

New or less known hyaloscyphaceous fungi from the Canadian timberline

Seppo Huhtinen

Herbarium, University of Turku, SF-20500 Turku, Finland

Four hyaloscyphaceous species, new to science or to North America, are treated. The material originates from the timberline areas in the Yukon and Northwest Territories of Canada. The circumscription of the genus *Ciliolarina* Svr. is discussed. *Ciliolarina neglecta* and *Ciliolarina laetifica* are described as new and *Ciliolarina pinicola* is proposed as new combination. A key to species of *Ciliolarina* is given. *Phialina carpinacea* is reported as new to the continent. *Hyaloscypha salicina* and *H. asperipila* are synonymized with *P. carpinacea*. *Psilocistella obsoleta* is redescribed and its delimitation from *P. lignatilis* is discussed. The typification of *Peziza acuum* var. *tenuissima* is discussed.

Additional keywords: Canada, Subarctic, fungi, Ascomycetes, Hyaloscyphaceae, *Ciliolarina*.

Knowledge on the distribution of hyaloscyphaceous species is still meagre. Species so far known only from a few localities in Europe could be easily collected on another continent. The material examined in this study was collected during a ten day excursion to Inuvik (North West Territories, Canada) and the Kluane Lake area (Yukon, Canada).

The material was studied following the methods described by Huhtinen (1990). The abbreviations and symbols also follow that study: Melzer's reagent (MLZ), cotton blue (CB), Congo red (CR), 1% IKI solution (LUG), length/width ratio (Q). Colours are given according to the code of Cailleux (1981).

Ciliolarina Svrcek

The genus *Ciliolarina* was erected by Svrcek (1977b) for species with small, externally brown apothecia bearing minute, thin-walled, cylindrical to clavate hairs. The excipular cells were described as pale brownish and elongated toward the margin, and the clavate paraphyses, together with basally deep brown encircled stipe, were also considered taxonomically important features. Due to the brownish excipulum, the placement into Hyaloscyphaceae was debated. Only *C. laricina* (Raitv.) Svr. was included in the genus.

Svrcek (1977b), however, included in *Ciliolarina* collections with white apothecia. He cited *Belonium biatorinum* Rehm sensu Velen. as a synonym of *Ciliolarina laricina* (Raitv.) Svr. The study of the material (PRM 148280), annotated by Svrcek, showed a hyaline, only basally brownish excipulum. Svrcek (1977b) also considered the material by Dennis (1955) as conspecific with *C. laricina*. Dennis (1955) described the apothecia as whitish with only a basally brownish stipe. The holotype collection of *Clavdisculum laricinum* Raitv.

bears only whitish apothecia. The excipulum is hyaline, except for the brown excipular cells at the stipe base. Therefore *Ciliolarina* must be circumscribed to include material with both hyaline and brown excipulum and hairs. Of the later additions to the genus (Svrcek, 1982, 1987), *C. ligniseda* (Velen.) Svr. is a white species while *C. corcontica* Svr. has coloured excipulum.

Diagnostic characters of *Ciliolarina* are the clavate hairs roughened by loose incrustation, the lack of dextrinoid reactions in the excipulum and hairs, the excipulum composed of regularly prismatic or clearly elongated cells, the tiny apothecia, the coniferous hosts, the cylindric-subclavate paraphyses, and the brownish basal excipulum. *Cistella* Qué. is somewhat similar but the hairs are either characterized by permanent, often cyanophilous spines, or in species with granulated hairs, similar to minute species of *Lachnum*, by stable incrustation. The roughness of hairs in *Ciliolarina* is best observed in MLZ, CR and water mounts which are not heavily tapped. After tapping or strong heating, e.g., in CB, the hairs are perfectly smooth.

Cistella pinicola (Henn. & Plott.) K. & L. Holm (1977) is clearly congeneric with *Ciliolarina*. A collection cited by Holm & Holm (1977) was studied (Kopperå, 25.8.1967 Holm & Holm 15b-67, UPS). Except for colour, hairs and excipulum are similar to the type collection of *Clavdisculum laricinum*, whereas differences can be found in hymenial characters. Holm & Holm (1977) arranged their material in three informal groups, mainly on the basis of increasing brown pigmentation. In *C. pinicola* s. str. parts of the excipulum are brown, in the "lowland form" and in the "mountain form" the excipulum is more or less uniformly brown. All groups have the same microscopic characters and ecology. A recent collection from Spain (Sigüenza, 20.11.1991 Raitviir 186, TAA, sub *Ciliolarina laricina*) on twig of *Pinus* represents the "lowland form" of Holm & Holm (1977).

The following new combination is thus proposed:

Ciliolarina pinicola (Henn. & Plöttner) Huhtinen comb. nov.

Basionym: *Niptera pinicola* Henn. & Plöttner, Abh. Bot. Ver. Brandenburg 41: 95. 1899.

Key to species of *Ciliolarina*

Colours and measures refer to herbarium material. [*C. ligniseda* (Velen.) Svr. and *C. corcontica* Svr. are known to the author only by their descriptions]

- 1 Spores over 2.5 µm wide, mostly over 7 µm long, septate or aseptate, asci wider than 7 µm 2
- 1 Spores smaller than 7 x 2.5 µm, aseptate, asci not wider than 7 µm 3
- 2 Spores up to 5 µm wide, asci MLZ⁻ even after KOH-pretreatment *C. pinicola*
- 2 Spores up to 3.5 µm wide, asci MLZ⁺, at least after KOH-pretreatment *C. laricina*
- 3 Apothecia whitish, excipular cells hyaline under the microscope 4

- 3 Apothecia bluish grey, excipular cells olivaceous under the microscope *C. corcontica*
- 4 Apothecia stipitate, up to 0.3 mm in diam, spores elliptic to cuneiform 5
- 4 Apothecia sessile, up to 1 mm in diam, spores elliptic to fusoid *C. ligniseda*
- 5 Spores 4.0–5.5 x 1.2–1.8 µm, asci MLZ⁺ *C. neglecta*
- 5 Spores 5.0–6.5 x 1.8–2.4 µm, asci MLZ⁻ *C. laetifica*

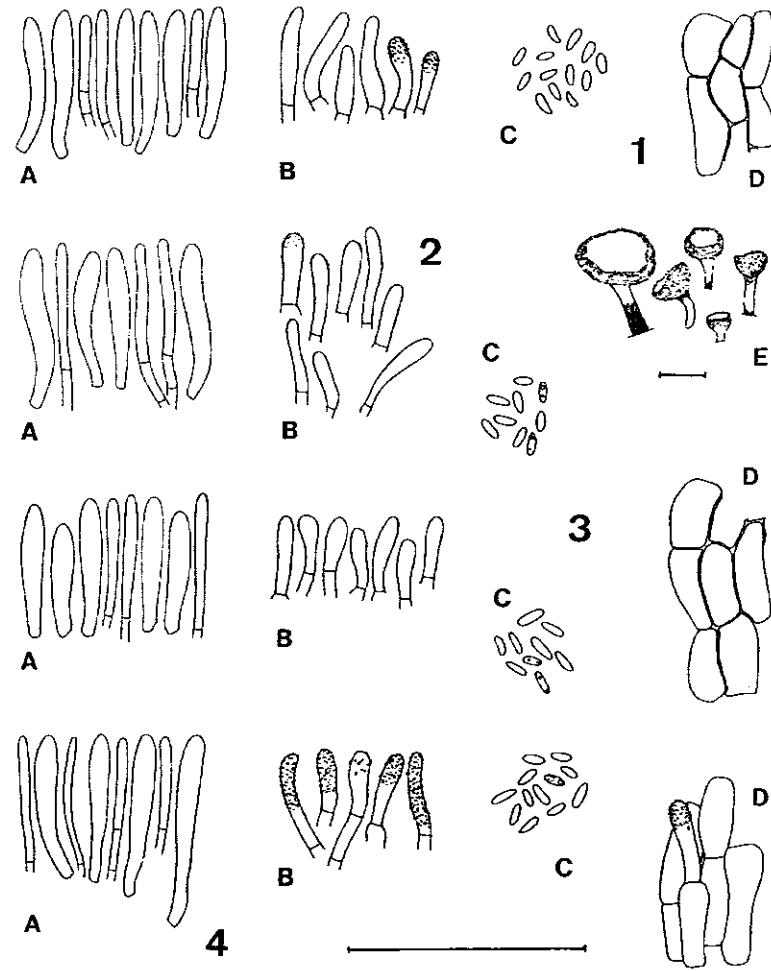
Ciliolarina neglecta Huhtinen, sp. nov. – Figs. 1–4.

Apothecia stipitata, cupulata ad 0.4 mm in diametro, alba, extus minute pilosa. Pili clavati, hyalini, tenuiter tunicati, aseptati, minute incrustati, 12–20 x 2.5–3.0 µm. Excipulum ectale cellulis prismaticis, hyalinis. Asci cylindraco-clavati, octospori, amyloidei, in basi uncinati, 28–35 x 4.0–5.2 µm. Sporae ellipsoideae vel cuneatae, unicellulares, 4.0–5.4 x 1.2–1.8 µm. Paraphyses cylindracoae vel in apice minute dilatatae, cellulis terminalibus 13–29 x 1.5–3.0 µm.

Holotype. – CANADA: Yukon, Whitehorse, Miles Canyon, on wood of *Picea*, 26.9.1987, Huhtinen 87/176 (TUR).

Apothecia gregarious, superficial, up to 0.4 mm in diam when fresh, 50–200(–300) µm in diam when dry, cupulate throughout development, stipitate on a stout to slender stipe, up to 100 µm long and 40 µm wide, more rarely gradually tapering to a narrow base. – Disc shallow to plano-convex when fresh and dry, bordered by an inconspicuous and only slightly raised, fimbriate margin when fresh, margin similar when dry, not covering much of the hymenium, in one population fleshy and strongly incurved. – Hair cover sparse and inconspicuous when fresh, snow-white and more conspicuous when dry. Colour white when fresh; dry apothecia varying within a population from very pale ochraceous to Straw (K79) to yellow, occasionally reddening to M39, disc occasionally also brighter yellow (K85). – Ectal excipulum of *textura prismatica*, cells on middle flanks varying among populations from 9–12 x 4–5 µm (\bar{x} = 10.3 x 4.2 µm, \bar{Q} = 2.5, n = 15) to more robust, 12.3–21.0 x 6–9 µm (\bar{x} = 16.7 x 7.0 µm, \bar{Q} = 2.4, n = 15). Walls in ectal parts thin to 0.6 µm thick on middle flanks, 0.8–1.0 µm at stipe base, hyaline, MLZ⁻, in one collection with few strongly amyloid areas. A medium brown hyphal cover frequent at stipe base. – Hairs 12–20 x 2.5–3.0 µm, cylindric to clavate, aseptate but merging gradually to the excipulum, straight to slightly bent. Apex equal or widening gradually to 4.0–4.5 µm. Wall thin, hyaline, dull, MLZ⁻, smooth to minutely granulated in untapped water mounts, MLZ and CR mounts, granulation mostly lost after tapping. – Asci 28–35 x 4.0–5.2 µm (\bar{x} = 31 x 4.6 µm, \bar{Q} = 6.8, n = 15) in MLZ, cylindric-clavate, eight-spored, with slightly conical apices. Apical pore MLZ⁺ without KOH pretreatment, varying between populations from red to blue in LUG. Ascal contents not turning intensely orange in MLZ, frequently and in-

tense red in LUG. Asci arising from croziers.— Spores 4.0–5.4 (–6.8) × 1.2–1.8 (–2.2) μm (\bar{x} = 4.7 × 1.6 μm, n = 120, \bar{Q} = 3.0), elliptic to cuneiform, aseptate, eguttulate or with a minute, light guttula at each end.— Paraphyses cylindrical to apically widened, not protruding clearly above the level of the asci, unpigmented, aguttulate, first dichotomous branches occurring below or at the level of ascus bases. Terminal cells 13–29 μm long, basally 1.5–2.8 μm wide, apically up to 3 μm wide.



Other material examined.— CANADA: Yukon, Kluane Lake, Outpost Mtn., on wood of *Picea glauca*, 19.9.1987, Huhtinen 87/119 (TUR); Outpost Mtn., close to the timberline at 1200 m, on wood of *P. glauca*, 19.9.1987, Huhtinen 87/122 (TUR).— Northwest Territories, MacKenzie District, Inuvik, close to the water tower, on cortex of *P. mariana*, 14.9.1984, Huhtinen 84/160 (TUR); same area, on cones of *P. mariana*, 15.9. and 23.9.1984, Huhtinen 84/172 and 84/225 (TUR); town area, cortex of *Picea mariana*, 15.9.1984, Huhtinen 84/174 (TUR); Inuvik area, Caribou Hills 10 km N of Reindeer Station, cortex of *Picea glauca* 22.9.1984, Huhtinen 84/214 (TUR).— FINLAND: Etelä-Häme, Tammela, Mustiala, on cones of *Pinus sylvestris*, 21.10.1868, Karsten (H 2695, syntype of *Peziza acuum* var. *tenuissima*).

Ciliolarina neglecta is distinguished by the stipitate apothecia, short, clavate, loosely encrusted hairs, and the small spores. Occurrence on conifers is also characteristic of the species. Under the microscope it is distinguished from the closely related *Ciliolarina laetifica* on the basis of the permanently MLZ⁻ asci and larger spores of the latter. *Pezizella ligniseda*, another closely related taxon, is described to possess sessile apothecia, large (40–50 × 5–6 μm) asci and fusoid spores (Velenovsky, 1934). Svrcek (1982) transferred this species to *Ciliolarina*.

The original diagnosis of *Cistella parksii* Cash agrees well with the present material (Cash, 1958). A study of part of the type material (27.1.1939 Parks 6190, BPI 727e) has shown, however, that this collection contains apothecia which only partly match the original diagnosis. The clavate–fusoid spores measured 7–15 × 1.8–3.0 μm and the asci were permanently MLZ⁻. The almost cylindrical marginal hairs were lacking the loose roughness typical of *Ciliolarina*. A study of the whole type material is needed to clarify the status of *Cistella parksii*.

Graddon (1977) described a somewhat similar species from *Betula* cortex in England, for which a new combination, *Cistella microspora* (Graddon) M.P. Sharma, was later proposed (Sharma, 1982). Although the species bears resemblance to *C. neglecta*, the thickened hair walls, illustrated by Graddon, clearly differentiate the two species.

The dextrinoid reaction of hairs and excipulum was totally lacking in all populations. One syntype of Karsten's *P. acuum* var. *tenuissima* showed, however, few deep amyloid areas in the excipulum, and in the type specimen of *Clavisdisculum laricinum* these blackish violet areas were common in one, KOH–pretreated apothecium. This feature parallels that reported in *Arachnopeziza* Fuckel and *Hyaloscypha* (Huhtinen, 1987a, 1990). The variable

Figs. 1–4.— *Ciliolarina neglecta*.— 1. Syntype of *Peziza acuum* var. *tenuissima*: A. Asci and paraphyses in MLZ; B. Marginal hairs, four in CB, two from untapped MLZ mount; C. Spores in CB; D. Ectal excipulum from middle flank area; E. Dry apothecia.— 2. Coll. SH 84/172: A. Asci and paraphyses in MLZ; B. Marginal hairs from untapped MLZ mount; C. Spores in MLZ.— 3. Coll. SH 84/225: A. Asci and paraphyses in CB; B. Marginal hairs in CB; C. Spores in CB; D. Ectal excipulum from middle flank area, in CB.— 4. Coll. SH 84/160: A. Asci and paraphyses in MLZ; B. Marginal hairs from untapped MLZ mount; C. Spores in MLZ; D. Ectal excipulum from middle flank area, in CB.— Scale bar: 50 μm, for apothecia 100 μm.

nature of this character diminishes its taxonomic value, because in, e.g., the common *H. aureliella* (Nyl.) Huht. many populations do not show these amyloid areas (Huhtinen, 1990). When present, the amyloid reaction may often be a useful means of recognition. None of the numerous mounts made from the Canadian material showed amyloid areas, although they were otherwise identical to Karsten's collection. The ascus pores in some populations were clearly red in LUG, in others they were deep blue. Recently, Baral (1987) discussed LUG reactions extensively, and he proposed the term hemiamyloid for the red reactions visible in LUG but suppressed in MLZ. The present species falls into the "rb" category (Baral, 1987: 414), in which the reaction varies between blue and red in a gradient of decreasing iodine concentration. In the present material, however, variation occurs between different populations, even when using the same iodine concentration. Further studies are needed to ascertain the extent of interpopulation variation.

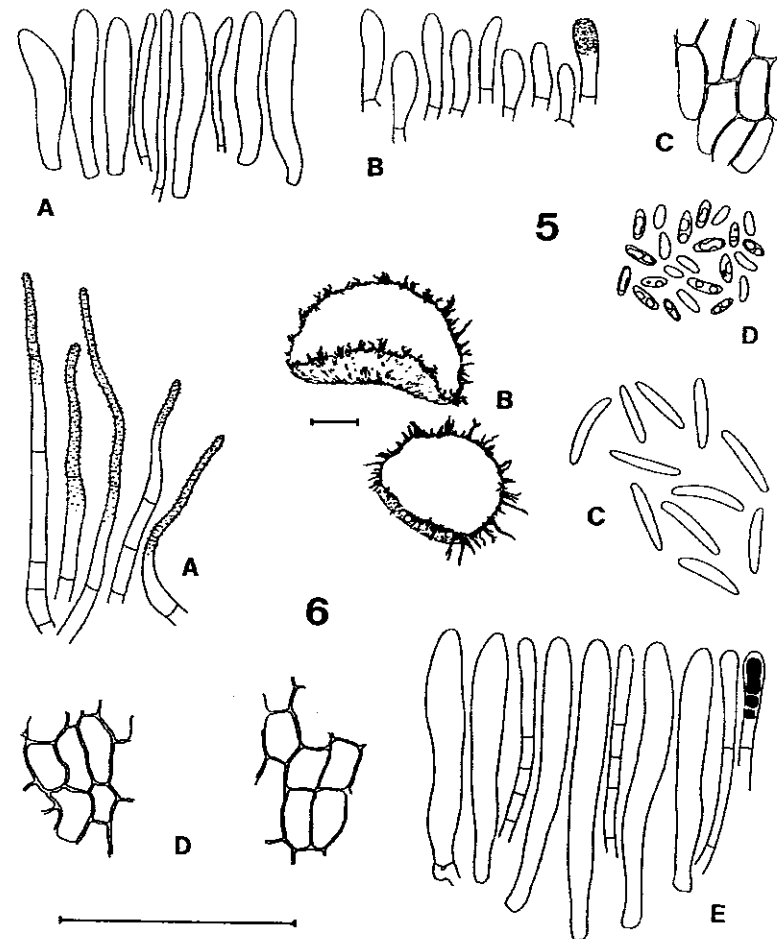
When describing *Peziza acuum* Alb. & Schw. var. *tenuissima*, Karsten (1869) cited more than one collection and there are three syntypes in his herbarium (H). Two of these (2693, 2694) contain apothecia conspecific with *Hamatocanthoscypha laricionis* (Velen.) Svr. The third syntypic collection (2695), from cones of *Pinus sylvestris*, contains numerous apothecia of *C. neglecta*. The original diagnosis was apparently based on collections 2693 and 2694 because both contain Karsten's original annotations from which the diagnosis was compiled. Collection 2695 bears only a small paper slip with two stipitate apothecia depicted and the text "hyalino alba." Furthermore, the original diagnosis described the apothecia as sessile, in accordance with the sessile and seemingly sessile nature of apothecia in 2693 and 2694, but contrasting with collection 2695. Hence, collection 2694 was selected as lectotype of *Peziza acuum* var. *tenuissima* (Huhtinen, 1990).

Ciliolarina neglecta is a minute species easily observed and collected in northern Canada. The two other hyaloscyphaceous species dominating coniferous substrata in the boreal zone are *Hyaloscypha aureliella* and *Hamatocanthoscypha laricionis*. Both are very common in Finland; the former on wood of larger branches and trunks and the latter on twigs, cones and needles. *Ciliolarina neglecta* is clearly less frequent than *H. laricionis* and *H. aureliella* in Finland, whereas in Canadian timberline areas it may be dominant on coniferous substrata. At least at Inuvik and Kluane lakes, populations of *H. aureliella* were far less frequent than in central Finland and *H. laricionis* was not found at all.

Ciliolarina laetifica Huhtinen, sp. nov.— Fig. 5.

Ciliolarinae neglectae similis, sporis et ascis magnis, et ascis in iodo non coerulescentibus difert.

HOLOTYPE.— CANADA: N.W.T., McKenzie District, Inuvik, town area, by the road to water tower, grid 5383, on cortex of *Picea mariana*, 15.9.1984 Huhtinen 84/165 (TUR).



Figs. 5–6.— *Ciliolarina laetifica* and *Phialina carpinacea*.— 5. Holotype of *Ciliolarina laetifica*: A. asci and paraphyses in MLZ; B. Marginal hairs from CB and tapped MLZ mounts, one from untapped MLZ mount; C. Ectal excipulum from middle flank area, in CB; D. Spores in MLZ.— 6. *Phialina carpinacea*, coll. 84/173: A. Marginal hairs in CB and MLZ; B. Dry apothecia; C. Spores in MLZ; D. Ectal excipulum from middle flank area, in CB; E. Asci and paraphyses in MLZ.— Scale bar: 50 µm, for apothecia 100 µm.

This species is quite similar to *C. neglecta*. Macroscopically, it differs slightly by the subsessile, pale ochraceous apothecia, up to 250 µm wide when dry. Microscopical differences are restricted to spores, and asci. As in *C. neglecta*,

asci arise from croziers but are permanently MLZ⁻ even after KOH pretreatment. The spores measure 5.0–6.5 (–7.0) × 1.8–2.4 (–3.0) μm (90% confidence limits, dry material; \bar{x} = 5.6 × 2.1 μm (n = 100); mean Q-value, 2.7. The asci in *Ciliolarina laetifica* measure 30–39 (–43) × 5.6 (–6.5) μm (in MLZ); \bar{x} = 34.5 × 5.6 μm (n = 30).

The shape and size distributions in these two taxa are quite different and overlap only slightly. The material is, however, restricted to one collection. This collection was made at Inuvik at the same collecting site as *C. neglecta*.

A possible synonym, *Cistella conorum*, was described by Raitviir (1978) from fallen cones of *Picea abies* in Estonia. The diagnosis fits the present material rather well. The apothecia are, however, broadly sessile and the paraphyses have rather acute apices. The asci in *C. conorum* have MLZ⁺ apical pores. The spore size reported by Raitviir (6–8 × 1.5–2.2 μm) refers to dry material (A. Raitviir, pers. comm.).

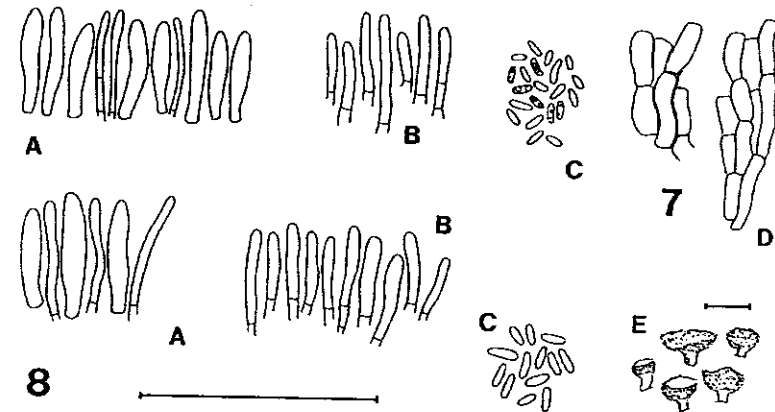
Phialina carpinacea (Velen.) Raitv. & Galán, Mycotaxon 44: 33. 1992.— Fig. 6.

- = *Hyaloscypha carpinacea* Velen., Monogr. Discom. Bohem.: 273. 1934. Lectotype (selected by Svrcek, Ceská Mykol. 39:206. 1985): [Czech Republic] Bohemia, Mnichovice, Miresovice, in foliis carpineis, 16.IX.1929 Velenovsky (PRM 151167, examined).
- = *Hyaloscypha salicina* Velen., Monogr. Discom. Bohem.: 284. 1934. Lectotype (selected by Svrcek, Ceská Mykol. 39:216. 1985): [Czech Republic] Bohemia, Radotin in foliis carpineis IX.1925 Velenovsky (PRM 150903, examined).
- = *Hyaloscypha asperipila* Svr., Ceská Mykol. 31: 9. 1977.
= *Calycellina asperipila* (Svr.) Baral, Beitr. zur Kenntnis Pilze Mitteleur. 5: 228. 1989. Holotype (designated when published): [Czech Republic] Bohemia, Trebon, in alneto paludoso "U Jindru" dicto, 10.XI.1956 Kubicka (PRM 799375, not examined).

Apothecia gregarious, superficial, up to 500 μm diam when dry, cupulate, appressed to the substrate and appearing discoid when aged, borne on a short, stout stipe or narrowly and centrally sessile. Disc plane to convex when dry, bordered by a thin margin of sparse hairs, not clearly raised above the hymenium, not incurved. Hair cover is relatively dense, whitish when dry. Colour light yellow (K85) over disc, whitish on flanks due to the hair cover.— Ectal excipulum of *textura prismatica*, cells on middle flanks regularly to broadly prismatic, 9–19 × 5.3–7.6 μm, \bar{x} = 12.8 × 6.3 μm (n = 20), \bar{Q} = 2.0, becoming smaller toward the margin. Walls in ectal parts 0.6–0.8 μm thick, hyaline, MLZ⁻.— Hairs 30–100 × 3–4 μm, almost cylindrical, one- to three-septate, but merging gradually with the excipulum, flexuose, frequently containing a yellow pigment persistent in MLZ, CB and KOH. Apex tapering gradually to 1–2 μm. Walls thin, hyaline, dull, MLZ⁻, in the upper half densely covered with firmly attached warts that are hyaline, often somewhat rod-like, MLZ⁻, CB⁻.— Asci 51–63 × 6.0–7.8 μm, cylindrical-clavate, eight-spored, with conical apex. Apical pore MLZ⁺ without KOH pretreatment, deep blue in LUG. Ascal contents not turning intensely orange in MLZ, infre-

quently intensely red in LUG. Asci arising from croziers.— Spores 12.0–15.3 × 2.0–2.6 μm, elongate-fusoid, straight to slightly bent, aseptate, with light guttulae in water, aguttulate in MLZ, CB⁻.— Paraphyses cylindrical to apically widened, not protruding clearly above the level of the asci, frequently with yellow pigment, densely septate. Terminal cells 10–35 μm long, basally 1.5–2.8 μm wide, apically 2.5–4.8 μm wide.

Material examined.— CANADA: Northwest Territories, MacKenzie District, Inuvik, town area at 5383, on leaves of *Alnus crispa*, 15.IX.1984, Huhtinen 84/173 (TUR).



Figs 7–8.— *Psilocistella obsolete* and *P. lignatilis*.— 7. *Psilocistella obsolete*, coll. 84/170: A. Asci and paraphyses in MLZ; B. Marginal hairs in CB; C. Spores in CB and MLZ; D. Ectal excipulum from the margin (left) and middle flank area (right); E. Dry apothecia.— 8. *P. lignatilis*, holotype: A. Asci and paraphyses in CB; B. Marginal hairs in CB; C. Spores in CB.— Scale bar: 50 μm, for apothecia 100 μm.

This species has been reported from Czech Republic, Germany and Spain (Velenovsky, 1934; Svrcek, 1977a, as *Hyaloscypha asperipila*; Galán & Raitviir, 1992). Great Britain (Wotton-under-Edge, 10.11.1948 Dennis, K, examined) and Poland (Wielkopolski Natn. Park, 6.11.1987 Fiebrich, WPN, examined) can also be added to the list of countries in which this fungus has been collected. *P. carpinacea* is easily recognized by the clearly roughened hairs, yellow pigment, elongate-fusoid spores and the foliicolous habit. The identity of *Hyaloscypha carpinacea*, *H. salicina* and *H. asperipila* is confirmed by the study of the lectotypes of the first two and a paratype (from Germany) of the latter. The conspecificity of Velenovsky's taxa has also been indicated by Svrcek (1985).

The taxonomic position of *H. carpinacea* is problematic. It was excluded from *Hyaloscypha* by Huhtinen (1990). The presence of yellow pigment, the nature of hair roughness, the fusoid spores, and the ecology of this fungus are discriminating characters. Velenovsky's (1934) illustrations show too acute hairs and spores, but otherwise his description is accurate. The hairs often merge gradually with the excipulum. Hair length and septation has been interpreted variously. Svrcek (1977a) reported the hairs to be aseptate, but they are septate also in their protruding, free part. The species is closely related to *Calycellina* and *Phialina* by its ecology, pigmentation, spores and paraphyses. The taxonomic significance of the prominent and stabile warts is unclear. Since the hairs in *Phialina* are tapering and they may be minutely roughened, I support the generic placement proposed by Galán & Raitviir (1992).

P. carpinacea is a foliicolous species, so far reported growing on leaves of *Carpinus* and *Alnus* (Velenovsky, 1934; Svrcek, 1977a, 1985) and now from *Quercus* (from Poland) and *Corylus* (from England). The species is rarely collected in comparison to many more inconspicuous foliicolous species.

Psilocistella obsoleta (Velen.) Svr., Česká Mykol. 31:196. 1977.— Fig. 7.

= *Hyaloscypha priapi* Velen. var. *obsoleta* Velen., Monogr. Discom. Bohem.: 272. 1934.
Holotype (the only specimen mentioned): [Czech Republic] Bohemia, Jevany, *Fagus*, 10.X.1025 Velenovsky (PRM 150906, examined).

Apothecia gregarious, superficial, up to 100 µm in diam when dry, cupulate throughout development, with a gradually tapering to shortly stipitate base. Disc plane when dry, bordered by an inconspicuous, slightly raised and incurved margin when dry. Hair cover dense, white. Dry apothecia pale yellowish brown.— Ectal excipulum of *textura prismatica*, cells on middle flanks varying from 7–11 x 3.0–4.5 µm to 11–18 x 3.2–4.0 µm. Walls in ectal parts thin to 0.4 µm thick, hyaline, MLZ⁻, at the base often slightly brownish, with an irregular, golden brown exudate on the walls.— Hairs merging gradually with the excipulum, terminal cells 12–23 x 2.0–2.5 µm, cylindrical to somewhat clavate, straight. Wall thin, hyaline, dull, MLZ⁻, smooth.— Ascii 18–24 x 3.5–4.4 (–4.9) µm (in MLZ), \bar{x} = 20.4 x 4.0 µm (n=20), cylindrical-clavate, eight-spored, with slightly conical apex. Apical pore MLZ⁺ without KOH pretreatment, deep blue in LUG. Ascus contents not turning deep orange in MLZ, frequently and intensely red in LUG. Ascii arising from croziers.— Spores 3.2–5.0 x 1.0–1.6 µm, elliptic to subfusoid, aseptate, often with two light guttula, hyaline, walls infrequently becoming golden brown after being discharged.— Paraphyses cylindrical to apically slightly widened, not protruding clearly above the level of the asci, unpigmented, eguttulate, first dichotomous branches occurring at the level of ascus bases. Terminal cells 13–22 x 1.0–1.8 µm.

Material examined.— CANADA: Northwest Territories, MacKenzie District, Inuvik, town area, on inner side of *Alnus* cortex, 15.IX.1984 Huhtinen 84/170 (TUR).

Psilocistella obsoleta was recently reported from Svalbard (Huhtinen, 1987b). The present collection broadens the distribution for this species. The Svalbard collection is characterized by the spores that become typically brown still inside the asci. In the material examined here only some discharged spores become brown: the coloration is probably due to resinous exudates on the excipulum which apparently attached to some of the discharged spores.

Delimitation of tiny, rarely collected *Psilocistella* species is somewhat difficult. Svrcek (1977b) has treated *P. obsoleta* and *P. lignatilis* (Velen.) Svr. as different species, the differences lying mainly in spore size and hair characteristics. Hairs in the latter species were depicted by Svrcek as aseptate and those of *P. obsoleta* multiseptate. After study of the holotypes of both species, I could not detect such a difference. It is almost impossible to delimit the hairs because they gradually merge with the excipulum. The terminal cells in both species are without marked differences (cf. Fig. 8 and Huhtinen, 1987b). As stated by Svrcek (1977b), however, the spore sizes are different. In the type specimen of *P. obsoleta* the spores measure 2.5–4.0 x 1.0–1.5 µm; those of *P. lignatilis*, on the other hand, are 4.0–6.0 (–6.6) x 1.3–1.8 µm. The two recent collections, however, make this difference untenable.

The hairs in *P. lignatilis* were stated to contain oily globules which were lacking in *P. obsoleta* (Svrcek, 1977b). These globules were also noted and depicted by Velenovsky (1934). Their presence may have taxonomic significance. In any case the two species are closely related, and the stability of the differentiating characters will only be solved after study of further collections.

Acknowledgments

I wish to express my sincere thanks to Drs G.A. Laursen, R.S. Currah, A. Raitviir, and O. Petrini for many valuable comments on the manuscript.

References

- Baral, H.O. (1987). Lugol's solution/IKI versus Melzer's reagent: Hemiamyloidity, a universal feature of the ascus wall.— *Mycotaxon* 29: 399–450.
Cailleux, A. (1981). "Code des couleurs des sols."
Cash, E.K. (1958). Some new discomycetes from California.— *Mycologia* 50: 642–656.
Dennis, R.W.G. (1955). A minute discomycete on larch twigs.— *Kew Bull.* 1955: 130.
Galán, R. & A. Raitviir (1992). Notes on Spanish leaf-inhabiting Hyaloscyphaceae.— *Mycotaxon* 44: 31–44.
Graddon, W.D. (1977). Some new discomycete species: 4.— *Trans. Br. mycol. Soc.* 69: 255–273.
Holm, K. & L. Holm (1977). Nordic junipericolous ascomycetes.— *Symb. Bot. Upsal.* 21: 1–70.
Huhtinen, S. (1987a). Taxonomic studies in the genera *Protounguicularia*, *Arachnopeziza* and *Dematiopsis*.— *Mycotaxon* 30: 9–28.
—— (1987b). New Svalbard fungi. In: Laursen, G.A., J.F. Ammirati & S.A. Redhead (eds.). *Arctic and Alpine Mycology 2*.— Plenum Press, New York and London: 123–151.
—— (1990). A monograph of *Hyaloscypha* and allied genera.— *Karstenia* 29: 45–252.

- & T. Niemelä (1985). Mycoflora of Poste-de-la-Baleine, northern Quebec. Introduction.— *Naturaliste Canad.* 112: 437–444.
- Karsten, P.A. (1869). *Monographia Pezizarum fennicarum.*— *Not. Sällsk. Fauna Flora Fenn.* 10: 101–206.
- Raitviir, A. (1978). K sistematike roda *Cistella* i blizkih k nemu taksonov. (In Russian).— *Scripta Mykol.* 8: 147–159.
- Sharma, M.P. (1982). Helotiales: New combinations and records.— *Nova Hedwigia* 36: 709–712.
- Svrcek, M. (1977a). New or less known Discomycetes. 4. Nové nebo méne známé diskomycety. 4.— *Ceská Mykol.* 31: 8–14.
- (1977b). New or less known Discomycetes. 6. Nové nebo méne známé diskomycety. 6.— *Ceská Mykol.* 31: 193–200.
- (1982). New or less known Discomycetes. 11. Nové nebo méne známé diskomycety. 11.— *Ceská Mykol.* 36: 146–153.
- (1985). Notes on the genus *Hyaloscypha* (Helotiales). *Poznamky o rodu Hyaloscypha* (Helotiales).— *Ceská Mykol.* 39: 205–219.
- (1987). New or less known Discomycetes. 15. Nové nebo méne známé diskomycety. 15.— *Ceská Mykol.* 41: 16–25.
- Velenovsky, J. (1934). *Monographia Discomycetum Bohemiae*, 436 pp.

(Manuscript accepted 23rd February 1993)