

NEW AND INTERESTING TAXA OF *MYCENA* PERS. OCCURRING IN NOVA SCOTIA

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This report includes ten taxa of *Mycena* Pers. occurring in Nova Scotia. *M. pteriphila*, *M. pelliculosa* var. *bryopsea*, *M. epipterygia* var. *sophia*, *M. insignis* var. *macrospora*, and *M. rubromarginata* var. *bulbosotipitata* are described as new. Five taxa are reported for the first time from Canada.

Ce rapport fort sur dix taxa de *Mycena* Pers. présents en Nouvelle-Ecosse. *M. pteriphila*, *M. pelliculosa* var. *bryopsea*, *M. epipterygia* var. *sophia*, *M. insignis* var. *macrospora*, and *M. rubromarginata* var. *bulbosotipitata* sont nouveaux. Cinq taxa sont mentionnés pour la première fois au Canada.

Species of *Mycena* Pers. occur abundantly in the forests of Nova Scotia where they often comprise a conspicuous part of the local flora, despite their small size. Species of *Mycena* included in this paper are either new or are reported for the first time from Canada.

Where descriptions exist that adequately cover our species, we provide references to the published accounts along with the summary of the general appearance of the fungus and remarks about our material. A full description is provided only for the species that is described as new. In the descriptions, color terms are cited from two sources. Terms from Ridgway (1912) are enclosed in quotation marks and those from the National Bureau of Standards (Kelly and Judd, 1955) are cited thus: (ISCC 56).

Collection numbers are designated ACAD and refer to fungi deposited in the E.C. Smith Herbarium, Acadia University. Camera lucida tracings were taken from the nomenclatorial type.

1. *Mycena rainierensis* Smith. *Mycologia* 42(1): 115. 1950. Fig. 9.

Pileus 6-22 mm broad, conic to broadly campanulate-convex to plano-convex with a depressed disc, margin incurved when young, often flaring in age; surface moist or subviscid when wet, becoming glabrous when dry; margin translucent striate, hygrophanous; color variable, pale brown at the disc and elsewhere pallid or "Snuff Brown" (ISCC 77) fading to watery gray-brown, often with yellow tints; flesh thin, pliant; taste slightly peppery, odor not distinctive. Lamellae close to subdistant, short-decurrent. Stipe 3-8 cm long, 1-4 mm thick, equal, hollow, fragile, surface pruinose at apex becoming glabrous below; color pallid or light gray. Spores 7-10 μm , globose, amyloid, smooth. Cheilocystidia 40-120 x 9-17 μm , pyriform, avicular or more or less fusoid-ventricose with subacute to obtuse apices, sometimes with 2-3 small elongations at the top.

Our material agrees closely with the original description (Smith, 1950) with the exception that our specimens have a slightly peppery taste where Smith reported the taste as "not distinctive". We collected all our specimens growing scattered or gregarious on *Sphagnum* moss, a habit not reported by Smith for his Washington State material.

This is the first report of this species from Canada, and as far we can determine, the first report for its occurrence east of the west coast of N. America. It is common in Nova Scotia during the fall and may be locally abundant during rainy periods. *M. rainierensis* resembles *M. bisphaerigera* (Lange) Smith macroscopically, but differs in having a much darker pileus and shorter stipe (Favre, 1948). Favre's variety *M. bisphaerigera* var. *longicystis* Favre agrees more closely in coloration and stature, but differs microscopically by its greatly elongated cystidia.

Material examined: ACAD 14519, and 14520, Gifford Island, Mahone Bay, Lunenburg Co., N.S., 10 Oct. 82, leg. E. Hadjisterkoti; ACAD 14521, West Gasperaux, Kings Co., N.S., 21 Sept. 82, leg. E. Hadjisterkoti; ACAD 14517, and 14518, Port Hawkesbury, Richmond Co., N.S., 21 Sept. 82, leg. E. Hadjisterkoti.

2. *Mycena marginella* (Fr.) Quél. Champ. Jura et Vosges: 343. 1873. Fig. 7.

Pileus 6-12 mm broad, ovoid to subumbonate, umbo collapsing in age creating a depressed disc; margin translucent-striate, sometimes become rimose in age; surface moist, glabrous, sometimes appearing dry and velvety; color "Fuscous-Black" (ISCC 64) at center, elsewhere "Hair Brown" to "Fuscous"; flesh 1 mm thick at centre, oozing drops of hyaline liquid when cut, gray-pallid; taste mild or slightly acidic, odor mild. Lamellae broadly adnate, white with a blue component, edges brown. Stipe 1-5 cm long, 1-2 mm thick, equal hollow, surface pruinose when young becoming glabrous, base slightly enlarged, color dark bluish-brown at apex, elsewhere watery gray-brown, latex hyaline. Spores 6-7 x 4.5-5 μm , ellipsoid, smooth, weakly amyloid. Cheilocystidia (-10-40 (-75) x (-8) 11-15 μm , fusoid-ventricose with obtuse apices, abundant, intracellular contents sordid brown. Pleurocystidia similar to the cheilocystidia and present only near the lamellar edges. Pileal cuticle covered with irregularly arranged saccate cells, mostly 30-45 x 9-23 μm , intracellular contents dull-brown.

The most distinctive characters are its cuticular cells and cheilocystidia, both of which contain brown intracellular pigment. The above features in combination with the subumbonate pileal shape and velvety appearance characterize the species. Our material was collected only once on Blackman Is., Mahone Bay, and was growing in large troops on a rotten spruce log. This is the first report of its occurrence in Canada.

Material examined: ACAD 14516, Blackman Island, Mahone Bay, Lunenburg Co., N.S., 8 Aug. 1982; leg. E. Hadjisterkoti and D. Grund.

3. *Mycena rubromarginata* (Fr.) Quél. Champ. Jura et Vosges. p 435. 1875. var. *bulbosostipitata* Hadjisterkoti and Grund var. nov. Fig. 2.

Pileus 12-13 mm latus, conicus demum convexus, ad centrum depressus; glaber; ad marginem striatus; vinoso-bulbalinus ad brunneo-vinosus. Lamellae albridae, ad marginem rubra. Stipes basin bulbosus, lubricus. Sporae 10-13 x 5-8 μm , amyloideae, subglobosae; cheilocystidia 30-60 x 8-11 μm , fusoid ventricosa.

Typus ACAD 14515, in sylvia convallis prope Universitatis Acadiae lectus; holotypus in herbario Universitatis Acadiae (ACAD) conservatus.

Pileus 12-13 mm broad, broadly conic to convex, centrally depressed, margin entire, striate, sometimes striatae reaching center, glabrous, moist and shiny when wet, hygrophanous; color "Vinaceous-Buff" to "Pale Brownish Vinaceous" (ISCC 7) at center, margin "Pale Vinaceous-Fawn"; (ISCC 32) flesh fragile. Lamellae adnate, narrow to moderately broad, subdistant, pallid, edges pinkish-red. Stipe 2.5-2.8 cm long, 1.5 mm thick, equal with a distinct bulbous base, bulb with scattered

mycelial hairs; surface lubricous, flesh elastic, firm, center hollow. Spores 10-13 x 5-8 μm , subglobose, amyloid.

Occurring gregarious on dead stick.

Material examined: ACAD 14515, on campus, Acadia University at location of physical plant buildings, Wolfville, Kings Co., N.S., 26 Sept., 1981, leg. E. Hadjisterkoti.

The distinctive feature of this new variety is the obvious bulbous base. Smith (pp. 211-212, 1947) discussed variations of *M. rubromarginata* that he examined from N. America, but did not mention the species having bulbous bases or a lubricous stipe surface. This is the first report of *M. rubromarginata* from Nova Scotia.

4. *Mycena galopus* (Fr.) Quél. Champ Jura et Vosges: 107. 1872. Fig. 10.

Pileus 6-15 mm broad, ovoid when young, becoming conic or conic-campanulate with a recurved margin, umbonate; margin entire, translucent, striate when moist; surface glabrous; color "Fuscous-Black" (ISCC 64) overall when young, margin becoming gray to "Hair Brown" (ISCC 64), umbo becoming blackish; flesh thin, fragile; odor slightly fruity, taste mild or sometimes slightly bitter. Lamellae subdistant, narrow, ascending-adnate, pallid. Stipe 4-6 cm long, 1-2 mm thick, equal, flexuous; surface glabrous; color "Olive-Brown" (ISCC 96), pallid at apex, blackish-brown at base, base white strigose; exuding white latex when broken. Spores 9-13 x 5-7 μm , smooth, ellipsoid, subpyriform, or rarely "heart-shaped", weakly amyloid.

Occurring gregarious on fronds of ferns (*Onoclea sensibilis* L.)

Material examined: ACAD 14468, in woodlot behind the E.K.M. Hospital, Wolfville, Kings Co., N.S., 5 Oct., 1982, leg. E. Hadjisterkoti.

This is the first report of this species in Canada, and also the first time it has been reported growing on ferns. Fresh specimens exude a milky white juice when the stipe is slightly cut with a razor blade.

5. *Mycena epipterygia* Fr. Syst., Myc. 1: 155. 1821. var. *epipterygioides* (Pearson) Kühn. Encycl. Mycol. 10: 353. 1938.

Pileus 9-20 mm broad, ovoid to obtusely conic, becoming broadly conic or convex, nearly plane in age, umbonate; margin appressed against stipe when young; surface pruinose with young, becoming glabrous, viscid, pellicle separable; color "Pale Ochraceous-Buff" (ISCC 92) to "Tilleul Buff" (ISCC 31). Lamellae ascending and bluntly adnate, sometimes toothed, subdistant to close; concolorous with pileus. Stipe 4-7 cm long, 1 mm thick or less, equal, surface viscid; pallid with greenish-yellow component. Spores 9-11 x 4-5.5 μm , ellipsoid, smooth, amyloid.

Occurring gregarious on conifer needles and twigs among mosses.

Material examined: ACAD 14531, Port Hawkesbury, Richmond Co., N.S., 10 Oct., 1981, leg. E. Hadjisterkoti.

This is the first report for this taxon from Canada. Our collection was compared with Dr. A.H. Smith's collection (Mich 3446) and no microscopic differences were found. Spores from European material are reported to be wider (9-10 x 7.5-8 μm) and have two-spored basidia (Smith, p. 425, 1947). We did not observe red stains at the stipe base for the Nova Scotian material as reported by Smith for his Michigan specimens. The color of the stipe is pale yellow in dried material.

6. *Mycena insignis* Smith. Contrib. Univ. Mich. Herb. 5: 25. 1941. var. *macrospora* Hadjisterkoti and Grund var. nov. Fig. 3.

Pileus 8-10 mm latus, convexus, glaber; ad marginem striatus centrum fulvus ad marginem pallida. Lamellae adnatae, subdistances, concolores. Stipes 25-33 mm longus, 1-1.5 mm crassus, aequalis, viscidus. Sporae 9-14 x 5-6 μ m, ellipsoideae, amyloideae.

Typus ACAD 14454, in sylva convallis prope Universitatis Acadiae, Wolfville, N.S. lectus; holotypus in herbario Universitatis Acadiae (ACAD) conservatus.

Pileus 8-10 mm broad, convex to broadly convex, somewhat flattened at the center; surface subviscid to viscid and shiny when wet, dull when dry, striate; color yellowish-brown at center buff to light yellow on margins, "Cartridge Buff" (ISCC 89) to "Marguerite Yellow" (ISCC 104) overall in age; flesh thin, fragile, brown-gray. Lamellae with decurrent tooth, close to subdistant; "Cartridge Buff" (ISCC 89). Stipe 25-33 mm long, 1-1.5 mm thick, equal, cartilaginous, hollow; surface viscid; color "Ivory Yellow" (ISCC 104) at apex, darker towards base, base white-strigose. Spores 9-14 x 5-6 μ m, ovoid to long ellipsoid, amyloid.

Growing solitary on humus under spruce.

Material examined: ACAD 14454, Acadia University woodlot, Wolfville, Kings Co., N.S., 27 Sept., 1981, leg. E. Hadjisterkoti.

This is the first report of this species from Canada. Smith's collections (paratype, MICH. 14471 and MICH 13101) were examined and the spores found to be 7-9 x 4 μ m.; thus, the Nova Scotian material was much larger. In all other particulars our collection fits the description for the taxon growing on needle beds of Douglas Fir reported by Smith (Smith, p. 405, 1947).

7. *Mycena epipterygia* (Fr.) S.F. Gray. Nat. Arr. Brit. Plants. 1:619. 1821. var. *sophia* Hadjisterkoti and Grund. Fig. 6.

Pileus 8-13 mm latus, conicus vel campanulatus, ad marginem striatus, viscidus, olivaceo-brunus. Lamellae eburneae, ad marginem viscidae. Stipes 3.3-5.5 (15) cm longus, 1-2 mm crassus, aequalis, viscidus. Sporae 10-12 x 6-7 μ m vel 15-19 (21) x 5-7 μ m, ellipsoideae.

Typus Acad 14502 in sylva convallis, Gifford Is. Mahone Bay, comitato Lunenburg, N.S. lectus; holotypus in herbario Universitatis Acadiae (ACAD) conservatus.

Pileus 8-13 mm broad, subovoid when young, umbonate, becoming conic-campanulate and retaining the umbo in age; translucent-striate; surface with a separable viscid cuticle; color "Olive Brown" (ISCC 86) to "Clove Brown" at the center becoming "Colonial Buff" (ISCC 86) at the margin; flesh thin, firm; odor not distinctive or slightly raphanoid; taste spicy, unpleasant and lingering. Lamellae subdistant, uncinatae, narrow, pallid to "Ivory Yellow" (ISCC 104), edges viscid. Stipe 3.3-5.5 (15) cm long, 1-2 mm thick, equal, cartilaginous, firm. Surface viscid; color "Lemon Chrome" to "Lemon Yellow" when older. Spores 10-12 x 6-7 μ m, (four-spored), narrowly ellipsoid, cylindrical or pyriform.

Growing solitary or gregarious between mosses on fern and spruce debris, always under ferns (*Dennstaedtia* sp.).

Material examined: ACAD 14502, Gifford Island, Mahone Bay, Lunenburg Co., N.S., leg. S. Grund and E. Hadjisterkoti; ACAD 14503, Port Hawkesbury, Richmond Co., N.S., leg. E. Hadjisterkoti.

This new taxon is definitely one of the varieties of *M. epipterygia* because of its similarity in color, cystidia, viscosity of the stipe and cuticle, and the number of lamellae. It differs from the other varieties in having unusually large spores. *M.*

griseogilva Horak. (*M. epiterygia* var. *brunneola*) has spores [(10)11-15 x 6.5-7.5 μm ,] that are in the size range of our new variety, but differs in a number of other particulars. The large spores, lemon yellow stipe and the unpleasant taste distinguish this variety from others within the species.

8. *Mycena pelliculosa* (Fr.) Quél. Champ Jura et Vosges: 343. 1873. var. *bryopsea* Hadjisterkoti and Grund var. nov. Fig. 4.

Pileus 3-4 mm latus, conicus, umbonatus, ad centrum depressus; ad marginem striatus; fuscus et brunneus. Lamellae cineraceae vel pallide griseae; subdistantes, subdecurrentes. Stipes 231-40 mm longus, 0.8-1 mm crassus, aequalis, viscidus, pallidus. Sporae 5-10 x 4-5.5 μm , ellipsoideae, amyloideae.

Typus ACAD 14504, prope Port Hawkesbury lectus, holotypus in herbario Universitatis Acadiae (ACAD) conservatus.

Pileus 3-4.5 mm broad, conic hemispherical with an umbo, centrally depressed at maturity; margin entire, translucent-striate to the disc; surface glabrous to subviscid; "Fuscous" (ISCC 64) to "Drab" (ISCC 23) at center and on striations, lighter between striations; flesh thin, fragile; taste and odor not distinctive. Lamellae subdecurrent, distant to subdistant, gray. Stipe 23-40 mm long, 0.8-1 mm thick, equal, flexible, fragile, hollow; surface viscid, hygrophanous, translucent, pruinose at apex; watery white to pallid-gray; base attached to mosses and liverworts by white rhizoids. Spores 6-10 x 4-5.5 μm , smooth, amyloid, ellipsoid.

Growing gregarious on mosses and liverworts.

Material examined: ACAD 14504, Port Hawkesbury Community Park System (near highway), Richmond Co., N.S., 18 Oct., 1982, leg. E. Hadjisterkoti.

This taxon is similar to *M. pelliculosa* var. *pelliculosa*; however, hyphae of the pileipellis are rough where those in *M. pelliculosa* are described as gelatinous (Smith, 1947). Our collection was growing on mosses and liverworts whereas *M. pelliculosa* var. *pelliculosa* grows on humus under conifers. The gill edges gelatinize in both varieties. The pileus of this new variety has an umbo when young and then becomes depressed in older specimens, but Smith (loc. cit.) did not mention observing an umbo. The pileus of *M. pelliculosa* var. *bryopsea* is smaller than the typical variety (5-10 mm broad).

9. *M. pteriphila* Hadjisterkoti and Grund Sp. nov. Etymol: Gr.-pteris - fern; philo - fond of. Figs. 1, 5.

Pileus 4-13 mm latus, conicus demum plano-campanulatus, umbonatus, ad marginem rimosus et striatus; centrum fuscus, ad marginem bubalinus; odore farinaceus. Lamellae albiae, subdistantes, latae. Stipes 2-6.5 cm longus, 0.8-2 mm crassus, aequalis, pruinosis demum glaber; fuscus demum pallidus. Sporae 8-11 x 6-7 μm , ovulatae vel ellipsoideae, non-amyloideae. Pleurocystidia et cheilocystidia 32-85 x 8-17 μm , subclavatae. Habitatio filices.

Typus ACAD 14505, prope Wolfville comitato Kings, N.S. lectus; holotypus in herbario Universitatis Acadiae (ACAD) conservatus.

Pileus 4-13 mm broad, ovoid when young, becoming conic to broadly conic with an obtuse umbo, campanulate or plano-campanulate in age; margin at first appressed against stipe becoming straight-flaring in age, rimose, translucent-striate, sulcate in age; surface glabrous; color blackish-brown at center, fading to "Cream-Buff" (ISCC 73) at margin, color generally variable; flesh thin, fragile; taste not distinctive or slightly acidic; odor farinaceous. Lamellae uncinatae, subdistant, rather broad; 18-23 reaching stipe, lamellulae in three series; pallid. Stipe 2-6.5 cm

long, 0.8-2 mm thick; equal, cartilaginous, surface covered at first with white pruina, later becoming polished, glabrous; color at apex "Fuscous-Black" (ISCC 64) when young, becoming concolorous with the lamellae or with a shade of "Old Gold" (ISCC 88) elsewhere pallid; base strigose, holding on fern fronds and rhizomes with several white mycelioid hairs. Spores 8-11 x 6-7 μm , ovoid to ellipsoid, smooth, nonamyloid, often thick-walled, sometimes granulated. Basidia 25-30(38) x 6-9(15) μm , subcylindric to clavate, 4, 5, 6, and sometimes 7-spored. Cheilocystidia 32-85 x 8-17 μm , subcylindric to subclavate, often with irregularities, abundant. Pleurocystidia similar to cheilocystidia, rare to scattered. Lamellar trama interwoven. Pileipellis interwoven, containing hyphae with short elongations or protruberances about 2 μm wide, hyphae often collapsing (gelatinizing) when examined in potassium hydroxide; subcutis with large, loosely arranged cells, some 40 μm wide; cuticle of stipe with cells similar to those in the pileipellis but larger, 2-5 μm wide and to 35 μm long.

Growing gregarious or clumped in pairs on the fronds and rhizomes of the fern *Osmunda cinnamomea* L.

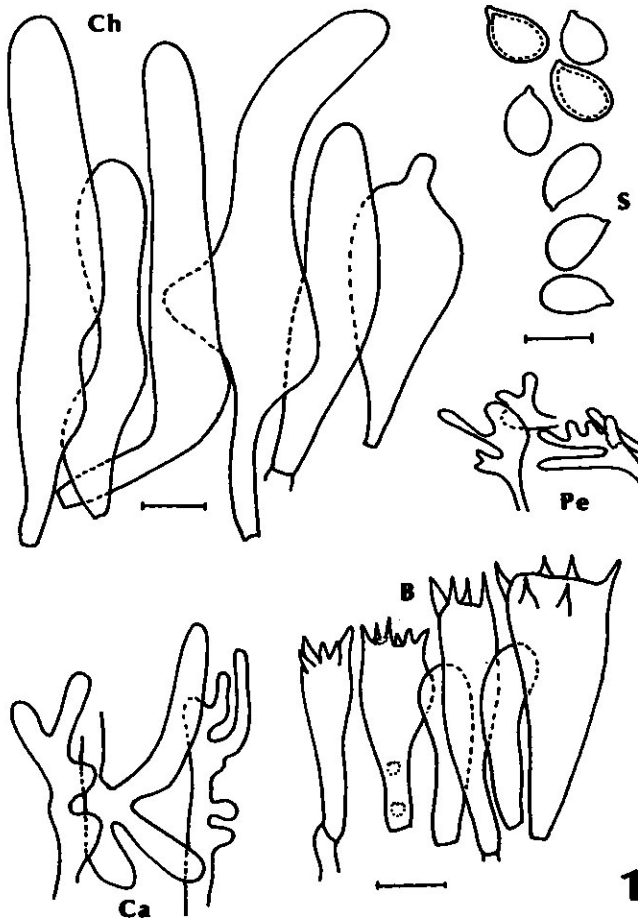
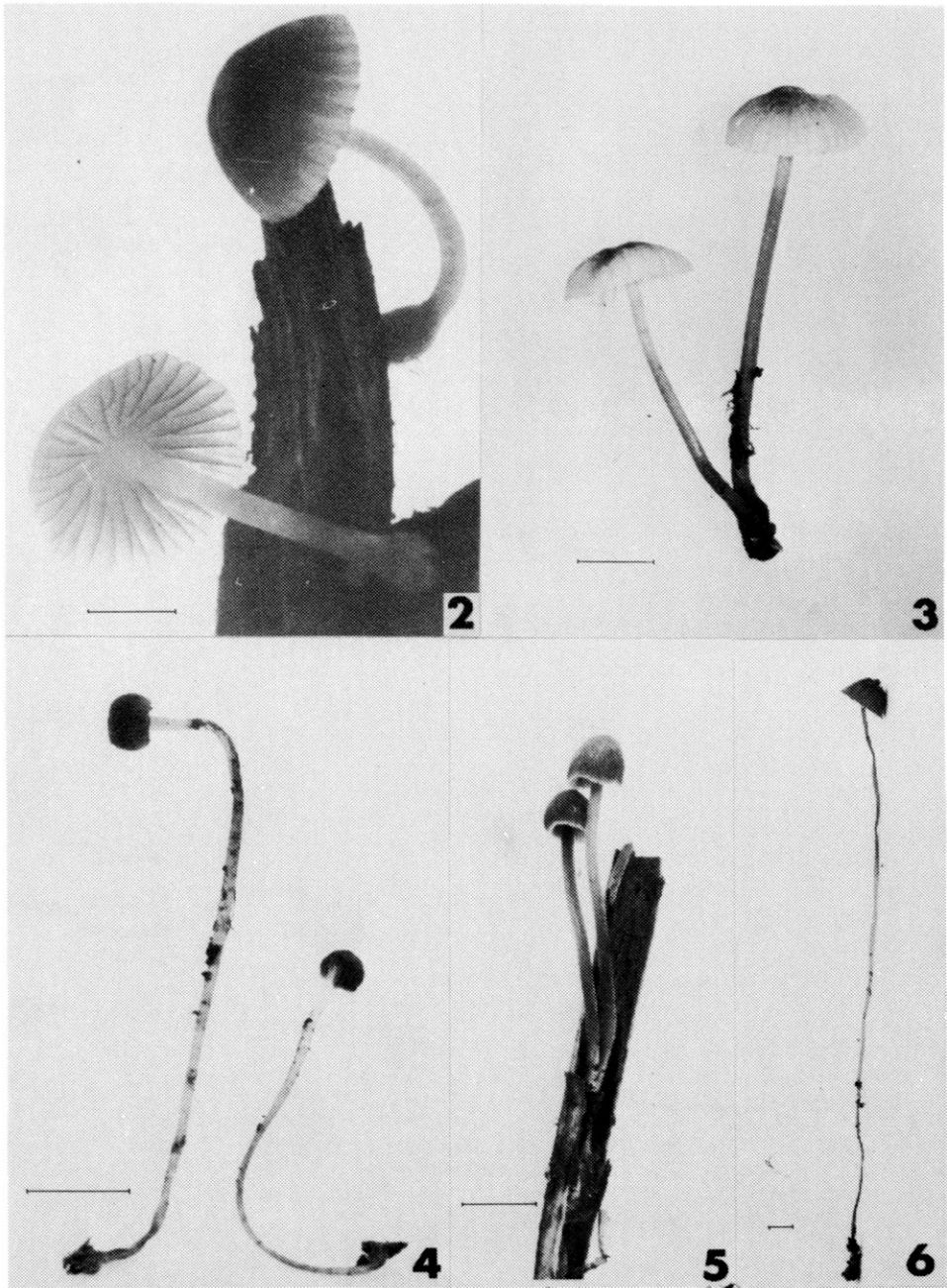
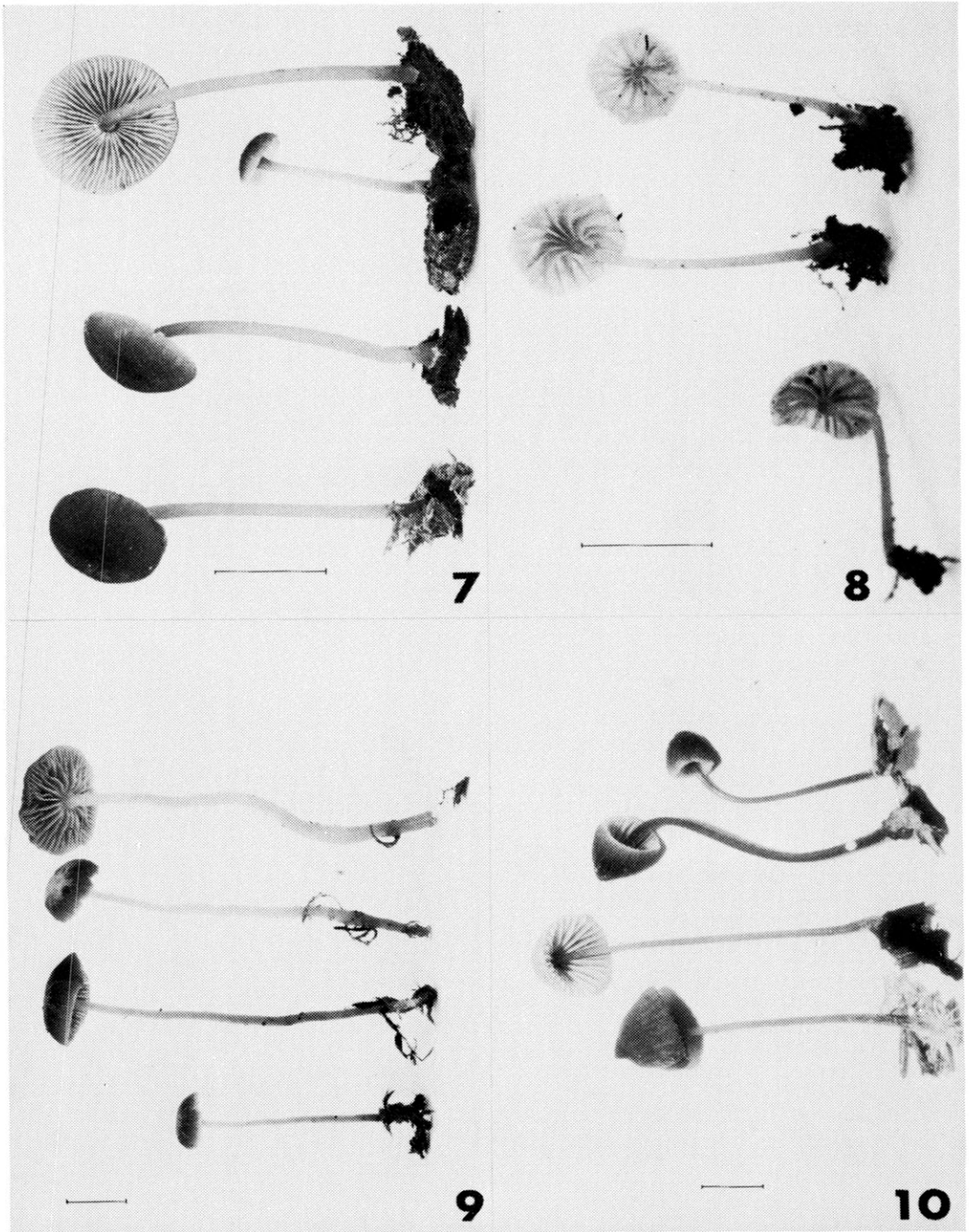


Fig 1

M. pteriphila Hadjisterkoti and Grund. Symbols: Ch—cheilocystidia; Ca—caulocystidia; B—basidia and basidioles; S—spores; Pe—terminal cells in the pileipellis. All scale bars equal to 10 μm .



Figs 2-6 Fig 2—*M. rubromarginata* (Fr.) Quél. var. *bulbosostipitata* Hadjisterkoti and Grund; Fig 3—*M. insignis* Smth var. *macrospora* Hadjisterkoti and Grund; Fig 4—*M. pelliculosa* (Fr.) Quél. var. *bryopsea* Hadjisterkoti and Grund; Fig 5—*M. pteriphila* Hadjisterkoti and Grund; Fig 6—*M. epipterygia* (Fr.) S.F. Gray var. *sophia* Hadjisterkoti and Grund. All scale bars for Figs 2-6 equal 5.0 mm.



Figs 7-10 Fig 7—*M. marginella* (Fr.) Quél.; Fig 8—*M. speirea* (Fr.) Gill.; Fig 9—*M. rainierensis* Smith; Fig 10—*M. galopus* (Fr.) Quél. All scale bars for Figs 7-10 equal 1.0 cm.

Material examined: ACAD 14505, 26 May, 1982; ACAD 14506, 3 June, 1982, ACAD 14453, 20 Sept., 1982; near Wolfville train station, Wolfville, Kings Co., N.S., leg. E. Hadjisterkoti.

All three collections were taken from the same fern stand. Microscopically they were identical but the basidia varied in shape, size and number of sterigmata. Spores were often thick-walled and sometimes granulated. *Mycena pteriphila* is most closely related to *M. olida* var. *americana* Smith because of spore shape and size, cystidia similarities, and in the way the hyphae of the pileus gelatinize; however, its basidial characteristics, taste, odor, and habitat are definitely distinctive. *M. olida* var. *americana* Smith grows on humus and on old stumps (Smith, p. 153. 1947).

10. *Mycena speirea* (Fr.) Gillet. Les Hymen: 280. 1874. Fig. 8.

Pileus 3-13 mm broad; conic to convex, sometimes papillate, center depressed around papilla, papilla usually collapsing in older specimens, becoming plane; surface glabrous, translucent-striate, moist or appearing dry; margin rimose in age; color variable, center gray, "Isabella Color" (ISCC 94) to "Cream-Buff" (ISCC 73) becoming pallid at margin; flesh membranous but fragile; taste peppery and slightly acidic, odor not distinctive. Lamellae subdistant to distant, arcuate-decurrent, 12-17 reaching the stipe, in 2-series, lamellulae narrow to broad, usually intervenose; pallid to gray. Stipe 1-6 cm long, approximately 1 mm thick, filiform, equal, flexible, cartilagenous and firm, tubular; surface subpruinose becoming glabrous, often lubricous when young; color yellowish at apex grayish-yellow or "Cinnamon-Buff" (ISCC 72) to "Clay Color" (ISCC 74) below; base with white rhizoids.

Growing gregarious on bark of fallen trees.

Material examined: ACAD 14478, 26 Sept., 1982; ACAD 14479, 7 Oct., 1982, both collections taken behind E.K.M. Hospital, Wolfville, Kings Co., N.S., leg. E. Hadjisterkoti.

This is the first report of this species from Canada. Smith's collection (MICH 15227) was compared to our material. The yellow color in the apex of the stipe is a reliable character if young specimens are examined. Mature pilei must be used to examine microscopic details, especially cheilocystidia. Smith (p. 360, 1947) reported the odor and taste as non-distinctive or slightly farinaceous, but our specimens were definitely peppery-acidic.

Acknowledgement

This investigation was supported by a research grant (A-2826) from the Natural Science and Engineering Research Council of Canada, Ottawa.

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