

**Studies in the genus *Mollisia* s.l. III:
Revision of some species of *Mollisia* and *Tapesia*
described by J. Velenovský (part 2)**

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The author presents the results of his revision of several mollisoid species described by J. Velenovský. Three of these are considered good species and are combined into *Mollisia*: *M. dimorpha* comb. nov., *M. lentiformis* comb. nov., and *M. urnigera* comb. nov. *Tapesia aurantiaca* and *T. exigua* are viewed as nomina dubia. The genus *Crustula* is lectotypified here by *C. quercina* and proved to be a later synonym of *Mollisia*.

Key words: Ascomycota, *Helotiales*, *Dermateaceae*, *Mollisioideae*, type studies.

Gminder A. (2012): Studie rodu *Mollisia* s.l. III: Revize některých druhů rodu *Mollisia* a *Tapesia* popsáných J. Velenovským (část 2). – Czech Mycol. 64(2): 105–126.

Autor prezentuje výsledky své revize některých mollisoidních hub popsáných J. Velenovským. Tři z nich jsou potvrzeny jako dobré druhy a jsou přeráženy do rodu *Mollisia*: *M. dimorpha* comb. nov., *M. lentiformis* comb. nov. a *M. urnigera* comb. nov. *Tapesia aurantiaca* a *T. exigua* jsou považovány za pochybné druhy. Rod *Crustula* je lektotypifikován druhem *C. quercina* a považován za pozdější synonymum rodu *Mollisia*.

INTRODUCTION

Velenovský (1934) in his circumscription of the family *Mollisiaceae* Rehm includes the genera *Belonidium*, *Belonopsis*, *Cejpia* gen. nov., *Coronellaria*, *Crustula* gen. nov., *Mollisia*, *Niptera*, *Tapesia*, and *Trichobelonium*. Velenovský (1947) later added the new (monotypic) genera *Capricola*, *Cornuntum*, *Pseudoniptera* and *Robincola*. In this second part of the study (for its first part see Gminder 2006) the types of *Crustula* as well as several species of *Mollisia*, *Tapesia* and *Trichobelonium* were examined.

METHODS

All drawings are based on dried material mounted in 3% KOH. The descriptions of the macrocharacters are based on observations of the material investigated in this study. For further explanations and an introduction to the methods used in the examination of mollisoid fungi by the author, see Gminder (1996) or an updated version at <http://www.mollisia.de>.

Abbreviations. CRB = cresyl blue (aqueous), H₂O = tap-water, IKI = Lugol's solution (1%), KOH = potassium hydroxide 3%, MLZ = Melzer's reagent, Q = length-width ratio of the spores, vol. = spore volume ($1 \times w^2 \times 0.523$, according to the formula of a rotation ellipsis). In the description of the spores the notation (20/1/1) stands for 20 spores from 1 apothecium of 1 collection measured.

RESULTS AND DISCUSSION

Crustula Velen., Monogr. Discom. Bohem., p. 143, 1934

Lectotype. *C. quercina* Velen. (designated here).

Discussion. When Velenovský (1934) erected the new genus *Crustula* he included three species, all described as new by him: *C. quercina*, *C. nigra*, and *C. corylacea*. No type species had ever been designated. After having examined the types of all three species (see below), I decide to designate *C. quercina* as the type species of *Crustula* for the following reasons:

C. quercina and *C. corylacea* are both in full agreement with the diagnosis of the genus, especially concerning the porus reaction, which should be negative ("As. [...], jodo lutei, [...]"). *C. quercina* is the first species mentioned by Velenovský (1934) and is furthermore stated to be common. My type studies have revealed that *C. corylacea* is moreover conspecific. On the other hand, *C. nigra* represents a separate species from a different genus, not agreeing with the genus characters of *Crustula*, as the porus reaction is positive (blue) and the excipular structure is hardly dermateaceoid.

As *C. quercina* is in all its characters identical with the author's concept of *Mollisia ligni* (Desm.) P. Karst., which is seated within *Mollisia* s.str. based on molecular data (Gminder, unpublished), *Crustula* falls into the synonymy of *Mollisia*.

Crustula corylacea Velen., Monogr. Discom. Bohem., p. 144, 1934

Fig. 1

Collections examined. Czech Republic, Bohemia, Mnichovice, Božkov, ad truncum *Quercus*, 19. I. 1931, leg./det. J. Velenovský (PRM150537 = lectotype, designated here). – ibidem, Mnichovice, probably *Corylus*, III. 1934, leg./det. J. Velenovský (PRM150533).

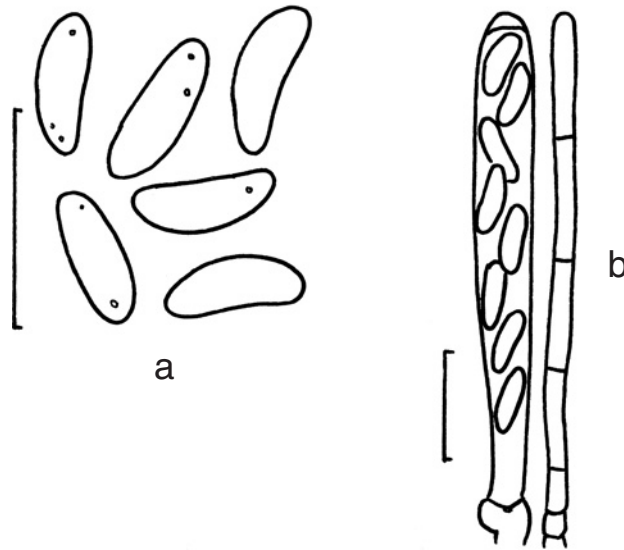


Fig. 1. *Crustula corylacea* Velen. (PRM150537 = lectotype).
a. Ascospores. **b.** Ascus and paraphyse. Del. A. Gminder (scale bars = 10 μ m).

There are three further specimens in PRM, of which PRM150538 is the collection from *Prunus avium* mentioned in the protologue.

The envelope of PRM150537 contains several small parts of deciduous wood, at least some of them with mollisoid apothecia. The collection is not very rich, but in fairly good state. PRM150533 consists of two pieces of deciduous wood, obviously *Carpinus betulus* (judging from the adhering part of the cortex), with several mollisoid apothecia.

From the three collections mentioned in the protologue I chose PRM150537 for the lectotype, as this seems to be the one in best state.

Description. Apothecia very small, 0.3–0.5 mm in diam., not seated on a subiculum, roundish, margin inconspicuous, disc dark grey, of nearly the same colour as the blackish external surface.

Ectal excipulum consisting of a *textura globulosa-angularis*, brown from the base up to the margin, no subicular hyphae observed. Marginal cells conspicuous, multicellular, consisting of 3–5 cells, end cell sphaeropedunculate to broadly claviform, subhyaline. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline *textura intricata*. Paraphyses cylindrical, approximately 2.5 μ m broad, septate, not reacting yellow when KOH is added. Asci 40–45 \times 4.5–5 μ m, with croziers, porus not reacting when adding Lugol, neither in a water preparation nor after pre-treatment with KOH. Ascospores broadly elliptical, with rounded

ends, often bent to slightly reniform, without droplets, $6\text{--}6.9\text{--}8 \times 2\text{--}2.1\text{--}2.5 \mu\text{m}$ (16/1/1 in KOH), $Q = 2.8\text{--}3.2\text{--}3.6$, vol. = $12\text{--}16\text{--}24 \mu\text{m}^3$.

Discussion. In the original diagnosis, Velenovský gives the spore size as $3\text{--}6 \mu\text{m}$. The revision revealed them to be substantially longer in all examined collections. The multicellular marginal protrudings, the spore characters and the negative porus reaction leave no doubt that it is conspecific with *Mollisia ligni*.

Crustula nigra Velen., Monogr. Discom. Bohem., p. 143–144, 1934 Fig. 2

Collection examined. Czech Republic, Bohemia, Mnichovice, *Quercus*, IV. 1928, leg./det. J. Velenovský (PRM614736 = lectotype, designated here).

The envelope of PRM614736 contains one piece of hardwood (stated to be *Quercus*) with many apothecia, which at first glance look rather like pyrenomycetes, then discomycetes. Another collection, PRM150541, equally contains one piece of hardwood, but with only few apothecia. Therefore this scanty collection was not examined further.

Description. Apothecia small, 0.5–0.8 mm in diam., not seated on a subiculum, roundish, urn-shaped, rubber-like, in shape and consistency reminding of *Heterosphaeria patella*, margin inconspicuous, disc dark grey, of nearly the same colour as the blackish external surface.

Ectal excipulum consisting of a textura prismatica-angularis, brown from the base up to the margin. Subicular hyphae at the base of the apothecia sparse, brown, 4–5 μm broad. Marginal cells conspicuous, multicellular, consisting of 4–6 cells, end cell equally broad but longer, light brown to subhyaline. The marginal “hairs” protrude up to 100 μm from the excipulum. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata. Paraphyses cylindrical, approximately 3 μm broad, septate, not reacting yellow when KOH is added. Asci $47\text{--}58 \times 5\text{--}5.5 \mu\text{m}$, with prominent croziers, porus reacting deep blue in Lugol, either after KOH pre-treatment or in a water preparation without KOH. Ascospores elliptical to ciborioid, without droplets, $(8)9\text{--}9.7\text{--}11 \times (2.5)2.8\text{--}2.9\text{--}3 \mu\text{m}$ (10/1/1 in KOH), $Q = 2.7\text{--}3.5\text{--}3.9(5.8)$, vol. = $36\text{--}42\text{--}52 \mu\text{m}^3$. A few fusiform to needle-shaped spores with lengths up to 14 μm were not included in the measurements, as their shape and size is probably due to beginning germination.

Discussion. In the original diagnosis, Velenovský gives the spore size as $6\text{--}8 \mu\text{m}$ and states that they should have 3 septae in mature state. The revision revealed them to be longer, and septae have never been seen in any spore. The given character “maturae 4 cellulares” remains dubious, even more in combination with the given spores size of $6\text{--}8 \mu\text{m}$.

C. nigra is not a member of the *Dermateaceae*.

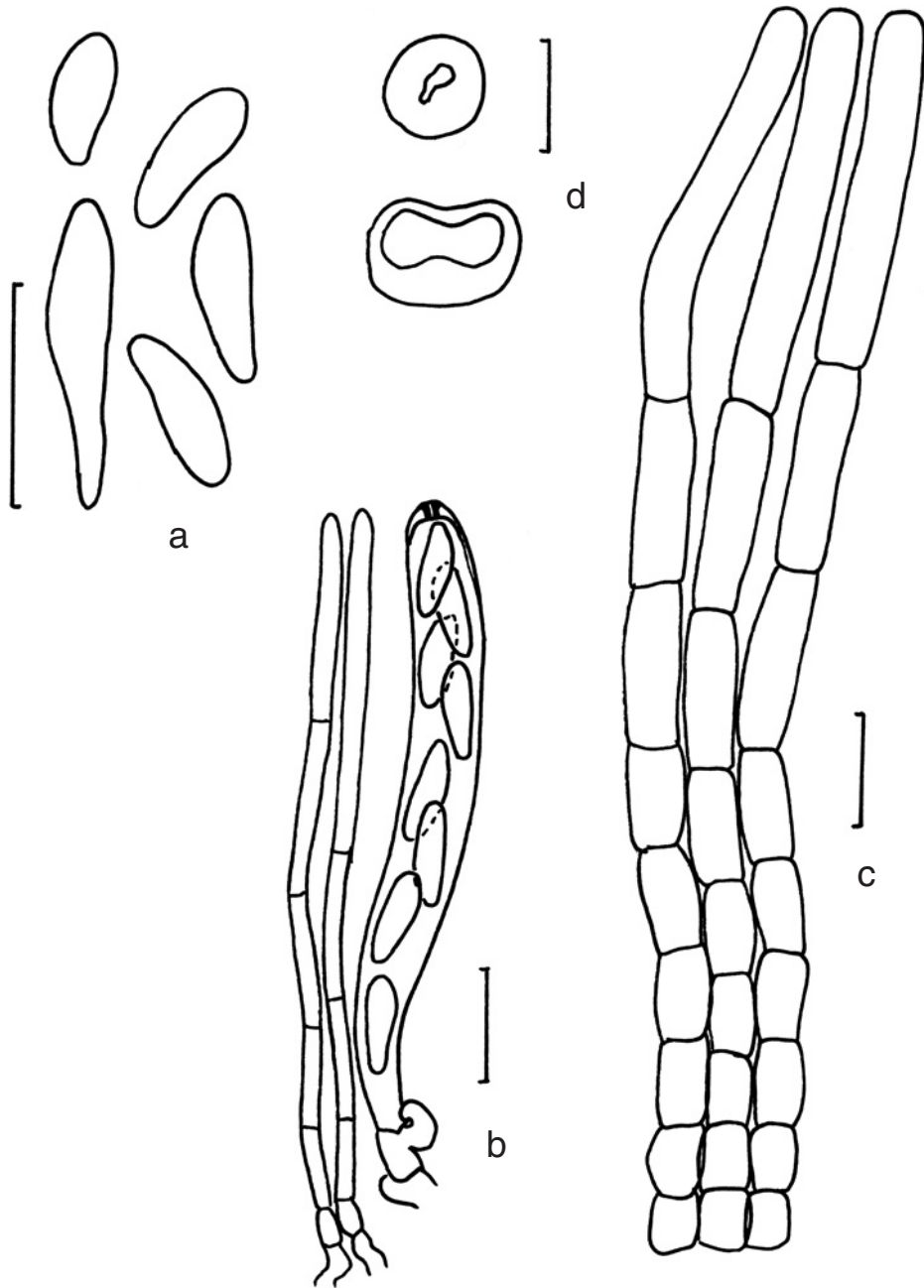


Fig. 2. *Crustula nigra* Velen. (PRM614736 = lectotype).
a. Ascospores. **b.** Ascus and paraphyses. **c.** Marginal cells in upper part of the apothecium. **d.** Apothecia. Del. A. Gminder (scale bars **a-c** = 10 μm ; **d** = 1 mm).

Crustula quercina Velen., Monogr. Discom. Bohem., p. 143, 1934

Fig. 3

Collections examined. Czech Republic, Bohemia, Hrusice, *Quercus*, I. 1930, leg./det. J. Velenovský (PRM153167 = lectotype, designated here). – ibidem, Mnichovice, Chlum, *Salix*, I. 1930, leg./det. J. Velenovský (PRM153184). – ibidem, Mnichovice, collis Plecháč, *Carpinus betulus*, XI. 1930, leg./det. J. Velenovský (PRM150543).

All three envelopes have the original inscription “*Tapesia cyathea* Vel.”.

As Velenovský (1934) gives no hints which collections he used for the data of the protologue, the only collection from the given substrate (*Quercus*), PRM153167, is chosen as the lectotype, which was already inscribed (seemingly by M. Svrček) on the envelope.

There is a fourth collection, originally inscribed as “*Tapesia globulifera*”, which has already been revised as *Crustula quercina* (PRM153025) by a former investigator. I have not examined this very scanty collection.

Description. Apothecia medium-sized, 1–2.5 mm in diam., not seated on a subiculum, roundish, some apothecia triangular, margin slightly crenulate, disc blackish, of nearly the same colour as the blackish external surface.

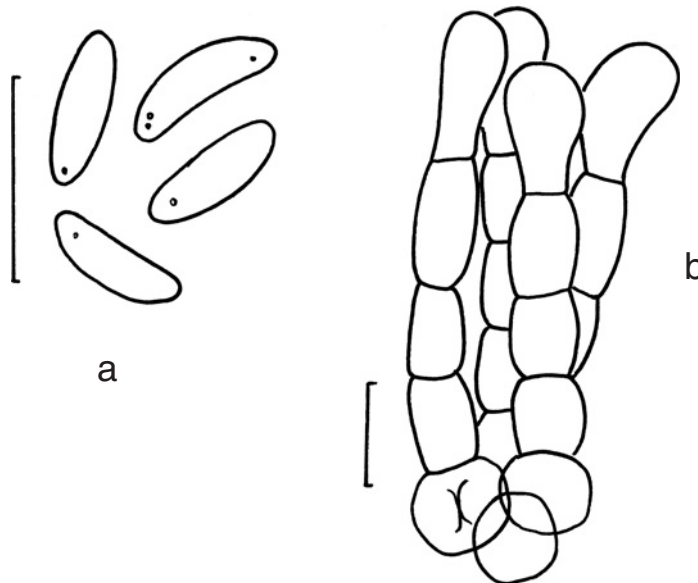


Fig. 3. *Crustula quercina* Velen. (PRM153167 = lectotype).

a. Ascospores. **b.** Marginal cells. Del. A. Grminder (scale bars = 10 μ m).

Ectal excipulum consisting of a textura globulosa-angularis, brown from the base up to the margin, no subicular hyphae seen. Marginal cells conspicuous, multicellular, consisting of 3–5 cells, end cell sphaeropedunculate to broadly claviform, subhyaline. The cells of the marginal protrudings become larger from the excipulum (diam. 7–8 μm) towards the end cell (12–16 \times 6–10 μm). Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata. Paraphyses cylindrical, approximately 2.5–3.5 μm broad, septate, not reacting yellow when KOH is added. Asci 42–50 \times 4.5–5 μm , with croziers, porus not reacting when adding Lugol, neither in a water preparation nor after pre-treatment with KOH. Ascospores broad elliptical, with rounded ends, often bent to slightly reniform, without droplets, 7–7.6–8 \times 2.2–2.5–2.8 μm (10/1/1 in KOH), $Q = 2.9\text{--}3.1\text{--}3.2$, vol. = 18–26–34 μm^3 in PRM153167, slightly smaller in PRM153184 (6–7.5 \times 1.5–2 μm).

Discussion. As in *C. corylacea*, the multicellular marginal protrudings, the spore characters, and the negative porus reaction leave no doubt that this is in fact *Mollisia ligni*.

Mollisia faginea Velen., Novit. Mycol. Noviss., p. 106, 1947

Fig. 4

Collection examined. Czech Republic, Bohemia, Jevany, ad cupulas *Fagi sylvaticae*, 7. VII. 1941, leg./det. J. Velenovský (PRM151676 = holotype).

The envelope contains several parts of at least three *Fagus* cupules, at least some of them including mollisoid apothecia (not all parts checked).

Description. Apothecia medium-sized, 1–2.5 mm in diam., seated on a rich dark brown subiculum, roundish, margin conspicuous, disc watery light grey to greyish-white, external surface brownish.

Ectal excipulum consisting of a textura globulosa-angularis of brownish cells up to margin. Subicular hyphae abundant, (4.5)5–7 μm broad, including the 0.5–1.5 μm broad gelatinised wall. Marginal cells moderately conspicuous, broadly claviform, less brownish than the excipular cells. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata and together with the hymenium approximately 80 μm thick. Paraphyses cylindrical, 65–70 \times 2–2.5 μm , septate, reacting strongly yellow when KOH is added. Asci 50–58 \times 4–5 μm , with croziers, porus reacting dark blue when adding Lugol either to a water- or a KOH preparation. Ascospores long elliptical, with rounded ends, sometimes bent to slightly reniform, usually with one or two droplets at each end, 7–9.1–12 \times 1.8–2–2.5 μm (20/1/1 in KOH), $Q = 3.5\text{--}4.5\text{--}6$, vol. = 12–20–40 μm^3 .

Discussion. In the original diagnosis, Velenovský gives the spore size as 6–8 \times 1 μm . The revision revealed them to be substantially longer and wider: 7–12 \times 1.8–2.5 μm .

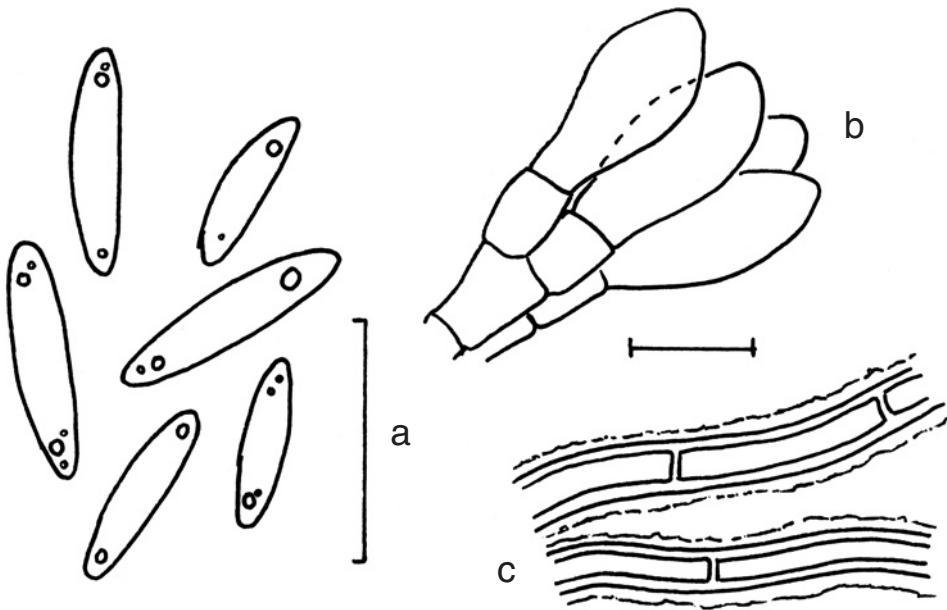


Fig. 4. *Mollisia faginea* Velen. (PRM151676 = holotype).

a. Ascospores. **b.** Marginal cells in upper part of the apothecium. **c.** Subicular hyphae. Del. A. Gminder (scale bars = 10 µm).

I have known this species for a long time. It was included in earlier versions of my provisional *Mollisia* key as “*Mollisia fagicola* nom. prov.”. I hesitated to describe it as a new species, as it seems to be quite common and confined to *Fagus* cupules (rarely on very small twigs of *Fagus*). I therefore expected that it had been described already, which was confirmed by this revision of Velenovský’s herbarium.

Compared to fresh material of this species, the spores in the type collection are slightly narrower, even considering the shrinking effect of dead material. Personal observations of *M. faginea* show a spore size range of 10–15 × 2.5–3 µm in vital state.

M. faginea is closely related to *M. fusca*, with which it has in common the yellow reaction with KOH, the spore size and the broad subicular hyphae. It differs by a lower oil content in the spores, the less pronounced marginal cells and the restriction to *Fagus* cupules (and small twigs). It may be just an infraspecific variety of *M. fusca*.

Mollisia gallincola Velen., Monogr. Discom. Bohem., p. 123, 1934

Fig. 5

Collections examined. Czech Republic, Bohemia, Mnichovice, Kunice, ad gallas quercinas, VI. 1928, leg./det. J. Velenovský (PRM148261 = lectotype, designated here). – ibidem, Mnichovice, collis Plecháč, ad gallas quercinas, V. 1924, leg./det. J. Velenovský (PRM147666).

The envelope of PRM148261 is provisionally labelled as a lectotype (probably by M. Svrček) and, as this collection has numerous mature apothecia, there is no reason not to follow this choice. In PRM147666, which represents the other collection mentioned in the protologue, only very young apothecia have been found. Therefore this collection does not provide much information and is less suitable as a lectotype, albeit richer in apothecia.

The lectotype collection contains 1 gall with many apothecia in good condition.

Description. Apothecia small, 0.5–1 mm, hymenium whitish to light grey, margin slightly darker grey, without visible subiculum.

Ectal excipulum consisting of a textura globulosa of brownish cells 9–11 × 7–9 µm in diam. No subicular hyphae were observed. Marginal cells inconspicuous, balloon-shaped and +/- hyaline. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata, together with the hymenium approxi-

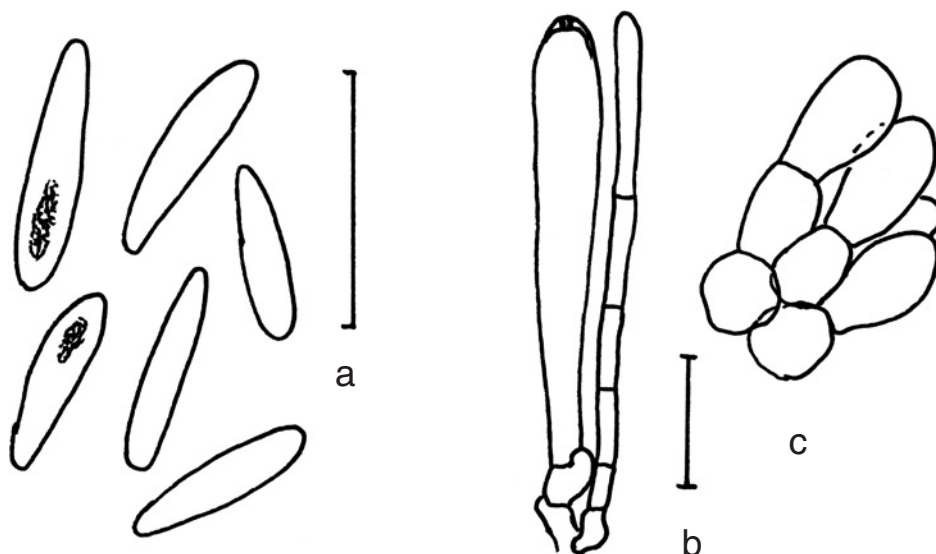


Fig. 5. *Mollisia gallincola* Velen. (a–b. PRM148261 = lectotype, c. PRM147666).

a. Ascospores. b. Ascus and paraphyse. c. Marginal cells in upper part of the apothecium. Del. A. Gminder (scale bars = 10 µm).

mately 50–55 μm thick. Paraphyses cylindrical, 2 μm broad, without reaction when KOH is added. Asci 32–41 \times 4.5–5 μm , with croziers, porus reacting blue in IKI, with and without KOH pre-treatment. Ascospores long elliptical, fusiform to almost needle-shaped, one end rounded, the other tapering, without oil drops, but with a fog-like content which could be rests of oil inclusions, 7–8.2–9(10) \times 1.2–1.8–2.2 μm (20/1/1 in KOH), $Q = 3.5\text{--}4.6\text{--}6$, vol. = (5)8–14–23 μm^3 .

Discussion. This is one of many wood-inhabiting species of *Mollisia*, which have in common a negative reaction with KOH, small spores with low or no oil content, no subicular hyphae and inconspicuous marginal cells. Further investigations with the aid of molecular data are needed to clarify how many species belong to this complex (also including *M. cinerea*) and how they can be separated. For time being, the shape of the spores, tapering at one end and rounded at the other, might indicate that *M. gallincola* is a good species. Whether it is really only confined to galls is doubtful.

Mollisia pilifera Velen., Novit. Mycol. Noviss., p. 107, 1947

Fig. 6

Collection examined. Czech Republic, Bohemia, Mnichovice, Božkov, Bílá Skála, ad ramos putr. *Pruni spinosae*, 16. VIII. 1942, leg./det. J. Velenovský (PRM152217 = holotype).

The envelope contains a piece of wood, obviously *Prunus spinosa*, with numerous apothecia in bad condition (most of them contaminated with a mould).

Description. Apothecia small, 0.5–1 mm in diam., not seated on a subiculum, roundish, margin very conspicuous, disc rehydrated light ochraceous, external surface equally ochraceous.

Ectal excipulum consisting of a slightly coloured textura prismatica, towards the margin +/- hyaline, no subicular hyphae observed. Marginal cells very conspicuous, tapering from a cylindrical base to a +/- pointed apex, sometimes with resinous exudates, +/- hyaline. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata. Paraphyses cylindrical, 2–2.5 μm broad, septate, not reacting yellow when KOH is added. Asci 30–35 \times 5.5–6 μm , porus reacting blue in IKI, absence or presence of croziers could not be verified due to the bad state of the material. Ascospores elliptical to ciborioid, sometimes kidney-shaped, without oil content, 7.5–8 \times 2.8–3 μm (only a few ascospores observed).

Discussion. The microscopical characters have been found in good accordance with the data given by Velenovský in the protologue. These features, especially the characteristic hairs, clearly show that *M. pilifera* is a species of *Hyaloscypha*. As I have not succeeded in verifying the presence or absence of croziers at the ascus base, the exact identity remains uncertain. Judging from the spore size, the hair length and the prominent warts on the hairs, it could well be *Hyaloscypha albohyalina* (P. Karst.) Boud. s.l.

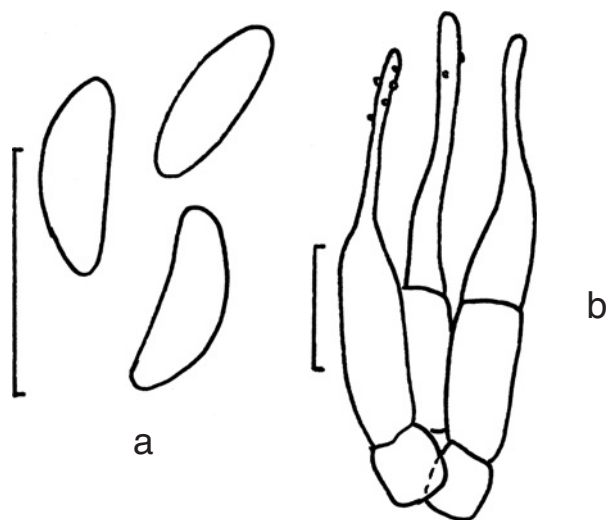


Fig. 6. *Mollisia pilifera* Velen. (PRM152217 = holotype).
a. Ascospores. **b.** Hairs. Del. A. Gminder (scale bars = 10 μm).

Tapesia airae Velen., Monogr. Discom. Bohem., p. 141, 1934

Fig. 7

Collection examined. Czech Republic, Bohemia, Ondřejov, mons Pecný, *Aira caespitosa* [= *Deschampsia c.*], X. 1933, leg./det. J. Velenovský (PRM154076 = holotype).

The envelope of the holotype contains one piece of a grass with many apothecia in good condition.

Description. Apothecia small, 0.5–1 mm in diam., seated on a hardly visible subiculum, roundish, margin not very conspicuous, disc light greyish, external surface brownish up to the margin.

Ectal excipulum approximately 60 μm thick, consisting of a textura globulosa-angularis, made up of small brownish cells of 5–8 μm diam. Subicular hyphae sparse, brownish, 3–4 μm broad, not very thick-walled, wall apparently smooth, not swelling in KOH. Marginal cells conspicuous, broadly claviform, hyaline, 10–15 \times 5.5–6 μm . Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata, together with the hymenium 35–40 μm thick. Paraphyses cylindrical, 1.5–2 μm broad, septate, no yellow reaction noticed when KOH was added. Asci 20–23 \times 3–3.5 μm , with croziers, porus reacting blue when adding Lugol either to a water- or a KOH preparation. Ascospores small, needle-shaped, usually with one droplet at one or both ends, (3.5)4–4.2–5 \times 0.8–0.9–1 μm (10/1/1 in KOH), $Q = 4\text{--}4.6\text{--}6.2$, vol. = 1.2–1.9–2.5 μm^3 .

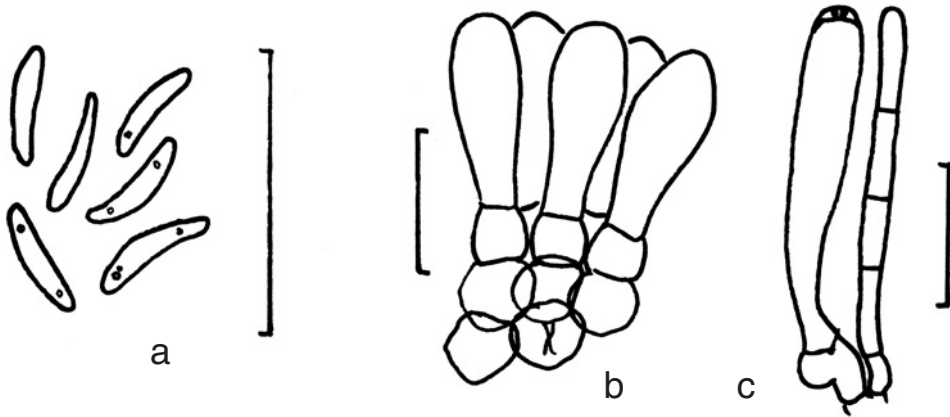


Fig. 7. *Tapesia airae* Velen. (PRM154076 = holotype).
a. Ascospores. **b.** Marginal cells. **c.** Ascus and paraphyses. Del. A. Gminder (scale bars = 10 µm).

Discussion. Already Velenovský noticed the similarity of *M. airae* to *M. phragmitis* (Velen.) Gminder. The differences he noted were a smaller size of the apothecia and smaller spores. The size of the apothecia is certainly influenced by the substrate, *Phragmites* being much more voluminous than *Deschampsia*. The size of the spores have found to be much larger than given by Velenovský and of the same size as *M. phragmitis*. Therefore *T. airae* is regarded a synonym of *M. phragmitis*.

Tapesia aurantiaca Velen., Monogr. Discom. Bohem., p. 142, 1934

Collection examined. Czech Republic, Bohemia, Mnichovice, Božkov (lacus), *Carex*, 27. VII. 1931, leg./det. J. Velenovský (PRM153112 = holotype).

The envelope of PRM153112 contains one piece of a stem base of *Carex*. No apothecia or any trace of a fungus has been found on it.

Discussion. The type collection obviously contains no apothecia and no other collection of this species has been found in Velenovský herbarium. The description by Velenovský (1934: 142) is not exhaustive enough to interpret this taxon in a modern sense. It should therefore be regarded a nomen dubium.

Tapesia dimorpha Velen., Novit. Mycol. Noviss., p. 112, 1947

Fig. 8

Collections examined. Czech Republic, Bohemia, Mirošovice, truncus betulinus, 15. V. 1941, leg./det. J. Velenovský (PRM153177 = lectotype, designated here). – Mnichovice, Božkov, Bílá Skála, *Quercus*, V. 1941, leg./det. J. Velenovský (PRM153050).

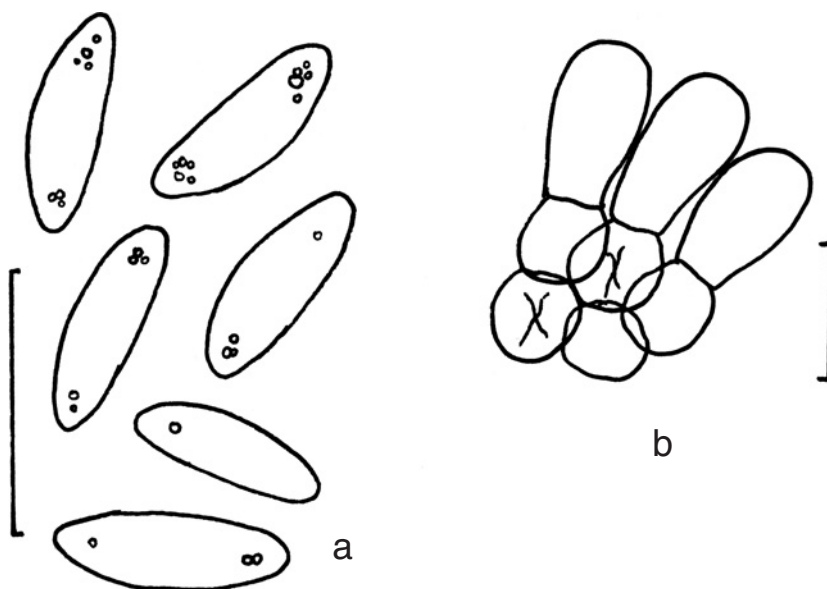


Fig. 8. *Mollisia dimorpha* (Velen.) Gminder (PRM153177 = lectotype).
a. Ascospores. **b.** Marginal cells. Del. A. Gminder (scale bars = 10 μ m).

The envelope of PRM153177 contains one piece of hardwood with numerous small apothecia in good condition. Another collection, PRM153050 (also mentioned in the protologue), has already been found empty by an unknown former investigator (“apoth. nulla inveni.”)

Description. Apothecia very small, 0.3–0.6 mm in diam., roundish, margin conspicuous, disc medium grey, dehydrating to greyish cream, external surface brownish up to the margin, no subiculum visible. The apothecia are growing between an undetermined hyphomycete.

Ectal excipulum consisting of a brownish textura globulosa, which turns olivaceous greenish when KOH is added. No subicular hyphae present. Marginal cells not very conspicuous, sphaeropendunculate to balloon-shaped, towards the margin broadly clavate, brownish. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata, together with the hymenium 60–70 μ m thick. Paraphyses cylindrical, 2–2.5 μ m broad, septate, not reacting yellow with KOH. Asci 48–55 \times 4.5–5 μ m, with croziers, reacting blue when adding Lugol either to a water- or a KOH preparation. Ascospores elliptical, with rounded ends, usually with few small droplets at both ends, 7–8.3–9 \times 2.5–2.7–3 μ m (10/1/1 in KOH), $Q = 2.7$ –3.1–3.6, vol. = 22–30–40 μ m³.

Discussion. The outstanding feature of this species is the colour change of the pigment of the excipular cell walls to olivaceous greenish when KOH is added.

Mollisia species usually turn +/- brownish-grey with KOH. This colour change was the main reason for Svrček to describe a new species called *M. olivaceo-cinerea* (Svrček 1989). As there are some differences in the descriptions, it remains uncertain whether the two species are conspecific until the type of *M. olivaceo-cinerea* can be re-examined.

I have known this species for several years and it is indeed this olivaceous greenish colour change that first distinguishes it from *M. cinerea*. In the meantime I have been able to find more differentiating characters, such as the bigger spores with tiny oil droplets, the presence of subicular hyphae (although not seated in a subiculum), and the colour change of the hymenium from greyish to cream or even yellowish when slowly dehydrating. Whether these characters are also present in *M. olivaceo-cinerea*, or if there are two (or even more?) species of *Mollisia* with such a colour change in KOH remains unsolved for the moment.

Independently of how the status of *M. olivaceo-cinerea* will turn out in the future, *T. dimorpha* is a good and common species of *Mollisia* (usually erroneously identified as *M. cinerea*). Therefore the following new combination is proposed:

***Mollisia dimorpha* (Velen.) Gminder comb. nov.**

Basionym: *Tapesia dimorpha* Velen., Novit. Mycol. Noviss., p. 112, 1947

(MycoBank MB 800954)

PRM153177 was labelled as the holotype on its envelope by curators of PRM herbarium (formerly the lectotype, but this has been cancelled on the herbarium label). As Velenovský states that he found this species at many locations on *Betula* and *Quercus* around Mnichovice in May 1941, it cannot be considered the holotype. As both collections are mentioned in the protologue, I chose PRM153177 as the lectotype, as PRM153050 seems to be empty.

On the original small label Velenovský named this collection (and the empty PRM153050) *Tapesia tentaculifera*. This name was never used in his publications.

***Tapesia exigua* Velen., Novit. Mycol. Noviss., p. 112, 1947**

Collection examined. Czech Republic, Bohemia, Myšlín, *Quercus*, 15. VI. 1942, leg./det. J. Velenovský (PRM153031 = holotype).

The envelope of PRM153031 contains one piece of wood with cortex, which seems to be *Corylus*, not *Quercus* as stated on the label. There was no trace of a discomycete found on this piece, only a few stromata of *Hypoxylon fuscum*.

Discussion. The type collection obviously contains no apothecia, and no other collection of this species has been found in Velenovský herbarium. Just as in the case of *Tapesia aurantiaca* the taxon should therefore be regarded a nomen dubium.

Tapesia lentiformis Velen., Monogr. Discom. Bohem., p. 141, 1934

Fig. 9

Collection examined. Czech Republic, Bohemia, Mirošovice, in gramine, 2. VII. 1931, leg./det. J. Velenovský (PRM153104 = holotype).

The envelope of PRM153104 contains one piece of a herbaceous stem (not a grass, as indicated by Velenovský!) with several small apothecia in fairly good condition.

Description. Apothecia small, 0.5–1.5 mm in diam., roundish, margin inconspicuous, disc blackish grey, nearly as dark as the blackish external surface, no subiculum visible.

Ectal excipulum consisting of a textura globulosa, which is vivid orange-brown in H₂O. No subicular hyphae present. Marginal cells not very conspicuous, sphaeropendunculate to balloon-shaped, towards the margin broadly clavate and sometimes slightly thick-walled, brownish. Medullary excipulum brownish to subhyaline, without crystals. Subhymenium a hyaline textura intricata. Paraphyses cylindrical, 2–2.5 µm broad, septate, not reacting yellow with KOH. Asci 40–45 × 4–4.5 µm, with croziers, reacting blue when adding Lugol either to a water- or a KOH preparation. Ascospores fusiform to needle-shaped, with one end rounded and the other tapering, without oil drops, 7–7.9–8.5 × 1.8–1.9–2 µm (only few spores found).

Discussion. As almost usual in this study, the spores have been found to be considerably larger than stated by Velenovský. His description of the fresh apothecia mentions a “papaverino” hymenium colour, which should mean a kind of red. In the type specimen the apothecia have been found to be nearly black. The hymenium colour, in addition to the brownish medullary hyphae and the vivid orange-brown colour of the excipulum, make this species unique among the hitherto known *Mollisia* species. As I see no reason why this collection should not belong to *Mollisia* s.str., especially as Velenovský states the paraphyses to contain a refractive vacuole, the following new combination is proposed:

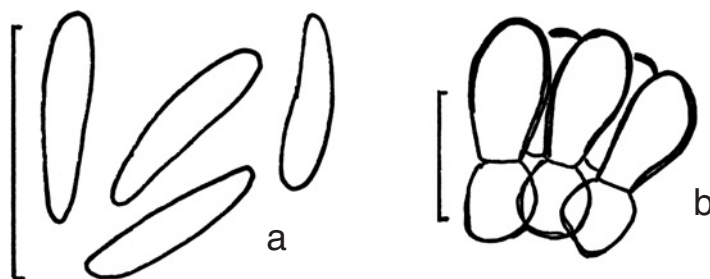


Fig. 9. *Mollisia lentiformis* (Velen.) Gminder (PRM153104 = holotype).
a. Ascospores. b. Marginal cells. Del. A. Gminder (scale bars = 10 µm).

Mollisia lentiformis (Velen.) Gminder **comb. nov.**

Basionym: *Tapesia lentiformis* Velen., Monogr. Discom. Bohem., p. 141, 1934
(Mycobank MB 800955)

It would be important to re-find this species to verify its placement in *Mollisia*.

Tapesia ochroleuca Velen., Monogr. Discom. Bohem., p. 142, 1934 Fig. 10

Collection examined. Czech Republic, Bohemia, Neratovice, Černínosk lacus, *Phragmites communis*, 15. IX. 1926, leg./det. J. Velenovský (PRM148710 = holotype).

The envelope of PRM148710 contains one piece of a *Phragmites* stem with numerous apothecia in good condition.

Description. Apothecia small, 0.5–1 mm in diam., roundish, cushion-like, margin inconspicuous and bent downwards, disc whitish, external surface brownish only around the base, no subiculum visible.

Ectal excipulum consisting of a textura globulosa, which is brownish near the base only and +/- hyaline towards the margin. Subicular hyphae sparse, 4–5 µm broad. Marginal cells not very conspicuous, broadly clavate, hyaline. Medullary excipulum hyaline, with masses of crystals. Subhymenium a hyaline textura intricata, together with the hymenium approximately 90 µm thick. Paraphyses cylindrical, 2.5–3 µm broad, septate, reacting faintly yellow with KOH. Asci 63–71 × 4–5 µm, with croziers, reacting blue when adding Lugol either to a water- or a KOH preparation. Ascospores fusoid to elliptical, with one rounded and one tapering end, sometimes bent to nearly scutuloid, usually containing many small to medium-sized drops, 9–10.1–12 × 2.2–2.5–2.8 µm (20/2/1 in KOH), Q = 3.6–4.1–5.5, vol. = 23–33–43(50) µm³.

Discussion. All characters agree well with my concept of *Mollisia hydrophila* (P. Karst.) Sacc., especially the shape, size and content of the spores and the crystal masses in the excipulum. I have seen such whitish apothecia several times in my own collections and also the abundance of subicular hyphae may vary from a thick subiculum to almost no hyphae at all. Therefore I have no doubt that *T. ochroleuca* is a synonym of *M. hydrophila*.

PRM148710 is the only collection of *T. ochroleuca* in the herbarium of Velenovský, and the given collection data all agree well with the protologue, except that the substrate is a piece of a stem of *Phragmites*, whereas the protologue says “in foliis *Phragmitis*”. Nevertheless I think this small discrepancy does not contradict the holotype status of this collection. Also the spores were found completely different as stated by Velenovský (9–12 × 2.2–2.8 µm, with many oil droplets vs. “3–5 µm, eguttulate”), but this is very often the case with his descriptions.

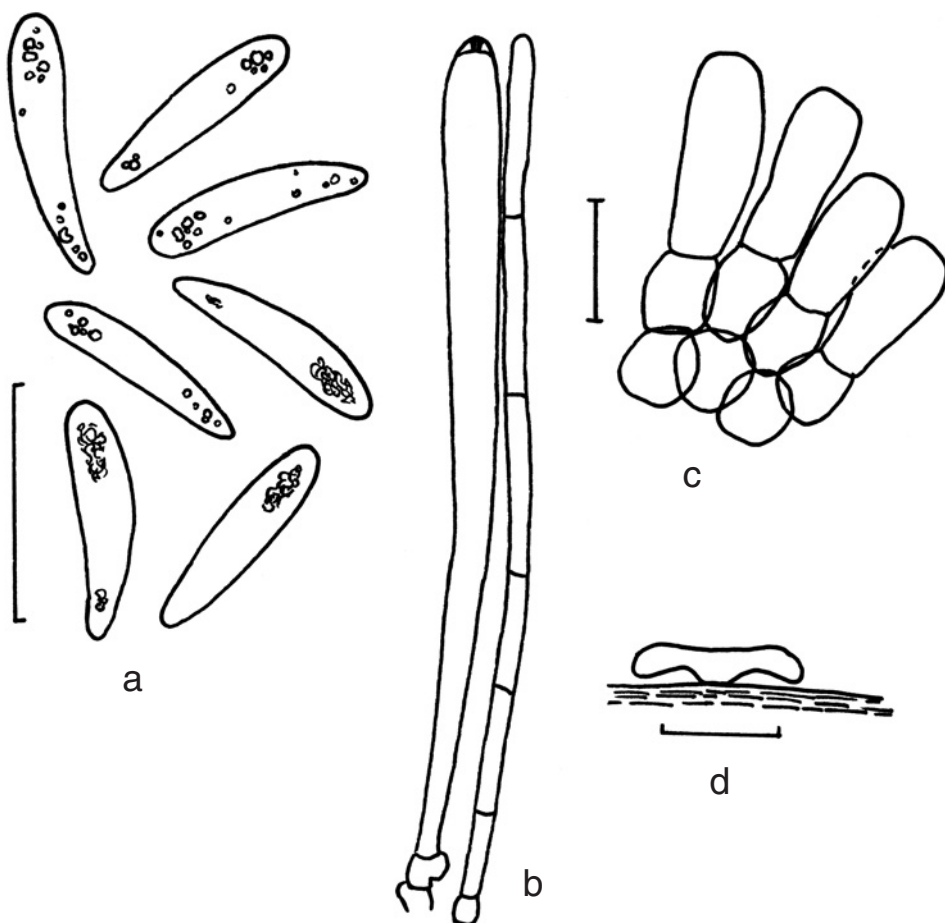


Fig. 10. *Tapesia ochroleuca* Velen. (PRM148710 = holotype).
a. Ascospores. **b.** Ascus and paraphyses. **c.** Marginal cells in upper part of the apothecium. **d.** Apothecium. Del. A. Gminder (scale bars **a-c** = 10 μ m; **d** = 1 mm).

Tapesia pezizellaeformis Velen., Novit. Mycol., p. 179, 1940

Fig. 11

Collection examined. Czech Republic, Bohemia, Mnichovice, Hubačov, *Quercus robur*, VIII. 1939, leg./det. J. Velenovský (PRM153038 = holotype).

The envelope of PRM153177 contains two pieces of hardwood with a few small apothecia which are in fairly good condition, but most of them are premature.

Description. Apothecia small, 0.8–1.5 mm in diam., roundish, margin conspicuous, finely crenulate, disc whitish, external surface dirty whitish up to the margin, no subiculum visible.

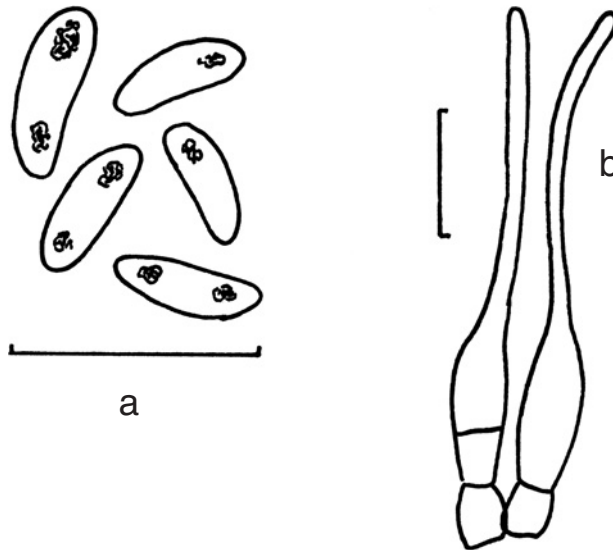


Fig. 11. *Tapesia pezizellaeformis* Velen. (PRM153038 = holotype).
a. Ascospores. **b.** Hairs. Del. A. Gminder (scale bars = 10 μm).

Ectal excipulum consisting of a very light yellowish textura prismatica-angularis, which turns olivaceous greenish when KOH is added. Subicular hyphae present, subhyaline, nearly thin-walled. Marginal cells conspicuous, hyaline, 35–45 μm long, with a cylindrical base 3–4.5 μm broad and a long and tapering apical part, with 0–1 septae. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata. Paraphyses cylindrical, 2–2.5 μm broad, septate, not reacting yellow with KOH. Asci 45–50 \times 5.5–6 μm , with croziers, reacting blue when adding Lugol either to a water- or a KOH preparation. Ascospores elliptical, kidney-shaped, with rounded ends, usually with one group of small droplets at each end, 5–6–6.5 \times 2.2–2.45–2.8 μm (10/1/1 in KOH), $Q = 2.1\text{--}2.5\text{--}2.7$, vol. = 13–19–25 μm^3 .

Discussion. The typical hairs clearly places this species in the genus *Hyaloscypha*, and the small spores make it very likely that *T. pezizellaeformis* is a synonym of *H. daedaleae* Velen.

Tapesia urnigera Velen., Monogr. Discom. Bohem., p. 141, 1934

Fig. 12

Collections examined. Czech Republic, Bohemia, Mnichovice, Hubáčkov, *Phalaris arundinacea*, 30. IX. 1929, leg./det. J. Velenovský (PRM153179 = holotype).

The envelope of PRM153179 contains one piece of a stem of *Phalaris* with very numerous small apothecia in good condition.

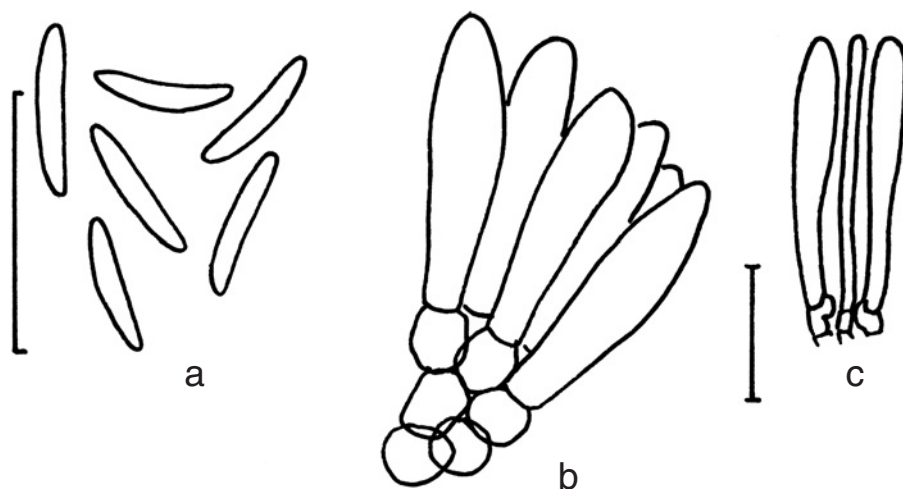


Fig. 12. *Mollisia urnigera* (Velen.) Gminder (PRM153179 = holotype).
a. Ascospores. **b.** Marginal cells. **c.** Ascus and paraphyses. Del. A. Gminder (scale bars = 10 μ m).

Description. Apothecia small, 0.5–1 mm in diam., roundish, urn-shaped, similar to *Olla millepunctata*, margin conspicuous and whitish, disc dark grey, external surface brownish up to the margin, no subiculum visible.

Ectal excipulum consisting of a light brownish textura globulosa-angularis, cells 7–11 μ m in diam. Subicular hyphae at the base of the apothecium present, (2.5)3–3.5(4) μ m, not very thick-walled. Marginal cells conspicuous, clavate, subhyaline to hyaline, 20–25 \times 4.5–6 μ m. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata, together with the hymenium 40–45 μ m thick. Paraphyses cylindrical, 1.5–2 μ m broad, septate, not reacting yellow with KOH. Asci 19–27 \times 2.2–3 μ m, with croziers, reacting blue when adding Lugol either to a water- or a KOH preparation. Ascospores needle-shaped, with pointed ends, without oil drops, 5.5–5.8–6 \times 1–1.1–1.2 μ m (only few spores seen).

Discussion. *T. urnigera* comes very close to *M. phragmitis*, but differs in its smaller asci, conspicuous marginal cells and urn-shaped apothecia. Furthermore, *T. urnigera* shows no reaction with KOH, whereas *M. phragmitis* has an orange-yellow reaction at least within some paraphyses. Although I would like to study a living collection of this species to be more certain about its relation to *M. phragmitis*, I find the differences strong enough to keep it as a separate species for the time being, which is here combined into *Mollisia*:

***Mollisia urnigera* (Velen.) Gminder comb. nov.**

Basionym: *Tapesia urnigera* Velen., Monogr. Discom. Bohem., p. 141, 1934 (Mycobank MB 800956)

Trichobelonium caricinum Velen., Monogr. Discom. Bohem., p. 145, 1934 Fig. 13

Collections examined. Czech Republic, Bohemia, Všetaty, ad vaginas caricum, 8. VII. 1925, leg./det. J. Velenovský (PRM148131 = holotype).

The envelope of PRM148131 contains several pieces of stem bases of a *Carex* species, some of them with numerous apothecia in good condition.

Description. Apothecia small, 0.8–1.5 mm in diam., roundish, margin hardly conspicuous, disc medium grey, external surface brownish up to the margin, no subiculum visible.

Ectal excipulum consisting of a brownish textura globulosa. No subicular hyphae present. Marginal cells not very conspicuous, sphaeropendunculate to balloon-shaped, towards the margin broadly clavate, brownish, 13–18 × 9.5–11 µm. Medullary excipulum hyaline, without crystals. Subhymenium a hyaline textura intricata, together with the hymenium 100–120 µm thick. Paraphyses cylindrical, 2.5–3.5 µm broad, septate, not reacting yellow with KOH. Asci 72–92 × 5–6.5 µm, with croziers, reacting deep red (!) when adding Lugol either to a water- or a KOH preparation. Ascospores fusiform, straight to slightly sickle-shaped, with tapering ends, with 1 to 3 septae, not constricted at the septae, with several small drops at both sides of each septum, 17–20.2–27 × 2–2.5–2.8 µm (10/1/1 in KOH), Q = 6–8.3–10(12), vol. = 44–65–82 µm³.

Discussion. There are three mollisoid species with multiseptate spores and a red porus reaction in Lugol: *M. filispora* (Cooke) Baral, *M. pilosa* (Crossl.) Baral & T. Richt. and *M. pulla* (W. Phillips & Keith) Baral. *M. pulla* differs clearly by its much broader spores which are 4–6-septate. *T. caricinum* shows characters which are intermediate between the other two. The spore size would better suit *M. pilosa*, but then the spores should be constricted at the septum. Ascus size would in contrary better fit *M. filispora* (80–90 µm) compared to *M. pilosa* with 120–160 µm long asci. The dark brown ectal excipulum, on the other hand again, leads to *M. pilosa*. The same is true for the substrate, as *M. pilosa* is known from *Carex*, whereas *M. filispora* only from *Poaceae*. Thus all characters point towards *M. pilosa*, except the spore and ascus size. This difference can be explained by the shrinking effect of dead cells in *Helotiales* (Baral 1992). This shrinking effect results in differences of 20–30% between vital and dead material. Hence the asci of *M. pilosa*, which are 120–160 µm in vital state, may shrink to 85–110 µm in dead state and the spores (vital (25)30–40 × 3–4 µm) to 17–28 × 2–2.8 µm. This is supported by the fact that Velenovský gives the ascus size as 120–160 × 6 µm, obviously taken from fresh and vital material. It may well be possible that the constriction at the septae is not seen in herbarium material or after treatment with KOH.

There is an undescribed pyrenopezizoid species (“*Mollisia*” “Gottmadingen” in Baral et al. 2003), also from *Carex* and with multiseptate spores and red porus reaction, which is very similar. As the refractive vacuole body in the paraphyses of

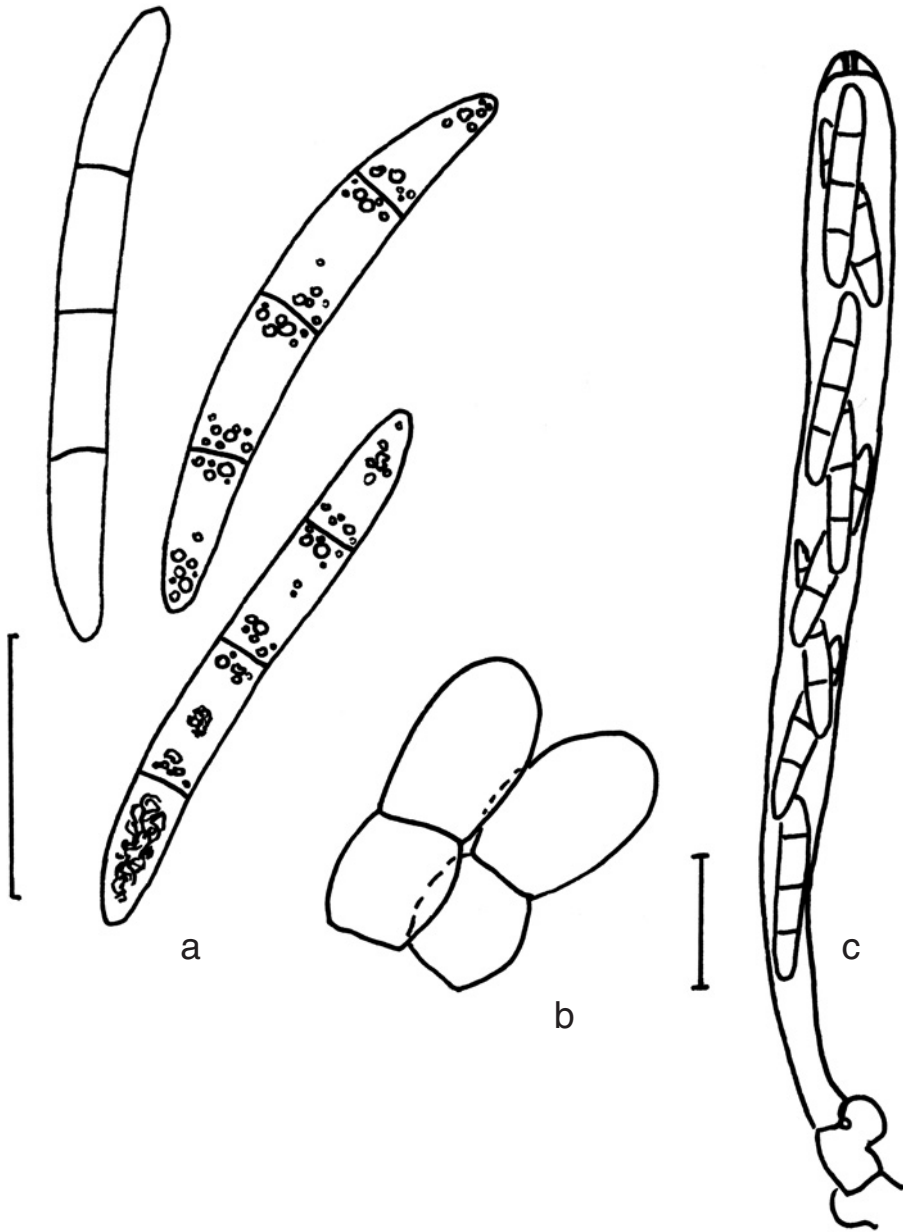


Fig. 13. *Trichobelonium caricinum* Velen. (PRM148431 = holotype).
a. Ascospores. b. Marginal cells. c. Ascus. Del. A. Gminder (scale bars = 10 µm).

the mollisoid group is not seen in herbarium material, exsiccates are sometimes difficult to classify into one or another group. Therefore it can not be excluded that *T. caricinum* belongs to the pyrenopezizoid group. But the mentioned undescribed species differs in larger spores, at least partly 4-spored asci and abundant subicular hyphae.

I have no doubt that *T. caricinum* is conspecific with *M. pilosa* and therefore falls into the synonymy of this species.

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