

New records of Pyrenomycetes from the Czech and Slovak  
Republics II  
Some rare and interesting species of the orders Dothideales and  
Sordariales

MARTINA RÉBLOVÁ<sup>1</sup> and MIRKO SVRČEK<sup>2</sup>

<sup>1</sup>Institute of Botany, Academy of Sciences,  
252 43 Průhonice, Czech Republic

<sup>2</sup>Department of Mycology, National Museum,  
Václavské nám. 68, 115 79 Praha, Czech Republic

Réblová M. and Svrček M. (1997): New records of Pyrenomycetes from the Czech and Slovak Republics II. Some rare and interesting species of the orders Dothideales and Sordariales.— *Czech Mycol.* 49: 207–227

The paper deals with 12 lignicolous species of Pyrenomycetes; *Actidium hysterioides* Fr., *Actidium nitidum* (Cooke et Ellis) Zogg, *Capronia borealis* M. E. Barr, *Capronia chlorospora* (Ellis et Everh.) M. E. Barr, *Cercophora caudata* (Currey) Lundq., *Farlowiella carmichaelina* (Berk.) Sacc., *Gloniopsis curvata* (Fr.) Sacc., *Mytilinidion rhenanum* Fuckel, *Pseudotrichia mutabilis* (Pers.: Fr.) Wehm., *Rebentischia massalongii* (Mont.) Sacc., *Trematosphaeria fissa* (Fuckel) Winter and *Trematosphaeria morthieri* Fuckel, most of which are reported from the Czech and Slovak Republics for the first time. Species are listed with localities, descriptions, illustrations and taxonomical and ecological notes. Most of them occur rarely in both countries or have very interesting habitats. *Capronia borealis* and *Capronia chlorospora*, so far known only from the temperate zone of North America, are reported from Europe for the first time. The systematic position of these species is arranged according to Eriksson and Hawksworth (1993).

**Key words:** New records, lignicolous Pyrenomycetes, Dothideales, Sordariales, Czech and Slovak Republics.

Réblová M. and Svrček M. (1997): Nové nálezy pyrenomycetů pro Českou a Slovenskou republiku II. Některé zajímavé a vzácně se vyskytující druhy z řádů Dothideales a Sordariales.— *Czech Mycol.* 49: 207–227

Příspěvek pojednává o 12 dřevních pyrenomycetech, *Actidium hysterioides* Fr., *Actidium nitidum* (Cooke et Ellis) Zogg, *Capronia borealis* M. E. Barr, *Capronia chlorospora* (Ellis et Everh.) M. E. Barr, *Cercophora caudata* (Currey) Lundq., *Farlowiella carmichaelina* (Berk.) Sacc., *Gloniopsis curvata* (Fr.: Fr.) Sacc., *Mytilinidion rhenanum* Fuckel, *Pseudotrichia mutabilis* (Pers.: Fr.) Wehm., *Rebentischia massalongii* (Mont.) Sacc., *Trematosphaeria fissa* (Fuckel) Winter a *Trematosphaeria morthieri* Fuckel, z nichž většina je uvedena poprvé pro Českou a Slovenskou republiku. Lokality druhů jsou doplněny krátkým popisem, taxonomickými a ekologickými poznámkami a vyobrazením podle studovaného materiálu. Jde o druhy vesměs vzácnější, ekologicky a zeměpisným rozšířením zajímavé. *Capronia borealis* a *Capronia chlorospora*, dosud známé pouze ze Severní Ameriky, byly poprvé sbírány také v Evropě. Zařazení jednotlivých druhů vychází ze členění navrženého Erikssonem a Hawksworthem (1993).

#### INTRODUCTION

The present paper is based on material collected by the authors in woodland and near-natural forests in the Czech Republic (Bohemia and Moravia) and Slovak

Republic. Specimens collected by F. Petrak, R. Podlahová and J. Velenovský deposited in the Mycological Herbarium of the National Museum in Prague (PRM) are also included. Species recorded here were collected on wood and bark of deciduous and coniferous trees. Two species, *Capronia borealis* and *Capronia chlorospora*, were collected in Europe for the first time, while the species *Actidium hysterioides*, *Farlowiella carmichaelina*, *Trematosphaeria fissa* and *Trematosphaeria morthieri* have not yet been reported from North America. Most species are rare and some have interesting habitats. For instance, the ascomata of the lignicolous species of *Actidium* and *Mytilinidion* are located on specific sites of the host coniferous trees (the inner side of peeling bark, wood beneath peeling bark and on cut sections of trunks and stumps) which are rich in resin. The content of resin in the host tissues obviously plays an important role in the occurrence of these species, which have not been reported from deciduous trees.

The geographical distribution of the species cited below is provided according to Barr (1980, 1987, 1990, 1991) and Farr et al. (1989) for North America, Teng (1996) for China and according to Saccardo (1883), Winter (1887), Hilitzer (1929), Zogg (1960, 1962), Lundqvist (1972), Dennis (1978), Sivanesan (1984), Eriksson (1992) and Krieglsteiner (1993) for Europe.

## LIST OF THE SPECIES

*Actidium hysterioides* Fr., Syst. Mycol. 2: 596, 1823.

Figs 1 a-b.

Specimens examined: Central Bohemia: Brdské hřebeny Mts., Dobřichovice; on the inner side of peeling bark at the base of a dead standing trunk of *Picea abies*, 5. V. 1991, leg. et det. M. Svrček (PRM). — Northern Bohemia: Jizerské hory Mts., Karlov near Josefův Důl; on bark of a stump of *Picea abies*, 19. III. 1972, leg. et det. M. Svrček (PRM). — Southern Bohemia: Šumava Mts., Černý Kříž near Volary; on peeling bark of a stump of *Picea abies*, 12. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 722/95). — Southern Bohemia: Šumava Mts., Mlynářská slat' peat-bog near Modrava; on bark of a stump of *Picea abies*, 19. VI. 1995, leg. et det. M. Réblová (Herb. M. Réblová 668/95). — Central Slovakia: Slovenské Rudohoří Mts., Muráňská planina, nature reserve Cigánka near Muráň, on the slopes of Mt. Cigánka (935 m a.s.l.); on peeling bark of a stump of *Picea abies*, 18. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 836/95).

Habitat: *A. hysterioides* is rare on bare wood and the inner side of peeling bark of stumps and was collected in localities with remnants of scree woodlands and near-climax spruce-forests in Bohemia and Slovakia. The fungus has not yet been reported from North America.

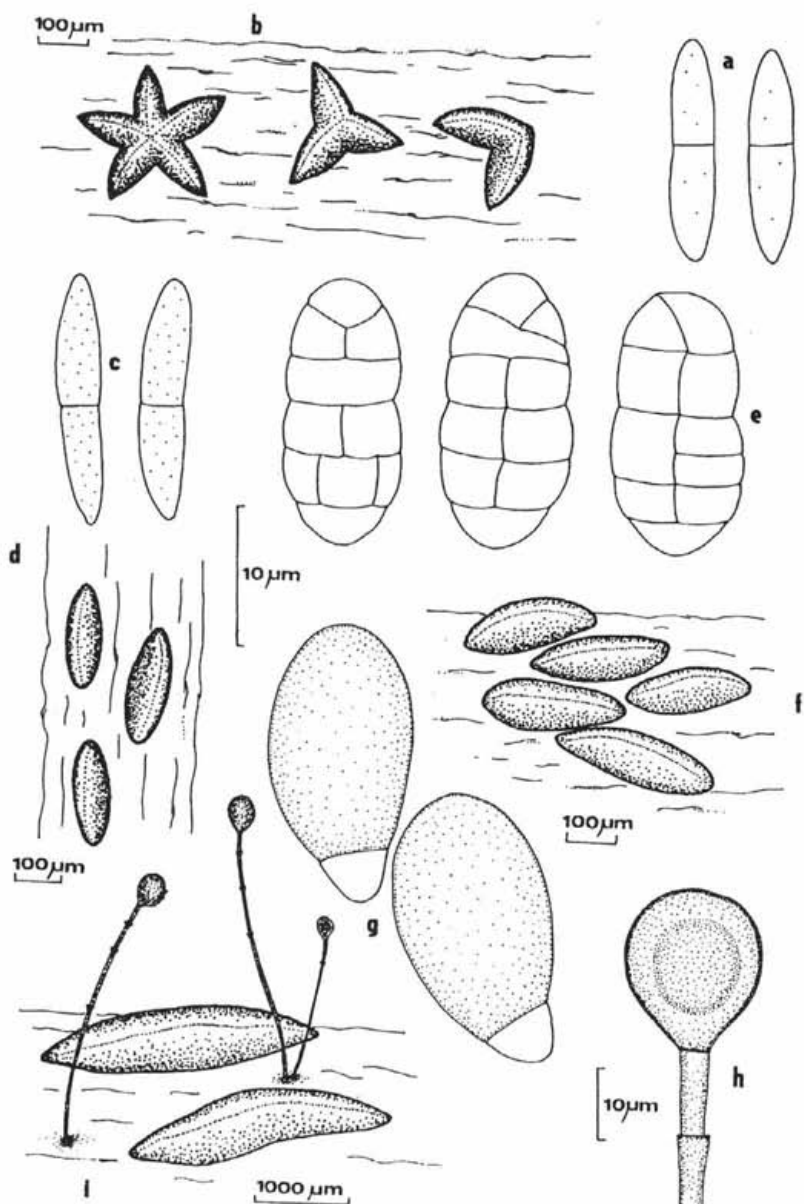


Fig 1. a-b: *Actidium hysterioides* Fr. (Herb. M. Réblová 668/95), a: ascospores, b: habit sketch of ascomata; c-d: *Actidium nitidum* (Cooke et Ellis) Zogg (Herb. M. Réblová 675/95), c: ascospores, d: habit sketch of ascomata; e-f: *Gloniopsis curvata* (Fr.: Fr.) Sacc. (Herb. M. Réblová 823/95), e: ascospores, f: habit sketch of ascomata; g-i: *Farlowiella carmichaelina* (Berk.) Sacc. (Herb. M. Réblová 826/95), g: ascospores, h: conidium attached to conidiophore of *Acrogenospora* sp. anamorph, i: habit sketch of ascomata and conidiophores.

Del.: M. Réblová

Anamorph: unknown.

Known hosts: *Picea abies* and *Pinus sylvestris* (Dennis 1978).

Distribution: Europe: Czech Republic, Germany, Great Britain, Slovak Republic, Sweden, Switzerland.

Systematic position: Mytiliniaceae Kirschstein, Dothideales Lindau.

For description see Zogg (1960).

Notes: This species is easily recognized by its star-shaped, superficial, black ascomata, usually with 3 or 5 equal arms but occasionally simple and unbranched, opening by a longitudinal slit. Asci 41.5–48.3 × 4.5–5 µm large; ascospores 11–16 × 2–3 µm, fusiform, two-celled, yellowish.

The records of the fungus from the Czech and Slovak Republics are published for the first time.

**Actidium nitidum** (Cooke et Ellis) Zogg, Beitr. Krypt.-Fl. Schweiz 11(3): 122, 1962.

Figs 1 c–d.

Syn.: *Glonium nitidum* Ellis ex Cooke et Ellis, Grevillea 8: 13, 1879.

≡ *Bulliardella nitida* (Ellis) Lohman, Pap. Mich. Acad. Sci. 23: 159, 1938.

Specimen examined: South-western Bohemia: Šumava Mts., Roklanský forest near Modrava; on peeling bark of a trunk of *Picea abies*, 20. VI. 1995, leg. et det. M. Réblová (Herb. M. Réblová 675/95).

Habitat: *A. nitidum* is closely related to *A. hysterooides* but differs by the almost ellipsoid shape of the ascomata and the somewhat larger size of the asci and ascospores. Both species are very rare, occurring principally on the inner side of peeling bark of decayed trunks and stumps. In these habitats they grow under specific microclimatic conditions on substrata with a relatively high moisture content and protected from desiccating winds. Both *Actidium* species are often overlooked for their inconspicuous appearance in the field. According to Dennis (1978) the fungus also occurs on dead needles of conifers, especially of *Juniperus*. The Bohemian find also included the following associated fungi: *Ceratostomella rostrata* (Fr.) Sacc., *Diplococcium spicatum* Grove and *Sporidesmium larvatum* Cooke et Ellis.

Anamorph: unknown.

Known hosts: *Cupressus thyoides* (Ellis and Everhart 1892) and *Juniperus* sp. (Farr et al. 1989) in North America; *Juniperus communis* in Europe (Dennis 1978, Zogg 1962) and *Picea abies* in Bohemia.

Distribution: Europe: Czech Republic, Great Britain, Sweden, Switzerland; North America: U. S. A. (New Jersey, Washington).

Systematic position: Mytiliniaceae Kirschstein, Dothideales Lindau.

For detailed description and further synonyms see Zogg (1960).

Notes: In the Bohemian specimens ascomata were shortly ellipsoid, black, 150–200  $\mu\text{m}$  long; asci 67.5–82.5  $\times$  3.7–4.3  $\mu\text{m}$  large; ascospores (13.7)15–17.5  $\times$  1.3–2.5  $\mu\text{m}$ , narrowly cylindrical to fusiform, two-celled, yellowish to pale brown and slightly constricted.

This is the only collection of *A. nitidum* known with certainty from the Czech and Slovak Republics.

**Capronia borealis** M. E. Barr, Mycotaxon 41: 424, 1991.

Figs 2 g, 4, 5.

Specimen examined: Central Bohemia: valley of the brook Klíčava near Nové Strašecí; on branch of *Carpinus betulus*, 10. VIII. 1996, leg. et det. M. Réblová (Herb. M. Réblová 830/96).

Habitat: On strongly rotten wood.

Anamorph: unknown.

Known hosts: *Cassiope mertensiana*, *Taxus canadensis* and *Vaccinium angustifolium* in temperate North America (Barr 1991) and *Carpinus betulus* in Bohemia.

Distribution: Recently the species was found in Europe for the first time.

Europe: Czech Republic; North America: U. S. A. (Michigan), Canada (British Columbia).

Systematic position: Herpotrichiellaceae Munk, Dothideales Lindau.

For detailed description see Barr (1991).

Notes: According to the Bohemian find the species forms globose, minutely papillate ascomata, occurring solitary or in small groups, 150–170(200)  $\mu\text{m}$  wide, base surrounded by a brown mycelium, hyphae septate, branched, 2.1–2.9  $\mu\text{m}$  wide; peridia dark greyish to dark brown, bearing darker thick-walled protruding cells on the surface. Asci 57.5–69.3  $\times$  (14.7)15.7–17.8  $\mu\text{m}$ , thick-walled, saccate; ascospores 16.8–20  $\times$  4.8–5.2  $\mu\text{m}$ , fusiform, 3–4-septate, olivaceous brown, slightly constricted at the septa.

*Capronia borealis* reported from North America (Barr 1991) differs slightly in possessing globose ascomata, collapsing when dry, ascospores of somewhat larger size (10)15–27.5  $\times$  (3.5)4.5–6  $\mu\text{m}$  and usually (1–3-) 5-septate, seldom with one longitudinal septum in the middle cell, not constricted. In the examined material ascospores were always observed without longitudinal septa. A similar case of the presence or absence of longitudinal septa is known also from *Capronia pilosella* (P. Karsten) E. Müll. et al. Some collections contain ascospores with transverse septa only, others have ascospores with one longitudinal septum in one of the middle cells.

This is the only record of *C. borealis* from the Czech and Slovak Republics.

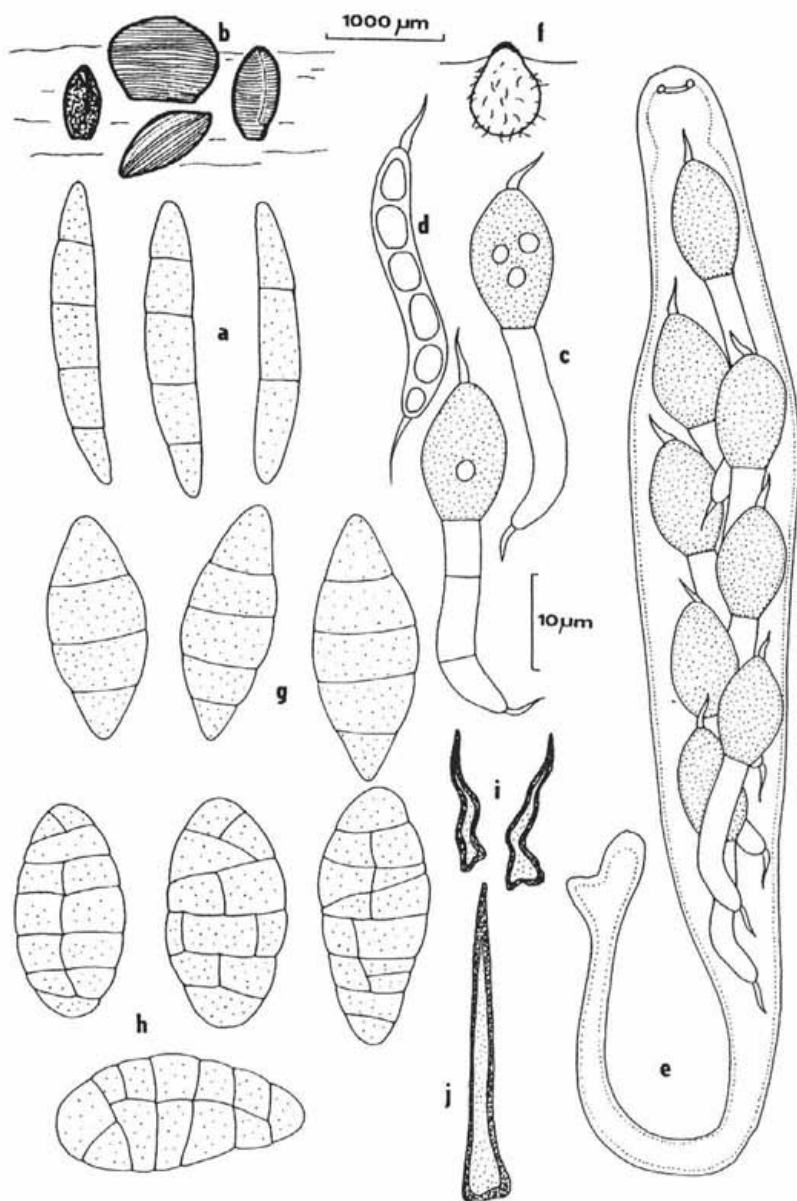


Fig 2. a-b: *Mytilinidion rhenanum* Fuckel (Herb. M. Réblová 796/95), a: ascospores, b: habit sketch of ascomata; c-f: *Cercophora caudata* (Currey) Lundq. (Herb. M. Réblová 686/95), c: mature ascospores, d: immature ascospores, e: ascus with ascospores, f: habit sketch of ascoma; g: *Capronia borealis* M. E. Barr (Herb. M. Réblová 830/96), g: ascospores; h-j: *Capronia chlorospora* (Ellis et Everh.) M. E. Barr (Herb. M. Réblová 828/96), h: ascospores, i: shorter flexuous setae, j: longer setae.

Del.: M. Réblová

*Capronia chlorospora* (Ellis et Everh.) M. E. Barr, Mycotaxon 41: 426, 1991.  
Figs 2 h-j, 6-9.

Syn.: *Teichospora chlorospora* Ellis et Everh., North Amer. Pyrenomyc. p. 219, 1892.

≡ *Pleosphaeria chlorospora* (Ellis et Everh.) Sacc., Syll. Fung. 11: 347, 1895.

Specimen examined: Central Bohemia: valley of the brook Klíčava near Nové Strašecí; on branch of *Carpinus betulus*, 10. VIII. 1996, leg et det. M. Réblová (Herb. M. Réblová 828/96).

Habitat: On rotten wood often beneath peeling bark. Barr (1991) mentioned its occasional occurrence on other ascomycetes.

Anamorph: unknown.

Known hosts: *Acer saccharum*, *Ailanthus*, *Lemaireocereus thurberi* and on old *Hypoxyylon* sp. on *Fagus* in North America (Barr 1991) and *Carpinus betulus* in Bohemia.

Distribution: Recently the species was found in Europe for the first time.

Europe: Czech Republic; North America: U. S. A. (Arizona, Massachusetts, New Jersey, Ohio, Vermont).

Systematic position: Herpotrichiellaceae Munk, Dothideales Lindau.

For detailed description see Barr (1991).

Notes: The Bohemian find contained scattered globose ascomata, 200-220  $\mu\text{m}$  wide and 250-275  $\mu\text{m}$  high, covered with setae, especially in the upper half. Setae usually of two sizes: (a) 7.3-12.6  $\mu\text{m}$  long and 3.1-4.2  $\mu\text{m}$  wide at base, acute and irregularly flexuous, surrounding the ostiolar region; (b) 30.4-52.5  $\mu\text{m}$  long and 4.2-5.2  $\mu\text{m}$  wide at base, acute, straight, covering the upper part of the ascoma except for the ostiolar region. Asci 44.1-52.5  $\times$  17.8-19  $\mu\text{m}$ , thick-walled, saccate, interthecial filaments lacking; ascospores (14.7)15.7-17.9(20.1)  $\times$  (5.2)6.3-7.3  $\mu\text{m}$ , broadly ellipsoid to fusiform, pale olivaceous brown, with 5 to 7(8) transverse septa and 1(2) longitudinal septum in the middle cells, constricted at each septum.

Ascospores have been observed being somewhat variable in shape (Figs. 6-7). Most of ascomata of the Bohemian find had both types of setae on the surface of the peridium, but on the other hand, the shorter setae were lacking on several ascomata. The ring of short setae around the ostiolar opening of *C. chlorospora* resembles that of *Capronia coronata* Samuels and *C. pilosella* (P. Karsten) E. Müll. et al., which differ in the 4-celled and smaller ascospores, (10)11.5-13.5(15.5)  $\times$  (2)3.6-4.7(5)  $\mu\text{m}$  large, for the former and in the 4-celled ascospores, 12-16  $\times$  4-6  $\mu\text{m}$  large, for the latter (Müller et al. 1987). *Capronia minima* (Ellis et Everh.) M. E. Barr is related but has smaller ascospores, (9)10-15.5  $\times$  4.5-7.5  $\mu\text{m}$  large, and collapsing ascomata bearing short setae or protruding cells (Barr 1991).

This is the only record of *C. chlorospora* from the Czech and Slovak Republics.



**Cercophora caudata** (Currey) Lundq., Symb. Bot. Upsal. 20: 92, 1972.

Figs 2 c-f.

Syn.: *Sphaeria caudata* Currey, Trans. Linn. Soc. London 22: 320, 1859.≡ *Sordaria caudata* (Currey) Saccardo, Syll. Fung. 1: 236, 1882.= *Sordaria lignicola* Fuckel, Symb. Mycol., Nachtr. 1: 326, 1871.≡ *Cercophora lignicola* (Fuckel) Richon, C. R. Ass. Franc. Av. Sci. 9: 156, 1881.≡ *Bombardia lignicola* (Fuckel) Kirschstein, Krypt. - Fl. Mark Brandenb. 7: 186, 1911.≡ *Lasiosordaria lignicola* (Fuckel) Chenantais, Bull. Soc. Mycol. France 35: 78, 1919.

Specimens examined: Central Bohemia: nature reserve Kohoutov near Jablečno; on wood of a fallen trunk of *Fagus sylvatica*, 28. IX. 1988, leg. et det. M. Svrček (PRM); Brdské hřebeny Mts., Dobřichovice, site called U obrázku; on wood of a fallen branch of *Carpinus betulus*, 21. VIII. 1984, leg. et det. M. Svrček (PRM); Český Kras, Srbsko near Karlštejn, valley of the river Bubovický potok; on saturated wood of a broad-leaved tree, 10. VI. 1967, leg. et det. M. Svrček (PRM). — Northern Bohemia: Jizerské hory Mts., Ferdinandov near Hejnice; on rotten and wet wood of a stump of *Fagus sylvatica*, 29. VIII. 1959, leg. et det. M. Svrček (PRM). — Southern Bohemia: Daleké Popelice near Kaplice, on the slopes of Mt. Kozí hřbet (731 m a.s.l.); on decorticated wood of *Betula verrucosa*, 9. X. 1971, leg. et det. R. Podlahová (PRM 731572, 731573). — Southern Moravia: Roztrhánky near Hodonín; on decorticated branch of *Quercus petraea*, 18. VI. 1995, leg. et det. M. Réblová (Herb. M. Réblová 686/95).

Habitat: *Cercophora caudata* is a rare species, occurring exclusively on strongly rotten wood of many deciduous trees.

Anamorph: unknown.

Known hosts: *Acer*, *Alnus*, *Betula verrucosa*, *Carpinus betulus*, *Corylus avellana*, *Fagus sylvatica*, *Prunus*, *Quercus petraea*, *Salix*, *Ulmus* in temperate regions of Europe and North America (Podlahová 1974, Farr et al. 1989).

Distribution: Europe: Austria, Belgium, Czech Republic, Denmark, France, Germany, Great Britain, Hungary, Netherlands, Sweden; North America: U. S. A. (New York).

Systematic position: Lasiosphaeriaceae Ces. et De Not., Sordariales Chad. ex Hawksw. et Eriksson.

For detailed description and further synonyms refer to Lundqvist (1972).

Notes: The ascomata were entirely immersed in wood, with erumpent small papilla only, pyriform, 250-400  $\mu\text{m}$  wide and 400-650  $\mu\text{m}$  high, with brown hairs scattered over the surface of the peridia. Asci 120-150 p. sp.  $\times$  15-18(20)  $\mu\text{m}$ , cylindrical-clavate; ascospores 40-52  $\times$  4-5.5  $\mu\text{m}$ , at first hyaline,



cylindric, resembling those of *Lasiosphaeria*, at maturity two-celled, the upper part turning dark brown and becoming ellipsoid, at the end with a hyaline appendage 5–9  $\mu\text{m}$  long, the basal part remaining hyaline, cylindric, often curved, occasionally with 1–2 septa, with hyaline appendage 11–15  $\mu\text{m}$  long.

*C. caudata* is easily distinguished from other species of *Cercophora* Fuckel by the total immersed ascomata. Lignicolous species of this genus have superficial ascomata or their base slightly immersed; in contrast, ascomata of coprophilous species are more commonly immersed. Lundqvist (1972) mentioned *C. caudata* as being closely related to the coprophilous species *C. anisura* Lundq., *C. mirabilis* Fuckel and to the lignicolous *C. natalita* (Speg.) Lundq. recorded from Argentina on wood of *Pircunia dioica*, which differs in its conspicuous hyaline appendages up to 55  $\mu\text{m}$  long.

These are the first published records of *C. caudata* from the Czech and Slovak Republics.

**Farlowiella carmichaelina** (Berk.) Sacc., Syll. Fung. 9: 1101, 1891.

Figs 1 g–i.

Syn.: *Hysterium carmichaelinum* Berk., English Flora 2: 294, 1836.

Specimen examined: Central Slovakia: Slovenské Rudohorí Mts., Muráňská planina, Hrdzavá valley; on trunk of *Fagus sylvatica*, 21. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 826/95).

Habitat: *F. carmichaelina* occurs rarely on the bark and decorticated wood of deciduous trees. On the material from Slovakia the fungus was associated with a *Acrogenospora* sp. anamorph and ascomata of *Lasiosphaeria spermoides* (Hoffm.: Fr.) Ces. et De Not. and *Chaetosphaeria pulviscula* (Currey) C. Booth.

Anamorph: *Acrogenospora* sp. (Mason 1941) is cosmopolitan, occurring on several species of shrubs and trees.

Known hosts: *Alnus*, *Betula*, *Corylus*, *Cytisus*, *Fagus*, *Fraxinus*, *Larix*, *Pinus*, *Prunus*, *Quercus*, *Sorbus* and *Taxus* (Ellis and Ellis 1985). Sivanesan (1984) reported it on undetermined rotten wood from New Zealand. On *Fagus sylvatica* in the Slovak Republic.

Distribution: Europe: Belgium, Germany, Great Britain, Slovak Republic, Switzerland; New Zealand.

Systematic position: Hysteriaceae Dumortier, Dothideales Lindau.

For full description and synonymy refer to Müller and von Arx (1962).

Notes: The specimens contained superficial, ellipsoid ascomata, about 3 mm long, opening by a longitudinal slit above; asci 87–92  $\times$  16–17  $\mu\text{m}$  and ascospores 18.4–20.7  $\times$  7–9.2  $\mu\text{m}$ , ovoid, brown, with minute hyaline basal cell.

Bisby and Hughes (1952) reported nine finds of *F. carmichaelina* with somewhat larger ascospores (18–27  $\times$  7–12  $\mu\text{m}$ ) from Great Britain and considered the

species widespread but uncommon in this area. *F. australis* Dennis reported from Tristan da Cunha has smaller ascospores ( $13-15 \times 6-7.5 \mu\text{m}$ ) and the hyaline basal cell is smaller than that of *F. carmichaelina* (Sivanesan 1984).

During the revision of the type material of the species *Rimula faginea* Velen. (Central Bohemia: Jevany; on rotten wood of *Fagus sylvatica*, IX. 1933, leg. et det. J. Velenovský, PRM; see Velenovský 1934: 38) the second author found that the genus *Rimula* Velen. is identical with *Farlowiella* Sacc. and *Rimula faginea* agrees well with *Farlowiella repanda* (Blox.) Sacc. in all morphological characters. The latter species was identified by some authors (Zogg 1962, Cannon et al. 1985) with *F. carmichaelina*. *F. repanda* should be considered a separate species with significantly smaller ascospores; this assumption was also confirmed by the size of the ascospores of *Rimula faginea* ( $14-18 \times 5.5-7.5 \mu\text{m}$ ).

This is the only record of *F. carmichaelina* from the Czech and Slovak Republics.

**Glioniopsis curvata** (Fr.) Sacc., Syll. Fung. 2: 775, 1883.

Figs 1 e-f.

Syn.: *Hysterium elongatum*  $\beta$  *curvatum* Fr., Elenchus Fung. 2: 138, 1828.

*Hysterium curvatum* (Fr.) Duby, Bot. Gall. 2: 718, 1830.

*Hysterographium curvatum* (Fr.) Rehm, Rabenhorst's Krypt.-Fl., ed. 2, Vol. 1/3: 17, 1887.

= *Hysterium naviculare* Wallr., Fl. Cr. Ger. 2: 441, 1833.

Specimens examined: Central Bohemia: Průhonice, site called Gloriet; on fallen branch of *Swida sanguinea*, 10. VI. 1954, leg. et det. M. Svrček (PRM); Brdské hřebeny Mts., Řevnice, west of Mt. Babka (505 m a.s.l.); on wood of a dead trunk of *Rosa* sp., 26. III. 1950, leg. et det. M. Svrček (PRM). — Southern Bohemia: Kaplice, valley of the river Malše; on wood of a fallen trunk of *Fagus sylvatica*, 31. VII. 1970, leg. et det. M. Svrček (PRM). — Central Slovakia: Slovenské Rudohorí Mts., Muráňská planina, nature reserve Poludnica near Muráň; on fallen trunk of *Quercus petraea* 22. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 823/95); ibidem, on fallen branch of *Fagus sylvatica* (Herb. M. Réblová 832/95); ibidem, on fallen branch of *Acer pseudoplatanus* (Herb. M. Réblová 849/95); ibidem, nature reserve Cigánka near Muráň, on the slopes of Mt. Cigánka (935 m a.s.l.); on fallen branch of *Fraxinus excelsior*, 18. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 837/95). — Poland: Plaska near Augustow, nature reserve Perkuć; on dead trunk of *Betula verrucosa*, 8. IX. 1974, leg. V. Holubová-Jechová, det. M. Svrček (PRM 802989).

Habitat: The fungus occurs on bark and hard decorticated wood of twigs, branches and trunks of many deciduous trees and shrubs.

Anamorph: unknown.

Known hosts: *Campsis*, *Pieris*, *Quercus* and *Smilax* in North America (Farr et al. 1989); *Cerasus*, *Ilex*, *Prunus spinosa*, *Rhododendron ponticum*, *Rosa*, *Rubus* and *Quercus* (Hilitzer 1929) and *Rosa*, *Rubus* and *Prunus* (Saccardo 1883) in Europe. According to the examined specimens also on *Acer pseudoplatanus*, *Fagus sylvatica*, *Fraxinus excelsior*, *Quercus petraea*, *Rosa* sp. and *Swida sanguinea* in the Czech and Slovak Republics and on *Betula verrucosa* in Poland.

Distribution: cosmopolitan; Europe: Czech Republic, France, Germany, Italy, Poland, Slovak Republic, Switzerland; Africa: Algeria; North America; China.

Systematic position: Hysteriaceae Dumortier, Dothideales Lindau.

For description and full synonymy see Hilitzer (1929), Zogg (1962) and Farr et al. (1989).

Notes: The ascomata were superficial, elongated, slightly flexuous, opening by a longitudinal slit, 300–600  $\mu\text{m}$  long and about 250  $\mu\text{m}$  wide; asci 89.2–110  $\times$  11.5–15.2  $\mu\text{m}$ , cylindric-clavate, interthecial filaments branching and anastomosing; ascospores 14.7–20  $\times$  9.4–10.5  $\mu\text{m}$ , broadly elliptic, hyaline to subhyaline, the upper part wider than the basal one, with 3 to 4 transverse septa and one longitudinal septum in the middle cells, strongly constricted at the middle septum.

The closely related *Gloniopsis praelonga* (Schweinitz) Zogg known from different plant species, is distinguished by its larger ascospores (20–32  $\times$  9–12  $\mu\text{m}$ ) with 5–7 transverse septa and several longitudinal ones (Dennis 1978).

Barr (1987) accepted five genera within Hysteriaceae Dumortier including *Gloniopsis*, but she did not include the genera *Farlowiella* and *Gloniella* as they have not yet been reported from temperate North America. The Hysteriaceae are clearly differentiated from the Mytiliniaceae Kirschstein (Barr 1987) in particular by the shortly ellipsoid (*Farlowiella*) to elongate (*Gloniopsis*, *Glonium*) ascomata, opening by a longitudinal slit above and the firm, somewhat thick peridium composed of pseudoparenchymatous cells. The Mytiliniaceae possess dolabrate or cochleate (*Mytilinidion*) and sometimes star-shape (*Actidium*) ascomata, brittle, carbonaceous peridia, composed of prosenchymatous cells or cephalothecioid plates.

These are the first published records of *G. curvata* from both the Czech and Slovak Republics.

**Mytilinidion rhenanum** Fuckel, Symb. Myc. p. 298, 1870.

Figs 2 a–b.

Syn.: *Mytilinidion karstenii* Sacc., Syll. Fung. 2: 763, 1883.

Specimens examined: Central Bohemia: Kosoř near Praha; on wood of a stump of *Pinus sylvestris*, 14. III. 1954, leg. et det. M. Svrček (PRM); Brdské hřebeny Mts., Halouny; on resinous exudations on wood at the base of a dead standing trunk of *Pinus sylvestris*, 6. VI. 1954, leg. et det. M. Svrček (PRM); valley of

the brook Klíčava near Nové Strašecí; on bark of a stump of *Pinus sylvestris*, 26. IV. 1995, leg. et det. M. Réblová (Herb. M. Réblová 796/95); Hrusice near Mnichovice; on wood of *Picea abies*, II. 1928, leg. et det. J. Velenovský (PRM 147733, PRM 152319); ibidem, on wood of *Pinus sylvestris*, II. 1928, leg. et det. J. Velenovský (PRM 152318); ibidem, on wood of *Abies alba*, 1. XII. 1928, VI. 1929 and 3. VI. 1931, leg. et det. J. Velenovský (PRM 152314, PRM 152316 and PRM 152317); Třemblaty near Mnichovice; on wood of a stump of *Pinus sylvestris*, 25. III. 1929, leg. et det. J. Velenovský (PRM 152320). — Northern Bohemia: Zahrádky near Česká Lípa, Mt. Kraví hora (378 m a.s.l.); on bark and hard resinuous wood in the cavity of a very old stump of *Picea abies*, 10. IV. 1950, leg. et det. M. Svrček (PRM). — Southern Bohemia: Šumava Mts., on the slopes of Mt. Černý les (1007 m a.s.l.) near Volary; on bark of a stump of *Picea abies*, 6. V. 1995, leg. et det. M. Réblová (Herb. M. Réblová 585/95); Šumava Mts., on the slopes of Mt. Ždánidla (1308 m a.s.l.) near Prášily; on peeling bark of a stump of *Picea abies*, 20. VI. 1995, leg. et det. M. Réblová (Herb. M. Réblová 660/95); Chýnovská doubrava near Tábor; on the inner side of the bark and on wood of a mossy stump of *Picea abies*, 29. VIII. 1949, leg. et det. M. Svrček (PRM); Borotín near Tábor, Mt. Šetkův vrch (564 m a.s.l.); on resinuous exudations in the cavity of a stump of *Pinus sylvestris*, 21. VIII. 1950, leg. et det. M. Svrček (PRM). — Central Slovakia: Slovenské Rudohoří Mts., Muráňská planina, nature reserve Cigánka, on the slopes of Mt. Cigánka (935 m a.s.l.) near Muráň; on peeling bark of a stump of *Pinus sylvestris*, 22. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 835/95). — Poland: nature reserve Perkuć near Augustow; on stump of *Pinus sylvestris*, 8. IX. 1974, leg. V. Holubová-Jechová, det. M. Réblová (Herb. M. Réblová 570/95).

Habitat: *M. rhenanum* was collected on bark, decorticated wood beneath peeling bark and, similar to *Actidium*, on the inner side of peeling bark of trunks and stumps of conifers. Sivanesan (1984) mentioned the fungus also from needles. According to the number of specimens listed above seems to be this species common but good knowledge of its habitat is required for its successful collection (the same applies for *Actidium* species and some other fungi with an inconspicuous appearance). Bisby (1941) considered *M. rhenanum* a rarely collected fungus in Great Britain.

Anamorph: *Septonema* sp. (Lohman 1933). The anamorph was not observed in the examined material.

Known hosts: *Picea abies* and *Pinus sylvestris* in both Europe and North America (Sivanesan 1984, Farr et al. 1989).

Distribution: Europe: Czech Republic, Germany, Great Britain, Italy, Poland, Slovak Republic, Sweden; North America: U. S. A. (Georgia).

Systematic position: Mytiliniaceae Kirschstein, Dothideales Lindau.

For full description refer to Sivanesan (1984).

Notes: According to the examined material the species forms superficial ascomata, which are upright, cochleate, usually longitudinally furrowed, 600–1000  $\mu\text{m}$  long, opening by a longitudinal slit along the upper edge. Asci 155.7–163.2(181)  $\times$  6.7–8.7  $\mu\text{m}$  and ascospores 30–37.5  $\times$  3.7–5.4  $\mu\text{m}$ , fusiform, brown, 3–4-septate, slightly constricted at the septa.

Three other species of *Mytilinidion* Duby occur on *Pinus* and *Picea* wood and bark. *M. gemmigenum* Fuckel, occurring also on cones, and described from the bark of *Larix* (Fuckel 1870), is closely related but differs in having ascospores 7-septate, 30–40  $\times$  5–7  $\mu\text{m}$  large. *M. scolecosporium* Lohman has ascospores somewhat larger (40–50  $\times$  2–2.5  $\mu\text{m}$ ), usually with 5 to 7 transverse septa. *M. mytilinellum* (Fr.) Zogg has smaller 1–3-septate ascospores (17–25  $\times$  2.5–3  $\mu\text{m}$ ) and occurs on leaves and cones of *Pinus* (Ellis and Ellis 1985).

Hilitzer (1929) regarded *M. rhenanum* as a synonym of *M. aggregatum* Duby. His specimen was slightly different from both species; it had some characters similar to those of the former and others typical of the latter. He assumed his specimen being intermediate between both of them and confirmed the identity of both species.

These are the first published records of *M. rhenanum* from the Czech and Slovak Republics.

***Pseudotrachia mutabilis*** (Pers.: Fr.) Wehmeyer, Fungi New Brunswick, Nova Scotia Prince Edward Island, 35 (footnote), 1950.

Figs 3 a–c.

Syn.: *Sphaeria (Villosae) mutabilis* Pers.: Fr., Syst. Mycol. 2: 447, 1823.

Specimens examined: Central Bohemia: valley of the river Svinařský potok near Zadní Třebáň; on stump of *Carpinus betulus*, 12. IV. 1959, leg. et det. M. Svrček (PRM); valley of the river Žloutkava near Nižbor; on stump of *Carpinus betulus*, 21. VI. 1972, leg. et det. M. Svrček (PRM). — Northern Bohemia: České středohoří Mts., Mt. Milešovka (837 m a.s.l.); on stump of *Fraxinus excelsior*, 19. VI. 1954, leg. et det. M. Svrček (PRM); on the slopes of Mt. Lipská hora (656 m a.s.l.) near Lipá; on rotten wood of a fallen trunk of *Populus tremula*, 24. X. 1956, leg. et det. M. Svrček (PRM). — Central Moravia: Chřiby Mts., Buchlov; on stump of *Carpinus betulus*, 23. VIII. 1962, leg. et det. M. Svrček (PRM). — Central Slovakia: Slovenské Rudohoří Mts., Muráňská planina, nature reserve Cigánka, on the slopes of Mt. Cigánka (935 m a.s.l.) near Muráň; on rotten wood of *Fagus sylvatica*, 22. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 810/95).

Habitat: *P. mutabilis* seems to be widespread over the temperate zone of Europe and North America on wood of deciduous trees, but it has seldom been collected (Barr 1984, 1990). The bright hyphal layer often disappears in old ascomata and its absence makes identification more difficult. From Sweden (Eriksson 1992) the

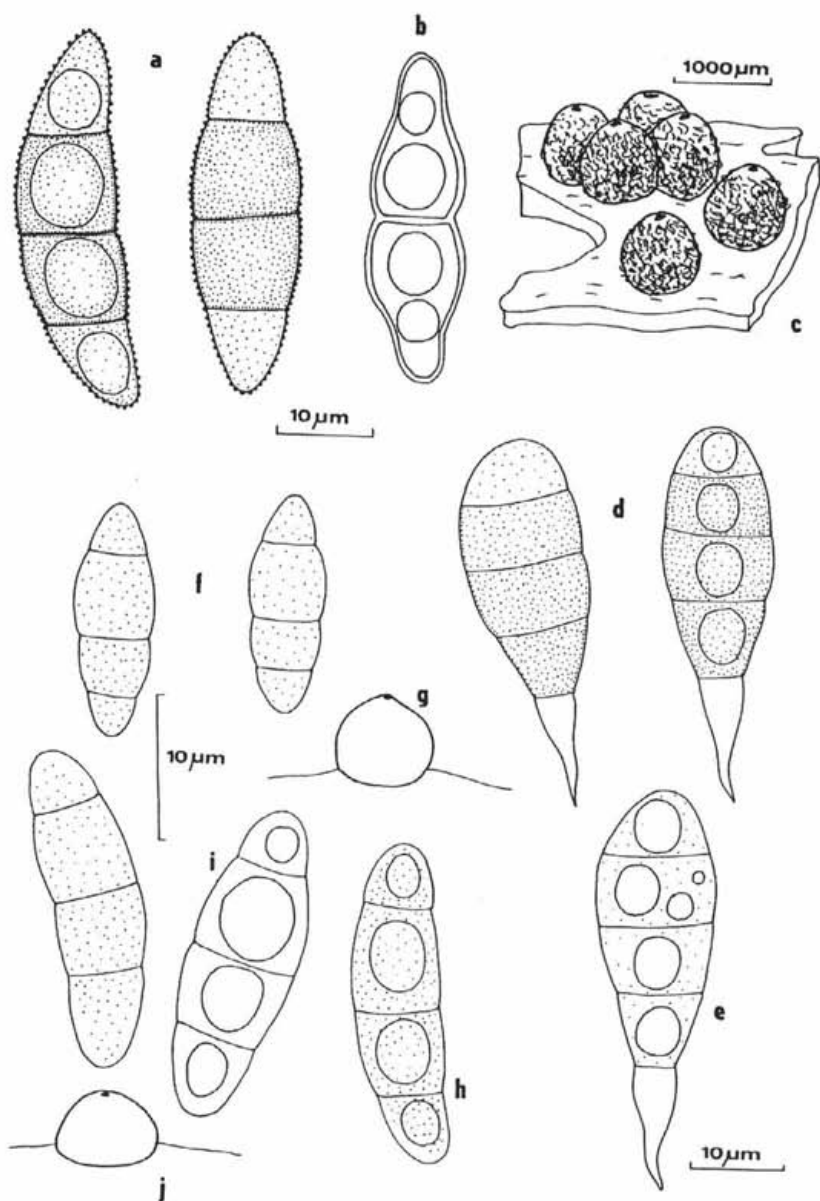


Fig 3. a-c: *Pseudotrichia mutabilis* (Pers.: Fr.) Wehmeyer (Herb. M. Réblová 810/95), a: mature ascospores, b: immature ascospores, c: habit sketch of ascomata; d-e: *Rebutischia massalongii* (Mont.) Sacc. (Herb. M. Réblová 841/96), d: mature ascospores, e: immature ascospores; f-g: *Trematosphaeria fissa* (Fuckel) Winter (Herb. M. Réblová 753/95), f: ascospores, g: ascoma; h-j: *Trematosphaeria northieri* Fuckel (Herb. M. Réblová 811/95), h: mature ascospores, i: immature ascospores, j: ascoma.

Del.: M. Réblová



fungus is reported from old stromata of various Pyrenomyces and on wood with hyphae of other fungi. Petrak (1921) collected it on old stromata of *Diatrypella aspera* and *Diatrypella tocciaeana*.

Anamorph: unknown.

Known hosts: Barr (1990) listed its occurrence on *Acer rubrum*, *A. saccharum*, *A. spicatum*, *Crataegus*, *Populus tremuloides*, *Rhus typhina* and *Ulmus americana* in North America. In Europe, it occurs on *Carpinus betulus*, *Fragaria excelsior* (Svrček 1954), *Corylus avellana* and *Fagus sylvatica* (Petrak 1921) and *Quercus* (Winter 1887).

Distribution: Europe: Austria, Czech Republic, Germany, Slovak Republic, Sweden; North America: Canada (Ontario), U. S. A. (Arizona, Illinois, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Vermont, Wisconsin).

Systematic position: Melanommataceae Winter, Dothideales Lindau.

For full description and synonymy refer to Petrak (1921, 1940) and Barr (1984).

Notes: The fungus is well characterized by erumpent superficial, subglobose ascomata (450)500–600  $\mu\text{m}$  wide, covered with short, bright yellowish to orange hairs except for the glabrous papilla; asci 101–126 p. sp. (142.6–180)  $\times$  20.7–23  $\mu\text{m}$ , clavate, stipitate, interthecial filaments filiform, branching, anastomosing; ascospores 36.8–39.1  $\times$  7.5–9.2  $\mu\text{m}$ , fusiform, 3-septate, constricted, straight or slightly curved, mature ascospores finely verrucose with a gelatinous sheath.

Petrak (1921) undertook a comprehensive survey of this species and created the new genus *Khekia* Petrak for it with *K. ambigua* (Pass.) Petr. as the type species of the genus. He collected it on *Corylus* and *Fagus* near Hranice na Moravě (in 1912), and edited it in his collection of exsiccatae Flora Bohemiae et Moraviae exsiccata under number 132 as *Calospora ambigua* Pass. (det. by H. Rehm). In a second paper Petrak (1940) focused on the nomenclature of the species.

Barr (1984) distinguished *P. mutabilis* as the only North American species typical of the temperate zone. Three other species, *P. mamillata* M. E. Barr with ascospores much like those of *P. mutabilis*, *P. pachnostoma* (Berk. et Curtis in Cooke) M. E. Barr (Barr 1984) and *P. guatopoensis* S. M. Huhndorf (Huhndorf 1994), are known from Venezuela.

Members of the genus *Pseudotrichia* Kirschstein (Barr 1984) have globose to ovoid ascomata covered with a bright hyphal layer (except for a black papilla), which also forms a basal subiculum on the substrate. The genus *Herpotrichia* Fuckel from the Lophiostomataceae Nitschke bears some resemblance to *Pseudotrichia*, especially in the appearance of the ascomata covered with a bright tomentose layer, but differs in the characteristics of the peridium, composed of rows of small pseudoparenchymatous cells, and in hamathecium morphology, with pseudoparaphyses numerous, narrowly cellular, forming a sheet-like layer above the asci (Barr 1987). The peridium of *Pseudotrichia* is composed of rows of



compressed cells and the hamathecium consists of trabeculate pseudoparaphyses. *Byssosphaeria* Cooke of the Melanommataceae Winter accommodates a group of fungi separated from *Herpotrichia* (Barr 1984) but closely related to *Pseudotrachia*.

These are the first published records of *P. mutabilis* from the Czech and Slovak Republics.

**Rebentischia massalongii** (Mont.) Sacc., Nuovo Giorn. Bot. Ital. 8: 12, 1876.  
Figs 3 d-e.

Syn.: *Sphaeria massalongii* Mont., Syll. Gen. Sp. Crypt. p. 237, 1856.

*Rebentischia pomiformis* P. Karsten, Fungi Fenn. Exsic. No. 881, 1869. Mycol. Fenn. 2: 97, 1873.

Specimens examined: Central Bohemia: valley of the brook Klíčava near Nové Strašecí; on bark of *Sambucus nigra*, 17. VIII. 1996, leg. et det. M. Réblová (Herb. M. Réblová 841/96). — Southern Bohemia: Kaplice; on bare wood of a living trunk of *Tilia* sp., 26. IX. 1971, leg. R. Podlahová, det. M. Svrček (PRM).

Habitat: *R. massalongii* occurs rarely, usually with erumpent superficial ascomata in bark and wood of conifers and deciduous trees and shrubs. In the Bohemian samples the ascomata were scattered on bark around old canker mark on living branches of *Sambucus nigra* and on bare pieces of wood of *Tilia* sp. cultivated in a moist chamber culture.

Anamorph: unknown.

Known hosts: *Abies balsamea*, *Acer pensylvanicum*, *Ilex verticillata*, *Robinia pseudoacacia* and *Ulmus americana* in North America (Barr 1980); *Amygdalus* (Berlese 1890), *Acer platanoides* (Karsten 1873) and *Salix* (Barr 1980) in Europe. The Bohemian finds on *Sambucus nigra* and *Tilia* sp.

Distribution: Europe: Austria, Czech Republic, Finland, Germany, Sweden, Switzerland; North America: U. S. A. (Maine, Massachusetts).

Systematic position: Tubeufiaceae M. E. Barr, Dothideales Lindau.

For full description refer to Müller (1950) and Barr (1980).

Notes: The ascomata were found solitary, partially immersed in the periderm of the host, subglobose, 300–400  $\mu\text{m}$  wide. Asci (80.5)87.4–96.6  $\times$  16.1–17.8  $\mu\text{m}$ , clavate and ascospores 29.4–35.7  $\times$  (6.3)7.3–8.4  $\mu\text{m}$ , 4-(5)-septate, narrowly obovoid, brown, apical cell faintly pigmented, basal cell hyaline with hyaline setiform base 10.5–12.6  $\mu\text{m}$  long.

The species was also observed on wood in a moist chamber culture. The wood was cut from a living trunk of *Tilia* sp. (26. IX. 1971) and put in the moist chamber culture one year later (6. X. 1972). The mature ascomata were observed three weeks after.

*R. unicaudata* (Berk. et Broome) Sacc. is closely related but differs in having smaller ascospores 17–25(30)  $\times$  4–6(7.5)  $\mu\text{m}$  large and occurs on suffrutescent

stems and branches of shrubs and vines (Barr 1980) and has not yet been confirmed for the Czech and Slovak Republics.

Barr (1980) accepted two species in *Rebentischia* P. Karsten within the Tubeufiaceae M. E. Barr, *R. massalongii* (the type of the genus) and *R. unicaudata*. The genus is well distinguished from most other taxa of the family by its ascospores being 4–5-septate, narrowly obovoid and at first subhyaline, at maturity the main body of the spore turns brown-violaceous with a hyaline setiform appendage in the bottom part.

These are the first published records of *R. massalongii* from the Czech and Slovak Republics.

**Trematosphaeria fissa** (Fuckel) Winter, in Rabenh. Krypt.-Flora Deutschl., Öster. und der Schweiz 1(2): 269, 1887.

Figs 3 f–g.

Syn.: *Melanomma fissa* Fuckel, Symb. Mycol., Nachtr. 2: 30, 1874.

Exsiccata: Petrak, Flora Bohemiae et Moraviae exsiccata, Lfg. 38, No. 1893; Nejdek near Hranice na Moravě; on fallen branch, 17. VIII. 1923, leg. et det. F. Petrak (PRM 481296).

Specimens examined: (except for the exsiccata cited above): Central Bohemia: valley of the brook Klíčava, near Zbečno; on decayed wood of a fallen branch of *Tilia* sp., 10. IX. 1948, leg. et det. M. Svrček (PRM). — Central Slovakia: Slovenské Rudohoří Mts., Muráňská planina, nature reserve Cigánka, on the slopes of Mt. Cigánka (935 m a.s.l.) near Muráň; on rotten wood of *Acer pseudoplatanus*, 19. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 753/95).

Habitat: Occasionally on rotten wood of branches of deciduous trees.

Anamorph: Fuckel (1874) described a fungus which he considered an anamorph. According to his observations the conidiomata were superficial, subglobose to flattened, punctiform, about 1  $\mu\text{m}$  wide, black, scattered among ascomata; conidia clavate-pyriform, septate, brown with a subhyaline basal cell, 38–44  $\times$  12–14  $\mu\text{m}$ . No conidiomata were observed associated with ascomata in the examined material.

Known hosts: *Ulmus campestris* (Winter 1887); according to the examined species on *Acer pseudoplatanus* and *Tilia* sp. in Bohemia and Slovakia.

Distribution: Europe: Czech Republic, Germany, Slovak Republic.

Systematic position: Melanommataceae Winter, Dothideales Lindau.

For full description refer to Winter (1887).

Notes: The ascomata were partially immersed in wood and later almost superficial, subglobose with a small papilla, base applanate, 300–400  $\mu\text{m}$  wide; asci 75–90 (53.7–60 p. sp.)  $\times$  7.5–8.7  $\mu\text{m}$ , cylindrical-clavate, stipitate; ascospores 12.5–15.1  $\times$  3.1–3.7  $\mu\text{m}$ , oblong to fusiform, 3-septate, constricted at the septa, at first hyaline, at maturity turning brown.

Boise (1985) recognized three North American and one tropical species of *Trematosphaeria* Fuckel. Cannon et al. (1985) listed another eight species known from Great Britain. *T. pertusa* (Pers.: Fr.) Fuckel, the only species mentioned from both North America and Europe, was also collected in the Slovak Republic (Herb. M. Réblová 709/95).

*T. fissa* is an easily recognized species with relatively small ascospores compared to other species of *Trematosphaeria* Fuckel, which usually have ascospores more than 20  $\mu\text{m}$  long (Winter 1887, Boise 1985).

***Trematosphaeria morthieri*** Fuckel, Symb. Mycol., Nachtr. 1: 306, 1872.

Figs 3 h-j.

Syn.: *Zignoella morthieri* (Fuckel) Sacc., Syll. Fung. 2: 222, 1883.

= *Trematosphaeria picastra* (Fr.) Fuckel, Symb. Mycol. p. 162, 1870 sensu Fuckel, [non *Sphaeria picastra* Fr., Syst. Mycol. 2: 463, 1823.].

Specimen examined: Central Slovakia: Slovenské Rudohorí Mts, Muráňská planina, between Muráň and chalet Maretkina, at edge of forest; on bare and dried out wood of a root of *Fagus sylvatica*, 27. VII. 1947, leg. et det. M. Svrček (PRM); ibidem, nature reserve Cigánka, on the slopes of Mt. Cigánka (935 m a.s.l.) near Muráň; on bare and dried out wood of a root of *Fagus sylvatica*, 19. IX. 1995, leg. et det. M. Réblová (Herb. M. Réblová 811/95).

Habitat: The fungus occurs rarely. Winter (1887) and Fuckel (1870) reported it from decayed roots of conifers, the recent collections are from the roots of a broad-leaved tree.

Anamorph: unknown.

Known hosts: conifers, *Fagus sylvatica*.

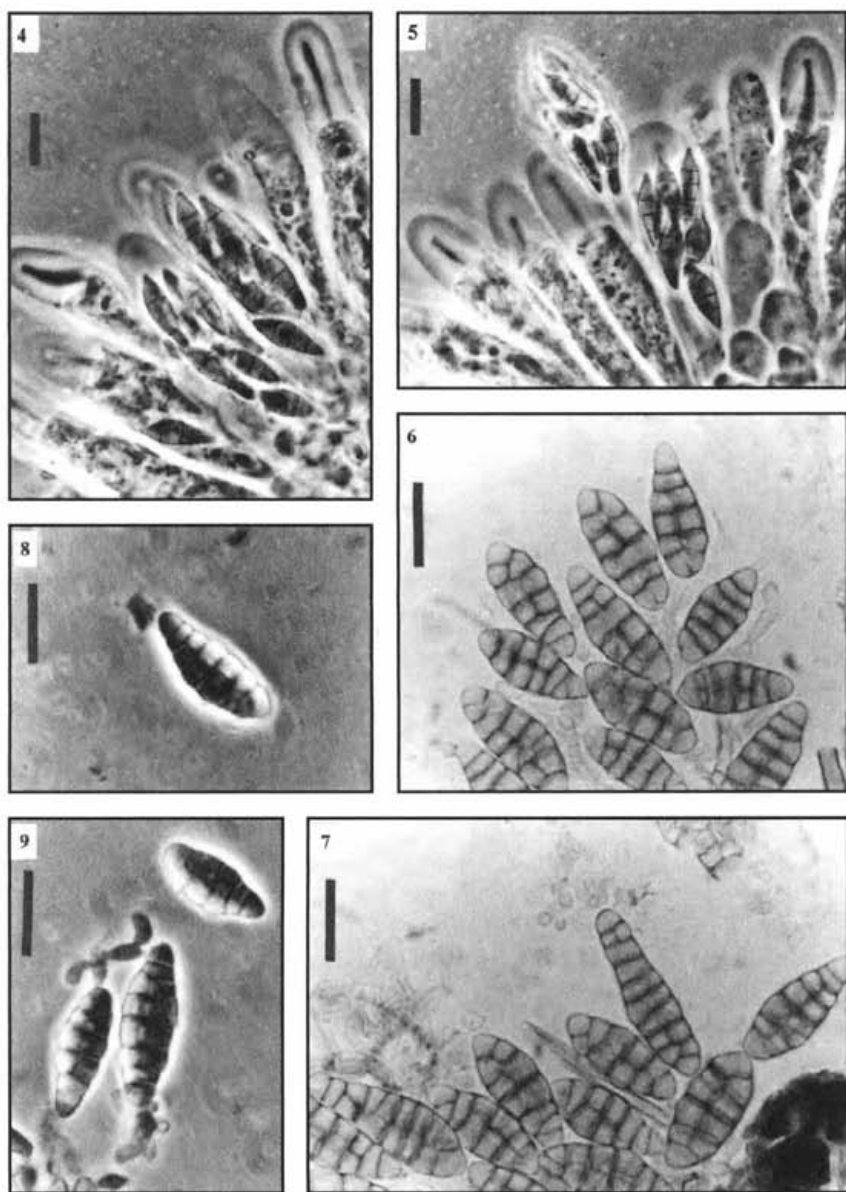
Distribution: Europe: Germany, Slovak Republic.

Systematic position: Melanommataceae Winter, Dothideales Lindau.

For full description see Winter (1887).

Notes: Ascomata partially immersed in decorticated wood, without a distinct papilla, 300-400  $\mu\text{m}$  wide; asci 85.2-96.6  $\times$  12.6-13.6  $\mu\text{m}$ , clavate, interthecial filaments septate, branched, 1.5  $\mu\text{m}$  wide; ascospores 22-25.2  $\times$  5.2-6.3  $\mu\text{m}$ , oblong to fusiform, at first hyaline, at maturity turning pale brown, four-celled, the upper middle cell is wider.

Winter (1887) mentioned asci somewhat smaller (75-85  $\times$  15-16  $\mu\text{m}$ ) and, likewise Fuckel (1870) in his original description, hyaline ascospores. Both authors probably observed immature ascospores which remain hyaline for a long time. The find from Slovakia also contained hyaline ascospores and only several of them were observed mature and brown. No further data on this species are available in the literature.



Figs 4–9. 4–5: *Capronia borealis* M. E. Barr (Herb. M. Réblová 830/96), 4–5: immature and mature asci with ascospores in hymenium (in phase contrast), scale = 10  $\mu\text{m}$ ; 6–9: *Capronia chlorospora* (Ellis et Everh.) M. E. Barr (Herb. M. Réblová 828/96), 6: ascospores, 7: ascospores, 8: ascospore (in phase contrast), 9: germinating ascospores (phase contrast), scale = 10  $\mu\text{m}$ .

Photo: M. Réblová

These are the first published records of *T. morthieri* from the Czech and Slovak Republics.

## ACKNOWLEDGEMENT

We wish to thank the Mycological Department of the National Museum in Prague for the loan of herbarium specimens.

## REFERENCES

- BARR M. E. (1980): On the family Tubeufiaceae (Pleosporales). – *Mycotaxon* 12: 137–167.
- BARR M. E. (1984): *Herpotrichia* and its segregates. – *Mycotaxon* 20: 1–38.
- BARR M. E. (1987): *Prodromus to class Loculoascomycetes*. – Amherst, MA, 168 pp.
- BARR M. E. (1990): *Melanommatales (Loculoascomycetes)*. – *North American Flora*, Ser. 2 (13): 1–129.
- BARR M. E. (1991): Notes on and additions to North American members of the *Herpotrichiaceae*. – *Mycotaxon* 41: 419–436.
- BERLESE N. A. (1890): *Icones Fungorum I. Pyrenomycetes*. – Patavii, 243 pp., 184 tab. (reimpr. 1968)
- BISBY G. R. (1941): British species of *Hysterium*, *Gloniopsis*, *Dichaena* and *Mytilidion*. – *Trans. Brit. Mycol. Soc.* 25: 9–141.
- BISBY G. R. and HUGHES S. J. (1952): Summary of the British *Hysteriales*. – *Trans. Brit. Mycol. Soc.* 35: 304–307.
- BOISE J. (1985): An amended description of *Trematosphaeria*. – *Mycologia* 77: 230–237.
- CANNON P. F., HAWKSWORTH D. L. and SHERWOOD-PIKE M. A. (1985): *The British Ascomycotina. An annotated checklist*. – Kew, 302 pp.
- DENNIS R. W. G. (1978): *British Ascomycetes*. – Vaduz, 585 pp.
- ELLIS J. B. and EVERHART B. M. (1892): *North American Pyrenomycetes*. – Newfield, 793 pp. (reimpr. 1966)
- ELLIS M. B. and ELLIS J. P. (1985): *Microfungi on land plants. An identification handbook*. – London and Sydney, 818 pp.
- ERIKSSON O. E. and HAWKSWORTH D. L. (1993): Outline of the *Ascomycetes* – 1993. – *Systema Ascomycetum* 12: 51–257.
- ERIKSSON O. E. (1992): The non-lichenized pyrenomycetes of Sweden. – 208 pp., Lund.
- FARR D. F., BILLS G. F., CHAMURIS G. P. and ROSSMAN A. Y. (1989): *Fungi on plants and plant products in the United States*. – Minnesota, 1252 pp.
- FUCKEL L. (1870): *Symbolae Mycologicae*. – *Jahrb. Nassauischen Vereins Naturk.* 23–24: 1–459.
- FUCKEL L. (1874): *Symbolae Mycologicae*, 2. Nachtrag. – *Jahrb. Nassauischen Vereins Naturk.* 27–28: 1–99.
- HILITZER A. (1929): *Monografická studie o českých družích řádu Hysteriales a o sypavkách jimi působených*. – Praha, 162 pp.
- HUHDORF S. M. (1994): Neotropical *Ascomycetes* 4. *Pseudotrachia guatupoensis*, a new species from Venezuela, with a key to species in the genus. – *Mycologia* 86: 134–137.
- KARSTEN P. A. (1873): *Mycologia Fennica* 2. *Pyrenomycetes*. – *Bidr. Känn. Finl. Nat. Folk* 23: 1–252.
- KRIEGLSTEINER G. J. (1993): *Verbreitungsatlas der Grosspilze Deutschlands (West). Band 2: Schlauchpilze*. – Stuttgart, 596 pp.
- LOHMAN M. L. (1933): *Hysteriaceae: life histories of certain species*. – *Pap. Mich. Acad. Sci. Arts et Letters* 17: 229–288 (1932).
- LUNDQVIST (1972): *Nordic Sordariaceae s. lat.* – *Symb. Bot. Upsal.* 20(1): 1–374.
- MASON R. W. (1941): Annotated account of fungi received at the Imperial Mycological Institute List 2. – *Mycol. Pap.* 5: 101–144.
- MÜLLER E. (1950): Die schweizerischen Arten der Gattung *Leptosphaeria* und ihrer Verwandten. – *Sydowia* 4: 185–319.

RĚBLOVÁ M. AND SVRČEK M.: NEW RECORDS OF PYRENOAMYCETES II.

- MÜLLER E. and VON ARX J. A. (1962): Die Gattungen der didymosporen Pyrenomyceten. – Beitr. Krypt.-Fl. Schweiz 11(2): 1–922.
- MÜLLER E., PETRINI O., FISHER P. J., SAMUELS G. J. and ROSSMAN A. Y. (1987): Taxonomy and anamorphs of the Herpotrichiellaceae with notes on generic synonymy. – Trans. Brit. Mycol. Soc. 88: 63–74.
- PETRAK F. (1921): Mykologische Beiträge 1. Khekia, eine neue Gattung der Lophiostomataceen. – Hedwigia 52: 282–284.
- PETRAK F. (1940): Mykologische Notizen 13. No. 877. ber die Gattung Pseudotruchia Kirschst. – Ann. Mycol. 38: 181–267.
- PODLAHOVÁ R. (1974): Lignikolní zástupci čeledi Lasiosphaeriaceae (Fuck.) Nannf. I, II. – 320 pp., ms. [Kand. dis. práce; depon. in: Knihovna kat. bot. Př. fak. Univ. Karlovy, Praha].
- SACCARDO P. A. (1883): Sylloge Fungorum 2. – Patavii, 813 pp.
- SIVANESAN A. (1984): The bitunicate Ascomycetes and their anamorphs. – Vaduz, 701 pp.
- SVRČEK M. (1953): Mykoflóra údolí potoka Klíčavy na Křivoklátsku. – Čas. Nár. Mus. 120: 204–215.
- SVRČEK M. (1954): První příspěvek k mykoflóře rezervace Milešovka v Českém středohoří. – Ochrana přírody 9: 109–112.
- TENG S. C. (1996): Fungi of China. – Ithaca, 586 pp.
- WINTER G. (1885): Die Pilze, Ascomyceten: Gymnoasceen und Pyrenomyceten. – In: Rabenhorst's Kryptogamen-Flora Deutschl., Öster. und der Schweiz, Band 2, 1(2): 1–928, Leipzig.
- ZOGG H. (1960): Über die Gattungen Actidium Fr. und Bulliardella (Sacc.) Paoli. – Ber. Schweiz. Bot. Ges. 70: 195–205.
- ZOGG H. (1962): Die Hysteriaceae s. str. und Lophiaceae. – Beitr. Kryptogamenfl. Schweiz 11(3): 1–190.