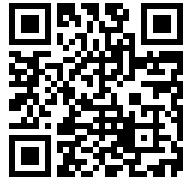

MYCOLOGIA MEMOIR NO. 4

A Contribution to the Taxonomy of the Genus Tomentella

MICHAEL J. LARSEN

Center for Forest Mycology Research
Forest Products Laboratory
Forest Service, United States Department of Agriculture
Madison, Wisconsin 53705

PUBLISHED BY
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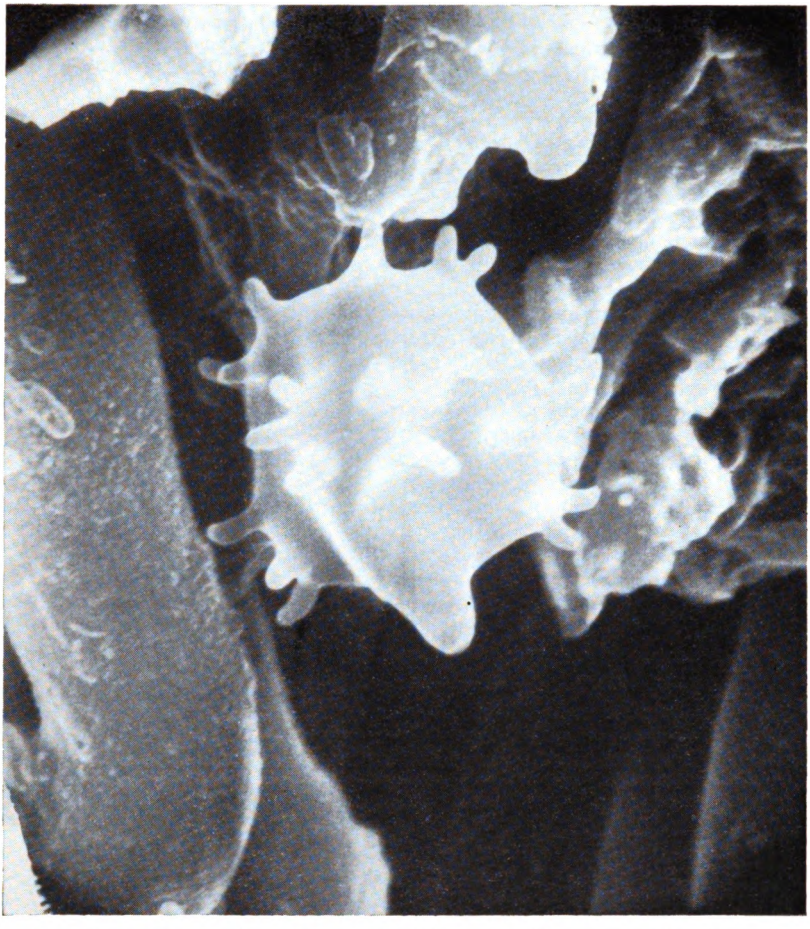

Scanning electron micrograph of a basidiospore of *Tomentella fuscoferruginosa* (×6000; from holotype: CFMR negative no. M139949).

A CONTRIBUTION TO THE TAXONOMY OF THE GENUS TOMENTELLA

MICHAEL J. LARSEN

Center for Forest Mycology Research
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Madison, Wisconsin 53705

INTRODUCTION

Acknowledgments

The assistance of the curators and personnel of the following herbaria in locating and loaning specimens that were essential to this study is gratefully acknowledged: University of Arizona, Tucson, Arizona (ARIZ[1]); National Fungus Collections, Beltsville, Maryland (BPI); Botanical Museum and Herbarium, Copenhagen, Denmark (C); Center for Forest Mycology Research, Forest Products Laboratory, Madison, Wisconsin (CFMR); Mycological Herbarium, Plant Research Institute, Research Branch, Department of Agriculture, Ottawa, Canada (DAOM); Mycological Herbarium, Forest Entomology and Pathology Laboratory, Department of Forestry, Victoria, British Columbia, Canada (DAVFP), now Pacific Forest Research Centre, Canada Department of the Environment; Royal Botanic Garden, Edinburgh, Scotland, United Kingdom (E); Forest Entomology and Pathology Laboratory, Department of Forestry, Fredericton, New Brunswick, Canada (FFB), now Maritime Forest Research Centre, Canada Department of the Environment; Farlow Library and Herbarium of Cryptogamic Botany, Harvard University, Cambridge, Massachusetts (FH); Herbarium, Institute of Systematic Botany, University of Göteborg, Göteborg, Sweden (GH); Botanical Museum, Helsinki, Finland (H); Department of Botany, University of Illinois, Urbana, Illinois (ILL); The Herbarium and Library, Kew, Great Britain (K); Rijksherbarium, Leiden, Netherlands (L); Herbarium of the Komarov Botanical Institute of the Academy of Sciences of the U.S.S.R., Leningrad, U.S.S.R. (LE); Mycological Herbarium, Louisiana State University, Baton Rouge, Louisiana

[1] Capital letters used to designate herbaria are those of Lanjouw and Stafleu (1964), except CFMR, SSMF, and SYRF.

(LSUM); University Herbarium, University of Michigan, Ann Arbor, Michigan (MICH); Institut de Botanique, Université de Montpellier, Montpellier, France (MPU); The New York Botanical Garden, Bronx Park, New York, New York (NY); Herbarium of New York State Museum, Albany, New York (NYS); The Pennsylvania State University, University Park, Pennsylvania (PAC); Instituto Orto Botanico dell'Universita, Padova, Italy (PAD); Museum National d'Histoire Naturelle, Laboratoire de Cryptogamie, Paris, France (PC); Department of Agriculture, Peradeniya, Ceylon (PDA); Auckland Plant Diseases Division, Department of Scientific and Industrial Research, Auckland, New Zealand (PDD); Academy of Natural Sciences, Philadelphia, Pennsylvania (PH); Botanical Department of the National Museum, Praha, Czechoslovakia (PR); Institut Scientifique Chérifien, Laboratoire de Phanerogamie et Laboratoire de Cryptogamie, Rabat, Morocco (RAB); Botanical Department, Naturhistoriska Riksmuseum, Stockholm, Sweden (S); Instituto de Botânica, Sao Paulo, Brazil (SP[2]); Canadian Forestry Service, Sault Ste. Marie, Ontario, Canada (SSMF), now Great Lakes Forest Research Centre, Canada Department of the Environment; State University of New York College of Forestry at Syracuse University, Syracuse, New York (SYRF); Cryptogamic Herbarium, Department of Botany, University of Toronto, Toronto, Ontario, Canada (TRTC); Institute of Systematic Botany, University of Uppsala, Uppsala, Sweden (UPS); Naturhistorisches Museum, Wien, Austria (W); Forest Research Laboratory, Canadian Forestry Service, Winnipeg, Manitoba, Canada (WINF).

The portion of this study between 1963–1966 was conducted under the auspices of National Science Foundation grants to Drs. R. L. Gilbertson (G24382) and J. L. Lowe (GB875), to both of whom I am grateful for their encouragement and assistance over the years. During this period, financial assistance was also received from the State of New York to Larsen in the form of a Student Honorarium. In 1967–1970 the continuance of the project was sponsored by the Great Lakes Forest Research Centre, Canadian Forestry Service, Sault Ste. Marie, Canada. The U.S. Department of Agriculture, Forest Service, has graciously provided the needed support to bring this study to its present stage of completion.

Special commendation is accorded Mr. R. A. Trieselmann, Forestry Research Technician, Great Lakes Forest Research Centre, for taking many of the photomicrographs, for supervising the final preparation of the figures, and contributing in many other ways to the successful completion of this study. Messrs. D. C. Anderson and E. Raynor are also

[2] Rick's Herbarium, according to Dr. A. Sehnem (Personal communication), is now located at Universidade do Vale do Rio dos Sinos, Instituto Anchietano, Praca Tiradentes 35, Sao Leopoldo, RS, Brasil.

noted for their assistance in the preparation of the figures, and C. N. Davis for able technical assistance. I also gratefully acknowledge Dr. I. B. Sachs for taking the electron micrograph of *T. fuscoferruginosa* (frontispiece).

The author is at present Botanist (Mycology), Center for Forest Mycology Research, U.S. Department of Agriculture, Forest Service, Forest Products Laboratory, Madison, Wisconsin 53705.

General Considerations

In recent years the genus *Tomentella* Pat. (Patouillard, **1897**) (Basidiomycetes, Aphyllophorales, Thelephoraceae s.str.) has received considerable attention. Significant contributions have been made from Denmark (Skovsted, **1950**; Christiansen, **1960**), Czechoslovakia and central Europe (Svrček, **1958, 1960**), United Kingdom (Wakefield, **1969**), and the North American continent (Larsen, **1965, 1966, 1967a, b, c, 1968a, b, 1969, 1970**). The works of Burt (**1916, 1926**) and Bourdot and Galzin (**1924, 1928**) provided the basis for much of this later work. A variety of reports and descriptions of new species of tomentelloid fungi throughout the world have been made by numerous investigators, but emphasis has been placed on temperate regions, and primarily the Northern Hemisphere. Accounts of tropical, near-tropical, or equatorial tomentelloid fungi are fragmentary and to date remain incomplete, with only a few investigators having provided data from these areas: namely Patouillard (**1908**), Petch (**1924a, b**), Wakefield (**1966**), and Malençon (**1952, 1954**). Their accounts, however, represent reports of new species or records only. To date no investigator has attempted to present a generic treatment of *Tomentella* on a world basis.

This monograph on *Tomentella* was prepared in an attempt to present a contemporary interpretation of the various taxonomic interrelationships that appear to exist in the group, and also to show more clearly their position in classification of the Thelephoraceae s.str.

Seventy-two species are presented and distributed among 14 sections. Two species are described as new, *Tomentella brunneorufa* and *T. kentuckiensis,* and 16 new combinations are proposed. These are:

Oliveonia subviolacea
Tomentella bryophila
Tomentella duemmeri
Tomentella fungicola
Tomentella fragilis
Tomentella ochracea
Tomentella schmoranzeri
Tomentella terrestris
Tomentella violaceofusca
Tomentellastrum alutaceo-umbrinum
Tomentellastrum brunneofirmum
Tomentellastrum cinereo-umbrinum
Tomentellastrum floridanum
Tomentellastrum litschaueri
Tomentellastrum montanensis
Tomentellina fibrosa

During the eight years in which this study was conducted, approximately 12,000 specimens of *Tomentella* from various regions of the world were examined and nomenclatural types of pertinent names studied whenever possible.

Historically, *Tomentella* has been a genus of confusion both nomenclaturally and taxonomically. Tomentelloid fungi were reported under a variety of names, e.g., *Hypochnus, Zygodesmus, Grandinia, Thelephora,* and others. The name *Hypochnus* has been the primary source of confusion. Its status has been reviewed thoroughly by Rogers (**1939**) and Wakefield (**1939**). *Hypochnus* is considered to be a nomen ambiguum. The name *Tomentella* has been conserved against *Caldesiella* Sacc. (now a facultative synonym of the former). The generic type species of *Tomentella* is cited in the International Code of Botanical Nomenclature as "*'Tomentella ferruginea'* [*Corticium ferrugineum* Persoon sensu Patouillard]." What Patouillard had in 1887 when he listed *"T. ferruginea"* was the fungus more recently known as *T. pallidofulva* (Pk.) Litsch., a misidentification of *"T. ferruginea"* (Pers.). Weresub (**1964**) has eloquently argued against the typification of *Tomentella* as stated in the Code, and for "the return to the originally approved typification of . . . *Tomentella* Pat. . . . with type species *Thelephora ferruginea* Pers." A similar situation exists with the name *Kneiffiella* Karst. (**1889**). As Donk (**1957**) would apparently have it, the type species is *Knieffiella bombycina* Karst. (=*Hydnum barbajovis* Bull. per Fr. sensu Karst.). Weresub (**1967**) has pointed out that Karsten's *Kneiffiella* was published for one species, *Hydnum barbajovis* Bull. per Fr.; and this species is the generic type. Apparently, Karsten (**1895**) recognized that he had misidentified Bulliard's species, and renamed it *K. bombycina.* However, Karsten's action has no effect on the typification of *Kneiffiella. Kneiffiella,* therefore, must be replaced by *Tomentellina* Hoehn. & Litsch.

Several hundred names of tomentelloid fungi have appeared in the literature since 1821. For the purpose of establishing nomenclatural stability, all names that have been associated, in the past, with this group nomenclaturally or taxonomically have been reviewed by studying original literature descriptions and/or nomenclatural types. The extensive list of names presented in the Nomina Excludendae, appended to this work, is the result of this phase of the research.

Larsen (**1968a**) provided a brief account of the history of the genus and a cursory summary of the activities of North American mycologists relative to *Tomentella.* In the same work, serious consideration was given to various aspects of the taxonomy and phylogeny of the genus, some of which now appear to need revision in view of recently accumulated evidence. Bourdot and Galzin (**1924, 1928**) divided the genus into two major sections and subsequently into several subsections. In several papers by Litschauer (**1932, 1939a, b, 1941**) the subsectional

concepts of Bourdot and Galzin were used. Donk (**1933**) and Svrček (**1958, 1960**) used the subsections of the genus, following Bourdot and Galzin, except that they called them sections, and Svrček (ibid.) proposed several new ones. Larsen (**1968a**) indicated that these subdivisions of the genus were without proper foundation and omitted them from his North American treatment. Donk's (**1970**) objection to this was that the lack of subdivisions gave the impression that the genus was homogeneous, a concept that is rectified in this study. Fourteen sections are recognized, nine of which are proposed as new.

The relationships of the sections to each other within *Tomentella* and those of the genus with other genera of the Thelephoraceae s. str., are by no means clear or firmly established. Those expressed in FIG. 1 are apparent only in the traditional comparative morphological sense. Sectional delimitation in several instances was most difficult because of the marginal nature of several species in the sections for which they were intended. Therefore, it must be kept in mind that some of the sections proposed here are provisional only, and that there are species in many of them that appear not to belong in the sense of the section's type species. As the number of recognized species increases, the make-up of many of the sections will change, and undoubtedly additional sections within *Tomentella* will be recognized in the future.

Larsen (**1968a**) attempted to construct a phylogenetic scheme that derived *Tomentella* from a *Ceratobasidium*-like ancestor and involved intermediate forms near *Pellicularia chordulata, P. asperula,* and *Botryohypochnus.* This position does not now appear to be tenable. A primitive ancestral kind of *Tomentella* is difficult to postulate in form, but it now appears that it may approach primitive tomentelloid fungi that today exist in the tropical, near-tropical, or equatorial regions. It may be exemplified by a *Pseudotomentella*-like organism as detailed in FIGS. 2–3, depicting napiform basidia and bifurcately warted subhyaline basidiospores. The genus *Pseudotomentella,* recently monographed by Larsen (**1973**), has been described as being more primitive because it is a genus whose members occur primarily on the historically more primitive gymnosperms as opposed to *Tomentella,* which apparently has no preference for gymnospermous or angiospermous wood. Also, the *Pseudotomentella* basidium is of a more primitive form. In its immature form it appears to be analogous to the undivided immature probasidium that exists in a number of the Heterobasidiomycetes. A similar analogous relationship may be seen with certain members of the Corticiaceae. Along with these so-called "primitive characters," the structure of the basidiocarp appears to be of some importance. Members of *Pseudotomentella,* the *Pseudotomentella*-like fungus from Florida, *Tomentella atrocyanea,* and possibly the species called *"Hypochnus cyaneus"* by Wakefield (**1917**) are all arachnoid to byssoid and possess a pellicular hymenial structure, which is considered here to be

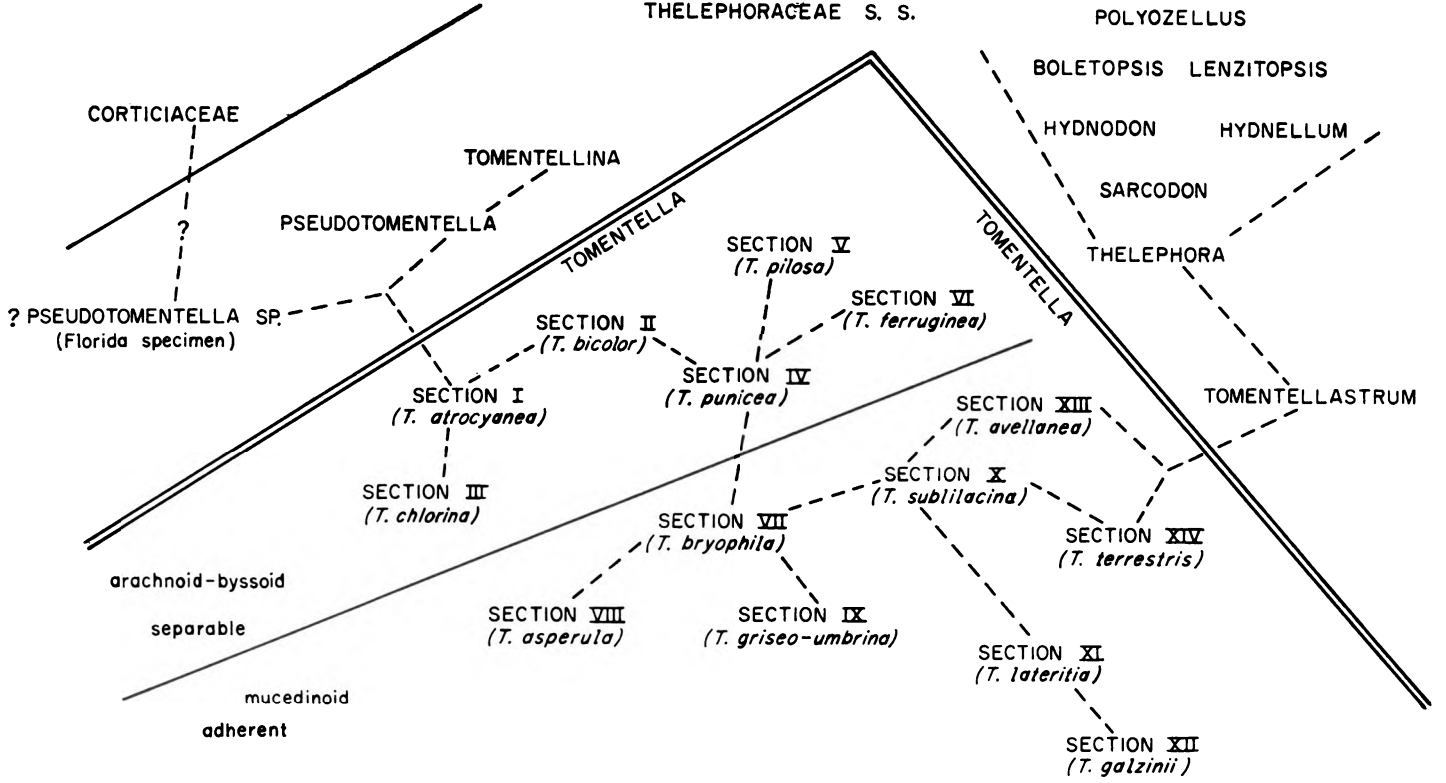
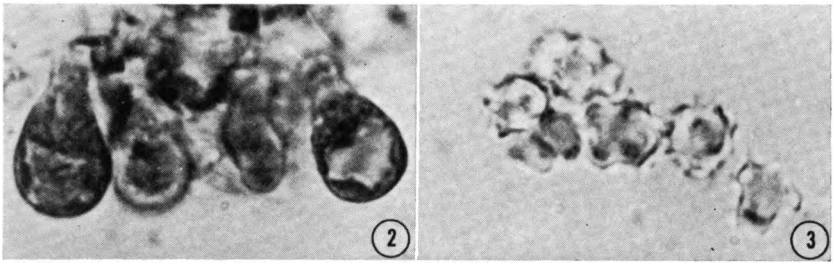
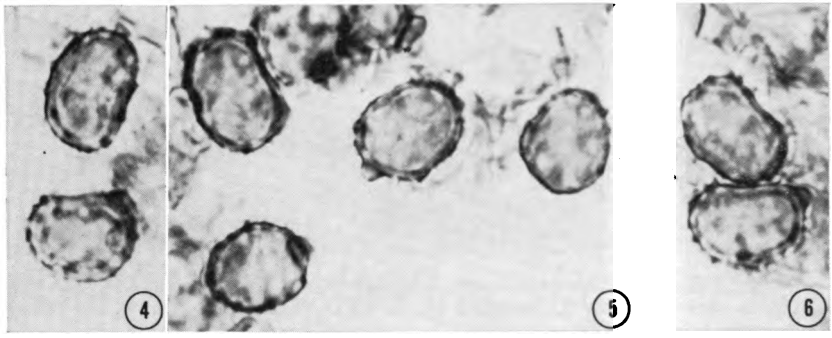


FIG. 1. Apparent relationships among the sections of *Tomentella* and other genera of the Thelephoraceae s.str.



FIGS. 2–3. *Pseudotomentella*-like fungus from Florida. 2. basidia. 3. basidiospores (both from D. R. Sumstine 121 in BPI: CFMR negative no. M139963).

more primitive than those basidiocarps defined as being mucedinoid. The hypothesis is an interesting one and needs further intensive study. Figure 1, from left to right, proceeds from arachnoid to byssoid separable basidiocarps of fungi with pale colored warted basidiospores (more primitive), to those that are adherent with pigmented basidiospores, to those that are adherent and encrusting, and finally to those that are encrusting, pileate, and/or stipitate (less primitive). Larsen (**1968a**) included in *Tomentella,* species that may be grouped into the now distinct and recognizable segregate of *Tomentellastrum,* as typified by the species *Thelephora fuscocinerea. Tomentellastrum* may be defined as a genus whose members possess large globose to subglobose basidiospores, fruiting bodies that may encrust organic debris, plant parts and soil, a fruiting surface that may become negatively geotropic, and having subicular hyphae that are primarily septate without clamps and dark colored. Upon examination of Corner's (**1968**) work on *Thelephora,* one finds a number of resupinate or so-called resupinate species that possess, for purposes of definition, the "*Tomentellastrum* spore" (as exemplified by *Thelephora fuscocinerea,* FIGS. 4–6). These are *Thelephora atra, T. crustacea, T. phylacteris, T. spiculosa,* and *T. dentosa.* When one places these species with *Tomentellastrum alutaceo-umbrinum, T. cinereo-umbrinum, T. litschaueri, T. brunneofirmum, T. montanensis,* and *T. floridanum,* there emerges what appears to be a rather natural and homogeneous group of fungi that would ideally constitute an intermediate between the resupinate tomentellae and stipitate-pileate thelephoroid, hydnoid, poroid, and lenzitoid forms of the Thelephoraceae s. str. The relationships, depicted in Fig. 1, among the sections of *Tomentella,* are based on the macromorphology and micromorphology of basidiocarps. A primary, but not wholly discernible, division occurs between those forms that are separable, arachnoid-byssoid and those that are adherent and mucedinoid. Other divisions



FIGS. 4–6. Basidiospores of *Thelephora fuscocinerea* (from lectotype in L: SSMF negative no. 5100).

are made on the absence or presence of cystidia, size and shape of spores, hyphal system, size of basidia, and color of fertile areas.

The species concept in the genus is considered unstable, as yet. The extreme variation of the primary taxonomic characters makes it difficult or impossible to define a majority of the species with any great degree of precision. Because the conditions necessary for the germination of basidiospores in the laboratory on artificial media are unknown, data on sexuality, genetic isolation, and physiological properties are not available, which might otherwise provide solutions to many of the speciation problems that exist.

Generalizations concerning the distribution of tomentellas can be made, but only to a limited extent. Many of the species appear to have a world-wide distribution, but others are apparently indigenous to certain ecological areas or zones on the various continents. Larsen (1973) indicated that specimens of *Pseudotomentella* occurred mainly on gymnospermous substrata. There appears to be no substratum preference for *Tomentella*. The latter is found predominantly on decorticated and well-decayed wood, but collections have been made from a variety of other substrata including magazines, leather, creosoted wood, soil, and rocky material of various kinds.

The methodology involved in examining fruiting bodies of *Tomentella* and their morphology has been adequately detailed and documented by Larsen (**1965, 1968a**). The terms used for shape and ornamentation of the basidiospore (FIG. 7) and hyphal types follows that of Larsen, **1965, 1967b**, respectively. Illustrative clarification is provided here for the terms colliculose and granulose (FIGS. 8–9) and should be interpreted rigidly in relation to their application in keys and descriptions. *Portions of the descriptive text are italicized to emphasize particular characters that are normally useful for identifying a species.* Whenever possible common color names are accompanied by an approximate or

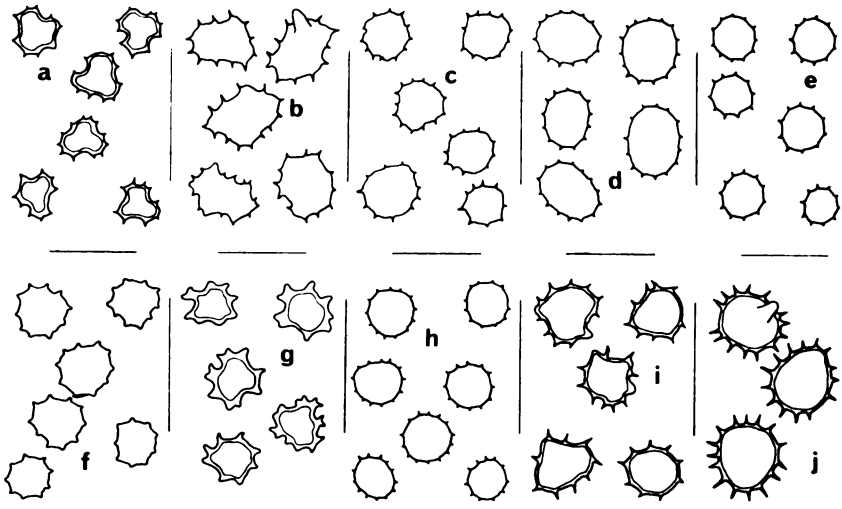
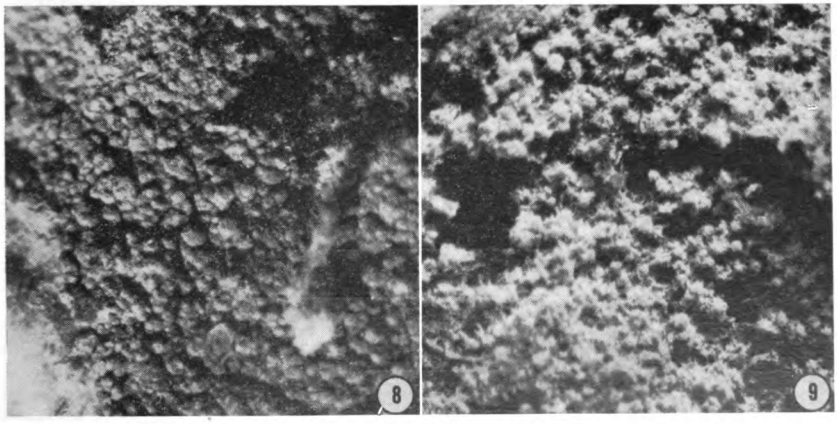


FIG. 7. Basidiospore shape: a, lobed; b, irregular; c, irregularly globose; d, subglobose; e, globose. Basidiospore ornamentation: f, verrucose; g, warted; h, aculeolate; i, echinulate; j, aculeate.

parallel color designation from the Munsell (**1929–1942**) color system. To indicate that a nomenclatural type specimen has been examined, the appropriate herbarium abbreviation (Lanjouw & Stafleu, **1964**) is placed after the basionym in question. The recommended author abbreviations after fungus names are, with rare exception, in accordance with those



FIGS. 8–9. Photomacrograph of colliculose and granulose hymenial surfaces of *Tomentella subcinerascens* (Fig. 8, H. Burdsall 2864 in CFMR: CFMR negative no. M139888) and *T. subvinosa* (Fig. 9, from holotype: CFMR negative no. M139888) (×10).

listed in the USDA Handbook No. 165 (1960). Adequate collections for the study of *Tomentella* species are housed at ARIZ, BPI, CFMR, DAOM, FH, GB, L, NY, SSMF, SYRF, and TRTC. Photomicrographs were taken with a Zeiss Photomicroscope and are scaled 2 mm = 1.25 μm, except Figs. 40, 151, and 155, that are scaled 1 mm = 2.0 μm.

THE GENUS TOMENTELLA

Tomentella Pat. nom. cons., Hym. Europ., p. 154. 1887.

=*Caldesiella* Sacc., Michelia **1**: 6. 1877.
=*Tomentella* Pat. sect. *Eutomentella* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 143. 1924.
(*Hypochnus* Fr. per Fr., Syst. Mycol. **3**: 289. 1832, nom. ambig.).

Basidiocarps annual, resupinate, effused, byssoid, arachnoid, mucedinoid or pelliculose, adherent to separable, sometimes encrusting; fertile areas continuous or discontinuous, red, ferruginous, yellow, tan, brown, green, olive, gray, or black; margin arachnoid, byssoid, villose, fibrillose, or fimbriate, normally paler than the fertile area; hymenial surface smooth, granulose, colliculose, or toothed; basidiocarps often darkening or changing color in KOH.

Hyphal system monomitic or dimitic; generative subicular hyphae often of more than one kind, thin- or thick-walled, septate, clamp connections abundant, normally pigmented; cordons present or absent; basidia clavate, often with transverse septa, 4-sterigmate; cystidia absent or present, acuminate, clavate, obclavate or capitulate; basidiospores normally pigmented some shade of brown, green or red (in H_2O) and usually appearing some shade of brown in KOH, ornamentation and shape variable.

TYPE SPECIES: *Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat.[3]

KEY TO THE SECTIONS OF TOMENTELLA

1. Hyphal system dimitic ..... Sect. VI (p. 37)
1. Hyphal system monomitic 2
2. Cystidia present 3
2. Cystidia absent 4
3. Basidiocarps normally adherent, mucedinoid; cordons absent to rare ..... Sect. XII (p. 91)
3. Basidiocarps normally separable, arachnoid to byssoid; cordons conspicuous ..... Sect. V (p. 31)
4. Basidiospores 4–6 μm across, globose, aculeolate 5
4. Basidiospores normally larger than 4–6 μm, normally echinulate or aculeate (but see *T. lilacinogrisea*) 6

[3] See Donk (1961) on the citation of authors of revalidated names.

5. Basidiospores yellowish green in H_2O, often becoming some shade of purple or blue in KOH ..... Sect. III (p. 16)
5. Basidiospores normally brown to yellowish brown in H_2O, rarely becoming purple or blue in KOH ..... Sect. IX (p. 66)
6. Basidiospore ornamentation warted, frequently bifurcate .... Sect. I (p. 12)
6. Basidiospore ornamentation not warted, rarely bifurcate 7
7. Basidia distended up to 20 μm diam, 10–20 μm above and narrowing sharply towards the basal septa ..... Sect. XIV (p. 104)
7. Basidia not with the above characters 8
8. Subiculum pale colored, almost white; basidiospores brown, globose, 7–9(–10.5) μm across ..... Sect. VIII (p. 65)
8. Subiculum not with the above characters 9
9. Fertile areas yellow, often with tints of bluish green ..... Sect. II (p. 14)
9. Fertile areas some shade of blue, brown, red, gray, or green 10
10. Basidiocarps adherent (but see *T. scobinella*); hymenial surface granulose to colliculose; cordons absent to infrequent; subicular hyphae normally less than 5 μm diam, wall thickening slight, not usually heavily pigmented ..... Sect. XI (p. 83)
10. Basidiocarps not with combination of the above characters 11
11. Basidiocarps arachnoid to byssoid, normally separable; cordons forming a conspicuous part of the soma ..... Sect. IV (p. 17)
11. Basidiocarps not with the above combination of characters 12
12. Basidiospores frequently elongated along one axis, irregular, irregularly globose, sometimes subglobose, but not normally globose (but see *T. pellicularioides*); subicular hyphae normally pale to medium brown (but see *T. ochracea*); fertile areas some shade of gray, brown, or green 13
12. Basidiospores normally globose, subglobose, or irregularly globose, sometimes irregular, or lobed; subicular hyphae medium to dark brown to olive brown, sometimes encrusted; fertile areas some shade of brown or red ..... Sect. VII (p. 46)
13. Fertile areas pale colored (avellaneous, pale tan, or pale buff) Sect. XIII (p. 98)
13. Fertile areas darker colored (medium to dark brown, gray, or green) Sect. X (p. 69)

LIST OF SPECIES BY SECTIONS

SECTION I. *Atrocyaneae*
atrocyanea*
aurantiaca

SECTION II. *Membranaceae*
bicolor*

SECTION III. *Virides*
chlorina*

SECTION IV. *Chordulatae*
atrorubra
botryoides
cinerascens
griseoviolacea
italica
lilacinogrisea
punicea*
rubiginosa
subcinerascens
variecolor

SECTION V. *Pilosae*
atro-arenicolor
muricata
*pilosa**
pirolae

SECTION VI. *Tomentellae*
brunneorufa sp. nov.
calcicola
crinalis
duemmeri
*ferruginea** **
umbrinospora

* Type species of the section.
** Generic type.

LIST OF SPECIES BY SECTIONS (Cont.)

SECTION VII. *Dimorphae*
atramentaria
bresadolae
brevispina
*bryophila**
ferruginella
fungicola
fuscoferruginosa
neobourdotii
pilatii
ramosissima
ruttneri
violaceofusca
viridescens

SECTION VIII. *Albostratosae*
*asperula**

SECTION IX. *Microsporae*
*griseo-umbrina**
rufobrunnea
subalpina

SECTION X. *Brunneolae*
albomarginata
cladii
epigaea
ochracea
ochraceo-olivacea
olivascens
pellicularioides
purpurea
radiosa
schmoranzeri
*sublilacina**

SECTION XI. *Bolares*
coerulea
donkii
*lateritia**
molybdaea
puberula
scobinella
subvinosa

SECTION XII. *Cystidiolatae*
clavigera
*galzinii**
subclavigera
subtestacea
viridula

SECTION XIII. *Avellaneae*
*avellanea**
fragilis
kentuckiensis sp. nov.
mairei
rhodophaea
testaceogilva

SECTION XIV. *Macrobasidii*
nitellina
*terrestris**

SECTION I. **Atrocyaneae** M. J. Larsen, sect. nov.

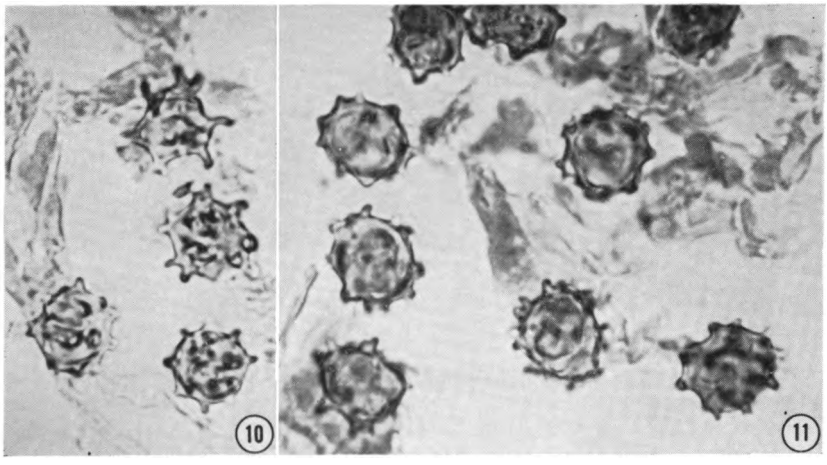
Basidiocarpis membranaceis, arachnoideis; hymenio superficie laevi; hyphis systematis monomitico; hyphis subiculo angusto, 2–3 μm diam, fibulatis; hyphis fasciculis adsunt; basidiis clavatis vel clavipedunculatis; basidiosporis tuberculatis, verrucis plerumque bifurcatis, hyalinis, pallidobrunneis vel cyaneis in KOH.

Basidiocarps membranous, arachnoid; hymenial surface smooth; hyphal system monomitic; subicular hyphae narrow, normally 2–3 μm diam, septate, with clamps normally present; cordons present; basidia clavate to clavipedunculate; basidiospores warted with the warts normally bifurcate, hyaline, pale tan, or blue in KOH.

TYPE SPECIES: *Tomentella atrocyanea* Wakef.

KEY TO THE SPECIES OF SECTION ATROCYANEAE

1. Basidiospores 5–6(–6.5) μm across, hyaline to pale tan in KOH; known from Guadeloupe ..... *T. aurantiaca*
1. Basidiospores 7–9(–10.5) μm across, frequently distinctly blue in KOH; known from Venezuela ..... *T. atrocyanea*



FIGS. 10–11. Basidiospores of *T. atrocyanea* (from holotype: SSMF negative no. 5203).

Tomentella atrocyanea Wakef., Trans. Brit. Mycol. Soc. **49**: 357. 1966. FIGS. 10–11

Holotype: Venezuela, Sierra de Ste. Domingo, on rotten wood, R. W. G. Dennis 1897, 27 VII 1958 (K).

Basidiocarp up to 0.3 mm thick, *byssoid to arachnoid or some parts pelliculose,* separable, membranous; fertile area discontinuous, *"deep blue when fresh"* (Wakefield, **1966**), *bluish with a yellow-green tint when dry (near 5.0 GY 4/4 or 5.0 GY 5/4);* hymenial surface smooth; subiculum byssoid, paler than the fertile area; sterile margin indeterminable, apparently paler than the fertile area and faintly yellow; cordons infrequent at 10×.

SUBICULAR HYPHAE 2.5–3(–4) μm diam, septate, frequently clamped, thin-walled, pale yellow to hyaline, contents sometimes ochre; CORDONS infrequent, up to 20 μm diam, pale brown, individual hyphae 2–3 μm diam, hyaline, septate, frequently clamped; SUBHYMENIAL HYPHAE 2-3.5 μm diam, clamped, hyaline, thin-walled, contents sometimes ochre; BASIDIA "35–40 × 8–10 μ" (Wakefield, **1966**), clamped (?) at the base, clavate (?), contents often becoming reddish ochre, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 10–11) 7–9(—10.5) μm across, irregular to lobed, wall thickening apparent or thick-walled, *warted with the warts frequently becoming bifurcate,* yellow in H_2O and distinctly *blue in KOH.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Venezuela, lignicolous.

Tomentella aurantiaca Pat., Bull. Soc. Mycol. France **24**: 3. 1908. FIGS. 12–14

FIGS. 12–14. Basidiospores of *T. aurantiaca* (from holotype: SSMF negative no. 5118).

≡*Hypochnus aurantiacus* (Pat.) Burt, Ann. Missouri Bot. Gard. **3**: 241. 1916.

Holotype: Guadeloupe, on bark, N. Patouillard, 764, V 1903 (Patouillard herb. in FH).

Basidiocarp up to 0.2 mm thick, *membranous, arachnoid,* separable; fertile area discontinuous, *ferruginous brown (near 5.0 YR 4/6);* hymenial surface smooth; subiculum arachnoid, concolorous with the fertile areas; sterile margin fimbriate to arachnoid, concolorous with the fertile areas; cordons evident at 10×.

SUBICULAR HYPHAE 2–3 μm diam, septate, frequently clamped, thin-walled, pale yellowish brown, with contents frequently pale ferruginous brown to ochre; CORDONS up to 20 μm diam, dull ferruginous brown, individual hyphae appearing agglutinated, 2–3 μm diam, thin-walled, septate, frequently clamped; SUBHYMENIAL HYPHAE 2–3 μm diam, clamped, thin-walled, hyaline; BASIDIA 25–35 × 5.5–6.5 μm, clamped at the base, some transverse septa present, *clavate to clavipedunculate when mature, clavate to napiform when immature,* 4-sterigmate, sterigmata up to 3 μm long, basidial contents often dull yellow brown; BASIDIOSPORES (Figs. 12–14) *5–6(–6.5) μm across, irregular to lobed, warted with the warts normally bifurcate,* hyaline to pale tan.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Guadeloupe, lignicolous.

SECTION II. **Membranaceae** M. J. Larsen, sect. nov.

Basidiocarpis separabilibus, arachnoideis, pelliculosis; hymenio superficie laevi, granulosa vel colliculosa; area fecunda luteola vel veneta; hyphis systematis monomitico; hyphis subiculis angusta, 3–4 μm diam, fibulatis; hyphis fasciculis adsunt; basidiis clavatis; basidiosporis echinulatis.

Basidiocarps separable, arachnoid, parchment-like to membranous; hymenial surface smooth, granulose, or colliculose; fertile area pale yellow to bluish green; hyphal system monomitic; subicular hyphae narrow,

3–4 μm diam, clamped; cordons present; basidia clavate; basidiospores echinulate.

TYPE SPECIES: *Tomentella bicolor* (Atk. & Burt) Bourd. & Galz.

Tomentella bicolor (Atk. & Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 132. 1924. FIGS. 15–17

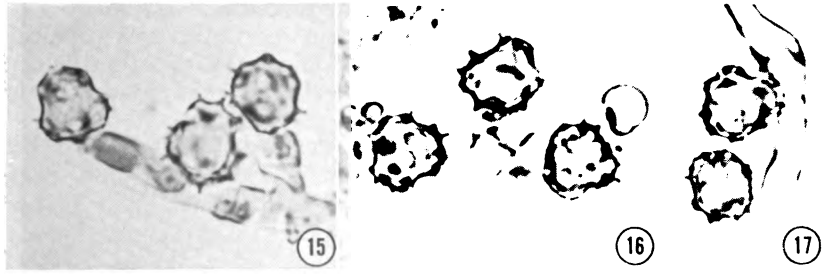
≡*Hypochnus bicolor* Atk. & Burt, Ann. Missouri Bot. Gard. **3**: 229. 1916.

Holotype: U.S.A., New York, Ithaca, Cascadilla Wood, on dead wood, C. J. Humphrey, Cornell herb. 22571, 25 VIII 1908 (FH sheet 742).

Basidiocarps up to 0.5 mm thick, separable, *parchment-like to membranous, cracking in spots* and exposing the subiculum; fertile area finally becoming continuous, *pale yellow (5.0 Y 7/10, 5.0 Y 6/8, 5.0 Y 5/6), some parts faintly bluish green;* subiculum loosely arranged, arachnoid, yellowish brown; *hymenial surface smooth, often granulose or colliculose;* margin fibrillose, darker than the fertile areas, pale yellowish brown to reddish brown.

SUBICULAR HYPHAE of two kinds, some 3–3.5 μm diam, septate, with clamps abundant, wall thickening apparent, pale olive-brown, with an agglutinating or encrusting material present which imparts a grayish green color to the hyphae; some 3–4 μm diam, septate, frequently with clamps, hyaline; CORDONS 15–25 μm diam, medium brown, individual hyphae 2.5–3.5 μm diam, septate, with clamps frequent, pale olive brown; SUBHYMENIAL HYPHAE 3–5 μm diam, septate, with clamps abundant, thin-walled, hyaline; BASIDIA *35–45 × 5–7 μm,* clamped at the base, clavate, *contents sometimes pale green* in KOH, 4-sterigmate, sterigmata up to 4 μm long; BASIDIOSPORES (Figs. 15–17) *6–7 μm across, irregular to lobed,* echinulate, walls pale yellowish brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: New York, on *Acer,* lignicolous; North Carolina, on angiospermous wood; Ontario, lignicolous; Ohio, lignicolous; Pennsylvania, on angiospermous wood.



FIGS. 15–17. Basidiospores of *T. bicolor* (from H. Burdsall 2184 in CFMR: SSMF negative no. 5202).

SECTION III. **Virides** M. J. Larsen, sect. nov.

Basidiocarpis separabilibus, arachnoideis vel byssoideis, area fecunda virella; hymenio superficie laevi vel odontoideo; hyphis systematis monomitico; hyphis fibulatis; hyphis fasciculis adsunt; basidiis clavatis, 5–7 μm diam; basidiosporis globosis vel subglobosis.

Basidiocarps separable, arachnoid to byssoid; fertile areas dull green to yellowish green; hymenial surface smooth to odontoid; hyphal system monomitic; hyphae clamped; cordons present; basidia clavate, 5–7 μm diam; basidiospores globose to subglobose, aculeolate.

TYPE SPECIES: *Tomentella chlorina* (Mass.) G. H. Cunn.

Tomentella chlorina (Mass.) G. H. Cunn., Proc. Linn. Soc. New South Wales **77**: 279. 1953. FIGS. 18–20

≡*Hypochnus chlorinus* Mass., Kew Bull. Misc. Inf., p. 158. 1901 (K).

=*Sistotrema viride* Alb. & Schw., Consp. Fung., p. 262. 1805 (FH).

≡*Hydnum viride* Alb. & Schw. per Fr., Syst. Mycol. **1**: 421. 1821.

≡*Odontia viridis* (Alb. & Schw. per Fr.) Quél., Fl. Mycol. France, p. 434. 1888.

≡*Caldesiella viridis* (Alb. & Schw. per Fr.) Pat., Ess. Taxon., p. 120. 1900.

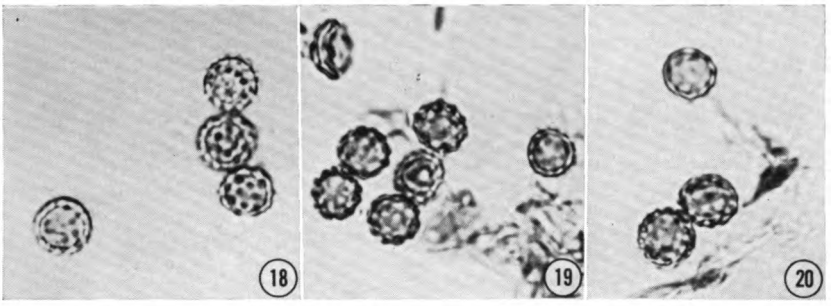
=*Thelephora viridis* Berk., in Hooker, Fl. Tasmania **2**: 258. 1860 (K) (not *Thelephora viridis* Preuss, Linnaea **24**: 152. 1851).

≡*Tomentella viridis* (Berk.) G. H. Cunn., New Zeal. Dept. Sci. Ind. Res. Bull. **145**: 239. 1963.

Holotype: Tasmania, on bark, Rodway, 266, "Type" (K).

Basidiocarps up to 0.3 mm thick, separable, arachnoid to byssoid, somewhat pelliculose in mature portions; fertile areas mostly continuous, *dull green to yellowish green (near 7.5 Y 6/4, 5.0 GY 6/4, and 7.5 GY 5/2);* subiculum thin, arachnoid, paler than the fertile area; hymenial surface smooth to warted or toothed, often faintly punctate; sterile margin irregular, paler than the fertile area, almost white, arachnoid, becoming fibrillose.

SUBICULAR HYPHAE 2.5–4 μm diam, clamped, thin-walled, or with some wall thickening apparent, hyaline to slightly citrine, *often purple in KOH;* CORDONS 5–30 μm diam, citrine to pale brown, individual hyphae 2–3 μm diam, clamped, thin-walled; SUBHYMENIAL HYPHAE 2.5–3.5 μm diam, clamped, thin-walled, hyaline, *parts faintly purple in KOH;* BASIDIA 20–35 × 5–7 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 18–20) *5–6*



FIGS. 18–20. Basidiospores of *T. chlorina* (from SSMF 695–4397: SSMF negative no. 5051).

µm diam, globose to subglobose, verrucose to aculeolate, pale citrine to yellow in water, usually purple in KOH.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Juglans, Picea, Pinus, Platanus, Populus, Quercus;* British Columbia, lignicolous; Idaho, on *Larix;* New Mexico, on *Abies, Pinus, Populus;* New York, on *Acer,* lignicolous; Pennsylvania, lignicolous; Netherlands, on angiospermous wood; New Zealand, lignicolous; Tasmania, lignicolous; United Kingdom, lignicolous.

Also noted from Czechoslovakia (*Quercus;* Svrček, **1960**), France (lignicolous; Bourdot & Galzin, **1924, 1928**), Russia (lignicolous; Nikolejeva, **1968**), and Tunisia (*Quercus;* Malençon, **1952**).

SECTION IV. **Chordulatae** (Bourd. & Galz.) Donk

Basidiocarps separable, arachnoid to byssoid, more rarely mucedinoid; hymenial surface granulose, papillose, or colliculose, sometimes smooth; hyphal system monomitic; subicular hyphae up to 7 µm diam; septate, frequently clamped; cordons abundant and forming a conspicuous part of the soma; basidia clavate; basidiospores aculeolate, echinulate, aculeate.

TYPE SPECIES: *Tomentella punicea* (Alb. & Schw. per. Pers.: Fr.) Schroet.

KEY TO THE SPECIES OF SECTION CHORDULATAE

1. Fertile areas reddish purple, red, or ferruginous brown when mature, rarely olivaceous; basidiospores normally irregular to lobed 2
1. Fertile areas not red or ferruginous brown 3
   2. Fertile areas normally reddish purple, margin honey colored; basidiospores pale tan to subhyaline in KOH (appearing some shade of red when mounted in water) ..... *T. atrorubra*
   2. Fertile areas red to ferruginous brown, rarely olivaceous; basidiospores yellow, citrine, or pale brown in KOH ..... *T. rubiginosa*

3. Basidiospores 5–6.5 μm across 4
3. Basidiospores larger, up to 9 μm across 5
4. Subiculum concolorous with the fertile area; hymenial surface granulose ..... *T. lilacinogrisea*
4. Subiculum normally much paler than the fertile area; hymenial surface distinctly papillose to colliculose 6
5. Hymenial surface finally becoming warted to toothed; subicular hyphae 4–7 μm diam; basidiospores 7–8(–10) μm across ..... *T. italica*
5. Not with a combination of the above characters 7
6. Subhymenial hyphae of two kinds, some becoming intricately branched due to intrusive growth, aseptate ..... *T. subcinerascens*
6. Subhymenial hyphae of one kind ..... *T. cinerascens*
7. Fungal tissues assuming a blue or bluish green color in KOH, and producing similarly colored diffusates 8
7. Fungal tissues not assuming a blue or bluish green color in KOH 9
8. Hymenial surface normally granulose; subicular hyphae sometimes appearing spinulose; subiculum much paler than the fertile areas ..... *T. botryoides*
8. Hymenial surface normally smooth; subicular hyphae frequently encrusted and appearing spinulose; subiculum concolorous with to darker than the fertile area ..... *T. griseoviolacea*
9. Subicular hyphae 2.5–6 μm diam, frequently encrusted ..... *T. griseoviolacea*
9. Subicular hyphae 2–4 μm diam, rarely encrusted 10
10. Hymenial surface smooth ..... *T. varicolor*
10. Hymenial surface colliculose to granulose ..... *T. punicea*

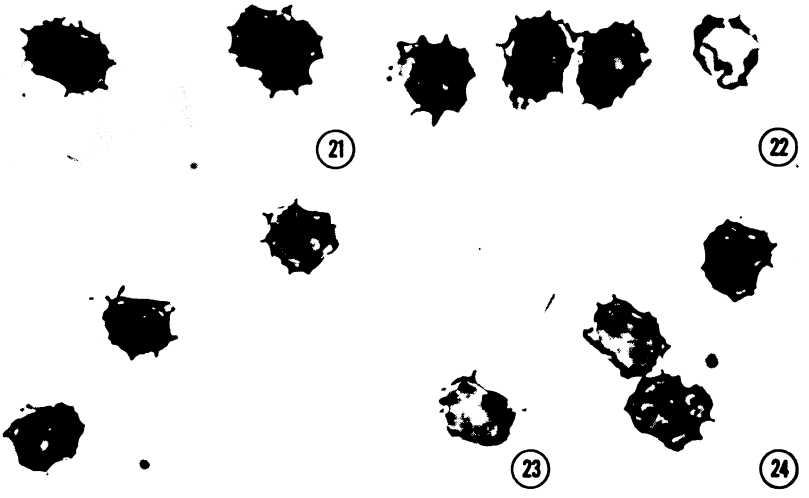
Tomentella atrorubra (Pk.) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 134. 1924. FIGS. 21–24

≡*Zygodesmus atroruber* Pk., Bot. Gaz. **6**: 277. 1881.
≡*Hypochnus atroruber* (Pk.) Burt, Ann. Missouri Bot. Gard. **3**: 230. 116.

Holotype: U.S.A., Massachusetts, Mt. Tom, on *Populus,* H. W. Harkness (NYS).

Basidiocarps up to 0.5 mm thick, normally arachnoid, sometimes mucedinoid, separable; fertile areas discontinuous, *dull reddish purple (10.0 R 4/6 to 10.0 R 3/6);* subiculum arachnoid, *dull honey yellow;* hymenial surface granulose to somewhat colliculose; sterile margin fibrillose, *concolorous with the subiculum;* cordons frequently evident at 10×.

SUBICULAR HYPHAE of two kinds, some 4–6.5(–7.5) μm diam, septate, with abundant clamps, with wall thickening apparent, hyphae uniform and straight, dull brown, *occasionally with parts pale grayish green in KOH (this color fading rapidly);* some 3.5–5 μm diam, septate, with clamps frequent, thin-walled, hyphae becoming irregular in form, hyaline, KOH reaction as above; CORDONS up to 50 μm diam, brown, individual hyphae 3–6 μm diam, septate, with clamps frequent; SUBHYMENIAL HYPHAE 3.5–5 μm diam, septate, with clamps frequent, thin-walled, hyaline; BASIDIA 35–40(–70) × 6–8 μm, clamped at the base, often with transverse septa, clavate, contents often composed of pale red granular material visible in water mounts but becoming brown



FIGS. 21–24. Basidiospores of *T. atrorubra* (from M. J. Larsen 612 in SYRF: SSMF negative no. 4945).

to ochre in KOH, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 21–24) 6–8(–9) μm across, *4-lobed to irregular or becoming subglobose, echinulate,* appearing some shade of red when mounted in water, becoming pale tan to subhyaline in KOH.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Kentucky, on angiospermous wood, humicolous; Maryland, on *Pinus, Quercus,* angiospermous wood; Massachusetts, on *Pinus, Populus, Tsuga,* lignicolous; Michigan, on *Acer;* New Hampshire, on angiospermous wood; New Jersey, on *Cedrus;* New York, on *Acer, Castanea, Picea, Pinus, Quercus, Tsuga,* lignicolous; North Carolina, on *Pinus;* Ontario, on *Pinus, Populus,* lignicolous.

Tomentella botryoides (Schw.) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 159. 1924. FIGS. 25–27

≡*Thelephora botryoides* Schw., Naturfoersch. Ges. Leipzig Schrift. **1**: 109. 1822.

≡*Thelephora olivacea* Fr. β *botryoides* Schw., Amer. Phil. Soc. Trans. (new ser.) **4**: 168. 1832.

≡*Hypochnus botryoides* (Schw.) Burt, Ann. Missouri Bot. Gard. **3**: 226. 1916.

=*Zygodesmus bicolor* Cke. & Ell., Grevillea **7**: 6. 1878 (K).

=*Thelephora granosa* Berk. & Curt., Grevillea **1**: 149. 1873 (K, FH).

≡*Hypochnus granosus* (Berk. & Curt.) Bres., Ann. Mycol. 1: 108. 1903.

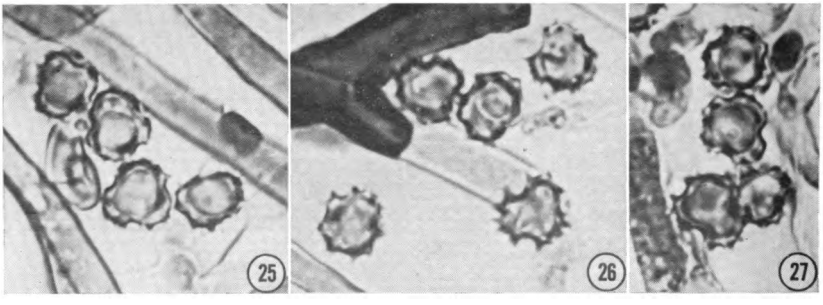
=*Tomentella glandulifera* Hoehn. & Litsch., Ann. Mycol. **4**: 290. 1906 (FH).

Lectotype: U.S.A., Pennsylvania, Bethlehem, on angiospermous wood, L. D. Schweinitz (PH), and isolectotype in Michener herb. (BPI).

Basidiocarps up to 0.4 mm thick, *separable, arachnoid to byssoid or slightly pelliculose;* fertile areas discontinuous when young, continuous in patches when mature, *bluish black to brownish black (7.5 YR 4/2, 10.0 YR 3/2, 10.0 YR 4/2, 2.5 Y 4/2, 2.5 Y 3/2); hymenial surface normally granulose,* sometimes smooth to more rarely colliculose; *subiculum arachnoid, pale to dull rusty brown;* sterile margin arachnoid to fibrillose, paler than the fertile areas, usually concolorous with the subiculum; cordons present at 10×.

SUBICULAR HYPHAE 3–5(–7) μm diam, septate, with clamps frequent, wall thickening apparent, often minutely spinulose or encrusted, pale to dark golden-brown; CORDONS up to 40 μm diam, golden brown, branched, individual hyphae 2–4 μm diam, septate, with clamps frequent; SUBHYMENIAL HYPHAE 3–4.5 μm diam, clamped, some wall thickening apparent, pale yellowish brown to hyaline, *associated with a blue or bluish green diffusate;* BASIDIA 35–40 × 7–8 μm, clamped at the base, often with transverse septa, clavate, 4-sterigmate, sterigmata up to 5 μm long, *associated with a blue or bluish green diffusate;* BASIDIOSPORES (Figs. 24–27) (5–)6–7(–8.5) μm across, *normally appearing 3- or 4-lobed, irregular, or sometimes irregularly globose, aculeate to mostly echinulate,* brown to pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Pinus;* Florida, on *Sabal,* lignicolous; Indiana, lignicolous; Maryland, on *Pinus, Quercus,* lignicolous; Massachusetts, lignicolous; Mississippi, lignicolous; Michigan, on *Betula, Fagus,* lignicolous; New Hampshire, lignicolous; New Jersey, on *Liquidambar, Thuja;* New York, on *Acer, Betula,*



FIGS. 25–27. Basidiospores of *T. botryoides* (from SSMF 695–4000: SSMF negative no. 5206).

Castanea, Fagus, Pinus, Populus, Quercus, Ulmus, lignicolous; North Carolina, on *Populus, Quercus, Tsuga,* angiospermous wood; Ohio, on *Polyporus, Quercus,* lignicolous; Ontario, on *Acer, Pinus, Populus, Quercus,* lignicolous; Pennsylvania, lignicolous; Tennessee, on *Quercus;* Germany, lignicolous; India, on *Abies.*

Also noted from Czechoslovakia (*Abies, Carpinus, Fagus, Quercus, Salix, Tilia;* Svrček, **1960**), Denmark (lignicolous; Christiansen, **1960**), France (lignicolous; Bourdot & Galzin, **1924, 1928**), and United Kingdom (lignicolous; Wakefield, **1917, 1969**).

Tomentella cinerascens (Karst.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1570. 1906. FIG. 28

≡*Hypochnus cinerascens* Karst., Med. Soc. Fauna Fl. Fenn. **16**: 2. 1888 (also as "n. sp." in Bidrag Kaenn. Finl. Nat. Folk **48**: 441. 1889).

=*Hypochnus capnoides* Bres., Hedwigia **35**: 62. 1896 (S).

≡*Tomentella cinerascens* (Karst.) Hoehn. & Litsch. var. *capnoides* (Bres.) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 161. 1924.

=*Tomentella asterigma* R. Maire, Ann. Mycol. **4**: 335. 1906 (FH).

=*Tomentella cinerascens* (Karst.) Hoehn. & Litsch. var. *calcarea* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 161. 1924 (PC).

=*Tomentella subcervina* Litsch., Bull. Soc. Mycol. France **49**: 60. 1933 (PR).

Lectotype: Finland, Mustiala, on wood, 28 VII 1887 (H).

Basidiocarps up to 0.3 mm thick, separable, tomentose, somewhat arachnoid when young; fertile areas at first discontinuous, becoming continuous in older specimens, *gray to dull buff (10.0 YR 7/4 to 10.0 YR 6/4); hymenial surface sometimes smooth, mostly papillose or colliculose, rarely granulose; subiculum loose-fibrous, almost white;* sterile margin fibrillose to mostly byssoid, much paler than the fertile areas, *almost white;* cordons present but obscure, white.

SUBICULAR HYPHAE 2.5–4(–5) μm diam, septate, with clamps frequent, thin-walled or with wall thickening slight, walls *hyaline or light tan to pale brown;* some with contents dull yellowish brown; CORDONS *up to 90 μm diam, pale brown to almost hyaline,* individual hyphae 1.5–3 μm diam, clamped, thin-walled; SUBHYMENIAL HYPHAE 2.5–4 μm diam, clamped, thin-walled, hyaline, parts sometimes green in KOH; BASIDIA 30–45 × 6.5–8 μm, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Fig. 28) *5–6 μm across, or 5–6 × 5 μm, mostly globose to subglobose,* sometimes irregular to irregularly globose, aculeolate to echinulate, walls hazel to dull brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: British Columbia, lignicolous; Michigan, on *Populus;* Montana, on *Alnus, Betula, Picea, Populus;* New York, on *Betula, Populus,* lignicolous; Ontario, on *Acer, Fagus, Populus, Tilia, Tsuga,* lignicolous; South Dakota, on *Populus;* Washington, lignicolous; Finland, on *Populus;* France, lapidicolous; Germany, on *Alnus, Phragmites;* Sweden, on *Betula, Salix.*

Also noted from Algeria (lignicolous; Maire, **1906**), Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Czechoslovakia (*Fagus, Quercus;* Svrček, **1960**), Denmark (*Aesculus, Betula, Fagus;* Christiansen, **1960**: moss; Skovsted, **1950**), Finland (lignicolous; Karsten, **1889, 1896**), France (lignicolous; Bourdot & Galzin, **1924, 1928**), Germany (lignicolous; Hoehnel & Litschauer, **1906, 1907, 1908c**), Poland (lignicolous; Bresadola, **1903**), and Turkey (*Abies;* Litschauer, **1933**).

REMARKS: *Tomentella cinerascens* should be closely compared to *T. subcinerascens,* to which it is very similar. The intricately branched aseptate subhymenial hyphae (Fig. 40), more darkly colored fertile area, and densely granulose hymenial surface of the latter, serve to distinguish that species from *T. cinerascens.* Some caution should be exercised, however, since the intricately branched hyphae are difficult to demonstrate, and the other two characters mentioned grade into those of *T. cinerascens.*

Though not readily apparent, *T. asperula* is in some ways similar to

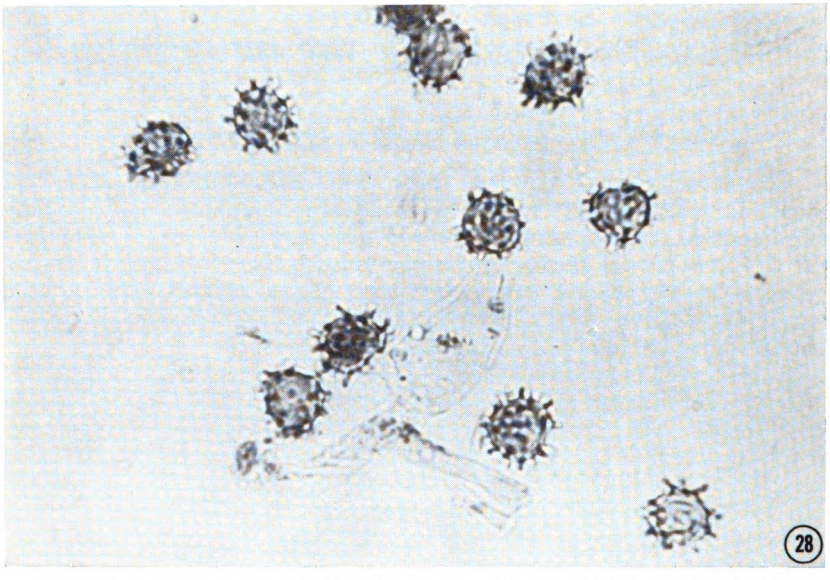


FIG. 28. Basidiospores of *T. cinerascens* (from SSMF 695–5052: SSMF negative no. 4966).

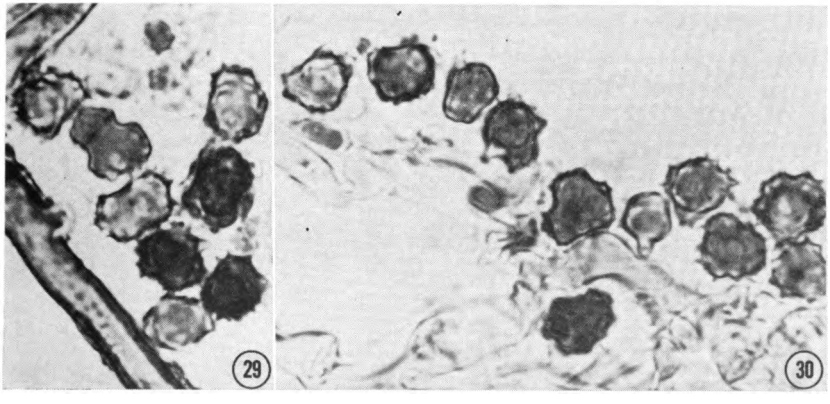
the above two species. All three have a pale colored subiculum, granulose to colliculose hymenial surface, globose spores (but much larger in *T. asperula*), and cordons. Conceivably, they could represent a separate section, but available evidence does not fully support this interpretation at present.

Tomentella griseoviolacea Litsch., Bull. Soc. Sci. Scoplje **20**: 20. 1939 (also, "nov. spec." in Ann. Mycol. **39**: 375. 1941).
FIGS. 29, 30

Holotype: Macedonia, in *Fagetis* ad silvae limitem montis Luboten (Šar Planina), on *Fagus,* A. Pilát et V. Lindtner, VII 1937 (PR 490662).

Basidiocarps up to 0.75 mm thick, separable, arachnoid to byssoid; fertile area continuous, *grayish brown to blackish brown, with some parts appearing dull grayish blue (2.5 Y 3/2, or 10.0 YR 3/2 to 10.0 YR 2/2; hymenial surface smooth to minutely granulose);* subiculum fibrous, concolorous with, to darker than, the fertile area; sterile margin arachnoid to byssoid, usually paler than the fertile area.

SUBICULAR HYPHAE 2.5–4.5(–6) μm diam, septate, with clamps frequent, wall thickening apparent, *often with encrusting material which gives the hyphae a spinulose appearance,* yellowish brown to dull brown, some parts dull purple due to the effect of KOH; CORDONS up to 80 μm diam, branched, dark brown, individual hyphae 2.5–4.5 μm diam, septate, with clamps frequent, wall thickening apparent; SUBHYMENIAL HYPHAE 2.5–4 μm diam, clamped, thin-walled, hyaline, *often minutely spinulose due to the presence of encrusting material;* BASIDIA 35–45 (–50) × 7.5–9.5 μm, clamped at the base, frequently with transverse septa, clavate, adhering crystalline material becoming green to bluish green in KOH, 4-sterigmate, sterigmata up to 8 μm long; BASIDIO-



FIGS. 29–30. Basidiospores of *T. griseoviolacea* (from SSMF 685–4571: SSMF negative no. 4973).

SPORES (Figs. 29–30) *5.5–7.5(–8) µm across, mostly lobed to irregularly globose,* some subglobose or more rarely globose, echinulate, pale brown to bister.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies;* Florida, lignicolous; Maryland, on *Liriodendron;* New York, on *Abies, Populus;* Ontario, on *Abies, Tilia, Tsuga,* lignicolous; Tennessee, on *Quercus;* Denmark, on *Fagus,* coniferous wood, lignicolous; Macedonian Region, on *Fagus.*

Tomentella italica (Sacc.) M. J. Larsen, Taxon **16**: 511. 1967. FIGS. 31, 32

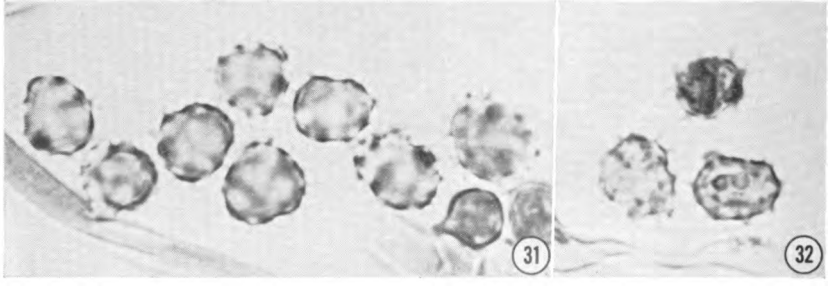
≡*Caldesiella italica* Sacc., Michelia 1: 7. 1877.

Holotype: Italy, "ad terram umbrosum, in Hort. Botanic. Pat., 1873 aut. B13303." (PAD).

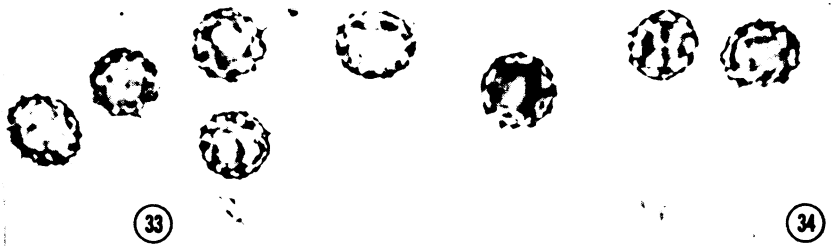
Basidiocarps up to 0.3 mm thick, loosely constructed, hypochnoid, separable; fertile areas finally becoming continuous, *medium to dark brown (near 5.0 YR 3/4 or 7.5 YR 4/4); hymenial surface smooth to rarely warted;* subiculum fibrous, slightly darker than the fertile area; sterile margin radiate-fibrillose, irregular, concolorous with the subiculum; cordons abundant and visible at 10×.

SUBICULAR HYPHAE 4–7 µm diam, septate, with clamps frequent, pale to dark brown, *often lightly encrusted with granular material,* hyphal contents frequently dull yellowish brown; CORDONS up to 80 µm diam, yellowish brown, individual hyphae thin-walled, 2.5–4.5 µm diam, clamped; SUBHYMENIAL HYPHAE 3–4(–6) µm diam, clamped, thin-walled, hyaline; BASIDIA 40–55 × 6.5–8 µm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 7 µm long and rarely with transverse septa; BASIDIOSPORES (Figs. 31–32) *7–8(–10) µm across, irregular, subglobose, mostly irregularly globose, aculeolate to echinulate, with the ornamentation often minutely bifurcate,* walls pale brown or pale tan.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: France, on *Ulmus;* Italy, lignicolous, humicolous.



FIGS. 31–32. Basidiospores of *T. italica* (from H. Bourdot 7446 in PC, S: SSMF negative nos. 5201, 5202).



FIGS. 33–34. Basidiospores of *T. lilacinogrisea* (from holotype: SSMF negative no. 4789).

Tomentella lilacinogrisea Wakef., Trans. Brit. Mycol. Soc. **49**: 360. 1966. FIGS. 33, 34

Holotype: Venezuela, Caracas, Botanical Garden, on rotten log, R. W. G. Dennis 1355, 3 VII 1958 (K).

Basidiocarp up to 0.5 mm thick, byssoid to arachnoid, separable in small pieces; fertile areas discontinuous when immature, continuous when mature, *dull grayish brown (5.0 YR 4/2); hymenial surface granulose;* subiculum byssoid, concolorous with, to paler than, the fertile area; sterile margin narrow, villose to fibrillose, paler than the fertile area.

SUBICULAR HYPHAE 2.5–3.5(–4.5) μm diam, septate, with clamps frequent, wall thickening apparent, hyaline to pale yellowish brown; CORDONS up to 20 μm diam, pale tan to hyaline, individual hyphae 2–2.5 (–3) μm diam, clamped, thin-walled, hyaline; SUBHYMENIAL HYPHAE 3.5–4 μm diam, clamped, medium brown, becoming (2–)2.5–3.5 μm diam and hyaline below basidia, some parts green in KOH; BASIDIA 25–35 × 6–8 μm, clamped at base, transverse septa sometimes present, clavate, frequently with a medium constriction, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 33–34) *(5–)5.5–6.5 μm diam, globose to subglobose, echinulate to aculeate,* medium brown to hazel, some parts green in KOH.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Venezuela, lignicolous.

Tomentella punicea (Alb. & Schw. per Pers.: Fr.) Schroet. in Cohn, Krypt.-Fl. Schles. **3**: 420. 1889. FIGS. 35, 36

≡*Thelephora punicea* Alb. & Schw., Conspect. Fung., p. 278. 1805.

≡*Thelephora punicea* Alb. & Schw. per Pers.: Fr., Elench. Fung. **1**: 199. 1828.

≡*Corticium puniceum* (Alb. & Schw. per Pers.: Fr.) Fr., Hym. Eur., p. 661. 1874.

≡*Hypochnus puniceus* (Alb. & Schw. per Pers.: Fr.) Sacc., Syll. Fung. **6**: 661. 1888.

=*Hydnum epiphyllum* Schw., Amer. Phil. Soc. Trans. (new ser.) **4**: 163. 1832 (PH).
≡*Hypochnus epiphyllus* (Schw.) Burt, Ann. Missouri Bot. Gard. **13**: 320. 1926.
≡*Tomentella epiphylla* (Schw.) Litsch., Oest. Bot. Zeitschr. **88**: 131. 1939.
≡*Tomentella epiphylla* (Schw.) G. H. Cunn., Trans. Roy. Soc. New Zeal. **84**: 483. 1957 (nom. superfl.).
=*Hypochnus elaeodes* Bres., Atti Accad. Sci. Lett. Art Agiati, Rovereto **3**(3): 115. 1897 (S).
≡*Tomentella elaeodes* (Bres.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **116**: 840. 1907.
=*Zygodesmus granulosus* Pk., Bot. Gaz. **6**: 277. 1881 (NYS).
≡Hypochnus granulosus (Pk.) Burt, Ann. Missouri Bot. Gard. **3**: 218. 1916.
≡*Tomentella granulosa* (Pk.) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 158. 1924.
=*Tomentella granulosa* (Pk.) Bourd. & Galz. var. *fuliginosa* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 158. 1924 (PC).
=*Tomentella granulosa* (Pk.) Bourd. & Galz. var. *laeviuscula* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 158. 1924 (PC).
=*Zygodesmus chlorochaetes* Ell., North American Fungi 423, January 21, 1881 (NY).
=*Tomentella liasicola* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 157. 1924 (PC).
≡*Tomentella rubiginosa* (Bres.) R. Maire subsp. *liasicola* Bourd. & Galz., Hym. France, p. 508. 1928.

Neotype: Pennsylvania, Bethlehem, on angiospermous wood, L. D. Schweinitz (PH), and isoneotypes in Curtis herb. (FH) and Michener herb. (BPI).

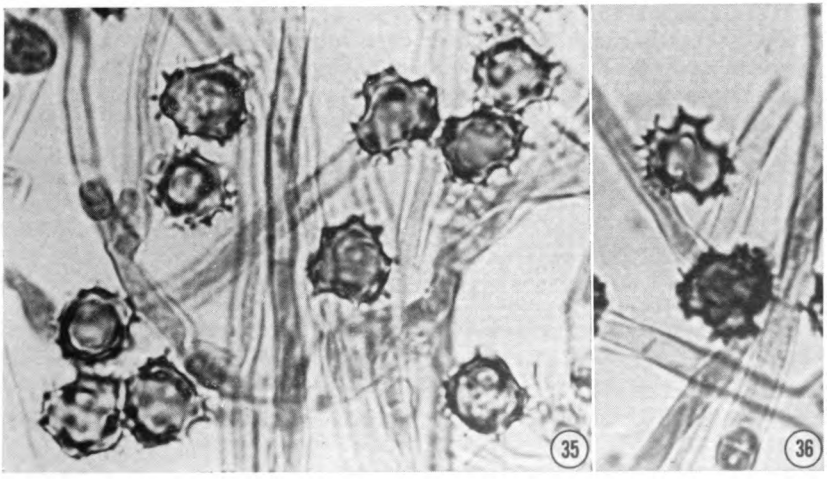
Basidiocarps annual, effused, up to 1.0 mm thick, separable in the fresh and dry states to adherent, parchment-like, almost brittle when dry and then cracking and exposing the subiculum; fertile areas discontinuous to mostly continuous, *sepia to dull brown, sometimes with pink tinges, rarely dull green (normally 2.5 Y 4/4, 2.5 Y 5/6);* hymenial surface at first smooth, *becoming strongly colliculose to granulose,* smoother towards the margin; subiculum concolorous with the fertile areas, fibrous; sterile margin radiate-fibrillose to villose, ochraceous to pale rusty brown, sometimes concolorous with the fertile areas; cordons evident at 10×.

SUBICULAR HYPHAE *3–4(–4.5) μm diam,* septate, with clamps frequent, thin-walled or with wall thickening apparent, pale brownish yel-

low to pale yellowish brown; CORDONS 10–25(–35) μm diam, pale yellowish brown, branched, individual hyphae (1.5–)2–3 μm diam, thin-walled, pale yellow, clamped; SUBHYMENIAL HYPHAE 2.5–4 μm diam, clamped, thin-walled, concolorous with the subiculum, a brown colored diffusate becoming apparent, *contents sometimes appearing reddish granular in water mounts,* but becoming ochre in KOH; BASIDIA 35–45 (–50) × 7–9 μm, clamped at the base, frequently with transverse septa, clavate, 4-sterigmate, sterigmata up to 4 μm long, rarely with septa, basidial contents often ochre or dull yellow; BASIDIOSPORES (FIGS. 35–36) *6–7(–8) μm across, 3- or 4-lobed or irregular, echinulate,* subhyaline to pale brown to yellowish brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alabama, lignicolous; Arizona, on *Quercus;* Florida, on *Quercus,* lignicolous; Illinois, on *Ulmus,* lignicolous; Kentucky, lignicolous, terricolous; Louisiana, on *Quercus;* Massachusetts, on *Betula;* Michigan, on *Tsuga;* Minnesota, on *Fraxinus;* New Hampshire, on angiospermous wood; New Jersey, on *Thuja, Zea mays;* New York, on *Acer, Populus,* lignicolous; North Carolina, on *Acer, Quercus, Robinia,* lignicolous; Ohio, lignicolous, humicolous; Ontario, lignicolous; Pennsylvania, lignicolous, humicolous; Tennessee, on *Pinus, Quercus,* lignicolous; Germany, on *Betula;* Hungary, lignicolous; India, on angiospermous wood; Poland, lignicolous; Sweden, on *Betula, Hypoxylon,* on angiospermous wood.

Also noted from Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Czechoslovakia (*Acer, Betula, Carpinus, Fagus, Quercus, Tilia, Trametes;* Svrček, **1960**), France (lapidicolous; Bourdot & Galzin, **1924, 1928**), Germany (*Abies, Fagus;* Litschauer, **1939a**), Macedonian Re-



FIGS. 35–36. Basidiospores of *T. punicea* (from SSMF 685–4581: SSMF negative no. 5046).

gion (*Fagus;* Litschauer, **1939b**), and United Kingdom (lignicolous; Pearson, **1922**; on gymnospermous wood; Wakefield, **1969**).

Tomentella rubiginosa (Bres.) R. Maire, Ann. Mycol. 4: 335. 1906. FIGS. 37–39

≡*Hypochnus rubiginosus* Bres., Atti Accad. Sci. Lett. Art. Agiati, Rovereto 3(3): 116. 1897.

≡*Tomentella rubiginosa* (Bres.) Hoehn. & Litsch., Wiesn. Festschr., p. 79. 1908 (nom. superfl.).

=*Hypochnus atrovirens* Bres., Atti Accad. Sci. Lett. Art. Agiati Rovereto 3(3): 116. 1897 (S).

≡*Tomentella atrovirens* (Bres.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse 116: 831. 1907.

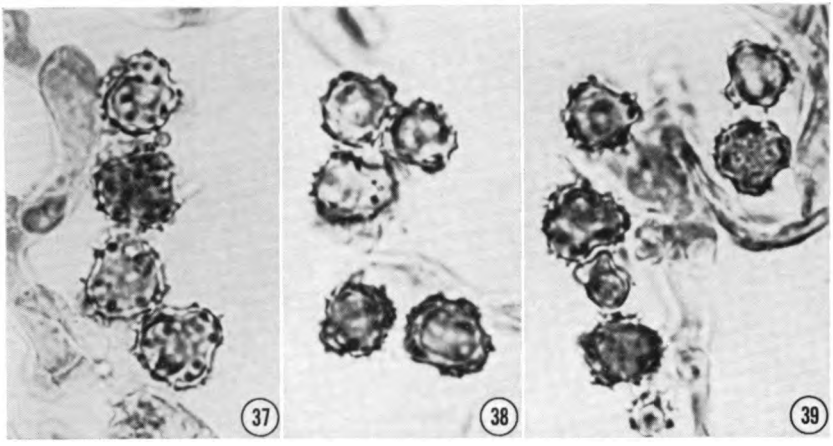
=*Tomentella subrubiginosa* Litsch., Bull. Soc. Sci. Skoplje 20: 19. 1939 (PR).

Holotype: Hungary, on needles of *Juniperus* and on leaves of *Quercus,* A. Kmet, 4 X 1888 (S), and isotype in FH.

Basidiocarps up to 1.0 mm thick, separable, arachnoid to becoming mucedinoid in older plants; fertile areas discontinuous when immature, continuous when mature, *normally ferruginous brown (5.0 YR 4/6) (in some European specimens becoming slightly olive to pale green);* subiculum arachnoid, thin, paler than the fertile area; hymenial surface granulose to colliculose, smooth when young; *cordons abundant and conspicuous, dark brown;* sterile margin arachnoid, yellowish brown to golden brown.

SUBICULAR HYPHAE 2–5.5 μm diam, septate, with clamps frequent, citrine to mostly medium brown or dark brown, some hyphae appearing spinulose or rough-walled; CORDONS *abundant, up to 70 μm diam, citrine to dark brown,* individual hyphae 2–3.5 μm diam, clamped, some wall thickening apparent; SUBHYMENIAL HYPHAE 3–4 μm diam, clamped, thin-walled, hyaline to pale yellow; BASIDIA 45–60 × 7–9 μm, clamped at the base, often with transverse septa, clavate, often with granular material adhering to the walls which becomes green or dark green in KOH, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (FIGS. 37–39) *6.5–8.5(–9) μm across, mostly irregular to lobed, echinulate to aculeate, mostly yellow,* sometimes citrine or pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arkansas, on *Quercus;* Florida, on *Fraxinus;* Illinois, lignicolous; Indiana, on *Quercus;* Iowa, lignicolous; Kentucky, lignicolous; Louisiana, on *Quercus;* Maryland, on *Liriodendron, Quercus,* lignicolous; New Hampshire, lignicolous; New York, on *Hicoria, Pinus, Populus, Thuja,* lignicolous; Ohio, lignicolous; Ontario, on *Tilia,* lignicolous; Pennsylvania, on *Prunus, Quercus;* West Virginia, on *Carex,* lignicolous; Hungary, on



FIGS. 37–39. Basidiospores of *T. rubiginosa* (from SSMF 695–4709: SSMF negative no. 5049).

leaves of *Juniperus* and *Quercus;* Macedonian Region, on *Fagus;* Sweden, on *Fagus,* lignicolous.

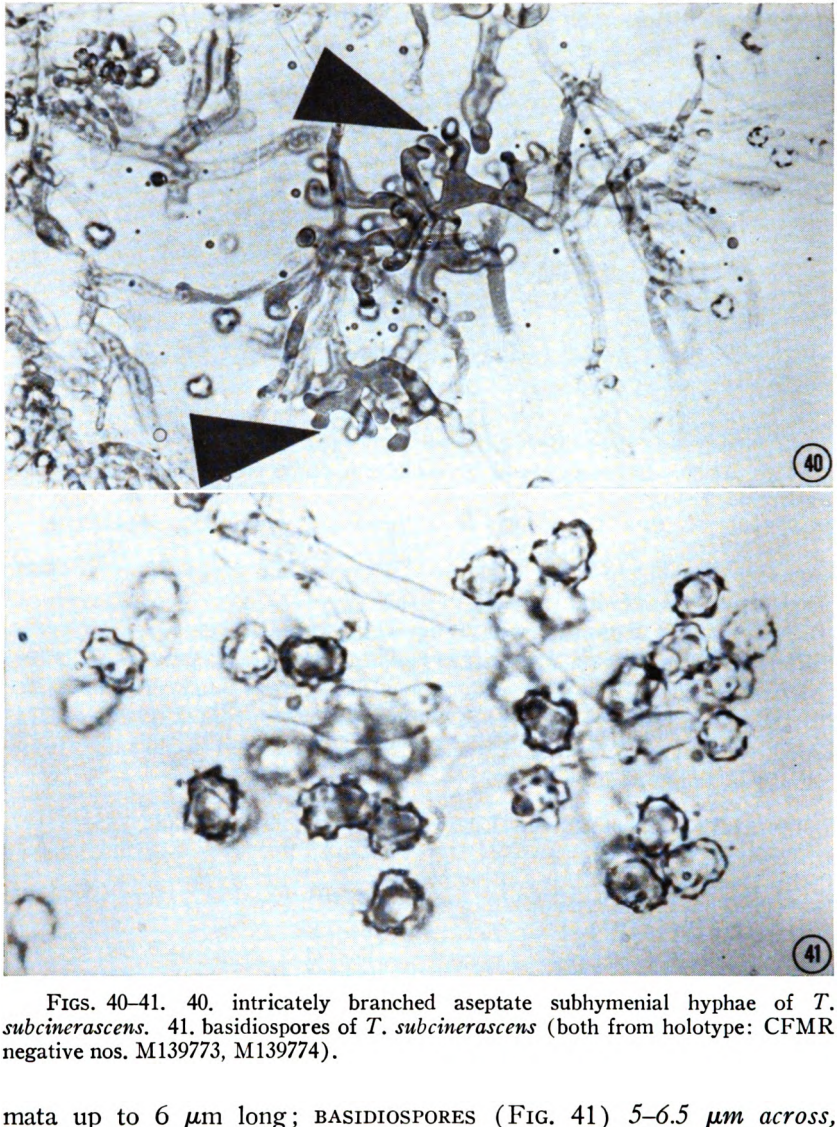
Also noted from Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Czechoslovakia (*Acer, Carpinus, Crataegus, Fraxinus, Populus, Quercus, Sorbus, Tilia;* Svrček, **1960**), Denmark (*Fagus, Picea, Quercus;* Christiansen, **1960**), France (lignicolous; Bourdot & Galzin, **1924, 1928**), Germany (*Fagus;* Litschauer, **1939a**), and Pakistan (lignicolous; Wakefield, **1966**).

Tomentella subcinerascens Litsch., Oest. Bot. Zeitschr. **88**: 133. 1939. FIGS. 40, 41

Holotype: Germany, Lunz, on *Picea,* 18 IX 1930, V. Litschauer (20328 in W).

Basidiocarps up to 0.4 mm thick, byssoid to arachnoid, separable; fertile area continuous, *buff brown to drab brown (near 7.5 YR 6/4 to 7.5 YR 5/4); hymenial surface densely granulose; subiculum byssoid, pale tan to almost white;* sterile margin byssoid, concolorous with, to paler than, the subiculum; cordons evident at 10×.

SUBICULAR HYPHAE 3.5–4.5(–5) μm diam, septate, with clamps frequent, normally thin-walled, some thick-walled and these swelling in 10% KOH, hyaline to very pale tan; CORDONS up to 30 μm diam, hyaline, individual hyphae 2–3.5 μm diam, clamped, hyaline; SUBHYMENIAL HYPHAE of two kinds, some 3–4 μm diam, clamped, thin-walled, hyaline; some (FIG. 40) *arising from the former and growing intrusively, aseptate, hyaline, becoming intricately branched, often associated with vesicle-like structures;* BASIDIA 25–35 × 6–7 μm, clamped at the base, some transverse septa also present, clavate, 4-sterigmate, sterig-

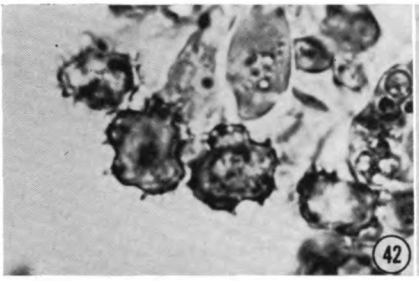
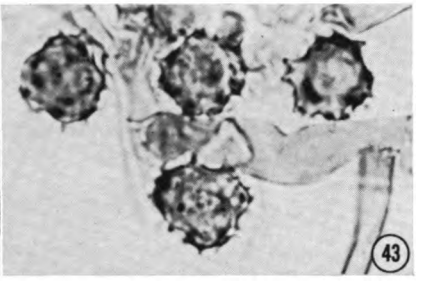


FIGS. 40–41. 40. intricately branched aseptate subhymenial hyphae of *T. subcinerascens*. 41. basidiospores of *T. subcinerascens* (both from holotype: CFMR negative nos. M139773, M139774).

mata up to 6 μm long; BASIDIOSPORES (FIG. 41) *5–6.5 μm across, irregular, normally elongated along one axis,* aculeolate to echinulate, hazel to dull brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: North Carolina, on *Acer;* France, lapidicolous; Germany, on *Alnus, Picea.*

REMARKS: See *Tomentella cinerascens.*

FIGS. 42–43. Basidiospores of *T. variecolor* (from holotype: SSMF negative no. 5061).

Tomentella variecolor Malençon, Bull. Soc. Bot. France **99**: 51. 1952. FIGS. 42, 43

Holotype: Tunisia, Vallee de L'Oued Delma pres Ain Draham, on *Quercus,* G. Malençon, 18 V 1952 (MPU).

Basidiocarp up to 0.5 mm thick, byssoid to arachnoid, becoming mucedinoid in part, cracking in some areas; fertile area continuous, *slightly olivaceous (10.0 YR 3/2, 10.0 YR 5/4, 10.0 YR 4/4);* hymenial surface smooth; subiculum membranous, paler than the fertile area; sterile margin up to 2.0 mm wide, arachnoid to pubescent, frequently farinaceous, paler than the fertile area, appearing *faintly green to citrine (near 2.5 Y 6/4 or 2.5 Y 6/6).*

SUBICULAR HYPHAE 2–3(–3.5) μm diam, septate, with clamps frequent, with some wall thickening noticeable, lightly and finely encrusted in some parts, yellowish brown, contents sometimes ochre; CORDONS up to 30 μm diam (40 μm, Malençon), dark yellowish brown, individual hyphae 2–2.5(–3) μm diam, clamps present; SUBHYMENIAL HYPHAE 2.5–3.5 μm diam, clamped, thin-walled hyaline; BASIDIA (40–) 50–60 × 7–9.5 μm, clamped at the base, clavate, contents frequently ochre, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (FIGS. 42–43) *7–8.5(–9) μm across, irregular to lobed, some irregularly globose, echinulate, yellowish brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Tunisia, on *Quercus.*

SECTION V. **Pilosae** M. J. Larsen, sect. nov.

Basidiocarpis arachnoideis vel byssoideis; hymenio superficie granulosa vel colliculosa, interdum laevi; hyphis systematis monomitico; hyphis subiculis usque ad 8 μm diam, fibulatis; hyphis fasciculis abundis et conspicuis; basidiis clavatis; cystidiis adsunt; basidiosporis echinulatis vel aculeatis.

Basidiocarps arachnoid to byssoid; hymenial surface granulose to colliculose, sometimes smooth; hyphal system monomitic; subicular hy-

phae up to 8 μm diam, clamped; cordons abundant and forming a conspicuous part of the soma; basidia clavate; cystidia present; basidiospores echinulate to aculeate.

TYPE SPECIES: *Tomentella pilosa* (Burt) Bourd. & Galz.

KEY TO THE SPECIES OF SECTION PILOSAE

1. Cystidia projecting conspicuously above the hymenium 2
1. Cystidia not projecting above the hymenium 4
   2. Cystidia narrow, hyphoid, apex not distinctly expanded .... *T. atro-arenicolor*
   2. Cystidia not hyphoid, apex distinctly expanded 3
3. Cystidia normally arising from the subicular hyphae, frequently capitulate, apex expanded up to 12 μm; cordons up to 200 μm diam ..... *T. pilosa*
3. Cystidia normally arising from subhymenial hyphae, clavate; apex expanded up to 9 μm; cordons up to 80 μm diam ..... *T. muricata*
   4. Hymenial surface becoming granulose; cystidia slightly expanded at the apex, frequently septate along their length, and with contents normally hyaline ..... *T. pilosa*
   4. Hymenial surface smooth; cystidia cylindrical-clavate, aseptate along their length, and with contents apparently composed of granules in an ochre-colored matrix ..... *T. pirolae*

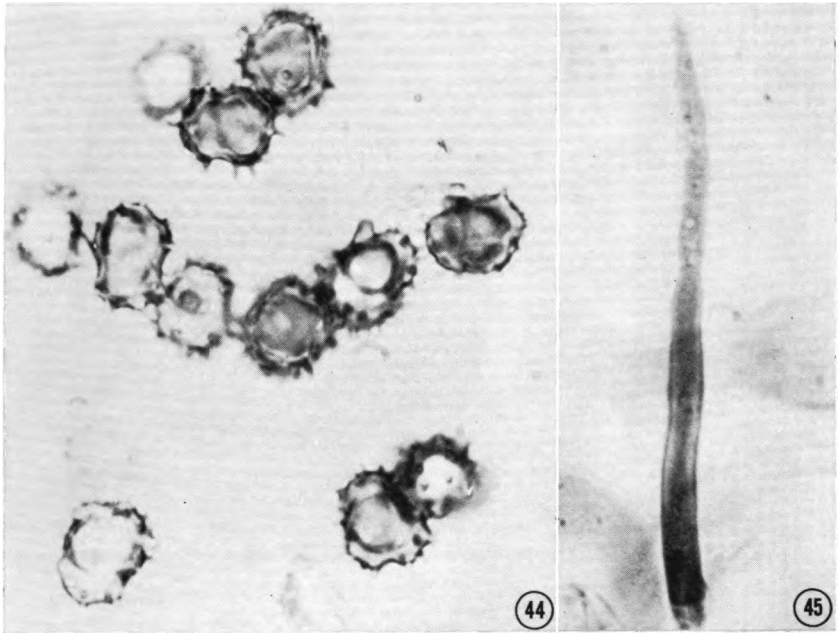
Tomentella atro-arenicolor Nikol., Mycol. Phytopath. **4**: 476. 1970. FIGS. 44, 45

Holotype: Russia, Krasnodar, Guseripl, on *Fagus,* E. Parmasto, 15 IX 1966 (LE).

Basidiocarp up to 0.5 mm thick, arachnoid to byssoid, separable; fertile area continuous, *tan brown with an olivaceous tint (near 10.0 YR 6/4);* hymenial surface smooth, *becoming colliculose in part;* subiculum arachnoid, somewhat darker than the fertile area; sterile margin fimbriate to more commonly arachnoid, paler than the fertile area; cordons evident at 10×.

SUBICULAR HYPHAE 3–5(–6) μm diam, septate, with clamps frequent, wall thickening apparent, dull olive brown to yellowish brown, smooth to normally encrusted; CORDONS abundant, up to 50 μm diam, dull olive brown, individual hyphae 2–4 diam, clamped; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, hyaline; BASIDIA 40–50(–60) × 10–12 μm, clamped at the base, transverse septa frequent, clavate, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (FIG. 44) *8–9.5 μm across, irregularly globose to lobed, echinulate to aculeate,* medium to dark brown with contents somewhat yellow to citrine; CYSTIDIA (FIG. 45) normally arising from or near bases of basidia, *clamped at the base, some with septa along their length, 3–4(–5) μm diam at the base and 2–3 μm diam at the apex, up to 70 μm long, projecting 20–40 μm beyond the basidia, hyphoid.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Russia, on *Fagus.*



FIGS. 44–45. *Tomentella atro-arenicolor.* 44. basidiospores. 45. cystidium (both from holotype: CFMR negative no. M139902).

Tomentella muricata (Ell. & Ev.) Wakef., Mycologia **52**: 924. 1960. FIG. 46

≡*Zygodesmus muricatus* Ell. & Ev., Bull. Torrey Bot. Club **11**: 17. 1884.

Holotype: U.S.A., New Jersey, Newfield, on *Pinus,* 19 IX 1883 (NY).

Basidiocarp up to 0.25 mm thick, separable, arachnoid to byssoid; fertile area continuous to discontinuous, *pale chocolate brown (7.5 YR 5/2);* hymenial surface smooth to minutely granulose or becoming somewhat reticulate; subiculum arachnoid, pale tan to medium brown; sterile margin concolorous with, to slightly paler than, the fertile area, floccose or cobwebby; cordons conspicuous, branched, pale brown.

SUBICULAR HYPHAE *3.5–5.5(–6) μm diam,* septate, with clamps frequent, wall thickening apparent, pale yellowish brown to medium brown, *becoming minutely rough-walled or spinulose, hyphae usually straight and uniform in diam, becoming irregular when associated with cordons;* CORDONS 15–80 μm diam, brown to yellowish brown, individual hyphae 2–3.5 μm diam, clamped, wall thickening noticeable, yellowish brown to hazel; SUBHYMENIAL HYPHAE 3–4(–4.5) μm diam,

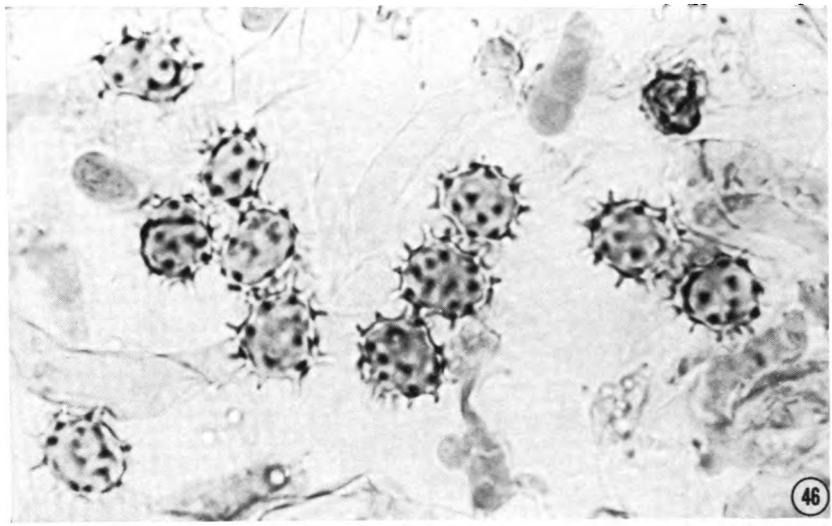


FIG. 46. Basidiospores of *T. muricata* (from holotype: SSMF negative no. 5052).

clamped, thin-walled, hyaline to pale brown or brown (not straight and uniform), hyphae sometimes minutely spinulose; BASIDIA 25–40 × 7–9 μm, clavate, often with a median constriction, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (FIG. 46) *7–9(–10) μm across, or 7–9 × 5–6 μm, mostly irregular to irregularly globose, or globose to subglobose, usually elongated along one axis and flattened slightly on one side,* echinulate to more rarely aculeate, walls hazel and contents light ochre to tan; CYSTIDIA arising from hyphae of the subhymenium, clavate, hyaline, *often slender and hyphoid, 35–120 μm long,* slightly expanded at the apex which is 6–8(–9) μm diam, clamped and 3–4(–6) μm diam at the base, usually septate along their length.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: New Jersey, on *Pinus;* Florida, on *Magnolia.*

Tomentella pilosa (Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 151. 1924. FIGS. 47, 48

≡*Hypochnus pilosus* Burt, Ann. Missouri Bot. Gard. **3**: 221. 1916.

=*Tomentella floccosa* Litsch., Oest. Bot. Zeitschr. **88**: 131. 1939 (W).

=*Tomentella subpilosa* Litsch. in Svrček, Sydowia **14**: 224. 1960 (PR).

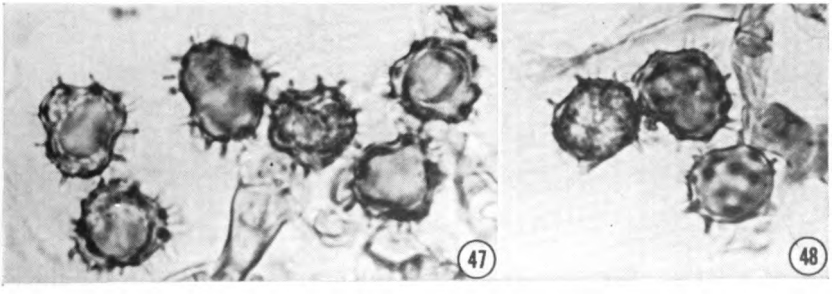
Holotype: U.S.A., Wisconsin, Lake Geneva, on bark of *Quercus,* E. T. and S. A. Harper 877, VII 1903 (FH sheet 794), and isotype in BPI.

Basidiocarps up to 1.0 mm thick, arachnoid to byssoid, separable from the substratum; fertile areas continuous, *dull brown to rarely olive brown (10.0 YR 5/6, 10.0 YR 6/6, 10.0 YR 5/4);* hymenial surface smooth to sometimes granulose or colliculose; cystidia barely distinguishable at 10×; subiculum fibrous, thin, dark brown; sterile margin irregular, fibrillose, paler than the fertile areas; cordons visible at 10×.

SUBICULAR HYPHAE of two kinds, *some 2.5–5(–8) μm diam, septate, with clamps frequent, thick-walled, golden brown; some 2.5–3(–4) μm diam, septate, thick-walled, golden brown;* CORDONS abundant, up to 200 μm diam, pale yellow to dark brown, branched, individual hyphae 2–3(–4) μm diam, clamped, dark brown; SUBHYMENIAL HYPHAE 3–4 μm diam, clamped, thin- to rarely thick-walled, tan to golden brown; BASIDIA 40–60 × 6–9 μm, clamped at the base, often with transverse septa, clavate, contents frequently becoming ochre, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (FIGS. 47–48) *6–8(–9) × 5–6(–7) μm or 7–9(–10) μm across, irregular, echinulate to aculeate, yellowish to dark golden brown;* CYSTIDIA concolorous with, and arising from, subicular hyphae, *capitulate, the apex expanded up to 12 μm, up to 130 μm long,* projecting up to 80 μm, clamped at the base and with unclamped septa occurring along their length, somewhat thick-walled, *often finely encrusted or bearing large granules at the apex.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Platanus, Quercus;* Kentucky, lignicolous; Louisiana, lignicolous; Maryland, on *Quercus;* Michigan, on *Populus;* Montana, on *Betula, Pinus, Populus,* humicolous, lignicolous; New Mexico, on *Populus, Pseudotsuga;* New York, on *Acer, Pinus, Populus, Quercus, Ulmus,* lignicolous; North Carolina, on *Liriodendron, Quercus;* Ontario, on *Abies,* lignicolous; Pennsylvania, on angiospermous wood; Washington, lignicolous; Wisconsin, on *Quercus;* Austria, on gymnospermous wood; Germany, on *Fagus,* lignicolous.

Also noted from Czechoslovakia (*Alnus, Carpinus, Fagus;* Svrček, **1960**), Denmark (*Picea,* moss; Christiansen, **1960**), France (*Pinus, Thymus;* Bourdot & Galzin, **1924**, **1928**), India (*Abies;* Thind & Rattan, **1971**), and United Kingdom (lignicolous; Wakefield, **1969**).



FIGS. 47–48. Basidiospores of *T. pilosa* (from SSMF 705-4225: SSMF negative no. 5085).

Tomentella pirolae (Ell. & Halst.) M. J. Larsen, State Univ. N.Y. Coll. Forest. at Syracuse Univ., Tech. Publ. **93**: 105. 1968. FIGS. 49, 50

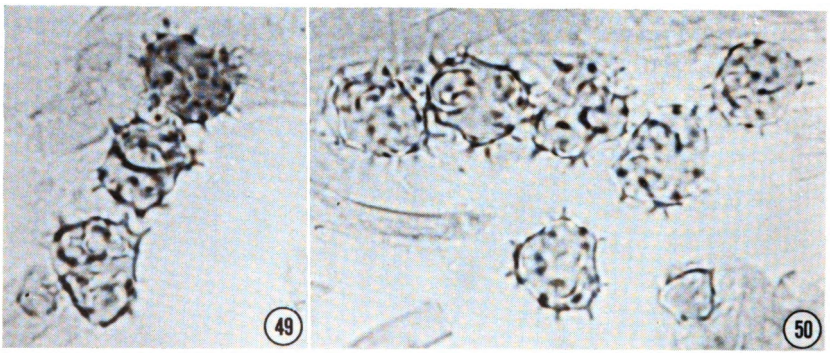
≡*Zygodesmus pirolae* Ell. & Halst., J. Mycol. **6**: 34. 1890.

Holotype: U.S.A., New Jersey, New Brunswick, on petioles of *Pyrola,* B. D. Halsted 13, 17 VII 1889 (NY).

Basidiocarp up to 0.25 mm thick, separable, arachnoid to byssoid, curling away from the substratum when dry; fertile area continuous, *dull buff to wood brown (near 5.0 YR 6/4); hymenial surface smooth;* subiculum appearing concolorous with the fertile area to somewhat darker; sterile margin even, fibrous, somewhat paler than the fertile area.

SUBICULAR HYPHAE (3.5–)5–7 μm diam, septate, with clamps frequent, wall thickening apparent, walls becoming slightly rough in some hyphae, pale yellow to light tan; CORDONS 10–40 μm diam, individual hyphae 2.5–4 μm diam, clamped, septate, pale yellow; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, thin-walled, hyaline; BASIDIA (40–) 50–65 × 7–10(–11) μm, clamped at the base, rarely with transverse septa, clavate, 4-sterigmate, sterigmata stout and up to 7 μm long; BASIDIOSPORES (FIGS. 49–50) *7.5–11 μm across, irregular or lobed,* thin-walled, echinulate to mostly aculeate, hyaline to pale yellow; CYSTIDIA found in the hymenium and arising from subhymenial hyphae, up to 15 μm diam and 90 μm long, *clavate-cylindrical,* clamped at the base, *filled with a granular-appearing material, the matrix of the material becoming reddish ochre to ochre.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: New Jersey, on *Pyrola.*



FIGS. 49–50. Basidiospores of *T. pirolae* (from holotype: SSMF negative no. 5204).

SECTION VI. **Tomentellae** M. J. Larsen, sect. nov.

Basidiocarpis arachnoideis, byssoideis, vel mucedinoideis, plerumque seperabilibus; hymenio superficie granulosa vel odontoideo; hyphis systematis dimitico; hyphis subiculis 2–4.5 μm diam; basidiis clavatis; basidiosporis verrucosis, aculeolatis, vel echinulatis.

Basidiocarps arachnoid, byssoid, or mucedinoid, normally separable; hymenial surface toothed or granulose; hyphal system dimitic; subicular hyphae normally 2–4.5 μm diam; basidia clavate; basidiospores verrucose, aculeolate or echinulate, to more rarely ridged or warted.

TYPE SPECIES: *Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat.

KEY TO THE SPECIES OF SECTION TOMENTELLAE

1. Basidiospores globose, verrucose, aculeolate to echinulate 2
1. Basidiospores irregular, irregularly globose, or lobed, normally echinulate, sometimes warted with the warts frequently bifurcate 4
2. Hymenial surface distinctly toothed 3
2. Hymenial surface smooth to minutely granulose ..... *T. brunneorufa*
3. Basidiospores (4–)5–6 μm across ..... *T. calcicola*
3. Basidiospores 3–3.5(–4) μm across ..... *T. duemmeri*
4. Basidiocarps distinctly toothed with teeth up to 1.75 mm long; fertile areas dark ferruginous to dull brown; fungal tissues not assuming a green or bluish green color in KOH ..... *T. crinalis*
4. Hymenial surface granulose to colliculose; fertile areas olive green, olive brown, or chestnut brown; fungal tissue sometimes assuming a green or bluish green color in KOH 5
5. Basidiospores normally umbrinous; fungal tissues not assuming a green or bluish green color in KOH; fertile areas chestnut brown ..... *T. umbrinospora*
5. Basidiospores normally pale brown; fungal tissue normally assuming a green, bluish green, or purple color in KOH; fertile areas olive green to olive brown ..... *T. ferruginea*

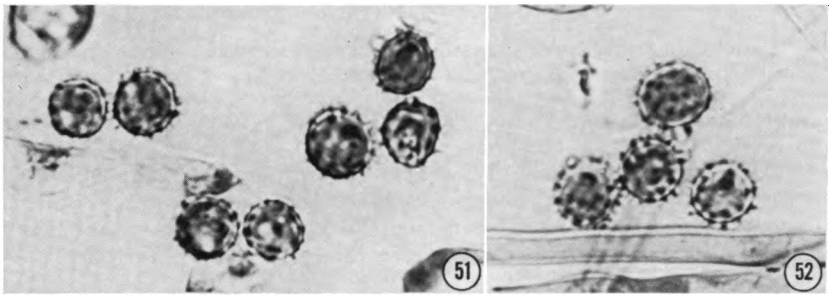
Tomentella brunneorufa M. J. Larsen, sp. nov. FIGS. 51, 52

Etymology: From *brunneus* (L., adj.) =brownish + *rufus* (L., adj.) =red.

Basidiocarpis arachnoideis, separabilibus; area fecunda brunneorufa vel aliquot ochracea; hyphis generatoriis 2–4 μm diam, fibulatis; basidiis 25–40 × 5–7 μm, clavatis; basidiosporis (Figs. 51–52) 4–6 μm latis, aculeolatis vel echinulatis, pallidis fulvobrunneis.

Holotype: U.S.A., Maryland, Thurmont, Catoctin Mt. Park, on *Liriodendron,* H. H. Burdsall 1706, 23 X 1968 (CFMR).

Basidiocarps up to 0.4 mm thick, arachnoid to byssoid, separable; fertile area continuous, *ferruginous brown to orchraceous brown (7.5 YR 5/6 to 7.5 YR 5/8 to 7.5 YR 4/4); hymenial surface smooth, sometimes minutely granulose;* subiculum arachnoid, somewhat darker than the



FIGS. 51–52. Basidiospores of *T. brunneorufa* (from holotype: SSMF negative no. 5117).

fertile area; sterile margin arachnoid to byssoid, concolorous with, to darker than, the fertile area; cordons evident at 10×.

SUBICULAR HYPHAE of two kinds, some generative, 2–4 μm diam, septate, with clamps frequent, wall thickening apparent, yellowish brown; some skeletal, 1–2 μm diam, aseptate, thick-walled, pale yellow to citrine; CORDONS of two kinds, some up to 80 μm diam, yellowish brown, individual generative hyphae 2–3.5 μm diam, clamped, thin-walled; some up to 60 μm diam, pale yellowish brown, composed of generative clamped hyphae 2–3 μm diam, and skeletal aseptate hyphae 1–2 μm diam; SUBHYMENIAL HYPHAE 2–3 μm diam, clamped, thin-walled, pale yellowish brown to hyaline; BASIDIA 25–40 × 5–7 μm, clamped at the base, infrequently with transverse septa, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (FIGS. 51–52) *4–6 μm across, globose, aculeolate to echinulate,* pale yellowish brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Maryland, on *Pinus* (H. Burdsall 452), *Liriodendron* (H. Burdsall 1706); North Carolina, on *Robinia* (H. Burdsall 4237). The collections cited above are filed in CFMR.

Tomentella calcicola (Bourd. & Galz.) M. J. Larsen, Taxon **16**: 511. 1967. FIG. 53

≡*Caldesiella ferruginosa* (Pers. per Pers.: Fr.) Sacc. var. *calcicola* Bourd. & Galz., Hym. France, p. 471. 1928.

≡*Caldesiella calcicola* (Bourd. & Galz.) M. P. Chris., Dansk Bot. Ark. **19**: 303. 1960.

Type: Location unknown. See remarks below.

Basidiocarps *up to 2.0 mm thick,* byssoid, separable; fertile area continuous, *dull ferruginous brown (near 5.0 YR 3/4),* paler towards the margin; subiculum dark ferruginous brown, thin; hymenial surface *smooth to granulose or distinctly toothed, teeth up to 1.5 mm long;* sterile margin wide to narrow, fimbriate to fibrillose, paler than the

fertile area; cordons spreading out over the substratum and usually visible at the margin at 10×.

SUBICULAR HYPHAE of three kinds, some generative, 2–3(–4) μm diam, normally septate, with clamps frequent, wall thickening apparent, yellowish brown, often encrusted with granular material which sometimes gives the hyphae a spinulose appearance; some generative, 3–5 μm diam, usually septate, with clamps infrequent, often aseptate for relatively long distances, thin-walled, often collapsed, rarely branched; some skeletal, 1–2 μm diam, usually aseptate, rarely with septa, thick-walled, bright yellow to citrine; CORDONS up to 40 μm diam, yellowish brown, individual hyphae mostly thin-walled, 2–3.5 μm diam, clamped; TRAMAL HYPHAE of two types, some generative, forming a distinct central core and projecting somewhat at the sterile apices, 2–4.5 μm diam, clamped, wall thickening apparent, yellowish brown, often with an ochre or brown agglutinating material which dissolves, resulting in a similarly colored diffusate; some skeletal, 1–2 μm diam, aseptate, thick-walled, yellow; SUBHYMENIAL HYPHAE 2–3.5 μm diam, clamped, thin-walled, pale yellow; BASIDIA 30–40 × 6–7(–8) μm, clavate, often with a median constriction, clamped at the base, rarely with transverse septa, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (FIG. 53) *(4–)5–6 μm diam, or 4.5 × 5–6 μm, globose to subglobose, verrucose to aculeolate,* pale brown to umbrinous.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, on *Picea;* British Columbia, on *Populus;* Idaho, on *Populus;* Iowa, on angiospermous wood; Montana, on *Populus;* New York, on *Acer;* Washington, on *Alnus.*

Also noted from Belgium (lignicolous; Christiansen, **1960**), France (*Juniperus,* lapidicolous; Bourdot & Galzin, **1928**), and Russia (lignicolous; Nikolejeva, **1968**).

REMARKS: Gilbertson and Larsen (**1965**) reported *T. calcicola* (as *Caldesiella calcicola*) from North America without knowledge of a type

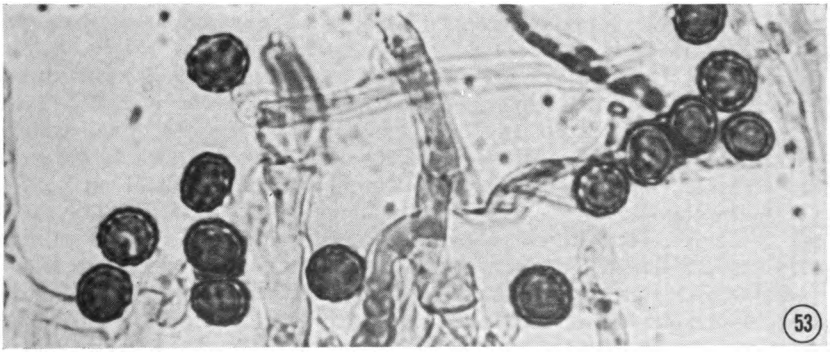


FIG. 53. Basidiospores of *T. calcicola* (from SSMF 705–4491: SSMF negative no. 4967).

or authentic specimen. Bourdot and Galzin's (**1928**) description, though, was sufficiently explicit to identify representative collections of this species from North America with those apparently collected in France. An examination of available material at BPI, FH, L, PC, and S has failed to reveal any specimen of Bourdot and Galzin's that could be interpreted to represent the type of *T. calcicola.*

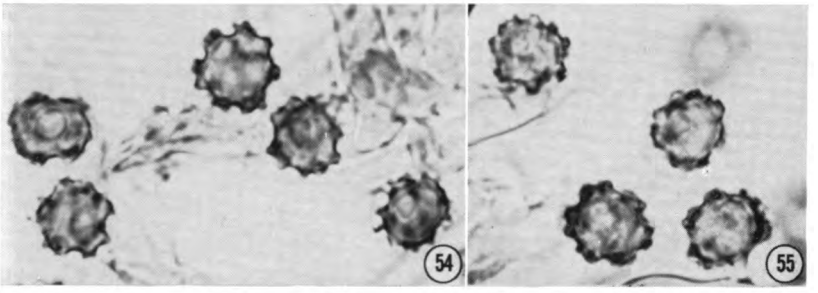
Tomentella crinalis (Fr.) M. J. Larsen, Taxon **16**: 511. 1967.
FIGS. 54, 55

≡*Hydnum crinale* Fr., Epicr. Syst. Mycol., p. 516. 1838.
≡*Caldesiella crinalis* (Fr.) Bourd. & Galz. in Rea, Brit. Basid., p. 651. 1922.
≡*Odontia crinalis* (Fr.) Bres., Atti Accad. Sci. Lett. Art. Agiati Rovereto **3**(3): 96. 1897.
=*Hydnum ferruginosum* Pers. per Pers.: Fr., Syst. Mycol. **1**: 416. 1821 (as *"ferrugineum"* in Persoon, Syn. Meth. Fung., p. 562. 1801).
≡*Caldesiella ferruginosa* (Pers. per Pers.: Fr.) Sacc., Michelia **2**: 303. 1881.
≡*Odontia ferruginea* (Pers. per Pers.: Fr.) Banker, Bull. Torrey Bot. Club **29**: 439. 1902.

Lectotype: Sweden, Femsjo, lignicolous, E. Fries (? UPS), and isolectotype in NY.

Basidiocarps *up to 2.0 mm thick,* often separable, felty to tomentose; fertile areas discontinuous, *dark ferruginous to dull brown (near 5.0 YR 3/4);* subiculum thin, concolorous with the fertile areas; hymenial surface *distinctly toothed, teeth up to 1.75 mm long,* apices sterile; sterile margin fimbriate, concolorous with, to lighter than, the fertile areas; cordons present, obscure at 10×.

SUBICULAR HYPHAE of two kinds, some generative, 2.5–4.5 μm diam, septate, with clamps frequent, wall thickening apparent, pale yellow to yellowish brown; some skeletal, 1–2.5 μm diam, rarely septate, thick-walled, bright yellow to citrine; CORDONS of two kinds, some up to 25 μm diam, yellowish brown, the individual generative hyphae 2–3 μm diam, clamped; some up to 15 μm diam, yellow, the individual skeletal hyphae 1–2.5 μm diam, rarely septate, thick-walled; TRAMAL HYPHAE of two kinds, some generative and forming a distinct central core, 2.5–4 (–5) μm diam, clamped, thin-walled, citrine to pale brown; some skeletal, 1–2.5 μm diam, thick-walled, aseptate, unbranched; SUBHYMENIAL HYPHAE 2.5–4 μm diam, clamped, hyaline, thin-walled; BASIDIA 40–55 (–65) × 7–9 μm, clamped at the base, often with transverse septa, clavate, 4-sterigmate, sterigmata up to 6 μm long and often with septa; BASIDIOSPORES (Figs. 54–55) *7–9(–10) μm across, irregular to mostly irregularly globose, warted or ridged to more rarely echinulate, the warts frequently bifurcate,* walls pale brown or umbrinous.



FIGS. 54–55. Basidiospores of *T. crinalis* (from SSMF 705–4312: SSMF negative no. 5205).

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, on *Populus;* Arizona, on *Abies, Populus;* Colorado, on *Populus;* Idaho, on *Populus;* Indiana, on *Quercus;* Iowa, lignicolous; Kentucky, lignicolous; Louisiana, on *Quercus;* Maine, on *Fraxinus;* Maryland, lignicolous; Minnesota, lignicolous; Montana, on *Pinus, Populus;* New York, on *Acer, Populus, Tsuga,* lignicolous; Ontario, on *Populus,* lignicolous; South Dakota, on *Populus;* Washington, on *Alnus;* Czechoslovakia, on *Betula;* Germany, lignicolous; Great Britain, lignicolous; India, lignicolous; Mexico, lignicolous; Sweden, on *Picea.*

Also noted from Czechoslovakia (*Abies, Acer, Carpinus, Crataegus, "Daphnidis," Fagus, Picea, Quercus, Tilia;* Svrček, **1960**), Denmark (on angiospermous wood; Christiansen **1960**), France (lignicolous; Bourdot & Galzin, **1924, 1928**), Germany (*Picea;* Litschauer, **1939a**), Italy (lignicolous; Saccardo, **1881**), Macedonian Region (*Fagus;* Litschauer, **1939b**), Netherlands (lignicolous; Donk, **1933**), Norway (*Sorbus;* Ryvarden, **1971**), Russia (lignicolous; Nikolejeva, **1961, 1968**), Sweden (lignicolous; Eriksson, **1958b**), and United Kingdom (*Fraxinus;* Wakefield, **1969**).

Tomentella duemmeri (Wakef.) M. J. Larsen, comb. nov.

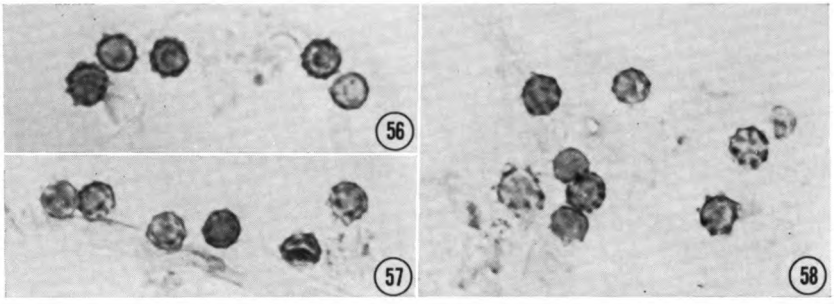
FIGS. 56–58

≡*Caldesiella duemmeri* Wakef., Roy. Bot. Gard., Bull. Misc. Inf. **3**: 73. 1916.

=*Tomentella subcalcicola* M. J. Larsen, Can. J. Bot. **45**: 1302. 1967 (BPI, SYRF).

Holotype: Uganda, on mouldy log, R. Duemmer 635, V 1914 (K).

Basidiocarps up to 1.5 mm thick, tomentose to byssoid, curling away from the substratum at the edges on drying; fertile area continuous in patches, *ferruginous brown (near 5.0 YR 3/4 and 5.0 YR 4/4);* subiculum thin, concolorous with the fertile areas; hymenial surface *granulose to distinctly toothed, teeth up to 1.0 mm long,* the apices sterile; sterile margin fimbriate, arachnoid to byssoid, concolorous with, to paler



FIGS. 56–58. Basidiospores of *T. duemmeri* (from SSMF 695–4093: SSMF negative no. 5082).

than, the fertile areas; cordons present and spreading over the substratum.

SUBICULAR HYPHAE of three kinds, some generative, 2.5–3(–3.5) μm diam, septate, with clamps frequent, wall thickening apparent, brown; some generative, 3.5–5 μm diam, septate, with clamp connections infrequent, thin-walled, pale yellow to citrine; some skeletal, 1–1.5 (–2) μm diam, aseptate, unbranched, thick-walled, bright yellow to citrine; CORDONS of three kinds, some up to 20 μm diam, yellowish brown, individual generative hyphae 2–3.5 μm diam, clamped, wall thickening apparent; some up to 20 μm diam, yellowish, individual skeletal hyphae 1–2 μm diam, aseptate, thick-walled, yellow; some composed of both generative and skeletal hyphae; TRAMAL HYPHAE of two kinds, some generative, 2.5–4 μm diam, clamped, wall thickening apparent, yellowish brown, forming a distinct central core and projecting somewhat at the apices of teeth, often encrusted with pale yellow to dull brown deposits that dissolve and result in a similarly colored diffusate; some skeletal, 1–2 μm diam, aseptate, unbranched, thick-walled, yellow; SUBHYMENIAL HYPHAE 2–2.5(–3) μm diam, clamped, thin-walled, pale yellowish brown; BASIDIA (15–)20–25 × 4–5(–6) μm, clavate, often with a median constriction, 2- or 4-sterigmate, sterigmata up to 4 μm long; BASIDIOSPORES (Figs. 56–58) *3–3.5(–4) μm diam, verrucose to aculeolate, globose,* walls pale brown to umbrinous.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Florida, on angiospermous wood; Costa Rica, on angiospermous wood; Uganda, lignicolous.

Tomentella ferruginea (Pers. per Pers.: Fr.) Pat., Hym. Europ., p. 154. 1887. FIGS. 59, 60

≡*Thelephora ferruginea* Pers. per Pers., Mycol. Europ. 1: 141. 1822.

≡*Thelephora ferruginea* Pers. per Pers.: Fr., Elench. Fung. 1: 198. 1828.

≡*Hypochnus ferrugineus* (Pers. per Pers.: Fr.) Fr., Monogr. Hym. Suec. 2: 264. 1863.

≡*Corticium ferrugineum* (Pers. per Pers.: Fr.) Fr., Hym. Europ., p. 661. 1874.

=*Corticium fuscum* Pers., Obs. Mycol. 1: 38. 1796.

≡?*Thelephora (Himantia) fusca* Pers. per Fr., Syst. Mycol. 1: 451. 1821 (see Lundell & Nannfeldt, nos. 2216 and 2217 in Fungi Exs. Suec.).

≡*Hypochnus fuscus* (Pers. per Fr.) Fr., Monogr. Hym. Suec. 2: 264. 1863.

≡*Tomentella fusca* (Pers. per Fr.) Schroet., in Cohn, Krypt.-Fl. Schles. 3: 419. 1888.

=*Grandinia coriaria* Pk., Buffalo Soc. Nat. Hist. Bull. 1: 61. 1873 (NYS).

≡*Hypochnus coriarius* (Pk.) Burt, Ann. Missouri Bot. Gard. 3: 228. 1916.

≡*Tomentella coraria* (Pk.) Bourd. & Galz., Bull. Soc. Mycol. France 40: 159. 1924.

=*Grandinia rudis* Pk., N.Y. State Museum Rep. 30: 47. 1878 (NYS).

=*Tomentella suberis* Pat., Catal. Raisonné Plant. Cellul. Tunis., p. 63. 1897 (FH).

≡*Hypochnus suberis* (Pat.) Sacc. & Syd., Syll. Fung. 14: 228. 1899.

=*Hypochnus fulvocinctus* Bres., Atti Accad. Sci. Lett. Art. Agiati, Rovereto 3(3): 116. 1897 (S).

≡*Tomentella fulvocincta* (Bres.) Rick, Broteria 3: 80. 1934.

=*Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat. var. *laeve* Skovs., Compt. Rend. Lab. Carlsb. sér. Physiol. 25: 22. 1950 (C).

Type: In Persoon herb., teste M. A. Donk (L).

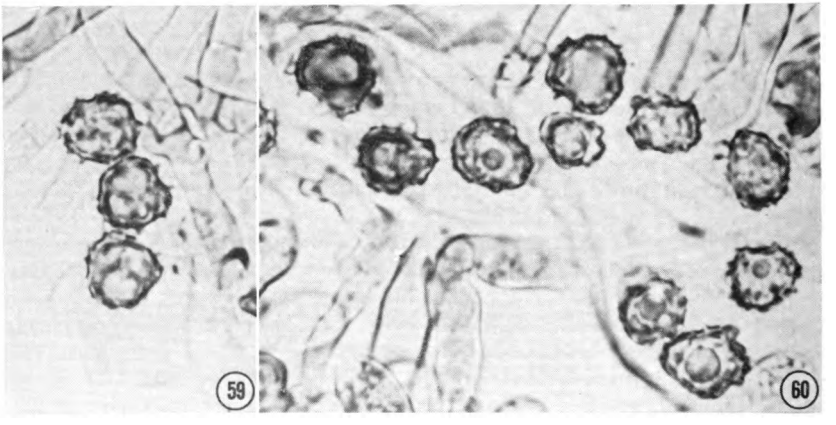
Basidiocarps up to 1.0 mm thick, arachnoid to mucedinoid, separable in small felt-like pieces; fertile area continuous, *bright green to olive green to dull brown (near 10.0 YR 3/4 to 2.5 Y 4/4); hymenial surface colliculose to sometimes smooth, individual colliculi hemispherical to blunt-conical; subiculum yellowish brown to ferruginous brown,* fibrous; sterile margin fimbriate, concolorous with the subiculum to somewhat paler.

SUBICULAR HYPHAE of three kinds, some generative, 3–4(–5) μm diam, septate, with clamps frequent, thick-walled, citrine to yellowish brown, hyphal contents frequently becoming dark ochre; some generative, 4–6(–7) μm diam, septate, clamps rare, wall thickening apparent, pale citrine, rarely branched; some skeletal, 2–2.5(–3) μm diam, normally aseptate, thick-walled, citrine, rarely branched; CORDONS of two kinds, some up to 90 μm diam, brown, composed of generative hyphae which are 2–3 μm diam, clamped; some up to 30 μm diam, citrine, composed of skeletal hyphae which are thick-walled, citrine, 2–2.5 μm diam,

septa rare; SUBHYMENIAL HYPHAE 2–3(–4) μm diam, septate, with clamps frequent, thin-walled, hyaline, sometimes with brown encrusting material; BASIDIA 40–45 × 6–8 μm, clamped at the base, often with transverse septa, clavate, 4-sterigmate, sterigmata up to 5 μm long and sometimes with septa, *basidial contents becoming green, bluish green, or purple, a brown encrusting material on basidial walls sometimes present but tends to dissolve, producing a similarly colored diffusate;* BASIDIOSPORES (Figs. 59–60) *7–8 μm across, appearing 3- or 4-lobed to irregular, echinulate, walls pale brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Juglans, Platanus, Quercus, Yucca,* lignicolous; British Columbia, on *Populus,* lignicolous; Florida, on angiospermous wood; Idaho, on *Populus;* Iowa, on angiospermous wood; Kentucky, on angiospermous wood; Manitoba, on *Populus;* Maryland, on *Liriodendron,* lignicolous; *Massachusetts,* lignicolous; Michigan, on *Acer, Fagus, Juniperus, Populus, Tilia,* lignicolous; Minnesota, lignicolous; Montana, on *Populus;* New Hampshire, lignicolous; New Mexico, on *Abies, Acer, Juniperus, Pinus, Populus, Quercus,* humicolous, lignicolous; New York, on *Acer, Betula, Pinus, Populus,* lignicolous, leather scraps; Ohio, on angiospermous wood, terricolous; Ontario, on *Pinus, Populus,* lignicolous; Tennessee, on angiospermous wood; Vermont, lignicolous; Virginia, on *Quercus;* Washington, on *Alnus;* West Viginia, on angiospermous wood; Wisconsin, on angiospermous wood; Costa Rica, on angiospermous wood; Denmark, on *Pinus;* Hungary, lignicolous; India, lignicolous; Netherlands, on angiospermous wood; New Zealand, on *Pinus;* Sweden, on *Betula;* Tunisia, on *Quercus.*

Also noted from Czechoslovakia (*Betula, Carpinus, Quercus, Tilia, Trametes;* Svrček, **1960**), Denmark (lignicolous; Skovsted, **1950**:



FIGS. 59–60. Basidiospores of *T. ferruginea* (from SSMF 695–5058: SSMF negative nos. 5205, 5206).

Christiansen, **1960**), Germany (lignicolous; Litschauer, **1939a**), France (*Alnus, Castanea, Quercus,* lignicolous; Bourdot & Galzin, **1924, 1928**), Sweden (lignicolous; Eriksson, **1958b**), and United Kingdom (*Rhamnus,* lignicolous; Wakefield, **1969**).

Tomentella umbrinospora M. J. Larsen, State Univ. N.Y. Coll. Forestry at Syracuse Univ., Tech. Publ. **93**: 61. 1968. FIGS. 61, 62

≡*Zygodesmus rubiginosus* Pk., N.Y. State Museum Rep. **30**: 58. 1876 [1878] (not *Hypochnus rubiginosus* Bres. ≡*Tomentella rubiginosa* (Bres.) R. Maire).

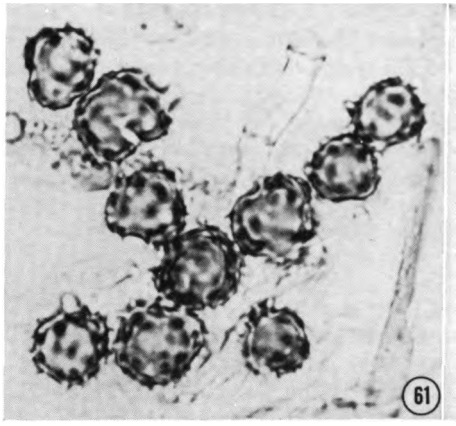
Holotype: U.S.A., New York, Greenbush, on hardwood, C. H. Peck (NYS).

Basidiocarps up to 1.0 mm thick, arachnoid to mucedinoid, becoming cobwebby in places; fertile area continuous to discontinuous, *mahogany red to chestnut brown (near 10.0 R 4/6); hymenial surface densely to sparsely granulose to colliculose;* subiculum dull yellowish brown; sterile margin irregular, concolorous with the subiculum, radiate-fibrillose; cordons present but obscure at 10×.

SUBICULAR HYPHAE of two kinds, some generative, 2.5–3(–4.5) μm diam, septate, with clamps frequent, thin-walled or with wall thickening apparent, yellowish brown, *hyphae often appearing spinulose due to pale yellow encrusting material,* a yellowish brown diffusate occurring in KOH; some skeletal, 2–2.5 μm diam, rarely with septa, thick-walled, citrine, not branched; CORDONS of two kinds, some 5–20 μm diam, yellow to yellowish brown, individual generative hyphae 2–3.5 μm diam, clamped, thin-walled, pale yellow, often becoming swollen and irregular; some 6–15 μm diam, individual skeletal hyphae 1.5–2(–2.5) μm diam, rarely with septa, citrine; SUBHYMENIAL HYPHAE 3–4(–5) μm diam, clamped, thin-walled, citrine, hyphae often encrusted with brown material which dissolves in KOH and produces a yellowish brown diffusate; BASIDIA 30–40(–50) × 6–7(–8) μm, clamped at the base, frequently with transverse septa, clavate, 2-4-sterigmate, sterigmata up to 6 μm long and sometimes with septa, basidial contents often becoming ochre; BASIDIOSPORES (Figs. 61–62) *6–8 μm across, usually irregular, rarely globose or subglobose, sometimes lobed, echinulate, pale brown to mostly umbrinous.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alabama, on *Pinus;* Arizona, on *Quercus,* lignicolous; Florida, on *Quercus;* Kentucky, on angiospermous wood; Louisiana, on angiospermous wood; New York, on *Acer, Tilia, Ulmus,* lignicolous; North Carolina, on angiospermous wood; Ohio, on angiospermous wood; Ontario, on *Acer, Hypoxylon, Salix,* lignicolous; Tennessee, lignicolous; Vermont, on angiospermous wood; India, lignicolous; Sweden, on *Populus.*

Also noted from India (coniferous wood; Thind and Rattan, **1971**).



FIGS. 61–62. Basidiospores of *T. umbrinospora* (from SSMF 705–4092: SSMF negative no. 5050).

SECTION VII. **Dimorphae** (Bourd. & Galz.) Donk

Basidiocarps mucedinoid, normally adherent; hymenial surface smooth, punctate, sometimes granulose or colliculose; hyphal system monomitic; subicular hyphae up to 10 μm diam, normally thick-walled and distinctly pigmented some shade of brown, clamped; cordons absent to rare; basidia clavate; basidiospores normally globose to subglobose, often irregularly globose, aculeate to aculeolate.

TYPE SPECIES: *Tomentella bryophila* (Pers.) M. J. Larsen

KEY TO THE SPECIES OF SECTION DIMORPHAE

1. Fertile areas some shade of red or orange 2
1. Fertile areas not some shade of red or orange 4
2. Basidiospores normally globose 3
2. Basidiospores not normally globose ..... *T. fuscoferruginosa*
3. Subicular hyphae 4.5–6(–7) μm diam ..... *T. bryophila*
3. Subicular hyphae 2–4(–5) μm diam ..... *T. ferruginella*
4. Cell walls of subicular hyphae encrusted, frequently appearing spinulose 5
4. Cell walls not encrusted or spinulose 7
5. Subicular hyphae 2.5–6.5 μm diam 6
5. Subicular hyphae 5–8(–9) μm diam ..... *T. violaceofusca*
6. Basidiospores 8–9(–9.5) μm across ..... *T. brevispina*
6. Basidiospores 5–6.5(–7.5) μm across ..... *T. neobourdotii*
7. Basidiospores predominantly subglobose 8
7. Basidiospores predominantly globose 11
8. Basidia 5–7 μm diam ..... *T. pilatii*
8. Basidia 7.5–15 μm diam 9
9. Fertile areas olive brown to dull citrine ..... *T. viridescens*
9. Fertile areas not olive brown to dull citrine 10

10. Fertile areas dark yellowish brown to bister; basidiospores some shade of brown; basidia 10–14 μm diam ..... *T. atramentaria*
10. Fertile areas testaceous; basidiospores pale yellow; basidia 8–11 μm diam ..... *T. fungicola*
11. Cell walls of subicular and/or subhymenial hyphae noticeably swelling upon exposure to 10% KOH ..... *T. ruttneri*
11. Cell walls not noticeably swelling in 10% KOH 12
12. Fertile areas olive brown to dull citrine ..... *T. viridescens*
12. Fertile areas not as above 13
13. Basidia 5–7 μm diam ..... *T. pilatii*
13. Basidia 8–14 μm diam 14
14. Basidiospores aculeolate to echinulate, normally 9.5–11.5 μm across *T. atramentaria*
14. Basidiospores aculeate 15
15. Basidiospores normally 10–12 μm across 16
15. Basidiospores normally 7–9 μm across 17
16. Basidiospores pale brown; subicular hyphae of one kind ..... *T. bresadolae*
16. Basidiospores pale yellow; subicular hyphae of two kinds ..... *T. fungicola*
17. Subicular hyphae 2.5–5 μm diam; fungal parts not becoming green or bluish green in KOH ..... *T. brevispina*
17. Subicular hyphae 3.5–10 μm diam; fungal parts frequently green to bluish green in KOH ..... *T. ramosissima*

Tomentella atramentaria Rostr., Bot. Tidsskr. **19**: 41. 1894. FIG. 63

≡*Thelephora atramentaria* (Rostr.) Sacc., Syll. Fung. **11**: 117. 1895.

=*Tomentella flaccida* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 151. 1924 (L).

=*Tomentella porulosa* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 154. 1924 (PC).

≡*Tomentella spongiosa* (Schw.: Fr.) Hoehn. & Litsch. subsp. *porulosa* Bourd. & Galz., Hym. France, p. 504. 1928.

=*Tomentella separabilis* Donk, Med. Bot. Mus. Herb., Utrecht Rijksuniv. **9**: 32. 1933 (proposed as a new name for *Hypochnus chalybaeus* Pers. sensu Bresadola, Ann. Mycol. **1**: 106. 1903) (S).

Holotype: Denmark, Aasevang, paa Skraenter mod Fureso, occurring on soil and organic debris, E. Rostrup, 8 V 1892 (C).

Basidiocarps up to 0.5 mm thick, floccose to mucedinoid, normally adherent, often separable; fertile area continuous to discontinuous, *dark yellowish brown to bister (7.5 YR 4/2 to 7.5 YR 4/4 or 10.0 YR 3/4);* hymenial surface minutely punctate to smooth; subiculum loose-fibrous, slightly darker than the fertile area; sterile margin indeterminable.

SUBICULAR HYPHAE 3–5(–6) μm diam, clamped, wall thickening apparent, pale brown to yellowish brown; SUBHYMENIAL HYPHAE 3.5–5.5 μm diam, clamped, thin-walled, pale yellowish brown to hyaline; BASIDIA 40–50 × 10–14 μm, clamped at the base, rarely with transverse septa, clavate, hyaline or sometimes pale brown, 4-sterigmate, sterigmata up to 10 μm long and often with septa; BASIDIOSPORES (Fig. 63) *(8.5–)*

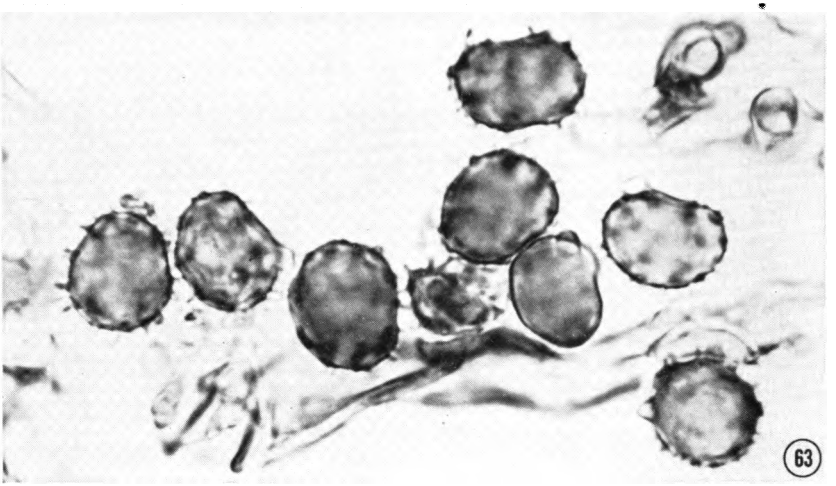


FIG. 63. Basidiospores of *T. atramentaria* (from lectotype of *T. porulosa:* SSMF negative no. 5041).

9.5–11.5(–12.5) μm, globose to subglobose, frequently becoming irregular in outline, apparently flattened on one side when mature, often elongated along one axis, aculeolate to more rarely echinulate, pale brown to yellowish brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Denmark, terricolous, humicolous; France, on *Thymus,* lapidiocolous; Netherlands, lignicolous; Poland, lignicolous, terricolous.

Also noted from Denmark (*Picea;* Christiansen, **1960**), France (*Corylus, Fagus, Quercus;* Bourdot & Galzin, **1924, 1928**), Germany (*Picea;* Litschauer, **1939a**), Macedonian Region (*Fagus;* Litschauer, **1939b**), ?Pakistan (*Viburnum;* Wakefield, **1966**), and Turkey (*Abies,* Litschauer, **1933**).

Tomentella bresadolae (Brinkm. in Bres.) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 155. 1924. FIGS. 64, 65

≡*Hypochnus bresadolae* Brinkm. in Bresadola, Ann. Mycol. **1**: 108. 1903.

Lectotype: Germany, an altem Holz (*Quercus*), Brinkmann, 328 (S).

Basidiocarps up to 0.5 mm thick, mucedinoid to hypochnoid, sometimes byssoid to membranous, separable; fertile areas discontinuous to continuous, *pale brown (5.0 YR 4/2, 7.5 YR 3/2, 7.5 YR 4/4, 7.5 YR 5/4, 10.0 YR 3/4, to 10.0 YR 4/4);* hymenial surface smooth to punctate, sometimes minutely granulose; subiculum thin, byssoid, darker

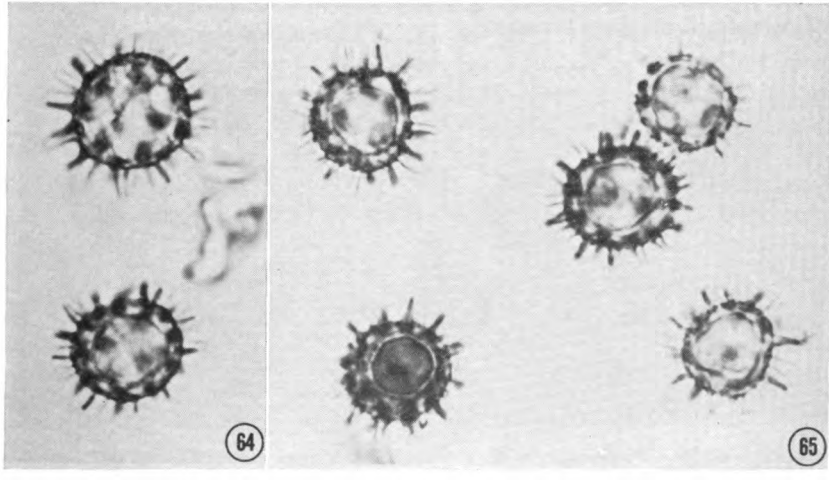
than the fertile areas; sterile margin narrow, byssoid to pubescent, darker than the fertile areas.

SUBICULAR HYPHAE *(3.5–)4.5–6.5(–8) μm diam,* septate, with clamps frequent, *individual cells up to 180 μm long (straight and uniform in outline, not irregular or wavy),* wall thickening apparent, tan to yellowish brown; SUBHYMENIAL HYPHAE 4–6 μm diam, clamped, thin-walled or some wall thickening apparent, pale tan to light brown; BASIDIA *55–70 × 10–12(–14) μm,* clamped at the base, transverse septa present, clavate, hyaline to pale brown, 4-sterigmate, sterigmata up to 11 μm long and frequently with septa; BASIDIOSPORES (Figs. 64–65) *(9–)10–12(–14) μm across, globose, aculeate, the aculei up to 3 μm long, pale brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, lignicolous; Kentucky, lignicolous; New Mexico, on *Abies, Pinus,* lignicolous; New York, on *Acer, Picea,* lignicolous, moss; North Carolina, lignicolous; Nova Scotia, on *Acer;* Ontario, on *Abies;* Tennessee, on *Pinus;* Germany, on *Quercus;* Sweden, on *Betula.*

Also noted from Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Denmark (lignicolous; Christiansen, **1960**), France (*Alnus, Pinus, Quercus;* Bourdot & Galzin, **1924**, **1928**), Germany (lignicolous; Litschauer, **1939a**), Sweden (*Picea;* Eriksson, **1958a**: lignicolous; Eriksson, **1958b**), and United Kingdom (lignicolous; Wakefield, **1969**).

REMARKS: *Tomentella bresadolae* is very similar, and appears to be closely related, to *T. ruttneri.* The most reliable diagnostic feature for separation of the two species is the swelling of hyphal cell walls of *T. ruttneri* in 10 % KOH. Other characters, it now appears, intergrade with



FIGS. 64–65. Basidiospores of *T. bresadolae* (from SSMF 685-4102: SSMF negative no. 4940).

one another to such a great extent as to render them more unreliable, as diagnostic aids, than was thought earlier (see Larsen, **1969**).

Compare also with *Tomentella brevispina*.

Tomentella brevispina (Bourd. & Galz.) M. J. Larsen, Mycologia **62**: 136. 1970. FIGS. 66–69

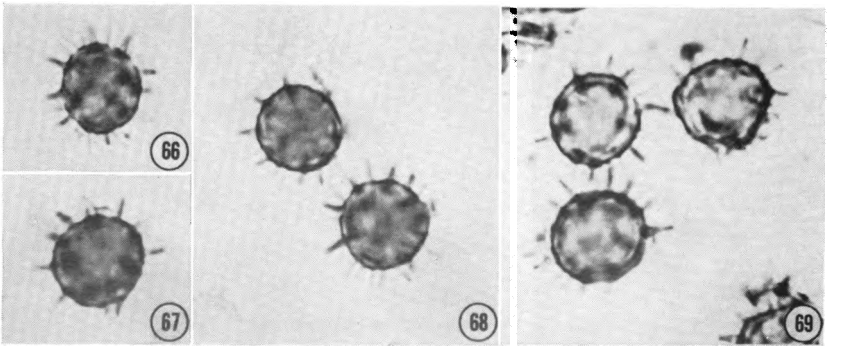
≡*Tomentella spongiosa* (Schw.: Fr.) Bourd. & Galz. var. *brevispina* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 154. 1924.

≡*Tomentella pallidofulva* (Pk.) Litsch. f. *brevispina* (Bourd. & Galz.) Litsch., Oest. Bot. Zeitschr. **88**: 131. 1939.

Lectotype: France, L'Aveyron, sous des mousses, A. Galzin 18407 (Bourdot herb. 18952), 22 VIII 1915 (PC).

Basidiocarps up to 1.0 mm thick, mucedinoid, adherent; fertile areas finally becoming continuous, *dark brown to umber (2.5 YR 3/2);* hymenial surface smooth; subiculum strongly fibrous, chocolate brown; sterile margin indeterminable.

SUBICULAR HYPHAE noticeably thick-walled, *of two kinds, some 2.5–4.5(–5) μm diam, clamped, usually branched, dull ferruginous brown, the walls somewhat spinulose; some 1.5–2.5(–3) μm diam, septate, with clamps frequent, rarely branched, yellowish brown, the walls becoming rough to spinulose;* CORDONS rare, up to 35 μm diam, yellowish brown, usually clamped, individual hyphae rough- and noticeably thick-walled; SUBHYMENIAL HYPHAE 5–6.5 μm diam, clamped, thin-walled or wall thickening slight, pale to medium brown or hyaline; BASIDIA 35–50 × 8.5–11(–12) μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 66–69) *8–9(–9.5) μm across, usually globose, sometimes subglobose, aculeate to less frequently echinulate,* pale to medium brown.



FIGS. 66–69. Basidiospores of *T. brevispina* (from lectotype: SSMF negative no. 5052).

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, lignicolous; Ontario, on *Thuja;* France, on moss.

REMARKS: *Tomentella brevispina* is, at present, imperfectly known. The two kinds of subicular hyphae that eventually become rough-walled or spinulose appear to be the only reliable means by which the species can be recognized. The spores are similar to those of *T. bresadolae* and *T. ruttneri,* but *T. brevispina* may be separated from both on the basis of hyphal characters.

Compare also with *T. neobourdotii, T. ramosissima,* and *T. violaceofusca.*

Tomentella bryophila (Pers.) M. J. Larsen, comb. nov. FIG. 70

≡*Sporotrichum bryophilum* Pers., Myc. Europ. **1**: 78. 1822.
=*Zygodesmus fulvus* Sacc., Michelia **2**: 147. 1880 (PAD).
=*Hypochnus obscuratus* Karst., Hedwigia **35**: 46. 1896 (H).
=*Zygodesmus pallidofulvus* Pk., N.Y. State Mus. Bull. **105**: 30. 1906 (NYS).
≡*Hypochnus pallidofulvus* (Pk.) Burt, Ann. Missouri Bot. Gard. **13**: 321. 1926.
≡*Tomentella pallidofulva* (Pk.) Litsch., Oest. Bot. Zeitschr. **88**: 131. 1939.
=*Tomentella pallidofulva* (Pk.) Litsch. f. *muscicola* Svrček, Sydowia **14**: 221. 1960 (PR).
=*Hypochnus subferrugineus* Burt, Ann. Missouri Bot. Gard. **3**: 210. 1916 (FH).
≡*Tomentella subferruginea* (Burt) Donk, Med. Bot. Mus. Herb., Rijksuniv. Utrecht **9**: 34. 1933.
=*Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat. "ut 'c' without explicit rank" *fuscomarginata* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 156. 1924 (PC).
≡*Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat. var. *fuscomarginata* Bourd. & Galz., Hym. France, p. 507. 1928.
=*Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat. "ut 'd' without explicit rank" . . . *-obscura* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 156. 1924 (PC).
≡*Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat. var. *obscura* Bourd. & Galz., Hym. France, p. 507. 1928.
=*Tomentella pseudoferruginea* Skovs., Compt. Rend. Lab. Carlsb. sér. Physiol. **25**: 18. 1950 (C).

Lectotype: In Persoon herb., teste M. A. Donk (L).

Basidiocarps up to 1.0 mm thick, mucedinoid, adherent to separable,

fertile area continuous, *bright to dull ferruginous brown, sometimes approaching reddish orange (near 10.0 YR 4/6);* hymenial surface faintly reticulate; sterile margin darker than the fertile area, normally concolorous with the subiculum.

SUBICULAR HYPHAE of two kinds, some 4.5–6(–7) μm diam, septa closely spaced, with clamps frequent, thick-walled and often with localized thickening, dull olive brown; some 4–6 μm diam, clamped, septa without clamps infrequent, thin- to thick-walled, often with localized thickenings, violaceous brown; SUBHYMENIAL HYPHAE 4–6 μm diam, clamped, thin-walled, sometimes with localized thickenings, pale olivaceous brown to hyaline, or becoming bright yellow due to the presence of yellow encrusting material; BASIDIA 50–60 × 7–9(–11) μm, clamped at the base, transverse septa present, clavate, 4-sterigmate, sterigmata up to 6 μm long, pale yellow encrusting material frequently present on basidial walls; BASIDIOSPORES (Fig. 70) *7–11(–12) μm across, globose to subglobose, sometimes irregularly globose, normally aculeate, sometimes echinulate, pale to bright yellow.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Picea, Populus, Quercus;* British Columbia, on *Amelanchier;* Colorado, on *Populus;* District of Columbia, on coniferous wood; Florida, on angiospermous wood; Georgia, on *Quercus;* Idaho, on *Alnus;* Illinois, lignicolous; Indiana, on angiospermous wood; Louisiana, on angiospermous wood; Maryland, on *Fagus;* Massachusetts, on *Betula, Fomes;* Michigan, on *Populus, Tsuga;* Montana, on *Populus, Thuja;* New Mexico, on *Abies, Pinus, Populus,* lignicolous; New York, on *Acer, Betula, Castanea, Fagus, Populus, Tsuga,* angiospermous and gymnospermous wood; North Carolina, on *Acer, Castanea, Robinia;* Ohio, on *Betula,* angiospermous wood, lignicolous; Ontario, on *Acer, Betula, Fagus, Populus, Quercus,* angiospermous and gymnospermous slash, humicolous; Pennsylvania, on *Quercus, Thuja;* Tennessee, on angiospermous wood; Vermont, on *Tsuga;* Belgium, on moss; Denmark, on *Quercus,* gymnospermous wood; Finland, on *Tilia;* France, lapidicolous; Ger-

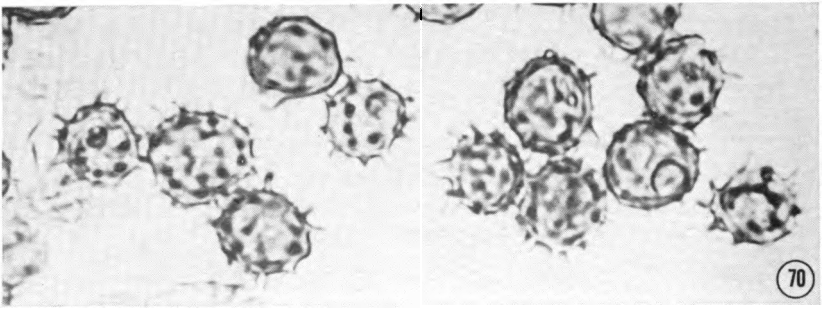


FIG. 70. Basidiospores of *T. bryophila* (from SSMF 705–4351: SSMF negative no. 5189).

many, on angiospermous wood; India, lignicolous; Italy, *Betula;* Netherlands, on angiospermous wood; Sweden, on *Betula, Quercus,* lignicolous.

Also noted from Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Czechoslovakia (*Acer, Alnus, Betula, Carex, Carpinus, Castanea, Cornus, Corylus, Fagus, Ganoderma, Hypoxylon, Juniperus, Picea, Populus, Quercus, Tilia;* Svrček, **1960**), Denmark (*Betula, Fagus;* Christiansen, **1960**: lignicolous; Skovsted, **1950**), Finland (lignicolous; Karsten, **1882, 1889**), France (*Alnus, Castanea, Quercus;* Bourdot & Galzin, **1924, 1928**), Germany (lignicolous; Litschauer, **1939a**), Hungary (lignicolous; Bresadola, **1897**), Italy (*Quercus;* Saccardo, **1881**), Macedonian Region (*Fagus;* Litschauer, **1939b**), Netherlands (lignicolous; Donk, **1933**), Norway (*Populus;* Ryvarden, **1971**), Pakistan (*Viburnum;* Wakefield, **1966**), Poland (lignicolous; Bresadola, **1903**), Sweden (*Betula, Picea, Salix;* Eriksson, **1958a**: lignicolous; Eriksson, **1958b**), Tunisia (*Quercus;* Patouillard, **1897**), and United Kingdom (lignicolous; Wakefield & Pearson, **1920**: *Fagus, Quercus, Tilia;* Wakefield, **1969**).

REMARKS: *Tomentella bryophila,* one of the most common and widely distributed species, is, for the most part, readily diagnosed by its bright ferruginous fertile areas and large, normally globose, aculeate, yellow basidiospores. However, it grades morphologically into *T. fuscoferruginosa,* which has irregular spores and apparently only one kind of subicular hyphae. The distinction between the two is by no means clear.

Tomentella viridescens is also strikingly similar to *T. bryophila,* but the olive brown to dull citrine fertile area and shape and ornamentation of basidiospores usually serves to separate *T. viridescens.*

Tomentella fungicola may be just a form of *T. bryophila,* but the slightly larger basidia and basidiospores of the former and paler fertile area suggest that it should be kept separate, for the present at least, from *T. bryophila.*

Tomentella ferruginella is similar to *T. bryophila* in most respects, but can be readily separated by its narrower subicular hyphae and somewhat smaller spores.

Tomentella ferruginella Bourd. & Galz., Bull. Soc. Mycol. France **40**: 157. 1924. FIG. 71

≡*Tomentella ferruginea* (Pers. per Pers.: Fr.) Pat. subsp. *ferruginella* Bourd. & Galz., Hym. France, p. 507. 1928.

≡*Tomentella furruginella* (Bourd. & Galz.) Svrček, Česká Mykol. **12**: 75. 1958 (nom. superfl.).

Lectotype: France, L'Aveyron, St. Esteve, sur grès, A. Galzin 22853 (Bourdot herb. 22507), X 1917 (PC).

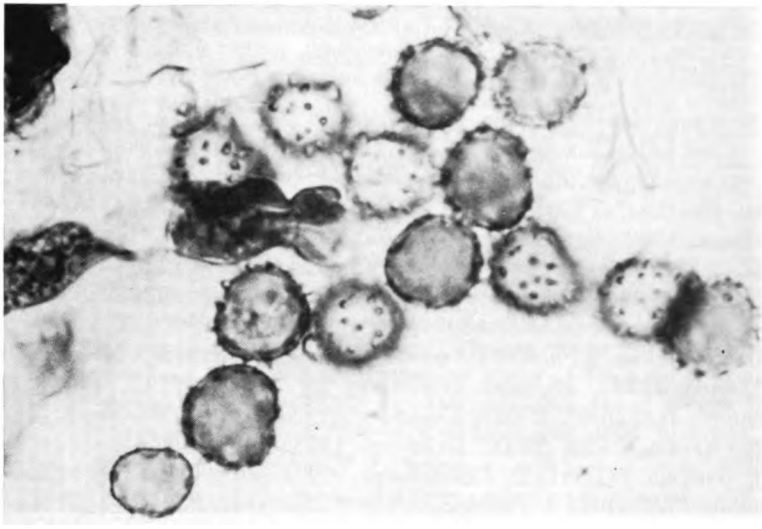


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FIG. 71. Basidiospores of *T. ferruginella* (from M. J. Larsen 4317 in SSMF: CFMR negative no. M139835).

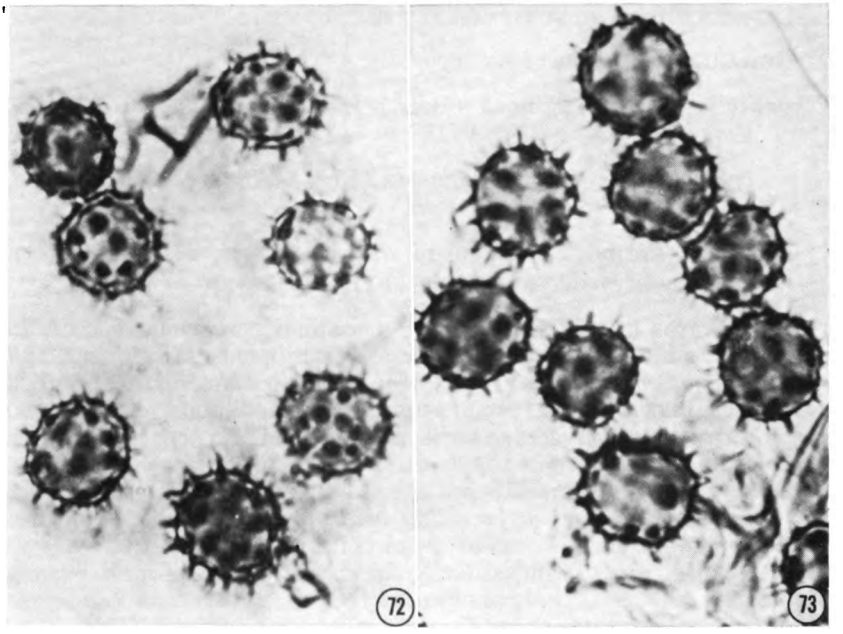
Basidiocarps up to 0.3 mm thick, tomentose, membranous, normally adherent; fertile area continuous, *ferruginous brown (near 10.0 R 4/4 to 10.0 R 3/6 or 2.5 YR 3/4);* hymenial surface smooth, finely reticulate, or slightly granulose; subiculum thin, loose-fibrous or cottony, paler than the fertile area; sterile margin farinaceous, cobwebby, paler than the fertile area.

SUBICULAR HYPHAE *2–4(–5) μm diam,* septate, with clamps frequent, wall thickening apparent, olive brown to pale yellowish brown; CORDONS up to 30 μm diam, dull yellowish brown to smokey brown, individual hyphae 2–4 μm diam, clamped, thin-walled; SUBHYMENIAL HYPHAE 2–4 μm diam, clamped, thin-walled, hyaline to pale tan; BASIDIA 40–60 × 8.5–11 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Fig. 71) *6–7.5 μm diam, or 6.5–8 μm across, mostly globose to subglobose,* echinulate, very rarely distinctly aculeate, *pale yellow.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, lignicolous; Louisiana, lignicolous; New Mexico, on *Populus;* France, lapidicolous; Sweden, on *Tilia.*

Also noted from Czechoslovakia (humicolous, terricolous; Svrček, 1960).

REMARKS: See *Tomentella bryophila.*



FIGS. 72–73. Basidiospores of *T. fungicola* (from holotype: CFMR negative no. M140044).

Tomentella fungicola (Litsch.) M. J. Larsen, comb. & stat. nov.
FIGS. *72, 73*

≡*Tomentella flaccida* Bourd. & Galz. var. *fungicola* Litsch., Bull. Soc. Mycol. France **49**: 64. 1933.

Holotype: Turkey, Čankiri, Ilgaz-Dagh, on *Abies,* A. Pilát 288, VIII 1931 (W, 21479), and isotype in PR (704214).

Basidiocarp up to 0.3 mm thick, adnate, mucedinoid, fertile area continuous, dull mustard yellow (*near 10.0 YR 6/8 to 10.0 YR 5/6*); hymenial surface smooth; subiculum fibrous, dark olive brown; sterile margin arachnoid to pubescent, concolorous with the subiculum.

SUBICULAR HYPHAE of two kinds, some 4–6(–7) μm diam, *septate, with clamps frequent,* becoming very thick-walled in part, but mostly with wall thickening apparent, walls dark olive brown; *some 3–3.5 μm diam, septate, with clamps absent,* thick-walled, dark olive brown; SUBHYMENIAL HYPHAE 5–6 μm diam, clamped, thin-walled, pale brown; BASIDIA 55–65(–70) × 8–10(–11) μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 11 μm long; BASIDIOSPORES (Figs. 72–73) *9–12(–13) μm across, normally globose to subglobose, some irregularly globose, echinulate to aculeate, pale yellow.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Turkey, on *Abies.*

REMARKS: See *Tomentella bryophila.*

Tomentella fuscoferruginosa (Bres.) Litsch., Ann. Mycol. **39**: 377. 1941. FIGS. 74–76

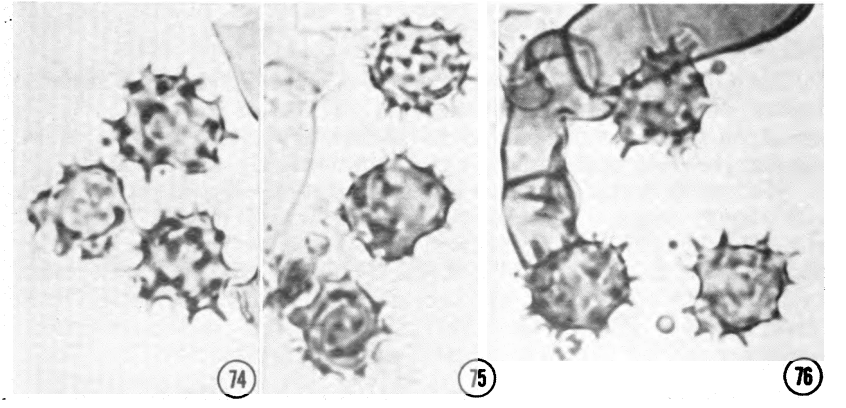
≡*Hypochnus fuscoferruginosus* Bres., Ann. Mycol. 1: 109. 1903.

Holotype: Poland, ad frangulam *Alnum,* Eichler, 84, August (S), and isotype in Hoehnel herb. (FH).

Basidiocarps up to 0.5 mm thick, mucedinoid, becoming floccose in some parts, normally adherent; fertile area continuous, *ferruginous, dull ferruginous or dark brown (10.0 R 4/4, 5.0 YR 3/4, or 5.0 YR 5/6);* hymenial surface smooth to punctate; subiculum fibrous, dark brown, darker than the fertile area; sterile margin arachnoid, concolorus with the subiculum.

SUBICULAR HYPHAE 4–6.5 μm diam, septate, with clamps frequent, *wall thickening apparent or becoming very thick-walled,* thickening frequently localized, dull brown to yellowish brown; SUBHYMENIAL HYPHAE 4–5 μm diam, clamped, wall thickening apparent, pale brown; BASIDIA 30–45 × 8–11 μm, clamped at the base, often with transverse septa, clavate, contents frequently dull yellowish brown in KOH, 2- to 4-sterigmate, sterigmata up to 7 μm long; BASIDIOSPORES (Figs. 74–76) *(7–)8–10(–12) μm across, irregularly globose to lobed when mature, echinulate to aculeate, bright yellow to dull yellowish brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: New York, on *Acer, Quercus;* Georgia, on *Quercus;* North Carolina, on *Quercus;* Ontario, on *Abies, Betula, Quercus,* lignicolous; Tennessee, on *Pinus;* Washington, lignicolous; Poland, on *Alnus.*



FIGS. 74–76. Basidiospores of *T. fuscoferruginosa* (from SSMF 9873: SSMF negative nos. 5189, 5191).

Also noted from Macedonian Region (*Fagus;* Litschauer, **1939b**: lignicolous; Litschauer, **1941**).

REMARKS: See *Tomentella bryophila.*

Tomentella neobourdotii M. J. Larsen, Mycologia **60**: 1179. 1968. FIGS. 77–80

≡*Tomentella bourdotii* Svrček f. *macrospora* Svrček, Česká Mykol. **12**: 76. 1958.

Holotype: Czechoslovakia, Bohemia meridionalis, on *Carpinus,* M. Svrček, 24 X 1954 (PR 162958).

Basidiocarps up to 0.4 mm thick, arachnoid to byssoid or sometimes floccose, usually mucedinoid, adherent to separable; fertile areas discontinuous to continuous, *dark brown to dull grayish blue (2.5 YR 2/2 to 5.0 YR 2/2); hymenial surface granulose to colliculose, rarely smooth;* subiculum fibrous and usually dark brown, sometimes dull grayish blue; sterile margin usually concolorous with fertile areas, but sometimes much paler and then pale tan.

SUBICULAR HYPHAE of two kinds, some 3–5(–6.5) μm diam, frequently clamped, wall thickening apparent, dull brown, with *duli brown encrusting material giving the walls a rough or spinulose appearance,* walls rarely smooth; *some rare, 2–4 μm, usually septate without clamps,* pale to dark brown, thick-walled with the lumen sometimes not evident, with brown encrusting material giving the walls a rough or spinulose appearance; CORDONS infrequent or rare, up to 35 μm diam, dark brown, individual hyphae 2–4.5 μm diam, clamped, brown and often encrusted as described above; SUBHYMENIAL HYPHAE 3–4.5 μm diam, clamped, thin-walled, pale to dark brown in the proximity of the subiculum and paler towards the hymenium, often encrusted as above, *in some specimens a bluish to greenish diffusate is apparent in KOH;* BASIDIA 20–35 × 5.5–7.5 μm, clamped at the base and infrequently with transverse septa, clavate, 4- to rarely 5–6-sterigmate; BASIDIOSPORES (Figs. 77–80) *5–6.5(–7.5) μm across, globose, subglobose, irregularly globose, or rarely irregular* when mature, aculeolate to echinulate, sometimes aculeate, walls dull brown.

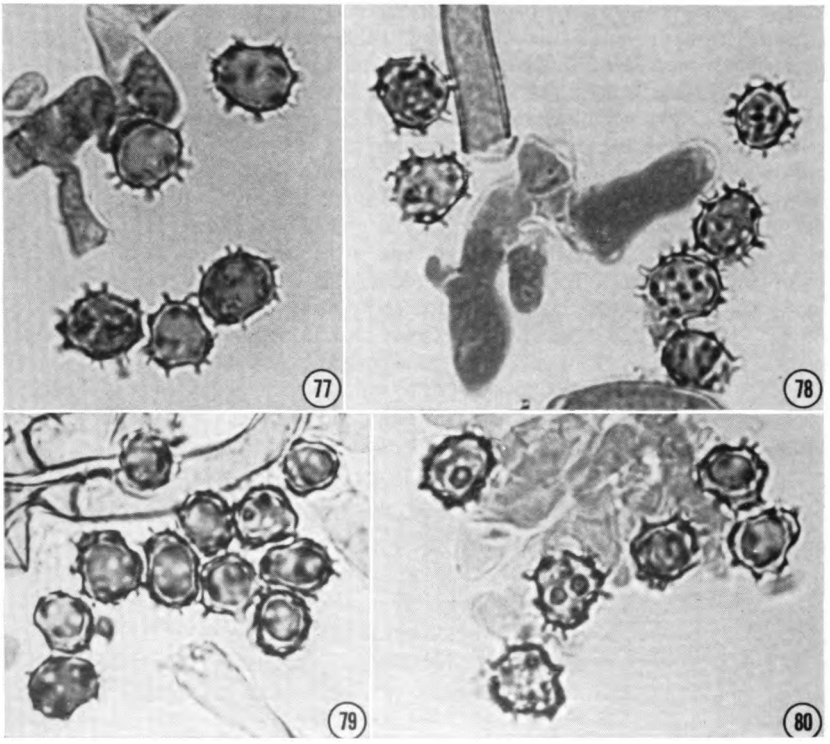
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Pinus, Populus, Quercus;* British Columbia, lignicolous; Kentucky, on angiospermous wood; Massachusetts, on *Polyporus,* lignicolous; Michigan, on *Acer, Betula, Pinus, Populus, Tsuga,* lignicolous; Montana, on *Alnus, Larix, Populus;* New Mexico, on *Populus;* New York, on *Acer, Betula, Carpinus, Fagus, Pinus, Populus,* lignicolous; North Carolina, on *Acer,* angiospermous wood; Northwest Territories, lignicolous; Ontario, on *Acer, Betula, Populus, Quercus, Salix, Thuja, Tilia,* lignicolous; Quebec, lignicolous; Tennessee, on *Tsuga;* Wisconsin, on *Quercus;* Austria, on *Fagus, Pinus,* coniferous wood; Czechoslovakia, on *Abies, Acer, Betula, Carpinus, Crataegus, Fagus, Juniperus, Picea,*

Tilia; Finland, on *Quercus,* coniferous wood; France, on *Castanea, Cerasus, Pinus, Quercus,* coniferous wood, lapidicolous; Germany, on *Picea, Populus, Quercus,* coniferous wood; Macedonian Region, on *Fagus;* Sweden, on *Populus, Quercus,* coniferous wood.

Also noted from Denmark (*Aesculus, Quercus;* Christiansen, **1960**), Sweden (lignicolous; Eriksson, **1958b**), and United Kingdom (*Fagus, Quercus;* Wakefield, **1969**).

REMARKS: *Tomentella neobourdotii* is usually identifiable by globose to irregularly globose basidiospores that are normally 5–6.5 μm across and subicular hyphae that are 3–5 μm diam and encrusted with brown deposits. It may be confused with *T. violaceofusca,* the spores and hyphae of which frequently intergrade morphologically with those of *T. neobourdotii. Tomentella violaceofusca,* however, is usually characterized by subicular hyphae and spores that are up to 9.5 μm diam and 8.5 μm across, respectively.

Tomentella ramosissima may at first be confused with the above



FIGS. 77–80. Basidiospores of *T. neobourdotii* (from SSMF 705–4052; SSMF negative no. 5016).

two species, but its subicular hyphae are very thick-walled and normally smooth (without encrustation). Another character of *T. ramosissima* that appears to be a useful diagnostic aid is the occurrence of scattered spores that are wholly, or in part, green or bluish green when mounted in KOH.

Tomentella pilatii Litsch., Bull. Soc. Mycol. France **49**: *72.* 1933. FIGS. 81–83

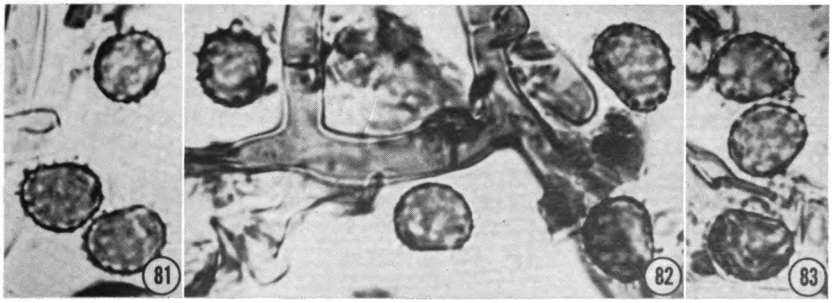
=*Tomentella pilatii* Litsch. var. *laeve* Skovs., Compt. Rend. Lab. Carlsb. sér. Physiol. **25**: 24. 1950 (C).

Lectotype: Turkey, prov. Čankiri, Ilgaz-Dagh, on *Abies,* A. Pilát 310, VIII 1931 (21957 in W).

Basidiocarps up to 0.5 mm thick, mucedinoid, somewhat separable; fertile area continuous, *dull brown to dull greyish brown (10.0 YR 3/2 to 10.0 YR 3/4); hymenial surface smooth to colliculose or blunt papillate;* subiculum loosely fibrous, dark brown to concolorous with the fertile area; sterile margin arachnoid, somewhat paler than, to concolorous with, the fertile area.

SUBICULAR HYPHAE 4–6(–6.5) μm diam, septate, with clamps frequent, wall thickening apparent, dull brown; CORDONS infrequent, up to 30 μm diam, dark brown, individual hyphae 3–4 μm diam, clamped, brown; SUBHYMENIAL HYPHAE 3–4 μm diam, clamped, thin-walled, hyaline to pale tan; BASIDIA 25–35 × 5–7 μm, clamped at the base, sometimes with transverse septa, clavate, 4-sterigmate, sterigmata up to 4 μm long; BASIDIOSPORES (Figs. 81–83) *6–8(–9.5) μm across, globose to subglobose, some appearing ellipsoid, often elongated along one axis, sometimes appearing bent, distinctly flattened on one side, aculeolate to echinulate, bister to dark brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Denmark, on *Picea;* Macedonia, on *Fagus;* Turkey, on *Abies.*



FIGS. 81–83. Basidiospores of *T. pilatii* (from lectotype: SSMF negative no. 5102).

Tomentella ramosissima (Berk. & Curt.) Wakef., Mycologia **52**: 927. 1960. FIGS. 84, 85

≡*Zygodesmus ramosissimus* Berk. & Curt., Grevillea **3**: 145. 1875.

=*Hypochnus fuligineus* Burt, Ann. Missouri Bot. Gard. **3**: 232. 1916 (FH).

≡*Tomentella fuliginea* (Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 153. 1924.

Holotype: U.S.A., South Carolina, Society Hill, on *Pinus,* M. A. Curtis 2274, II 1849 (K), and isotype in Curtis herb. (FH).

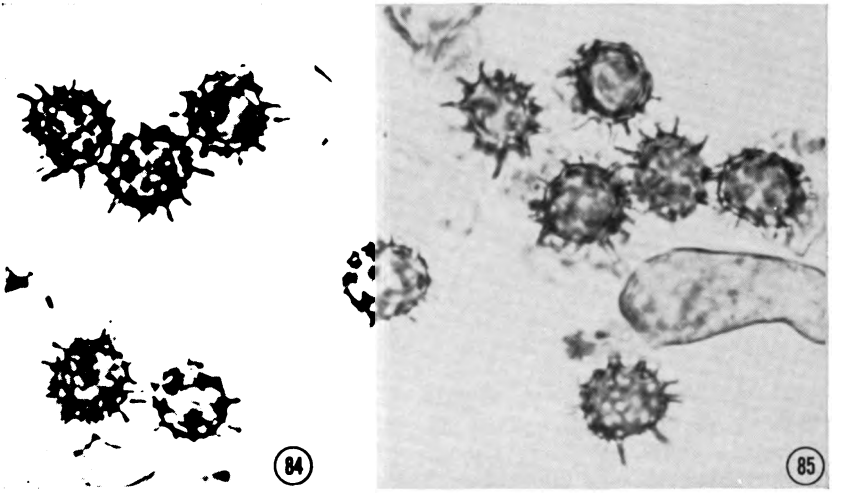
Basidiocarps up to 0.5 mm thick, adherent to separable, normally mucedinoid; fertile area finally becoming continuous, *fuligineous (5.0 YR 3/4, 5.0 YR 6/4);* subiculum fibrous, darker than the fertile area, hymenial surface smooth, more rarely granulose or colliculose; sterile margin fibrillose, concolorous with the subiculum.

SUBICULAR HYPHAE *(3.5–)4–7(–10) μm,* septate, with clamps frequent, wall thickening apparent or thick-walled, brown to dark golden brown, rarely with encrusting material; SUBHYMENIAL HYPHAE 4–6 μm diam, clamped, wall thickening apparent or thin-walled, pale brown, *scattered crystalline material adhering to the hyphae becoming green in KOH;* BASIDIA 35–50 × 8–10 μm, clamped at the base, often with transverse septa, clavate, 4-sterigmate, sterigmata up to 6 μm long and often with septa, *basidial parts becoming green to bluish green due to the reaction of scattered crystalline material on the walls with KOH;* BASIDIOSPORES (Figs. 84–85) *7–8.5(–9) μm across, globose to subglobose, aculeate,* tan to medium brown or dull golden brown, *sometimes becoming wholly or in part dark bluish green due to the reaction of adhering crystalline material with KOH.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, on *Pinus;* Arizona, on *Abies, Pinus;* British Columbia, on *Alnus, Thuja;* Idaho, on *Alnus,* lignicolous; Michigan, on *Quercus;* Mississippi, on *Populus;* Montana, on *Alnus, Larix, Picea, Pinus, Populus,* lignicolous; Newfoundland, on *Picea;* New Hampshire, lignicolous; New Mexico, on *Pinus, Pseudotsuga,* lignicolous; New York, on *Acer, Pinus, Populus, Thuja,* lignicolous; North Carolina, lignicolous; Ontario, on *Abies, Betula, Larix, Picea, Pinus, Populus, Quercus, Tilia,* lignicolous; Quebec, on *Picea;* South Carolina, on *Pinus;* Washington, lignicolous; Germany, lignicolous; Portugal, lignicolous (*?Pinus*); Sweden, on *Betula, Cedrus.*

Also noted from Czechoslovakia (*Carpinus, Quercus, Tilia;* Svrček, 1960), France (*Erica;* Bourdot & Galzin, 1924, 1928), and Turkey (*Abies;* Litschauer, 1933).

REMARKS: See *Tomentella neobourdotii.*



FIGS. 84–85. Basidiospores of *T. ramosissima* (from SSMF 695–4990; SSMF negative no. 4963).

Tomentella ruttneri Litsch., Bull. Soc. Mycol. France **49**: 67. 1933. FIG. 86

Lectotype: Turkey, prov. Čankiri, Ilgaz-Dagh, on *Abies,* A. Pilát 315, VIII 1931 (W).

Basidiocarps up to 1.0 mm thick, hypochnoid to mucedinoid, normally adherent; fertile area usually continuous, *dark brown (2.5 YR 3/2, 5.0 YR 3/4, 5.0 YR 4/4, 7.5 YR 5/4, to 10.0 R 3/2);* hymenial surface smooth to minutely punctate; subiculum concolorous with, to darker than, the fertile area; sterile margin byssoid, concolorous with, to darker than, the fertile area.

SUBICULAR HYPHAE *(2.5–)3–5.5(–6.5) μm diam, hyphal cells up to 70 μm long and irregular in outline or wavy (not straight or uniform),* septate, with clamps frequent, becoming thick-walled, with the lumen sometimes not evident (wall thickening frequently localized and cell wall strata often discernible), *cell walls swelling upon continuous exposure to 2% KOH and immediately so upon exposure to 10% KOH,* dark brown to yellowish brown; SUBHYMENIAL HYPHAE 4–6(–8) μm diam, clamped, thin-walled, localized wall thickening apparent in some instances, cell walls often reacting to KOH as described above, dull brown to yellowish brown; BASIDIA 45–55(–60) × 8–11(–12) μm, clamped at the base, transverse septa present, clavate, 2- to 4-sterigmate, sterigmata up to 9 μm long; BASIDIOSPORES (Fig. 86) *(7–)8–9.5(–11.5) μm across, globose to subglobose, aculeate to more rarely echinulate, pale brown to deep hazel.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, ligni-

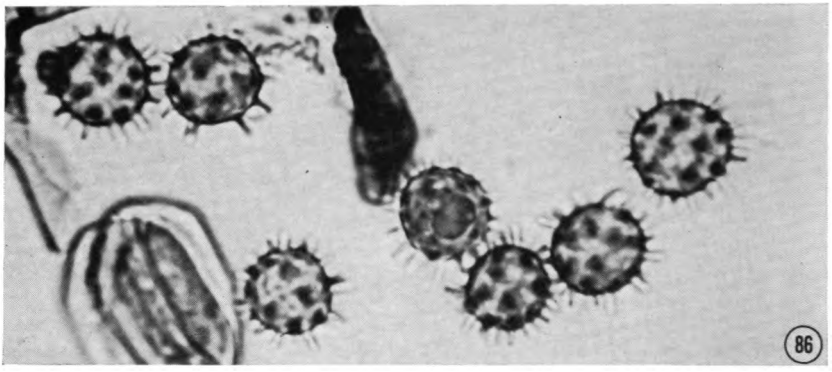


FIG. 86. Basidiospores of *T. ruttneri* (from SSMF 705–4180: SSMF negative no. 4957).

colous; Arizona, on *Populus;* Arkansas, on *Pinus;* Maryland, on ?*Juglans, Populus;* Michigan, on *Acer, Betula, Fagus, Picea, Populus, Thuja, Tsuga,* lignicolous; Newfoundland, on *Abies, Polyporus;* New Mexico, lignicolous; New York, on *Abies, Acer, Betula, Fagus, Picea, Pinus, Populus, Tsuga,* lignicolous; Ohio, lignicolous; Ontario, on *Abies, Acer, Betula, Fraxinus, Polyporus, Pinus, Populus, Thuja, Tilia,* lignicolous, humicolous; Tennessee, on *Pinus;* Vermont, on angiospermous wood; Denmark, on gymnospermous wood; Finland, on *Pinus;* Germany, on *Alnus, Fagus, Quercus;* India, lignicolous; Sweden, on *Alnus, Picea,* gymnospermous wood; Turkey, on *Abies.*

Also noted from Czechoslovakia (*Acer, Betula, Carpinus, Cornus, Fagus, Pinus, Quercus, Rubus, Salix, Sorbus, Tilia, Trametes;* Svrček, **1960**), Germany (*Abies, Picea;* Litschauer, **1939a**), Sweden (lignicolous; Eriksson, **1958b**), and Turkey (*Abies;* Litschauer, **1933**).

REMARKS: Compare with *Tomentella bresadolae.*

Tomentella violaceofusca (Sacc.) M. J. Larsen, comb. nov.

FIGS. 87, 88

≡*Zygodesmus violaceofuscus* Sacc., Michelia **2**: 293. 1881.

=*Zygodesmus trachychaetes* Ell. & Ev., J. Mycol. **4**: 106. 1888 (NY).

≡*Tomentella trachychaetes* (Ell. & Ev.) M. J. Larsen, State Univ. N.Y. Coll. Forest. at Syracuse Univ., Tech. Publ. **93**: 95. 1968.

=*Hypochnus spiniferus* Burt, Ann. Missouri Bot. Gard. **3**: 218. 1916 (FH).

≡*Tomentella spongiosa* (Schw.: Fr.) Hoehn. & Litsch. var. *spinifera* (Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 154. 1924.

≡*Tomentella spongiosa* (Schw.: Fr.) Hoehn. & Litsch. f. *spinifera* (Burt) Svrček, Sydowia **14**: 215. 1960.

≡*Tomentella spinifera* (Burt) M. P. Chris., Dansk Bot. Ark. **19**: 291. 1960.

=*Tomentella granulosa* (Pk.) Bourd. & Galz. var. *terricolor* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 158. 1924 (PC).

=*Tomentella pseudofusca* Skovs., Compt. Rend. Lab. Carlsb. sér. Physiol. **25**: 27. 1950(C).

Holotype: Italy, on *Quercus,* herb. P. A. Saccardo (PAD).

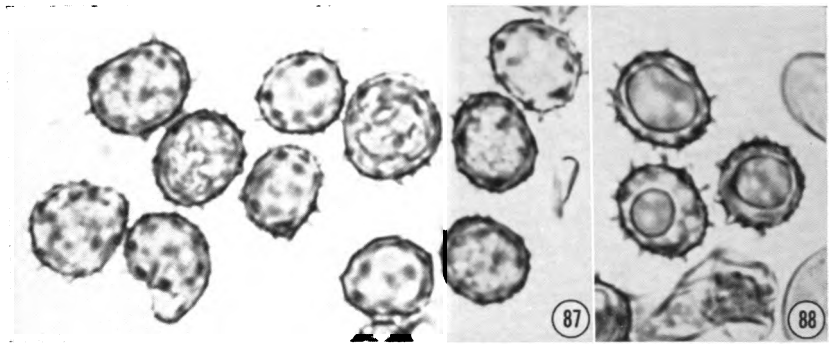
Basidiocarps up to 1.5 mm thick, usually mucedinoid, sometimes curling away from the substratum on drying, normally adherent; fertile area continuous, *grayish brown to umbrinous (5.0 YR 5/2, 5.0 YR 6/2);* subiculum concolorous with, to darker than, the fertile area, fibrous; hymenial surface normally smooth, rarely becoming granulose or colliculose; sterile margin byssoid, concolorous with, to darker than, the fertile area.

SUBICULAR HYPHAE 5–8(–9) μm diam, septate, with clamps frequent, becoming very thick-walled, pale yellowish brown to light golden brown, *encrusting material sometimes giving the hyphae a spinulose character, usually only slightly spinulose, or the encrusting material not spinulose;* CORDONS rare, up to 30 μm diam, golden brown, individual hyphae 3–6 μm diam, clamped, sometimes spinulose; SUBHYMENIAL HYPHAE 3.5–5(–6) μm diam, clamped, thick- to mostly thin-walled, sometimes spinulose, hyaline to pale yellowish brown, parts sometimes green in KOH; BASIDIA 30–40 × 7–8.5 μm, clamped at the base, transverse septa frequently present, clavate, 4-sterigmate, sterigmata up to 7 μm long, parts sometmes green in KOH; BASIDIOSPORES (Figs. 87–88) *6.5–8.5(–9) μm diam, globose to less frequently subglobose, sometimes flattened on one side, aculeate to echinulate, pale yellowish brown or subhyaline.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, lignicolous; Florida, on *Betula,* lignicolous; Georgia, on *Quercus;* Louisiana, lignicolous; Maine, on *Fraxinus;* Maryland, on *Pinus, Quercus,* angiospermous wood; Massachusetts, on *Magnolia,* lignicolous; Michigan, on *Thuja;* New Jersey, lignicolous; New York, on *Acer, Populus, Quercus, Trichoglossum,* lignicolous; North Carolina, on *Quercus;* Ontario, on *Abies;* South Carolina, lignicolous; Vermont, on *Quercus;* Wyoming, lignicolous; Finland, on *Picea;* France, lapidicolous; Germany, lignicolous; Italy, on *Quercus;* Sweden, on *Pinus, Picea, Quercus.*

Also noted from Austria (*Fagus;* Litschauer, **1939b**), Denmark (*Fagus;* Skovsted, **1950**, Christiansen, **1960**), and Germany (*Picea;* Litschauer, **1939a**).

REMARKS: See *Tomentella neobourdotii.*



FIGS. 87–88. Basidiospores of *T. violaceofusca* (from SSMF 705–4870: SSMF negative no. 5190).

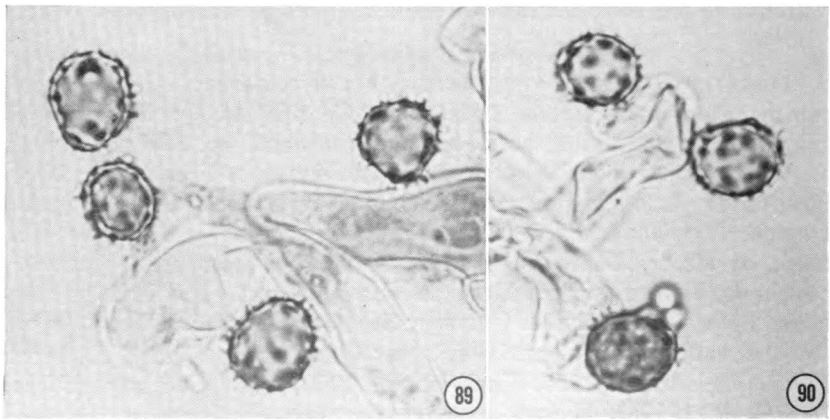
Tomentella viridescens (Bres. & Torrend) Bourd. & Galz., Hym. France, p. 477. 1928. FIGS. 89, 90

≡*Hypochnus viridescens* Bres. & Torrend in Torrend, Broteria 11: 85. 1913.

Holotype: Portugal, Lisbon, on *Quercus,* C. Torrend, 282 (S).

Basidiocarps up to 0.4 mm thick, mucedinoid, *appearing velvety,* adherent, separable in small pieces; fertile area continuous, *olive brown to dull citrine (10.0 YR 5/6, 5.0 YR 4/4);* hymenial surface smooth, finely punctate; subiculum dark olive brown, fibrous; sterile margin fimbriate, darker than the fertile area and concolorous with the subiculum.

SUBICULAR HYPHAE 2.5–4.5(–6) μm diam, clamped, normally with



FIGS. 89–90. Basidiospores of *T. viridescens* (from SSMF 715–8616: SSMF negative no. 5050).

wall thickening apparent, often with localized thickenings, dull olive brown; SUBHYMENIAL HYPHAE 3.5–5 μm diam, clamped, thin-walled, pale tan-brown and becoming paler towards the hymenium; BASIDIA *(45–)50–60 × 7.5–11(–15) μm,* clamped at the base, often with transverse septa, clavate, *contents often turning ochre in KOH,* 4-sterigmate, sterigmata up to 10 μm long; BASIDIOSPORES (Figs. 89–90) *8–12 μm across, globose to subglobose, often flattened on one side and elongated along one axis, aculeolate to echinulate, pale yellow to dull yellow.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Juglans, Pinus, Platanus, Populus;* New Mexico, on *Abies, Acer, Pinus,* lignicolous, humicolous, fungicolous; New York, on *Acer;* Ontario, on *Acer, Populus,* lignicolous; Portugal, on *Quercus.*

Also noted from Denmark (angiospermous wood; Christiansen, 1960).

SECTION VIII. **Albostratosae** M. J. Larsen, sect. nov.

Basidiocarpis mucedinoideis, plerumque separabilibus; hymenio superficie granulosa vel colliculosa, interdum laevi; subiculis albo vel subluteola; hyphis systematis monomitico; hyphis fasciculis adsunt; basidiis clavatis; basidiosporis globosis vel subglobosis, aculeolatis vel echinulatis.

Basidiocarps mucedinoid, often separable; hymenial surface granulose to colliculose, sometimes smooth; subiculum pale yellow to almost white; hyphal system monomitic; cordons present; basidia clavate; basidiospores globose to subglobose, aculeolate to echinulate.

TYPE SPECIES: *Tomentella asperula* (Karst.) Hoehn. & Litsch.

Tomentella asperula (Karst.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1570. 1906. FIG. 91

≡*Hypochnus asperulus* Karst., Bidrag Kaenn. Finl. Nat. Folk **48**: 441. 1889.

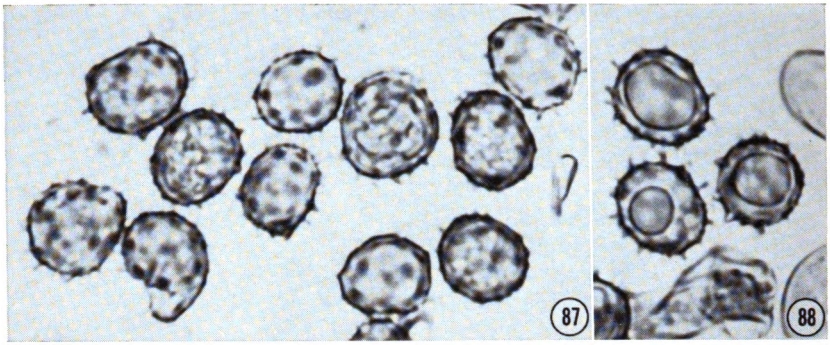
=*Tomentella gibbosa* Litsch., Bull. Soc. Mycol. France **49**: 70. 1933 (W).

=*Tomentella griseocinnamomea* Wakef., Trans. Brit. Mycol. Soc. **49**: 358. 1966 (K).

Holotype: Finland, Knajaschaguba, on *Betula,* P. A. Karsten, 1861 (H).

Basidiocarps up to 1.0 mm thick, firmly constructed, separable; fertile area continuous, *brownish olive (10.0 YR 4/2 to 10.0 YR 3/4); hymenial surface granulose to colliculose,* sometimes smooth; subiculum fibrous, much paler than the fertile area, almost white or pale yellow; sterile margin fimbriate to fibrillose, *almost white or very pale yellow.*

SUBICULAR HYPHAE 2.5–3.5 μm diam, straight and rather uniform, septate, with clamps frequent, thin-walled or wall thickening slight,



FIGS. 87–88. Basidiospores of *T. violaceofusca* (from SSMF 705–4870: SSMF negative no. 5190).

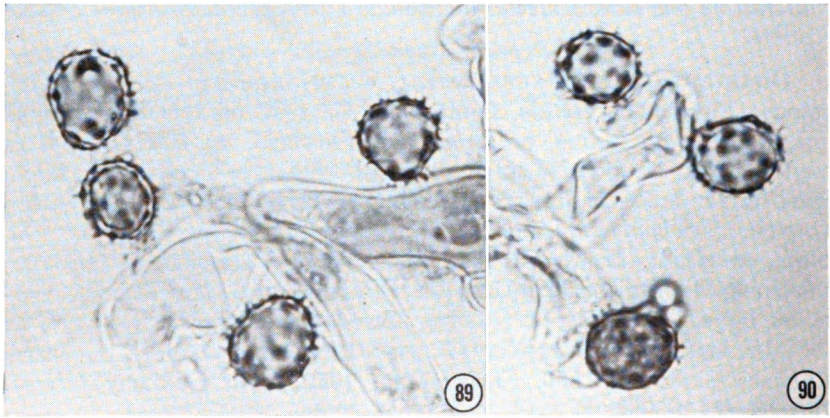
Tomentella viridescens (Bres. & Torrend) Bourd. & Galz., Hym. France, p. 477. 1928. FIGS. 89, 90

≡*Hypochnus viridescens* Bres. & Torrend in Torrend, Broteria 11: 85. 1913.

Holotype: Portugal, Lisbon, on *Quercus,* C. Torrend, 282 (S).

Basidiocarps up to 0.4 mm thick, mucedinoid, *appearing velvety,* adherent, separable in small pieces; fertile area continuous, *olive brown to dull citrine (10.0 YR 5/6, 5.0 YR 4/4);* hymenial surface smooth, finely punctate; subiculum dark olive brown, fibrous; sterile margin fimbriate, darker than the fertile area and concolorous with the subiculum.

SUBICULAR HYPHAE 2.5–4.5(–6) μm diam, clamped, normally with



FIGS. 89–90. Basidiospores of *T. viridescens* (from SSMF 715–8616: SSMF negative no. 5050).

wall thickening apparent, often with localized thickenings, dull olive brown; SUBHYMENIAL HYPHAE 3.5–5 μm diam, clamped, thin-walled, pale tan-brown and becoming paler towards the hymenium; BASIDIA *(45–)50–60 × 7.5–11(–15) μm,* clamped at the base, often with transverse septa, clavate, *contents often turning ochre in KOH,* 4-sterigmate, sterigmata up to 10 μm long; BASIDIOSPORES (Figs. 89–90) *8–12 μm across, globose to subglobose, often flattened on one side and elongated along one axis, aculeolate to echinulate, pale yellow to dull yellow.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Juglans, Pinus, Platanus, Populus;* New Mexico, on *Abies, Acer, Pinus,* lignicolous, humicolous, fungicolous; New York, on *Acer;* Ontario, on *Acer, Populus,* lignicolous; Portugal, on *Quercus.*

Also noted from Denmark (angiospermous wood; Christiansen, **1960**).

SECTION VIII. **Albostratosae** M. J. Larsen, sect. nov.

Basidiocarpis mucedinoideis, plerumque separabilibus; hymenio superficie granulosa vel colliculosa, interdum laevi; subiculis albo vel subluteola; hyphis systematis monomitico; hyphis fasciculis adsunt; basidiis clavatis; basidiosporis globosis vel subglobosis, aculeolatis vel echinulatis.

Basidiocarps mucedinoid, often separable; hymenial surface granulose to colliculose, sometimes smooth; subiculum pale yellow to almost white; hyphal system monomitic; cordons present; basidia clavate; basidiospores globose to subglobose, aculeolate to echinulate.

TYPE SPECIES: *Tomentella asperula* (Karst.) Hoehn. & Litsch.

Tomentella asperula (Karst.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1570. 1906. FIG. 91

≡*Hypochnus asperulus* Karst., Bidrag Kaenn. Finl. Nat. Folk **48**: 441. 1889.

=*Tomentella gibbosa* Litsch., Bull. Soc. Mycol. France **49**: 70. 1933 (W).

=*Tomentella griseocinnamomea* Wakef., Trans. Brit. Mycol. Soc. **49**: 358. 1966 (K).

Holotype: Finland, Knajaschaguba, on *Betula,* P. A. Karsten, 1861 (H).

Basidiocarps up to 1.0 mm thick, firmly constructed, separable; fertile area continuous, *brownish olive (10.0 YR 4/2 to 10.0 YR 3/4); hymenial surface granulose to colliculose,* sometimes smooth; subiculum fibrous, much paler than the fertile area, almost white or pale yellow; sterile margin fimbriate to fibrillose, *almost white or very pale yellow.*

SUBICULAR HYPHAE 2.5–3.5 μm diam, straight and rather uniform, septate, with clamps frequent, thin-walled or wall thickening slight,

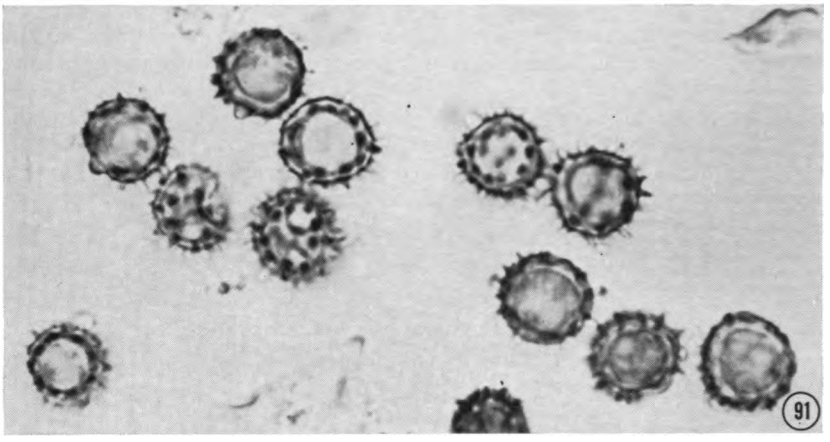


FIG. 91. Basidiospores of *T. asperula* (from holotype: SSMF negative no. 4767).

hyaline to pale yellow; CORDONS up to 80 μm diam, branched, hyaline, the individual hyphae normally 2.5–3.5 μm diam, thin-walled, hyaline, clamped (some hyphae are 6–8 μm diam, clamped, hyaline, appearing tortuous in relation to other hyphae of a cordon); SUBHYMENIAL HYPHAE 2.5–4 μm diam, clamped, hyaline, thin-walled; BASIDIA 40–55 (–65) × 8–10(–12) μm, clamped at the base, clavate, hyaline, 4-sterigmate, sterigmata up to 9 μm long; BASIDIOSPORES (Fig. 91) *7–9(–10.5) μm across, globose to subglobose, aculeolate to echinulate, pale yellowish brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, lignicolous; Idaho, lignicolous; Michigan, on *Juniperus, Thuja;* Ontario, on *Populus,* lignicolous; Finland, on *Betula;* Pakistan, humicolous; Turkey, on *Abies;* United Kingdom, lignicolous.

Also noted from Czechoslovakia (*Picea;* Svrček, **1960**), Denmark (*Fagus;* Christiansen, **1960**), and Germany (lignicolous; Hoehnel & Litschauer, **1906**).

SECTION IX. **Microsporae** M. J. Larsen, sect. nov.

Basidiocarpis mucedinoideis; hymenio superficie granulosa, odontoideo vel laevi; hyphis systmatis monomitico; hyphis subiculis 2–4 μm diam; basidiis clavatis; basidiosporis globosis vel subglobosis, 4–5.5 μm diam, aculeolatis vel echinulatis.

Basidiocarps mucedinoid; hymenial surface granulose, odontoid or smooth; hyphal system monomitic; subicular hyphae normally 2–4 μm diam; basidia clavate; basidiospores globose to subglobose, 4–5.5 μm diam, aculeolate to echinulate.

TYPE SPECIES: *Tomentella griseo-umbrina* Litsch.

KEY TO THE SPECIES OF SECTION MICROSPORAE

1. Hymenial surface distinctly granulose to odontoid ..... *T. rufobrunnea*
1. Hymenial surface smooth 2
   2. Fertile areas dull brown to brownish buff; basidia up to 20 μm long; margin pale to dark brown ..... *T. griseo-umbrina*
   2. Fertile areas bright to dull ferruginous; basidia up to 35 μm long; margin dull honey yellow ..... *T. subalpina*

Tomentella griseo-umbrina Litsch. in Lund. & Nannf., Fungi Exs. Suec., fasc. VII & VIII, no. 357, Uppsala 1936 (also, as "nov. spec." in Ann. Mycol. **39**: 373. 1941). FIGS. 92, 93

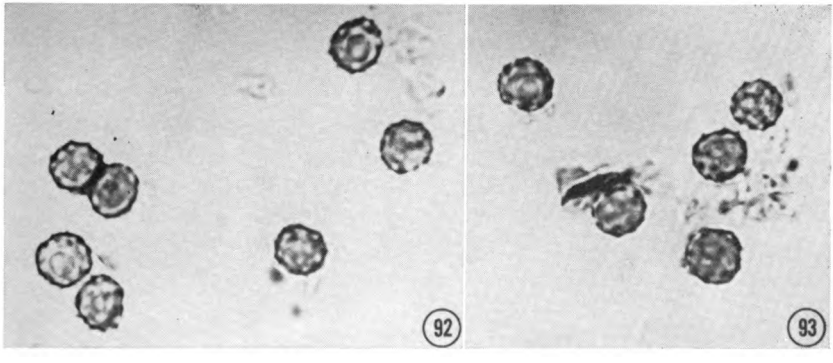
=*Tomentella griseo-umbrina* Litsch. var. *obscura* Svrček, Česká Mykol. **12**: 76. 1958 (PR).

Isotype: Sweden, Upland; Lena parish, Arby skog, on coniferous wood, S. Lundell 1045, 29 VIII 1933 (BPI).

Basidiocarps up to 0.3 mm thick, mucedinoid, soft and friable; fertile areas discontinuous to mostly continuous, *dull brown to brownish buff (10.0 YR 7/4);* hymenial surface smooth; subiculum concolorous with, to darker than, the fertile areas, thin; sterile margin darker than the fertile areas to becoming distinctly paler.

SUBICULAR HYPHAE *2.5–4(–5) μm* diam, clamped, wall thickening apparent, *brown to dull brown;* SUBHYMENIAL HYPHAE 2–3(–4) μm diam, clamped, thin-walled, hyaline, to pale brown; BASIDIA (12–15 (–20) × 5–6 μm, clamped at the base, clavate, 2- to 4-sterigmate, sterigmata up to 4 μm long; BASIDIOSPORES (Figs. 92–93) *4–5 μm diam or 4–5 × 4 μm, globose* to subglobose, aculeolate to echinulate, walls brownish.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Pinus, Populus,* lignicolous; New York, on *Tsuga;* Ohio, lignicolous; Ontario, on *Larix;* Czechoslovakia, lignicolous; Sweden, on gymnospermous wood, lignicolous.



FIGS. 92–93. Basidiospores of *T. grisea-umbrina* (from SSMF 695–4011: SSMF negative no. 4973).

Tomentella rufobrunnea Petch, Ann. Roy. Bot. Gard., Peradeniya **9**: 144. 1924 (as nom. nov.). FIGS. 94, 95

≡*Grandinia lateritia* Berk. & Br., J. Linn. Soc. (Botany) **14**: 61. 1875.

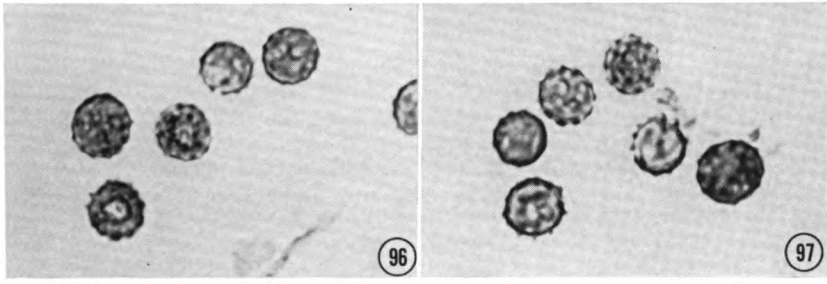
Holotype: Ceylon, on hardwood, G. H. K. Thwaites 334 (?PDA), and isotype in K (herb. Berkeley).

Basidiocarp up to 0.5 mm thick, mucedinoid; fertile area continuous, with the apices of "teeth" sterile, *ochraceous brown to buff (near 7.5 YR 6/4 or 5.0 YR 5/6); hymenial surface granulose to odontoid;* subiculum concolorous with the fertile area; sterile margin concolorous with the fertile area.

SUBICULAR HYPHAE 3–4 μm diam, clamped, thick-walled or with wall thickening apparent, yellowish brown, *encrusted with coarse hyaline granules;* SUBHYMENIAL HYPHAE 2–3 μm diam, clamped, thin-walled, hyaline, encrusted with coarse hyaline granules; BASIDIA 20–25(–30) × 6–7 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long, basidia frequently encrusted with coarse hyaline granules; BASIDIOSPORES (Figs. 94–95) *4–4.5 μm across, globose to subglobose, aculeolate,* yellowish brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Ceylon, lignicolous.

FIGS. 94–95. Basidiospores of *T. rufobrunnea* (from isotype: CFMR negative no. M139596).



FIGS. 96–97. Basidiospores of *T. subalpina* (from holotype: SSMF negative no. 5067).

Tomentella subalpina M. J. Larsen, Mycologia **64**: 444. 1972.
FIGS. 96, 97

Holotype: Canada, Alberta, Columbia Icefields, Jasper National Park, on coniferous wood, M. J. Larsen 4067 (SSMF 705-4925), 13 VIII 1970 (SSMF; isotype BPI).

Basidiocarps up to 0.25 mm thick, membranous, mucedinoid; fertile area continuous, *bright to dull ferruginous (2.5 YR 3/6 to 2.5 YR 4/6);* hymenial surface smooth; subiculum fibrous, dark yellowish brown to ferruginous brown; sterile margin up to 5.0 cm wide, *arachnoid to farinaceous, dull honey yellow (near 10.0 YR 4/4 to 10.0 YR 5/4).*

SUBICULAR HYPHAE 2–3.5(–4.5) μm diam, clamped, occasionally with some unclamped septa, wall thickening noticeable, pale yellowish brown, *sometimes encrusted with pale yellow to yellowish brown deposits;* SUBHYMENIAL HYPHAE 2–3.5 μm diam, clamped, thin-walled, pale yellow; BASIDIA 25–35 × 5–6 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 4 μm long; BASIDIOSPORES (Figs. 96–97) *4.5–5.5 μm across, globose to subglobose, aculeolate, pale to medium brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, lignicolous.

SECTION X. **Brunneolae** (Bourd. & Galz.) Donk

Basidiocarps mucedinoid, occasionally arachnoid; fertile areas normally brown, sometimes gray, green, or olive brown; hyphal system monomitic; cordons often present; basidia clavate, 7–13 μm diam; basidiospores lobed to irregular, normally irregular to irregularly globose, frequently elongated along one axis, normally 7–9.5 μm across.

TYPE SPECIES: *Tomentella sublilacina* (Ell. & Holw.) Wakef.

KEY TO THE SPECIES OF SECTION BRUNNEOLAE

1. Fertile areas distinctly gray or green to olive brown 2
1. Fertile areas some shade of brown 3

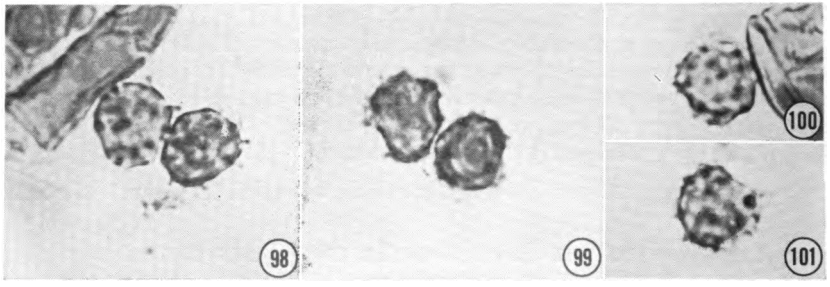
2. Fertile areas green to olive-brown ..... *T. olivascens*
2. Fertile areas gray ..... *T. epigaea*
3. Cordons normally present and often forming a noticeable part of the soma 7
3. Cordons not normally present 4
4. Basidiospores globose to subglobose 5
4. Basidiospores irregular to lobed 6
5. Basidiospores globose; basidia 22–30 × 7–8 μm; subhymenial hyphae 2–3 μm diam ..... *T. pellicularioides*
5. Basidiospores subglobose, sometimes flattened on one side; basidia 35–45 × 7–9 μm; subhymenial hyphae 3.5–6.5 μm diam ..... *T. cladii*
6. Subicular hyphae 4–6.5(–8) μm diam, often swollen and ampullate at the septa and appearing torose ..... *T. sublilacina*
6. Subicular hyphae 2–5 μm diam, somewhat constricted at the septa *T. ochraceo-olivacea*
7. Subicular hyphae hyaline, infrequently pale yellowish brown ..... *T. ochracea*
7. Subicular hyphae normally some shade of brown 8
8. Species tropical ..... *T. purpurea*
8. Species temperate 9
9. Subiculum much paler than the fertile area; subicular hyphae of two kinds *T. radiosa*
9. Subiculum concolorous with, to darker than, the fertile area 10
10. Basidiospores 8–11.5 μm across, densely echinulate, echinuli sometimes bifurcate, dull brown to bister; known from Italy ..... *T. schmoranzeri*
10. Basidiospores 7–9.5 μm across, aculeolate to echinulate, pale brown to pale umbrinous; known from France ..... *T. albomarginata*

Tomentella albomarginata (Bourd. & Galz.) M. J. Larsen, Mycologia **62**: 134. 1970. FIGS. 98–101

≡*Tomentella porulosa* Bourd. & Galz. f. *albomarginata* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 155. 1924.

Lectotype: France, L'Aveyron, Belly, sur grès, A. Galzin 26109 (Bourdot herb. 31033), XII 1920 (PC).

Basidiocarps up to 0.5 mm thick, mucedinoid, adherent; fertile areas discontinuous, *dark brown to umber (2.5 YR 3/2);* hymenial surface smooth, minutely punctate; subiculum firm to firm-fibrous, darker than the fertile areas; sterile margin fibrillose, paler than the fertile areas.



FIGS. 98–101. Basidiospores of *T. albormarginata* (from lectotype: SSMF negative no. 5062).

SUBICULAR HYPHAE *4–6(–7.5) μm diam,* septate, with clamps frequent, wall thickening apparent, pale umbrinous to pale brown, sometimes swollen and irregular; CORDONS not common, up to 25 μm diam, pale umbrinous to dark brown, individual hyphae 2.5–4 μm diam, clamped, wall thickening apparent; SUBHYMENIAL HYPHAE 4–6 μm diam, clamped, thin-walled or wall thickening slight, pale brown to tan; BASIDIA 40–60 × 10–12 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 6 μm long and sometimes with septa, *basidial contents often ochre in KOH;* BASIDIOSPORES (Figs. 98–101) *7–9.5 μm across, irregular to irregularly globose, rarely globose, sometimes elongated along one axis and then somewhat flattened on one side, aculeolate to mostly echinulate,* pale brown to pale umbrinous.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: France, lapidiocolous.

REMARKS: *Tomentella albomarginata* appears to be closely related to *T. sublilacina,* from which it is not readily distinguishable. In the former, the lack of torose ampullate hyphae in the subiculum and subhymenium, presence of cordons, and ochre colored contents of basidia when mounted in KOH appear to be the only criteria by which the two species can be separated. At present, *T. albomarginata* is imperfectly known, the concept presented here being based on only two collections (see *T. sublilacina*).

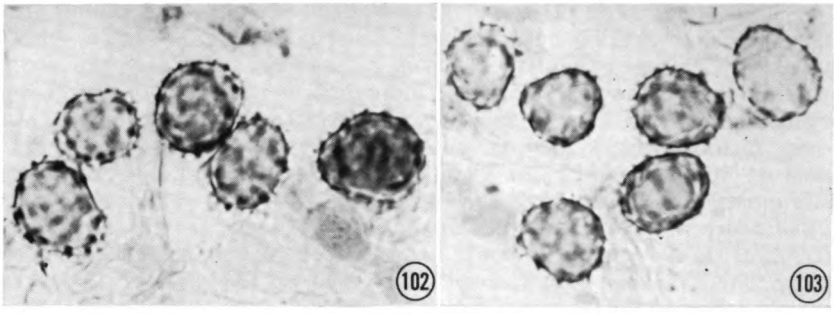
Tomentella cladii Wakef., Trans. Brit. Mycol. Soc. **53**: 179. 1969. FIGS. 102, 103

Holotype: England, Norfolk, Wheatfen Broad, on *Cladium,* M. B. Ellis, 4 VIII 1947 (K).

Basidiocarp up to 0.25 mm thick, membranous, mucedinoid, separable in small pieces; fertile area continuous, *buffy brown to snuff brown (near 7.5 YR 4/4 to 7.5 YR 3/2);* hymenial surface mostly smooth, *becoming granulose in part;* subiculum mealy fibrous, somewhat darker than the fertile area; sterile margin narrow to absent, villose, paler than the fertile area.

SUBICULAR HYPHAE scanty, 2–3.5 μm diam, clamped, thin-walled or with some wall thickening apparent, pale to medium brown; SUBHYMENIAL HYPHAE 3.5–6.5 μm diam, usually closely and repeatedly clamped, very variable in form and dimension, frequently appearing torose, thin-walled, pale brown to hyaline, some parts bluish green in KOH; BASIDIA 35–45 × 7–8(–9) μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 6 μm long, some basidial parts green in KOH; BASIDIOSPORES (Figs. 102–103) *8–8.5 × 6.5–7 μm or 8.5–9(–9.5) μm across, distinctly elongated along one axis and sometimes bent, normally subglobose, sometimes flattened on one side, aculeolate to echinulate,* pale to medium brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: England, on *Cladium.*



FIGS. 102–103. Basidiospores of *T. cladii* (from holotype: SSMF negative no. 5100).

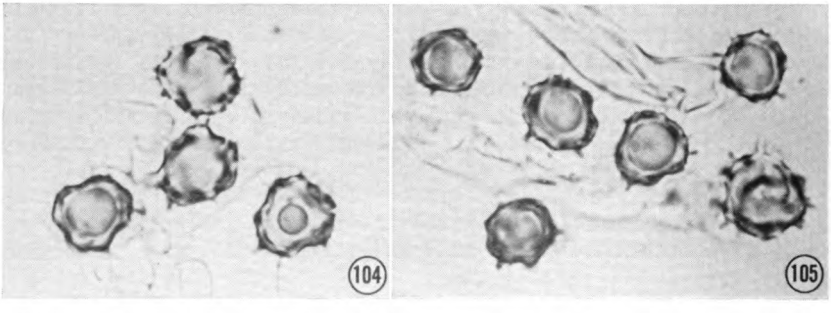
Tomentella epigaea (Burt) M. J. Larsen, Can. J. Bot. **43**: 1493. 1965. FIGS. 104, 105

≡*Hypochnus epigaeus* Burt, Ann. Missouri Bot. Gard. **3**: 226. 1916.

Holotype: U.S.A., Massachusetts, Manchester, on ground, W. G. Farlow 2, VIII 1905 (FH sheet 756), and isotype in general herb. (FH).

Basidiocarps up to 0.5 mm thick, adherent, normally mucedinoid; fertile area continuous, *gray to grayish buff (near 7.5 YR 7/2);* subiculum concolorous with the margin or slightly darker; sterile margin concolorous with the fertile area to almost white, villose.

SUBICULAR HYPHAE *(2–)2.5–4.5(–9) μm diam,* septate, with clamps frequent, *sometimes ampullate at the septa, wall thickening apparent, often randomly constricted and swollen,* pale yellow to pale yellowish brown; SUBHYMENIAL HYPHAE 3–4(–5) μm diam, clamped, *frequently appearing torose,* hyaline to pale brown; BASIDIA 30–45(–65) × 7–9 (–10) μm, clamped at the base, rarely with transverse septa, often taper-



FIGS. 104–105. Basidiospores of *T. epigaea* (from M. J. Larsen 1919 in SYRF and NYS: SSMF negative no. 5203).

ing abruptly 6–12 μm below the apex, 4-sterigmate, sterigmata up to 10 μm long and often septate; BASIDIOSPORES (Figs. 104–105) *7–9 μm across, irregular to irregularly globose, rarely lobed,* echinulate, walls pale yellowish brown to hazel.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Massachusetts, lapidicolous; New Hampshire, lapidicolous; New York, on *Acer,* lignicolous; Ontario, humicolous.

Tomentella ochracea (Sacc.) M. J. Larsen, comb. nov. FIGS. 106–111

≡*Zygodesmus (Hypochnus) ochraceus* Sacc., Michelia **2**: 565. 1882.

=*Zygodesmus nigrescens* Karst., Hedwigia **28**: 366. 1889 (H).

=*Hypochnus microsporus* Karst., Hedwigia **35**: 174. 1896 (H, FH).

≡*Tomentella microspora* (Karst.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1571. 1906.

=*Hypochnus sparsus* Burt, Ann. Missouri Bot. Gard. **3**: 225. 1916 (FH).

≡*Tomentella sparsa* (Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 135. 1924.

≡*Tomentella sparsa* (Burt) Svrček, Česká Mykol. **12**: 73. 1958 (nom. superf.).

=*Tomentella porphyrea* Petch, Ann. Roy. Bot. Gard., Peradeniya **9**: 297. 1924 (K).

=*Tomentella hydrophila* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 148. 1924 (PC).

≡*Tomentella fusca* Bourd. & Galz., subsp. *hydrophila* Bourd. & Galz., Hym. France, p. 495. 1928.

=*Tomentella bilthoveniensis* Bourd. in Donk, Med. Bot. Mus. Herb. Rijksuniv. Utrecht **9**: 32. 1933 (L).

=*Tomentella luteomarginata* M. P. Chris., Dansk Bot. Ark. **19**: 263. 1960 (C).

=*Tomentella livida* Litsch., Svensk Bot. Tidskr. **26**: 450. 1932 (W).

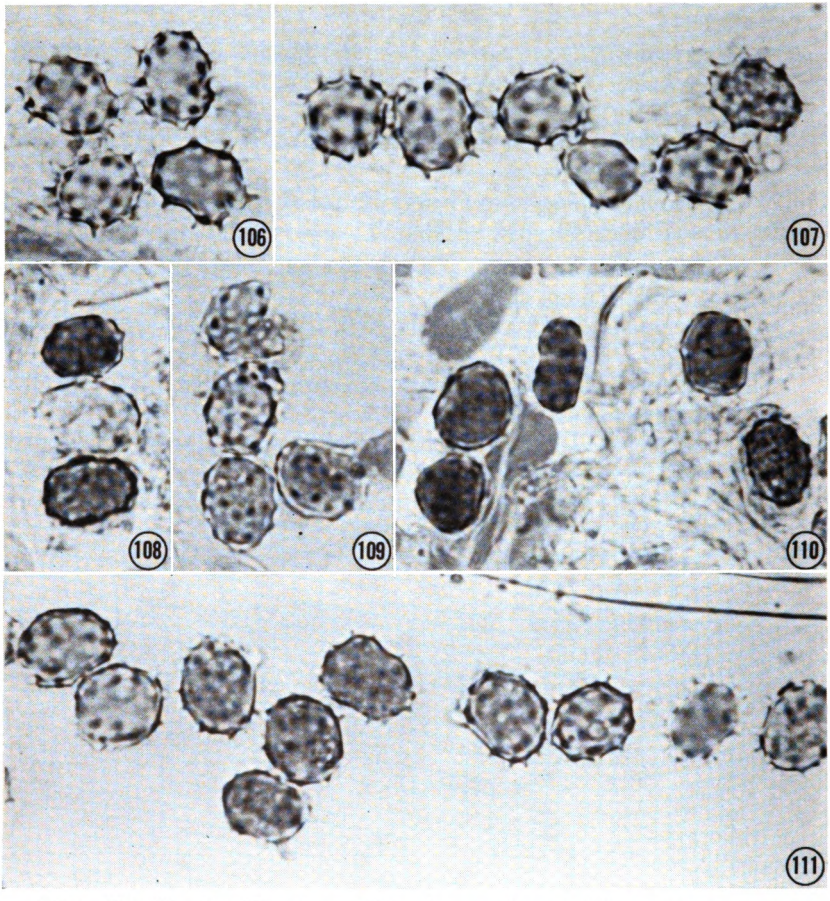
=*Tomentella livida* Litsch. f. *xerophila* Svrček, Česká Mykol. **12**: 73. 1958 (PR).

Holotype: U.S.A., New Jersey, ad lignum mucidum, J. B. Ellis 3540, in herb. P. A. Saccardo (PAD).

Basidiocarps up to 0.5 mm thick, mucedinoid, normally adherent to occasionally separable; fertile area continuous when mature, *brown vinaceous to dull purplish brown, sometimes dull avellaneous to buff (10.0 R 5/2 to 10.0 R 6/2, or 5.0 YR 4/4);* hymenial surface smooth; subiculum firm-fibrous, *very pale tan or hyaline to pale yellow;* sterile margin

up to 1.0 cm wide, fibrillose to fimbriate, *pale yellow to distinctly yellow;* cordons evident at 10×; basidiocarps often acquiring a dark green tint when exposed to KOH.

SUBICULAR HYPHAE very variable in form and dimension, (2.5–)3–5 (–7) μm diam, septate, with clamps frequent, *often ampullate and appearing constricted at the septa,* wall thickening slight or noticeably thick-walled, *some hyphae becoming irregular or swollen, normally hyaline,* infrequently pale yellowish brown, hyphal contents infrequently dull yellowish brown in KOH; CORDONS up to 80 μm diam, hyaline to very pale tan, individual hyphae 2–4 μm diam, clamped, hyaline; SUBHYMENIAL HYPHAE 3.5–6(–7) μm diam, clamped, constricted at the septa, septa often closely spaced and then appearing torose, thin-walled, hyaline, contents frequently dull yellowish brown in KOH, exterior parts of cell



FIGS. 106–111. Basidiospores of *T. ochracea* (from holotype of *T. microspora:* SSMF negative nos. 5059, 5077, 5083).

walls often dull green in KOH; BASIDIA 30–40 × 7–9 μm, clamped at the base, transverse septa infrequent, clavate, hyaline, contents sometimes pale yellowish brown in KOH, *parts frequently dull green in KOH,* 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 106–111) *7–8.5(–9) μm across, globose, irregularly subglobose or globose, usually elongated along one axis,* aculeolate to echinulate, pale to medium brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Picea;* British Columbia, on *Betula, Pseudotsuga, Thuja;* Idaho, on *Larix;* New Hampshire, on angiospermous wood, humicolous; New Jersey, on *Picea;* New York, on *Acer, Castanea, Picea;* Ontario, on *Abies, Alnus, Pinus, Populus, Spiraea, Thuja, Tsuga,* lignicolous; Quebec, on *Populus,* coniferous wood; Ceylon, lignicolous; Czechoslovakia, on *Quercus;* Denmark, on *Betula, Fagus, Quercus,* terricolous; Finland, on *Alnus,* lignicolous, terricolous; France, on *Quercus;* India, lignicolous; Netherlands, humicolous; Sweden, on *Picea, Pinus.*

Also noted from Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Czechoslovakia (*Abies, Betula, Corylus, Fagus, Fomes;* Svrček, **1960**), France (*Castanea;* Bourdot & Galzin, **1924, 1928**), Germany (lignicolous; Hoehnel & Litschauer, **1908c**: *Corylus, Fagus;* Litschauer, **1939a**), Macedonian Region (*Fagus;* Litschauer, **1939b**), Morocco (lignicolous; Malençon, **1954**), Netherlands (lignicolous; Donk, **1933**), Sweden (lignicolous; Eriksson, **1958b**), and United Kingdom (*Alnus, Fagus, Juncus, Quercus, Salix,* terricolous; Wakefield, **1969**).

REMARKS: *Tomentella ochracea* is readily identified by its normally brown vinaceous to dull purplish brown fertile area, pale yellow to distinctly yellow subiculum, presence of cordons, and form of basidiospores (see Figs. 106–111). *Tomentella ochraceo-olivacea* may be a form of *T. ochraceo,* but the former is characterized by a pale ochraceous brown fertile area, a hymenial surface that is minutely colliculose in part, and absence of cordons.

Tomentella ochraceo-olivacea Litsch., Bull. Soc. Mycol. France **49**: 62. 1933. FIG. 112

Holotype: Turkey, prov. Čankiri, Ilgaz-Dagh, on *Abies,* A. Pilát 273, VIII 1931 (W, 21891), and isotype in PR (704215).

Basidiocarp up to 0.3 mm thick, adherent, mucedinoid; fertile area continuous, *pale ochraceous brown (near 10.0 YR 7/4);* hymenial surface normally smooth, *some parts becoming minutely colliculose;* subiculum thin, hyaline to very pale brown; *sterile margin farinaceous to pruinose, buff straw color.*

SUBICULAR HYPHAE 2–5 μm diam, septate, with clamps frequent, somewhat constricted at the septa, wall thickening apparent, walls pale yellow to subhyaline; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, hyaline; BASIDIA 40–60 × 8–9 μm, clamped at the base, frequently with transverse septa, clavate, 4-sterigmate, sterigmata up to 6 μm long;

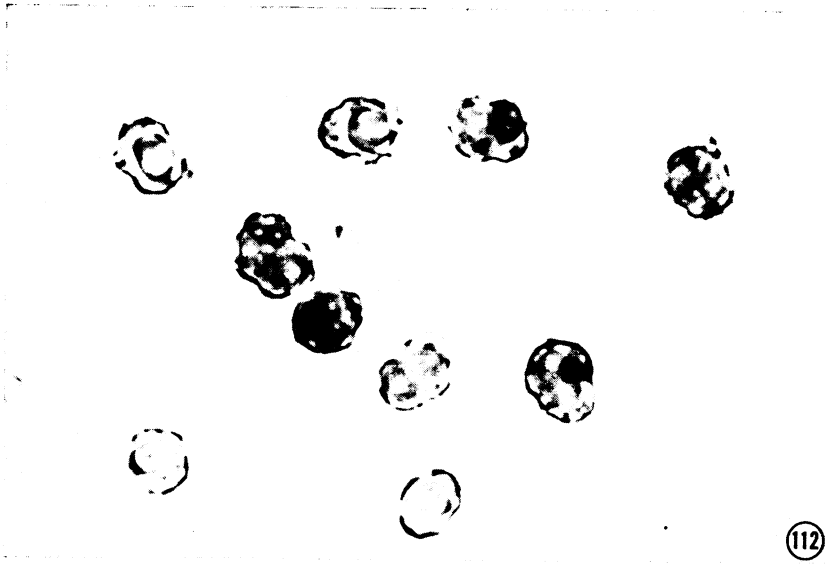


FIG. 112. Basidiospores of *T. ochraceo-olivacea* (from holotype: CFMR negative no. M140045).

BASIDIOSPORES (Fig. 112) *7–9 μm across, irregular in outline and normally elongated along axis, sometimes irregularly globose,* echinulate, pale to medium brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Turkey, on *Abies.*

REMARKS: See *Tomentella ochracea.*

Tomentella olivascens (Berk. & Curt.) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 132. 1924. FIGS. 113, 114

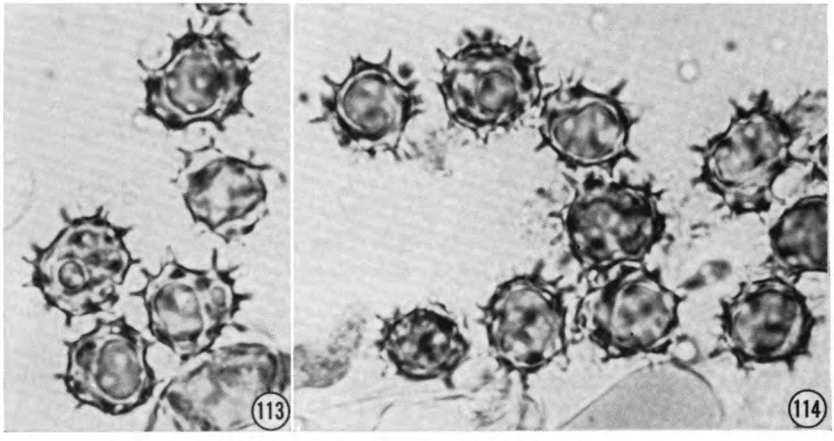
≡*Zygodesmus olivascens* Berk. & Curt., Grevillea **3**: 145. 1875.

≡*Hypochnus olivascens* (Berk. & Curt.) Burt, Ann. Missouri Bot. Gard. **3**: 220. 1916.

Holotype: U.S.A., South Carolina, Society Hill, on *Pinus,* M. A. Curtis 3204, X 1850 (K), and isotype in Curtis herb. (FH).

Basidiocarps up to 1.0 mm thick, firm, mucedinoid, becoming spongy, often thin and loosely constructed; fertile areas mostly continuous, *bright green to olive brown (5.0 GY 5/6, 2.5 GY 6/8, 2.5 GY 7/8, 5.0 YR 4/4);* hymenial surface *smooth to sometimes colliculose;* subiculum medium brown to pale brown; sterile margin villose to fibrillose, paler than the fertile area.

SUBICULAR HYPHAE 4–5 μm diam, septate, with clamps frequent, becoming thick-walled with the thickening often localized, brown to yellow-



FIGS. 113–114. Basidiospores of *T. olivascens* (from SSMF 685–4031: SSMF negative no. 5045).

ish brown and often with a pale green tint, *branching often highly irregular and resulting in a pattern of torose, ampullate, and swollen hyphal cells;* SUBHYMENIAL HYPHAE 3.5–4 μm diam, clamped, thin-walled, hyaline to pale yellow, BASIDIA 35–40 × 7–9 μm, clamped at the base, often with transverse septa, clavate, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 113–114) *7–8.5(–9) μm across, irregularly globose, sometimes lobed, echinulate to mostly aculeate, pale yellow to almost hyaline.*

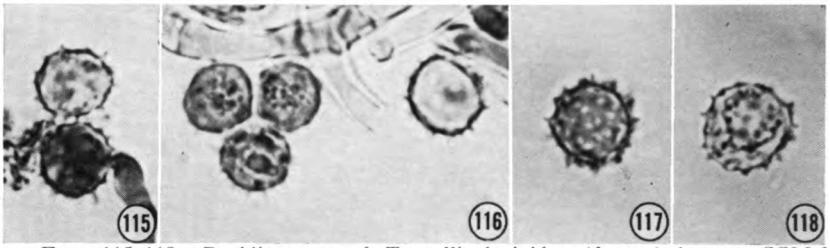
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Maryland, on *Quercus;* Massachusetts, on *Prunus, Tsuga,* lignicolous; New York, on *Acer, Betula, Castanea, Fagus, Ganoderma, Hydnellum, Picea, Pinus, Populus, Prunus, Quercus, Tsuga,* lignicolous; North Carolina, on *Pinus, Quercus,* angiospermous wood; Ohio, on *Quercus;* Ontario, on *Acer, Tsuga,* lignicolous; Pennsylvania, on *Castanea, Pinus, Quercus;* South Carolina, on *Pinus;* Tennessee, on *Pinus.*

Tomentella pellicularioides Wakef., Trans. Brit. Mycol. Soc. **49**: 360. 1966. FIGS. 115–118

Holotype: Trinidad, L'Orange, Aripo Valley, on palm petiole, R. W. G. Dennis, 13 × 1949 (K).

Basidiocarp up to 0.25 mm thick, byssoid to arachnoid, not separable; fertile areas *strongly discontinuous, pale buff (near 10.0 YR 7/4 or 10.0 YR 6/4);* hymenial surface smooth, distinctly punctate and exposing the subiculum; subiculum byssoid, concolorous with, to darker than, the fertile areas; sterile margin concolorous with fertile areas, farinaceous.

SUBICULAR HYPHAE *2–3(–4) μm diam, clamped, sometimes visibly swollen at the septa, thin-walled,* hyaline to pale brown; SUBHYMENIAL HYPHAE 2–3 μm diam, clamped, thin-walled, hyaline; BASIDIA 22–30 ×



FIGS. 115–118. Basidiospores of *T. pellicularioides* (from holotype: SSMF negative no. 5063).

7–8 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 115–118) *7–9 μm across, globose, thin-walled, aculeolate to echinulate, pale brown to tan.*

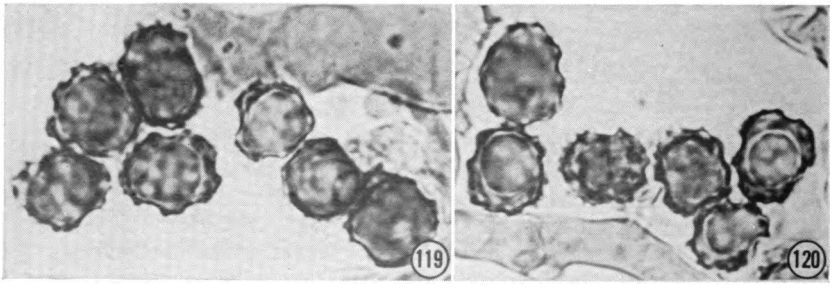
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Trinidad, on palm petiole.

Tomentella purpurea Wakef., Trans. Brit. Mycol. Soc. **49**: 361. 1966. FIGS. 119, 120

Holotype: South Africa (East Transvaal), Wasserman's Farm, Bethal, on *Eucalyptus,* P. H. B. Talbot, Union Dept. of Agric. 36945, 19 II 1949 (K).

Basidiocarps up to 1.0 mm thick, mucedinoid, spongy, separable in small pieces; fertile area continuous, *lilac brown, vinaceous brown, to mostly dull buffy brown (near 5.0 YR 3/4, 5.0 YR 4/4, 5.0 YR 6/4, 5.0 YR 3/2);* hymenial surface smooth to minutely punctate; subiculum firm-fibrous, darker than the fertile area; sterile margin up to 5.0 mm wide, villose, *distinctly white or at least paler than the fertile area;* cordons evident at 10×.

SUBICULAR HYPHAE 3–6(–7) μm diam, septate, with clamps frequent, *sometimes ampullate at the septa, frequently irregular in outline or swollen,* wall thickening apparent, medium to dark brown; CORDONS up



FIGS. 119–120. Basidiospores of *T. purpurea* (from SSMF 695–4575: SSMF negative no. 5061).

to 50 μm diam, dark brown, individual hyphae uniformly 3–4(–5) μm diam, clamped, medium brown; SUBHYMENIAL HYPHAE 3–4(–5) μm diam, clamped, wall thickening frequently apparent, dark brown and becoming paler towards the hymenium, *often appearing torose and palisade-like in structure;* BASIDIA 30–45(–55) × 7–10(–11) μm, clamped at the base, transverse septa infrequent, clavate, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 119–120) *7.5–8.5(–9) μm across, irregular to lobed and frequently elongated along one axis, the axis often slightly bent, thin-walled, aculeolate,* pale to medium brown.

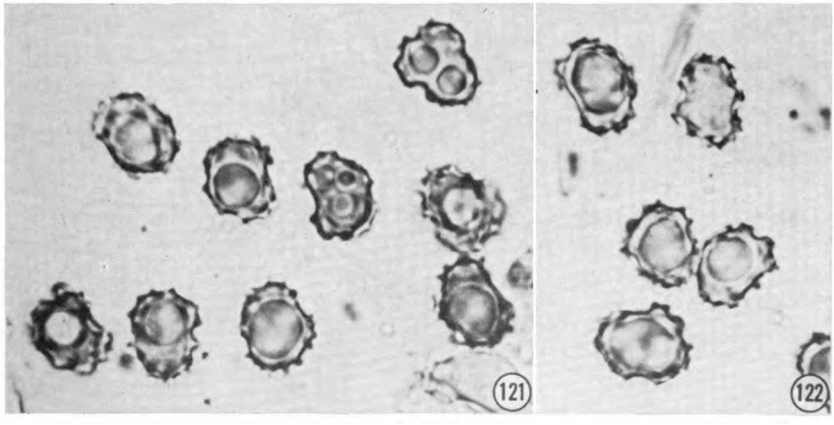
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Florida, lignicolous; East Transvaal, on *Acacia, Eucalyptus;* Kenya, on *Eucalyptus.*

Tomentella radiosa (Karst.) Rick, Broteria 2(ser. 3): 79. 1934.
FIGS. 121, 122

≡*Hypochnus fuscus* (Pers. per Fr.) Karst. var. *radiosus* Karst., Med. Soc. Fauna Fl. Fenn. 9: 71. 1882.
≡*Tomentella fuscella* (Sacc.) Lund. f. *radiosa* (Karst.) Svrček, Česká Mykol. 12: 74. 1958.
≡*Tomentella fusca* (Pers. per Fr.) Schroet. var. *radiosa* (Karst.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse 115: 1571. 1906.

Holotype: Finland, Helsingfors, on [?] conifer wood, W. Nylander, X 1858 (H).

Basidiocarp up to 0.5 mm thick, mucedinoid; fertile area continuous, *vinaceous brown to dull cinnamon brown (near 5.0 YR 4/4 to 5.0 YR 3/4);* hymenial surface smooth; subiculum thin, fibrous, pale brown,



FIGS. 121–122. Basidiospores of *T. radiosa* (from holotype: SSMF negative no. 5043).

much paler than the fertile area; sterile margin *fibrillose to villose, much paler than the fertile area.*

SUBICULAR HYPHAE of two kinds, *some 3–5.5 μm diam, septate, with clamps frequent,* wall thickening apparent, pale to medium brown; *some 5.5–7 μm diam, septate, normally without clamps,* mostly thin-walled, pale yellowish brown; CORDONS up to 25 μm diam, dull brown, individual hyphae 2.5–4.5 μm diam, clamped, pale brown; SUBHYMENIAL HYPHAE 3.5–4 μm diam, clamped, thin-walled, hyaline; BASIDIA 30–45 × 8–11 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 121–122) *7.5–9(–10) μm across, irregular in outline to lobed, usually elongated along one axis, aculeolate to echinulate,* pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Finland, lignicolous.

Tomentella schmoranzeri (Bres.) M. J. Larsen, comb. nov. FIG. 123

≡*Hypochnus schmoranzeri* Bres., Stud. Trent. 7(ser. 2, Sci. Nat. Econom.): 63. 1926.

Holotype: Italy, Appianum [?], ad frustulos ligna, Prof. Schmoranzer, XI 1923, "ex herb. Bresadola" (BPI).

Basidiocarp up to 0.4 mm thick, *encrusting, spongy-fibrous* to mucedinoid, becoming brittle in some parts, separable in small pieces; fertile area continuous, *medium to dull brown (near 7.5 YR 4/2);* hymenial surface smooth; subiculum paler than the fertile area; sterile margin indeterminable, probably paler than the fertile area.

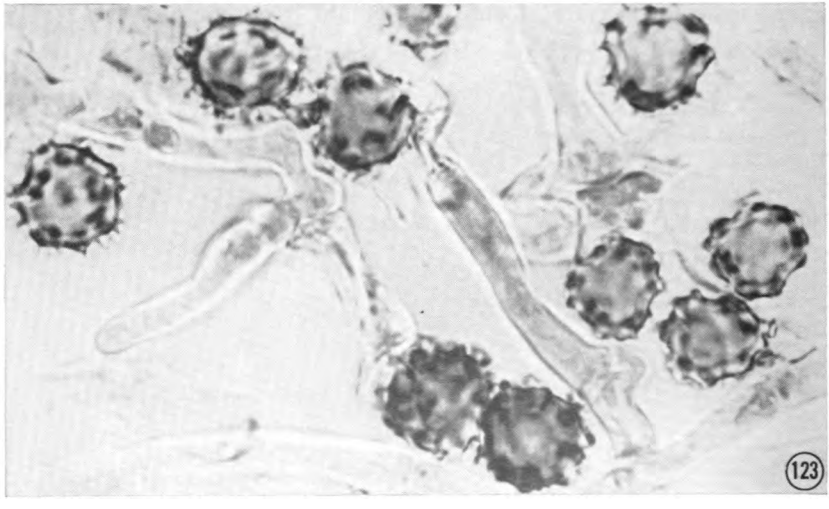


FIG. 123. Basidiospores of *T. schmoranzeri* (from holotype: SSMF negative no. 5066).

SUBICULAR HYPHAE 4–5.5(–6) μm diam, septate, with clamps frequent, wall thickening noticeable, pale yellowish brown; CORDONS up to 30 μm diam, yellowish brown, individual hyphae 2–4.5 μm diam, clamped, pale brown; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, thin-walled, hyaline to pale yellowish brown; BASIDIA 55–65(–70) × 9–11(–12) μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Fig. 123) *8–11(–11.5) μm across, irregular to irregularly globose, sometimes elongated along one axis, densely echinulate, echinuli sometimes bifurcate,* dull brown to bister.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Italy, lignicolous.

Tomentella sublilacina (Ell. & Holw.) Wakef., Mycologia **52**: 931. 1960. FIGS. 124, 125

≡*Zygodesmus sublilacinus* Ell. & Holw. in Arthur et al., Minn. Geol. Nat. Hist. Surv. Bull. **3**: 34. 1887.

=*Tomentella castanea* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 148. 1924 (PC).

≡*Tomentella fusca* (Pers. per Fr.) Schroet. subsp. *castanea* Bourd. & Galz., Hym. France, p. 496. 1928.

≡*Hypochnus castaneus* (Bourd. & Galz.) Donk, Ned. Kruidk. Arch., p. 82. 1930.

≡*Tomentella castanea* (Bourd. & Galz.) Donk, Med. Bot. Mus. Herb. Rijksuniv. Utrecht **9**: 31. 1933 (nom. superfl.).

≡*Tomentella fuscella* (Sacc.) Lund. subsp. *castanea* (Bourd. & Galz.) Lund., Fungi Exs. Suec. 2216, 1954.

=*Tomentella pseudopannosa* Wakef., Trans. Brit. Mycol. Soc. **53**: 189. 1969 (PC).

Lectotype: U.S.A., Minnesota, Vermilion Lake, on charred conifer wood, E. W. Holway 1651a, 26 VII 1886 (NY).

Basidiocarps up to 0.5 mm thick, mucedinoid, sometimes floccose; fertile area continuous, discontinuous when immature or towards the margin, *wood brown to vinaceous brown (10.0 YR 6/4, 10.0 YR 7/4, 10.0 YR 8/4);* subiculum firm, concolorous with, to darker than, the fertile area; hymenial surface smooth; sterile margin villose, paler than the fertile area.

SUBICULAR HYPHAE 4–6.5(–8) μm diam, septate, with clamps frequent, becoming thick-walled, *often swollen and ampullate at the septa and appearing torose,* dark brown to dull pale-brown; SUBHYMENIAL HYPHAE 4–7(–11) μm diam, clamped, some wall thickening noticeable to becoming thick-walled, *hyphae often appearing torose,* hyaline to pale brown; BASIDIA 50–65 × 7–12 μm, clamped at the base, transverse septa frequently present, 4-sterigmate, sterigmata up to 8 μm long and often with septa; BASIDIOSPORES (Figs. 124–125) *7.5–10(–11) μm across, irregular to strongly lobed, frequently appearing elongated along one axis,* echinulate, medium to dark brown.

FIGS. 124–125. Basidiospores of *T. sublilacina* (from SSMF 695–4053: SSMF negative no. 5047).

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Alnus, Juglans;* British Columbia, on *Pseudotsuga,* lignicolous; Kentucky, lignicolous; Maryland, on *Pinus;* Massachusetts, on *Betula, Fagus, Pinus, Tsuga,* lignicolous; Michigan, on *Abies, Acer, Betula, Picea, Thuja,* lignicolous; Minnesota, lignicolous; New Mexico, on *Pinus;* New York, on *Abies, Acer, Betula, Castanea, Fagus, Lycopodium, Picea, Pinus, Polyporus, Populus, Thuja, Tsuga,* moss, lapidicolous, lignicolous; North Carolina, on *Castanea, Quercus;* Nova Scotia, on *Betula;* Ontario, on *Abies, Acer, Alnus, Betula, Fagus, Fomes, Ganoderma, Hypoxylon, Picea, Pinus, Populus, Prunus, Thuja, Tsuga,* lignicolous; Oregon, on *Thuja;* Quebec, on *Prunus,* lignicolous; Tennessee, on *Pinus,* lignicolous; West Virginia, on *Acer, Betula;* Washington, on *Tsuga,* lignicolous; Denmark, on coniferous and angiospermous wood; France, on *Alnus, Castanea, Pinus, Quercus;* Finland, on *Alnus, Betula;* Germany, on *Alnus,* angiospermous wood; Netherlands, lignicolous; Sweden, on *Alnus, Betula, Pinus, Quercus,* lignicolous; United Kingdom, on *Betula,* angiospermous wood.

Also noted from Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Czechoslovakia (*Acer, Alnus, Betula, Carpinus, Cornus, Fagus, Juncus, Juniperus, Picea, Pinus, Populus, Quercus, Tilia,* lapidicolous; Svrček, **1960**), Finland (lignicolous; Karsten, **1882**, **1889**), Germany (*Fagus,* lignicolous; Hoehnel & Litschauer, **1908c**, **d**: Litschauer, **1939a**), Hungary (lignicolous; Bresadola, **1897**), Jamaica (*Pinus;* Wakefield, **1966**), New Zealand (lignicolous; Cunningham, **1957**), Sweden (*Juniperus, Picea;* Eriksson, **1958a**: lignicolous; Eriksson, **1958b**), and United Kingdom (*Fagus, Quercus;* Wakefield, **1969**).

REMARKS: Compare with *Tomentella albomarginata.*

SECTION XI. **Bolares** (Bourd. & Galz.) Donk

Basidiocarps adherent to rarely separable, mucedinoid; hymenial surface granulose, colliculose, or more rarely smooth; hyphal system monomitic; subicular hyphae normally less than 5 μm diam (some up to 6 μm diam), clamped; cordons absent to infrequent; basidia clavate; basidiospores echinulate.

TYPE SPECIES: *Tomentella lateritia* Pat.

KEY TO THE SPECIES OF SECTION BOLARES

1. Fertile areas brick red to vinaceous brown 2
1. Fertile areas buff, olivaceous brown, or grayish brown 3
   2. Fertile areas vinaceous brown; basidiospores distinctly lobed .... *T. subvionsa*
   2. Fertile areas bright to dull reddish cinnamon; basidiospores globose to irregularly globose, rarely distinctly lobed ..... *T. lateritia*
3. Basidial contents often appearing dull red when observed in water mounts; hymenial surface finally becoming papillose to colliculose; fertile areas pinkish buff to buff ..... *T. coerulea*
3. Not with the above combination of characters 4
   4. Basidiospores normally globose; fertile areas olivaceous brown .... *T. donkii*
   4. Basidiospores not normally globose, frequently irregularly globose, irregular, or lobed; fertile areas not olivaceous brown 5
5. Basidiospores irregular to lobed; subicular hyphae 4–6 μm diam, wall thickening noticeable; fertile areas dull grayish brown ..... *T. scobinella*
5. Basidiospores globose, irregularly globose, or rarely lobed; subicular hyphae up to 4 μm diam, thin-walled; fertile areas buff, pinkish buff, or pale ochraceous brown 6
   6. Fungal parts becoming bluish black in KOH; basidiospores 4.5–6.5(–7.5) μm across ..... *T. molybdaea*
   6. Fungal parts not becoming bluish black in KOH; basidiospores 6.5–8.5 μm across ..... *T. puberula*

Tomentella coerulea (Bres.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **116**: 831. 1907.

FIGS. 126, 127

≡*Hypochnus coeruleus* Bres., Ann. Mycol. **1**: 109. 1903.

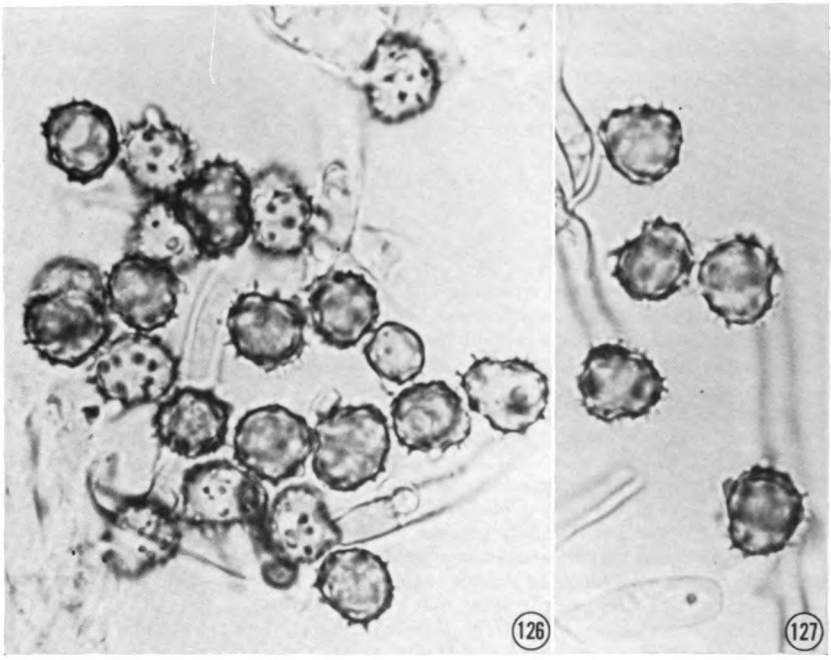
=*Tomentella papillata* Hoehn. & Litsch., Oest. Bot. Zeitschr. **58**: 333. 1908 (September), and in Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **117**: 118. 1908 (October) (FH).

=*Hypochnus cervinus* Burt, Ann. Missouri Bot. Gard. **3**: 232. 1916 (FH).

≡*Tomentella cervina* (Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 146. 1924.

=*Tomentella sordida* Wakef., Trans. Brit. Mycol. Soc. **53**: 185. 1969 (K).

Holotype: Poland, ad terram et frustula, V. B. Eichler 57, VII 1901 (S).



FIGS. 126–127. Basidiospores of *T. coerulea* (from holotype of *T. papillata:* SSMF negative no. 4769).

Basidiocarps up to 0.5 mm thick, mucedinoid, adhering to the substratum; fertile areas sometimes discontinuous, mostly continuous, *pinkish buff to buff (10.0 YR 6/4, 10.0 YR 5/4);* subiculum very pale tan-brown, cobwebby; *hymenial surface granulose, papillose or colliculose;* sterile margin irregular, narrow, distinctly radiate-fibrillose, paler than the fertile areas, gray to almost white when dry.

SUBICULAR HYPHAE 2.5–3(–4) μm diam, septate, with clamps frequent, wall thickening discernible, pale yellowish brown to infrequently dull brown; SUBHYMENIAL HYPHAE (2–)2.5–3(–4) μm diam, clamped, thin-walled, hyaline to dull brown, adhering crystalline material becoming green in KOH; BASIDIA 50–60 × (6–)7–8.5 μm, clamped at the base, transverse septa present, clavate, contents often composed of red granular material which is visible in water mounts but becoming ochre in KOH, adhering crystalline material becoming green in KOH, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 126–127) *(6–)7–8(–8.5) μm across, lobed, irregular, irregularly globose, or subglobose, echinulate, walls pale brown.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, on *Populus;* Arizona, on *Populus, Quercus;* British Columbia, on *Alnus, Populus;* Kentucky, lignicolous; Manitoba, on angiospermous wood;

Maryland, on *Quercus;* Michigan, on *Tsuga;* Montana, on *Pinus, Populus;* New Mexico, on *Quercus;* Nova Scotia, on *Poria;* Ontario, on *Betula, Populus, Quercus, Thuja,* lignicolous; Washington, on *Acer;* Germany, lignicolous; Poland, terricolous; Sweden, on *Quercus,* lignicolous.

Also noted from Czechoslovakia (*Betula, Populus;* Svrček, **1960**), Denmark (lignicolous, terricolous; Christiansen, **1960**), France (lignicolous; Bourdot & Galzin, **1924, 1928**), Germany (lignicolous; Hoehnel & Litschauer, **1908a, 1908c**; Litschauer, **1939a**), Sweden (lignicolous; Eriksson, **1958b**), Turkey (*Abies;* Litschauer, **1933**), and United Kingdom (*Fagus,* lignicolous, terricolous; Wakefield, **1969**).

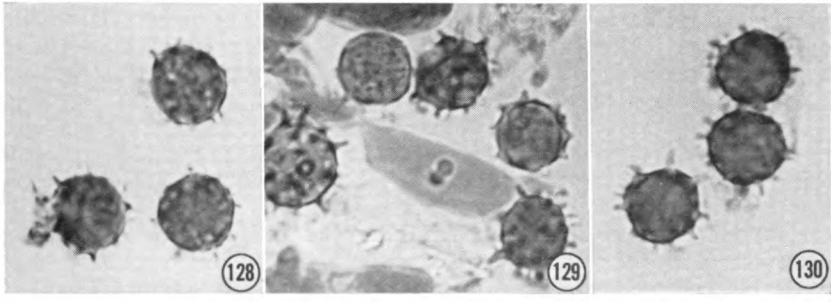
REMARKS: *Tomentella coerulea* is characterized by a pinkish buff to buff fertile area, granulose to colliculose hymenial surface, red contents of basidia when observed in H_2O mounts, and form of spores (see Figs. 126–127). *Tomentella molybdaea* is decidedly similar, but its spores are considerably smaller [4.5–6.5(–7.5) μm] and hyphal parts become bluish black in KOH. *Tomentella puberula* is similar to both of the above species, but it is distinguished by the occasional presence of cordons, lack of a color reaction when exposed to KOH, and spores that are more asymmetrical in outline.

Tomentella donkii Litsch., Ann. Mycol. **39**: 372. 1941. FIGS. 128–130

Holotype: Sweden, Uppland, on bark of *Populus,* M. A. Donk 3692, 16 IX 1932 (herb. M. A. Donk, L).

Basidiocarps up to 0.3 mm thick, mucedinoid, adherent; fertile area continuous to discontinuous, *dull brown with an olivaceous tint (near 2.5 Y 4/4); hymenial surface minutely granulose;* subiculum byssoid, concolorous with, to paler than, the fertile area; sterile margin farinaceous to pruinose, paler than the fertile area.

SUBICULAR HYPHAE 2.5–3 μm diam, septate, with clamps frequent, thin-walled, hyaline; SUBHYMENIAL HYPHAE 2–3.5 μm diam, clamped,



FIGS. 128–130. Basidiospores of *T. donkii* (from holotype: SSMF negative no. 5066).

thin-walled, hyaline; BASIDIA 30–35(–40) × 6–7(–8) μm, clamped or septate and without clamps at the base, transverse septa present, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 128–130) *5.5–6.5(–7.5) μm* across, globose, sometimes irregularly globose, echinulate, pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Sweden, on *Populus,* lignicolous.

Tomentella lateritia Pat., J. de Bot. **8**: 221. 1894 (and as "new species" in Catal. Raissonné Plant. Cellul. Tunis., p. 63. 1897). FIGS. 131, 132

≡*Hypochnus lateritius* (Pat.) Sacc. & Syd., Syll. Fung. **14**: 227. 1899.

=*Hypochnus puniceus* (Alb. & Schw. per Pers.: Fr.) Sacc. var. *bolaris* Bres., Ann. Mycol. **1**: 108. 1903 (S).

≡*Tomentella punicea* (Alb. & Schw. per Pers.: Fr.) Schroet. var. *bolaris* (Bres.) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 145. 1924.

≡*Tomentella punicea* (Alb. & Schw. per Pers.: Fr.) Schroet. f. *bolaris* (Bres.) Svrček, Česká Mykol. **12**: 73. 1958.

[*Tomentella punicea* (Alb. & Schw. per Pers.: Fr.) Schroet. sensu Cunningham (1963, p. 236), Svrček (**1960**, p. 193), Bourdot & Galzin (**1924**, p. 145; **1928**, p. 491), and Hoehnel & Litschauer (**1908b**, p. 79); non *Thelephora punicea* Alb. & Schw. per Pers.: Fr. sensu orig.]

Holotype: Tunisia, El Fedja, on charred *Quercus,* I 1893, in Patouillard herb., sheet 3608 (FH), and isotype in Hoehnel herb., sheet 1996 (FH).

Basidiocarps up to 0.5 mm thick, *occurring in small isolated patches which eventually coalesce, pulverulent,* adherent; fertile areas continuous to discontinuous, *bright to dull reddish cinnamon (2.5 YR 4/4, 2.5 YR 4/6, 2.5 YR 3/6); hymenial surface strongly granulose, becoming faintly colliculose in anastomosed portions;* subiculum extremely thin, visible between individual granules or colliculi, arachnoid, pale tan to hyaline; sterile margin narrow or totally absent, when present somewhat villose and paler than the fertile areas.

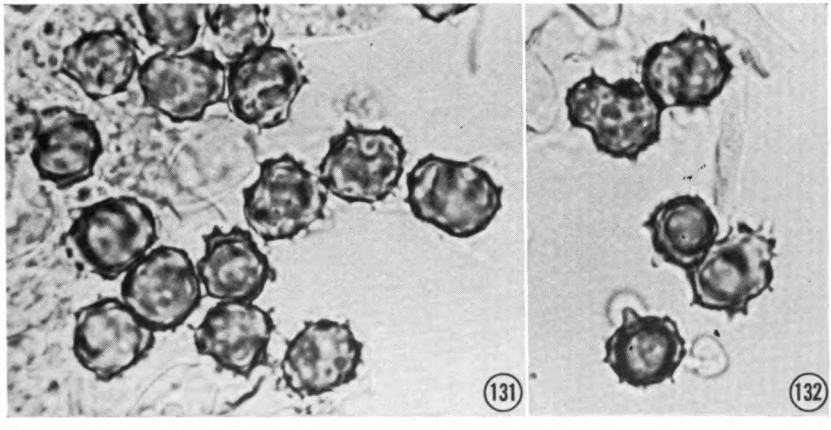
SUBICULAR HYPHAE of two kinds, some 2–3(–4.5) μm diam, septate, with clamps frequent, septa widely spaced, thin-walled or wall thickening apparent; some rare, 3–4(–5) μm diam, clamped, septa narrowly spaced, wall thickening apparent, becoming torose, hyaline; SUBHYMENIAL HYPHAE 2.5–4(–5) μm diam, clamped, thin-walled, hyaline, sometimes with red granular contents which are visible when mounted in water but become yellowish brown to ochre in KOH; BASIDIA 45–60 × 6.5–7.5 μm, clamped at the base, transverse septa present, calvate, slightly expanded at the apex, 4-sterigmate, *basidial contents often apparently*

composed of red granular material which is visible in water mounts but becomes yellowish brown to ochre in KOH; BASIDIOSPORES (Figs. 131–132) *7–8(–9.5) μm across, globose, subglobose, or irregularly globose to lobed, echinulate,* walls pale brown to hazel; VESICLES frequent in some specimens, arising from hyphae of the subiculum or subhymenium, borne in the subhymenium and hymenium, up to 20 μm across, hyaline, septate, with or without clamps, at the base.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Pinus, Platanus, Populus, Pseudotsuga, Quercus;* Colorado, on *Picea;* Illinois, on *Ulmus;* Massachusetts, lignicolous; Michigan, on *Acer, Fagus, Tsuga,* lignicolous; Montana, on *Populus, Pseudotsuga,* lignicolous; New Mexico, on *Pinus, Populus, Pseudotsuga,* lignicolous; New Hampshire, lignicolous, lapidicolous, terricolous; New York, on *Acer, Betula, Fagus, Pinus, Populus, Tsuga,* lignicolous, humicolous; North Carolina, on *Robinia;* Ontario, on *Betula, Populus, Taxus,* lignicolous; Pennsylvania, lignicolous; Tennessee, on *Pinus,* lignicolous; Germany, on leaves of *Pinus;* India, lignicolous; Portugal, on *Pinus;* Sweden, on *Juniperus, Populus, Salix;* Tunisia, on *Quercus.*

Also noted from Austria (lignicolous; Hoehnel & Litschauer, **1908b**), Czechoslovakia (*Acer, Betula, Fagus, Picea, Pinus, Quercus;* Svrček, **1960**), Finland (lignicolous; Karsten, **1882**), France (*Alnus, Castanea, Corylus, Pinus, Quercus;* Bourdot & Galzin, **1924, 1928**), Germany (*Fagus;* Litschauer, **1939a**), New Zealand (lignicolous; Cunningham, **1957**), Sweden (lignicolous; Eriksson, **1958b**), and United Kingdom (*Pinus;* Wakefield, **1917**: lignicolous; Wakefield, **1969**).

REMARKS: *Tomentella lateritia* is closely related to *T. subvinosa,* the two of which are not readily separated from each other. The fertile



FIGS. 131–132. Basidiospores of *T. lateritia* (from SSMF 695–4017: SSMF negative no. 4984).

areas of *T. lateritia* are usually bright to dull reddish cinnamon, the hymenial surface is strongly granulose, and spores are globose, subglobose, irregularly globose, to less frequently lobed and measure 7–8 (–9.5) μm across. The diagnostic characters of *T. subvinosa* are not wholly different from those of *T. lateritia*. The fertile areas are a uniform vinaceous brown with the hymenial surface smooth to granulose. The basidiospores of *T. subvinosa* measure (5.5–)6–8(–9.5) μm across and are predominantly 3–4 lobed.

Larsen (**1968a**) indicated that *T. lateritia* and *T. subvinosa* might represent the same species, but existing data are still insufficient to support this view.

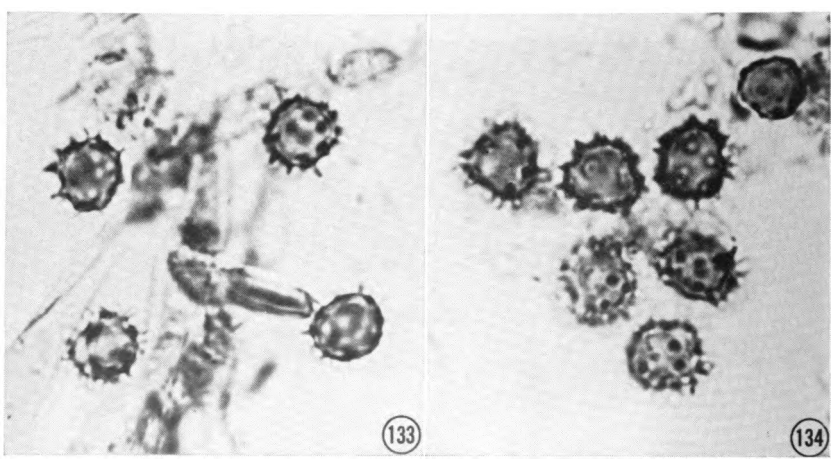
Tomentella molybdaea Bourd. & Galz., Bull. Soc. Mycol. France **40**: 142. 1924. FIGS. 133, 134

≡*Tomentellastrum molybdaeum* (Bourd. & Galz.) Svrček, Sydowia **14**: 180. 1960.

Lectotype: France, L'Aveyron, sur thyme, A. Galzin (Bourdot herb. 12427), 30 XI 1913 (PC).

Basidiocarps up to 0.5 mm thick, arachnoid to mucedinoid, frequently adherent; fertile areas discontinuous, *dull pinkish buff (near 5.0 YR 6/6); hymenial surface smooth to mostly granulose;* subiculum scanty, arachnoid, paler than the fertile areas, sterile margin narrow, arachnoid, paler than the fertile areas.

SUBICULAR HYPHAE 2.5–4 μm diam, septate, with clamps frequent, thin-walled or with wall thickening slight, hyaline to pale brown; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, thin-walled, hyaline, *parts*



FIGS. 133–134. Basidiospores of *T. molybdaea* (from lectotype: SSMF negative no. 4768).

bluish black in KOH; BASIDIA 25–35(–40) × 6–8 μm, often collapsed and not readily discernible, clamped at the base, transverse septa infrequent, clavate, *parts bluish black in KOH,* 2- or 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 133–134) *4.5–6.5(–7.5) μm across, globose, subglobose, to irregularly globose, aculeolate to echinulate,* pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Montana, on *Populus;* New Mexico, on *Abies;* New York, on *Populus,* lignicolous; Ontario, on *Abies, Pinus, Populus;* Finland, on *Salix.*

Also noted from Macedonian Region (*Fagus;* Litschauer, **1939b**).

REMARKS: See *Tomentella coerulea.*

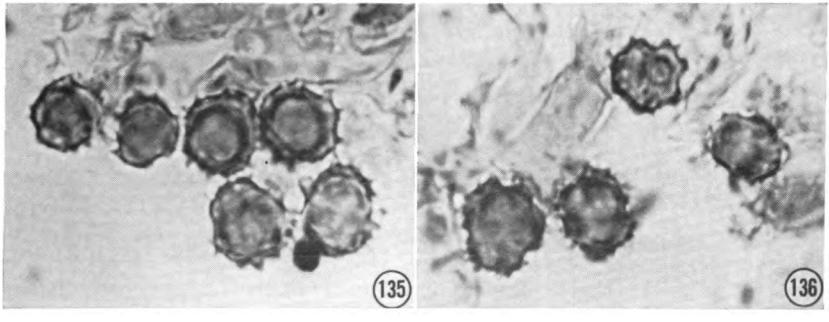
Tomentella puberula Bourd. & Galz., Bull. Soc. Mycol. France **40**: 150. 1924. FIGS. 135, 136

Lectotype: France, L'Aveyron, Boutaran, sur chêne, A. Galzin 22835 (Bourdot herb. 22514), X 1917 (PC).

Basidiocarps up to 0.25 mm thick, mucedinoid, arachnoid; *fertile areas discontinuous, buff to pale ochraceous brown; hymenial surface faintly colliculose to granulose;* subiculum byssoid, paler than the fertile areas; sterile margin indeterminable.

SUBICULAR HYPHAE 2.5–3.5(–4.5) μm diam, septate, with clamps frequent, thin-walled or wall thickening slight, tan to pale brown; CORDONS infrequent, pale to medium brown, individual hyphae 2.5–3 (–3.5) μm diam, clamped, wall thickening apparent; SUBHYMENIAL HYPHAE 3–3.5(–4) μm diam, clamped, thin-walled, pale tan to hyaline; BASIDIA 35–50 × 7.5–9(–9.5) μm, clavate, 4-sterigmate, sterigmata up to 4 μm long; BASIDIOSPORES (Figs. 135–136) *6.5–8(–8.5) μm across, irregular to irregularly globose, sometimes lobed, aculeolate to echinulate,* tan to pale brown.

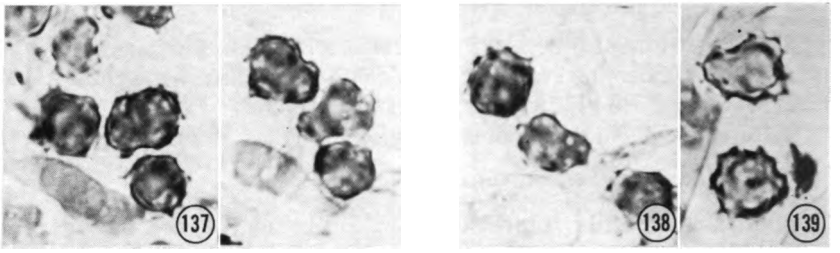
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: France, on *Castanea, Quercus.*



FIGS. 135–136. Basidiospores of *T. puberula* (from lectotype: SSMF negative no. 5064).

Also noted from Denmark (*Fagus;* Christiansen, **1960**), France (*Alnus;* Bourdot & Galzin, **1924, 1928**), and United Kingdom (leaves of *Quercus;* Wakefield, **1969**).

REMARKS: See *Tomentella coerulea.*



FIGS. 137–139. Basidiospores of *T. scobinella* (from holotype: SSMF negative no. 5119).

Tomentella scobinella G. H. Cunn., Trans. Roy. Soc. New Zeal. **84**: 485. 1957. FIGS. 137–139

Holotype: New Zealand, Reefton, Staircase Creek, on *Nothofagus,* S. D. Baker, 29 XI 1952 (herb. 15892, in PDD).

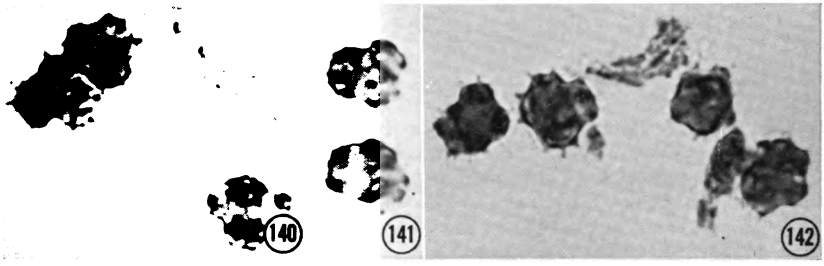
Basidiocarp up to 0.3 mm thick, arachnoid, separable; fertile areas discontinuous, dull grayish brown (near 7.5 YR 4/2); hymenial surface distinctly granulose; subiculum arachnoid, concolorous with the fertile areas; sterile margin arachnoid, concolorous with the fertile areas. SUBICULAR HYPHAE *4–6 μm diam, clamped, thick-walled* or wall thickening noticeable, pale to medium brown, with contents sometimes yellowish brown, parts frequently dull greenish blue in KOH; SUBHYMENIAL HYPHAE 3.5–4.5 μm diam, clamped, thin-walled, hyaline to pale tan, with parts green to dull grayish blue in KOH; BASIDIA 25–40 × 5.5–7 μm, clamped at the base, frequently with transverse septa, clavate when mature, *appearing fusiform or subulate when immature (cystidioles-Cunningham),* 2- to 4-sterigmate, sterigmata up to 6 μm long, some basidial parts green or bluish gray in KOH; BASIDIOSPORES (Figs. 137–139) *6–7.5 μm across, irregular (often angular and lobed), frequently elongated along one axis,* echinulate, pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: New Zealand, on *Nothofagus.*

Tomentella subvinosa (Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 146. 1924. FIGS. 140–142

≡*Hypochnus subvinosus* Burt, Ann. Missouri Bot. Gard. **3**: 231. 1916.

Holotype: U.S.A., New Jersey, Belleplain, on *Acer*(?), C. L. Shear 1251, 15 X 1902 (sheet 805 in FH), and isotype in BPI.



FIGS. 140–142. Basidiospores of *T. subvinosa* (from holotype: SSMF negative no. 5098).

Basidiocarps up to 1.0 mm thick, loosely constructed, becoming mucedinoid, adherent; fertile areas discontinuous to somewhat continuous, *uniformly vinaceous brown (7.5 YR 4/4);* subiculum hyaline to faintly brown, arachnoid; hymenial surface *smooth to granulose;* sterile margain concolorous with, to paler than, the subiculum.

SUBICULAR HYPHAE *of two kinds, some 3.5–6(–7) μm, diam,* clamped, *becoming somewhat torose,* wall thickening apparent, hyaline or pale to medium brown; *some 2–2.5 μm diam,* clamped with the *clamps widely spaced,* thin-walled, hyaline to pale brown; CORDONS rare, up to 15 μm diam, pale yellowish brown, individual hyphae 2–3 μm diam, clamped, pale brown; SUBHYMENIAL HYPHAE 2.5–4 μm diam, clamped, thin-walled, hyaline to pale brown, *a bright red granular material apparent in water mounts,* this material becoming yellowish brown to ochre in KOH; BASIDIA 40–50(–80) × 5–7 μm, clamped at the base, sometimes with transverse septa, slender-clavate when mature, with the apex slightly expanded, 4-sterigmate, sterigmata up to 4 μm long, *basidial contents appearing with red granular contents in water mounts* and becoming brown to ochre in KOH; BASIDIOSPORES (Figs. 140–142) (5.5–) 6–8(–9.5) μm across, *irregular to predominantly 3- or 4-lobed,* echinulate, pale brown; VESCICLES rare, arising from, and found in, the subiculum or subhymenium, 12–20 μm diam, clamped at the base, hyaline, thin- to thick-walled, globose.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Picea;* Minnesota, on *Betula;* New Hampshire, on angiospermous wood; New Jersey on *Acer;* New York, on *Acer, Fagus, Populus, Sassafras, Tilia,* lignicolous; Ontario, on *Populus,* lignicolous; Quebec, lignicolous.

REMARKS: See *Tomentella lateritia.*

SECTION XII. **Cystidiolatae** (Bourd. & Galz.) Donk

Basidiocarps adherent, mucedinoid; hymenial surface granulose, pulverulent, or rarely smooth; hyphal system monomitic; subicular hyphae normally 2.5–4.5 μm diam, clamped; cordons absent to rare; basidia clavate; cystidia present; basidiospores mostly echinulate, less frequently aculeate or aculeolate.

TYPE SPECIES: *Tomentella galzinii* Bourd. & Galz.

KEY TO THE SPECIES OF SECTION CYSTIDIOLATAE

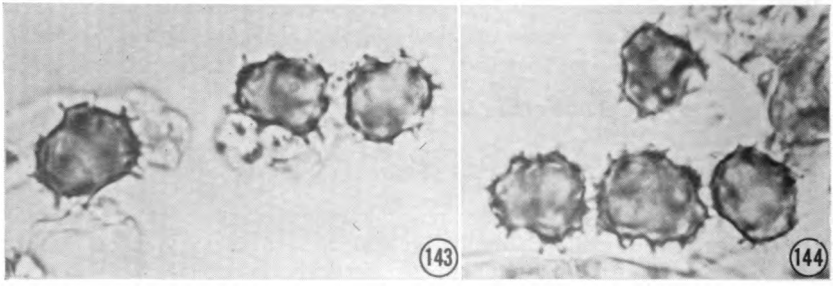
1. Cystidia normally acuminate, not expanded at the apex ..... *T. galzinii*
1. Cystidia not acuminate, normally clavate, obclavate, or capitulate 2
2. Fertile areas same shade of green; cystidia capitulate, expanded abruptly at the apex ..... *T. viridula*
2. Fertile areas not as above; cystidia clavate to obclavate, not expanded abruptly at the apex 3
3. Cystidia up to 60 μm long, obclavate, often with some brown encrusting material at the apex ..... *T. subtestacea*
3. Cystidia up to 140 μm long, clavate, not with brown encrusting material 4
4. Basidiospores globose to subglobose ..... *T. subclavigera*
4. Basidiospores irregular in outline, sometimes lobed ..... *T. clavigera*

Tomentella clavigera Litsch. in Svrček, Sydowia **14**: 192. 1960. FIGS. 143, 144

Lectotype: Austria, Tirol, Krannebittenklamm bei Innsbruck, auf Coniferenholz, V. Litschauer, 4 VII 1927 (PR 613101).

Basidiocarps up to 0.25 mm thick, mucedinoid, normally adherent; fertile area continuous, markedly discontinuous when immature, *dull pinkish buff to buff brown (near 5.0 YR 6/4 to 5.0 YR 5/4); hymenial surface smooth,* slightly pubescent (?cystidia); subiculum indistinct, apparently concolorous with, to darker than, the fertile area; sterile margin paler than the fertile area, farinaceous.

SUBICULAR HYPHAE 2.5–4 μm diam, clamped, thin-walled, pale yellow to hyaline; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, thin-walled, hyaline; BASIDIA 45–55 × 8–9 μm, clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 143–144) 7.5–8(–9) μm across, irregular, sometimes lobed, normally elongated along one axis, echinulate, yellowish brown; CYSTIDIA arising from subhymenial hyphae, *up to 100 μm long,* 3–5 μm diam at the base, 8–10 μm diam just below the apex, clamped at the base, septa without clamps frequently occurring 5–10 μm above the basal septa, *long-clavate,*



FIGS. 143–144. Basidiospores of *T. clavigera* (from lectotype: SSMF negative no. 5064).

sometimes approaching a capitulate form, thin-walled, hyaline, *sometimes lightly encrusted with fine granular particulates.*

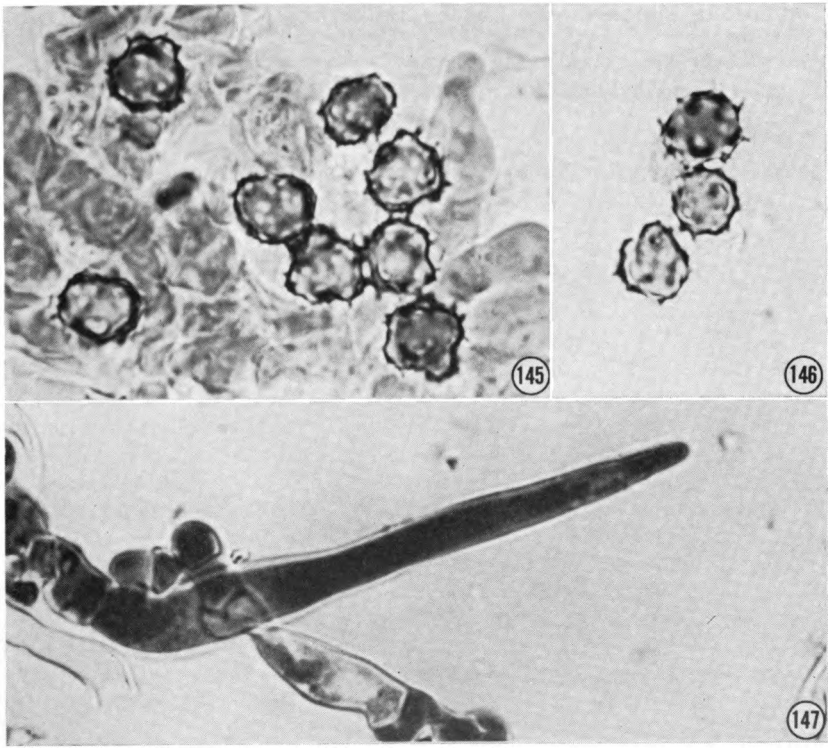
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: New Jersey, on *Pinus;* Austria, lignicolous.

Tomentella galzinii Bourd., Bull. Soc. Mycol. France **40**: 143. 1924. FIGS. 145–147

Lectotype: France, L'Aveyron, sur thyme, A. Galzin 7807 (Bourdot herb. 7615), 9 XII 1919 (PC).

Basidiocarps up to 0.3 mm thick, adherent; fertile areas discontinuous, *dull green to olive brown (near 10.0 R 2/2); hymenial surface rarely smooth, mostly granulose or pulverulent;* subiculum thin, scanty, somewhat paler than the fertile areas; sterile margin irregular, narrow, fimbriate or farinaceous, concolorus with, or barely paler than, the fertile areas.

SUBICULAR HYPHAE 2.5–3.5 μm diam, septate, with clamps frequent,



FIGS. 145–147. Basidiospores and a cystidium of *T. galzinii.* 145–146. Basidiospores (from SSMF 695–9004; SSMF negative no. 5059). 147. Cystidium (from SSMF 695–9004: SSMF negative no. 5059).

wall thickening apparent, pale brown to pale yellowish brown; SUBHYMENIAL HYPHAE 3.5–5(–6) μm diam, clamped, thin-walled, pale brown to mostly hyaline; BASIDIA 30–45 × 6–8 μm, clamped at the base, often with transverse septa, clavate, 4-sterigmate, sterigmata often with septa; BASIDIOSPORES (Figs. 145–146) *6–8.5 μm across, irregular, irregularly globose to lobed, echinulate to rarely aculeate,* pale brown; CYSTIDIA (Fig. 147) arising from hyphae of the subhymenium, 4–9 μm wide and up to 85 μm long, projecting up to 40 μm beyond the basidia, septate without clamps along their length, clamped at the base, *clavate to mostly acuminate, rarely thick-walled at the base,* hyaline to pale tan.

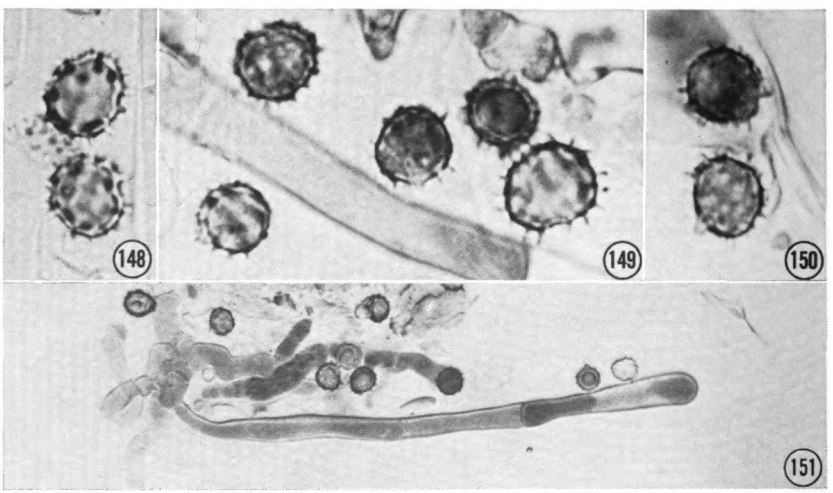
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Quercus;* New York, on *Fagus,* lignicolous; Ontario, on *Betula, Populus, Taxus,* humicolous, lignicolous; Pennsylvania, lignicolous; France, on *Thymus.*

Also noted from France (*Phellinus, Quercus;* Bourdot & Galzin, **1924, 1928**), Germany (*Fagus;* Litschauer, **1939a**), and Sweden (lignicolous; Eriksson, **1958b**).

Tomentella subclavigera Litsch., Bull. Soc. Mycol. France **49**: 57. 1933. FIGS. 148–151

=*Tomentella bohemica* Svrček, Česká Mykol. **12**: 71. 1958 (PR).

Holotype: Turkey, Prov. Čankiri, on *Abies,* A. Pilát 287, VIII 1931 (herb. 21744 in W).



FIGS. 148–151. Basidiospores and a cystidium of *T. subclavigera.* 148–150. Basidiospores (from holotype: SSMF negative no. 5103). 151. Cystidium (from SSMF 9835: SSMF negative no. 5194).

Basidiocarps tomentose to arachnoid, adherent; fertile areas discontinuous, *buff to wood brown (near 5.0 YR 4/4);* subiculum loosely arranged, thin, hyaline to pale tan; *hymenial surface minutely granulose;* sterile margin irregular, paler than the fertile areas, narrow, somewhat villose.

SUBICULAR HYPHAE 3–4.5(–5.5) μm diam, septate, frequently with clamps, thin-walled, or wall thickening apparent, becoming swollen and irregular, pale yellowish brown to subhyaline; SUBHYMENIAL HYPHAE 4–5(–8) μm diam, clamped, thin-walled, appearing somewhat torose, pale tan to hyaline; BASIDIA 25–35 × 6–8.5(–9.5) μm, clamped at the base, often with transverse septa, stout-clavate, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 148–150) *6.5–7.5(–8.5) μm across, globose to subglobose, sometimes irregular, thin-walled, echinulate,* subhyaline to pale brown; CYSTIDIA (Fig. 151) arising from subicular hyphae or at the base of subhymenial hyphae, *up to 160 μm long,* 2.5–5 μm diam at the base and *often expanded up to 12 μm at the apex,* projecting up to 80 μm beyond the basidia, clamped at the base and usually septate without clamps along their length, *clavate,* hyaline.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Montana, on *Betula;* New Hampshire, lignicolous; Ontario, on *Thuja;* Turkey, on *Abies.* Also noted from Czechoslovakia (*Picea, Pinus, Quercus;* Svrček, **1960**), Denmark (*Fagus;* Christiansen, **1960**), and United Kingdom (*Betula;* Wakefield, **1969**).

Tomentella subtestacea Bourd. & Galz., Bull. Soc. Mycol. France **40**: 144. 1924. FIG. 152

≡*Tomentella galzinii* Bourd. subsp. *subtestacea* Bourd. & Galz., Hym. France, p. 491. 1928.

Type: Location unknown: see remarks.

Basidiocarps up to 0.25 mm thick, mucedinoid, adherent; fertile areas discontinuous, *reddish brown to grayish buff (2.5 YR 5/8); hymenial surface mealy granulose;* subiculum cottony, paler than the fertile areas; sterile margin arachnoid, paler than the fertile areas.

SUBICULAR HYPHAE 2.5–4(–5) μm diam, clamped, often constricted at the septa, wall thickening apparent, hyaline to pale tan; CORDONS up to 15 μm diam, hyaline to pale brown, individual hyphae 2–3 μm diam, clamped, subhyaline; SUBHYMENIAL HYPHAE 3–4.5 μm diam, clamped, usually branching at the clamps, thin-walled, hyaline; BASIDIA 40–55 × 5–7 μm, clamped at the base, transverse septa rare, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Fig. 152) *7–8.5 μm across, irregular to irregularly globose, verrucose, aculeolate to echinulate,* dull brown to pale yellowish brown; CYSTIDIA arising from hyphae of the subhymenium, hyaline, thin-walled, clamped at the base and with some clamped and unclamped septa along their length, obclavate, 4–5(–6.5) μm diam at the *somewhat distended base and tapering towards the slightly expanded apices that are 2.5–3.5(–4.5) μm diam, often sparsely*

FIG. 152. Basidiospores of *T. subtestacea* (from M. J. Larsen 2726 in CFMR: CFMR negative no. M139642).

encrusted with brown deposits, up to 60 μm long, projecting up to 20 μm above the basidia.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on coniferous wood; France, lignicolous.

Also noted from France (*Carex, Prunus, Quercus;* Bourdot & Galzin, **1924, 1928**) and United Kingdom (*Ganoderma;* Wakefield, **1969**).

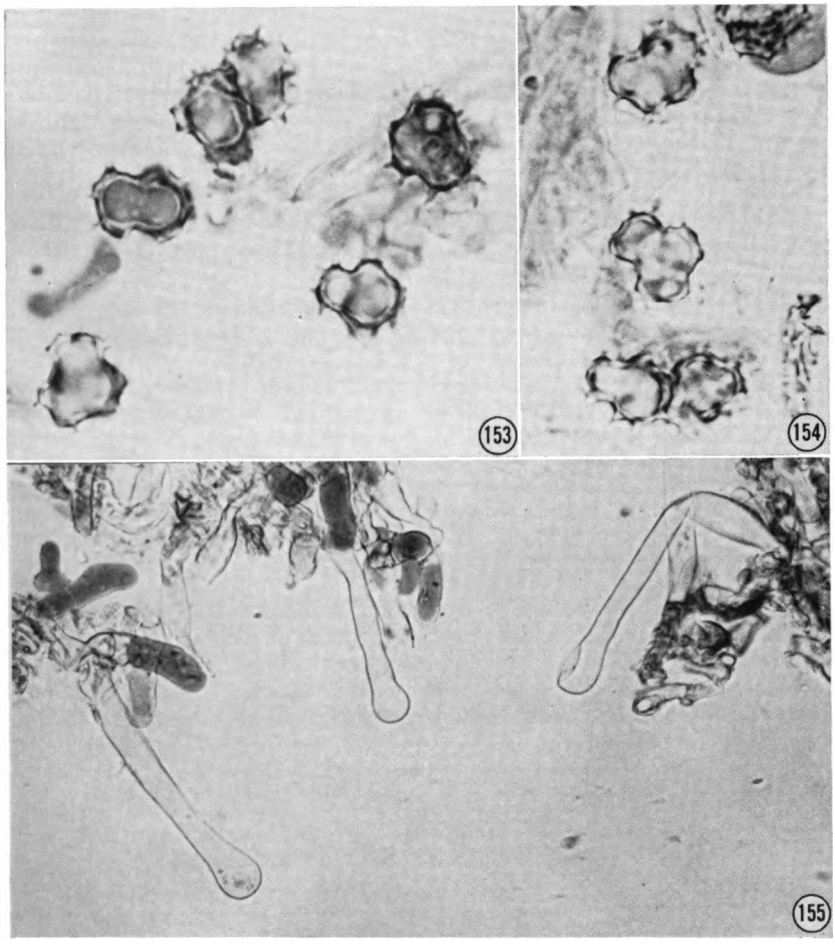
REMARKS: The concept of *T. subtestacea,* presented here, is that of Litschauer. During his examinations of specimens from the Bourdot herbarium, Litschauer apparently saw a specimen labeled as *T. subtestacea* that agreed with Bourdot and Galzin's original description. Such a specimen has not been seen by me. A specimen in the Bourdot herbarium named *Tomentella testacea* (Bourdot herb. 25954) is annotated by Litschauer as "Zeigt: *T. subtestacea* B. & G." It is this specimen that serves as the basis for the above description. *Tomentella roana* Bourd. & Galz. may be a synonym, but the species is, at present, imperfectly known (see Wakefield, p. 175, **1969** for further commentary).

Tomentella viridula Bourd. & Galz., Bull. Soc. Mycol. France **40**: 144. 1924. FIGS. 153–155

≡*Tomentella galzinii* Bourd. subsp. *viridula* Bourd. & Galz., Hym. France, p. 490. 1928.

Lectotype: France, Belly, sur grès, A. Galzin 24912 (Bourdot herb. 28426), XI 1919 (BPI).

Basidiocarps up to 0.2 mm thick, adherent, floccose; fertile areas discontinuous, *grayish green to olive-brown (near 7.5 Y 5/4 to 5.0 Y*



FIGS. 153–155. Basidiospores and cystidia of *T. viridula*. 153–154. Basidiospores (from SSMF 695-4353: SSMF negative no. 5060). 155. Cystidia. (from SSMF 685-4536: SSMF negative no. 5191).

4/4); hymenial surface mostly furfuraceous to finely granulose, becoming somewhat punctate; subiculum thin, scanty, concolorous with the fertile areas; cystidia barely discernible at 10×; sterile margin pubescent, paler than the fertile areas to almost white.

SUBICULAR HYPHAE 2.5–3(–4) μm diam, septate, with clamps frequent, some wall thickening apparent, hyaline to somewhat citrine; SUBHYMENIAL HYPHAE 2.5–4.5(–5) μm diam, clamped, thin-walled, hyaline to pale brown; BASIDIA 35–45(–50) × 5–7 μm, clamped at the base, clavate, often medianly constricted, 4-sterigmate, sterigmata up to 3 μm long; BASIDIOSPORES (Figs. 153–154) *6–8 μm across, mostly ir-*

regular, sometimes lobed, rarely subglobose, echinulate, pale brown to hazel; CYSTIDIA (Fig. 155) arising from hyphae of the subiculum and subhymenium, 3–5 μm diam at the base and expanded up to 7 μm diam at the apex, up to 90 μm long, clamped at the base and often along their length, *wall thickening frequently apparent* with the walls thinning out towards the apex, clavate when immature, *becoming capitulate when mature,* hyaline.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Alberta, lignicolous; Arizona, on *Platanus, Populus;* New Mexico, on *Acer, Pinus;* New York, on *Acer;* France, lapidicolous.

Also noted from Denmark (*Prunus;* Christiansen, **1960**), France (*Thymus;* Bourdot & Galzin, **1924, 1928**), and United Kingdom (*Betula;* Wakefield, **1969**).

SECTION XIII. **Avellaneae** M. J. Larsen, sect. nov.

Basidiocarpis lignatilibus vel terrestribus, mucedinoideis, adhaeribus; hymenio superficie laevi; area fecunda vepallidobrunnea; hyphis systematis monomitico; hyphis fasciculis adsunt, interdum raro; basidiis clavatis, plerumque 8–12 μm diam; basidiosporis plerumque 8–11 μm latis, elongatis, pallidis.

Basidiocarps lignicolous to terricolous, mucedinoid, adherent; hymenial surface smooth; fertile area some shade of pale brown (pale buff, avellaneous, dull cream, etc.); hyphal system monomitic; cordons present, sometimes infrequent to rare; basidia clavate, usually 8–12 μm diam; basidiospores usually 8–11 μm across, often elongated along one axis, pale colored.

TYPE SPECIES: *Tomentella avellanea* (Burt) Bourd. & Galz.

KEY TO THE SPECIES OF SECTION AVELLANEAE

1. Basidiocarps terricolous ..... *T. mairei*
1. Basidiocarps lignicolous 2
   2. Basidiospores pale yellow, irregular to lobed, aculeate ..... *T. kentuckiensis*
   2. Basidiospores not as above 3
3. Basidiospores 7–9.5 μm across, globose to irregularly globose, sometimes subglobose; subicular hyphae 2–3.5 μm diam ..... *T. fragilis*
3. Not with the above combination of characters 4
   4. Cordons up to 75 μm diam; subicular hyphae 4–6(–7) μm diam; basidia 50–70 × 9–14 μm ..... *T. avellanea*
   4. Cordons up to 40 μm diam; subicular hyphae 2.5–5(–6.5) μm diam; basidia 40–60 × 8–13(–14) μm 5
5. Basidiospores 7–10(–11) μm across, subglobose, irregularly globose, or irregular, frequently elongated along one axis and slightly bent, echinulate; subicular hyphae 3–5(–6) μm diam ..... *T. rhodophaea*
5. Basidiospores 7.5–9.5 μm across, irregularly globose to irregular, normally aculeate; subicular hyphae of two kinds, some 2.5–4 μm diam and normally clamped, and others 4–6.5 μm diam and normally septate without clamps. *T. testaceogilva*

Tomentella avellanea (Burt) Bourd. & Galz., Bull. Soc. Mycol. France **40**: 153. 1924. FIGS. 156, 157

≡*Hypochnus avellaneus* Burt, Ann. Missouri Bot. Gard. **3**: 225. 1916.

=*Tomentella corticioides* Wakef., Mycologia **52**: 921. 1960 (NY).

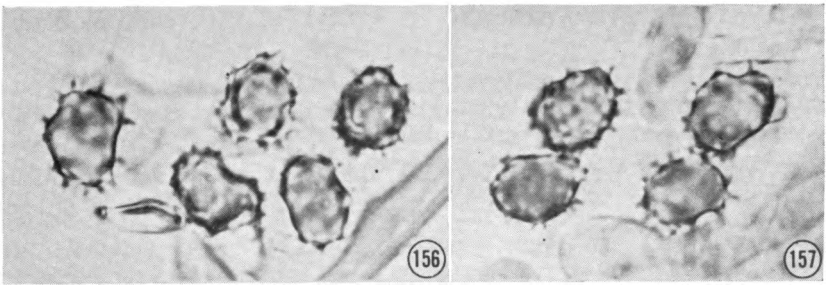
Holotype: U.S.A., Washington, Olympia, on red fir, C. J. Humphrey 6305, 18 X 1909 (FH sheet 741).

Basidiocarps up to 1.5 mm thick, mucedinoid, sometimes cracking and becoming deeply fissured; fertile area mostly continuous, *avellaneous to wood brown (7.5 YR 7/8, 7.5 YR 6/4);* subiculum exposed through cracks and fissures, darker than the fertile area; hymenial surface smooth; sterile margin fimbriate to fibrillose, paler than the fertile area, almost white to pale brown when dry; cordons evident at 10×.

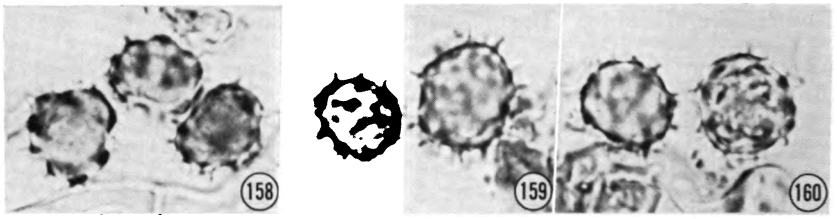
SUBICULAR HYPHAE *4–6(–7) μm diam,* septate, with clamps frequent, wall thickening apparent, pale yellowish brown; CORDONS 15–75 μm diam, pale yellowish brown to dark brown, branched, individual hyphae 3–3.5 μm diam, clamped, wall thickening apparent, pale yellowish brown; SUBHYMENIAL HYPHAE 3.5–5(–6) μm diam, clamped, wall thickening apparent, hyaline; BASIDIA *50–70 × 9–14 μm,* clamped at the base, frequently with transverse septa, stout-clavate, somewhat attenuated at the base, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 156–157) *8–10 μm across, irregularly subglobose to lobed, often elongated* along one axis, echinulate, walls yellowish brown to pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, lignicolous; British Columbia, on *Thuja;* California, humicolous; New York, on *Pinus,* humicolous; Ontario, lignicolous; Texas, lignicolous; Washington, on *Abies, Picea.*

Also noted from France (*Thymus;* Bourdot & Galzin, **1924**, **1928**) and United Kingdom (lignicolous, humicolous; Wakefield, **1969**).



FIGS. 156–157. Basidiospores of *T. avellanea* (from holotype: SSMF negative no. 5119).



FIGS. 158–160. Basidiospores of *T. fragilis* (from lectotype: SSMF negative no. 5098).

Tomentella fragilis (Bourd. & Galz.) M. J. Larsen, comb. & stat. nov. FIGS. 158–160

≡*Tomentella cinerascens* (Karst.) Hoehn. & Litsch. var. *fragilis* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 161. 1924.

Lectotype: France, L'Aveyron, sur grès, A. Galzin 26949 (Bourdot herb. 33306), 16 XII 1921 (PC).

Basidiocarp up to 0.2 mm thick, mucedinoid, adherent; fertile area continuous, *pale yellowish brown (near 7.5 YR 5/4 to 7.4 YR 4/4);* hymenial surface smooth; subiculum loose-fibrous, concolorous with, to darker than, the fertile area; sterile margin indeterminable.

SUBICULAR HYPHAE 2–3.5(–4.5) μm diam, clamped, some wall thickening apparent, pale yellowish brown; CORDONS up to 30 μm diam, dull yellowish brown, individual hyphae 2.5–3.5 μm diam, clamped; SUBHYMENIAL HYPHAE 3–5.5 μm diam, clamped, thin-walled, pale tan to hyaline; BASIDIA *35–45(–55) × 9–12 μm,* clamped at the base, clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 158–160) *7–9.5 μm across, globose to irregularly globose, sometimes appearing subglobose, often elongated along one axis,* echinulate, pale brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: France, lapidicolous.

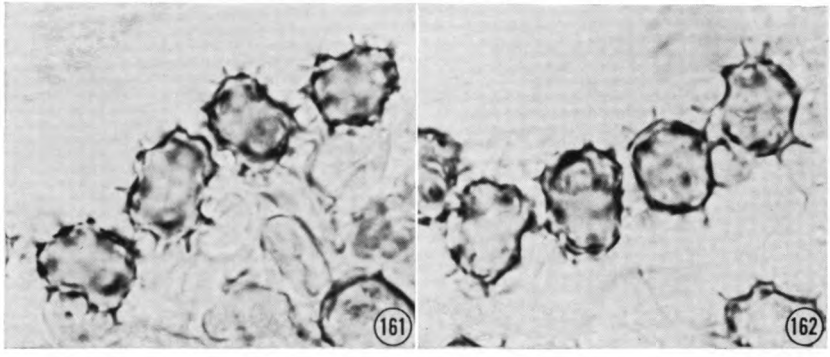
Tomentella kentuckiensis M. J. Larsen, sp. nov. FIGS. 161, 162

Etymology: From Kentucky + *-ensis* (L., adj. suff. indicating origin).

Basidiocarpis adnatis; area fecunda ochracea vel pallidobrunnea; hyphis 2–4(–6) μm diam, fibulatis; basidiis 35–45 × 7–9 μm, clavatis; basidiosporis (Figs. 161–162) 8–11 μm latis, lobatis vel irregularis, aculeatis, alboluteis.

Holotype: U.S.A., Kentucky, Crittenden Co., on angiospermous wood, C. G. Lloyd 1429, catalogue no. 24266, 5 X 1914 (Lloyd herb., BPI).

Basidiocarps up to 0.3 mm thick, mucedinoid, normally adherent; fertile area continuous, *very pale buff to wood brown (near 10.0 YR 7/4)*; hymenial surface smooth; subiculum firm, fibrous, darker than



FIGS. 161–162. Basidiospores of *T. kentuckiensis* (from holotype: SSMF negative no. 5118).

the fertile area, appearing yellowish brown; sterile margin fibrillose to villose, concolorous with the fertile area.

SUBICULAR HYPHAE *2–4(–6) μm diam,* septate, with clamps frequent, wall thickening apparent, pale yellowish brown; CORDONS infrequent to rare, up to 20 μm diam, individual hyphae 2–3.5 μm diam, clamped; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, thin-walled, hyaline to pale yellowish brown; BASIDIA *35–45 × 7–9 μm,* clamped at the base, infrequently with transverse septa, clavate, 2- to 4-sterigmate, sterigmata up to 9 μm long; BASIDIOSPORES (Figs. 161–162) *8–11 μm across, irregular to lobed, normally aculeate but frequently appearing echinulate, pale yellow.*

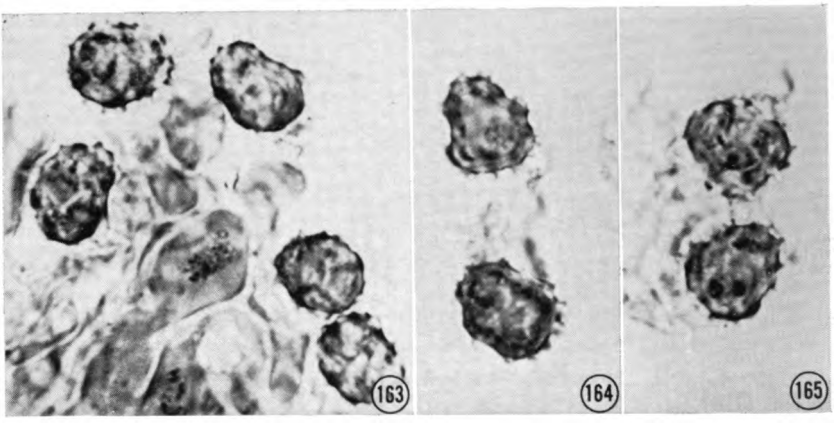
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Kentucky, lignicolous (in BPI, Lloyd catalogue nos. 24267, 44077, 44085, 44090, 58010).

Tomentella mairei Bourd., J. Lorraine Pharm. (Nancy) **4**(1): 1918 (not seen, but cited in Bull. Soc. Mycol. France **36**: 80. 1920). FIGS. 163–165

(?) *Holotype:* France, Lisy-sur-Ourcq (S. et M.), terre sablonneuse, L. Maire 331 (Bourdot herb. 23118), IX 1917 (PC), and isotype in BPI.

Basidiocarps up to 0.5 mm thick, *encrusting,* mucedinoid; fertile area continuous, *avellaneous to pale wood brown (5.0 YR 6/4);* subiculum very pale brown, not well differentiated; sterile margin indeterminable, probably paler than the fertile area.

SUBICULAR HYPHAE 2.5–4.5(–5) μm diam, septate, with clamps frequent, *hyphae slightly swollen, constricted at or adjacent to septa, without clamps,* thin-walled or wall thickening slight, pale yellowish brown; CORDONS rare, up to 30 μm diam, dull brown, individual hyphae 2–3.5 μm diam, clamped mostly thin-walled, pale yellowish brown; SUBHYMENIAL HYPHAE of two kinds, some arising from hyphae of the subciulum, 2.5–4



FIGS. 163–165. Basidiospores of *T. mairei* (from ?holotype: SSMF negative no. 5103).

(–5) μm diam, septate, with clamps frequent, thin-walled, pale yellowish brown to hyaline; *some arising from hyphae directly below the basidia and ramifying throughout the hymenophoric layer,* 2–3.5 μm diam, clamped, hyaline, *irregular and contorted;* BASIDIA 35–50 × 7–10 μm, clamped at the base, clavate when mature and somewhat obpyriform when immature, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 163–165) *8–10(–11) μm across, shape very variable, often regular in outline and elongated along one axis, sometimes irregularly globose to irregular,* aculeolate to echinulate, walls pale brown to yellowish brown.

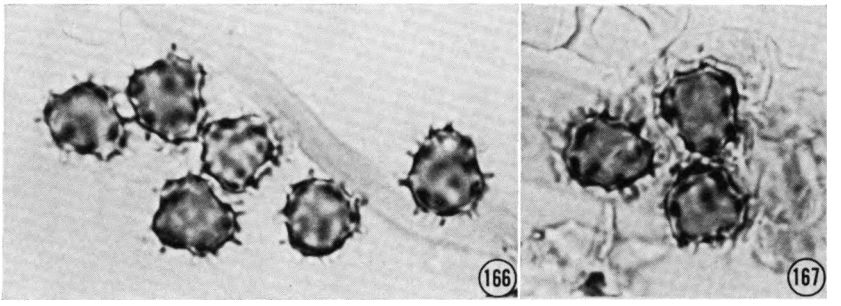
DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: France, terricolous; Germany, on wood partly buried in soil.

Tomentella rhodophaea Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **116**: 831. 1907.
FIGS. 166, 167

Holotype: Germany, am Sattelberg bei Pressbaum, auf morschem Pappelholz, 21 VIII 1906, F. Hoehnel (in Hoehnel herb., sheet 1997, FH).

Basidiocarp up to 0.25 mm thick, firm, mucedinoid, adherent; fertile area continuous, *very pale tan or buff (near 7.5 YR 5/4);* hymenial surface smooth; subiculum paler than the fertile area; *cordons apparent at 10×*; sterile margin apparently fimbriate.

SUBICULAR HYPHAE 3–5(–6) μm diam, septate, with clamps frequent, wall thickening apparent, pale yellowish brown to very pale tan; CORDONS up to 25 μm diam, dull brown, individual hyphae 2.5–3.5 μm diam, clamped; SUBHYMENIAL HYPHAE 4–5 μm diam, clamped, thin-walled, hyaline; BASIDIA *40–55(–60) × 11–13(–14) μm,* clamped at the



FIGS. 166–167. Basidiospores of *T. rhodophaea* (from holotype: SSMF negative no. 5117).

base, transverse septa sometimes present, clavate, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 166–167) *7–10(–11) μm across, appearing subglobose, irregularly globose, or irregular, frequently elongated along one axis and slightly bent,* echinulate, walls pale to medium brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Germany, lignicolous.

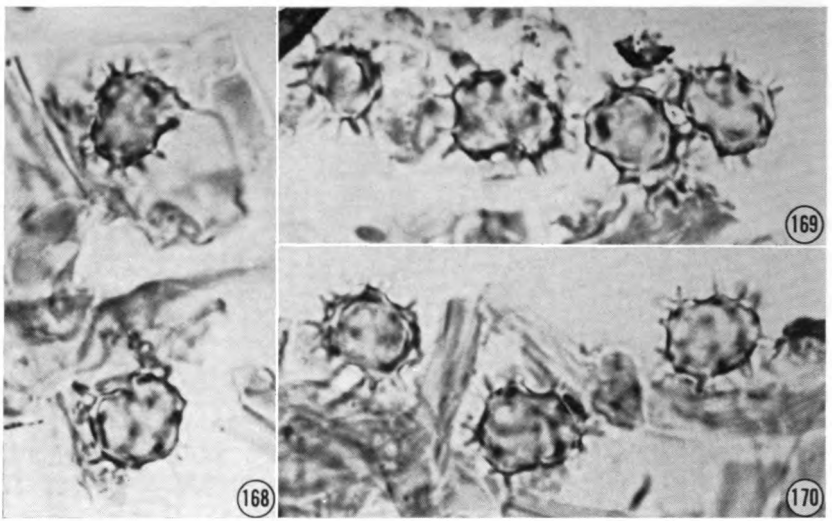
Tomentella testaceogilva Bourd. & Galz., Bull. Soc. Mycol. France **40**: 149. 1924. FIGS. 168–170

Lectotype: France, l'Allier, sur aune, H. Bourdot (Bourdot herb. 18955), 7 IX 1906 (PC).

Basidiocarps up to 1.0 mm thick, mucedinoid, somewhat separable; fertile area continuous, *pale yellowish brown (5.0 YR 5/4);* hymenial surface smooth to faintly reticulate; subiculum firm-fibrous, concolorous with, to paler than, the fertile area; sterile margin arachnoid to strongly fimbriate, irregular in outline, concolorous with the fertile area; cordons evident at 10×.

SUBICULAR HYPHAE of two kinds, some 2.5–4 μm diam, septate, with clamps frequent, wall thickening apparent, tan to pale brown; some arising from the former, 4–6.5 μm diam, septate, with clamps infrequent, wall thickening apparent, rarely branched, sometimes roughened by encrusting material, pale tan to hyaline; CORDONS up to 40 μm diam, tan-brown, individual hyphae 2.5–4.5 μm diam, clamped, wall thickening slight; SUBHYMENIAL HYPHAE 4–5.5 μm diam, clamped, thin-walled, hyaline; BASIDIA *40–60 × 8–10(–12) μm,* clavate, 4-sterigmate, sterigmata up to 5 μm long; BASIDIOSPORES (Figs. 168–170) *7.5–9.5 μm across, irregularly globose to more rarely irregular, sometimes elongated along one axis, echinulate to mostly aculeate, pale tan.*

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: France, on *Alnus.* Also noted from Czechoslovakia (*Carpinus;* Svrček, **1960**), Germany (*Populus;* Litschauer, **1939a**), Russia (lignicolous; Svrček, **1960**) and United Kingdom (moss, lignicolous, terricolous; Wakefield, **1969**).



FIGS. 168–170. Basidiospores of *T. testaceogilva* (from lectotype: SSMF negative no. 5062).

SECTION XIV. **Macrobasidii** M. J. Larsen, sect. nov.

Basidiocarpis mucedinoideis; hymenio superficie laevi; hyphis systematis monomitico; hyphis subiculis 2–4.5 μm diam; basidiis 60–90 × 9–15 μm, inflatis usque ad 20 μm latis; basidiosporis plerumque globosis irregularibus.

Basidiocarps normally mucedinoid; hymenial surface smooth; hyphal system monomitic; subicular hyphae 2–4.5 μm diam; basidia 60–90 × 9–15 μm, distended up to 20 μm across, 10–15 μm above the basal septa; basidiospores normally irregularly globose.

TYPE SPECIES: *Tomentella terrestris* (Berk. & Br.) M. J. Larsen.

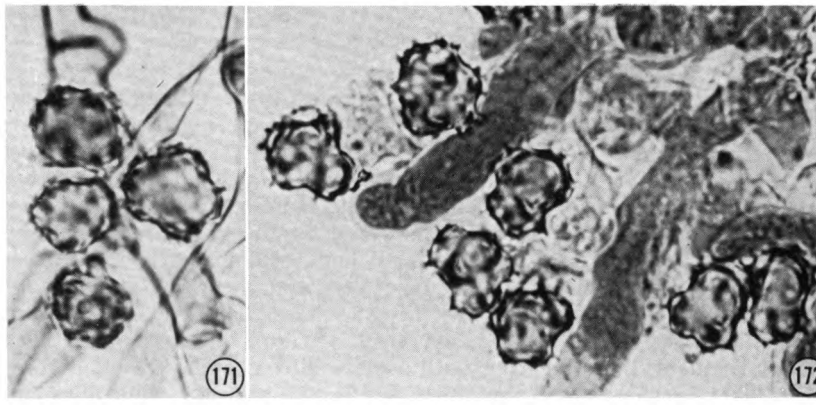
KEY TO THE SPECIES OF SECTION MACROBASIDII

1. Basidiospores 6–7(–8.5) μm across; fertile areas dark brown to bister *T. terrestris*
1. Basidiospores 7–10(–11) μm across; fertile areas pale yellowish brown *T. nitellina*

Tomentella nitellina Bourd. & Galz., Bull. Soc. Mycol. France **40**: 151. 1924. FIGS. 171, 172

Lectotype: France, L'Aveyron, Millau, calcaires du lias, A. Galzin 29596 (Bourdot herb. 32921), XI 1921 (PC).

Basidiocarps up to 0.3 mm thick, mostly adherent, some parts becoming separable, mucedinoid, mealy-velvety, or furfurescent; fertile areas mostly discontinuous, *pale yellowish brown (near 5.0 YR 4/4);*



FIGS. 171–172. Basidiospores of *T. nitellina* (from lectotype: SSMF negative no. 5060).

hymenial surface smooth, sometimes appearing minutely punctate or granulose; subiculum paler than the fertile areas, *pale yellowish brown;* sterile margin paler than the fertile areas, byssoid to fibrillose.

SUBICULAR HYPHAE 3–4.5(–6) μm diam, septate, with clamps frequent, wall thickening apparent, brown to yellowish brown; SUBHYMENIAL HYPHAE 3–5 μm diam, clamped, thin-walled, hyaline to pale yellow, often umbrinous (this stratum also contains elements that appear to be basidia that have failed to mature); BASIDIA *60–80 × 10–15 μm, up to 20 μm diam 10–15 μm above the basal septa,* clamped at the base, hyaline or somewhat umbrinous, 4-sterigmate, sterigmata up to 6 μm long; BASIDIOSPORES (Figs. 171–172) *6–8(–9) μm diam, or 7–10(–11) μm across, irregularly globose to sometimes irregular, aculeolate to echinulate,* pale brown to umbrinous.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Washington, on *Picea;* France, lapidicolous.

Tomentella terrestris (Berk. & Br.) M. J. Larsen, comb. nov. FIG. 173

≡*Zygodesmus terrestris* Berk. & Br., Ann. Mag. Nat. Hist. 7 (5): 130. 1881.

=*Tomentella umbrinella* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 154. 1924 (PC).

≡*Tomentella spongiosa* (Schw.: Fr.) Hoehn. & Litsch. subsp. *umbrinella* Bourd. & Galz., Hym. France, p. 504. 1928.

=*Tomentella porulosa* Bourd. & Galz. f. *lutricolor* Bourd. & Galz., Bull. Soc. Mycol. France **40**: 155. 1924 (PC).

=*Tomentella badiofusca* Bourd. & Galz., Hym. France, p. 497. 1928 (PC).

=*Tomentella badiofusca* Bourd. & Galz. f. *diatrypicola* Svrček, Česká Mykol. **12**: 73. 1958 (PR).

Holotype: England, Crundale (Crundall), Kent, on bare chalk, 1866, herb. Berkeley, 1879 (K).

Basidiocarps annual, effused, up to 0.5 mm thick, adherent, mucedinoid, often stretching and tearing on drying and exposing the subiculum; fertile area continuous, *dark brown to bister, often with a slight vinaceous tint (2.5 YR 5/4, 2.5 YR 6/4);* subiculum compact, thin, somewhat paler than the fertile area; hymenial surface smooth; sterile margin even, appressed, narrow, fibrillose to villose, concolorous with the subiculum. SUBICULAR HYPHAE 2.5–4(–5) μm diam, septate, with clamps frequent, wall thickening apparent, pale yellowish brown; CORDONS infrequent, up to 40 μm diam, dark brown, individual hyphae 2–4.5 μm diam, clamped; SUBHYMENIAL HYPHAE 3–5 μm diam, septate, with clamps frequent, thin-walled or with some wall thickening (walls becoming thinner towards the hymenium), dull brown near the subiculum and paler towards the hymenium; *this stratum also contains what appear to be aborted basidia that have proliferated from what is now the subhymenium, giving vertical sections of the basidiocarp a layered appearance;* BASIDIA *60–90 × 9–14 μm, up to 20 μm diam 10–15 μm above the basal septa,* often with transverse septa, clamped at the base, 4-sterigmate, sterigmata up to 8 μm long; BASIDIOSPORES (Fig. 173) *6–7(–8.5) μm across, irregularly globose to somewhat subglobose,* often flattened on one side, aculeolate to echinulate, pale tan to yellowish brown.

DISTRIBUTION AND SUBSTRATUM RELATIONSHIPS: Arizona, on *Abies, Pinus,* lignicolous; British Columbia, on *Thuja,* lignicolous; Florida, on angiospermous wood; Idaho, lignicolous; Michigan, on *Quercus;* Montana, on *Picea, Pinus, Populus,* lignicolous; New Mexico, on *Pinus,* lignicolous; New York, on *Pinus, Tsuga,* lignicolous; North Carolina, on *Acer, Castanea;* Nova Scotia, on *Abies;* Ontario, on *Betula;* Czecho-

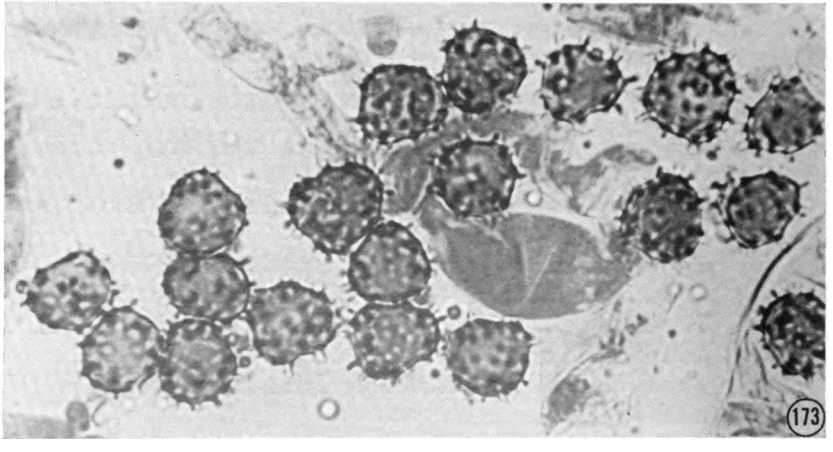


FIG. 173. Basidiospores of *T. terrestris* (from SSMF 695–4301: SSMF negative no. 5049).

slovakia, on *Diatrype, Tilia;* France, on *Pinus,* lapidicolous; Germany, on *Alnus;* Sweden, on *Betula, Sorbus;* United Kingdom, lapidicolous. Also noted from Germany (coniferous wood; Litschauer, **1939a**).

NOMINA EXCLUDENDAE

acerinus (Pers. per Fr.) Pat., *Hypochnus,* Rev. Mycol. **11**: 166. 1889. ≡*Dendrothele acerina* (Pers. per Fr.) Lemke, Persoonia **3**: 366. 1965.

ahrensii Ade, *Tomentella,* Allgem. Bot. Zeitschr. **30–31**: 17 (192). 1926. Ade's collection at Wuerzburg was apparently destroyed during World War II. His description does not appear to encompass a *Tomentella.* His fungus may conceivably have been near *Tomentellopsis.*

albidus Ell. & Halst., *Zygodesmus,* in Halsted, Bull. Torrey Bot. Club **17**: 152. 1890. =nomen nudum.

albocinctus Mont., *Hypochnus,* Plantés Cellul., in R. Sagra, Hist. phys., polit., natur. l'ile Cuba, p. 368. 1838–1842. =*Chiodectonis nivei* Fee (see Saccardo, Syll. Fung. **6**: 663. 1888).

albostramineus Bres., *Hypochnus,* Ann. Mycol. **1**: 110. 1903. (BPI) =*Hypochnicium punctulatum* (Cke.) J. Erikss., Symb. Bot. Upsal. **16**: 101. 1958.

albus Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **13**: 319. 1926. (BPI) =*Xenasma clematidis* (Bourd. & Galz.) Liberta, Mycologia **52**: 897. 1960.

alutaceo-umbrina (Bres.) Litsch., *Tomentella,* Bull. Soc. Mycol. France **49**: 66. 1933. See *H. alutaceo-umbrinus.*

alutaceo-umbrinus Bres., *Hypochnus,* Ann. Mycol. **1**: 109. 1903. (S) ≡**Tomentellastrum alutaceo-umbrinum** (Bres.) M. J. Larsen, comb. nov.

andinus Pat., *Hypochnus,* Bull. Herb. Boissier **3**: 58. 1895. (FH) This species appears to be referable to *Hyphoderma* or *Hypochnicium* of the Corticiaceae.

anthochroa ["*autochrous*" in Rick] (Pers. per Fr.) Rick, *Tomentella,* Broteria **3**: 79. 1934. See comments on *H. anthochrous.*

anthochroa ["*autochrous*" in Rick] (Pers. per Fr.) Rick var. *variispora* Rick, *Tomentella,* Broteria **3**: 79. 1934. Rick's type has not been available for examination. His description of the spores (". . . variis, irregularibus, argillaceis, 5–10 × 5–8 μ, angulatis, subsphaericus aut cylindricis aut fusiformibus . . .") indicates that this fungus is not a *Tomentella,* but instead belongs in the Corticiaceae.

anthochroa Pers. per Fr. var. *versicolor* Berk., *Thelephora,* Ann. Mag.

Nat. Hist., p. 4, May 1859. The type of this name has not been available for examination.

anthochrous (Pers. per. Fr.) Fr., *Hypochnus,* Monogr. Hym. Suec. **2**: 264. 1863. The name *Thelephora anthochroa* Pers. (non Schweinitz) is considered here to be of uncertain application.

arachnoideus (Berk. & Br.) Bres., *Hypochnus,* Ann. Mycol. **1**: 108. 1903. (K) ≡*Septobasidium arachnoideum* (Berk. & Br.) Bres., Ann. Mycol. **14**: 241. 1916.

arachnoideus (Berk. & Br.) Bres. var. *murinus* Bres., *Hypochnus,* Ann. Mycol. **1**: 109. 1903. (S) =*Tomentellastrum floridanum* (Ell. & Ev.) M. J. Larsen (see *Thelephora floridana*).

araneosa Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **116**: 830. 1907. (FH) This species should be referred to a position in or near *Trechispora.* Bourdot & Galzin report that *T. araneosa* appears to be intermediate between "*Corticium sphaerosporum* R. Maire" and "*C. fastidiosum* Fr."

argillaceus Karst., *Hypochnus,* Med. Soc. Fauna Fl. Fenn. **6**: 13. 1881. (H) =*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958.

asterophora (Bon.) Skovs., *Tomentella,* Compt. Rend. Lab. Carlsb. sér. Physiol. **25**: 12. 1950. See *H. asterophorus.*

asterophrous Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 160. 1851. ≡*Tylospora asterophora* (Bon.) Donk, Taxon **9**: 220. 1960.

asterostromelloides Rick, *Tomentella,* Broteria **7**: 77. 1938. Rick's species is probably referable to *Asterostroma,* and near *A. persimile* Wakef. A type specimen, though, has not been available for study.

atroviolacea Litsch., *Tomentella,* Bull. Soc. Mycol. France **49**: 53. 1933. (W) =*Tomentellastrum floridanum* (Ell. & Ev.) M. J. Larsen (see *Thelephora floridana*).

atroviolaceum (Litsch.) Svrček, *Tomentellastrum,* Česká Mykol. **12**: 70. 1958. See *T. atroviolacea.*

atrovirens (Fr.) Donk, *Hypochnus,* Nederl. Bot. Ver., Nederl. Kruidk. Arch., p. 82. 1932. ≡*Byssocorticium atrovirens* (Fr.) Bond. & Sing., Mycologia **36**: 69. 1944.

aureus (Fr. per Pers.: Fr.) Fr., *Hypochnus,* Syst. Mycol. **3**: 289. 1832. This name is of uncertain application.

badiofusca Bourd. & Galz. var. *angulispora* Litsch., *Tomentella,* Ann. Mycol. **39**: 376. 1941. The type of this name has not been available for examination. Litschauer indicates that the distinguishing feature of this variety is the irregular and angular spores. In my studies on *T. badiofusca,* it has been observed that the spore shape is highly

variable, and in North American material they are frequently angular and lobed. It appears that Litschauer's fungus eventually will not warrant varietal status.

bagliettoanus Fr., *Hypochnus,* Hym. Europ., p. 705. 1874. ≡*Septobasidium bagliettoanum* (Fr.) Bres. (see Couch, **1938**).

bambusina Viegas, *Tomentella,* J. Agron. (Sao Paulo) **2**: 324. 1939. Viegas illustrates and describes a fungus that possesses aculeolate, hyaline, globose to subglobose basidiospores that are 8.5–9 μm diam. It does not appear to be a *Tomentella.*

basicola Rostr., *Hypochnus,* in Lind, Danish Fungi Herb. Rostrup, p. 354. 1913. Lind states that this fungus is "closely related to *Hypochnus solani* and to *Hyp. cucumeris* Frank." Lind's description indicates that the fungus is not a *Tomentella.*

beccariana (Pass.) Rick, *Tomentella,* Broteria **3**: 79. 1934. See *H. beccarianus.*

beccarianus Pass., *Hypochnus,* Nuova Giorn. Bot. Ital. **7**: 181. 1875. The type of this name has not been available for examination. Passerini's description, though, indicates that the fungus in question is not a *Tomentella,* but instead a *Septobasidium.*

biennis (Fr.) A. M. Rogers, *Tomentella,* Mycologia **40**: 634. 1948. ≡*Thelephora biennis* Fr., Syst. Mycol. **1**: 449. 1821 (?nom. dubium).

bisporus Schroet., *Hypochnus,* in Cohn, Krypt. Fl. Schles. **3**: 415. 1889. ≡*Athelia bispora* (Schroet.) Donk, Fungus **27**: 12. 1957 (see Rogers and Jackson, **1943**).

bombycina Karst., *Kneiffiella,* Acta Soc. Fauna Fl. Fenn. **11**: 1. 1895. (H) =*Tomentellina fibrosa* (see *Z. fibrosus*).

bombycina Karst. var. *calcarea* Pouz. & Svrček, *Kneiffiella, Česká* Mykol. **12**: 77. 1958. (PR) =*Tomentellina fibrosa* (see *Z. fibrosus*).

bombycina Karst. var. *slovaca* Svrček, *Kneiffiella,* Česká Mykol. **12**: 77. 1958. (PR) =*Tomentellina fibrosa* (see *Z. fibrosus*).

bombycina (Karst.) J. Erikss., *Tomentella,* Symb. Bot. Upsal. **16**: 159. 1958. See *K. bombycina.*

bombycina (Karst.) G. H. Cunn., *Tomentella,* Trans. Roy. Soc. New Zeal. **84**: 483. 1957. This name is invalid according to Art. 33 of the International Code of Botanical Nomenclature.

bombycina (Karst.) Bourd. & Galz., *Tomentellina,* Hym. France, p. 473. 1928. See *K. bombycina.*

bombycina (Karst.) Bourd. & Galz. f. *saxicola* Bourd. & Galz., *Tomentellina,* Hym. France, p. 473. 1928. (PC) =*Tomentellina fibrosa* (see *Z. fibrosus.*)

bombycinus (Sommerf. per Fr.) Fr., *Hypochnus,* Monogr. Hymen. Suec.

2: 264. 1863. ≡*Hypochnicium bombycinum* (Sommerf. per Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 101. 1958.

bourdotii Svrček, *Tomentella,* Ceská Mykol. **12**: 76. 1958 (as a nom. nov. for *T. granosa* Bourd. & Galz.) =nomen superfluum.

brasiliensis Rick, *Tomentella,* Broteria **5**: 224. 1906. Rick's description of this species provides the following pertinent data: "basidiis 40 μ longis, 15 μ latis, cystidiis similibus . . .; sporis sphaericis, grosse riticulatis et echinulatis, olivaceis, 15 μ diametro," and fruiting bodies ". . . sicca alba . . . ceraceo gelatinosa . . .". One may safely assume that Rick's species is not a *Tomentella,* and its affinities with other genera are not clear. The type has not been available for examination.

brefeldii Sacc., *Hypochnus,* Syll. Fung. **9**: 243. 1891. The nomenclatural type of this name has not been available for study. Rogers (**1943**) indicates that it may be synonymous with "*Pellicularia pruinata* (Bres.) Rogers ex Linder."

brunnea Schroet., *Tomentella,* in Cohn, Krypt.-Fl. Schles. **3**: 419. 1889. From Schroeter's description the fungus appears to be a *Coniophora.*

brunneofirma M. J. Larsen, *Tomentella,* Can. J. Bot. **45**: 1300. 1967. (SYRF, BPI) ≡**Tomentellastrum brunneofirmum** (M. J. Larsen) M. J. Larsen, comb. nov.

bubaci Velenov., *Hypochnus,* České houby, p. 744. 1922. From Velenovskyi's description, the fungus appears to be a *Botryobasidium* or *Coniophora.* It is not a *Tomentella.*

burnatii Lendner, *Hypochnus,* Bull. Soc. Bot. Geneve **6**: 106. 1914. Lendner's type has not been available for study, but from his description it is possible to refer the fungus to *Thanatephorus* (? *T. cucumeris*).

byssina (Karst.) Karst., *Tomentella,* Bidrag Kaenn. Finl. Nat. Folk **48**: 420. 1889. (H) =*Athelia bicolor* (Pk.) Parm., Eesti NSV Teadu. Akad. Toimet. Biol. **16**: 379. 1967.

byssoideus (Pers. per Fr.) Quél., *Hypochnus,* Bull. Soc. Bot. France **26**: 231. 1879. ≡*Amphinema byssoides* (Pers. per Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 112. 1958.

caesia Pers. per Fr., *Thelephora,* Syst. Mycol. **1**: 449. 1821. Wakefield (1969) recently suggested that *Thelephora caesia* be discarded as a nomen confusum. I have not examined any Persoon specimens representing this name, and there is no indication that anybody else has either. The name has apparently been applied in various senses (see Bourdot & Galzin, **1928**) but not relative to an accurate appraisal of a type, which may still exist at Leiden. The name stands, at present, as one of uncertain application, although it has been used to represent a form of the species known as *Thelephora fuscocinerea.*

caesia (Pers. per Fr.) Hoehn. & Litsch., *Tomentella,* Oest. Bot. Zeitschr. **58**: 476. 1908. See *Thelephora caesia.*

caesiocinerea (Svrček) M. J. Larsen, *Tomentella,* State Univ. N.Y. Coll. Forest. at Syracuse Univ., Tech. Publ. **93**: 130. 1968. (PR) ≡*Tomentellastrum caesiocinereum* Svrček, Česká Mykol. **12**: 69. 1958.

caesius (Pers. per Fr.) Bres., *Hypochnus,* Ann. Mycol. **1**: 107. 1903. See *Thelephora caesia.*

canadensis Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 211. 1916. (FH) =*Tomentellina fibrosa* (see *Z. fibrosus*).

capnophilus Arnaud, *Hypochnus,* Bull. Soc. Mycol. France **67**: 194. 1951. Arnaud has provided adequate illustration and description of this fungus. It is not a *Tomentella,* and is doubtfully referable to *Botryobasidium.*

carneoroseus Rick, *Hypochnus,* Broteria **3**: 152. 1934. (SP) *Hypochnus carneoroseus* is not related to *H. lilacinoroseus* Pat. (a *Laeticorticium*) as indicated by Rick. The type demonstrates heavily encrusted cystidia, gloeocystidia that are frequently branched at the base, brown hyphae with clamp connections, and basidiospores that are hyaline, cylindrical and somewhat curved, and 6–6.5 × 2–3 μm. It appears to be related to *Hyphoderma.*

centrifugus (Lév.) Tul., *Hypochnus,* Sel. Fung. Carpol. **1**: 114. 1861. This name is of uncertain application (Also, see Rogers & Jackson, **1943**).

chaetophorus Hoehn., *Hypochnus,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **111**: 1007. 1902. (FH) ≡*Tubulicrinis chaetophorus* (Hoehn.) Donk, Fungus **26**: 14. 1956.

chalybaea (Pers. per Pers.: Fr.) Hoehn. & Litsch., *Tomentella,* Wiesn. Festschr., p. 77. 1908. See *H. chalybaeus.*

chalybaeus (Pers. per Pers.: Fr.) Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 417. 1889. Persoon's type has not been available for examination. *Hypochnus chalybeus* has apparently been applied to those forms of *Thelephora fuscocinerea* that are gray (see Wakefield, **1969**). A precise interpretation of the name is not possible, and it is considered here to be of uncertain application.

cinerascens (Karst.) Hoehn. & Litsch. var. *verrucarioides* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 161. 1924. The type of this name has not been available for examination, but from the original description it appears that it probably represents *T. cinerascens* or *T. subcinerascens.*

cinereo-umbrinus Bres., *Hypochnus,* Stud. Trent. **7**(Ser. 2, Sci. Nat. Econom.): 62. 1926. (BPI) ≡**Tomentellastrum cinereo-umbrinum** (Bres.) M. J. Larsen, comb. nov.

cinereus Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 158. 1851. Bonorden illustrates a basidium with smooth, allantoid spores attached. The fungus is not a *Tomentella.*

cinereus Ell. & Ev., *Zygodesmus,* in Langlois, Catal. Pl. Basse-Louisiana, p. 35. 1887. =nomen nudum.

cinnamomeus (Pers.: Fr.) Bon., *Hypochnus* ["*cinnameus*" in Bon.], Handb. Prakt. Heilk. Arzte Stud., p. 160. 1851. ≡*Hymenochaete cinnamomea* (Pers.: Fr.) Bres., Atti Accad. Sci. Lett. Art Agiati, Rovereto **3**(3): 110. 1897.

confluens (Fr. per Pers.: Fr.) Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 159. 1851. ≡*Radulomyces confluens* (Fr. per Pers.: Fr.) M. P. Chris, Dansk Bot. Ark. **19**: 231. 1960.

conspersus Fr., *Hypochnus,* Epicr. Syst. Mycol., p. 570. 1838. An interpretation of this name is not available, and therefore, its application at this time is uncertain.

coronatus Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 418. 1888. ≡*Corticium coronatum* (Schroet.) Sacc., Syll. Fung. **6**: 654. 1888. This fungus may be referable to *Botryobasidium.*

cremicolor Bres., *Hypochnus,* Ann. Mycol. **1**: 109. 1903. (S) =*Hypochnicium punctulatum* (Cke.) J. Erikss., Symb. Bot. Upsal. **16**: 101. 1958.

crustacea Schum. per Fr. sensu Bres., *Thelephora,* Ann. Mycol. **1**: 107. 1903. (S) ≡*Tomentellastrum litschaueri* (Svrček) M. J. Larsen. See *T. litschaueri.*

crustacea (Schum. per Fr.) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 149. 1924. ≡*Thelephora crustacea* Schum. per Fr., Syst. Mycol. **1**: 450. 1821 (see Corner, **1968**).

crustaceus (Schum. per Fr.) Karst., *Hypochnus,* Bidrag Kaenn. Finl. Nat. Folk. **37**: 163. 1882. See *T. crustacea.*

cucumeris Frank, *Hypochnus,* Hedwigia *22*: 126. 1883. ≡*Thanatephorus cucumeris* (Frank) Donk, Reinwardtia **3**: 376. 1956.

cyanea (Wakef.) Svrček, *Pseudotomentella,* Sydowia **14**: 173. 1960. See *T. cyanea.*

cyanea (Wakef.) Bourd. & Galz., *Tomentella,* Hym. France, p. 489. 1928. (K) Wakefield originally described this fungus in *Hypochnus,* but its generic position has yet to be elucidated.

cyanescens Peyronel, *Hypochnus,* Bull. Soc. Bot. Ital., no. 11, p. 9. 1922. =nomen nudum.

cyaneus Wakef., *Hypochnus,* Trans. Brit. Mycol. Soc. **5**: 478. 1917. See *T. cyanea.*

dendriticus Wallr., *Hypochnus,* Fl. Crypt. Germ., p. 310. 1833. The

application of Wallroth's name appears to be uncertain. His description indicates that the name probably does not represent a *Tomentella.*

dussii Pat., *Hypochnus,* Bull. Soc. Mycol. France **15**: 202. 1899. (FH) ≡*Tubulicium dussii* (Pat.) Oberw., Sydowia **19**: 55. 1965.

echinospora (Ell.) Svrček, *Pseudotomentella,* Česká Mykol. **12**: 68. 1958. (NY) ≡*Tomentellopsis echinospora* (Ell.) Hjorts., Svensk Bot. Tidskr. **64**: 42. 1970.

echinospora (Ell.) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 138. 1924. See *P. echinospora.*

echinosporus (Ell.) Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 237. 1916. See *P. echinospora.*

effusus Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 160. 1851. Bonorden describes round, hyaline spores for this species. It does not appear to be a *Tomentella.*

effusus Berk. & Curt., *Zygodesmus,* Grevillea **3**: 145. 1875. (FH, K) ≡*Oidium effusum* (Berk. & Curt.) Linder, Lloydia **5**: 199. 1942.

epimyces (Bres.) Sacc. & D. Sacc., *Hypochnus,* Syll. Fung. **17**: 186. 1905. (S) =*Pseudotomentella mucidula* (Karst.) Svrček, Česká Mykol. **12**: 68. 1958.

epimyces (Bres.) Hoehn. & Litsch., *Tomentella,* Oest. Bot. Zeitschr. **58**: 477. 1908. See *H. epimyces.*

epiphyllus (Pers.: Fr.) Wallr., *Hypochnus,* Fl. Crypt. Germ. **2**: 310. 1833. =?*Vararia phyllophila* (Mass.) Rogers & Jacks., Farlowia **1**: 323. 1943 (see Rogers & Jackson, **1943** and Gilbertson, **1965**).

epiphyllus (Pers.: Fr.) Wallr. var. *candidus* Sacc., *Hypochnus,* Syll. Fung. **6**: 655. 1888. The nomenclatural type of this name has not been available for examination. A specimen from PAD labelled as *H. epiphyllus* var. *candidus,* collected on moss in 1918, possesses characters that approximate those of *Sistotrema.* Saccardo's name probably does not represent a *Tomentella.*

eradians (Fr.) Bres., *Hypochnus,* Ann. Mycol. **1**: 107. 1903. According to Hoehnel & Litschauer (**1908a**), *Thelephora eradians* Fr. is referable to *Coniophora.* Bresadola (**1903**) interprets the name as representing a *Hypochnus* (=*Tomentella*). The name, at present, is of uncertain application.

erythroxylii Sawada, *Hypochnus,* Coll. Agric. Nat. Taiwan Univ., Spec. Publ. no. 8, p. 100. 1949. Sawada describes the spores of this fungus as being "obovoid, hyaline, smooth, 5–6 × 3–4." It does not represent a species of *Tomentella.*

euphorbiae Pat., *Hypochnus,* Bull. Herb. Boiss. **3**: 58. 1895. (FH) =*Subulicystidium longisporum* (Pat.) Parm., Consp. Syst. Cortic., p. 121. 1968.

euphrasiae Lagerh., *Hypochnus,* in Vestergren, Micromyc. rar. selecti, 733. 31 VII 1903. (FH) This fungus is referable to *Botryobasidium.*

eylesii Bijl, *Hypochnus,* South Afr. J. Sci. **22**: 168. 1925. Van der Bijl describes the spores as being "globose to subglobose, 6μ to 8μ, smooth-walled, hyaline." Evidently the fungus is not a *Tomentella.* He also states that cystidia are present.

fatrensis Svrček, *Tomentella.* Česká Mykol. **12**: 77. 1958. The type of this name has not been available for examination. From Svrček's description it is not possible to draw any firm conclusions relative to the affinities of this species with other tomentellas. There are indications though that it may belong in Section XIII.

ferruginea (Pers. per Pers.: Fr.) Pat. "ut'e' without explicit rank" *brevispina* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 156. 1924. The application of this name remains uncertain because a nomenclatural type has not been found. It is probably synonymous with *T. bryophila.*

ferruginea (Pers. per Pers.: Fr.) Pat. var. *brevispina* Bourd. & Galz., *Tomentella,* Hym. France, p. 507. 1928. See *T. ferruginea* "ut 'e' without explicit rank" *brevispina.*

ferruginea (Pers. per Pers.: Fr.) Pat. var. *entochroa* Bourd. & Galz., *Tomentella,* Hym. France, p. 507. 1928. This name is probably synonymous with *T. bryophila,* but a type specimen has not been found.

ferrugineus Preuss, *Zygodesmus,* Linnaea **24**: 109. 1851. Preuss' description of this fungas is as follows [in part]: ". . . . effusis ferrugineis . . . . sporis ellipticis verrucosis, basi truncatis . . . . episporio colorato. . . ." The taxonomic position of this fungus will remain unknown until a type is located. Spore shape, though, is suggestive of the spore form of some species that are now referred to *Trechispora.*

ferruginosa (Hoehn. & Litsch.) Sacc. & Trott, *Tomentella,* Syll. Fung. **21**: 418. 1912. (FH) =*Tomentellina fibrosa* (see *Z. fibrosus*).

ferruginosa Hoehn. & Litsch., *Tomentellina,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1604. 1906. See *T. ferruginosa.*

ferruginosa Hoehn. & Litsch. f. *saxicola* Bourd. & Galz., *Tomentellina,* Bull. Soc. Mycol. France **40**: 129. 1924. (PC) =*Tomentellina fibrosa* (see *Z. fibrosus*).

ferruginosus (Hoehn. & Litsch.) Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 212. 1916. See *T. ferruginosa.*

fibrillosa (Burt) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 162. 1924. See *H. fibrillosus.*

fibrillosus Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 328. 1916. (FH) ≡*Tylospora fibrillosa* (Burt) Donk, Taxon **9**: 220. 1960.

fibrosa (Berk. & Curt.) M. J. Larsen, *Kneiffiella,* State Univ. N.Y. Coll. Forest. at Syracuse Univ., Tech. Publ. **93**: 35. 1968. See *Z. fibrosus.*

fibrosus Berk. & Curt., *Zygodesmus,* Grevillea **3**: 145. 1875. (FH, K) ≡**Tomentellina fibrosa** (Berk. & Curt.) M. J. Larsen, comb. nov.

filamentosus Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **13**: 219. 1926. (FH) =*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

filamentosus Pat., *Hypochnus,* Bull. Soc. Mycol. France **7**: 163. 1891. (FH) ≡*Pellicularia filamentosa* (Pat.) Rogers sensu Rogers, Farlowia **1**: 113. 1943 (=*Thanatephorus cucumeris* (Frank) Donk; see Talbot, pp. 386–390, **1965**).

fimbriata M. P. Chris., *Tomentella,* Dansk Bot. Ark. **19**: 258. 1960. (C) =*Tomentellastrum floridanum* (Ell. & Ev.) M. J. Larsen (see *Thelephora floridana*).

flaccida Bourd. & Galz. var. *euspora* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 152. 1924. The type of this name has not been located. From the original description it appears as though this fungus is related to those in Section X.

flava Bref., *Tomentella,* Unters. Gesammt. Mykol. **8**: 11. 1889. ≡*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958 (see Rogers, **1943**).

flavescens Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 160. 1851. ≡*Botryobasidium flavescens* (Bon.) Rogers, Univ. Iowa Stud. Nat. Hist. **17**: 13. 1935 (see Rogers, **1943**). Donk (**1958**) interprets this name as a nomen dubium.

flavo-aurantius Trav. *Hypochnus,* in Saccardo, Ann. Mycol. **6**: 553. 1908. (PAD) =*Trechispora petrophila* (Bourd. & Galz.) Liberta, Taxon **15**: 319. 1966.

flavobrunneus Dearn. & Bisby, *Hypochnus,* Fungi Manitoba, p. 90. 1929. (WINF) =*Coniophora suffocata* (Pk.) Mass., J. Linn. Soc. **25**: 138. 1889.

flavovirens Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **116**: 831. 1907. (FH) ≡*Pseudotomentella flavovirens* (Hoehn. & Litsch.) Syrček, Česká Mykol. **12**: 68. 1958.

flavovirens Hoehn. & Litsch. subsp. *viridiflava* Bourd. & Galz., *Tomentella,* Hym. France, p. 483. 1928. See *T. viridiflava.*

flavus (Bref.) Sacc., *Hypochnus,* Syll. Fung. **9**: 242. 1891. =*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958.

floccidus Britz., *Hypochnus,* Material. Beschreib. Hym. (sep. from Botanisch. Centr. **71**: 1897), p. 18, Fig. 112. 1897. Britzelmayr describes a fungus with smooth, elongated spores. Apparently it is not a *Tomentella.*

floridana Ell. & Ev., *Thelephora,* J. Mycol. **2**: 37. 1886. (NY) ≡**Tomentellastrum floridanum** (Ell. & Ev.) M. J. Larsen, comb. nov.

fuciformis (Berk.) McAlp., *Hypochnus,* Ann. Mycol. **4**: 549. 1906. =*Epithele fuciformis* (Berk.) Hoehn. & Syd., Ann. Mycol. **4**: 551. 1906. The taxonomic position of this species appears to be uncertain (see Boquiren, **1971**).

fulvescens Sacc., *Hypochnus,* Ann. Mycol. **4**: 13. 1904. (PAD) =*Hymenochaete* sp. (also, see Hoehnel & Litschauer, **1906**).

fulvus Sacc. var. *olivascens* Sacc., *Zygodesmus,* Michelia **2**: 585. 1882. (PAD) =*Tomentella* sp. The nomenclatural type is too scanty and microscopic details too obscure to derive sufficient data on which to base any sort of a species concept.

fumosa (Fr. per Pers.) Pilát, *Tomentella,* Bull. Soc. Mycol. France **51**: 409. 1936. See *H. fumosus.*

fumosus (Fr. per Pers.) Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 239. 1916. =*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

furfuraceus Bres., *Hypochnus,* Fungi Trident. **2**: 97. 1900. (S) ≡*Gloeocystidiellum furfuraceum* (Bres.) Donk, Fungus **26**: 9. 1951.

furfuraceus Bres. f. *cinerella* Bres., *Hypochnus,* Ann. Mycol. **1**: 107. 1903. The type of this name has not been available for study. In terms of Bresadola's description, the fungus does not appear to be a *Tomentella.*

fusca (Pers. per Fr.) Schroet. var. *ambigua* Bourd. & Galz., *Tomentella.* Hym. France, p. 494. 1928. The type of this name has not been located, but from Bourdot and Galzin's description it appears that it is probably synonymous with *T. sublilacina.*

fusca (Pers. per Fr.) Schroet. var. *flavo-umbrina* Bres. in Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 147. 1924. This name probably does not represent a distinct variety and should be considered a synonym of *T. sublilacina.* A type specimen, though, that could substantiate this opinion has not been located.

fusca (Pers. per Fr.) Schroet. subsp. *mycophila* Bourd. & Galz., *Tomentella,* Hym. France, p. 494. 1928. See *T. mycophila.*

fusca (Pers. per. Fr.) Schroet. subsp. *subfusca* (Karst.) Hoehn. & Litsch. in Bourd. & Galz., *Tomentella,* Hym. France, p. 496. 1928. See *H. subfuscus.*

fuscata Karst., *Hypochnopsis,* Bidrag Kaenn. Finl. Nat. Folk **48**: 443

1889. (H) =*Pseudotomentella tristis* (Karst.) M. J. Larsen, Nova Hedw. **22**: 613. 1971 [1973].

fuscatus (Karst.) Sacc., *Hypochnus,* Syll. Fung. **9**: 244. 1891. See *H. fuscata.*

fuscella (Sacc.) Lund. & Nannf., *Tomentella,* Fungi Exs. Suec., No. 2216, 1954. Saccardo's species may be conspecific with either *T. sublilacina* or *T. ochracea.* The nomenclatural type, though, of *H. fuscellus* has not been available for examination.

fuscella (Sacc.) Lund. & Nannf. f. *macrospora* Svrček, *Tomentella,* Česká Mykol. **12**: 74. 1958. The taxonomic disposition of this form within the genus *Tomentella* is uncertain. Svrček gives the spore size as "9.5–12.5 × 8–9 μ", which is much larger than any spores from specimens called *T. fuscella* (? =*T. sublilacina*). It probably does not represent *T. fuscella* or *T. sublilacina,* but the question of its status must remain unanswered until the type is available for study.

fuscellus Sacc., *Hypochnus,* Syll. Fung. **6**: 662. 1882. See *T. fuscella.*

fuscocinerea (Pers.) Donk, *Tomentella,* Med. Bot. Mus. Herb. Rijksuniv. Utrecht **9**: 30. 1933. (L) ≡*Tomentellastrum fuscocinereum* (Pers.) Svrček, Česká Mykol. **12**: 69. 1958.

fuscocinerea Pers. var. *fusca* Pers., *Thelephora,* Mycol. Europ., p. 114. 1822. (L) =?*Thelephora biennis* Fr. (see *T. biennis*).

fuscus Cda., *Zygodesmus,* Icones Fung. **4**: 26. 1840. =*Thelephora biennis* Fr., Syst. Mycol. **1**: 449. 1821 (?nomen dubium). See Rogers, **1948**.

fusisporus Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 416. 1889. ≡*Uthatobasidium fusisporum* (Schroet.) Donk, Fungus **28**: 22. 1958.

galzinii Bourd. subsp. *roana* Bourd. & Galz., *Tomentella,* Hym. France, p. 491. 1928. See *T. roana.*

gardeniae Zimm., *Hypochnus,* Centralb. Bacteriol. Parasit. Jena **7**: 102. 1901. Zimmermann describes a fungus with hyaline, smooth, and globose to subglobose spores. It is not a *Tomentella.*

gilbertii Bourd. & Galz., *Tomentella,* Hym. France, p. 489. 1928. (PC) =*Pseudotomentella mucidula* (Karst.) Svrček, Česká Mykol. **12**: 68. 1958.

gilva Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 146. 1924. The type of this name has not been located and the relationships of this organism within the genus are not discernible.

gracillimus Velenov., *Hypochnus,* České houby, p. 774. 1922. As described, the spores of this fungus are oblong-ellipsoid, hyaline, and 5–6 × 3 μm. Velenovskyi indicates that *H. gracillimus* has affinities

with *H. granulatus* Bon., *H. coronatus* Schroet., and *H. fusisporus* Schroet. Apparently the fungus is not a *Tomentella.*

graminicola Ell. & Ev., *Zygodesmus,* in Millspaugh & Nuttall, Publ. Mus. Bot. **1**: 190. 1896. =nomen nudum.

grandinioides Rick, *Hypochnus,* Egatea **13**: 435. 1928. In Rick's description the spores are described as ". . .. cylindricis, 10-5 μ, valde echenulatis fere albis . . . ," and cystidia as "pyriformibus." His fungus does not appear to be a *Tomentella,* but rather a member of the Corticiaceae.

granosa Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 160. 1924. =nomen dubium.

granosus Berk. & Curt. sensu Bres., *Hypochnus,* Ann. Mycol. **1**: 108. 1903. ≡*Tomentella granosa* Bourd. & Galz. (see *T. granosa*).

granulata Bref., *Tomentella,* Unters. Gesammt. Mykol. **8**: 11. 1889. =(?)*Botryobasidium pruinatum* (Bres.) J. Erikss., Svensk Bot. Tidskr. **52**: 9. 1958.

granulatus Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 160. 1851. There appears to be no reasonable nomenclatural disposition of this binomial, and at present it is of uncertain application.

gresicola Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 157. 1924. From Bourdot and Galzin's description it appears that *T. gresicola* may be synonymous with *T. rubiginosa.* A satisfactory type specimen, though, has not been located.

hellebori Rostr., *Hypochnus,* Bot. Tidsskr. **43**(51): 21. 1897. =nomen nudum.

hoehnellii Skovs., *Tomentella,* Compt. Rend. Lab. Carlsb. sér. Physiol. **25**: 29. 1950. Skovsted proposed *T. hoehnellii* as a "new name" to represent what Hoehnel & Litschauer called "*T. subfusca* (Karst.) Hoehn. & Litsch." The protologue of Skovsted's name, therefore, is among that material of Hoehnel and Litschauer called "*subfusca* Karst." The Hoehnel collections at FH, labelled as such, represent a mixture of *T. violaceofusca, T. ruttneri, T. bresadolae,* and an admixture of collections that approach *T. sublilacina, T. pilatii* and *T. ochracea. Tomentella hoehnellii* is considered here to be a nomen dubium.

holoxanthus Mont., *Hypochnus,* Plantés Cellul., in R. Sagra, Hist. phys., polit., natur. l'ile Cuba, p. 367. 1838–1842. Montagne's description indicates that the plant is probably a lichen. The application of the name, though, is uncertain.

hydnoideus Berk. & Curt., *Zygodesmus,* Grevillea **3**: 112. 1875. (K, FH) =nomen confusum.

incarnata P. Henn., *Tomentella,* Schrift. Naturw. Vereins Schles.-Holst.

11: 102. 1898. (FH) =*Tomentellopsis echinospora* (Ell.) Hjorts., Svensk Bot. Tidskr. **64**: 42. 1970.

incarnatus (P. Henn.) Sacc. & Syd., *Hypochnus,* Syll. Fung. **14**: 227. 1899. See *T. incarnata.*

indigoferus Ell. & Ev., *Zygodesmus,* J. Myc. **1**: 149. 1885. (NY) =*Coniophora olivacea* (Pers. per Pers.: Fr.) Karst., Bidrag Kaenn. Finl. Nat. Folk **37**: 162. 1882.

isabellina (Fr.) Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1570. 1906. See *H. isabellinus.*

isabellinus (Fr.) Fr., *Hypochnus,* Summ. Veg. Scand., p. 337. 1849. ≡*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958.

jaapii Bres., in litt., *Hypochnus.* See *T. jaapii.*

jaapii (Bres.) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 155. 1924. =nomen nudum.

juncicola Svrček, *Tomentella,* Česká Mykol. **12**: 74. 1958. The type of this name has not been available for study, but Svrček's description indicates that the fungus is related to those in Section XIII.

lacteus (Fr.) Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 160. 1851. =nomen dubium (see Rogers & Jackson, 1943).

lacteus Ell. & Ev., *Zygodesmus,* Proc. Phil. Acad. Sci., p. 87. 1891. (NY) =nomen nudum.

lacunosus (Berk. & Br.) Sacc., *Hypochnus,* Syll. Fung. **6**: 660. 1888. (K) =*Amphinema byssoides* (Pers. per Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 112. 1958.

laevisporus Cke., *Zygodesmus,* Grevillea **6**: 139. 1878. (FH) ≡*Oidium laevisporum* (Cke.) Linder, Lloydia **5**: 200. 1942.

langloisii Pat., *Hypochnus,* Bull. Soc. Mycol. France **24**: 3. 1908. (FH) ≡*Botryobasidium langloisii* (Pat.) Gilbertson & Budington, J. Ariz. Acad. Sci. **6**: 92. 1970, and as *Candelabrochaete langloisii* (Pat.) Boid., in Cahiers Maboké **8**: 24. 1970.

laxus (Fr.) Karst., *Hypochnus,* Bidrag Kaenn. Finl. Nat. Folk **37**: 164. 1882. ≡*Coniophora laxa* (Fr.) Bres., Ann. Mycol. **1**: 110. 1903.

lilacinoroseus Pat., *Hypochnus,* Catal. Raissoné Plant. Cellul. Tunis., p. 62. 1897. (FH) =*Laeticorticium* sp.

limoniisporus Ell. & Ev., *Zygodesmus,* Proc. Phil. Acad. Sci., p. 87. 1891. (NY) =*Botryobasidium flavescens* (Bon.) Rogers, Farlowia **1**: 105. 1943.

litschaueri Svrček, *Tomentella,* Česká Mykol. **12**: 75. 1958. (S) ≡**Tomentellastrum litschaueri** (Svrček) M. J. Larsen, comb. nov.

longisporus Pat., *Hypochnus,* J. de Bot. **8**: 221. 1894. (FH) ≡*Sub-*

ulicystidium longisporum (Pat.) Parm., Conspect. Syst. Cortic., p. 120. 1968.

lurida Skovs., *Tomentella,* Compt. Rend. Lab. Carlsb. sér. Physiol. **25**: 15. 1950. =*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

macrospora Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1602. 1906. (W) =*Tomentellastrum alutaceo-umbrinum* (Bres.) M. J. Larsen (see *H. alutaceo-umbrinus*).

macrosporum (Hoehn. & Litsch.) Svrček, *Tomentellastrum,* Česká Mykol. **12**: 70. 1958. See *T. macrospora.*

marginatus Cke. & Harkn., *Zygodesmus,* Grevillea **12**: 97. 1884. (K) =*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958.

membranaceus Ell. & Ev., *Zygodesmus,* J. Myc. **4**: 54. 1888. (NY) =*Amphinema byssoides* (Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 112. 1958.

meneiri Pat., *Tomentella,* Tab. Anal. Fung., ser. 2, p. 32. 1886 [1887]. =?*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

michelianus Cald., *Hypochnus,* Un. Itin. Crypt., no. 61, 1866; and in Fries, Hym. Europ., p. 660. 1874. See Saccardo, Syll. Fung. **6**: 661. 1888. (FH) ≡*Septobasidium michelianum* (Cald.) Pat., Ess. Taxon., p. 10. 1900 (see Couch, **1938**).

mollis (Fr.) Fr., *Hypochnus,* Monogr. Hym. Suec. **2**: 264. 1863. This Friesian name is of uncertain application. Corner (**1968**) states that it (*"Thelephora mollis"*) is a synonym of *Corticium molle* Fr.

mollis (Fr.) Fr. var. *pellicula* (Fr.) Sacc., *Hypochnus,* Syll. Fung. **6**: 656. 1888. The application of this name is uncertain. It has been associated with *Tomentellopsis echinospora* in the past, but that association appears doubtful.

mollis (Fr.) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 139. 1924. ≡*Pseudotomentella submollis* Svrček, Česká Mykol. **12**: 68. 1958 (as a nom. nov.). The correct taxonomic position of this species remains to be elucidated. It does not belong in *Tomentella* or *Pseudotomentella,* but does have affinity with *Tomentellopsis.*

montanensis M. J. Larsen, *Tomentella,* Can. J. Bot. **45**: 1304. 1967. (SYRF, BPI) ≡**Tomentellastrum montanensis** (M. J. Larsen) M. J. Larsen, comb. nov.

mucidula (Karst.) Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1572. 1906. See *H. mucidulus.*

mucidula (Karst.) Hoehn. & Litsch. f. *lavandulacea* (Pears.) J. Erikss..

Tomentella, K. Fysiogr. Saellsk. Lund. Forh. **18**: 124 (p. 7 separate). 1948. See *H. mucidulus.*

mucidulus Karst., *Hypochnus,* Bidrag Kaenn. Finl. Nat. Folk **37**: 163. 1882. (H) ≡*Pseudotomentella mucidula* (Karst.) Svrček, Česká Mykol. **12**: 68. 1958.

mucidus Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 416. 1889. ≡*Corticium mucidum* (Schroet.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **116**: 745. 1907 (see Hoehnel & Litschauer, **1906**).

mucor Rick, *Hypochnus,* Broteria **3**: 153. 1934. The spores of this fungus are described as being spherical, hyaline, and echinulate. Its affinities may be with *Tomentellopsis.*

mucor Rick var. *minor* Rick, *Hypochnus,* Broteria **3**: 153. 1934. (SP) =*Xenasmatella tulasnelloidea* (Hoehn. & Litsch.) Oberw., Sydowia **19**: 34. 1965.

muricatum Ell. & Ev., *Rhinotrichum,* Proc. Phil. Acad. Sci., p. 86. 1891. (NY). Linder (**1942**) indicates that this name represents a species of *Tomentella* (also see Cash, **1954**). Examination of the type reveals that the fungus present represents what is currently called *Coniophora olivacea* (Pers. per Pers.: Fr.) Karst.

muscorum Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 418. 1889. =*Amphinema byssoides* (Fr.) J. Erikss., Symb. Bot. Upsal **16**: 112. 1958.

mustialaensis Karst., *Hypochnus,* Saellsk. Fauna Fl. Fenn. Not. (new ser.) **8**: 222. 1871. (H) ≡*Coniophora mustialaensis* (Karst.) Mass., J. Linn. Soc. (Bot.) **25**: 139. 1889.

mutabilis Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 145. 1924. An appropriate specimen has not been located that could be considered the nomenclatural type of this name. Bourdot and Galzin's description may be applicable to what is called *T. punicea* here.

mutabilis Bourd. & Galz. subsp. *gilva* Bourd. & Galz., *Tomentella,* Hym. France, p. 493. 1928. See *T. gilva.*

mycophila Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 147. 1924. (L, BPI) =*Tomentellastrum alutaceo-umbrinum* (Bres.) M. J. Larsen (see *H. alutaceo-umbrinus*).

nigra Hoehn. & Litsch., *Tomentella,* Wiesn. Festschr., p. 78. 1908. (FH) ≡*Pseudotomentella nigra* (Hoehn. & Litsch.) Svrček, Sydowia **14**: 178. 1960.

nigra Hoehn. & Litsch. var. *lavandulacea* (Pears.) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 143. 1924. (K) =*Pseudotomentella mucidula* (Karst.) Svrček, Česká Mykol. **12**: 68. 1958.

nigrocinctus Ehrenb. per Fr., *Hypochnus,* Syst. Mycol. **3**: 290. 1832. This fungus is probably a lichen and referable to *Chiodectonis.*

niveus Britz., *Hypochnus,* Material. Beschreib. Hym. (reprint from Bot. Centralb. **71**: 1897), p. 18, fig. 109. 1897. Britzelmayr's fungus apparently is not a *Tomentella,* for he figures smooth, hyaline, and ellipsoid spores.

nodosus Preuss f. *versiformis* Sacc., *Zygodesmus,* Michelia **2**: 362. 1881. (PAD) Saccardo's diagnosis and nomenclatural type embrace two discordant fungal elements: basidiomycetous hyphae (clamps present), and large, dark, rough-walled conidia of a dematioid hyphomycete. The name should probably be applied to the latter fungus.

obducens (Karst.) Sacc., *Hypochnus,* Syll. Fung. **9**: 243. 1891. (H) =*Amphinema byssoides* (Karst.) J. Erikss., Symb. Bot. Upsal. **16**: 112. 1958.

obducens Karst., *Tomentella,* Bidrag Kaenn. Finl. Nat. Folk **48**: 421. 1889. See *H. obducens.*

obtusus Ell. & Ev., *Zygodesmus,* J. Myc. **5**: 84. 1889. (NY) =nomen nudum.

ochraceoviridis Pat., *Tomentella,* Bull. Soc. Mycol. France **9**: 134. 1893. (FH) =*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958.

ochroleucus Noack, *Hypochnus,* in Sacc., Syll. Fung. **16**: 197. 1902. =? *"Pellicularia koleroga* Cooke," Grevillea **4**: 116 (134). 1876. Donk (**1954**) states that *P. koleroga* is a nomen confusum (also, see Talbot, **1965**).

ochromelas Sacc., *Hypochnus,* Nuovo Giorn. Bot. Italy **23**: 198. 1916. (PAD) =*Septobasidium* sp.

olivaceus (Pers. per Pers.: Fr.) Fr., *Hypochnus,* Summa Veg. Scand., p. 337. 1849. =*Coniophora olivacea* (Pers. per Pers.: Fr.) Karst., Bidrag Kaenn. Finl. Nat. Folk **37**: 162. 1882.

pannosa (Berk. & Curt.) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 150. 1924. See *Zygodesmus pannosus.*

pannosa (Berk. & Curt.) Bourd. & Galz. var. *pallida* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 150. 1924. The identity of this taxon and its realtionships within the genus must remain unknown until a satisfactory type specimen has been located.

pannosus (Berk. & Curt.) Burt., *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 223. 1916. See *Zygodesmus pannosus.*

pannosus Berk. & Curt., *Zygodesmus,* Grevillea **3**: 112. 1875. (K, FH) =nomen confusum.

peniophoroides Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 234.

1916. (FH) ≡*Vararia peniophoroides* (Burt) Rogers & Jacks., Farlowia **1**: 294. 1943.

pennsylvanicus Overh., *Hypochnus,* Mycologia **21**: 283. 1929. (PAC) =*Tomentellopsis echinospora* (Ell.) Hjorts., Svensk Bot. Tidskr. **64**: 42. 1970.

peronosporoides Speg., *Hypochnus,* Ann. Museo. Nacion. Buenos Aires **6**: 181. 1898 [1899]. Spegazzini describes the spores of this fungus as ovate-subglobose (4–5 × 3–4 μm), smooth, and hyaline. Apparently, it is not a *Tomentella* and may be referable to *Botryobasidium.*

phylacteris Bull., *Auricularia,* Herb. France Hist. Champ., p. 286. 1971. ≡*Thelephora biennis* (see *Tomentella biennis*).

phylacteris (Bull. per Bourd. & Maire) Rea, *Hypochnus,* Trans. Brit. Mycol. Soc. **12**: 222. 1927. ≡*Thelephora biennis* Fr. (see *Tomentella biennis*).

phylacteris (Bull. per Bourd. & Maire) Corner, *Thelephora,* Nova Hedw. **27**: 78. 1968. ≡*Thelephora biennis* Fr. (see *Tomentella biennis*).

phylacteris Bull. per Bourd. & Maire, *Tomentella,* Bull. Soc. Mycol. France **36**: 81. 1920. ≡*Thelephora biennis* Fr. (see *Tomentella biennis*).

phylacteris Bull. per Bourd. & Maire f. *caesia* (Pers. per Fr.) Bourd. & Galz., *Tomentella,* Hym. France, p. 487. 1928. See *Thelephora caesia.*

phylacteris Bull. per Bourd. & Maire "ut 'b' without explicit rank" *fuscocinerea* Pers., *Tomentella,* Bull. Soc. Mycol. France **40**: 141. 1924. See *T. fuscocinerea.*

phylacteris Bull. per Bourd. & Maire f. *fuscocinerea* (Pers.) Bourd. & Galz., *Tomentella,* Hym. France, p. 487. 1928. See *T. fuscocinerea.*

phylacteris Bull. per Bourd. & Maire "ut 'd' without explicit rank" *griseo-atra* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 142. 1924. A satisfactory type specimen has not been located for this name. An interpretation of Bourdot and Galzin's classification indicates that it may be synonymous with *T. floridana.*

phylacteris Bull. per Bourd. & Maire f. *griseo-atra* Bourd. & Galz., *Tomentella,* Hym. France, p. 487. 1928. See *T. phylacteris* "ut 'd' without explicit rank" *griseo-atra.*

polyporoideus (Berk. & Curt.) Overh., *Hypochnus,* Mycologia **30**: 275. 1938. (FH, K) Berkeley & Curtis originally described this fungus in *Corticium.* Burt (**1926**) placed it in *Coniophora* and Liberta

(**1966**) in *Trechispora*. There appears to be no reasonable similarity to either genus.

porulosa Bourd. & Galz. f. *gresophila* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 155. 1924. A satisfactory type specimen has not been located for this name.

puberus (Fr.) Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 159. 1851. ≡*Hyphoderma puberum* (Fr.) Wallr., Fl. Crypt. Germ., p. 576. 1833.

pubidus Ell. & Ev., *Zygodesmus,* Bull. Torrey Bot. Club **27**: 50. 1900. (NY) =*Amphinema byssoides* (Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 112. 1958.

punicea (Alb. & Schw. per Pers.: Fr.) Schroet. var. *microspora* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 145. 1924. Though a type has not been located, Bourdot and Galzin's description indicates that this name is probably synonymous with *T. lateritia.*

punicea (Alb. & Schw. per Pers.: Fr.) Schroet. f. *microspora* (Bourd. & Galz.) Svrček, *Tomentella,* Česká Mykol. **12**: 73. 1958. See *T. punicea* var. *microspora.*

puniceus (Alb. & Schw. per Pers.: Fr.) Sacc. subsp. *geophilus* Sacc., *Hypochnus,* Ann. Mycol. **5**: 558. 1907. The nomenclatural type has not been available for study. The name is probably synonymous with *T. lateritia.*

purpureus Tul., *Hypochnus,* Ann. Sci. Nat. Bot. (V) **15**: 228. 1872. ≡*Helicobasidium purpureum* (Tul.) Pat., Bull. Soc. Bot. France **32**: 172. 1885.

quercinus de N. & Bagl., *Hypochnus,* in Erbar. Crittogam. Ital. ser. II, no. 585, 1872. (E, FH) =*Septobasidium* sp.

radiosus (Pers. per Pers.: Fr.) Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 160. 1851. ≡*Gloeocystidiellum radiosum* (Pers. per Pers.: Fr.) Boid., Publ. Mus. Nat. Hist. **17**: 122. 1957.

reticulatus Wallr., *Hypochnus,* Fl. Crypt. Germ., p. 310. 1833. The type of this name has not been located and its application at present is unknown. Wallroth's description may be interpreted to encompass a *Tomentella.*

rhacodium Berk. & Curt., *Hypochnus,* in Burt. Ann. Missouri Bot. Gard. **13**: 322. 1926. (BPI, FH, K) =*Pseudotomentella tristis* (Karst.) M. J. Larsen, Nova Hedw. **22**: 613. 1971 [1973].

rimincola Speg., *Hypochnus,* Ann. Mus. Nac. Hist. Nat. **23**: 10. 1912. The description and illustration, provided by Spegazzini, of this fungus is more appropriately applied to a species of *Peniophora* or *Gloeocystidiellum* rather than a *Tomentella.* He records hyaline, smooth basidiospores that are suballantoid and 12–14 × 4 μm.

roana Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 144. 1924. An appropriate specimen has not been located that at present can be considered the type. A specimen in PC named as *T. roana* (Bourdot herb. 26059) possesses basidia, cystidia, and spores that are considerably smaller (approximately one-half) than those provided in the original description. It is conceivable that Bourdot and Galzin's measurements, as published, are in error, and in effect represent a mechanical error relative to the application of the correct scale to their observations. Only one specimen of *T. roana* named by Bourdot has been seen by me to date.

roseocinctus (Fr.) Sacc., *Hypochnus,* Syll. Fung. **6**: 663. 1888. ≡*Chiodecton sanguineum* Wainio f. *ros(ac)eocinctum* (Fr.) Wainio, Etud. Lich. Bresil **2**: 143. 1890.

roseogrisea (Wakef. & Pears.) Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 143. 1924. See *H. roseogriseus.*

roseogrisea (Wakef. & Pears.) Bourd. & Galz. var. *lavandulacea* (Pears.) Bourd. & Galz., *Tomentella,* Hym. France, p. 489. 1928. (K) =*P. mucidula* (see *H. roseogriseus*).

roseogriseus Wakef. & Pears., *Hypochnus,* Trans. Brit. Mycol. Soc. **6**: 141. 1917–1919 [1920]. (K) =*Pseudotomentella mucidula* (Karst.) Svrček, Česká Mykol. **12**: 69. 1958.

roseogriseus Wakef. & Pears. var. *lavandulaceus* Pears., *Hypochnus,* Trans. Brit. Mycol. Soc. **7**: 57. 1920–1922 [1922]. (K) =*P. mucidula* (see *H. roseogriseus*).

roseus (Pers. per Pers.: Fr.) Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 417. 1889. =*Laeticorticium roseum* (Pers. per Pers.: Fr.) Donk, Fungus **26**: 17. 1956.

ruberrimus Ces., *Hypochnus,* Atti Della R. Accad. Sci. Fis. Matemat. **84**: 10. 1879. Cesati's description indicates that this name probably represents a lichen.

rubiginosa (Bres.) R. Maire subsp. *gresicola* Bourd. & Galz., *Tomentella,* Hym. France, p. 508. 1928. See *T. gresicola.*

rubrocinctus Ehrneb. in Nees per Fr., *Hypochnus,* Epicr. Syst. Mycol., p. 569. 1838. =*Chiodecton sanguineum* Wainio, Etud. Lich. Bresil **2**: 143. 1890.

rudis Ell., *Zygodesmus,* Bull. Torrey Bot. Club **9**: 98. 1882. (NY) =*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958.

sacchari Speg., *Hypochnus,* Revista Facol. Agron. Vet. **19**: 227. 1896. Spegazzini describes the spores of this fungus as being ovate, 10–12 × 4–5 μm, hyaline and smooth. It is probably referable to a position near *Ceratobasidium, Uthatobasidium,* or *Botryobasidium.*

sambuci (Pers. per Pers.: Fr.) Fr., *Hypochnus,* Epicr. Syst. Mycol., p. 565. 1838. ≡*Hyphodontia sambuci* (Pers. per Pers.: Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 104. 1958.

sambuci (Pers. per Pers.: Fr.) Fr. var. *cretaceus* Pers. per Sacc., *Hypochnus,* Syll. Fung. **6**: 657. 1888. =?*Hyphodontia papillosa* (Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 104. 1958 (also see Corner, **1968**, p. 101).

sasakii Shirai in Sawada (in ed.), *Hypochnus* =*Pellicularia sasakii* Shirai in S. Ito, Mycol. Fl. Jap. II, **4**: 107. 1955. Donk (**1958**) indicated that this fungus should be placed in *Thanatephorus.* Its taxonomic position is uncertain according to Talbot (**1965**).

schroeteri Sacc., *Hypochnus,* Syll. Fung. **6**: 658. 1888. =?*Botryobasidium pruinatum* (Bres.) Donk, Fungus **28**: 26. 1958. Also, see Rogers **1943**, p. 107.

sericeus (Schrad. per Pers.) Wallr., *Hypochnus,* Fl. Crypt. Germ., p. 310. 1833. =*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

serus (Pers. per Pers.) Fr., *Hypochnus,* Hym. Europ., p. 659. 1874. =*Hyphodontia sambuci* (Pers. per Pers.: Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 104. 1958.

serus (Pers. per Pers.) Fr. var. *sphaerincola* (Karst.) Sacc., *Hypochnus,* Syll. Fung. **14**: 226. 1889. (H) =*Hyphodontia* sp., possibly *H. aspera* or *H. breviseta.*

setosus Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 418. 1889. =*Amphinema byssoides* (Pers. per. Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 112. 1958.

sitnensis Bres., *Hypochnus,* Atti Accad. Sci. Lett. Art. Agiati, Rovereto **3**(3): 115. 1897. (S) =*Pseudotomentella tristis* (Karst.) M. J. Larsen, Nova Hedw. **22**: 613. 1971 [1973].

smardae Pilát, *Tomentella,* Stud. Bot. Čech. **5**: 75. 1942. (PR) This fungus is closely related to what is presently called *Corticium polyporoideum* Berk. & Curt., Grevillea **1**: 177. 1872 (also, see *H. polyporoideus*).

solani Prill. & Del., *Hypochnus,* Bull. Soc. Mycol. France **7**: 220. 1891. =*Thanatephorus cucumeris* (Frank) Donk, Reinwardtia **2**: 376. 1956.

sordidellus (Hoehn. & Litsch.) Rick, *Hypochnus,* Broteria **3**: 35. 1934. (FH) =*Phanerochaete cremea* (Bres.) Parm., Consp. Syst. Cort., p. 84. 1968.

sordidus Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 418. 1889. =*Hypochnicium punctulatum* (Cke.) J. Erikss., Symb. Bot. Upsal. **16**: 101. 1958.

sphaerosporus R. Maire, *Hypochnus,* Bull. Soc. Mycol. France **21**: 164. 1905. A specimen from Maire (? type) in the Hoehnel collections at FH indicates that the name apparently does not represent a *Tomentella.* Hoehnel & Litschauer (**1908a**) have placed it in *Corticium,* but this placement does not now appear to be satisfactory. Its affinities with *Trechispora* are also doubtful.

spongiosa (Schw.: Fr.) Hoehn. & Litsch., *Tomentella,* Oest. Bot. Zeitschr. **58**: 333. 1908 (BPI). The Schweinitz type does not represent a *Tomentella* and is more correctly referred to *Thelephora.* Study of the type material indicates that the structure is quite abnormal.

spongiosa (Schw.:Fr.) Hoehn. & Litsch. f. *murina* (Bres.) Svrček, *Tomentella,* Česká Mykol. **12**: 75. 1958. (S) =*Tomentellastrum floridanum* (Ell. & Ev.) M. J. Larsen (see *Thelephora floridana*).

spongiosus Schw.: Fr., *Hypochnus,* Elench. Fung. **1**: 193. 1828. See *T. spongiosa.*

strigosus (Pers.) Wallr., *Hypochnus,* Fl. Crypt. Germ., p. 312. 1833. There appears to be no current taxonomic treatment of this name, and its application is uncertain. It may be synonymous with *Amphinema byssoides* (Pers. per Fr.) J. Erikss.

strigosus (Pers.) Wallr. var. *filamentosus* Wallr., *Hypochnus,* Fl. Crypt. Germ., p. 312. 1833. =*Amphinema byssoides* (Pers. per Fr.) J. Erikss., Symb. Bot. Upsal. **16**: 112. 1958.

subdendriticus Rick, *Hypochnus,* Broteria **3**: 153. 1934. The spores of this fungus are described as "4½ ×3½ μ, irregularibus, ovatis, hyalinus . . . ". Rick states that it may be a form of *"Kneiffia muscorum."*

subfusca (Karst.) Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1572. 1906. See *H. subfuscus.*

subfuscus Karst., *Hypochnus,* Bidrag Kaenn. Finl. Nat. Folk **37**: 163. 1882. The nomenclatural type of this name has not been located, and its application remains unknown.

subfuscus Karst. subsp. *tristis* Karst., *Hypochnus,* Med. Soc. Fauna Fl. Fenn. **9**: 71. 1882. (H) =*Pseudotomentella tristis* (Karst.) M. J. Larsen, Nova Hedw. **22**: 613. 1971 [1973].

submollis Svrček, *Pseudotomentella,* Česká Mykol. **12**: 68. 1958. Svrček's species is not allied with either *Tomentella* or *Pseudotomentella.* It appears, though, to have affinities with *Tomentellopsis.*

submollis (Svrček) Wakef., *Tomentella,* Trans. Brit. Mycol. Soc. **53**: 167. 1969. See *P. submollis.*

submutabilis (Hoehn. & Litsch.) Rea, *Hypochnus,* British Basid., p. 658.

1922. (FH) ≡*Trechispora submutabile* (Hoehn. & Litsch.) Parm., Consp. Syst. Cortic., p. 46. 1968.

subterraneous Hartz, *Hypochnus,* Bot. Centralb. **37**: 341. 1889. Hartz describes the spores of this fungus as "oval, braäunlich-grau, 3.5–3.7 μ breit, 6–8 μ lang." Apparently, it is not a *Tomentella.*

subtilis Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles., p. 418. 1889. =*Hyphoderma puberum* (Fr.) Wallr., Fl. Crypt. Germ., p. 576. 1883.

subviolaceus Pk., *Hypochnus,* Ann. Rep. State Bot. 1893, p. 25. 1894. (NYS) ≡**Oliveonia subviolacea** (Pk.) M. J. Larsen, comb. nov. This is an earlier name for *Oliveonia atrata* (Bres.) Talbot, Persoonia **3**: 381. 1965.

subzygodesmoides Rick, *Hypochnus,* Broteria **3**: 35. 1934. (SP) =*Oidium curtisii* (Berk.) Linder, Lloydia **5**: 201. 1942.

sulphurea (Pers. per Pers.: Fr.) Karst., *Tomentella,* Bidrag Kaenn. Finl. Nat. Folk **48**: 419. 1889. =*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

sulphureus (Pers. per Pers.: Fr.) Schroet., *Hypochnus,* in Cohn, Krypt.-Fl. Schles. **3**: 417. 1889. See *T. sulphurea.*

sulphurina Karst., *Tomentella,* Bidrag Kaenn. Finl. Nat. Folk **48**: 420. 1889. (H) ≡*Peniophora sulphurina* (Karst.) Hoehn. & Litsch., Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1573. 1906. Parmasto (**1968**) has indicated that this species belongs in *Phanerochaete.*

sulphurinus (Karst.) Sacc., *Hypochnus,* Syll. Fung. **9**: 243. 1891. See *T. sulphurina.*

tabacina (Ell. & Cook) Pat., *Caldesiella,* Ess. Taxon., p. 120. 1900. See *G. tabacina.*

tabacina Ell. & Cook, *Grandinia,* Grevillea **9**: 103. 1881. (NY) =*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

tabacina (Bres.) Sacc. & Trott., *Tomentella,* Syll. Fung. **21**: 418. 1912. See *H. tabacinus.*

tabacina (Bres.) Sacc. & Trott. "ut 'l' without explicit rank" *saxicola* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 140. 1924. A satisfactory type specimen has not been located for this name. It is probably a synonym of *Thelephora zygodesmoides* Ell.

tabacina (Bres.) Sacc. & Trott. "ut '2' without explicit rank" *fulvorubella* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 140. 1924. (PC) =*Thelephora zygodesmoides* (see *H. tabacinus*).

tabacinus Bres., *Hypochnus,* in Brinkmann, Westf. Pilz., 108. 1908. (BPI) =*Thelephora zygodesmoides* Ell., North American Fungi,

715. 1882. This taxon is best placed, for the present, near *Tomentellopsis*. It is not a *Tomentella*.

tenebrosa Malençon, *Tomentella,* Bull. Soc. Mycol. France **70**: 156. 1954. (RAB) ≡*Pseudotomentella tenebrosa* (Malençon) M. J. Larsen, Mycopath. et Mycol. Appl. **32**: 44. 1967.

tenuis Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 159. 1851. Bonorden describes this fungus as possessing smooth, brown spores. It is perhaps referable to *Serpula* or *Coniophora.*

terrestris Kniep, *Hypochnus,* Zeitschr. Bot. **5**: 599. 1913. Kniep figures and describes a Basidiomycete with smooth, colorless spores that are elliptical and 10–12 × 4–6 μm. Apparently, it is not a *Tomentella,* and is probably referable to *Corticium* in the restricted sense.

testacea Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 146. 1924. Bourdot and Galzin's original description, and specimens identified by Litschauer as *T. testacea,* indicate that this name may be synonymous with *T. coerulea* or *T. subvinosa.* A satisfactory type specimen has not been located.

testaceus (Bourd. & Galz.) Wehm., *Hypochnus,* Can. J. Res. **18**: 93. 1940. See *T. testacea.*

theae Bernard, *Hypochnus,* Bull. Dept. Agric. Indes Neerland. **6**: 24. 1907. Bernard's fungus is described and illustrated as possessing spores that are hyaline, elliptical, and smooth, and measure 7–9 × 5–7 μm. The fungus does not appear to be a *Tomentella.*

thelephoroides (Ell. & Ev.) Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 235. 1916. (NY) =*Vararia pallescens* (Schw.) Rogers & Jacks., Farlowia **1**: 309. 1943.

theobromae Faber, *Hypochnus,* Arbeit. Kaiserl. Biol. Anst. Land- und Forstwirts. **7**: 227. 1909. Faber describes this fungus as possessing smooth, hyaline, globose spores, 4–5 μm across. Apparently it is not a *Tomentella.*

tiliaceus Ell. & Ev., *Zygodesmus,* in Millspaugh, West Va. Geol. Surv. **5**: 35. 1913 =nomen nudum.

trigonosperma (Bres.) Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **117**: 1091. 1908 (S) =*Tylospora asterophora* (Bon.) Donk, Taxon **9**: 220. 1960.

trigonosperma (Bres.) Hoehn. & Litsch. var. *fibrillosa* (Burt) Bourd. & Galz., *Tomentella,* Hym. France, p. 513. 1928. See *H. fibrillosus.*

tristis (Karst.) Karst., *Hypochnus,* Bidrag Kaenn. Finl. Nat. Folk. **48**: 440. 1889. See *H. subfuscus* subsp. *tristis.*

tristis (Karst.) Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **115**: 1572. 1906. See *H. subfuscus* subsp. *tristis.*

tristis Karst. var. *ardosiacus* Bres., *Hypochnus,* Ann. Mycol. **1**: 107. 1903. (S) =*P. tristis* (see *H. subfuscus* subsp. *tristis*).

tristis (Karst.) Hoehn. & Litsch.—"ut 'b.' without explicit rank" *ardosiaca* Bres., *Tomentella,* in Bourd. & Galz., Bull. Soc. Mycol. France **40**: 140. 1924. See *H. tristis* var. *ardosiacus.*

tristis (Karst.) Hoehn & Litsch. f. *ardosiaca* (Bres.) Bourd. & Galz., *Tomentella,* Hym. France, p. 486. 1928. See *H. tristis* var. *ardosiacus.*

tristis (Karst.) Hoehn. & Litsch. var. *lapidicola* Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 140. 1924. (PC) =*P. tristis* (see *H. subfuscus* subsp. *tristis*).

tristis (Karst.) Hoehn. & Litsch.—"ut 'c.' without explicit rank" *sitnensis* Bres., *Tomentella,* in Bourd. & Galz., Bull. Soc. Mycol. France **40**: 140. 1924. See *H. sitnensis.*

tristis (Karst.) Hoehn. & Litsch. f. *sitnensis* (Bres.) Bourd. & Galz., *Tomentella,* Hym. France, p. 486. 1928. See *H. stinensis.*

truncatus Karst., *Zygodesmus,* Hedwigia **35**: 49. 1896. (H) =*Botryobasidium* sp.

tubercularis Ell. & Ev., *Zygodesmus,* Proc. Acad. Phil., p. 87. 1891. (NY) =*Botryohypochnus isabellinus* (Fr.) J. Erikss., Svensk Bot. Tidskr. **52**: 2. 1958.

tulasnelloidea (Hoehn. & Litsch.) Skovs., *Tomentella,* Compt. Rend. Lab. Carlsb. sér. Physiol. **25**: 14. 1950. (FH) ≡*Xenasmatella tulasnelloidea* (Hoehn. & Litsch.) Oberw., Sydowia **19**: 34. 1965.

tulasnelloideus (Hoehn. & Litsch.) Rea, *Hypochnus,* Trans. Brit. Mycol. Soc. **12**: 222. 1927. See *T. tulasnelloidea.*

typhae (Pers.) Pat., *Hypochnus,* Bull. Soc. Mycol. France **15**: 202. 1899. ≡*Epithele typhae* (Pers.) Pat., Ess. Taxon., p. 59. 1900.

umbrina (Fr.) Litsch., *Tomentella,* Bull. Soc. Mycol. France **49**: 52. 1933. =*Coniophora olivacea* (Pers. per Pers.: Fr.) Karst., Bidrag Kaenn. Finl. Nat. Folk **37**: 162. 1882.

umbrina (Fr.) Donk, *Tomentella,* Med. Bot. Mus. Herb. Rijksuniv. Utrecht **9**: 29. 1933. =*Coniophora olivacea* (Pers. per Pers.: Fr.) Karst., Bidrag Kaenn. Finl. Nat. Folk **37**: 162. 1882.

umbrina (Fr.) Litsch. f. *sitnensis* (Bres.) Litsch., *Tomentella,* Ann. Mycol. **39**: 364. 1941. See *H. sitnensis.*

umbrinum (Fr.) Svrček, *Tomentellastrum,* Česká Mykol. **12**: 70. 1958. See *Tomentella umbrina.*

umbrinum (Fr.) Svrček f. *ardosiaca* (Bres.) Svrček, *Tomentellastrum* Sydowia **14**: 186. 1960. See *H. tristis* var. *ardosiacus.*

umbrinum (Fr.) Svrček f. *sitnensis* (Bres.) Svrček, *Tomentellastrum,* Sydowia **14**: 186. 1960. See *H. sitnensis.*

umbrinum (Fr.) Svrček f. *umbrinovirens* Svrček, *Tomentellastrum,* Česká Mykol. **12**: 70. 1958 (PR) =*P. tristis* (see *H. subfuscus* subsp. *tristis*).

umbrinus (Fr.) Fr., *Hypochnus,* Monogr. Hym. Suec. **2**: 264. 1863. See *T. umbrina.*

uvidus Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 159. 1851. The application of this name is not known.

vaga (Fr.) Pat., *Caldesiella,* Ess. Taxon., p. 120. 1900. ≡*Trechispora vaga* (Fr.) Liberta, Taxon **15**: 319. 1966.

vagus (Fr.) Kauffm., *Hypochnus,* N.Y. State Mus. Bull. **179**: 88. 1915. See *C. vaga.*

velutinus (DC. per Pers.: Fr.) Wallr., *Hypochnus,* Fl. Crypt., Germ., p. 310. 1833. ≡*Peniophora velutina* (DC. per Pers.:Fr.) Cke., Grevillea **8**: 21. 1879.

verrucispora Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 137. 1924. (PC) =*P. mucidula* (see *H. mucidulus*).

violaceus (Auersw. in Schroet.) Sacc., *Hypochnus,* Syll. Fung. **6**: 659. 1888. ≡*Hypochnella violacea* Auersw. in Schroet., in Cohn, Krypt.-Fl. Schles. **3**: 420. 1889 (see Donk, **1964**, p. 259).

violascens (Fr.) Fr., *Hypochnus,* Monogr. Hym. Suec. **2**: 264. 1863. ≡*Ceraceomyces violascens* (Fr.) Jülich, Willdenowia **7**: 162. 1972.

violeus Quél., *Hypochnus,* Assoc. France. Avanc. Sci. **1882**: 401. 1883. ≡*Tulasnella violea* (Quél.) Bourd. & Galz., Bull. Soc. Mycol. France **25**: 31. 1909.

viridiflava Bourd. & Galz., *Tomentella,* Bull. Soc. Mycol. France **40**: 138. 1924. (PC) =*Tomentellopsis echinosporum* (Ell.) Hjorts., Svensk Bot. Tidskr. **64**: 42. 1970.

viscosus (Pers. per Fr.) Bon., *Hypochnus,* Handb. Prakt. Heilk. Arzte Stud., p. 159. 1851. =*Phlebia livida* (Pers. per Pers.: Fr.) Bres., Atti Acad. Sci. Lett. Art. Agiati, Rovereto 3(3): 105. 1897.

vitellinus Fr., *Hypochnus,* Epicr. Syst. Mycol., p. 570. 1838. This Friesian name probably represents a lichen. Its application, though, is not known.

weisseanus P. Henn., *Hypochnus,* Verhandl. Bot. Vereins Prov. Branden. **43**: XII. 1902. Henning described the spores of this fungus as spherical to subspherical, hyaline, with walls smooth or punctate, and 4–5 μm in diameter. Henning's fungus does not appear to be a *Tomentella.*

zygodesmoides (Ell.) Burt, *Hypochnus,* Ann. Missouri Bot. Gard. **3**: 236. 1916. (BPI, NY, NYS, FH) ≡*Thelephora zygodesmoides* Ell., North American Fungi, 715. 1882 (see *H. tabacinus*).

zygodesmoides (Ell.) Svrček, *Pseudotomentella,* Česká Mykol. **12**: 68. 1958. See *H. zygodesmoides* and *H. tabacinus.*

zygodesmoides (Ell.) Hoehn. & Litsch., *Tomentella,* Sitzungs. kaiserl. Akad. Wissensch. Wien, Math.-naturw. Klasse **116**: 786. 1907. See *H. zygodesmodies* and *H. tabacinus.*

zygodesmoides (Ell.) Hoehn. & Litsch. subsp. *tabacina* (Bres.) Sacc. & Trott. var. *fulvorubella* Bourd. & Galz., *Tomentella,* Hym. France, p. 485. 1928. See *T. tabacina* "ut '2' without explicit rank" *fulvorubella.*

zygodesmoides (Ell.) Hoehn. & Litsch. subsp. *tabacina* (Bres.) Sacc. & Trott. var. *saxicola* Bourd. & Galz., *Tomentella,* Hym. France, p. 485. 1928. See *T. tabacina* "ut '1' without explicit rank" *saxicola.*

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