

**A revision of selected material of lignicolous species of
Brunnipila, *Capitotricha*, *Dasyscyphella* and
Neodasyscypha from the Czech Republic**

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Suková M. (2005): A revision of selected material of lignicolous species of *Brunnipila*, *Capitotricha*, *Dasyscyphella* and *Neodasyscypha* from the Czech Republic. – Czech Mycol. 57: 139–172.

Selected material of lignicolous species of *Brunnipila*, *Capitotricha*, *Dasyscyphella* and *Neodasyscypha* from the Czech Republic was studied. Possible forms of *Brunnipila fuscescens* s.l. and their characters are outlined. The generic name *Dasyscyphus* (Nees) ex Gray typified by Korf using *D. virgineus* belongs to the synonymy of *Lachnum*. For its later homonym, *Dasyscyphus* Fuckel (nom. illeg.), the nomen novum *Neodasyscypha* Suková et Spooner is proposed. The replacing name *Neodasyscypha* was already earlier proposed by Spooner, but was published invalidly by him. The new combinations *Neodasyscypha cerina* (Pers.: Fr.) Spooner and *Neodasyscypha subciboria* (Rodway) Spooner are published.

Key words: Bohemia, Moravia, taxonomy, nomenclature, *Dasyscyphus*, *Lachnella brunneola* var. *fagicola*

Suková M. (2005): Revize vybraného materiálu lignikolních druhů rodů *Brunnipila*, *Capitotricha*, *Dasyscyphella* a *Neodasyscypha* z České republiky. – Czech Mycol. 57: 139–172.

Byly studovány lignikolní druhy rodů *Brunnipila* (hnědochlupka), *Capitotricha* (dlouhochlupka), *Dasyscyphella* (chlupáčkovec) a *Neodasyscypha* (pachlupáček) na vybraném materiálu z území České republiky. Možné formy v rámci širokého pojetí druhu *Brunnipila fuscescens* a jejich nejdůležitější znaky jsou načrtnuty. Rodové jméno *Dasyscyphus* (Nees) ex Gray s typovým druhem *D. virgineus* stanoveným Korfem patří do synonymiky rodu *Lachnum*. Pro jeho pozdější homonymum, *Dasyscyphus* Fuckel (nom. illeg.), je navrženo nahrazující jméno (nomen novum) *Neodasyscypha* Suková et Spooner. Jméno *Neodasyscypha* bylo již dříve navrženo Spoonerem, ale bylo publikováno neplatně. Jsou publikovány nové kombinace *Neodasyscypha cerina* (Pers.: Fr.) Spooner a *Neodasyscypha subciboria* (Rodway) Spooner.

INTRODUCTION

This contribution focuses on lignicolous species of selected genera of *Lachnaceae* (Nannf.) Raitv. (Raitviir 2004) from the Czech Republic.

Dennis (1949) had a wide generic concept of the genus *Lachnum* Retz. (as *Dasyscypha* Fuckel). He divided the genus into 9 sections, some of them belonging at present to *Hyaloscyphaceae* Nannf. emend. Raitviir (Raitviir 2004). Raitviir (1970) separated the following taxa from *Lachnum* s. l. (as *Dasyscyphus* Gray): *Dasyscyphella* Tranzschel, *Dasyscyphus* subgen. *Capitotricha* Raitv. and *Belonidium* Mont. et Durieu. Species of *Belonidium* s. Raitviir (1970) are currently placed in two or three genera named *Trichopeziza* Fuckel and *Lasiobelonium* Ellis et Everh. s. Spooner 1987 (including *Trichopezizella* Raitv.); according to Raitviir (1980) *Trichopezizella* is a separate genus. Baral (in Baral and Krieglsteiner 1985) divided *Dasyscyphus* subgen. *Capitotricha* Raitv. into three taxa and raised the emended subgenus to the generic level. *Capitotricha* (Raitv.) Baral includes only taxa formerly belonging to *Dasyscyphus bicolor* s.l. The newly described genus *Brunnipila* Baral includes brown-haired species and the new genus *Incrucipulum* Baral was described for small species with rather wide and thick-walled hairs bearing apical crystals and with a warted ectal excipulum. The division of *Lachnum* s.l. (s. Raitviir 1970, as *Dasyscyphus*) into *Brunnipila*, *Capitotricha* s. str., *Incrucipulum* and *Lachnum* s. str. was supported by ultrastructural studies of the morphology of hair wall and apical apparatus of the ascus (Leenurm et al. 2000). Also a molecular study (Cantrell and Hanlin 1997: 750) provided support for a separation of *Brunnipila* and *Capitotricha*. Later, Haines (1989) separated *Fuscolachnum* Haines from *Lachnum* s.l., which includes small, non-lignicolous species with brownish-coloured hair walls. Lately, also *Peziza cerina* Pers.: Fr. should be excluded and put into a genus of its own (see Raitviir 1980, Haines and Dumont 1984, Spooner 1987). This problem is discussed below under *Neodasyscypha*.

Studying discomycetes has a long tradition in the Czech Republic. This work is based on collections from the PRM herbarium. The majority of collections deposited there comes from the collectors M. Svrček and J. Velenovský.

MATERIAL AND METHODS

Material from herbarium specimens was prepared using tap water as a mountant. Microcharacters were first observed in water in several specimens of each species and in all *Dasyscyphella* specimens. Measurements and drawings of microcharacters were made in freshly made slides in 5% KOH. Measurements of living cells (see Baral 1992), especially asci, would yield much larger values, and therefore paraphyses exceed dead asci distinctly more than living asci. Also spore arrangement (biseriate vs. uniseriate) strongly depends on the state: spores inside living asci are always biseriate in the species treated here (Baral 1992). The term "warted" is used as proposed by Leenurm et al. (2003). Before the publication,

a less appropriate term was used for warted hair walls: "encrusted" or "incrusted". Amyloidity of the ascoapical apparatus was observed in Melzer's reagent mostly after pretreatment in 5 % KOH (marked KOH/MLZ), its reaction in Lugol's solution (IKI: 1 % iodine and 3 % KI in water) was observed in most cases without the KOH pretreatment. Apothecia in longitudinal section were studied in tap water. Ascus bases, croziers and the thickness of hair walls were studied mostly in KOH at a magnification of 2000x using an oil-immersion lens on an Olympus BX-51 microscope. The croziers are visible also at a magnification 1000x using an oil-immersion lens, at which the other characters were studied. Colours of dried apothecia are in some cases provided with numbers which come from a lexicon of colours (Kornerup and Wanscher 1981), e.g. '4-A5' means tab. 4, colour A5. Abbreviations used in the drawings are: 'h.' = hairs, 'a.' = asci, 'p.' = paraphyses, 's.' = ascospores. Selected material from the herbarium PRM was revised. Localities, substrata and dates from labels of important old collections are cited without square brackets and explanatory or additional information. Published records of studied species from the Czech Republic are listed. In case specimens of those were studied, results of the revision are given. Czech generic and specific names are proposed or follow earlier national literature. Unless stated otherwise, articles from the St. Louis Code (Greuter et al. 2000) are cited.

RESULTS

Key to species examined, based on studied material

In the following key, characters observed on dried material and in slides in KOH from dried material are used.

1a Hairs greyish brown with olive tint, roughly and irregularly warted, warts higher and their size variable (Fig. 11). Ascospores ellipsoidal, with rounded ends ($8.5\text{--}10.5 \times 2.3\text{--}3 \mu\text{m}$). Asci arising from simple septa. – *Neodasyscypha cerina* (apothecia dark when dry, densely covered with olive brown hairs, paraphyses cylindrical-lanceolate, densely guttulate [in older specimens (c. from 1950) also guttulate, but guttules slightly smaller and less abundant]).

1b Hairs hyaline or brown, finely and regularly warted, warts not so high and their height almost invariable. If hairs brown, then ascospores fusiform to narrowly fusiform and asci arising from croziers [in lignicolous species].

2a Hairs with pigmented, brown wall; crystals or masses of refractive amorphous matter mostly present at (hair) apices – *Brunnipila*.

3a Hairs 137–157(–165) μm , asci 45–56 μm , mostly on *Corylus* – *Brunnipila calyculiformis*.

3b Hairs 70-113(-130) μm , asci 30-44 μm , frequent on *Fagus* cupules - *Brunnipila fuscescens*.

2b Hairs hyaline (sometimes lower part of hair becoming brown [cytoplasmatic pigment] on drying and sometimes remaining brown also after rehydration on slide); crystals or refractive amorphous matter on hair apices not present or present, if present then hairs (110-)145-300 μm long.

4a Hairs (110-)145-300 μm long, wall (0.6-)0.75-1.6 μm thick, crystals at apices present at least on some hairs. - *Capitotricha* (apothecia densely covered with white hairs, discs orange or dark orange).

5a Ascospores longer, c. (6.4-)8.4-11(-12.3) μm , on *Fagus*. - *Capitotricha fagiseda*.

5b Ascospores shorter, c. (6.4-)7.4-9.2(-9.9) μm , on *Quercus*, *Crataegus*, *Betula*, *Corylus*. - *Capitotricha bicolor*.

4b Hairs up to 120(-160) μm long, wall up to 0.9(-1) μm thick, crystals at hair apices never present (sometimes octahedral crystals present among hairs, but usually not at hair apices).

6a Apical cell of hair or also part of subapical cell smooth. - *Dasyscyphella* (outer surface of dried apothecia often covered with lumps of pale orange to dark orange resinous matter).

7a On cones of conifers. - *Dasyscyphella conicola*.

7b On wood.

8a Paraphyses 3-5 μm wide, protruding for 10-29 μm (exceeding the asci), asci arising from simple septa. - *Dasyscyphella crystallina*.

8b Paraphyses up to 3 μm wide, protruding for up to 10(-12.5) μm , asci arising from croziers. - *Dasyscyphella nivea*.

6b Apical hair cell as well as whole surface of the hairs warted (warts sometimes absent in lower part of hair, especially when marginal hairs are dense, or on apex of hair). - *Lachnum* (a key to *Lachnum* species will be published in another article).

LIST OF SPECIES

Brunnipila Baral - hnědochlupka

Brunnipila Baral in Baral et Krieglst., Beih. Z. Mykol. 6: 49, 1985.

Type species: *Peziza clandestina* Bull.: Fr.

Note: Hair apices observed in studied material were naked (Fig. 3A) or possessed amorphous refractive matter (as illustrated here especially in Fig. 1; previously observed in *Brunnipila calycioides* by Scheuer 1988: 218-219 and Suková 2004: 68) or with crystals of octahedral shape (Fig. 3B). The crystals of octahedral

shape were less sharp than crystals known from the genus *Incrucipulum* Baral, where the crystals are more regular and sharper (see e.g. Chlebicki and Suková in print).

***Brunnipila calyculiformis* (Schumach.: Fr.) Baral**

Fig. 1.

Peziza calyculiformis Schumach., Enumeratio plantarum 2: 425, 1803. – *Peziza calyculiformis* Schumach.: Fr., Syst. Mycol. 2(1), p. 94, 1822. – *Lachnum calyculiforme* (Schumach.: Fr.) P. Karst., Bidrag Kännedom Finlands Natur Folk 19: 178, 1871. – *Brunnipila calyculiformis* (Schumach.: Fr.) Baral in Baral et Krieglst., Beih. Z. Mykol. 6: 49, 1985.

Description. Dried apothecia stipitate, 0.65–1.1 mm high, 0.55–1.2 mm in diam., outside brown, covered with brown hairs, hairs often with pale (almost white) crystals on their apices, discs pale ochraceous. Hairs brown (dark or with beige or olive tint), warted, 5–9(–13)–septate, 137–157(–165) × 3.5–6 µm, with walls 0.7–1 µm thick, often bearing amorphous, hyaline, refractive matter or crystals of octahedral shape at their tips, young hairs paler in their upper part. Asci arising from croziers, 8-spored, 45–56 × 4–5 µm, KOH/MLZ blue. Ascospores hyaline, one-celled, narrowly fusiform, (6.5–)7–9.6 × 1.5–2 µm. Paraphyses lanceolate with acute tips, 2.8–5(–6) µm wide, exceeding asci for (11–)15–19 µm.

Comments. In the Czech Republic this species is known only from *Corylus avellana*. Dimitrova (2002) reported it from Bulgaria also from *Corylus*. It seems that it is the most common host of this fungus. However, Dennis (1949) reported the species also from *Alnus* and Nannfeldt (1928) from *Sorbus aucuparia*. Baral (in Baral and Krieglsteiner 1985) reported it from *Alnus* sp., *Alnus incana*, *Corylus* and *Acer*.

Published records: Velenovský 1934: 246 (as *Lachnum calyculiforme*, Central Bohemia, Hrusice, on beech cupule – revised, the specimen (PRM 151461) contains one apothecium, it is *B. calyculiformis*, hairs of the material were 135–165 × 4–6 µm and paraphyses 5–6 µm wide; but the substrate is not present in the specimen).

Material revised: Central Bohemia: Mnichovice, on small twig of *Corylus avellana*, April 1934, leg. et det. J. Velenovský, PRM 152047. – [Central Bohemia, Hrusice, brick-field] "Hrusická cihelna", [substrate not present in the specimen, said to be from] *Fagus cupules*, July 1931, leg. et det. J. Velenovský, PRM 151461. – Southern Bohemia: Orlík, valley of Vltava river, gorge, on corticated twigs of *Corylus avellana*, 12 May 1955, leg. et det. M. Svrček, PRM 816242. – Oounuz near Jistebnice, on twigs (wood and bark) of *Corylus avellana*, 28 May 1950, leg. et det. M. Svrček, PRM 816239. – Kaplice, valley of Malše river, Loužek ruin, on cortex of twig of *Corylus avellana*, 29 July 1971, leg. et det. M. Svrček, PRM 802066.

***Brunnipila fuscescens* (Pers.: Fr.) Baral – hnědochlupka nahnědlá** Fig. 2, 3.

Peziza fuscescens Pers., Syn. Meth. Fung., p. 654, 1801. – *Peziza fuscescens* Pers.: Fr., Syst. Mycol. 2(1), p. 95, 1822. – *Dasyscyphus fuscescens* (Pers.: Fr.) Gray, Nat. Arrang. Brit. Pl. 1: 671, 1821. – *Lachnum fuscescens* (Pers.: Fr.) P. Karst., Acta Soc. Fauna Fl. Fenn. 2(4): 134, 1885 (n.v.). – *Brunnipila fuscescens* (Pers.: Fr.) Baral in Baral et Krieglst., Beih. Z. Mykol. 6: 50, 1985.

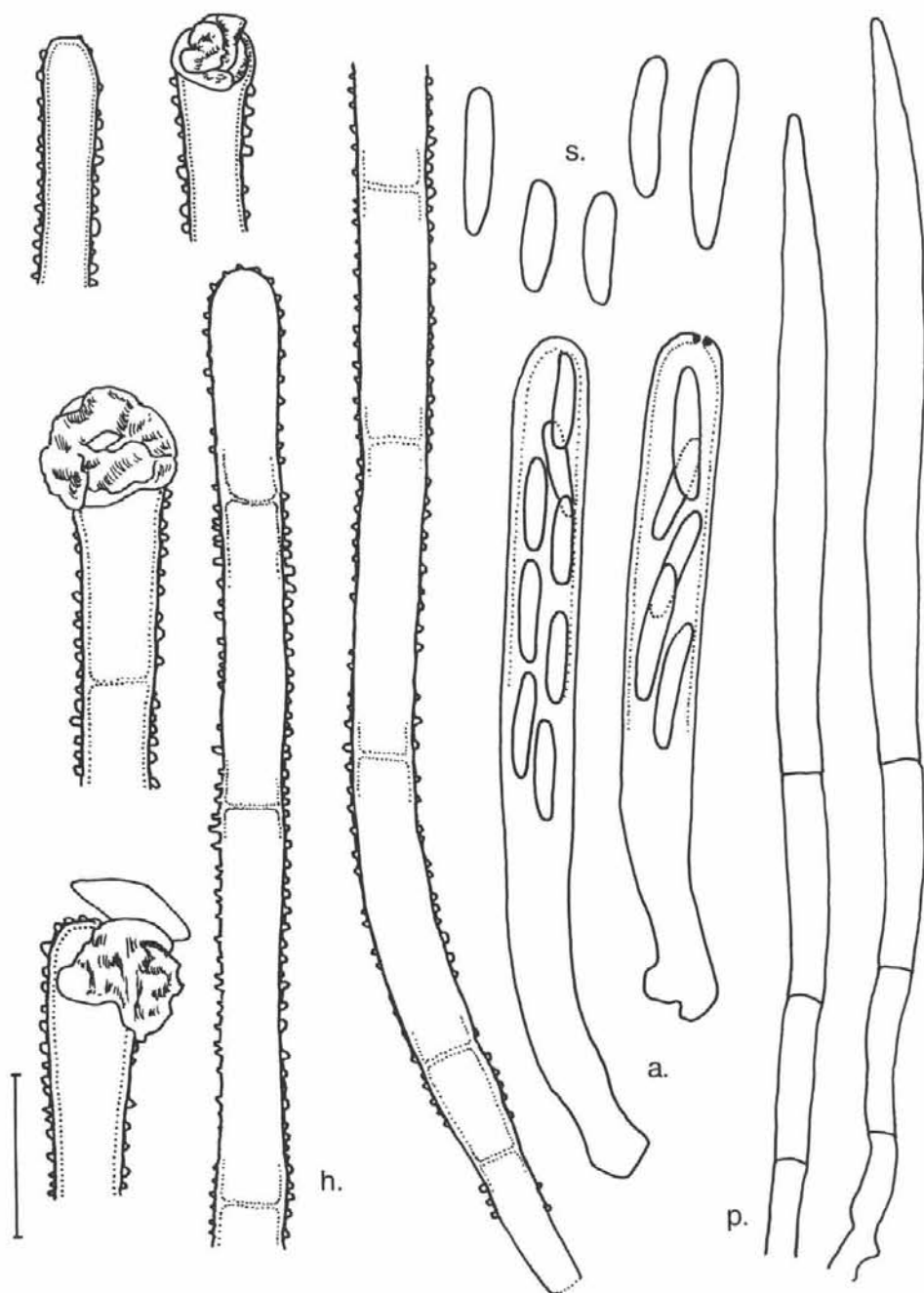


Fig. 1. *Brunnipila calyculiiformis* (Schumach.: Fr.) Baral, PRM 802066. Scale bar = 10 μ m. For explanations see Material and Methods.

Description (material from *Fagus cupules*). Dried apothecia stipitate, 0.4–0.6 mm high, 0.3–0.6(–0.7) mm in diam., outside pale brown (cf. 5–D6 to 5–D8) to brown (6–E8), covered with concolorous hairs, hairs usually with whitish crystals on their apices, discs orange yellow (4–A6 to A8). Hairs brown, warted, up to 5-septate, 70–113(–130) \times 4.8–6.2 μ m, with walls 0.5–0.8(–1) μ m thick, often bearing amorphous, hyaline, refractive matter or crystals of octahedral shape at their tips, very young hairs almost hyaline. Asci arising from croziers, (6–)8-spored, 30–44 \times (3–)3.5–4.5 μ m, MLZ very slightly blue, KOH/MLZ blue, IKI blue, KOH/IKI deeply dark blue. Ascospores one-celled, mostly narrowly fusiform, (5.8–)6.5–8.5(–10.5) \times 1.3–1.9 μ m (average 7.45 \times 1.6 μ m). Paraphyses lanceolate with acute tips, (3.3–)3.7–5.1(–6) μ m wide, exceeding asci for (9–)10–19(–22.5) μ m (average 14.6 μ m).

Comments. Various taxon epithets have been described in literature, which most probably belong to the synonymy of *Brunnipila fuscescens* (Pers.: Fr.) Baral s.l. (see Tab. 1). Moreover, some varieties or even separate species were distinguished.

I also found some differences in the studied material. The differences in ascospore width, in the literature (Le Gal 1939, Dennis 1949, Baral in Baral and Krieglsteiner 1985) considered to be an important distinguishing character (ascospores 1.5–2 vs. 2–2.5 μ m wide) proved to be less conspicuous in the studied dried material, although they were observed (see Tab. 2). Moreover, it seems that the differences in microcharacters do not correlate with the substrate (Tabs. 1, 2).

Short-stalked, often dark coloured apothecia collected on *Quercus* leaves often had slightly darker hairs, flank hairs with capitate apices were more abundant than in other material and the ascospores were relatively wide. It is possible that this form could be a separate species as mentioned by Le Gal (1939) and Baral (in Baral and Krieglsteiner 1985). Persoon's *Peziza dryophila* (Persoon 1822) might correspond with this short-stalked form. *Peziza dryophila* was originally even described as "sessile", but hairy and brown in contrast to the sessile *Mollisia rabenhorstii* (Auersw.) Rehm common on *Quercus* leaves. The name *Lachnella brunneola* (Desm.) W. Phillips in its original sense (Desmazières 1842 as *Peziza brunneola*, *Quercus* leaves) probably relates to this form according to the description provided by Le Gal (1939), who revised a specimen from Desmazières's exsiccate collection.

Not so dark, relatively long-stalked apothecia with cylindrical or only slightly enlarged hairs apices, moderately wide ascospores and not too much protruding paraphyses named *Lachnella brunneola* (Desm.) W. Phillips by Le Gal (1939) and reported from *Fagus* leaves, have been observed by me on *Fagus cupules* and *Quercus* leaves. The name of a species originally described from *Fagus* leaves (Persoon 1801) seems to be appropriate for it: *Brunnipila fuscescens* (Pers.: Fr.) Baral. In the case its neotypification is needed, I would suggest to select material with less protruding paraphyses rather than material of the rare form with more protruding paraphyses described below.

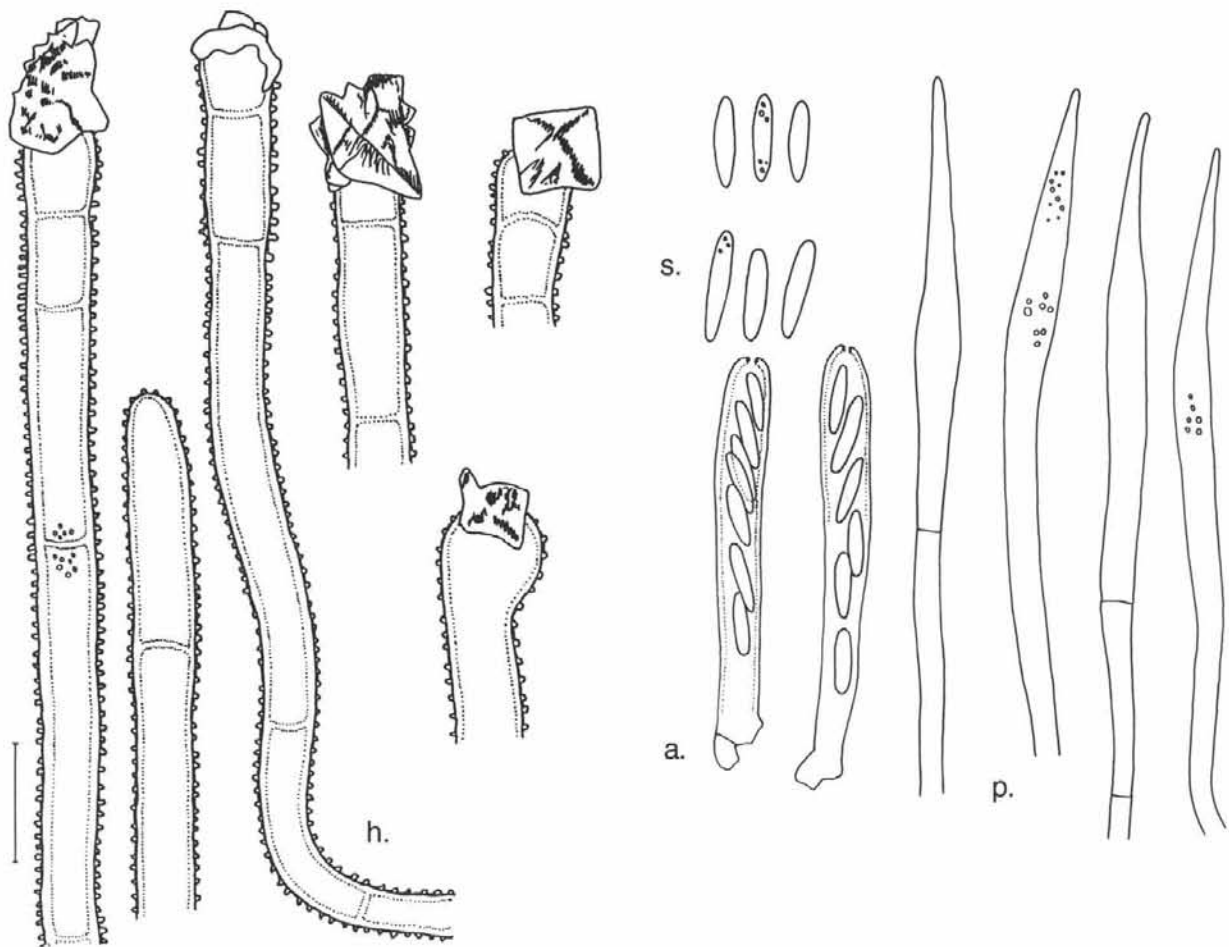


Fig. 2. *Brunnipila fuscescens* (Pers.: Fr.) Baral, PRM 816299. Scale bar = 10 μ m. For explanations see Material and Methods.

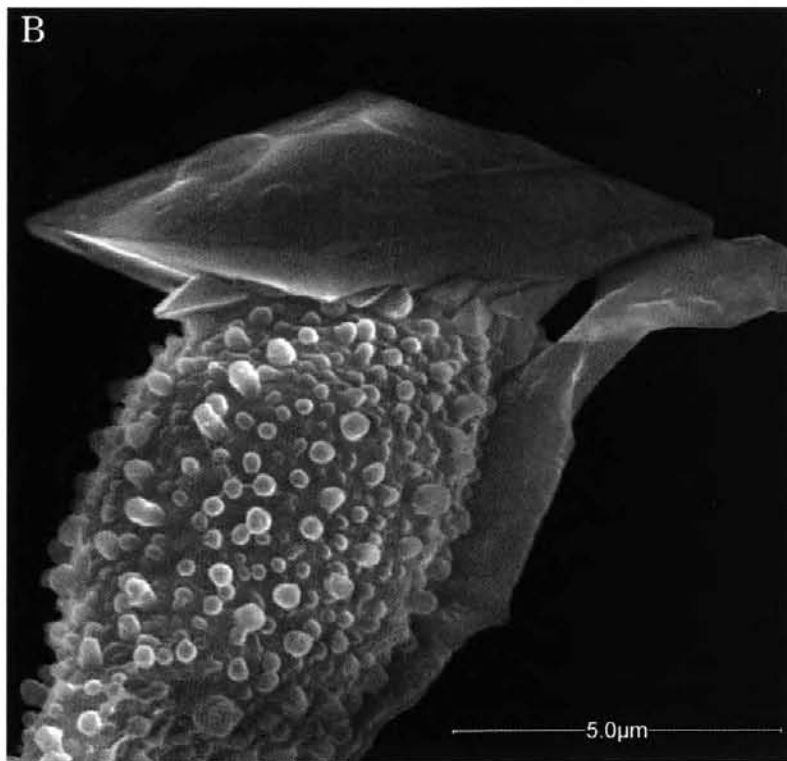
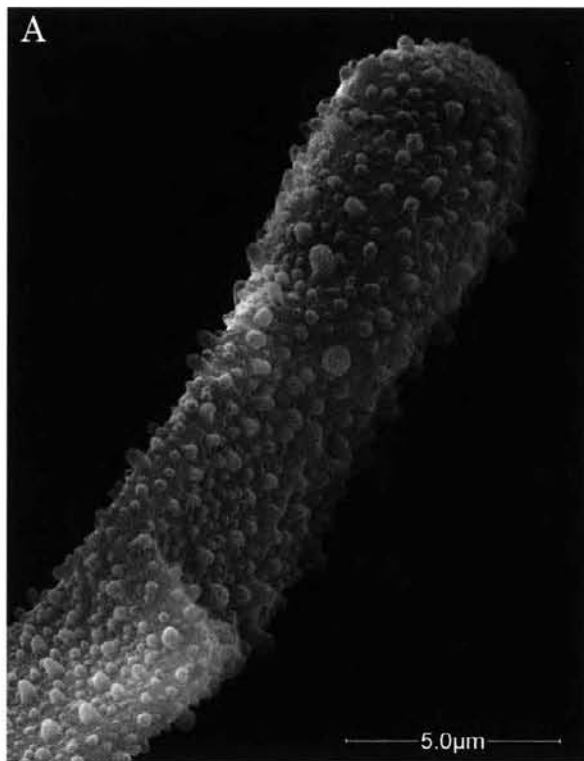


Fig. 3. *Brunnipila fuscescens* (Pers.: Fr.) Baral on *Fagus* cupules (PRM 902331), SEM photographs of hairs: A. hair without apical crystals, B: hair with apical crystals.

Tab. 1. Epithets belonging to the synonymy of *Brunnipila fuscescens* s.l. and substrates from which they were reported. *Dasyscyphus brunneolus* (Desm.) Sacc. was included in the synonymy of *Dasyscyphus fuscescens* by Rehm (1893: 900) and Dennis (1949). *Peziza dryophila* Pers. might belong to the synonymy of *Brunnipila fuscescens* s.l. according to Saccardo (1889: 460) and Rehm (1893: 900), but they considered only *Peziza dryophila* Pers. sensu other authors, not its protologue or type. Indexes B, D, FA and FU are abbreviations for 'brunneola', 'dryophila', 'fuscescens forma fagicola' and 'fuscescens f. fuscescens' and indicate my opinion on the material based on descriptions published by the authors. *Peziza brunneola* Desm. was evaluated according to the description provided by Le Gal (1939), who revised a specimen from Desmazières's exsiccate collection.

author	year	according to	rank of 'fagicola'	leaves of another tree or other trees	Quercus leaves	Fagus leaves	Fagus cupules	Alnus catkins
Persoon	1801	Persoon (1801)	–	–	–	<i>fuscescens</i> ^(FU) 1801	–	–
Persoon	1822	Persoon (1822)	–	–	<i>dryophila</i> ^(D-B) 1822	<i>fuscescens</i>	–	–
Desmazières	1842	Desmazières (1842)	–	–	<i>brunneola</i> ^(B) 1842	–	–	–
Phillips	1887	Phillips (1893)	var. under 'brunneola'	<i>brunneola</i>	<i>brunneola</i>	–	<i>fagicola</i> ^(FA) 1887	–
Boudier	1907, 1911	Boudier (1907, 1911)	var. under 'brunneola'	–	<i>brunneola</i>	<i>fagicola</i>	–	–
Boudier	1907, 1911	Korf (1985)	–	–	? <i>fuscescens</i>	<i>fuscescens</i>	–	–
Le Gal	1939	Le Gal (1939)	species	–	–	<i>brunneola</i> ^(FU)	<i>fagicola</i> ^(FA)	–
Dennis	1949	Dennis (1949)	var. under 'fuscescens'	–	<i>fuscescens</i>	<i>fuscescens</i>	<i>fagicola</i>	–
Baral	1985	Baral (in Baral and Krieglsteiner 1985)	species	<i>fagicola</i>	<i>fuscescens</i> ^(B)	<i>fagicola</i>	<i>fagicola</i>	<i>fagicola</i>
Suková	2005	–	–	–	<i>brunneola</i> ^(B) <i>fuscescens</i> ^(FU)	<i>fagicola</i> ^(FA)	<i>fuscescens</i> ^(FU)	–

Tab. 2. Small differences in morphological characters demonstrated on selected specimens of *Brunnipila fuscescens* s.l. (herbarium material studied in KOH). Indexes B, FA and FU ('*brunneola*', '*fuscescens* forma *fagicola*' and '*fuscescens* f. *fuscescens*') are used in the same sense as in Tab. 1.

specimen	substrate	dried apothecia	stalks	colour of hairs	ascospores (μm)	average (μm)	paraphyses exceed asci for (μm)	average (μm)
PRM 900754 ^(B)	<i>Quercus</i> leaves	hemispherical, dark	short, widened towards cup	darker	6.8–8.8(–9.7) \times 1.5–2.2	7.88 \times 1.85	(13–)14.5–20.5(–23)	17.5
PRM 907154 ^(B)	<i>Quercus</i> leaves	rather dark, basis darkened	short, widened towards cup	paler	6.7–7.2 \times 1.7–2.0	6.85 \times 1.85	(15–)16.5–22.5	19.6
PRM 907156 ^(FU)	<i>Quercus</i> leaves	plane, marginate, dark	short or longer	paler	(6.4–)6.8–8.8(–9.6) \times 1.3–1.8	7.81 \times 1.53	9.5–14.5(–16)	12.2
PRM 900754 ^(FU)	<i>Quercus</i> leaves	plane, marginate, pale	longer	paler	6.8–8.5(–9.3) \times 1.4–1.6	7.64 \times 1.51	13–18.3(–20)	16.1
PRM 684251 ^(FA)	<i>Fagus</i> cupules	dark	long	paler	6.3–7.9 \times 1.4–1.8	7.09 \times 1.63	–	–
PRM 816299 ^(FA)	<i>Fagus</i> cupules	paler	long	paler	(5.8–)6.5–8.5(–10.5) \times 1.3–1.9	7.42 \times 1.60	(12–)14–21.3(–22.5)	17.6
PRM 902331 ^(FA)	<i>Fagus</i> cupules	paler	long	paler	6.7–8.5(–9.2) \times 1.4–1.7	7.67 \times 1.56	(7.5–)9.5–17.2	11.9
PRM 900742 ^(FA)	<i>Fagus</i> leaves	rather dark, outer flanks and stipe darkened*	long	paler	(6–)6.6–8(–8.4) \times 1.4–1.7	7.33 \times 1.48	30–37(–42)	33.7

* Apothecia with thickened surface cells of excipulum and with rare flank hairs were present in the collection, but in my opinion, it should not be considered a difference with '*Brunnipila fuscescens* f. *fuscescens*'. According to Suková (2004) apothecia of such kind were observed also on some *Juncus* stems in populations of *Brunnipila calycioides* with prevailing 'normal' apothecia (with non-darkened and rich haired outer surface). Possibly the apothecia were older than the 'normal' apothecia or were more insolated.

A form with more protruding paraphyses was described by Phillips as *Lachnella brunneola* var. *fagicola* W. Phillips and accepted by Le Gal as a separate species. I have observed this form only on *Fagus* leaves, but according to Phillips (1887) and Le Gal (1939) it can occur also on cupules of *Fagus*. The only distinct difference is in fact the length of the paraphyses which is in my opinion not sufficient for distinguishing it at species level. I would prefer distinguishing the long-paraphysate material no higher than at form level (*Brunnipila fuscescens* f. *fagicola*).

Published records: Svrček 1953: 207 (as *Lachnum fuscescens* (Pers.) P. Karst. f. *fagicola* (W. Phillips) 'Svrček' [should be considered a provisional combination, without citation of basionym and not indicated as a new combination], Central Bohemia, Protected Landscape Area Křivoklátsko, valley of Klíčava brook, on *Fagus sylvatica* – revised, PRM 816299, on cupules: it has less exceeding paraphyses and ascospores on average 1.6 µm in diam.). – Svrček 1986: 14 (Western Bohemia, Horomyslice, Bečvářka forest, on cupules of *Fagus sylvatica*). – Suková in Prášil 1999: 24 (Hřebeň hills, Řevnice, valley of Moklický potok brook, on cupules of *Fagus*) as *Lachnum fuscescens* var. *fagicola* (W. Phillips) 'Dennis' [erroneous citation of author, as a variety it has never been combined into *Lachnum*]. – Réblová and Prášil 1999: 30 (Šumava Mts., Černé jezero lake and Mt. Ždanidla, on *Fagus sylvatica*). – Papoušek 2004: 44 (Southern Bohemia, Novohradské hory Mts., Žofínský prales virgin forest, on beech cupule – revised) as *Lachnum fuscescens* var. *fagicola* (W. Phillips) 'Dennis' [mistake in citation of author introduced by Suková in Prášil (1999)].

Material revised (from cupules of *Fagus sylvatica*): Central Bohemia, Protected Landscape Area Křivoklátsko, valley of Klíčava brook, on beech cupules, 28 May 1948, leg. et det. M. Svrček (as *Lachnum fuscescens* (Pers.) P. Karst. f. *fagicola* (W. Phillips)), PRM 816299. – Protected Landscape Area Český kras, NW of Dobřichovice, Karlické údolí (valley), alt. 250–280 m, 25 May 2002, leg. et det. M. Suková, PRM 900750. – Southern Bohemia: Šumava Mts., Mt. Ždanidla (alt. 1308 m) near Prášíly, 18 June 1997, leg. et det. M. Svrček, PRM 891845, 891839. – Šumava Mts., Boubínský prales virgin forest, on cupules of *Fagus*, 1 June 1974, leg. et det. M. Svrček, PRM 902331. – Novohradské hory Mts., Žofínský prales virgin forest, 17 April 1970, leg. J. Kubička, det. M. Svrček (as *Dasyscyphus fuscescens* var. *fagicola* (W. Phillips) Dennis), PRM 816300 (too young material, asci not developed, paraphyses long, but still immature with non-acute apices, can be identified only as *Brunnipila fuscescens* s.l.). – Moravia: Veveří, "Obora" forest, 18 May 1969, leg. et det. M. Svrček (as *Dasyscyphus fuscescens* var. *fagicola* (W. Phillips) Dennis), PRM 684521.

Comparative material from leaves of *Fagus sylvatica* and *Quercus* studied: Central Bohemia: Protected Landscape Area Český kras [Bohemian Karst], Srbsko, Doutnáč hill, on fallen leaves of *Quercus*, together with *Mollisia rabenhorstii* (Auersw.) Rehm, 16 May 2002, leg. et det. M. Suková, PRM 907154. – Český kras, Srbsko, SE slope of Doutnáč hill, on fallen leaf of *Quercus*, 16 May 2002, leg. et det. M. Suková, PRM 907156. – Český kras, Velká hora hill near Karlštejn, on fallen leaves of *Quercus pubescens*, 22 May 1960, leg. et det. M. Svrček, PRM 620064. – Český kras, Karlické údolí valley, to 400 m N of Karlík, alt. 245 m, on fallen leaves of *Fagus sylvatica*, 25 May 2002, leg. et det. M. Suková, PRM 900742. – NW of Dobřichovice, Karlické údolí valley, alt. 250–280 m, on *Quercus* leaves, 25 May 2002, leg. et det. M. Suková, PRM 900754. – Vrané nad Vltavou, on *Quercus* leaves, 31 May 1953, leg. et det. M. Svrček, PRM 816297. – Zvánovické údolí, on leaves of *Quercus rubra*, 24 May 1944, leg. et det. M. Svrček, PRM 690212.

Capitotricha (Raitv.) Baral – dlouhochlupka

Dasyscyphus subgen. *Capitotricha* Raitv. pro parte, Scripta Mycol. 1: 88, 1970. – *Capitotricha* (Raitv. emend. Baral) Baral in Baral et Krieglst., Beih. Z. Mykol. 6: 60, 1985.

Type species: *Peziza bicolor* Bull.: Fr.

Capitotricha bicolor (Bull.: Fr.) Baral – dlouhochlupka dvoubarvá Fig. 4, 6.

Peziza bicolor Bull., Herb. France, Tom. 9, Fasc. 97–108, Pl. 410, Fig. 3, 1789. – *Peziza bicolor* Bull.: Fr., Syst. Mycol. 2(1), p. 92, 1822. – *Dasyascyphus bicolor* (Bull.: Fr.) Fuckel, Jahrb. Nassauischen Vereins Naturk. 23–24: 305, 1870. – *Lachnum bicolor* (Bull.: Fr.) P. Karst., Bidrag Kännedom Finlands Natur Folk 19: 172, 1871. – *Capitotricha bicolor* (Bull.: Fr.) Baral in Baral et Krieglst., Beih. Z. Mykol. 6: 60, 1985.

Description. Dried apothecia (0.3–)0.4–0.65(–0.85) mm high, 0.55–1.0(–1.8) mm wide, short-stalked, stalks mostly almost smooth, beige to brown, 70–260(–450) μm high (average 136.5 μm) and 90–180(–230) μm wide (average 105 μm), height/width ratio (0.57–)0.69–1.38(–1.65), average 1.04, discs orange (5–A6), up to dark orange (6–A8), outer surface of cup densely covered with pure white, long hairs, with more or less frequent small, white crystals at their apices (visible at magnification 32x). Hairs hyaline, warty, cylindrical or with enlarged apices, 180–240(–260) \times (2.6–)3–4.2(–4.6) μm (average length 206 μm), with walls 0.75–1.2 μm thick, multiseptate, frequently bearing crystals at their tips. Asci arising from simple septa, 40–60 \times 4.5–5.4 μm . Ascospores rather straight, one-celled, hyaline, tapering to both ends, (6.4–)7.4–9.2(–9.9) \times (1.5–)1.7–2.1(–2.2) μm , non-guttulate or with several small guttules in plasma. Paraphyses lanceolate with acute to subacute (conical) tips, with more or less numerous small guttules in plasma, (2.4–)3–4.2 μm wide, exceeding asci for 6.5–23 μm .

Habitat. Corticated twigs of *Quercus*, *Crataegus*, *Betula* and *Corylus avellana*, decorticated twigs of *Crataegus* and partially decorticated twigs of *Crataegus* in top of this tree.

Comments. Baral (in Baral and Krieglsteiner 1985) proposed that two taxa could be distinguished in *Capitotricha bicolor* (s.l.) – one growing on twigs and cupules of *Fagus*, and the other one on twigs of other hosts. The former (*C. fagiseda* Baral, nom. prov.) is characterised by him as having somewhat longer spores in fresh state (9–15(–17) \times 2.5 μm) compared to *C. bicolor* s. str. (7–12 \times 2–2.5 μm). This difference was confirmed, although in herbarium material ascospores of both taxa are smaller than in living material. Further differences were noted in the thickness of stalks and excipulum. Stalks were on average slightly shorter and broader in material from *Quercus*, *Crataegus* and other deciduous trees (Fig. 6). Apothecia in this material were also usually slightly smaller and often entirely closed (with non-visible discs), however, not absolutely: e.g. overmature apothecia on a *Quercus* twig were 600–850 μm high, 720–900(–1800) μm wide and usually open in specimen PRM 690113. In macroscopical view it seemed to me that hairs of the fagicolous form are longer and not so abundant. In measurements hairs in material from *Fagus* are on average of the same length, but the length is more variable. Crystals at hair apices were more frequent in the non-fagicolous material.

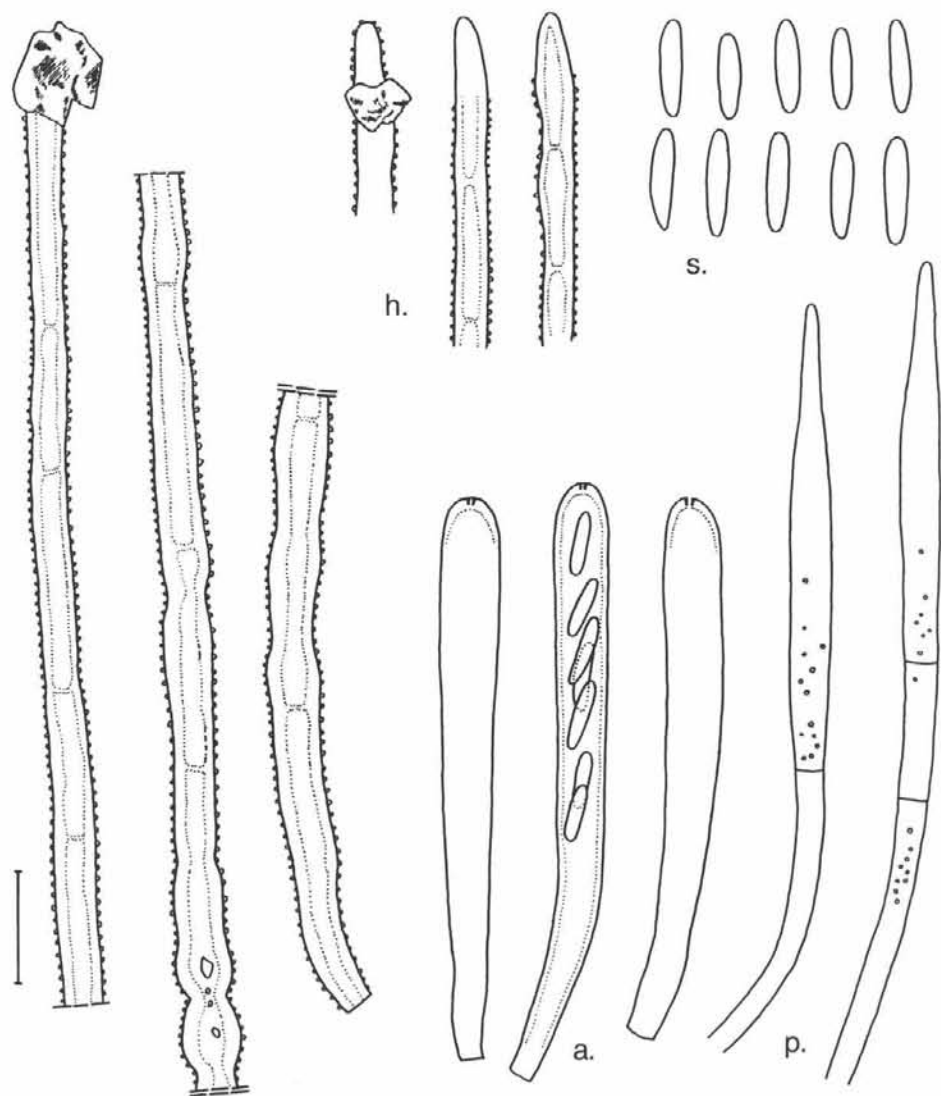


Fig. 4. *Capitotricha bicolor* (Bull.: Fr.) Baral, PRM 690111. Scale bar = 10 μ m. For explanations see Material and Methods.

I accept that the fagicolous material (described below) belongs to a separate species which should be distinguished from *Capitotricha bicolor*. The original substrate of *Peziza bicolor* Bull. illustrated by Bulliard (1789) is possibly a twig of *Quercus*, but this is not unambiguous. Some studied specimens from PRM contain *Quercus* twigs with long internodia and thin bark with longitudinal furrows simi-

lar to Bulliard's illustration. In Bulliard's later work (1791: 243–244), where descriptions to previously published icones were published, also only deciduous twigs are mentioned as the substrate, but he did not specify the concrete tree. As according to my observation Bulliard (1789) illustrated the short-stalked form of apothecia in original work, the epithet *bicolor* should be used for the non-fagicolous taxon.

Published records: Zimmermann 1909: 75 (Southern Moravia, Lednice, on *Quercus* – revised, PRM 690106). – Velenovský 1934: 248 (as a common species, on twigs, wood and cupules of *Quercus*, twigs of *Betula* – revised, PRM 147387, 147638, 147900, 149636). – Picbauer 1942: 183 (Northern Moravia, Kamenice forest near Turovice, on *Quercus robur*).

Material revised: Central Bohemia: Koněprusy, on *Quercus* twigs, 26 April 1942, leg. et det. V. Vacek, PRM 690112. – Srbsko, Koda, on *Crataegus* twigs, 17 April 1949, leg. et det. V. Vacek, PRM 690111. – Karlštejn, foot of Velká hora and Koniček (hills), on twigs of *Crataegus* in crown of the tree, 11 October 1953, leg. et det. M. Svrček, PRM 816215. – Liteň near Zadní Třebáň, by a pond, on twigs of *Quercus robur*, 2 April 1961, leg. et det. M. Svrček, PRM 615928. – Liteň (near Zadní Třebáň), in Mramor valley, on twigs of *Crataegus* sp., 9 May 1962, leg. et det. M. Svrček, PRM 568482. – Všenory, [on twigs of *Quercus*,] 21 April 1923, leg. et det. J. Velenovský, PRM 149636. – Všenory, on twig of *Quercus*, 4 January 1942, leg. et det. V. Vacek, PRM 690113. – Praha – Zadní Kopanina, on deciduous twigs (*Quercus*), 14 March 1948, leg. et det. V. Vacek, PRM 690123. – Praha – Radotín, on twigs of *Quercus*, 26 February 1950, leg. Z. Pouzar, det. M. Svrček, PRM 623182. – Praha – Hvězda (= Stern), on twig of *Quercus*, date not given, leg. et det. Eck (as *Peziza bicolor* Bull.), PRM 727177, 727178, 727185, 727199, 727204. – Zahořany near Davle, on [dead] twigs of *Quercus* in crown of [living] tree, 6 April 1946, leg. et det. M. Svrček, PRM 816217. – Mnichovice, on twig of *Betula alba* [= *Betula pendula*], August 1926, leg. et det. J. Velenovský, PRM 147900. – Mnichovice, on twigs of *Quercus*, May 1923, leg. et det. J. Velenovský, PRM 147387 (very old, probably overwintered material). – Hrusice, on twigs of *Betula alba* [= *Betula pendula*], 13 June 1923, leg. et det. J. Velenovský, PRM 147638. – Southern Bohemia: Čimelice, *Quercus* forest at Nerestec pond, on twigs in top of tree, *Quercus* sp. (rare), 19 August 1964, leg. et det. M. Svrček, PRM 613283. – Čimelice, Chlum forest, on fallen twigs of *Quercus* sp. (rare), 4 July 1965, leg. et det. M. Svrček, PRM 610639. – Smržov near Lomnice nad Lužnicí, by Dvořiště pond, on twigs of *Quercus* sp., 30 May 1960, leg. et det. M. Svrček, PRM 620059. – Třeboň, under Stupský rybník (pond), on twig of *Quercus* sp., 12 May 1966, leg. et det. M. Svrček, PRM 622523. – Třeboň, Holičky, Vlčí luka, on twigs of *Quercus* sp., 1 March 1959, leg. J. Kubička, det. M. Svrček, PRM 613837. – Třeboň, forest by Fráterský rybník (pond), on twig of *Quercus* sp., 19 May 1964, leg. et det. M. Svrček, PRM 611404. – Třeboň, on dike of Rožmberk pond, on twig of *Quercus* sp., 22 May 1964, leg. et det. M. Svrček, PRM 611405. – Eisgrub [Lednice], Unterwald forest, on twigs of *Quercus robur*, March 1907, leg. et det. H. Zimmermann, PRM 690106, 690117.

Capitotricha fagiseda nom. prov.

Fig. 5, 7.

Capitotricha fagiseda nom. prov. proposed by Baral in Baral et Krieglst., Beih. Z. Mykol. 6: 60, 1985.

Description. Fresh apothecia (PRM 907157) 0.6–1.6 mm high, 1.2–2.4 mm in diam., with brightly white hairs and orange-yellow discs, stalks 180–580 µm long. Dried apothecia 0.5–0.8 mm high, 0.5–1.4 mm wide, stalks often covered with some hairs, white or pale beige, (100–)150–400(–600) µm high (average 273 µm) and (90–)100–240(–310) µm wide (average 170 µm), height/width ratio (0.83–)0.95–2.26(–2.92), average 1.61, discs orange (5–A6), outer surface of cup densely covered with pure white, long hairs rather frequently with small, white

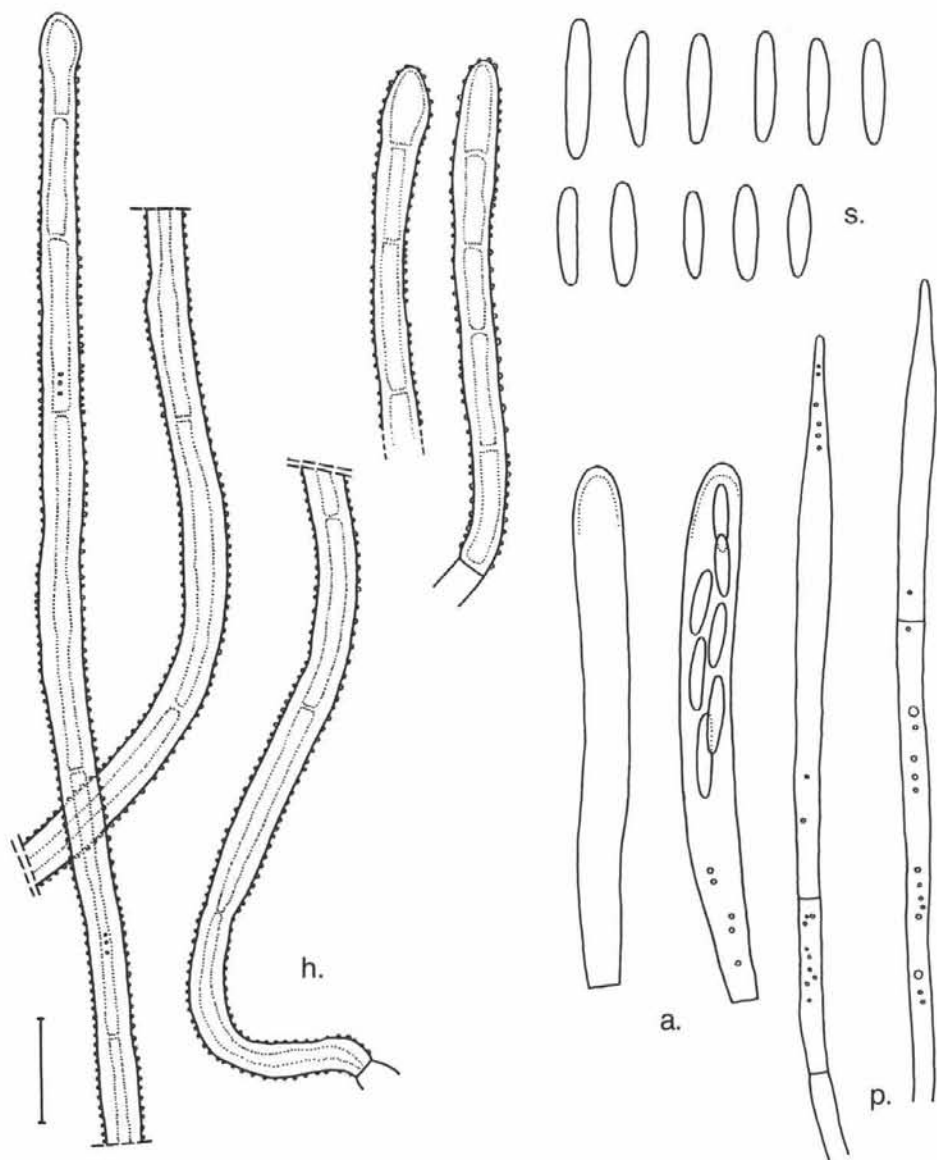


Fig. 5. *Capitotricha fagiseda* nom. prov., PRM 892256. Scale bar = 10 μ m. For explanations see Material and Methods.

crystals at their apices (visible at magnification 32x). Hairs hyaline, warty, multiseptate, cylindrical or with tapering apices or with conspicuously enlarged apices, (110-)145-275(-300) \times 3-4.5 μ m (average length 210 μ m), with walls (0.6-)0.8-1.6 μ m thick, often bearing crystals (8.5-14 μ m diam.) at their tips. Asci

arising from simple septa, (38.5–)40–62 × (4.3–)4.6–5.6 µm. Ascospores straight or slightly inequilateral, one-celled, hyaline, tapering to both ends, (6.4–)8.4–11(–12.3) × (1.5–)1.9–2.3(–2.6) µm, non-guttulate or with several small guttules in plasma. Paraphyses lanceolate with acute tips, with more or less numerous small guttules in plasma, (2.4–)3.2–4.5 µm wide, exceeding asci for 6.5–21(–25) µm.

Habitat. Small corticated twigs, bigger decorticated twigs, twigs in the tree top, wood of a lying trunk, wood of a standing trunk, cupules and, moreover, a petiole of a leaf (PRM 690120), all of *Fagus*.

Comments. Differences between *Capitotricha fagiseda* and *C. bicolor* are discussed under *C. bicolor*.

Since an interesting, still unidentified material of *Capitotricha bicolor* s.l. was found on *Alnus viridis*, it is possible, that the provisional epithet '*fagiseda*' is inappropriate for the species. The specimen from *Alnus* contains rather thinner stalked apothecia (briefly described under Unidentified material studied), similar to the fagicolous material, and ascospores slightly longer than in *Capitotricha bicolor* s. str.: (6.2–)7.6–9.4(–11.2) × (1.5–)1.8–2.2(–2.5) µm. Crystals at hair apices were abundant in this collection similarly as in *C. bicolor* s. str.

Published records (as *Lachnum bicolor* (Bull.: Fr.) P. Karst. or *Dasyyscypha(-us) bicolor* (Bull.: Fr.) Fuckel): Svrček 1986: 13 (Western Bohemia, Nature Reserve Bělýšov prope Chudenice, on cupules of *Fagus sylvatica*). – Réblová and Prášil 1999: 30 (Western Bohemia, Šumava Mts., Mt. Ždanidla and Černé jezero lake, on *Fagus sylvatica* – revised, PRM 891837–891838, 891852, 892256). – Papoušek 2004: 44–45 (Southern Bohemia, Novohradské hory Mts., Žofínský prales, twig of *Fagus*).

Material revised (in herbarium mostly as *Lachnum bicolor* (Bull.: Fr.) P. Karst. or *Dasyyscypha(-us) bicolor* (Bull.) Fuckel): Western Bohemia: Šumava Mts., Černé jezero near Železná Ruda, on *Fagus* cupules, 19 June 1997, leg. M. Svrček, PRM 891852. – Šumava Mts., Mt. Ždanidla, 2.6 km W of Prášily, seminatural mixed forest (*Fagus*, *Picea*, *Acer pseudoplatanus*), on *Fagus* twigs, 18 May 2005, leg. J. Holec, PRM 898748. – Šumava Mts., Mt. Ždanidla (alt. 1308 m) near Prášily, on wood of fallen trunk of *Fagus*, 18 June 1997, leg. M. Svrček, PRM 891837. – l.c., on wood of a standing trunk of *Fagus*, 18 June 1997, leg. M. Svrček, PRM 891838. – l.c., on fallen, decorticated twig of *Fagus*, 18 June 1997, leg. M. Svrček, PRM 892256. – Central Bohemia: Jevany, on twigs and petiole of *Fagus sylvatica*, 28 April 1945, leg. M. Svrček, PRM 690120. – Baba hill near Stříbrná Skalice, on twigs of *Fagus sylvatica*, 25 March 1951, leg. Z. Pouzar, PRM 690107. – Southern Bohemia: Šumava Mts., Boubínský prales virgin forest, on twig and cupules of *Fagus sylvatica*, 11 April 1961, leg. J. Kubička, PRM 615927. – Šumava Mts., Horní Vitavice, Boubínský prales virgin forest, on twig of *Fagus sylvatica*, 19 May 1965, leg. M. Svrček (scanty material, one apothecium only), PRM 604113. – Moravia: Hrubý Jeseník Mts., ENE of Kouty nad Desnou, beech forest on slope between Divoká Desná river and Hřbetý, on corticated twigs of *Fagus sylvatica*, 20 May 2002, leg. et det. M. Suková, PRM 907157. – Českomoravská vrchovina, Mt. Javoříce near Počátky, on twig of *Fagus sylvatica*, 3 June 1971, leg. F. Kotlaba et Z. Pouzar, det. M. Suková, PRM 902330. – Českomoravská vrchovina, Špičák hill near Třešť, on twigs of *Fagus*, 14 May 1971, leg. M. Svrček, PRM 816214. – Vsetínské vrchy Mts., Mt. Cáb, virgin forest, on twigs of *Fagus sylvatica*, 22 August 1962, leg. M. Svrček, PRM 568313.

Unidentified material of *Capitotricha bicolor* s.l. studied: Austria, Hohe Tauern Mts., Ankolgelgruppe, NW of Gmünd i. Kärnten, valley of Gößbach brook, NE of Gößkarspeicher, alt. 1920 m, 46° 59' 19" N, 13° 20' 20" E, on twigs (all decorticated, corticated or with only bast) of *Alnus viridis* lying on the ground, 4 July 2005, leg. M. Suková et A. Chlebicki, PRM 907160. – Fresh apothecia

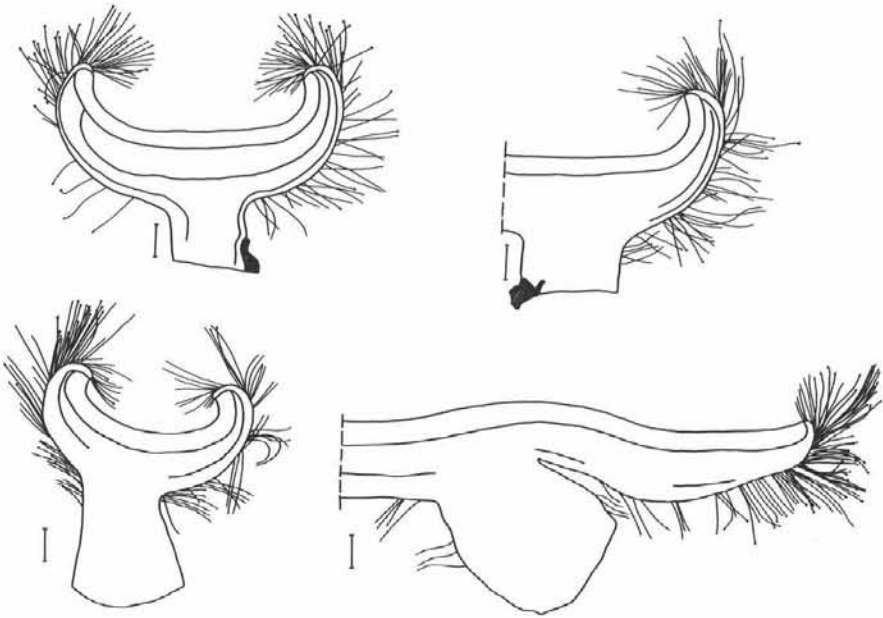


Fig. 6. *Capitotricha bicolor* (Bull.: Fr.) Baral (PRM 690111, on *Crataegus*) – apothecia in longitudinal section studied in water. Scale bars = 100 μ m.

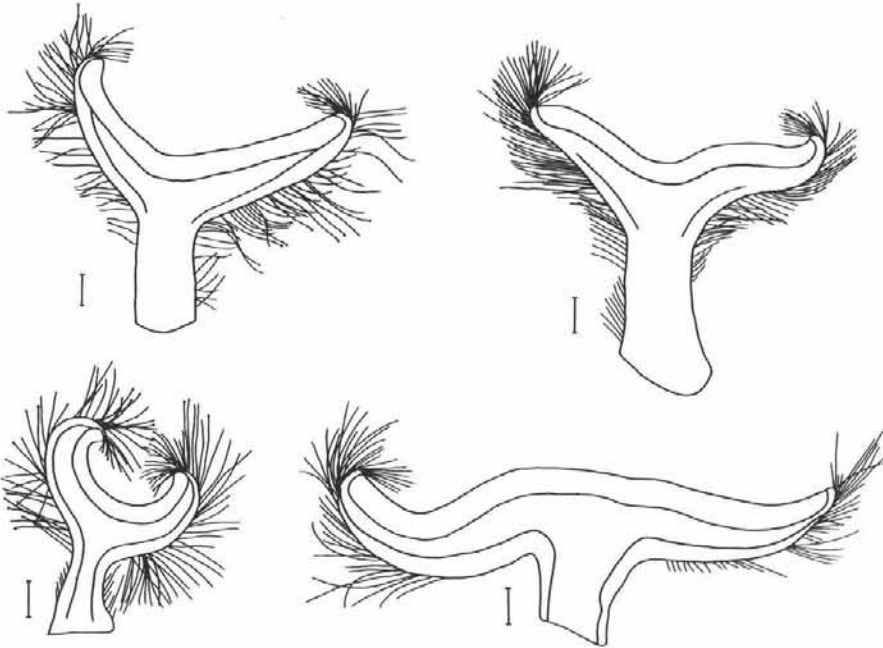


Fig. 7. *Capitotricha fagiseda*, nom. prov. (PRM 892256, on *Fagus*) – apothecia in longitudinal section studied in water. Scale bars = 100 μ m.

0.6–1.2(–1.5) mm high, (0.75–)1.0–2.1(–2.4) mm in diam., with brightly white hairs and yellow-orange discs, stalks 180–520 µm long, (120–)160–320(–380) µm wide. Stalks of dried apothecia often covered with hairs, white or pale beige, (140–)210–300 µm high (average 255 µm) and (100–)120–190(–210) µm wide (average 156 µm), height/width ratio (0.95–)1.24–2.13(–2.50), average 1.69.

Dasyscyphella Tranzschel – chlupáčkovec

Dasyscyphella Tranzschel, Trav. Soc. Imp. Naturalistes Saint-Pétersbourg Sect. Bot. 28: 296, 1898.

Type species: *Dasyscyphella cassandrae* Tranzschel

Note: The width of hairs in the descriptions below is given from the central to upper half of the hairs, the width of the apical (often enlarged, subclavate) part of the hairs is given under the measurements of the apical cell.

Dasyscyphella conicola (Rehm) Raitv. et Arendh.

Fig. 8.

Dasyscyphus pulverulentus (Lib.) Sacc. var. *conicola* Rehm, Ann. Mycol. 8: 482, 1910. – *Dasyscyphella conicola* (Rehm) Raitv. et Arendh. in Arendh. et Raitv., Mycotaxon 32: 355, 1988.

Description. Dried apothecia stipitate, 0.35–0.65 mm high, (0.2–)0.3–1.0 mm in diam., cup-shaped, outer surface orange-yellow (4–A4), covered by concolorous to whitish hairs and concolorous (4–A8) to orange (5–B8) lumps of resinous matter (dissolving in KOH), discs pale yellow to orange-yellow (4–A6 or 3–A5). Hairs hyaline, 48–60 × 2–3 µm, with lower part cylindrical and warty, in apical part enlarged, with apical cell or very rarely also part of subapical cell smooth, apical cell (7–)9–14(–17.5) × 2.7–4.1 µm. Asci arising from croziers, 40–48 × 4–5 µm, KOH/MLZ blue. Ascospores one-celled, ellipsoidal fusiform, slightly inequilateral or rarely symmetric, 5.4–6.7(–7.4) × 1.4–1.9 µm. Paraphyses narrowly lanceolate, 1.6–1.8 µm in diam., not exceeding asci or exceeding for up to 6.7 µm.

Comments. Raitviir (2002) reported asci arising from simple septa in this species. In Czech collections croziers were constantly present.

Arendholz and Raitviir (1988) reported also another taxon from *Lachnaceae*, *Lachnum pulverulentum* (Lib.) P. Karst. var. *fructicola* (Kauffm.) Arendh. et Raitv. from cones of *Pinus sylvestris*. The variety as described by Arendholz and Raitviir differs from material of *Dasyscyphella conicola* studied by me in exudations insoluble in KOH and hairs without completely smooth tips.

Published records: Velenovský 1934: 233 as *Dasyscypha pulverulenta* (Central Bohemia, Mnichovice, on *Pinus sylvestris* – no specimen from cones seen, probably all the specimens studied by him were from needles).

Material revised (in the herbarium under *Dasyscypha pulverulenta* (Lib.) Sacc.): Central Bohemia: Hřebeň hills, Halouny, on cones of *Pinus sylvestris*, 11 June 1954, leg. et det. M. Svrček, PRM 816365. – Hřebeň hills, Dobřichovice, on cones of *Pinus sylvestris*, 25 August 1957, leg. et det. M. Svrček, PRM 816364. – Mnichovice, on cone of *Pinus sylvestris*, November 1933, leg. et det. J. Velenovský (as *Lachnum papyraceum*), PRM 152023. – Southern Bohemia: Nová Ves near Klikov, Široké blato, Sphagnetum, on cone of *Picea excelsa*, 11 June 1959, leg. J. Kubička, det. M. Svrček, PRM 613863. – Třeboň, forests between Svatý Vít and Nová Hlína, on fallen cones of *Pinus sylvestris*, 11 May 1971, leg. et det. M. Svrček, PRM 816363.

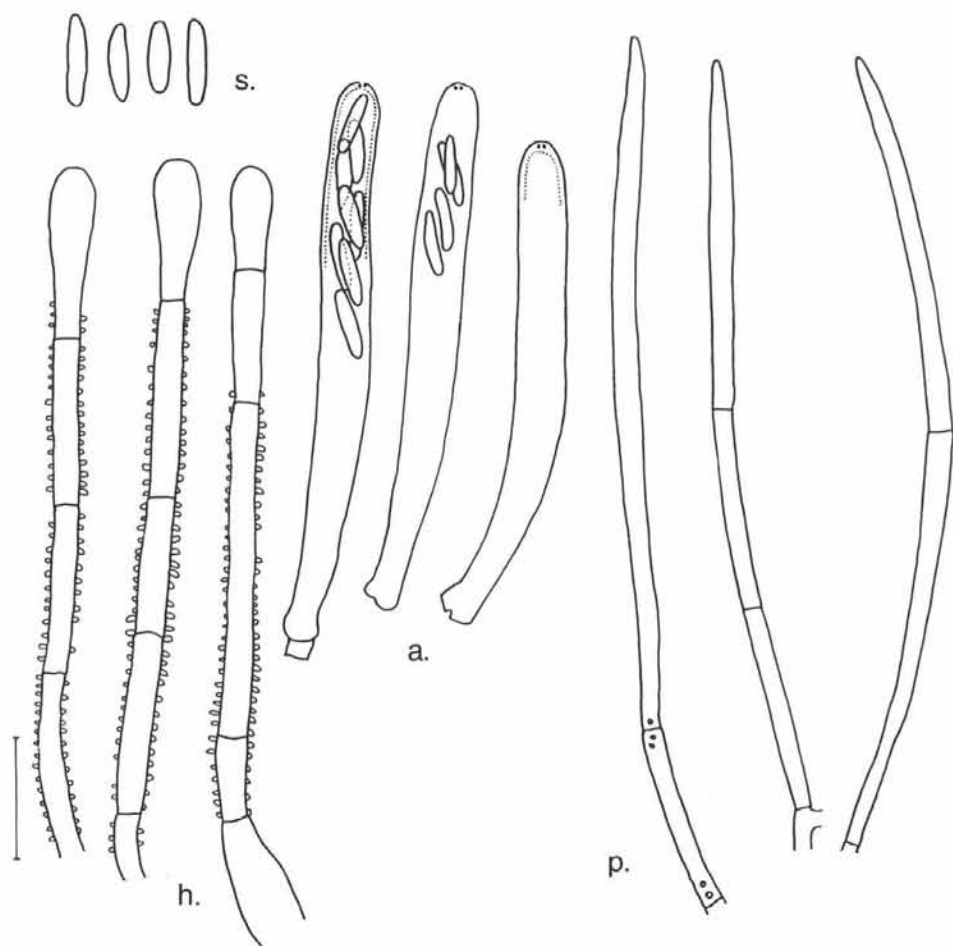


Fig. 8. *Dasyscyphella conicola* (Rehm) Raitv. et Arendh., PRM 816364. Scale bar = 10 μ m. For explanations see Material and Methods.

***Dasyscyphella crystallina* (Fuckel) Raitv.**

Fig. 9.

Peziza crystallina Fuckel, Jahrb. Nassauischen Vereins Naturk. 23-24: 306, 1870. – *Dasyscyphella crystallina* (Fuckel) Raitv., Scripta Mycol. 1: 72, 1970.

Description (excl. PRM 617298). Dried apothecia stipitate, 0.5–1.2 mm high, 0.45–0.85 mm in diam., cup-shaped, outer surface white to orange-yellow (4–A4, rarely 4–A6), covered with concolorous to white hairs and orange (5–A7 to 6–B8) granules, discs more (5–B7 or 5–B8) or less deeply orange. Hairs 88–106 \times 2.3–3.6 μ m, hyaline, warted, with apical cell or cells smooth, apical cell

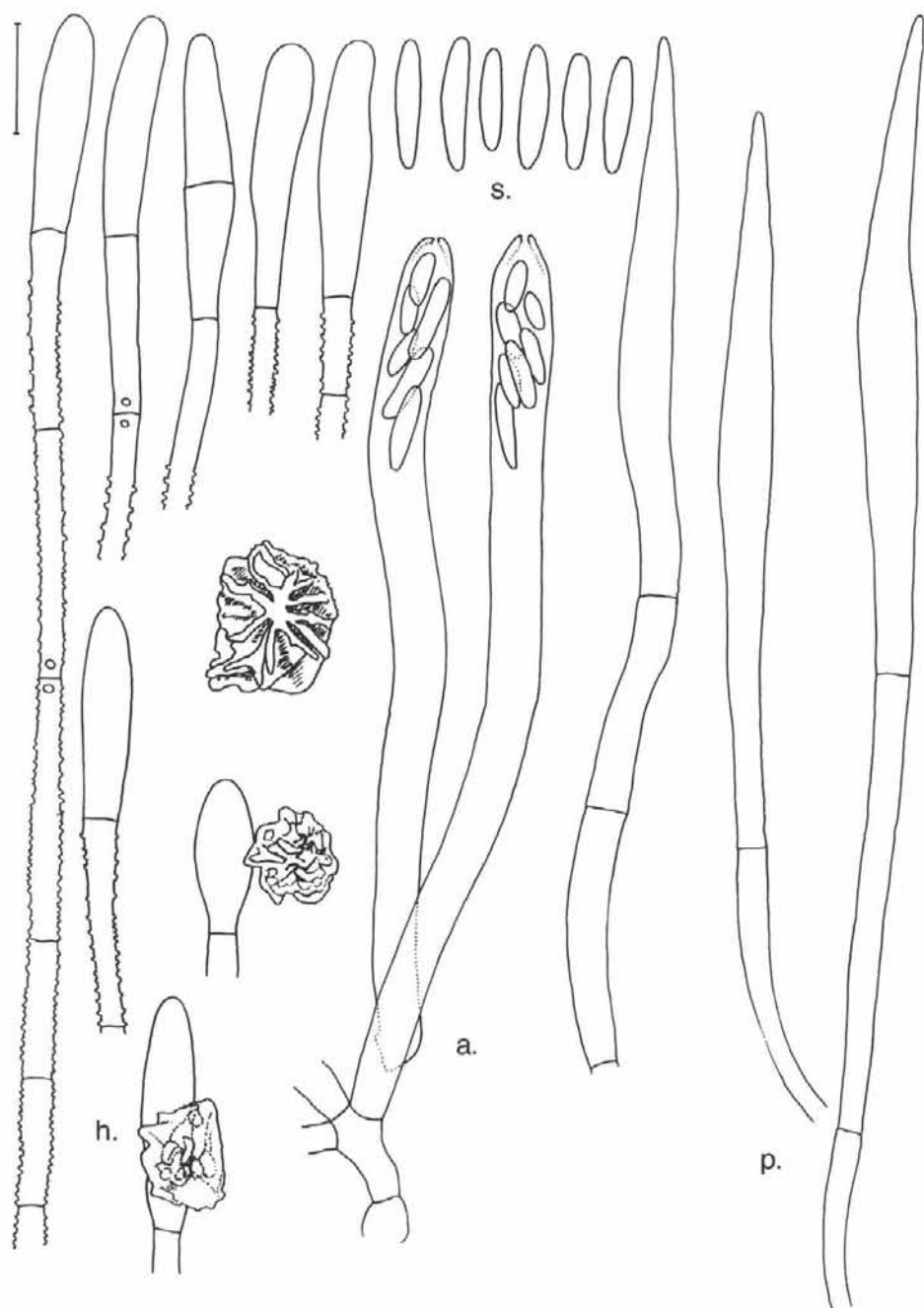


Fig. 9. *Dasyscyphella crystallina* (Fuekel) Raitv., PRM 617298. Scale bar = 10 μ m. For explanations see Material and Methods.

14.5–26(–30.5) × 3.4–5.1(–5.6) µm, of the same length as other cells or longer. Asci arising from simple septa, (50–)55–66(–70) × 4.5–6.3 µm, KOH/MLZ blue. Ascospores one-celled, narrowly fusiform, 8.5–12 × 1.4–2.3 µm. Paraphyses lanceolate, 3–5 µm wide, exceeding asci by 10–29 µm.

Comments. In the specimens PRM 907153 and PRM 617298 not very numerous octahedral crystals were observed among the hairs and the asci were longer in the latter specimen than in the other specimens of *D. crystallina* examined, (71–)75–79(–85) µm.

Published records: Velenovský 1934: 410 as *Lachnum crystallinum* (Central Bohemia, Mnichovice, on cone – revised, it is *Lachnum virgineum* on a cone of *Picea excelsa*). – Svrček 1986: 11 (Western Bohemia, Nature Reserve Zlín, on *Carpinus betulus*). – Svrček 1989: 69 (Central Bohemia, Praha, Radotínské údolí valley, on *Quercus robur* and *Q. petraea*).

Material revised: Central Bohemia: Svatý Jan pod Skalou near Beroun, on twig of *Quercus*, 17 May 1942, leg. et det. M. Svrček, PRM 916479. – Karlštejn, on twig of *Quercus*, 30 May 1943, leg. et det. M. Svrček, PRM 816481. – Mořinka, Karlické údolí (valley), on fallen twigs of *Quercus*, 9 May 1958, leg. et det. M. Svrček, PRM 617298. – Hřebeny Mts., Dobřichovice, on twigs of *Quercus*, 21 April 1957, leg. et det. M. Svrček, PRM 816478. – Dobřichovice, on decorticated branch of *Quercus* lying among fallen leaves of trees, 1 June 2005, leg. M. Svrček, PRM 907153. – Jiloviště, on twig of *Quercus*, 11 May 1946, leg. et det. M. Svrček, PRM 816482. – Praha – Suchdol, on wood of fallen trunk of *Quercus*, 25 July 1965, leg. E. Wichanský, det. M. Svrček, PRM 610923.

***Dasyscyphella nivea* (R. Hedw.: Fr.) Raitv.**

Fig. 10.

Octospora nivea R. Hedw., ?*Observ. Bot.*, Fasc. 1, p. ?, 1802 (n.v.). – *Peziza nivea* (R. Hedw.) Fr., *Syst. Mycol.* 2(1), p. 90, 1822. – *Peziza nivea* (R. Hedw.) Fr.: Fr., *Syst. Mycol.* 2(1), p. 90, 1822. – *Dasyscyphella nivea* (R. Hedw.: Fr.) Raitv., *Scripta Mycol.* 1: 72, 1970.
Syn.: *Dasyscyphus roburum* Velen., *Monogr. Discom. Bohem.*, p. 237, 1934. – Holotype: [Western Bohemia,] Plzeň-Lohy, on wood of *Quercus*, XII. 1929, leg. A. Pilát, det. J. Velenovský (PRM 812383).

Description (specimens with octahedral crystals, Fig. 10). Dried apothecia stipitate, 0.6–1 mm high, (0.4–)0.65–0.85(–1.15) mm in diameter, disc and outer surface pale yellow (4–A5) to yellow-orange, hairs white. Hairs 45–100 × 2–2.5 µm, warty, one or two apical cells smooth, apical cell 14–22.5 × 3–3.7 µm, subclavate. Typical octahedral crystals of variable size (10–40 µm) among hairs (visible in water and in very fresh slides in KOH). Asci arising from croziers, 44–58 × 3.5–4.5 µm, KOH/MLZ blue. Ascospores one-celled, fusoid, 6–8 × 1.8–2.2 µm. Paraphyses narrowly lanceolate, 1.7–3 µm in diam., exceeding the asci for 2.5–8.5 µm.

Description (specimens without octahedral crystals, incl. PRM 907145). Fresh apothecia (PRM 907126) stipitate, cup-shaped to broadly cup-shaped (almost flattened, with raised margins), 1.2–1.7 mm in diam., outside white, with creamy white discs. Dried apothecia stipitate, cup-shaped, (0.6–)0.85–1.1(–1.8) mm high, (0.4–)0.55–0.85(–1.1) mm in diam., discs yellow-orange (4–A7), outer surface yellow-orange (4–A6 to 4–A7), covered with white to concolorous hairs. Hairs (58.5–)68.5–95 × 1.8–3.5 µm, warty, with apical cells smooth, subclavate, only slightly longer than other cells, 15–25 × 2.8–4.8 µm. Asci arising from croziers,

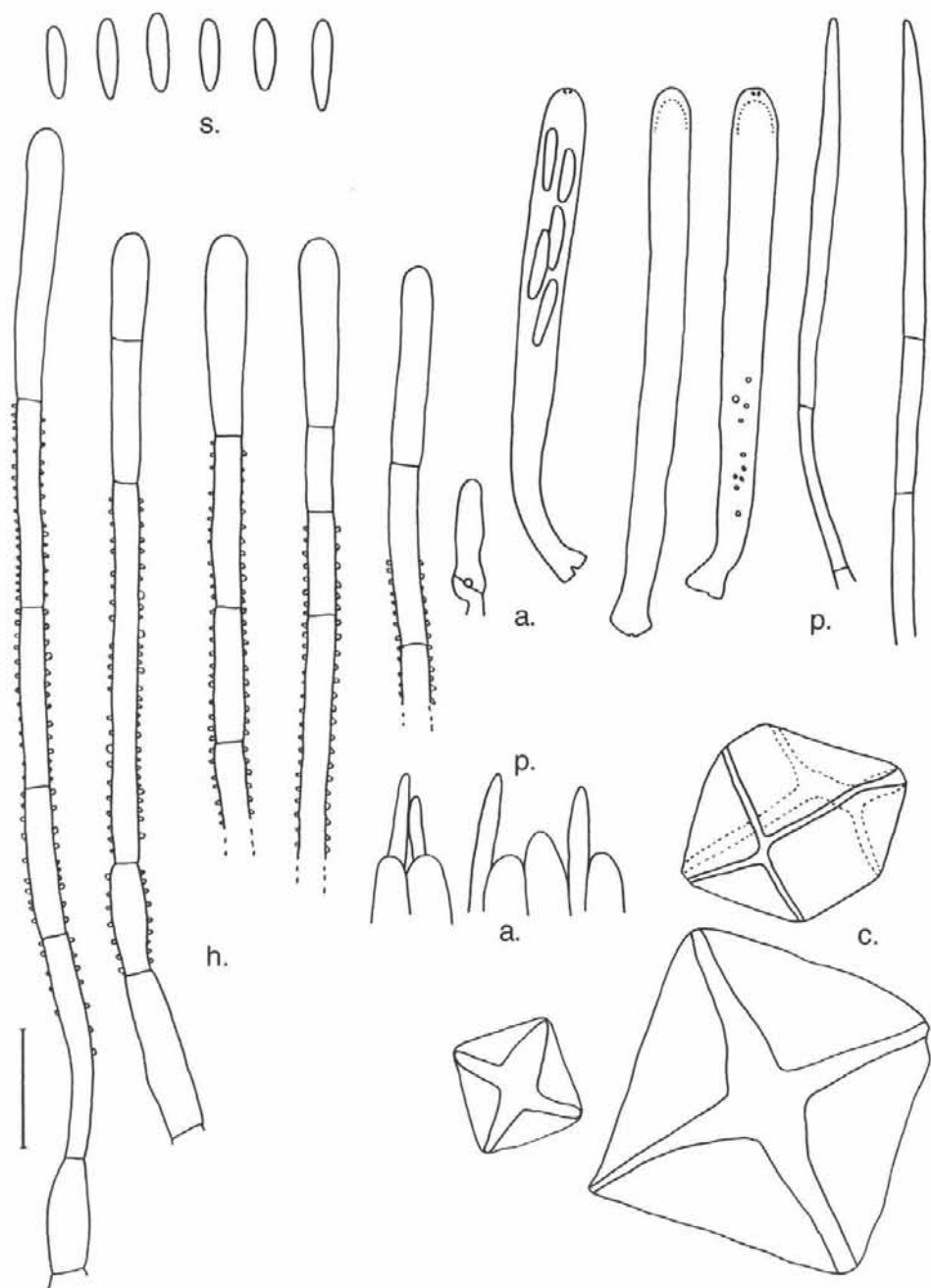


Fig. 10. *Dasyscyphella nivea* (R. Hedw.: Fr.) Raitv., PRM 901179. Scale bar = 10 μ m. 'c.' = octahedral crystals present among hairs. For explanation of the other abbreviations see Material and Methods.

41–54.5 × 3.3–4.8 µm, KOH/MLZ blue. Ascospores one-celled, fusiform, (5.8–)6.4–8(–9) × 1.6–2 µm. Paraphyses narrowly lanceolate, 1.6–2.3 µm in diam., exceeding the asci for 3.3–10(–12.5) µm.

Comments. A species similar to *Dasyscyphella nivea* is reported in literature under the name *Dasyscyphella montana* Raitv. It is not included in my key as I did not see any material. But the species should not be overlooked anymore, therefore I discuss here the differences with *D. nivea*. Raitviir (2002) used in his key the presence of crystals as the most important character for distinguishing *Dasyscyphella montana* from *D. nivea*. Otherwise, also some small differences in microcharacters can be found in his descriptions – *D. montana*: apical cells of hairs up to 25 × 4 µm, paraphyses protruding 10–18 µm, ascospores (5.0–)7.1–7.8(–9.0) µm; *D. nivea*: apical cells of hairs up to 20 × 4 µm, paraphyses protruding up to 12 µm, ascospores (5.0–)6.0–7.5(–9.0) µm. According to my observation (also populations of *D. nivea* with lacking crystals seen), the presence of crystals is not the best distinguishing character and the same regards the apical cells of hairs (at *D. nivea* they can be up to 22.5 µm or even 25 µm long according to my descriptions above). According to Baral (in litt.), hairs of *D. montana* are longer [(85–)100–120(–150) µm in living material] than in *D. nivea* and crystals are always absent. On the other side, Raitviir (2002) mentioned a hair length of up to 110 µm for both species (70–110 µm for *D. montana* and 60–110 µm for *D. nivea*). It seems to me that the most useful distinguishing characters can be found in Baral's keys and drawings (Baral 2003, living material) – *D. montana*: hairs (85–)100–150 µm long, paraphyses protruding 0–15 µm; *D. nivea*: hairs (50–)70–110(–120) µm long, paraphyses protruding 0–6(–9) µm; he collected *D. montana* most frequently on *Fagus*, but also on *Fraxinus*, *Populus*, *Salix*, *Robinia*, *Quercus*, *Alnus*, *Ulmus*, and even *Picea*, and *D. nivea* most frequently on *Quercus*, but also quite often on *Fagus*, whereas very rarely on other trees like *Castanea* and *Salix* (Baral, pers. comm.).

Type study: The holotype of *Dasyscyphus roburum* Velen. published as a collection by Pilát from 1931, contains long stalked, old, white apothecia externally covered with brownish to pale orange matter, hymenia are lacking. The hairs with smooth apical cells and typical octahedral crystals among the hairs refer to *Dasyscyphella nivea*. Velenovský (1934) published asci 50–70 × 5 µm, filiform paraphyses and narrowly acicular, straight, 4–5 µm long ascospores.

Published records: Zimmermann 1909: 75 as *Dasyscypha dryina* (P. Karst.) Sacc. [Southern Moravia, Lednice, on decaying log, ?*Quercus* – revised (PRM 668749), it is *Dasyscyphella nivea* (R. Hedw.: Fr.) Raitv.]. – Velenovský 1934: 252 as *Lachnum niveum* Hedw. (as a common species, on dead herbs). – Svrček 1954: 109 as *Lachnum niveum* (Hedw.: Fr.) P. Karst. (Northern Bohemia, České Středohoří Mts., Mt. Milešovka, on *Rubus idaeus*). – Note: The last two records refer to "*Lachnum niveum* (Hedw. ex Fr.) P. Karst." sensu Rehm (1893: 879), a taxon frequent on *Rubus*, which is (according to Rehm's description) *Capitotricha rubi* (Bres.) Baral. Already Rehm (1893) mentioned in his discussion, that the name *Lachnum niveum* was used by various authors in two meanings – for rubicolous and for lignicolous fungi. "*Lachnum niveum* (Hedw. ex Fr.) P. Karst. sensu Rehm" as described by Le Gal (1939) is according to her drawing and description certainly *Capitotricha rubi* (Bres.) Baral.

Material revised (specimens with octahedral crystals): Western Bohemia: Plzeň – Lohy, on wood of *Quercus*, December 1929, leg. A. Pilát, det. J. Velenovský (as *Dasyscypha roburum* Velen.), host rev. A. Chlebicki, PRM 812383 (holotype of *Dasyscyphus roburum* Velen.). – N of Neratovice (between Neratovice and Labe river), nature reserve Černínovsko, E part, floodplain forest, alt. 160 m, on underside of wood piece of *Quercus robur* lying on soil, 23 April 2002, leg. J. Holec, det. M. Suková, PRM 901179. – Kostomlaty nad Labem, nature reserve Mydlovarský luh S of Šnepov, on wood of *Quercus robur*, 23 October 2004, leg. M. Suková et A. Chlebicki, PRM 907159. – Moravia: Eisgrub [Lednice], "Unterswald" forest, on decaying log (?*Quercus*), 2 March 1906, leg. et det. H. Zimmermann (as *Dasyscypha dryina* (P. Karst.) Sacc.), PRM 668749.

Material revised (specimens without octahedral crystals): Černošice, [on wood of *Quercus*,] May 1925, leg. et det. J. Velenovský (as *Lachnum alneum* Velen., non-type material), PRM 148670. – Praha – Klánovice, Klánovický les (forest), on decaying tree stump of *Quercus*, apothecia present in the part close to the soil, 28 April 2002, leg. et det. M. Suková, PRM 907126.

Material revised (specimen without octahedral crystals from other countries): Poland, Biebrza National Park, E of Grajewo, Czerwone Bagno, *Tilio-Carpinetum* forest NW of Grzędy, on wood of decaying basis of *Quercus*, 9 May 2005, leg. et det. M. Suková, PRM 907145.

Neodasyscypha Suková et Spooner, **nom. nov.** – pachlupáček

Syn.: *Dasyscypha* Fuckel, Jahrb. Nassauischen Vereins Naturk. 23–24: 304, 1870. (diagnosis latina).
Dasyscypha Fuckel, Jahrb. Nassauischen Vereins Naturk. 23–24: 304, 1870, nom. illeg. [type species: *D. cerina* (Pers.: Fr.) Fuckel, lectotype designated by Clements and Shear (1931)]

Comments. *Peziza cerina* Pers.: Fr. (see also Raitviir 1980, Haines and Dumont 1984) should be put into a genus of its own. The separate genus should include also one other species, *Phialea subciboria* Rodway, studied by the second author (see Spooner 1987). There is no legitimate generic name available for such a genus at present. *Peziza cerina* was designated as a lectotype of the generic name *Dasyscypha* Fuckel by Clements and Shear (1931). The name *Dasyscypha* Fuckel and an earlier competing name *Dasyscyphus* (Nees) ex Gray have already been discussed many times and the problem has a really interesting history from the nomenclatural point of view.

Dasyscypha Fuckel (1870) had been used for more than 80 years, when suddenly Korf (1954) discovered an earlier name for the genus, *Dasyscyphus* Gray (1821). He lectotypified the earlier name by *D. virgineus* and stated that *Dasyscypha* is only an orthographical variant of it and all species names already combined into *Dasyscyphus* or *Dasyscypha* should be used without the necessity of new combinations.

Holm (1976) indicated for the first time, that *Dasyscypha* Fuckel was already lectotypified by *Dasyscypha cerina* by Clements and Shear (1931) and that *Dasyscypha* Fuckel should be considered a later homonym of *Dasyscyphus* Gray, if the names are orthographical variants of one name.

Korf (1977) proved that the names are orthographical variants and, moreover, showed for the first time that both the generic names are, according to him, based on the same taxon, *Peziza* fam. *Dasyscyphi* Nees (1817), and therefore must have the same type. He connected *Dasyscypha* Fuckel with *Peziza* ser. *Lachnea* trib.

Dasyscyphae (Nees) ex Fr.: Fr. (1822) by an indirect reference. Holm (1978) did not accept the existence of the indirect reference.

Svrček (1962) was probably the first one who excluded *Dasyscyphus cerinus* from the genus *Dasyscyphus* Gray (and put it into the genus *Perrotia*, discussed below under *Neodasyscypha cerina*). Raitviir (1970) transferred *P. cerina* to *Belonidium* subgen. *Phaobelonidium* Raitv., however ten years later (Raitviir 1980: 100, 124) stated that *Dasyscyphus cerinus* is not congeneric with *Dasyscyphus virgineus* nor *Belonidium* subgen. *Phaobelonidium*. He considered *Dasyscyphus* Gray to be typified by *Peziza cerina* and warned that this earliest typification could cause a lot of transfers from *Dasyscyphus* Gray to *Lachnum* P. Karst. [*Lachnum* Retz. ex P. Karst.] and suggested to conserve *Dasyscyphus* Gray for the type species *Dasyscyphus virgineus* and to treat *P. cerina* in a genus of its own.

After the change in starting point from 1 January 1821 to 1 May 1753 (the Sydney Code from 1983), *Lachnum* Retz. became valid and began to have priority for species congeneric with *Dasyscyphus virgineus*. Many combinations at species level were already done by Karsten (1871). Haines and Dumont (1984: 2) stated briefly that *Dasyscyphus* Gray thanks to the change in starting point must be replaced by *Lachnum* Retz. for all species congeneric with it except for *D. cerinus*. They erroneously presumed, similarly as Raitviir (1980), that the earliest lectotypification of *Dasyscyphus* Gray was the one of *Dasyscypha* Fuckel by *D. cerina*. Baral (in Baral and Krieglsteiner 1985: 65) cited Haines and Dumont, considered the situation again and also accepted *Dasyscyphus* (Nees) ex Gray for the type *D. cerinus*.

Spooner (1987: 590-592) indicated that the key to the solution is in the basionym(-s) of the generic names. But he erroneously presumed that the basionym of *Dasyscyphus* (Nees) ex Gray is in Nees (1817) and cited it as *Dasyscyphus* (Nees) Gray. *Peziza* fam. *Dasyscyphi* Nees is really invalid also after the change in starting point, because it was described as a family subordinated to a genus (currently Art. 33.7. of the Saint Louis Code). However, he proved that the alleged indirect reference connecting *Dasyscypha* Fuckel with Fries's tribe *Dasyscyphae* and promoted by Korf (1977) does not really exist and that *Dasyscyphus* and *Dasyscypha* are homonyms. He correctly considered *Dasyscyphus* (Nees) ex Gray as a generic name typified by *D. virgineus*, belonging to the synonymy of *Lachnum* Retz. For the later homonym, *Dasyscypha* Fuckel, typified by *Dasyscypha cerina*, he proposed a nomen novum, *Neodasyscypha* Spooner, including also one other taxon (*Phialea subciboria* Rodway). The nomen novum was unfortunately invalidly published by him (without sufficient reference to the replaced name).

The most important problems concerning the generic names *Dasyscypha* Fuckel and *Dasyscyphus* (Nees) ex Gray, which were discussed or more or less neglected by previous authors, are discussed here in detail. The problem of orthographical variants is important for the decision whether *Dasyscypha* and *Dasyscyphus* can be homonyms or not (1). Basionyms are important for estimating the homonymy again (basionyms vs. a common basionym) and for protologues for considering lectotypifications under Art. 10.5.a (2). The correct citation of *Dasyscypha* Fuckel and the location of its protologue depends on the problem of Fuckel's indirect reference (3). The lectotypifications are important for anchoring the generic names (4, 5).

1) Orthographical variants. We agree with Korf (1954, 1977) that the generic name *Dasyscypha* is an orthographical variant of *Dasyscyphus*. The words "*Dasyscyphi*" and "*Dasyscyphae*" and, consequently, the words "*Dasyscyphus*" and "*Dasyscypha*" should be considered interchangeable in the sense of Art. 60. and therefore writing e.g. "*Dasyscyphus* Fuckel" is no mistake, although the name was originally published by Fuckel (1870) as "*Dasyscypha*". The fact that the infrageneric name in the feminine is only an orthographical variant of the name in the masculine was demonstrated by Fries (1822: 77) who cited "*P. Dasyscyphae* Nees Syst. p. 264" converted to the feminine with clear reference to Nees's *Dasyscyphi* (also the number of the taxon, 264, agrees). Fries (1822) changed also other names by Nees to the feminine (e.g. "*Hymenoscyphi*" to "*Hymenoscyphae*"). As we agree that Fuckel was inspired by Friesian names, although he used them for his independent genera, we consider also the generic names as interchangeable.

2) Basionyms and protologues. The name *Dasyscyphi* Nees (1817) was introduced for the first time as a "family" subordinated to the genus *Peziza* Pers., hence this name should be considered as not validly published (Art. 33.7.). As *Peziza* fam. *Dasyscyphi* Nees (1817) is an invalid name, there is no common basis for the following three taxa: *Dasyscyphus* (Nees) ex Gray, *Peziza* ser. *Lachnea* trib. *Dasyscyphi* (Nees) ex Fr.: Fr. (valid according to Art. 33.8. and sanctioned at Fries's tribe level) and *Dasyscyphus* Fuckel. Protologues of these names are found in Gray (1821: 160), Fries (1822: 89) and Fuckel (1870: 304). Also in case Fuckel's *Dasyscyphus* were connected with Fries's *Peziza* ser. *Lachnea* trib. *Dasyscyphi* by an indirect reference as proposed by Korf (1977), there still would be two taxa: *Dasyscyphus* (Nees) ex Gray and *Dasyscyphus* (Nees ex Fr.) Fuckel.

3) Fuckel's indirect reference. Korf (1977) suggested that Fuckel (1870) in the case of his *Dasyscypha* indirectly referred to Fries's *Peziza* ser. *Lachnea* trib. *Dasyscyphae*. Therefore, according to Korf, *Dasyscypha* Fuckel should not be considered an independent generic name. Korf argued that "when Fuckel erected *Dasyscypha*, he included 7 species. Two of these were Fuckel's own taxa, with no bearing on any previous use of the generic name. But

the first 5 species he lists, inclusive of 2 varieties and 1 subspecies, *all* appear in Fries's *Systema mycologicum* (1822) in that exact tribus *Dasyscyphae*. While it is true that Fuckel ascribed the generic name to himself, one cannot ignore the very clear though indirect, reference to Fries's tribe demonstrated by his citation of those pages of the *Systema* in three separate entries; even the formula 'PEZIZA *Lachnea Dasysc.*' heads each page pair where the 7 specific and infraspecific epithets appear in the *Systema*."

We cannot accept Korf's argument that Fuckel's indirect reference can be demonstrated by citation of concrete pages of the *Systema*. The concrete pages cited by Fuckel (1870: 305) are really those from a part of the *Systema* devoted to *Dasyscyphae* (Fries 1822: 89-105), but the "three separate entries" where Fuckel mentioned these citations are located under two varieties of *Dasyscypha bicolor* and under *Dasyscypha virginea*. In our opinion, references mentioned under a single species have no importance at generic level. On the contrary, citations under higher taxa can have influence on subordinated taxa, e.g. reference to "*P. Dasyscyphae* Nees Syst. p. 264" mentioned by Fries (1822: 77) under *Peziza* ser. *Lachnea* could act as an indirect reference for the subordinated taxon *Peziza* ser. *Lachnea* trib. *Dasyscyphae*, which was not provided by any direct reference to Nees's work.

Korf's view was restricted only to *Dasyscypha* and we did not confirm that inside of *Dasyscypha* the indirect reference exists. We considered the problem also in the context of Fuckel's entire work and compared it with Kummer's *Führer für die Pilzkunde*, which is given in Art. 32.4. Ex. 8. as an example of indirect reference. But the situation proved to be not analogous with Kummer's work, because the general arrangement of Fuckel's work does not faithfully follow that of Fries. This can be demonstrated e.g. on the example of *Humaria* Fuckel. Fuckel (1870) included into his genus *Humaria* species which were placed under *Peziza* ser. *Lachnea* trib. *Sarcoscyphae* in Fries's work, although Fries (1822) used the tribe name *Humariae* for other species (*Peziza* ser. *Aleuria* trib. *Humariae*). It is clear that although Fuckel often used for his genera the same or similar names to those adopted at subgeneric level by earlier authors, he was not raising the latter to generic rank but proposing new and independent genera.

4) Typification of *Dasyscyphus* Fuckel. When Clements and Shear (1931: 326) typified *Dasyscyphus* Fuckel by *D. cerinus* (Pers.: Fr.) Fuckel, they cited the genus as "*Dasyscypha* Fr., Syst. Myc. 2: 89, 1822; Fuckel, Symb. Myc. 304, 1869". The first citation should be considered as erroneous (discussed under Note 1 below) and we do not think that the typification was made for the Friesian name *Peziza* ser. *Lachnea* trib. *Dasyscyphi* (Nees) ex Fr.: Fr. The second citation means that they typified *Dasyscyphus* Fuckel (1870). If the indirect reference connecting *Dasyscyphus* Fuckel (1870) with *Peziza* ser. *Lachnea* trib. *Dasyscyphi* (Nees) ex Fr.: Fr. (1822) would exist, then the name typified would be *Dasyscyphus* (Nees ex Fr.) Fuckel, non *Dasyscyphus* (Nees) ex Gray, because of two independent

basionyms (Fries 1822: 89, Gray 1821: 160). For additional information about the typifications by Clements and Shear see Note 2 below.

Note 1. From the history of application of *Dasyscypha* Fuckel (an example of confusion). *Dasyscypha* was cited as *Dasyscypha* Fuckel (Nannfeldt 1932, Dennis 1949), or erroneously as *Dasyscypha* Fr. emend. Fuckel (Saccardo 1889: 432) or even as *Dasyscypha* Fr. (Boudier 1885, Rehm 1893: 829, Clements and Shear 1931, Le Gal 1939). However, in all the mentioned works Fuckel's new combinations were cited as combinations, e.g. *Dasyscypha bicolor* (Bull.) Fuckel [except for Boudier (1885) who listed in his classification only epithets]. The erroneous ascribing of the generic name to Fries was (in our opinion) only a mistake in citation which should be corrected. It is clear that it was erroneously introduced by Saccardo (1889: 432) who cited it as *Dasyscypha* Fr. emend. Fuckel.

Note 2. Typifications by Clements and Shear. Clements and Shear (1931) listed many genera and provided each of them with a type. They gave no reasons for their choices. Also mistakes can be found there, e.g. they typified *Lachnum* Retz. by *L. bicolor* (Bull.: Fr.) P. Karst. (currently belonging to *Capitotricha*), although *Lachnum* was originally described as a monotypic genus for *Lachnum agaricinum* Retz. (currently belonging to *Lachnum* s.str.). However, as already discussed by Huhtinen and Cannon (1987) in the case of *Hyaloscypha*, they did not choose the types mechanically (in the sense of Art. 10.5.b.) as the first species from a protologue. We checked it e.g. at *Erinella* (Saccardo 1889), *Ciboria*, *Dasyscypha*, *Pezizella* (Fuckel 1870) and *Rutstroemia* (Karsten 1871). A mechanical selection according to other than original works cannot be ruled out, but no such work has been found yet and their lectotypifications (we mean those which may not be superseded according to Art. 10.5.a. or are not superfluous because of earlier lectotypifications) are currently considered as obligatory (see e.g. Huhtinen and Cannon 1987).

5) Typification of *Dasyscyphus* (Nees) ex Gray. *Dasyscyphus* (Nees) ex Gray was for the first time lectotypified by Korf (1954) using *Dasyscyphus virgineus* and therefore the generic name belongs to the synonymy of *Lachnum* Retz. Earlier typifications by *Dasyscyphus cerinus* (Clements and Shear 1931) and by *Dasyscyphus bicolor* (Nannfeldt 1932) were made for *Dasyscypha* Fuckel. As *Dasyscyphus* Fuckel has not the same basionym as *Dasyscyphus* (Nees) ex Gray, the discussed lectotypifications have no influence on Gray's generic name.

6) Conclusion. As *Dasyscyphus* (Nees) ex Gray belongs to the synonymy of *Lachnum* Retz. and *Dasyscypha* Fuckel, though validly published and useful for *P. cerina*, is an illegitimate name, a replacing generic name for *Dasyscyphus* Fuckel is proposed. The name *Neodasyscypha* was proposed by the second author (Spooner 1987) with the following etymology: from the Latin *neo*, new, and the generic name *Dasyscypha*, which it is to replace. We validate the name as *Neodasyscypha* in the feminine here, although we are aware that it is interchangeable with its orthographical variant in the masculine – "*Neodasyscyphus*". Until 1954, *Dasyscyphus* in the masculine was neglected and was not used for *Peziza cerina* at all. Gray's protologue of *Dasyscyphus* did not contain this species and it was for the first time combined into Fuckel's genus, as *Dasyscypha cerina*. Moreover, *Neodasyscypha* in the feminine indicates didactically that the name replaced is *Dasyscypha* Fuckel; non *Dasyscyphus* (Nees) ex Gray. We selected the feminine variant as more appropriate, preserving historical information, and do not wish it to be converted to the masculine.

The second author of the generic name would like to validate here his previously invalidly published new combinations:

Neodasyscypha cerina (Pers.: Fr.) Spooner, **comb. nov.**

Bas.: *Peziza cerina* Pers., *Observ. Mycol.*, p. 43, 1796.

Neodasyscypha subciboria (Rodway) Spooner, **comb. nov.**

Bas.: *Phialea subciboria* Rodway, *Papers and Proceedings of the Royal Society of Tasmania* 1924: 104, 1925.

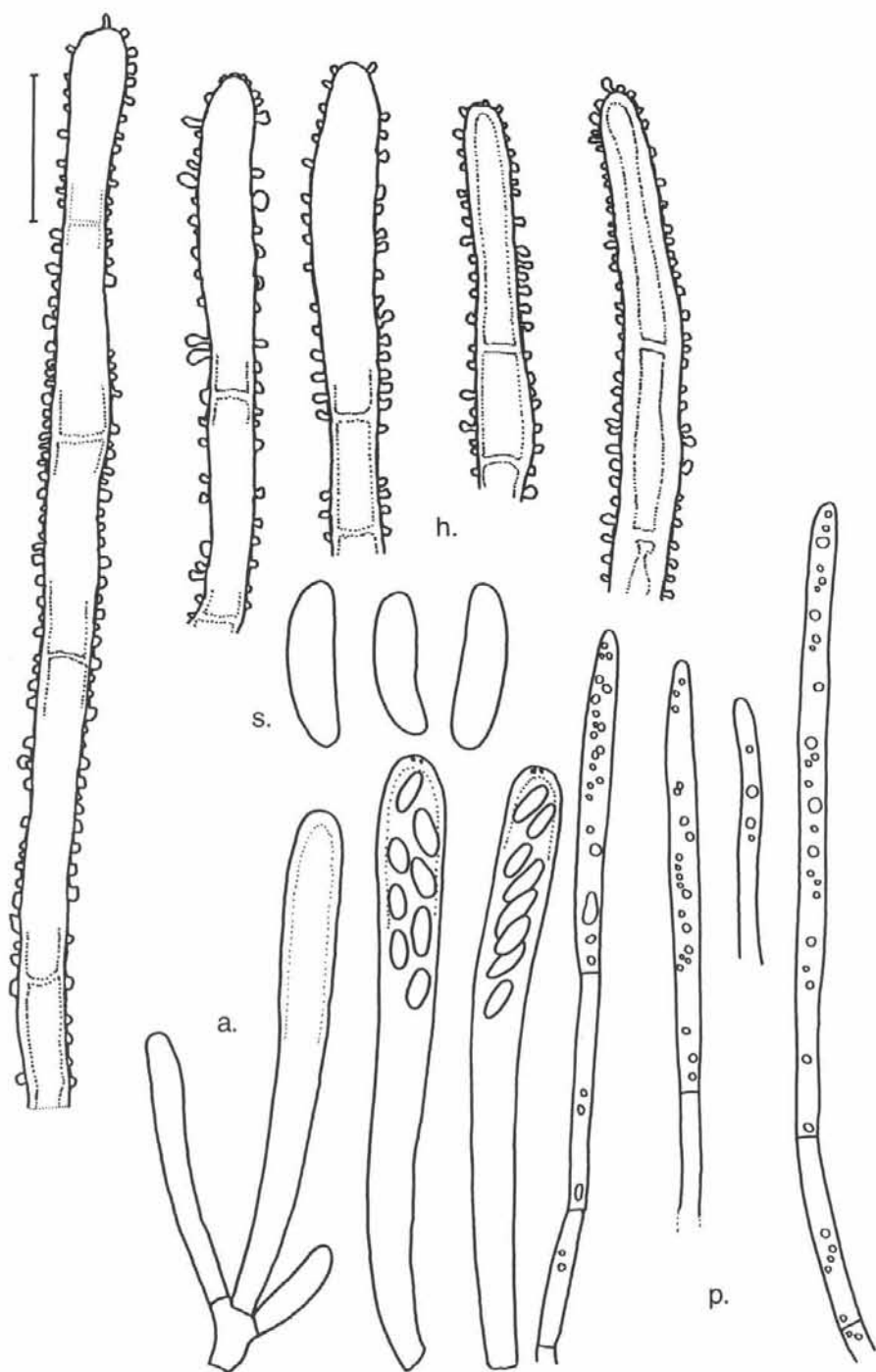
Neodasyscypha cerina (Pers.: Fr.) Spooner – pachlupáček nazelenalý Fig. 11.

Peziza cerina Pers., *Observ. Mycol.*, p. 43, 1796. – *Peziza cerina* Pers.: Fr., *Syst. Mycol.* 2(1), p. 92, 1822. – *Dasyscypha cerina* (Pers.: Fr.) Fuckel, *Jahrb. Nassauischen Vereins Naturk.* 23-24: 305, 1870. – *Lachnum cerinum* (Pers.: Fr.) Nannf., *Nova Acta Regiae Soc. Sci. Upsal.*, Ser. 4, 8(2): 262, 1932. – *Perrotia cerina* (Pers.: Fr.) Svrček, *Česká Mykol.* 16: 96, 1962.

Description. Dried apothecia 0.25–0.45(–0.9) mm high, 0.3–1.4 mm in diam., umbilicate sessile or with broad stipe, very dark coloured, blackish brown (olive, 3–F3), covered with yellow to beige hairs with slight olive tint (yellow, 3–A7), discs usually covered by marginal walls of apothecia when dry, with very slight orange or pale beige tint when rehydrated in water (pale yellow, 4–A4). Hairs greyish brown with olive tint, cylindrical, (63–)96–173 × 3–4.3 µm, sometimes arising also from centre of hymenium, roughly and irregularly warted, size of warts variable. Asci arising from simple septa, 42.5–53.5 × 4.5–5.2 µm, MLZ no reaction, KOH/MLZ blue, IKI red. Ascospores one-celled, cylindrical with broad ends, straight or slightly curved, 8.5–10.5 × 2.3–3 µm. Paraphyses cylindrical-lanceolate with subacute tips (cylindrical, attenuated towards apex), with many refractive guttules with fine (yellow-)orange tint in plasma (present also in c. 50 years old collections – guttules are smaller there and almost without the orange tint), 1.8–2.2 µm in diam., exceeding the asci for 6.5–8(–14.5) µm.

Comments. The genus *Neodasyscypha* differs from *Lachnum* Retz. in different hair warts (see also the key) and structure of excipulum (see e.g. drawings by Spooner 1987). Svrček (1962) transferred *Dasyscyphus cerinus* (Pers.: Fr.) Fuckel into the genus *Perrotia* Boud. on the basis of excipulum and hair characters. He considered the difference in amyloidity of the asci (inamyloid in *Perrotia* and amyloid in *D. cerinus*), a character not important at the generic level. I must agree with Svrček (1962) that *Perrotia* (represented in my study by *P. flammea*, type species of *Perrotia*) has a similar shape of apothecia and structure of excipulum as *Neodasyscypha cerina*. However, the asci of *P. flammea* not only show no reactions in MLZ, KOH/MLZ, IKI and KOH/IKI, but also the structure of the ascus apices is different. Only a homogenous wall in the apical part of the

Fig. 11. *Neodasyscypha cerina* (Pers.: Fr.) Spooner, PRM 901970 (ascospores PRM 816265). Scale bar = 10 µm. For explanations see Material and Methods.



ascus is visible in all these media and the same counts for KOH, water and 5% ammonium. Additionally, the hairs of *Neodasyscypha cerina* have bigger warts, which are not disappearing in MLZ nor in MLZ after pretreatment in KOH. According to Spooner (1987) hairs of various species of *Perrotia* may either appear smooth or finely granulate when observed in Melzer's reagent. In *Perrotia flammea*, I observed that the hairs become almost smooth with scattered fine granules or warts in MLZ and completely smooth in MLZ after the pretreatment in KOH. Agreeing with Spooner's generic concept (and see also Raitviir 1970), I consider *Perrotia flammea* and *Neodasyscypha cerina* to be not congeneric and the characteristic broadly rounded, inamyloid ascus apex, looking like undifferentiated, an important diagnostic character for the delimitation of the genus *Perrotia*.

Published records: Velenovský 1934: 236 as *Dasyscypha cerina* Pers. (as a common species, on wood and bark of deciduous trees).

Material of *Neodasyscypha cerina* revised: Western Bohemia: Šumava Mts., valley of Popelný potok brook (right tributary of Vydra river c. 2.5 km N of Antýgl), alt. 840 m, on lying piece of wood of *Fagus sylvatica*, 15 September 2004, leg. et det. M. Suková, PRM 901970. – Central Bohemia: Koda near Srbsko, on cut log of *Fraxinus excelsior*, 18 May 1950, leg. et det. M. Svrček, PRM 816265. – Srbsko, valley of Bubovický potok (brook), on wood of *Corylus avellana*, 22 March 1974, leg. et det. M. Svrček, PRM 804250. – Poříčko na Sázavě, valley of Křešický potok (brook), on fallen, dry trunk of *Carpinus betulus*, 30 October 1954, leg. et det. M. Svrček, PRM 816268. – Southern Bohemia: Valley of Vltava river between Zvíkov and Červená, Lavička, on branch of *Pyrus communis*, 20 August 1955, leg. et det. M. Svrček, PRM 816263. – Vrábsko near Čimelice, Alnetum by Nerestec pond, on wood of *Salix cinerea*, 16 August 1963, leg. et det. M. Svrček, PRM 805278. – Tábor, on decaying twig of *Betula*, July 1950, leg. et det. M. Svrček, PRM 816271.

Additional material of *Neodasyscypha cerina* from other countries studied: Slovakia, Muránska planina Mts. (alt. 1000–1300 m), Maretkina, on twig of *Fagus sylvatica* in top of the tree, 30 July 1947, leg. et det. M. Svrček, PRM 816262.

Comparative material of *Perrotia flammea* studied: Western Bohemia: Doupovské hory hills, Valeč, on dry decorticated twigs of *Rosa* sp. in arid valley, 28 November 1953, leg. F. Kotlaba, det. M. Svrček, PRM 817784 (as *Lachnum flammeum* (Alb. et Schwein.) Svrček in herb.). – Central Bohemia: Karlštejn, Velká hora hill, on dry twigs of *Ligustrum vulgare*, 14 June 1953, leg. et det. M. Svrček, PRM 817777 (as *Lachnum flammeum* (Alb. et Schwein.) Svrček in herb.). – Hřebeny Mts., Voznice near Dobříš, on decorticated twigs of *Carpinus betulus*, 8 October 1949, leg. et det. M. Svrček, PRM 817776 (as *Lachnella flammea*). – Southern Bohemia, valley of Vltava river between Zvíkov and Červená, on *Pirus communis*, 11 August 1955, leg. et det. M. Svrček, PRM 817779 (as *Lachnum flammeum* (Alb. et Schwein.) Svrček in herb.).

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REFERENCES

- ARENHOLZ W.-R. and RAITVIIR A. (1988): A new species of *Hyaloscyphaceae* on needles of *Picea* (*Pinaceae*). – *Mycotaxon* 32: 353–364.
- BARAL H. O. (1992): Vital versus herbarium taxonomy: morphological differences between living and dead cells of Ascomycetes, and their taxonomic implications. – *Mycotaxon* 44: 333–390.
- BARAL H. O. (2003): *In vivo veritas*, ed. 2. – 2 CD-ROM, unpublished.
- BARAL H. O. and KRIEGLSTEINER G. J. (1985): Bausteine zu einer Askomyzeten-Flora der BR Deutschland: In Süddeutschland gefundene Inoperculate Discomyceten mit taxonomischen, ökologischen und chorologischen Hinweisen. – *Beih. Z. Mykol.* 6: 1–160.
- BOUDIER É. (1885): Nouvelle classification naturelle des Discomycètes charnus, connus généralement sous le nom de Pezizes. – *Bull. Soc. Mycol. France* 1: 91–120.
- BOUDIER É. (1907): *Icones mycologicae*. Ser. 3, livr. 13, pl. 212. – Paris.
- BOUDIER É. (1909): *Icones mycologicae*. Ser. 5, livr. 22, pl. 416. – Paris.
- BOUDIER É. (1911): *Icones mycologicae*. Tom. 4. – 362 p. Paris.
- BULLIARD J. B. F. (1789): *Herbier de la France*. Tom. 9, Fasc. 97–108. – pl. 385–432, Paris.
- BULLIARD J. B. F. (1791): *Histoire des champignons de la France*. – 368 p. Paris.
- CANTRELL S. A. and HANLIN R. T. (1997): Phylogenetic relationships in the family *Hyaloscyphaceae* inferred from sequences of ITS regions, 5.8S ribosomal DNA and morphological characters. – *Mycologia* 89(5): 745–755.
- CHELBICKI A. and SUKOVÁ M. (in print): *Helotiales on Dryas*. – *Mycotaxon*.
- CLEMENTS F. E. and SHEAR C. L. (1931): *The genera of fungi*. – 496 p., 58 tab. New York.
- DENNIS R. W. G. (1949): A revision of British *Hyaloscyphaceae* with notes on related European species. – *Mycol. Pap.* 32: 1–97.
- DESMAZIÈRES J. B. H. J. (1842): Neuvième notice sur quelques plantes cryptogames, la plupart inédites, récemment découvertes en France, et qui vont paraître en nature dans la collection publiée par l'auteur. – *Ann. Sci. Nat., Ser. 2., Bot.*, 17: 91–118.
- DIMITROVA E. (2002): Discomycetous fungi of the *Leotiales* found on the *Betulaceae* in Bulgaria. – *Turk. J. Bot.* 26: 253–258.
- FRIES E. (1822): *Systema mycologicum*, vol. 2(1). – 274 p., Lundae.
- FUCKEL L. (1870): *Symbolae mycologicae*. – *Jahrb. Nassauischen Vereins Naturk.* 23–24: 1–459, 6 pl.
- GRAY S. F. (1821): *A natural arrangement of British plants*, vol. 1. – 824 p. London.
- GREUTER W. et al. (2000): *International Code of Botanical Nomenclature (Saint Louis Code)*. – 474 p. Königstein.
- HAINES J. H. (1989): Studies in the *Hyaloscyphaceae* IV: *Fuscolachnum*, a new genus for *Dasyscyphus pteridis*. – *Mem. New York Bot. Gard.* 49: 315–325.
- HAINES J. H. and DUMONT K. P. (1984): Studies in the *Hyaloscyphaceae* III: The longspored, lignicolous species of *Lachnum*. – *Mycotaxon* 19: 1–39.
- HOLM L. (1976): Some notes on discomycete nomenclature. – *Trans. Brit. Mycol. Soc.* 76(2): 333–334.
- HOLM L. (1978): Two controversial discomycete names. – *Mycotaxon* 7: 139–140.
- HUHTINEN S. and CANNON P. F. (1987): Proposal to conserve *Hyaloscypha* Boudier with *H. vitreola* (P. Karsten) Boudier as the conserved type (Fungi). – *Taxon* 36: 649–651.
- KARSTEN P. A. (1871): *Mycologia fennica*. I. Discomycetes. – *Bidrag Kännedom Finlands Natur Folk* 19: 1–263.
- KORF R. P. (1954): *Discomycetaceae exsiccatae*, Fasc. 1. – *Mycologia* 46: 837–841.

- KORF R. P. (1977): Nomenclatural notes. IX. A misconception in regard to *Dasyscyphus* and *Dasyscypha*. – Mycotaxon 5: 515-516.
- KORF R. P. (1985): A compendium of currently valid names for species illustrated in volumes 2 and 3 of Boudier's *Icones Mycologicae*. – p. 211-252, Lausanne.
- KORNERUP A. and WANSCHER J. H. (1981): Taschenlexikon der Farben. Ed. 3. – 242 p. Zürich and Göttingen.
- LE GAL M. (1939): Florule mycologique des Bois de la Grange et de l'Etoile. *Discomycetes*. – Rev. Mycol. (Paris) 4: 25-63.
- LEENURM K., RAITVIIR A. and RAID R. (2000): Studies on the ultrastructure of *Lachnum* and related genera (*Hyaloscyphaceae*, *Helotiales*, Ascomycetes). – *Sydowia* 52(1): 30-45.
- NANNFELDT J. A. (1928): Contribution to the mycoflora of Sweden I. *Discomycetes* from Torne Lappmark. – *Svensk. Bot. Tidskr.* 22: 115-139.
- NANNFELDT J. A. (1932): Studie über der Morphologie und Systematik der nichtlichenisierten und inoperculaten *Discomyceten*. – *Nova Acta Reg. Soc. Sci. Upsal.*, Uppsala, Ser 4., 8: 1-368.
- NEES von ESENBECK C. G. (1817): Das System der Pilze und Schwämme. Ein Versuch. – 234 p. Würzburg.
- PAPOUŠEK T. [ed.] (2004): Velký fotoatlas hub z jižních Čech. – 819 p. České Budějovice.
- PERSOON C. H. (1801): *Synopsis methodica fungorum*. – 706 p. Gottingae.
- PERSOON C. H. (1822): *Mycologia europaea*, vol. 1. – 356 p., 12 tab. Erlangae.
- PHILLIPS W. (1893): A manual of the British *Discomycetes*. Ed. 2. – 462 p., 12 pl. London.
- PICBAUER R. (1942): Beitrag zur Pilzflora von Böhmen, Mähren und der Slowakei. – *Verh. Naturf. Vereins Brünn*, 73 [1941]: 177-203.
- PRÁŠIL K. (1999): Exkurze sekce pro studium mikroskopických hub v ČR v roce 1998. – *Mykol. Listy* 71: 23-27.
- RAITVIIR A. (1970): Synopsis of the *Hyaloscyphaceae*. – *Scripta Mycol.* 1: 1-115, 1 tab.
- RAITVIIR A. (1980): The genus *Lasiobelonium*. – *Scripta Mycol.* 9: 99-132.
- RAITVIIR A. (2002): A revision of the genus *Dasyscyphella* (*Hyaloscyphaceae*, *Helotiales*). – *Polish Bot. J.* 47: 227-241.
- RAITVIIR A. (2004): Revised synopsis of the *Hyaloscyphaceae*. – *Scripta Mycol.*, Tartu, 20: 1-133.
- RÉBLOVÁ M. and PRÁŠIL K. (1999): Příspěvek k poznání askomycetů a deuteromycetů v karech šumavských jezer – vstupní studie pro monitoring [Contribution to the knowledge of Ascomycetes and Deuteromycetes in glacial cirques of lakes in the Šumava Mts.]. – *Příroda (Prague)* 14: 7-31.
- REHM H. (1893): *Ascomyceten: Hysteriaceen und Discomyceten*. Lf. 41. – In: Rabenhorst's *Krypt.-Fl. Deutschl., Oest. und Schweiz*, ed. 2, 1/3: 849-912, Leipzig.
- SACCARDO P. A. (1889): *Sylloge Fungorum*. Vol. 8. – 1143 p. Patavii.
- SCHEUER C. (1988): *Ascomyceten auf Cyperaceen und Juncaceen im Ostalpenraum*. – In: *Bibliotheca Mycologica* 123, p. 1-274, Berlin and Stuttgart.
- SPOONER B. (1987): *Helotiales of Australasia: Geoglossaceae, Orbiliaceae, Sclerotiniaceae, Hyaloscyphaceae*. – *Bibliotheca Mycologica* 116: 1-711, Berlin and Stuttgart.
- SUKOVÁ M. (2004): Fungi on *Juncus trifidus* in the Czech Republic. I. – *Czech Mycol.* 56: 63-84.
- SVRČEK M. (1953): Mykoflora údolí potoka Klíčavy na Křivoklátsku. – *Čas. Nár. Mus.* 122: 204-215.
- SVRČEK M. (1954): První příspěvek k mykoflóře rezervace Milešovka v Českém Středohoří. – *Ochr. Přír.* 9: 109-112.
- SVRČEK M. (1962): Diskomycety z Nízkých Tater, nalezené během posjezdové exkurze II. SEM. 1960 [Discomycetes, qui in montibus Nízké Tatry, Slovakiae, excursionem post Congressum Secundum Mycologorum Europaeorum procedente, tempore 5.-10. septembri 1960 collecti sunt.]. – *Česká Mykol.* 16: 87-114.
- SVRČEK M. (1986): *Discomycetes from West Bohemia*. – *Folia Mus. Rer. Natur. Bohem. Occid. Bot.* 24: 1-27.
- SVRČEK M. (1989): New or less known *Discomycetes* XIX. – *Česká Mykol.* 43: 65-76.
- VELENOVSKÝ J. (1934): *Monographia Discomycetum Bohemiae*. Vol. 1, 2. – 436 p., 31 tab. Praegae.
- ZIMMERMANN H. (1909): Verzeichnis der Pilze aus der Umgebung von Eisgrub. – *Verh. Naturf. Vereins Brünn*, 47 [1908]: 60-112, 4 tab.