

## On two remarkable *Marasmiellus* species from Sardinia, Italy

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**Key words:** *Agaricales*, *Omphalotaceae*, *Marasmiellus*. – Systematics, taxonomy, new taxa. – Mycoflora of Sardegna, Italy.

**Abstract:** The new species *Marasmiellus roseotinctus* is described from Sardinia, Italy. A detailed description is given of the rare *M. brevisporus*.

**Zusammenfassung:** Die neue Art *Marasmiellus roseotinctus* wird von Sardinien, Italien, beschrieben. Eine detaillierte Beschreibung des seltenen *M. brevisporus* wird gegeben.

The Mediterranean area is a treasure chamber for Marasmioid fungi. Recently, a number of new species and new records of the genus *Marasmiellus* have been described (ANTONÍN & NOORDELOOS 1993, 1997; ROBICH & al. 1994; ROBICH & CAMPO 2000).

The present paper deals with two remarkable *Marasmiellus* species, viz., *M. roseotinctus* with a distinct pinkish-vinose to pinkish incarnate pileus, which comes close to, but clearly differs in a number of characters from *M. carneopallidus* (POUZAR) SINGER, and *M. brevisporus* (MAIRE) CONTU & CURELLI, closely related to *M. tricolor* (ALB. & SCHWEIN.: FR.) SINGER, with 2-spored basidia and green tinges in the stipe.

***Marasmiellus roseotinctus* CONTU & NOORDEL., spec. nova.** (Fig. 1)

### **Descriptio latina:**

Pileus 5-20 mm latus, membranaceus, plicato-sulcatus, roseo-incarnatus vel roseo-vinosus, minute tomentosus. Lamellae distantes, adnato-decurrentes, albae demum roseae. Stipes 8-30 × 1-2 mm, insititius, cylindraceus, roseo-tinctus, dense pruinosis; odore saporeque nullis. Sporae 10-14,5 × 4-6 µm, elongate lacrimiformes, haud amyloideae. Basidia 22-35 × 7-10,5 µm, 4-sporigera, fibulata. Acies lamellarum plus minusve steriles. Cheilocystidia 20-40 × 4-9 µm, fusiformia vel irregulariter coralloidea. Pileipellis cutis vel trichoderma ex elementis paulisper diverticulatis constituta. Caulocystidia 30-48 × 3-9 µm, cylindracea vel irregulariter coralloidea. Fibulae praesentes. Inter *Juncum* in dunis.

**Holotypus:** Italy: Sardegna, prov. Sassari, Olbia, Pittulongu, 5. 11. 1999, M. CONTU (L, isotypus in IB).

**Etymology:** “roseus”(lat.) pink, “tinctus”(lat.) tinged, referring to the pink tinges in the basidiocarps.

### Characters:

**Pileus:** 5-20 mm, thin-fleshed, convex then expanded, often with low, blunt umbo, with involute then deflexed, finally revolute margin, coarsely plicate-sulcate, when young pinkish-incarnate, pinkish-vinose or pale pinkish brown, when mature much paler pink or tending to white with pinkish centre, slightly tomentose or tomentose.

**Lamellae:** distant, unequal, uncinately-attached to decurrent, broad, white, becoming pink on drying.

**Stipe:** 8-30 × 1-2 mm, insititious, cylindrical often with broadened to bulbous base, white in upper 2/5, pink in lower part, finely fibrillose striate, entirely covered with a persistent, white pruinose covering.

**Context:** very thin, fragile, not gelatinised, white, not changing colour. Smell and taste practically absent.

**Spore print:** white.

**Spores:** 10-14.5 × 4-6 µm, average 13 × 5.5 µm, Q = 1.8-2.5-3, elongate-lacrymoid, thin-walled, non-amyloid.

**Basidia:** 22-35 × 7.0-10.5 µm, 4-spored, with clamp connections. Basidioles 20-30 × 4.5-9 µm, fusiform.

**Cheilocystidia:** 20-40 × 4-9 µm, fusiform or irregularly coralloid, thin-walled. Lamellar edge almost fertile, with few, scattered cheilocystidia.

**Hymenophoral trama:** regular, made up of cylindrical, 3-7 µm wide hyphae.

**Pileipellis:** a cutis with transitions to a trichoderm, made up of cylindrical, weakly diverticulate hyphae. Pigment brown, intracellular and minutely incrusting.

**Stipitipellis:** a cutis with abundant caulocystidia, caulocystidia 30-48 × 3-9 µm, cylindrical to irregularly coralloid, sometimes with a few diverticulae, thin-walled.

**Clamp connections:** present.

**Chemical reactions:** no part of the basidiocarp shows an amyloid or dextrinoid reaction.

**Habitat and distribution:** caespitose on stems of *Juncus maritimus* LAM. in open dune vegetation. So far only known from the island of Sardinia, Italy.

**Collections examined: Italy:** Sardegna, prov. Sassari, Olbia, Pittulongu, 31. 10. 1999, F. PADOVAN, M. FLORIANI & M. CONTU; - 5. 11. 1999, M. CONTU (Holotype); - 6. 11. 1999, M. CONTU (all in L).

**Remarks:** *Marasmiellus roseotinctus* is very similar to *M. mesosporus* SINGER which differs, however, in having distinctly pink to ochre-pink lamellae and glabrous stipe (compare ANTONÍN & NOORDELOOS 1993 and ROBICH & al. 1994). Microscopically the sparse cheilocystidia, and slightly more elongate spores are distinctive. *Marasmiellus carneopallidus* (POUZAR) SINGER differs especially by smaller spores, pinkish lamellae with violaceous tinge, and clavate cheilocystidia.

*Marasmiellus roseotinctus* grows in the same habitat and on the same substrate as *M. trabutii* (MAIRE) SINGER. That species, however, clearly differs by having a whitish pileus, dark basal part of stipe, gelatinous tissues in lamellae and pileus, and a well-developed *Ramealis*-structure in the pileipellis.

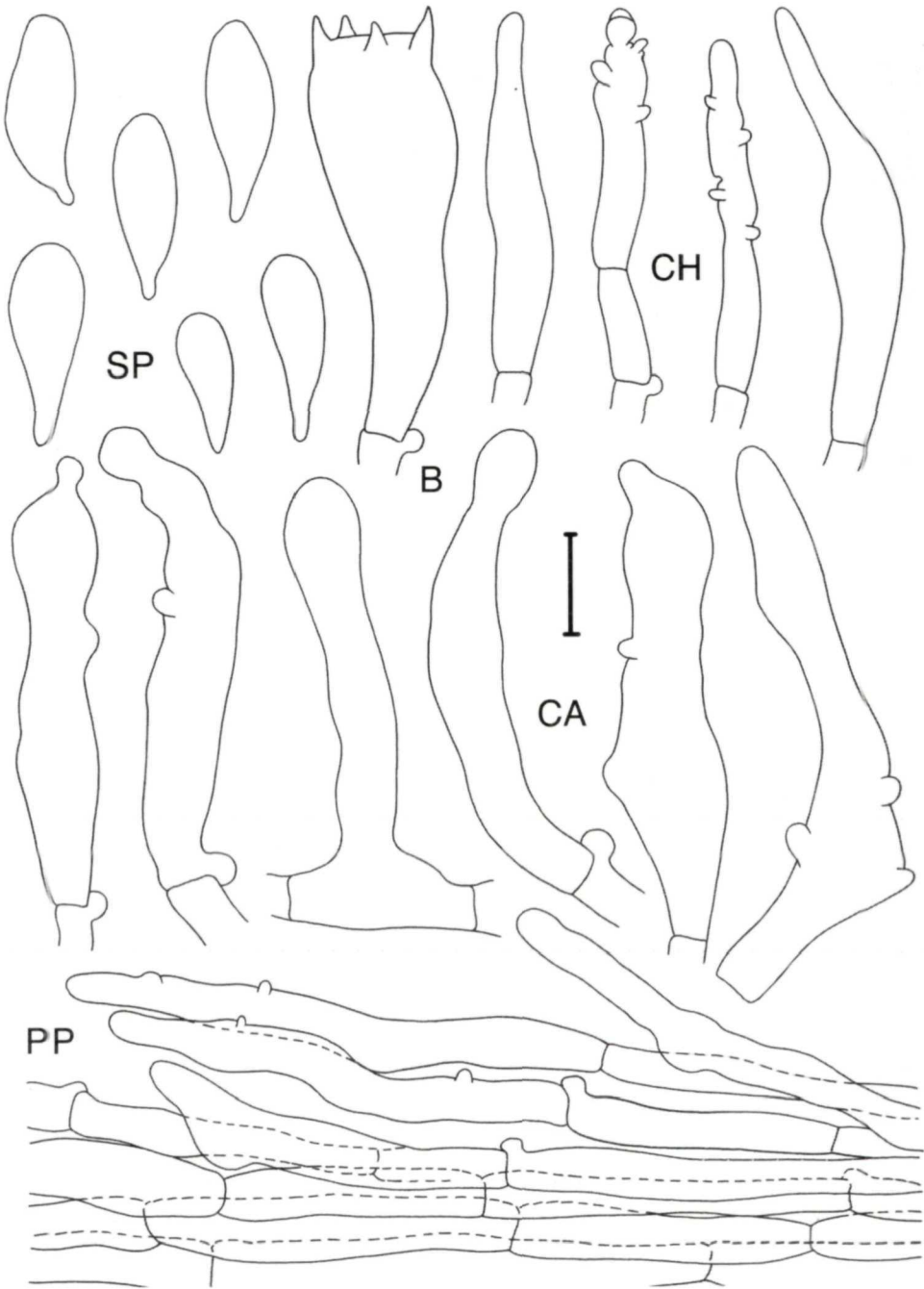


Fig. 1. *Marasmiellus roseotinctus*. Spores (SP), basidium (B), cheilocystidia (CH), pileipellis elements (PP), and caulocystidia (CA). – Bar: 10  $\mu$ m.

*Marasmiellus brevisporus* (MAIRE) CONTU & CURELLI, Micol. Veget. Medit. **6(2)**: 142. 1991. (Fig. 2)

*Marasmius trabutii* var. *brevisporus* MAIRE, Bull. Soc. Mycol. France **44**: 43. 1928

### Characters:

**Pileus:** 5-20 mm, membranaceous, convex then appanate, with depressed centre, often quasi cyathiform, with involute then extended margin, remaining revolute in moist weather, white with age tinged pale ochraceous, slightly to distinctly tomentose, sometimes plicate-sulcate.

**Lamellae:** deeply decurrent, unequal, broad, often intervenose or anastomosing, white.

**Stipe:** 10-30 × 1-2 mm, cylindrical, either attenuate towards base and broadened towards apex or vice-versa, white in upper 2/5, lower part dark green, entirely finely white tomentose.

**Context:** thin, fragile, somewhat elastic, white, not changing colour. Smell and taste indistinct.

**Spore print:** white.

**Spores:** 9-12.5(-14) × 7-10 µm, average 10.6 × 7.8 µm, Q = 1.05-1.4-1.8, subglobose, broadly ellipsoid or oblong, often somewhat amygdaliform or lacrymoid, with large hilar appendage, thin-walled, inamyloid.

**Basidia:** 19-25 × 3.0-6.0 µm, 2- or 1-spored, with clamp connections.

**Cheilocystidia:** 15-40 × 1.5-9 µm, diverticulate-coralloid, sometimes branched, frequently with non-diverticulate, swollen, more or less clavate apical part, which sometimes is in addition slightly thick-walled. Lamellar edge entirely sterile.

**Hymenophoral trama:** regular, made up of cylindrical hyphae.

**Pileipellis:** a trichoderm of densely diverticulate terminal elements, resembling the cheilocystidia; subpellis of cylindrical to inflated hyphae with slightly incrustated walls.

**Stipitipellis:** a dense trichoderm of long, subcylindrical elements, 20-110 × 2-6 µm, frequently with clavate to subglobose apex, thin, or more frequently thick-walled, sometimes very thick-walled with slightly coloured walls and narrow lumen, intermixed with slightly to distinctly diverticulate caulocystidia, resembling the cheilocystidia.

**Clamp connections:** abundant in all tissues.

**Chemical reactions:** no part of the basidiocarp shows an amyloid or dextrinoid reaction.

**Habitat and distribution:** saprobic on debris and roots of grasses in dry grassland on sandy soil. Known from Italy and Mauritania.

**Collections examined:** **Italy:** Sardinia, Prov. Sassari, Olbia, complesso sportivo "Fausto Noce", 26. 10. 1999, 30. 10. 1999, 2. 11. 1999, M. CONTU; - - S. Antonio di Gallura, La Crucitta, 25. 10. 1999, L. PITTORRU & M. CONTU (all in L).

**Remarks:** *Marasmiellus brevisporus* comes close to *M. tricolor*, with its strongly diverticulate elements in pileipellis, hymenium and stipitipellis. Particularly *M. tricolor* var. *graminis* (MURRILL) SINGER is very similar. The most important differences are found in the 2-spored basidia and accordingly large and wide spores. Macroscopically the green tinges in the lower part of the stipe are distinctive.



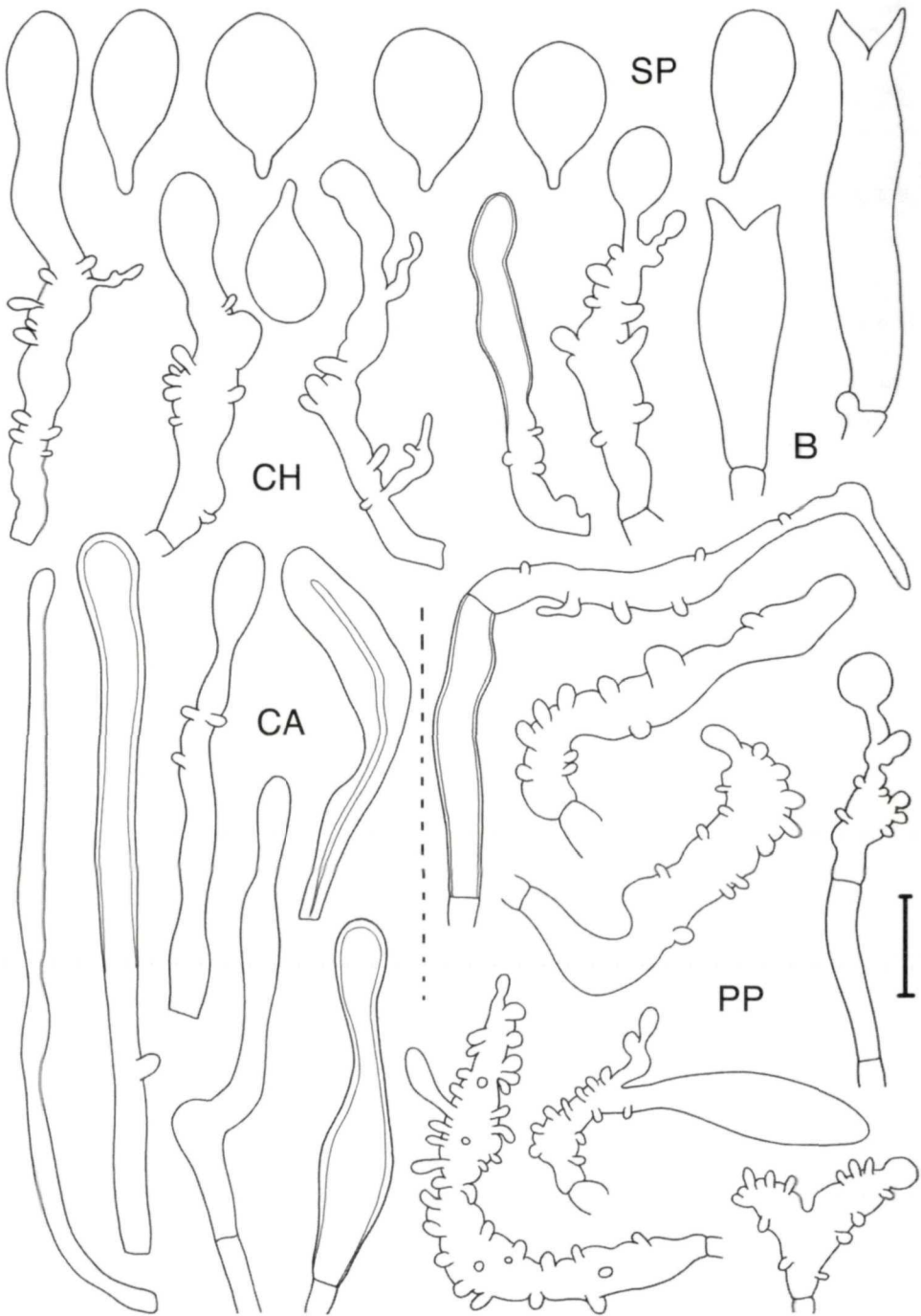


Fig. 2. *Marasmiellus brevisporus*. Spores (SP), basidia (B), cheilocystidia (CH), pileipellis elements (PP), and caulocystidia (CA). – Bar: 10  $\mu$ m.

Originally it has been described as a variety of '*Marasmius*' *trabutii* by MAIRE (1928), who gave only a very short diagnosis of var. *brevisporus*, viz "A typo differt basidiis bisporis, sporis obovatis l. subamygdaliformis, nec oblongis, 11-13 × 6-8 µm (nec 13-20 × 6,5-7 µm). Hab. in caudicibus graminum in planetibus arenosis Mauretaniae, autumnno: prope Icosium lco dicto L'Alma." No original material could unfortunately be traced of this taxon in MPU. *Marasmiellus trabutii*, however, has a different pileipellis structure and cheilocystidial shape, and furthermore distinctly gelatinised trama in the pileus and lamellae, and clearly represents a different species.

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