

Hemimycena longipilosa (Agaricales), a new species from Germany

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A new species, *Hemimycena longipilosa*, found in Germany, is described. Its macro- and microscopical characters are given in detail, and differences from similar taxa are discussed.

Key words: *Hemimycena longipilosa*, Agaricales, Basidiomycota, new species, taxonomy.

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Je popsán nový druh, *Hemimycena longipilosa*, nalezený v Německu. Jsou podrobně uvedeny jeho makroskopické i mikroskopické znaky a jsou diskutovány rozdíly oproti podobným taxonům.

INTRODUCTION

The genus *Hemimycena* Singer is a small genus with about 50 species (Kirk et al. 2008), but its systematic position is not fully settled. Traditionally, it was included in the family *Tricholomataceae* R. Heim ex Pouzar, tribus *Mycenae* (e.g. Singer 1986). Redhead (1987) transferred it to *Xerulaceae* Jülich based on the presence of sarcodimitic tissues. Moncalvo et al. (2002) placed *Hemimycena*, together with *Calyprella* QuéL., into the clade *Hemimycena*, but Matheny et al. (2006) remarked that *Hemimycena* [together with *Pleurotopsis* (Henn.) Earle] may form a special lineage within the marasmioid clade. According to Kirk et al. (2008), it belongs to *Mycenaceae* Overeem.

Because of the mostly tiny basidiocarps, *Hemimycena* species have often been overlooked or neglected by many mycologists. Available data about the European taxa known to date were summarised by Antonín & Noordeloos (2004; see there for a detailed history of studies in this group). They considered this publication the basis for further studies of this little known and taxonomically complicated genus. Moreover, the variability of macro- and microscopic characters is poorly known in many taxa. Since that time, only Malysheva & Morozova (2009),

publishing *Hemimycena* taxa from the European part of Russia, have distinctly contributed to the knowledge of this genus. It is to be expected that more than the 38 taxa recorded by Antonín & Noordeloos 2004 and Malysheva & Morozova 2009 will eventually be known from Europe. The new species described here is a good example that even in a rather well-known area such as Central Europe new species can be found.

MATERIAL AND METHODS

The macroscopic description of the collected specimens is based on fresh basidiocarps and has been made by the first author. The photo was obtained using a Olympus C5060 WZ camera.

Microscopic features are described from dried material mounted in KOH, Melzer's reagent and Congo Red using an Olympus BX-50 light microscope (magnification of 1000×), and with the aid of a Zeiss Lumival microscope. The line drawing was processed using the Adobe-Photoshop software (2001 Adobe Systems Inc., San Jose, CA, USA).

For basidiospores, the factors E (quotient of length and width in any one spore) and Q (mean of E-values) are used. For lamellae, L means the number of entire lamellae from the stipe to the pileus margin. Authors of fungal names are cited according to the International Plant Names Index Authors website (<http://www.ipni.org/ipni/authorsearchpage.do>).

RESULTS

***Hemimycena longipilosa* Miersch & Antonín sp. nov.**

Figs. 1–2

(Mycobank MB 804330)

Diagnosis latina. Pileo 1–5 mm lato, hemisphaerico, centro umbonato, sulcato, leviter hirsuto, albo. Lamellis distantibus, decurrentibus, albidis. Stipite 9–17 × usque 0.5 mm, cylindraceo hirsuto, albido. Basidiosporis 7.5–9.5(10) × (3.7)4.5–5.3(6.0) µm, nucleiformibus vel lacrimiformibus. Basidiis tetra-, raro bisporis. Cheilocystidiis 18–37 × 2.5–6.0 µm, subfusiformibus, subcylindraceis, tenuitunicatis. Pileipellis ex hyphis cylindraceis, tenuitunicatis, laevis vel disperse diverticulatis, cum pilis usque 213 × 1.5–5.0 µm longis, cylindraceis, ad basin leviter crassitunicatis, et pileocystidiis 22–87 × 2.5–5.0 µm longis, clavatis, cylindraceis. Caulocystidiis (1) 23–64 × 6.0–10 µm, leviter clavatis, subfusiformibus, tenuitunicatis, et (2) pilis 28–90 × 2.0–3.0(4.0) µm latis, cylindraceis, tenuitunicatis. Hyphis fibulatis.

Holotypus. Germania, Saxonia-Anhalt, Sangerhausen prov., ad locum Kriegsholz prope Großleinungen, 22. VII. 2011 leg. Armin Hoch (exs. Miersch 1158); holotypus in herbario Universitatis Halensis asservatur (HAL 2590 F), isotypus in herbario Musei Moraviae Brno (BRNM 747481).

Etymology. Derived from lat. “longus” – long and “pilosus” – hairy, pilose.



Fig. 1. *Hemimycena longipilosa*. Germany, Sachsen-Anhalt, near Großleinungen, Kriegsholz, 22 July 2011 (HAL 2590 F and BRNM 747481). Photo by Jürgen Peitzsch.

Description. Pileus 1–5 mm broad, hemispherical, depressed at centre (umbilicate), sulcate up to 3/4 of diam., finely pruinose to minutely hairy, white. Lamellae well-developed or reduced and vein-like, all reaching the pileus margin, decurrent, distant, $L = 7\text{--}12$, narrow, with sometimes straight to slightly convex, but mostly concave edge, white. Stipe $9\text{--}17 \times$ up to 0.5 mm, cylindrical with bulbous base, pruinose at apex, densely hairy below, white, with pruinose to shortly hairy base. Smell and taste indistinct.

Basidiospores $7.5\text{--}9.5(10) \times (3.7)4.5\text{--}5.3(6.0) \mu\text{m}$, average $8.7 \times 4.8 \mu\text{m}$, $E = 1.45\text{--}1.89$, $Q = 1.68$, pip-shaped to lacrimoid, sometimes apically curved, sometimes sublimoniform, thin-walled. Basidia $(15)18\text{--}31(35) \times (7.5)8.5\text{--}10(14) \mu\text{m}$, 4-spored or rarely 2-spored, clavate. Basidioles up to $29 \times 10 \mu\text{m}$, clavate, subfusoid. Cheilocystidia scattered, $18\text{--}37 \times 2.5\text{--}6.0 \mu\text{m}$, subfusoid, subcylindrical, thin-walled. Pleurocystidia absent. Pileipellis a cutis composed of cylindrical, thin-walled, $2.5\text{--}8.0 \mu\text{m}$ wide hyphae, smooth or with scattered diverticules; with long cylindrical terminal elements (“hairs”), up to $213 \times 1.5\text{--}5.0 \mu\text{m}$ in size, mostly slightly thick-walled in basal part, mixed with clavate, cylindrical pileocystidia, $22\text{--}87 \times 2.5\text{--}5.0 \mu\text{m}$ in size, sometimes capitate (up to $12.5 \mu\text{m}$) at apex, \pm thin-walled, with up to $75 \times 2.5\text{--}4.0 \mu\text{m}$, subulate, slightly thick-walled, brown pigmented hairs.

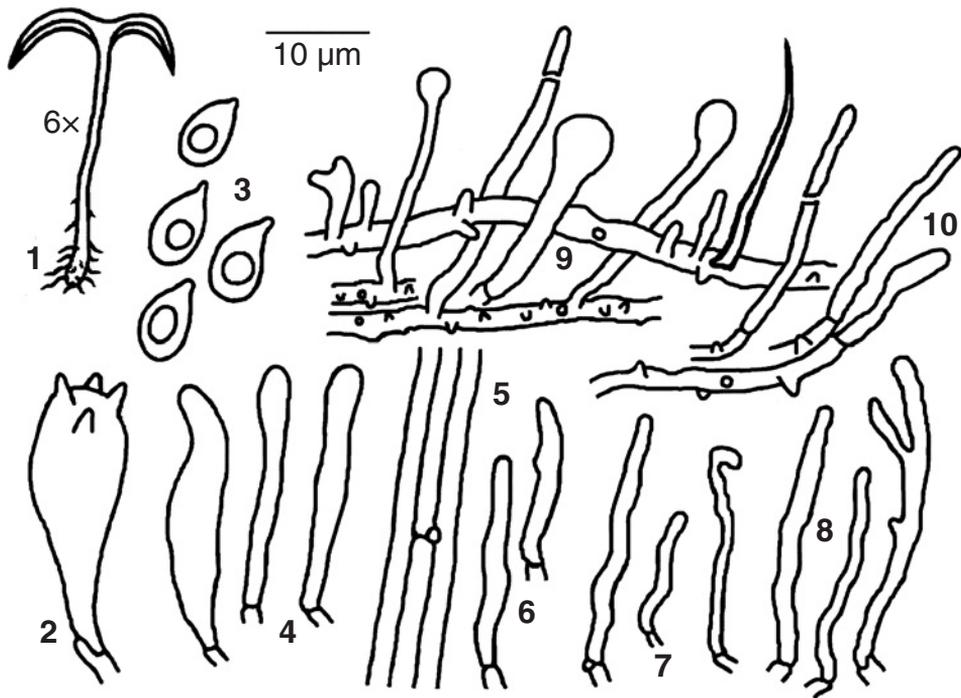


Fig. 2. *Hemimycena longipilosa*. 1 – cross section of basidiocarp (magnification 6×), 2 – basidium, 3 – spores, 4 – cheilocystidia, 5 – cortical layer of stipe, 6 – hairs at stipe apex, 7 – hairs at stipe centre, 8 – hairs at stipe base, 9 – hyphae of epicutis with warty and hairy elements, 10 – terminal cells of epicutis. Scale bar for microscopic elements = 10 µm. Drawings by Jürgen Miersch.

Stipitipellis a cutis of cylindrical, parallel, thin-walled, smooth, 2.0–4.0 µm wide hyphae. Caulocystidia 23–64 × 6.0–10.0 µm, narrowly clavate, subfusoid, thin-walled, mixed with 28–90 × 2.0–3.0(4.0) µm, cylindrical, thin-walled, rarely furcate hairs. Clamp connections present in all tissues.

Chemical reactions. No parts of basidiocarps dextrinoid or amyloid.

Ecology. On wood of *Larix decidua*.

Material studied

Germany. Sachsen-Anhalt, Sangerhausen Prov., Kriegsholz near Großleinungen, Central European mapping grid 4533/1, 22 July 2011, leg. Armin Hoch, exs. Miersch 1158 (holotype HAL 2590 F, isotype BRNM 747481).

DISCUSSION

Hemimycena longipilosa is characterised in having an umbilicate, sulcate, pruinose to minutely hairy pileus, both well-developed and venose, decurrent lamellae reaching the pileus margin, an entirely hairy stipe with a small basal bulb, moderately large, fusoid to lacrimoid basidiospores, mostly 4-spored basidia, scattered subfusoid or subcylindrical cheilocystidia, smooth or scatteredly diverticulate pileipellis hyphae with long, cylindrical, mostly basally thick-walled hairs, mixed with clavate, cylindrical, sometimes capitate cystidia, and slightly thick-walled, brown pigmented hairs, smooth stipitipellis hyphae, well-developed narrowly clavate or subfusoid caulocystidia mixed with cylindrical hairs, and presence of clamp connections.

Hemimycena cephalotricha (Joss. ex Redhead) Singer, often having limoni-form basidiospores, differs particularly by possessing (sub)capitate pileo-, caulo- and hymenial cystidia; *H. substellata* (Kühner) Antonín & Noordel. also has long, flagelliform or subulate elements in the pilei- and stipitipellis, but has distinctly smaller basidiospores ($5.0\text{--}7.5 \times 2.7\text{--}4.0 \mu\text{m}$), and shortly diverticulate pileipellis hyphae. Hymenial cystidia and caulocystidia with a rather long neck can also be found in *H. subglobispora* Aronsen. This species, however, is characterised in having subglobose to globose basidiospores, and a different shape of cheilo- and caulocystidia (Antonín & Noordeloos 2004). *Hemimycena globulifera* E.F. Malysheva & O.V. Morozova, recently described from the Leningrad Region, Russia, has a partly similar pileipellis structure, but lacks long hairs on pileus and stipe and its basidiospores are cylindrical to narrowly fusoid and distinctly larger [$10.3\text{--}12(13) \times 2.7\text{--}3.9 \mu\text{m}$] (Malysheva & Morozova 2009). According to the original description (Singer 1969) *H. nothofagi* Singer, described from Argentina and characterised by the presence of long hairs (up to $150 \mu\text{m}$) on pileus and stipe surface, seems to be very close to our fungus. It differs from *H. longipilosa* in the pileus sometimes becoming very pale brownish when drying out, a black-brown or fuliginous stipe towards base, slightly narrower ($6.5\text{--}9 \times 3\text{--}5 \mu\text{m}$), ellipsoid or oblong basidiospores, subulate, sometimes furcate hymenial cystidia, and by growing on *Nothofagus* wood, rarely on wood of *Myrtaceae*.

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REFERENCES

- ANTONÍN V., NOORDELOOS M.E. (2004): A monograph of the genera *Hemimycena*, *Delicatula*, *Fayodia*, *Gamundia*, *Myxomphalia*, *Resinomycena*, *Rickenella* and *Xeromphalina* (tribus *Mycenae* sensu Singer, *Mycena* excluded) in Europe. – 279 p. Eching.
- KIRK P.M., CANNON P.F., MINTER D.W., STALPERS J.A. (2008): Dictionary of the Fungi. 10th ed. – 784 p. Wallingford.
- MALYSHEVA E.F., MOROZOVA O.V. (2009): Notes on *Hemimycena* from European Russia. – Czech Mycol. 61(1): 27–71.
- MATHENY P.B., CURTIS J.C., HOFSTETTER V., AIME M.C., MONCALVO J.-M., GE Z.W., YANG Z.L., SLOT J.C., AMMIRATI J.F., BARONI T.J., BOUGHER N.L., HUGHES K.W., LOGDE D.J., KERRIGAN R.W., SEIDL M.T., AANEN D.K., DENITIS M., DANIELLE G., DESJARDIN D.E., KROPP B.R., NORVELL L.L., PARKER A., VELLINGA E.C., VILGALYS R., HIBBETT D.S. (2006): Major clades of *Agaricales*: a multi-locus phylogenetic overview. – Mycologia 98: 982–995.
- MONCALVO J.-M., VILGALYS R., REDHEAD S.A., JOHNSON J.E., JAMES T.Y., AIME C., HOFSTETTER V., VERDUIN S.J.W., LARSSON E., BARONI T.J., THORN R.G., JACOBSSON S., CLÉMENÇON H., MILLER O.K. JR. (2002): One hundred and seventeen clades of euagarics. – Mol. Phylogen. Evol. 23: 357–400.
- REDHEAD S.A. (1987): The *Xerulaceae* (Basidiomycetes), a family with sarcodimite tissues. – Can. J. Bot. 65: 1551–1562.
- SINGER R. (1969): Mycoflora australis. – Nova Hedw., Beih. 29: 1–405.
- SINGER R. (1986): The *Agaricales* in modern taxonomy. – 981 p. Koenigstein.