

BOLETES OF TAIWAN (IV)⁽³⁾KAI-WUN YEH⁽¹⁾ and ZUEI-CHING CHEN⁽²⁾*(Received for publication April 20, 1983 and in revised form June 20, 1983)*

Abstract: In this paper three species of boletes i. e. *Boletus rubellus* Krombholz; *Tylopilus chromapes* (Frost) Smith & Thiers and *Suillus brevipes* (Peck) Kuntze; collected from the Pa-Tong-Kuang area of the central mountain of Taiwan are described as new records from this island.

INTRODUCTION

Though we have exploited boletes of Taiwan for several years and published forty species (Yeh & Chen, 1980, 1981, 1982), a complete floristic picture of this group in Taiwan has not been obtained.

The Pa-Tong-Kuang area is located at the center of the central mountain range of Taiwan and covered with coniferous natural forests, particularly the areas around the range of altitude between 2,600-2,800 m are almost covered by Taiwan red pine (*Pinus formosensis* Hayata). In this area, 18 species of boletes, i. e. *Boletinus pictus*, *Boletus calopus*, *B. edulis*, *B. erythropus*, *B. reticulatus*, *B. subvelutipes*; *Gyroporus cyanescens*; *Leccinum rugosiceps*; *Phylloporus rhodoxanthus*; *Suillus americanus*, *S. bovinus*, *S. granulatus*, *S. luteus*, *S. punctatipes*, *S. subalutaceus*; *Xerocomus badius*, *X. chrysenteron* and *X. subtomentosus*, were recorded from our previous investigation. Dr. Hongo visited this area with the junior author in October, 1982 and collected following species of boletes which has not yet been published: *Suillus aeruginascens*, *S. brevipes*, *S. flavidus*, *S. punctatipes* (*S. ploran*), and *S. tomentosus*. Our separate collection made in summer of 1982, three additional species new to Taiwan were recorded. The species are described here for the additional record to Taiwan fungal flora. All color names are followed the Ridgeway (1912). All species reported in this paper are deposited in the Mycological Herbarium, Department of Botany, National Taiwan University, Taipei, Taiwan, R. O. C.

RESULTS

Enumeration of Species

Boletus rubellus Krombholz, Nat. Abb. Sche. 5: 12. 1836. (Plate 1 & 2, Fig. 3)

Pileus 3-6 cm dia., broadly convex to plane, surface dry, velutinous becoming irregularly rimulose, surface color dull brick red when young, fading to pale reddish, brownish yellow in age, with a yellowish margin, thick and even, context pallid yellow, turning blue quickly when cut.

Tube adnate or slightly decurrent to stipe, about 6 mm deep, dingy yellow, turning blue when injured, pores greenish yellow, irregular size, some up to 1 mm wide.

Stipe 3-5 cm long, 4-8 mm thick, always subequal, solid; context yellow; surface with yellowish ground but shading to rose red, reddish pruinose cover all over, base with whitish mycelia.

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Plate 1. *Boletus rubellus*



Plate 2. *Boletus rubellus*



Plate 3. *Suillus brevipes*



Plate 4. *Tylopilus chromapes*

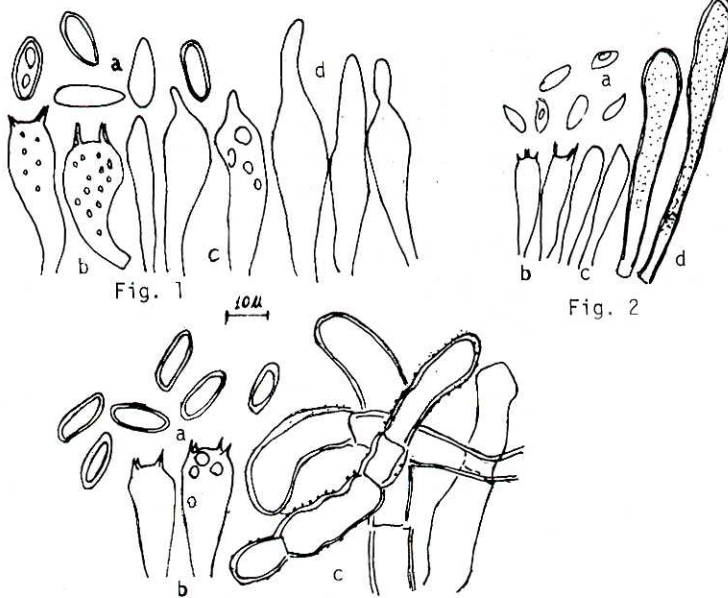


Fig. 3

- Fig. 1. *Tylophilus chromapes*, a. basidiospores, b. basidia, c. pleurocystidia, d. caulocystidia.
 Fig. 2. *Suillus brevipes*, a. basidiospores, b. basidia, c. pleurocystidia, d. pleurocystidia (golden yellow).
 Fig. 3. *Boletus rubellus*, a. basidiospores, b. basidia, c. cutis hyphae.

Spore $12-14 \times 5-6 \mu\text{m}$, Smooth, thick-walled, subelliptical; spore print olivaceous brown. Basidia 4-spored, $24-30 \times 9-12 \mu\text{m}$. Pleurocystidia not found. Pileus cutis trichodermium type, cuticle hyphae thick-walled, some with rough brownish wall.

Habitat: Solitary, scattered under the pine forests.

Distribution: Taiwan, Japan, North American, Europe.

Specimen Examined: NAN-TOU: Pa-Tong-Kuang, alt. 2600-2800 m. July, 1982, TAI-YB-198.

Suillus brevipes (Peck) Kuntze, Rev. Gen. Pl. 3: 535. 1898.

(Plate 3, Fig. 2)

Boletus viscosus Frost, Bull. Buff. Soc. Nat. Sci. 2: 101, 1874.

Boletus brevipes Peck, Ann. Rept. N. Y. State Mus. 38: 110, 1885.

Suillus brevipes var. *aestivalis* Singer, Farlowia 2: 217, 1945.

Boletus plumbeotinctus Kauffman in Snell, Mycologia 28: 472, 1936.

Pileus 3-10 cm dia., broadly convex or hemispherical when young, in age always becoming plane, margin irregular, lobed, thin and slightly recurved; surface glabrous and slimy in wet weather, surface color vinaceous-brown to grayish brown, in age becoming dull cinnamon, dingy yellow-ocher; subtomentose, appearing delicately patch-like in dry weather. Context 4-6 mm thick, white when young, becoming yellowish in age. color not changed when cut. Taste mild, odor not distinctive.

Tube 4-7 mm deep, adnate to decurrent, color whitish yellow, honey yellow or ochraceous yellow, darker in age.

Stipe 2-5 cm long, 0.6-1.5 cm thick, solid, equal or taper upward, always short, surface pure white and smooth (no granular dots present) when young, becoming yellowish and often appearing brownish red stains or pruinose in age (especially below).

Spore print cinnamon buff, spore 7-10(14)×2.8-3.2(4) μm , smooth, subcylindrical to oblong. Basidia 4-spored, 18-26×5-6 μm , clavate, hyaline in KOH soln, smooth. Pleurocystidia two types, one golden yellow, 50-70×8-11 μm , clavate, in fascicles; the other hyaline, clavate, 20-30×4-6 μm .

Habitat: gregarious under Taiwan red pine.

Distribution: Taiwan, Japan, North American, Europe.

Specimen Examined: NAN-TOU: Pa-Tong-Kuang, alt. 2600-2800 m, July, 1982, TAI-YB-190, TAI-YB-192.

Note: This species is very similar to *S. granulatus* in gross appearance but differ in having a shorter stipe and glabrous stipe surface, while the latter with a longer stipe and glandular dots. Under the pine plantation, the two species often appeared at the same time in the Pa-Tong-Kuang area. We have mistaken some of these specimens for *S. granulatus* in the former exploitation (Yeh & Chen, 1981).

Tylophilus chromapes (Frost) Smith & Thiers, in *Boletes of Michigan*, 1971. (Plat 4, Fig. 1.)

Boletus chromapes Frost, Bull. Buff. Soc. Nat. Sci. 2:105. 1874.

Leccinum chromapes (Frost) Singer, Amer. Midl. Nat. 37: 124. 1949.

Pileus 5-12 cm dia., convex to hemispheric when young, becoming plane when old, some slightly depressed; margin entire, surface dry, subtomentose with smooth feeling, but sometimes glabrous, surface color pale pink to pink, fading out in age. Context about 10 mm thick, soft, white or pinkish white, consistence when cut, a thin pink band appeared between the cutis and the context. Taste mild. Odor not distinctive.

Tube 6-11 mm deep, white, yellowish when young, in age becoming pink to brownish, slightly depressed or nearly free around the stipe; pores small, 2 per mm, round to angular, white when young, brownish when old.

Stipe 3-10 cm long, 0.8-2.5 cm thick, subbulbous or subradicating, rarely equal, solid, the apex pink, the middle white and the base deep chrome yellow, with yellow basal mycelium, feeling powdery when touch, surface with scabrous dots overall, these dots not darkening when old, context of the stipe pinkish.

Spore print vinaceous-fawn to near wood-rown; spores (11)13-18(20)×4.5-6 μm , smooth, oblong to inequilaterally ellipsoid. Basidia 4-spored, fusoid, obpyriform, 30-40×10-14 μm , smooth, hyaline. Pleurocystidia 34-45×8-11 μm , mostly ventricose-rostrate, hyaline. Caulocystidia 40-58×8-14 μm , obclavate, ventricose-rostrate, sicyoid.

Habitat: Solitary, scattered under mixed forest or pine forest.

Distribution: Taiwan, North American.

Specimen Examined: NAN-TOU: Pa-Tong-Kuang, alt., 2600-2800 m, July, 1982, TAI-YB-194, TAI-YB-195.

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臺灣之網孔蕈 (四)

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摘 要

臺灣產網孔蕈 (Boletes) 之調查始自民國 69 年，本文乃 71 年 7 月間調查中央山脈八通關一帶所發現之新紀錄種，分別是 *Boletus rubellus* Krombh., *Tylopilus chromapes* (Frost) Smith & Thiers 及 *Suillus brevipes* (Peck) Kuntze 三種。