

## **Revised flora of Velká Kotlina cirque, the Sudeten Mountains, I**

**Revize floruly Velké Kotliny v Hrubém Jeseníku, I**

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JENÍK J.<sup>1)</sup>, L. BUREŠ<sup>2)</sup> et Z. BUREŠOVÁ<sup>2)</sup> (1983): Revised flora of Velká Kotlina cirque, the Sudeten Mountains, I. — *Preslia, Praha, 55 : 25–61, 1983.*

Field observations during 1971 to 1978 in Velká Kotlina, a glacial cirque in the Hrubý Jeseník range and cross-road of Silesian and Moravian botanists for about two centuries, revealed the presence of 356 species, subspecies and hybrids of vascular plants. A reference grid, large-scale map and newly introduced micro-topographical names enabled the authors to describe distribution of both common and rare species. An annotated table also contains data referring to abundance, size of populations and affinity of the species to relevant syntaxa of the phytosociological system.

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### INTRODUCTION

The locality identified in this work as “Velká Kotlina” has been a famous locality of Central-European botany for almost two centuries. In the course of years, its name changed frequently, as witnessed by more than twenty synonyms identified in the literature: Kessel, Hinderster Kessel, Hinterer Kessel, Karlsdorfer Kessel, Janowitzter Kessel, Grosser Kessel, Mohrakessel, Hoher Fall, Hohenfall, Mohra Fall, Janowitzter Fall, Janowitzter Hohenfall, Karlsdorfer Hochfall, Hohenfall bei Mohra-Ursprung, Kotlina, Velká Kotlina, Kotel, Velký Kotel, Kotel Moravice, Pád and Vysoký Pád. This variety of names was a constant source of confusion in botanical records, and, necessarily, our floristic revision suffered from the lack of consistency in historical documents. Under these circumstances, Mr. R. Hampel, Hannover, BRD, an expert in the history and floristics of the Hrubý Jeseník range, provided us with valuable assistance for which we express our gratitude. We thank also our distinguished colleagues Drs. J. Holub, A. Plocek, D. Osborn, S. Kučera, M. Smejkal and B. Šula for their help at various stages of the research.

Velká Kotlina, a glacial cirque in the valley head of the Moravice river, is situated on S.E. flank of the Hrubý Jeseník range of the Sudeten Mountains. Using the available coordinate system, the centre of the cirque was located at 50°03'30" N latitude, and 34°54'20" E longitude. The area included in our observations covers about one km<sup>2</sup>, and ranges between 1110 and 1464 m in altitude. As shown in Fig. 1, the S.E. flanks of Vysoká Hole Mount (formerly also Janowitzter Heide, Hohe Heide) merge inseparably with the core of the cirque, creating an integral ecosystem. Therefore, our locality “Velká Kotlina” stretches up to the surrounding summit area.

Floristic revision described in this paper refers to the years 1971 to 1978, the period of ecological and phytosociological observations of the authors. Satisfactory progress of phytosociological research required intimate knowledge of the vascular flora, and, on the other hand, a reliable list of species, subspecies and hybrids could be facilitated by dense coverage of phytosociological relevés. In an earlier paper (JENÍK, BUREŠ et BUREŠOVÁ 1980) we published a general syntaxonomic classification of Velká Kotlina, which allowed us to point out, in this paper, affinities of individual taxa to various plant communities. The main emphasis of this account, however, is based on distribution of vascular plants within the cirque, in relation to a defined coordinate system and topographically determined reference points. We also use this opportunity to sketch the unique history of floristic exploration of this "cross-road" of Silesian and Moravian botanists.

## HISTORY OF FLORISTIC EXPLORATION

We can assume that Velká Kotlina had awakened human interest by the 12th or 13th century, or soon after the colonization of the Bruntál Basin whose mining centre of Bruntál (formerly Freudenthal) became a royal town in 1213. Due to its elevated position above the timberline, rocky relief, local formation of clouds, persistence of snow in summer, and vegetation, Velká Kotlina naturally served as reference point to hunters, prospectors and herbalists searching in the Hrubý Jeseník range for game, precious stones and medical drugs, respectively. The same features, possibly, made the locality a boundary of two large estates (Janovice and Bruntál), and a landmark between Silesia and Moravia, the two historical lands of Central Europe. The first written reference to Velká Kotlina, known so far, is a demarcation protocol from 1629, where "Fluss Maybergk" and "Kessel" undoubtedly correspond with Moravice river and Velká Kotlina (see WEINELT 1937; JENÍK et HAMPEL ms.).

Since the 18th century, some of the herbalists visiting the summit of the Hrubý Jeseník range supplied information and/or herbarium specimens to scientific institutions in Prussia and Austria where the first floristic works were compiled, and the centuries of dried specimens were distributed. According to MATTUSCHKA (1779 : 133) N. J. Jasquin had already described the natural occurrence of ornamental *Delphinium elatum* in words reminiscent of the environs of Velká Kotlina: "... in Ducatu Oppaviensis locis montanis umbrosis et nemorosis ab Oppido Freudenthal, paucarum horarum spatio dissitis...". Some species recorded by KROCKER (op. div.) as „in alibus nostris“, e.g. *Plantago atrata*, *Saxifraga umbrosa*, *Aster alpinus*, and *Poa alpina*, were collected, very likely, in our cirque, as proved later by their exclusive or dominant distribution within the entire Sudeten Mountains. The story of the extinct relict *Saxifraga umbrosa* (JENÍK 1980) was linked with "Hoher Fall" and "Janowitzter Hohenfall", the two names first used for Velká Kotlina in botanical literature.

At the turn of the 18th and 19th century, Mückusch, a veteran officer of the Austrian army, began a more systematic stage in the floristics of the Hrubý Jeseník range. The results of his excursions, documented by numerous herbarium specimens, slowly penetrated into botanical literature. In their enumeration of Silesian plants, GÜNTHER, GRABOWSKI et WIMMER (1824 : 7) refer to Mückusch's finding of *Saxifraga umbrosa* by explicit localization "am hohen Fall im Gesenke". Mückusch himself compiled a list of plants growing in the environs of Karlova Studánka (formerly Carlsbrunn) in a book by KLEMM (1826) where botanical diversity of surroundings of the Moravice spring were first indicated (op. c.: 2). WIMMER and GRABOWSKI (1827 : 289) attempted to describe a new species from the Velká Kotlina cirque, which they called *Anthriscus alpestris*, a name later synonymized with *Anthriscus nitida* (WAHLENB.) HAZSLINSZKY. WIMMER's flora from 1832 suggests that in the late twenties and early thirties, Velká Kotlina had become a botanically popular site visited and revisited by the author himself and, particularly, by Grabowski and his apothecary fellows. Species like *Poa alpina*, *Gentiana verna*, *Bupleurum longifolium*, *Bartsia alpina* and *Hedysarum obscurum*, reinforced the glory of a locality then called "Hoher Fall im Gesenke".

However, the topographical name "Hoher Fall" was never specific in the Hrubý Jeseník range, and, from the distance of years, someone can express doubts about the identity of the site. The first Moravian flora written by ROHRER and MAYER (1835) was a step forward. In connection with earlier rarities, and together with newly added *Valeriana tripteris*, *Trichophorum alpinum*,

*Agrostis alpina*, *Ribes petraeum*, *Aster alpinus*, and *Plantago atrata*, the interesting species discovered mainly by Grabowski and his associates, this text used distinctive topographical names, such as "hoher Fall oberhalb Karlsdorf", "hoher Fall unterhalb Janowitz Heide", "Hohengall beim Mohra-Ursprung", or, even more explicitly, "Hochfall bei Karlsdorf unter der Janowitz Heide".

In the following flora, WIMMER (1840) fully abandoned the name "hoher Fall" and, for the first time in botanical literature, introduced the old topographical name "Kessel". Furthermore, new rare species appeared in this flora, e.g. *Crepis sibirica*, *Hieracium villosum*, *Swertia perennis*, *Veronica bellidioides*, *Carex capillaris* and *Festuca versicolor*. GRABOWSKI remained the most successful collector, and his "Flora von Oberschlesien und dem Gesenke" (1843) published after the author's death, only confirms that he fully recognized Velká Kotlina as "one of the most remarkable montane localities from the viewpoint of botany" (op. c.: VII—VIII).

The fame of Velká Kotlina continued to attract distinguished botanists from both the Silesian and Moravian side throughout the remaining part of 19th century. MÜNCKE (1855) wrote a specialized paper dedicated to Velká Kotlina. MILDE (1856, 1859) concentrated on cryptogams and discovered several rare ferns, including *Woodsia alpina*. Detailed taxonomical studies of the *Hieracium* genus (e.g. numerous studies by R. Uechtritz) showed Velká Kotlina to be a refuge of rare species and also a centre of speciation and an important type locality. Most of this floristic progress was recorded in the comprehensive floras of FIEK (1881), OBORNÝ (1883—1886) and SCHUBE (1904), where Velká Kotlina stays to be described as „locus classicus“ of the first magnitude. FIEK's (op.c.) and other German floras of this period started using a new topographical name for the cirque — „Grosser Kessel“. This name was coined mainly in order to separate Velká Kotlina from „Kleiner Kessel“, a newly discovered botanical locality lying in the valley head of Kotelný Brook (formerly also Kesselbach) situated 2 km to the south of the cirque. We must, however, admit that similar antonyms were used by topographers of the Janovice Estate in the 17th century (WEINELT 1937). For example, Velká Kotlina viewed from the seat of Janovice, was considered the „hinderster Khessel“, as against the „vorderster Khessel“ corresponding to „Kleiner Kessel“ (now Malá Kotlina).

For Czech topographical names FORMÁNEK's flora (1887, 1892) can be considered as decisive. In this first flora of Moravia written in Czech, species growing undoubtedly in Velká Kotlina are referred to in sites called Velká Kotlina (prevailing), Kotlina, Velký pád, Pád, Vysoká hole and Janovická hole. Obviously, the author translated various German topographical names from floras of several generations, and, was not aware of the confused history of synonyms. However, while recognizing the existence of „Malá Kotlina“, he preferred the name „Velká Kotlina“, in the majority of cases. This priority should be accepted in present-day botany, and, in view of the prevailing scientific evidence of plants, maintained even in other branches of science where names like „Velký Kotel“ or „Kotel Moravice“ occasionally appear.

Since the beginning of the 20th century, botany broadened in scope, and Velká Kotlina became an object for phytogeographical and ecological investigations. This trend is reflected in the works of LAUS (1910, 1931), OTRUBA (1925, 1926, 1930), ŠMARDÁ (1950a, b) and JENÍK (1961). Although there was no striving for complete floristic inventory, new species of vascular plants were added to the preceding records. Moreover, remarkable occurrence of isolated populations and contradictory evidence of both arctic-alpine and lowland species provoked the new generation of botanists to attempt to answer the question of how phytogeographical and ecological factors were producing such an abnormally rich flora. There was progress also in taxonomical examination of rare populations. Three new endemic subspecies were described from specimens collected in Velká Kotlina: *Plantago atrata* ssp. *sudetica* (HOLUB, MĚSÍČEK et JAVŮRKOVÁ 1970), *Campanula tatrae* subsp. *sudetica* (KOVANDA 1977) and *Dianthus carthusianorum* subsp. *sudeticus* (KOVANDA 1980).

After two centuries of botanical research and repeated distinction of this species-rich locality, one is inclined to ask, "How many species of vascular plants actually grow in Velká Kotlina?" It is a challenging question which demands a full list of all taxa associated with this locality in the past, and confrontation with the actual situation in field. The only available attempt to do so was the M. Sc. thesis of JEROVÁ (1970). Though incomplete and unreliable, her manuscript was a valuable impulse for the present authors.

## INTERNAL TOPOGRAPHY

Any floristic account requires adequate localization of individual plants or populations in relation to certain reference point or coordinate system. The size of the area and virtual absence of firmly established landform names

within the Velká Kotlina cirque was a major obstacle. Most of the floristic data refer to Velká Kotlina as a single locality and/or habitat. However, a need for more detailed division of this site is expressed in all modern botanical papers, where vague micro-localities are occasionally defined as "upper zone", „foot of the rocks", "rocky ravine", "springs in the upper zone", "bottom of the cirque", etc. The latter name, for example, is sometimes substituted by "Kotelná louka" (formerly Kesselwiese), a deceptive term referring either to a flat landing right at the foot of the rocks („Laus Landing" in our sense) or to the broad flood-plain of the Moravice river at 1110 to 1130 m altitude ("Uechtriz Dale" in our sense).

A large-scale contour map 1 : 1,000 compiled by the Department of Geodesy, Agriculture University, Brno, served us as a basic tool for the establishment of a rectangular coordinate grid 100 by 100 m which was pegged out in the cirque; additional pegs situated in the centre of all squares made our reference grid still finer — 50 by 50 m. Subsequently, we have checked or mapped all prominent landforms, water courses and springs, which continued to provide a sufficient number of reference points after our pegs were swept away by avalanches or disappeared in lush vegetation. All landforms and water courses received a name as indicated in Fig. 1. While streams are named after certain prominent woody plants, the landform names honour respected scholars and other persons of merit who contributed to the present-day knowledge of Velká Kotlina. Our micro-topographical terminology of the Velká Kotlina cirque is assigned for scientific purposes only, and was not designed for further publicity.

The following alphabetical account presents the situation (referring to the grid in Fig. 1) of landform and vegetation features, and origin of the names of all micro-topographical points indicated in Fig. 1 and quoted in Table 1,

**Beckeho skály** ("Becke Rocks"): Outcrops of phyllites stretched along the 1200 m contour, in the E4 square. The dominant vegetation belongs to the *Juncetea trifidi*. After Friedrich Becke (1855—1931), professor of mineralogy, University of Prague, later in Vienna, author of works dealing with geology of Hrubý Jeseník and its crystalline schists.

**Borůvkový potok** ("Bilberry Brook"): A stream beginning at 1440 m altitude — the most elevated spring of the cirque. Situated in the C8 square, and inhabited by the *Montio-Cardaminetea*.

**Březový potok** ("Birch Brook"): Right tributary to Moravice rivulet, crossing the D6, E4 and E5 squares. On both sides, communities of the *Nardo-Calamagrostieta*.

**Bukový potok** ("Beech Brook"): Left tributary to Moravice rivulet, crossing the F2 and G1 squares. The banks are fringed by the *Betulo-Alnetea*.

**Cimrmanova zahrádka** ("Cimrman Garden"): Less inclined area on the southern margin of the cirque, between 1200 and 1350 m altitude, where mosaics of the *Mulgedio-Aconitetea* merge with the upper spruce zone. After Jára Cimrman, imaginary polyhistor, celebrated in Czech dramatic art and literature.

**Fiekovy ohlazy** ("Fiek Moulding"): Precipitous grassy and rocky slope smoothed down by avalanches. Situated in the C2 and C3 squares, inhabited by the *Juncetea trifidi*, *Asplenietea trichomanis* and *Montio-Cardaminetea*. After Emil Fiek (1840—1897), apothecary and botanist whose flora of Silesia from 1881 included a special chapter assessing peculiarities of Velká Kotlina.

**Finckeho strán** ("Fincke Slant"): Slightly undulating slope in the middle sector, belonging to the D3, D4 and E4 squares. Covered mainly by the *Daphno-Aceretum*. After August Fincke (1806—1873), apothecary in Silesia who shared with H. Grabowski some remarkable floristic discoveries in Velká Kotlina.

**Firbasova strán** ("Firbas Slant"): Steep slope above the rocks in the core of Velká Kotlina, between 1250 and 1300 m. Situated in the C2 and C3 squares, and covered by the *Hedysaromolinietum*, *Betulo-Alnetea* and *Asplenietea trichomanis*. After Franz Firbas, professor in botany,





Tab. 1. — Abbreviations of the names of the classes (Cl), orders (Or), alliances (Al), suballiances (SAl), associations (As), and subassociations (SAs) used in the Tab. 2; alphabetically listed

Al: <i>Aden. all.</i>	<i>Adenostylion alliariae</i> BR.-BL. 1926
Al: <i>Agr. arund.</i>	<i>Agrostion alpinae</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
Al: <i>Cal. arund.</i>	<i>Calamagrostion arundinaceae</i> (LUQUET 1926) JENÍK 1961
Al: <i>Cal. vill.</i>	<i>Calamagrostion villosae</i> PAWL., SOK. et WALL. 1928
Al: <i>Card.-Mont.</i>	<i>Cardamino-Montion</i> BR.-BL. 1925
Al: <i>Car. fus.</i>	<i>Caricion fuscae</i> KOCH 1926 em. KLIKA 1934
Al: <i>Dry.-Ath.</i>	<i>Dryopterido-Athyrium distentifolii</i> (HOLUB ex SÝKORA et ŠTURSA 1973) JENÍK, BUREŠ et BUREŠOVÁ 1980
Al: <i>Fag.</i>	<i>Fagion</i> LUQUET 1926
Al: <i>Jun. trif.</i>	<i>Juncion trifidi</i> PAWL. 1928
Al: <i>Mel.-Vac.</i>	<i>Melampyro-Vaccinion</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
Al: <i>Nar.</i>	<i>Nardion</i> BR.-BL. in BR.-BL. et JENNY 1926
Al: <i>Pic. exc.</i>	<i>Piceion excelsae</i> LUQUET 1926
Al: <i>Poo-Desch.</i>	<i>Poo chaixii-Deschampsion cespitosae</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
Al: <i>Sal. herb.</i>	<i>Salicion herbaceae</i> BR.-BL. in BR.-BL. et JENNY 1926
Al: <i>Sal. sil.</i>	<i>Salicion silesiacae</i> REJMÁNEK, SÝKORA et ŠTURSA 1971
As: <i>Acer.-Fag.</i>	<i>Aceri-Fagetum</i> J. et M. BARTSCH 1940
As: <i>Aden. all.</i>	<i>Adenostyletum alliariae</i> PAWL., SOK. et WALL. 1928
As: <i>All.-Crat.</i>	<i>Allio sibirici-Cratoneuretum filicinum</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>All. sib.</i>	<i>Allietum sibirici</i> ŠMARDA 1950
As: <i>Ath. alp.</i>	<i>Athyrietum alpestris</i> HADAČ 1956 em. W. et A. MATUSZ. 1960
As: <i>Ath.-Pic.</i>	<i>Athyrio alpestris-Piceetum</i> HARTMANN 1959
As: <i>Bup.-Cal.</i>	<i>Bupleuro-Calamagrostietum arundinaceae</i> JENÍK 1961
As: <i>Cal.-Fag.</i>	<i>Calamagrostio arundinaceae-Fagetum</i> HARTMANN 1959
As: <i>Cal.-Pic.</i>	<i>Calamagrostio villosae-Piceetum</i> (Tx. 1937) HARTMANN 1953
As: <i>Cet.-Fest.</i>	<i>Cetrario-Festucetum supinae</i> JENÍK 1961
As: <i>Daph.-Acer.</i>	<i>Daphno mezerei-Aceretum pseudoplatani</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Daph.-Dry.</i>	<i>Daphno mezerei-Dryopteridetum filicis-maris</i> SÝKORA et ŠTURSA 1973
As: <i>Epil.-Phil.</i>	<i>Epilobio alsinifolii-Philonotidetum</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Fest.-Pol.</i>	<i>Festuco supinae-Polytrichetum piliferi</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Fest.-Vac.</i>	<i>Festuco supinae-Vaccinietum myrtilli</i> ŠMARDA 1950
As: <i>Hed.-Mol.</i>	<i>Hedysaro hedysaroidis-Molinietum</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Las.-Dac.</i>	<i>Laserpitio-Dactylidetum glomeratae</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Pet. alb.</i>	<i>Petasietum albi</i> ZLATNÍK 1928
Ss: <i>Ping.-Trich.</i>	<i>Pinguiculo vulgaris-Trichophoretum alpini</i> (ŠMARDA 1950), JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Pol.-Nar.</i>	<i>Polytricho gracilis-Nardetum</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Poo-Desch.</i>	<i>Poo chaixii-Deschampsietum cespitosae</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Rhac.-All.</i>	<i>Rhacomitrio heterostichi-Allietum sibirici</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Sal.-Bet.</i>	<i>Salici silesiacae-Betuletum carpaticae</i> REJMÁNEK, SÝKORA et ŠTURSA 1971
As: <i>Sax.-Agr.</i>	<i>Saxifrago paniculatae-Agrostietum alpinae</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Sen.-San.</i>	<i>Senecioni rivularis-Salicetum hastatae</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Sil.-Cal.</i>	<i>Sileno vulgaris-Calamagrostietum villosae</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Thes.-Nar.</i>	<i>Thesio alpini-Nardetum</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Trol.-Ger.</i>	<i>Trollio altissimi-Geranium sylvatici</i> JENÍK, BUREŠ et BUREŠOVÁ 1980
As: <i>Viol.-Mol.</i>	<i>Violo biflorae-Molinietum</i> JENÍK, BUREŠ et BUREŠOVÁ 1980

- IC: *Asp. trich.*
- Cl: *Bet.-Aln.*
- Cl: *Jun. trif.*
- Cl: *Mont.-Card.*
- Cl: *Mul.-Acon.*
- Cl: *Nar.-Cal.*
- Cl: *Quer.-Fag.*
- Cl: *Sal. herb.*
- Cl: *Sch.-Car.*
- Cl: *Vac.-Pic.*
- Or: *Aden.*
- Or: *Aln. vir.*
- Or: *And. van.*
- Or: *Cal. vill.*
- Or: *Car. curv.*
- Or: *Car. fus.*
- Or: *Fag.*
- Or: *Mont.-Card.*
- Or: *Sal. herb.*
- Or: *Vac.-Pic.*
- SAl: *Acer.*
- SAl: *Luz.-Fag.*
- SAl: *Mont.*
- SAs: *Cal.-Fag. bet.*
- SAs: *Cet.-Fest. call.*
- SAs: *Cet.-Fest. desch.*
- SAs: *Cet.-Fest. typ.*
- SAs: *Fest.-Pol. camp.*
- SAs: *Fest.-Pol. mol.*
- SAs: *Fest.-Pol. sed.*
- SAs: *Fest.-Vac. cal.*
- SAs: *Fest.-Vac. vac.*
- SAS: *Las.-Dac. card.*
- SAs: *Las.-Dac. phal.*
- SAs: *Sal.-Bet. arund.*
- SAs: *Sal.-Bet. vill.*
- SAs: *Sil.-Cal. arund.*
- SAs: *Sil.-Cal. mol.*
- SAs: *Sil.-Cal. rub.*
- SAs: *Sil.-Cal. tri.*
- Asplenietea trichomanis* (BR.-BL. in MEIER et BR.-BL. 1934) OBERDORFER 1977
- Betulo carpaticae-Alnetea viridis* REJMÁNEK in HUML et al. 1979
- Juncetea trifidi* HADAČ in KLIKA et HADAČ 1944
- Montio-Cardaminetea* BR.-BL. et TX. 1943
- Mulgedio-Aconitetea* HADAČ et KLIKA 1944 em. JENÍK, BUREŠ et BUREŠOVÁ 1980
- Nardo-Calamagrostietea* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Quercio-Fagetea* BR.-BL. et Vlieg. 1937
- Salicetea herbaceae* BR.-BL. et al. 1947
- Scheuchzerio-Caricetea fuscae* TX. 1937
- Vaccinio-Piceetea* BR.-BL. in BR.-BL., SISS. et Vlieg. 1939
- Adenostyletalia* G. BR.-BL. 1931
- Alnetalia viridis* RÜBEL 1933
- Androsacetalia vandellii* BR.-BL. in MEIER et BR.-BL. 1934
- Calamagrostietalia villosae* PAWL., SOK. et WALL. 1928 em. JENÍK, BUREŠ et BUREŠOVÁ 1980
- Caricetalia curvulae* BR.-BL. in BR.-BL. et JENNY 1926
- Caricetalia fuscae* KOCH 1926 em. NORDH. 1937
- Fagetalia* PAWL., SOK. et WALL. 1928
- Montio-Cardaminetalia* PAWL., SOK. et WALL. 1928
- Salicetalia herbaceae* BR.-BL. in BR.-BL. et JENNY 1926
- Vaccinio-Piceetalia* BR.-BL. in BR.-BL., SISS. et Vlieg. 1939
- Acerenion* OBERD. 1957
- Luzulo-Fagenion* (LOHM. et TX. 1954) OBERD. 1957
- Montenion* (MAAS 1959) DEN HELD et WESTH. 1969
- Calamagrostio arundinaceae-Fagetum betuletosum carpaticae* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Cetrario-Festucetum supinae callunetosum* ROZSYPALOVÁ in BUREŠOVÁ 1976
- Cetrario-Festucetum supinae deschampsictosum flexuosae* ROZSYPALOVÁ in BUREŠOVÁ 1976
- Cetrario-Festucetum supinae typicum* ROZSYPALOVÁ in BUREŠOVÁ 1976
- Festuco supinae-Polytrichetum piliferi campanuletosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Festuco supinae-Polytrichetum piliferi molinietosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Festuco supinae-Polytrichetum piliferi sedetosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Festuco supinae-Vaccinietum myrtilli calamagrostietosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Festuco supinae-Vaccinietum myrtilli vaccinietosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Laserpitio-Dactylidetum glomeratae carduetosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Laserpitio-Dactylidetum glomeratae phalaridetosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Salici silesiacae-Betuletum carpaticae calamagrostietosum arundinaceae* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Salici silesiacae-Betuletum carpaticae calamagrostietosum villosae* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Sileno vulgaris-Calamagrostietum villosae arundinacetosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Sileno vulgaris-Calamagrostietum villosae molinietosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Sileno vulgaris-Calamagrostietum villosae rubetosum* JENÍK, BUREŠ et BUREŠOVÁ 1980
- Sileno vulgaris-Calamagrostietum villosae trientalietosum* JENÍK, BUREŠ et BUREŠOVÁ 1980

Tab. 2. — Annotated list of vascular plant taxa of Velká Kotlina

No	Taxon	Cat.	Affinity to syntaxa
1	<i>Acer pseudoplatanus</i> L.	A	Or: <i>Fag.</i> , SAs: <i>Sal.-Bet. ar.</i> , As: <i>Daph.-Dry.</i>
2	<i>Acetosa alpestris</i> (JACQ.) Á. LÖVE	A	Indifferent species, present in almost all communities
3	<i>Acetosa pratensis</i> MILL.	A	Transitions to As: <i>Thes.-Nar.</i>
4	<i>Achillea millefolium</i> L. subsp. <i>sudetica</i> (OPIZ) WEISS	A	Cl: <i>Nar.-Cal.</i> , As: <i>Trol.-Ger.</i> , As: <i>Hed.-Mol.</i>
5	<i>Aconitum callibotryon</i> REICHENB.	A	Cl: <i>Mul.-Acon.</i> , Cl: <i>Bet.-Aln.</i> , SAl: <i>Acer.</i> , etc.
6	<i>Aconitum lycoctonum</i> L. em. KOELLE subsp. <i>lycoctonum</i>	A	SAl: <i>Acer.</i> , Bs: <i>Pet. alb.</i> , As: <i>Las.-Dac.</i>
7	<i>Aconitum variegatum</i> L.	A	As: <i>Dap.-Acer.</i> , As: <i>Las.-Dac.</i> , As: <i>Bup.-Cal.</i> , etc.
8	<i>Actaea spicata</i> L.	A	Only Or: <i>Fag.</i>
9	<i>Adenostyles alliariae</i> (GOUAN) KERN.	A	Cl: <i>Mul.-Acon.</i> , Or: <i>Fag.</i> , Cl: <i>Vac.-Pic.</i> , Cl: <i>Bet.-Aln.</i> , etc.
10	<i>Aegopodium podagraria</i> L.	A	Transitions to As: <i>Thes.-Nar.</i>
11	<i>Agrostis alpina</i> SCOP.	A	Al: <i>Agr. alp.</i> , As: <i>Fest.-Pol.</i>
12	<i>Agrostis tenuis</i> SIBTH. subsp. <i>tenuis</i>	A	As: <i>Thes.-Nar.</i> , As: <i>Prol.-Ger.</i> , As: <i>Poo-Desch.</i>
13	<i>Agrostis tenuis</i> SIBTH. subsp. <i>oreophila</i> O. SCHWARZ	B	Transitions to: As: <i>Hed.-Mol.</i> , and to As: <i>Fest.-Pol.</i>
14	<i>Ajuga genevensis</i> L.	A	As: <i>Hed.-Mol.</i> , As: <i>Thes.-Nar.</i>
15	<i>Ajuga reptans</i> L.	A	Cl: <i>Mul.-Acon.</i> , As: <i>Thes.-Nar.</i> , Cl: <i>Bet.-Aln.</i> , etc.
16	<i>Alchemilla acutiloba</i> OPIZ in BERCHT. et OPIZ	B	As: <i>Sal.-Bet.</i>
17	<i>Alchemilla glabra</i> NEYGENF.	A	Al: <i>Car.-Mont.</i> , etc.
18	<i>Alchemilla monticola</i> OPIZ	A	As: <i>Trol.-Ger.</i> , As: <i>Sil.-Cal.</i>
19	<i>Alchemilla obtusa</i> BUSER	B	Cl: <i>Mont.-Car.</i> , As: <i>Ping.-Trich.</i> , As: <i>Pet. alb.</i> , As: <i>Aden. all.</i> , etc.
20	<i>Alchemilla subcrenata</i> BUSER	B	As: <i>Trol.-Ger.</i>
21	<i>Alchemilla xanthochlora</i> ROTHM.	B	As: <i>Pet. alb.</i> , As: <i>Aden. all.</i> , As: <i>Trol.-Ger.</i> , As: <i>Las.-Dac.</i>
22	<i>Allium schoenoprassum</i> L. subsp. <i>sibiricum</i> (L.) HARTMAN	A	As: <i>All.-Crat.</i> , As: <i>Ping.-Trich.</i> , Al: <i>Agr. alp.</i> , As: <i>All. sib.</i> , etc.
23	<i>Anemonastrum narcissiflorum</i> (L.) HOLUB	A	Al: <i>Cal. vill.</i> , As: <i>Thes.-Nar.</i> , As: <i>Cet.-Fest.</i> , etc.
24	<i>Anemonoides nemorosa</i> (L.) HOLUB	A	SAl: <i>Acer.</i> , Cl: <i>Bet.-Aln.</i> , Cl: <i>Mul.-Acon.</i> , etc.
25	<i>Anemonoides ranunculooides</i> (L.) HOLUB	A	SAl: <i>Acer.</i> , Cl: <i>Mul.-Acon.</i> , etc.
26	<i>Angelica sylvestris</i> L. s.l.	A	Cl: <i>Mul.-Acon.</i> , Al: <i>Nar.</i> , Al: <i>Poo-Desch.</i>
27	<i>Antennaria dioica</i> (L.) GAERTN.	A	As: <i>Hed.-Mol.</i> , As: <i>Fest.-Pol.</i> , As: <i>Thes.-Nar.</i>
28	<i>Anthoxanthum odoratum</i> L. s.l.	A	Mainly in As: <i>Thes.-Nar.</i> , but frequent also elsewhere
29	<i>Anthriscus nitida</i> (WAHLENB.) HAZSLINSZKY	A	Only As: <i>Daph.-Acer.</i> , As: <i>Las.-Dac.</i> , SAs: <i>Sil.-Cal. rub.</i>
30	<i>Arabis sudetica</i> TAUSCH	A	Transition to Al: <i>Agr. alp.</i> and As: <i>Fest.-Pol.</i>
31	<i>Aruncus vulgaris</i> RAFIN.	A	As: <i>Daph.-Acer.</i> , As: <i>Sax.-Agr.</i> , As: <i>Fest.-Pol.</i>
32	<i>Asarum europaeum</i> L.	A	Or: <i>Fag.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Dry.</i> , As: <i>Las.-Dac.</i> , etc.

◀ cirque recorded by the authors in the period 1971 to 1978

Distribution in cirque	Pop. size	Note
Frequent in middle and lower belt	4	Commonly reported
Very abundant in the whole cirque	3-5	Commonly reported from the summit area of Hr. Jeseník
Only C1d	2	Only OTRUBA (1926), by present authors in 1975
Scattered in the middle and lower belt	3	Identified by WIMMER (1840)
Rather frequent in middle and lower belt	3-4	Commonly reported
Scattered in middle and lower belt	2-3	Commonly reported
Scattered in middle and lower belt	2-3	First reported by JERIOVÁ (1970)
Rarely, mainly on Fincke Slant, alt. max. 1330 m	1-2	Commonly reported
Frequent over the whole cirque, solitary in upper belt	4-5	Commonly reported
Only E2a (1972)	1	First reported by OTRUBA (1930)
Frequent on rocks, namely Firbas Slant, Vitásek Ravine, and Fiek Moulding	3-4	Discovered by GRABOWSKI in 1832
Scattered over the whole area	2-3	Commonly reported in the summit region of Hr. Jeseník
Solitary on Fiek Moulding and Schube Road	1-2	Discovered by the present authors in 1976
Very rarely, B2b at 1325 m, F1a	1	Discovered by UECHTRITZ (FIEK 1881)
Scattered in middle and lower belt, alt. max. 1380 m	2	Commonly reported
Rarely, F2c et 1130 m	2-3	Discovered by the present authors in 1974
Rarely: B3c, B4a, C3a, C8b	2-3	First record by OBORNY (1886)
Rarely: C0d, C4d	2	First record by OTRUBA (1930)
Scattered in middle and lower belt	3	Collected by the present authors in 1974
Rarely: A4b, B4a, C0d, C1c, D2a	3	Collected by the authors in 1974
Rarely: C4d, C5c, C7a, E6b, E7d	3	Found by the present authors in 1972
Rather abundant over the whole area	4-5	Commonly reported, first reported by ROHRER et MAYER (1835)
Rather abundant in upper belt	2-4	Common records following WIMMER (1832)
Scattered in middle and lower belt	1-3	Since GRABOWSKI (1843), commonly reported
Solitary: C4b, D3a, D4c, D4d, E3c, F2d, alt. max. 1340 m	1-3	Since GRABOWSKI (1843), commonly reported
Scattered in middle and lower belt	2-3	First record by LAUS (1910), referring to subsp. <i>montana</i>
Rarely: C2a, C4d, C6d, F3c, alt. max. 1360 m	2-3	Found by GRABOWSKI (1843). later commonly reported
Frequent over the whole area	4	Possibly includes <i>A. nipponicum</i> subsp. <i>alpinum</i>
Rare in middle belt: B3b, D4d, E3b	1-2	First reported by WIMMER et GRABOWSKI (1827-29)
Rarely on the rocks in middle belt	1	Commonly reported, already by WIMMER (1840)
Scattered in middle belt	2-3	Commonly reported
Scattered in lower and middle belt, alt. max. 1360 m	3-4	First explicit record from the cirque only by ŠMARDÁ (1950a)

No	Taxon	Cat.	Affinity to syntaxa
33	<i>Asplenium trichomanes</i> L. s.l.	A	Transition to As: <i>Sax.-Agr.</i>
34	<i>Asplenium viride</i> HUDS.	A	Transitions to As: <i>Sax.-Agr.</i>
35	<i>Aster alpinus</i> L.	A	Transitions to As: <i>Sax.-Agr.</i>
36	<i>Athyrium distentifolium</i> TAUSCH ex OPIZ	A	Al: <i>Dry.-Ath.</i> , As: <i>Ath.-Pic.</i> , As: <i>Aden. all.</i> , Or: <i>Fag.</i> , etc.
37	<i>Athyrium filix-femina</i> (L.) ROTH	A	Or: <i>Fag.</i> , SAs: <i>Sal.-Bet. arund.</i> , As: <i>Las.-Dac.</i> , etc.
38	<i>Avenella flexuosa</i> (L.) DREJER s.l.	A	Cl: <i>Jun. trif.</i> , Cl: <i>Nar.-Cal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Fest.-Vac.</i> , As: <i>Cal.-Pic.</i> , etc.
39	<i>Avenula planiculmis</i> (SCHRAD.) SAUER et CHMEL. s.s.	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , As: <i>Bup.-Cal.</i> , etc.
40	<i>Bacothyron alpinum</i> (L.) EGOR.	A	Al: <i>Car. fus.</i> , As: <i>All.-Crat.</i>
41	<i>Bartsia alpina</i> L.	A	As: <i>Ping.-Trich.</i> , Al: <i>Agr. alp.</i>
42	<i>Betula carpatica</i> WALDST. et KIT.	A	As: <i>Sal.-Bet.</i> , SAs: <i>Cal.-Fag. bet.</i>
43	<i>Betula pubescens</i> EHRH. s.s	A	As: <i>Sal.-Bet.</i> , Al: <i>Aden. all.</i>
44	<i>Bistorta major</i> MILL.	A	Nearly all syntaxa
45	<i>Blechnum spicant</i> (L.) ROTH	A	Al: <i>Pic. exc.</i>
46	<i>Botrychium lunaria</i> (L.) SW.	A	As: <i>Trol.-Ger.</i> , As: <i>Thes.-Nar.</i> , As: <i>Cet.-Fest.</i> , etc.
47	<i>Briza media</i> L.	A	Above all in As: <i>Thes.-Nar.</i>
48	<i>Bupleurum longifolium</i> L. subsp. <i>vapincense</i> (VILL.) TODOR	A	As: <i>Bup.-Cal.</i> , As: <i>Las.-Dac.</i> , As: <i>Hed.-Mol.</i>
49	<i>Calamagrostis arundinacea</i> (L.) ROTH	A	Cl: <i>Nar.-Cal.</i> , Cl: <i>Mul.-Acon.</i> , Al: <i>Sal. sil.</i> , As: <i>Cal.-Fag.</i> , etc.
50	<i>Calamagrostis canescens</i> (WEBER) ROTH	A	As: <i>Sil.-Cal.</i>
51	<i>Calamagrostis epigeios</i> (L.) ROTH	A	SAs: <i>Sel.-Bet. vill.</i>
52	<i>Calamagrostis villosa</i> (CHAIX) J. F. GMELIN	A	Absent in: SAl: <i>Mont.</i> , As: <i>Ping.-Trich.</i> , SAs: <i>Las.-Dac. phal.</i>
53	<i>Calathiana verna</i> (L.) HOLUB	A	As: <i>Ping.-Trich.</i> , As: <i>Hed.-Mol.</i> , As: <i>All. sib.</i> , As: <i>All.-Crat.</i>
54	<i>Calluna vulgaris</i> (L.) HULL	A	Al: <i>Jun. trif.</i> , Al: <i>Agr. alp.</i>
55	<i>Caltha palustris</i> L. s.l.	A	SAl: <i>Mont.</i> , As: <i>Poo.-Desch.</i> , As: <i>Sen.-Sal.</i> , As: <i>Pet. alb.</i> , etc.
56	<i>Campanula barbata</i> L.	A	Only As: <i>Thes.-Nar.</i>
57	<i>Campanula latifolia</i> L.	A	As: <i>Daph.-Acer.</i> , As: <i>Las.-Dac.</i> , As: <i>Sal.-Bet.</i>
58	<i>Campanula persicifolia</i> L.	A	As: <i>Las.-Dac.</i> , As: <i>Bup.-Cal.</i>
59	<i>Campanula tatrae</i> BORBAS subsp. <i>sudetica</i> (HRUBY) KOVANDA	A	As: <i>Sax.-Agr.</i> , As: <i>Hed.-Mol.</i> , SAs: <i>Fest.-Pol. camp.</i>
60	<i>Campanula trachelium</i> L.	A	Ss: <i>Las.-Dac.</i> , As: <i>Daph.-Acer.</i> , As: <i>Bup.-Cal.</i>
61	<i>Cardamine amara</i> L.	A	Cl: <i>Mont.-Card.</i>
62	<i>Cardamine opizii</i> J. et C. PRESL	A	As: <i>All.-Crat.</i> , Or: <i>Aden.</i>
63	<i>Cardamine pratensis</i> L.	A	SAl: <i>Mont.</i> , As: <i>Thes.-Nar.</i> , As: <i>All. sib.</i> , As: <i>Trol.-Ger.</i> , etc.
64	<i>Cardaminopsis arenosa</i> (L.) HAYEK	A	As: <i>Sax.-Agr.</i> , As: <i>Fest.-Pol.</i>
65	<i>Carduus personata</i> (L.) JACQ.	A	SAs: <i>Las.-Dac. car.</i> , As: <i>Pet. alb.</i> , SAs: <i>Sal.-Bet. vill.</i> , etc.
66	<i>Carex acutiformis</i> EHRH.	A	As: <i>All. sib.</i> , As: <i>Viol.-Mol.</i> , As: <i>Sen.-Sal.</i>

Distribution in cirque	Pop. size	Note
Mainly Vitásek Ravine	1-2	Only by LAUS (1910)
Solitary on the rocks	2-3	Common reports
Very rare	2-3	Discovered by KRAUSE and FINCKE in 1834, possibly refers to <i>A. serpentimontanus</i> TAM.
Fairly abundant over the whole area	4-5	Common records from high elevations of Hr. Jeseník Mts.
Scattered in lower and middle belt, alt. max. 1330 m	2-4	Commonly reported
Very frequent	4-5	Commonly reported from higher elevations of Hr. Jeseník Mts., subsp. <i>montana</i> (L.) Á. LÖVE et D. LÖVE likely present
Solitary in upper and middle belt	3	Commonly reported, already by WIMMER (1840)
Scattered over whole area	4	Commonly reported (syn. <i>Trichophorum alpinum</i> )
Rocks of the middle belt	3-4	Commonly reported
Abundant	4-5	Common reports
Rare, only C3c, 1290 m	1	OTRUBA (1926), the authors in 1974
Abundant, except on rocks	4-5	Commonly reported
Rare	1-2	Explicitly from the cirque reported by OBORNY (1883), and OTRUBA (1930)
Scattered to rare, mainly in Cimrman Garden	2-3	Explicitly from the cirque first reported by OBORNY (1883)
Scattered, alt. max. 1350 m	2-4	Reported
Rather rare in middle belt, most frequent on Firbas Slant	2-3	Common reports, started already by WIMMER (1832)
Abundant over the whole cirque, mainly in the middle belt	4-5	Commonly reported from highest elevations of Hr. Jeseník Mts.
Found merely in G1a, 1120 m	2	Reported only by LAUS (1910)
Solitary in Uechtritz Dale	2-3	Reported only by OTRUBA (1926)
Abundant over the whole cirque	4-5	Commonly reported from higher elevations of Hr. Jeseník Mts.
Scattered, mainly in middle belt	3-4	Commonly reports, already WIMMER (1832) (syn. <i>Gentiana verna</i> )
Scattered to very abundant in middle and upper belt	3-4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Rather abundant in middle and lower belt, alt. max. 1430 m	4	Subsp. <i>procumbens</i> (BECK) NEUMAYER possibly prevailing
Rare to scattered	3-4	Commonly reported
Rarely: C3d, D4c, E2b, E4b, E4c, F3c		Common reports, started already by GRABOWSKI (1843)
Very rarely: B2b, B4b, C4b, alt. max. 1360 m	1-2	Likely first discovered by GRABOWSKI (1843)
Scattered to fairly abundant on rocks in middle belt	3-4	Reported already by GRABOWSKI (1843) as <i>C. rotundifolia</i> L.
Rather rare in middle belt, alt. max. 1360 m	1-2	Commonly reported
Solitary, near F0c, 1200 m	4	Reported by OTRUBA (1926)
Scattered over the whole area	4	Commonly reported
Scattered to very abundant in lower and middle belt, alt. max. 1400 m	4	First explicit record from the cirque only by OTRUBA (1926)
Solitary on rocks, e.g. in C4a, C4d, D3a, D3b, D3c	2	First record by GRABOWSKI (1843)
Rather abundant in lower and middle belt, alt. max. 1360 m	3-4	Explicitly from the cirque first by OBORNY (1883)
Rare in Uechtritz Dale and on Laus Landing	3-4	First record in FIEK (1881)



No	Taxon	Cat.	Affinity to syntaxa
67	<i>Carex aterrima</i> HOPPE	A	As: <i>Rhac.-All.</i> , As: <i>Hed.-Mol.</i> , etc.
68	<i>Carex bigelowii</i> TORR. ex SCHWEIN. subsp. <i>nardeticola</i> HOLUB	A	As: <i>Cet.-Fest.</i> , As: <i>Thes.-Nar.</i>
69	<i>Carex buxbaumii</i> WAHLENB.	A	As: <i>Hed.-Mol.</i> and transitions
70	<i>Carex canescens</i> L.	A	As: <i>Ping.-Trich.</i> , As: <i>All.-Crat.</i>
71	<i>Carex digitata</i> L.	A	As: <i>Rhac.-All.</i> , As: <i>Hed.-Mol.</i>
72	<i>Carex echinata</i> MURRAY	A	As: <i>Ping.-Trich.</i> , As: <i>All.-Crat.</i> , As: <i>Hed.-Mol.</i> , etc.
73	<i>Carex flava</i> L.	A	As: <i>Ping.-Trich.</i> , Al: <i>Agr. alp.</i> , As: <i>All. sib.</i> , etc.
74	<i>Carex gracilis</i> CURTIS s.l.	A	Transitional communities
75	<i>Carex</i> cf. <i>lepidocarpa</i> TAUSCH	A	Transitional communities
76	<i>Carex leporina</i> L.	A	Transition to SAs: <i>Fest.-Vac. cal.</i>
77	<i>Carex montana</i> L.	A	As: <i>Hed.-Mol.</i> , As: <i>Trol.-Ger.</i>
78	<i>Carex nigra</i> (L.) REICHARD s.l.	A	Al: <i>Car. fus.</i> , As: <i>All.-Crat.</i> , etc.
79	<i>Carex pallescens</i> L.	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , As: <i>Viol.-Mol.</i> , etc.
80	<i>Carex panicea</i> L.	A	As: <i>Thes.-Nar.</i>
81	<i>Carex pilulifera</i> L.	A	As: <i>Thes.-Nar.</i>
82	<i>Carex rostrata</i> STOKES ex WITH.	A	As: <i>All. sib.</i>
83	<i>Carex sylvatica</i> HUDS.	A	SAl: <i>Acer.</i>
84	<i>Carex vaginata</i> TAUSCH	A	As: <i>Thes.-Nar.</i> , Al: <i>Car. fus.</i> , As: <i>All.-Crat.</i>
85	<i>Carlina acaulis</i> L. subsp. <i>acaulis</i>	A	As: <i>Hed.-Mol.</i> , As: <i>Bup.-Cal.</i> , As: <i>Trol.-Ger.</i> , etc.
86	<i>Carlina stricta</i> (ROUY) FRITSCH	A	As: <i>Bup.-Cal.</i>
87	<i>Cerastium arvense</i> L. subsp. <i>arvense</i>	B	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i>
88	<i>Cerastium fontanum</i> BAUMG.	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , etc.
89	<i>Chaerophyllum hirsutum</i> L.	A	Al: <i>Aden. all.</i> , SAl: <i>Mont.</i> , As: <i>Ping.-Trich.</i> , SAl: <i>Acer.</i> , etc.
90	<i>Chamerion angustifolium</i> (L.) HOLUB	A	As: <i>Daph.-Acer.</i> , ledges of rocks, etc.
91	<i>Chrysosplenium alternifolium</i> L.	A	As: <i>Las.-Dac.</i> , SAl: <i>Mont.</i> , As: <i>Pet. alb.</i> , etc.
92	<i>Cicerbita alpina</i> (L.) WALLR.	A	Or: <i>Aden.</i> , Or: <i>Fag.</i> , As: <i>Sal.-Bet.</i> , As: <i>Bup.-Cal.</i> , etc.
93	<i>Cirsium heterophyllum</i> (L.) HILL	A	Al: <i>Aden.-all.</i> , As: <i>Sal.-Bet.</i> , As: <i>Bup.-Cal.</i> , As: <i>Poo.-Desch.</i>
94	<i>Cirsium oleraceum</i> (L.) SCOP.	A	As: <i>Las.-Dac.</i> , As: <i>Pet. alb.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Acer.</i>
95	<i>Cirsium rivulare</i> (JACQ.) ALL.	A	As: <i>All. sib.</i> , As: <i>Viol.-Mol.</i>
96	<i>Cirsium</i> × <i>affine</i> TAUSCH (= 93 × 94)	A	As: <i>Las.-Dac.</i> , As: <i>Daph.-Acer.</i>
97	<i>Cirsium</i> × <i>ambiguum</i> ALL. (= 93 × 95)	B	As: <i>All. sib.</i> and transitions
98	<i>Cirsium</i> × <i>erucagineum</i> DC. (= 94 × 95)	A	As: <i>All. sib.</i> and transitions
99	<i>Coeloglossum viride</i> (L.) HARTMAN	A	As: <i>Thes.-Nar.</i> and its transitions
100	<i>Conioselinum tataricum</i> HOFFM.	A	As: <i>Daph.-Acer.</i> , As: <i>Las.-Dac.</i> , SAs: <i>Sil.-Cal. rub.</i> , As: <i>Sal.-Bet.</i>
101	<i>Convallaria majalis</i> L.	A	As: <i>Sil.-Cal.</i> , As: <i>Bup.-Cal.</i> , As: <i>Fest.-Vac.</i> , etc.
102	<i>Corallorhiza trifida</i> CHATEL.	A	Transition stages

Distribution in cirque	Pop. size	Note
Rarely: B0a, B3d, C2d, D3a	2-3	Frequently reported as <i>C. atrata</i> L. or <i>C. a. aterrima</i> (HOPPE) C. HARTM.
Scattered in Schauer, Formánek and Kunz Side	3	Commonly reported already by WIMMER (1840)
Scattered on Fiek Moulding and Firbas Slant	2-4	First reported by WIMMER (1840) and GRABOWSKI (1843)
Rather rare in middle and lower belt	3	Commonly reported from higher elevation of Hr. Jeseník Mts.
Solitary on Fiek Moulding	1-2	Reported only by JERIOVÁ (1970)
Scattered over the whole area	3	First explicit record from the cirque only by OBORNY (1883)
Rather abundant in middle and lower belt	4	Commonly reported already by GRABOWSKI (1843)
Solitary on Laus Landing and Hruby Landing, D2d, E4d	4	Reported only by JERIOVÁ (1970)
Rarely, so far only C3a and E2a	3	Solely by OBORNY (1883) and OTRUBA (1926)
Solitary on Laus Landing, D3d	3	Reported already by SCHUBE (1903-4)
Fiek Moulding, Firbas Slant	4	Commonly reported
Scattered in middle and lower belt	3-4	Commonly reported from the upper elevations of Hr. Jeseník Mts.
Rather abundant, mainly middle belt, alt. max. 1420 m	4	Reported only by FIEK (1881)
So far recorded solely near Early Spring, F3c	2	Reported solely by OTRUBA (1926) and JERIOVÁ (1970)
Solely in B0a, F2c	3	Reported only by LAUS (1910)
Rarely: F1a, F1b, G2c	3	Commonly reported
Very rare: C4a, D1b, D4c, F4a, alt. max. 1360 m	2	Explicitly from the cirque solely OTRUBA (1926), JENÍK (1961)
Rare in upper belt: B5c, B6a, E6b, F7c	2-3	Discovered by FINCKE and KRAUSE 1834 (WIMMER 1840)
Rare in lower and middle belt, alt. max. 1365 m	3	Reported already by GRABOWSKI (1843)
Rare, B2d, 1320 m	1	Already by GRABOWSKI (1843)
Very rarely, solely in Cimrman Garden, C1c, D0c	2	JERIOVÁ (1970) listed also <i>C. *lerchenfeldianum</i>
Scattered in the whole area	2-3	Commonly reported
Rather abundant in the whole area, alt. max. 1435 m	4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Solitary in middle belt, alt. max. 1350 m (Kettner Rock)	3	Commonly reported from higher elevations of Hr. Jeseník Mts.
Scattered in lower and middle belt	3-4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Scattered in middle and lower belt	3-4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Scattered in middle and lower belt, alt. max. 1420 m	3-4	Commonly reported, already by ROHRER et MAYER (1835)
Scattered in middle and lower belt, alt. max. 1360 m	3-4	FIEK (1881) indicated OBORNY as first collector
Rarely: F1a, F2d, G1b	1-2	Only by LAUS (1910), OTRUBA (1926)
Rare: D1c, D3a, F1a, F1b, G1d	1	Discovered by OBORNY in 1876
Solely D5d, F1a	1	Found in 1976 by the authors
Very rarely: F1a	1-2	Discovered by OBORNY in 1876
Rare, mainly in upper and middle belt, e.g. A6d, B6a, E7d	2	Explicitly from the cirque only by OBORNY (1883)
Very rare	1-2	Discovered by FINCKE and GRABOWSKI (GRABOWSKI 1843)
Scattered in middle belt, alt. max. 1400 m	3-4	From the cirque first reported by MÜNCKE (1855)
Very rare	1	First reported by OBORNY (1883)

No	Taxon	Cat.	Affinity to syntaxa
103	<i>Corylus avellana</i> L.	A	As: <i>Daph.-Acer.</i> , As: <i>Sal.-Bet.</i>
104	<i>Cotoneaster integerrimus</i> MED.	A	Rocks
105	<i>Crataegus monogyna</i> JACQ. s.l.	B	As: <i>Daph.-Acer.</i>
106	<i>Crepis conyzifolia</i> (GOUAN) DALLA-TORRE	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , As: <i>Fest.-Vac.</i> , etc.
107	<i>Crepis mollis</i> (JACQ.) ASCHERS. subsp. <i>mollis</i>	A	As: <i>Thes.-Nar.</i> , As: <i>Poo.-Desch.</i>
108	<i>Crepis mollis</i> (JACQ.) ASCHERS. subsp. <i>succisifolia</i> (ALL.) JÁVORKA	A	Cl: <i>Mulg.-Acon.</i>
109	<i>Crepis paludosa</i> (L.) MOENCH	A	Cl: <i>Mul.-Acon.</i> , SAL: <i>Mont.</i> , As: <i>All. sib.</i> , etc.
110	<i>Crepis sibirica</i> L.	A	As: <i>Daph.-Acer.</i> , As.: <i>Sal.-Bet.</i>
111	<i>Currania dryopteris</i> (L.) WHERRY	A	As: <i>Ath. alp.</i> , Or: <i>Fag.</i> , transition stages on rocks
112	<i>Cystopteris fragilis</i> (L.) BERNH.	A	As: <i>Sax.-Agr.</i> and transitions to As: <i>Fest.-Pol.</i>
113	<i>Dactylis glomerata</i> L. subsp. <i>glomerata</i>	A	Cl: <i>Mul.-Acon.</i> , As: <i>Sal.-Bet.</i> , Al: <i>Fag.</i> , etc.
114	<i>Dactylis glomerata</i> L. subsp. <i>slovenica</i> (DOMIN) DOMIN	A	Cl: <i>Mul.-Acon.</i>
115	<i>Dactylorhiza fuchsii</i> (DRUCE) SOÓ subsp. <i>fuchsii</i>	A	As: <i>All. sib.</i> , As: <i>Viol.-Mol.</i> , As: <i>Pin.-Trich.</i> , etc.
116	<i>Dactylorhiza fuchsii</i> (DRUCE) SOÓ subsp. <i>psychrophila</i> (SCHLECHTER) HOLUB	B	As: <i>Ping.-Trich.</i> , Al: <i>Car. fus.</i> , As: <i>Rhac.-All.</i>
117	<i>Daphne mezereum</i> L.	A	As: <i>Daph.-Dry.</i> , SAL: <i>Acer.</i> , As: <i>Sal.-Bet.</i> , As: <i>Las.-Dac.</i> , etc.
118	<i>Delphinium elatum</i> L. subsp. <i>elatum</i>	A	Al: <i>Aden. all.</i> , As: <i>Daph.-Acer.</i> , As: <i>Bup.-Cal.</i>
119	<i>Deschampsia cespitosa</i> (L.) P. B. s.l.	A	As: <i>Poo.-Desch.</i> , Al: <i>Aden. all.</i> , As: <i>Thes.-Nar.</i> , SAL: <i>Mont.</i> , etc.
120	<i>Dianthus carthusianorum</i> L. subsp. <i>sudeticus</i> KOVANDA	A	As: <i>Hed.-Mol.</i> , As: <i>Bup.-Cal.</i> , As: <i>Thes.-Nar.</i> , etc.
121	<i>Dianthus superbus</i> L. subsp. <i>alpestris</i> KABLIK. ex ČELÁK.	A	As: <i>Thes.-Nar.</i> , solitary in As: <i>Trol.-Ger.</i> and As: <i>Bup.-Cal.</i>
122	<i>Digitalis grandiflora</i> MILL.	A	As: <i>Bup.-Cal.</i>
123	<i>Diphasiastrum alpinum</i> (L.) HOLUB	A	As: <i>Sil.-Cal.</i>
124	<i>Doronicum austriacum</i> JACQ.	A	Al: <i>Aden. all.</i> , SAL: <i>Acer.</i> , As: <i>Sal.-Bet.</i> , As: <i>Bup.-Cal.</i>
125	<i>Drosera rotundifolia</i> L.	A	As: <i>Ping.-Trich.</i>
126	<i>Dryopteris carthusiana</i> (VILL.) H. P. FUCHS	A	Al: <i>Pic. exc.</i> , As: <i>Sal.-Bet.</i>
127	<i>Dryopteris dilatata</i> (HOFFM.) A. GRAY	A	Al: <i>Pic. exc.</i>
128	<i>Dryopteris expansa</i> (C. PRESL) FRASER-JENKINS et JERMY	B	Al: <i>Pic. exc.</i> , As: <i>Sal.-Bet.</i> , Cl: <i>Quer.-Fag.</i> , etc.
129	<i>Dryopteris filix-mas</i> (L.) SCHOTT	A	As: <i>Daph.-Dry.</i> , As: <i>Sal.-Bet.</i> , Or: <i>Fag.</i> , As: <i>Bup.-Cal.</i> , etc.
130	<i>Dryopteris oreades</i> FOMIN	B	Open spruce stands on scree
131	<i>Duschekia viridis</i> (CHAIX) OPIZ	B	Planted in As: <i>Trol.-Ger.</i>
132	<i>Empetrum hermaphroditum</i> HAGERUP	A	Transition stages
133	<i>Epilobium alpestre</i> (JACQ.) KROCKER	A	Al: <i>Aden. all.</i> , SAL: <i>Acer.</i> , As: <i>Bup.-Cal.</i> , As: <i>Sal.-Bet.</i> , etc.
134	<i>Epilobium alsinifolium</i> VILL.	A	Solely SAL: <i>Mont.</i>
135	<i>Epilobium anagallidifolium</i> LAMK.	A	Solely SAL: <i>Mont.</i>

Distribution in cirque	Pop. size	Note
Scattered in middle belt, alt. max. 1310 m	1	First recorded by FIEK (1881) after Uechtritz's collection
Rarely: C4a, C4d, D3c	1	Commonly reported
Single sterile specimen in D3b, 1215 m	1	Found by the present authors in 1972
Rather abundant, mainly in middle belt	4	Commonly reported
Scattered in the whole area	4	Reported only by SCHUBE (1904)
Rarely, mainly in Cimernan Garden	2	Reported already by GRABOWSKI (1843)
Abundant in the whole area, alt. max. 1420 m	4	Commonly reported from higher altitudes of Hr. Jeseník Mts.
Very rare	2-3	Mückusch 1826 as <i>Cineraria sibirica</i> , properly identified by WIMMER (1840)
Rarely, mainly on the rocks of Vitásek Ravine	3	Explicitly from the cirque first by SCHUBE (1903-4) (syn. <i>Phegopteris dryopteris</i> )
Scattered on the rocks in middle belt	2-3	Commonly reported from higher elevations of Hr. Jeseník Mts.
Very abundant, mainly in middle belt, alt. max. 1450 m	5	Reported already by FIEK (1881)
Abundant jointly with the preceding species	5	Reported only by REJMÁNEK, SÝKORA et ŠTURSA (1971)
Rather abundant, mainly in middle and lower belt	3-4	Explicitly from the cirque first by WIMMER (1857)
Scattered in upper belt, mainly in Grabowski and Wimmer Gullies	2	Not identified by earlier authors, recorded by the present authors in 1972
Scattered in middle and lower belt, alt. max. 1360 m	3-4	Commonly reported, already WIMMER (1840)
Rather abundant, mainly on Laus Landing	4-5	Commonly reported, first recorded by ROHRER et MAYER (1835)
Abundant in the whole area	5	Subsp. <i>alpicola</i> likely present
Rather rare, mainly on Podpěra Rock and Schube Ledge	3	Commonly reported, taxonomically re-examined by KOVANDA (1980)
Rather abundant, mainly in middle belt	4	Commonly reported — already by MÜCKUSCH in KLEMM (1826)
Solitary in middle belt	3	Commonly reported
Very rare, solely D7c	2	Already by GRABOWSKI (1843) (syn. <i>Lycopodium alpinum</i> )
Scattered, mainly in middle belt (Fincke Slant)	3	Explicitly from the cirque first by WIMMER (1840)
Rarely: B3d, C3a, C6d, D5a, E4b	3-4	Only by OBORNY (1886)
Solitary in middle and lower belt, e.g. F5b, G2a, H1c	2	Explicitly from the cirque only by OBORNY (1883)
Solitary in middle and lower belt, e.g. F5b	2	Explicitly from the cirque only by LAUS (1910)
Scattered in lower belt	3	Formerly not identified, recorded by the present authors in 1972
Rather abundant in middle and lower belt	4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Found in D1b, possibly growing elsewhere	1	Newly established taxon recorded by the present authors
Only Cimrman Garden: B1d, C1c, C1d	1-2	First recorded by the present authors in 1974, planted (syn. <i>Alnus viridis</i> )
Very rare, so far recorded solely in D5a	1	Formerly determined as <i>E. nigrum</i>
Rather abundant in middle and lower belt	3-4	Commonly reported
Scattered in springs	4	Commonly reported
Very rarely in upper belt, e.g. C8b	2	Often confused with the preceding species

No	Taxon	Cat.	Affinity to syntaxa
136	<i>Epilobium ciliatum</i> RAFIN.	B	Al: <i>Aden. all.</i> , SAL: <i>Acer.</i> , As: <i>Bup.-Cal.</i> , As: <i>Sal.-Bet.</i> , etc.
137	<i>Epilobium collinum</i> C. G. GMELIN	A	Transition stages of rock communities
128	<i>Epilobium montanum</i> L.	A	As: <i>Daph.-Acer.</i> , As: <i>Thes.-Nar.</i> , As: <i>Bup.-Cal.</i> , As: <i>Aden. all.</i>
139	<i>Epilobium nutans</i> F. W. SCHMIDT	A	Transition stages of rock communities
140	<i>Epilobium palustre</i> L.	A	Or: <i>Car. fus.</i>
141	<i>Equisetum arvense</i> L.	A	As: <i>All. sib.</i> , As: <i>Viol.-Mol.</i> , As: <i>Ping.-Trich.</i> , As: <i>Sal.-Bet.</i>
142	<i>Equisetum fluviatile</i> L.	A	As: <i>Viol.-Mol.</i> , As: <i>Ping.-Trich.</i> As: <i>Sen.-Sal.</i> , SAs: <i>Las.-Dac. phal.</i>
143	<i>Equisetum palustre</i> L.	A	As: <i>All. sib.</i> , Al: <i>Car. fus.</i> , As: <i>Viol.-Mol.</i> , SAL: <i>Mont.</i> , etc.
144	<i>Equisetum sylvaticum</i> L.	A	As: <i>Sal.-Bet.</i> , As: <i>All. sib.</i> , As: <i>Viol.-Mol.</i> , As: <i>Sen.-Sal.</i>
145	<i>Eriophorum angustifolium</i> HONCK. subsp. <i>angustifolium</i>	A	Al: <i>Car. fus.</i> , As: <i>All.-Crat.</i> , etc.
146	<i>Eriophorum latifolium</i> HOPPE	A	As: <i>Ping.-Trich.</i>
147	<i>Euphrasia picta</i> WIMM. subsp. <i>picta</i>	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i>
148	<i>Fagus sylvatica</i> L.	A	Or: <i>Fag.</i> , As: <i>Sal.-Bet.</i>
149	<i>Festuca altissima</i> ALL.	A	SAL: <i>Acer.</i>
150	<i>Festuca diffusa</i> DUM.	B	Transitions to As: <i>Thes.-Nar.</i>
151	<i>Festuca rubra</i> L. subsp. <i>rubra</i>	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , SAs: <i>Sil.-Cal. rub.</i> , etc.
152	<i>Festuca supina</i> SCHUR	A	Cl: <i>Jun. trif.</i> , As: <i>Thes.-Nar.</i> , As: <i>Fest.-Vac.</i> , Al: <i>Agr. alp.</i>
153	<i>Ficaria bulbifera</i> (MARSD.-JON.) HOLUB	A	As: <i>Las.-Dac.</i>
154	<i>Filipendula ulmaria</i> (L.) MAXIM. subsp. <i>ulmaria</i>	A	As: <i>Las.-Dac.</i> , As: <i>Sen.-Sal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Acer.</i>
155	<i>Fragaria vesca</i> L.	B	Transition stages of rock communities
156	<i>Gagea lutea</i> (L.) KER-GAWLER	B	As: <i>Las.-Dac.</i> , As: <i>Daph.-Acer.</i>
157	<i>Galeobdolon montanum</i> (PERS.) EHREND.	A	Or: <i>Fag.</i> , SAs: <i>Sal.-Bet. arund.</i> , As: <i>Daph.-Dry.</i>
158	<i>Galeopsis bifida</i> BOENN.	A	As: <i>Bup.-Cal.</i>
159	<i>Galeopsis pubescens</i> BESSER	A	As: <i>Sil.-Cal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Acer.</i> , etc.
160	<i>Galeopsis tetrahit</i> L.	A	As: <i>Sil.-Cal.</i> , As: <i>Las.-Dac.</i> , etc.
161	<i>Galium boreale</i> L.	A	Al: <i>Agr. alp.</i> , As: <i>Bup.-Cal.</i> , As: <i>Trol.-Ger.</i> , etc.
162	<i>Galium mollugo</i> L.	A	Transitions to As: <i>Thes.-Nar.</i>
163	<i>Galium odoratum</i> (L.) SCOP.	A	Or: <i>Fag.</i>
164	<i>Galium palustre</i> L.	A	Al: <i>Car. fus.</i>
165	<i>Galium pumilum</i> MURRAY	A	Transition stages of rock communities
166	<i>Galium rotundifolium</i> L.	A	As: <i>Las.-Dac.</i>
167	<i>Galium sudeticum</i> TAUSCH	A	As: <i>Thes.-Nar.</i>
168	<i>Galium uliginosum</i> L.	A	As: <i>Trol.-Ger.</i>
169	<i>Gentiana punctata</i> L.	A	As: <i>Sil.-Cal.</i> , As: <i>Thes.-Nar.</i>
170	<i>Geranium sylvaticum</i> L.	A	Al: <i>Aden. all.</i> , As: <i>Bup.-Cal.</i> , As: <i>Poo.-Desch.</i> , As: <i>Sal.-Bet.</i>

Distribution in cirque	Pop. size	Note
Rather abundant in middle and lower belt	3-4	Neophyte, collected first by the present authors in 1976
Rare in middle belt: C3a, C3c, C4a, E4c	2	Reported only by FIEK (1881) after Uechtritz's collection
Scattered in middle belt, alt. max. 1330 m	3-4	Commonly recorded in higher area of Hr. Jeseník Mts.
Rare in middle belt, e.g. C4a, C4d, D3a, D3c, D4b	2	First reported by MÜNCKE (1855)
Very rare, e.g. C1d, F3c	2	First reported by OBORNY (1886)
Scattered, mainly in lower and middle belt	4	Explicitly from the cirque first by FIEK (1881)
Scattered, mainly in lower and middle belt	4	Explicitly from the cirque first by FIEK (1881)
Scattered, alt. max. 1395 m	3	Explicitly from the cirque first by FIEK (1881)
Rather abundant in middle and lower belt	4	Explicitly from the cirque first by FIEK (1881)
Solitary in middle and upper belt, alt. max. 1400 m	2	Explicitly from the cirque only by OBORNY (1883)
Scattered in middle belt, alt. max. 1330 m	2	Reported only by FIEK (1881)
Scattered in the whole area, mainly in middle belt	3-4	Explicitly from the cirque recorded by FIEK (1881)
Rather abundant, mainly lower belt, alt. max. 1320 m	4-5	Explicitly from the cirque first reported by LAUS (1910)
Rarely: D2d, F1a	3	Already by GRABOWSKI (1843)
Very rare, so far recorded solely in F2c	2	Found by the present authors in 1976
Abundant, mainly in middle belt, alt. max. 1300 m	4	Explicitly from the cirque first recorded by SCHUBE (1903)
Abundant in middle belt, very abundant in upper belt	3-5	Commonly recorded, formerly as <i>F. ovina</i> f. <i>alpina</i>
Solely on Laus Landing and Finecke Slant	3-4	Recorded only by OTRUBA (1926)
Frequent to scattered in lower and middle belt	3-4	Explicitly from the cirque first recorded by FIEK (1881)
Very rare in Vitásek Ravine C4a, C4d, D3c, alt. max. 1330 m	2	Explicitly from the cirque first recorded by JENÍK (1961)
Rare on Laus Landing and Mückusch Garden, alt. max. 1340 m in G7a	2-3	Discovered by the present authors in 1972
Scattered in middle and lower belt, alt. max. 1270 m	3	Commonly reported
Rarely: C1a, C2c, C2d, D2c	1-2	Reported solely by JERIOVÁ (1970)
Scattered, mainly in middle belt, alt. max. 1320 m	2	Reported by LAUS (1910), OTRUBA (1926) and JERIOVÁ (1970)
Solitary: C1a, D3b, D3c, G7a, H7c	2	Reported only by OTRUBA (1926)
Frequent, mainly in middle belt	3-4	Commonly reported, already GRABOWSKI (1843)
Rare: E3c, G1b, alt. max. 1170 m	1-2	Reported only by LAUS (1910)
Very rarely: D3b, F3d, D4c, alt. max. 1230 m	2	Reported already by FIEK (1881)
Uechtritz Dale: G1a	2	Reported only by JERIOVÁ (1970)
Very rare - solely on Podpěra Rock	2	Reported solely by WIMMER (1840), GRABOWSKI (1843), MÜNCKE (1955)
Klika Promontory - 1360 m	2	Already by GRABOWSKI (1843)
Very rare: C1d, E3c, F3a	2	Reported already by FIEK (1881)
Solely in Cimrman Garden	2	Reported only by JERIOVÁ (1970)
Very rarely	2	Commonly reported
Abundant in the whole area, max. alt. 1450 m (C9d)	4-5	Explicitly from the cirque first recorded by MÜNCKE (1855)

No	Taxon	Cat.	Affinity to syntaxa
171	<i>Geum rivale</i> L.	A	As: <i>Las.-Dac.</i> , As: <i>Sen.-Sal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Viol.-Mol.</i>
172	<i>Gymnadenia conopsea</i> (L.) R. BR. subsp. <i>montana</i> BISSE	A	As: <i>Thes.-Nar.</i> , As: <i>Hed.-Mol.</i> , As: <i>Bup.-Cal.</i> , etc.
173	<i>Hedysarum hedysaroides</i> (L.) SCHINZ et THELL. subsp. <i>hedysaroides</i>	A	As: <i>Hed.-Mol.</i> , As: <i>Ping.-Trich.</i> , As: <i>Rhac.-All.</i>
174	<i>Helianthemum grandiflorum</i> (SCOP.) DC. in LAM. et DC. subsp. <i>grandiflorum</i>	A	As: <i>Hed.-Mol.</i> , As: <i>Bup.-Cal.</i> , SAs: <i>Fest.-Pol. sed.</i>
175	<i>Heracleum sphondylium</i> L. s.l.	A	Al: <i>Aden. all.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Acer.</i> , As: <i>Poo.-Desch.</i>
176	<i>Hieracium alpinum</i> L.	A	As: <i>Cet.-Fest.</i> , As: <i>Fest.-Vac.</i>
177	<i>Hieracium lachenalii</i> C. C. GMEL. s.l.	A	As: <i>Thes.-Nar.</i> , As: <i>Fest.-Pol.</i> As: <i>Sil.-Cal.</i> , etc.
178	<i>Hieracium murorum</i> L.	A	As: <i>Daph.-Acer.</i> , As: <i>Acer.-Fag.</i> , SAs: <i>Sil.-Cal. rub.</i> , etc.
179	<i>Hieracium nigrescens</i> WILLD.	A	As: <i>Cet.-Fest.</i>
180	<i>Hieracium prenathoides</i> VILL. s.l.	A	Cl: <i>Nar.-Cal.</i> , SAs: <i>Sal.-Bet. arund.</i> , As: <i>Daph.-Acer.</i> , As: <i>Trol.-Ger.</i>
181	<i>Hieracium villosum</i> JACQ.	A	As: <i>Sax.-Agr.</i> , As: <i>Hed.-Mol.</i>
182	<i>Hippochaete hyemalis</i> (L.) BRUHIN	A	As: <i>Sen.-Sal.</i>
183	<i>Holcus mollis</i> L.	A	Transition to As: <i>Sal.-Bet.</i>
184	<i>Homogyne alpina</i> (L.) CASS.	A	Al: <i>Pic. exc.</i> , As: <i>Cet.-Fest.</i> , As: <i>Thes.-Nar.</i> , SAs: <i>Sil.-Cal. tri.</i> , etc.
185	<i>Huperzia selago</i> (L.) BERNH. ex SCHRANK et MART.	A	As: <i>Fest.-Pol.</i> , As: <i>Cet.-Fest.</i>
186	<i>Hylotelephium maximum</i> (L.) HOLUB	A	As: <i>Fest.-Pol.</i>
187	<i>Hypericum maculatum</i> CR.	A	As: <i>Las.-Dac.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Acer.</i> , As: <i>Trol.-Ger.</i>
188	<i>Impatiens noli-tangere</i> L.	A	As: <i>Cal.-Fag.</i> , As: <i>Acer.-Fag.</i> , As: <i>Daph.-Acer.</i> , etc.
189	<i>Juncus acutiflorus</i> EHRH. ex HOFFM.	A	Transition to As: <i>Ping.-Trich.</i>
190	<i>Juncus articulatus</i> L. s.l.	A	As: <i>Ping.-Trich.</i>
191	<i>Juncus effusus</i> L.	B	As: <i>Viol.-Mol.</i> , As: <i>All. sib.</i>
192	<i>Juncus filiformis</i> L.	A	Al: <i>Car. fus.</i> , As: <i>All.-Crat.</i> , As: <i>Pol.-Nar.</i>
193	<i>Juncus squarrosus</i> L.	A	As: <i>Sal.-Bet.</i>
194	<i>Juncus trifidus</i> L.	A	As: <i>Fest.-Pol.</i>
195	<i>Juniperus communis</i> L.	A	Transition to As: <i>Fest.-Pol.</i>
196	<i>Juniperus sibiricus</i> BURGD.	A	As: <i>Fest.-Pol.</i> , As: <i>Cet.-Fest.</i>
197	<i>Lamium maculatum</i> (L.) L. subsp. <i>cupreum</i> (SCHOTT) HADAČ	A	As: <i>Daph.-Acer.</i> , As: <i>Las.-Dac.</i> , As: <i>Daph.-Dry.</i>
198	<i>Lapsana communis</i> L.	A	As: <i>Sal.-Bet.</i> , SAs: <i>Cal.-Fag. bet.</i>
199	<i>Laserpitium archangelica</i> WULF.	A	As: <i>Las.-Dac.</i> , As: <i>Daph.-Acer.</i> , As: <i>Sal.-Bet.</i> , As: <i>Pet. alb.</i> , etc.
200	<i>Lathraea squamaria</i> L. subsp. <i>squamaria</i>	A	As: <i>Sal.-Bet.</i>
201	<i>Lathyrus pratensis</i> L.	A	As: <i>Las.-Dac.</i> , As: <i>Trol.-Ger.</i> , As: <i>All. sib.</i> , As: <i>Sen.-Sal.</i> , etc.
202	<i>Leontodon hispidus</i> L. subsp. <i>danubialis</i> (JACQ.) SIMONK.	A	As: <i>Bup.-Cal.</i> , As: <i>Hed.-Mol.</i> , As: <i>Rhac.-All.</i>
203	<i>Leontodon hispidus</i> L. subsp. <i>hispidus</i>	A	As: <i>Hed.-Mol.</i> , As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , As: <i>Sil.-Cal.</i>



Distribution in cirque	Pop. size	Note
Scattered, mainly in middle and lower belt	3	Reported already by WIMMER (1840)
Scattered in the whole area, alt. max. 1420 m	4	Explicitly from the cirque first reported by LAUS (1910)
Scattered, mainly Firbas Slant and Vitásek Ravine	2-4	First reported by WIMMER (1832)
Scattered, mainly Firbas Slant, Schube Ledge, Fiek Moulding	2-4	Commonly reported already by GRABOWSKI (1843)
Frequent to scattered, alt. max. 1420 m	3	Explicitly from the cirque first reported by OBORNY (1886)
Solitary in upper belt and Vysoká Hole Mount	2-3	Various micro-species and forms often reported
Frequently, mainly in lower and middle belt	3	Reported already by FIEK (1881), later on, several subsp. recorded
Scattered	3	Commonly reported, a number of ssp. and micro-species
Solitary in the upper belt, mainly Silesian Side	2	Reported by JERIOVÁ (1970), possibly from older sources
Frequent in lower and middle belt, mainly on Kratochvíl and Otruba Slant, Hruby Landing, etc.	3-4	Commonly reported; subsp. <i>bupleurifolium</i> , <i>perfoliatum</i> and <i>lanceolatum</i> confirmed by the present authors
Rare, Vitásek Ravine	3	Discovered by GRABOWSKI in 1834
Very rare	2	Discovered by SPATZIER (FIEK 1881)
Rarely: F2c	2	Reported solely by OTRUBA (1926)
Rather abundant in the whole area, mainly Schauer Side and Moravian Side	4	Commonly reported from higher elevations of Hr. Jeseník Mts., and from the cirque
Solitary in upper belt	3	Commonly reported
Rare in middle belt: C3d, C4a, D3c, D4b, alt. max. 1330 m	2	Reported already by GRABOWSKI (1843) (syn. <i>Sedum maximum</i> )
Rather abundant in the whole area, alt. max. 1445	4	Commonly reported
Scattered, alt. max. 1230 m	2-3	Reported already by FIEK (1881) after Uechtritz's collection
So far recorded solely at Early Spring	2	Reported only by JERIOVÁ (1970)
Rarely: C3a, E4a, F2d, alt. max. 1300 m	2-3	Reported solely by GRABOWSKI (1843)
Solitary in the whole area	3-4	Reported only by JENÍK (1961)
Scattered, mainly in upper and middle belt	3	Commonly reported from higher elevation of Hr. Jeseník Mts.
Solely in Uechtritz Dale, F2d	2	Reported only by JERIOVÁ (1970)
Rare on the rocks of Vitásek Ravine and Kettner Rock	3	Commonly reported
A single specimen on inaccessible place in Vitásek Ravine	1	Reported by LAUS (1910) in the spruce forests, OTRUBA (1926, 1930)
Rarely: Podpěra Rock and Formánek Side	1	From the cirque first recorded by ROHRER et MAYER (1835)
Solitary, mainly on Rathsburg Bank and Fincke Slant	3	Commonly reported as <i>Lamium maculatum</i>
Rarely: G1b, G2c	2	Reported solely by LAUS (1910), OTRUBA (1926) and JERIOVÁ (1970)
Frequent in middle and lower belt	4	Reported already by WIMMER (1840) and GRABOWSKI (1843)
Rare on Rathsburg Bank and in Uechtritz Dale, E2b, F2c	1	Reported already by GRABOWSKI (1843)
Solitary in lower and middle belt, alt. max. 1300 m	3	Reported by LAUS (1910)
Rare on Fiek Moulding and on Firbas Slant	1-2	Reported solely by ŠMARDÁ (1950)
Frequent in lower and middle belt, alt. max. 1450 m	3-4	Commonly reported from higher elevations of Hr. Jeseník Mts.

No	Taxon	Cat.	Affinity to syntaxa
204	<i>Leucorchis albida</i> (L.) E. H. F. MEYER	A	As: <i>Thes.-Nar.</i>
205	<i>Lilium martagon</i> L. subsp. <i>martagon</i>	A	As: <i>Las.-Dac.</i> , As: <i>Daph.-Acer.</i> , As: <i>Sal.-Bet.</i> , As: <i>Bup.-Cal.</i>
206	<i>Linaria vulgaris</i> MILL.	A	Transition to As: <i>Fest.-Pol.</i>
207	<i>Linum catharticum</i> L. s.l.	A	As: <i>Hed.-Mol.</i> , As: <i>Ping.-Trich.</i>
208	<i>Listera ovata</i> (L.) R. BR.	A	As: <i>Sal.-Bet.</i> , As: <i>Trol.-Ger.</i>
209	<i>Lonicera nigra</i> L.	A	As: <i>Daph.-Acer.</i> , As: <i>Acer.-Fag.</i> , As: <i>Sal.-Bet.</i>
210	<i>Lunaria rediviva</i> L.	A	As: <i>Daph.-Acer.</i> , SAs: <i>Sal.-Bet. arund.</i> , As: <i>Daph.-Dry.</i>
211	<i>Luzula luzuloides</i> (LAMK.) DANDY et WILMOTT subsp. <i>cuprina</i> (ROCH. ex ASCHERS. et GRAEBN.) CHRTEK et KŘÍSA	B	As: <i>Sil.-Cal.</i> , As: <i>Fest.-Vac.</i> , As: <i>Trol.-Ger.</i> , etc.
212	<i>Luzula luzuloides</i> (LAMK.) DANDY et WILMOTT subsp. <i>luzuloides</i>	A	Cl: <i>Nar.-Cal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Fest.-Vac.</i> , As: <i>Trol.-Ger.</i>
213	<i>Luzula multiflora</i> (EHRH. ex RETZ.) LEJ.	A	As: <i>Thes.-Nar.</i>
214	<i>Luzula sylvatica</i> (HUDS.) GAUDIN subsp. <i>sylvatica</i>	A	As: <i>Sal.-Bet.</i> , As: <i>Pet. alb.</i> , As: <i>Thes.-Nar.</i> , As: <i>Cal.-Pic.</i>
215	<i>Lychnis flos-cuculi</i> L.	A	As: <i>Ping.-Trich.</i> and transition patches
216	<i>Lycopodium annotinum</i> L.	A	Al: <i>Pic. exc.</i>
217	<i>Lycopodium clavatum</i> L.	A	As: <i>Sil.-Cal.</i> , small peat-bog islands
218	<i>Lysimachia nemorum</i> L.	A	As: <i>Sal.-Bet.</i> , transitions to As: <i>Acer.-Fag.</i>
219	<i>Maianthemum bifolium</i> (L.) F. W. SCHMIDT	A	As: <i>Cal.-Fag.</i> , As: <i>Acer.-Fag.</i> , As: <i>Fest.-Vac.</i> , As: <i>Sal.-Bet.</i>
220	<i>Melampyrum pratense</i> L. s.l.	A	Al: <i>Mel.-Vac.</i> , As: <i>Cet.-Fest.</i> , As: <i>Thes.-Nar.</i> , As: <i>Bup.-Cal.</i>
221	<i>Melampyrum sylvaticum</i> L. s.l.	A	Cl: <i>Nar.-Cal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Acer.</i> , As: <i>Fest.-Vac.</i>
222	<i>Melica nutans</i> L.	A	Transition stages of the rock communities
223	<i>Mercurialis perennis</i> L.	A	As: <i>Daph.-Acer.</i> , As: <i>Las.-Dac.</i> , As: <i>Sal.-Bet.</i> , etc.
224	<i>Milium effusum</i> L.	A	Or: <i>Fag.</i> , As: <i>Daph.-Dry.</i> , As: <i>Las.-Dac.</i> , etc.
225	<i>Molinia caerulea</i> (L.) MOENCH s.l.	A	Al: <i>Agr. alp.</i> , Cl: <i>Nar.-Cal.</i> , As: <i>Ping.-Trich.</i> , As: <i>Viol.-Mol.</i> , etc.
226	<i>Mutellina purpurea</i> THELL.	A	As: <i>Cet.-Fest.</i> , As: <i>Fest.-Vac.</i> , As: <i>Sil.-Cal.</i> , As: <i>All.-Crat.</i>
227	<i>Mycelis muralis</i> (L.) DUM.	B	As: <i>Daph.-Acer.</i> , As: <i>Ath.-Pic.</i>
228	<i>Myosotis nemorosa</i> BESSER	A	As: <i>Trol.-Ger.</i> , As: <i>Poo.-Desch.</i> , As: <i>Sal.-Bet.</i> , As: <i>Las.-Dac.</i> , etc.
229	<i>Myosotis</i> cf. <i>palustris</i> (L.) NATH.	A	As: <i>Sal.-Bet.</i> , As: <i>All. sib.</i> , As: <i>Las.-Dac.</i> , As: <i>Viol.-Mol.</i>
230	<i>Myosotis sylvatica</i> EHRH. ex HOFFM.	A	SAl: <i>Acer.</i> , As: <i>Trol.-Ger.</i> , As: <i>Bup.-Cal.</i>
231	<i>Nardus stricta</i> L.	A	As: <i>Thes.-Nar.</i> , As: <i>Pol.-Nar.</i> , As: <i>Ping.-Trich.</i> , etc.
232	<i>Oberna behen</i> (L.) IKONN. subsp. <i>behen</i>	A	Cl: <i>Nar.-Cal.</i> , As: <i>Fest.-Vac.</i> , As: <i>Sal.-Bet.</i> , As: <i>Aden. all.</i>
233	<i>Omalotheca norvegica</i> (L.) C. H. SCHULTZ et F. W. SCHULTZ	A	In initial stages of succession on scree, on roadside

Distribution in cirque	Pop. size	Note
Rare, mainly Cimrman Garden and Formánek Side	2	Reported already by GRABOWSKI (1843)
Scattered, mainly in middle belt, alt. max. 1340 m (E7c)	3	Commonly reported, explicitly from the cirque first by MÜNCKE (1855)
Found in 1973 on the rock above Schube Ledge	1	Reported only by SCHUBE (1904)
Very rare: C2b, E4b	3	Reported only by FIEK (1881)
Rare in middle belt, alt. max. 1260 m	2	Reported only by FIEK (1881)
Solitary, alt max. 1330 m (at Šmarda Wall)	1-2	Commonly reported, already by WIMMER (1840)
Scattered in lower and middle belt	3	Commonly reported, already by GRABOWSKI (1843)
Solitary in the whole area	2-3	Not identified by earlier authors
Abundant in the whole area	4-5	Commonly reported from higher elevations of Hr. Jeseník Mts.
Solitary: D1a, E3d, F2c, F3a, F3c, alt. max. 1220 m	2	Reported already by WIMMER (1840)
Frequently	4	Commonly reported
Very rare, solely F3c, G1a, alt. max. 1150 m	1-2	Reported already by FIEK (1881)
Solitary in the spruce forests in lower belt		Explicitly from the cirque only by OBORNY (1883)
Rare in middle belt, e.g. above Suza Wall, alt. max. 1370 m (Kunz Side)	3	Explicitly from the cirque first reported by KOLENATI (1860)
Rare, solely Otruba and Leneček Slant	2	Explicitly from the cirque reported solely by MÜNCKE (1855)
Scattered in lower and middle belt, alt. max. 1375 m	3-4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Frequent, mainly in upper and middle belt	3	Subsp. <i>vulgatum</i> and subsp. <i>alpestre</i> likely present
Rather abundant, mainly in middle belt	3	Commonly reported from higher elevations of Hr. Jeseník Mts.
Very rare, Vitásek Ravine and Podpěra Rock	2	Reported only by FIEK (1881)
Scattered, mainly in middle belt, alt. max. 1330 m	3-4	Commonly reported, already by GRABOWSKI (1843)
Scattered, mainly in middle belt, alt. max. 1385 m (C6a)	3	Explicitly from the cirque first reported by LAUS (1910)
Very abundant, mainly in middle belt	5	Commonly reported
Abundant on the whole area	4	Commonly reported
Rare: Rathsburg Bank and Hruby Landing, alt. max. 1180 m	2	Reported by LAUS (1910) in spruce forests outside the cirque
Frequent in the whole area	3	Reported only by REJMÁNEK, SÝKORA et ŠTURSA (1971)
Scattered	3	Explicitly from the cirque reported only by SCHUBE (1904)
Scattered, mainly in middle belt	3	Commonly reported
Frequent, mainly in middle belt	3-4	Commonly reported
Abundant, mainly in upper and middle belt	4-5	Commonly reported from high elevations of Hr. Jeseník Mts. (syn. <i>Silene inflata</i> )
Scattered, mainly in middle belt	2-3	Explicitly from the cirque first reported by MÜNCKE (1855) (syn. <i>Gnaphalium norvegicum</i> )

No	Taxon	Cat.	Affinity to syntaxa
234	<i>Oreopteris limbosperma</i> (ALL.) HOLUB	A	At the foot of rock faces
235	<i>Oxalis acetosella</i> L.	A	Al: <i>Pic. exc.</i> , As: <i>Cal.-Fag.</i> , As: <i>Acer.-Fag.</i> , As: <i>Ath. alp.</i>
236	<i>Padus avium</i> MILL.	A	Transition to As: <i>Daph.-Acer.</i>
237	<i>Paris quadrifolia</i> L.	A	SAl: <i>Acer.</i> , As: <i>Bup.-Cal.</i> , As: <i>Poo.-Desch.</i> , As: <i>Las.-Dac.</i> , etc.
238	<i>Parnassia palustris</i> L.	A	Al: <i>Car. fus.</i> , Al: <i>Agr. alp.</i> , As: <i>All.-Crat.</i> , As: <i>All. sib.</i>
239	<i>Petasites albus</i> (L.) GAERTN.	A	As: <i>Pet. alb.</i> , As: <i>Las.-Dac.</i> , SAl: <i>Mont.</i> , As: <i>Ping.-Trich.</i> , etc.
240	<i>Petasites hybridus</i> (L.) G., M. et SCH.	A	As: <i>Pet. alb.</i>
241	<i>Phalaroides arundinacea</i> (L.) RAUSCH.	A	SAs: <i>Las.-Dac. phal.</i> , transition stages
242	<i>Phegopteris connectilis</i> (MICHX. fil.) WATT	A	As: <i>Sax.-Agr.</i> and transition stages of A rock communities
243	<i>Phleum commutatum</i> GAUDIN	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , As: <i>Aden. all.</i> , etc.
244	<i>Phragmites australis</i> (CAV.) TRIN. ex STEUD. subsp. <i>australis</i>	A	As: <i>Viol.-Mol.</i> , As: <i>All. sib.</i> , As: <i>Ping.-Trich.</i>
245	<i>Phyteum orbiculare</i> L. subsp. <i>montanum</i> R. SCHULZ	A	Al: <i>Agr. alp.</i> , As: <i>Ping.-Trich.</i> , As: <i>Thes.-Nar.</i> , As: <i>Las.-Dac.</i>
246	<i>Phyteuma spicatum</i> L. subsp. <i>spicatum</i>	A	SAl: <i>Acer.</i> , As: <i>Bup.-Cal.</i> , Al: <i>Aden. all.</i> , As: <i>Thes.-Nar.</i> , etc.
247	<i>Picea abies</i> (L.) KARSTEN	A	Al: <i>Pic. exc.</i> , Or: <i>Fag.</i> , As: <i>Sal.-Bet.</i>
248	<i>Picea pungens</i> ENGELM.	B	As: <i>Cal.-Pic.</i>
249	<i>Pilosella aurantiaca</i> (L.) F. W. SCHULTZ et C. H. SCHULTZ subsp. <i>aurantiaca</i>	A	Solely As: <i>Thes.-Nar.</i>
250	<i>Pilosella officinarum</i> F. W. SCHULTZ et C. H. SCHULTZ	A	Solely As: <i>Thes.-Nar.</i>
251	<i>Pimpinella major</i> (L.) HUDS.	A	As: <i>Las.-Dac.</i>
252	<i>Pimpinella saxifraga</i> L. s.l.	A	As: <i>Hed.-Mol.</i> , As: <i>Sax.-Agr.</i> , As: <i>Bup.-Cal.</i> , etc.
253	<i>Pinguicula vulgaris</i> L.	A	As: <i>Ping.-Trich.</i> , Al: <i>Agr. alp.</i> , SAl: <i>Mont.</i>
254	<i>Pinus mugo</i> TURRA	A	planted in As: <i>Sil.-Cal.</i> , As: <i>Thes.-Nar.</i> , As: <i>Fest.-Vac.</i> , As: <i>Cet.-Fest.</i>
255	<i>Pistlochia cava</i> (L.) BERNH.	A	As: <i>Las.-Dac.</i> , As: <i>Daph.-Acer.</i> , etc.
256	<i>Plantago strata</i> HOPPE subsp. <i>sudetica</i> (PILG.) HOLUB	A	Transition stages of rock communities
257	<i>Plantago major</i> L. s.l.	A	Ruderal species occurring on tracks
258	<i>Pleurospermum austriacum</i> (L.) HOFFM.	A	As: <i>Bup.-Cal.</i> , As: <i>Las.-Dac.</i> , As: <i>Aden. all.</i> , As: <i>Trol.-Ger.</i>
259	<i>Poa alpina</i> L.	A	Al: <i>Agr. alp.</i> , SAl: <i>Mont.</i> , As: <i>Ping.-Trich.</i> , SAs: <i>Fest.-Pol. sed.</i>
260	<i>Poa annua</i> L.	A	Ruderal species on trampled road
261	<i>Poa chaixii</i> VILL.	A	As: <i>Poo.-Desch.</i> , As: <i>Thes.-Nar.</i> , As: <i>Aden. all.</i> , As: <i>Trol.-Ger.</i>
262	<i>Poa nemoralis</i> L. s.l.	A	As: <i>Las.-Dac.</i> , As: <i>Sal.-Bet.</i> , As: <i>Sax.-Agr.</i>
263	<i>Poa pratensis</i> L.	A	Ruderal species occurring on tracks
262	<i>Poa supina</i> SCHRAD.	A	As: <i>Thes.-Nar.</i>
265	<i>Poa trivialis</i> L.	A	As: <i>Pet. alb.</i> , etc.
266	<i>Polygala comosa</i> SCHKUHR	A	As: <i>Hed.-Mol.</i>

Distribution in cirque'	Pop. size	Note
Rare in middle belt, Suza Wall, Fiek Moulding, Grabowski Gully, Krufa Rock	2-3	Reported only by OBORNY (1883) and FIEK (1881)
Scattered in lower and middle belt, alt. max. 1200 m	3	Commonly reported from high elevation of Hr. Jeseník Mts.
A robust shrub on Rathsburg Bank, E3d, 1160 m	1	Reported already by OTRUBA (1926, 1930) and JERIOVÁ (1970)
Frequent to scattered, mainly in middle belt, alt. max. 1420 m (at Bilberry Brook)	3-4	Commonly reported
Scattered on the whole area, mainly in middle belt	3	Commonly reported
Scattered in middle and lower belt	4	Commonly reported
Rarely in Uechtritz Dale near the confluence of Spruce Brook and Moravice river	3	Explicitly from the cirque reported only by OTRUBA (1930)
Solitary in Uechtritz Dale and on Fineke Slant	4-5	Explicitly from the cirque reported only by OTRUBA (1926, 1930)
Rarely, Kolenati Rocks, Milde Rock, Roemer Outcrops and Vitásek Ravine	3	Commonly reported, explicitly from the cirque first reported by JERIOVÁ (1970)
Scattered	3-4	Commonly reported (as <i>Phleum alpinum</i> )
Solitary in lower and middle belt, alt. max. 1300 m	4	Commonly reported, already by GRABOWSKI (1843)
Scattered, mainly on the rocks	3	Commonly reported
Abundant in middle and lower belt, alt. max. 1450 m	3-4	Commonly reported
Very abundant	3-5	Commonly reported
Planted, Cimrman Garden	1	Found by present authors in 1975
Solitary in middle and lower belt	3	Commonly reported
Rare in middle belt: E3d, F3a, F3c	2-3	Commonly reported from high elevations of Hr. Jeseník Mts.
Found on Klika Promontory	2	Commonly reported
Scattered in middle belt, alt. max. 1365 m	2-3	Reported only by OBORNY (1886)
Scattered	3-4	Commonly reported
Planted in upper belt, mainly Kunz Side	4-5	Planted on the verge of century, first reported by LAUS (1910)
Scattered on Laus Landing, Uechtritz Dale and Fincke Slant, alt. max. 1330 m	3-4	Reported already by GRABOWSKI (1843) (syn. <i>Corydalis cava</i> )
Very rare	2-3	Discovered by GRABOWSKI and FINCKE in 1834 after ROHRER and MAYER (1835)
Rare in Uechtritz Dale, G1a, 1120 m	2	Reported only by OTRUBA (1926)
Solitary, mainly in middle belt	2	Commonly reported
Scattered on the rocks in middle belt	3	Discovered by GRABOWSKI in 1830 (WIMMER 1832)
Solitary in F3a, F7c, H1c	3	Explicitly from the cirque reported only by JERIOVÁ (1970)
Frequent mainly, in middle belt	3-4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Solitary, mainly in middle belt, alt. max. 1360 m	3	Explicitly from the cirque first reported by OBORNY (1883)
Rarely in Uechtritz Dale: H1c, 1100 m	3	Explicitly from the cirque reported only by LAUS (1910)
Rarely: Klika Promontory	3	Reported only by OTRUBA (1926)
Rarely in Uechtritz Dale and Cimrman Garden	2-3	Reported only by OTRUBA (1926) and JERIOVÁ (1970)
Rare in Vitásek Ravine	2	First reported by OBORNY (1886)

No	Taxon	Cat.	Affinity to syntaxa
267	<i>Polygala vulgaris</i> L.	A	As: <i>Hed.-Mol.</i>
268	<i>Polygonatum verticillatum</i> (L.) ALL.	A	Or: <i>Fag.</i> , Cl: <i>Nar.-Cal.</i> , Cl: <i>Mul.-Acon.</i> , As: <i>Sal.</i> ; <i>Bet.</i> , etc.
269	<i>Polypodium vulgare</i> L.	A	As: <i>Sax.-Agr.</i> , As: <i>Fest.-Pol.</i>
270	<i>Polystichum aculeatum</i> (L.) ROTH	A	Rock in the forest
271	<i>Polystichum lonchitis</i> (L.) ROTH	A	Weakly differentiated rock communities
272	<i>Populus tremula</i> L.	A	As: <i>Sal.-Bet.</i> , As: <i>Bup.-Cal.</i> , As: <i>Sil.-Cal.</i> , etc.
273	<i>Potentilla aurea</i> L.	A	As: <i>Thes.-Nar.</i> , As: <i>Hed.-Mol.</i> , As: <i>Trol.-Ger.</i> , etc.
274	<i>Potentilla erecta</i> (L.) RÄUSCHEL s.l.	A	An indifferent species, almost in all communities
275	<i>Prenanthes purpurea</i> L.	A	Or: <i>Fag.</i> , As: <i>Sal.-Bet.</i> , etc.
276	<i>Primula elatior</i> (L.) HILL	A	Al: <i>Aden. all.</i> , As: <i>Bup.-Cal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Daph.-Acer.</i>
277	<i>Prunella grandiflora</i> (L.) SCHOLLER	A	As: <i>Hed.-Mol.</i> , As: <i>Bup.-Cal.</i>
278	<i>Prunella vulgaris</i> L.	A	Ruderal species occurring on tracks
279	<i>Pulmonaria obscura</i> DUM.	A	As: <i>Daph.-Acer.</i> , As: <i>Las.-Dac.</i>
280	<i>Pyrola media</i> Sw.	A	Transition stages of Cl: <i>Nar.-Cal.</i>
281	<i>Pyrola minor</i> L.	A	Transition stage to As: <i>Acer.-Fag.</i>
282	<i>Pyrola rotundifolia</i> L.	A	Transition stage to As: <i>Fest.-Vac.</i>
283	<i>Ranunculus acris</i> L. subsp. <i>acris</i>	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , As: <i>Las.-Dac.</i> , As: <i>All. sib.</i> , etc.
284	<i>Ranunculus lanuginosus</i> L.	A	As: <i>Sal.-Bet.</i>
285	<i>Ranunculus nemorosus</i> DC.	A	As: <i>Thes.-Nar.</i> , As: <i>Bup.-Cal.</i> , As: <i>Trol.-Ger.</i> , etc.
286	<i>Ranunculus platanifolius</i> L.	A	Cl: <i>Nar.-Cal.</i> , SAs: <i>Sal.-Bet. arund.</i> , As: <i>Fest.-Vac.</i> , etc.
287	<i>Ranunculus polyanthemos</i> L.	A	As: <i>Trol.-Ger.</i>
288	<i>Rhinanthus pulcher</i> SCHUMMEL s.l.	A	As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i> , As: <i>Hed.-Mol.</i> , As: <i>Bup.-Cal.</i> , As: <i>Las.-Dac.</i>
289	<i>Rhodiola rosea</i> L.	A	As: <i>Sax.-Agr.</i>
290	<i>Ribes petraeum</i> WULFEN	A	Transition stage of rock communities
291	<i>Rosa pendulina</i> L.	A	As: <i>Bup.-Cal.</i> , SAs: <i>Sil.-Cal. arund.</i> , SAs: <i>Sal.-Bet. arund.</i>
292	<i>Rubus caesius</i> L.	A	As: <i>Sil.-Cal.</i>
293	<i>Rubus idaeus</i> L.	A	SAs: <i>Sil.-Cal. rub.</i> , As: <i>Las.-Dac.</i> , As: <i>Daph.-Dry.</i> , As: <i>Sal.-Bet.</i> , etc.
294	<i>Rubus saxatilis</i> L.	A	As: <i>Bup.-Cal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Sil.-Cal.</i> , As: <i>Hed.-Mol.</i>
295	<i>Sagina nodosa</i> (L.) FENZL	B	On the footpath
296	<i>Sagina procumbens</i> L.	A	Transition to Al: <i>Agr. alp.</i>
297	<i>Salix aurita</i> L.	A	As: <i>Sal.-Bet.</i> , As: <i>All. sib.</i>
298	<i>Salix caprea</i> L.	A	As: <i>Sal.-Bet.</i>
299	<i>Salix hastata</i> L. subsp. <i>hastata</i>	A	As: <i>Sen.-Sal.</i> , As: <i>All. sib.</i> , As: <i>Ping.-Trich.</i> , As: <i>All.-Crat.</i>
300	<i>Salix silesiaca</i> WILLD.	A	As: <i>Sal.-Bet.</i> , As: <i>Bup.-Cal.</i> , Al: <i>Agr. alp.</i> , As: <i>Daph.-Acer.</i> , etc.

Distribution in cirque	Pop. size	Note
Rarely, mainly on Fiek Moulding and Firbas Slant	3	Reported solely by SCHUBE (1903) and OTRUBA (1926)
Abundant in the whole area	4-5	Commonly reported from higher elevations of Hr. Jeseník Mts.
Rare on the rocks, Vitásek Ravine, Kolenati Rocks	2-3	Reported already by MÜNCKE (1855)
Very rare	2	Reported only by FIEK (1881)
Very rare	3	Reported already by GRABOWSKI (1843)
Solitary in middle belt, alt. max. 1325 m	3	Explicitly from the cirque reported only by OTRUBA (1926, 1930)
Frequently in the whole area	4	Commonly reported
Very abundant in the whole area	3-5	Commonly reported
Scattered	3	Commonly reported from high elevations of Hr. Jeseník Mts.
Frequent to scattered, alt. max. 1450 m (C9d)	3	Commonly reported
Scattered on Fiek Moulding, Firbas Slant and Vitásek Ravine, rare in D5a, alt. max. 1330 m	3	Commonly reported
Rare in Uechtritz Dale: G1b, G2a	2	Commonly reported
Scattered in lower and middle belt, alt. max. 1330 m	2	Reported already by GRABOWSKI (1843)
Rare in middle belt: C5b, D1a, E5b	3	Reported already by ROHRER et MAYER (1835)
Very rarely, found solely in F2c	2	Reported already by GRABOWSKI (1843)
Very rare, found solely in D5d	2	Reported already by GRABOWSKI (1843)
Frequent to scattered, alt. max. 1450 m	3	Explicitly from the cirque reported only by OBORNY (1886)
Found solely on Rathsburg Bank, E3b, 1170 m	2	Reported solely by OTRUBA (1926, 1930)
Frequent to scattered	3	Commonly reported
Rather abundant on the whole area	3-4	Frequently reported, but confused with <i>R. aconitifolius</i> L.
Found solely in Cimrman Garden	2	Reported solely by OTRUBA (1926), ŠMARDÁ (1950), JERIOVÁ (1970)
Frequent on the whole area	3-4	Commonly reported
Solely in Vitásek Ravine	2-3	First explicit record by WIMMER (1840)
Solely on Podpěra and Hilitzer Rock	1	Commonly reported, already ROHRER et MAYER (1835)
Frequent, mainly in middle belt	3-4	Commonly reported, already by MÜNCKE (1855)
Rare, found solely near Wilschowitz Outcrops	2	Reported solely by JERIOVÁ (1970)
Abundant on the whole area	4-5	Commonly reported from higher elevations of Hr. Jeseník Mts.
Solitary, mainly Fiek Moulding and Vitásek Ravine	2-3	Commonly reported
Found solely on Kunz Side: F7c, 1325 m	3	Found by the present authors in 1975
Found solely on Suza Wall	3	Reported solely by OTRUBA (1926)
Rarely: F1a, G1a	2	Commonly reported
Scattered in middle and lower belt, alt. max. 1330 m	1-2	Commonly reported
Frequent, mainly in middle belt	3-4	Commonly reported
Rather abundant in lower and middle belt	3-4	Commonly reported from high elevation of Hr. Jeseník Mts.



No	Taxon	Cat.	Affinity to syntaxa
301	<i>Salix</i> × <i>chlorophana</i> ANDERSS. (= 299 × 300)	A	As: <i>Sal.-Bet.</i>
302	<i>Salix</i> × <i>subcaprea</i> ANDERSS. (= 298 × 300)	A	As: <i>Sal.-Bet.</i>
303	<i>Sambucus racemosa</i> L.	A	Transition to As: <i>Daph.-Acer.</i>
304	<i>Saxifraga paniculata</i> MILL.	A	Solely in Al: <i>Agr. alp.</i>
305	<i>Scabiosa lucida</i> VILL.	A	As: <i>Thes.-Nar.</i> , As: <i>Bup.-Cal.</i> , As: <i>Trol.-Ger.</i> , As: <i>Hed.-Mol.</i>
306	<i>Scirpus sylvaticus</i> L.	A	As: <i>Viol.-Mol.</i>
307	<i>Scorzonera humulis</i> L.	A	As: <i>Hed.-Mol.</i> , As: <i>Bup.-Cal.</i>
308	<i>Scrophularia nodosa</i> L.	A	As: <i>Daph.-Acer.</i> , As: <i>Sal.-Bet.</i>
309	<i>Scrophularia scopolii</i> HOPPE	A	As: <i>Daph.-Acer.</i> , As: <i>Las.-Dac.</i> , As: <i>Pet. alb.</i> , etc.
310	<i>Sedum alpestre</i> VILL.	A	As: <i>Fest.-Pol.</i> , As: <i>Hed.-Mol.</i>
311	<i>Selaginella selaginoides</i> (L.) P. B. ex SCHRANK et MART.	A	Al: <i>Car. fus.</i> , Al: <i>Agr. alp.</i>
312	<i>Senecio fuchsii</i> C. C. GMELIN	A	As: <i>Daph.-Acer.</i> , As: <i>Sal.-Bet.</i> , As: <i>Las.-Dac.</i> , etc.
313	<i>Senecio jacquinianus</i> REICHENB.	A	Cl: <i>Mul.-Acon.</i> , Cl: <i>Nar.-Cal.</i> , As: <i>Sal.-Bet.</i> , Or: <i>Fag.</i> , etc.
314	<i>Silene dioica</i> (L.) CLAIRV.	A	As: <i>Daph.-Acer.</i> , Al: <i>Aden. all.</i> , As: <i>Bup.-Cal.</i> , As: <i>Poo-Desch.</i>
315	<i>Solidago virgaurea</i> L. subsp. <i>minuta</i> (L.) ARC.	A	As: <i>Cet.-Fest.</i> , As: <i>Fest.-Vac.</i> , As: <i>Sil.-Cal.</i> , etc.
316	<i>Sorbus aucuparia</i> L. s.l.	A	Al: <i>Pic. exc.</i> , Or: <i>Fag.</i> , As: <i>Sal.-Bet.</i> , etc.
317	<i>Stachys alpina</i> L.	A	As: <i>Daph.-Acer.</i> , SAs: <i>Las.-Dac. car.</i>
318	<i>Stachys sylvatica</i> L.	A	As: <i>Daph.-Acer.</i>
319	<i>Stellaria graminea</i> L.	A	Transitions to As: <i>Thes.-Nar.</i>
320	<i>Stellaria nemorum</i> L.	A	Cl: <i>Mul.-Acon.</i> , Or: <i>Fag.</i> , As: <i>Epil.-Phil.</i> , etc.
321	<i>Stellaria uliginosa</i> MURR.	A	As: <i>Epil.-Phil.</i>
322	<i>Streptopus amplexifolius</i> (L.) DC.	A	Al: <i>Pic. exc.</i> , As: <i>Acer.-Fag.</i> , As: <i>Ath. alp.</i>
323	<i>Swertia perennis</i> L. subsp. <i>perennis</i>	A	Al: <i>Car. fus.</i> , As: <i>All.-Crat.</i> , As: <i>Sen.-Sal.</i>
324	<i>Taraxacum officinale</i> WIGG. agg.	A	Transition stage on the rocks and in grass communities
325	<i>Tephrosieris crispa</i> (JACQ.) SCHUR	A	As: <i>Sen.-Sal.</i> , As: <i>Epil.-Phil.</i> , As: <i>Poo-Desch.</i> , As: <i>All. sib.</i>
326	<i>Thalictrum aquilegifolium</i> L.	A	As: <i>Aden. all.</i> , As: <i>Pet. alb.</i> , As: <i>Acer.-Fag.</i> , As: <i>Daph.-Acer.</i>
327	<i>Thalictrum minus</i> L. s.l.	A	Solely As: <i>Sax.-Agr.</i>
328	<i>Thesium alpinum</i> L.	A	As: <i>Thes.-Nar.</i>
329	<i>Thymus carpaticus</i> ČELAK.	A	Al: <i>Agr. alp.</i> , SAs: <i>Fest.-Pol. sed.</i> , As: <i>Thes.-Nar.</i> , etc.
330	<i>Tilia platyphyllos</i> SCOP. s.l.	B	As: <i>Daph.-Acer.</i>
331	<i>Traunsteinera globosa</i> (L.) REICHENB.	A	As: <i>Hed.-Mol.</i> , As: <i>Thes.-Nar.</i> , As: <i>Trol.-Ger.</i>
332	<i>Trientalis europaea</i> L.	A	As: <i>Cal.-Pic.</i> , Cl: <i>Nar.-Cal.</i> , As: <i>Sal.-Bet.</i> , As: <i>Fest.-Vac.</i>
333	<i>Trifolium pratense</i> L. subsp. <i>pratense</i>	A	As: <i>Thes.-Nar.</i>

Distribution in cirque	Pop. size	Note
Found solely in Uechtriz Dale	2	Reported already by FIEK (1881)
Found solely in Uechtriz Dale	2	Reported solely by KRKAVEC (1971)
Robust shrub near Petřík Rock	1	Reported only by OTRUBA (1926)
Solitary: C2c, C4a, C4d, D3a, D3c	3	Reported already by WIMMER (1840)
Scattered, mainly in middle belt	2-3	Reported already by WIMMER (1840) and GRABOWSKI (1843)
Rare in middle belt, alt. max. 1335 m (in Mückusch Garden)	3-4	Reported already by GRABOWSKI (1843)
Solitary, mainly on Firbas Slant	3	Commonly reported
Rarely: C3b, C3d, D3a, D3d, alt. max. 1260 m	2	First record possibly by UECHTRITZ (FIEK 1881)
Scattered, mainly in middle and lower belt	3	Reported already by WIMMER (1840)
Scattered on the rock in middle belt	3	Commonly reported
Scattered	3	Commonly reported
Scattered in lower and middle belt, alt. max. 1350 m	2-3	Explicitly from the cirque reported solely by JERIOVÁ (1970)
Very abundant in the whole area	3-5	Commonly reported from high elevation of Hr. Jeseník Mts.
Frequent in the whole area	4	Commonly reported from higher elevation of Hr. Jeseník Mts.
Rather abundant, mainly in upper belt	4	Commonly reported
Frequent in the whole area	3-4	According to present authors, solely subsp. <i>aucuparia</i>
Rare, C3d, D2c, D3b, D3c, E3a	3	Commonly reported
Rare, C4d, D3a, D3b, alt. max. 1270 m	2	Reported already by FIEK (1881)
Very rare, solely in Cimrman Garden and Laus Landing	2	Reported solely by OTRUBA (1926) and JERIOVÁ (1970)
Frequent in the whole area, alt. max. 1405 m	3-4	Explicitly from the cirque listed by OBORNY (1886)
Rare: A0b, A5d, C5c, C8a, C8b, alt. max. 1435 m	3	Reported solely by LAUS (1910) and OTRUBA (1926)
Solitary, mainly on Fineke and Kratochvíl Slant	2-3	Common reports
Rare, solely in Cimrman Garden (near Spruce Brook)	3	Discovered by GRABOWSKI (WIMMER 1840)
Very rare, Laus Landing and Schube Ledge	1	Listed solely by LAUS (1910)
Scattered, alt. max. 1400 m	3	Explicitly from the cirque first record by MÜNCKE (1855) (syn. <i>Senecio rivularis</i> )
Frequent to scattered, alt. max. 1450 m	3	Commonly listed from high elevations of Hr. Jeseník Mts.
Very rare, solely on the rocks of Vitásek Ravine	2	Listed already by GRABOWSKI (1843)
Scattered, alt. max. 1450 m	2-3	Commonly reported
Scattered in middle belt	3-4	Other vague taxa also reported
Rare, solely on Firbas Slant and Podpěra Rock	3	Discovered by present authors in 1973
Solitary in middle belt, mainly on Otruba Slant	2	Reported already by ROHRER et MAYER (1835)
Frequently	3-4	Commonly reported from upper regions of Hr. Jeseník Mts.
Found solely in Cimrman Garden (C1d)	2	Reported by OTRUBA (1926), ŠMARDÁ (1950) and JERIOVÁ (1970)

No	Taxon	Cat.	Affinity to syntaxa
334	<i>Trifolium repens</i> L.	A	Transition to As: <i>The</i> s.- <i>Nar</i> .
335	<i>Trisetum flavescens</i> (L.) P. B.	B	Transition to As: <i>The</i> s.- <i>Nar</i> .
336	<i>Trommsdorffia uniflora</i> (VILL.) SOJÁK	A	As: <i>The</i> s.- <i>Nar</i> ., As: <i>Bup</i> .- <i>Cal</i> ., As: <i>Cet</i> .- <i>Fest</i> ., etc.
337	<i>Trollius altissimus</i> CRANTZ	A	Al: <i>Aden</i> . <i>all</i> ., As: <i>Ping</i> .- <i>Trich</i> ., As: <i>Bup</i> .- <i>Cal</i> ., etc.
338	<i>Tussilago farfara</i> L.	A	Initial stages of succession on scree
339	<i>Urtica dioica</i> L.	A	As: <i>Daph</i> .- <i>Acer</i> ., As: <i>Las</i> .- <i>Dac</i> ., As: <i>Daph</i> .- <i>Dry</i> ., As: <i>Pet</i> . <i>alb</i> ., etc.
340	<i>Vaccinium myrtillus</i> L.	A	Indifferent species, absent in As: <i>Sax</i> .- <i>Agr</i> ., Cl: <i>Mul</i> .- <i>Acon</i> ., SAl: <i>Mont</i> ., Al: <i>Car</i> . <i>fus</i> .
341	<i>Vaccinium uliginosum</i> L.	A	Transition to As: <i>Sil</i> .- <i>Cal</i> . or As: <i>Fest</i> ., <i>Vac</i> .
342	<i>Vaccinium vitis-idaea</i> L.	A	SAs: <i>Fest</i> .- <i>Vac</i> . <i>vac</i> ., Al: <i>Jun</i> . <i>trif</i> ., As: <i>Hed</i> .- <i>Mol</i> ., etc.
343	<i>Valeriana dioica</i> L.	A	Transition to Al: <i>Car</i> . <i>fus</i> .
344	<i>Valeriana sambucifolia</i> MIKAN fil.	A	As: <i>Las</i> .- <i>Dac</i> ., As: <i>Trol</i> .- <i>Ger</i> ., As: <i>Daph</i> .- <i>Acer</i> ., As: <i>Bup</i> .- <i>Cal</i> ., As: <i>Poo</i> .- <i>Desch</i> .
345	<i>Valeriana tripteris</i> L.	A	As: <i>Sax</i> .- <i>Agr</i> .
346	<i>Veratrum lobelianum</i> BERNH.	A	Indifferent species, almost in all communities
347	<i>Veronica chamaedrys</i> L.	A	As: <i>The</i> s.- <i>Nar</i> ., <i>Trol</i> .- <i>Ger</i> .
348	<i>Veronica officinalis</i> L. subsp. <i>officinalis</i>	A	As: <i>The</i> s.- <i>Nar</i> .
349	<i>Veronica serpyllifolia</i> L.	A	On the footpath
350	<i>Vicia cracca</i> L. subsp. <i>oreophila</i> (ŽERTOVÁ) Á. LÖVE et D. LÖVE	A	As: <i>Las</i> .- <i>Dac</i> ., As: <i>Trol</i> .- <i>Ger</i> ., As: <i>Bup</i> .- <i>Cal</i> ., etc.
351	<i>Vicia sepium</i> L. subsp. <i>sepium</i>	A	An: <i>Sal</i> .- <i>Bet</i> ., As: <i>Las</i> .- <i>Dac</i> ., As: <i>The</i> s.- <i>Nar</i> ., etc.
352	<i>Vicia sylvatica</i> L.	A	As: <i>Daph</i> .- <i>Acer</i> .
353	<i>Viola biflora</i> L.	A	As: <i>Viol</i> .- <i>Mol</i> ., SAl: <i>Mont</i> ., As: <i>Las</i> .- <i>Dac</i> ., Al: <i>Car</i> . <i>fus</i> ., etc.
354	<i>Viola palustris</i> L.	A	As: <i>All</i> . <i>sib</i> ., As: <i>Epil</i> .- <i>Phil</i> ., etc.
355	<i>Viola reichenbachiana</i> JORDAN ex BOR.	A	SAs: <i>Cal</i> .- <i>Fag</i> . <i>bet</i> .
356	<i>Viola sudetica</i> WILLD.	A	Cl: <i>Nar</i> .- <i>Cal</i> ., As: <i>Trol</i> .- <i>Ger</i> ., SAs: <i>Cet</i> .- <i>Fest</i> . <i>desch</i> ., etc.

Distribution in cirque	Pop. size	Note
Found solely in Cimrman Garden	2	Explicitly from cirque recorded solely by LAUS (1910) and ŠMARDÁ (1950b)
Found solely on Kratochvíl Slant (E6b, 1310 m)	2	Discovered by present authors in 1974
Frequent, mainly in middle and upper belt	3	Commonly reported (syn. <i>Hypochoeris uniflora</i> )
Rather abundant, mainly in middle and lower belt	4	Explicitly from the cirque record only by FIEK (1881)
Rare in middle belt, B2b, C5c, D2a, alt. max. 1330 m	2	First record possibly by UECHTRITZ (FIEK 1881)
Scattered in middle belt	3	Explicitly from the cirque reported only by OTRUBA (1926)
Very abundant in the whole area	3-5	Common records from upper regions of Hr. Jeseník Mts.
Scattered, mainly in middle belt	3-4	Explicitly from the cirque only by LAUS (1910)
Frequent in the whole area, mainly in middle and upper belt	3-4	Commonly reported from higher elevations of Hr. Jeseník Mts.
Found solely in Uechtriz Dale, G1a, 1120 m	2	Commonly reported
Scattered, alt. max. 1380 m	2-4	Commonly reported
Solitary on shady rocks	3	Reported already by ROHRER et MAYER (1835)
Abundant	4-5	Common reports from high elevations of Hr. Jeseník Mts.
Solitary in middle and lower belt, alt. max. 1350 m	2-3	Explicitly from the cirque only by LAUS (1910)
Rare in middle and lower belt, D3b, E3d, F2c, F3a, alt. max. 1185 m	3	Explicitly from the cirque solely by OTRUBA (1926) and JERIOVÁ (1970)
Found solely in Uechtriz Dale, F1b, 1120 m	2	Commonly reported
Scattered in middle and lower belt, alt. max. 1380 m	2-3	Recorded already by WIMMER (1840) and GRABOWSKI (1843) as <i>V. cracca</i> ; newly given as <i>V. oreophila</i> by ŽERTOVÁ (1962)
Rather frequent in middle and lower belt, alt. max. 1380 m	3	Commonly reported
Rare in middle belt: C2c, C3d, D3b, alt. max. 1290 m	3	Commonly reported
Abundant in the whole area	4-5	Commonly reported from upper area of Hr. Jeseník Mts.
Rare, Uechtriz Dale, Kunz Side, Wimmer and Grabowski Gully, Bilberry Brook	3	Commonly reported
Very rare in Uechtriz Dale, H1d, 1110 m	2	Reported only by OTRUBA (1926) and JERIOVÁ (1970), found by KIRSCHNER in 1980
Frequent in the whole area	3-4	Commonly reported from higher elevation of Hr. Jeseník Mts.

*pyro-Vaccinion* and *Calamagrostion villosae*. After Eduard Formánek (1848–1900), secondary school teacher in Brno, author of papers dealing with flora of Hrubý Jeseník and compiler of the first Moravian flora written in Czech; the Czech topographical name “Velká Kotlina” probably first used by him.

Grabowského žleb (“Grabowski Gully”): Rocky trough in the upper belt corresponding with the maximum snow drifts in winter. Situated in the C5 square, covered by the *Montio-Cardaminetea* and *Nardo-Calamagrostietea*. After Heinrich Grabowski (1792–1842), apothecary in Opole, Silesia, co-author and author of several Silesian floras, discoverer of the greater part of botanical rarities in Velká Kotlina.

Hilitzerova skála (“Hilitzer Rock”): Large rocky outcrop to the west of the cirque core; situated in the C2 and inhabited predominantly by the *Juncetea trifidi* and *Asplenietea trichomanis*. After Alfred Hilitzer (1899–1940), associate professor in botany, Agriculture University, Prague; prominent lichenologist and author of a paper on lichens of Hrubý Jeseník containing rare findings in Velká Kotlina.

Hrubýho stupeň (“Hruby Landing”): Slightly inclined area on the left bank of Moravice rivulet, between 1175 and 1190 m altitude, in the F4 square. Covered prevalingly by the *Mulgedio-Aconitetea*. After Johann Hruby (1882–1964), secondary school teacher in Brno, author of numerous floristic papers from Moravia, including a comprehensive treatise on the flora of the Eastern Sudeten Mountains.

Jarní pramen (“Early Spring”): Source of Rose Brook at 1150 m altitude, in the lower belt of the cirque. Situated in the F3 square, and surrounded by the *Scheuchzerio-Caricetea*.

Jeřábový potok (“Rowan Brook”): A stream situated to the SW of the centre of Velká Kotlina, between 1250 and 1170 m altitude, in the C1, D1, D2 and E2 squares. Surrounded by spruce forests of the *Vaccinio-Piceetea*.

Kettnerova skála (“Kettner Rock”): Isolated outcropping of rocks in the upper belt between 1330 and 1350 m altitude, in the C5 square. Habitat of the *Juncion trifidi*. After Rádl Kettner (1891–1967), professor in geology, Charles University, Prague; he contributed to the geology of the Hrubý Jeseník range.

Klečový potok (“Pine Brook”): A stream on the N margin of the cirque, between 1405 and 1370 m altitude, in the E8 square. On its sides predominantly the *Calamagrostion villosae* and plantations of allochthonous krummholz pine — *Pinus mugo*.

Klenový potok (“Maple Brook”): A right tributary to Moravice rivulet in the middle belt of Velká Kotlina, between 1155 and 1220 m altitude, in the E2 and E4 squares. Its banks are occupied mostly by the *Salici-Betuletum*.

Klikova výsypa (“Klika Promontory”): Rounded promontory situated above the precipitous part of the cirque, between 1340 and 1370 m altitude; situated in the B4 and C4 square and covered by large stands of the *Laserpitio-Dactylidetum*. After Jaromír Klika (1888–1957), professor in geo-botany, Charles University, Prague, founder of Czech phytosociological school, author of first phytosociological papers in the Hrubý Jeseník range, jointly with J. Šmarla.

Kolenatiho skály (“Kolenati Rocks”): Large complex of rocks arising in the upper belt, between 1240 and 1300 m altitude, in the D4 and D5 squares, inhabited mostly by the *Juncion trifidi*. After Friedrich Anton Kolenati (1812–1864), physician and polyhistor in science, teaching at universities in Brno, Prague and Leningrad; his pioneer exploration of the Hrubý Jeseník range also refers to Velká Kotlina.

Kratochvílova stráň (“Kratochvíl Slant”): Large sloping area dissected by streams, in the NE part of Velká Kotlina, between 1200 and 1300 m, in the E4 and E5 squares. Prevalingly covered by the *Betulo-Alnetea*. After Josef Kratochvíl (born 1909), professor in zoology, academician and director of the Institute of Vertebratology, Brno; author of a paper describing distribution and ecology of mammals in Velká Kotlina.

Kruťuv kámen (“Kruťa Rock”): Small yet conspicuous isolated rock situated at 1275 m altitude, in the D5 square. Habitat of the *Juncion trifidi*. After Tomáš Kruta (born 1906), head of the Department of mineralogy and petrography, Moravian Museum, Brno, expert in minerals of Moravia, author of numerous contributions to mineralogy of the Hrubý Jeseník range.

Kunzova stráň (“Kunz Side”): Large and even sloping area in the upper belt, between 1320 and 1450 m altitude, in the D6 to D9, C6 to C8 and E7 to E9 squares. Covered by the *Calamagrostion villosae* and *Melampyro-Vaccinion*. After František Kunz, author of two papers dealing with grasslands above the timberline in the Hrubý Jeseník range, including those in Velká Kotlina.

Kurková stráň (“Kurková Slant”): A steep slope along the Spruce Brook in the S. part of the Velká Kotlina, between 1200 and 1240 m a.s.l., in the D1 square. Occupied by ecosystems of the *Senecioni-Salicetum*, *Sileno-Calamagrostietum*, and *Poo-Deschampsion*. After Jaroslava Zittová-Kurková (1951–1982), a bryologist in the Institute of Botany, Czech. Acad. Sci., Prague; co-worker in ecosystem studies of the Velká Kotlina.

**Lausův stupeň** ("Laus Landing"): Slightly sloping area representing "bottom" of the cirque, at the foot of precipitous rocks, between 1160 to 1200 m altitude, in the D2, D3, E2 and E3 squares. Prevalingly covered by the *Mulgedio-Aconitetea*. After Heinrich Laus (1872–1941), secondary school teacher in Olomouc, author of the first geo-botanical classification of Velká Kotlina (1910); jointly with Pauer, a professional gardener, he established a botanical garden near Ověčárna Chalet, in 1912.

**Lenčková stráň** ("Lenček Slant"): A sloping area facing SW on the left bank of Moravice rivulet, between 1150 and 1175 m altitude, in the F3 square; covered by the *Aceri-Fagetum*, *Calamagrostio-Fagetum betuletosum* and *Laserpitio-Dactylidetum*. After Otto Lenček (1867 to 1941), secondary school teacher in Brno, successful amateur botanist. In a paper from 1931 he first indicated the physical-geographical similarity of Velká Kotlina and cirques of the Giant Mountains.

**Lískový potok** ("Hazel Brook"): First right tributary to Moravice rivulet in NE part of Velká Kotlina, between 1370 and 1200 m altitude. Situated in the D7, E4, E5 and E6 squares, covered by the *Betulo-Alnetea*.

**Lýkovecový potok** ("Mezereon Brook"): Seasonal stream, a right tributary to Maple Brook, in the middle part of Velká Kotlina, between 1155 and 1270 m, in the E3 square. Covered by tall-herb communities of the *Mulgedio-Aconitetea*.

**Mayerova stráň** ("Mayer Slant"): Slightly convex slope over the rocks in the NW part of Velká Kotlina, between 1280 and 1330 m altitude, in the C4, C5, D4 and D5 squares; communities of the *Nardo-Calamagrostietea* predominating. After August Mayer (1802–1873), warden of an estate in Velké Heraltice, compiler of an unfinished flora of the Hrubý Jeseník range.

**Mildeho skála** ("Milde Rock"): Isolated rock in the western part of Velká Kotlina, at 1285 m altitude, in the C2 square. Inhabited by the *Festuco-Polytrichetum*. After Julius Milde (1824–1871), secondary school teacher, later university professor in Wrocław, prominent bryologist and expert in ferns, discoverer of many cryptogamic species in Velká Kotlina.

**Moravice** ("Moravice river/rivulet"): Largest water course collecting all streams of Velká Kotlina; its bed occupied by the *Montio-Cardaminetea*, and its banks covered by predominant scrub of the *Salici-Betuletum*. The spring is situated at 1337 m altitude and the stream crosses the F1 to F5, H1, G1, E6 and E7 squares.

**Moravské úbočí** ("Moravian Side"): Large slopes facing NE, situated to the south of the core, and in the E0, E1, F0, F1, G0 and H0 squares. Prevalingly covered by forests of the *Vaccinio-Piceetea*.

**Mückuschova zahrádka** ("Mückusch Garden"): Relatively mild slope to the NE of the cirque, with numerous scattered springs and flushes, between 1320 and 1350 m altitude, in the G7 square. Occupied by the *Montio-Cardaminetea*, *Nardo-Calamagrostietea* and *Mulgedio-Aconitetea*. After Franz von Mückusch Ritter von Buchberg (1749–1837), retired army officer, settled in Krnov. As a keen amateur, he started exploring the flora of Hrubý Jeseník and his information and herbarium specimens were broadly exploited by compilers of all Silesian floras; discoverer of rare species in Hrubý Jeseník, possibly right in Velká Kotlina.

**Obornýho skála** ("Oborný Rock"): Small isolated rock in the northern part of the cirque, at 1305 m altitude, in the D5 square. Habitat of communities of the *Juncion trifidi*. After Adolf Oborný (1840–1924), secondary school teacher, friend of J. G. Mendel, author of numerous floristic papers, and compiler of a critical Moravian flora, including many data referring to Velká Kotlina.

**Otrubova stráň** ("Otruba Slant"): Steep slope facing east in the SW part of the cirque. Situated between 1200 and 1230 m altitude and in the C2 and D2 squares. Covered by the *Salici-Betuletum*. After Josef Otruba (1889–1953), post office official, later custodian of Natural Science Museum in Olomouc; compiler of the first Silesian flora written in Czech, admirer of Velká Kotlina, and contradictory contributor to the floristics of this locality.

**Petříkova skalka** ("Petřík Rock"): Most conspicuous isolated rock, a "big boulder", right in the core of the cirque, at 1200 m altitude, in the D3 square. Habitat of rocky communities of the *Festuco-Polytrichetum*. After Petr Němec, young mountain climber from Olomouc, who died in Velká Kotlina in 1963.

**Podpěrova skála** ("Podpěra Rock"): Distinctive rocky promontory in the core of the cirque, between 1200 and 1250 m altitude, in the D3 square; prevalingly inhabited by the *Agrostion alpinae* and *Juncion trifidi*. After Josef Podpěra (1878–1954), university professor in botany, academician, Brno; in his extensive work, Velká Kotlina is frequently quoted and recommended as nature reserve.

**Přední Klenový potok** ("Maple Front Brook"): A stream springing in the upper belt, flowing to the SE, between 1420 and 1220 m altitude, in the E5, D5, C6 and B7 squares. Predominantly occupied by the *Montio-Cardaminetea*.

Rathsburgův břeh ("Rathsburg Bank"): Steep slope between the two "bottoms" in the lower belt of the cirque, between 1140 and 1170 m altitude, in the E2 and E3 squares. Covered by scrub of the *Salici-Betuletum*, *Daphno-Aceretum* and *Calamagrostio-Fagetum*. After A. Rathsburg, expert in geography, geomorphology and glaciology, author of papers dealing with glaciation of Central-European mountains; first detailed explanation of glacial morphology in Velká Kotlina.

Roemerovy výchozy ("Roemer Outcrops"): A series of smaller outcrops in the middle belt of the cirque, at 1240 m altitude, in the D1 and C2 squares. Habitat of the *Juncion trifidi* and *Calamagrostion villosae*. After Carl Ferdinand Roemer (1818–1891), university professor in mineralogy and geology, Wrocław; monographer of the Silesian geology and author of a number of papers dealing with geology of the Hrubý Jeseník range.

Růžičkova tůňka ("Růžička Pool"): Small pool near the central point of the cirque, at 1185 m altitude, in the E2 square. Surrounded by a stand of *Carex acutiformis*. After Jiří Růžička (born 1909), lawyer and later professional algologist, leading expert in *Conjugatophyceae*; author of a monograph on *Desmidiaceae* of Velká Kotlina.

Růžový potok ("Rose Brook"): Short stream arising in the Early Spring in the lower belt of the cirque, at 1150 m altitude, in the F3 square. Inhabited by communities of the *Montenion*, *Carcion fuscae* and *Adenostyliion*; a left tributary to Moravice rivulet.

Schauerova stráň ("Schauer Side"): Vast, even and steep slope in the upper belt of the cirque, between 1270 and 1450 m altitude, in the 00 to 04, A0 to A4, B0 to B4, C0, C1, C3 and C4 squares. Prevaingly covered by the *Calamagrostion villosae* and *Melampyro-Vaccinion*. After Conrad Johann Schauer (1813–1848), professor in botany in Greifswald, later in Wrocław; his paper from 1840 contains remarkable evaluation of the Velká Kotlina cirque.

Schubeho zářez ("Schube Ledge"): Narrow horizontal path incised into the rocks across the central part of the cirque, at 1300 m altitude, in the C3 and C4 squares; predominantly inhabited by the *Montenion*. After Theodor Schube (1860–1934), secondary school teacher, later custodian of herbaria in Wrocław, manager of floristic research into Silesia, author of the last comprehensive flora of Silesia (Schube 1903–1904) which summarized the botanical research of the 19th century.

Slezské úbočí ("Silesian Side"): South facing slopes adjoining the cirque on its eastern margin; in the F5, F6, G2 to G7 and H2 to H7 squares; forests of the *Piceion* prevailing.

Smrkový potok ("Spruce Brook"): A stream in the W and SW part of the cirque, between 1300 and 1125 m altitude, in B0; C0, D0, E1 and F1 squares. Most of the stream under the closed canopy of the *Piceion*.

Suzova stěna ("Suza Wall"): Precipitous rocks in the middle part in the core of the cirque, in the C2, C3 and D3 squares. Inhabited by the *Agrostion alpinae* and *Juncion trifidi*. After Jindřich Suza (1890–1951), professor in cryptogamology, Charles University, Prague, eminent lichenologist whose observations in Hrubý Jeseník also include new findings in Velká Kotlina.

Šmardova stěna ("Šmarda Wall"): Permanently flushed rock face in NW part of the cirque, at 1340 m altitude, on the border of C4 and C5 squares; covered by communities of the *Montenion* and *Adenostyliion*. After Jan Šmarda (1904–1968), associate professor in botany, Brno, later senior research officer in Czechoslovak Academy of Sciences, author of numerous papers dealing with both vascular and bryophytic flora of Hrubý Jeseník, including first phytosociological relevés from Velká Kotlina.

Uechtritzův úval ("Uechtritz Dale"): The lowest part of the cirque, a broad "flood-plain" of the Moravice rivulet, between 1100–1140 m altitude, in the H0, H1, G1, G2, F1 and F2 squares. Prevaingly occupied by the scrub of the *Salici-Betuletum*. After Rudolf von Uechtritz (1838–1886), private teacher in Wrocław, keen collector and author of valuable contributions to the flora of Velká Kotlina.

Vitáskova rokle ("Vitásek Ravine"): Most conspicuous landform of the cirque, representing a rocky incision descending between 1200 and 1350 m altitude in the middle sector of the locality, in the D3 and C4 squares. Starting from its foot, near Podpěra Rock, five prominent buttresses of rocky outcrops can be distinguished, that are covered by communities of the *Juncion trifidi* and *Agrostion alpinae*. After František Vitásek (1890–1973), professor of physical geography, University of Brno, whose glaciological survey of Czechoslovak mountains contains references to Velká Kotlina.

Vrbový potok ("Willow Brook"): A stream in the upper belt of NW sector, between 1400 and 1350 m latitude, in the A5, B4 and C5 squares. The banks are covered by the *Mulgedio-Aconitetea*.

Wilschowitzovy výchozy ("Wilschowitz Outcrops"): A series of rocky outcrops lying horizontally in the N sector of the cirque, at 1315 m altitude, in the D6 and E6 squares. Communities of the *Juncion trifidi* predominate. After J. Wilschowitz, geologist and author



of geological and paleontological papers on Hrubý Jeseník, and compiler of a geological map of the same area.

Wimmerův žleb ("Wimmer Gully"): Steep rocky trough in the upper belt of the cirque, between 1330 and 1360 m altitude, in the C6 square, covered mainly by the *Montio-Cardaminetea* and *Nardo-Calamagrostieta*. After Christian F. H. Wimmer (1803–1868), director of secondary school in Wrocław, royal education counsellor in Prussia, author of numerous editions of Silesian floras, and successful collector in Velká Kotlina where he first identified *Crepis sibirica*.

Zadní Klenový potok ("Maple Rear Brook"): A stream in the middle belt of the northern part of Velká Kotlina, between 1410 and 1350 m altitude, in the C5 and D5 squares. The banks covered by grasslands of the *Nardo-Calamagrostieta*.

## PRESENT-DAY ACCOUNT OF VASCULAR TAXA

In the course of our revision of the flora of vascular plants in Velká Kotlina, four categories have been distinguished:

A: confirmed species, i.e. taxa reported in earlier literature and confirmed during field studies in the period 1971 to 1978.

B: new species, i.e. taxa newly discovered during 1971 to 1978.

C: veritable species, i.e. taxa unconfirmed during field surveys yet present in the past or overlooked by the present authors.

D: doubtful species, i.e. taxa whose names were probably named in association with Velká Kotlina by mistake.

Tab. 2 is an annotated list of taxa belonging to A and B-categories. Taxa of the C and D-categories will be listed and commented in a following paper (part II).

Two prerequisites may affect the degree of accuracy of the floristic list and classification of its taxa into the above categories: (1) reasonably complete observations in field, and (2) reasonably complete excerpts of relevant literature and herbarium sheets. As far as the field studies are concerned, we tried to achieve completeness by spending sufficient time in the cirque, by visits during all seasons, by continuation of the research over eight years, and by coverage of all the most inaccessible parts of the cirque. The joint effort of three independent observers, and intensive floristic work accompanying the 400 phytosociological relevés spread over the entire area of the cirque, have contributed to the completeness of our field data. However, the area of one km<sup>2</sup> equals one million m<sup>2</sup>, and detailed inspection of every square meter would require about 17,000 hours of field work. Beside the time factor, our inability to distinguish between taxonomically difficult taxa, such as the *Hieracium* species, necessarily resulted in certain gaps in the A category of "confirmed species". As far as the extraction of literary data and examination of herbarium specimens are concerned, we have concentrated upon the integrated floras and papers specially devoted to Velká Kotlina. Herbaria were consulted only occasionally in order to clarify some confusions.

The taxa adopted and alphabetically listed in Tab. 2 follow the nomenclature of recent enumerations: EHRENDORFER (1973), ROTHMALER et al. (1976), HOLUB, PROCHÁZKA et ČEŘOVSKÝ (1979) and SMEJKAL (1980). The column indicating the above mentioned categories is followed by a column describing phytosociological affinities of the taxa, a feature derived from an earlier publication (JENÍK, BUREŠ et BUREŠOVÁ 1980). The abbreviations used in this part follow the list in Tab. 1. The sequence of syntaxa quoted in connection with individual species reflects their constancy and abundance

in various phytosociological units, leaving aside the diagnostic aspects (differential and character species). In species lacking distinctive affinity to certain syntaxa, the opposite feature has been indicated: phytosociological syntaxa avoided by the species.

The following column contains indications of abundance and distribution within the cirque. The abundance is estimated according to the following scale: Common — Abundant — Frequent — Scattered — Rare. Wherever possible, these estimates were linked with detailed localization utilizing the micro-topographical terminology of reference grid according to Fig. 1. Ten very rare and phytogeographically important species, viz. *Aster alpinus*, *Blechnum spicant*, *Conioselinum tataricum*, *Corallorhiza trifida*, *Crepis sibirica*, *Hippochaete hyemalis*, *Plantago\* sudetica*, *Gentiana punctata*, *Polystichum aculeatum* and *P. lonchitis*, have been left without precise indication of their occurrence. Any serious botanist interested in these species is welcome to inspect our card-file deposited in Podlesí. The altitudinal limits recorded in the same column are derived from our observations only, since most of the earlier data are unreliable — an understandable result of the past lacking of a large-scale map and reference points.

Another column in Tab. 2 provides an estimate of the present-day size of separate populations, regardless of the number of these populations within the cirque. This feature is expressed in a five-member scale as follows:

- 5 — Very strong population
- 4 — Strong population
- 3 — Weak population
- 2 — Very weak population
- 1 — Single specimens only

The size or strength of a particular population refers to behaviour and life strategy of the respective taxon, such as natality, vitality and sociability, and does not depend on general abundance and overall distribution of the taxon within the cirque. A rare species, such as *Aster alpinus* or *Plantago\* sudetica*, develop strong populations, while the population of fairly widespread *Traunsteinera globosa* can be rated only as "single". Similar evaluations were given to all other species of the *Orchidaceae*, to *Ajuga genevensis*, *Conioselinum tataricum*, and even to certain shrubs, e.g. *Crataegus monogyna* and *Corylus avellana*. Weakly represented populations belong to species with sub-montane or lowland affinity, e.g. *Asarum europaeum*, *Anemonoides ranunculoides* and *Pistulochia cava*. Dominant species of extensively represented stands, such as *Calamagrostis villosa*, *Betula carpatica* or *Picea abies*, accordingly, belong to "very strong" populations.

The last column of Tab. 2 contains notes summarizing certain historical events in the discovery of the species or their confirmation in the course of time. In a few cases even taxonomical notes have been added.

There are still many taxa of the Velká Kotlina flora that require urgent taxonomical treatment, e.g. *Agrostis alpina* (diploid taxon differing also by morphological characters from related taxa of the aggregate — J. Měsíček, ined.), *Aster alpinus* (possibly *A. serpentimontanus* according to J. Májovský), *Dactylis glomerata* s.l. (subsp. *slovenica* sometimes reported), *Betula carpatica* (*B. tortuosa* or other different taxa according to Z. Kříž), *Festuca supina*, *Deschampsia cespitosa*, *Avenella flexuosa*, *Molinia caerulea*, *Thalictrum minus*,

etc. As seen in Tab. 2, some micro-species or subspecies could not be distinguished — mainly because of our inability to do so in field observations and collections. The only shrub of *Crataegus monogyna*, for example, was never in flower during the times of our surveys. The fruits of *Caltha palustris* showed mostly intermediary characters. We have listed *Sorbus aucuparia* at species level only, and assume that the subsp. *glabrata* does not grow in Velká Kotlina. Also, it was difficult to decide on certain microspecies or subspecies in plants reported earlier in broader taxonomic sense, e.g. *Dryopteris austriaca*, *Myosotis palustris*, *Carex flava*, and *Orchis maculata*. In obvious cases we assume the identity with taxa determined according to present-day criteria.

## CONCLUSIONS

The flora of any territory is subject to continual natural and man-made changes, and all successive floristic lists vary with the perpetual research and a progressive change in taxonomy. Velká Kotlina in the Hrubý Jeseník range is a prominent example of both natural change and contemporary scientific development. However, its species-rich flora, abundant herbarium specimens and vast amount of documentation make any cataloguing, and updating of the same, a difficult task. Our revised flora reflects all these difficulties.

In the period 1971 to 1978 we were able to identify 356 species, subspecies and hybrids of vascular plants over the study area of about one km<sup>2</sup>. This number of taxa is much lower than expected, as further 283 vascular species were additionally reported to be present in this remarkable locality. A list of these missing species will be discussed in a following paper (part II), which will also contain simple numerical accounts of confirmed, newly discovered, veritably recorded and doubtful species.

Unless a catastrophic factor, such as air pollution, destroys the general environmental setting of the Sudeten Mountains, Velká Kotlina will continue to be major botanical attraction. Future revision of its flora, hopefully, will exploit newly introduced micro-topography, and the annotated list will not only provide historical background but also basis for future comparative studies.

## SOUHRN

Květena jakéhokoli území se trvale mění vlivem přírodních a antropických činitelů. Postupně vznikající floristické soupisy a psané květeny odrážejí zčásti tyto objektivní změny, zčásti jsou výsledkem prohlubujících se výzkumů v terénu a pokroků v taxonomii rostlin. Velká Kotlina v Hrubém Jeseníku, která byla po dvě století křížovatkou slezských a moravských botaniků, je význačným příkladem lokality s poměrně dobře dokumentovaným vývojem floristiky. Konfrontace starších údajů se současným stavem dává naději nahlédnout do recentních florogenetických procesů i do dějin botanického výzkumu ve střední Evropě.

Ukutečnění takové konfrontace však naráží na potíže, které pramení z vysokého počtu taxonů cévnatých rostlin, jež jsou skutečně nebo údajně ve Velké Kotlině zastoupené. Literatura k tomuto tématu je velmi početná a dokladové sběry jsou rozmístěny po mnoha soukromých i ústavních herbáriích. Milión čtverečných metrů v členitém terénu nemohl beze zbytku postihnout ani dlouhodobý floristický výzkum tří autorů, kteří usilovali — zejména ve spojitosti s fyto-cenologickým snímkováním a mapováním — prozkoumat každou část cirků Velké Kotliny. Proto nelze výsledky inventarizace flory tohoto místa považovat za definitivní.

V období 1971 až 1978 jsme ve Velké Kotlině zjistili 356 druhů, poddruhů a kříženců cévnatých rostlin (z toho 23 taxonů udáváme poprvé). Pomocí mapy 1 : 1000, vytyčené sítě čtverců a nově zavedeného podrobného topografického názvoslovi jsme poměrně přesně určili výskyt a sílu populací jednotlivých taxonů na lokalitě. Spolu s odkazy na fyto-sociologickou vazbu taxonů a historickými poznámkami, jsou údaje o flоре Velké Kotliny shrnuty v příložené tabulce 2.

Zjištěný počet taxonů cévnatých rostlin je však proti očekávání překvapivě nižší než vyplývá z údajů literatury. V období výzkumu nebylo nalezeno 283 taxonů, které buď na lokalitě skutečně v minulosti rostly a nebo byly pro ni zdávány omylem. Rozborem těchto nevěstných taxonů Velké Kotliny se zabývá další článek (část II).

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### Studies on the chlorococcal algae (*Chlorophyceae*) II.

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Chlorokokální řasy jsou nejen jednou z nejrozsáhlejších skupin řas (alespoň ve sladkovodním měřítku), ale patří také k hospodářsky nejdůležitějším. Přesto tu nalezneme ještě řadu otevřených otázek v jejich taxonomii, morfologii, fyziologii i dalších oborech. Je tedy pozornost, která je těmto řasám se strany algologů věnována, plně oprávněná. Československá algologie má ve studiu chlorokokálních řas dlouhou a úspěšnou tradici, k jejímuž budování v posledních letech patří i autor této studie, který je právem počítán mezi přední znalce těchto řas.

Tři roky po prvním svazku studií o chlorokokálních řasách vyšel koncem r. 1980 svazek další. Způsob a struktura zpracování jsou obdobné jako v prvním svazku. Autor vychází z kritického studia přírodního materiálu i laboratorních kultur a zaměřil se především na variabilitu a ontogenetické cykly některých rodů a druhů z čeledí *Radiococcaceae*, *Micractiniaceae*, *Dictyosphaeriaceae*, *Chlorellaceae*, *Scenedesmeceae* a *Hydrodictyceae*.

Kromě některých nových nálezů na území Československa, případně prvých nálezů po původním popisu, je nově popsáno 12 druhů: *Coenochloris asymmetrica*, *C. helvetica*, *C. sphagnicola*, *Dictyosphaerium sphagnale*, *Chlorella oocystoides*, *Choricystis guttula*, *Siderocelis irregularis*, *Granulocystis chlamydomonadoides*, *Quadrigula sabulosa*, *Kirchneriella danubiana*, *Monoraphidium fontinale* a *Tetraedron mediocre*. Nově je kombinováno *Monoraphidium nanum* (ETTL) HIND.

Bohaté vybavení ilustracemi (pérovky) se snaží vystihnout co největší šíři variability, v některých případech autor srovnává i přírodní a kultivovaný materiál téhož druhu.

Obsáhlý seznam literatury, slovenský a ruský souhrn, jakož i rejstřík rodových a druhových jmen doplňují svazek, který je cenným přírůstkem v naší algologické literatuře.

O. Lhotský