LICHENS RECORDED DURING THE 16TH MEETING OF THE BRYOLOGICAL AND LICHENOLOGICAL SECTION CBS IN SLAVKOVSKÝ LES MOUNTAINS, APRIL 2009

Lišejníky zaznamenané během 16. setkání Bryologicko-lichenologické sekce ČBS ve Slavkovském lese v dubnu 2009

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Abstract: A list of 188 lichen taxa and 3 non-lichenized fungi recorded from the Slavkovský les Mts and Soos National Nature Reserve during the 16th meeting of bryological and lichenological section CBS in April 2009 is presented. *Candelariella efflorescens*, *Cladonia diversa* and *Verrucaria memnonia* are new to the Czech Republic. Along with three mentioned species, *Caloplaca vitellinula*, *Carbonea vitellinaria*, *Lecanora rupicola* subsp. *subplanata*, *Nephromopsis laureri*, *Placopsis lambii* and *Psilolechia leprosa* are briefly discussed. A number of noteworthy lichens is reported from former mines and spoil heaps (e.g. *Rhizocarpon furfurosum*, *Stereocaulon condensatum*, *S. pileatum*). The epiphytic flora is represented by several endangered but recently spreading species like *Evernia divaricata* and *E. mesomorpha*. A distribution map is provided for *Nephromopsis laureri*.

Key words: *Candelariella efflorescens*, *Cladonia diversa*, lichen diversity, metal-enriched substrates, *Nephromopsis laureri*, serpentine, *Verrucaria memnonia*

Slavkovský les Mts is situated in the western part of the Czech Republic. The region consists of three significant morphological subunits: (1) the Karlovarský massif in the North and North–East, (2) the Slavkovský les in the central part and (3) the Tepelská vrchovina hilly country in the East and South–East. The geology of this area is characterised by granitic rocks; however, other rocks are also quite common, including volcanite, amphibolite or serpentinite. In the past, this area was renowned for rich deposits of tin, silver, bismuth and uranium (Beran & Sejkora 2006). The natural vegetation of the area comprises beech and spruce forests, peat bogs and pine forests on

serpentinite (Neuhäuslová & Moravec 1997), but it has been largely replaced with spruce plantations and pastures.

Besides Slavkovský les Mts, we visited also the Soos National Nature Reserve. This reserve was declared in 1964 and consists mostly of peat bogs and fens with numerous mineral spring effluents and mofettes (fumaroles emitting mainly pure carbon dioxide). In the central part, a diatomite deposit with high concentrations of mineral salts is present (Gross et al. 2002). Previously only Havlicová (1988) listed several more common macrolichens and a toxitolerant microlichen *Lecanora conizaeoides* from this reserve.

In the past, lichenological investigations focused rather randomly on the area of Slavkovský les Mts. First reports of lichens were listed within local floras in the first half of the 19th century (Conrad 1837, Eversmann et al. 1837). The serpentine outcrops were visited by G. W. Körber and J. Kalmus (Körber 1855, Laurer & Kalmus 1862) who reported three lichen species from the vicinity of the village Mnichov (= Einsiedel). Later, Suza (1928, 1934) recorded about 120 species from different serpentinite localities in Slavkovský les Mts. A detailed study of lichen diversity in Křížky Nature Reserve was performed by Peksa (2011). Further records of lichens from this area are mentioned by Suza (1938), Palice (1999), Palice et al. (2005) or Malíček et al. (2011).

Records of species *Cladonia floerkeana*, *C. incrassata*, *C. merochlorophaea*, *Porpidia macrocarpa*, *Porpidia melinodes*, *P. nadvornikiana*, *P. soredizodes* and *P. tuberculosa* collected during the 16th meeting of Bryological and lichenological section CBS have already been published (Jabłońska et al. 2011, Jabłońska 2012, Malíček et al. 2011).

List of localities

1. Karlovy Vary (Slavkovský les Mts): boulder screes (granite) above the right bank of the Ohře River, WGS-84: 50°11'48"N, 12°49'26"E, alt. ca. 480 m (16. 4. 2009).
2. Nová Ves (Slavkovský les Mts): avenue (predominantly maple and ash trees) along the road from "Bečov" to "Nová Ves", WGS-84: 50°05'14"N, 12°47'54"E, alt. ca. 715 m (18. 4. 2009).
3. Nová Ves (Slavkovský les Mts): "Dominova skalka" Nature Monument, outcrop of serpentinite on the right side of the road from "Nová Ves" to "Louka u Mariánských Lázní", WGS-84: 50°04'17"N, 12°47'10"E, alt. 750 m (18. 4. 2009).
4. Krásno (Slavkovský les Mts): NE side of the mined peat bog, 2.5 km W of the Krásno Village, WGS-84: 50°06'39"N, 12°45'18"E, alt. 775 m (18. 4. 2009).
5. Krásno (Slavkovský les Mts): ore heap 0.6 km NNE of the crossroad in the former town of Litrbachy (Čistá), WGS-84: 50°06'16"N, 12°43'55"E, alt. 800 m (18. 4. 2009).
6. Františkovy Lázně: Hájek, National Nature Reserve Soos, SW part, WGS-84: 50°09'N, 12°24'E, alt. 435 m (19. 4. 2009).
7. Horní Slavkov (Slavkovský les Mts): Area of the former mine "Stannum" (a pit "Hubert"), ca. 1.5 km SSW from Horní Slavkov, WGS-84: 50°07'23"N, 12°48'E, alt. 640 m.
   a) settling pit of Svatopluk mine WGS-84: 50°7'40"N, 12°48'47"E (18. 4. 2009).
8. Krásno (Slavkovský les Mts): young plantation of *Larix decidua* along the road to Prameny, ca 1.7 km W from Krásno, WGS-84: 50°06'18"N, 12°46'01"E, alt. 770 m (18. 4. 2009).
9. Ostrov: Vojkovice, Nový Svět. WGS-84: 50°18'27"N, 13°00'35"E, alt. 380 m (17. 4. 2009).

10. Mariánské Lázně (Slavkovský les Mts): Chodová Planá, Lazurový vrch Hill National Nature Reserve, rocky outcrops in the forest close to the top of the hill, WGS-84: 49°54'57"N, 12°46'25"E, alt. 600 m (19. 4. 2009).
11. Mariánské Lázně (Slavkovský les Mts): Chodová Planá, Lazurový vrch Hill Nature Reserve, valley of Jilmový potok brook, WGS-84: 49°54'57"N, 12°46'25"E, alt. 520 m (19. 4. 2009).
12. Karlovy Vary (Slavkovský les Mts): forests above the right bank of the Ohře River, WGS-84: 50°11'48"N, 12°49'26"E, alt. ca. 480 m (17. 4. 2009).
13. Cihelny (Slavkovský les Mts): forest road to Svatošské skály rocks, ca. 600 m SW from the railway station Cihelny, WGS-84: 50°10'59.931"N, 12°50'12.631"E, alt. 475 m (16. 4. 2009).

List of recorded species

Lichen nomenclature follows Liška & Palice (2010), including IUCN categories of threat. Lichenicolous fungi, lichen allied fungi, and lichens missing in the paper are mentioned with author's abbreviations. An exclamation mark (!) indicates taxa new to the Czech Republic. Lichenicolous and non-lichenized fungi similar to lichens are marked by an asterisk (*).

Collected samples are indicated by an abbreviated collector's name, and the location in a public or private herbarium in parentheses: **AM** – Aleš Müller, **DS** – D. Svoboda, **FB** – F. Bouda (PRM), **JM** – J. Malíček, **JPH** – Josef P. Halda, **JSo** – J. Šoun, **JSt** – J. Steinová (PRC), **JV** – J. Vondrák (CBFS), **LS** – L. Syrovátková, **MK** – M. Kukwa (UGDA), **OP** – O. Peksa (PL), **PU** – P. Uhlík (SOKO), **US** – U. Schiefelbein, **ZP** – Z. Palice (PRA). Other records are based on field identifications.

Substrate abbreviations: **Aglu** – *Alnus glutinosa*, **Apla** – *Acer platanoides*, **Apse** – *Acer pseudoplatanus*, **as** – acid soil, **Bet** – *Betula* sp., **Bpen** – *Betula pendula*, **bryo** – bryophytes, **con** – concrete, **dw** – dead wood, **Fexc** – *Fraxinus excelsior*, **ip** – iron plate, **Lar** – *Larix decidua*, **lich** – lichenicolous, **Mdom** – *Malus domestica*, **met** – metal-rich stones and rocks, **Pabi** – *Picea abies*, **Pcer** – *Prunus cerasus*, **peat** – peat, **peb** – pebble, **pla** – plant debris, **Psyl** – *Pinus sylvestris*, **Ptre** – *Populus tremula*, **Que** – *Quercus* sp., **r** – rock, **s** – soil, **Sal** – *Salix* sp., **Sauc** – *Sorbus aucuparia*, **serp** – serpentine, **Sfra** – *Salix fragilis*, **Snig** – *Sambucus nigra*, **ss** – siliceous stone, **u** – unknown, **ut** – unknown tree.

LC *Acarospora fuscata* – 3 (serp)
VU *Acarospora sinopica* – 5 (met) JPH
NT *Acarospora* cf. *smaragdula* – 6 (met) JV
LC *Agonimia tristicula* – 3 (pla) JM
LC *Amandinea punctata* – 2 (Fexc, Apse) AM, JM, MK, 6 (Ptre) OP
LC *Anisomeridium polypori* – 11 (Apse, Snig) MK
NT *Arctoparmelia incurva* – 1 (ss) US
* *Arthonia epiphyscia* – 2 (lich) MK (on *Physcia dubia*)
LC *Arthrorhaphis grisea* – 7 (lich) FB (on *Baeomyces rufus*)
LC *Bacidina chloroticula* – 6 (dw) ZP
DD *Bacidina neosquamulosa* – 9 (Fexc) JM
LC *Baeomyces rufus* – 4 (s), 5 (s), 7 (as) LS
VU *Bryoria fuscescens* – 6 (Bpen), 8 (Lar) JM, 9 (Pcer) JM, 13 (Lar)
LC *Buellia aethalea* – 3 (serp), 7 (met) JM, JV
LC *Buellia griseovirens* – 2 (Fexc, Apse) JM, 11 (Fexc)
VU *Caloplaca cerinella* – 6 (Ptre) JSo

DD *Caloplaca cerinelloides* – 2 (Ptre) FB, 9 (Ptre) JV
LC *Caloplaca holocarpa* – 6 (con, Ptre) JM, JSo, LS
LC *Caloplaca pyracea* – 2 (Ptre) FB, 6 (Ptre) DS, OP, MK, 9 (Ptre) JV
Caloplaca cf. *turkuensis* – 5 (Apse) ZP
DD *Caloplaca vitellinula* – 6 (con) JV
NT *Candelaria concolor* – 5 (Apse) ZP
LC *Candelariella aurella* – 6 (con) JM
! *Candelariella efflorescens* – 2 (Apse) MK, 6 (Bpen), 11 (Fexc, Sal) MK
Candelariella efflorescens s. l. – 2 (ut)
LC *Candelariella vitellina* – 3 (serp) ZP
* *Carbonea vitellinaria* – 3 (lich) JM (on *Candelariella vitellina*)
NT *Cetraria aculeata* – 7 (as) DS, JM, OP
NT *Cetraria islandica* – 3 (u)
DD *Cetraria muricata* – 7 (as) DS, FB, JM, LS
DD *Cetrelia olivetorum* s. l. – 8 (Lar) JV
VU *Chaenotheca xyloxena* – 6 (dw) JM
LC *Chrysothrix chlorina* – 1 (ss)
NT *Cladonia arbuscula* – 1 (s), 3 (serp) FB
DD *Cladonia borealis* – 3 (s, serp) AM, DS, JM, JPH, JSt, PU, US
LC *Cladonia chlorophaea* – 1 (s) PU, 4 (s)
LC *Cladonia coccifera* – 1 (s)
LC *Cladonia coniocraea* – 4 (peat) FB
VU *Cladonia cornuta* – 3 (s) JM, US
NT *Cladonia deformis* – 1 (s), 5 (s) US
LC *Cladonia digitata* – 4 (s)
! *Cladonia diversa* – 7 (as) DS, FB, LS, JSt, OP
LC *Cladonia fimbriata* – 3 (s) JSt, 4 (peat) JSt, OP, US, 5 (u) AM, 6 (Bpen), 11 (Bpen)
LC *Cladonia floerkeana* – 1 (s), 4 (peat) ZP, 5 (s), 7 (as) JSt, LS
LC *Cladonia furcata* – 1 (s), 3 (s) MK
VU *Cladonia glauca* – 8 (as) FB
LC *Cladonia gracilis* – 1 (s), 3 (s)
NT *Cladonia* cf. *grayi* – 4 (peat) ZP
CR *Cladonia incrassata* – 6 (dw) AM, DS, FB, LS, ZP
LC *Cladonia macilenta* – 1 (s), 3 (s), 4 (s), 5 (s) JPH
DD *Cladonia merochlorophaea* – 7 (as) JM
Cladonia mitis – 7 (as) DS, FB, JM
DD *Cladonia monomorpha* – 3 (s) MK, US
LC *Cladonia ochrochlora* – 4 (u), 6 (Bpen), 8 (dw) OP
NT *Cladonia phyllophora* – 7 (as) DS, FB, JV
NT *Cladonia pleurota* – 1 (s) AM, 3 (serp) JSt, 7 (as) DS
NT *Cladonia polydactyla* – 1 (u), 5 (u) US
LC *Cladonia pyxidata* agg. – 1 (s)
NT *Cladonia rangiferina* – 3 (s)
NT *Cladonia rangiformis* – 3 (s) JPH, 5 (s) JPH
LC *Cladonia rei* – 1 (s), 3 (s), 5 (r) MK, 7 (as) FB, 7a (as) JV
LC *Cladonia squamosa* – 1 (s), 4 (s)
NT *Cladonia stygia* – 3 (s) MK
LC *Cladonia subulata* – 3 (s) MK, 4 (as) JV, 5 (s) JPH, 6 (as) JV, 7 (as) JV

VU *Cladonia sulphurina* – 4 (peat) JSt
NT *Cladonia verticillata* – 7 (as) DS, FB, JM
LC *Dibaeis baeomyces* – 6 (s) AM, 7 (as) DS, FB, LS
LC *Diploschistes muscorum* – 3 (ss)
LC *Diploschistes scruposus* – 1 (ss), 3 (serp) MK
VU *Enterographa zonata* – 10 (r) MK
CR *Evernia divaricata* – 8 (Lar) JM, LS
CR *Evernia mesomorpha* – 13 (Lar) OP
NT *Evernia prunastri* – 2 (Apse), 4 (ut) AM, 6 (Bpen), 8 (Lar) JM, 13 (Lar)
DD *Halecania viridescens* – 9 (Fexc, Sfra, Snig) JM, JV, 11 (Fexc) MK
LC *Hypocenomyce scalaris* – 1 (ut), 2 (ut)
VU *Hypogymnia farinacea* – 8 (Lar) OP
LC *Hypogymnia physodes* – 1 (ut), 2 (u), 3 (ut), 4 (u), 6 (Bpen), 13 (Lar)
NT *Hypogymnia tubulosa* – 2 (u), 3 (u), 4 (u) AM, 6 (Bpen), 8 (Lar) OP, 13 (Lar) OP
* *Intralichen lichenum* – 6 (lich) MK (on *Caloplaca pyracea*)
LC *Lecania cyrtella* – 6 (dw, Ptre) JM, ZP, 9 (Fexc, Sfra) JM
NT *Lecania naegelii* – 6 (Fexc, Ptre) FB, LS, OP, 9 (Sfra) JV
NT *Lecanora carpinea* – 2 (u)
NT *Lecanora cenisia* – 5 (u) US
LC *Lecanora chlarotera* – 2 (Fexc, Apse) JM
LC *Lecanora conizaeoides* – 2 (Apla, Apse, Psyl, ut) ZP, 3(u), 4(u), 6 (Bpen)
LC *Lecanora dispersa* s. str. – 6 (Bet, con) JM, MK
VU *Lecanora epanora* – 5 (u) US
LC *Lecanora expallens* – 2 (Apse) MK
NT *Lecanora hagenii* – 2 (u), 6 (con) MK
LC *Lecanora intricata* – 3 (ut) US
DD *Lecanora leptyrodes* – 2 (Sauc, Ptre) JM
NT *Lecanora orosthea* – 10 (r) MK
NT *Lecanora persimilis* – 2 (Apse, Sauc) JM, MK, 3 (Mdom) JM, 6 (Fexc) FB
LC *Lecanora polytropa* – 3 (ut), 5 (u), 7 (met) JM
LC *Lecanora pulicaris* – 2 (Fexc, Apse) JM
LC *Lecanora rupicola* – 3 (ut)
LC *Lecanora rupicola* subsp. *subplanata* – 3 (serp) JM, MK
LC *Lecanora saligna* – 2 (Apla) ZP, 6 (dw) ZP
LC *Lecanora saxicola* – 3 (ut), 6 (con)
DD *Lecanora semipallida* – 6 (con) MK
NT *Lecanora soralifera* – 5 (r) MK, 7 (ip, ss) JM, JV
VU *Lecanora subaurea* – 5 (r) MK, 7 (ip, ss) JM, JV
VU *Lecanora varia* – 2 (u) MK
LC *Lecidea fuscoatra* – 3 (u)
DD *Lecidea huxariensis* – 6 (dw) AM, JM, JV, ZP
NT *Lecidea lapicida* – 7 (ss) JV
NT *Lecidea plana* – 7 (met) JM
LC *Lecidella carpathica* – 3 (serp) JM
VU *Lecidoma demissum* – 7 (as) JV
LC *Lepraria caesioalba* – 1 (ss)
NT *Lepraria crassissima* – 10 (r) MK
LC *Lepraria incana* – 1 (ss), 11 (Aglu) MK

NT *Lepraria jackii* – 6 (dw) JM
LC *Lepraria rigidula* – 2 (Apse), 3 (bryo) MK, 11 (Apse, Fexc) MK
LC *Melanelixia fuliginosa* – 1 (u), 2 (Apse) MK, 11 (Fexc)
VU *Melanelixia subaurifera* – 6 (Bpen) MK, 13 (Lar)
LC *Melanohalea exasperatula* – 2 (ut), 6 (Bpen)
LC *Micarea denigrata* – 6 (dw) JM
LC *Micarea melaena* – 7 (pla) OP
LC *Micarea peliocarpa* – 7 (as) OP
LC *Mycoblastus fucatus* – 2 (ut)
LC *Myriospora heppii* – 6 (as) AM, FB
CR *Nephromopsis laureri* – 7 (Bpen) OP
EN *Pachyphiale fagicola* – 11 (Fexc) MK
NT *Parmelia omphalodes* – 1 (ss) AM, 5 (ss) US
LC *Parmelia saxatilis* – 1 (ss), 2 (Fexc) MK, PU, 3 (serp) MK
LC *Parmelia sulcata* – 2 (ut), 3 (u), 4 (u) AM, 6 (Bpen), 11 (Fexc) MK
NT *Parmelina tiliacea* – 3 (Mdom, serp, ut) FB, JM
LC *Parmeliopsis ambigua* – 1 (ss)
NT *Peltigera rufescens* – 3 (u)
NT *Pertusaria amara* – 3 (ut)
NT *Pertusaria corallina* – 1 (ss) PU, US
LC *Phaeophyscia nigricans* – 6 (con) JM
LC *Phaeophyscia orbicularis* – 2 (ut)
LC *Phlyctis argena* – 3 (serp) JM, PU, 11 (Fexc)
LC *Physcia adscendens* – 2 (ut)
LC *Physcia caesia* – 3 (u)
LC *Physcia dubia* – 2 (Apse,ut) MK, 3 (ut), 5 (Apse) ZP
VU *Physcia stellaris* – 11 (Fexc, Sal)
LC *Physcia tenella* – 2 (Apse) AM, FB, LS, (ut) PU, ZP, 6 (Bpen), 11 (Fexc)
NT *Piccolia ochrophora* – 11 (Snig) MK
DD *Placopsis lambii* – 5 (met) MK, ZP
LC *Placynthiella icmalea* – 4 (u), 7 (as) FB
LC *Placynthiella uliginosa* – 6 (as) ZP
NT *Platismatia glauca* – 2 (ut), 4 (ut), 6 (Bpen)
VU *Pleurosticta acetabulum* – 2 (Apse, ut) AM, LS
LN *Porina aenea* – 11 (Fexc)
LC *Porpidia crustulata* – 5 (u)
LC *Porpidia macrocarpa* – 5 (r) MK, 7 FB
Porpidia melinodes – 5 (r) MK
EN *Porpidia nadvornikiana* – 3 (serp) JM, JPH, MK, PU, US
LC *Porpidia soredizodes* – 5 (r) MK
LC *Porpidia tuberculosa* – 5 (r) MK, 7 (met) JM
LC *Protoparmelia badia* – 7 (met) JM
NT *Pseudevernia furfuracea* – 2 (ut), 3 (ut), 4 (ut), 6 (Bpen), 13 (Lar)
LC *Psilolechia clavulifera* – 12 (Pabi) MK
VU *Psilolechia leprosa* – 7 (met) DS, JM, LS
LC *Psilolechia lucida* – 1 (ss)
VU *Ramalina farinacea* – 6 (Sal) LS, 8 (Lar) FB
EN *Ramalina fastigiata* – 2 (Apse) AM, PU

NT *Ramalina pollinaria* – 3 (serp) PU
EN *Rhizocarpon furfurosum* – 5 (met) ZP
LC *Rhizocarpon geographicum* – 1 (ss), 5 (ss)
LC *Rhizocarpon lecanorinum* – 1 (ss), 3 (ss) US
LC *Rhizocarpon reductum* – 5 (met), 7 (ip, ss) JM, JV
LC *Rinodina oleae* – 6 (con) JM, JV
LC *Scoliciosporum chlorococcum* – 6 (Ptre, Sal) JM, OP, 13 (Lar)
DD *Scoliciosporum* cf. *gallurae* – 6 (Que) MK
LC *Scoliciosporum sarothamni* – 6 (Sal) JM
VU *Stereocaulon condensatum* – 7 (as, met) JM, JV, LS, OP
NT *Stereocaulon nanodes* – 5 (r) AM, MK, US, 6 (peb) MK, 7 (met) DS, FB, JM, LS, OP
VU *Stereocaulon pileatum* – 5 (s) US
VU *Stereocaulon vesuvianum* – 5 (r) AM, MK, (ss) US
NT *Strangospora moriformis* – 6 (dw) JM
NT *Strangospora pinicola* – 2 (ut), 11 (Sal)
NT *Tephromela atra* – 3 (serp)
LC *Trapelia coarctata* – 1 (ss)
LC *Trapeliopsis flexuosa* – 4 (u)
LC *Trapeliopsis granulosa* – 1 (ss), 4 (peat) AM, FB, PU, 7 (as) JM
NT *Tuckermannopsis chlorophylla* – 8 (Lar) JM
LC *Umbilicaria polyphylla* – 1 (ss) DS
VU *Usnea hirta* – 2 (ut), 4 (ut), 6 (Bpen)
CR *Usnea scabrata* – 8 (Lar) FB, JM, JSo, OP, 13 (Lar, Sal) LS, OP
Usnea substerilis – 8 (Lar) LS
! *Verrucaria memnonia* – 5 (met) ZP
NT *Vezdaea aestivalis* – 7 (as) OP
DD *Vezdaea retigera* – 9 (Mdom) JV
NT *Vulpicida pinastri* – 8 (Lar) JM
LC *Xanthoria candelaria* – 2 (Apla, Fexc) PU, ZP, MK, 6 (Bpen)
LC *Xanthoria parietina* – 2 (ut) PU, 6 (Bpen), 11 (Fexc, Sal)
NT *Xanthoria polycarpa* – 2 (ut) PU, 4 (ut) AM, 11 (Sal)

Comments on noteworthy taxa

Caloplaca vitellinula (Nyl.) H. Olivier
C. vitellinula is a rather poorly understood species, which is similar and closely related to *C. holocarpa*, but differs in the distinct yellow to yellow-orange thallus (Arup 2009). It has been reported several times from the Czech Republic (cf. Vězda & Liška 1999), but recently it has been mentioned only by Vězda (1998). All previous records should be revised, because this lichen is similar to other yellow crusts, e.g. *C. arnoldii* subsp. *obliterata* (Vondrák & Wirth 2013).

Candelariella efflorescens R. C. Harris & W. R. Buck
Sorediate corticolous lichens traditionally named *Candelariella reflexa* are widely distributed all over the Czech Republic, but more species have been revealed in this complex taxon. Specimens of *C. reflexa* s. l. are rarely found with apothecia and determination of sterile crusts is very difficult. *C. efflorescens* is easily distinguished from similar species by the 20-30-spored asci (e.g. Kubiak & Westberg 2011). Only

fertile collections are reported here. All sterile records are regarded as *C. efflorescens* s. l. *C. reflexa* s. str. is probably very rare in the Czech Republic and most sorediate populations belong to another taxon, possibly *C. xanthostigmoides* (cf. Lendemer & Westberg 2010, Westberg & Clerc 2012). However, the identity and distribution of Czech populations require more investigation.

– Additional specimen: Northern Moravia, Jeseníky Protected Landscape Area, Bělá pod Pradědem, in Bělá settlement, trees along road, WGS-84: 50°08'10"N, 17°12'40"E, alt. 620 m, on bark of *Acer platanoides*, 2012, J. Malíček 5144 & L. Syrovátková (herb. JM, well developed fertile collection!).

Carbonea vitellinaria (Nyl.) Hertel

This lichenicolous fungus is quite conspicuous due to the black apothecia formed on the thallus of *Candelariella*, especially on *C. vitellina*. It has been reported only twice from the Czech Republic – from Nový Bor in Northern Bohemia (Anders 1922, as *Lecidea vitellinaria*) and from the serpentinite outcrop Křížky in Slavkovský les Mts (Peksa 2011).

Cladonia diversa Asperges ex S. Stenroos

This species was distinguished from *C. coccifera* and *C. pleurota* by Asperges (1983). All three species contain usnic acid and zeorin as main secondary substances. *C. diversa* has usually slender scyphi covered with granules and microsquamules. Soredia and irregular plates, typical for *C. pleurota* and *C. coccifera*, respectively, might be also present on the surface of the podetia, but always in smaller amounts. The status of this species was doubted by Stenroos (1989) but recently Ahti and Stenroos (2012) accepted it as a valid taxon.

This species differs from *C. coccifera* also ecologically. *C. coccifera* grows in Central Europe usually at higher altitudes, whereas *C. diversa* prefers lower altitudes (Steinová 2009). It prefers open habitats like grasslands, heathlands or dune areas (e.g., Asperges 1985, Osyczka 2009), but it is common also in forests. This species plays an important role in the initial phase of succession in *Corynephorus* grasslands (Hasse & Daniëls 2006).

C. diversa is a common species in the Czech Republic, but often misidentified as *C. coccifera* (rarely also as *C. pleurota*). Most records of *C. coccifera* from lower altitudes belong in fact to *C. diversa*. The recent distribution of *C. diversa* in the Czech Republic will be described in a forthcoming publication (Steinová, in prep.).

Lecanora rupicola subsp. *subplanata* (Nyl.) Leuck. & Poelt

Leuckert & Poelt (1989) distinguished four subspecies of *L. rupicola*, which differ in the presence of different secondary metabolites. The real taxonomic value of these chemotypes is still not clear. Molecular ITS data show *L. rupicola* as a polyphyletic taxon related to *L. bicincta* (Grube et al. 2004). *L. rupicola* subsp. *suplanata* differs from *L. rupicola* s. str. in the presence of thiophanic acid in the medulla, which causes a KC+ orange reaction (Leuckert & Poelt 1989). It seems to be much more restricted in the Czech Republic than the nominate subspecies; however, it is usually not distinguished by many lichenologists. According to Leuckert & Poelt (1989) the subsp. *subplanata* is widespread in Europe.

Nephromopsis laureri (Kremp.) Kurok.

Twelve publications reporting *N. laureri* are listed in the Catalogue of Lichens of the Czech Republic (Vězda & Liška 1999, sub *Cetraria laureri, C. complicata*), but only three of them contain original records: Wurm (1901), Hilitzer (1923) and Liška & Pišút (1995). This suggests that the species was very rare in the past; moreover, according to the descriptions of Wurm as well as Hilitzer, the populations were small. The records of J. Liška and Z. Palice from the end of 20th century, a period of persisting acid air pollution, may indicate the continuous presence of the species in Bohemia as they predate the beginning of the recent intensive dispersal (both collectors found only one very small thallus – J. Liška, pers. comm.). Since 2009, six new localities of *N. laureri* have been found in western and southern part of the Czech Republic. Young, vigorous and sorediate thalli were collected mainly from twigs of *Prunus spinosa* and *Larix decidua*. The occurrence of most (if not all) of the new records is related to the recolonization of the area after the decrease of air pollution in the 1990s (together with other epiphytic species as *Evernia divaricata, E. mesomorpha* etc.). We expect further dispersal of the species and gradual colonization of other substrates, especially deciduous trees.

Other records from the Czech Republic (see also Fig. 1):

- Wurm (1901); Hilitzer (1923); Liška & Pišút (1995): Distr. Chrudim, ad corticem *Cerasi aviae* in pago Hrbokov – 10 km ad merid. ab oppidulum Heřmanův Městec versus, 6160a, 15. 10. 1986, leg. J. Liška, det. I. Pišút [in original paper, incomplete localization was published]; Malíček (2013); Malíček & Palice (2013).
- South Bohemia, Šumava Mts, Volary: Mt. Hůrka near Pěkná village, fragment of beech forest, on branch of cut *Fagus*, growing with *Tuckermannopsis chlorophylla*, alt. ca 850 m, 17. 9. 1992, leg. Z. Palice (PRA); Písecko Hlubocký hřbet hills, Protivín, Nuzov, surroundings of summit of Nuzovský vrch hill, alt. ca 480 m, WGS-84: 49°14'38"N, 14°15'2"E, in *Prunus spinosa* shrubs, 6. 4. 2010, leg. O. Merkulova & J. Vondrák (CBFS 7751); Foothills of Doupovské hory Mts, Bochov, Albeřice, 1 km NW of village, alt. 670 m, WGS-84: 50°10'09.2"N, 13°09'13.6"E, on twigs of *Prunus spinosa*, 10. 4. 2011, leg. O. Peksa, L. Syrovátková & J. Vondrák (CBFS 8495); Plzeňská pahorkatina, the forest area W from Čížice village, alt. 460 m, WGS-84: 49°39'11.1"N, 13°22'42.6"E, on twigs of *Larix decidua* in young plantation, 27. 8. 2009, leg. O. Peksa (PL).

Placopsis lambii Hertel et V. Wirth

This lichen species is morphologically and ecologically similar to *P. gelida*, but the two species differ in chemistry and TLC is necessary to distinguish them. Both taxa contain gyrophoric acid but *P. lambii* contains 5-O-methylhiascic acid in addition (Moberg & Carlin 1996). Earlier, these species were distinguished by the presence/absence of cephalodia, but this character was shown to be unreliable (Moberg & Carlin 1996, Schmitt et al. 2003).

In the Czech Republic, it has been reported only from Boreč Hill in České středohoří Mts (Berger & Bayerová 2000, Soldán et al. 2003).

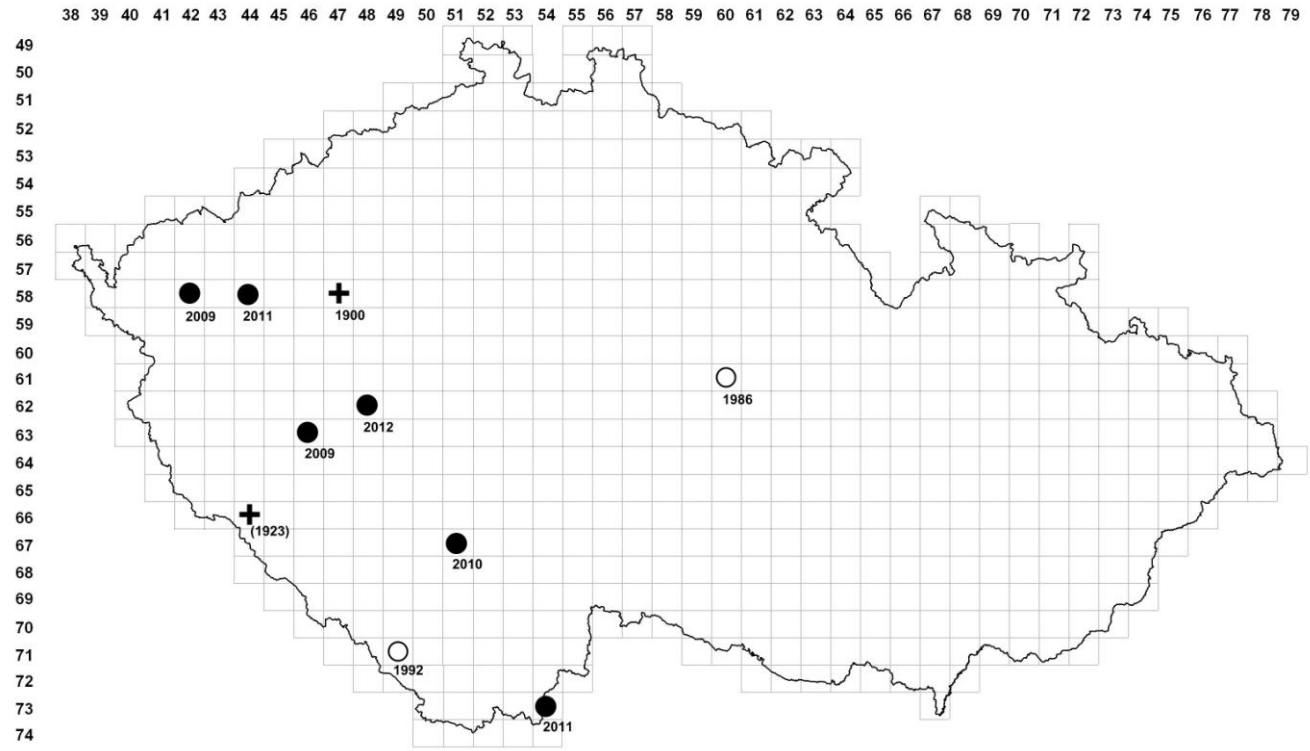

Fig. 1. Occurrence of the species *Nephromopsis laureri* in the Czech Republic. Dots – recent records, circles – somewhat older records from the period of strong acid air pollution (1970–2000), crosses – historical records [years of collections (or publications) are attached].

Psilolechia leprosa Coppins & Purvis

This sorediate lichen has been known sterile from four sites in the Czech Republic (Palice et al. 2008). We discovered a fertile population richly overgrowing the lower sides of Cu-enriched stones in the area of Stannum mine.

Verrucaria memnonia (Flot. in Körb.) Arnold

This is a poorly known terrestrial, pioneer species of *Verrucaria* with distinct dark subgelatinous thallus (without cortex) and tiny half-immersed perithecia (0.15–0.25 (–0.3) mm in diam.) with the involucrellum reaching the base and containing narrowly ellipsoid ascospores (11–)13–16(–18) × 5–7(–8) µm (Pykälä & Breuss 2008, Breuss & Berger 2010). The Central Bohemian specimen contains indistinctly halonate ascospores that reach up up to 20 µm. All three Bohemian specimens are, however, conspecific according to gross morphology. Surprisingly *V. memnonia* has not been reported previously from the Czech Republic, although Servít (1954) included this taxon in his identification key. The species may grow on siliceous as well as limestone stones and outcrops on shaded, less frequently exposed sites (Pykälä & Breuss 2008). The ecologically and morphologically similar *V. dolosa* may be distinguished by the indistinct, half-immersed, greenish brown, non-gelatinous thallus and sessile perithecia that have unpigmented bases to the perithecia („Zwickel“) (Breuss & Berger 2010). The specimen from Slavkovský les Mts was initially misidentified as *V. maculiformis* Kremp. That species differs by slightly larger ascospores (14–20 × 6–8(–9) µm) and

mainly by the involucrellum diverging from the exciple at the base of the perithecium (Pykälä et al. 2012). Non-lichenized algal films may secondarily overgrow crustose lichens, e.g. on serpentinic rocks, and may easily be misinterpreted for (sub)gelatinous thalli of *V. memnonia*. Such specimens should be carefully examined microscopically. All confirmed Bohemian specimens were collected on quite recently exposed surfaces of siliceous stones near the ground. Since the species shares a similar ecology with *V. dolosa*, a frequent species of the Czech lichen flora (Liška & Palice 2010), it is expected that *V. memnonia* is also a frequent but overlooked species.

– Additional specimens: Central Bohemia, Brdy Mts, Jince – Ohrazenice: valley of the Pstruhový potok brook, a dumped heap of stones near a small field, WGS-84: 49°47'10"N, 13°57'35"E, alt. 415 m, 21. II. 1998, leg. Š. Bayerová, A. Guttová & Z. Palice 1053, det. Z. Palice, conf. O. Breuss (PRA); Eastern Bohemia, Orlické hory Mts, Olešnice v Orl. h.: Číhalka, on loose stones at forest-road-side, alt. 750 m, 7. X. 2001, leg. J. Halda & Z. Palice 6704, det. O. Breuss (PRA).

Souhrn

Oblast Slavkovského lesa jako celku byla z hlediska výzkumu diverzity lišejníků dosud spíše opomíjena. Výjimku tvoří lokality s výchozy hadce (např. Křížky či Dominova skalka), které byly již v minulosti lichenology poměrně hojně navštěvovány. Během exkurzí 16. jarního setkání Bryologicko-lichenologické sekce ČBS jsme se zaměřili i na odlišné biotopy. Studovali jsme především epifytickou lichenoflóru oblasti či lišejníky vyskytující se zde na sekundárních stanovištích (rudná halda, peň, odkaliště). V tomto příspěvku uvádíme seznam 188 lišejníků a tři taxony lichenikolních hub zaznamenaných během tohoto setkání (z toho podle červeného seznamu Liška & Palice (2010) spadá pět taxonů do kategorie CR, čtyři do kategorie EN, 22 druhů do kategorie VU a 45 druhů do kategorie NT). Tři nalezené druhy nebyly z ČR dosud udávány (*Candelariella efflorescens*, *Cladonia diversa*, *Verrucaria memnonia*). Mezi nejzajímavější lokality patřila rudná halda u křižovatky v zaniklém městě Litrbachy (Čistá), kde bylo zjištěno více druhů lišejníků vázaných na substráty obohacené těžkými kovy (např. *Lecanora soralifera*, *L. subaurea*, *Placopsis lambii*, *Porpidia melinodes*, *Rhizocarpon furfurosum*, *Stereocaulon pileatum*), dále areál bývalého dolu Stannum (např. *Cladonia diversa*, *Lecidoma demissum*, *Nephromopis laureri*, *Psilolechia leprosa*, *Stereocaulon condensatum*), hadcový výchoz Dominova skalka (*Carbonea vitellinaria*, *Cladonia stygia*, *Porpidia nadvornikiana* atd.) či rašeliniště Soos (např. *Caloplaca vitellinula*, *Lecidea huxariensis*, *Cladonia incrassata*). Další pozoruhodné nálezy byly učiněny v aleji mezi Bečovem a Novou Vsí (poměrně bohaté společenstvo epifytických druhů včetně např. *Pleurosticta acetabulum*) a v modřínovém lese u silnice u obce Krásno (např. *Evernia divaricata*). Významný je také nález druhu *Evernia mesomorpha* na modřínu v lese poblíž obce Cihelny.

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