

Nomenclatural novelties : J.F. Ammirati, R. Halling, A. Corrales, C.L. Ovrebo, T. Niskanen, K. Liimatainen & S. Garnica

Cortinarius hallingii Ammirati, Niskanen, Liimat. & Garnica, sp. nov.

IF558132

Holotype USJ, Ammirati 11917

Pileus 44–60 mm expanded, broadly conic or rounded conic, gradually more obtuse to plane or uplifted, umbonate to subumbonate, surface glutinous, in extreme age only viscid to moist, margin narrowly enrolled to incurved, colored highly variable, buttons olive buff to brownish ochraceous or more brown on disc, at times somewhat watery lilac, when mature a mixture of pallid, light ochraceous, watery gray, watery brown, and sometimes with gray lilac tints on edge, in some specimens disc pallid to ochraceous or orange ochraceous, inner margin more brownish, edge pallid, mixed with grayish, ochraceous or lilac, in age disc becoming dark red brown, inner margin orange red brown and edge more ochraceous brown or with grayish tones, in age edge brown, margin and disc deep reddish brown, sometimes the orange brown to yellow brown colors dominate overall. Odor not distinctive. Taste of gluten and context mild. Context in pileus solid, ± fragile, especially in age, colour whitish mixed with yellow or ochraceous tones, often ± watery mottled, in age watery brown to orange brown in stipe solid, becoming ± hollow, with larvae tunnels in age, above white mottled with watery lavender to watery gray areas, lower one-third whitish but with brown and ochraceous colors, in age more watery brownish to orange-brown with whitish to ochraceous streaks, below often becoming olivaceous to blackish in places, or centrally more rust-brown. Lamellae lavender (light- to pale-) at first, developing slight grayish tones, colour persistent for some time, then more brownish, eventually dark brown, edges ± concolor, ± even at first, becoming irregular and often split in age, adnexed with a slight decurrent tooth, ± ventricose or broader towards the base, ± subdistant. Stipe 47–120 mm long, apex 9–16 mm thick, tapered at apex in buttons and when young, less so in age, ± equal then rounded to ± flattened at base, sometimes with slight bulb, ground colour white fibrillose at apex (above viscid veil), base white to watery sordid at first, apex in age ochraceous to brownish, lower stipe often more dingy to olive or blackish (occasionally), or more often becoming more sordid in age, glutinous veil heavy, beneath gluten (between apex and base) inner veil lavender/lilac at first, colour persistent for some time, eventually becoming whitish to dingy colored, without concentric zones or large scales, rarely forming smaller scales. Basidiospores 14·0–17·0 (–17·5) x (6·5–) 8·0–9·5 µm, Q 1·84–2·24, Qm 2, narrowly to broadly amygdaloid, coarsely verrucose to slightly rugulose. Basidia 4-spored. Lamellar edges with some ± clavate to broadly enlarged cells. Pileipellis: surface layer of narrow, cylindrical, yellowish to colorless hyphae embedded in a gelatinous matrix epicutis of narrow, cylindrical to irregular, colorless to yellow hyphae, walls smooth to encrusted hypocutis of broadly cylindrical to enlarged, brownish to yellow or colorless hyphae, with yellow to brown pigment plaques. Clamp connections present. ITS sequence (GenBank KJ421159) distinct from other members of sect. *Myxacium* and deviating from them in the ITS regions by at least 10 substitutions and indel positions.

Ecology and Distribution: Known to date from *Quercus* forest in Costa Rica.

Specimens Examined: Costa Rica. Prov. San José, Escuela La Guaria, Jardin de Dota, 3·5 km west of Interamerican Highway at Empalme, 5 June 1996, coll. J. Torres, R. Halling & J. Ammirati, *Quercus semanii*, *Q. copeyensis*, J.F. Ammirati 11917 (USJ, NYBG), GenBank KJ421159.

Notes: *Cortinarius hallingii* has considerable variation in pileus colour but in general the pileus is dominated by dark brown colors when mature. The lamellae, stipe cortex and inner veil on the stipe surface are violaceous when young and fresh.

Etymology: Named for Roy E. Halling, Eminent Mycologist, New York Botanical Garden.

Cortinarius matae Ammirati, Halling, Liimat. & Niskanen, sp. nov.

IF558133

Holotype USJ, Ammirati 12012

Pileus 45-75 mm diam, obtuse-umbonate, broadly campanulate or broadly umbonate, margin narrowly incurved to decurved then uplifted recurved, surface viscid to moist, striate then opaque, colour somewhat variable, margin light orange brown, yellow brown, light brown or yellowish buff to whitish with dull ochraceous streaks, sometimes discolored blackish, inner margin sometimes mostly ochraceous buff, disc creamy yellow to brownish, orange brown, reddish brown, dark brown or ochraceous, when dry margin light brownish yellow to ochraceous with some darker brown areas, orange brown tints around disc. Odor none or pungent Taste mild/fungoid. Context in pileus pale with yellowish to ochraceous buff, \pm less watery brown over lamellae at times in stipe pith whitish or watery streaked, cortex pale grayish violet at first, then yellowish to yellow brown, darker below, in base faintly yellowish buff. Lamellae close to subdistant, broadly sinuate, whitish to faintly lilac then pale brown to light medium brown or rust yellow brown, edges finely serrulate, somewhat paler than faces. Stipe 83–124 mm long, apex 8–13 mm thick, not tapered above, \pm tapered downward to rounded or squared-off base, inner veil white, viscid, apex whitish becoming creamy white with some yellowish buff tints in age and yellow-brown stains, lower stipe (below veil) whitish creamy in places, mainly with ochraceous, yellow brown or brown stains and discolorations, lower portion of veil broken into patches at times, upper part of veil unbroken. Basidiospores 14.0–17.0 x (7.0–) 8.0–9.0 (–9.5) μm , Q 1.77–2.01, Qm 1.9, amygdaloid, distal end \pm extended, \pm coarsely verrucose to rugulose. Basidia 4-spored. Lamella edges with clavate to broadly clavate cells. Pileipellis surface layer of narrow, cylindrical, yellowish to colorless hyphae embedded in a gelatinous matrix; epicutis of narrow, cylindrical, colorless to yellow hyphae, walls smooth to encrusted hypocutis of broadly cylindrical to enlarged, brownish to yellow or colorless hyphae, with yellow to brown pigment plaques. Clamp connections present. ITS sequences (GenBank MW508849) distinct from other members of sect. *Myxacium* and deviating from them in the ITS regions by over 20 substitutions and indel positions.

Ecology and Distribution: Known from Costa Rica with species of *Quercus* or in mixed vegetation of *Quercus*, *Vaccinium consanguineus*, *Camarostaphylis arbutoides*.

Specimens Examined: Costa Rica. San José. San Gerardo de Dota, Alberguede Montaña, Savegre, 5 km SW of Cerro de la Muerta, *Quercus semanii*, *Q. copeyensis*, 8 June 1996, coll. J. Torres, R. Halling & J. Ammirati, JFA 11965 (USJ, NYBG), GenBank no. MW508850 loc. cit., JFA 11966 (USJ, NYBG), GenBank MW508851 loc. cit., 3 July 2000, coll. R.E. Halling & L.L. Norvell, REH 7980 (NYBG) Savegre, Los Robles Trail, Sendero, *Quercus semanii*, *Q. copayensis*, 10 June 1996, coll. M. Mata, R. Halling & J. Ammirati, JFA 12001 (USJ, NYBG), GenBank MW508852 loc. cit., 11 June 1996, coll. M. Mata, R. Halling & J. Ammirati, J.F. Ammirati 12012 (USJ, NYBG), GenBank MW508849 loc. cit., JFA12013 (USJ, NYBG) Inter American Highway, \pm 5 mi. from KM80, elev. 3000 m, *Quercus costaricensis*, *Vaccinium consanguineus*, *Camarostaphylis arbutoides*, 2 June 2004, coll. J. Ammirati, JFA12932 (CR, NYBG), GenBank MW508853.

Notes: This species is similar in appearance to *Cortinarius trivialis*. The basidiospores are rather large in size and coarsely verrucose to rugulose a feature it shares with *C. hallingii*. See comments under *C. hallingii*.

Etymology: Named for Milagro Mata, mycologist, Costa Rica.

Cortinarius oreomunneae Corrales, Ovrebo, Ammirati, Liimat. & Niskanen, sp. nov.

IF558134

Holotype UA, Corrales 65

Pileus to 32 mm diam, depressed, moist, striate, colour brown purple with obscure yellow tones, outer margin undulate, shiny purple. Context in pileus white, 3 mm thick in stipe hollow, whitish in base, purple in apex. Lamellae purple, adnexed. Stipe 75 mm long, apex 5 mm thick, base 7 mm thick, cylindrical, curved, glutinous, purple, with apical membranous zone. Basidiospores (10.5–) 12.0–14.0 (–15.0) x 6.5–7.5 μm , Q 1.65–2.1, Qm 1.86, amygdaloid to broadly amygdaloid, densely, coarsely verrucose. Basidia 4-spored. Lamellar edges with clavate to spherical cells. Pileipellis: surface layer of narrow, cylindrical, colorless hyphae embedded in a gelatinous matrix, walls smooth epicutis of narrow, cylindrical, colorless to yellowish hyphae, walls smooth hypocutis of \pm enlarged, yellowish to colorless hyphae, walls often with dull yellow encrusting pigment. Clamp connections absent. ITS sequence (GenBank MW508854) distinct from other members of section Defibulati and deviating from them in the ITS regions by over 20 substitutions and indel positions.

Ecology and Distribution: Known from Montane forests in Panama, associated with *Oreomunnea*.

Specimens Examined: Panama. Chiriqui. Reserva Forestal Fortuna, Honda, montane forest, *Oreomunnea*, 9 April 2012, coll. A. Corrales, C. Velásquez, A. Corrales 65 (UA), GenBank MW508854.

Notes: The type sequence of *C. oreomunneae* matches *Juglandaceae_root_HB_sapling-2-4_KM594851* providing a direct connection of this species to the roots of *Oreomunnea*. This is a medium sized, rather slender species with purple coloration in all portions of the basidiomata. The basidiospores are densely and distinctly verrucose and most similar to those of *C. panamaensis*.

Etymology: Named after the genus *Oreomunnea*, *Juglandaceae*.

Cortinarius panamaensis Corrales, Ovrebo, Ammirati, Liimat. & Niskanen, sp. nov.

IF558135

Holotype UA, Ovrebo 5423

Pileus 20–50 mm diam, button rounded-conic, expanding to plane, most often with a low rounded umbo, margin slightly enrolled to incurved often uplifted or wavy with age, translucent-striate to disc when expanded, glutinous buttons medium dark brown with slight streaking, when expanded central area dark brown to brownish purple, paler toward margin where translucent, very edge light translucent-purplish, dry, specimens become brown to olive brown overall. Context in pileus 2 mm at disc, white to ochraceous buff in button, when mature brownish or ochraceous in stipe in buttons purplish near surface, buff at center, at maturity ochraceous buff, becoming hollow with age. Odor absent or pungent Taste mild including surface. Lamellae subdistant, 4–5 mm wide, purple when young and freshly expanded, soon brownish purple to brown, occasionally purplish at pileus edge, edges entire. Stipe 46–135 mm long, 3–7 mm thick above, tapered slightly to apex, up to 9 mm thick below, slimy fresh, becoming dry with age, purple to light purple, with age fading to buff or occasionally tinged purplish, glabrous, occasionally with buff to brownish veil fibrils. Basidiospores (12.0–) 12.5–15.0 x (7.5–) 8.5–9.5 μm , Q 1.63–1.86, Qm 1.76, amygdaloid, broadly amygdaloid to citriniform, coarsely verrucose, aborted basidiospores common. Basidia mostly 4-spored (some 3-spored). Lamellar edges with clavate, broadly clavate, sphaeropedunculate or fusoid cells. Pileipellis surface layer of narrow, cylindrical, colorless hyphae embedded in a gelatinous matrix, walls smooth epicutis of narrow cylindrical, colorless to yellowish hyphae, walls smooth hypocutis of broadly cylindrical to enlarged hyphae, colorless to yellowish, walls with yellow encrusting pigment. Clamp connections absent. ITS sequences (GenBank MW508855) distinct from other members of section Defibulati and deviating from them in the ITS regions by over 20 substitutions and indel positions.

Ecology and Distribution: *Oreomunnea mexicana* dominated forest, Panama.

Specimens examined: Panama. Chiriqui. Reserva Forestal Fortuna, Quebrada Honda, montane forest, 14 May 2012, coll. A. Corrales, C. Velásquez, AC 209 (UA), GenBank MW508856 loc. cit., 26 Oct. 2013, coll. A. Corrales, AC 456 (UA), GenBank MW508857 loc. cit., 20 May 2015, Oreomunnea mexicana dominated forest, coll. C.L. Ovrebo, A. Corrales, C.L. Ovrebo 5423 (UA), GenBank MW508855 loc. cit., 12 July 2014, coll. C.L. Ovrebo, CO5227 (UA). Costa Rica. San José. Savegre, Sendero Los Robles, *Quercus semanii*, *Q. copayensis*, 10 June 1996, coll. M. Mata, R. Halling & J. Ammirati, JFA12000 (USJ, NYBG), GenBank MW508858.

Notes: *Oreomunnea* root tip sequences, HB_sapling-2_KM594938, HB_sapling-2_KM595022, and HA_seedling_4_KM595007 match sequence data from basidiomata of *C. panamaensis*. The collection from Costa Rica (JFA12000) was noted as being under *Quercus* spp., however, it was from a mixed forest habitat and *Oreomunnea* may have been present. Collection CO5227 has somewhat narrower basidiospores than other collections, otherwise it is similar to the holotype. See further comments under *C. oreomunneae*. *Cortinarius* cf. *paliformis* is another species in *Defibulati* found in Panama.

Etymology: Named after Panama, Central America.