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November 2013

Alnicola Notebook 1

L. R. Hesler

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ALNICOLA Kühner

Le Botaniste 17:175. 1926

Pileus dry, ^{not} ~~neither~~ hygrophanous, ~~nor viscid~~,
fibrillose to glabrous, not striate. Taste often
raphanoid to bitter. Lamellae broadly adnate to
emarginate-adnate.

Spores usually more than 9μ long, more or less
Hebeloma-like, rough, no germ-pore. Cheilocystidia
apices ^{acute} ~~adnate~~. Pileus cuticle usually a trichodermium,
of ovoid, short-cylindrical cells in chains, often as
pileocystidia.

Singer (3rd ed. Agar., p. 569), in his Key to
Genera of Tribe Inocybeae, characterizes Alnicola
by its ornamented spores, and separated from
Hebeloma by the viscid pileus in latter, dry
in former plus either dermatocystidia, or sphaerocysts,
or even an epithelium.

23906 ALNICOLA AMARESCENS (Qué1.) Romagn.

On burned peat, covered with mosses, Deurne, Province of Noord-Brabant, Netherlands, leg.-det. Bas, October 14, 1958

Notes by Bas

Pileus 15-26 mm, convex to plano-convex, mostly umbonate (rounded or acute), ochraceous brown (slightly browner than Seguy 191), center darker (sometimes date-brown), moist, hygrophanous, pale ochraceous brown when dry with center slightly rusty, very minutely radially fibrillose, mat (dull), fatty when older, margin at first slightly involute and 2/3 striate, pruinose when young. Context odor unpleasant, sourish when rubbed.

Lamellae narrowly adnate to slightly or deeply emarginate, pale buff then darker and browner, rather crowded, narrow to broad (up to 4 mm), rather concave becoming ventricose.

Stipe 3.5-7.2 cm long, 1-3.5 mm thick, at first pale brownish yellow, then dark dingy chocolate-brown from the base upward, the lower portion whitish, later isabella in colored appressed fibrils, apex slightly floccose-pruinose.

Notes by Hesler

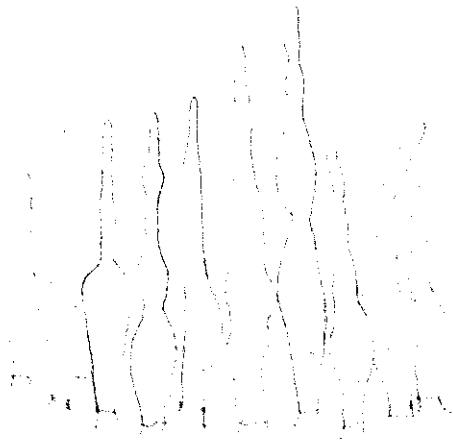
Spores pale yellowish in 2% KOH, 8-10(11) x 4.5-5(5.5) μ , slightly inequilateral in profile, more or less ellipsoid in face view, wall 0.4-0.5 μ thick, minutely rugulose, no germ pore, callus none or slight. Basidia 23-26 x 6-7 μ , 2-4-spored (similar to those of Hebeloma). Pleurocystidia none;

cheilocystidia 30-52 x 5-8 μ , basal portion enlarged (on one or both sides), the upper third or half a slender slightly tapering neck or acute, at times more or less constricted, conspicuous. Gill trama of subparallel hyphae, 6-10 μ broad. Pileus trama of radial hyphae (appears cellular in tangential section). Pileus cuticle not gelatinous, an epithelium (cellular in tangential view; but in radial view appear as long to medium-short hyphal cells (see drawings), bearing ~~to~~ more or less clavate pileocystidia; hypodermium not differentiated. Stipe cuticle of dry, repent, perpendicular hyphae, the surface bearing scattered caulocystidia, 34-42 x 3-8 μ , similar to cheilocystidia. Clamp connections not found. Some hyphae of the pileus cuticle and pileocystidia incrustated (or with wall-thickening rings).

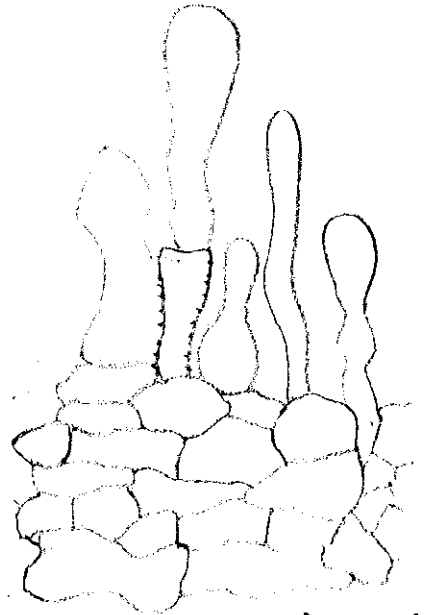
Differs from Hebeloma in dry epithelial cuticle, with pileocystidia, and distinctive cheilocystidia.

Alnicola amarescens (Quél.) Romagn.

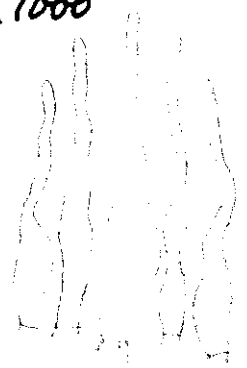
23906 (leg-det. Bas)



Ch x 1000



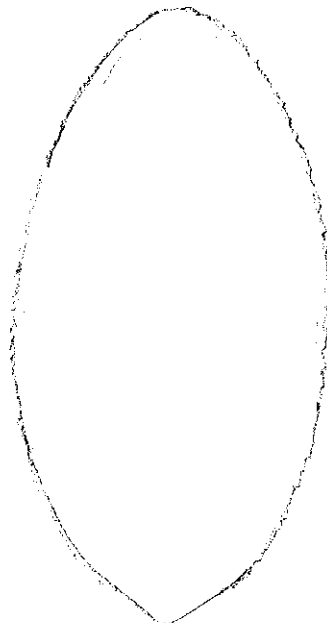
Pileus cuticle (epithelium) with pilos - x 1000
(tangential sect.)
[see next page]



Canls x 1000



Profile



Face

Spores x 8000

Alnicola amarescens

23906



Pith cuticle (radial section), $\times 1000$

ALNICOLA BOHEMICA (Vel.)Kuhner

[Sydowia 4:150. 1950?]

Naucoria bohemica Vel., Ceske houby, p. 527. 1921.

(See: Mich. Acad. Sci. 22:219. 1937) (also: Rev. d. Mycol. 5:11. 1940)

Occurs in North America, acc. to Singer.
Later, Singer (Sydowia 9: 406), ~~Singer~~^{he} compared it
with Galbrula mirabilis Atk.; & concluded they
were the same. Since Atkinson's name was
earlier, Singer proposed: Alnicola mirabilis
(Atk.) Sing. ^{comb. nov.} Sydowia # 9: 406. 1955.

Alnicola fragilis (Pk.) Comb. nov.

Hebeloma fragilis (Pk.) Facc., Syll. Fung., 5: 798, 1887

[see notes in Hebeloma folder]

ALNICOLA INCULTA (Pk.) Singer

Sydowia 9:406. 1955

Galera inculta Pk., New York State Mus. Ann. Rept. 41:69 1888.

Alnicola alnetorum Maire,

Pileus 1.2 - 2.5 cm broad, campanulate, becoming convex or nearly plane, obtuse or rarely with an umbo, hygrophanous, cinnamon-colored and striatulate when moist, buff-colored and granulate when dry, sometimes minutely pitted or corrugated, rarely rimose-squamulose. Context thin, fragile.

Famellae adnexed, at first pale then pale-cinnamon, edges white, crenulate, broad, subdistant.

Stipe 2.5 - 3.5 cm long, 1 - 2 mm thick, reddish-brown, apex sometimes mealy or pruinose, base white-villose, ^{slightly} silky, brittle, hollow, straight or subflexuous.

Spores 15 - 16 x 7.5 μ , subellipsoid, pointed at each end.

On damp ground under willows and alders, Catskill Mts., New York, Type.

Sy Singer (Sydowia 9: 406) says it is identical with A. alnetorum Maire, + so he re-named it.

10336 NAUCORIA MELINOIDES (Fr.) Kummer

In sphagnum bog, Lake Temagami, Bear Island, Ontario,
leg. R. F. Cain, det. Smith, September 4, 1936

Spores 9-11 x 5.5-6 μ . Otherwise as in Tenn-11673.

[= Alnicola ~~eschar~~ melinoides (Fr.) Kähler, 1926]

= Alnicola melinoides (Fr.) Kühner

11673 NAUCORIA MELINOIDES (Fr.) Kummer

Bear Island, Lake Temagami, Ontario, leg. R. F. Cain &

A. H. Smith, det. Smith (No. 4025) (Cain No. 11441)

August 19, 1936. (= N. escharoides (Fr.) Kummer)

Notes by Hesler

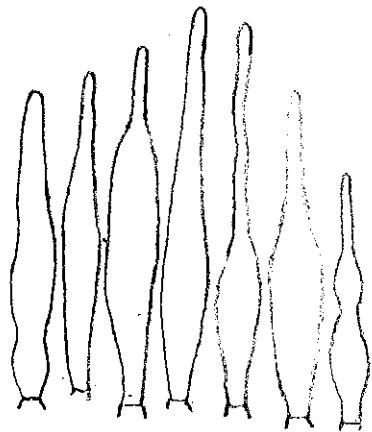
Spores 9-11.5 x 4.5-5.5(6) μ , inequilateral in profile, ovoid in face view, rugulose (with a pore^{no!}), brown in 2% KOH. Basidia 25-28 x 6-7 μ , 4-spored. Pleurocystidia none; cheilocystidia 32-52 x 5-7 μ , ventricose below, with a slender, sub-acute neck, abundant. Gill trama of sub-parallel hyphae, 3-5 μ broad. Pileus trama of radial hyphae. Pileus cuticle a cell-zone, cells irregular in shape, surface bearing rather long, septate hyphae, the terminal elements, cylindric-clavate, more or less pileocystidioid. Stipe hollow, cuticle of repent hyphae, and scattered, clavate caulocystidia. Clamp connections not observed.

Dennis, Orton, and Hora (1960) list N. melinoides (Bull. ex Fr.) Kummer as a synonym of N. escharoides (Fr. ex Fr.) Kummer sensu auct. non Ricken.

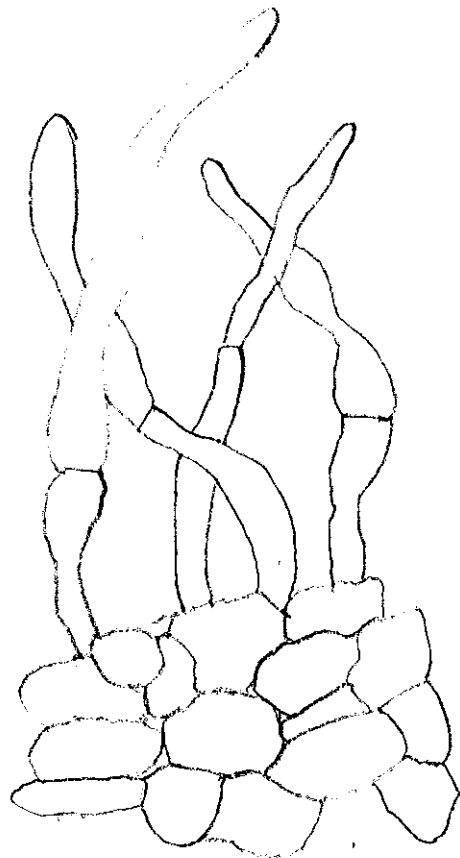
Note: Tenn-10336 was taken from sphagnum bed.

Naucoria melinoides (Fr.) Kummer

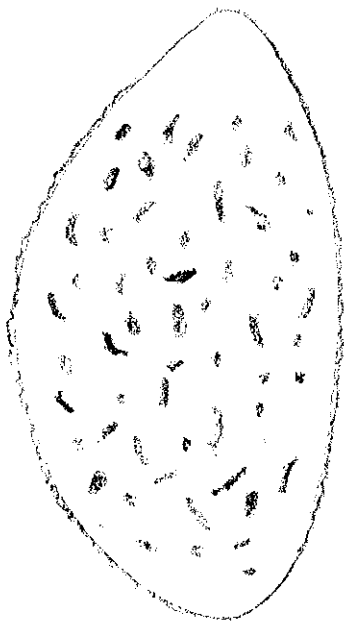
11673 (leg. Smith + Cain)
(Toronto - 11441)



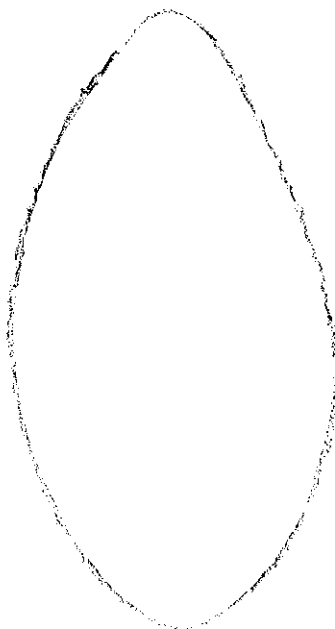
Ch x 1000



Pileus cuticle
x 1000



Profile



Face

Spores x 8000

ALNICOLA MIRABILIS (Atk.) Singer

Sydowia 9:406. 1955

Galerula mirabilis Atk., Amer. Phil. Soc. Proc. 59: 1918.

Naucoria bohémica Vel., Ceske houby, p. 527. 1921.

Alnicola bohémica (Vel.) Kühner,

Singer (Sydowia 9:406) says it was first described from North America by Atkinson, then reported by Smith, under the name Naucoria hamadryas Fr.; and finally described from Bohemia by Velenovsky in 1921 as Naucoria bohémica Vel. Singer further states that it occurs commonly in eastern U.S., especially in Michigan.

[Note that Singer (Agar. p. 639) following Heim, lists Phaeocollybia hamadryas Fr. sensu Cooke.]

Singer states (Sydowia 9:406) that the agaric collected by Smith as Naucoria hamadryas Fr. is Alnicola mirabilis (Atk.) Sing. [see: Mich Acad. 22:219. Figs. 5, 6, 8.]

Alnicola

Trichia (Alnicola)

Hebeloma (senum Walk.)

Mutov

HEBELOMA PALLIDOMARGINATUM (Pk.) ~~Sacc.~~

Syll. Fung. 5:804. 1887

Agaricus (Hebeloma) pallidomarginatus Pk. Buffalo Soc. Nat.

Sci. Bull. 1(No. 2):50. 1873.

Notes on Type (This is an Alnicola)

Spores (7.5)8-11 x 5-6 μ , slightly inequilateral in profile, subfusoid to subellipsoid in face view, wall 0.25-0.3 μ thick, minutely ~~warty~~ ^{warty}, pale yellow in 2% KOH. Basidia 28-38 x 7-9 μ , (2)4-spored. Pleurocystidia 24-30 x 4-5 μ , sub-ventricose or bottle-shaped, widely scattered and inconspicuous (overlooked at first); cheilocystidia 27-48 x 4-10 μ , bottle-shaped with a long slender neck, clustered and conspicuous. Gill trama of subparallel, rather broad and short-celled (22-36 x 7-14 μ). Pileus cuticle a zone of irregular, dry cells, bearing scattered pileocystidia (clavate, ellipsoid, or ventricose). Stipe cuticle of dry repent hyphae, with scattered caulocystidia. Clamp connections present.

In Smith's notes, he treats this as Alnicola.

Type on soil in swamps and wet places, Sandlake, N.Y., leg. Peck, September.

The rough spores + epithelium of the pileus indicate an Alnicola.

Naucoria, ^{renewed} Naucoria
Alnicola

HEBELOMA PALLIDOMARGINATUM (Pk.) Murr.

Buffalo Soc. Nat. Hist. Soc. Bull. 1:50. 1873) which? New York State Mus. Ann. Rept. 25:78. 1873. (Peck cites the latter.)

Pileus 1-2.5 cm broad, broadly convex, sometimes irregular, hygrophanous, brown with a pale margin when moist, ochraceous and subatomaceous when dry.

Lamellae adnexed, brownish ochraceous, close, thin, tapering outwardly.

Stipe 2.5-7 cm long, 2 mm thick, concolorous with the pileus but paler, base white-floccose, equal or tapering upward, hollow.

Spores 10 x 5 u, ellipsoid.

Gregarious in swamps and wet places. Sandlake. September.

In his notes Smith treats this as Alnicola pallidomarginata (Pk.). Synonymy:

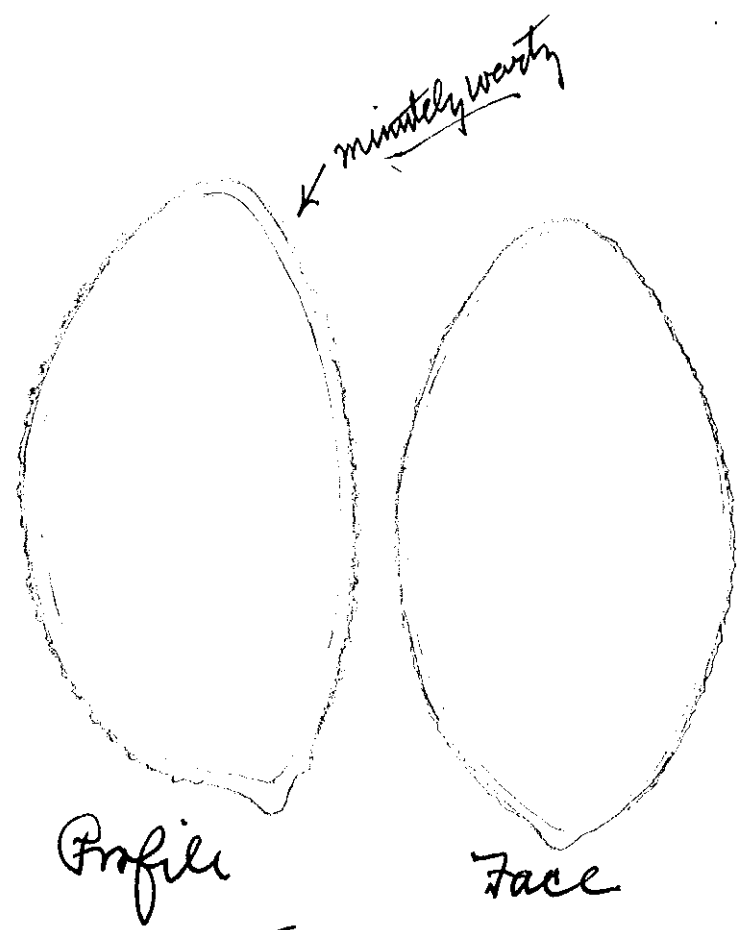
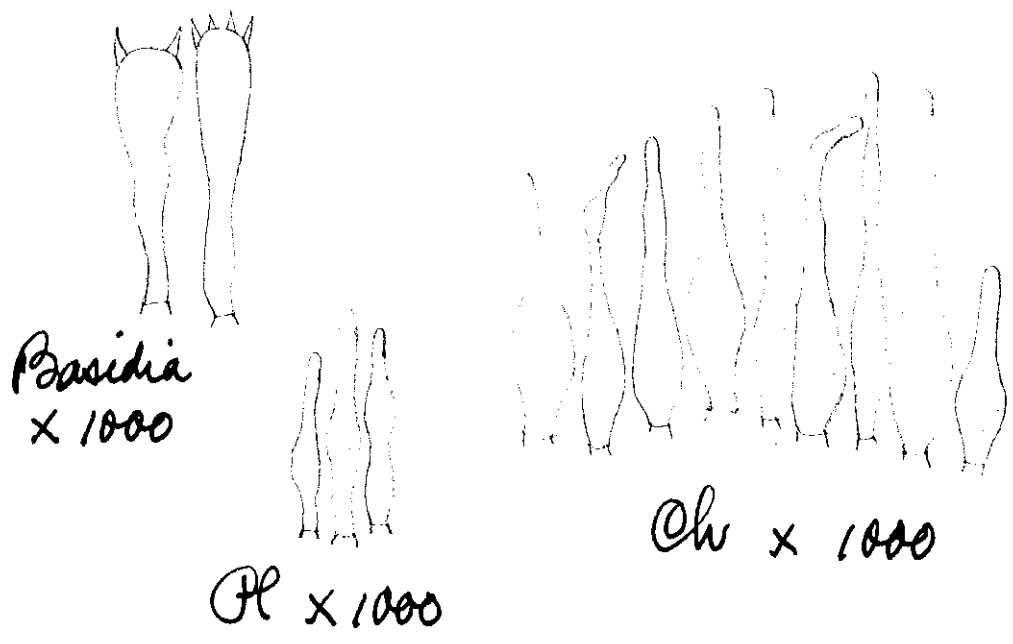
Agaricus pallidomarginatus Pk. Buffalo Soc. Nat. Sci. Bull. 1:50. 1873.

Hebeloma pallidomarginatum (Pk.) Sacc. 5:804. 1887.

Murrill (N.R.F. 10:178) lists it as Naucoria pallidomarginata (Pk.) Murr., + gives Hebeloma pallidomarginatum Sacc. as a synonym. ~~Murrill~~ He also lists as other synonyms: Naucoria paludosa Pk. & Naucoria uliginosa Pk. They all appear (to me) to be the same species, and perhaps is: Naucoria pallidomarginata (Pk.) Murr.?

~~Helvella~~ ^{Nauvoria} pallido-marginatum (Pk.) ~~Sacc.~~ ^{Murr.}

Type - ~~an~~ Alnicola
(a Nauvoria)



Spores x 8000

NAUCORIA PALUDOSA Pk.

New York State Mus. Nat. Hist. Ann. Rept. 41:68. 1888

Type

Pileus 1.2-2.4 cm broad, broadly convex or plane, hygrophanous, brown and striatulate on the margin when moist, buff-yellow when dry, glabrous. Context very thin.

Lamellae adnexed, at first yellowish or pallid, then brownish-ochraceous, thin, rather broad, close.

Stipe 2.5-5 cm long, 1-2 mm thick, pallid or brownish, equal, ~~glab~~ glabrous, brittle, hollow.

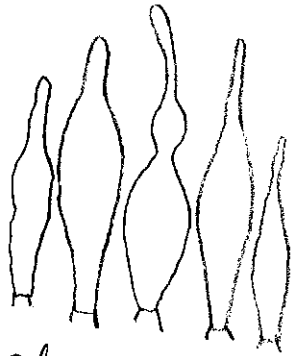
Notes by Hesler

Spores 8.5-12.5 x (4.5)5-7 μ , inequilateral to slightly so in profile, subvoid-subfusoid in face view, wall 0.25 μ thick, minutely warty, germ-pore none, yellowish brown in 2% KOH. Basidia 20-25 x 6-8 μ , 4-spored. Pleurocystidia none; cheilocystidia 27-40 x 5-10 μ , ampullaceous, neck slender and its apex tapering or slightly enlarged. Gill trama of slender, subparallel hyphae. Pileus cuticle of irregularly shaped cells, bearing pileocystidia, 28-63 x 6-11 μ , subcylindric to subclavate, ~~d~~scattered or more rarely in small tufts (scales). Stipe cuticle of repent hyphae, the apical region bearing caulocystidia, 24-60 x 4-6 μ , cylindrical, incrusted, in tufts (scales). Clamp connections not \emptyset found.

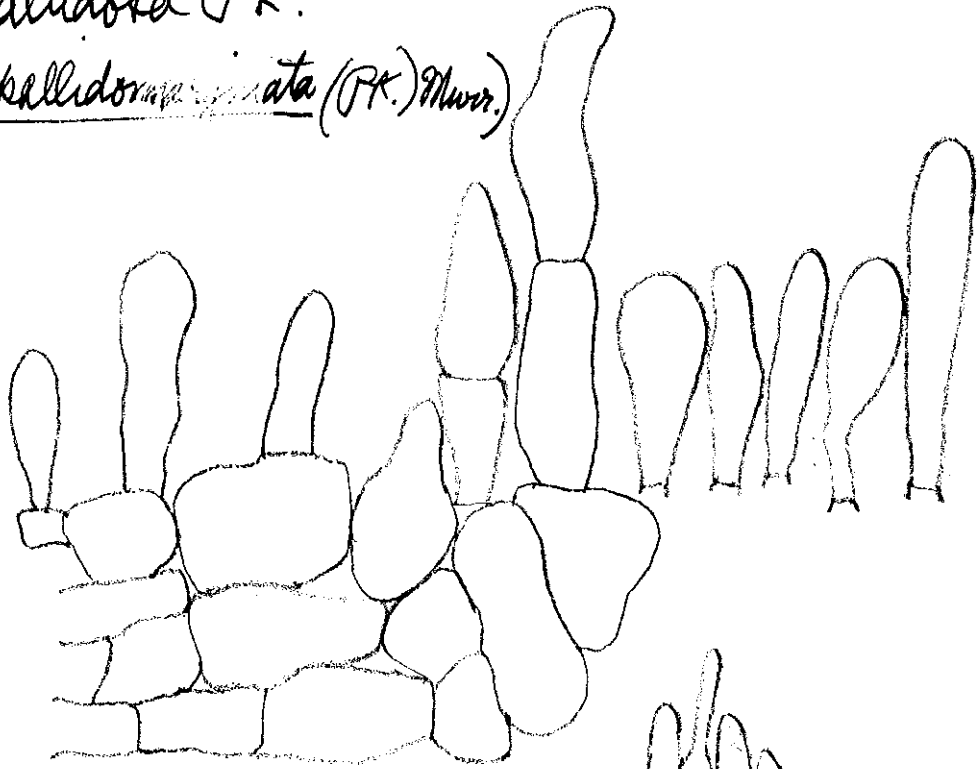
Type on wet, marshy or damp ground, under willows and alders, Catskill Mts., New York, September, leg. Peck. Murrill (N.A.F. 10:178) uses Naucoria pallidomarginata (Pk.) Murrill, placing Hebeloma pallidomarginata (Pk.) Sacc., Naucoria paludosa Pk., and N. uliginosa Pk. in synonymy. To me, these latter two are the same species.

This would appear to be a Naucoria sensu Watling.

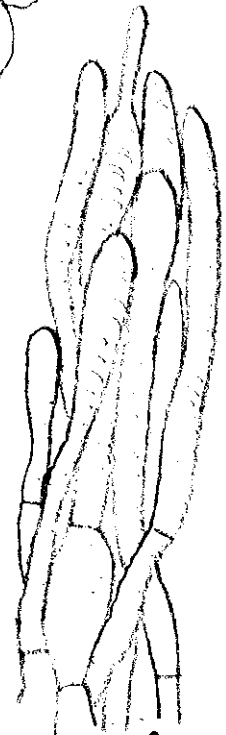
Nauvoia paludosa PK.
 Type [≡ *N. pallidomarginata* (PK.) Murr.]



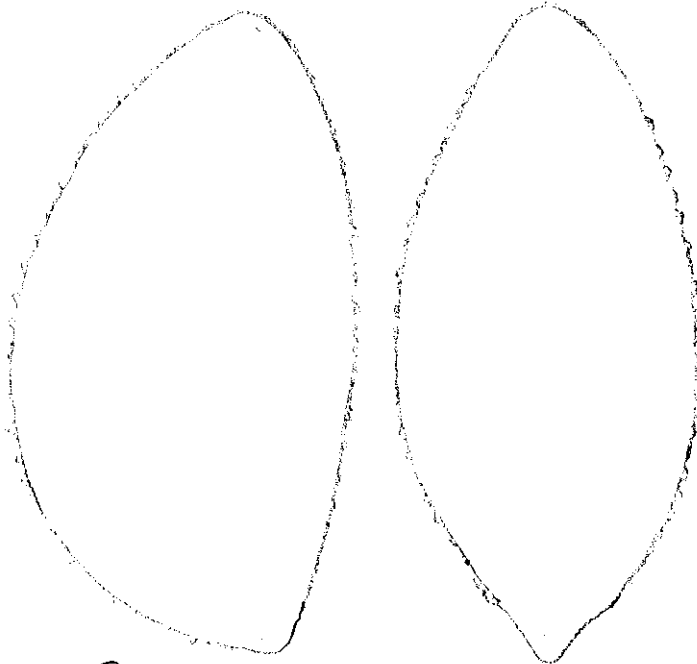
Ch x 1000



Pileus cuticle with
 pili - x 1000



Scale -
 (scale) x 1000



Profile

Face

Spores x 8000

23919 ALNICOLA PHAEA (Kühner & R. Maire)
Strijbeek, Noord-Brabant, Netherlands, leg.-det. Maas
Geesteranus, August 18, 1959

Notes by Maas Geesteranus

Pileus 1.5-2(2.7) cm in diameter, convex to rounded-conical, flattening and then with a broad rounded umbo, dark sepia with a reddish tinge, center yellowish-brown to date-brown, becoming dingy yellow-brown where drying, 1/2 striate, with minute white fibrils or minutely fibrillose-scaly. Context taste not bitter, odor not noted.

Lamellae yellowish brown to reddish sepia, slightly wrinkled, up to 3 mm broad, subdistant.

Stipe 2-4.5 cm long, 2-2.5 mm thick, flesh-colored reddish-brown at apex, dark sepia at base, with a faint purplish tinge, apex slightly powdery, base white-tomentose, elsewhere glabrous, faintly striped.

Notes by Hesler

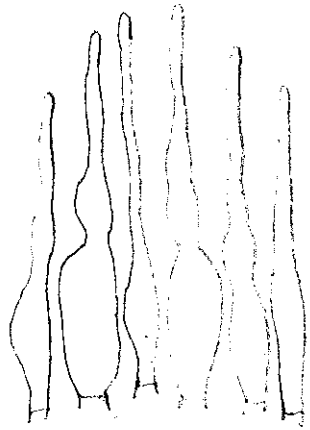
Spores pale yellowish brown in KOH, 8.5-11 x 5-5.5 μ , slightly inequilateral in profile, subellipsoid in face view, wall 0.3 μ thick, minutely rugulose. Basidia 25-28 x 6-8 μ , 4-spored. Pleurocystidia 42-53 x 4-8 μ , flash-shaped or at least enlarged below on one side, with a long, slender semi-acute neck, abundant on lower third of gill but also found all over the gill; cheilocystidia 28-64 x 6-8 μ , similar to pleurocystidia, abundant, more rarely with a basal cell, and rarely the neck branched. Gill trama of subparallel hyphae,

7-16 μ broad. Pileus trama of radial hyphae. Pileus cuticle an epithelium, a zone of dry, irregularly shaped brownish cells, bearing large pileocystidia, 24-52 x 8-20 μ , clavate to sub-vesiculose, often repent (in dried material), scattered or in tufts. Stipe cuticle of repent, dry hyphae. Clamp connections present, not abundant, on pileus epicuticular hyphae.

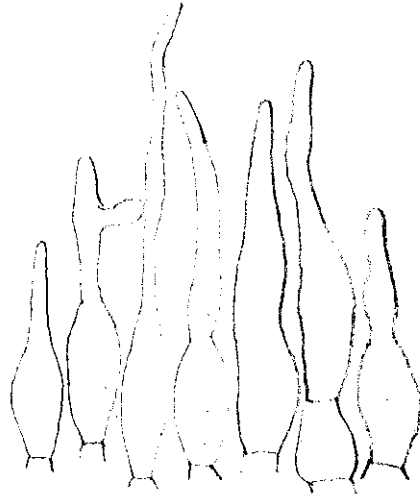
Differs from Alnicola amarescens in which pleurocystidia are absent, gills are rather crowded, and paler pileus.

Alnicola phaea (Kühner + E. Maire)

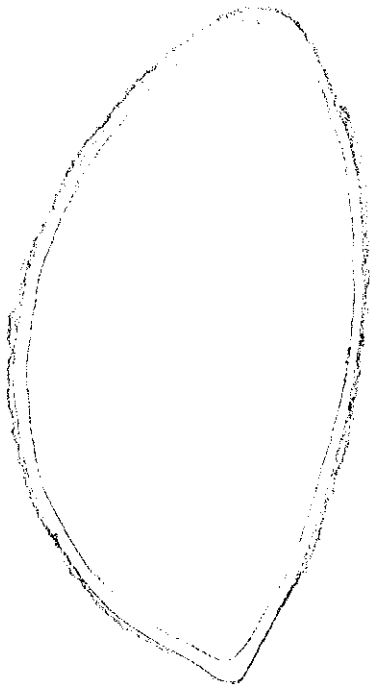
23919 (ex-Bas)



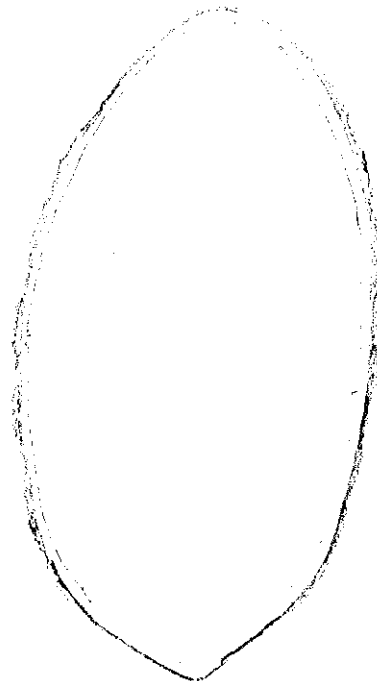
Pl x 1000



Ch x 1000



Profile



Face

Spores x 5000

Alnicola phaea

23919



Peltate cuticle (epithelium)
with piles - X 1000

Amicula (see Smith's notes)

NAUCORIA ULIGINOSA Pk.

New York State Museum Ann. Rept. 54:149. 1901

Type

Pileus 1.2-2 cm broad, convex, becoming nearly plane, hygrophanous, dark brown and striatulate when moist, dingy buff when dry, glabrous. Context thin.

Lamellae adnexed, rounded behind, dingy ochraceous, broad, subventricose, moderately close, edges uneven or crenulate.

Stipe 2.5-5 cm long, about 2 mm thick, reddish brown when moist, pallid when dry, hollow, firm, obscurely fibrillose.

Notes by Hesler

Spores 9-12.5 x 5-6(7) μ , slightly inequilateral in profile, subvoid, subfusoid to subellipsoid in face view, wall 0.25 μ thick, minutely warty, germ pore none, brown in KOH. Basidia 22-26 x 6-7 μ , (2)4-spored. Pleurocystidia none; cheilocystidia 32-50 x 4-7 μ , ampullaceous to subcylindric, with a slender neck (up to 25 μ long). Gill trama of slender, subparallel hyphae. Pileus cuticle of irregularly shaped cells (as in N. paludosa), the surface bearing pileocystidia, 30-45 x 6-11 μ , clavate, more rarely similar to cheilocystidia with occasional septate, epicuticular pale brownish hyphae, with clamp connections. Stipe cuticle of repent hyphae; caulocystidia not found.

Type on wet or muddy places in swamps, leg. Peck,
Sandlake, Rensselaer County, New York, September.

Murrill (n.d.F. 10:178) lists this as a synonym
(along with N. paludosa) of N. pallidomarginata (which
latter was placed in Hebeloma by Saccardo.

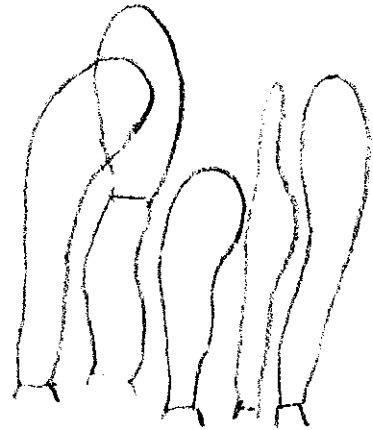
Seems to be same species as N. paludosa.

Nannoria nigrinosa PK

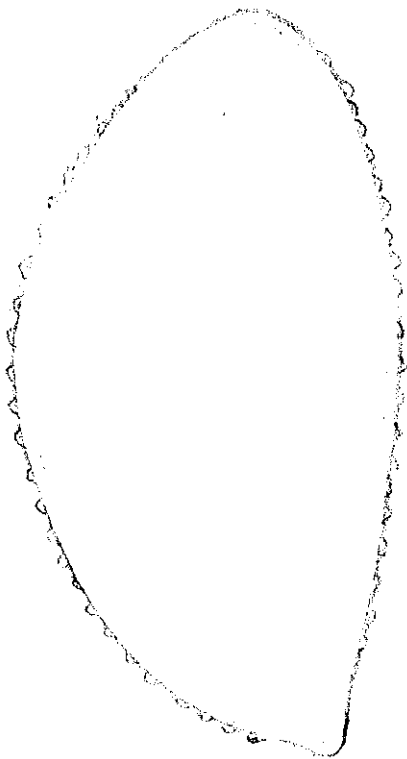
Type [*N. pallidomarginata* (PK) Murr.]



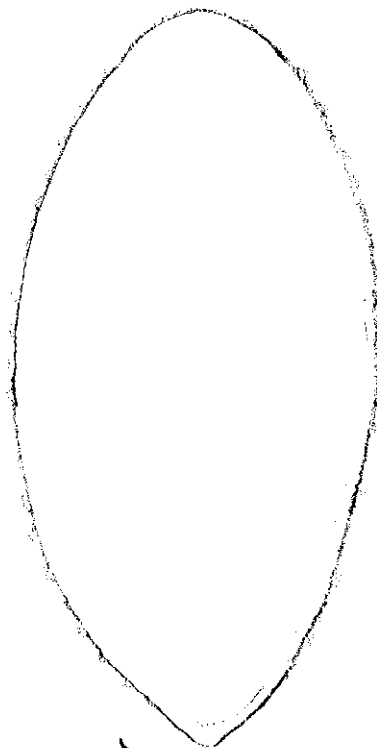
Ch x 1000



Pales x 1000



Profile



Face

Spores x 8000

NAUCORIA VELUTINA Murr.

North Amer. Flora 10:177. 1917

Alnicola velutina (Murr.) Singer

Type

Pileus 5-10 mm broad, expanded, subumbonate, pale-brownish, velvety-tomentose, margin not striate. Context thin, submembranous.

Lamellae adnexed, rosy-isabelline to pale-brownish, edges whitish-dentate, subdistant, very broad, ventricose.

Stipe 3 cm long, 1 mm thick, concolorous, apex pruinose-fibrillose, cylindrical, firm, tubular.

Notes by Hesler

Spores 8-10.5 x 5-5.5(6) μ , slightly inequilateral in profile, subfusoid to subellipsoid in face view, minutely rugulose, germ pore none, yellowish brown in H₂O, KOH, or Melzer's reagent. Basidia 28-33 x 6-7 μ , 4-spored. Pleurocystidia none; cheilocystidia 34-50 x 5-7 μ , ventricose and usually with a long, slender neck (not capitate). Gill trama of subparallel, rather short-celled hyphae. Pileus cuticle of brownish, dry, irregularly-shaped cells, some of which are incrustated, bearing gregarious or tufted more or less erect, septate, brown elements, the terminal element clavate pileocystidioid, some of these cells incrustated. Stipe cuticle of repent hyphae, some of which are incrustated, the surface bearing scattered, filamentous to clavate caulocystidia, 45-75 x 4-5 μ .

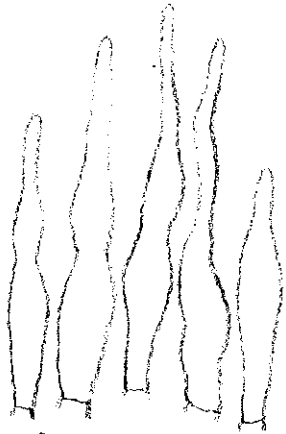
Type (1246) collected by F. S. Earle, among moss, in a swamp, Redding, Connecticut, August 27, 1902.

Singer places this in the genus Alnicola, which Dennis, Orton, and Hora (1960) place as a subgenus (section?) of Naucoria.

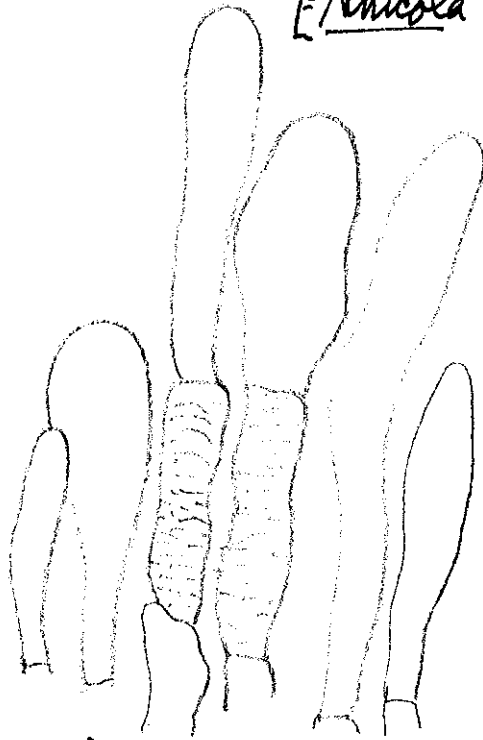
Naucoria velatina Murr.

Type

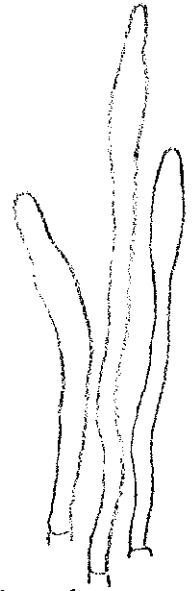
[*Alnicola velatina* (Murr.) Fung.



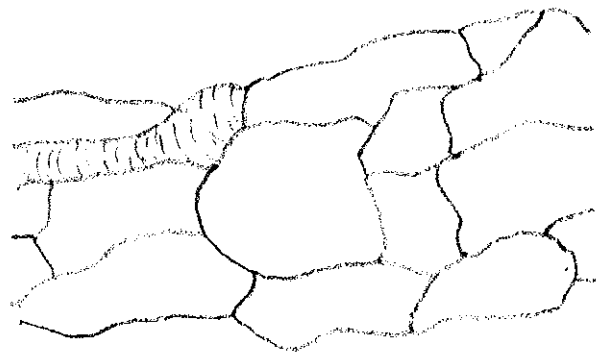
Ch $\times 1000$



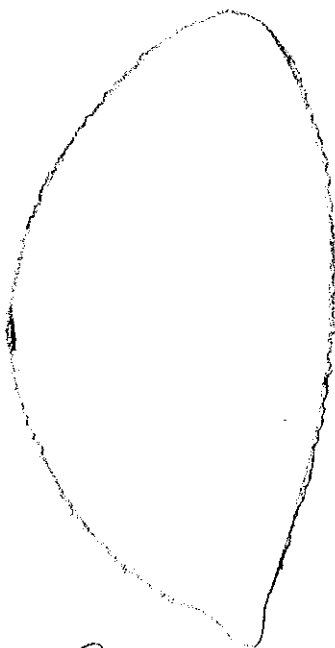
Pileo $\times 1000$



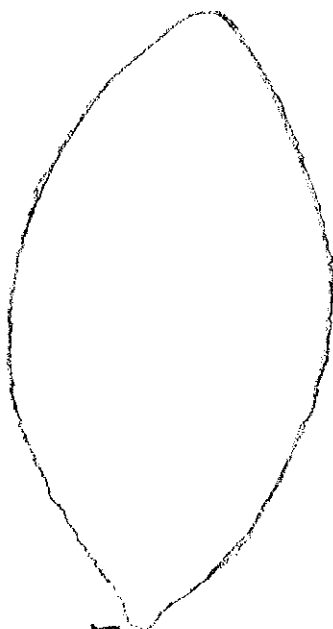
Caub $\times 1000$



Pileus - cellular cuticle
 $\times 1000$



Profile



Face

Spore $\times 8000$

Alnicola

NAUCORIA WASHINGTONENSIS Murr.

North Amer. Flora 10:181. 1917

Type

Pileus cespitose or gregarious, 2-3 cm broad, convex to plane, sometimes slightly depressed, not umbonate, uniformly isabelline, minutely tomentose, margin irregular or eroded, not striate, dry or moist.

Lamellae adnate or somewhat sinuate, dirty-isabelline, edges pallid and slightly serrulate, narrow, crowded, plane.

Stipe 6-8 cm long, 2-3 mm thick, isabelline, darker below, cartilaginous, cylindric, equal, very straight, smooth, glabrous, hollow.

Notes by Hesler

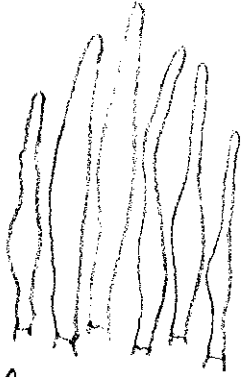
Spores 8.5-10.5(11) x 5.5-7 μ , slightly inequilateral in profile, ellipsoid or more rarely subfusoid, minutely punctate-warty, yellowish-brown (about same color in water, 2% KOH, and in Melzer's reagent). Pleurocystidia none; cheilocystidia 28-40 x 3-5 μ , filamentous to slender-ventricose, often with a very slender neck, rather abundant. Pileus cuticle of dry, brownish repent hyphae, with scattered pileocystidia as terminal elements of epicuticular hyphae (as a trichodermium). No elements with incrustations. Stipe cuticle of dry, repent hyphae; no incrustations.

Type (235) collected by Murrill, in humus, in a peat bog, Seattle, Washington, October 20-November 1, 1911.

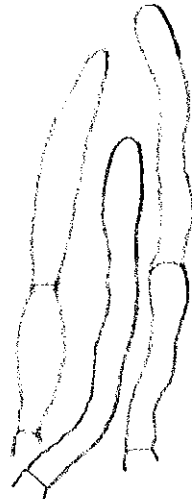
This, it seems to me, is a Naucoria in the sense of Watling (Henderson, Orton, and Watling, 1969) with the possible exception that the pileus cuticle is not "heterocellular."

Naucoria washingtonensis Murr.

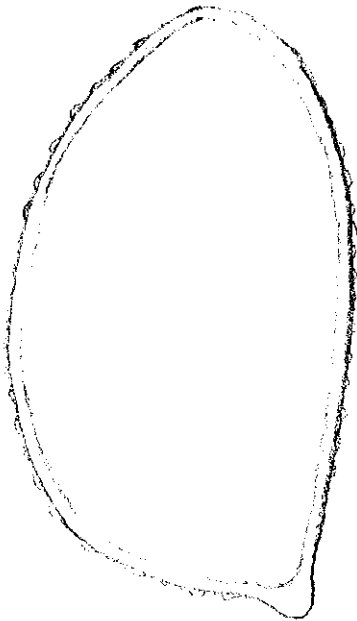
Type



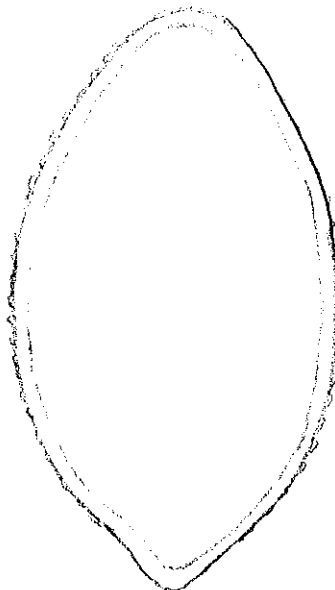
Ch x 1000



Pileo x 1000



Pilele



Face

Spores x 8000

25555

ALNICOLA

PHOTO

On soil, golf green, near Cashiers, North Carolina,

June 19, 1963

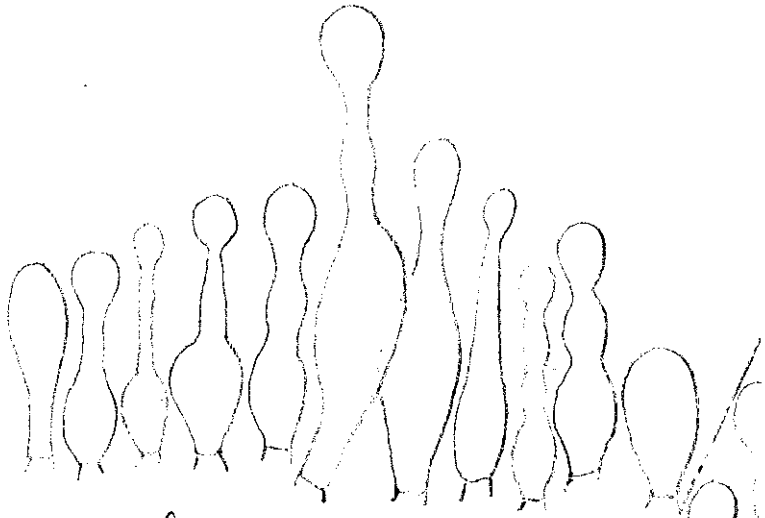
Pileus 1-2.5 cm broad, convex-conic, finally expanded, more or less umbonate, hygrophanous, "pinkish buff" (dry), "ochraceous tawny" (wet), glabrous, striate to disc. Context thin, pallid; odor mild, taste slightly grassy.

Lamellae narrowly attached or nearly free, rounded behind, broad, ventricose, subdistant, pallid at first, "ochraceous tawny" at maturity, lamellulae numerous, edges fimbriate.

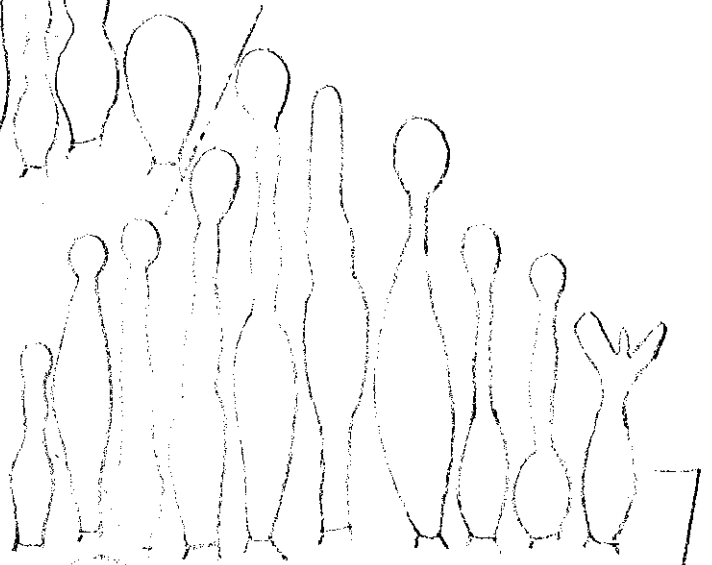
Stipe 3-4 cm long, 1-2 mm thick, white, white-pruinose above, dingy and shining below, fragile, hollow, equal.

Spores in deposit: "buckthorn brown," 10-15.5 x (5) 6-7 μ , elongate, slightly inequilateral in profile, ellipsoid to slender so in face view, no germ pore, wall minutely warty, about 0.25 μ thick, brown in 2% KOH. Pleurocystidia none; cheilocystidia (18) 28-60 x 5-10 μ , flask-shaped, capitate, at times abundant. Pileus cuticle of dry, repent hyphae, rarely as uplifted epicuticular hyphae, rarely incrustated. Stipe cuticle repent, dry. Caulocystidia gregarious or scattered, similar to cheilocystidia, rather rarely the apex finger-like, 26-64 x 5-10 μ , or rarely branched.

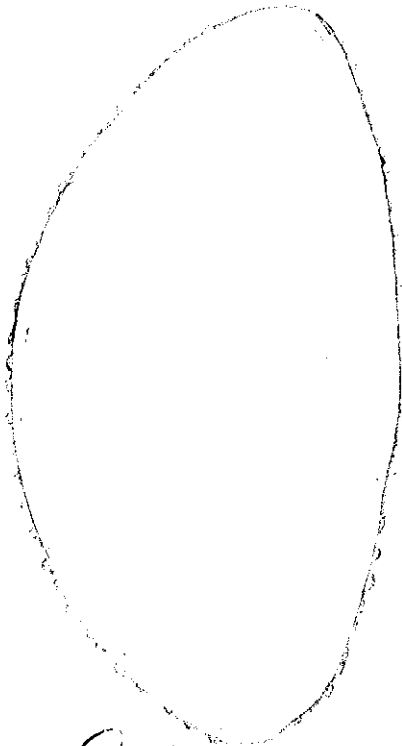
Nannoria / Alveola
25555



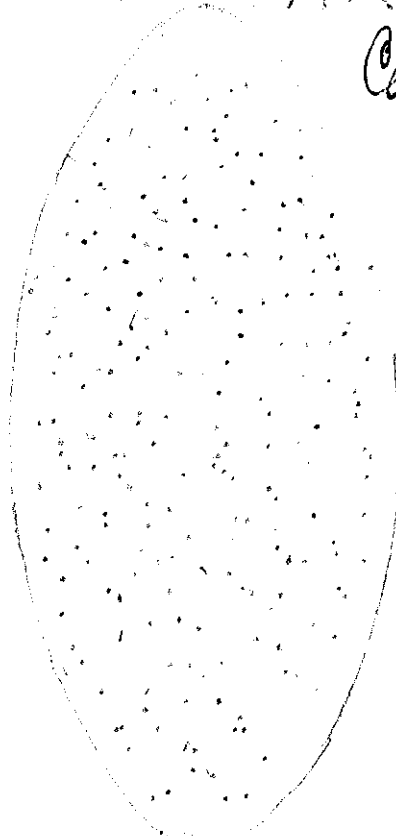
Ch x 1000



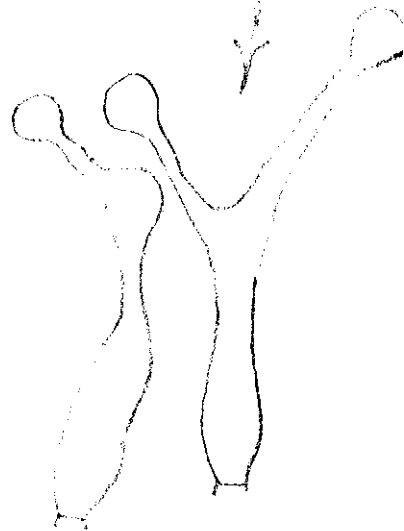
Caule x 1000



Profile



Spores x 8000 Face



Caule (more rare) x 1000

Alnicola

Keys and Descriptions

Alexander H. Smith

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ALNICOLA

KEY TO SECTIONS

- A. Cheilocystidia absent or if present with obtuse
to rounded apices Submelinoideae

- A. Cheilocystidia always present and with narrow
(2 - 4 μ) necks and acute apices Melinoideae #10

Get disc
for #15 -

ALNICOLA

SECTION SUBMELINOIDEAE

- 1. Spores 7-9.5 x 4.5-6 μ , on 4-spored basidia. 2
- 1. Spores larger, typically 11 μ or more long. 3
 - 2. Cheilocystidia 30-40 x 6-7 μ 1. A. Sm-17530
 - 2. Cheilocystidia 50-75 x 9-12 μ 2. A. Sm-40226
- 3. Pleurocystidia abundant. 3. A. Sm-33172
- 3. Pleurocystidia absent to very rare 4
 - 4. Clamp connections absent 5
 - 4. Clamp connections present. 8
- 5. Cheilocystidia large, 40-65 x 8-14(18) μ clavate
to elongate-subcapitate, thickest at apex. 6
- 5. Cheilocystidia 5-7 μ thick at apex when clavate
or filamentose 7
 - 6. Stipe glabrous 4. A. mirabilis
 - 6. Stipe appressed-fibrillose . 5. A. ^ghomodryes^{or} (Sm-22307)
- 7. Stipe darkening distinctly in basal region; taste
bitterish; apex of spores often snoutlike.
. 6. A. Sm-23479
- 7. Stipe not darkening; spores not with snoutlike
apex 7. A. Sm-36432
- 8. Pileus subviscid to lubricous. 9
- 8. Pileus merely moist to dry 10
- 9. Clavate to ventricose hyaline subgelatinous
pileocystidia present; spores 9-11 μ long. . Hebeloma Sm-19282
- 9. Pileus with a thin subgelatinous pallicle
of appressed hyphae 3-4 μ thick . . . 8. A. discomorbida BK.

- 10. Pileus dark vinaceous brown young and when faded
retaining a vinaceous tone 9. A. Sm-270
- 10. Not as above 11
- 11. Flesh exceedingly soft, odor and taste farinaceous
at first; stipe deep red brown at base . . . 10. A. Sm-40630
- 11. Not as above 12
- 12. Cuticle of irregularly arranged (tangential
sections) inflated cells (as in Psathyrella)
. 11. A. Sm-17195
- 12. Cuticle a palisade as in Conocybe
. 12. A. Sm-24753 & Sm-19197

Alnicola Sm-17530

Pileus 3 - 4.5 cm. broad, nearly plane with an inrolled margin young, plane to broadly convex in age, margin spreading, when moist glabrous and translucent striate, hygrophanous, evenly "Sagal brown" and fading to "cinnamon buff" (on disc first), faded portions finally becoming darker and browner but remaining glabrous; flesh very soft, thin and fragile, \pm 2 mm. thick in the disc, tapered evenly to the margin, odor none, taste mild.

Lamellae close to crowded, 33 - 38 reach the stipe, 2 tiers of lamellulae, narrow to moderately broad, nearly horizontal, broadest near the stipe (\pm 4 mm.), bluntly depressed or depressed-adnate and seceding, a bit duller than "Sagal brown" but still with a strong cinnamon tinge, edges slightly undulating.

Stipe 5 - 7 cm. long, 4 - 7 mm. thick, equal hollow, fragile, pallid brownish within but soon becoming bister from base upward, surface with a thin coating of $\bar{\sigma}$ ppressed fibrils but soon glabrescent, pale brownish above.

Spores 7 - 9.5 x 4.5 - 6 μ , inequilateral in side view, ovate in face view, very minutely roughened, pale dingy ochraceous in KOH, inner wall thickened; basidia 20 - 24 x 7 - 8 μ , hyaline to yellowish in KOH, 4-spored; pleurocystidia none; cheilocystidia numerous, 30 - 40 x 6 - 7 μ , obtuse, mostly cylindric or with flexuous walls, some slightly ventricose below; gill trama parallel or nearly so, dingy orange

Alnicola Sm-17530, cont.

ochraceous to nearly hyaline in KOH; pileus trama floccose-interwoven, orange-ochraceous to ochraceous revived in KOH (caps poorly dried); outicle a layer of hyaline enlarged cells (in KOH) as in Psathyrella; clamp connections present.

Habit, habitat and distribution: Gregarious on swampy soil, Mt. Angeles, Olympic Mts., Washington, October 4, 1941, Sm-17530.

Observations: This is a dingy cinnamon species with a stipe that darkens from the base upward and which has obtuse instead of acute chellocystidia. No veil was present. The specimens were overheated in drying.

Alnicola Sm-40226

Pileus 10 - 15 mm. broad, convex with an incurved margin, expanding to broadly convex or nearly plane, surface glabrous when moist, hygrophanous, "Sayal brown" to "cinnamon brown" fading to "cinnamon buff" and then appearing atomate, margin striate when moist; flesh fragile, brownish, odor none, taste slightly unpleasant.

Lamellae close, broad, nearly free, dull clay color, edges fimbriate.

Stipe 2 - 2.5 cm. long, 1.5 - 2 mm. thick, equal fragile, apex scurfy-pruinose, pallid-fibrillose-striate downward, paler than pileus but darkening from base up.

Spores in 2 ranges 7 - 9 x 5 - 5.5 μ and 9 - 11 x 6 - 7 μ , inequilateral in side view, ovate in face view, roughened, dingy clay color in KOH; basidia 2- and 4-spored, 25 - 30 x 8 - 10 μ , hyaline to dingy ochraceous in KOH; pleurocystidia none; cheilocystidia filamentose to clavate, 50 - 75 x 9 - 12 μ , broadest near the apex, hyaline, thin-walled, smooth; gill trama subparallel dingy ochraceous in KOH; pileus trama dingy ochraceous and of floccose hyphae; cuticle an hymeniform layer of clavate-pedicellate cells with dingy yellowish to yellowish brown walls especially in the pedicels; clamp connections present.

Habit, habitat and distribution: Gregarious on debris and soil in a wet area, Mowich Lake Road, Mt. Rainier National Park, Wash., Sept. 25, 1952, Sm-40226.

Alnicola Sm-40226, cont.

Observations: The large cheilocystidia and hymeni-
form cuticle separate it from Sm-17530, and the smaller
spores, even those on 2-spored basidia, separate it from
19197 and 24753.

Microscopic characters: Spores 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Basidia 2-spored, sterigmata 4, cylindrical, thin-walled, hyaline, smooth.

Cheilocystidia 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Hymenium 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Spores 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Basidia 2-spored, sterigmata 4, cylindrical, thin-walled, hyaline, smooth.

Cheilocystidia 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Hymenium 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Spores 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Basidia 2-spored, sterigmata 4, cylindrical, thin-walled, hyaline, smooth.

Cheilocystidia 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Hymenium 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Spores 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Basidia 2-spored, sterigmata 4, cylindrical, thin-walled, hyaline, smooth.

Cheilocystidia 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Hymenium 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Spores 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Basidia 2-spored, sterigmata 4, cylindrical, thin-walled, hyaline, smooth.

Cheilocystidia 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Hymenium 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

Spores 1.5-2.0 x 1.5-2.0, elliptical, thin-walled, hyaline, smooth.

3

Alnicola Sm-33172 (*psathyrelloides* sp. nov.)

Pileus 2 - 2.5 cm. broad, obtuse when young, becoming obtusely campanulate, surface glabrous, moist, hygrophorous, bay-brown moist and fading to a grayish tan, striate when moist; flesh thin and fragile, odor and taste not recorded.

Lamellae close, narrow, ascending adnate, grayish brown young with more of a cocoa-tinge in age, edges white crenulate to fimbriate.

Stipe 3 - 5 cm. long, 1.5 - 2.5 mm. thick, equal, flexuous, fragile, white silky from remains of a thin veil and with an obscure apical zone in some, pallid within above, dingy brown below in age, somewhat glabrescent.

Spores 11 - 14 x 6.5 - 8 μ , ovate in face view, inequilateral in side view, conspicuously warty-rugulose and snuff brown to bister in KOH; basidia 4-spored, 26 - 30 x 8 - 9 μ , hyaline in KOH; pleurocystidia abundant, ventricose-mucronate with a long neck and subacute apex (much as in *P. delineata*), no refractive content in KOH; cheilocystidia 36 - 50 x 7 - 11 μ , ventricose near base, neck elongated and apical region slightly enlarged to equal, apices \pm obtuse, hyaline, homogeneous content in KOH; gill trama interwoven, dingy ochraceous in KOH; pileus trama of floccose dingy brown hyphae in KOH, cuticle Psathyrella-like (of hyaline inflated cells), numerous

Alnicola Sm-33172 (*psathyrelloides* sp. nov.), cont.

hyaline septate filaments projecting from it; filaments 3 - 5 μ in diam. and septate but lacking clamp connections; clamp connections absent on all other hyphae also.

Habit, habitat and distribution: Three in a cluster, on leaf mold, Tahquamenon Falls State Park, Michigan, Sept. 2, 1949, Sm-33172.

Observations: This is close to *A. mirabilis* but has pleurocystidia and a veil. It is similar in color and veil characters to *A. Sm-23479* but, again, the pleurocystidia separate it.

Alnicola mirabilis (Atk) Comb nov.

Galerula mirabilis Proc. Amer. Phil. Soc. 57: 367. 1918.

Pileus 1.5-2 cm. broad, convex-complanate becoming expanded and umbonate, glabrous, striatulate, rugulose, vinaceous cinnamon, castaneous over disc.

Lamellae adnexed, subdistant, subventricose, fulvous ochraceous, edges white.

Stipe equal, straight or flexuous, hollow, glabrous, concolorous with pileus but paler, apex brunose.

Spores 12-25 \times 7-11 μ , inequilateral in side view, navicular to cymbiform in face view, minutely tuberculate, fulvous; cheilocystidia clavate, 40-70 \times 12-18 μ ; cuticle of pileus of ovate to pear shaped cells.

Data from type: Spores 16-20(24) \times 6.5-8(10) μ , inequilateral in side view ovate in face view, dull rusty brown in KOH, verrucose basidia 2-spored; pleurocystidia none; cheilocystidia abundant, 40-65 \times 8-14(18) μ , clavate to elongate-subcapitate, hyaline, thin walled, with a tendency to adhere to each other (agglutinated) gill trama \pm interwoven; pileus cuticle of isolated cells and some that are clavate but not truly hymeniforme; flesh proper floccose-interwoven; clamp connections absent.

Observations: Es. *A. bohemica* the same as this?

Alnicola Sm-22307 (hamadryas?)

Pileus 1 - 3.5 cm. broad, conic at first, margin incurved, expanding to campanulate, plano-umbonate, or with a raised margin, surface glabrous and moist, at first "burnt umber" or darker on disc, margin soon paler (at times near "clay color" white disc is still burnt umber), finally becoming translucent-striate, hygrophanous and finally fading to near "Army brown" or "vinaceous fawn", vinaceous brown when dried; flesh watery, concolorous with surface, fragile, thin, taste bitterish, odor none.

Lamellae broad, depressed adnate, readily seceding, close to subdistant, dull brown when young, finally more clay color from spores but when dried a vinaceous tone present, edges conspicuously white-serrulate.

Stipe 3 - 6 cm. long, 1 - 3 (4) mm. thick, equal, hollow, fragile, ~~depressed~~ fibrillose to fibrillose-striate, toned dingy incarnate tan beneath the fibrils, in age merely brownish and not darkening appreciably below, dark vinaceous brown over all as dried; no veil present.

Spores 15 - 20 x 7.5 - 10 μ , inequilateral in side view, ovate in face view, outer wall wrinkled warty, inner wall thickened, apex with a hyaline spot, remainder of space light to dark bistar in KOH, apex with a tendency to be snoutlike; basidia 4-spored (2- and 4-spored on some caps), 30 - 33 x 9 - 11 μ , hyaline in KOH; pleurocystidia none; cheilocystidia clavate with elongated pedicels to nearly

Alnicola Sm-22307, cont.

filamentose, (40) 50 - 70 x (8) 9 - 20 μ , hyaline, thin-walled, smooth; gill trama interwoven, of \pm inflated irregular cells nearly hyaline in H₂O fresh and dingy brown revived in KOH; pileus trama with a outicle of inflated cells several deep (in compact vertical chains), pigment incrusted on the walls and dark reddish brown in H₂O, KOH as revived the cells near the surface pallid to nearly hyaline, the heavily incrusted cells in the hypodermal area; clamp connections absent.

Habit, habitat and distribution: Subcespitoso-gregarious to scattered, on black muck under Fraxinus & Theya, Wolf Bog, Cheboygan County, Michigan, August 28, 1946, Sm-22307.

Observations: This is very close to Sm-³⁶⁴³⁴~~22307~~ but lacks a veil and has broad, more clavate cheilocystidia.

Alnicola Sm-23479

Pileus 2 - 3 cm. broad, obtusely conic expanding to broadly conic, surface moist and hygrophanous, dark reddish brown ("liver brown") fading to near "cinnamon buff" but with more vinaceous in it, at first covered by a thin hoary film of veil remnants, glabrescent, margin with a fringe of fibrils which soon vanishes; flesh soft, thin, concolorous with surface, odor none, taste bitterish.

Lamellae ascending adnate, pallid brown, then nearly clay color, close, broad, edges white fimbriate.

Stipe 2 - 3 cm. long, 3 - 5 mm. thick, short, equal, cartilaginous, whitish from a silky fibrillose coating, white-silky above point where veil breaks, brownish within and darkening somewhat at the base.

Spore 13 - 16 x 7 - 9 μ , broadly inequilateral in side view and the apex often drawn out into a snout-like protrusion, broadly ovate in face view, pale bister in KOH, outer wall wrinkled to verrucose, inner wall thickened; basidia 2-spored, 30 - 44 x 9 - 11 μ , hyaline in KOH; pleurocystidia very rare, similar to cheilocystidia; cheilocystidia 26 - 40 x 5 - 7 μ and filamentous to narrowly clavate, some fusoid ventricose and 30 - 35 x 8 - 10 μ , apices, obtuse, all hyaline thin-walled and smooth; gill trama parallel to somewhat interwoven, dingy reddish brown to bister in KOH; pileus trama floccose-interwoven, colored like gill trama but darker and hyphae with heavy incrustations in hypodermial

Alnicola Sm-23479, cont.

region; cuticle a thick layer of vesiculose cells (as in Psathyrella) paler to nearly colorless (compared to tramal hyphae) and many of them near surface giving rise to hyaline septate proliferations 5 - 6 μ in diam.; clamp connections absent as far as could be determined.

Habit, habitat and distribution: Scattered on muck in Ree's Bog, Burt Lake, Michigan, August 30, 1946, Sm-23479.

Observations: This is similar in most respects to Sm-36432 but the basidia are larger, the cheilocystidia so far as seen very rare, and the spores often have a very pronounced snout. In fact the spores are very irregular, suggesting that something "went wrong" cytologically. Some spores show both a snoutlike apex and considerable angularity, bifid spores were also observed and some spores $\pm 18 \times 6 \mu$ were found which never had the normal pigment. They were hyaline to pale ochraceous.

Alnicola Sm-36432

Pileus 1 - 3 cm. broad, obtusely conic, expanding to conic-campanulate or the margin spreading, surface glabrous and moist, "warm sepia" moist, fading to dull alutaceous varying toward avellaneous, with a rudimentary partial veil all traces of which are soon lost, some faintly striate at maturity before fading; odor and taste not recorded.

Lamellae grayish when young, becoming "sage brown" to argillaceous, ascending-connate, ventricose and broad, close, edges even but slightly white-fimbriate.

Stipe 4 - 7 cm. long, 2 - 3.5 mm. thick, evenly and slightly enlarged downward or equal, whitish and unchanging, silky fibrillose or with inconspicuous zones, apex pruinose, ground color dull brownish.

Spores 11 - 14 (15) x 7 - 8.5 (9) μ , broadly inequilateral in side view, broadly ovate-pointed in face view, verruculose-roughened, thick-walled, near snuff brown in KOH; basidia 28 - 34 x 9 - 11 μ , 2-spored, hyaline or nearly so in KOH; pleurocystidia none; cheilocystidia abundant, narrowly ventricose with necks 3 - 5 μ thick and obtuse apices, elongating to filamentous with flexuous walls and obtuse apices, rarely subcapitate, hyaline, thin-walled, smooth; gill trama subparallel to interwoven, dingy ochraceous in KOH; pileus trama floccose-interwoven, ochraceous to rusty brown in KOH and some incrusting pigment present, cuticle a layer 2 - 4 cells deep of inflated cells 20 - 40 μ thick and

Alnicola Sm-36432, cont.

the walls smooth to incrusted; clamp connections absent as far as could be determined!

Habit, habitat and distribution: Cespitose-gregarious on a sandy road in woods (mixed conifer and hardwood), Cut River Bridge, U. S. Highway 2, Michigan, June 25, 1951. Smith-36432.

Observations: This species is very close to Sm-270 but has broader spores, a distinct veil, and duller colors when faded.

Alnicola discolorbida (Pk.)

Agaricus discolorbicus Peck, Ann. Rep. N.Y. State Mus.

26:58. 1874

Naucoria discolorbida (Pk) Saccardo, Syll. Fung. 5:842. 1887.

Pileus 2.5-4 cm. broad, convex or expanded, surface glabrous, subviscid, reddish brown or shell chestnut; flesh white.

Lamellae crowded, narrow, white or pallid to brownish, serrulate on the edges.

Stipe 5-8 cm. long, 2.5 mm. thick, equal, white, stuffed glabrous, subpruinose at apex.

Sporos 10-13 x 5-6.5 μ , inequilateral in side view, ovate in face view, pale yellow in KOH, roughened; basidia 4-spored, 20-24 x 8-9 μ , yellowish in KOH; pleurocystidia none; cheilocystidia abundant, 36-58 x 9-13 μ , fusoid-ventricose to subcylindric, apices obtuse, smooth, thin-walled, hyaline to yellowish in KOH; gill trama interwoven, yellowish, subhymenium not distinctive; pileus trama floccose=interwoven, beneath a thin loosely organized pellicle of hyphae 3-4 μ in diam.; clamp connections present.

Habit, habitat and distribution: On the ground in woods, Croghan, New York.

Observations:

Alnicola Sm-270

Pileus 1 - 2 cm. broad, obtusely conic and remaining broadly conic, glabrous and polished, hygrophane, watery "Rood's brown" on the disc and "Sayal brown" on the margin, fading to "light vinaceous cinnamon" or "pinkish cinnamon", margin inrolled, striate when moist, very fragile, odor and taste not recorded.

Lamellae adnate to narrowly rounded, adnexed, subdistant, broad, concolorous with pileus, edges eroded.

Stipe 3 - 5 cm. long, 1.5 - 2.5 mm. thick, concolorous with pileus, varying to paler or darker, very sparsely appressed-longitudinally fibrillose striate.

Spores 11 - 14 (15.5) x 5 - 6.5 μ , ovate-pointed in face view, inequilateral in side view, pale ochraceous tawny in KOH, outer wall rugulose-roughened, inner wall thickened; basidia 2-spored, 20 - 24 x 6 - 7 μ , yellowish in KOH; pleurocystidia none; cheilocystidia abundant, 40 - 80 x 7 - 9 μ , slightly ventricose at base and apex subcapitate, finally filamentose-elongated, thin-walled, hyaline, smooth; gill trama of dingy ochraceous smooth hyphae more or less parallel and the cells equal in width throughout or only slightly inflated; pileus trama floccose-interwoven, rusty-ochraceous in KOH; cuticle on hymeniform layer of pyriform to clavate-pedicellate cells, readily collapsing and not reviving well in KOH; clamp connections present.

Alnicola Sm-270, cont.

Habit, habitat and distribution: Gregarious on muck in a bog, North Creek Road, Adirondack Mountains, New York, August 28, 1934, Sm-270.

Observations: The clavate to fusoid-ventricose obtuse cheilocystidia, hymeniform outicle, and vinaceous cinnamon color are distinctive along with the lack of a veil.

Alnicola Sm-40630

Pileus 1 - 3 cm. broad, plane with an incurved margin, expanding to plane or with a broad low umbo and an uplifted margin, surface glabrous, moist, hygrophanous, conspicuously translucent striate when moist, "Sage brown", fading to cinnamon buff but drying with a vinaceous tone, glabrous and naked at all stages; flesh very fragile, soft, concolorous with surface, odor and taste farinaceous when collected but both soon gone entirely.

Lamellae close, moderately broad, ventricose, adnate to adnexed but soon seceding, soft, concolorous with pileus or slightly paler, edges even.

Stipe 3 - 6 cm. long, 2 - 3 mm. thick, equal or nearly so, hollow, fragile, readily splitting, glabrous, apex naked to faintly pruinose, often undulating concolorous with pileus or near apex paler, darkening to deep red-brown in the base.

Spores 9 - 13 x 6 - 7.5 μ , inequilateral in side view, ovate in face view, roughened, inner wall thickened, near snuff brown in KOH; basidia 2-spored, 28 - 36 x 8 - 9.5 μ , hyaline in KOH; pleurocystidia none; cheilocystidia abundant, narrowly fusoid-ventricose to filamentous, apices obtuse, when filamentose 40 - 60 x 6 - 7 (8) μ , when ventricose the ventricose portion 8 - 10 (11) μ broad, all thin-walled and smooth, hyaline in KOH or practically so; gill trama parallel, dingy cinnamon buff in KOH; pileus trama floccose-interwoven and a darker dingy cinnamon in KOH; cuticle ^{an} ~~is~~ hymeniform

Alnicola Sm-40630, cont.

layer of clavate to pear-shaped cells up to 20 μ broad and dingy cinnamon in KOH, the walls somewhat thickened in the pedicels; clamp connections present.

Habit, habitat and distribution: Cespitose-gregarious on muck in partly dried-up swamp, Carbon River Entrance, Mt. Rainier National Park, Washington, October 6, 1952, Sm-40630.

Observations: The hymeniform cuticle, obtuse chelocystidia, darkening stipe and soft fragile consistency are distinctive, as is the color of herbarium specimens when considered in relation to the other species.

Alnicola Sm-17195

Pileus 1.5 - 4 cm. broad, obtusely conic with an inrolled margin, becoming expanded to plane or with a low obscure umbo, margin sometimes recurved, surface glabrous and moist, hygrophanous, translucent striate to the disc, "cinnamon buff" on disc and "pinkish buff" over margin when young, gradually becoming "cinnamon" over all, finally dingy watery cinnamon, fading to a dingy pale pinkish buff, surface smooth or rugulose; flesh very thin and exceedingly fragile, watery, concolorous with pileus moist and faded, odor and taste not distinctive.

Lamellae close to subdistant (27 - 31 reach the stipe), 2 - 3 tiers of lamellulae, adnate to slightly adnexed, readily seceding; narrow to broad (3 - 5 mm.), broadest near the stipe, \pm horizontal, pallid pinkish buff young but soon dingy cinnamon, edges \pm even.

Stipe 3 - 5 cm. long, 2 - 3.5 mm. thick, equal, hollow, very fragile and readily splitting longitudinally when broken, dull cinnamon in color (either paler or darker than cap) darkening at the base, apex pruinose, remainder with a thin coating of grayish oppressed fibrils which does not entirely obscure the cinnamon color.

Spores 11 - 14 x 6 - 7.5 μ , broadly inequilateral in side view, ovate in face view, pale ochraceous tawny in KOH, roughened, inner wall thickened; basidia 2-spored, 26 - 30 x 7 - 8 μ , hyaline or nearly so in KOH; pleurocystidia none;

Alnicola Sm-17195, cont.

cheilocystidia abundant, variable, some $\pm 22 \times 5$ and fusoid ventricose with obtuse apices, some cylindric and $\pm 50 \times 9 - 10 \mu$, some clavate and up to 12μ at broadest part, some cylindric with a narrowed neck and capitate apex, all hyaline, thin-walled and readily collapsing; gill trama dingy yellowish in KOH, not reviving well; pileus trama floccose-filamentose beneath a cuticle of irregularly arranged enlarged cells which collapse readily; clamp connections present.

Habit, habitat and distribution: Densely gregarious on wet soil along with *A. melinoides*, Mt. Angeles, Olympic National Park, Washington, September 24, 1941, Sm-17195.

Observations: This is a pale cinnamon species related to *A. mirabilis* but distinct by virtue of the different color.

Alnicola Sm-24753

Pileus 5 - 15 mm. broad, convex with an incurved margin, expanding to broadly convex, surface glabrous, moist, hygrophanous, disc "Sayal brown", margin near "light pinkish cinnamon", fading on disc first to "pinkish buff", when moist translucent-striate to the disc, adamate when faded; flesh very thin and very fragile, concolorous with the surface moist and faded, odor and taste not distinctive.

Lamellae subdistant, broad, 2 tiers of lamellulae, depressed adnate or rounded next to the stipe, seceding, "light pinkish cinnamon", becoming concolorous with moist pileus.

Stipe 3 - 6 cm. long, 1 - 2.5 mm. thick, equal, tubular, silky striate, apex concolorous with pileus and faintly pruinose becoming dark brown (near "mummy brown") from base upward, no veil present.

Spores 11 - 15 x 6.5 - 8 μ, (14 - 18 x 5.5 - 6.5 μ), inequilateral in side view, ovate in face view, pale cinnamon brown in KOH, slightly roughened; basidia 2- and 4- spored, 30 - 36 x 8 - 9 μ, yellowish in KOH; pleurocystidia none; cheilocystidia abundant, 40 - 80 x 6.5 - 9 (12) μ, narrowly clavate or some slightly ventricose at base, a few subcapitate, hyaline, thin-walled, smooth; gill trama subparallel to interwoven, the cells inflated and irregular in shape in age, cells long and narrow in young gills and then trama ±

Alnicola Sm-24753, cont.

parallel, scarcely colored in KOH; pileus trama floccose-filamentose, faintly cinnamon buff in H₂O, and KOH; cuticle a palisade of clavate to pear-shaped or ellipsoid cells 15 - 30 μ in diam., and 34 - 50 (60) μ long, pale cinnamon buff to yellowish in KOH, thin-walled, smooth; clamp connections present but inconspicuous.

Habit, habitat and distribution: Gregarious under conifers, Twin Bridges, Mt. Hood National Forest, Oregon, October 18, 1946, Sm-24753.

Observations: This is in the A. hamadryas group but is a pale-colored species with obtuse cheilocystidia.

Alnicola Sm-19197

Pileus 1 - 2.5 cm. broad, obtusely conic, the margin incurved, expanding to obtusely umbonate or nearly plane, glabrous, hygrophamous, "tawny olive" to near "Sayal brown" and striatulate when moist, hygrophamous, fading on the disc first to cinnamon buff, some finally becoming pallid and furfuraceous; flesh soft, concolorous with surface, unchanging, odor and taste not distinctive.

Lamellae rounded-adenate, close, broad (\pm 5 mm.), ventricose, pallid brownish becoming "Sayal brown", edges whitish and slightly uneven.

Stipe 3 - 5 cm. long, 1.5 - 3 mm. thick, equal, tubular, cartilaginous, $\bar{\sigma}$ ppressed silky-fibrillose over all but no veil present, concolorous with pileus or paler in upper third, eventually darker brown over all.

Spores 12 - 15.5 x 5.5 - 7.5 μ narrowly inequilateral to simply inequilateral, ovate in face view, roughened, inner wall thickened, near snuff brown to dingy ochraceous tawny in KOH; basidia 2-spored, 20 - 23 x 7 - 8 μ , yellowish to hyaline in KOH; pleurocystidia none; cheilocystidia 46 - 60 x 7 - 11 μ , fuscoid ventricose to narrowly clavate, ventricose part 7 - 11 μ thick, neck 4 - 6 μ thick and apices obtuse, smooth, hyaline, thin-walled; gill trama parallel or nearly so, dingy ochraceous in KOH; pileus trama floccose-filamentose, dingy ochraceous in KOH, cuticle

Alnicola Sm-19197, cont.

hymeniform, of clavate cells up to 50 μ broad, walls yellowish in KOH; clamp connections present.

Habit, habitat and distribution: Gregarious under alder, Bear Springs, Mt. Hood National Forest, Oregon, September 28, 1944, Sm-19197.

Observations: The hymeniform outicle, obtuse chilocystidia, lack of a veil, and large spores are distinctive among the dingy cinnamon species. Clamp connections were observed at the base of the basidia.

AINICOLA

SECTION MELINOIDEA

KEY TO SPECIES

1. Pileus subricous to subviscid; pellicle of appressed hyphae poorly formed and subgelatinous 13. A. Sm-35590
1. Pileus not as above. 2
2. Pileus velvety and dry 14. A. *velutina*
2. Pileus moist and hygrophanous or if dry appearing appressed fibrillose (often furfuraceous faded) 3
3. Clamp connections absent; taste bitter 15. A. *Sm-8331*
3. Clamp connections present. 4
4. Spores 7-10 μ long 5
4. Spores 10 μ or more long 11
5. Pleurocystidia present; lamellae dark brown when young 16. A. *Sm-24504* (*galerinoides* sp nov.)
5. Pleurocystidia absent; lamellae not as above. 6
6. Odor fragrant (more or less cinamon-like). 17. A. *Sm-19198*
6. Odor not as above (slightly pungent in 3055) 7
7. Stipe not darkening in age. 18. A. *Sm-19199*
7. Stipe darkening from base up 8
8. Hyaline clavate to ventricose pileocystidia with rounded apices present 19. A. *Sm-20137*
8. Not as above 9

9. Taste bitterish 20. A. Sm-24097
9. Taste mild to musty 10
10. Odor penetrating, stipe 1-1.5 mm, thick . . 21. A. Sm-3055
10. Odor none, stipe 2-6 mm, thick 22. A. Sm-40261
11. Spores 12-15 x 6.5-7.5 μ on 4-spored
basidia 23. A. Sm-40296
11. Spores 9-12 μ long. 12
12. Pileus with a distinct coating of
grayish fibrils obscuring the ground
color 24. A. Sm-33817
12. Not as above. 13
13. Lamellae distant, thickish
. 25. A. Sm-44023 galerinoides sp. nov.
13. Lamellae close and thin 14
14. Odor raphanoid; cheilocystidia with
enlarged part having pale ochraceous
walls in KOH 26. A. Sm-42839
14. Not with above combination of characters. 15
15. Flesh blackening in age; veil rudimentary . . 27. A. Sm-19200
15. Not with above combination of characters. 16
16. Stipe with a thin coating of
appressed fibrils 17
16. Stipe glabrous 18
17. Gills concolorous with pileus
"cinnamon brown" or darker 28. A. Sm-43744

17. Gills dingy ochraceous, 29. A. uliginosa
18. Spores "snuff brown" in KOH 30. A. Sm-19195
18. Spores pale yellow in KOH 19
19. Basidia 2-spored; spores 9-12 x 4.5-5 μ . . .31. A. Burke "U"
19. Basidia 4-spored; spores 9-12 x 5-6 μ . 32. A. pallidomarginata

Alnicola Sm-35580

Pileus 10 - 30 mm. broad, obtuse with a curved-in margin expanding to plane or retaining a low broad umbo, surface glabrous, lubricous, pale dull cinnamon brown, fading to pale cinnamon, pale cinnamon dried; flesh thin and pale brown fading to cinnamon buff; odor faintly of raw cucumber, taste none.

Lamellae close, broad, adnexed, clay color to pale cinnamon, when dried concolorous with pileus.

Stipe 2.5 - 3.5 cm. long, equal, fragile, colored about like the pileus and darkening to bister from the base upward, naked; veil absent.

Spores 8 - 9 x 4.5 - 5 μ , obscurely inequilateral in side view, elliptic or nearly so in KOH, roughened, dingy ochraceous cinnamon in KOH; basidia 4-spored, 22 - 25 x 8 - 9 μ , hyaline in KOH; pleurocystidia none; cheilocystidia 28 - 38 (40) x 8 - 12 μ , ventricose at base, with a narrow neck and acute apex, hyaline in KOH, smooth; gill trama subparallel, the cells inflated, dingy ochraceous in KOH; pileus trama floccose-filamentose, nearly all hyphae with inflated cells in age, hence hypoderm not distinct, with a poorly formed subgelatinous pellicle, no pilocystidia seen; clamp connections present.

Habit, habitat and distribution: Gregarious on wet soil, Upper French Creek, Medicine Bow Mts., Wyoming, 8-11-50, W. G. Solheim (Sm-35580).

Alnicola Sm-35580, cont.

Observations: The small spores, naked stipe, faint odor of raw cucumber, and lubricous pileus are distinctive. The cinnamon tone of the dried specimens is also distinctive.

~~31~~

13-

a. sm-8331

14

Alnicola velutina (Murrill) Singer

Naucoria velutina Murrill, North Am. Fl. 10:177. 1917.

Pileus 5-10mm. broad, thin, submembranous, expanded and subumbonate, surface velvety tomentose, pallid brownish, margin not striate.

Lamellae adnexed, subdistant, very broad, irregular, rosy-isabelline to pale brownish, whitish and somewhat dentate on the edges, ventricose.

Stipe 3 cm. long, 1 mm. thick, cylindric, concolorous, tubular, firm, pruinose-fibrillose at the apex.

Spores 8-10.5 × 5-6.5μ, inequilateral in side view, in face view ovate, pale ochraceous revived in KOH, surface wrinkled warty over all; basidia 4-spored, ± 30 × 8μ; pleurocystidia none; cheilocystidia abundant, (35)40-56 × 7-12μ, ventricose with long narrow necks and acute apices, hyaline to yellowish revived in KOH; gill trama brown in KOH, ± interwoven, subhymenium not distinctive; pilous trama with radial compactly arranged hyphae in cuticular region and with many hyphal tips (single cells to filaments) projecting to cause the velutinous appearance, walls brown and with incrustated pigment; clamp-connections present.

Habit, habitat and distribution: Type collected among mosses in a swamp at Redding Con. Aug. 27, 1902, F.S. Earle 1246.

Observations:

Alnicola galerinoides sp. nov. Sm-24504

Pileus 10 - 20 mm. broad, obtusely conic with an incurved margin, expanding to conic campanulate, glabrous, moist, hygrophorous, "auburn" fading to near "cinnamon buff" or with a redder tinge, moist margin faintly striatulate in some, surface generally developing a hoary sheen in the process of fading; flesh thick in the disc, very thin over margin, pallid buff (dingy "pinkish buff"), odor and taste not distinctive.

Lamellae deeply adnexed, very broad and ventricose (± 5 mm), close, 1 - 2 tiers of lamellulae, dark brown young but paler than pileus, near "ochraceous tawny" in age, edges uneven.

Stipe short, ± 2.5 cm. long, 1.5 - 2 mm. thick at the apex, base slightly enlarged, solid or with a very narrow silky pith, surface pallid over a dingy pale cinnamon ground color, in age "snuff brown" from the base upward; no veil seen.

Spores 7 - 9.5 x 4 - 5 (5.5) μ , inequilateral in side view, ovate in face view, outer wall verruculose, plage area not differentiated, pale ochraceous tawny in KOH; basidia 20 - 22 x 5 - 6.5 μ , four-spored, hyaline in KOH; pleurocystidia scattered to rare or in local areas (injured areas) very abundant, narrowly ventricose with a long narrow (2 μ) neck and acute apex, 30 - 48 x 4 - 8 μ , hyaline, thin-walled, smooth; cheilocystidia abundant, similar to pleurocystidia in

Alnicola galerinoides sp. nov. Sm-24504, cont.

all characters or becoming longer; gill trama subparallel, hyphae 10 - 20 μ in diam. and cells of various lengths, scarcely colored in KOH; pileus trama floccose-interwoven, yellowish in KOH, no incrusting pigment seen; outiole a thick layer of vesiculose cells (10 - 50 μ in diam.), about 3 - 4 cells deep, the walls thin, smooth and yellowish in KOH - same type of outiole as is characteristic of *Psathyrella* - ; clamp connections present.

Habit, habitat and distribution: Gregarious on a clay bank, Camp Creek Forest Camp, Mt. Hood National Forest, Oregon, October 12, 1946, Stuntz and Smith - 24504.

Observations: The pale ochraceous tawny spores are very similar to those characteristic of *Galerina*, but the plage area is not sharply delimited and clamp connections are present. In addition, the outiole of the pileus is not like that of any known *Galerina*. The outiole and the cystidia are more in line with *Alnicola*, hence the collection is placed here.

Alnicola Sm-19198

Pileus 2 - 3.5 cm. broad, obtuse to convex when young, margin incurved, expanding to broadly convex or nearly plane, surface moist and glabrous, extreme margin pruinose, "russet" to "walnut brown" moist, gradually becoming "Sayer brown" and furfuraceous along the margin which usually is opaque, hygrophanous, finally ± cinnamon buff over all and then conescent to furfuraceous in appearance but glabrous under a lens; flesh concolorous with surface, thick (2 - 3 mm), taste none, odor fragrant as in Armillaria ponderosa (of cinnamon).

Lamellae pallid brownish becoming "Sayer brown", close, moderately broad, ± equal, adnate to rounded-adnate, 2 tiers of lamellulae, edges even but becoming eroded.

Stipe 4 - 6 cm. long, 3 - 5 mm. thick, equal, tubular, fragile, ± concolorous with the pileus, sparsely silky fibrillose to apex, base with whitish mycelium, lower portion darkened in a few carpophores, apex scarcely paler than mid-portion.

Spores 8 - 10 x 5 - 5.5 μ, inequilateral in side view, ovate in face view, roughened, pale ochraceous in KOH, inner wall thickened; basidia 23 - 26 x 6 - 7 μ cylindric, 4-spored nearly hyaline in KOH; pleurocystidia none; cheilocystidia abundant, 28 - 36 x 7 - 11 μ, fusoid-ventricose with narrow (± 3 μ) necks and acute apices, hyaline, thin-walled, smooth;

Alnicola Sm-19198, cont.

gill trama parallel, the hyphal walls dingy ochraceous in KOH; pileus trama floccose-interwoven and dingy ochraceous in KOH; cuticle darker and of inflated cells mostly in chains or some as pilocystidia, very little incrusting pigment present; clamp connections present.

Habit, habitat and distribution: Gregarious under alder, Bear Springs, Mt. Hood National Forest, Oregon, September 28, 1944, Sm-19198.

Observations: The fragrant odor is an unusual character in this genus. It belongs in the Melinoides group. *Bauer*, Sm-33-940 from Michigan *Mit* did not have an odor but seems to belong here. Compare them carefully!

Alnicola Sm-19199

Pileus 1 - 3 cm. broad, obtuse to convex when young, margin incurved and fringed with remains of the white fibrillose veil, in age convex to plane or occasionally obtuse, moist and hygrophanous but color obscured by grayish veil fibrils, ground color "cinnamon brown", dingy buff faded, (appearing pallid because of veil remnants); flesh thin, soft, pale cinnamon brown, unchanging bruised, odor and taste not distinctive.

Lamellae close, 2 tiers of lamellulae, moderately broad (3 - 4 mm), broadly adnate with a slight decurrent tooth, seceding readily, pallid brown young, "Sayal brown" (dull cinnamon) at maturity.

Stipe 4 - 5 cm. long, 1.5 - 2.5 mm. thick, equal, tubular, fragile, near "Sayal brown" but coated with zones and patches of grayish veil fibrils, often annulate above, apex silky-pruinose and not appreciably paler than mid-portion, base not darkening in age.

Spores 7 - 9 x 5 - 5.5 μ , inequilateral in side view, in face view ovate, verruculose, pale ochraceous in KOH, wall appreciably thickened; basidia 4-spored, 22 - 26 x 6 - 7 μ , yellowish in KOH; pleurocystidia none; cheilocystidia abundant, 26 - 34 x 8 - 12 μ , broadly ventricose at base, tapered abruptly to a narrow (\pm 3 μ) neck ending in an acute apex, hyaline, thin-walled, smooth; gill trama parallel or nearly so, dingy ochraceous in KOH; pileus trama floccose-interwoven, outicle an irregular layer of enlarged hyphal

Alnicola Sm-19199, cont.

cells from among which fibrils originate, veil remnants also distributed over surface to confuse the situation; clamp connections present.

Habit, habitat and distribution: Gregarious under alder, Bear Springs, Mt. Hood National Forest, Oregon, September 28, 1944, Sm-19199.

Observations: The small spores, heavy gray veil, and broadly ventricose cheilocystidia with their narrow necks and pointed apices are distinctive.

Alnicola Sm-20137

Pileus 10 - 15 mm. broad, obtuse with an incurved margin, expanding to plane or with a low obtuse umbo, pileus moist and hygrophanous, "clay color" moist and fading to "cinnamon buff" translucent striate when moist and faintly pruinose from pilocystidia; flesh thin and pallid, odor acidulous, taste bitterish.

Lamellae adnexed to depressed-adnate, ventricose and broad, subdistant, paler than pileus, edges even.

Stipe 3 - 4 cm. long, 1 - 1.5 mm. thick, equal, fragile, pallid but in age dark brown from the base upward, pruinose to silky; no veil present.

Spores 7 - 8.8 (9) x 4.5 - 5 μ , obscurely inequilateral in side view, nearly elliptic in side view, very slightly roughened, yellowish hyaline in KOH; basidia four-spored, 24 - 32 x 7 - 9 μ , hyaline in KOH; pleurocystidia none; cheilocystidia abundant, 30 - 40 x 6 - 10 μ ventricose at base and tapered to an acute apex, scarcely 2 μ thick near apex, hyaline, thin-walled, smooth; gill trama interwoven, dingy pallid in KOH; subhymenium not distinct; pileus trama dingy pallid, of floccose interwoven hyphae beneath the hypoderm of inflated hyphal cells (yellowish in KOH), pellicle very rudimentary to lacking and clavate to ventricose-rounded pilocystidia 30 - 46 x 9 - 14 μ arising from it and scattered over surface, pilocystidia thin-walled and hyaline in KOH; caulocystidia similar to

Alnicola Sm-20137, cont.

cheilocystidia or larger and more irregular; clamp connections present.

Habit and habitat: Gregarious on charred wood where brush had been burned.

Distribution: Rhododendron, Oregon 10 - 24 - 44.
(Sm-20137).

Observations: The hyaline thin-walled pilocystidia which are clavate to ventricose, the bitter taste, lack of a veil, small spores which are scarcely inequilateral in side view, and darkening stipe appear distinctive.

Alnicola Sm-24097

Pileus 10 - 15 mm. broad, broadly convex expanding to nearly plane, surface moist and hygrophanous, "verona brown" when wet, fading out to about "cinnamon buff" appearing glabrous and smooth when moist, then canescent to tomentose or slightly furfuraceous and finally glabrous again when completely faded; flesh near "snuff brown" moist, pallid faded, relatively thick and firm, odor none, taste slightly bitter.

Lamellae close, rounded next to the stipe but free or barely attached, broad and becoming ventricose, pallid brown young near "clay color" at maturity, edges eroded.

Stipe 3 - 4 cm. long, 2.5 - 3.5 mm. thick, equal, solid or with a small tubule, pallid brownish throughout, soon darkening to near bistre at base and eventually over all, surface coarsely fibrillose striate or with a few zones of pallid fibrils apparently from a thin veil.

Spores 6.5 - 7.5 (8) x 3.8 - 4.4 μ, inequilateral in side view, ovate in face view, pallid ochraceous in KOH, minutely roughened, inner wall thickened; basidia 4-spored, 20 - 22 x 6 - 7 μ, hyaline in KOH; pleurocystidia none; cheilocystidia abundant, fusoid-ventricose, 30 - 44 x 6 - 9 μ, necks 2 - 3 μ and apices acute, thin-walled, smooth, hyaline; gill trama parallel, dingy pale cinnamon in KOH; pileus trama floccose-interwoven, cuticle a layer of enlarged hyphal cells with ochraceous walls (orange ochraceous in sections and very dingy), some filaments and pileocystidia (clavate) projecting, walls roughened somewhat; clamp connections present.

Alnicola Sm-24097, cont.

Habit, habitat and distribution: Gregarious on wet soil under brush, Camp Creek Forest Camp, Mt. Hood National Forest, Oregon, October 4, 1946, Sm-24097.

Observations: This is a small-spored species with a stipe that darkens, a slightly bitter taste, thin veil and rather ordinary colors for the genus.

Alnicola Sm-3055

Pileus 2 - 3 cm. broad, obtusely conic with an inrolled margin when young, expanding to convex or somewhat umbonate, surface moist, hygrophanous, "russet" to "Liver brown" to "hazel" or finally "Verona brown" before fading, fading to "cinnamon", evenly and minutely fibrillose-furaceous giving it a canescent appearance; flesh watery cinnamon fragile, cinnamon buff faded, moderately thick (\pm 3 mm.) in the disc, tapering to margin, taste musty, odor faint but penetrating.

Lamellae close, narrow to moderately broad, shallowly adnexed to adnate, seceding, pallid brownish at first, becoming near "mikado brown" to "Sayal brown" from spores, edges slightly eroded.

Stipe 6 - 10 cm. long, 2 - 6 mm. thick, fragile, equal, hollow, often compressed, concolorous with moist pileus or paler, at times nearly "chestnut" at base, (dark brownish red), surface longitudinally silky striate, apex fibrillose-scurfy, base cottony.

Spores 6.5 - 8 x 3.5 - 4 (4.5) μ ovate in face view, inequilateral in side view, minutely roughened, pallid yellowish in KOH; basidia 4-spored, hyaline to dingy ochraceous in KOH, 20 - 23 x 6.5 - 8 μ ; pleurocystidia none; cheilocystidia 20 - 34 x 6 - 9 μ , fusoid-ventricose with acute apices, hyaline to yellowish in KOH, smooth; gill trama subparallel, dingy ochraceous pallid in KOH; pileus trama with a floccose-filamentose central body and a colored

Alnicola Sm-3055, cont.

somewhat pseudoparenchymatous hypoderm, above this occurs a thin layer of filaments 4 - 6 μ in diam., with pale ochraceous slightly roughened walls (no pilocystidia found); clamp connections present.

Habit, habitat and distribution: Gregarious in moss, Lake Crescent, Washington, October 9, 1935, Sm-3055.

Observations: In my notes at the time of collecting, I wrote "near lubriciceps" "but not quite as robust". It is, of course, an Alnicola and is very close to Sm-24097 but differs in the penetrating odor, smaller cheilocystidia, mild to musty taste, and in the redder colors - especially as the stipe darkens.

Alnicola Sm-40261

Pileus 10 - 15 mm. broad, convex with an inrolled margin expanding to plane or the disc becoming shallowly depressed, surface glabrous, moist, hygrophanous, "burnt umber" (dark vinaceous red) when moist, fading to "onion skin pink" and then furfuraceous; flesh thin, fragile, vinaceous brown, odor and taste not distinctive.

Lamellae close to subdistant, moderately broad, adnate becoming adnexed, dingy vinaceous brownish young, retaining this tone until masked by the spores (\pm ochraceous tawny then), edges even.

Stipe 2 - 3 cm. long, 1 - 1.5 mm. thick, equal, fragile, thinly fibrillose silky but no veil seen, apex fibrillose punctate; reddish at first (none real old).

Spores 7 - 10 x 4.5 - 5.5 μ , inequilateral in side view, ovate in face view, obscurely roughened, pale clay color in KOH; basidia 26 - 30 x 7 - 8.5 μ , 4-spored, hyaline in KOH; pleurocystidia none or present only near gill edge and similar to the cheilocystidia; cheilocystidia abundant, narrowly ventricose-aciculate, 30 - 52 x 4 - 8 μ , scarcely ventricose near base and tapered evenly to a long needle-like tip, hyaline or nearly so in KOH, smooth; gill trama subparallel to interwoven, dingy brownish in KOH; pileus trama of floccose-interwoven hyphae beneath a dark hypoderm of enlarged cells, above this innate

Alnicola Sm-40261, cont.

hyphae project and have cells of various shapes from cylindrical to nearly globose, their walls ± colored and the end-cells often cystidioid; clamp connections present.

Habit, habitat and distribution: On humus, Upper Meadow, Meadow Creek, Mt. Rainier National Park, Wash., Sept. 25, 1952, Sm-40261.

Observations: The almost aciculate cheilocystidia, burnt umber to vinaceous pileus, and relatively small spores are distinctive.

Alnicola Sm-40296

Pileus 10 - 15 mm. broad, obtuse to convex, the margin bent in at first, becoming broadly campanulate to broadly convex, surface moist and hygrophorous, furfuraceous-hoary at first, soon ± minutely squamulose, when moist "Carob brown" but soon fading to more ferruginous over marginal area which is opaque at all times; flesh concolorous with pileus, fragile, thin, odor none, taste slightly disagreeable.

Lamellae subdistant to distant, broad, ventricose, narrowly but deeply adnexed, near "cinnamon brown" to "Verona brown" but more ferruginous (actually a dingy ferruginous), becoming paler and more ferruginous in age.

Stipe 1 - 2 cm. long, ± 2 mm. thick, short, curved, equal, concolorous with the pileus, base blackish in age, surface thinly fibrillose to apex, no veil present.

Spores 12 - 15 x 6.5 - 7.5 (10 - 12 - 16 - 20 x 6 - 8) μ inequilateral in side view, ovate in face view, roughened, pale snuff brown in KOH, apex not drawn out in spores from 4-spored basidia; basidia 27 - 34 x 9 - 10 μ, 4-spored (in some fruiting bodies 1 - 4-spored and spore-size variable); pleurocystidia none seen; cheilocystidia abundant, 40 - 60 x 5 - 8 x 2 - 3 μ, narrowly ventricose at base and with a long neck ending in an acute apex, ventricose part in some yellowish in KOH and with very slightly thickened smooth walls; gill trama parallel or nearly so, hyphae 10 - 15 μ in diam. in

Alnicola Sm-40296, cont.

central part narrower toward hymenium, bister in KOH; pileus trama floccose-interwoven, pale bister in KOH (in sections); outicle dark russet to dark bister in KOH, of inflated cells and several cells deep, (as in Psathyrella); clamp connections present.

Habit, habitat and distribution: Scattered on moss along a stream, Castle Peak, Mt. Rainier National Park, September 29, 1952, Nancy Jane Smith (Sm-40296).

Observations: A few giant bifid spores were observed from caps having 1 - 4-spored basidia and in these caps spore size and shape are tremendously variable. The outstanding characters are the heavily pigmented cuticular cells (some pigment in the wall and some incrustated on it), the acute cheilocystidia and the tendency of the colors to fade to ferruginous. The gill trama in water mounts of fresh material is pale cinnamon and in the outicle dark cinnamon, KOH darkens the color appreciably.

Alnicola Sm-33-817

Pileus 10 - 25 mm. broad, obtuse to convex with an incurved margin, expanding to plane or plano-umbonate, the umbo obtuse, the reddish cinnamon ground color obscured by a coating of grayish fibrils and hence appearing near "cinnamon buff" to naked eye fresh, becoming somewhat squamulose in age, dry, not hygrophanous, margin often with remnants of the veil; flesh brownish pallid, taste not distinctive, odor reminding one of musty straw.

Lamellae rather narrow, subdistant, decurrent to adnexed-decurrent, "cinnamon buff" to "clay color" at maturity, pallid when young, edge minutely eroded.

Stipe 3 - 5 cm. long, 2 mm. thick, tubular, fragile, equal, grayish from a coating of veil fibrils, becoming dark brown within from the base upward, fibrils over lower part arranged in subannular patches, apex silky-fibrillose to scabrous.

Spore print pale ochraceous cinnamon, spores 9 - 12 x 5 - 6.5 μ , inequilateral in side view, ovate in face view, distinctly (rather coarsely) roughened, pallid ochraceous in KOH; basidia 4-spored, 28 - 34 x 6.5 - 8 μ , hyaline in KOH; pleurocystidia none; cheilocystidia abundant, 40 - 50 x 7 - 11 (12) μ , ventricose at base and rather abruptly tapered to a long narrow (2 - 3 μ) neck ending in an acute apex, hyaline, smooth, thin-walled; gill trama subparallel to interwoven, ochraceous in KOH; pileus

Alnicola Sm-33-817, cont.

trama of floccose-interwoven hyphae with a somewhat differentiated hypoderm of enlarged cells and with fascicles of yellowish (in KOH) hyphae projecting as fibrils; clamp connections present.

Habit, habitat and distribution: Gregarious on springy soil, north of Newberry, Michigan, Aug. 30, 1933, Sm-33-817.

Observations: The medium-sized spores, coating of gray fibrils on cap and stipe, acute cheilocystidia and musty odor are distinctive.

Alnicola galerinoides sp. nov. (Sm-44023)

Pileus 10 - 15 mm. broad, conic when young, expanding to campanulate or plano-umbonate, striate nearly to disc when moist, surface glabrous moist and hygrophanous, cinnamon brown fading to cinnamon buff and then appearing slightly atomate.

Lamellae broad, distant, adnate, thickish, cinnamon brown, edges even.

Stipe 15 - 30 mm. long, about 1 mm. thick, equal fragile, naked, cinnamon brown, darker below.

Spores 9 - 11 x 5 - 6 μ , ovate in face view, inequilateral in side view, pale ochraceous tawny in KOH, roughened; basidia 4-spored, 20 - 24 x 7 - 8 μ , hyaline or nearly so in KOH (some with smoky-ochraceous content); pleurocystidia none, or if present, near edge and similar to cheilocystidia; cheilocystidia 36 - 55 x 5 - 9 μ , basal region slightly ventricose, tapered to a needle-like apex, hyaline or basal enlarged part faintly ochraceous (in KOH); gill trama parallel or nearly so, dull ochraceous in KOH; pileus trama of floccose interwoven hyphae, surface covering a hypoderm-like layer of radially arranged hyphae with enlarged cells with dingy ochraceous walls, no true pellicle above this; clamp connections present.

Habit, habitat and distribution: Gregarious on black muck under alder, Mud Lake Bog, Cheboygan County, Michigan, October 12, 1953, Sm-44023.

Alnicola galerinoides sp. nov. (Sm-44023), cont.

Observations: In this collection there is a tendency for the ornamentation to be deciduous over the plage area, hence accentuating the resemblance to a typical *Galerina* spore. The cheilocystidia and cap structure, however, are clearly *Alnicola*-like, and since the plage of the spore is not sharply bounded it is logical to place the species in *Alnicola*.

Spores 11 x 5 - 6 μ, ovate in face view, inequilateral in side view, pale brownish tan in KOH, roughened, basidia 4-spored, 20 - 24 x 7 - 8 μ, hyaline or nearly so in KOH (some with small, scattered, slightly pleurocystidia near, as if present, near edge and similar to cheilocystidia); cheilocystidia 7 x 5 - 6 μ, basal region slightly ventricose, tapered to a beak-like apex, hyaline or basal enlarged part faintly brownish in KOH; gill trama parallel to nearly so, full thickness in KOH; pileus trama of floccose interwoven hyphae, surface covered by a hypodermis-like layer of radially arranged hyphae with enlarged cells with dingy ochraceous walls, no true pellicle above this; clamp connections present.

Habitat and distribution: Occasional on black oak under litter, Old Lake Bog, Cheboygan County, Michigan, October 12, 1953, Sm-44023.

Alnicola Sm-42839

Pileus 20 - 35 mm. broad, plane with a decurved margin or the disc shallowly depressed and margin arched and elevated, surface glabrous moist and hygrophanous, rich cinnamon fading to cinnamon buff and in age or on drying developing blackish stains, minutely squamulose often fading; flesh thin, fragile, brownish, odor raphanoid, taste slight.

Lamellae close to crowded, narrow, adnate, dingy snuff brown as dried, more cinnamon present fresh, edges fimbriate.

Stipe 6 - 8 cm. long, 2 - 3.5 mm. thick, equal, flexuous, fragile, brownish, becoming bister from the base upward, glabrous to silky below, apex fibrillose-pruinose; no veil present.

Spores 9 - 11 (12) x 5 - 6.5 μ inequilateral in side view, ovate in face view, dingy clay color in KOH and rather coarsely roughened, plage area ornamented; basidia 4-spored, 28 - 36 x 8 - 9 μ , hyaline to smoky yellowish in KOH; pleurocystidia none seen; cheilocystidia abundant, ventricose at base, neck greatly elongated and apices acute, 45 - 65 x 6 - 12 μ , ventricose portion with dingy pale ochraceous walls in KOH, neck hyaline or nearly so and 2 - 3.5 μ in diam. near apex smooth; gill trama subparallel, the hyphal cells inflated and dingy ochraceous in KOH; pileus trama with floccose hyphae with inflated short cells

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Alnicola Sm-42839, cont.

dingy ochraceous in KOH, at surface giving rise to fascicles of hyphae (which are the squamules of the faded cap), the individual cells of which vary from cylindrical to globose and have dingy ochraceous slightly roughened walls; clamp connections present.

Habit, habitat and distribution: Gregarious on sphagnum, Tahquamenon Falls State Park, Luce County, Michigan, Sept. 20, 1953, Sm-42839.

Observations: The raphanoid odor, long cheilocystidia colored slightly in the basal or ventricose portion, lack of a veil, narrow gills, and tendency to stain blackish in age are distinctive. It appears close to Sm-19200 but the spores are darker and more dingy in KOH, and the pileus a richer cinnamon color than "tawny olive".

Alnicola Sm-19200

Pileus 1 - 2.5 (3) cm. broad, obtuse to convex, the margin incurved, expanding to broadly convex or nearly plane, occasionally with a slight umbo, when moist appearing glabrous and "tawny olive", hygrophanous and fading to "cinnamon buff", soon becoming pallid and having a grayish cast, minutely furfuraceous when faded, in age becoming bister to blackish over all; flesh thin, soft, concolorous with surface, blackening in age, odor and taste none.

Lamellae close, broad (\pm 5 mm), adnate and readily seceding, 2 tiers of lamellulae, pallid brown when young, dingy cinnamon in age, edges even.

Stipe 3 - 4.5 cm. long, 2 - 3.5 mm. thick, equal, tubular, fragile, pallid to dingy brown when young, with scattered patches of white silky fibrils from remains of a rudimentary veil, nearly glabrous at apex, in age becoming bister from the base upward.

Spores 9 - 12 x 5 - 6.5 μ inequilateral in side view, ovate-pointed in face view, roughened, pale ochraceous in KOH, inner wall appreciably thickened; basidia 4-spored, 22 - 25 x 7 - 8 μ hyaline in KOH; pleurocystidia none; cheilocystidia abundant, (30) 40 - 60 x 5 - 9 μ , fusoid-ventricose with long narrow straight necks \pm 3 μ diam. and acute apices, thin-walled, hyaline in KOH; gill trama parallel becoming somewhat interwoven, dingy ochraceous in KOH; pileus trama floccose-interwoven; dingy ochraceous to pallid in KOH; cuticle of

Alnicola Sm-19200

enlarged hyphal cells in an irregular layer and some groups of clavate to ellipsoid cells projecting, walls slightly roughened in some; clamp connections present.

Habit, habitat and distribution: Gregarious under alder, Bear Springs, Mt. Hood National Forest, Oregon, September 28, 1941, Sm-19200.

Observations: The manner in which the fruiting bodies darken in age appears characteristic as is also the presence of a thin veil. The spores and cystidia are what I regard as typical of the genus.

Alnicola Sm-43744

Pileus 1 - 2.5 cm. broad, obtuse with a straight to slightly incurved margin, becoming obtusely campanulate to plano-umbonate, surface glabrous, moist, hygrophanous, evenly "cinnamon brown", when real young near "Roads brown" (on disc), opaque or becoming faintly striate just before fading, hygrophanous, fading to a dingy tan and then appearing innately fibrillose; flesh very soft and fragile, odor and taste none.

Lamellae close, broad, depressed-adnate, ventricose in age, concolorous with pileus, edges even.

Stipe 3 - 8 cm. long, 1.5 - 2.5 mm. thick, equal, hollow, very fragile, concolorous with pileus, often twisted-striate to longitudinally striate, apex naked to pruinose, lower portion with a thin coating of oppressed fibrils in some.

Spores 9 - 11 x 5 - 6.5 μ , inequilateral in side view, ovate in face view, roughened, snuff brown in KOH, inner wall thickened; basidia 18 - 20 x 9 - 10 μ , 4-spored, ochraceous in KOH; pleurocystidia none; cheilocystidia 28 - 36 x 8 - 11 μ , ventricose with narrow (2 - 3 μ) necks and acute apices, abundant, wall of ventricose portion yellowish in KOH and with the walls slightly thickened; gill trama parallel, pale bister in KOH, darker near subhymenium because hyphae are narrower there; pileus trama floccose-interwoven, pale bister in KOH; outicle of inflated hyphal cells radially arranged the walls slightly incrusted and yellowish in KOH, the layer 3 - 5 cells deep; clamp connections present.

Alnicola Sm-43744, cont.

Habit, habitat and distribution: Gregarious under alder, Castle Rock Woods, St. Ignace, Michigan, October 4, 1953; Sm-43744.

Observations: This species is characterized by the rich cinnamon brown to vinaceous brown color, gills concolorous with pileus, medium-sized spores, acute cheilocystidia.

Alnicola uliginosa (PK)

Naucoria uliginosa Peck. Ann. Rep. N.Y. Bot. 54:149. 1900.

Pileus 1-2.5 cm. broad, thin, convex, becoming nearly plane, glabrous, hygrophanous, dark brown and striatulate on the margin when moist, dingy buff faded; flesh subconcolorous.

Lamellae broad, moderately close, rounded behind, adnexed, uneven or crenulate on the edge, subventricose, dingy ochraceous.

Stipe 3-5 cm. long, 1-2.5 mm. thick, slender, firm obscurely fibrillose, hollow, reddish brown when moist, pallid when dry.

Spores 9-12 x 5-6 μ , pale yellow in KOH, roughened, ovate in face view, inequilateral in side view; basidia 4-spored; pleurocystidia none; cheilocystidia 35-44 x 8-12 μ fusoid-ventricose with narrow necks and acute to subacute apices, hyaline, smooth, thin-walled; gill trama of more or less interwoven hyphae pale fulvous in KOH, subhymenium not distinctive; pileus trama fulvous to yellow in KOH, cuticle in the form of hyphae the end cells of which are often cystidioid.

Habit, habitat and distribution: Wet or muddy places in swamps, Sand Lake, Rensselaer County, N.Y.

Observations: Merrill placed this in synonymy with A. pallidomarginata.

Alnicola Sm-19195

Pileus 1 - 2.5 (3) cm. broad, broadly convex with an incurved margin, becoming plane or slightly umbonate, at times slightly depressed around the disc and with or without the umbo, surface glabrous and moist when fresh, "Verona brown" hygrophanous, fading to "cinnamon buff" or retaining more of a cinnamon tinge, appearing slightly furfuraceous when faded, translucent-striate before fading, fading on the disc first; flesh pallid to concolorous with the surface, not changing when bruised, odor and taste none.

Lamellae "Sayal brown" or in age becoming slightly darker, narrow to moderately broad, adnate or becoming slightly rounded and broadest next to the stipe, close, 2 tiers of lamellulae.

Stipe 3 - 5 cm. long, 1.5 - 2.5 mm. thick, equal, glabrous, hollow, cartilaginous, brittle, concolorous with pileus but in age darker (blackish brown) from base upward; veil none.

Spores 9 - 11 x 3.5 - 6.5 μ , inequilateral in side view, in face view ovate, slightly roughened, inner wall thickened, dingy yellowish brown in KOH (near pale "snuff brown"); basidia 4-spored, 24 - 30 x 7 - 8 μ , hyaline in KOH; pleurocystidia none; cheilocystidia abundant; 33 - 44 x 6 - 10 μ , ventricose at base with long narrow (2.5 μ) necks ending in acute apices, hyaline in KOH, thin-walled, smooth; gill trama

Alnicola Sm-19195, cont.

parallel, pale snuff brown in KOH; pileus trama darker than gill trama, floccose-interwoven; outicle of enlarged cells, the layer several thick, chains of ellipsoid to ovoid cells projecting and these with incrusting pigment though readily collapsing, no hymeniform layer present; clamp connections present.

Habit, habitat and distribution: Gregarious under alder (A. sinuata?), Bear Springs, Mt. Hood National Forest, Oregon, September 28, 1944, Sm-19195.

Observations: Lack of a veil, dingy cinnamon cap, dingy cinnamon gills, the stipe which darkens below, medium-sized spores and acute cheilocystidia place this fungus in a central position in the genus. The taste was mild, otherwise it is very close to A. melinoides.

Alnicola (Burke, Genus unknown "U")

Pileus 10 - 15 mm. broad, obtusely conic to convex, expanding to umbonate or nearly plane, surface moist and hygrophanous, "bister" to "Sayal brown", striate half way to disc, fading to dull tan and drying a dark dingy cinnamon.

Lamellae ± 20 reach stipe, 4 tiers of lamellulae, close, moderately broad, adnate to depressed-adnate, edges short-fimbriate in age.

Stipe 1 - 2.5 cm. long, ± 1 mm. thick, equal, cinnamon buff, glabrous, smooth, finely longitudinally striate, darkening below in age or on drying.

Spores yellow ("warm buff") in mass, 9 - 12 x 4.5 - 5 μ, narrowly inequilateral in side view, in face view narrowly ovate with fairly pointed apices minutely roughened; basidia 2-spored, 22 - 25 x 8 - 9 μ, hyaline in KOH; pleurocystidia none seen; cheilocystidia abundant, 18 - 26 x 5 - 9 μ, ventricose at base and with a narrow (2 - 3 μ) neck tapered to a subacute apex, refractive material often present in neck near apex; gill trama not reviving well; pileus cuticle of inflated cells - often in chains but not breaking up to leave sphaerocysts; clamp connections present.

Habit, habitat and distribution: Gregarious on wet ground, Robinson's Springs, Alabama, R. P. Burke, ("U" - genus unknown).

Observation: This is clearly an Alnicola but has more the stature of a Galerina.

Alnicola pallidomarginata (Peck)

Agaricus pallidomarginatus Peck, Bull. Buff. Soc. Nat. Sci.

1:50. 1873

Hebeloma pallidomarginatum (Pk) Saccardo, Syll. Fung.

5:804. 1887.

Pileus 1.2=2.5 cm. broad, convex to plane, surface glabrous, hygrophanous, brown and striatulate on the margin when moist, buff-yellow when dry; flesh subconcolorous.

Lamellae crowded, thin, rather broad, adnexed, at first yellowish or pallid, then brownish ochraceous, uneven or crenulate on the edges.

Stipe 2.5-5 cm. long, 1-2 mm. thick, slender, firm, equal, brittle, glabrous, pallid or brownish.

Spores 9-12 x 5-6 μ , inequilateral in side view, ovate in face view, roughened, pale yellow in KOH; basidia four-spored; pleurocystidia none; cheilocystidia 40-60 x 8-12 μ , with long narrow neck (3-5 μ) tapered to an acute apex, thin walled, smooth; gill trama interwoven to subparallel, subhymenium not distinctive; cuticle of pileus of cellular elements almost cysto-dermoid --- the hyphal tips of short somewhat enlarged cells and the compact layer beneath also cellular; clamp connections present.

Habit, habitat and distribution: Sand lake, New York, in wet marshy or damp ground.

Observations: *det. fm-37-729, identified as this species, a few pleurocystidia were found similar to cheilocystidia and the base of the stipe darkened.*