

SHORT COMMUNICATION

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A new species and a new variety of *Cortinarius* sect. *Defibulati* from Niigata, Japan

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Abstract A new species and a new variety of *Cortinarius* sect. *Defibulati* are described and illustrated from Niigata, Japan. *Cortinarius rugosolilacinus* sp. nov., found in deciduous forests, is most similar to *Cortinarius livido-ochraceus* (= *C. elatior*), but differs mainly in its longer basidiospores, slender basidiocarp, and pale violet lamellae in the button stage. *Cortinarius pseudosalor* var. *niigatensis* var. nov., found in deciduous forests, is distinguished from the type variety by its brown to dark brown pileus with a wrinkled surface even when young. The differences between the two taxa and similar species are briefly discussed.

Key words *Cortinarius pseudosalor* var. *niigatensis* · *Cortinarius rugosolilacinus* · *Defibulati* · New species · New variety

This article is concerned with a new species and a new variety of *Cortinarius* sect. *Defibulati* (Moser 1983; Singer 1986) observed in Niigata Prefecture, Japan.

In the following description, microscopic characters were investigated on 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 in the species description follow Kornerup and Wanscher (1978). For the size of basidiospores, a total of 20 spores from mounted lamellae were measured in each species.

***Cortinarius rugosolilacinus* Miyauchi, sp. nov.** Figs. 1–3

Pileo 50–80 mm lato, primo conico vel campanulato, dein umbonato-explanato, margine infracto, viscido, radiatim rugoso, primo brunneo vel ochraceo-brunneo et margine

pallide lilacino, dein brunneo, margine brunneolofulvo; lamellis confertis, adnatis, ventricosis, 6–8 mm latis, primo pallide lilacinis dein griseolo-aurantinis vel pallide brunneis; stipite 80–130 longo, 8–12 mm crasso, cylindraco sursum attenuato, ad basim leviter radicato, viscido, leviter lilacino, supra cortinam leviter striato; carne albida vel leviter cremea vel pallide brunneola; sapore miti; odore leviter farinaceo; basidiosporis fusoides vel limoniiformibus, 13.0–15.0 × 6.8–7.2 μm, asperatis; basidiis 4-sporigeris, 25–35 × 6.0–9.0 μm; cheilocystidiis bursiformibus, 30–40 × 13–17 μm. Pleurocystidiis nullis.

Holotypus: Sugiike, Sado Island, Niigata Pref. Oct. 19, 2000, S. Miyauchi leg., in Herbario TNS conservatus (TNS-F-101523).

Etymology: *rugosolilacinus* = wrinkled and violaceous.

Pileo 50–80 mm in diameter, conical or campanulate when young, becoming expanded and umbonate with an incurved margin, viscid, smooth at the button stage, soon radially wrinkled to one-third, at first light brown (7D7) to brown (7E6) and slightly lilaceous at the margin, later light brown (7D7) to brown (7E4), with margin brownish-yellow (5C7) or light brown (6D6), in places grayish-brown (7E3) or brown (7E4). Lamellae fairly crowded, with several lamellulae, adnate and somewhat emarginate, ventricose, 6–8 mm wide, initially pale violet-white (16A2, 17A2), later grayish-orange (6B4) to brownish (6D7) with white edges, from the button stage transversely venose. Stipe 80–130 × 8–12 mm, subcylindrical, tapering upward and somewhat subradicating at the base, viscid, covered with a pale whitish-violet veil (16A2, 17A2), slightly longitudinally furrowed above the cortina zone, pale whitish-violet (16A2, 17A2) below it, somewhat diffract and yellowish-white (3A2) at the base when old. Context whitish or slightly creamy, somewhat brownish in old specimens, somewhat soft. Taste mild, smell slightly farinaceous. Pileus context slightly discoloring to brownish with 5% KOH. Basidiospores fusiform to lemon-shaped or amygdaliform, 13.0–15.0 × 6.4–7.2 μm (including ornamentation), length/width quotient 1.9–2.1, coarsely verrucose (Fig. 1b). Basidia 25–35 × 6.0–9.0 μm, without clamps (Fig. 1c). Cheilocystidia broadly clavate 30–40 × 13–17 μm (Fig. 1e). Pleuro- and

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caulocystidia absent. Cuticular hyphae of the pileus surface tubular, 5.0–8.0 μm wide without clamps (Fig. 1d).

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

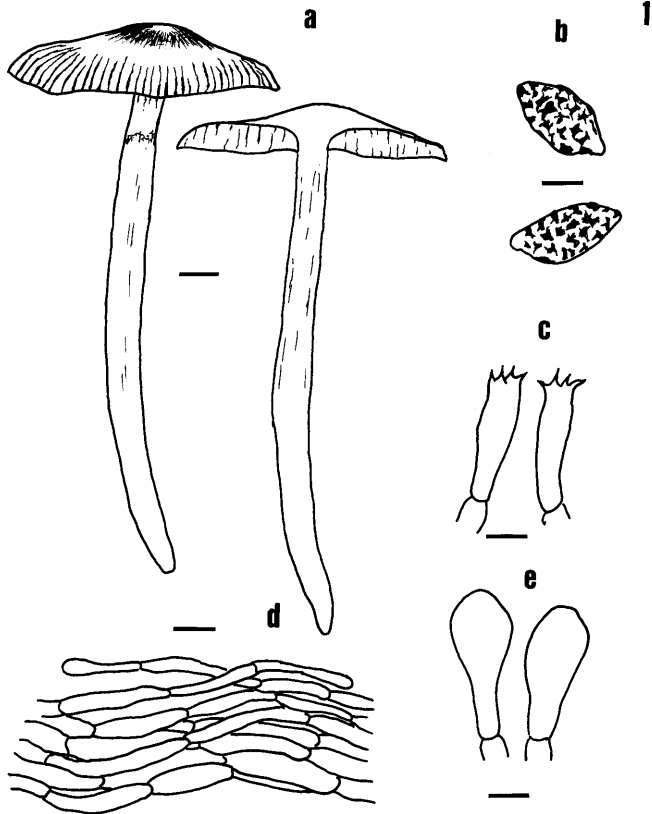
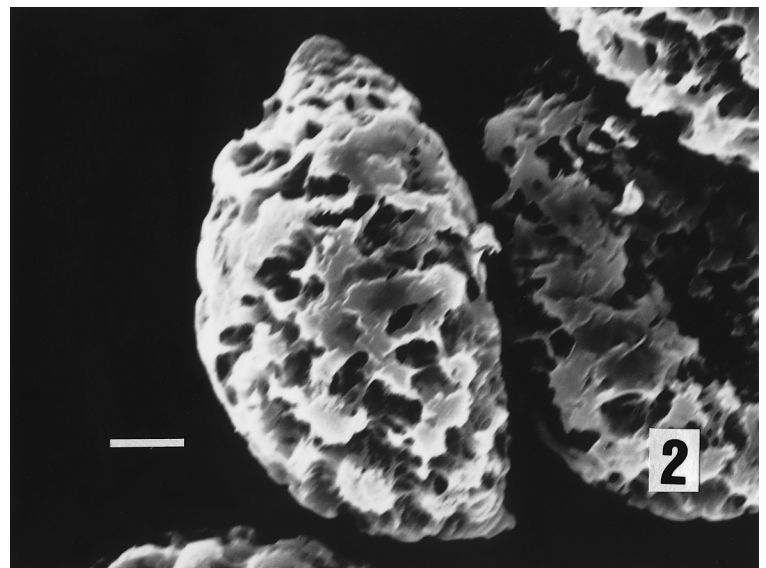


Fig. 1. *Cortinarius rugosolilacinus* (holotype). **a** Basidiocarps. **b** Basidiospores. **c** Basidia. **d** Pilleipellis. **e** Cheilocystidia. Bars **a** 1 cm; **b** 5 μm ; **c–e** 10 μm

Fig. 2. *Cortinarius rugosolilacinus* (isotype). Basidiospore (SEM photomicrograph). Bar 2 μm



Holotypus: Sugiike, Sado Island, Niigata Pref., in deciduous forest of *Q. serrata* and *Q. mongolica* var. *grosseserrata*, Oct. 19, 2000, collected by S. Miyauch (TNS-F-101523; preserved in National Science Museum, Tsukuba Herbarium); Isotype in Miyauchi private herbarium as SM00101902N. Other specimens examined: Otowaike, Sado Island, Niigata Pref., in a deciduous forest (*Q. serrata*, *Q. mongolica* var. *grosseserrata*, etc.), Oct. 3, 1993, collected by S. Miyauchi; Sugiike, Sado Island, Niigata Pref., in a deciduous forest (*Q. serrata*, *Q. mongolica* var. *grosseserrata*, etc.).

This species belongs to the *Cortinarius livido-ochraceus* complex in *Cortinarius* Sect. *Defibulati*. Moser (1983) classified it into four species: *Cortinarius livido-ochraceus* (Berk.) Berk. (as *Cortinarius elatior* Fr.) (Berkeley 1836; Fries 1838; Lange 1935; Marchand 1983; Dähncke 1993), *Cortinarius pseudosalor* J.E. Lange (= *Cortinarius mucifluoides* Rob. Henry) (Lange 1935; Orton 1960; Henry 1963, 1985; Marchand 1983; Hongo 1987; Phillips 1991), *Cortinarius stillatitius* Fr. (Fries 1838; Bresadola 1927–1933), and *Cortinarius integerrimus* Kühner (Kühner 1959; Marchand 1983). On the other hand, Brandrud et al. (1990) and Breitenbach and Kränzlin (2000) presented the complex as two species: *C. livido-ochraceus* (Berk.) Berk. (Brandrud et al. 1990; Breitenbach and Kränzlin 2000) and *C. stillatitius* Fr, treating *C. pseudosalor* and *C. integerrimus* as synonyms of the latter. *C. livido-ochraceus* is distinct from other members of the complex in large size of basidiocarp, transversely venose lamellae, and diffractive veil remnants on the stipe. I follow Moser (1983), considering that *C. pseudosalor* should be separated from *C. stillatitius* and *C. integerrimus* because its lamellae are slightly veined, the basidiospore is a little smaller, and the lamellae of the last two are not veined.

Cortinarius rugosolilacinus is characterized by its following characters: (1) the pileus is viscid and radially wrinkled; (2) the lamellae are pale violet-white in the button stage; (3) the stipe is slender and its surface somewhat diffract; (4) the basidiospores are fusiform to lemon-shaped and their

Fig. 3. *Cortinarius rugosolilacinus*.
Basidiocarps in the habitat. Bar
2 cm



length/width quotient (Q) is larger than 1.9; and (5) the cheilocystidia are broadly clavate. Judging from these characters, this species is most similar to *C. livido-ochraceus* and its variety (Miyuchi 2000) among the complex, in particular, because of the radially wrinkled pileus and somewhat clavate cheilocystidia, but differs from it in slender basidiocarp, pale violet-white lamellae in the button stage, longer basidiospores, and Q value larger than 1.9. The slender habit and the pale violet-white lamellae in the button stage place *C. rugosolilacinus* in a position close to the *C. pseudosalor* group, including *C. stillatitius* and *C. integerrimus*, but the other characters such as the shape of cheilocystidia and radially wrinkled pileus, clearly differentiate the former from the latter group. *Cortinarius collinitus* (Sowerby: Fr.) Fr. and *Cortinarius trivialis* J.E. Lange belonging to Section *Myxacium* (Singer 1986) are also similar in their appearance, but can easily be distinguished from *C. rugosolilacinus* by having clamps in veil and pileus hyphae.

Cortinarius pseudosalor* J.E. Lange var. *niigatensis
Miyuchi, var. nov. Figs. 4–6

Pileo 45–70 mm lato, primo conico vel campanulato, dein umbonato-explanato, viscido, primo brunneo vel rubro-brunneo, dein brunneo vel obscure brunneo, margine infracto in juventute radiatim rugoso; lamellis confertis, adnatis, ventricosis, 6–11 mm latis, primo pallide argillaceis, dein griseo- vel brunneo-aurantinis, parum venosis; stipite 60–80 mm longo, 8–11 mm crasso, cylindraceo, ad basim leviter attenuato-radicato, viscido, leviter lilacino, supra cortinam parum striato; carne albida vel crenea, supra stipitem pallide lilacina; sapore miti; odore leviter farinaceo; basidiosporis limoniformibus vel amygdalinis, $10.2\text{--}13.0 \times 6.2\text{--}7.2\mu\text{m}$, asperatis; basidiis 4-sporigeris, $25\text{--}35 \times 6.0\text{--}9.0\mu\text{m}$; cheilocystidiis bursiformibus, $30\text{--}40 \times 15\text{--}20\mu\text{m}$. Pleurocystidiis nullis.

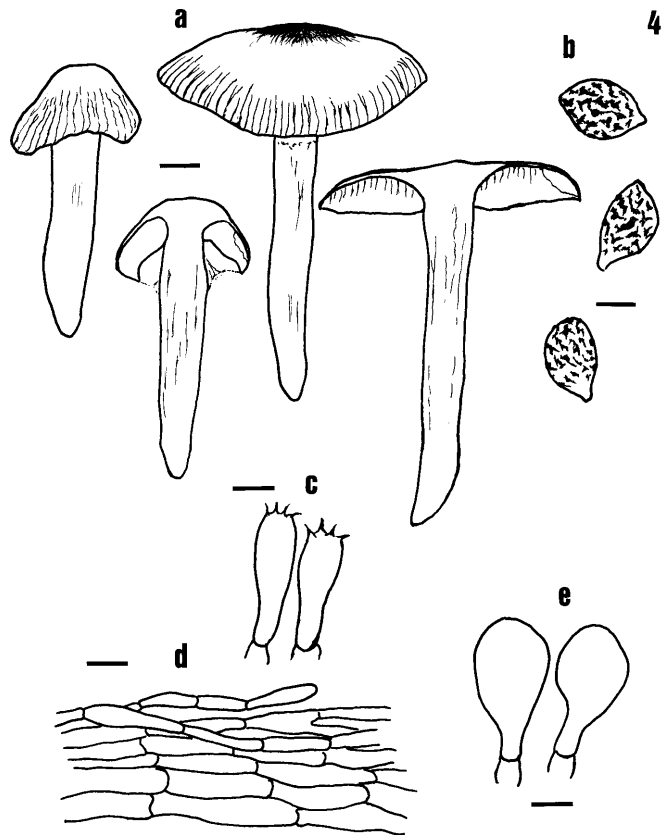


Fig. 4. *Cortinarius pseudosalor* var. *niigatensis* (holotype). **a** Basidiocarps. **b** Basidiospores. **c** Basidia. **d** Pileipellis. **e** Cheilocystidia. Bars **a** 1 cm; **b** 5 μm ; **c**–**e** 10 μm

Fig. 5. *Cortinarius pseudosalor* var. *niigatensis* (isotype). Basidiospore (SEM photomicrograph). Bar 1.7 μ m

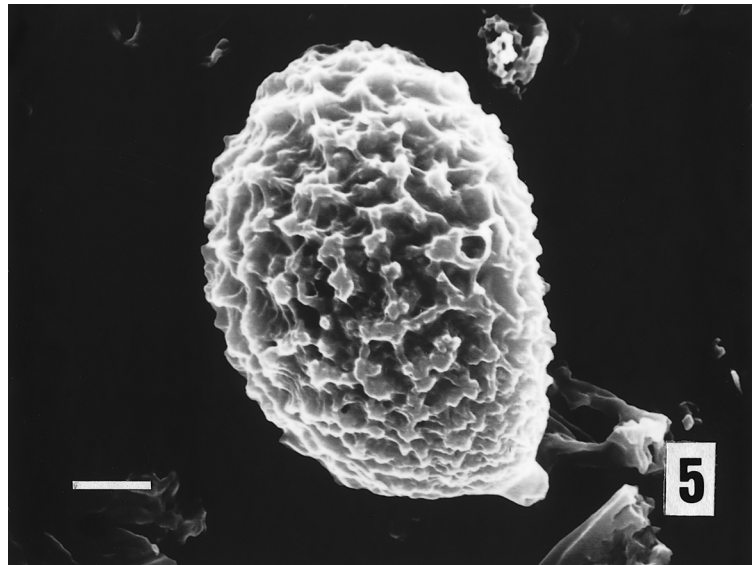


Fig. 6. *Cortinarius pseudosalor* var. *niigatensis*. Left: cross section of young basidiocarp. Right: young basidiocarp. Bar 1 cm



Holotypus: Happodai, Nagaoka-shi, Niigata Pref., Oct. 17, 2000, S. Miyauchi leg., in Herbario TNS conservatus (TNS-F-101525).

Etymology: *niigatensis* = from Niigata district.

Pileus 45–70 mm in diameter, conical or campanulate when young, becoming expanded, viscid, at first brown (7D8) to reddish-brown (8D8), somewhat dark brown (7F8) around center, later brown (7E7–7E8) to dark brown (7F8) at the center, becoming light brown (7D6) around margin, margin abruptly incurved, radially wrinkled even when young. Lamellae crowded, with several lamellulae, adnate and sometimes emarginately adnate, 6–11 mm wide, pale

orange (5A3) when young, later grayish-orange to brownish-orange (6B5, 6C7) with white edge, slightly venose, when old transversely striate. Stipe 60–100 \times 8–11 mm, somewhat fusiform and subradicating, viscid, covered with violet-white to pale violet (18A2–18A3) slimy veil, whitish and not striate above the cortina zone when young. Context whitish to creamy, tinted pale violet (18A2) in the upper part of stipe. Taste mild, smell slightly farinaceous. Pileus context slightly discoloring to brownish change with 5% KOH. Basidiospores lemon-shaped to amygdaliform, 10.2–13.0 \times 6.2–7.2 μ m, quotient 1.6–1.8, coarsely verrucose (Fig. 4b). Basidia 25–35 \times 6.0–10 μ m,

without clamps (Fig. 4c). Cheilocystidia broadly clavate to sphaeropedunculate $30\text{--}40 \times 15\text{--}20\ \mu\text{m}$ (Fig. 4e). Pleuro- and caulocystidia absent. Pileus cuticles $5.0\text{--}7.0\ \mu\text{m}$ wide without clamps (Fig. 4d).

Habitat and distribution: solitary to gregarious on the ground in deciduous forests, in particular, *Quercus serrata*, *Quercus mongolica* var. *grosseserrata*, and *Fagus crenata* Blume, etc.

Holotype: Happodai, Nagaoka-shi, Niigata Pref., in a deciduous forest of *Q. serrata* and *Q. mongolica* var. *grosseserrata*, Oct. 17, 2000, collected by S. Miyauchi (TNS-F-101525, preserved in National Science Museum, Tsukuba herbarium); isotype in Miyauchi private herbarium as SM0010171N. Other specimens examined: Happodai, Nagaoka-shi, Niigata Pref., in a deciduous forest (*Q. serrata*, *Q. mongolica* var. *grosseserrata*, *F. crenata*, etc.), Oct. 6, 1991, collected by S. Miyauchi; Yoshida, Tokamachi-shi, Niigata Pref. in a mixed forest (*Q. serrata*, *Q. mongolica* var. *grosseserrata*, *F. crenata*, *Pinus densiflora* Siebold et Zucc., etc.); Suwa, Tsugawa-machi, Niigata Pref., in a deciduous forest (*Q. serrata*, *Q. mongolica* var. *grosseserrata*, etc.).

Observations: *Cortinarius pseudosalor* var. *niigatensis* is characterized as follows: (1) the pileus is viscid, brown to dark brown, and radially wrinkled even when young; (2) the lamellae are brownish-orange when old; (3) the stipe is viscid and pale whitish-violet; (4) the basidiospores are amygdaliform to lemon-shaped and verrucose; (5) the cheilocystidia are balloon-shaped. It is separated from the type variety by its finely wrinkled pileus even at the button stage and slightly smaller basidiospores. *C. integerrimus* and *C. stillatitius* are also close to *C. pseudosalor* var. *niigatensis*. The former two species, however, have comparatively larger basidiospores, their lamellae are not venose, and their pileus surface is smooth.

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