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November 2013

Lactarius Notebook 12

L. R. Hesler

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LACTARIUS CROCEUS Burlingham Torrey Bot. Club Mem. 14:37. 1908

ILLUSTRATION:

Burlingham, Torrey Club Mem. 14, fig. 3.

Pileus 5-10 cm broad, broadly convex-umbilicate, spreading, saffron-yellow to orange-cadmium (49) (Repertoire de Couleurs), subzonate or azonate(?) expallent, glabrous, very viscid, margin involute and pruinose-dawny at first, glabrescent. Context brittle, whitish, staining yellow-cadmium where cut; odorless. Latex white, slowly becoming yellow-cadmium, acrid.

Lamellae adnate, pallid then honey-yellow (35), at length yellowish-buff (310. t. 1), becoming cadmium where cut or bruised, seldom forking, rather distant or subdistant, medium broad (5-6 mm).

Stipe 5 cm long, up to 16 mm thick, concolorous but paler, spotted, glabrous, base sometimes tomentose, stuffed then hollow.

Spores 7.5-9.5 x 6-7(7.5) μ, ellipsoid, warts 0.3-0.5 μ, ellipsoid, warts 0.3-0.5 μ high, with a reticulum of broad bands. Basidia 30-35 x 6-8 μ, 4-spored. Pleurocystidia (28)42-74 x 4-7 μ, ventricose, subulate, subcylindric, often constricted (more or less moniliform), apices tapering, granular; cheilocystidia 26-33 x 4-5 μ, clavate, ventricose, obclavate, granular. Gill trama cellular. Pileus trama vesiculose. Pileus cuticle a gelatinous zone; no pileocystidia. Stipe cuticle an ixocutis; caulocystidia 22-60 x 3-5 μ, filamentous, slightly constricted, in tufts. Clamp connections none.

HABIT, HABITAT, AND DISTRIBUTION - On soil, in deciduous woods, North Carolina and Virginia, July-September.

MATERIAL STUDIED - NORTH CAROLINA: Burlingham 48, type (NY), from Pisgah Forest, August, 1907; PENNSYLVANIA: Overholts (Tenn-16689), July.

OBSERVATIONS - This is distinguished by its orange-cadmium, viscid pileus, rather distant gills which become yellow-cadmium where bruised. The latex is scanty, and the change in color of it is detected by the change in color of the wounded context and gills. It differs from L. chrysorheus in its different spore-ornamentation, smaller basidia, subdistant gills, and itsmuch darker subzonate pileus.

LACTARIUS CROCEUS Burl.

Pisgah Forest, North Carolina, August, 1907

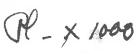
Type

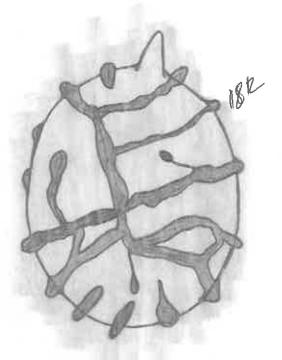
Spores 7.5-9.5 x 6-7(7.5) u, ellipsoid, warts \$134915 0.3-0.5 u high, with a reticulum of broad bands. Basidia 30-35 x 6-8 u, 4-spored. Pleurocystidia (28)42-74 x 4-7 u, ventricose, subulate, subcylindric, often constricted (more or less momliform), apices tapering, granular; cheilocystidia 26-33 x 4-5 u, clavate, ventricose, obclavate, granular. Gill trama cellular. Pileus trama vesiculose. Pileus cuticle a gelatinous zone, an ixocutis; no pileocystidia. Stipe cuticle an ixocutis; caulocystidia 22-60 x 3-5 u, filamentous, slightly constricted, in tufts. Clamp connections none.

Differs from <u>Lactarius chrysorheus</u> in its different spore-ornamentation, smaller basidia, subdistant gills, and its much darker, subzonate pileus, and in pleurocystidia (see Brittonia 12:337).

Sactarius croceus Bwl.



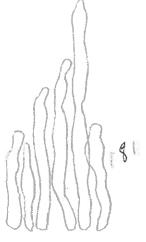




Spore - x 8000



OR- x 1000



Caulo - x 1000

LACTARIUS CROCEUS Burl.

In deciduous woods, Blacksburg, Virginia, July 27 - August 3, 1904 (ex-Herb. N.Y.B.G.)

Paratype

Spores 7-9 x 5.5-7 u, warts 0.3-0.5 u, bands forming a partial or sometimes complete reticulum. Pleurocystidia 38-72 x 4-6 u, scattered, subcylindric or subfusoid, acuminate; cheilocystidia 26-32 x 4-5 u, similar, scattered. Fileus cuticle an ixocutis; ho hypoderm. Stipe cuticle an ixocutis, sometimes not sharply delimited; no hypoderm.

The type was requested again in 1969, but Rogerson then stated that it could not be found; but, that he was sending the paratype, cited in the original description - which is Murrill 296, see notes above.

See notes on Type, studied many months earlier than the Paratype.

Lactarius exocens Burl. Mwill - 296 (Paratype)



Peleus ixocutis _ x 1000

Sm-14902

Cades Cove, Tennessee, August 20, 1939

Spores in deposit yellowish, 7-9 x 5.5-7(7.5) p, ellipsoid, warts 0.2-0.5 u high, more or less reticulated, a few warts isolated, bands with some free ends and a few fine lines. Pileus cuticle an ixocutis; no hypodermium. Stipe cuticle an ixocutis; no hypodermium. Pleurocystidia and cheilocystidia as in Type.

From Huntingdon Co., Penn., ex-herb. Overholts, July 21, 1942

Spores 8-10 x 6-7 μ , ellipsoid, reticulate, warty, warts 0.5 μ high. Pleurocystidia fusoid, 40-48 x 5-10 μ ; cheilocystidia clavate, 20-28 x 4-5 μ . Pileus cuticle an ixocutis, 80-120 μ thick; hypoderm none. Stipe cuticle an ixocutis; hypoderm none.

In deciduous woods, Blue Ridge Parkway, North Carolina, July 30, 1958

Pileus 5-10 cm broad, convex, deeply depressed, viscid, obscurely or not at all zonate, "light ochraceous buff" when young, in age "orange buff" to "capucine orange," glabrous, margin incurved, even. Context white, stained golden yellow by latex, rather thick on disk, thin on margin; odor mild, taste acrid-bitterish. Latex acrid, white, unchanging but drying greenish-yellow on flesh and gills.

Lamellae adnate to subdecurrent, whitish, soon "orange buff," nearly subdistant, broad (9-12 mm), tapering both ways, many short, some forking at base.

Stipe up to 8 cm x 20 mm, "light ochraceous buff," viscid, glabrous, equal, stuffed then hollow, base slightly curved, at times spotted.

Spores 7-9.5 x 6-7.5 µ, ellipsoid, reticulate-verrucose, warts 0.5-0.6 µ high. Pleurocystidia 60-80 x 6-ll µ, fusoid to subventricose, at times few; cheilocystidia clavate, cylindric, subfusoid, or subventricose, 30-42 x 4-7 µ. Gill trama of vesiculose cells and interwoven hyphae; subhymenium of small, irregular cells. Pileus cuticle an ixocutis, 40-250 µ thick, of slender interwoven hyphae. Stipe cuticle an ixocutis; rosettes none. Clamps none.

Blue Ridge Parkway, North Carolina, July 30, 1958

Spores as in 22031. Pleurocystidia and cheilocystidia moderately abundant, cylindric to subfusoid, often acuminate, but at times obtuse, granular. Pileus cuticle an ixocutis; hypoderm none. Stipe cuticle a thin ixocutis; hypoderm none. Clamp connections none.

LACTARIUS SUBCROCEUS sp. nov.

In deciduous-hemlock woods, Crib Gap, Cades Cove, July 29, 1971

Pileus 3-5 cm broad, "orange-buff," faintly zonate, viscid, glabrous, margin evan. Latex white, drying and staining yellow, aerid.

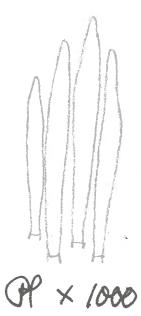
Lamellae adnate, concolor or paler, nearly subdistant, rather broad, few forking behind, lamellulae widely scattered.

Stipe 2-3 cm long, 4-6 mm thick, concolor or paler, viscid, solid, equal, not spotted.

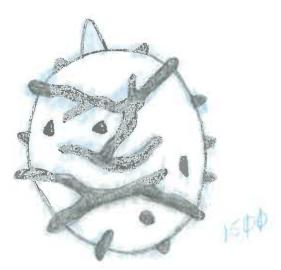
Spores in deposit: "cream buff," 5.5-7.5(8) x 5-6 μ, warts 0.2-0.3 μ high, bands and branches forming a partial reticulum. Pleurocystidia 42-60 x 5-7 μ, slender/-ventricose, scattered; cheilocystidia 24-35 x 4-6 μ, similar. Pileus cuticle a distinct ixocutis, with hyphal mounds at close intervals; hypodermium present. Stipe cuticle an ixocutis; rosettes present.

Near L. croceus, in which the spores are larger (7.5-10 μ long) and stipe scrobiaulate.

Factorius Acrocens of 7001.



Ch × 1000



Spar x 8000

LACTARIUS CURTISII Coker war - auchsu.

On soil, in pasture with small pines, west of Sparrow's Mill, Chapel Hill, N. C., leg. H. R. Totten, det. Coker-1845, September 19, 1915.

Type - Coker- 1845

(The basidiocarps are in poor condition for study. The lamellae have all been eaten away by an insect.)

Spores - none found. Pileus cuticle of repent hyphae. No pileocystidia. Pileus trama vesiculose, with scattered hyphae. Lactifers 4-6 µ broad. Clamps none. Caulocystidia none.

LACTARIUS CURTISII Cokerpar, curticu

In grass, under pines, Chapel Hill, N. C., leg. Totten, No. 1437, October 28, 1914.

(Gills mostly devoured by insects)

LACTARIUS CURTISII

East of Piney Prospect, Chapel Hill, N. C., same station as No. 1437, leg. H. R. Totten, No. 1857, September 22, 1915

(All specimens badly eaten by insects. Gills devoured.)

Spores and cystidia not found. Cuticle of repent hyphae; no pileocystidia. Pileus trama vesiculose (not duplem).

LACTARIUS CURTISII Coker

No. 1293 (1364), from Curtis' Collection, Farlow Herbarium, labelled (strangely enough!) <u>Lactarius camphoratus</u>, Society Hill, S. C. It appears to be <u>L</u>. curtisii.

Spores and other characters as in Curtis' Collection, No. 2883 (see my notes.)

LACTARIUS CURTISII Coker Fruth ardua

No. 2883, from Curtis' Collection, Farlow Herbarium, Harvard University, labelled: (2883) Lactarius deliciosus var. 1. n.sp. (Two basidiocarps attached to a piece of paper, with descriptive notes, essentially as given by Coker, p. 42, Jour. Elish. Mitch. 34)

Notes on Collection

Spores 7-8.5(9) x 5-6 µ, ellipsoid, somewhat inequilateral in profile, warts short (0.2-0.4 µ), with rather broad and narrow bands forming a reticulum. Basidia (unsuitable for study). Pleurocystidia and cheilocystidia none. Gill trama cellular, with brownish lactifers. Pileus trama vesiculose. Cuticle of repent hyphae, not sharply differentiated from the pileus trama; pileocystidia none. (Stipe not sectioned; material meager.)

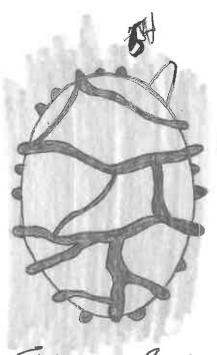
L. curtisii differs from L. salmoneus in its (curtisii) glabrous pileus, lack of pleurocystidia and cheilocystidia, latex peppery (mild in age).

factorius ourtisie Coker var. ourtisie 2883 - ex - Hert. Farlow. Fabelled Racturius deliciosus var. Fantel Canal, S. C., Pavenel-982

R . o

Ch O

Pileo O



Spore - × 8000

[Caulo: stipe not sectioned; material scanty]

Thiers - 6150 LACTARIUS GURTISII Goker var. CURTISII (GKer) Comb. not =

Near Van Cleave, Mississippi, June 11, 1959

Notes by Thiers

Cap whitish-yellow with pinkish overcast, dry, glabrous to subtomentose, not zonate. Latex orange, staining lamellae greenish.

Lamellae colored near ochraceous orange, subdistant.

Stipe orange.

Notes by Hesler

Spores 6-7.5(8) x 5-6 μ , warts 0.2 μ or less, bands forming a partial or no reticulum. Pleurocystidia none; cheilocystidia few, subfusoid, 22-28 x 3-4 μ . Pileus cuticle repent, dry. Stipe cuticle, dry, repent, bearing caulocystidia; rosettes none.

Micro characters comewhat as in Sm 69746, which may be a variety of curticit.

Thiers - 6340

LACTARIUS CURTISII AMARTI (OKOT) COMb. NOV.

DeSoto National Forest, near Biloxi, Mississippi, June 15, 1959

Spores 6-8 x 5-6 μ , warts about 0.2 μ or less. Pleurocystidia none; cheilocystidia 26-38 x 3-5 μ , subfusoid to subclavate, apices tapering, and at times constricted, scattered and neither abundant nor conspicuous. Pileus cuticle dry, repent.

Same as Thiers - 6150, Keept: what of stipe color?

Partarius aurtisu (var.?)
Thiers-6340

Ch-×1000

Hald for more information remained.

Sm-69746

LACTARIUS CURTISII var. Su-

Burgdorf, Idaho, August 25, 1966 (labelled L. deliciosus).

Notes by Smith

Pileus pale pinkish pallid, appearing matted-fibrillose, margin slightly cottony, stains rusty brown on edge. Latex carrot-colored.

Gills close, narrow.

Stipe pallid, frosted, carrot-colored beneath.

Smith says "nearest thing to L. curtisii in Idaho."

Notes by Hesler

Spores 6-7.5(8) x 5-6 u, ellipsoid to subglobose, warts 0.2 u or less in height, with a few bands and lines, rarely forming a reticulum, some warts isolated. Basidia 42-47 x 7-8 u, 4-spored. Pleurocystidia none; pseudocystidia filamentous, scattered, brownish; cheilocystidia 28-35 x 2-5 u, fusoid or subfusoid, more rarely with a long slender neck (more or less appendiculate), granular. Gill trama of small cells. Pileus trama vesiculose. Cuticle of pileus of repent, dry hyphae. Stipe cuticle of dry, repent hyphae, bearing scattered to gregarious caulocystidia 30-55 x 3-4 u, filamentous, rarely subcapitate or ventricose. Clamp connections none.

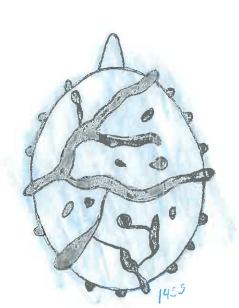
This is not ##11416## deliciosus; it is very near curtisii, but has fusoid or subfusoid cheilocystidia and spores rarely with a reticulum.

Ractarius curtisi var occidentalis vas zar. Sm -69746 - Type

Seil Kart

Psoudo - × 1000

Oh - x 1000



Fpare - X 8008



Caulo - x 1000

Order Colder

LACTARIUS CYATHULA (Fr.) Fr. Epicr. Myc., p. 344. 1838

and market will

Agaricus cyathula Fr., Syst. Myc. 1:66. 1821.

ILLUSTRATIONS:

Pileus 10-25 mm broad, at first plane, then depressed to infundibuliform, dry, papillate, reddish to reddish brown, tawny-reddish with a flesh-tint, sometimes becoming areolate, margin transparent-striate to the disc, at times the extreme margin grooved. Context odor mild, taste mild, or sometimes slightly bitterish. Latex white, unchanging, not staining, taste mild.

Lamellae adnate, at first pallid or pale ocher, becoming pale brownish cream, rather close, narrow, often forked.

Stipe 2-3(4) cm long, 1.5-3 mm thick, pallid, becoming rufous from the base up, finally dark reddish brown, hollow, dry.

Spores 7.5-10.5 x 6.5-8 μ , ellipsoid, warts 0.2-0.6 μ , bands and branchipes forming a partial to more or less complete reticulum. Pleurocystidia 44-67 x 5-7 μ , slender-ventricose-acuminate; cheilocystidia 23-30 x 3-4 μ , similar. Gill trama of narrow, subparallel hyphae. Pileus cuticle a cellular zone, at intervals with low mounds of irregularly-shaped cells, often bearing scattered clavate to ventricose pileocystidia; hypodermium brownish. Stipe cuticle a zone of repent, brownish, narrow, perpendicular hyphae, with scattered cylindric to clavate caulocystidia; rosettes present. Clamp connections none.

HABIT, HABITAT, AND DISTRIBUTION - On soil, under birch, alder, willow, Europe, July-September.

THE
MATERIAL STUDIED - DENMARK: Petersen (TENN 35736);/NETHERLANDS:
Bas 1042 (TENN 35604), 1532 (TENN 30274), 4634 (L); SCOTLAND: Watling
6877 (E).

OBSERVATIONS - The distinctive characters of <u>L</u>. <u>cyathula</u> sensu J. Lange, include its papillate, reddish brown, long-striate pileus; its watery-white, mild latex which does not stain the lamellae; moderately large spores with warts 0.2-0.6 µ high, and bands forming more or less of a reticulum. It is near <u>L</u>. <u>tabidus</u> (which see for distinctions). Although it has been confused with <u>L</u>. <u>paludinellus</u>, this species differs from <u>L</u>. cyathula in its viscid pileus cuticle, and smaller spores.

Bas - 4634

LACTARIUS CYATHULA (Fr.) Fr.

In damp forest of Alnus, Salix, Zuid Holland, August 17, 1966.

(No notes) (specimen at feiden)

Notes by Hesler

Spores 7-9.5 x 6-7.5 μ . Basidia 41-47 x 9-11 μ , 4-spored. Otherwise as in Bas - 1042.

of takidus.

Watling - 6877

IACTARIUS CYATHULA

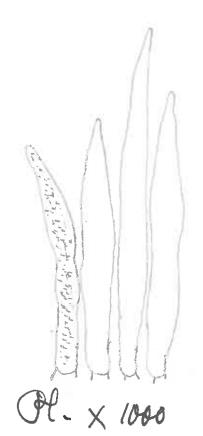
Under Alnus, Scotland, ex-Herb, Edinburgh, September 12, 1959. (collection of Edinburgh)

Spores 7-8.5 x 5.5-6.5(7) µ, ellipsoid, warts 0.3-0.8 µ high, bands and a few lines forming at most only a partial reticulum.

Basidia 38-43 x 8-10 µ, 4-spored. Pleurocystidia 62-93 x 7-10 µ, subfusoid to nearly cylindric, apices tapering, granular conspicuous but very widely scattered (absent in most sections); pseudocystidia filamentous; cheilocystidia 23-35 x 3-5 µ, subfusoid, apices subacute or with a neck, scattered, inconspicuous. Gill trama of small and large irregularly shaped cells. Pileus trama vesiculose. Pileus cuticle a cellular zone, cells globose to irregular, rather variable in size, surface with scattered pileocystidia, 20-35 x 8-12 µ, ventricose, clavate. Stipe cuticle of repent hyphae, with scattered or gregarious caulocystidia, clavate-cylindric, small and inconspicuous; rosettes present. Clamps none.

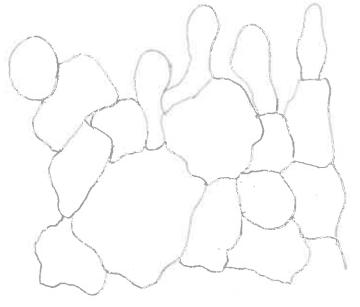
Coker says this is same as <u>L. paludinellus</u> Pk. But, the cuticlestructure of the two is different! The spores of the two, however, are quite similar.

Ractarius ayatkula Watling - 6897



Ch-×1000

Expres similar to paleiding]



Pileur outicle - x 1000

(Tenn-30274

Bas - 1532) LACTARIUS CYATHULA (Fr.) Fr. sensu Lange In moist Alnus-Betula-Salix forest, on humus, Noord Holland, September 17, 1958

Notes by Bas (Transl. by Donk)

Cap 8-20 mm, red as in <u>Laccaria laccata</u>, when young always with a dark orange pointed wart, older fruit bodies transparent-striate.

Taste mild. Latex white, not copious, mild.

Stalk 16-31 x 1-2(-3) mm, concolor or darker brown-red.

Spores with small warts occasionally with a few lines, rarely with rather numerous lines and the initial of a reticulum.

Notes by Hesler

Spores 7.5-10.5 x 6-7.5(8) μ , warts 0.2-0.6 μ , bands and branches forming a partial to more or less complete reticulum. Pleurocystidia 43-78 x 4-7 μ , ventricose-acuminate; cheilocystidia 24-36 x 3-4 μ , similar. Pileus cuticle a cell-zone, 3-5 cells thick, the cells 18-35 x 12-28 μ , irregularly isodiametric, some of the surface cells prolonged upward to form scattered pileocystidia. Stipe cuticle repent, dry, bearing scattered, hyphoid caulocystidia.

Rastarius cyathula pensu Range (+ Bas) Bas 1532 (Term 30274)

P × 1000

the 4 1000

Pelens enticle as in Watting - 6877. Bas - 1042

(Tenn 35604) LACTARIUS CYATHULA (Fr.) Fr.

At edge of young deciduous forest, <u>Betula</u>, <u>Salix</u>, <u>Alnus</u>, Noord Brabant, Holland, July 10, 1956 (Det: Bas, cyathula sensu Lange)

Notes by Bas (Transl. by Donk)

(Material closely resembles Neuhoff, Pl. XVI, fig. 67)

Cap 14-25 mm, at first flat with a small sharp papilla, then shallow funnel-shaped without a papilla, bright orange-brown with a faint flesh-colour hue, slightly granular, occasionally areolate by minute cracks, transparent-striate to the center, extreme margin somewhat grooved. Context odor mild, taste slightly bitter, not sharp. Latex white-watery, unchanging, taste mild.

Gills adnate, pale foxy-brownish cream, often forked, rather close, medium broad.

Stipe 40 x 2.5 mm, at first concolor, then purple red-brown, hollow.

Spores 7.4-10.4 x 5.5-7.2 μ , with rather big warts which are often connected by thin or thick raised lines (especially running from adaxial to abaxial side).

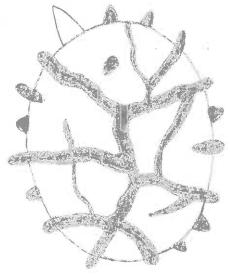
Notes by Hesler

Spores 7.5-10.5 x 6.5-8 μ , ellipsoid, warts 0.2-0.6 μ , bands and branching forming a partial to more or less complete reticulum. Pleurocystidia 44-67 x 5-7 μ , slender-ventricose-acuminate; cheilocystidia 23-30 x 3-4 μ , similar. Gill trama of narrow, subparallel hyphae. Pileus cuticle a cellular zone, at intervals with low mounds of irregularly-shaped cells, often bearing scattered clavate to ventricose

pileocystidia; hypodermium brownsish. Stipe cuticle a zone of repent, brownish, narrow, perpendicular / hyphae, with scattered cylindric to clavate caulocystidia; rosettes present. Clamp connections none.

Rectarins cyathula (7r.) Fr. 55 Pange Bas - 1042 (Tenn-35604)

P-×1000



Spore - × 8000

LACTARIUS CYATHULUS Fr.

Epicr. Myc., p. 344. 1838

Lactarius paludinellus Pk., N. Y. State Mus. Ann. Rept. 38:133. 1885

(from Elisha Mitch. Jour. 40-41)

"Pileus fleshy, thin, convex, then plane-umbilicate to depressed in the center, sometimes with a small umbo, brownish-drab (302 t. 2) to dark-fawn (307), expallent, slightly viscid when wet, glabrous, 12 mm to 4 cm broad, margin at length slightly striate; gills white to cream colored, becoming darker with age, pruinose, many forking near the stem, close, adnate or slightly decurrent, thin, up to 4 cm broad; stem of the same color as the pileus or paler, nearly equal, glabrous, except at the base, which is slightly villose when growing in moss, stuffed, sometimes hollow, 2-3 cm long, 3-4 mm thick; flesh white or tinted with the color fh of the surface; spores white, subglobose, echinulate, 6.5-8.5 u; latex white, unchanging, mild."

HABITAT AND DISTRIBUTION - On soil, in woods, in sphagmum, or in decaying leaves, North Carolina. Coker accepts <u>cyathula</u> (with <u>paludinellus</u> as a synonym).

Notes on Bresadola Collection of L. cyathula (from N. Y. Bot. Garden)

Spores 8-9 x 6-7.5 u, ellipsoid to subglobose, reticulabe-verrucose, reticulum continuous, warts about 0.5 u high. Pleurocystidia 64-81 x 7-10 u, fusoid, few; cheilocystidia similar, 30-36 x 2-3 u. Gill-trama of interwoven hyphae. Subhymenium not differentiated. Epicutis a gelatinous zone, 35-50 u thick. (This is not cyathula)

Mud Lake Bog, Washtenaw Co., Michigan, October 14, 1969

(No Notes by Smith)

Notes by Hesler

Spores 7-9 x 5.5-7 μ , warts 0.4-0.8(1.0) μ , some warts isolated, bands and branches broken, and with a few lines. Pleurocystidia 54-78 x 5-7 μ , ventricose-acuminate; cheilocystidia 30-43 x 4-6 μ , similar. Pileus cuticle a cell zone, the cells 12-35 x 7-15 μ .

Although there are no notes on fresh state, and the color of the dried material is paler than in some collections, the spore markings and pileus-cuticle cells are characteristic of those of <u>L</u>. <u>cyathula</u>. If the latex became yellow, I then would suggest <u>L</u>. <u>theiogalus</u>.

LACTARIUS CYSTIDIOSUS Thiers

Gregarious in humus in mixed pine-hardwood forest, Sam Houston National Forest, near Stubblefield Lake, San Jacinto Co., Texas, H. D. Thiers No. 1670, June 8, 1952

Type

Spores 7-9 x 5.5-7.5 u, ellipsoid to subovoid, slightly inequilateral info profile, warts 0.3-0.5 u high, lines and narrow bands forming a reticulum. Basidia 35-52 x 7-10 u, 4-spored. Pleurocystidia 33-54 x 5-9 u, more or less clavate, apices rounded or conic, thin-walled, granular, not projecting, inconspicuous, scattered; pseudocystidia 35-55 x 2.5-4 u, filamentous, more or less crooked, refractive, scattered; cheilocystidia 26-43 x 5-10 u, clavate, more rarely nine-pin-shaped (lecythiform), thin-walled, granular, scattered, inconspicuous. Gill trama somewhat vesiculose, with hyphae. Pileus trama vesiculose. Cuticle a zone of cells, 3-4 layers in depth, bearing a turf of colorless pileocystidia, 22-62 x 2-5 u, filamentous, crooked, slightly constricted, thin-walled. Caulocystidia similar to pileocystidia, somewhat shorter, arising from repent hyphae, thin-walled. Clamp connections none.

Factarius cyptidiosus Phiers Type Valintimi I

Pl-×1000 Prendo × 1000 Peleo-turf - × 1000

Spore - x 8000

LACTARIUS DECEPTIVUS Pk.

New York State Mus. Ann. Rept. 38:0125. 1885

Pileus 6-16 cm broad, convex-depressed, finally infundibuliform, whitish, often with rusty stains, glabrous but surface torn into fibers and scales, dry, at times rimose, margin inrolled, soft-cottony. Flesh white, hard, thick on disc, thin on margin; odor mild, becoming strong at maturity. Latex white, unchanging, acrid.

Lamellae adnate-decurrent, ivory white then creamy, avellaneous-brownish where bruised, close, narrow to medium broad, some forking, edges even. Stipe 4-9 cm x 20-35 mm, white, densely fibrillose, hard, equal or tapering downward, dry, solid.

Spores 9-11 x 7.5-8.5 μ, ellipsoid, reticulate by fine lines, verrucose, warts (0.4)0.6-1.0(1.5) μ high, white or "cartridge buff" in mass. Pleurocystidia 41-95 x 5-10 μ, subventricose, granular; cheilocystidia fusoid, 35-80 x 5-11 μ. Gill trama of large celled hyphae. Subhymenium not differentiated. Epicutis of repent, nongelatinous hyphae. Clamps none.

Habitat and distribution - On soil, in deciduous and coniferous woods, Tennessee, North Carolina, Alabama, and Florida, July-October.

LACTARIUS DECEPTIVUS Pk.

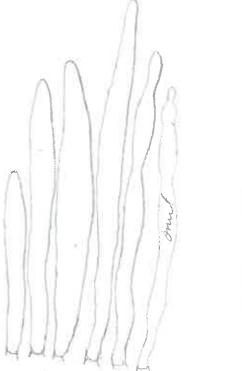
Sandlake, N.Y., August.

Type (lectotype)

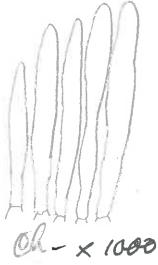
(With the collection is a note, signed by H. D. House: "Peck did not designate a type collection or locality for L. deceptivus, hence the mounted specimens from Sandlake, accompanied by drawings and spore print may perhaps best serve the purpose of a Type type.")

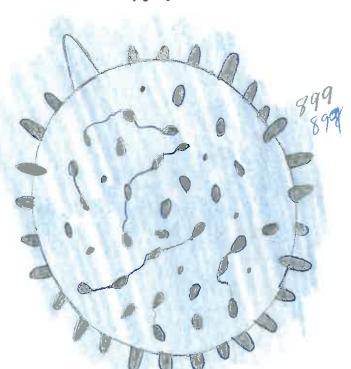
Spores white in deposit, 9-11(13) x 7.5-8.5(9) μ , broadly ellipsoid, more rarely subglobose, warts 0.4-1.0 μ high, isolated but with some connecting fine lines. Basidia 46-58 x 7-9 μ , 4-spored. Pleurocystidia 48-96 x 6-10 μ , subclavate to subventricose, apices often tapering more or less, granular, often more or less constricted, very abundant; cheilocystidia 40-58 x 5-7 μ , more or less similar. Gill trama interwoven. Pileus trama vesiculose, rosettes sometimes present in upper portion of the trama. Pileus cuticle not greatly differentiated, the surface bearing strands of more or less uplifted hyphae (tomentum). Stipe cuticle of repent hyphae, bearing caulocystidia 40-65 x 4-5 μ , more or less constricted and filamentous, as terminal elements of surface hyphae; rosettes present. Clamp connections none.

Padarius deceptions PK. Jype.



P-X 1000

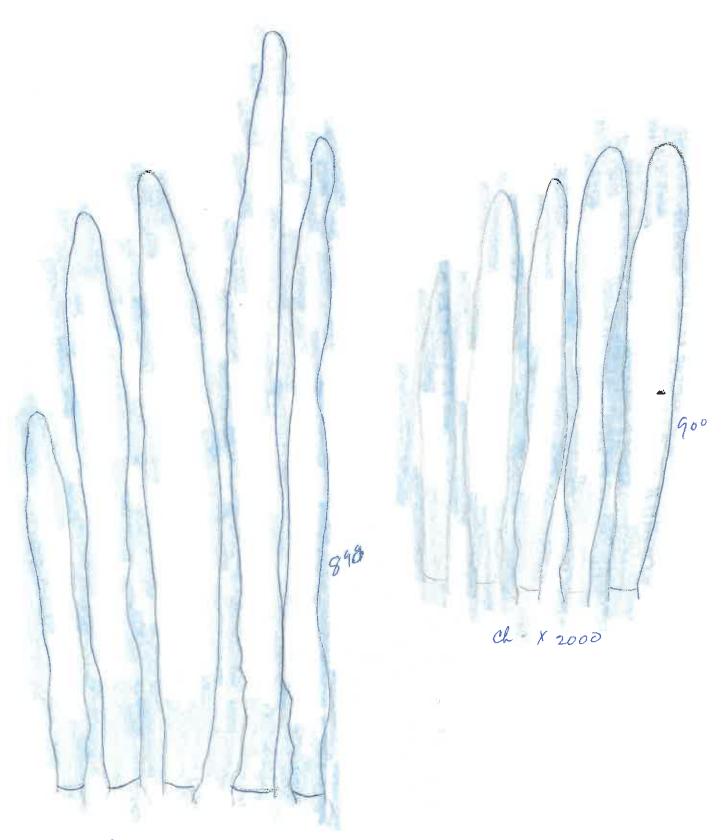




Caulo -× 1000

Spre - x 8000

L. deceptions PK



Pl - X 2000

LACTARIUS INCLARATAINS

No.	Place Coll.	Spores	Pl.	Ch.	
Type	Sandlake, N.Y.	10 -1 2 7 - 9	68-80 6-7 numerous	42-63 6-7 similar	
5309	Mt. LeConte 3,500 ft.	8.5-12 7-85	99	\$1	Aug.
5418	Shady Valley	9-12 7-5-9	69	H	Aug.
9160	Elkmont	9-12 7-5-10			Aug.
9675	Clingman's	9-13(15) 8-10(11)	52-80 6-9 inconspic/ not abundant	30-42 3-6	Sept.
10773	Clingman's	8.5-12 7-8.5	/rather abundan	it	Aug.
12356	Highlands	9 - 13 7•5 - 9		æ is	Sept.
12869	Cades Cove	8.5-12 7-8	50-66 5-9 mumerous	36-50 5-6	Sept.
16187	Gainesville, Florida	8.5-11 7-8.5	rather abundant		June
19345	Highlands	10 - 13 7•5 - 9•5	44473 44-83 5-9 abundant	35-47 6-11	Sept.
20563	Cades Cove	9-12 7-5-9	as in 28182 abundant		Sept.
20907	Highlands	9.5-13 7.5-9.5	37-66 5-8 mumerous	37-66 5-8	July
22120	Clingmen's	9.5-13 8-10	7 88 (as in 28182	Sept.
25689	Cades Cove	8.5 -10(11) 7.5 - 9	45-62 5-7 conspic/ numerous	similar	July

MAGARINE TREEPMENS

No.	Place Coll.	Spores	På.	Ch.	
Type	Sandlake, N.Y.	10-12 7-9	68-80 6-7 Rumerous	42=63 6=7 similar	
5309	Mt. LeConte 3,500 ft.	8.5-12 7-85	**	*	Aug.
5418	Shady Valley	9-12 7-5-9	•	40	Aug.
9160	Ellenont	9-12 7-5-10			Aug.
9675	Clingsan*e	9-13(15) 8-10(11)	52-80 6-9 inconspic/ not abundant	30-42 3-6	Sept.
10773	Clingman's	8.5-12 7-8.5	/rather abundan	nt.	Aug.
12356	Highlands	9-13 7-5-9			Sept.
12869	Cades Cove	8.5-12 7-8	5066 59 muserous	36-50 5-6	Sept.
16187	Gainesville, Florida	8.5-11 7-8.5	rather abundant		June
19345	Righlands	10-13 7-5-9-5	##### 44-83 5-9 abundant	35+47 6-11	Sept.
20563	Cades Cove	9-12 7-5-9	as in 28182 abundant		Sept.
20907	Highlands	9.5-13 7.5-9.5	37-66 5-8 mmerous	3766 58	July
22120	Clingman*s	9.5-13 8-10	**	as in 28182	Sept.
25689	Cades Cove	8.5-10(11) 7.5-9	45-62 5-7 conspic/ numerous	similar	July

L. deceptivus - page 2

No.	Placed Coll.	Spores	P1.	Ch.			
26 8 35	Ontario	9.5-13 7.5-9.5	58-71 4-6		Aug.		
28182	Cades Cove	9-11 7-8.5	43-55 5-7		Sept.		
29166	Cades Cove	9-12 x 7-8.5	(as in 28182)		Aug.		
		Pl. and Ch.					
Type	10-12 x 7-9	numerous					
Clingma	ns: 9-13(15) x 8-9(10 8.5-12 x 7-8.5 9.5-13 x 8-10	inconspic - r	ather abundant				
Ontario	Ontario: 9.5-13 x 7.5-9.5 conspic - rather abundant						
Highlan (3,500-	ds/LeConte: 4,000) 8.5-12 x 7-8.5 9-13 x 7.5-9 10-13 x 7.5-9.5 9.5-13 x 7.5-9.5	conspic - abu	ndant				
Elkmont New Yor							
Cades C	9-12 x 7-8.5 9-11 x 7-8.5	conspic					
	8.5-12 x 7-8 9-12 x 7.5-9 8.5-10 x 7-8.5	abundant					
Florida	8.5-11 x 7-8.5	abundant					

L. deceptivus - page 2

No.	Placed Coll.	Spores	n.	Ch.	
26935	Ontario	9.5-13 7.5-9.5	58-71 4-6		Aug.
28182	Cades Cove	9-11 7-8.5	43-55 5-7		Sept.
29166	Cades Cove	9-12 × 7-8.5	(as in 28182)		Aug.
		Pl. and Ch.			
Wee	10-12 x 7-9	Ruserous			
HL ITZUT,	18' 9-13(15) x 8-9(10) 8.5-12 x 7-8.5 9.5-13 x 8-10	incomepic - r	ather abundant		
Catario	9.5-13 × 7.5-9.5	conspic - rat	her abundant		
(3,500-4	%/leConte: 0,000) 8.5=12 x 7=8.5 9=13 x 7.5=9 10=13 x 7.5=9.5 9.5=13 x 7.5=9.5	conspic - abu	ndant	delik	
Ellanont Reu York	9-13 x 7-9(10) 10-12 x 7-9				
Cades Co	9-12 x 7-8.5 9-11 x 7-8.5	conspic			
	8.5-12 x 7-8 9-12 x 7.5-9 8.5-10 x 7-8.5	abundant			
Plowling	8.5-11 x 7-8.5	abundant			

Pine Lake, Marquette Co., Michigan, July 23, 1968 (labelled L. deceptivus; no notes).

Spores 8.5-11 x 7-8.5 μ , warts 0.5-1.0 μ , a few lines. Pleurocystidia 52-88 x 5-9 μ ; pseudocystidia filamentous; cheilocystidia 38-55 x 5-7 μ . Pileus cuticle a cutis with overlaid hyphal filamentous. Stipe cuticle repent, caulocystidia 38-60 x 4-5 μ , cylindexric, at times more or less constricted, more or less a turf; rosettes present.

340

Gilliam - 390

LACTARIUS DECEPTIVUS

Conway Lake, Marquette, Michigan, T. Gilliam, August 8, 1968.

Notes by Gilliam

Pileus 8-10.5 cm, "warm buff," margin "light buff," staining "buckthorn brown." Latex white, staining brownish.

Notes by Hesler

Spores, etc., as in Type. Cottony roll on pileus margin usual.

Peters - 1151

LACTARIUS DECEPTIVUS

In mixed hardwoods, Outonagon Co., Mich., August 25, 1962.

Spores 9-12 x 7-8.5 μ , warts 0.6-1.2 μ , slender, with some connecting lines. Otherwise as in Type.

Stipe dry, with numerous caulocystidia, cylindric; context vesiculose but cells not cuneiform nor in rosettes (as in L. deliciosus).

Ammarati - 2069 LACTARIUS DECEPTIVUS

In mixed woods, Marquette Co., Michigan, August 4, 1968

Notes by Ammarati

Pileus whitish with dull yellowish surface hyphae which break up into scales, margin with a roll of fibrils, becoming stained or discolored. Context white, mild. Latex white, milky, unchanging.

Lamellae dull or grayish white, with reddish tints when cut and standing.

Notes by Hesler

Spores 8.5-11.5 x 7.5-8.5 μ , warts 0.5-1.0 μ , isolated or some connected by lines (only a few found). Pleurocystidia and cheilocystidia and other micro characters as in Type.

The taste is described as mild: otherwise this agrees with Type.

alboluteus deceptions PK,

Ammirati - 2249

LACTARIUS GRANDISPORUS sp. nov

Marquette Co., Michigan, in mixed woods, August 12, 1968

Notes by Ammirati

Pileus (15 cm broad, depressed or umbilicate, ground-color whitish, but sordid yellow to pale brownish yellow over disc, pale tan to slightly yellow over margin, fibrillose on the outer margin, patchy-fibrillose on inner margin and disc. Latex we would milk-like. Taste slightly peppery; odor fungoid.

Lamellae close, whitish to cream color, sordid brownish or pale dingy yellow.

Stipe 8 cm long, 45 mm thick, finally "light buff" when der dried, tapering downward (velvety in appearance and to touch), hollow, with some green stains at apex (at gill-stipe juncture).

Spore deposit: white.

Notes by Hesler

Spores (9.5)10-13.5 x 8-10 µ, ellipsoid or (in profile) inequilateral, 0.8 warts variable 9.2-0.8 µ high, isolated or connected by obscure fine lines. Basidia 48-62 x 8-10 µ, 4-spored. Pleurocystidia 48-64 x 5-8 µ, cylindric or subventricose acuminate, granular-spangled, buried, or projecting; cheilocystidia 20-38 x 4-6 µ, clavate or cylindric, apices sometimes contracted-capitate. Gill trama of interwoven, short-celled hyphae. Pileus trama vesiculose. Pileus cuticle not greatly differentiated, surface bearing a loose mat of colorless, septate hyphae, 5-15 µ broad. Stipe cuticle similar, except the cylindric to subclavate caulocystidia are thick-walled; rosettes present.

See: Bigelow 13195; also Bigelow 13505 and 13540.

Ammirati - 2392 LACTARIUS DECEPTIVUS Pk.

Under Pinus, Yellow Dog Pine Plains, Marquette Co., Michigan, August 22, 1968.

Pileus 8-11.5 cm broad, margin decurved to plane, more or less splitting in age, deeply depressed on disc, scaly or squamulose over disc and inner margin, disc cinnamon orange to brownish orange or tinted with these colors, margin with pale-whitish ground color but tinted with disc colors to near edge is appearing more or less ## warm buff to pale cinnamon buff. Context whitish and solid, sometimes stained with colors of disc surface; odor pungent-disagreeable, taste mild - then hot - peppery. Latex white, unchanging.

Lamellae close, more or less ascendent in some, dull whitish to cream color, staining light cinnamon buff when older.

Stipe 3-4 cm, 2-3.5 cm at apex, tapered to base, surface and context white, more or less sordid to stained with cap (disc) color inside and out but not extensively, surface of stipe scruffy tomentose-fibrillose.

Spores in deposit: rich cream to light cream buff.

Notes by Hesler

Spores 8.5-12 x 7-9.5 μ , ellipsoid, slightly inequilateral in profile, warts 0.5-1.2 μ , isolated, a few obscure connecting lines. Otherwise as in the Type.

Hyphae of the pileus trama loosely interwoven, some with obscure incrustation.

Does spore color vary? (white to cream)

Ammirati - 2406 IACTARIUS (deceptivus?) (CARD: 2392)

Huron Mt. Club, Marquette Co., Michigan, August 23, 1968

Notes by Ammirati

Taste hot peppery. Margin inrolled with a cottony roll. Latex white, unchanging.

Notes by Hesler

No spores found (basidiocarps young). Undoubtedly this is L. deceptivus.

LACTARIUS DECEPTIVUS

Shaffer - 2701

In oak-pine woods, Ogemaw Co., Michigan, August 25, 1960

Notes by Shaffer

Pileus white, margin cottony, with tawny-olive stains. Taste acrid. Stipe white. Latex white, unchanging, acrid.

Notes by Hesler

Spores with isolated warts, some connected by lines.

LACTARIUS DECEPTIVUS

Under pine and hardwoods, Wilderness State Park, Mich., July 14, 1956.

Thiers - 3229

No spores found; otherwise appears to be deceptivus.

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Thiers - 3628

LACTARIUS DECEPTIVUS

Bois Blanc Island, Mich., July 29, 1956.

Margin of cap cottony, and extending over the gills as/semimembranous veil; veil composed of septate hyphae, 3-5 µ broad.

Spores $8.5-11.5 \times 6.5-8 \mu$. Otherwise as in Type.

Thiers - 3769

LACTARIUS DECEPTIVUS

In open hardwoods, Burt Lake, Mich., August 3, 1956.

Spores 9-12 x 7.5-8.5 μ . Otherwise as type. Stipe cortex vesiculose, the nest of cells of two kinds: (1) consisting of 12-25 large vesiculose cells, and (2) of smaller rosettes.

Mt. LeConte, Aug. 10, 1934.

Spores 8.5-12 x 7-8.5 μ_{\bullet} warts mostly isolated, 0.6-1.2 μ high.

Shady Valley, Johnson Co, Aug. 19, 1934

Spores 9-12 x 7.5-9 μ . Typical, but below average in size.

Elkmont, Tenn., Aug. 9, 1936.

Spores 9-12 x 7.5-10 μ , warts 0.6-1.3 μ high. Pleurocystidia 48-62 x 5-7 μ , scattered, not abundant, rather conspicuous; cheilocystidia 36-52 x 4-6 μ , similar. Cuticle repent.

In deep moss, under Abies fraseri, Clingman's Dome, 6500 ft., Sept. 27, 1936.

Pileus 8-16 cm broad, convex, finally depressed, glabrous at first but surface becoming more or less torn and arealate and appearing squamulose, not viscid, ochraceous (not changing much on drying), margin with a dense soft, cottony tomentum which extends to stipe.

Context white, firm. Latex white, unchanging, acrid.

Lamellae adnate to decurrent, subdistant, whitish or pale ochraceous at first, then ochraceous, some forking.

Stipe 3.5-5.5 cm long, 10-20 mm thick, whitish, pruinose or hairy, tapering downward, solid then hollow.

Spores 9-13 (15) x 29-10 µ, ellipsoid, at times inequilateral, warts 0.5-1.2 µ high, with a few obscure connecting lines. Basidia 52-58 x 8-9 µ, ell-spored. Pleurocystidia 52-80 x 6-9 µ, subcylindric to subfusoid, apices rounded, tapering, more rarely capitate-mucronate, granular, sometimes spangled, scattered, inconspicuous; pseudocystidia 41-73x1.5 -4µ, filamentous, with a refractive content, scattered; cheilocystidia 30-42 x 3-6 µ, fusoid, apices more rarely capitate-mucronate. Gill trama of irregular cells, subhymenium of small compact cells. Pileus trama vesiculose. Cuticle of pileus of repent hyphae, not greatly differentiated. Gaulocystidia in scattered tufts, 27-42 x 4-7 µ, clavate or ventricose; the stipe with numerous hyphal filaments. Clamp connections—none.

Factorius deceptions PK.
9675. Reception - × 1000 × 1000

Ffore - x 8000

In deep moss, Clingman's Dome, N.C., Aug. 8, 1937.

Spores 9-13 x 8-10 μ , warts 0.6-1.3 μ high, isolated or with a few obscure fine lines. Pleurocystidia 50-72 x 5-7 μ , cylindric to subventricose, apices $^+$ tapering but rounded or capitate; cheilocystidia 37-45 x 4-6 μ , similar (both similar to 28182; although numerous they are less conspicuous than in 28182).



10773 - Lactarius deceptivus)
(Philo by Alice Caton)



10773 - Ractarius deceptivus PK. X3/4

Highlands, N. C., Sept 3, 1939

Spores 9-13 x 7.5-9 μ , warts 0.6-1.2 μ , scattered with a few obscure connecting lines.

Bigelow 12376 LACTARIUS DECEPTIVUS Pk.

Under conifers, Conway State Forest, Conway, Mass., August 24, 1963.

Notes by Bigelow

"deceptivus"

Bigelow says: / "SSESPTIONS" with a blue line on stipe apex. Spore deposit failed.

Pileus 5-11 cm broad, plane depressed at first with incurved and inrolled margin, margin cottony, expanding to broadly infundibuliform, cotton appressed in age, surface dry, unpolished, fibrillose, whitish, ochraceous stained about disc in age, no odor, taste acrid, flesh white, thin, bather brittle, firm. Tatex white, unchanging or staining.

Lamellae decurrent, evenly, close, narrow, forked, whitish but finally nearly pinkish buff in age, sometimes ochraceous stained.

Stipe short, 3-5 cm long, apex 2-3 cm, enlarged and tapering down sbruptly, base 13-21 cm, solid, apex scabrous, with distinct glaucous line next to gills, appressed fibrillose below.

Notes by Hesler

All micro characters as in Type.

Potter - 12415

LACTARIUS DECEPTIVUS

Edgewood, Mich., on low ground, September 29, 1959.

Notes by Potter

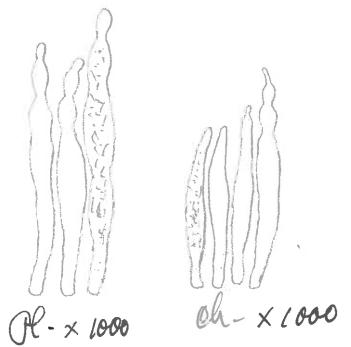
Latex white, unchanging, acrid. Cut lamellae turning pinkish cinnamon then tawny. Odor not distinctive. Spores white.

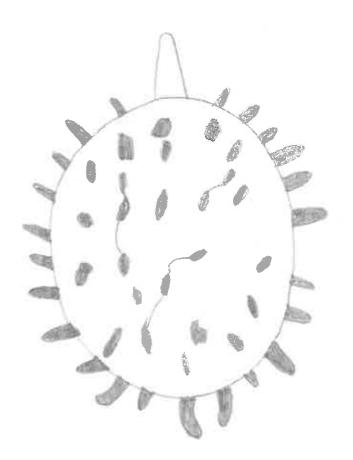
Notes by Hesler

Spores 9-12 x 8-10 u, warts (0.4)0.7-1.2 µ, isolated or connected by fine lines. Basidia 54-63 x 9-10 µ, 4-spored. Pleurocystidia 62-75 x 6-7 µ, subfusoid, constricted, apices with a capitellum; cheilocystidia 42-60 x 5-6 µ, subfusoid, at times constricted and with a capitellum. Gill trama of rather large cells. Pileus trama vesiculose. Pileus cuticle a thick zone of very loosely interwoven hyphae; no hypodermium. Stipe cuticle of repent hyphae bearing a turf of erect, hyphoid caulocystidia, 125 u (more or less) long. Clamp connections none.

Similar to Potter-12756, but differs in larger spores.

Potter-12415





Sperl - x 8000

Potter-12756 LACTARIUS DECEPTIVUS

Gregarious in woods, Ithaca, Michigan, September 3, 1960 (labelled L.

subtorminosus)

Notes by Potter

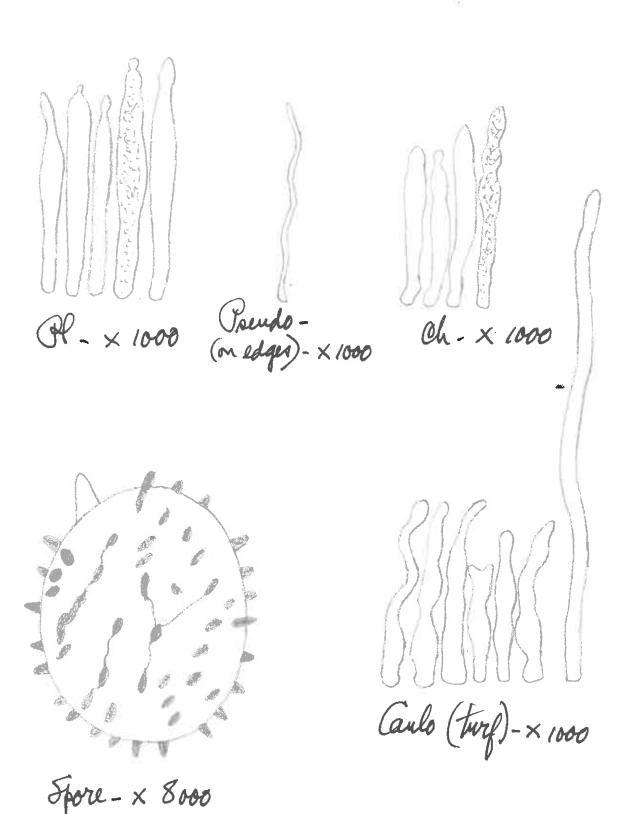
Notes by Hesler

Spores 7.5-10 x 6-8.5 μ , warts 0.3-0.5 μ high, isolated or at times with fine connecting obscure lines. Basidia 40-44 x 8-10 μ , 4-spored.

Pleurocystidia 52-64 x 5-9 μ , subventricose to subclavate, often with a capitellum, granular-spangled; pseudocystidia present on edges, cheilocystidia 40-53 x 5-6 μ , subclavate, at times with a capitellum. Gill trama of interwoven hyphae. Pileus trama vesiculose. Pileus cuticle a loose zone of tangled, colorless, non-gelatinous, hyphae. Stipe cuticle of repent hyphae, bearing a turf of caulocystidia, 30-50(175) x (3)4-8 μ , filamentous to flask-shaped. Stipe cortex with rosettes; also with a peripheral zone of longitudinally-disposed hyphae which are yellowish brown in 2% KOH. Clamp connections none.

Although labelled L. subtorminosus that species has much smaller spores (5.5-7 x 4.5-6 μ) and with bands and lines forming a partial reticulum.

Pactarius deceptions Potter - 12756



LACTARIUS DECEPTIVUS

Gregarious, on soil, Ithaca, Michigan, September 5, 1960.

Notes by Potter

Taste acrid. Latex white, unchanging. Old cuts and bruises pinkish cinnamon. Spores white.

Notes by Hesler

Spores 7.5-10 x 6-8.5 μ , warts 0.3-0.5 μ high, isolated, or with a few fine lines. Basidia 38-42 x 7-9 μ , 4-spored. Pleurocystidia 52-64 x 5-7 μ ; cheilocystidia 35-46 x 5-6 μ . Gill trama interwoven. Pileus cuticle a thick zone of very loosely interwoven hyphae. Pileus context vesiculose. Otherwise as in Potter-12756.

Cades Cove, Sept. 1, 1940

Spores 8.5-12 x 7-8 μ . Pleurocystidia 50-66 x 5-9 μ , numerous in most sections, subfusoid, apices more or less tapering, often capitate-mucronate; cheilocystidia 36-50 x 5-6 μ , somewhat similar.

factorius deceptivus 12869

Pl- x 1000

Ch- × 1000

decephrus Pt.

Bigelow - 13505

LACTARIUS GRANDISPORUS sp. nov. (Card: 13195)

Long Trail, Bolton, Vermont, August 18, 1964

Spores 9-13 x 8-9.5 μ , ellipsoid (face view), inequilateral (profile), warts 0.6-1.0 μ , isolated or with an occasional, obscure connecting line, apiculus rather blunt. Micro characters otherwise as in 13195 - but add: some epicuticular hyphae of pileus are incrusted. The caulocystidia are thick-walled (as in 13195).

In deep moss, N. C., Clingmans Dome, balsam woods, August 24, 1941.

Pileus 6-14 cm broad, convex, depressed, finally deeply so, whitish, or more often "cinnamon buff" to near tawny, dry, at first matted fibrillose, fibrils soon aggregated to form coarse scales (especially in center), becoming rimose, margin inrolled and cottony. Context white, thick, firm; odor mild (strong at maturity). Latex white, unchanging, acrid.

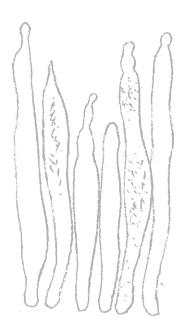
Lamellae adnate, close, becoming nearly subdistant, often forked, narrow, arcuate, tapering both ways, at first white, at maturity brownish-flesh, edges even.

Stipe 4-9 cm long, 20-35 mm thick, equal or tapering downward, fibrillose, concolorous, dry, solid.

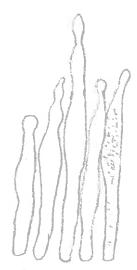
Spores 9-12(13) x 8-10 μ, ellipsoid, warts .8-1.2 μ high, many isolated, some with connecting fine lines. Pleurocystidia fusoid to more or less clavate-nodulose, often subcapitate, 50-95 x 4-8 μ; cheilocystidia similar, 38-66 x 4-7 μ. Pileus cuticle of repent hyphae, often overlaid with strands of fibrils, not gelatinous. Subhymenium inconspicuous, subparallel. Stipe cuticle of repent hyphae with overlaid strands of fibrils. No rosettes found. Clamps none.

In this material the cuticle was slow in becoming cracked as is often the case.

factarius deceptivus 13983



Pl- × 1000



Oh - x 1000

Under live-oak, Gainesville, Florida, June 24, 1938

Spores $8.5-11 \times 7-8.5 \, \mu$. Pleurocystidia more or less abundant. Otherwise typical.

19345

Highland 9.C. leg Heler, Sept 11, 1949
Pileus 8-12 (15) cm broad, convex-depressed, finally infundifuliform, white with rusty stains, glabrous but surface becoming torn into fibers and scales, dry, margin inrolled, soft-cottony. Context white, hard, thick on disk, thin on margin. Latex white, unchanging, acrid.

Lamellae adnate-decurrent, ivory white then creamy. avellaneous-brownish where bruised, subdistant to close. brownish when bruised, medium broad, some forking, edges even.

Stipe 5-9 cm long, 20-30-mm thick, white darkening slightly in age, densely fibrillose, hard, equal or tapering downward, solid, dry,

Spores white in deposits, 9-13 x 7.5-9 u. ellipsoid. warts 1-1.5 u high with some fine lines, white in mass. Pleurocystidia fusoid, 41-83 x 5-9 u, rather abundant; hyphae, not gelatinous.



19356 - Radarius deceptions PK. X &



19356 - Lactarius deceptures PK.

Cades Cove, Sept. 3, 1952.

Spores white in deposits, 9-12 x 7.5-9 μ , warts 0.7-1.2 μ high. Pleurocystidia and cheilocystidia numerous and conspicuous (as in 28182).



20563 - Lactarius deceptivus) Pk

Under hemlock, Highlands, N.C., July 19, 1953

Pileus 8-12 (15) cm broad, convex, depressed, finally infundifuliform, white with rusty stains, glabrous but the surface becoming torn into fibers and scales, dry, margin inrolled, soft-cottony. Context white, hard, thick on disk, thin on margin. Latex white, unchanging, acrid.

Lamellae adnate-decurrent, ivory white then creamy, avellaneous-brownish where bruised, close, long, medium broad, some forking, edges even.

Stipe 5-9 cm x 29-30 mm thick, white, densely fibrillose, hard, equal or tapering downward, solid, dry.

Spores 9.5-13 x 7.5-9.5 μ , ellipsoid, reticulate by fine lines, verrucose, warts 1-1.5 μ high, white in mass, (pale yellow after storage in herbarium). Pleurocystidia and cheilocystidia fusoid, 37-66 x 5-8 μ , abundant. Cuticle of repent hyphae, not gelatinous.



20907 - Lastarius deceptions PK. X 1/3

20907 - Lactaruis deceptions Pr

Clingman's Dome, GSMNP, Sept. 1, 1955.

Spores white in deposit, 9-12.5 x 7.5-9 μ , warts 0.6-1.4 μ high. Pleurocystidia and cheilocystidia numerous, as in 28182.



22120 - Lactarus deceptions Pk.

Decid. - conifer woods, Cades Cove, July 15, 1963.

Spores 8.5-16(11) x 7.5-9 μ , ellipsoid, warts 0.5-1.0 μ high. Pleurocystidia 45-62 x 5-7 μ , ventricose-cylindric, apics tapering, often moniliform-capitate, conspicuous and numerous; cheilocystidia 37-50 x 5-7 μ , similar

Whitney, Ontario, leg. Petersen, Aug. 6, 1962.

Spores 9.5-13 x 7.5-9.5 μ , ellipsoid, often inequilateral, warts 0.5-1.2 μ high, isolated or with an occasional connecting line. Pleurocystidia 58-71 x μ 4-6 μ , $\frac{1}{2}$ cylindric or subventricose, apices tapering, often capitate-moniliform, granular and spangled; cheilocystidia not found. Otherwise as usual.

Partarins deceptions 26835

A- × 1000

LACTARIUS DECEPTIVUS

On soil, hemlock knoll, edge of bog, Genessee Co., N. Y., leg. N. G. Miller, October 2, 1962.

Spores 9.5-13 x 8-9.5 μ , warts short, with a few connecting lines. Otherwise as Type.

LACTARIUS DECEPTIVUS

In hemlock-deciduous woods, Genesee Co., N. Y. leg. N. G. Miller, October 9, 1962.

Spores 9-13 x 8-9.5 μ . Otherwise typical.

Cades Cove, Sept. 3, 1965.

Spores 9-11 x 7-8.5 μ . Pleurocystidia 43-55 x 5-7 μ , capitate or non-capitate; granular-spangled; cheilocystidia 37-45 x 5-7 μ , similar. Pseudocystidia 37-43 x 2-3 μ , filamentous, with a refractive content, on the gill-edges. Cuticle repent.

Factorius deceptivus 28182

Pl-× 1000 (Isendo Ch-(on edges) × 1000 --× 1000

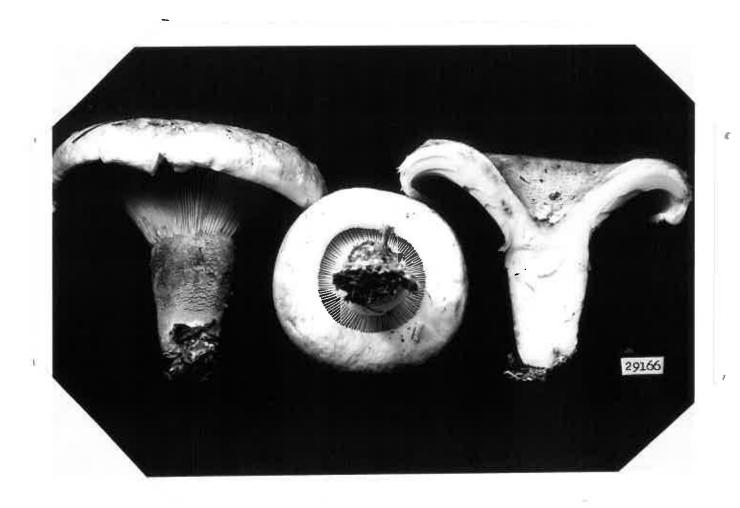
[Spones as usual]

On soil, mixed conifer-deciduous woods, leg. Ron Petersen, Cades Cove, August 2, 1966.

In most, the stipe minutely white pruinose to pubescent or fibrillose; in some it is densely hirsute tinged dingy buff.

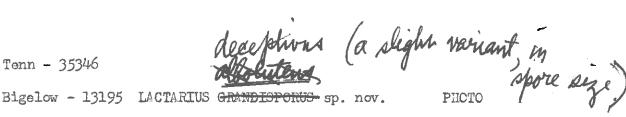
Spore deposit whitish-buff; spores 9-12 x 7-8.5 μ .

Pleurocystidia and cheilocystidia as in 28182.



29166 - Pactarius deceptivus

Tenn - 35346



Gregarious in mixed woods, Stowe, Vermont, July 31, 1964

Notes by Bigelow

Pileus 5-11(15) cm broad, convex-depressed, at first with narrowly incurved or inrolled, slightly felt-like margin (not cottony as in L. deceptivus!), even, remaining inrolled for sometime, becoming planodepressed, finally margin elevated somewhat, then more or less broadly infundibuliform with arched margin, surface dry, appressed, soft, matted-fibrillose, scabrous in age especially in the depression, whitish (near "light buff"), pale dingy buff in age. Context white, medium thick, firm; odor rather unpleasant but not strong, taste slowly but strongly acrid. Latex white, unchanging, slightly staining the tissue brownish, taste slightly peppery to mild.

Lamellae decurrent, whitish, paler than cap when young then concolor in age (not pinkish), close but not crowded, forked, or at times anastomosed, not intervenose, rather narrow (3-4.5 mm), evenly attached to form collar, edges even.

Stipe 3-4.6 cm long, apex 18-22 mm thick, tapering downward, solid (white within and continuous with cap flesh), surface soft with feeling of chamois, densely, short fibrillose under lens, white, sometimes brownish when bruised, dry, unpolished.

Notes by Hesler

Spores white in deposit, $8.5-13.5 \times 8-10 \mu$, ellipsoid, inequilateral, warts 0.5-1.0 \u03b4 high, isolated or with a few obscure fine lines. Basidia 48-62 x 8-11 μ , (2)4-spored. Pleurocystidia 48-78 x 5-8 μ , rather

Flern - 35846 Bigelow - 13195 L. grandisporus - page 2

numerous, more or less cylindric-filamentous, apices tapering somewhat and often constricted-nodulose, thin-walled, granular; pseudocystidia filamentous; cheilocystidia 20-57 x 4-7 μ, similar. Gill trama of short-celled, interwoven hyphae. Pileus trama vesiculose. Pileus cuticle of repent hyphae (poorly differentiated) bearing tangled, thin-walled hyphae, 3.5-5 μ broad, forming a trichodermium; hypodermium none. Stipe cuticle of repent hyphae bearing a turf of slender, colorless, mostly thick-walled hyphae; rosettes present. Clamp connections none.

The matted-fibrillose pileus margin indicates Sect. Torminosi, but the large spores and thick-walled caulocystidia are distinctive!

It, in general, resembles the Piperati-especially L. subvellereus, and has a soft feel, as of chamois (shammy, or shamoy).

Bigelow - 13195 (Tenn-35346) Pl- × 1000 Caulo - × 1000 (thick-walled) (more, next sheet)

Sporl-X8000 (profile)

Cartarus - grands porus op not. Bigelow - 13195 - type (Term-35346)



Bigelow - 16238 IACTARIUS DESEPTIVUS var. ROSEOPHYLLUS Rev. PHOTO
Scattered to gregarious, in oak woods, Fannie Stebbens Wildlife Refuge,
Longmeadow, Hampden Co., Mass., September 30, 1970

Notes by Bigelow

Pileus 7-9.5 cm broad, plane with margin at first decurved and incurved, edge distinctly cottony, horizontal to elevated in age and sometimes splitting downward into stipe, dry, dull, finely matted-fibrillose cottony under lens, white, with tinges and areas of yellowish brown in age. Context thin, firm, white; odor pleasant, taste mild. Latex white, unchanging, staining the lamellae pale pinkish tan (darker than gills), not copious.

Lamellae decurrent, whitish on the faces, but decidedly with a pinkish flush overall, slightly darker in age, pinkish brown where bruised or from latex stain, close to subdistant (not crowded), forked at times near base, not intervenose, narrow to medium broad, edges even.

Stipe 3.5-5 cm long, 20-40 mm thick, white, dull, densely mattedfibrillose to velvety-pubescent, with some erect short hairs under a lens.

Spore deposit: white to very faintly step cream.

Like <u>deceptivus</u> but margin less developed, the taste mild, lamellae flushed pinkish, under hardwoods. Almost a "cross" between <u>deceptivus</u> and controversus.

Notes by Hesler

connections none.

Spores 8-11 x 6-8.5 μ , warts 0.2-0.8 μ , slender, isolated with some connected by obscure lines. Basidia 50-62 x 10-11 μ , 4-spored.

Pleurocystidia 50-62 x 5-7 μ , subventricose, apices tapering slightly, buried, inconspicuous; pseudocystidia filamentous, 2- μ broad; cheilocystidia 36-52 x 5-7 μ , similar. Pileus cuticle not greatly differentiated from the trama, the surface bearing a loosely interwoven zone of slightly thick-walled, colorless hyphae, 4-12 μ broad; rosettes in lower trama. Stipe cuticle of repent hyphae, bearing a trichodermial turf of thick-walled, slender (3-5 μ) hyphae; rosettes present. Clamp

Factorium deceptions von toseophyllus in mot.
Bigelow - 16238

Oh × 1000

Hyphal hair, from stipe - auticle turf × 1000

On soil, in mixed woods, Cades Cove, Tennessee, October 13, 1971

Pileus 4-7 cm broad, depressed, dry, white, softappressed-fibrillose, margin with a slender cottony-roll. Latex acrid, white, unchanging, the gills, when rubbed lightly, staining "avellaneous."

Lamellae creamy-white, adnate, few forking, few lamellulae, nearly close, narrow.

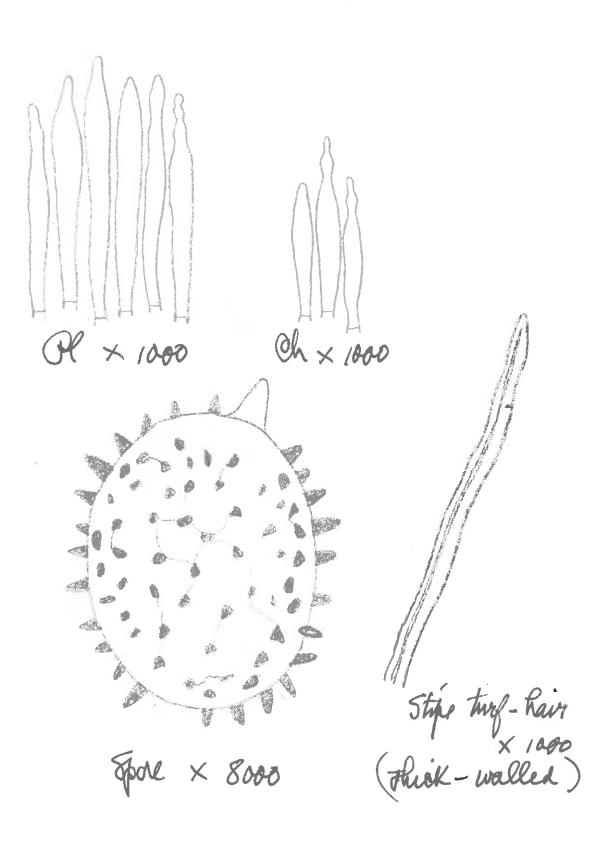
Stipe 2-3 cm, 10-30 mm, white, pale "avellaneous" where bruised, equal or tapering slightly downward, stuffed to hollow, dry, fibrillose.

Spores white in deposit, 8-11 x 6.5-8 μ , warts more or less slender 0.3-0.8 μ , isolated, with some connected by fine lines. Pleurocystidia 53-68 x 5-8 μ , subclavate and either shorta-appendiculate or conic, or subcylindric-conic, buried, rather numerous but not very conspicuous; cheilocystidia 35-46 x 4-6 μ , ventricose-acuminate. Gill trama of densely interwoven, slender hyphae. Pileus cuticle of repent hyphae, bearing a thick zone of loosely arranged, colorless hyphae, 7-14 μ broad, thin-walled, finally "weathering" away in age (glabrescent).

Special characters: hyphae on stipe thick-walled, latex white, unchanging, staining the gills and stipe "avellaneous," when rubbed; spores white, rather large with conspicuous warts (isolated and connected by lines).

Stipe cuticle similar to pileus cuticle but hyphae thick-walled, and 3-5u broad.

Ractarius deceptions 35912



Cades Cove, in oak woods, October 18, 1971

Pileus, etc. as usual. Lamellae staining pinkish-brown ("avellaneous").

Spores in deposit: white.

Hocking Co., Ohio, August 27, 1966

Notes by Cooke

Pileus convex-depressed, light brown, cracked and darker brown on center, rough-innate-scaly. Latex white, strongly peppery. Stipe white; 7 cm x 40 mm. Gills white-cream, medium close.

Notes by Hesler



Cooke - 37623

Hocking Co., Ohio, August 27, 1966

Notes by Cooke

Pileus 5-12 cm, cream to tan. Latax white no flavor (?should be acrid - L.R.H.). Gills creamy, medium close. Stipe up to 6 cm x 25 mm.

Notes by Hesler

Micro characters agree with Type.

LACTARIUS DECEPTIVUS

In mixed woods, Cantwell Cliffs, Hocking Co., Ohio, August 15, 1970

Notes by Cooke

Cap 13 cm, infundibuliform, whitish with the surface broken into yellowish or tan scales. Flesh white. Latex white, acrid, unchanging, not staining. Gills white. Stipe 7 cm \times 20 mm.

Notes by Hesler

(Specimens seem to have been invaded by insects.)

Spores 8.5-11(12) x 7-8.5 μ , warts variable: 0.2-0.7 μ high, with a few obscure lines. Pleurocystidia and cheilocystidia usual. Stipe cuticle with colorless, thick-walled hyphae (hairs).

LACTARIUS DECEPTIVUS Pk.

Jackson Co., Mich., July 31, 1960.

Notes by Smith

Pileus squamules dull alutaceus in age. Cottony roll very distinct on margin. Blue line on gills.

Stipe with a blue line at apex of one young basidiocarp. Olive of the state of the

Spores 9-12 x 7-8.5 μ , ellipsoid, warts 0.7-1.3 ν high, usually slender, isolated or with some connecting lines. Otherwise as in Type.

van Waveren - a LACTARIUS DECIPIENS Quel. (color photo)

(Tenn - 35534)

Under beech and oak, in moss, Denekamp, Holland, July 17, 1965.

Notes by van Waveren

Pileus 25-50 mm, irregularly shaped, sometimes semi-globose and margin undulating, but usually convex to plano-convex to applanate, center slightly depressed and then with sharp umbo in center, color of moist center dark pinkish orange brown (S 191, 192, 202), peripheral half paler (S 194, 203, 204, 190). Context odor of pelargonium. Latex abundant, rather acrid, in fresh specimens immediately distinctly yellow on gills, after storage in refrigerator for 24 hours white but soon turning yellow on a white handkerchief.

Gills pinkish-ocher, rather crowded.

Stipe 3.5-4.5 cm long, 7-8 mm thick, concolorous with cap, darker toward the base, cylindric, irregularly shaped or flattened and with a furrow on two sides.

Cap surface not cellular.

Notes by Hesler

Spores 7-9 x 6-7.5 u, ellipsoid, warts 0.2-0.5 u high, bands and branches, and a few lines, forming a partial reticulum. Basidia 46-53 x 8-10 u, 4-spored. Pleurocystidia 52-73 x 5-7 u, slender-ventricose acuminate; cheilocystidia 27-33 x 3-5 u, subventricose. Pileus cuticle

van Waveren - <u>a</u>

L. decipiens = 2

(Tenn - 35534)

a distinct gelatinous to subgelatinous zone - an ixocutis; hypodermium obscure. Stipe a pale zone of repent, dry, perpendicular hyphae; rosettes present. Clamps none.

Neuhoff says pileus is lubricous (slippery).

van Waveren - b LACTARIUS DECIPIENS, Quel. (Color Photo)

In deciduous woods; in moss, Holland, Denekamp, July 31, 1966.

Notes by van Waveren

Pileus: the largest 5 cm broad, distinctly depressed, sometimes with a small umbo, pinkish pale brown to pinkish ocher, margin sometimes slightly striate-sulcate over a short distance. Context odor very marked of <u>pelargonium</u>. Latex abundant, white, somewhat acrid.

Gills very decurrent, pale pinkish ocher.

Stipe 2.5-4 cm long, 6-8 mm thick, apex same color as cap, increasingly darker towards base, flesh-color and the very base sometimes white tomentose.

Notes by Hesler

Micro characters as in van Waveren a (Tenn - 35534).

LACTARIUS DECIPIENS Quel

van Waveren - b

Tenn - 35535

In oak woods, Holland, Santpoort, September 30, 1966.

Notes by van Waveren

Pileus 4-6 cm, pale pinkish brown, (young: dark reddish brown), paler towards the margin, peripheral 2/3 being more or less S 204, 205, 195, center darker, umbo rather indistinct. Latex fairly abundant, beautifully yellow on a white handkerchief. Odor strong of pelargonium.

Gills decurrent, color more or less S 199, more pinkish towards base (S 204).

Stem 4-8 cm, 10-14 mm, more orange than cap, paler towards apex.

Notes by Hesler

Micro characters as in van Waveren - a (Tenn - 35534).

Under oak (small pollarded densely planted trees), sandy humus, Vogelenzang, Holland, October 15, 1955.

Notes by Bas (Transl. by Donk)

Cap - 55 mm, shallow to deep cup - to funnel-shaped, margin bent downward, with or without a small pointed umbo, pale flesh-colored pink (brownish), or pale brownish salmon flesh colored pink, usually somewhat darker at center, appearing felted but under lens not so, margin occasionally slightly grooved, faintly radially vein-like ribbed. Context pale brownish pink, tardily yellow where cut; odor intermediate between bugs and pelargonium. Latex white, on gills almost not discoloring, but on flesh, tissue and journal paper bright yellow, tardily sharp.

Gills pale other tinted flesh color pink becoming darker and somewhat brownish, with rusty spots.

Stalk 80 x 6 mm, also 55 x 14 mm, cylindric or tapering downward, at first concolor with cap with paler top, then from base upward much darker flesh-color brown.

Spores with rather thick reticulate raised lines as in fig. of K and R.

Notes by Hesler

Spores 7-9 x 55.5-7.5 u, warts 0.2-0.5u, some isolated, bands and branches forming a partial reticulum. Pleurocystidia 52-78 x 5-7 u,

slender ventricose, scattered; pseudocystidia filamentous, 2.5-5 u broad; cheilocystidia 34-42 x 3-5 u, similar. Pileus cuticle a rather thin (35-50 u) ixocutis, the hyphae interwoven to near an ixolattice; hypoderm brown. Stipe cuticle repent, dry; rosettes present.

LACTARIUS DECIPIENS Quel.

Bas-2377

Under Quercus and Alnus on clay soil, Holland, leg.-det. Bas, September 20, 1961

Notes by Bas

(Translated by M. A. Donk)

Pileus flesh-colour-brown, margin flesh-colour-pink, not shining, not viscid, occasionally slight brownish zoned. Context taste acrid, odor soapy (rather than of Pelargonium). Latex white, quickly and strongly yellow (also on flesh).

Gills pale flesh-colored-pink (more or less subdistant).

Stipe pale flesh-colored-pink.

Spores more or less reticulated. Cutis of cap not cellular.

Notes by Hesler

Spores 7-9 x 5.5-7.5 μ , warts 0.2-0.5 μ . Pleurocystidia 46-58 x 5-7 μ , subventricose, buried, inconspicuous; cheilocystidia 24-30 x 3-5 μ , subventricose. Pileus and stipe cuticles as in Bas-2473.

Bas - 2473 LACTARIUS DECIPIENS Quel

Under Quercus, in dry dunes, among mosses, and sta scarce grasses, Vogelennang, North Holland, leg.-det. C. Bas, October 5, 1961

Notes by Bas

(Translated by M. A. Donk)

Pileus 26-30 mm, rather irregular, plano-convex, to not deeply funnel-shaped, without umbo, the margin remaining inrolled for a considerable time, when young dark-flesh-coloured red-brown, soon becoming paler flesh-coloured brown from margin inward, finally flesh-coloured pink-cream, remaining dark for a long time at the center, glabrous and smooth, not viscid, somewhat rugulose in age. Context pale foxy brown, especially at the periphery, discoloring yellow, in age darker red-brown at the base. Latex white, quickly and intensely turning yellow on paper, slowly on fruit body; taste acrid; odor similar to but not same as geranium (Pelargonium).

Lamellae rather narrow, only slightly crowded (nearly or quite subdistant - L.R.H.), pale flesh-coloured ochre.

Stipe 20-32 mm long, 5-7 mm thick, flesh-coloured pink, at first white pruinose, gradually from base upward muted vinaceous-red brown (hollow - L.R.H.).

Spores with delicate ornamentation, occasionally with small isolated warts, usually with delicate incomplete reticulum.

Notes by Hesler

Spores 7-9 x 5.5-7(7.5) μ , ellipsoid, warts 0/2/01 0.2-0.5 μ high, bands and branches, and a few lines forming a partial reticulum. Basidia 4/4 44-50 x 7-9 μ , 4-spored. Pleurocystidia 52-78 x 5-7 μ , ventricose,

rather numerous and conspicuous; pseudocystidia filamentous; cheilocystidia 26-42 x 3-5 u, subventricose. Gill trama of interwoven hyphae. Pileus cuticle a colorless, subgelatinous zone, 50-60 u thick, the hyphae interwoven with the terminal elements as ventricose pileocystidia, 23-28 x 4-6 u; hypodermium none. Stipe cuticle a zone 50-60 u thick, of dry, perpendicular, repent, narrow (1-2.5 u thick) hyphae, the zone resting on a brown hypodermium 35-40 u thick; rosettes present. Clamp connections none.

Near L. hepaticus in which the gills are close to crowded, the pleurocystidia large (62-103 x 6-10 u) and conspicuous.

Factorius decipiens Quél. Bas - 2473

roll

1-1/2

Pl-x 1000

ch-x1000

Files × 1000



Sporl _ × 8000

Gimburg, Holland, October 7, 1962, near Quercus

Notes by Bas

Odor of Pelargonium. Latex quickly yellow.

Notes by Hesler

Micro characters as in Bas - 911.