AN ILLUSTRATED KEY TO EURO-AMERICAN MYCENAS

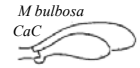
Adapted from R.A. Maas Geesteranus (1992) and Aronsen web site

KEYS TO THE SECTIONS

1. Lamellar edge, by means of a needle, separable as an elastic-tough thread, not orange.

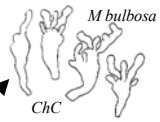
2. Spores globose or almost so. Hyphae of the pileipellis producing conspicuous, lageniform dermatocystidia ➔***marocana*** **EXIGUAE**

2. Spores pip-shaped.



3. Terminal cells of the hyphae of the cortical layer of the stipe (caulocystidia) smooth or somewhat furcated.

4. Stipe whitish or greyish throughout. Cheilocystidia with a fairly broad neck or apically with a few coarse excrescences .



➔***bulbosa*** **BULBOSAE**

4. Stipe blue at the base. Cheilocystidia with very slender excrescences

➔***cyanorrhiza*** **VISCIPELLES**

3. Terminal cells of the hyphae of the cortical layer of the stipe (caulocystidia) much diverticulate and/or branched.

5. Lamellae ascending. Pleurocystidia absent. Stipe fragile

➔ ***epipterygia*** **HYGROCYBOIDEAE**

5. Not these characters combined. Stipe tenacious, never yellow. Associated with coniferous trees: **FULIGINELLAE**

1. Lamellar edge without a separable, elastic-tough thread

6. Spores globose to subglobose .

7. Spores inamyloid: part of **HIEMALES - OMPHALIARIAE**

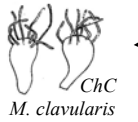
7. Spores amyloid.

8. Lamellar edge pinkish brown to flesh-colored, lamellar sides white

➔***venustula*** **SUPINAE**

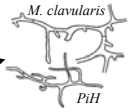
8. Lamellar edge concolorous with the sides or paler or whitish.

9. Pileus covered with a separable, tenacious pellicle.



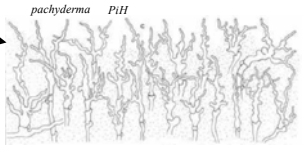
10. Cheilocystidia clavate to obpyriform, covered with fairly few cylindrical excrescences.

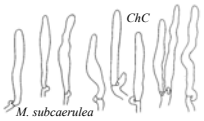
11. Stipe springing from a basal disc**.** Hyphae of the pileipellis smooth



➔***clavularis*** **CLAVULARES**

11. Stipe not springing from a basal disc**.** Hyphae of the pileipellis covered with excrescences. ➔***pachyderma*** **VISCIPELLES**



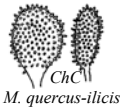


10. Cheilocystidia cylindrical to subfusiform, smooth.:

➔***subcaerulea*** **AMICTAE**.

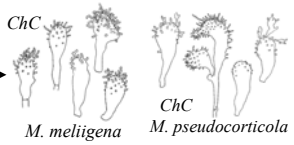
9. Pileus without a separable, tenacious pellicle.

12. Cheilocystidia very densely and almost entirely covered with short, cylindrical excrescences. Basidiomata growing on fallen Quercus leaves.:



➔***quercus-ilicis*** **POLYADELPHIA**

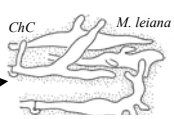
12. Cheilocystidia not very densely and/or only apically covered with excrescences: **SUPINAE**



6. Spores pip-shaped

13. Stipe exuding a deeply **colored juice** (red, orange, yellow) when cut.

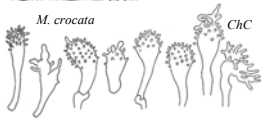
14. Pileus covered with a separable, gelatinous pellicle, cheilocystidia embedded in gelatinous matter:



➔***leaiana*** **CAESPITOSAE**

14. Pileus not covered with a separable, gelatinous pellicle.

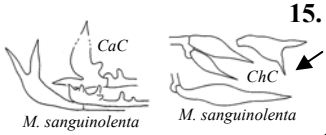
15. Cheilocystidia typically clavate, covered with cylindrical excrescences.

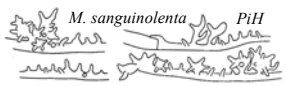


➔***crocata*** **CROCATAE**

15. Cheilocystidia typically fusiform or lageniform, smooth.

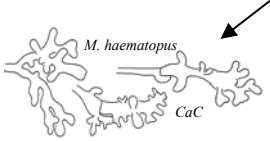
16. Caulocystidia and cheilocystidia similar. Hyphae of the cortical layer of the stipe diverticulate: **SANGUINOLENTAE**

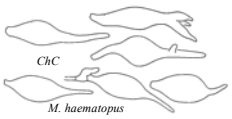




16. Caulocystidia and cheilocystidia dissimilar. Hyphae of the cortical layer of the stipe smooth for the greater part.

➔***haematopus*** **GALACTOPODA**





13. Stipe exuding a milk white or watery juice when cut, or not bleeding at all.

17. Stipe **bleeding when cut**.

18. Exudation milk white to watery milky. Pleurocystidia very much protruding, readily visible under a hand lens. Terminal cells of the hyphae of the cortical layer of the stipe present: **LACTIPEDES**

18. Exudation watery hyaline. Pleurocystidia little protruding or absent.

19. Cheilocystidia predominantly smooth. Terminal cells of the hyphae of the cortical layer of the stipe, if present at all, hard to find.

➔***abramsii*** **FRAGILIPEDES**

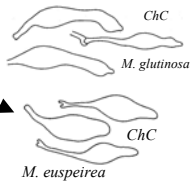
19. Cheilocystidia covered with excrescences. Terminal cells of the hyphae of the cortical layer of the stipe readily visible, diverticulate

➔***monticola*** **MONTICOLA**

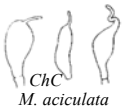
17. Stipe not bleeding when cut.

20. Pileus covered with a (completely or partially) separable, tenacious, **gelatinous pellicle**.

21. Cheilocystidia strikingly long- and slender-stalked**.** Stipe covered with a separable, tough, gelatinous pellicle: **EUSPEIREAE**

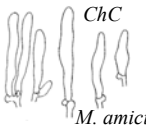


21. Cheilocystidia sessile or short-stalked.



22. Lamellar edge of a deeper color than the sides (vinaceous, purple, brown or orange).

27. Lamellar edge orange: **CAESPITOSAE**



27. Lamellar edge dark vinaceous or dark purple to brown.

28. Terminal cells of the hyphae of the cortical layer of the stipe smooth: ➔***rutilantiformis*** **CALODONTES - MARGINATA**

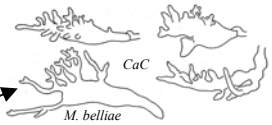
28. Terminal cells of the hyphae of the cortical layer of the stipe covered with coarse warts. Odour of chlorine or nitrous.

➔***seynesiella*** **RUBROMARGINATAE**

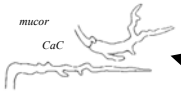
22. Lamellar edge concolorous with the sides or white, sometimes yellowish, rarely greenish or bluish.

23. Stipe arising from a **basal disc** or a basal patch of radiating fibrils.

24. Caulocystidia variously and coarsely diverticulate. Growing exclusively on dead, standing culms of *Phragmites australis* just above the level of stagnant water



➔***belliae*** **CALAMOPHILAE**



24. Caulocystidia smooth to furcate or somewhat branched apically.

25. Stipe white or greyish below: **BASIPEDES**

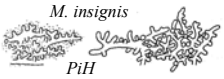
25. Stipe blue below: Pileus greyish brown to greyish white. Stipe entirely puberulous. On bark and decayed coniferous wood. ➔***cyanorrhiza*** **VISCIPELLES**

23. Stipe not arising from a basal disc or a basal patch of radiating fibrils.

26. Lamellae narrowly adnate. Hyphae of the pileipellis branched but smooth, not embedded in gelatinous matter: . Stipe entirely covered with a dense and fairly coarse white pubescence, the base sometimes with some blue-green stains.

➔***amicta*** **AMICTAE**.

26. Lamellae broadly adnate. Hyphae of the pileipellis covered with much branched excrescences, embedded in gelatinous matter:

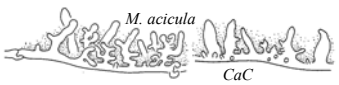


➔***insignis*** **INSIGNES**

20. Pileus devoid of a separable pellicle

29. Spores **inamyloid**

30. Pileus red, pink, orange or deep yellow.

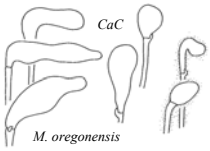


31. Hyphae of the cortical layer of the stipe densely covered with excrescences embedded in gelatinous matter.

➔***acicula*** **ACICULAE**

31. Hyphae of the cortical layer of the stipe smooth.

32. Lamellar edge deep yellow. Caulocystidia with yellow contents. Pileus and stipe bright yellow.➔***oregonensis*** **OREGONENSES**



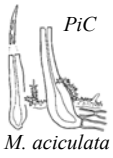
32. Lamellar edge not deep yellow. Caulocystidia with colorless contents: **ADONIDEAE**

30. Pileus of a different color.

30. Pileus of a different color.

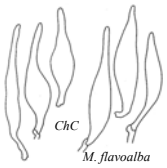
33. Lamellae ascending, lamellar edge convex.

34. Pileus covered with scattered, long, thick-walled setae penetrating the surface. ➔***aciculata*** **LONGISETAE**



34. Pileus devoid of long, thick-walled setae penetrating the surface.

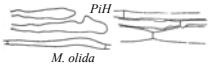
35. Pileus pale yellowish or whitish to white.



36. Cheilocystidia apically much narrowed to acute. Hyphae of the pileipellis densely covered with excrescences: pale yellowish or white forms of species of **ADONIDEAE**

36. Cheilocystidia apically obtuse. Hyphae of the pileipellis smooth or sparsely covered with excrescences:

➔***olida*** **HIEMALES - HIEMALES**



35. Pileus of a darker color:part of **HIEMALES - HIEMALES**

33. Lamellae arcuate, lamellar edge concave to horizontal.

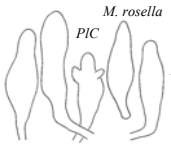
37. Lamellar trama vinescent in Melzer's reagent. Lamellar edge violaceous to purplish brown

➔***pearsoniana*** **CALODONTES-VIOLACELLAE**

37. Lamellar trama not vinescent in Melzer's reagent. Lamellar edge whitish: part of **HIEMALES - OMPHALIARIAE**

29. Spores amyloid

38. Lamellar edge of a different color (almost black, violet, purplish brown, red-brown, pinkish brown, brown, orange, deep yellow, citrine, greenish) and usually more intensely colored than the lamellar sides.



39. Pleurocystidia present, usually numerous.

40. Pleurocystidia smooth .

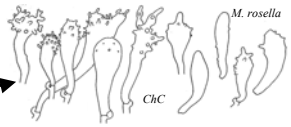
41. Hyphae of the pileipellis smooth:

CALODONTES - MARGINATAE

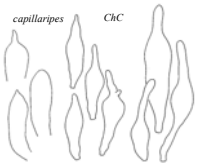
41. Hyphae of the pileipellis covered with excrescences.

42. Cheilocystidia clavate to fusiform covered with excrescences or with a few smooth ones intermixed:

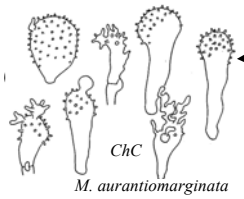
LUCULENTAE – ROSELLAE



42. Cheilocystidia fusiform lageniform, subcylindrical, all smooth: part of **RUBROMARGINATAE**



40. Pleurocystidia more or less densely covered with generally evenly spaced, short, cylindrical excrescences



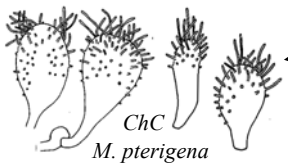
43. Lamellar edge orange:

LUCULENTAE - ELEGANTES

43. Lamellar edge yellow, Occuring in mossy lawns, on moss-coveres tree trunks, among vegetable debris under deciduous trees, on fallen needles in coniferous woods particularly Picea. ➔young specimens of ***flavescens*** **FILIPEDES**

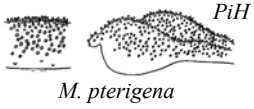
39. Pleurocystidia absent.

44. Stipe arising from a basal patch of radiating fibrils. Cheilocystidia covered with very narrow and in part very long excrescences.



45. Lamellae with their breadth much greater than their length. Stipe apically abruptly dilated**.** Hyphae of the pileipellis smooth ➔***picta*** **PICTAE**

45. Lamellae much longer than their breadth. Stipe equal. Hyphae of the pileipellis densely covered with cylindrical excrescences.➔***pterigena*** **PTERIGENAE**



44. Differently characterized.

46. Lamellar edge almost black, violet, purplish, reddish or pink: part of **RUBROMARGINATAE**

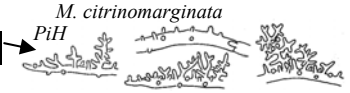
46. Lamellar edge brownish, greenish, deep yellow or citrine.

47. Excrescences of the hyphae of the pileipellis inflated or with inflated parts:

➔***viridimarginata*** **FRAGILIPEDES**

47. Excrescences of the hyphae of the pileipellis cylindrical, narrow:

➔***citrinomarginata*** **FRAGILIPEDES**

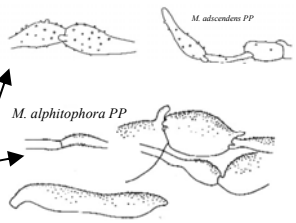


38. Lamellar edge concolorous with the sides or paler or whitish

48. Lamellar trama not vinescent in Melzer's reagent. Cheilocystidia absent: ➔MG-I-301 ***radiata*** **RADIATAE**

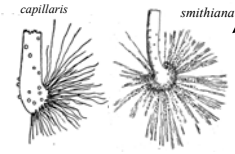
48. Lamellar trama generally vinescent in Melzer's reagent. Cheilocystidia present.

49. Pileus markedly granular or furfuraceous to floccose, greyish to white. Hyphae of the pileipellis more or less densely covered with usually short excrescences. Growing on woody substrates: **SACCHARIFERAE**



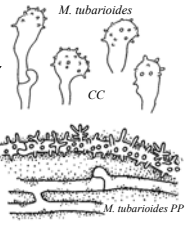
49. Not these characters combined.

50. Stipe arising from a **basal patch of mycelium** or radiating fibrils.



51. Pleurocystidia absent.

52. Cheilocystidia and hyphae of the pileipellis embedded in gelatinous matter ➔***tubarioides*** **SAETULIPEDES**



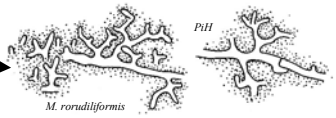
52. Cheilocystidia not embedded in gelatinous matter.

53. Hyphae of the pileipellis more or less densely covered with small, cylindrical, mostly simple excrescences.

54. Cheilocystidia subcylindrical or subfusiform, smooth: ➔***oligophylla*** **RARIFOLIATAE**

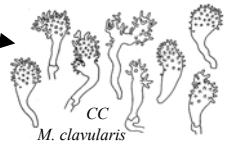
54. Cheilocystidia mostly clavate, covered with cylindrical excrescences: part of **POLYADELPHIA**

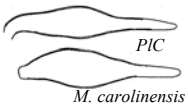
53. Hyphae of the pileipellis covered with side-branches and branched excrescences: ➔***roriduliformis*** **INSIGNES**



51. Pleurocystidia present.

55. Pleurocystidia clavate, covered with cylindrical excrescences ➔***clavicularis*** **CINERELLAE**





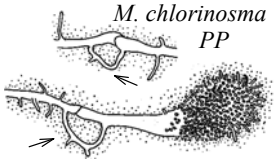
55. Pleurocystidia lageniform, smooth ➔***carolinensis*** **CAROLINENSES**

50. Stipe not arising from a basal patch of mycelium or radiating fibrils:

56. Stipe very slender, thickly covered with a transparent slimy layer. Pileipellis hymeniform: ***'Mycena'rorida*** (Fr. : Fr.) Quél, excluded from the genus *Mycena*

56. Differently characterized**.** Hyphae of the pileipellis radiately aligned.

57. Hyphae of the pileipellis with wide, loop-like clamp connections, embedded in gelatinous matter ➔***chlorinosma*** **INGRATAE**



57. Hyphae of the pileipellis clampless or with normally shaped clamps closely adhering to the hyphae.

See **KEY 2**

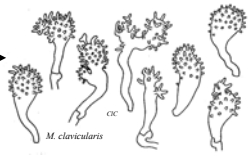
KEY 2

58. Hyphae of the pileipellis producing a dense growth of side-branches which are embedded in gelatinous matter, covered with thorn-like excrescences, and terminated by long-stalked pileocystidia whose upper sides are densely covered with short, cylindrical excrescences ➔***chlorophos*** **EXORNATAE**

58. Differently characterized.

59. Hyphae of the pileipellis **embedded in gelatinous matter**.

60. Cheilocystidia clavate and covered with usually evenly spaced, cylindrical excrescences: part of **CINERELLAE**

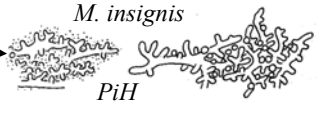


60. Cheilocystidia not at the same time clavate and covered with usually evenly spaced, cylindrical excrescences.

61. Hyphae of the cortical layer of the stipe not embedded in gelatinous matter: part of **FRAGILIPEDES**

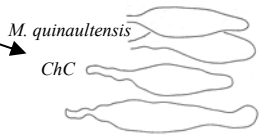
61. Hyphae of the cortical layer of the stipe more or less gelatinized or embedded in gelatinous matter.

62. Hyphae of the pileipellis branched or covered with much branched excrescences. Cheilocystidia often flexuous or somewhat irregularly shaped: part of **INSIGNES**



62. Hyphae of the pileipellis smooth.

63. Pleurocystidia numerous, much protruding: →***quinaultensis*** **INSIGNES**



63. Pleurocystidia absent (or very rare?).

64. Lamellae tender: →***stipata*** **FRAGILIPEDES**

64. Lamellae elastic-tough: →***tintinnabulum*** **MYCENA**

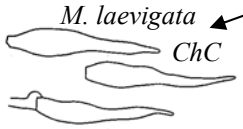
59. Hyphae of the pileipellis not embedded in gelatinous matter.

65. Pileus **white** (although the center may be somewhat colored).

66. Cheilocystidia fusiform lageniform or subcylindrical, smooth, furcate or covered with few coarse excrescences.

67. Hyphae of the pileipellis producing erect, capitate oleocystidi**a.** Stipe covered with similarly shaped caulocystidia:
Resinomycena saccharifera (Berk. & Br.)Kühn. ***(= Mycena quisquiliaris = Mycena pudica),*** excluded from the genus ***Mycena.***

67. Differently characterized.



68. Cheilocystidia fusiform and smooth.

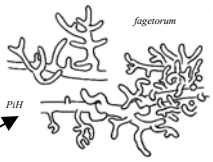
69. Basidiomata growing on wood:
white species or white form of species of **FRAGILIPEDES**

69. Basidiomata growing in leaf humus:
→***pura f. alba*** **CALODONTES-PURAE**

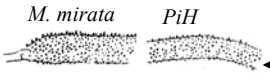
68. Caulocystidia not at once fusiform and smooth: part of **FRAGILIPEDES**

66. Cheilocystidia predominantly clavate, generally covered with usually small warts or longer, cylindrical excrescences.

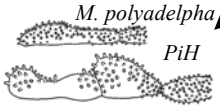
70. Pleurocystidia absent.



71. Hyphae of the pileipellis smooth or sparsely covered with excrescences. Basidiomata growing on wood:
white or very pale forms or species of **MYCENA**



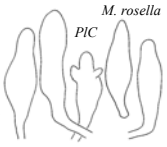
71. Hyphae of the pileipellis densely covered with small, mostly equally long excrescences.



72. Caulocystidia present. Basidiomata growing on fallen leaves or herbaceous plants: part of **POLYADELPHIA**

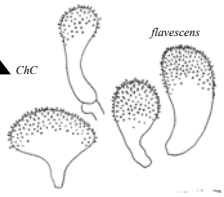
72. Caulocystidia absent. Basidiomata growing on bark of trees:
white form of →***mirata*** **FILIPEDES**

70. Pleurocystidia numerous.

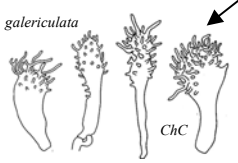


73. Pleurocystidia smooth. Hyphae of the pileipellis covered with excrescences of variable length, the longer ones frequently more or less branched:
→white form of ***rosella*** **LUCULENTAE - ROSELLAE**

73. Pleurocystidia covered with warts or small cylindrical excrescences:
white forms of species of **FILIPEDES**



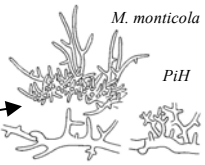
65. Pileus pronouncedly colored



74. **Cheilocystidia** usually **clavate** or, if apically much branched and diverticulate, the general outline being clavate, narrowed at the base. Pleurocystidia not strongly protruding.

75. Lamellae as a rule elastic-tough, ascending. Odor often farinaceous or rancid**.** Stipe usually cartilaginous-tough. Cheilocystidia often asymmetrical, with the head somewhat angular or knobby and the excrescences generally curved
MYCENA

75. Lamellae tender.



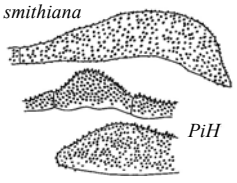
76. Pileus flame red to pinkish red**.** Lamellae pale flesh-colored pink. Stipe pink. Hyphae of the pileipellis covered with long, branched excrescences
→***monticola*** **MONTICOLA**

76. Pileus variously colored, often in shades of grey-brown but also yellow or blue; if tinged violet, purplish or pink, delicately colored and only when young.

77. Stipe deep yellow throughout. Hyphae of the pileipellis and of the cortical layer of the stipe covered with strikingly inflated excrescences:
→***renati*** **RUBROMARGINATAE**

77. Not these characters combined.

78. Basidiomata small to minute, generally less than 5 mm across, growing on non-woody substrates. Pleurocystidia absent. Hyphae of the pileipellis densely covered with very small, usually simple excrescences: part of **POLYADELPHIA**

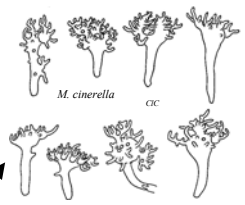


78. Not these characters combined.

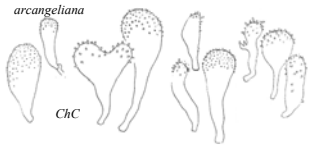
79. Pileus dull colored, grey-brown to dark brown, generally somewhat lubricous when wet.

80. Lamellar edge convex. Cheilocystidia apically smooth, broadly rounded: part of **FRAGILIPEDES**

80. Lamellar edge generally concave. Cheilocystidia apically often somewhat divided into two arms or frankly branched, not infrequently covered with fairly long, untidy-looking or very coarse excrescences: **CINERELLAE**



79. Pileus often more brightly colored, generally not lubricous when wet. Cheilocystidia covered with mostly evenly spaced, short, straight excrescences: **FILIPEDES**

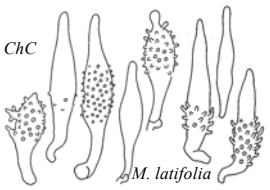


74. Cheilocystidia variously shaped, exceptionally (in section ***Fragilipedes***) clavate**.**

81. Most cheilocystidia with a very broad base, apically covered with few coarse excrescences: ➔***septentrionalis*** **FILIPEDES**

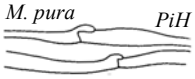
81. Cheilocystidia narrowed towards the base.

82. Stipe cartilaginous. Pleurocystidia strongly protruding, generally partly covered with warts or narrow, cylindrical excrescences: **INTERMEDIAE**



82. Not these characters combined**.** Pleurocystidia, if present, smooth or covered with few coarse excrescences.

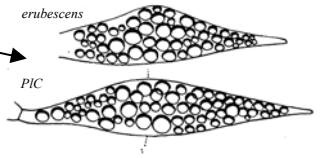
83. Hyphae of both pileipellis and cortical layer of the stipe smooth, never embedded in gelatinous matter. Odor raphanoid, never nitrous. Taste not bitter. Lamellae and/or other parts of the basidiome generally tinged bluish, lilac or pink: . . . . **CALODONTES - PURAE**



83. Not these characters combined.

84. Taste bitter. Pleurocystidia usually filled with refractive globules: ➔***erubescens*** **LACTIPEDES**

84. Not these characters combined: **FRAGILIPEDES**



Section SACCHARIFERAE Kühn. ex Sing.

1. Stipe springing from a basal disc or with a bulbous base **2**
1. Stipe without basal disc **5**

2. Stipe with bulbose base. Pileus cream white with translucent centre. Lamellae adnate. Cheilocystidia clavate or subpyriform:

querciramuli Robich

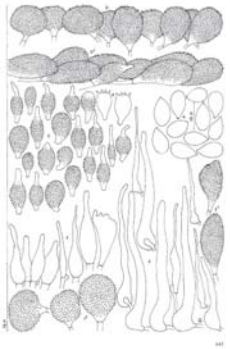
2. Stipe with basal disc (although very small) **3**

3. Basidia 2-spored. Pileus white to grey, lamellae narrowly adnate or forming a pseudocollarium, cheilocystidia with a slender neck, clamps present: On fallen twigs or moss-covered trunks of deciduous trees (e.g. Aesculus, Populus, Salix, Ulmus) much more rarely on conifers (Picea). Eur, Nam.

Frb white; many cheilocystidia with a long, narrow, pointed rostrum (fig. 355C). Cap 1-5 mm, hemispherical to bell-shaped, pure white to grey brown at centre when very old; gills narrowly adnate, then forming a pseudocollarium, ventricose ascending, L = 7-12, white to greyish with a white edge; stem 5-20 x 0.1-0.5 mm, white to pale grey, hirsute especially to-wards the 0.2-0.7 mm wide, hirsute disc. Sp 7-11 x 4-6 µm, Qav = 1.3-1.8, dacryoid, amyloid; basidia 2-spored, rarely 4-spored; cheilocystidia 13-36 µm long, variable, with small diver-ticulae, lageniform, many with a smooth, long and narrow rostrum; caulocystidia scattered, clustered towards the base, smooth to slightly verrucose, tapering, 20-110 x 4-15 µm; clamps mostly present and abundant. On plant debris of broadleaved trees, including Corylus, Crataegus and Fagus fruits, sometimes on mossy trunks and on coarse herbs; early summer to early winter, all year in the south; very common in temp., occasional in hemib., rare in bore. DK (LC), FI (DD), FO, NO (LC), SE (LC). – B&K 3:314, FAD 57C, M&J 40, Rob 633, Svp 52:9, •. (=M. tenerrima (Berk.) Sacc.)

adscendens (Lasch) Mass G.
Description: MG II-10, K 206
Illustrations: BK3.314 - CO111D - MY06.118 - RO633

3. Basidia 4-spored **4**



4. Pileus white, lamellae narrowly adnate, cheilocystidia mostly with a slender neck, clamps very rare, basal disc cystidia with smooth caulocystidia and acanthocysts. On fruits of *Corylus*:

nucicola Huijsm
Description: MG II-15
Illustrations: RO641

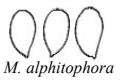
↓**4.** Pileus white to greyish, lamellae narrowly adnate or attached to a pseudocollarium, cheilocystidia mostly with a slender neck, clamps abundant, basal disc only with smooth cystidia, lacking acanthocysts. On fruits of Corylus and fallen pericarps of Fagus:

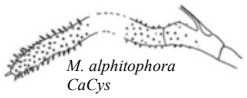
4-spored form of ***adscendens***

4. Pileus very pale blue, soon turning white, lamellae narrowly adnate, cheilocystidia without a neck, clampless. On conifer needles:

Frb initially pale blue, then white; cheilocystidia lacking rostrum. Cap 0.5-2 mm, bell-shaped, convex, sulcate, minutely granulose, viscid; gills narrowly adnate, ascending, L ≤ 8, white; stem 5-20(-30) x 0.1 mm, viscid, almost glabrous, arising from a small white disc. Sp 6.5-10 x 3.7-5 µm, Q = 1.3-1.8, dacryoid, amyloid; basidia 4-spored; cheilocystidia 12.5-18 x 5.5-7 µm, occurring mixed with basidia, clavate, covered with from few to many short straight diverticulae; caulocystidia inconspicuous, lageniform, 25-100 x 7-17 µm, thin-walled, smooth; pileipellis hyphae end cells clavate to globose with very small and crowded cylindrical diverticulae; clamps absent or present. On decaying conifer needles in rich forests or mesic heaths; summer to autumn; very rare in hemib. or overlooked; FI (DD). M. occulta Harmaja

occulta Harmaja



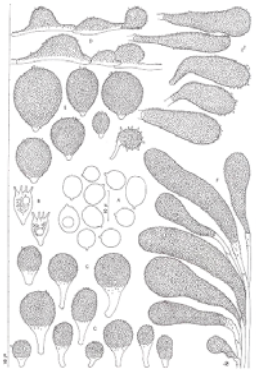


5. Spores pip-shaped**.** Caulocystidia cylindrical On various kind of vegetable debris in North America, but in Europe usually on fern rhizomes in hot-houses, only occasionally also found in nature.: .

alphitophora (Berk.) Sacc.
Description: MG II-12, K 209

5. Spores globose. Caulocystidia with obpyriform to clavate terminal cell On moss-covered bark of deciduous trees; Eur.

Without basal disc; sp subglobose (fig. 355B). Cap 2-5 mm, hemispherical to bell-shaped, ± pulverulent, white; gills adnate with a decurrent tooth, ascending, ventricose to horizontal, L = 8-16, white; stem 5-18 x 0.1-1 mm, hyaline, densely covered with white hairs forming paral-lel lines, especially at the top. Sp 6-8.5 x 5.5-8.5 µm, Qav = 1.1-1.2, amyloid; basidia 2- and 4-spored; cheilocystidia 18-40 x 5-20 µm, clavate, densely covered with 1-2 µm long diver-ticulae; caulocystidia abundant and similarly ornamented, 34-68 x 17-30 µm, from clavate to long cylindrical types, these especially at the base of the stem, up to 250 x 10 µm, some with up to 5 µm long diverticulae; clamps sometimes abundant, often absent. Singly or in swarms on mossy trunks or decaying wood of many species of broadleaved trees, not least Salix and Alnus; autumn to early winter; DE, UK. – B&K 3:325, Cou 112, GBW 3:465, M&J 28, Rob 637. M. corynephora Maas Geest



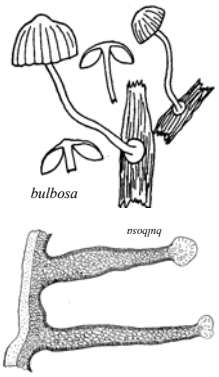
.***corynephora*** Maas G.
Description: MG II-13
Illustrations : BK3.325 - CO112A - MY06.118 - RO637

Section CECIDIOPHILAE v.d. Berg, v. d. Berg-Blok, Noordel. & Uljé

On knopper galls from Quercus robur acorn cups; gill trama without iodine reactions; sp amyloid. Cap 3-10 mm, at first ovoid and greyish, then expanding to bell-shaped and then almost flat, white with brownish centre, minutely pruinose especially away from centre; gills narrowly adnate or free, sometimes forming a pseudocollarium, ventricose, L = 20-30, white; stem 12-22 x 0.5-0.75 mm, entirely pruinose, white or brownish, at base attached by disc-like, thin pad of fine hairs. Sp 5-8.5 x 3-4.5 µm, Qav = 1.7-1.9, ellipsoid, amyloid; cheilo- and pleurocystidia absent; caulocystidia 30-70 x 10-22 µm, mostly conical to broadly conical, with acute, sometimes rostrate apex (fig. 355A); pileipellis a cutis of cylindrical slightly inflated diverticulate elements, with terminal acanthocysts, diverticulae 2 x 1 µm, forming a uniform surface feature. Summer to autumn; absent or overlooked in area; NL, UK. – Pers 17:513. M. cecidiophila A.P. Berg, Berg-Blok, Noordel. & Uljé

cecidiophila v.d. Berg, v. d. Berg-Blok, Noordel. & Uljé

Section BULBOSAE Maas G.



Pileus pale grey to greyish brownish, pallescent. Lamellae forming a pseudocollarium. Lamellar edge inflated and containing a separable tough-elastic, gelatinous thread. On herbaceous stalks in wet places (e;g; *Juncus*, *Scirpus*, *Glyceria*). Eur, NAf.

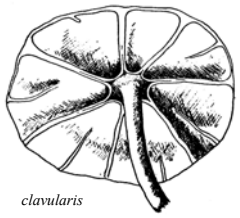
On riparian herbaceous plants, especially Juncus effusus; basal disc strongly pubescent hairy; cap pellicle separable. Cap up to 4 mm, hemispherical, sulcate, pale drab to brownish grey; gills adnate, forming a pseudocollarium, ventricose, L = 8-16, white to greyish white; stem 3-20 x 0.1-0.2 mm, pubescent especially in the lower third, silky or watery white; basal disc large in proportion to the frb. Sp 9-11(-13) x 4-5 µm, subcylindrical, Qav = c. 1.8 occasionally to 2.5, amyloid; cheilocystidia short with broad, rounded fingers (fig. 361E). Also on Carex acuta, etc.; summer to autumn; common in temp., in hemib. locally common on the south coast of NO, rare but poorly known in bore. in FI; DK (LC), FI (DD, PH: Keuruu, PK: Ilomantsi), NO ( ), SE ( ). – B&K 3:321, C&D 546, GBW 3:393, M&J 10b, •.

bulbosa (Cejl) Kühn.
Description: MG II-21, K176
Illustrations: BK3.321 - MY06.118

Section CLAVULARES Maas G.

Pileus greyish to pale sepia grey-brown, pallescent. Lamellae soon receding stellately from the stipe. On moss-covered bark of various broad-leaved trees. Eur.

On the mossy or bare trunks of living or recently fallen broadleaved trees; basal disc 2 mm, pubescent; sp globose. Cap up to 6 mm, pubescent, with a separable pellicle, white to greyish white, or pale sepia away from the margin; gills adnate, with plane edge to ventricose, L = (7-)9-12, white or tinted grey; stem 5-20 x 0.1-0.6 mm, smooth to sparsely floccose; basal disc white or grey; smell if any, faintly nitrous. Sp 7.5-11 x 7.5-11 µm, Qav = c. 1.1; cheilocystidia spheropedunculate with long narrow finger-like extensions, some as long as the main structure (fig. 361G); caulocystidia broadest at the base, often septate with the outerpart quite thick-walled, narrowing to a point, sometimes twisted. Autumn to early winter; occasional in temp., rare in hemib.; DK (LC), NO (NE), SE (LC). – Phil 86c, Rob 65, •.muc



clavularis (Batsch: Fr.) Sacc.
Description: MG II-22, K180
Illustrations: DA361 - PH075 - RO65

Section EXIGUAE Maas G.

On roots of *Eucalyptus globulus*. Algeria.

marocana Maas G.
Description: MG II-24

Section BASIPEDES (Fr.) Quél.

1. Cheilocystidia absent. Odour nitrous. Terminal cells of the pileipellis inflated, densely covered with warts. Caulocystidia broad, smooth. Growing on fallen debris of Alnus glutinosa:

On decaying female catkins of Alnus; cap margin with a granular appearance. Cap 2-6 mm, plane when expanded, with a central depression, strongly plicate, viscid, greyish white with grey at the centre, striate and nearly translucent, at margin fringed with sugary granules; gills narrowly adnate forming a pseudocollarium, ventricose, L = 14-18, white; stem 10-25 x 0.2-0.5 mm, white, translucent, under lens with scattered hairs; basal disc small, hollow and covered with fine white hairs, especially at the edge, where attached to the substrate. Sp 6-8 x 3-5 µm, Qav = c. 1.8; cheilocystidia absent; pileipellis hyphae verrucose, with terminal elements easily separating (fig. 361F); caulocystidia to over 40 µm long, inflated, smooth. DE, UK. – C D 547, Rob 74, Win 93:25.

rhenana Maas G.
Illustrations: RO74

1. Cheilocystidia present**. 2**

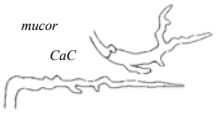
2. Cheilocystidia with coarse, inflated excrescences**.** Caulocystidia often with inflated basis. Margin of basal disc ciliate On fallen twigs, leaves, coniferous needles, dead culms of grasses.: Eur, NAf, Nam.

Cap with ± distinct hyphal pegs (small spines) especially at centre, visible when viewed in profile. Cap 4-10 mm, with a tenacious separable pellicle, white, greyish to pale brownish grey; gills adnate, adnexed to almost free, ventricose, forming a pseudocollarium, L = 14-21, white to greyish white; stem 15-50 x 0.3-1 mm, white to pale buff, may be darker towards base; basal disc distinctly plicate-hairy. Sp 7-10 x 4-5 µm, subcylindrical to ellipsoid, Qav = c. 1.7, amyloid; cheilocystidia variable, often with broad fingers (fig. 361D). Often solitary on leaf litter, including leaves from conifers, small twigs, Vaccinium litter, etc., often on rich ground; summer to autumn; common in temp.-hemib., occasional in bore.; DK (LC), FI (LC), FO, IS, NO (LC), SE (LC). – B&K 3:369, FAD 54C, GBW 3:391, M&J 10, Svp 52:8, •.

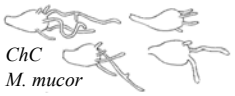
stylobates (Pers.: Fr.) Kummer
Description: MG II-18, K186
Illustrations: BK3.369 - CO111E - JO180.1 - MY06.118 - RH350 - RO79

2. Cheilocystidia with narrow excrescences 1-2 µm wide. 3

3. Odour none. Pileal surface smooth. Spores 3-4(-5) µm broad. Caulocystidia narrow, often furcate. Margin of basal disc velutinous, not ciliate.Growing on fallen, decaying leaves of Quercus: Eur, NAm.

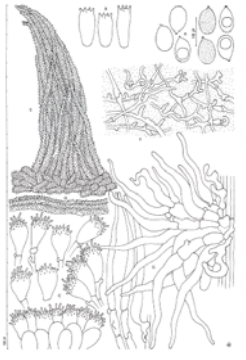


On leaves of Quercus sp.; basal disc of radial fibrils which are not persistent; sp almost cylindrical. Cap 1-5 mm, greyish brown, paler at the edge, with a separable pellicle; gills adnate, forming a pseudocollarium, ventricose, L = 8-14, greyish with paler edge; stem 3-30 x 1-4 mm, hyaline white or grey; disc white. Sp 8-12 x 3-4.5 µm, Q > 2, cylindrical, strongly amyloid; cheilocystidia similar to cheilocystidia in fig. 361G, but with unevenly elongate diverticulae. Autumn to late autumn; status not well understood, but possibly overlooked and at least occasional in temp., rare in hemib.-southern bore.; DK (LC), FI (DD), NO (NE), SE (LC). – FAD 56A, M&J 40.



mucor (Batsch: Fr.) Gillet
Description: MG II-16, K182

3. Odour none. Pileal surface densely covered with acute spinules. Spores 5-5.5 µm broad: Hyphae and hymenial elements devoid of clamps. Found to grow at the base of the trunk of an Alnus. Switzerland.



tenuispinosa Favre
Description: MG II-19

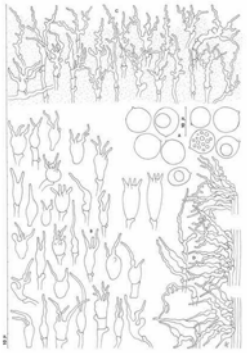
Section LONGISETAE A.H. Smith ex Maas G.

Pileus covered with scattered, long, thick-walled setae penetrating the surface. On decaying vegetable matter, including grass stems and fallen coniferous cones. Eur, NAm.

Cap with long projecting setose hairs, visible in profile, like deep bedded rose thorns (fig. 361C). Cap 3-7 mm, mouse grey to drab, with a separable pellicle; gills adnate or arcuate, sometimes to a pseudocollarium, ventricose, L = 12-16, grey with a pale edge; stem 10-30 x 0.1-0.5 mm, white to silky white; basal disc pubescent. Sp 7-10 x (3.5-)4-5(-6) µm, ellipsoid, without iodine reactions, Qav = 1.8-2.1; cheilocystidia clavate to inflated, often with an acuminate extension (like a small fig. 379A). On litter from both deciduous and coniferous trees, mostly in oligotrophic habitats, but also in more rich sites; late summer to autumn; rare, but locally occasional in hemib.-bore.; FI (LC), NO (LC), SE (LC). – M&J 23 (as longiseta), Rob 69 (as longiseta), •.

aciculata Hohn.
Description: MG II-25, K173
Illustrations: RO69

Section VISCIPELLES Kühn.



1. Spores subglobose, 6.5-8.5 µm broad: Pileus glaucous grey, turning white. On bark of deciduous trees (Ulmus, Salix). Eur.

pachyderma Kühn
Description: MG II-31, K192

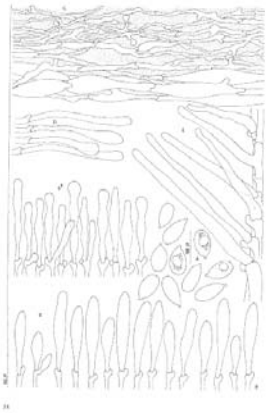
1. Spores pip-shaped 2
2. Spores 3.5-5 µm broad. Pileus greyish brown to greyish white. Stipe entirely puberulous, blue at the base. On bark and decayed coniferous wood. Eur.
   Gill edge separable as a gelatinous thread, test by inserting a needle behind the edge. Cap 3-9 mm, globose to bell-shaped, sulcate, translucently striate, white with a slight milky coffee tone; gills narrowly adnate to almost free, ventricose, L = 10-13, whitish to grey with paler edge; stem 3-30 x 0.3-1 mm, very pruinose, white at the top, milky coffee below, the base deep turquoise blue; smell absent to faintly nitrous. Sp 6-9 x 3.5-5 µm, Qav = 1.6, ellipsoid, amyloid; cheilocystidia congested, like in fig. 365C; caulocystidia broad at the base, attenuated to a point often branched (fig. 365B). On conifer twigs or fallen bark, in area on Picea and Pinus; late summer to autumn; rare in hemib.-bore.; FI (EN, Ks: Kuusamo), NO (NE), SE (LC). – B&K 3:327, BSMF Atlas 314, C&D 550, M&J 12, Rob 677, •.

M. cyanorrhiza Quél.
Description: MG II-30, K194
Illustrations: BK3.327 - RO677

2. Spores 6-7 µm wide. Pileus sooty grey, cream-brown. Hairs of stipe witj blue contents in fresh examples.

M. pseudocyanorrhiza Robich

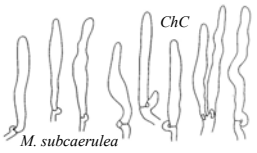
Section AMICTAE A. H. Smith ex Maas G.



1. Spores pip-shaped, 4-5.5 µm broad. Lamellae narrowly adnate. Hyphae of the pileipellis branched but smooth, not embedded in gelatinous matter. Stipe entirely covered with a dense and fairly coarse white pubescence, the base sometimes with some blue-green stains. On decayed wood, mostly of conifers but also of broad-leaved trees. Eur, NAm.

Gill edge not gelatinised or separable. Cap 3-20 mm, convex to paraboloid, vinaceous buff to olivaceous buff, with drab disc, often showing a dull blue rim at margin; gills narrowly adnate, sometimes seceding to form a pseudocollarium, ventricose or with plane edge, L = 16-25, pale to dark grey; stem 40-80 x 0.5-2 mm, densely pubescent, whitish, pale brown to shiny dark brown, covered densely with white hairs, the base often with blue patches or rarely the whole stem entirely blue. Sp 6-10.5 x 4-5.5 µm, Qav = 1.5-1.7, dacryoid to sub-cylindrical, amyloid; cheilocystidia and caulocystidia simple clavate. On woody debris, especially from conifers, but also on wood from broadleaves trees such as Fagus, Populus and Betula; late summer to late autumn; occasional in temp.-suba.; DK (LC), FI (LC), FO, NO (LC), SE (LC). – BCat 784, B&K 3:318, FAD 50C, Rob 55, Ves 234, •.

amicta (Fr.) Quél.
Description: MG II-33, K196
Illustrations: BK3.318 - CO119B - DA362 - FI2.653 - JO172.1 - MY06.119 - RH350 - RO55



1. Spores globose to subglobose, 6-8 µm broad: Cheilocystidia cylindrical to subfusiform, smooth. On decaying wood and debris of broad-leaved trees. NAm.

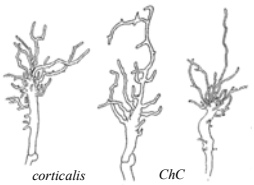
M. subcaerulea (Peck) Sacc.
Description: MG II-35, K204
Illustrations:

Section SUPINAE Konr. & Maubl.

1. Lamellar edge pinkish brown to flesh-colored, lamellar sides white. On moss-covered trunks of deciduous trees (Malus, Populus). Eur, NAf?

venustula Quél.
Description: MG II-44, K238

1. Lamellar edge concolorous with the sides or paler or whitish**. 2**



2. Cheilocystidia slender, 2.5-6(-8) µm wide. Basidiomata thus far known to occur only on the bark of a coniferous tree *(Thuja*) NAm.

c***orticalis*** AH Smith
Description: MG II-38

2. Cheilocystidia clavate, (6-)8-20 µm wide. Basidiomata occurring on the bark of various deciduous trees. **3**

3. Cheilocystidia covered with excrescences which are more or less branched, curved, tortuous or irregularly shaped, and usually fairly long. **4**
3. Cheilocystidia covered with unbranched, fairly short, cylindrical excrescences. **7**

4. Basidiomata with purplish violet, bluish grey or vinaceous brown colours. Growing on the bark of various deciduous trees. **5**
4. Basidiomata without purplish violet, bluish grey or vinaceous brown colours. Growing on the bark of coniferous trees **6**

5. Pileus at first purplish violet to vinaceous brown, then brownish. Terminal cells of the hyphae of the cortical layer of the stipe slender, (22-)32-80 µm long. On moss-covered bark of various living deciduous trees. Eur, NAm.

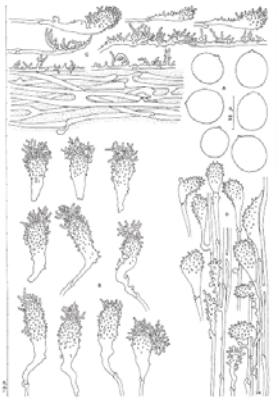
On broadleaved trees; frb in shades of reddish brown or pink. Cap 2-8 mm, hemispherical to bell-shaped, sulcate, pruinose when fresh, colour varies from brown vinaceous, through pinks to burgundy; gills adnate, with plane edge to ventricose, often with a decurrent tooth, L = 8-12, concolorous with cap or off white; stem 4-20 x 0.2-1 mm, concolorous with cap, but paler near the top. Sp 9-14 µm, Qav = 1-1.1 globose to subglobose, amyloid; cheilocystidia like in M. pseudocorticola, clavate with short broad diverticulae; caulocystidia more densely ornamented than the cheilocystidia, but terminal cell of caulocystidia up to 100 µm long. On the bark of broadleaved trees, often in association with mosses; autumn to winter; occasional in temp.-hemib., rare in southern bore.; DK (NT), FI (LC), NO (LC), SE (LC). – B&K 3:348, C&D 551, FAD 57E, M&J 32, Rob 663.

meliigena (Berk. & Cooke apud Cooke) Sacc.
Description: MG II-39, K245
Illustrations: BK3.348 - CO130B - RO663

5. Pileus pale or dark bluish grey, with age discoloring to paler or darker grey-brown. Terminal cells of the hyphae of the cortical layer of the stipe stubby, 18-32 µm long. On moss-covered bark of various living deciduous trees. Eur, NAm.

Frb blue or bluish grey. cap 2-8(-10) mm, hemispherical to bell-shaped, sulcate, pruinose when fresh, from mouse grey through bluish grey to dark blue or violet grey, browning with age; gills adnate with a decurrent tooth, broad, ventricose, L = 8-12, pale grey; stem 5-20 x 0.2-1 mm, profusely pruinose, greyish white or concolorous with the cap. Sp 9-14 µm, Qav = 1-1.1 globose to subglobose, amyloid; cheilocystidia clavate with short broad diverticulae (fig. 367G); caulocystidia more densely ornamented than the cheilocystidia and up to 35 µm from tip to septum, abundant. On bark of many species of broadleaved trees, often in association with mosses; autumn to winter; common in temp.-hemib. occasional in southern bore.; DK (LC), FI (LC), NO (LC), SE (LC). – B&K 3:356, FAD 57E1-2, M&J 32b, Rob 667, Ves 236, .

pseudocorticola Kühn.
Description: MG II-41, K243
Illustrations: BK3.356 - CE3.1007 - JO178.3 - RH354 - RO667



6. Pileus greyish ochraceous, brown at the centre. Hyphae of the stipitipellis smooth. Found growing mainly on the bark of *Cupressus sempervirens*:

cupressina Antonin & Maas G.
Illustrations: RO654

6. Pileus pale brown or yellowish brown. Hyphae of the stipitipellis diverticulate. Growing on the bark of *Juniperus communis*:

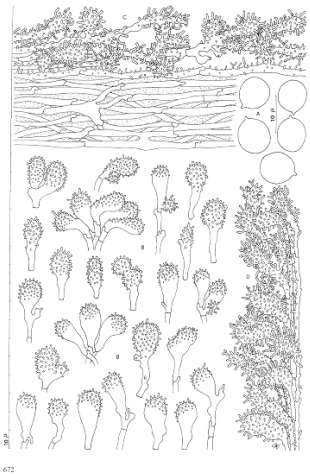
Scattered or in small groups on bark of living Juniperus communis. cap 2.5-8 mm, hemispherical to paraboloid, finally convex, sometimes with a small papilla, conspicuously sulcate, pruinose to flocculose, pale brown or yellowish brown to rather bright brownish yellow, often darker at the centre, paler to white at the margin; gills arcuate and broadly adnate with a decurrent tooth sometimes distinctly decurrent, L = (7-)10-13, pale yellowish grey or beige, edge white pruinose; stem 3-5 x 0.5 mm, slightly widened below the gills and at base, pruinose, beige to pale brown. Sp 9-12 x 8-10.5 µm, subglobose to globose, Qav = 1.0-1.3, amyloid; cheilocystidia clavate with terminal diverticulae in dense groups, tangled, forked and up to > 30 µm long (fig. 379E); caulocystidia with fewer and shorter diverticulae; pileipellis hyphae with structures, like small cheilocystidia, giving a tangled coralloid appearance. Late summer to autumn; rare or overlooked in temp.-hemib.; DK (NA, EJyl: Vandplasken, Glatved Strand, Lol: Møn, Høvblege), NO (DD, Vestf), SE. – Rob 654, 658, SMT 29(2):20, Svp 51:56, •.

juniperina Aronsen
Illustrations : RO658

7. Pileus hemispherical to plano-convex, dark brown, sepia brown, turning pale grey-brown with age. Hyphae of the pileipellis not forming coralloid masses. On moss-covered trunks of deciduous trees, more particularly *Ulmus*. Eur, NAm.

Frb greyish white with a darker centre, no mauve or purple tones; cap without pigmented pustules; gill edge not coloured. cap 2-5(-10) mm, hemispherical, bell-shaped to convex, sulcate, translucently striate, dark sepia at the centre, paler sepia outwards; gills ventricose or plane subhorizontal, adnate often with a decurrent tooth, L = 10-15(-18), grey brown with a paler edge becoming whiter with age; stem 6-20 x 0.5-1 mm, concolorous with the cap, pruinose. Sp 8-10 x 8-11 µm, globose, amyloid; cheilocystidia like fig. 367G, but the diverticulae less than 4 µm long, more like fig. 355G. On bark, often mossy, of broadleaved trees (Ulmus), possibly mostly in rich, calcareous sites; autumn to early winter; very rare or overlooked in temp.; DK (DD, EJyl: Mønsted), NO (NE), SE (LC). – FAD 57D, Rob 671.

supina(Fr.) Kummer
Description: MG II-43, K240
Illustrations : RO671



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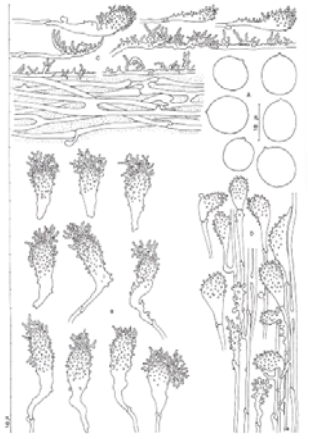
↓7. Pileus conical with small papilla, white. Hyphae of the pileipellis tending to form dense coralloid masses. Spain:

conicoalba Villarreal & Esteve-Raventos

Fig. 3. *Mycena conicoalba*, holotype. *A* Pileus, section of pileus and detail of basal patch of the stipe. *B* Spores. *C* Hyphae of the pileipellis. *D* Basidium. *E* Hyphae of the stipipellis. *F* Caulocystidia. *G* Cheilocystidia. *H* Hyphae of the basal patch of the stipe. Bar: 15 µm.

7. Pileus hemispherical to convex, greyish ochraceous. Hyphae of the cortical layer of the stipe smooth. Found growing mainly on the bark of *Cupressus sempervirens*:

cupressina Antonin & Maas G.
Illustrations: RO654



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Section FILIPEDES (Fr.) Quél.

1. Pileus pure white to somewhat yellowish, or cream to citrine or ochraceous, the center not brownish. Stipe not brownish, nor suffused with bluish or violaceous shades. **2**

1. Differently characterized. **6**

2. Stipe white or watery white. **3**

2. Stipe dingy citrine. Pileus dingy citrine to ochraceous **5**

3. Lamellae reaching the stipe numbering 8-15; odor absent or indistinctive:

white form of : ***mirata***(Peck) Sacc.
Description: MG II-72

3. Lamellae reaching the stipe more than 30, odour of iodoform on drying out or indistinctive or somewhat farinaceous **4**

4. Pileus greenish yellow, olive yellow, olive-grey, cream grey with yellow tint. Pleurocystidia present.

erianthi-ravennae Robich & Marchetti
Illustrations: RO153

4. Pileus yellowish white, greyish with yellow tint, ochraceous grey. Pleurocystidia absent: Found growing among moss and dead wood in a forest. France.
L = (25-)30-35; frb cream to yellowish white, looking similar to M. flavoalba. cap 4-25 mm, narrowly conical to paraboloid when young, becoming bell-shaped, then low convex, trans- lucently striate towards the margin, creamy white when young, later yellowish pale brown, white at margin, more brown at the centre with age; gills ventricose, narrowly adnate, white to cream sometimes with a pink tinge; stem 30-120 x 0.5-2.5 mm, watery white, becoming grey brown. Sp 7-10 x 3.5-5 µm, Qav = 1.7-2.3, dacryoid to ellipsoid, amyloid; cheilocystidia like in fig. 377B, with some stipitate ones. Solitary to fasciculate on litter including twigs but often among moss in forest habitats, conifer and broadleaved; late summer to late autumn. DE. – B&K 3:372.

xantholeuca Kühn.
Description: MG II-79, K314
Illustrations: BK3.372 - RO203

5. Hyphae of the pileipellis diverticulate. A vernal species, found growing on decayed stems of *Cephalaria mauretanica* in the montains of Algeria.

peyerimhoffii Maire.
Description: MG II-73, K313
Illustrations: RO181

5. Hyphae of the pileipellis smooth.

limonia Maas G.

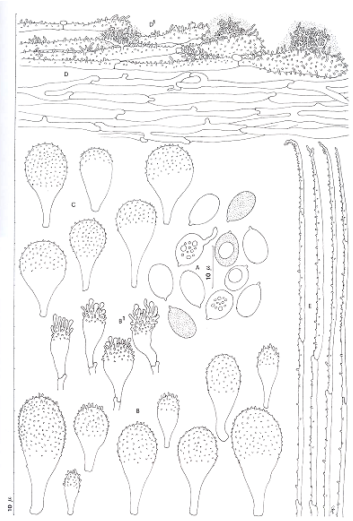
6. Stipe with long microscopic hairs 2-3,5 µm wide:

rebaudengi Robich
Illustrations: RO193

6. Stipe not with long hairs **7**

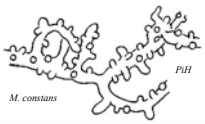
7. Stipe bluish, bluish grey, lilaceous grey, violaceous grey to steel blue, at least below and at least in the younger stages. **8**

7. Stipe as a rule differently colored but, if occasionally with some violaceous shade, the fungus is characterized either by (i) a pileus with rimose surface and (ii) numerous and conspicuously swollen terminal cells of the cortical hyphae in the apical part of the stipe [M. *filopes],* or by a strong, somewhat disagreeable or raphanoid odor *[M. flavescens]*. **12**



8. Pileus with a pronounced yellow to yellowish olive shade, at least at the margin. Odor of iodoform on drying out. Typically on wood of frondose trees and other non-coniferous debris:
Cheilocystidia balloon-shaped, with even ornamentation, mostly just 1-2 µm high, like fig. 355G. cap 10-25 mm, hemispherical, convex, bell-shaped to almost plane, sometimes umbonate, hygrophanous, translucently striate, from pale buff to sepia or with olivaceous tones, sometimes darker like date brown at the disc, the outer part being paler often with yellowish tones; gills ventricose or sinuate, adnate, L = 16-28, very pale straw to pale sulphur, often with a pinkish tinge; stem 25-70 x 1-2.5 mm, violaceous grey to vinaceous buff, becoming clay buff to drab, never purely white, attached to substrate by coarse, white, strigose fibres at the base, which sometimes extend half way up the stem. Sp 6.5-9 x (4.5-)5-6 µm, ellipsoid, Qav (1.3-) 1.4-1.5(-1.6), amyloid; pleurocystidia sparse, similar to the cheilocystidia. Often caespitose or in troops, on fallen wood, on mossy trees, in Ribes shrubberies etc., more rarely on leaf litter; from late summer, but predominantly in autumn to early winter; common in temp., rare in hemib.-suba., with southern distribution in FI; DK (LC), FI (DD), NO (VU), SE (NE). – B&K 3:319, Cou 118, Däh 376, Phil 81f, Rob 147, Svp 20:66, •.

arcangeliana Bres. apud Barsali.
Description: MG II-52
Illustrations: BK3.319 - CO118B - DA377 - DA376 - JO177.2 - KE198 - KE199 - MY06.75 - MY07.67 - PH071 - RO147



8. Differently characterized**.** Odor not of iodoform. **9**

9. Pileus bluish, bluish grey, violaceous grey. **10**

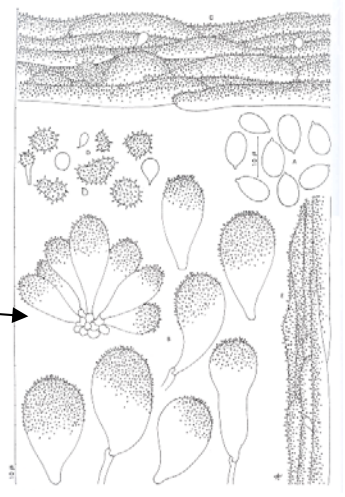
9. Pileus not with bluish colors **11**

10. Stipe 0.5-1 mm wide. Lamellae adnate to somewhat uncinate, at first white, turning bluish to pallid grey Among mosses or on vegetable debris under conifers (e.g. *Picea*), once found in a Mesobrometum. Eur, USA.:
Frb strikingly violet to blue grey or blackish violet. cap 5-15 mm, conical, convex or bell-shaped, violet to violet grey when young, fading to grey, paler at margin, may be darker at centre; gills adnate, slightly ventricose, L = 17-20(-22), grey violet to grey, with paler edge; stem 20-60 x 0.5-1 mm, pruinose especially at the top, becoming shiny, concolorous with cap or paler lilaceous to grey brown, at base white tomentose. Sp 8-10 x 3-5 µm, ellipsoid, amyloid; cheilocystidia clavate with even ornamentation, like cheilocystidia in figs 359A and 377B; pleurocystidia similar; stem surface hyphae evenly diverticulate. On litter among moss or ericaceous plants under conifers, in mountain Betula forests and in arc./alp. habitats; summer to autumn; occasional in hemib.-arc./alp.; FI (LC), NO (LC), SE (LC). – M&J 8, Rob 200, SMT 29(2):22.

urania (Fr.: Fr.) Quél.
Description: MG II-78, K310
Illustrations: RO200

10. Stipe 3-4 mm wide. Lamellae almost free, at first white, turning pink to dingy flesh- color: On moss-covered bark of Larix. Italy.

caesiolivida Bres.
Description: MG II-56



11. Pileus with a pronounced yellow to yellowish olive shade, at least at the margin. Hyphae of the pileipellis 1.8 - 4.5 µm wide:

arcangeliana Bres. apud Barsali.

↓**11.** Pileus white to whitish, greyish brown at the centre. Lamellae white. Spores 6.3 - 7.0 µm long:

pseudolaevigata Kalamees apud Vaasma & al.

11. Pileus cream white, grey-white, clear grey. Hyphae of the pileipellis 3.5 - 20 µm wide:

ticinensis Robich →
Illustrations: RO197

12. Stipe pale cinereous, concolorous with the pileus. Lamellae white. Odor of "hartshorn" (pungent and ammonia-like). Hyphae of the pileipellis covered with scattered, rounded warts. NAm.

constans (Peck) Sacc.

Description: MG II-61

12. Differently characterized. **13**

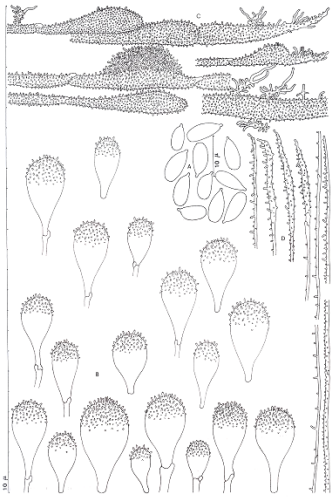
13. Lamellae reaching the stipe numbering 8-13 (-15). Basidia clamped, mostly 2-spored**.** Spores almost cylindrical. Stipipelis diverticulate without terminal cells. Usually on moss-covered trunks of deciduous trees, but also known to occur on fallen twigs of *Juniperus* and on the bark of *Picea*. Eur, NAm.

Gills with L < 16; cheilocystidia diverticulate, like fig. 377B, but with slightly longer diverticulae, which are more variable in length. cap up to 6 mm, hemispherical, later flattening, slightly sulcate, brownish grey or pale grey with whitish margin; gills ventricose, adnate, sometimes sinuate, L = 8-15, off white or with tinge of cap colour; stem 12-30 x < 0.5 mm, greyish brown, paler to white near the top, attached to the substrate by a distinct pad of fine fibrils; smell insignificant. Sp (7-)8-12(-13) x 4.5-7 µm, Qav = 1.6-2, dacryoid to subcylindrical, amyloid; basidia 2- or 1-spored. On small woody debris of conifers and broadleaved trees, in the litter layer; summer to late autumn; common in temp., occasional in hemib.-southern bore.; DK (LC), FI (DD), NO (LC), SE (LC). – FAD 57F (as filopes), 57H (as debilis).

mirata (Peck) Sacc.
Description: MG II-72, K282
Illustrations: bk3.350 - ro179

↓**13.** Lamellae reaching the stipe numbering 12-16. Basidia 4-spored.

favrei Maas G.
Illustrations: ro157



13. Lamellae reaching the stipe numbering 15-30. **14**

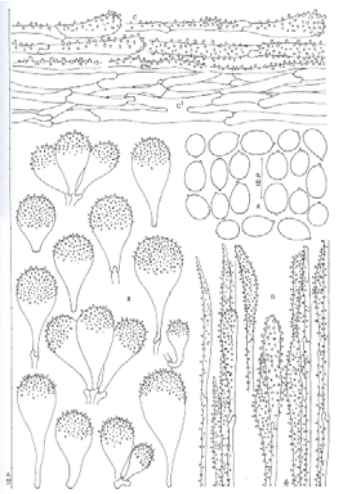
14. Spores broadly ellipsoid to suglobose **15**

14. Spores cylindrical or ellipsoid **16**

15. Pileus and stipe red brown or dark brown. ***pinus-rigidae*** Robich
Illustrations: ro185

15. Pileus clear grey-brown or cream grey. Stipe translucently grey.

graminicola Robich
Illustrations: ro170



15. Pileus blackish brown with a yellow to whitish margin.

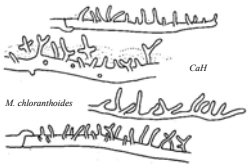
cicognanii Robich

16. Lamellar edge pale yellow, pale citrine to greenish yellow, at least in the younger stages, in some species fading whitish. **17**
16. Lamellar edge differently colored. **20**

17. Lamellae tending to turn pinkish or flesh-color with age. Odor of iodoform on drying out. Basidiomata typically growing on decayed woody substrates or on old thatched roofs:

arcangeliana Bres. apud Barsali.
Description: MG II-52

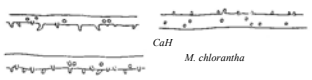
17. Differently characterized**.** Lamellae never turning pink. **18**



18. Hyphae of the cortical layer of the stipe for the greater part covered with slender, sometimes forked excrescences up to 10.5 µm long**.** Under cedar. USA.

chloranthoides Maas G.
Description: MG II-60

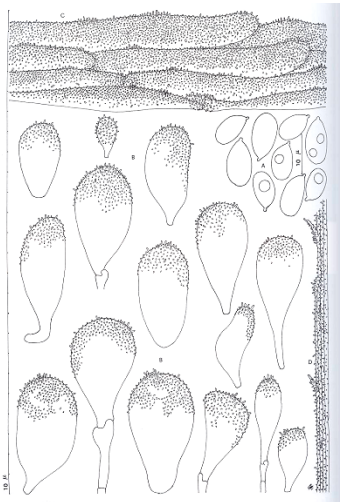
18. Hyphae of the cortical layer of the stipe covered with predominantly short excrescences not exceeding 3-4 um in length. **19**



19. Color of the pileus tending towards greenish or olive green. Odor indistinctive or chemical when fresh, of iodoform on drying out Growing among sparse and low vegetation of grasses (e.g. *Ammophila arenaria* and *Leymus arenarius*), *Carex*, and mosses on poor sandy soil in the costal dunes. Denmark, Great Britain, the Netherlands and France:

On grass in sand dunes, especially Ammophila arenaria, more rarely other grasses; smell of iodoform on drying. cap 6-25 mm, convex to hemispherical or bell-shaped, hygrophanous, translucently striate when wet, olivaceous green or olivaceous brown at the centre, paling to pale yellow at the margin; gills narrowly adnate with short decurrent tooth, ventricose, L = 18-30, grey with yellow or olivaceous tone, with paler or pale yellow to olivaceous buff edge; stem up to 50 x 1-2 mm, minutely pruinose at first, becoming shiny, but tomentose at the base, smoke grey to greyish brown with olivaceous tinge, paler near the top. Sp (8-)9-11.5 x 5-6.5(-7), Qav = 1.5-1.6, dacryoid, amyloid; cheilocystidia include some similar to fig. 355G, but with a longer pedicel, others have longer diverticulae (fig. 355F), with some heads branched. Autumn, but mostly late autumn to early winter; common in temp., very rare in hemib.; DK (LC), NO (NT), SE (LC). – C&D 559, Cou 127, OPN 9C, SMT 29(2):24, Svp 19:9

chlorantha (Fr.: Fr.) Kummer
Description: MG II-57, K271
Illustrations: co127b - ke200



19. Color of the pileus tending towards yellowish, brownish or greyish. Odor strong when cut or crushed, of potatoes or of earth, or raphanoid, not of iodoform on drying out. Occurring in mossy lawns, on moss-covered tree trunks, among vegetable debris under deciduous trees, on fallen needles in coniferous woods particularly *Picea*. Eur, USA:

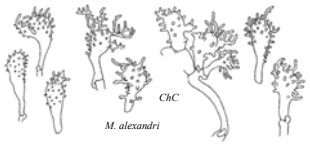
Cheilocystidia very evenly ornate, balloon-shaped with a short pedicel (fig. 355G); smell of earth, potato or radish, especially when crushed. cap 5-17 mm, conical, bell-shaped to pa-raboloid, vinaceous buff to dark buff or sepia, darker at the disc; gills adnate and ventricose, L = 14-22, white, tinted yellow or grey, often with pale yellow to lemon-coloured edge; stem 15-70 x 0.5-2 mm, often joined in clusters, shiny, vinaceous buff to snuff brown, paler above to almost white. Sp 8-12 x 4.5-6 µm, Qav = 1.7-2.0, ellipsoid to subcylindrical, amyloid; pleu-rocystidia similar to cheilocystidia; pileipellis and stipe surface hyphae ornamented with short diverticulae. On forest litter, often decaying Fagus leaves or cupules, or in grassland, in FI found in Corylus dominated forests on rich ground; late summer to late autumn; very common in temp., occasional in hemib., but rare in FI; DK (LC), FI (DD, V: Houtskari, Iniö), NO (LC), SE (LC). – B&K 3:335 (old), C&D 554, FAD 54E (as luteoalba var. sulphureo-marginata), M&J 29, Rob 167..

flavescens
Description: MG II-66, K274
Illustrations: bk3.335 - my07.67 - my06.170 - ph075 - ro167

20. Cheilocystidia mostly covered with unevenly spaced, coarse, often curved, simple to branched excrescences. **21**
20. All cheilocystidia or the majority covered with evenly spaced, cylindrical, narrow excrescences. **23**

21. Pileus russet to tawny, turning more ochraceous with age. Odor of iodoform on drying out: Occuring on fallen pine needles. NAm.

Frb brown, looking like a Galerina. cap (2-)4-15 mm, conical to hemispherical and bell-shaped, often with an umbo, smooth to sulcate, translucently striate, fulvous to pale orange brown, paler and sometimes with a cream tinge at margin, occasionally with a salmon pink hue; gills weakly ventricose, variously adnate, sometimes with a small decurrent tooth, L = 14–18(-20), concolorous with the cap or paler; stem 20-60 x 0.5-1.5 mm, concolorous with or slightly paler than the cap. Sp 7-10 x 4-6 µm, Qav = c. 1.8, ellipsoid, amyloid; basidia 4-spored; cheilocystidia clavate and variable, some with regular short diverticulae, others with irregular diverticulae and sometimes branched (fig. 373D); caulocystidia simple hyphal terminations with regular diverticulae like fig. 377B. Often among mosses or on litter of shrubby or dwarf trees, e.g. with Salix glauca, but also in moist Betula and conifer forest habitats; occasional, but locally common and probably overlooked as a Galerina, in bore.-arc./alp.; NO (LC), FI (DD), •. M. alexandri Singer (M. aphanes Aronsen & Gulden)

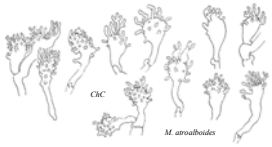


alexandri Sing.
Description: MG II-50

21. Pileus dark sepia brown, dark olive brown, blackish brown. Odor of the drying basidiome not of iodoform. **22**

22. Cheilocystidia clavate, with the apical part appreciably broader than the base. Odor, when fresh, mild or very slightly of radish. On fallen needles in coniferous woods or among Sphagnum. NAm.**:**

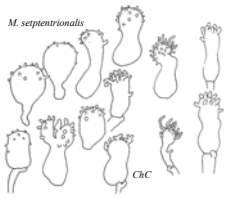
atroalboides (Peck) Sacc.
Description: MG II-53



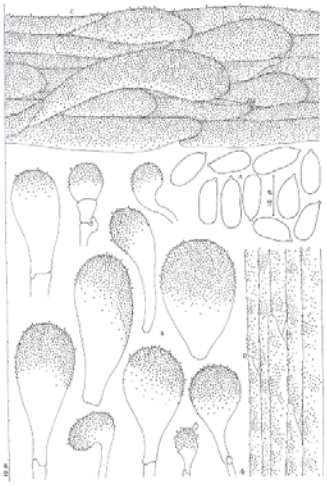
22. Several or most cheilocystidia saccate or shaped like an hourglass, with the apical part and the base equally broad. Odor, when fresh, pungent-aromatic, of *Pelargonium graveoiens.* On coniferous woods (*Picea*). Norway, Sweden, Denmark, USA.

Cheilocystidia spheropedunculate, clavate or saccate, some constricted in the middle (fig. 373G); smell in fresh frb pleasant aromatic-spicy, not of iodoform on drying out. cap 5-15(-20) mm, bell-shaped to convex, often with a small umbo, drab, sepia, cigar brown to fuscous black; gills ventricose, adnate with a decurrent tooth, L = 15-20(-25), drab, milky coffee, to whitish, edge paler; stem (25-)30-75 x 1-5 mm, pale vinaceous buff to hazel or sepia, darker towards the base. Sp 7-9 x 4-5(-5.5) µm, Qav = 1.7-1.9, ellipsoid, amyloid; pleurocystidia sparse, similar to cheilocystidia; stem surface hyphae sparsely diverticulate, caulocystidia with diverticulate slightly capitate apex. On conifer litter, especially leaf beds of Picea and Pinus; early autumn to early winter; occasional, but locally common in temp.-bore.; DK (LC), FI (LC), NO (LC), SE (LC). – SMT 29(2):23, Svp 6:101.

septentrionalis Maas G.
Description: MG II-76



23. Lamellae reaching the stipe numbering 15-24. **24**
23. Lamellae reaching the stipe numbering 25-30. **27**



24. Odor raphanoid**.** Hymenial elements clampless. Pileus dark sepia brown or grey-brown, fading to pale grey-brown Among moss and fallen needles of *Picea*. Between 400 and 1000m in the Jura, Switzerland.:

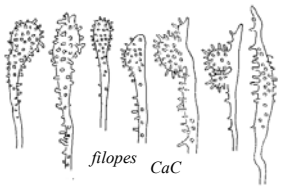
rapiolens Favre
Description: MG II-75
Illustration : ro189

24. Odor of iodoform on drying out. Hymenial elements clamped. **25**

25. Pileus with olivaceous and/or yellow (stramineous, sulphureous, citrine) shades. On decayed woof of fallen trees or branches, on moss-covered trunks of deciduous trees. on old, moss-overgrown thatched roofs, very rarely on wood of conifers (*Picea*, *Taxus*). Eur.:

arcangeliana Bres. apud Barsali.
Description: MG II-52, K297

25. Differently characterized. **26**

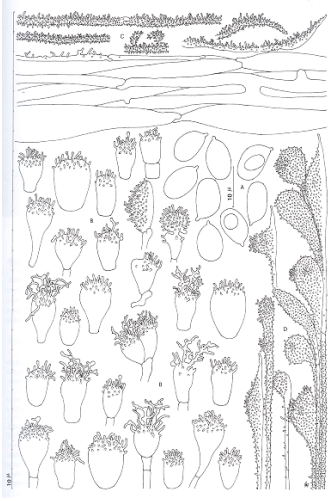


26. Pileus in young specimens often conspicuously pruinose, margin embracing the upper part of the stipe like a cuff; in older specimens fairly coarsely innate-fibrillose, giving the impression of the surface being rimose and imparting a silvery luster on drying out. Margin usually protruding beyond the lamellae. Lamellae as a rule not turning pinkish. Sessile cheilocystidia often more frequent than stipitate ones. Stipitate cheilocystidia up to 30 µm long. Terminal cells of the cortical layer of the stipe always present, numerous, and easy to find. Occurring on mossy lawn, under conifers as well as deciduous trees, on vegetable debris, decaying wood, not infrequently also on moss-covered trunks. Eur, USA.

L = (14-)17-20(-25); frb with shades of grey. cap 5-20 mm, conical to bell-shaped, becoming more plane, often with an umbo, pale buff to vinaceous buff with darker centre, hazel to pale umber, sometimes almost white towards the margin; gills ventricose to sinuate, some-times slightly arcuate, adnate with a decurrent tooth, white, often with a vinaceous or pink tone; stem 40-100(-150) x 0.5-2 mm, lightly pruinose, vinaceous buff to snuff brown, usually darker towards the base, paler to almost white at the top. Sp 8-10(-12) x 5-6.5 µm, ellipsoid, amyloid; cheilocystidia predominantly spheropedunculate (fig. 377B). On plant debris and litter, often in eutrophic sites, also along roads in disturbed sites with Urtica etc.; summer to autumn; very common in temp., common in hemib.-suba., also recorded from arc./alp.; DK (LC), FI (DD), FO, IS, NO (LC, incl. Svb), SE (LC). – Rob 161.


filopes

filopes (Bull.: Fr.) kummer
Description: MG II-63, K299
Illustrations: bk3.334 - co118a - ph074 - ro161



26. Pileus surface either not rimose or without apparent texture, without silvery luster. Margin of the pileus, although sometimes projecting beyong the lamellae in late stages, not embracing the stipe in very young specimens. Pileus and lamellae usually becoming tinged with pink. Stipitate cheilocystidia often more frequent than the sessile ones. Stipitate cheilocystidia often greatly varying in size and the bigger ones reaching more than 70 µm in length. Terminal cells of the cortical hyphae of the stipe absent or, if present, rare and mostly hard to find. Growing on mossy lawns, under both conifers (mostly *Picea*) and deciduous trees, on fallen twigs and other vegetable debris. Eur, USA.

Cheilocystidia mostly stipitate, up to 70 µm long; frb with pinkish hues. cap 5-25 mm, conical to bell-shaped, often with a slight umbo or papilla, sometimes sulcate, but often with a silky texture, clay buff to vinaceous buff, often with a pinkish tinge or even with a clay-pink centre; gills ventricose or sinuate, narrowly to broadly adnate, may be with surface ridges, L = (14-)17-23(-25), clay buff to pinkish; stem 25-100 x 1-2.5 mm, silky smooth, clay or vinaceous buff to pale pink, often more fawn below. Sp 8-11 x 4-6 µm, Qav = 1.7-2.2, dacryoid to ellipsoid, amyloid; cheilocystidia predominantly stipitate and voluminous, with diverticulae from 1-10 µm long (fig. 377A). Usually on conifer litter; very common in temp.-conifer-ous suba., occasional in mountain Betula forests and in arc./alp.; DK (LC), FI (LC), IS, NO (LC), SE (LC). – B&K 3:349, FAD 56F, M&J 30, R&H 359, Rob 173.

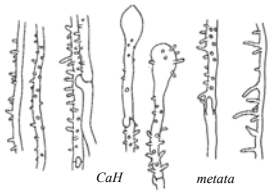
metata (Fr.) Kummer
Description: MG II-68, K289
Illus: bk3.349 - da365 - da364 - fi2.657 - jo177.1 - my07.66 - rh359 - ro173

27. Pileus with olivaceous and/or yellow shades. Typically growing on wood and other debris of frondose trees, also on old thatched roofs:

arcangeliana Bres. apud Barsali.
Description: MG II-52, K297

27. Pileus differently colored**.** Growing on fallen conifer needles: On needle beds under conifers. USA.

hudsoniana AH Smith
Description: MG II-67



albidoaquosipes Robich
dobraensis Robich & Hauskn.
eburneopileata Robich
fuscoaquosipes Robich
malafidensis Robich
parvistrobilicola Robich
phoenicis-canariensis Robich
pinastri Robich
rhododendri Robich
secessa Robich
tenuicorticola Robich
truncimuscicola Robich

Section PICTAE (A.H. Smith) Maas G.

Lamellae with their breadth much greater than their length. Stipe apically abruptly dilated**.** Hyphae of the pileipellis smooth:

Cap cylindrical with margin flaring slightly; gills shorter than broad. cap 2-6 mm, umbilicate, dark brown with darker radial lines, the margin often rusty brown; gills flat with a decurrent tooth, L = 20-22, cream to pale brown often with a fulvous brown edge, especially at their outer end; stem 15-35 x 0.2-1 mm, wider just below the gills to twice the diam., concolorous with the cap or slightly paler brown, base with whorl of yellowish brown, smooth, strigose hairs. Sp 6.5-8.5(-10) x 3.5-5.5 µm, Qav = 1.6-1.7(-1.9), amyloid; basidia 2-4 spored; cheilocystidia hard to see, being part of a chain of cells with the terminal cells in diverse shapes, diverticulate with diverticulae often densely coralloid; caulocystidia absent. Often solitary, on many substrates in woodland habitats, including woody debris and fallen, strongly decayed conifer or hardwood trunks, e.g. Alnus and Fagus; summer to autumn; rare in temp.-bore., apparently more common in FI, easily overlooked; DK (NT), FI (LC), NO (DD), SE (LC). – B&K 3:353, Lud 88.1, Sieniop 173, Svp 8:97, •.

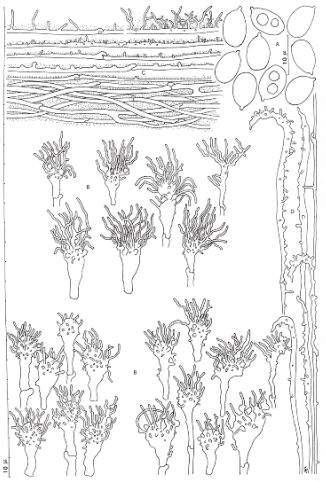
picta (Fr.: Fr.) Harmaja
Description: MG I-205
Illustrations: bk3.353

Section MYCENA

1. Spores up to 6 µm long and up to 3 µm broad: On decayed wood of deciduous trees, e.g. *Fagus*. North Eur.

Sp ≤ 6 µm long. cap rarely exceeding 25 mm, convex, bell-shaped to depressed with in-curved margin, with very tough and leathery surface, greasy lubricous, only separable as strips, not as a separate pellicle, removed tissue has tissue from below, blackish brown to sepia to grey brown; gills adnate to decurrent, L = 20-24, whitish to grey; stem 15-40(-100) x 1-3 mm, glabrous and shiny, grey, becoming darker from the base; smell spermatic or as young camembert cheese. Sp 3-6 x 2-3 µm, ellipsoid, Qav = 1.7-2.0, amyloid; cheilocystidia clavate with inflated or simple obtuse diverticulae (fig. 385C). Densely caespitose, clusters may be 40 cm across, on stumps and trunks from broadleaved trees mainly Fagus, but also with other broadleaved trees, e.g. Betula, Populus and Quercus; late autumn throughout win-ter to early spring; occasional, but locally common in temp., rare in hemib.-bore.; DK (LC), FI (VU), NO (NT), SE (LC). – GBW 3:452, M&J 41, R&H 360, Sienio 177, Ves 236.

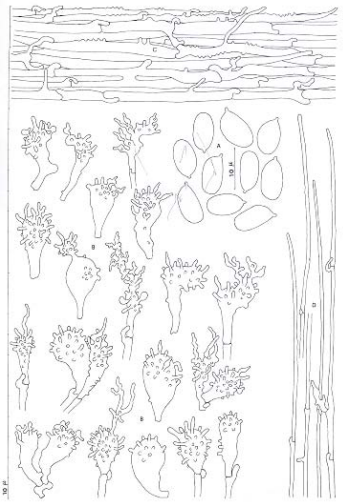
tintinnabulum (Fr.) Quél.
Description: MG II-108
Illustrations: GE151 - MY06.119 - RH360



1. Spores longer than 6 µm, broader than 3 µm. **2**
2. Stipe vinaceous brown, purplish brown, dark bluish grey, dark brown with a steel blue sheen, or with a violaceous tint to the whitish or greyish apex. **3**
2. Stipe without purplish, violaceous or bluish colors. **7**
3. Narrower hyphae of the pileipellis smooth or sparsely covered with usually small excrescences. **4**
3. Narrower hyphae of the pileipellis diverticulate, excrescences forming dense masses. Odor strong, of meal or rancid**.** Taste disagreeable:

Stem floccose-pruinose, silvery grey to bicoloured, paler above and yellow brown to orange brown below; smell rancid-aromatic, farinaceous or of cucumber, especially when crushed. cap 10-35(-40) mm, conical, becoming bell-shaped, sometimes with an acute papilla or broad umbo, with a crenulate rim exceeding the gills, may be radially rugulose or fibrillose, viscid when wet, from pale buff through hazel to sepia; gills ventricose, adnexed to adnate with a decurrent tooth, L = (18-)20-25(-28), white at first, becoming greyish sometimes with a pinkish or vinaceous tinge; stem 30-110 x 1.5-4(-6) mm, white floccose when young with a longitudinally grooved appearance, becoming bicoloured, the lower part of the stem developing a chrome yellow to date colour, the base very dark. Sp 8-10 x 5.5-7.5 µm, Qav = 1.3-1.6; cheilocystidia clavate and very varied, with irregular broad or narrow diverticulae (fig. 385B) some like those in fig. 383B. In fascicles, typically associated with Quercus, more rarely on Fagus; autumn to early winter; common in temp.-hemib., rare in the eastern parts; DK (LC), FI (LC), NO (LC), SE (LC). – B&K 3:342, FAD 55E, GBW 3:449, M&J 15, Ves 233, •.

inclinata (Fr.) Quél.
Description: MG II-98
Illustrations: BK3.342 - CE2.557 - CE3.1003 - CO115D - DA378 - FI1.107 - JO176.2 - KE198 - MY06.171 - MY14.36P - PH072 - RH359 - RO511



4. Odor absent, indistinctive, or slightly spermatic. **5**
5. Lamellae 30-40 reaching the stipe. Cheilocystidia forming a continuous sterile band: On decayed wood of *Picea* trunks. Switzerland.

atrochalybaea Huijsm.
Description: MG II-86
Illustrations: RO489

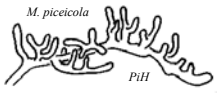
5. Lamellae up to 25 reaching the stipe. Cheilocystidia forming a discontinuous sterile band. On decayed wood of both coniferous and deciduous trees. Eur, NAf, USA:

Smell not nitrous; cap and gills may be spotted red; cheilocystidia variable, but clavate with irregular diverticulae (fig. 383E), not smooth. cap 10-45 mm, obtusely conical to bell-shaped, or convex, various shades of brown, from vinaceous buff to dark sepia, usually darker at the centre, frequently developing brown-vinaceous to dull red spots, but not always evident in fresh fruitings, hygrophanous, sulcate, translucently striate; gills ventricose, adnate, L = 18-25, greyish white; stem 25-85(-100) x 1-4 mm, quite tough, withstands twisting, grey brown to pale sepia below, paler above to almost white. Sp 7-9 x 4.5-6 µm, Qav = 1.4-1.7; cheilocystidia clavate and mostly distorted, with many coarse diverticulae (fig. 383E), these are discontinuous, with tracts of basidia scattered along the gill edge (this character helps separate this species from dark M. galericulata, which has similar cheilocystidia but a sterile gill edge). Fasciculate on Quercus trunks and stumps in the south and on Picea trunks further north; autumn; occasional in temp.-hemib., occasional in bore., but rarer in northern part; DK (LC), FI (LC), NO (LC), SE (LC). – GBW 3:450, M&J 15, Rob 519.

maculata P. Karst
Description: MG II-99
Illustrations: bk3.347 - co115e - my07.11 - ph073 - ro519

6. Spores up to 5 µm broad. Stipe fragile. Growing under spruce. USA:

piceicola AH Smith
Description: MG II-104



6. Spores 5.8-6.3 µm broad**.** Stipe cartilaginous: Among fallen leaves in hardwood forest. USA.

umbrinovinosa Maas G.
Description: MG II-110

7. Pileus white, whitish, very pale grey-brown, very pale ochraceous yellow, or suffused with a pink shade. **8**

7. Pileus more deeply colored, grey-brown, yellowish grey-brown, incarnate grey-brown, reddish brown, sepia brown or almost black. **13**

8. Odor (when bruised or cut) farinaceous, rancid or disagreeable, **9**

8. Odor (when bruised or cut) agreeable, fruity or indistinctive. **11**

9. Basidiomata growing on fallen leaves (of *Fagus* in Europe, of *Quercus* in North America): Among fallen leaves and firmly attached to these by a dense growth of fibils. Occuring on fallen Fagus leaves in Europe, apparently on Quercus leaves in the USA.

On leaves of Fagus sylvatica; stem tough; cheilocystidia similar to fig. 367E; sp Q > 2. cap 10-25 mm, conical to bell-shaped, becoming low convex, plicate, grey brown to brown; gills adnate, often with a small decurrent tooth, ventricose, L = 20-30, white to grey brown; stem 30-80 x 1-3 mm, yellowish grey to shades of brown, very tough. Sp 8-11 x 3.5-4.5 µm, Qav = 2.3-2.5, cylindrical, amyloid; cheilocystidia with irregular, broad diverticulae. Late autumn; rare or overlooked in temp.-hemib.; DK (DD), NO (NT), SE (NE). – FAD 56E, SMT 29(2):25.

fagetorum (Fr.) Gillet
Description: MG II-88
Illustrations: gw064 - ro493

9. Basidiomata growing on wood. **10**

10. Base of the stipe orange-brown: white form of ***inclinata*** (Fr.) Quél.
Description: MG II-98

10. Base of the stipe whitish: ***galericulata var. albida***
Description: MG II-94
Illustrations: ro508

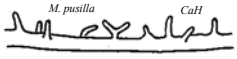
11. Lamellae 4-13 mm broad**.** The type collected on partly charred stumps of *Fagus*. Eur.

romagnesiana Maas G
Description: MG II-107

11. Lamellae c. 3 mm broad or less. **12**

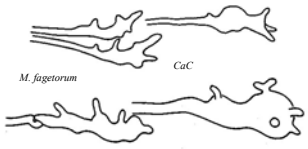
12. Basidiomata growing among moss and fallen needles under Douglas fir. Hyphae of the cortical layer of the stipe with no apparent terminal cells: Among moss and fallen needles under Douglas fir. USA.

pusilla AH Smith.
Description: MG II-106



12. Basidiomata growing among fallen leaves (of *Fagus* in Europe, of *Quercus* in North America). Hyphae of the cortical layer of the stipe apically with terminal cells:

fagetorum (Fr.) Gillet
Description: MG II-88
Illustrations: gw064 - ro493

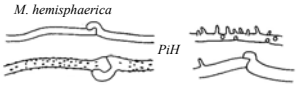


13. Narrower hyphae of the pileipellis smooth or very sparsely diverticulate. **14**

13. Narrower hyphae of the pileipellis diverticulate, excrescences usually forming dense masses. **16**

14. Odor strong, farinaceous or rancid: On decaying wood of old stumps and fallen branches of deciduous trees. Eur, Algeria, NAm.. .

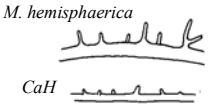
inclinata (Fr.) Quél.
Description: MG II-98
Illustrations: bk3.342 - ce2.557 - ce3.1003 - co115d - da378 - fi1.107 - jo176.2 - ke198 - my06.171 - my14.36p - ph072 - rh359 - ro511



14. Odor none, indistinctive or somewhat spermatic**. 15**

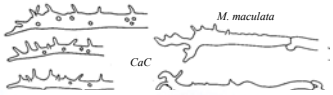
15. Cheilocystidia forming a continuous sterile band**.** Hyphae of the cortical layer of the stipe lacking terminal cells: hyphes de l'epicutis incrustées

hemisphaerica Peck
Description: MG II-95



15. Cheilocystidia forming a discontinuous sterile band**.** Hyphae of the cortical layer of the stipe with terminal cells On decayed wood of both coniferous and deciduous trees. Eur, NAf, USA.: .

maculata P. Karst.
Description: MG II-99
Illustrations: bk3.347 - co115e - my07.11 - ph073 - ro519

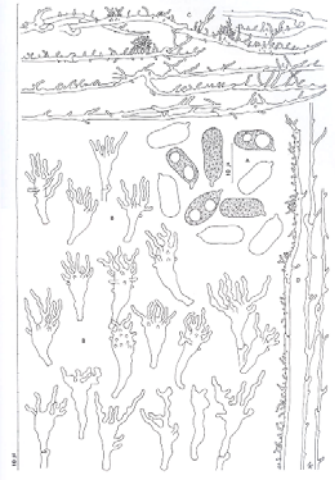


16. Spores up to 5 µm broad. **17**

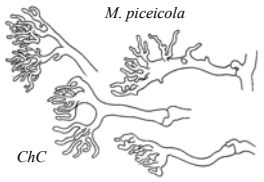
16. Spores 6 µm broad or more. **20**

17. Vernal species. Stipe narrowly fistulose: . Growing on coniferous debris such as wood, bark, needles and cones of Picea, Abies and Pinus. A vernal species known from submontane and montane regions of France and Swtzerland..

flos-nivium Kuhn
Description: MG II-89



17. Autumnal species. Stipe fairly widely hollow. **18**



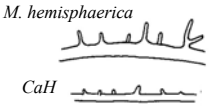
18. Stipe fragile. Cheilocystidia rather more cylindrical: Growing under spruce. USA..

piceicola AH Smith.
Description: MG II-104

18. Stipe cartilaginous, tenacious. Cheilocystidia clavate. **19**

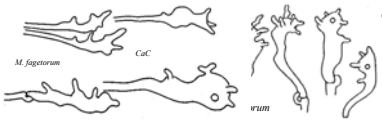
19. Growing on wood**.** Hyphae of the cortical layer of the stipe with no apparent terminal cells:

hemisphaerica Peck
Description: MG II-95



19. Growing among fallen leaves (of *Fagus* in Europe, of *Quercus in* North America). Hyphae of the cortical layer of the stipe apically with terminal cells:

fagetorum
Description: MG II-88



20. Basidiomata typically growing on peat, in burnt heaths, among Ericaceae, Sphagnum bogs, Molinia tussocks, among Empetrum and vaccinium, on boggy ground under conifers (Picea, Pinus). Eur, NAm.

Cap up to 40 mm; L rarely < 20; stem tough, can be twisted through 180°. Cap 10-35 mm, at first paraboloid to conical, spreading to shallowly convex, often umbonate, sometimes radially wrinkled, grey brown or pale cigar brown to sepia, date brown or fuscous black; gills ventricose-adnate, interveining obvious by their open nature, L = 17-28(-30), vinaceous buff to pale smoke grey or whitish, sometimes tinted pink; stem 20-200 x 2-4 mm including radicating part, hazel to date brown, paler at the top, radicating quite deep in moss or soil to buried roots. Sp 8-16 x 6-9 µm, varying over a wide range, Qav = 1.3-2.0, dacryoid or almost cylindrical; basidia 2- or 4-spored, but do occur mixed; cheilocystidia irregularly clavate, sometimes branched and ornamented with uneven diverticulae (fig. 377C). Rooting in soil or Sphagnum, often in heathland and sometimes on burnt sites; summer to late autumn, occasional, but locally common in temp.-arc./alp.; DK (LC), FI (LC), NO (LC), SE (LC). – FRIC 7: 51b, M&J 8, R&H 358, Rob 523.

megaspora Kauff. apud Kauff. & Smith
Description: MG II-101
Illustrations: ph072 - rh358 - ro523

20. Basidiomata growing on decayed wood. **21**

21. Pileus blackish when young. Spores 6 um broad at the most On wood of deciduous and coniferous trees. USA, Greenland.

hemisphaerica Peck
Description: MG II-95

21. Spores brader than 6µm **22**

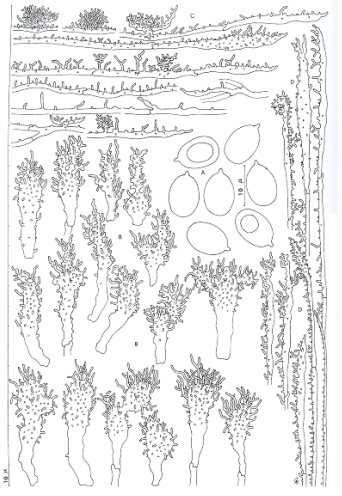
22. Pileus not umbonate, dry. Lamellae ca 1mm broad. Stipe not rooting, attached to *Juniperus* needles:

Sp amyloid; on needle litter or small twigs of Juniperus communis. cap 6-12(-21) mm, obtusely conical to hemispherical, hygrophanous, translucently striate and shallowly sulcate, straw to yellow, with greenish tints, to clear yellow or olivaceous with yellow at the margin; gills narrowly adnate to emarginate, ventricose, L = 16-19, whitish; stem 40-60 x 1-1.5 mm, lightly pruinose especially at the top, grey to brownish grey. Sp 7-11 x 6-8 µm, Qav = 1.4, dacryoid to ellipsoid, amyloid; cheilocystidia clavate with short broad diverticulae of irregular length and spacing, some longer and may be curved or forked (fig. 373A) or like cheilocystidia in fig. 359A; caulocystidia simple terminations of the diverticulate stem surface hyphae; basidia 2-spored. Solitary or gregarious; late autumn; rare in temp.; NO (LC).

citrinovirens Lange

22. Pileus more or less pronouncly umbonate, becoming lubricious when wet. Lamellae up to 8mm broad. Stipe rooting in decaying wood. Pileus usually some shade of yellowish grey-brown even when young. Spores broader than 6 µm At the base of old stumps, on fallen branches and generally on decaying wood of both deciduous and coniferous trees (Picea, Pinus). Eur, NAm.

Cap with greyish cream to grey brown colours, rarely white, darker when young; cheilocystidia rarely with any branching. Cap 10-45 mm, conical-hemispherical to bell-shaped, often umbonate, sometimes gibbous; gills ventricose emarginate, L = 18-40, off white to grey brown, often pinkish when old; stem 30-200 x 1-6 mm, dark sepia when young becoming pale vinaceous buff to pale greyish cream, tough, can be twisted through 360° and recover, sometimes radicating to buried wood. Sp 9-12 x 6.5-9 µm, Qav = 1.2-1.7, dacryoid, amyloid; basidia 2-spored (early season) or 4-spored (late season); cheilocystidia clavate with irregular short diverticulae (fig. 385E). On stumps, large branches, fallen trunks of broad-leaved trees in most habitats where these occur; late spring to early winter; very common in temp.-bore.; DK (LC), FI (LC), FO, IS, NO (LC), SE (LC). – B&K 3:338, FAD 56C, GBW 3:447, Rob 501-502, Ves 235, •.



galericulata (Scop.: Fr.) SF Gray
Description: MG II-90.
Illustrations: bk3.338 - ce2.558 - co115b - da380 - fi1.106 - jo175.1 - ke196 - ph070 - rh360 - ro501 - ro508

Section LUCULENTAE Maas G.

1. Pleurocystidia smooth :

LUCULENTAE *subsect.* **ROSELLAE**

Cheilocystidia clavate to fusiform covered with excrescences or with a few smooth ones intermixed: Growing strictly in coniferous woods (*Picea*, *Pinus*). Eur, NAm.

Gills pale pink with a red edge; cheilocystidia clavate and often diverticulate (fig. 359F); pleurocystidia coloured, visible on the gill faces with a lens. Cap 5-15 mm, paraboloid to hemispherical, slightly glutinous when wet, peach, deep salmon to coral red with darker coral lines when moist, may be hazel to blood red at the disc, paling with age; gills adnate, ventricose becoming plane, L = 15-20; stem 20-50 x 0.5-2 mm, pale pink to cinnamon. Sp (6-)7-9(-10) x 4-5.5 µm, Qav = (1.5-)1.7-1.8, dacryoid, amyloid. Typically on leaf litter in herb rich, moist Picea forests or plantations, but also in poor, Vaccinium-Picea forests, often under Pinus, also on cones, small twigs, etc.; autumn; common in hemib.-bore., rare in temp. (DK); DK (DD), FI (LC), NO (LC), SE (LC). – B&K 3:362, FAD 54F, GBW 3:443, M&J 5b, Rob 481.

rosella (Fr.) Kummer

Description: MG II-121

Illustrations: bk3.362 - ce3.1006 - co130e - da372 - fi1.101 - gw069 - ke202 - my06.118 - rh355 - ro481

1. Pleurocystidia apically covered with usually simple, cylindrical excrescences **2**

LUCULENTAE *subsect.* **ELEGANTES**

2. Pileus dark, with brownish, fuscous, or olivaceous shades, only the young margin being bright orange. Nearly the whole basidiome turning brownish olive on drying: Generally associated with conifers (*Picea* and *Pinus*, also *Juniperus*), exceptionally found in deciduous woods (*Carpinus*, *Fagus*, Quercus). Eur, NAf, USA..

Frb in various shades of brown and orange; cap 8-22 mm; sp amyloid. Cap obtusely conical to convex, slightly sulcate and hygrophanous, dark clay buff to grey or olivaceous brown, often with a yellow to rich golden margin; gills adnate, may have decurrent tooth, ventri-cose, L = 16-25, pale greyish yellow to beige with a distinctly orange edge; stem 35-80 x 1-2 mm, grey brown to orange with orange coarse and fine fibrils at the base attached to the substrate. Sp 7-10.5 x 4-7 µm, Qav = 1.5-2.1, cylindrical; cheilocystidia variable, but many evenly ornate (fig. 359A); caulocystidia cylindrical or clavate, often diverticulate. On litter in eutrophic coniferous forests; summer to late autumn; common in hemib.-bore, occasional in temp.; DK (LC), FI (LC), FO, NO (LC), SE (LC). – B&K 3:320, FAD 54G (as elegans), GBW 3:441, M&J 6, Rob 473, •.

aurantiomarginata (Fr.) Quél

Description: MG II-116

Illustrations: bk3.320 - ce2.564 - co129a - da373 - fi1.100 - gw068 - ro473

2. Pileus entirely red, orange, or yellow, without brownish shades. Basidiome retaining its colours on drying: On fallen needles of coniferous trees (usually pine but also hemlock). NAm, Eur.

strobilinoides Peck

Description: MG II-119

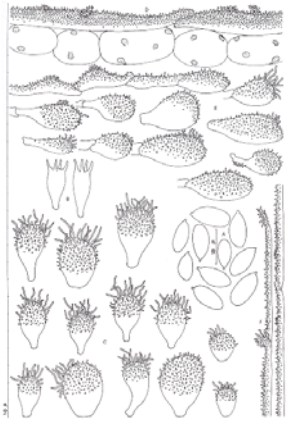
Illustration: ro477

Section PTERIGENAE (Maas G.) Maas G.

Growing on the decaying rachis of the fronds of diverse ferns. Eur, NAm

Cap narrowly paraboloid, up to 5 mm; on decaying fern fronds. Cap pale salmon to pale pink, at margin sometimes darker pink; gills arcuate or with plane edge, broadly adnate with a decurrent tooth, L = 4-10, white to pale salmon, with entirely pink edge; stem 5-40 x 0.1-0.3 mm, pale salmon to apricot, often more strongly coloured towards the base. Sp 8-11.5 x 4-5 µm, Qav = 2-2.2, ellipsoid to subcylindrical (fig. 359G), amyloid; cheilocystidia spheropedunculate and diverticulate, very variable in size and with some diverticulae extending well beyond the others; hyphae of the surface layer of the cap and stem with many short, even diverticulae. In moist forests or Salix and Alnus carrs with a rich fern flora; autumn to early winter; common in temp.-bore., very rare in arc./alp.; DK (LC), FI (LC), NO (LC), SE (LC). – B&K 3:357, C&D 561 (pale form), FAD 54H, GBW 3:457, R&H 355, •.

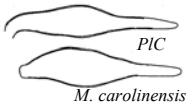
pterigena (Fr.: Fr.) Kummer
Description: MG II-124
Illustrations : bk3.357 - co121e - rh355 - ro567



Section CAROLINENSES Maas G.

Pleurocystidia lageniform, smooth: On dead twigs of *Rhododendron* and dead stems of *Leicothoe catesbaei*. USA

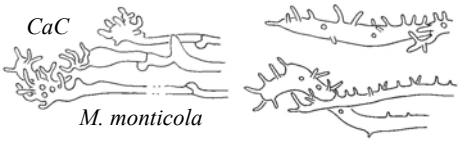
carolinensis Smith & Hesler
Description: MG II-128

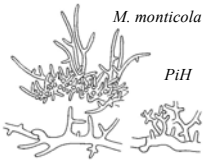


Section MONTICOLA Sing. ex Maas G.

Pileus flame red to pinkish red**.** Lamellae pale flesh-colored pink. Stipe pink. Hyphae of the pileipellis covered with long, branched excrescences. Cheilocystidia covered with excrescences. Terminal cells of the hyphae of the cortical layer of the stipe readily visible, diverticulate. On fallen pine needles. USA.

monticola AH Smith.
Description: MG II-130





Section POLYADELPHIA Sing. ex Maas G.

1. Cheilocystidia covered with thin excrescences **2**

1. Cheilocystidia smooth **19**

2. Basidiomata with pink, vinaceous, purplish or violaceous tints. **3**

2. Basidiomata without pink, vinaceous, purplish or violaceous tints. **9**

3. Clamps present. **4**

3. Clamps absent. **6**

4. Cheilocystidia somewhat irregularly and asymmetrically shaped, frequently sprouting globose, diverticulate proliferation. Spores 8-9 x 4-5 µm . Hyphae of the basal disc clamped, with colorless cell-walls. Pileus greyish brown to vinaceous buff or pale pink. On decaying leaf sheaths of riparian plants (*Juncus*, *Carex*). Eur, Canada.

Caulocystidia simple diverticulate, hyphal terminations without inflated ends, similar to fig. 359I. Cap 2-7 mm, convex to bell-shaped, sometimes with a flared margin, vinaceous buff, pale pink or greyish sepia brown, shallowly sulcate; gills adnate to subdecurrent, arcuate, L = 7-9, buff to pale pink or whitish; stem 5-13 x 0.2-0.5 mm, flexuous, lightly pruinose, then glabrescent, vinaceous buff, may be darker below, the base slightly broadened into a pad with short coarse fibrils penetrating the substrate. Sp 7-9(-10) x 4-5 µm, Qav = c. 1.7, dacryoid to ellipsoid, amyloid; basidia 4-spored; cheilocystidia variable, similar to figs 355F and 359F; stem surface hyphae diverticulate with diverticulae up to at least 7µm long. In wet habitats, on Juncus, Carex, Deschampsia, etc.; autumn; very rare or overlooked in temp.-bore.; NO, SE.

juncicola (Fr.) Gillet
Description: MG II-143

4. Cheilocystidia regularly and symmetrically shaped, without globose proliferation. **5**

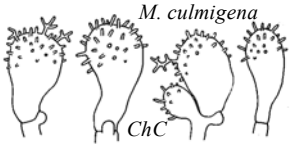
5. Pileus greyish white, pinkish colour only present at the base of the stipe, cheilocystidia regularly shaped. Found on Pinus litter and twigs of Quercus:

dasypus Mass G & Laessoe

5. Pinkish colour only present in the lamellae, cheilocystidia regularly shaped. Growing on fallen, decaying leaves of Quercus suber:

bertaultiana Moreno & Heykoop

5. Purplish tinge or grayish vinaceous present on the pileus, the lamellae and the stipe. Pileus paler to whitish at the margin. Hyphae of the basal disc clampless, with brown cell-walls: Spores 9-11 x 5-6 µm.On decaying sedge leaves and culms. USA



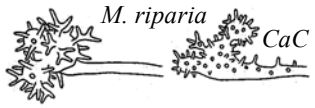
culmigena Maas G.
Description: MG II-138

5. On leaves of Salix in boreal-subalpine sites.

Cap 1-3 mm, paraboloid to hemispherical, often with a flattened centre, translucently striate, sulcate, pinkish apricot to brownish pink, often darkest at the centre; gills ventricose, narrowly adnate, L = 5-10, pinkish white; stem up to 12 x 0.3 mm, with a somewhat bulbous base, pruinose, glabrescent except at the base, hyaline-white, insititious. Sp 7-10 x 4-5 µm, Qav = 1.9-2.1, subcylindrical, amyloid; cheilocystidia clavate with fairly regular and quite abundant ornamentation, with mostly short diverticulae, but some up to 5 µm long, up to 30 x 16 µm, similar to figs 355G, 377B, 365F. On leaf litter of Salix; late summer to autumn; rare or overlooked in bore.-suba.; NO.

exilis Aronsen & Gulden

6. Basidia 4-spored**.** Caulocystidia at the base of the stipe covered with fairly long, usually curved excrescences: Growing on *Carex*, *Scirpus* etc .

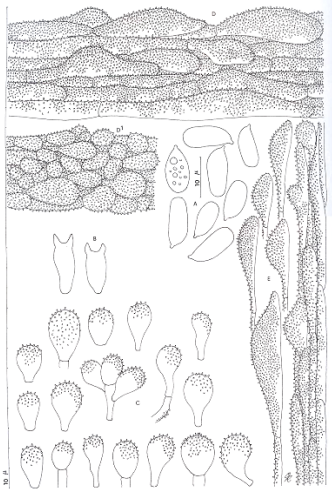


Caulocystidia diverticulate with clavate and subglobose ends (fig. 367F). Cap 2-4 mm, convex to low convex, sometimes paraboloid, somewhat sulcate, pink to brownish pink; gills slightly ventricose, broadly adnate to distinctly decurrent, colour reflecting that of the cap, L = to 10; stem 3-5 x 0.2-0.3 mm, pruinose, may be broadened at the base, with pinkish hues, white, finely pubescent. Sp 8-10 x 4.5-5.5 µm, Qav = c. 2, ellipsoid to subcylindrical, amyloid; basidia 4-spored; cheilocystidia very variable, mostly clavate, with irregularly shaped diverticulae, unevenly spaced up to 7 µm long; caulocystidia abundant at the stem base with distinct globose ends as well as clavate ones, with dense diverticulae up to 4.5 µm long. On decaying riparian plants, Carex, Scirpus, etc.; autumn; very rare in temp.-hemib.; DK, NO, SE. – C&D 571, MMB 34(1).

riparia Maas G.
Description: MG II-149

6. Basidia 2-spored**. 8**

8. Caulocystidia at the base of the stipe covered with short, straight excrescences Spores cylindrical. Growing on fallen, decaying leaves of *Quercus*

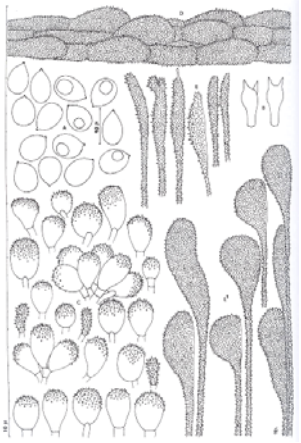


Cap or entire frb pink. Cap up to 3 mm, paraboloid to convex or even flat, under the lens textured and like parachute panels, from pale pink to strikingly pale rose; gills adnate and ventricose, rarely decurrent and arcuate, L = (4-)6-9(-11), concolorous with cap or slightly paler, may be absent in minute frb; stem up to 25 x 0.1-0.2 mm, silky smooth, concolorous with cap or paler, apparently insititious (arising cleanly from the leaf), but seen at x 50 a small radial pad of fine fibrils is often present. Sp 8-11 x 4-5 µm, Qav = 1.9-2.2, subcylindrical, amyloid; cheilocystidia like fig. 377B or even almost spherical (fig. 365F); pileipellis hyphae densely verrucose with short even diverticulae. On leaves of e.g. Quercus and Betula, in temperate woods, rarely boreal Betula woods; autumn to early winter; occasional in temp.-southern bore.; DK (LC), FI (DD), NO (LC), SE (LC). – Cet 2748.

smithiana Kuhner
Description: MG II-151
Illustration : ro561

8. Caulocystidia covered with short excrescences. Spores broadly pip-shaped to subglobose. Growing on leaves of *Quercus ilex*:

catalaunica Robich
Illustration : ro547



9. Pileus dingy yellowish brown. Basal disc strigose-hairy, pale orange-yellow: On the dead leaves of *Gaultheria shallon*. USA.

gaultheria AH Smith.
Description: MG II-140

9. Not these characters. **10**
10. Spores pip-shaped to almost cylindrical. **11**
10. Spores broadly pip-shaped to subglobose **18**
11. Base of the stipe attached to the substratum by a whorl of radiating mycelial hyphae or strands of hyphae. **12**
11. Stipe insititious (base of the stipe not or not visibly attached to the substratum by a whorl of radiating hyphae). **15**

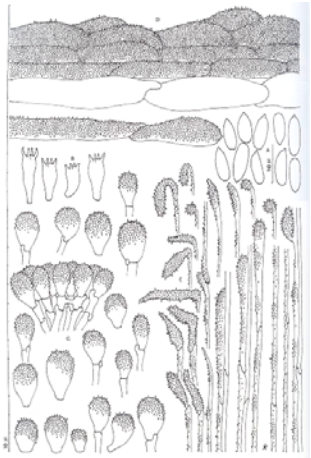
12. Mycelial hyphae radiating from the base of the stipe brown to almost black. **13**
12. Mycelial hyphae radiating from the base of the stipe whitish. **14**

M. albiceps

13. Lamellae decurrent with a tooth. Stipe black: Among fallen leaves in mixed woods. USA.

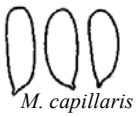
albiceps (Peck) Gilliam
Description: MG II-135

13. Lamellae not decurrent with a tooth. Stipe dark grey-brown in very young specimens but soon pallescent, eventually whitish: On fallen, decaying leaves of *Fagus*. Eur, USA.
On leaves of Fagus; gills narrowly adnate. Cap 1-2.5(-5) mm, hemispherical, plicate, translucently striate, white to drab, darker colours when present towards the centre; gills narrowly adnate, sometimes to a pseudocollarium, slightly ventricose, L = 6-10, white; stem up to 25 x 0.25 mm, white to brownish grey, attachment to the leaf variable, etiolating among the leaves, from insititious, to attachment with a very small pad of radially arranged pale strigose fibres or fine brown ones, all possible on the same leaf. Sp 8-10 x (3.5-)4-5 µm, Qav = c. 2.1, cylindrical, amyloid; basidia usually 4-spored, but some 2-spored yielding spores up to 13 µm long; cheilocystidia clavate and diverticulate with irregular diverticulae up to 6 µm long (fig. 373B), mixed with others with even, short diverticulae, like in fig. 377B, caulocystidia just simple hyphal terminations with diverticulae. In quantity on leaves, often with many on each leaf; autumn to winter; very common in temp., probably common where Fagus occurs in hemib.; DK (LC), FI (DD), NO (LC), SE (LC). – B&K 3:323, FAD 56B, Knu 127, R&H 354, Rob 545, •.



capillaris (Schum.: Fr.) Kummer
Description: MG II-136
Illustrations : bk3.323 - rh354 - ro545

14. Stipe pale yellowish brownish. Spores 4.7-5.2 µm broad (-6.5 µm according to Redhead, 1984b: 439). Growing densely cespitose on fern rhizomes.
Fasciculate on fern rhizomes such as Athyrium filix-femina and Matteuccia struthiopteris. Cap 3-7 mm, paraboloid, bell-shaped to conical, with a small papilla, sulcate, translucently striate, pale brown to whitish, often with a dark brown centre and pallid to white margin; gills arcuate, broadly adnate to decurrent, L = 14-17, white; stem 20-60 x 0.5-1 mm, cartilaginous, glabrous, pale yellow brown, whiter towards the top and darker towards the base. Sp 7-10 x 4-6 µm, Qav = c. 1.5, dacryoid to ellipsoid, amyloid; cheilocystidia clavate and diverticulate, some like in fig. 365E, others like in fig. 377B. Autumn; very rare in temp.-southern bore., one record from arc./alp. on Athyrium, only known from a few collections from NO (DD) and SE.



M. capillaris

lohwagii Sing
Description: MG II-144

14. Stipe white. Spores 3.2-4 µm broad: On dead stems and leaves of *Calamagrostis*, *Cirsium* and ferns. Altai region.

herbarum Sing.
Description: MG II-140

14. Growing solitary or in twos. Found on *Pinus* litter and twigs of *Quercus*:

dasypus Mass G & Laessoe

14. Growing gregarious on *Cistus ladonifer*:

cistophila Moreno & Heykoop

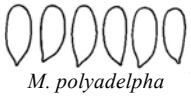
15. Lamellae decurrent with a tooth or frankly decurrent. Stipe originally white. **16**
15. Lamellae not decurrent with a tooth. Stipe originally dark grey-brown, pallescent, eventually whitish. **17**

16. Basidiomata entirely white. Spores broadly pip-shaped, up to 5 µm broad**.** Cheilocystidia subglobose. Found to grow in a hothouse: On dry, sterile basal fronds of *Platycerium alcicorne* in a hothouse, as well as on *Sphagnum* round about these ferns. Lyon in France.

invisibilis Joss. ex Maas G.
Description: MG II-141

16. Basidiomata entirely white. Spores elongated pip-shaped**.** Cheilocystidia clavate to obpyriform. Occurring out of doors:
Frb white. Cap up to 3 mm, paraboloid to convex or even flat, under the lens, textured and like parachute panels; gills decurrent and arcuate, L = (4-)6-9(-11), may be absent in minute frb; stem up to 25 x 0.1-0.2 mm, silky smooth, apparently insititious, but seen at x 50 a small radial pad of fine fibrils is often present. Sp 8-11 x 4-5 µm, Qav = 1.9-2.2, subcylindrical, amyloid; cheilocystidia like in fig. 377B or even almost spherical like in fig. 365F; pileipellis hyphae densely verrucose with short, even diverticulae. On fallen leaves of broadleaved trees, especially Quercus; autumn to winter; probably common in temp., occasional in hemib.; DK (LC), NO (NE), SE (LC). – GBW 3:455, •.

M. polyadelpha *ChC*



M. polyadelpha

polyadelphia (Lasch) Kuhner

Description: MG II-145
Illustrations : bk3.354 - ro553

16. Pileus dark greyish-brown at the centre, whitish-grey at the margin, stipe greyish-brown below. Cheilocystidia clavate. Growing on decayed needles of *Pinus sylvestris*:

pinophila Villareal

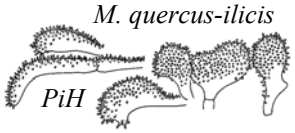
17. Pileus white to greyish. Spores almost cylindrical. Growing on fallen leaves of *Fagus*:

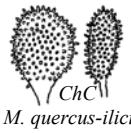
capillaris (Schum.: Fr.) Kummer
Description: MG II-136
Illustrations : bk3.323 - rh354 - ro545

17. Pileus pale brown. Spores pip-shaped. Growing on fallen leaves of *Alnus viridis*:

alniphila Robich
Illustration : ro541

M. quercus-ilicis





M. quercus-ilicis

18. Spores 5-7 µm broad. Pileus from grey turning white, granular (citrin-sulfurin in the var ***citrina*** Kuhn). Hyphae of the pileipellis with conspicuous terminal cells Cheilocystidia very densely and almost entirely covered with short, cylindrical excrescences..Basidiomata growing on fallen Quercus leaves (*Quercus ilex, Q. faginea Q. rotundifolia*).

quercus-ilicis Kühn
Description: MG II-147

18. Spores broadly pip-shaped to subglobose, 4.5 - 6 µm broad. Found on standing trunk of Salix caprea. Entirely white:

truncosalicicola Reid

19. Pileus pale olive-yellow, yellowish-brown, dark olivaceous-grey. Lamellae concolorous. Growing on leaves of Quercus ilex subsp. ballota:

quercophila Esteve-Raventos & Villareal
Illustration : ro555

19. Pileus pale grey to whitish. Lamellae white. Stipe at first black. Growing on Salix leaves:

Stem black when young, becoming grey from the base upwards; L = 0-8. Cap up to 3 mm, hemispherical, convex to bell-shaped, occasionally with a small papilla when young, shallowly sulcate, brownish grey or pale grey, often with a darker grey centre, fading to white with centre yellowish or ochraceous brown; gills arcuate, adnate to subdecurrent, sometimes reduced to shallow ridges or even absent, white; stem 5-10(-23) x < 0.2 mm, flexuous, glabrescent, entirely black when young, except for the base, which is whitish, fading from the bottom to grey as the frb matures, leaving black if any only present at the top, finally watery white, attached to the substrate by fine white fibrils. Sp 7-9 x 4.5-5.5 µm, dacryoid, amyloid; cheilocystidia smooth, simple clavate like in fig. 381A. On leaf litter of Salix spp.; autumn; rare or overlooked in hemib.; NO (NE, Vestf). – M&J 5.

terena Aronson & Maas G.

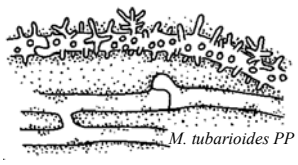
M. verrucosocystis Robich , ***albida*** Robich ***M. albidoaquosa*** Robich, ***M. angusta*** Robich, ***M. calangianuensis*** Robich, , ***M. quercincola*** Robich, ***M. rhamnicola*** Robich and ***M. tenuipellucida***

Section SAETULIPEDES Maas G.

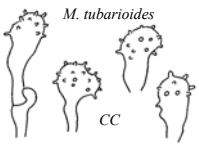
Cheilocystidia and hyphae of the pileipellis embedded in gelatinous matter On decayed leaf sheaths of *Juncus* and *Typha* and stems of *Scirpus* in wet places.

Sp 10-12(-15) x 3-5 µm. Cap 2-7 mm, hemispherical to convex, sometimes more bell-shaped, sulcate, translucently striate, pink to lilaceous pink, becoming deep straw yellow; gills adnate with a decurrent tooth, arcuate, L = 6-11, pink to pinkish white becoming more brownish; stem 3-15 x 0.2-0.7 mm, flexuous, pruinose when young, then glabrescent, concolorous with the cap or more yellowish to brownish, the base attached by short coarse fibrils. Sp Qav = 2.1-2.5, subcylindrical, amyloid; basidia 4-spored; cheilocystidia slightly clavate with short rounded elaborate diverticulae (fig. 367E), hyphae of the stem surface diverticulate, the caulocystidia, simply terminal cells, occasionally clavate. In close groups in wet habitats on remnants of e.g. Carex species such as C. acuta, C. rostrata and C. aquatilis, Juncus, etc.; autumn; rare in temp.-southern bore., but possibly overlooked; DK (DD), FI (LC), NO (NT). M&J 34b, SZP 81(6):237, •.

tubarioides (Maire) Kuhn.
Description: MG II-153
Illustration :my06.170



M. tubarioides PP



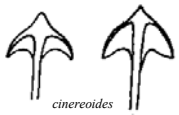
Section CINERELLAE Sing. ex Maas G.

1. Basidia 2-spored.

1. Basidia 4-spored, known to be clamped in most species. **5**

2. Basidia clamped**.** Corticolous on *Madrona* trees. Known only from Oregon (USA):

madronicola AH Smith
Description: MG II-169



2. Basidia without clamps. **3**

3. Height of the pileus exceeding the breadth. Lamellae decurrent with a long line. Odor farinaceous when cut. Occurring on mossy coniferous forests. Known from Finland, Norway and Denmark.

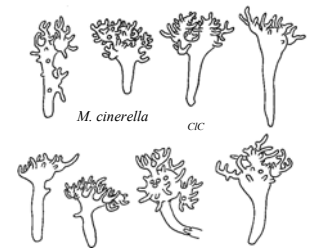
cinereoides Hintikka
Description: MG II-162

3. Breadth and height of the pileus equal, or breadth exceeding the height. **4**

4. Odor strongly farinaceous when cut. Lamellae decurrent with a tooth. Cheilocystidia with short and comparatively rather fine excrescences. Among moss, fallen leaves of deciduous trees, and needles of conifers (*Larix*, *Pinus*, *Juniperus*) in various habitats. Known from Europe, Greenland and USA.

Frb pale grey; smell farinaceous, especially when crushed. Cap 4-15 mm, bell-shaped, becoming broadly convex to almost plane, pale grey to brownish grey with a matt appearance; gills decurrent, shallow, arcuate, L = 10-25, concolorous with cap, paler at edge; stem 20-50 x 0.5-1.5 mm, at first lightly pubescent, becoming shiny smooth, concolorous with cap or paler, sometimes buff. Sp from 4-spored basidia 8-10.5 x 4-6 µm, Qav = 1.6-1.9, from 2-spored basidia 9-12.5 x 4.5-7 µm, Qav = c. 1.9, dacryoid to ellipsoid, amyloid; cheilocystidia clavate with broad tips, irregularly branched and densely packed (fig. 367A); caulocystidia asymmetrically ornamented with ± elaborate diverticulae. On forest litter, e.g. under Quercus, Pinus, Juniperus, more rarely in turf near trees, or under Pteridium; late autumn to early winter; common to very common in temp.-suba., occasional in arc./alp.; DK (LC), FI (LC), FO, NO (LC), SE (LC). – B&K 3:324, C&D 590, FAD 61H, M&J 37, R&H 358, •.

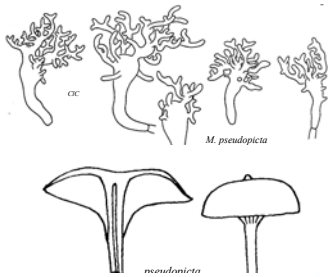
cinerella (P Karst.) P Karst.
Description: MG II-160
Illustration : bk3.324 - jo173.3 - ke199 - rh358

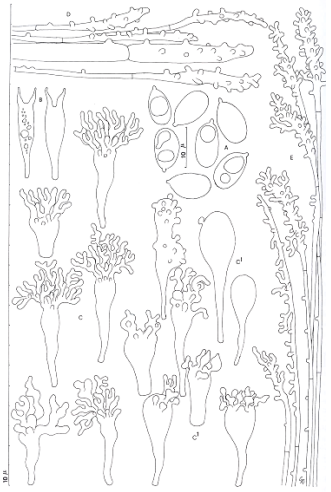


4. Odor, when cut, none or occasionally somewhat raphanoid**.** Lamellae long decurrent. Cheilocystidia with long and often very coarse excrescences. Among moss and lichens on low shrubs (e.g. *Salix repens*, *Juniperus*) on calcareous sand. Eur

Basidia 2-spored; with lichens and mosses in dry, open habitats. Cap 5-15 mm, hemispherical to convex or broadly umbonate, with crenulate margin, dark sepia brown to grey brown; gills broad, arcuate and quite deeply decurrent, L = 12-20, whitish towards the edge; stem 20-35 x 0.7-1.5 mm, pale brown below, greyer above, may be swollen towards the top, base slightly bulbous with strigose hairs. Sp 9-13 x 5-7 µm, Qav = 1.7-1.9, dacryoid, amyloid, in some collections a small proportion of 4-spored basidia have been observed; cheilocystidia branched with diverticular ornamentation, more regular than in the previous two species (fig. 367C), continuous, without intermixed basidia. Typically in dry rather acid, sandy grassland, sometimes with low shrubs such as Salix repens and Juniperus communis; but also recorded from calcareous grassland and from a burnt oligotrophic forest site, the latter in NO; aututo early winter; rare in temp.-suba.; DK (EN), IS, NO, SE (NE). – FAD 61J, GBW 3:403, Rob 137.

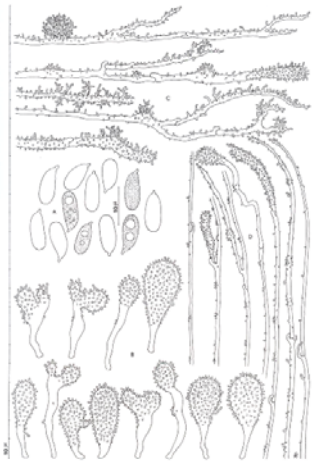
. ***pseudopicta*** (JE Lange) Kuhn.Description:
MG II-170
Illustration : ro137





5. Cheilocystidia with generally numerous, evenly spaced, usually regularly shaped and narrow excrescences *("clavicularis-type").* **6**

5. Cheilocystidia with generally fairly few, unevenly spaced, usually and at least partly irregularly shaped, somewhat to very much branched, coarse excrescences *("cinerella-type").* **7**



6. Stipe glutinous to viscous when wet. Associated exclusively with coniferous trees. On needle beds and among debris of coniferous trees (Juniperus, Larix, Picea, Pinus). Eur Nam.

Stem glutinous, but layer thin; pileipellis of repent hyphae with diverticulae. Cap (7-)10-20 (-22) mm, bell-shaped, becoming depressed at the centre, often umbonate, sulcate, translucently striate, drab to brownish orange; gills broadly adnate with a decurrent tooth or clearly decurrent, L = 13-23, grey to greyish brown; stem 20-80 x 1-2 mm, glutinous, grey brown, yellowish brown to brownish orange, tough, can be rotated beyond 180°. Sp 7-9.5 x 4-5.5 µm, Qav = 1.8-2.1, subcylindrical, amyloid; cheilocystidia clavate and ornamented with short broad diverticulae (fig. 365E); caulocystidia like small cheilocystidia. On woody debris and leaves from conifers, especially Pinus, especially on poor sandy soil; summer to late autumn; very common in hemib.-bore., occasional in temp.; DK (LC), FI (LC), NO (LC), SE (LC). – BCat 840, C&D 591, M&J 28, R&H 345, Rob 133, •.

clavicularis (Fr.) Gillet
Description: MG II-163
Illustration : co118c - rh345 - ro133

6. Stipe dry. Only known from the type which was found on decayed wood of *Belula lutea*. USA

subgrisea (Peck) Maas G.
Description: MG II-173

7. Spores 2.5-3.5 um wide. Lamellae 14-16 reaching the stipe. Odor distinctly farinaceous when cut. Growing on fallen spruce needles. Known from Switzerland.

aleuriosma Favre
Description: MG II-159

7. Differently characterized. **8**

8. Lamellae 10-11 reaching the stipe. Spores up to 4 µm broad**.** Growing in wet places not on fallen conifer needles. USA

inopinata Maas G.
Description: MG II-167

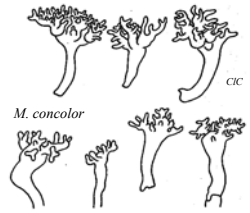
8. Lamellae 13-27 reaching the stipe. Spores 4-6 µm broad. **9**

9. Odor farinaceous when cut or crushed. **10**
9. Odor none or indistinctive. **11**

10. Color of the pileus with a pronounced brown component. Corticolous on *Madrona* trees. Known only from Oregon (United States):

madronicola AH Smith
Description: MG II-169

10. Color of the pileus darker or paler grey-brown. Occurring in various habitats, not known to be corticolous. Eur, Nam.

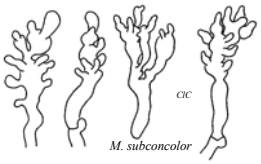


cinerella (P Karst.) P Karst.
Description: MG II-160

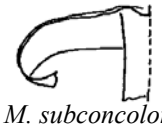
11. Spores up to 5 (- 5**.**2) µm broad, subcylindrical. Lamellae ascending to subarcuate. Cheilocystidia covered with comparatively narrow excrescences. Typically growing in association with *Sphagnum* or peat, but sometimes found in other acid habitats, e.g. under *Alnus viridis*. Eur, Nam.
Basidia 4-spored; in Sphagnum moss or other deep, wet, acidic soils. Cap up to 12 mm, hemispherical, then shallowly bell-shaped, blackish brown to grey; gills relatively deep, arcuate decurrent, L = 14-20, sepia grey brown to grey with a paler edge; stem 20-60 x 1-2 mm seeming relatively long for the cap, dark brownish grey to grey, radicating in wet substrates. Sp 7-11 x 4-5 µm, Qav = 1.8-2.2, oblong to subcylindrical, amyloid; cheilocystidia with intermixed basidia, clavate and like in fig. 367A; caulocystidia diverticulate and some large and very coralloid. As well as the typical site above, it has been recorded from a burnt oligotrophic forest site in NO; autumn; rare in temp.-arc./alp.; DK (EN), IS, NO (LC), SE (LC). – FAD 61I, SMT 29(2):21.

concolor (JE Lange) Kuhn.
Description: MG II-166
Illustration : my06.171

11. Spores 5-6 (- 7) µm broad, fairly broadly pip-shaped Lamellae subhorizontal. Cheilocystidia covered with broad and strikingly coarse excrescences. Found to grow on a lawn and in a heath. USA, Greenland.



subconcolor AH Smith
Description: MG II-172



M. subconcolor

Section INTERMEDIAE Kühn ex Maas G. (according to Robich et al 2005)

1. Pileipellis diverticulate, with simple, flexuose, branched excrescences forming a dense coralloid mass. Spores 7.5–8.5 µm long. Cheilocystidia fusiform and clavate with wart-shaped excrescences on the swollen zone; others clavate, smooth or entirely covered with wide excrescences. Pleurocystidia similar. Hyphae of the cortex of the stipe with simple, flexuose, branched irregular excrescences 2–15 µm long, covered by a thin layer of glutinous matter. Solitary or gregarious, on and between needles of conifers, also among grasses, with *Betula*, *Castanea*, *Quercus*

Most cheilocystidia ornamented only in the ventral part, the narrower tip without diverticulae. Cap 5-20 mm, hemispherical to convex, hygrophanous, milky coffee to hazel, with sepia lines, sometimes with sepia disc; gills broadly adnate with a pronounced decurrent tooth and may appear decurrent, ventricose or sinuate, L = 10-20, whitish smoke grey or white; stem (20-)35-75 x 1-2 mm, dull brown, milky coffee to sepia, smooth, quite tough, can be twisted to 180°. Sp 6-10 x 3.5-5 µm, Qav = 1.7-2.0, ellipsoid to subcylindrical, amyloid; basidia 4-spored; cheilo- and pleurocystidia similar, either clavate with light verrucose ornamentation, or characteristically lageniform with the ventral part ornamented, but the tip usually smooth (fig. 373E), some with forked tips, ornamentation hardly more than 1 µm high, mixed with basidia on the gill edge. In open or lightly wooded grassland or on conifer litter; autumn; rare in temp.-southern bore.; DK (DD), FI (DD), NO (DD). – B&K 3:344, FAD 55B, FRIC 3:21b, Myc 7(2):64, Rob 427.

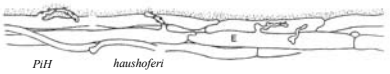
latifolia
Description: MG II-181
Illustration: bk3.344 - my07.66 - ro427

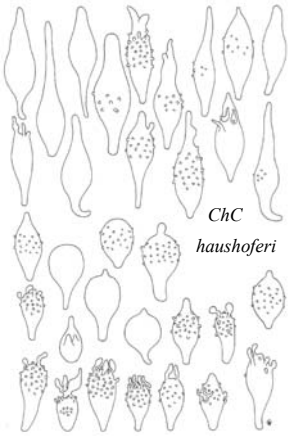
1. Pileipellis with smooth hyphae or with sparse excrescences **2**

2. Spores (9) 10–13.5 (15) µm long. Pileus grey-brown-black with reddish or violaceous reflex, 15–35 mm broad. Lamellae 36–45, grey or white-grey. Stipe subcartilagineous, brownish to cream-grey, 2–3 mm broad. Cheilocystidia clavate, entirely covered with wide excrescences. Pleurocystidia fusiform, **with thick walls**, smooth or with wart-like excrescences on the swollen zone. Gregarious or solitary, on the ground among *Quercus*, *Pinus*, *Cedrus atlantica.* Known from Algeria and Spain.

font-queri
Description: MG II-180 Illustration : ro421

2. Spores 7.0–10.7 µm long **3**





3. Stipe approximately 0.5–1 mm broad, white to watery grey.

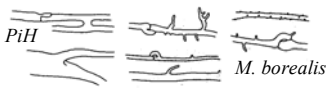
Pileus pale brownish, 7–12 mm broad. Lamellae white; edge convex, partly somewhat gelatinous. Flesh brownish, odour and taste fragrant (a few rancid). Basidia 20–27 µm long. Cheilocystidia fusiform, lageniform, smooth or with warted protuberances on the swollen zone; also clavate, pyriform and subpyriform cystidia with smooth apex and ventricose zone with coarse wart-shaped excrescences, or entirely with excrescences, covered by a layer of glutinous matter. Pleurocystidia fusiform, smooth, also with wartshaped excrecences on the swollen zone. Hyphae of the cortex of the stipe smooth or with rare excrescences, covered by a thin layer of glutinous matter. Gregarious and sometimes fasciculate on and between grasses (*Poaceae*). Known from Germany

haushoferi Robich, Miersch & Karasch

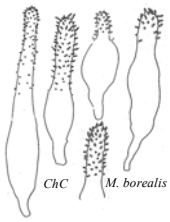
3. Stipe 1–4 mm broad. Pileus up to 25 or 40 mm broad. Cheilocystidia and pleurocystidia apically covered with thin, simple excrescences **4**

4. Cheilocystidia and pleurocystidia apically covered by 1.5–4.5 µm long, thin, simple, cylindrical curved excrescences.

Pileus grey, darker to fuscous, 10–40 mm broad, with somewhat gelatinous partially detachable pellicle. Flesh without odour or raphanoid; taste farinaceous or raphanoid. Stipe cartilagineous, grey, darker to fuscous, 2–4 mm broad. Spores 8.1–10.7 µm long. On decaying wood of conifers, United States and Canada.



borealis AH Smith
Description: MG II-178



4. Cheilocystidia and pleurocystidia apically covered by thin, simple, 2 (3) µm long excrescences. Pileus grey-brown, 4–25 mm broad. Flesh without odour and taste. Stipe grey-brown, 1–2 mm broad. Spores 7–10 µm long. Growing in association with *Quercus robur***.**

Cystidia cylindrical to clavate, ornamented only at the outer end (fig. 373F). Cap 4-25 mm, paraboloid, then bell-shaped with a small umbo, with a crenulate margin when young, hygrophanous, translucently striate, sulcate, dark grey brown when moist, pale grey brown when dry; gills sinuate and broadly adnate, slightly notched at the stem, L = 15-22, grey; stem up to 30 x 1-2 mm, slightly broader below, conspicuously pruinose when young, when dry slightly shiny, grey to grey brown. Sp 7-10 x 5.5-7 µm, Qav = 1.3-1.5, broadly ellipsoid; cheilocystidia mixed with basidia, distally ornamented; pleurocystidia similar; caulocystidia up to 85 x 30 µm, irregularly shaped. On Quercus stumps or on brown rotted wood; autumn; very rare in DK (DD, EJyl: Åbenrå).

silvae-pristinae Veerkamp & Kuyper

Section RARIFOLIATAE Aronsen & Maas G.

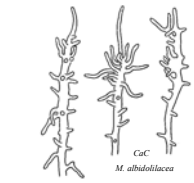
On the lower part of monocots, Carex and Juncus, in wet places. Cap 0.5-3 mm, paraboloid, conical to convex or hemispherical, papillate or not, not striate, white; gills often reduced, adnate to decurrent, L = 0-5, white; stem 1-3(-4) x 0.1-0.3 mm, cylindrical or widened just below the gills, pruinose then smooth, attached with very fine, radiating whitish fibrils which are united by a very thin film of gelatinous matter to form an irregularly shaped plaque. Sp 9.5-11 x 3.5-4.5 µm, Qav = 2.6, dacryoid, amyloid; basidia 4-spored; cheilocystidia 20-27 x 4.5-7 µm, rather scarce, occurring mixed with the basidia, subcylindrical, subfusiform, clamped, smooth; pleurocystidia absent; caulocystidia 20-40 x 2.5-9 µm, variously shaped, much branched, becoming less branched or even simple and subcylindrical farther upwards, then just below the gills gradually passing into lageniform elements, 22.5-35 x 6.5-9 x 3.5-4.5 µm; hyphae of the pileipellis covered with cylindrical, simple diverticulae, 2.5-5.5 x 1-2 µm. Autumn; only known from the type locality, but possibly overlooked and mistaken for Hemimycena spp.; NO (NE, Vestf: Tjøme).

oligophylla. Aronsen & Maas Geest.
Description: MG I-331

Section RUBROMARGINATAE Sing. ex Maas G.

1. Pileus white to whitish for the greater part, delicately tinted lilaceous to mauve or pale yellowish at the center. Hyphae of the pileipellis not covered with coarse, broadly rounded, often inflated warts. **2**

1. Pileus generally more richly colored to very dark, except sometimes in one species which is otherwise characterized by a conspicuously yellow stipe and by broadly rounded to much inflated excrescences covering the hyphae of the pileipellis. **5**



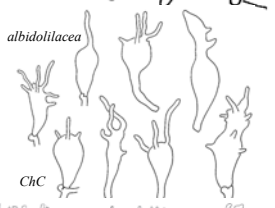
2. Hyphae of the cortical layer of the stipe diverticulate. **3**

2. Hyphae of the cortical layer of the stipe smooth. **4**

3. Pileus pinkish lilac or flesh-coloured, whitish towards the margin. Lamellar edge pinkish. Lamellae 15-21 reaching the stipe. Spores 9.2-11.6 x 5.6-6.7 µm, somewhat elongated pip-shaped. Cheilocystidia variously shaped with one or several necks or with several excrescences. Odour nitrous. Growing among grass or on vegetable debris both deciduous and coniferous trees. Known from France and East Germany.

Cap very pale with ± lilaceous tinge. Cap 10-20 mm, convex, becoming almost plane, pinkish lilac or flesh-coloured to clay buff; gills adnate and ventricose, L = 11-17; vinaceous buff, with very pale pink to red edge; stem 12-25 x 0.5-1 mm, pink in upper third or golden yellow. Sp 8-12 x 5-8 µm, Qav = 1.6-2.2, dacryoid, amyloid; cheilocystidia clavate with one to several necks (fig. 359H); caulocystidia similar to fig. 359I. Among grass or herbaceous litter; DE, UK. – M&J 25, MMB 34(1):41, SZP 77(5):220.

albidolilacea Kuhn. et Maire
Description: MG II-185

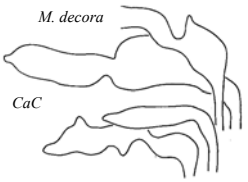


3. Pileus cream coloured. Lamellar edge brown. Spores 8.5-11 x 5-6(-7.5) µm, pip-shaped. Cheilocystidia smooth and broadly rounded at the apex or with some coarse excrescences. Hyphae of the pileipellis and of the stipe cortex with granular yellow-brown pigment:

brunneomarginata Robich →
Illustration : ro593

4. Pileus delicately pink becoming whitish. Stipe violet. Lamellae 12-14 reaching the stipe. Terminal cells curved sharply outwards forming smooth caulocystidia. Growing among grass at the edge of a wood and on decayed litter of deciduous trees. Known from Holland.

decora Maas G.
Description: MG II-190



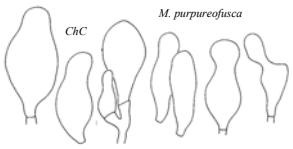
4. Pileus pale creamy white to pale brownish white, delicately brownish wine-coloured at the centre. Stipe yellowish with an isabelline flush, turning dark brown from the base with age. Terminal cells absent:

schildiana Maas G.

5. Hyphae and hymenial elements sporadically clamped or clamps so rare as to seem absent. Cheilocystidia (in European forms) apically broadly rounded. Strictly associated with conifers. On decaying coniferous wood (*Picea*, *Pinus*, *Pseudotsuga*). Eur, USA.

Cap, stem and gill edge violaceous purple. Cap 5-35 mm, paraboloid to hemispherical, brown vinaceous purple, fading to sepia or hazel, hygrophanous; gills narrowly adnate, ventricose, L = 15-26, greyish with dark violet edge; stem 10-100 x 1-3(-5) mm, quite tough, silvery lilac pink to purplish chestnut. Sp 9.5-10.5 x 6-7 µm, Qav = 1.4-1.6, ellipsoid, amy-loid; cheilocystidia variably shaped, utriform, clavate and often quite broad distally (fig. 359B); pleurocystidia absent; pileipellis of densely diverticulate hyphae; stem surface hyphae smooth to sparsely diverticulate, caulocystidia simple diverticulate sometimes broadened at the end. Frb solitary to caespitose on bark of living conifers, decorticated fallen conifer trunks or large boughs, or in soil close to living conifers; autumn; occasional in hemib.-bore., rare in temp.; DK (LC), FI (LC), NO (LC), SE (LC). – C&D 566 (too brown), ČM8(4), M&H 3:110, R&H 357, Rob 607.

purpureofusca (Peck) Sacc.
Description: MG II-197
Illustrations***:*** my06.170 - rh357 - ro607



5. Hyphae and hymenial elements clamped, clamps usually easy to find. **6**

6. Stipe yellow, or somewhat yellowish color. **7**

6. Stipe at least originally without yellowish or olivaceous colors. **10**

7. Stipe olive brown to dark grey, turning more yellow when drying. Small species with pinkish grey pileus, growing on dead leaves and twigs of *Quercus ilex*:

roseoquercina Villareal & Esteve-Rav

7. Stipe bright yellow. Hyphae of the pileipellis smooth or with broadly rounded and inflated excrescences. **8**

7. Stipe olive-yellow or with orange-yellow pruina. **9**

8. Stipe yellow. Pileus lilaceous pink to yellowish red or pale brownish vinaceous. Hyphae of the pileipellis covered with broadly rounded warts or simple to somewhat branched, inflated excrescences. Spore ellipsoid 9-13 µm long. Known to occur on decaying wood and fallen branches of deciduous trees (e.g. Alnus, Corylus, Fagus), in Europe, on conifer wood in USA.

Stem uniformly yellow. Cap 10-40 mm, bell-shaped to hemispherical, ochraceous brown to dark clay pink, paler towards the edge; gills adnate, ventricose, L = 18-22, white, becoming salmon to pink or yellowish, edge yellow to red, sometimes only over the outer part; stem 15-50 x 1-4 mm, yellow to pale orange buff. Sp 8-10 x 5.5-7 µm, Qav = 1.4-1.5, ellipsoid, amyloid; cheilocystidia lageniform, broadened ventrally; caulocystidia often with branches with rounded tips (fig. 359C); pileipellis hyphae with inflated diverticulae. Caespitose on dead wood of broadleaved trees, e.g. Fagus, Ulmus and Corylus; early summer to autumn; common in south eastern DK, rare, but locally occasional further north and west in temp.-bore., in FI rare in hemib.; DK (LC), FI (VU, V: Houtskari and Tammisaari), NO (LC), SE (LC). – B&K 3:359, GBW 3:461, M&J 19, Rob 611, Ves 236.

renati Quél.
Description: MG II-199
Illustrations: bk3.359 - ce1.124 - co131c - da374 - fm03.62 – fm03.999 - my06.118 - rh356 - ro611

8. Stipe bright yellow, lilac-yellow, pink-yellow. Pileus brown-lilac, pink-lilac. Hyphae of the pileipellis gelatinized, smooth or with rounded excrescences. Hyphae of the cortical layer of the stipe smooth. Spores subglobose 8.5-11(-12) µm long:

bresadolana Robich & Neville
Illustration: ro589

9. Pleurocystidia numerous, fusiform. Hyphae of the cortical layer of the stipe smooth, terminal cells forming caulocystidia 55-200 µm long:

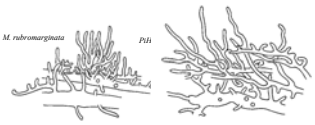
aurantiistipitata Robich & Gennari
Illustration : ro581

9. Pleurocystidia absent. Hyphae of the cortical layer of the stipe diverticulate, terminal cells absent or very rare. Hyphae of the pileipellis covered with narrow, much branched excrescences. Preferably growing on moss-interspersed lawns. Eur.

olivaceomarginata (Massee apud Cooke) Massee
Description: MG II-192
Illustrations: my06.170 - ph074 - ro593 - ro625 - ro603

a. Pileus and/or stipe with yellow tints.
- **b.** Pileus very dark brown to black-brown: 195 *f.* ***contraria***
- **b.** Pileus grey-brown with more or less pronounced yellow tints, the center generally more reddish brown: 193 *f.* ***olivaceomarginala***

a. Pileus and stipe devoid of yellow tints.
- **b.** Stipe grey-brown with a pink or lilaceous cast: . . .195 *f.* ***roseofusca***
- **b.** Stipe brown, very dark coffee brown at the base: . 196 *f.* ***thymicola***



10. Hyphae of the pileipellis covered with simple to much branched excrescences which may form dense masses. **11**

10. Hyphae of the pileipellis covered with scattered, simple, fairly coarse excrescences. **15**

11. Sides of the lamellae finely punctuate with dark reddish brown dots. Odour nitrous. Generally on fallen needles of conifers (*Juniperus*, *Pinus*, *Picea*) but occasionally on litter of deciduous tress (eg *Quercus*). Eur, NAf, USA.

Frb reddish grey brown; smell nitrous or like swimming pool; cheilocystidia with rounded or narrow tips. Cap 5-30 mm, paraboloid to hemispherical, pale drab to grey vinaceous, usually with a darker disc; gills adnate with a decurrent tooth, ventricose, L = 10-20, greyish white with a brownish red edge to part or all of the gill, sides with similarly coloured dots visible with a hand lens or under dissecting microscope; stem 20-90 x 1-2 mm, vinaceous buff to grey. Sp 9-11 x 5-6 µm, Qav = 1.7-2, ellipsoid, amyloid; cheilo- and pleurocystidia lageniform, the narrow ends with rounded tips, with red brown contents. Typically on leaf litter from Pinus, but also of Picea; late summer to autumn; common in temp., occasional in hemib.-bore.; DK (LC), FI (LC), FO, NO (LC), SE (LC). – C&D 562, Cou 116, M&J 27, Rob 597, SMT 29(2):18.

capillaripes Peck
Description: MG II-186
Illustrations: bk3.322 - co116e - da375 - jo173.2 - my06.171 - ro597

11. Not so. **12**

12. Spore length 7-9 µm, cheilocystidia lageniform with a long, narrow neck. Occurring on dead leaves of *Quercus suber*:

rubroquercina Moreno & Heykoop

12. Spores larger. Not growing on leaves of *Quercus suber*. **13**

13. Maximum width of spore less than 6µm. Cheilocystidia apically and laterally covered with few, short, stout excrescences. Pileus brown or purplish brown. Lamellae edge purplish brown. Known from California.

elegantula Peck
Description: MG II-191

13. Characters different. **14**

14. Pileus cream coloured. Lamellae with brown edge. Spores 8.5-11 x 5-6(-7.5) µm, pip-shaped. Hyphae of the pileipellis and the stipe cortex with granular yellow-brown pigment.

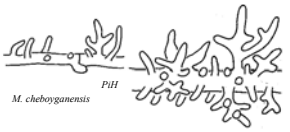
brunneomarginata Robich
Illustration : ro593

↓**14**. Pileus grey-brown to dark brown. Lamellae with red-brown to purplish brown edge. Spores 9.2-13.4 x 6.5-9.4 µm, broadly pip-shaped to almost subglobose. Excrescences of the hyphae of the pileipellis and their side branches mainly arranged parallel to each other. On fallen branches and decaying wood of conifers (*Juniperus*, *Picea*, *Pinus*) but also of deciduous trees (eg *Betula*). Eur, Nam.
Stem lacking yellow colour. Cap 5-25(-30) mm, paraboloid to hemispherical, translucently striate, buff to brownish pink, usually darker at the centre, greyish red; gills adnate with a decurrent tooth, ventricose, L = (12-)14-20(-22), white to pale grey, edge red; stem 10-50 x 1-2 mm, concolorous with cap, but paler at the top, shiny smooth. Sp 8-12 x 5-8 µm, Qav = 1.4-1.6, ellipsoid, amyloid; cheilocystidia lageniform with narrower tips which are sometimes forked (fig. 359D); stem surface hyphae smooth with sparse diverticulae. Solitary or in groups on fallen woody conifer litter, but also on deciduous wood, e.g. Betula, some-times low down on the bark of living trees, rarely on broadleaved trees; late summer to late autumn; common in temp.-arc./alp.; DK (LC), FI (LC), FO, IS, NO (LC), SE (LC). – B&K 3:363, GBW 3:463, M&J 39, Rob 615, Ves 238, •.

rubromarginata (Fr.: Fr.) Kummer
Description: MG II-203
Illustrations: bk3.363 - my14.109 - rh357 - ro615

14. Pileus fuscous at the centre, parler farther outwards, fading pale geyish except for the reddish brown margin. Lamellae edge dark reddish brown. Spores 10.7-13.0 x 7.2-7.9 µm. Excrescences of the hyphae of the pileipellis producing side branches mainly arranged at right angles. Basidiomes growing on *Sphagnum*. Known only from Michigan, USA

cheboyganensis AH Smith
Description: MG II-188



15. Pileus covered with a viscous, elactic pellicle. Odor of chlorine or nitrous. Cheilocystidia apically narrowed into a long and slender neck. Terminal cells of the hyphae of the cortical layer of the stipe covered with coarse warts. Lignicolous and confined to such coniferous genera as *Abies* and *Cedrus* (not *Pinus*) and not to occur on fallen cones. Known only from North Africa.

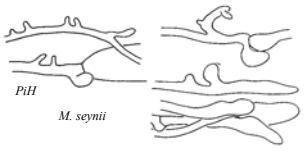
seynesiella Malençon apud Mal & Bertault
Description: MG II-205

15. Not this combination of characters. **16**

16. Spores longer than 10 µm. Pileus purplish brown with pinkish, lilaceous to vinaceous components. Spores 10.7-14.5 x 5.6-7.5 µ. Growing on fallen *Pinus* cones (and decaying trunks):

seynii Quél.
Description: MG II-206
Illustrations : co133d - fi1.102 - my05.179 - my11.999 - ro621

16. Spores shorter than 10 µm. **17**



17. Pileus and stipe dusky red to reddish grey-brown. Found on rhizomes and partially buried stems of *Scirpus holoschoenus*:

hepatica Villareal

17. Pileus greyish to pinkish grey. Stipe olive brown to dark grey. Found on dead leaves and twigs of *Quercus ilex*:

roseoquercina Villareal & Esteve-Rav

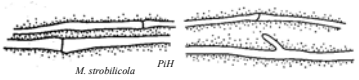
Section FRAGILIPEDES (Fr.) Quél.

Key to European species, according to Aronsen

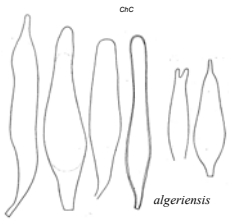
1. Hyphae of the pileipellis smooth at most with very few, scattered excrescences: **Key 1**
1. Hyphae of the pileipellis diverticulate
18. Hyphae of the cortical layer of the stipe smooth
19. Spores broader than 6 µm **: Key 2**
19. Spores less than 6 µm broad: **Key 3**
18. Hyphae of the cortical layer diverticulate
41. Hyphae of the cortical layer of the stipe embedded in gelatinous matter: **Key 4**
41. Hyphae of the cortical layer of the stipe not embedded in gelatinous matter
47. Pleurocystidia present: **Key 5**
47. Pleurocystidia absent: **Key 6**

KEY 1. Hyphae of the pileipellis and the stipe cortex smooth.

2. Hyphae of the cortical layer of the stipe smooth
3. Pleurocystidia present
4. Spores less than 6 µm broad
5. Pileus white, pale pink. Stipe white, yellow-white below: ***albido-rosea***
5. Pileus with darker colours
6. Clamp connections absent. Growing on fallen Picea cones in the spring. Hyphae of the pileipellis embedded in gelatinous matter: ***strobilicola***



6. Clamp connections present
7. Pileus dark brown to blackish
8. Cheilocystidia 57-103 µm long, strongly protruding, fusiform or sublagenifor. Growing on decaying wood of deciduous trees: ***algeriensis***
8. Cheilocystidia 20-60 µm long, clavate to fusiform Terrestrial: ***ustalis*** (4-spored)
7. Pileus grey-brown to cream brown. Odour strongly of chloride. Cheilocystidia 27-40 µm long, subcylindrical, utriform or clavate. Spores 7.3-9.0 x 4.6-5.4 µm: ***caliginosa***



4. Spores broader than 6 µm
9. Pileus dark brown to blackish
10. Cheilocystidia 57-103 µm long, strongly protruding, fusiform or sublageniforGrowing on decaying wood of deciduous trees: ***algeriensis***
10. Cheilocystidia 20-60 µm long, clavate to fusiform Terrestrial: ***ustalis*** (2-spored)
9. Pileus paler grey-brown
11. Cheilocystidia 40-110 x 9-22 µm, fusiform, lageniform, subcylindrical or clavate, smooth. On decaying wood of deciduous trees.: ***niveipes***
11. Cheilocystidia 25-45 x 4-6 µm, sinuous, flexuous, smooth to coarsely furcate. Terrestrial: ***maurella***
3. Pleurocystidia absent
12. Pileus white, growing cespitose on decaying wood of conifers: ***laevigata***
12. Pileus differently coloured.
13. Hyphae of the pileipellis and the cortical layer of the stipe embedded in gelatinous matter. Pileus dark sepia brown. Cespitose on coniferous wood: ***stipata***
13. Hyphae of the pileipellis and the cortical layer of the stipe not gelatinized. Occuring in the spring.
14. Pileus pale dingy pinkish brown, lamellae pink, stipe pale brownish white with a slight yellowish tint. On decayed wood of Fagus: ***lignivora***
14. Pileus vinous purplish brown, lamellae whitish, stipe ochraceous yellow. On decayed wood of deciduous tree. : ***aculeata***
14. Pileus at first blackish brown, then sepia brown, reddish brown to grey brown, lamellae grey, stipe slightly paler than the pileus. On decaying stµmp of Pinus: ***tephrophylla***
2. Hyphae of the cortical layer of the stipe with excrescences
15. Hyphae of the pileipellis embedded in gelatinous matter
16. Pileus sepia brown, odour nitrous, hyphae of the stipe cortex smooth or with very scattered excrescences, spores 9.2-11.6 x 5.4-6.3 µm: ***stipata***
16. Pileus white to ochraceous, odour indistinctive, hyphae of the stipe cortex sparsely diverticulate, spores 6.3-9.0 x 3.8-4.7 µm: ***laevigata***
15. Hyphae of the pileipellis not embedded in gelatinous matter
17. Pileus white or beige to pale brownish, soon stained with reddish brown spots. Spores almost cylindrical, cheilocystidia fusiform, clavate, subcylindrical, smooth or with finger-like excrescences, pleurocystidia usually present. Terrestrial: ***zephirus***

17. Pileus fuscous to dark watery grey with whitish margin, not stained with reddish brown spots. Spores broadly pip-shaped, cheilocystidia more or less clavate, covered with irregular, coarse excrescences, pleurocystidia absent. On decaying wood: ***pseudoinclinata***

KEY 2. Hyphae of the pileipellis diverticulate. Hyphae of the cortical layer of the stipe smooth. Spores broader than 6 µm.

20. Pleurocystidia present
    21. Basidia 2-spored, clampless
        22. stipe yellow to ochraceous. Cheilocystidia not flexuous: ***lutea***
        22. stipe brownish. Cheilocystidia flexuous: ***maurella***
    21. Basidia 4-spored, clamped
        23. Pileus and stipe greyish. Cheilocystidia not flexuous: ***murina***
        23. Pileus and stipe fairly dark brown. Odour alcaline or chlorine. Cheilocystidia flexuous: ***maurella***
20. Pleurocystidia absent
    24. More than 25 lamellae reaching the stipe. Spores broadly pip-shaped.
        25. Pileus almost blackish. Stipe fragile. Cheilocystidia clavate, smooth or covered with finger-like excrescences. Hyphae of the stipe cortex smooth or covered with small warts: ***tristis***
        25. Pileus grey-brown to dark sepia brown. Stipe rigid, cartilaginous. Cheilocystidia fusiform, lageniform, utriform, subcylindrical or irregularly shaped, smooth or with a few coarse excrescences: ***polygramma***
    24. Less than 25 lamellae reaching the stipe
        26. Hyphae of the pileipellis tending to form dense masses and become gelatinized
            27. Pileus dark reddish brown to dark reddish grey, the centre black-brown. Hyphae of the stipe cortex embedded in gelatinous matter: ***rubidofusca***
            27. Pileus differently coloured
                28. Pileus grey brown to sepia brown. Stipe often grooved lengthwise. Hyphae clamped. Hyphae of the stipe cortex not embedded in gelatinous matter: ***polygramma***
                28. Pileus grey brown to sepia brown, sometimes paler to almost whitish. Stipe smooth, lubricous to almost viscid wen wet, shiny when dry. Hyphae generally clampless. Stipe cortex embedded in gelatinous matter: ***vitilis***
        26. Hyphae of the pileipellis not gelatinized
            29. Pileus almost black under a white-pruinose covering. Stipe dark brown. Lamellae almost free, white with a pinkish sheen: ***nigroalba***
            29. Pileus and lamellae differently coloured
                30. Lamellar edge often olive green or brownish. Excrescences of the hyphae of the pileipellis inflated or with inflated parts: ***viridimarginata***
                30. Lamellae whitish with some pinkish tint, becoming spotted with vinaceous stains, the edge concolorous. Excrescences of the hyphae of the pileipellis much branched 2-45 µm long: ***obtecta***

KEY 3. Hyphae of the pileipellis diverticulate. Hyphae of the cortical layer of the stipe smooth. Spores less than 6 µm broad.

31. Pileus white, whitish or with yellow colours
    32. Pileus yellow or yellowish. Lamellar edge yellow: ***citrinomarginata***
    32. Pileus white to whitish
        33. Pileus pure white, then very pale creamy pink or pale creaOdour nitrous. Caulocystidia clavate, smooth or with a few coarse to very coarse excrescences: ***erminea***
        33. Pileus white with a slight yellowish tint. Odour alcaline. Caulocystidia slender, hair-like up to more than100 µm long: ***pilosella***
31. Pileus differently coloured
    34. Caulocystidia slender, hair-like with slightly thickened walls at the base, up to 300 µm long: ***scirpicola***
    34. Caulocystidia strikingly inflated, up to 20 µm wide
        35. Pileus and stipe fairly pale grey, with no brown colours: ***fragillima***
        35. Pileus and stipe darker grey, brownish to grey-brown: ***leptocephala***
    34. Caulocystidia differently shaped, if present.
        36. Pileus and stipe paler or darker grey, without any brown colours (parca with stipe brown-grey below).
            37. Cheilocystidia almost cylindrical, more rarely subclavate. Pileus greyish black, becoming ash grey: ***subexcisa***
            37. Cheilocystidia fusiforPileus dark grey with almost black centre. Hyphae clampless. Terminal cells of the hyphae of the pileipellis conspiculously inflated, frequently covered with coarse excrescences: ***austera***
            37. Cheilocystidia lageniforPileus dark to pale grey. Terminal cells of stipe cortex slender-clavate,

smooth: ***parca***

37. Cheilocystidia variously shaped, smooth or with finger-like excrescences. Hyphae of the stipe cortex smooth or sparsely diverticulate. Pileus grey with a slight bluish tint, pallescent, becoming ash grey to whitish grey: ***murina***

36. Pileus and stipe brown or with violet or vinaceous tint

38. Cheilocystidia flexuous, 3-5 µm wide. Pileus greyish, grey with brown tint, centre sooty grey: ***fuligineipapillata***

38. Cheilocystidia fusiform, lageniform, clavate, broader than 5 µm.

39. Pileus brown-black with vinaceous or violaceous tints. Cheilocystidia fusiform with rounded apex, clavate, 50-85 x 8-16 µm: ***atrovinosa***

39. Pileus sepia brown with pale dingy pinkish margin, becoming dingy pinkish at the centre on frying out. Cheilocystidia fusiform to subcylindrical, 40-70 x 11.5-15 µHyphae of the stipe cortex sparsely diverticulate, but often seemingly smooth: ***cyrnea***

39. Pileus not with vinaceous, violaceous or pinkish tints.

40. Lamellae reaching the stipe 28-33. Pileus beige-brownish, 15-30 mm across. Odour weakly alcaline. Occuring in the spring: ***verna***

40. Lamellae reaching the stipe 16-18. Pileus grey-brown, 8-10 mm across. Hyphae of the stipe cortex sparsely covered with simple to furcate, curved to more or less coiled excrescences: ***aronsenii***

40. Lamellae reaching the stipe 17-20. Pileus warm beige-brown, 20-40 mm across. Odour nitrous. Hyphae of the stipe cortex embedded in gelatinous matter: ***valida***

KEY 4: Hyphae of the pileipellis diverticulate. Hyphae of the cortical layer of the stipe diverticulate. Hyphae of the cortical layer of the stipe embedded in gelatinous matter

42. Pleurocystidia present

43. Pileus 20-40 mm across, beige-brown. Stipe fragile, watery horn grey, turning reddish brown from the base. Lamellae free, white to greyish white, becoming flushed with pink: ***valida***

43. Pileus up to 35 mm across, dark brown, blackish grey to grey-brown or grey. Stipe fragile, brown, grey-brown or greyish. Lamellae narrowly adnate to adnate, dark grey to grey-brown: ***aetites***

43. Pileus c. 20 mm across, greyish blavk, becoming ash grey. Stipe brittle, ash grey, pallescent. Lamellae narrowly adnate, decurrent with a tooth, white: ***subexcisa***

42. Pleurocystidia absent

44. Spores broader than 6 µm

45. Pileus 5-11 mm across, white to cream Lamellae 9-11 reaching the stipe. Basidia 2(-3)-spored. Cheilocystidia covered with coarse, simple to branched, curved to flexuous excrescences. Spores 12.5-16.1 x 7.2-9.4 µm: ***corrugans***

45. Pileus 10-14 mm across, dark reddish brown to reddish grey. Lamellae 18-20 reaching the stipe. Basidia 4-spored. Cheilocystidia fusiform, apically divided into two or more necks. Spores 8.5-10.5 x 6.5-8 µm: ***rubidofusca***

44. Spores less than 6 µm broad

46. Pileus up to 5 mm across, very pale pink. Stipe very pale pink. Growing on fallen leaves of Quercus: ***mitis***

46. Pileus up to 30 mm across, sepia brown. Stipe brown or with an ochraceous tint. Growing on coniferous wood: ***stipata***

KEY 5 :Hyphae of the pileipellis diverticulate. Hyphae of the cortical layer of the stipe diverticulate. Hyphae of the cortical layer of the stipe not embedded in gelatinous matter Pleurocystidia present

48. Basidia 2(-3)-spored, clampless

49. Pileus yellowish red-brown, stipe yellow to ochraceous. Odour absent: ***lutea***

49. Pileus black-brown to sepia brown. Stipe brownish. Odour nitrous. Occuring on coniferous wood in the spring: ***silvae-nigrae***

48. Basidia 4-spored, clamped.

49. Pileus very dark, brown-black, bluish black, dark grey

50. Pileus black, brown-black to bluish black. Cheilocystidia 18-25 µm long, fusiform, clamped: ***hausknechtii***

50. Pileus dark grey with almost black centre. Cheilocystidia 50-103 µm long, fusiform, clampless: ***austera***

50. Pileus dark grey, fading to ash grey. Cheilocystidia 19-42 µm long, fusiform, lageniform, clamped: ***subcana***

49. Pileus not so dark, or then more brownish

51. Stipe greyish brown, blackening when drying, covered with long caulocystidia up to 300 µm long: ***scirpicola***

51. Not these characters

52. Lamellae less than 20 reaching the stipe

53. Stipe with yellowish tints

54. Pileus dark grey to olive grey, without pink tinge. Cheilocystidia 80-110 µHyphae of the stipitipellis densely diverticulate: ***gilvipes***
54. Pileus sepia brown with pinkish tinge at the centre and the margin. Cheilocystidia 40-70 µHyphae of the stipitipellis very sparsely diverticulate: ***cyrnea***

53. Stipe without yellowish tints
55. Pileus up to 35 mm across, dark brown to greyish. Spores 8.5-10.7 x 5.5-7.1 µHyphae of the pileipellis tending to form dense masses and becoming gelatinized: ***aetites***
55. Pileus 8-10 mm across, grey-brown. Spores 7.6-8.2 x 4.9-5.5 µHyphae of the pileipellis not gelatinizing: ***aronsenii***

52. Lamellae more than 20 reaching the stipe
56. Basidia 2(-3)-spored, clampless. Growing on coniferous wood in the spring: ***silvae-nigrae***
56. Basidia 4-spored, clamped.
57. Terminal cells of stipitipellis up to 72 µm long, covered with few or nµmerous excrescences. Cheilocystidia up to 92 µm long: ***vicina***
57. Terminal cells of stipitipellis shorter and less conspicuous, if present. Cheilocystidia shorter.
58. Pileus and stipe greyish without any brown tinges
59. Pileus greyish black, becoming ash grey. Stipe brittle. Cheilocystidia cylindrical: ***subexcisa***
59. Pileus grey with a slight bluish tint, becoming ash grey to whitish grey. Stipe fragile. Cheilocystidia variously shaped, smooth or with finger-like excrescences: ***murina***
58. Pileus and stipe more or less with brownish tints
60. Spores elongated to cylindrical. Cheilocystidia generally apically drawn into a slender neck. Stipe, when fresh, exuding a watery fluid when incised: ***abramsii***
60. Spores pip-shaped. Cheilocystidia apically drawn into a simple or furcate neck, or with relatively coarse excrescences. Growing in grassland: ***aetites***

KEY 6. Hyphae of the pileipellis diverticulate. Hyphae of the cortical layer of the stipe diverticulate and not gelatinized. Pleurocystidia absent.

61. Hyphae of the cortical layer of the stipe covered with thin, smooth "hairs" up to 300 µm long.
62. Hairs thick-walled. Pileus light grey-brown, paler to whitish towards the margin. Cheilocystidia 22.5-34 µm long, clavate, subcylindrical or subfusiform, apically drawn into a slender neck: ***villicaulis***
62. Hairs thin-walled.
63. Hyphae of the stipe cortex smooth or with some isolated thick excrescence. Caulocystidia thin-walled but with slightly thickened walls at the base. Stipe greyish brown, blackening from the base when drying: ***scirpicola***
63. Hyphae of the stipe cortex smooth or covered with a few excrescences. Caulocystidia thin-walled, slender, simple to somewhat branched. Stipe watery greyish white: ***pilosella***

61. Hyphae of the cortical layer of the stipe not covered with hairs.
64. Pileus white, yellowish, or olivaceous.
65. Pileus white
66. Stipe fragile, watery grey or violet-grey below. Hyphae of the pileipellis not gelatinizing: ***laevigatoides***
66. Stipe cartilaginous-brittle, white. Hyphae of the pileipellis generally gelatinized: ***polygramma*** f. ***candida***
65. Pileus yellowish or olivaceous
67. Pileus and stipe olivaceous-yellow. Spores 9.5-11.5 x 5.5-7 µ Clampless. Caulocystidia up to 20 µm wide. ***??***
67. Pileus yellowish red-brown. Stipe yellow to ochraceous. Spores 7-8 x 4-5 µClamped: ***lutea*** (4-spored form)
67. Pileus and stipe yellowish. Lamellae with yellow edge. Spores 9.2-12.0(-14.4) x 4.6-5.6(-6.4) µClamped: ***citrinomarginata***

64. Pileus not with these colours
68. Spores elongated to cylindrical
69. Spores (10-)13.5-15(-17) x (5.5-)6-7.5 µAssociated with Alnus viridis: ***alnetorum***
69. Spores 9-12.5(-13.8) x 4.5-6(-6.5) µGrowing on various trees, mainly decidious trees: ***abramsii***
68. Spores pip-shaped
70. Spores broadly pip-shaped.
71. Pileus very dark grey to almost blackish. Stipe at first blackish grey, then more brownish, fragile. Cheilocystidia 35-70 x 11-22.5 µm, clavate, smooth or covered with finger-like excrescences: ***tristis***

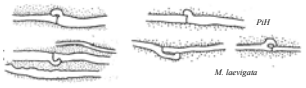
71. Pileus brownish to grey-brown. Stipe grey to brownish grey, cartilaginous-brittle. Cheilocystida 21.5-55 x 5.5-11 µm, variously shaped, smoth or with a few coarse excrescences: ***polygramma***

70. Spores pip-shaped or somewhat elongated. Pileus sepia brown. Odour nitrous. Cespitose on coniferous wood: ***stipata***

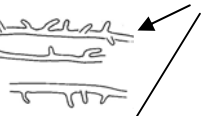
Key 2 From Maas G.

1. Pileus **white** to **whitish** (although the center may be more or less colored).

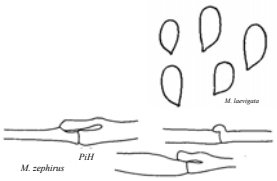
2. Hyphae of the <u>pileipellis</u> smooth or covered with granular matter, definitely not diverticulate.

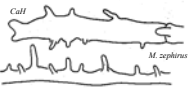


6. Hyphae of the <u>cortical</u> layer of the stipe diverticulate.

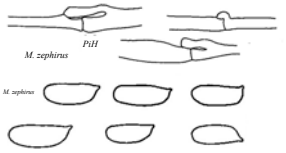


7. Stipe firm to tough, watery grey to bluish grey at the base when young, gradually turning pure white throughout. Hyphae of the <u>pileipellis</u> embedded in gelatinous matter. <u>Spores</u> pip-shaped: .
252 ***laevigata***



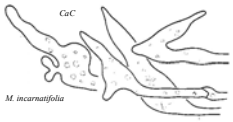


7. Stipe fragile, whitish above, greyish below, sometimes tinted incarnate or lilac, gradually turning reddish brown to vinaceous brown. Hyphae of the <u>pileipellis</u> not embedded in gelatinous matter. <u>Spores</u> elongated to cylindrical: . . 310 ***zephirus***



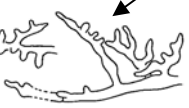
6. Hyphae of the cortical layer of the stipe smooth.

8. Caulocystidia conspicuous (to be found near the apex of the stipe) .
9. Hyphae with clamps. Pleurocystidia absent: .251 ****incarnatifolia***
9. Hyphae clampless. Pleurocystidia present: 299 ****sudorella***



8. Caulocystidia absent. Odor, if sometimes faint, nitrous or raphanoid: pale form of . 264 ***niveipes***

2. Hyphae of the <u>pileipellis</u> diverticulate.



10. Lamellae 23-40 reaching the stipe.

11. Lamellae adnate, occasionally decurrent with a tooth. Stipe watery grey or violet-grey when young: . .254 ***laevigatoides***

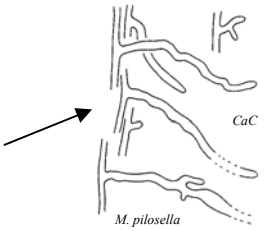
11. Lamellae narrowly adnate to almost free. Stipe white: . 275 ***polygramma*** f. ***candida***

10. Lamellae **c.** 20 or less reaching the stipe.

12. Lamellae more than 10 reaching the stipe. Spores more than 4.5 µm broad.

13. Lamellae adnate, broadly adnate or decurrent with a short tooth. Stipe not rooting. Pleurocystidia absent.

14. Hyphae of the cortical layer of the stipe covered with <u>caulocystidia</u> projecting at right angles: . . . 271 ***pilosella***



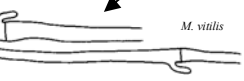
14. Hyphae of the cortical layer of the stipe lacking caulocystidia: white form of 231 ***citrinomarginata***

13. Lamellae narrowly adnate. Stipe rooting. Pleurocystidia present: 241 ****eburnea***
12. Lamellae less than 10 reaching the stipe. Spores 3.6-4.0 µm broad: 243 ****fallax***

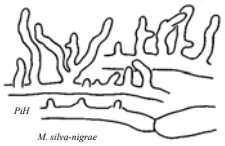
1. Pileus pronouncedly colored

15. All hyphae and hymenial elements **clampless**.

16. Basidia 2-spored.



17. Hyphae of the pileipellis diverticulate.



18. Spores 7-10 µm broad.

19. Stipe grey-brown, avellaneous, ochraceous or yellow.

20. Odor indistinctive or absent.

21. Lamellae decurrent with a short tooth. Pleurocystidia present: . . 259 ***lutea***

21. Lamellae not decurrent with a tooth. Pleurocystidia absent: 229 ****avellaneibrunnea***

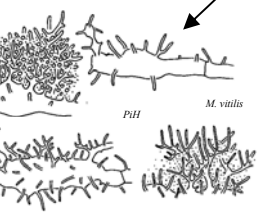
20. Odor nitrous. Lamellae adnate. Pleurocystidia present: . 285 ***silvae-nigrae***

19. Stipe white. Pleurocystidia present: 238 ****corticaticeps***
18. Spores 5-6 µm broad**.** Pileus grey-brown. Odor absent: 294 ****subfusca***

17. Hyphae of the pileipellis smooth. Odor, if sometimes faint, nitrous or raphanoid: . . . 264 ***niveipes***

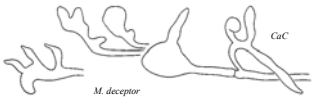
16. Basidia 4-spored.

22. Hyphae of the pileipellis diverticulate.



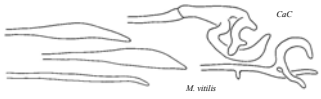
23. Pileus black-brown, vinaceous brown or grey-brown.

24. Hyphae of the cortical layer of the stipe not embedded in gelatinous matter; stipe not slippery when wet.



25. Spores 6.5-8 µm broad**.** Caulocystidia absent: 229 ****avellaneibrunnea***
25. Spores 5.5-6.5 µm broad. <u>Caulocystidia</u> conspicuous: . 239 ****deceptor***

24. Hyphae of the cortical layer of the stipe embedded in gelatinous matter; stipe slippery when wet. Caulocystidia present: . 308 ***vitilis***

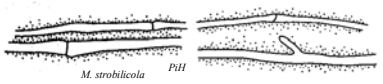


23. Pileus citrine. Spores up to 5.5 µm broad: . 231 ***chrysocorypha***

22. Hyphae of both the pileipellis and the cortical layer of the stipe smooth.

26. Basidiomata associated with deciduous trees. Stipe from bluish white or greyish white (when very young) turning white. Hyphae of the pileipellis not embedded in gelatinous matter: . . 264 ***niveipes***

26. Basidiomata growing on fallen *Picea* cones. Stipe grey-brown. Hyphae of the pileipellis embedded in gelatinous matter: . 289 ***strobilicola***



15. All hyphae and hymenial elements with clamp connections:

27. Narrower hyphae of the pileipellis diverticulate, with the excrescences fairly closely spaced to crowded, generally forming dense masses.

28. Stipe yellow, brownish with some yellow tint, greenish yellow, or olive green.

29. Excrescences of the hyphae of the pileipellis cylindrical, narrow.

30. Hyphae of both the pileipellis and the cortical layer of the stipe not embedded in gelatinous matter.

31. Lamellar edge whitish. Stipe cartilaginous Odor pleasant. Terminal cells of the hyphae of the cortical layer of the stipe not observed: 222 ****alcaliniformis***

31. Lamellar edge mostly yellow, at least near the margin of the pileus. Stipe fragile. Odor absent, indistinctive or chemical. Terminal cells of the hyphae of the cortical layer of the stipe conspicuous: Growing in lawns, under trees (Quercus, Fagus, Populus, Salix, Larix, Picea), among terrestrial mosses, on moss-covered tree trunk, among fallen leaves, on fallen twigs, on the decaying bark of standing trees. 231 ***citrinomarginata*** Gillet

30. Hyphae of both the pileipellis and the cortical layer of the stipe embedded in gelatinous matter. Stipe fragile. Odor nitrous: .

287 ***stipata***

29. Excrescences of the hyphae of the pileipellis markedly inflated or with inflated parts.

32. Spores broader than 5 µm.

33. Pileus with yellowish, reddish or vinaceous tints. Lamellae decurrent with a short tooth, at first white, then pale creamy pink or pale lilaceous pink (section *Rubromarginatae)*: . 199 ***renati***

33. Pileus grey-green, olive green, avellaneous, brown, dark brown. Lamellae not decurrent with a tooth, whitish to grey: Growing on fallen branches or decayed wood of coniferous trees (Abies, Juniperous, Picea) but also on soil around stumps.

305 ***viridimarginata*** P. Karst

32. Spores up to 4.5 µm broad. Pileus pale yellow or somewhat flesh-colored, pallescent with age: 295 ****subincarnata***

28. Stipe with no trace of yellowish tints, nor olive green:

34. Hyphae of the cortical layer of the stipe smooth.

35. Basidia not very slender, 7-11 µm broad when mature. Cheilocystidia numerous to abundant. Stipes neither connate nor peronate.

36. Pleurocystidia present. Hyphae of the pileipellis embedded in gelatinous matter or their cell-walls gelatinizing.

37. Odor not nitrous or absent.

38. Stipe firm to tough. Terminal cells of the hyphae of the cortical layer of the stipe not greatly inflated.

39. Odor faint to strong, but variously interpreted. Stipe generally rooting. Associated with deciduous trees:

272 ***polygramma***

39. Odor absent. Stipe not rooting, Associated with coniferous trees:

. 279 ****robusta***

38. Stipe fragile, not rooting. Terminal cells of the hyphae of the cortical layer of the stipe, all or in part, greatly inflated**:** 256 ***leptocephala***

37. Odor nitrous. Stipe fragile, not rooting: . 256 ***leptocephala***

36. Not these two characters combined.

40. Hyphae of the pileipellis not embedded in gelatinous matter.

41. Color of the stipe with a pronounced brown component.

42. Pleurocystidia present.

43. Pileus pruinose when young. Lamellae fairly dark, sepia grey-brown: . 256 ***leptocephala***

43. Pileus strikingly furfuraceous-pubescent when young. Lamellae white: . . 293 ****subfumosa***

42. Pleurocystidia absent.

44. Lamellae adnate, without pinkish sheen. Excrescences of the hyphae of the pileipellis generally broader than 1 µm.

45. Pileus lubricous when moist, margin without yellowish tint. Excrescences of the hyphae of the pileipellis cylindrical: . . . 256 ***leptocephala***

45. Pileus not lubricous when moist, margin with yellowish tint. Excrescences of the hyphae of the pileipellis inflated or with inflated parts:
305 ***viridimarginata***

44. Lamellae almost free, white with a pinkish sheen. Excrescences of the hyphae of the pileipellis up to 1 µm broad: . 262 ***nigroalba***

41. Color of the stipe without brown shades.

46. Lamellae 25 or more reaching the stipe.

47. Lamellae greyish. Stipe very fragile. Growing among ferns:
245 ****fragillima***

47. Lamellae white. Stipe "rigido-fragilis". Growing among shrubs in coniferous forest: . 292 ***subexcisa***

46. Lamellae 14-16 reaching the stipe: . . . 291 ****subcana***

40. Hyphae of the pileipellis embedded in gelatinous matter.

48. Stipe fragile.

49. Hyphae of the cortical layer of the stipe embedded in gelatinous matter; the terminal cells little widened:
. .287 ***stipata***

49. Hyphae of the cortical layer of the stipe not embedded in gelatinous matter; the terminal cells, all or in part, greatly inflated: . 256 ***leptocephala***

48. Stipe rigid, cartilaginous Hyphae of the cortical layer of the stipe not embedded in gelatinous matter: .
273 ***polygramma***

35. Basidia slender, 5.5-6.5 µm broad when mature. Cheilocystidia not numerous. Stipes connate and peronate. Odor pungent: .267 ****overholtsii***

34. Hyphae of the cortical layer of the stipe diverticulate:

50. Lamellae decurrent with a tooth. Hyphae of the cortical layer of the stipe embedded in gelatinous matter or their cell-walls gelatinizing, or again their terminal cells covered with clumps of gelatinous matter.

51. Pleurocystidia present. Stipe rigid-brittle, cartilaginous or tough.

52. Lamellae grey in various shades.

53. Stipe black to dark sepia grey-brown. Hyphae of the pileipellis with excrescences up to 13.5 µm long: 235 ****coracina***

53. Stipe pale grey-brown to pale grey. Hyphae of the pileipellis with excrescences up to 45 µm long: .279 ****robusta***

52. Lamellae white: . 292 ***subexcisa***

51. Pleurocystidia absent. Stipe fragile: . 287 ***stipata***

50. Not these characters combined.

54. Pleurocystidia present.

55. Stipe firm to tough or cartilaginous.

56. Cheilocystidia slender, cylindrical to subfusiform.

57. Spores 4.5-5.8 µm broad: . . 292 ***subexcisa***

57. Spores 6.3-6.7 µm broad. Odor alkaline: 302 ****vexans***

56. Cheilocystidia differently shaped, much broadened either below, in the middle, or above.

58. Basidiomata associated with coniferous trees.

59. Stipe black to dark sepia grey-brown. Hyphae of the pileipellis with excrescences up to 13.5 µm long: 235 ****coracina***

59. Stipe pale grey-brown to pale grey. Hyphae of the pileipellis with excrescences up to 45 µm long: 279 ****robusta***

58. Basidiomata not associated with coniferous trees.

60. Basidiomata growing on stumps and fallen branches of deciduous trees. Pileus and stipe suffused with purplish or violaceous tints. Terminal cells of the hyphae of the cortical layer of the stipe conspicuous: 300 ****tenuicula***

60. Basidiomata growing in *Sphagnum* bogs. Neither pileus nor stipe suffused with purplish or violaceous tints. Terminal cells of the hyphae of the cortical layer of the stipe unknown:
275 ****praelonga***

55. Stipe fragile.

61. Pileus black, very dark grey, dark sepia brown, grey-brown, without or with some violaceous tint. Lamellae adnate.

62. Lamellae white, greyish white or pale yellowish grey. Basidiomata lignicolous or growing among woody debris.

63. Pileus pruinose when young, glabrescent.

64. Odor mild or indistinctive.

65. Lamellae 20-30 reaching the stipe: . . 226 ****alnicola***

65. Lamellae 14-16 reaching the stipe: . 291****subcana***

64. Odor nitrous or raphanoid. Stipe exuding a watery fluid when incised. Growing on debris of various deciduous tress (Alnus, Fraxinus, Populpous, Quercus) or on moss

covered base of livinf trees, also knwn from very decayed wood of Picea and other coniferous debris.::
. 216 ***abramsii***

63. Pileus strikingly furfuraccous-pubescent when young. Stipe floccose-puberulous above: 293 ***subfumosa***

62. Lamellae fairly dark grey to grey-brown. Basidiomata typically growing in gramineous habitats. Odor not nitrous:. 219 ***aetites***

61. Pileus grey with some bluish tint. Lamellae decurrent with a tooth: 261 ***murina***

54. Pleurocystidia absent.

66. Lamellae decurrent with a tooth.

67. Stipe brownish to dark brown.

68. Lamellae c. 15 reaching the stipe. Excrescences of the hyphae of the pileipellis up to 18 µm long. Odor pleasant: 222 ***alcaliniformis***

68. Lamellae 22-23 reaching the stipe. Excrescences of the hyphae of the pileipellis less than 10 µm long. Odor subfarinaceous: .
277 ***pseudoinclinata***

67. Stipe grey: . 249 ***griseiconica***

66. Lamellae not decurrent with a tooth.

69. Stipe grey-brown to dark sepia brown.

70. Spores up to 6 µm broad. Cheilocystidia up to 55 µm long.

71. Pileus lubricous when moist (hyphae of the pileipellis tending to become gelatinized). Lamellae adnate. Terminal cells of the hyphae of the cortical layer of the stipe absent or rarely observed Growing on debris of various deciduous tress (Alnus, Fraxinus, Populpous, Quercus) or on moss covered base of living trees, also known from very decayed wood of Picea and other coniferous debris.:: . 216 ***abramsii***

71. Pileus dry (hyphae of the pileipellis not becoming gelatinized). Lamellae emarginate. Terminal cells of the hyphae of the cortical layer of the stipe conspicuous: . . 303 ***villicaulis***

70. Spores 6-7 µm broad. Cheilocystidia 50-90 µm long:
225 ***alnetorum***

69. Stipe greyish white: 297 ***subvitrea***

27. Narrower hyphae of the pileipellis smooth (sometimes covered with granular matter) or covered with very few, widely spaced, and small excrescences

72. Pleurocystidia present.

73. Hyphae of the pileipellis embedded in gelatinous matter.

74. Odor nitrous (sometimes experienced as alkaline).

75. Basidia 65.-9 µm broad. Spores 7.5-10 x 4.5-7 µm: . . .
224 ***algeriensis***

75. Basidia 4.5-5.5 µm broad. Spores 6.3-7.3 x 3.7-4 µm: . . 283 ***semivestipes***

74. Odor not nitrous. Cheilocystidia very slender, up to 5.5 µm broad: 267 ***overholtsii***

73. Hyphae of the pileipellis not embedded in gelatinous matter.

76. Spores 6-7 µm broad.

77. Terminal cells of the hyphae of the cortical layer of the stipe smooth: . 264 ***niveipes***

77. Terminal cells of the hyphae of the cortical layer of the stipe strikingly diverticulate:
300 ***tenuicula***

76. Spores 3.5-5.5 µm broad.

78. Stipe cartilaginous, tough. Basidia 4.5-5.5 µm broad: . 283 ***semivestipes***

78. Stipe fragile. Basidia 8-9 µm broad: . 310 ***zephirus***

72. Pleurocystidia absent.

79. Hyphae of the pileipellis embedded in gelatinous matter.

80. Odor nitrous. Spores 9.2-11.6 x 5.4-6.3 µm: 287 ***stipata***

80. Odor not nitrous. Spores 6.3-9 x 3.8-4.7 µm: . 252 ***laevigata***

79. Hyphae of the pileipellis not embedded in gelatinous matter.

81. Lamellae decurrent with a tooth.

82. Hyphae of the cortical layer of the stipe smooth or sparsely covered with small excrescences.

83. Lamellae c. 22 reaching the stipe. Spores 5.4-6.7 µm broad: 277 ***pseudoinclinata***

83. Lamellae 9-14 reaching the stipe. Spores 3.8-4.5 µm broad: . 247 ***fuliginella***

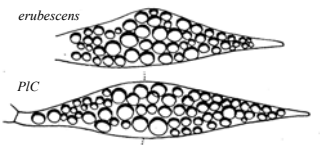
82. Hyphae of the cortical layer of the stipe coarsely diverticulate. Lamellae reaching the stipe:20-27: . . 310 ***zephirus***

81. Lamellae not decurrent with a tooth.

84. Pileus avellaneous. Associated with coniferous trees: . 228 ***avellanea***

84. Pileus pallid, with reddish brown center. Associated with deciduous trees:
268 ***pectinata***

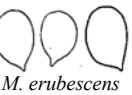
Section LACTIPEDES (Fr.) Quél.



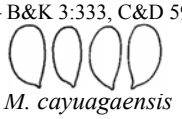
a. Spores pip-shaped to broadly pip-shaped

b. Lamellae becoming stained with reddish brown when bruised**.** Taste bitter. Pleurocystidia numerous. On moss-covered trunks of mainly deciduous trees (*Acer*, *Fagus*, *Quercus*). Eur, USA.

2Frb ± smooth; fluid cloudy, sparse, staining brown; typically on mossy trunks of living broadleaved trees, including Quercus and Fagus. Cap 5-20 mm, convex to hemispherical, warm brown colours like date brown, sometimes with a darker cigar-brown umbo; gills narrowly adnate with a decurrent tooth, ventricose and rather thick, L = 11-17(-20), greyish white, staining orange red when damaged; stem 10-50 x 0.5-2 mm, smooth but minutely pubescent at the top, milky coffee to fulvous, usually paler at the top; taste bitter. Sp 7-11 x (4-)5-8 µm, Qav = 1.3-1.4, broadly ellipsoid, amyloid; basidia 2-spored; cheilocystidia of two types, one narrowly pointed, the other, which mostly occurs near the cap margin, very variable, often clavate with long narrow irregular fingers (fig. 361B); pleurocystidia like the narrowly pointed type. Autumn to early winter; common in temp., rare, but locally more frequent in hemib.-southern bore.; DK (LC), FI (LC), NO (NT), SE (LC). – B&K 3:333, C&D 594, FAD 50B, GBW 3:436, Rob 439.


M. erubescens

erubescens Hohn.
Description: MG II-318


M. cayuagaensis

Illustrations : bk3.333 - co118e - da357 - my06.170 - rh349 - ro439

b. Lamellae not becoming stained**.** Pleurocystidia absent. Growing among fallen leaves. Known only from the region around Ithaca, New York, USA.

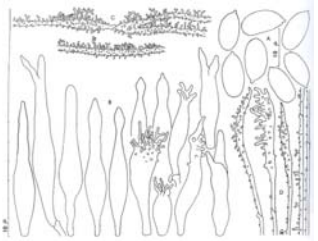
cayugaensis AH Smith
Description: MG II-317

a. Spores elongated pip-shaped to almost cylindrical

b. Basidiomata usually fasciculate. Stipe apically dark brown. On debris and decayed wood of deciduous trees, among conifers (*Pinus*), on burnt places.Eur.

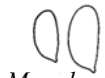

M. leucogala

leucogala (Cooke) Sacc.
Description: MG II-324
Illustrations : bk3.346 - jo176.3 - ph070-ro455

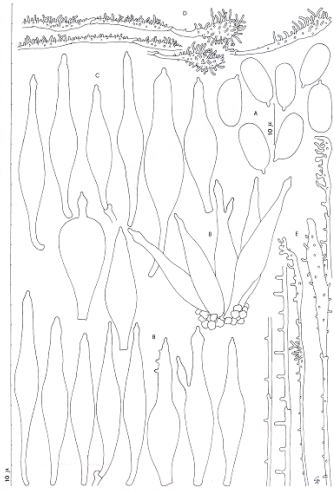


b. Basidiomata scattered, rarely subfasciculate. Stipe apically pale brown to white. On debris and decayed wood of various deciduous trees, on *Alnus* cones as wall as on fallen needles of *Larix* and *Picea.* Eur, Nam.

Fluid milky white, not staining brown. Cap 10-20 mm, bell-shaped to paraboloid, grey brown, from pale clay buff to hazel with sepia disc and radial lines, sometimes white or very dark brown to black; gills ventricose, adnate with a decurrent tooth, L = 14-19(-20), white or off white; stem 50-80 x 0.5-1.5(-2) mm, slightly pubescent, concolorous with the cap, normally grey brown, darker below, white or blackish in some collections. Sp 9-13 (-14) x 5-7 µm, Qav = 1.5-2.0, ellipsoid to subcylindrical, amyloid; cheilo- and pleurocystidia 60-100 x 5-15 µm, lageniform with rounded ends, but often with a characteristic broader tip, slightly arrow shaped (fig. 361A); pleurocystidia very evident, protruding conspicuously from the gill face, visible with a lens on fresh material; caulocystidia variable, many like in fig. 359I, often longer, but some wider and variously diverticulate. On all kinds of forest litter, including burnt sites and also in more open habitats, not or rarely on decaying trunks, also among Sphagnum; early summer to early winter; very common in temp.-bore., also observed in arc./alp.; DK (LC), FI (LC), FO, NO (LC), SE (LC). – B&K 3:339 (poor), FAD 50E (dark form), 51G, GBW 3:437, Rob 443-444, 452 (white form), 455 (dark form), Ves 234, •.


M. galopus

galopus (Pers.: Fr.) Kummer
Description: MG II-321



bk3.339 - ce3.1005 - co119e - da358 - fi1.108 - ge149 - gw065 - jo175.2 - ke197 - my07.10 - my11.57 - ph070 - rh349 - ro443

c. Stipe grey-brown in various shades: 321 *var.* ***galopus***

c. Stipe white: . 324 *var.* ***candida*** da359 - jo175.3 - ke198 - ph070 - ro452

Section SANGUINOLENTAE Maas G.

a. Lamellae 23-26 reaching the stipe; at first pale dingy ochraceous, darkening with age. Stipe orange-yellow above, reddish brown below. Growing among leaves in beech and beech-Hemlock forests. USA.

atkinsoniana AH Smith
Description: MG II-328

a. Lamellae 13-21 reaching the stipe; at first whitish, turning pale brownish pink or pale purplish. Stipe not orange-yellow above. On humus and vegetable debris among grass and moss, on fallen twigs and moss-covered trunks of deciduous trees, among fallen needles of coniferous trees (*Juniperus*, *Pinus*). Eur, Nam.

Frb hardly pruinose, delicate. Cap 5-15 mm, paraboloid to hemispherical, glabrous, distinctly striate or sulcate, colour variable, pale buff with reddish buff to coral lines over gills to dark red brown, often with a purple tint, at margin often coloured like gill edge; gills adnateto subdecurrent, ventricose, L = 13-21, often white with a dark red-brown edge extending along the whole gill; stem 20-100 x 0.5-1.5 mm, fawn to vinaceous buff, clay pink to dark red brown, sometimes densely spotted with red dots at the top, may be shiny, at base attached by fine hyphae, usually yielding a brownish red fluid when damaged. Sp 7-10 x 4.5-6 µm, Qav = c. 1.5, dacryoid, amyloid; cheilocystidia sharply acuminate (fig. 355E), useful for collections with no fluid; caulocystidia variable, but usually narrow tipped. On humus and litter of coniferous trees, often in deep moss, but also occurs with Betula, Fagus and Quercus in oligotrophic environments; early summer to late autumn; common in temp.-bore.; DK (LC), FI (LC), FO, NO (LC), SE (LC). – B&K 3:322 (as capillaripes), 364, FAD 50A, GBW 3:440, Rob 463, 465, Ves 234, •.

sanguinolenta (Alb. & Schw.: Fr.) Kummer
Description: MG II-330

Illustrations : bk3.364 - ce2.565 - co131a - da355 - fi1.109 - ke201 - ph070 - rh348 - ro463

b. Pileus obtusely conical to campanulate. Spores up to 5.5 µm broad:

var. ***sanguinolenta***
Description: MG II-330

b. Pileus acutely conical to cuspidate. Spores 5-7 µm broad. On decayed aspen wood. USA.

******var.* ***cuspidata*** (Mitchel & Smith) Maas G.
Description: MG II-333

Section GALACTOPODA (Earle) Maas G.

On fallen branches and decayed wood of deciduous trees, less frequently on conifers (*Picea*). Eur, Nam

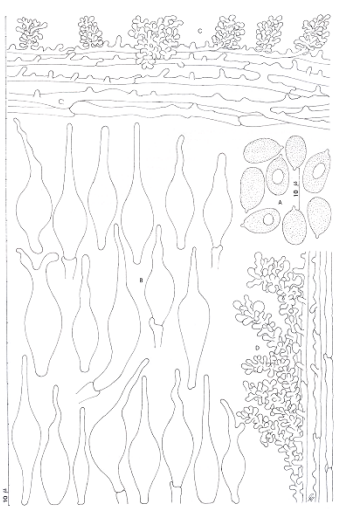
Frb strongly pruinose, robust. Cap 10-30 mm, hemispherical to bell-shaped, often with crenate margin, pinkish brown to purplish date, hygrophanous, drying to clay pink; gills broadly adnate to subdecurrent, ventricose, L = 15-26, pinkish white to pale vinaceous, edge usually with some reddish brown colour, at least towards the cap margin, sometimes concolorous with the gill; stem 30-100 x 2-4 mm, hollow, fragile, concolorous with the cap or darker towards the base, yielding dark red fluid when damaged. Sp 7-11 x 4-7 µm, Qav = 1.5-2.5, dacryoid, amy-loid; cheilocystidia smooth, acuminate, sometimes forked (fig. 355D); caulocystidia clustered, clavate with irregular, often diverticulate shapes. Typically on the wood of broadleaved trees; summer to autumn; very common in temp., common in hemib.bore., occasional in suba.; DK (LC), FI (LC), NO (LC), SE (LC). – B&K 3:340, GBW 3:439, M&J 11, Rob 459, Ves 235, •. M. haematopus (Pers.: Fr.) P. Kumm.

Note: forms with and without coloured gill edge are sometimes recognised.

haematopus (Pers.: Fr.) Kummer

Description: MG II-334

Illustrations: bk3.340 - co131b - da356 - fi2.651 - ge150 - gw098 - jo176.1 - ke197 - my06.999 - ph070 - rh348 - ro459



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Section CROCATAE Maas G.

Fluid orange; frb often stained orange; in deciduous woodland, especially on woody Fagus litter. Cap 5-25(-30) mm, convex to hemispherical, sometimes umbonate, rimose, grey olivaceous buff to brown, vinaceous and sepia; gills narrowly adnate and ventricose, L = 20-25 (-29), white to off white; stem 50-150 x 1-2 mm, umber, pale orange to deep apricot, tough, can be twisted beyond 90° without breaking. Sp 5-10(-11) x 5-7 µm, Qav = 1.6-1.8, ellipsoid to subcylindrical, amyloid; cheilocystidia similar to fig. 359A. Late summer to late autumn; very common in temp. and where Fagus occurs in hemib.; DK (LC), NO (LC), SE (LC). – B&K 3:326, GBW 3:434, FAD 55D, M&J 11, Ves 234, •.

crocata (Schrad.: Fr.) Kummer.

Description: MG II-338

Illustrations: bk3.326 - co130d - da354 - fi2.650 - jo174.1 - my06.14 - ph070 - rh347 - ro435

Among fallen leaves and on decaying branches predominantly in *Fagus sylvatica* woods. Eur, NAf, Nam.

Section HYGROCYBOIDEAE (Fr.) Sing. ***epipterygia*** (Scop.:Fr.) SF Gray **and its varieties**

a. Hyphae and hymenial elements clampless. Basidia 2-spored.

b. Pileus dark brown to almost black. Odor pronounced, farinaceous-acid. Growing among moss.

Clamps absent. Cap (4-)6-12(-16) mm, olive brown, dark sepia, cigar brown, umber drab, olive grey or pale grey brown, often with yellow or white margin; L = 16-22; stem 15-75 x 1-2.5 mm. Sp 11.5-13.5(-14.5) x 5.5-7(-9.5) µm, Qav = 1.7-2.1. In other characters as the main variety. Gregarious in damp moss, mostly Sphagnum, but also Polytrichum, Aulacomnium and Hylocomium, in mires and dwarf shrub heaths, along brooks and roadsides; often on north slopes on acid soil; common in suba.-arc./alp.; FI, IS, NO, SE.

var. ***badiceps*** M. Lange

Description MGII-350

b. Pileus brown with citrine shade. Odor indistinctive. Growing in subalpine coniferous forest. *var.* ***brunneola*** Favre ex Maas G.

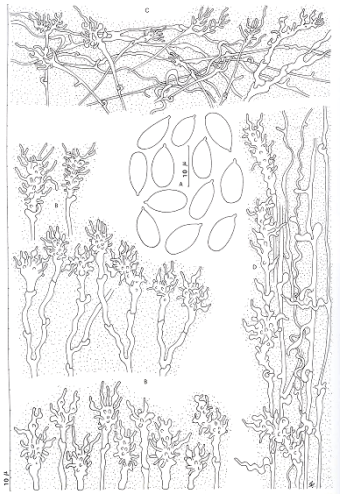
Description MGII-352

a. Hyphae and hymenial elements clamped.

b. Basidia 2-spored. Among moss in pine woods. Eur. *var.* ***epipterygioides*** (Pearson) Kuhn.

Clamps present. Frb with pale colours especially with stem having luteous to yellow with greenish tones, very dark colours have not been recorded, otherwise similar to the main variety. In moist habitats on herbaceous and woody substrates throughout; rare, but locally occasional in temp.-bore., possibly overlooked; DK, SE.

Description MGII-353



b. Basidia 4-spored.

c. Spores rather narrowly pip-shaped, almost cylindrical. Odor disagreeable, then of iodoform: the idioform-smelling form of *:* *var.* ***epipterygia***

Basidia 4-spored. Cap 5-35 mm, convex, conical, paraboloid or bell-shaped, often papillate, very glutinous, from pale grey through buff, olivaceous buff over sulphur yellow, lemon yellow, blood red to dark brown and almost black, extremely variable; gills broadly adnate often with a decurrent tooth or even decurrent, ventricose, L = 11-30, white often with a yellow tone, sometimes pinkish or becoming red, edge separable as an elastic thread; stem 14-110 x 0.8-4 mm, viscid, white, pale straw, lemon yellow, pale greenish yellow, dark brick to brown vinaceous. Sp 8-10 x 5-8 µm, Qav = 1.1-2, ellipsoid, dacryoid to amygdaloid, amyloid; cheilocystidia very variable, congested with many irregular shaped fingers like in fig. 365C, embedded in the gelatinous gill edge. On small standing trees, all sorts of litter including fallen wood, and in grass; autumn to early winter; very common in temp.-arc./alp.; DK (LC), FI (LC), FO, IS, NO (LC), SE (LC). – B&K 3:329-330, 332, GBW 3:432-433, M&J 36 (as viscosa), Rob 389, 407, 409, Ves 238, •.

Description MGII-347

c. Spores pip-shaped to broadly pip-shaped**.** Odor as a rule not of iodoform.

d. Pileus dark-colored (olivaceous yellow, olive brown, paler or darker grey-brown to almost black) at the center; margin yellowish or not.

e. Stipe grey, pinkish brown, red-brown.

f. Lamellae grey in various shades, but with no pinkish or purplish tints. Growing among grass and moss. *var.* ***pelliculosa*** (Fr.) Maas G.

Description MGII-358

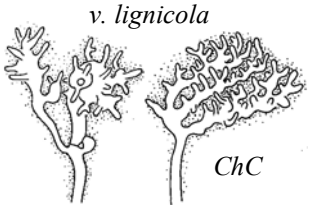
f. Lamellae with pinkish or purplish tints. *var.* ***fuscopurpurea*** (Arnolds) Maas

Description MGII-354

e. Stipe bright yellow, yellow-green, greenish, at least in part or when young.

f. Cheilocystidia with their excrescences more or less of the same length, neither very long, net some strikingly needle-like.

v. lignicola



g. Pileus margin not yellow. Growing on coniferous wood.

var. ***atroviscosa*** Malençon ex Maas G.

Description MGII-349

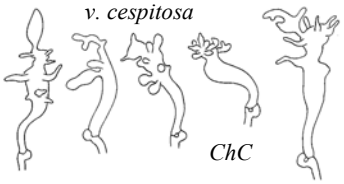
g. Pileus margin yellow or whitish.

h. Cheilocystidia with cylindrical excrescences. Growing on coniferous wood. *var.* ***lignicola*** AH Smith.

Description MGII-356

h. Cheilocystidia with several of their excrescences markedly inflated. At the base of a coniferous stump. USA. *var.* ***cespitosa*** Thiers

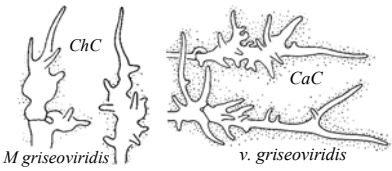
Description MGII-353



f. Cheilocystidia with some of their excrescences much longer than the others and/or needle-like.

g. Lamellae becoming stained with reddish brown spots. Stipe usually dingy purplish brown towards the base. Terminal cells with cylindrical excrescences. Growing under oaks. *var.* ***griseoviridis*** (AH Smith) Maas

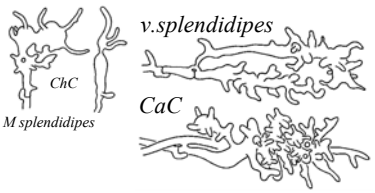
Description MGII-355



g. Neither lamellae nor stipe reddening. Terminal cells with several of their excrescences sublageniform. Growing on decayed pine needles.

var. ***splendidipes*** (Peck) Maas G.

Description MGII-359



d. Pileus light-colored (whitish, yellowish, citrine or pale greenish), becoming greyish or brownish at the disk with age.

e. Spores broadly pip-shaped, mature broader than 6 µm. Terminal cells of the hyphae of the cortical layer of the stipe covered with short excrescences c. 5 µm long.

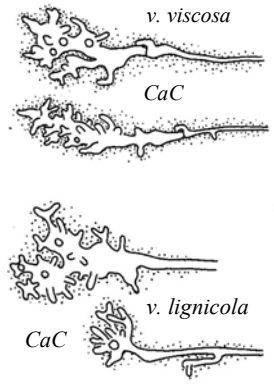
f. Flesh turning red-brown in all parts with age. Odor rancid. Occurring on decayed stumps and fallen needles of conifers (*Abies*, *Picea*).

var. ***viscosa*** (Maire) Ricken

Description MGII-360

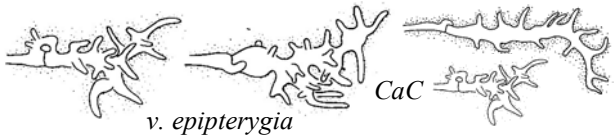
f. Flesh not reddening with age. Odor farinaceous. Growing on coniferous wood. *var.* ***lignicola*** AH Smith

Description MGII-356



e. Spores pip-shaped, mature up to 6 µm broad**.** Terminal cells of the hyphae of the cortical layer of the stipe covered with several longer excrescences up to 12**.**5 µm long. On humus in mixed woods on acid soil, in mossy lans, among fallen coniferous needles (*Juniperus*, *Picea*, *Pinus*) more rarely on decayed wood of deciduous trees. Eur, Nam. *var.* ***epipterygia***

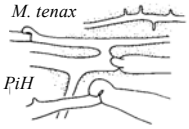
Description MGII-347



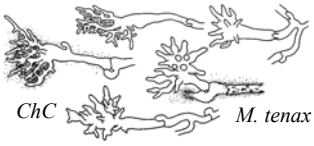
Section FULIGINELLAE (A. H. Smith ex Sing.) Maas G.

a. Lamellae ascending, with convex edge.

b. Cheilocystidia generally slender, 4.5-10 µm broad (except where much branched excrescences seem to form a head). Pleurocystidia with strikingly acute apex. Hyphae of the pileipellis smooth or with few excrescences. Growing under various conifer trees. Nam.

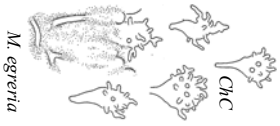


tenax AH Smith
Description MGII-371

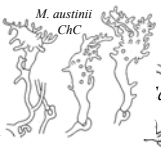


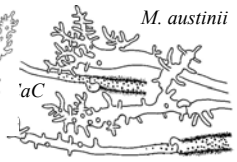
b. Cheilocystidia stubby, 9-18 µm broad**.** Pleurocystidia apically not particularly acute, more often broadly rounded. Hyphae of the pileipellis covered with scattered to very numerous excrescences. Under *Abies*. USA.

egregia Maas G.
Description MGII-367



a. Lamellae arcuate, with concave edge.



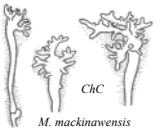


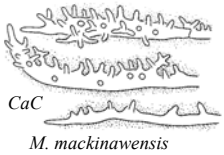
b. Pleurocystidia present. Cheilocystidia clavate.

c. Pileus white. Terminal cells of the hyphae of the cortical layer of the stipe in part with long and very much branched excrescences. On bark on dead spruce and on fallen twigs embedded in moss of a *Thuja-Picea* swamp. Nam.

austinii (Peck) Kuhn.
Description MGII-365

c. Pileus grey in various shades. Terminal cells of the hyphae of the cortical layer of the stipe with short and simple to little branched excrescences. On dead coniferous branches. USA.

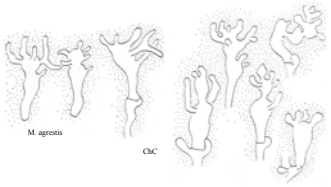




mackinawensis AH Smith
Description MGII-369

b. Pleurocystidia absent.

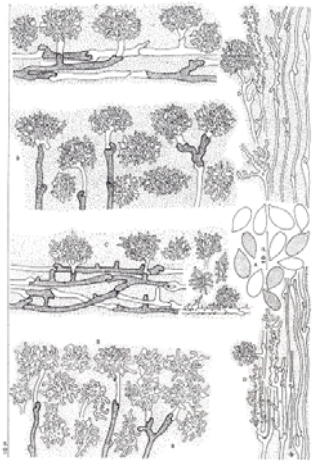
d. Cheilocystidia clavate, with rather few, very coarse excrescence. Not associated with conifers. Gregarious among grass in open field and in moss under Juniper.



Sp on av > 5 µm wide; L = (20-)26-32; cheilocystidia clavate with broad and narrow diverticulae (fig. 365D). Cap up to 20 mm, conical, becoming irregularly bell-shaped, shallowly sulcate and translucently striate, blackish grey, blackish brown to dark grey brown, paler when dry; gills decurrent, with plane edge to arcuate, pale to dark grey, the edge paler and separable as an elastic thread; stem up to 65 x 1.5-3.5 mm, hollow, smooth, pruinose but glabrescent except for the top, viscid, grey. Sp 7-11 x 5-6 µm, Qav = 1.7-1.8. In grass, sometimes near conifers; autumn; known from a few collections from NO (DD, Vestf: Tjøme, Moutmarka).

agrestis Aronsen & Maas G.

d. Cheilocystidia not clavate, apically profusely branched, dendroid: On fallen coniferous needles (Picea, Pinus). Eur, NAf, Nam.

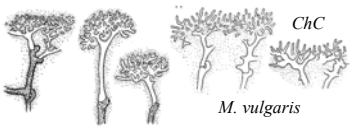


e. Spores 6.7-8.3 x 3.6-4.9 µm:

Sp on av < 5 µm wide; L = 13-22; cheilocystidia highly congested (fig. 365C). Cap 2-20 mm, paraboloid to hemispherical, pellucid striate, plicate, sometimes depressed sometimes with a small umbo, from white through pale grey to drab clay buff; gills arcuate and subdecurrent to decurrent, white to pale grey brown, edge separable as an elastic thread; stem 20-60 x 1-2 mm, hollow, watery white to dark grey brown, sometimes with a pale yellowish tinge, glutinous with a separable gelatinous pellicle, tough. Sp 7-8.5 x 4-5 µm, Qav = 1.7-2, dacryoid, amyloid; cheilocystidia apparently entangled at their outer ends, embedded in a gelatinous layer. On needle-litter, especially of Picea; late summer to winter; common, but locally very common in temp.-bore., rare in suba.; DK (LC), FI (LC), IS, NO (LC), SE (LC). – C&D 593, M&J 1, R&H 345, Rob 353, Ves 238, •.

vulgaris (Pers.: Fr.) Kummer
Description MGII-372

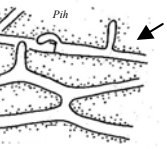
c. Fungus brownish: *var.* ***vulgaris***
Description MGII-373



c. Fungus white. Eur. *var.* ***albida*** Gillet
Description MGII-375

e. Spores 4-5 x 2-2.5 µm, strongly amyloid: ***geesterani*** Heykoop

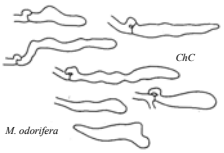
Section INSIGNES Maas G.



a. Hyphae of the pileipellis smooth.

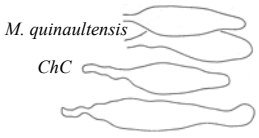
b. Cheilocystidia very slender, up to 10 µm broad: On fallen coniferous needles (e.g. *Thuja*) but also among fallen *Quercus* leaves . USA, Canada.

odorifera (Peck) Sacc
Description MGII-378



b. Cheilocystidia 10-18 µm broad: Growing on fallen needles. Western part of USA

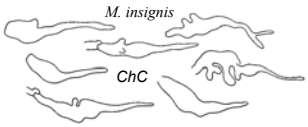
quinaultensis Kauff. Apud Smith
Description MGII-382

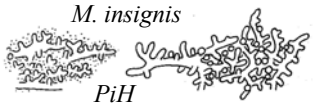


a. Hyphae of the pileipellis diverticulate.

b. Cheilocystidia with the neck very slender and very much narrower than the ventral part: Lamellae broadly adnate. Hyphae of the pileipellis covered with much branched excrescences, embedded in gelatinous matter: On fallen needles of Douglas fir and hemlock. Washington, USA.

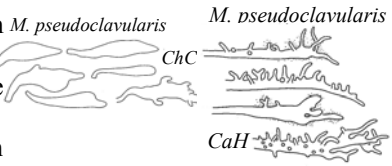
insignis AH Smith
Description MGII-376





M. insignis

b. Cheilocystidia apically obtuse to broadly rounded-, neck not very much narrower than the ventral part.



c. Spores at least 7 x 4 µm. Terminal cells of the hyphae of the cortical layer of the stipe 4.5-6.5 µm wide: Growing under yellow pine. Oregon, USA.

pseudoclavicularis AH Smith
Description MGII-380

c. Spores at most 5 x 3 µm. Terminal cells of the hyphae of the cortical layer of the stipe 9-12.5 µm wide: On dead, fallen logs. Caribean region.

roriduliformis (Murrill) Dennis
Description MGII-383

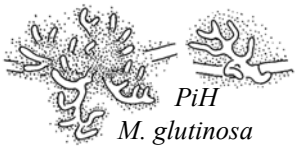
Mycena borellae **Robich,** ***Mycena subinsignis*** **Esteve-Rav. & Barrasa** ***Mycena choriophila*** **Robich & Gasparini** ***Mycena circacea*** **Robich**

calceata Robich

Section INGRATAE Maas G.

On vegetable debris in a hothouse.

M. chlorinosma Sing.
Description MGII-385



Section EUSPEIREA Maas G.

a. Lamellae long decurrent. Hyphae of the pileipellis with much-diverticulate side-branches. On old logs, at the base of harwood trunks. USA, Porto Rico, Cuba.

glutinosa Beardslee
Description MGII-390

a. Lamellae adnate, decurrent with a short tooth. Hyphae of the pileipellis smooth. On logs in woods. Cuba, Venezuela.

euspeirea (Berk. & Curt.) Sacc.
Description MGII-388

graminum Robich, eucalyptina Robich

Section CAESPITOSAE (A. H. Smith ex Sing.) Maas G.

a. Lamellae ascending. Spores 5 µm or more wide. Pleurocystidia present. On wood of various broad-leaves trees. Nam, Russia.

leaiana (Berk.) Sacc.
Description MGII-393

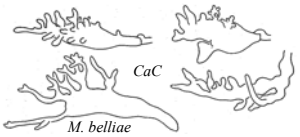
a. Lamellae arcuate. Spores up to 3.5 µm wide. Pleurocystidia absent. On oak logs and stumps. USA.

texensis AH Smith
Description MGII-395

Section CALAMOPHILAE Maas G.

Caulocystidia variously and coarsely diverticulate. Growing exclusively on dead, standing culms of *Phragmites australis* just above the level of stagnant water. Eur.

Frb on the stems of Phragmites above or half in water; gills deeply decurrent and arcuate. Cap 4-20 mm bell-shaped, soon becoming flat, then depressed, umbilicate or funnel-shaped, at first with inrolled margin, clay pink, dingy yellowish brown becoming darker, the separable pellicle tough; gills dingy white to pale sepia, sometimes with a pinkish tinge, L = 18-26; stem 5-65 x 0.5-3 mm, coarsely granular-pubescent, off white, becoming yellowish to pale brown, eventually reddish brown from the base. Sp 10-15 x 5-7 µm (fig. 365A), Qav = c. 2.3, cylindrical, amyloid; cheilocystidia simple clavate or like in fig. 359H or caulocystidium in fig. 361A. Solitary or subcaespitose, in fresh water lakes; autumn to early winter; probably common in temp.; DK (LC), SE (LC). – C&D 557, Cou 94, FAD 61F, Knu 126, M&J 26, •.



belliae (Johnst. apud Berk.) PD Orton
Description MGII-400

Section CALODONTES (Fr. ex Berk.) Quél.

1. Spores inamyloid. Pleurocystidia absent: *subsect.* **VIOLACELLAE**

   Lamellar trama vinescent in Melzer's reagent. Lamellar edge violaceous to purplish brown. Found in leaf humus, under shrubs or deciduous trees, less frequently under conifers (e.g. *Juniperus*, *Picea*). Eur, Mexico.

   Sp without iodine reactions, Qav = c. 1.6. Cap 4-25 mm, convex to paraboloid, but often rather flattened, with or without a depressed centre, very pale rose through clay pink to pale violaceous, hygrophanous, translucently striate; gills adnate with a decurrent tooth to quite deeply decurrent, ventricose, L = 18-30, concolorous with cap; stem 20-60 x 1-2.5 mm, concolorous with cap. Sp 6-7.5 x 3.5-5 µm, Qav = 1.6, dacryoid; cheilocystidia similar to cheilocystidium in fig. 367B, more often without long stems, clavate or fusiform; caulocystidia similar to fig. 367B. Sometimes fasciculate, more often solitary in litter of deciduous trees in damp places or on conifer debris, especially in Populus and Alnus forests; summer to autumn; locally common but few records, perhaps overlooked in temp.-bore., in FI north to Kn; DK (DD), FI (LC), NO (NE), SE (LC). – C&D 604, M&J 31.

   pearsoniana Dennis ex Sing.
   Description MGII-422

1. Spores amyloid. Pleurocystidia present, usually numerous.

   2. Cheilocystidia and pleurocystidia with purplish brown content : *subsect.* **MARGINATAE**

      a. Spores 4-5 µm broad.

         b. Pileus dingy lilac, more brownish in age: Found growing among decaying leaves of *Alnus incana*, and, more rarely, on fallen needles of Picea abies. Known from Finland.

      Note: forms from FI occurring north to PS with Alnus and Picea, with sp > 4 µm wide and pleurocystid-ia protruding further from the hymenium than in the typical M. pelianthina, have been described as **M. lammiensis** Harmaja (Prunulus l. (Harmaja) Harmaja). This difference is not easily demonstrated since the difference in sp size is so small. Collections from southern Fagus forests sometimes have sp > 4 µm wide. It may be simply within the intraspecific variation of M. pelianthina; this should soon be resolved using molecular methods.

      lammiensis Harmaja
      Description MGII-403

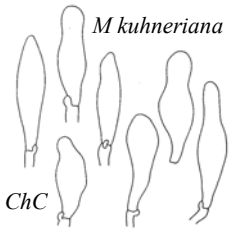
      b. Pileus dark purplish brown to dark greyish violet, pallescent and with a dingy yellowish shade in age. Growing on humus among deciduous trees. USA.

      rutilantiformis (Murrill) Murrill
      Description MGII-408

      a. Spores less than 4 µm broad. Growing among vegetable debris under various deciduous trees (*Alnus*, *Fagus*, *Fraxinus*, *Quercus*) but also on fallen needles in Picea abies woods on calcareous soil. Eur, NAf, Nam.

      Gill edge purplish black; on leaf litter of broadleaved trees, rarely on conifer litter; smell strong, of radish. Cap 15-55 mm, convex, hygrophanous, pale vinaceous buff to dark brown or purplish brown, often with a darker edge; gills emarginate, ventricose to sinuate, L ≥ 28, violaceous grey to grey brown, coloured cystidia visible on the face as many dark dots, edge crenulate, dark violet black; stem 30-70 x 2-8 mm, broader below than above, silky pale fawn with darker longitudinal fibrils. Sp 6.5-8.5 x 3.5-4.5 µm, Qav = 1.6-2, ellipsoid, amyloid; cheilo- and pleurocystidia narrowly lageniform, up to 100 µm long, (fig. 359E) with purple brown contents; pileipellis and stem surface hyphae smooth, caulocystidia simple curved hairs. On litter of Fagaceae on rich soils, also with Alnus in northern part of distribution area, rarely in mountain Betula forests or on conifer litter; late summer to autumn; common in temp.-hemib., occasional. in bore.; DK (LC), FI (EN, U: Helsinki), NO (VU), SE (LC). B&K 3:352, GBW 3:397, M&J 31b, Ves 232, •.

      pelianthina (Fr.) Quél.
      Description MGII-405

   2. Cheilocystidia and pleurocystidia colorless content *: subsect.* **PURAE**

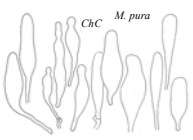
      a. Lamellae decurrent, lamellar edge concave. Cheilocystidia not long-stalked. Growing in oak woods in Nam, under *Fagus* in Norway.

      Sp amyloid, Qav = c. 2. Cap 5-15(-20) mm, convex, sometimes papillate and/or depressed at the centre, pinkish white through pale pink to dull red, hygrophanous; gills sinuate and slightly decurrent, L = 18-25, very pale grey to pinkish; stem 20-40 x 1-2(-4) mm, concolorous with cap. Sp 6-8 x 3.5-4.5 µm, Qav = 1.9-2.0, subcylindrical; cheilocystidia oblong to clavate, often with stipitate ones present (fig. 367B); caulocystidia with rounded tips as well as acute. In deciduous and rich Picea dominated forests, on litter of deciduous trees; autumn; apparently very rare in hemib.-bore.; FI (DD), NO (NE).

      kuehneriana AH Smith
      Description MGII-413

      a. Lamellae more or less narrowly adnate, lamellar edge convex. Short-stalked cheilocystidia occurring mixed with very long-stalked ones.

         b. Lamellae dark brownish violet to dark violet. In Fagus woods, more often on calcareous or loamy soil. Pleuro rare. Eur.

      Frb in shades of violet, often in concentric zones on cap; smell usually aromatic, of radish when crushed; gills some dark shade of mauve or violet. Cap 15-45 mm, bell-shaped, soon flattening, usually with an umbo, often with upturned edge, hygrophanous and translucently striate, brownish vinaceous to violet, with umbo, often contrasting with ochraceous or grey pinkish tones; gills narrowly adnate, ventricose, may have a small decurrent tooth, L = 20-45; stem 40-110 x 2-6 mm, often flattened, lilac smoke grey to brownish violet. Sp 7-10 x 3.5-5.5 µm, Qav = 1.6-1.7, dacryoid, amyloid; cheilocystidia simple clavate or lageniform; caulocystidia similar. In troops or fasciculate, on leaf litter, in mainly rich, often calcareous forests, e.g. Fagus forests, possibly also with conifers; autumn; occasional, but locally common in temp.; DK (LC), NO, SE (NT). – B&K 3:328, C&D 602, GBW 3:395, M&J 35, Rob 97.

      diosma Krieglssteiner & Schwöbel
      Description MGII-411

b. Lamellae white to somewhat colored, but always pale. Pleuro frequent.

c. Pileus long retaining its conical shape, lacking a concentric depression. Stipe firm to brittle. Growing on calcareous soil mostly under *Fagus*. Eur.

Cap umbonate, bright rose or vinaceous pink; stem pale pinkish, clavate, occasionally whole frb white. Cap 25-60 mm, convex with an umbo which is often emphasised by a shallow de-pression between it and the cap margin, hygrophanous, drying from the centre to vinaceous pink; gills emarginate, L > 40, pale rose; stem 70-150(-200) x 3-12 mm. Sp 7-9 x 4-5.5 µm, Qav = 1.5-1.6, dacryoid to subcylindrical, amyloid; cheilocystidia very variable, clavate, globose, fusiform to narrowly utriform (fig. 367D); caulocystidia similar to fig. 367B. On leaf litter, in deciduous and coniferous forests, typically in rich to fairly rich Fagus forests; autumn; very common in temp., occasional in hemib.-bore., but rare in FI, rare in suba.; DK (LC), FI (NT), NO (LC), SE (LC). – B&K 3:361, GBW 3:401, M&J 21, Rob 125, 128 (white form), Ves 233, •.

rosea (Bull.) Gramberg
Description MGII-420

c. Pileus soon shallowly campanulate, often with a concentric depression round the umbo. Stipe tough. Growing on leaf humus in deciduous as well as coniferous woods. Eur, Nam.

Cap not or hardly umbonate, colours highly variable, typically vinaceous pink to pale rose,but also almost white, yellow or pale blue; stem typically with violaceous shades. Cap 10-50(-60) mm, convex; gills emarginate, L = 20-40; stem 30-100 x 1-7 mm. Sp (5-)6-7(-10) x 3-4(-5) µm, Qav = 1.6-1.8, ellipsoid, amyloid; cheilocystidia similar to fig. 367D and caulocystidium in fig. 367B. In all sorts of habitats, but mainly on leaf litter in broadleaved or coniferous forests or in turf in open areas; late summer to late autumn, rare in late spring; very common in temp.-suba., rare in arc./alp.; DK (LC), FI (LC), FO, IS, NO (LC), SE (LC). – GBW 3:398, M&J 21, Ves 232, •. – Poisonous.

pura (Pers.: Fr.) Kummer
Description MGII-416

d. Stipe white or pale pink to pale violet; pileus not bluish, violaceous or purplish.

e. Pileus definitely colored, although the colors may be pale.

f. Pileus pale pink: . . Description MGII-416 *f.* ***pura***

f. Pileus yellow: . . . Description MGII-419 *f.* ***lutea***

e. Pileus white: . . . . Description MGII-418 *f.* ***alba***

d. Stipe showing a more pronounced color.

e. Pileus white: . . . . Description MGII-420 *f.* ***purpurea***

e. Pileus with reddish, purplish, violaceous or bluish colors.

f. Center of the pileus not reddish or fulvous: . Description MGII-419 *f.* ***ianthina***

f. Center of the pileus reddish or fulvous.

g. Pileus (farther outwards from the center) dingy pink or violaceous pink: . . Description MGII-420 *f.* ***roseoviolacea***

g. Pileus (farther from the center) bluish: . . Description MGII-420 *f.* ***multicolor***

Section ADONIDEAE (Fr.) Quél.

a. Stipe rooting, turning dark brown from base upwards. Growing near the base of trees in deciduous or mixed woods or on moss-covered fallen logs. Eur, USA.

Stem white, discolouring brown from base, with a long pseudorrhiza. Cap 5-25(-30) mm, conical to bell-shaped, often umbonate or papillate, pale orange yellow at the margin, be-coming darker towards the deep orange centre; gills adnate with a decurrent tooth, slightly ventricose, L = 10-25(-30), concolorous with the cap to pale ochraceous, paler at the edge; stem 10->100 x 0.5-2 mm including the radicating part, finely pubescent. Sp 6-9 x 5-7 µm, Qav = 1.2-1.4, subglobose to ovoid, with prominent apiculus, non-amyloid; cheilocystidia smooth and with various simple shapes, clavate, fusiform or even capitate (fig. 367H); caulocystidia simple, smooth, mostly linear. Emanating from decaying wood or roots in broadleaved or mixed woodland, often along stream banks, typically with Fagus; late summer to autumn; rare and local in temp., in NO only in two localities; DK (VU), NO, SE (LC). – C&D 607, FAD 199E (as Collybia ventricosa var. subaequalis), M&J 12, Rob cover, Svp 6:101.

leptophylla (Peck) Sacc.
Description MGII-438

a. Stipe not rooting, not turning dark brown with age.

b. Lamellae bright pink-red to coral red at the base, pallescent with age. Pileus turning bright yellow with age. Among grass and moss or under trees. France.

Sp Q > 1.8. Cap 4-15(-25) mm, ± conical to bell-shaped, often papillate, striate, smooth, dry to lubricous, coral red, fading to yellow and thus resembling M. flavoalba; gills almost free to adnate with a decurrent tooth, L = 21-27, basally coral red to white towards edge; stem 30-70 x 1-2 mm, cylindrical to widened towards base, pruinose, especially at top, translucent white. Sp 7-9.5 x 3.5-4 µm, dacryoid to cylindrical, non-amyloid; basidia 4-spored; cheilo- and pleurocystidia 45-55 x 7-10 µm, lageniform with slender neck; caulocystidia include scattered globose forms like fig. 373C; pileipellis hyphae with coralloid clusters of diverticulae; gill trama without iodine reactions; clamps present. In grassy places, often in wet fens; autumn; rare in temp., occasional in hemib.-bore.; DK (DD), NO (LC), SE (LC). – BSMF 46, pl. 1, Rob 40.

floridula *sensu* Kühner.
Description MGII-437

b. Lamellae white to pale yellowish or delicately and evenly pink.

c. Pileus with no trace of yellow, nor turning yellowish when fading. Among grass and moss, on fallen twigs or decayed wood, in open dry and wet places, under deciduous and conifeous trees. Eur, NAf, USA.

Sp Q < 1.8. Cap 5-22 mm, conical, bell-shaped to low convex, ± striate, smooth, dry to lubricous, scarlet, coral red, salmon pink, fading to pinkish white, occasionally pale orange; gills adnate with a decurrent tooth, L 14-21, pinkish to white, edge white; stem 14-55 x 0.5-2 mm, short pruinose, white, strigose hairy at base. Sp 8-11 x 4-7 µm, Qav = 1.8-2.4, dacryoid to ellipsoid, without iodine reactions; basidia 2(-4)-spored; cheilo- and pleurocystidia 30-70 x 6-15 µm, lageniform, acuminate lageniform to acute lageniform; caulocystidia clavate, more rarely resembling cheilocystidia; pileipellis hyphae with simple to somewhat branched diverticulae; gill trama indextrinoid. In forests and grassland, among grass and moss, on bare peat on open sites or on woody litter, rarely in more rich sites; autumn; occasional in temp.-suba., rare in arc./alp.; DK (LC), FI (LC), NO (LC), SE (LC). – BCat 783, B&K 3:313, GBW 3:386, M&J 3, Rob 29, •.

adonis (Bull.: Fr.) SF Gray
Description MGII-429

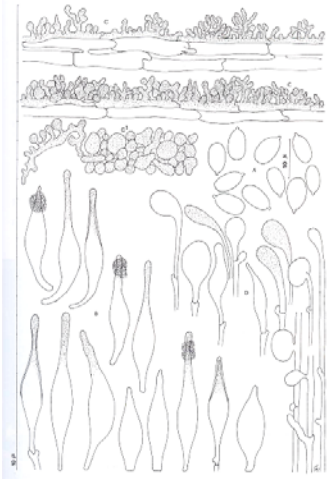
c. Pileus yellow, paler or darker ochraceous or orange to citrine. Lamellae not pink.

d. Spores pip-shaped**.** Cheilocystidia fusiform to sublageniform.

e. Pileus yellow to pale ochraceous, more rarely almost white. Among grass and moss, on fallen twigs, in broad-leaved as well as coniferous woods. Eur, NAf, USA.

Cap 5-20 mm; gills broadly to very narrowly adnate, with a small decurrent tooth. Cap paraboloid to convex, sometimes papillate, slightly sulcate, translucently striate, cream to pale ochre, whiter towards the margin; gills ventricose, L = 14-24, white to cream; stem 20-60 (-80) x 1-2.5 mm, lightly pubescent when fresh, glabrescent, silky, whitish to pale ivory. Sp 6.5-8 x 3.5-4.5 µm, Qav = 1.7-1.8, subcylindrical, without iodine reactions; cheilocystidia mixed with basidia, fusiform, often with a gelatinous cap (fig. 373C); pleurocystidia similar; caulocystidia mostly globose. In grassland or on litter in oligotrophic and eutrophic coniferous and deciduous forests; autumn to early winter; very common in temp.-hemib., common in bore., also recorded in arc./alp.; DK (LC), FI (LC), FO, IS, NO (LC), SE (LC). – C&D 606, FAD 53G, GBW 3:388, M&J 3, Rob 33.

flavoalba (Fr.) Quél.
Description MGII-435

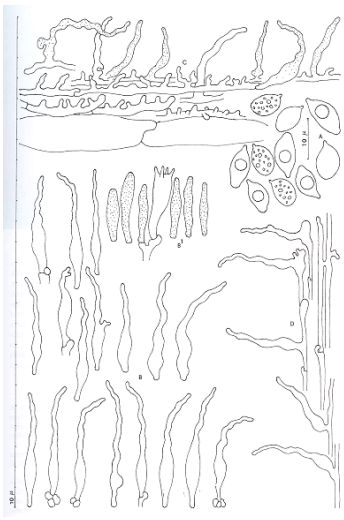


e. Pileus orange at the umbo, fading to citrine.On the ground among mosses and humus in coniferous forest. USA.

aurantiidisca (Murrill) Murrill
Description MGII-433

d. Spores fusiform-amygdaliform. Cheilocystidia subcylindrical, with wavy sides. Alpine species. On very wet mosses, on roots or on decayings remnants of Cirsium spinosissimum. Switzerland, Austria.

ochrogaleata Favre
Description MGII-441



Section RUBESCENTES Villareal, Esteve-Rav., Heykoop & Maas G.

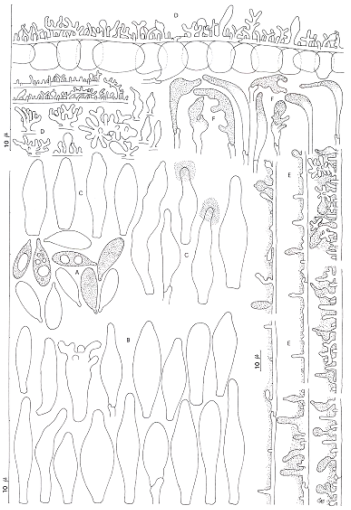
M. rubescens

Section ACICULAE Kühn. ex Sing.

Hyphae of the cortical layer of the stipe densely covered with excrescences embedded in gelatinous matter. On fallen twigs and decayed wood of deciduous trees. Eur, Naf, Nam.

Stem orange, yellow to straw. Cap 2-7 mm, conical to bell-shaped, often papillate, shallowly sulcate, apricot orange, at least at the centre, sometimes paling outwards to yellow; gills sinuate to adnate, slightly ventricose, L = 7-16, pale luteous to whitish with a white edge; stem 20-50 x 0.25-0.8 mm, bright to pale yellow or straw. Sp 9-11 x 3-4 µm, Qav = c. 3, subfusiform to cylindrical, non-amyloid; cheilo- and pleurocystidia smooth, simple, clavate or subfusiform; pileipellis hyphae and stem surface hyphae mostly with simple short diverticulae. On plant debris in scrub and woodland, often rooting to small woody items; early summer to late autumn; very common in temp., common in hemib., occasional in bore., in FI north to KiL; DK (LC), FI (LC), FO, NO (LC), SE (LC). – BCat 782, B&K 3:312, FAD 53D, GBW 3:385, M&J 4,

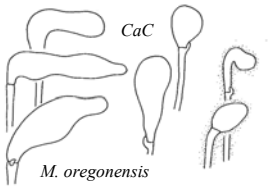
acicula (Schaeff.: Fr.) Kummer
Description MGII-443



Section OREGONENSES Maas G. Only *M. oregonense*.

Lamellar edge deep yellow. Caulocystidia with yellow contents Pileus and stipe bright yellow. Inserted on fallen needles of Douglas fir and spruce. Eur, USA.

Frb ± uniformly orange; cap 1-8 mm; sp without iodine reactions. Cap bell-shaped, bright yellow to orange, often with a papilla which may be darker orange; gills arcuate and de-current, L = 7-16, pale orange with bright orange edge; stem 6-40 x 0.2-0.7 mm, pruinose, orange with a darker orange pruina at the top. Sp 6.5-8.5 x 3-4.5 µm, Qav = c. 2.4, dacryoid; basidia 2-spored; cheilocystidia clavate or ventricose, sometimes bluntly forked; caulo-cystidia simple. On conifer litter including small twigs, usually in herb and fern rich Picea forests close to watercourses; summer to autumn; rare, but locally occasional in hemib-bore.; FI (NT), NO (NT), SE (VU). – Jordst 5(1): cover, M&J 4, Rob 533,

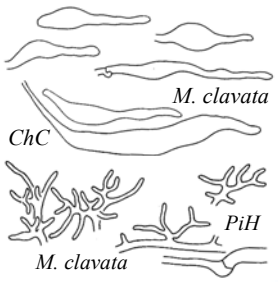


oregonensis AH Smith
Description MGII-446

Section HIEMALES Konr. & Maubl.

1. Lamellae horizontal to arcuate, edge strait or concave *subsect.* **OMPHALIARIAE** Kuhn ex Maas G.
   2. spore globose or almost so.
      3. Cheilocystidia fusiform to lageniform. Hyphae of the pileipellis with branched excrescences. On dead trunk of Thuja occidentalis. USA.

      clavata (Peck) Redhead
      Description MGII-461



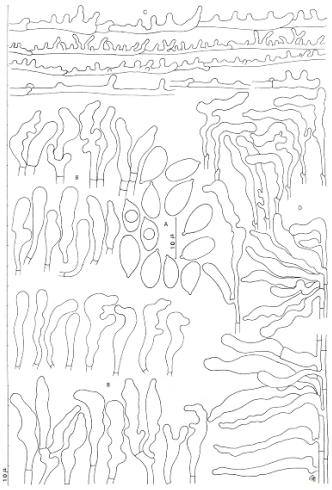
      3. Cheilocystidia clavate to subcylindrical. Hyphae of the pileipellis with inflated, simple excrescences. Pileus dingy white to cream, sometimes more greyish or greyish with a brownish hue. Lamellar edge with a straight to concave outline. On moss-covered trunks of way-side trees. Eur.

      Cap 2-6(-10) mm; stem minutely pruinose. Cap hemispherical to shallowly bell-shaped, sometimes papillate, sulcate, pruinose, ± white to greyish brown; gills broadly adnate to decurrent and arcuate, L = 8-15, concolorous with the cap; stem 5-20 x 0.2-1 mm, concolor-ous with the cap or paler, minutely pruinose. Sp 7-10 µm, almost spherical, non-amyloid; basidia either predominantly 4-spored or 2-spored; cheilocystidia simple clavate (fig. 381A); caulocystidia and cuticular hyphae with inflated diverticulae. On mossy, living trunks; autumn; rare in temp.-hemib.; DK (DD, EJyl: Mønsted), NO (NT), SE (LC). – Rob 361. M. alba (Bres.) Kühner

      alba (Bres. apud Sacc.) Kuhn
      Description MGII-460

   2. Spores pip-shapes, amygdaliform or pruniform
      4. Excrescences of the hyphae of the pileipellis simple to branched, tending to become gelatinized : On trunk (moss-covered or not) of deciduous tress (Acer, Aesculus, Alnus, Carpinus, Populus, Salix, Ulmus) or on fallen twigs. Eur, Naf, Nam.

      Sp Q > 1.5. Cap 2-10(-15) mm, convex, may be papillate, usually pale drab or pale buff to fawn often with a darker centre; gills slightly to distinctly decurrent, arcuate, L = 8-18, pale grey; stem up to 50(-60) x 0.5-1(-1.5) mm, distinctly pruinose, usually concolorous with the cap, but may be pale luteous or lemon. Sp 6.5-10 x 4-6 µm, Qav = 1.6-1.9, ellipsoid, without iodine reaction; cheilocystidia cylindrical or lageniform; caulocystidia as curved simple hairs in clusters. On small pieces of woody debris in moist habitats, also on rotten bark; all year, at least in the south; very common in temp.-hemib., occasional, but locally common in bore., rare in suba.-arc./alp.; DK (LC), FI (LC), IS, NO (LC), SE (LC). – B&K 3:366, M&J 2, Rob 382, Ves 239, •. M. speirea (Fr.: Fr.) Gillet



      speirea (Fr.: Fr.) Gillet
      Description MGII-465

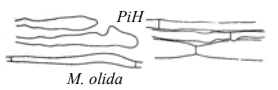
      4. Excrescences of the pileipellis simple, not becoming gelatinized: On moss-covered pieces of bark on the ground or moss-covered stumps. France.

      Frb grey brown, including gills; on bark and wood of conifers and possibly broadleaved trees. Cap 3-10 mm, at first bell-shaped, becoming convex with slight papilla or a depressed centre, pale grey brown, milky coffee, darker when young, translucently striate; gills broadly adnate to decurrent, arcuate, L = 8-15(-20), concolorous with cap or slightly paler; stem 8-25(-30) x 0.5-1 mm, pale ochraceous to cinnamon buff or beige brown. Sp 6-9 x 5-7 µm from 4-spored basidia, 7-10 x 5-8 µm from 2-spored basidia, Qav = 1.2-1.5, subglobose to slightly ellipsoid, non-amyloid, punctate from obscure ornamentation; cheilocystidia irregu-lar lageniform often with gelatinous covering to the tip (fig. 365G); hyphae of the pileipellis diverticulate with long tangled diverticulae; caulocystidia also diverticulate but not tangled. Singly or subcaespitose; late summer to autumn; rare in temp.-hemib.; DK (VU), NO (NE), SE (LC). – •. M. clavata (Peck) Redhead (M. phaeophylla Kühner)

      phaeophylla Kuhn.
      Description MGII-464

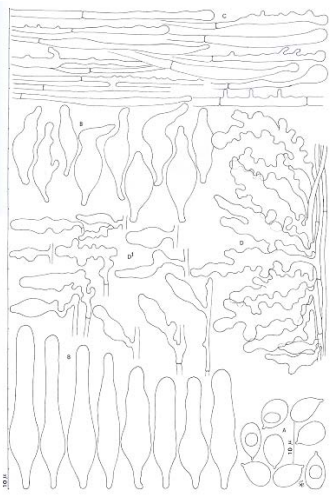
1. Lamellae ascending, edge convex : *subsect.* **HIEMALES** Maas G.
   a. Hyphae of the pileipellis smooth or rarely with very few, scattered excrescences.
      b. Pileus grey-brown, central papilla black. Stipe rooting. Among mosses in a mountain meadow. France.

      atropapillatta Kuhn. & Maire apud Kuhn.
      Description MGII-452



      b. Pileus white to whitish, yellowish at the center. Stipe not rooting. Growing on vegetable debirs, decayed wood, moss-covered bases of deciduous trees (Betula, Fagus, Populus). Eur, Nam, Naf.

      Cap creamy white. Cap 2-15 mm, bell-shaped to low convex, white to very pale cream to buff; gills adnate, ventricose, L = 16-22, concolorous with the cap or paler; stem 15-35 x 0.5-1.5 mm, distinctly pubescent, tough, can be twisted considerably without snapping, watery white or concolorous with the cap. Sp 6-9 x 5-6 µm, ellipsoid, Qav = 1.3-1.4, non-amyloid; basidia 2- or 4-spored; cheilocystidia mostly narrowly utriform (fig. 381B); caulocystidia abundant, very variable, typically clavate, but often bent at right angles or even with a wavy outline. Associated with broadleaved trees, often Fagus, usually occurring at the base of trees, often on root buttresses; autumn; common in temp., rare in hemib.; DK (LC), NO, SE. – B&K 3:351, Bres 240.1, C&D 610, FAD 52B (as gypsea), M&J 33. M. olida Bres. (M. minutula (Peck) Sacc.)



      olida Bres.
      Description MGII-456

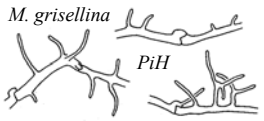
   a. Hyphae of the pileipellis diverticulate.
   b. Stipe with a conspicuous, massive root: Terrestrial or possibly associated with roots of herbs . Germany, Switzerland.

      radicifer Favre
      Description MGII-458

b. Stipe not rooting.

c. Excrescences of the hyphae of the pileipellis long and slender Among vegetable debris in *Alnus viridis* thicket and on rotting catkins. Switzerland.

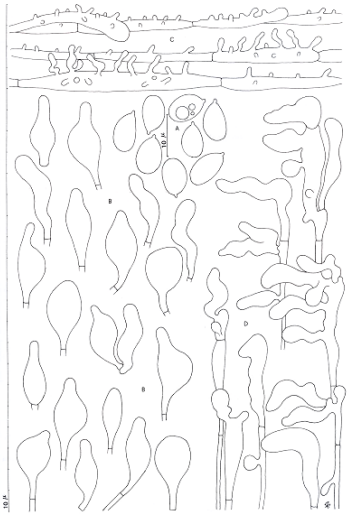
grisellina Favre
Description MGII-453



c. Excrescences of the hyphae of the pileipellis short and comparatively broad: On moss covered trunk of deciduous trees (Carpinus, Fagus, Salix, Ulmus). Eur, USA.

Gills ventricose, ascending and adnate, not decurrent; caulocystidia of various shapes with inflated ends (fig. 381C). Cap 2-10 mm, hemispherical, bell-shaped to low convex, clay buff to dark sepia at the centre, paler outwards; gills arcuate, adnate to decurrent, L = 10-20, white to off white; stem 10-30 x 0.5-1 mm, watery white. Sp 6-10 x 5-7 µm, Qav = 1.3-1.4, non-amyloid; cheilocystidia cylindrical to lageniform; caulocystidia with inflated tips to the diverticulae. Usually at the base of broadleaved trees, also on fallen wood; autumn to win-ter; common in temp., rare in hemib.-southern bore.; DK (LC), FI (LC), NO (NT), SE (LC). – B&K3:341, FAD 54A, M&J 2, Rob 365, •. M. hiemalis (Osbeck) Quél.

hiemalis (Osb apud Retz.: Fr.) Quél
Description MGII-454



Section DUNICOLAE Villarreal, Esteve-Rav., Barrasa & A. Ortega. Only *M. dunicola*.

Section EXORNATAE Maas G. Only

On dead twigs, bark, and wood in the forest. Tropical to sub-tropical.

M. chlorophos (Berk. & Curt.) Sacc.
Description MGII-468