

Genome size, chromosome counts and distribution of *Homogyne alpina* (Asteraceae) in the Slovak Carpathians

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Fráková V., Koprivý L., Mártonfiová L., Kocová V., Dudáš M. & Mártonfi P. (2021): Genome size, chromosome counts and distribution of *Homogyne alpina* (Asteraceae) in the Slovak Carpathians. – Thaiszia – J. Bot. 31 (2): 125-169.

Abstract: *Homogyne alpina* (L.) Cass. represents the only species of the genus *Homogyne* Cass. in Slovakia. This study characterizes *H. alpina* in terms of chromosome counts, genome size, reproduction mode and distribution in Slovakia. Three known cytotypes of the species are known, of which the cytotype $2n = 160$ is represented in the Slovak mountains and has not been documented from other countries yet. Flow cytometric analyses showed the genome size $2C = 21.30$ pg for petioles and $2C = 21.82$ pg for seeds. Sexual reproduction mode was confirmed by flow cytometric screening method based on embryo to endosperm genome size ratio. The centre of the species distribution is in high mountains of the Slovak Carpathians, where it is frequent in the altitude above 1000 m a. s. l. from mountane to alpine vegetation zone. The full list of the data of its distribution and the distribution map are also presented.

Keywords: mountain species, flow cytometry, chromosome numbers, distribution, Asteraceae.

Introduction

The genus *Homogyne* belongs to the tribe *Senecioneae* Cass. within the gigantic Asteraceae Bercht. et J. Presl. plant family and comprises three species (*H. alpina*, *H.*

discolor Cass. and *H. sylvestris* (Scop.) Cass.) widely distributed in mountain ranges of Europe (Tutin et al. 1976; Nordenstam 2007). In Slovakia, only *H. alpina* is present. The species is distributed in the mountains from northern Spain through the Pyrenees, the southern Jura, the Schwarzwald, The Alps to the Central European mountains (the Šumava Mts., the Krušné hory Mts., the Sudety Mts., and the Carpathians), extending towards the south, to the mountains of the Balkan Peninsula, and finally the species is also scattered in the Apennines (Tutin et al. 1976; Greuter 2006+).

Homogyne alpina is a perennial herb with slender, creeping, brown rhizomes, occasionally branched, with scales and lanate hairs on the surface. Stems are erect, simple, with a few cauline leaves. During flowering, stems are 10–35 (–45) cm long, often reddish-brown, longitudinally ribbed, covered with arachnoid to lanate hairs on their surface. The hairs can be long, curly, or shorter, simple; stems become ± glabrous with time. Basal leaves are 2–3 in a ground rosette, petiole is 3–12 cm long, leaf blade is entire, round or cordate to reniform-orbicular, cordate at the base, crenate to shallowly dentated at the margin. Basal leaves are (0.7–) 1.0–5.0 (–7.0) × 1.0–6.0 (–9.2) cm in size, coarse to slightly leathery, rough, dark green on upper side, glabrous, paler to purplish on lower side, sparsely pubescent, with longer off-yellow hairs on veins. Scaly leaves are situated at the upper part of the stem, narrowly to broadly lanceolate to ovate, sessile, entire, 0.8–1.8 (–2.2) × 0.2–1.2 cm in size, green or purplish to purple, glabrous on upper side, with scattered hairs on lower side. Inflorescence is one terminal capitulum, rarely 2–4 capitula, 10–15 mm in diameter, involucre is campanulate to cylindrical, ± 10 mm long. Involucral bracts are 12–20 in 1 row, linear lanceolate, entire, 1.0–2.5 mm wide, green with different shades of colour, sometimes striped, often purplish to purple at the tip and edges, sometimes completely purple. Ligular florets with corolla narrowly linearly oblong to linearly lanceolate, pink to purplish-red, tubular florets are fused with petals at the base, 7–10 mm long, purple to purple-red. The style with stigma is longer than corolla, protruding above the corolla tips, conspicuous. Fruits are narrowly cylindrical to cylindrical achenes, 4–5 (–6) mm long, longitudinally ribbed with 8–10 ribs, pappus hairs are numerous in 1 row, rough, white, 6–9 (–12) mm long.

The species grows in mountain spruce forests, often with rich moss undergrowth, in dwarf pine scrubs, in rocky alpine meadows and alpine pastures. It is a calciphobic species growing predominantly in shade, in alpine zone on sunny exposed habitats (Kaplan 2004).

Initially, our main motivation for the study was to prepare a summary of biological characteristics and detailed distribution of the species for the needs of final volume of the publication of *Flóra Slovenska: Asteraceae* (Flora of Slovakia). The species is variable in terms of its chromosome numbers. According to Chromosome Counts Database (Rice et al. 2015, <http://ccdb.tau.ac.il/home/>), three different cytotypes of *Homogyne alpina*, $2n = 120$, $2n = 140$ and $2n = 160$ are present in European mountains. From the territory of Slovakia, only one record of chromosome number has been published in 1970 by Uhríková, $2n = 160$. From neighbouring countries,

cytotypes $2n = 140$ (Poland, Urbańska 1956; Ukraine, Pashuk 1987) and $2n = 120$ (Austria, Kempniak in Lepper 1970; Favarger in Löve 1971) are known. Such data are not available from Czech Republic.

Another feature worth attention is the genome size. At the time of our analyses, one study reporting the genome size of *H. alpina* (Garcia et al. 2013) has already been published. Another study (Šmarda et al. 2019) was published during the evaluation of our data and writing the manuscript. Both studies claimed that they analysed plants of the cytotype $2n = 120$, however, they did not count the chromosomes in their studies and only used data published in the database. Therefore, we wanted to compare our data for genome size with previously published ones in relation to the ploidy levels.

Apomixis, asexual reproduction by seeds, can be found in Asteraceae, with well-documented examples in the genera as *Taraxacum* F. H. Wigg., *Hieracium* L., *Pilosella* Hill, etc. (Noyes 2007). The genus *Homogyne* within the *Senecioneae* tribe belongs to the strongly supported *Petasites*-clade together with the genera *Endocellion* Turcz. ex Heder, *Petasites* Mill. and *Tussilago* L. (Pelser et al. 2007; Steffen et al. 2016). Czapik (1996) stated that the genus *Petasites* is aposporous, however did not report any supporting data. Previous studies do not suggest the evidence of apomixis in *Petasites*, and we did not reveal such claim in the literature (Toman 1972; Cherniawsky & Bayer 1998). On the contrary, *Homogyne alpina* itself within $2n = 140$ was documented as a sexual species (Urbańska 1956). Therefore, we decided to test if other cytotypes, potentially distributed in Slovakia reproduce in the same way.

The detailed distribution of the species in Slovakia has not been studied so far. This fact led us to summarize all available distribution data, visualize it on the map of distribution, and also uncover the minimal and maximal altitude, where the species occurs.

Studying selected populations from the territory of Slovakia, this work summarizes (1) the chromosome counts, (2) the results of the measurements of genome size, (3) the evidence of sexual reproduction mode and (4) the distribution of *Homogyne alpina* in Slovakia, because the distribution range of the species in Slovakia has not been previously described in detail.

Material and Methods

Plant material

Living plants for flow cytometry were collected during summers and autumns 2014 and 2015 at four localities in the Stolické vrchy Mts. and at two localities in the Volovské vrchy Mts. The plants were potted in their natural soil and cultivated in the Botanical Garden of P. J. Šafárik University in Košice. Seeds for flow-cytometric and karyological analyses were collected in summer 2015 from two localities in the Stolické vrchy Mts., one locality in the Západné Tatry Mts. and one locality in the Nízke Tatry Mts. Until the analyses were performed, the seeds were stored in refrigerator at the temperature 4°C. The herbarium specimens of the plants used for the flow-cytometric analyses are deposited in KO (Herbarium of the Botanical

Garden of P. J. Šafárik University, Košice, Slovakia). Complete data on the collections and the herbarium specimens are given in the Appendix 1.

Karyological methods

For karyological analysis seedlings and root meristems of the cultivated plants from the selected localities were used (for details see Appendix 1). For the pretreatment, the root tips were transferred to 0.002 M aqueous solution of 8-hydroxyquinoline at the temperature of 4°C for 16 hours. Then the root tips were fixed for at least 1 hour in acetic ethanol (glacial acetic acid and 96 % ethanol in the ratio 1: 3), washed in distilled water and hydrolyzed for 3 minutes in 1N HCL at 60°C, then washed in distilled water. The meristems were squashed using a cellophane technique (Murín 1960) and stained in 7 % Giemsa stain solution in Sörensen phosphate buffer for 3 hours. The slides were then washed in distilled water, dried, and observed in a drop of immersion oil. Selected c-metaphase plates were photographed (using a Leica DM 2500 microscope equipped with camera DFC 290 HD and software Leica application suite version 3.5.0, Switzerland) and number of chromosomes was determined.

Flow cytometry

Flow cytometric analyses were performed both on petioles from living plants and on seeds. The samples were prepared by a two-step procedure, consisting of nuclear isolation and staining steps, using propidium iodide as DNA intercalator (Doležel & Göhde 1995; Loureiro et al. 2007). A method referred to as internal standardization was used (Doležel et al. 2007). To keep recommended maximum differences between standard and sample (Suda 2004) we used the internal reference standard: *Vicia faba* subsp. *faba* var. *equina* 'Inovec' (2C DNA content = 26.9 pg, Doležel et al. 1992). The seeds of the standard were acquired from the Institute of Experimental Botany, Olomouc, Czech Republic and grown in the Laboratory of Taxonomy at the Institute of Biological and Ecological Sciences of P. J. Šafárik University in Košice, Slovakia. For the determination of genome size three plants from each population were collected and one petiole per plant was used. To minimize possible deviations caused by the flow cytometer or sample preparation every plant was measured 3 times on 3 different days (Greilhuber & Obermayer 1997). These values were averaged for every plant extra, making 3 genome size values for each locality, 18 in total. For the detection of reproductive pathway and the estimation of genome size seeds from five plants per locality were used. Ten seeds of *Homogyne alpina* were used for each analysis and chopped together with the standard. Four samples from the locality Čuntava and five samples from each of the 3 remaining localities were measured once, making 19 measurements in total. Particular methodology of preparing the samples and their evaluation was identical with our previously published work (Koprivý et al. 2019). Statistical difference between population means of genome size values was tested with analysis of numerical variance (ANOVA). Genome size values obtained after analyses of petioles and seeds were then statistically evaluated with t test (or Mann-Whitney test, if assumptions for t

test were not met). Prior to statistical analyses, normality and homoscedasticity of data were verified. Data analyses were done in Past ver. 3.10 (Hammer et al. 2001).

Species distribution mapping

The study of the distribution of the species was based on the field work (2014-2021), the revision of voucher specimens deposited in the public herbaria in Central Europe: BP, BRA, BRNM, BRNU, KO, MOP, MPS, NI, POP, PR, PRC, SAV, SLO, SMB, SMBB, SNV, TM, ZAM, ZV and W (acronyms according to Thiers (2020+) and Vozárová & Sutorý (2001) for the small local collections), the published literature records (cited in the Appendix 3) and the data from the database Comprehensive information and monitoring system (CIMS), available online at www.biomonitoring.sk (which are cited as „Bio“). A grid map for the distribution of *Homogyne alpina* in Slovakia was designed in the ArcGis program, version 9.2. The phytogeographical division follows Futák (1984).

Results and Discussion

Chromosome number, genome size and reproduction mode

One chromosome number record from Slovakia has previously been known: $2n = 160$ from the locality Stinská in the Bukovské vrchy Mts. (Uhríková 1970). Based on our karyological analyses we approximately confirmed this number, $2n = ca\ 160$ from Stolica Mt. We could not determine the exact number because several chromosomes overlapped (Fig. 1). Considering all the data summarized by Chromosome Counts Database, three different cytotypes of the species are reported. Our result most likely corresponds with the cytotype $2n = 160$ determined by Uhríková (1970), which has been the only report for this cytotype so far. Thus, from the territory of Slovakia only the individuals with $2n = 160$ are known. The cytotype $2n = 140$ was described by Langlet (1936) for the first time. However, this result was only an approximate one due to high number of chromosome sets and problems with accurate counting. This chromosome number was later roughly confirmed by the embryological study of Urbańska (1956), who analysed plant material from the Polish side of the Tatry Mts., and by Pashuk (1987) from the Ukrainian Chornohora Mts. The third cytotype represents $2n = 120$, with records from Austria (Kempiak in Lepper 1970; Favarger in Löve 1971), Italy (Löve & Löve 1982) or Bulgaria (Kuzmanov et al. 1986).

Some of the previously mentioned works (eg. Langlet 1936; Urbańska 1956) concede that the chromosome numbers are only approximate, since the chromosomes did not nicely stand apart and some chromosomes fully or partially overlapped. While preparing the slides, sometimes even the chromosomes from two different cells could mix, which also leads to inaccuracies.

To date, two studies providing the results of genome size of *H. alpina* have been known. In both studies the authors believed that they analysed plants with cytotype $2n = 120$, although they did not perform karyological analyses and only relied on the literature data. The samples originated from Spain (Garcia et al. 2013) and the Czech Republic (Šmarda et al. 2019). They reported $2C$ values of 13.67 ± 0.70 pg (13 369

Mbp) and 12.75 pg (12 465 Mbp), as the internal standards *Pisum sativum* and *Vicia faba* were used, respectively. Our measurements of *Homogyne alpina* resulted in the genome size value $2C = 21.30 \pm 0.20$ pg (20 831 Mbp; 1 pg DNA = 978 Mbp according to Doležel et al. 2003) (Fig. 2, Tab. 1) from the petioles and $2C = 21.82 \pm 0.47$ pg (21 340 Mbp) from the seeds (Fig. 3). Our genome size values for petioles and seeds are the very first data for *H. alpina* of this ploidy level. At this point, comparison of our data with the previous works revealed diametrically different values for genome size. There is also difference in genome size of cca 0.9 pg between these two studies. Several reasons may be considered to be responsible for reported variation: a) it is uncertain if Garcia et al. (2013) and Šmarda et al. (2019) really analysed plants with $2n=120$; b) different methods, reference standards, buffers may cause variation in estimated genome size; c) other genomic factors as genome downsizing. Considering the classification of genome sizes of Angiosperms by Leitch et al. (1998) and Soltis et al. (2003), our results for the genome size of *H. alpina* are assigned as the intermediate ones ($3.5 < 1C < 14$ pg).

As in our previous study (Koprivý et al. 2019) we planned to determine the genome size values for the leaves and the seeds and then compare the results. However, the analysis of the leaves has not provided proper data probably due to high content of secondary metabolites. Instead of leaves, petioles were used, which provided reliable results supported by high-class histograms. The genome size values from all analysed populations showed only little differences. The minimal value (20.94 pg) for petioles was determined for the sample from Kojšovská hoľa Mt., while the highest one (21.72 pg) from Volovec Mt. Assumptions of ANOVA are not violated, and we noticed marginal but statistically significant differences in genome size between populations (ANOVA, $F_{5,12} = 4.221$, $p < 0.05$). It results from slight deviation of plants from locality Volovec Mt., which in average have larger genome sizes compared to plants from Čuntava (2.22 % difference) and Kojšovská hoľa Mt. (1.84 %). These differences may be caused by small population sample and it deserves further attention. Better sampling of the populations from surrounding of Volovec Mt., Čuntava and Kojšovská hoľa Mt. will be needed to confirm or disprove detected differences.

According to Sliwinska et al. (2005) and Kolarčík et al. (2018) seeds are not only suitable for determining the genome size, but in some cases are even better material for FCM analysis than leaves. For seeds, the minimal value (21.19 pg) together with maximal one (22.85 pg) were revealed in the samples from Žiarska dolina valley. Data of genome size measurements from both petioles and seeds are available only for two populations, Čuntava and Stolica Mt. In both cases, statistically significant differences were observed: in Stolica Mt., t test, $t = -2.77$, $p = 0.04$ (2.93 % difference), and in Čuntava, Mann-Whitney test, $z = -2.087$, $p = 0.04$ (4.21 % difference). Statistical significance (p values) are only marginal, which once again indicates that for definitive confirmation of differences in genome size between petioles and seeds better sampling will be needed.

Tab. 1 Genome size of *Homogyne alpina* obtained after flow cytometry analyses of petioles (p) and seeds (s).

Locality	Type of analysis	No. of analysis	Minimum (pg)	Maximum (pg)	Average (pg)	Standard deviation
Stolica Mt.	p	3	21.23	21.33	21.29	0.05
Čuntava site	p	3	20.95	21.20	21.12	0.14
Kojšovská hoľa Mt.	p	3	20.94	21.36	21.20	0.22
Faltenovo sedlo saddle	p	3	21.21	21.53	21.39	0.17
Volovec Mt.	p	3	21.45	21.72	21.58	0.14
Kohút Mt.	p	3	21.19	21.24	21.22	0.03
Total	p	18	20.94	21.72	21.3	0.20
Čuntava site	s	4	21.27	22.09	21.74	0.36
Kološňa site	s	5	21.2	21.97	21.55	0.29
Stolica Mt.	s	5	21.68	22.64	22.19	0.36
Žiarska dolina valley	s	5	21.19	22.85	21.77	0.64
Total	s	19	21.19	22.85	21.82	0.47

Simple comparison of the mean genome size values for the seeds and the petioles showed that the values for seeds are in average by 2.4 % (0.52 pg) higher. Several reasons may cause this variation in the genome size values. Kolarčík et al. (2018) mentioned that cytosolic compounds present in FCM samples may affect genome size estimates in *Onosma* sp. Along with this, they reported that staining duration may also have an effect on an estimate of this parameter in cases where fluorescence dye incorporation into DNA may be slowed down, as shorter staining time may result into inaccurate lower values of DNA content. Likewise, other aspects, such as different chromatine structure in cells of embryonic stage, i.e. nuclear size reduction during the seed maturation and nuclear architecture reorganization in the time of seedling establishment (Baluška 1990; Biradar & Rayburn 1994; van Zanten et al. 2011; Bourbousse et al. 2015), can lead to different binding of fluorescence stains to DNA and diverse values of 2C DNA obtained by FCM analyses. However, this requires further research.

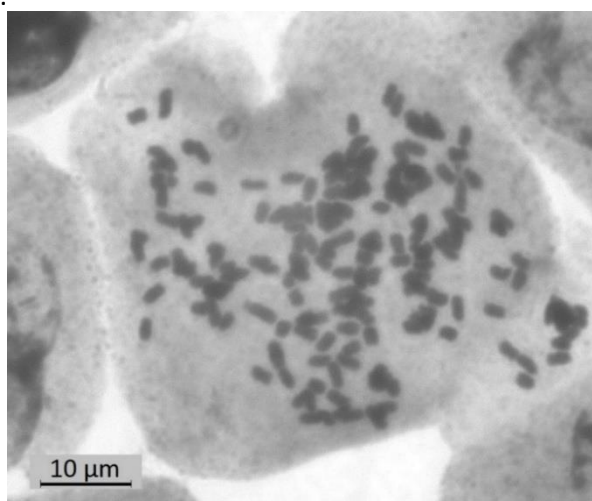


Fig. 1 Somatic chromosomes of *Homogyne alpina*, $2n = ca\ 160$ (Stolica Mt., Stolické vrchy Mts.).

We suppose that the difference of circa 2 pg between the minimal and the maximal value is too little to indicate different ploidy levels among the populations. Ergo we conclude that the individuals from all of the populations have the same chromosome number, $2n \approx 160$. Even the individuals from the Západné Tatry Mts. (locality Žiarska dolina valley) and the Nízke Tatry Mts. (locality Kološňa) showed no significant variance compared to the values from other localities from the Stolické and the Volovské vrchy Mts. This suggests that the populations on the northern, Polish side of the Tatry Mts. ($2n = 140$, Urbańska 1956) and those on the southern, Slovak side may be of different ploidy levels. However, due to the lack of precise data, much more detailed study aiming at chromosome counts and genome size determination will be needed to support this hypothesis.

The ratio of ploidy level of embryo and endosperm was 2:3 in all cases, which corresponds to the sexual type of reproduction (for complete data see Appendix 2). The detailed embryological study of *H. alpina* by Urbańska (1956) identified the presence of pollen tubes in several sacs, which also contained typically developed embryos surrounded by endosperm. Hence, we verify this reproduction mode using flow cytometry.

Distribution in Slovakia

Homogyne alpina occurs in most of the mountains of the Slovak Carpathians, frequently at altitudes over 1000 m, in the submountain, mountain, subalpine and alpine vegetation zones. The occurrence of the species was documented in 25 phyto-

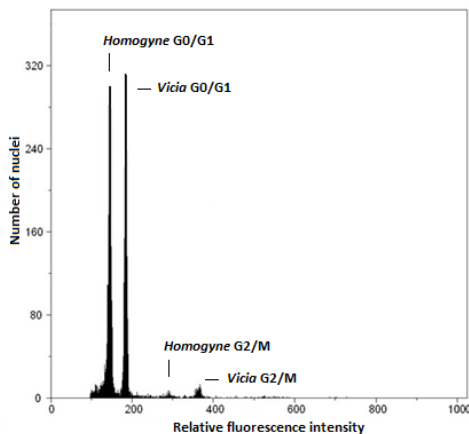


Fig. 2 Flow cytometric histogram of relative fluorescence intensity (propidium iodide) obtained after simultaneous analysis of nuclei from petioles of *Homogyne alpina* and reference standard (*Vicia faba* subsp. *faba* var. *equina* 'Inovec', $2C = 26.9$ pg DNA). G0/G1 and G2/M represents phases of cell cycle.

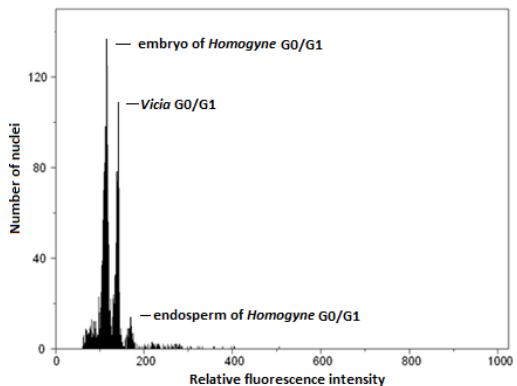


Fig. 3 Flow cytometric histogram of the relative fluorescence intensity (propidium iodide) obtained after the simultaneous analysis of the nuclei of *Homogyne alpina* seeds and the reference standard of *Vicia faba*.

geographical districts and subdistricts of the Slovak flora and its distribution in the territory of Slovakia is shown in Fig. 4. The species is most frequent in the area of *Eucarpaticum* (the Malá Fatra Mts., the Veľká Fatra Mts., the Nízke Tatry Mts. and the Tatry Mts.), *Beschidicum occidentale* (the Západné Beskydy Mts.) and *Beschidicum orientale* (the Spišské vrchy Mts.), many records are also from the Slovenské Rudohorie Mts., the Muránska planina Mts., the Slovenský raj Mts. and the Čergov Mts., where *H. alpina* occurs in beech and spruce forests and in mountain meadows. The species grows in a wide range of altitudes, the maximum reaches at ca 2500 m in the Vysoké Tatry Mts. (Kotlový štít Mt.; for details see Appendix 3) and the lowermost occurrence ever recorded, very surprisingly, lies near the Meľov hill in Ondavská vrchovina Mts., where Chrtek & Kříša in 1976 found the species at the altitude of about 320 m. The species grows very rarely in north-eastern Slovakia due to maximum altitudes under 1000 m. Low altitudes do not allow the species to colonize permanently the hill areas of the Ondavská and Laborecká vrchovina. In the Slanské vrchy Mts. there are some hills over 1000 m, but only a single occurrence was recorded here at the altitude of 800 m. Rather isolated occurrences are situated in the easternmost Slovakian mountains (the Bukovské vrchy Mts. and the Vihorlat Mts.). Farther eastwards the species' range continues in the high hills towards the Ukrainian Eastern Carpathians (Chopik & Fedoronchuk 2015). The earliest known report from the territory of Slovakia dates back to 1851; the species was collected by János Fábry at the Muránsky hrad castle and the herbarium specimen is deposited in the collection of BRA (see Appendix 3).

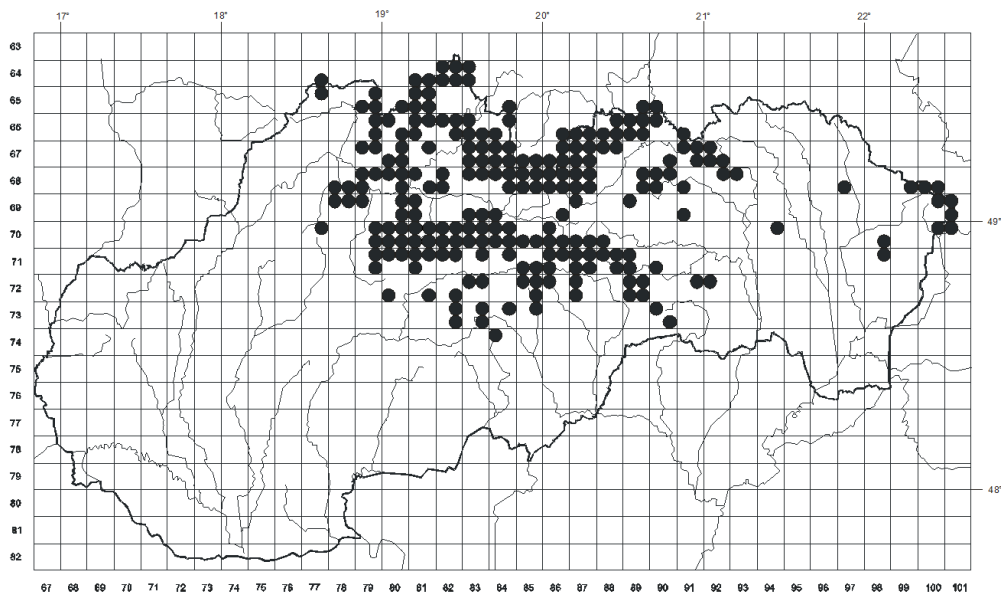


Fig. 4 Grid map of distribution of *Homogyne alpina* in Slovakia.

Acknowledgement

The authors thank to the herbarium staff for the providing of herbarium specimens. Thanks are due to Tatiana Miháliková (Botanical Institute of Slovak Academy of Science, Bratislava, Slovakia) for the computer preparation of the distribution map and Stanislav Motyčka (State Nature Conservancy of the Slovak Republic, Banská Bystrica, Slovakia) for providing of the data on *Homogyne alpina* distribution from the database Comprehensive information and monitoring system (CIMS), available also online at www.biomonitoring.sk. We would also like to thank two anonymous reviewers and Dr. Vladislav Kolarčík (Košice, Slovakia) for their constructive criticism on earlier version of the manuscript.

References

- Baluška F. (1990): Nuclear size, DNA content, and chromatin condensation are different in individual tissues of the maize root apex. – *Protoplasma* 158 (1): 45–52. DOI: 10.1007/BF01323273
- Biradar D. P. & Rayburn A. L. (1994): Flow cytometric probing of chromatin condensation in maize diploid nuclei. – *New Phytologist* 126 (1): 31–35. DOI: 10.1111/j.1469-8137.1994.tb07526.x
- Bourbousse C., Mestiri I., Zabulon G., Bourge M., Formiggini F., Koini M. A., Brown S. C., Fransz P., Bowler C. & Barneche F. (2015): Light signaling controls nuclear architecture reorganization during seedling establishment. – *Proc. Natl. Acad. Sci. U.S.A.* 112: 2836–2844. DOI:10.1073/pnas.1503512112
- Cherniawsky D. M. & Bayer R. J. (1998): Systematics of North American *Petasites* (Asteraceae: Senecioneae). I. Morphometric analyses. – *Canad. J. Bot.* 76: 23–36.
- Chopik V. I. & Fedoronchuk M. I. (2015): Flora Ukrainae Carpaticae. – TzOV «Terno-graf», Ternopil'. [In Ukrainian]
- Czapik R. (1996): Problems of apomictic reproduction in the families Compositae and Rosaceae. – *Folia Geobot. Phytotax.* 31: 381–387.
- Doležel J. & Göhde W. (1995): Sex determination in dioecious plants *Melandrium album* and *M. rubrum* using high-resolution flow cytometry. – *Cytometry* 19: 103–106. DOI.org/10.1002/cyto.990190203
- Doležel J., Sgorbati S. & Lucretti S. (1992): Comparison of three DNA fluorochromes for flow cytometric estimation of nuclear DNA content in plants. – *Physiol. Plant.* 85: 625–631. DOI: 10.1111/j.1399-3054.1992.tb04764.x
- Doležel J., Bartoš J., Volgmayr H. & Greilhuber J. (2003): Nuclear DNA content and genome size of trout and human. – *Cytometry* 51: 127–128. DOI: 10.1002/cyto.a.10013
- Doležel J., Greilhuber J. & Suda J. (2007): Estimation of nuclear DNA content in plants using flow cytometry. – *Nat. Protoc.* 21 (9): 2233–2244. DOI: 10.1038/nprot.2007.310
- Futák J. (1984): Fytogeografické členenie Slovenska. – In: Bertová, L. (ed.): *Flóra Slovenska* IV/1. – Veda, Bratislava. pp: 418–420.
- Garcia S., Hidalgo O., Jakovljević I., Siljak-Yakovlev S., Vigo J., Garnatje T. & Vallès J. (2013): New data on genome size in 128 Asteraceae species and subspecies, with first assessments for 40 genera, 3 tribes and 2 subfamilies. – *Plant Biosyst.* 147 (4): 1219–1227. DOI: 10.1080/11263504.2013.863811
- Greilhuber J. & Obermayer R. (1997): Genome size and maturity group in *Glycine max* (Soybean). – *Heredity* 78: 547–551. DOI: 10.1038/sj.hdy.6881690

- Greuter W. (2006+): Compositae (pro parte majore). – In: Greuter W. & Raab-Straube E. von (ed.): Compositae. Euro+Med Plantbase - the information resource for Euro-Mediterranean plant diversity. Published on the Internet: <http://ww2.bgbm.org/EuroPlusMed/> [accessed August 13, 2020]
- Hammer Ø., Harper D. A. T. & Ryan P. D. (2001): PAST: Paleontological statistics software package for education and data analysis. – *Palaeontol. Electron.* 4. 9 pp.
- Kaplan Z. (2004): 37. Homogyne CASS. – podbělice. In: Slavík B. & Štěpánková J. & Štěpánek J. (eds.): Květena České republiky 7. – Academia, Praha. pp. 284–285. [in Czech]
- Kolarčík V., Kocová V., Caković D., Kačmárová T., Piovár J. & Mártonfi P. (2018): Nuclear genome size variation in the allopolyploid *Onosma arenaria* – *O. pseudoarenaria* species group: methodological issues and revised data. – *Botany* 96: 397–410. DOI.org/10.1139/cjb-2017-0164
- Koprivý L., Mártonfióvá L., Kocová V., Fráková V. & Mártonfi P. (2019): Genome size and distribution of *Adenostyles alliariae* in Slovakia. – *Thaiszia – J. Bot.* 29 (2): 151–177. DOI.org/10.33542/TJB2019-2-03
- Kuzmanov B., Georgieva S. & Nikolova V. (1986): Chromosome number of Bulgarian flowering plants. I. Fam. Asteraceae. – *Fitologia* 31: 71–74.
- Langlet O. F. J. (1936): Einige Beiträge zur Kenntnis der Chromosomenzahlen in Nymphaeaceae, Ranunculaceae, Polemoniaceae and Compositae. – *Svensk Bot. Tidsk.* 30: 288.
- Lepper L. (1970): Beiträge zur Chromosomenzahlen-Dokumentation. – *Wiss. Z. Friedrich-Schiller- Univ. Jena, Math.-Naturwiss. Reihe* 19 (3): 369–376.
- Leitch I. J., Chase M. W. & Bennett M. D. (1998): Phylogenetic analysis of DNA C-values provides evidence for a small ancestral genome size in flowering plants. – *Ann. Bot.* 82 (Suppl. A): 85–94.
- Loureiro J., Rodríguez E., Doležel J. & Santos C. (2007): Two new nuclear isolation buffers for plant DNA flow cytometry: A test with 37 species. – *Ann. Bot.* 100: 875–888. DOI: 10.1093/aob/mcm152
- Löve A. (ed.) (1971): IOPB chromosome numbers reports XXXII. – *Taxon* 20 (2/3): 349–356.
- Löve A. & Löve D. (1982). Reports. In: Löve A. (ed.): IOPB chromosome numbers reports LXXVI. – *Taxon* 31 (3): 583–587.
- Murín A. (1960): Substitution of cellophane for glass covers to facilitate preparation of permanent squashes and smears. – *Stain Technol.* 35: 351–353.
- Niklfeld H. (1971): Bericht über die Kartierung der Flora Mitteleuropas. – *Taxon* 20: 545–571.
- Nordenstam B. (2007): XII. Tribe Senecioneae. – In: Kadereit J. W. & Jeffrey C. (eds.): *The Families and Genera of Vascular Plants vol. 8. Flowering Plants. Eudicots, Asterales.* – Springer, Berlin. pp. 208–241.
- Noyes R. D. (2007): Apomixis in the Asteraceae: Diamonds in the Rough. – *Funct. Plant Sci. Biotech.* 1 (2): 207–222.
- Pashuk K. T. (1987): Chromosome numbers in species of subalpine belt of Chernogora (Ukrainian Carpathians). – *Bot. Zhurn.* 721 (1): 1069–1074.
- Pelser P. B., Nordenstam B., Kadereit J. W. & Watson L. E. (2007): An ITS phylogeny of tribe *Senecioneae* (Asteraceae) and a new delimitation of *Senecio* L. – *Taxon* 56: 1077–1104. DOI.org/10.2307/25065905
- Rice A., Glick L., Abadi S., Einhorn M., Kopelman N. M., Salman-Minkov A., Mayzel J., Chay O. & Mayrose I. (2015): The Chromosome Counts Database (CCDB) – a community resource of plant chromosome numbers. – *New Phytologist* 206 (1): 19–26. DOI.org/10.1111/nph.13191

- Sliwiska E., Zielinska E. & Jedrzejczyk I. (2005): Are seeds suitable for flow cytometric estimation of plant genome size? – *Cytometry A* 64: 72–79. DOI:10.1002/cyto.a.20122
- Soltis D. E., Soltis P. S., Bennett M. D. & Leitch I. J. (2003): Evolution of genome size in the angiosperms. – *Am. J. Bot.* 90: 1596–1603.
- Steffen S., Dillenberger M. S. & Kadereit J. W. (2016): Of dwarfs and giants: phylogeny of the *Petasites*-clade (Asteraceae–Senecioneae) and evolution of miniaturization in arctic–alpine environments. – *Plant. Syst. Evol.* 302: 545–559. DOI.org/10.1007/s00606-016-1282-x
- Suda J. (2004): An employment of flow cytometry into plant biosystematics. – PhD Thesis, Charles University in Prague.
- Šmarda P., Knápek O., Březinová A., Horová L., Grulich V., Danihelka J., Veselý P., Šmerda J., Rotreklová O. & Bureš P. (2019): Genome sizes and genomic guanine+cytosine (GC) contents of the Czech vascular flora with new estimates for 1700 species. – *Preslia* 91: 117–142. DOI: 10.23855/preslia.2019.117
- Thiers B. (2020+): [continually updated] Index Herbariorum: A global directory of public herbaria and associated staff. – New York Botanical Garden’s Virtual Herbarium, New York. <http://sweetgum.nybg.org/ih/>
- Toman J. (1972): A taxonomic survey of the genera *Petasites* and *Endocellion*. – *Folia Geobot. Phytotax.* 7: 381–406.
- Tutin T. G., Heywood V. H., Burges N. A., Moore D. M., Valentine D. H., Walters S. M. & Webb D. A. (1976): *Flora Europaea* 4. – Cambridge University Press, Cambridge. 534 pp.
- Uhríková A. (1970): Zytologische Auswertung des Taxons *Homogyne alpina* Cass. – *Acta Fac. Rerum Nat. Univ. Comen., Bot.* 16: 85–88.
- Urbańska K. (1956): Studies in the biology of reproduction and embryology of *Homogyne alpina* (L.) Cass. – *Acta Soc. Bot. Pol.* 25: 733–751.
- van Zanten M., Koini M. A., Geyer R., Liu Y., Brambilla V., Bartels D., Koornneef M., Fransz P. & Soppe W. J. J. (2011): Seed maturation in *Arabidopsis thaliana* is characterized by nuclear size reduction and increased chromatin condensation. – *Proc. Natl. Acad. Sci. U.S.A.* 108: 20219–20224. DOI: 10.1073/pnas.1117726108
- Vozárová M. & Sutorý K. (eds.) (2001): *Index herbariorum Reipublicae bohemicae et Reipublicae slovacae*. – *Bull. Slov. Bot. Spoločn., Suppl.* 7: 95 pp. [in Slovak].

Received: October 13th 2020

Revised: January 11th 2021

Accepted: September 21st 2021

Appendix 1

Plant material for flow cytometric analyses:

1. Central Slovakia, Stolické vrchy Mts., Stolica Mt., 48°46'44.1"N, 20°12'49.1"E, 5 July 2014, leg. Fráková, KO 32186-32188 (3 individuals), 2. Central Slovakia, Stolické vrchy Mts., Kohút Mt., 48°43'47.8"N, 20°10'57.1"E, 21 July 2014, leg. Fráková, KO 32183-32185 (3 individuals), 3. Central Slovakia, Stolické vrchy Mts., Faltenovo sedlo saddle, 48°45'06.2"N, 20°10'57.7"E, 21 July 2014, leg. Fráková, KO 32177-32179 (3 individuals), 4. Central Slovakia, Stolické vrchy Mts., Čuntava, 48°50'46.1"N, 20°15'12.2"E, 6 October 2014, leg. Fráková, KO 32174-32176 (3 individuals), 5. Central Slovakia, Volovské vrchy Mts., Kojšovská hoľa Mt., 48°46'59.9"N, 20°59'15.3"E, 26 October 2014, leg. Fráková, KO 32171-32173 (3 individuals), 6. Central Slovakia, Volovské vrchy Mts., Volovec Mt., 48°44'39.9"N, 20°34'31.2"E, 8 May 2015, leg. Fráková, KO 32180-32182 (3 individuals).

Seed material for karyological and flow cytometric analyses:

1. Central Slovakia, Stolické vrchy Mts., Čuntava, 48°50'45.9"N, 20°15'10.9"E, 10 July 2015, leg. Fráková KO 32174-32176 (5 individuals), 2. Central Slovakia, Stolické vrchy Mts., Stolica Mt., 48°46'24.9"N, 20°12'27.1"E, 11 July 2015, leg. Fráková (5 individuals), 3. Northern Slovakia, Západné Tatry Mts., Žiarska dolina valley, 49°11'22.3"N, 19°44'17.4"E, 15 August 2015, leg. Fráková (5 individuals), 4. Central Slovakia, Nízke Tatry Mts., Kološňa, 48°56'03.4"N, 19°36'47.4"E, 21 August 2015, leg. Fráková (5 individuals).

Appendix 2. Complete data of FCSS analyses showing the embryo – endosperm ploidy level ratio.

Sample	Mean peak position of embryo	Mean peak position of endosperm	Embryo – Endosperm real ratio	Embryo – Endosperm potential ratio
Čuntava 1	99.83	150.46	0.66	2:3
Čuntava 2	103.29	148.56	0.70	2:3
Čuntava 3	100.15	145.02	0.69	2:3
Čuntava 4	107.13	156.34	0.69	2:3
Kološňa 1	123.82	189.64	0.65	2:3
Kološňa 2	124.23	187.23	0.66	2:3
Kološňa 3	104.52	159.54	0.66	2:3
Kološňa 4	105.55	158.62	0.67	2:3
Kološňa 5	113.2	167.88	0.67	2:3
Stolica 1	102.18	148.38	0.69	2:3
Stolica 2	100.31	148.17	0.68	2:3
Stolica 3	105.22	152.88	0.69	2:3
Stolica 4	97.03	140.09	0.69	2:3
Stolica 5	93.24	141.47	0.66	2:3
Žiarska dolina 1	118.97	173.56	0.69	2:3
Žiarska dolina 2	125.45	186.24	0.67	2:3
Žiarska dolina 3	112.62	169.1	0.67	2:3
Žiarska dolina 4	118.92	178.61	0.67	2:3
Žiarska dolina 5	124.94	189.26	0.66	2:3

Appendix 3. List of revised herbarium specimens, published and unpublished records of *Homogyne alpina*

For herbarium specimens the collector, year of collection and herbarium acronym (and evidence number if exists) are given; herbarium acronyms follow Thiers (2020+). The references for the published records from the sources not listed in the References chapter are given in an abridged form including the page of a particular *Homogyne alpina* record. For unpublished manuscripts and field records the year is given, followed by the name(s) of its author(s). The records are arranged following the phytogeographical division of Slovakia by Futák (1984) and assigned to the quadrants (in parentheses) of the CEBA grid template according Niklfeld (1971). Altitude (where available) is presented by a number followed by „m“, which is abbreviation of m a. s. l. Abbreviations: N (north), S (south), W (west), E (east) and their combinations, NR – Nature reserve, NNR – National Nature Reserve.

Carpaticum occidentale.

(Praecarpaticum) 14c. Kremnické vrchy Mts.: Handel Mt. [= Flochová Mt.], 48°48'25.3"N, 18°58'20.3"E (Pavlišin 2014 Bio) (7179d). – Svrčinník Mt., 48°48'55.6"N, 18°59'42.5"E (Vaško 2015 Bio) (7179d). – Badín, 48°42'38"N, 19°0'21.2"E (Siakel' 2014 Bio) (7280c). – **14d. Poľana Mts.:** Ratajová dolina valley, 560 m (Manica 1960 ZV) (7281d). – Valaská, NR Havranie skaly, valley of Jaseňový potok brook, 930–970 m, 48°41'7"N, 19°28'52"E (Janišová et al. Bull. Slov. Bot. Spoločn. 26. Suppl. 13: 2004) (7382b). – NR Havranie skaly, 48°41'5.1"N, 19°28'51.6"E (Rajtarová 1999 Bio) (7382b). – Kyslinky, 48°38'54.1"N, 19°29'14.6"E (Lizoň 2014 Bio) (7382d). – Katruška, Zbojnický Tanec, meadow near the spot height 1414, 1410–1420 m, 48°38'28"N, 19°29'5"E (7382d). – Zadná Poľana Mt., on the top of the spot height 1458, 1450–1458 m, 48°38'13"N, 19°28'59"E (7382d). – Výbohove, SW slope of Zadná Poľana Mt., 1304–1364 m, 48°38'01"N, 19°28'39"E (7382d). – Sihla, NR Vrchslatina, along Slatinský potok brook, and around the road, cca 920 m, 48°38'56"N, 19°37'46"E (all Janišová et al. Bull. Slov. Bot. Spoločn. 26. Suppl. 13: 2004) (7383d). – Habáňovo, 48°35'19.8"N, 19°40'4.7"E (Hrivnák 2003 Bio) (7484a). – **14e. Štiavnické vrchy Mts.:** Banište Mt. (Truchlý 1894 BRA) (7578d). – **15. Slovenské rudohorie Mts.:** N from the spot height 1286, 1220 m (7185c). – Skalka Mt., near the spot height 1286, 1280 m (7185c). – Skalka Mt., bellow the spot height 1286, 1230 m (all Miadok Preslia 60 (3): 261, tab. 3, p. 264, tab. 4, 1988) (7185c). – Slatvinisko Mt. [= Slatvinské], 1150–1190 m (7185c-d). – S from Slatvinisko Mt. [= Slatvinské], 1220 m (7185c-d). – between Rovienky Mt. and Slatvinisko Mt. [= Slatvinské], 1240 m (all Miadok Preslia 60(3): 264, tab. 4, 1988) (7185c-7285a). – Priebybka, on meadows (7187c). – Balková, on meadows (both Magic & Májovský Acta Fac. Rer. Natur. Univ. Comen. Bot. 22: 70, 1974; not. Koprivý 2018) (7187c). – Čuntava, 20 m from the tourist signpost, 1134 m, 48°50'45.9"N, 20°15'10.9"E (7187d). – Čuntava, near the forest road, 50 m E from the tourist signpost, 1125 m, 48°50'46.1"N, 20°15'12.2"E (both Fráková 2015 KO 32230, 32231) (7187d). – Boserpalské mláky, 48°50'43"N, 20°18'19.5"E (Leskovjanská 2015 Bio) (7187d). – Babiná Mt., 90 m from the tourist signpost on the top, 1278 m, 48°49'48.8"N, 20°27'46.6"E (Fráková 2015 KO 32244, 32245) (7188d). – in the valley below the saddle between Babiná Mt. and Smrečinka Mt., 1000 m (7188d). – Nálepko, Čierna Hora spa, N slopes of Pálenica Mt., 1000–1050 m (both Mráz & Mrázová Bull. Slov. Bot. Spoločn. 38, Suppl. 1, 2003) (7189c). – Buchwald (Bukovec), 1127 m (Mitskeová 1969 SNV B639) (7190c). – around the spot height Hrb (1254), 1050–1254 m, 48°43'50"N, 19°27'27"E (Janišová et al. Bull. Slov. Bot. Spoločn. 26. Suppl. 13: 2004) (7282d). – surroundings of the spot height Hrb, 48°43'50.7"N, 19°27'27.1"E (7282d). – surroundings of the spot height Vepor, 48°42'50.9"N, 19°27'31.4"E (both Rajtarová 2002 Bio) (7282d). – around the spot height Vepor (1277), 1200–

1277 m, 48°42'54"N, 19°27'29"E (Janišová et al. Bull. Slov. Bot. Spoločn. 26. Suppl. 13: 2004) (7282d). – Osrbie, the end of Hruškovo valley, 800 m (7283a). – Krámniská, 580–820 m, between Poľana Mt. and confluence of Kamenistý potok brook and the Hron river (both not. Magic 1967) (7283b). – below Lešník Mt., above Prostredná dolina valley, 1300 m (7285a). – Lešník Mt., 1340 m (7285a). – Psica Mt., 1340 m (7285a). – Psica Mt., 1390 m (7285a). – above Prostredná dolina valley, below Psica Mt., 1280 m (all Miadok Preslia 60 (3): 259–267, 1988) (7285a). – Veľká Smrekovica Mt., N edge of the meadow, 1325 m (Miadok Acta Fac. Rer. Natur. Univ. Comen. Bot. 29: 74, 1982) (7285a). – Rovienky Mt., 1230 m, 1250 m (7285a). – Malá Smrekovica Mt., SE from the meadow, 1310 m (7285a). – Malá Smrekovica Mt., below the meadow, 1260 m (7285a). – Javorinka Mt., S from the top, 1390 m (7285a). – below the forest road Malá Smrekovica Mt. – cabin on Fabova hoľa Mt., 1250 m (7285a). – below the road Fabova hoľa Mt. – Malá Smrekovica Mt., 1330 m (7285a). – N from the top of Fabova hoľa Mt., 1420 m (7285a). – the top of Fabova hoľa Mt., E from the tourist cabin, 1380 m (all Miadok Preslia 60 (3): 259–267, 1988) (7285a). – Fabova hoľa Mt., 48°46'58.1"N, 19°52'42.7"E (Vaško 2013 Bio) (7285a). – Fabova hoľa Mt. (Richter 1887 BP 173609; Vraný 1923 BRA; not. Hajdúk 1958; Burkovský Stredné Slovensko 4: 85, 1985; Dudáš & Dudášová 2018 KO 34644; Dudáš 2018 BRNU 663510) (7285a). – Fabova hoľa Mt., 1441 m (Hendrych Preslia 27: 68, 1955) (7285a). – Fabova hoľa Mt., 1400 m (7285a). – Fabova hoľa Mt., on the top (both Cvachová & Urbanová Stredné Slovensko 4: 49, 1985) (7285a). – Fabova hoľa Mt., 1330 m (Miadok Acta Fac. Rer. Natur. Univ. Comen. Bot. 29: 75, 1982) (7285a). – from the Ruská chata cabin to the top of Kyprov Mt. (Májovský 1971 SLO) (7287a). – Kyprov Mt., on the top, 1390 m, 48°47'31.6"N, 20°11'44"E (7287a). – 60 m from the Slanské sedlo saddle towards Kyprov Mt., 1252 m, 48°43'29"N, 19°28'07"E (both Fráková 2015 KO 32239, 32240) (7287a). – Slanská dolina valley, on the meadow, cca 1000 m (Magic & Májovský Acta Fac. Rer. Natur. Univ. Comen. Bot. 22: 70, 1974) (7287a). – from the top of Stolica Mt. to the Slanské sedlo saddle (Králik 1972 SLO) (7287a). – Rejdová – Stolica Mt., 48°47'15.7"N, 20°13'23.4"E (Leskovjanská 2015 Bio) (7287a). – Stolica Mt., Roveň meadow (Kupčok 1907 PR 133386) (7287a). – Stolica Mt., meadow below the top, 1 km from the top towards Rejdová, 1448 m, 48°46'44.1"N, 20°12'49.1"E (7287a). – Stolica Mt., on the top near the tourist signpost, 1477 m, 48°46'25.1"N, 20°12'25.1"E (both Fráková 2015 KO 32220, 32221) (7287a). – the top of Stolica Mt. (Hendrych Acta Univ. Carol. 2: 139, 1968) (7287a). – Stolica Mt., on the meadows (Magic & Májovský Acta Fac. Rer. Natur. Univ. Comen. Bot. 22: 70, 1974) (7287a). – sedlo Harová saddle, 20 m from the tourist signpost towards Stolica Mt., 1370 m, 48°46'11.3"N, 20°12'09.6"E (Fráková 2015 KO 32222-32224) (7287a). – Lehotská hoľa ridge (7287a). – Chyžnianska Mt., on the meadows (both Magic & Májovský Acta Fac. Rer. Natur. Univ. Comen. Bot. 22: 70, 1974) (7287a). – Faltenovo sedlo saddle, near the tourist signpost, 1254 m, 48°45'06.2"N, 20°10'57.7"E (Fráková 2015 KO 32177-32179) (7287a). – Revúca, 48°44'39.6"N, 20°10'50.8"E (Daniel-Szabó 2013 Bio) (7287c). – Kohút Mt., NW from the spot height 1409, 48°43'43.3"N, 20°10'28.6"E, 1215 m (7287c). – Kohút Mt., slope between Parajka cabin and spot height 1409, near Parajka cabin, 1100–1409 m (both Mihál et al. Reussia 6 (1-2): 6, 2011) (7287c). – Kohút Mt. (Kochjarová & Kliment Výsk. a ochr. príř. Murán. planiny 3: 97, 2002) (7287c). – on the top of Kohút Mt. (Fábry Gömör viránya: 85, 1867; Hendrych Acta Univ. Carol. 2: 139, 1968) (7287c). – Kohút Mt., 1300–1400 m (Slabý 1966 PRC) (7287c). – top of Kohút Mt., near the tourist signpost, 1409 m, 48°43'48.8"N, 20°10'56.8"E (7287c). – Jakušova dolina valley, below Kohút Mt., 1042 m, 48°44'03.4"N, 20°11'54.8"E (both Fráková 2015 KO 32228, 32229) (7287c). – Malý Kohút Mt., Parajka cabin, 1192 m (Králik 1971 SLO) (7287c). – on meadows around Parajka cabin, cca 1123 m (7287c). – Kohút Mt., on meadows (both Magic & Májovský Acta Fac. Rer. Natur. Univ. Comen. Bot. 22: 70, 1974) (7287c). – NE from Revúca, spruce forests of Kohút Mt., 1000 m (Novák Věda příř. 7: 220–221, 1926) (7287c). – Skalka Mt. (Magic & Májovský Acta Fac. Rer. Natur. Univ. Comen. Bot. 22: 70, 1974) (7287c). – Nálepko, 48°47'41.6"N, 20°32'15.4"E (Maršalek 2013 Bio) (7289a). – Peklisko, N from the spot height 1244,8, 1190 m (Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. 21: 21, 1973) (7289a). – below Čertova hoľa Mt., above Henclová, 1230 m (Vykoková

& Hrubá Bull. Slov. Bot. Spoločn. 31 (2): 61, 2009) (7289a). – Volovské vrchy Mts., Henclová, pasture (Nižnanská 1985 SNV B2326) (7289a). – meadow between chata Stadielko chalet and Košútova jama, cca 1100 m (7289a). – Košútova jama, towards chata Stadielko chalet, cca 1150 m (7289a). – Javorina Mt. (1212), NW slope above Dlhá dolina valley (7289a). – spring of Henclová brook, SE below the ridge, 1100 m (all Vlčáková & Hajdúk Nat. Carp. 48: 97–108, 2007) (7289a). – sedlo Volovec saddle, near the tourist signpost, 1155 m, 48°45'17.2"N, 20°33'27.9"E (Fráková 2015 KO 32241) (7289a). – Močidlá, old meadows with swamp, 1200 m (Vlčáková & Hajdúk Nat. Carp. 48: 97–108, 2007) (7289a). – E from the spot height Suchý vrch, 1050 m (7289b). – Tichá Voda, on the ridge Suchý vrch Mt. – Žobrácka poľana Mt. (both Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. 21: 21, 1973) (7289b). – Zlatý Stôl Mt., 1200–1280 m (Dvořák 1979 BRA) (7289b). – Zlatý stôl Mt., SW below the spot height, 1270 m (7289b). – Zlatý stôl Mt., 1240 m (both Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. 21: 21, 1973) (7289b). – Zlatý stôl Mt. hilltop, 1322 m, 48°45'59.2"N, 20°39'20.7"E (Dudáš 2018 KO 34646) (7289b). – Čučma, cca 500 m NW along the main ridge of Slovenské rudohorie Mts., 1130 m (Vykouková & Hrubá Bull. Slov. Bot. Spoločn. 31 (2): 61, 2009) (7289c). – Volovec Mt., Skalisko (Geyer 1866 BRA) (7289c). – Baračka [= Skalisko] (Vlčáková & Hajdúk Nat. Carp. 48: 97–108, 2007) (7289c). – Volovec Mt., below the spot height Baračka [= Skalisko] (1293,1) (Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. 21: 21, 1973) (7289c). – Volovec Mt., 30 m from the tourist signpost on the top of Skalisko Mt., 1283 m, 48°44'39.9"N, 20°34'31.2"E (7289c). – Volovec Mt., 10 m NW from the tourist signpost on the top of Volovec (Skalisko), 1280 m, 48°44'40.4"N, 20°34'29"E (both Fráková 2015 KO 32242, 32243) (7289c). – Volovec Mt., cca 1280 m (Kárpáti 1939 BP 363861, 395866) (7289c). – Volovec Mt., 1270 m (Hulják 1934 BP 173563) (7289c). – Volovec Mt., 1250 m (Boros 1939 BP 463933) (7289c). – Volovec Mt., 1200–1280 m (7289c). – Volovec Mt., cca 1000 m (both Andreánszky 1939 BP 173568, 173569) (7289c). – saddle on the main ridge above Čierna dolina valley (Vlčáková & Hajdúk Nat. Carp. 48: 97–108, 2007) (7289c). – Hekerová Mt., 48°44'4.3"N, 20°39'17.5"E (Leskovjanská 2015 Bio) (7289d). – Úhorná, meadow between Hekerová Mt. and Biele skaly Mt., 1200 m, 48°43'39.4"N, 20°39'19.3"E (Dudáš 2018 KO 34647). – Štós, Osadník Mt. (Mikoláš 1987 KO 33674). – Kojšovská hoľa Mt., spring area on N–NW slope, 1150–1180 m (7291b). – Kojšovská hoľa Mt., on the top, 1160–1246 m (both Mráz & Mrázová Bull. Slov. Bot. Spoločn. 38. Suppl. 1: 2003) (7291b). – Kojšovská hoľa Mt., 1248 m (Brym 1934 PRC) (7291b). – Kojšovská hoľa Mt., 150 m NW from the tourist signpost on the top, 1236 m, 48°46'59.9"N, 20°59'15.3"E (Fráková 2015 KO 32218, 32219) (7291b). – Kojšovská hoľa Mt., 48°46'59.3"N, 20°59'23.3"E (Šibík 2014 Bio) (7291b). – on the ridge E from Kojšovská hoľa Mt., 1100 m (Šmídt Ústav rádioekol. a využ. jad. techniky: 52, 1976; Šmídt 1975 SNV B2053) (7291b). – chata Erika chalet (Brecher 1913 KO 5584; Zsák & Brecher 1941 KO 5585, 14079) (7291b). – Zlatoidské lúky meadows, cca 1100 m (Kárpáti 1989 BP 173564, 395868) (7291b-7292a). – Sihla Mt., 48°39'29.8"N, 19°38'4.2"E (Vaško 2014, 2015 Bio) (7383b). – Sihla Mt., spring area of the Slatina brook, 890 m (not. Magic 1967) (7383b). – Sihla Mt., near the Slatina brook, 900 m (Beracko Dipl. práca (msc.), depon. in PrF UK Bratislava: 64, 1975) (7383b). – spring area of Ipeľ river and Rimavica river (not. Magic 1960) (7383d). – Málinec, 48°36'23"N, 19°39'8.4"E (Vaško 2013, 2015 Bio) (7383d). – Klenovský Vepor Mt., 1000–1200 m (Magic TOP 17: 61, 1985) (7384b). – Klenovský Vepor Mt. – on the top (Miadok Dipl. práca (msc.), depon. in PrF UK Bratislava) (7384b). – Klenovský Vepor Mt., near Polianky (not. Magic 1960) (7384b). – Klenovský Vepor Mt., spruce forest and around (Miadok Sborn. Slov. Nár. Múz. - Prír. vedy 13 (1): 50, 1967) (7384b). – Klenovský Vepor Mt., W from the spot height 1032, 1120 m (Miadok Biológia 24: 324, tab. 1, 1969) (7384b). – Šaling valley, 48°41'39.5"N, 19°47'38.3"E (Vaško 2014, 2015 Bio) (7384b). – Trstie Mt., on the top (not. Futák 1970) (7385b). – Trstie Mt., 1117 m (Hendrych Preslia 27: 68, 1955) (7385b). – Trstie Mt., on the top, 1000 m (Hendrych Acta Carol. 1968 (2): 200, 1969) (7385b). – Pipitka Mt., 0,7 km long section of the ridge W from the top, 1180–1224 m (Mráz & Mrázová Bull. Slov. Bot. Spoločn. 38. Suppl. 1: 2003) (7390a). – Pipitka Mt., W from the cabin, 1160 m (Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. 21: 21, 1973) (7390a). – Havrania skala Mt., 48°38'59.6"N,

20°47'26"E (Brym 1987 Bio) (7390d). – Habáňovo, 48°35'19.8"N, 19°40'4.7"E (Hrivnák 2003 Bio) (7484a). – **16. Muránska planina Mts.:** Lopušná Mt., 1000 m (Krist & Suza 1927 BRNU 188658) (7186c). – near the road from Malá Tesná skala to Havrania dolina valley, cca 1000 m (Hendrych 1948 PR) (7186c-7286a). – Malá Stožka Mt. (Hendrych Acta Univ. Carol. 1968 (2): 200, 1969) (7285b). – Malá Stožka Mt., 900–1200 m (7285b). – Mochnatá Mt., 1200 m (both Hendrych Acta Univ. Carol. 1968 (2): 200, 1969) (7285b). – Zadné hory and Veľká Stožka Mt. (Hendrych Acta Carol. 1968 (2): 200, 1969) (7285b). – Veľká Stožka Mt. (Burkovský Stredné Slovensko 4: 100, 1985) (7285b). – Veľká Stožka Mt., 1400 m (Sillinger 1937 PRC) (7285b). – Veľká Stožka Mt., in lower parts (Cvachová & Urbanová Stredné Slovensko 4: 64, 1985) (7285b). – Kľak Mt., 1385 m, 48°46'43.2"N, 19°57'52.4"E (Kučera Reussia 5 (1-2): 37, 2009) (7285b). – Muráň, 48°46'54.8"N, 19°58'1.5"E (Flachbart 2013 Bio) (7285b). – Kľak Mt., ridge around the spot height 1155 (Hendrych Preslia 27: 68, 1955) (7285b). – Hlboká dolina valley, 800–1000 m (7285b-d). – Vohanová dolina valley (7285b-7286a). – Borišové včely Mt. (950 m) and the spot height 1179 near Ostrica Mt. (all Hendrych Acta Univ. Carol. 1968 (2): 200, 1969) (7285d). – near Studňa, 1170 m (Hendrych Acta Carol. 1968 (2): 200, 1969) (7286a). – Maratinka near the gamekeeper's house Studňa, cca 1200 m (Hendrych 1949 PR) (7286a). – Mochnatá below Cigánka Mt. (Májovský 1971 SLO) (7286a). – Veľký Cigáň Mt. and Malý Cigáň Mt. (Hendrych Acta Carol. 1968 (2): 200, 1969) (7286a). – Veľký Cigáň Mt., above gamekeeper's house Havran, cca 1080 m (Hendrych 1947 PR) (7286a). – Havran Mt. (Hendrych Acta Carol. 1968 (2): 200, 1969) (7286a). – Maretkiná, 1320 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab.3, 1976) (7286a). – Muránsky hrad castle, on the top (Fábry Gömör viránya: 84, 1867) (7286a). – near Muránsky hrad castle (Fábry 1851 BRA) (7286a). – Hradová Mt., cca 880 m (Vraný 1929 PRC) (7385b). – **17. Slovenský raj Mts.:** Veľký Sokol gorge, NW mountainside of the spot height 1023, 750 m (Uhlířová & Bernátová Biológia 41 (5): 497, 1986) (7088c). – Besník saddle, 0,5 km from the tourist signpost Besník saddle towards Čuntava, 1026 m, 48°51'36.8"N, 20°13'41.3"E (Fráková 2015 KO 32234-32236) (7187a). – Besník (Kuchárek 1977 SNV B1924) (7187a). – „Pod Závej“, 48°53'23.6"N, 20°16'28.2"E (Leskovjanská 2014, 2017 Bio) (7187b). – spot height Kopa 1127, between Pusté Pole and Dobšinská ľadová jaskyňa near Hnilec brook (7187b). – spot height Ondrejisko (1270) (7187b). – spot height Bikarky 1078, above the confluence of Kopanec brook and Hnilec brook (7187b). – Dobšinská ľadová jaskyňa, 800 m (Skalický 1977 PRC) (7187b). – Dobšinská ľadová jaskyňa, NW mountainside of the spot height 1114,8, and between the spot heights 1114,8 and 1084 (7187b). – spot height 1114, above Dobšinská ľadová jaskyňa (all Pitoniak et al. Biol. Pr. SAV 24 (6): tab. 8, tab. 9, tab. 10, 1978) (7187b). – Dobšinská ľadová jaskyňa, mountainside between spot heights 1114,8 and 1084 (Šimeková Biológia 29 (4): 271, 1974) (7187b). – Telgárt-Tresník Mt., 48°50'54.2"N, 20°13'56.6"E (Leskovjanská 2015 Bio) (7187c). – Tresník Mt., on the top, near the pathway, 1390 m, 48°50'04.3"N, 20°13'11.5"E (Fráková 2015 KO 32217) (7187c). – mountain meadows on Tresník Mt. towards Skalka Mt. (Hejný 1932 PRC) (7187c). – Čuntava, Mastná, pasture meadows, 1100 m (Manica 1959 ZV 7736) (7187c). – Dobšiná, 48°48'50.1"N, 20°12'38.7"E (Flachbart 2013 Bio) (7187c). – spot height 1185,4, NW mountainside between spot heights 1112,2 and 1154,7, NE from Strosík meadow (7188a). – below spot height 1013,2, on the left side of road Stratená – Dedinky, 950 m (both Šimeková Biológia 29 (4): 271, 1974) (7188a). – below Pelc plateau, 20 m above brook (7188a). – Palcmanská Maša (both Pitoniak et al. Biol. Pr. SAV 24(6): tab. 7, 1978) (7188a). – Mlynky, 48°52'34.3"N, 20°26'0.5"E (Flachbart 2014, 2015 Bio) (7188b). – sedlo Čertova hlava saddle (1882 s. coll. POP) (7188b). – Knola Mt., 48°51'58.6"N, 20°28'9.9"E (Leskovjanská 2015 Bio) (7188b). – Malá Knola Mt. meadows (Vlčáková & Nižnanská 1986 SNV B2357) (7188b). – Grajnár, forest (Nižnanská 1993 SNV B2642) (7189a). – **18. Stredné Pohornádie Region:** Poľanovce, near the road below Smrekovica Mt. (L. Dostál 1980 MPS; Dostál Zborn. Východoslov. múz., príř. vedy XXVII: 38, 1985) (6991c). – **19. Slanské vrchy Mts.:** N part of Slanské vrchy Mt., cca 4 km S from Pavlovce, Lysá Mt, below N slopes of spot height 822, over Zlatá studňa, 800 m (L. Dostál 1978 MPS; Dostál & Vazúr Biológia 36 (4): 309, 1981) (7094b). – **20. Vihorlatské vrchy**

Mts.: Remetské Hámre, near spring area Čeremošnia brook [= Čremošná] (Dostál Zborn. Východoslov. múz. XXIII: 72, 1983) (7098d). – Vihorlat Mt., cca 50 m below the top on N slope, 1025 m (Valachovič 2013 SAV) (7198b). – Vihorlat Mt., 1025 m, 48°53'32"N, 22°6'53"E (Eliáš jun. Bull. Slov. Bot. Spoločn. 35 (2): 223, 2013) (7198b). – Vihorlat Mt., on the top (L. Dostál 1977 MPS; Michalko Biológia 35 (7): 494, 1980) (7198b).

(*Eucarpaticum*) **21a. Lúčanská Malá Fatra Mts.:** Kunerád (Borbás 1898 BP 187766) (6878c-6978a). – Minčol Mt. (Holuby 1893 BRA) (6878d). – Martinské hole, lateral ridge of Veľká lúka Mt., 49°6'35.6"N, 18°49'16.7"E (6878d). – below Krížava Mt., 49°6'16.5"N, 18°49'5.4"E (both Turisová 2015 Bio) (6878d). – Martinské hole, 49°6'8.1"N, 18°49'18.2"E (Rizman 2014 Bio) (6878d). – meadow near cottage below Grúň Mt. (Pavelková & Gálisová 1956 SLO) (6879a-c). – Malý Minčol Mt., 49°7'46.3"N, 18°50'10"E (6879c). – Okopy, 49°7'34.1"N, 18°50'3.3"E (both Turisová 2014 Bio) (6879c). – Kamenná Poruba (Hollá 1968 SLO) (6978a). – Krížava Mt., SE slopes below transmitter, 1431 m, 49°05'38.4"N, 18°49'09.5"E (6978b). – Veľká lúka Mt., SE slope below the top, 1435 m, 49°05'29.1"N, 18°48'59"E (6978b). – SE slopes between Veľká lúka Mt. and Krížava Mt., 1411 m, 49°05'30"N, 18°49'05.09"E (6978b). – Veľká lúka Mt., 1440 m, 49°05'16"N, 18°49'012"E (6978b). – between spot heights Veľká lúka Mt. and Vidlica Mt., 1449 m, 49°05'03.2"N, 18°49'08"E (all Kliment Bull. Slov. Bot. Spoločn. 37 (1): 106, 112, 2015) (6978b). – Veľká lúka Mt., Martinské hole, 49°5'28.8"N, 18°48'54"E (Šibík 2014 Bio) (6978b). – below the top of Veľká lúka Mt., 1380 m (Manica Záverečná správa (msc.) Zvolen: 56, 1973) (6978b). – grassy uplands of Veľká lúka Mt., Sačné in Turská dolina valley (Hollá Dipl. práca (msc.), depon. in PrF UK Bratislava, 1969) (6978b). – Veľká lúka Mt., 49°5'24.1"N, 18°49'1.3"E (Turisová 2014 Bio) (6978b). – Martinské hole, 1394 m (Kučera Bull. Slov. Bot. Spoločn. 27: 65, 2005) (6978b). – Martinské hole – Veterné Mt., 49°5'18.1"N, 18°49'15.4"E (Pirchala 2013 Bio) (6978b). – Podkova Mt., 49°4'59.6"N, 18°48'48.2"E (Turisová 2014 Bio) (6978b). – Veterné Mt., 49°4'54.9"N, 18°48'44.1"E (Turisová 2014 Bio) (6978b). – Veterná hoľa Mt. [= Veterné] (Pax Karpathen II: 175, 1908) (6978b). – Horná lúka Mt., 49°4'20.9"N, 18°47'56.9"E (Vyšínský 2014 Bio) (6978b). – Horná lúka Mt., 49°4'1.1"N, 18°47'17.5"E (Turisová 2015 Bio) (6978b). – Bystrická dolina valley – Horná lúka Mt., 49°4'7.1"N, 18°47'35.8"E (Pirchala 2014 Bio) (6978b). – Prieslopská dolina valley, Žiariky, 1230 m, 49°04'18.7"N, 18°49'27.5"E (6978b). – Prieslopská dolina valley, spot height Humience, 1240 m, 49°04'04.7"N, 18°49'11.7"E (6978b). – Bystrická dolina valley, spot height Veľký Úplaz, 200 m E from cabins, 1250 m, 49°03'50.08"N, 18°47'36.17"E (all Hederová et al. Bull. Slov. Bot. Spoločn. 37 (1): 128, 2015) (6978b). – Bystrická dolina valley, Hulejova skala, 200 m above Bystrička brook, 1110 m, 49°03'42.86"N, 18°48'17.88"E (6978b). – Bystrická dolina valley, Pod Skalkou, 1155 m, 49°3'46"N, 18°49'20.41"E (both Hederová et al. Bull. Slov. Bot. Spoločn. 37 (1): 128, 2015) (6978b). – Kalužná Mt. (Brižický 1942 SLO) (6979a). – Bystrická dolina valley, Podkova, towards Valašská dolina valley, 1120 m, 49°04'54.93"N, 18°50'00.04"E (Hederová et al. Bull. Slov. Bot. Spoločn. 37 (1): 128, 2015) (6979a). – Skaly near Kľak Mt., 48°59'20.3"N, 18°39'7"E (Duchoň 2015 Bio) (7077b). – Kľak Mt. (s. coll. 1911 BRA; Jičínský 1928 BRNU 234339; Margittai 1910 BP 484393; Urbanová 1997 ZAM 7048) (7077b). – Kľak Mt., 48°58'55.6"N, 18°38'36.1"E (Pietorová 1997; Duchoň 2013; 2015; Fekiač 2015; Šibík 2017 Bio) (7077b). – Reváň Mt. (Nábělek & Brižický 1940 SLO) (7077b). – **21b. Krivánska Malá Fatra Mts.:** Vrátna valley, Tiesňavy near Terchová, towards Sokolie (not. Futák 1964) (6780c). – Štefanová, 49°14'8.7"N, 19°2'34.9"E (Figura 2014 Bio) (6780c). – Vrátna dolina valley, the road up to cottage and around, cca 1200 m and higher (Domin Věda přír. 4: 35–36, 1923) (6780c). – Poludňový Grúň Mt. (Šibík 2018 Bio) (6780c). – Poludňový Grúň Mt., towards Stohové sedlo saddle, 1390 m, 49°12'46.4"N, 19°04'16.7"E (Šibíková et al. Bull. Slov. Bot. Spoločn. 30: 81, tab. 1, 2008) (6780c). – Poludňový grúň Mt., 49°13'7.1"N, 19°4'53.9"E (Sviteková 2013 Bio) (6780c). – Stohové sedlo saddle, 49°12'49.6"N, 19°4'52.8"E (Sviteková 2013 Bio) (6780c). – Steny Mt., 49°12'33.9"N, 19°3'58.5"E (Sviteková 2013 Bio) (6780c). – Steny (Šibík 2018 Bio) (6780c). – Varín – Steny Mt., 49°12'2.7"N, 19°3'40.6"E (Vyšínský 2015 Bio) (6780c). – Jánošíkovo, 49°12'21"N, 19°4'37.5"E (Pirchala 2014 Bio) (6780c). – sedlo Medziholie saddle (Hadač 1932 PRC) (6780d). –

Veľký Rozsutec Mt., N mountainside above sedlo Medzirozsutce saddle (Fajmonová Biológia 33 (7): 558–559, 1978) (6780d). – Veľký Rozsutec Mt. (Holuby 1896 BRA; Brancsik 1898 BRA) (6780d). – Veľký Rozsutec Mt., E mountainside (Fajmonová Biológia 33 (7): 558–559, 1978) (6780d). – Veľký Rozsutec Mt., cca 1560 m (Kláštorský & Deyl 1935 PR 123390) (6780d). – Terchová, 49°13'18.9"N, 19°6'17.4"E (Tomáš 2015 Bio) (6780d). – Stoh Mt., cca 1350 m (Schidlay 1939 BRA; Dýlik 1959 ZAM 1299) (6780d). – Stoh Mt., cca 1400 m (Valenta 1941 BRA) (6780d). – above sedlo Osnice saddle, 49°13'29.5"N, 19°7'16.5"E (Pavlišin 2014 Bio) (6780d). – below Veľký Rozsutec Mt. in Bystrička valley (Kocián 1930 PRC) (6780d-6880b). – Suchý Mt., 1500 m (Švestka 1924 BRNU 039751) (6879b). – Suchý Mt. (1468 m), N slope (6879b). – ridge of Suchý Mt. – Stratenec Mt. (1512), N slope (both Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (6879b). – Biele skaly Mt. (not. Futák 1964; Škoviřová 1976 TM) (6879b). – Stratenec Mt. – Suchý Mt., below sedlo Vráta saddle, slope in Kúrska dolina valley, 1362 m, 49°10'40.4"N, 18°57'53.4"E (Šibíková et al. Bull. Slov. Bot. Spoločn. 30: 81, tab. 1, 2008) (6879b). – Ťavie chrby Mt., N slope, 49°10'38.8"N, 18°57'54.6"E (6879b). – Stratenec Mt., 49°10'48"N, 18°58'4.1"E (6879b). – sedlo Priehyb saddle, 49°10'59.9"N, 18°58'35.2"E (all Šibík 2014 Bio) (6879b). – Malý Kriváň Mt., towards sedlo Priehyb saddle, 1503 m, 49°11'00"N, 18°59'15"E (Šibíková et al. Thaiszia – J. Bot. 19: 16, 2009) (6879b). – Malý Kriváň Mt., N slope, 1550 m, 49°11'01"N, 18°59'26.1"E (Šibík et al. Bull. Slov. Bot. Spoločn. 27: 189, 2005) (6879b). – Malý Kriváň Mt., NW slope, couloir below the ridge, above Belianska dolina valley, 1373 m, 49°11'15.7"N, 18°59'44.1"E (6879b). – Malý Kriváň Mt., towards sedlo Priehyb saddle, 1503 m, 49°11'00" N, 18°59'14.5" E (6879b). – Malý Kriváň Mt., on the left side from the tourist pathway towards Priehyb saddle, 1552 m, 49°10'55.6"N, 18°59'25.1"E (all Šibíková et al. Bull. Slov. Bot. Spoločn. 30: 73, 81, 2008) (6879b). – Malý Kriváň Mt., W ridge, N slope, 1540 m (6879b). – Malý Kriváň Mt., NE ridge, N slope, 1580 m (both Bělohávková & Fišerová Preslia 48 (2): 141, tab. 1, 1976) (6879b). – Malý Fatranský Kriváň Mt. (not. Futák 1964) (6879b). – Vrátna dolina valley, Malý Kriváň Mt. (Brancsik 1901 PRC) (6879b). – Malý Kriváň, on the top (Šibík 2017 Bio) (6879b). – Malý Kriváň Mt. – NR Prípor, 49°11'14.3"N, 18°59'21"E (Šibík 2015 Bio) (6879b). – NR Prípor, 49°11'19.2"N, 18°59'36"E (Figura 2015 Bio) (6879b). – Malý Kriváň Mt., between the top and rocky formation called „Sviňa“, 1630 m (Bernátová et al. Bull. Slov. Bot. Spoločn. 22: 95, 2000) (6879b). – Malý Kriváň Mt., below the ridge beyond Svinský žľab couloir, 1588 m, 49°11'10.1"N, 18°59'56"E (6879b). – Malý Kriváň Mt., Markušov žľab couloir, above Belianska dolina valley, 1519 m, 49°11'09.1"N, 18°59'44.2"E (6879b). – Malý Kriváň Mt., slope below pathway towards rocky formation called „Sviňa“, 1601 m, 49°11'09.1"N, 18°59'58.7"E (all Šibíková et al. Bull. Slov. Bot. Spoločn. 30: 81, tab. 1, 2008) (6879b). – Malý Kriváň Mt., cca 20 m below tourist pathway towards rocky formation called „Sviňa“, 1616 m, 49°11'09.3"N, 18°59'57.4"E (Šibíková et al. Thaiszia – J. Bot. 19: 16, 2009) (6879b). – Malý Kriváň Mt., N slope, 49°11'9.7"N, 18°59'54.2"E (Figura 2015 Bio) (6879b). – Malý Kriváň Mt., 49°10'45.3"N, 18°59'23.3"E (6879b). – Malý Kriváň Mt., 49°10'49.3"N, 18°59'34.9"E (both Šibík 2014 Bio) (6879b). – Magura Mt., towards Suchý Mt., 1357 m (Horváthová 1968 BRA) (6879b). – Michalove dolinky valley, 49°9'21.2"N, 18°57'30.5"E (Pirchala 2013 Bio) (6879b). – Veľký Kriváň Mt. – Biele skaly Mt. (not. Futák 1964) (6879b-6880a). – Kuriková Mt., 49°11'52.8"N, 19°0'9.6"E (Figura 2015 Bio) (6880a). – Koniarky Mt., W slope, 1434 m, 49°11'45.8"N, 19°00'16.9"E (6880a). – Koniarky Mt., SE slope, above the tourist pathway from sedlo Bublén saddle to Koniarky saddle, above Studenec valley, 1500 m, 49°11'0"N, 19°00'36.1"E (both Šibíková et al. Thaiszia – J. Bot. 19: 16, 2009) (6880a). – sedlo Bublén saddle, 49°11'44.2"N, 19°0'36.8"E (Figura 2015; Šibík 2018 Bio) (6880a). – Koniarky Mt., S slopes, 49°11'35.3"N, 19°0'36.1"E (Sviteková 2013; Šibík 2018 Bio) (6880a). – Koniarky Mt., 49°11'38.2"N, 19°0'46.5"E (6880a). – sedlo Bublén saddle, 49°11'36"N, 19°0'51.4"E (both Sviteková 2013 Bio) (6880a). – Chrapáky, 49°11'45"N, 19°1'4.2"E (Figura 2015 Bio) (6880a). – Chrapáky, 49°11'40.7"N, 19°1'7.8"E (Figura 2015 Bio) (6880a). – Malý Kriváň Mt., 49°11'16.1"N, 19°0'0.9"E (Figura 2015 Bio) (6880a). – Malý Kriváň Mt., couloir below rocky formation called „Sviňa“, 1522 m, 49°11'15.6"N, 19°00'04.1"E (Šibíková et al. Bull. Slov. Bot. Spoločn. 30: 81, tab. 1, 2008) (6880a). – Malý Kriváň

Mt., below rocky formation called „Sviňa“, 1549 m, 49°11'13.3"N, 19°00'04.6"E (6880a). – Malý Kriváň Mt., E slope at the end of Studenec valley, below rocky formation called „Sviňa“, 1456 m, 49°11'11.6"N, 19°00'12"E (both Šibíková et al. *Thaiszia – J. Bot.* 19: 16, 2009) (6880a). – Malý Kriváň Mt., 49°11'16.8"N, 19°0'23"E (Sviteková 2013 Bio) (6880a). – below Javorina saddle, 49°11'2.6"N, 19°0'7.6"E (Figura 2015 Bio) (6880a). – Malý Kriváň Mt., above Studenec valley, 1423 m, 49°11'02.7" N, 19°00'08.9" E (Krajčiová–Šibíková et al. *Bull. Slov. Bot. Spoločn.* 27: 201, 2005; Šibíková et al. *Bull. Slov. Bot. Spoločn.* 29: 166, 2007) (6880a). – Malý Kriváň Mt., lateral NE ridge, 49°11'6.4"N, 19°0'29.6"E (Sviteková 2013; Šibík 2018 Bio) (6880a). – Pekelník Mt., 49°11'30.2"N, 19°0'56"E (Sviteková 2013 Bio) (6880a). – Pekelník Mt., below the blue tourist pathway from Snilovské sedlo saddle to Chrapáky Mt., 1458 m, 49°11'38"N, 19°01'04.5"E (Šibíková et al. *Bull. Slov. Bot. Spoločn.* 30: 81, tab. 1, 2008) (6880a). – Pekelník Mt., below the main ridge, 1598 m, 49°11'28.2"N, 19°01'15.8"E (Šibík et al. *Bull. Slov. Bot. Spoločn.* 26: 67, 2004) (6880a). – Pekelník Mt., 49°11'28.2"N, 19°1'22.4"E (Sviteková 2013 Bio; Figura 2015; Šibík 2017 Bio) (6880a). – near the yellow tourist pathway from Snilovské sedlo saddle to Chrapáky Mt., 1478 m, 49°11'40.3"N, 19°01'37.5"E (Šibíková et al. *Thaiszia – J. Bot.* 19: 16, 2009) (6880a). – Veľký Kriváň Mt., N slope towards Pekelník Mt., 49°11'34.1"N, 19°1'35.6"E (Sviteková 2013; Šibík 2018 Bio) (6880a). – Kriváň, 1666 m (Maloch 1921 KO 12200) (6880a). – between the tops of Veľký Kriváň Mt. and Pekelník Mt., 1545 m, 49°11'24.7"N, 19°01'28.3"E (6880a). – Veľký Kriváň Mt., near couloir separating Veľký Kriváň Mt. and Pekelník Mt., 1572 m, 49°11'25.1"N, 19°01'32"E (both Šibíková et al. *Thaiszia – J. Bot.* 19: 16, 2009) (6880a). – couloir between Veľký Kriváň Mt. and Pekelník Mt., above the end of Studenec valley, 1445 m, 49°11'25"N, 19°01'29.9"E (Šibíková et al. *Bull. Slov. Bot. Spoločn.* 29: 164, 166, 2007) (6880a). – Veľký Kriváň Mt. – S, 49°11'15.4"N, 19°1'36"E (Šibík 2015, 2017 Bio) (6880a). – N slope above the blue tourist pathway from Snilovské sedlo saddle to Chrapáky, 1509 m, 49°11'33.1"N, 19°01'53.4"E (6880a). – Veľký Kriváň Mt., E slope, above the end of Révayovská dolina valley, 1481 m, 49°11'19.3"N, 19°02'16.1"E (both Šibíková et al. *Bull. Slov. Bot. Spoločn.* 30: 81, tab. 1, 2008) (6880a). – Veľký Kriváň Mt. – E, 49°11'23.7"N, 19°2'9.8"E (Šibík 2015 Bio) (6880a). – Veľký Kriváň Mt. (Svrček 1947 PR) (6880a). – Veľký Kriváň Mt., cca 1400–1600 m (Domin Věda příř. 4: 35–39, 1923) (6880a). – below Veľký Kriváň Mt., on the ridge (not. Michalko 1951) (6880a). – E slope of Veľký Kriváň Mt., between Snilovské sedlo saddle and the top, cca 1600 m (Unar 1968 BRNU 438268) (6880a). – Snilovské sedlo saddle (Horváthová 1952 BRA) (6880a). – Snilovské sedlo saddle, 49°11'44.6"N, 19°2'20.8"E (Figura 2015 Bio) (6880a). – slope below upper chairlift station below Snilovské sedlo saddle, 1300 m (6880a). – above the tourist pathway from Snilovské sedlo saddle to Chata pod Chlebom chalet, 1480 m (both Manica Záverečná správa (msc.) Zvolen, p. 73, 1973) (6880a). – Chleb Mt. – Malý Kriváň Mt. – Kravárske Mt. (Pavelková & Gálisová 1956 SLO) (6880a). – ridge Chleb Mt. – Kriváň Mt. (not. Futák 1964) (6880a). – Chlebské kotle cirques, 49°11'25.4"N, 19°2'59.6"E (Figura 2015; Šibík 2017 Bio) (6880a). – Chleb Mt., in lower parts of Chlebské kotle cirques, 1605 m, 49°11'18.5"N, 19°03'05.9"E (Šibík et al. *Bull. Slov. Bot. Spoločn.* 27: 189, 2005) (6880a). – Chleb Mt. (Futák 1946 SLO; not. Futák 1946, 1954; s. coll. 1978 BRA) (6880a). – Chleb Mt., cca 1600 m (Kláštorský & Deyl 1935 PR 123387) (6880a). – Chleb Mt., 1550 m (Černoch 1950 BRNM 401788) (6880a). – Chleb Mt., 1430 m (Šoltéssová *Acta Fac. Rer. Natur. Univ. Comen.* 23: tab. 3, 1974) (6880a). – Chleb Mt., S slopes, 49°11'18.1"N, 19°3'2.2"E (Sviteková 2013; Šibík 2017 Bio) (6880a). – Chleb Mt., 49°11'15.1"N, 19°2'41.3"E (Šibík 2015 Bio) (6880a). – road from the Chata pod Chlebom chalet towards Snilovské sedlo saddle (Dobošová 2018 Bio) (6880a). – from Hromové sedlo saddle to Vrátna dolina valley, towards Chlebské kotle cirques, 1545 m, 49°11'21.7"N, 19°03'11.1"E (6880a). – below Hromové sedlo saddle towards Vrátna dolina valley, 1500 m, 49°11'24.4"N, 19°03'13.1"E (both Šibíková et al. *Thaiszia – J. Bot.* 19: 16, 2009) (6880a). – Hromové Mt., below Hromové sedlo saddle towards Vrátna dolina valley, 1500 m, 49°11'24.4"N, 19°03'12.1"E (Šibíková et al. *Bull. Slov. Bot. Spoločn.* 29: 162, tab. 1, 2007) (6880a). – Hromové sedlo saddle, on the left side of the tourist pathway from Chleb Mt., 1630 m, 49°11'24.2"N, 19°03'19.2"E (Šibík et al. *Bull. Slov. Bot. Spoločn.* 26: 62, 2004) (6880a). – Hromové

Mt., on the right side of the tourist pathway from sedlo za Hromovým saddle to Chleb Mt., 1548 m, 49°11'25.8"N, 19°03'28"E (Šibíková et al. *Thaiszia – J. Bot.* 19: 16, 2009) (6880a). – Vrátna dolina valley – Snilovské sedlo saddle – Chata pod Chlebom chalet, below Stoh Mt., 1400–1500–1100 m (Manica 1964 ZV) (6880a). – Južné Steny Mt., S slope, 1600 m, 49°11'32.3"N, 19°03'41.4"E (6880a). – Južné Steny Mt., E slope, 1580 m, 49°11'32.6"N, 19°03'42.8"E (both Šibíková et al. *Thaiszia – J. Bot.* 19: 16, 2009) (6880a). – Šútovo, 49°11'15.5"N, 19°3'46.8"E (Šibík 2014; 2017 Bio) (6880a). – Chleb Mt., S slope, near Chata pod Chlebom chalet, 1425 m, 49°10'55.1"N, 19°03'00.9"E (Šibík et al. *Bull. Slov. Bot. Spoločn.* 26: 65, 2004; *Figura* 2014; Šibík 2017 Bio) (6880a). – Žobrák Mt. (spot height 1307), on the top (Bernátová et al. *Ochr. prír.* 7: 271, 1986) (6880b). – Párnica, 49°10'54.3"N, 19°5'53"E (Dupkala 2014 Bio) (6880b). – Harmanecká dolina valley, Zalámaná dolina valley (not. Futák 1935) (7180a). – **21c. Veľká Fatra Mts.:** Ľubochnianska kopa Mt., 49°8'15.4"N, 19°8'44.1"E (Fekiač 2015 Bio) (6880d). – E slopes of Ľubochnianska dolina valley (Bernátová et al. *Kmetianum* 6: 42, 1982) (6980b-d-7080d). – below Tokanisko, 49°1'20.4"N, 19°7'18.8"E (Pavlišin 2014 Bio) (6980d). – Hubová, 49°3'47.3"N, 19°12'51.9"E (Flachbart 2015 Bio) (6981a). – Hubová, 49°3'16.9"N, 19°13'3.2"E (Daniel-Szabó 2015 Bio) (6981a). – Magura Mt. (Krist 1927 BRNU 254039) (6981a-c). – Malá Smrekovica Mt., 49°1'21.3"N, 19°12'48.1"E (Vyšinský 2014 Bio) (6981c). – Malá Smrekovica Mt., near NR Jánošíkova kolkáreň, W slope below the ridge, 49°00'27.3"N, 19°12'27.5"E, 1470 m (Kliment *Thaiszia – J. Bot.* 25 (2): 117, 2015) (6981c). – NR Jánošíkova kolkáreň, 49°0'14.3"N, 19°12'23.1"E (Urbanová 2011 Bio) (6981c). – Kozia skala Mt., on the ridge, above Gaderská dolina valley (Bernátová & Hajdúk *Zborn. Slov. Nár. Múz., Prír. Vedy* 75: 19, 1981) (7079b). – Tlstá Mt., 48°56'24.2"N, 18°58'22.2"E (Rizman 2015 Bio) (7079d). – Tlstá Mt. (Textorisová 1988 BP 173649; not. Futák 1942; Nižnanská 1994 SNV B2695) (7079d). – on the ridge Ostrá Mt. – Báglov kopec Mt., 48°55'38"N, 18°58'39.5"E (Bernátová 1976 Bio) (7079d). – NR Chládkové úplazy, 48°55'2.7"N, 18°59'19.1"E (Vyšinský 2014 Bio) (7079d). – Lysec Mt., NW slope above Hornojasenská dolina valley, 48°59'54.3"N, 19°4'0.7"E (Vantarová 2013 Bio) (7080a). – Lysec Mt. (Škoviřová 1972 TM) (7080a). – Minčol Mt., cca 1300 m (Valenta 1941 BRA) (7080b). – from Južné Rakytové sedlo saddle to sedlo pod Čiernym kameňom saddle, along green marked tourist pathway, 1270–1330 m (Kochjarová (ed.) *Flor. kurz Ružomberok*, *Bull. Slov. Bot. Spoločn.* 42, Suppl. 1: 79, 2020) (7080b-d-7081a). – Skalná Mt., „Strapatá skala“, 48°54'22.4"N, 19°0'41.6"E (7080c). – Skalná dolina valley, 48°54'35.5"N, 19°0'48.5"E (7080c). – Skalná Mt., on the top, 48°54'20.2"N, 19°1'41.9"E (7080c). – Biela skala Mt., 48°55'6.5"N, 19°4'16"E (all Bernátová 1976 Bio) (7080c). – the end of Vrátna dolina valley, sidelong ridge of Suchý vrch Mt., near Biela skala Mt., 1450 m (7080c). – Ostredok Mt., NW slopes, sidelong ridge near Štrochy Mt., 1380 m (7080c). – Ostredok Mt., N slopes of the ridge above Vrátna dolina valley (green tourist mark), 1370 m (all Kliment & Slezák *Thaiszia – J. Bot.*, 25 (2): 170, 2015) (7080c). – Ostredok Mt., above 1500 m (Maloch 1920, 1922 PRC) (7080c). – Biela skala Mt., lower summit (Bernátová & Kliment TOP 18: 82, 1983; Kliment *Bull. Slov. Bot. Spoločn.* 20: 164, 1998) (7080c). – Ostredok Mt., 48°54'7.1"N, 19°4'45.9"E (Zajac 2015 Bio) (7080c). – Suchý vrch Mt., N slopes of the ridge near Biela skala Mt., above the end of Revúcky Mlyn valley, 1490 m (7080c-d). – Suchý vrch Mt., below the saddle between the spot heights 1551 and 1545, 1440 m (both Kliment & Slezák *Thaiszia – J. Bot.*, 25 (2): 170, 2015) (7080c-d). – Borišov Mt., 48°56'15.5"N, 19°5'8.2"E (Dudáš 2015 Bio) (7080d). – Ploská Mt., below the top, 48°56'15.6"N, 19°6'39.4"E (Vantarová 2015 Bio) (7080d). – Ploská Mt. (s. coll. 1911 BRA; Škoviřová 1972 TM) (7080d). – Ploská Mt., 1370 m (Bernátová et al. *Kmetianum* 6: 42, 1982) (7080d). – NE below the top of Ploská Mt., 1520 m (not. Ružička 1960) (7080d). – Ploská Mt., 48°55'36.9"N, 19°7'22.6"E (Vantarová 2015 Bio) (7080d). – Suchý vrch Mt., 48°54'40.8"N, 19°5'17.5"E (Zajac 2015 Bio) (7080d). – Suchý vrch Mt., 48°54'35.2"N, 19°5'18.6"E (Bernátová 1976 Bio) (7080d). – Čierny Kameň Mt., 48°56'3.9"N, 19°8'2.7"E (Šibík 2015 Bio) (7080d). – Čierny Kameň Mt., 48°55'55.2"N, 19°8'14.2"E (Zajac 2015 Bio) (7080d). – Čierny Kameň Mt. (s. coll. 1931 BRA) (7080d). – Čierny Kameň Mt., near the top, 48°56'5.9"N, 19°8'41.5"E (Bernátová 2003 Bio) (7080d). – Čierny Kameň Mt., 1480 m (Pax 1899 BP 173650) (7080d). – Čierny Kameň Mt., 1400 m

(Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. 24: 151, 1976; Bernátová et al. Kmetianum 6: 42, 1982) (7080d). – N slope of Čierny Kameň Mt., 1420 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974) (7080d). – Čierny Kameň Mt., NW slope below the spot height 1464,2, 1415 (7080d). – Čierny Kameň Mt., NE slope, 1335 m (7080d) (both not. Ružička 1960) (7080d). – NRR Suchý vrch, sedlo Kýšky saddle, 1339 m, 48°55'26"N, 19°06'04"E (Kochjarová (ed.) Flor. kurz Ružomberok, Bull. Slov. Bot. Spoločn. 42, Suppl. 1: 79, 2020) (7080d). – Dvorisko Mt., 48°59'22"N, 19°10'13.2"E (Duchoň 2015 Bio) (7081a). – Smrekovnica mountain hotel, 48°59'46.6"N, 19°11'57.3"E (Figura 2015 Bio) (7081a). – Smrekovica Mt., „Močidlo“, 48°59'41.8"N, 19°11'56.3"E (Chilová 1997 Bio) (7081a). – spot height 1367,2 at the end of Vyšné Matejkovo valley (Bebrátová & Medovič Biológia) (7081a). – S from the recreation area Smrekovica towards Rakytov Mt., 1400 m, W slope (Manica Záverečná správa (msc.) Zvolen: 62, 1973) (7081a). – Skalná Alpa Mt., 48°59'11.4"N, 19°11'45.2"E (Bernátová 2003 Bio; Duchoň 2015 Bio; Šibík 2015 Bio) (7081a). – Smrekovica Mt. – „Ramžová“, 48°59'6.1"N, 19°11'59.3"E (Pirchala 2014 Bio) (7081a). – Smrekovica Mt., W from the spot height 1419,3 (7081a). – Skalná Alpa Mt., NW slopes of spot height 1463, 1420 m (both not. Ružička 1960) (7081a). – Skalná Alpa Mt., NW slope below the saddle between Skalná Alpa Mt. and Smrekovica Mt. (7081a). – Skalná Alpa Mt., N and NE slope (both Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (7081a). – Veľká Smrekovica Mt., 48°59'25.3"N, 19°13'27.6"E (Pavlišin 2014 Bio) (7081a). – Smrekovica Mt. (Šomšák s. dato SLO) (7081a). – mountainside of Smrekovica Mt., above Vyšné Javoriská, below Liptovská Osada, 650–700 m (Manica 1964 ZV 225) (7081a). – Tanečnica Mt., N slope (Bělohávková & Fišerová Folia Geobot. Phytotax. 24 (1): 16, tab. 4, 1989) (7081a). – Tanečnica Mt., W slope, 1435 m (Kliment Bull. Slov. Bot. Spoločn. 20: 164, 1998) (7081a). – Tanečnica Mt., 1420 m (Sillinger Věda přír. 11: 133, 134, 1930) (7081a). – Rakytov Mt., 48°57'54.7"N, 19°10'52.6"E (Duchoň 2015 Bio) (7081a). – Rakytov Mt. – N saddle, 48°57'53"N, 19°11'0"E (7081a). – Rakytov Mt., 48°57'40.8"N, 19°10'31.1"E (both Vantarová 2015 Bio) (7081a). – Drieňok Mt., cca 1200 m (Margittai 1912 BRA, BP 484391, 1913 PRC) (7179b). – Drieňok Mt., on the top, 48°53'24.2"N, 18°57'42.3"E (Bernátová 1976 Bio) (7179b). – Rakytovská dolina valley, between Malý Rakytov Mt. and Veľký Rakytov Mt., 48°53'49.2"N, 18°58'20.6"E (Ondrejová 1993 Bio) (7179b). – Priepastná, 48°53'0.6"N, 18°59'50.9"E (Ondrejová 1992 Bio) (7179b). – S from Malý Rakytov Mt., on the ridge, 48°52'21.7"N, 18°58'16.8"E (7179b). – Veľký Rakytov Mt., on the ridge, 48°52'36.6"N, 18°59'23.6"E (7179b). – Rožková dolina valley, 48°52'8.4"N, 18°59'27.2"E (all Ondrejová 1993 Bio) (7179b). – Halamova kopa Mt., on the top, 48°53'26.1"N, 19°0'13.2"E (Bernátová 1976 Bio) (7180a). – Smrekov Mt., 48°53'13.9"N, 19°1'19.5"E (Bernátová 2003; Duchoň & Šibík 2015 Bio) (7180a). – Smrekov Mt., on the top, 48°53'7.1"N, 19°1'25.1"E (7180a). – Smrekovica Mt., N foothills, „Ťava“, 48°52'49.5"N, 19°1'36.9"E (both Bernátová 1976 Bio) (7180a). – Smrekov Mt., the end of Horné Lopaty valley (Bernátová & Rejdúk Zborn. Slov. Nár. Múz., Prír. Vedy 75: 19, 1981) (7180a). – Smrekovica Mt. – Kráľova studňa Mt., 48°52'58"N, 19°1'57.2"E (Duchoň 2015 Bio) (7180a). – Kráľova studňa Mt., 48°53'8.5"N, 19°2'48.5"E (Bernátová 1976 Bio) (7180a). – Kráľov grúň Mt., near the tourist pathway below Kráľova skala Mt., 1350 m (7180a). – Kráľova studňa saddle, S slopes above the end of Malé Studienky valley, 1340 m (both Kliment & Slezák Thaiszia – J. Bot., 25 (2): 170, 2015) (7180a). – Kráľova Studňa Mt. (Nábělek, Brižický & Futák 1942 SLO; Bernátová Kmetianum 4: 205, 1976) (7180a). – Kráľova Studňa Mt., 1380 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. 24: tab. 3, 1976) (7180a). – Kráľova studňa Mt., N slopes, 48°53'9.5"N, 19°2'59.5"E (7180a). – Pustalovčia Alpa Mt. – Frčkov Mt., 48°53'28.6"N, 19°4'17.3"E (both Bernátová 1976 Bio) (7180a). – Pustalovčia Mt., 48°53'15.8"N, 19°4'55.7"E (Zajac 2015 Bio) (7180a). – Malá Krížna Mt., from Veterné Mt. to Kráľova Studňa Mt. (Horváthová 1962 BRA) (7180a). – Malá Krížna Mt., near the tourist pathway below the ridge, 1480 m (Kliment & Slezák Thaiszia – J. Bot., 25 (2): 170, 2015) (7180a). – ridge between Krížna Mt. and Kráľova studňa Mt., 48°52'38.6"N, 19°3'38.7"E (Bernátová 1976 Bio) (7180a). – Krížna Mt., N slopes of the ridge between the spot heights 1557 and 1497, above the end of Dedošova dolina valley, 1430 m (Kliment & Slezák Thaiszia – J. Bot., 25 (2): 170, 2015) (7180a). – Krížna Mt. (Truchlý 1889 BRNU

137470; Nábělek 1936 BRA) (7180a). – Krížna Mt., 1280 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. 24: 151, 1976) (7180a). – Krížna Mt., N slopes of the ridge between Krížna Mt. and the spot height 1557, 1460 m (7180a). – the end of Rovne valley below Krížna Mt., 1360 m (both Kliment & Slezák Thaiszia – J. Bot., 25 (2): 170, 2015) (7180a). – Krížna Mt., 48°52'42.2"N, 19°4'46.3"E (Zajac 2015 Bio) (7180a). – Úplaz Mt. (Nábělek & Brižický 1942 SLO) (7180a). – Veľká Pustalovčia Mt., W slopes, 1340 m (Kliment & Slezák Thaiszia – J. Bot., 25 (2): 170, 2015) (7180b). – Prášnicke sedlo saddle, 48°53'8.4"N, 19°7'53.9"E (Pavlišin 2015 Bio) (7180b). – Majerova skala Mt. (Truchlý 1889 BRA) (7180b). – Šturec Mt., SW slope, Koleso, 760 m (not. Ružička 1960) (7181a). – below the top of Predný Zvolen Mt. (Májovský 1969 SLO) (7181a). – **21d. Chočské vrchy Mts.:** Šíp Mt., 1080 m (Valenta 1946 BRA) (6881a). – Valaská Dubová, alongside blue marked tourist pathway to Stredná poľana, 770-1240 m (Kochjarová (ed.) Flor. kurz Ružomberok, Bull. Slov. Bot. Spoločn. 42, Suppl. 1: 79, 2020) (6881d). – Choč, on the top (Sedláková 2017 Bio) (6882a). – Vyšný Kubín, 49°9'13.1"N, 19°20'29"E (Šibík 2014 Bio) (6882a). – Choč Mt., 49°9'13.6"N, 19°20'56.1"E (Vyšinský 2014 Bio) (6882a). – Choč Mt. (Vítek 1927 BRNM 45350; Hadač 1933 PRC; s. coll. 1936 BRA; Futák 1947 SLO; s. coll. 1952 BRA; s. coll. 1974 BRA; Cvachová 1976 SMBB, B-550/142; Dítě 1983 NI; s. coll. 1992 BRA) (6882a-c). – mountainside of Veľký Choč Mt., 1500 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974) (6882a-c). – from the top of Veľký Choč Mt. to sedlo Vráca saddle, 1608-1420 m (Kochjarová (ed.) Flor. kurz Ružomberok, Bull. Slov. Bot. Spoločn. 42, Suppl. 1: 79, 2020) (6882a-c). – Chočské sedlo saddle [= Vráca saddle] (Domin Čas. čs. Lékar. 3: 198, 1922) (6882c). – Malý Choč Mt., E slope (Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (6882c). – Kvačianska dolina valley, above Oblazy, 49°11'49.4"N, 19°32'17.1"E (Pavlišin 2015 Bio) (6883a). – Ostrý vrch Mt. (Kláštorský & Měsíček 1959 PR) (6883a). – Kvačianska dolina valley, Ostruhý saddle (Magdolenová 1970 BRA) (6883a). – Prosečné Mt., cca 1000 m (Bottlíková 1965 BRA) (6883a). – the top of Prosečno Mt. (1373 m) [= Prosečné Mt.], NE from Prosečno [= Prosiek] (not. Futák 1958) (6883a). – **22. Nízke Tatry Mts.:** Siná Mt., 49°0'3.4"N, 19°33'10.7"E (Šibík 2015 Bio) (6983c). – Nižný Blatník valley, 49°0'11.1"N, 19°33'48"E (6983c). – Vyšný Blatník valley, 49°0'3.7"N, 19°34'42.2"E (both Vnuk 2014 Bio) (6983c). – Siná Mt., 1550 m (Sillinger Mon. stud. veg. N. Tater: 120, 1933) (6983c-7083a). – Poludnica Mt., 1550 m (not. Futák 1944) (6983d). – Poludnica Mt., 1400 m (Pax 1905 BP 173642) (6983d). – Poludnica Mt., W slope (6983d). – Poludnica Mt., E slope (6983d). – Poludnica Mt., S ridge, W slope (all Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (6983d). – Iľanovská dolina valley, E slopes of Magura Mt., 1180 m (not. Ružička 1962) (6983d). – Biela skala Mt., 49°0'33.2"N, 19°37'34.2"E (Pavlišin 2015 Bio) (6983d). – below Iľanovské sedlo saddle, 49°0'7.5"N, 19°36'34.8"E (6983d). – Pod Stavmi, 49°0'2"N, 19°36'25.6"E (both Pavlišin 2014 Bio) (6983d). – Jánska dolina valley, Smrekovica Mt., NE slope below the ridge (Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (6984c). – Nižná Šuňava, the top of Breziny, E from Lopušná cabin, 930 m (not. Michalko 1972) (6986d). – Kozí kameň Mt., S from Lučivná (Šmarda Veg. Pom. Spiš. Kotl.: 1961) (6986d). – meadows and bushes alongside green marked tourist pathway near the top of Veľký Brankov Mt., 1000-1130 m, 48°59'19"N, 19°18'52"E (Kochjarová (ed.) Flor. kurz Ružomberok, Bull. Slov. Bot. Spoločn. 42, Suppl. 1: 79, 2020) (7081b). – Liptovské Revúce – Vyšná Revúca, around the top of Čierna Hora Mt., 1230-1335 m (Kochjarová (ed.) Flor. kurz Ružomberok, Bull. Slov. Bot. Spoločn. 42, Suppl. 1: 79, 2020) (7081c). – dolina Bensko valley [= Banská valley], NE slopes, 850 m (not. Ružička 1962) (7081d-7082c). – Salatín Mt. (Školek 2002 Bio) (7082a). – Salatín Mt., 1580–1600 m (Sillinger Mon. stud. veg. N. Tater: 120, 1933) (7082a). – Koniarka Mt., 48°59'14.5"N, 19°28'45.4"E (Dupkala 2014 Bio) (7082b). – below Kozí grúň Mt., 48°58'14.9"N, 19°28'19.8"E (Pavlišin 2014 Bio) (7082b). – Solisko Mt., 48°57'18.7"N, 19°28'12.4"E (Pirchala 2014 Bio) (7082b). – ridge of Solisko Mt. (Šoltés 1999 Bio) (7082b). – dolina Bensko valley [= Banská dolina valley], Hrubý grúň Mt. below Košarisko Mt., 1130 m (not. Ružička 1962) (7082c). – Košariská Mt., 48°54'0.2"N, 19°21'9"E (Duchon 2015 Bio) (7082c). – Košariská Mt., 48°55'9.5"N, 19°21'48.5"E (Pirchala 2014 Bio) (7082c). – below Skalka Mt., 48°55'6.9"N, 19°22'8.5"E (7082c). – sedlo pod Skalkou saddle, 48°55'10.7"N, 19°22'24.7"E (both Duchon 2015 Bio) (7082c). – Veľká

hoľa Mt., 1690 m (7082c). – Veľká hoľa Mt., 1550 m (7082c). – below the saddle of Veľká hoľa Mt. above Liptovská Lužná, 1500 m (7082c). – Veľká hoľa Mt., saddle above Liptovská Lužná, 1608 m (7082c). – saddle between Veľká hoľa Mt. and Latiborská hoľa Mt., 1550 m (7082c). – Latiborská hoľa Mt., 1500 m (all Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7082c). – Latiborská hoľa Mt. - Veľká hoľa Mt., 1540 m (Randuška 1967 ZV, 9613) (7082c). – Latiborská hoľa Mt., N slope, 1450 m (Sillinger Mon. stud. veg. N. Tater: 273, 1933) (7082c). – below Latiborská hoľa Mt., upper forest limit (not. Michalko 1952) (7082c). – Magurka Mt., 48°56'14.8"N, 19°25'59.4"E (Vyšínský 2014 Bio) (7082d). – Zámostská hoľa Mt., 48°55'43.3"N, 19°25'40"E (Duchoň 2015 Bio) (7082d). – sidelong ridge from Mestská hoľa Mt. to the main ridge – Solisko Mt., 1750 m (Pekarovič Dipl. práca (msc.), depon. in VŠLD Zvolen: 16a, 1975) (7082d). – Ďurková Mt. above Magurka, 1680 m (Sillinger Mon. stud. veg. N. Tater: 276, 1933) (7082d). – Ďurková Mt., 48°55'57.4"N, 19°27'43.3"E (Duchoň 2015 Bio) (7082d). – Ďurková Mt., 1765 m (7082d). – sedlo Ďurkovej saddle, on the ridge, 1750 m (7082d). – Ďurková Mt., 1620 m (all Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7082d). – valley below the sidelong ridge of Ďurková Mt., 1560 m (Pekarovič Dipl. práca (msc.), depon. in VŠLD Zvolen: 31a, 1975) (7082d). – below Chabenec Mt., 48°56'20.9"N, 19°28'21.4"E (7082d). – Malý Chabenec Mt., 48°56'28.4"N, 19°28'46.9"E (7082d). – Chabenec Mt., 48°56'34"N, 19°29'26.1"E (all Duchoň 2015 Bio) (7082d). – Chabenec Mt., cca 50 m W from the top, 1900 m (7082d). – 50 m E from the spot height Chabenec, 1950 m (7082d). – upper part and bottom of the cirque below Chabenec Mt., 1680 – 1850 m (7082d). – sidelong ridge of Chabenec Mt., 1495–1820 m (7082d). – cca 100 m E from Chabenec saddle, 20 m below the main ridge, 1860 m (all Pekarovič Dipl. práca (msc.), depon. in VŠLD Zvolen: 16a-31a, 1975) (7082d). – Chabenec Mt., 1750 m (7082d). – Chabenec Mt., 1845 m (7082d). – below Chabenec Mt., near upper dwarf pine growth limit, 1625 m (all Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7082d). – Siná Mt., W slope below the ridge (7083a). – Siná Mt., S sidelong ridge, E slope (both Fajmonová Biológia 33 (7): 558–559, 1978) (7083a). – Siná Mt., E slope (Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (7083a). – Mošnická dolina valley – Vstupný grúň Mt., 48°59'17.6"N, 19°32'16.7"E (7083a). – „Repiská“, 48°59'47.5"N, 19°34'38"E (7083a). – Stodôlky, 48°59'43"N, 19°34'58.9"E (7083a). – Bohuš, 48°59'11.8"N, 19°33'40.7"E (all Pirchala 2014 Bio) (7083a). – Vrbické pleso tarn (Votavová 1976 SLO; Školek 1988 MOP 6655; Dítě 1991 NI) (7083a). – Bôr Mt., 48°58'15.3"N, 19°32'42.9"E (7083a). – slopes of Bôr Mt., 48°57'44.9"N, 19°32'48.7"E (7083a). – Zákľuky Mt., 48°57'36.1"N, 19°32'32.3"E (7083a). – Poľana Mt., 48°57'4.9"N, 19°32'19.1"E (all Fekiač 2015 Bio) (7083a). – Brhliská, pathway towards Tri Vody (Mutkovič 1975 SLO) (7083a). – near Chata Odboj chalet (Jaroš 1961 PR 254161) (7083a-b). – Demänovská dolina valley, towards Ostredok Mt. (Mutkovič 1975 SLO) (7083a-b). – Dolina Zadnej vody valley, 1200–1830 m (Lepš et al. Preslia 57 (4): 302, tab. 1, 1985) (7083a-c). – Poľana Mt., 1550 m (Rejzlová 1990 PRC) (7083a-c). – Poľana Mt. – Bôry Mt., 1830–1910 m (Pekarovič Dipl. práca (msc.), depon. in VŠLD Zvolen: 23a, 26a, 27a 1975) (7083a-c). – Pusté Mt., 48°59'55.2"N, 19°36'16.7"E (Pavlišin 2014 Bio) (7083b). – below Krakova hoľa Mt., 48°59'49.2"N, 19°37'23.6"E (Fekiač 2015 Bio) (7083b). – Demänovská dolina valley, Pusté Mt., N slope below the top (7083b). – ridge between Pusté Mt. and saddle below Krakova hoľa Mt., E slope (7083b). – saddle below Krakova hoľa Mt., W slope below the ridge (all Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (7083b). – Krakova hoľa Mt., N from the top, 1730 m, 48°59'08"N, 19°37'59"E (Šibík et al. Bull. Slov. Bot. Spoločn. 27: 190, 2005) (7083b). – Krakova hoľa Mt., 1550 m (Sillinger Mon. stud. veg. N. Tater: 120, 1933) (7083b). – Demänovská Dolina, 48°59'19.9"N, 19°38'11.6" E (Šibík 2014 Bio) (7083b). – Demänovská dolina valley (Novacký 1949 BRA) (7083b). – slope in Jasná below Chopok Mt., 1180 m (Manica Záverečná správa (msc.) Zvolen: 57, 1973) (7083b). – Tanečnica Mt., 48°57'55.7"N, 19°37'44.8"E (Duchoň 2015 Bio) (7083b). – Kraviarky Mt., 48°57'55.9"N, 19°38'33.9"E (Pirchala 2015 Bio) (7083b). – N slope of Chopok Mt., 1580 m (Manica Záverečná správa (msc.) Zvolen: 56, 1973; Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (7083b). – Chopok (Zelník 1965 ZAM 1300; Sekera 1967 SNV B7749) (7083b). – Chopok Mt., Luková Mt, northern slope

(Školek 1988 MOP 4862) (7083b). – saddle between Kotlíská Mt. and nameless Mt. in front of Chabeneč saddle, 1810 m (7083c). – cca 100 m W from the spot height Kotlíská, 1830 m (both Pekarovič Dipl. práca (msc.), depon. in VŠLD Zvolen: 18a, 1975) (7083c). – Kotlíská Mt., 1840 – 1850 m (7083c). – Kotlíská Mt., 1800 m (both Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083c). – Kotlíská Mt., 48°56'37.8"N, 19°31'23.4"E (7083c). – Skalka Mt., 48°55'50.9"N, 19°31'7.1"E (7083c). – Žiarska hoľa Mt., 48°55'4.4"N, 19°30'18.5"E (all Duchoň 2015 Bio) (7083c). – Žiarska hoľa Mt. – Vajskovská Skalka Mt., 48°55'8.3"N, 19°30'34.9"E (Jánošík 2014 Bio) (7083c). – Krížske sedlo saddle, 1775 m (Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083c). – Poľana Mt., 48°56'52.9"N, 19°31'44.8"E (Špulerová 2015 Bio) (7083c). – cca 300 m W from the spot height Poľana, 1840 m (7083c). – on the top of Poľana Mt., 1888 m (both Pekarovič Dipl. práca (msc.), depon. in VŠLD Zvolen: 18a, 26a, 1975) (7083c). – Poľana Mt., 1810 – 1870 m (7083c). – Poľana Mt., 1760 m (7083c). – below Poľana Mt., 1560 m (7083c). – sedlo Poľany saddle, 1750 m (all Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083c). – W slope of Poľana Mt., 1630 m (7083c). – S slope of Poľana Mt., 1590 m (both Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (7083c). – Dubovská hoľa Mt., slope with springs, 1725 m (Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083c). – Liptovská hoľa Mt. (Magic TOP 25: 28, 1989) (7083c). – Liptovská hoľa Mt., 1920 m (7083c). – Liptovská hoľa Mt., 1775 m (both Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083c). – Vajskovská dolina valley, SW slopes of Liptovská hoľa Mt. (Magic TOP 25: 31, 1989) (7083c). – Dereše Mt., 48°56'56.1"N, 19°34'25.6"E (Zajac 2014; Šibík 2018 Bio) (7083c). – Dereše Mt., W from the top, 48°56'26.9"N, 19°34'10"E (Turis 2014 Bio) (7083c). – Dereše Mt., 1980 m (7083c). – Dereše Mt., edge of a stone run, 1900 m (both Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083c). – below Dereše Mt., 48°56'11.7"N, 19°34'25.5"E (Jánošík 2014; Šibík 2018 Bio) (7083c). – S slope of Dereše Mt., 1580 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (7083c). – ridge S of Dereše Mt., 1550 m (Dvořáková Biológia 21: 518–519, 1966) (7083c). – Dereše Mt., eastern slope (Školek 1988 MOP 4861) (7083c). – Zadné Pálenice, 48°55'57.6"N, 19°33'29.9"E (Kliment 2013 Bio) (7083c). – Chopok Mt., N slope, 48°56'57.7"N, 19°35'39.7"E (Součková 1950 BRNM 70686; Zajac 2014 Bio) (7083d). – N slope of Chopok Mt. towards Štále, in the dwarf pine zone, 1800 m (Manica Záverečná správa (msc.) Zvolen: 58, 1973) (7083d). – Chopok Mt., N slope, cca 700 m from the top (Mutmovič 1976 SLO) (7083d). – Chopok Mt., 2000 m (7083d). – Chopok Mt., stone run, 1925 m (7083d). – Chopok, wide couloir, 1900 m (all Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083d). – Chopok Mt. (Lengyel 1928 BP 277018; not. Futák 1962) (7083d). – S mountainside of Chopok Mt., 1520 m, 1600 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (7083d). – S slope of Chopok Mt. near Kosodrevina, 1400 m (Manica Záverečná správa (msc.) Zvolen: 57, 1973) (7083d). – Ďumbier Mt., 48°55'51.8"N, 19°36'12.5"E (Vaško 2015 Bio) (7083d). – Kanskô Mt., in the saddle, 1850 m (7083d). – Kanskô Mt., 1920 m (7083d). – Demänovské sedlo saddle, 1760 m, 1705 m (all Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083d). – below Krúpova hoľa Mt., 48°56'10.6"N, 19°37'2.1"E (Jánošík 2014 Bio) (7083d). – Krúpovo sedlo saddle, 48°56'55.2"N, 19°37'37.7"E (Špulerová 2015 Bio) (7083d). – W mountainside of Krúpova hoľa Mt., 1640 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (7083d). – Krúpová hoľa Mt., cirque on N slope, 1720 m (Sillinger Mon. stud. veg. N. Tater: 276, 1933) (7083d). – Krúpová hoľa Mt., N slope, 1800 m (Sillinger Mon. stud. veg. N. Tater: 278, 1933; Pekarovič Dipl. práca (msc.), depon. in VŠLD Zvolen: 20a, 1975) (7083d). – Krúpová hoľa Mt., 1925 m, 1760 m (Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083d). – Ďumbier Mt., N slope, cca 1500 m (Zavřel 1950 BRA) (7083d). – Ďumbier Mt., cirque on N slope, 1900–1950 m (Sillinger 1930 PRC) (7083d). – Ďumbier Mt., glacial cirque on N slope, 1920 m (Sillinger Mon. stud. veg. N. Tater: 261, 1933) (7083d). – Ďumbier Mt. (s. coll. 1868 SLO; s. coll. 1868 SMBB B-1/277; Zemplén 1905 BP 173624; Halász 1907 BRA; Thaisz 1911 BP 173611; Trapl 1922 PRC; Úlehla 1923 BRNU 033656; s. coll. 1948 BRA; Fabranská 1955 SLO; Dočolomanský 1959 BRA; Rotreklová & Lososová

2001 BRNU 565106) (7083d). – Ďumbier Mt., 1900 m, 2020 m (Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083d). – Ďumbier Mt., cca 2000 m (Lengyel 1927 BP 277021) (7083d). – Ďumbier Mt., on the ridge above the dwarf pine zone, 1700–1800 m (Suza Věda přír. 13: 195, 1932) (7083d). – Ďumbier Mt., 1760 m (Sillinger Mon. stud. veg. N. Tater: 276, 1933) (7083d). – Ďumbier Mt., 1400 m (Freyn 1870 BRNM 01100/36) (7083d). – Ďumbier Mt., above the chalet (Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083d). – slope below Ďumbier Mt. and Chopok Mt. (Dočolomanský 1959 BRA) (7083d). – Štiavnica Mt., 1900 m (Treskoňová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (7083d). – Štiavnica Mt., 48°56'20.1"N, 19°39'7.2"E (Duchoň 2015 Bio) (7083d). – Králička Mt., 48°55'37.4"N, 19°39'14"E (Duchoň & Fekiač 2015 Bio) (7083d). – Veľký Gápeľ Mt., 1650 m (Sillinger Mon. stud. veg. N. Tater: 273, 1933) (7083d). – Veľký Gápeľ Mt., 48°55'12"N, 19°38'5.7"E (Jánošík 2014 Bio) (7083d). – Dolina Bystrá valley (Martincová Stredoslov. múz. B. B. 5: 52, 1989; Martincová 1987 SMBB B-98/1 - B-98/3) (7083d-7183b). – Slemä Mt., 1470 m (7084a). – Slemä Mt., ridge towards Ohnište Mt. (both Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (7084a). – Slemä Mt., E side of the ridge (7084a). – Ohnište Mt., E side of the ridge (both Fajmonová Biológia 33 (7): 558–559, 1978) (7084a). – Špatná, 48°59'8.1"N, 19°42'10.2"E (Vyšínský 2015 Bio) (7084a). – Ohnište Mt., 48°59'7.4"N, 19°43'29.6"E (Vyšínský 2014 Bio; Duchoň 2015 Bio) (7084a). – Štiavnická [Jánska] dolina valley near gamekeeper's house Pred Bystrou, 875 m (not. Ružička 1962) (7084a). – Malužiná, Svidový potok brook, 800 m (Suza 1931 BRNU 219274) (7084b). – Kráľov stôl saddle, 48°56'52.6"N, 19°41'53"E (Vyšínský 2014 Bio) (7084c). – below Solisko Mt., 48°56'51.9"N, 19°43'35.8"E (Pavlišin 2014 Bio) (7084c). – Kráľov stôl Mt. (1580 m), above Konský grúň Mt., 1360 m (not. Ružička 1962) (7084c). – Rovná hoľa Mt., 48°56'26"N, 19°42'45.1"E (Fekiač 2015 Bio) (7084c). – Bocké [Bocianske] sedlo saddle, 48°55'58.5"N, 19°41'46.4"E (Dupkala 2014 Bio) (7084c). – Bocianske sedlo saddle, 48°55'41.6"N, 19°41'27.9"E (Duchoň 2015 Bio) (7084c). – Králička Mt. end of Svätajánska [Jánska] dolina valley, E slope, 1600 m (Sillinger Mon. stud. veg. N. Tater: 123, 1933) (7084c). – Králička Mt., N slope (Sillinger Mon. stud. veg. N. Tater: 278, 1932) (7084c). – Králička Mt., W slopes, 1630 m (Vicherek 1964 BRNU 424132) (7084c). – Králička Mt. (Martincová Stredoslov. múz. B. B. 5: 52, 1989; Jalovičiarová 1986 SMBB B-31/22) (7084c). – Králička Mt., 1600–1660 m, 1740 m (Sillinger Mon. stud. veg. N. Tater: 273–278, 1933) (7084c). – Gápľik Mt. (Kupčok 1886 PR 123376, 1896 BRA, BRNU 045293) (7084c). – Ďumbier Mt., 48°54'42.4"N, 19°41'39.1"E (Vaško 2013 Bio) (7084c). – Rovienky Mt. above Vyšná Boca, 1540 m (Sillinger Mon. stud. veg. N. Tater: 120, 1933) (7084c). – Lajštroch Mt., 48°54'54.3"N, 19°43'22.8"E (Dupkala 2014 Bio) (7084c). – sedlo Čertovica saddle (J. Dostál 1968 PR 304299) (7084c). – NW slope of Čertova svadba Mt. cca 200 m E from Čertovica saddle, 1260 m (Manica Záverečná správa (msc.) Zvolen: 49, 1973) (7084c). – Úplazská dolina valley, 48°55'53"N, 19°46'33.5"E (Pavlišin 2014 Bio) (7084d). – Veľký bok Mt., 48°56'47.7"N, 19°53'18.4"E (Duchoň 2015 Bio, Rizman 2015 Bio) (7085c). – Stará dedina – Hodruša valley, 48°55'47.1"N, 19°51'30.5"E (Pirchala 2013 Bio) (7085c). – Homôľka Mt., 48°55'0.1"N, 19°51'49.2"E (Vyšínský 2013 Bio, Duchoň 2015 Bio) (7085c). – Zadná Široká Mt., 48°54'54.1"N, 19°52'48.1"E (7085c). – Zadná hoľa Mt., 48°54'42"N, 19°52'40.8"E (both Duchoň 2015 Bio) (7085c). – Polomka, 48°54'32"N, 19°52'58.7"E (Siakel' 2013 Bio) (7085c). – Oravcová Mt., 48°54'28.9"N, 19°54'33.1"E (Vaško 2013 Bio) (7085c). – Veľká Vápenica Mt., 48°55'11.7"N, 19°58'29.3"E (Němec 2015 Bio) (7085d). – Veľká Vápenica Mt., 48°54'56.8"N, 19°58'33.3"E (Jánošík 2014 Bio) (7085d). – from Priehyba saddle to the top of Veľká Vápenica Mt. (Vartíková & Votavová 1977 SLO) (7085d). – Veľká Vápenica Mt., 1550 m (Sillinger Mon. stud. veg. N. Tater: 273, 1933) (7085d). – below Vápenica Mt., 48°55'27.3"N, 19°59'43.9"E (Pavlišin 2015 Bio) (7085d). – Košariská Mt., 48°57'36.6"N, 20°1'32.2"E (Pirchala 2015 Bio) (7086a). – Andrejcová Mt., 48°54'35.8"N, 20°0'2.3"E (7086c). – below Priehyba saddle, 48°54'25.1"N, 20°1'19.9"E (both Pavlišin 2014 Bio) (7086c). – Liptovská Teplička, 48°54'20.7"N, 20°2'58.1"E (Vnuk 2014 Bio) (7086c). – gamekeeper's lodge Veľký Brunov, 1100 m (Vartíková 1974 SLO) (7086d). – Holičná valley, 48°54'29.7"N, 20°6'17.8"E (Pirchala 2014 Bio) (7086d). – Stredná hoľa Mt., 48°54'2.2"N,

20°7'6.5"E (Jánošík 2014 Bio) (7086d). – Veľký Brunov valley, 48°54'20.6"N, 20°8'17.5"E (Pirchala 2014 Bio) (7086d). – slope of Široká Mt. towards Lapinka meadow, 1450–1500 m (Hrouda et al. Preslia 62 (2): 152, 1990) (7086d). – Podškutová, 48°54'37.3"N, 20°9'18.5"E (Šefferová Stanová 2015 Bio) (7086d). – Kráľova hoľa Mt., Prašivok Mt., 1330 m (Vartíková 1974 SLO) (7086d). – Škutová, 48°54'11.1"N, 20°9'33.2"E (Dupkala 2014 Bio) (7086d). – Úplaz Mt., above the springs of Bystrá brook (Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (7087c). – gamekeeper's house Ľadová, above Vernárske lúky meadows, 1125 m (Šimeková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 2, 1970) (7087c-d). – the spot height 1185,4 (near Vernárske lúky meadows) (Pitoniak et al. Biol. Pr. SAV 24 (6): tab. 8, tab. 9, tab. 10, 1978) (7087c-d). – Vernárske lúky meadows (not. Hajdúk 1956; Hajdúk 1957 BRA) (7087d). – Donovaly – Nová hoľa Mt. (Bačkor 2017 Bio) (7181a). – edge of forest S form Donovalské sedlo saddle above Donovaly, 980 m (Manica Záverečná spáva (msc.) Zvolen: 70, 1973) (7181a). – Mistríky, near the road from Donovaly to Korytnica, mouth of Krivá valley, 830 m (not. Ružička 1962) (7181a). – NR Barania hlava, willows near the cabin (Háberová Prír. Nízk. Tatier 1: 93, 2004) (7181a). – Slovenská Ľupča, 48°51'23.4"N, 19°14'17.2"E (Vaško 2014, 2015 Bio) (7181a). – NR Barania hlava, 48°51'20.8"N, 19°14'15"E (Dítě 2014; Galváneek 2017 Bio) (7181a). – Kozí Chrbát Mt., 48°51'54.9"N, 19°17'3.4"E (Juříček 2015 Bio) (7181b). – Kozí chrbát Mt. (Futák 1929 SLO; Sillinger Mon. stud. veg. N. Tater: 120, 1933) (7181b). – top of Kozí chrbát Mt., 1300–1330 m (7181b). – beechwood on slope of Kozí chrbát Mt. (above Hiadieľské sedlo saddle), 1150–1200 m (both Procházka & Krahulec Preslia 54: 177, 1982) (7181b). – Kozí chrbát Mt. below Ďumbier Mt., 1650 m (Sillinger Mon. stud. veg. N. Tater: 123, 1933) (7181b). – Hiadeľ, 48°52'3.1"N, 19°19'3.7"E (Němec 2015 Bio) (7181b). – Prašivá Mt., slope above Korytnica (not. Michalko 1951) (7181b). – Prašivá Mt. (Trapl 1920 PRC) (7181b). – Prašivá Mt., cca 1400 m (Margittai 1912 BP 484392) (7181b). – Prašivá Mt., 1650 m (Pax 1905 BP 173641) (7181b). – Prašivá Mt., 48°52'50"N, 19°19'11"E (Jánošík 2014 Bio; Vyšinský 2014 Bio) (7181b). – Malá Chochuľa Mt., 48°53'11.3"N, 19°19'1.8"E (7181b). – Veľká Chochuľa Mt., 48°53'48"N, 19°19'48.9"E (both Duchoň 2015 Bio) (7181b). – Kalište, meadows around abandoned settlement, 800–1000 m (Procházka & Krahulec Preslia 54: 177, 1982) (7181c). – Veľká Chochuľa Mt., 48°53'28.1"N, 19°20'2.6"E (Jánošík 2014 Bio) (7182a). – Košarisko Mt., 48°53'52.3"N, 19°21'4.1"E (Duchoň 2015 Bio) (7182a). – Ondrejská hoľa Mt., 48°53'28"N, 19°21'25"E (Jánošík 2014 Bio) (7182a). – Ráztocká hoľa Mt., 1400–1700 m (Randuška 1967 ZV, 9712) (7182a). – Slovenská Ľupča, 48°52'35.1"N, 19°22'50.6"E (Kliment 2013 Bio) (7182a). – Jasenie, 48°52'46.1"N, 19°23'28.2"E (Lizoň 2013 Bio) (7182a). – Lomníšťa dolina valley (Mucina 1976 BRA) (7182b). – between the end of Spáristá dolina valley and Nemcová dolina valley above Bacúch, 1400 m (Manica Záverečná správa (msc.) Zvolen: 46, 1973) (7184b). – Ždiarske sedlo saddle, 48°53'50.5"N, 20°3'13.5"E (Němec 2015 Bio) (7186a). – Bartková Mt., 48°53'41.6"N, 20°3'35.4"E (Jánošík 2014 Bio) (7186a). – Orlová Mt., 48°53'25.4"N, 20°4'55.3"E (Šibík 2015 Bio) (7186a). – between Orlová Mt. and spot height 1877 (Kláštorský 1948 PR) (7186b). – Orlová Mt., 48°53'21.2"N, 20°5'26.4"E (7186b). – Stredná hoľa Mt., 48°53'24.7"N, 20°6'29.5"E (7186b). – Stredná hoľa Mt., the edge of the cirque, 48°53'23.1"N, 20°6'34.7"E (all Šibík 2015 Bio) (7186b). – Kráľova hoľa Mt., 48°53'26.2"N, 20°7'19"E (Šibík 2014, 2017 Bio) (7186b). – Veľký Brunov cirque, 1700 m (Turis et al. Bull. Slov. Bot. Spoločn. 28: 124, 2006) (7186b). – Veľký Brunov cirque, 1600–1800 m (7186b). – ridge near red mark between Kráľova hoľa Mt. and Stredná hoľa Mt., 1830–1900 m (7186b). – Kráľova hoľa Mt., grassy uplands on N slope near green mark, 1700–1900 m (7186b). – Kráľova hoľa Mt., spring area of Hnilec brook, 1550–1750 m (7186b). – Kráľova hoľa Mt., grassy uplands on SW slopes, 1800–1900 m (7186b). – Kráľova hoľa Mt., top rocks and grassy uplands, 1900–1948 m (all Hrouda et al. Preslia 62 (2): 152, 1990) (7186b). – Kráľova hoľa Mt. (Fábry 1872 BRA; Lengyel 1906 BP 277024; Mágócsy & Lengyel 1906 BP 44234; Filarszky & Kümmerle 1906 BP 173622; Thaisz 1906 BP 173613; Tuzson 1906 BP 119239, 119240; Brym 1933 PRC; Pulchart & Souček 1933 BRNM 39393) (7186b). – Kráľova hoľa Mt., 1940 m (Valenta 1940 BRA) (7186b). – Kráľova hoľa Mt., cca 1900 m (Hendrych 1948 PR) (7186b). – Kráľova hoľa Mt., 1620–1650 m (Sillinger Mon. stud. veg. N. Tater: 123, 1933) (7186b). – Kráľova hoľa Mt., grassy

uplands on S slope between the top and Predné sedlo saddle, 1550–1850 m (7186b). – Kráľova skala Mt., valley of Zubrovica brook, 1500–1650 m (7186b). – Kráľova skala Mt., on the top, 1620–1690 m (all Hrouda et al. Preslia 62 (2): 152, 1990) (7186b). – Kráľova skala Mt. (Šibík 2018 Bio) (7186b). – NR Martalúžka, 48°52'29.7"N, 20°9'33.4"E (Jánošík 2014 Bio) (7186b). – Rovienska Mt., 48°52'9.2"N, 20°6'7.1"E (Vaško 2013 Bio) (7186b). – Kráľova hoľa Mt., S slope, cca 1400 m (Pulchart, Pulchartová & Souček 1933 PRC) (7186b). – Kráľova skala Mt., growth of dwarf pine on SE slope, 1550–1650 m (7186b-7187a). – Tri kopce Mt., E from the rocks in Martalúžka, 1300–1450 m (7187a). – Kráľova skala Mt., above the valley of Zubrovica brook, 1350–1500 m (all Hrouda et al. Preslia 62 (2): 152, 1990) (7187a). – Telgárt-Lačná voda, 48°52'48.1"N, 20°12'8"E (Vaško 2013; Siakel' 2015 Bio) (7187a). – Popová Mt., 1025–1050 m (Suza 1930 BRNU 208928; Brym 1930 PRC) (7187a). – **23a. Západné Tatry Mts.:** Zuberec, „Medzi bory“ peatbog (not. Futák 1953) (6783b). – NR Úplazíky, 49°14'23"N, 19°37'40.5"E (Vyšinský 2015 Bio) (6783d). – Biela skala Mt., below the rocks (not. Futák 1966) (6783d). – Huty, Biela skala gamekeeper's house – Sivý vrch Mt. (6783d). – Sivý vrch Mt., N slope (both Bělohávková & Fišerová Folia Geobot. Phytotax. 24 (1): 6, 6, tab. 1, p. 16, tab. 4, 1989) (6783d). – Sivý vrch Mt. – Biela skala Mt. (Nyárády 1924 POP; Školek 1996 Bio) (6783d). – Sivý vrch Mt., 49°12'52.1"N, 19°38'5.7"E (Duchoň 2015 Bio) (6783d). – Sivý vrch Mt., 1800 m (Sillinger & Scheffer Feddes Repert. XXXI: 351, 785, 1933) (6783d). – Sivý vrch Mt., 1600 m (J. Dostál 1926 PRC; Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974; Hulják s. dato. BP 173610) (6783d). – Sivý vrch Mt., 1680 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974) (6783d). – Sivý vrch Mt., 1350 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab.3, 1976) (6783d). – Sivý vrch Mt., Priehyba (Školek 1987 MOP 4837) (6783d). – Sivý vrch Mt., 1145–1215 m (not. Futák 1966) (6783d). – Sivý vrch Mt. – ridge towards Ostrá Mt. (not. Futák 1966) (6783d). – Malé Ostré Mt., near the saddle (Bělohávková & Fišerová Folia Geobot. Phytotax. 24 (1): 16, tab. 4, 1989) (6783d). – sedlo Pálenica saddle, cca 100 m below the saddle, 1550 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6783d). – Zuberec, on the left side of the tourist pathway, 1760 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6783d). – Za Kozaliska Mt., 1550 m (Sillinger & Scheffer Feddes Repert. XXXI: 351, 785, 1933) (6783d). – Grapy Mt., 49°13'4.9"N, 19°39'59.9"E (Šibík 2015 Bio) (6783d). – Homôľka Mt., 49°12'13.6"N, 19°37'10.3"E (Pirchala 2015 Bio) (6783d). – Suchá dolina valley (Magdolenová 1970 BRA) (6783d-6883b). – Oravice – Habovka – Skorušiná, 49°17'19.3"N, 19°42'23.2"E (Rizman 2015 Bio) (6784a). – Habovka – Zuberec, 49°16'39.1"N, 19°41'36.8"E (Figura 2015 Bio) (6784a). – Zverovka, towards Osobitá Mt., near the lake, cca 1000 m (6784a). – Zverovka, towards Osobitá Mt., 1360–1400 m (both not. Futák 1965) (6784a). – slope below the road in Roháčska dolina valley cca 1 km below Zverovka, 1000 m (Manica Záverečná správa (msc.) Zvolen: 76, 1973) (6784a). – Osobitá Mt. (Futák 1949 SLO; not. Futák 1949) (6784a). – Osobitá Mt., 1687 m (Nábělek & Pastýrik 1940 SLO) (6784a). – Osobitá Mt., 49°15'40"N, 19°43'17.5"E (Sedláková 2015 Bio) (6784a). – Osobitá Mt., cca 30 m E below the top, 1650 m (6784a). – Osobitá Mt., 1530 m (both Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6784a). – Osobitá Mt., 1400–1600 m (Sillinger & Scheffer Feddes Repert. XXXI: 351, 785, 1933) (6784a). – Osobitá Mt., cca 1400 m (J. Dostál 1929 PRC) (6784a). – Osobitá Mt. – Suchá dolina valley (not. Futák 1965) (6784a). – between Osobitá Mt. and Volovec Mt., cca 1400–1500 m (Deyl 1938 PR) (6784a). – Korytiny, 49°15'14.5"N, 19°44'16.8"E (Pirchala 2015 Bio) (6784a). – Oravice – „Nad brehy“, 49°17'19.4"N, 19°45'16.7"E (Vyšinský 2013 Bio) (6784b). – Zábřez, 49°16'58.7"N, 19°45'2.9"E (Vyšinský 2013, 2015 Bio) (6784b). – Juráňova dolina valley (Červenka 1968 SLO) (6784b). – W slope of the saddle between the spot heights Bobrovec (1663) and Veľká Furkaška (1490) (Fajmonová Biológia 33 (7): 558–559, 1978) (6784b). – Bobrovec, NW ridge, S slope, below the top (Fajmonová Preslia 58 (1): 46, tab. 1, 1986) (6784b). – mountainside above the springs of Juráňov potok brook, on the right side (Fajmonová Biológia 33 (7): 558–559, 1978) (6784b-d). – below Predný Salatín Mt., 49°14'11.9"N, 19°42'25.3"E (Pavlišin 2015 Bio) (6784c). – Látaná dolina valley, 49°14'11.2"N, 19°43'57.2"E (Vyšinský 2015 Bio) (6784c). – Predný Salatín Mt., cca 1400 m (J. Dostál

1929 PRC) (6784c). – Brestová Mt., N slope (Školek 2002 Bio) (6784c). – Brestová Mt., 1840 m (Šoltéssová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6784c). – Brestová Mt., 49°13'14.5"N, 19°40'55.3"E (Duchoň 2015 Bio; Fekiač 2015 Bio) (6784c). – Malá Brestová Mt., 49°13'27.3"N, 19°41'36.5"E (6784c). – Salatínska dolina valley, 49°13'23.5"N, 19°41'52"E (6784c). – Zadný Salatín Mt., 49°13'9.8"N, 19°42'23.2"E (all Duchoň 2015 Bio) (6784c). – Salatín Mt. – Lysec Mt., 49°12'39.7"N, 19°41'0.4"E (Fekiač 2015 Bio) (6784c). – Salatínska dolina valley, couloir below Salatín Mt., 49°12'49.9"N, 19°41'28.5"E (6784c). – Skriniarky Mt., 49°12'41.4"N, 19°41'45.5"E (6784c). – Salatín Mt. – Skriniarky Mt., 49°12'36.2"N, 19°41'50.2"E (6784c). – Spálená Mt., 49°12'36.5"N, 19°42'22.9"E (all Duchoň 2015 Bio) (6784c). – Jalovecká dolina valley, Pachoľa Mt. (Školek 1976 Bio) (6784c). – Pachoľa Mt., 49°12'1"N, 19°42'7.4"E (Sedláková 2015, 2018 Bio) (6784c). – Spálená dolina valley, below Baníkov Mt., cca 1600 m (J. Dostál 1926 PRC) (6784c). – Spálená dolina valley (Školek 1976 Bio) (6784c). – Roháčska dolina valley, „Vodopády“ waterfalls, cca 1350 m (J. Dostál 1932 PRC) (6784c). – NE ridge of Predný Zábrať Mt. [= Predná Zábrať Mt.], 1640 m (6784c). – Spálená dolina valley, 1660 m (6784c). – Spálená dolina valley, scree below Hrubá kopa Mt., 1630 m (6784c). – Spálená dolina valley, scree below Zelené Mt., 1495 m, 1570 m (6784c). – Zelenô Mt., wall above the 1st Roháčske pleso tarn, 1530–1580 m (all Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 7, tab. 9, tab. 17, tab. 23, 1964) (6784c). – below Hrubá kopa Mt., 49°12'10"N, 19°43'17.3"E (Fekiač 2015 Bio) (6784c). – Hrubá kopa Mt., 49°12'1.2"N, 19°43'22.7"E (Zajac 2015 Bio) (6784c). – Tri Kopy Mt., 49°12'10.9"N, 19°43'54.7"E (Sedláková 2014, 2017 Bio; Duchoň 2015 Bio) (6784c). – Roháčska dolina valley, near the tourist cabin, 1450 m (Kosík 1928 PRC) (6784c). – Roháčske pleso tarn, 1600 m (Sillinger & Scheffer Feddes Repert. XXI: 351, 785, 1933) (6784c). – Smutná dolina valley, moraine below the 1st Roháčske pleso tarn, 1540 m (Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 7, 1964) (6784c). – Smutná dolina valley, below the pathway towards Roháčske pleso tarn (Šeffler & Šefflerová Biológia 44 (1): 48, 1989) (6784c). – Roháčska dolina valley, below lower Roháčske pleso tarn (Domin 1919 PRC) (6784c). – Smutná dolina valley, 49°12'23.5"N, 19°44'44.2"E (Školek 1976, 2002 Bio; Špulerová 2015 Bio) (6784c). – Rákoň Mt. – Predná Zábrať Mt. (Školek 2002 Bio) (6784c-d). – Smutná dolina valley below Plačlivé Mt., cca 1900 m (J. Dostál 1926 PRC) (6784c-d). – Smutná dolina valley, 1640 m (Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 23, 1964) (6784c-d). – Smutná dolina valley, 1700 m (Sillinger & Scheffer Feddes Repert. XXI: 351, 785, 1933) (6784c-d). – Roháče Mts., 1630–2115 m (Šomšák & Maláriková Acta Fac. Rer. Natur. Univ. Comen., Bot. XXX: tab. č. 1 v prílohe 2, 1983) (6784c-d-6884a-b). – Žiarska dolina valley, Plačlivô Mt. – Pachoľa Mt. (Školek 2002 Bio) (6784c-6884a). – Bobrovec Mt., W mountainside above the end of Bobrovecká dolina valley (6784d). – Bobrovec Mt., W ridge, S slope above the end of Juráňova dolina valley (both Fajmonová Biológia 33 (7): 558–559, 1978) (6784d). – Lúčna Mt., 49°14'12.8"N, 19°45'48.3"E (Rizman 2013 Bio) (6784d). – Smutná dolina valley, couloir of Rákoň Mt., 1565 m (6784d). – Rákoň Mt., below the top, 1870 m (6784d). – saddle between Rákoň Mt. and Volovec Mt., 1855 m (6784d). – Smutná dolina valley, slopes of Volovec, 15580 m, 1675m, 1685 m (6784d). – Volovec Mt., SW ridge, 2015 m (6784d). – Smutná dolina valley, slope of Jamnické sedlo saddle, 1605 m (6784d). – Smutná dolina valley, below the saddle between Ostrý Roháč Mt. and Plačlivé Mt., 1660 m, 1730 m (all Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 7, tab. 9, tab. 17, tab. 23, 1964) (6784d). – Volovec Mt. – Rákoň Mt. (Školek 2002 Bio) (6784d). – Volovec Mt., 49°12'35.8"N, 19°45'37.5"E (Duchoň 2015 Bio) (6784d). – Ostrý Roháč Mt. (Školek 1976 Bio) (6784d). – Jamnické plesá tarns, 1718 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6784d). – near Jamnické plesá tarns (Školek 1976 Bio) (6784d). – Jamnická dolina valley, between tarns, 1710 m (6784d). – sedlo pod Deravou saddle, 1876 m (both Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 9, tab. 28, 1964) (6784d). – Deravá Mt., 49°12'18.3"N, 19°46'32.9"E (Duchoň 2015 Bio) (6784d). – Končistá Mt., 1960 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6784d). – Račkovo sedlo saddle, 49°12'17.9"N, 19°48'24.7"E (6784d). – Gáborovo sedlo saddle, 49°12'5.9"N, 19°49'43.6"E (both Duchoň 2015

Bio) (6784d). – Ostrý Roháč Mt., 1915 m, 1980 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6784d-6884b). – Ostrý Roháč Mt., cca 2000 m (Deyl 1938 PR) (6784d-6884b). – Kresanica Mt., 49°13'55.1"N, 19°54'41.3"E (Duchon 2013 Bio) (6785c). – below rocky wall of Kresanica Mt., cca 1850 m (Dúbravcová & Petřík Bulletin Slov. Bot. Spoločn. 11: 8, 1989) (6785c). – Kresanica Mt. (6785c). – Hviždalka valley [=Zadný úplaz], 1850 m (6785c). – below Stoly Mt., 1625 m (6785c). – Tomanove sedlo saddle, 1690 m (6785c). – below Tomanove sedlo saddle, 1600 m (6785c). – near Tomanove pleso tarn, 1592 m (6785c). – N slope of Poľská Tomanová Mt., 1850 m (6785c). – Ferečiny Mt., 1410 m (all Šmarda et al. Kvet. Toman. dol.: 81, 1966) (6785c). – below Tomanovské pleso tarn, 49°13'6.3"N, 19°54'44.3"E (Kicková 2015 Bio) (6785c). – Poľská Tomanová Mt., 49°12'46.5"N, 19°54'25.9"E (Duchon 2013 Bio) (6785c). – Poľská Tomanová Mt. (Školek 2002 Bio) (6785c). – Liptovská Tomanová Mt., 1870 m (Šmarda et al. Kvet. Toman. dol.: 81, 1966) (6785c). – Tichá dolina valley, Smrečiny Mt. (Školek 2002 Bio) (6785c). – Rozpadnutý grúň Mt. (6785c-d). – slope of Rozpadnutý grúň Mt., 1710 m (6785c-d). – near Rozpadnutý grúň Mt., 1815 m (all Šmarda et al. Kvet. Toman. dol.: 81, 1966) (6785c-d). – couloir of Rozpadnutý grúň Mt., cca 1790 m (Dúbravcová & Petřík Bulletin Slov. Bot. Spoločn. 11: 8, 1989) (6785c-d). – Červené vrchy Mts. (Bělohávková & Fišerová Folia Geobot. Phytotax. 24 (1): 6, tab.1, 1989) (6785c-d-6885a). – Malolúčniak Mt. (Šmarda et al. Kvet. Toman. dol.: 81, 1966) (6785d). – Tomanova dolina valley, cca 250 m from the cabin, 1270 m (Sedláčková 1959 BRNU 402044) (6785d). – Liptovská Tomanová Mt., 49°12'54.6"N, 19°55'14.3"E (Kicková 2015 Bio) (6785d). – Zadná Tichá dolina valley, slopes of Goričková Mt. (not. Futák 1951) (6785d). – Kasprov vrch Mt., 49°13'52.3"N, 19°58'51.6"E (Celerová 2015 Bio) (6785d). – Zadná Tichá valley – Tarišková, 49°13'38.2"N, 19°58'56"E (Duchon 2013 Bio) (6785d). – Ľaliové sedlo saddle, 49°13'31.7"N, 19°59'29.1"E (Duchon 2013 Bio) (6785d). – Veľká Kopa Mt., above Kôprová dolina valley, cca 2000 m (Švestka 1938 BRNM 00455/41) (6785d). – Tichá dolina valley (Holková 1963 SLO) (6785d-6885a-b). – Liptovské kopy Mt. (Školek 2002 Bio) (6785d-6885b). – Zadná Tichá valley, Veľká Kopa Mt. (Školek 2002 Bio) (6785d-6885b). – Závory saddle, 49°12'21.7"N, 20°0'26.8"E (Duchon 2013 Bio) (6786c). – Kôprová dolina valley, below Závory saddle (Školek 2002 Bio) (6786c). – Sivý vrch Mt., saddle between Veľká Kopa Mt. and Malá Kopa Mt. [sedlo Predúvratie saddle] (not. Futák 1966) (6883b). – sedlo Predúvratie saddle, 49°11'40.6"N, 19°38'18"E (Duchon 2015 Bio) (6883b). – Malá kopa Mt., 49°11'35.5"N, 19°38'45.4"E (Duchon 2015 Bio) (6883b). – Jalovecká dolina valley, Babky Mt. (Školek 1996 Bio) (6883b). – Dolina Parichvost valley, 1560 m, 1665 m (Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 7, tab. 9, tab. 17, tab. 23, 1964) (6884a). – Parichvost valley, 49°11'46.3"N, 19°42'18.5"E (Sedláková 2015, 2018 Bio) (6884a). – Ráztoka Mt. – Trnác Mt., 49°10'50.7"N, 19°41'3.3"E (Duchon 2015 Bio) (6884a). – Veľká vrbička, 49°10'1.3"N, 19°40'52.8"E (Pirchala 2015 Bio) (6884a). – Baníkov Mt. (Doležal 1927 BRNU 175328) (6884a). – Baníkov Mt., NE – E ridge below Baníkovská Ihla, 2115 m (Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 23, 1964) (6884a). – Príslop Mt., 49°11'48.4"N, 19°42'34"E (Duchon 2015 Bio) (6884a). – Žiarska dolina valley, Ráztoka Mt. – Príslop Mt. (Školek 1976 Bio) (6884a). – Jalovecké sedlo saddle, 49°11'12.9"N, 19°42'10.3"E (Celerová 2015 Bio, Duchon 2015 Bio) (6884a). – Ráztoka Mt., 49°10'58.5"N, 19°41'49"E (Duchon 2015 Bio) (6884a). – Baníkov Mt. – Ráztoka Mt., 49°11'2.7"N, 19°41'50.3"E (6884a). – Hladké žľaby couloirs, 49°10'41"N, 19°41'50.9"E (both Fekiač 2015 Bio) (6884a). – Žiarska dolina valley – Čiernô, 49°9'51.3"N, 19°42'7.6"E (Pavlišin 2015 Bio) (6884a). – Žiarska dolina valley, below Tri kopy Mt. (6884a). – Prostredný grúň Mt. (both Školek 2002 Bio) (6884a). – Prostredný grúň Mt., 49°11'33"N, 19°44'2.6"E (Celerová 2015 Bio) (6884a). – Žiarska dolina valley, Prostredný grúň Mt., 1910 m (6884a). – Smutná dolina valley, below the ridge of Nohavica Mt., 1850–1930 m (both Komárková Dipl. práca (msc.), depon. in PrF UK Bratislava: tab. 23, tab. 30 1964) (6884a). – Smutné sedlo saddle, 49°11'59.7"N, 19°43'58.3"E (Zajac 2015 Bio) (6884a). – Smutná dolina valley, 49°11'59.9" N, 19°44'38"E (Sedláková 2015, 2018 Bio) (6884a). – the spot height Plačlivé, 1950 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6884a). – the end of Žiarska dolina valley (6884a). – Žiarska dolina valley, below the saddle, near the tarn (both

Školek 2002 Bio) (6884a). – Žiarska dolina valley, 49°11'27.6"N, 19°44'19.1"E (Celerová 2015 Bio) (6884a). – Smrek Mt. (Školek 1976 Bio) (6884a). – below Baranec Mt., 49°10'37"N, 19°44'48.3"E (Sedláková 2015, 2018 Bio) (6884a). – Baranec Mt. (Školek 1976 Bio) (6884a). – Baranec Mt. – ridge, 49°10'14"N, 19°44'48.6"E (Duchon 2015 Bio) (6884a). – Baranec Mt., 49°10'14.9"N, 19°44'15.4"E (Celerová 2015 Bio) (6884a). – Baranec Mt., 1850 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6884a). – Baranec Mt. – Holý vrch Mt., 49°9'14"N, 19°43'56.4"E (6884a). – Studničky pod Barancom, 49°9'52"N, 19°44'8.5"E (both Fekiač 2015 Bio) (6884a). – Holý vrch Mt., 49°9'46.6"N, 19°44'1.3"E (Vyšinský 2015 Bio) (6884a). – Trnovecká dolina valley [= Trnovská dolina valley], 1670 – 2184 m (Šomšák & Maláriková Acta Fac. Rer. Natur. Univ. Comen., Bot. XXX: tab. č. 1 v prílohe 2, 1983) (6884a). – Žiarska dolina valley, below Baranec Mt., 1300 m (Švestka 1925 BRNM 01102/36) (6884a). – Baranec Mt., cca 1000 m (Ullepitsch 1894 BP 173645) (6884a). – Plačlivé Mt., 1900 m (Černoch 1932 BRNM 401786) (6884a-b). – Žiarska dolina valley (Školek 2002 Bio) (6884a-c). – below Žiarske sedlo saddle (Školek 1976 Bio) (6884b). – Jamnícka dolina valley below Baranec Mt., 49°10'12"N, 19°45'59.9"E (Celerová 2015 Bio) (6884b). – Malý Baranec Mt. (Školek 1976; Sedláková 2018 Bio) (6884a). – Malý Baranec Mt., 1625 m, 1785 m, 1930 m (6884b). – Klinovate Mt. – Malý Baranec Mt., 1300 – 1605 m (both Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6884b). – Baranec Mt. – Mládky Mt., 49°9'20.3"N, 19°45'50.5"E (Duchon 2015 Bio) (6884b). – Jamnícka dolina valley, alpine meadow in cirque, 1300 m (Manica & Dvořák s. dato ZV; Manica 1962 ZV 6521) (6884b). – Záhradky valley, 1330–1590 m (6884b). – Jamnícka dolina valley, Maselná [Maselňa] couloir, 1290 m (6884b). – Jamnícka dolina valley, Repa couloir, 1160–1530 m (all Horák Acta scient. net. acad. scient. Bohemoslov. 5: 1971) (6884b). – Jalovecká dolina valley, 49°10'55.8"N, 19°46'53.2"E (Celerová 2015 Bio) (6884b). – Račkova dolina valley (not. Futák 1951; Hulják 1908 BRA; Lengyel 1908 BP 277019) (6884b). – Hrubý vrch Mt., cirque in Račkova dolina valley, 49°11'59.3"N, 19°48'2.5"E (Duchon 2015 Bio) (6884b). – Hrubý vrch Mt. (6884b). – Račkove plesá tarns (both Školek 1976 Bio) (6884b). – Račkove plesá tarns, 1730 m (Horák Acta scient. net. acad. scient. Bohemoslov. 5: 1971) (6884b). – Jakubiná Mt. (Školek 1976 Bio) (6884b). – Jakubiná Mt., on the top, cca 2100–2189 m (not. Pačlová 1966) (6884b). – Jakubiná Mt., 2015–2165 m (6884b). – ridge Jamnícka dolina valley – Račkova dolina valley, 1680–1890 m (6884b). – Magura Mt., 1825 m (all Horák Acta scient. net. acad. scient. Bohemoslov. 5: 1971) (6884b). – Vyšná Magura Mt., 49°11'18.8"N, 19°47'49.8"E (Sedláková 2015 Bio) (6884b). – Vyšná Magura Mt. (6884b). – Nižná Magura Mt. (both Školek 1976 Bio) (6884b). – Ostredok Mt., 1930 m (6884b). – Nižná Magura Mt., 1525–1615 m (6884b). – Nižná Magura Mt., Račkove plesá tarns, 1500–1590 m (all Horák Acta scient. net. acad. scient. Bohemoslov. 5: 1971) (6884b). – Otrhance Mts., 49°10'49.8"N, 19°47'37.3"E (Duchon 2015 Bio) (6884b). – below Otrhance Mts., 49°10'24.6"N, 19°48'24.1"E (Vyšinský 2015 Bio) (6884b). – below Ostredok Mt., Lanovô, 49°9'47.1"N, 19°47'30.8"E (Pavlišin 2014 Bio) (6884b). – the end of Račkova dolina valley below Klin Mt., 1280 m (Manica Záverečná správa (msc.) Zvolen: 78, 1973) (6884b). – Račkova dolina valley, 1800 – 2130 m (Šomšák & Maláriková Acta Fac. Rer. Natur. Univ. Comen., Bot. XXX: tab. č. 1 v prílohe 2, 1983) (6884b). – Klin Mt., 2005 m, 2060 m, 2115 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6884b). – Gáborova dolina valley below Klin Mt., 1600–1800 m (Švestka 1935 BRNM 00879/40) (6884b). – Gáborova dolina valley, slope of cirque below Bystré sedlo saddle (Dúbravcová Biológia 37 (5): 482–483, 1982) (6884b). – Račkova dolina valley, sheepfarm below Klin Mt. (Školek 1976 Bio) (6884b). – Gáborova dolina valley, cca 1695 m (6884b). – Gáborova dolina valley, 1585 m, 1840 m (6884b). – Račkova dolina valley below mouth of Gáborova dolina valley, 1330 m (6884b). – Nižná Bystrá Mt., 2040 m (all Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6884b). – Nižná Bystrá Mt. (Školek 1976 Bio) (6884b). – ridge of Nižná Bystrá Mt. (Dúbravcová Biológia 37 (5): 482–483, 1982) (6884b). – below Prostredná, Michalova lúka, 49°10'4.1"N, 19°48'57.8"E (Pavlišin 2014 Bio) (6884b). – above Michalova lúka meadow, 49°9'57.6"N, 19°49'3.1"E (Pavlišin 2015 Bio) (6884b). – Račkova dolina valley, below Ježová Mt., 1450–1550 m (Dostál Bibliografia: 122, s. dato) (6884b). – Račkova dolina valley, SW

ridge of Ježová Mt., 1570–1650 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6884b). – Kobylô, 49°8'37.4"N, 19°45'28.1"E (Dupkala 2014 Bio) (6884d). – Račková, 49°8'41.9"N, 19°48'43.8"E (Vnuk 2014 Bio) (6884d). – Blyšť Mt., 1920 m (6885a). – slope near the pathway towards Blyšť Mt. and Bystrá Mt., 1900 m (both Dúbravcová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1974) (6885a). – Blyšť Mt. (Školek 1976 Bio) (6885a). – the spot height Bystrá, 2090 m (Horák Acta scient. net. acad. scient. bohemoslov. 5: 1971) (6885a). – the top of Bystrá Mt., 49°11'30"N, 19°50'28.7"E (Duchoň 2015 Bio) (6885a). – Bystrá Mt., 2150 m (6885a). – slope below the top of Bystrá Mt., 1910–2145 m (6885a). – Bystrá Mt., below the rock wall, 1750–1880 m (6885a). – below Bystrá Mt., 1680 – 1710 m (6885a). – below the ridge Bystrá Mt. – Kotlová Mt., 1950 m (6885a). – couloir below the ridge Bystrá Mt. – Kotlová Mt., 1760 m (all Dúbravcová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1974) (6885a). – Ježová Mt. (6885a). – Bystrá dolina valley (both Školek 1998 Bio) (6885a). – below Bystré plesá tarns, 49°10'53.4"N, 19°50'40.3"E (Kicková 2015 Bio) (6885a). – Bystrá dolina valley, 1600 m (Švestka 1935 BRNM 00878/40; Školek 1986 MOP 7087) (6885a). – Kobyla, 49°10'55.2"N, 19°50'53.5"E (Duchoň 2015 Bio) (6885a). – Bystrá dolina valley, 49°10'34.1"N, 19°50'48.4"E (Duchoň, Kicková 2015 Bio) (6885a). – below Veľká Kamenistá Mt., 49°11'36.9"N, 19°51'50.5"E (Kicková 2015 Bio) (6885a). – Kamenistá dolina valley, Grešovo Mt., 1830–1895 m (6885a). – Kamenistá dolina Mt., sidelong ridge below Grešovo Mt., 1720 m (6885a). – Kamenistá dolina valley, couloir below Grešovo Mt., 1700 m (6885a). – Kamenistá dolina valley, 1500–2180 m (all Šomšák et Maláriková Acta Fac. Rer. Natur. Univ. Comen., Bot. XXX: tab. č. 1 v prílohe 2, 1983) (6885a). – Pyšné sedlo saddle (Dúbravcová 1975 SLO) (6885a). – above Pyšné sedlo saddle, near the pathway towards Veľká Kamenistá Mt., 1810 m (6885a). – couloir near the pathway towards Pyšné sedlo saddle, 1750 m (6885a). – Kamenistá dolina valley, slope above tarns, 1880 m (6885a). – Kamenistá dolina valley, near tarns, 1770–1820 m (6885a). – right side of the pathway towards Pyšné sedlo saddle, 1550 m (6885a). – below the ridge between Veľká Kamenistá Mt. and Grešovo Mt., 2048 m (6885a). – on the ridge between Veľká Kamenistá Mt. and Grešovo Mt., 1905 m (6885a). – slope of Veľká Kamenistá Mt., 1960 m (6885a). – slope below Veľká Kamenistá Mt., 1850 m (6885a). – slope of the couloir below Veľká Kamenistá Mt., 1690 m (6885a). – Kamenistá dolina valley, right side of the brook (all Dúbravcová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1974) (6885a). – Kamenistá dolina valley, 49°11'0.6"N, 19°52'48.1"E (6885a). – Grešovo Mt., 49°11'19.7"N, 19°52'14.6"E (both Kicková 2015 Bio) (6885a). – Kamenistá dolina valley, Kotlová Mt. (Školek 1976, 1998 Bio) (6885a). – Trsteník Mt., 49°9'46.4"N, 19°52'4.9"E (Pirchala 2014 Bio) (6885a). – Kamenistá dolina valley (Školek 1976 Bio) (6885a). – Kamenistá dolina valley, 49°10'4.2"N, 19°53'6.4"E (Vyšinský 2015 Bio) (6885a). – Tichá dolina valley, Grešovo Mt. (Školek 2002 Bio) (6885a). – Krížna dolina valley, 49°10'46.3"N, 19°57'12.7"E (Duchoň 2013 Bio) (6885b). – Malé Krížne Mt., 1520–1600 m (6885b). – Všiváky Mt., 1500–1580 m (6885b). – left slope of Kudrová dolina valley, 1560–1600 m (6885b). – above Kvasničná dolina valley, 1570 m, 1580 m (all Vidličková Biológia 44 (1): 64, 1989) (6885b). – **23b. Vysoké Tatry Mts.:** Červená dolina valley (Šoltés 1999, 2000 Bio) (6786b). – Holica Mt., 49°14'43.7"N, 20°7'9.5"E (Maršalek 2015 Bio) (6786d). – Široká dolina valley (Šoltés 2002 Bio) (6786d). – Genšia šija, 49°14'26"N, 20°7'44"E (Lipták 2015 Bio) (6786d). – Žabia Bielovodská dolina valley (Šeffler & Šefflerová Biológia 44 (1): 48, 1989) (6786d). – Dolina Žabích plies valley, 49°12'31.7"N, 20°5'40.1"E (Duchoň 2015 Bio) (6786d). – slope below Zemky Mt. (1895 m) in Bielovodská dolina valley, 1380 m (Manica Záverečná správa (msc.) Zvolen: 90, 1973) (6786d). – Litvorový žľab couloir (Kyselová 2002 Bio) (6786d). – Javorinská [= Javorová] dolina valley, confluent of Javorinka brook (6786d). – Javorinka brook, forest on the right side of the bridge, cca 1050 m (both Domin Věda přír. 3: 94–96, 1922) (6786d). – Javorová dolina valley, near the road, cca 1100 m (6786d). – Javorová dolina valley, 1680 m (6786d). – Javorová dolina valley, towards the top of Košiar Mt., 1530 m (all not. Futák 1943) (6786d). – Široká Mt. (Domin 1929 PRC) (6786d). – Zelené Javorové pleso tarn, 49°12'24.4"N, 20°8'33.6"E (Sedláková 2015 Bio) (6786d). – Zelená Javorová dolina valley (Šoltés 2002 Bio) (6786d). – Žabia Javorová dolina valley (Šoltés 2002 Bio)

(6786d). – waterfall from Žabia Javorová dolina valley, 49°12'12"N, 20°9'17.2"E (Sedláková 2015 Bio) (6786d). – Bielovodská dolina valley (Nyárády 1908 BP; Sillinger 1925 PR 133379) (6786d-6886b). – Zadné Meďodoly valley, near chata Na Burdeli cabin (Uherčíková 1986 BRA) (6787c). – below the ridge of Jahnenca Mt. (Šoltés 2001 Bio) (6787c). – Belasá veža Mt., 49°13'12.1"N, 20°11'57.6"E (Sedláková 2015 Bio) (6787c). – Kopa brán Mt. (Šoltés 2002 Bio) (6787c). – above Kolové pleso tarn, 49°13'12.9"N, 20°11'32.9"E (Sedláková 2014 Bio) (6787c). – Kolová dolina valley (6787c). – Kolová dolina valley, below Svinka Mt. (both Šoltés 2001 Bio) (6787c). – below Kolový štít Mt., 49°13'3.2"N, 20°11'34.2"E (Sedláková 2014, 2017 Bio) (6787c). – Čierna Javorová dolina valley (Kyselová & Šoltés 2002 Bio) (6787c). – Čierna Javorová dolina valley, below Svinka Mt. (Kyselová 2002 Bio) (6787c). – Kolový štít Mt., 2405 m (6787c). – Stolarczykovo sedlo saddle, 2369 m (6787c). – Snehový štít Mt., 2350 m (all Paclová Zborn. Pr. TANAPu 21: 179, 1979) (6787c). – Suchá dolina (Javorová) valley (Šoltés 2002 Bio) (6787c). – below Ľadové sedlo saddle, 2318 m (Vojtúň 1976 KO 2788; Paclová Zborn. Pr. TANAPu 21: 179, 1979) (6787c). – Ľadová priehyba, 49°12'5"N, 20°11'8.4"E (Sedláková 2015 Bio) (6787c). – Belasá veža Mt. – Jahňací štít Mt. (Šoltés 1999 Bio) (6787c). – Dolina Bielych plies valley, below Jahňací štít Mt. (Šeffler & Šefflerová Biológia 44 (1): 48, 1989) (6787c). – Dolina Bielych plies valley (Šoltés 2002 Bio) (6787c). – Biele plesá tarns, 49°13'17.8"N, 20°13'20.1"E (Sedláková 2013 Bio) (6787c). – below Kežmarské [= Veľké Biele] pleso tarn (Šoltés 2000 Bio) (6787c). – between Plesnivec chalet and Kežmarská chata chalet, below Predné Jatky Mt., 1500 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6787c). – Dolina Kežmarskej Bielej vody valley, near Kežmarská chata chalet, cca 1450 m (Chrtek & Kříša 1969 PRC) (6787c). – Trojklanné [= Trojrohé] pleso tarn – Biele pleso tarn – Kežmarská chata chalet (Kolbek Bull. Slov. Bot. Spoločn. 36 (2): 160, 2014) (6787c). – Trojrohé pleso tarn, 49°13'10.7"N, 20°13'50.5"E (Dítě 2013 Bio) (6787c). – Dolina Zeleného plesa valley, 49°13'16.4"N, 20°13'42.1"E (Šibík 2015 Bio) (6787c). – between Brnčalova chata chalet and Kežmarská chata chalet, 1550 – 1580 m (6787c). – cca 100 m N from Brnčalova chata chalet, 1600 m (6787c). – road between Zelený potok valley and Dolina Bielej vody Kežmarskej valley, 1515 m (all Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6787c). – Červená dolinka valley (Šibík 2018 Bio) (6787c). – below Červená dolinka valley, 49°12'45.7"N, 20°13'12.8"E (Sedláková 2014 Bio) (6787c). – Dolina Zeleného plesa valley, 49°12'37"N, 20°12'59.5"E (Šoltés 2002 Bio; Sedláková 2014 Bio) (6787c). – near Chata pri Zelenom plese chalet, cca 1550 m (Kolbek Bull. Slov. Bot. Spoločn. 36 (2): 160, 2014) (6787c). – Zelené pleso tarn (Nándor 1889 BP 0505713; Simonkai 1890 BP 173658; Filarszky 1903 BP 173623; Degen 1912 BP 714709; Weber 1923 BRA) (6787c). – Zelené pleso tarn, 1600 m (Tuzson 1918 BP 49440) (6787c). – Zelené pleso tarn, 1550 m (Filarszky & Timkó 1915 BP 173575, 187996, 575466, PRC) (6787c). – Dolina Zelený potok valley [= Dolina Zeleného plesa valley], cca 300 m below the chalet, 1500 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6787c). – Dolina Zeleného potoka valley [= Dolina Zeleného plesa], 1390 m, 1400 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab. 4, 1976) (6787c). – Malá Zmrzlá dolina valley, below Malý Pyšný štít Mt. (Šoltés 2000 Bio) (6787c). – mouth of Zmrzlé doliny valleys (6787c). – Veľká Zmrzlá dolina valley, below Baranie rohy Mt. (both Šoltés 2000 Bio) (6787c). – Veľká Zmrzlá dolina valley, cca 1800 m (Margittai 1926 BP 484389) (6787c). – near Čierne pleso tarn, 49°12'30.2"N, 20°13'22.2"E (Sedláková 2014 Bio) (6787c). – Malý Kežmarský štít Mt., 2320 m (6787c). – Kežmarský štít Mt., 2548 m, 2415 m (both Paclová Zborn. Pr. TANAPu 21: 178, 179, 1979) (6787c). – Veľká Svišťovka Mt. (Šoltés 1999, Sedláková 2017 Bio) (6787c). – descend from Veľká Svišťovka Mt. to Zelené pleso tarn (Werner 1956 W 3427). – Malá Studená dolina valley, below Baranie rohy Mt. (Šoltés 2002 Bio) (6787c-6887a). – Kežmarský štít Mt. – Huncovský štít Mt. (Šoltés 1999 Bio) (6787c-6887a). – Huncovská kotlina [= dolina] valley (Šoltés 2001 Bio) (6787c-6887a). – Dolina Kežmarskej Bielej vody valley, 1075 – 1420 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab.4, 1976) (6787d). – between Dolná Folvarská poľana and Horná Folvarská poľana, 1270 m (Šoltés Dipl. práca (msc.), depon. in PrF UK Bratislava, 1969) (6787d). – near Biela voda brook, N from Malá Svišťovka Mt. (Fröhner Preslia 38: 324, 1966) (6787d). – above Šalvejov [= Šalviový]

prameň spring, 1220 m (6787d). – slope opposite to Stežky Mt. (1530 m) in valley of Biely potok brook, 1020 m (both Manica Záverečná správa (msc.) Zvolen: 86, 1973) (6787d). – Kôprová dolina valley (Schidlay 1929 BRA; Filipi 1933 BRNU 252020; Novacký 1940 BRA) (6885b). – Necferka valley, 49°10'30.4" N, 19°59'26.3" E (Šibík 2014 Bio) (6885b). – Škaredý žľab couloir below Kriváň Mt. (Školek 2002 Bio) (6885b). – Vyšná Priehyba Mt., 49°9'31.1"N, 19°59'19"E (Šibík 2015 Bio) (6885b). – Grúnik Mt. below Kriváň Mt., 49°9'25.2"N, 19°58'35.6"E (Sedláková 2015 Bio) (6885b). – Kôprová dolina valley, 1040 m, 1105 m (6885b). – Kôprová dolina valley, W slope of Grúnik Mt., 1455 m (both Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab. 4, 1976) (6885b). – Grúnik Mt., 49°9'1.6"N, 19°58'15.2"E (Celerová 2015 Bio) (6885b). – Kôprové sedlo saddle, 1470 m (Šoltés Dipl. práca (msc.), depon. in PrF UK Bratislava, 1969; Vojtúň 1975 KO 2787) (6885b). – below Kriváň Mt., 49°9'12.4"N, 19°59'55"E (Šibík 2015 Bio) (6885b). – Necferka valley, 1400 m (Švestka 1931 BRNM 00584/32) (6885b-6886a). – Necferka valley (Šoltés 2002 Bio) (6885b-6886a). – Kriváň Mt., 2470 m (Paclová Zborn. Pr. TANAPu 21: 178, 1979) (6885b-6886a). – Kriváň Mt., cca 1900 m (Kmeť 1907 BRA; Hendrych 1947 PR; Brančík 1953 PR; Vojtúň 1965 KO 238) (6885b-6886a). – above Chata kpt. Rašu [= Važecká chata] chalet, towards Štrbské pleso tarn, 1200 m (Šoltés Dipl. práca (msc.), depon. in PrF UK Bratislava, 1969) (6885d). – Hrádok below Tri studničky, 1100 – 1200 m, upper part of the slope (6885d). – Hrádok near Tri studničky, 950 m, N below the saddle (both not. Michalko 1976) (6885d). – near the road towards Podbanské, area of Štrbské pleso tarn (Opold 1973 BRA) (6885d-6886c). – Temné Smrečiny, above tarn, 49°11'47.9"N, 20°1'40.9"E (6886a). – Temné smrečiny valley, 49°11'24"N, 20°1'54.1"E (both Sedláková 2014 Bio) (6886a). – Temnosmrečinová [= Temnosmrečinská] dolina valley, 49°11'41.9"N, 20°1'34.1"E (Šibík 2014 Bio) (6886a). – Nižné Temnosmrečinské pleso tarn (6886a). – Temnosmrečinská dolina valley, between tarns (both Šoltés 2002 Bio) (6886a). – around Vyšné Temnosmrečinské pleso tarn, cca 1800 m (Švestka 1931 BRNM 00579/32) (6886a). – Temnosmrečinová [= Temnosmrečinská] dolina valley (Bělohlávková & Fišerová Folia Geobot. Phytotax. 24 (1): 6, tab.1, 1989) (6886a). – Prostredný chrbát Mt. (6886a). – Hlinská dolina valley, below Nefcerská veža Mt. (both Šoltés 2002 Bio) (6886a). – Hlinská dolina valley, near the brook, 1780 m, 49°10'40.7"N, 20°02'06.2"E (6886a). – Hlinská dolina valley, slope between Malá and Veľká Záhradka, 1890 m, 49°10'32.2"N, 20°2'13.5"E (both Šibík Bull. Slov. Bot. Spoločn. 37 (1): 143, 144, 2015) (6886a). – Hlinská dolina valley, 49°10'36.6"N, 20°1'43.2"E (Sedláková 2015 Bio) (6886a). – Hlinská dolina valley, below Vyšné Kôprovské sedlo (6886a). – Hrubý štít (both Šoltés 2002 Bio) (6886a). – Necferka valley, tarn, 49°10'13.6"N, 20°0'32.2"E (Šibík 2014 Bio) (6886a). – Necferka valley, slopes of Kriváň Mt. and Ostrá Mt. (Šoltés 2002 Bio) (6886a). – ridge of Ostrá veža Mt. (Školek 2000 Bio) (6886a). – on the ridge between Malý Kriváň Mt. and Kriváň Mt. (Odložilíková Krásy Slovenska 34: 341, 1957) (6886a). – Važecká dolina valley, Malý Kriváň Mt. (Školek 2000, 2001 Bio) (6886a). – Važecká dolina valley, 49°9'16.8"N, 20°0'24.7"E (Celerová 2015 Bio) (6886a). – near Vyšné Wahlenbergovo pleso tarn, 49°9'41.3"N, 20°1'26.6"E (6886a). – near Nižné Wahlenbergovo pleso tarn, 49°9'38.3"N, 20°1'28.7"E (6886a). – below Malé Solisko Mt., 49°9'38.3"N, 20°1'38.7"E (6886a). – below Štrbské Solisko Mt., 49°9'28.3"N, 20°1'48.6"E (all Školek 2000 Bio) (6886a). – below Ostrá veža Mt., 49°9'18.4"N, 20°1'21.6"E (Školek 1999, 2000 Bio) (6886a). – Sedielková kopa Mt. (Školek 2001 Bio) (6886a). – Furkotská dolina valley, 49°9'14.7"N, 20°1'44.5"E (Celerová 2014 Bio) (6886a). – Furkotský štít Mt. – Kriváň Mt. – Krátka (Školek 2000 Bio) (6886a). – Furkotský štít Mt., 2396 m (6886a). – Bystré sedlo saddle, 2312 m (both Paclová Zborn. Pr. TANAPu 21: 179, 1979) (6886a). – Bystré sedlo saddle, 49°10'4.8"N, 20°1'46.9"E (Celerová 2015 Bio) (6886a). – Veľké Solisko Mt., 2402 m (Paclová Zborn. Pr. TANAPu 21: 178, 179, 1979) (6886a). – below Capie pleso tarn, 49°9'58.4"N, 20°2'36.7"E (Šoltés 2000 Bio) (6886a). – Mlynická dolina valley, below Štrbský štít Mt., 1650–1900 m (Bothnberger 1921 PR 133393) (6886a). – Štrbský štít Mt. (Hazslinsky s. dato BP 173588; Šoltés 2001 Bio) (6886a). – Kozie plesá tarns, 49°10'0.3"N, 20°2'29"E (6886a). – Kozie pleso tarn, 49°9'45.3"N, 20°2'30.1"E (both Celerová 2014 Bio) (6886a). – peatbog near Nižné Kozie pleso tarn (Šoltés 1999, 2001 Bio) (6886a). – Mlynická dolina valley, below Satan Mt. (Šeffler &

Šeffero*va* Biológia 44 (1): 48, 1989; Šoltés 2001 Bio) (6886a). – E slope of Štrbské Solisko Mt., 49°9'16.4"N, 20°2'18.7"E (Šoltés 1999 Bio) (6886a). – Mlynická dolina valley, 49°9'33.3"N, 20°2'37.5"E (Šibík 2015 Bio) (6886a). – surroundings of the tarn above Skok waterfall, 49°9'10.3"N, 20°2'49.7"E (Šoltés 1999 Bio) (6886a). – Pleso nad Skokom tarn, 49°9'20.9"N, 20°2'48.7"E (Celerová 2014 Bio; Šibík 2015 Bio) (6886a). – Mlynická dolina valley, cca 1800 m (not. Futák 1943) (6886a). – Skok waterfall (Lengyel 1928 BP 277027) (6886a). – near Skok waterfall (Veselý 1937 PRC) (6886a). – below Skok waterfall, 49°9'10.3"N, 20°2'45.7"E (Šoltés 2001 Bio) (6886a). – ridge of Patria Mt. – Satan Mt., 49°9'43.4"N, 20°3'23.6"E (Šoltés 2000 Bio) (6886a). – Patria Mt., 49°9'12.1"N, 20°3'28.6"E (Celerová 2014 Bio) (6886a). – Mlynická dolina valley, 1560 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6886a). – Východný Mengusovský štít Mt., 2350 m (6886a). – Prostredný Mengusovský štít Mt., 2350 m (both Paclová Zborn. Pr. TANAPu 21: 179, 1979) (6886a). – Vyšné Kôprovské sedlo saddle – Čubrina Mt. – Mengusovský štít Mt. – Mengusovský Volovec Mt. (Šoltés 2001 Bio) (6886a). – Kôprovský štít Mt. – Prostredný chrbát Mt. (Šoltés 2002 Bio) (6886a). – Kôprovský štít Mt., 2320–2363 m (Paclová Zborn. Pr. TANAPu 21: 178, 1979) (6886a). – Vyšné Kôprovské sedlo saddle, 49°10'38.3"N, 20°3'8.5"E (Sedláková 2015 Bio) (6886a). – below Hlinská veža Mt., 49°10'18.3"N, 20°3'13.7"E (6886a). – Veľké Hincovo pleso tarn, 49°10'38.4"N, 20°3'53.6"E (both Šoltés 2002 Bio) (6886a). – Veľké Hincovo pleso tarn, cca 1965 m (Pénzes 1932 BP 363863) (6886a). – Malé Hincovo pleso tarn, cca 1942 m (Hanasiewicz 1932 BP 463944) (6886a). – Mengusovská dolina valley, near Hincov potok brook, 1980 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6886a). – below Mengusovský Volovec Mt., 49°10'18.3"N, 20°3'55.6"E (Šoltés 2001 Bio) (6886a). – Mengusovská dolina valley, 49°10'38.5"N, 20°3'47.2"E (Celerová 2015 Bio) (6886a). – near Malé Žabie pleso tarn (6886a). – below Žabie plesá tarns, 49°10'15.4"N, 20°4'36.6"E (both Šoltés 2002 Bio) (6886a). – below Žabie plesá tarns, 49°10'19.3"N, 20°4'20.9"E (Sedláková 2015 Bio) (6886a). – Mengusovská dolina valley, 49°10'3.4"N, 20°4'15.2"E (Celerová 2015 Bio) (6886a). – Mengusovská dolina valley below Kôpky Mt. (Šeffe*r* & Šeffe*r*ová Biológia 44 (1): 48, 1989) (6886a). – above crossroads towards Rysy Mt., 49°9'58.1"N, 20°4'21.7"E (Sedláková 2015 Bio) (6886a). – Kôpky Mt., 2350 m (Paclová Zborn. Pr. TANAPu 21: 178, 179, 1979) (6886a). – Mengusovská dolina valley, Hincov potok brook, 1640m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6886a). – Popradské pleso tarn, cca 1500–1700 m (Filarszky 1899 BP 173604; Tuszon 1906 BP 119237; Grodkovszky 1933 BRA; Chrtek & Deylová 1979 PR; not. Dudáš 2019) (6886a). – above Popradské pleso tarn, cca 1500–1550 m (not. Futák 1943) (6886a). – Český [= Ťažký] štít Mt. – Kôpky Mt. (Šoltés 1999 Bio) (6886a-b). – Furkotská dolina valley (Filarszky 1912 BP 173659; Margittai 1915 PRC; Weber 1923 PR 235771; Domin 1925 PRC; Polívka 1938 PR; s. coll. 1970 BRA; Chrtek & Deylová 1979 PR) (6886a-c). – Dolina Suchej vody valley (Školek 2001, Sedláková 2017 Bio) (6886a-c). – Mengusovská dolina valley (Žertová 1953 PR 534739) (6886a-c). – below Žabia kopa Mt. (Šoltés 2000 Bio) (6886b). – Žabia Bielovodská dolina valley, below Malý Žabí štít Mt. (6886b). – Žabia Bielovodská dolina valley, below Mlynár Mt. (both Šoltés 2002 Bio) (6886b). – Bielovodská dolina valley, base of Mlynár Mt. (not. Futák 1957) (6886b). – Rovienky valley, cca 1400 m (J. Dostál 1955 PR 363026) (6886b). – Bielovodská dolina valley, below České [= Ťažké] pleso tarn (Kláštterský 1925 PR) (6886b). – above Ťažké pleso tarn, 49°11'11"N, 20°6'15.1"E (Sedláková 2015 Bio) (6886b). – Česká [= Ťažká] dolina valley, near Zmrzlé pleso tarn (6886b). – Česká [= Ťažká] dolina valley, below Rysy Mt. (6886b). – Česká [= Ťažká] dolina valley, below Kačacia veža (all Šoltés 2002 Bio) (6886b). – Ťažká dolina valley, 49°11'24.4"N, 20°6'27.9"E (Šibík 2015 Bio) (6886b). – Ťažká dolina valley, 49°10'53.2"N, 20°6'7.7"E (Sedláková 2013 Bio) (6886b). – Kačacia dolina valley (6886b). – Kačacia dolina valley, below Snežná kopa Mt. (both Šoltés 2000 Bio) (6886b). – Kačacia dolina valley, above Kačacie plesko tarn (Šeffe*r* & Šeffe*r*ová Biológia 44 (1): 48, 1989) (6886b). – Kačacia dolina valley, around small tarn (not. Paclová 1966) (6886b). – Litvorová dolina valley (Šoltés 2000 Bio) (6886b). – Rysy Mt. (Šoltés 2002 Bio) (6886b). – Nižné Rysy [= Malé Rysy] Mt., 2415 m (6886b). – Český štít Mt. [= Ťažký štít Mt.], 2497 m (both Paclová Zborn. Pr. TANAPu 21: 178, 179, 1979) (6886b). –

Vysoká Mt., 2550 m (Pačlová 1958 TNP) (6886b). – Vysoká Mt., ridge between the summits, 2545 m (6886b). – Dračí štít Mt., 2345 m (both Pačlová Zborn. Pr. TANAPu 21: 179, 1979) (6886b). – Dračia dolina valley, below Dračie sedlo saddle (Šoltés 2002 Bio) (6886b). – saddle below Ostrva Mt., 49°9'3.7"N, 20°5'33.7"E (Celerová 2015 Bio) (6886b). – Zlomisková dolina valley, below Tupá Mt. (Šoltés 2002 Bio) (6886b). – Zlomisková dolina valley, near Popradské pleso tarn, 1560–1600 m (not. Futák 1943) (6886a). – Zlomisková roveň (Šoltés 2001 Bio) (6886b). – above Zlomisková roveň (Šoltés 2002 Bio) (6886b). – Zlomisková dolina valley, 49°9'51.1"N, 20°6'14.1"E (Celerová 2015 Bio) (6886b). – around Ľadové pleso tarn, cca 1920–1960 m (not. Futák 1943) (6886b). – Ľadové pleso tarn (Šoltés 2002 Bio) (6886b). – Dolina Zlomisk valley [= Zlomisková dolina valley], near Ľadový potok brook (Šeffer & Šefferová Biológia 44 (1): 48, 1989) (6886b). – Ľadové pleso tarn, 1935 m (Hanasiwick 1932 BP 363862) (6886b). – Rumanova dolina valley (Šoltés 2002 Bio) (6886b). – Východný štít Mt. above Železná brána saddle, 2325 m (6886b). – Popradský Ľadový štít Mt., NW ridge, 2318 m (both Pačlová Zborn. Pr. TANAPu 21: 178, 179, 1979) (6886b). – Lúčne sedlo saddle (not. Futák 1962) (6886b). – Lúčne sedlo saddle, 49°9'35.4"N, 20°6'20.2"E (Šibík 2014 Bio) (6886b). – Batizovská dolina valley (6886b). – Batizovská dolina valley, slopes of Končistá Mt. (both Šoltés 2001 Bio) (6886b). – E slopes of Končistá Mt. (6886b). – Batizovská dolina valley, cirque below Končistá Mt., 2020 m (6886b). – cirque below Kostolík Mt. (6886b). – Batizovská dolina valley, below Kostolík Mt., 2030 m (all Háberová & Šoltésová Biológia 44 (5): 56–444, 1989) (6886b). – Batizovská dolina valley, cirque, cca 2000 m (6886b). – Batizovská dolina valley, above the tarn near brook, 1890 m (both not. Futák 1962) (6886b). – Batizovská dolina valley, below Končistá Mt., 1882 m, 1900 m (6886b). – slopes above Batizovské pleso tarn, 1890 m (6886b). – cirque of Dromedárov chrbát Mt., 1880 m (all Háberová & Šoltésová Biológia 44 (5): 442, 444, 448, 1989) (6886b). – base of Dromedár Mt., near Batizovské pleso tarn (Háberová & Šoltésová Biológia 44 (1): 56, 1989) (6886b). – Dromedárov chrbát Mt., 2470 m (6886b). – below Čertov chrbát Mt., 2430 m (both Pačlová Zborn. Pr. TANAPu 21: 178, 1979) (6886b). – Gerlach Mt. (Šoltés 1999 Bio) (6886b). – Gerlach Mt., S slope (Šoltés 2001 Bio) (6886b). – Gerlachovský štít Mt., 2500 m (Domin Tatranská květena: 6, 1928) (6886b). – Gerlachovský štít Mt., cca 2200 m (Degen 1905 BP 214456) (6886b). – Kotlový štít Mt., 2565 m (Pačlová Zborn. Pr. TANAPu 21: 178, 1979) (6886b). – below the walls of Kotlový štít Mt. (Háberová & Šoltésová Biológia 44 (1): 58, 1989) (6886b). – Kvetnicová veža Mt., 2360 m (Pačlová Zborn. Pr. TANAPu 21: 178, 1979) (6886b). – Kvetnicová veža Mt. – S from Sliezsky dom mountain hotel, 1690 m (not. Michalko 1972) (6886b). – Velická dolina valley (Pačlová 1954 BRA) (6886b). – Velická dolina valley, upper part (Šeffer & Šefferová Biológia 44 (1): 48, 1989) (6886b). – Velické plieska tarns, 49°10'22.9"N, 20°8'9.2"E (Celerová 2015 Bio) (6886b). – Poľský hrebeň saddle (Entz 1867 BP 82022) (6886b). – below Poľský hrebeň saddle (Šoltés 2002 Bio) (6886b). – Východná Vysoká Mt., 2340 m (Pačlová Zborn. Pr. TANAPu 21: 178, 179, 1979) (6886b). – Východná Vysoká Mt., 49°10'20.8"N, 20°8'46.4"E (Sedláková 2015, 2018 Bio) (6886b). – Velická dolina valley, Guľatý kopec Mt. (Šoltés 2000 Bio) (6886b). – below Guľatý kopec Mt. (6886b). – Velická dolina valley, below the couloir of Bradavica Mt. (both Šeffer & Šefferová Biológia 44 (1): 48, 1989) (6886b). – in the middle of Velická dolina valley, 49°10'4.9"N, 20°8'56.9"E (Šibík 2015 Bio) (6886b). – Kvetnica (Czakó 1887 BP 173614; Domin 1919 PRC; Krajina 1925 PRC) (6886b). – Kvetnica, 49°9'58.3"N, 20°9'3.3"E (Šoltés 2001 Bio; Šibík 2014 Bio; Sedláková 2015 Bio) (6886b). – above Velické pleso tarn, mountainside of Gerlachovský štít Mt., 1960 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974) (6886b). – Velická dolina valley, Dlhé pleso tarn (not. Futák 1962, Hazslinszky s. dato BP 173583) (6886b). – Velická dolina valley, below Dlhé pleso tarn (6886b). – Velická dolina valley, mountainside of Kvetnicová veža Mt. (both Šeffer & Šefferová Biológia 44 (1): 48, 1989) (6886b). – Kvetnica, 1900 m (not. Michalko 1971) (6886b). – Kvetnica below Gerlach Mt., 1825 m (not. Michalko 1970) (6886b). – Velická dolina valley, below Granátová veža Mt. (Šoltés 2001, 2002 Bio) (6886b). – near the waterfall above Velické pleso tarn, foot of rocky wall, 1850 m (not. Michalko 1970) (6886b). – below Velická stena (6886b). – Velické pleso tarn towards Večný dážď (both Šoltés 2001 Bio) (6886b). – Velická dolina valley, cca 1700 m

(Kováčsová 1962 BP 0503966) (6886d). – N from Velické pleso tarn, 49°9'32.18"N, 20°9'21.25"E (not. Dudáš 2016) (6886b). – 200 m below Sliezsky dom mountain hotel, near the brook, 1680 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974) (6886b). – near the brook from Pusté pleso tarn to Zbojnícke plesá tarns, below Svišťový štít Mt. (Šimko Krásy Slovenska 34: 339, 1957) (6886b). – Svišťový štít Mt., 49°10'43.5"N, 20°9'13.2"E (6886b). – Pusté pleso tarn, 49°10'54"N, 20°9'12.7"E (6886b). – Sesterské plesá tarns, 49°10'49.9 N, 20°9'37.8"E (all Celerová 2014 Bio) (6886b). – above Zbojnícke plesá tarns (6886b). – near Vyšné Zbojnícke pleso tarn (6886b). – Bradavica Mt. – Granátová veža Mt. (all Šoltés 2001 Bio) (6886b). – Granátová stena, 49°9'49.8"N, 20°9'40.4"E (Celerová 2015 Bio) (6886b). – Štôlska dolina valley, slope of Tupá Mt. (Šoltés 2001 Bio) (6886b-d). – Zadná Javorová dolina valley (Šoltés 2002 Bio) (6886b-6887a). – near Rakytovské plesá tarns, 49°7'39.7"N, 20°0'59.2"E (Figura 2015 Bio) (6886c). – Pod Rakytovec, 49°7'7.5"N, 20°1'53.1"E (Lipták 2013, 2015 Bio) (6886c). – Ostrá Mt., 49°8'36.2"N, 20°1'13.2"E (Lipták 2015 Bio) (6886c). – below Predné Solisko Mt., 49°8'58.4"N, 20°1'43.7"E (Škollec 2000 Bio) (6886c). – Furkotská dolina valley, 49°8'41.3"N, 20°1'42.3"E (Sedláková 2015 Bio) (6886c). – Škutnastá poľana, 49°8'24.7"N, 20°1'58.3"E (Maršalek 2015 Bio) (6886c). – Furkotská dolina valley, cca 1600 m (Margittai 1915 BP 484390) (6886c). – Furkotská dolina valley, cca 1500 m (not. Futák 1943) (6886c). – Furkota valley, 49°8'2.9"N, 20°2'39.4"E (Celerová 2014 Bio) (6886c). – below Furkota, 49°7'54.6"N, 20°2'7.8"E (Figura 2013 Bio) (6886c). – Patria Mt., SW slope, 49°8'58.4"N, 20°2'23.7"E (Šoltés 2000 Bio) (6886c). – above Štrbské pleso tarn in Mlynická dolina valley (Weber 1923 PR 235770) (6886c). – Patria Mt., 49°8'45.1"N, 20°4'6.5"E (6886c). – Trigan, 49°8'44.6"N, 20°4'8.4"E (both Maršalek 2015 Bio) (6886c). – Štrbské pleso tarn, 1700 m (J. Dostál, Novák 1936 PRC 13593) (6886c). – Štrbské pleso tarn, 1550 m (Širjaev 1925 BRNU 059002) (6886c). – Štrbské pleso tarn (Borbás 1890 BP 187762; Bäumler 1901 BP 173603; Černý 1924 BRA; Lengyel 1928 BP 277026; Degen 1928 BP 438391; Veselý 1937 PRC) (6886c). – Štrbské pleso tarn, 49°7'19.1"N, 20°3'53.6"E (6886c). – Slepé pleso tarn, 49°7'32.1"N, 20°3'13.4"E (6886c). – Rašelinisko peatbog, 49°7'23.9"N, 20°3'46.9"E (all Dítě 2013 Bio) (6886c). – Nové Štrbské pleso tarn, 1300 m (Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. XXVII: 32, 1979) (6886c). – Popradské pleso tarn, 49°8'54.8"N, 20°4'16.9"E (Lipták 2015 Bio) (6886c). – middle part of Mengusovská dolina valley, 1480 m (6886c). – Mengusovská dolina valley, 1450 m (6886c). – Mengusovská dolina valley, lower part of the valley, 1325 m (all Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab. 4, 1976) (6886c). – short ridge S from Popradské pleso tarn, below Ostrva Mt. in Mengusovská dolina valley, 1500 m (Manica Záverečná správa (msc.) Zvolen: 80, 1973) (6886c). – SE slope in Mengusovská dolina valley below Štrbské pleso tarn, 1260 m (Manica Záverečná správa (msc.) Zvolen: 51, 1973) (6886c). – below Lúčne sedlo saddle, 49°8'53.9"N, 20°6'32.3"E (Šibík 2014 Bio) (6886d). – Štôlska dolina valley, 1920 m (not. Futák 1962) (6886d). – peatbog near Vyšné Hágy (not. Futák 1954) (6886d). – ridge between Velická dolina valley and Batizovská dolina valley, above Tatranská Polianka, 1520 m (Manica Záverečná správa (msc.) Zvolen: 81, 1973) (6886d). – above Partizánska, 49°8'21.9"N, 20°8'25.7"E (Maršalek 2015 Bio) (6886d). – below Nová Polianka (Šomšák 1970 SLO) (6886d). – Nová Polianka, SW from the spot height 1026,6, 1040 m (6886d). – Nová Polianka „Mraznica“, E from the spot height 970, 950 m (both Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. XXVII: 27, 1979) (6886d). – Žabie Javorové pleso tarn (Hazslinszky s. dato BP 173589) (6887a). – Ľadový štít Mt., 2605 m (Pačlová Acta Fac. Rer. Natur. Univ. Comen. Bot. 19: 269, 1971; Zborn. Pr. TANAPu 21: 178, 1979) (6887a). – Zadný Ľadový štít Mt., 2350 m (6887a). – Malý Ľadový štít Mt., SE ridge, 2440 m (6887a). – Sedielko saddle above Kotol Mt., cca 2440 m (all Pačlová Zborn. Pr. TANAPu 21: 178, 1979) (6887a). – sedlo Sedielko saddle (Futák 1946 SLO) (6887a). – Javorový štít Mt., 2405 m (6887a). – Ostrý štít Mt., 2355 m (6887a). – Široká veža Mt., 2440 m (all Pačlová Zborn. Pr. TANAPu 21: 178, 1979) (6887a). – Javorový štít Mt. – Prostredný hrebeň Mt. (Šoltés 2001 Bio) (6887a). – Studená dolina valley (Haynald 1866 BP 439089; Filarszky 1889 BP 0505725; 1902 BP 173605; Bernátsky 1897 BP 173619; Haszslinszky s. dato BP 173579) (6887a). – Studená dolina valley, 1300–1400 m (Sillinger & Scheffer Feddes Repert. XXXI: 351, 785,

1933) (6887a). – Studená dolina valley, 1300 m (Pax 1903 BP 173647; Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab. 4, 1976) (6887a). – Veľká Studená dolina valley (Renner 1872 BP 35649; Kováts 1970 BP 484395) (6887a). – Veľká Studená dolina valley, below Ostrý štít Mt. (Šoltés 2001 Bio) (6887a). – Sivé pleso tarn, 49°11'7.2"N, 20°10'34.2"E (Celerová 2014 Bio) (6887a). – Zbojnická chata chalet, 49°10'36.6"N, 20°10'4.5"E (Celerová 2015 Bio) (6887a). – Veľká Studená dolina valley, above Dlhé pleso tarn (Šoltés 2001 Bio) (6887a). – Dlhé pleso tarn, 49°10'35.2"N, 20°10'3.3"E (Celerová 2014, Šibík 2018 Bio) (6887a). – Varešková kotlina, 49°10'29,5"N 20°10'3,8"E (Sedláková 2015, 2018 Bio) (6887a). – near Vareškovo pleso tarn (6887a). – Veľká Studená dolina valley, above Studené pleso tarn (both Šoltés 2001 Bio) (6887a). – Veľká Studená dolina valley, 49°10'29.4"N, 20°10'38.7"E (Šibík 2015 Bio) (6887a). – Veľká Studená dolina valley, 49°10'24.2"N, 20°11'57"E (Lipták 2015 Bio) (6887a). – Veľká Studená dolina valley, bottom of Slavkovský štít Mt. (Šoltés 2001 Bio) (6887a). – Veľká Studená dolina valley, 1460 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab. 4, 1976) (6887a). – Veľká Studená dolina valley, slope in the valley, 1470 m (6887a). – Veľká Studená dolina valley, on the left side towards Zbojnická chata chalet, 1420 m (both Šoltés Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6887a). – Malá Studená dolina valley, below Malý Ľadový štít Mt. (Šoltés 2002 Bio) (6887a). – Horné Spišské pleso tarn, 49°11'39.5"N, 20°11'54.4"E (6887a). – Päť Spišských plies tarns, 49°11'44.2"N, 20°12'8.3"E (both Šibík 2015 Bio) (6887a). – Päť Spišských plies tarns, cca 2100 m (Sztehlo 1876 BP 173584; Horváth 1887 BP 173595; Simonkai 1907 BP 173652; Pax 1910 BP 173646; Szurák 1912 BP 86206; Nyárády 1924 POP; Šoltés 2002 Bio) (6887a). – Téryho chata chalet, 49°11'24.8"N, 20°11'59.2"E (Šibík 2015 Bio) (6887a). – below Žltá stena Mt., 49°11'16.7"N, 20°11'46.7"E (Šoltés 2002 Bio; Sedláková 2015 Bio) (6887a). – Malá Studená dolina valley, 49°10'52.3"N, 20°12'51.5"E (Šibík 2015 Bio) (6887a). – near Zamkovského chata chalet (Soják 1955 PR 562148) (6887a). – the end of Slavkovská dolina valley (6887a). – Slavkovská dolina valley (both Šoltés 2001 Bio) (6887a). – Slavkovská dolina valley, 49°9'55.7"N, 20°10'11.9"E (Celerová 2015 Bio) (6887a). – Slavkovský štít Mt. (Šoltés 2002, Šibík 2017 Bio) (6887a). – Slavkovský štít Mt., 2330 – 2405 m (Pačlová Zborn. Pr. TANAPu 21: 178, 179, 1979) (6887a). – Slavkovský štít Mt., S slope (Šoltés 2001 Bio) (6887a). – Slavkovský štít Mt., 49°9'51.4"N, 20°11'58.6"E (Celerová 2015 Bio) (6887a). – slope of Slavkovský štít Mt., 1650 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974) (6887a). – above the tourist pathway below Slavkovský štít Mt., cca 300 m W from Hrebienok, 1280 m (Manica Záverečná správa (msc.) Zvolen: 87, 1973) (6887a). – between Hrebienok and Reinerova chata cabin, cca 1300 m (Boros 1940 BP 403934) (6887a). – Christlová, 49°9'40.8"N, 20°14'22.1"E (Kicková 2015 Bio) (6887a). – Ľadový štít Mt. – Lomnický štít Mt. (Šoltés 2001 Bio) (6887a). – Lomnický štít Mt., below the top (Borbás 1902 BP 187765) (6887a). – Lomnický štít Mt., 2465 m (6887a). – Lomnický štít Mt., 2360 m (both Pačlová Zborn. Pr. TANAPu 21: 178, 1979) (6887a). – Lomnický štít Mt., cca 1700 m (Lengyel 1940 BP 277028) (6887a). – Lievikový kotoľ, 49°11'34.6"N, 20°13'25"E (Šibík 2015 Bio) (6887a). – Lomnické sedlo saddle, 49°11'26.9"N, 20°13'7.4"E (Šoltés 2001 Bio, Šibík 2015, 2017 Bio) (6887a). – Lomnický chrbát ridge (Bothár 1855 NI) (6887a). – above Skalnatá kotlina, 49°11'23.5"N, 20°13'18.8"E (Šibík 2015, 2017 Bio) (6887a). – Francúzsky žľab, 49°11'7.9"N, 20°13'31.9"E (Šibík 2015 Bio) (6887a). – above Skalnaté pleso tarn (Šoltés 2001 Bio) (6887a). – Skalnaté pleso tarn, cca 1800 m (J. Dostál 1947 PRC; Dvořák 1947 BRNU 572922) (6887a). – Skalnaté pleso tarn, 49°11'20.2"N, 20°13'37"E (Šibík 2015, 2017 Bio) (6887a). – below Skalnaté pleso tarn, near Skalnatý potok brook, 1550 m (6887a). – tourist pathway Skalnaté pleso tarn – Štart, upper forest limit, 1470 m (6887a). – near tourist pathway Skalnaté pleso tarn – Štart, 1480–1500 m (all Šoltés Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6887a). – cca 1 km from „Štart“ towards Skalnaté pleso tarn, 1155 m (Šoltés Dipl. práca (msc.) , depon. in PrF UK Bratislava, 1969) (6887a). – Malá Svišťovka Mt., 1380 m (6887b). – Dolina Kežmarskej Bielej vody valley, NE slope of Malá Svišťovka Mt., 1370 m (both Šoltés Dipl. práca (msc.) , depon. in PrF UK Bratislava, 1969) (6887b). – Malá Svišťovka Mt., 1155 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab. 4, 1976) (6887b). – Malá Svišťovka Mt., cca 200 m from the spot height 1560, 1550

m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, 1974) (6887b). – below Malá Svišťovka Mt., 1245 m (Šomšák & Kubiček Biológia 34 (7): 575, 1979) (6887b). – Tatranská Lomnica, Tri jazierka (6887b). – Tatranská Lesná, cca 200 m N from the station (both Neuhäuslová–Novotná & Neuhäusl Preslia 41 (1): 87, 89, 1969) (6887b). – Tatranské Matliare (Votavová 1969 SLO) (6887b). – Tatranské Matliare, E from the spot height 832,4, 820 m (Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. XXVII: 27, 1979) (6887b). – Velická dolina valley, 1260 m (not. Michalko 1971) (6887c). – Starý Smokovec (Borbás 1890 BP 187763; Perlaky 1907 BP 54978; Filarszky & Moesz 1909 BP 173594; Vajda 1914 BP 280734) (6887c). – cca 300 m above the lower funicular station in Starý Smokovec, 1040 m (Manica Záverečná správa (msc.) Zvolen: 88, 1973) (6887c). – Tatranská Lesná, NW from the spot height 930,9 (6887d). – cca 200 m S from Tatranská Lesná (both Neuhäuslová–Novotná & Neuhäusl Preslia 41 (1): 93, 1969) (6887d). – **23c. Belianske Tatry Mts.:** Kýčera Mt., 49°16'21.3"N, 20°9'48.5"E (Lipták 2015 Bio) (6786b). – below Kôň, 49°15'32.4"N, 20°9'35.9"E (Maršalek 2015 Bio) (6786b). – Príslopok, 49°16'28.3"N, 20°12'2.4"E (Lipták 2015 Bio) (6787a). – rocky ridge of Muráň Mt., N slope (Domin Tatranská květena: 14, 1928) (6787a). – Muráň Mt., N slope (6787a). – between Muráň Mt. and Nový Mt., above cca 1100 m (both Domin Věda přír. 3: 98, 165, 1922) (6787a). – valley between Muráň Mt. and Nový Mt., 49°15'11.6"N, 20°10'49.9"E (Sedláková 2014 Bio) (6787a). – between Nový Mt. and Havran Mt., below the saddle (Domin Tatranská květena: 18, 1928) (6787a). – Monkova dolina valley, near Ždiar (not. Futák 1943) (6787a). – Monkova dolina valley, cca 1200 m (Hajdúk 1969 BRA) (6787a). – Babia dolina valley (not. Futák 1951) (6787b). – Ožielec Mt. (1045 m) - below Tokáreň, below Holý vrch Mt., 1060–1220 m (6787b). – Holý vrch Mt., 1230 m (both Domin Carpatica 2b: 4–6, 1940) (6787b). – Tatranská Javorina, 49°14'50.5"N, 20°10'58.6"E (Šibík 2014 Bio) (6787c). – Tatranská Javorina, Medzisteny, 1130 m (Mikoláš 2009 KO 33884, W 11952) (6787c). – Nový Mt., 49°14'59.8"N, 20°11'15.1"E (Sedláková 2014 Bio) (6787c). – Havran Mt. (Nábělek 1936 BRA) (6787c). – Havran Mt., around the top (Domin Věda přír. 6: 258–259, 1925) (6787c). – on the top and on the top ridge of Havran Mt., 2140–2154 m (Domin Naše Tatry: 130, 1931) (6787c). – Havran Mt., 2151 m (Hayek Pflanzendecke Österr.–Ung.: 400, 1918) (6787c). – basin between Ždiarska Vidla Mt. and Hlúpy vrch Mt. (Domin Věda přír. 7: 101, 1926; Naše Tatry: 106, 1931) (6787c). – Široké sedlo saddle, 49°14'14.6"N, 20°12'48.8"E (Sedláková 2013 Bio) (6787c). – Malý Čosek, 49°14'56.3"N, 20°14'13.8"E (Lipták 2015 Bio) (6787c). – Veľký Podkošiar Mt., cca 1500 m (not. Futák 1946) (6787c). – Stredné Jatky, 49°14'8.1"N, 20°14'42.5"E (Šibík 2014 Bio) (6787c). – Kopské sedlo saddle (Šmarda Biol. práce 2 (8): 39, 1956) (6787c). – Kopské sedlo saddle, 49°13'44.9"N, 20°13'11.9"E (Sedláková 2013; Šibík 2014 Bio; Šibík 2018 Bio) (6787c). – Predné Meďodoly valley, 49°14'1.1"N, 20°14'13.8"E (Celerová 2015 Bio) (6787c). – above Kežmarská chata chalet near tourist pathway towards Kopské sedlo saddle, 1630–1690 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 2, tab. 3, 1974) (6787c). – Rendy Mt. (Domin Rozpr. 2. Tř. čes. Akad. 34 (19): 8, 1930) (6787c). – Tatranská Kotlina, below Tokáreň, 970 m (Šomšák Biol. práce 32 (4): 54, tab. 4, 1986) (6787d). – Rakúska poľana, 49°13'41.4"N, 20°15'35.8"E (Celerová 2015 Bio) (6787d). – Bujačí vrch Mt. (Smejkal 1949 BP 211016; Vytouš 1959 PR 518517; Hadač & Šmarda Rastl. Kotl. Siedmich Pram.: 112, 1960) (6787d). – Bujačí vrch Mt., NW slope (6787d). – NE from the top of Bujačí vrch Mt., 1800 m (6787d). – Bujačí vrch Mt., S slope, cca 1920 m (all Šmarda Biol. práce 2 (8): 20–33, 1956) (6787d). – Bujačí Mt., S, 49°13'48.9"N, 20°15'43.6"E (6787d). – Bujačí Mt., N, 49°13'56.1"N, 20°16'1.2"E (6787d). – Ovčie Komíny, 49°13'45.5"N, 20°16'14"E (6787d). – Skalné vráta Mt., 49°13'52.6"N, 20°16'26.7"E (all Šibík 2014 Bio) (6787d). – Rakúsky chrbát ridge, cca 1450 m (Šoltés Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIV: tab. 3, tab. 4, 1976) (6787d). – Skalné vráta Mt. (Filarszky 1900 BP 173606; Boros 1933 BP 463943; Baksay 1956 BP 211466; Hadač & Šmarda Rastl. Kotl. Siedmich Pram.: 112, 1960) (6787d). – Skalné vráta Mt., 1620 m (Šoltésová Acta Fac. Rer. Natur. Univ. Comen. 23: tab. 3, 1974) (6787d). – Skalné Vráta Mt., below the rock wall on NE slope, 1570 m and lower (Domin Věda přír. 7: 166, 1926) (6787d). – near Plesnivec chalet (Hadač & Šmarda Rastl. Kotl. Siedmich Pram.: 112, 1960) (6787d). – below Plesnivec chalet (Grebensčíkov

1951 SLO) (6787d). – Faixová Mt., above 1450 m (Domin Rozpr. 2. Tř. čes. Akad. 34 (19): 13, 1925) (6787d). – Dolina Siedmich prameňov valley (Vytouš 1959 PR 518523) (6787d). – Dolina Siedmich prameňov valley, 1130–1250 m (Hadač Biológia 20: 594–597, 1965) (6787d). – around Hlboký potok brook (6787d). – Poniklecový hrebienok ridge (both Hadač & Šmarda Rastl. Kotl. Siedmich Pram.: 112, 1960) (6787d). – Tatranská Kotlina (Vraný 1887 BRA) (6787d). – **24. Pieniny Mts.:** Strážňany, around the spot height Vysoké skalky (1050) (Mártonfi (ed.) Flóra okr. St. Lubovňa, p. 60, 1992) (6689a).

(*Intracarpaticum*) **26a. Liptovská kotlina Basin:** Podbanské (Svobodová 1965 BRNU 619042) (6885c). – Račková – Machy, 49°7'52.8"N, 19°53'43.2"E (Pirchala 2013, 2015 Bio) (6885c). – Liptovská Kokava, Podbanské, „Machy“, W from the spot height 938,3, 910 m (Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. XXVII: 27, 1979) (6885c). – Liptovská Kokava, meadows along road towards nature reserve (Urbanová 1996 MOP 6713) (6885c). – Machy, Nad Zubercom (Šustr 2018 Bio). – Račková – Dlhá, 49°7'5.7"N, 19°52'24.9"E (Vyšinský 2013, 2015 Bio) (6885c). – Kokavské Hrdovo, 49°7'16.7"N, 19°53'36.5"E (6885c). – Slepý kút, 49°7'6.7"N, 19°53'23.9"E (6885c). – Jochova, 49°7'0.6"N, 19°53'11.6"E (all Pavlišin 2013, 2015 Bio) (6885c). – Kútovo, 49°6'35.5"N, 19°53'43.2"E (Vyšinský 2013 Bio) (6885c). – Demänová (Jílek 1929 PRC) (6983c-d). – **26b. Spišské kotliny Basins:** Batizovce, S from the spot height „Kahúl“ (936,6), 900 m (Šomšák Acta Fac. Rer. Natur. Univ. Comen. Bot. XXVII: 27, 1979) (6987a).

(*Beschidicum occidentale*) **28. Západné Beskydy Mts.:** Polom, 49°30'30.1"N, 19°14'47"E (Vyšinský 2013, 2015 Bio) (6481c). – Malý Polom Mt. (Urbanová 1990 ZAM 5099) (6477d). – Spálený Grúnik Mt., 49°30'2"N, 19°15'18.3"E (Špulerová 2013 Bio) (6481d). – Spálený grúnik Mt. – Novoťská hoľa Mt., 49°30'28"N, 19°15'24.3"E (6481d). – Spálený grúnik Mt., 49°30'20.6"N, 19°15'30.8"E (both Pirchala 2013, 2015 Bio) (6481d). – Grúnik Mt., 49°30'4.2"N, 19°15'50.1"E (Pavlišin 2013, 2015 Bio) (6481d). – Mútne – below Pilsko Mt., above Tajch, 49°31'47.4"N, 19°18'15.6"E (Pavlišin 2013 Bio) (6481d). – Pilsko Mt. (Májovský 1966 SLO; Šibík 2017 Bio) (6481d). – Pilsko Mt., cca 1090 m (not. Futák 1964) (6481d). – Mútne, 49°32'4.4"N, 19°19'4.9"E (Špulerová 2014, Šibík 2017 Bio) (6481d). – Pilsko Mt., 49°31'43.5"N, 19°19'16.4"E (Vyšinský 2013, Šibík & Špulerová 2014 Bio) (6481d). – Tisovnica peatbog, 748 m (Migra Oravské múzeum: 58, 1984) (6482a). – Polhora „Tisovnica“, above „Beskyd“ lodge (not. Futák 1964) (6482a). – Malá Babia hora Mt., on the top, 1517 m (Migra Oravské múzeum: 58, 1984) (6482b-6483a). – Malá Babia hora Mt., S slope, dwarf pine, 1400 m, 49°34'43.6"N, 19°29'51.5"E (Dudáš 2020 KO 35669, BRNU 676352) (6482b-6483a). – Pilsko Mt., 49°32'2.3"N, 19°21'12.5"E (Špulerová 2015 Bio) (6482c). – peatbog near Píla, 708 m (Migra Oravské múzeum: 58, 1984) (6482c). – Zubrohlava – Hviezdoslavova alej, Bor, 49°32'1.5"N, 19°29'3.8"E (Vyšinský 2013, Lipták 2015 Bio) (6482d). – Zubrohlava – Hájka, 49°31'55.4"N, 19°29'42.4"E (Vyšinský 2013, 2015 Bio) (6482d). – Slaná Voda, 49°31'53.2"N, 19°28'42.2"E (Tomáš 2015 Bio) (6482d). – peatbog near Vonžovec lodge, 751 m (6482d). – Hviezdoslavova alej, Hájka, 800 m (6482d). – peatbog near Bystrá brook, 846 m (6482d). – Bučinka (all Migra Oravské múzeum: 58, 1984) (6482d). – below Slaná voda, 49°31'15.8"N, 19°29'15.2"E (Pavlišin 2013, 2015 Bio) (6482d). – below Brána saddle, 1400 m (Migra Oravské múzeum: 58, 1984) (6483a). – Babia hora Mt., 49°34'42"N, 19°30'42.5"E (Duchoň & Rizman 2013 Bio) (6483a). – Babia hora Mt., ridge, 1450 m (6483a). – Šťaviny, 1400 m (6483a). – near Šťaviny, 1350 m, 49°33'52.9"N, 19°30'28.5"E (all Migra Oravské múzeum: 58, 1984; not. 2020 Dudáš) (6483a). – Babia hora Mt., Bučinka, above the cabin at Šťaviny Mt. (Bražinová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1972) (6483a). – Rabčická hoľa Mt., SW below the top, 1665 m (6483a). – Rabčická hoľa Mt., 1510 m (both Migra Oravské múzeum: 58, 1984) (6483a). – Babia hora Mt., 49°34'23.4"N, 19°31'8.5"E (Duchoň 2013 Bio) (6483a). – Babia hora Mt., near the pathway towards the top, 1650–1700 m, 49°34'18.7"N, 19°31'44.8"E (Gallo 1972 MPS; not. 2020 Dudáš) (6483a). – slope below the top of Babia hora Mt., 1520 m (Manica Záverečná správa (msc.) Zvolen: 75, 1973) (6483a). – Babia hora Mt. (Dýlik 1963 ZAM 1301-1304; Deylová 1972 PR; Škovirová 1972 TM; Šibík 2018 Bio) (6483a). – Babia hora Mt., on the top, 1725 m (Migra Oravské múzeum: 58, 1984) (6483a). – Babia hora Mt., 1200 m and

higher (Zelený Ochr. prír. 21 (5): 75, 1966) (6483a). – below Babia hora Mt., 49°33'19"N, 19°30'26"E (Rizman 2013 Bio) (6483a). – valley of Bystrá brook, 1000 m, 49°32'57.1"N, 19°30'12.4"E (Dudáš 2020 KO 35683) (6483a). – peatbog towards Babia hora Mt. (not. Futák 1964) (6483a). – basin below Babia hora Mt. (Migra Oravské múzeum: 58, 1984) (6483a). – Zubrohľava – Roveň, 49°32'8.2"N, 19°30'22.6"E (Pirchala 2013, 2015 Bio) (6483c). – border ridge Čubaňov Mt. – Burkov vrch Mt., 950 m (Skalický Materiály z florist. kursu ČSBS: 144, 1978) (6577b). – Vreščovský Beskyd Mt. (Žertová & Chrtek Sborn. Slov. Nár. Múz. – Prír. vedy 12 (2): 25, 1966) (6579b). – Vreščovský Beskyd Mt., W slope, near the state border (Chrtek & Žertová 1964 PRC) (6579b). – Veľký Príslop Mt. (6579d). – Veľká Rača Mt. (both Žertová & Chrtek Sborn. Slov. Nár. Múz. – Prír. vedy 12 (2): 25, 1966) (6579d). – Veľká Rača Mt., ridge near the the ski-lift (Magic Správy z výsk. a invent. prác na XIII. TOPE: 8, 9, 1977, 1978) (6579d). – Malá Rača, 49°24'4.4"N, 18°58'15.1"E (Ďurčanová 2014 Bio) (6579d). – near the spot height Bednárová (1093) (Magic Správy z výsk. a invent. prác na XIII. TOPE: 8, 9, 1977, 1978) (6580d). – Novoťská hoľa Mt. (Vyšinský 2015 Bio) (6581a). – Lokca – Pri Medvedovi, 49°29'27"N, 19°14'59.8"E (Rizman 2013 Bio; Pirchala 2015 Bio) (6581a). – Krušetnický bor, 49°29'42.5"N, 19°16'30.6"E (Pavlišin 2013, 2015 Bio) (6581b). – Krušetnický bor, 49°29'36.3"N, 19°17'3.5"E (Vyšinský 2015 Bio) (6581b). – S from the spot height Kaňovka 952,4, spring area of Zasihlanka brook, 860 m (Šomšák Folia Geobot. Phytotax. 18 (2): 153, 1983) (6581c). – Úšust Mt. (6581c). – Koválov vrch Mt. (both Žertová & Chrtek Sborn. Slov. Nár. Múz. – Prír. vedy 12 (2): 25, 1966) (6581c). – Zákamenné (Lehrmann 1928 PRC) (6581c-6681a). – Suchá hora, 49°24'7.4"N, 19°46'35.1"E (Rizman 2013, Vyšinský 2013 Bio; Pirchala 2015 Bio) (6584d). – Orol Mt. (Žertová & Chrtek Sborn. Slov. Nár. Múz. – Prír. vedy 12 (2): 25, 1966) (6679b). – below Zrubitá, 49°23'53.3"N, 18°59'27.3"E (Ďurčanová 2014 Bio) (6679b). – Nová Bystrica, the end of Veľký Potok valley, 660 m (not. Hančinský 1959) (6679b). – Stará Bystrica, below Strapačovské, 590 m (not. Greštiak s. dato) (6679b-d). – Stará Bystrica, NE from the spot height 719, „Kykula“ – Bolgušovia, 590 m (not. Hančinský 1959) (6679d). – Javorina Mt. (Žertová & Chrtek Sborn. Slov. Nár. Múz. – Prír. vedy 12 (2): 25, 1966) (6680a). – Harvelka, Halvanka, 960 m (not. Greštiak s. dato) (6680d). – Magurský potok brook, slope of Vysoká Magura Mt., 880 m (Šomšák Folia Geobot. Phytotax. 18 (2): 153, 1983) (6681a). – Oravská Lesná, N slope of Rusniacka Mt. (Žertová & Chrtek Sborn. Slov. Nár. Múz. – Prír. vedy 12 (2): 25, 1966) (6681a). – Oravská Lesná, Dolina Novej rieky valley, near the brook, 700 m, 760 m (Šomšák Folia Geobot. Phytotax. 18 (2): 153, 1983) (6681a). – Paráč – Ustrig – Borcok, 49°22'35.2"N, 19°13'21.1"E (Dupkala 2014, Pirchala 2015 Bio) (6681a). – Oravská Lesná, slopes near Nová rieka brook, 740 m (Šomšák Folia Geobot. Phytotax. 18 (2): 142, 153, 1983) (6681a-c). – Lokca, 49°22'32.9"N, 19°22'50.1"E (Rizman 2015 Bio) (6682a). – Magurka Mt. (Žertová & Chrtek Sborn. Slov. Nár. Múz. – Prír. vedy 12 (2): 25, 1966) (6682b). – Priehyba Mt., NE slopes, 925 m (Migra Oravské múzeum: 58, 1984) (6682b). – Ťapešovo (Budínska hoľa Mt.), E from the spot height Budín, 870 m (Šomšák Folia Geobot. Phytotax. 18 (2): 142, 1983) (6682d). – Slanická Osada, meadow (Urbanová 2000 MOP 7446) (6683a). – Medvedzie, Lúčky (Truchlý 1896 BRA) (6683c). – Javorinky Mt. (1122,7), W slope below the top, 1115 m (Bernátová et al. Bull. Slov. Bot. Spoločn. 24: 107, 2002) (6683d). – Bory, between Suchá Hora and Jablonka (Degen 1904 BP 214458; Kümmerle 1904 BP 173600) (6684b). – Oravica river, the spot height 1110 (6684c). – Nadšimajová, spot height 1212,8 (6684c). – Hájisko, 1100 m (all Majzlanová Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIX: 106, 1982) (6684c). – Liesek, Polanka [= Polianky] (Truchlý 1894 BRA) (6684c). – Horný Vadičov, the spot height 880,5, „Vrzleny“, 840 m (not. Hančinský 1958) (6779a). – Zlieň Mt., 840 m (not. Greštiak s. dato) (6779b). – Terchová, SE slope of Pupov Mt. (Chrtková–Žertová & Chrtek Zpr. čs. bot. Společ. 8: 121, 1973) (6780b). – Pupov vrch Mt. (Urbanová 1969 ZAM 2312) (6780b). – Hruštín, S from Zábava, 700 m (6781b). – the valley of Hruštínka brook, 950 m (6781b). – spring of Hruštínka brook, SW slopes, 930 m (6781b). – near confluence of Hruštínka brook and Čierny potok brook, 770 m (all Šomšák Folia Geobot. Phytotax. 18 (2): 142, 153, 1983) (6781b). – near Čierny potok brook, 850 m (Majzlanová Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIX: 106, 1982) (6781b). – Kubínska hoľa Mt., 1304 m, 49°16'23.76"N,

19°15'39.6"E (Bernátová & Kučera Bull. Slov. Bot. Spoločn. 31 (2): 30, 2009) (6781b). – Hruštínsky potok brook, lakes, 49°16'56.6"N, 19°15'21.4"E (Vnuk 2014 Bio) (6781b). – Puchmajerovej jazierko lake, 49°16'40.3"N, 19°15'19.8"E (Dítě 2013 Bio) (6781b). – Kubínska hoľa, above spring area of Klimovka brook, 1290 m (6781b). – slope of Čierny vrch Mt. below the ridge, 1180 m, 1260 m (both Šomšák Folia Geobot. Phytotax. 18 (2): 142, 153, 1983) (6781b). – in the valley of Krivský potok brook (Chrtek & Křísa Acta Univ. Carol. Biol. 1971: 405, 1974) (6783a). – Zuberec, 49°15'34.5"N, 19°34'48.4"E (Tomáš 2015 Bio) (6783a). – Malé Borové, S slopes of the spot height Blato, 1150 m (not. Ružička 1964) (6783c). – Huty, 49°12'59.7"N, 19°34'13.2"E (Tomáš 2015 Bio) (6783c). – Skorušina Mt., meadows on the top, 1200–1313 m (Majzlanová Biológia 36 (4): 285, 1981) (6784a). – Skorušina Mt., below the top (6784a). – Mihulčia dolina valley, W from the spot height 1025, 1050 m (6784a). – Mihulčia dolina valley, 970 m, mountainside above the basin (6784a). – Mihulčia dolina valley, cca 500 m from the spot height 947, 980 m (6784a). – Mihulčia dolina valley, W from the spot height 873, 920 m (all Majzlanová Acta Fac. Rer. Natur. Univ. Comen. Bot. XXIX: 106, 1982) (6784a).

(*Beschidicum orientale*). **29. Spišské vrchy Mts.:** Stará Ľubovňa, 49°24'19.4"N, 20°38'9.8"E (Daniel-Szabó 2014 Bio) (6589d). – Litmanová, W slopes of Eliášovka Mt. (6589d). – 1 km S from the spot height Okružla (6589d-6689b). – S slopes of Okružla Mt. (6589d-6689b). – S slopes of Eliášovka Mt. (6589d-6689b). – upper part of the valley of Pilhovčik brook (6590c). – N slope of Petříkov vrch Mt. (all Chrtek & Skočdoplová Preslia 58 (3): 261, 1986) (6590c). – the valley of Pilhovčik brook (Chrtek & Deylová 1985 PR) (6590c). – around the spot height Petříkov vrch (932) and N slopes (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6590c-6690a). – on the top of Petříkov vrch Mt. (Chrtek & Skočdoplová Preslia 58 (3): 261, 1986) (6590c-6690a). – Jandrečková, 49°18'8.4"N, 20°8'46.2"E (Lipták 2013, 2015 Bio) (6686d). – Osturňa, Brija Mt., near Suchý potok brook, 970 m (6687c). – Podspády – Vojtasová, below the spot height „Solisko“, 990 m (6687c). – Podspády – Vojtasová, below the spot height „Cerla“ [= Črchľa], 925 m (all Šomšák Biol. práce 32 (4): 32–101, 1986) (6687c). – Osturňa, 49°18'11.1"N, 20°13'21.2"E (Maršalek 2015 Bio) (6687c). – Malé osturnianske jazerá lakes, 49°20'30.2"N, 20°12'15.1"E (Polák 2014 Bio) (6687c). – Veľké osturnianske jazero lake, 49°20'32.2"N, 20°13'6.2"E (Polák 2014 Bio; not. Dudáš 2020) (6687c). – valley of Kremeniak brook, NE slope, 900 m (Dostál Acta Rer. Nat. Mus. Nat. Slov. XXV: 74, 1979) (6687c). – Osturňa, meadows around (6687c). – S from Osturňa, Ozero lake (both Dostál Pamiat. prír. 1: 30, 31, 1977) (6687c). – Osturňa, below the spot height 1140,3, cca 1120 m (6687c). – Osturňa, below the spot height 1181,2, 1090 m (6687c-6787a). – Kacvinska poľana Mt., below the spot height 1180, 1150 m (all Haraslinová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1971) (6687c-6787a). – Spišské Hanušovce, „Lôch“ valley, N from the spot height 981,3, 870 m (6687d). – „Lôch“ valley, slope below the ridge, 880 m (both Šomšák Biol. práce 32 (4): 90, tab. 8, 1986) (6687d). – Haligovce, cca 0,5 km NW from Kobylia hlava Mt. (953 m), 640–900 m (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6688b). – Reľov, above the village, 900 m (Šomšák Biol. práce 32 (4): 90, tab. 8, 1986) (6688c-6788a). – Veľký Lipník, Hlušková valley (6688d). – Veľká Lesná, the valley of Vápeník brook, NE from the village, 600–750 m (both Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6688d). – Litmanová, the valley of Rozdiel brook (Chrtek & Deylová 1983 PR) (6689b). – Litmanová, the valley of Rozdiel brook 690–720 m (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6689b). – Ostré skalky Mt., N from Litmanová (6689b). – the valley of Veľký Lipník brook, NE from Litmanová (6689b). – Litmanová, W slopes of Medvedelica Mt. (all Chrtek & Skočdoplová Preslia 58 (3): 261, 1986) (6689b). – Hraničné, N slope of Medvedelica Mt., in the valley (Dostál Zborn. Východoslov. múzea, XXIII: 72, 1983) (6689b). – Horbáľova, 49°20'56.1"N, 20°32'37.7"E (Maršalek 2014 Bio) (6689c). – Stráňany, forest in the valley of Veterný potok brook, 740–840 m (6689c). – Kamienka, ridges and slopes between Havrilová Mt. and Horbáľová Mt. (both Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6689c). – Podolíneč, 49°19'43.9"N, 20°30'22.3"E (Flachbart 2013 Bio) (6689c). – Vyšné Ružbachy, S–SE from Veterný vrch Mt. (6689c). – SW end of the valley of Podháj brook, 900–940 m (6689c). – forest N–NE from Grúň Mt. (1039

m) (all Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6689c). – sedlo Grúň saddle (Mikoláš 2003 KO 35668) (6689c). – upper forest part of the valley of Rieka brook, above Barvienková chapel (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6689c). – Zálažný potok brook (Ľ. Dostál 1986 MPS) (6689c). – valley of Zálažný potok brook, below the spot height „Kotlina“, 850 m (6689c). – Zálažný potok brook, below Zbojnický stôl Mt., 730 m (both Šomšák Biol. práce 32 (4): 90, tab. 8, 1986) (6689c). – slopes and pathways around the top of Zbojnický stôl Mt. (1022 m) (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6689c). – the valley of Lazňanka brook, NE from Vyšné Ružbachy, 775 m (Gallo 1971 BRA, MPS) (6689c). – Kamienska, W from the N end of the village, 670 m (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6689d). – Hraničné, N slope of the spot height 767, S from Eliášovka brook (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6690a). – Hraničné (Ľ. Dostál 1979 MPS) (6690a). – Hraničné, Košiarska valley, 625 m (Šomšák Biol. práce 32 (4): 32, tab. 2, 1986) (6690a). – Legnava, N slopes of Kurčianska Magura Mt. (6691c). – S slopes of Kurčianska Magura (both Chrtok & Skočdopolová Preslia 58 (3): 261, 1986) (6691c). – Kurčianska Magura Mt., N from the top, 830 m (6691c). – Kurčianska Magura Mt., grasslands NE below the top, 800–850 m (6691c). – around the top of Orlovská Magura Mt. (830 m) (all Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6691c-6791a). – Firštova cesta, 49°17'31.1"N, 20°7'53.7"E (Lipták 2015 Bio) (6786b). – SE slope of Chovancov vrch Mt., 960 m (6786b). – Chovancov vrch Mt., S part, 1000 m (both Šomšák Biol. práce 32 (4): 101, tab. 9, 1986) (6786b). – Javorina, 49°16'34.9"N, 20°9'6.7"E (Lipták 2013, 2015 Bio) (6786b). – Podspády – Vojtasová, left slope of Javorinka brook, below the ridge, 970 m (Šomšák Biol. práce 32 (4): 79–101, 1986) (6787a). – Kašina, 49°17'26.8"N, 20°10'14.7"E (Maršalek 2013, 2015 Bio) (6787a). – Podspády, 49°17'2.2"N, 20°10'20.9"E (Lipták 2013 Bio) (6787a). – Podspády, meadows and forests near Jurgovská cesta road (Domin Věda přír. 5: 174–175, 1924) (6787a). – Podspády, above „Grappa“, 935 m (6787a). – below Príslop Mt., near Javorinka brook, 950 m (both Šomšák Biol. práce 32 (4): 90, tab. 8, 1986) (6787a). – SW from the spot height Repisko, 950 m (Šomšák Biol. práce 32 (4): 79–101, 1986) (6787a). – Repisko Mt., 1267 m (Grodzianska Fragm. flor. geob. 10 (4): 437–452, 1964) (6787a). – main ridge of Spišská Magura Mts., Kacvinská poľana, 1150 m (6787a). – between Repisko Mt. and Príslop Mt., 1150 m (6787a). – below Príslop Mt., on the main ridge, 1150 m (all Haraslínová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1971) (6787a). – below the spot height Príslop, SW slopes, 1100 m (Šomšák Biol. práce 32 (4): 79–101, 1986) (6787a). – below spot height 1209,4 [Prehrstie], 1200 m (6787a). – main ridge of Spišská Magura Mt., road Osturňa – Ždiar, 1205 m (both Haraslínová Dipl. práca (msc.), depon. in PrF UK Bratislava, 1971) (6787a). – Spišská Magura Mts., ridge above Ždiar, cca 900–1000 m (Hajdúk 1969 BRA) (6787a-b). – Magurka Mt., cca 1100 m (Chrtok & Křísa 1969 PRC; Dudáš 2020 KO 35667) (6787b). – Ždiar, near Belá brook, S from the spot height 1086, 830 m (Šomšák Biol. práce 32 (4): 101, 1986) (6787b). – forest below Furmanec Mt., SE from Malá Franková, cca 1020 m (Gallo 1971 BRA, MPS) (6787b). – Jezersko, Spišská Magura Mts. (Hajduk 1958) (6788a). – Jezerské jazero lake, 960 m, 49°16'56.8"N, 20°20'50.1"E (Dudáš 2020 KO 35666) (6788a). – Slovenská Ves, „Smrečiny“ complex, below the ridge, 850 m (Šomšák Biol. práce 32 (4): 32, tab. 2, 1986) (6788a). – between Spádik Mt. and Švabová Mt. (6788a-b). – Spádik Mt., 1060 m (both Grodzianska Fragm. flor. geob. 10 (4): 437–452, 1964) (6788b). – Toporec, S slope of Kameniariky Mt. (935 m) (6788b). – Toporec, cca 2 km N – NW from the village, 650 m (both Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6788b). – the spot height „Kopa“ (Ľ. Dostál 1991 MPS) (6790d). – Bajerovce (Ľ. Dostál 1992 MPS) (6790d). – Levočské vrchy Mts., Jankovec Mt., meadows (Greschik 1910 SLO; Nižnanská 1995 SNV) (6889b). – Marčulina (Grodkovszky 1939 BRA) (6889d). – Tichý Potok, 49°8'23.8"N, 20°39'58.9"E (Lipták 2014 Bio) (6889d). – Blažov (Ľ. Dostál 1990 MPS) (6890a-c). – Brezovica nad Torysou, Pavlišové lúky meadow (Margittai Sborn. prírod. Klubu Košice 3: 110, 1935–1937) (6890b-6891c). – Hradisko (Ľ. Dostál 1985 MPS) (6889a). – **30b. Čergov Mt.:** Ruská Voľa, between the spot heights Murianik Mt. (1009) and Malý Minčol Mt. (1055) (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6791b). – Minčol Mt., the valley of Soliská brook towards Čirč (Dostál Zborn. Východoslov. múz. Košice,

prír. vedy XXVII: 39, 1985) (6791b-d). – Šarišské Jastrabie, between the top of Hriňová hora Mt. (888) and the spot height 1038 (6791d). – Minčol Mt. (1157), grasslands on N slope below the top, 1050–1120 m (6791d). – around the top of Minčol Mt. (1157) (all Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6791d). – Minčol Mt., yellow tourist path (Mikoláš 1985 KO 33887) (6791d). – on the top of Veľký Minčol Mt., 1157 m (Pospíšil 1958 SMB 76B; s. coll. 1962 SMB 28338; Dudáš & Gojdičová (eds.) Flor. kurz Bardejov, Bull. Slov. Bot. Spoločn. 42, Suppl. 2: 72, 2020) (6791d). – Minčol Mt., the top + area of Poloninky (Dostál Ochr. príř. okr. Bardejov, p. 65, 1981) (6791d-6792c). – Kružlov, 49°15'30.3"N, 21°0'6.7"E (Maršalek 2013 Bio) (6792a). – Čirč, Uhliská saddle, 950–1050 m (Mártonfi (ed.) Flóra okr. St. Ľubovňa, p. 60, 1992) (6792c). – grassy uplands near the spring of Topľa river (Pospíšil 1960 SMB 22912) (6792c). – meadows E of sedlo Priehyby saddle, 965–1015 m (Dudáš & Gojdičová (eds.) Flor. kurz Bardejov, Bull. Slov. Bot. Spoločn. 42, Suppl. 2: 72, 2020) (6792d). – Majdan, near the brook (Gallo 1970 MPS) (6892b). – Baranie, above the brook, S from the settlement (Gallo 1973 MPS) (6892b). – Olejníkov, Baranie, N slope of the ridge from Lysá saddle to Ambrušovce (Dostál Zborn. Východoslov. múz. Košice, príř. vedy XXVII: 39, 1985) (6892b). – Drienica, meadow between Ostrý kameň Mt. and Lysá hora Mt., green tourist path, 1000 m, 49°9'58.9"N, 21°9'41.3"E (Dudáš 2017 KO 33396) (6892b). – Hradisko, from tourist cabin to Čergov Mt. (above Serňa meadow) (Dostál Zborn. Východoslov. múz. Košice, príř. vedy XXVII: 38, 1985) (6893a). – **30c. Nízke Beskydy Mts.:** Krivá Oľka, near the road NE, from Meľov Mt. (Chrtek & Křisa Acta Univ. Carol.- Biol. 1974: 244, 1976) (6897c). (*Carpaticum orientale*) **31. Bukovské vrchy Mts.:** below the top of Rypy Mt., 960 m (6899d). – the top of Rypy Mt., 975 m (6899d). – from Ruské sedlo saddle towards the top of Rypy Mt., 850–910 m (all Hadač, Terray et al. Kvet. Buk. vrchov: 127, 1991) (6899d). – Rypy Mt., E slope at tourist path, 920–950 m, 49°8'14.5"N, 22°19'18.7"E (not. Dudáš 2021) (6899d). – ridge above Ruské sedlo saddle, 49°8'21.6"N, 22°19'37.7"E (Uhrin 2015 Bio) (6899d). – mountainside between Ruské sedlo saddle and Kruhliak Mt., 930 m (Hadač, Terray et al. Kvet. Buk. vrchov: 127, 1991) (68100c). – 1,7 km E from Ruské sedlo saddle, 950 m (Blažková & Březina Thaiszia – J. Bot. 13: 194, 2003) (68100c). – Ruské saddle, ridge from state border to spot height 1045 (68100c). – the spot height 1045, on state border (both not. Futák 1969) (68100c). – N from the top of Pľaša Mt., 1155 m (Blažková & Březina Thaiszia – J. Bot. 13: 194, 2003) (68100c). – Pľaša Mt. the top, 1160 m, 49°6'46.1"N, 22°24'6.9"E (Mártonfi 1996 KO 33796; not. Dudáš 2021) (68100c). – Ruské, 49°6'53.5"N, 22°23'51"E (Mochňacký 2015 Bio) (68100c). – Runina, border ridge N from the village, 1197 m (Gallo 1969 BRA) (68100c-d). – ridge between Pľaša Mt. and Ďurkovec Mt., 1140–1199 m (Hadač, Terray et al. Kvet. Buk. vrchov: 127, 1991) (68100c-d). – between Ďurkovec Mt. and Pľaša Mt., cca 1100 m, meadow on state border (Májovský Acta Fac. Rer. Natur. Univ. Comen. Bot. 1 (8-9): 354, 1956) (68100c-d-69100b). – Riaba skala Mt. [= Jarabá skala Mt.] (Chyzer 1881 BP 48803; Soják 1957 PR 563150; Májovský 1958 SLO; Chrtek & Křisa 1965 PRC; Hindák 1969 SLO) (68100d). – Riaba skala Mt. [= Jarabá skala Mt.], N slopes, around the top (Kučerová & Jeník Biológia 18: 655, 1963) (68100d). – Riaba skala Mt. [= Jarabá skala Mt.], 1155 m (Kučerová & Jeník Biológia 18 (9): 655, 1963) (68100d). – 0,6 km W from Riaba skala Mt. [= Jarabá skala Mt.], 1160 m (Blažková & Březina Thaiszia – J. Bot. 13: 194, 2003) (68100d). – Zboj, 49°6'12"N, 22°26'45.9"E (Mochňacký 2015 Bio) (68100d). – between Ďurkovec Mt. and Riaba skala Mt. (Mártonfi 1996 KO 33797, 33798). (68100d). – border meadows between Riaba skala Mt. [= Jarabá skala Mt.] and Čolo Mt., 1080 m (Gallo 1970 BRA, MPS) (68100d). – tourist shelter E from Riaba skala sightseeing point, meadow, 1075 m, 49°6'10.5"N, 22°27'32.8"E (not. Dudáš 2021) (68100d). – Nastas Mt., on the top near the spot height 807 (Soják 1956 PR 563151) (6999d). – saddle Sedlo pod Ďurkovcom, meadow, W slope, 1100 m, 49°6'2.8"N, 22°25'11.8"E (not. Dudáš 2021) (69100b). – Ďurkovec Mt., SW from the top (Blažková & Březina Thaiszia – J. Bot. 13: 188, 194, 2003) (69100b). – Ďurkovec Mt., 1186 m (69100b). – between Ďurkovec Mt. and the spot height 1016 (69100b). – Hrubky Mt., 1186 m (all Hadač, Terray et al. Kvet. Buk. vrchov: 127, 1991) (69101a). – Hrubki Mt., meadow on the top, 1186 m, 49°5'35.8"N, 22°31'49.7"E (not. Dudáš 2021) (69101a). – 0,5 km from the spot

height Hrubky, 1125 m (Blažková & Březina Thaiszia – J. Bot. 13: 188, 2003) (69101a). – between Hrubky Mt. and Čertůž Mt., 1050 m (69101a). – W slope of Hrubky Mt., 1050 m (69101a). – Hrubky Mt., on the top, 1186 m (69101a). – Kamenná lúka Mt., 1200 m (all Hadač et al. Preslia 60 (4): 332, tab. 4, 1988) (69101a). – between the tops of Hrubky Mt. and Kremenec Mt. (69101a). – Kamenná lúka Mt. (both Májovský 1969 SLO) (69101a). – Kamenná lúka Mt., W slope (69101a). – Kamenná lúka Mt., on the ridge, near the top (both Hadač & Terray Folia Geobot. Phytotax. 24 (4): 352, tab.8, 1989) (69101a). – Kamenná lúka Mt., meadow on the top, 1200 m, 49°5'27.1"N, 22°32'49.7"E (not. Dudáš 2021) (69101a). – S from the top of Kamenná lúka Mt., 1195 m (Blažková & Březina Thaiszia – J. Bot. 13: 194, 2003) (69101a). – Kremenec Mt., triangular border point, 1200 m, 49°5'16.6"N, 22°33'56.4"E (not. Dudáš 2021) (69101a). – Nová Sedlica, Rovná lúka Mt., 1120 m (Blažková & Březina Thaiszia – J. Bot. 13: 188, 2003) (69101a). – border ridge on the top of Kýčera Mt. (Májovský 1969 SLO) (69101a). – NR Stinská – Sušice, 880 m (69101c). – NR Stinská, meadow N from Májková, 1030 m (69101c). – NR Stinská, state boundary on the ridge, 1085 m (all Hadač et al. Preslia 60 (4): 322, tab. 1, 324, tab. 2, 1988) (69101c). – NR Stinka [= Stinská], 1070 m, near the state border (Májovský 1968, 1969 SLO) (69101c-70101a). – NR Stinská, 1078–1092 m, ridge (69101c-70101a). – Rožok Mt. (both Hadač, Terray et al. Kvet. Buk. vrchov: 127, 1991) (70100b).

General data (not mapped)

21b. Krivánska Malá Fatra Mts.: Krivánska Malá Fatra Mts. (Bělohávková & Fišerová Folia Geobot. Phytotax. 24 (1): 6, tab.1, 1989). – **21c. Velká Fatra Mts.:** Velká Fatra Mts. (Bělohávková & Fišerová Folia Geobot. Phytotax. 24 (1): 6, tab.1, 1989). – **22. Nízke Tatry Mts.:** Nízke Tatry Mts. (Trapl 1920 PRC; Randušková 1963 BRA; Bělohávková & Fišerová Folia Geobot. Phytotax. 24 (1): 6, tab.1, 1989). – **23. Tatry Mts.:** Tatry Mts. (Geyer 1856 BP 82019; Krajina 1924 PRC; Rohlena 1924 PRC; Kříša 1950 PR; J. Dostál 1968 MPS; Scherfel 1864 BRA; Kalchbrenner s.dato BRA). – **23b. Vysoké Tatry Mts.:** Vysoké Tatry Mts. (Greschik 1883 SLO; Blatný 1940 BRA; s.coll. 1940 BRA). – Vysoké Tatry Mts., dwarf pine zone (Domin Tatranská květena: 3, 1928) – **23c. Belianske Tatry Mts.:** Belianske Tatry Mts. (Grodkovszky 1930 BRA). – Belianske Tatry Mts., 1490 m (Grodkovszky 1930 BP 363864). – Belianske Tatry Mts., spruce forest in the valley, cca 1000 m (Domin Tatranská květena: 11, 1928). – **24. Pieniny Mts.:** limestone rocks of Pieniny Mts. (Hayek Pflanzendecke Österr.–Ung.: 381, 1926). – **28. Západné Beskydy Mts.:** area of Orava, NW (Špániková 1970 SAV). – Horná Orava area, 700–1250 m (Vološčuk Acta Bot. Slov. Acad. Sci. Slovacae A4: 103, 105, 106, 1978). – Pilsko Mt., ridge of Babia hora Mt. (Futák & Magic 1964). – W part of Slovenské Beskydy Mts., higher woodlands (Žertová & Chrtek Acta rer. nat. Mus. nat. slov. 12 (2): 21, 1966). – **29. Spišské vrchy Mts.:** Spišská Magura Mts. (L. Dostál 1978 MPS). – Spišská Magura Mts., on the ridge (Hajdúk 1969 BRA). – Levočsko–Lubovnianske vrchy Mts. (Greschik 1895 BP 173643). – **30b. Čergov Mts.:** Čergov Mts. (L. Dostál 1978, 1980 MPS).

Doubtful data (not mapped)

7. Košická kotlina Basin: Košice, Ťahanovce, stream (Mikoláš 2002 MOP). Probably transcriptional error.