

## FURTHER MYCENAS FROM THE STATE OF PARANÁ, BRAZIL

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Seven new species of *Mycena* from the State of Paraná, Brazil, are described in section *Sacchariferae*, one species each in sections *Nigrescentes* and *Granuliferae*, and complementary notes are given of one species in section *Polyadelphia*. A key is provided for the species of section *Sacchariferae* thus far found in Paraná.

Since the publication of 'Mycenae paranaenses' by the same authors of this paper (1997), a few more species remain that call for attention. Many more species of *Mycena*, the first author is convinced, await to be discovered in Paraná but, however desirable, the search cannot for various reasons be continued.

### Section *Sacchariferae* Kühn. ex Sing.

Synonyms and descriptions, see Maas Geesteranus (1983: 403) and Desjardin (1995: 7).

Desjardin (1995: 9) subdivided the section into the stirpes *Amparoina*, *Alphitophora* and *Adscendens*, diagnostic descriptions of which were given in his paper on pages 14, 37 and 53.

If the dark contents of the acanthocysts in *Mycena fuscinea* and *M. fuliginea* described in the present paper are rated to possess taxonomic value, the two species should be separated from most other members of the section, whose acanthocysts possess hyaline contents. They would form a fourth stirps which is here called stirps *Fuscinea*, nom. prov., and differentiated in the following key.

#### KEY TO THE STIRPES OF SECTION SACCHARIFERAE

1. Cheroocytes absent from the surface of the primordium or the pileus.
  2. Caulocystidia densely spinulose all over.
    3. Acanthocysts with dark contents ..... stirps *Fuscinea*
    3. Acanthocysts with hyaline contents ..... stirps *Alphitophora*
  2. Caulocystidia smooth or only partially spinulose ..... stirps *Adscendens*
1. Cheroocytes present. In one case, the acanthocysts (characterized by dark contents) simulate cheroocytes by their shape ..... stirps *Amparoina*

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## KEY TO THE SPECIES THUS FAR FOUND IN PARANÁ

1. Surface of the primordium or the disc of the young pileus or the disc at the base of the stipe bearing cheroocytes.
  2. Primordium and pileus not covered with long, needle-thin hairs.
    3. Cheroocytes with striking spines.
      4. Spines of the cheroocytes thick-walled to solid, smooth.
        5. Cheilocystidia covered with comparatively few excrescences.
          6. Cheilocystidia with narrowed base, apically covered with excrescences  $1.8-3.5 \times 0.9 \mu\text{m}$ . Hyphae of the pileipellis densely covered with excrescences.
            7. Spores  $8.1-9.0 \times 5.4-6.3 \mu\text{m}$  ( $Q = 1.6$ ). Cheilocystidia  $18-24 \mu\text{m}$  long  
*M. impexa* (Maas G. & de Meijer, 1997: 22)
            7. Spores  $8.9-10.7(-11.6) \times 4.4-5.4 \mu\text{m}$  ( $Q = 2.1$ ). Cheilocystidia  $10.5-16 \mu\text{m}$  long  
*M. paula* (Maas G. & de Meijer, 1997: 25)
          6. Cheilocystidia almost sessile, apically covered with excrescences  $0.5-0.9 \times 0.5 \mu\text{m}$ . Hyphae of the pileipellis not very densely covered with excrescences  
*M. propinqua* (Maas G. & de Meijer, 1997: 28)
        5. Cheilocystidia covered with very numerous excrescences  
*M. excelsa* (Maas G. & de Meijer, 1997: 21)
      4. Spines of the cheroocytes moderately thick-walled, spinulose, at least at the base.
        8. Stipe with somewhat bulbous base. Spores  $(6-7)7.2-8.1 \mu\text{m}$  long. Cheilocystidia short-stalked . . . . . *M. atrox* (Maas G. & de Meijer, 1997: 16)
        8. Stipe springing from a basal disc. Spores  $9.4-10.7(-11.6) \mu\text{m}$  long. Cheilocystidia frequently long-stalked *M. chloroxantha* (Maas G. & de Meijer, 1997: 17)
    3. Cheroocytes without spines.
      9. Spores subglobose,  $8.5-9.8 \times 6.7-7.6 \mu\text{m}$  ( $Q = 1.3$ ). Cheilocystidia densely and almost entirely covered with excrescences. Cheroocytes covered with fairly coarse excrescences . . . . . *M. capillata*
      9. Spores pip-shaped,  $8.1-9.8 \times 5.4-6.5 \mu\text{m}$  ( $Q = 1.6$ ). Cheilocystidia not very densely and only apically covered with excrescences. Cheroocytes covered with fine excrescences . . . . . *M. lasiopus*
  2. Primordium and pileus covered with long, needle-thin hairs. Cheilocystidia absent. Main body of the cheroocytes densely covered with excrescences, the neck slender and smooth . . . . . *M. raphidocephala*
1. Surface of the primordium or the disc of the young pileus or the basal disc devoid of cheroocytes.
  10. Acanthocysts with colourless contents.
    11. Caulocystidia densely covered with excrescences all over.
      12. Caulocystidia predominantly cylindrical.
        13. Spores up to  $10.5 \mu\text{m}$  long.
          14. Stipe with clavate to subbulbous base. Cheilocystidia (presumably) fusiform. Spores  $8.5-10.3 \times 3.6-5.4 \mu\text{m}$  ( $Q = 2.1$ ) . . . . . *M. umbratilis*
          14. Stipe springing from a white-powdered basal patch. Cheilocystidia clavate to obpyriform. Spores  $7.6-9.4 \times 4.5-5.4(-6) \mu\text{m}$  ( $Q = 1.8-1.9$ )  
*M. hylophila*
      13. Spores  $11.6-15.2 \mu\text{m}$  long . . . *M. pistacea* (Maas G. & de Meijer, 1997: 27)

12. Caulocystidia predominantly with terminal swelling. Cheilocystidia globose to spheropedunculate . . . . . *M. dissimiliis* (Maas G. & de Meijer, 1997: 19)
11. Caulocystidia smooth . . . . . *M. adscendens* (Maas G. & de Meijer, 1997: 15)
10. Acanthocysts with brownish contents.
15. Stipe springing from a basal disc. Caulocystidia cylindrical. Growing on fallen leaves . . . . . *M. fuscinea*
15. Stipe not springing from a basal disc. Caulocystidia clavate to subfusiform. On decayed wood and bark . . . . . *M. fuliginea*

***Mycena capillata* Maas G. & de Meijer, *spec. nov.* — Fig. 1**

Basidiomata dispersa. Pileus 2–3.5 mm latus, primo subellipsoideus, fuscus, crinibus vitreis numerosis obtectus, postea convexus, siccus, sulcatus, striatus, fusco-pulverulentus, pallidus inter striis. Caro pertenuis, odore nullo. Lamellae c. 15 stipitem attingentes, molles, adscendentes, ventricosae, usque ad 0.7 mm latae, adnexae, albae, margine convexae, concolores. Stipes 2.5–7 × c. 0.4 mm, fistulosus, fragilis, aequalis, cylindraceus, siccus, levis, brunneo-puberulus, albus, e disco basali albo-pubescente natus.

Basidia 18–22.5 × 11–13.5 μm, obpyriformia, 2-sporigera, efibulata. Sporae 8.5–9.8 × 6.7–7.6 μm, subgloboseae, leves, tenuiter amyloideae. Cheilocystidia 16–25 × 9–16 μm, clavata, obpyriformia, efibulata, dense spinulosa, surculis cylindraceis rectis 0.9–1.5 × 0.5 μm praedita. Pleurocystidia nulla. Trama lamellarum iodi ope brunneo-vinescens. Hyphae pileipellis 2.5–4.5 μm latae, efibulatae, leves. Acanthocystides 13.5–38 × 11.5–32 μm, globosae, sphaeropedunculatae, efibulatae, sucum brunneum continentes, dense spinulosae. Crines vitrei 500–800 μm, basi usque ad 90 μm lati, apice 20–25 μm. Velum universale e cherocytibus 36–55 × 23–30 μm, crasse-tunicatis spinulosisque formatum. Hyphae stipitis corticales 1.8–2.5 μm latae, leves, efibulatae. Caulocystidia 24–80 × 7–15 μm, clavata vel cylindracea, dense spinulosa.

Ramulicola.

Holotypus: A. A. R. de Meijer MA-3152 (No. 990.200-030; L); notulae: MBM 212261.

Etymology: capillatus, hairy, referring to the hyaline hairs covering the young pileus.

Basidiomata scattered. Pileus 2–3.5 mm across; in the primordial stage subellipsoid, dark grey-brown (6E4) to almost black-brown (6F4), paler grey-brown (6D3) towards the margin, covered with numerous, long, smooth, firm, straight, hyaline hairs, falling off with age; later conico-convex to convex, dry, sulcate, translucent-striate, entirely dark brown-pulverulent, pale between the striae, pallescent with age. Context very thin. Odour absent. Lamellae c. 15 reaching the stipe, tender, ascending, ventricose, up to 0.7 mm broad, adnexed, white, with convex, concolorous edge. Stipe 2.5–7 × c. 0.4 mm, fistulose, fragile, equal, terete, dry, smooth, brown-puberulous, white, springing from a small, white-pubescent basal disc.

Basidia (immature) 18–22.5 × 11–13.5 μm, obpyriform, 2-spored, clampless. Spores 8.5–9.8 × 6.7–7.6 μm (Q = 1.3), subglobose, smooth, weakly amyloid. Cheilocystidia 16–25 × 9–16 μm, clavate, obpyriform, clampless, densely spinulose, with the excrescences cylindrical, straight, 0.9–1.5 × 0.5 μm. Pleurocystidia absent. Lamellar trama brownish vinescent in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are 2.5–4.5 μm wide, clampless, smooth. Acanthocysts 13.5–38 × 11.5–32 μm, globose and almost sessile or spheropedunculate, clampless, thin-walled, with brownish contents, densely spinulose, with the excrescences 0.9–1.5 × 0.5 μm. Vitreous hairs 500–800 μm long, up to 90 μm broad at the base, 20–25 μm at the apex, very thick-walled (although the width of the wall is difficult to discern), smooth to sparsely spinulose below, equally sparsely covered at the apex with coarse excrescences. Cherocytes 36–55 × 23–30 μm, clavate, fusiform,

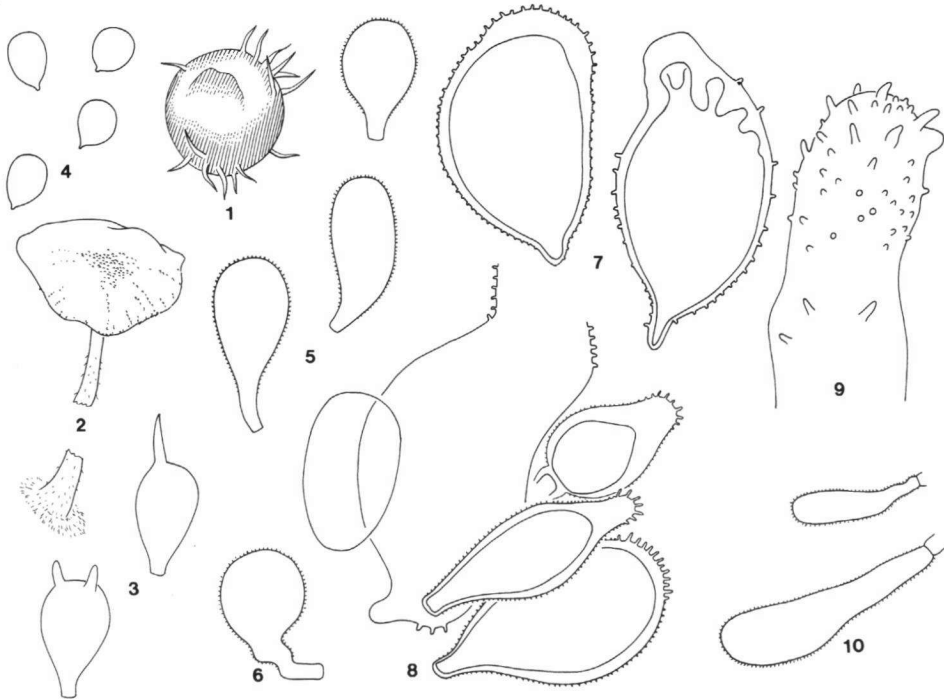


Fig. 1. *Mycena capillata* (holotype). 1. Young pileus covered with glass hairs, seen from above; 2. pileus and basal part of the stipe; 3. immature basidia; 4. spores; 5. cheilocystidia; 6. acanthocyst; 7. cheroocytes at the base of the primordium; 8. glass hair and cheroocytes; 9. glass hair, apical part; 10. caulocystidia. — Figs. 1 & 2,  $\times 10$ ; all others,  $\times 700$ .

pyriform, thick-walled (0.9–1.5  $\mu\text{m}$ , apically sometimes much more), densely spinulose (at the junction of stipe and basal disc sometimes more sparsely spinulose), with the excrescences 0.9–1.5  $\times$  0.5–0.9  $\mu\text{m}$ . Hyphae of the cortical layer of the stipe 1.8–2.5  $\mu\text{m}$  wide, clampless, smooth. Caulocystidia 24–80  $\times$  7–15  $\mu\text{m}$ , clavate to cylindrical, clampless, thin-walled, apically broadly rounded, densely spinulose, with the excrescences 0.9–0.5  $\mu\text{m}$ .

Growing on a decayed twig of a dicotyledonous tree, in mixed ombrophilous forest, 900 m alt.

Holotype: “*Mycena capillata* Maas G. & de Meijer / 25 July 1995 / Paraná: Piraquara Parque Marumbi, Mananciais da Serra / A. A. R. de Meijer MA-3152” (No. 990.200-030; L); notes and drawings: MBM 212261.

The name of the present species should not be confused with *Mycena capillaris* (Schum.: Fr.) Kummer, a member of section *Polyadelphia* Sing. ex Maas G., nor with *M. capillaris* P. Karst., which is a nomen dubium (Maas Geesteranus, 1981: 222).

*Mycena capillata* is a striking species which in the primordial stage is abundantly covered with long hyaline hairs and at a later stage (when most of these hairs have fallen off) by its cover of brown acanthocysts. Unfortunately, the scantiness of the material precluded a more detailed investigation, and several points remain unclear. It is unknown whether the vitreous hairs originate in the upper layer of the pileipellis or farther down; the cell-wall (of the one hair studied) remained uncoloured in a solution of Congo red, so that its thick-

ness could only be surmised. No definite answer can be given to the question whether or not the contents of the cherocytes are colourless.

In spite of these imperfections and even in the absence of primordia or young stages of the pileus, the species is easily recognizable by the combination of two-spored basidia, subglobose spores, brownish contents of the acanthocysts, shape of the cherocytes and relatively short caulocystidia.

### *Mycena fuscinea* Maas G. & de Meijer, *spec. nov.* — Fig. 2

Basidiomata dispersa. Pileus usque ad 4 mm latus, usque ad 2 mm altus, e campanulato convexus, siccus, subsulcatus, striatus, brunneo-pruinosis, pallide griseobrunneus. Caro tenuis, odore nullo. Lamellae c. 14 stipitem attingentes, molles, adscendentes, ventricosae, c. 0.5 mm latae, anguste adnatae, albae, margine convexae, concolores. Stipes 8–35 × 0.2–0.4 mm, cavus, fragilis, aequalis, cylindraceus, siccus, levis, totus puberulus, albus, basi disco usque ad 1 mm lato, sulcato floccosoque substrato affixus.

Basidia (immatura) c. 16 × 10 μm, late clavata, 2?-sporigera, efibulata. Sporae 8.9–10.3(–11.6) × 4.9–5.4 μm, inaequilateraliter ellipsoideae, leves, amyloideae. Cheilocystidia 20–21 × 9–11 μm, clavata, efibulata, surculis cylindraceis 0.9 × 0.5 μm praedita. Pleurocystidia nulla. Trama lamellarum iodi ope brunneo-vinescens. Hyphae pileipellis 2.5–10 μm latae, efibulatae, sucum brunneum continentes, leves vel minute diverticulatae. Acanthocystides 16–36 × 13.5–27 μm, globosae vel late clavatae, sucum brunneum continentes, minute denseque spinulosae. Cherocytes haud visae. Hyphae stipitis corticales 1.8–2.5 μm latae, leves. Caulocystidia – c. 200 × 11–13.5 μm, cylindracea, dense spinulosa.

Foliicola.

Holotypus: *A.A.R. de Meijer GUA-3112* (No. 991.343-759; L); notulae: MBM 212257.

Etymology: *fuscineus*, an artificial word meant as a diminutive of *fuscus* (dark brown) and referring to the brown colour of the pruinose pileus.

Basidiomata scattered. Pileus up to 4 mm across, up to 2 mm high, at first campanulate, then convex, flattening with age, dry, smooth to somewhat sulcate along the margin, more pronouncedly sulcate when dried, translucent-striate, entirely brown-pruinose (acanthocysts), pale grey-brown under the pruina, turning fairly dark brown when dried. Context very thin. Odour absent. Lamellae c. 14 reaching the stipe, tender, ascending, ventricose, c. 0.5 mm broad, narrowly adnate, white, with convex, concolorous edge. Stipe 8–35 × 0.2–0.4 mm, hollow, fragile, equal, terete, dry, smooth, puberulous all over, white, arising from a sulcate, floccose, white basal disc up to 1 mm across.

Basidia (few seen, immature) c. 16 × 10 μm, broadly clavate, presumably 2-spored, clampless. Spores 8.9–10.3(–11.6) × 4.9–5.4 μm ( $Q = 2.2$ ), pip-shaped, smooth, weakly amyloid. Cheilocystidia (only two seen) 20–21 × 9–11 μm, clavate, clampless, thin-walled, not very densely covered with evenly spaced, cylindrical, simple, straight excrescences 0.9 × 0.5 μm. Pleurocystidia absent. Lamellar trama brownish vinescent in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are 2.5–10 μm wide, clampless, with brownish contents, smooth or densely covered with very small excrescences. Acanthocysts 16–36 × 13.5–27 μm, globose or broadly clavate, thin-walled, with brownish contents, densely covered with evenly spaced, cylindrical, simple, straight excrescences 0.9–1.5 × 0.5 μm. Cherocytes not observed. Hypoderm made up of parallel hyphae with inflated cells up to 25 μm wide. Hyphae of the cortical layer of the stipe 1.8–2.5 μm wide, smooth. Caulocystidia – c. 200 × 11–13.5 μm, cylindrical, thin-walled, with broadly rounded apex, densely covered with cylindrical, simple, straight excrescences 1.8–2.7 × 0.9 μm. Acanthocysts and caulocystidia from the basal disc covered with appreciably smaller excrescences; the acanthocysts with colourless contents.

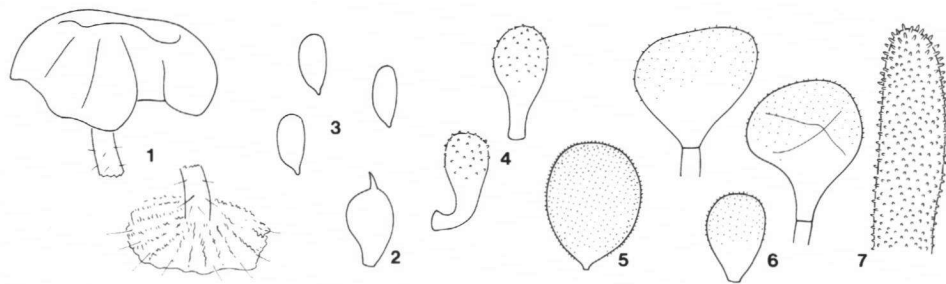


Fig. 2. *Mycena fuscinea* (holotype). 1. Pileus and basal disc; 2. immature basidium; 3. spores; 4. cheilocystidia; 5. acanthocyst; 6. acanthocysts taken from the basal disc; 7. caulocystidium. — Fig. 1,  $\times 10$ ; all others,  $\times 700$ .

On fallen leaves of dicotyledonous trees in dense ombrophilous forest, 5 m above sea level.

Holotype: “*Mycena fuscinea* Maas G. & de Meijer / 5 July 1995 / Paraná: Guaraqueçaba, Potinga / A. A. R. de Meijer GUA-3112” (No. 991.343-759; L); notes and drawings: MBM 212257.

Desjardin (1995: 35), in his redescription of *Mycena sotae* Singer, stated that “the granulose pileus ... dries dark brown;” the stipe arises “from a broad, sulcate, pulverulent, white to grey basal disc;” the acanthocysts have “brown cytoplasmic contents;” and the basal disc cystidia (similar to the caulocystidia) are “densely spinulose overall.” These are the same features which characterize *M. fuscinea*, but there are other characters which clearly show the two species to be different. The pileus of *M. sotae*, under its granular cover, is white; the acanthocysts are “angular or irregular in outline with 1–5 broadly rounded lobes;” the cheilocystidia are very densely covered with excrescences.

***Mycena fuliginea* Maas G. & de Meijer, spec. nov. — Fig. 3**

Basidiomata solitaria. Pileus 1.5–3 mm latus, usque ad 2 mm altus, campanulatus, siccus, levis, estriatus, brunneo-pruinosis, obscure griseobrunneus, margine albus. Caro tenuis, odore nullo. Lamellae c. 10 stipitem attingentes, molles, adscendentes, ventricosae, c. 0.5 mm latae, subliberae, albae, margine convexae, concolores. Stipes 10–27  $\times$  0.2–0.4 mm, cavus, fragilis, aequalis, cylindraceus, siccus, levis, totus puberulus, albus, disco basali destitutus.

Basidia haud visa. Sporae 8.7–10.3  $\times$  4.7–5.4  $\mu\text{m}$ , inaequilateraliter ellipsoideae, leves, amyloideae. Cheilocystidia 13.5–18  $\times$  7–10  $\mu\text{m}$ , clavata vel sphaeropedunculata, efibulata, surculis cylindraceis 0.9–0.5  $\mu\text{m}$  instructa. Pleurocystidia nulla. Trama lamellarum iodi ope brunneovirescens. Hyphae pileipellis 2.7–4.5  $\mu\text{m}$  latae, efibulatae, leves. Acanthocystides 14.5–20.5  $\times$  13.5–20  $\mu\text{m}$ , globosae vel ellipsoideae, sucum brunneum continentes, minute denseque spinulosae. Cheroctes haud visae. Hyphae stipitis corticales 1.8–3.5  $\mu\text{m}$  latae, efibulatae, leves. Caulocystidia 10–60  $\times$  5.5–11.5  $\mu\text{m}$ , clavata vel subfusiformia, raro cylindracea, dense spinulosa.

Lignicola et corticola.

Holotypus: A. A. R. de Meijer PAF-3080 (No. 991.343-760; L); notulae: MBM 212254.

Etymology: fuligineus, sooty, referring to the colour of the pileus.

Basidiomata solitary. Pileus 1.5–3 mm across, up to 2 mm high, campanulate, dry, smooth, not translucent-striate, brown-pruinose (acanthocysts), dark grey-brown under the pruina, white at the margin. Context very thin. Odour absent. Lamellae c. 10 reaching the stipe,

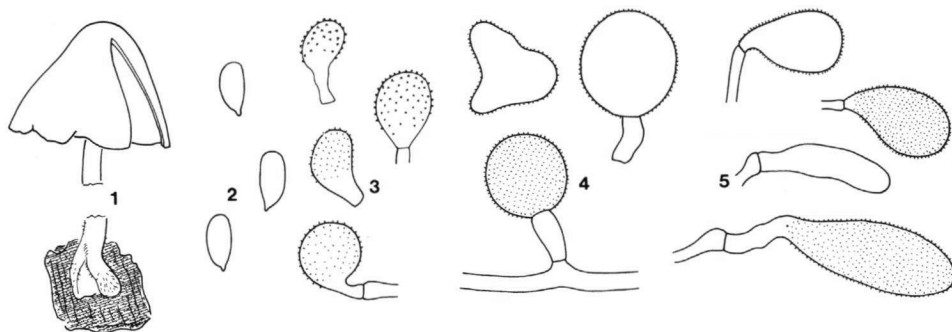


Fig. 3. *Mycena fuliginea* (holotype). 1. Pileus and basal part of the stipe; 2. spores; 3. cheilocystidia; 4. acanthocysts; 5. caulocystidia. — Fig. 1,  $\times 10$ ; all others,  $\times 700$ .

tender, ascending, ventricose, c. 0.5 mm broad, almost free, white, with convex, concolorous edge. Stipe 10–27  $\times$  0.2–0.4 mm, hollow, fragile, equal, terete, dry, smooth, puberulous throughout, white, not springing from a basal disc, directly attached to the substratum.

Basidia not observed. Spores (possibly not quite mature) 8.7–10.3  $\times$  4.7–5.4  $\mu\text{m}$  ( $Q = 2.0$ ), pip-shaped, smooth, weakly amyloid. Cheilocystidia (few seen) 13.5–18  $\times$  7–10  $\mu\text{m}$ , clavate to spheropedunculate, clampless, thin-walled, almost entirely but not very densely covered with evenly spaced, cylindrical, simple, straight excrescences 0.9  $\times$  0.5  $\mu\text{m}$ . Pleurocystidia absent. Lamellar trama brownish vivescent in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are 2.7–4.5  $\mu\text{m}$  wide, clampless, smooth. Acanthocysts 14.5–20.5  $\times$  13.5–20  $\mu\text{m}$ , globose or broadly ellipsoid, thin-walled, with brownish homogeneous contents, minutely and densely spinulose, excrescences 0.9  $\times$  0.5  $\mu\text{m}$ . Chero-cytes absent. Hypoderm made up of inflated hyphae. Hyphae of the cortical layer of the stipe 1.8–3.5  $\mu\text{m}$  wide, smooth. Caulocystidia 10–60  $\times$  5.5–11.5  $\mu\text{m}$ , clavate to subfusiform, rarely cylindrical, thin-walled, with broadly rounded apex, minutely and densely spinulose, excrescences 0.9  $\times$  0.5  $\mu\text{m}$ .

On decayed wood and bark of dicotyledonous trees in dense, ombrophilous forest, 10 m altitude.

Holotypus: "*Mycena fuliginea* Maas G. & de Meijer / 22 June 1995 / Paraná: Paranaguá, Saquarema / A. A. R. de Meijer PAf-3080" (No. 991.343-760; L); notes and drawings: MBM 212254.

The differences between *M. fuliginea* and *M. fuscinea* indicated in the key are corroborated by the lamellae reaching the stipe numbering only c. 10 in *M. fuliginea* as against c. 14 in *M. fuscinea*.

#### *Mycena hylophila* Maas G. & de Meijer, *spec. nov.* — Figs. 4 & 5

Basidiomata dispersa. Pileus 0.5–3 mm latus, hemisphaericus vel convexus, aetate planus, interdum subdepressus, siccus, sulcatus, striatus, glaber ut videtur, pallide griseus. Caro pertenuis, odore indistincto. Lamellae 8–11(–14) stipitem attingentes, molles, adscendentes, ventricosae, usque ad 0.5 mm latae, liberae vel anguste adnatae, haud intervenosae, albae, margine convexae, concolores. Stipes 3–15  $\times$  c. 0.2 mm, fistulosus, fragilis, aequalis, cylindraceus, siccus, levis, puberulus, deorsum pubescens, albus, e disco basali minuto natus.

Basidia  $13.5\text{--}18 \times 8\text{--}10 \mu\text{m}$ , obpyriformia, 4-sporigera, efibulata. Sporae  $7.6\text{--}9.4 \times 4.5\text{--}5.4\text{--}(6) \mu\text{m}$ , inaequilateraliter ellipsoideae, leves, amyloideae. Cheilocystidia  $13.5\text{--}24 \times 6.5\text{--}15 \mu\text{m}$ , clavata, obpyriformia, raro subcylindracea, efibulata, apice surculis cylindraceis, rectis  $0.9\text{--}1 \times 0.5$  munita. Pleurocystidia nulla. Trama lamellarum iodi ope brunneovinescens vel rubrobrunnea. Hyphae pileipellis  $2.5\text{--}4.5 \mu\text{m}$  latae, efibulatae, partim spinulosae. Acanthocystides  $15\text{--}26 \times 18\text{--}21 \mu\text{m}$ , globosae vel obovoideae dense spinulosae. Cheroocytes haud visae. Hyphae stipitis corticales leves. Caulocystidia  $18\text{--}110 \times 4.5\text{--}6.5 \mu\text{m}$ , cylindracea, apicibus obtusa, dense spinulosa.

Ramulicola, raro foliicola.

Holotypus: A. A. R. de Meijer MA-2939 (No. 990.200-069; L); notulae: MBM 212252.

Etymology: hylophilus, dwelling in forests.

Basidiomata scattered. Primordium, one seen, less than 0.5 mm across, globose, white. Pileus 0.5–3 mm across, hemispherical to convex, flattening with age, sometimes becoming somewhat depressed at the centre, dry, sulcate, translucent-striate, appearing glabrous, pale grey at the centre, the striae very pale greyish, pure white between the striae, distinctly sulcate when drying out and turning white all over. Context very thin. Odour indistinct. Lamellae 8–11(–14) reaching the stipe, tender, ascending, ventricose, up to 0.5 mm broad, free or narrowly adnate, not intervenose, white, with convex, concolorous edge. Stipe 3–15 × c. 0.2 mm, fistulose, fragile, equal, terete, dry, smooth, puberulous, pubescent near the base, white, springing from a very small, white-powdered basal patch which appears obscured by the base of the stipe when fresh and is best observed when dry.

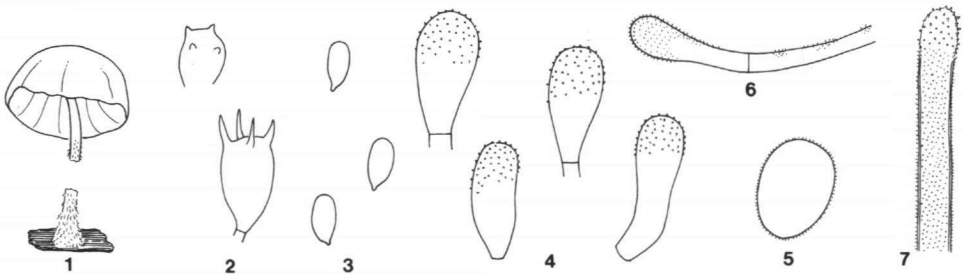


Fig. 4. *Mycena hylophila* (holotype). 1. Pileus and basal part of the stipe; 2. basidia; 3. spores; 4. cheilocystidia; 5. acanthocyst; 6. hypha of the pileipellis; 7. caulocystidium. — Fig. 1,  $\times 10$ ; all others,  $\times 700$ .

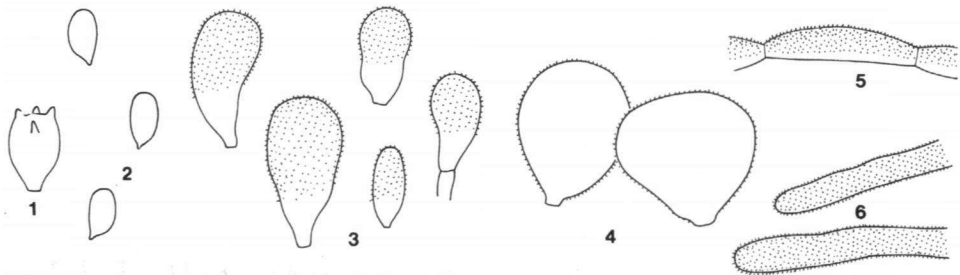


Fig. 5. *Mycena hylophila* (de Meijer 3118). 1. Basidium; 2. spores; 3. cheilocystidia; 4. acanthocysts; 5. hypha of the pileipellis; 6. caulocystidia. — All Figs.,  $\times 700$ .



Basidia 13.5–18 × 8–10 µm, obpyriform, 4-spored, clampless, with sterigmata up to 6.5 µm long. Spores 7.6–9.4 × 4.5–5.4(–6) µm (Q = 1.8–1.9), pip-shaped, smooth, amyloid. Cheilocystidia 13.5–24 × 6.5–15 µm, occurring mixed with the basidia, clavate, obpyriform, more rarely subcylindrical, clampless, apically fairly densely covered with evenly spaced, cylindrical, simple, straight excrescences 0.9–>1 × 0.5 µm. Pleurocystidia absent. Lamellar trama brownish virescent or reddish brown in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are 2.5–4.5 µm wide, clampless, in part smooth, in part spinulose or densely spinulose. Acanthocysts 15–26 × 18–21 µm, globose to subglobose or obovoid, thin-walled, densely and finely spinulose. Cheroocytes not observed. Hyphae of the cortical layer of the stipe smooth. Caulocystidia 18–110 × 4.5–6.5 µm, cylindrical, thin-walled or with thickened cell-walls, apically obtuse, densely spinulose all over with the excrescences 0.9–1.8 × 0.5 µm.

On dead twigs, less frequently on dead leaves of dicotyledonous trees in dense ombrophilous forest, 850 m alt.

Holotype: "*Mycena hylophila* Maas G. & de Meijer / 17 Nov. 1994 / Paraná: Morretes, Parque Marumbi, BR-277 road / A. A. R. de Meijer MA-2939" (No. 990.200-069; L); notes and drawings: MBM 212252.

Additional material: "*Mycena hylophila* Maas G. & de Meijer / 5 July 1995 / Paraná: Guaraqueçaba, Potinga / A. A. R. de Meijer GUA-3118" (No. 990.200-171; L); notes and drawings: MBM 212259.

The present species would be identified in Desjardin's key (1995: 9) as *Mycena hemitrichialis* Sing., but the description of the latter by Singer (1989: 74) shows some inconsistencies that need comment. The pileus in *M. hylophila* is hemispherical to convex and tends to flatten with age (conical to campanulate in *hemitrichialis*, according to Singer); the stipe in *hylophila* arises from a small basal patch (in *hemitrichialis* there is "a well-developed flattened ring of hispid mycelium surrounding and covering the swelling that constitutes a rudimentary basal disc," as demonstrated by Desjardin); in *hylophila* the caulocystidia are densely covered with spinulae of the same size right to their tips (in *hemitrichialis*, according to Singer, the spinulae on [the] distal 25% [part of the caulocystidia] are sparse and longer [than the] spinulae on [the] proximal 75% part).

### *Mycena lasiopus* Maas G. & de Meijer, *spec. nov.* — Fig. 6

Basidiomata dispersa. Pileus usque ad 4 mm latus, usque ad 2.5 mm altus, e campanulato convexus, siccus, levis, striatus, dense brunneo-pruinosis, obscure griseobrunneus, aetate pallidior. Caro tenuis, odore nullo. Lamellae c. 14 stipitem attingentes, molles, adscendentes, ventricosae, c. 1 mm latae, subliberae, albae, margine convexae, concolores. Stipes 5–7 × c. 0.4 mm, cavus, fragilis, aequalis, cylindraceus, siccus, levis, infra villosus, supra puberulus, albus, basi, disco c. 1 mm lato, laciniatolamellato, albo substrato affixus.

Basidia (immatura) 15–18 × 10–11.5 µm, late clavata vel subglobosa, 4-sporigera. Sporae 8.1–9.8 × 5.4–6.5 µm, inaequilateraliter ellipsoideae, leves, tenuiter amyloideae. Cheilocystidia 16–22.5 × 8–14.5 µm obovata vel clavata, surculis haud numerosis, cylindraceis, 0.9–>1 × 0.5 µm instructae. Pleurocystidia nulla. Trama lamellarum iodi ope brunneovinescens. Hyphae pileipellis 2.5–4.5 µm latae, sucum brunneum continentes, leves. Acanthocystides 13.5–27 × 11.5–22.5 µm, globosae, sucum brunneum continentes, minute denseque spinulosae. Cheroocytes haud numerosae, 27–35 × 18–40 µm, versiformia, crasse tunicatae, minute denseque spinulosae. Hyphae stipitis corticales 1.8–3.5 µm latae, leves. Caulocystidia –c. 350 × 4.5–11.5 µm, cylindracea, dense spinulosae, apicibus tamen sublevia.

*Corticola*.

Holotypus: *A.A.R. de Meijer MA-3092* (No. 991.343-747; L); notulae: MBM 212255.

Etyymology: *λασίου*, shaggy, and *πους*, foot, in reference to the shaggy lower part of the stipe.

Basidiomata scattered. Pileus up to 4 mm across, up to 2.5 mm high, at first campanulate, then convex, dry, smooth, translucent-striate, densely brown-pruinose, fresh dark grey-brown (5–6E4), pallescent with age, becoming fairly pale grey-brown (5C3–5D3) to pale greyish. Context very thin. Odour absent. Lamellae c. 14 reaching the stipe, tender, ascending, ventricose, c. 1 mm broad, almost free, white, with convex, concolorous edge. Stipe 5–7 × c. 0.4 mm, hollow, fragile, equal, terete, dry, smooth, villose below, puberulous above, white, springing from a radially lamellate basal disc c. 1 mm across, whose lamellae are white and minutely fimbriate-laciniate.

Basidia (immature) 15–18 × 10–11.5 μm, broadly clavate to subglobose, 4-spored. Spores 8.1–9.8 × 5.4–6.5 μm (Q = 1.6), pip-shaped, smooth, very weakly amyloid. Cheilocystidia 16–22.5 × 8–14.5 μm, broadly obovate to almost globose in the middle of the lamella, mixed with narrower, clavate ones near the pileus margin, not forming a sterile band, mostly occurring in small groups, covered with not very numerous, evenly spaced, cylindrical, simple, straight excrescences 0.9–>1 × 0.5 μm which are barely visible in the obovate cystidia, more clearly visible in the clavate cystidia. Pleurocystidia absent. Lamellar trama brownish vinescent in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are 2.5–4.5 μm wide, with brownish contents, smooth. Acanthocysts 13.5–27 × 11.5–22.5 μm, globose, thin-walled, with homogeneous brownish contents, densely covered with barely visible, evenly spaced, cylindrical, simple, straight excrescences 0.9 × 0.5 μm. Cheroocytes not very numerous, 27–35 × 18–40 μm, variously shaped, short-stalked, thick-walled (1.8–3.5 μm), with homogeneous brownish contents, densely spinulose. Hypoderm made up of parallel hyphae with inflated cells up to 30 μm wide. Hyphae of the cortical layer of the stipe 1.8–3.5 μm wide, smooth. Caulocystidia – c. 350 × 4.5–11.5 μm, cylindrical, thin-walled, with broadly rounded apex, densely spinulose for the greater part, terminally almost smooth. Acanthocysts and an occasional cheroocyte from the basal disc with colourless contents.

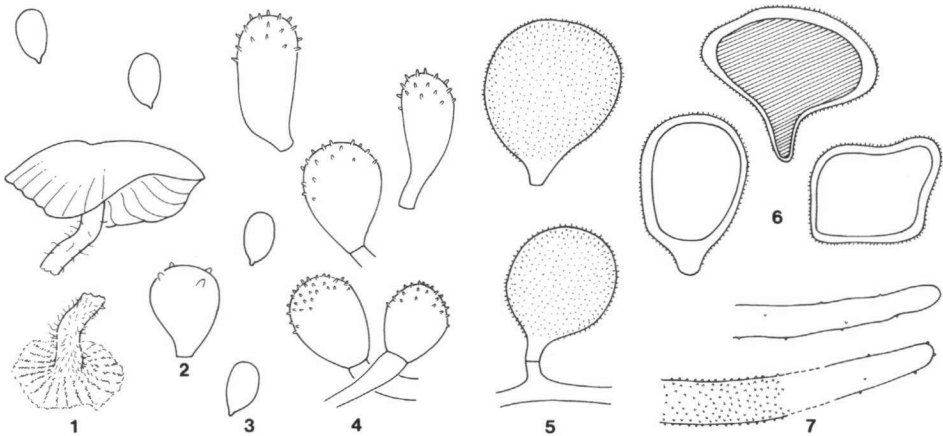


Fig. 6. *Mycena lasiopus* (holotype). 1. Pileus and basal disc; 2. basidium; 3. spores; 4. cheilocystidia; 5. acanthocysts; 6. cheroocytes; 7. caulocystidia. — Fig. 1, × 8; all others, × 700.

Clamp-connections either not observed or not clearly seen.

On the cortex of a fallen twig of a dicotyledonous tree in dense ombrophilous forest, 20 m above sea level.

Holotype: "*Mycena lasiopus* Maas G. & de Meijer / 27 June 1995 / Paraná: Morretes, Porto de Cima, Parque Marumbi, rio Nhundiaquara / A.A.R. de Meijer MA-3092" (No. 991.343-747; L); notes on drawings: MBM 212255.

Desjardin (1995: 14) defined his stirps *Amparoina* among other features by stating that the cherocytes are thick-walled and possess spine-like projections and the caulocystidia are densely spinulose overall. However, it is probably not possible to define any subgeneric taxon without allowing one or more taxa to deviate in one or two of its characters. Sharp lines of demarcation are rare in Nature, and this led Desjardin to accept *Mycena sotae* Singer (p. 37) as a member of stirps *Amparoina* although the acanthocysts of the species are thin-walled and lack spine-like projections, the connecting element being the acanthocysts "overall morphology ... suggestive of cherocytes."

*Mycena lasiopus* constitutes a comparable case. Most of its characters agree with those of stirps *Amparoina* but the cherocytes lack spine-like projections and the caulocystidia, instead of being "densely spinulose overall," are almost smooth terminally.

### ***Mycena rhapsidocephala* Maas G. & de Meijer, *spec. nov.* — Fig. 7**

Basidiomata dispersa. Pileus 0.5–2 mm latus, convexus, siccus subsulcatus, striatus, pulverulentus, acubus vitreis longissimis obtectus, pallide brunneo-griseus, hygrophanus. Caro pertenuis, odore nullo. Lamellae 6–10 stipitem attingentes, molles, adscendentes, ventricosae, usque ad 0.3 mm latae, liberae, albae, margine convexae, concolores. Stipes 2–7 × 0.1–0.2 mm, fistulosus, fragilis, aequalis, cylindraceus, siccus, levis, puberulus, albus, e disco basali albo natus.

Basidia c. 17 × 10–11.5 µm, obpyriformia, 2-sporigera, efibulata. Sporae 10–12 × 5–6 µm, inaequilateraliter ellipsoideae, leves, amyloideae. Cheilocystidia pleurocystidiaque nulla. Trama lamellarum iodi ope brunneovinescens. Hyphae pileipellis 2.5–3.5 µm latae, efibulatae, leves. Acanthocystides 9–15 × 6.5–9 µm, obpyriformes, efibulatae, dense spinulosae. Acus –3000 × 9–11 µm, basi usque ad 18 µm lati, leves. Velum universale e cherocytibus 45–65 × 13.5–21.5 µm, ellipsoideis, nonnihil crasse-tunicatis, spinulosis, collo angustiore 30–55 × 3.5–5.5 µm, tenui-tunicato, levi instructis formatum. Hyphae stipitis corticales leves. Caulocystidia –75 (vel ultra) × 13.5–18 × 5.5–9 µm, lageniformia, levia, tenui-tunicata.

Ramulicola.

Holotypus: A.A.R. de Meijer MA-3098 (No. 990.200-185; L); notulae: MBM 212256.

Etymology: ραφις, needle; κεφαλή, head, referring to the needles covering the pileus.

Basidiomata scattered. Pileus 0.5–2 mm across, convex, dry, shallowly sulcate, translucent-striate, pulverulent, covered with needle-thin, long, hyaline hairs, the centre and striae pale brownish grey (5B2), white between the striae. Context very thin. Odour absent. Lamellae 6–10 reaching the stipe, tender, ascending, ventricose, up to 0.3 mm broad, free, white, with convex, concolorous edge. Stipe 2–7 × 0.1–0.2 mm, fistulose, fragile, equal, terete, dry, smooth, puberulous, white, springing from a radiately striate basal disc 0.5 mm across, the edges of which turn involute when dried.

Basidia (immature) c. 17 × 10–11.5 µm, obpyriform, with two incipient sterigmata, clampless. Spores 9–10.7 × 4.5–5.4 µm (Q = 2.0), pip-shaped, smooth, amyloid. Cheilocystidia absent. Pleurocystidia absent. Lamellar trama brownish vinescent in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are 2.5–3.5 µm wide, clampless, smooth. Acanthocysts 9–15 × 6.5–9 µm, obpyriform, short-stalked, clampless, thin-walled,

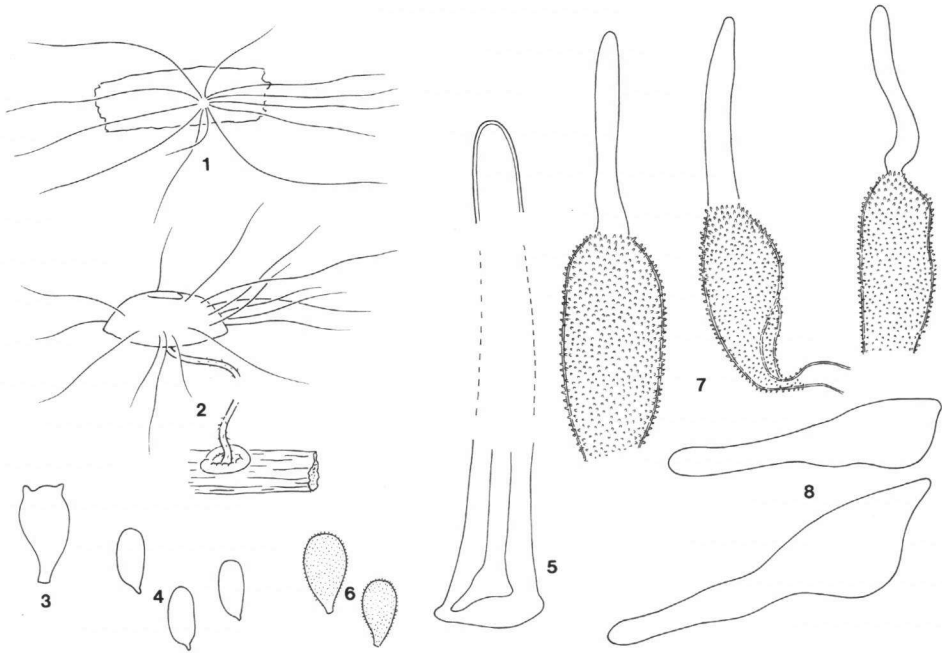


Fig. 7. *Mycena raphidocephala* (holotype). 1. Primordium; 2. pileus and basal disc; 3. immature basidium; 4. spores; 5. glass hair; 6. acanthocysts; 7. cheroocytes; 8. caulocystidia. — Figs. 1 and 2,  $\times 10$ ; all others,  $\times 700$ .

with hyaline contents, densely spinulose, with the excrescences  $1-2 \times < 1 \mu\text{m}$ . Vitreous hairs up to  $3000 \mu\text{m}$  long,  $9-11 \mu\text{m}$  broad, at the base up to  $18 \mu\text{m}$  broad, thick-walled ( $1-2.5 \mu\text{m}$ ), smooth. Cheroocytes  $45-65 \times 13.5-21.5 \mu\text{m}$ , ellipsoid, somewhat thick-walled, densely spinulose, with the excrescences  $2-2.5 \times 1 \mu\text{m}$ , passing into a slender neck which is  $30-55 \times 3.5-5.5 \mu\text{m}$ , thin-walled, smooth. Hypoderm made up of parallel hyphae with inflated cells c.  $20 \mu\text{m}$  wide. Hyphae of the cortical layer of the stipe smooth. Caulocystidia  $-75$  (or longer)  $\times 13.5-18 \times 5.5-9 \mu\text{m}$ , lageniform, smooth, thin-walled.

On a dead twig of a dicotyledonous tree in dense ombrophilous forest, 20 m alt.

Holotype: "*Mycena raphidocephala* Maas G. & de Meijer / 27 June 1995 / Paraná: Morretes, Porto do Cima, Parque Marumbi, rio Nhundiaquara / A.A.R. de Meijer MA-3098" (No. 990.200-185; L); notes and drawings: MBM 212256.

The combination of long, needle-shaped vitreous hairs covering the pileus, the lack of cheilocystidia and smooth caulocystidia is not known in any other species of the section *Sacchariferae*.

***Mycena umbratilis* Maas G. & de Meijer, spec. nov. — Fig. 8**

Basidiomata dispersa. Pileus usque ad  $2.5 \text{ mm}$  latus, convexus, siccus, subsulcatus, striatus, griseo-albus. Caro tenuis, alba, odore nullo. Lamellae c. 10 stipitem attingentes, molles, adscendentes, ventricosae, c.  $0.3 \text{ mm}$  latae, anguste adnatae, albae, margine convexae, concolores. Stipes  $-18 \times 0.2 \text{ mm}$ , fistulosus, fragilis, aequalis, cylindraceus, siccus, levis, totus puberulus, albus, basi subbulbosus.

Basidia (immatura)  $7-8 \mu\text{m}$  lata, late clavata, 4-sporigera. Sporae  $8.5-10.3 \times 3.6-5.4 \mu\text{m}$ , inaequilateraliter ellipsoideae, leves, amyloideae. Cheilocystidia  $9-10 \mu\text{m}$  lata, fusiformia, surculis cylindra-

ceis  $0.9\text{--}1.5 \times 0.5 \mu\text{m}$  instructa. Pleurocystidia nulla. Trama lamellarum iodi ope brunneovinescens. Hyphae pileipellis  $2.5\text{--}4.5 \mu\text{m}$  latae, efibulatae, spinulosae. Acanthocystides  $11\text{--}17 \times 11\text{--}16 \mu\text{m}$ , globosae, minute denseque spinulosae. Cherocytes haud visae. Hyphae stipitis corticales  $1.8\text{--}3.5 \mu\text{m}$  latae, leves. Caulocystidia  $\text{--}120 \times 3\text{--}8 \mu\text{m}$ , cylindracea, dense spinulosa. Cystidia stipitis basi c.  $20 \times 9 \mu\text{m}$ , efibulata, dense spinulosa.

Follicola.

Holotypus: A. A. R. de Meijer *GUA-3117* (No. 991.343-685; L); notulae: MBM 212258.

Etymology: *umbratilis*, remaining in the shadow.

Basidiomata scattered. Pileus up to 2.5 mm across, convex, dry, slightly sulcate along the margin, translucent-striate, centre and striae greyish white, pure white between the striae. Context thin, white. Odour absent. Lamellae c. 10 reaching the stipe, tender, ascending, ventricose, c. 0.3 mm broad, narrowly adnate, white, with convex, concolorous edge. Stipe  $\text{--}18 \times 0.2 \text{ mm}$ , fistulose, fragile, equal, terete, dry, smooth, puberulous throughout, white, with puberulous, clavate to subbulbous base which, when dry, looks like a small basal disc.

Basidia (immature)  $7\text{--}8 \mu\text{m}$  broad, broadly clavate, 4-spored. Spores  $8.5\text{--}10.3 \times 3.6\text{--}5.4 \mu\text{m}$  ( $Q = 2.1$ ), pip-shaped, smooth, amyloid. Cheilocystidia not numerous, occurring mixed with the basidia,  $9\text{--}10 \mu\text{m}$  broad, (presumably) fusiform, apically covered with not numerous, evenly spaced, cylindrical, simple, straight excrescences  $0.9\text{--}1.5 \times 0.5 \mu\text{m}$ . Pleurocystidia absent. Lamellar trama brownish vinescent in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are  $2.5\text{--}4.5 \mu\text{m}$  wide, clampless, the upper side densely covered with minute excrescences  $0.5 \times 0.5 \mu\text{m}$ . Acanthocysts  $11\text{--}17 \times 11\text{--}16 \mu\text{m}$ , globose (with a single exception which is irregularly triangular and much larger, Fig. 6), thin-walled, with colourless contents, densely covered with evenly spaced, simple, straight excrescences  $0.5 \times 0.5 \mu\text{m}$ . Cherocytes not observed. Hypoderm made up of hyphae with inflated cells. Hyphae of the cortical layer of the stipe  $1.8\text{--}3.5 \mu\text{m}$  wide, smooth. Caulocystidia  $\text{--}120 \times 3\text{--}8 \mu\text{m}$ , cylindrical, thin-walled, with broadly rounded apex, densely spinulose, with the excrescences  $0.9\text{--}1.5 \times 0.5 \mu\text{m}$ . Cystidia at the base of the stipe c.  $20 \times 9 \mu\text{m}$ , clavate, thin-walled, clampless, densely spinulose.

On fallen leaves of dicotyledonous trees in dense ombrophilous forest, 5 m above sea level.

Holotype: "*Mycena umbratilis* Maas G. & de Meijer / 5 July 1995 / Paraná: Guaraqueçaba, Potinga / A. A. R. de Meijer *GUA-3117*" (No. 991.343-685; L); notes and drawings: MBM 212258.

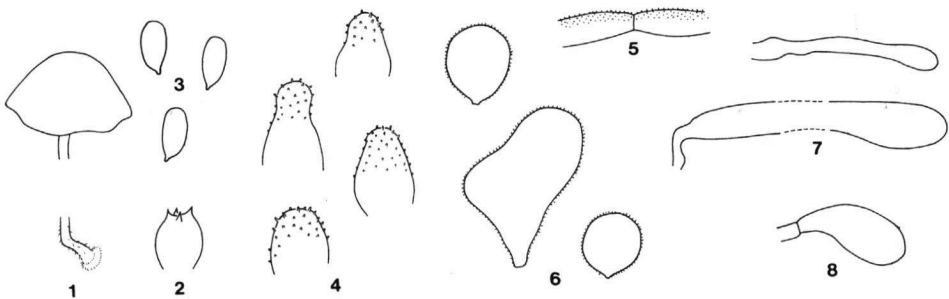


Fig. 8. *Mycena umbratilis* (holotype). 1. Pileus and basal part of the stipe; 2. basidium; 3. spores; 4. cheilocystidia; 5. fragment of a hypha of the pileipellis; 6. acanthocysts; 7. caulocystidia; 8. basal cystidium. — Fig. 1,  $\times 10$ ; all others,  $\times 700$ .

Desjardin's key (1995: 9) to the species of section *Sacchariferae* would give no other choice but to name the present species *Mycena depilata* Sing., but the original description (Singer, 1989: 72) shows at least two clear differences from *M. umbratilis*. Singer found the acanthocysts of the pileus surface (which he called dermatocystidia) much larger ( $20\text{--}39 \times 12\text{--}17\text{--}24 \mu\text{m}$ ) than those of *M. umbratilis*, while his material apparently lacked cylindrical caulocystidia. Desjardin who reexamined the holotype (consisting "of one fragmented stipe") did not find long-cylindrical caulocystidia either.

It is most unfortunate that Singer's description gives so little detail (it is not known whether the fresh pileus was sulcate; how many lamellae reached the stipe; which part of the cheilocystidia was covered with excrescences and whether they were few in number or densely spaced; whether there were clamps), but going by his measurements of the pileus (1 mm across) and the stipe (up to 10 mm long) and considering that he found the spores only weakly amyloid, it seems that all differences taken together are sufficient proof to proclaim *M. depilata* and *M. umbratilis* two separate species.

### Section *Polyadelphia* Sing. ex Maas G.

Synonyms and description, see Maas Geesteranus (1986: 159).

#### *Mycena elongata* Maas G. & de Meijer — Fig. 9

*Mycena elongata* Maas G. & de Meijer, *Mycenae paranaenses* (1997) 50.

The second collection of this species differs only very little macroscopically from the type, described in 1997, but additional microscopical data presenting the variability of the species should not be omitted.

Basidia (immature, few seen) c.  $18 \times 9 \mu\text{m}$ . Spores (immature?)  $8.1\text{--}9.8 \times 4.7\text{--}5.4 \mu\text{m}$  ( $Q = 2.2$ ), pip-shaped, smooth, strongly amyloid. Cheilocystidia  $13.5\text{--}22.5 \times 10\text{--}13.5 \mu\text{m}$ , forming a sterile band, subclavate, subpyriform, broadly ellipsoid, (clamps not observed), thin-walled, covered with few, unevenly spaced, very coarse, cylindrical to subclavate or

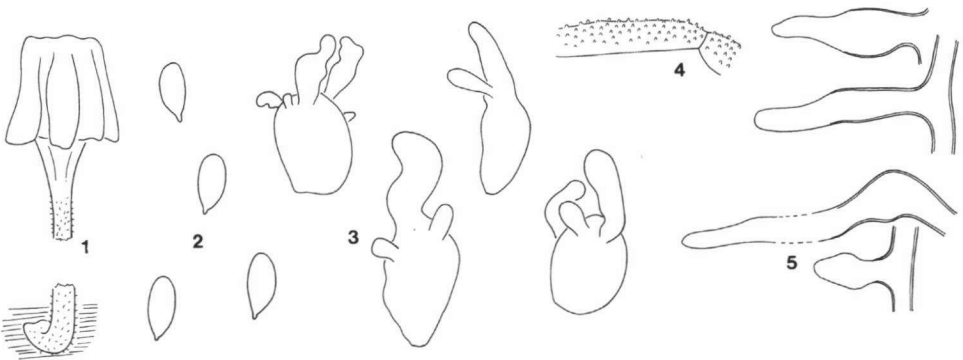


Fig. 9. *Mycena elongata* (de Meijer 3120). 1. Pileus and basal part of the stipe; 2. spores; 3. cheilocystidia 4. fragment of a hypha of the pileipellis; 5. caulocystidia. — Fig. 1,  $\times 10$ ; all others,  $\times 700$ .

variously shaped excrescences  $6.5\text{--}18 \times 4.5\text{--}7 \mu\text{m}$ . Pleurocystidia absent. Lamellar trama reddish brown (due to immaturity?) in Melzer's reagent. Hyphae of the pileipellis (few observed) c.  $6.5 \mu\text{m}$  wide (clamps not observed), densely covered with evenly spaced warts or short cylindrical excrescences  $0.9\text{--}1.5 \times 0.9\text{--}1.5 \mu\text{m}$ . Hyphae of the hypoderm with inflated cells up to  $25 \mu\text{m}$  wide. Hyphae of the cortical layer of the stipe  $2.5\text{--}3.5 \mu\text{m}$  wide, one clamp observed, with somewhat thickened cell-walls, smooth, the caulocystidia  $30\text{--}60 \times 4.5\text{--}11 \mu\text{m}$ , lateral, sublageniform to cylindrical, smooth.

Growing on dead leaves of dicotyledonous trees in dense ombrophilous forest, 5 m above sea level.

Material examined: '*Mycena elongata* Maas G. & de Meijer / 5 July 1995 / Paraná: Guaraqueçaba, Potinga / A.A.R. de Meijer GUA-3120' (No. 990.200-199; L); notes and drawings: MBM 212260.

### Section Nigrescentes Maas G. & de Meijer

Description, see Maas Geesteranus & de Meijer (1997: 74).

#### KEY TO THE SPECIES

1. Cheilocystidia short- to long-stalked.
  2. Cheilocystidia covered with excrescences  
*M. nigrescens* (Maas G. & de Meijer, 1997: 75)
  2. Cheilocystidia smooth or with one or two coarse outgrowths . . . . . *M. obscurata*
1. Cheilocystidia sessile . . . . . *M. furva* (Maas G. & de Meijer, 1997: 77)

### *Mycena obscurata* Maas G. & de Meijer, *spec. nov.* — Fig. 10

Basidiomata gregaria. Pileus 2.5–10 mm latus, initio convexus, centro umbilicatus, siccus, striatus, glaber ut videtur, hygrophanus, centro striisque atrobrunneus, siccus nigrescens. Caro pileo concolor, odore fungoideo. Lamellae 14–18 stipitem attingentes, haud molles, arcuatae, 1.5(–2) mm latae, longe decurrentes, pallide brunneogriseae, margine atrobrunneo. Stipes 12–50  $\times$  0.5–1.5 mm, cavus, fragilis, subaequalis, cylindraceus, siccus, levis, glaber, atrobrunneus, siccatus nigrescens, basi fibrillis tenuibus munitus.

Basidia 22.5–27  $\times$  5.5–6.5  $\mu\text{m}$ , anguste clavata, 2-sporigera, efibulata, sterigmatibus 6.5  $\mu\text{m}$  longis praedita. Sporae 8.1–9.4  $\times$  4.5–5.3  $\mu\text{m}$ , inaequilateraliter ellipsoideae, leves, tenuiter amyloideae. Cheilocystidia 20–30  $\times$  (3–)4.5–10  $\mu\text{m}$ , clavata, stipitata, efibulata, levia vel surculis crassis instructa, sucum brunneum continentia. Pleurocystidia nulla. Trama lamellarum iodi ope brunneo-vinescens. Hyphae pileipellis 2.5–4.5  $\mu\text{m}$  latae, efibulatae, ramosae, sucum brunneum continentis, cellulae terminales surculis crassis 1.8–3.5  $\times$  1.8–2.5  $\mu\text{m}$  munitae. Hyphae stipitis corticales 1.8–2.5  $\mu\text{m}$  latae, efibulatae, leves, sucum brunneum continentis, cellulae terminales surculis crassis 4–12  $\times$  4–7  $\mu\text{m}$  instructae.

Lignicola.

Holotypus: A.A.R. de Meijer DN-3348 (No. 990.200-165; L); isotypus: MBM 212262.

Etymology: obscuratus, darkened, referring to the basidiomata almost blackening when dried.

Basidiomata gregarious. Pileus 2.5–10 mm across, convex, then with umbilicate centre, dry, translucent-striate, appearing glabrous, hygrophanous, the centre and striae dark brown (8F3–8F5), between the striae brownish grey (8D2), drying evenly greyish white, finally blackening. Context thin, concolorous with the pileus surface. Odour fungoid. Lamellae

14–18 reaching the stipe, not tender, arcuate, 1.5(–2) mm broad, broadly adnate, far decurrent, pale brownish grey (8C2), with dark brown edge (8F4). Stipe 12–50 × 0.5–1.5 mm, hollow, fragile, more or less equal, terete, broadened at the base, dry, smooth, appearing glabrous, the upper part darkish brown (6E4), the lower part black-brown (8F4), blackened when dry, the base covered with fine fibrils.

Basidia 22.5–27 × 5.5–6.5 μm, slender-clavate, 2-spored, clampless, with 6.5 μm long sterigmata. Spores 8.1–9.4 × 4.5–5.3 μm (Q = 1.9), pip-shaped, smooth, weakly amyloid. Cheilocystidia 20–30 × (3–)4.5–10 μm, occurring mixed with basidia, generally clavate, almost capitate, more rarely almost cylindrical, long-stalked, clampless, smooth or with one or two coarse outgrowths, filled with brown vacuolar pigment. Pleurocystidia absent. Lamellar trama vivescent in Melzer's reagent. Pileipellis a cutis of repent, radiately aligned hyphae which are 2.5–4.5 μm wide, clampless, branched, with brown vacuolar pigment, the terminal cells with coarse excrescences 1.8–3.5 × 1.8–2.5 μm. Hypoderm made up of inflated hyphae. Hyphae of the cortical layer of the stipe 1.8–2.5 μm wide, clampless, smooth, with brown vacuolar pigment in the lower part of the stipe, the terminal cells with coarse, sometimes branched excrescences 4–12 × 4–7 μm.

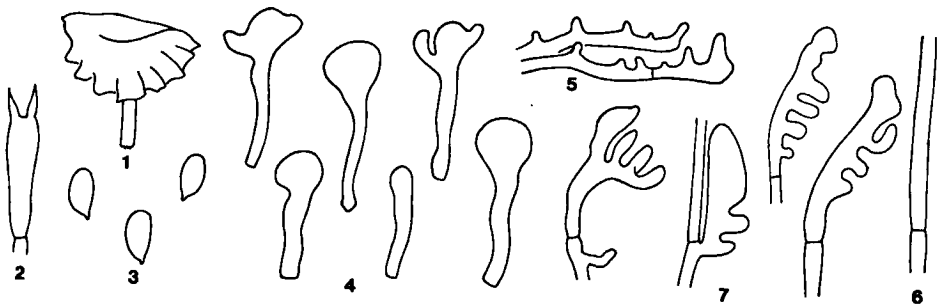


Fig. 10. *Mycena obscurata* (holotype). 1. Pileus; 2. basidium; 3. spores; 4. cheilocystidia; 5. hyphae of the pileipellis; 6. hypha of the cortical layer of the stipe; 7. terminal cells. — Fig. 1, × 3; all others, × 700.

On decayed trunk of a dicotyledonous tree in seasonal semi-deciduous submontane forest, 300 m alt.

Holotypus: "*Mycena obscurata* Maas G. & de Meijer / 15 March 1996 / Paraná: Diamante do Norte, Estação Ecológica do Caiuá / A.A.R. de Meijer DN-3348" (No. 990.200-167; L); isotype: MBM 212262.

*Mycena fuscocystidiata* Singer as described by its author (1989: 72) has the blackening pileus, pallid lamellae but with dark lamellar edge and smooth cheilocystidia in common with *M. obscurata*, and the two species could be confused. The former can be separated by the dingy purple pileus, inodorous context, appreciably longer spores and presence of pleurocystidia which are said to be "frequenter hyalinis."

### Section *Granuliferae* Maas G. & de Meijer

Description, see Maas Geesteranus & de Meijer (1997: 121).



## KEY TO THE SPECIES

1. Lamellae more or less pronouncedly arcuate; lamellar edge concave.
  2. Spores almost cylindrical, 8.9–10.7  $\mu\text{m}$  long. Caulocystidia absent  
*M. sertipes* (Maas G. & de Meijer, 1997: 124)
  2. Spores pip-shaped, 7.2–8.1  $\mu\text{m}$  long (but possibly not quite mature). Caulocystidia present ..... *M. extenuata*
1. Lamellae ascending; lamellar edge convex. Hyphae of the cortical layer of the stipe diverticulate ..... *M. granulifera* (Maas G. & de Meijer, 1997: 122)

***Mycena extenuata* Maas G. & de Meijer, *spec. nov.* — Fig. 11**

Basidiomata dispersa. Pileus usque ad 3 mm latus, usque ad 2.7 mm altus, campanulatus, sulcatus, striatus, minute pruinosis, glabrescens, siccus, albus, aetate interdum pallide flavus. Caro tenuis, odore nullo. Lamellae 8–10 stipitem attingentes, molles, arcuatae, usque ad 1.3 mm latae, longe decurrentes, albae, margine concavo, concolore. Stipes 6–30  $\times$  0.1–0.3 mm, fistulosus, fragilis, aequalis, cylindraceus, siccus, levis, minute pruinosis, albus, e disco basali parvo minute fibrilloso natus.

Basidia 22.5–27  $\times$  6.5–7  $\mu\text{m}$ , clavata, haud fibulata. Sporae 7.2–8.1  $\times$  4.5–4.9  $\mu\text{m}$ , inaequilateraliter ellipsoideae, leves, inamyloideae. Cheilocystidia 18–27  $\times$  2.5–6.5  $\mu\text{m}$ , clavata, haud fibulata, apice furcata vel subramosa, surculis 1.5–5.5  $\times$  1–2.5  $\mu\text{m}$  praedita. Pleurocystidia nulla. Trama lamellarum iodi ope haud vinescens. Hyphae pileipellis 1.8–3.5  $\mu\text{m}$  latae, haud fibulatae, diverticulatae. Hyphae stipitis corticales 1.8–2.7  $\mu\text{m}$  latae, haud fibulatae, sparse diverticulatae, cellulae terminales – c. 18  $\times$  3.5–4.5  $\mu\text{m}$ , variformes.

Lignicola.

Holotypus: A. A. R. de Meijer CUF-3062 (No. 990.200-274; L); notulae: MBM 212253.

Etymology: *extenuatus*, stretched lengthwise, in reference to the comparatively long stipe.

Basidiomata scattered. Pileus up to 3 mm across, up to 2.7 mm high, campanulate, sulcate, translucent-striate, at first minutely pruinose, glabrescent, dry, pure white, with age sometimes turning very pale yellow (3A3–4A3). Context thin. Odour absent. Lamellae 8–10 reaching the stipe, tender, arcuate, up to 1.3 mm broad, far decurrent, white, with concave, concolorous edge. Stipe 6–30  $\times$  0.1–0.3 mm, fistulose, fragile, equal, terete, dry, smooth, minutely pruinose, white, springing from a small basal patch made up of radiating, very fine, silky, white fibrils which tend to disappear at maturity.

Basidia (immature) 22.5–27  $\times$  6.5–7  $\mu\text{m}$ , clavate, clampless. Spores (not quite mature?) 7.2–8.1  $\times$  4.5–4.9  $\mu\text{m}$  ( $Q = 1.9$ ), pip-shaped, smooth, inamyloid. Cheilocystidia 18–27  $\times$  2.5–6.5  $\mu\text{m}$ , forming a sterile band, clavate, clampless, apically furcate to somewhat

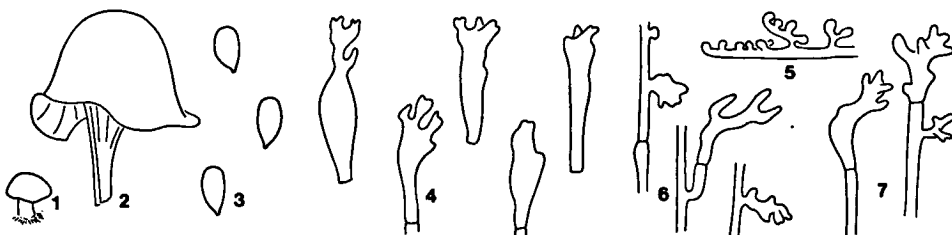


Fig. 11. *Mycena extenuata* (holotype). 1. Young specimen, showing the stipe with its basal patch; 2. pileus; 3. spores; 4. cheilocystidia; 5. hypha of the pileipellis; 6. hyphae of the cortical layer of the stipe; 7. terminal cells. — Fig. 1 and 2,  $\times 10$ ; all others,  $\times 700$ .

branched, the terminal excrescences  $1.5\text{--}5.5 \times 1\text{--}2.5 \mu\text{m}$ . Pleurocystidia absent. Lamellar trama not vinescent in Melzer's reagent. Pileipellis a cutis of repent hyphae which are  $1.8\text{--}3.5 \mu\text{m}$  wide, clampless, covered with simple or furcate to branched, cylindrical excrescences  $\text{--}10 \times 1.8\text{--}2.5 \mu\text{m}$ . Hypoderm consisting of parallel hyphae with inflated cells up to  $30 \mu\text{m}$  wide. Hyphae of the cortical layer of the stipe  $1.8\text{--}2.7 \mu\text{m}$  wide, clampless, covered with scattered, variously shaped to somewhat branched caulocystidia  $1.8\text{--}27 \times 1.8\text{--}3.5 \mu\text{m}$ , the terminal cells  $\text{--}c. 18 \times 3.5\text{--}4.5 \mu\text{m}$ , apically furcate to more or less branched.

On decayed woody fruit of *Bignoniaceae* sp. in mixed ombrophilous forest, 900 m alt.

Holotype: "*Mycena extenuata* Maas G. & de Meijer / 23 April 1995 / Paraná: Curitiba, Parque Municipal do Iguaçu, Zoológico / A. A. R. de Meijer *CUF-3062*" (No. 990.200-274; L); notes and drawings: MBM 212253.

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