

CATATHELASMA

No. 2

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BIODIVERSITY of FUNGI

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CONSERVATION of FUNGI

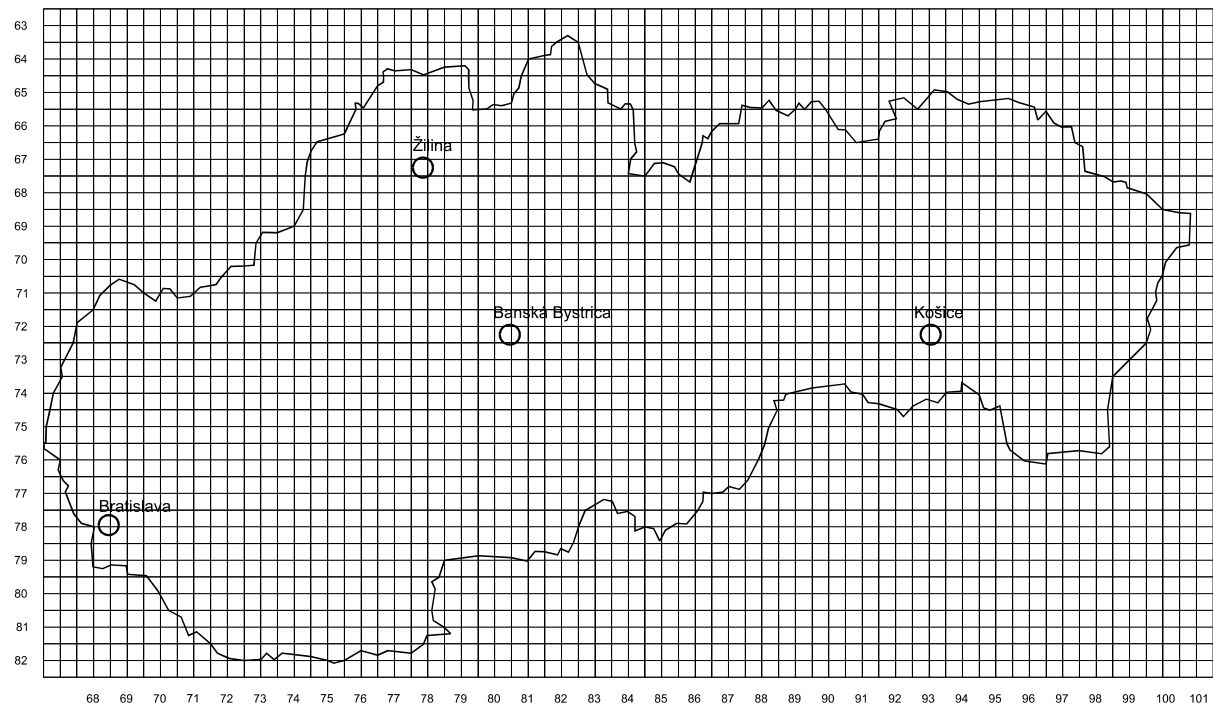
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Grid cells are bounded with geographical coordinates (longitude and latitude). Boundaries of basic grid cells - squares represent 10' long. (west to east) x 6' lat. (north to south), an area of ca 12 x 11.1 km which covers ca 133 km². The square code consists of four-digit number, a combination of two-digit designator of horizontal line and two-digit designator for vertical row. Each square can be divided (for more detailed mapping) to four quadrants 5' x 3' which are coded by letters a (NW), b (NE), c (SW), d (SE). The quadrant code consists of four-digit number (square code) and the letter of particular quadrant

NEW RECORDS OF THREE MYCENOID AND MARASMIOID FUNGI (TRICHOLOMATACEAE) IN SLOVAKIA

VLADIMÍR ANTONÍN¹

Key words: *Hemimycena angustispora*, *Marasmius favrei*, *Xeromphalina fraxinophila*, Slovakia, check-list

During the several last years of field research in Slovakia and in preparation of a European monograph of the genera belonging to the tribe *Mycenae* (*Mycena* excl., Antonín & Noordeloos in prep.), three interesting agaricaceous fungi were collected or found in herbarium. Since none of these taxa appear in the Slovak check-list (Lizoň & Bacigálová, 1998), they presumably represent new records in the Slovak Republic.

Microscopical features are described from material mounted in Melzer's reagent, Congo Red, and KOH. For basidiospores the following factors are used: E (quotient of length and width in any one spore); Q (mean of E-values). Authors of fungal names are cited according to Kirk and Ansell (1992).

****Hemimycena angustispora*** (P. D. Orton) Singer (Fig. 1)

Pileus 2-5 mm broad, conical-convex to convex-applanate, with conical-warty papilla at centre, then sometimes with a small papilla within a small depression, with inflexed obtuse margin, hygrophanous, translucently striate, apparently glabrous but distinctly pubescent under lens, white. Lamellae well-developed, reaching the margin of the pileus, never vein-like, moderately crowded to fairly distant, L = 6-11, l = 0-1, arcuate-adenate to arcuate-decurrent, narrow, sometimes forked, white, with concolorous edge. Stipe 5-10 x 0.2-0.5 mm, cylindrical, straight, never with bulbous base, entirely finely pubescent, white, then tinged pale brown towards base, with strigose hairs at base. Context very thin, white.

Basidiospores 8.5-11.5 x 2.0-3.0 µm, E = 3.5-4.5, Q = 4.1, narrowly cylindrical to fusoid, mostly attenuated towards apiculus, usually in tetrads in microscopical preparations of dried specimens, hyaline, non-dextrinoid. Basidia 17-20 x 5.0-7.0 µm, 4-spored, clavate. Basidioles 10-21 x 3.0-7.0 µm, cylindrical, clavate. Hymenial cystidia absent or very scattered, similar to pileocystidia, found along lamellar edge. Hymenophoral trama made up of cylindrical, ellipsoid, fusoid to inflated,

¹ Moravian Museum, Dept. of Botany, Zelný trh 6, CZ-659 37 Brno, Czech Republic; vantonin@mzm.cz

thin-walled, hyaline, non-dextrinoid, 3.0-25 μm wide elements. Pileipellis a cutis, consisting of radially arranged, cylindrical, thin- to slightly thick-walled, up to 10 μm wide hyphae. Pileocystidia 25-41 x 3.5-7.0 μm , awl-shaped, usually distinctly tapering towards acute to subacute apex, often slightly thick-walled, at least in basal part. Stipitipellis a cutis of parallel, cylindrical, slightly thick-walled, up to 5 μm wide hyphae with pale yellow walls in KOH; with scattered projections or \pm erect terminal cells.

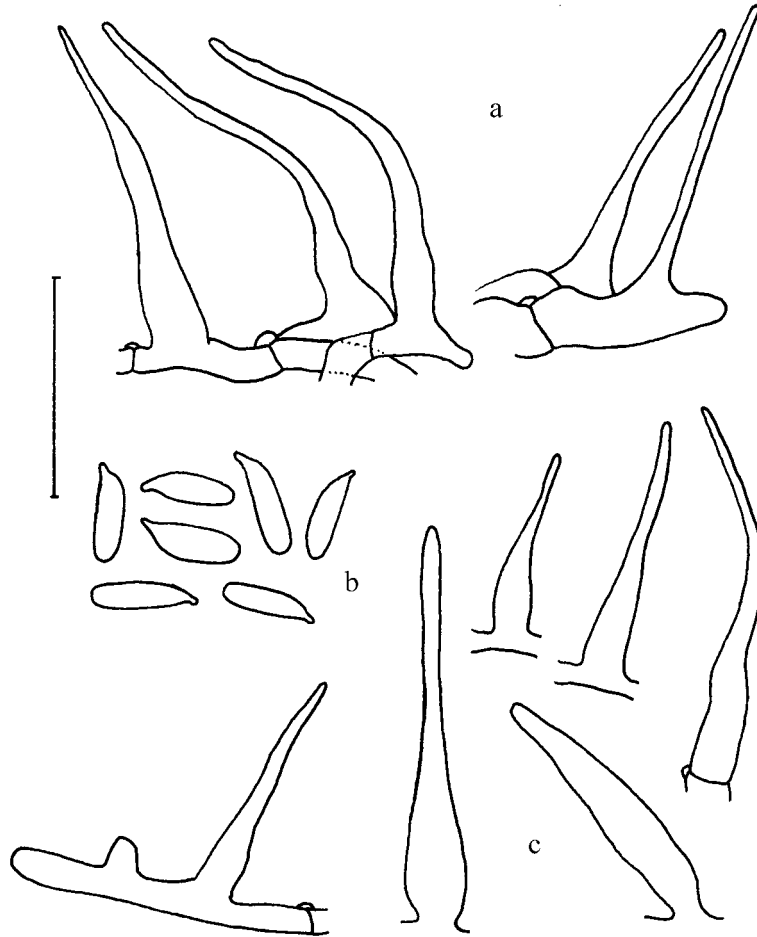


Fig. 1. *Hemimycena angustispora*: a) pileipellis, b) basidiospores, c) caulocystidia. Scale bar = 20 μm .

Caulocystidia 17-35 x 3.0-6.0 μm , awl-form, usually gradually tapering towards acute, rarely obtuse apex, often irregularly shaped, with hyaline, slightly thickened walls. Clamp-connections present in all tissues.

Hab. Single or in small groups, on remnants of herbaceous plants.

Locality: Slovakia, Belianské Tatry Mts., Tatranská Kotlina, Skalné vráta, 29 Aug. 1998 leg. V. Antonín 98.86 (BRNM 648828).

Hemimycena angustispora is distinguished in having small carpophores, distinctly papillate pileus, narrow spores, (almost) absent hymenial cystidia, and present awl-form pileo- and caulocystidia. From the related *H. mauretanica* complex it differs by its white to sordid white pileus, which appears glabrous to the naked eye, and particularly by the well-developed lamellae which reach the margin of the pileus, and pale brownish or yellowish brownish tinges in the basal part of the stipe.

Initially this fungus was described by Jossierand (1937) as *Omphalia angustispora* Joss., which represents an invalid name (missing Latin diagnosis, Art. 36.1). Bon (1983) validated the epithet *angustispora* of Jossierand by designating another type specimen than the one selected by Jossierand (1937). However, it represents a later synonym of *H. angustispora* P. D. Orton.

A collection from Slovakia published here differs from the type specimen in having smaller pileo- and caulocystidia [pileocystidia 35-91 x 4.5-8.0(-10.0) μm , caulocystidia (16-)25-78 x 3.5-8.0(-10.0) μm in type specimen], and by the absence of cheilocystidia in the type specimen. Other features agree very well.

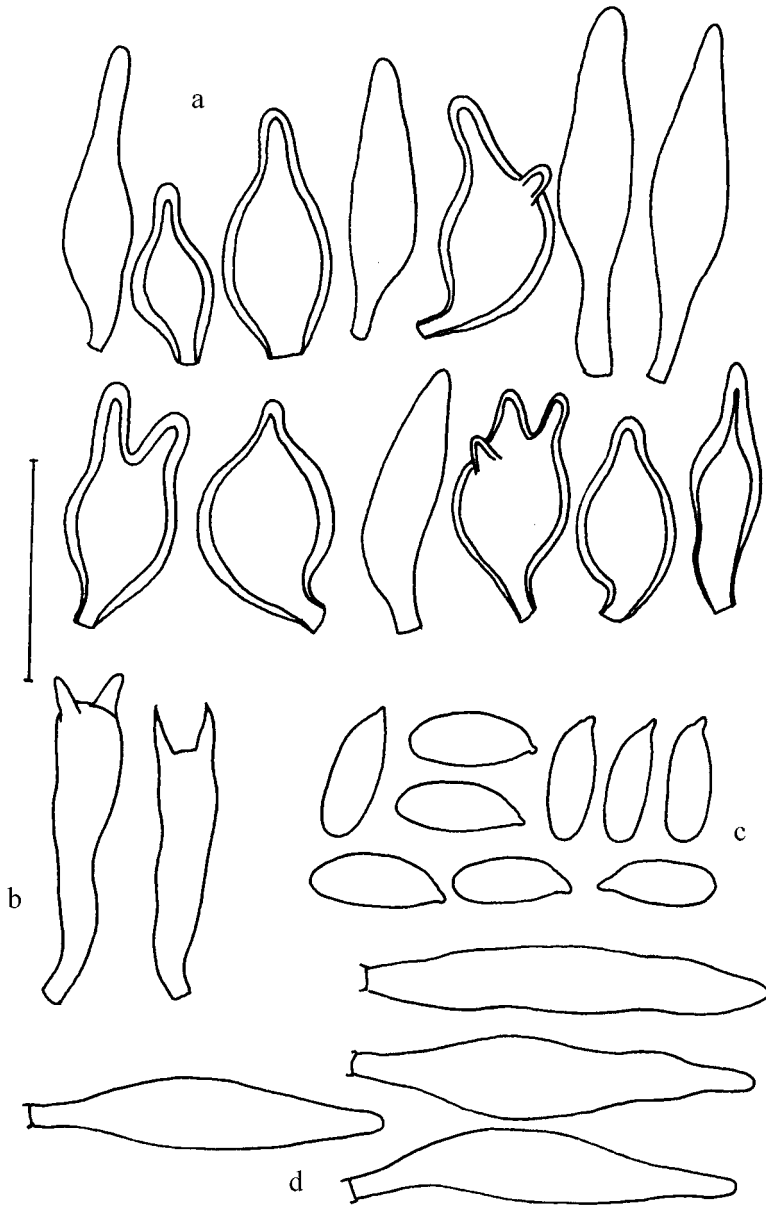
This species probably occurs all over Western and Central Europe; it is known from England, France, Germany, Slovakia and Switzerland, but its distribution is poorly known. The collection in the Belianské Tatry Mts. represents the first record in Slovakia.

**Marasmius favrei* Antonín

(Fig. 2 and 3)

(syn. *Marasmius tremulae* Velen.)

Pileus 0.5-1.5 mm broad, convex, involute to inflexed at margin, rugulose, finely tomentose under lens, white. Lamellae almost totally reduced when young, then venose, not reaching the pileus margin, distant, L = 4, white to cream coloured. Stipe 3-7 mm long, filiform, central to eccentric, entirely distinctly pubescent, insititious, entirely white when young, then white at apex and brown towards base.



Basidiospores 10-16 x 3.5-5.5 μm , $E = 1.9-3.3$, $Q = 2.6$, ellipsoid-fusoid, cylindrical-ellipsoid, subcylindrical, thin-walled, hyaline, smooth, non-dextrinoid. Basidia 21-28 x 6.0-7.5 μm , 2-spored, clavate. Basidioles 12-28 x 4.0-7.0 μm , cylindrical to clavate. Hymenial cystidia 27-43 x 6.0-8.5 μm , fusoid, sublageniform, rostrate, obtuse, thin- to mostly slightly thick-walled, hyaline. Hyphae cylindrical, thin- to slightly thick-walled, hyaline, non-dextrinoid, up to 8 μm wide. Pileipellis a hymeniderm, made up of 12-28 x 5.0-15 μm , clavate, broadly clavate, broadly fusoid, vesiculose, lemon-shaped, mostly rostrate (often with 2 or 3 rostra), thick-walled, with 0.5-2 μm thick walls, non-dextrinoid. Pileocystidia numerous, 19-32 x 5.0-8.0 μm , fusoid, sublageniform, slightly thick-walled. Stipitipellis a cutis, of parallel, cylindrical, slightly thick-walled, smooth, up to 6 μm wide hyphae with hyaline walls at apex, and yellow ones towards base in KOH. Medulla hyphae hyaline, up to 10 μm wide. Caulocystidia numerous, 12-28 x 4.0-8.0(-11) μm , fusoid, subcylindrical, sublageniform, mostly rostrate, obtuse, slightly thick-walled, subhyaline to hyaline, rarely pale yellowish. Clamp-connections absent in all tissues, sometimes false clamps present.

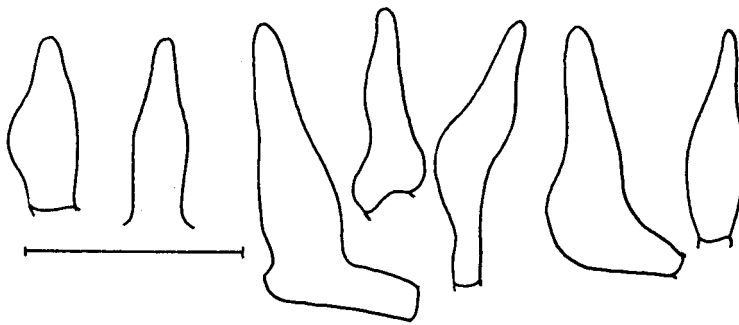


Fig. 3. *Marasmius favrei*: caulocystidia. Scale bar = 20 μm .

Hab. Single, on leaf petioles of *Populus tremula*.

Locality: Slovakia, Horná Orava LPA, Oravská Polhora, Rabčické bory, 29 Sept. 2000 leg. H. Deckerová (Antonín 00.125, BRNM 653036).

Marasmius favrei is distinguished in having small carpophores with mostly \pm reduced lamellae (especially when young), often eccentric stipe, 2-spored basidia, clampless hyphae, and rather large basidiospores.

Fig. 2. *Marasmius favrei*: a) pileipellis cells and pileocystidia, b) basidia, c) basidiospores, d) hymenial cystidia. Scale bar = 20 μm .

It grows only on *Populus* leaves (*P. tremula*, *P. nigra* and *P. nigra* var. *pyramidalis* in Europe, Antonín & Noordeloos 1993).

The similar *M. favrei* var. *sorbi* Antonín differs in having smaller spores [(7.5)9.5-12.5 x 3.2-4.0 µm] and by growing on dead leaves of *Sorbus aucuparia*; it has been collected only in two localities in southern Bohemia, Czech Republic till now.

This species is widespread in Europe (it is known from the Czech Republic, Estonia, France, Iceland, Italy, Lithuania, Slovakia, and Switzerland) but it is rare everywhere. However, with regard to its minute carpophores and growing often in a rather high layer of fallen leaves, probably it is usually overlooked.

The collection published here represents the first record in Slovakia.

****Xeromphalina fraxinophila*** A. H. Sm. (Fig. 4)

Pileus 10-30 mm broad, broadly convex, truncate to umbilicate when young, then umbilicate, with inflexed, then spreading undulate or often crenulate margin, hygrophanous, translucently striate, sometimes to subsulcate at margin when moist, dark brown, "Cinnamon brown", sienna to dark brick at centre, ochraceous-yellow to yellow at margin, glabrous, somewhat radially rugose, pallescent and becoming silky when dry. Lamellae crowded, with lamellulae ($l = 2$), arcuate-decurrent to adnate, up to 2 mm broad, intervenose, initially ivory to pale luteous, becoming yellowish-ochraceous, with concolorous, entire edge. Stipe 20-70 x 1-3.5 mm, almost cylindrical, slightly broadened at apex and base, "Cinnamon brown", chestnut to sepia when wet, darkening to dark brown towards base; entirely pubescent, with luteous to ochraceous or orange-rust-coloured floccose-strigose basal tomentum, the luteous to amber-coloured coating more prominent upon partial drying, when fully dried with a conspicuous yellowish brownish velvety coating over all. Context concolorous with the surface, with indistinct smell and taste.

Basidiospores 6.0-8.0 x 3.0-4.0 µm, $E = 1.6-2.0$, $Q = 1.8$, ellipsoid, thin-walled, smooth, amyloid. Basidia 25-31 x 5.0-7.0 µm, 4-spored, clavate. Basidioles 12-31 x 3.0-7.0 µm, cylindrical to clavate. Cheilocystidia not frequent, inconspicuous, 18-30 x 5.0-9.0 µm, versiform, (sub)lageniform, clavate, fusoid, sometimes rostrate, often slightly irregular, thin- to slightly thick-walled, hyaline or pale yellow. Trama made up of cylindrical, subellipsoid or subfusoid, up to 15 µm wide, thin- to slightly thick-walled, smooth or incrustated elements, thick-walled hyphae branched or with lateral projections, non-dextrinoid, with pale orange-brown to orange-

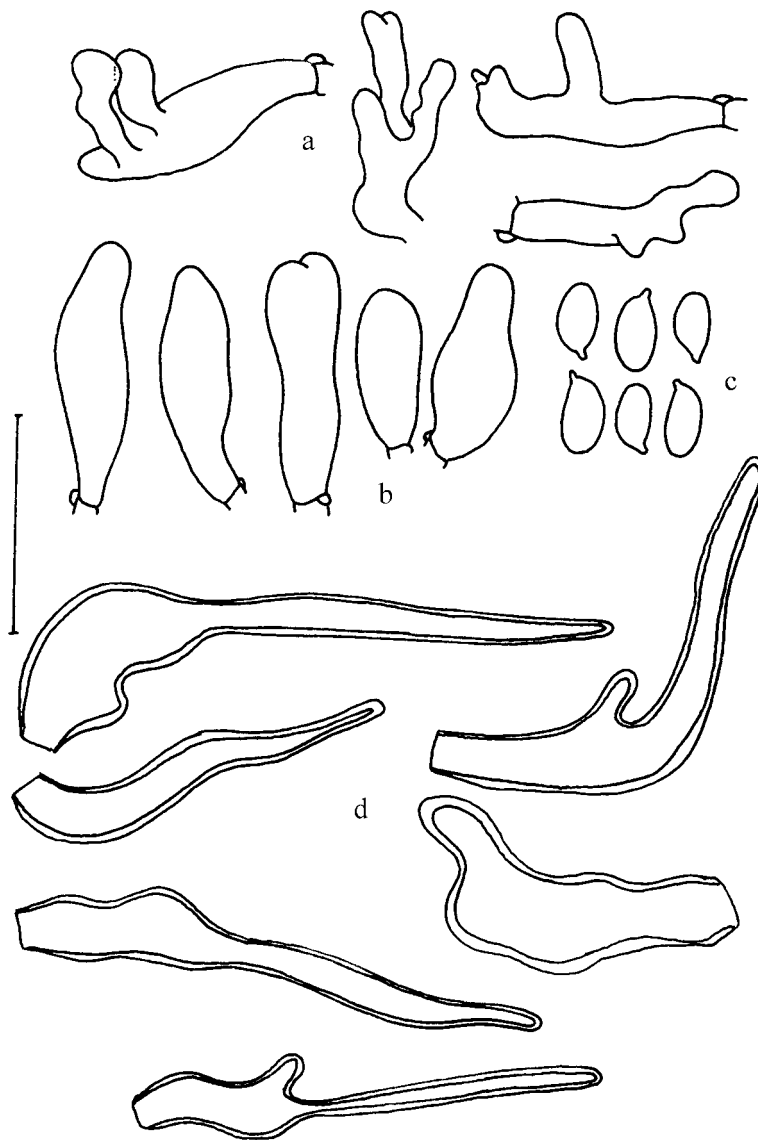


Fig. 4. *Xeromphalina fraxinophila*: a) circumcystidia, b) cheilocystidia, c) basidiospores, d) caulocystidia. Scale bar = 40 μm (for caulocystidia), 20 μm for other elements.

ochraceous-brown walls in KOH. Pileipellis a cutis, made up of radially arranged, slightly thick-walled, incrustated, up to 8 µm wide hyphae with yellow-brown (in H₂O) or orange brown (in KOH) walls.

Subpileipellis of hyphae with subhyaline to pale orange-brown to reddish brown walls in KOH. Circumcystidia 23-35 x 4.0-6.0 µm, ± cylindrical, with lateral projections or coralloid, smooth, thin- to slightly thick-walled, (sub)hyaline to pale yellowish. Stipitipellis a cutis, of parallel, cylindrical, thick-walled, incrustated, up to 8 µm wide hyphae with orange-brown walls in KOH. Stipititrama made up of thin- and slightly thick-walled hyphae with subhyaline walls in H₂O and subhyaline to pale reddish yellow(-brown) walls in KOH, non-dextrinoid. Caulocystidia numerous, mostly forming fascicles, 10.0-120 x 2.5-15 µm, cylindrical, clavate, fusoid, awl-shaped, often irregular, sometimes branched, non incrustated, often ± thick-walled at obtuse apex, thick-walled (up to 3 µm at base), orange-brown in KOH. Clamp-connections present.

Hab. Gregarious, on decayed twigs of *Fagus*.

Locality: Slovakia, Vihorlat Mts., Zemplínske Hámre, 1 Oct. 1967 leg. K. Kříž (BRNM 325240).

Xeromphalina fraxinophila is characterised in having rather robust carpophores with an entirely distinctly pubescent stipe (very distinct also in dry specimens), mild taste, caulocystidia with often long and narrow upper part, rather large basidiospores, and by growing (mostly?) on wood and litter of broadleaved trees.

The term 'circumcystidia' was introduced by Redhead (1988) for a special type of pileocystidia which are found along the margin of the pileus. In addition also typical pileocystidia are frequently found. The shape of circumcystidia is one of the most important features for the delimitation of species within the genus *Xeromphalina*.

This specimen was found within my studies of the herbarium material of the Herbarium of the Dept. of Botany of the Moravian Museum in Brno, Czech Republic (BRNM), for a proposed European monograph (Antonín & Noordeloos in prep.). Therefore, the macroscopic characters are based on descriptions by Miller (1968) and Redhead (1988).

Klán (1984) mentioned some collections of *X. caudicinalis* in his sense (with a mild taste) on wood of broadleaved trees – *Fagus* (two specimens, both from Slovakia) and *Populus tremula* (one specimen from Estonia). Carpophores of the first Slovak collection (Nížké Tatry Mts., Podbrezová-Tále, 4 Sept. 1977 leg. L. Kotilová and J. Klán, herb. J Klán) were collected in mixed detritus of *Picea* and *Fagus* and may also represent *X. fraxinophila*. However, the second cited collection from *Fagus* (High Tatra Mts., Važecká Polana, 13 Aug. 1977 leg. J. Kuthan,

herb. BRA!) certainly does not represent *X. fraxinophila* but its exact determination is not clear at present.

This species was described from the U.S.A. Till now, it has been collected in boreal and montane regions in Europe (Finland, France, Germany, Norway, Russia, Slovakia, Sweden, Switzerland) and North America (Canada, U.S.A.). It grows on hardwood litter and wood. It was found on *Alnus incana*, *Fagus*, and *Populus tremula* (Europe), *Alnus crispa*, *Fraxinus*, and *Populus tremuloides* (North America), apparently rarely also on coniferous wood.

The collection from the Vihorlat Mts. represents the first record in Slovakia.

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Vladimír Antonín: Tři nové nálezy mycenoidních a marasmioidních druhů hub na Slovensku. *Catathelasma* (2): 3-11, 2001.

Tři druhy mycenoidních a marasmioidních hub, *Hemimycena angustispora*, *Marasmius favrei* a *Xeromphalina fraxinophila*, jsou nové proslovenskou mykofloru. První z nich byl nalezen při mykologickém výzkumu Belianských Tater v roce 1998, druhý v průběhu mykologických dnů v CHKO Horná Orava v roce 2000 a položka třetího z nich při revizi herbářového materiálu v herbáři botanického odd. Moravského zemského muzea v Brně.

BOOK NOTICES

PAVEL LIZOŇ

G. Venturella, A. Saitta & A. La Rocca. 2000. **A check-list of the mycological flora of Madonie Park (north Sicily)**. 246 pp. (inck. numerous distrib. maps). ISBN 0-930845-10-2. Publ. by Mycotaxon, Ithaca, USA. Price not indicated (orders: Ente Parco delle Madonie, Corso Paolo Agliata, 16, IT-Petralia Sottana (Palermo), Italy; epm@abies.it, fax: 0039-0921-680478).

G. Venturella, A. Saitta, S. La Rocca & S. Onofri. 2001. **The mycological flora of the Ficuzza Wood-Rocca Bussambra territory (north Sicily, Italy)**. 66 pp. ISBN 0-930845-11-0. Publ. by Mycotaxon, Ithaca, USA. Price not indicated. (orders: Società Editrice Ispe Archimede, Via Domenico Trentacoste 34, IT-90100 Palermo, Italy; ispearchimede@katamail.com, fax: 0039-0913-04551).

Sicilian mycologists, led by professor Giuseppe Venturella, are gathering step by step data on Sicilian macrofungi. Following a check-list of Sicilian fungi (Boccone a 2, 1991) they present data on the biodiversity of two areas in north Sicily: Madonie park (4000 ha) and the Ficuzza Wood-Rocca Busambra natural reserve (more than 7000 ha). There are reported 614 species for the first area and 741 species for the second one.

G. J. Krieglsteiner (ed.). 2000. **Die Grosspilze Baden-Württembergs. Band 1. Allgemeiner Teil: Ständerpilze: Gallert-, Rinden-, Stachel- und Porenpilze; Band 2. Ständerpilze: Leisten-, Keulen-, Korallen- und Stoppelpilze, Bauchpilze, Röhrlings- und Täublingsartige**. 629 (incl. 213 color phot., 425 maps, 58 line draw.) + 620 pp. (incl. 325 color phot., 354 maps, 33 line draw.). ISBN 3-8001-3318-0, 3-8001-3319-9. Published by Verlag Eugen Ulmer, Stuttgart, Germany; info@ulmer.de. In Italian. Price DEM 98+98.

The book presents results of a mapping project „Macrofungi of Baden-Württemberg“. In 1993-1998 a group of more than 100 „mappers“ collected ca 416.000 data on ca 2200 taxa of aphyllorphoroid, gasteromycetoid, boletoid and russuloid basidiomycetes. Entry for a particular species (taxon) has data on morphology, ecology (incl. hosts and phenology, distribution in the state of Baden-Württemberg, general distribution, distribution map (European UTM grid system) and color photographs (not all species).

TAXA OF *RUSSULA* SECT. *XERAMPELINAE* IN SLOVAKIA*

SLAVOMÍR ADAMČÍK¹

Key words: Russulales, key, taxonomy, nomenclature

Current authors present quite different taxonomic concepts of *Russula* sect. *Xerampelinae* (Singer) Jul. Schaeff. Because of numerous taxa accepted in this section as well as their ambiguous delimitation we have not included any species in our checklist (Adamčík & al., 1999). My observations on type and other herbarium specimens let me to conclude that I cannot follow any current taxonomic concept. Delimitation of taxa and names listed below follow my papers which are submitted for publication (Adamčík, 2001a, Adamčík, 2001b). The most important characters for identification are presented in a key and few taxonomical and nomenclatural problems are discussed.

Key to taxa of *Russula* sect. *Xerampelinae* in Slovakia

- | | |
|---|-----------------------------------|
| 1A. Associated with coniferous trees | 2 |
| 1B. Associated with deciduous trees | 4 |
| 1C. Species growing in with <i>Salix</i> in subalpine belt | 7 |
| 2A. Colour of pileus cuticle mainly olive-green, purple or red can occur only on the spots on the margin. Terminal or subterminal cells of generative hyphae often inflated (wider or equal to 7 µm) in the centre of pileus epicutis. Terminal cells of generative hyphae on the margin of pileus epicutis cylindrical or subulate. From lowland to montane forests on the wet places; associated especially with <i>Picea</i> and <i>Betula</i> . | <i>Russula clavipes</i> |
| 2B. Pileus cuticle mainly purple, purple-brown or red-brown. Terminal cells of generative hyphae not inflated in the centre of pileus epicutis. | 3 |
| 3A. Pileus cuticle bright purple on the margin and dark purple to black in the centre. Spore print dark ochraceous to bright yellow (IIIc-IVa according to Romagnesi 1967). Terminal cells of generative hyphae attenuated on the margin of pileus epicutis and narrower than 3 µm on their apices. Pleurocystidia distinctly apendiculate. Spores (7,3-) 7,9-9,8 (-10,6) x (5,9-) 6,4-7,8 (-8,2) µm. From lowland to montane forests; associated with <i>Pinus</i> or <i>Picea</i> . | <i>Russula erythropoda</i> |

* Partly presented at the workshop Biodiversity of fungi in Slovakia 1 (Bratislava, June 9, 2001)

¹ Institute of Botany, Dept. of Cryptogams, Dúbravská cesta 14, SK-842 23 Bratislava; botuadam@savba.savba.sk

- 3B. Pileus cuticle purple-brown to red-brown, often darker on the margin than in the centre. Spore print ochraceous (IIIb). Terminal cells of generative hyphae clavate or cylindrical on the margin of pileus epicutis, never narrower more than 3 μm on their tips. Pleurocystidia obtuse or with short appendage. Spores (8,6-) 9,2-11,3 (-12,3) \times (6,7-) 7,3-8,6 (9,2) μm . In submontane to subalpine forests; with *Picea*, rarely with *Pinus cembra*. ***Russula favrei***
- 4A. On wet places with *Salix* or *Alnus*. Pileus cuticle red-brown to palisander-brown, slightly discoloured in the centre. Terminal cells of generative hyphae not inflated in the centre of pileus epicutis. ***Russula subrubens***
- 4B. Associated with *Betula* or *Alnus* (stands often also with *Pinus* and/or *Picea*), preferably in wet places. Pileus cuticle mainly olive-green. Terminal cells of generative hyphae often inflated in the centre of pileus epicutis. ***Russula clavipes***
- 4C. Growing in another type of habitat **6**
- 5A. Terminal cells of generative hyphae often short and inflated (wider or equal to 7 μm) in the centre and on the margin of pileus epicutis. Flesh firm, fruitbodies often robust and large. Pileus cuticle red (variant tints of red colour) on the margin and ochraceous or olive in the centre. With *Fagus*, rarely with *Quercus*. ***Russula faginea***
- 5B. Terminal cells of generative hyphae never or rarely inflated and short in the centre of pileus epicutis. Flesh of mature fruitbodies usually fragile, fruitbodies medium sized. Pileus cuticle often purple coloured, but sometimes also with red or olive tints. Usually with *Quercus*, also with *Carpinus* and *Tilia*. ***Russula graveolens***
- 6A. Pileus cuticle bright carmine-red or purple-red in the centre or with ochraceous or olive spots. ***Russula oreina***
- 6B. Pileus cuticle solid ochraceous, without red tints. ***Russula felleaecolor***

Russula clavipes Velen.

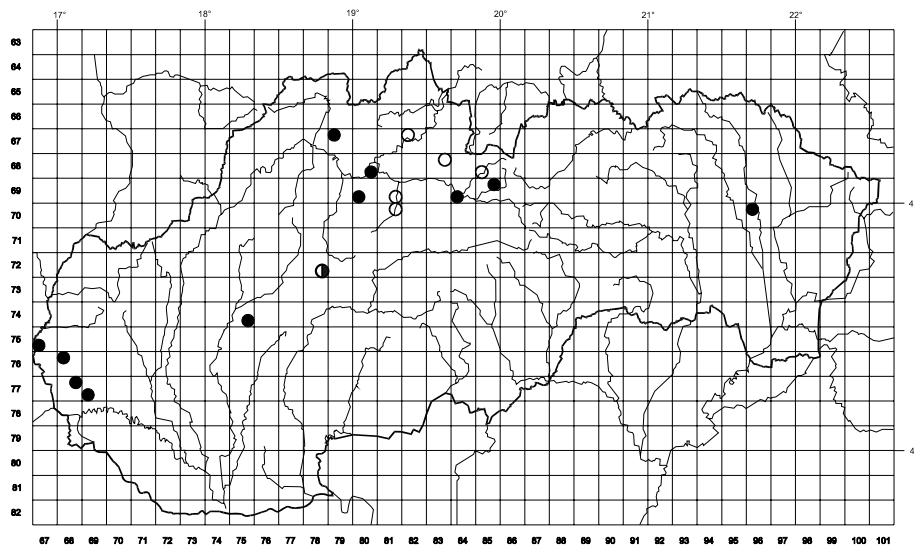
(map 2)

The name "clavipes", after being described (Velenovský 1920), was almost forgotten. Currently, only a few authors accept *Russula clavipes* as a valid name. According to Kärcher & Seibt (1994) and Kärcher (1996) and my own studies (Adamčík 2001b) misapplied names, such as *Russula xerampelina* var. *olivascens* sensu Melzer & Zvára and *R.*

xerampelina var. *fusca* sensu Melzer & Zvára, or a valid name such as *R. xerampelina* var. *elaeodes* Bres. were used for this species.

Specimens examined

Montes Nízke Tatry, prope Malužiná, ad terram sub Piceis, alt. 850 m, 13.VIII.1982, Kuthan (BRA, *R. olivascens*). – Convexo Podtatranská kotl., prope Važec, in valle rivi Solisková voda, ad terram sub Betulis (+ *Picea*), alt. 850 m, 14.IX.1985, Kuthan (BRA, *R. elaeodes*). – Podtatranská kotlina, Tatranská štrba, okraj rašeliniska 1 km východne od obce, pod brezami [on the border of peat-bog, under *Betula*], 6.VII.1994, Škubla (BRA, *R. elaeodes*). – Podtatranská kotlina, Tatranská Štrba, na okraji smrečiny pod brezami [on the margin of *Picea* forest under *Betula* trees], 1 km od obce, 7.VII.1994, Škubla (BRA, *R. elaeodes*). – Záhorská nížina lowland, 2.5 km SW from Lakšárska Nová Ves village, near Jasenecký rybník lake, on moist soil on the margin of moor, under *Betula* and *Alnus* trees, alt. 200 m, 22.X.1998, Adamčík & Kosorinová (SAV) – Oravské Beskydy hills, peat-bog 1 km E from Hviezdoslavova alej alley, 3 km from Oravská Polhora village, under *Picea* trees on moist soil among *Sphagnum*, alt. cca. 850 m., 29.IX.2000, Adamčík (SAV).



Map 1. ● *Russula erythropoda*, ○ *R. favrei*

Russula erythropoda Peltereau

(map 1)

Most current authors treat *Russula erythropoda* as a synonym of *R. xerampelina* (Schaeff.) Fr. According to my observation of the type material and the original diagnosis the name *R. xerampelina* cannot be

used in the concept of current authors (Adamčík 2001a). Other names, such as *R. xerampelina* var. *linnaei* sensu Melzer et Zvára, *R. xerampelina* var. *rubra* sensu Singer and *R. atosanguinea* Velenovský have been used for this species.

Specimens examined

[Západné Beskydy] Oravský Podzámok, 12.VIII.1960, Fábry (BRA, *R. xerampelina* var. *erythropoda*). - [Záhorská nížina] Plavecký Štvrtok, 13.X.1960, Fábry (BRA, *R. xerampelina*). - [Záhorská nížina] Plavecký Štvrtok, v borovom lese, 19.X.1960, Fábry (BRA, *R. xerampelina*). - [Veľká Fatra] Ľubochňa prope Ružomberok, in silva coniferarum, alt. 500 m, 13.VIII.1967, Kuthan (BRA, *R. xerampelina*). - Záhorská nížina, ad terram in pineto prope pag. Plavecký Štvrtok, 13.X.1973, Horváthová (BRA, *R. xerampelina* var. *erythropoda*). - Záhorská nížina, Jakubov "Feld", ad terram in pineto, 3.IX.1977, Dermeková (BRA, *R. xerampelina*). - Malá Fatra, v smrečine na sev. úbočí vrchu Dubový diel, 1,8 km ZJZ od obce Bystrička, alt. 570 m, 1.X.1982, Hagara (BRA, *R. xerampelina*). - Malá Fatra, smrekovo-borový porast na sev. úbočí vrchu dubový diel (chotárna časť Trstie), 1,9 km ZJZ od obce Bystrička, alt. cca. 550 m, 16.X.1982, Hagara (BRA, *R. xerampelina*). - Montes Malá Fatra, in piceto ad pedem collis Hrádok 21,4 km situ occid. a pago Bystrička (distr. Martin), alt. cca. 570 m, 9.X.1984, Hagara (BRA, *R. xerampelina*). - Montes Malá Fatra, sub Piceis in loco "Lazy" dicto cca. 1,5 km situ septent.-occid. a pago Bystrička (distr. Martin), alt. cca. 600 m, 14.X.1984, Tolnay (BRA, *R. xerampelina*). - Montes Malá Fatra, in piceto ad calcem in colle Hrádok 2,4 km situ occid. a pago Bystrička (distr. Martin), alt. cca. 570 m, 15.X.1984, Hagara (BRA, *R. xerampelina*). - Convexum Turčianska kotlina, in piceto acido in silva "Rovná hora" dicto 2 km situ merid. a pago Dubové (distr. Martin), alt. 520 m, 22.VIII.1985, Hagara (BRA, *R. xerampelina*). - [Veľká Fatra] sub piceis in valle "Jasenská dolina" 2,6 km situ merid.-orient. a pago Turčianske Jaseno (distr. Martin), alt. 670 m, 6.IX.1986, Hagara (BRA, *R. xerampelina*). - Borská nížina [Záhorská nížina], 4 km SZ od obce Studienka (okr. Senica), v riedkej brezovej mladine na okraji borovicového lesa, alt. cca. 200 m, 18.X.1987, Sand (BRA, *R. xerampelina*). - Trábeč, Klátova Nová Ves, časť Sádok, lokalita Kozlica, okraj lesa, pod borovicami a čerešňami, alt. cca. 220 m, 5.X.1996, Benko (BRA, *R. amoenipes*). - Záhorská nížina lowland, between Tomky village and Červený rybník lake, 5 km W of Lakšárska Nová Ves village, on the sandy soil, among mosses and grass on the margin of the path, under *Pinus sylvestris*, 200 m a.s.l., 30.IX.1998, Adamčík (SAV). - Záhorská nížina lowland, Červený rybník lake, 3 km W of Lakšárska Nová Ves village, on the sandy soil, among mosses, under *Pinus sylvestris*, 200 m a.s.l., 30.IX.1998, Adamčík (SAV). - Nízke Beskydy mountains, Ondavská vrchovina hills, 2 km E of Kvakovce village, under *Pinus sylvestris*, on the ground without herbal undergrowth, 200 m a.s.l., 7.X.1998, Adamčík (SAV). - Nízke Tatry mountains, 1 km S of the margin of the Liptovský Hrádok town, under *Pinus sylvestris* and *Picea abies*, on decayed needles, 775 m a.s.l., 14.X.1998, Adamčík (SAV). - Nízke Tatry mountains, in the valley 1 km SSW the town of Liptovský Hrádok, under *Picea abies*, in decayed needles and among grass, 725 m a.s.l., 14.X.1998, Adamčík (SAV). - Liptovská kotlina, 1 km S of Východná village, on

the right side of river Váh, under *Picea abies*, among moses, 860 m a.s.l., 15.X.1998, Adamčík (SAV).

Russula faginea Romagnesi

(map 3)

Although Romagnesi (1967) noted that *Russula faginea* is the only clearly delimited species in the section, other related taxa can be distinguished. All collections from Slovakia are similar to the type of *R. faginea* by having inflated terminal cells of generative hyphae in the centre and on the margin of pileus epicutis. The spores of Slovak collections are often very small ($6,5-9 \times 5,7-7,2 \mu\text{m}$) and terminal cells of generative hyphae are often appendiculate on the margin. In the type specimen, I have not observed spores smaller than $7,9 \times 6,4 \mu\text{m}$ and the terminal cells were often ampulaceous, subulate or pyriform but never appendiculate. However, more observations are needed for better understanding the variability of *R. faginea* and for delimiting of other taxa within this species in concept of current authors. The species was treated also as *R. xerampelina* var. *barlae* (Quél.) Melzer et Zvára (for example by Schaeffer 1933).

Specimens examined

Malá Fatra, in fageto supra ripam sinistram rivi Bystrička 3,2 km situ occid. a pago Bystrička (distr. Martin), alt. cca. 730 m, 18.VIII.1984, Hagara (BRA). - Kremnické vrchy, sub Quercubus in valle "Bjenska dolina" cca 3 km situ septentr. occid. a pago Kováčová (distr. Zvolen), alt. cca. 400 m, 13.VII.1985, Hagara (BRA, *R. graveolens*). - Bukovské vrchy hills, Osadné d. Humenné, terr. natur. munit. Udava, humi sub Abietis, alt. 500 m, 17.IX.1991, Kuthan (BRA, *R. viscida*). - Bukovské vrchy, Ruské, pri potoku, pod starým *Fagus*, v hrabanke, 6.VII.1995, Adamčík (BRA, *R. xerampelina* agg.). - Bukovské vrchy, pod ŠPR Bahno, pod *Fagus*, na okraji lesnej cesty, 25.VII.1995, Adamčík (BRA). - Bukovské vrchy, ŠPR Stužica, pod *Fagus*, na okraji lesnej cesty, 26.VII.1995, Adamčík (BRA). - Bukovské vrchy, ŠPR Rožok, pod *Fagus*, 18.IX.1995, Adamčík (BRA). - [Vihorlat] Laborecká vrchovina, Snina, rekreačné stredisko Sninské rybníky, listnatý les, pod bukom, alt. cca. 250 m, 20.IX.1996, Benko (BRA). - Nízke Beskydy montains, Ondavská vrchovina hills, "Kuria hora" hill, 2 km NE from Kvakove village, under *Fagus* Trees, cca. 280 m a.s.l., 11.VII.1998, Adamčík (SAV).

Russula favrei M. M. Moser

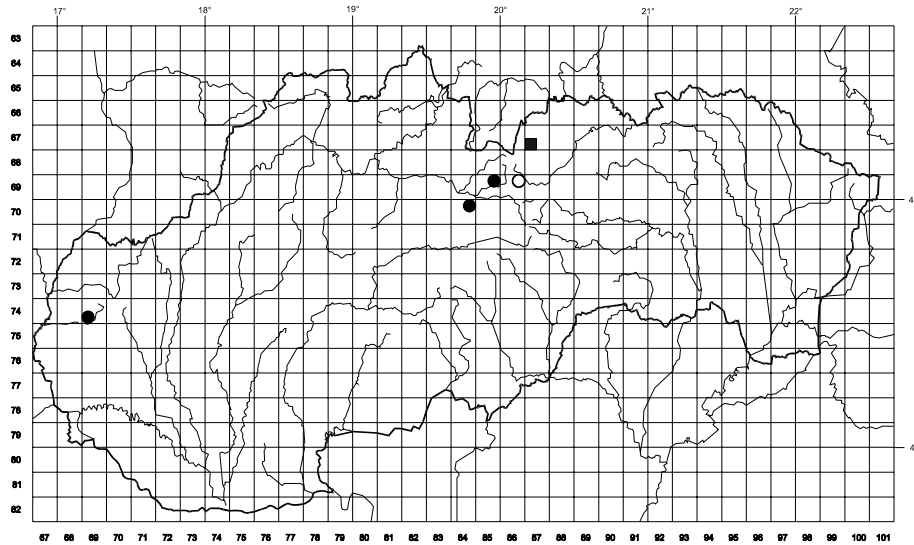
(map 1)

Although only a few collections have been reported, numerous collections of *R. favrei* in BRA and PRM prove that the species is not rare. Several mycologists probably did not distinguish this species (for all differentiating characters see Adamčík & Marhold 2000 and Adamčík 2001a) from *R. erythropoda*.

Specimens examined

[Západné Beskydy] Oravský Podzámok, 15.VIII.1959, Fábry (BRA, *R. xerampelina* var. *pseudomelliolens*) - convexum Turčianska kotlina, in piceto

acido in silva "Rovná hora" dicta 2 km situ merid. a pago Dubové (distr. Martin), alt. 520 m, 25.VII.1985, Hagara (BRA). - Mont. Vysoké Tartry [Západné Tatry], prope Podbanské, terr. nat. munitum Machy, in piceto, alt. 900 m, 13.VII.1986, Kuthan (BRA). - Západné Tatry mountains, at Jalovecký potok stream, in the mouth of Jalovecká dolina valley, under *Picea abies*, *Larix decidua*, on the decayed needles among the sparse herbal undergrowth, ca. 730 m a.s.l., 26.VI.1998, Adamčík (SAV). - Západné Tatry mountains, in the firth of Bobrovecká dolina, under *Picea abies*, in the dense herbal undergrowth of *Melampyrum sylvaticum*, *Alchemilla* sp., *Poa* sp. and other plants, ca. 750 m a.s.l., 26.VI.1998, Adamčík (SAV). - Veľká Fatra mountains, Bukovinka hill, under *Picea abies*, on the decayed needles in the sparse herbal undergrowth, 780 m a.s.l., 16.VII.1998, Adamčík (SAV). - Nízke Tatry mountains, on the pasture above Brankovský vodopád falls, under *Picea abies*, in decayed needles, ca. 1000 m a.s.l., 16.VII.1998, Adamčík (SAV).



Map 2. ● *Russula clavipes*, ○ *R. subrubens*,
■ *R. oreina* and *R. felleaeicolor*

***Russula felleaeicolor* Bon & Jamoni**

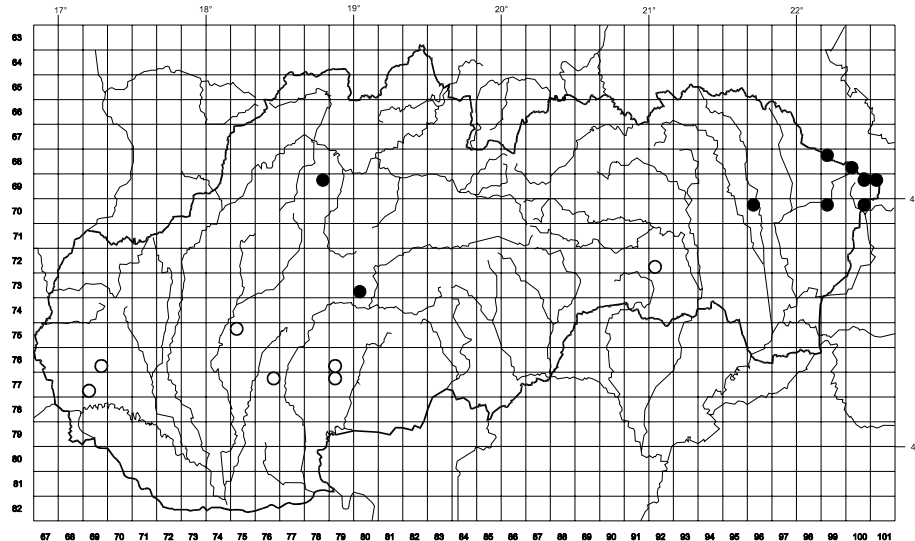
(map 2)

The species differs from *R. oreina* by a completely ochraceous pileus cuticle without purple or red colours. But I have not found any micromorphological differences between the type specimen of *R. felleaeicolor* of my collections of this species from Slovakia and of my

collections of *R. oreina*. Therefore I cannot exclude the conspecificity of *R. felleaeicolor* and *R. oreina*.

Specimens examined

Belianske Tatry mountains, on the edge between Predné Jatky hills and Košiarske hills, associated with *Salix reticulata*, alt. 1900 m, 29.VIII.1998, Adamčík (SAV).



Map 3. ● *Russula faginea*, ○ *R. graveolens*

Russula graveolens Romell

(map 3)

A few taxa, such as *R. gilvescens* Romagnesi ex Bon, *R. amoenoides* Romagnesi, *R. quercetorum* Velen. and *R. purpurea* Gillet, related to *R. graveolens*, were described but their delimitation is based only on colour of pileus cuticle and other macromorphological characters. Therefore all collections not having inflated terminal cells of generative hyphae on the margin and in the centre of pileus epicutis from „dry“ deciduous forests (associated with *Quercus*, *Carpinus*, *Tilia*, *Castanea*, etc.) I treat here as a single species *R. graveolens*.

Specimens examined

Štiavnické vrchy, ad marginem querceti in loco "Studeneč" dicto 4 km situ occid. a pago Ladzany (distr. Zvolen), alt. cca. 380 m, 3.VII.1984, Hagara (BRA, *R. graveolens*). - Štiavnické vrchy, in querceto 2 km situ merid. a pago Klastava (distr. Žiar nad Hronom), alt. cca. 480 m, 18.IX.1984, Hagara (BRA, *R. faginea*). -

Podunajská nížina lowland, 1 km NW from Mochovce village, under *Quercus* trees, cca. 250 m a.s.l., 14.IX.1998, Adamčík (SAV). - Tríbeč hills, 2 km W from Súľovce village, 300 m a.s.l., under *Quercus* trees, 17.IX.1998, Adamčík (SAV). - Malé Karpaty hills, Modra town, Gaštanka near Štúrova Lavička, 260 m a.s.l., under *Castanea sativa*, 23.IX.1998, Adamčík (SAV). – Malé Karpaty hills, 1 km W from Štúrova Lavička near Modra town, 300 m a.s.l., under *Castanea sativa*, *Tilia* and *Quercus*, 23.IX.1998, Adamčík (SAV). - *Záhorská nížina* lowland, Tomky hamlet, 8 km W from Lakšárska Nová Ves village, 200 m a.s.l., under *Quercus* trees, 30.IX.1998, Adamčík (SAV). –Slovenské rudohorie mountains, Volovské vrchy hills, near Rudník hill, under *Quercus* trees, 6.X.1998, Adamčík (SAV).

Russula oreina Singer

(map 2)

Three species, related to *R. oreina*, with red or purple red pileus cuticle growing in the alpine belt were described: *R. chamitae* Kühner, *R. pasqua* (F. H. Moller & Jul. Schaeff.) Kühner and *R. nuoljae* Kühner. Kühner (1975) based his delimitation of those species on characters of pileocystidia and colour of pileus cuticle (he accepted all those species but not *R. oreina*). The number of pileocystidia and their reaction with sulphovanillin can vary during maturation and drying and therefore I do not accept Kühner's characters as suitable for delimiting the taxa from *R. oreina*. I am treating all those taxa under one (oldest) name, *R. oreina* (Singer 1938).

Specimens examined

Belianske Tatry mountains, on the edge between Predné Jatky hills and Košiare hills, associated with *Salix reticulata* and *Salix herbacea*, alt. 1900 m, 29.VIII.1998, Adamčík (SAV).

Russula subrubens (J. E. Lange) Bon

(map 2)

This species growing in floodplains and riverside forests on wet places under *Alnus*, *Salix* or *Fraxinus* was reported from France (Bon 1972), Czech Republic (Svrček & al. 1984) and from type locality in Denmark (Lange 1940). The easily identifiable species is probably endangered because its habitats are declining and should be included to the Red list of Slovak fungi.

Specimens examined

[Vysoké Tatry mountains] Štrba, distr. Poprad, in vicinitate pagi, ad teram udam sub Salicis (*S. cinerea*, *S. caprea*), alt. cca 550 m, 6.X.1980, Kuthan (BRA, *R. xerampelina* cf. *subrubens*). - [Vysoké Tatry mountains] prope Tatranská Štrba, ad terram udam sub Salicis, alt. 600 m, 20.IX.1977, Kuthan (BRA, *R. pasqua*).

ACKNOWLEDGEMENTS

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Slavomír Adamčík: Taxony sekcie *Russula* sec. *Xerampelinae* na Slovensku. *Catathelasma* (2): 13-21, 2001.

V sekcii *Russula* sect. *Xerampelinae* sa na Slovensku rozlišuje 9 druhov. Kľúč na určovanie slovenských druhov je doplnený dátami o rozšírení na Slovensku (doklady v BRA a SAV) a poznámkami o taxonómii a nomenklatúre.

BOOK NOTICES

L. Hansen[†] & H. Knudsen (eds.). 2000. **Nordic macromycetes, vol. 1. Ascomycetes.** ii+309 pp.(incl. 250 line drawings of microscopic characters). ISBN 87-983961-2-9. Published by Nordsvamp, Copenhagen, Denmark. Price not indicated.

This is the last volume of three volume identification manual for not only Nordic macrofungi (vol. 2, covering Polyporales, Boletales, Agaricales, Russulales was published in 1992, and vol. 3 for heterobasidioid,

aphyllophoroid and gasteromycetoid Basidiomycetes was published in 1997). Keys for species (as well as those for genera, families and orders) are constructed clearly and easy to use. Each genus and species are briefly described, key entries for species have data also on substrate and host plants, distribution in Scandinavia and references to illustrations. Introductory chapters includes mycogeography of the area, glossary and introduction to the Ascomycetes. Classification follows Eriksson & Hawksworth (1998 - but reference missing in the list of reference on p. 45) and Eriksson & Wenka (on-line at [http://www.mycology.chalmers.se](#)), taxonomic concepts and nomenclature are up to date. Good luck in keying out your ascos!

PAVEL LIZOŇ

J. Müller. 2000. **Rzi, sněti a fytopatogenní plísně Moravského Krasu** [Rusts, smuts and downy mildews of the Moravský Kras/Moravian Karst]. 78 pp. Published by Cortusa, Blansko, Czech rep. In Czech with English and German summaries. Price not indicated.

The monograph represents results of the author's 50 years of mycological research of Landscape Protected Area Moravský Kras, which is located northeast to the city of Brno and covers a territory of 120 km². It is favorable for rusts, smuts and downy mildews, due to its moderately warm to warm and moderately dry to wet macroclimate. List of recorded fungi covers 116 species of *Pernosporales* in 9 genera (*Albugo*, *Basidiospora*, *Bremia*, *Paraperonospora*, *Peronospora*, *Phytophthora*, *Plasmopara*, *Pseudoperonospora* and *Sclerospora*); 222 species of *Uredinales* in 22 genera (*Aecidium*, *Chrysomyxa*, *Coleosporium*, *Cronartium*, *Cumminsella*, *Endophyllum*, *Gymnosporangium*, *Hyalopsora*, *Kuehneola*, *Melampsora*, *Melampsorella*, *Melampsoridium*, *Milesina*, *Ochropsora*, *Phragmidium*, *Puccinia*, *Pucciniastrum*, *Thekopsora*, *Trachyspora*, *Tranzschelia*, *Triphragmium* and *Uromyces*), and 56 *Ustilaginales* (genera: *Anthracoidea* - all 3 listed species known also from Slovakia; *Entyloma* - five of 15 listed also in Slovakia; *Melanotaenium* - two of three also in Slovakia; *Microbotrium* - none of four listed taxa reported from Slovakia; *Schizonella* - both listed species also in Slovakia; *Sphacelotheca* and *Ustilago* - ten of 14 Moravian species also in Slovakia). PETER PAULECH

NEW AND RARE MICROFUNGI FOR SLOVAKIA*

ALEXANDRA ŠIMONVIČOVÁ & MIROSLAVA GÓDYOVÁ¹

Key words: *Myxotrichum deflexum*, *Engyodontium album*, *Syncephalastrum racemosum*, African art

Microfungi were isolated from objects of primitive African art (textile material, wooden and serpentine sculptures), collected from different parts of Africa (Zimbabwe, Zaire, Zambezi valley) coming from the collection of the Slovak National Museum. The collection was accessed in 1997 in the building originated from 17th century. The 17th century building is attached to a slope and three floors are in the contact with surrounding terrain so rain water, flowing from the slope is retained there. In the north, remains of stone-made fortification are component of an enclosure wall. As interior space has improper conditions, contamination and damage exhibited objects has occurred.

Fungi were isolated from the surface of art objects and walls by wiping off with sterile cotton plugs. Cultures were grown on oatmeal agar (OA), Sabouraud maltose agar (SMA), and Czapek-Dox agar. All species are held in the culture collection of the Department of Soil Sciences.

Myxotrichum deflexum Berk. (Ascomycota)

Isolated from textiles. Rather slowly growing colonies (on OA) are greenish with pale purple reverse. It was reported as isolated from an onychomycosis and from a painting in the castle Trojský zámek in Praha (Kubátová & al., 1996). For details on Slovak collection see Krakovská and Gódyová.

Engyodontium album (Limber) de Hoog (Hyphomycetes)

Isolated from a wet damaged wall. Rapid growing colonies (on SMA) are white, lanate to floccose with uncoloured reverse. Typical feature of the genus *Engyodontium* is zigzag bended (curved) part of conidiophores like in *Beauveria* (Šimonovičová & Benková, 2000). It was reported as isolated from a man in the Netherlands (Kubátová & al., 1996).

Syncephalastrum racemosum Cohn ex J. Schröt. (Zygomycota)

Isolated from a wooden sculpture. Very fast growing colonies (on SMA) are greyish with uncoloured reverse. The species is characterized by

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¹ Department of Soil Science, Comenius University, Mlynská dolina, SK-842 15 Bratislava; asimonovicova @fns.uniba.sk, miroslavagody@hotmail.com

having merosporangia and merospores. It was isolated also from agricultural soil (Šimonovičová & Váňová, 2001) and semolina (Kubátová et al., 1996) in Slovakia.

Myxotrichum deflexum and *Engyodontium album* are new taxa for the country, and *Syncephalastrum racemosum* was reported from Slovakia only twice before (Bernát & al., 1984; Kubátová & al., 1996).

ACKNOWLEDGEMENTS

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Alexandra Šimonovičová & Miroslava Gódyová: Nové a vzácne mikromycéty pre Slovensko. *Catathelasma* (2): 23-24, 2001.

Mikromycéty sa izolovali zo zbierky umeleckých predmetov (textílie, plastiky z dreva a serpentínu) z rôznych častí Afrického kontinentu (Zimbabwe, Zaire, dolina Zambezi), ktorá je vo vlastníctve Slovenského národného múzea v Bratislave a zo steny miestnosti, kde bola zbierka umiestnená. Zbierka predmetov afrického primitívneho umenia bola sprístupnená v r. 1997 v historických priestoroch s nevhodnými mikroklimatickými podmienkami, dôsledkom čoho došlo k výraznej kontaminácii a poškodeniu predmetov mikroorganizmami, vrátane húb. *Engyodontium album* (Hyphomycetes) a *Myxotrichum deflexum* (Ascomycota) sú nové druhy pre Slovensko a *Syncephalastrum racemosum* (Zygomycota) je vzácny druh.

RED LIST OF SLOVAK FUNGI

PAVEL LIZOŇ

Key words: threatened taxa, IUCN

Third edition of the Red List of Slovak fungi was based on 1st and 2nd editions (Lizoň, 1995, Lizoň & Bacigálová, 1998), as well as on the Red Book of Slovak and Czech republics (Antonín & al., 1995). Recent list includes also legally protected fungi in Slovakia (Anon., 1999 and additions proposed by P. Škubla in 2001), species proposed by European Committee for Conservation of Fungi to be implemented to the Bern Convention (Perini, 2001) and selected taxa described from Slovakia (Lizoň & Jančovičová, 2000). Nomenclature follows the Check List of Slovak Fungi (Lizoň & Bacigálová, 1998) and IndexFungorum (Kirk, 2001). Categories are those adopted by IUCN in 2001.

taxon	IUCN
Ascomycota	
<i>Ascotremella faginea</i> (Peck) Seaver	EN
<i>Biscogniauxia dennisii</i> (Pouzar) Pouzar	DD
<i>Biscogniauxia simplicior</i> Pouzar	VU
<i>Bryoglossum gracile</i> (P. Karst.) Redhead	EN
<i>Caloscypha fulgens</i> (Pers.) Boud.	VU
<i>Camarops tubulina</i> (Alb. & Schwein.) Shear	VU
<i>Chlorosplenium hyperici-maculati</i> Svrček	DD
<i>Ciboria dumbiresis</i> (Velen.) Spooner [<i>Tatrea d.</i> (Velen.) Svrček]	DD
<i>Erysiphe thesii</i> L. Junell	NE
<i>Gyromitra fastigiata</i> (Krombh.) Rehm	LC
<i>Helvella leucopus</i> Pers. [<i>H. spadicea</i> Schaeff.]	VU
<i>Helvella pithyophila</i> Boud. [<i>H. crispa</i> var. <i>pithyophila</i>]	LC
<i>Hymenoscyphus caeruleo-maculatus</i> Svrček	DD
<i>Hymenoscyphus ombrophilaeformis</i> Svrček	DD
<i>Hymenoscyphus pallidae-subolivaceus</i> (Svrček) Lizoň	DD
<i>Hymenoscyphus rokebyensis</i> (Svrček) Matheis	DD
<i>Hymenoscyphus tatrae</i> (Svrček) Lizoň	DD
<i>Hypoxylon ticiense</i> L. E. Petrini	DD
<i>Kubickia tatrensis</i> Svrček	DD
<i>Lachnum belaense</i> Svrček	DD
<i>Lachnum pseudocorticale</i> Svrček	DD
<i>Leveillula taurica</i> (Lév.) G. Arnaud	NE
<i>Leveillula verbasci</i> (Jacz.) Golovin	NE
<i>Marcellina georgii</i> (Svrček) J. Moravec	DD

<i>Microglossum viride</i> (Pers.) Gillet	EN
<i>Microsphaera loniceræ</i> var. <i>ehrenbergii</i> (Lév.) U. Braun	NE
<i>Microstoma protracta</i> (Fr.) Kanouse	NT
<i>Miyoshiella larvata</i> Réblová	DD
<i>Nectria tatrensis</i> Alstrup	DD
<i>Otidea concinna</i> (Pers.) Sacc.	LC
<i>Parascutellinia carneo-sanguinea</i> (Fuckel) T. Schumach.	DD
<i>Phyllactinia roboris</i> (Gachet) S. Blumer	NE
<i>Piceomphale bulgarioides</i> (Rabenh.) Svrček	DD
<i>Plectania melastoma</i> (Sowerby) Fuckel	DD
<i>Poronia punctata</i> (L.) Fr.	EX
<i>Protomycolopsis bellidis</i> (K. Krieg) Magnus	DD
<i>Protomycolopsis leontodontis</i> Büren	DD
<i>Protomycolopsis leucanthemi</i> Magnus	DD
<i>Pseudoplectania melaena</i> (Fr.) Sacc.	VU
<i>Pseudorhizina sphaerospora</i> (Peck) Pouzar	VU
<i>Sarcoleotia turficola</i> (Boud.) Dennis	EN
<i>Sarcosoma globosum</i> (Schmidel) Rehm	EX
<i>Sarcosphaera coronaria</i> (Jacq.) J. Schröt.	VU
<i>Scutellinia legaliae</i> Lohmeyer & Häffner	DD
<i>Scutellinia paludicola</i> (Boud.) Le Gal	EN
<i>Scutellinia sinensis</i> M. H. Liu	DD
<i>Sowerbyella densireticulata</i> J. Moravec	DD
<i>Sowerbyella rhenana</i> (Fuckel) J. Moravec	DD
<i>Spathularia flavida</i> Pers.	EN
<i>Sphaerotheca drabae</i> Juel	NE
<i>Sphaerotheca polemonii</i> L. Junell	NE
<i>Sphaerotheca thalictri</i> L. Junell	NE
<i>Taphrina bullata</i> (Berk. & Broome) Tul.	NE
<i>Taphrina carnea</i> Johanson	NE
<i>Taphrina coeruleascens</i> (Desm.) Tul.	NE
<i>Taphrina crataegi</i> Sadeb.	NE
<i>Taphrina filicina</i> Rostr.	NE
<i>Taphrina johansonii</i> Sadeb.	NE
<i>Taphrina polyspora</i> (Sorokin) Johanson	NE
<i>Taphrina potentillae</i> (Farl.) Johanson	NE
<i>Taphrina rhizophora</i> Johanson	NE
<i>Taphrina ulmi</i> (Fuckel) Johanson	NE
<i>Taphrina viridis</i> Sadeb. ex Maire	NE
<i>Trichoglossum hirsutum</i> (Pers.) Boud.	EN
<i>Trichopezizella lizonii</i> (Svrček) Baral & E. Weber	EX
<i>Trichophaea variornata</i> Korf & W.-Y. Zhuang	DD

<i>Trichophaeopsis bicuspis</i> (Boud.) Korf & Erb	DD
<i>Trichoscyphella carpatica</i> Svrček	DD
<i>Tuber aestivum</i> Vittad.	CR
<i>Tuber borchii</i> Vittad.	CR
<i>Tuber brumale</i> Vittad.	EX
<i>Tuber dryophilum</i> Tul.	CR
<i>Tuber melanosporum</i> Vittad.	EX
<i>Urnula craterium</i> (Schwein.) Fr.	NT
<i>Verpa conica</i> (O. F. Müll.) Schwartz	NT
<i>Vibrissea truncorum</i> (Alb. & Schwein.) Fr.	NT
Basidiomycota	
<i>Abortiporus fractipes</i> (Berk. & M. A. Curtis) Gilb. & Ryvarden	VU
[<i>Spongipellis f.</i> (Berk. & M. A. Curtis) Kotl. & Pouzar]	
<i>Agaricus bernardii</i> (Quél.) Sacc.	LC
<i>Agaricus maleolens</i> F. Møller	LC
<i>Agrocybe arenicola</i> (Berk.) Singer	VU
<i>Agrocybe cylindracea</i> (DC.) Maire	NT
<i>Aleurodiscus digitalis</i> (Alb. & Schwein.) Donk [<i>Cyphella d.</i> (Alb. & Schwein.) Fr.]	DD
<i>Amanita caesarea</i> (Scop.) Pers.	VU
<i>Amanita friabilis</i> (P. Karst.) Bas	VU
<i>Amanita nivalis</i> Grev.	
<i>Amanita ovoidea</i> (Bull.) Quél.	VU
<i>Amanita strobiliformis</i> (Paulet) Bertillon	NT
<i>Amanita vittadinii</i> (Moretti) Vittad.	VU
<i>Amylocystis lapponica</i> (Romell) Singer	VU
<i>Amyloporia sitchensis</i> (D. V. Baxter) Vampola & Pouzar	NT
<i>Anthracoidea caricis-albae</i> (Syd.) Kukkonen	NE
<i>Anthracoidea caryophylleae</i> Kukkonen	NE
<i>Anthracoidea heterospora</i> (B. Lindeb.) Kukkonen	NE
<i>Antrodia hoehnelii</i> (Bres.) Niemelä	DD
<i>Antrodia macra</i> (Sommerf.) Niemelä	LC
<i>Antrodia odora</i> (Peck & Sacc.) Gilb. & Ryvarden	LC
<i>Antrodiella citrinella</i> Niemelä & Ryvarden	DD
<i>Arrhenia auriscalpium</i> (Fr.) Fr.	LC
<i>Baeospora myriadophylla</i>	EN
<i>Battarraea stevenii</i> (Libosch.) Fr.	CR
<i>Boletopsis leucomelas</i> (Pers.) Fayod	DD
<i>Boletopsis subsquamosa</i> (Fr.) Kotl. & Pouzar	VU
<i>Boletus appendiculatus</i> Schaeff.	NT
<i>Boletus dupainii</i> Boud.	EN

<i>Boletus edulis</i> Bull. var. <i>arenarius</i> Engel, Krieglsteiner & Dermek	DD
<i>Boletus erythropus</i> Pers. var. <i>rubropileus</i> Dermek	DD
<i>Boletus fechtneri</i> Velen.	NT
<i>Boletus fragrans</i> Vittad.	NT
<i>Boletus impolitus</i> Fr.	VU
<i>Boletus junquilleus</i> (Quél.) Boud.	VU
<i>Boletus lupinus</i> Fr.	VU
<i>Boletus queletii</i> Schulzer	NT
<i>Boletus radicans</i> Pers.	NT
<i>Boletus regius</i> Krombh.	VU
<i>Boletus rhodoxanthus</i> (Krombh.) Kallenb.	NT
<i>Boletus satanas</i> Lenz	EN
<i>Boletus speciosus</i> Frost	VU
<i>Boletus splendidus</i> C. Martin	
<i>Boletus subappendiculatus</i> Dermek, Lazebníček & Veselský	DD
<i>Boletus torosus</i> Fr.	VU
<i>Bovista paludosa</i> Lév.	NT
<i>Calvatia candida</i> (Rostk.) Hollós	VU
<i>Calvatia cretacea</i> (Berk.) Lloyd [<i>C. tatrensis</i> Hollós]	EN
<i>Calvatia fragilis</i> (Vittad.) Morgan	NT
<i>Camarophylloopsis foetens</i> (W. Phillips) Arnolds	NT
<i>Catathelasma imperiale</i> (Fr.) Singer	EN
<i>Ceriporia purpurea</i> (Fr.) Donk	NE
<i>Chalciporus rubinus</i> (W. G. Sm.) Singer	VU
<i>Chamaemyces fracidus</i> (Fr.) Donk	NT
<i>Chamonixia caespitosa</i> Rolland	VU
<i>Clathrus ruber</i> P. Micheli ex Pers.	VU
<i>Clavariadelphus truncatus</i> (Quél.) Donk	NT
<i>Clitocybe candicans</i> var. <i>dryadicola</i> (J. Favre) Lamoure	LC
<i>Coltricia montagnei</i> (Fr.) Murrill	VU
<i>Cortinarius auroturbinatus</i> (Secr.) J. E. Lange	NT
<i>Cortinarius balteatovumatilis</i> var. <i>laetus</i> M. M. Moser	NT
<i>Cortinarius balteatus</i> (Fr.) Fr.	DD
<i>Cortinarius basiroseus</i> A. Pearson ex P. D. Orton	DD
<i>Cortinarius coerulescens</i> (Schaeff.) Fr.	DD
<i>Cortinarius dionysae</i> Rob. Henry	DD
<i>Cortinarius fulminoides</i> (M. M. Moser) M. M. Moser	EN
<i>Cortinarius fulvoochrascens</i> Rob. Henry	DD
<i>Cortinarius lividoviolaceus</i> Rob. Henry	NT
<i>Cortinarius melanotus</i> Kalchbr.	DD
<i>Cortinarius pauperculus</i> J. Favre	DD

<i>Cortinarius tatrensis</i> Fellner & Landa	DD
<i>Cortinarius veregrerius</i> Rob. Henry	NT
<i>Cotylidia carpatica</i> (Pilát) Huijsman	DD
<i>Crepidotus crocophyllus</i> (Berk.) Sacc.	VU
<i>Crepidotus macedonicus</i> Pilát	EN
<i>Cystolepiota bucknallii</i> (Berk. & Broome) Singer & Clémenton	NT
<i>Datronia stereoides</i> (Fr.) Ryvarden	DD
<i>Dermoloma cuneifolium</i> (Fr.) Bon [<i>D. atrocinerum</i> (Pers.) P. D. Orton]	DD
<i>Endophyllum euphorbiae sylvaticae</i> (DC.) G. Winter	NE
<i>Endoptychum agaricoides</i> Czern.	CR
<i>Entoloma babingtonii</i> (A. Bloxam) M. M. Moser	DD
<i>Entoloma bloxami</i> (Berk. & Broome) Sacc.	NT
<i>Entoloma byssisedum</i> (Pers.) Donk	LC
<i>Entoloma catalaunicum</i> (Singer) Noordel.	DD
<i>Entoloma corvinum</i> (Kühner) Noordel.	DD
<i>Entoloma euchroum</i> (Pers.) Donk	NT
<i>Entoloma plebejum</i> (Kalchbr.) Noordel.	DD
<i>Entoloma sarcitulum</i> P. D. Orton	
<i>Entyloma chrysosplenii</i> (Berk. & Broome) J. Schröt.	DD
<i>Entyloma dactylidis</i> (Pass.) Cif.	DD
<i>Floccularia straminea</i> (Krombh.) Pouzar	VU
<i>Fomitopsis officinalis</i> (Vill.) Bondartsev & Singer	EN
<i>Frommeella tormentillae</i> (Fuckel) Cummins & Y. Hirats.	DD
<i>Ganoderma valesiacum</i> Boud.	EN
<i>Gastropodium simplex</i> Mattir.	VU
<i>Geastrum berkeleyi</i> Masee	VU
<i>Geastrum hungaricum</i> Hollós	EN
<i>Gomphidius roseus</i> (Nees) Fr.	NT
<i>Gomphus clavatus</i> (Pers.) Gray	VU
<i>Gyrodon lividus</i> (Bull.) Sacc.	VU
<i>Haasiella splendidissima</i> Kotl. & Pouzar	DD
<i>Handkea utrififormis</i> (Bull.) Kreisel var. <i>hungarica</i> (Hollós) Kreisel	DD
<i>Hapalopilus croceus</i> (Pers.) Bondartsev & Singer [<i>Aurantioporus</i> c. (Pers.) Murrill]	VU
<i>Hebeloma pallidoluctuosum</i> Gröger & Zschiesch.	NT
<i>Hericium erinaceus</i> (Bull.) Pers.	NT
<i>Hohenbuehelia abietina</i> Singer & Kuthan	NT
<i>Hyalopsora aspidiotus</i> (Peck) Magnus	DD
<i>Hydnellum concrescens</i> (Pers.) Banker	EN
<i>Hydnellum geogenium</i> (Fr.) Banker	EN
<i>Hydnellum peckii</i> Banker	EN

<i>Hydropus atramentosus</i> (Kalchbr.) Kotl. & Pouzar	CR
<i>Hygrocybe calyptriformis</i> (Berk. & Broome) Fayod;	DD
<i>Hygrocybe reidii</i> Kühner	NT
<i>Hygrocybe spadicea</i> (Scop.) P. Karst.	DD
<i>Hygrocybe splendissima</i> (P. D. Orton) P. D. Orton & Watling	EN
<i>Hygrophorus atramentosus</i> (Alb. & Schwein.) H. Haas & Haller	EN
<i>Hygrophorus capreolarius</i> (Kalchbr.) Sacc.	NT
<i>Hygrophorus lucorum</i> Kalchbr.	DD
<i>Hygrophorus marzuolus</i> (Fr.) Bres.	VU
<i>Hymenochaete carpatica</i> Pilát	DD
<i>Hyphodontia latitans</i> (Bourdot & Galzin) Ginns & Lefebvre	EN
<i>Hypholoma myosotis</i> (Fr.) M. Lange	VU
<i>Inocybe adaequata</i> (Britzelm.) Sacc. [<i>I. jurana</i> Pat.]	LC
<i>Inocybe calamistrata</i> (Fr.) Gillet	NT
<i>Inocybe fulvipes</i> Kühner	LC
<i>Inonotus andersonii</i> (Ellis & Everh.) Černý	NT
<i>Inonotus nidus-pici</i> Pilát	LC
<i>Lactarius acris</i> (Bolton) Fr.	NT
<i>Lactarius cookei</i> Z. Schaefer	DD
<i>Lactarius lilacinus</i> (Lasch) Fr.	NT
<i>Lactarius nanus</i> J. Favre [<i>L. tatorum</i> Z. Schaefer]	DD
<i>Lactarius repraesentaneus</i> Britzelm.	NT
<i>Lactarius salicis-reticulatae</i> Kühner	NT
<i>Lactarius subtomentosus</i> Z. Schaefer	DD
<i>Lactarius volemus</i> (Fr.) Fr.	VU
<i>Lasiochlaena anisea</i> Pouzar	DD
<i>Laurilia sulcata</i> (Burt) Pouzar	VU
<i>Leccinum duriusculum</i> (Schulzer) Singer	NT
<i>Leccinum thalassinum</i> Pilát & Dermek	DD
<i>Lentinellus ursinus</i> (Fr.) Kühner	LC
<i>Lentinellus vulpinus</i> (Sowerby) Kühner & Maire	LC
<i>Lentinus degener</i> Kalchbr.	LC
<i>Lenzites warnieri</i> Durieu & Mont.	DD
<i>Lepiota hystrix</i> F. H. Møller & J. E. Lange	LC
<i>Lepista graveolens</i> (Peck) Dermek	NT
<i>Leucoagaricus pilatianus</i> (Demoulin) Bon & Boiffard	NT
<i>Leucoagaricus sublittoralis</i> (Kühner ex Hora) Singer	LC
<i>Leucopaxillus lepistoides</i> (Maire) Singer	EN
<i>Limacella guttata</i> (Fr.) Konrad & Maubl.	VU
<i>Lindtneria trachyspora</i> (Bourdot & Galzin) Pilát	LC
<i>Marasmiellus carneopallidus</i> (Pouzar) Singer	DD
<i>Marasmius minutus</i> Peck	DD

<i>Marasmius wynnei</i> Berk. & Broome var. <i>carpathicus</i> (Kalchbr.) Antonín	DD
<i>Milesina blechni</i> (Syd. & P.Syd.) Arthur ex Faull	DD
<i>Montagnea radiosa</i> (Pall.) Rauschert [<i>M. arenaria</i> (DC.) Fr.]	CR
<i>Multiclavula mucida</i> (Fr.) R. H. Petersen	EN
<i>Myriostoma coliforme</i> (Dicks.) Corda	VU
<i>Oligoporus septentrionalis</i> Vampola	DD
<i>Omphalina discorosea</i> (Pilát) Herink & Kottl.	VU
<i>Omphalina epichysium</i> (Pers.) Quéf.	LC
<i>Omphalina grossula</i> (Pers.) Sing.	EN
<i>Ossicaulis lignatilis</i> (Pers.) Redhead & Ginns	NT
<i>Oxyporus latemarginatus</i> (Durieu & Mont.) Donk	DD
<i>Oxyporus philadelphia</i> (Parmasto) Ryvarden	DD
<i>Panaeolus reticulatus</i> Overh. [<i>P. uliginosus</i> Jul. Schäff.]	EN
<i>Perenniporia narymica</i> (Pilát) Pouzar	LC
<i>Phaeocollybia christinae</i> (Fr.) R. Heim	NT
<i>Phaeocollybia festiva</i> (Fr.) R. Heim	NT
<i>Phallogaster saccatus</i> Morgan	NT
<i>Phallus impudicus</i> var. <i>pseudoduplicatus</i> O. Anderson [<i>Ph. duplicatus</i> Bosc.]	VU
<i>Phellinus ferrugineofuscus</i> (P. Karst.) Bourdot	EN
<i>Phellinus pouzarii</i> Kottl.	VU
<i>Phellodon confluens</i> (Pers.) Pouzar	LC
<i>Phlebia ryvardenii</i> Hallenb. & Hjortstam	EN
<i>Pholiota cerifera</i> (P. Karst.) P. Karst. [<i>P. aurivella</i> (Batsch) P. Kumm.]	DD
<i>Pholiota elegans</i> Jacobson	DD
<i>Pholiota henningsii</i> (Bres.) P. D. Orton	LC
<i>Phylloporus rhodoxanthus</i> (Schwein.) Bres. [<i>Ph. pelletieri</i> (Lév.) Quéf.]	NT
<i>Piptoporus quercinus</i> (Schrad.) Pilát	EN
[<i>Buglossoporus pulvinus</i> (Pers.) Donk]	
<i>Pleurotus eryngii</i> (DC.) Quéf.	EN
<i>Pluteus aurantiorugosus</i> (Trog) Sacc.	NT
<i>Pluteus favrei</i> Antonín & Škubla	DD
<i>Podoscypha multizonata</i> (Berk. & Broome) Pat.	LC
<i>Polyporus rhizophilus</i> Pat.	VU
<i>Psathyrella ammophila</i> (Durieu & Lév.) P. D. Orton	EN
<i>Psathyrella typhae</i> (Kalchbr.) Pears. & Dennis	DD
<i>Pseudoombrophila kalchbrenneri</i> (Bres.) Singer	
<i>Puccinia adoxae</i> R. Hedw.	NE
<i>Puccinia albescens</i> Grev.	NE

<i>Puccinia impatientis</i> (Schwein.) Arthur	NE
<i>Puccinia kochiana</i> Gäum.	NE
<i>Puccinia sieversiae</i> Arthur	NE
<i>Puccinia uralensis</i> Tranzschel	DD
<i>Pycnoporellus alboluteus</i> (Ellis & Everh.) Kotl. & Pouzar	EN
<i>Rhodocollybia fodiens</i> (Kalchbr.) Antonin & Noordel.	DD
<i>Rhodocybe obscura</i> (Pilát) M. M. Moser	VU
<i>Rhodotus palmatus</i> (Bull.) Maire	EN
<i>Ripartitella rickenii</i> (Bohus) Singer	EN
<i>Russula albonigra</i> (Krombh.) Fr.	LC
<i>Russula alnetorum</i> Romagn.	LC
<i>Russula consobrina</i> Fr.	LC
<i>Russula dryadicola</i> Fellner & Landa	DD
<i>Russula nana</i> Killerm.	LC
<i>Russula norvegica</i> D. A. Reid	LC
<i>Russula viscida</i> Kudrna	LC
<i>Sarcodon fuligineo-violaceus</i> (Kalchbr.) Pat.	LC
<i>Sarcodon glaucopus</i> Maas Geest. & Nannf.	DD
<i>Skeletocutis odora</i> (Sacc.) Ginns [<i>S. tschulymica</i> (Pilát) Jean Keller]	LC
<i>Stereum subtomentosum</i> Pouzar	DD
<i>Stropharia albocrenulata</i> (Peck) Kreisel	NT
<i>Suillus flavidus</i> (Fr.) C. Presl	VU
<i>Suillus sibiricus</i> (Singer) Singer	VU
<i>Tephrocybe putida</i> (Fr.) M. M. Moser	NT
<i>Thanatephorus ovalisporus</i> Čížek & Pouzar	DD
<i>Tilletia olida</i> (Riess.) G. Winter	NE
<i>Tolyposporium aterrinum</i> (Tul. & C. Tul.) Dietel	NE
<i>Tremella steidleri</i> (Bres.) Bourdot & Galzin	VU
<i>Tricholoma atosquamosum</i> (Chevall.) Sacc.	LC
<i>Tricholoma equestre</i> (L.) P. Kumm.	EN
<i>Tricholoma inodermeum</i> (Fr.) Gillet	LC
<i>Tricholoma joachimii</i> Bon & A. Riva	LC
<i>Tricholoma psammopus</i> (Kalchbr.) Quél.	DD
<i>Tubaria confragosa</i> (Fr.) Harmaja	LC
<i>Tulostoma kotlabae</i> Pouzar	EN
<i>Tyromyces kmetii</i> (Bres.) Bondartsev & Singer	DD
<i>Urocystis picbaueri</i> Součk.-Tomk.	NE
<i>Ustilago vuyckii</i> Oudem. & Beij.	DD
<i>Volvariella caesiocincta</i> P. D. Orton	NT
<i>Volvariella surrecta</i> (J. A. Knapp) Singer	EN
<i>Xerocomus armeniacus</i> (Quél.) Quél.	NT

<i>Xerocomus moravicus</i> (Vacek) Herink	VU
<i>Xerocomus parasiticus</i> (Bull.) Quél.	EN
<i>Xeromphalina caudicinalis</i> (Fr.) Kühner & Maire	NT
<i>Xerula melanotricha</i> Dörfelt	VU

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Pavel Lizoň: Červený zoznam húb Slovenska. *Catathelasma* (2): 25-33, 2001.

Tretie vydanie zoznamu ohrozených húb Slovenska zahrnuje viac ako 600 húb.

MYCOLOGICAL EVENTS

May 13-17, 2001. 4th Latin American Mycological Congress - Xalapa, Mexico (details at www.fungifest.com/page1024.html).

Aug. 11-17, 2001. 7th International Mycological Congress - Oslo, Norway (second circular, program, registration and other details at www.uio.no/conferences/imc7/).

BOOK NOTICES

PAVEL LIZOŇ

W. Wojewoda (ed.). 2000. **Atlas of the geographical distribution of fungi on Poland, fascicle 1.** 61 pp., 10 distrib. maps. ISBN 83-85444-76-9. Published by W. Szafer Institute of Botany, Kraków. Price USD 17.00 (orders: IB Publisher, Lubicz 46, PL-31-512 Kraków, Poland; wieser@ib-pan.krakow.pl).

New series is a continuation of distribution atlases of lichens and bryophytes. First fascicle presents 10 aphylophoraceous fungi: *Asterodon ferruginosus*, *Bondarzewia mesenterica*, *Cyphellostereum laeve*, *Eucronartium muscicola*, *Ganoderma resinaceum*, *Inonotus hispidus*, *Peniophora lilacea*, *Porostereum spadiceum*, *Stypella grilletii*, and *Xylobolus frustulatus*. Each species has description, distribution map, list of known localities, and data on its general distribution and biology.

D. W. Minter, M. Rodríguez Hernández, & J. Mena Portales. 2001. **Fungi of the Caribbean. An annotated checklist.** P. [1]-946, PDMS Publishing, Isleworth, UK. ISBN 0 9540169 0 4. Price not indicated.

A team of mycologists, lead by David Minter (CABI Bioscience, UK), collected in four years almost 150 000 records which were stored in a database. The database was used to produce this impressive checklist presenting data on 11,268 taxa of fungi that were reported from Caribbean countries (Cuba, Puerto Rico, the Dominican Republic, Trinidad & Tobago, Jamaica and the American Virgin Islands. Each entry has accepted name, author of the name, place of original publication, any known synonyms, the number of times the fungus was recorded, the date of earliest record, month in which the fungus was observed, geographical distribution by country, a list of reference collections and bibliographic information on sources of information. All synonyms are cross-indexed.

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Instructions to Authors

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- title: informative and concise
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- list of references
- abstract/summary in Slovak or Czech: max. 10 lines (starting with author's name and the title of the article)

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Editorial office

Slovak Mycological Society, c/o Institute of Botany, Dúbravská 14, SK-842 23 Bratislava; e-mail botupali@savba.sk.



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