



November 2013

## Gymnopilus Notebook 2

L. R. Hesler

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GYMNOPIIUS ABRAMSII Murr.

On soil, leg. L. R. Abrams & Jas. McMurphey, Stanford University, November 27, 1902.

TYPE

Spores 6-8.5 x 4.5-5  $\mu$ , ellipsoid in face view, slightly inequilateral in profile, verruculose, ferruginous in KOH, dextrinoid, no germ pore. Basidia 20-25 x 4-6  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 24-43 x 3-8  $\mu$ , clavate-cylindric, flask-shaped, or ventricose, to subcapitate or non-capitate, more rarely the apex forked, often inconspicuous. Gill trama of subparallel hyphae, 2-4  $\mu$  broad; subhymenium not distinctive. Pileus trama of interwoven hyphae. Cuticle of repent hyphae, with some brown fibrils which may be arranged at times in bundles (scales), sometimes lightly incrustated. Clamp connections present. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent. Caulocystidia ?

Kauffman (1926) states that this is a Cortinarius. Its habitat suggests Cortinarius, but its ferruginous spores indicate Gymnopilus.

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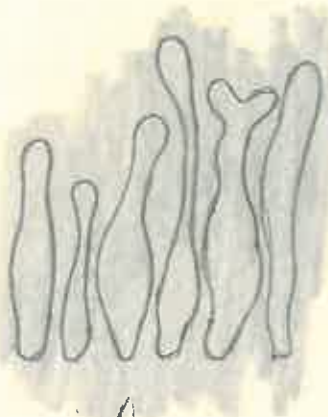
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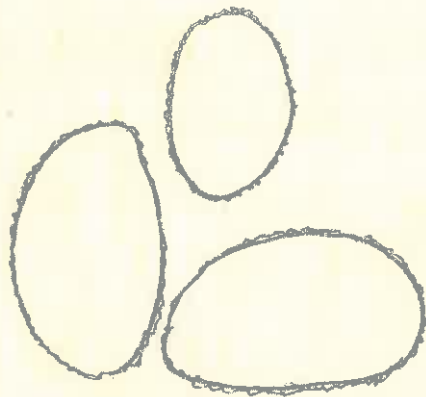
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*Gymnopilus abramii* Murv.

Type



Ch - x 1000



Spores - x 4000

PHOLIOTA ACULEATA Bres. & Roumg. n. sp.

Revue Mycologique 12:28. 1890

(Translation from Latin by L.R.H.)

Pileus 1-1.5 cm broad, fleshy, campanulate to convex-expanded, luteus (= golden yellow, saffron yellow), at first squamulose, especially on the center, aculeiform-hirsute, then subappressed, saturatioribus praeditus; flesh yellow; lamellae adnate, luteofulvous, close; stipe 1.5-2 cm long, 1-2 mm broad; stuffed, flavidus (= golden yellow), furfuraceous, ferruginascens downward; annulus inferior, not lacerate, fugaceous; spores luteofulvous, subamygdaliform, 6-7 x 4-4.5  $\mu$ .

Habitat - Cespitose on decaying trunks, S (St ?)  
Thomal Angolares, leg. Newton, 1887. Compares (comparanda) slightly with Ph. luciferae.

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Habitat - Cespitose on decaying trunks, S (St ?)  
Thomal Angolares, leg. Newton, 1887. Compares (comparanda) slightly with Ph. luciferae.

No. 48-1-2. GYMNOPIIUS ACULEATUS (Bres. & Roumg.) Singer

On palm, near Manila, Luzon, P. I., leg. R. S. Davis, det. R. Singer, January 1948. (Borrowed from Farlow Herb., July 1967).

Spores 5.5-7 x 4-4.5  $\mu$ , ellipsoid in face view, inequilateral in profile, verruculose, no germ pore, ferruginous in KOH, dextrinoid. Basidia 18-24 x 5-6  $\mu$ , 4-spored. Pleurocystidia 24-28 x 6-7  $\mu$ , ventricose; basidioles 20-34 x 7-10  $\mu$ , clavate with conic apices, or more rarely ventricose-capitate, brown; cheilocystidia 17-25 x 4-7  $\mu$ , ventricose, non-capitate. Gill trama of parallel, frequently-septate hyphae, 6-12  $\mu$  broad; subhymenium not distinctive. Pileus trama of radial hyphae. Cuticle of loosely interwoven hyphae not distinct from the tramal hyphae, bearing conic tufts (scales) of pale-brown, frequently-septate hyphae, the terminal elements sometimes as pileocystidia, 28-55 x 7-18  $\mu$ , clavate, ventricose, or flask-shaped with a long neck. Clamp connections present. Caulocystidia none, but stipe-apex with tufts of hyphae.

Some of the basidiocarps distinctly show a membranous, apical, more or less persistent annulus; in others it has sloughed away.

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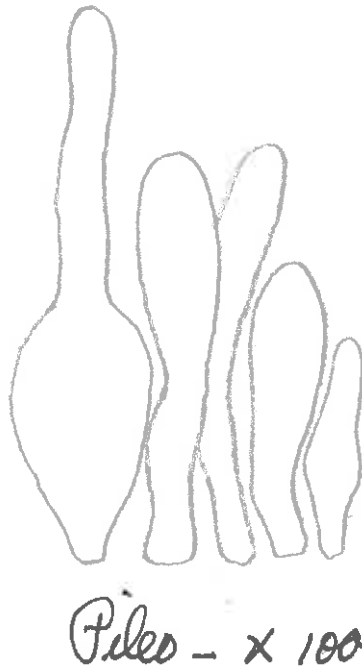
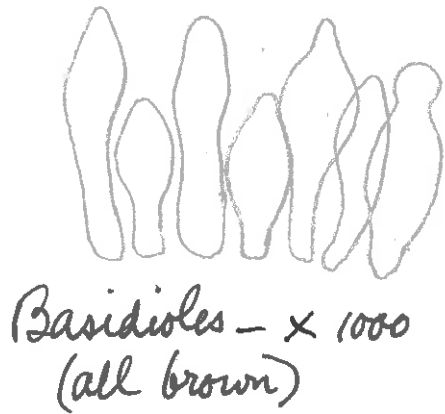
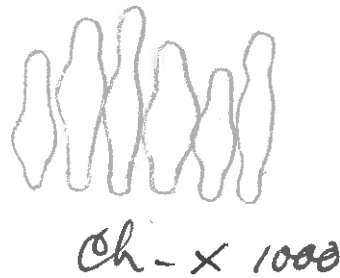
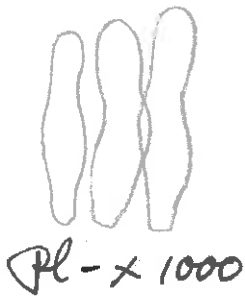
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Gymnopilus aculeatus

No. 48-1-2, on palm, near Manilla, Luzon, P.I.,  
leg. R. S. Davis, det. R. Singer, January 1948  
(borrowed from Farlow Herb., July 1967).



GYMNOPIIUS AERUGINOSUS (Pk.)

Coll. William Herbst, Trexlertown, Pa., <sup>October,</sup> 1889; on oak  
railroad ties.

TYPE of Pholiota aeruginosa Pk.

Pileus tinged greenish, areolate with one to six or eight fibrillose scales. Lamellae broad, close. Veil apparently yellowish, fibrillose, leaving only a zone of fibrils near the apex of the stipe.

Spores 6.5-8(9) x 3.5-4.5(5)  $\mu$ , ellipsoid, inequilateral, verrucose, ferruginous in KOH, dextrinoid. Basidia 24-27 x 5-6  $\mu$ , 4-spored. Pleurocystidia 23-27 x 5-6  $\mu$ , ventricose, inconspicuous, scattered; cheilocystidia 18-27 x 5-7(9)  $\mu$ , ventricose or flask-shaped, capitate to subcapitate, at times extending up the sides to 15.0  $\mu$ . Gill trama of subparallel hyphae, 5-12  $\mu$  broad. Pileus trama vesiculose, interwoven. Cuticle a zone of opaque, repent hyphae, with tufts of brown hyphae (scales). Caulocystidia none. Clamp connections present.

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Coll. William Herbst, Trexlertown, Pa., 1889; on oak railroad ties.

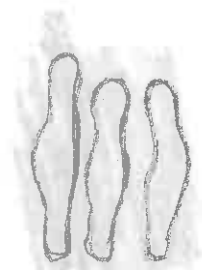
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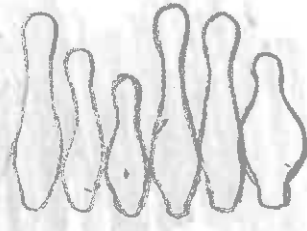
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*Pholista aeruginosa* PK.

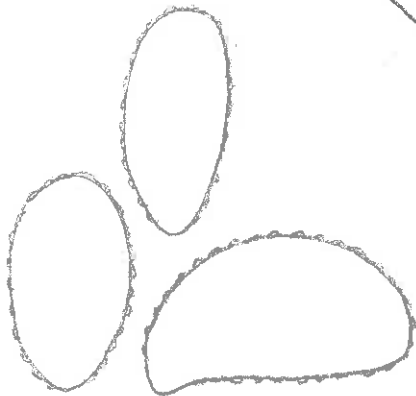
Type (= *Gymnosporus aeruginosus*)



Pl - x 1000



Ch - x 1000



Spores - x 4000



Pl - (really ch extending up sides 150μ) - x 1000



Tenn-9591

GYMNOPIIUS AERUGINOSUS (Pk.) Singer

On hemlock log, Greenbrier, GSMNP, October 18, 1936

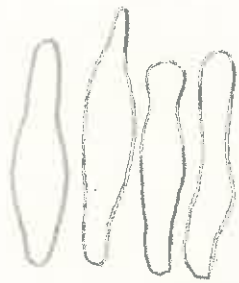
Pileus tinged pink and green, areolate, scaly, the scales becoming blackish.

Stipe pink at apex, greenish below, yellowish at base.

Spores 6-8 x 4-4.5  $\mu$ , in each field a few (1-4) up to 10 x 5  $\mu$ , ellipsoid in face view, slightly inequilateral in profile, *ferruginous in KOH, dextrinoid,* verruculose, <sup>^</sup>no germ-pore. Basidia 23-29 x 5-7  $\mu$ , 4-spored. Pleurocystidia: (a) colorless, 28-35 x 5-7  $\mu$ , ventricose, apices rounded, somewhat acute, or sometimes subcapitate, rare; (b) brown, 22-27 x 5-6  $\mu$ , clavate; cheilocystidia 20-38 x 3-7  $\mu$ , ventricose with a slender neck, apices often subcapitate. Gill trama subparallel, hyphae 7-25  $\mu$  broad. Pileus trama interwoven, sometimes more or less vesiculose. Cuticle repent, bearing mounds or more or less repent or semi-erect tufts of brown hyphae (scales). Clamp connections present, small. Caulocystidia clavate, as terminal elements of epicuticular hyphae. Pileus and gill trama pale yellowish in KOH; dingy yellowish brown in Melzer's reagent. *Yellow pigment soluble in KOH in gill trama.*

*Pholiota aeruginosa*<sup>MA</sup> (Pk.) Singer  
*Gymnopilus*

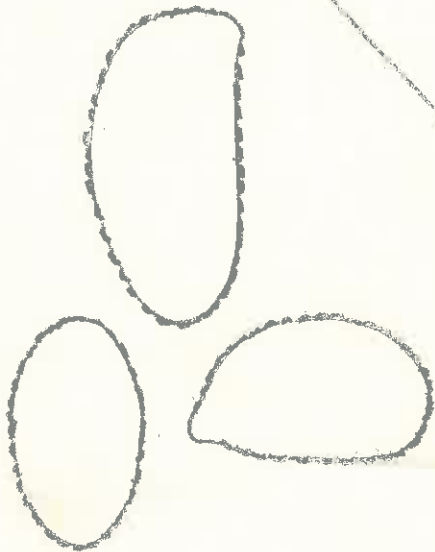
Tenn - 9591



a) colorless  
Pk - x 1000



Ch - x 1000



Spores - x 4000



(b) brown

Pk - x 1000

Tenn.-15085

GYMNOPIIUS AERUGINOSUS Pk.

On sawdust pile, Claxton's School, Anderson Co., Oct. 25, 1942.

Pileus 7-15(23) cm broad, convex, not viscid, not hygrophanous, warm buff to pinkish buff, fibrillose-scaly, scales erect and tawny, becoming areolate, each areola cushion-like and surmounted by 2-4 scales, margin even. Context rather thick over disc, firm, pale brownish vinaceous; odor mild, taste very bitter.

Lamellae uncinatae, adnexed, to adnate and decurrent by a long tooth or line, cream buff, becoming reddish brown ("cinnamon-rufous"), broad, crowded, many short, edge even or slightly rough.

Stipe 5-12 cm x 20-45 mm, (rarely 10 mm), concolorous, dry, appressed-fibrillose, solid, often becoming hollow, connate at base (3 to 8); veil cortinate, yellowish, leaving an evanescent ring.

Spores in deposit: near "orange-rufous," "cinnamon rufous" to "amber brown" (not exactly matched); spores (5.5) 6-8 x 4-4.5  $\mu$ , ellipsoid, inequilateral, *ferruginous in KOH, dextrinoid,* in profile, verruculose, no germ pore. Basidia 22-25 x 4-6  $\mu$ , 4-spored, ferruginous in KOH, red-brown in Melzer's reagent. Pleurocystidia 23-30 x 4-6  $\mu$ , flask shaped, rarely subcapitate; cheilocystidia 24-33 x 4-7  $\mu$ , flask shaped, usually capitate. Gill trama slightly interwoven to subparallel, hyphae 4-8  $\mu$  broad. Subhymenium not distinctive. Pileus trama of ~~WDDWAA~~ somewhat interwoven hyphae. Cuticle of repent hyphae with

numerous tufts of more or less erect brown hyphae which are occasionally slightly incrusted and forming <sup>the</sup> scales. Clamp connections numerous on aerial hyphae of stipe apex. Caulocystidia 34-60 x 4-7  $\mu$ , as terminal cells on more or less erect hyphae.

Smith (letter, Jan. 7, 1943) says: "Overholts illustrates cystidia for P. luteofolia and describes the cap as pinkish. Your specimens stained bluish green along the margin in several places and hence lead me to consider P. aeruginosa. Flammula braendlii and F. pulchrifolia are probably synonyms. The greenish color is very erratic in fresh material. This is certainly a beautiful collection."

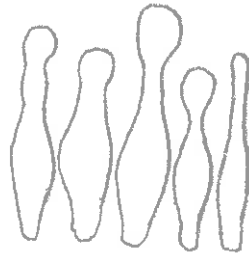


*Gymnopilus aeruginosus*

Teru-15085



Gl - x 1000



Ch - x 1000



Caulo - x 1000



19147 : *Gymnopilus aeruginosus*

Sm-17883

GYMNOPIIUS AERUGINOSUS

On conifer stump, Sequim, Wash., October 13, 1941

Spores 6-8 x 4-4.5  $\mu$ , dextrinoid at once.

Pileus areolate-scaly, 2-5 fibrillose scales each areola.

Malloch - 28

GYMNOFILUS AERUGINOSUS (Pk.) Singer

On wood, Jackson State Forest, near Mendocino, Calif., Oct. 27, 1963.  
Leg. - det. by D. Malloch (as G. harmoge).

Spores 6-8 x 4-4.5  $\mu$ ; pileus areolate, each areola 3-6 or 7  
fibrillose scales. The pileus and context both show tints of blue-green  
color.

SM - 7-3

GYMNOPIIUS AERUGINOSUS

STEREO-PHOTO

Cipole Station, Ore., Nov. 4, 1942.

Spores 5.5-8 x 4-4.5  $\mu$ , dextrinoid.

SM - 397

GYMNOFILUS AERUGINOSUS

On hardwood (?), near Ann Arbor, Mich., Oct. 4, 1949.

Spores 6-8 x 3.8-4.5  $\mu$ , dextrinoid.

Harding - 429

GYMNOPIIUS AERUGINOSUS

On basswood log, Sharon Hollow, Mich., Oct. 4, 1950.

Spores 6-8 x 4-4.5  $\mu$ .

Harding - 438

GYMNOPIIUS AERUGINOSUS

On yellow birch, Proud Lake area, N.E. of Ann Arbor, Mich., Oct. 28, 1950.

Spores 6-8 x 4-4.5  $\mu$ .



SM - 18830

GYMNOPIIUS AERUGINOSUS

On oak timber, Ann Arbor, Mich., Oct. 15, 1942.

Spores 6-8 x 4-4.5  $\mu$ .

SM - 20770

GYMNOFILUS AERUGINOSUS

On basswood, Ann Arbor, Mich., Sept. 29, 1945.

Spores 6-8 x 4-4.5  $\mu$ .

SM - 20890

GYMNOPIIUS AERUGINOSUS

Kent Lake, Oakland Co., Mich., Oct. 2, 1945.

Spores 6-8 x 4-4.5  $\mu$ .

SM - 28714

GYMNOPIIUS AERUGINOSUS

On sawdust pile, Dexter, Mich., May 18, 1948.

Spores 6.5-8 x 4-4.5  $\mu$ .

Cooke-33124

GYMNOPIIUS AERUGINOSUS

On sawdust (oak ?), Shawnee State Forest, Scioto County,  
Ohio, November 4, 1961.

Notes by Cooke

Pileus connate to gregarious, up to 10 cm broad,  
convex then plane, at first dark-red, with scales, becoming  
areolate and yellow-brown, with 2- several scales on each  
areola. Context reddish, blue or blue-green when cut;  
taste bitter.

Lamellae broadly adnexed, yellow-brown, close, broad.

Stipe up to 9 cm long and 20 mm thick, brown, striate.  
Veil cortinate, remaining on stipe.

Notes by Hesler

Spores 6.5-8(9) x 4-5  $\mu$ , ellipsoid, slightly inequi-  
lateral, verruculose, ferruginous in KOH, dextrinoid.  
Pleurocystidia present, ventricose; cheilocystidia 24-32 x  
4-6  $\mu$ , flask-shaped, slightly capitate to non-capitate.  
Caulocystidia either in tufts, or scattered and as terminal  
elements of surface hyphae, 34-57 x 3-7  $\mu$ , filamentous,  
cylindric-clavate, or more or less ventricose. Clamp  
connections present.

SM - 35829

GYMNOPIIUS AERUGINOSUS

On sawdust, Brutus, Mich., Sept. 15, 1950.

Spores 6-8.5 x 4-4.5  $\mu$ .

Sm-62524

GYMNOPIIUS AERUGINOSUS

PHOTO

In henhouse, Ann Arbor, Mich., July 6, 1960

Spores 6.5-8.5 x 3.5-4.5  $\mu$ , dextrinoid at once.

Context thinner than usual. Pileus areolate, scaly, with green tints, and in one young basidiocarp very definitely blue-green.

Sm-64698

GYMNOFILUS AERUGINOSUS

On sawdust, Ecorbe, Michigan, October 15, 1961

Spores 6-8 x 3.5-4.5  $\mu$ , dextrinoid at once. Pileus areolate, scaly, with blue-green tints.



74229  
Sm-~~2~~

GYMNOPIIUS AERUGINOSUS

On sawdust, near Saltsburg, Pa., coll. D. R. Sumstine,  
det. A. H. Smith, July 8, 1940 (Harding, in a note,  
says it is possibly a form of Gymnopilus filiceus).

Spores (5.5)6-8 x 4-4.5  $\mu$ , ellipsoid, a few subovoid,  
in face view, slightly inequilateral in profile, verruculose,  
ferruginous in KOH, slightly dextrinoid at once in Melzer's  
reagent, dark-red after one hour (both with and without the  
use of  $\text{NH}_4\text{OH}$ ), no germ pore. Basidia 23-28 x 5-6  $\mu$ , 4-spored.  
Pleurocystidia 24-27 x 5-6  $\mu$ , ventricose, inconspicuous;  
cheilocystidia 12-28 x 5-7  $\mu$ , flask-shaped, not capitate.  
Gill trama of subparallel hyphae 4-12  $\mu$  broad; subhymenium  
not distinctive. Pileus trama of loosely interwoven hyphae.  
Cuticle of repent hyphae, not greatly differentiated from the  
trama, bearing bundles of brownish hyphae, sometimes obscurely  
incrusted. Clamp connections present. Caulocystidia none  
or as cylindrical-clavate, terminal elements of epicuticular  
hyphae. Pileocystidia none.

Sm - 74229

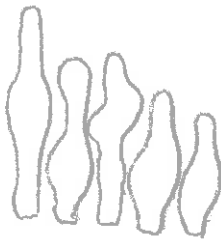
*Gymnosporium aeruginosus*

(form of *filiceus* - acc. to Harding)

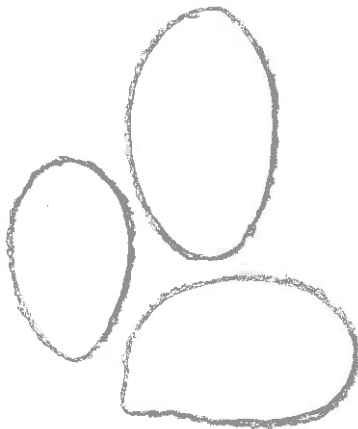
from Fallsburg, Pa.



Sp - x 1000



Ch - x 1000



Spores - x 4000

Sm-74234

GYMNOPIIUS AERUGINOSUS

On log, Clearwater River, Idaho, leg. Wehmeyer, det.  
Kauffman (as P. aeruginosa), June 18, 1920.

Spores 6-8.5 x 4-5  $\mu$ , ellipsoid, inequilateral,  
verruculose, ferruginous in KOH, dextrinoid at once.

Pileus areolate, scaly.

Sm-74236

GYMNOPIILUS AERUGINOSUS

*Anit*

On boards, side-walk, leg. and det. Kauffman, Ann Arbor,  
Michigan, September 11, 1907.

Kauffman states: Pileus almost fulvous-yellow with  
a few green blotches. Pileus areolate, scaly.

Spores 6-8.5 x 4.5-5  $\mu$ , ferruginous in KOH, a few  
slightly reddish brown at first, but not truly dextrinoid  
even when  $\text{NH}_4\text{OH}$  is used, nor when left standing in Melzer's  
for 5 hours. } ?

Sm-35286

*Hygrospilus*? *Galerina*?  
ch not typical of *Hygrospilus*

*PHOLIOTA ALPINA* (Smith) comb. nov.

*Kuehneromyces alpinus* Smith, *Sydowia Suppl.* 1:52. 1957.

Notes by Smith

Pileus 2-3.5 cm broad, broadly convex with an incurved margin, becoming plane to shallowly depressed, margin often uplifted in age, surface moist and hygrophanous, "russet" over all when young, fading to various shades of tawny, margin opaque to faintly striate, surface obscurely innately squamulose at first (before fading), when faded obscurely to distinctly furfuraceous. Context concolorous with the surface; odor and taste not distinctive; no color change.

Lamellae depressed-adnate to bluntly adnate, close, 3 tiers of lamellulae, narrow to moderately broad, rich dark cinnamon when young, nearly concolorous with the pileus in age; edges even at first but becoming wavy to eroded in age.

Stipe 3-4.5 cm long, 1.5-2.5 mm thick, concolorous with pileus, equal, fragile, tubular, evenly faintly silky fibrillose but no pruina present, base darkening to blackish brown in age, coated at and near attachment with white mycelium. Veil none.

Spores 8-9.5 x 5.5-6.5 x 6.5-8  $\mu$ , broadly ellipsoid in side view, broadly oval to subcircular in outline in face view, apical pore present but inconspicuous, outer wall yellowish to nearly hyaline and warty-wrinkled, inner wall thickened and rich rusty cinnamon in KOH, the outer wall tending to slough off irregularly. Basidia 4-spored, 22-24 x 7-8  $\mu$ , hyaline in KOH. Pleurocystidia

none; cheilocystidia 16-20 x 9-13  $\mu$ , clavate to nearly globose, mostly with ochraceous content (in KOH), smooth, thin-walled. Gill trama yellowish in H<sub>2</sub>O and KOH, somewhat interwoven. Pileus trama floccose-interwoven, yellowish except for the bay-brown cuticular region, with fascicles of hyphae having ellipsoid to elongate heavily encrusted cells. Clamp connections present.

HABITAT, HABITAT, AND DISTRIBUTION - On wet soil, Little Laramie River, Medicine Bow National Forest, Wyoming, July 29, 1950, leg. and det. A.H. Smith, No. 35286 - Paratype.

OBSERVATIONS - The distinctive features are the practically imbedded cheilocystidia, the roughened spores, and the silky stipe which in age darkens at the base. The color of the spores when fresh is that of the section Flammula in Pholiota; in other words, typical of the rusty-brown-spored group.

Notes by Hesler

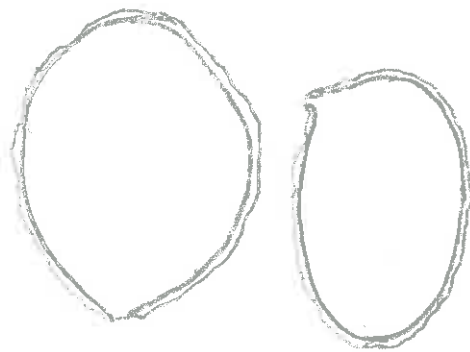
Spores 8-10 x 5.5-8  $\mu$ , ellipsoid, often broadly so, outer wall thin, rough-wrinkled, tending to loosen and slough away, inner wall thicker and smooth, pore present, not truncate. Basidia 26-33 x 7-10(11)  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 22-28 x 10-15  $\mu$ , cuneiform, ellipsoid, or sub-globose, smooth, buried. Gill trama slightly interwoven, hyphae 4-7  $\mu$  broad. Subhymenium not distinctive. Pileus trama radial, more or less interwoven. Cuticle a trichodermium, hyphae brownish, incrusted; terminal elements more or less clavate. Clamp connections present. Caulocystidia none.

~~Gymnopus~~  
~~Heteromycet~~ alpinus Sm.

paratype. Sm-35286



Ch - x 1000



Spores - x 4000

Sm-46580

Gyromyces

KUEHNEROMYCES ALPINUS

Scattered to gregarious on wet soil, Papoose Creek, Idaho,  
August 23, 1954

Notes by Smith (specimen not found)

Pileus 2-3.5 cm broad, broadly convex with an incurved margin, becoming plane to shallowly depressed, margin often raised up in age, surface moist and hygrophanous, "russet" over all when young, fading out to various shades of tawny, margin opaque to faintly striate, surface obscurely innately squamulose at first (before fading) more conspicuously so (use a lens) when faded and then appearing furfuraceous, flesh concolorous with surface, no distinctive odor or taste or color change.

Gills close, 3 tiers of lamellulae, narrow to moderately broad, depressed adnate to bluntly adnate, color when young a rich dark cinnamon, nearly concolorous with pileus in age; edges finally wavy to eroded, even at first.

Stipe 3-4.5 cm long, 1.5-2.5 mm thick, equal, fragile, tubular, colored like cap, evenly faintly silky fibrillose but no pruina present and no veil, base darkening in age and usually with white mycelium around it.

Spores: Spore print rusty faintly toned pink, hence more or less "Verona brown". 8-9.5 x 6.5-8  $\mu$ , check for smooth plage at home.

Pileus homogeneous, but at surface with fascicles of projecting hyphae with ellipsoid to elongate pigment incrustated cells. Clamps present.



Sm-65381

KUEHNEROMYCES ALPINUS

Pappoose Creek, Ida., July 13, 1962

Spores 7.5-9.5 x 5.5-7.5  $\mu$ . Pleurocystidia none; cheilocystidia 10-21 x 8-10  $\mu$ , subglobose, subpyriform, to ellipsoid, buried. Gill trama slightly interwoven, hyphae 4-7  $\mu$ . Cuticle a trichodermium of brownish, incrustated hyphae.

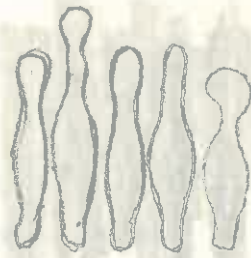
See Sm-35286 for full notes.

*Flammula amarissima* Murr.

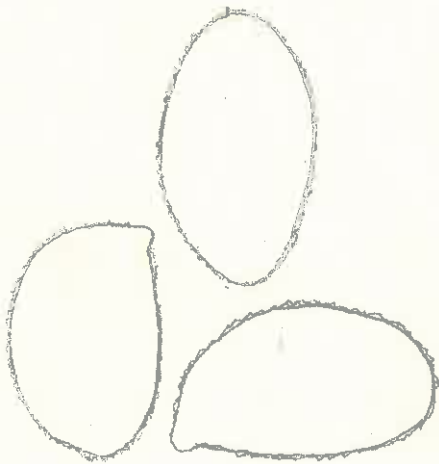
Type - 716206



Pl - x 1000



Ch - x 1000



Spores - x 4000



Pileo - x 1000



GYMNOFILUS AMARISSIMUS Murr.

On dead pine trunk, Magnesia Springs, Florida, leg. Murrill,  
April 12, 1938, F 16206.

TYPE

Spores 7-8.5 x 4-5  $\mu$ , ellipsoid to ovoid in face view, inequilateral in profile, not dextrinoid, verruculose, germ-pore none, pale yellowish brown in Melzer's reagent. Basidia 20-26 x 4-5  $\mu$ , 4-spored. Pleurocystidia 24-30 x 5-6  $\mu$ , filamentous to ventricose, apices rarely forked; cheilocystidia 25-32 x 4-6  $\mu$ , ventricose-capitate, or more rarely non-capitate. Gill trama of parallel to sub-parallel hyphae, 5-8  $\mu$  broad. Pileus trama of radial hyphae. Cuticle of repent, brownish hyphae, bearing scattered, very slender-ventricose pileocystidia, 22-30 x 2-3  $\mu$ . Clamp connections present. Caulocystidia none. Pileus and gill trama yellowish brown in KOH; pale reddish brown in Melzer's reagent. A yellowish pigment, soluble in KOH, is present.

GYMNOPIIUS AMARISSIMUS Murr.

On dead pine trunk, Magnesia Springs, Florida, leg. Murrill,  
April 12, 1938, F 16206.

TYPE

Spores 7-8.5 x 4-5  $\mu$ , ellipsoid to ovoid in face view, inequilateral in profile, not dextrinoid, verruculose, germ-pore none, pale yellowish brown in Melzer's reagent. Basidia 20-26 x 4-5  $\mu$ , 4-spored. Pleurocystidia 24-30 x 5-6  $\mu$ , filamentous to ventricose, apices rarely forked; cheilocystidia 25-32 x 4-6  $\mu$ , ventricose-capitate, or more rarely non-capitate. Gill trama of parallel to sub-parallel hyphae, 5-8  $\mu$  broad. Pileus trama of radial hyphae. Cuticle of repent, brownish hyphae, bearing scattered, very slender-ventricose pileocystidia, 22-30 x 2-3  $\mu$ . Clamp connections present. Caulocystidia none. Pileus and gill trama yellowish brown in KOH; pale reddish brown in Melzer's reagent. A yellowish pigment, soluble in KOH, is present.

Sm-63489

GYMNOPIIUS ANGUSTIFOLIUS sp. nov.

Type

On soil, by a conifer stump, West Branch, Maple River, Michigan, July 2, 1961.

Notes by Smith

Pileus 1.5-3 cm broad, convex-expanded, orange beneath minute reddish brown squamules (yellow on rusty brown in daylight). Context odor slightly fragrant, of Cantharellus cibarius.

Lamellae adnate, orange-brown, close, narrow.

Stipe 2.5-3.5 cm long, 3-4 mm thick, dull-orange-brown, with an obscure, fibrillose, apical zone. Veil arachnoid, fugacious.

Notes by Hesler

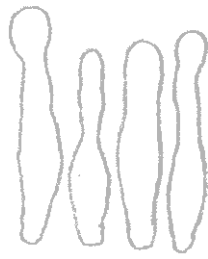
Spores 7-8.5 x 4.3-5  $\mu$ , ellipsoid in face view, obscurely inequilateral in profile, verrucose, no germ pore, ferruginous in KOH, promptly dextrinoid. Basidia 25-30 x 6-7  $\mu$  4-spored. Pleurocystidia 25-32 x 5-6  $\mu$ , flask-shaped or ventricose, sometimes subcapitate, scattered; cheilocystidia 22-32 x 4-7  $\mu$ , flask-shaped, not capitate. Gill trama of subparallel hyphae, 4-8  $\mu$  broad; subhymenium not distinctive. Pileus trama of radial hyphae. Cuticle of repent hyphae, bearing mounds of brown, incrustated hyphae, the terminal elements cylindric-clavate and subcapitate-- as pileocystidia, 50-82 x 7-11  $\mu$ . Caulocystidia 25-35 x 3-5  $\mu$ , scattered, filamentous-subcapitate, brownish. Clamp connections present, rare. Yellow pigment, soluble in KOH, present in gill trama.

Near sapineus in which the pileus is golden-yellow or tawny, the odor usually strong, the gills broader, the cheilocystidia subcapitate, the pileocystidia much shorter.

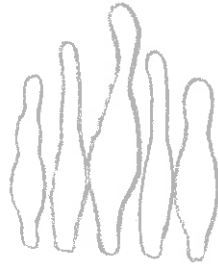
*Gymnopilus angustifolius* sp. nov.

Sm - 63489

Type



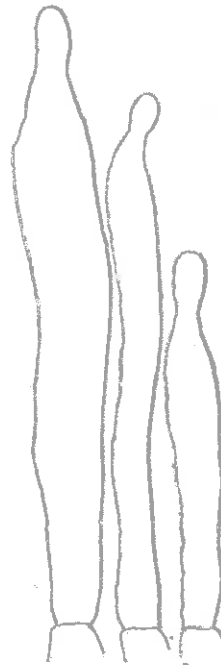
R - x 1000



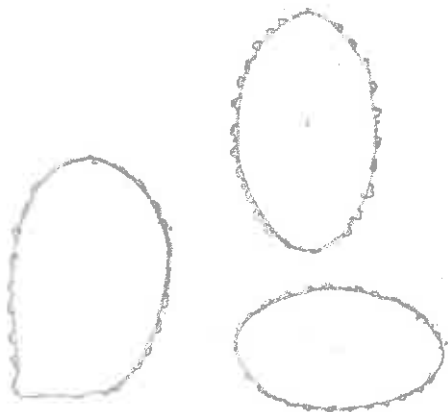
Ch - x 1000



Caulo -  
x 1000



Pileo - x 1000



Spores - x 4000

Sm-47448

GYMNOPIIUS ARENICOLUS<sup>a</sup> sp. nov.

Type

On sandy soil, along trail of Shaddows, Longmire, Wash.,  
Sept. 13, 1954. (See also Sm-47449).

Notes by Smith

(near turficola, but spores separate it)

Pileus 15-30 mm broad, obtuse, expanding to nearly  
plane or broadly umbonate, surface dull and unpolished <sup>or</sup>  
minutely fibrillose, color "zinc orange" or duller and near  
"tawny," evenly colored or disc finally paler and yellowish;  
<sup>Contact</sup> flesh pallid; odor and taste mild.

Lamellae close, moderately broad, adnate to slightly  
adnexed, "burnt sienna" at maturity, 2-3 tiers of lamellulae,  
edges even.

Stipe 2-3 cm long, 1.5-2.5 mm thick, equal, solid,  
~~brownish within~~, surface dull brown and more or less fibrillose-  
striate, ~~but no veil present~~, in age dingy over all but base  
not appreciably darker, *brownish within. Veil none.*

Spores 7-8 x 4-4.5  $\mu$ ; clamps present; cheilocystidia  
with thickened walls in apical half.

Notes by Hesler

Spores 7-8 x 3.5-4.5  $\mu$ , ellipsoid to slightly pip-  
shaped, at times subfusoid, slightly inequilateral, verr-  
uculose, no pore, ferruginous in KOH, dextrinoid, ~~at once~~.

Basidia 24-28 x 5-6  $\mu$ , 2-4-spored. Pleurocystidia 20-27 x 4-5  $\mu$ , ventricose; cheilocystidia 15-28 x 3-7  $\mu$ , ventricose or flask-shaped, subcapitate or capitate. Gill trama of subparallel hyphae, 3-6  $\mu$  broad; subhymenium not distinctive. Pileus trama radial. Cuticle a dark-brown, conspicuous zone of repent hyphae, the surface hyphae brown, and often incrustated; pileocystidia none. Caulocystidia 14-22 x 3-5  $\mu$ , ventricose to clavate, mostly with a brown contents.

Clamp connections present.

*present in gill trama.*

*yellow pigment, soluble in KOH,*  
Smith (notes above) says near turficola, but spores separate it.

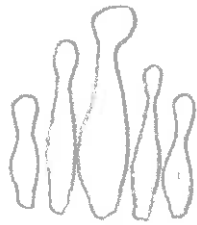


*Gymnopilus arenicola* sp. nov.

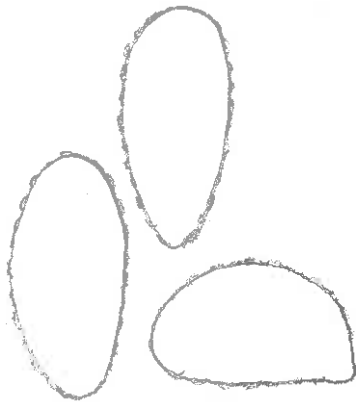
Sm - 47448 - Type



Gl - x 1000



Ch - x 1000



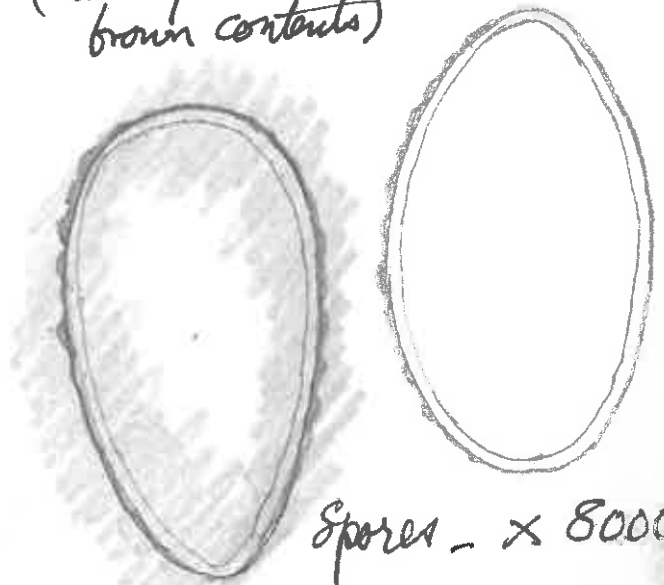
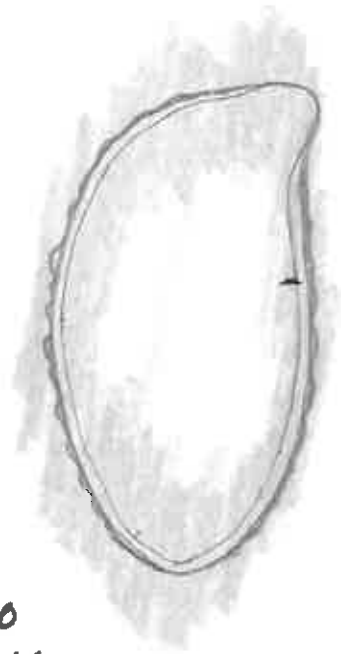
Spores - x 4000



Caulo.

x 1000

(mostly with brown contents)



Spores - x 8000

Sm-47449 GYMNOPIIUS ARENICOL<sup>A</sup>~~US~~ sp. nov.

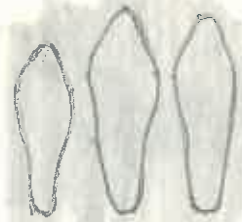
On soil, along trail, Longmire, Washington, Sept. 13, 1954

Smith says: see Card, 47448.

Spores 6.5-8 x 3.5-4.5  $\mu$ . Otherwise as in Sm-47448.

*Gyromyces areolatus* Murr.

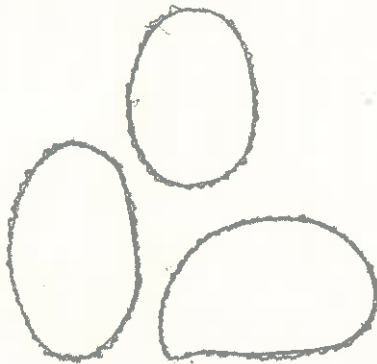
Type



~~Sp~~ - x 1000  
Sp.



Ch - x 1000



Spores - x 4000

GYMNOPIIUS AREOLATUS Murr.

On hardwood stump, leg. F. S. Earle, No. 36, Santiago de las Vegas, Cuba, May 27, 1904.

TYPE

Spores 6-7 x 4-4.5  $\mu$ , ellipsoid in face view, slightly inequilateral in profile, verruculose, no germ pore, not dextrinoid. Basidia 22-27 x 5-6  $\mu$ , 4-spored. Pleurocystidia 22-27 x 7-9  $\mu$ , clavate, with a conic apex; cheilocystidia 18-30 x 4-6  $\mu$ , ventricose to flask-shaped, non-capitate, or more rarely capitate, inconspicuous. Gill trama of wavy-subparallel hyphae, 3-5  $\mu$  broad; subhymenium not distinctive. Pileus trama radial, ~~strobiliform~~. Cuticle of repent hyphae, bearing, on the central portion of the pileus, tufts of fuscous to pale hyphae forming scales. Clamp connections present. Caulocystidia none. Pileus and gill trama pale yellowish in KOH; reddish brown in Melzer's reagent.

Murrill (NA7 10:214) states that the spores are 9-11 x 6-7  $\mu$ .

GYMNOFILUS AREOLATUS Murr.

On hardwood stump, leg. F. S. Earle, No. 36, Santiago de las Vegas, Cuba, May 27, 1904.

TYPE

Spores 6-7 x 4-4.5  $\mu$ , ellipsoid in face view, slightly inequilateral in profile, verruculose, no germ pore, not dextrinoid. Basidia 22-27 x 5-6  $\mu$ , 4-spored. Pleurocystidia 22-27 x 7-9  $\mu$ , clavate, with a conic apex; cheilocystidia 18-30 x 4-6  $\mu$ , ventricose to flask-shaped, non-capitate, or more rarely capitate, inconspicuous. Gill trama of wavy-subparallel hyphae, 3-5  $\mu$  broad; subhymenium not distinctive. Pileus trama radial, ~~subparallel~~. Cuticle of repent hyphae, bearing, on the central portion of the pileus, tufts of fuscous to pale hyphae forming scales. Clamp connections present. Caulocystidia none. Pileus and gill trama pale yellowish in KOH; reddish brown in Melzer's reagent.

*Cortinarius?*  
GYMNOPIILUS AREOLATUS Murr. ?

Leg. Earle, No. 37, Santiago de las Vegas, Cuba, May 27,  
1904

Not the Type

Spores 8-11 x 5-6.5 $\mu$ , ellipsoid, tuberculate or coarsely wrinkled-rough, no germ-pore. Basidia 26-30 x 6-7 $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 18-28 x 3-6 $\mu$ , ventricose, rare, inconspicuous. Gill trama undulating-subparallel, hyphae 3-6 $\mu$  broad. Pileus trama radial. Cuticle repent. Brown lactifers in both gill and pileus trama. Pileus and gill trama pallid in KOH; reddish brown in Melzer's reagent.

This does not agree with the type; its spores are larger and warty to wrinkled; the type has spores 6-7 x 4-4.5 $\mu$ , wrinkled.

This seems to be a Cortinarius. A second collection ~~of~~ by Earle, and which Murrill mistook for G. areolatus (Earle's No. 36). But it is not the same as No. 36.

GYMNOPIIUS AREOLATUS Murr.

Leg. Earle, No. 37, Santiago de las Vegas, Cuba, May 27,  
1904

Not the Type

Spores 8-11 x 5-6.5 $\mu$ , ellipsoid, tuberculate or coarsely wrinkled-rough, no germ-pore. Basidia 26-30 x 6-7 $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 18-28 x 3-6 $\mu$ , ventricose, rare, inconspicuous. Gill trama undulating-subparallel, hyphae 3-6 $\mu$  broad. Pileus trama radial. Cuticle repent. Brown lactifers in both gill and pileus trama. Pileus and gill trama pallid in KOH; reddish brown in Melzer's reagent.

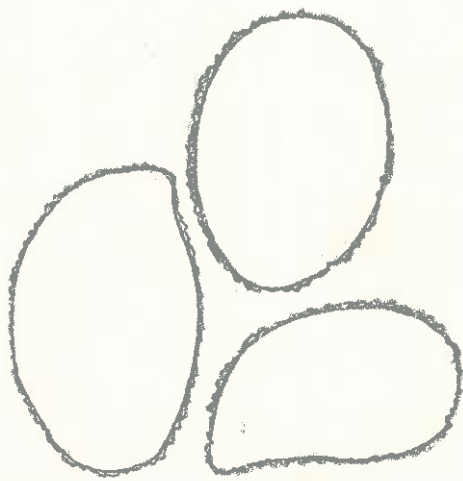
This does not agree with the type; its spores are larger and warty to wrinkled; the type has spores 6-7 x 4-4.5 $\mu$ , wrinkled.

This seems to be a Cortinarius.

*Gymnopilus areolatus* Murr. ?

Earle No. 37 (Not the type)

(This is a Cortinarius !)





GYMNOPIIUS ARMILLATUS Murr.

On root of living sweet gum, Bithlo, Florida, Orange Co.,  
leg. A.S. Rhoads, December 21, 1932. F 15731.

TYPE

Spores 8-10 x 4.5-6  $\mu$ , ellipsoid to ovoid in face view, inequilateral in profile, verruculose, no germ pore, ferruginous in KOH, not dextrinoid even after 18 hours. Basidia 26-37 x 6-7  $\mu$ , (2)4-spored. Pleurocystidia 20-31 x 5-6  $\mu$ , ventricose, more rarely flask-shaped, at times capitate; cheilocystidia 18-34 x 3-8  $\mu$ , capitate, ventricose or flask-shaped. Gill trama of slightly interwoven hyphae, 6-18  $\mu$  broad; subhymenium not distinctive. Pileus trama of radial hyphae, often becoming vesiculose. Cuticle of repent hyphae, bearing scattered pileocystidia, 31-38 x 2.5-4  $\mu$ , filamentous to subventricose. Caulocystidia 24-48 x 3-5  $\mu$ , filamentous to clavate, in pyramidal tufts. Clamp connections present. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent. *Pigment in gill trama yellow-brown in KOH.*

GYMNOPIIUS ARMILLATUS Murr.

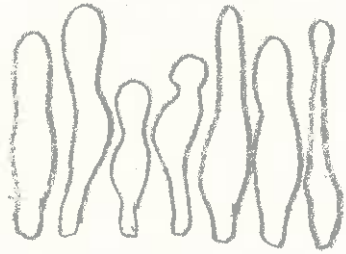
On root of living sweet gum, Bithlo, Florida, Orange Co.,  
leg. A.S. Rhoads, December 21, 1932. F 15731.

TYPE

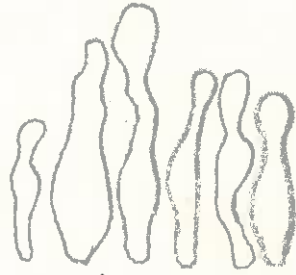
Spores 8-10 x 4.5-6  $\mu$ , ellipsoid to ovoid in face view, inequilateral in profile, verruculose, no germ pore, ferruginous in KOH, not dextrinoid even after 18 hours. Basidia 26-37 x 6-7  $\mu$ , (2)4-spored. Pleurocystidia 20-31 x 5-6  $\mu$ , ventricose, more rarely flask-shaped, at times capitate; cheilocystidia 18-34 x 3-8  $\mu$ , capitate, ventricose or flask-shaped. Gill trama of slightly interwoven hyphae, 6-18  $\mu$  broad; subhymenium not distinctive. Pileus trama of radial hyphae, often becoming vesiculose. Cuticle of repent hyphae, bearing scattered pileocystidia, 31-38 x 2.5-4  $\mu$ , filamentous to subventricose. Caulocystidia 24-48 x 3-5  $\mu$ , filamentous to clavate, in pyramidal tufts. Clamp connections present. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent.

~~Gymnophilus~~  
~~Flammula~~ *armillata* Murr.

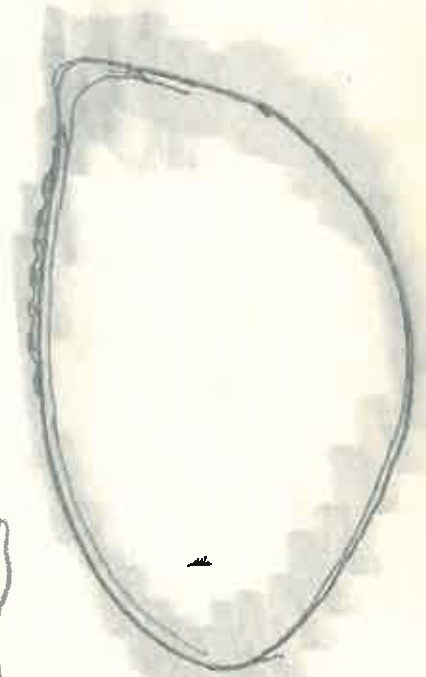
Type 7 15731



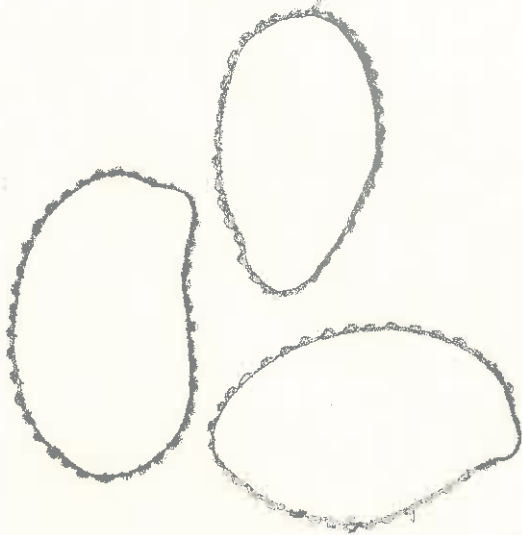
Pl - x 1000



Ch - x 1000



Spore - x 8000



Spores - x 4000



Pilo - x 1000



Caules - x 1000

Bigelow-3322

GYMNOPIIUS AURANTIACUS sp. nov.

*Type*

On conifer log, near Mud Lake, Sinclair, Maine, July 17, 1956.

Notes by Bigelow

Pileus 3 cm broad, convex, solitary, orange-rufous, scaly.

Ramellae close, narrow.

Stipe yellow, heavily fibrillose, 2 cm x 3 mm, clavate.

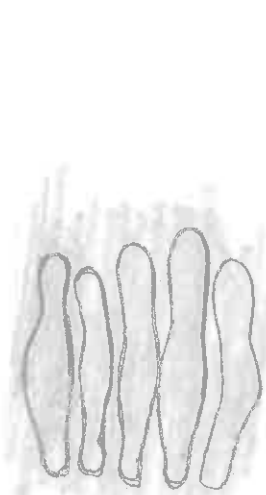
Notes by Hesler

Spores 6-8.5 x 4.5-5  $\mu$ , ellipsoid, inequilateral, verruculose, thin-walled, no pore, ferruginous in KOH, not dextrinoid in Melzer's even after one hour, slightly dextrinoid in  $\text{NH}_4\text{OH}$  and Melzer's. Basidia 24-28 x 5-6  $\mu$ , 4-spored. Pleurocystidia 25-34 x 4-7  $\mu$ , ventricose; cheilocystidia 27-67 x 3-6  $\mu$ , filamentous-capitate, often with a brown pigment. Gill trama of subparallel hyphae, 3-6  $\mu$  broad; subhymenium not distinctive. Pileus trama of interwoven hyphae. Cuticle of interwoven hyphae, the surface densely fibrillose. Pileocystidia as clavate, terminal elements, 28-36 x 4-5  $\mu$ . Caulocystidia 45-125 x 3-9  $\mu$ , filamentous, more or less clavate, in tufts. Clamp connections present. Yellow pigment, soluble in KOH, present in the gill trama.

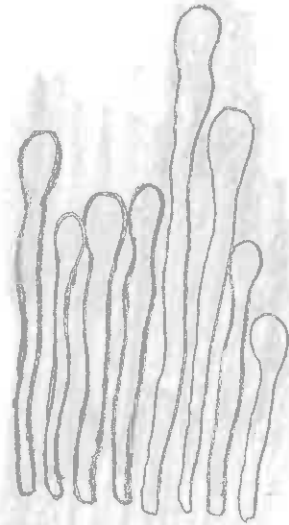
The spores resemble those of Pholiota; at first they appear smooth, but closer examination shows them to be minutely wrinkled and without a germ pore.

*Gymnospilus aurantiacus* sp. nov.

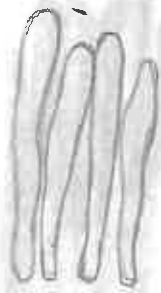
Bigelow - 3322 - Type



Pl. - x 1000



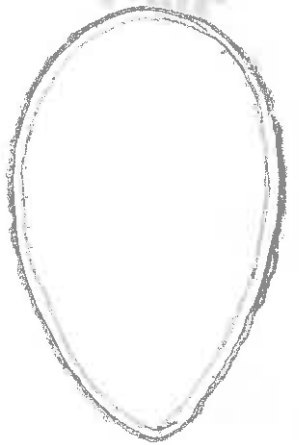
Ch. - x 1000



Pileo - x 1000



Caulo - x 1000



Spores - x 8000

Sm-55807 GYMNOPIIUS AURANTIOPHYLLUS sp. nov.

PHOTO

Cespitose on sawdust, Grants Pass, Oregon, Nov. 18, 1956

Notes by Smith

Pileus 4-8 cm broad, broadly convex with an inrolled ~~to incurved~~ margin, expanding to plane, or with a very slight umbo, color "burnt sienna" young, in age ferruginous on disc and margin ochraceous buff, margin at first with a few fibrils from veil but soon glabrous, in age often with minute moist darker rusty spots (glabrous under a lens); flesh watery olive-buff <sup>when</sup> moist, yellowish <sup>when</sup> faded, taste bitter.

Lamellae adnexed to subdecurrent, "light buff" to "warm buff," finally rusty from spores, close, broad, edges often eroded, staining rusty orange where bruised.

Stipe 6-10 cm long, 5-8 mm thick, equal, pallid-orange-buff, ~~but~~ at first paler from whitish veil fibrils; Veil leaving a slight evanescent zone, base white mycelioid, not darker, rhizomorphs numerous.

Notes by Hesler

Spores 6.5-8.5 x 4-5  $\mu$ , ellipsoid, slightly inequilateral, ferruginous in KOH, dextrinoid, no germ pore. Basidia 25-30 x 5-6  $\mu$ , 4-spored. Pleurocystidia 25-31 x 5-6  $\mu$ , ventricose; cheilocystidia 28-48 x 4-7  $\mu$ , flask-shaped, sub-capitate to non-capitate. Gill trama of subparallel hyphae, 4-9  $\mu$  broad; subhymenium not distinctive. Pileus trama of radial <sup>hyphae.</sup> ~~slightly interwoven~~. Cuticle a zone of

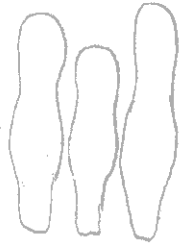
repent, brown, incrustated hyphae; pileocystidia none.

Caulocystidia 36-62 x 4-5  $\mu$ , filamentous, subcapitate or non-capitate, in tufts. Clamp connections present. *Yellow pigment, soluble in KOH, present in gill trama.*

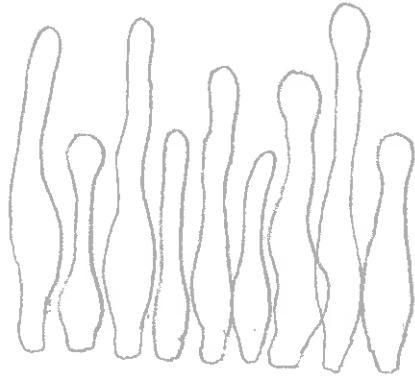
This is distinguished by its pileus color when young, olive-buff context, rusty-orange stained gills where bruised, and caulocystidia in tufts. It is near <sup>S.</sup> penetrans ~~var. penetrans~~ in which the pileus is yellow to golden, gills rusty spotted; and also near <sup>S.</sup> ~~penetrans~~ var. hybridus in which the pileus is cinnamon-fulvous, then fulvous-orange, the flesh lurid-white to pale-isabelline, gills not spotted <sup>not</sup> ~~or~~ changing color, the caulocystidia in a palisade.

*Gymnopilus aurantiophyllus* sp. nov.

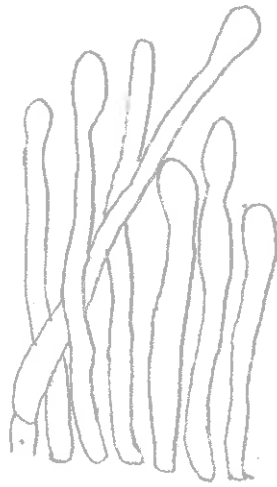
Sm - 55807



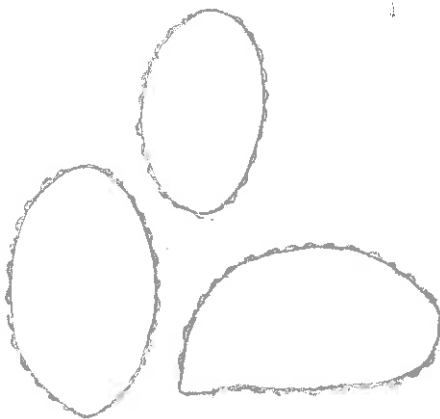
Gl - x 1000



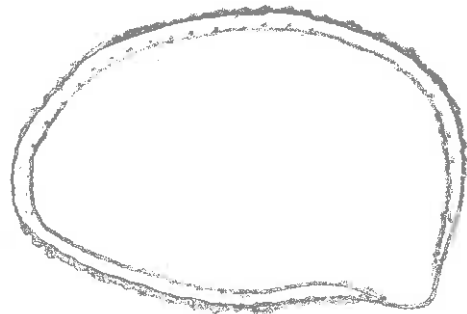
Ch - x 1000



Caulo - x 1000



Spores - x 4000



Spore - x 8000



AGARICUS (FLAMMULA) AUREOBRUNNEUS Berk. & Curt.

Coll. C. Wright, Fungi Cubensis Wrightiani (on loan from Kew, Jan. 1967).

TYPE

Spores 5.5-7.5 ~~4.5~~ x 4-4.5 (5)  $\mu$ , ellipsoid, obscurely inequilateral, verruculose, no germ pore, yellowish brown in KOH, <sup>non-dextrinoid</sup> (yellowish brown at first in Melzer's reagent, ~~no~~ change after <sup>48</sup> hours). Basidia 16-20 x 4-5  $\mu$ , (2) 4-spored. Pleurocystidia none found; basidioles 23-27 x 5-6  $\mu$ , clavate, rare; cheilocystidia 20-24 x 3-4  $\mu$ , flask-shaped, non-capitate, few. Gill trama subparallel. Pileus trama radial. Cuticle a zone of narrow, repent, brown hyphae, bearing some more or less erect brown, incrustated hyphae, with scattered, more or less cylindric or flask-shaped, colorless pileocystidia 22-26 x 4-5  $\mu$ . Caulocystidia 20-35 x 2-4  $\mu$ , slender flask-shaped, scattered, rare. Clamps not found.

*Agaricus (Rammler) aureobrunneus*

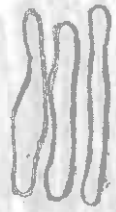
Type (from Kew)



Ch - x 1000



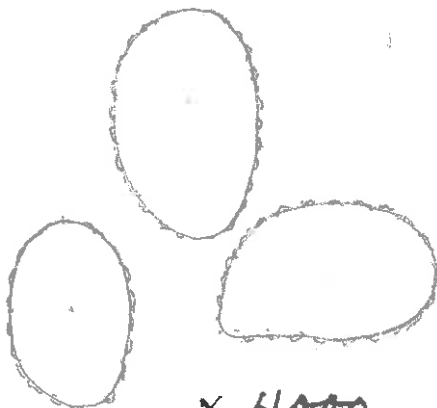
Basidia -  
x 1000 (brown)



Pileo -  
x 1000



Caulo - x 1000



x 4000

GYMNOPIILUS AUREOBRUNNEUS (B. & C.) Murr.

A fragment of the pileus in a packet marked "Type",  
from the N. Y. Bot. Garden

Type

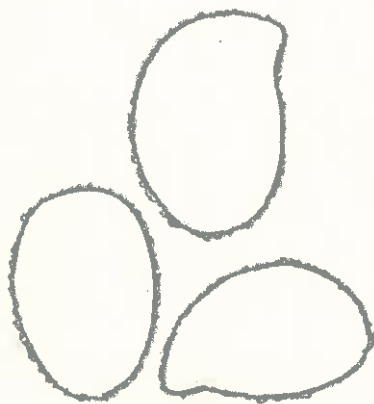
Spores 5.5-7.5 x 4-5 $\mu$ , ellipsoid in face view, slightly  
inequilateral in profile, wrinkled-rough, no germ-pore.  
Basidia 23-26 x 4-5 $\mu$ , 4-spored. Pleurocystidia and  
cheilocystidia none<sup>?</sup>. Gill trama loosely interwoven, hyphae  
6-20 $\mu$  broad. Pileus trama loosely interwoven. Cuticle a  
thick zone of brown, repent hyphae. Clamp connections present.  
Pileus and gill trama reddish brown in KOH; dark brown in  
Melzer's reagent. Caulocystidia (no stipe material in the  
packet).

lack of ch, and interwoven pileus trama  
excludes it from aureobrunneus.

may be an  
error! May  
not be type.

*Gymnopilus aureobrunneus* (B+C) Murr.

Type (from N.Y. Bot. Garden)



Spores - x 4000

Dennis-412

GYMNOPIIUS AUREOBRUNNEUS (B.&C.) Murr. (?)

On Cocos, Trinidad, Nov. 30, 1949 (from Kew).

Spores (5.5) 6-8 (8.5) x 4.5-5  $\mu$ , ellipsoid, slightly inequilateral, verruculose, no germ pore, ferruginous in KOH, yellow brown in Melzer's (at first, and also after one hour). Basidia 20-25 x 4-5  $\mu$ , 2-4-spored. Pleurocystidia 20-24 x 5-6  $\mu$ , ventricose; cheilocystidia 17-25 x 4-5  $\mu$ , flask shaped, subcapitate; Gill trama of subparallel hyphae, 6-18  $\mu$  broad. Pileus trama of loosely interwoven hyphae. Cuticle not greatly differentiated, bearing tufts (scales) of clavate, colorless or brown pileocystidia, 50-72 x 6-13  $\mu$ . Caulocystidia 30-52 x 5-9  $\mu$ , ventricose to subfusoid, brownish. Clamp connections present.

Differs from the type in presence of pleurocystidia, slightly larger spores, and different pileocystidia.

Dennis-412

GYMNOPIIUS AUREOBRUNNEUS (B.&C.) Murr.

On Cocos, Trinidad, Nov. 30, 1949 (from Kew).

Spores (5.5) 6-8 (8.5) x 4.5-5  $\mu$ , ellipsoid, slightly inequilateral, verruculose, no germ pore, ferruginous in KOH, yellow brown in Melzer's (at first, and also after one hour). Basidia 20-25 x 4-5  $\mu$ , 2-4-spored. Pleurocystidia 20-24 x 5-6  $\mu$ , ventricose; cheilocystidia 17-25 x 4-5  $\mu$ , flask shaped, subcapitate; Gill trama of subparallel hyphae, 6-18  $\mu$  broad. Pileus trama of loosely interwoven hyphae. Cuticle not greatly differentiated, bearing tufts (scales) of clavate, colorless or brown pileocystidia, 50-72 x 6-13  $\mu$ . Caulocystidia 30-52 x 5-9  $\mu$ , ventricose to subfusoid, brownish. Clamp connections present.

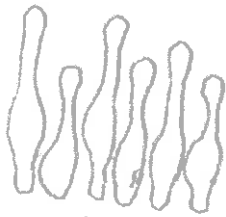
Differs from the type in presence of pleurocystidia, slightly larger spores, and different pileocystidia.

*Gymnopilus aureobrunneus* ?

Dennis 412 (Trinidad)



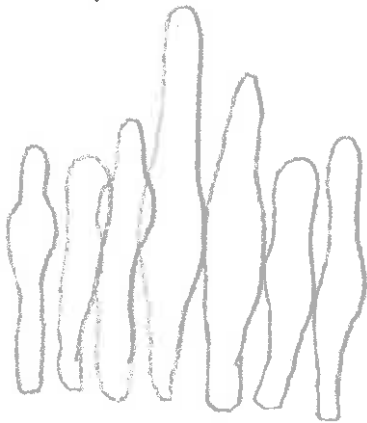
Pl - x 1000



ch - x 1000



Basidios - x 1000



Caulo - x 1000



Piles (brownish  
or colorless) - x 1000

Kew-3339

GYMNOFILUS AUREOBRUNNEUS

From Trinidad, R.E.D. Baker-1555, from herb. Hort. Bot. Reg. Kew. (no date). Label in Dennis' handwriting.

Spores 5.5-7.5 x 4-4.5  $\mu$ , ferruginous in deposits, ellipsoid, slightly inequilateral, verruculose, ferruginous in KOH, reddish or reddish brown in Melzer's reagent at once (dextrinoid). Basidia 18-24 x 5-6  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 18-26 x 4-5  $\mu$ , flask-shaped, not capitate. Gill trama of subparallel hyphae, 4-8  $\mu$  broad. Pileus trama of radial hyphae. Cuticle of repent hyphae, bearing brown, incrustated epicuticular hyphae. Pileocystidia and caulocystidia none. Clamp connections present.

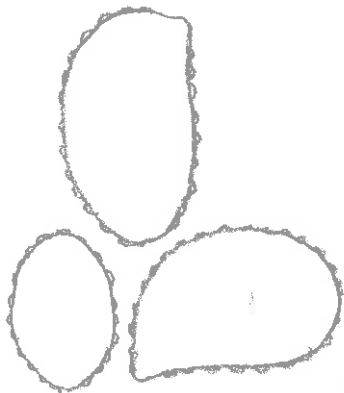
This may not be aureobrunneus: it has generally smaller, ~~spores~~ dextrinoid spores, lacks pileo- and caulocystidia. Cf. Bryophilus + earlei.



*Gymnopilus aureobrunneus*  
Kew - 3339



Ch - x 1000



Spores - x 4000

GYMNOFILUS AUREOBRUNNEUS (B. & C.) Murr.

Singer (Sydowia 9:409) finds many of the cheilocystidia capitate to subcapitate, but non-capitate in many others.

The type, Singer says, differs very little from G. chrysopellus, in which a minority of the cheilocystidia are subcapitate. He believes that, at present, it is best to refrain from synonymizing the various species involved until further studies made.

2  
1  
u  
GYMNOPIIUS AUREOBRUNNEUS (B. & C.) Murr.

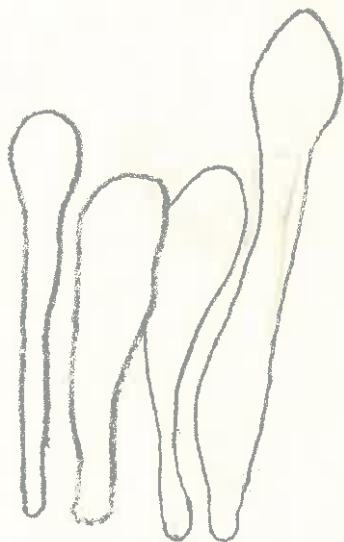
On royal palm stump, Candelaria, Cuba, Sept. 16, 1904,  
leg. Earle and Wilson 202

(Not the Type)

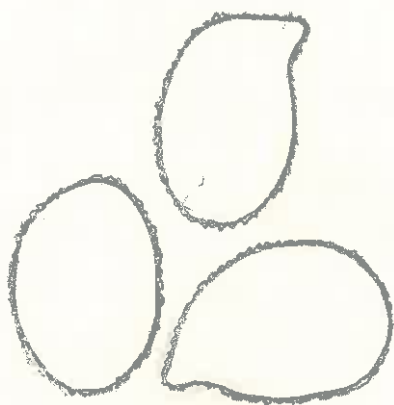
Spores 5.5-7.5 x 4-5 $\mu$ , ellipsoid in face view, slightly  
inequilateral in profile, wrinkled-rough, germ-pore none.  
Basidia 22-25 x 5 $\mu$ , 4-spored. Pleurocystidia and cheilocystidia  
none. Gill trama loosely interwoven, hyphae 7-22 $\mu$  broad.  
Pileus trama loosely interwoven. Cuticle a zone of brown,  
repent hyphae, the zone 20-35 $\mu$  thick. Clamp connections  
present. Caulocystidia 48-70 x 10-13 $\mu$ , clavate-capitate,  
brown. Pileus and gill trama reddish brown in KOH; dark brown  
in Melzer's reagent.

Gymnopilus avicebrunneus <sup>(B+C.)</sup> Murr.

from Cuba - Leg. Earle + Wilson No. 202.  
~~Hyph~~ (Not the Type)



Basidia - x 1000



Spores - x 4000

GYMNOPIIUS BELLULOIDES (Kauff.)

(Naucoria belluloides Kauff.)

SEE: G. picreus

Gymnopilus bellulus (Pk.) Murr.

Type

A re-study of Peck's type was made Jan/ 22, 1975, and it was found to agree with my description in Mycologia Mem. No. 3, as follows:

Spores 3.5 - 5 x 2.5 - 3.5 $\mu$ , ellipsoid, verrucose.

Pl. 24-36 x 4-6 $\mu$ ; ch 18-25 x 3-5(7) $\mu$ . (see drawings)

Other characters as published.

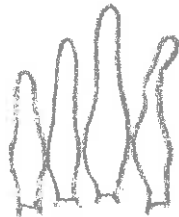
*Gymnopilus bellulus* (Pk.) Murr.

Type of *Agaricus bellulus* Pk.

Re-study of Jan. 22, 1975



Pl x 1000



Sh x 1000

[Spores as in *Mycologia* Mem. No. 3]

Not bellulus, which has spores 4-5.5 x 2.7-3.5  $\mu$ .  
Labels mixed? near liquiritiae!

GYMNOPIIUS (NAUCORIA) BELLULUS (Pk.) Murr. ?\*

Type

On mossy hemlock trunk, Lowville, N.Y., leg. Peck, September

Spores 8-9.5 x 5-5.5  $\mu$ , ellipsoid to ovoid in face view, inequilateral in profile, rough (wrinkled-warty), no germ pore. Basidia 22-26 x 5-6  $\mu$ , 4-spored. Pleurocystidia 24-27 x 6-7  $\mu$ , cylindrical-subventricose, few, inconspicuous; cheilocystidia 28-33 x 4-8  $\mu$ , ventricose to slender-flasked-shaped, usually with a subcapitate neck. Gill trama subparallel, hyphae 2-4  $\mu$  broad. Pileus trama radial. Cuticle of brown hyphae, with more or less erect tufts, these slightly incrustated. Clamp connections not found.

Spores of type larger than given by Murrill & Kauffman, who give 5-5.5 x 3  $\mu$ , smooth. Also, Tenn-10136, a collection named by Smith, Michigan, has spores 4-5.5 x 3-3.5  $\mu$ , warty.

\* Smith (letter, Dec. 7, 1964) says the type from Lowville had spores 5-5.5 x 2.5-3  $\mu$  when I measured them back in the "thirties", and this was true when Harding studied them for his thesis on Gymnopilus. Smith suggests that the labels got changed.



7. 70.

GYMNOPIIUS (NAUCORIA) BELLULUS (Pk.) Murr.

Type

On mossy hemlock trunk, Lowville, N.Y., leg. Peck, September

Spores 8-9.5 x 5-5.5  $\mu$ , ellipsoid to ovoid in face view, inequilateral in profile, rough (wrinkled-warty), no germ pore. Basidia 22-26 x 5-6  $\mu$ , 4-spored. Pleurocystidia 24-27 x 6-7  $\mu$ , cylindric-subventricose, few, inconspicuous; cheilocystidia 28-33 x 4-8  $\mu$ , ventricose to slender-flasked-shaped, usually with a subcapitate neck. Gill trama subparallel, hyphae 2-4  $\mu$  broad. Pileus trama radial. Cuticle of brown hyphae, with more or less erect tufts, these slightly incrustated. Clamp connections not found.

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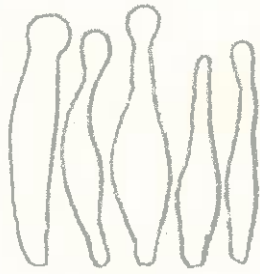
The above collection may be liquiritiae.

*Gymnopilus (Naucoria) bellulus* (Pk.) ?  
1

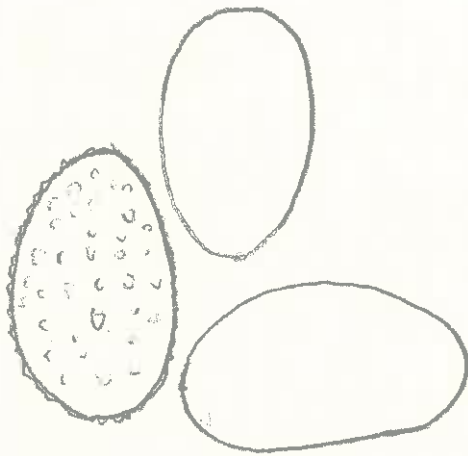
~~Type~~ ??



Sp - x 1000



Ch - x 1000



Spores - x 4000

GYMNOPIIUS BELLULUS (Pk.) Murr.

Specimen from N.Y. Botanical Garden, examined January 16, 1967, with a note (label) which reads: "Fragments of Albany types given to Ellis and others by Peck ~~and others.~~"

\* \* \*

Spores 7.5-10 x 5-6.5(7)  $\mu$ , verruculose. Pleurocystidia and cheilocystidia present. Caulocystidia none.

This can not be G. bellulus, which has much smaller spores (4-5.5 x 2.6-3.3  $\mu$ ) and no pleurocystidia; it may be G. liquiritiae or near that.

This is same as, or similar to, the supposed type from Albany. The labels of Peck's collections may have been mixed; the collection I examined, <sup>erroneously marked</sup> as the "type", also had large spores (8-9.5 x 5-5.5  $\mu$ ), and had both pleurocystidia and cheilo- cystidia.

GYMNOPIIUS aff. BELLULUS (Pk.)

Sydowia 11:366. 1957

Describes the above, from Mexico, M1587 which is deposited in Univ. of Michigan Herbarium.

Says it has broader spores (4.2-5.7 x 3.2-4.2  $\mu$ ) than bellulus, and mild taste.

Further says that his note in Lilloa 22: is incorrect.

GYMNOPIIUS aff. BELLULUS (Pk.)

Sydowia 11:366. 1957

Describes the above, from Mexico, M1587 which is deposited in Univ. of Michigan Herbarium.

Says it has broader spores (4.2-5.7 x 3.2-4.2  $\mu$ ) than bellulus, and mild taste.

Further says that his note in Lilloa 22: is incorrect.

Harding-387

GYMNOPIIUS BELLULUS

On conifer wood, near Upper Tahquamenon Falls, Michigan,  
September 11, 1949.

Spores 3.8-5.2 x 2.8-3.5  $\mu$ . Otherwise typical.

Tamm-

10136

GYMNOPIIUS BELLULUS (Pk.) Murr.

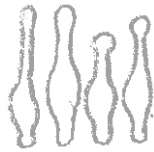
On old logs, Stockbridge, Mich., leg. and det. A.H. Smith  
(33-1119), Oct. 10, 1933.

(Small specimens; material sparse)

Spores 4-5.5 x 2.7-3.5  $\mu$ , ellipsoid or subovoid, rough-warty, ferruginous in 2% KOH, reddish brown in Melzer's reagent. Pleurocystidia none; cheilocystidia 14-20 x 3-5  $\mu$ , bottle shaped, neck slender, capitate or subcapitate. Pilocystidia similar to cheilocystidia; none like those reported by Harding (saccate-stalked). Caulocystidia none.

*Gymnopilus bellulus* (Pk) Murr.

No. 10136  
(Sm - 331119)



ch - x 1000



Walters - 110

GYMNOPIIUS BELLULUS

On hemlock, Cleveland, Ohio, June 2, 1946.

Spores 4-5 x 2.8-3.4  $\mu$ .

SM - 288

GYMNOPIIUS BELLULUS

On conifer log, Newcomb, New York, August 30, 1934.

Spores 4-5 x 3-3.5  $\mu$ .

Sargent - 713

GYMNOPIIUS BELLULUS (Pk.) Murr.

On cottonwood, 7-Devils Recreation Area, Idaho, leg. - det. D. Sargent,  
Aug. 19, 1962.

Spores 4-5.5 x 2.8-3.5  $\mu$ , dextrinoid.

Bigelow-4460

GYMNOPIIUS BELLULUS

Gregarious on rotten log, near Guerette, Maine, Aug. 28, 1956.

Notes by Bigelow

Cap more or less 1 cm broad, dry, glabrous, ferruginous.

Gills orange-yellow, adnate-seceding, broad.  
*medium*  
^

Stipe concolorous with cap, 1.5 cm x 2 mm.

Notes by Hesler

Spores 4-6 x 2.5-3.5  $\mu$ , ellipsoid to ovoid or somewhat pip-shaped, verrucose, ferruginous in mass, slowly dextrinoid. Other characters usual.

Bigelow-4547

GYMNOFILUS BELLULUS

On conifer log, near Guerette, Maine, August 30, 1956.

(Label says: see label of 4538, which is picreus).

Spores 4-5.5 x 2.5-3.5  $\mu$ , ellipsoid, ovoid, or pip-shaped, verrucose, dextrinoid. Pleurocystidia and cheilocystidia usual. Pileocystidia brown, clavate.

Imshang-4784

GYMNOPIIUS BELLULUS

On wood, Fall River, L'Anse, Michigan, September 9, 1949

Notes by Imshang

Pileus dark reddish brown, convex. Context thin. Lamellae yellowish cinnamon, spotted darker. Stipe sordid-yellow-brown.

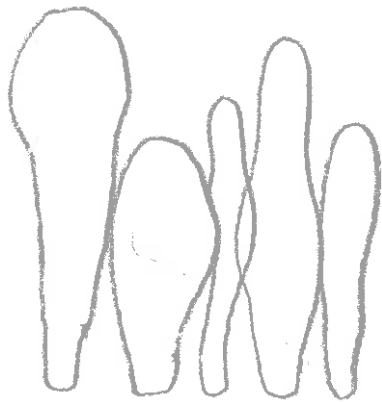
Notes by Hesler

Spores 4-5.5 x 2.7-3.2  $\mu$ , ellipsoid, dextrinoid at once. Caulocystidia none. Pileocystidia 34-50 x 5-15  $\mu$ , clavate, ventricose, more or less in tufts, brown.

Otherwise as in Sm-47324.

*Gymnopilus bellulus*

~~Sm~~ Smshang - 4784



Piles - x 1000

Thiers - 11610      GYMNOFILUS BELLULUS (Pk.) Murr.

Gregarious on conifer log, Boulder Creek, near Pollock Mt., Idaho, Sept. 3, 1964.

Spores 3.5-5 x 2.7-3.5  $\mu$ , dextrinoid.



Thiers - 18432      GYMNOPIIUS BELLULUS (Pk.) Murr.

Gregarious on conifer log, Jackson State Forest, Mendocino, Calif., Jan. 8, 1967.

Spores 3.5-4.7 x 2.5-3.2  $\mu$ , dextrinoid.

SM - 33-898

GYMNOPIIUS BELLULUS

On conifer wood, Munising, Mich., Sept. 7, 1933.

Spores 3.8-5.3 x 2.7-3.5  $\mu$ , dextrinoid.

SM - 3539

GYMNOPIIUS BELLULUS

On spruce log, Lake Tahkenitch, Oregon, Nov. 18, 1935.

Spores 4-4.6 x 2.8-3.6  $\mu$ , dextrinoid.

SM - 9395

GYMNOPIIUS BELLULUS

On redwood, Orick, Calif., Dec. 4, 1937.

Spores 4-5 x 2.7-3.5  $\mu$ . (Collection mixed; another species in the box with bellulus.)

SM - 10876

GYMNOPIIUS BELLULUS

On beech? Grassy Patch, Great Smoky Mountains National Park, Tenn.,  
Sept. 3, 1938.

Spores 3.5-4.5 x 3-3.7  $\mu$ , dextrinoid.

SM - 13961

GYMNOPIIUS BELLULUS

On conifer log, Lake Crescent, Wash., June 2, 1939.

Spores 4.3-5.5 x 2.6-3  $\mu$ , dextrinoid.

SM - 21440

GYMNOPIIUS BELLULUS

On log, Rees' Bog, Cheboygan Co., Mich., June 21, 1946.

Spores 3.7-4.8 x 3-3.8  $\mu$ , dextrinoid.

SM - 26236

GYMNOPIIUS BELLULUS

On conifer log, Burt Lake, Mich., Aug. 8, 1947.

Spores 3.5-5 x 3-3.5  $\mu$ , dextrinoid.



Sm-41129

GYMNOPIIUS BELLULUS

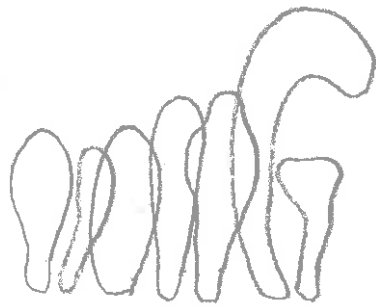
On conifer log, Green Lake, MRNP (Washington), Oct. 17, 1952

Spores 3.5-5 x 3-3.6  $\mu$ , ellipsoid, slightly inequilateral, ferruginous in KOH, dextrinoid (1/2 at first, all after one hour). Pleurocystidia 17-22 x 3-5  $\mu$ , ventricose; cheilocystidia 18-21 x 3-4  $\mu$ , flask shaped, capitate. Caulocystidia 20-37 x 5-10  $\mu$ , scattered, brownish, variable, (spathulate, clavate, ellipsoid, clavate-subcapitate).

Otherwise similar to Sm-47324.

*Gymnopilus bellulus*

Sm - 41129



Caulo - x 1000

Sm-41206

GYMNOPIIUS BELLULUS

PHOTO

On conifer log, Green Lake, Mt. Rainier Nat'l. Park,  
Washington, October 19, 1952.

Spores 3.5-5 x 2.8-3.6  $\mu$ . Otherwise typical.

Sm-42215

GYMNOPIIUS BELLULUS

Tahquamenon, Michigan, August 17, 1953

Spores 3.5-5 x 3-3.5  $\mu$ . Otherwise typical.

Sm-47324

GYMNOPIIUS BELLULUS

Papoose Creek, 7-Devils, Idaho, September 3, 1956

Spores 4-5.5 x 2.8-3.5  $\mu$ , ellipsoid, slightly inequilateral, verruculose, ferruginous in KOH, promptly dextrinoid in Melzer's reagent. Basidia 17-21 x 4-5  $\mu$ , 4-spored. Pleurocystidia 20-24 x 5-6  $\mu$ , ventricose, scattered; cheilocystidia 20-26 x 3-4  $\mu$ , slender-flask-shaped, capitate, numerous. Gill trama of subparallel hyphae, 5-10  $\mu$  broad; subhymenium of narrow hyphae. Pileus trama radial. Cuticle of brown, repent, radially disposed hyphae, bearing bundles of brown, incrustated hyphae. Pileocystidia 28-35 x 10-15  $\mu$ , clavate, brownish, usually in tufts. Caulocystidia none. Clamp connections none.

Yellow pigment, soluble in KOH,  
is present in the gill trama.

but see Sm-41129.

*Gymnophilus bellulus*

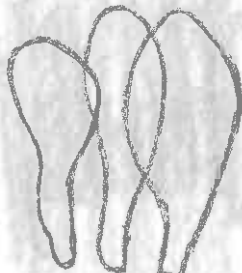
Sm-47324



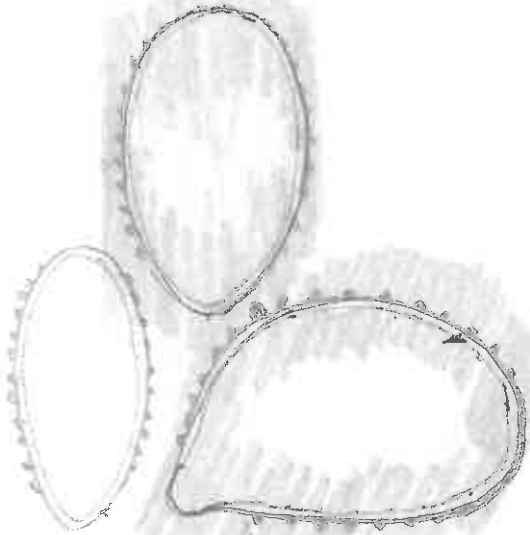
Pl - x 1000



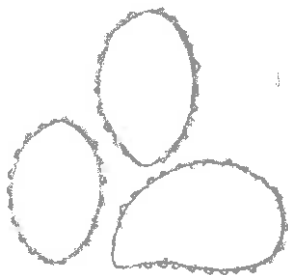
Ch - x 1000



Pileo - x 1000



Spores - x 8000



Spores - x 4000

Caulo - see Sm-41129

Sm-47934

GYMNOPIIUS BELLULUS

On conifer log, Preston, Wash., Sept. 26, 1954

Spores 3.5-5.5 x 2.5-3.5  $\mu$ , ellipsoid, inequilateral, verruculose, pale yellowish brown in KOH, yellowish brown in Melzer's reagent even when treated with  $\text{NH}_4\text{OH}$ . Pleurocystidia ventricose; cheilocystidia flask-shaped, capitate; pileocystidia clavate. (Spores dextrinoid in other collections).

Sm-49255

GYMNOPIIUS BELLULUS

On conifer log, \_\_\_\_\_ River (illegible), Wash., Oct. 19, 1954

Spores 4-5 x 3-3.5  $\mu$ , yellowish brown in KOH, about  
1/2 dextrinoid at once. Pleurocystidia and cheilocystidia  
usual.



Sm-50357

GYMNOPIIUS BELLULUS

On conifer wood, Trout Lake, <sup>Colo.</sup> Sept. 12, 1955

Spores 4-5.5 x 2.7-3.3  $\mu$ , verrucose, yellowish brown  
in KOH, dextrinoid.

Sm-50359

GYMNOPILUS BELLULUS

*Colo.*

On conifer, Trout Lake, <sup>^</sup>Sept. 12, 1955

Spores 4-5.5 x 3-3.8  $\mu$ , verrucose, ferruginous to yellowish brown in KOH, reddish brown (dextrinoid) in Melzer's reagent.

Sm-55146

GYMNOPIIUS BELLULUS

On redwood, Humboldt State Park, Calif., Nov. 30, 1956

Spores 4.5-5.5 x 3-3.5  $\mu$ , ferruginous in KOH, dextrinoid  
at once.

Sm-56337

GYMNOPIIUS BELLULUS

On conifer wood, Prairie Creek, Calif., Dec. 5, 1956

Notes by Smith

Cap orange-brown. Gills yellow. Stipe red-brown below, yellow above.

Notes by Hesler

Spores 4-5.5 x 2.8-3.7  $\mu$ , verrucose, ferruginous in KOH, slightly dextrinoid at once.

Sm-56507

GYMNOPIILUS BELLULUS

Prairie Creek State Park, Orick, Calif., Dec. 9, 1956

Notes by Smith

Cap "Kaiser brown," glabrous, naked. Taste slowly bitter. Gills ochraceous, becoming rusty cinnamon.

Notes by Hesler

Spores 4-5.5 x 3-3.8  $\mu$ , verrucose, ferruginous in KOH, dextrinoid at once.

Sm-56601

GYMNOPIIUS BELLULUS

On redwood stunp, Trinidad, Calif., Dec. 11, 1950

Gills yellow (Smith).

Spores 3.5-5 x 3-3.6  $\mu$ , verrucose, yellowish brown  
in KOH, dextrinoid.

Sm-56704

GYMNOFILUS BELLULUS

On spruce, Patricks (Point ?), Calif., Dec. 15, 1956

Gills yellow (Smith).

Spores 4-5.5 x 3-3.5  $\mu$ , verrucose, yellowish brown  
in KOH, dextrinoid.

Sm-56751

GYMNOPIIUS BELLULUS

On conifer logs, Trinidad, Calif., Dec. 11, 1956

Gills yellow; no veil when young (Smith).

Spores 4-5.5 x 3-3.6  $\mu$ , ferruginous in KOH, dextrinoid.



Sm-56924

GYMNOPIIUS BELLULUS

On redwood, Prairie Creek Park, Calif., Dec. 21, 1956

Gills yellow (Smith).

Spores 3.5-5.5 x 3.2-4  $\mu$ , verrucose, ferruginous in  
KOH, dextrinoid.

Sm-57904

GYMNOPIIUS BELLULUS

On conifer log, Rees Bog, Sept. 4, 1957

Spores 4-5.4 x 3-3.6  $\mu$ , verrucose, ferruginous,  
dextrinoid.

Sm-63388

GYMNOPIIUS BELLULUS

On conifer stump, Wilderness Park, <sup>Mich,</sup> October 15, 1960  
^

Spores 4-6 x 2.8-3.5  $\mu$ , verrucose, dextrinoid.

Sm-70210

GYMNOPIIUS BELLULUS

On conifer log, Salmon River, Idaho, Sept. 6, 1964

Spores 3.8-5 x 3-3.5  $\mu$ , dextrinoid.

Sm-70215

GYMNOFILUS BELLULUS

On conifer log, Salmon River (French Creek Grade), <sup>Ida.</sup> Sept. 6, 1964  
^

Spores 3.5-5 x 2.5-3.5  $\mu$ , verrucose, dextrinoid.

Sm-33-1119

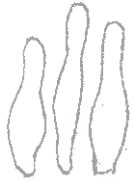
GYMNOPIIUS BELLULUS

On old logs, Stockbridge, Mich., Oct. 10, 1933.

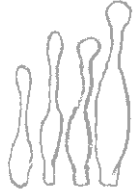
Spores 4-5.5 x 3-3.7  $\mu$ , ellipsoid, verruculose, ferruginous in KOH, majority dextrinoid only after 30 min. Pleurocystidia 18-23 x 4-5  $\mu$ , ventricose; cheilocystidia 16-24 x 3-5  $\mu$ , flask-shaped, capitate. Gill trama of subparallel hyphae, 4-10  $\mu$  broad. Pileus trama of radial hyphae. Cuticle of brown, repent hyphae, at times incrustated. No pileocystidia found. Caulocystidia 20-40 x 4-6  $\mu$ , ventricose, or flask-shaped and capitate, scattered (absent in some sections). *Yellow pigment, soluble in KOH, present in gill trama.*

*Gymnopilus bellulus*

Smith 33-1119



Gl - x 1000



Ch - x 1000



Caulo - x 1000

74232

Sm-~~(no number)~~

GYMNOPIIUS BELLULUS

On conifer wood, Lake Tahkenitch, Oregon, Nov. 19, 1935

Spores 3.8-5 x 3-3.5  $\mu$ , dextrinoid.



40094

GYMNOPIIUS

[*aeruginosus* forma?]

On soil and wood-debris, Madison, Wisconsin, leg. H.H. Burdsall,

June 2, 1976.

Notes by Burdsall

Pileus cespitose, 4-17 cm broad, convex, soon irregularly shaped from pressure of other caps, dry, disc at times rimulose, buttons "ocher red" to "prussian red", fading to near "cartridge buff", with fibrillose squamules or warts, tips of fibrils dark brown, margin inrolled and staining "purplish lilac" to "light perilla purple", or at times, when handled, staining green to blue-green. Context near "purplish lilac", on standing becoming "light perilla purple", the stains observed mainly near the gills; odor not distinctive, taste bitter.

Lamellae decurrent, at first "baryta yellow" to "warm buff", becoming orange buff, broad (up to 10 mm), subdistant.

Stipe 5-10(15) cm long, 10-40(60) mm thick, thickened and connate at base, in larger basidiocarps the stipe thicker at apex than at base, apical region "sky gray" to "light alice blue", elsewhere (below) the colors "deep brownish vinaceous" to "vinaceous brown", the ground color nearly white, with yellow tints and streaks, dry; stipe flesh white or yellowish, with purple colors near the stipe cuticle. Veil heavy as cortinate, annular remnants on the stipe and forming a fugacious superior annulus.

Spores in light deposits "capucine orange", in heavy deposits "cinnamon rufous".  $\text{FeSO}_4$  on cap trama green, especially near the gills; on stipe slightly greenish tint; on gills, greenish. KOH on cap trama, slight greenish tint as in stipe, almost no change in stipe trama.

Notes by Hesler

Spores 6-8 x 4.5-5  $\mu$ , inequilateral in profile, ellipsoid in face view, minutely rugulose, no germ-pore, yellowish in KOH, dextrinoid (in Melzer's reagent). Pleurocystidia none found; cheilocystidia 18-30 x 4-6  $\mu$ , ventricose, apices more or less capitate or at times equal. Gill trama of rather broad, subparallel hyphae. Pileus cuticle of dry, repent hyphae. Pileus trama of broad, loosely interwoven hyphae.

GYMNOPIIUS BRAENDLEI (Pk.)

Coll. F. J. Braendle, Washington, D.C., November 1902

*Single or cespitose on decaying trunks.*

TYPE

Spores 6.5-8 x (4)4.5-5  $\mu$ , ellipsoid in face view, inequilateral in profile, verruculose, ferruginous in KOH, dextrinoid at once in Melzer's reagent, no germ pore. Basidia 25-30 x 5-6  $\mu$ , 4-spored. Pleurocystidia 22-33 x 6-7  $\mu$ , clavate-ventricose, inconspicuous; cheilocystidia 20-34 x 3-7  $\mu$ , ventricose to flask-shaped, subcapitate. Gill trama of subparallel to slightly interwoven hyphae, 7-22  $\mu$  broad; subhymenium not distinctive. Pileus trama loosely interwoven. Cuticle repent, not greatly differentiated; sections show mounds of colorless hyphae (the scales) in which the terminal elements are pileocystidia, 40-62 x 7-16  $\mu$ , clavate, cylindrical, to subventricose; no gelatinous hyphae. Clamp connections present. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent. Caulocystidia none.

GYMNOPIIUS BRAENDLEI (Pk.)

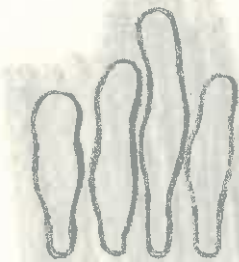
Coll. F. J. Braendle, Washington, D.C., November 1902

TYPE

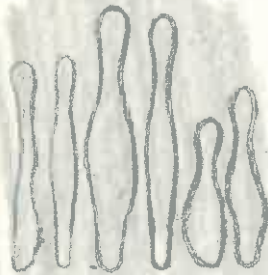
Spores 6.5-8 x (4)4.5-5  $\mu$ , ellipsoid in face view, inequilateral in profile, verruculose, ferruginous in KOH, dextrinoid at once in Melzer's reagent, no germ pore. Basidia 25-30 x 5-6  $\mu$ , 4-spored. Pleurocystidia 22-33 x 6-7  $\mu$ , clavate-ventricose, inconspicuous; cheilocystidia 20-34 x 3-7  $\mu$ , ventricose to flask-shaped, subcapitate. Gill trama of subparallel to slightly interwoven hyphae, 7-22  $\mu$  broad; subhymenium not distinctive. Pileus trama loosely interwoven. Cuticle repent, not greatly differentiated; sections show mounds of colorless hyphae (the scales) in which the terminal elements are pileocystidia, 40-62 x 7-16  $\mu$ , clavate, cylindric, to subventricose; no gelatinous hyphae. Clamp connections present. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent. Caulocystidia none.

*Gymnosporium (Fammula) braendlei* (Pk.)

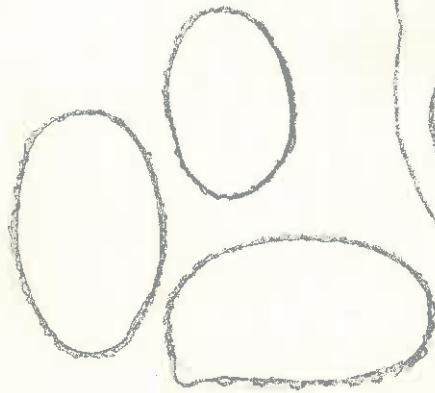
Type



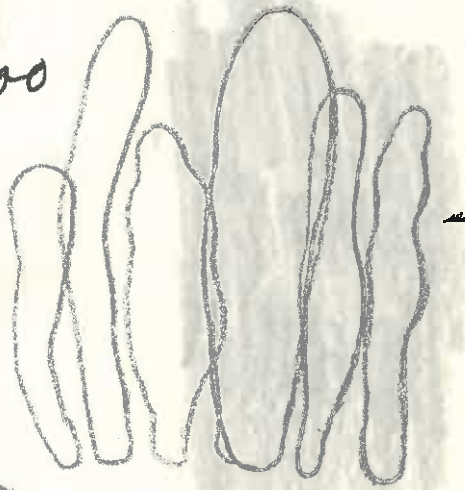
Pl. - x 1000



Ch. - x 1000



Spores - x 4000



Pleocystidia - x 1000

PHOLIOTA BRITTONIAE Murr.

On roots of living Eucalyptus tree, Cinchona, Jamaica,  
coll. Elizabeth G. Britton, October 1908.

TYPE

Spores 7-9.5 x 6-8  $\mu$ , broadly ellipsoid or ovoid, sometimes sublimoniform, coarsely tuberculate, occasionally slightly calyptrate, brown. Basidia unfit for study. Pleurocystidia and cheilocystidia similar, 20-33 x 4-5  $\mu$ , cylindric to subventricose, at times subcapitate, colorless or brown, inconspicuous. Pileus trama badly shrunken, unfit. Cuticle repent, bearing brown hyphae — the fibrillose scales.

Material old and hard, difficult to section.

Singer calls it Gymnopilus pampeanus (Speg.) Sing., but the coarsely tuberculate, calyptrate spores suggest Galerina.

Unfit; material poor, & I am unable to establish its relationship

PHOLIOTA BRITTONIAE Murr.

On roots of living Eucalyptus tree, Cinchona, Jamaica,  
coll. Elizabeth G. Britton, October 1908.

TYPE

Spores 7-9.5 x 6-8  $\mu$ , broadly ellipsoid or ovoid,  
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Pleurocystidia and cheilocystidia similar, 20-33 x 4-5  $\mu$ ,  
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Cuticle repent, bearing brown hyphae — the fibrillose  
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but the coarsely tuberculate, calyptrate spores suggest  
Galerina.

~~Gymnopilus~~      ~~spectabilis?~~  
PHOLIOTA BRITTONIAE Murr.  
(Gymnopilus ?)

On roots of living Eucalyptus tree, Cinchona, Jamaica,  
coll. Elizabeth G. Britton, Oct. 1908.

No. 1122,

Type

Spores 7-9.5 x 6-8 $\mu$  broadly ellipsoid or ovoid, sometimes  
sublimoniform, coarsely tuberculate, warty, occasionally  
slightly calyptrate, ~~brown~~ <sup>corruugious</sup> Basidia unfit for study.

Pleurocystidia and cheilocystidia similar, 20-33 x 4-5 $\mu$ ,  
cylindric to subventricose, at times subcapitate, colorless  
or brown, inconspicuous. Pileus <sup>us</sup> trama badly shrunken,  
unfit. Cuticle repent, bearing brown hyphae—the fibrillose  
scales.

Material old and hard, difficult to section.

? Probably a Cortinarius? or Galericina



GYMNOFILUS BRYOPHILUS Murr.

On decayed mossy log, Port Antonio, Jamaica, leg. Earle,  
November 24, 1902, No. 613.

TYPE

Spores 5-7 x 4-4.5  $\mu$ , ellipsoid to subvoid in face view, slightly inequilateral in profile, verruculose, no germ pore, ferruginous in KOH, ~~(dextrinoid)~~. Basidia 23-27 x 5-6  $\mu$ , 4-spored. Pleurocystidia rare, buried, 21-27 x 4-7  $\mu$ , similar to cheilocystidia; cheilocystidia 22-30 x 4-8  $\mu$ , ventricose-capitate, inconspicuous. Gill trama of subparallel hyphae 5-14  $\mu$  broad; subhymenium not distinctive. Pileus trama radial. Cuticle a thick zone of dark-brown hyphae, bearing more or less erect epicuticular, brown, lightly incrustated hyphae. Clamp connections present. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent. Stipe densely fibrillose, the hyphae brownish, frequently with clamps, the terminal elements clavate, cystidioid (caulocystidia), 33-40 x 5-7  $\mu$ , clavate, apices at times mucronate.

GYMNOFILUS BRYOPHILUS Murr.

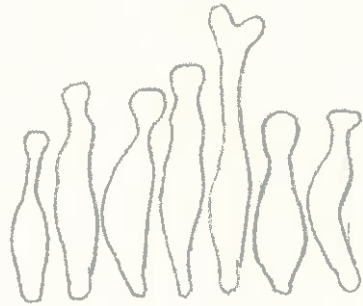
On decayed mossy log, Port Antonio, Jamaica, leg. Earle,  
November 24, 1902, No. 613.

TYPE

Spores 5-7 x 4-4.5  $\mu$ , ellipsoid to subovoid in face view, slightly inequilateral in profile, verruculose, no germ pore, ferruginous in KOH, ~~(dextrinoid)~~. Basidia 23-27 x 5-6  $\mu$ , 4-spored. Pleurocystidia rare, buried, 21-27 x 4-7  $\mu$ , similar to cheilocystidia; cheilocystidia 22-30 x 4-8  $\mu$ , ventricose-capitate, inconspicuous. Gill trama of subparallel hyphae 5-14  $\mu$  broad; subhymenium not distinctive. Pileus trama radial. Cuticle a thick zone of dark-brown hyphae, bearing more or less erect epicuticular, brown, lightly incrustated hyphae. Clamp connections present. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent. Stipe densely fibrillose, the hyphae brownish, frequently with clamps, the terminal elements clavate, cystidioid (caulocystidia).

*Gymnopilus bryophilus* Murr.

Type



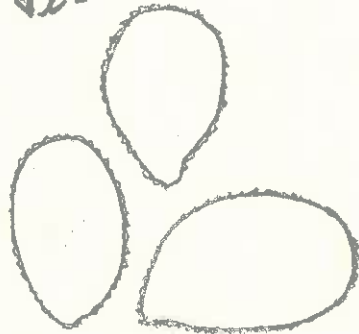
Ch - x 1000



Pl - x 1000



Carlo - x 1000



Spores - x 4000

*Cortinarius*, near C. phoeniceus.

GYMNOPIIUS CASTANEUS Murr.

On soil, in pine woods, Auburn, Ala., leg. F. S. Earle,  
Dec. 16, 1900

Type

Spores 7-8.5(9) x 3.5-4.5 $\mu$ , ellipsoid to subvoid in face view, slightly inequilateral in profile, wrinkled-rough, no germ-pore. Basidia 25-32 x 5-6 $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 22-33 x 2.5-5 $\mu$ , slender-filamentous or clavate, rare, inconspicuous (apparently often collapsed against gill-edge). Gill trama subparallel. Pileus trama interwoven, vesiculose. Cuticle repent, with epicuticular more or less colorless hyphae, the terminal element clavate-cystidioid. Clamp connections not distinguished. Pileus and gill trama dark-vinaceous in KOH, with a vinaceous pigment diffusing into the mount; blackish brown in Melzer's reagent.

This seems to be a Cortinarius, perhaps near C. phoeniceus.

GYMNOPIIUS CASTANEUS Murr.

On soil, in pine woods, Auburn, Ala., leg. F. S. Earle,  
Dec. 16, 1900

Type

Spores 7-8.5(9) x 3.5-4.5 $\mu$ , ellipsoid to subovoid in face view, slightly inequilateral in profile, wrinkled-rough, no germ-pore. Basidia 25-32 x 5-6 $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 22-33 x 2.5-5 $\mu$ , slender-filamentous or clavate, rare, inconspicuous (apparently often collapsed against gill-edge). Gill trama subparallel. Pileus trama interwoven, vesiculose. Cuticle repent, with epicuticular more or less colorless hyphae, the terminal element clavate-cystidioid. Clamp connections not distinguished. Pileus and gill trama dark-vinaceous in KOH, with a vinaceous pigment diffusing into the mount; blackish brown in Melzer's reagent.

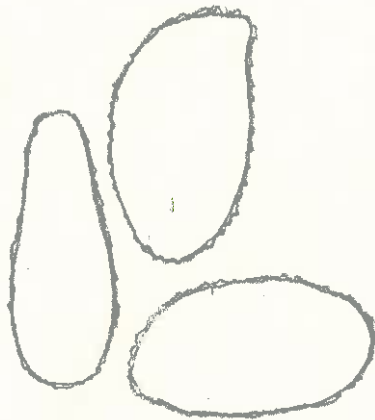
This seems to be a Cortinarius, perhaps near C. phoeniceus.

*Gymnopilus castaneus* Murr.  
(= *Cortinarius* ?)

Type



Ch - x 1000



Spores - x 4000

This can not be chrysopeplus;  
spores too large!

GYMNOPIIUS CHRYSOPELLUS (B. & C.) Sing.

Lilloa 25:369 - 371. 1951

(Description by Singer)

(Translation by Dana Griffin)

Pileus quite variable in size 10-11.5 cm, more often 2.2-5.5 cm broad, convex, at times subumbonate, finally depressed and plane, deep yellow, with erect scales, brownish hairy, orange ferruginous, disc concolorous, margin less fibrillose (fibrils more scattered and more appressed), or loosened as scales and then clearer yellow or gradually becoming, in age, a deeper orange or ferruginous, mixed, in center, with fibrils and appearing sub-squarrose to scaly, the margin sub-smooth, neither viscid nor notably hygrophanous. Context yellow, at first pale yellow in pileus, then deeper yellow and yellow then brownish in stipe, fleshy in pileus, fibrous in the stipe; taste mild or slowly subastringent, odor none or not distinctive.

Lamellae adnate or subadnate-subsinuate, or decurrent, yellow, then ochraceous, at times intensely orange ferruginous, <sup>broad</sup> (up to 12 mm wide, <sup>or</sup> 15 mm in large basidiocarp), subdistant or nearly close.

Stipe 9-<sup>85</sup>~~9.5~~ mm x 1.5-14 mm (usually 22-<sup>7mm</sup>42<sub>^</sub> x 2-8 mm), paler than pileus, usually pale-yellow, finally somewhat ferruginous or brown, appressed fibrillose, glabrescent, becoming striate below, and also striated continuations of the decurrent gills, equal or subequal, rarely attenuated

GYMNOPIIUS CHRYSOPELLUS (B. & C.) Sing.

Lilloa 25:369 - 371. 1951

(Description by Singer)

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Stipe 9-<sup>8.5</sup>~~8.5~~ mm x 1.5-14 mm (usually 22-<sup>7mm</sup>~~4.2~~ x 2-8 mm), paler than pileus, usually pale-yellow, finally somewhat ferruginous or brown, appressed fibrillose, glabrescent, becoming striate below, and also striated continuations of the decurrent gills, equal or subequal, rarely attenuated



upward, hollow. Ring usually obsolete, if present it is sub-arachnoid, apical and very fugacious, more often merely a veil forming a narrow, fibrillose zone at the apex, pale yellow.

Spores 6-9.5(10.3) x 4-6  $\mu$ , usually 6-7.5 x 4-4.8  $\mu$ , verrucose, no plage, deeply colored, no germ pore, ellipsoid. Basidia (1-2-3)4-spored, 16.5-27 x 7-9.5  $\mu$ . <sup>Quilo-</sup>~~Cheilo-~~cystidia" 17-28, 4.3-9.5  $\mu$ , ampullaceous, lageniform, apex 2-4  $\mu$  broad, 3.5-11.3  $\mu$  long, rarely slightly subcapitate; pseudoparaphyses at times numerous, vesiculose, and sometimes with a small, narrow mucro, 10-20 x 6.7-13  $\mu$ , occasionally with transitions approaching cheilocystidia, yellow in  $\text{NH}_4\text{OH}$ , Cuticle not hymeniform, brownish, incrustated. Clamp connections present.

On oak, mesquite, etc., rarely on conifers, singly or cespitose.

Large specimens on oak in Florida (smaller in Argentina). In some Argentine specimens the neck of cystidia is subcapitate.

Singer (Sydowia 9:410) states that the type at Kew and at Farlow are identical: the cheilocystidia are ampullaceous, non-capitate.

AGARICUS (FLAMMULA) CHRYSOPELLUS B. & C.

On dead wood, coll. Wright, Cuba

TYPE (from Kew)

Spores 5.5-7.5 x 3.8-4.7  $\mu$ , ellipsoid, slightly inequilateral, verruculose, ferruginous in KOH, in Melzer's yellowish brown at first, and remaining so after 48 hours (not dextrinoid), no germ pore. Basidia 20-24 x 4-5  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 21-26 x 4-5  $\mu$ , flask-shaped, non-capitate. Gill trama of subparallel hyphae, 3-6  $\mu$  broad. Pileus trama of radial hyphae. Cuticle of brown, repent hyphae, bearing epicuticular, brown, incrustated hyphae. Clamp connections present. Pileocystidia and caulocystidia none.

Microscopic characters much as in the type of ~~ANNIV~~ *chrysostrichus*,  
~~ANNIV~~, and they may be the same.

AGARICUS (FLAMMULA) CHRYSOPELLUS B. & C.

On dead wood, coll. Wright, Cuba

TYPE (from Kew)

Spores 5.5-7.5 x 3.8-4.7  $\mu$ , ellipsoid, slightly inequilateral, verruculose, ferruginous in KOH, in Melzer's yellowish brown at first, and remaining so after 48 hours (not dextrinoid), no germ pore. Basidia 20-24 x 4-5  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 21-26 x 4-5  $\mu$ , flask-shaped, non-capitate. Gill trama of subparallel hyphae, 3-6  $\mu$  broad. Pileus trama of radial hyphae. Cuticle of brown, repent hyphae, bearing epicuticular, brown, incrustated hyphae. Clamp connections present. Pileocystidia and caulocystidia none.

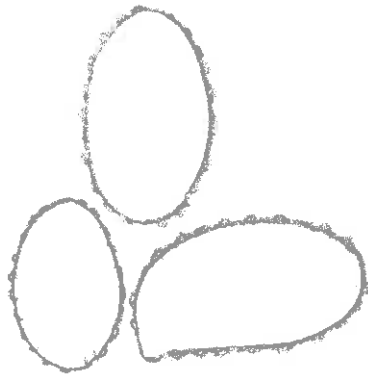
Microscopic characters much as in the type of ~~Agaricus~~ <sup>*Chrysotrichus*</sup> ~~Agaricus~~ and they may be the same.

*Agaricus (Flammula) chrysopellis* B. + C.

Type (from Kew)



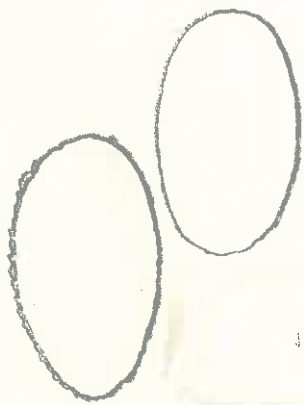
ch - x 1000



Spores - x 4000

*Gymnopellus chrysopellus* (B + C) Murr.

(Part of Type)  
(from N.Y. B.G.)



Spores - x 4000

GYMNOPIIUS CHRYSOTRICHOIDES Murr.

On dead cocoanut log, near Managna, Cuba, leg. F.S. Earle,  
October 2, 1904, No. 270.

TYPE

Spores 7.5-10 x 5-6(6.5)  $\mu$ , ellipsoid in face view, verrucose, ferruginous in KOH, no germ pore, dextrinoid. Basidia 24-30 x 7-8  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 20-27 x 4-7  $\mu$ , ventricose-capitate to clavate, rare and inconspicuous. Gill trama of interwoven hyphae 5-15  $\mu$  broad. Pileus trama interwoven. Cuticle of repent hyphae. Clamp connections rare. Caulocystidia none. Pileus and gill trama yellowish brown in KOH; brown in Melzer's reagent.

The spores indicate that this is near Cortinarius, but Murrill says they are ferruginous in deposit.

GYMNOPIIUS CHRYSOTRICHOIDES Murr.

On dead cocoanut log, near Managna, Cuba, leg. F.S. Earle,  
October 2, 1904, No. 270.

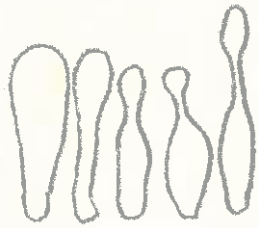
TYPE

Spores 7.5-10 x 5-6(6.5)  $\mu$ , ellipsoid in face view, verrucose, ferruginous in KOH, no germ pore, dextrinoid. Basidia 24-30 x 7-8  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 20-27 x 4-7  $\mu$ , ventricose-capitate to clavate, rare and inconspicuous. Gill trama of interwoven hyphae 5-15  $\mu$  broad. Pileus trama interwoven. Cuticle of repent hyphae. Clamp connections rare. Caulocystidia none. Pileus and gill trama yellowish brown in KOH; brown in Melzer's reagent.

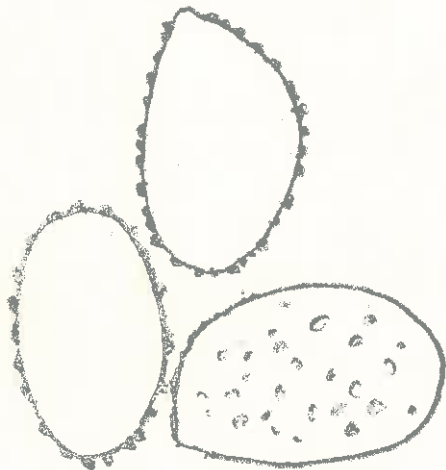
The spores indicate that this is near Cortinarius, but Murrill says they are ferruginous in deposit.

*Gymnosporium chrysotrichoides* Morr.

Type.



ch - x 1000



Spores - x 4000



GYMNOPIIUS CHRYSOTRICHUS (B. & C.) Murr.

Singer (1955: Sydowia 9:410) studied the Type; he states that it is probably identical with either G. chrysopellus or G. aureobrunneus. It is supposed to be different in having free appressed hair on the pileus, but these hairs in No. 54 (Type, Kew) are mold conidia. Thus it is 2 organisms — and is a nomen confusum. Spores of chryso-trichus 6-7.8 x 4.3-5.2  $\mu$ , cheilocystidia ampullaceous-non-capitate, and probably = chrysopellus.

The type (from Kew) I studied showed no conidia, as Singer reports.

*= chrysopellus*

AGARICUS (FLAMMULA) CHRYSOTRICHUS B. & C.

Coll. by Wright, Cuba, on rotten logs, February (Kew Herb.)

TYPE (From Kew)

Spores 5.5-7.5 x 4-4.5  $\mu$ , ellipsoid, slightly inequilateral, verruculose, ferruginous in KOH, not dextrinoid even after 48 hours in Melzer's reagent. Basidia 20-25 x 5-6  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 18-27 x 3-6  $\mu$ , flask-shaped, non-capitate, a few with a brown pigment. Gill trama of subparallel hyphae 5-9  $\mu$  broad; subhymenium not distinctive. Pileus trama of radial hyphae. Cuticle of brown, repent hyphae, bearing epicuticular hyphae which are brown and incrustated. Clamp connections present. Pileocystidia and caulocystidia none.

This close to, or same as, G. aureobrunneus and G. chrysopellus.

AGARICUS (FLAMMULA) CHRYSOTRICHUS B. & C.

Coll. by Wright, Cuba, on rotten logs, February (Kew Herb.)

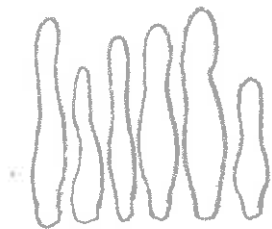
TYPE (From Kew)

Spores 5.5-7.5 x 4-4.5  $\mu$ , ellipsoid, slightly inequilateral, verruculose, ferruginous in KOH, not dextrinoid even after 48 hours in Melzer's reagent. Basidia 20-25 x 5-6  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 18-27 x 3-6  $\mu$ , flask-shaped, non-capitate, a few with a brown pigment. Gill trama of subparallel hyphae 5-9  $\mu$  broad; subhymenium not distinctive. Pileus trama of radial hyphae. Cuticle of brown, repent hyphae, bearing epicuticular hyphae which are brown and incrustated. Clamp connections present. Pileocystidia and caulocystidia none.

This close to, or same as, G. aureobrunneus and G. chrysopellus.

*Agaricus (Flammula) chrysotrichus*

Type (from Kew)



Ch - x 1000

Kew-3341

FLAMMULA CHRYSOTRICHIA

On dead wood, St. Augustine, Trinidad, May 6, 1947. Coll.  
R.E.D. Baker-1448.

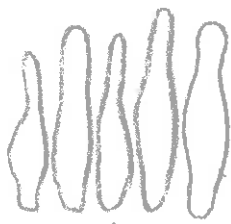
Spores 5.5-7 x 4-4.5  $\mu$ , ellipsoid, slightly inequilateral, verruculose, no germ pore, ferruginous in KOH, yellow brown in Melzer's (after 2 1/2 hours). Pleurocystidia none; brown basidioles rare, 22-27 x 5-6  $\mu$ ; cheilocystidia 20-27 x 4-6  $\mu$ , flask-shaped, not capitate or rarely subcapitate. Gill trama of subparallel hyphae, 5-12  $\mu$  broad. Pileus trama of radial hyphae. Cuticle of brown, repent hyphae, epicuticular hyphae in tufts forming brownish scales. Pileocystidia and caulocystidia none. Clamp connections present.

*Flammula chryso-tricha*

from Kew - 3341



Basidia -  
X 1000



Sp - X 1000

GYMNOPIIUS CHRYSOTRICHUS (B. & C.) Murr.

On logs, source? (Cuba?) (label does not indicate on collection from N. Y. Bot. Garden)

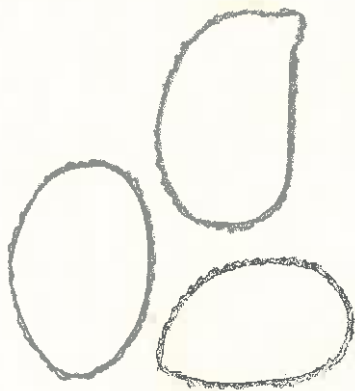
Spores 5-7 x 4-4.5 $\mu$ , ellipsoid, inequilateral, wrinkled-rough.

Material sparse; no sections made. Other characters not determined.

*Gymnopilus chrysotrichus* (B + C) Murr.

Type (?)

Probably not a part of Type. Source?



Spores - x 4000



Homola-980

*croceoluteus*  
GYMNOPIIUS (~~LIQUIRITIAE ?~~)

On deciduous log (oak ?), George Reserve, Livingston Co., Michigan, August 4, 1964.

Notes by Homola

Pileus 3.8 cm broad, convex, yellowish brown, dry, glabrous.

Lamellae adnate or slightly sinuate, concolorous to pileus, close, medium broad, lamellulae present.

Stipe 4 cm x 4.2 mm, concolorous, apex pruinose, elsewhere glabrous.

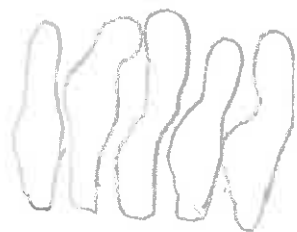
Notes by Hesler

Spores 6.5-8.5 x 4-5  $\mu$ , ellipsoid, inequilateral, verruculose, ferruginous, dextrinoid. Basidia 22-25 x 5-6  $\mu$ , 4-spored. Pleurocystidia 24-28 x 5-7  $\mu$ , ventricose; cheilocystidia 20-25 x 4-5  $\mu$ , flask-shaped, capitate. Gill trama of subparallel hyphae, 5-12  $\mu$  broad; subhymenium not distinctive. Pileus trama loosely interwoven. Cuticle not sharply differentiated, bearing scattered pileocystidia, ventricose, filamentous, capitate, 18-27 x 4-7  $\mu$ , capitate or non-capitate. Caulocystidia 25-38 x 2-5  $\mu$ , scattered and in tufts, filamentous, flask-shaped, capitate or non-capitate. Clamp connections present.

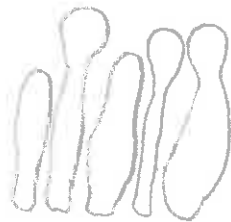
Near liquiritiae but cuticle and pileus trama appear to be distinct.

*Gymnoplex croceoluteus*

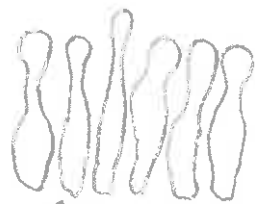
Homola - 980



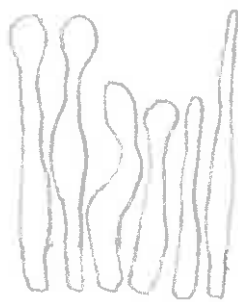
Stem - x 1000



Fila - x 1000



Ch - x 1000



Caulo - x 1000

Thiers - 4923

GYMNOPIUS CROCEOLUTE<sup>U</sup>~~MS~~

On pine logs, Rochelle Hammock, east of Gainesville, Fla., July 30, 1958.

Note by Thiers

Pileus glabrous; gills ochraceous orange.

Notes by Hesler

Spores (6)7-9 x 4.5-5  $\mu$ , ellipsoid, dextrinoid. Basidia 26-28 x 6-7  $\mu$ , 4-spored. Pleurocystidia 24-28 x 5-7  $\mu$ , ventricose; cheilocystidia 20-26 x 4-6  $\mu$ , flask-shaped. Pileus trama interwoven. Cuticle a narrow, brown zone. Pileocystidia none. Caulocystidia ventricose to <sup>+</sup> similar to cheilocystidia.

Apparently no veil. Resembles type.

Sm-51168

GYMNOPIIUS CROCEOLUTEUS sp. nov.

- *Type*

On white pine debris, Stinchfield, Michigan, November 3, 1955.

Notes by Smith

Cap 3-8 cm broad, glabrous, moist, hygrophanous, warm buff to tawny orange, margin inrolled. Context taste bitter.

Lamellae adnate, decurrent by a tooth, yellow then rusty, narrow, crowded.

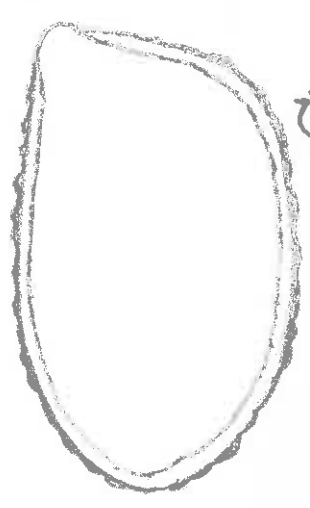
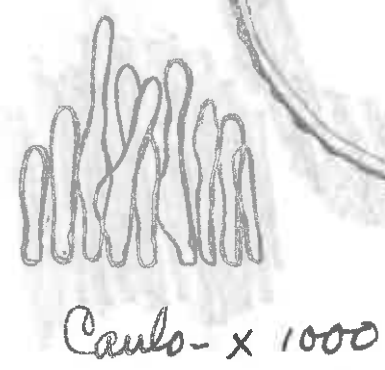
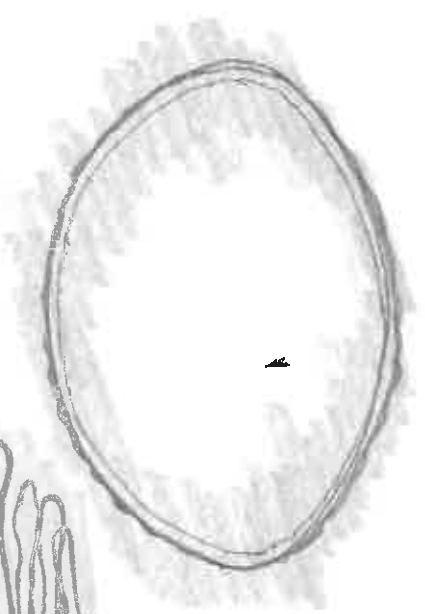
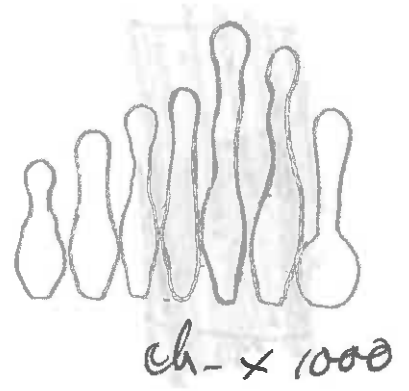
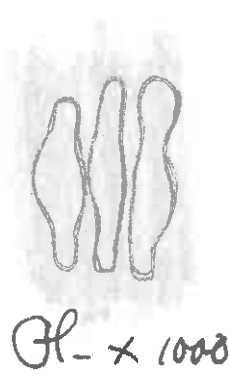
Stipe 2-5 cm long, 3-7 mm thick at the apex, pallid yellowish, dingy below, glabrous but fibrous-striate. Veil none.

Notes by Hesler

Spores (6.5) 7-8.5 x 4.5-5.5  $\mu$ , ellipsoid to broadly so, slightly inequilateral, ferruginous in KOH, dextrinoid, no germ pore, sometimes conspicuously 1-guttulate. Basidia 23-26 x 6-7  $\mu$ , 4-spored. Pleurocystidia 22-26 x 5-6  $\mu$ , ventricose; cheilocystidia 18-35 x 5-8  $\mu$ , flask-shaped, subcapitate, rarely capitate. Gill trama of subparallel hyphae, 5-10  $\mu$  broad; subhymenium of narrow compact hyphae, 2-3  $\mu$  broad. Pileus trama of loosely interwoven hyphae. Cuticle a narrow, compact zone of repent, brown hyphae; pileocystidia none. Caulocystidia 15-32 x 3-5  $\mu$ , clavate, flask-shaped, ventricose, colorless, in tufts. Clamp connections present. Yellow pigment, soluble in KOH, present in gill trama.

Near picreus which is rufous to cinnamon-brown or dark ferruginous, taste acid, pileus smaller, cheilocystidia capitate, has pileocystidia, caulocystidia capitate.

*Gymnosporium croceolutes* sp. nov.  
Sm. 51168 - Type



Spores - x 8000

*Croceolutes*

Sm-67935

GYMNOPIIUS ~~LIQUIRITIAE~~ variant

On conifer wood, Priest River, Idaho, June 27, 1966

Notes by Smith

Pileus 1.5-3 cm broad, convex-expanding, orange-rusty to orange-tan, fading to orange-buff, glabrous, shining, subviscid. Context bitter.  $\text{FeSO}_4$  - olive; KOH - reddish to red-brown on the center.

Lamellae rusty orange spotted, narrow, crowded.

Stipe 2.5-3 cm long, 2-3 mm thick, orange-buff, finally darker and dingy below, naked. (Veil none ~~X~~ - LRH)

Notes by Hesler

Spores <sup>9</sup>7.5-~~9.5~~ x 4.5-5.5  $\mu$ , ellipsoid, inequilateral, no germ pore, ferruginous in KOH, dextrinoid at once, verrucose. Basidia 23-27 x 6-7  $\mu$ , 4-spored. Pleurocystidia 28-37 x 5-7  $\mu$ , flask-shaped, capitate to non-capitate, abundant in some sections, absent in others; cheilocystidia 28-40 x 3-6  $\mu$ , flask-shaped to slender-ventricose, capitate to non-capitate. Gill trama of subparallel hyphae, 3-6  $\mu$  broad; subhymenium not distinctive. Pileus trama of interwoven hyphae. Cuticle a dark-brown zone of repent hyphae, the zone 22-30  $\mu$  thick. Clamp connections present. Pileocystidia none. Caulocystidia 25-48 x 5-11  $\mu$ , flask-shaped, capitate (similar to pleurocystidia), scattered or in tufts.

*croceolutes*  
Gymnopilus liquiritiae - 2

(Sm - 67935)

*the pileus trama is interwoven*

Near liquiritiae, but lacks minute waxy dots on cap,  
and the pleurocystidia are more flask-shaped-capitate  
than in liquiritiae. ~~It is a slight variant of liquiritiae~~

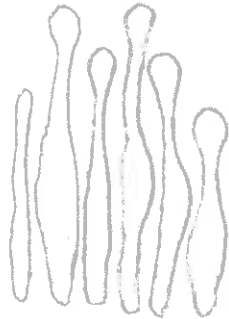
~~cf. Hemoloma sp.~~

*Gymnopilus* <sup>*croceoluteus*</sup> ~~*lequiritiae*~~ - ~~variant~~

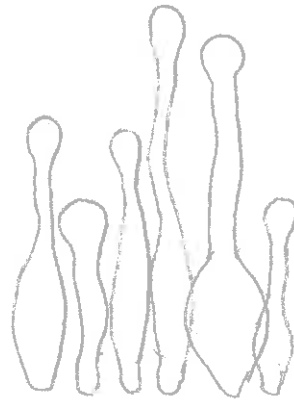
Sm - 67935



As - x 1000



Bs - x 1000



Ba - x 1000



Hoxie-56

GYMNOPIIUS DECURRENS sp. nov.

On pine tree, California (no other data)

Notes by Hoxie

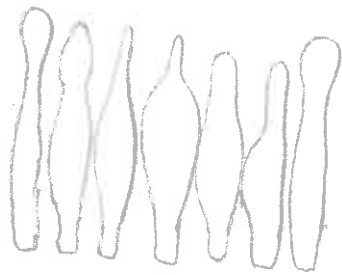
Cap 2.5-6 cm broad, dry, orange-brown. Gills decurrent, lines extending down the stem, yellow-orange or burnt orange, close, broad. Stipe 3-5 cm long, 4-7 mm thick, pallid brownish orange at apex, paler with white patches at the base.

Notes by Hesler

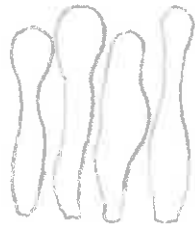
Spores 6-8 x 4.5-5  $\mu$ , ellipsoid, slightly inequilateral, ferruginous in KOH, dextrinoid, verruculose, no germ pore. Basidia 24-28 x 5-6  $\mu$ , (2)4-spored. Pleurocystidia 26-32 x 4-8  $\mu$ , somewhat variable: clavate-mucronate, ventricose, subcapitate to non-capitate; cheilocystidia 24-30 x 4-7  $\mu$ , clavate-capitate to ventricose. Gill trama of subparallel hyphae, 5-8  $\mu$  broad; subhymenium not distinctive. Pileus trama radial. Cuticle of repent hyphae, bearing small bundles or strands of brown, more or less incrustated hyphae (fibrils scarcely as scales). Clamp connections present. Caulocystidia 28-38 x 5-7  $\mu$ , ventricose, subcapitate to capitate. Yellow pigment, soluble in KOH, present in gill trama.

*Gymnopleus decurrens* sp. nov.

Hoxie - 56



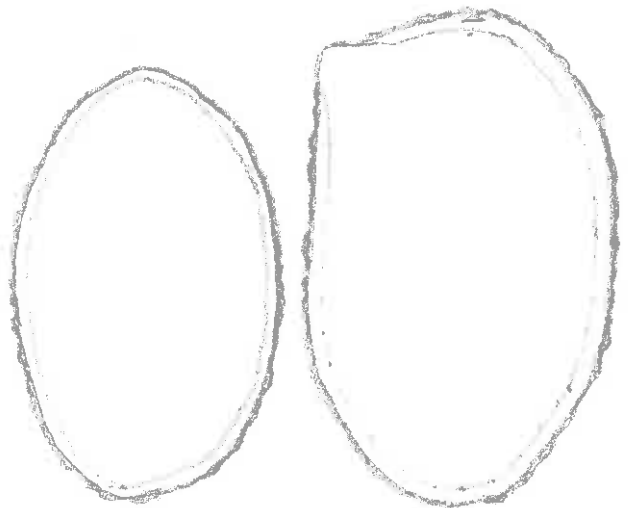
Pl - x 1000



Ch - x 1000



Caulo - x 1000



Spores - x 8000

24547

GYMNOPIIUS DECURRENS Hes.

On saw-dust, Shelton, Washington, L. R. Brady, Oct. 23, 1966

Pileus 2.5-5 cm broad, "ketchup" color, brown appressed-fibrillose, dry.

Lamellae decurrent, broad, medium close, not spotted.

Stipe dingy.

Spores (5.5 6-7.5 -7.5 (8) x 4.5-5  $\mu$ , ellipsoid, inequilateral, minutely verruculose, no pore. Pleurocystidia 27-34 x 4-6  $\mu$ , flask-shaped-capitate; cheilocystidia 23-32 x 4-6  $\mu$ , similar. Caulocystidia similar, longer. Pileus trama radial.

GYMNOPIIUS DEPRESSUS Murr.

On log, Hope Gardens, Jamaica, leg. F.S. Earle, November 16,  
1902, No. 499.

TYPE

Spores 6-7.5 x 4-4.5  $\mu$ , ellipsoid in face view, only slightly inequilateral in profile, verruculose, no germ pore, not dextrinoid. Basidia 20-25 x 5-6  $\mu$ , Pleurocystidia 26-37 x 4-6  $\mu$ , ventricose; cheilocystidia 24-40 x 5-7  $\mu$ , ventricose, capitate or non-capitate. Gill trama of parallel, very broad hyphae, 12-25  $\mu$ ; subhymenium not distinctive. Pileus trama radial. Cuticle repent, with tufts of brown, sometimes incrustated hyphae (scales). Clamp connections present. Pileus and gill trama reddish brown in KOH; dark brown in Melzer's reagent. Caulocystidia none.

GYMNOFILUS DEPRESSUS Murr.

On log, Hope Gardens, Jamaica, leg. F.S. Earle, November 16,  
1902, No. 499.

TYPE

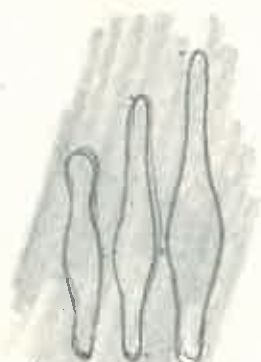
Spores 6-7.5 x 4-4.5  $\mu$ , ellipsoid in face view, only slightly inequilateral in profile, verruculose, no germ pore, not dextrinoid. Basidia 20-25 x 5-6  $\mu$ , Pleurocystidia 26-37 x 4-6  $\mu$ , ventricose; cheilocystidia 24-40 x 5-7  $\mu$ , ventricose, capitate or non-capitate. Gill trama of parallel, very broad hyphae, 12-25  $\mu$ ; subhymenium not distinctive. Pileus trama radial. Cuticle repent, with tufts of brown, sometimes incrustated hyphae (scales). Clamp connections present. Pileus and gill trama reddish brown in KOH; dark brown in Melzer's reagent. Caulocystidia none.

*Gymnopilus depressus* Murk.

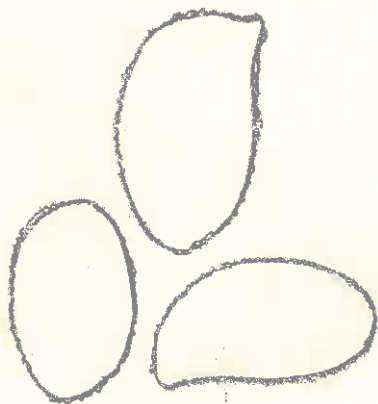
Type



Pl - x/1000



Ch - x/1000



Spores - x 4000

*Gyromyces*

Flammula dryophilus Murrill

All note by  
Singer ↓

Murrill's description (Mycologia 35:531~~432~~. 1943):

*Flammula dryophila* (Murrill) Murrill " 35:537, 1943

"Pileus convex to subexpanded, cespitose, 3-5 cm. broad; surface dry, hispid-squamulose, especially at the center, becoming fibrillose or subsquamulose with age, pale flavous to darker, margin even, entire; context pallid, mild; lamellae adnate with decurrent tooth, broad, not crowded, entire, pale luteous; spores ellipsoid, finely granular, uniguttulate, ferruginous, 6-7 x 3.5-5  $\mu$ ; stipe equal or tapering upward, dry, smooth, slightly fibrillose, pale luteous, opaque, varying in thickness, about 5-7 cm. long.

"Type collected by Lillian Arnold and Erdman West on an oak log at Gainesville, Fla., Dec. 14, 1931 (No. F 15735). Also collected several other times about Gainesville on dead oak wood. Suggesting G. penetrans in form and habit of growth, but not found on pine and conspicuously speckled with erect, pointed scales.

"According to Singer, 'Type specimens are not good for study of gill-edge. I have studied the Camp O'Leno specimens. Cheilocystidia fusoid-bottle-shaped, 19-28 x 4.5-9.5  $\mu$ , hyaline, smooth, thin-walled, neck 3.5-11.3 x 2-4  $\mu$ . Basidia 20-27 x 6.8-8  $\mu$ , 4-spored. Cystidia none. Gill-trama bright-yellow in  $\text{NH}_3$ , coloring the ammonia yellow in preparations of the hymenium.' "(p. 532)

GYMNOPIIUS DRYOPHILUS Murr.

On oak log, Gainesville, Florida, leg. Arnold & West, December 14, 1931,  
No. 15735.

TYPE

Spores (5.5) 6-7.5 x 4-5  $\mu$ , ellipsoid in face view, inequilateral in profile, verruculose, no germ pore, at first pale yellowish brown in Melzer's reagent, becoming slightly darker yellowish brown after 24 hours; using  $\text{NH}_4\text{OH}$ , then Melzer's, and observing after 20 minutes; no change (not dextrinoid). Basidia 22-27 x 5-7  $\mu$ , 4-spored. Pleurocystidia 25-33 x 4-8  $\mu$ , clavate, apices conical, buried; cheilocystidia 20-28 x 5-7  $\mu$ , ventricose, non-capitate, rare and difficult to find. Gill trama of subparallel hyphae, 2-4  $\mu$  broad; subhymenium not distinctive. Pileus trama interwoven. Cuticle of repent hyphae, bearing tufts of brown hyphae (scales). Clamp connections present. Caulocystidia none. Pileus and gill trama rusty brown in KOH; dingy brown in Melzer's reagent. Yellow pigment, soluble in KOH, present in gill trama.



GYMNOPIIUS DRYOPHILLUS Murr.

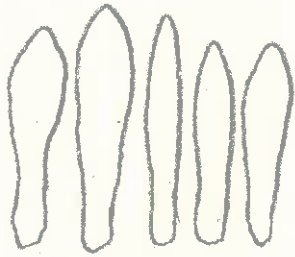
On oak log, Gainesville, Florida, leg. Arnold & West, December 14, 1931.  
No. 15735.

TYPE

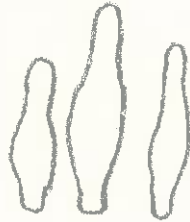
Spores (5.5) 6-7.5 x 4-5  $\mu$ , ellipsoid in face view, inequilateral in profile, verruculose, no germ pore, at first pale yellowish brown in Melzer's reagent, becoming slightly darker yellowish brown after 24 hours; using  $\text{NH}_4\text{OH}$ , then Melzer's, and observing after 20 minutes; no change (not dextrinoid). Basidia 22-27 x 5-7  $\mu$ , 4-spored. Pleurocystidia 25-33 x 4-8  $\mu$ , clavate, apices conical, buried; cheilocystidia 20-28 x 5-7  $\mu$ , ventricose, non-capitate, rare and difficult to find. Gill trama of subparallel hyphae, 2-4  $\mu$  broad; subhymenium not distinctive. Pileus trama interwoven. Cuticle of repent hyphae, bearing tufts of brown hyphae (scales). Clamp connections present. Caulocystidia none. Pileus and gill trama rusty brown in KOH; dingy brown in Melzer's reagent. Yellow pigment, soluble in KOH, present in gill trama.

*Gymnopilus*  
~~*Flammula*~~ *dryophilus* Murr.

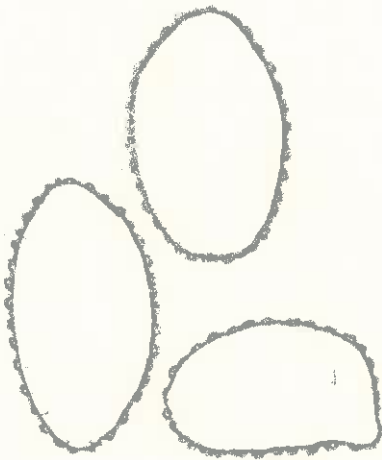
Type



Pl - x 1000



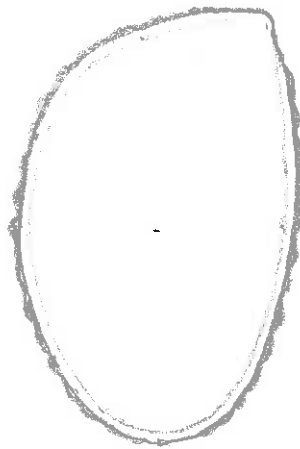
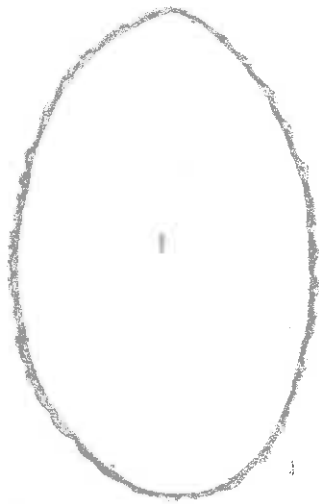
Ch - x 1000



Spores - x 4000

16151

*S. dryophilus*



Spores x 8000

Tenn-20627

GYMNOPIIUS DRYOPHILUS Murr.

On hardwood, Tuscaloosa, Ala., leg. Hollis, det. Murr., July 5, 1952.

Spores and other characters agree with the type. The pileus is a bit less fibrillose than in the type. The veil remnants on the stipe are fibrillose, and form a slight, superior ring; veil evidently evanescent.

GYMNOPIIUS EARLEI Murr.

Port Antonio, Jamaica, on cocoanut logs, leg. F.S. Earle,  
October 20, 1902.

TYPE

Spores  $6\text{-}\overset{8.5}{\cancel{4}} \times 4\text{-}4.5 \mu$ , ellipsoid in face view, inequi-  
lateral in profile, verruculose, no germ pore, not dext-  
rinoid. Basidia  $23\text{-}26 \times 5\text{-}6 \mu$ , 4-spored. Pleurocystidia  
 $22\text{-}28 \times 5\text{-}7 \mu$ , ventricose; cheilocystidia  $18\text{-}24 \times 4\text{-}6 \mu$ ,  
ventricose, subcapitate or non-capitate. Gill trama of  
subparallel broad hyphae  $10\text{-}15 \mu$ . Pileus trama radial.  
Cuticle repent, bearing bundles of brown hyphae (scales).  
Clamp connections present. Caulocystidia none. Pileus  
and gill trama yellowish brown in KOH; dark-brown in  
Melzer's reagent. Context exudes a yellowish pigment in  
KOH.

GYMNOPIIUS EARLEI Murr.

Port Antonio, Jamaica, on cocconut logs, leg. F.S. Earle,  
October 20, 1902.

TYPE

85  
Spores 6-~~7~~<sup>8.5</sup> x 4-4.5  $\mu$ , ellipsoid in face view, inequi-  
lateral in profile, verruculose, no germ pore, not dext-  
rinoid. Basidia 23-26 x 5-6  $\mu$ , 4-spored. Pleurocystidia  
22-28 x 5-7  $\mu$ , ventricose; cheilocystidia 18-24 x 4-6  $\mu$ ,  
ventricose, subcapitate or non-capitate. Gill trama of  
subparallel broad hyphae 10-15  $\mu$ . Pileus trama radial.  
Cuticle repent, bearing bundles of brown hyphae (scales).  
Clamp connections present. Caulocystidia none. Pileus  
and gill trama yellowish brown in KOH; dark-brown in  
Melzer's reagent. Context exudes a yellowish pigment in  
KOH.

*Gymnopilus earlei* Murr.

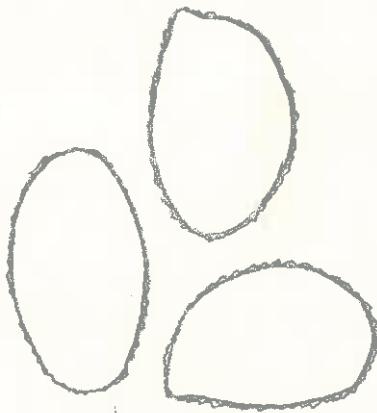
Type



Pl - x 1000



Ch - x 1000



Spores - x 4000

GYMNOPIIUS ECCENTRICUS (Pk.) Murr.

Leg. N. M. Glatfelter, St. Louis, Mo., on decaying wood,  
October 26, 1900 - Sept. 6, 1902.

TYPE

Spores 5.5-8.5 x 3.8-5  $\mu$ , ellipsoid in face view, inequilateral in profile, verruculose, with a hilum, dextrinoid. Basidia 26-29 x 4-5  $\mu$ , 2-4-spored. Pleurocystidia 25-32 x 5-7  $\mu$ , ventricose, subcapitate, rare, inconspicuous; cheilocystidia 27-35 x 5-8  $\mu$ , ventricose, capitate. Gill trama of slightly interwoven hyphae 4-7  $\mu$  broad. Pileus trama interwoven. Cuticle only slightly differentiated, hyphae brown, a few free ends erect. Clamp connections present. Caulocystidia 29-35 x 4-6  $\mu$ , few, inconspicuous, more or less similar to cheilocystidia. Pileus and gill trama yellowish in KOH; reddish brown in Melzer's reagent.

Peck says the spores measure 15-16 x 8  $\mu$ ; either he was in error, or I did not see the true type.



GYMNOPIIUS ECCENTRICUS (Pk.) Murr.

Leg. N. M. Glatfelter, St. Louis, Mo., on decaying wood,  
October 26, 1900 - Sept. 6, 1902.

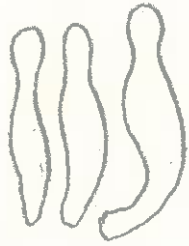
TYPE

Spores 5.5-8.5 x 3.8-5  $\mu$ , ellipsoid in face view, inequilateral in profile, verruculose, with a hilum, dextrinoid. Basidia 26-29 x 4-5  $\mu$ , 2-4-spored. Pleurocystidia 25-32 x 5-7  $\mu$ , ventricose, subcapitate, rare, inconspicuous; cheilocystidia 27-35 x 5-8  $\mu$ , ventricose, capitate. Gill trama of slightly interwoven hyphae 4-7  $\mu$  broad. Pileus trama interwoven. Cuticle only slightly differentiated, hyphae brown, a few free ends erect. Clamp connections present. Caulocystidia 29-35 x 4-6  $\mu$ , few, inconspicuous, more or less similar to cheilocystidia. Pileus and gill trama yellowish in KOH; reddish brown in Melzer's reagent.

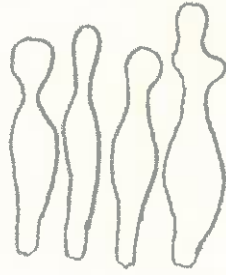
Peck says the spores measure 15-16 x 8  $\mu$ ; either he was in error, or I did not see the true type.

*Gymnosiphus* (*Fammula*) *eccentrica*<sup>nov</sup> (F.) Muxer.

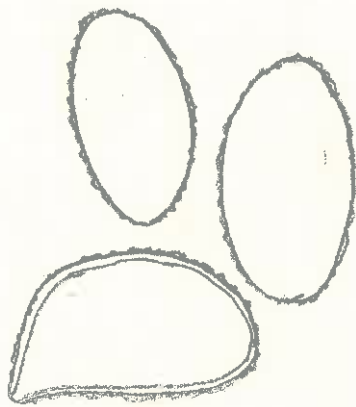
Type



Sp - x 1000



Ch - x 1000



Spores - x 4000



Caulo - x 1000

GYMNOPIIUS ECHINULISPORUS Murr.

On dead wood, in woods, Mill City, Ore., Nov. 9, 1911

TYPE

Spores 6-8 x 5-6  $\mu$ , ellipsoid, ovoid, or subglobose, verrucose, no germ pore, dextrinoid. Basidia 28-40 x 6-7  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 25-40 x 4-6  $\mu$ , filamentous, subcylindric, or subventricose, sometimes capitate. Gill trama of subparallel hyphae, 6-10  $\mu$  broad. Pileus trama radial. Cuticle of repent hyphae, at times some of the surface hyphae loosen and become semi-erect. Clamp connections present. Caulocystidia none; sometimes tufts of erect hyphae are found. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent.

The cheilocystidia are not strictly gymnopiloid, but the spores are ferruginous, and it is included here. Kauffman (1926) interpreted it as a species of Cortinarius. Further study of fresh collections is desirable.

GYMNOPIILUS ECHINULISPORUS Murr.

On dead wood, in woods, Mill City, Ore., Nov. 9, 1911

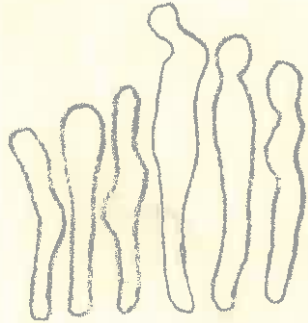
TYPE

Spores 6-8 x 5-6  $\mu$ , ellipsoid, ovoid, or subglobose, verrucose, no germ pore, dextrinoid. Basidia 28-40 x 6-7  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 25-40 x 4-6  $\mu$ , filamentous, subcylindric, or subventricose, sometimes capitate. Gill trama of subparallel hyphae, 6-10  $\mu$  broad. Pileus trama radial. Cuticle of repent hyphae, at times some of the surface hyphae loosen and become semi-erect. Clamp connections present. Caulocystidia none; sometimes tufts of erect hyphae are found. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent.

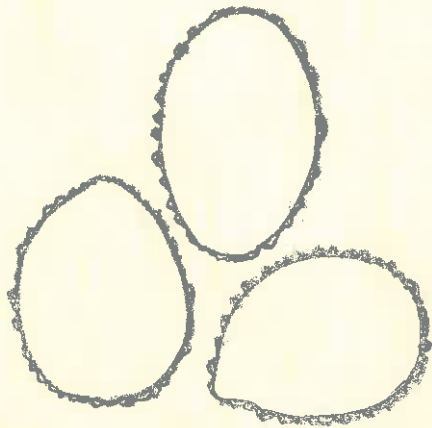
The cheilocystidia are not strictly gymnopiloid, but the spores are ferruginous, and it is included here. Kauffman (1926) interpreted it as a species of Cortinarius. Further study of fresh collections is desirable.

*Gymnopilus echinuliporus* Murr.

Type



Ch - x 1000



Spores - x 4000

F-2460 GYMNOPIIUS ERYTHROPELLUS Sing. ad int.

On oak trunk, Kelley's Hammock, near Gainesville, Florida,  
June 29, 1943. (Borrowed from Farlow Herb.)

Basidiocarps small (pileus 1-2.5 cm). Buttons show  
a fibrillose, pallid or yellowish veil.

Spores (5.5)6-8 x 4-4.5  $\mu$ , ellipsoid, slightly inequi-  
lateral, verruculose, ferruginous, moderately dextrinoid.  
Basidioles scattered, clavate, brown, 12-18 x 4-5  $\mu$ .  
Otherwise, structure as in G. peliolepis, F-2175 (which  
Singer calls a larger form).

This collection, on deposit at Farlow, was  
sent me on loan. To date, I have no  
literature record of it. Perhaps a search of the  
literature may reveal Singer's description of it  
(if he has published).