

**CORTINARIUS ERYTHROFUSCUS (SUBGENUS TELAMONIA,
SECTION FIRMIORES), A NEW SPECIES FROM SPAIN**

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The new species *Cortinarius erythrofuscus* Mahiques & A. Ortega (subgen. *Telamonia*, sect. *Firmiores*) is proposed. Its morphological characters are compared with similar taxa (e.g. *Cortinarius petroselineus* Chevassut & Rob. Henry and *Cortinarius casimiri* (Velen.) Huijsman). Its taxonomic inclusion in section *Firmiores* (Fr.) Henn. (subgen. *Telamonia* (Fr.) Trog) is discussed.

In the last few years, the region of Valencia (Eastern Spain) has been extensively studied from a mycological point of view, and particularly regarding the genus *Cortinarius*. Some of the results of this study have been published recently (Mahiques & Ortega, 1997; Ortega & Mahiques, 1995b, 1998). In this contribution we propose *Cortinarius erythrofuscus* Mahiques & A. Ortega as a new species, based on material collected by the first author (R.M.) which shows a combination of characters unknown in *Cortinarius*.

Cortinarius erythrofuscus was collected in abundance (about 100 basidiomata), fructifying in a wide area (around 1500 m²) in two different years, 1998 and 1999. The material studied is deposited in the Herbarium of the University of Granada, Spain (GDAC), the Nationaal Herbarium Nederland, Universiteit Leiden branch, the Netherlands (L) as well as in the private herbaria of R. Mahiques (MES) and F. Martinez (FM).

***Cortinarius erythrofuscus* Mahiques & A. Ortega, spec. nov. — Fig. 1**

Pileo 30–70 mm lato, primum forma conica conico-campanulata, postea hemisphaericus aut convexus, umbonatus. Hygrophanus, colore castaneo rubeo aut castaneo nigricante (simile *Cortinarius vernus* H. Lindstr. et Melot), in medio castaneo quasi nigro, marcens colore castaneo ochraceo, sed cum variis maculis radialibus quibusdam castaneis nigricantibus. Cuticula levis, non rugulosa, cum paucis albidulis fragmentis veli, plus manifestis ad marginem. Lamellae emarginatae aut uncinatae, ventricosae, rariae (4–5/cm), usque ad 1.1 cm latitudinem, colore castaneo ochraceo satis persistente, arista pallida, flocculosa et serrulata. Stipes 35–100 × 4–15 mm, cylindricus cum base attenuata, colore albidulo, sed prompte adipiscens colorem castaneum ochraceum in dimidia superiore et atrorubentem nigricantem in dimidia inferiore, cum fibrillarum albidularum bandis transversis, base tomentosa alba. Caro colore castaneo atrorubente in pileo, atque in parte inferiore stipis, alba, et prompte, fit cinerea in reliquo stipe. Odor levis, selinis aut herbae corrupta et, quondam, parum certus. Sapor inconspicuus.

Sporae 9–13(–14) × 6–7.5 μm, ellipsoideae, sublacriformes, aut subcylindricae, cum ornamento medio, crestulis anastomosadis praeditae. Pileipellis conformata ex hyphis cum pigmento castaneo ochraceo parietale et intracellulare.

Circiter 50 basidiomata, gregaria aut connata sub *Quercus pyrenaica*, prope Ciruelos del Pinar (Guadalajara). Leg. R. Mahiques. 19.XI.1998. In herbarium GDAC no. 44213 (Holotypus). In Herbarium L (Isotypus). In herbarium MES no. 3351 (Isotypus). In herbarium FM no. 2303 (Isotypus).

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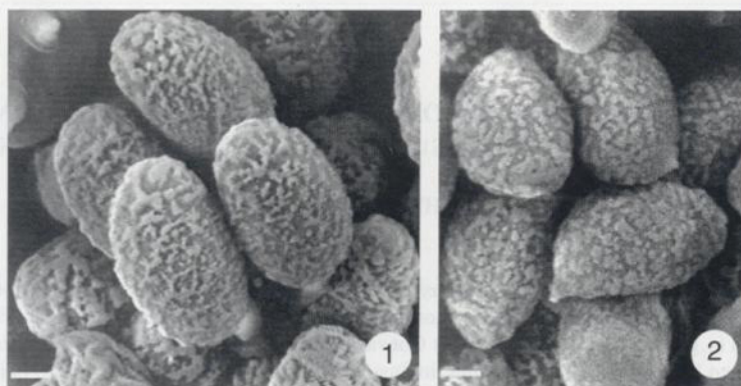


Fig. 1. *Cortinarius erytrophuscus* (holotypus). Spores SEM (bar = 2 µm). — Fig. 2. *Cortinarius casimiri* (GDAC 42848). Spores SEM (bar = 2 µm).

Fruit-bodies gregarious to fasciculate or connate. Pileus 30–70 mm diam., at first campanulate-conical, then hemispherical-convex to convex, frequently with a broad umbo, hygrophanous (in most cases, the pileus shows centripetal drying, with some radial narrow bands which remain dark; in other the drying process is simultaneous in margin and disc, retaining a dark concentric zone in between), cigar-brown or dark reddish brown, blackish brown at centre, turning brown-saffron on drying; cuticle smooth, non rugulose, silky, with whitish veil remnants especially at the margin; margin translucently striate. Gills ventricose, sinuate, distant (4–5/cm), moderately wide (0.8–1.1 cm), reddish brown to saffron, with floccose and serrulate whitish edge. Stipe 35–100 × 4–15 mm, cylindrical, tapering slightly towards the base, whitish when young, quickly turning ochraceous-brown in the upper half, dark reddish brown in the lower half (on handling). Veil whitish, forming some transverse bands on the stipe. Flesh dark reddish brown in the pileus, cortex and lower part of the stipe (similar to *Cortinarius vernus* H. Lindstr. & Melot), brownish in the rest of stipe. Smell mild, reminiscent of parsley or fermented grass (some basidiomata with indistinct smell). Taste mild, sometimes of fermented grass.

Chemical characters — KOH blackish brown on pileus surface, and pileus and stipe context; Phenol-Aniline negative.

Spores (Fig. 1) ($n = 180$) $9\text{--}13\text{--}(14) \times 5\text{--}7.5$ µm; (mean value between $10.0\text{--}11.6 \times 5.8\text{--}6.7$ µm; average 10.9×6.4 µm), ellipsoid to amygdaliform, sub-lacrymoid or sub-cylindrical (Q: L/w = 1.4–2; mean value between 1.60–1.72; average 1.66), with a moderately high ornamentation (spore outline serrulate) made up of anastomosing crests. Basidia 4-spored, hyaline or with brownish content. Gill edge heterogeneous, with clavate sterile cells (similar to basidia). Pileipellis formed by a cutis of 3.5–6 µm wide hyphae, slightly to moderately encrusted with a parietal brownish granular pigment, also with intracellular pigment. Hypodermium with brownish hyphae, 10–20 µm wide. Hymenophoral trama made up of intracellular and slightly encrusted brownish hyphae. Clamp-connections present in all tissues.

Habitat — On sandy soil under *Quercus pyrenaica*, in mixed forest of *Quercus pyrenaica* and *Pinus pinaster*.

Material studied. SPAIN: Guadalajara, Ciruelos del Pinar, 19.XI.1998, R. Mahiques (GDAC 44213, holotype; L, isotype; MES 3351, isotype; FM 2303, isotype). Idem, 30.X.1999, R. Mahiques (GDAC 44498; MES 3493).

Additional collections studied for comparison

Cortinarius casimiri (Velen.) Huijsman. FRANCE: Arbois, 28.IX.1998, R. Mahiques (MES 3370) [XVI Journées Européennes du *Cortinarius*; under *Fagus sylvatica* and *Quercus robur*]. — SPAIN: Córdoba, near Priego de Córdoba, 18.XI.1996, J. Gómez & B. Moreno-Arroyo (GDAC 42848) [on acid soil, under *Cistus ladanifer*].

Cortinarius petroselinus Chevassut & Rob. Henry. FRANCE: Pezennes, 21.XI.1973 (Herb. Chevassut no. 2333) [Avignon exhibition; on acid soil, under evergreen oaks]; 18.XI.1984, G. Chevassut (Herb. G. Chevassut no. 3362). — SPAIN: Valencia, Pinet, Els Surars, 1.XI.1991, R. Mahiques (MES 1552) [mixed forests of *Quercus suber* and *Pinus halepensis*].

Cortinarius vernus H. Lindstr. & Melot. SPAIN: Granada, Huéneja, Sierra Nevada, 19.V.1996, A. Capilla (GDAC 41046) [1500 m alt., in riparian woods of *Populus nigra* and *Salix atrocinerea*]; Aldeire, Sierra Nevada, 4.IV.1999, A. Capilla (GDAC 44672) [1400 m alt., under *Populus nigra*].

Cortinarius bififormis Fr. SPAIN: Granada, Barranco de S. Sebastián (Natural Park of Sierra de Baza), 7.XII.1990, A. Ortega (GDAC 36716) [under *Pinus sylvestris*].

Cortinarius erythrofuscus is referred to the section *Firmiores* (Fr.) Henn. based on the size of its basidiomata (pileus 3–7 cm diam., stipe 3.5–10 × 0.4–1.5 cm), whitish veil forming silky fibres on the pileus surface, the markedly hygrophanous pileus and spores with moderately high ornamentation. However, *Cortinarius erythrofuscus* can easily be distinguished from other species in this section (e.g. *Cortinarius bififormis* Fr.; *Cortinarius illuminus* Fr.) because of the reddish dark brown basidiomata (essentially the flesh of the pileus and the stipe base), parsley smell and larger spores (Brandrud et al., 1992, 1994).

The parsley smell might suggest a relationship with *Cortinarius rheubarbarinus* Rob. Henry (sect. *Brunnei* Kühner & Romagn. ex Melot). However, the two species are easily distinguished, since *Cortinarius rheubarbarinus* has a different colour and habit, its pileus is hardly hygrophanous and the spores are smaller (Henry, 1956; Brandrud et al., 1992, 1994). Another Mediterranean autumnal taxon with parsley smell is *Cortinarius petroselinus* Chevassut & Rob. Henry (= ? *C. vernus* H. Lindstr. & Melot) (sect. *Erythrini* Melot), which is smaller (pileus 1–4 cm diam., stipe 2–6.5 × 0.2–0.5(–0.6) cm), and has quite different spores (Ortega & Mahiques, 1995a; Ortega & Chevassut, 1998).

Cortinarius casimiri (Velen.) Huijsman (= *C. subsertipes* Kühner, *C. rubellopes* Rob. Henry) has similar spores (Fig. 2) to *C. erythrofuscus*. *Cortinarius casimiri* is – like other taxa of section *Hygrocybe* (Fr.) Nezdójm. (e.g. *Cortinarius decipiens* (Pers.: Fr.) Fr., *Cortinarius sertipes* f. *contrarius* (J. Geesink) A. Ortega & Mahiques (= *C. sertipes* ss. Kuyper in Arnolds et al., 1995)) – smaller, with a pileus of 1–5 cm diameter and a stipe of 2–7(–9) × 0.2–0.5(–0.7) cm, the dark reddish flesh is paler and it lacks the parsley smell (Henry, 1937; Brandrud et al., 1994, 1998).

It should be noted that, because of its macroscopical characters and the large spores, *Cortinarius erythrofuscus* could also be related to some species of section *Uracei* Kühner & Romagn. ex Melot (e.g. *Cortinarius uraceus* Fr., *Cortinarius crassifolius* (Velen.) Kühner & Romagn.). However, the species in this section have darker basidiomata becoming blackish on drying, a yellowish to greenish veil and spores with a very marked ornamentation (Moser, 1983; Brandrud et al., 1990, 1994). Another important character of section *Uracei* is the presence of a distinct greenish pigment in the basidia (Brandrud et al., 1990; Melot, 1990), which is absent in *Cortinarius erythrofuscus*.

Resumen

Se describe una nueva especie *Cortinarius erythrofuscus* Mahiques & A. Ortega (subgen. *Telamonia*, sect. *Firmiores*), recolectado bajo *Quercus pyrenaica* en la provincia de Guadalajara (España). Se compara con otros taxones de caracteres similares como *Cortinarius petroselineus* Chevassut & Rob. Henry y *Cortinarius casimiri* (Velen.) Huijsman. Se discute su inclusión dentro de la sección *Firmiores* (Fr.) Henn. del subgénero *Telamonia* (Fr.) Trog.

ACKNOWLEDGEMENTS

We wish to express our gratitude to Prof. Dr. M.M. Moser (Innsbruck, Austria) and Mr. A. Bidaud (Meyzieu, France) for the revision of material of this species. Our thanks are extended to Dr. J.D. Bueno and Dra. A. González (Univ. Granada) for their collaboration in the material preparation and SEM study of the spores. Also to Dr. Sanchez Marín (Univ. Granada) and D. Sampedro for the Latin diagnosis. This contribution has been partly supported by Project PB98-1316 (DGICYT).

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