Mycological observations, 4—12: on *Kuehneromyces*, *Stropharia*, *Marasmius*, *Mycena*, *Geopetalum*, *Omphalopsis*, *Phaeomarasmius*, *Naucoria* and *Prunulus*

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Abstract. — Based on type studies the author concludes that *Pholiota marginella* Peck is an earlier name for *Kuehneromyces rostratus* Singer & Smith; *Agaricus lignicola* Peck is the earliest legitimate name for *K. vernalis* (Sacc.) Singer & Smith; *Pholiota fulvosquamosa* Peck is a synonym of *Agaricus subrufescens* Peck; *Geopetalum albescens* Murr. is an older name for *Crepidotus phaseoliformis* Hesler & Smith; *G. geophilum* Murr. is a older name for *Crepidotus pubescens* Bres.; *Panus betulinus* Peck is a synonym of *Panellus serotinus* (Pers.) Kühner; *Omphalopsis mcmurphyi* Murr. is *Helotium subimmaculatum* (Murr.) Redhead; *O. pallida* Murr. is *Clitocybe incomis* (Karst.) Orton; *O. pseudogrisea* Murr., *O. turbinata* Murr., *Mycena arenaria* Smith, *M. madorophila* Bigelow, and *M. macilenta* Bigelow are all synonyms of *O. praedecurrens* Murr.; *Crinipellis alnicola* Murr. is *Phaeomarasmius erinaceus* (Fr.) Romagnesi; *Naucoria alniphila* Zeller is an earlier name for *Pholiota occidentalis* Smith & Hesler; *N. pattersonae* Murr. is an earlier name for *Pholiota mutans* Smith & Hesler; *N. californica* Murr. is *Tubaria furfuracea* (Pers.) Gillet; *N. umbriniceps* Murr. is *Simocybe centunculus* (Fr.) Karst., *Simocybe serrulatus* (Murr.) Singer is the correct name for *S. sumptuosus* (Orton) Singer; *Prunulus brevipes* Murr. is a *Pluteus* sp.; *Prunulus ludovicianus* Murr. is *Pluteus eugraptus* (Berk. & Br.) Singer; *Macrocystidia lutea* Redhead & Liu is a *Pluteus; Prunulus collybiiformis* Murr. is *Clitocybula lacerata* (Scop.) Métrod; *Prunulus farinaceus* Murr. is *Lyophyllum tylicolor* (Fr.) Lange & Sivertsen; and *Marasmius cucullatus* Ellis is a *Mycena*.

The following new combinations are proposed: *Kuehneromyces lignicola*, *K. marginellus*, *Mycena cucullata*, *Crepidotus albescens*, *C. geophilus*, *Hydropus praedecurrens*, *Pholiota alniphila*, *P. pattersonae*, *Hydropus hymenocephalus*, and *Pluteus luteus*. *Marasmius pallidocephalus* was discovered to be a clampless species. *Naucoria* (Fr.) Kummer is the correct name for *Simocybe* Karst. but following current usage it is not adopted.

This is the second paper in this series of observations on miscellaneous mycological topics (Redhead, 1979):

4. Kuehneromyces

Collections in DAOM under the name *Kuehneromyces vernalis* (Peck) Singer & Smith were revised in preparation for mapping. Considerable variation was noted among the collections accepted as this

species. Notable variation occured in the size of the basidiomes, lamellar width in some of the larger specimens, the quantity and distinctness of the caulocystidia, and in the thickening of the tramal-hyphal walls. The variation noted represented extremes in an intergradation among collections. These observations support the broader species concept outlined by SINGER & SMITH (1946) with the exception of their comments on *Pholiota marginella* PECK, rather than the narrower concept outlined by SMITH & HESLER (1968). SMITH & HESLER (1968) reported on the type of *P. marginella,* noting it to be distinctly different from *K. vernalis.* They speculated that *P. marginella* might be a common species, but cited the type as the only known collection. Reexamination of the type of *P. marginella* (NYS) confirmed that *P. marginella* is distinct from *K. vernalis.* SMITH & HESLER (1968) did not observe a gelatinized pellicle on *P. marginella* although this tissue is present. The gel readily dissolves in KOH sol., the one used by SMITH & HESLER, but does not dissolve in NH_3OH sol. to the same extent. The presence of the gelatinized pellicle, the general lack of incrusting pigments, the characteristic spores and cheilocystidia illustrated by SMITH & HESLER (1968) and macroscopic features; fragile hollow stipe, cespitose growth, initially richly coloured pileus fading extremely to whitish as illustrated by PECK (1898), indicate that *P. marginella* is conspecific *with Kuehneromyces rostratus* SINGER & SMITH (1946 b) (= *Pholiota veris* SMITH & HESLER, 1968), and is an older name. Two recent Canadian collections (cited below) identified as *K. rostratus* were compared, particularly in regard to the gel reaction in KOH. In one collection the gel readily dissolved in KOH and not in NH_3OH. In the other the gel was not as soluble in KOH solution, indicating there is some variability to this feature.

Kuehneromyces marginellus (PECK) REDHEAD, **comb. nov.** (basionym: *Pholiota marginella* PECK, Ann. Rep. N. Y. State Mus. 51: 289. 1898) occurs in the eastern decidous forests of North America.

The name *Kuehneromyces vernalis* is not the correct name for the commoner species on coniferous wood. The change of starting dates for valid publication of fungal names back to 1753 made *Agaricus vernalis* BOLTON (1788) valid and *Agaricus vernalis* PECK (1872) a later illegitimate homonym which became *Naucoria vernalis* SACCARDO (1887), with priority dating only from 1887 (Art. 72, note 1, I. C. B. N.). Realizing that *A. vernalis* PECK was a later homonym, MURRILL (1917 a) unnecessarily proposed the new name *Naucoria praecox* MURR. The earliest available name is *Agaricus lignicola* PECK (1872) which current authors consider to be conspecific with *A. vernalis* PECK (SINGER & SMITH 1946 b, SMITH & HESLER 1968).

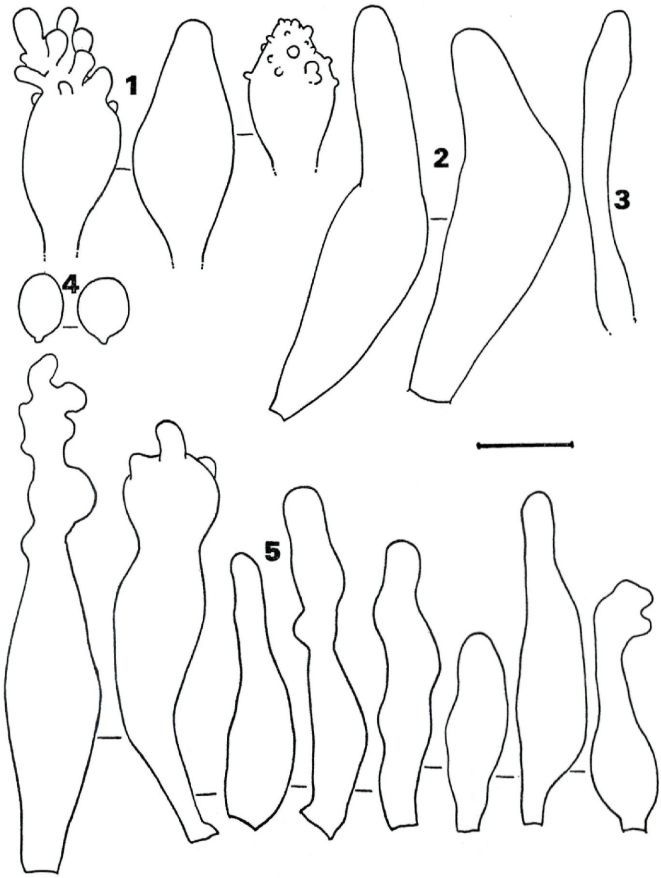
Therefore, the name ***Kuehneromyces lignicola*** (PECK) REDHEAD **comb. nov.** (basionym: *Agricus lignicola* PECK, N. Y. State Cab., Ann. Rep. 23: 91. 1872) is proposed to replace the name *K. vernalis.*

In addition to the synonyms given by SINGER & SMITH (1946 b), excepting *P. marginella, Gymnopilus hillii* MURRILL (1912) can be added as a synonym of *K. lignicola* (HESLER 1969). In European literature *K. lignicola* had been reported as *K. vernalis* by FAVRE (1960), but recently the name *Kuehneromyces myriadophylla* (ORTON) PEGLER & YOUNG (= *Galerina myriadophylla* ORTON) has been substituted (MOSER, 1983). ORTON's (1969) distinction between *G. myriadophylla* and *K. vernalis* was based on cheilocystidial morphology and pileus colours, which he presumed to be different. Contrary to ORTON's statements the typical form of the cheilocystidia in *K. lignicola* in North America is fusoid-ventricose and nodulose-capitate (see fig. 5). Vesiculose cystidia are rare (SINGER & SMITH, 1946 b), not common as believed by ORTON. The pilear colours also are similar. SMITH & HESLER (1968) reported pilei to be „pale to dark butterscotch-colour ("honey-yellow" to near "clay-colour" or darker)", fading to "pale yellow to (at times) almost pallid". ORTON stated *G. myriadophylla* to be uniform honey-buff or ochraceous-honey, drying creamy, ochraceous yellowish or buff, often with a darker central spot. The differences in colour and cystidial form are negligible. *Galerina myriadophylla* is a synonym of *K. lignicola*. The species is circumpolar having been collected across North America, in Britain (ORTON, 1969), Switzerland (FAVRE, 1960), the USSR (SINGER & SMITH, 1946 b), and Japan (ITO, 1959).

Specimens examined (selected). — *Kuehneromyces lignicola:*

CANADA: Alberta: Banff Natl. Park, L. Louise, July 11, 1957, J. W. GROVES & R. J. BOURCHIER (DAOM 56883); Spray L., June 16, 1963, J.-A. BARANYAY (DAOM 96357); Kananaskis, July 11, 1957, J. W. G. (DAOM 56637); Lac la Biche, June 25, 1953, W. CODY & R. GUTTERDGE 6816 (DAOM 39245); Subbald Flats, 20 mi. W. of Calgary, R. M. DANIELSON 831 (DAOM 169137); Waterson Lakes Natl. Park, July 12, 1977, H. M. SCHALKWYK 776 (DAOM 178181). British Columbia: Arrowhead, June 2, 1950, W. G. ZILLER (DAOM 26201); Fort Babine, June 11, 1968, J. S. MONTS (DAOM 128465); Fort St. James, June 22, 1940, T. MCCABE 194 (DAOM 114017); Vancouver I., Nanaimo Lakes, June 19, 1953, D. J. MACPHERSON (DAOM 45178), Victoria J. W. GROVES & M. C. MELBURN (DAOM 109808). Manitoba: Gillam, July 2, 1950, W. B. SCHOFIELD 1032 (DAOM 25863); The Pas, July 28, 1953, W. KRIVDS (DAOM 40012). New Brunswick; Keswick Ridge, E. LAWRENCE & W. R. NEWELL (DAOM 44454); Kouchibouguac Natl. Park, June 13, 1977, R. MILLIKIN (DAOM 169640); Stewarton, June 5, 1961, K. L. CALLAHAN (DAOM 87379): Newfoundland: Humber Dist., Deer L., July 31. 1954, E. R. ROBERTSON & M. A. STILLWELL (DAOM 45578); White Bay Dist., Sops Arm, E. R. R. & M. A. S. (DAOM 46770); Labrador, Goose Bay, June 20, 1953, J. M. GILLET & W. I. FINDLAY 5078 (DAOM 26295). Nova Scotia: Dingwall, Cape Breton, June 1954, E. R. (DAOM 45577); Kentville, May 31, 1932, K. A. HARRISON (DAOM 110731); Pictou Co., Eden L., June 8, 1954, E. L. & W. R. N. (DAOM 46771). Ontario: Algonquin Prov. Park, May 18, 1976, P. JOHNSON 201 (DAOM 182365); Black Sturgeon L., Aug. 8, 1974, S. A. REDHEAD 1045 (DAOM 174821), June 17, 1977, D. W. MALLOCH & S. A. R., 2252 (DAOM 174823); KEEWATIN, 1958, A. HERD (DAOM 107360); L. Timagami, Aug. 10, 1936, R. F. CAIN 8499 (DAOM 80627); North Gower, May 23, 1979, D. HAM-

MERSLEY & R. A. SHOEMAKER (DAOM 172073); Pakenham, June 14, 1952, J. W GROVES (DAOM 28929); South March, May 21, 1968, J. W. G. 68—9 (DAOM 124620); Tenaga, May 26, 1955, J. W. G. (DAOM 48128). Quebec: Cantley, May 21, 1975, J. GINNS 2890 (DAOM 149689); L'Islet Co., Duvals Wood,



Figs. 1—4. *Mycena cucullata*, isotype, N. Amer. Fungi 702 (DAOM). Fig. 1. Cheilocystidia. Fig. 2. Pleurocystidia. Fig. 3. Caulocystidium. Fig. 4. Basidiospores. — Fig. 5 *Kuehneromyces lignicola:* cheilocystidia, DAOM 174821. Scale = 10 μm.

Aug. 6, 1952, H. A. C. JACKSON (DAOM 84908); St. Adolph, June 22, 1957, H. E. & M. E. BIGELOW 4979 & FRÈRE ROLLAND (DAOM 55764). — FINLAND: Pohjois-Pohjammaa; Kiiminki, Huttukylia, Rytiselan, June 25, 1967, M. OHENOJA (DAOM 172846). — SWEDEN: Hälsingland, Harmånger parish, June 25, 1948, B. & J. ERIKSSON 3044 (DAOM, Fl. Ex. Suecici 2026). — USA: Michigan: Cut R., June 25, 1951, S. C. HOARE (DAOM 27300), Douglas L., June 22, 1951, A. H. SMITH (DAOM 27306).

Kuehneromyces marginellus:

CANADA: Quebec: Gatineau Park, May 27, 1979, C. & A. GANTHIER (DAOM 172072); Rawdon, May 23, 1981, R. MCNEIL 998 (DAOM 185906).

5. Stropharia

Pholiota fulvosquamosa PECK and *Stropharia kauffmanii* A. H. SMITH were considered to be closely releated (SMITH & HESLER, 1968; SMITH, 1975) and the suggestion was made that a distinct *Agaricus*-like genus might be recognized for the two species. This is was also mentioned by SINGER (1975).

However, OVERHOLTS (1927) had earlier intimated that *P. fulvosquamosa* resembled *Agaricus subrufescens* PECK, and HARDING (1952) in an unpublished thesis stated that *P. fulvosquamosa* was a synonym of *A. subrufescens*. Examination of the type (B. O. LONGYEAR — 52, collected at the Agricultural college, Michigan, NYS), confirms HARDING's opinion. The microscopic features of the type as reported by SMITH & HESLER (1968) are decidedly *Agaricus*-like and match those of other collections of *A. subrufescens*. The spores are identical (figs. 39 & 40). The stipe and pileus have dismembered like a ball and socket joint leaving free the young lamellae. Except for the report of adnate lamellae, an incorrect interpretation probably resulting from the immaturity of the type, there are no data to indicate the species is a *Pholiota*. Free lamellae are evident in a photograph of the type deposited with isotype material at Ann Arbor (MICH).

Part of the confusion over the concept of *P. fulvosquamosa* can be traced to plate 60, published by HARPER (1914) under the name *Pholiota fulvosquamosa*, and based on a collection or photograph confirmed as *P. fulvosquamosa* by PECK. Unfortunately, there is no HARPER collection currently filed under this name in PECK's herbarium (HAINES, pers. comm.). OVERHOLTS (1927) and SMITH & HESLER (1968) have made reference to HARPER's (1914) plate as typical for *P. fulvosquamosa*. OVERHOLTS (1927) reproduced it as his pl. 13. However HARPER's plate is not of *A. subrufescens*, the species represented by the type of *P. fulvosquamosa*. The illustrated species differs by its sqarrose scales (appressed in *P. fulvosquamosa*), distinctly adnate lamellae (free in *P. fulvosquamosa*) and the prominently striate annulus (not or indistinctly striate in *P. fulvosquamosa*). In my opinion pl. 60 is *Stropharia kauffmanii*. Comparison of HARPER's plate and other illustrations of *S. kauffmanii*

(SMITH 1941, p. 23; 1975 pl. 167) and with recent Canadian collections (cited below) lead to this conclusion. HARPER's collection was from northern Michigan. Canadian collections are from southern Manitoba, central Alberta, and western Newfoundland, indicating that *S. kauffmanii* is not restricted to the west coast of North America where all previous collections have been made. *Stropharia kauffmanii* is a good species of *Stropharia*. It produces clamp connections and spores with a germ pore (SMITH, 1975), chrysocystidia (SMITH, SMITH & WEBER, 1979), and acanthocytes (FARR, 1980). Neither it nor the type of *P. fulvosquamosa* (= *Agaricus subrufescens*) warrant a new genus.

Specimens examined. — *Stropharia kauffmanii:*

CANADA: Alberta: Sandy L., 72 km N. W. of Edmonton, June 24, 1973, H. M. SCHALKWYK 152 (DAOM 150767). Manitoba: Riding Mt. Natl. Park, Aug. 19, 1979, S. A. REDHEAD 2888 (DAOM 185542). Newfoundland: Gros Morne Natl. Park, Sept. 19, 1983, S. A. REDHEAD 4807 & J. H. GINNS (DAOM 187869).

6. Marasmius

GILLIAM (1976) did not recognize any clampless species of *Marasmius* in the geographic area covered by her monograph of *Marasmius*. In her thesis she stated that clamp connections were not taxonomically important because they were present in all the species studied. Subsequently the type of *Marasmius uliginosus* GILLIAM was discovered to be clampless and referable to *Strobilurus* (REDHEAD 1980 a) a genus partially differentiated from *Marasmius* by the absence of clamp connections. Another clampless species, *M. flavomerulinus* REDHEAD, was described from southern Quebec (REDHEAD, 1981). Now two additional species of *Marasmius* have been found to lack clamp connections. *Marasmius pallidocephalus* GILLIAM, which is nearly as common as *M. androsaceus* (L.) FR. in North America, is distinguished from the latter by the presence of spirally or circularly incrusted stipe hyphae, the absence of cheilocystidia (GILLIAM, 1976), and the absence of clamp connections. These facts became evident during a revision of collections filed as *Marasmius androsaceus* in DAOM and study of the type of *M. pallidocephalus* at Ann Arbor (MICH).

Marasmius straminipes PECK is another clampless species. Although suggested to be a species of *Marasmiellus* by GILLIAM (1976) the presence of rhizomorphs and a glabrous insititous wiry stipe indicate that the species belongs in *Marasmius* section *Androsacei*. *Marasmius straminipes* differs from *M. pallidocephalus* by the presence of diverticulate cheilocystidia and a paler stipe with smooth cortical hyphae.

Specimens of *Marasmius* sect. *Androsacei* examined (seleced): *Marasmius androsaceus:*

CANADA: Alberta: Seebe, Aug. 5, 1976, R. M. DANIELSON 2123 (DAOM 169133). British Columbia: Mt. Revelstoke Natl. Park, Sept. 24, 1980, S. A. REDHEAD 4026 (DAOM 181011); Vancouver I., L. Cowichan, Oct. 4, 1979, S. A. R.

3345 (DAOM 178930). Manitoba: Norway House, Aug. 14, 1931, G. R. Bisby (DAOM F5718). New Brunswick: Kouchibouguac Natl. Park, Sept. 18, 1977 S. A. R. 2393 (DAOM 165862). Newfoundland: Gros Morne Natl. Park, Sept. 23, 1983, S. A. R. 4949 (DAOM 187871). Ontario: Black Sturgeon L., Aug. 11, 1974, S. A. R. 1164 (DAOM 178920); Kenora, Aug. 28, 1927, W. L. Gordon (DAOM 152317); L. Timagami, Sept. 7, 1936, R. F. Cain 8456 (DAOM 80509); Ottawa, May 24, 1977, S. A. R. (DAOM 162814); Petawawa, Aug. 29, 1947, I. L. Conners, A. H. Smith & J. W. Groves (DAOM 17393); St. Lawrence Is. Natl. Park, Mallory Town, June 22, 1976, S. C. Thomson (DAOM 158874). Quebec: Gatineau Park, July 9, 1953, C. A. Loveland (DAOM 39914); Grand Riviere, Gaspé Penn., Aug. 16, 1959, V. G. & W. B. Cooke 31645 (DAOM 84300); Rawdon, June 28, 1968 J. W. G. (DAOM 124613); St. Aubert, Aug. 4, 1939, H. A. C. Jackson (DAOM 87057).

Marasmius pallidocephalus:

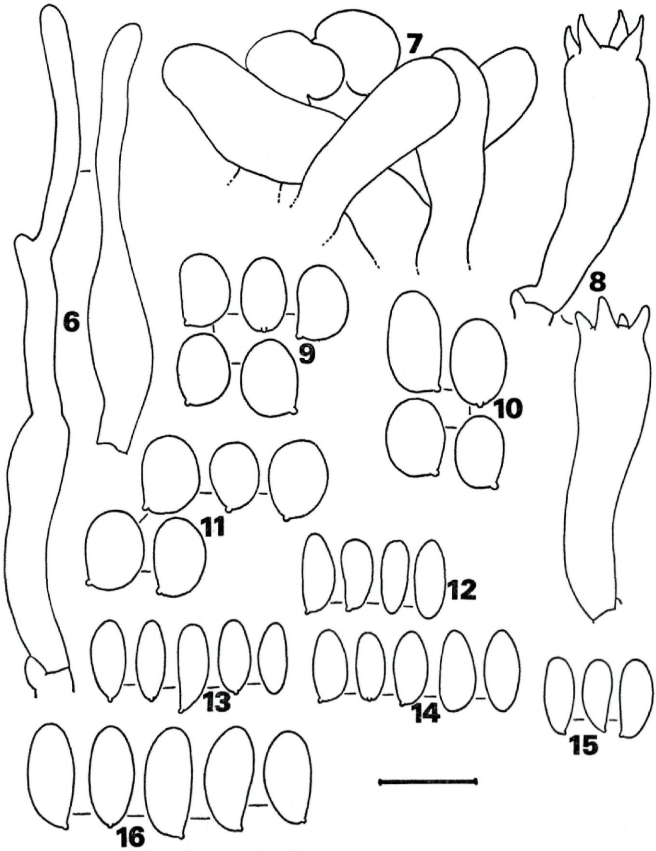
Canada: British Columbia: Fort St. James, July 13, 1940, T. McCabe 253 (DAOM 113899); Glacier Natl. Park, Rogers Pass, Sept. 14, 1980, S. A. Redhead 3747 (DAOM 181089); Manning Prov. Park, Lightning L., S. A. R. AX-4 (DAOM 175728); Queen Charlotte Is., Moresby I., Takakkia L., July 29 — Aug. 2, 1965, J. A. Calder & R. L. Taylor (DAOM 113861). Manitoba: Riding Mt. Natl. Park, July 12, 1977, H. M. E. Schalkwyk 776 (DAOM 178181). British Kouchibouguac Natl. Park, June 3, 1977, R. Millikin (DAOM 169683). Newfoundland: Gros Morne Natl. Park, Sept. 16, 1983, S. A. R. 4669 (DAOM 187872); St. Anthony, July 17, 1951, D. B. O. Savile & J. Vaillancourt 2336 (DAOM 28067); Labrador, Goose Bay, July 19, 1950, J. M. Gillet & W. I. Findlay 5369 (DAOM 26292). Nova Scotia: Cape Breton, Crowdis Bridge, Sept. 1, 1957, K. A. Harrison 4113 (DAOM 112594). Ontario: Fallowfield, May 31, 1955, J. W. Groves & D. E. Wells (DAOM 46439); L. Timagami, July 2, 1931, R. F. Cain 1136 (DAOM 80508); Ottawa, July 14, 1970, N. Grainger (DAOM 156751); Ramsayville, May 30, 1957, M. E. Elliott (DAOM 55781); St. Lawrence Is. Natl. Park, June 3, 1975, S. A. R. 1519 (DAOM 153661); South March, June 10, 1953, J. W. G., (DAOM 40343); Thunder Bay Dist., Black Surgeon L., Aug. 10, 1974, D. W. Malloch & S. A. Redhead 1136 (DAOM 178922). Prince Edward Island: Brackley Pt., Aug. 21, 1888, J. Macoun (DAOM 51355, filed as host for *Syzygospora marasmoidea* Ginns). Quebec: Bic Prov. Park, Aug. 19, 1969, R. W. Coleman (DAOM 127890); Bonaventure I., Aug. 15, 1959, W. B. & V. G. Cooke 31644A (DAOM 84301); Cantley, June 10, 1981, J. H. Ginns (DAOM 180196); Lakefield, July 1968, H. S. Cook (DAOM 124822). — USA: Michigan: Cross Village, July 26, 1953, S. C. Hoare (DAOM 40093); Chippewa Co., Tahquamenon Falls State Park, July 22, 1971, M. Gilliam 1165 (holotype, MICH).

Marasmius straminipes:

USA: New Jersey: Newfield, July 1876, J. B. Ellis (N. Amer. Fungi 701, DAOM). New York: Albany Co., Center (= Kramer), Oct. 1872, C. H. Peck (NYS, type).

7. *Mycena*

Gilliam (1976) noted that the type of *Marasmius cucullatus* Ellis might be a *Mycena* but did not offer a definite placement. Based on examination of isotype material in DAOM I conclude that *M. cucullatus* is a *Mycena,* most closely related to *Mycena pachyderma* Kühner, for which the name ***Mycena cucullata*** (Ellis) Redhead **comb. nov.**



Figs. 6—11. *Clitocybe incomis;* 6—9, DAOM 175172; 10, DAOM 165904; 11, lectotype of *Collybia incomis* (H). Fig. 6. Cheilocystidia. Fig. 7. Pileocystidia. Fig. 8. Basidia. Fig. 9—11. Basidiospores. Figs. 12—15. *Crepidotus herbarum* basidiospores. Fig. 12. A.H.S.-55544 (MICH), cited as *C. herbarum.* Fig. 13. Type *C. herbarum* (NYS). Fig. 14. A.H.S.-54060 (MICH), cited as *C. pubescens.* Fig. 15. A.H.S.-55561 (MICH), cited as *C. pubescens.* Fig. 16. *Crepidotus geophilus,* type of *Geopetalum geophilum* NY. Scale = 10 μm.

(basionym: *Marasmius cucullatus,* Ellis, Bull. Torrey Bot. Club 6: 76. 1876) is proposed. Ellis (1876) described the species from New Jersey on twigs of blueberries (*Vaccinium corymbosum* L.) erroneously labelled *Viburnum corymbosum* in the original description. A second known collection originally identified as *Marasmius straminipes* by Peck is on identical appearing twigs, possibly indicating that *Mycena cucullata* is restricted to ericaceous hosts. The following description is based on isotype material:

Pileipellis a thick gelatinized layer up to 100 µm deep but apparently not viscid, surface hyphae densely diverticulate and occasionally protruding; embedded hyphae 3—9 µm diam., filamentous, weakly dextrinoid, clamped. — Subpellis 1—2 hyphae deep, of inflated dextrinoid hyphae 6—15(—20) µm diam., below which are less inflated tramal hyphal. — Pleurocystidia (Fig. 2) scattered and abundant, prominently projecting, fusoid-ventricose, up to 48 × 12 µm, smooth, thin-walled. — Cheilocystidia (Fig. 1) polymorphic, similar to the pleurocystidia but shorter, 20—25 × 9—11 µm, smooth or with short wart-like or more elongated finger-like protuberances on the apex. — Basidia clavate, 4-spored, 28—30 × 5—6 µm. — Basidiospores (Fig. 4) broadly ellipsoid, 7—8 × 5—6.5 µm, amyloid, hyaline, thin-walled. — Stipe hyphae with slightly thickened walls in the cortical region, 2—4 µm diam. on the surface, 7—8 µm diam. in the interior, the superficial hyphae diverticulate, and with abundant protruding (collapsed) repent, elongated, smooth ends (hairs) over the surface (Fig. 3).

Specimens examined. — *Mycena cucullata:*

USA: New Jersey: Newfield, Oct. 1875, J. Ellis (N. Amer. Fungi 702, DAOM). New York: Forestburg, Sept., C. H. Peck (as *Marasmius straminipes,* NYS).

Bon & Chevassut (1973) proposed the combination, *Mycena cucullata,* based on *Agaricus cucullatus* Fries, a different species, but did not fully cite the basionym, thereby invalidating the combination (Art. 33.2).

8. Geopetalum

Geopetalum Pat. is synonymous with *Hohenbuehelia* Schulz., although for years it has been taken to be a monotypic genus (Singer, 1975) now named *Faerberia* Pouzar (1981). Even in its broader applications it was considered to be a white-spored genus (Murrill, 1916 a), but at least three of Murrill's taxa (types at NY) examined, have pigmented spores which evidently were overlooked because of the lack of spore deposits. *Geopetalum albescens* Murrill is brown-spored and belongs in the genus *Crepidotus.* In the North American monograph of *Crepidotus* (Hesler & Smith, 1965) it readily keys to *C. phaseoliformis* Hesler & Smith (1965) which is a later synonym. All critical features correlate including spores, cystidia, tramal and subhymenial tissues, and

clamp formation. Partially sterile lamellae which macroscopically are whitish are probably the basis of MURRILL's misplacement of the species. The new combination is proposed as ***Crepidotus albescens*** (MURRILL) REDHEAD **comb. nov.** (basionym: *Geopetalum albescens* MURRILL, N. Amer. Fl. 9(5): 299. 1916). The species is known from Ontario (type of *C. phaseoliformis)* and New York (type of *G. albescens*), in both cases on birch wood.

Geopetalum geophilum MURRILL (1916 a) is another *Crepidotus*. It has pale brown spores (Fig. 16) somewhat similar to the type of the genus *Pleurotellus* FAYOD but the spores differ in larger size and slightly more pigmentation. The species is not treated in HESLER & SMITH's (1965) North American monograph of the genus *Crepidotus* but is found under the name *Crepidotus pubescens* BRESADOLA (1930) in European literature (PEGLER & YOUNG, 1972; MOSER, 1983). This species is redisposed as ***Crepidotus geophilus*** (MURRILL) REDHEAD **comb. nov.** (basionym: *Geopetalum geophilum* MURRILL, N. Amer. Fl. 9(8): 299. 1916). The following decription is based on MURRILL's collection.

"P i l e u s thin, fleshy, sessile, more or less resupinate, conchate, 5—15 mm broad; surface smooth, glabrous, white, dry, mycelioid behind margin thin, concolorous, entire or somewhat lobed. — L a m e l l a e of medium breadth and distance, white when fresh, becoming yellowish-brown and fragile or drying:" (MURRILL, l. c.). The dried basidiomes are finely pubescent to silky on the surface and occur on compacted silty (?alluvial-type) soil containing chips and shreds of wood. — P i l e i p e l l i s a loose trichoderm-like lattice of smooth, thin-walled, simple septate, hyaline hyphae 4—7 µm diam. with only slightly serpentine ends. Tramal hyphae compactly arranged, subparallel, 2—5 µm diam., smooth and thin-walled. Lamellar tramal hyphae similar. — B a s i d i a clavate, 4-spored, 30—40 × 9—10 µm. — B a s i d i o s p o r e s (Fig. 16) 9.5—11.6 × 4.5—5 µm, smooth, relatively thin-walled, pale ochreous brown, narrowly ellipsoidal to narrowly amygdaliform. — C h e i l o c y s t i d i a 50—60 × 7—10 µm obtusely lageniform, thin-walled, hyaline.

HESLER & SMITH (1965) applied both the names *Crepidotus pubescens* BRES., sensu KÜHNER & ROMAGNESI and *C. herbarum* (PECK) SACC. to one species, *C. herbarum*, as noted by SINGER (1969, 1975). Materials identified as either *C. pubescens* (Figs. 14 & 15) or *C. herbarum* (Figs. 12 & 13) cited by HESLER & SMITH (1965) were reexamined and judged to be conspecific (see specimens cited below). The differences in spore form and cheilocystidial forms noted by the latter authors could not be confirmed as consistent features. One collection, A. H. S. 57414, cited as *C. herbarum* is *Clitopilus hobsonii* (BERK. & BR.) ORTON. It has the characteristically angled spores as seen in polar view. Similarly the collection, MGW 1881 (MICH), cited as *C. herbarum* by WEAVER & SHAFFER (1972) is *C. hobsonii*.

SINGER (1969, 1975) noted also that HESLER & SMITH (1965) misinterpreted the nomenclature of the name *C. pubescens* as accepted by KÜHNER & ROMAGNESI (1954). The latter authors explicitly treated *C. pubescens* BRES. under the name *C. bresadolae* PILÁT (1948) while treating *C. herbarum* as "*C. pubescens* ss. SCHROET.", a nomenclaturally unacceptable combination; without basionym citation and potentially a later homonym of *C. pubescens* BRES.

Specimens examined. — *Crepidotus herbarum:*

CANADA: British Columbia: Glacier Natl. Park, Beaver R. valley, Sept. 16, 1983, S. A. REDHEAD 3817 (DAOM 187599); Queen Charlotte Is., Graham I., Shields Bay, Sept. 19, 1982, on *Rubus* and *Elymus mollis*, S. A. R. 4393 (DAOM 187493); Vancouver I., Saanichton, Nov. 1, 1932, W. JONES (DAOM F-3417). New Brunswick: Kouchibouguac Natl. Park, Oct. 11, 1978, on *Populus*, S. A. R. 2808 (DAOM 169892). Ontario: Aurora, Sept. 28. 1935, on *Quercus*, H. S. JACKSON (DAOM 50109, 80606). — SWEDEN: Västergötland, Backa Parish, Dec. 14, 1945, F. KARLVAD (DAOM 65016). — USA: California: Mission Canyon, Santa Barbara Co,, Mar. 22, 1943, P. M. REA 1204 (MICH). Idaho: Bonner Co., Nordman, Oct. 5, 1956, A. H. SMITH 54060 (MICH). Michigan: Oakland Co., Proud L. Oct. 19, 1955, A. H. S. 66272 (MICH). New Jersey: Newfield, Nov. 1891, J. B. ELLIS & EVERHART (DAOM, N. Amer. fungi 2727 ut *Agaricus septicus*). New York: North Greenbush, C. H. PECK, Oct. (NYS, type *Crepidotus herbarum*). Ohio: Highland Co., Fort Hill, Nov. 24, 1962, W. B. & V. G. COOKE 33952 (MICH). Oregon: Josephine Co., Grant's Pass, Nov. 12, 1956, A. H. S. 55544, 55561 (MICH), Nov. 10, 1956, A. H. S. 55365 (MICH). Washington: L. Quiniault, Oct. 12, 1925, C. A. Brown (MICH).

Geopetalum densifolium MURRILL (1912) is a species of *Clitopilus* but further classification has not been attempted pending Dr. T. BARONI's examination and report.

A portion of the type of *Panus betulinus* PECK (1896) was filed as *Geopetalum betulinum* (PECK) MURRILL in the New York Botanical Garden (NY). In all respects microscopically it is the same as *Panellus serotinus* (PERS. in HOFMANN: FR.) KÜHNER. Discrepancies in the macroscopic appearance as originally described are probably the result of poor drying conditions available to the collector, The Rev. A. C. WAGHORNE. *Panellus serotinus* was noted to occur on both birch and alder in Newfoundland during a recent field trip.

9. Omphalopsis

Most North American types of *Omphalopsis* species have been reexamined by A. H. SMITH (1947) during the course of his doctoral studies on *Mycena*. Types of some of the enigmatic taxa, known only from the type localities and which were incompletely characterized in SMITH's monograph were restudied. *Omphalopsis mcmurphi* MURRILL (1916 b) was found to have nonamyloid hyaline spores 12.5—14 × 4—5.5 µm (Fig. 20) and ventricose cheilocystidida (Fig. 33). SMITH (1938) did not observe cheilocystidia and reported the spores on one basidiome to be 10—12 × 6—7 µm, brown and roughened, an another to be 12—16 ×

7—8 µm, smooth and hyaline. The latter was selected as lectotype. The type presently consists of what appears to be a split basidiome, both portions with spores as noted by me above. I consider *O. mcmurphyi* to be a synonym of *Helotium subimmaculatum* (MURR.) REDHEAD (Figs. 21 & 34), also known as *Mycena albissima* A. H. SMITH and *Mycena neocrispata* KÜHNER & VALLA (REDHEAD, 1982). Many spores on the pileus surface appeared to be swollen as often precedes gemination in hyaline-spored basidiomycetes. There is a possibility that spores swollen even more were observed by SMITH. No roughened pigmented spores were noted. In general the type is in poor condition. The cheilocystidia, although abundant and characteristic, were observed with certainty only on a carefully selected intact lamella laid on its side in KOH solution with phloxine stain.

Omphalopsis pallida MURRILL (1917 b) was transfered to *Mycena* by SMITH (1947) and said to be the same as *Mycena phaeopylla* KÜHNER. This synonymy has not been adopted in current European literature (MOSER, 1983). The nonreactive spores and tissues in Melzer's reagent and the abundant incrusting pigments in the upper tramal area exclude the taxon from *Mycena*. At present I consider O. *pallida* to be a synonym of *Clitocybe incomis* (KARST.) ORTON, a variable species known by many names, and better known as *Clitocybe fellea* PECK (see BIGELOW, 1982). HARMAJA (1979) reported on the type of *Collybia incomis* KARSTEN and, although indicating that it should be excluded from the genus *Clitocybe* where ORTON had transferred it, did not suggest an alternative genus. HARMAJA's exclusion has merit. BIGELOW (1982) noted that this species is somewhat intermediate between *Collybia* and *Clitocybe*. He did not note its cheilocystidia and yellow cytoplasmic pigments which some basidiomes develop and which make its placement in *Clitocybe* even more anomalous. The following rescription is based on Canadian materials:

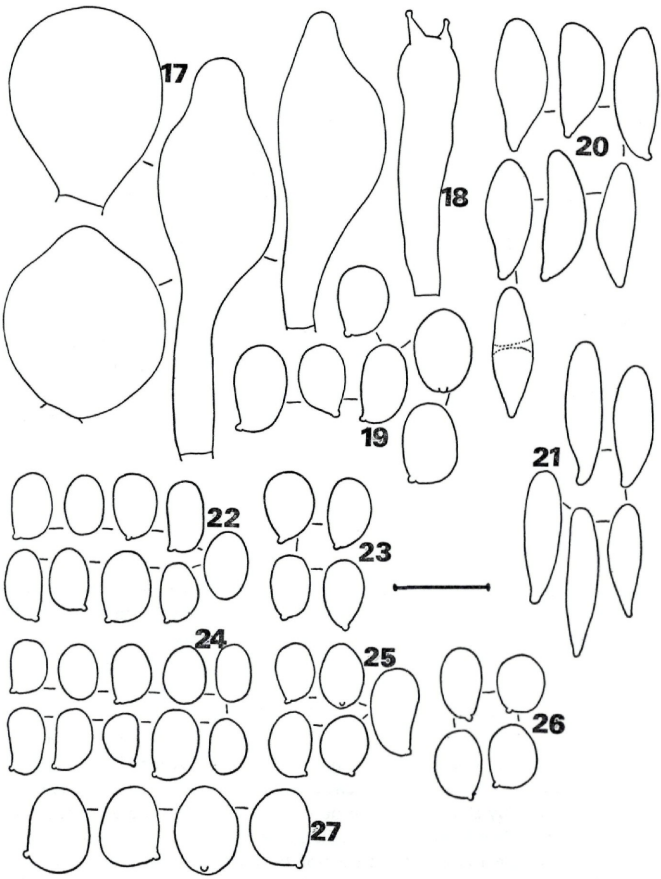
Pileus 6.5—22 mm wide, convex, at times nearly hemispherical, or varying to plano-convex, umbonate, centrally depressed; dry, opaque, usually buff coloured to ochreous, sometimes with straw coloured tints or slightly darker and with more cinnamon or honey tints, the surface smooth to rugose, usually slightly fibrillose, occasionally micaceous, occasionally subpolished, the edges incurved slightly, often uneven, furrowed or crisped and scalloped, the context fleshy, concolorous or more yellowish. — Odor variable, from indistinctive to faintly or strongly farinaceous or faintly rancid, the taste similar or somewhat bitter. — Lamellae adnate sometimes with a short decurrent extension, sometimes slightly adnexed, usually becoming broadly ventricose with age, moderately spaced, vinaceous buff to buff or more whitish, often developing yellowish tints (straw to amber) especially towards the pileus margin, sometimes causing the hymenophore to appear quite yellow in this region; lamellulae in 1—2 tiers. — Stipe 2.3—4 cm × 1—2.5 mm, mostly equal and often slightly sinuous, cartilaginous, fistulose, dry, terete to compressed, concolorous with the pileus, finely striate and often finely fibrillose, usually with conspicuous appressed cottony white basal mycelium.

Pileipellis a radially repent layer of brownish incrusted hyphae 5—12 µm diam. with frequent erect often fasciculated cystidioform ends (Fig. 7) with nonincrusted or faintly incrusted walls. Pilear and lamellar tramal hyphae: similar but less incrusted than those of the pellis. — Clamps present on all hyphae. — Basidia (Fig. 8) clavate, 4-spored, not carminophilous, 28—31 × 8—9 µm. — Basidiospores (Figs. 9 & 10) 7.5—11 × 5—6 µm, broadly ellipsoid, less often obscurely broadly reniform, obovoid or cylindrical, hyaline, thin-walled, smooth, nonamyloid, broadly apiculate. — Cheilocystidia (Fig. 6) absent to scattered or abundant but not forming a sterile edge, narrowly fusoid ventricose, sometimes forked or slightly contorted on the elongated neck, sometimes basidiole-like and merely mucronate or aculeate, 25—70 × 6—7 µm, thin-walled, hyaline. — Stipe hyphae similar to the pilear hyphae but ridgedly parallel, incrusted, 5—12 µm diam.

Specimens examined: *Clitocybe incomis:*

Canada: British Columbia: Vancouver Is.: L. Cowichan, Sept. 28, 1979, Oct. 2, 5, 8, 1979, S. A. Redhead 3230, 3278, 3361, 3411 (DAOM 175171, 175173, 175174, 175172). New Brunswick: Kouchibouguac Natl. Park, July 6, 1977, S. A. R. 2299 (DAOM 165904), July 21, 1977, R. Millikin (DAOM 169639). Quebec: Chandler, Aug. 5, 1980, R. du Nert (DAOM 180904); Chibougamau Res., L. Nicabau, Aug. 23, 1977, S. A. R. 2003 (DAOM 164968); Gatineau Park, July 12, 1956, J. W. Groves (DAOM 519778); Villeroy, July 1, 1981, R. McNeil 1158 (DAOM 185853). — Finland: Fennia: Tavastia, Tammela, Syrjö, Sept. 21, 1878, P. A. Karsten (H, lectotype *Collybia incomis*). — Sweden: Femsjö parish, Slättagärdet, Sept. 3, 1940, S. Lundell (DAOM, Fungi Ex. Suecici 1108, as *Collybia pseudo-clusilis*), Sept. 21, 1947, A. Melderis (DAOM 65327). — USA: Massachusetts: Cambridge, June 27, 1942, E. V. Seeler, det. R. Singer (FH, type *Clitocybe vulgaris* Singer); N. Amherst, Oct. 31, 1958, H. E. Bigelow 7955 (DAOM 633374). New York: Karmer, Sept., C. H. Peck (NYS, lectotype *Collybia esculentoides* Peck), Adamville = Delmar, Sept., C. H. P. (NYS), Bolton Landing, Aug. 17, C. H. P. (NYS) all as *C. esculentoides* at NYS; Lake Placid, Oct. 3—14, 1912, W. A. & E. L. Murrill 1093 (NY, type *Omphalopsis pallida* (Murr.).

Omphalopsis praedecurrens Murrill (1912), *O. pseudogrisea* Murrill (1916 b), and *O. turbinata* Murrill (1916 b), were all transferred to the genus *Mycena* by A. H. Smith (1947) and recognized as distinct species. Cursory examination of the types by eye suggested that a single characteristic species might be involved. The distinguishing features noted by Smith were critically reevaluated by microscopic examination and the new data recorded support synonymization. Smith (1947) reported spores in the three types to be 4—5 × 3—3.5 µm, 6—7 × 3.5—4 µm, and 7—8 × 3.5—4 µm respectively. I found them to be 5.5—7.2(—8) × 3.5—4.6(—5) µm (Fig. 24), 7—8 × 4.2—5 µm (Fig. 23), and 6.5—8 × 4—5 µm (Fig. 22) respectively, and therefore more alike. Numerous lactiferous hyphae were noted by Smith (1947) in *O. praedecurrens* while the tramas of the other two were said to be homogenous. Reëxamination showed refractive lactiferous hyphae present in all three types. The pellis of the pilei and stipes is subgelatinized in some mounts and details of these tissues are obscured by this breakdown of the walls. The struc-



Figs. 17—19. *Hydropus fraterniger* type (FH). Fig. 17. Fuscous pilear elements. Fig. 18. Basidium. Fig. 19. Basidiospores. Figs. 20—21. *Helotium subimmaculatum* basidiospores. Fig. 20. Type of *Omphalopsis mcmurphyi* (NY). Fig. 21. Type of *Omphalopsis subimmaculata* (NY). Figs. 22—27. *Hydropus praedecurrens* basidiospores. Fig. 22. Type *Omphalopsis turbinata* (NY). Fig. 23. Type of *O. pseudogrisea* (NY). Fig. 24. Type of *O. praedecurrens* (NY). Fig. 25. Type of *Mycena macilenta* (MASS). Fig. 26. Type of *M. madorophila* (MASS). Fig. 27. bisporous Linder & Singer coll. (FH). Scale = 10 μm.

tures are best observed in Congo Red stain in KOH solution. MURRILL's observations of a slightly viscid pileus and stipe on *O. praedecurrens* indicates that this subgelatinization takes place in the field. The frosting of pileocystidia probably accunts for features attributed to the species by other authors. The types of *Mycena arenaria* A. H. SMITH (1947), *M. macilenta* BIGELOW (1976), and *M. madorophila* BIGELOW (1976) were all compared and judged to be conspecific with MURRILL's types. Characteristic pileocystidia (Fig. 29), cheilocystidia, pleurocystidia (Figs. 28 & 32) and caulocystidia (Figs. 30 & 31) were noted on all three types although not all were recorded when originally described. The somewhat duplex nature of the pilear trama which is sarcodimitic is caused by a disproportionate number of swollen cells in the upper half. BIGELOW (1976) reported them to be 18—40 µm diam. in *M. madorophila*. Comparative mounts of the types of *M. madorophila* and *M. macilenta* did not reveal significant differences. Swollen hyphae 22—31 µm diam. were noted in the latter. Another discrepancy regarding pleurocystidia may be have arisen because of the slight thickening of the hymenium and the collapse of the cystidia much as occurs in some *Lactarius* species where they become exceedingly difficult to locate in heavily sporulating materials (HESLER & SMITH, 1979).

Notably the habitats, on sandy soils, and the presence of mosses, are common to all type collections. Even *O. pseudogrisea* collected "on a rotten stump" has sandy soil and bits of moss present at the bases of the basidiomes. Also, all types have dried to a horny consistency. The name ***Hydropus praedecurrens*** (MURRILL) REDHEAD **comb. nov.** (basionym: *Omphalopsis praedecurrens* MURRILL, Mycologia 4: 165. 1912), based on the oldest name, is proposed for this interesting species. It is known from New Jersey, New York, New Hampshire, Massachusetts and Michigan, thus exhibiting a similar distributional pattern to *Laccaria trullisata* (ELLIS) PECK. Both species are arenicolous.

SINGER (1982) compared *Hydropus fraterniger* SINGER to *Mycena macilenta,* distinguishing the bisporus *H. fraterniger* from bisporus forms of *M. macilenta* by the absence of clamps in the latter. One of the collections cited by SINGER, said to be deposited in the Farlow herbarium (FH), was from New Hampshire and therefore in the same geographic area as *H. praedecurrens*. It could not be located at Farlow under the name *H. fraterniger* but following SINGER's suggestion (in litt., 1983) a specimen labelled *Hydropus marginellus* var. *rugosodiscus* f. *bispora,* coll. D. H. LINDER & R. SINGER, July 25—26, 1941, Pequaket, N. H., was located. This collection lacks clamp connections and in all other respects in similar to other collections of *H. praedecurrens* except for the larger spores (Fig. 27). The collection data cited by SINGER (1982) differed mainly in location, Chocorua versus Pequaket, but based on the identitiy of the Pequaket collection and SINGER's notes (in litt., 1983) on the Chocorua

specimen it is probable that *H. fraterniger* does not occur in New England.

The type of *Hydropus fraterniger* (Figs. 17—19) from Florida is also deposited in the Farlow herbarium (FH) and was examined for comparison. It differs from *H. praedecurrens* by the presence of many globose to subglobose cells in the pileipellis (Fig. 17) and by the presence of a prominent fuscous brown cytoplasmic pigment in the pileipellis cells. This pigment is lacking in the clavate cells of *H. praedecurrens*. The tramal hyphae of the pileus of *H. fraterniger* also had thinner walls than *H. praedecurrens*. Contrary to SINGER's report of the presence of clamp connections in this species none could be found. All tissues revived well and were checked carefully for this feature. Basidia, cystidia, tramal tissues and basal mycelium all lacked clamp connections. Thus the species cannot be distinguished from bisporus collections of *H. praedecurrens* on the basis of clamp formation as suggested by SINGER but must be distinguished based on the other features listed above.

SINGER (in litt., 1983) has indicated that the Tristan da Cunha collection he cited as *H. fraterniger* produced clamp connections. If so, it probably represents a distinct taxon.

10. Phaeomarasmius

SINGER (1943) excluded *Crinipellis alnicola* MURR. from the genus *Crinipellis*, and later (SINGER, 1956) transferred it to the genus *Phaeomarasmius*. At the same time he distinguished it from *Phaeomarasmius erinaceus* (FR.) ROMAGNESI by smaller spores and thinner walls on the pilear hairs. SMITH & HESLER (1968) treated *P. erinaceus* as a *Pholiota* but left *C. alnicola* in the genus *Phaeomarasmius* basing their concept of the species on SINGER's studies. Reëxamination of the type of *C. alnicola* (NY) showed it to be based on young basidiomes just beginning to sporulate. Walls of the pilear hairs were up to 2 µm thick and heavily incrusted. In all respects this taxon resembled other specimens of *Phaemarasmius erinaceus* examined by me (REDHEAD, 1980). The spore size reported by SINGER (1942), 7.7—9.7 × 5.5—7.5 µm was confirmed but is not significantly different from other collections of *P. erinaceus*. JOSSERAND & SMITH (1941) reported spores of *P. erinaceus* to be 7—9.5 (—10 × 4—4.5(—6) µm from 4-spored North American collections and 8.5—11 × 6.5—8.5 µm in 2-spored European collections. SMITH & HESLER (1968) later reported 1-, 2-, and 4-spored basidia in North American collections with spores 7—10 × 4—5.5 (9—11 × 6—8) µm. REDHEAD (1980) found 2- and 4-spored collections with spores 7.2—10.8 × 6.5—5 µm.

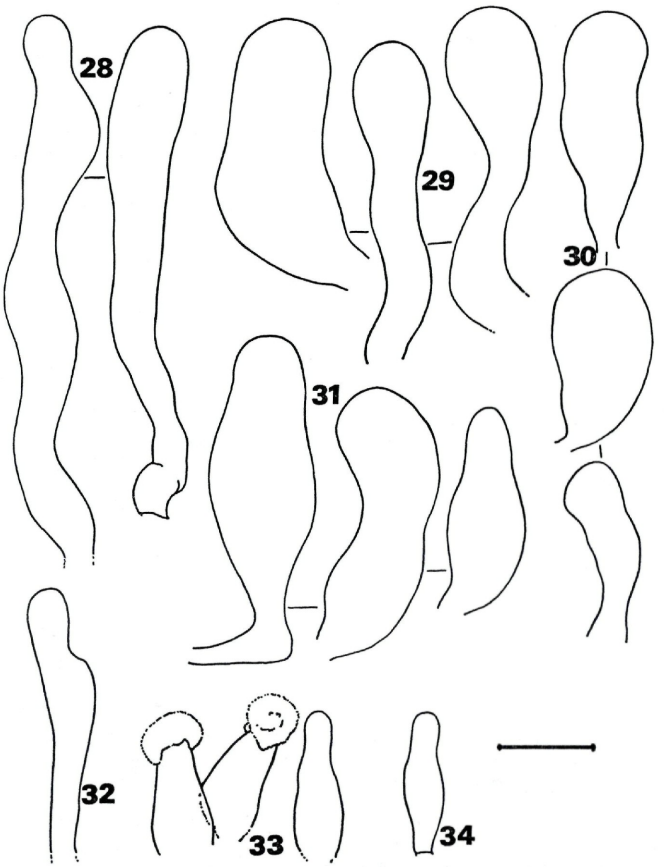
The Swiss collection of *P. erinaceus* upon which SINGER (1950, 1956) apparently based his concept of the species had spores 9—15 × 6—

9 µm. Its identity is questionable because of the spore size. There is a possibility that 1-spored basidia account for the larger spores as the number of spores per basidium for this collection was not stated.

Based on examination of their types at NY both *C. alnicola* and *Naucoria badia* MURRILL (earlier stated to be a synonym of *P. erinaceus* by JOSSERAND & SMITH 1941) are judged to be conspecific with *P. erinaceus*. The types of both were collected on alders near Seattle, Washington.

11. Naucoria

At present the name *Naucoria* (FR.) KUMMER (1871) is rejected by some (SINGER, 1962, 1975; SMITH, 1973) and misapplied by others (DONK, 1962; PEGLER & YOUNG, 1975) based on an illegitimate lectotypification. The genus is based on *Agaricus* "tribus" *Naucoria* FRIES (1821), as acknowledged by all, and formerly cited as *Naucoria* (FR.) QUÉLET (1872) which is a bibliographic error in authority (Art. 33.2) based on the same basionym. SINGER (1936) and later in more detail SINGER & SMITH (1946 a) selected *Agaricus centunculus* FR. as lectotype. Theirs was the first lectotypification applicable to *Agaricus* "tribus" *Naucoria* when elevated to generic status for which supersedure is not possible. DONK (1949, 1962) amply demonstrated why earlier proposals could be superseded but his reasoning for rejecting SINGER & SMITH's lectotype contradicts articles 7.2 and 8 of the International Code of Botanical Nomenclature. DONK argued that because *Agaricus centunculus* was not one of FRIES's *Genuini* it was not available as lectotype. However, *Agaricus centunculus* was an original species and part of the protologue, and cannot be rejected as an atypical element; "The nomenclatural type is not necessarily the most typical or representative element of a taxon" (Art. 7.2), and even consideration of recommendations in the 'Guide for the determination of types, towards preferred elements with epithets *"typicus, genuinus, vulgaris, communis,* etc." are not binding as is clearly stated in the preamble to the code: "names contrary to a recommendation cannot, on that account, be rejected, but they are not examples to be followed". SINGER & SMITH (1946 a) cannot be accused of mechanical selection when consideration is given to their reasoning. Only confusion has followed the proposal of *Agaricus escharoides* FR. as type by DONK (1949). *Naucoria* (FR.) KUMMER, typified by *A. centunculus,* has priority over *Simocybe* KARSTEN (1879), also lectotypified by SINGER & SMITH (1946 a) with *A. centunculus,* after superseding earlier choices as allowed by article 8, contrary to DONK's (1962) opinion. However, the discontinued use of *Neucoria* in the correct application and its incorrect use for an alternative group make its adoption in any form confusing until formally conserved or rejected. At present the generic name *Simocybe* is adopted here for the taxon typified by *Agaricus centunculus.*



Figs. 28—32. *Hydropus praedecurrens*. Fig. 28. Pleurocystidia from type of *Mycena arenaria* (MICH). Fig. 29. Pileocystidia from type of *M. madorophila* (MASS). Fig. 30. Caulocystidia from type of *M. madorophila* (MASS). Fig. 31. Caulocystidia from type of *M. macilenta* (MASS). Fig. 32. Pleurocystidium from type of *M. macilenta* (MASS). Figs. 33—34. *Helotium subimmaculatum*, cheilocystidia. Fig. 33. Type of *Omphalopsis mcmurphi* (NY). Fig. 34. *Type of O. subimmaculatum* (NY). Scale = 10 μm.

North American taxa assigned to *Naucoria* have not been the subject of a recent revision except for some species assigned to genera such as *Galerina* (SMITH & SINGER, 1964), *Agrocybe* (WATLING & GREGORY, 1981), and *Pholiota* (SMITH & HESLER, 1968). Types for a number of northern American taxa deposited at NY were examined to establish their modern positions prior to describing new taxa based on recent collections from Canada. *Naucoria alniphila* ZELLER (1933) was found to be a species of *Pholiota* for which name ***Pholiota alniphila*** (ZELLER) REDHEAD, **comb. nov.** (basionym: *Naucoria alniphila* ZELLER, Mycologia 25: 384. 1933) is proposed. It is conspecific with the later named *Pholiota occidentalis* SMITH & HESLER (1968). An affinity for wood of *Alnus* was indicated for the species by both sets of authors. *Naucoria pattersonae* MURRILL is another *Pholiota:* ***Pholiota pattersonae*** (MURRILL) REDHEAD, **comb. nov.** (basionym: *Naucoria pattersonae* MURRILL, N. Amer. Flora 10: 180. 1917). HESLER (unpubl. annotations with specimens) apparently examined most of the *Naucoria* types in preparation for his *Hebeloma* monograph. He did not observe a gelatinous pellicle on the type of *N. pattersonae,* but I was able to observe this tissue on better preserved portions of the type and to match the type with *Pholiota mutans* SMITH & HESLER (1968), a later name. The type of *P. pattersonae* evidently was a faded specimen. The collector's notes indicated that it was "clay-colour" or "dirty-yellow". SMITH & HESLER (1968) reported that their species faded to "clay-colour" or "SACCARDO's umber". An *Agrocybe*-like appearance is characteristic of the species.

Naucoria californica MURRILL (1917 a) is a *Tubaria* and is conspecific with *T. furfuracea* (PERS.: FR.) GILLET in the sense of MOSER (1983) and J. LANGE (1939) which is the same as *T. pellucida* (BULL.: FR.) GILLET in the sense of KONRAD & MAUBLANC (1924—32) and A. H. SMITH (1936). *Tubaria pellucida* is considered to be distinct from *T. furfuracea* by LANGE and MOSER. MURRILL described the stipe of *N. californica* as smooth but small patches of appressed veil are present. The type compared well with Canadian material (DAOM 172116 from Ottawa, Ont. and 150764 from Calgary, Alta.).

Naucoria umbriniceps MURRILL (1917 a) is conspecific with *Simocybe centuncula* (FR.) KARSTEN, and *Naucoria serrulata* MURRILL (1917 a) appears to be conspecific with *Simocybe sumptuosa* (ORTON) SINGER (ORTON, 1960; REID, 1967; ROMAGNESI, 1942, 1962) for which the correct name is *Simocybe serrulata* (MURR.) SINGER is the generic name *Naucoria* is discarded. Although noted to be a common eastern North American taxon by SINGER (1973), no specimens of *S. serrulatus* were cited. Collections in DAOM in this complex were clearly divisible into two taxa, *S. centunculus* and *S. serrulatus* based on cheilocystidial form (figs. 35, 37), spore size, 5.5—6.5 × 3.5—4.5 µm for the former, 7.5—

10 × 4.5—5.5 µm for the latter, and by the organization of the pileipellis (figs. 36, 38).

Specimens examined (selected): *Simocybe centunculus:*

CANADA: Manitoba: Riding Mt. Natl. Park, Aug. 29, 1979, J. E. & S. A. REDHEAD 3136 (DAOM 186620); Winnipeg, Aug. 31, 1927, G. R. BISBY (DAOM 189429). Ontario: Dunrobin, July 16, 1959, J. W. GROVES (DAOM 63310); North Gower, Aug. 27, 1956, J. W. G. (DAOM 54194); Ottawa, J. W. G., Sept. 16, 1968 (DAOM 124835); St. Lawrence Is. Natl. Park, Mallory Town Landing, Sept. 24, 1975, M. MCCAULEY (DAOM 154542); South March, June 27, 1955, S. C. THOMSON (DAOM 46817). Quebec: Cantley, Aug. 18, 1955, S. C. T. (DAOM 187412); Chateauguay, Aug. 9, 1981, R. MCNEIL 1202 (DAOM 185855); Gatineau Park, Sept. 6, 1978, S. A. R. 2643 (DAOM 169014); Montreal, June 5, 1980, R. MCN. 563 (DAOM 176751). — USA: Michigan: Tahquamenon Falls, July 2, 1951, A. H. SMITH (DAOM 26887). New York: Lake Placid, July 17—29, 1912, W. A. & E. L. MURRILL 189 (NY, type of *Naucoria umbriniceps).*

Simocybe serrulatus:

Canada: Alberta: Sandy L., 72 km N. W. of Edmonton, July 18, 1977, H. M. E. SCHAKWYK 808 (DAOM 178179). Ontario: Nepean, Aug. 4, 1979, Petawawa, J. E,. & S. A. REDHEAD 2824 (DAOM 175246); Petawawa, Aug. 28, 1947, J. W. GROVES (DAOM 17417); Pt. Pelee Natl. Park, Sept. 12, 1962, J. W. G. (DAOM 89876); St. Lawrence Is. Natl. Park, McDonald I., Aug. 23, 1975, S. A. R. 1762 (DAOM 153730); Shaw Forest, near Eganville, June 27, 1980, S. A. R. 3514 (DAOM 176497); South March, June 10, 1953, D. E. WELLS (DAOM 40033). Quebec: Chateauguay, R. MCNEIL 1149 (DAOM 185941); Gatineau Park, June 23, 1953 J. W. G. (DAOM 37016). — USA: Michigan: Douglas L., July 11, 1953, S. C. HOARE (DAOM 40306). New York: Lake Placid, July 17—29, 1912, W. A. & E. L. MURRILL 13 (NY, type of *Naucoria serrulata*).

12. Prunulus

As in the case of *Omphalopsis,* most types of *Prunulus* species from North America had been reëxamined by A. H. SMITH (1947) in the preparation of a monograph of *Mycena.* A few anomalous species known only from their type localities have not been recognized in nature since their original descriptions. Some of these types were examined. *Prunulus brevipes* MURRILL (1916 c) is an immature *Pluteus* which cannot be identified without mature spores. MURRILL (1916 c) did not record the presence of spores and SMITH (1937) reported he could not at that time find reliable spores, although he later (SMITH 1947) reported the presence of definitely amyloid spores. The type is a single basidiome and its tissues revive well revealing a convergent, typically pluteoid lamellar trama, abundant lactiferous hyphae, and crowded free lamellae. The short stipe is also more common in medium sized *Pluteus* species than in *Mycena* species. All basidia are immature. The pileipellis consists of repent cigar-shaped cells with fuscous contents.

Prunulus ludovicianus MURRILL (1916 c) is another *Pluteus,* and is conspecific with *P. eugraptus* (BERK. & BR.) SINGER. It has the convergent lamellar tramal tissue, faintly yellowish spores, and fuscous-brown

amorphous cellular contents in its cheilocystidia and pileipellis cells as indicated for *P. eugraptus* by HOMALA (1972). SMITH (1947) published other details on the type. He placed it in *Mycena* sect. Corticatae. The other two species SMITH recognized in that section have since been removed from the genus *Mycena*. *Mycena wyomingensis* SMITH is a *Strobilurus* (WELLS & KEMPTON, 1971; REDHEAD, 1980) and *Mycena hymenocephala* (SMITH) SMITH was removed as a *Dermoloma* (SINGER, 1962 a), but has since been suggested to be a *Hydropus* (SINGER, 1982). Based on examination of a Canadian collection (DAOM 45146, Fallowfield, Ont., J. W. GROVES, Sept. 23, 1954) the latter generic disposition is accepted. The combination ***Hydropus hymenocephalus*** (SMITH) REDHEAD, **comb. nov.** (basionym: *Collybia hymenocephala* SMITH, Pap. Mich. Acad. Sci. Arts & Lett. 26: 61. 1941) is proposed for it.

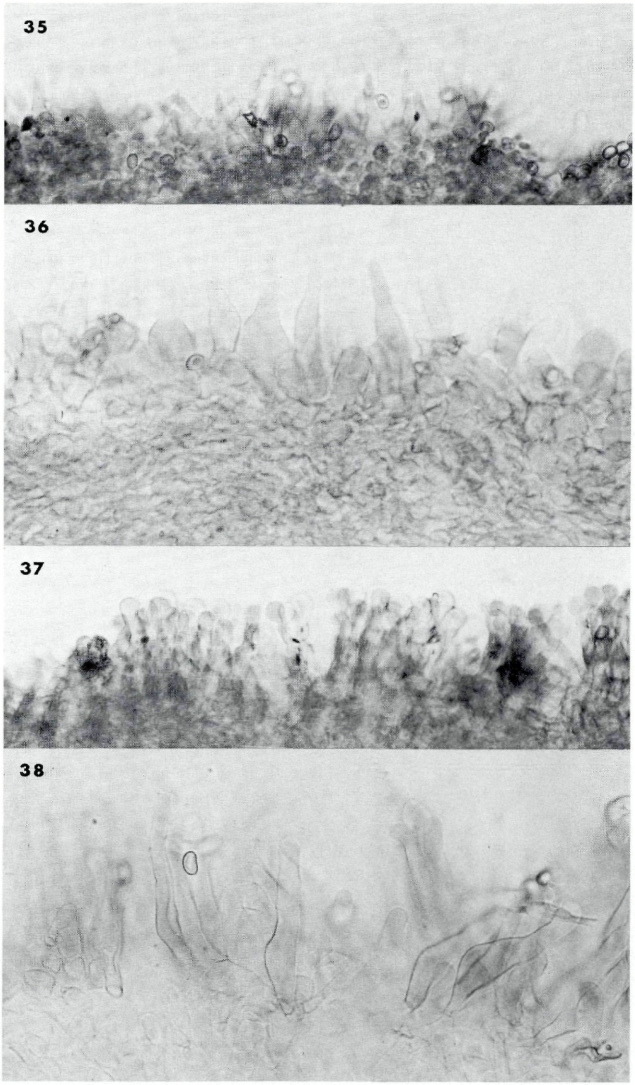
Examination of the types of the names *P. brevipes* and *P. ludovicianus* suggested a reëxamination of the type of *Macrocystidia lutea* REDHEAD & LIU (1982). Numerous slides of immature basidiomes were made which revived better than in previously used mounts, revealing a convergent pluteoid tramal structure and a more palisade-like nature of the pileipellis on the disc. I now recognize my error in generic placement and propose the name, ***Pluteus luteus*** (REDHEAD & LIU) REDHEAD **comb. nov.** (basionym: *Macrocystidia lutea* REDHEAD & LIU, Can. J. Bot. 60: 1485. 1982). It could not be matched against other named species of *Pluteus*.

Prunulus collybiiformis MURRILL (1916 c)) is *Clitocybula lacerata* (SCOP.) MÉTROD. SMITH (1947) reported some details on the type to which it may be added that clamp connections and the occasional caulocystidium are present. Spores reported by SMITH as 5—6(—7) × 4—5 µm actually range up to 8 × 5 µm. *Clitocybula lacerata* was recently redescribed by BIGELOW (1973).

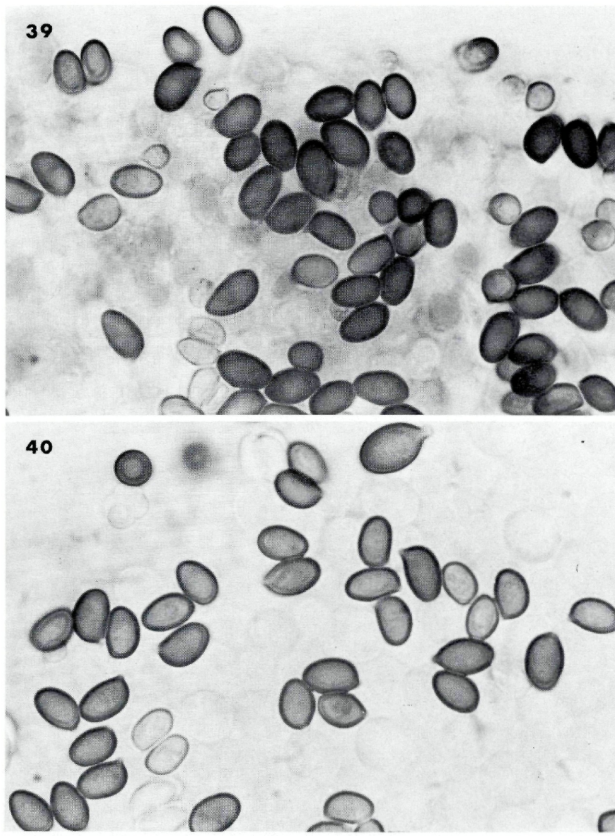
Prunulus farinaceus MURRILL (1916 c) is *Lyophyllum tylicolor* (FR.: FR.) LANGE & SIVERTSEN (1966) as accepted by these authors. KÜHNER (1938) and SMITH (1947) suggested that *P. farinaceus* was close to *Collybia erosa* sensu J. LANGE which was noted to be a synonym of *L. tylicolor* by LANGE & SIVERTSEN (1966). Microscopically the type of *P. farinaceus* is similar to other Canadian collections identified as *L. tylicolor*.

Specimens examined: *Lyophyllum tylicolor:*

CANADA: British Columbia: Queen Charlotte Is., Graham I., Delkatla Inlet near Masset, Sept. 18, 1982, S. A. REDHEAD 4373 (DAOM 187488), Naikoon Prov. Park, Tow Hill, Sept. 24, 1982, on human feces, S. A. R. 4510 (DAOM 187490); Vancouver, Oct. 10, 1979, S. A. R. 3418 (DAOM 175262). Newfoundland: Gros Morne Natl. Park, Sept. 17, 1983, S. A. R. 4735 (DAOM 187835). — USA: Alaska: Sept. 11, 1961, on decaying eagle carcass, V. L. WELLS 9—11—61—4 (MICH). New York: Bronx, Oct. 8, 1911, W. A. MURRILL & E. C. VOLKERT (NY, type *Prunulus farinaceus*).



Figs. 35—36. *Simocybe centunculus*. Fig. 35. Lamellar edge (DAOM 186620). Fig. 36. Pileipellis (DAOM 185855). Figs. 37—38. *Simocybe serrulatus*. Fig. 37. Lamellar edge (DAOM 175246). Fig. 38. Pileipellis (DAOM 175246). Figs. 35, 37 approx. 300 × mag. Figs. 36, 38 approx. 480 × mag.



Figs. 39—40. *Agaricus subrufescens*, spores approx. 1.200 × mag. Fig. 39. Type of *Pholiota fulvosquamosa* PECK (NYS). Fig. 40. DAOM 28971 Ottawa, Ontario.

The type of the name *Prunulus leucophaeus* MURRILL (1916 c), the basionym of *Helotium leucophaeum* (MURR.) REDHEAD (1982) was confirmed to be conspecific with *Mycena delectabilis* (PECK) SACC. as stated by SMITH (1947). It has nonreactive spores and tissues in Melzer's reagent. SMITH had not tested the type of *P. leucophaeus* in iodine solution when he proposed that *P. leucophaeus* and *M. delectabilis* were synonymous.

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