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SHORT COMMUNICATION

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A new species of *Gymnopilus* Sect. *Microspori* from Japan

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Abstract *Gymnopilus ombrophilus* sp. nov., growing on rotten wood of conifers and hardwoods from Niigata, Japan is described and illustrated. It is characterized by its medium-sized, brownish-orange basidiocarps with a finely squamulose pileus, stipe lacking an annulus, and mild taste, and microscopically by dextrinoid, small, broadly ellipsoid basidiospores. The new species belongs to the section *Microspori*. The differences between the taxon and similar species are briefly discussed.

Key words *Gymnopilus ombrophilus* · *Microspori* · New species · Taxonomy

This article treats a new species of *Gymnopilus* sect. *Microspori* Hesler (Hesler, 1969; Bon and Roux 2002) observed in Niigata Prefecture, Japan.

In the following description, microscopic characters were obtained by examining sections of fresh materials in Melzer's reagent. For scanning electron microscope (SEM) preparations, basidiospores were dusted on a specimen holder with double-sided adhesive tape and then sputter-coated with gold. Amyloid reaction was observed with basidiospores thickly mounted on a slide glass. Color designations in parentheses in the species description follow Kornerup and Wanscher (1978). Fifty basidiospores from 4 materials including the holotype were measured for the size of basidiospores.

Gymnopilus ombrophilus Miyauchi, sp. nov. Figs. 1–3
Pileo 50–80 mm lato, primo conico vel campanulato, dein explanato, sicco, margine infracto, primo fibrilloso-squamuloso, dein paene glabro, primo brunneo-aurantiaco dein brunneo vel aurantiaco-fulvo, margine pallide aurantiaco-fulvo; lamellis confertis, decurrento-adnatis, arcuatis, 3–4 mm latis, aurantiaco-fulvis, dein brunneo-aurantiacis, tactu brunnescenti; stipite 50–90 longo, 8–12 mm crasso, cylindraceo vel ventricoso, ad basim leviter radicato, sicco, aurantiaco-fulvo, striato; carne pallide fulva vel leviter aurantiaca vel leviter rubra; sapore miti; odore farinaceo; basidiosporis in massa brunneo-aurantiacis, late ellipsoideis, 4.5–7.5 × 4.0–6.0 μm, pseudoamyloideis, verrucosis; basidiis 25–35 × 6.0–10.0 μm; cheilocystidiis cylindraceis vel leviter lageniformibus, 30–36 × 6.0–8.0 μm; pleurocystidiis fusiformibus, 30–35 × 7.0–10.0 μm; fibulis praesentibus.

Holotypus: In ligno emortuo *Pinus thunbergii* Parl, Echizenhama, Maki-machi, Niigata Pref., 1 Julius, 2000. S. Miyauchi leg., in Herbario TNS conservatus (TNS-F-101524).

Etymology: *ombrophilus* means rain-loving.

Pileus 50–80 mm in diameter, conical or campanulate when young, becoming expanded with an incurved margin, dry or slightly hygrophanous when wet, at first squamulose, almost smooth when old, at first brownish-orange (6C7–6C8), later dark orange (5A6) or orangish-yellow (4A7), light yellow (4A5) at the margin. Lamellae crowded, adnate to slightly decurrent, arcuate, 3–4 mm wide, orange-yellow to yellowish-orange (4A6–4A7), later brownish-orange (6C8), turning brownish-orange (6C8) or darker (7F6) at the edges when touched or old. Stipe 50–90 × 8–12 mm, cylindrical or somewhat ventricose, with a narrowed base, dry, pale orange (5A3) or light orange (5A5), fibrillose-striate, annulus absent. Context pale yellow (4A3) or light orange (5A4), later becoming brownish-orange (6C8) in age, turning dark brown in 5% KOH. Taste mild, smell farinaceous. Basidiospore print brownish-orange (6C8). Basidiospores broadly elliptical, 4.5–7.5 × 4.0–6.0 μm (n = 50: 6.5 ± 0.5 × 4.4 ± 0.4 μm) (including ornamentation), length/breadth quotient 1.2–1.6 (n = 50: 1.5 ± 0.1), verrucose (Fig. 1b), dextrinoid, dark reddish-brown in Melzer's reagent, pale yellow in water, and yellowish-brown in 5% KOH. Basidia 25–35 × 6.0–10.0 μm, with clamps (Fig. 1f), 4-spored, sterigmata up to 5 μm long. Cheilocystidia cylindri-

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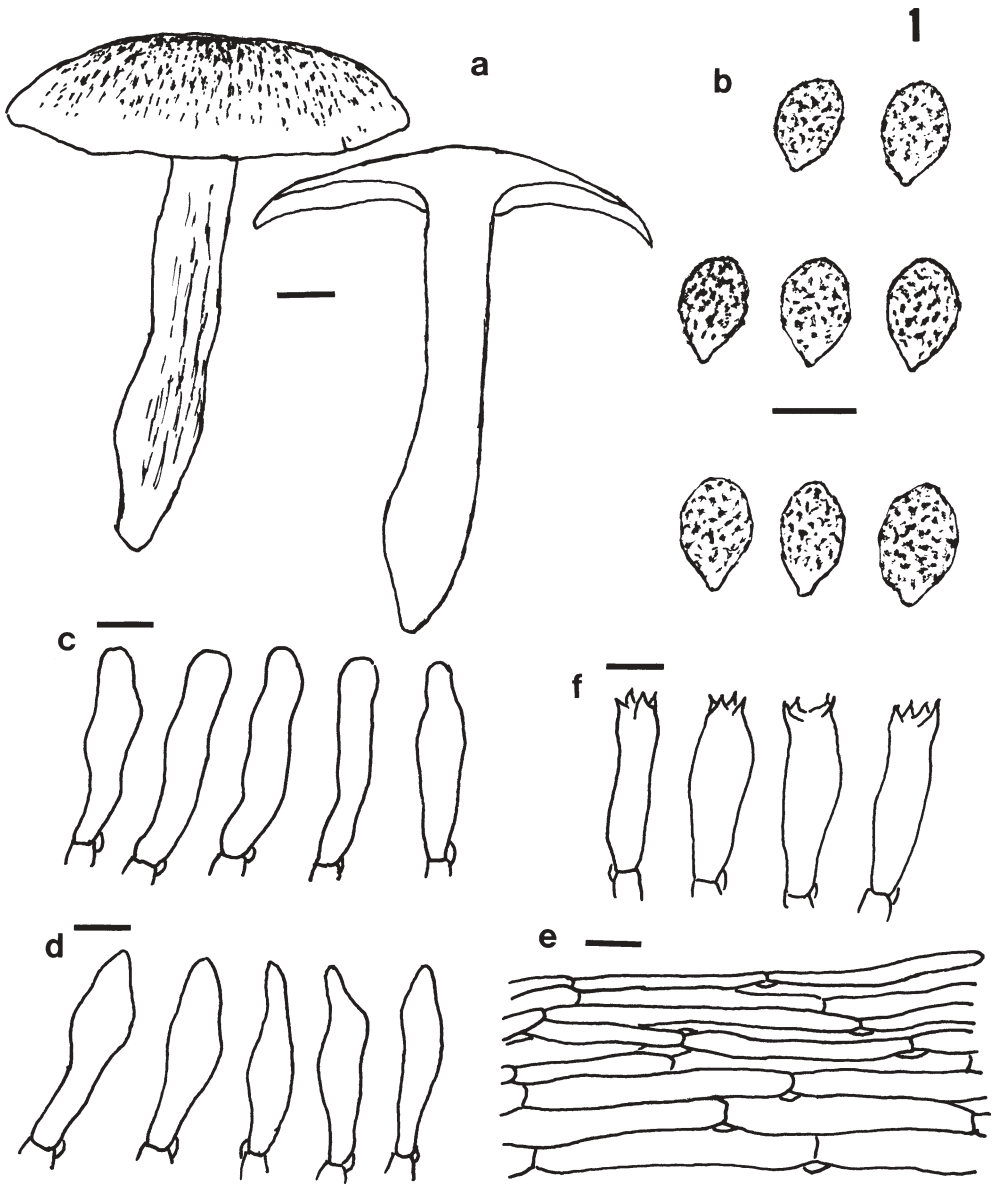

Fig. 1. *Gymnopilus ombrophilus* (holotype). **a** Basidiocarps; **b** basidiospores; **c** cheilocystidia; **d** pleurocystidia; **e** pileipellis; **f** basidia. *Bars* **a** 1 cm; **b** 5 μm; **c–f** 10 μm

cal narrowly clavate or sublageniform, 30–36 × 6.0–8.0 μm (Fig. 1c), hyaline in water, and pale yellowish in 5% KOH. Pleurocystidia subclavate to subfusiform, 30–35 × 7.0–10.0 μm (Fig. 1d), hyaline in water, and pale yellowish in 5% KOH. Caulocystidia absent. Hyphae of pileus surface tubular, 3–8 μm wide (5–9 μm in squamules), clamped (Fig. 1e), with terminal elements slightly tapering toward the apex. Hyphae of squamules with an intracellular pigment becoming pale yellow in Melzer's reagent and yellowish-brown in 5% KOH. The yellowish-brown pigment is dissolved when mounted in KOH.

Habitat and distribution: solitary to clustered on rotten wood or wood chips of conifers and hardwoods, in particular of *Pinus thunbergii*, *Pinus densiflora* Siebold et Zucc., *Robinia pseudoacacia* L., or *Quercus serrata* Thunb. ex Murray.

Holotype: Echizenhama, Maki-machi, Niigata Pref. July 1, 2000, collected by S. Miyauchi (S.M.) [TNS-F-101524, preserved in the herbarium of National Science Museum, Tsukuba]; isotype in Miyauchi private herbarium as SM0070101N. Other specimens examined: Kakuda, Maki-machi, Niigata Pref. on rotten wood of *Q. serrata*, July 11, 1992 col. S. Miyauchi (S.M.); Ishiji, Nishiyama-machi, Niigata Pref. on rotten wood of *P. densiflora*, June 22, 1995 col. S.M.; Kobarihama, Niigata-shi, Niigata Pref. on wood chips of *R. pseudoacacia*, Oct. 18, 2000, col. S. Nagumo; Echizenhama, Maki-machi, Niigata Pref. on rotten wood of *P. thunbergii*, July 8, 2001, col. S.M.; Echizenhama, Maki-machi, Niigata Pref. on rotten wood of *P. thunbergii*, July 1, 2002, col. S.M.

Comments: *Gymnopilus ombrophilus* is characterized by its following characters: (1) the medium-sized brownish-orange basidiocarp; (2) the dry squamulose pileus; (3) the yellow lamellae changing to brown when bruised; (4) the stipe lacking remnants of veil; (5) the mild taste; (6) the small dexitrinoid basidiospores; and (7) the presence of

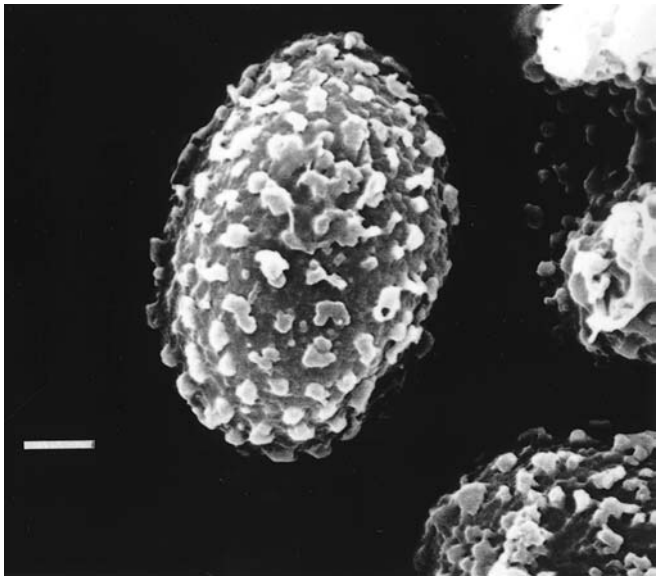

Fig. 2. *Gymnopilus ombrophilus* (isotype). Basidiospore (SEM photograph). *Bar* 1 μm

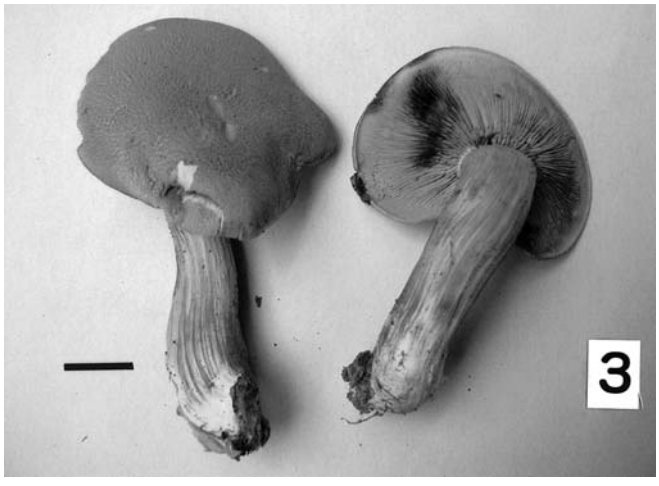

Fig. 3. *Gymnopilus ombrophilus* (July 8, 2001, col. S.M.; Echizenhama, Maki-machi, Niigata Pref.). *Left*, basidiocarp showing the pileus surface; *right*, basidiocarp showing the lamellae. *Bar* 15 mm

cheilo- and pleurocystidia. It belongs to the section *Microspori* in the subgenus *Gymnopilus* (Hesler 1969; Bon and Roux 2002), because it has no veil on the stipe and its basidiospores are small. *Gymnopilus bellulus* (Peck) Murril (Hesler 1969; Breitenbach and Kränzlin 2000; Bon and Roux 2002) and *Gymnopilus sordidostipes* Hesler (Hesler 1969; Bon and Roux 2002) are similar to this new species in having a stipe without veil, small basidiospores, and cheilo- and pleurocystidia. However, the former primarily differs from *G. ombrophilus* in its significantly smaller fruiting body with a smooth pileus surface, and the latter in a bitter taste and the stipe being weakly discolored blackish at the base. *Gymnopilus penetrans* (Fr.: Fr.) Murrill (Hongo 1987; Phillips 1991; Breitenbach and Kranzlin 2000) and *Gymnopilus sapineus* (Fr.) R. Maire (Breitenbach and Kränzlin 2000) are also similar in their habitat and appearance, but are easily distinguished from *G. ombrophilus* by their larger basidiospores and bitter taste. Recently, a small-spored *Gymnopilus* was described from Germany by Ludwig (2001) as the new variety of the latter, *G. sapineus* (Fr.) R. Maire var. *microsporus* E. Ludwig (Ludwig 2001; Bon and Roux, 2002). According to the literature the fungus seems rather closer to *G. sordidostipes* than *G. ombrophilus* and differs in its bitter taste and darker-colored pileus.

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