

Two new species of *Mycena* from eastern Honshu, Japan

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Two new species of *Mycena* are described and illustrated from eastern Honshu, Japan: *Mycena brevicapillata* sp. nov. (section *Hiemales*), forming tall and slender basidiomata covered overall with long, fusiform or sublageniform dermatocysts, was found on a dead branch of *Hydrangea involucrata*; *Mycena chrysanthemiformis* sp. nov. (section *Fragilipedes*), forming small, white basidiomata with a campanulate, shallowly sulcate-striate, occasionally subumbonate pileus and adnate-decurrent lamellae, was found on living bark or a dead fallen twig of *Aphananthe aspera*, *Cryptomeria japonica*, and *Zelkova serrata*.

Key Words—Agaricales; *Mycena brevicapillata*; *Mycena chrysanthemiformis*; new species.

Two new species of *Mycena* were collected in the lowland forest of eastern Honshu, Japan, viz. *Mycena brevicapillata* sp. nov., and *Mycena chrysanthemiformis* sp. nov. These species are described and illustrated with their photographs showing macromorphological features. Color notations in parentheses are taken from Kornerup and Wanscher (1978). Specimens cited are preserved in the Kanagawa Prefectural Museum of Natural History, Japan (KPM).

Species descriptions

Mycena brevicapillata Har. Takahashi, sp. nov. Figs. 1, 2

Pileo 4–7 mm lato, primo convexo, dein plano-convexo, puberulo, primo rubro-brunneo vel violaceo-brunneo, mox pallide brunneo; odore saporeque nullo; stipe 15–40 × 0.5–1.5 mm, subaequali vel ad basim leviter incrassato, cavo, albo, puberulo; mycelio basali albo-strigoso; lamellis adnexis, distantibus, albis; basidiosporis 6–7.5 × 4.5–5 μm, ellipsoideis vel subglobois, levibus, hyalinis, inamyloideis; basidiis bisporis; cheilocystidiis et pleurocystidiis nullis; dermatocystidiis fusiformibus vel sublageniformibus; hyphis defibulatis.

Holotypus: In ramulis delapsis *Hydrangeae involucratae* Sieb., Yamato-shi, Kanagawa-ken, Japonia, 7 Jul. 1999, H. Takahashi (KPM-NC-0005072).

Etymology: *brevicapillata*, referring the short, fine hairs densely covering the pileus and stipe.

Pileus 4–7 mm in diam, at first convex then plano-convex, smooth or slightly striatulate at margin, finely puberulous overall, evenly colored brown (7E7–7E8 to 8F7–8F8) when young, then somewhat paler toward the margin. Flesh thin (up to 0.5 mm thick), white, soft; odor and taste indistinct. Stipe 15–40 × 0.5–1.5 mm, almost equal, often slightly enlarged at the base, central, terete, hollow, white, smooth, finely puberulous overall, denser toward the insititious base. Lamellae adnexed, distant (15–18 reach the stipe), up to 1 mm broad, thin,

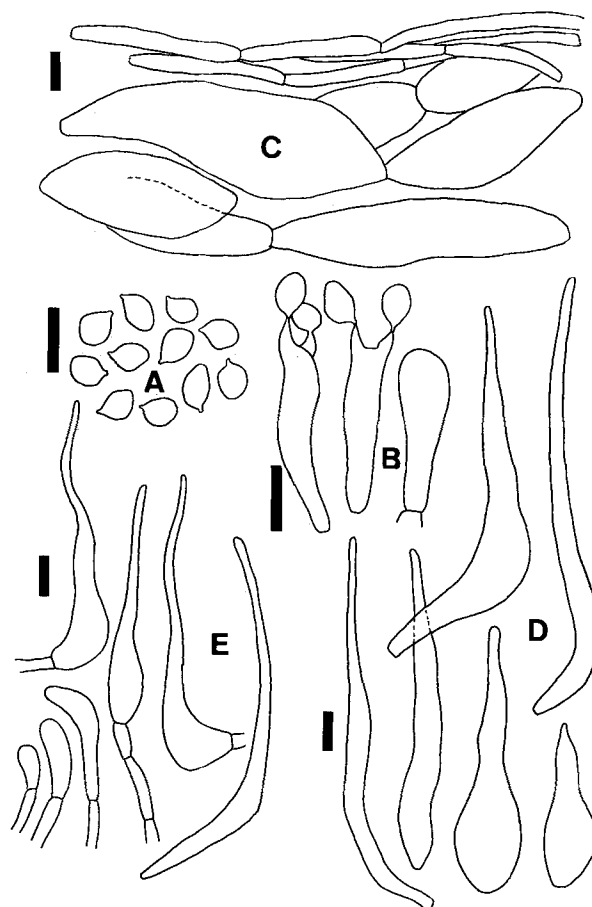


Fig. 1. *Mycena brevicapillata*.

A. Basidiospores. B. Basidia and basidiole. C. Surface of the pileus. Longitudinal section showing the smooth, repent hyphae of the outer surface layer, and the pseudoparenchymatous inner surface layer (*Mycena*-structure). D. Dermatocysts of the pileus. E. Dermatocysts of the stipe. Scales: 10 μm. All figures from the holotype.

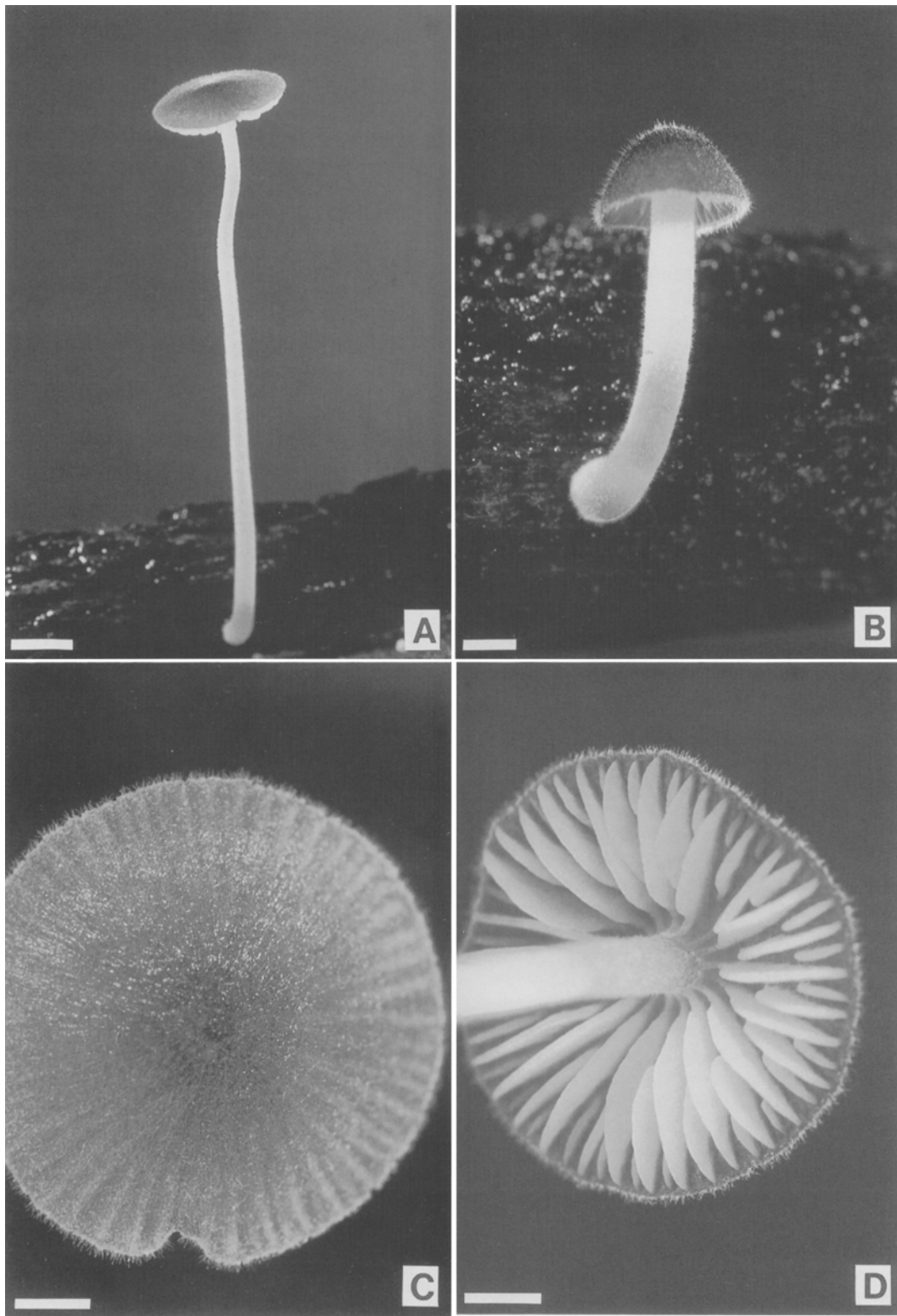


Fig. 2. *Mycena brevicapillata*.

A. Mature basidioma. B. Immature basidioma. C. Surface view of the mature pileus. D. Underside view of the mature pileus. Scales: A=3 mm; B-D=1 mm. All figures from the holotype.

white; edges even, concolorous.

Basidiospores $6\text{--}7.5 \times 4.5\text{--}5 \mu\text{m}$, ellipsoid to subglobose, smooth, colorless, inamyloid, thin-walled. Basidia $19\text{--}30 \times 6\text{--}9 \mu\text{m}$, clavate, two-spored. Basidioles clavate. lamella-edge fertile. Cheilocystidia and pleurocystidia absent. Hymenophoral trama regular to subregular; element hyphae $4\text{--}11 \mu\text{m}$ wide, cylindrical, often inflated, smooth, colorless, inamyloid, thin-walled; element cells of subhymenial layer $7\text{--}20 \times 1.5\text{--}2.5 \mu\text{m}$, filiform, parallel each other. Pileipellis a cutis of parallel, repent hyphae $3\text{--}10 \mu\text{m}$ wide, cylindrical, smooth, with yellowish brown (5E6–5E7) vacuolar pigment, inamyloid, thin-walled; dermatocysts scattered, suberect to erect, fusiform or sublageniform, $30\text{--}120 \times 6\text{--}14 \mu\text{m}$, smooth, colorless, inamyloid, thin-walled; underlying hyphae parallel, with yellowish brown (5E6–5E7) vacuolar pigment, dextrinoid, with short and inflated cells up to $27 \mu\text{m}$ wide. Stipitipellis a cutis of parallel, repent hyphae $2\text{--}5 \mu\text{m}$ wide, filiform, smooth, colorless, inamyloid, thin-walled; dermatocysts similar to those of the pileus but smaller ($20\text{--}80 \times 5\text{--}10 \mu\text{m}$). Stipe trama composed of longitudinally running, cylindrical hyphae $5\text{--}10 \mu\text{m}$ wide, smooth, colorless, dextrinoid, thin-walled. Clamp connections absent in all tissues.

Known distribution: Japan (Tokyo).

Habitat: Solitary to caespitose, on dead branch of *Hydrangea involucrata* Sieb., from July to September, not common.

Holotype: KPM-NC-0005072, on dead branch of *H. involucrata*, Mt. Takao, Hachioji-shi, Tokyo, 7 Jul. 1999.

Other specimens examined: on dead branch of *H. involucrata*, Mt. Takao, Hachioji-shi, Tokyo, 19 Aug. 1999; *ibid.* 29 Sept. 1999.

Japanese name: Ubuge-ochiedatake.

Notes: This species is distinct in its finely pubescent pileus and stipe, the inamyloid basidiospores associated with two-spored basidia, the absence of hymenial cystidia, the non-diverticulate elements in the cortical layer of pileus and stipe, and the habitat on dead branches of *H. involucrata*. The adnexed lamellae and the inamyloid basidiospores suggest placement of this taxon in the section *Hiemales* Konrad & Maubl., subsection *Hiemales* Maas Geest. (Maas Geesteranus, 1980, 1991). However, its long, fusiform or sublageniform dermatocysts covering the whole basidioma distinguish this taxon from all previously described taxa of the section *Hiemales*.

In its inamyloid basidiospores, hair-like dermatocysts, and lignicolous habitat, the new species is comparable with several taxa in the section *Longiseta* A. H. Sm. ex Maas Geest. (Maas Geesteranus, 1983), such as north temperate *Mycena longiseta* Höhn. (Maas Geesteranus, 1983; Pegler, 1986), *Mycena tenuisetosa* Corner (Corner, 1994), *Mycena brevisetosa* Corner (Corner, 1994), and *Mycena brunneisetosa* Corner (Corner, 1994), the latter three from Malaysia. *Mycena longiseta* differs in forming ventricose cheilocystidia, diverticulate pileipellis elements, and thick-walled dermatocysts. The three Malaysian taxa differ primarily in forming a distinct basal disk to the stipe and collariate

lamellae. In addition, *M. tenuisetosa* has clavate, tuberculate-echinulate cheilocystidia and pileocystidia, and, *M. brevisetosa* and *M. brunneisetosa* have very thick-walled dermatocysts, and echinulate pileipellis elements.

Mycena chrysanthemiformis Har. Takahashi, sp. nov. Figs. 3, 4

Pileo $4\text{--}10 \text{ mm}$ lato, conico-convexo vel campanulato, saepe subumbonato, sulcato-striato, pruinoso, albo vel saepe ad centrum fuliginoso; odore nitroso; sapore nullo; stipite $7\text{--}18 \times 0.4\text{--}1.5 \text{ mm}$, subaequali vel ad basim leviter incrassato, cavo, albo, saepe ad basim fuliginoso, pruinoso; mycelio basali albo-strigoso; lamellis adnato-decurrentibus, distantibus, albis; basidiosporis $7.5\text{--}10 \times 4\text{--}5.5 \mu\text{m}$, ellipsoideis, levibus, hyalinis, amyloideis; basidiis $30\text{--}38 \times 6\text{--}9 \mu\text{m}$, tetrasporis; cheilocystidiis $25\text{--}53 \times 9\text{--}14 \mu\text{m}$, numerosis, fusoides vel lanceolatis; pleurocystidiis nullis; hyphis defibulatis.

Holotypus: Ad corticem vivum *Zelkovae serratae* (Thunb.) Makino in silva, Yamato-shi, Kanagawa-ken, Japonia, 27 Jun. 1999, H. Takahashi (KPM-NC-0005073).

Etymology: *chrysanthemiformis*, referring the appearance of sulcate-striate, occasionally subumbonate pileus which gives an impression of petals of a chrysanthemum.

Pileus $4\text{--}10 \text{ mm}$ in diam, conico-convex to campanulate, not applanate, sometimes subumbonate, radially sulcate-striate almost to the disk, hygrophanous, translucent-striate, minutely white pruinose at first, glabrous in age, white overall or often fuliginous at the center,

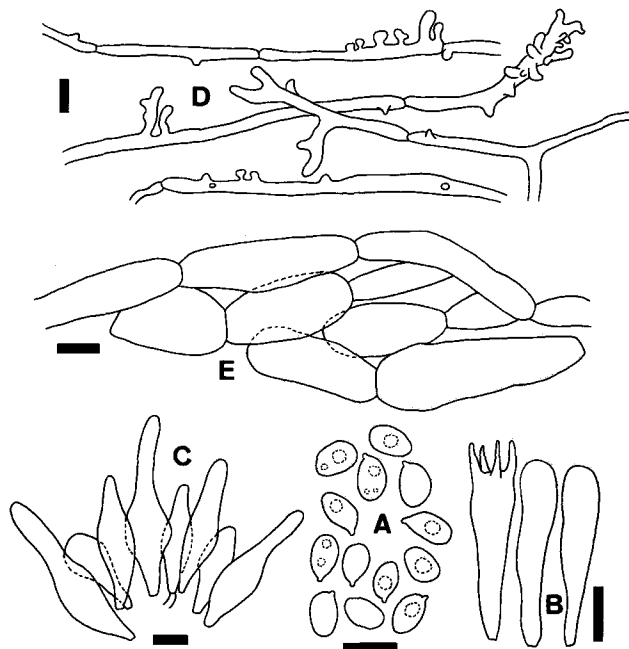


Fig. 3. *Mycena chrysanthemiformis*.

A. Basidiospores. B. Basidium and basidioles. C. cheilocystidia. D. Pileipellis elements. E. Underlying hyphae of the pileipellis. Scales: A–D = $10 \mu\text{m}$; E = $20 \mu\text{m}$. All figures from the holotype.

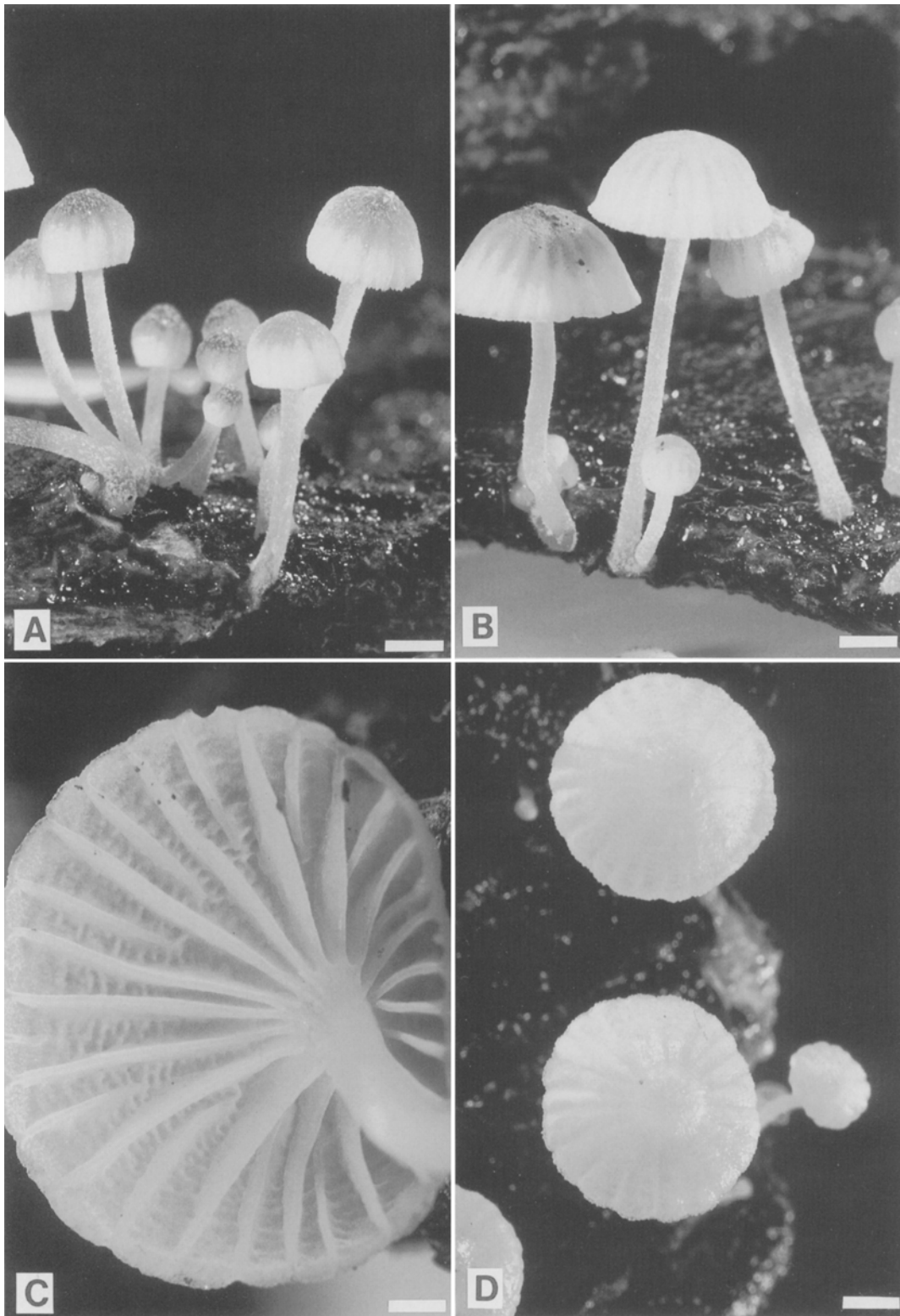


Fig. 4. *Mycena chrysanthemiformis*.

A, B. Basidiomata densely gregarious on living bark of *Zelkova serrata*. C. Underside view of the mature pileus. D. Surface view of the mature pileus. Scales: A, B, D=2 mm; C=1 mm. All figures from the holotype.

often with undulating marginal zone. Flesh up to 1 mm, white, fragile; odor slightly nitrous; taste none. Stipe 7–18 × 0.4–1.5 mm, cylindrical, slightly enlarged at the base, central or somewhat eccentric, slender, terete, hollow, white above, fuliginous toward the base, white pruinose over the entire length, white strigose at the base. Lamellae adnate-decurrent, distant (13–18 reach the stipe), up to 1 mm broad, thin, white, shallowly intervenose; edges pruinose, concolorous.

Spore print pure white. Basidiospores 7.5–10 × 4–5.5 μm, ellipsoid, smooth, colorless, amyloid, thin-walled. Basidia 30–38 × 6–9 μm, clavate, four-spored. Basidioles clavate. Cheilocystidia 25–53 × 9–14 μm, abundant, forming a sterile lamella edge, fusoid or narrowly fusoid to lanceolate, colorless, thin-walled. Pleurocystidia absent. Hymenophoral trama regular; element hyphae 15–25 μm wide, cylindrical, often inflated, walls thin, smooth, colorless, dextrinoid. Pileipellis a cutis of parallel, repent hyphae 4–10 μm wide, cylindrical, covered with warty or finger-like diverticulae, walls thin, colorless or pale brownish in the center portion of pileus, weakly dextrinoid; underlying hyphae parallel, hyaline, dextrinoid, with short and inflated cells up to 36 μm wide. Stipitipellis a cutis of parallel, repent hyphae 4–10 μm wide, cylindrical, covered with warty or finger-like diverticulae, colorless or pale brownish in the basal portion of stipe, weakly dextrinoid, thin-walled. Stipe trama composed of longitudinally running, cylindrical hyphae 16–22 μm wide, smooth, colorless, dextrinoid. Clamp connections absent in all tissues.

Known distribution: Japan (Kanagawa).

Habitat: densely gregarious, on living bark or dead fallen twig of *Aphananthe aspera* (Thunb.) Planch, *Cryptomeria japonica* (L. f.) D. Don, and *Zelkova serrata* (Thunb.) Makino, from June to September, common.

Holotype: KPM-NC-0005073, on living bark of *Z. serrata*, Yamato-shi, Kanagawa-ken, 27 Jun. 1999.

Other specimens examined: on dead fallen twig of *A. aspera*, Machida-shi, Tokyo, 24 Jun. 1993; on living bark of *Z. serrata*, Yamato-shi, Kanagawa-ken, 11 Jun. 1998; on living bark of *C. japonica*, Kawasaki-shi, Kanagawa-ken, 4 Jul. 1999.

Japanese name: Kikumon-kunugitake.

Notes: This species is characterized by its small, white basidiomata growing on a woody substratum, the

campanulate, shallowly sulcate-striate, occasionally subumbonate pileus, and the adnate-decurrent lamellae; microscopically by the amyloid basidiospores, the fusoid to lanceolate cheilocystidia, the diverticulate elements in the cortical layer of pileus and stipe, and the absence of clamp connections. The combination of these characteristics suggests that this taxon belongs to the section *Fragilipedes* (Fr.) Quél., as defined by Maas (Maas, 1980, 1988). Within the section, the most closely allied species is North American *Mycena subcana* A. H. Sm. (Smith, 1947), which differs in forming a grayish pileus and stipe, grayish, adnexed lamellae, and having clamp connections. *Mycena apiculispora* Corner (Corner, 1994) from Solomon Islands, which may belong to the section *Hiemales* Konrad & Maubl., subsection *Omphaliariae* Kühner ex Maas Geest. (Maas Geesteranus, 1980), is also comparable with *M. chrysanthemiformis* in having finely pruinose-puberulous, white basidiomata, decurrent lamellae, absence of pleurocystidia, and lignicolous habitat. The former species, however, differs in having inamyloid basidiospores with subapiculate apex, and long, sinuous, ventricose-attenuate dermatocysts.

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