

Short Communication

***Mycena auricoma*, a new species of *Mycena* section *Radiatae* from Japan, and *Mycena spinosissima*, a new record in Japan**

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Accepted for publication 14 November 1998

Two lignicolous species of *Mycena* (Agaricales, Basidiomycetes) are described and illustrated from eastern Japan: *Mycena auricoma* sp. nov., forming ephemeral coprinoid basidiomata and belonging to section *Radiatae*, was found on a dead fallen twig of *Quercus serrata*. It appears to close to a Malaysian species, "*Trogia*" *crinipelliformis*. *Mycena spinosissima* in section *Sacchariferae*, new to Japan, was collected from dead bark of *Aphananthe aspera*, a dead fallen inflorescence of *Cryptomeria japonica*, and a dead fallen twig of *Quercus serrata*.

Key Words—*Mycena auricoma*; *Mycena* sect. *Radiatae*; *Mycena spinosissima*; taxonomy.

A survey of agaric flora in Japan revealed the occurrence of two noteworthy lignicolous species of *Mycena* in eastern Japan. One of these, *Mycena auricoma* sp. nov., is unique in its coprinoid habit and related to tropical and subtropical taxa of section *Radiatae* in the sense of Singer (1975, 1986). The other species, *Mycena spinosissima* (Singer) Desjardin, is known from the neotropical regions. These species are described and illustrated here, and color photographs are presented showing macromorphological features of the basidiomata in primordial and mature stages. Color notations in parentheses are taken from Kornerup and Wanscher (1978). Specimens cited are deposited in the herbarium of the Natural History Museum and Institute, Chiba, Japan (CBM).

Mycena auricoma H. Takahashi, sp. nov. Figs. 1–4

Primordium 0.5–2 mm lato, hemisphaerico, cum flocculo aurantiaco obvolvato; pileo 15–25 mm lato, primo hemisphaerico, dein campanulato vel obtusi-conico, mox plano sed saepe subumbonato, fere ad centrum plicato-striato, luteolo-aurantiaco furfuraceo, margine crenulato aurantiaco-pruinoso; carne aquosa ceracea; odore sapore nullo; stipite 20–30 × 1–2 mm, superne 1–1.5 mm diam, subaequali vel ad basim leniter incrassato, cavo, luteolo-aurantiaco furfuraceo, apice albo-pruinoso, mycelio basali nullo; lamellis liberis, mediocriter subdistantibus, albis, ad aciem pallide aurantiacis; basidiosporis 5–7 × 3–4 μm, hyalinis, levibus, ellipsoideis, amyloideis; basidiis 15–20 × 6–8 μm, tetrasporis; cheilocystidiis ad basim pyriformibus vel lageniformibus 30–50 × 7.5–20 μm, ad apicem attenuato filiformibus 20–150 × 1.5–4 μm; pleurocystidiis nullis; dermatocystidiis numerosis, ad basim claviformibus 30–45 × 7.5–15 μm vel strangulatis

40–150 × 5–12.5 μm, ad apicem attenuato filiformibus 50–250 × 1.5–6 μm, pallide aureis, inamyloideis, tunicis 0.5–1.5 μm crassis; hyphis fibulatis.

Holotypus: In ramulis delapsis *Quercus serrata* Thunb., Yamato-shi, Kanagawa-ken, Japonia, 3 Sept. 1996, H. Takahashi (CBM-FB-16150).

Etymology: *auri*-=golden-yellow in Latin; *coma*=hair tuft in Latin: referring to yellowish orange flocci enveloping the whole basidioma.

Primordium 0.5–2 mm in diam, hemispherical, with a discoid stipe, enveloped in orange (5A6–5A7) to yellowish orange (4A6–4A7) flocci. Pileus 15–25 mm in diam, at first hemispherical, then subfusiform, expanding to campanulate or obtusely conical, finally plane but often narrowly subumbonate, radially plicate-striate almost to the disk, often split in places along the lines of the lamellae, pale yellow (4A3) under yellowish orange (4A6–4A7) flocci, yellowish orange (4A6–4A7) to orange (5A6–5A7) furfuraceous over the center, orange (5A6–5A7) at the crenulate-pruinose margin. Flesh very thin (up to 1 mm in the center of the pileus), yellowish white (4A2) to whitish, odor and taste none. Stipe 20–30 × 1–2 mm, 1–1.5 mm above, almost equal or slightly enlarged at the base, central, slender, terete, brittle, hollow, covered with yellowish orange (4A6–4A7) flocci as on the pileus, yellowish orange (4A6–4A7) to orange (5A6–5A7) furfuraceous toward the dark orange (5A8) base, yellowish white (4A2) to white pruinose at the apex, without basal mycelium and disk. Lamellae free, subdistant, L=30–45, 1–3 mm broad, thin, white, edge ascending, pale orange especially near the margin of the pileus.

Spore print pure white. Basidiospores 5–7 × 3–4 μm, colorless, smooth, ovoid-ellipsoid to ellipsoid, dark grey in Melzer's reagent (amyloid), thin-walled, without

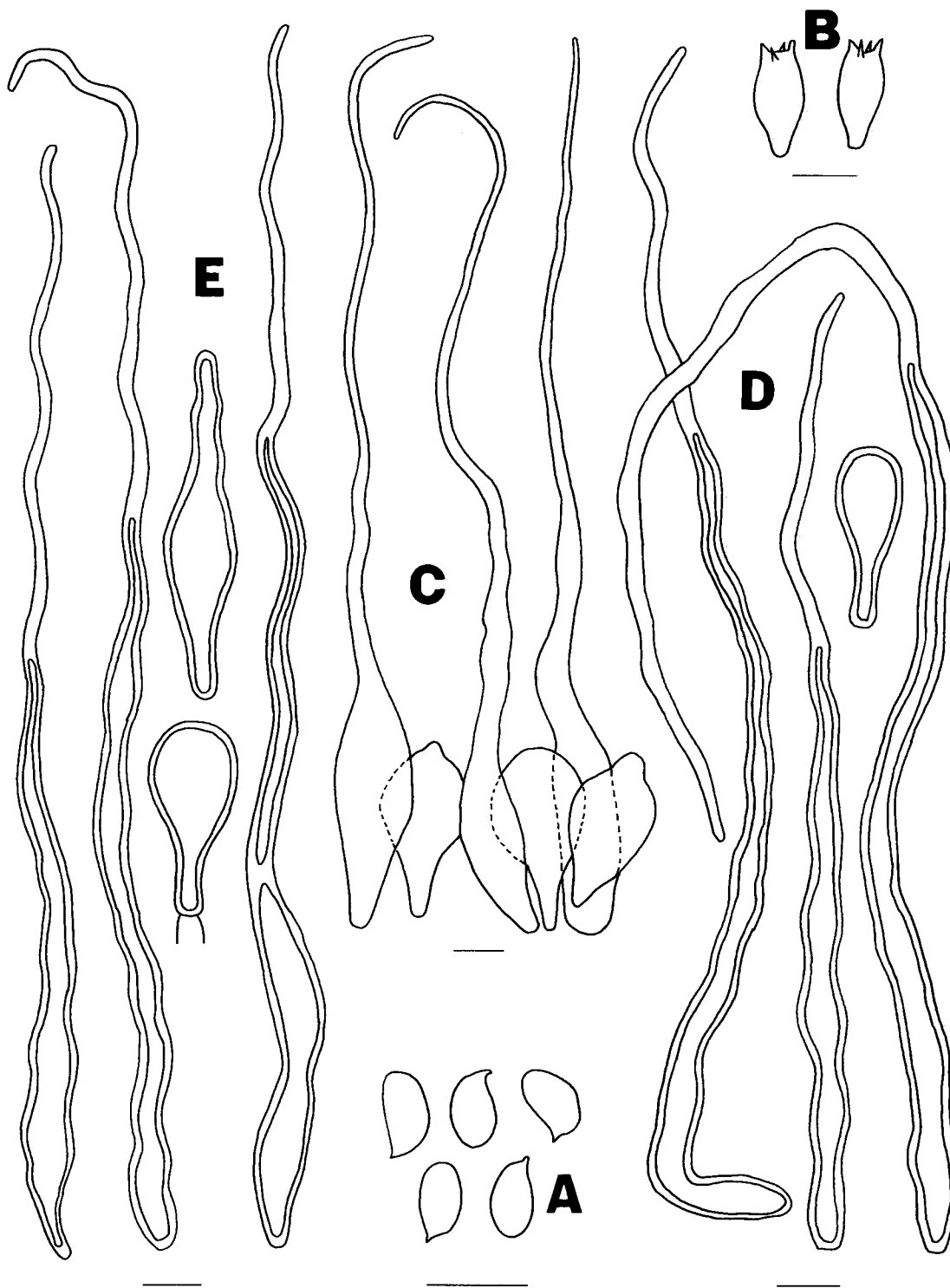


Fig. 1. *Mycena auricoma*.

A. Basidiospores. B. Basidia. C. Cheilocystidia. D. Dermatocysts from the center of the pileus. E. Dermatocysts from the lower part of the stipe. Scales: 10 μm . All figures from the holotype.

germ pore. Basidia 15–20 \times 6–8 μm , clavate, four-spored. Cheilocystidia forming a compact sterile edge, pyriform or ventricose to lageniform with filiform appendages, colorless or pale yellow, with thin to slightly thick-

ened walls up to 0.5 μm , smooth, inamyloid; main cell bodies 30–50 \times 7.5–20 μm ; appendages 20–150 \times 1.5–4 μm , filiform, flexuous, simple, colorless, tapering to an obtuse or subacute apex. Pleurocystidia none.



Fig. 2. Basidiomata of *Mycena auricoma* growing on dead fallen twig of *Quercus serrata*.

A. Primordia. B. Immature basidiomata with a developing stipe. Scales: A, 1 mm; B, 2 mm. All figures from the holotype.

Trama of pileus and lamellae composed of long-celled inflated hyphae $500\text{--}1,500 \times 15\text{--}50 \mu\text{m}$, with the ends attenuating into narrow septa, accompanied by a few uninflated and short-celled hyphae, walls thin, smooth, colorless, inamyloid. Surface of pileus a poorly developed narrow cutis of parallel, repent hyphae $30\text{--}80 \times 6.5\text{--}15 \mu\text{m}$, often with indistinctly clamped septa, walls thin, smooth, pale yellow, inamyloid, not gelatinized. Dermatocysts of pileus numerous, dispersed, decumbent, pale yellow, smooth, inamyloid, walls $0.5\text{--}1.5 \mu\text{m}$ thick, arising directly from the cutis hyphae; main cell bodies simply clavate to pyriform ($30\text{--}45 \times 7.5\text{--}15 \mu\text{m}$) or irregularly cylindrical to strangulated ($40\text{--}150 \times 5\text{--}12.5 \mu\text{m}$), sometimes with a secondary septum; ap-

pendages $50\text{--}250 \times 1.5\text{--}6 \mu\text{m}$, long, flexuous, filiform, simple, tapering to an obtuse or subacute apex. Surface of stipe thinly coated with parallel, repent hyphae $5\text{--}10 \mu\text{m}$ wide, often with indistinctly clamped septa, walls thin, smooth, pale yellow, inamyloid, not gelatinized. Dermatocysts of stipe similar to those of the pileus but shorter and paler at the apex of the stipe. Trama of stipe composed of longitudinally running, spindle-form hyphae $1,000\text{--}2,500 \times 15\text{--}30 \mu\text{m}$, walls thin, smooth, colorless, inamyloid.

Habitat: Solitary on dead fallen twig of *Q. serrata*, from June to October, not common.

Distribution: Japan (Kanagawa, Saitama).

Holotype: CBM-FB-16150, on a dead fallen twig of

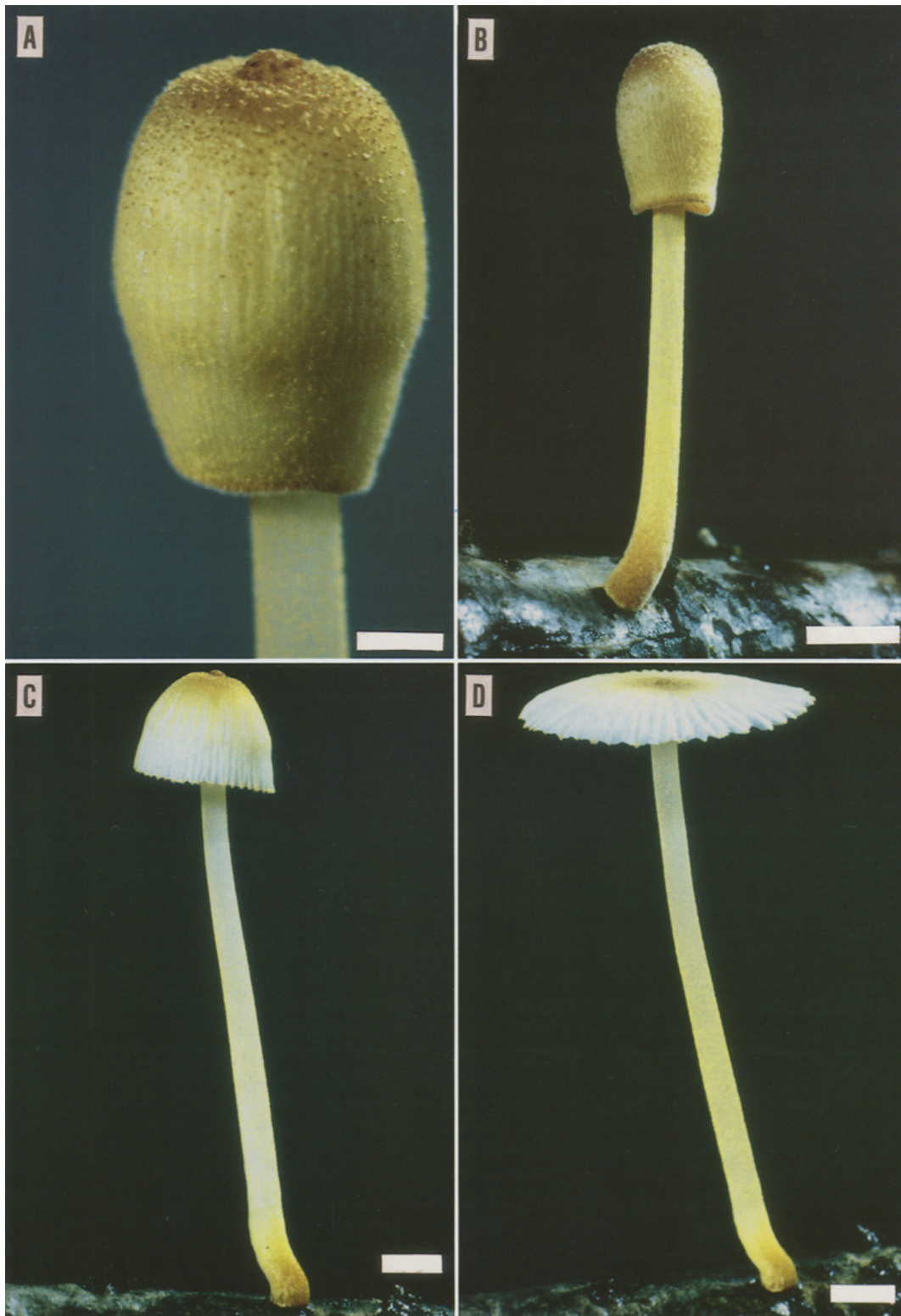


Fig. 3. Basidiomata of *Mycena auricoma* growing on dead fallen twig of *Quercus serrata*. A–C. Immature basidioma beginning to expand the pileus. D. Mature basidioma with an expanded pileus. Scales: A, 1 mm; B–D, 4 mm. All figures from the holotype.

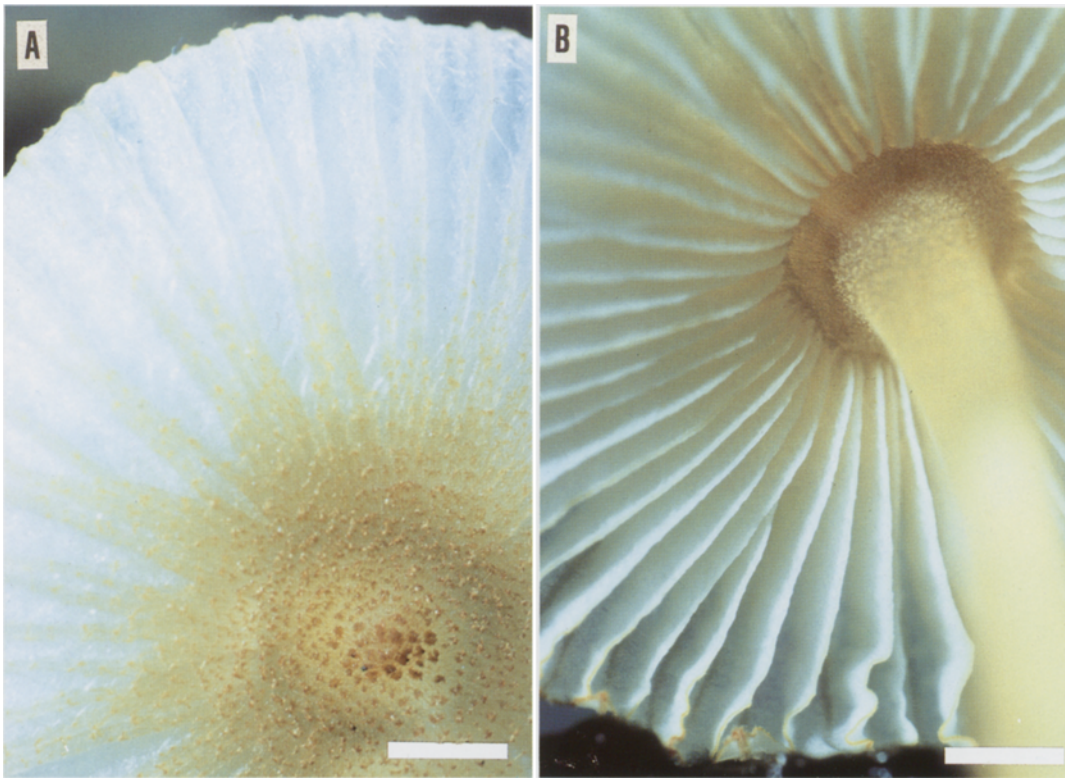


Fig. 4. Mature pileus of *Mycena auricoma*.
A. Surface view. B. Underside view. Scales: A, B, 2 mm. All figures from the holotype.

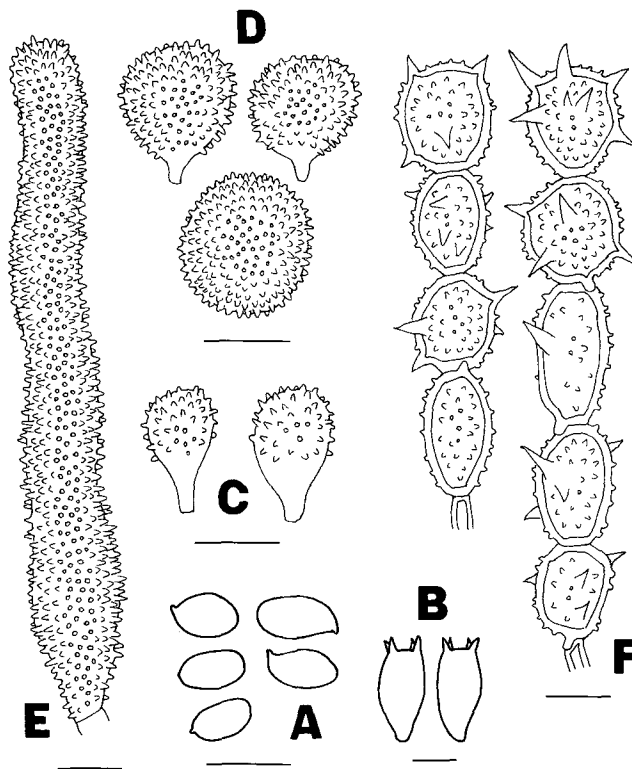


Fig. 5. *Mycena spinosissima*.
A. Basidiospores. B. Basidia. C. Cheilocystidia. D. Acanthocysts of the pileipellis. E. Caulocystidium. F. Chains of cheroocytes forming conical spines of the universal veil. Scales: A–C, E, 10 μm ; D, F, 20 μm . All figures from CBM-FB-15519.

Q. serrata in lowland forest (60 m alt.), Yamato-shi, Kanagawa-ken, 3 September 1996.

Japanese name: Koganehanagasa (first collected and named by Mr. Minoru Aoki).

Notes: This species is well characterized macroscopically by the yellowish orange flocci on the pileus and stipe, the delicate, plicate-striate pilei, the insititious stipe lacking a basal disc, the white, free lamellae and the lignicolous habit, and microscopically by the colorless, amyloid basidiospores, the chilocystidia often with filiform appendages and the thick-walled, non-diverticulate dermatocysts tapering into filiform appendages apically. The combination of these features suggests that it belongs to *Mycena* section *Radiatae* in the sense of

Singer (1975, 1986). However, its yellowish orange flocci enveloping the whole basidioma distinguish the present fungus from other known species of the section *Radiatae*.

"*Trogia*" *crinipelliformis* Corner (1996) from Malaysia, which would belong to *Mycena* section *Radiatae* following the Singer's system (Singer, 1986), seems to be most closely allied with *M. auricoma*. The former, however, has an acutely umbonate primordium, reddish orange (not yellowish) tones in the fibrillose flocci on the pileus and stipe, inamyloid basidiospores, and cheilocystidia with occasionally branched appendages.

Although numerous primordia occur initially, only a few grow into mature basidiomata. The expanded

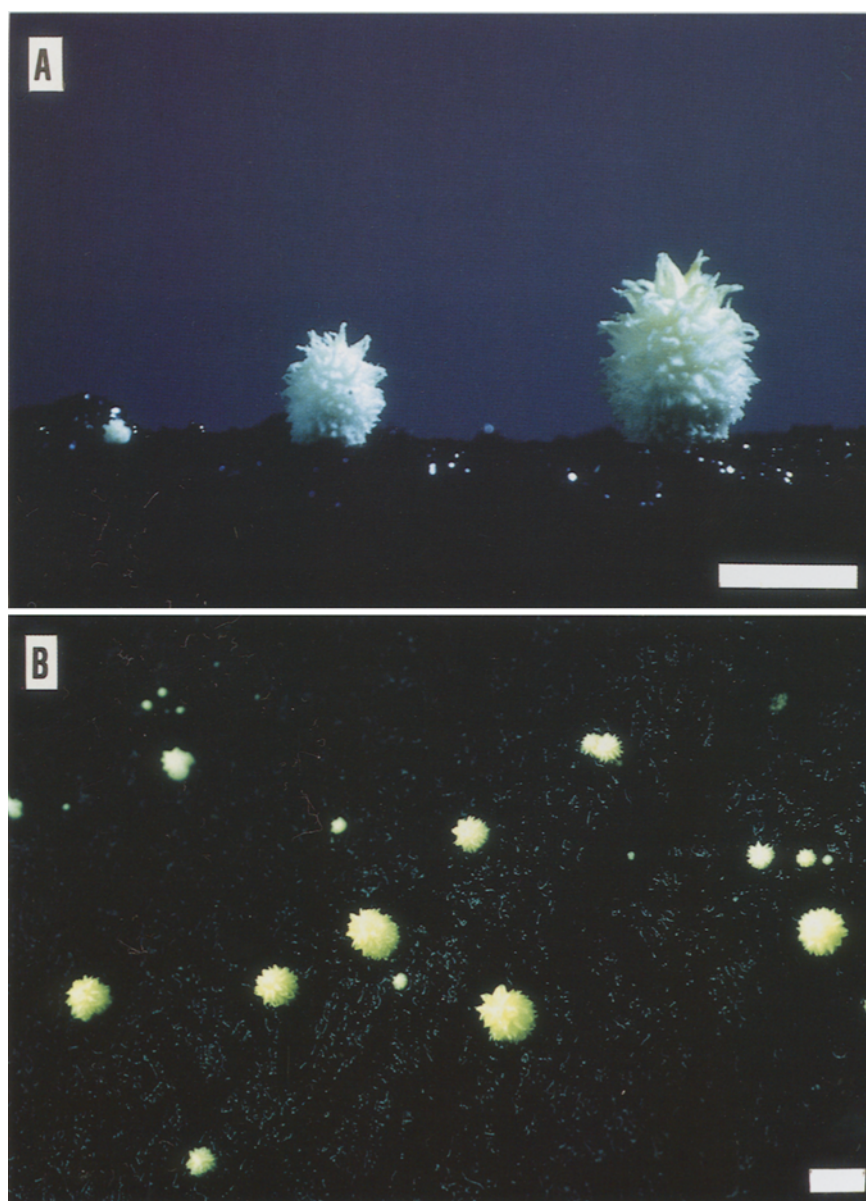


Fig. 6. Primordia of *Mycena spinosissima* growing on dead bark of *Aphananthe aspera*.
A. Side view. B. Upper view. Scales: A, B, 3 mm. A from CBM-FB-15519; B from CBM-FB-15528.

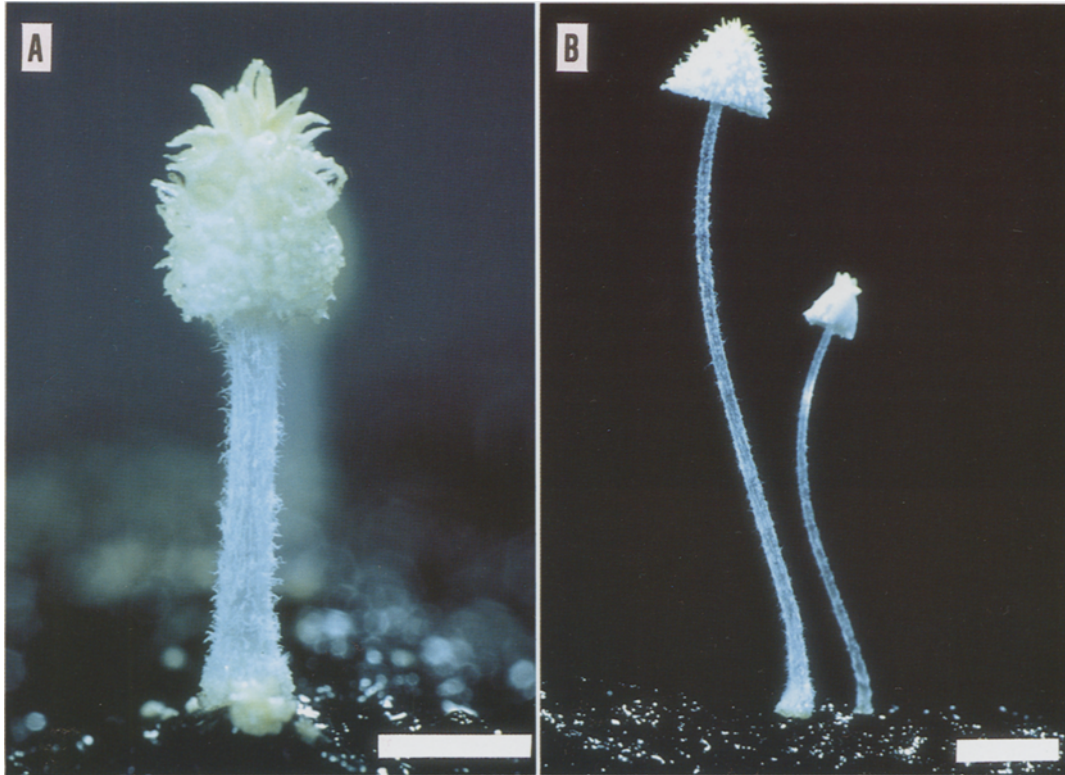


Fig. 7. Basidiomata of *Mycena spinosissima* growing on dead bark of *Aphananthe aspera*.

A. Immature basidioma with a developing stipe. B. Mature basidiomata expanding the pilei. Scales: A, 3 mm; B, 8 mm. All figures from CBM-FB-15519.

basidiomata make basidiospores only for one night and soon collapse.

Mycena spinosissima (Singer) Desjardin, *Bibl. Mycol.* **159**: 15. 1995. Figs. 5–7

Basionym: *Marasmius spinosissimus* Singer, *Schweiz. Z. Pilzk.* **28**: 193. 1950.

Synonym: *Amparoina spinosissima* (Singer) Singer, *Mycologia* **50**: 110. 1958.

Primordium 0.5–3 mm in diam, subglobose, sessile, with a universal veil forming yellowish white (1A2–2A2) to pale yellow (1A3–2A3), granules to conical detersile spines up to 1.5 mm high. Pileus 3–8 mm in diam, at first subglobose, then becoming campanulate to obtusely conical, not plane, opaque, dry, white under the pale yellow conical spines and granules, sulcate-striate from midway to the white pruinose or smooth margin; mature pilei often leaving a few spines or granules only on the disk. Flesh very thin, membranous, white; odor and taste none. Stipe 20–40 × 0.5–1 mm, subequal but slightly bulbous at the base, central, filiform, terete, white, dry, opaque, pruinose at the apex, hirsute elsewhere, without basal mycelium. Lamellae adnexed to subfree, close, L = 10–20, 0.5–1 mm broad, thin, white, edge ascending, concolous.

Spore print pure white. Basidiospores 8–10 × 5–6 μm, colorless, smooth, ellipsoid to broadly ellipsoid, violet grey in Melzer's reagent (amyloid), thin-walled.

Basidia 10–20 × 10–12.5 μm, clavate, four-spored. Cheilocystidia 10–20 × 5–10 μm, broadly clavate, echinulate above, thin-walled, colorless, inamyloid. Pleurocystidia none. Trama of lamellae composed of inflated, short-celled hyphae up to 15 μm wide, walls thin, smooth, colorless, dextrinoid. Surface of pileus a subhymeniform layer of acanthocyst end cells arising from repent, filiform hyphae up to 10 μm wide, hyphae of inner layer becoming inflated and short-celled (up to 20 μm wide), walls thin, smooth, colorless, strongly dextrinoid, not gelatinized; acanthocysts 10–50 μm wide, subglobose to broadly clavate, echinulate overall, thin-walled, colorless, weakly dextrinoid, often disarticulate. Veil structures of pileus made up of erect, parallel chains of highly inflated short cells (cherocytes) with clamped septa; cherocytes 20–35 × 15–25 μm, vesiculose, echinulate overall, with a few simple, spine-like, thin-walled appendages 5–10 μm long, walls 0.5–2.0 μm thick, colorless, inamyloid or weakly dextrinoid. Trama and cortical layer of stipe monomitic of parallel, filiform, short-celled hyphae 5–15 μm wide, walls thin, smooth, colorless, dextrinoid, not gelatinized; caulocystidia numerous, 50–200 × 8–15 μm, cylindrical to subclavate with rounded apex, echinulate overall, thin-walled, colorless, inamyloid. Clamp connections not seen except for the universal veil elements.

Habitat in Japan: Solitary to scattered on dead bark of *Aphananthe aspera* (Thunb.) Planch., on dead fallen

inflorescence of *Cryptomeria japonica* D. Don, and on dead fallen twig of *Q. serrata*, from June to October, fairly common.

Distribution: Argentina, Colombia, Japan (Kanagawa, Tokyo, Yamanashi), Hawaiian Islands, New Caledonia, Puerto Rico.

Specimens examined: CBM-FB-15528, on dead bark of *A. aspera* in lowland forest (60 m alt.), Yamato-shi, Kanagawa-ken, 1 July 1994; CBM-FB-15519, on dead bark of *A. aspera* in lowland forest (60 m alt.), Yamato-shi, Kanagawa-ken, 18 July 1996.

Japanese name: Tosaka-ochiedatake (named by Mr. Wakao Ikeda).

Notes: The most distinctive feature of *M. spinosissima* is the small subspherical primordium that is enveloped in conical, pale yellow, detersile spines (universal veil) composed of chains of cheroocytes. Consequently, its primordia have an appearance reminiscent of basidiomata of a Gasteromycete with conical spines in

the outer surface.

This seems to be the first record of *M. spinosissima* outside of the tropical and subtropical regions.

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