Studies in *Entoloma*. – 9. On two new European species in section Entoloma

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Summary. – One new species, *Entoloma moserianum*, is described from the Netherlands, and a redescription is given of *Entoloma rubellum* (SCOP.) GILL., on account of a recent collection from Corsica (France).

Introduction

Entoloma sect. Entoloma is characterized by taxa with a fleshy *Tricholoma*-like stature, a non-hygrophanous, smooth pileus, a pileipellis which is an ixocutis, intracellular pigment and rather simple, almost isodiametrical spores. In my revision of subgenus Entoloma (NOORDELOOS, 1981) I recognized seven species from Europe. In the present paper two more species are added, viz. *Entoloma rubellum* (SCOP.) GILL., based on a collection made by Dr. R. A. MAAS GEESTERANUS on Corsica, and *Entoloma moserianum*, a new species from river-plain forest in the Netherlands.

Descriptions

1. *Entoloma moserianum* NOORDELOOS, spec. nov. – Fig. 1

Pileus (20-)30–95 mm latus, conico-convexus late expansus, haud hygrophanus, haud striatus, albus, cremeus vel eburneus, interdum luteolo-tinctus. Lamellae subdistantae, crassae, albae, luteolotinctae demum pallide roseae. Stipes firmus, 40–100×5–14 mm, albus, luteolo-tinctus, fibrilloso-costatus. Caro compacta, alba. Odor acidulo-alcalinus demum farinaceus. Sapor farinaceo-rancidus. Sporae 9.3–11.5×8.1–9.3 µm, isodiametricae. Basidia 4-sporigera. Cheilocystidia cylindraceo-clavata, 22–60×4–8 µm. Pileipellis ixocutis. Pigmentis intracellulosis. Fibulae numerosae. Habitat ad terram in silvis frondosis. Holotypus. – The Netherlands, prov. Gelderland, mun. of Geldermalsen, estate Mariënewaard, C. BAS (7896) & TH. W. KUYPER, 25-VIII-1982 (L).

Basidiocarps robust, young stages reminiscent of *Hygrophorus cossus*, mature specimens tricholomatoid. – Pileus (20–)30–95 mm broad, conico-convex or hemispherical then expanding, without or with broad and weak umbo, with involute margin when young, not hygrophanous, not striate, white to cream, often with slight ocre tinge at centre, turning bright yellow in places when bruised or with age (Munsell 2.5 YR 8/8–8/6), subviscid when wet, on drying dull appearing felty but smooth. – Lamellae L = 25–70,

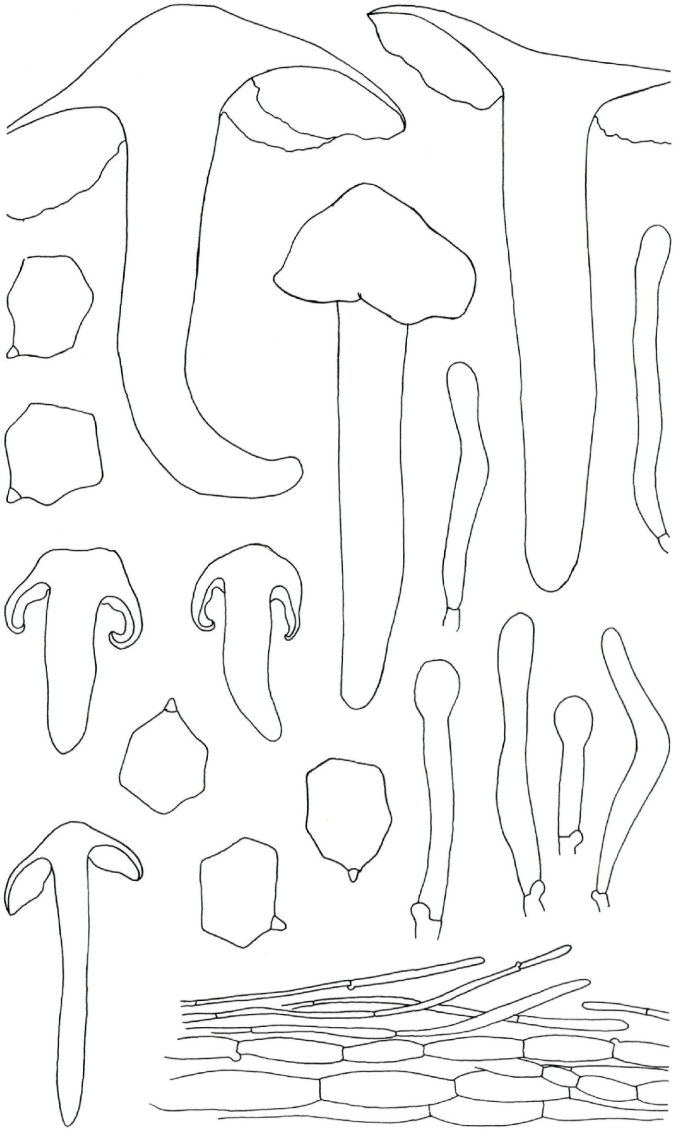

Fig. 1. *Entoloma moserianum*. – Habit (×1); spores (×1500); cheilocystidia (×1000); and pileipellis (×300) (all figs. from holotype).

(1–)3–5, subdistant, somewhat thickish, adnate-emarginate, broadly ventricose, white then pallid pink, with bright yellow spots when bruised or when old, with concolorous, serrate edge. – Stipe 40–100×5–14 mm, tapering towards base, white or creamy with bright yellow spots when old or when bruised, apex pruinose-scurfy, strongly fibrillose-costate lengthwise. – Flesh firm, white but in one specimen turning orange when bruised. – Smell spontaneously acidulous-soaplike, when cut distinctly farinaceous. – Taste farinaceous-rancid.

Spores 9.3–11.5×8.1–9.3 µm, average 9.6×8.7 µm, Q = 1.0–1.15–1.3, 5–6-angled in side-view. – Basidia 27–48×8.5–13 µm, 4-spored. – Cheilocystidia scattered to numerous, cylindrico-clavate, 22–60×4–8 µm, lamella edge partly or entirely sterile. – Hymenophoral trama regular made up of barrel-shaped cells, 35–150×7–10 µm. – Pileipellis an ixocutis of slightly gelatinized, narrow, cylindrical hyphae, 2–5 µm wide. – Pigment intracellular. – Pileitrama regular, made up of the same type of cells as in hymenophoral trama. – Clamp-connections numerous in all tissues.

Chemical reactions. – Guaiacol on flesh of pileus and stipe negative.

Habitat. – Terrestrial in deciduous forest on heavy riverclay.

Collections examined. – The Netherlands: prov Gelderland, mun. of Geldersmalsen, Mariënwaard, 25 Aug. 1982, C. Bas (7896) & Th. W. Kuyper (Holotype, L: isotype in IB).

Entoloma moserianum is a very remarkable species because of its pale colours, the characteristic yellow spots on pileus, lamellae, and stipe, and the entirely or partly sterile lamella edge. It was taken in the field for a species of *Hygrophorus* because of its rather distant, thick and pale-coloured lamellae, and it showed a superficial resemblance, especially young basidiocarps, with *Hygrophorus cossus*. The pink spore-deposit and angular spores, however, revealed that it belongs to the genus *Entoloma*. On account of the tricholomatoid habit, non-hygrophanous, smooth pileus, small isodiametrical spores and type of pileipellis and pigmentation, *Entoloma moserianum* belongs to sect. Entoloma, close to *E. lividum* and *E. sinuatum* from which it differs in colour and in having cheilocystidia. Furthermore the yellow staining of the basidiocarp is a feature which is unique among the species of the section. *Entoloma moserianum* has been collected only once, but in great quantity in the type-locality, where it was growing on several spots under different kinds of deciduous trees (mainly *Quercus, Fraxinus,* and *Tilia*). The type-locality is a well-known hunting-place for rare mushrooms in the Netherlands, and its habitat can be compared with riverplain forest in Southern Germany and Austria (so called 'Auenwälder').

2. *Entoloma rubellum* (SCOP.) GILL. – Fig. 2

Agaricus rubellus SCOP., Fl. carn. ed. alt.: 445, 1772. – *Entoloma rubellum* (SCOP.) GILL., Hyménom. Fr.: 400. 1874. – *Rhodophyllus rubellus* (SCOP.) QUÉL., Ench. fung.: 58. 1886.

Excluded. – *Agaricus rubellus* SCOP. sensu FRIES, 1836 (= ? *Entoloma sericellum*), non sensu FRIES 1874.

Characteristics. – Basidiocarps tricholomatoid; pileus pinkish-red, smooth; lamellae adnate, pink; stipe white; spores isodiametrical, 6.5–8×5.8–8 µm.

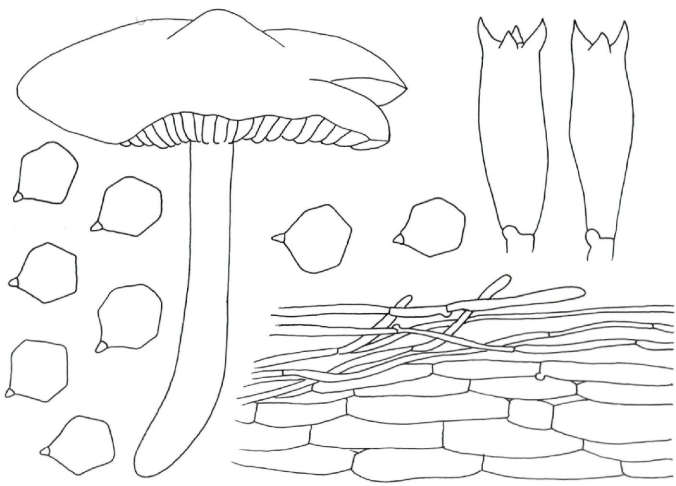

Fig. 2. *Entoloma rubellum*. – Habit (×1); spores (×1500), basidia (×1000); and pileipellis (×300) (all figs. from MAAS GEESTERANUS 15721).

Pileus about 60 mm broad, convex with broad umbo, with straight margin, not hygrophanous, not striate, pinkish-red with slight ochraceous tinge at centre, smooth. – Lamellae adnate, ventricose, pink with concolorous, serrulate edge. – Stipe up to 80×7–9 mm, tapering downwards, white-cream, smooth. – Flesh white. – Smell and taste not noted.

Spores 6.5–8×5.8–8 µm, isodiametrical, 5–6-angled in side-view. – Basidia 22–38×8–11 µm, 4-spored. – Cystidia none. – Hymenophoral trama and pileitrama regular, made up of barrel-shaped cells, 50–170×5.5–22 µm. – Pileipellis an ixocutis of

slightly gelatinized, 2.2–6 µm wide, cylindrical hyphae with intracellular pigment. – Clamp-connections numerous in all tissues.

Habitat.– Terrestrial in mixed forest of deciduous trees and *Pinus*.

Collection examined. – FRANCE: Corsica, Galeria, Fango-river valley, 3 Nov. 1982, R. A. MAAS GEESTERANUS 15721(L).

SCOPOLI (1772) described a fungus with pink pileus and continuous, pink lamellae and a white stipe from *Fagus* forest in Italy. FRIES (1836) used *Agaricus rubellus* for a species close to *Entoloma sericellum,* but GILLET (1874), KARSTEN (1879), and QUÉLET (1886) gave another interpretation of SCOPOLI's fungus, viz. a species of *Entoloma* close to *Entoloma madidum* and *E. viridans*. Also FRIES (1874) admitted that this interpretation is not in disagreement with the diagnosis of SCOPOLI, and accepted it accordingly.

The collection from Corsica is in full agreement with the interpretations cited above, and I feel no doubt to accept the name *Entoloma rubellum* (SCOP.) GILL. for it.

Entoloma rubellum is a very attractive species which is easily recognised in the field with its large basidiocarps and bright-coloured pileus. It certainly does not belong to the large bulk of *Entoloma*-species, whose lack of distribution-data is due to their 'little-brown-mushroom' appearance, which no doubt is the reason that they are easily overlooked, or even worse, neglected. Therefore I suppose that *Entoloma rubellum* is a very rare species, as modern records are lacking.

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