

NOTULAE AD FLORAM AGARICINAM NEERLANDICAM — XLII
ADDITIONS TO COPRINUS SUBSECTION SETULOSI

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Throughout the years, a number of unknown species in subsect. *Setulosi* have been collected and preserved. As a result of our work on the Flora agaricina neerlandica, some new species and a new variety are described from the Netherlands.

METHODS

The magnification of the drawings is $\times 2000$ for spores, $\times 800$ for other microscopical features and $\times 1$ for basidiocarps.

In the descriptions, reference is made to the colour codes of Munsell (1975) and Kornerup & Wanscher (1978), respectively indicated as Mu. and K. & W.

The terminology in this paper follows the glossary in Flora agaricina neerlandica (Vellinga, 1988).

A notation like [80, 4, 2] means: 80 spores from 4 specimens from 2 collections were measured. Spore measurements are generally based on samples of 20 spores.

The sizes of the spores as given in the key and the descriptions relate to $L \times B$ or $L \times B \times W$. The quotients of the spores (QB and QW) relate to $L : B$ and $L : W$.

For other abbreviations see Uljé & Bas (1991).

1. *Coprinus callinus* var. *limicolus* Uljé, var. *nov.*

Coprinus species Uljé, Persoonia 14 (1991) 314.

Pileus primo usque ad 10×9 mm, in centro obscure rubro-brunneus vel ochraceo-brunneus, ad marginem pallidior, ut expansus ad 22 mm latus. Lamellae liberae, ad 2 mm latae, ex albo nigricantes. Stipes $20\text{--}50 \times 1.5\text{--}2.5$ mm, albidus, pubescens. Sporae $9.4\text{--}12.8 \times 6.0\text{--}7.6$ μm , med. $L = 11.1$, med. $B = 6.7$ μm , $Q = 1.55\text{--}1.80$, med. $Q = 1.65$, ellipsoideae vel ovoideae, poro germinativo excentrico, ca. 1.8 μm lato, instructae. Basidia $18\text{--}40 \times 8.5\text{--}10.5$ μm , 4-sporigera. Pseudoparaphyses 3–6 pro basidio. Cheilocystidia globosa, ad 40 μm lata, interdum late ellipsoidea, usque ad 40×25 μm . Pleurocystidia absentes. Pileocystidia $50\text{--}90 \times 13\text{--}20$ μm , lageniformia, ad apicem attenuata, 5–7 μm lata. Sclerocystidia absentes. Caulocystidia $40\text{--}80 \times 16\text{--}25$ μm , lageniformia, ad apicem attenuata vel cylindrata, interdum incrassata, 5–8.5 μm lata. Fibulae praesentes. In solo palustri.

Holotypus: The Netherlands, prov. Zuid-Holland, Ter Aar, De Put, 20.VIII.1986, C. B. Uljé (Uljé 1009, holotype, L).

Closed pileus up to 10×9 mm, dark red-brown to ochre-brown at centre (Mu. 7.5 YR 3–4/4, 4/6, 10 YR 4/4, 5/3–4, 6/5, K. & W. 6E/F8, 6E7, 5C4), paler towards margin (7.5 YR 4/4, 10 YR 4–5/3, 6/4–6, 7/2–4, 2.5 Y 7.5/4 to 5 Y 6/1, K. & W. 5C/D4, 4A3); up to c. 22 mm wide when expanded. Lamellae free, up to 2 mm broad, white to blackish; $L = 16\text{--}21$, $l = 1\text{--}3$. Stipe $20\text{--}50 \times 1.5\text{--}2.5$ mm, whitish, pubescent.

Spores [60, 3, 1] $9.4\text{--}12.8 \times 6.0\text{--}7.6 \mu\text{m}$, av. $L = 11.1$, av. $B = 6.7 \mu\text{m}$, $Q = 1.55\text{--}1.80$, av. $Q = 1.65$, ellipsoid to ovoid; germ pore eccentric, c. $1.8 \mu\text{m}$ wide. Basidia $18\text{--}40 \times 8.5\text{--}10.5 \mu\text{m}$, 4-spored. Pseudoparaphyses 3–6 per basidium. Cheilocystidia mostly globose, up to $40 \mu\text{m}$ in diam., but also broadly ellipsoid, up to $40 \times 25 \mu\text{m}$. Pleurocystidia absent. Pileocystidia $50\text{--}90 \times 13\text{--}20 \mu\text{m}$, lageniform with tapering neck, $5\text{--}7 \mu\text{m}$ wide at apex. Sclerocystidia absent. Caulocystidia somewhat shorter and broader, $40\text{--}80 \times 16\text{--}25 \mu\text{m}$, lageniform with tapering to cylindrical neck and equal, sometimes slightly enlarged, $5\text{--}8.5 \mu\text{m}$ wide apex. Clamp-connections present.

Habitat & distribution — Solitary or gregarious in dry ditch, on humus and fallen branches.

Only known from type locality.

Collection examined. THE NETHERLANDS: prov. Zuid-Holland, Ter Aar, De Put, 2.VIII.1986, C.B. Uljé (Uljé 1009, holotype, L).

Macroscopically this taxon resembles *C. callinus*, but the fruit-bodies are smaller than in that species. Microscopically this variety deviates in the absence of sclerocystidia, which are almost always present in *C. callinus*. The length of the pileocystidia is less than $100 \mu\text{m}$, whereas the pileocystidia in *C. callinus* are up to $150\text{--}180 \mu\text{m}$ long. The habitat on mud in dry ditch is also a feature that distinguishes *C. callinus* var. *callinus* from *C. callinus* var. *limicolus*.

2. *Coprinus minutisporus* Uljé, *spec. nov.*

Coprinus species Uljé, Persoonia 14 (1991) 314.

Pileus primo usque ad $4 \times 3 \text{ mm}$, in centro cinnamomeus, ad marginem pallidior, ut expansus ad 7 mm latus cum albo atque minute flocculoso velo. Lamellae anguste adnatae, ex albo nigricantes. Stipes $8\text{--}20 \times 0.1\text{--}0.5 \text{ mm}$, albidus, vitreus, minute setulosus. Sporae $7.0\text{--}8.5 \times 5.1\text{--}6.2 \mu\text{m}$, med. $L = 7.4\text{--}8.1$, med. $B = 5.5\text{--}5.7 \mu\text{m}$, $Q = 1.25\text{--}1.60$, med. $Q = 1.35\text{--}1.40$, late ellipsoideae, ellipsoideae vel etiam ovoideae, poro germinativo medio, $1.6 \mu\text{m}$ lato, instructae. Basidia $16\text{--}40 \times 8\text{--}11 \mu\text{m}$, 4-sporigera. Pseudoparaphyses non detectae. Cheilocystidia $20\text{--}50 \times 20\text{--}30 \mu\text{m}$, vesiculosa. Pleurocystidia absentes. Pileocystidia $50\text{--}100 \times 14\text{--}22 \mu\text{m}$, (late) lageniformia, stricto vel subcapitato apice, $7\text{--}12 \mu\text{m}$ lato, praedita. Sclerocystidia absentes. Velum leviter diverculatis hyphis, $2\text{--}8\text{--}(10) \mu\text{m}$ latis, compositum. Fibulae praesentes. Super vel prope parva ligna in solo arenoso.

Holotypus: The Netherlands, prov. Zuid-Holland, Alphen aan den Rijn, 17.VII.1988, C.B. Uljé (Uljé 926, holotype, L).

Closed pileus up to $4 \times 3 \text{ mm}$, at centre cinnamon, towards margin paler, soon grey, up to c. 7 mm wide when expanded. Veil present on pileus, visible as small, whitish, radial fibrillose flocks. Lamellae narrowly adnate; $L = 8\text{--}13$, $l = 0\text{--}1$. Stipe $8\text{--}20 \times 0.1\text{--}0.5 \text{ mm}$, whitish, vitreous, with widely dispersed setulae.

Spores [40, 2, 1] $7.0\text{--}8.5 \times 5.1\text{--}6.2 \mu\text{m}$, av. $L = 7.4\text{--}8.1$, av. $B = 5.5\text{--}5.7 \mu\text{m}$, $Q = 1.25\text{--}1.60$, av. $Q = 1.35\text{--}1.40$, broadly ellipsoid, ellipsoid to ovoid; germ pore central, $1.6 \mu\text{m}$ wide. Basidia $16\text{--}40 \times 8\text{--}11 \mu\text{m}$, 4-spored. Pseudoparaphyses not noted. Cheilocystidia $20\text{--}50 \times 20\text{--}30 \mu\text{m}$, vesiculose. Pleurocystidia absent. Pileocystidia $50\text{--}100 \times 14\text{--}22 \mu\text{m}$, (broadly) lageniform with $7\text{--}12 \mu\text{m}$ wide, equal to slightly subcapitate apex. Sclerocystidia absent. Veil on pileus of somewhat diverculate $2\text{--}8\text{--}(10) \mu\text{m}$ broad hyphae. Clamp-connections present.

Habitat & distribution — On sandy-clayey soil, among or on wood-chips. Solitary or a few together.

Collection examined. THE NETHERLANDS: prov. Zuid-Holland, Alphen aan den Rijn, 17.VII.1988, C.B. Uljé (Uljé 926, holotype, L).

In this species particularly the shape and the size of the spores are characteristic. None of the other species with cylindrical veil elements has spores as small as *Uljé 926*. The central germ pore is the most important difference with other species (except *C. hiascens*) which possess cylindrical veil elements. *Coprinus hiascens*, however, has spores with a conical apex, lageniform cheilocystidia and tapering pileocystidia, whereas *Uljé 926* has spores with a rounded apex, vesiculose cheilocystidia and pileocystidia, that are broadened at the apex. Because of the very small size of the fruit-bodies and the greyish colour of the pileus this species is very inconspicuous and difficult to find. Another species that agrees somewhat is *C. heterothrix*, but that species have larger spores with $Q = 1.65-1.70$ (*Uljé 926*: 1.35–1.40) and lageniform cheilocystidia.

3. *Coprinus allovelus* Uljé, *spec. nov.*

Coprinus species Uljé 952 in *Persoonia* 14 (1991) 297.

Pileus primo usque ad 6×4 mm, in centro ochraceus, ad marginem leviter pallidior, ut expansus ad 12 mm latus cum albo, minute flocculoso velo. Lamellae anguste adnatae, ex albo nigricantes. Stipes $15-30 \times 0.5-1$ mm, albidus, vitreus, pubescens. Sporae $8.8-11.6 \times 5.0-5.7 \mu\text{m}$, med. $L = 10.4$, med. $B = 5.3 \mu\text{m}$, $Q = 1.70-2.15$, med. $Q = 1.95$, subcylindratae vel anguste ovoideae, poro germinativo excentrico, ca. $1.6 \mu\text{m}$ lato, instructae. Basidia $17-36 \times 7-9 \mu\text{m}$, 4-sporigera. Pseudoparaphyses (3-) 4-5(-6) pro basidio. Cheilocystidia $30-50 \times 8-10 \mu\text{m}$, lageniformia, in propria cervice $3-5 \mu\text{m}$ lata, at saepe ad apicem incrassata, usque ad $6.5 \mu\text{m}$ lata. Pleurocystidia absentes. Pileocystidia $70-120 \times 13-18 \mu\text{m}$, late lageniformia, in cervice $7-11 \mu\text{m}$ lata, in apice aequalia vel subclavata, $9-13(-15) \mu\text{m}$ lata. Sclerocystidia absentes. Velum hyphis inflatis, $6-16 \mu\text{m}$ latis, compositum. Fibulae praesentes. In solo argillaceo.

Holotypus: The Netherlands, prov. Utrecht, Linschoten, 13.VIII.1988, C.B. Uljé (*Uljé 952*, holotype, L).

Closed pileus up to 6×4 mm, ochre-brown at centre, somewhat paler towards margin, up to c. 12 mm in diam. when expanded. Veil present, visible as small, whitish, radially fibrillose flocks on pileus. Lamellae narrowly adnate; $L \leq 18$, $l = 0-1(-3)$. Stipe $15-30 \times 0.5-1$ mm, whitish, vitreous, pubescent.

Spores [20, 1, 1] $8.8-11.6 \times 5.0-5.7 \mu\text{m}$, av. $L = 10.4$, av. $B = 5.3 \mu\text{m}$, $Q = 1.70-2.15$, av. $Q = 1.95$, subcylindric to narrowly ovoid; germ pore distinctly eccentric, c. $1.6 \mu\text{m}$ wide. Basidia $17-36 \times 7-9 \mu\text{m}$, 4-spored. Pseudoparaphyses (3-)4-5(-6) per basidium. Cheilocystidia $30-50 \times 8-10 \mu\text{m}$, lageniform with $3-5 \mu\text{m}$ wide neck often slightly enlarged towards (up to $6.5 \mu\text{m}$ wide) apex. Pleurocystidia absent. Pileocystidia $70-120 \times 13-18 \mu\text{m}$, broadly lageniform with $7-11 \mu\text{m}$ wide neck and equal to subclavate, $9-13(-15) \mu\text{m}$ wide apex. Sclerocystidia absent. Veil consisting of inflated, fusiform, $6-16 \mu\text{m}$ thick hyphae present on pileus. Clamp-connections present.

Habitat & distribution — Solitary or subfasciculate on bare, rich river-clay; a few together.

Collection examined. THE NETHERLANDS: prov. Utrecht, Linschoten, 13.VIII.1988, C.B. Uljé (*Uljé 952*, holotype, L).

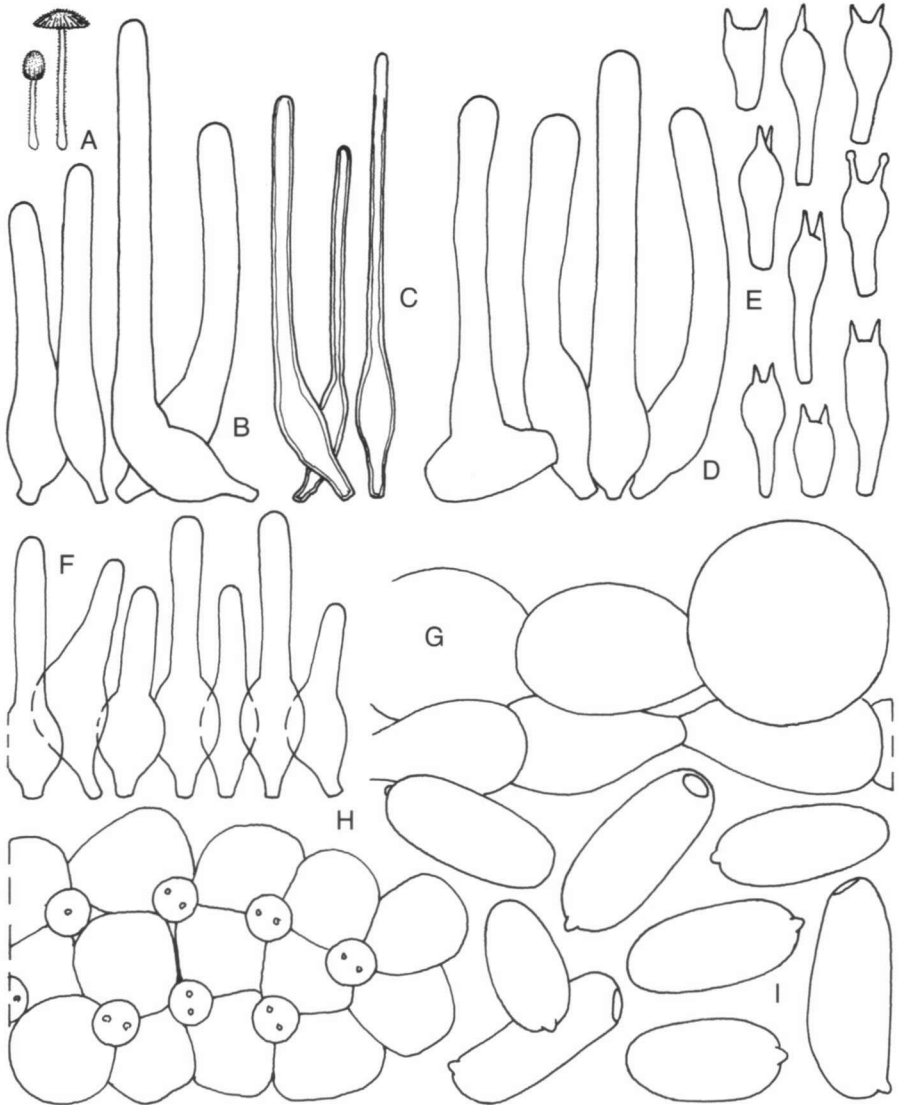


Fig. 1. *Coprinus pseudoamphithallus*. A. Habitus, $\times 1$; B. pileocystidia; C. sclerocystidia; D. caulocystidia; E. basidia; F. cheilocystidia; G. pileipellis; H. fragment of lamella (A–H $\times 800$; I $\times 2000$).

The veil on the pileus consists of hyphae made up of elongate cells and fusiform to clavate terminal cells. The elements of this veil are larger and broader than in other species of the *Setulosi* with velar hyphae on the pileus. Moreover, this taxon can be distinguished from those species by its slender, subcylindrical spores.

4. *Coprinus pseudoamphithallus* Uljé, *spec. nov.* — Fig. 1

Pileus primo 2–3 × 1–2 mm, ut expansus ad 7 mm latus, primo globosus vel ellipsoideus, demum expansus vel applanatus, primo pallide ochraceus, demum flos lactis vel pallide griseus, iuvenis pruinosis. Lamellae (fere) liberae, ex albo nigricantes. Stipes usque ad 15 × 0.75 mm, albidus, pruinosis. Sporae 9–12.7(–14.8) × 4.7–5.7 × 4.4–5.6 μm, QB = 1.75–2.4, med. QB = 2.1, QW = 2.1–2.9, med. QW = 2.25–2.55, med. L = 10.9–11.4(–12.8) μm, med. B = 5.2 μm, med. W = 5.1 μm, oblongae vel subcylindratae, interdum a latere leviter phaseoliformes, obscure rufobrunneae, poro germinativo excentrico, c. 1.6 μm lato, instructae. Basidia 14–28 × 7–9 μm, bi- vel unisporigera, 3–6 pseudoparaphysibus cincta. Pleurocystidia absentes. Cheilocystidia 23–50 × 7.5–14 × 3–5.5 μm, lageniformia, cum cylindrata cervice atque rotundato apice. Pileocystidia 50–90 × 6–12 × 4–7 μm, lageniformia, cum cylindrata cervice atque aequali vel leviter incrassato apice. Sclerocystidia 70–100 × 5–7 × 1.5–4 μm, copiosa, leviter crassitunicata, flavobrunnea. Caulocystidia 40–100 × 7–14 × 5–8 μm, pileocystidiis similia. Pileipellis sphaeropedunculatis vel (sub)globosis partibus, ad 36 μm latis, composita. Fibulae absentes. In solo.

Holotypus: The Netherlands, prov. Zuid-Holland, Ter Aar, De Put, Oostkanaalweg, at the end of the small path of approach at the West-side, from the Aarkanaal, 2.VI.2000, *C.B. Uljé* (*C.B. Uljé 1288*, holotype, L).

Pileus 2–3 × 1–2 mm when still closed, up to 7 mm when expanded, first globose or ellipsoid, then hemispherical to convex, finally almost flat, at first pale ochre-brown, soon becoming cream to pale grey, pruinose when young. Lamellae, L = c. 14, l = 0–1, free or almost free, first white, then pale grey. Stipe up to 15 × 0.75 mm, white, pruinose.

Spores [20, 1, 1] 9–12.7(–14.8) × 4.7–5.7 × 4.4–5.6 μm, QB = 1.75–2.4, av. QB = 2.1, QW = 2.1–2.9, av. QW = 2.25–2.55, av. L = 10.9–11.4(–12.8) μm, av. B = 5.2 μm, av. W = 5.1 μm, oblong to subcylindrical, in side view often somewhat phaseoliform, dark red-brown, with large, c. 2 μm wide, eccentric germ pore. Basidia 14–28 × 7–9 μm, 2-spored, some 1-spored, surrounded by 3–6 pseudoparaphyses. Pleurocystidia absent. Cheilocystidia 23–50 × 7.5–14 × 3–5.5 μm, lageniform with cylindrical neck and rounded apex. Pileocystidia 50–90 × 6–12 × 4–7 μm, lageniform with cylindrical neck and equal to slightly widened apex. Sclerocystidia 70–100 × 5–7 × 1.5–4 μm, numerous, slightly thick-walled and yellow-brown. Caulocystidia 40–100 × 7–14 × 5–8 μm, similar to pileocystidia. Pileipellis made up of spheropedunculate to (sub)globose elements, the latter up to 36 μm in diameter. Clamp-connections absent.

Habitat & distribution — Solitary on grassy road-sides, often on naked soil. Very rare, only known from type-locality.

Collection examined. THE NETHERLANDS: prov. Zuid-Holland, Ter Aar, De Put, Oostkanaalweg, at the end of the small path of approach at the West-side, from the Aarkanaal, Am. Coörd: 108.3-462.3, Km. hok: 31-32-34, 22.V.2000, two young basidiocarps, 2.VI.2000, *C.B. Uljé* (*C.B. Uljé 1288*, holotype, L).

This species differs from the 2-spored and slightly similar *C. amphithallus* in smaller basidiocarps, smaller and narrower spores with relative large germ pore, cystidia with cylindrical neck, presence of sclerocystidia and absence of clamp-connections.

ACKNOWLEDGEMENT

Sincere thanks are due to Francesco Doveri for correcting the Latin diagnoses of the new taxa.

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