November 2013

Gymnopilus Notebook 9

L. R. Hesler

GYMNOPILUS Karsten

Bidr. Känn. Finl. Nat. Folk 32:~~406~~ XXI, 400. 1879 (Fulvidula Romagnesi, Rev. Mycol. 1:209. 1936).

Pileus medium small to ~~large~~ large, usually bright colored, yellow, red, blue, or green, ~~viscid~~, hygrophanous or dry, glabrous or fibrillose, ~~to~~ squamulose; context often bitter. mild or more

Lamellae adnexed or decurrent, becoming bright rusty, narrow to broad.

Stipe central, well-developed, usually yellow or yellowish; often with a distinct cortinate or membranous veil, which in some species forms an annulus, ~~always~~ usually annulate if the pileus is viscid.

Spores rufous to ferruginous, with a double wall, without a germ-pore, ellipsoid to amygdaloid, distinctly warty (well seen in ammoniacal medium). Basidia either clavate or constricted between a capitate apex and the lower ventricose portion. Pleurocystidia present or absent; cheilocystidia ~~always~~ usually present and usually ventricose below, the apex tapering and subcapitate. All hyphae with clamp connections.

On coniferous or deciduous wood, more rarely on humus or debris.

It is closely related to Pholiota in which the spores are smooth, and perhaps is even more closely akin to Cortinarius

which is terrestrial rather than lignicolous, and its spores ~~[illegible]~~ cinnamon-brown to ochraceous-tawny *in deposito*.

Type species Gymnopilus liguiritiae (Pers. ex Fr.) Karst.

GYMNOPILUS

Singer (1951): Key to Species

1. Stipe with a distinct annulus at first 2

1. Stipe not, or not distinctly annulate 12

2. Context or stipe-apex "light purplish vinaceous," or some similar bright color; pileus often rose or red on the scales, often areolate; on deciduous trunks in North America ..... G. luteofolius

2. Context or stipe-apex of other colors, or if vinaceous, not of the above habitat 3

3. Context lilac-violet, pileus somewhat viscid; on conifers, Central Asia ..... G. janthinosarx

3. Context usually not lilac-violet; pileus usually not viscid, and never combining these characters 4

4. Context reddish or greenish; pileus with aeruginous spots on reddish ground or vice versa, or entirely greenish; in Caucasus or in North America 5

4. Context white, at least when young, or yellowish to fulvous (in age); pileus not colored as above 6

5. Pileus reddish with aeruginous spots; context reddish; on deciduous trunks in the Caucasus..... G. intermedius

5. Pileus mainly aeruginous, sometimes also reddish; context greenish; on deciduous and coniferous trees, and railway ties in North America ..... G. aeruginous

6. Pileus with some bluish violet or greenish spots, or entirely violet-blue in youth; in Indo-China, perhaps Ceylon, Java, etc. ..... G. dilepsis

6. Pileus yellow to fulvous, or purple-red, never bluish or violet or greenish when fresh 7

7. Pileus rather large, fleshy, squamulose-fibrillose or rimose, or innately fibrillose; on conifer and deciduous trunks (not on palms or Eucalyptus), mainly in temperature zones ..... G. spectabilis

7. Pileus either squarrose on disc or at least innately fibrillose, or the species tropical or exclusively Eucalyptus or palms 8

8. On Quercus in North Africa..... G. suberis

8. On other deciduous trees, usually (Eucalyptus or palms) or not bitter 9

9. Pileus with red scales, at least when young 10

9. Pileus without red scales, scales on young fresh basidiocarps either concolorous (yellow) or fulvous to brown 11

10. Cheilocystidia capitate (majority); on Monocots, in Florida, West Africa, etc. ..... G. aculeatus

10. Cheilocystidia fusoid or ampullaceous (majority); on dicots, in North to South America (tropical to subtropical) ..... G. peliopis

11. All cheilocystidia ampullaceous or fusoid; some pleurocystidia which are incrusted, otherwise identical with cheilocystidia; taste mild; on deciduous trees, Florida, West Indies, and South America .....(see chrysopellus)

11. Not combining these characters; on deciduous trees (mostly Eucalyptus); in South America, Australia (if on palm, cf. aculeatus) ..... G. pampeanus

12. Pileus pink or latericious, or partly so (see "2", above. Cf. pulchrifolius)

12. Pileus not so colored 13

13. Pileus blue-green or yellowish green; in North America ..... G. punctifolius

13. Pileus not so colored 14

14. Basidiocarps on wood (stumps, trunks, buried wood), or fallen twigs or conifer cones..... 15

14. Basidiocarps on earth, humus, or rotten sticks, decaying grass-stems 26

15. On Coniferae 16

15. On broad-leaf (frondose) trees, wood, etc. 23

16. Pileus usually squamulose with innate fibrillose scales, or with hairy scales on the disc 17

16. Pileus glabrous 18

17. P

17. Pileus usually with innate, fibrillose scales, or merely fibrillose-subglabrous..... (G. sapineus (G. bellulus*

17. Pileus with scales hairy, or fibrillose-squarrose, mainly conspicuous on the disc ..... (see G. chrysopellus)

18. Pileus non-hygrophanous, or merely an hygrophanous margin in thin specimens; stipe-context not entirely brown in fresh young basidiocarps.....19

18. Pileus hygrophanous, thin, splitting, margin at times striate when old; stipe-context entirely brown when old and young 21

19. Lamellae rusty spotted; cheilocystidia all or almost all ampullaceous, not capitate; temperate species..... G. penetrans

19. Lamellae not spotted; cheilocystidia mostly capitate ...20

20. Basidiocarps large; veil well-developed; temperate species ..... G. hybridus

20. Basidiocarps of varying size; veil none; in warmer parts of North America ..... G. amarissimus

21. 20. See also 22

21. Spores 8 μ or longer 22

21. Spores smaller (in mts., mostly on Abies, in Europe and Caucasus) ..... G. microsporus

22. Stipe glabrous, fulvous-ferruginous; lamellae broad, somewhat ventricose; mostly on Abies, Europe, Northern Asia and North America ..... G. liquiritiae

22. Stipe pruinate when young, rather dark-brown; lamellae narrow, not ventricose; temperate species ..... G. picreus

23. Pileus densely flocculose-squamulose, disc squarrulose; spores 5.8-6.5 x 4-4.8 μ; cheilocystidia ampullaceous; in tropical West Africa ..... G. zenkeri

23. Pileus not as above; spores usually somewhat larger; cheilocystidia either ampullaceous or capitate; not known from Africa 24

---

* See bottom, p. 564.

24. Pileus scaly, the scales either yellow or fulvous, or brown or red; cheilocystidia ampullaceous to fusoid, often pleurocystidia (similar) in young basidiocarps; taste mild; subtropical or tropical North, Central, and South America..G. Chrysopellus

24. Not combining all these characters; cheilocystidia capitate; in Florida 25

25. Pileus glabrous, or more rarely with some partly erect fibrils; taste extremely bitter .....
= ..... G. amarissimus var. subdryophilus

25. Pileus covered with conspicuous, erect spines--strongly echinate--shaggy; taste somewhat astringent.....
..... G. praefloccosus

26. Spores 5-6 (7.5) μ long; on Dactylis glomerata, from Denmark to Italy, and west to Spain ..... G. flavus

26. Spores 6.6-10 μ long, mostly 8-9 μ long 27

27. Alpine species of the Caucasus Mts., on alpine meadows ..... G. alpinus

27. Small species on peat-soil among Polytrichum in Europe, or on forest humus (with leaf debris) in Indo-China 28

28. Lamellae broad, decurrent; on decayed fragments of foliage and small sticks on the ground in the forest; Indo-China (Tonkin) ..... G. tonkinensis

28. Lamellae rather broad, emarginate-adnate or sinuate-adnate, or plainly adnate, not decurrent; in Europe (French Jura).....G. fulgens

GYMNOPILUS

Singer (1951): Key to Species

1. Stipe with a distinct annulus at first 2

1. Stipe not, or not distinctly annulate 12

2. Context or stipe-apex "light purplish vinaceous," or some similar bright color; pileus often rose or red on the scales, often areolate; on deciduous trunks in North America ..... G. luteofolius

2. Context or stipe-apex of other colors, or if vinaceous, not of the above habitat 3

3. Context lilac-violet, pileus somewhat viscid; on conifers, Central Asia ..... G. janthinosarx

3. Context usually not lilac-violet; pileus usually not viscid, and never combining these characters 4

4. Context reddish or greenish; pileus with aeruginous spots on reddish ground or vice versa, or entirely greenish; in Caucasus or in North America 5

4. Context white, at least when young, or yellowish to fulvous (in age); pileus not colored as above 6

5. Pileus reddish with aeruginous spots; context reddish; on deciduous trunks in the Caucasus..... G. intermedius

5. Pileus mainly aeruginous, sometimes also reddish; context greenish; on deciduous and coniferous trees, and railway ties in North America ..... G. aeruginous

6. Pileus with some bluish violet or greenish spots, or entirely violet-blue in youth; in Indo-China, perhaps Ceylon, Java, etc. ..... G. dilepsis

6. Pileus yellow to fulvous, or purple-red, never bluish or violet or greenish when fresh 7

7. Pileus rather large, fleshy, squamulose-fibrillose or rimose, or innately fibrillose; on conifer and deciduous trunks (not on palms or Eucalyptus), mainly in temperature zones ..... G. spectabilis

7. Pileus either squarrose on disc or at least innately fibrillose, or the species tropical or exclusively Eucalyptus or palms 8

8. On Quercus in North Africa..... G. suberis

8. On other deciduous trees, usually (Eucalyptus or palms) or not bitter 9

9. Pileus with red scales, at least when young 10

9. Pileus without red scales, scales on young fresh basidiocarps either concolorous (yellow) or fulvous to brown 11

10. Cheilocystidia capitate (majority); on Monocots, in Florida, West Africa, etc. ..... G. aeuleatus

10. Cheilocystidia fusoid or ampullaceous (majority); on dicots, in North to South America (tropical to subtropical) ..... G. peliopis

11. All cheilocystidia ampullaceous or fusoid; some pleurocystidia which are incrusted, otherwise identical with cheilocystidia; taste mild; on deciduous trees, Florida, West Indies, and South America .....(see chrysopellus)

11. Not combining these characters; on deciduous trees (mostly Eucalyptus); in South America, Australia (if on palm, cf. aculeatus) ..... G. pampeanus

12. Pileus pink or latericious, or partly so (see "2", above. Cf. pulchrifolius)

12. Pileus not so colored 13

13. Pileus blue-green or yellowish green; in North America ..... G. punctifolius

13. Pileus not so colored 14

14. Basidiocarps on wood (stumps, trunks, buried wood), or fallen twigs or conifer cones..... 15

14. Basidiocarps on earth, humus, or rotten sticks, decaying grass-stems 26

15. On Coniferae 16

15. On broad-leaf (frondose) trees, wood, etc. 23

16. Pileus usually squamulose with innate fibrillose scales, or with hairy scales on the disc 17

16. Pileus glabrous 18

17. P

17. Pileus usually with innate, fibrillose scales, or merely fibrillose-subglabrous..... (G. sapineus
(G. bellulus*

17. Pileus with scales hairy, or fibrillose-squarrose, mainly conspicuous on the disc ..... (see G. chrysopellus)

18. Pileus non-hygrophanous, or merely an hygrophanous margin in thin specimens; stipe-context not entirely brown in fresh young basidiocarps.....19

18. Pileus hygrophanous, thin, splitting, margin at times striate when old; stipe-context entirely brown when old and young 21

19. Lamellae rusty spotted; cheilocystidia all or almost all ampullaceous, not capitate; temperate species..... G. pgnetrans

19. Lamellae not spotted; cheilocystidia mostly capitate ...20

20. Basidiocarps large; veil well-developed; temperate species ..... G. hybridus

20. Basidiocarps of varying size; veil none; in warmer parts of North America ..... G. amarissimus

21. 20. See also

21. Spores 8 μ or longer 22

21. Spores smaller (in mts., mostly on Abies, in Europe and Caucasus) ..... G. microsporus

22. Stipe glabrous, fulvous-ferruginous; lamellae broad, somewhat ventricose; mostly on Abies, Europe, Northern Asia, and North America ..... G. liquiritiae

22 .Stipe pruinate when young, rather dark-brown; lamellae narrow, not ventricose; temperate species ..... G. picreus

23. Pileus densely flocculose-squamulose, disc squarrulose; spores 5.8-6.5 x 4-4.8 μ; cheilocystidia ampullaceous; in tropical West Africa ..... G. zenkeri

23. Pileus not as above; spores usually somewhat larger; cheilocystidia either ampullaceous or capitate; not known from Africa 24

* Copy, bottom, p. 564.

24. Pileus scaly, the scales either yellow or fulvous, or brown or red; cheilocystidia ampullaceous to fusoid, often pleurocystidia (similar) in young basidiocarps; taste mild; subtropical or tropical North, Central, and South America..G. Chrysopellus

24. Not combining all these characters; cheilocystidia capitate; in Florida 25

25. Pileus glabrous, or more rarely with some partly erect fibrils; taste extremely bitter .... G. amarissimus var. subdryophilus

25. Pileus covered with conspicuous, erect spines--strongly echinate--shaggy; taste somewhat astringent..... ..... G. praefloccosus

26. Spores 5-6 (7.5) μ long; on Dactylis glomerata, from Denmark to Italy, and west to Spain ..... G. flavus

26. Spores 6.6-10 μ long, mostly 8-9 μ long 27

27. Alpine species of the Caucasus Mts., on alpine meadows ..... G. alpinus

27. Small species on peat-soil among Polytrichum in Europe, or on forest humus (with leaf debris) in Indo-China 28

28. Lamellae broad, decurrent; on decayed fragments of foliage and small sticks on the ground in the forest; Indo-China (Tonkin) ..... G. tonkinensis

28. Lamellae rather broad, emarginate-adnate or sinuate-adnate, or plainly adnate, not decurrent; in Europe (French Jura).....G. fulgens

GYMNOPILUS Karsten (1879) emend.

Bibl.: Romagnesi, H. Sur quelques groupements naturels d'agarics ochrospores. R.M. 1:209.

Singer, R. Notes sur quelques Basidiomycetes. R.M. 2:239.

***

The typical species of this genus were assembled by Fries in his section "Sapinei" of Flammula. We do not consider him exactly as the originator of his name (Karsten has, in fact, classed Rhodotus palmatus there, but excluded from it the annuliform species) nor like R. Maire, who used it for Flammula Fries, but such as H.R. has defined and delimited it (loc.cit.), under the name Fulvidula.

***

A) Stipe with an evident and persistent membranous annulus (1). Pileus 5-13 cm (rarely 2.5-6 cm in var. junonia (fr. Lange), fibrillose to shaggy-subsquarrose, orange-tawny or fibrils of this color on a background of golden yellow. Stipe fibrillose, base sometimes tapering to a short root. Spores amyghaliform, 7.5-9.5 x 5-5.7 µ, very strongly verrucose. Aurea Mattuschka; var. junonia Fr. (Syn. Ph. aurea)..... ..... spectabilis (Fr.)

A) Partial veil cortinate, sometimes leaving an annuliform zone at the stipe-apex, more often entirely and prematurely fugaceous

B) Meridional species (only in North Africa and Catalonia), frequently on cork-tree (also on Quercus lusitanica). Stipe 3-6 cm x 4-18 mm, yellowish white, then fulvescent, bearing, at the apex, an annular zone of cortina fibrils, rusty from spores, 6-9 x 3.5-5 µ. Pileus 3-10 cm, light tawny ocher, subviscid after rains. R. Maire says the cap is glabrous, sometimes squamulose-diffracted when dry (in this instance the species would be closely akin to hybridus), but his figure shows a young example studded with prominent conic warts. We have never observed such warts--no more in G. hybridus than in other European Gymnopilus known to us (2)..... ..... suberis (Maire) Sing.

B) Species not on Quercus suber or lusitanica, the pileus lacking conical warts, even in youth (2).

C) Species found typically in conifer forests, often on wood..... Sapineae (Fr.), Sect. Flammula

D)Species with a slender stipe (x 2-5 mm), pileus not very fleshy, and further characterized by: either the stipe is entirely pulverulent, white in youth; or by innate flakes of bright color..(see Notes 2 & 3)

D)The stipe powdery, only at the apex; when the pileus is squamulose, the pileus then distinctly fleshy, the stipe robust, or the color dull.

E)Stipe thick or slender; when slender the spores not globose-ovoid.

F)Stipe at least 4 mm thick

G)Pileus minutely scaly, shaggy or velvety-squamulose, woolly-fibrillose, tending in age to become cracked, the cuticle hyphae 10-18 μ broad, even young specimens the wall tawny, incrusted. Stipe x 3.5-7.5 mm thick, often compressed. Spores 7.5-8.5 x 4-5 μ ..... sapineus (Fr.)

G)Pileus not shaggy-scaly, with cuticular hyphae usually not more than 4-10 diam, even on thick specimens.

H)Pileus 3-8.5 cm, orange-tawny or pale orange-ochre, then fulvescent, veil white, appressed, fugaceous, appearing to be merged with the cuticle, becoming smooth and more or less streaked by fibrils, fleshy over the disc. Stipe firm or hard, x 6-20 mm, yellowish, fibrillose; taste very bitter. Spores 6-8 x 4-5.2 μ .....stabilis (Weinm.) K. & R.

H)Pileus neither white-velate at first, nor finally streaked, not hard

I)Pileus 2.5-7 cm (rarely more), tawny, tawny ochre, or golden-ochre, glabrous, margin not striate; flesh pale-yellow to nearly white Stipe dingy whitish, then pulverulent, browning from the base up, with white, silky veil, apex yellowish, covered with a bloom. Spores 7-9 x 3.7 -5.5 μ. The f. hybridus (Fr.) has an obvious veil which leaves an annuliform zone at the apex ..... penetrans (4)

I)According to Fries, the pileus is thinner than in the preceeding, subumbonate, scissile, margin striate. Stipe hollow. Lamellae broad (6-7 mm). Odor acetic..liquiritiae (5)

F)Stipe slender, scarcely 4 mm thick. Pileus glabrous. Lamellae with large crystalline masses.

J)Spores 8-10.7 x 5.5-6.2 μ, ovoid-conic. Pileus reddish brown. Lamellae golden yellow. Stipe 2-4 cm x 1.5-2.5 mm, concolorous but paler than pileus, glabrous. Cheilocystidia as in the following species. On stumps..... satur Kuhn. sp. nov.

J)Spores 4.5-5 x 2.5-3.7 μ. Pileus margin sometimes extending (beyond lamellae), rust-brown, red-brown, tawny, or tawny ochre. Lamellae edges sometimes staining brown. Stipe 1-4 cm x 1-3.5 mm, fawn or russet, fibrillose-glabrous, apex pruinose, cortina fugaceous. Taste bitter. Similar to following (species) by the small spores, which latter are sub-ellipsoid; moreover, the cheilocystidia have a smaller (1.5-3μ) rounded head ..... bellulus (PK.)

E)Species with stipe slender, spores ovoid-globose, 4-5.5 x 3.5-4.5 μ. Pileus finely, distinctly tomentose-felted, even spotted-squamulose (under lens), rarely appearing glabrous when soaked, dull fawn. Stipe x 1.2-3 mm. Lamellae yellowish-ochre-fawn or cinnamon, not showing the gray-yellow-greenish crystals revealed by the polarized microscope in typical Gymnopilus. Cheilocystidia capitate, 3.5-6 μ broad, with a slender neck (1 μ or less). Taste sweet .... subsphaerosporus (Joss.) K&R.

C)Species neither cespitose nor on wood.

K)Growing in grass (dactylis). Pileus 3-5 cm, tawny-yellow. No fibrillose veil, even when young. Taste sweet. Spores 5-7 x 4 μ ..... flavus (6)

K)Not in grass.

L)Spores 6-8.5 x 3.5-4.5 μ. On soil, sometimes burned. Stipe 1-2 cm x 2-4 mm, fawn-yellow, darkening below, minutely fibrillose. Pileus 1-2 cm, rather bright-tawny-brown to orange-tawny, (margin more tawny, according to Fries). Lamellae slightly sinuate, bright yellow to warm golden yellow. Taste slightly bitter, but mainly farinaceous..... ..... odini (7) (hebeloma Fr.)

L)Spores 8-11 (13) x 5-7 (8) μ. In peat bogs, in sphagnum, at the edge of ponds. Pileus 0.5-2.5 cm broad, rust-brown, inclined toward orange color when moist, rusty-fawn to orange-fawn when dry. Lamellae distant, at least not very close. Seems to lack hymenial crystals present in a majority of species of this genus. Taste sweet (8)..... fulgens (Favre-Maire)
(Alnicola Favre-Maire)

NOTES AND OBSERVATIONS ON GYMNOPILUS

(1) G. intermedius (Singer), at first (1929) as Cortinarius, then Pholiota, finally in annulate Gymnopilus, is of uncertain taxonomic position. In any case, it is easily distinguished from spectabilis by its sweet taste (flesh), its rusty scales on pileus, in part "aerugineo decolorante." In this last coloration, it is reminiscent of Flammula harmoge Fr., which no one seems to have found again; it is, however, distinctive by its disc (of pileus) "aerugineo," subvisced surface, appressed squamules, and its saffron spores. But Fries, contrary to Singer, does not point out any annulus on the stipe, so that any similarity between the two species remains hypothetical, the habitat not agreeing either.

(2) According to H.R., several tropical Gymnopilus (e.g. G. aculeatus (Bres.-Roumguere) Singer), have a cap covered by conic warts. But, Flammula limulata, placed by Fries in Sapinei, with sapinea and penetrans, is described by him as the pileus being densely papillose-rivulose by innate flocci. However, it is not a gymnopilus, since the spores are smooth.

(3) G. picreus Fr., with a rust or bay-cinnamon cap, glabrous, is far removed from all the species of the section Sapinei, which Fries placed it, because of its dusky brown stipe, entirely white pulverulent in youth; cortina none. We do not know this species, which Fries claims he found in abundance in pine forests of mountains (principally under Pinus sylvestris), and which, no more than limulata, perhaps is not a gymnopilus.

(4) According to Fries, penetrans is a frequent species, chiefly in the mountains, with a very fugaceous cortina, and G. hybridus, not very rare, would be related to penetrans, by intermediary individual species. Also, one might consider penetrans and hybridus as two forms, characterized by the more or less great copiousness of the veil, of a single and even common species in France, especially in the mountains, to which would re-appear the name penetrans. But, not having clearly delimited these two forms, we are astonished that Fries has, nevertheless, been able to distinguish them specifically, since he goes so far as to state the G. hybridus differs from penetrans "by its bearing and by numerous characteristics, even important ones."

(5) A species not well known. Hicken, like Fries, insists on the width of the lamellae (7-15 mm, according to him), and the thinness of the flesh, he attributes to it. Spores 8-9 x 5-6 µ. H.R. Names thus a species AR (which he knows only from

a single station where it occurs on soil, sometimes in rather dense clumps, not far from Pinus pinaster), and which shows approximately these macroscopic characteristics, notably the segmentiformed lamellae, conspicuously broad, with, moreover, a strong, agreeable odor, different from that of other Gymnopilus, spores 6.5-7.5 x 4-5 µ. R.K. wondered if liquiritiae Fr. was probably only bellulus whose habitat it has (in general on fir trees, and not pine); the dimensions given by Fries for his species (stipe x 4-7 mm) seem, however, to oppose this identification.

(6) G. alpinus (Singer), a species found in the grass of alpine prairies, with spores 6.5-9.5 x 4-6 µ, with a rust or ferruginous-brown pileus, has not yet been reported from France.

(7) Although this species has the stature of a Naucoria, as Fries remarks, we are dealing here with a typical Gymnopilus, whose lamellae are studded with thick bi-refringent crystals, resisting hydrochloric acid (but they have seemed to us also to resist ammonia, and several other reagents). Fries has without doubt placed it in Hebeloma only because of its lamellae "slightly sinuate, sub-adnate, because he remarks that it has the color of Flammula.

(8) M.R. makes one notice that this species seems to be the type of a group with rather variable forms; he has gathered some, outside of moist places (on the soil of forests, on coal deposits), with a distinctly bitter taste, and with spores a little smaller, although also coarsely ornamented.

Flammula

Analytical Key to the North American Species of Gymnopilus

by Paul R. Harding, Jr.

A. Carpophores terrestrial.

B. Cheilocystidia lacking..... 1. G. atlcticus

B. Cheilocystidia present

C. Pileus context with bitter taste..... 2. G. humicola

C. Pileus context with mild taste..... 3. G. Abramsii

A. Carpophores on charred remains of hummocks of Polytrichum or Sphagnum, or on peat soil or burned-over ground which has supported Polytrichum or Sphagnum..... 4. G. fulgens

A. Carpophores on wood

D. Apexes of cheilocystidia neither capitate nor subcapitate (scattered capitate elements present in G. Earlei).

E. Pilei up to 10 cm. broad

F. Cheilocystidia all non-capitate at the apexes and of one size range; stipe with prominent longitudinal ridges for 1-2 cm. at the apex and these ridges exactly continuous with the gills..... 5. G. depressus

F. Cheilocystidia of two types, one type abundant, non-capitate, 17-22 x 6-7 μ, the other type scattered, capitate, 26-32 x 7-9 μ; stipe without decurrent ridges from the gills..... 6. G. Earlei

E. Pilei not exceeding 5 cm. broad

G. Stipe becoming fuscous from the base up in age; pileus with pilose squamules on a tomentose surface..... 7. G. aureobrunneus

G. Stipe scarcely discoloring; pileus with hispid or floccose squamules on a smooth surface.. 8. G. filiceus

D. Cheilocystidia typically capitate or subcapitate

H. Basidia two-spored; pileus tough as in G. Lentinus..... 9. areolatus

H. Basidia four-spored or a mixture of four-spored and two-spored elements; pileus not Lentinus-like in texture

I. Pileus cuticle equipped with cystidioid elements

J. Pileus and stipe some shade of dull green over all; cystidioid elements of the pileus cuticle filiform-capitate..... 10. G. punctifolius

J. Pileus and stipe red-brown or bay-brown

K. Cystidioid elements of the pileus cuticle saccate-clavate; spores 4-5.5 x 2.6-3.3 µ..... 11. G. bellulus

K. Cystidioid elements of the pileus cuticle a mixture of saccate-clavate elements and elements which are fusoid-ventricose with filiform neck and capitate apex; spores 7-9 x 5-6 µ..... 12. G. pioreus

J. Pileus fulvous; stipe yellow-ocher to ferruginous; pileus cuticle equipped with brown lactiferous cystidioid cells which are subcylindric to somewhat fusoid-ventricose and sometimes with capitate or sub-capitate apex..... 13. G. liquiritiae

I. Pileus cuticle composed entirely of filamentous hyphae

L. Stipe annulate

M. Pileus conspicuously scaly

N. Pileus echinately hispid-squamose; stipe bulbous at the base..... 14. G. praefloccosus

N. Pileus not echinately hispid-squamose; stipe not bulbous at the base

O. Pileus areolate-scaly and often with green spots, sometimes hispid-squamulose on the disk, imbricate-scaly and deep vinaceous-red in the button stage; carpophores on hardwoods and conifers.. 15. G. Harmoge

O. Pileus floccose-squamulose, ochraceous, never vinaceous-red or spotted with green; stipe scarcely discoloring on drying; carpophores on palms..... 16. G. palmicola

O. Pileus with appressed fibrous or coarsely fibrillose squamules formed by the cuticle breaking up radially, ochraceous, never vinaceous-red or spotted with green; stipe becoming ferruginous on drying; carpophores also on palms.. 17. G. pholiotoides

M. Pileus not conspicuously scaly, but appressed-fibrillose or with minute appressed scales.

P. Context lavender in fresh carpophores and sometimes becoming greenish when cut or in age..... 15. G. Harmoge

P. Context yellow or yellowish in fresh carpophores and never becoming greenish when cut or in age

Q. Spores verruculose, ellipsoid to sub-amygdaliform, 7-10 x 4.5-6 μ; stipe solid, compact and rather hard, pale yellow, not changing color appreciably on drying..... 18. G. Junonius

Q. Spores coarsely verrucose, subglobose to broadly ellipsoid, 8-10 x 7-8.5 μ; stipe hollow, fleshy-fibrous, luteous-cinnamon to fulvous, becoming deep brown on drying..... 19. G. imperialis

L. Stipe not annulate

R. Pileus vinaceous-pink, yellowish-red, pinkish-ochraceous, pinkish-buff or pallid, often with green spots; stipe concolorous or vinaceous, typically central ..... 15. G. Harmoge

R. Pileus fulvous to ferruginous; stipe pallid to yellow-ocher or ferruginous, central to eccentric

S. Pileus glabrous or with minute brown dots composed of brown lactiferous hyphae; cuticle hyphae non-incrusted; veil lacking..... 13. G. liquiritiae

S. Pileus innately silky, appressed-fibrillose or minutely floccose-scaly, rarely truly glabrous; cuticle hyphae incrusted at least in part; veil present in young carpophores... 20. G. sapineus

R. Pileus orange or yellow; stipe pallid or pale yellow, typically central

T. Pileus yellow, glabrous; stipe fragile, not solid..... 21. G. flavidellus

T. Pileus yellow to orange, appressed silky-fibrillose or appressed silky-squamulose; stipe compact and rather hard, solid..... 18. G. Junonius

R. Pileus red-brown or bay-brown; stipe concolorous, central

U. Spores 7-9 x 5-6 μ; stipe blackening on drying..... 12. G. piereus

U. Spores 4-5.5 x 2.6-3.3 μ; stipe not blackening on drying..... 11. G. bellulus

Translation from K-R: Flore Anal. Champ. Super. - 1953.

GYMNOPILUS Karsten (1879) emend.

Bibl.: Romagnesi, H. Sur quelques groupements naturels d'agarics ochrospores. R.M. 1:209.

Singer, R. Notes sur quelques Basidiomycetes. R.M. 2:239.

***

The typical species of this genus were assembled by Fries in his section "Sapinei" of Flammula. We do not consider him exactly as the originator of his name (Karsten has, in fact, classed Rhodotus palmatus there, but excluded from it the annuliform species) nor like R. Maire, who used it for Flammula Fries, but such as H.R. has defined and delimited it (loc.cit.), under the name Fulvidula.

***

A) Stipe with an evident and persistent membranous annulus (1). Pileus 5-13 cm (rarely 2.5-6 cm in var. junonia (Fr.) Lange), fibrillose to shaggy-subsquarrose, orange-tawny or fibrils of this color on a background of golden yellow. Stipe fibrillose, base sometimes tapering to a short root. Spores amyghaliform, 7.5-9.5 x 5-5.7 µ, very strongly verrucose. Aurea Mattuschka; var. junonia Fr. (Syn. Ph. aurea)..... ..... spectabilis (Fr.)

A) Partial veil cortinate, sometimes leaving an annuliform zone at the stipe-apex, more often entirely and prematurely fugacious

B) Meridional species (only in North Africa and Catalonia), frequently on cork-tree (also on Quercus lusitanica). Stipe 3-6 cm x 4-18 mm, yellowish white, then fulvescent, bearing, at the apex, an annular zone of cortina fibrils, rusty from spores, 6-9 x 3.5-5 µ. Pileus 3-10 cm, light tawny ocher, subviscid after rains. R. Maire says the cap is glabrous, sometimes squamulose-diffracted when dry (in this instance the species would be closely akin to hybridus), but his figure shows a young example studded with prominent conic warts. We have never observed such warts--no more in G. hybridus than in other European Gymnopilus known to us (2)..... ..... suberis (Maire) Sing.

B) Species not on Quercus suber or lusitanica, the pileus lacking conical warts, even in youth (2).

6) Species found typically in conifer forests, often on wood..... Sapineae (Fr.), Sect. Flammula

D)Species with a slender stipe (x 2-5 mm), pileus not very fleshy, and further characterized by: either the stipe is entirely pulverulent, white in youth; or by innate flakes of bright color..(see Notes 2 & 3)

D)The stipe powdery, only at the apex; when the pileus is squamulose, the pileus then distinctly fleshy, the stipe robust, or the color dull.

E)Stipe thick or slender; when slender the spores not globose-ovoid.

F)Stipe at least 4 mm thick

G)Pileus minutely scaly, shaggy or velvety-squamulose, woolly-fibrillose, tending in age to become cracked, the cuticle hyphae 10-18 μ broad, even young specimens the wall tawny, incrusted. Stipe x 3.5-7.5 mm thick, often compressed. Spores 7.5-8.5 x 4-5 μ ..... sapineus (Fr.)

G)Pileus not shaggy-scaly, with cuticular hyphae usually not more than 4-10 diam, even on thick specimens.

H)Pileus 3-8.5 cm, orange-tawny or pale orange-ochre, then fulvescent, veil white, appressed, fugaceous, appearing to be merged with the cuticle, becoming smooth and more or less streaked by fibrils, fleshy over the disc. Stipe firm or hard, x 6-20 mm, yellowish, fibrillose; taste very bitter. Spores 6-8 x 4-5.2 μ .....stabilis (Weinm.) K. & R.

H)Pileus neither white-velate at first, nor finally streaked, not hard

I)Pileus 2.5-7 cm (rarely more), tawny, tawny ochre, or golden-ochre, glabrous, margin not striate; flesh pale-yellow to nearly white Stipe dingy whitish, then pulverulent, browning from the base up, with white, silky veil, apex yellowish, covered with a bloom. Spores 7-9 x 3.7 -5.5 μ. The f. hybridus (Fr.) has an obvious veil which leaves an annuliform zone at the apex ..... penetrans (4)

I)According to Fries, the pileus is thinner than in the preceeding, subumbonate, scissile, margin striate. Stipe hollow. Lamellae broad (6-7 mm). Odor acetic..liquiritiae (5)

F)Stipe slender, scarcely 4 mm thick. Pileus glabrous. Lamellae with large crystalline masses.

J)Spores 8-10.7 x 5.5-6.2 μ, ovoid-conic. Pileus reddish brown. Lamellae golden yellow. Stipe 2-4 cm x 1.5-2.5 mm, concolorous but paler than pileus, glabrous. Cheilocystidia as in the following species. On stumps..... satur Kuhn. sp. nov.

J)Spores 4.5-5 x 2.5-3.7 μ. Pileus margin sometimes extending (beyond lamellae), rust-brown, red-brown, tawny, or tawny ochre. Lamellae edges sometimes staining brown. Stipe 1-4 cm x 1-3.5 mm, fawn or russet, fibrillose-glabrous, apex pruinose, cortina fugaceous. Taste bitter. Similar to following (species) by the small spores, which latter are sub-ellipsoid; moreover, the cheilocystidia have a smaller (1.5-3μ) rounded head ..... bellulus (PK.)

E)Species with stipe slender, spores ovoid-globose, 4-5.5 x 3.5-4.5 μ. Pileus finely, distinctly tomentose-felted, even spotted-squamulose (under lens), rarely appearing glabrous when soaked, dull fawn. Stipe x 1.2-3 mm. Lamellae yellowish-ochre-fawn or cinnamon, not showing the gray-yellow-greenish crystals revealed by the polarized microscope in typical Gymnopilus. Cheilocystidia capitate, 3.5-6 μ broad, with a slender neck (1 μ or less). Taste sweet .... subsphaerosporus (Joss.) K&R.

C)Species neither cespitose nor on wood.

K)Growing in grass (dactylis). Pileus 3-5 cm, tawny-yellow. No fibrillose veil, even when young. Taste sweet. Spores 5-7 x 4 μ ..... flavus (6)

K)Not in grass.

L)Spores 6-8.5 x 3.5-4.5 μ. On soil, sometimes burned. Stipe 1-2 cm x 2-4 mm, fawn-yellow, darkening below, minutely fibrillose. Pileus 1-2 cm, rather bright-tawny-brown to orange-tawny, (margin more tawny, according to Fries). Lamellae slightly sinuate, bright yellow to warm golden yellow. Taste slightly bitter, but mainly farinaceous..... ..... odini (7) (hebeloma Fr.)

L)Spores 8-11 (13) x 5-7 (8) μ. In peat bogs, in sphagnum, at the edge of ponds. Pileus 0.5-2.5 cm broad, rust-brown, inclined toward orange color when moist, rusty-fawn to orange-fawn when dry. Lamellae distant, at least not very close. Seems to lack hymenial crystals present in a majority of species of this genus. Taste sweet (8)..... fulgens (Favre-Maire)
(Alnicola Favre-Maire)

NOTES AND OBSERVATIONS ON GYMNOPILUS

(1) G. intermedius (Singer), at first (1929) as Cortinarius, then Pholiota, finally in annulate Gymnopilus, is of uncertain taxonomic position. In any case, it is easily distinguished from spectabilis by its sweet taste (flesh), its rusty scales on pileus, in part "aerugineo decolorante." In this last coloration, it is reminiscent of Flammula harmoge Fr., which no one seems to have found again; it is, however, distinctive by its disc (of pileus) "aerugineo," subviscid surface, appressed squamules, and its saffron spores. But Fries, contrary to Singer, does not point out any annulus on the stipe, so that any similarity between the two species remains hypothetical, the habitat not agreeing either.

(2) According to H.R., several tropical Gymnopilus (e.g. G. aculeatus (Bres.-Roumguere) Singer), have a cap covered by conic warts. But, Flammula limulata, placed by Fries in Sapinei, with sapinea and penetrans, is described by him as the pileus being densely papillose-rivulose by innate flocci. However, it is not a Gymnopilus, since the spores are smooth.

(3) G. picreus Fr., with a rust or bay-cinnamon cap, glabrous, is far removed from all the species of the section Sapinei, which Fries placed it, because of its dusky brown stipe, entirely white pulverulent in youth; cortina none. We do not know this species, which Fries claims he found in abundance in pine forests of mountains (principally under Pinus sylvestris), and which, no more than limulata, perhaps is not a gymnopilus.

(4) According to Fries, penetrans is a frequent species, chiefly in the mountains, with a very fugaceous cortina, and G. hybridus, not very rare, would be related to penetrans, by intermediary individual species. Also, one might consider penetrans and hybridus as two forms, characterized by the more or less great copiousness of the veil, of a single and even common species in France, especially in the mountains, to which would re-appear the name penetrans. But, not having clearly delimited these two forms, we are astonished that Fries has, nevertheless, been able to distinguish them specifically, since he goes so far as to state the G. hybridus differs from penetrans "by its bearing and by numerous characteristics, even important ones."

(5) A species not well known. Ricken, like Fries, insists on the width of the lamellae (7-15 mm, according to him), and the thinness of the flesh, he attributes to it. Spores 8-9 x 5-6 μ. H.R. Names thus a species AR (which he knows only from

a single station where it occurs on soil, sometimes in rather dense clumps, not far from Pinus pinaster), and which shows approximately these macroscopic characteristics, notably the segmentiformed lamellae, conspicuously broad, with, moreover, a strong, agreeable odor, different from that of other Gymnopilus, spores 6.5-7.5 x 4-5 µ. R.K. wondered if liquiritiae Fr. was probably only bellulus whose habitat it has (in general on fir trees, and not pine); the dimensions given by Fries for his species (stipe x 4-7 mm) seem, however, to oppose this identification.

(6) G. alpinus (Singer), a species found in the grass of alpine prairies, with spores 6.5-9.5 x 4-6 µ, with a rust or ferruginous-brown pileus, has not yet been reported from France.

(7) Although this species has the stature of a Naucoria, as Fries remarks, we are dealing here with a typical Gymnopilus, whose lamellae are studded with thick bi-refringent crystals, resisting hydrochloric acid (but they have seemed to us also to resist ammonia, and several other reagents). Fries has without doubt placed it in Hebeloma only because of its lamellae "slightly sinuate, sub-adnate, because he remarks that it has the color of Flammula.

(8) H.R. makes one notice that this species seems to be the type of a group with rather variable forms; he has gathered some, outside of moist places (on the soil of forests, on coal deposits), with a distinctly bitter taste, and with spores a little smaller, although also coarsely ornamented.

from Africa

GYMNOPILUS ACULEATUS (Bres. & Roum.) Sing.

Lilloa 22:561. 1950

Pholiota aculeata Bres. & Roum., Rev. Mycol. 12:28. 1890.

(From Bresadola: ~~Icon. Myc. 15:705. 1930~~ and Roumeguere: Rev. Mycol. 12:28. 1890)

Pileus 1-1.5 cm broad, campanulate to convex-expanded, yellowish (luteus-saffron yellow, golden yellow), at first squamulose, very sharply bristly, then sub-adpressed. Context golden yellow.

Lamellae adnate, close, luteo-fulvous (yellowish tawny).

Stipe 1.5-2 cm long, 1-2 mm thick, yellowish, ferruginascent downward, furfuraceous, stuffed. Annulus inferior, not lacerate, evanescent.

Spores 7-8 x 4-4.5 μ, subamydaliform, yellowish tawny, smooth.

Hab. Caespitose on rotting trunks, Isle of St. Thomas, ~~1887~~. Western Africa, 1887.

Harding (p. 114) lists it as a synonym of G. fulvescens (and hispidus, parvulus, dryophilus etc).

Harding thinks this (Singer's) descr. is of palmicola; spores too large for aculeatus.

GYMNOPILUS ACULEATUS (Bres. & Roumeguère) Sing. ~~Revue de Mycologie 18: 19. 1953.~~
run in ~~Lilloa 22: 561. 1951~~

Pholiota aculeata Bres. & Roumg., Rev. Myc. 12: 28. 1890. ~~Bol. Soc. Broter. 7: 1890.~~

Illustration:

Singer, Rolf. Agar. in Modern Taxonomy, Pl. 1, frontispiece (in color), 1962.

Pileus 2.2-6 cm broad, convex-campanulate, then convex-applanate, finally applanate, often more or less umbonate, "Narcissus," "golden rod" (young), later "Cadmium y" or "Florida gold" (M & P), with erect pilose squamules or spines, which at their bases continue into concolorous lines, the scales ~~ornamentation~~ "Zanzibar" (M & P), or "oxblood red" to "madder brown (R), scales scarce to abundant, on the margin few or absent, scales fading to "ochraceous orange." Context yellowish white; odor slightly farinaceous, taste submild with a farinaceous aftertaste, slightly to moderately bitter.

Lamellae broadly adnate with a decurrent tooth or sinuate-subdecurrent, "ochraceous buff" (R), or "Feuille morte" (M & P), with a yellow edge, later bright rusty or orange rusty, almost narrow to medium broad, close or crowded.

Stipe 2.3-6.8 cm long, 2-10 mm thick, pale yellow to "ochraceous orange," later deeper colored but never red, frequently ribbed and subpruinate at apex, fibrillose-striate below, glabrescent, solid then hollow, equal or tapering upward, or

somewhat curved. Veil thin-membranous-subcortinoid, yellowish white, forming a distinct, apical, ascendent annulus, at times narrow, which eventually disappears.

Spores 6.8-11 x 4.8-6.8 μ, variable in size and shape, mostly 8-9.5 μ, warts richer colored than exosporium. Basidia 26-28 x 6.8-7.5 μ, 4-spored. ~~Pleurocystidia~~ Cheilocystidia 23-33 x 6-8.2 μ, ventricose below and capitate* above (cap. 3.7-5.4 μ), strongly constricted between thickenings, numerous in yough caps, later more scattered; ch Scales of hyphae in bundles, the terminal elements sometimes cystidiform, fusoid, clavate, the lower elements rusty-incrusted.

HABIT, HABITAT, AND DISTRIBUTION - On living and dead trunks of palms, and orchid-rhizomes, May - October, ~~Massachusetts~~ (in greenhouse), ~~Florida~~, Africa. there palmicola

OBSERVATIONS - Singer's material at Farlow Herbarium.

The above account is from Singer (Lilloa 25:505-507. 1951), and there is discrepancy between spore measurements in Singer and in Harding. Latter gives spores as typically 6-7 x 4-5μ, but that often they are 8-9μ long. Harding thinks Singer's P. aculeatus may have been P. palmicola. (*Harding's study of the type of P. aculeata showed the ch to be non-capitate.)

P. aculeata Bresadola (Icon. Myc. 15: 705. 1930) gives spores for 7-8 x 4-4.5μ — smaller than Singer gives above.

(over)

Singer (1953) reports it from Argentina, stating that it is close in appearance to G. peliolepis (Speg.) Sing., but which is in Monocots. We have seen material from St Thomas, Liberia, Florida, Massachusetts, + Argentina.

From: Jour. Linn. Soc. 10: 290-291. 1868.

presso-fibroso tenui aureo, margine inflexo; stipite solido adpresso-piloso pallide fusco; lamellis latis adnatis aureis.

On rotten logs in the field. March. Pileus 2 inches across; stem 3 inches high, $\frac{1}{3}$ inch thick.

61. A. (FLAMMULA) CHRYSOPELLUS, *B. & C.* (65.) Pileo umbilicato adpresse tomentoso, quandoque depresso margine subsulcato; stipite elongato graciliore, basi incrassato, fusco; lamellis latis decurrentibus luride aureis.

On dead wood. Pileus $1\frac{1}{2}$ inch across; stem 3 inches high, 2–3 lines thick. Cespitose.

62. A. (FLAMMULA) CHRYSOTRICHUS, *B. & C.* (54, 26.) Aureus; pileo obtuso carnoso excentrico, pilis depressis liberis vestito; stipite pallidiore deorsum incrassato pulverulento-fibrilloso; lamellis latis adnexis.

On rotten logs in fields. February. Pileus 1–$1\frac{1}{2}$ inch across; stem 1 inch high, $\frac{1}{3}$ inch thick. This and the four preceding species are closely allied, and, like their European relations, probably grow on Conifers.

63. A. (FLAMMULA) HELVOLICEPS, *B. & C.* (90, 93.) Pileo tenui e convexo depresso glabro helvolo; stipite æquali solido glabro, basi substrigoso, fusco; lamellis adnatis arcuatis ferrugineo-vinosis; sporis majoribus.

On rotting logs in woods. June and July. Pileus 1 inch across; stem 1–$1\frac{1}{4}$ inch high. Distinguished at once from *A. chrysopellus*, which it somewhat resembles, by the much larger spores. No. 90 differs slightly in the straiter gills and the adpresso-fibrous stem.

64. A. (NAUCORIA) COPRINOCEPS, *B. & C.* (88.) Pileo e convexo plano, margine demum revoluto, tenui glabro albo; stipite ex albo subrufo æquali leviter fistuloso; lamellis latis adnatis pallide fuscis.

On logs. May. Pileus $\frac{1}{2}$ inch across; stem $\frac{1}{2}$ inch high. Pileus and stem tawny when dry. This species and the next belong to the same section as *A. hyperellus*.

65. A. (NAUCORIA) EUTHUGRAMMUS, *B. & C.* (27.) Tenerrimus; pileo convexo striato pallide umbrino; stipite gracili hyalino, basi strigoso; lamellis fuscis adnexis.

On rotten wood. Pileus $\frac{1}{3}$ inch across; stem $\frac{1}{2}$ inch high, filiform. Spores many times as small as in *A. coprinoides*. It has the habit of *A. disseminatus*; but the colour and size of the spores are quite different.

66. A. (NAUCORIA) SIDEROIDES, *Bull.* t. 588; *Fr. Ep.* p. 196. (33.)
On dead wood. *Hab.* Europe.

67. A. (NAUCORIA) SEMIORBICULARIS, *Bull.* t. 422; *Fr. Ep.* p. 197. (101.)

On earth. February. *Hab.* Hindustan, Southern and Northern United States, Europe.

68. A. (NAUCORIA) OINODES, *B. & C.* (68.) Pileo umbonato striato hemisphærico vinoso glabro; stipite brevi fusco; lamellis adnatis ferrugineo-rubris distantibus.

On rotten wood. Gregarious. Pileus $\frac{1}{4}$–$\frac{1}{3}$ inch across; stem $\frac{1}{2}$ inch high. Spores ferruginous.

69. A. (NAUCORIA) PECTINATUS, *B. & C.* (81.) Cæspitosus; pileo e convexo plano depressove glabro tenui profunde striato helvolo; stipite glabro brunneo; lamellis angustis pileo concoloribus adnexis.

On logs in bunches. January. Pileus 1 inch across; stem 1 inch high, 2 lines thick. Spores abundant, ferruginous. Evidently allied to *A. furfuraceus*.

70. A. (GALERA) MARTIANUS, *B. & C.* (85.) Helvolus; pileo tenui umbonato plano glabro; stipite gracili leviter sursum deorsumque incrassato; lamellis latis ventricosis læte ferrugineis liberis.

On rotten wood. June. Pileus $\frac{1}{4}$ inch across; stem $\frac{3}{4}$ inch high, capillary. Spores bright ochraceous.

71. A. (CREPIDOTUS) ALVEOLUS, *Lasch. Fr. Ep.* p. 210. (37.)

On dead wood. *Hab.* United States, Europe.

72. A. (CREPIDOTUS) PYRRHUS, *B & C.* (38.) Pileo conchiformi sessili glabro rufo; lamellis latis concoloribus; sporis ferrugineis echinulatis.

On dead wood. Pileus $\frac{1}{3}$–1 inch across; $\frac{1}{3}$–$\frac{1}{2}$ inch long.

Var. sporis lævibus (38 A, 59), LEIOSPORA.

On logs. August. There appears to be no assignable difference except in the spores, as far as regards the dried specimens.

73. A. (CREPIDOTUS) MUSÆCOLA, *B. & C.* (86.) Primum hemisphæricus stipite centrali, demum galeæformis, pileo tenui albo, stipite brevissimo excentrico lateralique pulverulento; lamellis latis adnexis pallide fuscis vel purpureo-fuscis.

On dead plantain-leaves near the ground. May. Pileus $\frac{1}{2}$ inch across. Spores purple-brown, obovate.

73*. A. (CREPIDOTUS) CACAOPHYLLUS, *B. & C.* (807.) Pileo excentrico subreniformi luteolo squamoso, marginem versus tomentoso; stipite brevi; lamellis adnexis, postice attenuatis fuscis distantibus.

On dead wood. Pileus $\frac{1}{2}$ inch across; stem 2 lines high, 1 line thick. Gills chocolate-brown. Spores ochraceous.

74. A. (PSALLIOTA) BAMBUSIGENA, *B. & C.* (82, 83, 104.) Pileo um-

= chrysopellus

GYMNOPILUS CHRYSOTRICHUS (Berk. & Curt.) Murr.

Mycologia 5:21. 1913

Agaricus chrysotrichus Berk. & Curt., Jou. Linn. Soc. 10: 290. 1868.

Flammula chrysotricha (Berk. & Curt.) Sacc., Syll. Fung. 5:813. 1887.

Pileus 2.5-4 cm broad, obtuse, golden-yellow, covered with pilose, free, depressed hairs. Context fleshy.

Lamellae adnexed, concolorous, broad, close.

Stipe 2.5 cm long, 8 mm thick, paler than pileus, pulverulent-fibrillose, enlarged below.

Spores 5-7 x 4-4.5 μ, ellipsoid, inequilateral, verruculose. Harding gives other characters, as follows: (note that Harding regards chrysotrichus as a synonym of aureobrunneus): Spores 6-7 x 4-5 μ, bright-ferruginous in deposits. Basidia 17-20 x 4.5-5.5 μ, 4-spored. Lactiferous basidioles 15-20 x 5-7 μ, brown amorphous contents. Pleurocystidia none; cheilocystidia 17-22 x 6-7 μ, fusoid-ventricose, neck narrow, not capitate. Gill trama parallel, hyphae 7-15 μ broad. Subhymenium not distinctive. Pileus trama interwoven, 10-20 μ broad. Cuticle bearing bundles of erect or repent hyphae, rusty and heavily incrusted.

HABIT, HABITAT, AND DISTRIBUTION - On log, Cuba, February.

MATERIAL STUDIED - CUBA(?): collection from N. Y. Botanical Garden, source not indicated.

OBSERVATIONS - The New York material (above) was so sparse that no sections were prepared. (Hold for collection from Kew, if available). Harding lists chrysotrichus and chrysopellus as synonyms of aureobrunneus.

Singer (Sydowia 9:410) says the type is most probably identical with either G. chrysopellus or G. aureobrunneus. It is supposedly different in having free, appressed hairs on the pileus, but the type (K) shows that the golden hairs of no. 54 consist of mold conidia: thus this (Type) really is composed of two organisms, and thus is a nomen confusum. It is probably identical with G. chrysopellus (spores 6-7.8 x 4.3-5.2 μ, cheilocystidia ampullaceous-non-capitate.

Excluded

GYMNOPILUS ECCENTRICUS (Pk.) Murr.

North Amer. Flora 10:203. 1917

Flammula eccentrica Pk., Bull. Torrey Club 31:179. 1904.

Pileus 2.5-3.5 cm broad, broadly convex, obtuse or slightly umbilicate, tawny, yellowish, or reddish ferruginous, minutely squamulose. Context thin, whitish.

Lamellae somewhat sinuate, adnate, dingy ochraceous, becoming ferruginous, close, rather broad.

Stipe 2-3 cm long, 4-8 mm thick, yellowish or dingy ochraceous, becoming brownish within and without, equal or slightly tapering upward, commonly eccentric, fibrillose, often curved, solid.

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

HABIT, HABITAT, AND DISTRIBUTION - On decaying wood, Missouri, September - October.

MATERIAL STUDIED - MISSOURI: Peck, type, (NY), from near St. Louis.

OBSERVATIONS - Peck described the spores as 15-16 x 8 μ. This is a puzzling report, since in the type material I studied, the spores measured 5.5-8.5 x 3.8-5 μ. Flammula excentrica Cleland & Cheel (Trans. Royal Soc. South Australia 42:115. 1918) is different, and might be a form of G. sapineus.

F-2460 GYMNOPILUS ERYTHROPELLUS Sing. ad int.

On oak trunk, Kelley's Hammock, near Gainesville, Florida, June 29, 1943.

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

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

Spectabilis

GYMNOPILUS FLAVIFOLIUS Murr.

Lloydia 8:285. 1945

Flammula flavifolia Murr.

Pileus 2.5-3 cm broad, convex, not fully expanding, very slightly depressed, gregarious, dry, uniformly umbrinous, disc imbricate, radiate-fibrillose toward the margin, margin incurved when young, even, entire. Context very thin, stramineous, unchanging; odorless, taste mild.

Lamellae short-decurrent, flavous, edges white and minutely eroded, 5 mm broad (medium broad), medium distant.

Stipe 3-3.5 cm long, 5 mm thick, flavous at the apex, yellowish below, with furrows and brown fibrils, solid.

Spores 8.5-12.5 x 3-4 μ, oblong, smooth, no germ pore, pale brownish in KOH, yellowish brown in Melzer's reagent. Basidia 24-29 x 6-7 μ, 4-spored, vinaceous red in KOH. Pleurocystidia none; basidioles clavate, 18-20 x 4-6 μ, vinaceous red in KOH; cheilocystidia 20-24 x 6-11 μ, clavate, scattered (few), colorless. Gill trama of subparallel hyphae, 3-5 μ broad, vinaceous pink in KOH. Pileus trama vinaceous pink in KOH. Both gill and pileus tramae exuding a pinkish coloration in KOH. Cuticle of repent hyphae, bearing fibrils on surface. Clamp connections none. Caulocystidia none.

HABIT, HABITAT, AND DISTRIBUTION - On short grass, under pine, Florida, January.

MATERIAL STUDIED - FLORIDA: Murrill F22500, type, from Gainesville, January 20, 1944.

OBSERVATIONS - The spores, pinkish tramae, in KOH, the clavate ch, and habitat all strongly suggest Cortinarius. A note in the type box by Harding says A. H. Smith also says it is a Cortinarius by the KOH reaction of the tramal hyphae.

GYMNOPILUS FLAVUS (Bres.) Sing.

Lilloa 22:561. 1951

Naucoria flava Bres., Ann. Myc. 3:162. 1905.

Flammula flava (Bres.) J. Lange, Flora Agar. Danica 4:12. 1939.

Flammula dactylidicola J. Lange, Meddel f. Foren. til Svampekundskabens Fremme, p. 2. 1926.

Fulvidula flava (Bres.) Sing., Revue de Mycologia, N. S., 5:12. 1940.

Pileus 1.5-5 cm broad, convex to sub-campanulate, expanding umbonate, dry, when young light ochre, becoming a deeper, somewhat rusty-yellow hue, silky-subfloccose or slightly tomentose at first, then fulvous-spotted. Context soft, yellow, fading; odor and taste not distinctive.

Lamellae adnate or sinuate, at first yellow, then fulvous to bright rusty yellow, fulvous spotted, close, moderately broad.

Stipe 2-5 cm long, 3-5 mm thick, base fusiform-subradicate (up to 10 mm), concolorous, apex yellow-furfuraceous, elsewhere fibrillose, solid, then stuffed to hollow below. Veil none.

Spores 5-6 x 3.5-4.5 μ, ellipsoid-subglobose or subovoid, minutely punctate (lightly asperulate), ochraceous (Bresadola), or ferruginous (J. Lange). Basidia 23-25 x 6-7 μ, 4-spored. Pleurocystidia none (?); cheilocystidia filiform to slender-flask-shaped, apices obtuse (subcapitate ?), crowded.

HABIT, HABITAT, AND DISTRIBUTION - In grass (fields and lawn), in tufts of Dactylis.

OBSERVATIONS - Lange (1926) described F. dactylidicola, which later (1939) he placed as a synonym of F. flava. Bresadola (1930, Tab. 795 and 1905:162) comments that on account of its color (his Naucoria flava) it forms a transition to Flammula. Harding says it is extralimital.

The habitat (on grass) is diagnostic.

Cathariscus

GYMNOPILUS HALLIANUS (Pk.) Murr.

North Amer. Flora 10:197. 1917

Agaricus hallianus Pk., N. Y. State Cab. Ann. Rept. 23:90. 1872.

Flammula halliana (Pk.) Sacc., Syll. Fung. 5:822. 1887.

Pileus 2.5-5 cm broad, hemispheric or convex, hygrophanous, subferruginous when moist, dull-yellow when dry, glabrous, margin obscurely striatulate when moist. Context thin; taste slightly bitter.

Lamellae slightly decurrent, subarcuate, ferruginous, crowded, tapering outward.

Stipe 5-7.5 cm long, 4-6 mm thick, reddish brown slightly fibrillose, equal, hollow. Veil forming a thin, membranous annulus.

Spores ferruginous ~~(Murrill),~~ 7.5-10 x 4.5-6 μ, ellipsoid to subovoid in face view, inequilateral in profile, wrinkled-rough, germ-pore none. Basidia 24-30 x 4-6 μ, 4-spored. Pleurocystidia and cheilocystidia none. Gill trama interwoven, hyphae 4-7 μ broad. Pileus trama radial. Cuticle of repent hyphae. Clamp connections none. Caulocystidia 25-43 x 4-5 μ, filamentous or cylindric-clavate, or ventricose, rare. Pileus and gill trama yellowish brown in KOH; blackish brown in Melzer's reagent.

HABIT, HABITAT, AND DISTRIBUTION - On soil, New York, November.

MATERIAL STUDIED - NEW TORK: Peck, type (NYS), in pastures, Bethlehem.

OBSERVATIONS - The description of microscopic characters is based on a study of the type. Harding studied the type, and proposed Galerina halliana (Pk.) comb. nov.; but Smith and Singer do not list it as a Galerina. I suggest that it is better in Gymnopilus because of its ferruginous spores, which are not calyptrate, and despite its habitat (in pastures). Since I found no pleurocystidia nor cheilocystidia its relationships are doubtful.

Pholiota (vernalis?)

GYMNOPILUS HILLII Murr.

Mycologia 4: 253. 1912

Pileus 2-4 cm broad, slightly convex, umbonate, glabrous, raw-sienna, brown to buff at the center, margin thin, even. Context thin, yellowish; odor not characterictic, taste mucilaginous.

Lamellae adnate or emarginate, yellowish to fulvous, crowded, rather broad, inserted.

Stipe 2.5-4 cm long, 2-5 mm thick, glabrous, umber-brown to slightly blackish below, paler above, hollow, equal.

Spores 6-7.5 (8) x 3.5-4 μ, ellipsoid, more or less inequilateral, often to rarely ovoid, smooth, truncate, germ-pore present (not always conspicuous). Pleurocystidia only as cheilocystidia which extend up the sides a short distance; cheilocystidia numerous, conspicuous, 26-34 x 4-7 μ, filamentous-cylindric, flask-shaped with a neck, apices sometimes capitate or subcapitate. Gill trama subparallel, hyphae 6-10 μ broad. Pileus trama radial. Cuticle of repent hyphae.

HABIT, HABITAT, AND DISTRIBUTION - On rotten logs and stumps, British Columbia, April.

MATERIAL STUDIED - BRITISH COLUMBIA: Hill-7 (type, leg. Albert I. Hill, April 23, 1905, at Westminster).

OBSERVATIONS - The description of microscopic characters above is based on my study of the type. Harding says it is Kuehueromyces verualis, and I agree.

All Ferrum

GYMNOPILUS HYBRIDUS (Fr.) Maire

Treballs del Museo de Ciencies Naturals de Barcelona
15 (no. 2): 96. 1933

Agaricus sapineus f. hybridus Fr., Syst. Myc. 1:239. 1821.

Agaricus hybridus (Fr.) Fr., Epicr. Myc., p. 189. 1838.

Flammula hybrida (Fr.) Gill., Les Hymen., p. 532. 1874.

Flammula sapinea var. hybrida (Fr.) Kohr. & Maubl., Icon. Sel. Fung. 6:108. 1924-1937.

Fulvidula hybrida (Fr.) Sing., Rev. Myc. n. 5. 2:239. 1937.

Pileus 3-5 cm broad, fleshy, hemispheric, expanding, glabrous, smooth, moist, at first cinnamon-fulvous, then fulvous-orange. Context lurid white to pale isabellina; odor subnauseous, taste sub-bitter.

Lamellae adnate, broad, subclose, at first pallid to golden yellow.

Stipe 3-6 cm long, 6-10 mm thick, soft-stuffed, or hollow, attenuated above, appressed-silky, striate, yellowish, base white-villose. Veil cortinate and whitish.

Spores 6-8 x 4-4.5(5) μ, ellipsoid in face view, slightly inequilateral in profile, minutely rough, ferruginous in KOH, red-brown in Melzer's reagent (dextrinoid). Basidia 20-24 x 5-6 μ, 4-spored. Pleurocystidia 27-44 x 6-10 μ, flask-shaped to 9-pin shaped, with a neck, capitate or subcapitate, often obscurely so, rather conspicuous; cheilocystidia 30-37 x 5-7 μ, similar, capitate. Gill

trama of subparallel hyphae, 4-9 μ broad; subhymenium of narrow hyphae. Pileus trama of distinctly interwoven hyphae. Cuticle a zone of brown, repent, incrusted hyphae. Pileocystidia none. Caulocystidia in an extended palisade, chiefly of ventricose to flask-shaped, capitate or subcapitate or non-capitate, 33-56 x 6-14 μ; also scattered among these a few are pyriform to spathulate, 25-34 x 10-14 μ. Clamp connections not found.

On the label of Romell 14445, Pilat had written "Flammula penetrans var. hybrida." This differs from penetrans in its distinct pleurocystidia, conspicuously different caulocystidia, its interwoven pileus-trama, and slightly smaller spores and less prominently roughened spore wall.

Bresadola (Tab. 781) gives for F. hybrida spores 7-9 x 4-5 μ, and the cheilocystidia 40-50 x 4-6 μ, cylindric with a capitate apex (or clavate). Singer thinks Bresadola's F. penetrans (Tab. 780) is F. hybrida [G. hybridus (Fr. ex Fr.) Sing.; F. sapinea var. hybrida (Fr.) Konr. & Maubl.; Fulvidula hybrida Romagnesi]. Lange distinguishes penetrans and hybrida, as follows: in penetrans the cap is chrome-yellow to golden; gills become spotted rusty red; in hybrida the cap is yellowish fulvous becoming bright ferruginous; gills not spotted.

Macroscopic characters above taken from Fries, Epicr. Myc., p. . Microscopic characters from Lars Romell collection from Stockholm, No. 14445.

LIBRARY PHOTODUPLICATION ORDER FORM

For: Dr. Hesler

C

Date of request: 7/10/67

Requester's Order No. _____

Supplier's Order No. _____

Call-No.

REFERENCE DEPARTMENT
LIBRARY
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37916

Author (or Periodical title, vol. and year)

Fold → Revue de Mycologie. V. 18, 1953.

Title (with author and pages for periodical articles) (incl. edition, place and date)

Singer, "Gymnopilus luteofolius," p. 191f

☐ Any edition

Verified in (or Source of reference)

Union List of Serials, p. 3611

Request ☐ microfilm ☐ photoprint ☒ Other Remarks: Xerox

Interlibrary Center
University of North Carolina Library
Chapel Hill, North Carolina 27515

NOTE: This material is requested in accordance with the A. L. A. recommendations concerning the photocopying of copyrighted materials.

ORDER AUTHORIZED BY: B. Hesler

REPORTS:

NOT SENT BECAUSE:

- ☐ Not owned by Library
- ☐ File is incomplete
- ☐ In use
  - ☐ Hold Placed
  - ☐ Request again
- ☐ Publication not yet received
- ☐ Please verify your reference ← Fold
- ☐ Other:
- ☐ Suggest you request of:

Estimated Cost of Microfilm _____

Photoprint _____

Please pay in advance ☐

Please do not pay in advance ☐

Please send cost estimate for

☐ microfilm ☐ photoprint

Go ahead with the order if it does not exceed: $2.50

Special instructions:

oris, breviter clavatis, e.
s vel ventricosis, abrupte
µ, capitulo 3.5 µ diam.;
8.2 µ, capitulo 3.5-5 µ
onocybis. — Ad lignum
tropicalis in zona mon-
estate. Provincia Tucu-
no. T 1718, LIL, typus.
ybe macrorhina (Speg.)
mais elle s'en distingue
obtusément umboné et
up plus grande que *C.*
) Sing. avec les spores

ugosovenosa *Sing. nov.*
le fortiterque rugosove-
i edulis *in silva subtro-*
le los Sosas, 800 m alt.,
us.

bexo-applanato, umbonato (sed haud acute nec prominenter papillato), 32-33 mm. diametro. — Lamellis ferrugineis, pallide ferrugineis in vivis, intense obscureque ferrugineis in exsiccatis, subventricosis, mediocriter latis, vel latiusculis (4.5 mm.), confertis, anguste adnexis; sporis in cumulo intense obscureque ferrugineis. — Stipite ochraceo-brunneo, longitudinaliter striato, subtiliter pruinosulo, apice flavescente, subaequali vel leniter attenuato apicem versus, ad basin fortiter bulboso et bulbo in pseudorhizam tenuem gradatim attenuatam producto, 45-46 × 3-3.5 mm., supra bulbum 4-4.5 mm. lato, bulbo 6-6.5 mm. lato. — Carne alba, immutabili; odore debili, raphanaceo; sapore miti. — Sporis ferrugineis, poro germinativo manifesto sed interdum papillato, aliis in sporis truncato praeditis, apparenter levibus, sed ornamentatione exosporiali subtili, interdum bene visibili et magis obscura quam episporium sed aliis in sporis paulum manifesta punctatis, sed numquam ornamentatione ex toto desti-

eguère) Sing. — Cette
emblable à *Gymnopilus*
ur les Monocotylédones
recastrum romanzoffia-
1951, R. Singer T 1699,
LIL. Nous avons vu du matériel de Saint-Thomé, Liberia, Floride, Massachusetts (dans les serres chaudes sur Orchidées du Mexique), Argentine.

Gymnopilus luteofolius (Peck) Sing. — Chapeau entre « pinkish buff » à « cinnamon » (Ridgway) ou entre « maroon » et « carbuncle » (Maerz et Paul) sur les élévations aréolées ou verruqueuses qui couvrent la surface, subfibrilleux ou tomenteux, dans la vieillesse squamuleux à fibrilles fasciculées brun clair, avec le centre pointillé de brun rougeâtre, blanchâtre-noisette entre les élévations ou fibrilles squamuleuses, convexe ou presque hémisphérique, souvent subumboné, toujours sec et ni hygrophane, ni visqueux, appendiculé sur la marge d'un voile de couleur paille (« straw », Maerz et Paul), puis formant des lignes

BOLBITIACEAE

Conocybe intrusa (Peck) Sing.

Cette espèce, la plus grande du genre, a été décrite par nous dans *Sydowia*, 4, p. 133, 1950. Les récoltes sudaméricaines sont identiques à celles des Etats-Unis. Notre matériel argentin provient de la province de Tucumán, Capital, Jardin du Instituto Miguel Lillo, sur des accumulations de foin un peu fumé dans les endroits ombragés, 14-I-1952, R. Singer, no. T 1728, LIL. — C'est la première récolte hors des serres chaudes, ce qui pourrait être interprété comme indication d'une origine néotropicale de cette espèce.

Conocybe megalospora *subspec.* **nivalis** *Sing. ssp. nov.* — *A* C. megalospora *typica differt pileo paulum minore (cc. 13-14 mm.), capitulis cheilocystidiorum crassioribus (4-5.7 µ); sporis 15.5-22 -(26) × 8.2-13.6 µ; basidiis bi-, tri-, tetrasporis, 23-30 × 11-12.5 µ, pseudoparaphysibus numerosissimis ad aciem lateraque, 22-26 × 12.3-13 µ; dermatocystidiis stipitis capitatis et haud capitatis mixtis de apice usque ad basin. Habitat ad terram subfimosam locis apricis alpinis. Provincia Catamarca, Enter Minas Capillitas et Cerro Negro, 3.600-3.800 m. alt., 3-III-1952, Sleumer et Sparre, comm. Singer T 1933, LIL, typus.*

Conocybe radicata *Sing. spec. nov.* — *Pileo ochraceo-brunneolo, mox avellaneo-albo in centro et aeneo-ochraceo in zona marginali, glabro, subtiliter ruguloso-venosulo, convexo, dein convexo-applanato, umbonato (sed haud acute nec prominenter papillato), 32-33 mm. diametro.* — *Lamellis ferrugineis, pallide ferrugineis in vivis, intense obscureque ferrugineis in exsiccatis, subventricosis, mediocriter latis, vel latiusculis (4.5 mm.), confertis, anguste adnexis; sporis in cumulo intense obscureque ferrugineis.* — *Stipite ochraceo-brunneo, longitudinaliter striato, subtiliter pruinosulo, apice flavescente, subaequali vel leniter attenuato apicem versus, ad basin fortiter bulboso et bulbo in pseudorhizam tenuem gradatim attenuatam producto, 45-46 × 3-3.5 mm., supra bulbum 4-4.5 mm. lato, bulbo 6-6.5 mm. lato.* — *Carne alba, immutabili; odore debili, raphanaceo; sapore miti.* — *Sporis ferrugineis, poro germinativo manifesto sed interdum papillato, aliis in sporis truncato praeditis, apparenter levibus, sed ornamentatione exosporiali subtili, interdum bene visibili et magis obscura quam episporium sed aliis in sporis paulum manifesta punctatis, sed numquam ornamentatione ex toto destitutis, 7.5-9.5 × 4.8-5.5 µ; basidiis tetrasporis, breviter clavatis, e. gr. 20.5 × 8.2 µ; cheilocystidiis vesiculosis vel ventricosis, abrupte capitatis, e. gr. 13.7 × 8.2 µ vel 15 × 9 µ, capitulo 3.5 µ diam.; dermatocystidiis stipitis capitatis 20.5 × 8.2 µ, capitulo 3.5-5 µ diametro; tramate hymenophorali typi Conocybis.* — *Ad lignum putridum immersum in humo silvae subtropicalis in zona montana (Myrtaceis praevalentibus), raro, aestate. Provincia Tucumán, Anta Muerta, 11-I-1952, R. Singer, no. T 1718, LIL, typus.*

Cette espèce est très affine au *Conocybe macrorhina* (Speg.) Sing. dont elle a l'ornementation sporale, mais elle s'en distingue par ses spores plus petites, le chapeau obtusément umboné et la pseudorhize du stipe. Elle est beaucoup plus grande que *C. missionum* Sing. et *C. juruensis* (Henn.) Sing. avec les spores plus grandes que dans ces derniers.

Agrocybe aegerita (*Brig.*) *Sing. var.* **rugosovenosa** *Sing. nov. var.* — *A varietate typica pileo manifeste fortiterque rugosovenoso. Habitat in arboribus vivis* Allophyli edulis *in silva subtropicali, aestate. Provincia Tucumán, Rio de los Sosas, 800 m alt., 26-II-1952, R. Singer no. T 1875, LIL, typus.*

CORTINARIACEAE

Gymnopilus aculeatus (Bres. et Roumeguère) Sing. — Cette espèce, très affine et d'apparence très semblable à *Gymnopilus peliolepis* (Speg.) Sing., mais qui croît sur les Monocotylédones (Orchidées, Palmier) a été récoltée sur *Arecastrum romanzoffianum* dans un jardin de Tucumán, 28-XII-1951, R. Singer T 1699, LIL. Nous avons vu du matériel de Saint-Thomé, Liberia, Floride, Massachusetts (dans les serres chaudes sur Orchidées du Mexique), Argentine.

Gymnopilus luteofolius (Peck) Sing. — Chapeau entre « pinkish buff » à « cinnamon » (Ridgway) ou entre « maroon » et « carbuncle » (Maerz et Paul) sur les élévations aréolées ou verruqueuses qui couvrent la surface, subfibrilleux ou tomenteux, dans la vieillesse squamuleux à fibrilles fasciculées brun clair, avec le centre pointillé de brun rougeâtre, blanchâtre-noisette entre les élévations ou fibrilles squamuleuses, convexe ou presque hémisphérique, souvent subumboné, toujours sec et ni hygrophane, ni visqueux, appendiculé sur la marge d'un voile de couleur paille (« straw », Maerz et Paul), puis formant des lignes

circulaires sur la marge, diamètre du chapeau 9-50 mm. — Lames « clay color » (Ridgway), puis jaune ocre roux et enfin d'une couleur ferrugineux brillante, jusqu'à 5 mm. de largeur, presque linéaires, mais larges dans la jeunesse, irrégulièrement sinuées, adnexées ou adnées, toujours adnées dans la jeunesse, modérément serrées à distantes; sporée roux vif. — Stipe jaune (« antimony yellow » de Ridgway) ou alutacé pâle et sale, le sommet lilas (« light purplish vinaceous » Ridgway), puis entièrement concolore au chapeau et pâlissant dans la vieillesse, fibrilleux, glabrescent, égal ou à base un peu plus grosse, jusqu'à 40 mm. de longueur, 2.5-5 mm. de diamètre; voile aranéeux-fibrilleux, gros et abondant, formant une zone alutacée pâle subannuliforme au sommet du stipe ou bien un anneau assez persistant dans quelques carpophores; mycélium blanc. — Chair rosée ou alutacée ou crème pâle; odeur très faible; saveur très faiblement amère. — Spores pigmentées, verruqueuses, 7.5-10.2 × 4.3-5.8 µ, sans plage et sans pore germinatif; basides 25-29 × 6.8-8.2 µ rarement petites de 15 × 5.5 µ, tétraspores, rarement quelques basides bisporiques entremêlées; cystides nulles; cheilocystides hyalines ou jaunâtres, ventrues en bas, subcapitées ou capitées au sommet, sous le sommet 2.5-3 µ de diamètre, 22-36 × 4-8.2 µ, sommet 4.2-7.5 µ de diamètre; une minorité d'entre elles légèrement jaunâtre citrin dans les carpophores jeunes; trame hyménophorale régulière, hyaline; toutes les hyphes avec boucles.

Hab. : Sur bois pourrissant, e. gr. sur *Phoebe porphyria*, dans les forêts. Argentine, prov. de Tucumán, Rio de los Sosas, 26-II-1952, R. Singer, T 1881, LIL. — Etats-Unis, Floride, Sugarfoot Hammock (Alachua County), 24-I-1943, R. Singer, F 1760, FH.

Le type de Peck n'a pas été comparé avec nos récoltes; en conséquence, la détermination n'est pas absolument certaine. La couleur lilacine du sommet du stipe n'a été observée que dans la récolte floridienne, tandis que la chair rosée est plus distincte dans la récolte argentine.

Phaeomarasmius confragosulus *Sing. spec. nov. Pileo atro-ferrugineo-brunneo (« Chutney » Maerz et Paul), hygrophano sub punctatione microscopica castaneo-ferrugineo et siccando convexo, macroscopice, glabro vel subglabro, convexo, subumriente, margine per 6 mm. pellucide striatello, sed siccitate estrio, convexo, macroscopice, glabro, vel subglabro, convexo, subumbonato, 25-26 mm. lato. — Lamellis cinnamomeis (pl. 14 B 11, Maerz et Paul), confertis, adnatis, albofimbriatis, satis angustis (3 mm. latis). — Stipite pileo concolori sed pallidiore, zona annulari excepta glabro, sed apice pruinoso, e mycelio archnoideo-tomentoso subtus subincrassato alboque, ceterum aequali, 33 × 2.5 mm. (ad basin 3 mm.); velo sericeo, pallido, zonam apicalem annularem fibrillarum sericearum applicatarum formante, sed annulum bene evolutum haud formante. — Carne subconcolori sed pallidiore, carnoso-molli inodora. — Sporis levibus, epi- et endo- sporio praevisis, bene pigmentatis (ferrugineo-ochraceo-brunneolis), ellipsoideis et interdum ad latus interius applanatis, et tunc subreniformibus, sed numquam depressis manifesteque reniformibus obviis, poro germinativo calloque destitutis, 7.3-7.7 × 4.8-5.5 µ; sporis paucis majoribus deformatisque aut latissimis aut epi- et endosporio separatis in parte media spatioque intermembranali instructis, ex basidiis bisporis ortis et usque ad 11.7 × 5.5 µ metientibus; cystidiis nullis; cheilocystidiis hyalinis, basi incrassata vel rarius haud incrassata praeditis, apice incrassato vel frequentius haud incrassato praeditis, sed numquam capitatis, raro clavatis (infrequenter cheilocystidium centrale fasciculi cheilocystidiorum clavatum est!). et tunc paulum latioribus, plerumque subfilamentosis, 44-52 × 4-7 µ; acie lamellarum heteromorpha; prope marginem pilei acie lamellarum saepe elementis subbasidiomorphis obsita; basidiis 20-22 × 7-8 µ, clavatis vel ventricosis, hyalinis, tetrasporis v. 2 sporis, tramate hymenophorali brunneolo-cinnamomeo, regulari, ex hyphis parallelis vel subparallelis consistente quae diametro variabili gaudent; subhymenio tramate concolori, ex hyphis tenuioribus multiseptatis efformato, gradatim magis intertextis cum basidiis approximent, non-nusquam (sed frustra) subcellulari apparente; epicute ex hyphis trichodermii palisadici mox depressis applicatisque ita ut cutem spuriam efforment efformata, pigmento membranali abundante et incrustante sparso coloratis, rarius suberectis, septatis sed numquam sphaerocystodieis, membris terminalibus apice rotundato-obtusis; hyphis omnibus fibuligeris. — Habitat ad lignum emortuum putrescente arboris indeterminatae dicotyledoneae in silva subtropicali humida solitarius, provincia Tucumán, Rio Cochuna, alt. 800 m., 11-II-1952, R. Singer, T 1826, LIL, typus.*

Cette espèce est intermédiaire entre *P. confragosus* et *P. rostratus*, car elle a un voile plus fort que dans ce dernier et moins développé que dans *P. confragosus*. Elle possède la couleur, l'apparence et les spores de *P. confragosus*, et la structure de l'épicutis du *P. rostratus*. Les cheilocystides sont différentes de celles des espèces mentionnées puisqu'elles ont une forme plus filamenteuse. Cette position de notre espèce nouvelle indique,

****

Excluded

GYMNOPILUS NASHII Murr.

Mycologia 5:23. 1913

Flammula nashii (Murr.) Murr., Mycologia 5:36. 1913

Pileus 2-4 cm broad, densely cespitose, convex, ochraceous, dry, densely floccose-squamose, margin not striate.

Lamellae adnate, fuscous-ferruginous, broad, subcrowded.

Stipe 4-7 cm long, 3-6 mm thick, concolorous, darker below, subcylindric, enlarged at the apex, fibrillose, firm, becoming fistulose. Veil pale-yellowish, scanty.

Spores 5.5-7 x 4-4.5 μ, ellipsoid in face view, slightly inequilateral in profile, wrinkled rough, germ-pore none. Pleurocystidia 25-32 x 6-7 μ, buried, clavate, brown; cheilocystidia 22-30 x 4-5 μ, inconspicuous, ventricose. Gill trama subparallel, hyphae 3-5 μ broad. Pileus trama radial. Cuticle of repent hyphae, bearing scattered, brown, hyphal tufts (the scales).

HABIT, HABITAT, AND DISTRIBUTION - On logs, Haiti, Santo Domingo, and Cuba, August - January.

MATERIAL STUDIED - HAITI: Nash 79, type (NY), near Port Margot, August 4, 1903; DOMINICAN REPUBLIC: Taylor 177 (NY).

OBSERVATIONS - The description of microscopic characters above is based on both the type and Taylor's collection, neither of which was entirely adequate for critical study.

Harding calls it a synonym of G. felicens.

Galerina ?

GYMNOPILUS PAMPEANUS (Speg.) Sing.*

Lilloa 22:561. 1951

Pholiota brittoniae Murr., Mycologia 5:35. 1913.

Flammula brittoniae Murr.,

Flammula eucalyptorum Cleland,

Pileus reaching 10 cm broad, cespitose, convex to expanded, becoming depressed at the center, fulvous, becoming fuliginous or blackish with age, dry, umbricate-fibrillose to subglabrous, on drying the margin concolorous and strongly inflexed.

Lamellae sinuate with a decurrent tooth, seceding with age, ferruginous, darker with age, broad, subdistant, irregular in shape.

Stipe reaching 10 cm long, 10-30 mm thick, concolorous, blackening with age, longitudinally furrowed, enlarged below, hollow. Veil forming an ample, membranous, ferruginous, persistent annulus, fixed near stipe-apex.

Spores 7-9.5 x 6-8 μ broadly ellipsoid or ovoid, sometimes sublimoniform, coarsely tuberculate, wary, occasionally slightly calyptrate, ferruginous, dextrinoid. Basidia unfit for study. Pleurocystidia and cheilocystidia similar, 20-33 x 4-5 μ, cylindric to subventricose, at times subcapitate, colorless or brown, inconspicious. Pileus trama badly shrunken, unfit. Cuticle

---

* Singer (1962:635, foot-note) says this, and G. suberis are probably geographical races of G. spectabilis. He adds, however, that A. junonius Fr. is not conspecific with G. spectabilis.

repent, bearing brown hyphae - the fibrillose scales.

HABIT, HABITAT, AND DISTRIBUTION - On trees, Jamaica (as Pholiota brittoniae Murr.), October.

MATERIAL STUDIED - JAMAICA: Murrill, type (NY), on roots of living Eucalyptus tree, Cinchona, coll. Elizabeth G. Britton, October, 1908.

OBSERVATIONS - This may prove to be G. spectabilis; or it might be a Galerina (see my Excluded Species).

Harding lists it as a synonym of G. junonius.

GYMNOPILUS SATUR Kühner

Kühner & Romagnesi, Flore Anal. Champ. Super., p. 323. 1953

Pileus up to 4 cm broad, at first subhemispheric-conic, then convex, sometimes slightly depressed at the center, dry, glabrous, a beautiful brownish red, margin paler and overhanging fissile. Context brownish red, deeper in the cap, then yellowish reddish; odor none, taste bitter.

Lamellae slightly adnate, thin, broadest behind, at first yellowish.

Stipe 3-3.5(6.5) cm long, (1.5)2-4 mm thick, at first brownish red, glabrous, apex yellow floccose. Veil none.

Spores 8-10.7 x 5.5-6.2 μ, ellipsoid-amygdaloid, or ovoid-conic, strongly verrucose, no germ-pore. Basidia 25-29 x 6.5-7.5 μ, 4-spored, cylindric-clavate. Pleurocystidia none; cheilocystidia 28-36 x 5.5-9 μ, fusoid, capitate, neck short or long. Gill trama with extracellular, granular, yellow pig-ment, mediostrate of broad (up to 23 μ) hyphae. Cuticle hyphae with clamp connections, narrow (2-8μ), brownish yellow. Caulocystidia similar to cheilocystidia but large (50 x 12 μ), forming the flocculence.

HABIT, HABITAT, AND DISTRIBUTION - On fallen, decaying trunk of Pinus mugho, Switzerland.

OBSERVATIONS - Near G. bellulus in which the spores are much smaller (4.5-5 x 2.5-3.7 μ).

GYMNOPILUS SPECTABILIS SUBSP. PAMPEANUS (Speg.) Sing.

Lilloa 23: 222. 1950

Flammula pampeana Speg., An. Mus. Nac. B.A. 6:130. 1899.

Pholiota brittoniae Murr., Mycologia 5:35. 1913.

Pholiota eucalyptorum Cleland, Toadstools, Mushrooms, of South Australia 1:1934.

Gymnopilus eucalptorus (Cleland) Sing., Lilloa 13:5. 1947.

(NOTE: Singer thinks the following are forms of the same: P. suberis, P. spectabilis (Typica), and P. ventricosa).

Pileus bright yellowish brown (between "feuille morte" and "Windsor tan" M. & P.), with bright lemon color contexts appearing between the fibers, at first tomentose or rimose and then becoming levigate with appressed coarse radial fibrils, the center at first with appressed tomentose darker patches, in age appressedly squamose in the center, convex eventually more applanate and often difformed, dry, with a tendency to blackening if exposed or poorly dried, obtuse50-120 mm broad.

Lamellae yellow, becoming dark brown if dried improperly, rusty when old (from the orange rusty spore print), the edge tending to become fulvous-ferruginous where broken, broad, subclose, sometimes inversely forked, often sinuate lobed or denticulate, but also often with straight, entire edge, adnate, mostly with a decurrent tooth.

Stipe deep lemon-egg-yellow, tending to stain blackish

or brownish black from the base upwards when very old or exposed, or if dried improperly, yellowish white at the apex and at the base (from the mycelium), innately fibrous and almost sulcate or furrowed longitudinally, solid, eventually sometimes becoming hollow in places, fusoid with the broadest portion near the base, and attenuate from there upwards and downwards, 50-120 x 14-25 mm; veil rather thick to very thick and rather strong and persistent, more rarely fugacious with a densely cortinoid to submembranous annulus which is apical, yellow, sometimes with rusty dots, and eventually always bright rust color from the spore masses. Context yellow to light yellow or yellowish white in portions, fleshy, rather tough in the stipe; odor slight,; taste distinctly bitter when quite fresh, but gradually loosing its bitterness on drying, and almost mild in herbarium specimens.

Spores 8-11.5 x 5.8-6.6 μ, ellipsoid, well colored (ferruginous), without plage, warty; basidia 23-33 x 6.5-9.4 μ, cylindric, ventricose, or clavate, 4-spored; cystidia none; cheilocystidia 30-37 x 5.8-8 μ, ventricose below, with ampullaceous apex, the "neck" 7-22 μ long, with a subcapitate tip of (2)2.8-3.8 μ diameter, more rarely without terminal thickening; hyphae of the edge-region and lower portion of the cheilocystidia or the entire cheilocystidia often filled with a lemon yellow pigment; hymenophoral trama regular, consisting of hyaline

(or bright yellow) hyphae which are parallel with each other and bear clamp connections; cuticle consisting of hyphae, these are radially arranged and strongly pigment-incrusted.

On trunks of living trees in the wounds and particularly at the bases, also frequently on dead or diseased rots, and on buried wood of Eucalyptus also on dead trunks of Eucalyptus, rarely on other trees, especially Leguminosae if they stand close to infected specimens of Eucalyptus. Fruiting practically the year round, especially in spring. Probably originally in Australia but now practically everywhere Eucalyptus is planted.

Material studied: Argentina. Prov. of Buenos Aires.— Conchita, May 1888, C. Spegazzini (type, LPS).— Numerous other collections by Spegazzini from the province of Buenos Aires (LPS), under the names Pholiota spectabilis and P. aurea. Gonnet, October 30, 1948, R. Singer (LIL). — La Plata, "Bosque", may 24, 1949, R. Singer S 5 (LIL), — Uruguary. Colonia Española, near mouth of Río Los Sauces, April 20, 1946, J. Winitzky 9 (N) (NY). — Several other collections from Uruguay determined by Spegazzini as Pholiota spectabilis and aurea (LPS). — Jamaica (W.I), Cinchona, Briton & Murrill (type of P. Brittoniae, NY).

Other forms of the same species are:

Pholiota suberis R. Maire, on Quercus suber in North Africa.

Pholiota spectabilis (typica) on Ulmus, Fagus, Quercus, and Crataegus.

Gymnopilus armillatus Murr. on Liquidambar and Quercus in Florida.

Pholiota ventricosa Earle, on conifers in California.

Aside from its preference of Eucalyptus, and avoidance of introduced European trees in South America, the ssp. pampeanus is distinguished by a medium strongly thickened apex of the cheilocystidia (against non-incrassate tip in Pholiota ventricosa, and very strongly capitate — 4.3-7.3 μ in diameter — cheilocystidia in the European type form. It also appeared to me that the spores are slightly broader than in typical G. spectabilis or at least more voluminous, but there are cases (e. gr. a collections from Tbilisi, Gruzia, U.S. S.R. LE) which, according to their other characters were typical G. spectabilis, but did not show this correlation, i.e. they had spores as broad as those of ssp. pampeanus. If Maire's spore measurements are correct, one would expect to find smaller spores (than in the other forms) in his African form, but here again a checkup would probably show that the differences are not quite constant. It will be necessary to make more detailed studies about the differentiating characters of the other forms enumerated above before it will be possible to add more subspecies to the typical and the pampeanus-mycoecotypes.

GYMNOPILUS SPECTABILIS SUBSP. PANPEANUS (Speg.) Sing.

Lilloa 23: 222. 1950

Flammula pampeana Speg., An. Mus. Nac. B.A. 6:130. 1899.

Pholiota brittoniae Murr., Mycologia 5:35. 1913.

Pholiota eucalyptorum Cleland, Toadstools, Mushrooms, of South Australia 1:1934.

Gymnopilus eucalptorus (Cleland) Sing., Lilloa 13:5. 1947.

(NOTE: Singer thinks the following are forms of the same: P. suberis, P. spectabilis (Typica), and P. ventricosa).

Pileus bright yellowish brown (between "feuille morte" and "Windsor tan" M. & P.), with bright lemon color context appearing between the fibers, at first tomentose or rimose and then becoming levigate with appressed coarse radial fibrils, the center at first with appressed tomentose darker patches, in age appressedly squamose in the center, convex eventually more applanate and often difformed, dry, with a tendency to blackening if exposed or poorly dried, obtuse50-120 mm broad.

Lamellae yellow, becoming dark brown if dried improperly, rusty when old (from the orange rusty spore print), the edge tending to become fulvous-ferruginous where broken, broad, subclose, sometimes inversely forked, often sinuate lobed or denticulate, but also often with straight, entire edge, adnate, mostly with a decurrent tooth.

Stipe deep lemon-egg-yellow, tending to stain blackish

or brownish black from the base upwards when very old or exposed, or if dried improperly, yellowish white at the apex and at the base (from the mycelium), innately fibrous and almost sulcate or furrowed longitudinally, solid, eventually sometimes becoming hollow in places, fusoid with the broadest portion near the base, and attenuate from there upwards and downwards, 50-120 x 14-25 mm; veil rather thick to very thick and rather strong and persistent, more rarely fugacious with a densely cortinoid to submembranous annulus which is apical, yellow, sometimes with rusty dots, and eventually always bright rust color from the spore masses. Context yellow to light yellow or yellowish white in portions, fleshy, rather tough in the stipe; odor slight,; taste distinctly bitter when quite fresh, but gradually loosing its bitterness on drying, and almost mild in herbarium specimens.

Spores 8-11.5 x 5.8-6.6 μ, ellipsoid, well colored (ferruginous), without plage, warty; basidia 23-33 x 6.5-9.4 μ, cylindric, ventricose, or clavate, 4-spored; cystidia none; cheilocystidia 30-37 x 5.8-8 μ, ventricose below, with ampullaceous apex, the "neck" 7-22 μ long, with a subcapitate tip of (2)2.8-3.8 μ diameter, more rarely without terminal thickening; hyphae of the edge-region and lower portion of the cheilocystidia or the entire cheilocystidia often filled with a lemon yellow pigment; hymenophoral trama regular, consisting of hyaline

(or bright yellow) hyphae which are parallel with each other and bear clamp connections; cuticle consisting of hyphae, these are radially arranged and strongly pigment-incrusted.

On trunks of living trees in the wounds and particularly at the bases, also frequently on dead or diseased rots, and on buried wood of Eucalyptus also on dead trunks of Eucalyptus, rarely on other trees, especially Leguminosae if they stand close to infected specimens of Eucalyptus. Fruiting practically the year round, especially in spring. Probably originally in Australia but now practically everywhere Eucalyptus is planted.

Material studied: Argentina. Prov. of Buenos Aires. Conchita, May 1888, C. Spegazzini (type, LPS).— Numerous other collections by Spegazzini from the province of Buenos Aires (LPS), under the names Pholiota spectabilis and P. aurea. Gonnet, October 30, 1948, R. Singer (LIL). — La Plata, "Bosque", may 24, 1949, R. Singer S 5 (LIL), — Uruguary. Colonia Española, near mouth of Río Los Sauces, April 20, 1946, J. Winitzky 9 (N) (NY). — Several other collections from Uruguay determined by Spegazzini as Pholiota spectabilis and aurea (LPS). — Jamaica (W.I), Cinchona, Briton & Murrill (type of P. Brittoniae, NY).

Other forms of the same species are:

Pholiota suberis R. Maire, on Quercus suber in North Africa.

Pholiota spectabilis (typica) on Ulmus, Fagus, Quercus, and Crataegus.

Gymnopilus armillatus Murr. on Liquidambar and Quercus in Florida.

Pholiota ventricosa Earle, on conifers in California.

Aside from its preference of Eucalyptus, and avoidance of introduced European trees in South America, the ssp. pampeanus is distinguished by a medium strongly thickened apex of the cheilocystidia (against non-incrassate tip in Pholiota ventricosa, and very strongly capitate — 4.3-7.3 μ in diameter — cheilocystidia in the European type form. It also appeared to me that the spores are slightly broader than in typical G. spectabilis or at least more voluminous, but there are cases (e. gr. a collections from Tbilisi, Gruzia, U.S. S.R. LE) which, apcording to their other characters were typical G. spectabilis, but did not show this correlation, i.e. they had spores as broad as those of ssp. pampeanus. If Maire's spore measurements are correct, one would expect to find smaller spores (than in the other forms) in his African form, but here again a checkup would probably show that the differences are not quite constant. It will be necessary to make more detailed studies about the differentiating characters of the other forms enumerated above before it will be possible to add more subspecies to the typical and the pampeanus-mycoecotypes.

Cortinarius?

GYMNOPILUS SPINULIFER (Murr.) comb. nov.

Naucoria spinulifer Murr., Mycologia 4:79. 1912.

Pileus 2 cm broad, hemispheric-umbonate, isabelline, umbo testaceous, margin cremeous, innate-fibrillose, margin revolute.

Lamellae adnate, arcuate, dull-purplish isabelline, medium broad, subdistant.

Stipe 2.5 cm long, 2.5 mm thick, stramineous above, fulvous below, subglabrous, cylindric, equal, curved.

Spores 7-9 x 4-5 μ, ovoid to subamygdaliform, wrinkled-rough or verrucose, germ-pore none. Basidia in poor condition for study. Pleurocystidia 42-64 x 7-13 μ, ventricose with a neck, apices often crystallate; cheilocystidia 32-45 x 9-11 μ, ventricose. Gill trama a medio-strate, of slightly interwoven hyphae, 2-5 μ broad, rusty brown in 2% KOH, flanked by a gelatinous subhymenium. Pileus trama floccose. Cuticle gelatinous. Hypodermium not sharply differentiated. Clamp connections not observed.

HABIT, HABITAT, AND DISTRIBUTION - On dead wood, Jamaica, December.

MATERIAL STUDIED - JAMAICA: Murrill 705, type (NY), Morce's Gap, December 3, 1908.

OBSERVATIONS - The description of microscopic characters is based on a study of the type. It may be related to G. depressus, but the pleurocystidia are distinctly different, and the cuticle on depressus is not gelatinous.

= G. spumicolus

GYMNOPILUS SUBPENETRANS Murr.

Mycologia 5:20. 1913

Flammula subpenetrans Murr., Mycologia 5:36. 1913.

Pileus 2-4 cm broad, broadly convex to expanded, ferruginous-orange, moist, not viscid, slightly fibrillose, margin not striate. Context whitish; taste mild but unpleasant.

Lamellae sinuate with a long-decurrent tooth, soon seceding.

Stipe 3 cm long, 3 mm thick, concolorous, not paler below, somewhat fibrillose, slightly tapering downward, solid with a spongy interior. Veil cortinate, slight, white to yellowish, fugacious.

Spores 7-8.5 x 4.5-5 μ, ellipsoid to subovoid in face view, inequilateral in profile, warty, germ-pore none, ferruginous in KOH, dextrinoid. Basidia 24-30 x (5)6-7 μ, 4-spored. Pleurocystidia 22-30 x 4-6 μ, clavate or ventricose, some capitate to subcapitate, colorless or brown, usually buried; cheilocystidia 15-27 x 3-7 μ, ventricose, usually conocyboid, more or less capitate, colorless or brown. Gill trama subparallel, hyphae 5-10 μ. broad. Pileus trama radial. Cuticle of brown repent hyphae, some more or less uplifted. Clamp connections present. Caulocystidia none. Pileus and gill trama pale yellowish in KOH, exuding a yellowish pigment in KOH; dark reddish brown in Melzer's reagent.

(= geminellus)

HABIT, HABITAT, AND DISTRIBUTION - On palm, Cuba, May; also Jamaica (Murrill).

MATERIAL STUDIED - CUBA: Earle 526, type (NY), leg. C. F. Baker, on royal palm trunk, Managua, May 25, 1906.

OBSERVATIONS - The description of the microscopic characters is based on a study of the type. It is apparently related to G. junonius, which has yellowish flesh, and possibly larger spores. Harding lists it as a synonym of G. vaporarius, along with penetrans, hybridus, & others.

GYMNOPILUS SUBSPHAEROSPORUS (Joss.) Kühner and Romagn.

2 more

Flore Anal. des Champ. Super., p. 323. 1953

Naucoria subsphaerospora Joss., Bull. Soc. Myc. Fr. 64:21. 1948.

Pileus up to 3.2 cm broad, at first conic then convex, expanding mammillate, margin incurved, dull-fawn, tawny cinnamon, tawny-ferruginous, dry, dull, uniformly tomentose-fetted, or minutely squamulose, margin thin and estending slightly. Context brownish tawny; odor none, taste sweet.

Lamellae adnate, yellow-ocher, cinnamon-tawny, or reddish cinnamon, subdistant, rather narrow (up to 4 mm); moderately serrate.

Stipe concolorous, or paler, finely fibrillose, mealy at apex, fistulose. Veil scanty, yellowish brown, very fugaceous, observed only in the young carpophores.

Spores 4-5.5 x 3.5-4.5 μ, ovoid- globose, dusky ocher-brown, minutely verrucose. Basidia 23-30 x 5-6 μ, 4 spored, sterigmata 4-5 - 5.5 μ long. Pleurocystidia none; cheilocystidia 27-44 x 5.7 μ, fusoid, capitate. Caulocystidia similar to cheilocystidia, but longer. Gill trama regular. Cuticle of narrow hyphae, with clamp connections, brownish-yellow, incrusted.

HABIT, HABITAT, AND DISTRIBUTION - On conifer wood, Europe.

OBSERVATIONS: This has the appearance of Cortinarius cinnamomeus. (See Josserand: Bull. Soc. Myc. Fr. 64:21. 1948). Above description based on Kuhner-Romagnesi, and Favre (Schw. Zeitschr/ f. Pilzk., Nov. 1956, pp. 174-175; (see my reprint).

= earlier

GYMNOPILUS TENUIS Murr.

Mycologia 5:22. 1913

Flammula tenuis (Murr.) Murr., Mycologia 5:36. 1913.

Pileus 6-10 cm broad, convex to expanded, obtuse, cespitose, pale-yellow to ferruginous, dry, fibrillose to floccose scaly, finally subglabrous, margin not striate, often uneven and undulate. Context thin.

Lamellae decurrent, yellow to ferruginous, crowded, narrow.

Stipe 4-6 cm long, 5-8 mm thick, ferruginous-brown, often whitish at the base, cylindric, slightly fibrillose, hollow, the rind becoming hard and horny on drying. Veil of bright yellow fibrils, soon vanishing.

Spores 7-8.5 x 4-5 μ, ellipsoid to subovoid in face view, inequilateral in profile, verruculose, not dextrinoid, no germ-pore. Basidia 23-30 x 5-6 μ, 4-spored. Pleurocystidia (a) brown (basidioles ?), buried, scattered, 20-30 x 6-8 μ, clavate, (b) colorless, ventricose, 23-27 x 7-8 μ, scattered; cheilocystidia 16-25 x 3-7 μ, ventricose or sometimes more or less conocyboid. Gill trama undulating subparallel, hyphae 3-5 μ broad. Pileus trama radial. Cuticle of repent, brownish hyphae, bearing clusters (scales) of brown hyphae, at times incrusted. Clamp connections present. Caulocystidia none. Pileus and gill trama yellowish brown in KOH; reddish brown in Melzer's reagent.

HABIT, HABITAT, AND DISTRIBUTION - On dead wood, Jamaica, Cuba, and the Bahamas, September, November, and March.

MATERIAL STUDIED - JAMAICA: Earle 612, type (NY), Port Antonio, November 24, 1902.

OBSERVATIONS - The description of microscopic characters is based on a study of the type. It is obviously related to G. sapineus, if not identical with it.

When sections of the pileus are mounted in KOH, a yellowish pigment diffuses out.

Harding lists tenuis as a synonym of G. earlei; but he found no pl in earlei, and I found pl in tenuis.

Hebeloma ?

GYMNOPILUS VISCIDISSIMUS Murr.

Mycologia 4:256. 1912

Flammula viscidissima (Murr.) Murr., Mycologia 4:262. 1912.

Pileus gregarious, 2 cm broad, conic, not fully expanding, isabelline with an incarnate tint, usually a little darker at the center, glabrous, very slimy.

Lamellae sinuate-adnate, pale-isabelline, becoming darker with age, broad, ventricose, rather crowded.

Stipe 6 cm long, 3.5 mm thick, whitish, furfuraceous above, fibrillose below, equal or slightly larger below, stuffed, rather tough.

in deposit = dark fulvous; pale with a fuscous tint under scope,

Spores 7-8(10) x 4-4.5(5) μ, ellipsoid to subovoid in face view, inequilateral in profile, minutely wrinkled-rough, pale yellowish brown in KOH, germ-pore none, callus apparently present. Basidia 20-25 x 4-5 μ, 4-spored. Pleurocystidia none; cheilocystidia 17-30 x 2.5-4 μ, clavate-filamentous, or ventricose, scarce and inconspicuous. Gill trama subparallel, hyphae 3-5 μ broad. Subhymenium not gelatinous. Pileus trama radial. Cuticle a gelatinous zone, resting on an hypodermium of brown hyphae. Clamp connections present. Caulocystidia present as shrivelled, clavate terminal elements of hyphal tufts. Pileus and gill trama rusty brown in KOH; dark reddish brown in Melzer's reagent.

HABIT, HABITAT, AND DISTRIBUTION - Among mosses and humus, and in a peat bog, Oregon.

MATERIAL STUDIED - OREGON: Murrill, type (NY), Mill City.

OBSERVATIONS - The description of microscopic characters is based on a study of the type. It seems near G. abramsii, which is not gelatinous. Harding (Thesis, p. 63) lists it as Hebeloma viscidissimus (Murr.) comb. nov. after a study of the type. Perhaps the spore-color (more brown than ferruginous) indicates Hebeloma, along with its viscid pileus, terrestrial habitat, and ch.