

## Short Communication

A new species of *Cortinarius* section *Bolares* from Japan

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*Cortinarius reticulisporus* sp. nov., found in deciduous forests, is described and illustrated. It closely resembles *Cortinarius rubicundulus* in its pileus color and the vivid yellowing of the context on bruising, but differs from the latter in its subglobose to broadly ellipsoid basidiospores with quotient of the length/width smaller than 1.4 and particularly fine lines connecting warts when observed under SEM. The differences between *Cortinarius reticulisporus* and other similar taxa are briefly discussed.

Key Words—*Cortinarius reticulisporus*; new species; sect. *Bolares*; taxonomy.

In this paper, a new species of *Cortinarius* Fr. in section *Bolares* of the subgenus *Leprocybe* Moser (Singer, 1986) is reported from Niigata Prefecture.

In the following description, microscopic characters were from sections of fresh material mounted in Melzer's reagent. For scanning electron microscope (SEM) preparations, basidiospores were deposited on a specimen holder with double-sided adhesive tape and then sputter-coated with gold. Color designations in parentheses follow Kornerup and Wanscher (1978).

*Cortinarius reticulisporus* Miyauchi, sp. nov. Figs. 1–4

Pileo 40–70 mm lato, primo subgloboso vel campanulato, dein explanato, margine leviter undulato, sicco, paene glabro, partim subfibrilloso, griseo-aurantio vel aureo-fulvo, margine pallide fulvo, in vestutate omnino brunneo, tacto xanthino, dein tarde rubro-aurantio; lamellis confertis, emarginato-adnatis, 3–6 mm latis, primo pallide flavo-albis dein cinnamomeis; stipite 60–80 mm longo, 9–12 mm crasso, clavato, aequali vel ad basim leviter attenuato, sicco, pileo subconcololi, tacto xanthino et tarde rubro-aurantiascenti, leviter subfibrilloso, velo pauculo; carne primo albida, secto xanthina, et tarde rubro-aurantiascenti; sapore miti, interdum leviter amaro; odore leviter farinaceo; basidiosporis subglobosis vel latellipsoideis, 5.0–6.5 × 3.5–4.7 μm, asperatis; basidiis 4-sporigeris, 25–35 × 4–6 μm; cheilocystidiis cylindricis vel fusiformibus, 30–38 × 3–8 μm.

Holotypus: Yukyuzan, Nagaoka-shi, Niigata Pref. 24 Sept. 1999, S. Miyauchi leg., in Herbario TNS conservatus (TNS-F-101514).

Etymology: The epithet "*reticulisporus*" refers to basidiospores ornamented with fine lines of this species.

Pileus 40–70 mm in diam, hemispherical or campanulate when young, becoming expanded, broadly umbonate, or pluvinate-convex with a wavy margin, dry,

nearly glabrous, slightly innately scaly to minutely fibrillose in places (Fig. 4), cuticle separable, at first pale yellow (4A4), later greyish orange (5B6) to golden yellow (5B8), with margin pale yellow to light yellow (3A3–3A4), light brown (6D8) entirely when older, turning vivid yellow (3A8) when touched, then reddish orange (7A8) very slowly. Lamellae crowded, with several lamellulae, adnate to sinuate, arcuate, 3–6 mm wide, at first pale yellowish white (3A2), later light brown (6D6), turning reddish orange at the edges. Stipe 60–80 × 9–12 mm, nearly equal, with a somewhat swollen base up to 15 mm, solid then fistulose, surface coloured paler than pileus, becoming vivid yellow (3A8) when touched, then reddish orange (7A8) very slowly, dry, glabrous, slightly fibrous in places. Context whitish, becoming vivid yellow when cut, then reddish orange gradually in places, soft. Taste mild or sometimes slightly bitter, smell faint. Pileus surface discoloring to dark brown with 5% KOH, but the context little. Basidio-spores subglobose to broadly ellipsoid, 5.0–6.5 × 3.5–4.7 μm (excluding ornamentation), quotient of the length/width 1.2–1.4, coarsely verrucose (Fig. 1b), under SEM the warts connected by fine lines and forming an incomplete reticulum (Fig. 2a). Basidia 25–35 × 4–6 μm, four-sterigmate, not clamped at the base (Fig. 1c). Cheilocystidia cylindrical or fusiform, 30–38 × 3–8 μm (Fig. 1e). Pleuro- and caulocystidia absent. Cuticular hyphae of the pileus surface tubular, with element cells 25–50 × 2.0–6.0 μm, clamp connections present (Fig. 1d).

Habitat: solitary to gregarious on the ground in deciduous forests, in particular with *Quercus serrata* Thunb. ex Murray and *Quercus mongolica* var. *grosseserrata* (Blume) Rhed. et Wilson.

Holotype: Yukyuzan, Nagaoka-shi, Niigata Pref., in *Q. serrata* forest, 24 Sept. 1999, collected by S. Miyauchi [TNS-F-101514, preserved in herbarium of

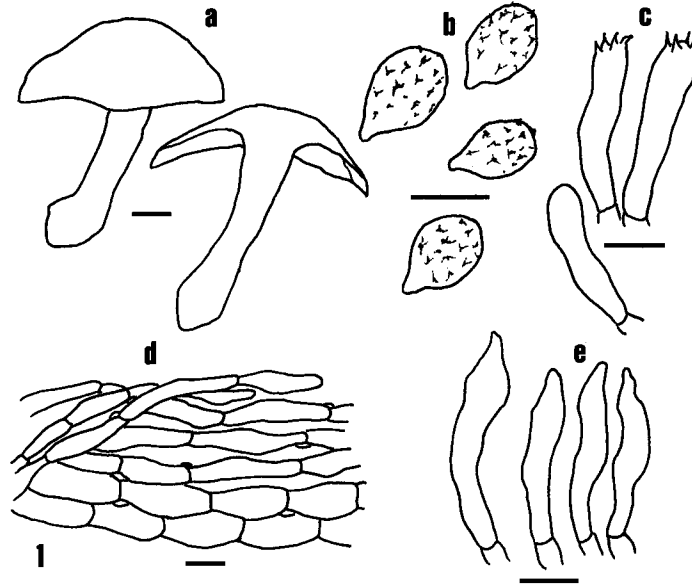


Fig. 1. *Cortinarius reticulisporus* (Holotype).

a. Basidiocarps; b. Basidiospores; c. Basidia; d. Pilleipellis; e. Cheilocystidia. Scale bars: a=1 cm; b=5  $\mu$ m; c, d, e=10  $\mu$ m.

National Science Museum, Tsukuba; isotype in Miyauchi private herbarium as SM9909241N].

Other specimens examined: Kamitomioka, Nagaoka-shi, Niigata Pref. in deciduous forest (*Q. serrata*, *Q. mongolica* var. *grosseserrata* etc.), 16 Sept. 1988, col. by S. Miyauchi (S. M.); Yukyuzan, Nagaoka-shi, Niigata Pref. in deciduous forest (*Q. serrata*, *Q. mongolica* var. *grosseserrata*, etc.), 28 Sept. 1990, col. by S. M.; Suyoshicho, Nagaoka-shi, Niigata Pref. in deciduous forest (*Fagus crenata* Blume, *Q. mongolica* var. *grosseserrata*, etc.), 3 Oct. 1997, col. by S. M.

Comments: *Cortinarius reticulisporus* is characterized by 1) the pileus, which is dry, at first pale yellow, later greyish orange to golden yellow, and changes to vivid yellow when touched; 2) the lamellae, which are pale yellowish white when young, later become light brown; 3) the stipe, which is nearly equal, coloured paler than the pileus, changes to vivid yellow when touched; 4) the basidiospores, which are small, broadly ellipsoid, verrucose, and incompletely reticulate with fine lines (under SEM); and 5) the habitat in deciduous forests. It belongs to the section *Bolares* of the subgenus *Leprocybe* and closely resembles *C. rubicundulus* (Rea) Pearson (Pearson, 1946; Hongo, 1963; Høiland, 1980; Moser, 1983; Brandrud et al., 1990). However, *C. rubicundulus* differs from *C. reticulisporus* in the following features: when injured the pileus and context discolour more quickly than in the latter; the pileus surface is more fibrillose-squamulose than in the latter; and the basidiospores are larger, narrowly ellipsoid to sub-

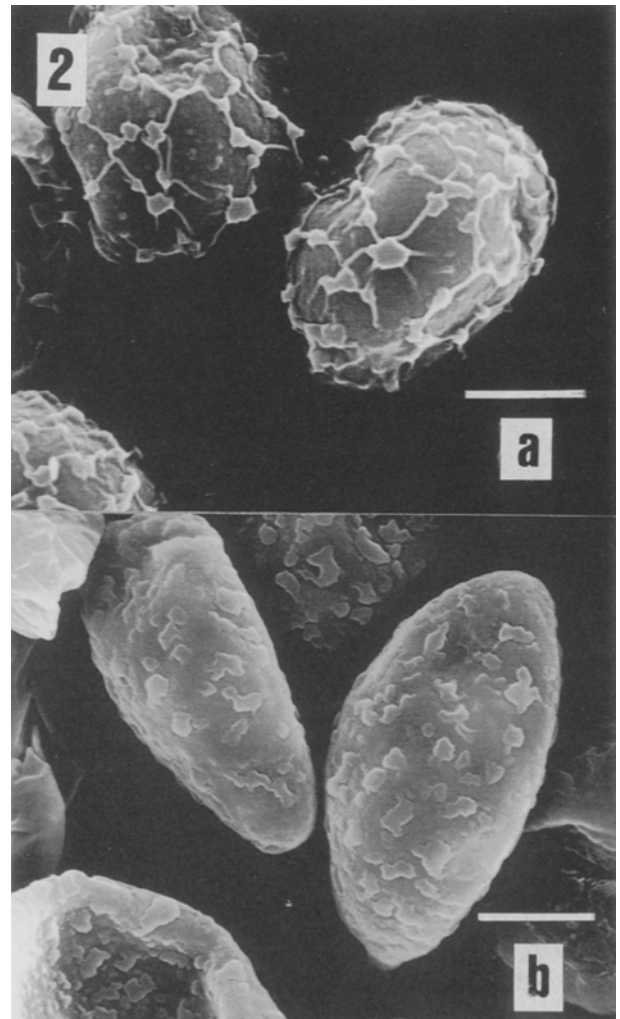


Fig. 2. SEM photographs of basidiospores.

a. *Cortinarius reticulisporus* (SM9909241N). Scale bar: 1  $\mu$ m. b. *Cortinarius rubicundulus* (SM9912281Sw). [Col. by G. Lucchini, in deciduous forest, 21 Aug. 1982. Tessin, Switzerland]. Scale bar: 1  $\mu$ m.



Fig. 3. Basidiocarps of *Cortinarius reticulisporus* (SM9909241N). Scale bar: 1 cm. The photograph was taken with a flash light 5 hr after collecting the basidiocarps.

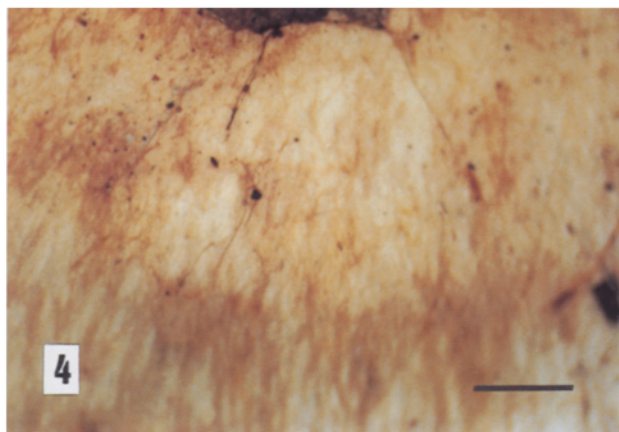


Fig. 4. Pileus surface of *Cortinarius reticulisporus* (SM9909241N). Scale bar: 2 mm.

fusiform, verrucose, and even under SEM not reticulate with fine lines (Fig. 2b). *Cortinarius pseudobolaris* Maire sensu A. H. Smith (Smith, 1939; Phillips, 1991), which is considered to be identical with *C. rubicundulus* by Moser (1983), is also similar to *C. reticulisporus*, but its basidiospores are subellipsoid to ventricose and somewhat larger. In addition, *C. pseudobolaris* occurs in coniferous forests. *Cortinarius semirubicundulus* M. M. Moser (Moser and Horak, 1975) from South America differs from *C. reticulisporus* in having longer and larger basidiospores.

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