

# Rhodora

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### CONTRIBUTION TO THE FUNGUS FLORA OF NORTHEASTERN NORTH AMERICA. III<sup>1</sup>

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Many of the fungi reported in this contribution were collected during the 1962 field season in Baxter State Park, Maine, or in adjacent areas of Piscataquis and Penobscot counties. This large wilderness region abounds in resources for the scientist as well as for the sportsman and vacationer. A variety of habitats exists over extremes of elevation in the Katahdin Range and these provided interesting additions to our earlier studies in Maine. We are grateful to Mr. Austin H. Wilkins, Forest Commissioner, for the privilege of studying the fungi of this valuable preserve, and to Mr. Helon Taylor, Supervisor of Baxter Park, for his kind assistance during our work.

Also included are notes on species and collections from elsewhere in the northeast. Some of the records extend the known range of several taxa, while other data provide a better understanding of species described by Peck as well as Ellis and Everhart. The senior author is responsible for the investigations on agarics, and the junior author for those on pyrenomycetes. The colors noted in the descriptions of agarics are from Ridgway, R. 1912. Color standards and color nomenclature. Washington, D. C.

We acknowledge with appreciation the support of Na-

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<sup>1</sup>I. *Rhodora* 62: 186-198. 1960. II. *Rhodora* 64: 126-137. 1962. Contribution from the Department of Botany, University of Massachusetts, Amherst.

<sup>2</sup>Mrs. Howard E. Bigelow.



tional Science Foundation Grant G 19534. Dr. Clark Rogerson, Curator of the Cryptogamic Herbarium, New York Botanical Garden and Stanley J. Smith, Senior Curator of Botany, New York State Museum kindly have extended the opportunity to study the type material of Peck and Ellis and Everhart.

#### BASIDIOMYCETES

*Clitocybe eccentrica* Peck, Bull. Torrey Club 25: 321. 1898. Plate 1289.

Pileus 1-6 cm. broad, plano-depressed at first, soon expanding to infundibuliform, margin thin and narrowly inrolled, even, arched, often wavy and lobed in age, surface sometimes with thin canescent coating at first but soon glabrous, hygrophanous and moist, whitish to pale watery buff at first ("tilleul buff", "avellaneous"), darker in age (nearly "wood brown", "tawny olive"), white or sordid white when faded; flesh thin and cartilaginous, concolorous with the pileus, odor fragrant at times or absent, taste bitter or absent.

Lamellae decurrent, crowded, narrow, thin, forked, not intervenose, whitish to pale cream, edges even and straight.

Stipe 3-5 cm. long, 2-7 mm. thick at apex, equal or nearly so, base densely white strigose and with numerous rhizomorphs, glabrous or appressed-fibrillose above, compressed at times, often eccentric, soon hollow, pliant, concolorous with pileus or lamellae.

Spores  $4.5-6 \times 2.5-3.5 \mu$ , elliptical to pyriform in face view, sublacrymoid in side view, smooth, not amyloid, white or faintly cream tinged in mass; basidia  $14.5-21 \times 4-5 \mu$ , 4-spored; cystidia not differentiated; pileus tissue: homogeneous, hyphae mostly cylindrical,  $2-8.5 \mu$  in diameter, clamp connections present; gill trama interwoven, hyphae mostly cylindrical,  $2-7 \mu$  in diameter.

Usually cespitose, sometimes gregarious. On hardwood logs.

Material examined: *Bigelow 3900*, Madawaska Lake, Aroostook Co., Maine, August 10, 1956; *10342*, Abol Field, near Baxter State Park, Piscataquis Co., July 18, 1962; *10766*, Ragged Mt., Penobscot Co., August 5, 1962; *10849*, near Norcross, Penobscot Co., August 8, 1962; *10995*, Abol Field, August 14, 1962; *11111*, *11112*, near Norcross, August 18, 1962; *11260*, Cedar Lake, Penobscot Co., August 24, 1962; *7185*, Mt. Toby, Sunderland, Massachusetts, July 28, 1958; *7647*, Mt. Toby, August 30, 1958; *8969*, Conway State Forest, Conway, August 1, 1960; *9044*, Conway State Forest, August 9, 1960; *E. A. Burt*, S. Dunmore, Vermont (type of *Clitocybe eccentrica*).

*Clitocybe leptoloma* (Peck) Peck, N. Y. State Mus. Bull. 157: 68. 1912. Plate 1290.

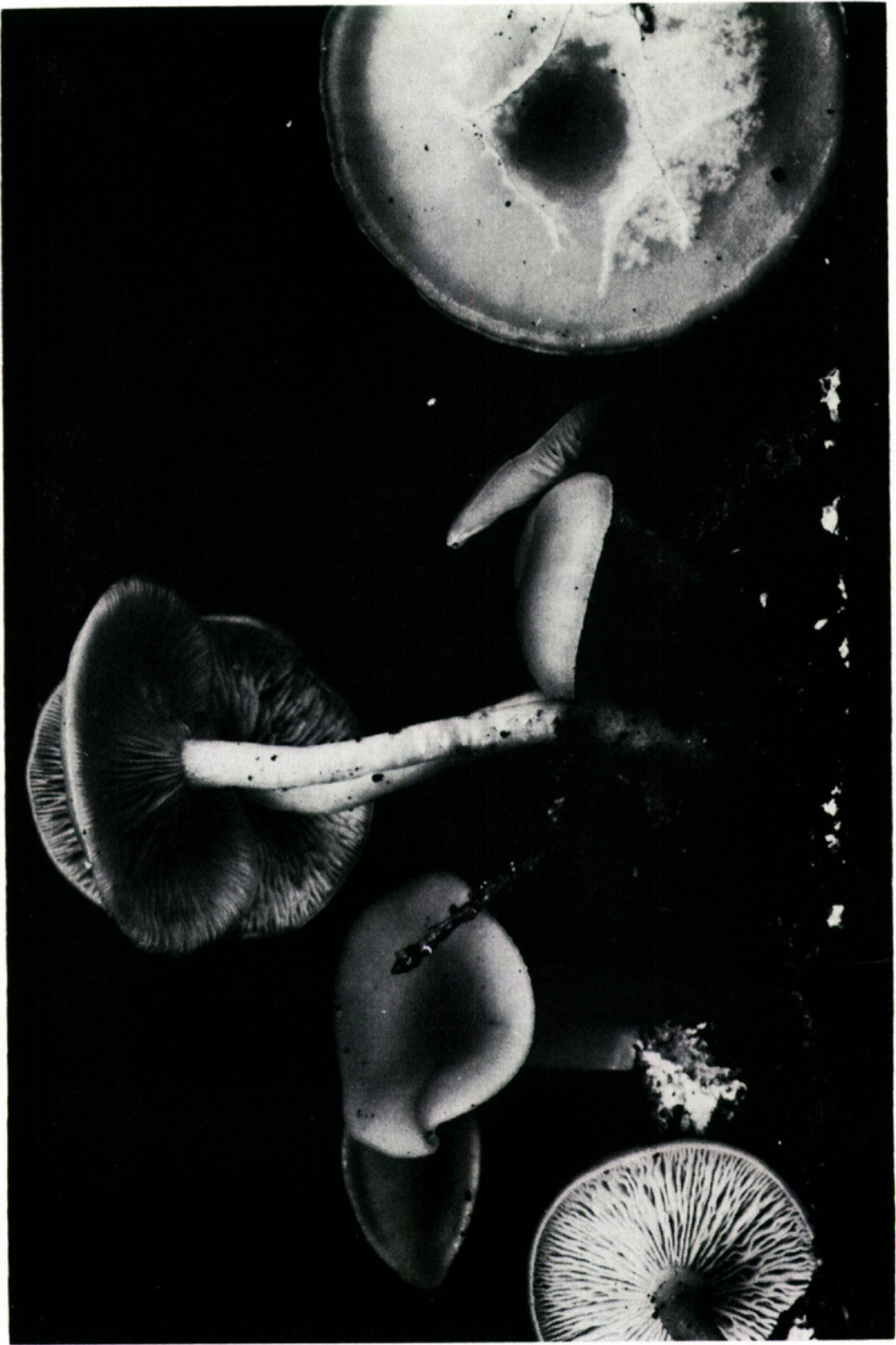
*Agaricus leptolomus* Peck, N. Y. State Mus. Rep. 32: 26. 1879.

*Clitocybe subbulbipes* Murrill, N. Am. Fl. 9: 404. 1916.





*Clitocybe eccentrica* Peck.  $\times 1$  Plate 1289



*Clitocybe leptoloma* (Peck) Peck.  $\times 1$  Plate 1290



Pileus 1-6 cm. broad, broadly convex at first, soon expanding to plane with disc usually shallowly depressed, margin narrowly in-rolled and edge slightly white canescent, finally becoming infundibuliform, margin often arched and undulate, at times repand or sinuate, occasionally faintly pellucid-striate, thin, surface glabrous, hygrophanous, watery buff moist ("warm buff", "pinkish buff", "cinnamon buff", "pinkish cinnamon"), paler in age but disc often remaining dark and tinged with pink, fading to whitish or pale buff ("pale pinkish buff"), disc remaining moist and colored for some time after margin faded; flesh thin, watery and concolorous with moist pileus, whitish when faded, odor and taste not distinctive.

Lamellae adnate to short decurrent at first, becoming moderately to long decurrent, narrow (1-4 mm.), close or sometimes crowded, occasionally forked, intervenose at times, whitish to pale yellowish or pale buff ("cartridge buff", "light buff", "pale pinkish buff", "pale pinkish cinnamon"), not fading with pileus, edges usually straight and even.

Stipe (1-)2-5.5(-7) cm. long, (1-)2-5(-10) mm. thick at apex, equal or either end enlarged, base usually with watery buff tomentum, a few white rhizomorphs present, often curved, compressed at times, stuffed becoming hollow, glabrous or fibrillose-striate, ground color watery buff ("pale pinkish buff", "pinkish buff", "cinnamon buff").

Spores 4-5.5(-6.5)  $\times$  2.5-3.5(-4.5)  $\mu$ , broadly elliptical to elliptical, smooth, not amyloid, pinkish tinted ("pale pinkish buff") in heavy deposit; basidia 16.5-25(-28)  $\times$  4-6(-6.5)  $\mu$ , usually 4-spored, at times also 2-spored; cystidia not differentiated; pileus tissue: cuticular hyphae cylindrical, 1.5-4(-7)  $\mu$  in diameter, tramal hyphae cylindrical to inflated, 3-10(-18)  $\mu$  in diameter, clamp connections present; gill trama regular, hyphae cylindrical, 2-6.5(-14)  $\mu$  in diameter.

Solitary, scattered, gregarious, or subcespitose. On or near hardwood logs, or attached to buried hardwood debris.

Material examined: *Bigelow* 4326, Guerette, Aroostook Co., Maine, August 24, 1956; 10407, near Norcross, Penobscot Co., July 22, 1962; 10565, near Millinocket, July 27, 1962; 11000, Abol Field, near Baxter State Park, Piscataquis Co., August 14, 1962; 11047, Medway, Penobscot Co., August 15, 1962; 11141, near Norcross, August 18, 1962; 11154, Katahdin Lake Trail, Baxter State Park, August 20, 1962; 11192, Trout Mt., Piscataquis Co., August 22, 1962; 11428, Bear Brook, Piscataquis Co., August 31, 1962; 7186, 7187, 7189, Mt. Toby, Sunderland, Massachusetts, July 28, 1958; 7413, 7414, Amherst, August 9, 1958; 8159, Hawley, Franklin Co., July 16, 1959; 8182, 8183, Mt. Toby, July 18, 1959; 9678, Alum Pond, Fiskdale, Worcester Co., August 2, 1961; 9702, Conway, Franklin Co., August 7, 1961; *C. H. Peck*, Indian Lake, New York (type of *Agaricus leptolomus*); *W. A. & E. L. Murrill* 199, Lake Placid, July 17-19, 1912 (type of *Clitocybe subbulbipes*); *Bigelow* 5625, 5632, 5633, 5640, Lac Munroe, Mt. Trem-





*Clitocybe truncicola* (Peck) Saccardo.  $\times 2$  Plate 1291



blant Park, Quebec, July 23, 1957; 5768, 5786, Lac Munroe, July 25, 1957; 5910, 5911, 5912, Lac Munroe, July 27, 1957; 5978 - 5984, Lac Munroe, July 28, 1957; 9734, 9735, Newfane - Wardsboro, Vermont, August 26, 1961.

*Clitocybe truncicola* (Peck) Saccardo, Syll. Fung. 5: 184. 1887. Plate 1291.

*Agaricus truncicola* Peck, Buffalo Soc. Nat. Sci. Bull. 1: 46. 1873.

Pileus 1-3.5(-5.5) cm. broad, broadly convex with margin inrolled and slightly incurved at first, becoming plane, margin remaining narrowly inrolled, even, broadly depressed in age and margin wavy, surface heavily canescent appearing finely matted-fibrillose in places under a lens, white, sometimes faintly watery-yellowish about disc in wet weather, canescence appressed in age then faintly buff overall, rarely rivulose; flesh white, thin, firm, no distinct odor and taste.

Lamellae adnate to short decurrent, close to crowded, narrow (up to 3 mm., rarely 5 mm. broad), not forked or intervenose, whitish ("cartridge buff"), edges even.

Stipe 1-3(-4) cm. long, 1.5-5(-15) mm. thick at apex, equal or base slightly enlarged, rhizomorphs few or absent, basal mycelium sparse, apex slightly pruinose at times, innately-fibrillose below, stuffed (interior white), often curved, eccentric at times, terete, white, finally pale buff in age ("cream buff", "pale pinkish buff").

Spores 3.5-4.5(-5)  $\times$  2.5-3.5(-4)  $\mu$ , subglobose to broadly elliptical or elliptical, smooth, not amyloid, white in mass; basidia 12-23(-26)  $\times$  3.5-5(-6)  $\mu$ , 4-spored; cystidia not differentiated; pileus tissue: cuticular hyphae cylindrical, 2-4(-5)  $\mu$  in diameter, tramal hyphae usually cylindrical, 2-10  $\mu$  in diameter, clamp connections present; gill trama regular, hyphae cylindrical, 2.5-6  $\mu$  in diameter.

Scattered or gregarious, rarely solitary or subcespitose. On hardwood logs and stumps.

Material examined: *Bigelow* 4082, Madawaska Lake, Aroostook Co., Maine, August 17, 1956; 4120, Madawaska Lake, August 18, 1956; 10637, near Norcross, Penobscot Co., July 30, 1962; 10705, Abol Field, near Baxter State Park, Piscataquis Co., August 2, 1962; 10998, Abol Field, August 14, 1962; 11227, Abol Field, August 23, 1962; 11364, near Norcross, August 29, 1962; 11427, Bear Brook, Piscataquis Co., August 31, 1962; 11539, Katahdin Lake Trail, Baxter State Park, September 6, 1962; *C. H. Peck*, Croghan, New York, September (type of *Agaricus truncicola*).

The three preceding *Clitocybes* of section *Candicantes* fruited abundantly during 1962 and provided several opportunities for a close comparison of fresh carpophores. Although very similar in microscopic features these species are quite distinct when gross features are compared. *C.*



*eccentrica* generally grows in cespitose fashion on logs and is distinctive from the other two lignicolous species by long strigose hairs at base of stipe and a conspicuously depressed cap. *C. leptoloma* is separated by the pinkish to buff cap when moist (recalling *C. diatreta*) and pinkish-buff spores in *heavy* deposit. Typically, *C. truncicola* is heavily canescent. Although fully expanded or old specimens may lose this coating, especially if water-soaked, the white spore deposit always will separate *C. truncicola* from *C. leptoloma*. Faded specimens of the two species are virtually impossible to distinguish if a spore deposit is lacking.

**Hygrophorus chrysodon** (Fr.) Fries, *Epicr. Myc.* p. 320. 1838.

Material examined: *Bigelow 11577*, Conway, **Massachusetts**, October 20, 1962; *11585*, Conway State Forest, Conway, October 21, 1962.

**Hygrophorus fuliginus** Frost *apud* Peck, N. Y. State Mus. Rep. 35: 134. 1884.

Material examined: *Bigelow 10027*, Women's Club State Forest, New Salem, **Massachusetts**, November 7, 1961; *11586*, Harvard Forest, Petersham, November 3, 1962.

**Marasmius strictipes** (Peck) Singer, *Lilloa* 22: 326. 1951.

*Collybia strictipes* Peck, N. Y. State Mus. Rep. 41: 62. 1888.

*Gymnopus strictipes* (Peck) Murrill, N. Am. Fl. 9: 357. 1916.

Pileus 2-6.5 cm. broad, convex at first with the margin narrowly incurved and inrolled, not striate, expanding to broadly convex, plane in age, disc often rugulose, subumbonate at times, glabrous, moist, disc with irregular rusty-orange stains ("orange rufous", "ochraceous orange", "mars orange"), margin watery buff ("warm buff" to "ochraceous buff"); flesh thin, watery pallid, odor and taste rather disagreeable.

Lamellae adnexed to adnate, seceding at times, close or crowded, narrow (1-4 mm.), occasionally forked, whitish ("pale pinkish buff"), edges crenate or eroded under a lens, slightly undulate.

Stipe 3-8.5 cm. long, 3-9 mm. thick at apex, equal or the base slightly enlarged, base white tomentose or strigose, central, hollow, cortex brittle, compressed at times in age, surface white pruinose at first, becoming appressed, whitish to very pale yellowish.

Spores 6-9(-10)  $\times$  3-4  $\mu$ , narrowly elliptical to subcylindrical, base attenuated and somewhat curved in side view, smooth, not amyloid, white in mass; basidia 23-33  $\times$  5.5-7.5  $\mu$ , 2- and 4-spored; cheilocystidia present, 19-36  $\times$  4-7.5  $\mu$ , more or less basidioid in shape, forked at times, 2-celled at times; pileus tissue: cuticle pale yellow to pale orange in KOH, pigment intracellular or in wall, cuticle consisting of pilocystidia, cellular, clavate to globose or obtuse, mostly pedicellate,



sometimes irregular in shape, 14-28  $\mu$  in diameter, walls smooth, thin or somewhat thickened, trama dextrinoid in Melzer's reagent, hyphae cylindrical to inflated or irregular, 6-13  $\mu$  in diameter, clamp connections small and inconspicuous, lactifers present occasionally; gill trama regular to subparallel, dextrinoid, hyphae cylindrical to somewhat inflated, 3-12  $\mu$  in diameter.

Often solitary, sometimes gregarious or subcespitose. Usually beneath hardwoods, rarely conifers.

Material examined: *Bigelow 10376*, Katahdin Lake Trail, Baxter State Park, Maine, July 19, 1962; *10438*, near Abol Campground, Baxter State Park, July 23, 1962; *10540*, Foster Field, Baxter State Park, July 26, 1962; *10631*, Norcross, Penobscot Co., July 30, 1962; *11099*, Katahdin Stream Campground, Baxter State Park, August 17, 1962; *11411*, Katahdin Lake Trail, Baxter State Park, August 30, 1962; *7493*, Leverett, Massachusetts, August 14, 1958; *8145*, Hawley, Franklin Co., July 16, 1959; *8181*, Sunderland, July 18, 1959; *9784*, Conway, September 5, 1961; *C. H. Peck*, Catskill Mts., New York, September (type of *Collybia strictipes*); *Bigelow 9743*, Newfane, Vermont, August 26, 1961; *9817*, Whitingham, September 10, 1961.

This species belongs to section *Globulares* of *Marasmius* as Singer (1951) has indicated. Although the general aspect certainly seems typical of a *Collybia*, the nature of the pileus cuticle and the dextrinoid reaction of pileus and gill trama clearly indicate the proper position within *Marasmius*.

In New England, rarely have I found more than a single carpophore at a time, yet it is not an uncommon species under hardwoods during the summer. Field characters for easy recognition are the rusty-stained pileus with rugulose surface, and the straight, pale stipe.

The distribution of *M. strictipes* is unusual on present records. It is known with certainty to occur from Michigan to Maine in the northeast, and in Mexico from the work of Singer (1958).

*Phaeocollybia christinae* (Fr.) Heim, Encyc. Mycol. 1:71. 1931.

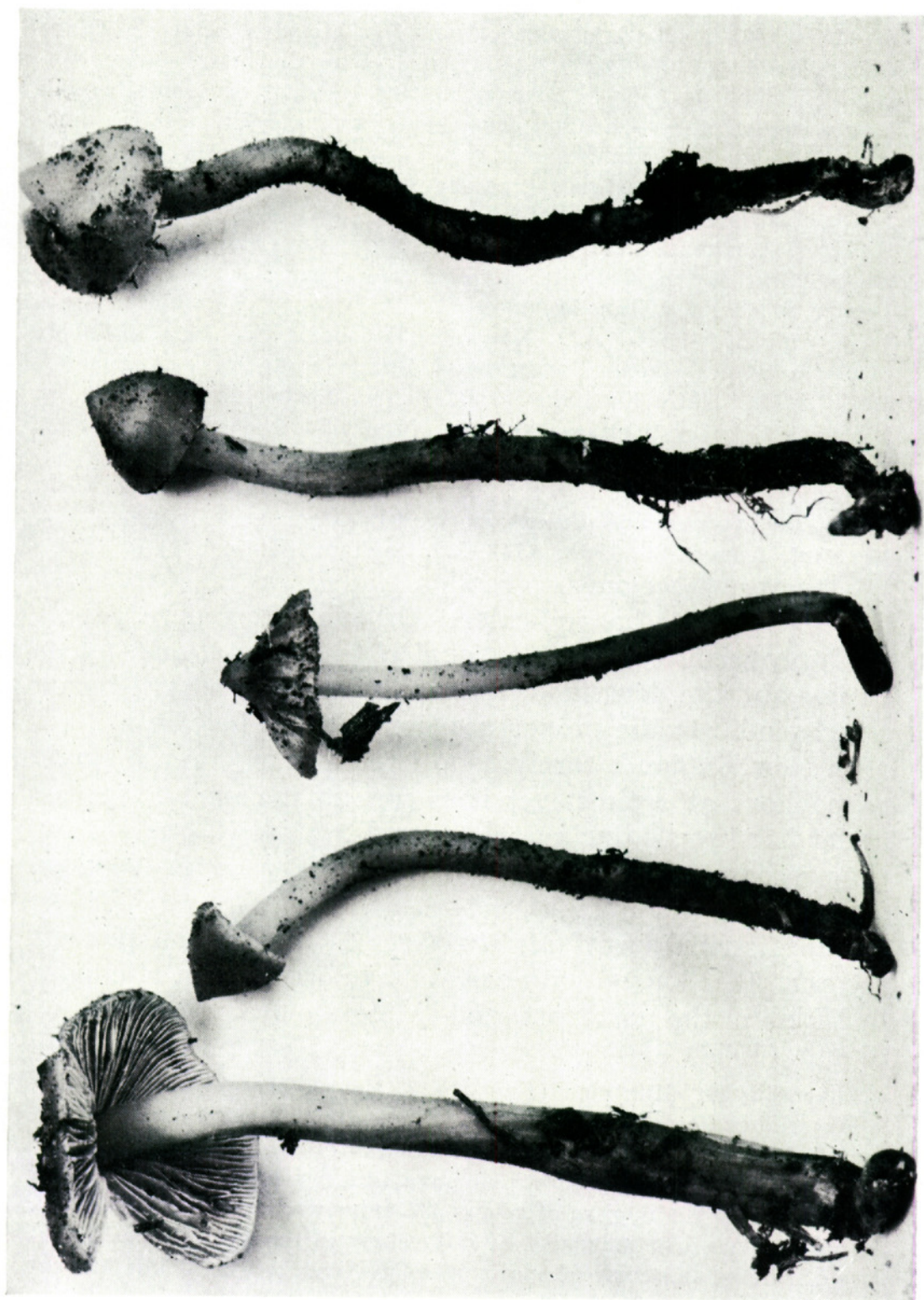
Material examined: *Bigelow 6704*, North Sunderland, Massachusetts, July 7, 1958; *7154*, Mt. Toby, Sunderland, July 28, 1958.

Species in *Phaeocollybia* which have small spores and lack clamp connections on the hyphae of pileus are only two, *P. christinae* and *P. jennyae*. These are separated by differences in the taste of flesh, surface of pileus, and color of spores when revived in KOH. The Massachusetts specimens fit the interpretation of Smith (1957).

*Phaeocollybia rufipes* Bigelow, *sp. nov.* Plate 1292.

Pileus 1-4 cm. latitudine, conicus demum convexo-umbonatus, vis-





*Phaeocollybia rufipes* Bigelow, sp. nov. X 1 Plate 1292



cidus, glaber, hygrophanus, ferruginus demum pallido-alutaceus; odor raphanaceus, sapor farinaceus; lamellae emarginatae, confertae, angustae vel latae, primum pallide alutaceae tum argillaceae; stipes 8-15 cm. longitudine, apice 3-5 mm. crassitudine, pallido-alutaceus dein argillaceus, glaber, deorsum attenuatus, radicans, rufescens; sporae  $7-8.5 \times 4-5 \mu$ ; cheilocystidia filamenteo,  $27-31 \times 3-5 \mu$ ; hyphae defibulatae.

*Typhum* legit *H. E. Bigelow*, n. 11478, Katahdin Lake Trail, Baxter State Park, Maine, September 1, 1962; in Herb. Univ. Mass. conservatum.

Pileus 1-4 cm. broad, acutely conic or cuspidate at first with margin slightly incurved and narrowly inrolled, even, becoming convex with a large acute umbo, in age broadly convex to nearly plane, umbo remaining acute, margin becoming faintly striate, viscid, glabrous, hygrophanous, color brown (near "orange cinnamon") fading to buff (near "light ochraceous buff"); flesh thin, concolorous with pileus when moist, fading to whitish or pale buff, odor raphanoid, taste slowly farinaceous when crushed.

Lamellae emarginate, close, narrow to moderately broad (2-5 mm.), "pinkish buff" when young, becoming brown with spores ("cinnamon buff" to "clay color"), edges fimbriate, wavy or crenate in age.

Stipe 8-15 cm. long, radicate and tapering downward, apex 3-5 mm. thick, base deeply embedded in substrate, surface glabrous, cortex fibrous and easily splitting lengthwise, brittle, stuffed becoming hollow, apex "pinkish buff" or "apricot buff", darkening somewhat to "cinnamon buff", rufous (dark "brick red") downward, darkest toward the tapered end, not blackening.

Spores  $7-8.5 \times 4-5 \mu$ , broadly fusoid in face view, inequilateral in side view, apical pore distinct, sometimes with slight knob at apex, wall thickened, with short and rather inconspicuous spines, yellowish-brown in KOH, spore deposit "snuff brown"; basidia  $19-31 \times 4.5-8 \mu$ , 4-spored; cheilocystidia filamentous,  $27-31 \mu$  long,  $3-5.5 \mu$  in diameter, smooth, hyaline, often subcapitate at apex; pileus tissue: cuticular hyphae with gelatinizing walls, hyaline,  $3-4.5 \mu$  in diameter, subcuticular zone and trama brown in KOH, hyphae cylindrical to somewhat inflated,  $4-12 \mu$  in diameter, walls finely encrusted with pigment or sinuous-thickened, clamp connections absent, yellowish-brown laticiferous hyphae present; gill trama broad, subparallel, brown in KOH, hyphae cylindrical,  $2.5-10 \mu$  in diameter, laticiferous hyphae present.

Scattered to gregarious, under spruce and fir.

Material examined: *Bigelow* 11478 (type), 11479, Katahdin Lake Trail, Baxter State Park, Maine, September 1, 1962.

Numerous carpophores were found in each collection of this unusual agaric. They were deeply embedded in the needle beds and difficult to remove without breaking the



stipes. Frequently, only the caps were visible above the ground level.

In comparison with the North American species known previously in *Phaeocollybia* (Smith, 1957), *P. rufipes* is most closely related to *P. laterarius* Smith of section *Phaeocollybia*. From this species, *P. rufipes* differs in color of pileus, non-blackening stipe, more hair-like cheilocystidia, habitat, and both spore length and shape. The odor and taste of *P. rufipes* probably are distinctive as well, as is the hygrophamous nature of the pileus. These features are not mentioned specifically in the original description of *P. laterarius*.

#### ASCOMYCETES

***Barya parasitica*** Fuckel, Symb. Mycol. p. 93. 1870.

Material examined: *Barr 3359A*, on *Bertia moriformis*, Katahdin Stream Campground, Baxter State Park, Maine, July 10, 1962; *C. H. Peck*, on *Bertia moriformis* and decayed wood of *Fagus*, Catskill Mts., New York, September, (type and isotype of *B. parasitica* var. *caespitosa* Peck).

My collection is a small one, whereas those of Peck's bear hundreds of perithecia grouped over the *Bertia* and nearby wood. Seaver (1910) described a collection from New York City with numerous perithecia. Outside of these three localities, I have found no records of *B. parasitica* in North America. It is known in Europe, and has been reported to be rare. Munk (1957) has a good description of the species from Danish material.

*B. parasitica* is a non-stromatic member of the Clavicipitaceae. The yellowish perithecia are seated on a dingy whitish subiculum, and eventually darken to grayish yellow-brown. The asci are characteristic of the family, cylindrical with an enlarged and refractive apex, through which a narrow canal can be seen. The ascospores are filiform, hyaline to faintly yellowish, several-septate and guttulate.

***Herpotrichiella spinifera*** (Ell. & Ev.) Barr, *comb. nov.* Page 302, figures 1-3.

*Melanomma spiniferum* Ellis & Everhart, North Amer. Pyreno. p. 184. 1892.

Ascstromata 70-112  $\mu$  in diameter, globose to conical, entirely immersed or upper portion erumpent, scattered to gregarious, lower wall thin, light grayish brown to nearly hyaline, of two to four layers of



polygonal cells, 8-11  $\mu$  wide, upper exposed portion of wall blackened, short setose around apex, setae at times inconspicuous, 7.5-22  $\mu$  long, 5-5.5  $\mu$  wide near base, blackish-brown, often irregular, simple, ends blunt or pointed, wall thick, apical pore up to 25  $\mu$  wide.

Asci 27-44  $\times$  7.5-15.5  $\mu$ , saccate, narrowed to rounded apex and sessile base, wall double, thickened above, few in a fascicle, pseudo-paraphyses indistinct.

Spores (10-)12-15.5  $\times$  3.5-4.5  $\mu$ , hyaline when young, light olive brown or grayish brown at maturity, clavate-elliptical, broadest in upper third, tapered to rounded ends, straight to slightly curved, (1-, 2-)3-(4-, 5-) septate, not or slightly constricted at septa, cell above primary septum broadest, contents guttulate or one globule in each cell, wall thin, smooth or very finely roughened, crowded in the ascus.

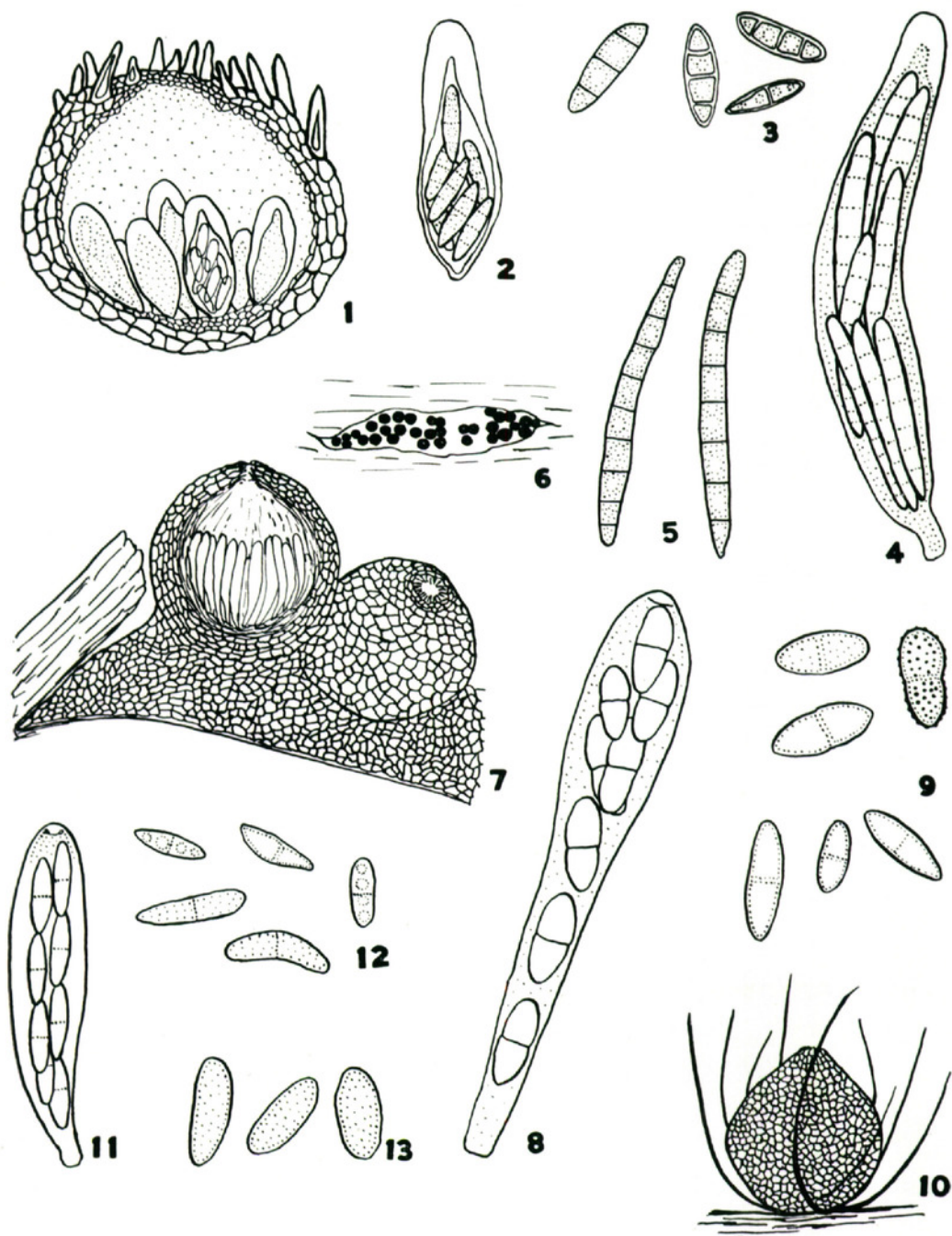
Immersed in pore surface of old resupinate basidiomycetes.

Material examined: *A. Commons*, on *Corticium* sp.(?), Wilmington, Delaware, September, 1890, Ell. & Ev. N.A.F. Second series 2610; Barr 3326, on old *Poria* sp., Abol Stream, Baxter State Park, Maine, July 6, 1962; R. H. Petersen and C. T. Rogerson, on *Sabacina incrustans*, Toxaway River junction with Bear Wallow Creek, Transylvania Co., North Carolina, July 29, 1961; on old *Stereum*, same data as above; on old *Stereum*, along Corbin Creek, branch of Whitewater River, Transylvania Co., August 9, 1961; on old *Stereum*, 4 miles south of Upper Falls of Whitewater River, Oconee Co., South Carolina, August 14, 1961.

Dr. Rogerson has kindly communicated his collections of *Herpotrichiella spinifera* to me, and has compared them with type material of *Melanomma spiniferum*. N.A.F. 2610 is part of the material from which the species was originally described. My collection from Maine is identical with it and with Rogerson's material.

The three collections on *Stereum* bear both *H. spinifera* and a representative of the Trichosphaeriaceae, as yet unidentified. The latter fungus is the more conspicuous, with superficial, collapsing, setose perithecia, and 3-septate ascospores. The ascostromata of *H. spinifera* in these collections are very short setose, and were at first thought to be glabrous. Further examination has shown that setae are present, and in all respects these specimens are identical with the others cited above. Rogerson (*in litt.*) noted that the "glabrous" form was similar to what Ellis called *Melanomma poroethelia* (Berk. & Curt.) Sacc. However, *M. poroethelia*





Figs. 1-3. *Herpotrichiella spinifera* (Ell. & Ev.) Barr, *comb. nov.*: 1, ascostroma, 2, ascus, 3, ascospores. Figs. 4, 5. *Tubeufia cerea* (Berk. & Curt.) Barr, *comb. nov.*: 4, ascus, 5, ascospores. Figs. 6-9. *Nectria atrofusca* (Schw.) Ell. & Ev.: 6, habit of perithecia on stroma erumpent through bark, 7, perithecia on stroma, 8, ascus, 9, ascospores. Figs. 10-12. *Niesslia barbicineta* (Ell. & Ev.) Barr, *comb. nov.*: 10, perithecium, 11, ascus, 12, ascospores. Fig. 13. *Phylleutypa wittrockii* (Erikss.) Petrak: ascospores. Fig. 1,  $\times 400$ ; figs. 2-5, 8, 9, 11-13,  $\times 750$ ; fig. 6,  $\times 10$ ; figs. 7, 10,  $\times 80$ .



is identical with *Litschaueria corticiorum* (Hoehnel) Petrak, a member of the Xylariaceae, according to Petrak (1923). What Ellis considered *M. porothelia* is obviously different from Berkeley and Curtis's fungus.

In most of the species at present known to belong to the genus *Herpotrichiella*, considerable variation in length and septation of ascospores occurs. Mueller (in Mueller and von Arx, 1962) considered that the genus *Didymotrichiella* Munk (1953), erected for species with one-septate spores, could not be distinguished satisfactorily from *Herpotrichiella*, and reduced *Didymotrichiella* to synonymy with the latter. In comparing the described species, *H. spinifera* appears to be most closely related to *H. setosa* Barr and *H. fusispora* Barr (1959). *H. spinifera* bears setae only at the apex of the ascostroma, whereas the other two species are setose over most of the wall. *H. spinifera* also differs from these two species in shorter spores, and in having the ascostromata more deeply immersed in the substrate.

Munk (1953) erected the family Herpotrichiellaceae to accommodate *Herpotrichiella* and four other genera of similar aspect. Mueller and von Arx (1962) reduced the family to synonymy under the Pleosporaceae. Such disposition appears logical to me, as familial distinctions can scarcely be made on the bases of small size and greenish or olive grayish ascospores.

*Nectria atrofusca* (Schw.) Ellis & Everhart, Journ. Mycol. 1:140. 1885. Page 302, figures 6-9.

*Sphaeria atrofusca* Schweinitz, Trans. Am. Philos. Soc. ser. 2, 4: 206. 1832.

*Creonectria atrofusca* (Schw.) Seaver, Mycologia 1:186. 1909.

*Cucurbitaria seriata* Peck, N. Y. St. Museum Rep. 28:75. 1876.

*Otthia seriata* (Peck) Sacc. Syll. Fung. 1:739. 1882.

*Otthiella seriata* (Peck) Sacc. & D. Sacc. Syll. Fung. 17:662. 1905.

*Plowrightia staphyлина* Ell. & Ev. Proc. Acad. Phila. 1890:248.

*Otthia staphyлина* (Ell. & Ev.) Ell. & Ev. North Amer. Pyreno. p. 251. 1892.

*Otthiella staphyлина* (Ell. & Ev.) Dearness & House, N. Y. St. Museum Bull. 266:71. 1925.

Stroma immersed in wood tissue, yellowish brown, composed of thin-walled, compact cells, with yellowish brown hyphae penetrating deep into wood, elliptical, rounded, or elongate, up to 4 mm. long, 150-600



$\mu$  wide, (80-)115-400  $\mu$  thick; perithecia grouped on and bases immersed in stromatic tissue, forming rounded or elongate rows and erumpent through splits in bark, brown to blackish and shining when dry, brown or yellowish brown when fresh, glabrous, apex collapsing or pinched in at sides when dry, but not cupulate, short papillate or conic, 150-275  $\mu$  in diameter, 180-300  $\mu$  high, wall of two distinct layers, outer dark to light brown and crust-like, 16-33  $\mu$  thick, composed of 4-6 layers of polygonal thick-walled cells, inner layer yellowish to hyaline, 8-13  $\mu$  thick, of compressed rows of thin-walled cells, pore 20-33  $\mu$  wide, surrounded by elongate cell layers, brown externally, lined with hyaline periphyses.

Asci 50-82  $\times$  6.5-12  $\mu$ , clavate or oblong, narrowed to stipe of varying length, apex rounded-truncate, wall single, thin but slightly thickened and with refractive line at apex, non-amyloid, (4-)8-spored, paraphyses delicate and slender, eventually compressed.

Spores 9-15(-17.5)  $\times$  4-6(-7.5)  $\mu$ , hyaline, light dull yellowish in mass and in age, oblong, elliptical, or ovoid, ends rounded, straight to inequilateral, 1-septate in the middle, not constricted, wall thin, smooth, in age finely roughened, contents homogeneous or minutely guttulate, obliquely uniseriate to partially biseriate in the ascus.

Erumpent through bark on dead or dying limbs of *Staphylea trifolia*, less often on *Evonymus* sp.

Material examined: *Barr 3182*, South Deerfield, **Massachusetts**, May 10, 1962; *L. N. Johnson 594*, Ann Arbor, **Michigan**, April 1, 1893; *C. Devol*, Albany, **New York**, October, 1874 (type of *Cucurbitaria seriata* on *Evonymus* sp.); *J. Dearness 1560*, London, **Ontario**, (type of *Plowrightia staphylina* Ell. & Ev.); 663, London, May 25, 1891; 1848, Parkhill, May 24, 1892; Parkhill, May, 1892; same data, Ell. & Ev. N.A.F. Second series 3320; London, December, 1903, Fungi Columbiani, Bartholomew 1943; London, 1912, Rehm Ascomycetes 2041; London, June, 1913, Sydow, Fungi exot. exs. 184; *B. M. Everhart 527*, West Chester, **Pennsylvania**, October 1, 1885; same data, Ell. & Ev. N.A.F. Second series 1547; *J. Dearness*, Montreal, **Quebec**, November 8, 1898.

According to Rogerson (*in litt.*), the type of *Sphaeria atrofusca* Schweinitz is identical with Ellis specimens designated *Nectria atrofusca* and with my collection from Massachusetts. Type and authentic material of *Plowrightia staphylina* Ell. & Ev., and the type collection of *Cucurbitaria seriata* Peck are also identical. Wall and centrum structure, as well as the delicate paraphyses, thin-walled asci, and variable nature of ascospores, all lead to disposition of the fungus as a *Nectria*.

According to Munk's (1957) description of *Melanopsam-*



*ma pomiformis* (Pers. ex Fr.) Sacc., many points of similarity exist between it and *N. atrofusca*. Several specimens of *M. pomiformis* from Europe and North America were studied to compare the two species. The major distinction is in the perithecial wall which is carbonaceous in *M. pomiformis*, much softer and more fleshy in *N. atrofusca*. They cannot be considered identical. Mueller and von Arx (1962) have transferred *M. pomiformis* to *Chaetosphaeria*. This genus belongs in the Trichosphaeriaceae (Sphaeriaceae), and within the family is close to *Eriosphaeria*. The Hypocreaceae, while related to the Sphaeriaceae in ascus structure, is distinguished by the bright or light colored, more fleshy perithecia.

In the genus *Nectria*, *N. atrofusca* appears to belong in the *Ochroleuca* group, as delimited by Booth (1959). *N. pallidula*, as described by Booth, is similar in many respects. It differs in the brighter color of perithecia, roughened wall, and constricted spores. I have not seen authentic material, nor a good description of *N. ochroleuca* (Schw.) Berk., to compare with *N. atrofusca*, but apparently it is also much lighter in color than the latter species.

**Niesslia barbicineta** (Ell. & Ev.) Barr, *comb. nov.* Page 302, figures 10-12.

*Byssosphaeria barbicineta* Ell. & Ev. Journ. Mycol. 4: 63. 1888.

*Trichosphaeria barbicineta* (Ell. & Ev.) Sacc. Syll. Fung. 9: 603. 1891.

*Herpotrichia barbicineta* (Ell. & Ev.) Ell. & Ev. North Amer. Pyreno. p. 158. 1892.

Perithecia 120-185  $\mu$  in diameter, globose to conical, collapsing cupulate when dry, black, shining, scattered singly or grouped on scanty or abundant subiculum of brown, thick-walled hyphae, apical pore small, periphysate, wall brittle, thin, 6-7.5  $\mu$  thick, composed of few compressed layers of cells, blackish brown externally, light brown to hyaline within, setose around base, setae few, curved upward around perithecium, dark brown, septate, apex blunt and often pallid, (27-) 60-200  $\mu$  long, 3.5-7.5  $\mu$  wide near base, frequently similar setae scattered on hyphae of subiculum, not associated with perithecia.

Asci 46-66  $\times$  6-10  $\mu$ , oblong, apex rounded-truncate, stipe short, wall single, thin, with minutely refractive area at apex, non-amyloid, paraphyses filiform, hyaline, thin-walled.

Spores 10-16.5  $\times$  2-4  $\mu$ , greenish hyaline, oblong or fusoid, ends rounded or pointed, straight, inequilateral, or slightly curved, 1-septate



in the middle, not constricted, wall thin and smooth, contents minutely guttulate, overlapping bi- to uniseriate in the ascus.

Superficial on old fungi and on adjacent leaf or wood surfaces.

Material examined: *Barr 3766*, Ruggles Pond, Wendell State Forest, Massachusetts, September 22, 1962; *1292A*, The Gorge, U.M.B.S., Cheboygan Co., Michigan, July 22, 1953; *J. B. Ellis*, Newfield, New Jersey, October, 1887, N.A.F. Second series 1958 (cotype of *Bysso-sphaeria barbicincta* Ell. & Ev.).

The distinguishing feature of *N. barbicincta* is the position of setae. They arise from the lower wall of the perithecium and curve upward beyond its apex. In *N. exilis* (Alb. & Schw. ex Fr.) Winter, setae develop over the entire perithecial wall and are short and stiff. *N. exosporioides* (Desm.) Winter, is said (Mueller and von Arx, 1962) to be similar to *N. exilis* except for longer setae. The third species recognized by Mueller and von Arx, *N. crucipila* (Hoehnel) Mueller, has branched setae. The spores of all three species are smaller than are those of *N. barbicincta*. *N. exilis* is the correct name for the fungus I have reported previously as *N. pusilla* (Fr.) Schroet. from northern Quebec (Barr, 1959) and Gaspé Parc (Barr, 1961).

The genus *Niesslia* Auerswald is a representative of the Trichosphaeriaceae (Sphaeriaceae ss. *auct.*) with small, scattered, setose perithecia on scanty subiculum, and with thin-walled asci and hyaline, two-celled spores. It is closely related to *Eriosphaeria* Sacc., but differs in smaller, thin-walled perithecia and in lacking a thin stroma.

*Phylleutypa wittrockii* (Erikss.) Petrak, Ann. Mycol. 39: 280. 1941. Page 302, figure 13.

Material examined: *Barr 3211*, *Linnaea borealis* var. *americana*, near Katahdin Stream Campground, Baxter State Park, Maine, June 25, 1962; *3757*, September 5, 1962; *Stuntz and Allen 1591*, Isle Royal, Michigan, September 13, 1901; *W. G. Farlow*, Shelburne, New Hampshire, September, 1886; *H. D. House*, Lake Placid, New York, September 9, 1917; Newcomb, Essex Co., July 18, 1922.

*P. wittrockii* is much less common than the prevalence of colonies of *Linnaea* in northern regions would imply. I have found only the two Maine collections to date. The remaining four collections are all in the Peck Herbarium at Albany (NYS). That collected by Farlow was cited both by Ellis and Everhart (1892) and Theissen and Sydow



(1915). Wehmeyer (1942) has reported a collection from Nova Scotia. In Europe the only record I have seen is from Sweden.

The collection made in Maine in June contained mature asci and spores as well as early infection and young stromata on living plants. The latter were blackened and distorted from the uppermost pair of leaves to tip of branch. The September collection, in the same locality, showed well-developed stromata. The perithecia were immature and lacked asci and spores.

*Tubeufia cerea* (Berk. & Curt.) Barr, *comb. nov.* Page 302, figures 4, 5.

*Sphaeria cerea* Berk. & Curt. *Grevillea* 4:108. 1875.

*Calonectria cerea* (Berk. & Curt.) Sacc. *Syll. Fung.* 2:551. 1883.

*Dialonectria cerea* (Berk. & Curt.) Cooke, *Grevillea* 12:110. 1884.

*Ophionectria cerea* (Berk. & Curt.) Ell. & Ev. *North Amer. Pyreno.* p. 118. 1892.

*Nectria fulvida* Ell. & Ev. *Journ. Myc.* 1:140. 1885.

*Calonectria fulvida* (Ell. & Ev.) Berl. & Vogl. *Add. Syll. Fung.* p. 212. 1886.

*Dialonectria fulvida* (Ell. & Ev.) Ell. & Ev. *Journ. Mycol.* 2:122. 1886.

*Ophionectria everhartii* Ell. & Galw. *Journ. Mycol.* 6:32. 1890.

Ascstromata 150-160  $\mu$  in diameter, 120-130  $\mu$  high, superficial, scattered or grouped on surface of old pyrenomycete stromata and adjacent wood, yellowish brown, pulverulent, wall thin at base and lower sides, 10-11  $\mu$  wide, of several layers of polygonal cells, brownish to yellowish, thickened as a ring or collar at upper sides, the outermost layers of cells protruding from surface, inner layers of cells yellowish, compressed, apex minutely papillate, pore filled with yellowish tips of pseudoparaphyses.

Asci 66-74  $\times$  9-11  $\mu$ , oblong, apex rounded, base foot-like, wall double and thickened above, pseudoparaphysate.

Spores 33-44  $\times$  3-3.5  $\mu$ , greenish hyaline, fusoid to nearly cylindrical, ends tapered and narrowly rounded, straight to slightly curved, 7- to 9-septate, delicate, not constricted, each cell with a single globule, wall thin, smooth, in two overlapping fascicles in the ascus.

On old stromata of *Diatrype* spp. and *Hypoxylon* spp. and adjacent wood surfaces.

Material examined: Barr 3337, *Diatrype stigma* on white birch, Abol Field, Piscataquis Co., near Baxter State Park, Maine, July 6, 1962; 3360A, *Hypoxylon* sp. on beech, Katahdin Stream Campground, Baxter State Park, July 10, 1962; 2160, *Diatrype* sp. on birch, Lac Munroe, Mt. Tremblant Park, Quebec, July 28, 1957.



This species is a member of the Pleosporaceae with superficial ascostromata, bitunicate asci and pseudoparaphyses. Booth (1959) noted that *O. cerea* belonged in the genus *Tubeufia*, but did not make the combination. The shape of the ascostroma, with thickened ring-like upper wall, is most distinctive.

I have not examined the types of *Nectria fulvida* Ell. & Ev. and *Ophionectria everhartii* Ell. & Galw., but these names were placed in synonymy with *Ophionectria cerea* by Ellis and Everhart (1892). According to the description, *Calonectria belonospora* Schroet. (*Ophionectria belonospora* (Schroet.) Sacc.) is synonymous probably with *Tubeufia cerea*.

This fungus has been reported from Europe and North America. According to the literature, in North America it has been collected in South Carolina, New Jersey, Newfoundland, and Ontario. Although not rare, it is probably overlooked.

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A NEW STATION FOR THE MASSACHUSETTS FERN. — In September 1962 on a collecting trip with three of my faculty colleagues we stopped to open our lunch boxes in the old spring house at the Bradford Mineral Spring a short distance from the highway between Bradford Center and East Washington, New Hampshire. While exploring in the vicinity after lunch I came across a sizable, vigorous colony of *Dryopteris simulata* Davenport growing in damp mixed woods a short distance north of the spring. The only other station for this species in Merrimack County, represented by a specimen in the New England Botanical Club Herbarium, is in Contoocook near the middle of the county. The Bradford station is less than a mile east of the Sullivan County line. A station near the highway on Route 9 in South Stoddard in Cheshire County represents a more western extension for this species for this part of the state but the Bradford station is the most northerly to be reported except for an early collection in 1903 made by Timothy O. Fuller at Lake Wentworth in Carroll County. A specimen from the Bradford station has been deposited in the Jesup Herbarium at Dartmouth College, Hanover, N. H. Others have been sent to the University of New Hampshire Herbarium in Durham, N. H., and to the Gray Herbarium and the New England Botanical Club Herbarium in Cambridge, Mass.

JAMES P. POOLE, JESUP HERBARIUM, DARTMOUTH COLLEGE.





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