



November 2013

## Lactarius Notebook 11

L. R. Hesler

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LACTARIUS COLORASCENS Pk. ~~1907~~ ~~Coltrane~~

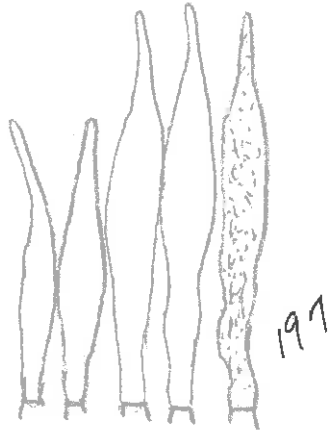
Port Jefferson, N. Y., leg. Atkinson, August, 1904

Type

Spores 6-7.5(8) x 5-6  $\mu$ , ellipsoid, more rarely subglobose, warts 0.3-0.7  $\mu$  high, broad bands and lines forming a reticulum. Basidia 40-48 x 8-11  $\mu$ , 4-spored. Pleurocystidia 38-53 x 5-8  $\mu$ , ventricose, apices tapering, granular-spangled, found on lower portion of gill only; cheilocystidia 37-45 x 5-7  $\mu$ , more or less similar. Gill trama of interwoven hyphae and large cells. Pileus trama vesiculose. Pileus cuticle a thin zone of gelatinous to subgelatinous hyphae, the surface bearing pileocystidia, 30-38 x 4-5  $\mu$ , cylindric, bottle-shaped, scattered. Stipe cuticle of repent, dry hyphae; rosettes few and inconspicuous. Caulocystidia and clamp connections none.

*Plectonius colorascens* PK. var. *colorascens*

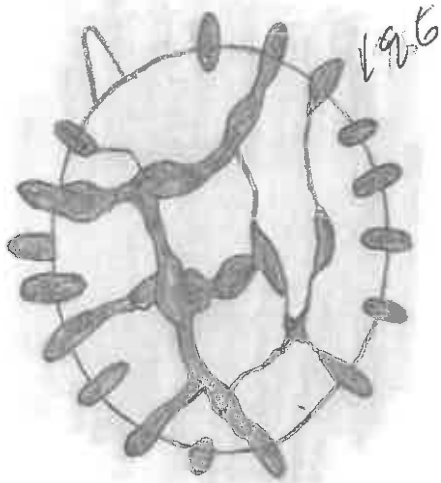
Type



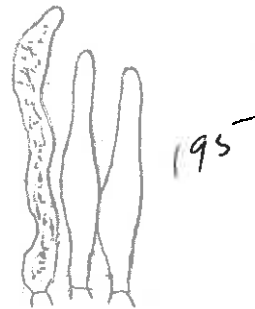
Pl - x 1000



Ch - x 1000



Spore - x 8000

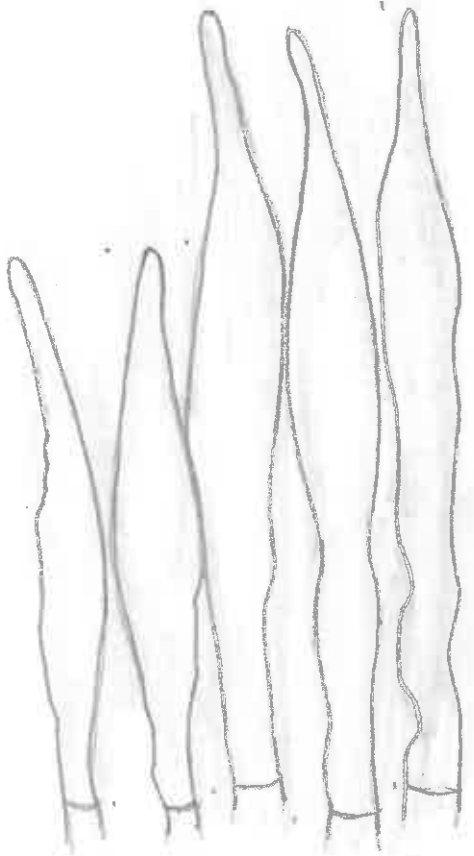


Pileo - x 1000

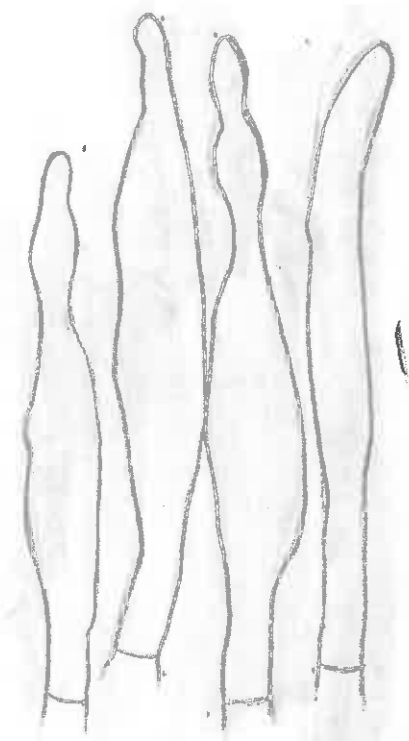
Lactarius colorascens ~~Fr.~~ var. ~~colorascens~~  
Type



Pales - X 2000



Pl -  
X 2000



~~Pl~~ - X 2000  
eh

Potter-9103

LACTARIUS COLORASCENS

On sphagnum, Edgewood, Michigan, September 23, 1949.

Potter: milk white, turning yellow.

Spores 6-7.5 x 5-6  $\mu$ , ellipsoid, warts 0.2-0.4  $\mu$  high, bands not forming a reticulum. Pleurocystidia 52-64 x 7-9  $\mu$ , clavate-acuminate; cheilocystidia 28-50 x 5-8  $\mu$ , clavate-acuminate or fusoid. Pileus cuticle a narrow gelatinous to subgelatinous zone--an ixocutis.

Sm - 9907

LACTARIUS COLORASCENS Pk.

Among oak leaves on soil, Laurel Falls Trail, GSMNP, Tenn., August 8, 1938.

Notes by Smith

Pileus 2-4 cm broad, convex, with an incurved cottony margin at first (not distinctly fibrillose), soon broadly convex to slightly depressed on the disc with the margin arched or uplifted, surface glabrous, color white when young, in age darkening to dingy reddish brown, faintly zoned and sometimes spotted, margin faintly striate, context white or tinge pinkish tan, rather pliant. Latex white, soon changing to "pale lemon yellow," slightly acrid to nearly mild.

Lamellae slightly decurrent, crowded, narrow, white at first or nearly so, becoming pinkish buff to reddish like the pileus but not spotted.

Stipe 3-5 cm long, 6-15 mm thick, equal, hollow, white and dull but glabrous under a lens, becoming pale pinkish tan near the base and finally over all.

Notes by Hesler

Spores white in deposit, 6-7.5 x 5.5-6  $\mu$ , ellipsoid, warts 0.3-0.7  $\mu$  high, bands and lines forming more or less a reticulum. Basidia 30-38 x 6-8  $\mu$ , 4-spored. Pleurocystidia 44-56 x 6-10  $\mu$ , ventricose, mucronate or often acuminate; cheilocystidia 26-42 x 5-7  $\mu$ , similar. Gill trama slight interwoven. Pileus trama vesiculose. Pileus cuticle a gelatinous zone, resting on a brownish hypodermium. Stipe cuticle of repent, non-gelatinous hyphae, bearing scattered caulocystidia, 27-40 x 2-5  $\mu$ , filamentous, ventricose, flask-shaped, at times capitate. Clamp connections none.

*Plectarium colorascens* PK.

Sm. 9907



Cauls (scattered)

- x 1000

21530

LACTARIUS COLORASCENS Pk. (?)

Tuscaloosa Co., Ala., September 15, 1952.

(labelled colorascens)

Spores with warts 0.5-1.0  $\mu$  high; cystidia usual.

*Pileus*  
^

Cuticle a thin gelatinous zone.

Hollis says latex white, instantly turning  
sulfur-yellow.



35224

*colorascens* PK.  
LACTARIUS ~~RUSSET-STIPE~~ sp. nov.

Under rhododendron, Cades Cove, August 12, 1969

Pileus 1-2.5 cm broad, convex-plane then slightly depressed, "pinkish buff" to "cinnamon buff," often with a minute papilla, azonate, viscid, glabrous, even. Context pallid buff; odor faint, taste bitter. Latex white, soon yellow, not staining, bitter.

Lamellae adnate, "light ochraceous buff," unchanging, (not staining), close, medium broad, some forking behind, lamellulae few.

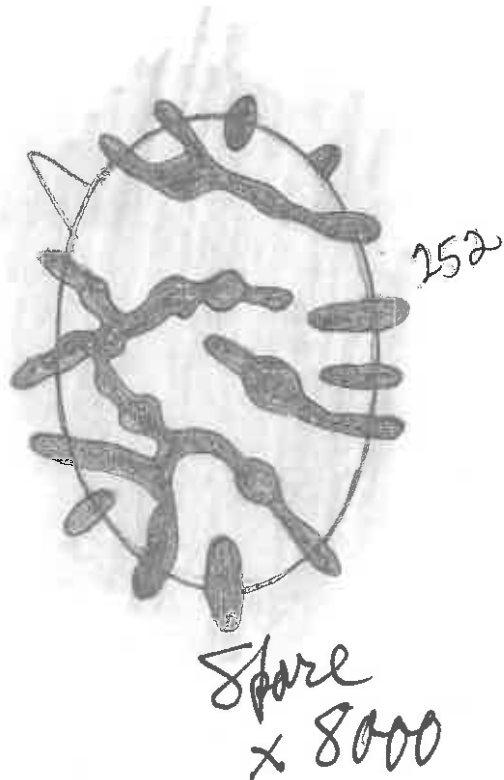
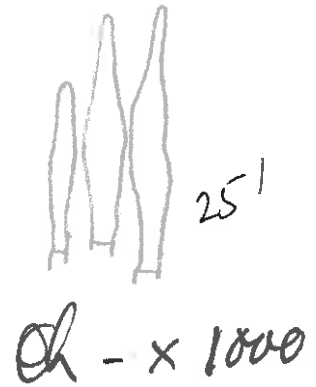
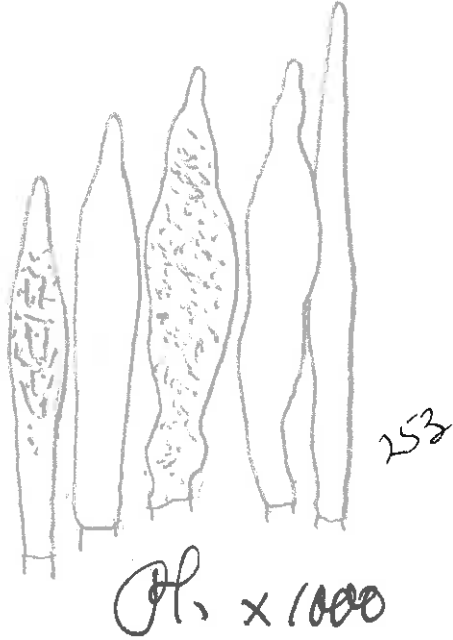
Stipe 2-3.5 cm long, 3-5 mm thick, "russet," equal, hollow, dry.

*yellowish in deposit,*  
Spores ~~(8)~~ 5.5-7.5(8) x 5-6  $\mu$ , ellipsoid, at times slender-ellipsoid, warts 0.3-1.0  $\mu$  (~~variable~~), bands more or less nodulose, forming a partial reticulum. Basidia 32-38 x 6-8  $\mu$ , 4-spored. Pleurocystidia 56-68 x 7-14  $\mu$ , ventricose, sometimes slightly constricted, apices tapering, granular-spangled; scattered; cheilocystidia 25-34 x 4-7  $\mu$ , subfusoid, not abundant. Gill trama of short-celled, subparallel hyphae. Pileus trama vesiculose; lactifers 3-8  $\mu$  broad. Pileus cuticle a thin ixocutis, distinct or indistinct; hypodermium none. Stipe cuticle of repent, dry hyphae; rosettes present. Clamp connections none.

The distinctive characters include the papillate, viscid, azonate, glabrous, pinkish buff pileus; the russet, dry stipe; the white then yellow, bitter latex, the small spores, and rather short and broad pleurocystidia.

*Factarius colorascens*  
~~*fusca* *sp. nov.*~~

35224



37073

LACTARIUS COLORASCENS (?)

Among moss, conifer forest, Conway, N.H., September 26, 1971,  
leg. John Minot (labelled colorascens)

Notes by Minot

Cap pale to red-brown, dry, azonate, glabrous. Taste peppery. Latex white then fulfur-yellow. Gills pale to brownish. Stipe pale to brownish, stuffed.

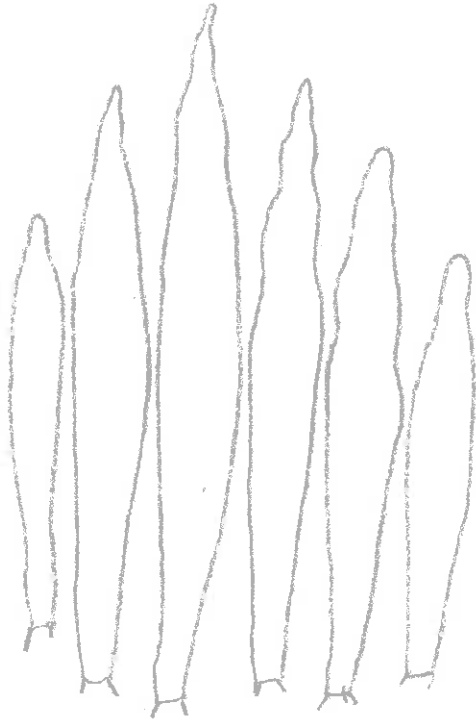
Notes by Hesler

Spores (5.5)6-8 x (5)5.5-6.5(7)  $\mu$ , warts 0.2-0.5  $\mu$ , bands and branches forming a partial reticulum. Pleurocystidia 53-92 x 7-11  $\mu$ , ventricose, apices often more or less tapering; cheilocystidia 27-53 x 4-7  $\mu$ , subclavate, apices conic. Pileus cuticle an ixocutis; hypodermium brown. Stipe cuticle of dry repent hyphae, bearing a thin turf of caulocystidia, 15-32 x 3-5  $\mu$ ; rosettes present.

With notes available, it might be colorascens.

*Pectarius colorascens* (?)

37073



Pl  $\times 1000$



Ch  $\times 1000$

Sm-58142

LACTARIUS COLORASCENS Pk.

PHOTO

Scattered under oak-pine barrens, Tapinabee, Mich.,  
September 15, 1957. Studied, spores drawn.

Pileus 3-7 cm broad, convex becoming depressed,  
or merely plane, surface slightly viscid white to  
whitish when young, becoming pale incarnate zoned  
pallid, or merely zoned or spotted and canescent,  
margin merely faintly downy; flesh fragile, pallid.  
Latex white quickly yellow, mild to slightly acrid.

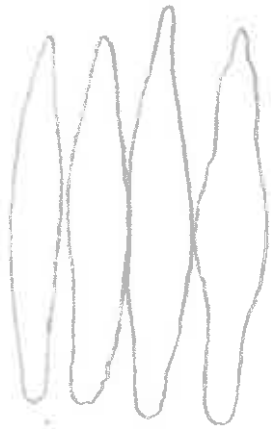
Lamellae crowded, narrow, adnate white becoming  
pale vinaceous buff, quite a few forked.

Stipe 3-5 cm long, 1-1.5 cm thick at apex, solid,  
white, unpolished, naked. Spores whitish buff  
("cartridge buff").

Spores in deposit: "cartridge buff," 6-8 x 5-6  $\mu$ .  
Pleurocystidia 46-55 x 7-9  $\mu$ , fusoid-ventricose;  
cheilocystidia 40-46 x 6-8  $\mu$ , similar. Cuticle a  
gelatinous zone, 80-130  $\mu$  thick.

*Actarum colorascens* PK.

Sm - 58142



Pl - x 1000



Ch - x 1000

colorascens Pk.

Sm-77240

LACTARIUS NAUBEOSUS sp. nov.

Alabama

Gregarious, on soil, Robinsons Springs, in swamp, leg. Dr. Burke,

September 18, 1942

Notes by Burke

Pileus 10-16 mm, between white and cream color, viscid, obscurely zonate, zones becoming more distinct, minutely reticulate-rugulose, *margin* even. Context white, quickly "Martins yellow;" taste mawkish, disagreeable, slightly and tardily acrid. Latex milky-white, becoming "Martins yellow," abundant, *staining tawny*.

Gills adnate-decurrent, few forked behind, "light ochraceous buff" to "ochraceous buff," staining "tawny" by latex, close, narrow,

Stipe 1.5-2.5 cm long, 2-3 mm thick, concolorous with pileus above, faded fawn color below, solid, equal, pale hoary, base short-strigose.

~~Spores in deposit: white.~~

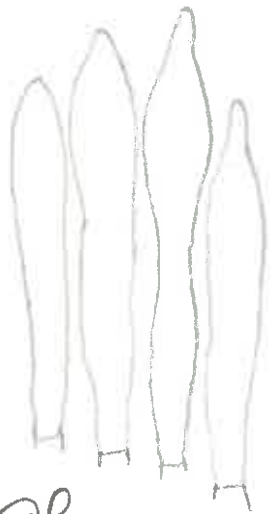
Notes by Hesler

*white,*  
Spores  $6-8 \times 5-5.5(6) \mu$ , ellipsoid, warts  $0.3-0.8 \mu$ , bands and branches forming a partial reticulum or none, some slight webbing. Basidia  $36-40 \times 7-9 \mu$ , 4-spored. Pleurocystidia  $44-57 \times 6-10 \mu$ , subclavate to subventricose-acuminate; cheilocystidia  $25-37 \times 4-6 \mu$ , subclavate. Pileus cuticle a thin ixocutis. Stipe cuticle of repent, dry hyphae; rosettes present. Clamp connections none.

Chief characters: small, pallid pileus; latex turning to yellowish-green; white spores; mawkish, disagreeable taste. It is near L. insipidus.

*Lactarius colarascens* P.K.  
~~maurandii~~ sp. nov.

Sm-77240



Pl. x 1000



Ch. x 1000



Spore  
- x 8000



Barrows - 522

LACTARIUS CONTROVERSUS

In mountains near Santa Fe, New Mexico, August, 1957.

Notes by Barrows

Pileus up to 20-22.5 cm broad, funnel-shaped, white with rusty stains and spots, 3-4 narrow zones on margin. Latex white, mild then slowly acrid. Lamellae narrow, pinkish. Stipe 5-8 cm x 25-50 mm, white, solid.

Notes by Hesler

Spores 5-7.5 x 4-5  $\mu$ . Stipe cuticle bearing tufts of caulocystidia. Otherwise as in Sm-77223.

Bas - 2477 LACTARIUS CONTROVERSUS (Pers. ex Fr.) Fr.

In open dunes, among Salix repens, Vogelenzang, North Holland, October 5,  
1961 (in Nert. Reiden)

Notes by Bas (Transl. by Donk)

Cap 7 cm in diam., funnel-shaped, with deflexed margin, chamois with brownish-hyaline narrow concentric rings and similar spots, in addition with vague spaced flesh-coloured spots, glabrous, viscid. Flesh white with slightly yellowish hue, with hyaline zones in cap-margin; odor faint, pleasant; taste tardily very sharp. Latex white.

Gills crowded, narrow (up to 3.5 mm), pale flesh-coloured-pink, forked near stalk.

Stalk 2.5 cm x 16 mm, white, with pink surface structure, narrowed towards the base.

Spores 6.7-7.3 x 4.6-5.6  $\mu$ , with coarse ornamentation, usually almost a complete reticulum.

Notes by Hesler

Spores 5.5-7.5 x 4.5-5.5  $\mu$ , warts 0.2-0.4  $\mu$ , bands and branches forming a partial reticulum. Other micro characters as in Maas G. - 9249.

W-K 2903

LACTARIUS CONTROVERSUS

Eklutna River, near Anchorage, Alaska, in deciduous woods, Wells-Kempton, September 13, 1965 - #3

Notes by Wells-Kempton

Pileus 9-17 cm broad, convex, depressed to subinfunduliform, pale ivory to whitish with obscurely smoky lavender to lavender brown areas, azonate, or rarely the margin with narrow zones, viscid, subglabrous. Context pallid whitish, unchanging; odor not distinctive, taste moderately bitter, tardily but strongly acrid, flesh in large specimens appears concentrically zoned. Latex white, moderately abundant, unchanging (on finger-~~and~~ nail and on gills), bitter then tardily becoming moderately acrid.

Lamellae adnate to decurrent, medium flesh (in buttons) becoming darker with age (Pl. V, W 3-4, buttons, orange-buff, then more pink with gray tints), narrow (5 mm), close to crowded, some forking near stipe.

Stipe 2.5-6 cm long, 20-35 mm thick, equal or tapering below, whitish, sometimes staining slightly ochraceous where bruised, dry, unpolished, pruinose-floccose, not scrobiculate.

Macrochemicals (all parts):  $\text{FeSO}_4$ , neg.; KOH, neg.; Amm., neg.; Phenol, vinaceous.

Lavender staining on pileus obscure, and probably of no taxonomic value. Of the general stature of L. controversus but staining too obscure for that.

Notes by Hesler

Spores 5.5-7 x 5-5.5  $\mu$ , warts 0.2-0.3  $\mu$  high, bands forming a partial or no reticulum. Pleurocystidia 43-57 x 3-5  $\mu$ , slender, aciculate, granular, inconspicuous; pseudocystidia filamentous; cheilocystidia 18-25 x 3-4  $\mu$ , ventricose, scattered. Pileus cuticle a thick gelatinous zone--an ixocutis. Stipe cuticle of repent hyphae--an ixocutis; rosettes present.

W-K 2904

LACTARIUS CONTROVERSUS

Del Rois, Palmer Highway, Alaska, in mixed coniferous-deciduous woods, August 29, 1966.

Notes by W-K

Pileus 8-9.5 cm (young collection), pallid white, staining vinaceous. Latex tardily moderately strongly acrid in the throat. Lamellae pinkish flesh. Stipe stuffed then hollow. Spores in deposit just off white (A-B).

FeSO<sub>4</sub>, KOH, NH<sub>4</sub>OH - 0; phenol vinaceous.

Notes by Hesler

Spores 5.5-7(7.5) x 4.5-5.5 u, warts 0.2-0.4 u, bands and branches forming a partial reticulum. Pleurocystidia rare or absent, when present 37-48 x 4-6 u; cheilocystidia similar, smaller. Pileus cuticle an ixocutis. Stipe cuticle an ixocutis; rosettes present. Clamps none.

Thiers - 3684

LACTARIUS CONTROVERSUS

In hardwood forest, Pellston, Michigan, July 30, 1956.

Spores 5-7.5 x 4-5.5  $\mu$ , warts about 0.2  $\mu$  high, bands forming a reticulum. Otherwise agrees well with Groves coll (see Tenn. 29801).

Ours in North America seems to have a more slender stipe than that of Europe (see Neuhoff, Lange, and Bresadola).

Bas 4812

LACTARIUS CONTROVERSUS (Pers. ex Fr.) Fr.

Along patch of Salix repens, Ontvoorne, Holland, the Netherlands,

October 14, 1966 (no notes)

Notes by Hesler

Micro characters as in Bas - 4836.

Wells-Kempton - 4835 LACTARIUS CONTROVERSUS

Eklutna Flats, south central Alaska, in spruce and deciduous, September 1,  
1970

Notes by Wells-Kempton

Pileus 5-7(11) cm broad, margin inrolled, depressed to funnel-shaped, whitish, staining vinaceous-pink on disc, becoming dull ochraceous, viscid, with an over-~~l~~ay of white pruinose floccosity but not hairy on disc, zonate (3-4 zones) on the very margin. Context white, unchanging, thick (10-12 mm); odor not distinctive to slightly metallic, taste bitter and tardily strongly acrid. Latex scanty, watery to slightly milky and causes no changes.

Lamellae adnate-subdecurrent, pale flesh with a pinkish tint, narrow, crowded.

Stipe 3-4 cm long, 20-30 mm thick, white, pruinose, dry, not scrobiculate, stuffed soon hollow, equal or tapering downward slightly.

KOH - 0;  $\text{FeSO}_4$ -0; Phenol - vinaceous on all parts.

Notes by Hesler

Spores 6-7.5 x 4.5-5.5(6)  $\mu$ , more or less slender-ellipsoid, waists 0.2-0.5  $\mu$  and blunt, bands and branches forming a partial to nearly complete reticulum. Basidia 47-54 x 7-8  $\mu$ , 4-spored. Pleurocystidia rare; 50-62 x 6-8  $\mu$ , subventricose. Cheilocystidia 32-30 x 4-6  $\mu$ , cylindrical or subclavate, not conspicuous. Pileus cuticle an ixocutis, 220-360  $\mu$  thick; hypodermium brown. Stipe cuticle an ixocutis; hypodermium rather obscure; rosettes present.



Bas - 4836

LACTARIUS CONTROVERSUS (Pers. ex Fr.) Fr.

Near Salix repens, in open grassy vegetation, Schonwen, Netherlands,  
Province Geeland, October 22, 1966 (no notes)

Notes by Hesler

Spores 5.5-7.5 x 4.5-5.5  $\mu$ , warts 0.2-0.5  $\mu$ , bands and branches forming a partial reticulum. Pleurocystidia widely scattered, 42-60 x 3-7  $\mu$ , slender-ventricose-acuminate; pseudocystidia 2-4  $\mu$  broad, filamentous; cheilocystidia rare, 30-38 x 3-4  $\mu$ , similar to pleurocystidia. Pileus cuticle an ixocutis, hyphae loosely interwoven; hypoderm obscure. Stipe cuticle a thin ixocutis, bearing scattered caulocystidia, 22-45 x 3-5  $\mu$ , more or less cylindric.

*Factarium controversum*

Bas - 4836

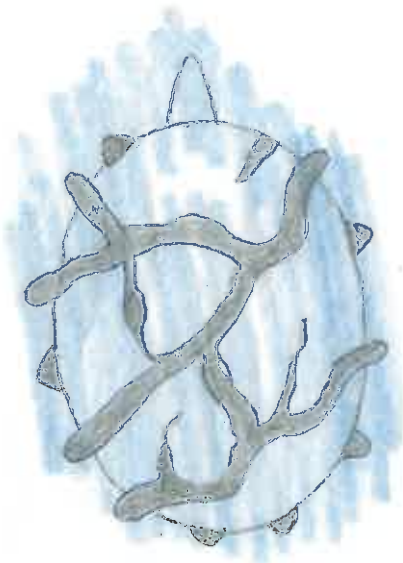
Jermineci



Pl. - x1000



Ch. - x1000



910

Spore - x8000

W-K 5207

LACTARIUS CONTROVERSUS

In deciduous-spruce woods, Eklutna Lake, Alaska,  
August 24, 1971.

Notes by W-K

Pileus 9-13 cm, pallid whitish, staining slowly lavender-pink, tacky, azonate, margin floccose when young. Context white, unchanging; odor none, taste slightly bitter then slightly acrid, "buttons" tardily but strongly acrid. Latex white, unchanging, apparently eventually causing lavender coloration.

Lamellae adnate subdecurrent, pale flesh pink, narrow, crowded.

Stipe 4-5 cm x 30-50 mm, white, appressed white-floccose, hollow.

Spores in deposit: pale cream.

Notes by Hesler

Spores 5.5-7 x 4.5-5.5  $\mu$ , warts 0.2-0.5  $\mu$ , bands and branches forming a partial reticulum. Pleurocystidia 42-50 x 4-6  $\mu$ ; cheilocystidia 30-38 x 3-5  $\mu$ . Pileus and stipe cuticles each an ixocutis.

W-K 5301

LACTARIUS CONTROVERSUS

University of Alaska, Fairbanks, in mixed woods,

August 16, 1971.

Notes by W-K

Pileus 9-17 cm broad, depressed, whitish or in areas tinged ocher, slowly staining pink to lavender pink, tacky to subviscid, white-appressed-fibrillose subfloccose, appearing somewhat-shaggy, glabrescent, sometimes with 6-7 narrow, margin zones, or azonate. Context white, hard; odor none, taste slightly bitter at first, tardily moderately strongly acrid. Latex scanty, opaque whitish.

Lamellae adnate-decurrent, pale flesh, in age vinaceous pink or vinaceous buff, narrow, crowded, intervenose.

Stipe 5-7 cm long, 25-40 mm thick, white, dry, appressed fibrillose-floccose, tapering slightly downward, hollow.

Spore deposit: flesh pink.

Notes by Hesler

Spores 5-7(7.5) x (4.5) 5-5.5  $\mu$ , warts 0.2-0.4  $\mu$ , bands and branches forming a partial reticulum. Pleurocystidia 36-47 x 4-5  $\mu$ , scattered; cheilocystidia 28-38 x 2-4  $\mu$ . Pileus cuticle an ixocutis. Stipe cuticle.

Watling - 6181

LACTARIUS CONTROVERSUS

St. Kilda, amongst Salix repens, September 13, 1967 (ex-Herb. Edinburgh)

Spores 5-7 x 4.2-5  $\mu$ , ellipsoid to subglobose, warts 0.2-0.3  $\mu$  high, bands partial or nearly complete. Pleurocystidia 38-52 x 4-6  $\mu$ , ventricose to subclavate, apices conic, inconspicuous; pseudocystidia filamentous; cheilocystidia 22-28 x 3-5  $\mu$ , cylindrical, subclavate, ventricose, inconspicuous. Pileus cuticle an ixocutis, 150-200  $\mu$  thick; no hypodermium. (Stipe cuticle not studied; material not suited.)

Sm - 9949

LACTARIUS CONTROVERSUS

Laurel Ridge Trail, (State?), August 8, 1938

(Labelled controversus; no notes. Says see my Mich. coll.)

Spores 5-7(7.5) x 4.5-5.5  $\mu$ . Pleurocystidia and cheilocystidia scattered, slender-ventricose, apices tapering nodulose. Pileus cuticle an ixocutis of subgelatinous hyphae. Stipe cuticle an ixocutis.

Micro features as in material from Leiden (Maas G. - 9249 and Bas 4836).

Sm-15873

LACTARIUS CONTROVERSUS

Machinaw City, Michigan, August 9, 1968.

Spores 5.5-7.5 x 4.5-5  $\mu$ . Otherwise as in Sm-76204.

29801

LACTARIUS CONTROVERSUS (Pers. ex Fr.) Fr.

On soil, in poplar woods, Ottawa, Canada, leg. det. Groves (113322),  
September 2, 1965.

Spores "pale pinkish cinnamon" (Smith) 5-7 x 4.5-5.5  $\mu$ , ellipsoid, warts 0.3  $\mu$  or less in height, bands and lines forming an incomplete reticulum, with some free-end branches. Basidia 37-42 x 6-8  $\mu$ , 4-spored. Pleurocystidia 40-53 x 4-6  $\mu$ , ventricose, apices constricted-capitate, granular, rare and inconspicuous; pseudocystidia on sides and edges, filamentous to irregular 18-50 x 2-4, with refractive content; cheilocystidia 20-27 x 3-5  $\mu$ , flask-shaped, ventricose, scattered, not abundant. Gill trama of subparallel, short-celled hyphae, with lactifers. Pileus trama vesiculose. Pileus cuticle a gelatinous zone, ixocutis, 150-300  $\mu$  thick. Pileocystidia and caulocystidia none. Stipe cuticle a thin ixocutis, ~~thick~~ at times obscure, the surface in some sections bearing pyramidal tufts of hyphae 150-300  $\mu$  high; hypodermium distinct; rosettes present. Clamp connections none.

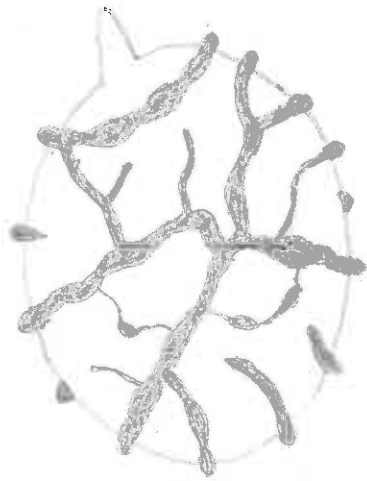
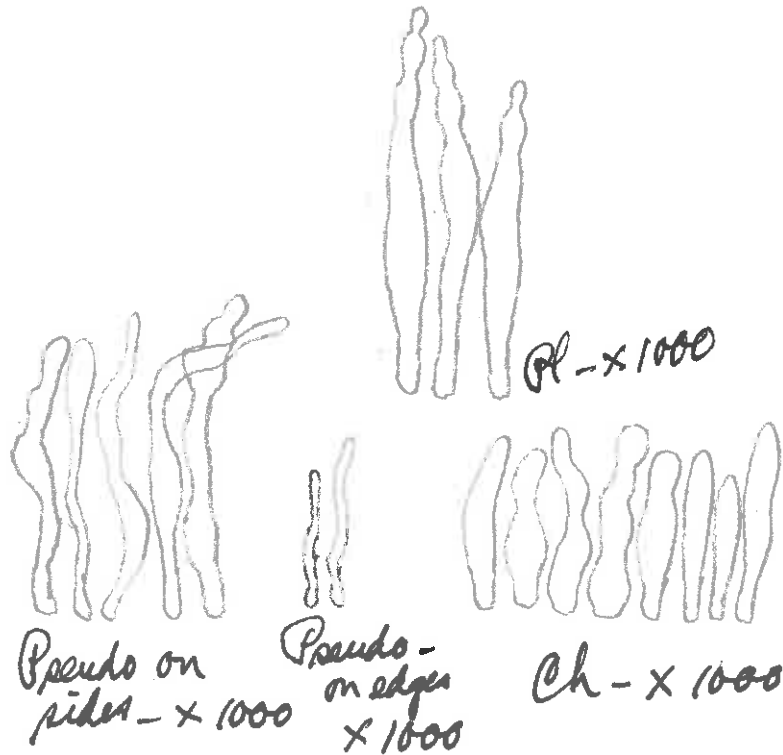
See Neuhoff, p. 94; Lange; Groves, Edible and Poisonous Mushrooms of Canada, p. 42; and A. H. Smith, Notes.

Thiers (Mycol. 49: 712) says it is near albolutescens in which the latex is white becoming greenish-yellow within 15 sec., the spores larger, and the stipe white.



*Pectanum controversus*

29801 (Canada; Groves)



Spore x 8000

{ Bas 5006

{ Tenn 35431

LACTARIUS CONTROVERSUS

Roadside, under Tilia and Populus, near Leiden, Holland,

September 8, 1968

Notes by Bas

Pileus 90-170 mm, whitish to dingy cream with vinaceous-purplish red spots, azonate (but sometimes with vague concentric ridges, especially at margin of oldest caps), with appressed, cottony-felted covering, sometimes somewhat scabrous at centre, covering at outmost margin thin, cottony-subtomentose, showing impressions of gills. Context whitish, somewhat yellowish near surface of stem. Taste slowly acrid; odor fruity. Latex white, copious at margin of cap, scanty elsewhere, unchanging (also on white filter-paper).

Lamellae crowded, narrow, subdecurrent, pale pinkish cream at first, later pale flesh pink with slight dingy cream tinge (colours Munsell 10 Y R 8/4 till 5 Y R 8/4).

Stipe 25-50 x 20-35 mm, tapering downward, white-subvelutinous with naked isabella spots (subscrobiculate), with ochraceous brown spots near base.

Spore print pale cream with flesh pink tinge (Munsell 7.5 ~~Y~~ Y R 8/2 - 8/4 in thin print).

Notes by Hesler

Spores 6-7.5(8) x (4.5)5-5.5  $\mu$ , rather slender-ellipsoid, warts 0.2-0.5  $\mu$  high. Pleurocystidia and cheilocystidia as in Maas G - 9249 (TENN 35813). Pileus cuticle a thick ixocutis, with fibrils on surface; hypodermium present. Stipe cuticle (sections) appears repent and dry,

{ Bas 5006  
Tenn 35431

L. controversus - page 2

in other sections a cuticle-zone is distinct, and is more or less gelatinous, an ixocutis; rosettes present; caulocystidia scattered, or dense and forming a turf, more or less cylindric, 22-45 x 2.5-4  $\mu$ .

(Tenn-35813

Maas Geesteranus - 9249) LACTARIUS CONTROVERSUS (Pers. ex Fr.) Fr.

Wassenaar, Netherlands, October 23, 1952

Notes by Maas G. (transl. by Donk)

Cap 7-8 cm, pale ochre, faintly zoned, slimy when wet, faintly shining, with somewhat hairy margin. Latex white. Gills pale-yellowish-flesh, crowded. Stalk whitish, shiny, rugulose, attenuate strongly downward, almost triangular (apparently solid).

Notes by Hesler

Spores "pale pinkish cinnamon," 5-7(8) x 5-5.5(6)  $\mu$ , slightly inequilateral in profile, warts 0.2-0.5  $\mu$ , bands and at times branches forming a partial reticulum. Basidia 43-50 x 7-9  $\mu$ , 4-spored. Pleurocystidia 38-53 x 4-5(7)  $\mu$ , slender-ventricose, apices tapering, more or less nodulose; cheilocystidia 33-42 x 3-5  $\mu$ , similar. Gill trama subparallel. Pileus cuticle a thick ixocutis (330-~~400~~400  $\mu$ ), hyphae 2.5-5  $\mu$  and parallel to subparallel, extending periclinally; hypoderm indistinct or absent, to more or less conspicuous. Stipe cuticle an ixocutis, 70-100  $\mu$  thick; hypoderm present; rosettes none. Clamp connections none.

*Ractarius controrsus*

[Maas Geesteranus - 9249  
Tenn 35813 (The Netherlands)]

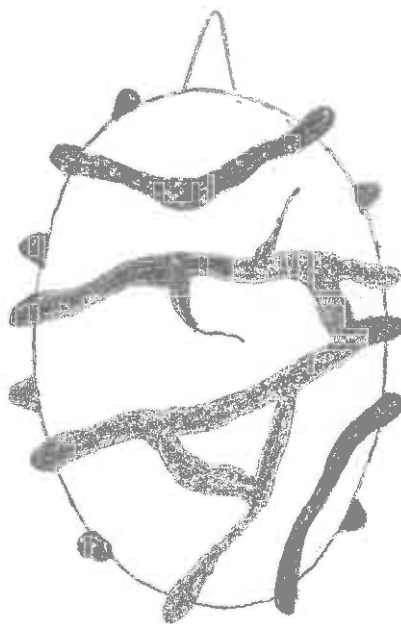
*Fornuosi*



Ch - x 1000



Ch - x 1000



Spore - x 8000

Sm - 75030

LACTARIUS CONTROVERSUS

PHOTO

Mich. Biol. Station, Mazzer, August 15, 1967.

Spores 5-7 x 4.5-5  $\mu$ , ellipsoid. Otherwise as in 29801.

Sm-75873

LACTARIUS CONTROVERSUS

Mackinaw City Hardwoods, Emmet Co., Michigan, August 9, 1968

(no notes by Smith)

Notes by Hesler

Spores 5.5-7 x 4.5-5(5.5)  $\mu$ . Pleurocystidia and cheilocystidia usual. Pileus cuticle an ixocutis, 500-650  $\mu$  thick; hypodermium distinct. Stipe cuticle an ixocutis; hypodermium none.

Sm-76204

LACTARIUS CONTROVERSUS

Under Populus, Codin, Idaho, AHS, September 11, 1968.

Spores 5.5-7.5 x 4.5-5  $\mu$ , ellipsoid, warts 0.3  $\mu$  or less, bands and lines rarely forming a reticulum. Pleurocystidia ~~34-45~~ x 3-4  $\mu$ , fusoid, granular-spangled, common near edges, rare elsewhere; pseudocystidia filamentous; cheilocystidia 26-32 x 3-4  $\mu$ , fusoid or subulate, not abundant. Gill trama of small cells. Pileus trama vesiculose. Pileus cuticle an ixocutis, 80-120  $\mu$  thick; rosettes present in lower portion of context. Stipe cuticle an ixocutis; rosettes present in outer portion. Clamp connections none.

Agrees with 29801.



*Factorius contronensis*

Sm-76204



Pl- x 1000



Ch- x 1000



Pseudo-  
x 1000

Sm-76441

LACTARIUS CONTROVERSUS

C - PHOTO

Under hemlock and cotton-wood, Idaho, September 18, 1968.

Spores, pileus- and stipe-cuticle, and other characters as in  
Sm-76204.

Sm-80598

LACTARIUS CONTROVERSUS

Heath ---- area, with Salix procumbens, Ross Lake Area,  
England, September 22, 1971 (Labelled L. controversus).  
(No notes).

Notes by Hesler

Spores 5-7.5 x (4.5)5-5.5  $\mu$ , warts 0.2-0.4  $\mu$ , bands  
and branches forming a partial reticulum. Pleurocystidia  
37-50 x 4-5  $\mu$ , slender-ventricose, acuminate, buried and  
inconspicuous, rather abundant; cheilocystidia similar,  
shorter. Pileus cuticle an ixocutis. Stipe cuticle an  
ixocutis; rosettes present. Clamp connections none.

Cordovaensis sp. nov. - Type

W-K 2838 LACTARIUS ~~VIOLASCENS~~ var. ~~ALASKENSIS~~ var. nov.

More or less gregarious, in open, grassy-mossy area in woods  
(Sitka spruce and hemlock), Cordove, Alaska, leg.

Wells-Kempton, September 1, 1964 (labelled violascens).

Notes by Wells-Kempton

Pileus 5.5-12 cm broad, convex, margin inrolled, finally shallowly depressed, buttons medium lilac-brown, becoming pale and somewhat ochraceous tinged over the disc, lightly but distinctly zoned, zones closer toward the margin, subviscid or viscid-lubricous or ceraceous, buttons pruinose then glabrous, margin even. Context pallid-ochraceous to tawny, tinged lilac under the cuticle, becoming lilac when cut; odor faintly resinous to fragrant (slightly of camphoratus when dried), taste resinous, not acrid. Latex viscous, milky white, staining all cut-parts lilac, mild.

Lamellae narrowly adnate, then subdecurrent, orange-tan becoming paler, stained lavender by latex, narrow, close to crowded, rather frequently forked and sometimes strongly intervenose, edges concolorous and entire.

Stipe 4-8 cm long, 15-25 mm thick, equal or subclavate, pallid-ocher above, sometimes tinged yellowish, faintly lilac where bruised, dry (see below!), unpolished, at times obscurely pruinose, slightly water-spotted (sub-scrobiculate), base mycelioid, flesh pallid ochraceous to tannish, hollow.

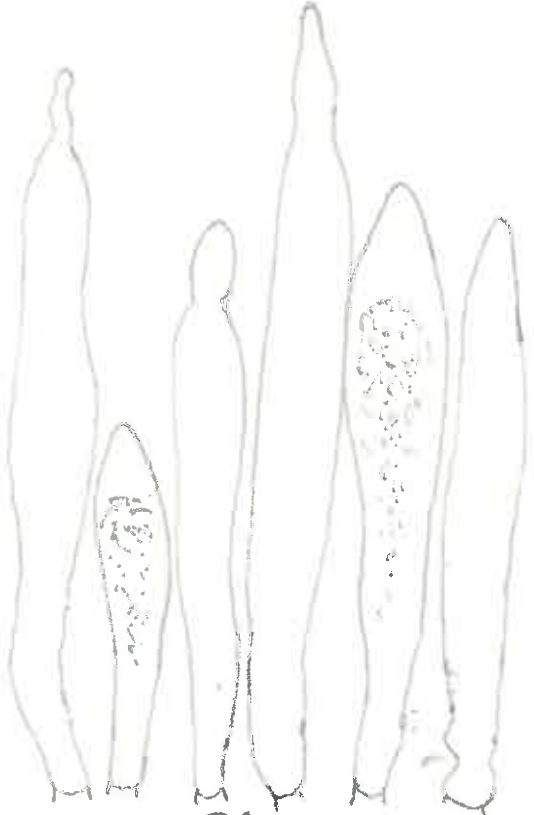
Spore deposit not obtainable.

Notes by Hesler

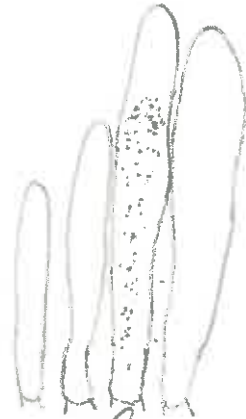
Spores 7.5-9(9.5) x 7-8  $\mu$ , ellipsoid to subglobose, warts 0.2-0.4  $\mu$  high, bands and an occasional fine line not forming a reticulum (or rarely a partial one). Basidia 55-62 x 9-11  $\mu$ , (2)4-spored. Pleurocystidia 48-105 x 10-14  $\mu$ , subclavate-acuminate to subventricose-acuminate, granular-spangled; cheilocystidia 30-52 x 4-10  $\mu$ , subcylindric to subclavate, apices obtuse, granular. Gill trama of short-celled, interwoven hyphae. Pileus trama vesiculose. Pileus cuticle an ixocutis, an outer, thin gelatinous zone, and an inner thicker subgelatinous to non-gelatinous zone. Stipe cuticle a gelatinous to subgelatinous zone, 40-70  $\mu$  thick-- an ixocutis; rosettes present. Clamps none.

The pileus colors and mild taste suggest a relationship to L. violascens sensu Neuhoff rather than to L. uvidus. The latter has a gray to lilac-gray, viscid, azonate pileus. But in the Wells-Kempton collection, the spores are 7.5-9(9.5) x 7-8  $\mu$ , and thus too small for ~~the type variety of~~ L. violascens.

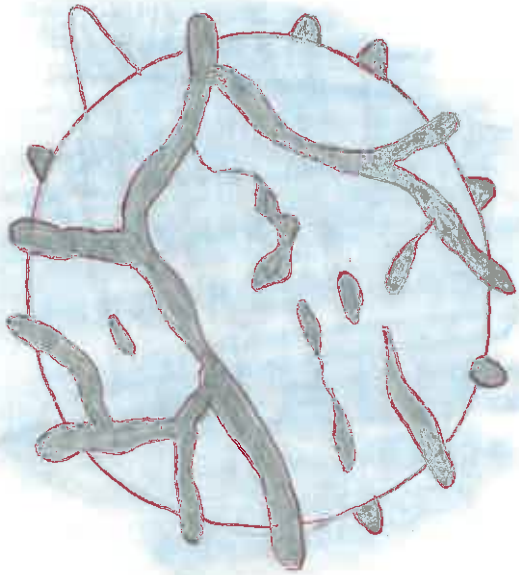
*Factarius violaceus* var. *alaskaensis* var. nov.  
*cordoraensis* sp. nov.  
~~Em 77219~~ WK-2838



Pl - x 1000



Ch - x 1000 -



457

457

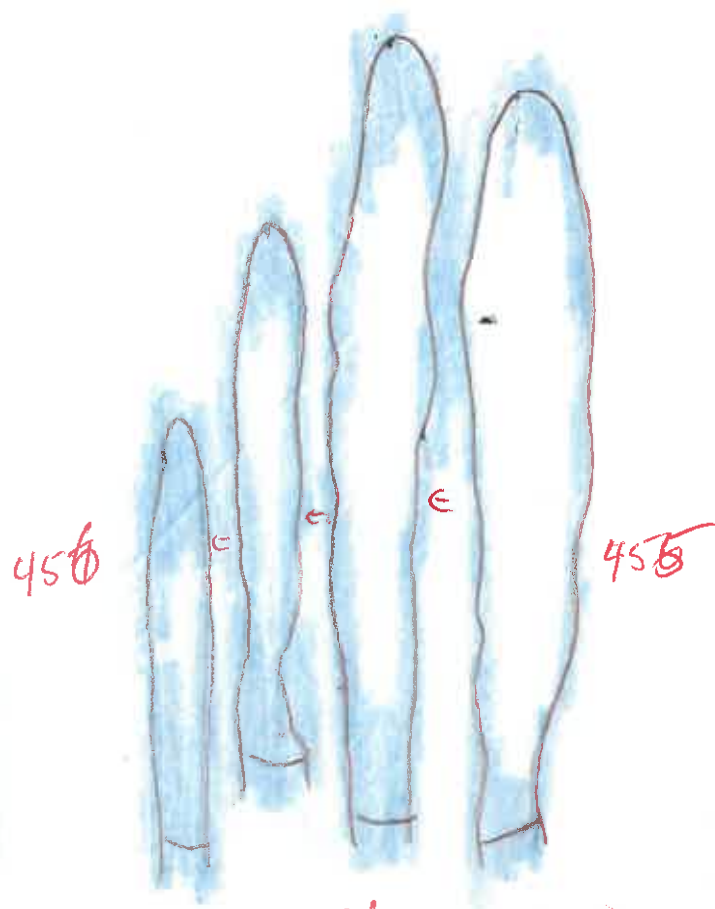
Spore - x 8000

~~Lactarius violaceus var. alabastrinus var. nov.~~  
Cordovaensis sp. nov.  
Wk - 2838



Spine

PL - x 2000



450

450

Ch - x 2000

*Cordovaenia* sp. nov.

W-K 2839 LACTARIUS ~~VIOLASCENS~~ var. ~~ALASKENSIS~~ var. nov.

Cordova, Alaska, spruce-hemlock woods, August 23, 1967

Notes by W-K

Pileus 6.5-11 cm, dull brownish lavender, with dark lavender zones (about 1 mm diameter), glabrous, lubricous to dry. Context whitish, slowly stained lavender, medium thick (15-20 mm) near disc; odor and taste slightly resinous. Latex whey-like, staining all parts slowly lavender, strongly resinous, not acrid.

Lamellae adnate to short decurrent, dark flesh becoming orange flesh or darker and more pink, narrow (4-7 mm), close or crowded, occasionally forked near stipe.

Stipe 4-8 cm x 20-25 mm, pallid, stained or tinged ochraceous toward the base, dry, stuffed to hollow.

Spore deposit: creamy (B-C).

FeSO<sub>4</sub> and KOH: 0; phenol: weakly vinaceous.

Notes by Hesler

Spores 7-9 x 5.5-7.5 u, warts 0.2-0.4 u, bands and lines forming a partial reticulum. Pleurocystidia (not fully mature?) 47-72 x 8-10 μ, apices obtuse; abundant; cheilocystidia smaller, similar. Pileus cuticle an ixocutis. Stipe cuticle an ixocutis (sometimes indistinct); rosettes present.



N-K 2845

*Cordovaensis* sp. nov.

~~8-7725~~

~~LACTARIUS VIOLASCENS var. ALASKENSIS var. nov.~~

Gregarious in deciduous woods (alder, birch, aspen, willow), and some spruce, Steese Highway, Fairbanks, Alaska, Wells-Kempton, August 23, 1965 (#3) (L. uvidus?)

Notes by Wells-Kempton

Pileus 4-8.5 cm broad, convex, margin incurved, then convex-expanded to plane, sometimes slightly depressed on the disc, at times acutely papillate to obtusely subumbonate, light lavender tan, usually zonate, especially on the margin, at first white pruinose, smooth or slightly rugulose. Context white, staining lavender from latex, moderately thick on the disc, then over the gills; odor and taste not distinctive. Latex copious, watery-white, staining all parts lavender, but itself unchanging; taste not distinctive or finally resinous.

Lamellae adnate to subdecurrent, pallid-white, staining lavender, finally brownish-spotted in age, close, brittle, edges entire, sometimes forked behind.

Stipe 4-5.5 cm long, 6-10 mm thick, pallid-white or tinged lavender-gray, staining lavender, sometimes ocher to brownish in age or when handled, lubricous to dry, glabrous, smooth, base white-mycelioid, stuffed.

Spore deposit: Crawshay A-B (fresh).

FE SO<sub>4</sub> - pink in latex zones

KOH - epicutis green (pileus and stipe)

Amm. - epicutis sl. green (pileus and stipe)

Phenol - neg.

~~Sm. 77253~~

*Cordovaenia*  
L. ~~violasceus var. alaskensis~~ - page 2

Notes by Hesler

Spores 8.5-11 x 7-8.5  $\mu$ , warts 0.3-0.6  $\mu$ . Pleurocystidia 60-78 x 7-10  $\mu$ , ventricose; cheilocystidia similar, smaller. Pileus and stipe cuticle - ixocutis.

KEY

Corrugis, hygrophoroides, luteolus, volemus

1. Spores globose, or subglobose, with a distinct reticulum of rather broad bands; pleurocystidia conspicuous, large, thick-walled . . . . . 2
1. Spores ellipsoid; pleurocystidia, if present, thin-walled . . . . 3
  2. Spores 8-10 x 8-9  $\mu$ ; pileus buff, terra cotta, or brownish orange . . . . . volemus
  2. Spores 9-12 x 8-11  $\mu$ ; pileus darker, *corrugated*. . . . . corrugis
3. Lamellae distant; pleurocystidia none; cheilocystidia clavate, cylindric, short (up to 30  $\mu$ ), rarely subcapitate). hygrophoroides
3. Lamellae close; pleurocystidia present, inconspicuous; cheilocystidia cylindric-capitate, long (30-70  $\mu$ ) . . . . . luteolus

LACTARIUS CORRUGIS Pk.

Sandlake and Gansevoort, New York

Type

Spores 9.5-13 x 9-11  $\mu$ , globose to subglobose, at times broadly ellipsoid, warts 0.3-0.6  $\mu$  high, broad bands and a few narrow bands and lines forming a reticulum. Basidia  $\frac{4}{4}$  54-65 x 9-12  $\mu$ , 4-spored. Pleurocystidia 92-204 x 8-16  $\mu$ ; more or less fusiform, often constricted, apices tapering (acuminate), wall thick (often the lumen reduced to a mere slit); cheilocystidia 37-78 x 3-8  $\mu$ , similar, some thick-walled (as pleurocystidia). Gill trama of small cells. Pileus trama vesiculose. Pileus cuticle a zone of small compact cells bearing a turf of pileocystidia, 34-90 x 3-5  $\mu$ , cylindrical, thick-walled, often more or less constricted. Cuticle of stipe of repent hyphae bearing a turf of caulocystidia 28-78 x 3-5  $\mu$ , thick-walled, similar to pileocystidia. Clamp connections none.

*Lactarius corrugis* Pk.

Type

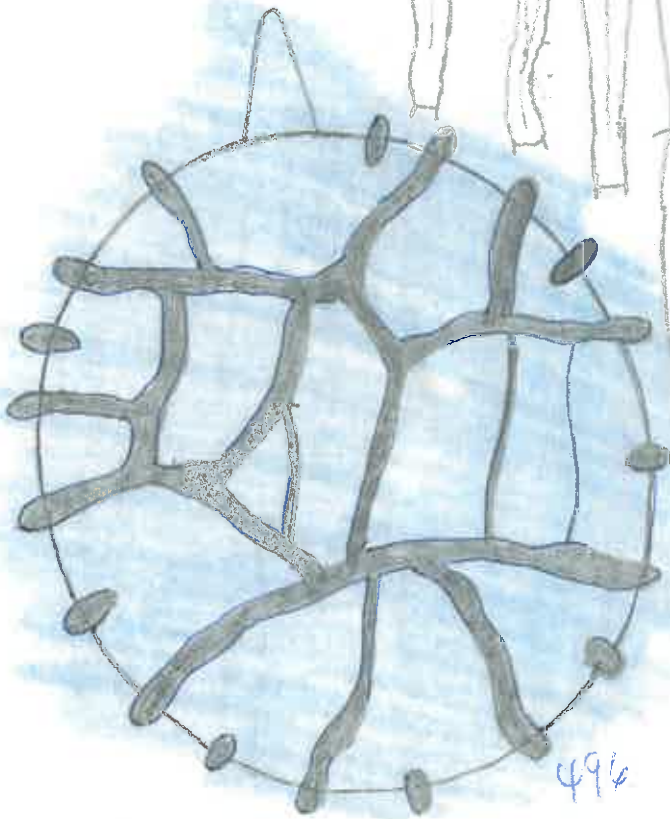


Caules -  
x 1000.

Pl -  
x 1000



Pileus - x 1000



49 1/2

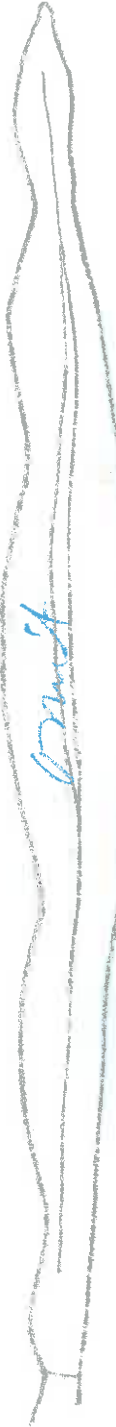
Spore - x 8000



~~ch~~ ch - x 1000

Lactarius conuqis Pk.

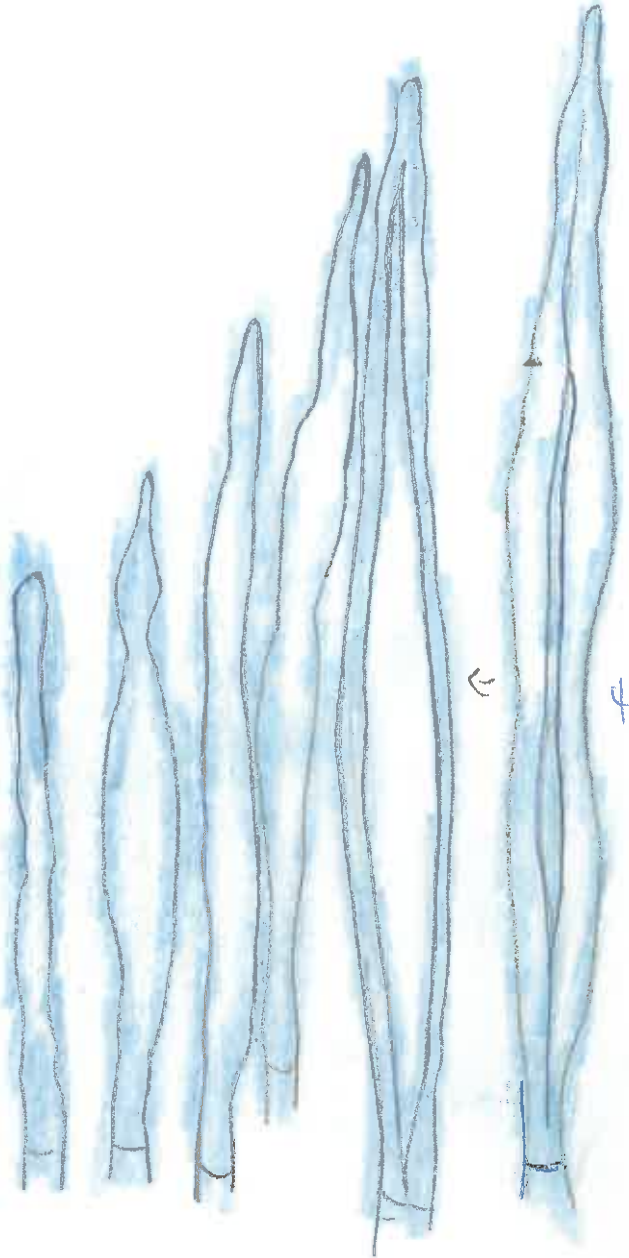
Type  
thin



12.1.17



498



498

Pl - x 2000

ch - x 2000

*corrugis* PK.

LACTARIUS ~~VOLEMUS~~ var. ~~SUBRUGOSUS~~ PK.

New York State Mus. Ann. Rept. 38: 130. 1885

ILLUSTRATIONS:

Rept. 48; pl 30, fig. 6

Pileus rugose-reticulated on the margin.

[ Peck states that <sup>*volemus* v. *subrugosus* PK.</sup> ~~this variety~~ connects L. volemus to L. corrugis. ]

Stanley J. Smith (letter, January 8, 1970) says: there seems to be a problem. Peck did not cite any specimens in his original description. Further, although we have four or five specimens so named by Peck, none of them is from New York, and none of them is of as early a date as the publication....thus it seems you will have to designate a neotype. (specimen requested January 17, 1970; and received later).

*Factarium voluini* <sup>Corrugis</sup> var. ~~subrugosum~~ ~~PK.~~

leg. W. H. Ballou, Deal Beach, N. J.,

Aug. 1911

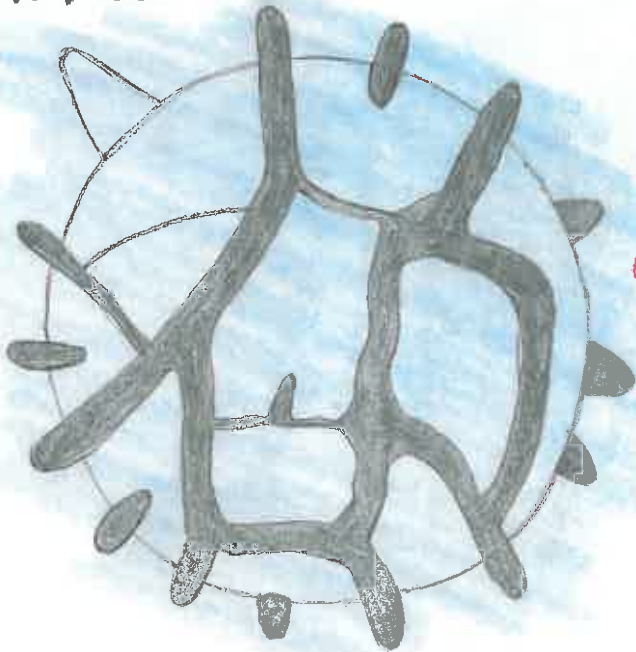
(ex-Herb. of Peck)



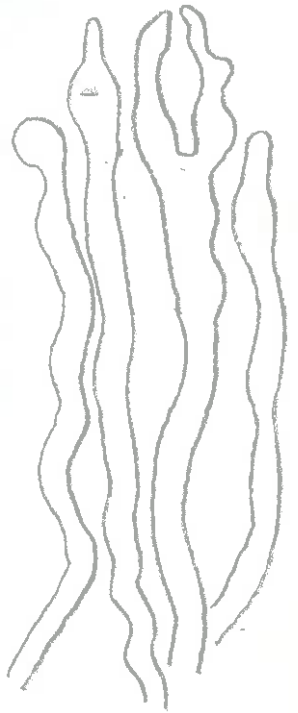
Asc. - x 1000



Asc. - x 1000



Spore - x 8000



Pseudo - x 1000



Isaacs - 2527

LACTARIUS CORRUGIS

In oak-pine woods, Gainesville, Florida, July 11, 1965

(No notes; labelled L. volemus)

Spores 10-13 x 9-11  $\mu$ , bands forming a reticulum. Spore size and pileus surface indicate L. corrugis.

Atkinson - 3850

*corrugis*  
LACTARIUS ~~VOLEMUS~~ var. ~~SUBRUGOSUS~~ Pk.

Leg. Geo. F. Atkinson, Blowing Rock, N. C., August 19, September 19,  
1899. (deposited in Peck Herb., Albany)

Notes on Packet

Entire plant tawny to cream buff, radiating rugosities from depressed center. Stipe paler, hollow. Milk white, unchanging, mild.

Notes by Hesler

Spores 8.5-11 x 8.5-10.5  $\mu$ , subglobose to globose, bands forming a reticulum. Other micro characters as in the Ballou collection (at Albany; neotype).

5306

LACTARIUS CORRUGIS

Mt. LeConte, Aug. 10, 1934

Spores 9.5-13 x 9.5-12  $\mu$ , warts 0.4-0.7(1.0)  $\mu$  high.  
Pleurocystidia 114-168 x 11-15  $\mu$ , metuloid-type,  
yellowish in Melzer's.

5307

LACTARIUS CORRUGIS

In oak woods, Monterey, Aug. 3, 1934

Spores 9.5-12 x 8.5-11  $\mu$ , globose or subglobose, more rarely short-ellipsoid, warts 0.3-0.7  $\mu$  high. Pleurocystidia 62-127 x 9-12  $\mu$ , metuloid-type; cheilocystidia 37-68 x 5-7  $\mu$ , metuloid-type.

5308

LACTARIUS CORRUGIS

In oak woods, Sewanee, Aug. 5, 1934

Spores 9-12 x 8.5-11  $\mu$ , warts 0.4-0.8(1.0)  $\mu$ .

Pleurocystidia 76-110 x 6-10  $\mu$ , metuloid-type.

Thiers - 6077

CORRUGIS Pk.  
LACTARIUS ~~XXXXXXXXXX~~

In mixed woods, Ocean Springs, Mississippi, June 9, 1959

Notes by Thiers

Cap colored cinnamon-rufous to hazel, conspicuously pruinose, whitish, dry. Latex white, abundant, staining lamellae brown (slowly); taste mild.

Lamellae close to subdistant, colored light buff, adnate to subdecurrent.

Stipe equal, colored salmon color, white-pruinose.

Notes by Hesler

Micro characters okay. Pileocystidia thick-walled, as in pleurocystidia. (Check type for thickness of walls in pileocystidia and caulocystidia.)

8125

LACTARIUS CORRUGIS

On soil, pine woods, Cades Cove, July 29, 1935

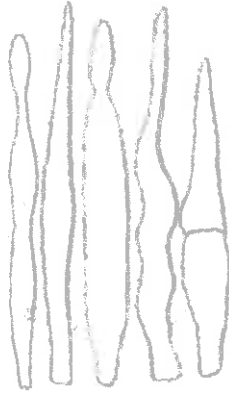
Spores (8)9-12 x (8)9-11  $\mu$ , globose, subglobose, reticulum a broad band. Pleurocystidia 70-108 x 6-9  $\mu$ , thick-walled, subfusoid,  $\pm$  constricted; cheilocystidia 40-52 x 4-6  $\mu$ , thin-walled, subfusoid, cylindric, often irregularly constricted, rarely septate.

*Trichostema curvum*

8175



Pl - x 1000



Ch - x 1000



8169

LACTARIUS CORRUGIS

Laurel Creek, Blount Co., August 1, 1935

Spores few. Pleurocystidia 53-110 x 6-12  $\mu$ , thick-walled.

Lactifers abundant in pileus trama, yellow in Melzer's, 14-18  $\mu$  broad.

8188

LACTARIUS CORRUGIS

White Oak Sinks, Cades Cove, August 11, 1935

Spores 9-11.5 x 8.5-11  $\mu$ , globose to subglobose. Otherwise as usual.

9112

LACTARIUS CORRUGIS

Mt. Lake, Va., Milliken, July 23, 1957

Notes by Milliken

Pileus 6-8.5 cm, "cinnamon rufus", center "hazel".  
Lamellae decurrent, brownish where bruised. Stipe 4-7.5  
cm long, 18-25 mm thick, "vinaceous rufus".

Notes by Hesler

Spores 9-12 x 9-11  $\mu$ , globose to subglobose, warts  
0.4-0.7  $\mu$  high.

17097

LACTARIUS CORRUGIS Pk.

On soil, mixed woods, near Mt. LeConte, Aug. 11, 1945

Pileus 5-10 cm., "natal brown" to "pecan brown",  
velvety. Lamellae "cinnamon buff" to "ochraceous buff".

Stipe "pinkish cinnamon", 8-11 cm long, 17-23 mm thick.

Spores 9-11.5 x 8.5-10.5  $\mu$ . Otherwise as usual.

19172

LACTARIUS CORRUGIS

Highlands, N. C., August 10, 1949

Spores 10-12.5 x 10-12  $\mu$ , globose to subglobose.

20894

LACTARIUS CORRUGIS Pk.

N. Y. State Mus. Ann. Rept. 32:31. 1880  
*W. H. Cole, July 11, 1953*

Pileus 7-12 (rarely 20) cm., depressed, dry, "natal brown", "pecan brown", to "Vandyke brown", margin "wood brown", tomentose-velvety (under lens), central portion strongly corrugated, azonate, margin even. Context firm, white, staining brown by latex; odor slight. Latex white, unchanging, but staining parts brown, abundant, mild.

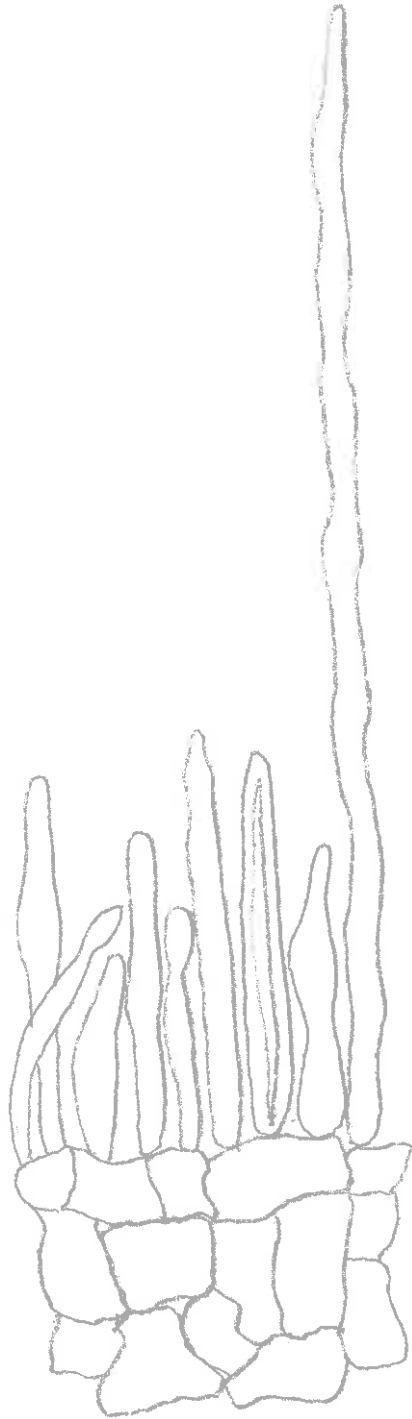
Lamellae adnate or subdecurrent, "chamois", "cinnamon buff", "ochraceous buff", to "honey yellow", brown where injured, close, occasional forking, many short, medium broad.

Stipe 6-11 cm long, 15-23 mm thick, "wood brown", to "avellaneous", equal, dry, pruinose, base white-mycelioid, firm, solid.

Spores 10-13 x 9-12  $\mu$ , globose to subglobose, warts 0.2-0.5(8)  $\mu$  high, reticulum continuous. Pleurocystidia 52-115 x 6-12  $\mu$ ; fusiform, more or less acuminate, often with brownish contents, numerous; cheilocystidia similar, 34-76 x 4-12  $\mu$ . Gill-trama of large, irregular, colorless cells; subhymenium of small, irregular cells with yellowish contents. <sup>Pileus</sup> Cuticle a cellular zone, bearing a turf of pileocystidia, 28-150 x 4-6  $\mu$ , cylindrical, ventricose, apices rounded to subacute, wall thin, <sup>or</sup> more rarely thick (metuloid-type). Clamps none.

*Lactarius corvugis*

70894



Pileus - x 1000



20894- *Lactarius corrugis* Plc.



20925

LACTARIUS CORRUGIS Pk.

Highlands, N.C., July 23, 1953

Pileus 7-12 (rarely 20) cm, depressed, dry, "natal brown", "pecan brown", to "Vandyke brown", margin "wood brown", tomentose-velvety, central portion strongly corrugated, azonate, margin even. Context firm, white, staining brown by latex; odor slight. Latex white, unchanging, but staining parts brown, abundant, mild.

Lamellae adnate or subdecurrent, "chamois", "cinnamon buff", "ochraceous buff", to "honey yellow", brown where injured, close, occasionally forking, many short, medium broad.

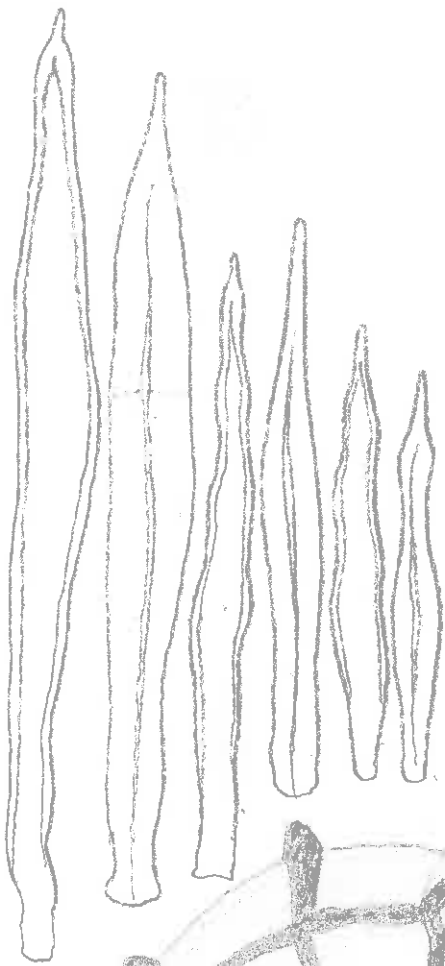
Stipe 6-11 cm long, 15-23 mm thick, "wood brown", to "avellaneous", equal, dry, pruinose, base white-mycelioid, firm, solid.

Spores white in deposit, 10-12.5 x 9-11  $\mu$ , globose or subglobose, strongly reticulate-verrucose, reticulum continuous with an occasional fine line, warts 0.3-0.6  $\mu$  high, few, Basidia 44-68 x 9-11  $\mu$ , 4-spored. Pleurocystidia 52-150 x 6-12  $\mu$ , fusoid, more or less acuminate, with yellowish to brownish contents, numerous, wall thick (metuloid-type); cheilocystidia similar, 34-60 x 4-8  $\mu$ . Cuticle of 5-7 layers of versiform cells, bearing a turf of pileocystidia, cylindrical to obclavate or subulate, 27-128 x 3-6  $\mu$ . Caulocystidia 50-110 x 6-9  $\mu$ , cylindrical-clavate or subulate, resting on a cellular cuticle. Clamps none.

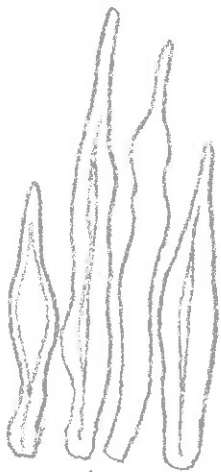
*Factarium corugis*

20975

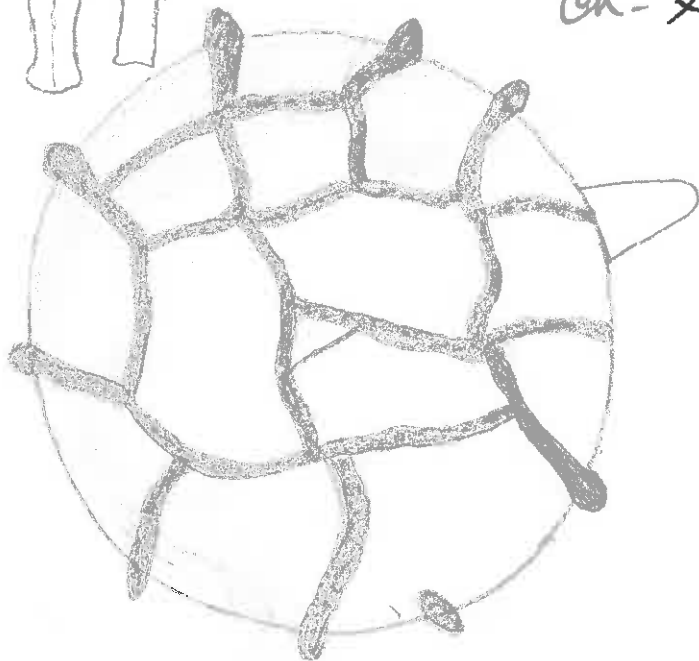
more  
next sheet



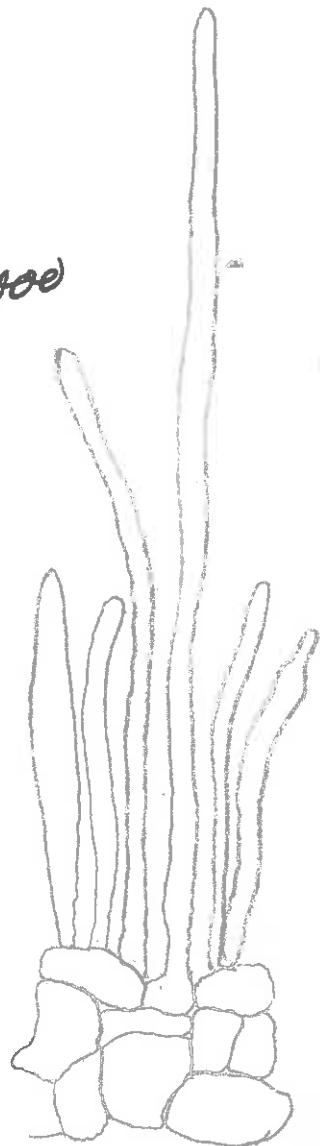
Pl. - x 1000



Ch. - x 1000



Spore x 8000



Cuticle + files. -  
x 1000

*Sactarius corrugis*

20975



Caule (+ cuticle)

x 1000



20925 - *Factarins corrugis*

21891

LACTARIUS CORRUGIS

Highlands, N. C., July 19, 1955

Spores white in deposit, 10-12.5 x 10-11  $\mu$ , globose or subglobose. Pleurocystidia 48-83 x 8-12  $\mu$ , cylindric, subfusoid, thick-walled (metuloid-type), not projecting, inconspicuous; cheilocystidia 25-45 x  $\frac{1}{2}$  2-4  $\mu$ , aciculate to subulate, numerous, conspicuous, thin-walled (apparently under-developed). Otherwise typical.



21891 - *Lactarius corrugis* Peck.

21931

LACTARIUS CORRUGIS

Cades Cove, Aug. 6, 1955

Spores 9-12 x 9-11  $\mu$ , globose, subglobose. Otherwise typical.

21972

LACTARIUS CORRUGIS

Montgomery, Ala., D. E. Davis, Aug. 2, 1955

Spores 10-12.5 x 10-11.5  $\mu$ , globose, subglobose.

Otherwise typical.



22099

LACTARIUS CORRUGIS

Rabun Co., Georgia, Aug. 25, 1955

Spores 9.5-12 x 9-12  $\mu$ , globose to subglobose.

Otherwise as usual.

23141

LACTARIUS CORRUGIS

Rabun Co., Ga., Aug. 15, 1958

Spores 9-11.5 x 8.5-11  $\mu$ , globose, subglobose, or rarely ellipsoid. Pleurocystidia 74-123 x 8-15  $\mu$ , wall thick (up to 7  $\mu$ ). Otherwise typical.

24536

LACTARIUS CORRUGIS

Photo

Cades Cove, Aug. 29, 1961

Spores 9-11 x 8.5-10.5  $\mu$ , globose or subglobose,  
white in deposits. Otherwise typical.



24536 - *Lactarius corrugis* OK.

24574

LACTARIUS CORRUGIS

Near Salem, Va., Sept. 16, 1961

Spores 9.5-13 x 8.5-13  $\mu$ , globose, subglobose, more rarely broadly ellipsoid. Otherwise typical.

Pileus 9-12 cm broad. Stipe 5-7 cm long, 15-30 mm thick (when 30 mm, slightly compressed).

25040

LACTARIUS CORRUGIS

Tuscaloosa, Ala., Deason, Oct. 10, 1952

Spores 9-12 x 9-11.5  $\mu$ , globose, subglobose.

Otherwise typical.

Pileus 3.5 cm broad. Stipe 3 cm x 8 mm.

25778

LACTARIUS CORRUGIS

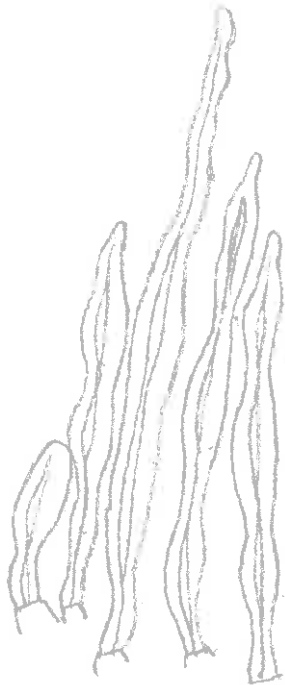
PHOTO

Cades Cove, August 1, 1963

Spores 8-11.5 x 8-11.5  $\mu$ , globose or subglobose. Otherwise as usual. Caulocystidia 45-90 x 5-7  $\mu$ , thick-walled, forming a turf, arising from a cuticular surface of interwoven hyphae.

*Lactarius corrugis*

25778



Caulo x 1000  
(turf)



26822

LACTARIUS CORRUGIS

Cades Cove, Petersen, July 22, 1963

Notes by Petersen

Pileus red-brown, corrugate. Gills buffy ochraceous.  
Stipe concolorous with gills. Latex white, unchanging.

Notes by Hesler

Spores 9.5-11.5 x 9-11.5  $\mu$ , globose or subglobose.  
Otherwise typical.

27111

LACTARIUS CORRUGIS

Cades Cove, July 22, 1963

Spores 9.5-12 x 9-11.5  $\mu$ , globose, subglobose.

Otherwise typical.

35120

*corrugis*  
~~LACTARIUS VOLEMUS var. SUBRUGOSUS Fr.~~

Cades Cove, near Crib Gap, July 16, 1969

Pileus distinctly rugulose overall, dull fulvous (unmatched; near orange-cinnamon). Latex sticky, white, drops finally more or less whey-like. Spore 8-10.5 x 7.5-9.5  $\mu$ . Otherwise as usual.

Cooke - 35486

LACTARIUS CORRUGIS

Hocking ~~Co~~ <sup>pp</sup> County, Ohio, August 29, 1965

Notes by Cooke

Pileus 9 cm. Stipe 11 cm x 20 mm. Gills adnate cream. Latex white, mild, staining brown. Odor and taste mild.

Notes by Hesler

Spores 8.5-12.5 x 8.5-11  $\mu$ , globose, subglobose, bands forming a complete reticulum. Pleurocystidia 82-127 x 7-12  $\mu$ , acuminate, thick-walled; cheilocystidia 46-74 x 5-7  $\mu$ , similar; pseudocystidia apices more or less branched and gnarled, 4-6  $\mu$  broad. Pileus cuticle a zone of cells, bearing a turf of colorless, slender-cylindric, apices often acuminate pileocystidia, 62-175 x 4-5  $\mu$ , walls more or less thickened.

*Sactarium corrugis*

Cooke - 35486



Appendix -  
x 1000  
(on gill-edges)

35490

*Corrugis*  
LACTARIUS VOLLENIUS var. ~~SUBRUGOSUS~~ FR.

On soil, in mixed hardwoods, Ross Co., Ohio, leg. W. B. Cooke (No. 39693), August 31, 1968

Notes by Hesler

Pileus 4-5 cm, convex, slightly depressed, dull brown with a bloom, minutely velvety, rugose, azonate, dry, even.

Lamellae adnate, close, medium broad.

Stipe 3.5-5 cm x 8-10 mm, concolor, minutely velvety, spongy, equal.

Spores 8-10 x 7-9  $\mu$ , globose to subglobose. Pleurocystidia 62-98 x 7-10  $\mu$ , thick-walled; cheilocystidia 42-50 x 4-5  $\mu$ , aciculate, thick-walled. Pileus cuticle cellular, bearing a turf of pileocystidia, 32-48 x 2-4  $\mu$ , thick-walled. Stipe cuticle cellular, bearing a turf (as the pileocystidia).

(Tenn - 35494  
Cooke - 41042

*corrugis*  
LACTARIUS VOIENIS var. ~~SUBRUGOSUS~~ Fr.

On soil, under hardwoods, Ross Co., Ohio, July 20, 1969

Notes by Cooke

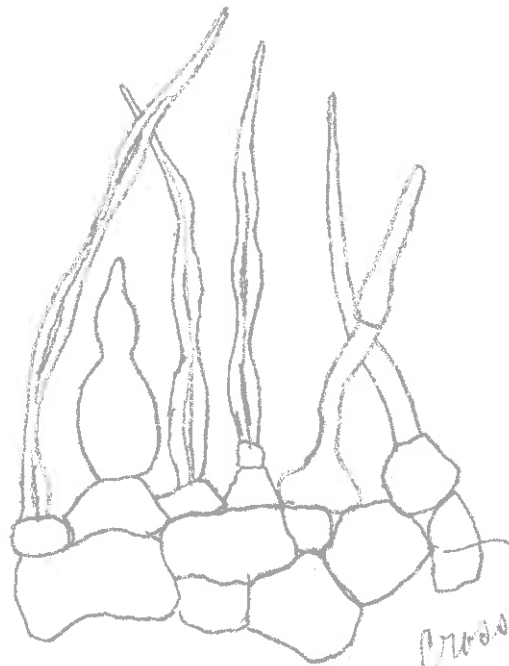
Cap 4-8 cm broad, red brown with a purplish tint. Latex white, unchanging, staining brown. Lamellae adnate or subdecurrent, dark yellow, brown where bruised, close. Stipe 4-6 cm long, 12-15 mm thick, concolorous, apex paler, equal or tapering downward.

Notes by Hesler

Spores white in deposit, (7)8-11 x 7.5-9.5  $\mu$ , globose, subglobose, reticulum complete, warts 0.4-1.0  $\mu$ . Pleurocystidia 66-127 x 7-12  $\mu$ , thick-walled, cylindric, more or less acuminate or obtuse; cheilocystidia similar, smaller, wall thick. Pileus cuticle a zone 65-75  $\mu$  thick of brownish cells, 5-7 cells deep, bearing more or less scattered, <sup>ariculate</sup> ~~hyphoid~~ pileocystidia, 30-70 x 2-3  $\mu$ , <sup>thick-walled.</sup> Stipe cuticle ~~repeat~~ <sup>a callus zone</sup> bearing a turf of repeat hyphae similar to pileus; rosettes present.

*Saccarium* <sup>*Corrugis*</sup> ~~*volcanus* var. *subrugosus* Ok.~~

35494 (Coke - 41042)



cross-section  
of hyphae

Stipe cuticle x 1000



Cooke - 39674

LACTARIUS CORRUGIS Pk.

On soil, Camp Lazarus, Delaware County, Ohio, August 17, 1968

Spores 8.5-11 x 8-9.5  $\mu$ . Pleurocystidia 70-110 x 6-9  $\mu$ .

examinatus sp. nov.  
LACTARIUS ~~TORMINOSUS~~ var. GLABRUS Murr.

On lawn, under oak, Gainesville, Florida, October 7, 1938

Type (F-18474) of torminosus v. glabrus

Spores pale yellow in deposit, 7-9.5 x 6-7.5  $\mu$ , ellipsoid to subglobose, warts 0.2-0.7  $\mu$  high, with broad bands and branches forming a partial reticulum. Basidia 37-52 x 9-12  $\mu$ , 4-spored. Pleurocystidia 43-66 x 4-8  $\mu$ , ventricose, obclavate, subcylindric, often capitate, buried and inconspicuous; pseudocystidia 34-45 x 3-6  $\mu$ , cylindric, usually capitate, with brown contents; cheilocystidia 24-42 x 3-5  $\mu$ , ventricose, subcylindric and often constricted, frequently more or less capitate. Gill trama of short-celled hyphae. Pileus trama vesiculose. Pileus cuticle a broad zone (350-700  $\mu$  thick) of narrow gelatinous hyphae; pileocystidia none. Stipe cuticle ~~of dry, repent hyphae~~ <sup>an excutis, sometimes not evident;</sup> caulocystidia 25-47 x 2-4  $\mu$ , ventricose, more or less subcapitate, as terminal elements of surface hyphae. Clamp connections none.

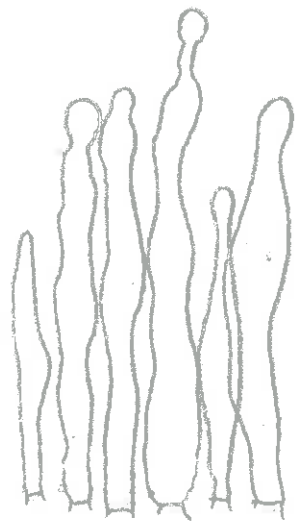
The cuticle structure, slightly smaller spores, and more or less glabrous pileus suggest that this might be elevated to the rank of species. Cf. L. glabripes Smith which has larger spores (7.5-10 x 6-8.5  $\mu$ ).

Singer (1947) studied L. torminosus var. glabrus, as well as coll. of L. torminosus, and Coker's torminosus, and concluded that all are L. psammicola (p. 171). Thinks var. glabrus is a form without taxonomic importance (p. 173).

*Factarium crassicutis* sp. nov.  
~~*Factarium tomentosus* var. *glabrum* Marr.~~

*Fernandez*

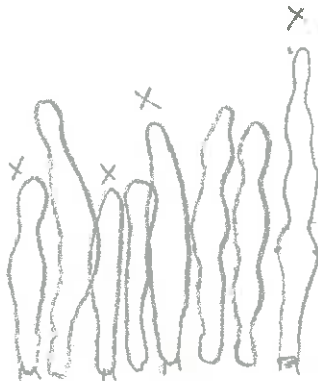
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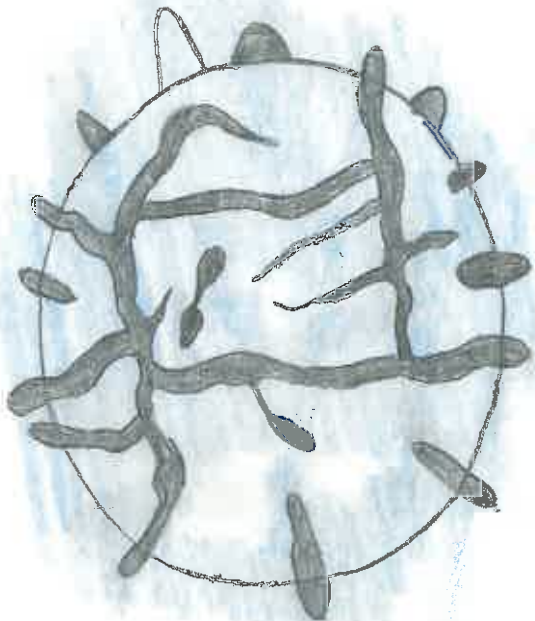
Sp - x 1000



Pseudo-cystidia x 1000



Ch - x 1000



Spore - x 8000

96



Caulo- x 1000

~~not~~ *crassipennis* nom. nov.

4123

LACTARIUS INSULSUS (Fr.) Fr. var. INSULSUS

Cove Creek, Anderson County, July 11, 1934

Pileus 4-9 cm, zonate, viscid, glabrous, buff, the zones orange.  
Latex white, unchanging, acrid.

Stipe 3-4.5 cm long, 9-12 mm thick, scarcely spotted, viscid.

Spores 7.5-9 x 6-7.5  $\mu$ , warts 0.5-0.8  $\mu$  long, reticulum more or less complete but with some free ends. Pleurocystidia 43-52 x 5-7  $\mu$ , ventricose, apices tapering, often with a capitellum and submoniliform below it; cheilocystidia similar, smaller. Pileus cuticle a gelatinous zone (an ixocutis), 70-90  $\mu$  thick. Stipe cuticle an ixocutis; rosettes present.

Crassicutis sp. nov.

16189 LACTARIUS ~~TORMINOSUS~~ var. ~~GLABRUS~~ (Murr.) ~~comb. nov.~~

Under laurel oak, Gainesville, Fla., July 19, 1940

(In Fla. Agr. Exp. Sta. Bull. 478:24. 1951, Merrill cites Lloydia 6:209 for original description of L. floridanus var. glabrus Murr. But, in Lloydia 6:209, the entity described is L. torminosus var. glabrus Murr. Where was L. floridanus var. glabrus Murr. described?)

Spores 7-9 x 6-7.5  $\mu$ , ellipsoid, warts 0.3-0.6  $\mu$  high, bands forming a reticulum. Pleurocystidia, cheilocystidia and cuticle all suggest L. torminosus var. glabrus; my No. 16189 seems to be erroneously labelled: it is labelled floridanus var. glabrus and apparently should be torminosus var. glabrus.

21670

LACTARIUS ~~INSOLENS (Fr.) Fr.~~

*crassicutis* nom. nov.  
~~*sp. nov.*~~  
~~*insolens*~~

In deciduous woods, near Knoxville, June 10, 1955

Pileus 5-11 cm broad, convex-depressed, finally sub-infundibuliform, viscid, glabrous, zonate, coppery-orange, "ochraceous orange" to "ochraceous buff," or more rarely straw-color to whitish, margin arched, even. Context firm, white, slowly yellow in 15% KOH, thick on disc, thin on margin; odor mild or slightly aromatic, taste acrid. Latex white, unchanging, moderately abundant, acrid, at times slowly so.

Lamellae adnate-decurrent at maturity as pileus deepens, white becoming "warm buff," rather narrow, rather close, many short, some forking behind.

Stipe (3) 7-11 cm long, 10-20 mm thick, whitish to pale buff, at times spotted, glabrous, stuffed becoming hollow, equal or tapering downward, dry.

Spores 7.5-9 x 5.5-7  $\mu$ , ellipsoid, warty-reticulate, reticulum more or less broken, warts 0.3-0.5  $\mu$  high, "light ochraceous buff" to "warm buff" in mass. Pleurocystidia fusoid to subcylindric, 40-55 x 4-7  $\mu$ ; cheilocystidia small, clavate or subfusoid, 20-34 x 4-7  $\mu$ . ~~Gill trama vesiculose with hyphae; subhymenium not clearly differentiated.~~

Cuticle a gelatinous zone, 50-200  $\mu$  thick, hyphae narrow, nearly parallel. Clamp connections none. *Stipe cuticle dry, with numerous canals; rosettes present.*

Lange (Fl. Agar. Dan., p. 30) states that the basidia are 2-spored.



21670 - Lactarius <sup>crassius</sup> ~~insularis~~ (Fr.) Fr.  
Zonarius insularis

LACTARIUS CRASSCUTIS

22174

Nales Creek, Sevier Co., October 13, 1955

Pileus 5-9 cm broad, convex-depressed, glabrous, viscid, whitish but tinged straw with "ochraceous orange" zones, stained brownish. Context white. Latex white, unchanging, acrid.

Lamellae adnate-decurrent, white, then pale cream, close, not broad, broadest behind, few forking behind.

Stipe 2.5-3.5 cm long, 10-16 mm thick, enlarged at apex, whitish, more or less spotted, spongy, surface dry, not spotted.

Spores in mass: "light ochraceous buff," 7.5-9 x 6-7  $\mu$ , ellipsoid, conspicuously reticulate-verrucose, reticulum more or less broken, warts 0.5-1.0  $\mu$  high. Basidia 42-50 x 9-10  $\mu$ , 2-4-spored. Pleurocystidia and cheilocystidia typical, but rare. Gill trama vesiculose with hyphae; subhymenium not at all or only slightly differentiated. Pileus cuticle a gelatinous zone, 80-120  $\mu$  thick, the hyphae subparallel. Clamp connections none. Stipe cuticle dry; rosettes present.



*crassicutis*

24520

LACTARIUS ~~ZONARIUS~~

In deciduous woods, Oconaluftee Ranger Station, GSMNP, August 16, 1961

Spores 7-9 x 5.5-7  $\mu$ . Pileus cuticle a thin ixocutis. Stipe cuticle of repent, dry hyphae; rosettes present.

*Crassocutis*

25641

LACTARIUS ZONARIUS

On soil, under oak, Norris, June 30, 1963

Pileus 15 cm broad, depressed-funnel-shaped, viscid, zonate, brownish-orange (not matched). Context white, thin, firm; odor slight. Latex acrid, white, unchanging.

Lamellae "cinnamon buff," close, narrow.

Stipe 2 cm long, 25 mm thick, dingy whitish, tinged cinnamon buff, not spotted.

Spore deposit thin, yellowish-buff; spores 7-9 x 6-7.5  $\mu$ , warts 0.4-0.7  $\mu$   $\frac{1}{2}$  high. Pleurocystidia and cheilocystidia as usual. Pileus cuticle of pileus a gelatinous zone of repent hyphae--an ixocutis. Hypodermium brown. Stipe cuticle of repent, dry hyphae.

26508

*crassicutis*  
LACTARIUS ~~ZONARIUS~~

On soil, in deciduous woods, Wayah Bald, North Carolina, August 12, 1964

Pileus viscid, zoned, orange-buff. Latex white, unchanging, acrid.  
Pileus cuticle an ixocutis. Stipe cuticle of dry, repent hyphae.

Spores "Naples yellow" in deposit, 7-8.5 x 6-7  $\mu$ .

*Crassidictyon* nom. nov.

26510

LACTARIUS ~~INSULSUS (Fr.) Fr. var. INSULSUS~~

Under deciduous trees, Wayah Bald, North Carolina, August 12, 1964

Pileus 12-22 cm broad, deeply depressed to umbilicate, "ochraceous orange," zonate, viscid, glabrous. Context white, medium thin. Letex white, unchanging, acrid, not abundant, not staining.

Lamellae adnate-decurrent, white then cream, broad, subdistant.

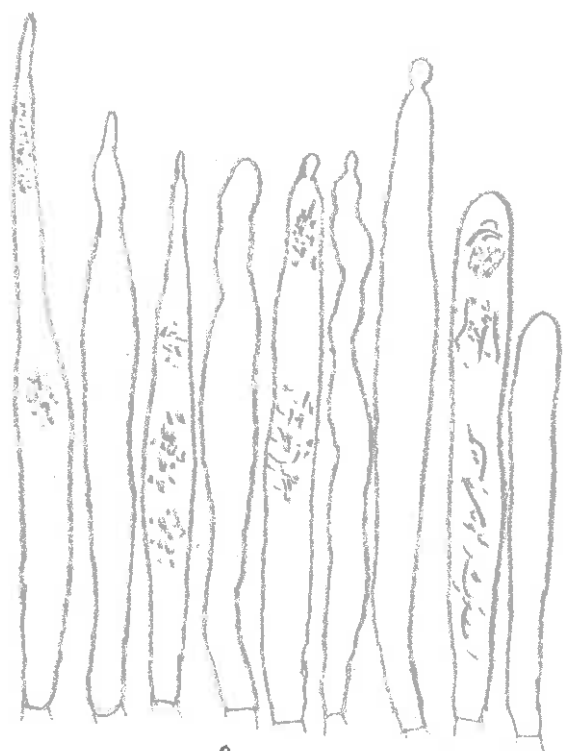
Stipe 4-8 cm long, 22-38 mm thick, white, glabrous, viscid, not spotted, firm but hollow.

Spores in deposit: yellowish-cream; spores (6)7-9 x 5.5-7.0  $\mu$ , ellipsoid, more rarely subovoid, very slightly inequilateral in profile, warts 0.3-0.5  $\mu$  high, broad and a few narrow bands forming a reticulum. Basidia 42-50 x 8-10  $\mu$ , 4-spored. Pleurocystidia 54-92 x 6-8  $\mu$ , subulate, ventricose, subcylindric, apices usually tapering and with or without a capitellum, at times rounded and not tapering (cylindric), granular, projecting conspicuously; cheilocystidia 32-42 x 4-6  $\mu$ , subclavate, sub-flask-shaped, granular. Gill trama of rather large vesiculose cells. Pileus vesiculose. Pileus cuticle a gelatinous zone (an ixocutis), 80-170  $\mu$  thick; hypodermium a distinct brownish zone, 20-30  $\mu$  thick. Stipe cuticle a thin ixocutis which in places apparently has washed away. Caulocystidia 20-27 x 3-5  $\mu$ , subclavate or subcylindric, scattered or in small tufts. Clamp connections none.

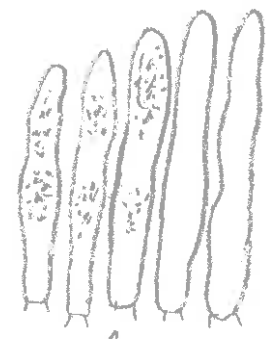
This is a rather robust form, but seems to agree with L. insulsus in the basic structural characters. The stipe is described as spotted or again not spotted--a variable character.

*Factorium ~~insubras~~ crassocentris*

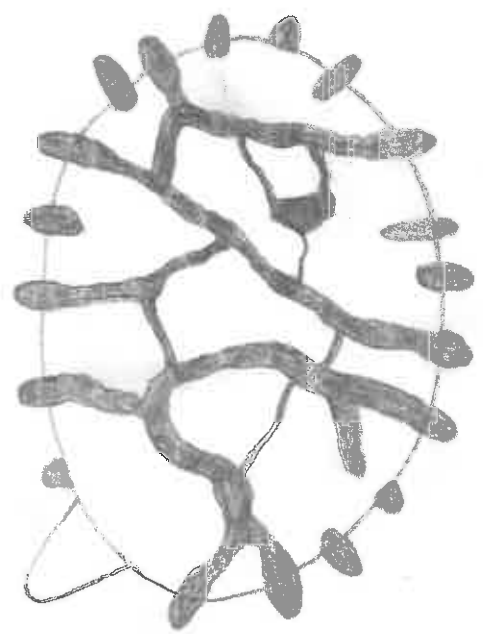
Tem - 26510



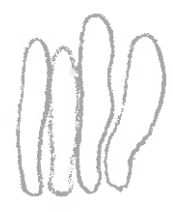
Fl - x 1000



Ch - x 1000



Spore - x 8000



Cauls -  
x 1000

*Oraxiocutis*

29333

LACTARIUS ~~ZONARIUS~~

Cades Cove, August 2, 1966

Pileus 13-17 cm broad, convex, infundibuliform or deeply depressed, viscid, zonate,  $\neq$  "ochraceous buff," with whitish zones alternating with the ochraceous buff zones. Latex white, unchanging, acrid.

Lamellae concolor, close, narrow to medium broad.

Stipe 3.5-5 cm long, 25-35 mm thick, white, densely white-pruinose, not spotted, tapering downward, solid.

Spore deposit: yellow. Spores 7.5-9 x 6.5-7.5(8)  $\mu$ , ellipsoid to subglobose, warts 0.5-0.8  $\mu$  high, reticulum as usual. Basidia 44-53 x 8-10  $\mu$ , 4-spored. Pleurocystidia 45-64 x 4-7  $\mu$ , subcylindric to ventricose, inconspicuous although rather numerous; cheilocystidia usual, few. Pileus cuticle, gelatinous, an ixocutis, zone 140-190  $\mu$  thick. Stipe cuticle of dry, repent hyphae; rosettes present.

*Crassocanthi*

30301

LACTARIUS ZONARIUS

Cades Cove, August 15, 1968

Pileus depressed, zonate, viscid, glabrous, zones "ochraceous buff" alternating with "ochraceous orange." Latex white, unchanging, not staining, acrid.

Lamellae ochraceous buff to ochraceous orange, nearly subdistant, medium narrow, none forking, numerous lamellulae.

Stipe "light ochraceous buff," not spotted.

Spores ochraceous yellow (about C-D), 6.5-8.5 x 5.5-6.5  $\mu$ . Pileus cuticle an ixocutis. Stipe cuticle of dry, repent hyphae; rosettes present.

*Crassicutis*

35212

LACTARIUS ~~ZONARIUS~~ Bull. ex Fr.

Cades Cove, August 12, 1969

Pileus 15 cm broad, deeply depressed, margin arched, zonate, "warm buff." Context white, acrid. Latex white, unchanging, acrid, not staining. Lamellae pallid, finally "ochraceous buff," close, broad. Stipe 4 cm x 30 mm, ~~st~~ warm buff, not spotted.

Spores "ochraceous buff," 7-9 x 6-7  $\mu$ . Pileus cuticle an ixocutis. Stipe cuticle of ~~dry~~ repent hyphae, with scattered, short caulocystidia; rosettes present.



35375

*craxocutis?*  
Lactarius insulsus(?)

on lawn, under pine, Knoxville (Dean Dunford's yard)  
October 13, 1969

Pileus 6-12 cm broad, soon depressed from uplifted margin, ~~viscid~~ viscid, "cream buff", zonate, zones narrow, and close and slightly of watery spots, margin glabrous (no buttons seen). Context white, firm; odor mild. Latex white, unchanging, not staining, taste acrid.

Lamellae adnate or adnexed, subdecurrent when pileus upturned, close, medium broad, pale cream color, a few forking at base, lamellulae few.

Stipe 3-5 cm long, 14-25mm thick, white, viscid, equal, not spotted.

Spores in deposit: "warm buff" (deposit not heavy); spores 7-9 x 6-7.5 $\mu$ , short-ellipsoid to subglobose, warts 0.3-0.8(1.0) $\mu$  high, with bands forming a partial reticulum. Pleurocystidia 36-52 x 4-7 $\mu$ , scattered, not always conspicuous, ventricose; cheilocystidia 22-38 x 3-6 $\mu$ , rather sparse, ventricose. Pileus cuticle an ixocutis; no pileocystidia observed. Stipe cuticle a thin ixocutis, not always evident, but found in some sections of each mount. Caulocystidia not found.

35382

*Crassicutis*  
LACTARIUS ~~ZONARIUS~~

Cades Cove, September 25, 1969, leg. Uda Donk

Cap near "ochraceous orange," viscid, obscurely zonate. Latex white, unchanging, staining gills orange, acrid. Stipe dry, obscurely spotted, solid.

Spores 6-8(8.5) x 5-6  $\mu$ , ellipsoid, warts 0.2-0.4  $\mu$ , bands and branches forming a partial reticulum. Pileus cuticle an ixocutis. Stipe cuticle (dry.?)

(*Tenn* - 35492 *Cramocitis* <sup>nom.</sup> ~~sp.~~ nov.  
Cooke - 40976 LACTARIUS ~~FORMICOSUS~~ var. GLABRUS Murr.

In mixed woods, Old Man's Cave State Park, Hacking County, Ohio, July 19,  
1969.

Notes by Cooke

Pileus 7-9 cm, zonate, light yellowish brown, dry, smooth. Latex white, slowly peppery, unchanging, not staining. Gills concolor, close. Stipe 1.5-2 cm long, 18-20 mm thick, cream color, tapering downward.

Notes by Hesler

Spores 6-8(9) x 5.5-7  $\mu$ , ellipsoid or subglobose, warts 0.3-0.8(1.0)  $\mu$  high, bands often broken, not forming a reticulum. Other micro characters agree with the type.

Cooke - 35556

LACTARIUS ~~FORMINOSUS~~ var. ~~GLABRUS~~

*Oranocutis* <sup>nom.</sup> ~~sp. nov.~~ [*S. terminorum*  
var. *glabra* *Murr.*]

On soil, Old Man's Cave State Park, Hocking County, Ohio, August 29, 1965

Notes by Cooke

Pileus 17 cm broad, deep funnel-shaped, yellow-brown, with indistinct zones of innate (fibrillose) scales. Latex white to clear. Gills tan, close. Stipe 7 cm x 40 mm, light tan.

Spores pale yellow.

Notes by Hesler

Spores 7.5-8.5(9) x 6-8  $\mu$ , warts 0.4-0.8(1.0)  $\mu$ , bands broken, branched, forming no reticulum. Pileus cuticle an ixocutis 350-600  $\mu$  thick; hypodermium brown. Stipe cuticle a zone of colorless, dry, perpendicular hyphae, bearing a turf of caulocystidia. Otherwise as in the Type.

*Crassocentris nom. nov.*

35679

LACTARIUS ~~INSULSUS (Fr.) Fr. var. INSULSUS~~

In deciduous woods, Horse Cove, Highlands, N. C., August 17, 1970

Pileus "ochraceous buff" with an orange tint, glabrous, zonate, the zones narrow, darker, viscid. Flesh white, firm. Latex acrid, not copious, white, unchanging, not staining.

Gills adnate, whitish then "light ochraceous buff," close to nearly subdistant, medium broad, some forking behind, lamellulae few.

Stipe white, not scrobiculate, equal, hollow, dry.

Spore deposit: "cream color." Spores 6-8.5 x 5.5-6.5  $\mu$ , often inequilateral, warts 0.2-0.4  $\mu$ , bands and branches forming a partial reticulum. Pleurocystidia ~~40-68 x 5-7 (?)  $\mu$~~ , *40-68 x 5-7 (?)  $\mu$ , ventricose-acuminate to subfusoid;* pseudocystidia few, 3-5  $\mu$  wide; cheilocystidia 28-36 x 5-7  $\mu$ , cylindrical to subventricose. Pileus cuticle a thick (250-400  $\mu$ ) ixocutis, of slender hyphae. Stipe cuticle repent, dry; rosettes present.

*Crascipanus* nom. nov.

~~*zonarius* (Fr.) Fr.~~

35710

LACTARIUS ~~ZONARIUS~~ Fr.

Tennessee,

Edge of woods, in grass, Pickett State Park, September 23, 1970

Pileus 12 cm, rather deeply depressed, glabrous, margin slightly appressed-fibrillose, viscid, ~~orange~~ more or less yellowish-orange (near "ochraceous orange"), zonate; odor mild. Latex white, unchanging, drying dull white, staining pinkish-brownish, acrid.

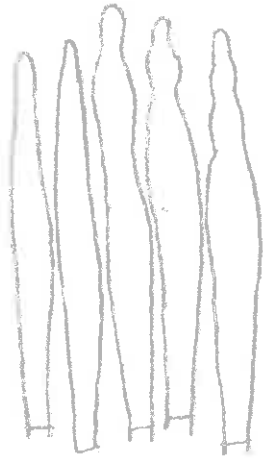
Lamellae adnate-decurrent, "ochraceous buff," close, medium broad, few forked behind, lamellulae numerous.

Stipe 3.5 cm x 2.3 mm, "pale ochraceous buff," not spotted, stuffed then hollow, firm, tapering downward slightly.

Spores in deposit; "light ochraceous buff"; spores 7.5-9(9.5) x 6-7.5(8)  $\mu$ , warts 0.4-0.8(1.0)  $\mu$ , bands and branches forming a partial reticulum. Pleurocystidia 50-58 x 5-7  $\mu$ , ventricose, rather abundant but not very conspicuous; cheilocystidia 28-42 x 3-5  $\mu$ , ventricose, not abundant. Pileus cuticle an ixocutis, thick (450-900  $\mu$ ), with repent strands of hyphae (appressed fibrillose surface). Stipe cuticle repent, dry, bearing a thin turf of more or less cylindrical slender caulocystidia; rosettes present.

*Sactarium zonarium* Fr. *crassocutis*

35710



Pl. x 1000



Ch. x 1000

*Oranocutis* <sup>nom.</sup> ~~ref.~~ <sup>2001.</sup>

Cooke - 36112 LACTARIUS ~~FORMINOSUS~~ var. ~~GLABRUS~~

Mt. Airy Forest, Cincinnati, Ohio, September 26, 1965

Notes by Cooke

Cap up to 14 cm (more or less 6-14 cm), yellow brown, zonate, margin inrolled at first. Latex white, slowly acrid. Gills yellow to brownish, close, with a decurrent tooth. Stipe up to 4 cm x 10-20 mm, tapering downward.

Notes by Hesler

Spores 8-9.5 x 7-8  $\mu$ , warts 0.4-0.7(1.0)  $\mu$ . Basidia 40-46 x 8-10  $\mu$ , 4-spored.

/ Pleurocystidia 42-55 x 4-6  $\mu$ , subventricose; cheilocystidia similar, shorter. Pileus cuticle an ixocutis, 180-400  $\mu$  thick. Stipe cuticle of dry, repent hyphae.



LACTARIUS CRASSOCUTIS nom. nov.  
(=L. torminosa var. glabra Murr.)

39757

on soil, oak-pine woods, New Hopewell, Knox Col, Sept. 29, 1974

Pileus 7-12 cm broad, convex to expanded-convex, eccentrically attached and depressed to deeply so behind, zonate, the zones alternately "cartridge buff" and "cream buff", glabrous, viscid, margin even, glabrous. Context white; odor slight, taste promptly sharply acrid. Latex white, unchanging, not staining, acrid.

Lamellae adnate, "cream buff", medium close, narrow to only moderately broad, occasionally forked behind, lamellulae rather abundant.

Stipe 2-3.5 cm long, 16-22 mm thick, eccentric, tapering pointedly below, whitish, somewhat spotted, white-matted-fibrillose, firm but with a large hollow (tubule), dry.

Spores in deposit: "cream buff", 7.5-10 x 6.5-8  $\mu$ , ellipsoid, with a partial reticulum, warts 0.7-0.8  $\mu$  high. Pleurocystidia and cheilocystidia not found (overlooked?). Pileus cuticle a distinct ixocutis. Hypodermium brownish hyphoid. Stipe cuticle of dry, repent hyphae.

*Crassicutis*

37282

LACTARIUS ~~ZONARIUS (St. Amans) Fr.~~

On soil, in mixed pine-deciduous woods, Herndon's, Knox County,

August 15, 1972

Pileus 8-16 cm broad, convex-depressed, finally infundibuliform, at first "pale ochraceous buff" finally "ochraceous buff," zonate, viscid, glabrous. Context white or pallid, thin on margin; odor mild, taste acrid. Latex white, unchanging, acrid-burning, not staining.

Lamellae adnate, concolorous, close, medium broad, occasionally forked, lamellulae scattered to rather numerous.

Stipe 2-3.5 cm long, 14-27 mm, pallid to pale ochraceous buff, not spotted, hollow, dry.

Spores in deposit: "light ochraceous buff;" spores 7.5-9.5 x 6.5-8  $\mu$ , warts 0.2-0.5  $\mu$  high, bands and branches forming a partial reticulum. Pleurocystidia 43-60 x 4-7  $\mu$ , ventricose, apices often nodulose; cheilocystidia similar, smaller. Pileus cuticle an ixocutis. Stipe cuticle of dry repent hyphae.

Sm-55806

*near crassocutis* ~~Diane has drawings.~~  
LACTARIUS ~~INSULSUS~~ var. ~~MICROSPORUS~~ var. ~~nov.~~

In oak-pine woods, Grants Pass, Oregon, November 18, 1956

Notes by Smith

Pileus 5-8 cm broad, convex then plano-depressed, orange with pale-buff zones, glabrous, moist but (not viscid?) Context medium thin; taste acrid. Latex white, unchanging, not staining, acrid.

Lamellae adnate-decurrent, pale incarnate-buff, not staining, close, medium broad to medium narrow.

Stipe 2.5-4 cm long, 10-15 mm thick, more or less concolorous with the lamellae, not spotted, dry (?)

Notes by Hesler

Spores 5.5-7.5 x 5-6  $\mu$ , ellipsoid, warts 0.2-0.3  $\mu$  high, bands and branches forming a partial reticulum. Basidia 44-48 x 7-8  $\mu$ , 4-spored. Pleurocystidia 48-62 x 5-7  $\mu$ , ventricose, acuminate, apices often subcapitate; cheilocystidia 34-48 x 4-6  $\mu$ , ventricose, apices with or without a capitellum. Gill trama of short-celled, interwoven hyphae. Pileus cuticle an ixocutis, resting on an hypodermium of brownish hyphae 30-60  $\mu$  thick. Stipe cuticle a very thin ixocutis; rosettes none. Clamp connections none.

It resembles (dried) L. insulsus var. insulsus which has larger spores. ?

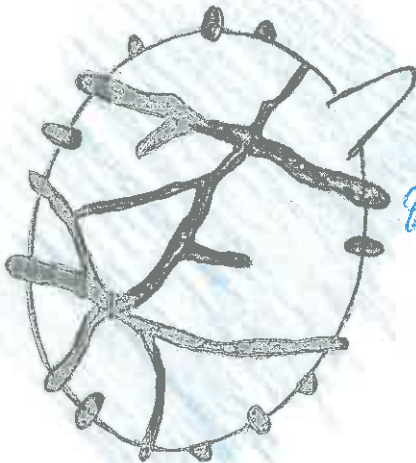
*Sactarius* <sup>near *crassocelis*</sup> ~~*pseudo-madidus* sp. nov.~~  
~~*imubus* var. *microsporus* sp. var. nov.~~  
Sm - 55806



Ph. x 1000



Ch. x 1000



Spore - x 8000

839  
840

*var. crassocutis*

Sm-55847

LACTARIUS ZONARIUS

In oak-pine woods, Grants Pass, Oregon, November 19, 1956

Notes by Smith

Pileus warm buff with paler zones, slimy-viscid margin thin, naked, striatulate when mature. Taste strongly slowly burning acrid. Latex white, unchanging, not staining.

Lamellae pale pinkish buff or yellowish.

Stipe pallid, dark ochraceous below,

Notes by Hesler

Spores 7-9.5 x 6-8  $\mu$ , bands and branches forming a partial reticulum. Pleurocystidia 48-56 x 5-8  $\mu$ , ventricose-acuminate, not always conspicuous; cheilocystidia 32-36 x 4-6  $\mu$ , similar, scattered. Pileus cuticle an ixocutis. Stipe cuticle of dry, repent hyphae; rosettes present.

*Oraxiocutis*

Sm-58289

LACTARIUS ~~ZONARIUS~~

Tapinobee Barrens, Michigan, September 19, 1957 (near  
insulsus).

Notes by Smith

Pileus 3-4 cm broad, dingy watery orange-buff, zonate.  
Latex white, unchanging, acrid.

Notes by Hesler

Spores 7-9.5 x 5.5-7.5  $\mu$ , warts 0.3-0.7, bands not forming a reticulum. Basidia 36-42 x 7-9  $\mu$ , 4-spored. Pleurocystidia 47-58 x 5-7  $\mu$ , subventricose, subclavate, apices tapering; cheilocystidia 25-37 x 4-6  $\mu$ , subclavate, more or less capitate. Pileus cuticle an ixocutis. Stipe cuticle of dry, repent hyphae; rosettes present.

*crassicutis*

Sm-77235

LACTARIUS ~~ZONARIUS~~

Gregarious in mixed woods, Robinson Springs, Alabama, leg. Dr. Burke,

October 25, 1942

Notes by Burke

Pileus 4-5 cm, "cartridge buff" with "clay color" stains, obscurely zonate, viscid, glabrous, even, cuticle partially separable. Taste tardily, moderately acrid. Latex milk-white, unchanging, not staining, acrid.

Lamellae decurrent, close to subcrowded, several forked behind, not attenuated, "warm buff."

Stipe near "cartridge buff," not spotted, not stained.

Notes by Hesler

Spores in deposit: "pale pinkish buff;" spores 7-9 x 5.5-7(7.5) $\mu$  warts 0.2-0.5  $\mu$ , bands and branches forming a partial reticulum. Pileus cuticle an ixocutis. Stipe cuticle of repent, dry hyphae.