**Cortinarius aurescens** Ammirati, Bojantchev, Beug, Liimat. & Niskanen, sp.nov.

**IF551203**

Pileus 37-77 mm diam, hemispheric to obtuse becoming plane or uplifted, margin incurred to decurved becoming irregular expanded, edge enrolled, surface faintly streaked on margin, dry to viscid, with some white mycelium patches centrally, color a mixture of white, whitish lilac, pale lilac, pale pinkish lilac or sometimes lavender to deep lavender, especially if remaining covered by leaves or not exposed, on exposed areas often developing buff, brownish to ochraceous tawny colors. Lamellae adnexe, narrow to moderately broad, crowded, moderately thin, edges uneven, at first pale- to light lavender or lilac, gradually brownish, sometimes retaining lavender tones. Stipe 50-63 mm long, 13-20 mm thick above, base up to 35 mm thick, variable in shape, with poorly formed slightly margine bulb or more distinctly margine bulb with a rim, base short, basal mycelium white to ochraceous, surface shiny, white to pale lilac, apex white or very faintly blue, rim of bulb with white to pale lilac or pale lavender veil tissue in places, basal mycelium white to discolorred ochraceous. Context white to dingy pale yellowish white in pileus and stipe base, remainder of stipe mostly white with lavender, pale lilac or gray lilac in cortex above, broken areas of context discolor yellowish. Odor and taste mild. Reaction with 40 % KOH on pileus surface bright ochraceous, brownish, or slightly pinkish or slightly reddish then brownish, on pileus and stipe context yellowish to ochraceous, sometimes slightly pinkish in stipe base, negative or slightly yellowish on basal mycelium, on lilac veil on bulb rim pinkish (veil material on the pileus surface may account for the occasional pinkish to reddish reaction there). Basidiospores 9.5-12 (12.5) x (5.5) 6-7.5 um, moderatly verrucose, amygdaolid to broadly amygdaolid, sometimes with smooth, extended apex. Basidia 4-spored. Pleiopellic simplex; gelatinous surface layer well developed, composed of interwoven, cylindrical hyphae, 2.5-5.5 um wide, colorless or with yellowish pigment, not encrusted; hyphae of epikutis ascending into gelatinous layer above, more radially arranged below, 3-14 um wide, cylindrical to broadly cylindrical, colorless to yellow, with some yellow pigment or granules, with some scattered yellow refractive pigment masses (yellow pigmented hyphae more common near pileus trama), not encrusted. Clamp connections present. Remarks: Distinguishing features include lilac to white colors of the basidiomata, the lilac to lavender colors of the pileus that fade quickly to pale lilac or white with exposure, the distinct lilac to lavender lamellae and yellow reaction of context with KOH. ITS sequence (GenBank KR674106, holotype) distinct from the other members of section Calochroi and deviating from C. lilacinovelatus Reumaux & Ramm (GenBank EU655668) in the ITS region by 12 substitutions and indel positions. Ecology and distribution: To date known from western North America, under Quercus garryana, Washington, USA. Additional specimens: USA, Washington, Klickitat County, Columbia Gorge: JFA13297 (WTU), GenBank no. KR674105, JFA13636 (WTU), GenBank no. KR674104, JFA13639 (WTU), GenBank no. KR674103, JFA13667 (WTU), GenBank no. KR674102 Etymology: The name refers to the white and lilac colors of the basidiomata.


**Cortinarius anetholens** Ammirati, Garnica, Bojantchev, Beug, Liimat. & Niskanen, sp.nov.

**IF551204**

Diagnosis: Pileus 52-80 mm, convex to plano-convex, with low umbo, margin incurred to decurved, edge enrolled, surface viscid to glutinous, with some brownish patches on disc and inner margin, margin yellow to pale olive yellow to grayish yellow, soon developing ochraceous tawny to orange-brown colors, around disc more brownish yellow, disc darker, dark orange-brown or tinted with yellowish brown. Lamellae adnexe, narrow, broadest towards base, thin to moderately thin, more or less crowded, dull pale lilac beneath pale brown tones, or pale- to light brownish to brownish olive, with some areas pale grayish green or olive buff (near pileus edge). Stipe 50-82 mm long, 13-19 mm thick above, base 24-38 mm thick, marginate bulbous, pale greenish yellow, yellowish or greenish white, mottled with grayish green or dull streaks (gray), discolored olive yellowish in places, viewed at an angle the cortex beneath the surface grayish (almost blue gray), margin of bulb yellow to ochraceous or watery greenish yellow to brownish, basal mycelium whitish to yellowish or ochraceous, discoloring brownish. Context to 8 mm on disc, solid and firm throughout, yellowish with gray streaks or pale yellowish green white mottled with olive yellow, yellowish to greenish yellow under pileus cuticle, watery gray olive over lamellae, white (faint purple hue in places) to whitish in pileus above stipe apex, in base yellowish to soild yellowish buff. Odor of anise. Taste mild, fungoid or not distinctive. Reaction with 40 % KOH vinaceous on all places, but paler reaction in pileus context, strong elsewhere. Basidiospores 10.8-12.8 x 6-7.3 um, amygdaolid to limoniform, very coarsely ornamented, apex more or less snout-like, smooth. Basidia 4-spored. Pleiopellic simplex; gelatinous surface layer well developed, hyphae interwoven, cylindrical, 2.4-5.6 um wide, slightly pinkish, yellowish to yellow-brown or colorless, some slightly encrusted; hyphae of epikutis ascending into gelatinous layer above, more radially arranged to pileus trama, cylindrical, 2.4-12.8 um diam, pale vinaceous pink to colorless. Clamp connections present. Remarks: Distinguishing features include the ochraceous brown to orange brown colorations of mature pilei, strong vinaceous color reaction of basidiomata with KOH, and anise odor. ITS sequence (GenBank KR674108, holotype) distinct from the other members of section Laeticolores and deviating from C. saxamontanus Fogel (GenBank KF732421) in the ITS region by 20 substitutions and indel positions. Ecology and distribution: Known from California and Washington in western North America, under Quercus garryana or Q. garyana and Pinus ponderosus. Additional specimens: USA, Washington, Klickitat County, Columbia Gorge: JFA13298 (WTU), GenBank no. KR674107; California, Del Norte County, Gasquet, JFA11849 (WTU), GenBank no. EU057031), MM95/648 (IN). Etymology: The name refers to the anise odor.

Cortinarius beugii Ammirati, Bojantchev, Liimat., Niskanen and Garnica, sp.nov.

**Diagnosis:** Pileus 70-76 mm diam, plano-convex to uplifted, edge enrolled, margin decurved to upturned, gluttonous to viscid, color a mixture of yellow, tan and greenish shades, margin often light yellow, finely narrowly streaked, becoming brownish to pinkish brown, center brownish to slightly pinkish brown or grey vinaceous brown, granular or with small patches. Lamellae adnexed, crowded, rather narrow, edges uneven, thin, pale brown to light brown, all mature. Stipe 97-110 mm long, above 13-16 mm thick, clavate or clavate-bulbous to rounded with a slight rim or marginate bulbous, basal mycelium white, surface shiny, when young faintly bluish to slightly lavender above, developing yellowish to brownish yellow discoloration in age, veils white, membranous on rim or extending somewhat above the base, discoloring brownish. Context firm to hard, in pileus whitish to watery yellowish, in central stipe white, in cortex above bluish to slightly lavender to watery gray, in stipe base yellowish to ochreous, developing yellowish colors in pileus with age or in stipe, flesh where broken or damaged becoming ochreous-golden yellow. Odor pleasant, mild. Taste mild, fungoid. Reaction with 40 % KOH on pileus surface distinctly yellow, ochreous yellow, orange ochreous or brownish (sometimes the reaction is less distinctive or can be faintly pinkish to somewhat brownish), on context of pileus and stipe base always strongly ochreous to yellow or orange ochreous, on basal mycelium negative to slightly yellowish, sometimes reddish brown on rim of bulb. Basidiospores (9) 10 -11 x 5.5 - 6.5 (7) um, elliptoid to amygdaloid, moderately to coarsely verrucose. Basidia 4-spored. Pileipellis simplex; gelatinous surface layer moderately developed, hyphe interwoven, mostly radially arranged, cylindrical, 2.5 - 7 um wide, some encrusted, colorless or containing yellowish pigment; hypheae of epicutis radially oriented, interwoven, 3.5 - 16 um wide, cylindrical to somewhat broadly cylindrical, adjacent to pileus trama some shorter and broader, colorless or slightly yellowish, some slightly encrusted; with distinct yellow pigment layer beneath pileus epicutis (dried material in KOH). Clamp connections present. Remarks: Distinguishing features include the pale coloration of basidiomata, strong yellow to ochreous discolorations and similar color reaction of the context with KOH, and yellow pigment layer beneath pileus epicutis (dried material in KOH). Cannot be clearly placed in a described section. ITS sequence (GenBank KR674110, holotype) differs by more than 23 substitutions and indel positions from the closest species C. coerulescentium Henry s. C. coerulescentes) and C. patrickensis (M.M. Moser) Niskanen, Liimat., Kytov., Bojantchev & Ammirati (GenBank KF732307) (sect. Caerulescentes) and C. patrickensis (M.M. Moser) Niskanen, Liimat., Kytov., Bojantchev & Ammirati (GenBank KF732307) (sect. Arguti). Ecology and distribution: Known from western North America, under Quercus garryana or Q. garryana and Pinus ponderosus, Washington, USA. Additional specimens: USA. Washington, Klickitat County, Columbia Gorge: JFA13294 (WTU), GenBank no. KR674109, JFA13662 (WTU), GenBank no. KR674111. Etymology: The name refers to the yellow color change in age and where damaged.