

Gymnopus piceipes sp. nov. from Japan

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Accepted for publication 25 December 2000

Gymnopus piceipes is proposed as a new species within the section *Vestipedes*. It is characterized by a brown pileus, pale brown close lamellae, a solid black stipe that is not insititious, and conspicuous pleurocystidia.

Key Words—Agaricales; Basidiomycetes; *Gymnopus piceipes*; Japan; *Picea glehnii*.

During a study of litter-decomposing basidiomycetes in Hokkaido, Japan from 1991 to 1997, a species of *Gymnopus* (Pers.) Roussel growing on the needle litter of *Picea glehnii* (Fr. Schmidt) Mast. was collected. Here, it is described as a new species in the section *Vestipedes* (Fr.) Antonín, Halling, & Noordel.

The description of macroscopic features is based on fresh material. Names of colors and codes in parentheses are taken from Munsell (1990). Specimens examined are deposited in SAPA (the Herbarium of the Faculty of Agriculture, Hokkaido University, Sapporo, Japan).

Taxonomy

Gymnopus piceipes T. Miyamoto & Igarashi, sp. nov.

Figs. 1–3

Basidiomata gregaria, raro caespitosa. Pileus 6–20 mm latus, convexus, deinde campanulatus, planus, obtuse umbonatus, ad centrum interdum alveolatus, in siccitate rugoso-sulcatus, margine initio incurvo laevi vel undulato; superficies siccans, hebetata, glabra, badia, in siccitate brunneola. Contextus tenuis, inodorus. Sapor mitis. Lamellae adnatae, adnexae, saepe collariatae, densae, tenues, angustae, raro furcatae, cremeo-albae, pallide brunneae; acies integra, concolor. Stipes 10–43 × 0.7–2 mm, aequalis, teres vel compressus, superne cremeus, versus basis piceus vel niger, superne glaber, ad basim pubescens; contextus albus, solidus.

Basidiosporae 6.3–8.5 × 2.8–3.7 μm, prolongato-ellipsoideae vel subfusiformes, laeves, inamyloideae et acyanophilae. Cheilocystidia pauca vel numerosa, 26.8–56 × 4.6–10 μm, cylindracea, subfusiformia, anguste clavata, interdum varie lobata. Pleurocystidia, pauca, 33–56 × 4.5–7.9 μm, subfusiformia, cylindracea, raro varie lobata. Hyphae pileipellis repentes, cylindraceae, aliquantum radiatae, 3.3–10 μm latae, spiraliter vel zonatim incrustatae, pigmentiferae, interdum tumidae, prominentis dispersis formantes. Caulocystidia 9.5–55 × 3–6 μm, cylindracea vel sinuosa, interdum ramosa; paries tenuis vel paulo crassus, hyalinus vel brunneus. Fibulae praesentes.

Holotypus: HUCO97014 in SAPA.

Etymology: *piceipes* = black foot, in reference to the color of stipe.

Basidiomata gregarious, rarely caespitose. Pileus 6–20 mm across, convex with incurved margin at first, becoming campanulate, plane or obtusely umbonate, sometimes pitted at center over the stipe connection, smooth to rugulose sulcate when dry; surface dry, unpolished, glabrous, dark reddish brown (5YR3/2), yellowish red (5YR4/6–5/6) at the center, reddish yellow (7.5YR6/6–7/6), yellowish red (5YR5/6) outward when fresh, very pale brown (10YR8/4) when dry. Context thin, white to cream-white, soft; odor indistinctive, taste mild. Lamellae adnate to adnexed, often attached to a collar around the stipe, close (22–26 reach the stipe, lamellulae; 1–3), thin, narrow, rarely forked, cream-white to very pale brown (10YR 8/4), edges entire and concolorous with lamella side. Stipe 10–43 mm × 0.7–2 mm, equal or slightly enlarged to the apex, terete or compressed, straight, tough, cream white to pink (7.5YR8/4) at the apex, dark reddish brown (5YR3/2), very dark gray (5YR3/1) toward the base, glabrescent at the apex, covered with a dense pubescence at the base and binding the needles, pink (7.5YR8/4) to reddish brown (5YR4/4–5/4), light brown (7.5YR 6/4), interior white, solid.

Basidiospores 6.3–8.5 × 2.8–3.7 μm, elongate-ellipsoid to subfusoid, smooth, inamyloid, acyanophilous. Basidia 22.5–31 × 4.3–7.1 μm, clavate to subfusiform, four sterigmata, not siderophilous. Basidioles 20.1–31 × 3.9–6.9 μm, clavate or fusiform. Cheilocystidia few to abundant, 26.8–56 × 4.6–10 μm, cylindrical, subfusiform, narrowly clavate, sometimes variously lobed. Pleurocystidia scattered, 33–56 × 4.5–7.9 μm, subfusiform, cylindrical, rarely variously lobed. Lamellar trama interwoven, inamyloid, made up of smooth, thin-walled, 2–4.2 μm in diam hyphae. Pileus trama interwoven, inamyloid, made up of smooth, thin-walled, 2.5–5.5 μm in diam hyphae. Hyphae of the pileipellis repent, cylindrical, more or less radially oriented, 3.3–10 μm in diam, encrusted with a spiral to banded pigment, sometimes swollen, with scattered projections or bran-

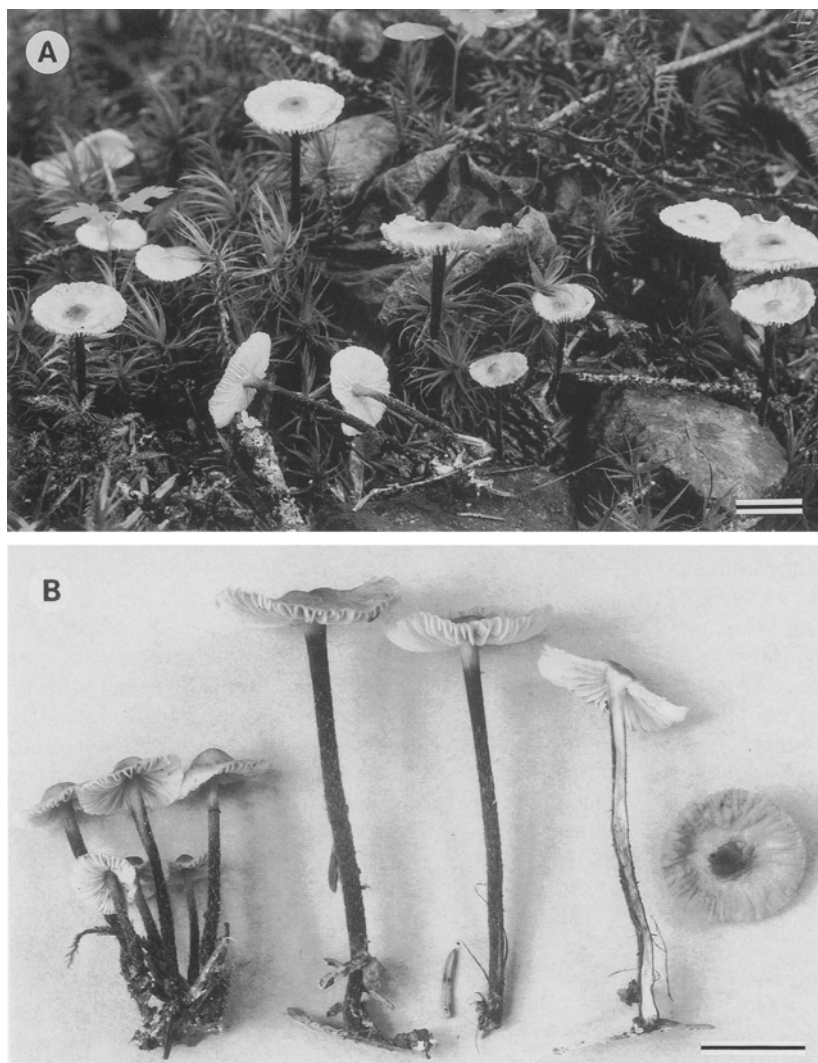


Fig. 1. *Gymnopus piceipes*. A, B: Basidiomata (B: holotype). Scale lines=10 mm.

chlets, end cells often swollen and suberect. Hyphae of the stiptipellis parallel, hyaline to pale brownish in 10% NH_4OH , 2.1–4.3 μm in diam, sometimes slightly thick-walled. Stipe trama parallel, hyaline, inamyloid, made up of smooth, thin-walled, 2.9–9.9 μm in diam hyphae. Caulocystidia 9.5–55 \times 3–6 μm , cylindrical to sinuous, sometimes branched, thin- or slightly thick-walled (up to 0.5 μm thick), hyaline to brownish in 10% NH_4OH . Clamp connections present in all tissues.

Habitat: On the needle litter of *Picea glehnii* Mast. and *Abies sachalinensis* Mast.

Specimens examined: HUCO97014 in SAPA (holotype), Akan, elev. 700 m, 31 July 1997, coll. Toshizumi Miyamoto; HUCO97015, Akan, elev. 600 m, 31 July 1997, coll. T. M.

Commentary: *Gymnopus piceipes* is characterized by a brown pileus, pale brown close lamellae, a solid black stipe that is not insititious, and conspicuous pleurocystidia. This species belongs to section *Vestipedes*, subsection *Vestipedes* as defined by Antonín and

Noordeloos (1997), because the pileipellis is made up of cylindrical hyphae with scattered projections or branchlets and the smell is indistinct.

Gymnopus piceipes is very close to *G. inodorus* (Pat.) Antonín & Noordel., but the latter can be distinguished on the basis of certain characteristics reported in the literature (Antonín and Noordeloos 1997) and that revealed by examination of type specimen (L 0053914, coll. J. Daams). *Gymnopus inodorus* has a fistulose stipe, and the habitat was reported to be the dead branches of wood, but rarely in humus, in deciduous and coniferous woods. However, *G. piceipes* has a solid stipe and was found growing on the fallen needles of coniferous trees in mixed woods with coniferous and deciduous trees. Microscopically, *G. inodorus* has no pleurocystidia, but *G. piceipes* has conspicuous pleurocystidia.

A second species similar to *G. piceipes* is *Collybia pinastris* (Kauffman) Mitchel & A. H. Sm., which was described in detail by Halling (1983). Both of these species

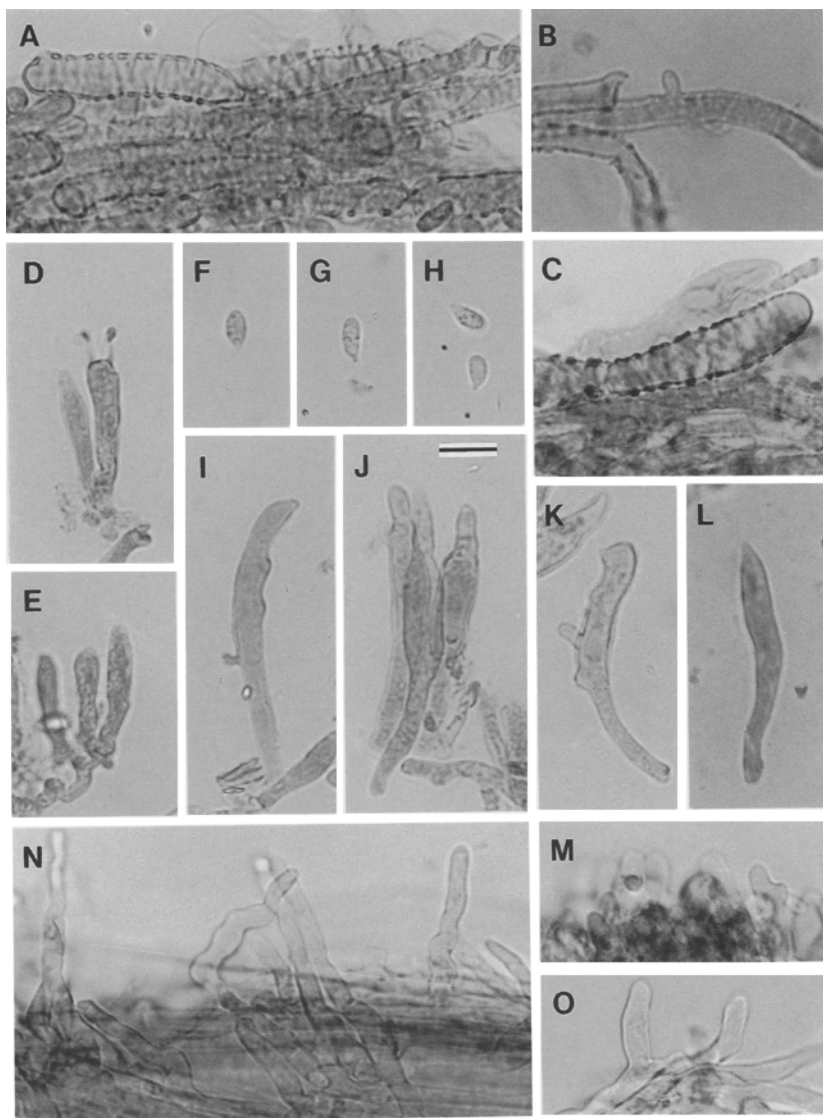


Fig. 2. *Gymnopus piceipes* (holotype). A-C: Pileipellis. D: Basidium and basidiole. E: Basidioles. F-H: Basidiospores. I-K: Cheilocystidia. L: Pleurocystidium. M: Lamella edge. N-O: Caulocystidia. Scale line = 10 μ m.

have a rather small and thin pileus, and interior solid white stipe. In addition, *C. pinastris* also occurs on the fallen needles of *Picea* in North America and Japan (Halling 1983, Miyamoto et al. 1998). However, *C. pinastris* differs from *G. piceipes* in having a paler pileus and sub-distant lamellae (13–23 reach the stipe), and lacking a black stipe and hymenial cystidia. Furthermore, the walls of the caulocystidia of *C. pinastris* are quite thick, unlike those of *G. piceipes*.

Therefore, we can distinguish our species from the two known species, and propose *G. piceipes* as a new species.

Acknowledgement—We are grateful to the curators of Nationaal Herbarium Nederland (L) for loan of the type specimen of *G. inodorus*.

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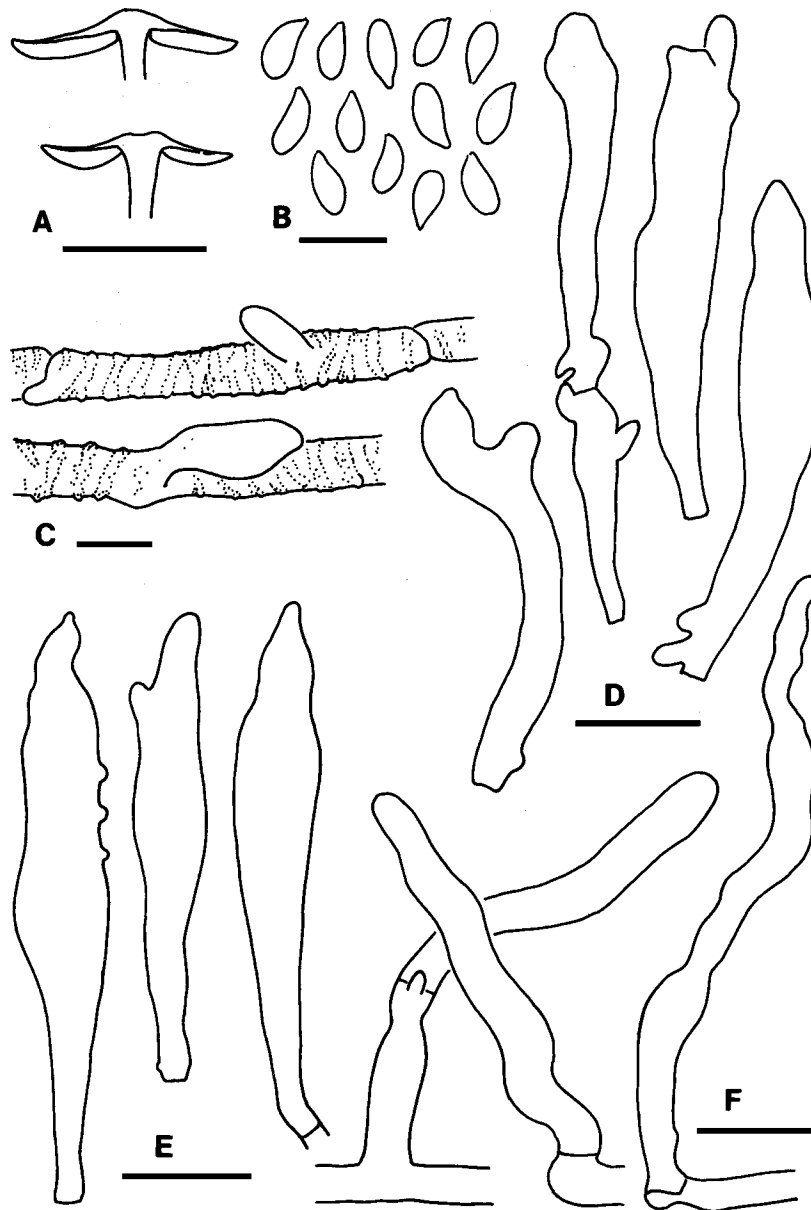


Fig. 3. *Gymnopus piceipes* (holotype). A: Sections of pileus. B: Basidiospores. C: Hyphae of the pileipellis. D: Cheilocystidia. E: Pleurocystidia. F: Caulocystidia. Scale lines: A=10 mm; B-F=10 μm.