

## FURTHER NEW SPECIES OF MYCENA FROM SPAIN – II

M. VILLARREAL<sup>1</sup>, M. HEYKOOP<sup>1</sup> & R.A. MAAS GEESTERANUS<sup>2</sup>

In this paper, again, three new species of section *Fragilipedes* are described, *Mycena olivaceoflava*, *M. rubidofusca* and *M. vicina*. *Mycena hepatica* is a new species of section *Rubromarginatae*. The circumscription of section *Insignes* is slightly altered, as a result of which *Mycena quinaultensis*, *M. conspersa*, *M. mitis* and *M. corrugans* are transferred to section *Fragilipedes*.

### *Mycena olivaceoflava* Villarreal, Heykoop & Maas G., spec. nov. — Figs. 1–6

Basidiomata gregaria. Pileus 4–8 mm latus, e conico conico-campanulatus, umbonatus, striatus, haud sulcatus, siccus, e pruinoso glabrescens, olivaceoflavus. Caro tenuis, pileo concolor, odore indistincto. Lamellae 13–15 stipitem attingesentes, adscendentia, haud dente decurrentes, albae, margine convexae, albidae. Stipes 40–75 × 1 mm, cylindraceus, fragilis, e pruinoso glabrescens, apice excepto, siccus, pileo concolor vel basi satis brunneo-olivaceus, radicans, basi dense albofibrillosus.

Sporae 9.5–10.54–11.5 × 5.5–6.43–7 µm, ellipsoideae, leves, amyloideae. Basidia 4-spora, 20–23 × 9.5–14 µm, late clavata, efibulata, sterigmatibus usque ad 8 µm instructa. Cheilocystidia 25–45 (–60) × 7–13 µm, hyalina, subutriformia, lageniformia vel fusiformia, efibulata, collis 1–3(–pluribus) munita. Lamellarum margo sterilis. Pleurocystidia nulla. Hymenophori trama dextrinoidea, e hyphis usque ad 23 µm latis. Hyphae pileipellis 2.5–4 µm latae, efibulatae, haud in materiam gelatinosam immersae, surculis simplicibus vel ramosis (4–)8–22 × 1.5–2.5 µm instructae. Hyphae stipitipellis 2–4 µm latae, efibulatae, verrucis 1.5–3 × 0.8–1.2 µm instructae. Caulocystidia usque ad 20 µm lata, stipitis parte superiore sparsa.

In *Salicis atrocinereae* sarmenta.

Holotypus: no. 22264 AH.

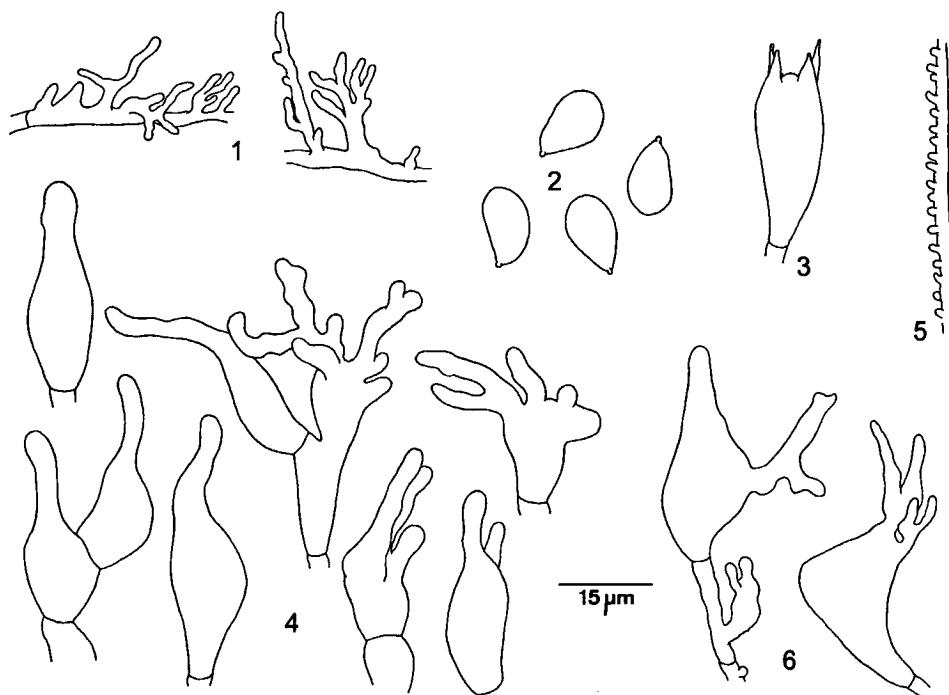
Etymology: olivaceoflavus, olivaceous-yellow.

Basidiomata gregarious. Pileus 4–8 mm diam., conical to conical-campanulate, with a large umbo, translucent-striate, not sulcate, dry, pruinose, glabrescent, evenly olivaceous-yellow (Mu. 5 Y 7/6) except at centre which is olivaceous (Mu. 5 Y 6/4, 6/5), turning pale olivaceous (Mu. 5 Y 6/4) when drying. Context thin and concolorous. Odour not distinctive. Lamellae 13–15 reaching the stipe, ascending, adnate, without a decurrent tooth, white, whitish to yellowish in dried material, lamella-edge convex and whitish. Stipe 40–75 × 1 mm, cylindrical, fragile, pruinose, glabrescent except at the apex, dry, concolorous to pileus or slightly more brown-olivaceous (Mu. 5 Y 5/3) towards the base, rooting, at the base densely covered with thin and whitish fibrils which lump together the surrounding organic matter.

Spores 9.5–10.54–11.5 × 5.5–6.43–7 µm; Q = 1.4–1.64–1.9 (n = 21), ellipsoid, smooth, amyloid. Basidia 4-spored, 20–23 × 9.5–14 µm, broadly clavate, clampless, sterigmata up to 8 µm in length. Cheilocystidia 25–45(–60) × 7–13 µm, hyaline, subutriform, lageniform to fusiform, clampless, with one to three (or more) necks, the latter up to 5 µm wide, with more or more irregularly shaped necks towards the margin of pileus. Lamella-edge sterile. Pleurocystidia absent. Hymenophoral trama dextrinoid, consisting of hyphae up to 23 µm

1) Dpto. de Biología Vegetal, Univ. de Alcalá, E-28871 Alcalá de Henares, Spain.

2) Rijksherbarium / Hortus Botanicus, P.O. Box 9514, 2300 RA Leiden, The Netherlands.



Figs. 1–6. *Mycena olivaceoflava* (holotype). 1. Hyphae of the pileipellis; 2. spores; 3. basidium; 4. cheilocystidia; 5. hyphae of the stipitipellis; 6. caulocystidia.

diam. Hyphae of the pileipellis 2.5–4 µm wide, clampless, not embedded in gelatinous matter, covered with simple or more or less ramified excrescences (4–)8–22 × 1.5–2.5 µm, usually forming dense coraloid masses. Hyphae of the stipitipellis 2–4 µm wide, clampless, densely covered with warts (1.5–3 × 0.8–1.2 µm) at the lower portion of the stipe, the latter more scattered towards the upper portion. Caulocystidia scattered, up to 20 µm wide, only present at the upper portion of the stipe.

**Habitat** — On humus of *Salix atrocinerea* Brot.

**Material examined.** Madrid, Pto. de Canencia, 24 Oct. 1996, leg. F. Esteve-Raventós, C. Sánchez, J.N. Campoamor & M. Villarreal, on humus of *Salix atrocinerea*, AH 22264 (holotype).

This material represents a new species belonging to section *Fragilipedes*. It is characterized by the bright olivaceous-yellow colour of both the pileus and stipe, its rooting stipe, absence of clamps and pleurocystidia, its apically divided cheilocystidia in two or more long necks and its fructification on humus of *Salix*. Besides, the caulocystidia are only present at the upper portion of the stipe. This feature should be taken into consideration when trying to include this new taxon into future keys.

When following the key to the section *Fragilipedes* (Maas Geesteranus, 1988), the present taxon keys out close to *Mycena chrysocorypha* Singer, a species described from alpine and subalpine zones of the former Soviet Union, fruiting on *Betula rotundifolia* Regel & Tiling.

*Mycena chrysocorypha* differs, however, from *M. olivaceoflava* because of its narrower spores ( $8.1\text{--}9.7 \times 4.3\text{--}5.4 \mu\text{m}$ ), presence of pleurocystidia and very different aspect of the ornamentation of the hyphae of the pileipellis. The differences between *M. olivaceoflava* and *M. chrysocorypha* are tabulated in Table I.

Table I. Differences between *Mycena olivaceoflava* and *M. chrysocorypha*.

	Spores	Pleuro-cystidia	Length of cheilocystidia	Lamella-edge	Width of caulocystidia	Lamellar insertion	Habitat
<i>M. olivaceoflava</i>	$Q = 1.59\text{--}1.71$	–	25–60 $\mu\text{m}$	homogeneous	–20 $\mu\text{m}$	without decurrent	not alpine tooth
<i>M. chrysocorypha</i>	$Q = 1.77\text{--}1.81$	+	18–33 $\mu\text{m}$	heterogeneous	–6.5 $\mu\text{m}$	with decurrent	(sub)alpine tooth

Another close species seems to be *Mycena lutea* Bres. which is apparently very similar to *M. olivaceoflava* from a macroscopical point of view but, although it was described originally as lacking clamps and with bisporic basidia, later Örstadius (1993) found a tetrasporic and clamped form. In addition, *M. lutea* differs from *M. olivaceoflava* because of its smaller spores ( $7\text{--}8 \times 4\text{--}5 \mu\text{m}$  in the tetrasporic form), differently shaped caulocystidia and its habitat in coniferous woods.

### *Mycena rubidofusca* Villarreal, Heykoop & Maas G., spec. nov. — Figs. 7–11

Basidiomata gregaria. Pileus 10–14 mm latus, conicus usque ad conico-campanulatus, subumbonatus, e pruinoso glabrescens, hygrophanus, striatus, madidus subviscidus, obscure rubidofuscus, centro atro-brunneus. Caro albida, stipite grisea, odore saporeque indistinctis. Lamellae c. 18–20 stipitem attingentes, c. 15 mm latae, crassae, adscendentes, adnatae vel dente subdecurrentes, isabellinogriseolae, margine convexae. Stipes 30–65  $\times$  2 mm, radicans, cylindraceus vel deorsum subincrassatus, apice pruinosis, cartilaginosus, griseobrunneus, nitens, basi dense albofibrillosus.

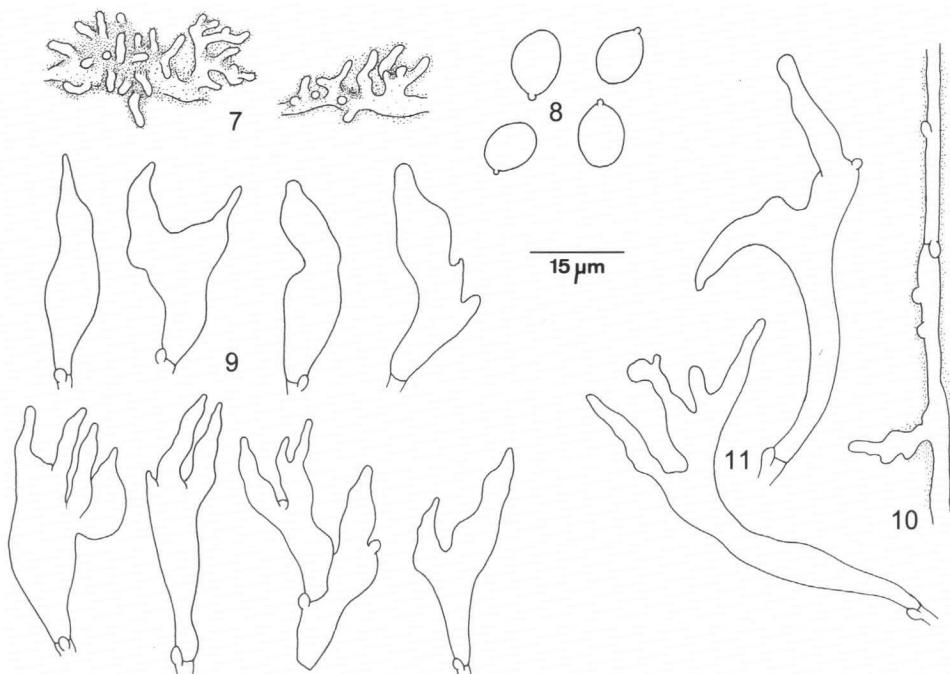
Sporae 8.5–9.40–10.5  $\times$  6.5–7.05–8  $\mu\text{m}$ , latae ellipsoideae, leves, amyloideae. Basidia 4-spora, 28–30  $\times$  11–13  $\mu\text{m}$ , clavata, fibulata, sterigmatibus usque ad 5  $\mu\text{m}$  instructa. Cheilocystidia 25–42  $\times$  8–15  $\mu\text{m}$ , hyalina, fusiformia, fibulata, apice attenuata, plerumque 2–pluribus collis praedita, haud in materiam gelatinosam inmersa. Lamellarum margo sterilis. Pleurocystidia nulla. Hymenophori trama sub-dextrinoidea, e hyphis usque ad 10  $\mu\text{m}$  latis. Hyphae pileipellis 2–3  $\mu\text{m}$  latae, fibulata, in materiam gelatinosam inmersae, dense diverticulatae, surculis 10  $\times$  0.8–2  $\mu\text{m}$ , valde ramosis munitae. Hyphae stiptipellis 3–4  $\mu\text{m}$  latae, fibulatae, in materiam gelatinosam inmersae, surculis dispersis 2–13  $\times$  1–3  $\mu\text{m}$  praeditae. Caulocystida 38–85  $\times$  6–12  $\mu\text{m}$ , versiformia, levia vel surculis nonnullis stiptitis parte superiore instructa.

In *Coryli avellanae* sarmenta.

Holotype: no. 22265 AH.

Etymology: rubidofuscus, because of its dark reddish brown colour.

Basidiomata gregarious. Pileus 10–14 mm diam., conical to conical-campanulate, slightly umbonate, pruinose, glabrescent, hygrophanous, translucent-striate, slightly viscid when wet but without separable layer, dark reddish brown (Mu. 10 YR 3/2) to dark reddish grey (10 Mu. YR 4/2), the centre black-brown (Mu. 10 YR 2/1–2/2). Context whitish under



Figs. 7–11. *Mycena rubidofusca* (holotype). 7. Hyphae of the pileipellis; 8. spores; 9. cheilocystidia; 10. hyphae of the stipitipellis; 11. caulocystidia.

the cuticle, greyish in the stipe. Odour and taste not distinctive. Lamellae c. 18–20, approximately 1.5 mm wide, thick, ascending, adnate or slightly decurrent with a tooth, beige-greyish, lamella-edge convex and whitish. Stipe 30–65 × 2 mm, rooting, cylindrical or slightly thickened towards the base (~3 mm wide), pruinose at the apex, cartilaginous, greyish brown to brown (Mu. 10 YR 5/2 to 10 YR 5/3), shining, the base densely covered with long and whitish fibrils.

Spores 8.5–9.40–10.5 × 6.5–7.05–8 µm, Q = 1.2–1.33–1.4 (n = 21), broadly ellipsoid, smooth, amyloid. Basidia 4-spored, 28–30 × 11–13 µm, clavate, clamped, with sterigmata up to 5 µm in length. Cheilocystidia 25–42 × 8–15 µm, hyaline, fusiform, clamped, with attenuated apex, frequently divided into two or more necks (especially towards the margin of lamella), not embedded in gelatinous matter. Lamella-edge sterile. Pleurocystidia absent. Hymenophoral trama slightly dextrinoid, consisting of hyphae up to 10 µm wide. Hyphae of the pileipellis 2–3 µm wide, clamped, embedded in gelatinous matter, densely diverticulate with excrescences ~10 × 0.8–2 µm, strongly branched, usually forming dense coraloid masses. Hyphae of the stipitipellis 3–4 µm wide, clamped, embedded in gelatinous matter, with scattered excrescences 2–13 × 1–3 µm. Caulocystidia 38–85 × 6–12 µm, versiform, smooth or with excrescences and isolated projections, only present in the upper part of stipe.

**Habitat** — In humus of *Corylus avellana* L.

**Material examined.** Madrid, Pto. de Somosierra, 16 Oct. 1996, leg. F. Esteve-Raventós, C. Sánchez, J.N. Campoamor & M. Villarreal, in humus of *Corylus avellana*, AH 22265 (holotype).

*Mycena rubidofusca* was at first thought to be a member of section *Insignes* Maas G. (Maas Geesteranus, 1989: 343) on account of the gelatinous layer covering the hyphae of both the pileipellis and the stipitipellis. A similar coating, however, is also known in *Mycena stipata* Maas G. & Schwöbel (Maas Geesteranus & Schwöbel, 1987: 147), a species of section *Fragilipedes* (Fr.) QuéL. (Maas Geesteranus, 1988: 43). All species of this section have invariably ascending lamellae, with their lamella-edge ventricose. This feature, in the authors' opinion, places *M. rubidofusca* in section *Fragilipedes*, very close to *Mycena stipata*, but it entails the following important changes. *Mycena quinaultensis* Kauff. apud A. H. Smith (Maas Geesteranus, 1989: 350) and *M. conspersa* Maas G. & de Meijer (Maas Geesteranus & de Meijer, 1997: 84), former members of the *Insignes*, must for the same reason (ascending lamellae; hyphae of both the pileipellis and the stipitipellis embedded in gelatinous matter) be transferred to the *Fragilipedes*. This strengthens the homogeneity of section *Insignes* and, however slightly, alters its diagnosis.

*Mycena* sect. *Insignes* Maas G. emend. Villarreal, Heykoop & Maas Geesteranus

*Mycena* sect. *Insignes* Maas G., Proc. Kon. Ned. Akad. Wet., C 92 (1989) 343.

Lamellae invariably arcuate (instead of: arcuate or ascending).

Two further species, *Mycena mitis* Maas G. (Maas Geesteranus, 1992: 469) and *M. corrugans* Maas G. (Maas Geesteranus, 1992: 471), formerly placed not without some doubt in section *Insignes*, are now best included in section *Fragilipedes*. It is certainly true that, while some of the features of *M. mitis* and *M. corrugans* are intermediate between those of the two sections under discussion, they are equally transitional to those of other species of the *Fragilipedes* whose surface hyphae are not embedded in gelatinous matter.

### ***Mycena vicina* Villarreal, Heykoop & Maas G., spec. nov. — Figs. 12–17**

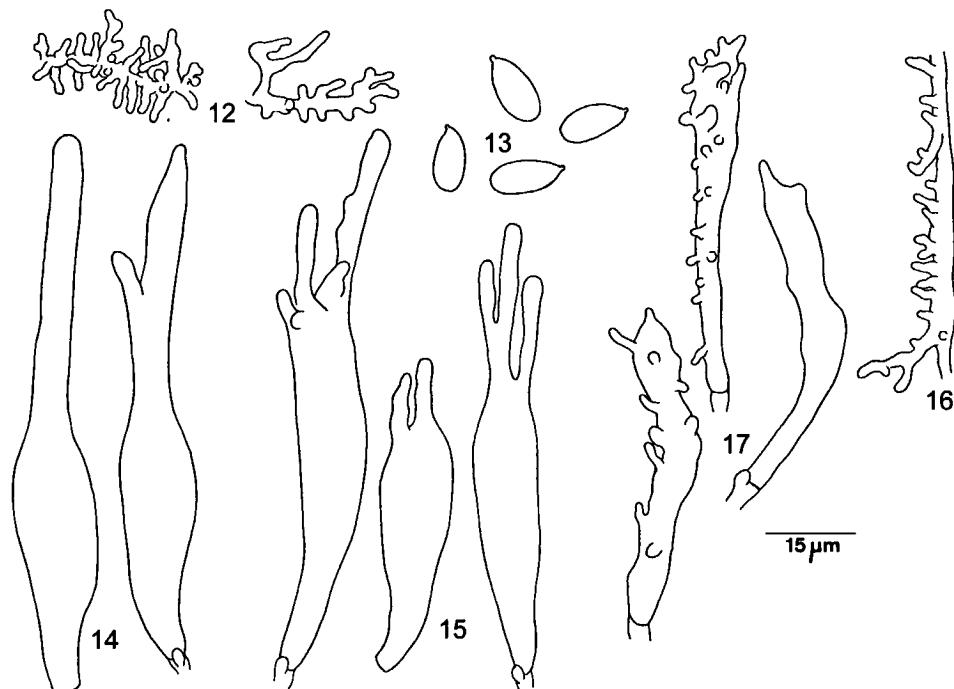
Basidiomata caespitosa. Pileus 3–17 mm latus, e hemisphaerico conico-campanulatus vel campanulatus, sulcatus, striatus, hygrophanus, siccus, e pruinoso glabrescens, initio obscure brunneus, deinde griseobrunneus, demum fere albidus. Caro tenuis, albida, odore saporeque nullis. Lamellae c. 22 stipitem attingentes, usque ad 1.5 mm latae, albidae, tenues, valde pruinosaes, adscendentes, adnatae vel dense modice decurrentes, margine convexae, concolores. Stipes 35–75 × 0.5–2 mm, cylindraceus, fragilis, apice pruinosis, initio griseolbrunneus, deinde pallide flavobrunneus, basi obscurior, fibrillis longis, tenuibus, albidis instructus.

Sporae 8–9.18–10.7(–11) × 4.5–4.95–5.5 µm, ellipsoideae, leves, amyloideae. Basidia 4-spored, 27–32 × 7–10 µm, anguste clavata, fibulata, sterigmatibus usque ad 5 µm longis munita. Cheilocystidia (32–)56–92 × 6.5–11 µm, hyalina, cylindracea, fusiformia usque ad anguste lageniformia, collis 2–5 vel apice surculis crassis munita. Pleurocystidia crebra, cheilocystidiis similia. Hymenophori trama dextroidea, e hyphis usque ad 32 µm latis. Hyphae pileipellis 1.8–3 µm latae, fibulatae, haud in materiam gelatinosam inmersae, surculis 2.5–15 × 1.5–2.5 µm simplicibus vel ramosis dense praeditae. Hyphae hypodermii usque ad 23 µm latae. Hyphae stipitipellis 1.5–4 µm latae, fibulatae, haud in materiam gelatinosam inmersae, surculis 3–18 × 1.5–2.2 µm dense instructae. Caulocystidia usque ad 72 × 9 µm, clavata vel cylindracea, surculis obtecta.

Ad *Scirpi holoschoeni* stipites.

Holotypus: no. 22268 AH.

Etymology: *vicinus*, neighbouring, because of its occurrence together with *M. scirpicola* on the same substratum.



Figs. 12–17. *Mycena vicina* (holotype). 12. Hyphae of the pileipellis; 13. spores; 14. pleurocystidia; 15. cheilocystidia; 16. hypha of the stipitipellis; 17. caulocystidia.

Basidiomata cespitose. Pileus 3–17 mm diam., at first hemispherical, becoming conical-campanulate to campanulate, sulcate, hygrophanous, translucent-striate, dry, pruinose, glabrescent, at first dark brown, later greyish brown, progressively becoming clearer towards the margin, finally nearly whitish. Context thin, whitish. Odour and taste none. Lamellae c. 22, up to 1.5 mm wide (dried material), ascending, adnate to slightly decurrent with a tooth, whitish, thin, strongly pruinose under lens, lamella-edge convex and concolorous. Stipe 35–75 × 0.5–2 mm, cylindrical or becoming slightly wider towards the apex, fragile, pruinose at the apex, at first greyish-brown, later beige, the base always somewhat darker, with long, thin and whitish fibrils at the base.

Spores 8–9.18–10.7(–11) × 4.5–4.95–5.5  $\mu\text{m}$ ; Q = 1.6–1.85–2.2 (n = 21), ellipsoid, smooth, amyloid. Basidia 4-spored, 27–32 × 7–10  $\mu\text{m}$ , narrowly clavate, clamped, with sterigmata up to 5  $\mu\text{m}$  in length. Cheilocystidia (32–)56–92 × 6.5–11  $\mu\text{m}$ , hyaline, cylindrical, fusiform to narrowly lageniform, with one or 2–5 necks or at the apex with coarse excrescences. Pleurocystidia very abundant, similar to the cheilocystidia, but usually less branched at the apex. Hymenophoral trama dextrinoid, consisting of elements up to 32  $\mu\text{m}$  wide. Hyphae of the pileipellis 1.8–3  $\mu\text{m}$  wide, clamped, not embedded in gelatinous matter, densely covered with simple or branched excrescences usually forming dense coraloid masses, excrescences 2.5–15 × 1.5–2.5  $\mu\text{m}$ . Hyphae of hypodermium consisting of elements up to 23  $\mu\text{m}$  wide. Hyphae of the stipitipellis 1.5–4  $\mu\text{m}$  wide, clamped, not embedded in gelatinous matter, densely covered with excrescences 3–18 × 1.5–2.2  $\mu\text{m}$ . Terminal cells

of the cortical layer of the stipitipellis consisting of clavate to cylindrical caulocystidia, up to  $72 \times 9 \mu\text{m}$ , covered with few or more or less numerous excrescences.

**Habitat** — On stems and dead culms of *Scirpus holoschoenus* L., in the dry river bed of a stream.

**Material examined.** Toledo, La Iglesuela, 20 Nov. 1996, leg. F. Esteve-Raventós, C. Sánchez & M. Villarreal, AH 22268 (holotype); ibidem, 17 Dec. 1996, leg. F. Esteve-Raventós, C. Sánchez, J.N. Campoamor & M. Villarreal, AH 22267.

Both collections (AH 22268 and 22267) were found growing together with *Mycena scirpicola* (described recently by Villarreal et al., 1998), and some material even turned out to contain both species which were not recognized due to the similarity of their macroscopical characters. However, both species can be separated without problems according to their very different microscopic characters. The principal differences between *Mycena vicina* and *M. scirpicola* are tabulated in Table II.

Table II. Differences between *Mycena vicina* and *M. scirpicola*.

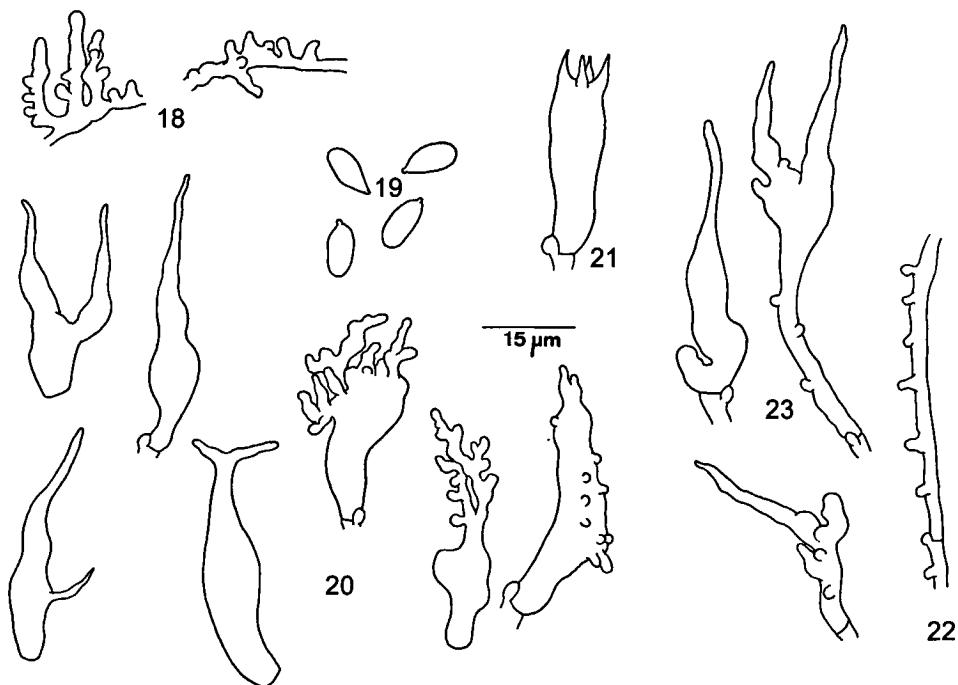
	Basidiomata	Pleurocystidia	Cheilocystidia	Stipitipellis	Caulocystidia
<i>M. vicina</i>	cespitoso	present only near to the lamella-edge	up to 92 $\mu\text{m}$ long, with 1 or 2–5 necks or at the apex with coarse excrescences	densely covered with excrescences	up to 73 $\mu\text{m}$ long, with few or more or less numerous excrescences
<i>M. scirpicola</i>	gregarious	very abundant	up to 65 $\mu\text{m}$ long, smooth	smooth or with some isolated thick excrescences	up to 300 $\mu\text{m}$ long with apical ramifications or lateral excrescences

Following the key to the section *Fragilipedes* (Maas Geesteranus, 1988) we arrive to key number 6 where *Mycena vicina* keys out as *M. alnicola* A.H. Smith, a completely different species because of its habitat on *Alnus* logs, bluish to violaceous grey pileus, differently shaped cheilocystidia and lack of caulocystidia.

### *Mycena hepatica* Villarreal, Heykoop & Maas G., spec. nov. — Figs. 18–23

Basidiomata gregaria vel subcaespitosa. Pileus 7–9 mm latus, paraboloides vel planoconvexus, sulcatus, siccus, hygrophanus, striatus, e pruinoso glabrescens, centro, margine, striis obscure rubris. Lamellae 17–21 stipitem attingentes, c. 1 mm latae, tenues, adscendentibus, adnatae, albidoroseae, margine convexae, valde obscure rubrobrunneae. Caro tenuis, concolor, odore indistincto, sapore haud notato. Stipes 11–17  $\times$  1–2 mm, cylindraceus, deorsum latior, interdum longitudinaliter sulcatus, rubro-tincto griseobrunneus, deorsum obscurior, e pruinoso glabrescens apice excepto, basi fibrillis longis, tenuibus, albidis instructus.

Sporae 7.5–8.74–10  $\times$  4.3–4.76–5.5  $\mu\text{m}$ , ellipoideae, leves, amyloideae. Basidia 4-spora, 26–28  $\times$  7–10  $\mu\text{m}$ , hyalina, clavata, fibulata, sterigmatibus usque ad 5.5  $\mu\text{m}$  longis munitus. Cheilocystidia 29–55  $\times$  6.5–13  $\mu\text{m}$ , polymorpha, 1) conico-fusiformia, fibulata, levia vel cum surculis dispersis tum collis simplicibus vel partitis instructa; vel 2) clavata, utriformia vel irregularia, vulgo breviora, apice dense diverticulata, siccum rubrobrunneum continentia. Lamellae margine steriles. Pleurocystidia nulla. Hymenophori trama dextrinoidea, e hyphis usque ad 35  $\mu\text{m}$  latis. Hyphae pileipellis 2–3  $\mu\text{m}$  latae, fibulatae, haud in materiam gelatinosam inmersae. Hyphae stipitipellis 2–2.8  $\mu\text{m}$  latae, haud in materiam gelati-



Figs. 18–23. *Mycena hepatica* (holotype). 18. Hyphae of the pileipellis; 19. spores; 20. cheilocystidia; 21. basidium; 22. hypha of the stipitipellis; 23. caulocystidia.

nosam inmersae, surculis dispersis,  $1.6\text{--}3.2 \times 1.8\text{--}2.5 \mu\text{m}$  preditae, cellulis terminalibus  $37\text{--}65 \times 6\text{--}14 \mu\text{m}$ , fusiformibus, apice simplicibus vel 2-partitis, levibus vel surculis obtectis munitis.

Ad *Scirpi holoschoeni* rhizomata vel stipites inhumatos.

Holotypus: no. 20900 AH.

Etymology: hepaticus, because of its liver-colour.

Basidiomata gregarious to subcespitoso. Pileus 7–9 mm diam., paraboloid to plano-convex, sulcate, dry, hygrophanous, translucent-striate, pruinose, glabrescent, dusky red (Mu. 10 R 3/4) at centre, margin and the striation, the rest somewhat reddish grey-brown (Mu. 10 R 4/4), becoming darker when drying out. Lamellae 17–21, c. 1 mm wide, thin, ascending, adnate, whitish-pink, lamella-edge convex and strongly dark reddish-brown. Context thin, concolorous. Odour not distinctive. Taste not recorded. Stipe 11–17 × 1–2 mm, cylindrical or progressively wider towards the base in some specimens ( $-2.5 \text{ mm wide}$ ), sometimes sulcate longitudinally, somewhat reddish grey-brown (Mu. 10 R 4/4) at the apex, progressively darker towards the base, where it becomes dusky red (Mu. 10 R 3/4) or very dusky red (Mu. 10 R 2.5/2), at first pruinose, later pruinose only at the apex, the base densely covered with entangled long, thin and whitish fibrils when fresh, later brown-pinkish in dried material.

Spores  $7.5\text{--}8.74\text{--}10 \times 4.3\text{--}4.76\text{--}5.5 \mu\text{m}$ ;  $Q = 1.6\text{--}1.83\text{--}2.1$  ( $n = 21$ ), ellipsoid, smooth, amyloid. Basidia 4-spored,  $26\text{--}28 \times 7\text{--}10 \mu\text{m}$ , hyaline, clavate, clamped, with sterigmata up to  $-5.5 \mu\text{m}$  in length. Cheilocystidia  $29\text{--}55 \times 6.5\text{--}13 \mu\text{m}$ , extremely polymorphic and

apparently of two types, i.e. i) conical-fusiform, clamped, smooth or with only very few scattered excrescences and simple or frequently divided into two or more acute necks; ii) clavate, utriform to irregularly shaped, generally shorter and densely diverticulate at the apex, with reddish-brown intracellular pigment. Lamella-edge sterile. Pleurocystidia absent. Hyphae of the hymenophoral trama dextrinoid, up to 35 µm wide. Hyphae of the pileipellis 2–3 µm wide, clamped, not embedded in gelatinous matter. Hyphae of the stipitipellis 2–2.8 µm wide, not embedded in gelatinous matter, with more or less isolated excrescences, 1.6–3.2 × 1.8–2.5 µm. Terminal cells of the cortical layer 37–65 × 6–14 µm, fusiform, apically simple or divided into two necks, smooth or with scattered excrescences.

**Habitat** — On rhizomes and partially buried stems of *Scirpus holoschoenus* L.

**Material examined.** Toledo, La Iglesuela, 20 Nov. 1996, leg. F. Esteve-Raventós, C. Sánchez & M. Villarreal, AH 20900 (holotype).

*Mycena hepatica* is a typical member of section *Rubromarginatae* Singer ex Maas G. Following the key of this section (Maas Geesteranus, 1986), it keys out close to *M. seyenesiella* Malençon apud Malençon & Bertault. However, the latter is completely different from *M. hepatica*, because of the lack of liver-colour, its viscous separable elastic pellicle on the pileus, odour of chlorine or nitrous, broader spores (5.5–6.8 µm), clavate caulocystidia covered with coarse rounded warts, as well as its habitat on conifers. *Mycena hepatica* is also close to *M. albidolilacea* Kühner & Maire apud Kühner, a species only known (?) from France (Kühner, 1938: 419) and Germany. The macroscopic description of the latter does not seem to differ much from that of *M. hepatica* except for the colour of the margin of pileus ("..., whitish towards the margin ...") and the clearly nitrous odour. The microscopical differences do not seem to be very sharp either, though the width and extent of diverticulation of the caulocystidia is completely different in both species. The principal differences between *M. albidolilacea* and *M. hepatica* are tabulated in Table III.

Table III. Differences between *Mycena albidolilacea* and *M. hepatica*.

	Pileus colour	Odour	Spore length	Stipe colour	Habitat
<i>M. albidolilacea</i>	pale	nitrous	9–12 µm acc. Kühner	pale	on remains of leaves
<i>M. hepatica</i>	dark	—	7.5–10 µm	dark	<i>Scirpus</i>

*Mycena hepatica*, because of its name, should not be confused with *M. hepaticarum* Dennis (1961: 104), a species which fruits on old trees covered by hepatics in Venezuela, and which does not belong to the section *Rubromarginatae*.

#### REFERENCES

- Dennis, R.W.G. 1961. Fungi Venezuelani: IV. Kew Bull. 15: 67–156.  
 Kühner, R. 1938. Le Genre *Mycena* (Fries). Encycl. Mycol. 10.  
 Maas Geesteranus, R.A. 1986. Conspectus of the Mycenas of the Northern Hemisphere – 8. Sections Intermediae, Rubromarginatae. Proc. Kon. Ned. Akad. Wet. (Ser. C) 89: 279–310.  
 Maas Geesteranus, R.A. 1988. Conspectus of the Mycenas of the Northern Hemisphere – 9. Section Fragilipedes, species A–G. Proc. Kon. Ned. Akad. Wet. (Ser. C) 91: 43–83.

- Maas Geesteranus, R. A. 1989. Conspectus of the Mycenas of the Northern Hemisphere – 12. Sections Fulliginellae, Insignes, Ingratae, Euspeireae, and Caespitosae. Proc. Kon. Ned. Akad. Wet. (Ser. C) 92: 331–365.
- Maas Geesteranus, R. A. 1992. Two new Mycenas of section Insignes from the Netherlands. Proc. Kon. Ned. Akad. Wet. (Ser. C) 95: 469–472.
- Maas Geesteranus, R. A. & A. A. R. de Meijer. 1997. Mycena paranaensis. Kon. Ned. Akad. Wet., Verhand. Afd. Nat. II 97.
- Maas Geesteranus, R. A. & G. Schwöbel. 1987. Über zwei auf Koniferenholz wachsende, nitrösriechende Helmlingsarten. Beitr. Kenntn. Pilze Mitteleur. 3: 147–152.
- Örstadius, L. 1993. Mycena lutea, found in Sweden. Windahlia 20: 63–65.
- Villarreal, M., M. Heykoop, F. Esteve-Raventós & R. A. Maas Geesteranus. 1998. Further new species of Mycena and a new section from Spain. Persoonia 16 (4): 527–535.