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Mycena handkeana, a new member of section *Fragilipedes* from Germany

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Abstract: *Mycena handkeana*, a new species of section *Fragilipedes* collected in Germany is described here. A colour photograph of the species and drawings of the microscopical characters are given. It is also compared with *Mycena eburnea*, *M. erminea*, *M. profusa* and *M. incana*, four species of section *Fragilipedes* having pale white or cream pileus and some microscopical characters similar to those of *M. handkeana*.

Zusammenfassung: *Mycena handkeana*, eine neue Art der Sektion *Fragilipedes*, die in Deutschland gesammelt wurde, wird beschrieben. Eine Farbabbildung der Art und Zeichnungen der mikroskopischen Merkmale sind beigefügt. Sie wird verglichen mit *Mycena eburnea*, *M. erminea*, *M. profusa* und *M. incana*, vier Arten der Sektion *Fragilipedes*, die helle oder cremefarbige Hüte aufweisen und in einigen mikroskopischen Merkmalen *M. handkeana* ähneln.

90 taxa (87 species and 3 varieties) of *Mycena* sect. *Fragilipedes* (FR.) QUÉL. of the Northern Hemisphere have been described since 2003 (ROBICH 2006). Further four new species of the sect. *Fragilipedes* of the Northern Hemisphere were published by ROBICH (2005). This section is heterogenous and some of the species are still critical and difficult to identify. Nevertheless a species hithero undescribed was found in Germany in 2004.

Latin description:
Pileus 11-17 mm latus, hemisphaericus, umbone lato, pallide cremeus, centro griseo-brunneo; Lamellae albidae, ca. 20-24, adnatae, lamellae acie albidae, convexae. Odore et sapore non probatis. Stipes 47 × 2 mm, cavus, firmus, pubescens, ad basim cum pilis albidis substrato affixus. Sporae 8,5-11(-11,5) × 5-6(-6,5) µm, ellipsoideae vel cylindraceo-ellipsoideae, raro subglobosae, amyloideae. Basidia 27-32 × 8-8,5 µm, clavata, quadrispora, sterigmata 2,5-6 µm longa. Cheilocystidia 43-105 × 5-20 µm, tenuitunicata, laevia, lageniformia vel clavata, apice cum protuberationibus, vel fusiformia, apice vel laterale dactyloide diverticulato, 3-40 × 1-6 µm, lamellae acie sterili. Pleurocystidia 52-105 × 8-21 µm, cheilocystidiis similibus. Epicutis ex hyphis 6-

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13 µm latis, diverticulatis, diverticulis simplicibus, flexuosis, ramificantibus, 1-35 × 1-1,5 µm. Pileocystidia 7-28 µm lata, diverticulata. Hyphae externae corticum stipitum (1-) 1,5-5 µm, laeves vel diverticulis subglobosis, curvatis, non ramosis, 2-18(-25) × 1,5-5 µm. Caulocystidia, 18-160 × 3-9 µm, diverticulata, hyphae externae corticum stipitum similia. Fibulae in fere omni segmento fruticationis.

Habitatio: Basidiomata gregaria, inter muscos e herbas (*Dactylus glomerata*, *Festuca* spec., etc.) super solo saxo calcareo simili.

Typus: Germania, Saxonia-Anhalt, Thermae Kösen, ad locum Galgenberg, 3. 11. 2004, leg. D. PENKE; holotypus in herbario universitatis halensis (HAL 1915 F), isotypus in museo naturalis venecianis (MCVE 1048).

Characters: (Figs. 2, 3)

Pileus: 11-17 mm in diam., hemispherical, umbonate, pale-cream, greyish-brown in the centre, a little bit shiny.

Lamellae: ca. 20-24 reaching the stipe, with lamellulae (1 L = 1-3 lam.), ascending, adnate, convex, white with brown reflexes in the dorsal zone, white in the marginal zone, lamellar edge concolorous with the sides.

Stipe: 47 × 2 mm, hollow, whitish, solid, pubescent; base a little bit widened with white hairs attached to the substratum.

Context: thin, odour and taste not verified.

Spores: (Fig. 2 a) 8.5-11(-11.5) × 5-6(-6.5) µm, ellipsoidal, cylindrical-ellipsoidal, rarely subglobose, with small apiculus, hyaline, with opaque content, some with guttulae, amyloid in grey.

Basidia: (Fig. 2 b) 27-32 × 8-8.5 µm with sterigmata 2.5-6 µm, 4-spored, clavate, weakly narrowing in the ventricose zone.

Cheilocystidia: (Fig. 3 a) 43-105 × 5-20 µm, smooth, thin-walled, lageniform, clavate with apical prolongation, fusiform, some with apical finger-like excrescences, 3-40 × 1-6 µm; others with side finger-like excrescences, covering the whole sterile lamellar edge.

Pleurocystidia: (Fig. 3 b) 52-105 × 8-21 µm, smooth, thin-walled, more or less similar to the cheilocystidia.

Pileipellis: (Fig. 2 c) 6-13 µm wide, yellow in Melzer's reagent, diverticulate, with simple, flexuose, branched excrescences, 1-35 × 1-1.5 µm. Pileocystidia (Fig. 2 d) 7-28 µm wide, diverticulate. Some ellipsoidal, sometimes pip-shaped, smooth cells (Fig. 2 e) observable on the hyphae of the pileipellis among the excrescences, 3.5-8 × 2-6 µm. Tramahyphae of the pileus subglobose, elongate-globose, vesiculose, up to 60 µm wide, pseudoamyloid (red and wine-red coloured).

Hymenophoral trama: Hyphae cylindrical, up to 32 µm wide, pseudoamyloid (red and wine-red coloured).

Stipe trama: Hyphae cylindrical, inside up to 32 µm wide, pseudoamyloid (brown-wine coloured) and metachromatic (violet).

Cortical layer of the stipe: (Fig. 2 f): Hyphae (1-)1.5-5 µm wide, yellow in Melzer's reagent, not metachromatic, some segments smooth, others covered with simple, curved, subglobose excrescences, 2-18(-25) × 1.5-5 µm. Laticiferous hyphae on the stipe.

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Fig. 1. *Mycena handkeana* (holotype). – Phot. D. PENKE.

Caulocystidia: (Fig. 2 g) as wide as the hyphae of the cortex or a little wider, 18-160 × 3-9 µm, diverticulate.

Clamp-connections: present in all parts of the basidiomata.

Habitat: Basidiomata gregarious in a park-like grassland over shell limestone (calcareous, sandy-gravelly soil) between mosses, grasses (*Dactylis glomerata* L., *Festuca pratensis* HUDS., *Poa* spec.), and other vascular plants [*Agrimonia eupatoria* L., *Anthericum racemosum* L., *Carlina acaulis* L., *Eryngium campestre* L., *Gentianella ciliata* (L.) BORKH., *Odontites vernus* (BELLARDI) DUM., *Pimpinella saxifraga* L., *Pulsatilla vulgaris* MILL., *Pseudolysimachium spicatum* (L.) OPIZ, *Scabiosa canescens* W. & K. and others], near bushes [*Cornus mas* L., *Crataegus laevigata* (POIRET) DC., *C. monogyna* JACQ., *Rosa* spec.].

Etymologie: The new species is dedicated to Prof. Dr HORST-HERBERT HANDKE (1913-2005), the teacher of J. M. at Martin-Luther-University Halle-Wittenberg in Mycology and General Botany.

Comments:

Mycena handkeana is a member of sect. *Fragilipedes*. *M. eburnea* MAAS GEEST., *M. erminea* MAAS GEEST. and *M. profusa* MANIM. & LEELAV. are similar species of this section with pale white or cream pileus, spores more than 10 µm long, pleurocystidia and diverticulate hyphae of the pileipellis.

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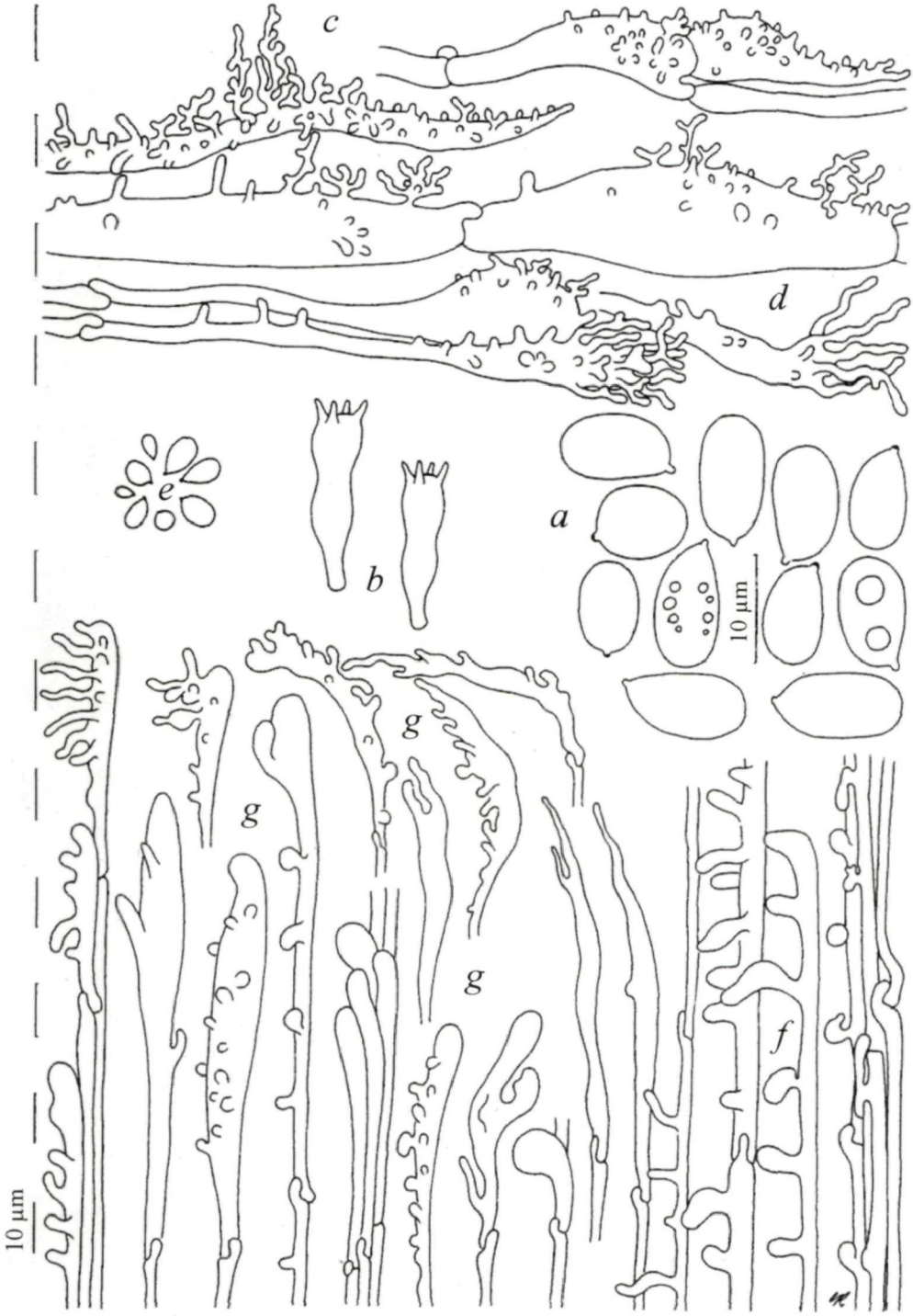

Fig. 2 *a-g. Mycena handkeana. a* spores, *b* basidia, *c* hyphae of pileipellis, *d* terminal cells of pileipellis, *e* single cells of pileipellis, *f* cortical hyphae of stipe, *g* caulocystidia.

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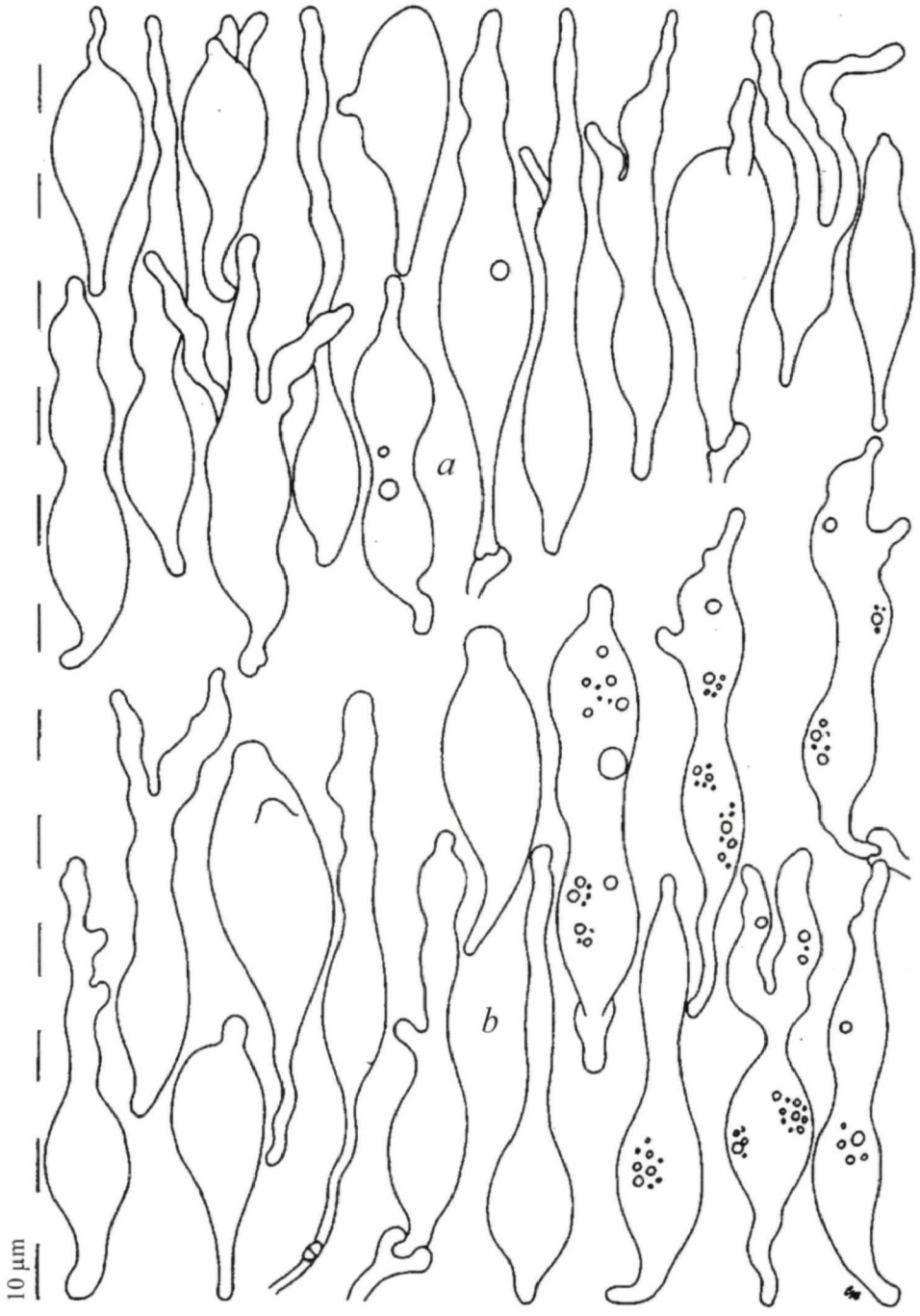

Fig. 3 *a*, *b*. *Mycena handkeana*. *a* cheilocystidia, *b* pleurocystidia.

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Mycena eburnea differs from *M. handkeana* by the white and translucent striate pileus, white lamellae, white and rooting stipe, cheilocystidia and pleurocystidia 22.5-70 µm long, hyphae of the pileipellis 1.8-6.5 µm wide, and the hyphae of the cortex of the stipe covered with simple or branched excrescences, 1.8-2.7 µm wide (MAAS GEESTERANUS 1988).

Mycena erminea has a white or pale pink-cream (also pale cream) pileus up to 35 mm wide and differs from *M. handkeana* by 18-20 lamellae, whitish to very pale greyish, then pink-cream, stipe wider, pure white, floccose above, 50-80 × 2.4 mm, spores cylindrical, 10.7-14.3 µm long, cheilocystidia and pleurocystidia smooth, 25-55 µm long, hyphae of the pileipellis only 0.9-1.8 µm wide; hyphae of the cortex of the stipe 1.8-2.7 µm wide and caulocystidia smooth or with few large excrescences (MAAS GEESTERANUS 1993).

Mycena profusa is a species collected in India with rose-white and striate pileus, thin and white opaque, sub-distant lamellae, clavate basidia, not narrow in the ventricose zone, smaller spores, 8-10 × 4-5.5 µm; 25-65 µm long cheilocystidia and pleurocystidia (MANIMOHAN & LEELAVATHY 1988). Also these characters are different from those of *M. handkeana*.

Mycena incana MAAS GEEST. & E. HORAK (1995: 165) was found in New Guinea with white to greyish white pileus, but it differs from *M. handkeana* by the greyish white stipe only 1 mm wide, very small spores, 4.5-5.6 × 2.5-3.1 µm, cheilocystidia only 20-30 µm long, pleurocystidia absent, hyphae of the pileipellis 2.5 µm wide, with very short excrescences, hyphae of the cortex of the stipe 2-2.5 µm wide, caulocystidia 3-5-5.5 µm wide and growth on rotten wood of *Nothofagus carrii* in 2350 m s. m.

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