

Austrian discomycetous fungi 1. An annotated list of species recently collected in the Eastern Alps and the Peripannonic area

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Abstract: 87 accepted taxa (species and varieties) of discomycetous fungi mainly from the Eastern Alps, southern Styria and the vicinity of Vienna from the orders *Helotiales*, *Lecanorales*, *Mycocaliciales*, *Orbiliiales*, *Pezizales*, and *Rhytismatales* have been identified and listed here in the form of an annotated checklist. Six species are new to Austria. In the course of the project we also included our previously collected but so far unreported material from Höllen-Gebirge (Upper Austria) with 21 collections of 14 pezizalean species.

Zusammenfassung: 87 akzeptierte Taxa (Arten und Varietäten) von Discomyceten aus den Ordnungen *Helotiales*, *Lecanorales*, *Mycocaliciales*, *Orbiliiales*, *Pezizales* und *Rhytismatales* vor allem von den Ostalpen, der Südsteiermark und der Umgebung von Wien wurden identifiziert und hier als annotierte Checkliste aufgelistet. Sechs Arten sind neu für Österreich. Im Verlauf des Projektes haben wir auch früher gesammeltes, aber bisher nicht publiziertes Material vom Höllengebirge (Oberösterreich) mit 21 Aufsammlungen von 14 *Pezizales* mit eingeschlossen.

In 2003 and 2004 we run the project “Austrian discomycetes” in which we concentrated on discomycetous fungi – a group which is only rarely treated in separate studies and accordingly rather poorly known. We have tried to collect as many species as possible during the fieldwork including very diverse habitat types situated in Eastern Alps, southern Styria and the vicinity of Vienna, such as: plain broadleaved riverine forests under groundwater influence (*Quercus robur*, *Ulmus campestris*, *Fraxinus angustifolia*, *Salix alba*, *Populus alba*, *P. nigra*, and *Alnus glutinosa* dominated vegetation); colline broadleaved forests (*Quercus petraea*, *Carpinus betulus*, and partly *Fagus sylvatica* dominated vegetation); montane mixed forests (*Fagus sylvatica*, *Picea abies*, *Abies alba*); altimontane to subalpine forests (*Ulmus glabra*, *Acer pseudoplatanus*, and *Fagus sylvatica*; *Picea abies*, *Larix decidua*, *Pinus cembra*, and *P. mugo* stands); riparian vegetation dominated by *Alnus incana* and *A. alnobetula* (= *A. viridis*) with *Sorbus aucuparia*; (sub)alpine tall herbs and shrub stands (e.g., *Cicerbita alpina* and

Rhododendron-Juniperus); (sub)alpine bogs and swamps (*Trichophorum cespitosum* stands).

Altogether, 200 recent collections have been recorded and preserved. Six species out of 88 accepted specific and infraspecific taxa are new to Austria, namely: *Aleuria carbonicola*, *Dasyscyphella montana*, *Hymenoscyphus trichosporus*, *Peziza pseudoanthracina*, *Scutellinia pilatii* and *Symphyosirinia angelicae*. Most of the recent collections were studied by vital taxonomy methods (see BARAL 1992) by means of recognition of living vs. dead cells in freshly collected apothecia. Accordingly, most of the collections treated are documented with microscopic drawings and descriptions that served for additional analysis in 21 taxa representing potential new or insufficiently known species. These cases will be treated subsequently in separate papers. Dried materials were deposited in CNF, GZU, and WU. The species are listed mostly according to the classifications proposed by ERIKSSON (2004).

Localities (Fig. 1) and habitats visited

1. Falschgraben (3. 8. 2003; 26. 10. 2003) – Styria, Grazer Bergland: Schöcklgebiet N of Graz, 3 km N of Graz-Andritz, ravine “Falschgraben” E and NE of the village Stattegg-Hub, MTB 8858/4 (below 600 m s. m.), 8858/2 (above 600 m s. m.), 47°08'-09'N/15°25'E, 440-700 m s. m.; wooded slopes along the orographically left flank of the ravine, rotting wood in the dry bed of the stream; *Fagus sylvatica*, *Carpinus betulus*, *Quercus robur*, *Prunus avium*, *Betula pendula*, *Picea abies*, *Larix decidua*, *Pinus sylvestris*, *Abies alba*.
2. Gsöllberg (3. 8. 2003) – Styria, Grazer Bergland: Schöcklgebiet N of Graz, 3 km N of Graz-Andritz, NW slopes of the hill “Gsöllberg” S of Stattegg-Buch, MTB 8858/2, 47°09'N/15°26'E, 720-750 m s. m.; wooded slope along a deep shaded path in forest of *Picea abies* and *Pinus sylvestris*.
3. Heiligengeistklamm (4. 8. 2003, 29. 10. 2003) – Styria, Poßruck (Kozjak): 4 km S of Leutschach, Großwalz, ravine “Heiligengeistklamm”, MTB 9358/4, 46°37'-38'N/15°28'E, 400-660 m s. m.; ravine with *Acer pseudoplatanus*, *Tilia cordata*, *Fagus sylvatica*, *Ulmus glabra*, *Abies alba*, *Picea abies*.
4. Kohl lung (5. 8. 2003) – Styria, Schladminger Tauern: 18 km ESE of Schladming, 11 km S of Gröbming, Kleinsölk-Obertal, N above the house “Kohl lung”, MTB 8649/4, 47°20'N/13°55'E, 1050-1200 m s. m.; forest road on S- to E-exposed slope, and steep, E-exposed slope with montane forest of *Acer pseudoplatanus*, *Ulmus glabra*, *Fagus sylvatica*, *Picea abies*.
5. Essl-Alm (5. 8. 2003) – Styria, Schladminger Tauern: 17 km ESE of Schladming, 13 km S of Gröbming, Kleinsölk-Obertal, along the stream Schwarzenseebach, shortly N of the Essl-Alm, MTB 8649/3, 47°19'N/13°53'E, 1055 m s. m.; boggy pastures, *Alnus incana* floodplain forest.
6. Harmeralm (6. 8. 2003) – Styria, Schladminger Tauern: 17.5 km SE of Schladming, 17 km SSW of Gröbming, Kleinsölk-Obertal, shortly SW of the Harmeralm, close to the NW shore of the Schwarzensee, MTB 8749/1, 47°17'N/13°52'E, 1200 m s. m.; stony pasture with some carbonate influence, tall herbs, *Rosa* shrubs.
7. Schwarzensee-NW (6. 8. 2003) – Styria, Schladminger Tauern: 17.5 km SE of Schladming, 17 km SSW of Gröbming, Kleinsölk-Obertal, along the NW shore of the Schwarzensee, MTB 8749/1, 47°17'N/13°52'E, 1180 m s. m.; tall herbs and *Rubus idaeus* under *Alnus incana*.
8. Putzentalm (6. 8. 2003) – Styria, Schladminger Tauern: 18 km SE of Schladming, 19 km SSW of Gröbming, 14.5 km SSW of Kleinsölk, shortly S of the Putzentalm, MTB 8749/1,

47°16'N/13°51'E, 1360-1400 m s. m.; pastures with *Rhododendron ferrugineum*, *Juniperus communis* subsp. *alpina*, *Alnus alnobetula*, tall herbs, small watercourses.

9. Schelch (6. 8. 2003) – Styria, Schladminger Tauern: 18 km SE of Schladming, 19 km SSW of Gröbming, 14.5 km SSW of Kleinsölk, slope “Schelch” shortly SSE of the Putzentalm, MTB 8749/1, 47°16'N/13°51'E, 1400-1520 m s. m.; steep slope with tall herbs and *Rubus idaeus* under and between *Alnus alnobetula*, small watercourses.

10. Putzentalm (6. 8. 2003) – Styria, Schladminger Tauern: 18 km SE of Schladming, 18.5 km SSW of Gröbming, 14 km SSW of Kleinsölk, “Putzentalm” NE of the Putzentalm, SSW of the Schwarzensee, MTB 8749/1, 47°16'N/13°51'-52'E, 1200-1350 m s. m.; *Alnus alnobetula* shrubs and small watercourses along the road.

11. Schwarzensee-E (6. 8. 2003) – Styria, Schladminger Tauern: 18 km SE of Schladming, 17.5 km SSW of Gröbming, Kleinsölk-Obertal, along the road by the SE and E shore of the Schwarzensee, MTB 8749/1, 47°17'N/13°52'E, 1180 m s. m.; wooded shore with *Acer pseudoplatanus*, *Picea abies*.

12. Schwarzensee → Grafenalm → Breitlahnhütte (6. 8. 2003) – Styria, Schladminger Tauern: 17.5 km SE of Schladming, 16 km S of Gröbming, Kleinsölk-Obertal, along the road by the Schwarzenseebach, MTB 8749/1 (S of the Grafenalm), 8649/3 (N of the Grafenalm), 47°17'-18'N/13°52'-53'E, 1070-1170 m s. m.; pastures, small pieces of *Picea abies* woodland.



Fig. 1. Map of localities visited in Austria

13. Planneralm (7. 8. 2003) – Styria, Wölzer Tauern: ca. 19 km SSW of Liezen, 14 km SE of Irdning, 9 km SE above Donnersbach, along the lower part of the walking path from the skiing resort Planneralm up to the small pass Goldbachscharte, MTB 8551/3 (below 1680 m s. m.), 8651/1 (above 1680 m s. m.), 47°23'–24'N/14°11'E, 1640–1740 m s. m.; pastures, *Picea abies*, *Pinus mugo*, *Rhododendron ferrugineum*.
14. Plannerkessel (7. 8. 2003) – Styria, Wölzer Tauern: ca. 19 km SSW of Liezen, 14 km SE of Irdning, 9 km SE above Donnersbach, Plannerkessel, along the middle part of the walking path from the skiing resort Planneralm up to the saddle Goldbachscharte, MTB 8651/1, 47°23'N/14°11'E, 1740–1770 m s. m.; *Pinus mugo* bog.
15. Kothüttensee (7. 8. 2003) – Styria, Wölzer Tauern: ca. 19 km SSW of Liezen, 14 km SE of Irdning, 9 km SE above Donnersbach, Plannerkessel, along the middle part of the walking path from the skiing resort Planneralm up to the saddle Goldbachscharte, around the small lake Kothüttensee, MTB 8651/1, 47°23'N/14°11'E, 1790–1800 m s. m.; *Pinus mugo* bog, *Caricetum rostratae*, tall herbs, small watercourses; *Pinus cembra*.
16. Hartelsgraben (7. 8. 2003) – Styria, Ennstaler Alpen: Gesäuse, 18 km E of Admont, 4 km WSW to SW of Hieflau, ravine Hartelsgraben, along the forest road, MTB 8454/1, 47°35'–34'N/14°42'E, 530–750 m s. m.; montane forest with *Acer pseudoplatanus*, *Fagus sylvatica*, *Picea abies*, tall herbs along the road.
17. Großer Winterleitensee (10. 8. 2003) – Styria, Seetaler Alpen: 11 km SW of Judenburg, 11 km ENE of Neumarkt in Steiermark, N of the Zirbitzkogel, around the lake Großer Winterleitensee and along the lower part of the path to the peak Scharfes Eck, MTB 8953/1, 47°05'N/14°33'E, 1840–1920 m s. m.; subalpine forest with *Pinus cembra* and *Picea abies*, *Alnus alnobetula* along small watercourses, pastures, tall herbs, *Caricetum rostratae*.
18. Bog above Großer Winterleitensee (10. 8. 2003) – Styria, Seetaler Alpen: 11 km SW of Judenburg, 11 km ENE of Neumarkt in Steiermark, N of the Zirbitzkogel, bog SW above the lake Großer Winterleitensee, along the middle part of the path up to the peak Scharfes Eck, MTB 8953/1, 47°05'N/14°33'E, c. 1960 m s. m.; bog with *Trichophorum cespitosum*, *Eriophorum vaginatum*.
19. Kleiner Winterleitensee (10. 8. 2003) – Styria, Seetaler Alpen: 11 km SW of Judenburg, 11 km ENE of Neumarkt in Steiermark, N of the Zirbitzkogel, around the lake Kleiner Winterleitensee and along the path up to the lake Großer Winterleitensee, MTB 8953/1, 47°05'N/14°34'E, 1780–1820 m s. m.; subalpine forest with *Pinus cembra* and *Picea abies*, tall herbs.
20. Am Katzelbach (25. 10. 2003) – Styria, Graz, Straßgang, “Am Katzelbach”, MTB 8958/3, 47°01'N/ 15°23'E, ca. 380 m s. m.; *Urtica* stands, shrubs, hedges, roadsides, etc.
21. Florianiberg (25. 10. 2003) – Styria, Graz, Straßgang, N slope of the Florianiberg, walking path from “Am Katzelbach” up to the “Bildföhre” (towards Mantscha), MTB 8958/3, 47°01'N/15°22'E, ca. 380–480 m s. m.; woodland with *Fagus sylvatica*, planted *Picea abies* and *Pinus sylvestris*, but also some stands of *Betula pendula*; forest road and forest path.
22. Florianiberg (25. 10. 2003) – Styria, Graz, Straßgang, walking path along the ridge of the Florianiberg, from the “Bildföhre” to the “Greifgrube” and to the chapel “St. Florian”, MTB 8958/3, 47°01'N/ 15°22'–23'E, ca. 500–520 m s. m.; woodland with *Fagus sylvatica*, forest paths and roadsides, clearings.
23. Florianiberg (25. 10. 2003) – Styria, Graz, Straßgang, walking path from the chapel “St. Florian” down to the church of Straßgang, MTB 8958/3, 47°01'N/15°23'E, ca. 380–520 m s. m.; woodland with *Fagus sylvatica*, forest path.

24. Kalkleiten (26. 10. 2003) – Styria, Grazer Bergland, Schöcklgebiet N of Graz, ca. 3 km N of Graz-Andritz, along the road between the settlements Buch and Kalkleiten, MTB 8858/4, ca. 47°09'N/15°26'E, ca. 700 m s. m.; shrubs along open roadside (e.g., *Rosa spec.*, *Rhamnus cathartica*).
25. Schweinsbach (29. 10. 2003) – Styria, Oststeirisches Hügelland, 11.5 km NW of Mureck, 3.5 km N of Perbersdorf, along the lower, meandering part of the Schweinsbach, MTB 9260/1, 46°47'N/15°40'E, 290 m s. m.; woodland with *Carpinus betulus*, *Quercus robur*, *Fraxinus excelsior*, *Picea abies* (cult.), etc.
26. Lobau (22. 11. 2003) – Vienna, Lobau, 8 km E of centre of Vienna, Zaineth Au S of Mühlleiten, along Kühwörther Wasser, MTB 7865/1, 150 m s. m., flood forest of *Populus alba*, *Salix* spp., *Quercus robur*.
27. Großbrotmayr (22. 11. 2003) – Upper Austria, district Schärding, community Raab, SO farm house Großbrotmayr, along Wiesbach, MTB 7647/2, 390 m s. m.; broadleaved forest with *Dryopteris filix-mas*.
28. Aichet-Gautzham (22. 11. 2003) – Upper Austria, district Schärding, community Raab, between Aichet and Gautzham near Wiesbach, MTB 7648/1, 400 m s. m.; *Alnus glutinosa* streamside forest.
29. Perchtoldsdorfer Heide (26. 11. 2003) – Lower Austria, district Mödling, community Perchtoldsdorf, 2 km E of Perchtoldsdorf, 340 m s. m., MTB 7863/3; *Populus tremula* stand.
30. Wien (29. 11. 2003) – Vienna, district Landstraße, Botanical Garden of the University of Vienna, 180 m s. m., MTB 7864/1; *Phragmites* stand.
31. Mariatrost (14. 12. 2003) – Styria, Graz, Mariatrost, between Wenisbacherstraße and Himmelreichweg, MTB 8858/4, 47°06,6'N, 15°29,2'E, 450-480 m s. m.; Querco-Carpinetum with numerous other tree species, including *Picea abies* (cult.).
32. Rettenbachklamm (14. 12. 2003) – Styria, Graz, Mariatrost, ravine Rettenbachklamm, MTB 8858/4, 47°06'N/15°28'E, 450-480 m s. m.; wooded ravine with *Carpinus betulus*, *Acer pseudoplatanus*.
33. Badlgraben (19. 12. 2003) – Styria, Grazer Bergland N of Graz, 2 km N of Peggau, lower part of the ravine “Badlgraben“, MTB 8758/3, 47°13,6'N/15°20,8'E, 450-460 m s. m.; wooded humid ravine dominated by *Fagus sylvatica*, with *Asplenium scolopendrium* (= *Phyllitis scolopendrium*).
34. Botanical Garden (27. and 28. 10. 2003) – Styria, Graz, district Geidorf, Botanical Garden, MTB 8958/2, 47°04'N/15°27'E, 380 m s. m.
35. Innere Ragnitz (18. 12. 2003) – Styria, Graz, Waltendorf distr., Innere Ragnitz, near the stream Grazbach (“Ragnitzbach“), MTB 8958/2, 47°04'N/15°28'E, 380 m s. m.
36. Rettenbachalm (23. 9. 1994) – Styria, Liezen, Altaussee, Totes Gebirge, Rettenbachalm, MTB 8348/2, 47,67°N/13,75°E, 840 m s. m.
37. Taferlklausen (23. 9. 1994) – Upper Austria, Gmunden, Altmünster, Höllen-Gebirge: Taferlklausen W of Neukirchen, MTB 8147/4, 47,84°N/13,638°E, 750 m s. m.
38. Weidenbachtal (21. 9. 1994) – Upper Austria, Gmunden, Altmünster, Höllen-Gebirge: Neukirchen, Weidenbachtal, MTB 8147/2, 47,85°N/13,65°E, 670 m s. m.
39. In der Kreh (18. 9. 1994) – Upper Austria, Gmunden, Ebensee, Höllen-Gebirge: Langbathbachtal, Krehstube, MTB 8148/3, 47,84°N/13,71°E, 650-800 m s. m.

40. Gahberg (21. 9. 1994) – Upper Austria, Vöcklabruck, Weyregg am Attersee, Höllen-Gebirge: Hintergahberg, MTB 8047/4, 47,91°N/13,61°E, 700-800 m s. m.

41. Gimbachtal, Saglstube (19. 9. 1994) – Upper Austria, Vöcklabruck, Steinbach am Attersee, Höllen-Gebirge: Weißenbach am Attersee, Gimbachtal, Saglstube, MTB 8247/2, 47,79°N/13,59°E, 520-570 m s. m.

42. Aurach Ursprung (23. 9. 1994) – Upper Austria, Gmunden, Altmünster, Höllen-Gebirge: W of Neukirchen, Aurach Ursprung, MTB 8147/4, 47,84°N/13,638°E, 840 m s. m.

Annotated species list

The checklist contains 87 accepted taxa (species and varieties) of discomycetous fungi mostly collected from August to December in 2003 during the present project. In the course of the project we also included our previously collected material from Höllen-Gebirge (Upper Austria) that was so far unpublished. This material was collected during the 23. Mykologische Dreiländertagung held in Ebensee, Upper Austria, 1994 (SCHÜSSLER & al. 1995) and represents 21 collections of 14 pezizalean species. Some older collections from GZU are incorporated that were also revised and identified as additional comparative material to some recently collected species.

***Helotiales* NANF.**

***Allophylaria subhyalina* (REHM) BARAL & KRIEGLST.**

Loc. 20: on previous years fallen petioles of *Acer pseudoplatanus*, 25. 10. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6781.

Although species from this genus strongly resemble those from very closely related *Crocicreas*, especially on the account of excipular texture (textura oblita), they can be separated from the latter by details of the hyphal structure (surface hyphae without ramifications and absence of excipular crystals are strictly confirmed here in our material) and by different type of amyloid reaction of the ascus top (see also CARPENTER 1981, TRIEBEL & BARAL 1996). CARPENTER (1981) stressed some doubts regarding the position of this species but he anyway decided to place it in *Crocicreas* as he was unable to see specific hemiamyloid reaction on asci due to the method he applied (cf. BARAL 1987). We think that the correct position of the species should be in the genus *Allophylaria* as it is shown in BARAL & KRIEGLSTEINER (1985) and TRIEBEL & BARAL (1996).

***Ascocoryne cylichnium* (TUL.) KORF**

Loc. 3: on large decorticated fallen trunk of *Tilia* spec. semiimmersed in stream, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6804. **Loc. 28:** on woody remnants of *Alnus* spec., 22. 11. 2003, leg. H. VOGLMAYR, det. N. MATOČEC, exs. CNF 2/6840.

***Ascocoryne sarcoides* (JACQ.: FR.) J. W. GROVES & D. E. WILSON**

Loc. 3: on large decorticated fallen trunk of *Abies alba* semiimmersed in stream, 4. 8. 2003, leg. & det. N. MATOČEC, no exs. **Loc. 33:** on woody remnants of *Alnus* spec., 19. 12. 2003, leg. & det. N. MATOČEC & I. KUŠAN, no exs.

Ascocoryne solitaria (REHM) DENNIS

Loc. 9: on fallen, partially decorticated branch of *Sorbus aucuparia*, 6. 8. 2003, leg. H. RIEGLER-HAGER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6610.

Contrary to the very common species *Ascocoryne cylichnium* and *A. sarcoides*, this species is rarely reported both in Austria and Croatia. It can easily be delimited from both common species mainly on the account of characters of the anamorph (stipitate-capitate, never confluent, apical conidiophore cells distinctly swollen), but also on account of the spores producing blastoconidia with non moniliform germ tubes (all differences mentioned are also supported by the unpublished key to *Ascocoryne* spp., BARAL & WEBER 2000). Besides, apothecia have a long tapering stalk with dominance of reddish-brown (purplish-violet tint only slightly pronounced).

Bisporella citrina (BATSCH: FR.) KORF & S. E. CARP.

Loc 34: on rotten buried wooden balk used as border to different parcels in a garden, beset with moss, 28. 10. 2003 leg. N. MATOČEC, & det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6787.

Bisporella confluens (SACC.) KORF & BUJAKIEWICZ

Loc. 21: on decorticated areas or under semidetached bark of fallen branch of *Fagus sylvatica* or *Acer pseudoplatanus*, 25. 10. 2003 leg. & det. N. MATOČEC, exs. CNF 2/6778. **Loc. 25:** on fallen decorticated branch of *Carpinus betulus*, 29. 10. 2003 leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6795. **Loc. 3:** on fallen decorticated branch of a broadleaved tree, 29. 10. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6806. **Loc. 2:** on fallen decorticated branch of a broadleaved tree, 26. 11. 2003 leg. N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6843.

It seems that this species is frequently reported as *Bisporella citrina* in many references as it is far more frequent in central Europe (e.g., Austria, Slovenia, continental part of Croatia) than real *B. citrina* from which it can be successfully delimited by consistently longer and wider living mature ascospores (generally, $13.0\text{-}20.6 \times 4.1\text{-}6.3 \mu\text{m}$ vs. $8.6\text{-}14.7 \times 3.6\text{-}5.0 \mu\text{m}$ in Austrian material). Besides, overmature ascospores are frequently more than two-celled in *Bisporella confluens* and at most two-celled in *B. citrina*. Nevertheless, it is critical not to confuse with two different data sets on spore dimensions and spore septation mode: those obtained from rehydrated exsiccata (dead material) and from living material (cf. BARAL 1992) as spore measurements of the two species are very close (sometimes overlapping to a minor degree). Spore dimensions and septation mode are rather low in KORF & BUJAKIEWICZ (1985) as they worked with dead material. There are also additional delimiting characters (texture and cytology) and they will be the subject of future studies on the genus *Bisporella*.

Bisporella pallescens (PERS.) S. E. CARP. & KORF

Loc. 33: on water-soaked decorticated branch of *Fagus sylvatica*, 19. 12. 2003, leg. I. KUŠAN, det. N. MATOČEC & I. KUŠAN, no exs.

***Bisporella scolochloae* (DE NOT.) SPOONER**

Loc. 30: on dead fallen stems of *Phragmites communis*, 29. 11. 2003, leg. N. MATOČEC & H. VOGLMAYR, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6845.

***Bisporella sulfurina* (QUÉL.) S. E. CARP.**

Loc. 4: on dry decorticated branch still attached to the living tree of *Ulmus glabra* (= *U. montana*), ca. 2.0-2.5 m above ground; 5. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6593.

This fairly common species is usually found as inhabitant of the litter layer – a microhabitat with prolonged humidity duration. Our collection proves that the species can also colonize woody material exposed to heavy droughts as a normal xerotolerant species. Apothecia were tested six months after collecting showing still some vital asci and ascospores.

***Brunnipila clandestina* (BULL. ex MÉRAT: FR.) BARAL & KRIEGLST.**

Loc. 9: on dead fallen *Rubus idaeus* stems together with *Capitotricha rubi* and *Lachnum virgineum*, 6. 8. 2003, leg. & det. A. RAITVIIR and N. MATOČEC, no exs.

In this case we can confirm the mycosociological behaviour of the three species cited above as was stated earlier by BARAL & KRIEGLSTEINER (1985).

***Calycellina punctata* (FR.) LOWEN & DUMONT**

Loc. 25: on fallen *Quercus petraea* leaves, 29. 10. 2003, leg. N. MATOČEC & C. SCHEUER, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6789, 2/6800.

***Capitotricha bicolor* (BULL. ex MÉRAT: FR.) BARAL**

Loc. 17: on *Rhododendron ferrugineum* twigs fallen near the bank of a small stream, 10. 8. 2003 leg. & det. N. MATOČEC, exs. CNF 2/6622.

It seems that this very frequent species, notorious to broadleaved forests from lowlands to montane area on, e.g., *Quercus*, *Fagus*, *Corylus*, *Alnus*, *Carpinus*, has never been found in habitats above the tree limit and that *Rhododendron* represents a new substrate for the species. It seems that this collection does not differ in any important respect from collections of the species so far collected and analysed from broadleaved forests from Austria to Croatia by the authors. Ongoing, more detailed studies on the genus, will show the real affinity of this unusual collection more clearly.

***Capitotricha rubi* (BRES.) BARAL**

Loc. 7: on fallen stems of *Rubus idaeus*, 6. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6603. **Loc. 9:** on fallen stems of *Rubus idaeus* together with *Brunnipila clandestina* and *Lachnum virgineum*, 6. 8. 2003, leg. & det. N. MATOČEC, no exs.

***Chlorociboria aeruginosa* (PERS.: FR.) SEAVER ex RAMAMURTHI, KORF & L. R. BATRA**

Loc. 16: on very rotten branch fragment of a broadleaved tree, 6. 8. 2003, leg. H. VOGLMAYR, det. N. MATOČEC, exs. CNF 2/6621.

***Claussenomyces atrovirens* (PERS.: FR.) KORF & ABAWI**

Loc. 31: on fallen branch of *Fraxinus excelsior*, 14. 12. 2003, leg. C. SCHEUER, det. N. MATOČEC, exs. CNF 2/6849.

***Claussenomyces prasinulus* (P. KARST.) KORF & ABAWI**

Loc. 5: on fallen, partially decorticated branch, 5. 8. 2003, leg. W. JAKLITSCH, det. N. MATOČEC, exs. CNF 2/6599.

Normally, this species produces both anamorph and teleomorph at the same time and place, but in this case the anamorph was not found. A part of this collection was kept alive for more than one month in moist condition but the anamorph was not formed even subsequently. There are only two additional such collections from Croatia known to the authors.

***Crocireas coronatum* (BULL.) S. E. CARP. (Fig. 3)**

Loc. 20: on dead stems and petioles of several herbaceous plant species (mostly *Apiaceae*), 25. 10. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6775 (fructification on *Apiaceae*).

It was already known that asci, apart from other important characters, in this common species arise from croziers (cf. TRIEBEL & BARAL 1996), but detailed analysis in this collection revealed that crozier cell-length varies considerably in dependence of the position in the ascogenous system. Cells that directly produce asci are much shorter than those that produce other crozier cells and are situated deeper in the subhymenium (Fig. 3 d). It would be interesting to know whether this is a constant feature of the species or just an accidental developmental pattern of this collection.

Crocireas cyathoideum* (BULL.) S. E. CARP. var. *cyathoideum

Loc. 16: on dead stems of some asteracean plant, 7. 8. 2003, leg. & det. A. RAITVIIR & N. MATOČEC, no exs.

***Crocireas fraxinophilum* (SVRČEK) TRIEBEL & BARAL**

Loc. 1: on fallen petioles of *Fraxinus excelsior*, 26. 10. 2003, leg. N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6785.

***Dasyscyphella montana* RAITV.**

Loc. 4: on the lower side of fallen rotten decorticated branch of *Ulmus glabra*; 5. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6594.

This rarely reported species seems to be confined to altimontane deciduous forest areas and it is new for Austria. It is not yet recorded in Croatia.

***Encoelia furfuracea* (ROTH: PERS.) P. KARST.**

Loc. 7: on thick branch covered with bark, still attached to the living tree of *Alnus incana*, 6. 8. 2003, observed & det. by C. SCHEUER, A. RAITVIIR and N. MATOČEC, leg. N. MATOČEC, exs. CNF 2/6602.

Loc. 35: on branch covered with bark, still attached to the living tree of *Corylus avellana*, 18. 12. 2003, observed & det. by C. SCHEUER, N. MATOČEC and I. KUŠAN, not collected.

This species with large apothecia, readily recognizable in the field, which is quite common also in Croatia, was never found there during summer nor on any other host species except *Corylus avellana*. However, the occurrence during summer on *Alnus incana* is quite normal in Estonia (A. RAITVIIR, pers. comm.).

***Graddonia coracina* (BRES.) DENNIS**

Loc. 17: on submersed rotten branch of *Alnus alnobetula* or *Sorbus aucuparia* in small stream, 10. 8. 2003, leg. H. RIEGLER-HAGER & C. SCHEUER, det. C. SCHEUER & N. MATOČEC, CNF 2/6628.

On account of the higher number of collections so far analysed from Austria to Croatia of the species we observed considerable differences among them. We will test the correlation of this deviations (e.g., fine structure of ascus apex, sporulation mode, ascospore size and guttulation pattern) with ecological features (apothecia can be completely aquatic, even several decimeters below water level, but also can inhabit barely moist rotten branches) and try to explain if they are consequences of ecological conditions or a question of taxonomy. Spores produced in this collection with aquatic apothecia showed striking xerotolerance as the majority of them was still in the living state two and a half months after collecting.

Hamatocanthoscypha laricionis* (VELEN.) SVRČEK var. *laricionis

Loc. 3: on very wet fallen rotten cones of *Picea abies* together with *Ombrophila janthina* deposited in a puddle, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6584.

***Hamatocanthoscypha uncipila* (LE GAL) HUHTINEN (Fig. 2)**

Loc. 3: on watersoaked decorticated, fallen branch of a deciduous tree, 29. 10. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6810.

This species is rarely reported but it is far more frequent than it is considered, most likely easily overlooked despite of its minute though vividly coloured apothecia. Our material showed some unreported peculiarities. The asci are mainly 5-7-spored, a feature that is not recorded in HUHTINEN's monograph (1990) and that is very rare in inoperculate discomycetes (observed also in all Croatian specimens and some *Unguiculariopsis* species treated by the first author), but there are also asci with two to four and eight spores present in lesser extent (Fig. 2 f). It is obvious that *Hamatocanthoscypha uncipila* is initially a normal 8-spored species (i.e. that in its asci one mitosis follows meiotic division) as we observed eight spore initials in all asci (see asci in various stages of development in Fig. 2 a), but very frequently 1-6 spores became abortive. It is interesting that spore size (Fig. 2 g, spores freshly ejected from the same 5-spored ascus) does not depend significantly on the number of fully developed spores per ascus (as in *Tuber* spp.) but ascus length greatly depends on this feature (compare left 4-spored and right 8-spored ascus on Fig. 2 f). The ascus is shorter by increase of number of abortive spores inside it. Other peculiarities are that living ascospores contain two non-refractive globules stainable by cresyl-blue (Fig. 2 h) and that vacuolar bodies (Fig. 2 b, c, d, f) in the living apical cell of the paraphyses and inside living hair cytoplasm (chlorinaceous green-yellow in water) are stainable by cresyl-blue (emerald-green), but not at all or only faintly by neutral-red (faintly greyish instead of blood-red). The

regular situation for refractive vacuolar bodies is that they are equally stainable by both vital dyes.

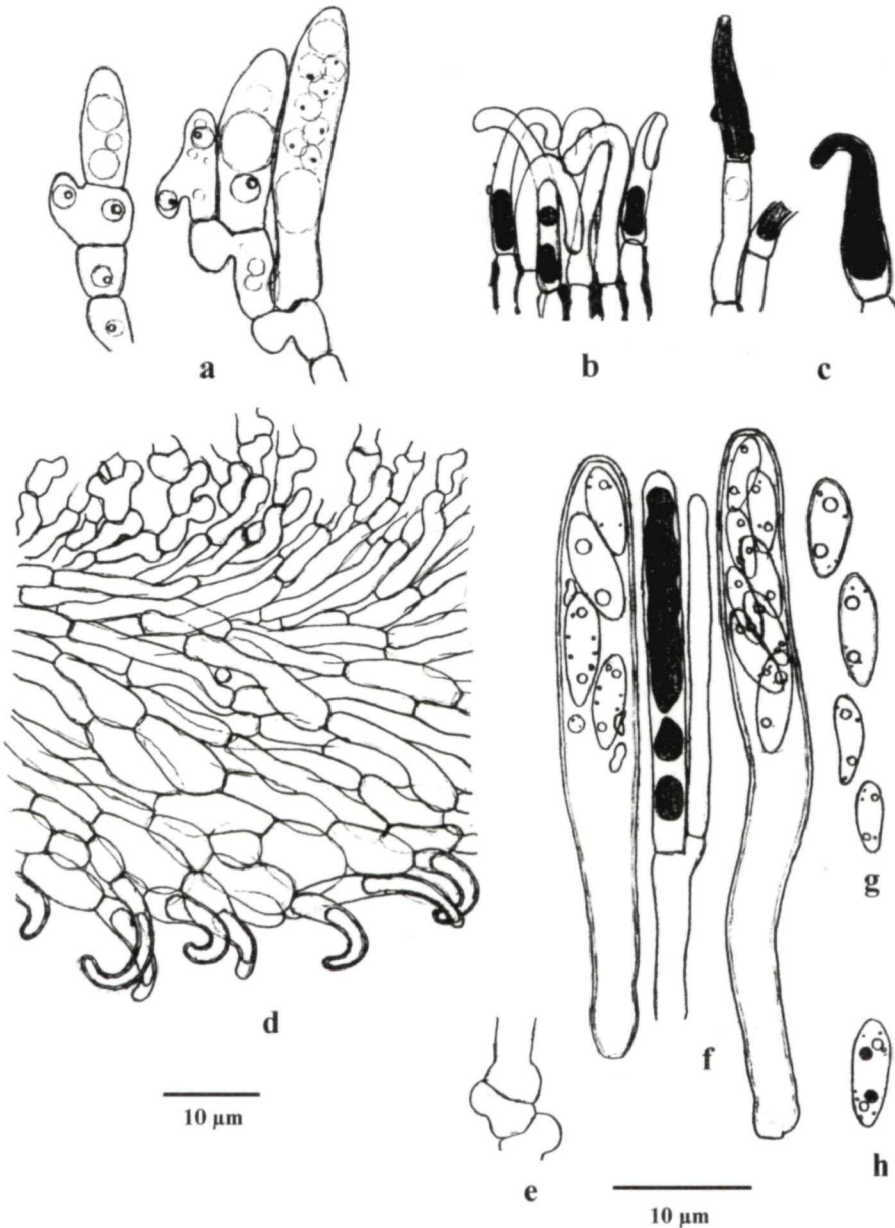


Fig. 2. *Hamatocanthoscypha uncipila*: a ascogenous system with croziers and its asci in various stages of development, some nuclei are readily visible in tap water; marginal hairs: b lateral view showing resinous agglutination, c from squash, both b and c with vacuolar bodies stained in cresyl-blue; d apothecial anatomy, middle flanks, vertical-median section; e croziers on the base of the mature ascus; f hymenial elements; g freshly ejected mature ascospores; d-g in tap water (except for the paraphysis that is in cresyl-blue); h mature ascospore in cresyl-blue; all structures are in statu vivo. Left bar is valid for texture and right one for all other structures.

Hyaloscypha fuckelii* NANNF. var. *fuckelii

Loc. 25: on very rotten *Picea abies* trunk, 29. 10. 2003, leg. C. SCHEUER, det. N. MATOČEC, exs. CNF 2/6801.

***Hyaloscypha quercicola* (VELEN.) HUHTINEN**

Loc. 23: on *Quercus petraea* gall, 25. 10. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6784.

***Hymenoscyphus fagineus* (PERS.: FR.) DENNIS**

Loc. 3: on fallen *Fagus sylvatica* cupules and its small woody remnants, semiimmersed in wet stream-bank soil, leg. & det. N. MATOČEC & C. SCHEUER, 4. 8. 2003, no exs.

***Hymenoscyphus imberbis* (BULL.: FR.) DENNIS**

Loc. 3: on large fallen water-soaked decorticated branch of broadleaved tree, 29. 10. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6807.

***Hymenoscyphus scutula* (PERS.: FR.) PHILLIPS.**

Loc. 20: on rotten stems of some apiacean plant, 25. 10. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6773.

***Hymenoscyphus trichosporus* DOUGOUD**

Loc. 17: on fallen semidecorticated branch of *Alnus alnobetula*, 10. 8. 2003, leg. & det. A. RAITVIIR & N. MATOČEC, exs. CNF 2/6624.

This truly alpine species that is recently described (DOUGOUD 2001) is new to Austria, though it is not surprising as it is apparently a circumalpine, central European species.

***Incrucipulum ciliare* (SCHRAD.: PERS.) BARAL**

Loc. 1: on fallen leaves of *Quercus petraea* inside the litter layer, 3. 8. 2003, leg. & det. N. MATOČEC & A. RAITVIIR, exs. CNF 2/6572.

***Lachnum pudibundum* (QUÉL.) SCHROET.**

Loc. 3: on fallen decorticated branchlet in water-spray zone near the fall, 4. 8. 2003, leg. N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6803. **Loc. 26:** on fallen rotten woody fragment, 22. 11. 2003, leg. I. KRISAI-GREILHUBER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6834.

***Lachnum virgineum* (BATSCH) P. KARST.**

Loc. 9: on fallen stems of *Rubus idaeus* together with *Brunnipila clandestina* and *Capitotricha rubi*, 6. 8. 2003, leg. & det. N. MATOČEC, no exs.

***Mollisia benesuada* (TUL.) W. PHILLIPS**

Loc. 26: on decorticated fallen branches of *Populus alba*, 22. 11. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6836.

***Mollisia cinerea* (BATSCH) P. KARST.**

Loc. 16: on fallen decorticated part of large branch of *Fagus sylvatica*, 7. 8. 2003, leg. & det. N. MATOČEC, no exs. **Loc. 25:** on large decorticated trunk of *Carpinus betulus*, together with *Orbilbia delicatula* and *Ascocoryne* spec., 29. 10. 2003, leg. N. MATOČEC & C. SCHEUER, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6791. **Loc. 26:** on upper side of lying decorticated branch of a broadleaved tree, 22. 11. 2003, leg. I. KRISAI-GREILHUBER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6835.

***Mollisia lividofusca* (FR.) GILLET**

Loc. 28: fallen branch of *Corylus avellana* still with bark, 22. 11. 2003, leg. H. VOGLMAYR, det. N. MATOČEC, exs. CNF 2/6841.

***Mollisia rosae* (PERS.) FUECKEL**

Loc. 6: fallen semidecorticated branchlet of *Rosa* spec., 6. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6600.

***Neodasyscypha cerina* (PERS.: FR.) SPOONER**

Loc. 16: on fallen decorticated branch of a broadleaved tree, 7. 8. 2003, leg. & det. N. MATOČEC, no exs.

***Ombrophila janthina* P. KARST.**

Loc. 3: on very wet fallen rotten cones of *Picea abies* together with *Hamatocanthoscypha laricionis* var. *laricionis* deposited in a puddle, 4. 8. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6583.

***Ombrophila violacea* (ALB. & SCHWEIN.: FR.) FR.**

Loc. 10: on semiimmersed fallen, decorticated branch of *Alnus alnobetula*, 6. 8. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6604. **Loc. 3:** on lower side of water-soaked branch of a broadleaved tree, 29. 10. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6802. **Loc. 3:** on water-soaked trunk of a broadleaved tree, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6809. **Loc. 33:** on water-soaked decorticated branch of a broadleaved tree, 19. 12. 2003, leg. I. KUŠAN, det. N. MATOČEC & I. KUŠAN, no exs.

***Rutstroemia luteovirescens* (ROB. ex DESM.) WHITE**

Loc. 22: on fallen previous year petioles of *Acer pseudoplatanus*, 25. 10. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6780.

***Symphysirinia angelicae* ELLIS**

Loc. 29: on rotten buried seedling (of some *Apiaceae*?), 26. 11. 2003 leg. & det. N. MATOČEC, exs. CNF 2/6844.

This very rare species (thus far not collected in Croatia), is new to Austria and even though it is excellently described by BARAL (1994) we will give a full description of the Austrian collection in our next paper of the series in order to evaluate its variability important to taxonomic delimitation towards other species in the genus and to present some new data. The anamorph was not found.

***Trichopeziza mollissima* (LASCH) FUCKEL**

Loc. 16: on rotten stems of tall herbs, 7. 8. 2003, leg. & det. A. RAITVIIR & N. MATOČEC, no exs.

***Tympanis laricina* (FUCKEL) SACC.**

Loc. 14: on recently fallen branches of *Pinus mugo* still with bark, 7. 8. 2003, leg. & det. W. JAK-LITSCH & N. MATOČEC, exs. CNF 2/6615.

***Vibrissea decolorans* (SAUT.) SÁNCHEZ & KORF**

Loc. 15: on wet, fallen *Pinus mugo* cones, 7. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6618. **Loc. 17:** on fallen, semidecorticated wet branches of *Alnus alnobetula*, exs. CNF 2/6623, and on fallen, decorticated, wet branch of *Sorbus aucuparia*, exs. CNF 2/6626, 10. 8. 2003, leg. & det. N. MATOČEC.

***Vibrissea flavovirens* (PERS.) KORF & DIXON**

Loc. 3: on very wet decorticated fallen branch in a puddle, 4. 8. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6579.

***Vibrissea truncorum* (ALB. & SCHWEIN.) FR.**

Loc. 8: on submersed fallen branchlets of *Alnus alnobetula*, 6. 8. 2003, det. C. SCHEUER and N. MATOČEC, no exs. **Loc. 9 and 10:** on submersed fallen branchlets of *Sorbus aucuparia*, 6. 8. 2003, det. C. SCHEUER & N. MATOČEC. **Loc. 17:** on submersed fallen branchlets of *Sorbus aucuparia*, 10. 8. 2003, det. N. MATOČEC, no exs.

This fairly common species in streams and rivulets in the alpine zone seems to be significantly rarer to completely absent in lower bioclimate areas.

***Lecanorales* NANNF. s. lato**

***Dactylospora stygia* (BERK. & M. A. CURTIS) HAFELLNER**

Loc. 26: on fallen, decorticated branch of *Populus* spec., 22. 11. 2003, leg. I. KRISAI-GREILHUBER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6838.

***Mycocaliciales* TIBELL & WEDIN**

***Phaeocalicium compressulum* (NYL. ex VAINIO) A. F. W. SCHMIDT**

Loc. 9: 6. 8. 2003, exs. CNF 2/6613, and **Loc. 19:** 10. 8. 2003, no exs.; on living apical parts of branchlets of *Alnus alnobetula* but also on thicker twigs, leg. C. SCHEUER & N. MATOČEC, det. C. SCHEUER.

Apothecia of this species were observed twice, both times in areas with massive die back of *Alnus alnobetula*, apparently caused by abiotic factors, but probably often accelerated by a species of *Valsa* (*Diaporthales*).

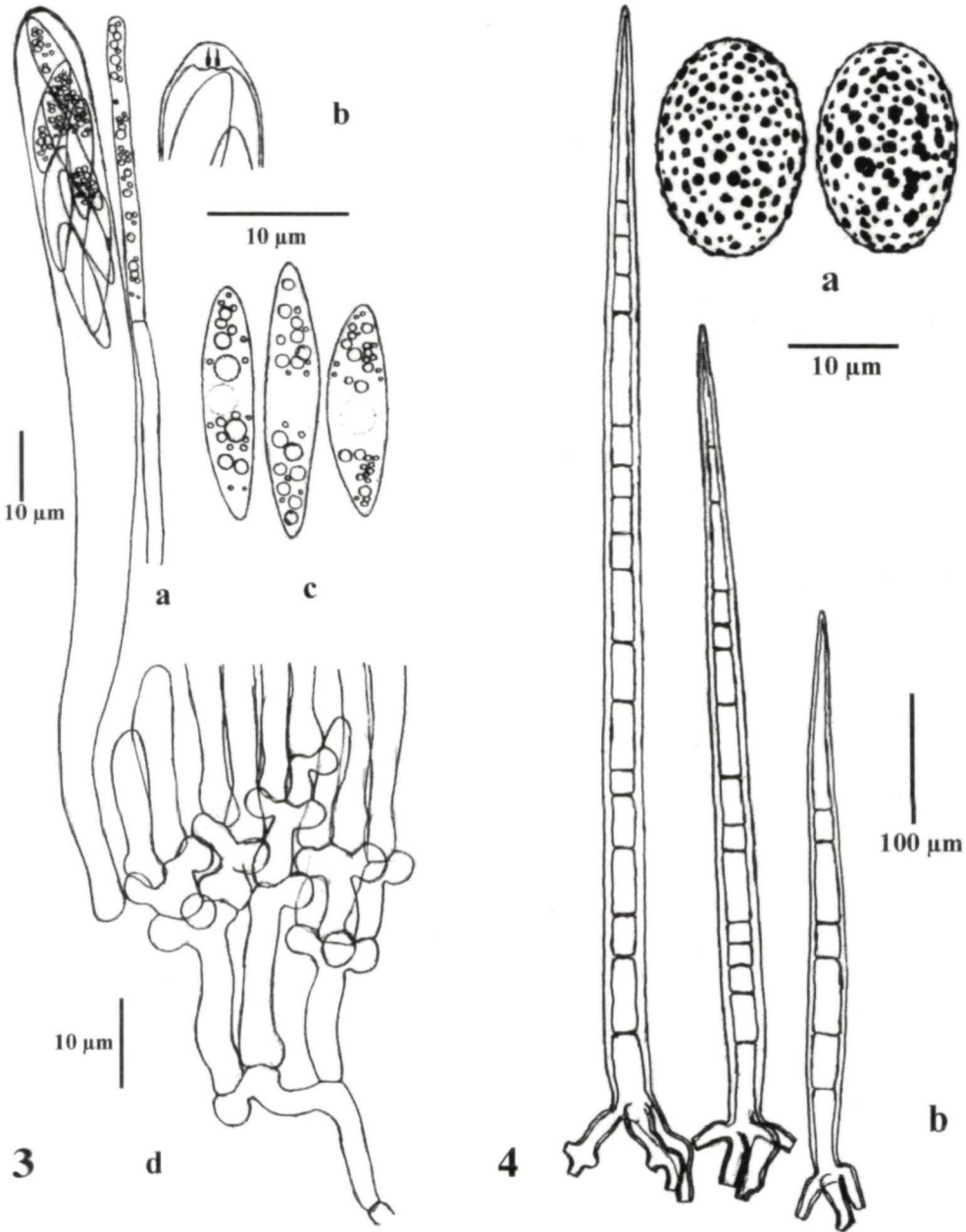


Fig. 3. *Crociareas coronata*. a Hymenial elements in tap water; b apex of the mature ascus in IKI, c freshly ejected ascospores; d part of the ascogenous system; c, d in tap water; all structures except b are in statu vivo. – Fig. 4. *Scutellinia crinita* var. *discreta*. a Mature ascospores from spore print in aniline-blue showing characteristic cyanophilic ornamentation; b marginal hairs from squash in tap water; all structures are rehydrated from exsiccata in statu mortuo.

Orbiliales BARAL, O. E. ERIKSS., G. MARSON & E. WEBER***Orbilium delicatula* (P. KARST.) P. KARST.**

Loc. 3: on very wet decorticated trunk on the stream bank, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6585.

The Austrian material repeatedly displayed peculiar minute ascospore ornamentation on the dorsal part, while the ventral part was completely smooth, as was stated before (SPOONER 1987; MATOČEC & FOCHT 2000; BARAL, pers. comm.).

***Orbilium erythro stigma* (BERK. & BROOME) BOUD.**

Loc. 1: on old stromata of *Diatrypella* on a decorticated branch of a broadleaved tree in humid ravine, 3. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6577.

Some older collections: GZU 1-95: Vorarlberg, Rankweil, Mischwälder E der Heilanstalt in Valduna; on stromata of *Diatrypella* on *Corylus*, 3. 9. 1995, leg. C. SCHEUER, det. N. MATOČEC. GZU 19-95: Steiermark, Schöcklgebiet, N Graz, Schlucht bei Oberschöckl, on stromata of *Diatrypella verruciformis* together with *Nectria episphaeria* on *Corylus avellana*, 29. 10. 1995, leg. W. MAURER, det. N. MATOČEC. GZU 78-98: Oststeiermark, Sebersdorfberg, N of Bad Waltersdorf; on stromata of *Diatrypella quercina* on *Quercus*, 18. 1. 1998, leg. W. MAURER, det. N. MATOČEC.

This is a rarely reported species, but it is perhaps much more frequent than assumed as it is very easily overlooked.

***Orbilium inflatula* (P. KARST.) P. KARST.**

Loc. 4: on rotten woody remnants, 5. 8. 2003, leg. & det. N. MATOČEC, no exs. **Loc. 9:** on rotten woody remnants, 6. 8. 2003, leg. & det. N. MATOČEC, no exs.

***Orbilium luteorubella* (NYL.) P. KARST.**

Loc. 3: on decorticated areas of *Abies alba* trunk semiimmersed in the stream together with *Scutellinia nigrohirtula* and mosses, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6581. **Loc. 17:** on fallen decorticated branch of a broadleaved tree, 10. 8. 2003, leg. H. RIEGLER-HAGER, det. N. MATOČEC, exs. CNF 2/6627. **Loc. 25:** on fallen decorticated branch of *Alnus glutinosa* together with *Mollisia* spec., 29. 10. 2003, leg. C. SCHEUER, det. N. MATOČEC, exs. CNF 2/6796.

The species is very similar to *Orbilium sarraziniana* from which it can be separated by few characters of the ascospores in the vital state (BARAL, pers. comm.). As these differences appear to be constant in our material we keep both taxa as separate species until more information is available.

***Orbilium sarraziniana* BOUD.**

Loc. 25: on fallen woody fragment of *Picea abies*, 29. 10. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6798.

Pezizales* C. BESSEY**Aleuria aurantia* (PERS.: FR.) FÜCKEL**

Loc. 34: on wet ground among grass in open area near *Helvella crispa*, 27. 10. 2003, observed and det. N. MATOČEC & C. SCHEUER, no exs.

***Aleuria carbonicola* (J. MORAVEC) J. MORAVEC**

Loc. 36: on burnt ground and charcoal, 23. 9. 1994, leg. A. MUELLER, det. N. MATOČEC, exs. CNF 2/2303.

Our material excellently fits the original diagnosis (MORAVEC 1972) and proves this taxon clearly delimited from the similar species *Aleuria cornubiensis* (BERK. & BROOME) J. MORAVEC [= *Melastiza chateri* (W. G. SMITH) BOUD.] on account of much coarser ascospore ornamentation (both reticulum and apiculi), smaller ascospores and longer marginal hairs (cf. also MORAVEC 1994). This rarely reported species is new for Austria.

***Aleuria cornubiensis* (BERK. & BROOME) J. MORAVEC**

Loc. 23: on mossy soil of the forest footpath edge, 25. 10. 2003, leg. & det. N. MATOČEC, no exs.

***Geopora arenicola* (LÉV.) KERS**

Loc. 36: on burnt ground, 22. 9. 1994, leg. H. FORSTINGER, det. N. MATOČEC, exs. CNF 2/2307. **Loc. 22:** small slope of the forest path soil, 25. 10. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6782.

***Geopora cervina* (VELEN.) T. SCHUMACH.**

Loc. 37: on moist ground of the stream bank beset with moss, 22. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2299.

***Helvella crispa* FR.**

Loc. 34: on wet ground among grass in open area near *Aleuria aurantia*, 27. 10. 2003, observed and det. N. MATOČEC & C. SCHEUER, no exs.

***Helvella elastica* BULL. ex ST. AMANS**

Loc. 38: on soil of the forest path fringe with mosses, 21. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2292.

***Helvella lacunosa* AFZ.: FR.**

Loc. 21: on soil of the path fringe with thick litter layer, 25. 10. 2003, observed & det. N. MATOČEC & C. SCHEUER, no exs.

***Humaria hemisphaerica* (WEBER: FR.) FUCKEL**

Loc. 39: on forest soil with litter and moss, 18. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2289.

***Miladina lecithina* (COOKE) SVRČEK**

Loc. 3: on water-soaked decorticated branch of a broadleaved tree, 4. 8. 2003, leg. & det. N. MATOČEC, no exs. **Loc. 16:** on water-soaked decorticated branch of a broadleaved tree together with *Asco-coryne* spec., 7. 8. 2003, leg. & det. N. MATOČEC, no exs.

***Otidea alutacea* (PERS.) MASSEE**

Loc. 39: on forest soil with litter and moss, 18. 9. 1994, leg. & det. N. MATOČEC, no exs.

***Peziza badiofusca* (BOUD.) DENNIS**

Loc. 38: on forest ground of seepage, 21. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2293.

***Peziza cerea* BULL.: FR.**

Loc. 40: on fresh cow dung from the barn, 21. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2297.

***Peziza michelii* (BOUD.) DENNIS**

Loc. 37: on gravel soil with moss on the edge of the forest path, 23. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2298. **Loc. 38:** on forest ground with scarce litter, 21. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2296.

***Peziza micropus* PERS.**

Loc. 36: on burnt ground, 23. 9. 1994, leg. A. MUELLER, det. N. MATOČEC, exs. CNF 2/2304.

***Peziza moseri* AVIZ.-HERSH. & NEMLICH**

Loc. 41: on bare soil of the forest path, 19. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2290.

***Peziza pseudoanthracina* DONADINI**

Loc. 4: on rocky soil of the edge of the forest road with some mosses, 5. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6596.

This extremely rare species will be redescribed and discussed in a separate paper due to its rareness and because only few data about the species exist. Nomenclature and taxonomic position will also be reconsidered. Our analysis of living structures concurs with BOUDIER's drawings (1910). The species is apparently new to Austria and it was not yet recorded in Croatia.

***Peziza saniosa* SCHRAD.: FR.**

Loc. 16: on larger extremely rotten woody fragment beset with moss, 7. 8. 2003, leg. H. VOGLMAYR, det. N. MATOČEC, exs. CNF 2/6620.

***Peziza subisabellina* (LE GAL) HÄFFNER & HOHMEYER (Fig. 5)**

Loc. 39: on mossy forest ground, 18. 9. 1994, leg. & det. N. MATOČEC, exs. 2/2288.

This species is quite rare, at least in the area investigated and further south in Slovenia and Croatia. The spores, when overmature produce mitotic secondary spores. Usually, a number of secondary spores develops simultaneously on each ascospore. One germ tube usually produces a single secondary spore (Fig. 5 b). It is interesting that we found the same cytoplasmic non-refractive structures (Fig. 5 a) in dead spores

(a large ellipsoid central one, supplemented by many globose small vacuoles situated at both polar regions) as LE GAL (1941).

***Ramsbottomia asperior* (NYL.) BENKERT & T. SCHUMACH.**

Loc. 18: among mosses on the bog edge in the inundation zone, 10. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6634.

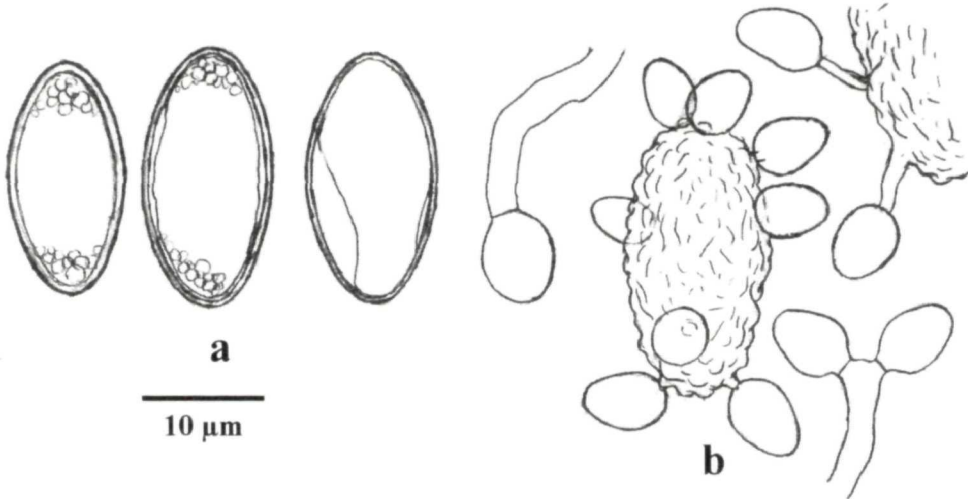


Fig. 5. *Peziza subisabellina*. a Mature ejected ascospores, the two left ones in tap water showing cytoplasmic structures (none are lipid bodies), the right one in aniline-blue showing absence of ornamentation; b two overmature ascospores germinated producing secondary mitotic spores and primary mycelia with conidia of the same type (in tap water), all structures are rehydrated from exsiccata in statu emortuo.

***Sarcocypha austriaca* (BECK ex SACC.) BOUD.**

Loc. 31: on fallen branch of *Prunus avium* still with bark, 14. 12. 2003, leg. C. SCHEUER, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6850.

Scutellinia crinita* (BULL.: FR.) LAMBOTTE var. *crinita

Loc. 4: on mineral soil of the edge of the forest road with mosses, 5. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6597.

This variety, very common in lower altitudes (from lowlands to montane broad-leaved forest areas), especially in microhabitats with permanent humidity, is rather rare in the alpine zone regardless of habitat type. In this zone *Scutellinia scutellata* is much more common in microhabitats without permanent humidity (such as forest path fringes) and *S. pilati* in microhabitats with continuous substrate humidity (such as springs and stream banks) instead of *S. crinita*. This species shows minor, but very constant differentiation on the infraspecific level. The type material has sinuose-vermiform

spore ornamentation (SCHUMACHER 1990). As we can recognize other spore ornamentation modes to be consistently distinct, without intermediate forms, we consider this vermiform ornamented entity as the typical variety. This variety is the most frequent form of *Scutellinia crinita*.

***Scutellinia crinita* (BULL.: FR.) LAMBOTTE var. *discreta* (KULLM. & RAITV.) N. MATOČEC & KRISAI-GREILHUBER, comb. nova (Fig. 4)**

Basionym: *Scutellinia scutellata* (L.) LAMBOTTE var. *discreta* KULLM. & RAITV., Scripta Mycologica, Tartu 10: 100, 1982.

Loc. 38: on soil with gravel and minute plant remnants at the edge of the forest path, 21. 9. 1994, leg. & det. N. MATOČEC, exs. CNF 2/2294. Other collections examined for comparison: CNF 2/2024 and 2/6474 (both from Croatia), and one collection from Slovenia, no exs.

This variety with isolated spot-shaped spore ornamentation (Fig. 4 a) was originally bound to *Scutellinia scutellata* (KULLMAN 1982), to a species with much coarser spore ornamentation and narrower spores with ends more or less attenuated. As the spore dimensions and shape (ends rounded) perfectly fit with those of *Scutellinia crinita* together with the other important characters (e.g., marginal hair base structure and hair dimensions, Fig. 4 b) we think that this variety should be transferred to *S. crinita*. It seems that this variety is much rarer than the typical variety and while the usual microhabitat for *Scutellinia crinita* var. *crinita* is water-soaked or humid fallen branches of mostly broadleaved trees (e.g., *Alnus*, *Salix*, *Fagus*, *Carpinus*, *Acer*), *S. crinita* var. *discreta* inhabits soil, mostly beset with minute unrecognizable plant remnants and litter.

***Scutellinia heterosculpturata* KULLM. & RAITV.**

Loc. 18: on mossy soil in the inundation zone of the bog together with *Scutellinia macrospora* and *S. patagonica*, 10. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6631.

This species is a typical representative of the arctic-alpine zone, though there are some sporadic collections known from warmer bioclimates (MATOČEC & al. 1995).

***Scutellinia macrospora* (SVRČEK) LE GAL**

Loc. 9: on mineral soil of the edge of the mountain footpath, 6. 8. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC, exs. CNF 2/6609. **Loc. 18:** on mossy soil in the inundation zone of the bog together with *Scutellinia heterosculpturata* and *S. patagonica*, 10. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6633.

This species is characteristic and confined to arctic-alpine habitats.

***Scutellinia minor* (VELEN.) SVRČEK & DONADINI**

Loc. 4: on mineral soil of the edge of the forest road with mosses, 5. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6598.

This species is considered to be confined to arcto-alpine areas of Europe, but it can also occur in subalpine and altimontane habitats and has already been recorded in neighbouring countries such as Czech Republic (SCHUMACHER 1990), Croatia (MATOČEC 1998) and Slovenia.

Scutellinia nigrohirtula (SVRČEK) LE GAL

Loc. 3: on decorticated areas of an *Abies alba* trunk semiimmersed in the stream together with *Orbilina luteorubella* and mosses, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6580; on water-soaked decorticated woody remnant in stream bed, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6588; on water-soaked decorticated woody remnant on stream bank, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6590; on very wet small woody remnants partially buried in the inundated stream bank, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6587; on very wet partly decorticated *Tilia* trunk on stream bank, 4. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6591, 2/6592. **Loc. 25:** on water-soaked branch of a broadleaved tree, 29. 10. 2003, leg. N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6794. **Loc. 38:** on fallen trunk of *Picea abies*, 21. 9. 1994, leg. M. SCHUBERT, det. N. MATOČEC, exs. CNF 2/2295. **Loc. 42:** on water-soaked trunk semiimmersed in the stream, 23. 9. 1994, leg. A. & H. ANDERSSON, det. N. MATOČEC, exs. CNF 2/2301.

This species is barely distinguishable from *Scutellinia kerguelensis*. There is much doubt if these two species should be separated at specific level or any subspecific level at all (see also MATOČEC & al. 1995). This taxonomic issue will be the subject of a separate paper. Nevertheless, we temporarily retain this name here in original sense and status since all collections showed low variability and they could match the original description of *Scutellinia nigrohirtula*. This is one of the commonest species in our study area, especially in and around the fresh water habitats.

Scutellinia patagonica (REHM) GAMUNDI

Loc. 18: on mossy soil in the inundation zone of the bog together with *Scutellinia macrospora* and *S. heterosculpturata*, 10. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6632.

Scutellinia pilati (VELEN.) SVRČEK

Loc. 17: on water-soaked branch of *Sorbus aucuparia* still with bark densely beset with moss, 10. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6625.

This semiaquatic species, bound to higher altitude and latitude is rare in central Europe and it is new to Austria.

Scutellinia scutellata (L.: FR.) LAMBOTTE

Loc. 2: on forest soil deeply hidden in a small hole beneath the partially exposed tree rhizosphere, 3. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6576.

The ascospores are somewhat shorter in comparison to the most frequently found range, but the species is known to have a rather high variability regarding the ascospore characters. A decision about a possible microtaxonomical status of such relatively minor deviations should not be made until further and sufficient material is carefully analysed by standardized methodology including the methods of vital taxonomy.

Scutellinia vitreola KULLM.

Loc. 4: on small woody remnants mixed with soil particles of the edge of the forest road with mosses, 5. 8. 2003, leg. & det. N. MATOČEC, exs. CNF 2/6597.

Rhytismatales M. E. BARR ex MINTER***Cyclaneusma minus* (BUTIN) DICOSMO, PEREDO & MINTER
= *Naemacyclus minor* BUTIN**

Loc. 1: on fallen leaves of *Pinus sylvestris*, 26. 10. 2003, leg. & det. C. SCHEUER & N. MATOČEC, exs. CNF 2/6786.

***Cyclaneusma niveum* (PERS.) DICOSMO, PEREDO & MINTER
= *Naemacyclus niveus* (PERS.) SACC.**

Loc. 23: on fallen leaves of *Pinus nigra* var. *austriaca*, 25. 10. 2003, leg. C. SCHEUER & N. MATOČEC, det. N. MATOČEC & I. KUŠAN, exs. CNF 2/6783.

The two species, although often considered as synonyms, can be separated in vital state by ascospore dimensions, number of septa in freshly ejected ascospores and number, size and configuration of non-refractive vacuoles in the cytoplasm of living freshly ejected ascospores. Species delimitation within the genus is under ongoing revision and more detailed results will be shown subsequently in a separate paper.

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