



November 2013

## Cortinarius Phlegmacium Notebook 1

L. R. Hesler

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SOUTHEASTERN CORTINARIUS

List of Species. Numbers in Hesler's December, 1955, Kay are given.

264	acutus Fr.	23	callochrous Fr.
51	albiceps Murr.	194	campestris Murr.
50	albidiformis Murr.	131	camphoratus Fr.
181	albidulus Murr.	111	canescens Pk.
155	alboviolaceus Fr.	281	castaneus Fr.
176	amarissimus Murr.	116	castanellus Pk.
165	annulatus Pk.	261	castaneoides Pk.
140	anomalus Fr.	203	cinnabarinus Fr.
158	argentatus Fr.	202	cinnamomeus Fr.
35	arquatus (A. & S.) Fr. sensu Lange (as No. 20159)	55	citriniceps Murr.
177	armillatus Fr.	118	colymbadinus Fr. <i>communis</i> Pk.
6	Arnoldae Murr.	152	compressus A. H. Smith
153	asper Pk.	38	corrugatus Pk.
36	Atkinsonianus Kauff.	81	corruscans Fr.
53	atribadius Murr.	102	<i>croceoceruleus</i> Fr.
259a	badius Pk.	168	croceocolor Kauff.
63	balteatus Fr.	267	cuspidatus (Murr.) Singer
112	Birchfieldii Murr.	2	cylindripes Kauff.
218	bivelus Fr.	173	cylindrisporus Murr.
115	bolaris Fr.	54	Davisii Murr.
42	Boudieri Henry	251	deceptivus Kauff.
132	Brandlei Pk.	151	deflexus Murr.
233	brunneofulvus Fr.	17	delibutus Fr.
40	caerulescens Fr.	231	distans Pk.
41	caesiocyaneus Britz.	223	duracinus Fr.
172b	callisteus Fr.	4	elatior Fr.
		48	elegantior Fr.

- |     |                               |     |   |
|-----|-------------------------------|-----|---|
| 46  | <i>elegantoides</i> Kauff.    | 227 | <i>livor</i> Fr.                                    |
| 70  | <i>equestriformis</i> Murr.   | 11  | <i>longisporus</i> (Murr.) Singer                   |
| 274 | <i>erythrinus</i> Fr.         | 18  | <i>luteobrunnescens</i> Smith                       |
| 217 | <i>evernius</i> Fr.           | 138 | <i>malachus</i> Fr.                                 |
| 65  | <i>fimbriatus</i> Murr.       | 201 | <i>malicorius</i> Fr.                               |
| 191 | <i>flammuliformis</i> Murr.   | 222 | <i>mamosus</i> Kauff.                               |
| 185 | <i>flavifolius</i> Pk.        | 200 | <i>melleipes</i> (Murr.) Singer                     |
| 283 | <i>flexipes</i> Fr.           | 24  | <i>michiganensis</i> Kauff.                         |
| 269 | <i>gentilis</i> Fr.           | 45  | <i>montanus</i> Kauff.                              |
| 247 | <i>glandicolor</i> Fr.        | 235 | <i>Morrisii</i> Pk.                                 |
| 34  | <i>glaucopus</i> Fr.          | 8   | <i>mucifluus</i> Fr.                                |
| 107 | <i>glutinosus</i> Pk.         | 10  | <i>mucosus</i> Fr.                                  |
| 86  | <i>hebelomoides</i> Murr.     | 61  | <i>multiformis</i> Fr.                              |
| 243 | <i>hemitrichus</i> Fr.        | 9   | <i>muscigenus</i> Pk.                               |
| 198 | <i>hiemalis</i> Murr.         | 248 | <i>nigrellus</i> Pk.                                |
| 239 | <i>hinnuleus</i> Fr.          | 271 | <i>nigrocuspidatus</i> Kauff.                       |
| 183 | <i>humicola</i> (Quél.) Maire | 144 | <i>obliquus</i> Pk.                                 |
| 257 | <i>iliopodius</i> Fr.         | 276 | <i>obtusus</i> Fr.                                  |
| 108 | <i>infractus</i> Fr.          | 68  | <i>olivaceus</i> Pk.                                |
| 12  | <i>iodeoides</i> Kauff.       | 78  | <i>oreades</i> Murr.                                |
| 13  | <i>iodes</i> B. & C.          | 277 | <i>paleaceus</i> Fr.                                |
| 278 | <i>juberinus</i> Fr.          | 178 | <i>perferrugineus</i> Murr.                         |
| 113 | <i>lacticeps</i> Murr.        | 280 | <i>periscelis</i> Fr.                               |
| 109 | <i>laeticolor</i> Murr.       | 142 | <i>perviolaceus</i> Murr.                           |
| 98  | <i>lanatipes</i> Pk.          | 205 | <i>phoeniceus</i> var.<br><i>occidentalis</i> Smith |
| 96  | <i>lapidophilus</i>           | 224 | <i>plumiger</i> Fr.                                 |
| 69  | <i>largiformis</i> Murr.      | 67  | <i>porphyropus</i> Fr.                              |
| 74  | <i>largus</i> Fr.             | 33  | <i>praebrevipes</i> Murr.                           |
| 159 | <i>lilacinus</i> Pk.          | 249 | <i>praepallens</i> Pk.                              |

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|------|--|------|--|
| 182  | privigniformis Murr.                     | 104  | subcaespitosus Murr.                           |
| 253  | privignus Fr.                            | 75   | subcamphoratus Murr.                           |
| 1    | pseudo-salor Lange                       | 76   | subcommunis Murr.                              |
| 125  | pulchrifolius var.<br>odorifer Hesler    | 89   | subfimbriatus Murr.                            |
| 126  | pulchrifolius var.<br>typicus Smith      | 184  | subflavifolius Murr.                           |
| 25   | purpurascens Fr.                         | 279  | subflexipes Pk.                                |
| 139a | pusillus Murr.                           | 49   | subfulmineus Murr.                             |
| 192  | raphanoides Fr.                          | 56   | subglaucopus Murr.                             |
| 225  | renidens Fr.                             | 139  | subglobisporus Murr.                           |
| 245  | rigens Fr.                               | 268  | subjuberinus Murr.                             |
| 127  | rimosus Pk.                              | 95   | sublilacinus Murr.                             |
| 72   | robustus Beardslee                       | 7    | submarginalis Pk.                              |
| 37   | rubens Kauff.                            | 172a | subnotatus Fr.                                 |
| 130  | rubrocinereus Pk.                        | 160  | subpulchrifolius Kauff.                        |
| 14   | salor Fr.                                | 161  | subpulchrifolius var.<br>microsporus var. nov. |
| 204  | sanguineus Fr.                           | 26   | subpurpurascens Fr.                            |
| 275  | scandens Fr.                             | 226  | subrigens Kauff.                               |
| 27   | scaurus Fr.                              | 114  | subrimosus Smith & Hesler                      |
| 252  | scutulatus Fr.                           | 135  | subtabularis Kauff.                            |
| 206  | semisanguineus (Fr.)<br>Kauff.           | 210  | torvus Fr.                                     |
| 17   | sphaerosporus Pk.<br>(see delibutus Fr.) | 265  | uraceus Fr.                                    |
| 5    | splendidus Pk.                           | 73   | varicolor Fr.                                  |
| 87   | squalidiformis Murr.                     | 71   | varius Fr.                                     |
| 147  | squamulosus Pk.                          | 64   | verruculosus (Murr.) Singer                    |
| 88   | straminipes Murr.                        | 19   | vibratilis Fr.                                 |
| 180  | subargentatus Murr.                      | 20   | vibratilis (large-spored<br>form)              |
| 117  | subaustralis Smith & Hesler              | 124  | violaceus Fr.                                  |
|      |  | 44   | virentophyllus Kauff.                          |

90	viscibadius Murr.	107a	No. 17195
52	Watsonii Murr.	164	No. 17218
195	Weberi Murr.	190	No. 17219
196	Weberianus (Murr.) Singer	30	No. 17220
272	Westii (Murr.) Singer	15	No. 17229
43	No. 9635	216	No. 17248
3	No. 12320	241	No. 17271
242	No. 12708	230	No. 17298
171	No. 13820	187	No. 17692
121	No. 13917	188	No. 17903
166	No. 13918	16	No. 18045
66	No. 14032	106	No. 18162
263	No. 14776	122	No. 18570
168a	No. 16416	122	No. 18571
179	No. 16426	213	No. 18575
238	No. 16427	207	No. 18582
15	No. 16564	162	No. 18586
47	No. 16565	186	No. 18603
21	No. 16566	189	No. 18606
77	No. 16568	148	No. 18607
197	No. 16617	143	No. 18612
110	No. 17062	32	No. 18640
133	No. 17068	211	No. 18646
128	No. 17072	141	No. 18653
134	No. 17118	137	No. 18661
172a	No. 17135	129	No. 18667
174	No. 17174	99	No. 18695
163	No. 17193	254	No. 19011

209	No. 19012	120	No. 19371	105	No. 20949
212	No. 19170	255	No. 19378	92	No. 20999
82	No. 19215	236	No. 19379	256	No. 21046
79	No. 19223	39	No. 19390	94	No. 21599
119	No. 19224	253	No. 19400	232	No. 21814
219	No. 19252	83	No. 19401	229	No. 21825
220	No. 19253	154	No. 19464	170	No. 21845
285	No. 19254	167	No. 19711	146	No. 21882
258	No. 19256	270	No. 19720	150	No. 21942
100	No. 19262	156	No. 19814	228	No. 22016
101	No. 19275	35	No. 20159	250	No. 22049
62	No. 19276	22	No. 20198	103	No. 22089
262	No. 19279	246	No. 20233	91	No. 22119
193	No. 19280	59	No. 20234	60	No. 22142
221	No. 19281	215	No. 20235	29	No. 22160
136	No. 19286	282	No. 20247	31	No. 22161
260	No. 19288	<del>102</del>	<del>No. 20449</del>	57	No. 22164
244a	No. 19298	97	No. 20450	58	No. 22167
244	No. 19306	240	No. 20452	84	No. 22169
80	No. 19308	208	No. 20524	28	No. 22183
237	No. 19309	273	No. 20525	85	No. 22185
93	No. 19310	149	No. 20537		
259	No. 19326	234	No. 20556		
284	No. 19338	123	No. 20559		
199	No. 19341	145	No. 20560		
214	No. 19342	254	No. 20579		
266	No. 19347	157	No. 20585		
169	No. 19353	175	No. 20596		



CORTINARIUS BALTEATUS Fr.  
Epicr. Myc., p. 257. 1838

*Pileus maximus*

(N.A.F. 10:311)

"Pileus fleshy, convex-expanded, obtuse, sometimes discoid or somewhat broadly gibbous, 7-10 cm. broad; surface with an adnate cuticle at first viscid, soon dry and shining, then breaking up on the disk in an areolate manner, Kaiser-brown (R) to snuff-brown (R), at first yellow-ocher (R) toward the margin, then clay-colored (R); margin at first incurved and whitish-cortinate (not violaceous in this form); context very thick, compact, white, unchanging, the odor and taste mild; lamellae adnate, then emarginate, close, 9-14 mm. broad, broader in front, thin, whitish at first then ochraceous-buff (R) to clay-colored (R), the edge entire; stipe stout, short, 4-6 cm. long, rarely longer, 1.5-2.5 cm. thick, solid, compact, subequal to oval-bulbous, the apex naked, elsewhere obscurely reticulate or longitudinally striate, at first subcortinate from the white cortina, whitish within and without, not lutescent; spores almond-shaped, tuberculate, 10-12 x 5-6  $\mu$ , brownish."

Habitat and Distribution. - On soil, in conifer woods (?), North Carolina (Elisha Mitch. Sci. Soc. Jour. 31:147. 1915.).

CORTINARIUS COMMUNIS Pk.

New York State Cabinet Ann. Rept. 23:106. 1872

Pileus 2-5 cm. broad, convex, viscid, glabrous, but fibrils on margin, white or grayish. Flesh medium thick, white; odor slightly farinaceous, taste somewhat bitter. Lamellae emarginate, medium broad, close, pallid at first, finally pale brown (not matched). Stipe 2-4 cm. x 3-5 mm., dry, slightly fibrillose, equal or slightly <sup>?</sup>at base, whitish then dingy-brownish. Cortina white, rather fugaceous.

Spores ellipsoidal, ovoid, sublimoniform, strongly warty-wrinkled, 9-11 x 5.5-7  $\mu$ .

Habitat and Distribution. - On soil, in deciduous woods, Tennessee, August.

Discussion. - Since this has a cortina, it is closer to Cortinarius communis Pk. than to Hebeloma sarcophyllum Pk.



9210

CORTINARIUS COMMUNIS Pk. (?)

In deciduous woods on soil, Woodson Drive, Knox Co.,  
Tennessee, August 14, 1936

Pileus 2-5 cm broad, convex, white to grayish, viscid, glabrous, but with fibrils on margin. Context medium thick, white; odor slightly farinaceous, taste somewhat bitter.

Lamellae emarginate, medium broad, close, pallid at first, finally pale brown (not matched).

Stipe 2-4 cm long, 3-5 mm thick, dry, slightly fibrillose, equal or slightly <sup>?</sup>at base, whitish then dingy-brownish. Veil white, webby, fugaceous.

Spores in deposit "bister," ellipsoidal, ovoid, sublimoniform, strongly warty-wrinkled, 9-11 x 5.5-7  $\mu$ .

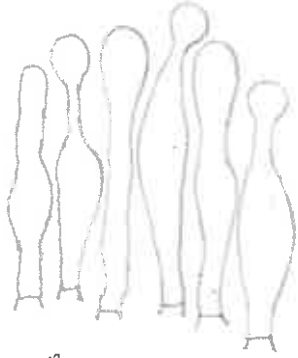
Spores in deposit "bister," 8.5-10.5 x 5.5-6.5  $\mu$ , inequilateral in profile, ellipsoid in face view, wall 0.4  $\mu$  thick, asperulate, calyptrate, no germ pore, brownish in KOH. Basidia 24-27 x 7-8  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 32-40 x 6-7  $\mu$ , 4-spored. Pleurocystidia none; cheilocystidia 32-40 x 6-7  $\mu$ , of two general types: cylindric-capitate and lecythiform (nine-pin). Gill trama of slightly interwoven hyphae, 3-8  $\mu$  broad. Pileus trama of interwoven hyphae. Pileus cuticle an ixocutis; hypodermium of brown hyphae. Stipe cuticle of dry repent hyphae. Clamp connections none.

This should be compared with the Type.

*Corticium commune* PK.

9210

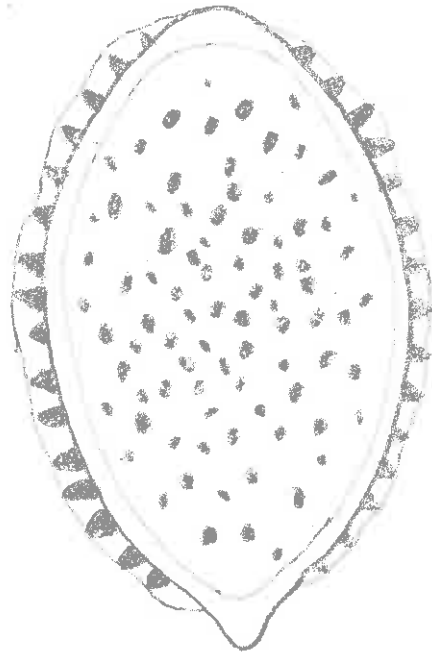
*Alcyonaria* ?



Ch - x 1000



Profile



Face View

Spores x 8000

CORTINARIUS CROCEOCAERULEUS Fr.

*Phlegmacium*

Epicr. Myc. p. 269. 1838

Pileus 4-10 cm. broad, convex, finally expanded-convex, viscid or glutinous, with somewhat agglutinated fibers, at first dingy gray-brown (not at all matched), finally more or less mottled "sayaal brown" to "snuff brown," often violaceous at margin or violaceous tints showing through, pellicle separable half-way to disk, when removed exposing violaceous flesh, margin even, at first appendiculate. Flesh thick on disk, thin on margin, violaceous or white and violaceous under pellicle, firm; odor and taste mild or earthy. Lamellae narrowly adnate to emarginate-uncinate, when young nearly white to caesius, flushed avellaneous, at maturity "sayaal brown," pale purplish when bruised, crowded, medium broad, somewhat narrowed either way, edges even. Stipe 6-9 cm. x 12-18 mm., brittle, dry, fibrillose, fibers often in reticulations, whitish, tinged violaceous, stained brownish below, solid, with an ovoid bulb (up to 25 mm. diam.). Veil webby, leaving a slight evanescent, apical ring.

Spores 8-11 x 4.5-5  $\mu$ , ellipsoid to ovoid, pointed one end, often inequilateral, tuberculate.

Habitat and Distribution. - On soil, in deciduous and mixed woods, Tennessee, August-September.



20449 - *Cortinarius croceocaulus* Fr.

*Phlegmacium*



Cortinarius croceoceruleus Fr.

Same as # 19223 (see Notes)

(Same as 19223)



19223 . Cortinarius *croceoceruleus* Fr.

See 1930E

CORTINARIUS ELEGANTIOIDES Kauff.

*Phlegmacium*

Agar. Mich. 1:344. 1918

Pileus 3-5 cm. broad, convex, expanded-convex, viscid, central portion "tawny," marginal fourth "olive-ochre," glabrous, pellicle separable. Flesh thick on disk, thin on margin, pale yellowish-green; odor mild, taste tardily bitter. Lamellae emarginate-uncinate, at first "citron yellow" to "primuline yellow," finally "sulphine yellow," moderately broad, tapering slightly each way, close. Stipe 4-5 cm. x 6-10 mm., yellowish-green, dry, with a marginate, more or less depressed bulb (bulb up to 2.4 cm. diam.), solid, flesh of stipe greenish-yellow. Cortina webby, fugaceous, whitish.

Spores 15-19 x 7-9  $\mu$ , ellipsoid-limoniform, subinequilateral, tuberculate with short, fine reticulations.

Habitat and Distribution. - On soil, in deciduous woods, Tennessee and North Carolina, August-October.

Discussion. - In KOH the cuticle and lamellae turn dark red, flesh of pileus and stipe brownish.



CORTINARIUS ELEGANTIOR Fries

Epicr. Myc., p. 267. 1838

*Phlegmaria*

Pileus 4-8 cm. broad, hemispheric, then convex-expanded, viscid, glabrous, ~~viscid~~, yellow to "light-orange-yellow," at times mottled, margin incurved. Flesh whitish becoming pale yellow, rather thick on disk; odor and taste mild. Lamellae narrowly adnate, medium broad, narrowed both ways, crowded, at first "straw-yellow," becoming "ochraceous-tawny." Stipe 5-9 cm. x 6-15 mm., dry, bulbous, the bulb marginate, not depressed, whitish, equal, fibrillose-silky, solid.

Spores 10-14 x 7-9  $\mu$ , ellipsoid to slightly amygdaliform, coarsely tubercular with minute reticulations.

Habitat and Distribution. - On soil, in deciduous woods, Tennessee and North Carolina, September-October.

Cortinarius equestriformis Murrill

*Phlegmacium*

Murrill's description (Lloydia 8:282. 1945):

"Pileus convex to subexpanded, gregarious, about 4-5 cm. broad; surface viscid, smooth, glabrous, citrinous to fulvous, margin inflexed at first, entire, even, sulfur-yellow; context 2 cm. thick near center thinning toward margin, citrinous, unchanging, mild, earthy; lamellae adnate, close, 5 mm. broad behind, entire, bright-yellow, rusty at maturity; spores pip-shaped, smooth, clear bright-ferruginous, 1-guttulate, about 10 x 5  $\mu$ ; stipe solid, citrinous within, equal above bulb, citrinous or subfulvous, smooth, glabrous, about 2 x 1.5 cm.; cortina white, evanescent; bulb abrupt, not margined, 1.5 cm. high and 2 cm. broad.

"Type collected by W. A. Murrill in short grass under a live-oak on a lawn in Gainesville, Fla., Jan. 20, 1944 (F 19626). Suggesting Tricholoma equestre when young, both in form and coloring, but related to C. fulmineus Fr. var. sulphureus Kauffm. Typical C. fulmineus is squamulose and Kauffman says his variety sometimes has spotlike scales on the disk."

Spores of No. — (unable to find spores)

Cortinarius <sup>us</sup> fimbriat~~a~~ Murrill

*Phlegmacium?*

Murrill's description (Lloydia 7:317-318. 1944):

"Pileus convex to subexpanded, gregarious, 5-7 cm. broad; surface slightly viscid, smooth, glabrous, isabelline, margin paler, even, undulate; context white, odorless, mild or radish-like or bitter; lamellae sinuate, rather broad, close, inserted, pallid, white-fimbriate; spores subovoid, pointed, inequilateral, smooth, pale-ferruginous, about  $11 \times 6 \mu$ ; stipe subequal, smooth, glabrous, white, fibrillose at the apex and sometimes with a bulbous base, 4-6 x 0.8-1.3 cm.

"Type collected by W. A. Murrill on the ground in a live-oak hammock on the Old Micanopy Road, near Gainesville, Fla., Jan. 21, 1940 (F 22504). Also collected in the vicinity under laurel oak. The gills are beautifully fringed."

Spores of #16121, not type,  $10-14 \times 6-7.5 \mu$ , inequilateral, strongly wrinkled-rough.

CORTINARIUS GLUTINOSUS Pk.

New York State Mus. Ann. Rept. 43:64. 1890

*Alleganensis*

Pileus 2.5-5 cm. broad, convex, expanding, slightly upturned, glutinous, near "ochraceous tawny," margin even, incurved. Flesh moderately thin, yellowish; odor and taste not recorded. Lamellae adnexed, broad, medium close, olivaceous. Stipe 3-5 cm. x 5-8 mm., pallid, dry, base slightly enlarged, solid.

Spores 6.5-8 x 5.5-6.5  $\mu$ , broadly ellipsoid, some subglobose, punctate-rough.

Habitat and Distribution. - On soil, in deep moss, conifer woods, North Carolina, September.

Cortinarius hebelomoides Murrill

*Pilegnacium*

Murrill's description (Lloydia 8:282-283. 1945):

"Pileus convex to plane, solitary, 4 cm. broad; surface viscid, shining, smooth, glabrous, pale rosy-avellaneous, margin even, entire; context thin, white, unchanging; lamellae sinuate, rounded behind, close, inserted, medium broad, entire, soon fulvous; spores subellipsoid, slightly tuberculate, bright pale-ferruginous, about 8-9 x 5-6  $\mu$ ; cystidia none; stipe equal above bulb, smooth, glabrous, pale-violaceous, about 3 x 0.8 cm.; bulb large, onion-shaped, whitish, not margined, 1.5 cm. thick; cortina evanescent.

"Type collected by W. A. Murrill under a laurel oak at Gainesville, Fla., Jan. 12, 1940 (F 22466). Also collected by Watson and Murrill in a live-oak hammock at Arredonda, west of Gainesville, Jan. 21, 1940 (F 22473). Suggesting Hebeloma when viewed from above."

CORTINARIUS INFRACTUS Fr.

Epicr. Myc., p. 261. 1838

*Alegmacium*

Pileus 4-10 cm. broad, convex, expanding, "light grayish olive" to "pale drab gray," flushed with "honey yellow," finally "chamois" appressed silky or virgate, slightly rugose at times, hygrophanous, viscid, pellicle separable half-way. Flesh pallid, medium thick on disk, abruptly thin on margin; odor and taste of radish, at times bitter. Lamellae adnate to emarginate-uncinate, close to crowded, sooty-olive ("buffy brown") at first retaining olive tinge for some time, finally "Prout's brown" to "cinnamon brown," edges even or eroded. Stipe 4-8 cm. x 5-8 (20) mm., equal above the slight clavate or ovoid bulb, solid, dry, shining, dingy-whitish, at times tinged olive, apex violaceous.

Spores 5-7 x 4-6  $\mu$ , ovoid to subglobose, at times globose, warty-subreticulate, color in mass: "syal brown."

Habitat and Distribution. - On soil, in deciduous and coniferous woods, Tennessee and North Carolina, August-October.



22155 - *Cortinarius infractus* Fr.





22158 - *Cortinarius infractus* Fr.



Cortinarius infractus Fr.

CORTINARIUS LAETICOLOR Murrill

Mycologia 44:112-113. 1952

*Phlegmacium*

"Pileus convex, not fully expanding, gregarious, about 6 cm. broad; surface viscid, glabrous, bay, margin incurved, entire to lobed, flavous or paler yellow; context 6 mm. thick, pale-yellow, unchanging, mild, with musty odor; lamellae lemon-yellow, unchanging, medium distant, adnexed, rounded behind, entire, 7 mm. broad; spores obovoid, uniguttulate, bright-ferruginous, slightly roughened, about  $7 \times 4 \mu$ ; stipe solid, equal above the slightly enlarged base, dry, smooth, glabrous, pale-yellow, not margined, about  $2.5 \times 1.8-2.2$  cm.; cortina basal, scant, vanishing.

"Type collected by W. A. Murrill on a grassy lawn under a laurel oak in Gainesville, Fla., Jan. 7, 1951 (F 41349). Not found elsewhere. Evidently a winter-fruiting species. The colors are varied and striking."

Notes on Type

Spores of No. 21140, part of type, are  $8-10 \times 5-6 \mu$ , inequilateral, amygdaliform, tuberculate.

CORTINARIUS LANATIPES Pk.

*Pilegma*

N. Y. State Mus. Ann. Rept. 42:116. 1889

Pileus 3-6.5 cm. broad, viscid, glabrous, "light buff" when young, "saya brown" at maturity, margin striate. Flesh pallid or whitish, thick on disk, thin on margin; odor and taste mild. Lamellae emarginate, pale caesius ("ecru-drab") when young, "saya brown" at maturity, thin, medium broad, close. Stipe 4-6 cm. x 8-12 mm., dry, whitish, fibrillose, equal or sub-bulbous, with 2-3 remnants of veil forming evanescent rings at middle or below, solid.

Spores 8-9.5 x 4.5-5.5  $\mu$ , ellipsoid, echinulate.

Habitat and Distribution. - On soil, under rhododendron, Tennessee, October.

CORTINARIUS LAPIDOPHILUS ~~Pk.~~

N. Y. State Mus. Ann. Rept. 31:36. 1879

*Pileus*

Illustration:

Plate

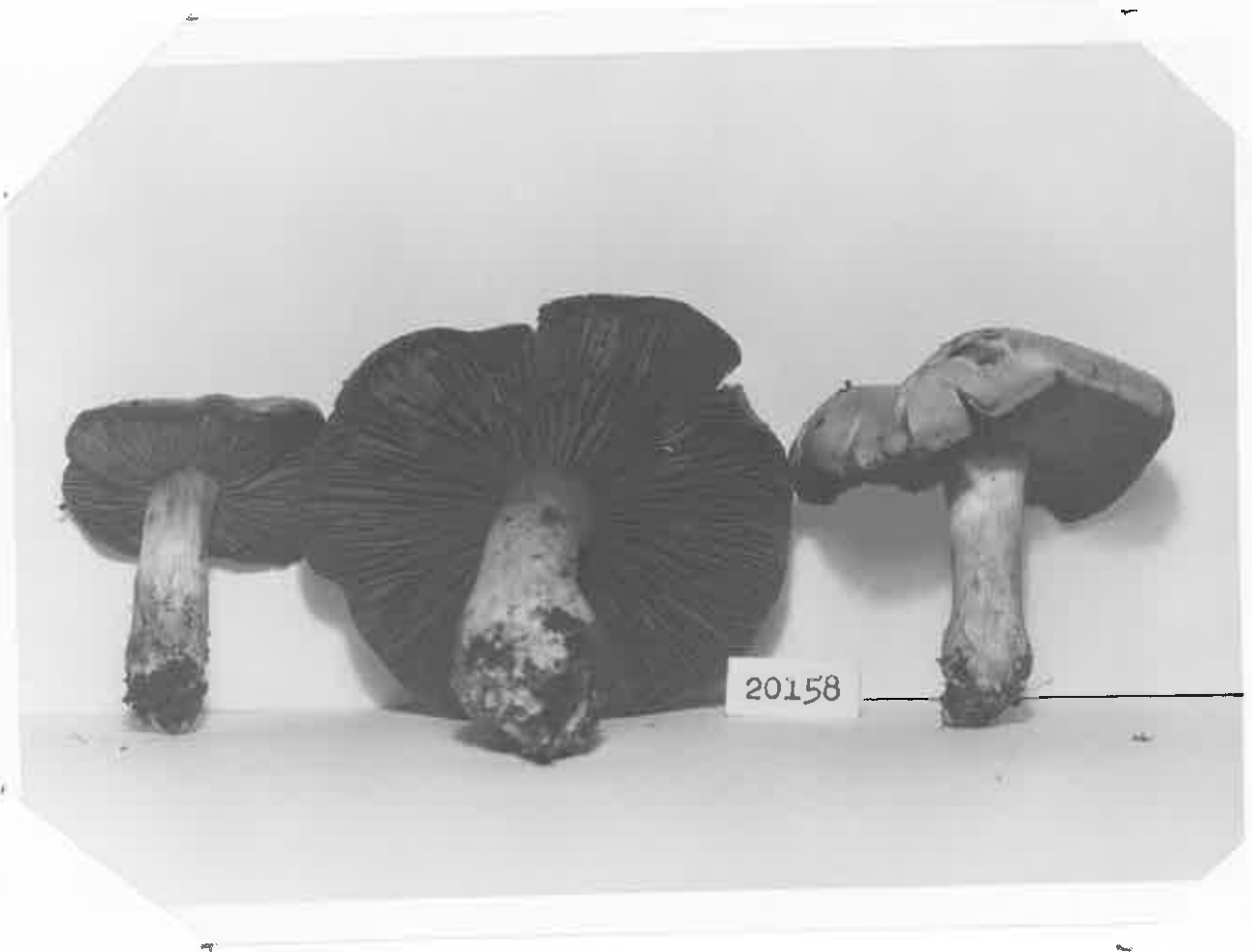
Pileus 3.5-5.5 cm. broad, convex, expanding nearly plane, viscid, "drab gray" or "pale drab gray" to "buffy brown," disk "pinkish buff," virgate, margin at times with a band remnant of universal veil. Flesh whitish, medium thick; odor slight, taste mild (bitter in No. 19377). Lamellae rounded-adenate, close or crowded, medium broad at first, violaceous, then near "pinkish buff" with violaceous tints, finally "buffy brown," edges eroded. Stipe 5-7 cm. x 6-9 mm., dry, apex violaceous, whitish or dingy below, scattered-fibrillose, base clavate-bulbous, hollow. Veil leaving a slight fibrillose ring.

Spores 7-8.5 x 5-6.5  $\mu$ , short-ellipsoidal or ellipsoidal-ovoid, at times subglobose, echinulate. Pleurocystidia none; cheilocystidia clavate, few, 18-20 x 8-9  $\mu$ .

Habitat and Distribution. - On soil, in mixed woods, Tennessee and North Carolina, August-October.



20450 - *Cortinarius lapidophylus* PK.



20158 - *Cortinarius lapidophyllus* PK.



Cortinarius largiformis Murrill

*Allegnascium*

Cortinarius sublargus Murrill. Elisha Mitchell Sci. Soc.

Jour. 55:366-367. 1939.

Murrill's description (Elisha Mitchell Sci. Soc. Jour. 55:366-367. 1939):

"Pileus convex to plane, solitary, 5 cm. broad; surface slimy-viscid, smooth, glabrous, isabelline with a violet tint, margin even, entire; context thin, white, odorless; lamellae adnate, subdistant, medium broad, entire, violet to fulvous; spores ellipsoid, uneven, granular, deep-ferruginous, about  $15 \times 6-8 \mu$ ; cystidia none; stipe equal or slightly clavate, smooth, glabrous, white with a violet tint,  $5 \times 1.3$  cm.; annulus superior, persistent, submembranous with a fibrillose margin.

"Type collected by W. A. Murrill under an oak in Gainesville, Fla., July 9, 1938 (F 18416). Also collected by E. West in oak woods at Gainesville, Oct. 7, 1928 (F 15729). The spores appear rougher than they really are because of their very granular contents. The species is rare in oak woods about Gainesville, appearing during warm weather."

Spores # 16123, not type,  $13-17 \times 7.5-9 \mu$ ,  
coarsely tuberculate, amygdaliform.

CORTINARIUS LARGUS Fries  
Epicr. Myc., p. 259. 1838

*Fries*

Pileus 5-10 cm. broad, convex then expanded, <sup>viscid,</sup> at first "bluish lavender" to "light cinnamon drab," becoming "buffy-citrine" to "tawny olive," margin at times violaceous, glabrous or appressed-silky, margin rivulose-wrinkled on the margin. <sup>pale violaceous.</sup> Flesh thick on the disk, thin on the margin; odor and taste slight. Lamellae adnate, then emarginate, moderately broad, narrowed at ends, close to crowded, at first "bluish lavender," soon "deep plumbeous," finally "cinnamon," edges even. Stipe 5-9 cm. x 7-11 mm., dry, bulbous, the bulb clavate or ovoid, stuffed then hollow, appressed-fibrillose, glabrescent, apex pruinose, at first lavender, fading, concolorous within.

<sup>(8)</sup>  
Spores 9-11 x 4.5-6  $\mu$ , somewhat almond-shaped, wrinkled-rough.

Habitat and Distribution. - On soil, in mixed woods, Tennessee and North Carolina, August.

CORTINARIUS MONTANUS Kauffmann

N. A. Flora 10:348. 1932

*Pilegmasium*

Illustration:

Plate

*platinous when wet,*  
*hemispheric-convex, then*  
Pileus 3-<sup>6</sup>/<sub>8</sub> cm. broad, convex-expanded, finally depressed, viscid, "brownish olive" in button stage, near "Dresden brown" to "sepia" with olivaceous hues especially on margin, at maturity rivulose (under lens), margin incurved, even. Flesh thick on disk, thin on margin; dingy to olive brownish; odor and taste mild. Lamellae emarginate-uncinate, "grape green" to "yellowish citrine," finally "snuff brown," stained reddish-brown when bruised, medium broad, narrowed either way, crowded, many short, edges even or fimbriate. Stipe 4-6 cm. x 6-8 mm., dry, fibrillose, tapering upward, dingy, at times faintly bluish or violaceous, base bulbous, bulb slightly marginate-depressed, bulb 2 cm. broad, stuffed, the pith brownish-violaceous. Veil copious, white, tinged green.

*tuberculate, indistinctly reticulate,*

Spores ellipsoidal, *rough,* 9-12 (14.5) x 5-7 (8)  $\mu$ .

Pleurocystidia none; cheilocystidia pyriform-clavate, 24-38 x 6-10  $\mu$ .

Habitat and Distribution. - On soil, in spruce and fir woods, North Carolina, July-September.

Observations. - In KOH, young sporophores show little or no color change; in mature sporophores, all parts become dark-red.



20566 - *Cortinarius montanus* Kauff.

(cf. 19274 - *Cort. sp.*)

CORTINARIUS MUTABILIS Smith

Lloydia 7:190. 1944

*Cortinarius mutabilis*

Pileus 2-2.5 (8) cm. broad, convex, viscid to glutinous, "light drab," tinged lavender on margin, appressed fibrillose, glabrescent. Flesh "vinaceous gray," becoming pallid, changing to violaceous purple when bruised; odor and taste mild. Lamellae rounded-adnate to adnexed, "deep heliotrope gray," finally pale cinnamon brown, close, medium broad, edges even. Stipe 4-6 cm. x 4-6 (12) mm., "vinaceous gray," darker when rubbed (about "deep slate violet"), base clavate-bulbous or bulb oval.

Spores 8-9.5 x 5-6  $\mu$ , ellipsoid, tuberculate, subreticulate. Pleurocystidia and cheilocystidia none.

Habitat and Distribution. - On soil, under conifer-rhododendron, North Carolina, August.

Discussion. - Described from Olympic Hot Springs (see pl. 6, Lloydia 7:190).



Cortinarius mutabilis Smith

CORTINARIUS OLIVACEUS Pk.

*Phlegmacium*

N. Y. State Mus. Ann. Rept. 24:72. 1872

Pileus 4-6 cm. broad, expanded, glutinous, "dresden brown," "buffy brown" to "olive-brown" tinged dark-red or with a rusty olive tint; glabrous, radiately wrinkled to corrugated, margin with short striae, with a zone of dark spots near margin. Flesh brown, thick on disk, thin on margin; odor and taste mild. Lamellae sub-emarginate, medium broad, broadest behind, at first dark-olivaceous, at maturity "antique brown" to "argus brown," close, rather broad, faces rugulose, edges eroded. Stipe 4-6 cm. x 4-6 mm., dingy, scattered brown-fibrillose or reticulated, not viscid, with an ovoid bulb up to 2 cm. diam., bulb not at all marginate-depressed, tapering upward, stuffed to hollow.

Spores ellipsoidal, 9-12 x 6-8  $\mu$ , tuberculate.

Habitat and Distribution. - On soil among moss, North Carolina, August.



# 19274 - Cortinarius olivaceus PK  
cf. montanus



*Phlegmarium*

CORTINARIUS OREADES Murrill

Murrill's description (Lloydia 7:318-319. 1944):

"Pileus convex to subexpanded, gregarious, 4-7 cm. broad; surface slightly viscid, glabrous, dark-isabelline or ferruginous-fulvous, margin pallid, even, undulate or lobed; context pallid, odorless, very bitter at once; lamellae sinuate, rounded behind, inserted, broad, crowded, entire, pallid to rusty; spores pipshaped, smooth, opaque, ferruginous, 8-11 x 4-5  $\mu$ ; stipe equal or tapering downward, smooth, glabrous, solid, pallid, 4-6 x 1-1.5 cm.; cortina slight, white, evanescent.

"Type collected by Dr. G. F. Weber in his yard in Gainesville, Fla., Jan. 13, 1941 (F 19301). Also collected by the author in the vicinity. The type collection was part of a fairy ring 8 ft. in diameter."

Spores of No. 16126, not type, 8-9.5 x 5-6  $\mu$ , ellipsoid, inequilateral, tuberculate. Spores of No. 19831, 8-9 x 4-5  $\mu$ , ellipsoid, subinequilateral, smooth to minutely wrinkled. Appearance of pileus + spore-surface indicate these (Nos. 16126 + 19831) are not the same.

CORTINARIUS PORPHYROPUS (Alb. & Schw.) Fries

Epicr. Myc., p. 271. 1838

*phlegmarium*

Pileus 3-5 cm. broad, convex, then expanded, viscid, somewhat virgate, at first "cinnamon buff," becoming "buffy brown," margin incurved. Flesh thin, whitish, ~~but~~ changing to dark purple when bruised; odor and taste mild or slight. Lamellae adnexed to emarginate or subdecurrent, close, moderately broad, at first "vernonia-purple," finally "natal brown," becoming dark-purple when bruised, edges even. Stipe 3-7 cm. x 4-10 mm., <sup>dry,</sup> equal or tapering upward, more or less clavate-bulbous, somewhat fibrillose, at first "deep purplish-vinaceous," fading, becoming dark purple when bruised, spongy.

Spores 9.5-11 x <sup>(13)</sup><sub>(5)</sub> 6-7 μ, ellipsoid, tuberculate.

Habitat and Distribution. - On soil, under hemlock, *spruce,* fir, and birch, Tennessee and North Carolina, <sup>August -</sup> September.

CORTINARIUS ROBUSTUS Beardslee

Elisha Mitchell Sci. Soc. 31:147. 1915

*Phlegmacium*

"Pileus as much as 14 cm. broad, very solid and firm, dull date brown, the paler margin thinner and inflexed, becoming expanded with maturity, viscid when moist, flesh firm, blue when moist, becoming white in drying.

"Gills at first violaceous, then pallid, finally cinnamon, the violaceous tint persisting under the inflexed margin, adnate, irregular on the margin.

"Stipe solid, firm, rather short, slightly violaceous, fibrillose to the point where the incurved pileus touches it, pubescent above that.

"Spores 9-10 mc. long.

"This is the largest and firmest species of Cortinarius that I find at Asheville. It belongs to Phlegmacium but seems distinct. I find it in large colonies under oaks. The stipe is only slightly bulbous in my specimens and never marginate.

"The Carolina Cortinariii are quite numerous and very perplexing. Many of Peck's New York species occur in our mountains, along with some species which appear to be rare farther north. Cortinarius balteatus, of which I find no record in the United States, occurs with us occasionally, and is one of our finest species."

Cortinarius squalidiformis Murrill

*Phlegmarium*

Murrill's description (Lloydia 8:283-284. 1945):

"Pileus convex to plane or slightly depressed, gregarious to caespitose, 3-4 cm. broad; surface slightly viscid, smooth, glabrous, shining, uniformly brownish and drying fuliginous, margin even, entire to undulate or rimose; context very thin, pallid to brownish, odorless, mild; lamellae adnate, medium broad, close, entire, soon fulvous-umbrinous; spores cylindrical, smooth, very pale yellowish-brown, about 6-9 x 3-4  $\mu$ ; cystidia none; stipe subequal, not bulbous, smooth, glabrous, shining, pale-violet, about 3 x 0.3-0.6 cm.; cortina evanescent.

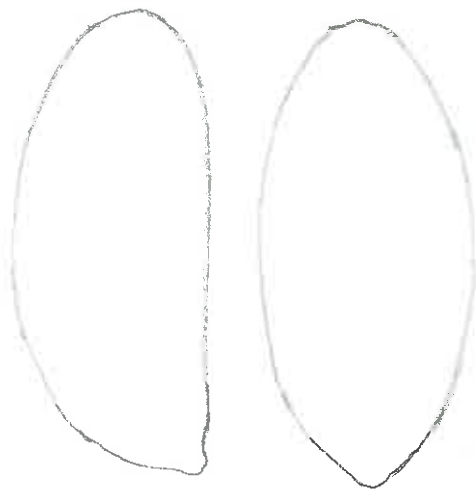
"Type collected by W. A. Murrill in open mixed woods on the river flat northwest of High Springs, in Columbia Co., Fla., Dec. 14, 1941 (F 16534). Suggesting C. squalida Smith but with spores much like those of C. cylindrispora Murr. In Smith's species they are pip-shaped. C. uracea Fr. is similar in appearance but more umbonate."

Notes by Hesler

Spores 5.5 - 7.5 (8) x 2.5 - 3.5  $\mu$ , cylindrical to sub-pip-shaped, smooth (under oil lens, x 1100), very pale yellowish in water + in KOH, pinkish in Melszer's reagent.

*Corticarius squalidiformis* Murr

21143 (Part of Type)



Profile

Face

Spores x 8000

Cortinarius straminipes Murrill

*Phlegmacium*

Murrill's description (Lloydia 5:147. 1942):

"Pileus convex to slightly depressed, solitary, 8 cm. broad; surface smooth, glabrous, slightly viscid when moist, uniformly ferruginous-fulvous, margin even, entire, narrowly sterile and deflexed; context thin except at the center, white, odorless, sweet; lamellae adnexed, very broad, crowded, inserted, undulate on the edge, pallid to fulvous; spores almond-shaped or subfusiform, rough-punctate, ferruginous, about 8-10 x 4-5  $\mu$ ; cystidia none; stipe short and thick, equal, not bulbous, dry, smooth, glabrous, stramineous, about 3 x 2 cm.; veil evanescent, leaving no trace.

"Type collected by E. West on a creek bank in a hammock in Gainesville, Fla., Jan. 17, 1939 (F 19571). Found but once. Apparently a cool-weather species."

Cortinarius subcaespitosus Murrill

*Pilegma*

Murrill's description (Elisha Mitchell Sci. Soc. Jour. 55:364-365. 1939):

"Pileus convex to expanded, slightly depressed, caespitose, 6-10 cm. broad; surface smooth, glabrous, shining, viscid, isabelline to fulvous; margin paler, even, entire, inflexed when young, straight or slightly upturned with age; context very thick, 1 cm. or more, white, unchanging, odorless, mild but mawkish; lamellae sinuate or adnexed, rounded behind, ventricose, broad, close, inserted, entire to undulate, pallid with a violet tint, becoming dull-fulvous; spores almond-shaped, often inequilateral, smooth, 1-guttulate, deep-ferruginous, about 7-8 x 4  $\mu$ ; cystidia none; stipe tapering upward, smooth, glabrous, shining, white with a violet tint, solid, clavate, not marginate, 3.5-4 x 1.5-3 cm.

"Type collected by W. A. Murrill under hardwood trees in South Planera Hammock, eleven miles northwest of Gainesville, Fla., Oct. 30, 1938 (F 18413). Cotype collected by the author under oaks at the same time and place (F 18415). Few members of this genus are caespitose. In the type three hymenophores were grown together at the base. It may occasionally be found solitary."

Cortinarius subcamphorata<sup>us</sup> Murrill

*Pilegmasia*

Murrill's description (Lloydia 8:284. 1945):

"Pileus convex to expanded, gregarious, 5-6 cm. broad; surface viscid, smooth, glabrous, uniformly ferruginous, margin even, entire; context thick near center, white, unchanging, odor strong, taste mawkish, oily and slightly radishy; lamellae adnate, becoming sinuate, broad, close, entire, soon rusty; spores amygdaloid, rough, deep-ferruginous, 10-12 x 5-6  $\mu$ ; stipe solid, white within, smooth, glabrous, equal above the bulb, partly violet, about 3.5 x 1.5 cm.; cortina copious, evanescent; bulb clavate, not marginate, about 2 cm. broad.

"Type collected by W. A. Murrill on a shaded bank in low frondose woods at River Rise, Alachua Co., Fla., Jan. 12, 1941 (F 21789). Suggesting C. camphorata but differing in several ways."



CORTINARIUS SUBCOMMUNIS Murrill

Mycologia 30:370. 1938

*Allegmore*

"Pileus convex to plane, not umbonate, gregarious, about 5 cm. broad; surface smooth, slightly viscid, glabrous, whitish with a rosy-isabelline tint, margin even, entire; context thin, whitish, nutty, odor not characteristic; lamellae adnate, medium broad, rather crowded, soon colored ferruginous to fulvous by the spores, entire on the edges; spores ovoid to ellipsoid, plainly verrucose, uniguttulate at times, ferruginous, 9.5-12 x 6  $\mu$ ; stipe concolorous, equal, except somewhat enlarged at the base, smooth, subglabrous, stuffed, about 5-7 cm. long and 6-8 mm. thick; cortina slight, fibrillose, evanescent.

"Type collected by W. A. Murrill on the ground under a live-oak at Gainesville, Fla., Jan. 13, 1938 (No. 16044)."

Notes on No. 16131

Spores of No. 16131, not type, 7.5-9 (9.5) x 5-7  $\mu$ , ellipsoid, tuberculate.

CORTINARIUS SUBFIMBRIATUS

Lloydia 8:284-285. 1945

*Pileus*

"Pileus convex to plane, gregarious, 4 cm. broad; surface slightly viscid, smooth, glabrous, pale-ochraceous, shining and rugose when dried, margin even, entire, concolorous; context white, unchanging, odorless, mild, 1 cm. thick near center; lamellae sinuate, rounded behind, medium broad, medium close, entire, fulvous at maturity; spores ellipsoid, 1-guttulate, slightly roughened, clear bright-ferruginous under the microscope, fulvous in mass, about  $8 \times 5 \mu$ ; stipe slightly enlarged at the base, stuffed, dull-whitish within, smooth, glabrous, shining, white,  $2-3 \times 0.6-1$  cm.; cortina evanescent; bulb subglobose, not margined.

"Type collected by G. F. Weber in his yard at Gainesville, Fla., Jan. 16, 1944 (F 15995). Suggesting C. fimbriata Murr. but smaller and with different spores."

Notes on Type

Spores of No. 21145, part of type,  $8-9 \times 5.5-6.5 \mu$ , ellipsoid, echinulate.

CORTINARIUS SUBLILACINUS Murrill

Lloydia 7:320. 1944

*Allegmaecium*

"Pileus convex to plane, gregarious, 5-7 cm. broad; surface viscid when wet, innate-fibrillose, pale-violet, with a ferruginous tint in places, margin even, entire, deflexed to straight; context firm, thick, pallid with yellowish and violet tints, taste mawkish, odor somewhat unpleasant; lamellae sinuate, inserted, medium broad, crowded, entire, violet; spores fusoid, smooth, uniguttulate, ferruginous, 9-10 x 5-6  $\mu$ ; stipe short, bulbous, striate, innate-fibrillose to subglabrous, violet, 2-5 x 1.5-2 cm.; bulb 3 cm. thick, cortina evanescent.

"Type collected by W. A. Murrill on a lawn in Gainesville, Fla., Nov. 20, 1938 (F 19211)."

Notes on Type

Spores of No. 21146, part of type, 8-10 x 4.5-5  $\mu$ , ellipsoid, minutely tuberculate.

CORTINARIUS VARIICOLOR Fr.  
Epicr. Myc., p. 259. 1838

*Phlegmacium*

Pileus 5-8 (12) cm. broad, convex, expanded-convex, at full maturity depressed from upturned margin, viscid, at first pale to smoky olive (not matched), with a violet tint, finally "buffy brown" to "tawny olive," appressed fibrillose. Flesh "dark plumbago gray," to "dark lavender," more intense when wet, fading in age to nearly white, thick; odor and ~~and~~ taste not distinctive. Lamellae narrowly emarginate, broad, narrowed at ends, at first violet (near "dark plumbago gray"), finally "Prout's brown," not changing when bruised, close, edges even. Stipe 5-8 (12) cm. x 8-15 mm., "dark lavender" at first, finally dingy whitish, concolor within, fibrillose (fibrils brown), dry, stuffed with a pith, slightly bulbous (bulb 10-20 mm. diam., ovoid).

Spores 9-11 x 5.5-6.5  $\mu$ , tuberculate, somewhat almond-shaped.

Habitat and Distribution. - On soil, in mixed woods, Tennessee, August.

CORTINARIUS VARIUS Fries

Epicr. Myc., p. 258. 1838

*Allymacin*

Pileus 3-5 cm. broad, convex then convex-expanded, viscid, glabrous, yellowish to "tawny," margin incurved, even. Flesh white, or whitish; odor and taste mild. Lamellae adnate, then emarginate, close, at first rather narrow, "vinaceous-lilac," finally broader, "cinnamon," fading slowly, edges even. Stipe 3-5 cm. x 6-10 mm., equal or clavate, dry, white, apex violaceous, fibrillose, stuffed then hollow.

Spores 9-11 x 5-6  $\mu$ , sub-inequilateral, coarsely tuberculate.

Habitat and Distribution. - On soil, in oak woods, North Carolina, August.

CORTINARIUS VERRUCULOSUS (Murrill) Singer  
Agaricales, p. 553. 1949

*Phlegmacium*

Hebeloma verruculosum Murrill, Lloydia 5:149. 1942.

"Pileus convex, not expanding, solitary, 8 cm. broad; surface slimy-viscid, the gluten in streaks, uniformly pallid with an avellaneous tint, margin undulate; context thin, white, mild, odorless; lamellae plane, adnate, inserted, medium broad, rather distant, distinctly notched, dirty-white; spores elongate-ovoid or pip-shaped, slightly verrucose, bright-pale-ferruginous under the microscope, about 12 x 6  $\mu$ ; stipe subequal, smooth, white, dry, glabrous, 9 x 2 cm.

"Type collected by W. A. Murrill under red oaks in Gainesville, Florida, Jan. 22, 1941 (F 18541). Not known from elsewhere."

CORTINARIUS VIRENTOPHYLLUS Kauff.

Agar. Mich. 1:353. 1918

*Phlegmacium*  
*Bulbopodium*

Pileus 5-8 cm. broad, viscid, pellicle separable, grayish olive (not matched) at first, becoming yellowish with olive tints, often streaked brownish, margin even. Flesh pallid, watery-green along lamellae, thick, abruptly thin on margin; odor slight, taste slightly bitter. Lamellae adnate, slightly adnexed, at first "citrine," finally brownish-olive (not matched), close, moderately narrow, edges even. Stipe 3-5 cm. x 10-15 mm., "pallid quaker drab," fading downward, bluish within, fading, silky-appressed striate, dry, stuffed then hollow, bulbous, the bulb more or less marginate.

Spores 9-11 x 6.5-7.5  $\mu$ , ellipsoid, warty-reticulate.

Habitat and Distribution. - On soil, in deciduous woods, Kentucky, October.

Cortinarius viscibadia<sup>us</sup> Murrill

*Pleurocybe*

Murrill's description (Lloydia 7:320. 1944):

"Pileus convex to subexpanded, solitary, 6 cm. broad; surface viscid, smooth, glabrous, uniformly bay, margin even, entire; context thick, white, odorless, mild; lamellae adnate, plane, close, rather broad, entire, soon fulvous; spores ovoid, pointed, smooth, opaque, pale-ferruginous, about 8-10 x 5  $\mu$ ; stipe tapering downward, bulbous, smooth, glabrous, shining, violet, 4 x 1.5-1.8 cm.; bulb white, 2.3 cm. thick; cortina copious, persisting on stipe.

"Type collected by W. A. Murrill on the ground in high-pine woods at Gainesville, Fla., Jan. 12, 1940 (F 22476). Found but once. Suggesting C. atribadia Murr. but differing in several ways."



*Phlegmacium*

12262

CORTINARIUS

On soil, in oak woods, Cades Cove, Sept. 11, 1974

Pileus 4-9 cm broad, convex, expanding, margin finally upturned, at first "deep olive buff," finally with a buff tint, viscid, glabrous but finely rivulose under lens, margin even. Context white, firm; odor mild, taste bitter (especially the separable pellicle).

Lamellae adnexed, dull dark brown to near "chaetura drab" (not well matched), young gills not seen (possibly with a ~~bluish~~ bluish or greenish tinge), close, medium broad, lamellulae rather numerous.

Stipe 2.5-6 cm long, 10-18 mm thick, base clavate (15-25 mm thick), white, the apex often with a smoky-bluish tint, solid, dry. Veil not seen.

Spores in deposit: "argus brown."

CORTINARIUS No. 16568

*Phlegmacium*

Pileus 3-6 cm. broad, convex, glutinous-viscid, "ochraceous buff," margin darker, glabrous, even. Flesh white, firm, thick on disk, thin outward; odor and taste mild. Lamellae adnate-decurrent, crowded, medium broad, "pinkish buff," edges eroded. Stipe 4-4.5 cm. x 8-10 mm., clavate-bulbous, dry, dingy, solid, scattered-fibrillose.

Spores ellipsoidal, 9-11 x 4.5-5.5 (6)  $\mu$ , punctate-rough.

Habitat and Distribution. - On soil, in Abies woods, Great Smoky Mountains National Park, North Carolina, October.

Pileus 2-4.5 cm. broad, viscid, olive-brown, near "dresden brown," glabrous, even. Flesh pallid, medium thick, thin on margin; odor and taste mild. Lamellae adnate, green at first (near "olive-yellow"), finally "buckthorn brown," medium broad, close, edges wavy. Stipe 3-4.5 x 4-7 mm., pallid with dingy fibers, dry, tapering upward, slightly bulbous, bulb ovoid.

Spores ellipsoidal, definitely or slightly rough, 8-11 x 6.5-8  $\mu$ .

Habitat and Distribution. - On soil, under spruce, Great Smoky Mountains National Park, North Carolina, July.

Discussion. - This does not fit anything well in North American Flora. It must be a Phlegmacium. Close to C. olivaceus Pk. and C. glutinosus. Smith (January, 1956) says he has written it up.

Cortinarius

*Phlegmacium*

(No. 17195)

Pileus 5-15 cm. broad, convex, expanding, glutinous-viscid, "pinkish buff," "cinnamon buff" to "ochraceous buff," disk usually darker, innately fibrillose-canescens, margin even, decorated with veil-remnants. Flesh white, firm, thick on disk, thin on margin; odor and taste mild. Lamellae rounded-adnate, becoming emarginate, crowded, medium broad, "pale olive-buff" when young, finally "pinkish buff," "cinnamon buff" to "clay color," edge even. Stipe (3) 6-10 cm. x 12-25 mm., white, base lilac (fading), equal, dry, not bulbous, solid, appressed fibrillose; veil white, webby, leaving a band near margin of pileus and an apical, evanescent "ring" on stipe. <sup>8-10 x 4-5 μ</sup> Spores ellipsoidal-subfusiform, ~~ends~~ <sup>even under oil.</sup> ~~acute, 8-9.6 x 4.5-5 microns,~~ smooth (spore-print failed).

Growing in arcs, abundantly, under red spruce. Stipe (even when young) showed no viscidty.

This must be same as No. 16564, from Cades Cove, October 22, 1944, which Dr. A. H. Smith says is new, despite the disagreement in the notes on viscidty of stipe.

This and 16564 need further checking. Two species might easily be involved. It is nothing I know. - A. H. Smith, letter, October 24, 1945.

Great Smoky Mountains National Park, North Carolina, under red spruce, September.

*Phlegmacium*

Pileus 2.5-3.5 cm. broad, viscid, with appressed fibrils, somewhat virgate, grayish ("pale smoke gray"), lutescent, margin even. Flesh thin except on disk, dingy; odor and taste mild. Lamellae emarginate, crowded, narrow, "pale violet-gray" at first, finally "ecru drab" or darker. Stipe 4-5 cm. x 6-8 mm., moist, not viscid, clavate, hollow, pallid, interior "pale violet-gray." Cortina white, copious.

Spores

Spores ellipsoidal, 7-8 x 4-5  $\mu$ , smooth.

Habitat and Distribution. - On soil, under hemlock, Great Smoky Mountains National Park, Tennessee, October.

Discussion. - Smith says not C. lanatipes; spores too small. Same as his No. 26882 (January, 1956).

*Phlegmarium*

Pileus 4-6.5 cm., convex, expanding, viscid, with a bitter pellicle separable half-way to disk, "ivory yellow," streaked and stained "cream-buff" to "chamois," glabrous, even. Flesh pallid, thick on disk, thin on margin; odor slight, taste bitter. Lamellae adnate to emarginate-decurrent, "cream buff," finally "cinnamon buff," medium broad, close. Stipe 4-5 cm. x 8-12 mm., whitish, dry, fibrillose, hollow. Annulus brown-stained, median, fibrillose.

Spores 7-8 x 4.5-5  $\mu$ , ellipsoid, inequilateral, punctate-rough.

Habitat and Distribution. - On soil, in woods, Great Smoky Mountains National Park, Tennessee, August.

*Phlegmarium*

Pileus 4-6 cm., viscid, fibrillose, "light violet gray," disk tinged tawny. Flesh pallid, with violaceous tinge, thick on disk, thin on margin; odor and taste mild. Lamellae adnate, then emarginate, violaceous at first, then "verona brown," medium broad, close. Stipe 4-5 cm. x 10-16 mm., dingy brownish, dry, bulbous, bulb oval, bulb 20-35 mm. Veil white, sparse, webby.

Spores 8-9 x 5-6  $\mu$ , slightly rough, ellipsoid.

Habitat and Distribution. - On soil, deciduous woods, Great Smoky Mountains National Park, Tennessee, August.

Discussion. - Smith says he has written it up (January, 1956). It is near my No. 19310; also has the general appearance of C. argentatus.



Cortinarius



*Phlegmacium*

Pileus 5-8 cm., viscid, "deep heliotrope gray," densely white-fibrillose, not fully expanding. Flesh thick pale violaceous; odor and taste slightly of radish. Lamellae adnate, violaceous-drab or "light drab" when young, "brownish drab" when mature, rather close, broad. Stipe 4 cm. x 18 mm., dry, concolor to pileus, bulbous, bulb rounded, solid.

Spores 7.5-9 x 4-5  $\mu$ , ellipsoidal, minutely rough.

Habitat and Distribution. - On soil, deciduous woods, Cades Cove, Tennessee, September.

Discussion. - Smith (January 16, 1956) says it is near his No. 19947 but spores narrower and we lack certain details for comparison. Also near my No. 19275.



Cortinarius

CORTINARIUS NO. 20425

*Phlegmacium*

Notes by Hollis:

Pileus slightly viscid, pinkish tan, upturned in age. Stipe hollow or stuffed, fibrillose. Lamellae brownish tan.

Habitat and Distribution. - On humus, under oak, South Carolina, December.

Data insufficient (Smith, 1-16-'56).

*Pileus*

Pileus up to 13 cm. broad, convex, expanding, viscid, when young "clay color," darkening at maturity to "tawny," streaked and spotted rusty brown, glabrous, margin incurved and white-silky, even. Flesh pallid, thick (up to 27 mm.) on disk, abruptly thin on margin; odor and taste slight of decaying wood. Lamellae emarginate-adnexed, when young "light vinaceous-drab," at maturity "cinnamon brown," medium broad (up to 8 mm.), close, narrowed slightly at both ends, sides slightly rugulose. Stipe up to 10 cm. x 20 mm., clavate-bulbous, bulb 4 cm. diameter, dingy brownish, apex pallid and tinged violaceous, white-fibrillose, striate, dry, solid. Cortina webby, white, sparse.

Spores ellipsoidal, 7-9 x 4.5-6  $\mu$ , minutely punctate-rough.

Habitat and Distribution. - On soil, under hemlock-rhododendron, North Carolina, July.

Discussion. - Apparently close to C. claricolor Fr. and C. cyanopus Fr.

CORTINARIUS NO. 21009 (near corruscans Fr.)

~~New York State Mus. Bul. 54.950. 1902~~

*Phlegmacium*

Pileus 3-6 cm. broad, convex, obtusely and broadly umbonate, finally expanded-convex, viscid, cuticle separable half-way, "clay-color" to "ochraceous tawny," disk "tawny," margin paler, fibrillose, even. Flesh moderately thick, abruptly thin on margin, whitish; odor mild, taste sweetish. Lamellae adnate, then adnexed, yellowish to "pale pinkish buff" when young, finally "snuff brown," medium broad, close to nearly sub-distant, edges even. Stipe 4-8 cm. x 6-14 mm., equal, whitish, solid. Cortina ample, white, leaving a superior, annular band.

Spores 9-11.5 x 5-6.5  $\mu$ , ellipsoid to sub-amygdaliform, smooth or faintly warty (warts when present inconspicuous, low, scattered, observed only with oil-immersion lens, 1125x), color in mass: "cinnamon brown."

Habitat and Distribution. - On soil, in conifer woods, Tennessee and North Carolina, September and January.

Smith says it is near corruscans Fr. The pellicle ~~affix~~ definitely gelatinous. Should be orange-cinnamon, moist. (Note: Kauffman gives spores for corruscans 6-7 x 4  $\mu$ , Hebeloma-like.)



21009 - *Cortinarius submarginatis* PK.  
*Phlegmacium*

*Allegonocium*

21968

CORTINARIUS

On soil, in deciduous woods, Chewakla Park, near Auburn,  
Alabama, leg. Hesler and D. E. Davis, August 1, 1955

Pileus 3-6 cm broad, whitish, tinged pinkish buff,  
glabrous, viscid-glutinous. Context white; odor and  
taste somewhat farinaceous.

Lamellae adnexed, broad, close, "avellaneous,"  
finally "fawn color," edges rough (not fimbriate).

Stipe 7-10 cm long, 5-10 mm thick, white, scattered-  
fibrillose, not viscid, clavate-enlarged below, more or  
less clavate-bulbous, solid. Veil remnants on margin of  
pileus.

Spores 8-11 x 7-8.5  $\mu$ , very slightly to not at all  
inequilateral in profile, ovoid in face view, wall 0.2  $\mu$   
thick, tuberculate, many spores more or less calyptrate,  
dark rusty brown in KOH, germ pore none. Basidia 35-48 x  
6-8  $\mu$ , 2-4-spored. Pleurocystidia none; cheilocystidia  
25-40 x 5-9  $\mu$ , subpyriform to more or less clavate. Gill  
trama of subparallel hyphae, 5-15  $\mu$  broad. Pileus trama  
radial. Pileus cuticle a thin (27-32  $\mu$ ) ixocutis; hypo-  
dermium an opaque zone of hyphae. Stipe cuticle of repent  
dry hyphae. Clamps not found.

The spores are dark rusty and tuberculate in KOH.  
Many appear to be calyptrate (but Singer says they are not  
calyptrate in Cortinarius. The spore color excludes it  
from Hebeloma).

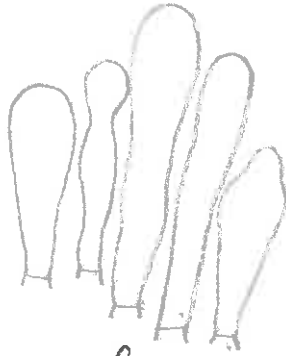
Cortinarius

21968

Phlegmacium



Basidium  
x 1000



Ch x 1000



Profile



Face View

Spores x 8000



*Phlegmarium*

Pileus 8 cm., viscid, "light russet vinaceous," margin with appressed fibrils. Flesh thick, firm, white, changing to "light pinkish lilac" when cut, and "purple lilac" when bruised; odor and taste slight. Lamellae rounded-adenate, violaceous at first, finally brownish-violaceous, unchanging when bruised, not broad, close. Stipe 7 cm. x 20 mm., with an ovoid bulb (3 cm. diam.), russet-vinaceous below, white above, scattered-fibrillose, dry, solid.

Spores 8-10 x 4.5-5.5  $\mu$ , rough, sublimoniform, inequilateral.

Habitat and Distribution. - In deciduous woods, under Leucothoe, North Carolina, August.

Smith says it does not run to anything he has.

Pileus

Fileus 5-7 cm. broad, convex-campanulate, then convex-expanding, viscid, appressed-fibrillose, "clay color," disk "cinnamon buff," no change in KOH, even. Flesh pale buff, thick, firm; odor and taste slightly of radish. Lamellae adnexed, at first "pinkish buff," finally "snuff brown," medium broad, rather close, edges even. Stipe 3-5 cm. x 12-15 mm. <sup>pallid,</sup> dry, bulbous, the bulb ovoid, not emarginate, universal veil leaving a shallow, somewhat membranous, volvarium on bulb (prominent in one specimen). Cortina white, rather copious.

Spores 7-9 x 5-6  $\mu$ , ellipsoid, warty-subreticulate, in mass: "cinnamon brown."

Habitat and Distribution. - In mixed hemlock-deciduous woods, Tennessee, October.

Discussion. - Near ~~C. turmalis~~. cf. C. compressus Smith

Smith says it does not run down but he finds a subglutinous pellicle of hyaline cells. Could be near compressus but characters do not agree.

23543

Cortinarius  
in deciduous woods  
Boarts' October 30, 1959

*Pilegmacium*

Pileus 3.5-5.5 cm. broad, hemispheric-convex, viscid, "pallid brownish drab," tinged more or less strongly of "ecru drab," somewhat fibrillose, even. Flesh "lilac gray," thick; odor faintly of ripe apples, taste mild. Lamellae adnate to faintly emarginate, "pallid brownish drab," finally "sage brown," close, narrow. Stipe 4-7 cm. x 12-16 mm., dingy whitish, more or less fibrillose, slightly enlarged downward, not at all bulbous, dry, solid. Veil remnants on pileus-margin.

23743

Cortinarius  
(Phlegmacium)

Photo

in oak woods

Oak Ridge, Oct. 21-60

Pileus 5-8 cm. broad, convex, viscid or glutinous, "ochraceous buff", marginal third paler (near white), appressed-fibrillose (under lens), margin fibrillose (from the veil). Context white, firm; odor earthy, taste slightly of grass and slightly bitter.

Lamellae adnexed, pallid at first, finally "clay color" or "tawny olive", close, medium narrow, many short, edges rough.

Stipe 5-6 cm. x 10-16 mm., white above, dingy brownish below, dry, appressed-fibrillose, spongy-solid, slightly clavate. Veil webby, white, leaving one to three rings on lower half of stipe.



23743- *Cortinarius*  
(*Phlegmacium*)

24972

Cortinarius

Photo

Pileus 5-6.5 cm. broad, convex, not fully expanding, dingy buff, with numerous brown fibrillose scales (giving a dingy brown color), somewhat viscid when wet, even. Context whitish, thick, firm; odor mild, taste unpleasant, more or less bitterish.

Lamellae adnate-decurrent, white then "plumbago gray," finally "pale brownish drab," close, narrow, many short.

Stipe 5-6 cm. x 15-20 mm., dingy pale brown, with brown, minute, scattered, fibrillose scales, equal, solid. Veil arachnoid, copious, white.

Spores in deposit: near "avellaneous."



24972 - *Cortinarius*

24973

Cortinarius

Photo

Pileus 4-15 cm., convex, expanding, finally depressed from upturned margin, ground-color dingy buff but with numerous fibrillose brown scales, viscid, even. Context white, firm; odor and taste mild.

Lamellae adnate, "snuff brown" to "bister," narrow, close, many short.

Stipe 5-8.5 cm. x 8-18 mm., dingy pale brown, with scattered brown fibrils, equal above the bulbous base, bulb ovoid. Veil arachnoid, leaving a fibrillose superior ring.





24973 - Cortuarius

*Phlegmacium*  
*try communis*

26275

CORTINARIUS

PHOTO

on soil, mixed woods, Cades Cove, Aug. 3, 1964

Pileus whitish, disc buff, finally "warm buff", viscid.  
Context white; odor raphanoid-pungent, becoming fruity,  
taste pungent-bitter.

Lamellae white, finally "avellaneous", close, medium  
broad behind, narrowed, in front.

Stipe white, clavate-enlarged at base, solid. Veil  
white, webby-arachnoid.

*Pilequarius*

29435

CORTINARIUS

On soil, pine woods, Cades Cove, Sept. 30, 1966

Pileus violaceous gray, the basic color violet but densely covered with white fibrils, disc pale clay color; slightly viscid (wet), even. Context pallid; odor mild, taste earthy.

Lamellae emarginate, violaceous at first, close, medium narrow.

Stipe pallid/grayish, basically pale violet with white fibrillose covering, clavate, solid. Veil leaving a superior, fibrillose ring.

35223

CORTINARIUS

Cades Cove, under hemlock, August 12, 1969.

Pileus "yellow ocher," appressed-fibrillose. Context pale yellowish-white; odor raphanoid, taste becoming bitter-raphanoid. Lamellae adnexed, "madder brown," close. Stipe concolor to pileus or paler.

Near semisanguinius but differs in odor and taste.

*Pleurocybella*

35931

CORTINARIUS

Cades Cove, under hemlock, October 18, 1971

Pileus disc "pinkish buff," elsewhere "pale pinkish buff,"  
glabrous, viscid(?), not hygrophanous, even. Context white; odor  
pungent, almost like raw irish potato, taste mild (fungoid).

Lamellae adnexed, violaceous, becoming brownish (from spores),  
nearly subdistant, ventricose-broad, lamellulae numerous (alternating).

Stipe white, with two median and below narrow rings, the rings  
and basal half of stipe rusty-reddish-brown, dry, solid, equal to  
subolavate.

*Phlegmacium*

39743

CORTINARIUS

In pine-oak woods, Cades Cove, September 25, 1974

Pileus 2.5-3.5 cm broad, hemispheric then expanded-convex, viscid, "french gray" to "pale violet gray," appressed white-fibrillose (under lens), margin even. Context pallid-violaceous; odor and taste fungoid.

Lamellae adnexed, violaceous ("deep plumbeous") when young, then brown, close, rather broad, lamellulae alternating.

Stipe 4-7 cm long, 5-6 mm thick, clavate, dry, concolorous with the cap to paler, flesh violaceous, stuffed. Veil white, webby, not profuse, leaving a fugaceous band (annulus).

Spores in deposit: "snuff brown."

*Pilequarium*

Cortinarius

40015

in humus, edge of deciduous woods, Cherokee National Forest,  
Tellico Plains, Tennessee, September 29, 1975

Pileus 2.5-6 cm broad, hemispheric-convex, expanding-plane, viscid when wet, silvery-violaceous (near "lilac gray", disc tinged "ochraceous buff" glabrous, (appressed-fibrillose under lens), even. Context concolorous or paler; odor and taste mild.

Lamellae adnexed, at first violaceous ["slate violet (1)"], finally with a brownish tint, close, medium broad, lamellulae numerous.

Stipe 5-8 cm long, 6-12 mm thick, concolorous, clavate at base, hollow, dry. Veil webby, white, not leaving an annulus.

Spore deposit: "buckthorn brown".

*Phlegmacium*

40026

CORTINARIUS

On soil, decid-conifer woods, Cades Cove, October 12, 1975.

Pileus 2-3.5 cm broad, convex, expanding-convex, viscid, "tawny olive", paler to whitish on a narrow marginal zone, glabrous but with a few veil fibrils on margin. Context odor and taste mild, flesh pallid brownish.

Lamellae emarginate-adnexed, at first pallid to pallid brownish, finally "dresden brown", close, medium broad, lamellulae alternating.

Stipe 1.5-2.5 cm long, 4-8 mm thick, whitish, more or less fibrillose, dry, equal, hollow. Veil webby, evanescent.

Spores 6-8 x 5-5.5  $\mu$ , ellipsoid to subglobose or more or less globose, echinulate, no germ pore, wall medium thick (deposit failed). Pleurocystidia and cheilocystidia none. Pileus cuticle and ixocutis.