NOTES ON SOUTHERN APPALACHIAN FUNGI, XII

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In this report, twenty-seven species of agarics are treated. Those marked with an asterisk (*) have been found in the Great Smoky Mountains National Park. Color names in quotation marks are from Ridgway's Color Standards and Color Nomenclature.

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Agaricus magnificus Pk. Pileus 6-14 cm. broad, caespitose (in clusters of 8-20 sporophores), hemispherical-convex then convex-expanded, finally plane, dry, white or whitish when young, becoming tan to "honey yellow" on disk, finally, in age, pale to darker buff, fibrillose, the cuticle breaking to form many concentric flat scales (in some cases the cuticle cracks), margin even. Flesh white, unchanging when rubbed, turning quickly to "light greenish yellow" in 15% KOH firm, odor and taste mild or slight. Lamellae free, rather remote, rounded behind, white when young, becoming bright pink (not well matched), then "ecru-drab," finally " dusky drab," "light greenish yellow" in 15% KOH, crowded, medium broad, edges even. Stipe 8-13 cm. x 12-20 mm., white, flesh promptly "light greenish yellow" in 15% KOH, at first somewhat squamulose below, glabrescent, equal or tapering slightly either way, solid. Anulus membranous, ample, white, pendant to flaring, rather persistent, superior. Spores 4.5-6 x 2.8-3.3 microns, ellipsoid, "fuscous black" in mass. Pleurocystidia none; cheilocystidia clustered, 10-16 x 4-5 microns, clavate, rather inconspicuous.

On freshly filled lawn, Tennessee, May. Despite the fact that the above measurements were based on spores from a deposit, they were slightly shorter than given in Smith's description, though about the same as given for the type (1940:119). Our material was named by Dr. A. H. Smith.

Agaricus subrutiluscens (Kauff.) Hotson & Stuntz. Pileus 6-10 cm. broad, hemispheric then convex, white to pinkish, with "sorghum brown" to "walnut brown" fibrillose scales, margin even. Flesh medium thick, thin on margin, soft, white, unchanging; odor and taste mild. Lamellae free, rounded behind, white then pink, finally "natale brown," crowded, narrowed in front, edges entire. Stipe 8-10 (15) cm. x 6-8 mm., pallid, with a vinaceous tinge, stuffed, fibrillose below the annulus, base bulbous. Anulus apical, white, ample, median to superior, with vinaceous patches near edge. Spores ellipsoid, 5.5-5.5 x 3-3.5 microns, smooth. Pleurocystidia none; cheilocystidia rare, saccate to clavate. 10-20 x 8-15 microns.

In humus, conifer-deciduous woods, Tennessee, July. Reported from northwestern United States (Smith 1940:121-122).

Agaricus sylvicola (Vitt.) Fr. Pileus 6-8 cm. broad, convex-hemispheric then expanded-plane, broadly umbounate, dry, whitish but distinctly tinted yellowish, "empire yellow," and with reddish brown "russet vinaceous," stains over disk, distinctly fibrous, the yellow and reddish color confined to fibrils. Flesh white, soft, reddish-brown on bruising, 5 mm. thick at disk, thin at margin; odor and taste mild and pleasant. Lamellae free, crowded.

*Contributions from the Botanical Laboratory, The University of Tennessee of Tennessee, N. Ser. No. 165.
Fig. 1. Armillaria Zelleri Stuntz & Smith. x 1
ventricose, medium broad (about 5 mm. broad), white becoming "brownish drab" to "warin sepia," edges floccose-fimbriate, Stipe 6-10 x 8-10 mm., equal, or enlarged slightly downward, base subbulbous, fibrillos, whitish at apex, elsewhere stained yellowish to brownish, promptly turning yellowish on rubbing, stuffed then hollow. Anulus median, white, double. Spores 4.5-6 x 3.5-4.5 microns, ellipsoid, color in mass: "deep brownish drab." Pleurocystidium none; cheilocystidia clavate or fusoid-ventricose, 15-28 x 8-15 microns (Smith 1949: 542).

On soil and humus, in deciduous woods, Tennessee, North Carolina, and Florida, June-August. This has often been referred to as A. abruptibulbus Pk. The latter has been placed in synonymy.

Agaricus xanthodermus Ganevier. Pileus 4-6 cm. broad, hemispheric then convex, firm, white, appressed-fibrillos scale, scales dingy on disk, white elsewhere, staining when rubbed or bruised, margin incurved at first, then straight, appendiculate, even. Flesh thick, firm, white, turning yellow when cut or bruised; odor and taste fungoid. Lamellae barely free, narrow, crowded, ivory white at first, then "pale salmon color," finally dark drab, edges serrulate. Stipe 7-9 cm. x 12-18 mm., white, yellowish when handled, scattered-fibrillos, hard and firm, equal, with a white pith. Anulus membranous, white with yellow stains on lower surface, simple. Spores ellipsoid, smooth, 4.5-5.5 x 3-3.5 microns, color in mass near "chaetura drab."

On lawn, Tennessee, May. Our collections were identified by Dr. A. H. Smith.

Armillaria Zelleri Stuntz & Smith (Fig. 1). Pileus (3) 5-11 cm. broad, convex, expanding plane or nearly so, viscid when wet (nearly glutinous when young), "honey yellow" to "isabella color" to "lawn olive" or "yellow ochre," appressed-fibrillos, becoming scaly from agglutinated fibrils, margin at first strongly incurved and densely to feltly white-fibrillos (from veil-remnants), even. Flesh, firm, thick on disk, thin on margin; white; odor and taste slightly farinaceous when fresh. Lamellae adnate to adnate-subcurrent, finally emarginate, white at first, becoming dingy or ashy, and often spotted brown, close or crowded, medium broad, many short, few forked at base, edges even or crenated. Stipe 2-5 (9) cm. x 10-15 (25) mm., dry, fibrillos, often white squamulose at apex, at times compressed, base curved and tapering rather abruptly, apex white, elsewhere brownish, with 1-3 medium or basal rusty brown zones and scales, solid. Veil apical, membranous, at first forming a flaring annulus, which is white above, orange to brownish below, soon collapsing. Spores 3.8-5.5 x 3-3.5 microns, ellipsoid to subglobous, smooth, white in mass, non-amyloid. Basidia 24-32 x 5-6.5 microns. Pleurocystidium and cheilocystidia none. Gill trama subparallel.

On soil, in pine woods, usually forming a fairy-ring 6 to 8 feet in diameter, Tennessee and Georgia, November-December. This species was originally discovered in Washington and Oregon in 1941. (Smith 1949: 351-352). My collections from Tennessee and Georgia appear to be the only other reports of it.

*Cortinarius bivelus Fr. Pileus 6-9 cm. broad, convex-campanulate, expanded-wavy, unonate, hygrophanous, pale silvery-gray when dry, dark brown when wet, (not matched), silky-shining, margin even. Flesh thin except on disk whitish; odor and taste of radish. Lamellae adnate to adnexed, broad (up to 15 mm. broad), "verona brown" (not observed in young stage), faces wrinkled, edges conspicuously white, fimbriate. Stipe 7-10 cm. x 14-17 mm., tapering downward, white-silky, violaceous beneath and within, hollow, dry. Spores ellipsoid, 8.5-12 x 5.5-6.5 microns, slightly rough.
On soil, in spruce woods, North Carolina, August. Found once, at 5200 ft., Indian Gap, the Park. It has been reported in the North (New York to Michigan), and the West (Colorado) by Kaufman (1932). Identified by Dr. A. H. Smith.

*Corinarius canescens* Pk. Pileus 2.5-4 cm. broad, convex, dry, not hygrophanous, densely silky to fibrillose, “pinkish buff” to “light pinkish cinnamon” with a pale brown tint, margin even. Flesh pale pinkish to “tilluvi buff,” firm; odor and taste faintly of radish or unpleasant. Lamellae deeply emarginate, seceding, “snuff brown” (young gills not seen), broad, nearly subdistant, edges white, entire. Stipe 4-7 cm. x 6-9 mm., dry, dingy, fibrillose- striate, clavate, solid; veil white, leaving an evanescent annulus. Spores 9.5-12 (14) x 6-7 (8) microns, minutely rough, ellipsoid to subpyriform.


*Corinarius colymbadinus* Fr. Pileus 3-7 cm. broad, convex, expanding, tomentose-subscaly, “saly brown,” disk blackish, slightly hygrophanous, not viscid, margin even. Flesh thick, firm, pale yellow, in 15% KOH promptly turning pinkish; odor and taste slight of radish. Lamellae emarginate, pallid at first, soon olive, finally brown, close, rather broad, edges eroded. Stipe 3-5 (8) cm. x 9-12 mm., dingy greenish-brown, dry, clavate-bulbous, with a median, annular band, solid. Spores subglobose to short-ellipsoid, 6.5-7.5 x 6-6.5 microns, tuberculate-warty. Pleurocystidia and cheilocystidia not observed.

On soil and in deep moss, in conifer woods, Tennessee and North Carolina, August-September. Identification confirmed by Dr. A. H. Smith.

*Corinarius lanatipes* Pk. Pileus 3-6.5 cm. broad, viscid, glabrous, “light buff” when young, “saly brown” at maturity, margin striate. Flesh pallid or white, thick on disk, thin on margin; odor and taste mild. Lamellae emarginate, pale caesius (“ceci-drab”) when young, “saly brown” at maturity, thin, medium broad, close. Stipe 4-6 cm. x 8-12 mm., dry, white or whitish, fibrillose, equal or subbulbous, with 2-3 remnants of veil forming evanescent rings at middle or below, solid. Spores 8-9.6 x 4.5-5 microns, minutely rough.


*Corinarius olivaceus* Pk. Pileus 4-6 cm. broad, convex, not fully expanding, “blue gray” to “pallid purple-drab,” moist, not hygrophanous, not viscid, white or silky, margin even. Flesh medium thick on disk, thin on margin, nearly concolorous; odor and taste mild. Lamellae rounded-adnate or adnate, “vinaceous gray” at first, then “saly brown” at maturity, medium broad, ventricose, close, transversely ribulose, edges crenulate. Stipe 5-6 cm. x 10-12 mm., concolorous, “vinaceous gray” within, white-silky, moist, equal above the oblique, emarginate bulb (bulp 2-3 cm. diam.), spongy. Veil whitish, webby, leaving an apical, evanescent ring. Spores variable, 7-9 x 4.8-6.6.4 microns, slightly rough, ellipsoid.

On soil, in coniferous and mixed woods, Tennessee, July-September and December.

*Corinarius olivaceus* Pk. Pileus 4-6 cm. broad, expanded, glutinous, “dresden brown,” “buffy brown” to “olive-brown” tinged dark-red or with a rusty olive tint; glabrous, radiately wrinkled to corrugated, margin with short striae, with a zone of dark spots near margin. Flesh gray-brown, thick on disk, thin on margin; odor and taste mild. Lamellae subemarginate, medium broad, broadest behind, color when young probably olive, at maturity “antique brown” to “argus brown,” close, faces rugulose, edges eroded. Stipe 3-6 cm. x 4-6 mm., dingy, scattered brown-fibrillose or
reticulated, not viscid, with an ovoid bulb up to 2 cm. diam., bulb not at all marginate-depressed, tapering upward, stuffed to hollow. Spores ellipsoidal, 9.5-12 x 5.5-7 microns, rough.

On soil among moss, North Carolina, August. One collection, taken from a moss-hummock, in fir woods atop Clingman's Dome. This species is closely related to C. luteo-fuscus Pk., in which the lamellae are at first yellow. Identification confirmed by Dr. A. H. Smith.

**Cortinarius pseudo-salior** Lange (Fig. 2). Pileus 3-6 cm. broad, hemispheric at first, finally expanded plane or nearly so, slightly and obtusely umbonate, glutinous, at first “deep vinaceous gray,” becoming “tawny olive” to “buckthorn brown” or “cinnamon brown” with splashes and areas of “dark plumbago blue,” at times entirely blue except disk which remains “tawny olive,” fading, pellicle separable, glabrous, margin incurved, pellucid-striatulate. Flesh medium on disk, thin on margin, concolor to pileus (brownish to bluish); odor and taste mild. Lamellae adnate-decurrent, sometimes emarginate, at first “deep vinaceous gray” to “dark heliotrope gray,” finally “salff brown,” broad to medium broad, close, edges eroded to serrulate. Stipe 5-12 (15) cm. x 5-12 mm., glutinous, varying whitish.

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"lilac gray," "dark heliotrope gray," "deep plumbago gray," "dark plumbago blue," "deep lavender," "bluish lavender," base white, flexuous or strict, equal, with or without a slight bulb, hollow-stuffed, concolor (bluish) within. Cortina cottony, covered by heavy gluten, breaking to form a conspicuous, flaring evanescent collar. Spores (11) 14-16 x (7.5) 8-9 microns, sterigmata 6-8 microns long. Pleurocystidia none; cheilocystidia clustered, pyriform-clavate to inflated (balloon-shaped), 27-41 x 12-21 microns.
On soil and in deep humus, in deciduous and mixed woods, Tennessee and western North Carolina. Smith (1944:178-179) gives a good account of this species as he found it.

*Corinarius uraeus* Fr. (Fig. 3). Pileus 3-5 cm., convex, umbonate, umbo prominent, acute, hygrophanous, pale dull brownish and silky, shining when dry, darker (“walnut brown”) and radiately streaked blackish when wet, umbo “army brown” to black, margin incurved at first. Flesh dingy-grayish, thick on disk, thin on margin; odor and taste of radish. Lamellae emarginate, at first drab, finally “warm sepia,” nearly close, broad, thin, markedly rugose on sides. Stipe 4-8 cm. x 6-10 mm., dingy, apex and base tinted violaceous, clavate-enlarged below, dry, fibrillose-striate, hollow. Peti rather sparse, at times leaving a slight apical ring. Spores 8-9.5 x 5-6.5 microns, slightly rough, ellipsoidal.


*Corinarius varicolor* Fr. Pileus 5-8 cm. broad, convex, expanded-convex, viscid, at first pale to smoky olive (not matched), with a violet tint, finally “buffy brown” to “tawny olive,” appressed fibrillose. Flesh “dark plumbago gray,” to “dark lavender,” more intense when wet, fading in age to nearly white, thick; odor and taste not distinctive. Lamellae narrowly emarginate, broad, narrowed at ends, at first violet (near “dark plumbago gray”), finally “Prout’s brown,” not changing when bruised, close, edges even. Stipe 5-8 cm. x 8-15 mm., “dark lavender” at first, finally dingy whitish, concolor within, fibrillose (fibrils brown), dry, stuffed with a pith, slightly bulbous (bulb 10-20 mm. diam., ovoid). Spores (9)10-12 x (5) 6-8 microns, rough, somewhat almond-shaped.

On soil, in mixed woods, Tennessee, August. Only one collection has been found, and that in the Park. Apparently rare in North America. Identified by Dr. A. H. Smith.

*Entoloma Cordae* Karsten (Fig. 4). Pileus 25-35 mm. broad, convex, “drab,” disk “hair brown,” with few scattered white fibrils, disk radiately

![Fig. 3. Corinarius uraeus Fr. x 2/3.](image-url)
rugulose, margin striatulate. Flesh thin, "drab," odor and taste mild. Lamellae narrowly emarginate, broad, ventricose, narrowed in front, ashy-color (not matched), edges even. Stipe 5-7 cm. x 3-4 mm., equal, twisted, dingy grayish, fibrillose-striate, mealy at apex, base strigose, hollow. Spores indistinctly 5-angled, apiculate, 8 x 7 or 8 x 8 microns; color in mass "russet." Pleurocystidia and cheilocystidia none.

On debris, edge of pine woods, Tennessee, August. Lange’s description and illustration represent our collection very well (1935-40). Previous report of this species in North America has not come to my attention.

*Lactarius pyrogalus* Fr. Pileus (4) 10-13 cm. broad, at first convex-plane, finally depressed from upturned margin, “light drab” to livid-grayish, zonate, not viscid, glabrous, margin crenate-wavy. Flesh white, somewhat firm, thick on disk, thin on margin; odor and taste mild. Milk white, unchanging, promptly very acid. Lamellae adnate, becoming sub-decurrent, distant or nearly so, pallid, finally "chamois," broad (up to 12 mm.), many short, few forking behind, edges even. Stipe 3-8 cm. x 7-20 mm., concolor to pileus or paler, not spotted, dry, glabrous, equal above pointed base, solid. Spores globose, 6-7 microns diam., echinulate; spore-print failed. Pleurocystidia abundant, cylindrical, 55-77 x 6-8 microns (projecting 25-40 microns); cheilocystidia few, not conspicuous, clavate, 16-20 x 5-7 microns. Cuticle fibrillose.

On soil, in deciduous woods, Tennessee and North Carolina, July-September. Three collections, all from the Park, have thus far been taken.

*Lentinus adhaerens* Fr. Pileus 10-18 mm., convex, dry, pinkish brown to "tawny," white- hoary, even. Flesh thin, white, firm; odor and
taste mild. Lamellae emarginate-uncinate, white, unchanging, broad, nearly close, edges serrate to crenulate. Stipe 2-3 cm. x 2-4 mm., curved, tapering slightly upward, fibrilloid, dry, solid. Spores 7.5 (11) x 3-4 microns, white, smooth, cylindrical, non-amyloid. Pleurocystidia scattered, cylindrical, conspicuously, 50-65 x 9-10 microns; cheilocystidia clustered, slender-cylindrical, 22-25 x 2 microns.

On soil, in spruce woods, Tennessee-North Carolina State line, October. Pilat (1946) presents a rather full account of this species, which, although of wide range in the world, is apparently rather rare here. Identity established by Dr. A. H. Smith.

Lentinus cochleatus Fr. Pileus 1-5 cm. broad, convex, depressed-umbilicate, hygrophanous, white to "pinkish buff," glabrous but appearing velvety under lens, often lobed, margin even. Flesh thin, whitish, piliated; odor slight, taste acid-bitterish. Lamellae decurrent, white, then dingy, close, broad, many short, short ones of six ranks, edges dentate. Stipe 0.7-4 cm. x 3-8 mm., often flattened, ridged and sulcate, eccentric or central, "buckthorn brown," velvety, dry, equal or enlarged at base, solid, bases confluent. Spores subglobose to short-ellipsoid, 5-5.5 x 4.4-5.5 microns, smooth, white in mass, amyloid. Pleurocystidia and cheilocystidia not differentiated. Surface of pileus composed of short, cylindrical, palisade cells.

Singly to sub-caesipitate, on deciduous log, Tennessee and Kentucky, October-November.

Lentinus lepideus Fr. Pileus 5-12 cm. or more broad, expanded, depressed behind, white with "stuffy brown" scales (from breaking of cuticle), scales larger and more numerous on disk, margin even. Flesh thick, hard, white; odor and taste mild. Lamellae sinuate-decurrent, white yellowish to rusty on bruising, broad, close, edges conspicuously serrate-dentate. Stipe 3-5 cm. x 12-25 mm., lateral or eccentric, tapering downward, hard, fibrilloid, at times scaly, solid. Veil evanescent. Spores 8-12 x 2.5-5 microns, oblong, smooth; white in mass, non-amyloid. Basidia slender, 40-48 x 5-6 microns; 2- to 4- spored. Pleurocystidia and cheilocystidia none found (Smith, 1949:300, reports both types of cystidia).

On dead wood of oak and pine, Tennessee, North Carolina, South Carolina, and Florida, May-July. This is perhaps our largest species of this genus, and, though infrequent in Tennessee, is widespread in temperate and tropical North America.

*Lentinus omphalodes Fr. Pileus 1-3 cm. broad, convex, deeply umbilicate, hygrophanous, "pale pinkish buff" when dry, "Prout's brown" when wet, glabrous, margin often lobed. Flesh thin, pallid; odor and taste mild. Lamellae adnate to decurrent, narrow, subdistant, whitish, edges serrate. Stipe 1-3 cm. x 2.3 mm., equal or tapering upward, tough, glabrous, wrinkled or lacunose, central to eccentric, concolor to pileus or paler, studded to hollow. Spores 4.5-6.5 x 3.5-4.5 microns, ellipsoid, verruculose, white in mass, amyloid. Pleurocystidia and cheilocystidia slender-clavate to sub-cylindrical, similar, buried, not conspicuous, 13-26 x 3-6 microns. Hyphae of pileus and gilltrama non-amyloid.

Gregarious to sub-caesipitate on logs and fallen limbs of deciduous trees, Tennessee and Virginia, throughout the year. Following Pilat (1946), I am placing L. umbilicatus Fr. in synonymy.

*Lentinus tigrinus Fr. Pileus 2-7 cm. broad, convex to plane, depressed to umbilicate, white with dense, dark brown or black scales, margin inrolled, becoming wavy and split. Flesh white, often becoming reddish when wounded, thin; odor and taste mild. Lamellae decurrent, white to yellowish, close, narrow, edges serrate-dentate. Stipe 1-2 cm. x 2.5 mm., whitish with ashy to brownish squamules, base often darker, often curved,
attenuated downward, solid. Veil slight, evanescent. Spores 5-7 x 3.4 microns, ovoid-ellipsoidal, smooth, pale cream in mass, non-amyloid. Pleurocystidia and cheilocystidia none.


*Lentinus vulpinus* Fr. Pileus 2-9 cm. broad, sessile, imbricated, reniform to conchate, coarsely hairy to scurfy, radially ribbed, whitish at first, then alutaceous, finally brownish, margin even. Flesh thick on disk, thin on margin, white, tough; odor strong, pungent, taste acid. Lamellae decurrent, broad, close or crowded, white, finally reddish, edges serrate, dentate or lacerate. Stipe none. Spores 3-5 x 2.5 microns, subglobose, smooth, white in mass, amyloid. Pleurocystidia and cheilocystidia, if present, resembling basidia.

On deciduous logs, Tennessee, Kentucky, and West Virginia, August-January. Following Pilat (1946:29), I am placing *L. ursinus* Fr. in synonymy.

*Paxillus atrotomentosus* Fr. Pileus 8-15 cm., convex, expanding, finally upturned and deeply depressed, "ochraceous buff" to "yellow ochre," at times reddish-brown, dry, short-tomentose, glabrescent, at times coarsely scaly from cracking of cuticle, margin even, wavy, incurved. Flesh thick, rather compact, white, promptly yellow becoming lavender in 15% KOH; odor and taste somewhat alkaline. Lamellae short-decurrent, close, broad, easily separable from pileus, "ochraceous buff," brown in KOH, forked and at times anastomosing, edges even. Stipe 3-7 cm., x 15-30 mm., central or eccentric, tough, with a dense brown-velvety tomentum, equal or tapering upward slightly, solid. Spores 4.5-6 x 3.3-5 microns, ovoid to ellipsoid, smooth, non-amyloid, in mass: "dark olive buff." Pleurocystidia and cheilocystidia none.

Singly and caespitose, on conifer logs and stumps, Tennessee and North Carolina, June-September.

*Paxillus Curtisii* Berk. Pileus 2-7 cm. broad, imbricate, sessile, laterally attached and shelving, flabelliform to dimitidate, convex, expanding, "olive-ocher" then "isabella color" to "metal bronze," matted-tomentose, margin even. Flesh thick, brownish, thin on margin, spongy; odor strong, disagreeable (suggesting old magnolia blossoms); taste bitter. Lamellae close, radiating from central-basal point, crisped, about 3 mm. broad, narrowed in front, dichotomously forked, anastomosed, "ferruginous" to "warm buff," finally "yellow ochre," easily separating from pileus, edges even but wavy. Stipe absent. Spores ellipsoidal, 3-3.5 x 1.5-2 microns, color in mass: "dark olive buff" to "buffy citrine." Pleurocystidia and cheilocystidia none.

On conifer logs and stumps, Tennessee, North Carolina. In our No. 18019, from Greenbrier, in the Park, the pileus was fasciculate-squamulose, the odor mild, and the spores 4.5 x 3.5-4 microns, "honey yellow" in mass.

*Paxillus involutus* Fr. Pileus 5-12 cm. broad, convex, fibrillos, viscid when wet, "clay color," "sawd brown," "smuff brown" to "tawny olive," at times with "orange cinnamon" areas, margin at first involute, often heavy-tomentose and ridged. Flesh medium thick, abruptly thin on margin; pale yellow, brownish when bruised; odor and taste mild. Lamellae decurrent, rather broad, close, forked, anastomosed-porose on stipe, at first pallid then yellowish, finally "tawny olive," to brownish in age or when bruised. Stipe 2.5-8 cm. x 5-16 mm., central or eccentric, equal or enlarged downward or at base, dingy brownish, reddish or brownish when bruised, dry, solid. Spores 7-9 (11, rarely 13) x 4.5-5 microns, ellipsoidal, smooth. Pleurocystidia scattered, lancelate, often inconspicuous, at times with brownish contents, 40-73 x 6-10 microns; cheilocystidia similar.
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On soil and decaying logs, Tennessee and North Carolina, June-September.

*Paxillus panuoides* Fr. Pileus 2-6 (10) cm. broad, sessile, fan-shaped or conchate, "pale orange-yellow" to "honey yellow," rarely whitish, hispid behind, tomentose in front, margin incurved, even. Flesh thick, soft, pale yellow; odor mild and taste mild or bitter. Lamellae radiating, close, yellowish, medium broad, anastomosing and crisped behind, edges even. Stipe none. Spores 3.5-5 x 2.5-4 microns, short-ellipsoid, smooth, in mass: "sayal brown." Pleurocystidia and cheilocystidia none.

On conifer logs and stumps, Tennessee, North Carolina, Alabama, and Florida, June-October. About a dozen collections have been taken, most of them from the Park. All parts become reddish brown in 15 per cent KOH.

*Paxillus rhodoxanthus* Schw. Pileus 4-10 cm. broad, convex, depressed, "orange cinnamon," "minkado brown," "sayal brown," "ochraceous tawny," "cinnamon," "hazel," or "Kaiser brown," tomentose, rimosely cracked, margin even, incurved. Flesh medium thick on disk, thin on margin, tinged pinkish above, yellowish below, firm; odor and taste mild. Lamellae arcuate-decurrent, "aniline yellow" to "lemon chrome," "pale lemon yellow" to "strongtian yellow" broad, close, many short, none forked, edges even. Stipe 1.5-6 cm. x 4-15 mm., curved, concolor to pileus above, yellowish below, upper portion tomentose, at times with russet scales, flesh yellow, cavernous, enlarged upward, at times equal, dry. Spores oblong, 11-12 x 4-5 microns, like Boletus spores, smooth; color in mass: "vetiver green" to "buffy olive." Pleurocystidia 101-112 x 12-14 microns, scattered, buried deeply but projecting about 40 microns, yellow, bottle-shaped-fusiform; cheilocystidia clavate-cylindrical, 48-56 x 10-15 microns, yellow.

On soil in mixed and deciduous woods, Tennessee and North Carolina, June-September.

**Literature Cited**


