

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

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Accepted 28. 8. 2006

**Key words:** Fungi, Agaricales, Tricholomataceae, *Mycena*, sect. *Fragilipedes*, *Mycena handkeana*. – New species. – Mycoflora of Germany.

**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 albiae, ca. 20-24, adnatae, lamellae acie albiae, 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-

13  $\mu\text{m}$  latis, diverticulatis, diverticulis simplicibus, flexuosis, ramificantibus, 1-35  $\times$  1-1,5  $\mu\text{m}$ . Pileocystidia 7-28  $\mu\text{m}$  lata, diverticulata. Hyphae externae corticum stipitum (1-) 1,5-5  $\mu\text{m}$ , laeves vel diverticulis subglobosis, curvatis, non ramosis, 2-18(-25)  $\times$  1,5-5  $\mu\text{m}$ . Caulocystidia, 18-160  $\times$  3-9  $\mu\text{m}$ , 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  $\times$  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)  $\times$  5-6(-6.5)  $\mu\text{m}$ , ellipsoidal, cylindrical-ellipsoidal, rarely subglobose, with small apiculus, hyaline, with opaque content, some with guttulae, amyloid in grey.

**Basidia:** (Fig. 2 b) 27-32  $\times$  8-8.5  $\mu\text{m}$  with sterigmata 2.5-6  $\mu\text{m}$ , 4-spored, clavate, weakly narrowing in the ventricose zone.

**Cheilocystidia:** (Fig. 3 a) 43-105  $\times$  5-20  $\mu\text{m}$ , smooth, thin-walled, lageniform, clavate with apical prolongation, fusiform, some with apical finger-like excrescences, 3-40  $\times$  1-6  $\mu\text{m}$ ; others with side finger-like excrescences, covering the whole sterile lamellar edge.

**Pleurocystidia:** (Fig. 3 b) 52-105  $\times$  8-21  $\mu\text{m}$ , smooth, thin-walled, more or less similar to the cheilocystidia.

**Pileipellis:** (Fig. 2 c) 6-13  $\mu\text{m}$  wide, yellow in Melzer's reagent, diverticulate, with simple, flexuose, branched excrescences, 1-35  $\times$  1-1.5  $\mu\text{m}$ . Pileocystidia (Fig. 2 d) 7-28  $\mu\text{m}$  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  $\times$  2-6  $\mu\text{m}$ . Tramahyphae of the pileus subglobose, elongate-globose, vesiculose, up to 60  $\mu\text{m}$  wide, pseudoamyloid (red and wine-red coloured).

**Hymenophoral trama:** Hyphae cylindrical, up to 32  $\mu\text{m}$  wide, pseudoamyloid (red and wine-red coloured).

**Stipe trama:** Hyphae cylindrical, inside up to 32  $\mu\text{m}$  wide, pseudoamyloid (brown-wine coloured) and metachromatic (violet).

**Cortical layer of the stipe:** (Fig. 2 f): Hyphae (1-)1.5-5  $\mu\text{m}$  wide, yellow in Melzer's reagent, not metachromatic, some segments smooth, others covered with simple, curved, subglobose excrescences, 2-18(-25)  $\times$  1.5-5  $\mu\text{m}$ . Laticiferous hyphae on the stipe.



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

Caulocystidia: (Fig. 2 g) as wide as the hyphae of the cortex or a little wider,  $18-160 \times 3-9 \mu\text{m}$ , 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.].

**Etymology:** 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  $10 \mu\text{m}$  long, pleurocystidia and diverticulate hyphae of the pileipellis.

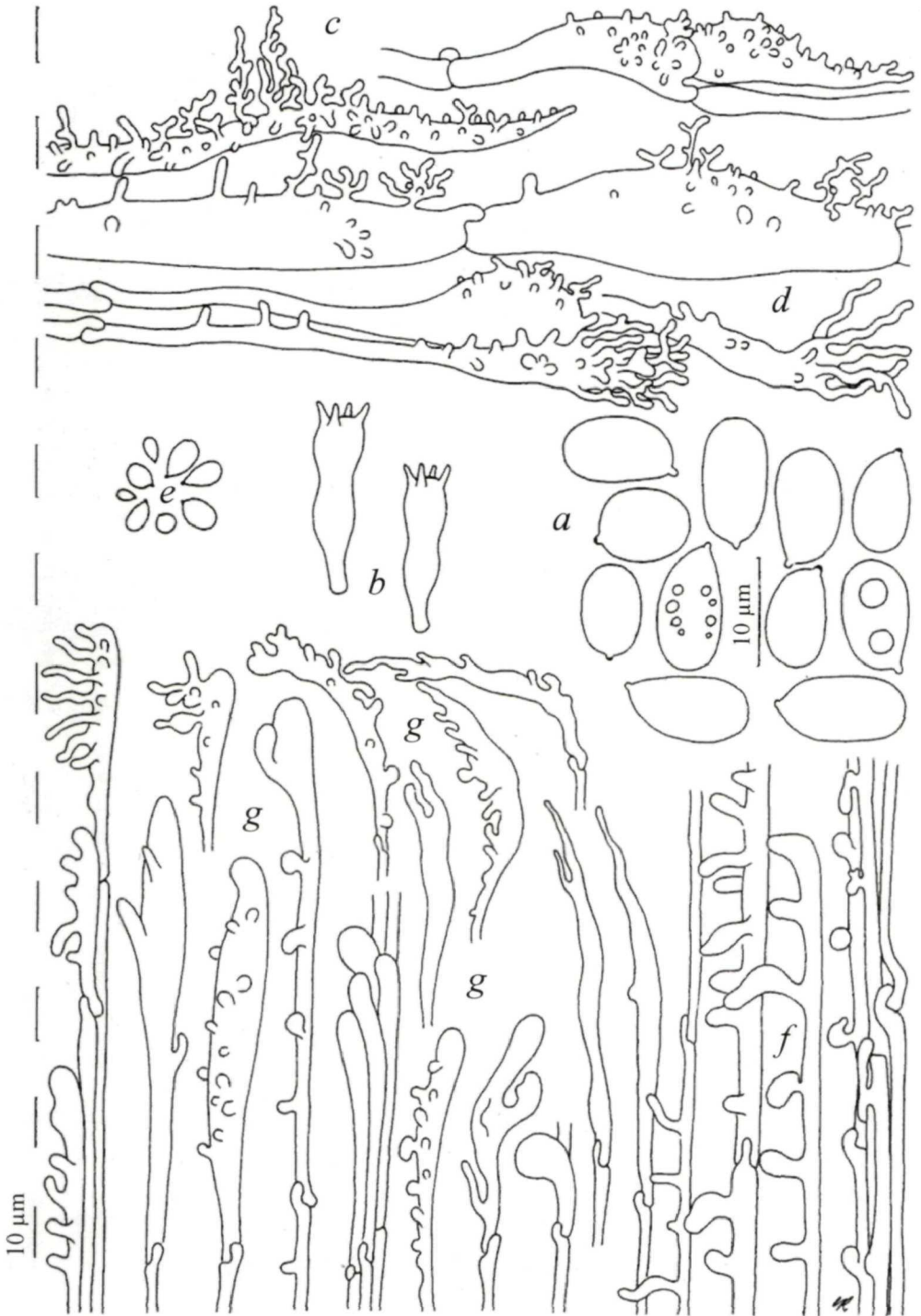


Fig. 2 a-g. *Mycena handkeana*. a spores, b basidia, c hyphae of pileipellis, d terminal cells of pileipellis, e single cells of pileipellis, f cortical hyphae of stipe, g caulocystidia.

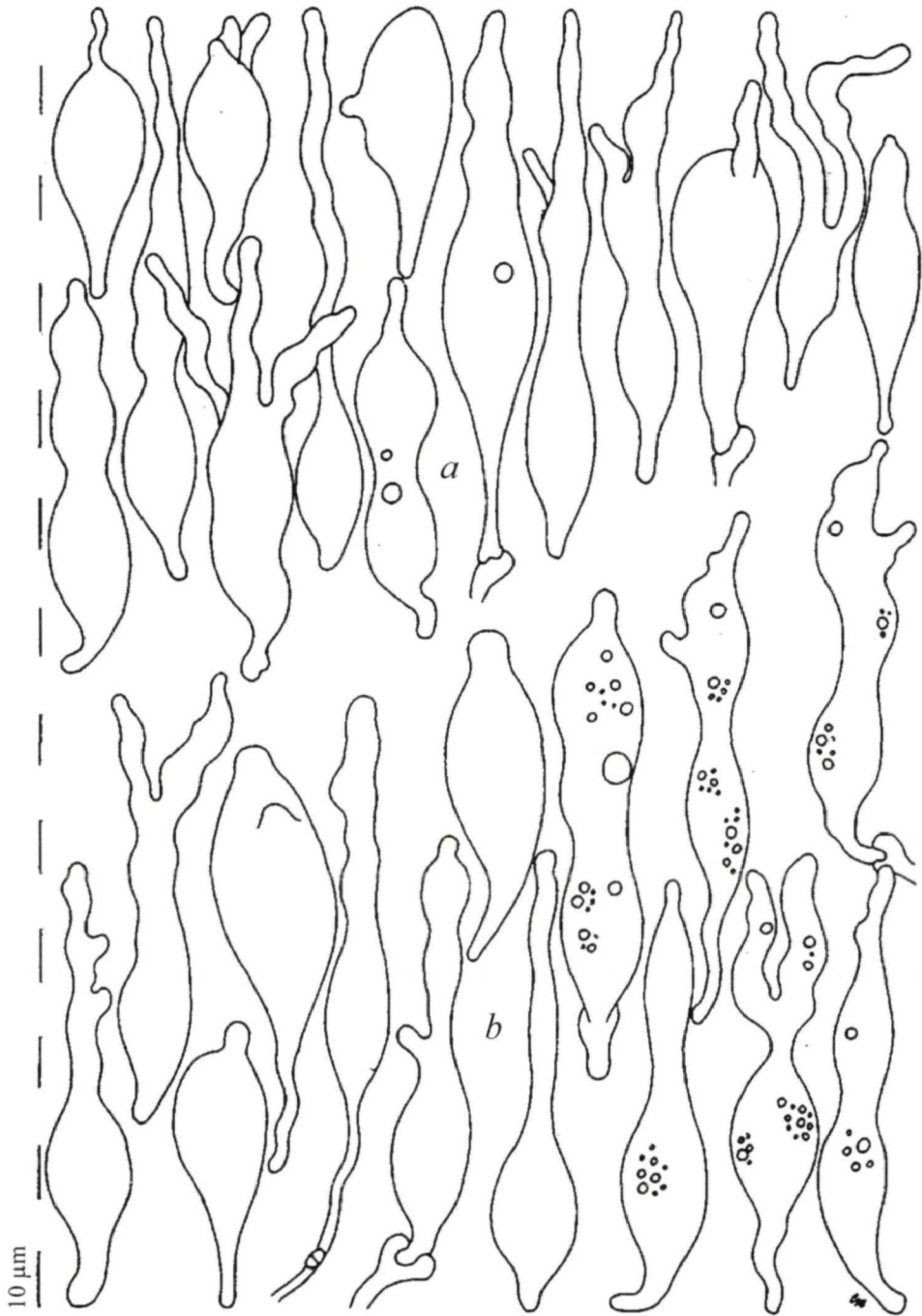


Fig. 3 a, b. *Mycena handkeana*. a cheilocystidia, b pleurocystidia.

*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.

The authors thank Prof. Dr U. BRAUN (University Halle, Department Biology) for kind help with the Latin description.

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Autor(en)/Author(s): Miersch Jürgen, Penke Dieter, Robich Giovanni

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