



November 2013

Lactarius Notebook 18

L. R. Hesler

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LACTARIUS HEMICYANEUS Romagn.

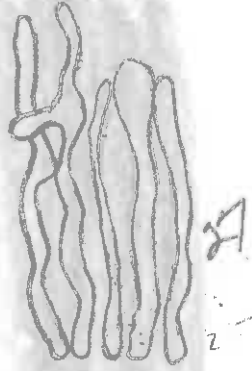
Communicated by Romagnesi, N. 52-218 (Rec'd May 12, 1969)

Typus

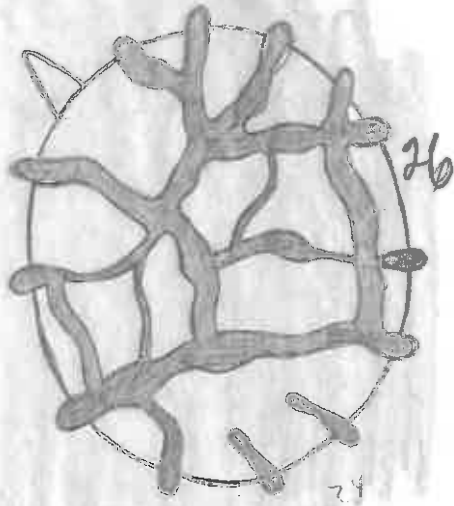
Spores 7.5-9 x 6-7.5 μ , subglobose to ellipsoid, warts 0.2-0.5 μ high, bands and a very few lines forming a rather complete reticulum. Basidia 38-44 x 6-8 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous, scattered, on sides and edges; cheilocystidia none. Gill trama of narrow subparallel hyphae, the trama more or less filled with brownish lactifers. Pileus trama vesiculose, lactifers numerous. Pileus cuticle a thick (240-350 μ) ixocutis, with numerous brown lactifers; hypodermium not discerned. Stipe cuticle a thin ixocutis; rosettes present. Clamp connections none.

Factarium hemicyaneus Romagu.
from Romaguera, No. 52-218

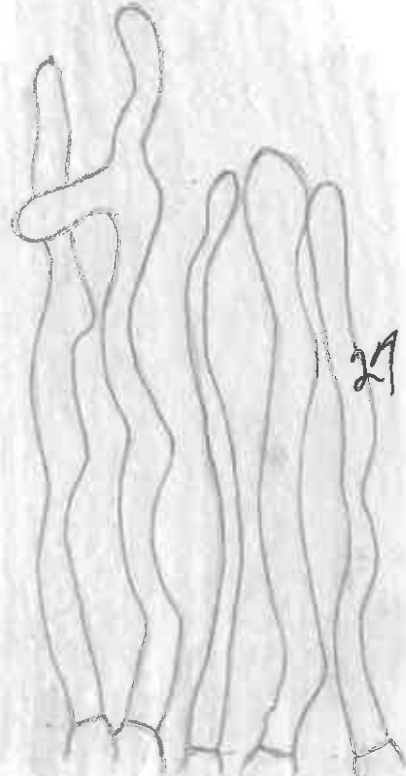
Typus



Pseudo x 1000



Spore - x 8000



Pseudo x 2000

LACTARIUS HEMICYANEUS Romagn.

Communicated by Romagnesi, N. 52-218 (Received May 12, 1969)

Typus

Spores 7.5-9 x 6-7.5 μ , subglobose to ellipsoid, warts 0.2-0.5 μ high, bands and a very few lines forming a rather complete reticulum. Basidia 38-44 x 6-8 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous, scattered, on sides and edges; cheilocystidia not found (see under Observations, below). Gill trama of narrow subparallel hyphae, the trama with numerous brownish lactifers. Pileus trama vesiculose, lactifers numerous. Pileus cuticle a thick (240-350 μ) ixocutis, with numerous brown lactifers; hypodermium not distinguished. Stipe cuticle a thin ixocutis; rosettes present. Clamp connections none.

(Tenn-35608)

LACTARIUS HEMICYANEUS Romagn.

Staverden, Gelderland, Holland, leg. T. Daams, G. A. de Fries, T.
Frenchen, September 3, 1967, det. C. Bas (no number) (with painting
by Bas)

Notes by Bas

(Material sent by mail; 2 days old.)

Cap 5-6 cm, convex with slightly involute margin and flat center when young, soon convex or plano-convex with depressed center and straight margin to infundibuliform, dark-olive-green-blue when young, spotted, subumbonate, later pale dingy greyish flesh-pink with small olive spots, surface somewhat silvery-hoary, ^{see MICRO SPOTTING} dry to subviscid, with 2-6 crowded narrow dark rings near edge and some obscure distant ones in center, with age dingy olive grey with obscure zones. Context when young deep blue in cap (Seguy 476), pallid in stem, orange yellow in base of stem; when older (1) salmon pallid with blue; (2) blue green or greyish green narrow zone under cap-surface; (3) bright orange yellow in outline, and base of stem and there very slowly (after more than 50 min.) turning dark brown red. Odor fruity (apple-like). Taste of gills somewhat bitterish astringent; of flesh ditto and slowly slightly acrid (on point of the tongue). Latex scanty, orange yellow in outline and base of stem and gills, watery blue to green blue in cap when very young.

Gills adnate to subdecurrent, dark olive green but pale greenish ochraceous near margin when young, later becoming pale salmon with somewhat paler edge, with greenish spots where bruised some hours earlier, and dark blood-red spots when freshly bruised.

Stem 35-55 x 10-16 mm, pallid to greyish pallid, when young with salmon, greenish and bluish tinges, often with narrow, whitish zone just below

gills, becoming hollow, subcylindric or slightly clavate below; subfelted.

Notes by Hesler

Spores 7.5-9 x 6-7.5 μ , ellipsoid, warts 0.2-0.5 μ , bands and branches forming partial to a more or less complete reticulum. Basidia 36-42 x 6-8 μ , 4-spored. Pleurocystidia none; pseudocystidia 2-3 μ broad, filamentous; cheilocystidia 28-33 x 5-7 μ , subclavate, very rare. Gill trama with numerous dingy yellow-brown lactifers. Pileus trama conspicuously provided with yellow-brown lactifers; rosettes abundant in lower trama. Pileus cuticle ϕ a distinct ixocutis; hypoderm present. Stipe cuticle a repent, colorless zone of narrow compact hyphae, the outermost gelatinous; rosettes present.

Lactarius Remicyanus Romagn.

Bas - (from Gelderland, un-numbered)
(Term - 35608)



Spores -
x 1000



ch - x 1000
(very rare!)

Bas-897

LACTARIUS HEPATICUS Plowr.

Under Pinus sylvestris, Vallenburg, Holland, October 9, 1955

Notes by Bas (Transl. by Donk)

Cap up to 35 mm, flat-convex, then center depressed or shallow cup-shaped, occasionally with a small umbo, matt (dull?) and smooth, not felted nor fibrillose, dark olive-tinted red-brown, margin paler brownish-yellow or orange, always with a faint olive hue. Flesh pale brownish flesh colour pink, becoming yellow where cut; odor distinctive, faintly of raspberries, taste sharp. Latex white-clouded, occasionally becoming yellow (especially on cuts).

Gills adnate, decurrent with a tooth, beige-flesh coloured, somewhat spotty-rusty (occasionally tinted somewhat yellow).

Stalk up to 47 x 7.5 mm, pale dewy-brownish flesh-color pink, then always browner from base upward, cylindric.

Notes by Hesler

Pleurocystidia not abundant; otherwise micro characters as in Bas-4965.

Bas-958

LACTARIUS HEPATICUS Plowr.

In grass, under Pinus, Wassenaar, Holland, October 30, 1955

Notes by Bas

Cap 25-54 mm, plano-convex with a slight depression, then mostly nearly dish-shaped, rarely with a small blunt umbo, faded flesh-color brown throughout except margin conspicuously paler brown or yellow pink, matt, surface fatty, glabrous. Flesh pale pink tinted, somewhat stronger tinted in stalk-base; odor weak, but where bruised pleasantly fruity, taste mild. Latex ϕ colours flesh yellow where cut.

Gills pale ocher tinted flesh colour-pink, adnate-decurrent with a tooth or ridge.

Stalk 25-40 x 3.5-10.5 mm, pale ocher brownish, tinted incarnate pink, changing toward base into red-brown, faintly ribbed, paler in the furrows.

Notes by Hesler

Micro characters as in Bas-4965, except that in some sections the pileus cuticle hyphal cells have not become as greatly inflated.

Term-
23866
(Bas-2256)

LACTARIUS HEPATICUS Plowr.

On sand, old pine woods, with young Quercus, and Prunus padus, Apeldoorn, Gelderland, the Netherlands, October 8, 1960

Notes by Bas (Transl. by Donk)

Cap 2-5 cm, at first plano-convex, with or without a small papilla, disc funnel-shaped or shallowly so, margin often down-bent and often crenulate, azonate, brown, rather dark when young, then somewhat paler, young Expo E 43, F 43, occasionally H 23 (in that case, the margin E 24), rarely H 52, matt, glabrous and smooth, then discoloring to D 46, E 46, E 44, average (?) E 43 - F 43. Context in cap pinkish white, in stalk-base periphery flesh-brown, discoloring yellow when cut, however, after a half an hour again pubescent. Smell faintly fresh, not like quietus, after rubbing rather strong, complex, soapy, sharp, but also with flowery component. Latex white copious, long remaining white on the gills, on paper quickly yellow, somewhat sharp on tip of tongue.

Gills rather crowded, decurrent with a small tooth, not too wide, edge entire, not or hardly ventricose.

Stalk 2-5 cm x 4-8 mm, often tapering downward, at first pale ochre flesh colour pink, with flesh red base, then base darker purple or remaining pale for a long time, glabrous, very vaguely ribbed, under a hand lens, between ribs with fine pale small spots, hence appearing somewhat pruinose, base often hirsute, occasionally the hirsuteness flaming red-brown.

Spores with dense reticulum.

Notes by Hesler

Spores 6-8.5 x 5-7 u, warts 0.2-0.5 u, bands and branches forming a partial reticulum, rarely nearly complete. Otherwise as in Tenn-23866 (which was a gift from Bas-2256, same collection).

Bas-4865 LACTARIUS HEPATICUS Plowr. apud Boud.

In Pinus plantation, Zeeland, The Netherlands, October 23, 1966

(no notes)

Notes by Hesler

Microcharacters as in Bas-4965.

Bas-4965

LACTARIUS HEPATICUS Plowr. apud Boud.

State Forest, Bergen, North Holland, October 8, 1967

Notes by Bas

Kept because of ~~vivid~~ vivid red margin of cap, reminding of L. badiosanguineus. Milk turning bright yellow on white paper.

Notes by Hesler

Spores 7-9 x (5.5)6-7.5(8) μ , warts 0.2-0.4 μ , bands and branches forming a partial reticulum. Basidia 42-48 x 8-10 μ , 4-spored. Pleurocystidia 52-88 x 6-9 μ , subventricose-acuminate; pseudocystidia 2-3 μ ; cheilocystidia 28-40 x 3-5 μ , ventricose-acuminate. Pileus cuticle of inflated hyphal cells (as in ~~camphoratus~~ ^{subdulcis}), the surface elements gelatinous. Stipe cuticle of dry, repent hyphae, some terminal elements more or less erect, rosettes present. Clamps none.

23866 LACTARIUS HEPATICUS Flowr. apud Boud.

In Boudier, Ic. Myc. IV: 28. 1905. Netherlands, leg. Bas,

October 8, 1960

Notes by Bas (No. 2256)

Cap 2-5 cm, uniformly reddish brown or gradually paler near margin, sometimes outmost margin very pale, dull, smooth and glabrous, (colours: Expo E 43 - F 43, sometimes H 23, later on paler), edge of cap often slightly crenate and outmost margin slightly grooved. Context pinkish white with reddish brown outline in base of stalk, rather soon yellow after cutting; odor weak, pleasant. Latex white, hardly coloring the gills, soon bright yellow on white paper, slightly acrid.

Gills pale pinkish ochraceous, close, narrow.

Stalk 2-5 cm long, 4-8 mm thick, at first ochraceous flesh coloured pink with flesh coloured red base, base becoming dark purplish red later on, glabrous, often bright brownish red strigose at base.

Notes by Hesler

Spores 7.5-9 x 6.5-7.5(8) μ , (yellowish, Neuhoff), ellipsoid, warts 0.3-0.5 μ high, with broad and narrow bands, forming only a partial reticulum. Basidia 40-45 x 8-10 μ , (2)4-spored. Pleurocystidia 52-103 x 6-10 μ , ventricose, prominent and projecting but scattered, granular-spangled; cheilocystidia 25-42 x 3-7 μ , ventricose to fusoid, granular-spangled. Gill trama of subparallel to slightly interwoven, short-celled hyphae. Pileus trama vesiculose. Pileus cuticle of interwoven inflated cells, the outer ones gelatinous, much as in L.

Sub-dulcis
caespitosus var. sp.; hypodermium none. Stipe cuticle of dry, repent hyphae; rosettes few. Caulocystidia 34-49 x 3-6 μ , similar to cheilocystidia, scattered. Clamp connections none.

Fattarius hepaticus Plowr.

23866 (from Bas)



Sp - x 1000



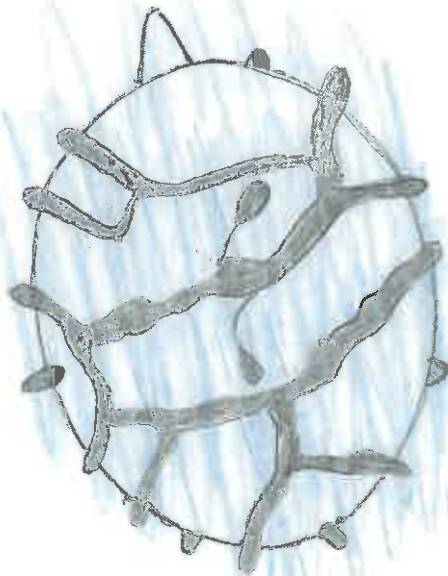
slightly
gelatinous
zone

interwoven
hyphae with
irregular
cells

Pileus cuticle x 1000



Ch - x 1000



Spore - x 8000



Canlo -
x 1000

Bigelow - 14307

Ribbardia v. glaucescens
LACTARIUS ANISATUS ~~sp. nov.~~

On soil, and moss, open aspen, Mt. Mansfield, Vermont, September 30,
1964

Notes on Label by Bigelow

Pileus 2.5-5 cm broad, depressed, azonate, matted fibrillose, "warm sepia," moist. Odor fragrant (as in Bigelow-14261) similar to anise.

Gills close, narrow, "light ochraceous buff."

Stipe 2.5-3.5 cm long, 5-8 mm thick, "pale ecru drab," finely fibrillose under a lens, solid. Latex white or whey-like, drying pale grayish-greenish, slowly acrid.

Spores in deposit: white to faintly "ivory yellow."

Notes by Hesler

Spores 7-9.5 x 5-5.5(6) μ , narrowly to medium ellipsoid, warts 0.2-0.4 μ high, bands forming a partial reticulum. Basidia 38-43 x 7-9 μ , 4-spored. Pleurocystidia 36-44 x 5-6 μ , subventricose to subclavate, obscurely subcapitate, buried, scattered, and inconspicuous (observed best in crushed-tissue mounts); cheilocystidia 30-34 x 5-7 μ , ventricose or subclavate, apices blunt or tapering, sparse. Gill trama subparallel. Pileus trama vesiculose. Pileus cuticle of repent, dry, brownish hyphae, bearing scattered or tufts of pileocystidia (drawing), rosettes below. Stipe cuticle a colorless trichodermial zone of interwoven hyphae; hypodermium brown; rosettes present. Clamps none.

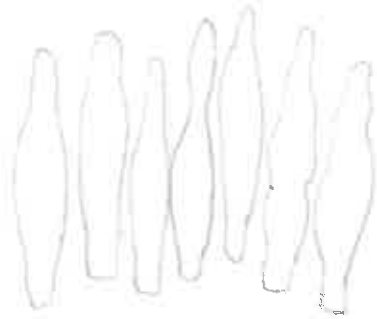
This is very close to Bigelow 14261.

Plecterium hubbardae v. *glaucescens*
~~*missatus* sp. nov.~~

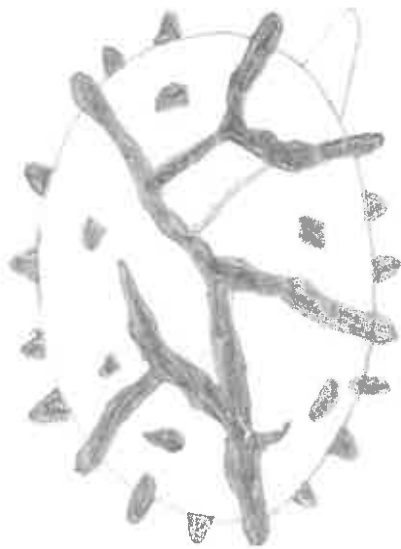
Bigelow - 14307



As - x 1000



Ch - x 1000



Spore - x 3000



Pileo tuft x 1100

Bigelow - 14655

LACTARIUS ~~ANISATUS~~ sp. nov.

hubbardae v. *glaucescens*

Conway, Massachusetts, October 19, 1965

(Bigelow says: see Card 14261. This is L. anisatus sp. nov.
It seems to be the same as 14307).

Spores pale cream (5.5)6.5-9 x 4.5-5.5(6) μ , ellipsoid. Otherwise
as in 14307.

Tenn-35350

Bigelow - 14261

LACTARIUS ~~ANISATUS~~ sp. nov.

PHOTO

libbardae v. *glaucescens*

Scattered, gregarious, occasionally cespitose, on sandy soil of road-band, under hemlock, Mt. Mansfield, Vermont, September 28, 1964 - Type.

Notes by Bigelow

Pileus 2-7 cm broad, broadly convex to plane at first, with incurved and inrolled margin, if plane then margin narrowly decurved, becoming larger and depressed, margin finally horizontal, umbilicate at times, color at first "hair brown," "drab," paler and more brown in age ("pale drab," nearly "snuff brown"), surface dry and unpolished, azonate, matted-fibrillose under a lens, larger carpophores with diffracted fibrillose scales. Context thin, brittle, "pale ochraceous buff," odor fragrant, similar to anise, taste slowly acrid. Latex white or whey-like, drying pale grayish-green, not staining, slowly acrid.

Lamellae decurrent, "pinkish buff" to "pale ochraceous buff" young, darkening to "light ochraceous buff," finally "ochraceous buff" or nearly "cinnamon buff," ~~edg~~ close, narrow (2-5 mm), often forked near base, edges mostly even, straight or slightly undulate.

Stipe 1.2-5 cm long, 4-11 mm thick at apex, surface hoary, "pale ochraceous buff," equal, dry, solid (white within), rather brittle.

Notes by Hesler

Spores in deposit pale cream, (6.5)7-9 x 5.5-6 μ ,

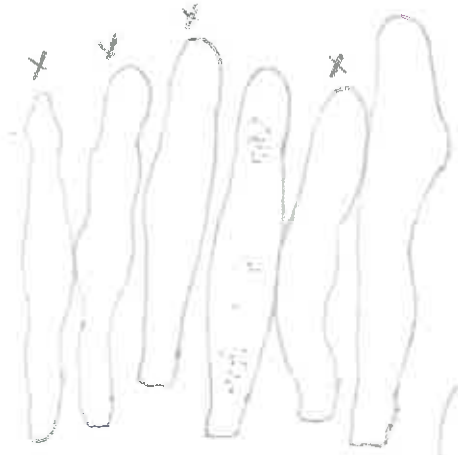
Tenn-35350
Bigelow - 14261

Rehderae v. *glaucescens*
L. ~~anisatus~~ - page 2

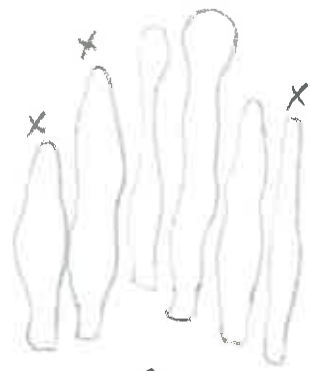
ellipsoid, warts 0.2-0.4 μ high, bands and free-end branches forming a partial reticulum. Basidia 33-40 x 7-9 μ , 4-spored. Pleurocystidia (36)44-56 x (5)7-11 μ , subclavate to sub-ventricose, sparsely granular, often buried and inconspicuous, varying in abundance; pseudocystidia 4-8 μ broad, filamentous, often crooked, apices at times enlarged; cheilocystidia 28-40 x 4-7 μ , ventricose, cylindric, not abundant, absent in some sections. Gill trama of subparallel, more or less short-celled hyphae. Pileus trama vesiculose. Pileus cuticle dry, of repent, dingy brown hyphae, at times with tufts of pileocystidia, 48-65 x 5-10 μ . Stipe cuticle dry, the surface bearing a tangled turf of cylindric to subclavate caulocystidia; rosettes present. Clamp connections none.

It differs from glyciosmus in its latex drying pale gray-greenish, its drab, hair brown to snuff brown pileus, fragrant (near anise) odor, frequent forking of lamellae, solid stipe.

Pectarius ~~sp. nov.~~ : missatus sp. nov.
~~sp. nov.~~
 Bigelow - 14261 anisatus sp. nov.
 (Tenn - 35350) hibbardae v. glaucescens



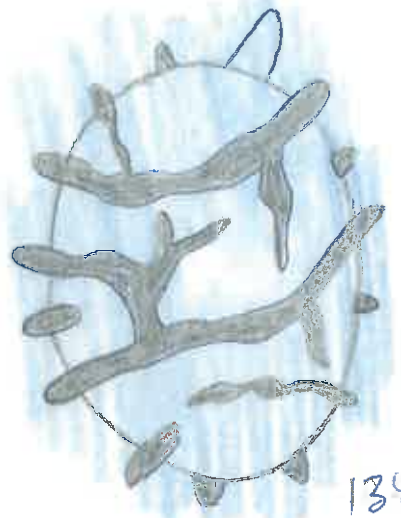
Pl - x 1000



ch - x 1000



Pseudo - x 1000



1341

Spore - x 8000



Pileo tuft x 1000

Teun - 35351
Bigelow - 14656

Hubbardsi glaucescens

LACTARIUS ~~ANISATUS~~ sp. nov.

Under hemlock, Conway, Massachusetts, October 19, 1965

Spores 7-9 x 5-5.5(6) μ . Pleurocystidia and cheilocystidia and other micro characters as in 14307.

Spore deposit: pale cream.

LACTARIUS HIBBARDAE Pk.

West Roxbury, Mass., leg. Miss A. Hibbard, October 18, 1907.

Jour. Myc. 14:2. 1908.

Type

Spores 6-7.5 x 5-5.5 μ , ellipsoid, warts 0.2 μ or less in height, with some broad bands and short lines with occasional free ends, not forming a reticulum. Basidia 26-30 x 5-6 μ , 4-spored. Pleurocystidia 38-52 x 6-8 μ , cylindrical, subventricose, often constricted, granular-spangled; cheilocystidia 23-36 x 5-6 μ , similar. Gill trama of interwoven, short-celled hyphae. Pileus trama vesiculose. Pileus cuticle of repent hyphae with a tangle of trichodermial hyphae ~~with~~ occasionally ^{erect} pyramidal tufts. Stipe cuticle bearing a zone of colorless, repent, dry, tangled hyphae, more or less forming a turf. Clamp connections none.

Listed by Neuhoff as a synonym for L. mammosus. Bas wonders whether same?

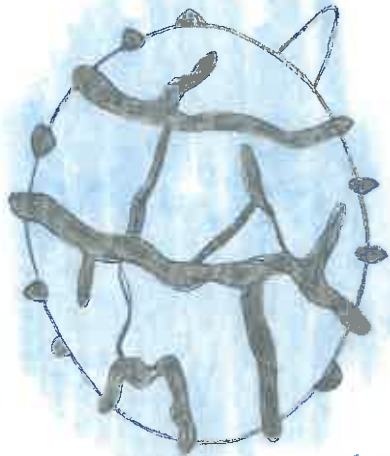
ILLUS:

Murrill, Mycologia 7, pl. 163, fig. 8 (in color) (fair to good, probably hardly worth citing.)

It appears that Murrill is correct in saying that in Peck's type the pilei, and probably the stipes, are not fully expanded (slightly immature).

Rattarius libbardae PK.

Type



Spore -
x 8000

1354



Pseudo -
x 1000

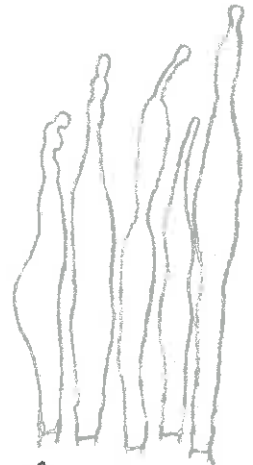
Lactarius hubbardsii var. hubbardsii
~~hubbardsii~~
(= LACTARIUS HENSLEYAE Burl.)

Newfane, Vermont, under yellow birch and spruce trees No. 38, 1908

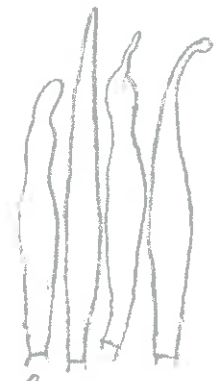
Type of L. hensleyae.

Spores pale cream colored in deposit, 6-8 x 5-7 μ , subglobose to ellipsoid, warts 0.5-0.8 μ high, with prominent broad bands scarcely forming a reticulum. Basidia 34-41 x 7-8 μ , 4-spored. Pleurocystidia 43-58 x 4-7 μ , ventricose, at times constricted, apices tapering and often minutely capitate or spool-like, granular; cheilocystidia 35-47 x 4-6 μ , similar. Gill trama of slightly interwoven hyphae. Pileus trama vesiculose. Pileus cuticle of repent, dry hyphae, bearing numerous erect, scattered, or tufts of hyphae, forming the stiff pubescence. Stipe cuticle of repent, perpendicular, dry hyphae; caulocystidia of two types: (1) 15-30 x 2-3 μ , cylindric, more or less in tufts or forming a turf; (2) 45-58 x 3-6 μ , cylindric to subventricose, or subulate caulocystidia, apices more or less tapering, with a granular contents, and resembling the cheilocystidia; rosettes none. Clamp connections none.

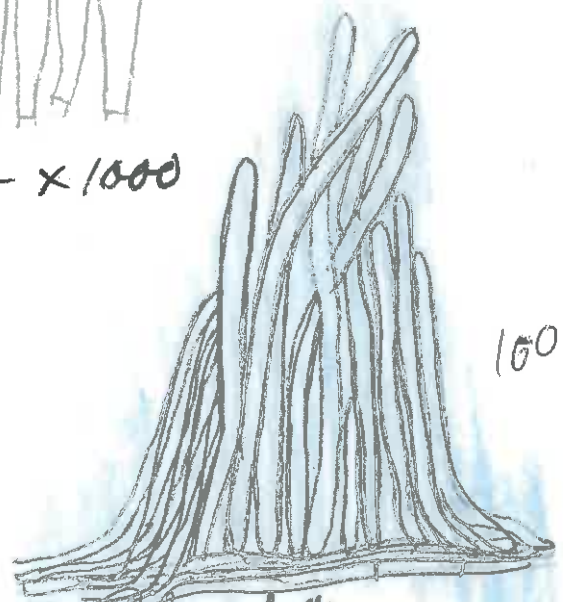
Pectanurus bursleyae Burl.
 Type *hibbardae*



A - x 1000

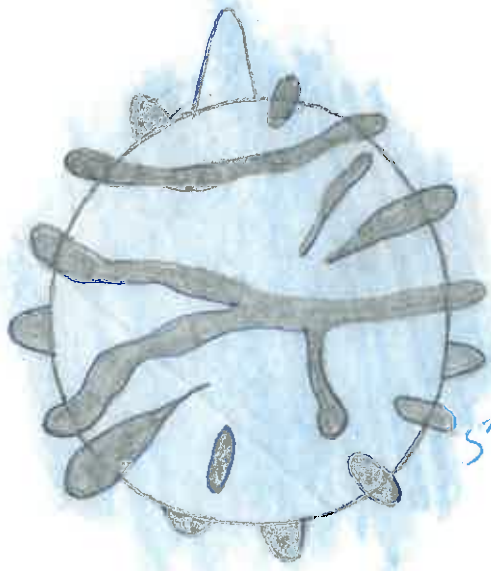


B - x 1000



1006

Filco-tuft - x 1000

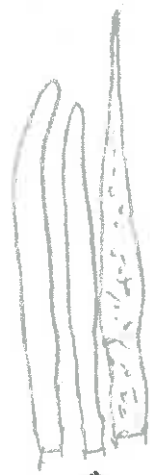


5741

Spore - x 8000



(a)



(b)

Caulo: (a) in a palisade or turf;
 (b) scattered in + on cuticular surface.

Sm-763

LACTARIUS HIBBARDAE Pk.

PHOTO

Warrensburg, New York, leg.-det. Smith, No. 763, September 10, 1934.

Notes by Hesler

Spores (5.5)6-7.5 x 5-5.5 μ . Otherwise as in the Type.

Notes by Smith

Pileus 2-6 cm broad, when young, convex or plane with an abrupt shapely conic umbo, in age becoming broadly depressed to umbellicate, the papilla frequently is found to one side of the center of the depression, or it may be absent in age, surface dry, glabrous but dull toward the center, appressed fibrillose to the margin, margin with no fibers projecting, appressed fibrillose, azonate or faintly zoned. Latex white, tardily but decidedly acrid.

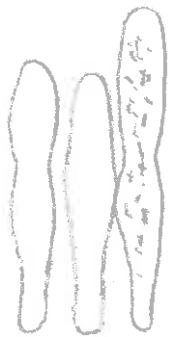
Gills - crowded, narrow, decurrent, light buff (whitish) thin tinged incarnate tan.

Stipe 3-9 cm x 10-20 mm, equal abruptly narrowed at the base, and whitish, hollow, very fragile, pruinose fibrous above to pruinose, below covered by an opaque layer which is thin and easily rubbed off. Whitish, thin tinged incarnate tan.

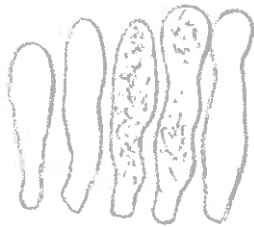
Spores 5-6.5 x 5-5.5 μ (Smith), (5.5)6-7.5 x 5-5.5 μ ; otherwise as in Type (Hesler). (A re-study showed micro characters as in Type.)

Factorius hibbardae FK.

Jm - 763



Pl. x 1000



Ch. x 1000

[Spores as
in Type]

Sm-1885

LACTARIUS HIBBARDAE

Marquette Co., Michigan, September 2, 1968.

Micro characters as in Type.

Sm-1934

LACTARIUS HIBBARDAE

In mixed woods, Huron Mts., Michigan, September 2, 1968.

Notes by Smith

Pileus dark benzo brown to vinaceous fuscous, zonate, becoming reddish on fading. Context taste slowly acrid. Latex white, whey-like, not spotting the gills appreciably.

Gills crowded, narrow, adnate, pale tan at maturity.

Stipe concolor with gills (dry).

Spores yellowish in deposit.

Notes by Hesler

Micro characters as in Type.

hibbardae

W-K 2911

LACTARIUS SUBGRISEUS ~~sp. nov.~~

Around alder, willow, birch, Harding Lake Area, Fairbanks, Alaska,

August 22, 1966 (labelled: griseus)

Notes by W-K

Pileus 1.2-3.5 cm, usually acutely papillate, depressed, medium dull gray brown, paler in age, appressed tomentose, some miniature tomentose-scaly. Context whitish, thin (1-2 mm), odor and taste not distinctive, but leaves a tardy, slight burning, not bitter. Latex white, unchanging, scanty.

Lamellae narrowly adnate, white to pale ivory, unchanging, narrow (2-3 mm), close to crowded, occasionally forked.

Stipe 1.5-4 cm long, 2-5 mm (apex), warm rosy brown ground-color, pallid pruinose, stuffed to hollow.

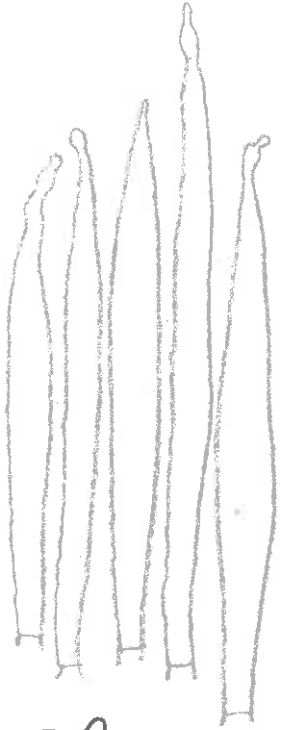
Spores white (when fresh). Phenol: gills vinaceous.

Notes by Hesler

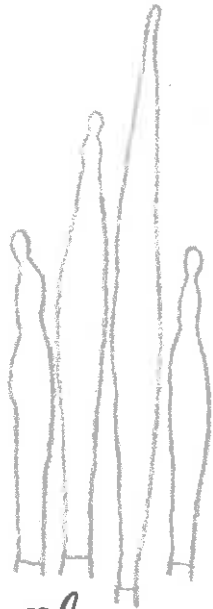
Spores 7-9 x 5-6(6.5) μ , warts 0.2-0.4 μ , bands and branches forming a partial reticulum. Pleurocystidia 62-87 x 5-8 μ (mostly 5-6 μ), more or less aciculate or slender-ventricose, conspicuous, rather abundant; cheilocystidia 42-56(76) x 5-6(7) μ , similar. Pileus cuticle a trichodermium, hyphae finally forming more or less fasciculate tufts. Stipe cuticle of repent, dry hyphae; rosettes present.

Much like L. subgriseus (W-K 2912); however, I was puzzled by the conspicuous pleurocystidia and cheilocystidia in W-K 2911, and their scarcity in WK2912.

Plectaninus subgriseus sp. nov.
N-K 2911 Libbardae
(cf 2912)



Pl x 1000



Oh x 1000

W-K 2912

Hubbardsae
LACTARIUS ~~SUBGRISEUS~~ sp. nov. - ~~L.H.A.~~

Edge of bog, alder, birch, willow, spruce, Fairbanks, Alaska,

August 23, 1966 (labelled L. griseus?)

Notes by W-K

Pileus 2-5 cm, convex, margin inrolled, often minutely papillate, expanding-plane to depressed, dry, appressed-tomentose, some becoming minutely scaly in age or on drying, medium gray brown, often disc darker, azonate, even. Context pallid to pinkish buff, medium thin (3-5 mm); odor not distinctive, taste faintly resinous, very slightly acrid, burning throat. Latex white to watery-white, unchanging, scanty.

Lamellae adnate, pale pinkish flesh when young, then darker to pinkish orange or apricot, narrow, medium broad (3-5 mm), close or crowded.

Stipe 10-25 mm long, 6-9 mm thick, pale pinkish orange, more or less concolorous to or paler than gills, pruinose, then subglabrous, white-pruinose at base, stuffed.

Phenol: vinaceous all parts.

(Probably same as 8-22-66 - #14).

Notes by Hesler

Spores white, 6-7.5(8) x 5-6 μ , warts 0.2-0.3 μ , bands and branches forming a partial to nearly complete reticulum. Basidia 34-40 x 7-8 μ , 4-spored. Pleurocystidia none ^{or rare and then 54-80 x 5-7 μ ;} pseudocystidia filamentous, 1.5-3 μ broad, at times subcapitate, inconspicuous; cheilocystidia 28-40 x 5-7 μ , subclavate, inconspicuous. Pileus cuticle a trichodermium,

soon the surface hyphae aggregated to form pyramidal, floccose or fibrillose scales; rosettes in lower tramal region. Stipe cuticle of repent hyphae, bearing numerous hyphoid caulocystidia; rosettes present.

OBSERVATIONS - The chief characters include the gray-brown, fasciculate-scaly, dry, azonate pileus; the pinkish gills which become orange to apricot; the medium small spores with short warts; lack of pleurocystidia.

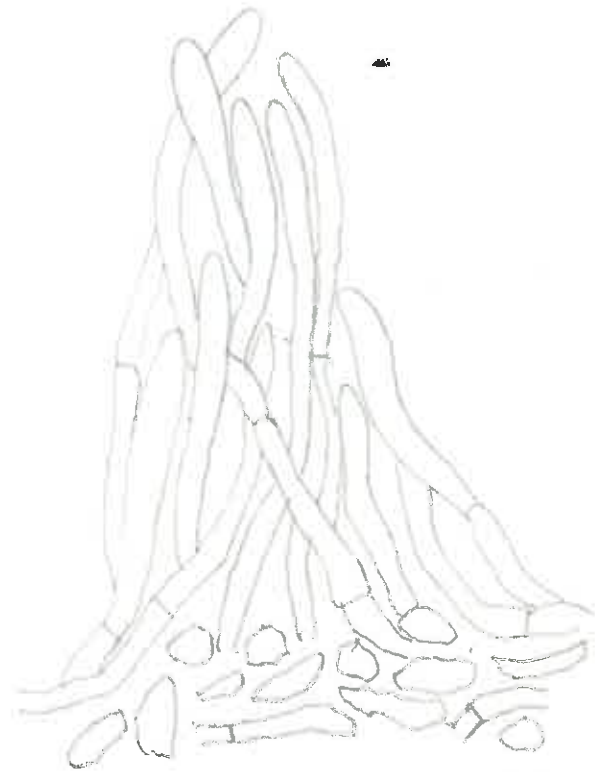
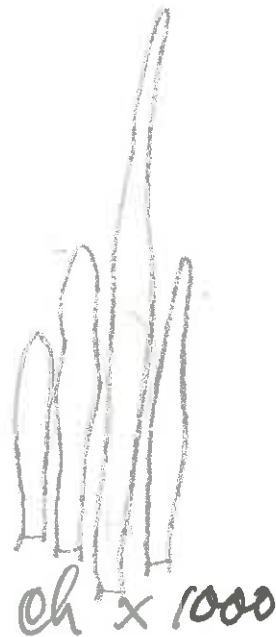
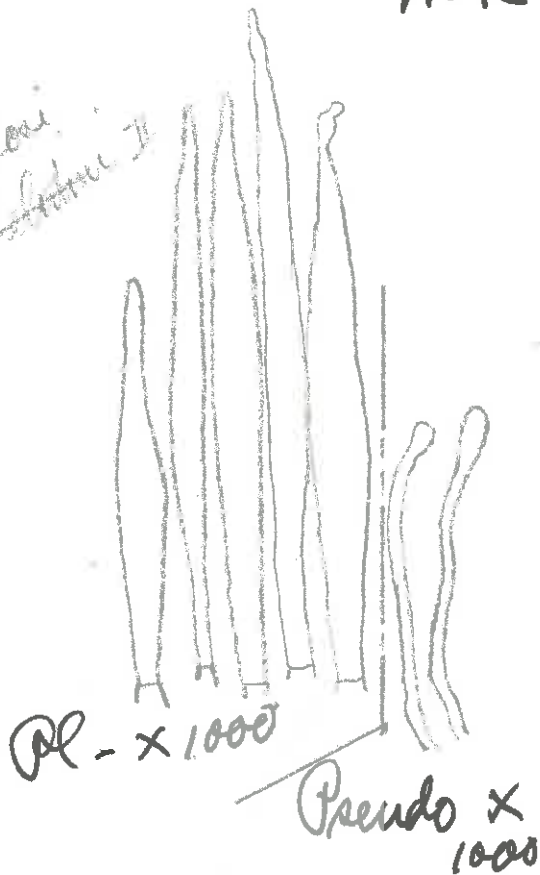
It is related to L. griseus, in which the pileus and gill colors are different, the spores larger, warts distinctly longer, pleurocystidia present.

Plectarimus subquiescens sp. nov.

N-K 2912

hibbardae

Pileus
Volvariaceae



W-K 2935

LACTARIUS HIBBARDAE (?)

Around Sitka spruce, in grass, ferns, etc., Kodiak Island, Alaska,
September 14, 1966.

Notes by W-K

Pileus 7-12 cm broad, convex, margin inrolled, becoming plane, finally depressed, dull lavender-gray, with lavender gray narrow zones especially on the margin, zones more or less watery, lubricous to dry, glabrous, cuticle adnate. Context pallid white to pale flesh, medium thick (12-20 mm); odor not distinctive, taste tardily acrid. Latex white, unchanging, immediately bitter, soon rather strongly acrid, finally slightly resinous, copious.

Lamellae narrowly adnate, pale flesh ocher, slightly darker in age; narrow (5-7 mm), close, occasionally forked, slightly intervenose.

Stipe 3-3.5 cm long, 20-40 mm thick, pallid white, pruinose, dry, not scrobiculate, solid.

Notes by Hesler

Spores 6-7.5 ~~μ~~ x 5-6(6.5) μ, warts 0.2-0.5 μ, bands and branches forming a partial reticulum. Pleurocystidia 56-72(88) x 7-8(9) μ, slender-ventricose; cheilocystidia 30-38 x 4-6 μ, subclavate to sub-ventricose. Pileus cuticle dry, repent, with tufts of hyphae (fibrillose scales, seen under lens on cap). Stipe cuticle of perpendicular, slender hyphae; rosettes present.

Identification with slight reservation. Pleurocystidia slightly longer than in other collections; and spores are pale ochraceous.

W-K 2938

LACTARIUS HIBBARDAE

Near Nome, Alaska, in sphagnum and peat around dwarf birch
and dwarf willow, August 13, 1967

Notes by W-K

Pileus 2-3.5 cm broad, convex, margin inrolled, usually with a small papilla, slightly depressed, subhygrophanous, medium lavender-brown, moist to dry, glabrous when moist, appearing pruinose on drying, azonate. Context pallid whitish, then (1.5-2 mm); odor and taste not distinctive. Latex watery whitish, unchanging, scanty.

Lamellae short decurrent, pallid whitish, then nearly flesh, close, narrow (2-4 mm), forked near margin.

Stipe 3-5 cm long, 3-6 mm thick, concolorous with pileus but paler, glabrous or sometimes slightly pruinose, especially at base, stuffed to hollow.

Spore deposit pure white (fresh). Phenol: lamellae vinaceous, otherwise 0.

Notes by Hesler

Spores 6-7.5 ~~μm~~ x 5.5-6.5 μ, warts 0.2-0.4 μ, bands and branches forming a partial reticulum. Pleurocystidia 42-53 x 6-7 μ, subventricose; cheilocystidia 28-40 x 4-6 μ, subventricose, subclavate, apices obtuse or conic. Pileus cuticle of dry, repent hyphae, hypodermium none. Stipe cuticle a zone of dry, slender, perpendicular, repent hyphae; rosettes present.

W/K #2938

Hubbardsae
LACTARIUS LAVANDULUS sp. nov.

Near Nome, Alaska, below junction of Teller and Kougarok Roads, August 13, 1967, in Sphagnum, around dwarf birch and dwarf willow.

Notes by W/K

Pileus 2-3.5 cm broad, convex with margin inrolled and pallid pruinose, usually with small acute papilla, becoming broadly convex, usually slightly depressed at the disc with the minute papilla remaining; subhygrophanous, medium lavender-brownish when moist, paler when dry; moist to dry, glabrous when moist, glabrous but appearing pruinose when dry, azonate. Flesh: pallid whitish, thin (1.5-2 mm), brittle, odor and taste not distinctive. Latex: scanty, watery-whitish, unchanging.

Lamellae: pallid whitish becoming slightly darker with age to nearly light flesh-colored, short decurrent, narrow (2-4 mm), close, occasionally forked near the stipe.

Stipe: 3-5 cm long, 3-6 mm broad at the apex, equal; concolorous with but paler than the pileus; glabrous, sometimes appearing slightly pruinose, white pruinose at stipe base, smooth; context pallid, stuffed to hollow.

FeSO₄ - negative all parts

KOH - negative all parts

phenol - gills definitely vinaceous, all else appears negative but the specimens are very water-soaked.

W-K 2940

LACTARIUS HIBBARDAE

glycymeris (odor of coconut)?

Haines, Alaska, September 10, 1967; in spruce-hemlock woods

Notes by W-K

Pileus 2-6 cm, convex, then subplane, margin inrolled, depressed on disc, frequently papillate, pale alutaceous with a lilac tint, dry, appressed fibrillose, azonate. Context whitish, then (2 mm near disc); odor slight of coconut, taste mild. Latex white, unchanging, mild.

Lamellae adnate-subdecurrent, pallid flesh becoming slightly darker in age, close, narrow.

Stipe 3-4 cm, 5-8 mm, concolorous, dry, pruinose to subglabrous, stuffed to hollow.

Spores in deposit: off-white (A-B).

FeSO₄ and KOH: 0.

Notes by Hesler

Spores 7-8.5 x 5.5-6.5(?) μ , warts 0.2-0.5 μ , bands and branches forming a partial reticulum. Pleurocystidia 42-58 x 4-8 μ , ventricose-acuminate, of absent in some sections; cheilocystidia 35-48 x 4-6 μ , similar. Pileus cuticle dry, fibrillose, with scattered tufts of hyphae (fibrillose-scales). Stipe cuticle of dry, repent hyphae.

Despite the notes say taste mild, this seems to be L. hibbardae. Whether the record of taste is an error, or this is in reality a mild-tasting form is not clear.

W-K 2944

LACTARIUS HIBBARDAE

In needle duff and sphagnum, Sitka spruce-hemlock woods, Haines,
Alaska, July 25, 1966 (young material)

Notes by W-K

(W-K: see for full notes)

Notes by Hesler

Micro features agree.

Bigelow - 3961

LACTARIUS HIBBARDAE

Gregarious on sphagnum, in path in boggy conifer woods, 4 miles south of Sinclair, Aroostook Co., Maine, August 12, 1956 (*in Mass. Herb.*)

Notes by Bigelow (on 3961)

Pileus 2-3.5 cms broad, plane with an abrupt umbo (often acute), margin slightly decurved or somewhat elevated at times, not striate, surface dry, matted-fibrillose under a lens, color a vinaceous gray (00S10-2° to 00S11-3°). Grayish black when dried. Flesh thin, pale ochraceous buff, (0 19-9°), odor fragrant, taste slowly and slightly acrid. Latex white, unchanging, not staining, slowly and slightly acrid.

Gills short decurrent, close, narrow (2-3 mm), forked, creamy (00Y19-9°) edges even, straight or slightly undulate.

Stipe 2-3.5 cms x 4-7 mms, equal, solid, surface whitish canescent over a watery buff ground color (018-8°) often curved, central, terete, slight whitish BT.

Spores white.

Notes by Hesler (on Bigelow - 10513)

(Bigelow - 3961 and 4555, which he says are same as Bigelow - 10513, ~~not identical~~.)

Spores white in deposit 5-7(7.5) x 4.5-5(5.5) μ , ellipsoid, warts 0.2-0.3 μ high, with one or two (three) medium broad bands and some lines, not forming a reticulum. Basidia 28-32 x 5-6 μ , 4-spored. Pleurocystidia 28-38 x 5-7 μ , clavate, granular-spangled, scattered but conspicuous;

cheilocystidia 20-28 x 3-7 μ , similar. Gill trama of narrow, subparallel hyphae. Pileus trama vesiculose. Pileus cuticle fibrillose, with numerous pyramidal tufts of ~~1/2~~ hyphae (scales), the terminal elements clavate or subclavate pileocystidia. Stipe cuticle fibrillose, terminal elements caulocystidia, but not in tufts; rosettes none. Clamp connections none.

Despite the fragrant odor I place this in hibbardae rather than glyciosmus. Compare L. mammosus.

Hibbardae

~~*simulatus* sp. nov.~~

Bigelow - 4555

LACTARIUS HIBBARDAE

var.

~~sp.~~ *lactosus* var. nov.

Gregarious on moss and needles in low conifer woods, State Game Preserve,
near Guerette, Aroostook Co., Maine, August 30, 1956 (labelled
L. griseus?) (in Herb. Mass.).

Notes by Bigelow

Pileus 2-5 cms broad, convex at first, soon expanding to broadly convex, then plane, not striate, disc soon shallowly depressed, often umbilicate (umbo small, abrupt and rather acute), surface dull, densely appressed fibrillose under lens, color a vinaceous gray (SO9+10-2°), flesh thin, pale ochraceous buff, firm but brittle, no odor, taste slowly acrid (not intense). Latex white, not staining, drying cream to pale yellowish).

Gills adnate to short decurrent (unevenly), close, narrow (2-4 mm) often intervenose, rarely forked, color cream (OOY19-9°, 19-6°), somewhat more ochraceous in age, edges even and straight.

Stipe 3.5-8.5 cms x 5-12 mm, equal or apex enlarged, base abruptly tapered where embedded, white tomentose, solid (concolor with surface), glabrous to eye, innately fibrillose under lens, pale salmon buff (OOS18-6°, 8°, 17-6°).

Spores cream.

Hubb. dae

Wells-Kempton - 4799 LACTARIUS ~~LAVANDULUS~~ sp. nov.

Nome, Alaska, gregarious on sphagnum and other decaying moss, near dwarf birch and willow, August 25, 1970

Notes by Wells-Kempton

Pileus 1.5-3 cm broad, "dark grayish lavender," convex, with margin incurved, with a minute papilla, becoming more or less plane, or margin slightly upturned, usually retaining papilla, dry though sometimes appearing slightly glazed. Context thin, light tan; odor not distinctive, taste slightly acrid in the throat (not very distinctive). Latex nearly clear watery whitish, unchanging, scanty.

Lamellae adnate-decurrent, whitish becoming slightly flesh-color with age, thin, close, narrow (1.5-2 mm).

Stipe 2-3 cm long, 4-5 mm thick, tan or tinged with pileus-color, dry, minutely appressed white-fibrillose, scanty, hollow, brittle.

Notes by Hesler

Spores 7-9.5 x 6-8 μ , warts 0.2-0.4 μ , bands and branches forming a partial reticulum. Basidia 42-50 x 7-8 μ , 4-spored. Pleurocystidia 60-76 x 6-9 μ , ventricose to subventricose-acuminate; cheilocystidia 32-40 x 4-6 μ , similar. Gill trama of subparallel hyphae. Pileus cuticle a pale zone, 120-200 μ thick, of interwoven hyphal elements and inflated, irregularly-shaped cells, at frequent intervals pushing up to form small mounds (rimosellus-like), at scattered intervals with

Wells-Kempton - 4799

Rubbardae
L. ~~lavandulus~~ - 2

fascicles of erect hyphae. Stipe cuticle a pale zone of dry, perpendicular, repent hyphae; hypodermium brown; rosettes present; caulocystidia cylindric. Clamp connections none.

Characterized by its papillate, grayish-lavender pileus, watery-whitish and slightly acrid latex.

Factarium ^{*hibbardae*} ~~*caeruleo-avandulus*~~ sp. nov.

Wells-Kempton - 4799

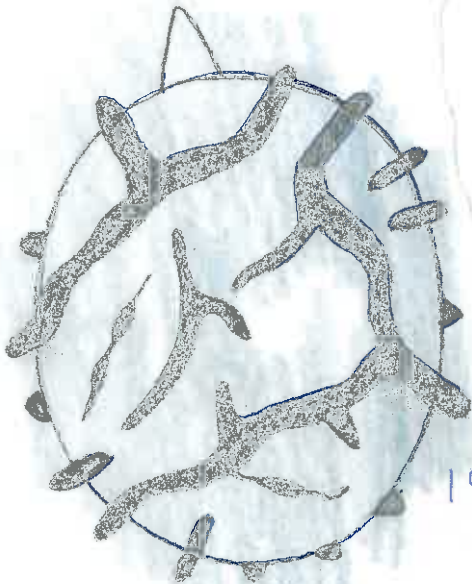


Sp x 1000



Sp x 1000

Something wrong
here; re-study!



Spore x 8000

1009

Pileus catulae - x 1000

W-K 5448

LACTARIUS (HIBBARDAE?)

Katmai National Monument, Alaska, September 3, 1971

Notes by W-K

Typical of previous collections.

Notes by Hesler

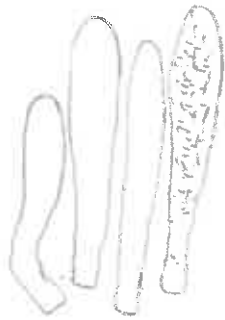
Spores 7.5-9 x 6-7 μ , warts 0.2-0.5 μ , bands and branches forming a partial reticulum. Pleurocystidia 50-62 x 7-9 μ , more or less cylindrical; cheilocystidia similar, smaller. Pileus cuticle a dry trichodermium, with tufts scattered over surface.

Spores and pleurocystidia wrong for hibbardae.

Need notes for positive identification.

Saccaricus hibbardae var.

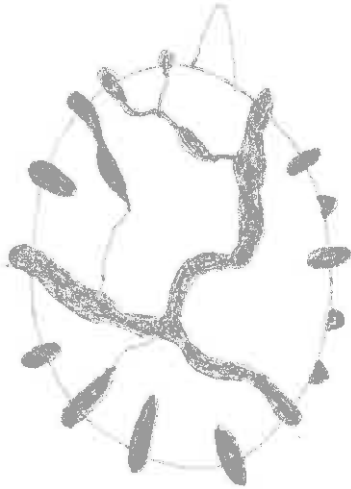
Bigelow - 10513



PP - x 1000



Ch - x 1000



Spore - x 8000

Subbardae
simulatus ~~sp. nov.~~

Bigelow - 10734

LACTARIUS HYPERBARDIAE var. *lectocromia* ~~sp. nov.~~

Gregarious on soil under conifers, Baxter State Park, Maine, August 3,
1962 (Bigelow says: see Card-4555)

Notes by Hesler

Spores 5.5-7.5(8) x 5-5.5(6) μ , warts .02-.04 μ high, bands with free ends, no reticulum. Pleurocystidia 28-45 x 5-7 μ , subcylindric to subfusoid, apices acute or somewhat rounded; pseudocystidia filamentous; cheilocystidia 24-35 x 5-6(7) μ , cylindric to subclavate. Pileus cuticle fibrillose, with some more or less erect hyphae, the terminal elements slightly cystidioid. Stipe cuticle similar; rosettes in stipe, a few in pileus. Clamps none.

Hubbards

Bigelow - 13675 LACTARIUS ~~SIMULATUS~~ sp. nov. (Card: 4555)

On moss, near spruce, atop Mt. Mansfield, Stowe, Vermont,
August 29, 1964 (in herb. MASS).

Spores and other micro characters as in Type.

Spore deposit "cartridge buff."

Rubbardal

Bigelow - 13783 LACTARIUS ~~SIMULATUS~~ sp. nov.

PHOTO

(See Cards: 3961 and 4555) (in herb. MASS).

Micro characters as in Bigelow - 4555.

Bigelow 15326

LACTARIUS HIBBARDAE

PHOTO

Gregarious to caespitose under hemlock, Conway, Massachusetts,

September 28, 1967

Notes by Bigelow

Cap dark vinaceous gray to brown-gray, more or less matted fibrillose, umbonate, or umbilicate. Latex white, acrid.

Gills cream, decurrent, close, narrow.

Stipe pallid or pale incarnate buff, hoary.

Spores in deposit: pale cream.

Notes by Hesler

Spores $5.5-7.5 \times 5-6 \mu$, warts $0.2-0.3 \mu$, bands and branches forming a partial reticulum. Pleurocystidia $42-54 \times 6-8 \mu$, subventricose, subclavate to subcylindric; cheilocystidia $26-34 \times 5-6 \mu$, similar. Pileus cuticle of repent, dry hyphae. Stipe cuticle similar, with hyphoid caulocystidia.

Sm-16812 LACTARIUS HIBBARDAE Pk. var. HIBBARDAE

Gregarious to scattered on sphagnum, Park Creek, Mt. Baker, National Forest, Washington, September 10, 1941

Notes by Smith

Pileus 2-5 cm broad, very broadly convex with an inrolled margin, disc slightly depressed in some, slightly umbonate or papillate in others, azonate or somewhat zoned near the margin, margin at first pubescent and very irregular, (lobed, crenate, or wavy), "benzo brown" or canescent with a purplish gray sheen which is somewhat evanescent (the sheen is due to a thin fibrillose coating, more or less glabrous in age, not viscid, usually with a dry appearance. Context near "pale grayish vinaceous," rather thick and firm, brittle. Latex white, copious, not changing, very acrid.

Lamellae decurrent, crowded, narrow, 3-5 tiers of lamellulae, near "pale cinnamon pink" fresh, at maturity or in age near "cinnamon buff," edges even, not spotted.

Stipe 4-7 cm long, 10-15 mm thick at apex, rigid, hollow, with a faint whitish canescent sheen in places, otherwise concolorous with gills, tapered at base.

Spores white in deposit 6.5-7.5 x 5.5-6.5 μ , broadly ellipsoid to subglobose, reticulate. Basidia four-spored. Pleurocystidia most numerous near gill edge, 50-65 x 5-8 μ , cylindric with blunt to rounded apices, content granular or homogeneous; cheilocystidia similar or shorter. Cuticle of pileus a compactly interwoven layer of narrow (3-4 μ) hyaline hyphae which are not gelatinous in KOH.

Notes by Hesler

Spores 6-7.5 x 4.5-6 μ , warts 0.2-0.3 μ or less, bands and branches, forming a partialreticulum. Basidia 33-38 x 6-7 μ , 4-spored. Pleurocystidia 34-53 x 5-7 μ , clavate-cylindric, apices obtuse, rather inconspicuous; cheilocystidia 24-36 x 3-5 μ similar. Gill trama of undulating subparallel. Pileus cuticle dry, the surface a ~~hilled~~ matted-down fibrillose zone. Stipe cuticle similar.

The habitat is unusual (in sphagnum), and the stipes are longer than usual).

Tenn-35313
Bigelow - 6335

Pubbardae
LACTARIUS ~~SULCATUS~~ sp. nov.

Gregarious to subcespitate, on muck and sphagnum, in old pond bed, Whitmore property, Sunderland, Massachusetts, September 25, 1957

Notes by Bigelow

Pileus 1-4 cm broad, broadly convex to plane, "vinaceous fawn," short tomentose, azonate, dry, margin sulcate. Context thin, whitish; taste slowly acrid. Latex white, unchanging, not staining, acrid.

Lamellae decurrent, "pale yellow orange," not staining where bruised, close, narrow.

Stipe 4-7 cm long, 6-12 mm thick (apex), 10-20 mm (base), base enlarged and tapering upward, hollow, short-tomentose, paler than the pileus.

Spores pale cream in deposit.

Notes by Hesler

Spores pale cream in deposit, 5.5-7 x 4.5-6 μ , ellipsoid or subglobose, warts 0.2-0.3 μ high, bands few and with free-ending branches, forming a partial reticulum or none. Basidia 33-38 x 6-7 μ , 4-spored. Pleurocystidia 40-57 x 4-7 μ , ventricose to subclavate, small but rather conspicuous, granular; pseudocystidia filamentous; cheilocystidia 26-40 x 5-6 μ , ventricose, clavate, at times constricted, granular. Gill trama of narrow, undulating, subparallel hyphae. Pileus trama vesiculose. Pileus cuticle of repent, dry hyphae,

Tenn-35313
Bigelow - 6335

L. subbarbatum
L. ~~subbarbatum~~ - page 2

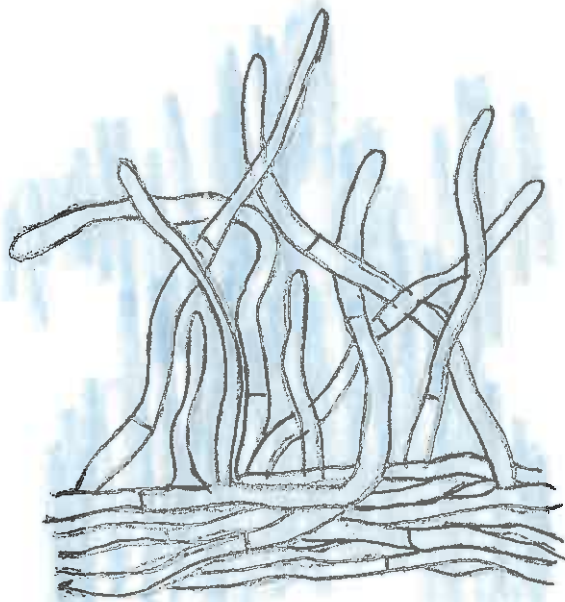
bearing a fibrillose epicutis (a trichodermium), the zone 90-125 μ thick; rosettes in the lower portion. Pileocystidia clavate or cylindrical, scattered. Stipe cuticle surface fibrillose; rosettes present. Clamp connections none.

This is characterized by its small, short-tomentose, vinaceous fawn, sulcate pileus; its small spores, and its small but conspicuous pleurocystidia. It seems somewhat related to L. pusillus in which the pileus is alutaceous, and the spores 7.5-9 x 6-7 μ .

Factarium ^{*hipharsae*}
~~*subcarni* sp. nov.~~

35313 (Bigelow - 6335)

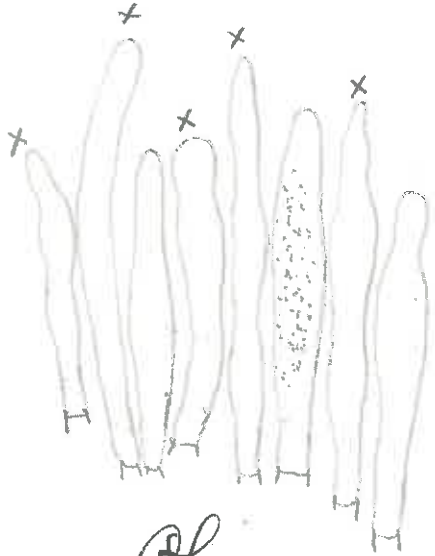
Oricium - *Cute* - I



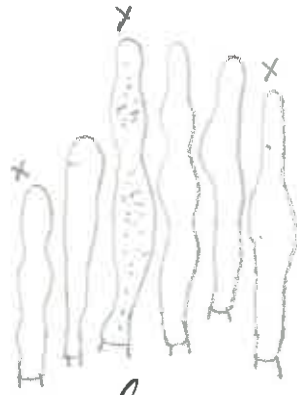
1603

Pileus cutis, bearing a
trichodermial tangle. - x 1000

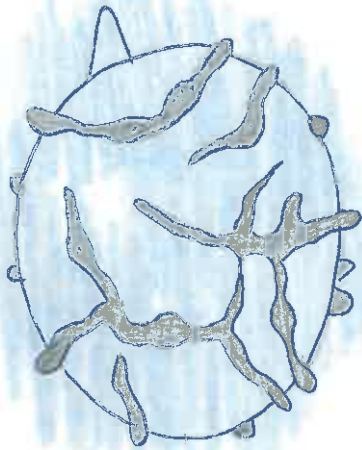
Pectarius sulcatus sp. nov.
hibbardae
Bigelow - 6335
(Tenn - 35313)



Pl - x 1000



Ch - x 1000



1383

Spore - x 8000

Tam - 35819
Bigelow - 8703

LACTARIUS HIBBARDAE

! 35 mm PHOTO

Gregarious under conifers, Wildwood Cemetery, Amherst, Massachusetts,

October 6, 1959

Notes by Bigelow

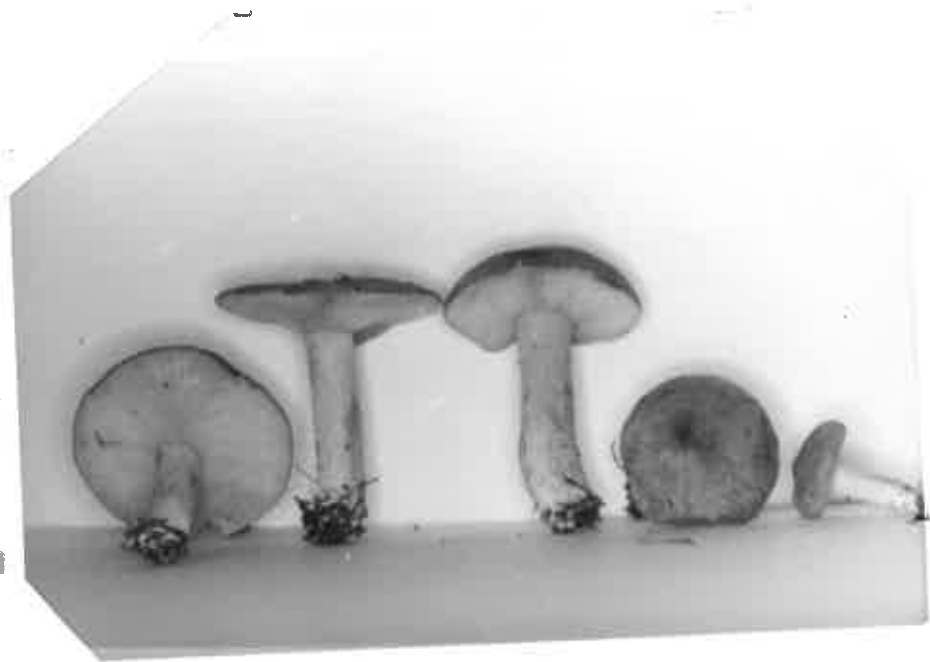
Cap 1-4 cm gray, dull, matted-tomentose, with an abrupt umbo,
"hair brown." Context acrid. Latex white, unchanging, not staining.

Lamellae "pale ochraceous buff," close, narrow, short-decurrent.

Stipe "pale ochraceous salmon," hoary, appearing finely-matted
tomentose under lens.

Notes by Hesler

Agrees with Type. Spore deposit pale cream (dried!).



[^{Temm - 35319}
Bigelow - 8763:] *Lactarius hubbardi* PK.

(Photo by Bigelow)

Tenn-35333

Bigelow-11471

LACTARIUS NIBERDAE var. LACTOCREMUS var. nov.

Hubbardsal
~~annulatus~~ sp. nov.

PHOTO

Gregarious on moss and needles, in low conifer woods, Baxter State Park, Maine, September 1, 1962. (Bigelow says see Card - 4555, given below.)

Notes on 4555 by Bigelow

Pileus 2-5 cms broad, convex at first, soon expanding to broadly convex, then plane, disc soon shallowly depressed, often umbilicate (umbo small, abrupt and rather acute), color a vinaceous gray, surface dull, densely appressed fibrillose under lens. Context thin, pale ochraceous buff, firm but brittle; no odor, taste slowly acrid (not intense). Latex white, not staining, drying cream to pale yellowish.

Gills adnate to short decurrent (unevenly), close, narrow (2-4 mms) often intervenose, rarely forked, color cream, somewhat more ochraceous in age, edges even and straight.

Stipe 3.5-8.5 cm long, 5-12 mm thick, pale salmon-buff, equal, or apex enlarged, base abruptly tapered where embedded, white-tomentose.

Notes by Hesler

Spores 5.5-7 x 5-5.5 μ , ellipsoid, warts usually less than 0.2 μ high, both broad and narrow bands forming a partial or no reticulum. Basidia 35-40 x 7-9 μ , 4-spored. Pleurocystidia 42-55 x 6-7 μ , subclavate, or subcylindric; pseudocystidia filamentous, numerous; cheilocystidia 27-38 x 5-7 μ , similar to pleurocystidia. Gill trama of subparallel hyphae.

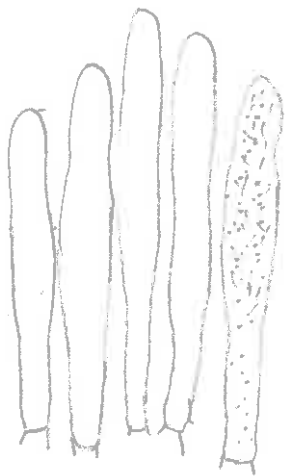
Tenn. - 35333

simulata *hibbardae*
L. ~~hibbardae~~ var. ~~lactocremeus~~ 2

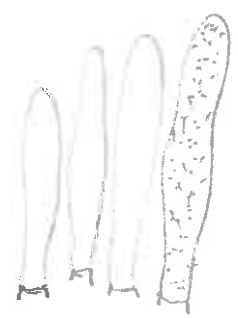
Pileus context vesiculose; rosettes in lower portion. Pileus cuticle dry, of interwoven hyphae, many uplifted ^{and often} to form tufts; hypodermium a zone of brownish hyphae. Stipe cuticle dry, of repent hyphae bearing scattered or small tufts of caulocystidia; rosettes present. Clamp connections none.

This seems to be L. hibbardae, despite its size, and the latex drying cream to pale yellow. The colors of the pileus and stipe of hibbardae vary somewhat. The pleurocystidia and cheilocystidia are similar to those of L. hibbardae, but are more abundant.

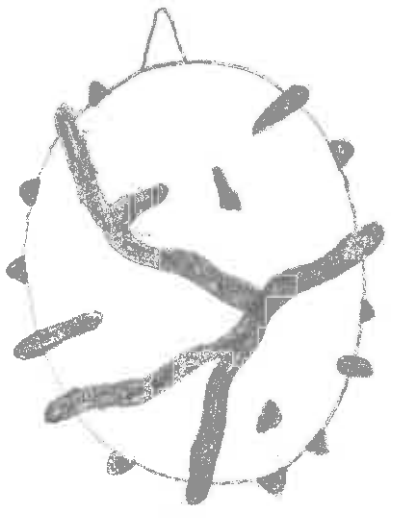
Factarius ~~subbaratae~~ ~~subbaratae~~ ~~subbaratae~~ ~~subbaratae~~ ~~subbaratae~~
simulatae sp. nov. ~~subbaratae~~
Bigelow - 11471
(Tenn - 35333)



Ph. x 1000



Ch. x 1000



Spore x 8000



11471 - Lactarius ^{hubbardsii} ~~simulatus~~
(Tenn-35332)

(Courtesy of H. E. Bigelow)

LACTARIUS HIBBARDAE Pk. var. hibbardae

Sm-67199

Under oak, Grayling, Michigan, August 14, 1963

Notes by Smith

Pileus 9.5 cm broad, flat, slimy, azonate, near "Verona brown," the margin more tawny and even. Context pallid, mild. Latex white, unchanging, not staining the lamellae, taste mild.

Lamellae adnate, near cinnamon-buff, not staining, medium broad, nearly subdistant to close, lamellulae present.

Stipe 7 cm long, 14 mm thick, equal, slimy, vinaceous tan at apex, pale benzo brown with a tan overtone below, pallid within, base with cinnamon-buff mycelium.

Notes by Hesler

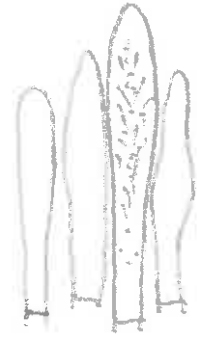
Spores 7-9.5(10) x 5.5-7(7.5) μ , ellipsoid, warts 0.3-0.5 μ , a few isolated, bands both broad and medium-narrow, with some branches, forming a partial reticulum. Basidia 47-53 x 7-9 μ , 4-spored. Pleurocystidia 53-74 x 9-11 μ , ventricose to subfusoid, granular-spangled; pseudocystidia filamentous, 2.5-4 μ broad; cheilocystidia 33-42 x 5-7 μ , subventricose, apices tapering but rounded, granular-spangled. Gill trama loosely interwoven, many cells inflated. Pileus cuticle an ixocutis hyphae 1.5-2 μ broad; hypodermium brown. Stipe cuticle an ixotrichodermium, at times more or less ixolattice; caulocystidia 25-60 x 2.5-3 μ , more or less cylindrical with flexuous walls; hypoderm brown; rosettes present. Clamp connections none.

Chief characters: basidiocarp slimy throughout; latex mild and not staining; pileus cuticle an ixolattice; stipe cuticle an ixotrichodermium.

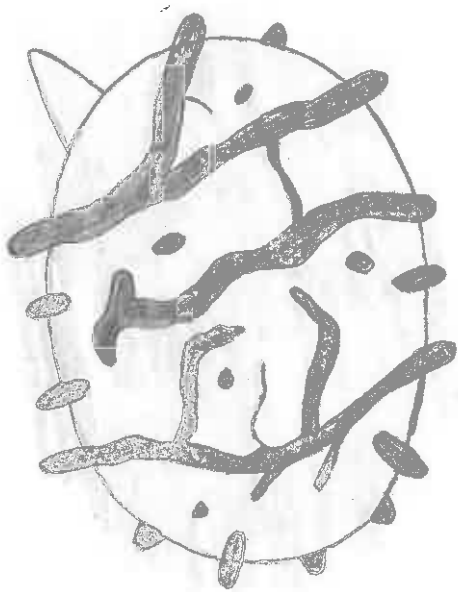
Pectarius ~~muscosus~~ sp. nov.
~~limosus~~ hubbardi
Sm-67199



Sp - x 1000



Ch - x 1000



Spore - x 8000

Factarius limosus sp. nov. Hubbardae

Sm - 67199 .



Stipe: isotrichodermium, with hypodermium (h)
x 1000

[Note: the pileus cuticle is an ixocutis]

Sm-78686

LACTARIUS HIBBARDAE (?)

Canyon Lake Swamp, Marquette Co., Michigan, August 29, 1970 (L.

flexuosipes")

Notes by Smith

Pileus 6-7 cm, lead-gray, zonate, dry. Latex white, unchanging, not staining, quickly acrid.

Lamellae narrow, pale buff.

Stipe 4-5 cm, 9-12 mm, steel-gray pallid, naked.

Spores creamy[?] in deposit.

Notes by Hesler

Spores 6-7.5 x 5.5-6 μ , warts 0.2-0.3(0.4) μ , bands and branches forming a partial reticulum. Pleurocystidia 46-68 x 6-8(9) μ , slender ventricose-acuminate; cheilocystidia 24-37 x 4-6 μ , subcylindric to subfusoid. Pileus cuticle of dry, repent hyphae. Stipe cuticle of dry, repent hyphae, bearing numerous cylindric to clavate, often matted-down caulocystidia; rosettes present.

Re-study!

Highlandensis sp. nov.

35134 LACTARIUS RIMOSELLUS ~~Pk. var. AGRIS var. nov.~~ PHOTO

In deep pine needles, Horse Cove, Highlands, N.C.,

August 23, 1969

Pileus 2-4 cm broad, convex, expanding convex, strongly umbonate, "Hay's russet", at first minutely fibrillose (under lens), glabrescent, fading and becoming areolate, margin often crimped and incurved. Context odor aromatic (odor after two years in herbarium not of fenugreek). Latex watery, unchanging, not staining, taste acrid.

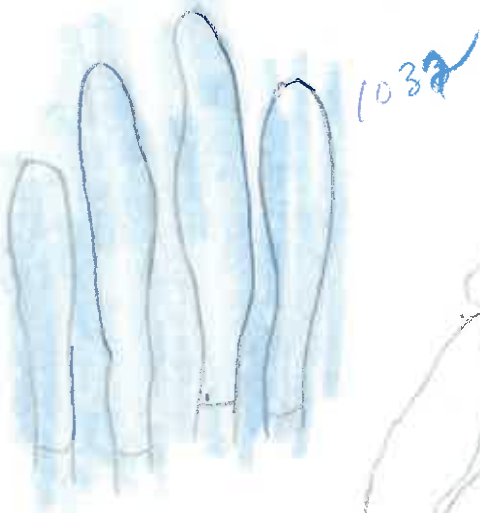
Lamellae decurrent, pallid then concolorous close, narrow, lamellulae very short.

Stipe 8-13 cm long, 5-11 mm thick, concolorous or paler, hollow, glabrous, dry equal.

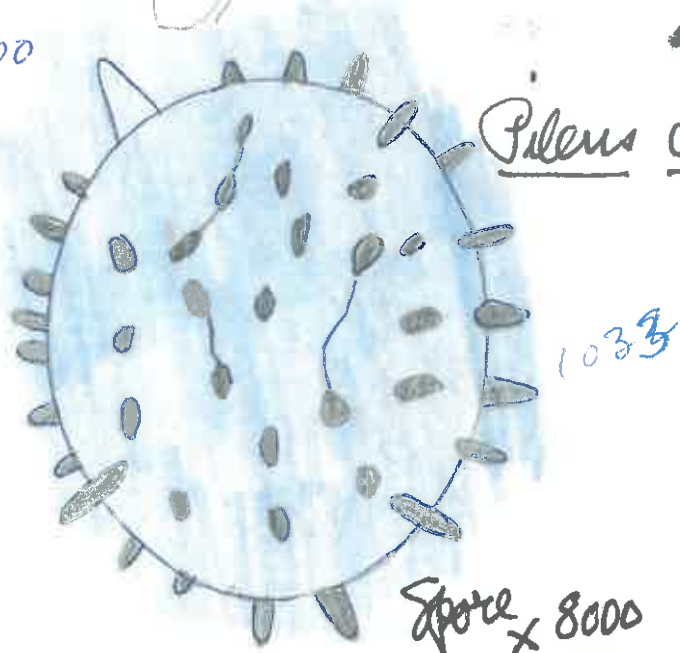
Spores in deposit white, 7-9.5 x 6-8 μ , warts 0.4-1.0 μ , isolated, occasionally with a connecting line. Pleurocystidia none; cheilocystidia 18-26 x 4-5 μ , subclavate, numerous but hardly conspicuous. Pileus cuticle: (a) young cap, before becoming rimulose-areolate, minutely fibrillose, in section the cuticle composed of a zone of cells many of which are elongated vertically, and are rather compact; (b) mature cap, rimulose-areolate, numerous mounds developed, the cells are more diffuse (become more or less separated).

Paetarium hemocellus var ~~hemocellus~~ ^{nov. sp. nov.}
highlandensis sp. nov.
35134

[Ox. 0]

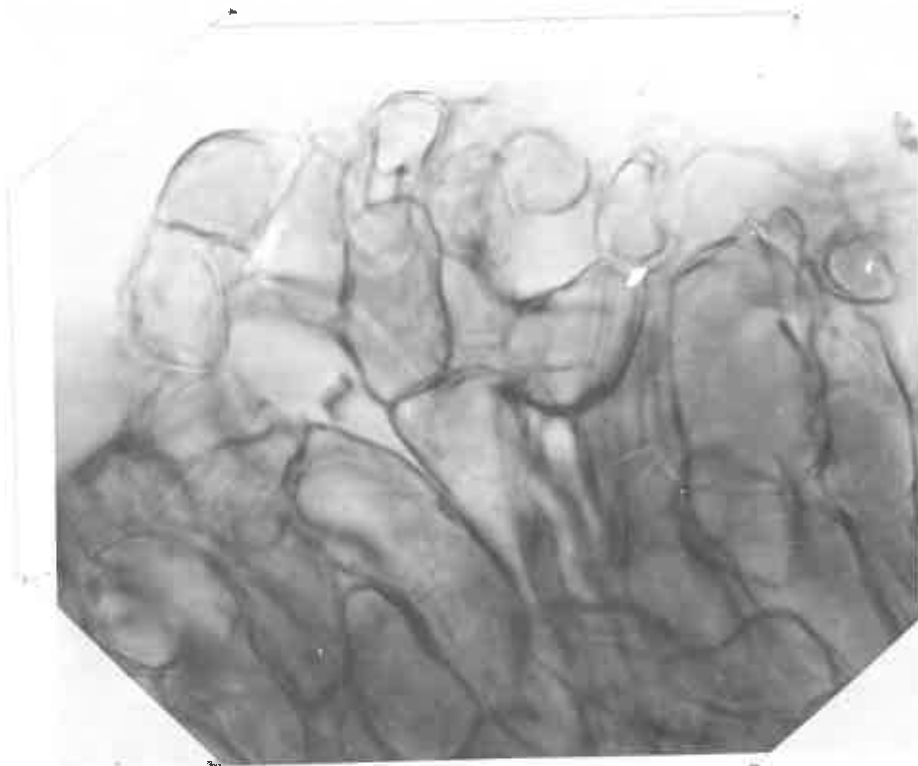


Ch. x 2000



Pileus cuticle
x 1000

Spore x 8000



Lactarius highlandensis sp. nov.
Fig. 5. - Lactarius tanzaniticus Fr. (No. 16441) Portion of
cellular cuticle. X 1250

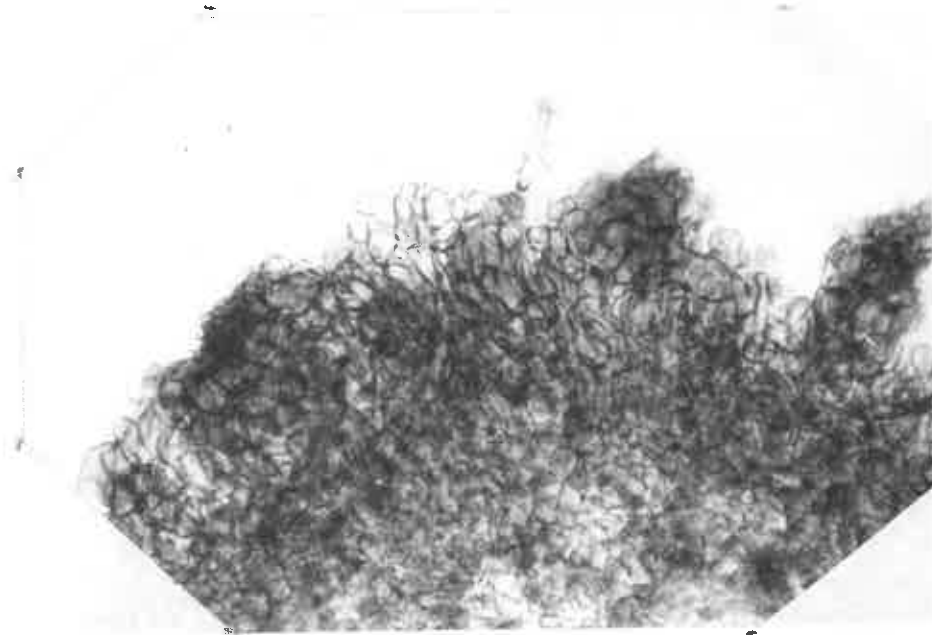


Fig. 6. - Same as above, X 275

Wk-2867

LACTARIUS HUMICOLA sp. nov.

Seward Highway, Alaska, in humus, needle-mold, and moss,
spruce-hemlock woods, August 11, 1966

Notes by W-K

Pileus 5.5-11 cm, convex becoming more or less plane depressed on disc, margin very often lobed, dull lavender-brown becoming paler to dark ochraceous with age, viscid to glutinous when moist, when young usually with some narrow marginal zones or watery spots becoming azonate. Context pallid-whitish, unchanging, thin; odor not distinctive, taste resinous then slightly acrid. Latex pallid whitish (watery-milky), unchanging.

Lamellae adnate, pale ivory then slightly darker, narrow (3-6 mm), close, frequently forked, intervenose on faces.

Stipe 5-7 cm long, 15-30 mm (at apex), ivory with lavender tinge at first becoming ivory to pallid, lubricous to subviscid but soon dry, glabrous, equal or subclavate, stuffed then hollow.

Notes by Hesler

Spores 8-12 x 6-8.5 μ , warts 0.2-0.6 μ ^{high,} bands and branches forming a partial reticulum. Pleurocystidia 52-78 x 5-8 μ , ventricose-acuminate; cheilocystidia 38-42 x 4-6 μ , similar. Pileus cuticle an ixocutis. Stipe cuticle an ixocutis; rosettes present.

Macro-chem (by W/K) :-

FeSO₄ - neg. KOH - neg. except on lavender ones turns apices pink.

UH₄OH - neg.

Phenol - positive, vinaceous weak on pileus epicutis.

M-K 2857

Lactarius ruficicola sp. nov.

Lact. ruficicola?

8-11-66-#7

Bird Creek Campground - Grand Hi. way - Alaska

Scattered to grey in humus, needle mold
& moss - spruce hemlock w/ some old birch
woods.

Pileus: 5.5-11 cm., convex being, - plane depressed
on disc, m. very often lobed; dull low-bronze
being. pale to dk. ochrace w/ age (Pl 14 L-N
w/ young, Pl 5 F-G w/ age) viscid to glut.
w/ moist; w/ young it is usually w/ some narrow
margin. zones to watery spots being azonate.

Flesh: pallid whitish ^{when young}, ^{mod} thin (10-15 mm disc)
ad. not bit, taste sl. resinous at very first.
sl. tardily acrid (burning down the throat)

Gomelia: pale waxy being. sl. dk. w/ age, adnet.
narrow (3-6 mm), close, freq. but indistinct
forked, intervenose on face & at p. flesh,
Sutris flexuous.

Stipe: 5-7 cm. x 1.5-3 cm girth, equal or sub-
clavate, variable waxy w/ low. tinge at 1st
being. waxy to pallid, lubric. to sub viscid
but soon dry, glabrous.

Context: whitish, stuffed being. hollow
Latex: pallid whitish (watery-milky), vischous.
macro-chem:

FeS₂ - neg.

KOH - neg. except on low. new turns ^{spic.} pink

NH₄OH - neg.

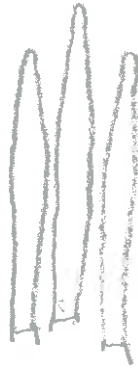
phenol - positive - Vinaceous weak on spores

Sactovius humicola sp. nov.
W-K 2867

Fig. 1



Sp $\times 1000$



Sp $\times 1000$



Spae $\times 8000$

LACTARIUS HYGROPHOROIDES B. & C.

Type

From Maine, leg. Sprague, collection on deposit at Kew (Burlingham says part of type also at Harvard); examined Mch. 13, 1968.

Spores 7.5-9.5 x 6-7.5 μ , ellipsoid, warts 0.2-0.4 μ high, with bands and fine lines forming a reticulum (as in Term-20965). Basidia 52-60 x 7-9 μ , 4-spored. Pleurocystidia none; cheilocystidia 22-30 x 2-5 μ , cylindrical or clavate, at times constricted. Gill trama cellular. Pileus trama vesiculose. ^{Pileus} cuticle a zone, 40-65 μ thick, of irregularly shaped cells, bearing a turf of more or less subulate pileocystidia, 20-74 x 1.5-4 μ broad, apices usually tapering.

= L. distans Pk. N. Y. State Cab. Ann. Rept. 23:117. 1872.
(acc. to Burlingham).

Reported from Yunnan, China, by Chiu (1945:39), and states that it differs from the American form in its pale yellowish orange stipe.

Reported from Japan (Hongo 1960:136)

ILLUSTRATIONS:

Murrill, Mycologia 8, pl. 187, fig. 2.

Smith, Mushrooms in Nat. Hab., Reel 9, No. 63. Singer (1953) studied the type of L. braunii Rick, Broteria 24:118. 1930, and concluded that it is very close to L. hygrophoroides (p. 84-85).

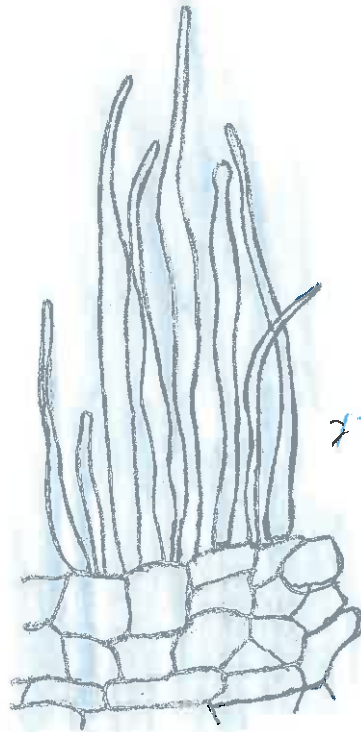
It is edible, and highly regarded by mycophagists.

Sactarius hygrophoroides

Type



ch - x 1000



2798

(Spores as
in Term-20965)

Pileus cuticle (cellular)
and turf of pileocystidia - x 1000

Ract. hygrophoroides

(= LACTARIUS DISTANS Pk.)

Type of L. distans Pk.

From near Albany, New York, August

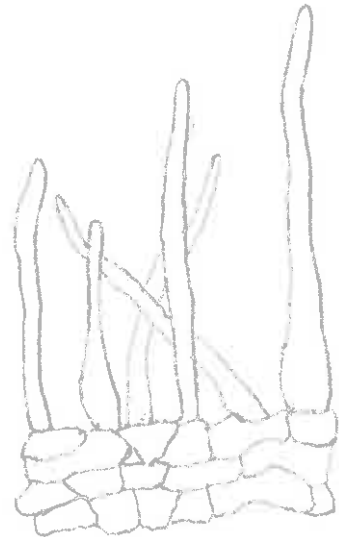
Spores 7-9.5 x 6.5-7.5 μ , ellipsoid, warts 0.2-0.4 μ high, irregular bands and some lines forming a reticulum. Basidia 44-60 x 9-11 μ , 4-spored. Pleurocystidia none; cheilocystidia 36-43 x 5-7 μ , fusoid, ventricose, at times constricted. Gill trama cellular. Pileus trama vesiculose. Cuticle of pileus a zone of small cells, bearing a turf of pileocystidia, 25-54 x 3-6 μ , filamentous to subulate. Stipe cuticle a zone of repent, interwoven, short-celled hyphae, bearing turf of caulocystidia 22-40 x 2.5-5 μ , filamentous, often more or less constricted. Clamp connections none.

Factarium distans PK.

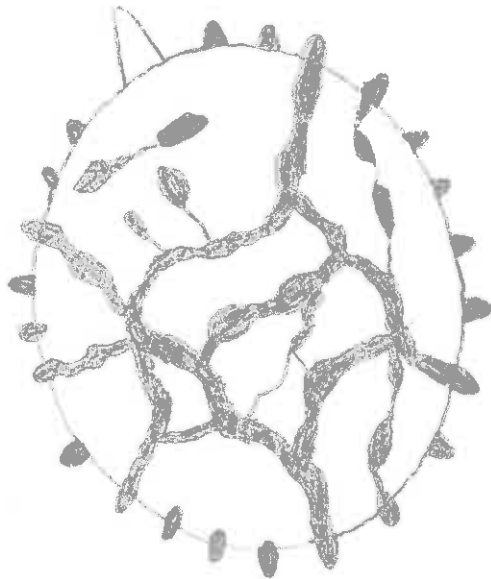
Type
→ (= *F. hypophoroides* B. + C.)



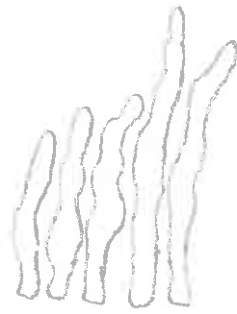
Ch - x 1000



Pileo + cuticle x 1000



Spore - x 8000



Caulo -
x 1000

LACTARIUS HYGROPHOROIDES

Ex-Kew Herb., Cantley, Quebec, Leg.-det. J.W. Groves,
No. 33905, July 22, 1952.

Spores 7.5-9.5 x 6-7 μ , ellipsoid, ornamentation as in Tenn-20965. Basidia 53-62 x 9-11 μ , 4-spored. Pleurocystidia none; cheilocystidia few, clavate, ventricose, 23-30 x 3-5 μ . Gill trama cellular. Pileus trama vesiculose. Pileus cuticle cellular, bearing a turf of more or less subulate pileocystidia. Cuticle of stipe of repent hyphae, ~~with a few surface~~ ~~with~~ bearing a turf of more or less subulate caulocystidia (as on the pileus).

Plectonium hygrophoroides
Groves - 33905 (Ottawa, Canada)



Pseudocystidia
x 1000



Ch - x 1000

Isaacs - 2344

LACTARIUS HYGROPHOROIDES

Under live-oak, U. Fla. campus, Gainesville, Florida, July 15, 1965

Notes by Isaacs

Pileus 3.5-6 cm, rugulose, more or less orange-yellow to dull rufous-brown. Latex white.

Gills subdistant. Stipe concolor to pileus.

Notes by Hesler

Pleurocystidia none found; cheilocystidia few. Other micro characters suggest hygrophoroides.

Ammarati - 2468

LACTARIUS HYGROPHOROIDES

In hardwoods, Proud Lake, Oakland Co., Michigan, September 13, 1968.

Spores 6.5-8.5 x 5.5-7 μ . ^{Rosettes in stipe .}
^ Otherwise as usual.

3721

LACTARIUS HYGROPHOROIDES

On soil, woods, Island Home, Knox Co., June 22, 1934

Spores 7.5-9.5 x 6-7.5 μ , ellipsoid, warts 0.2-0.5 μ , reticulum as in 20965. Pleurocystidia none; cheilocystidia as in 20965.

Cuticle and turf of pileus and stipe, as in 20965. Lactifers 7-20 μ broad, yellowish in Melzer's.

4281

LACTARIUS HYGROPHOROIDES

On soil, Roaring Springs, Knox Co., July 15, 1934

Spores 7-9(10) x 6-7.5 μ , warts 0.2-0.5 μ high, reticulum as in 20965. Pleurocystidia none; cheilocystidia as in 20965. Caulocystidia and pileocystidia as a turf on a ~~walnut~~ cuticle as in 20965, cuticle a brownish zone, 20-45 μ thick.

4282

LACTARIUS HYGROPHOROIDES

On soil, Marion Co., Tenn. July 15, 1934

Spores and other characters as in 20965.

8056

LACTARIUS HYGROPHOROIDES

Under rhododendron, Cataloochee, GSMNP, North Carolina, July 28, 1935

Spores 7.5-9.5 x 5.5-7.5 μ , warts 0.2-0.5 μ high, reticulum as usual. Pleurocystidia none; cheilocystidia ~~40-65 μ thick~~ and all other characters usual. Cuticle 40-65 μ thick.

Chemical reagents:

	<u>Cuticle</u>	<u>Pileo</u>	<u>Ptr</u>	<u>Lactifers</u>	<u>Gtr</u>	<u>Hymenium</u>	<u>Ch</u>
KOH	brown	0	0	0	0	0	0
Melzer's	reddish-brown	0	rbr	pale y	rbr	rbr	0

9025

LACTARIUS HYGROPHOROIDES

Under maple, Cold Spring Harbor, N. Y., July 14, 1936

*Pileus 2.5 - 7 cm broad.*Spores 7.5-9.5 x 6-7.5 μ , warts 0.2-0.4 μ high. Lactifers5-14 μ broad. Cheilocystidia 24-37 x 3-5 μ , clavate, subventricose,

inconspicuous. Reagents:

	Cuticle	Pileo.	Ptr.	Lact.	Gtr.	Hymenium	Ch
KOH	br	0	0	0	0	0	0
Melzer's	rbr	0	rbr	pale y (nearly colorless)	rbr	rbr	0

Pactarius hygrophoroides

9075



ch - x 1000

9163

LACTARIUS HYGROPHOROIDES

On soil, woods, Elkmont, Aug. 9, 1936

Spores and other features usual.

11345

LACTARIUS HYGROPHOROIDES B & C

Elkmont, Tenn. Leg. & det. Smith & Hesler, Sept. 3, 1937

Spores 7-9 x 7-8 μ , short-ellipsoid to globose, reticulate-
verrucose, warts low (about .2 μ high). Pleurocystidia none;
cheilocystidia 33-38 x 4-7 μ , cylindric, some flexuous. Epicutis
cellular, bearing a turf of pileocystidia which are straight or
flexuous, tapering upward to the apex 35-66 x 1.5-2 (tip) x 4-5 μ (base).

13957

LACTARIUS HYGROPHOROIDES

Indian Gap, N. C., Aug. 24, 1941

Cuticle brownish in KOH, 50-80 μ thick. Other characters usual.

Bigelow - 15263

LACTARIUS HYGROPHOROIDES

Mt. Toby, Sunderland, Massachusetts, August 24, 1967

Notes by Bigelow

Pileus more orange than usual, corrugated. Gills light yellow orange, distant, venose, broad.

Spores white.

Notes by Hesler

Spores 8-10 x 6.5-7.5 μ , warts 0.2-0.4 μ high, bands, somewhat broken, not forming a complete reticulum, at times partial. Basidia 48-56 x 9-11 μ , 4-spored. Pleurocystidia none; cheilocystidia cylindrical or clavate, 28-42 x 4-7 μ , scattered, often rare. Pileus cuticle a zone of cells bearing a turf of pileocystidia, 25-40 x 3-5 μ , ventricose, slender-obclavate, apices usually or often tapering. Stipe cuticle ^{of short-celled hyphae,} ~~similar but of smaller~~ cells, turf similar; rosettes present.

Bigelow called this a form because of its more orange pileus. But, it varies from light salmon orange, to orange cinnamon, ochraceous tawny, orange with a tint of brown.

16320

LACTARIUS HYGROPHOROIDES

Elkmont, Tenn., June 21, 1944.

Pileocystidia often up to 105 μ long (35-105 x 4-5 μ), subulate.

Otherwise as usual.

17649

LACTARIUS HYGROPHOROIDES

On grassy soil, open mixed hardwood woods, Mt. Lake, Va., H. R. Milliken,
July 24, 1958.

Milliken's Notes

Pileus 2.5-7.5 cm broad, "testaceous" to "light salmon orange",
depressed, center darker, † wrinkled.

Lamellae decurrent, cream, short lamellulae, distant.

Stipe 1.3-2.5 cm x 8-14 mm, equal, solid, cream.

Spore deposit white.

Hesler's Notes

All micro-characters usual.

Indian Gap, mixed woods, August 9, 1953

Pileus 3-7 cm broad, convex-expanding, finally upturned and depressed, "orange cinnamon" to "sage brown," azonate, dry, minutely velvety, at times rugulose, margin involute and even. Context white, rather firm; odor and taste mild. Latex white, unchanging, mild, not staining.

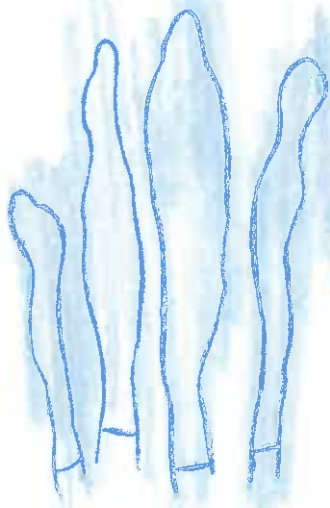
Lamellae adnate-subdecurrent, white then pale buff, not forking, venose at pileus, rather broad, distant.

Stipe 3-5 cm long, 8-15 mm thick, concolorous with pileus or paler, equal or tapering downward, glabrous or slightly pruinose, solid, dry.

Spores white in deposit, 7.5-9.5 x 6-7.5 μ , rarely up to 10.5 μ long, ellipsoid in face view, more rarely subvoid, subinequilateral in profile, warts 0.2-0.4 μ high, with bands and fine lines forming more or less of a reticulum, at times warts isolated. Basidia 44-60 (70) x 7-9 μ , 4-spored. Pleurocystidianone; cheilocystidia 18-30 x 3-6 μ , cylindrical, clavate, rarely subcapitate, thin-walled, inconspicuous, not or scarcely projecting. Gill trama cellular; subhymenium of small, compact cells. Pileus trama vesiculose with hyphae. Pileus cuticle a zone of pseudoparenchyma, the cells 6-30 x 6-30 μ , the zone 65-90 μ thick, the surface bearing a turf of pileocystidia, 15-56 x 3-5 μ , cylindrical, subventricose, apices rounded or tapering, thin-walled. Stipe cuticle of interwoven, short-celled, perpendicular, repent hyphae--in section appearing cellular; caulocystidia 15-60 x 3-5 μ , forming a turf and resembling the pileocystidia in size and shape; rosettes present. Clamp connections none.

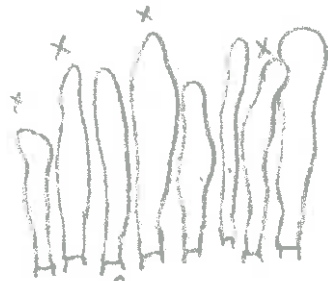
Factarium hygrophoroides

Temu - 20965



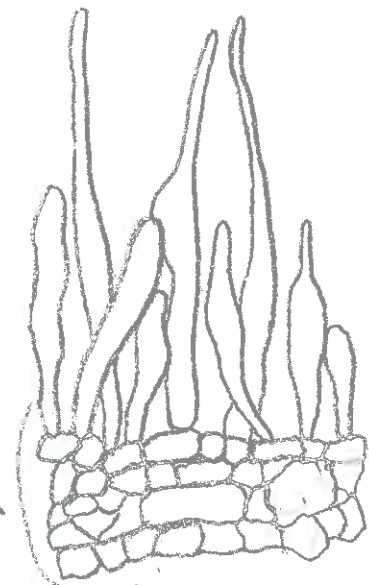
523

Ch - x 2000

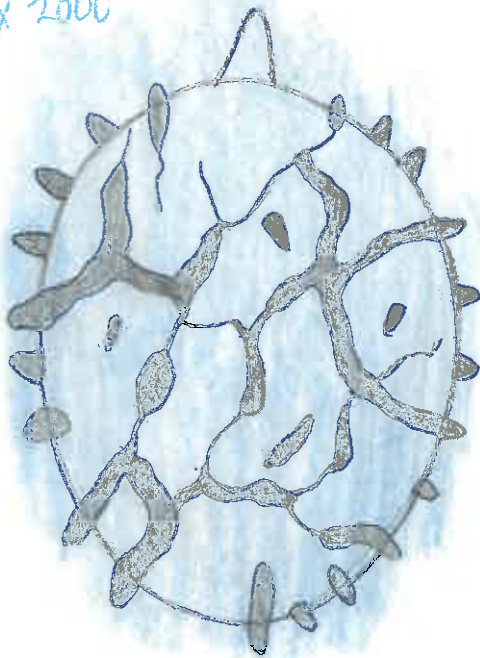


Ch - x 1000

re-study

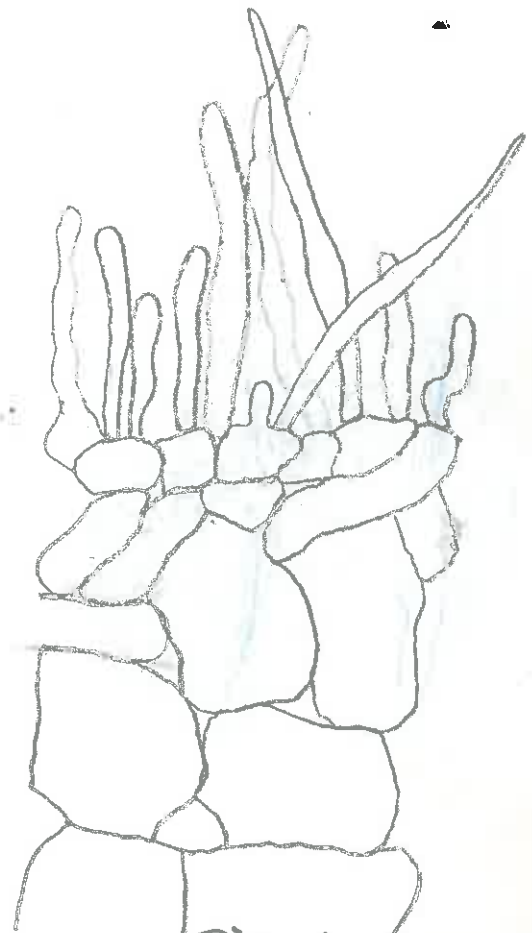


Conio turf on cuticle
x 1000



522

Spore - x 8000



Pileo turf on cuticle
x 1000



20965 - *Factarium hygrophoroides*

On soil, near Mt. LeConte, August 8, 1954

Illustration: Merrill, Mycologia 8, pl. 187, fig. 2.

Pileus 4-8 cm broad, convex-expanding, finally upturned and depressed, "ochraceous tawny" to "syal brown", dry, azonate, velvety, at times rugose, margin involute, even. Context white, rather firm; odor and taste mild. Latex white, unchanging, mild, abundant, not staining the flesh.

Lamellae adnate-decurrent, white then pale buff, not forking, some short venose at pileus, rather broad, thick, distant.

Stipe 3-5 cm long, 8-15 mm thick, concolorous to pileus or paler, equal or tapering downward, appearing glabrous to minutely pruinose or velvety, solid, dry.

Spores 7.5-10 x 6-7.5 μ , ellipsoid, warts low (.2 μ high), coarsely reticulate with fine lines, white in mass. Pleurocystidia none; cheilocystidia 30-38 x 3-6 μ , clavate to cylindric, often flexuous. Gill trama cellular; subhymenium not distinctly differentiated. Cuticle of flattened, pseudoparenchymatous cells, several layers thick, bearing a turf of colorless pileocystidia which taper upward (subulate), 35-66 x 1.5-2.5 (tip) x 4-5 μ (base), often flexuous. Clamps none.

23232

LACTARIUS HYGROPHOROIDES

In mixed woods, Huntsville, Texas, Thiers, ^{no. 4485,} May 4, 1957

Spores 7-9 x 5.5-6.5 μ . Otherwise as usual.

23255

LACTARIUS HYGROPHOROIDES

On soil/humus, under oaks, Florida, Thiers, ^{no. 5212} August 18, 1958

Spores 7.5-9.5(10.5) x 6-7.5(8) μ . Otherwise as usual.

24516

LACTARIUS HYGROPHOROIDES

On soil, deciduous woods, Gatlinburg, ^{near} Park, August 16, 1961.

white in deposit,

Spores [^]7.5-9.5 x 5.5-7.5 μ , warts 0.2-0.5 μ high. Basidia 54-68 x 9-13 μ , (2)4-spored. Pleurocystidia none; cheilocystidia usual, inconspicuous. Otherwise typical.

27271

LACTARIUS HYGROPHORCIDES

On humus, under maple, Macon Co., N.C., Petersen, August 19, 1961.

Spores 7.5-10 x 6.5-7.5 μ . Otherwise as usual.

29989

LACTARIUS HYGROPHOROIDES

PHOTO (color)
n.g.

Nashville, Warise, August, 1967.

Notes by Warise

Pileus resembles volemus. Gills distant. Latex white, not staining (or after several hours, staining pale flesh-colored.) Odor none.

Notes by Hesler

Micro characters indicate hygrophoroides, despite its paler pileus.

30232

LACTARIUS HYGROPHOROIDES B. & C.

In deep humus, Roaring Fork, GSMNP, July 17, 1968

Pileus center "zinc orange," outward "ochraceous buff," appearing glabrous, disc depressed, entire central portion more or less corrugated. Context odor mild. Latex white, unchanging, taste mild.

Lamellae subdistant, yellowish. Stipe more or less concolorous, solid, broader at apex.

Spores in deposit: white, 7-9.5 x 6-7.5 μ , ellipsoid, warts 0.2-0.3 μ high, with medium-broad bands forming a reticulum. Pleurocystidia none; cheilocystidia 23-32 x 3-5 μ , subcylindric to clavate. Pileus cuticle cellular, bearing a turf of pileocystidia, colorless and thin-walled. Stipe cuticle ^{of repeat, short-celled hyphae,} bearing a turf of caulocystidia, colorless and thin-walled; rosettes none. Clamps none.

30285

LACTARIUS HYGROPHOROIDES B. & C.

Cades Cove, August 15, 1968.

Pileus depressed, "light-ochraceous buff," disc "ochraceous buff," minutely velvety, dry, obscurely rugulose on margin. Context white, unchanging; odor and taste mild. Latex white unchanging, not staining, mild.

Lamellae subdistant, medium broad, "light ochraceous buff," not staining.

Stipe concolorous with pileus disc, (minutely velvety), solid.

Spores white; 7.5-9.5(10) x 6-7.5 μ , warts 0.2-0.4 μ high, bands and lines forming more or less a reticulum. Pleurocystidia none; pseudocystidia filamentous; cheilocystidia as in type. Gill trama of large vesiculose cells occupying most of the trama, smaller toward the edges (4-10 x 3-9 μ), larger farther away from the edges (10-35 x 8-28 μ). Pileus cuticle of large cells, bearing a turf of pileocystidia. Stipe cuticle ~~of short-celled hyphae,~~ ^{of short-celled hyphae,} bearing a turf of caulocystidia; rosettes present.

30291

LACTARIUS HYGROPHOROIDES

Cades Cove, Aug. 15, 1968.

Pileus depressed, orange with a faint brown tint, minutely velvety (under lens), rugose over all, margin crenate-wavy. Context white, mild. Latex white, unchanging and not staining gills or flesh.

Lamellae creamy-yellow, subdistant, rather broad, lamellulae numerous, few forked at base.

Stipe concolorous.

Spores white.

35128

LACTARIUS HYGROPHOROIDES

Roaring Fork, Ron Petersen, July 25, 1970

Pileus velvety, zinc orange. Latex white, mild, unchanging, not staining. Gills distant. Stipe concolorous with pileus.

Spores white in deposit, 7-9.5 x 5.5-7 μ , warts short (0.2 μ or less), with lines and narrow bands.

Cooke - 40964 LACTARIUS HYGROMORCHOIDES B & C

In mixed woods, Conkle's Hollow, Hocking County, Ohio, July 19, 1969

(labelled: L. distans)

Notes by Cooke

Pileus 3-8 cm, brownish orange, depressed. Odor none. Latex white, unchanging, not staining (or purplish spots on gills may be from latex on bruising). Gills pale cream, decurrent, distant. Stipe apex white, elsewhere concolor but paler, solid.

Notes by Hesler

Spores and other micro characters as in the Type.

(Tenn - 35495)

Cooke - 41127

LACTARIUS HYGROPHOROIDES B. & C.

On soil, mixed woods, Hocking County, Ohio, July 26, 1969

Notes by Cooke

Latex white, unchanging, staining gills brownish, weak alum-like taste.

Notes by Hesler

Micro characters agree with L. hygrophoroides. The "gills staining brownish" is puzzling; possibly a misinterpretation, or possibly an aberrant form (or variety).

Sm - 64371

LACTARIUS HYGROPHOROIDES

PHOTO

Ann Arbor, Michigan, September 18, 1961.

Spores 8-10 x 6-7.5(8) μ , ellipsoid warts 0.2-0.4 μ high, with bands and lines forming more or less a reticulum. Basidia 48-60 x 9-11 μ , 4-spored. Pleurocystidia none; cheilocystidia as in Type. Pileus trama loosely interwoven, with vesiculose cell-groups; no rosettes. Cuticle of pileus cellular, bearing a turf, the pileocystidia 24-80 x 3-4 μ . Stipe cuticle of hyphae bearing a turf of caulocystidia (smaller than pileocystidia). Stipe cortex with numerous rosettes, as well as groups of vesiculose cells. Clamp connections none.