

TYPE STUDIES ON ENTOLOMATOID SPECIES IN THE VELENOVSKÝ
HERBARIUM—II

Species described in the genera *Entoloma*,
Eccilia, and *Clitocybe*

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In this second report on types of entolomatoid fungi in the Velenovský Herbarium at Prague* (PRC and PRM) seven of Velenovský's new species in *Entoloma*, two in *Eccilia* and one described in *Clitocybe* are treated. For each taxon microscopical characters are given, followed by a consize discussion on its status.

SPECIES DESCRIBED IN ENTOLOMA

autumnale. — *Entoloma autumnale* Velen., Novitates mycologicae: 133. 1939. — Holotype: *J. Velenovský*, 24 Sept. 1934, Mnichovice, 'in colle' (PRM 153706). — Fig. 3.

The type consists of one specimen, badly damaged by a mould, with the following microscopical characters.—Spores $7.0-8.7 \times 6.5-7.6(-8.1) \mu\text{m}$, $Q=1.0-1.05-1.2$, (sub) isodiametrical 5–6–7-angled in side-view. Basidia $20-32 \times 7.5-11 \mu\text{m}$, 4-spored. Cystidia not found. Hymenophoral trama and pileitrama regular, made up of short, cylindrical or slightly inflated cells, $40-90(-130) \times 8-15 \mu\text{m}$. Covering layers impossible to study; no trace of any pigment seen.

The microscopical characters, particularly the small, isodiametrical spores, place *E. autumnale* in section *Entoloma*. The macroscopical characters given by Velenovský and the habitat agree in so many aspects with *E. prunuloides* (Fr.) Kumm. sensu Kühner (For a description see Kühner, 1977: 457–459) that I do not hesitate in placing *E. autumnale* Velen. among the synonyms of the latter.

involutum. — *Entoloma involutum* Velen., České Houby: 616. 1921. — Holotype: *J. Velenovský*, July 1918, Roblín (PRC; bottle 440a).—Fig. 1.

The type collection contains one well preserved specimen on liquid with the following characters.—Pileus about 23 mm broad, convex with central depression and strongly involute margin. Lamellae moderately crowded, ventricose with decurrent tooth. Stipe $20 \times 3 \text{ mm}$, straight, fibrillous. Spores $7.2-8.2(-8.7) \times 6.7-7.2 \mu\text{m}$, $Q=1.0-1.1-1.2$, $L-D=0-0.8-1.5 \mu\text{m}$, 5–6-angled in side-view, subisodiametrical. Basidia $30-42 \times 9.2-13.5 \mu\text{m}$, 2- rarely 1-spored.

* The first report appeared in Persoonia 10: 245–265(1979) and treated species described in *Nolanea*, *Leptonia*, and *Telamonia*.

Cystidia none. Hymenophoral trama regular, made up of broad, inflated cells, $110\text{--}220 \times 13\text{--}21 \mu\text{m}$, mixed up with $2\text{--}6 \mu\text{m}$ wide, cylindrical hyphae. Pileipellis difficult to study, most probably a thin cutis of up to $10 \mu\text{m}$ wide hyphae with minutely encrusted walls. Pileitrama regular, made up of cylindrical to inflated cells with minutely encrusted walls. Clamp-connections absent.

On account of the pigmentation and size and shape of the tramal elements *E. involutum* belongs to subgenus *Nolanea* in subsection *Cosmeoxonema*. It is closely related to *E. sericeoides* from which it differs by 2-spored basidia. *Entoloma bisporiger* (P. D. Orton) Noordeloos resembles *E. involutum* in habit and colour, but differs in having exclusively intracellular pigment and spores which are elongate in outline. Moreover the size and shape of the tramal elements make *E. bisporiger* a member of subgenus *Entoloma* (see Noordeloos, 1981a).

microsporium. — *Entoloma microsporium* Velen., Novitates mycologicae: 140. 1939. — Holotype: *J. Velenovský*, Oct. 1938, Mnichovice, Božkov, 'in dumeto Pruni spinosae' (PRM 153702).—Fig. 2.

The type collection consists of the remnants of one carpophore, riddled by mites, with the following microscopical characters.—Spores $4.7\text{--}7.0 \times 3.5\text{--}4.7 \mu\text{m}$, ellipsoid in outline, not angular but minutely warty. Basidia $20\text{--}26 \times 5\text{--}7 \mu\text{m}$, 4-spored. Cystidia or pseudocystidia not found. Clamp-connections seen at base of basidia.

Entoloma microsporium is certainly not a species of *Entoloma* but must be ranged into the genus *Rhodocybe* Maire on account of the minutely warty spores. The bad state of the type-collection does not permit a reliable determination, as important characters for that genus, such as the possible presence, shape and chemical characters of pseudocystidia, could not be verified.

olivaceum. — *Entoloma olivaceum* Velen., Novitates mycologicae: 140. 1939. — Holotype: *J. Velenovský*, 26 Sept. 1939, Mnichovice, 'ad limum piscinae' (PRM 153703).—Fig. 6.

The type-collection consists of one specimen in relatively good state with the following microscopical characters.—Spores $(8.7\text{--})9.3\text{--}10.4 \times (7.6\text{--})8.1\text{--}8.7(9.3) \mu\text{m}$, $Q = 1.07\text{--}1.17\text{--}1.30$, $L\text{--}D = 0.6\text{--}1.5\text{--}2.3 \mu\text{m}$, 6(7)-angled in side-view. Basidia $27\text{--}42 \times 8\text{--}12.5 \mu\text{m}$, 4-spored. Cystidia none. Hymenophoral trama regular, made up of inflated or cylindrical hyphae with cells $40\text{--}140 \times 8\text{--}17 \mu\text{m}$. Pileipellis difficult to study, probably the suprapellis damaged, subpellis a compact cutis of inflated cells, up to $120 \mu\text{m}$ long, $15\text{--}22 \mu\text{m}$ wide with brown intracellular pigment. Clamp-connections observed in hymenium and hymenophoral trama.

Entoloma olivaceum belongs to section *Rhodopolii* and is characterised by its olivaceous pileus and white stipe. Other *Entoloma* species with olivaceous pilei, such as *E. versatilis*, *E. ambrosium*, *E. icterinum*, and *E. chlorophyllum* (all belonging to other subgenera) differ among many other things in their distinctly coloured stipe.

pomaceum. — *Entoloma pomaceum* Velen., Novitates mycologicae: 139. 1939. — Holotype: *J. Velenovský*, 30 Sept. 1938, Všemimy (PRM 153707).—Fig. 7.

The type-collection consists of one specimen with the following characters.—Pileus 20 mm broad. Stipe $30 \times 2\text{--}3$ mm. Spores $9.3\text{--}11.5 \times 8.1\text{--}10.4 \mu\text{m}$, $Q = 1.0\text{--}1.15\text{--}1.3$, $L\text{--}D = 0\text{--}1.5\text{--}2.4 \mu\text{m}$, (4)5-6-angled in side-view with blunt base. Basidia $39\text{--}46 \times 9\text{--}11 \mu\text{m}$, 4-spored. Cystidia none. Hymenophoral trama regular, made up of cylindrical cells, $65\text{--}120 \times 5\text{--}11.5 \mu\text{m}$. Pileipellis impossible to reconstruct. Pileitrama regular, made up of cylindrical to slightly inflated cells, up to $140 \mu\text{m}$ long and $5\text{--}17 \mu\text{m}$ wide, with intracellular pigment. Clamp-connections observed in the hymenium.

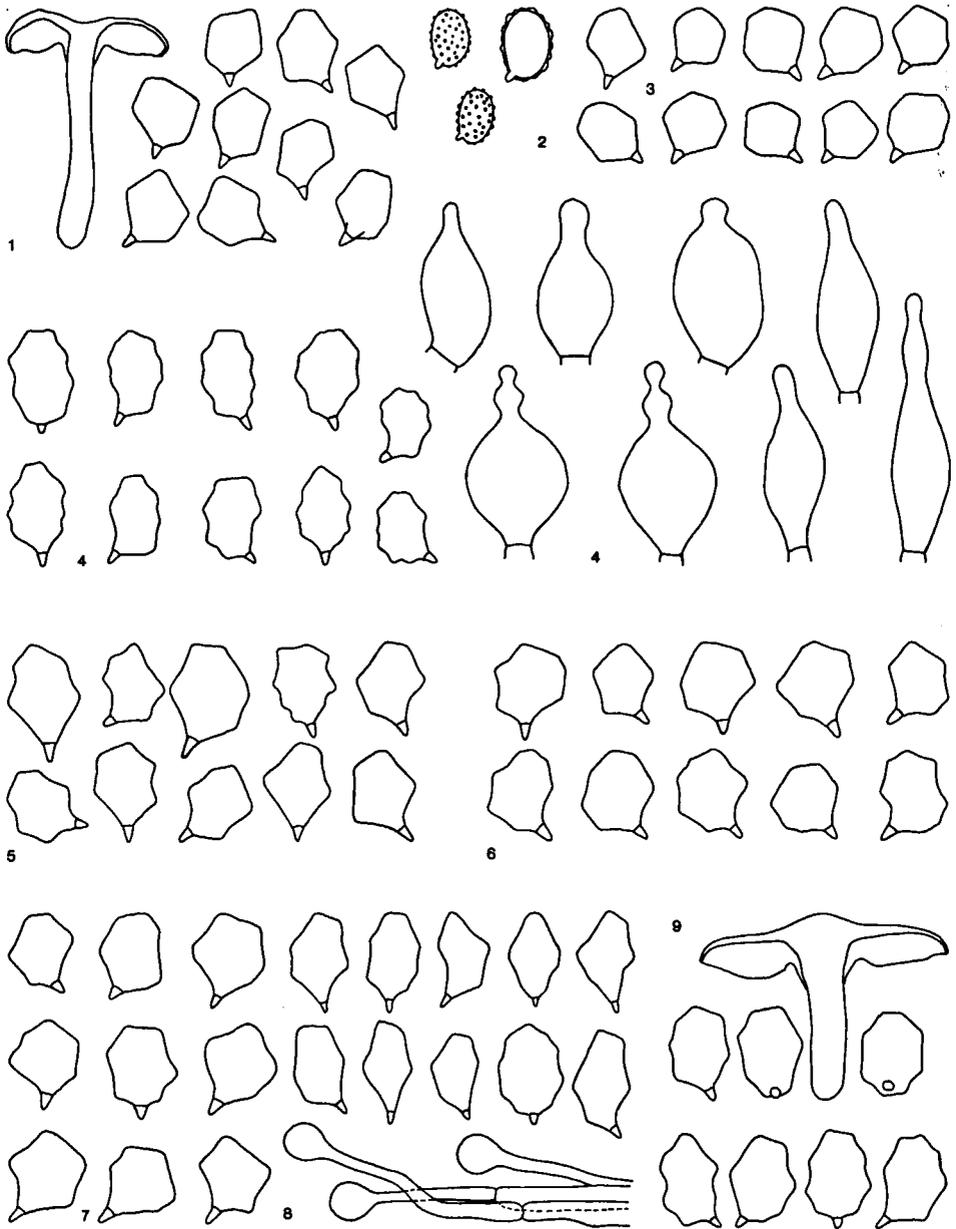


Fig. 1. *Entoloma involutum*, habit and spores. — Fig. 2. *Entoloma microsporum*, spores. — Fig. 3. *Entoloma autumnale*, spores. — Fig. 4. *Entoloma rostellatum*, spores and cheilocystidia. — Fig. 5. *Entoloma rigidulum*, spores. — Fig. 6. *Entoloma olivaceum*, spores. — Fig. 7. *Entoloma pomaceum*, spores. — Fig. 8. *Eccilia nivea*, spores and hairs of pileus. — Fig. 9. *Clitocybe opaca*, habit and spores (habit $\times 1$; spores $\times 1000$; cheilocystidia and hairs of pileus $\times 670$).

Entoloma pomaceum resembles *E. ameides* in habit, pale greyish pileus, strong aromatical smell (Velenovský compared the smell with that of apples) and also more or less in size and shape of the spores. However, the pileus is said to be not hygrophanous and the colour of the stipe to turn into blue. Therefore *E. pomaceum* may key out in section *Entoloma*, close to *E. madidum* and *E. prunuloides*, which is supported by the size and the shape of the tramal elements. For the time being the status of this taxon remains obscure to me.

pustulatum. — *Entoloma pustulatum* Velen. in *Mykologia* 5: 113. 1928. — No type material is left at PRC, nor at PRM.

rigidulum. — *Entoloma rigidulum* Velen., *Novitates mycologicae*: 139. 1939. — Holotype: *J. Velenovský*, July 1937, Mnichovice, 'noster hortus' (PRM 153709).—Fig. 5.

The type-collection contains two specimens, partly damaged by a mould, with the following microscopical characters.—Spores (8.7–)9.2–10.4(–11.5) × 7.6–8.7 μm, Q = 1.1–1.2–1.3, L–D = 1.2–1.5–2.7 μm, pronouncedly 6-angled in side-view, very variable. Basidia 26–40 × 7.5–10 μm, very difficult to reinflate, probably all 4-spored. Cystidia not seen. Hymenophoral trama regular, made up of cylindrical cells, 70–200 × 8–15 μm. Covering layers damaged. Pigment probably intracellular. Clamp-connections present.

The umbilicate pileus and the rigid, subcartilagineous flesh remind me of *E. politum* and related species. Particularly the size and shape of the spores are very similar to *E. caccabus*. However, according to Velenovský *E. rigidulum* does not have a hygrophanous pileus and the stipe is said to be white and striate. The size and shape of the spores of *E. rigidulum* make a close relationship with species from the *E. rhodopolium*–*E. nidorosum* complex improbable. It is not impossible that *E. rigidulum* is an older name for *E. caccabus*, but because of the condition of the type this cannot be proved.

rostellatum. — *Entoloma rostellatum* Velen., *Novitates mycologicae*: 139. 1939. — Holotype: *J. Velenovský*, 11 Nov. 1935, Mnichovice 'in Nardetis decliv. desertorum' (PRM 153704).—Fig. 4.

The type consists of fragments of two pilei in relatively good state with the following microscopical characters.—Spores 9.3–11.5(–12.7) × (6.5–)7.0–8.7(–9.3) μm, Q = (1.2–)1.3–1.45–1.5, L–D = 2.7–3.2–4.0 μm, rather irregularly nodulose-multiangled in side-view with blunt base (probably a basal facet). Basidia 32–45 × 11.5–14 μm, 2- and 4-spored. Cheilocystidia numerous, 30–54 × 6–25 × 3.5–7.5(–10) μm, versiform, slenderly lageniform to tibiiform or moniliform neck. Hymenophoral trama regular, made up of cylindrical to broadly inflated cells, 80–200 × 10–17 μm. Pileipellis an entangled layer of hyphae with numerous fusiform endcells, up to 250 μm long and 15–32 μm wide, often in bundles forming a transition to a trichodermium, with abundant, brown, intracellular pigment. Pileitrama regular, made up of cylindrical to inflated cells, 60–200 × 12–27 μm. Clamp-connections abundant in hymenium and also observed at some septa in pileipellis and hymenophoral trama.

Entoloma rostellatum belongs to subgenus *Trichopilus* and resembles *Entoloma jubatum* very much. It seems to differ, however, from the latter by the slightly more elongate and longer spores. (compare Arnolds & Noordeloos, 1980, pl. 95, fig. b; Kits v. Waveren, 1976: 460; Largent, 1977: 122–123). Perhaps the presence of 2- and 4-spored basidia in the hymenium is the cause of this variability. *Entoloma pophyrophaeum* usually has spores with similar size and shape as in *E. rostellatum*, but is usually much larger and shows violaceous grey-brown tinges in pileus and stipe.

SPECIES DESCRIBED IN *ECCILIA*

minuta. — *Eccilia minuta* Velen., *Novitates mycologicae novissimae*: 81. 1947. — Holotype: *J. Velenovský*, Aug. 1944, Mnichovice (PRM 153714).

The type-collection is in a very poor state and consists of a fragment of the stipe-base of one carpophore connected with the substratum (a moss). No fragments of pileus or lamellae were found. Therefore *Eccilia minuta* remains a nomen dubium to me.

nivea. — *Eccilia nivea* Velen., *Novitates mycologicae novissimae*: 81. 1947. — Holotype: *J. Velenovský*, 1944, Kožený vrch, Mnichovice (PRM 153715).—Fig. 8.

The type collection consists of 4 specimens glued on a piece of blue cardboard and is partly riddled by mites; complete lamellae are not present. The following microscopical characters have been observed.—Spores (8.7–)9.2–10.8 × 6.2–7.2(–7.4) μm , $Q = 1.3\text{--}1.45\text{--}1.6$, $L\text{--}D = 2\text{--}3.2\text{--}4$ μm , (4–)5–6–angled in side-view with dihedral base. Basidia 23–40 × 12.5–13 μm , 4-spored. Cystidia none(?). Pileipellis with capitate terminal cells with capitulum up to 10 μm wide. Clamp-connections not seen.

Eccilia nivea is undoubtedly identical with *Entoloma cephalotrichum* (P. D. Orton) Noordeloos (= *Rhodophyllus molliusculus* (Lasch) sensu Kühner & Romagn.).

A SPECIES DESCRIBED IN *CLITOCYBE*

opaca. — *Clitocybe opaca* Velen., *České Houby*: 268. 1920. — Holotype: *J. Velenovský*, August. 1918, Kožený near Mnichovice (PRC, bottle 186).—Fig. 9.

The label of bottle 186 in the Velenovský herbarium at PRC bears the following note in (Velenovský's?) handwriting: '*Leptonia opacus* (Vel.) (cf. *Clitocybe opaca* Vel., p. 268. 1918)'. It contains two well preserved specimens with the following characters.—Pileus about 20 mm broad, plano-convex with faint umbo or with flattened centre, with more or less crenate margin, with villose-subsquamulose surface, particularly at centre. Lamellae $L = 30\text{--}35$, $l = 1\text{--}3$, adnate with decurrent tooth, pink with brown tinge. Stipe 20 × 3 mm, cylindrical, straight, paler than pileus. Flesh thickish. Spores (8.0–)9.3–10.3(–11.3) × 7.2–8.2 μm , $Q = 1.25\text{--}1.3\text{--}1.4$ (–1.55), $L\text{--}D = 2.0\text{--}2.3\text{--}2.7$ (–3.2) μm , 6–7–angled in side-view, probably with basal facet. Basidia 34–38 × 10–14.5 μm , 4-spored. Cystidia not found. Hymenophoral trama regular, made up of inflated cells. Pileipellis a trichodermium made up of broad, inflated hyphae with repent or ascending terminal cells, 30–100 × 12–25 μm , with brown intracellular pigment. Pileitrama regular, made up of inflated cells up to 250 μm long and 12–33 μm wide with brown, intracellular pigment. Stipitepellis a cutis of cylindrical hyphae, up to 12 μm wide, without any visible pigment. Clamp-connections seen in hymenium and covering layers, but rare in trama.

'*Clitocybe opaca*' belongs to section *Erophila* in subgenus *Trichopilus* and is closely related to *E. plebejum* Kalchbr. sensu Romagnesi. The description of Velenovský differs from Romagnesi's concept of *E. plebejum* in the white stipe and the decurrent tooth of the lamellae. In *E. plebejum* the colour of the stipe usually is some shade of grey-brown and the lamellae are usually emarginate. The status of *Clitocybe opaca* Velen. will be treated in a future paper on subgenus *Trichopilus* (Noordeloos, 1981b).

NEW COMBINATIONS USED IN THE TEXT

Entoloma caccabus (Kühn.) Noordeloos, *comb. nov.* Basionym: *Rhodophyllus caccabus* Kühn. apud Kühn. & Romagn. in *Rev. Mycol.* **19**: 3. 1954 (Kühn. & Romagn., *Fl. anal.*: 195. 1953, nom. nud.).

Entoloma bisporiger (P. D. Orton) Noordeloos, *comb. nov.* Basionym: *Eccilia bisporigera* P. D. Orton in *Notes Roy. Bot. Gdn., Edinb.* **29**: 99. 1969.

Entoloma (Fr.) Kumm. subgenus *Trichopilus* (Romagn.) Noordeloos, *comb. nov.* Basionym: *Rhodophyllus* Quél. subgenus *Trichopilus* Romagn. in *Beih. Nova Hedwigia* **59**: 50. 1978.

Entoloma (Fr.) Kumm. section *Erophila* (Romagn.) Noordeloos, *comb. nov.* Basionym: *Rhodophyllus* section *Erophila* Romagn. in *Bull. mens. Soc. linn. Lyon* **43**: 332. 1974.

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- (1981b). *Entoloma* subgenus *Trichopilus* in the Netherlands and adjacent regions with a reconnaissance of its remaining taxa in Europe. In *Persoonia* **11** (in prep.).