Lichens new for Slovakia collected in the National Park Muránska planina (W Carpathians)

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Abstract – Seventeen new lichen taxa for Slovakia from the National Park Muránska planina (Central Slovakia, W Carpathians) are reported and shortly commented upon. They include both widely distributed, presumably undercollected, pioneer or ephemeral lichens (*Absconditella trivialis*, *Arthonia muscigena*, *Gyalidea diaphana*, *Micarea lithinella*, *Trapeliopsis glaucolepidea*, *Vezdaea rheocarpa*) as well as lichenogeographically interesting records (*Buellia violaceofusca*, *Calicium montanum*, *C. pinastri*, *Caloplaca lucifuga*, *Chaenotheca sphaerocephala*, *Lecanora exspersa*, *Rinodina polysporoides*, *Verrucaria geophila*, *V. hegetschweileri*). *Protoparmelia hypotremella* and *Scoliciosporum schadeanum* are probably partly undercollected species with a subatlantic bias and are apparently widespread in Slovakia, though not common.

Key words – lichenized fungi, diversity, threat, lichenogeography

Introduction

The National Park Muránska planina (Central Slovakia, W Carpathians) is a sparsely inhabited and substantially forested area (81% of total area of the park, 65% of its protective zone; cf. Šmídt 2001). It shelters sensitive lichens of untouched natural habitats as well as of man-made/induced semi-natural habitats (road-ditches, alleys). The most spectacular natural ecosystems include exposed limestone/marble outcrops and cliffs forming ridges of the plateau (e.g. Poludnica) or topping the mountains Vrbiarka and Cigánka (hosting e.g. stenoendemic shrub *Daphne arbuscula* Čelak.). Important forest habitats cover old-growth deciduous forests – beech forests (e.g. Hrdzavá, Poludnica), oak forests on warmer slopes (Poludnica, Šiance and Cigánka), ravine forests with lime-trees, ashes and sycamores (Hrdzavá) and old-growth boreal forests on N slopes of Mt. Kľak. A raised peat-bog with *Pinus mugo* – a unique ecosystem in the National Park – occurs in the valley Hrdzavá dolina. The

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preservation of natural habitats is high, which is well documented by the relatively rich occurence of the endangered epiphytic lichen *Lobaria pulmonaria* (Guttová & Palice 2001). The lichen flora of Muránska planina as a whole is exceptionally rich and unique vis-a-vis the above mentioned habitat richness and the fact that both montane and thermophilic species meet here on relatively small territory. The recent research focused on selected valuable small-scale areas in the SW part of the National Park and added 42 new species for Slovakia (Guttová & Palice 1999, 2002, 2004), i.e. species not included in the latest Checklist of Slovak lichens (Pišút et al. 1998, Bielczyk et al. 2004). Additional novelties originate either from other sites of the National Park or from already published inventories but were determined ex post after the results had been published.

Materials and methods

Localities listed in the section Specimens examined are fully cited according to the labels. Altitude is given in meters above sea level. The specimens are deposited in PRA (followed by Z. Palice's collection numer), SAV and private collections of J. P. Halda (hb. Halda) and Ch. Printzen (hb. Printzen). The acronyms used in the text follow Holmgren et al. (1990).

Results

Taxa treated here represent both frequent and rare lichens. Some of the lichens are probably common, but so far overlooked in Slovakia and additional findings are expected. On the other hand there are also species of natural/relic habitats (i.e. lichens collected in oak forests, calcareous outcrops in open grasslands) with apparently restricted distribution in Slovakia. The species may be divided into six groups according to ecological/distributional characteristics:

a) ephemeral and pioneer, widely distributed but undercollected species occurring in transient habitats (*Absconditella trivialis*, *Arthonia muscigena*, *Gyalidea diaphana*, *Micarea lithinella*, *Trapeliopsis glaucolepidea*, *Vezdaea rheocarpa*);

b) boreal/montane species – occurring in peat-bogs and old-growth coniferous forest in the N part of Muránska planina (*Calicium pinastri*, *Chaenotheca sphaerocephala*, *Lecanora exspersa*);

c) suboceanic-temperate old forest species (*Buellia violaceofusca*, *Caloplaca lucifuga*);

d) southern/subatlantic taxa with submediterranean distribution not known from Northern Europe (*Calicium montanum*, *Rinodina polysporoides*, *Verrucaria geophila*);

e) putatively suboceanic species (*Protoparmelia hypotremella*, *Scoliciosporum schadeanum*);

f) poorly known taxa so far recorded only few times world-wide (*Verrucaria hegetschweileri*).

The species

Absconditella trivialis (Willey ex Tuck.) Vězda

Ephemeral lichen typically growing on sandy/loamy soil, e.g. at road-ditches. It is undercollected, however as it is an acidophilic species it is apparently missing in E part of the National Park which is a purely limestone area.

SPECIMEN EXAMINED. Závadka nad Hronom. the valley of Hronec, ca 300m W of Pätina game-keeper house (confluence with the Dudlavka), N 48°47'10-15", E 19°56', on sandy soil at road-side, alt. 810-820m, 5.V. 2001 Š. Bayerová, A. Guttová, J. Halda & Z. Palice (PRA 5309).

Arthonia muscigena Th. Fr.

Small, apparently ephemeral lichen, which is widely overlooked. It occupies a wide range of substrates in moist, microclimatically suitable habitats. Recently Fryday (2004) forwarded nomenclature questions resulting from a thorough study of original material of *Lecidea lapidicola* Taylor, which is referable to *A. muscigena*.

SPECIMENS EXAMINED. Zlatno. The Havraník valley - a forest clearing, N 48°48'15-30", E 20°03'15-20", on decaying wood in the bedrock of the brook, *Micarea misella* associated, alt. 800-900m, 4.V. 2001 Š. Bayerová, J. Halda & Z. Palice (PRA 5471). **Muráň.** Javorníková dolina valley - the bottom (N 48°44', E 20°01'25"), on bark of *Fraxinus*, alt. 425-430m, 27.X. 2001 A. Guttová & Z. Palice (PRA 5564); ibid., on bark of *Corylus*, alt. 460m, 8.V. 2001 A. Guttová, J. Halda & Z. Palice (PRA 5614). **Závadka nad Hronom.** The valley Za Nehovým, mouth of a side valley parallel with the valley Teplá dolina trending towards the cave Mochnatá (NNR Veľká Stožka), bark of *Acer pseudoplatanus* and decayed bryophytes growing on it, alt. ca 840m, 17.X. 2002 Š. Bayerová, A. Guttová & K. Kresáňová (SAV).

Buellia violaceofusca Thor & Muhr

Described from S Sweden and only tentatively placed into the genus *Buellia* (Thor & Muhr 1991). Known only in sterile state having no secondary substances. Recognized by pale grey thallus and violet brown soralia. Characteristic for dry bark of old deciduous trees, especially *Quercus*. Reported also from Austria (Poelt 1994), Estonia (Thor & Nordin 1998), Belgium (Sérusiaux et al. 1999) and British Isles, where it is considered a Near Threatened species (Woods & Coppins 2003) as well as in Sweden (Gärdenfors 2005).

SPECIMEN EXAMINED. Muráň. Nature Reserve Poludnica, NNW-SSE oriented crest (N 48°45'40-45", E 20°02'03-05"), on bark of old *Quercus*, alt. 850m, 14.V. 2002 A. Guttová, J. Halda & Z. Palice (PRA 6264, cum *Caloplaca lucifuga*).

Calicium montanum Tibell

The lichen superficially resembles a *Cyphelium* species, as the stalk is very short and hidden in the thick, well developed, glaucous thallus. It could be mistaken also for a short-stalked variety of *Calicium quercinum*, which however differs distinctly by its spiral ascospore ornamentation. In all cases it formed extensive patches on very hard oak wood. The species reaches nothernmost European limit in the area, similarly like the epiphytes *Leptogium hildenbrandii* and *Physconia servitii* (Pišút 1990), saxicolous *Caloplaca adriatica* (Guttová & Palice 2004) or below treated *Verrucaria geophila*. *Calicium montanum* was recently described from mountains of southern Europe reaching northwards to Germany (Tibell 1999b) and Switzerland (Scheidegger et al. 2002). In Spain only four localities were recorded recently and it is regarded as an Endangered species there (Martínez et al. 2003). Known also from N Africa and Northern America (Kolb & Spribille 2001). Except *Quercus* it may also grow on hard wood of *Castanea* and *Pinus*.

SPECIMENS EXAMINED. Muráň. Mt. Šiance - S-SSE slope, light scree forest (N 48°46'10", E 20°04'30"), on hard wood of *Quercus*, alt. ca 860m, 15.V. 1998 Z. Palice, det. L. Tibell (PRA 327); ibid., on hard wood of snag of *Quercus*, alt. 940-1000m, 7.V. 2001 Š. Bayerová, J. Halda & Z. Palice (PRA 5301); ibid.: a crest ENE of Šiance, N 48°46.45', E 20°05.62', well-lit deciduous forest (*Quercus*, *Tilia*, *Fraxinus*) on SSE facing slopes, on wood of branch of living oak, alt. 860m, 26.V. 2005 Z. Palice (PRA 9031); Nature Reserve Poludnica, NNW-SSE oriented crest (N 48°45'29", E 20°02'01"), on wood of *Quercus* snag, alt. 690-700m, 24.V. 2003 A. Guttová, J. Halda, Z. Palice, C. Printzen & I. Schmitt (hb. Halda 4814, 5670, PRA 6309, hb. Printzen).

Calicium pinastri Tibell

This is a typical lichen of open boreal forest. It preferably grows on flaking bark of younger and middle-aged (faster growing) conifers, mostly pines, more rarely deciduous trees (*Betula*) or occasionally also on wood. Associated lichen taxa at the Slovak locality include other boreal-montane epiphytic/epixylic lichens, e.g. *Calicium glaucellum*, *C. trabinellum*, *Lecidea nylanderi* and *Pycnora sorophora*. *C. pinastri* was described from boreal forests in Finland, the Czech Republic and Germany (Tibell 1999) and later discovered also in Estonia (Jüriado et al. 2000), Sweden (Jonsson 2003) and Austria (Berger & Priemetzhofer 2005). One of the two Slovak specimens (hb. Palice 4044) was already published in a phylogenetic analysis on calicioid lichens based on ITS rDNA (Tibell 2003), where *Calicium pinastri* shows a close relationship to the superficially dissimilar *C. montanum*. No details are provided for the Slovak specimen and it was mistakenly indicated to originate from the Czech Republic.

SPECIMENS EXAMINED. Muráň. The Hrdzavá valley, peat-bog "V machoch", ca N 48°44'55"- 48°45', E 19°59'50", on bark of *Larix decidua*, alt. 650-700m, 18.X.1999 A. Guttová & Z. Palice (PRA 5071); ibid. 28.X. 2000 A. Guttová, J. Halda & Z. Palice, conf. L. Tibell (PRA 4044).

Caloplaca lucifuga Thor

This sterile sorediate lichen is generally confined to dry fissures of old oaks both in wood- and parklands (Wirth 1995). It was rarely collected also on *Ulmus glabra* (Berger & Türk 1993), *Castanea* (Poelt 1994), *Aesculus hippocastanum* (Arup et al. 1997), *Tilia* (Türk & Wunder 1999), *Carpinus* (Fałtynowicz 2003) or *Acer pseudoplatanus* (Palice et al. 2003). Characterized by immersed thallus and well-delimited ochre concave soralia. It is often associated with calicioid lichens (Wirth 1995). There are scattered reports throughout Europe, most of them originate from southern Scandinavia – the northernmost distributional limit of *Quercus* – its main host tree. *Caloplaca lucifuga* is regarded an indicator of long forest continuity there (Arup et al. 1997). In Finland treated as a critically endangered species (Rassi et al. 2001). In Austria, Switzerland and Denmark it is ranked among endangered lichens (Türk & Hafellner 1999, Scheidegger et al. 2002, Søchting & Alstrup 2002). In Great Britain it is considered a Vulnerable (Woods & Coppins 2003) and a Near Threatened in Sweden (Gärdenfors 2005).

SPECIMENS EXAMINED. Muráň. Mt. Šiance - S-SW slope, light deciduous forest with *Quercus* predominating (N 48°46'00-05", E 20°04'20"), on dry bark of *Quercus*, alt. 940-1000m, 7.V. 2001 Š. Bayerová, J. Halda & Z. Palice (PRA 5305); Nature Reserve Poludnica, NNW-SSE oriented crest (N 48°45'40-45", E 20°02'03-05"), on bark of old *Quercus*, alt. 850m, 14.V. 2002 A. Guttová, J. Halda & Z. Palice (PRA 6264); ibid., alt. 745m, 28.V. 2005 Z. Palice (PRA 8876).

Chaenotheca sphaerocephala Nádv.

Described during second World War from Chile and known only from the type locality for a long time. Recently a number of collections from humid forests were attributed to this taxon, and it was subsequently reported from various sites of both hemispheres (Tibell 1998, 1999a, Palice 1999, Selva & Tibell 1999, Holien 2001, Titov 2001). In Europe, the species occurs mainly in natural old-growth boreal forests (Palice 1999, Tibell 1999a, Santesson et al. 2004). The Slovak specimen was collected in an old-growth humid stand on a steep slope. The ecology (bark of very shaded parts at very base of old spruce trees) fits well to previously reported records as its chemistry does. Finely granular thalli contain traces of obtusatic and barbatic acids, which corresponds with Tibell (1999a). These substances are produced also by *Ch. hygrophila* and *Ch. stemonea* or *Lepraria obtusatica* (Tibell 1999a, Tønsberg 1992), but the species feature different anatomical characters. In the field it could be mistaken for *Chaenotheca gracilenta* which may occur in similar habitats. These two species however are readily distinguishable by photobionts and ascospore size. According to Tibell (in litt.) the European specimens slightly differ from the type collection and both putative taxa are currently under taxonomic study. It is red-listed in Sweden as a Vulnerable species (Gärdenfors 2005).

SPECIMEN EXAMINED. Muráň. Mt. Kľak [1409] - N facing steep slopes around Machnatá cave, ca 48°47' N, 19°58' E, at base of old *Picea*, alt. 1200-1300m, 5.V. 2000 A. Guttová, J. Halda, V. Orthová & Z. Palice (hb. Halda 4405, PRA 4669).

Gyalidea diaphana (Nyl.) Vězda

This lichen is usually reported from natural sites on submerged stones in streams and humid places (e.g. Purvis et al. 1992, Santesson et al. 2004), however it also may occupy seminatural or anthropogenic habitats like e.g. mine quarries or road-ditches (Anonymus 2002), where it is growing on free-lying pebbles on the ground and accompanied e.g. by *Trapelia* sp. div. and *Micarea lithinella*. This is also the case of Slovak locality. Similar ecology was observed by the authors also in the Bohemian Forest and eastern Turkey.

SPECIMEN EXAMINED. Závadka nad Hronom. Fabova dolina valley, a managed spruce forest along forestry-trail traverse 0.75km NNW of the saddle "Burda", 48°46'10" N, 19°54'10" E, on half-immersed siliceous pebbles at the trail-side, alt. 1100m, 5.V. 2001 Š. Bayerová, A. Guttová, J. Halda & Z. Palice (PRA 5470).

Lecanora exspersa Nyl.

Rather poorly known epiphytic/epixylic sorediate species described from Retezat Mts. in Romania (Nylander 1875, Hazslinszky 1884; original material deposited in W); known from Montenegro (Vězda 2000), Switzerland (Clerc 2004), Austria (Wittmann & Türk 1989), Germany (Türk & Wunder 1991, Printzen et al. 2002) and Slovenia (Mrak et al. 2004). More localities are reported from Finland (cf. Santesson et al. 2004). Although red-listed, in the Alps it is not a rare lichen, ranked among species of Least concern in Switzerland (Scheidegger et al. 2002) and Vulnerable species in Austria (Türk & Hafellner 1999). In Muránska planina the extensive white-grey sorediate (not continuously) patches with dispersed, often pruinose apothecia covered almost whole the trunk of a young larch in raised-bog but not observed anywhere else around. Thallus reacts K+ yellow and contains atranorin and 1-2 unidentified fatty acids not belonging to roccellic acid (Tønsberg et al. 2001). Similar sorediate species occuring in Europe include *L. farinaria* Borrer and *L. mughosphagneti* Poelt & Vězda. Both species are usually sterile and their soralia often become soon confluent (Lumbsch et al. 1997, Tønsberg et al. 2001), and they contain atranorin like *L. exspersa*. In addition, *L. farinaria* contains roccellic acid (Tønsberg 1992, Tønsberg et al. 2001), while *L. mughosphagneti*, producing protocetraric acid, does not contain any fatty acid (Lumbsch et al. 1997). None of these species is known from Slovakia so far.

SPECIMENS EXAMINED. Muráň. The Hrdzavá valley - peat-bog "V machoch", ca 48°44'55"- 48°45' N, 19°59'50" E, on bark of rather young *Larix decidua*, alt. 700-750m, 18.X.1999 A. Guttová & Z. Palice, conf. H. T. Lumbsch (PRA 2209, SAV); ibid., 28.X. 2000 A. Guttová, J. Halda & Z. Palice (hb. Halda 4542, PRA 4051).

Micarea lithinella (Nyl.) Hedl.

Widely distributed lichen, presumably nearly cosmopolitan. It grows as a pioneer on siliceous rocks, such as freshly exposed stones and small pebbles on the ground. In the area it occurs exclusively in W part of the national park which is siliceous. It is known also from NE Slovakia.

SPECIMENS EXAMINED. Tisovec. The Rimava valley, by the green-marked tourist footpath, ca 4,5km S of Mt. Fabova hoľa [1439], N 48°44', E 19°53'30", on silic. underhang together with *Micarea sylvicola*, alt. ca 750m, 13.V. 1998 Z. Palice (PRA 369); ibid., N 48°44'00", E 19°53'50", on loose silic. at road-cutting, alt. ca. 600m, 13.V. 1998 Z. Palice (PRA 441); Mt. Fabova hoľa [1439] - SW slopes, pasture ca 0.5km ENE of the point 1092.4m (N 48°45'55", E 19°52'), on shaded side of fresh solitary silic. boulder, alt. ca 1100m, 14.V. 1998 Z. Palice (PRA 409). **Závadka nad Hronom.** Fabova dolina valley, a managed spruce forest along forestry-trail traverse 0,75km NNW of the saddle "Burda", N 48°46'10", E 19°54'10", on half-immersed silliceous pebbles at the trail-side, alt. 1100m, 5.V. 2001 Š. Bayerová, A. Guttová, J. Halda & Z. Palice (PRA 5307).

Protoparmelia hypotremella van Herk, Spier & V.Wirth

The species may be overlooked for a stunted *Hypocenomyce caradocensis*, which is often found also in sterile state. In point of fact, *P. hypotremella* was not known fertile until report by Brodo & Aptoot (2005). The identity was usually revealed thanks to the parasymbiotic calicioid species *Sphinctrina anglica* Nyl. overgrowing its thallus. According to Aptroot et al. (1997) and Nordin & Hermansson (1999) this parasymbiont may grow on the thallus of both *P. hypotremella* and closely related *P. oleagina* (Harm.) Coppins. *P. hypotremella* differs from *P. oleagina* by its paler thallus (greyish to pale olivaceous to buff colour) consisting of dispersed isidia-like granules to squamules while *P. oleagina* has darker (brown to dark brown colour with greyish to olivaceous hue), more continuous thallus and true isidia. Both species contain lobaric acid, however only *P. hypotremella* is UV+ (Aptroot et al. 1997, Nordin & Hermansson 1999, Brodo & Aptroot 2005). It could be confused also with *P. ochrococca*, which unlike *P. hypotremella* produces round to hemispherical, pale to dark reddish brown squamules, lobaric acid is absent. It is not parasitized by *Sphinctrina*. Slovak material shows a distinct UV+ positive reaction and matches well the descriptions of *P. hypotremella* by the authors cited above.

SPECIMENS EXAMINED. Muráň. Nature Reserve Poludnica, NNW-SSE oriented crest (N 48°45'36", E 20°02'01"), on wood of bole of *Quercus* snag, alt. 790m, 24.V. 2003 A. Guttová, J. Halda, Z. Palice, C. Printzen & I. Schmitt (hb. Printzen, PRA 6298, SAV – cum *Sphinctrina anglica*).

Rinodina polysporoides Giralt & H.Mayrhofer

This is a species distributed in mountains of Mediterranean reaching Central Europe (Giralt & Mayrhofer 1994), where it is known so far from Slovenia, Switzerland and Austria. Both in Austria and Switzerland it is treated as a Vulnerable

species (Türk & Hafellner 1999, Scheidegger et al. 2002). The presented collections represent the northernmost known localities of the taxon. Another species of *Rinodina* with polysporic asci occurring in Central Europe – *R. polyspora* – is a boreal-montane lichen with *Physcia*-type ascospores while *R. polysporoides* has the *Dirinaria*-type of ascospores.

SPECIMENS EXAMINED. Muráň. W-slope of Žabica hill (1km SW of Muráň), a row of middle-aged *Juglans*-trees on a pasture, on bark of solitary *Juglans*, alt. 470m, 12.V. 1999 A. Guttová, J. Halda & Z. Palice, conf. H. Mayrhofer (PRA 2076); ibid. 29.X.2000 A. Guttová & Z. Palice (PRA 4023); "Na Kopanke" - a walnut orchard near forest margin (Poludnica reserve) ca 2km NW of Muráň village, SE foot of the point Vyšný Kostolec [1144,3], N 48°45.02', E 20°01.73', on twig of *Juglans*, alt. 440-450m, 28.V.2005 Z. Palice (PRA 8934).

Scoliciosporum schadeanum (Erichs.) Vězda

The species is doubtfully distinct from the later described but much frequently recorded *S. pruinosum* (P. James) Vězda, which allegedly differs in (richer) development of epipsamma in hymenium/exciple and by more richly branched hamathecium. The species has subatlantic distribution in Europe. Although it is easily overlooked the species may well be spreading during last decades as indicated by more recent finds in different parts of the Czech Republic (Palice et al. 2003).

SPECIMENS EXAMINED. Zlatno. 2km S of Zlatno, deciduous forest on bank of Havraník brook, on bark of *Acer pseudoplatanus*, alt 900-950m, 10.V. 1999 J. Halda & Z. Palice (hb. Halda 3221). **Muráň.** At forest-roadside on tourist red-marked footpath, ca 4km N of Muráň village (N 48°46'30", E 20°03'20"), on bark of *Fagus*, alt. 950m, 11.V. 1998 Z. Palice (PRA 299). **Závadka nad Hronom.** The valley of Hronec (Fabova dolina valley) - the upper part, N 48°46'40", E 19°54'30", on bark of *Acer pseudoplatanus*, alt. 1000m, 5.V. 2001 Š. Bayerová, A. Guttová, J. Halda & Z. Palice (PRA 5462).

Trapeliopsis glaucolepidea (Nyl.) G.Schneider

The collected specimen represents a diminished lignicolous form sometimes called *Trapeliopsis percrenata*. It is apparently a widespread lichen in humid regions of Slovakia. In Central Europe it favours peaty soils, humus and decaying wood in humid forests and may be overlooked for *Cladonia* squamules as the apothecia are only rarely developed. The species contains an UV+ blue-white unknown substance. It usually forms fine pale-creamy, on exposed sites bluish grey orbicular soralia which later merge to form marginal soralia. It may readily be distinguished from *Cladonia* squamules by a transient KC+ red spot reaction.

SPECIMEN EXAMINED. Muráň. Nature Reserve Veľká Stožka, Mt. Kľak [1409] - N facing slopes above Machnatá cave, N 48°46.92', E 19°57.69', on decaying wood (vertical part) of (?)*Picea* stump, alt. 1305-1310m, 27.VIII.2005 Z. Palice (PRA 8910).

Verrucaria geophila Zahlbr.

A terricolous species with most localities in the Mediterranean and Balkan. So far the northernmost record was from Austria (Wittmann & Türk 1994). It is characterized by relatively large perithecia (ca 0.35–0.5 mm) and ascospores (24–33 × 9.5–13 μm), and a well developed areolate/subsquamulose glossy olivaceous grey/green thallus.

SPECIMENS EXAMINED. Muránska Huta. Valley of Trsteník, by road-side, over mosses on ground, alt. 900m, 23.IX.1995 Z. Palice, det. O. Breuss (PRA s.n.). **Muráň**. Mt. Vrbiarka - SE exposed rocks above Javorníková valley (ca. N 48°44'30", E 20°00'), on humus and plant debris at rather steep calcareous rock, alt. 1000-1050m, 27.X.2000 A. Guttová, J. Halda & Z. Palice (PRA 4704).

Verrucaria hegetschweileri Körber

A poorly known corticolous species of *Verrucaria* described from Switzerland, and afterwards recorded only from the Czech Republic (Breuss 1998) and Belgium (Sérusiaux et al. 2003).

SPECIMEN EXAMINED. Zlatno. Valley of Sviniarka brook, nature reserve "Zlatnica", N 48°49'26", E 20°05'41", on weathered bark of old *Fagus*, alt. 795m, 25.X.2001 Z. Palice, det. O. Breuss (PRA 5749).

Vezdaea rheocarpa Poelt & Döbbeler

In the area of Muránska planina 4 species of the genus *Vezdaea* were collected so far (*V. aestivalis*, *V. retigera*, *V. rheocarpa*, *V. stipitata*). All the species are minute, easily overlooked ephemeral lichens sharing a similar ecology. *V. rheocarpa* is reported here as new to Slovakia. It is distinguished from related species by microscopic morphological characters of the thallus and apothecia (see Purvis et al. 1992).

SPECIMENS EXAMINED. Muráň. Mt. Veľký Cigán - SE slope, at yellow tourist footpath, ca 0.4-0.5km E of the point 1218m, N 48°46'55", E 20°01'40"), on bare sandy soil among roots of an eradicated tree, alt. 1120-1130m, 11.V.1998 V. Orthová & Z. Palice (PRA 417); By red tourist footpath ca 0,5km W of abandoned gamekeeper-house "Maretkino", ca N 48°46', E 20°01', on detritus at forest-roadside, alt. 980m, 12.V.1997 A. Guttová & Z. Palice (PRA 1753).

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