

## Notes on Spanish glassy-haired Hyaloscyphaceae

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Nine species of the Hyaloscyphaceae belonging to three genera with glassy hairs are described from Spain. Four of them, *Mollisia minutissima*, *Urceolella magnifica*, *Urceolella pinicola* and *Urceolella triseptata* are new. *Hyalopeziza verna* and *Urceolella graddonii* are proposed as a new combination and as a new name, respectively. All species are described and illustrated and their taxonomic position is discussed.

Keywords: Ascomycetes, Discomycetes, Hyaloscyphaceae, taxonomy.

Because of their attractive morphology and histochemistry, the glassy-haired Hyaloscyphaceae have received special attention by a number of scientists following the work of Raschle (1977). Korf & Kohn (1980) stressed the importance of histochemical reactions in the investigation of hair morphology and this line was followed by Huhtinen (1987b). We agree that the separation of *Urceolella* Boud. from *Hyalopeziza* Fuckel on the basis of hair and ectal excipulum reactions in KOH and Congo Red has advantages over the taxonomy used by Raitviir (1970). Also, it is evident that the dextrinoid or amyloid reactions in Melzer's reagent can be used only at the species level, and for this reason we treat *Unguicularia* Höhn. as a synonym of *Hyalopeziza* Fuckel.

The present paper deals with the species collected by the authors during the senior author's sabbatical at the University of Alcalá de Henares. The genus *Protounguicularia* Raitv. & Galán described recently by the authors (Raitviir & Galán, 1986), and discussed in detail also by Huhtinen (1987a), is not treated here.

### Material and methods

Several glassy-haired species as well as some other hyaloscyphaeous fungi have very minute apothecia which are difficult to notice

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in the field. The actual number of species of the Hyaloscyphaceae present at any collecting site can be more accurately determined by scanning a large amount of substrata under a dissecting microscope. The use of such a technique has been explicitly stated only for the discovery of *Trichodiscus diversipilus* by Graddon (1977) but was applied more widely by this author. In our studies 3 of 4 new species, namely *Mollisina minutissima*, *Urceolella pinicola* and *Urceolella triseptata* were discovered by scanning freshly collected forest debris in the laboratory under a dissecting microscope.

In this study 5% potassium hydroxide (KOH) was used to rehydrate dry apothecia. Melzer's reagent (MLZ), Cotton Blue (CB) and Congo Red (CR) were used in the same way as described by Huhtinen (1987b). Photographs were taken with a Nikon Labophot-2 phase-contrast microscope. Line drawings were made using a Carl Zeiss Jenaval phase-contrast microscope equipped with a drawing tube.

### Description of species

1. *Hyalopeziza millepunctata* (Lib.) Raitv., Scripta Mycologica 1: 34. 1970. – Figs. 1: A, 2: E-H.

Bas.: *Peziza millepunctata* Lib. Pl. Crypt. Ard. Fasc. 2, No. 128. 1832.

= *Unguicularia millepunctata* (Lib.) Dennis, Mycol. Papers 32: 79. 1949.

= *Unguicularia scrupulosa* (Karst.) Höhn., Sitzungsber. Akad. Wiss. Wien, Math.-Nat. Cl. 115: 1279. 1906.

= *Peziza scrupulosa* Karst., Not. Sällsk. Fauna Flora Fenn. Förh. 10: 178. 1869.

For full synonymy see Raschle (1977).

**Apothecia** scattered to gregarious, sessile. Disc 0.2–0.3 mm in diameter, whitish. – **Receptacle** urceolate, whitish to pale greyish when fresh, at the margin minutely downy, whitish gray or pale olivaceous gray to brownish-gray with whitish downy margin when dry. Ectal excipulum consisting of hyaline, prismatic cells 8–12 x 3–5 µm, having thin to firm walls, remaining hyaline in MLZ and CR; the space between the cells is filled with intercellular resinous matter which encrusts the excipular cell walls and is responsible for the colouring of excipulum and stains yellowish brown to golden brown in KOH. – **Hairs** cylindrical to cylindrical-conical with broadly rounded tip, hyaline, 10–35 x 3–5 µm with thin walls in basal part and solid glassy apex not losing refractiveness in KOH, staining deep reddish-brown in MLZ, and deep red in CR. – **Asci** clavate, 30–36 x 4–5 µm, arising from simple septa, apical pore blue in MLZ, with biseriolate, irregularly biseriolate or obliquely uniseriate arrangement of spores. – **Ascospores** ellipsoid, slightly inequilateral, sometimes clavate-ellipsoid, hyaline, aseptate, usually containing two minute polar guttules, 6–7.5 x 1.6–2.2 µm. – **Paraphyses** filiform, rarely branching in basal part, obtuse, not exceeding the asci, 1 µm in diameter.

*Specimens examined.* – On fallen decaying branches of *Fagus sylvatica* L., Hayedo de Tejera Negra, Cantalojas, Guadalajara, 30. 10. 1991, R. Galán & A. Raitviir (RG-6665); on fallen decorticated decaying branch of probably *Populus nigra*, Surroundings of Riofrio de Rianza, Segovia, 14. 11. 91, R. Galán & A. Raitviir (RG-6681).

*Hyalopeziza millepunctata* is a critical species of the genus. Raschle (1977) has adopted it as *Unguicularia millepunctata* in the widest possible sense including all taxa described for both light coloured and dark coloured phenotypes growing on herbaceous stems and wood, and indicated a very wide range of ascus length variation (20–45 µm).

Our two collections on decaying wood are uniform in all characters. The most remarkable feature is the darkish colour of apothecia and excipulum which is due to the brownish intercellular resinous matter whereas the excipular cells themselves have hyaline walls and content. All previous studies, however, have described the excipular cells of dark forms as brown-coloured and did not pay any attention to the location of the pigment. Further investigations must show whether there is a correlation between the substrate and the variation of morphological characters found in different forms of this group.

The species has been previously reported from Spain by Galán (1985) on the same substrata in Madrid and Granada provinces.

2. *Hyalopeziza pygmaea* (Mout.) Huhtinen, Mycotaxon 29: 279. 1987. – Figs. 1: D–H, 2: A–D.

Bas.: *Trichopeziza pygmaea* Mouton, Bull. Soc. Roy. Bot. Belg. 36(2): 19. 1897.

= *Hyaloscypha pygmaea* (Mouton) Boud., Hist. Classific. Discomyc. Europe: 127. 1907.

= *Unguicularia pygmaea* (Mouton) Svr., Česká Mykol. 39: 217. 1985.

= *Hyaloscypha subtilis* Vel. var. *drupacea* Vel., Mon. Disc. Boh. 273. 1934.

*Apothecia* gregarious on lower surface of leaf blades, sessile to subsessile. Disc up to 0.2 mm in diameter, pale yellowish to pale ochraceous. – *Receptacle* cupulate to deeply cupulate, concolorous with the hymenium, at the margin minutely downy. Ectal excipulum consisting of hyaline, thin-walled to firm-walled prismatic to almost isodiametric rectangular cells 6–10 x 4–9 µm, remaining hyaline in MLZ but staining deep red in CR. – *Hairs* cylindrical, cylindrical-conical to almost conical with rounded tip, hyaline, 25–50 x 2.5–3.5 µm, with thin walls in basal part and solid glassy apex not losing refractiveness in KOH, usually without but occasionally with lumen, remaining hyaline in MLZ but staining deep red in CR, covered in upper part to almost totally by hyaline hemispherical warts up to 0.5 µm high. – *Asci* clavate, 16–20 x 4–5 µm, arising from croziers, apical pore faintly blue in MLZ, with biseriate, irregularly biseriate or obliquely uniseriate arrangement of spores. – *Ascospores* ellip-

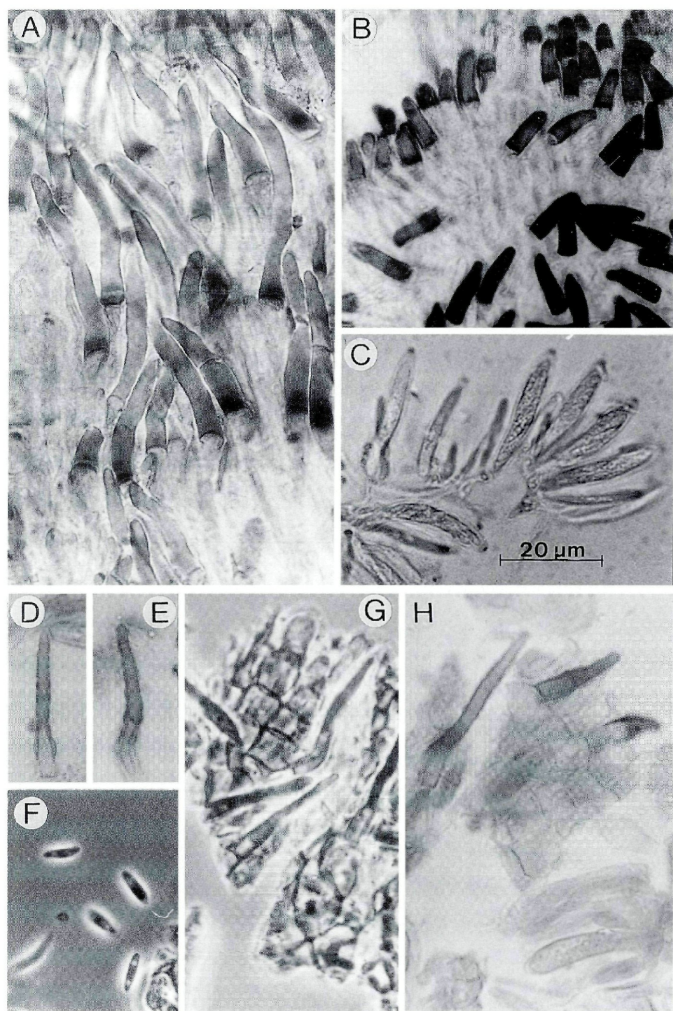


Fig. 1. - A. *Hyalopeziza millepunctata* (RG 6681): Excipulum with hairs. - B-C. *Hyalopeziza verna* (TAA-136847): B. Excipulum with hairs. - C. Portion of hymenium showing asci with spores. - D-H. *Hyalopeziza pygmaea* (TAA-136844): D-E. Granulated hairs. - F. Spores. - G. Part of excipulum. - H. Part of excipulum and hairs stained in CR.

soid, inequilateral to slightly allantoid, hyaline, aseptate, usually containing two minute polar guttules, 6–7 x 1.5  $\mu\text{m}$ . – P a r a p h y s e s filiform, rarely branching in basal part, obtuse, not exceeding the asci, 1  $\mu\text{m}$  in diameter.

Specimen examined. – On dead leaf of *Quercus pyrenaica* Willd., Hayedo La Pedrosa, Puerto de la Quesera, Segovia, 14. 11. 91, A. Raitviir & R. Galán (TAA-136844).

In our collection some variation in warts occurs when material is mounted in different media. In standard KOH mount the hairs appear to be completely smooth. In MLZ some hairs have a few strongly swollen and deformed globules on their surface (cf. Huhtinen, 1987b) but in ammoniacal CR mounts the hairs appear to be covered by regular hemispherical congophilous granules.

We agree with Huhtinen (1987b) that this species occupies a rather isolated position in the genus, but in our opinion this is not only because of the granulated hairs but also because of the CR+ ectal excipulum. Huhtinen (1987b) reported a CR+ ectal excipulum also for *Hyalopeziza digitipila* Huhtinen, but more studies are needed to assess the generic or subgeneric limits within *Hyalopeziza* Fuckel sensu Korf & Kohn (1980).

This is the first record of the species from Spain.

3. *Hyalopeziza verna* (Svr.) Raitv. & Galán comb. nov. – Figs. 1: B-C, 2: I-L.

Bas.: *Unguicularia verna* Svr., Česká Mykol. 43: 222, 1989.

A p o t h e c i a scattered on grass leaf blades, sessile. Disc up to 0.2 mm in diameter, pure white. – R e c e p t a c l e urceolate, concolorous with the hymenium, at the margin minutely downy. Ectal excipulum consisting of hyaline, prismatic cells 8–10 x 4–6.5  $\mu\text{m}$ , having firm walls with slight to moderate irregular thickenings, remaining hyaline in MLZ and CR. – H a i r s conical to cylindric-conical with broadly rounded tip, hyaline, 8–23 x 3–5  $\mu\text{m}$  with sometimes thin granulated walls in basal part and solid glassy apex not losing refractiveness in KOH, staining deep reddish-brown in MLZ, and deep red in CR. – A s c i clavate, 20–25 x 4–5  $\mu\text{m}$ , arising from simple septa, apical pore blue in MLZ, with biseriate, irregularly biseriate or obliquely uniseriate arrangement of spores. – A s c o s p o r e s narrowly fusoid, hyaline, aseptate, usually containing two minute polar guttules, 6–9 x 1–1.6  $\mu\text{m}$ . – P a r a p h y s e s filiform, rarely branching in basal part, obtuse, not exceeding the asci, 1  $\mu\text{m}$  in diameter.

Specimen examined. – On dead grasses, Sigüenza, Guadalajara, 20. 11. 91, A. Raitviir (TAA-136847).

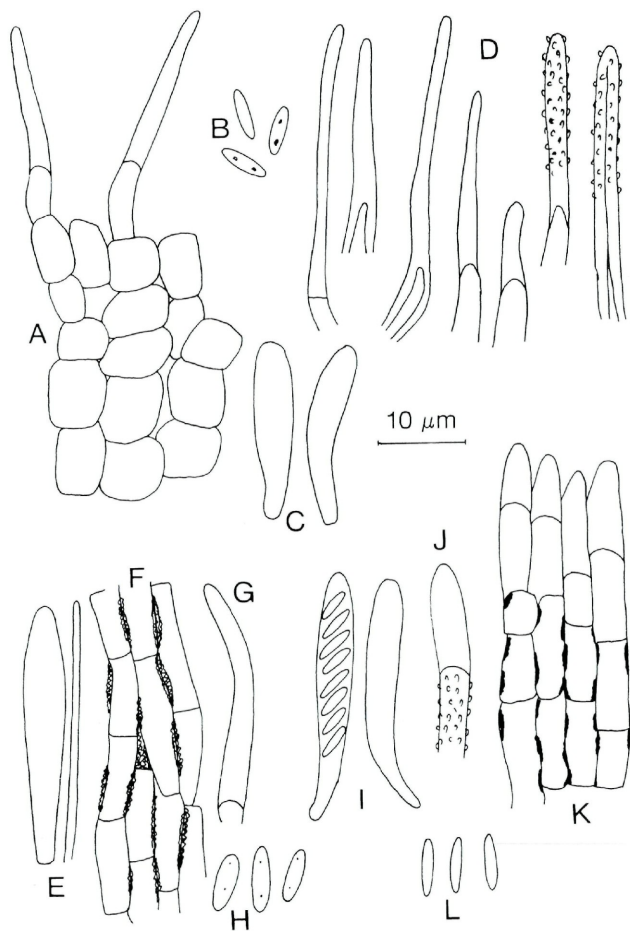


Fig. 2. - A-D. *Hyalopeziza pygmaea* (TAA-136844): A. Excipular cell with marginal hairs. - B. Spores. - C. Asci. - D. Differently shaped hairs, two of them showing granulation. - E-H. *Hyalopeziza millepunctata* (RG 6681): E. Ascus and paraphysis. - F. Excipular cells. - G. Hair. - H. Spores. - I-L. *Hyalopeziza verna* (TAA-136847): I. Asci. - J. Hair showing granulated thin wall at its base. - K. Margin of ectal excipulum with hairs. - L. Spores.

This recently described species differs from another graminicolous species, *Hyalopeziza graminicola* (Raitv.) Raitv., in having completely white apothecia, hyaline excipulum and considerably shorter asci (20–25  $\mu\text{m}$  vs. 34–38  $\mu\text{m}$ ). The white forms of the common species *Hyalopeziza millepunctata* (Lib.) Raitv. which grow on a wide range of dicotyledonous hosts are similar in general appearance but differ in the wider and ellipsoid ascospores whereas the spores of *H. verna* are characteristically narrow-fusoid. The species is probably not rare but extremely difficult to find due to its minute size.

A remarkable feature of this species is that at least some of the hairs have a granulated wall in the lower thin-walled part, whereas the upper solid part is completely smooth. Such granulation, which is well seen in CR, has not been observed in other species of *Hyalopeziza* Fuckel with short solid hairs. Following the taxonomy of glassy-haired genera proposed by Korf & Kohn (1980) we propose the transfer of this species to the genus *Hyalopeziza*.

This is the first record of the species from Spain.

4. *Mollisia flava* Arendholz, Morphologisch-taxonomische Untersuchungen an blattbewohnenden Ascomyceten aus der Ordnung Helotiales p. 30. 1979. – Figs. 3: A–C.

**Apothecia** scattered to gregarious on both surfaces of the leaf blades, sometimes concentrated at the veins, substipitate to shortly stipitate. Disc 0.1–0.25(–0.5) mm in diameter, bright lemon yellow, not changing colour when dry. – **Receptacle** shallow saucer-shaped to discoid, concolorous with the hymenium, at the margin minutely downy. Stipe short, cylindrical, up to 1/2 of the diameter of the disc in length. Ectal excipulum consists of a few layers of hyaline, thin-walled to firm-walled, prismatic cells 9–14 x 4–7  $\mu\text{m}$ , remaining hyaline in MLZ; cell walls bearing short solid projections. – **Hairs** cylindrical to subclavate, thin-walled, hyaline, 17–26 x 2.3–4.6  $\mu\text{m}$ , bearing numerous finger-shaped branches at their upper part; branches up to 3.5  $\mu\text{m}$  long, solid when intact but losing the solidness in KOH. – **Asci** cylindric-clavate to clavate, 27–32 x 4–5  $\mu\text{m}$ , arising from simple septa, apical pore not blue in MLZ without KOH pretreatment but staining distinctly after KOH pretreatment, with irregularly biseriate to obliquely uniseriate arrangement of spores. – **Ascospores** ellipsoid, usually slightly inequilateral, hyaline, aseptate, eguttulate, 4.8–7.2 x 1.6  $\mu\text{m}$ . – **Paraphyses** filiform, sparsely branching, obtuse to very slightly swollen, not exceeding the asci, 1.2–1.5  $\mu\text{m}$ , apically up to 2  $\mu\text{m}$  in diameter.

**Specimens examined.** – On fallen leaves of *Populus nigra* L. and *Salix* sp., Anquela del Ducado, Guadalajara, Spain, 1160 m a.s.l., 24. 10. 1991,

R. Galán & A. Raitviir (RG-6658, TAA-136845); on fallen leaves of *Populus* sp., between Naharros and Robledo de Corpes, Guadalajara, 18. 11. 1991, M. de la Cruz (RG-6713).

The species was fruiting abundantly on fallen leaves of poplar and willow in Anquela del Ducado. A part of the material was sent to

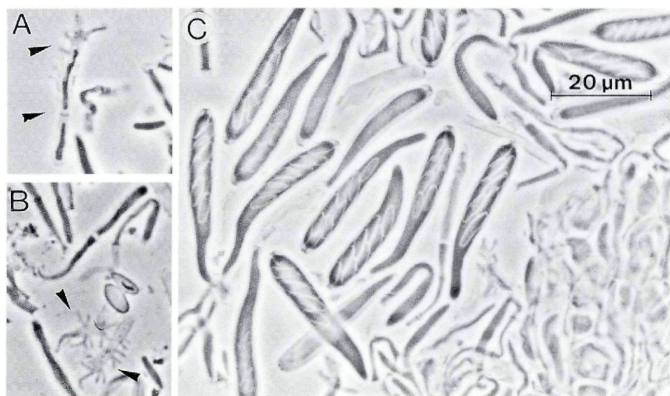


Fig. 3. – *Mollisia flava* (RG 6658): A–B. Hairs with characteristic finger-shaped branches. – C. Asci with spores and part of ectal excipulum.

Dr. Arendholz, who kindly confirmed our identification (Arendholz, pers. comm.).

Arendholz (1979) has described the ascus pore of *Mollisia flava* as inamyloid but after KOH pretreatment the ascus pore stains deep blue in MLZ.

This is the first record of the species from Spain.

5. *Mollisia minutissima* Raitv. & Galán sp. nov. – Figs. 4: A–C, 5: A–D.

Apothecia gregaria, subsessilia vel substipitata, 0.2 mm diametro, cupulata vel patelliformia, margine puberula, 0.2 mm diametro, albida vel pallide cremea, sicca ochracea. Excipulum ectale e cellulis prismaticis hyalinis compositum. Pili cylindracei vel subclavati, apicibus ramosis, 20–40 x 3–5 µm. Asci cylindraceo-clavati vel clavati, octospori, in basi non uncinati, poro iodo non coerulescenti, 38–50 x 4.5–6.5 µm. Sporae ellipsoideae, hyalinae, aseptatae, 6–7.5 x 2–2.7 µm. Paraphyses filiformes, ascos non superantes, 1.2–1.5 µm, apicibus 2 µm in diametro.

Ad ramos siccis *Cisti ladaniferi* L.



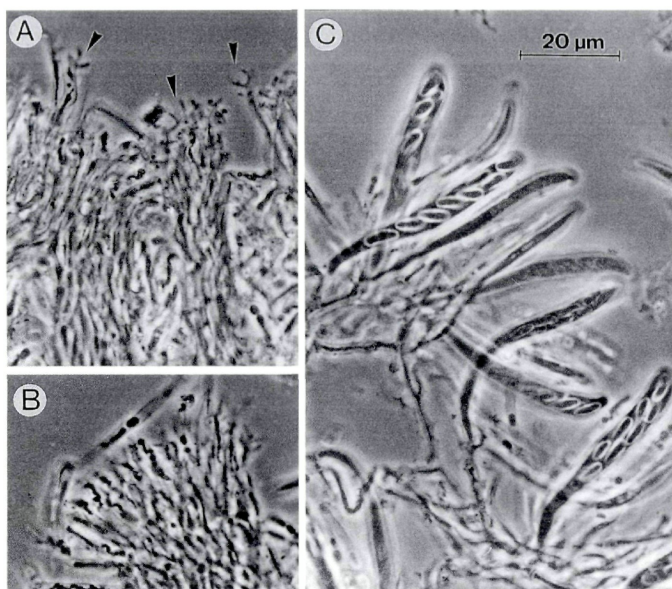


Fig. 4. – *Mollisia minutissima* (TAA-136846): A–B. Margin of the excipulum with branched hairs. – C. Portion of squashed hymenium showing asci with spores.

Holotypus: ad ramum dejectum *Cisti ladaniferi* L., in interseccione viarum Tamajón-Puebla de Valles collectus, Guadalajara, Hispania, 3. 12. 1991, A. Raitviir & R. Galán (TAA-136846).

**E t y m o l o g y .** – Referring to the extremely minute size of the apothecia.

**A p o t h e c i a** gregarious, sessile to substipitate, very small. Disc up to 0.2 mm in diameter, whitish to pale cream-coloured, ochraceous when dry. – **R e c e p t a c l e** shallow cupulate to saucer-shaped, concolorous with the hymenium, at the margin minutely downy. Ectal excipulum consists of a few layers of hyaline, thin-walled to firm-walled, prismatic cells 7.5–15 x 3.5–5.5 µm, remaining hyaline in MLZ; cell walls bearing some sparse, short, solid projections. – **H a i r s** cylindrical to subclavate, thin-walled, hyaline, 20–40 x 3–5 µm, bearing numerous finger-shaped branches at their upper part;

branches up to 3.5  $\mu\text{m}$  long, solid when intact but losing the solidness in KOH. – A s c i cylindric-clavate to clavate, 38–50 x 4.5–6.5  $\mu\text{m}$ , arising from simple septa, apical pore not blue in MLZ, with irregularly biseriate to obliquely uniseriate arrangement of spores. – A s c o s p o r e s ellipsoid, usually slightly inequilateral, hyaline, aseptate, eguttulate, 6–7.5 x 2–2.7  $\mu\text{m}$ . – P a r a p h y s e s filiform, sparsely branching, obtuse to very slightly swollen, not exceeding the asci, 1.2–1.5  $\mu\text{m}$ , apically up to 2  $\mu\text{m}$  in diameter.

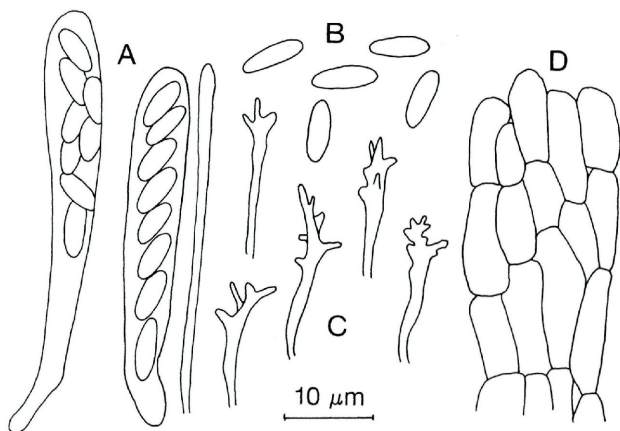


Fig. 5. – *Mollisia minutissima* (TAA-136846): A. Two asci with spores and a paraphysis. – B. Spores. – C. Hairs. D. – Excipular cells.

On decaying small branches of *Cistus ladanifer* L.

*Specimens examined.* – On a fallen thin branch of *Cistus ladanifer* L., junction of roads Tamajón-Puebla de Valles, Guadalajara, 3. 12. 1991, A. Raitviir & R. Galán (Holotype in TAA-136846); on cupule protecting scales of *Cistus ladanifer* L., Carrascosa de Henares, Guadalajara, 3. 1. 1992, M. de la Cruz (RG-6729).

This species differs from all described species of *Mollisia* Höhn. and *Dendrotrichoscypha* Svr. The foliicolous species *Mollisia uncinata* Arendholz & R. Sharma has longer asci and comparatively wide ellipsoid spores.

6. *Urceolella magnifica* Raitv. & Galán sp. nov. – Figs. 6: A–H, 7: A–E.

Apothecia substipitata, albida, hymenio pallide ochraceo griseo, 0.3–0.8 mm diametro, cupulata vel patelliformia, extus longe niveopilosa. Pili cylindracei, apici-

bus saepe minute angustatis, crassiter vel supracrassiter tunicati, aseptati, amyloidei pro parte , 100–120 x 4–5.6  $\mu\text{m}$ . Excipulum ectale ex cellulis prismaticis hyalinis tenuiter tunicatis compositum. Asci cylindraceo-clavati, plerumque tetraspori, raro octospori, uncinati, poro iodo coerulescenti praediti, 58–80 x 7–10  $\mu\text{m}$ . Sporae cylindraceo-ellipsoideae vel cylindraceo-clavatae, hyalinae, rariter aseptatae, 13–16.5(–18) x 2.8–4.5  $\mu\text{m}$ . Paraphyses filiformes, ascos non superantes, 2  $\mu\text{m}$  diametro. Urceolellae amphipilae similes, pilis et ascis longis, sporis brevis differt.

Ad folia sicca quercuum.

Holotypus: Ad folia sicca *Quercus fagineae* Lam., Anquela del Ducado, Guadalajara, Hispania, 1200 m a.s.l., 24. 10. 1991, A. Raitviir & R. Galán (TAA-136848); isotypus RG-6651.

**E t y m o l o g y .** – Referring to the outstanding size and appearance of the apothecia.

**A p o t h e c i a** solitary or scattered on the lower surface of the leaf blade, substipitate. Disc 0.3–0.8 mm in diameter, pale ochraceous-grayish. – **R e c e p t a c l e** shallow cupulate to saucer-shaped, white, densely covered by pure white, long, stiff to slightly flexuous hairs. Ectal excipulum well developed, consisting of a few layers of hyaline, thin-walled, prismatic cells, 11–24 x 7–14  $\mu\text{m}$ , staining deep red in CR. – **H a i r s** cylindrical to slightly tapering toward the apex, hyaline, smooth, 100–120 x 4–5.6  $\mu\text{m}$ , with thick to very thick, often unevenly thickened walls losing their refractiveness in KOH, staining deep blue in MLZ in some parts, remaining hyaline in CR, aseptate. – **A s c i** cylindric-clavate, 58–80 x 7–10  $\mu\text{m}$ , arising from croziers, apical pore blue in MLZ, generally 4-spored, occasionally 8-spored, with irregularly uni- to biserial arrangement of spores. – **A s c o s p o r e s** cylindric-ellipsoid to cylindric-clavate, often slightly inequilateral, hyaline, aseptate, 13–16.5(–18) x 2.8–4.5  $\mu\text{m}$ . – **P a r a p h y s e s** cylindrical with rounded tips, branching in their lower part, not exceeding the asci, 2  $\mu\text{m}$  in diameter.

On fallen leaves of *Quercus faginea* Lam.

**S p e c i m e n e x a m i n e d .** – On fallen leaves of *Quercus faginea* Lam., Anquela del Ducado, Guadalajara, 1200 m a.s.l., 24. 10. 1991, A. Raitviir & R. Galán (Holotype TAA-136848, isotype RG-6651).

The hair walls of this species show a very clearly defined amyloid reaction with quite large parts turning deep blue in MLZ. For this reason, *U. magnifica* is most closely related to *U. amphipila* Huhtinen which has amyloid hairs with a violaceous tinge in MLZ and typically 4-spored asci (Huhtinen, 1987b). Our species differs from *U. amphipila* in having longer hairs of only one type, longer asci and shorter spores, and in growing on fallen *Quercus* leaves instead of fronds of ferns. The apothecia of *U. magnifica* are comparatively large for the genus and very conspicuous in the field.

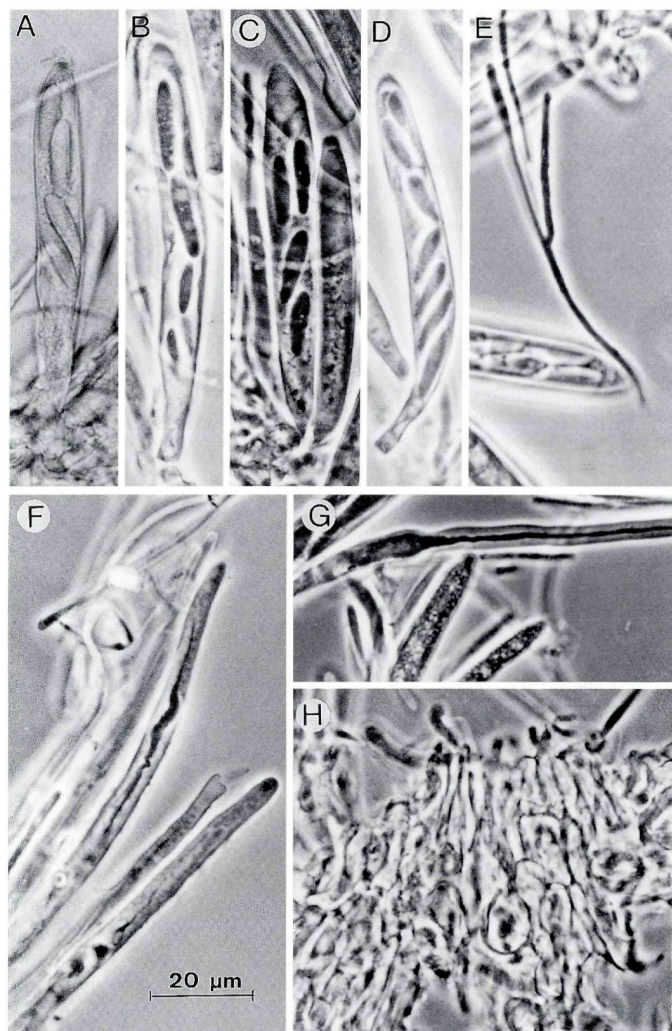


Fig. 6. - *Urceolella magnifica* (TAA-136848): A-C. 4-spored asci. - D. 8-spored ascus. - E. Branching paraphysis. - F-G. Hairs. - H. Part of ectal excipulum.

7. *Urceolella pinicola* Raitv. & Galán sp. nov. – Figs. 8: A–I, 9: A–E.

Apothecia subsessilia, albida, ad 0.2 mm diametro, turbinata, margine breviter pilosa. Pili conici vel cylindraceo-conici, supracrassiter tunicati, aseptati, 18–30 x 3–4  $\mu$ m. Excipulum ectale e cellulis prismaticis hyalinis tenuiter tunicatis compositum. Asci clavati, octospori, non uncinati sed ad basim bifurcati, poro iodo coeruleo-scenti praediti, 55–65 x 7–9  $\mu$ m. Sporae late ellipsoideae vel obovatae, hyalinae, rarer uniseptatae, 7–11 x 3–4  $\mu$ m. Paraphyses filiformes, ascos non superantes, 1–1.5  $\mu$ m in diametro. Urceolellae triseptatae similis, ascis longis e sporis late ellipsoideis aseptatis vel uniseptatis 7–11 x 3–4  $\mu$ m differt.

In conis *Pini halepensis* Miller.

Holotypus: In cono dejecto *Pini halepensis* Miller, via Cifuentes-Canredondo, 2 km extra Cifuentes, Guadalajara, Hispania, 17. 12. 1991, A. Raitviir (TAA-136849).

**E t y m o l o g y .** – Referring to the substrate of the fungus.

**A p o t h e c i a** scattered on upper surface of cone scales, substipitate. Disc 0.2 mm in diameter, pure white. – **R e c e p t a c l e** turbinate, concolorous with the hymenium, at the margin covered by short, stiff, white hairs. Ectal excipulum very thin, consisting of only one layer of hyaline, prismatic cells 8–12 x 3–4.5  $\mu$ m, having strong irregular glassy thickenings on walls when living material is mounted in water but becoming thin-walled in all reagents, staining deep red in CR, remaining hyaline in MLZ. – **H a i r s** conical to cylindrical-conical, hyaline, 18–30 x 3–4  $\mu$ m at the basis, tapering to 2.5  $\mu$ m at the apex, with very thick walls, up to 1.5  $\mu$ m, losing refractiveness in KOH, not staining in MLZ and CR, aseptate but with locally highly restricted lumen. – **A s c i** clavate, 55–65 x 7–9  $\mu$ m, arising from simple septa and often having a bifurcate basis due to downward bent hook, apical pore blue in MLZ, with irregularly biseriate arrangement of spores. – **A s c o s p o r e s** broadly ellipsoid to ovoid, hyaline, becoming rarely and tardily 1-septate, usually containing two big oil globules 7–11 x 3–4  $\mu$ m. – **P a r a p h y s e s** filiform, branching, obtuse, not exceeding the asci, 1–1.5  $\mu$ m in diameter.

**S p e c i m e n e x a m i n e d .** – On scales of a fallen cone of *Pinus halepensis* Miller, Cifuentes-Canredondo road, 2 km from Cifuentes, Guadalajara, 17. 12. 1991, A. Raitviir (Holotype in TAA-136849).

This species is close to *Urceolella triseptata*, having very delicate one-layered ectal excipulum and hairs that are similar in size and shape, but differs in its longer asci, completely different ascospores and absence of septa in hairs. Both species extend the known range of variation within the genus *Urceolella* Boud., because the morphology of their short hairs is quite different from that of a "typical" *Urceolella*. The histochemical reactions of hairs and ectal excipulum are, however, typical for the genus.

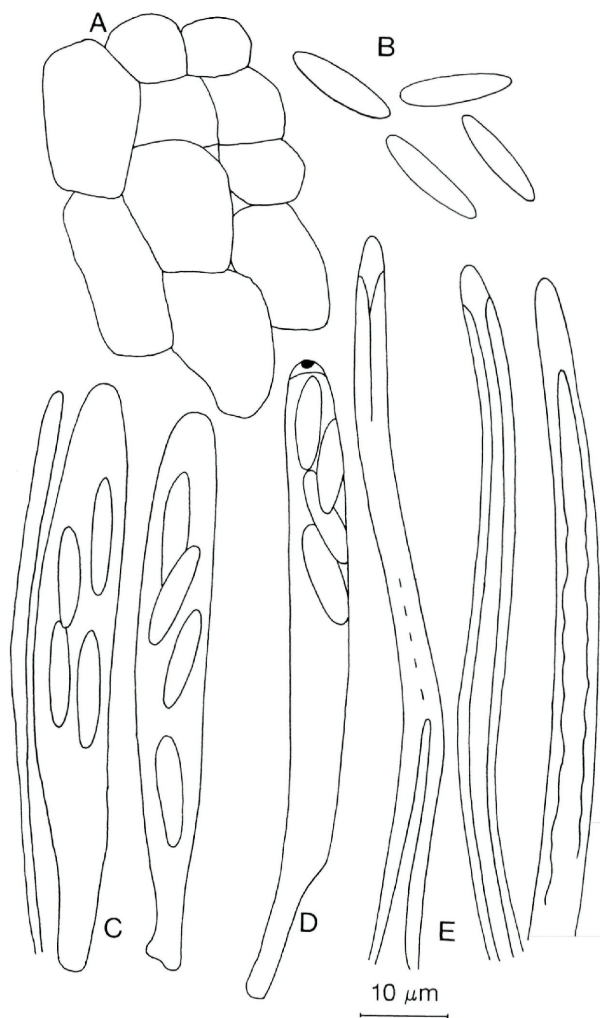


Fig. 7. - *Urceolella magnifica* (TAA-136848): A. Excipular cells. - B. Spores. - C. Two asci with spores and a paraphysis in water. - D. Ascus with spores in MLZ. - E. Hairs.

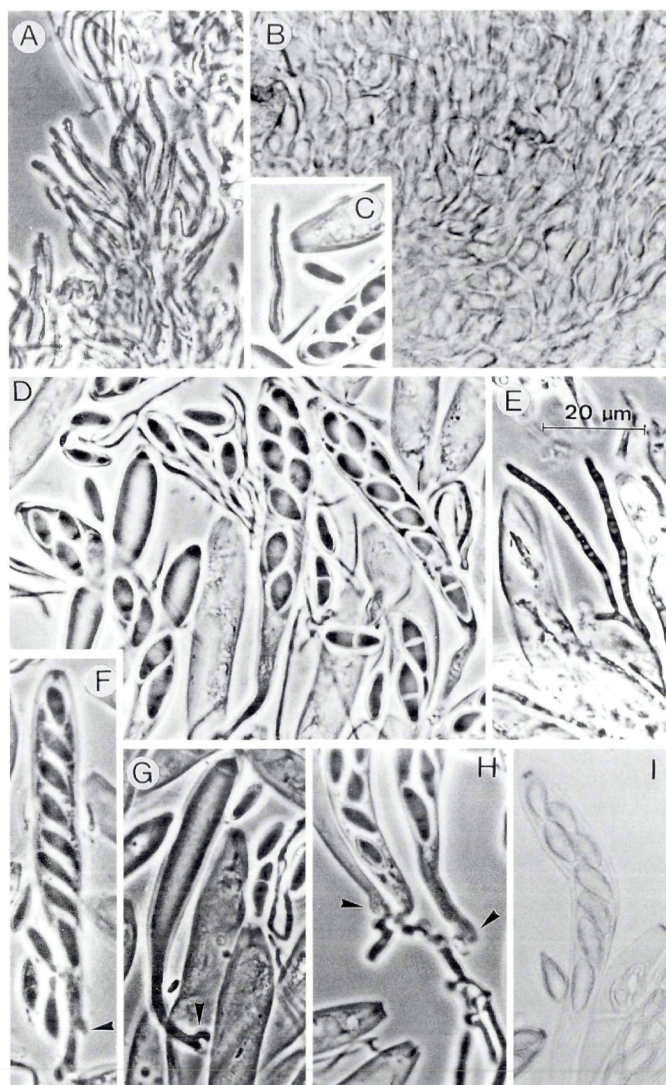


Fig. 8. – *Urceolella pinicola* (TAA-136849): A. Marginal hairs. – B. Ectal excipulum. – C. Hair. – D. Asci with spores. – E. Branching paraphysis. – F–H. Asci showing the characteristic basal hook. – I. Asci with apical pore blue in MLZ.

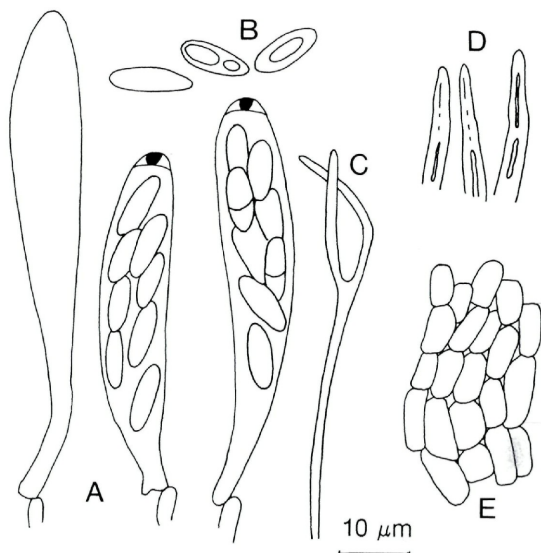


Fig. 9. - *Hyalopeziza pinicola* (TAA-136849): A. Ascus in water and two asci with spores in MLZ. - B. Spores. C - Branching paraphysis. - D. Hairs. - E. Excipular cells.

8. *Urceolella graddonii* Raitv. & Galán nom. nov. - Figs. 10: A-B.

= *Hyalotricha salicicola* Graddon, Trans. Br. mycol. Soc. 69: 262. 1977.

= *Urceolella salicicola* Raschle, Sydowia 39: 215. 1977.

Apothecia in small groups on the lower surface of the leaf blade, substipitate. Disc 0.2-0.3 mm in diameter, white. - Receptacle deeply cupulate to almost infundibuliform, urceolate and almost closed with enrolled margins when dry, pure snow-white, densely covered, by pure white, long, undulating hairs. Ectal excipulum well developed, consisting of a few layers of hyaline, thin-walled, prismatic cells 9-20 x 6-8 μm, staining deep red in CR. - Hairs cylindrical to slightly tapering toward the apex, flexuous, hyaline, smooth, 80-140 x 2.5-3.5 μm, with thick to very thick, more or less evenly thickened walls losing their refractiveness in KOH, remaining hyaline in CR and MLZ, aseptate. - Ascii cylindric-clavate, 27-34 x 4-4.5 μm arising from croziers, apical pore blue in MLZ, 8-spored, with irregularly uni- to biseriolate arrangement of spores. - Asco-



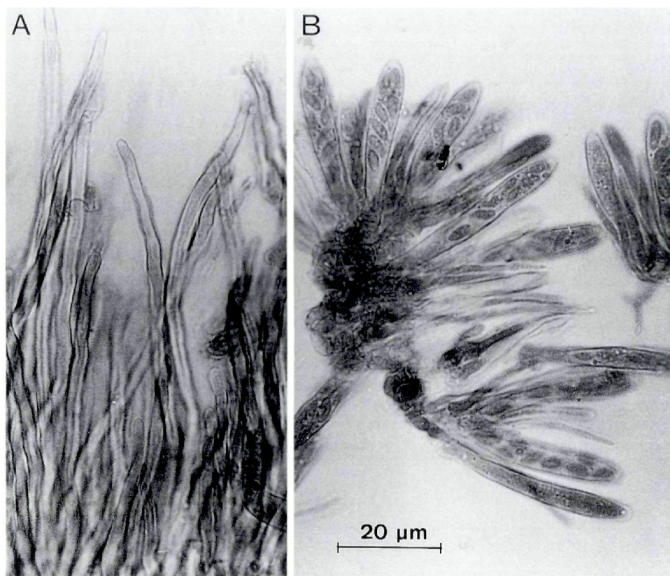


Fig. 10. – *Urceolella graddonii* (RG 6688): A. Hairs. – B. Portion of squashed hymenium.

spores cylindric-ellipsoid to cylindric-clavate, often slightly inequilateral, hyaline, aseptate,  $4\text{--}6 \times 1.5\text{--}2 \mu\text{m}$ . – Paraphyses cylindrical with rounded tips, branching in their lower part, not exceeding the asci,  $2 \mu\text{m}$  in diameter.

**Etymology.** – Named in the honour of the English mycologist W. D. Graddon.

**Specimen examined.** – On dead leaf of *Populus* sp. (?), Entre Naharros y Robledo de Corpes, Rio Cañamares, Guadalajara, 18. 11. 91, coll. M. de la Cruz (RG-6688).

Curiously enough, this species was published almost simultaneously in different genera and with the same epithet by Raschle (1977) and Graddon (1977). However, Graddon's paper was published 2 months earlier, and Graddon's name would have priority, but *Ur-*

*ceolella salicicola* (Graddon) Raitv. & Galán would be an illegitimate name because of the earlier homonym *Urceolella salicicola* Raschle. Therefore we propose a new name for this species.

*U. graddonii*, although not common, seems to be widely distributed and to grow on a wide range of hosts. The first author has collected it in Estonia. Baral & Krieglsteiner (1985) and Beyer (1991) have reported it from Germany on *Quercus*, *Salix* and *Betula* leaves.

9. *Urceolella triseptata* Raitv. & Galán sp. nov. – Figs. 11: A–E, 12: A–E.

Apothecia minutissima, subsessilia, albida, margine breviter pilosa. Pili subconici, supracrassiter tunicati, 1–4-septati, 20–40 x 3–5 µm. Excipulum ectale e cellulis prismaticis hyalinis tenuiter tunicatis compositum. Asci cylindraceo-clavati, octospori, poro iodo coerulescenti praediti, 40–50 x 5–9 µm. Ascospores cylindraceo-clavatae vel clavatae, hyalinae, triseptatae, 14–17 x 2.5–3.5 µm. Paraphyses filiformes, ascos non superantes, 1 µm diametro. Species ab aliis generis sporis magnis triseptatis differt. In cupulis dejectis *Quercus* crescit.

Holotypus: in cupula dejecta *Quercus rotundifoliae* Lam., Ermita de los Enebrales, Tamajón, Guadalajara, Hispania, 03. 12. 1991, A. Raitviir & R. Galán (TAA-136850).

**E t y m o l o g y .** – Referring to the 3-septate spores.

**A p o t h e c i a** gregarious, subsessile to substipitate, very small. Disc 0.2 mm in diameter, whitish to pale cream-coloured. – **R e c e p t a c l e** shallow cupulate to saucer-shaped, colorous with the hymenium, marginally covered by short, stiff, white hairs. Ectal excipulum very thin, consisting of only one layer of hyaline, thin-walled, prismatic cells 8–12 x 3–4.5 µm, staining deep red in CR, remaining hyaline in MLZ. – **H a i r s** conical to cylindric-conical, hyaline, 20–40 x 3–5 µm, with walls up to 2 µm thick, walls losing refractiveness in KOH, not staining in MLZ and CR, 1–4-septate with very thick septa. – **A s c i** cylindric-clavate, 40–50 x 5–9 µm, arising from simple septa, apical pore blue in MLZ, with irregularly biseriate to obliquely uniseriate arrangement of spores. – **A s c o s p o r e s** cylindric-clavate to clavate, hyaline, distinctly 3-septate, 14–17 x 2.5–3.5 µm. – **P a r a p h y s e s** slender filiform, branching, obtuse, not exceeding the asci, about 1 µm in diameter.

**S p e c i m e n e x a m i n e d .** – On a fallen cupule of *Quercus rotundifolia* Lam., Ermita de los Enebrales, Tamajón, Guadalajara, Spain, 03. 12. 1991, A. Raitviir & R. Galán (Holotype in TAA-136850).

The extremely minute apothecia of this species are very difficult to discover on the outer surface of fallen, decaying *Quercus* cupules.

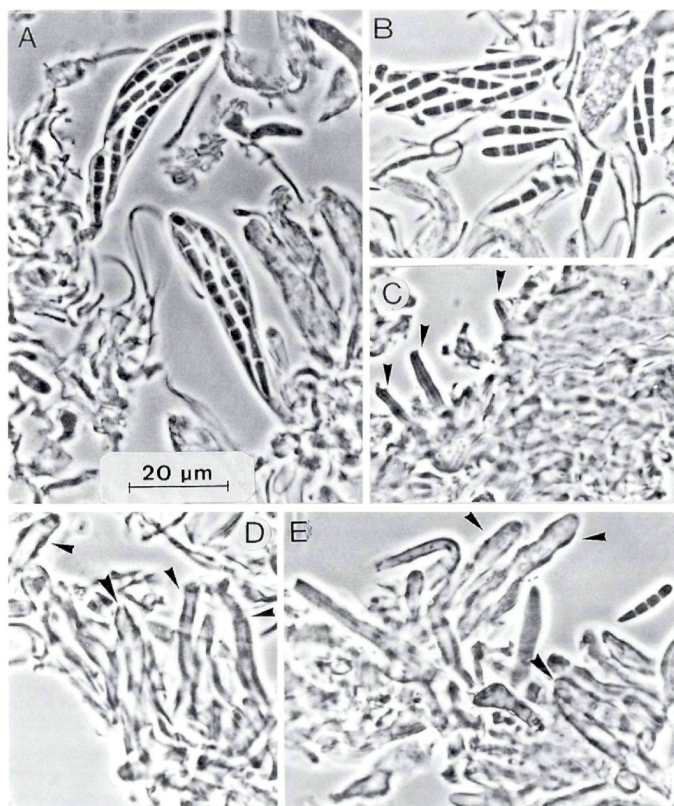


Fig. 11. – *Urceoella triseptata* (TAA-136850): A. Asci with spores. – B. Spores. – C. Part of ectal excipulum. – D–E. Hairs showing characteristic, unevenly thickened walls.

Macroscopically the species is distinct in its comparatively short but very stiff hairs of different length surrounding the apothecial margin. Microscopically it differs from all known glassy-haired species by its long, clavate, 3-septate spores.

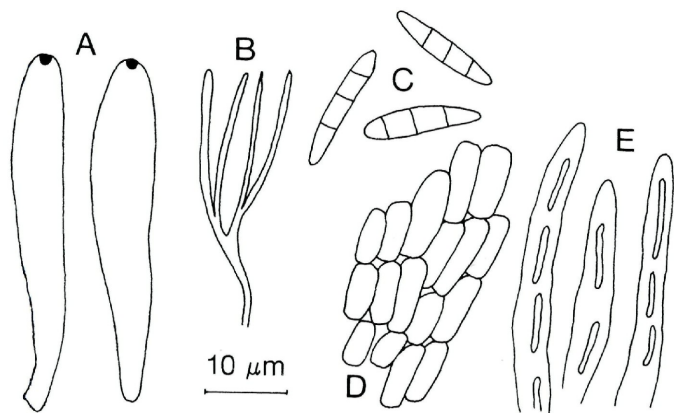


Fig. 12. - *Urceolella triseptata* (TAA-136850): A. Asci. - B. Branching paraphysis. - C. Spores. - D. Excipular cells. - E. Hairs.

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