

## Short Communication

A new record of *Mycena picta* from Japan

Toshizumi Miyamoto, Joo Young Cha and Tsuneo Igarashi

Department of Forest Science, Faculty of Agriculture, Hokkaido University, Sapporo 060, Japan

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***Mycena picta*, a rare species of Agaricales, is reported for the first time from Japan, based on specimens collected in Hokkaido.**Key Words—*Abies sachalinensis* forest; basidiomycetes; *Mycena picta*; *Picea abies* forest.

Fries provided the first description of *Agaricus pictus* Fr. in 1815, since when this species has been placed in various genera, such as *Omphalia* (Gillet, 1876) and *Xeromphalina* (Smith, 1953; Miller, 1968). Singer (1975) suggested that it belonged to *Mycena* or to some genus other than *Xeromphalina*, and Harmaja (1979) placed it in the genus *Mycena* as *M. picta* (Fr.: Fr.) Harmaja. Maas Geesteranus (1983) also recognized it as a species of *Mycena* and established a new section *Pictae* (A. H. Smith) Maas G. on the basis of its unique set of characteristics. Due to the rarity of *M. picta*, few illustrations of its microscopic features (Miller, 1968; Maas Geesteranus 1983; Breitenbach and Kränzlin 1991) and photographs of basidiomata (Breitenbach and Kränzlin, 1991) have been published in the literature.

During our investigations of the genus *Mycena* in the Uryu Experimental Forest of Hokkaido University, Hokkaido from 1991 to 1995, this rare species was found. The specimens, which represent the first record of the species from Japan, are described and illustrated here.

## Materials and Methods

The description of macroscopic features is based on fresh material. Names of colors and codes in parentheses are taken from Munsell (1990). For microscopic observations, dried basidiomata were placed in 95% ethanol for about 1 h, then transferred to tap water until they became pliable. Free-hand sections of the rehydrated basidiomata were examined in distilled water, 5% KOH, 10% NH<sub>4</sub>OH plus Congo Red and phloxine, and Melzer's reagent. The voucher specimens have been deposited at SAPA (Herbarium of the Faculty of Agriculture, Hokkaido University, Sapporo, Japan).

## Description and Discussion

***Mycena picta*** (Fr.: Fr.) Harmaja, *Karstenia* 19: 52. 1979.  
= *Agaricus pictus* Fr., *Obs. mycol.* 1: 83. 1815; Fr., *Syst. mycol.* 1: 166. 1821.

= *Omphalia picta* (Fr.: Fr.) Gillet, *Les Hyménomycètes*. p. 299. 1876.

= *Xeromphalina picta* (Fr.: Fr.) A. H. Smith, *Pap. Mich. Acad. Sci.* 38: 76. 1953.

Pileus 2.5–4 mm in diam, 2–4 mm high, at first cylindrical then cylindrical-campanulate, not expanding, depressed at center, radially grooved, margin smooth and slightly flared, surface glabrous, dry, translucent-striate up to center when wet, dark olive gray (5Y-3/2) to olive brown (2.5Y-4/4), pale yellow (5Y-7/3 to 2.5Y-7/4) at margin. Flesh very thin, watery; odor and taste not distinctive. Stipe 18–27 × 0.4–0.7 mm, filiform, apex slightly enlarged, cylindrical, glabrous, very pale brown (10YR-7/4) to light yellowish brown (10YR-6/4) at apex, dark brown (7.5YR-3/3) to yellowish red (5YR-4/6) downward, base connected to the substrate with a patch of radiating fulvous mycelium. Lamellae adnate to slightly decurrent, distant (15–18 reach the stipe), dark green-brown (10YR 8/2), edges horizontal, fulvous.

Basidiospores (5.6–)6.4–9.4(–10) × (2.6–)3.3–5.2 μm, ellipsoidal to oblong, hyaline, smooth, amyloid (pale blue in Melzer's reagent). Basidia clavate, 19.2–24 × 5.6–7.6 μm, with four or two sterigmata, hyaline, inamyloid, with basal clamps. Pleurocystidia not seen. Cheilocystidia made up of contiguous, catenulate chains of inflated cells; the terminal cells forming a sterile edge (lamellar edge homogeneous), globose, ellipsoid or clavate, 13.6–20 × 8–16 μm, covered with short-cylindrical, rarely furcate projections, 0.8–5.6 × 1.2–1.7 μm. Hyphae of hymenophoral trama parallel, irregularly inflated, dextrinoid, hyaline in water or 5% KOH. Hyphae of pileipellis parallel, 3–4 μm across in the uppermost layer, overlying inflated short-celled hyphae 10–20 μm across, smooth, septa sometimes with clamps, dextrinoid, pale brown in water or 5% KOH. Hyphae of the stipe parallel, smooth, 4–5.6 μm across in the surface, 8–12 μm across in the interior; caulocystidia absent.

Habitat: Solitary to gregarious, in closed coniferous forests, on needles of *Abies sachalinensis* Masters or *Picea abies* Karst., from August to early September, rare.

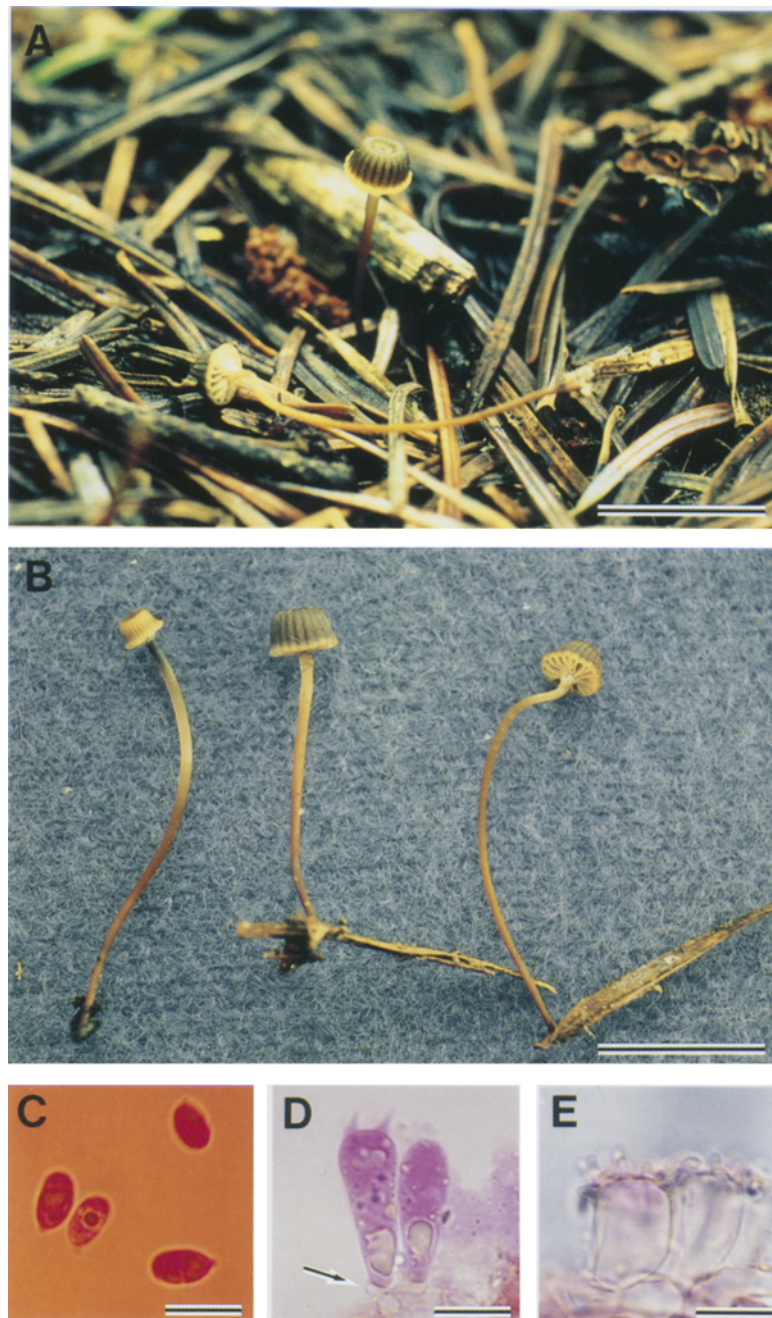


Fig. 1. *Mycena picta*

A, B. Basidiomata. C. Spores. D. Basidia (arrow indicates clamp connection). E. Terminal cells of the cheilocystidia. Scale bars: A, B=10 mm; C-E=10  $\mu$ m.

Specimens examined: HUMY9216-1, 9216-2, 9216-3, 9216-4 in *A. sachalinensis* forest, elev. 300 m, 4 Aug. 1992; HUMY9217 in *Picea abies* plantation forest, elev. 300 m, 15 Aug. 1992; HUMY9401 in *A. sachalinensis* forest, elev. 300 m, 29 Aug. 1994; HUMY9502-1, 9502-2, 9502-3, 9502-4 from *A. sachalinensis* forest, elev. 300 m, 6 Sept. 1995. All specimens were collected by T. Miyamoto in Uryu Experimental Forest of Hokkaido University, Uryu-gun, Horokanai-cho, Hokkaido, Japan.

Japanese name: Arinokasatake (new name).

*Mycena picta* has been reported from Europe (Cejp 1936; Harmaja 1979; Krieglsteiner 1981) and North America (Smith 1953; Miller, 1968) as a rare species. We observed the occurrence of only a few (1 to 5) basidiomata in *P. abies* forest (at least 100 m<sup>2</sup>) in 1992 and in *A. sachalinensis* forests (at least 200 m<sup>2</sup>) in each season of 1992 through 1995. Thus, this species also seems to be rare in northern Hokkaido, Japan.

Our specimens (Figs. 1A, B) are well represented in

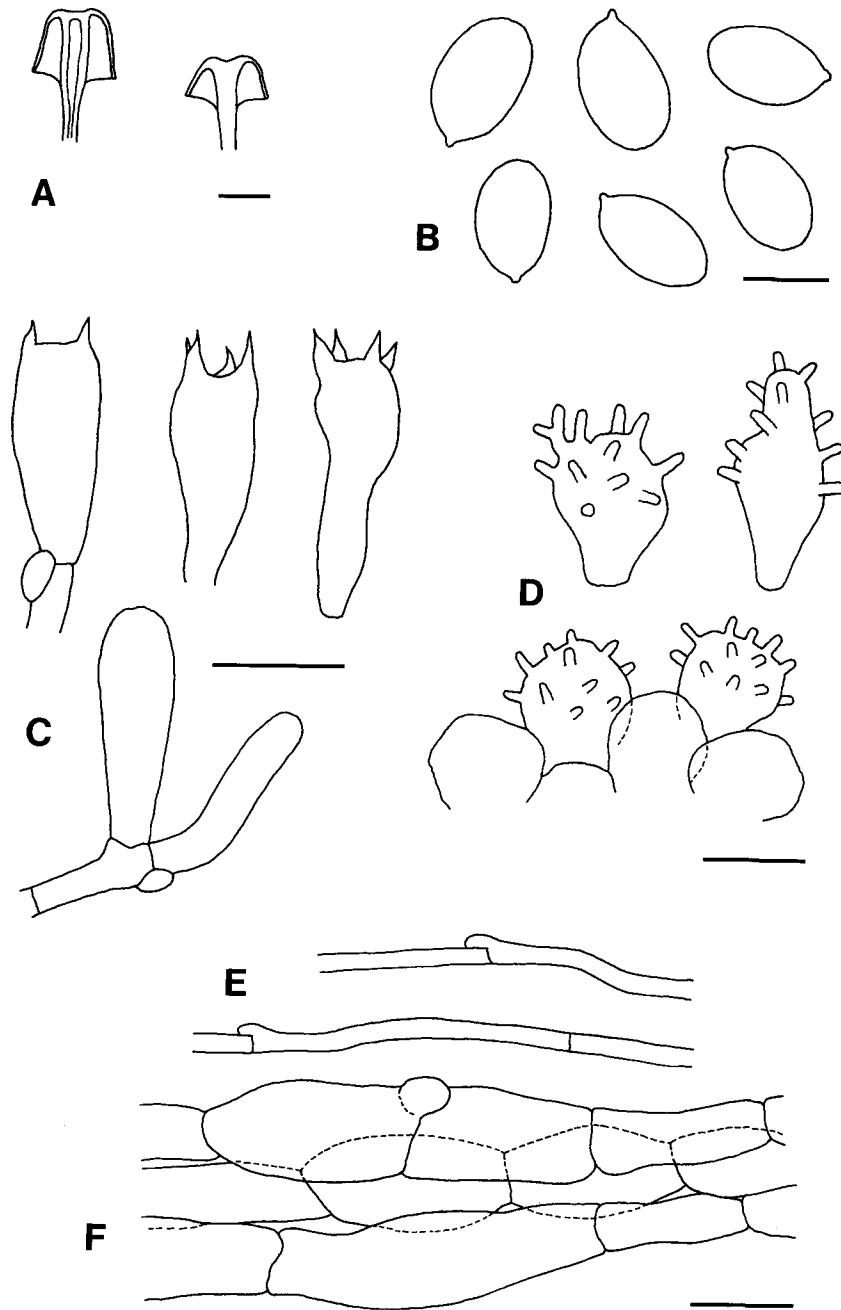


Fig. 2. *Mycena picta*.

A. Sections of the pileus. B. Spores. C. Basidia and basidioles. D. Terminal cells of the cheilocystidia. E. Hyphae of the uppermost layer of pileipellis. F. Inner hyphae of the pileipellis. Scale bars: A=2 mm; B=5  $\mu$ m; C-E and F=10  $\mu$ m.

the photograph by Breitenbach and Kränzlin (1991) on the color and shape of the basidiomata. The characteristics of this species include a very small cylindrical pileus that does not expand with age, and adnate and horizontal lamellae that are broader than they are long (Fig. 2A).

We observed in our specimens that the pileipellis (subpellis) was composed of a layer of inflated cells (Fig. 2F) beneath the surface layer consisting of filamentous hyphae (Fig. 2E). This is one of the important features of *Mycena* that has been described for this fungus only

by Breitenbach and Kränzlin (1991). Concerning cheilocystidia of *M. picta*, Maas Geesteranus (1983) noted that they are made up of contiguous, catenulate chains of inflated cells and that terminal cells of the cheilocystidia had been mistaken for the entire cheilocystidia by previous authors. The descriptions of (terminal cells of) cheilocystidia given by Smith (1953), Miller (1968), Harmaja (1979), Maas Geesteranus (1983), Breitenbach and Kränzlin (1991) and ourselves

are almost identical, although Haramaja (1979) has reported for the (terminal cells of) cheilocystidia much narrower size "up to ca. 6  $\mu\text{m}$  in diam" than in others.

Haramaja (1979) observed that the basidiomata occurred "mostly in inhabited ant hills, in needles of *Picea abies* (and probably in other litter as well)." Our observations indicated that basidiomata of *M. picta* occurred in the same area (within ca. 1 m in diam) for 4 yr at least, on needles of *A. sachalinensis* (one record on needles of *P. abies*), but the relationship of this species to ants was unclear. More detailed investigations seem necessary to understand the distribution and ecology of this rare species.

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