

# ウラベニホテイシメジについての新学名の提案

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## ***Entoloma sarcopum* nom. nov. for *E. crassipes* and *Rhodophyllus crassipes*\***

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### **Abstract**

The names *Entoloma crassipes* Imazeki & Toki and *Rhodophyllus crassipes* (Imazeki & Toki) Imazeki & Hongo, both given to an edible agaric mushroom in Japan, are unavailable for this taxon, the former being a later homonym of *E. crassipes* Petch and the latter being nomenclaturally superfluous. The name *E. sarcopum* is proposed as a replacement. A revised description is also presented.

**Key Words:** Agaricales, edible mushroom, *Entoloma crassipes*, Entolomataceae, nomenclature, *Rhodophyllus crassipes*.

In Japan, many species of wild mushrooms have traditionally been used as foods by local people. One of these is an agaric species, *Entoloma crassipes* Imazeki & Toki (also better known as *Rhodophyllus crassipes* (Imazeki & Toki) Imazeki & Hongo) (Imazeki and Toki, 1954; Imazeki and Hongo, 1957; Ito, 1959; Hongo, 1987; Imazeki et al., 1988).

It is unfortunate that neither *E. crassipes* nor *R. crassipes* are correct names for this well-known edible species in Japan because of the two following reasons. First, as already has been pointed out by Pegler (1986), the name *E. crassipes* Imazeki & Toki published in 1954 is

a later homonym of *E. crassipes* Petch published in 1924, hence illegitimate and should be rejected according to Article 53.1 of the "International Code of Botanical Nomenclature" (ICBN) (Greuter et al., 1994). Secondly, although *E. crassipes* Imazeki & Toki was later transferred to *Rhodophyllus* Quél. by Imazeki and Hongo (in Hongo, 1957) as *R. crassipes* (Imazeki & Toki) Imazeki & Hongo, the name *R. crassipes* is also unavailable for this taxon because the generic name *Rhodophyllus* Quél. is superfluous later synonym of the name *Entoloma* (Fr. ex Rabenh.) Kummer (Donk, 1949) (ICBN Article 11.5 and Article 52.1).

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We therefore propose a new name for this taxon with a revised description on the basis of a study of the type and additional collections.

In the following description color notations and names in parentheses (e.g., 5E5-bronze) are taken from Kornerup and Wanscher (1967) and color names in double quotation marks from Rayner (1970). Microscopic descriptions are derived from rehydrated dried specimens mounted in 2.5 % KOH aqueous solution.

***Entoloma sarcopum*** Nagasawa & Hongo, nom. nov. Figs. 1–10.

Replaced syn.: *E. crassipes* Imazeki & Toki, Bull. Gov. For. Exp. Stat., Meguro 67: 39. 1954, non *E. crassipes* Petch, Ann. Roy. Bot. Gard., Peradenis 9: 214. 1924 [= *Lepista hyalodes* (Berk. & Br.) Pegler, fide Pegler, 1986].

*Rhodophyllus crassipes* Imazeki & Hongo in Hongo, J. Jpn. Bot. 32: 146. 1957 [as (Imazeki & Toki) Imazeki & Hongo].

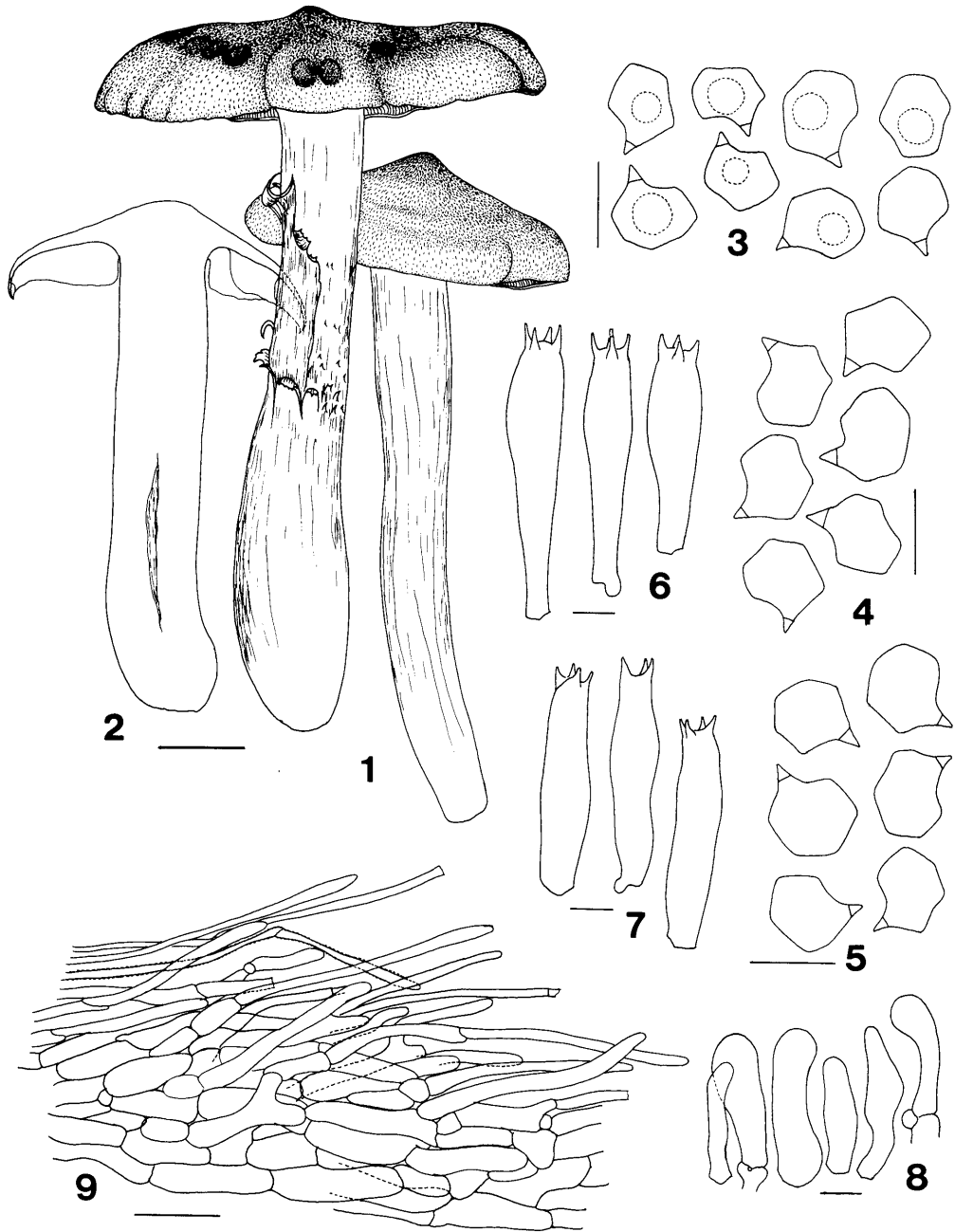
Col. illust.: Imazeki and Toki, Bull. Gov. For. Exp. Stat., Meguro 67: Pl. 1A, 1954 [figures are partly reproduced in Imazeki and Hongo (1957, Pl. 35, fig. 203)]; Imazeki and Hongo, Col. Ill. Mushrooms Japan 1: Pl. 68, fig. 486, 1987; Imazeki et al., Fungi of Japan, p. 286–287, 1989.

Basidiocarps (Figs. 1, 2) tricholomatoid, (medium- to) large-sized, stout. Pileus (50–) 60–150 mm broad, solid and brittle particularly when old, subconic then expanding to convex to plano-convex or finally plano-depressed, subconic-umbonate or dull umbonate, margin incurved and inrolled at first, decurved with age; surface glabrous, moist to dry, slippery when wet, non-hygrophanous, occasionally subtranslucent on the disc when fresh and moist, opaque, often shiny in old specimens, yellowish brown (5E5-bronze, 5E6-mustard brown, 5D5-clay), "Isabelline", or tinted more or less "Olivaceous" on the disc, often discolor-

ing to dull grayish yellow (4B2-putty to 4B3-ivory, "Honey") at the margin, becoming tinged with brown (6E6-tan, 7E5-Somalis) when old, finely and densely streaked white (Fig. 10), particularly over the disc, occasionally scattered with small to large circular spots (Fig. 1) concolorous with the ground color or somewhat darker (as if tightly pressed by a finger). Lamellae comparatively broad (7–13 mm broad), moderately close, with 1–3 tiers of lamellulae, sinuate to deeply emarginate or nearly free, "Buff" at first ["sordide albidis (Pale olive buff)" fide Imazeki and Toki, 1954], later "Rosy Buff", edges eroded. Stipe (45–)70–170 mm long, (8–)10–20(–25) mm wide at the midway, cylindrical to subventricose, at times tapering below or enlarged at the base, solid to stuffed; surface white, innately fibrillose; base rounded to truncate or rarely pointed, often deeply inserted in soil. Flesh white, hard in the rind of both pileus and stipe; odor more or less farinaceous; taste gradually bitter (especially in that of the lower stipe). Basidiospore print grayish orange (5B4-5) to brownish orange (5C6-Pompeian yellow) (in 13 year-old print).

Basidiospores (Figs. 3–5) (n=132, from 7 collections including holotype) 7.5–11.5 × 6.5–9 μm (9.1±0.7 × 7.6±0.6 μm), length/width ratio 1.0–1.4 (1.2±0.1) [holotype: n=30: 7.5–10.5 × 6.5–9 μm (9.1±0.6 × 7.4±0.6 μm), length/width ratio 1.1–1.4 (1.2±0.1)], 5–6(–7)-angled in side view, hyaline, thin to moderately thick-walled, typically one-guttulate. Basidia (Figs. 6, 7) (n=46, from 3 collections) 40–60 × 10–14(–14.5) μm (51.1±5.7 × 11.5±1.0 μm), 4-spored, occasionally 2 to 3-spored, clamped at the base. Pleurocystidia absent, but hymenium occasionally intermixed with subventricose to ventricose-rostrate or strangulated cells, 30–38 × 5–7 μm. Edges of lamellae occasionally with basidia, mostly of sterile clavate cells (basidioles ?), intermixed with subventricose (27–35 ×

*Entoloma sarcopum* nom. nov.



FIGS. 1–9. Basidiocarps and microstructures of *Entoloma sarcopum*. Figs. 1, 2. Basidiocarps. Figs. 3–5. Basidiospores. Figs. 6, 7. Basidia. Fig. 8. Element cells of a lamella edge. Fig. 9. Portion of a pileipellis. Fig. 1 from TMI 12272; Fig. 2 from TMI 22251; Fig. 3 from TFM-F2947 (holotype); Figs. 4, 6 from TMI 5846; Figs. 5, 7 and 8 from TMI 13899; Fig. 9 from TMI 22251. Scale bars = 2 cm in Figs. 1, 2; 10  $\mu$ m in Figs. 3–8; 40  $\mu$ m in Fig. 9.

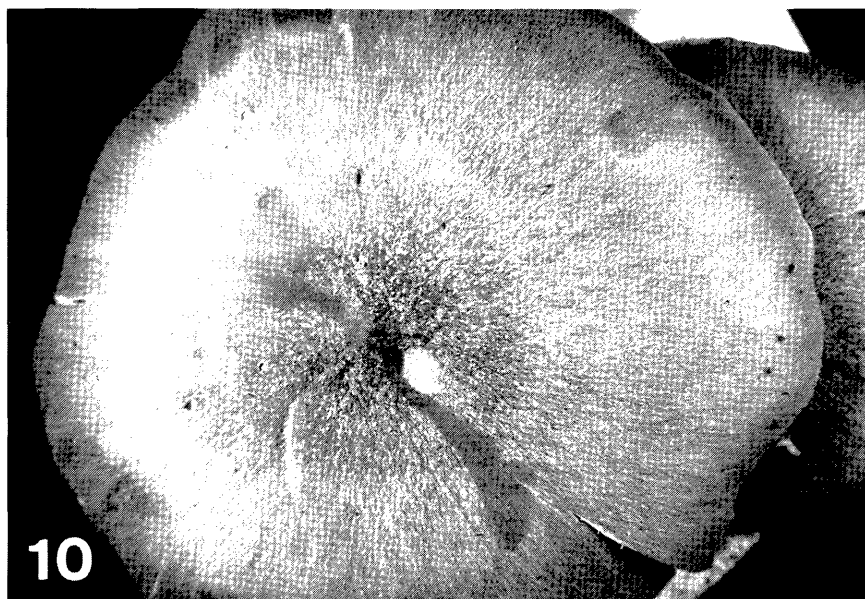


Fig. 10. Pileus surface of *Entoloma sarcopum* (TMI 12272) showing fine white speckles.

8–11  $\mu\text{m}$ ) or tubular ( $-28 \times 3\text{--}4 \mu\text{m}$ ) cells in old specimens (Fig. 8). Hymenophoral trama regular, of tubular to inflated hyphae, up to 25  $\mu\text{m}$  wide. Pileipellis (Fig. 9) two-layered; suprapellis 50–100  $\mu\text{m}$  thick at the midradius, a cutis or ixocutis of radially arranged, tubular to slightly inflated hyphae, 2–6  $\mu\text{m}$  wide, hyaline, walls smooth or rarely fine granular encrusted, terminal cells occasionally enlarged near or at the apex and up to 11  $\mu\text{m}$  wide; subpellis 60–90  $\mu\text{m}$  thick at the midradius, consisting of compactly arranged, tubular to inflated, comparatively short- to long-celled hyphae, 5–22.5  $\mu\text{m}$  wide, walls more or less thickened, smooth, refractive, with granular olivaceous contents which soon disappear in KOH (2.5%); occasionally intermixed with hyphae with oleiferous, homogeneous content. Clamps frequent.

Habit, habitat and distribution. Scattered to gregarious, rarely solitary, terrestrial, in *Quercus*, *Fagus* or *Castanopsis* forests with or without conifers. Possibly widespread and common, at least in Honshu, Shikoku and

Kyushu. Fruiting in autumn (late September to early November).

Collections examined. AKITA: Akita city, Taihei-Hatta, 30 Sept. 1973, E. Nagasawa (TMI 2836). TOKYO: Minamitama, Asakawa, 4 Oct. 1951, S. Toki (TFM-F2947, holotype !). TOTTORI: Yazu-gun, Funaoka-cho, Ohe, 12 Oct. 1974, E. Nagasawa (TMI 1928); Tottori city, Ochidani, 14 Oct. 1978, E. Nagasawa (TMI 5846); Tottori city, Koro, 14 Oct. 1983, C. Matsushita (TMI 13899); Tottori city, Kando, 16 Oct. 1985, E. Nagasawa 85-481 (TMI 12272); Tottori city, Kakuji, 5 Nov. 1991, N. Mizuui (TMI 16637); Tohoku-gun, Akasaki-cho, Senjyo-zan, 3 Oct. 1994, M. Uyama (TMI 18865); Tottori city, Ochidani, 26 Sept. 1996, E. Nagasawa 96-157 (TMI 22251); Tohoku-gun, Sekigane-cho, Yaokuri, 27 Sept. 1996, E. Nagasawa 96-161 (TMI 22405); Tottori city, Iwakura, 21 Oct. 1999, E. Nagasawa 99-191 (TMI 22406). HIROSHIMA: Hiba-gun, Saijyo-cho, 23 Sept. 1976, J. Kashiwagi (TMI 4304). All specimens exam-

ined except for the holotype are deposited in the herbarium of the Tottori Mycological Institute (TMI); the holotype is in the herbarium of Forestry and Forest Products Research Institute, Tsukuba (TFM).

*Entoloma sarcopum*, so far known only from Japan, is well characterized by the robust tricholomatoid basidiocarps with a thick white stipe, the non-viscid and non-hygrophanous, yellowish brown pileus densely and finely streaked white over the surface, the bitter taste of the flesh (when fresh), and the isodiametric to heterodiametric basidiospores with a length/width ratio of 1.0–1.4. Concerning the taste Imazeki and Toki (1954) originally recorded that "the taste is mild when fresh but becomes slightly bitter when cooked." So far we have examined, it is really bitter, though not so strong, even in fresh basidiocarps, particularly in the flesh of the lower part of stipe.

This species appears closely related to *E. sinuatum* (Bull. ex Pers.: Fr.) Kummer (= *E. eulividum* Noordeloos; *E. lividum* sensu auct. plur.) which is well known in the European literature (Noordeloos, 1981, 1985; 1992; Phillips, 1981; Moser, 1983; Orton, 1984; Bon, 1987; Breitenbach and Kränzlin, 1995), having in common a robust habit, a moist to dry non-hygrophanous pileus, the habitat in fagaceous forests, and 5-6-angled basidiospores with a length/width ratio of 1.0–1.4. The European species, however, has lamellae which are typically tinged yellowish when young, a somewhat differently colored pileus (e.g., "creamy yellow to beige or milky coffee color" in Bon, 1987; "pale gray-livid, grey ochraceous or cream color" in Noordeloos, 1992) and a mild to farinaceous (Breitenbach and Kränzlin, 1995) or nasty and rancid-raphanoid (Noordeloos, 1981) taste when fresh. Further, *E. sinuatum* is well known as a poisonous species (Bresinsky and Besl, 1985). The fungus reported as *E. lividoal-*

*bum* (Kühn. & Romagn.) Kubicka by Largent (1994) from North America also closely resembles *E. sarcopum* according to the description and illustrations presented by Largent, though the fine whitish streaks of the pileus surface characteristic in the Japanese taxon was not referred in the description. However, it seems to be different primarily in having a white stipe becoming brunnescent at the base with age or on handling and a farinaceous taste. *E. lividoalbum* ss. European authors (Kühner and Romagnesi, 1955; Noordeloos, 1992; Breitenbach and Kränzlin, 1995) is apparently different from *E. sarcopum* in having a distinctly hygrophanous, translucent pileus.

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## 摘 要

### ウラベニホテイシメジについての新学名の提案

長沢栄史・本郷次雄

食用きのこととして良く知られているウラベニホテイシメジに対して、従来 *Entoloma crassipes* あるいは *Rhodophyllus crassipes* の学名が用いられて来たが、これらの名前は植物命名規約に従っておらず認められない。従って本菌に対して新たに *E. sarcopum* の学名を提案した。また、正基準標本および新たな標本の観察結果に基づいて本菌を再記載した。