

## Additions and corrections to the lichen biota of the Czech Republic

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**Abstract:** MALÍČEK J., PALICE Z. & VONDRÁK J. 2018: Additions and corrections to the lichen biota of the Czech Republic. – *Herzogia* 31: 453–475.

This contribution presents new records of lichenized and “lichen-allied” fungi for the Czech Republic and a list of all recently published species missing in the last national checklist (LIŠKA & PALICE 2010). *Lecanora tephraea* is supposed to be synonymous with *L. cenisia* and the lectotype is designated here. *Polyblastia brunensis* is synonymized with *Thelidium zwackhii*. *Caloplaca fiumana*, lectotypified here, was found to be an older name of the recently described taxon *Caloplaca substerilis* subsp. *orbicularis*. *Candelariella subdeflexa* is replaced by *C. blastidiata* in the national checklist; *Lecanora reagens* is excluded from the Czech lichen biota. Twenty nine species are published as new to the Czech Republic: *Absconditella rubra*, *Alyxoria ochrocheila*, *Aspicilia verrucigera*, *Blastenia hungarica*, *Carbonicola anthracophila*, *Chaenothecopsis montana*, *C. savonica*, *Epigloea pleiospora*, *E. urosperma*, *Gyalecta ophiospora*, *Lecanora epibryon*, *L. flavoleprosa*, *L. silvae-nigrae*, *L. stenotropa*, *Leptorhaphis maggiana*, *Micarea tomentosa*, *Myriolecis perpruinosa*, *Ochrolechia mahuensis*, *Parmelia serrana*, *Peltigera ponojensis*, *Pertusaria borealis*, *Placynthium caesium*, *Protoblastenia lilacina*, *Ramalina europaea*, *Rinodina trevisanii*, *Strigula glabra*, *Verrucaria subcincta*, *Xanthomendoza huculica* and *Xylographa soraltifera*. Including the cited taxa, the lichen biota of the Czech Republic currently comprises 1691 taxa.

**Zusammenfassung:** MALÍČEK J., PALICE Z. & VONDRÁK J. 2018: Ergänzungen und Korrekturen zur Flechtenbiota der Tschechischen Republik. – *Herzogia* 31: 453–475.

Der vorliegende Beitrag enthält neue Angaben von lichenisierten und „Flechten-ähnlichen“ Pilzen für die Tschechische Republik und eine Liste aller jüngst publizierten Taxa, die in der letzten Checkliste des Landes nicht aufscheinen. *Lecanora tephraea*, die hier lectotypifiziert wird, ist ein Synonym von *L. cenisia*. Der Name *Caloplaca fiumana*, der hier ebenfalls lectotypifiziert wird, hat sich als ein älterer anwendbarer Name für die jüngst beschriebene *Caloplaca substerilis* subsp. *orbicularis* herausgestellt. *Polyblastia brunensis* wird mit *Thelidium zwackhii* synonymisiert. *Candelariella subdeflexa* soll in der Landes-Checkliste durch den Namen *C. blastidiata* ersetzt werden und *Lecanora reagens* muss aus dieser Liste gestrichen werden. Die folgenden 29 Arten sind Neufunde für die Tschechische Republik: *Absconditella rubra*, *Alyxoria ochrocheila*, *Aspicilia verrucigera*, *Blastenia hungarica*, *Carbonicola anthracophila*, *Chaenothecopsis montana*, *C. savonica*, *Epigloea pleiospora*, *E. urosperma*, *Gyalecta ophiospora*, *Lecanora epibryon*, *L. flavoleprosa*, *L. silvae-nigrae*, *L. stenotropa*, *Leptorhaphis maggiana*, *Micarea tomentosa*, *Myriolecis perpruinosa*, *Ochrolechia mahuensis*, *Parmelia serrana*, *Peltigera ponojensis*, *Pertusaria borealis*, *Placynthium caesium*, *Protoblastenia lilacina*, *Ramalina europaea*, *Rinodina trevisanii*, *Strigula glabra*, *Verrucaria subcincta*, *Xanthomendoza huculica* und *Xylographa soraltifera*. Unter Einbezug der oben angeführten Arten umfasst in der Tschechischen Republik die Gruppe der lichenisierten Pilze 1691 Taxa.

**Key words:** Biodiversity, boreal lichens, checklist, lichen-forming fungi, microlichens.

### Introduction

A thorough knowledge of national species inventories nowadays receives increasing attention and indicates rapid declines of biodiversity and rising priorities in biodiversity conservation (e.g. BROOKS et al. 2006). In contrast to the general trend of vast local extinctions of various

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organisms, the number of known lichenized fungi is increasing in most European countries. It is mainly caused by the increasing knowledge of lichen biota extracted from numerous recent studies on diversity and taxonomy of lichens including descriptions of new species. Additionally, regional extinctions of lichens are now slightly compensated by the spread of species as an assumed consequence of climate change (e.g. APTROOT 2012, PALICE 2017, ŠOUN et al. 2017).

The lichen biota of the Czech Republic has been studied for more than 200 years (DANIHELKA et al. 2017), but our general knowledge of the total lichen diversity is still incomplete. Numerous new country records are published every year (MALÍČEK & PALICE 2013, MALÍČEK et al. 2014, VONDRÁK et al. 2016, PALICE et al. 2018 etc.). Since the last national checklist (LIŠKA & PALICE 2010) comprising 1526 species, an additional 151 lichenized species have been published in almost 50 studies. Six taxa (*Cladonia mitis*, *C. uncialis* subsp. *biuncialis*, *Melanelixia glabrata*, *Opegrapha lithyrga*, *Rhizocarpon pycnocarpoides* and *Trapelia elacista*) were reported from the country in the past (VĚZDA & LIŠKA 1999), later synonymized and recently again distinguished at the species or subspecies level. Fifteen species have been excluded due to incorrect identifications, synonymizations or changes in species circumscriptions – see Appendices 1 & 2.

In recent years our research focused mainly on old-growth forests, especially on spruce and beech woodlands. Therefore, a substantial proportion of the newly reported lichens are epiphytes, especially species from montane spruce forests. Nevertheless, there are still substantial gaps in our knowledge of lichen biodiversity in many important habitats, for instance the alpine tundra, glacial cirques, boulder scree, lowland forests and generally in saxicolous lichens.

## Material and methods

Specimens were identified using routine methods, including TLC analyses (ORANGE et al. 2010) and UV light. DNA barcoding (nrITS and mtSSU regions), following methods by MALÍČEK et al. (2017), was used to identify seven samples (see Table 1). For the ITS region, we used ITS1F KYO2 and ITS4 KYO2 primers (TOJU et al. 2012). Selected critical specimens were checked by the acknowledged specialists. Specimens collected by Z. Palice (ZP) and J. Vondrák (JV) are deposited in the herbarium PRA; vouchers collected by J. Malíček (JM) in his private herbarium. We also studied material from the following herbaria: H, L, OLM, PRA and PRC. The list of taxa is in alphabetical order. The locality descriptions refer to the herbarium labels, with minor formal corrections. GPS coordinates use the World Geodetic System (WGS84) datum; the format corresponds to herbarium labels.

## Results

This contribution reports 29 species new to the Czech Republic; 24 belong to lichenized fungi and five to “lichen-allied” fungi (*Chaenothecopsis montana*, *C. savonica*, *Epigloea pleiospora*, *E. urosperma* and *Leptorhaphis maggiana*), traditionally studied by lichenologists. We included also two taxa incorrectly reported from the country and two synonymizations. The currently known national lichen biota comprises 1691 species, including one subspecies.

The newly recorded species include very inconspicuous (e.g. *Absconditella rubra*) and likely overlooked sorediate lichens (e.g. *Ochrolechia mahluensis*, *Pertusaria borealis*, *Xylographa soralifera*) as well as macrolichens (*Parmelia serrana*, *Peltigera ponojensis*, *Ramalina europaea*, *Xanthomendoza fallax*) that were overlooked or not distinguished in the past. Other in-

**Table 1:** GenBank accession numbers and voucher information for newly sequenced specimens used for DNA barcoding in this paper.

Taxon	Source – specimen	ITS	mtSSU
<i>Candelariella blastidiata</i>	Czech Republic, Lednice (hb. Malíček 10303)	MH145376	MH156655
<i>Parmelia serrana</i>	Czech Republic, Český les Mts (hb. Malíček 9575)	MH145377	MH156654
<i>Parmelia serrana</i>	Czech Republic, Šumava Mts (hb. Malíček 10043)	–	MH156653
<i>Xanthomendoza fallax</i>	Czech Republic, Rabštejn nad Střelou, schistose rock (hb. Malíček 7658)	MH145372	MH156650
<i>Xanthomendoza fallax</i>	Czech Republic, Pálava Hills, <i>Fraxinus excelsior</i> (hb. Malíček 6935)	MH145374	MH156652
<i>Xanthomendoza fallax</i>	Czech Republic, Budkovice, conglomerate rock (hb. Malíček 7869)	MH145375	MH156649
<i>Xanthomendoza huculica</i>	Czech Republic, Husinec (PRA Vondrák 11246)	MH145373	MH156651

cluded species represent taxonomically difficult lichens (e.g. *Aspicilia verrucigera*, *Blastenia hungarica*, some *Lecanora* species, *Micarea tomentosa*, *Verrucaria subcincta*) and some easily recognizable, but regionally very rare species (e.g. *Alyxoria ochrocheila*, *Gyalecta ophiopora*, *Lecanora epibryon*, *L. silvae-nigrae*). Two species (*Lecanora tephraea*, *Polyblastia brunensis*) are proposed for synonymization with species already known from the country. *Candelariella subdeflexa* and *Lecanora reagens* are excluded from the national checklist.

## New records

*Absoconditella rubra* van den Boom, M.Brand & Suija

(figure 1A)

This is evidently a widespread species, not restricted to western Europe from where it was originally described (VAN DEN BOOM et al. 2015). It occurs as a pioneer epiphyte in acidophytic, species-poor communities of both managed and old-growth forests and may thus be spreading. It is easily overlooked due to its extremely small apothecia rarely exceeding 0.15 mm, and having usually creamy or carneous apothecia often resembling the color of its substrate. The orange-reddish tint of apothecia that gave the name of the epithet is evident only in luxuriantly developed specimens. The taxon was placed into the genus *Absoconditella* based on the ITS sequence that was similar to that of *Absoconditella lignicola* (90% identity; VAN DEN BOOM et al. 2015). Nevertheless, the ascus tips of microscopied material show closer affinities to *Cryptodiscus* in having a shallow amyloid cap in the apical, outermost part of tholus (Palice, pers. observations). It may be more likely an algicolous species rather than a lichenized fungus, often forming distinct spots on trunks covered by initial sorediate lichen communities and non-symbiotic algal colonies.

**Northern Bohemia**, National Park České Švýcarsko, Mezná: Křídelní stěna, mixed forest at steep E-ESE-facing slope, c. 1.4 km N of Mezná, 50°52'53"N, 14°17'42"E, on bark of young *Fagus sylvatica*, alt. 420–430 m, 2015, 2017, Palice 19969, 24667 [PRA]; Krkonoše Mts, Harrachov, Mt Mrtvý vrch [1059], a peat-bog on the top plateau, 50°48'04.3"N, 15°26'16.6"E, on twig of *Picea*, alt. 1057 m, 2015, Palice 20409 & Uhlík [PRA]; valley of Jizera, W-foothill of Mt Čertova hora [1021], young *Picea* forest at W–WSW facing steep slope, 50°45'28.5"N, 15°24'47"E, on bark of young *Fagus*, alt. 650–660 m, 2015, Palice 20413 & Uhlík [PRA]; Kořenov: 1.2 km NE-E of the view-point Štěpánka [Mt Hvězda – 959 m], a managed *Picea* forest at steep N-facing slope with some *Fagus*, 50°45'06"N, 15°22'47.5"E, on bark of *Fagus*, alt. 865–870 m, 2015, Palice 20857 & Uhlík [PRA]; Jablonec nad Jizerou, Dolní Dušnice: Zabylský hřbet, managed mixed forest, 50°40'49"N, 15°27'40"E, on bark of *Fagus*, alt. 550 m, 2015, Palice 20912 & Uhlík [PRA]. **Southern Bohemia**, Novohradské hory Mts, virgin forest Žofinský prales, mild N-facing slope, 48°40'01"N, 14°42'31.5"E, on bark of *Fagus*, alt. 785 m, 2016, Palice 23606 [PRA]; ibid.: alt. 770 m, 48.66939N, 14.70818E, on log, 2016, J.Vondrák 17118 [PRA]; Šumava Mts, Volary, Stožec: Mt Stožec [1065] – locality Medvědice, old-growth scree forest on NE-facing slope, 48°52'49"N, 13°50'19"E, on bark of old *Fagus*, alt. 900 m, 2016, Palice 22131 [PRA]; ibid.: Mt Stožec [1065] – managed beech-spruce forest with some sycamores, just below of forest road, on NE-facing slope, 48°53'03.5"N, 13°49'57"E, on bark of *Fagus*, alt. 875 m,

2016, Palice 24503 [PRA]; *ibid.*: České Žleby: Mt Spáleníště [960], just W of the top, managed forest with beech prevailing at SSW-facing slope, 48°52'40.8"N, 13°47'25.9"E, *Acer pseudoplatanus*, alt. 940 m, 2016, Palice 23670 [PRA]; Nová Pec: Mt Hraničník, NE slope, managed forest with beech predominant, 48°45'24"N, 13°54'10"E, on bark of young *Fagus*, alt. 1130 m, 2017, Palice 24369 [PRA]. **Central Bohemia**, distr. Mladá Boleslav, Český ráj, Kacanovy, forest on sandstone outcrops just E of the house 'Kopicův statek', 50°33'21"N, 15°09'36"E, *Fagus*, alt. 375 m, 2018, Palice 24836 [PRA]. **Silesia**, Jeseníky Mts, NR Praděd, Mt Vysoká hole, old-growth spruce forest at E-facing slope above the chalet Eustaška, 50°03'35"N, 17°15'13"E, on dry wood of big *Picea* stump, alt. 1220 m, 2015, Palice 20248 [PRA]; Moravsko-slezské Beskydy Mts, Mt Kněhyně, managed spruce forest at E-facing slope, 49°29'47"N, 18°19'07.5"E, on bark of young *Fagus*, 1100 m, 2016, Malíček & Palice 21805 [PRA].

*Alyxoria ochrocheila* (Nyl.) Ertz & Tehler

(figure 1B)

A distinctive member of the genus *Alyxoria* that occurs sparsely in Europe, mainly on bark or wood of old deciduous trees. It has been reported from all surrounding countries (ADAMČÍK et al. 2016, FAŁTYNOWICZ & KOSSOWSKA 2016, HAFELLNER & TÜRK 2016, WIRTH et al. 2013).

**Western Bohemia**, Český les Mts, Přimda, nature reserve Diana, old-growth mixed forest with predominant beech, 49°37'55.5"N, 12°34'46.5"E, on bark of *Fagus*, alt. 515 m, 2016, Palice 20989 [PRA]; *ibid.*: Vondrák 14837 [PRA]; *ibid.*: on dead *Fagus sylvatica*, alt. 520 m, 2015, Peksa et al. [PL]; Tachov, Přimda, old-growth scree forest in protected area Přimda, alt. 700–840 m, 49.681N, 12.667E, on dry bark of dead *Fagus sylvatica*, 2016, Vondrák 16659 [PRA]. **Southern Bohemia**, Novohradské hory Mts, Pohorská Ves, Žofín, N part of Žofínský prales National Nature Reserve, old-growth beech forest, 48°40'10"N, 14°42'29"E, alt. 770 m, *Fagus sylvatica*, 2016, Malíček 9649, Kocourková, Palice & Vondrák [JM]; *ibid.*: nature reserve Pivonické skály, old managed beech forest at N facing slope of Mt Stříbrný vrch [936], 48°39'35"N, 14°41'50"E, on bark of *Fagus*, alt. 835 m, 2016, Palice 22189 [PRA]; Šumava Mts, Nová Pec, southern slope of Mt Hraničník, old-growth beech-dominated forest, alt. 1170 m, 48.75364N, 13.90472E, on bark of *Fagus sylvatica*, 2017, Vondrák 18593 [PRA]; Volary, Dobrá, protected virgin forest Spáleníště, alt. 940 m, 48.87724N, 13.79395E, *Fagus sylvatica*, 2016, Vondrák 17749 [PRA]; Mt Stožec, protected area Medvědice, alt. 900 m, 48.88024N, 13.83857E, 2016, Vondrák 17677 [PRA].

*Aspicilia verrucigera* Hue

This stictic acid containing taxon (for details see PAUKOV et al. 2017) was incorrectly reported as *A. laevata* from the Brdy Mts in Central Bohemia (MALÍČEK 2013b, MALÍČEK et al. 2009, 2015) where it commonly occurs on boulder screes at elevations of 600–750 m.

**Western Bohemia**, Český les Mts, Bělá nad Radbuzou, Rybník: Malý Zvon Nature Reserve, old-growth beech forest on steep E-facing slope of Mt Malý Zvon, 49°32'06"N, 12°38'40"E, alt. 820 m, on siliceous boulder, 2014, Malíček 7203, Bouda, Peksa, Šoun & Vondrák [JM].

*Blastenia hungarica* (H.Magn.) Arup, Søchting & Frödén

This is a montane species, frequently recorded in the Alps (NIMIS et al. 2018) and with some records in the Carpathians, but without any reliable distribution data north of these mountain ranges. For example, it is not known from Poland and it has been unknown from the Czech Republic. Further north, it is only known in southern Scandinavia (ARUP 2011).

**Western Bohemia**, Šumava Mts, Hartmanice, Nová Hůrka, young birch forest, alt. 880 m, 49.1686289N, 13.3612389E, on twig of *Salix aurita*, 2017, Vondrák 18942 [PRA].

*Carbonicola anthracophila* (Nyl.) Bendiksby & Timdal

This is a characteristic boreal species of vast coniferous forests (TIMDAL 1984), known also from pine forests in the mountains of the Mediterranean (e.g. NIMIS 2016, ROUX et al. 2017). Characteristic compounds, a range of anthracophila unknowns (UV+ blue) and fumarprotocetraric acid (TIMDAL 1984), have been revealed by TLC in the Czech collection. The species is supposed to grow almost exclusively on charred wood. Wood with the collected specimen did not show any signs of burning, but fire must have influenced the locality (wood of some close snags was charred in patches). The closest known localities are hundreds of kilometers away and the species is very likely able to spread effectively by its soredia.

**Southern Bohemia**, Šumava Mts, Nová Pec: a bouldery field with *Pinus sylvestris*, *P. mugo* agg., *Betula* and *Picea* below (N-wards of) the lake Plešné jezero, 48°46'52.5"N, 13°52'06"E, on wood of *Pinus* snag, alt. 1032 m, 2016, Palice 21304 [PRA].

***Chaenothecopsis montana*** Rikkinen

A resinicolous taxon, which was described from North America and later reported from Fennoscandia, Switzerland and Spain. In Europe, it occurs on resin of *Abies* and *Picea* in boreal and montane coniferous forests (TUOVILA et al. 2012).

**Southern Bohemia**, Šumava Mts, Kubova Huť, Boubínský prales National Nature Reserve, managed spruce forest (c. 60–70 years old) in valley of Kaplický potok brook, 350 m SE of Boubínské jezírko, 48°58'15"N, 13°49'19"E, alt. 900 m, on resin of *Picea abies*, 2015, Malíček 8595, Palice & Vondrák [JM].

***Chaenothecopsis savonica*** (Räsänen) Tibell

*Chaenothecopsis savonica* occurs on wood or bark of trees, usually associated with or parasitic on algae or various *Chaenotheca* species. It is widely distributed in boreal forests in Fennoscandia (TIBELL 1999), but rarely reported from Central Europe (e.g. GRONER 2006, WIRTH et al. 2013, NIMIS et al. 2018).

**Western Bohemia**, Tachov, Lesná, protected area Ostrůvek, E-slope with beech-spruce forest, alt. 730–770 m, 49.7642339N, 12.4567244E, on bark at base of *Picea abies* trunk and on snag, 2015, Vondrák 13879, 13893 [PRA].

**Southern Bohemia**, Šumava Mts, Kubova Huť, Boubínský prales National Nature Reserve, old-growth spruce forest (up to c. 200 years old) on steep, NE-facing slope under top of Mt Boubín (1362 m), 48°59'32–33"N, 13°49'17–18"E, alt. 1250–1260 m, on bark and wood at base of *Picea abies* trees and snags, 2015, Malíček 8608, Kocourková, Palice 20113, 20117, 20135, 21176 & Vondrák 16776 [JM, PRA]; *ibid.*: managed spruce forest c. 120 years old, 0.4 km NNE of top of Mt Boubín (1362 m), 48°59'42.2"N, 13°49'05.7"E, alt. 1275 m, on decaying stump, 2015, Malíček 8343 & Palice [JM]; *ibid.*: fenced virgin forest at right bank of Kaplický potok brook, beech-spruce and spruce forests, 48°58'27"N, 13°49'05"E, alt. 930–1000 m, on snags of *Abies alba* and *Picea abies*, 2011, 2012 & 2015, Malíček 3570, 8746 & Palice 15841, 19539, 21115, 22562 [JM, PRA]. **Eastern Bohemia**, Krkonoše Mts, Pec pod Sněžkou, valley of Jelení potok, glade in a managed montane spruce forest at foot of a boulder-scrub, 50°44'06"N, 15°45'48"E, on lower side of slowly decaying wood of lying trunk of *Picea*, alt. 1138 m, 2015, Palice 20380 [PRA].

***Epigloea pleiospora*** Döbbeler

*Epigloea* is a fungal genus presumed to be parasitic on algae (“phycophil”) according to DÖBBELER (1984). Recent molecular data assigned *Epigloea* to predominantly lichenized Ostropomycetidae, close to the genus *Arthrorhaphis* (PINO-BODAS et al. 2017). Within the genus, *E. pleiospora* forms relatively large ascomata (in the Bohemian specimen reaching up to 0.2 mm in diam.). This fungus occurs on algae overgrowing humus, mosses or wood, and rarely it is also associated with thalli of *Placynthiella* species. The species is similar to the forthcoming *E. urosperma*, but its ascospores lack gelatinous appendages, are slightly larger, differently shaped and its ascomata show a distinctly pigmented ring around opening (see DÖBBELER 1994). It has been reported from Germany, the Netherlands, Poland (DÖBBELER 1984, VAN DEN BOOM et al. 1994, CEYNOWA-GIEŁDOŃ 2005) and North America (e.g. COPPINS 2008).

**Eastern Bohemia**, Krkonoše Mts, Pec pod Sněžkou, valley of Jelení potok, old-growth spruce forest, 50°44'16.5"N, 15°45'32"E, on algal films on decaying wood, alt. 1220 m, 2015, Palice 19555 [PRA].

***Epigloea urosperma*** Döbbeler

Within *Epigloea* this species is well recognizable due to its two-celled ascospores (32 per ascus) with long filiform appendices and an association with *Placynthiella* spp. (CZARNOTA & HERNIK 2013, DÖBBELER 1994, PÉREZ-ORTEGA & BARRENO 2006). *E. urosperma* is regarded as the only strictly lichenicolous species of the genus, with *Placynthiella uliginosa* and *P. dasaea* reported as the only known hosts. The latter one is also associated with two of our specimens (JM 7195, ZP 20913) and even believed to be the only host species (CZARNOTA & HERNIK 2013). *Epigloea urosperma* may occur also on *P. icmalea* (e.g. JM 8962). Since the thallus of *Placynthiella* is known to provide a suitable niche for rich algal communities (both symbiotic and epiphytic algae; VOYTSEKHOVICH et al. 2011) and it may also be overgrown by other *Epigloea* species (CZARNOTA & HERNIK 2013, DÖBBELER 1994), we suggest *Epigloea urosperma* may not be necessarily an obligate lichenicolous fungus, exclusively associated with *Placynthiella* spp.

**Western Bohemia**, Český les Mts, Bělá nad Radbuzou, Rybník: Malý Zvon Nature Reserve, old-growth beech forest on steep E-facing slope of Mt Malý Zvon, 49°32'06"N, 12°38'40"E, alt. 750–820 m, on *Placynthiella dasaea* on decaying wood, 2014, Malíček 7195, Bouda, Peksa, Šoun & Vondrák [JM]. **Northern Bohemia**, Krkonoše Mts, Harrachov, valley of Klokovitý potok brook, old growth mixed forest nearby waterfalls, 50°44'47"N, 15°23'52"E, on *Placynthiella dasaea*, decaying wood, alt. 697 m, 2015, Palice 20913 & Uhlík [PRA]. **Silesia**, Beskydy Mts, Horní Bečva, Bumbálka: Salajka National Nature Reserve, silver fir-beech old-growth forest, 49°24'07"N, 18°25'11"E, alt. 730–740 m, on *Placynthiella icmalea*, decaying wood, 2015, Malíček 8962, Kocourková & Vondrák [JM].

### *Gyalecta ophiospora* (Lettau) Baloch & Lücking

*Gyalecta ophiospora* differs from other species formerly ranked into the genus *Pachyphiale* by its S-shaped ascospores, which are spirally twisted in the asci. Nevertheless, the most similar taxon, *G. arbuti*, characterized by its broader and more septate ascospores (e.g. VĚZDA 1958), as well tends to have sigmoid ascospores according to LETTAU (1937). Also, some morphs of *G. fagicola* may have distinctly curved ascospores (LETTAU 1937, VĚZDA 1958) that may appear spirally arranged. The Czech material of *G. ophiospora* has slightly wider ascospores than reported by LETTAU (1937) and VĚZDA (1958). Therefore, we speculated about species delimitation of *G. arbuti*, which, however, has a more southern Mediterranean distribution and has not been reported north of the Mediterranean region (see e.g. NIMIS 2016, ROUX et al. 2017). *Gyalecta ophiospora* has rarely been reported from several European countries: Austria, Switzerland (VĚZDA 1958), Sweden, Norway (NORDIN et al. 2011), Slovakia (GUTTOVÁ et al. 2013), Poland (FAŁTYNOWICZ & KOSSOWSKA 2016) and France (ROUX et al. 2017).

**Southern Bohemia**, Šumava Mts, Nová Pec, Mt Hraničník, NE-facing slope, 0.4–0.5 km ENE of the top, old-growth montane mixed forest, 48°45'02.7"N, 13°54'39.3"E, on bark of *Fagus*, 1183 m, 2014, Palice 17894 & Vondrák [PRA]. **Eastern Moravia**, Beskydy Mts, Frenštát pod Radhoštěm, Kněhyně-Čertův mlýn National Nature Reserve, old-growth beech forest on SE-facing slope of Mt Kněhyně (1257 m), 49°29'42"N, 18°18'50"E, alt. 1225 m, *Fagus sylvatica*, 2016, Malíček 9673 & Palice [JM]; Jablunkov, Dolní Lomná, protected old-growth forest Mionší, alt. 860 m, 49.53917N, 18.65849E, on bark of *Acer pseudoplatanus*, 2015, Vondrák 17278, 17777 [PRA].

### *Lecanora epibryon* (Ach.) Ach.

A widespread lichen growing on mosses and plant debris on calcareous bedrock in high mountains of Europe. In Central Europe, it is common in limestone areas of the Alps and Carpathians. Its occurrence in the Czech Republic is quite surprising because suitable habitats are very scarce. We were intensively searching for *Lecanora epibryon* at its historical locality in the famous glacial cirque Velká kotlina in Hrubý Jeseník Mts in recent years, however, without success.

**Silesia**, Jeseník, Ve Velké kotlině na mechu, 1908, Kovář [OLM 7063], rev. JM.

### *Lecanora flavoleprosa* Tønsberg

(figure 1C)

*Lecanora flavoleprosa* is a boreal-montane species and supposed to be a post-glacial relict in Central Europe (CZARNOTA et al. 2009). It shares a similar ecology with *L. epibryon* and has been reported from several European countries (see CZARNOTA et al. 2009; MALÍČEK et al. 2015). In the Hrubý Jeseník Mts it rarely occurs in a wind-exposed alpine grassland, which is slightly enriched by calcium from the phyllite rock underground. The collected material was richly fertile and contained usnic acid, zeorin and traces of two terpenoids by TLC.

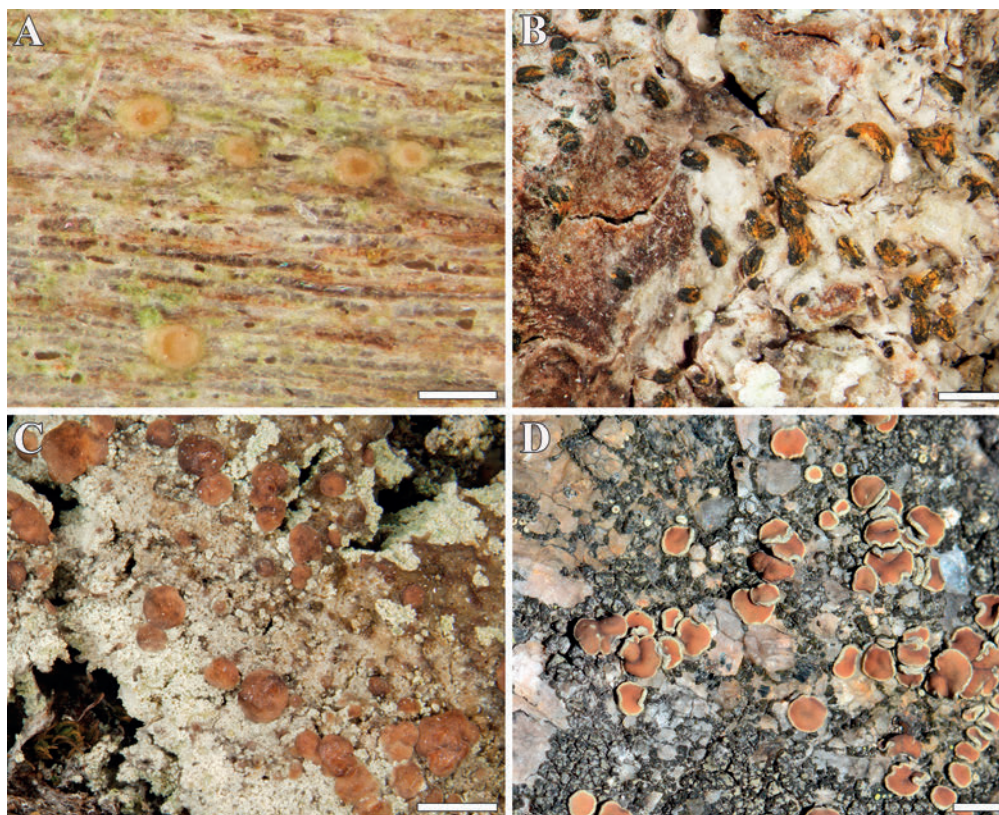
**Silesia**, Hrubý Jeseník Mts, Karlova Studánka, Ovčárna: rock on top of Mt Petrovy kameny (1446 m), 50°04'06"N, 17°14'01"E, alt. 1440 m, on mosses on slightly Ca-enriched soil, 2015, Malíček et al. 8721 [JM].

### *Lecanora silvae-nigrae* V. Wirth

(figure 1D)

This mountain species is so far only known from several European countries: Austria (HAFELLNER & TÜRK 2016), France (ROUX et al. 2017), Germany (WIRTH et al. 2013), Italy (NIMIS 2016) and Switzerland (CLERC 2004). In Germany, it has been reported also from sites very close to the Czech borderline – from Erzgebirge and Böhmerwald (WIRTH et al. 2013).

**Northern Bohemia**, Jizerské hory Mts, Bílý Potok, Jizerskohorské bučiny National Nature Reserve, Frýdlantské cimbuří rocks, 50°51'22"N, 15°13'01"E, alt. 900 m, on exposed granite rock, 2013, Malíček 6041 [JM]. **Southern Bohemia**, Šumava Mts, Volary: Mt Trojmezna hora [1361], the top part, N-facing side right on the Czech side of the border, 48°46'19.2"N, 13°49'37.3"E, on exposed granite rock, alt. 1360 m, 2014, Palice 18845 [PRA].



**Figure 1:** A) *Absconditella rubra* (habitus; specimen ZP 20248). – B) *Alyxoria ochrocheila* (habitus; specimen JM 9649). – C) *Lecanora flavoleprosa* (habitus; specimen JM 8721). – D) *Lecanora silvae-nigrae* (locality in the Jizerské hory Mountains). – Scales: A = 0.2 mm; B = 0.5 mm; C = 1 mm; D = 2 mm. [Photos: A,B,C by J. Machač; D by J. Malíček].

### *Lecanora stenotropa* Nyl.

A species very similar to *L. polytropa*, from which it differs in narrower ascospores (3–4  $\mu\text{m}$ ) and less green thallus and apothecia (e.g. EDWARDS et al. 2009). Its distribution in Europe is still poorly known, because in the past the species has not been distinguished from *L. polytropa*. The Czech collection has a poorly developed thallus, brown apothecia and distinctly narrow ascospores.

**Central Bohemia**, Příbram, in pago Žežice, alt. 600 m, ad lapides quartziticos ferrugineos, 1966, A. Vězda [OLM 6936, sub *Lecanora hercynica*, together with *L. subaurea*], rev. JM.

### *Leptorhaphis maggiana* (A.Massal.) Körb.

With its small perithecia and indistinct thallus, it superficially resembles some non-lichenized *Arthopyrenia* species, but the combination of bitunicate asci, thin and long 1–3-septate ascospores, presence of involucrellum and preference for smooth bark are diagnostic. It is already known from Central Europe (e.g. AGUIRRE-HUDSON 1991).

**Western Bohemia**, Šumava Mts, Kašperské Hory, protected area Amálino údolí, alt. 820 m, 49.1413886N, 13.5996375E, on bark of *Corylus avellana*, 2017, Vondrák 18892 [PRA]. **Southern Bohemia**, Šumava Mts, Přední Výtoň, Pasečná, protected area Jasánky, alt. 690 m, 48.6253172N, 14.0476628E, on bark of *Corylus avellana*, 2017, Vondrák 19027 [PRA].

***Micarea tomentosa* Czarnota & Coppins**

The two Bohemian specimens are quite poor, but exhibiting characteristic grey pruinose stalked pycnidia and a bright green, finely granular thallus. The species is similar to *Micarea hedlundii* Coppins, forming a dark green thallus and pinkish pycnidia (see CZARNOTA 2007).

**Southern Bohemia**, Třeboň area, nature reserve Stará řeka, alluvial oak forest, 48°59'18.7"N, 14°50'56.5"E, on decaying wood of *Quercus* stump, alt. 435 m, 2014, Palice 17457 [PRA]. **Western Bohemia**, Český les Mts, Přimda, c. 2 km S of the village Diana, young managed mixed forest with predominant beech at mild W-facing slope of the point 557, 49°36'47"N, 12°35'38"E, on dry decaying wood of a coniferous stump, alt. 543 m, 2016, Palice 21074 [PRA]; *ibid.*: Diana Nature Reserve, old-growth mixed forest with predominant beech, 49°37'55"N, 12°34'46"E, on dry decaying wood of *Picea* stump, alt. 515 m, 2016, Palice 21084 [PRA].

***Myriolecis perpruinosa* (Fröberg) Šliwa, Zhao Xin & Lumbsch**

ŠLIWA (2007) considered this species as very distinctive within the *Lecanora dispersa* group due to its superficial thallus, paraplectenchymatous amphithecial cortex and thick submoniliform paraphyses. However, its identification is difficult in practice and the species is widely overlooked. *Myriolecis perpruinosa* seems to be rare in the Czech Republic and this is the first record from this country.

**Central Bohemia**, Český kras Protect. Landsc. Area, Beroun, Karlštejn National Nature Reserve, rocky diabasic SW-exposed slopes 0.7 km SW of Hostim, N of Schülerova jeskyně cave, 49°57'20"N, 14°07'20"E, alt. 280–300 m, on diabasic rock, 2012, Malíček et al. 4621 [JM], det. L. Šliwa.

***Ochrolechia mahuensis* Räsänen**

*Ochrolechia mahuensis* is a species from the *O. androgyna* complex, characterized by the production of only gyrophoric acid and its related compounds, and usually a thin thallus. It is mainly a boreal species of coniferous forests, rarely occurring in mountain regions in Central Europe (see KUKWA 2011).

**Western Bohemia**, Šumava Mts, Modrava, below hill Oblík, alt. 1080 m, 49.0499633N, 13.4270822E, *Picea abies*, 2017, Vondrák 18704 [PRA]. *ibid.*: 1070 m, 49.0474886N, 13.4306392E, on bark of *Picea abies*, 2017, Vondrák 18712 [PRA]; Prášily, protected area Frauenthal, alt. 805 m, 49.1443858N, 13.3951714E, on bark of *Pinus sylvestris*, 2017, Vondrák 19014 [PRA]. **Southern Bohemia**, Šumava Mts, Nová Pec, southern slope of Mt Hraničník, managed beech-dominated forest, alt. 1130 m, 48.75644N, 13.90321E, *Fagus sylvatica*, 2017, Vondrák 18752 [PRA]; Stožec, České Žleby, alt. 890 m, 48.8918728N, 13.7905042E, *Fagus sylvatica*, 2017, Vondrák 18715 [PRA]; Volary, Mt Trojmezna, dead climatic spruce forest on N-NE-facing slopes, c. 48°46'28"N 13°49'33"E, on wood and bark of *Picea abies*, alt. 1250–1340 m, 2012–2014, Frolov, Palice 15783, 15785, 15793, 15805, 15816, 17196, 17290, 17314, 18875, Pouska & Vondrák [PRA]; Mt Plechý [1378], just 150 m NW of the Stifter monument, dead montane spruce forest affected by bark-beetle, 48°46'38.5"N, 13°51'21.4"E, on bark of dead *Picea*, alt. 1320 m, 2014, Palice 18268 [PRA]; Nová Pec, Mt Hraničník, NNE slope, a fragment of climax spruce forest surrounded by large-scaled clearings, 130 m NNE from the top, 48°45'03"N, 13°54'19"E, on wood of *Picea* snag, alt. 1233 m, 2014, Palice 18804 [PRA]; Mt Smrčina, old-growth spruce forest on NE-facing slope, 48°44'23"N, 13°55'16"E, on bark of old *Picea*, alt. 1320 m, 2015, Malíček, Palice 21187 & Vondrák 17216 [PRA].

***Parmelia serrana* A.Crespo, M.C.Molina & D.Hawksw.**

This corticolous taxon from the *Parmelia saxatilis* group seems to be widespread across Europe (see e.g. OSSOWSKA et al. 2014), but usually not distinguished from *P. saxatilis* s. str. *Parmelia serrana* produces fatty acids instead of lobaric acid, which is present in *P. saxatilis* (OSSOWSKA et al. 2014). Lobes of *P. serrana* are rounded to sublinear, often overlapping, in contrast to sublinear narrower lobes in *P. saxatilis* (MOLINA et al. 2004). Identifications of the first two Czech samples were confirmed by nrITS and mtSSU sequences.

**Western Bohemia**, Český les Mts, Rozvadov, Diana Nature Reserve, old-growth beech forest in central part of the reserve, 49°37'55"N, 12°34'46"E, alt. 515 m, on branch of *Fagus sylvatica*, 2016, Malíček 9575, Kocourková, Palice & Vondrák [JM]. **Southern Bohemia**, Šumava National Park, Volary, České Žleby, old-growth forest predominated by beeches in upper part of Mt Spáleníště (960 m), 48°52'38"N, 13°47'38"E, alt. 930–940 m, *Fagus sylvatica*, 2016, Malíček 10043, Palice & Vondrák [JM]; Šumava National Park, Nová Pec, old-growth beech-spruce forest on N-facing slope of Mt Hraničník (1281 m), 48°45'13"N, 13°54'17"E, alt. 1170 m, *Fagus sylvatica*, 2017, Malíček 11286 & 11314 [JM]. Šumava Mts, Kubova Huť, Milešický prales Nature Reserve, old-growth beech-spruce forest, 48°59'05"N, 13°50'20"E, alt. 1090–1120 m, *Fagus sylvatica*, 2018, Malíček 11840 & Palice [JM].



*Peltigera ponojensis* Gyeln.

*Peltigera ponojensis* is probably rare in the Czech Republic, however, it could easily be confused with the common *P. rufescens*, which occurs in similar habitats.

**Western Moravia**, Českomoravská vrchovina upland, Velké Meziříčí, near the town, on ground, 2000, Vondrák 2798 [PRA], det. O. Vitikainen. **Southern Moravia**, Pálava Protect. Lands. Area, Klentnice, Tabulová, Růžový vrch a Kočičí kámen National Nature Reserve, area of Stolová hora hill (459 m), c. 48°50'26"N, 16°38'14"E, alt. 400–450 m, on calcareous soil associated with mosses, 2013, Malíček 6326 & Vondrák [JM].

*Pertusaria borealis* Erichsen

*Pertusaria borealis* is chemically and morphologically similar to *Pertusaria pupillaris*. The latter species differs in the absence of succinprotocetraric acid (trace/minor substance often but not constantly present in *P. borealis* as an accessory compound to fumarprotocetraric acid; TØNSBERG 1992). For morphological differences see TØNSBERG (1992). *Pertusaria pupillaris* is locally common on bark of younger deciduous trees in wooded valleys and natural to intensively managed forests while *P. borealis* is a montane, old-growth forest species. It is widespread in Fennoscandia (SANTESSON et al. 2004), but considered as a rare relictual taxon of Caledonian forests in Scotland (CHAMBERS et al. 2009). In Central Europe it appears to be a rare species of montane forests, so far only known from a few localities in the Swiss and Austrian Alps (DIETRICH & SCHEIDEGGER 1996, TÜRK 2004) and the Böhmerwald, not far from the Czech borderline (WIRTH et al. 2013).

The species, as currently circumscribed, may consist of more taxa. The two references of apothecia in *P. borealis* considerably differ; the Norwegian specimens contained predominantly 6-spored asci with single-walled spores (TØNSBERG 1992) while specimens from Alaska contained 1-spored asci with double-walled spores (SPRIBILLE et al. 2010).

**Southern Bohemia**, Novohradské hory Mts, Pohorská ves, Žofínský prales National Nature Reserve, small wetland with *Abies*, 48°40'03"N, 14°42'17"E, alt. 770 m, on bark of dead *Abies alba*, 2011, Malíček 3523 & Palice [JM]; Šumava Mts, Volary: Mt Trojmezna, 130–150 m NNW of the top, dead climatic spruce forest at N-facing slope, 48°46'22"N 13°49'33.5"E, on bark of dead standing *Picea* and on wood of *Picea* snag, alt. 1340 m, 2012, Frolov, Palice 15781, 15809, Pouska & Vondrák [PRA]; ibid.: 0.35 km N of the top, dead climatic spruce forest at N-facing slope, 48°46'28.5"N 13°49'33.5"E, on bark of dead standing *Picea*, alt. 1300 m, 2013, Palice 17285 & Pouska [PRA].

*Placynthium caesium* (Fr.) Jatta

This species is probably quite common in the Pálava Hills – we observed thalli at multiple sites, but they were usually very small and difficult to collect.

**Southern Bohemia**, distr. Strakonice, Krty-Hradec, W-facing rocks above Veský rybník pond, in village, 49°17'29"N, 13°51'03"E, alt. 425 m, on limestone rock, 2018, Malíček 11817 [JM]. **Southern Moravia**, Pálava Protected Landscape Area, Klentnice, Tabulová National Nature Reserve, rocks on SW-facing slopes of Tabulová Hill (459 m), 48°50'16"N, 16°38'13"E, alt. 385 m, on limestone rock, 2017, Malíček 10327 [JM].

*Protoblastenia lilacina* Poelt & Vězda

(figure 2A)

Poelt and Vězda (in VÉZDA 1970) described *P. lilacina* and characterized it mainly on the account of the purplish hypothecium and larger ascospores compared to similar species. According to KAINZ & RAMBOLD (2004) the purplish pigment is not always produced or is formed only patchily. Based on results of their phylogenetic analyses, they concluded the epihymenial KOH reddish reaction is the most reliable character, which is stressed also by the British authors as the diagnostic feature (LAMBLEY & ORANGE 2009). In addition to this KOH wine-red reaction (no distinct purple solution as in other *Protoblastenia* species), we found inspersion of hymenium/hypothecium to be another helpful character separating *P. lilacina* from similar taxa. 1-O-Methylparietin is the characteristic anthraquinone pigment for this species (see ELIX 2014), which appears to form distinct, brightly yellow spots on TLC plates. Most specimens were confirmed by TLC.

The material published as *Protoblastenia calva* and *P. siebenhaariana* from the Bohemian Karst (SVOBODA et al. 2014) belongs to *P. lilacina*.

**Northern Bohemia**, Mimoň, Polomené hory Hills, Hradčanské stěny, Tvarožník hill, ca. 2 km W of Hradčany, SE exposition, 50°37'19"N, 14°40'44"E, on vertical to overhanging calcareous sandstone rock-face, together with

*Protoblastenia rupestris*, alt. 295 m, 2009, Malíček 2247 & Palice 12670 [JM, PRA]. **Central Bohemia**, Czech Karst, Srbsko, rocky outcrops SE–ESE from the Bubovické vodopády rapids, xerothermic vegetation at open, S–SW-facing slope, 49°56'53"N, 14°09'18"E, on sheltered, overhanging SE-facing limestone rock-face, alt. 319 m, 2017, Palice 23746 [PRA]. **Eastern Bohemia**, Krkonoše Mts, Obří důl valley, Rudník: crystalline limestone outcrop above the left bank of Rudný potok brook, 50°43.84'N, 15°43.93'E, on half-shaded overhanging limestone rock, alt. 1150 m, 2005, Palice 9029 & Slavíková [PRA]. **Southern Moravia**, Pálava Protected Landscape Area, Klentnice, Tabulová, Růžový vrch a Kočíův kámen National Nature Reserve, rocks on SW slopes of Stolová hora hill (459 m), c. 48°50'26"N, 16°38'14"E, alt. 400–450 m, on limestone rock, 2013, Malíček 6295, 6411 [JM].

### *Ramalina europaea* Gasparyan, Sipman & Lücking

The newly described *Ramalina europaea* seems to be very common in the Czech Republic, at least in the recently collected material. We observed this species on rocks as well as on trees. Identifications of most of the studied samples were obvious because of numerous small, spine-like branchlets with starting punctiform soralia, the typical character of this species (GASPARYAN et al. 2017).

**Southern Bohemia**, Novohradské hory Mts, Pohorská ves, Žofínský prales National Nature Reserve, old-growth beech forest, S border of reserve, alt. 800–820 m, *Fagus sylvatica*, 2010, Malíček 3135 & Černajová [JM]. **Central Bohemia**, Vltava River valley, Kamýk nad Vltavou, Velká: complex of rocks N of village, alt. 270–350 m, on granodiorite rock, 2009, Malíček 1894 [JM]; *ibid.*: Velká: rocks on SW border of Tahava recreation area, 49°40'07"N, 14°15'21"E, alt. 290 m, on granodiorite rock, 2012, Malíček 4371 [JM]; Sedláňany region, Skoupý, locality Kozince, limestone rocks above Skoupý p. brook, 49°34'26"N, 14°19'58"E, alt. 430 m, on siliceous rock, 2011, Malíček 4076 [JM]; distr. Mladá Boleslav, Jabkenice, trees along path near Hrádecký pond 1.2 km SE of village, 50°19'01"N, 15°01'56"E, alt. 240 m, *Fraxinus excelsior*, 2011, Malíček 3337 & Černajová [JM]; Zvírotice, Zvírotický meandr, stinná skála, 2005, Malíček 247 [JM]. **Southern Moravia**, distr. Třebíč, Mohelno, Mohelenská hadcová step National Nature Reserve, serpentinite outcrops in well-lit pine forest on S-facing slope under road, 49°06'17"N, 16°11'37"E, alt. 330–340 m, on serpentinite rock, 2015, Malíček 8695 & Lenzová [JM]; Vyškov, Ruprechtov, kyselá doubrava V od obce na svazích poblíž Hrádku, 49°19'46"N, 16°53'50"E, *Quercus petraea*, 2007, Malíček 703 [JM]. **Silesia**, Hrubý Jeseník Mts, Karlova Studánka, Ověčárna: rock on top of Mt Petrovy kameny (1446 m), 50°04'06"N, 17°14'01"E, alt. 1440 m, on gneiss rock, 2015, Malíček et al. 8723 [JM].

### *Rinodina trevisanii* (Hepp) Körb.

(figure 2C)

In Europe, this montane species is distributed mainly in Fennoscandia and the Alps (SHEARD 2010). However, its distribution is poorly known because the species has not been distinguished from the similar *R. archaea* (Ach.) Arnold. The ascospore size of the majority of Czech material is slightly bigger (18–23 × 10 µm) than those reported by SHEARD (2010). On the other hand, the specimen ZP 18820 has unusually small ascospores fitting better to those of *R. orculata* as described by MAYRHOFER & SHEARD (2007).

**Western Bohemia**, Šumava National Park, Modrava, managed spruce forest with solitary sycamores 0.5 km NE of top of Mt Medvěd (1137 m), 49°00'33"N, 13°25'29"E, alt. 1120 m, on wood of old *Acer pseudoplatanus*, 2015, Malíček 8905, Bouda, Peksa, Palice & Svoboda [JM], rev. H. Mayrhofer; Nová Pec, Mt Hraničník, NE slope, a young beech stand surrounded by old-growth montane forest, c. 400 m NE–ENE of the top, 48°45'03.5"N, 13°54'34.3"E, *Acer pseudoplatanus*, alt. 1194 m, 2014, Palice 18820 [PRA], det. H. Mayrhofer. **Silesia**, Beskydy Mts, Horní Lomná, Mionší National Nature Reserve, solitary *Acer pseudoplatanus* on meadow 0.2 km N of top of Mt Velká Polana (893 m), 49°32'09.5"N, 18°39'22.8"E, alt. 865 m, 2015, Malíček 8853 & Vondrák [JM], det. H. Mayrhofer.

### *Strigula glabra* (A.Massal.) V.Wirth

*Strigula glabra* prefers a smooth bark of deciduous trees, typically in the Graphidion community in humid woodlands. In Central Europe, it is quite rare, but widespread in the Alps (WIRTH et al. 2013, NIMIS et al. 2018) and also known from Slovakia (GUTTOVÁ et al. 2013). The Moravian collection is an anamorph with macropycnidia, producing typical cylindrical, 5-septate macroconidia, about 4 µm thick. Large pycnidia superficially resemble perithecia, which makes the lichen similar to small *Pyrenula* species. *Strigula stigmatella* has similar, but thicker macroconidia; its macropycnidia are smaller and thallus is more distinct. It also prefers different substrata, such as a rough bark and epiphytic bryophytes at tree bases.

**Southern Moravia**, Pavlovské vrchy hills, Mikulov, Klentnice, protected area Děvín-Kotel-Soutěska (SE part below limestone cliffs), alt. 350–400 m, 48°51'20"N, 16°38'29"E, *Tilia*, 2013, Malíček & Vondrák 11628 [PRA].

***Verrucaria subcincta*** Nyl.

This species is characterized by its endolithic whitish thallus with superficial perithecia forming hemispherical projections. It occurs on natural limestone and dolomite outcrops in open habitats (KRZEWICKA 2012, as *V. cincta*). *Verrucaria subcincta* seems to be a rare species throughout Europe (SERVÍT 1954, KRZEWICKA 2012, NIMIS et al. 2018). Our material has been identified as *V. cincta* Hepp by O. Breuss. However, this name is invalid and *V. subcincta* has been proposed as the valid name for the species (SPARRIUS 2004).

**Southern Moravia**, Pálava Protected Landscape Area, Horní Věstonice, Děvín-Kotel-Soutěska National Nature Reserve, W-facing limestone rocks in Soutěska, 48°51'57"N, 16°38'35"E, alt. 420–460 m, limestone rock, 2013, Malíček 6389 & Vondrák [JM], det. O. Breuss.

***Xanthomendoza huculica*** (S.Y.Kondr.) Diederich

This recently described species (KONTRATYUK et al. 2010, as *Oxneria huculica*) was reported as *Xanthoria fallax* Arnold in the past. Both species are very similar. *Xanthomendoza huculica* differs in large, helmet-like soralia (in contrast to predominately marginal or labriform soralia, usually containing blastidia, in *X. fallax*), distinctly wider and shorter lobes and more abundant rhizines. Similar observations have been reported also by NIMIS (2016) and ROUX et al. (2017). A green tinge of soralia, reported by KONTRATYUK et al. (2010) and BROECK (2013), seems to be frequent in *X. huculica*, but sometimes present also in *X. fallax*. Both species differ in their ecology – *X. huculica* occurs on bark in nitrophilous communities; *X. fallax* on rocks. While corticolous populations are known in *X. fallax* as well (ROUX 2017 and our observations), we did not observe saxicolous populations of *X. huculica*. Another very similar and variable taxon, *X. ulophylloides* (Räsänen) Søchting, Kärnefelt & S.Y. Kondr., has flatter lobes and usually lacks the typical helmet-like soralia.

**Southern Bohemia**, Šumava Mts, Horní Planá, Pernek, on bark of solitary *Fraxinus* near a crossroad in the village, alt. 765 m, 2001, Palice 5285 [PRA]. Prachatice, Husinec, Výrov, in village, 49°03'00"N, 13°59'50"E, *Fraxinus excelsior*, 2013, Vondrák 11246 [PRA]; *ibid.*: in the valley of Blanice River, 2 km E from the town, 49°03'05"N, 14°01'10"E, *Fraxinus excelsior*, 2002, Vondrák 311 [PRA]; *ibid.*: Husinec, *Aesculus hippocastanum*, 2003, Vondrák 1599 [PRA]; Prachatice, Chroboly, Záhoří, in village, alt. 700 m, *Salix fragilis*, Vondrák 4362 [PRA]. Montes Šumava, ad pagum Želnavá prope oppidulum Volary, alt. 800 m, *Fraxinus excelsior*, 1984, Liška [PRC]. Distr. Tábor, oppidum Bechyně, in propatulo castri, *Acer platanoides*, 1984, Liška [PRC]. **Southern Moravia**, distr. Břeclav, Lednice, castle park, trees along canal 0.5 km E of castle, 48°48'03"N, 16°48'45"E, alt. 160 m, on bark of old *Fraxinus excelsior*, 2017, Malíček 10305 [JM].

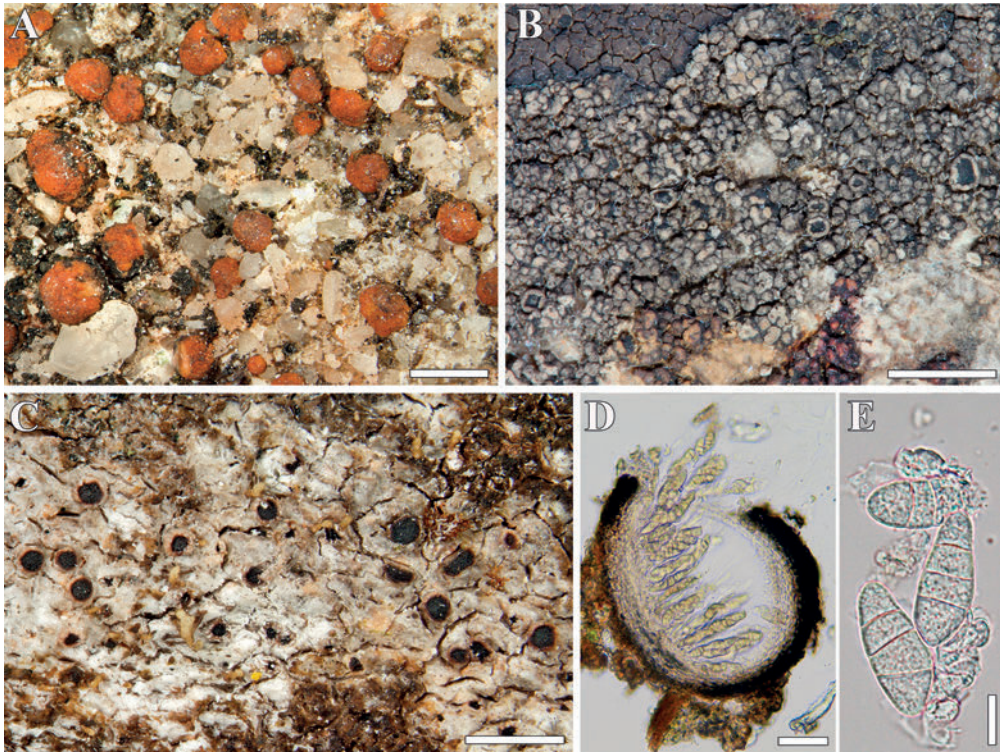
***Xylographa soralifera*** Holien & Tønsberg

*Xylographa soralifera* occurs on coniferous wood in boreal and montane forests. It prefers suboceanic regions (SPRIBILLE et al. 2014). Both Czech specimens are sterile, and the presence of fumarprotocetraric acid was confirmed by TLC.

**Southern Bohemia**, Šumava Mts, Zátoň, Jilmová skála Nature Monument, a well-lit gap in old-growth mixed forest at S-sloping crest, 48°57'12"N, 13°47'47"E, on hard, lying, slowly decaying wood of conifer, alt. 1008 m, 2015, Malíček & Palice 19057 [PRA]; Kubova Hut, Boubínský prales National Nature Reserve, old-growth spruce forest (up to c. 200 years old) on steep, NE-facing slope under top of Mt Boubín (1362 m), 48°59'32"N, 13°49'18"E, alt. 1250 m, on wood of snag of *Picea abies*, 2015, Malíček 8632, Kocourková, Palice & Vondrák [JM, in the voucher of *Xylographa vitiligo*].

**Names to be excluded from the national checklist*****Candelariella subdeflexa*** (Nyl.) Lettau

Both published Czech records (MALÍČEK et al. 2008, MALÍČEK & PALICE 2013) are based on material which produces blastidia and therefore is referable to the recently described *Candelariella blastidiata* Yakovchenko, which is said to differ from *C. subdeflexa*, in addition to the presence of blastidia, also by the absence (or scarcity) of conidiophores on the lower side of the squamules and matt thallus (YAKOVCHENKO et al. 2017). Molecular separation of these species (see YAKOVCHENKO et al. 2017) is questionable because both taxa are closely related according to nrITS and only North American



**Figure 2:** **A)** *Protoblastenia lilacina* (habitus; specimen JM 2247). – **B)** *Lecanora tephraea* (lectotype [L 0056678]). Synonymized in this paper with *Lecanora cenisia*. – **C)** *Rinodina trevisanii* (habitus; specimen JM 8905). – **D,E)** *Polyblastia brunnensis* (holotype [PRA-V 6602]). Synonymized in this paper with *Thelidium zwackhii*. – **D)** Section of perithecium. – **E)** Detail of ascospores. – Scales: A,C = 1 mm; B = 2 mm; D = 50  $\mu$ m; E = 10  $\mu$ m. [Photos: A,B by J. Machač; C,D,E by J. Malíček].

material of *C. subdeflexa* was used in the study. The Central Bohemian material (ZP 9313, MALÍČEK et al. 2008) readily produces globose conidia, but since the thallus characters are very distinctive, we distinguish both species. However, further studies with a more extensive sampling are necessary.

#### *Lecanora reagens* Norman

The record by VONDRÁK & PALICE (2004) from the Šumava foothills belongs to the similar species *L. epanora*. The crateriform soralia, typical for *L. reagens*, are absent from the voucher (JV 318). *Lecanora reagens* occurs on siliceous overhangs mainly in high altitudes (e.g. WIRTH et al. 2013, NIMIS 2016).

#### *Lecanora tephraea* Körb. [= *Lecanora cenisia* Ach.]

(figure 2B)

*Lecanora tephraea* is regarded here as a synonym of *L. cenisia*. The collections match very well in the morphology, anatomy, chemistry, and ecology. *Lecanora tephraea* was described from two localities in the Krkonoše Mts – Kleine Schneegrube (Mały Śnieżny Kocioł) in Poland and Schneekoppe (Mt Sněžka) at the border of the Czech Republic and Poland (see the protologue). The specimen from the latter locality is selected as the lectotype because the second voucher (deposited in Warschau) was likely destroyed during the Second World War.

**Eastern Bohemia**, Schneekoppe, Kөрber (no. 28) [lectotype in L (0056678); selected here by JM]; TLC: atranorin, gangaleoidin, roccellic acid, stictic acid. – Other studied collections under this name in herbaria: **Silesia**, Jeseník: vrcholová skála na Keprníku, 1909, Kovář [OLM 7105], rev. JM. – **POLAND**, Am Basalt in Kleiner Schneegrube, 1889, R. Traxler [PRC], rev. JM.

***Polyblastia brunensis*** Vězda [= *Thelidium zwackhii* (Hepp) A.Massal.] (figures 2D,E)

This taxon was described in the Lichenes Selecti Exsiccati (Fasc. XLI., no. 1002) by Antonín Vězda (VĚZDA 1971). The very short description compares it with *Thelidium fueistingii* Körb. (= *Thelidium zwackhii* (Hepp) A.Massal.), from which the species differs in submuriform ascospores. Revision of the type material showed the presence of 3-septate ascospores. Submuriform spores were observed very rarely and contained only one longitudinal septum. The occasional presence of 1–2 longitudinal septa is known in the genus *Thelidium* (e.g. THŮS & SCHULTZ 2009, ORANGE 2013). We suppose the type specimen belongs to *T. zwackhii*. No anatomical differences were found and the ecology also corresponds well.

**Southern Moravia**, Brno (Brunna), supra pagum, Bosonohy, alt. 300 m, terricola in parietibus loesaceis humidis, 1971, A. Vězda [holotype in PRA-V 6602; revised by JM].

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**Appendix 1:** Species list of lichens published from the Czech Republic after the last version of the national checklist (LIŠKA & PALICE 2010), including six taxa reported from the country in the past (VĚZDA & LIŠKA 1999), later synonymized and recently again distinguished at the species level. Records from this paper are included as well.

*Absconditella rubra* van den Boom, M. Brand & Suija – this paper

*Acarospora rehmi* H.Magn. – MALÍČEK (2017)

*Acarospora irregularis* H.Magn. – KNUDSEN et al. (2014)

*Acarospora sphaerosperma* R.C. Harris & K. Knudsen – KNUDSEN & KOCOURKOVÁ (2016)

*Agonimia borysthonica* Dymytrova, Breuss & S.Y.Kondr. – VONDRÁK et al. (2016)

*Agonimia flabelliformis* J.Halda, Czarnota & Guzow-Krzemińska – GUZOW-KRZEMIŃSKA et al. (2014)

*Alyxoria ochrocheila* (Nyl.) Ertz & Tehler – this paper

*Arthonia excipienda* (Nyl.) Leight. – MALÍČEK & PALICE (2013)

*Arthonia incarnata* Th.Fr. ex Almq. – MALÍČEK et al. (2014)

*Aspicilia goettweigensis* (Zahlbr.) Hue – PAUKOV et al. (2017)

*Aspicilia verrucigera* Hue – this paper

*Atla alpina* Savič & Tibell – HALDA (2017)

*Bacidina brandii* (Coppins & van den Boom) M.Hauck & V.Wirth – MALÍČEK et al. (2014)

*Bacidina caligans* (Nyl.) Llop & Hladun – HALDA et al. (2011)

*Bacidina etayana* (van den Boom & Vězda) M.Hauck & V.Wirth – MALÍČEK et al. (2014)

*Bacidina flavoleprosa* Czarnota & Guzow-Krzem. – CZARNOTA & GUZOW-KRZEMIŃSKA (2012)

*Bacidina mendax* Czarnota & Guz.-Krzem. – CZARNOTA & GUZOW-KRZEMIŃSKA (2018)

*Bacidina saxenii* (Erichsen) M.Hauck & V.Wirth – MALÍČEK et al. (2014)

*Biatora ligni-mollis* T.Sprib. & Printzen – MALÍČEK & PALICE (2013)

*Biatora pontica* Printzen & Tønsberg – VONDRÁK et al. (2016)

*Biatora radicolica* Printzen, Palice & J.Halda – PRINTZEN et al. (2016)

*Biatora vacciniicola* (Tønsberg) Printzen – PALICE et al. (2018)

*Biatoridium delitescens* (Arnold) Hafellner – MALÍČEK & PALICE (2015)

*Blastenia hungarica* (H.Magn.) Arup, Søchting & Frödén – this paper

*Bryobilimbia ahlesii* (Körb.) Fryday, Printzen & S.Ekman – HALDA et al. (2011, as *Lecidea ahlesii* (Hepp) Nyl.)

*Bryoria furcellata* (Fr.) Brodo & D.Hawksw. – MALÍČEK et al. (2014)

*Buellia arborea* Coppins & Tønsberg – MALÍČEK et al. (2014)

*Calicium montanum* Tibell – ŠOUN (2010)

*Caloplaca alstrupii* Søchting – PALICE et al. (2018)

*Caloplaca arcis* (Poelt & Vězda) Arup – MALÍČEK et al. (2014)

*Caloplaca atroflava* (Turner) Mong. – SVOBODA et al. (2011)

*Caloplaca concretilcola* Vondrák & Khodosovtsev – FROLOV & VONDRÁK (2012)

*Caloplaca emilii* Vondrák, Khodos., Cl.Roux & V.Wirth – VONDRÁK et al. (2013a)

*Caloplaca interfulgens* (Nyl.) J.Steiner – VONDRÁK et al. (2013a)

*Caloplaca limonia* Nimis & Poelt – VONDRÁK et al. (2009); listed among new amendments in the last checklist, but absent from the species list (see LIŠKA & PALICE 2010)

*Caloplaca microstepposa* Frolov, Nadyeina, Khodos. & Vondrák – FROLOV et al. (2016)

*Caloplaca scabrosa* Søchting, Lorentsen & Arup – VONDRÁK et al. (2013a)

*Caloplaca substerilis* Vondrák, Palice & van den Boom – VONDRÁK et al. (2013a)

*Caloplaca substerilis* subsp. *orbicularis* M.Haji Moniri, Vondrák & Malíček – VONDRÁK et al. (2017) = *Caloplaca fiumana* Zahlbruckner in Annalen des Naturhistorischen Museums in Wien 25: 248 (1911); Type: Hungaria [currently Croatia]. Ad saxa calcarea prope Fiume [Rijeka], leg. J. Schuler. Syntype distributed in Kryptogamas exsiccatas, no. 1880. Vouchers in H and PRM have been studied; the specimen from PRM is selected here as lectotype by JV. The name *Caloplaca fiumana* was recently considered as a synonym of *Caloplaca polycarpa* (e.g. NIMIS 2016), but this is not correct.

- Caloplaca tominii* Savicz – VONDRÁK et al. (2011)  
*Caloplaca turkuensis* (Vain.) Zahlbr. – MALÍČEK et al. (2010)  
*Candelaria pacifica* M. Westb. & Arup – MALÍČEK et al. (2014)  
*Candelariella blastidiata* Yakovch. – this paper  
*Candelariella efflorescens* R.C.Harris & W.R.Buck – STEINOVÁ et al. (2013)  
*Candelariella plumbea* Poelt & Vězda – MALÍČEK et al. (2014)  
*Candelariella viae-lactaeae* G.Thor & V.Wirth – MALÍČEK et al. (2014)  
*Candelariella xanthostigmoides* (Müll.Arg.) R.W.Rogers – MALÍČEK & PALICE (2013)  
*Carbonicola anthracophila* (Nyl.) Bendiksby & Timdal – this paper  
*Catillaria atomarioides* (Müll.Arg.) H.Kiliás – PEKSA (2011)  
*Catillaria fungoides* Etayo & van den Boom – MALÍČEK et al. (2014)  
*Chaenotheca gracillima* (Vain.) Tibell – PALICE et al. (2018)  
*Chaenotheca hygrophila* Tibell – PALICE et al. (2018)  
*Cladonia conista* (Ach.) Robbins – MALÍČEK (2016)  
*Cladonia diversa* Asperges ex S.Stenroos – STEINOVÁ et al. (2013)  
*Cladonia krogiana* Løfall & Timdal – PALICE et al. (2018)  
*Cladonia mitis* Sandst. – included in *C. arbuscula* in LIŠKA & PALICE (2010)  
*Cladonia novochlorophaea* (Sipman) Brodo & Ahti – MALÍČEK et al. (2014)  
*Cladonia uncialis* subsp. *biuncialis* (Hoffm.) M.Choisy – mentioned several times in VĚZDA & LIŠKA (1999); currently recognized at the subspecies level (STENROOS et al. 2015)  
*Cliostomum leprosum* (Räsänen) Holien & Tønberg – MALÍČEK & PALICE (2013)  
*Collemopsidium angermannicum* (G.B.F.Nilsson) A.Nordin – HALDA (2017)  
*Dendrographa decolorans* (Turner & Borrer ex Sm.) Ertz & Tehler – MALÍČEK et al. (2014)  
*Dirina fallax* De Not. – TEHLER et al. (2013)  
*Endocarpon adsurgens* Vain. – MALÍČEK & VONDRÁK (2016)  
*Fellhanera gyrophorica* Sérus., Coppins, Diederich & Scheid. – MALÍČEK & PALICE (2013)  
*Fellhanera viridisorediata* Aptroot, M.Brand & Spier – MALÍČEK et al. (2014)  
*Flavoparmelia soredians* (Nyl.) Hale – MALÍČEK et al. (2011)  
*Fuscidea pusilla* Tønberg – MALÍČEK & PALICE (2013)  
*Fuscidea recensa* (Stirt.) Hertel, V.Wirth & Vězda – PEKSA (2011)  
*Gregorella humida* (Kullh.) Lumbsch – VONDRÁK et al. (2013b)  
*Gyalecta ophiospora* (Lettau) Baloch & Lücking – this paper  
*Gyalidea minuta* van den Boom & Vězda – KUBIAK & MALÍČEK (2012)  
*Gyalideopsis muscicola* P.James & Vězda – PALICE et al. (2018)  
*Hypotrachyna afrorevoluta* (Krog & Swinscow) Krog & Swinscow – ŠOUN et al. (2017)  
*Hypotrachyna lividescens* (Kurok.) Hale – ŠOUN et al. (2017)  
*Involucropyrenium romeaunum* (B.de Lesd.) Breuss – MALÍČEK (2013a; as *I. squamulosum* (van den Boom & M. Brand) Breuss)  
*Lecania croatica* (Zahlbr.) Kotlov – MALÍČEK & PALICE (2013)  
*Lecania sordida* Reese Næsb. – MALÍČEK et al. (2014)  
*Lecania suavis* (Müll.Arg.) Mig. – MAYRHOFER (1988), HALDA (2009)  
*Lecanora barkmaniana* Aptroot & Herk – MALÍČEK et al. (2017)  
*Lecanora cinerescens* (Harm.) Ozenda & Clauzade – MALÍČEK et al. (2012)  
*Lecanora cinereofusca* H.Magn. – MALÍČEK (2014)  
*Lecanora epibryon* (Ach.) Ach. – this paper  
*Lecanora expersa* Nyl. – MALÍČEK et al. (2017)

- Lecanora flavoleprosa* Tønsberg – this paper  
*Lecanora hypoptoides* (Nyl.) Nyl. – PALICE et al. (2018)  
*Lecanora mughosphagneti* Poelt & Vězda – MALÍČEK et al. (2017)  
*Lecanora norvegica* Tønsberg – MALÍČEK et al. (2017)  
*Lecanora pannonica* Szatala – ŠOUN et al. (2015a)  
*Lecanora quercicola* Coppins & P.James – VONDRÁK et al. (2016)  
*Lecanora silvae-nigrae* V.Wirth – this paper  
*Lecanora stanislai* Guzow-Krzemińska et al. – GUZOW-KRZEMIŃSKA et al. (2017)  
*Lecanora stenotropa* Nyl. – this paper  
*Lecanora subcarpineae* Szatala – VONDRÁK et al. (2016)  
*Lecanora substerilis* Malíček & Vondrák – MALÍČEK et al. (2017)  
*Lecanora thysanophora* R.C.Harris – MALÍČEK & PALICE (2013)  
*Lecidea coriacea* Holien & Palice – HOLIEN et al. (2016)  
*Lecidea haerjedalica* H.Magn. – PALICE et al. (2018)  
*Lecidea sphaerella* Hedl. – MALÍČEK et al. (2014)  
*Lecidella albida* Hafellner – MALÍČEK et al. (2014)  
*Lecidella subviridis* Tønsberg – MALÍČEK & PALICE (2013)  
*Lemmopsis arnoldiana* (Hepp) Zahlbr. – HALDA (2012)  
*Leptogium intermedium* (Arnold) Arnold – MALÍČEK et al. (2014)  
*Lithothelium hyalosporum* (Nyl.) Aptroot – VONDRÁK et al. (2016)  
*Lithothelium phaeosporum* (R.C.Harris) Aptroot – VONDRÁK et al. (2016)  
*Melanelixia glabrata* (Lamy) Sandler & Arup – numerous records are mentioned in VÉZDA & LIŠKA (1999); the taxon was included under *M. fuliginosa* in LIŠKA & PALICE (2010)  
*Metamelanea caesiella* (Th.Fr.) Henssen – MALÍČEK et al. (2014)  
*Micarea confusa* Coppins & van den Boom – MALÍČEK et al. (2014)  
*Micarea globulosella* (Nyl.) Coppins – MALÍČEK et al. (2014)  
*Micarea nowakii* Czarnota & Coppins – MALÍČEK et al. (2014)  
*Micarea parva* Coppins – MALÍČEK & PALICE (2013)  
*Micarea soralifera* Guzow-Krzemińska, Czarnota, Łubek & Kukwa – GUZOW-KRZEMIŃSKA et al. (2016)  
*Micarea tomentosa* Czarnota & Coppins – this paper  
*Miriquidica instrata* (Nyl.) Hertel & Rambold – MALÍČEK & KOCOURKOVÁ (2014)  
*Mycobilimbia pilularis* (Körb.) S.Ekman & Printzen – MALÍČEK & PALICE (2013)  
*Myriolecis perpruinosa* (Frøberg) Śliwa, Zhao Xin & Lumbsch – this paper  
*Myriospora dilatata* (M.Westb. & Wedin) K.Knudsen & Arcadia – KNUDSEN et al. (2017b)  
*Myriospora scabrida* (Hedl. ex H.Magn.) K.Knudsen & Arcadia – KNUDSEN et al. (2017a)  
*Ochrolechia mahuensis* Räsänen – this paper  
*Opegrapha lithyrge* Ach. – *O. vulgata* p.p. specim. saxicol. (see VÉZDA & LIŠKA 1999); accepted taxon following FRISCH et al. (2014)  
*Opegrapha trochodes* Coppins, F.Berger & Ertz – MALÍČEK & PALICE (2013)  
*Parmelia barrenoae* Divakar, M.C.Molina & A.Crespo – ŠOUN et al. (2015b)  
*Parmelia serrana* A.Crespo, M.C.Molina & D.Hawksw. – this paper  
*Peltigera extenuata* (Nyl. ex Vain.) Lojka – MALÍČEK et al. (2014)  
*Peltigera ponojensis* Gyeln. – this paper  
*Pertusaria borealis* Erichsen – this paper  
*Pertusaria macounii* (I.M.Lamb) Dibben – MALÍČEK et al. (2018)  
*Phaeophyscia rubropulchra* (Degel.) Moberg – VONDRÁK et al. (2016)

- Pilophorus strumaticus* Nyl. ex Cromb. – HALDA et al. (2011)
- Placynthiella hyporhoda* (Th.Fr.) Coppins & P.James – PALICE et al. (2018)
- Placynthium caesium* (Fr.) Jatta – this paper
- Porina pseudohibernica* Tretiach – TRETIACH (2014)
- Porpidia melinodes* (Körb.) Gowan & Ahti – JABŁOŃSKA et al. (2011)
- Protoblastenia lilacina* Poelt & Vězda – this paper
- Psorotichia diffracta* (Nyl.) Forssell – HALDA (2012)
- Pterygiopsis neglecta* (Erichsen) M.Schultz & Thüs ined. – MALÍČEK & VONDRÁK (2016)
- Punctelia borrieri* (Sm.) Krog – ŠOUN et al. (2017)
- Pyrenopsis picina* (Nyl.) Forssell – HALDA et al. (2011)
- Ramalina europaea* Gasparyan, Sipman & Lücking – this paper
- Ramonia luteola* Vězda – PALICE et al. (2018)
- Rhaphidicyrtis trichosporella* (Nyl.) Vain. – MALÍČEK & PALICE (2013)
- Rhizocarpon amphibium* (Fr.) Th.Fr. – HALDA et al. (2011)
- Rhizocarpon atroflavescens* Lyngé – BOUDA (2017)
- Rhizocarpon carpaticum* Runemark – BOUDA (2017)
- Rhizocarpon ferax* H.Magn. – BOUDA (2017)
- Rhizocarpon pycnocarpoides* Eitner – EITNER (1911), WESTBERG et al. (2015)
- Rhizocarpon timidali* Ihlen & Fryday – MALÍČEK et al. (2014)
- Rhizoplaca melanophthalma* (DC.) Leuckert & Poelt – MALÍČEK et al. (2014)
- Rhizoplaca subdiscrepans* (Nyl.) R.Sant. – MALÍČEK et al. (2014)
- Rinodina capensis* Hampe – MALÍČEK et al. (2014)
- Rinodina excrescens* Vain. – MALÍČEK & PALICE (2013)
- Rinodina fimbriata* Körb. – HALDA (2017)
- Rinodina malangica* (Norman) Arnold – PALICE et al. (2018)
- Rinodina subpariata* (Nyl.) Zahlbr. – MALÍČEK & PALICE (2013; as *Rinodina degeliana* Coppins)
- Rinodina trevisanii* (Hepp) Körb. – this paper
- Sarcogyne praetermissa* K.Knudsen & Kocourk. – KNUDSEN & KOCOURKOVÁ (2018)
- Schismatomma umbrinum* (Coppins & P.James) P.M.Jørg. & Tønsberg – MALÍČEK et al. (2014)
- Sclerophora amabilis* (Tibell) Tibell – MALÍČEK et al. (2014)
- Scutula dedicata* Triebel, Wedin & Rambold – KOCOURKOVÁ (2000), MALÍČEK et al. (2014)
- Sporodictyon terrestre* (Th.Fr.) Savić & Tibell – HALDA (2017)
- Staurothele clopima* (Wahlenb.) Th.Fr. – HALDA et al. (2011)
- Stereocaulon symphycheilum* I.M.Lamb – PALICE et al. (2018)
- Strigula affinis* (A.Massal.) R.C.Harris – VONDRÁK et al. (2016)
- Strigula glabra* (A.Massal.) V.Wirth – this paper
- Strigula jamesii* (Swinscow) R.C.Harris – PALICE et al. (2018)
- Strigula ziziphi* (A. Massal.) Cl.Roux & Sérus. – PALICE et al. (2018)
- Thelidium fumidum* (Nyl.) Hazsl. – HALDA (2015)
- Thelocarpon citrum* (Wallr.) Rossman – MALÍČEK et al. (2014)
- Thelocarpon imperceptum* (Nyl.) Migula – MALÍČEK et al. (2014)
- Trapelia elacista* (Ach.) Orange – reinstation of the taxon (ORANGE 2018); published many times from the Czech Republic on the varietal level and subsumed under *Trapelia coarctata* (see VĚZDA & LIŠKA 1999)
- Usnea wasmuthii* Räsänen – ŠOUN et al. (2015b)
- Verrucaria breussii* Diederich & van den Boom – MALÍČEK et al. (2014)
- Verrucaria subcincta* Nyl. – this paper

*Verrucaria fuscovelutina* Servít – MALÍČEK et al. (2014)  
*Verrucaria memnonia* (Flot. in Körb.) Arnold – STEINOVÁ et al. (2013)  
*Verrucaria viridigrana* Breuss – VONDRÁK et al. (2016)  
*Xanthomendoza huculica* (S.Y.Kondr.) Diederich – this paper  
*Xanthoparmelia delisei* (Duby) O.Blanco & al. – MALÍČEK & VONDRÁK (2016)  
*Xanthoria papillifera* (Vain.) Poelt – MALÍČEK et al. (2014)  
*Xylographa pallens* (Nyl.) Harm. – MALÍČEK et al. (2014)  
*Xylographa soralifera* Holien & Tønsberg – this paper  
*Xylographa trunciseda* (Th.Fr.) Minks ex Redinger – SPRIBILLE et al. (2014)

**Appendix 2:** List of species excluded from the national checklist. Records from this paper are included as well.

*Ainoa geochroa* (Körb.) Lumbsch & I.Schmitt – synonymized with *A. mooreana* (Carroll) Lumbsch & I.Schmitt (RESL et al. 2015)  
*Buellia violaceofusca* G.Thor & Muhr [reported as new to the Czech Republic by ŠOUN et al. (2015b)] – recently synonymized with *Lecanographa amylacea* (Ehrh. ex Pers.) Egea & Torrente (ERTZ et al. 2018)  
*Candelariella subdeflexa* (Nyl.) Lettau – this paper  
*Gyalecta bififormis* (Körb.) H.Olivier – reported as new to the Czech Republic by PEKSA (2011), reidentified as *Ramonia luteola* (PALICE et al. 2018)  
*Hymenelia melanocarpa* (Kremp.) Lutzoni – incorrect identification (SVOBODA et al. 2014)  
*Lecanora circumborealis* Brodo & Vítik. – incorrect identification (MALÍČEK 2014)  
*Lecanora reagens* Norman – this paper  
*Lecanora rugosella* Zahlbr. – synonymized with *L. chlarotera* Nyl. (MALÍČEK 2014)  
*Lecanora subrugosa* Nyl. – synonymized with *L. argentata* (Ach.) Malme (MALÍČEK 2014)  
*Lecanora tephraea* Körb. – synonymized in this paper with *Lecanora cenisia*  
*Lecidea subdiffracta* (Arnold) Lettau – incorrect identification (SVOBODA et al. 2014)  
*Polyblastia brunnensis* Vězda – synonymized in this paper with *Thelidium zwackhii*  
*Polyblastia gothica* Th.Fr. – a lichenicolous fungus (HAFELLNER 2011)  
*Porina hibernica* P.James & Swinscow – a change in the species circumscription, Czech populations belong to *P. pseudohibernica* (TRETIACH 2014)  
*Rhizoplaca chrysoleuca* (Sm.) Zopf – incorrect identification, Czech material belongs to *Rhizoplaca subdiscrepans* (Nyl.) R.Sant. (MALÍČEK et al. 2014)  
*Trapeliopsis aeneofusca* (Flörke ex Flot.) Coppins & P.James – synonymized with *T. gelatinosa* (Flörke) Coppins & P.James (RESL et al. 2015)  
*Usnea substerilis* Motyka [reported as new to the Czech Republic by MALÍČEK 2013a] – synonymized with *Usnea lapponica* Vain., for which the name *Usnea perplexans* Stirt. has been supposed as the oldest name (MARK et al. 2016)  
*Verrucaria atroviridis* Servít ex J.Nowak & Tobol. – synonymized with *V. aquatilis* Mudd (KRZEWICKA 2012)  
*Xylographa minutula* Körb. – synonymized with *X. parallela* (SPRIBILLE et al. 2014)