

Some New Species of *Boletus* (Boletaceae) and *Cantharellus* (Cantharellaceae) from Korea

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Abstract

Many higher fungi were collected in Korea from 2002 to 2005. They were identified. As the result, three *Boletus* and one *Cantharellus* are new to the world. Among them, *Boletus alboporus* D.H.Cho is pileus with darkish and rugulose. Tubepores and stipe are white. *B. nigri-aeruginosa* D.H.Cho is pileus mixed green and yellow. Tubepores and stipe are yellowish. *B. tabicinus* D.H.Cho is pileus with light yellow. Stipe is yellowish and rough furrow-net. It is not exchanged color when is burised. *Cnatharellus minor* f. *pallid* D.H.Cho is pallid color with white at edge.

Key words : new species, *Boletus alboporus*, *B. nigri-aeruginosa*, *B. tabicinus*, *Cnatharellus minor* f. *pallid*

Introduction

Study on higher fungi has been done for a long time in Korea. 2,000species are reported from basidiomycetes to ascomycetes at Korean peninsula (contained south Korea, north Korea and Mt. Packdu). Until now *Boletus* are reported 28 species and *Cantharellus* are reported 10 species. Many higher fungi were collected in Korean many places from 2002 to 2005. Among them three species of *Boletus* and one *Cantharellus* are new to world. Three species were collected at Mt. Jiri and Mt. Pukhan of Korean national park. The other were collected at Mt. Unjang of Chollabuk-do in Korea. They were identified with many references of Bessette, William and Bessette(2000), Alessio(1985, 1991), Breitenbach(1991). Bruno(1987), Courtecuisse(1994), Imazeki and Hongo(1989), Phillips (1981,1991) and Cho(2006).

They are descripted contained Latin description.

1. *Boletus albopores* D.H.Cho, sp. nov.

Pileo 5.0~7.5 cm lato, convexo dein plano, atro-griseus, rugulosus, promineus, depressus, protuberans. Carne crassa, solido, alba. Tubulis alba, 5~6mm longo, small, smooth, poris alba, adnate. Stipe 12~15.5 cm longo, 1.5~2.5 cm crasso, alba, downwards crassa, bulbosus, solido, longitudinaiter striato et sulcus, rubro-brunneus when exsiccatus. Sporis 14~17×4~5.5 μ M fusoides, elliptical, basidiis 30~37.5×8.8~15.8 μ M clavaviformis, 4-sporis, cystidia 15~17.5×8.8~10 μ M, amplius.

2. *Boetus albopores* D.H.Cho, sp. nov. 흰구멍그물버섯(신칭)

Pileus 5.0~7.5 cm, broad, convex to plane, grayish dark, rugolose, prominence and depression, protuberance. Context thick, solid, white. Tube slightly white, 5~6mm long, small, slightly smooth, pores white, adnate, slightly adnexed. Stipe 12~15.5 cm long, 1.5~2.5 cm thick, white, downwards thick, bulbous, solid, longitudinal striate with furrow, reddish brown when dry. Spores 14~17×4~5.5 μ M fusiforms, long elliptical, seldom faintly with 3~4 oil drops, cell wall thick, basidia 30~37.5×8.8~15.8 μ M clavate, 4-spored, cystidia 15~17.5×8.8~10 μ M flask-forms, hyphae from lamellae trama 13~37.5×1.3~5 μ M wide.

Habitation : Clustered on soils of broadleaved forests.

Distribution : Mt. Jiri of Korea

Specimens studied : CHO-9504 (13 August, 2005) collected Mt. Jiri of National Park in Korea.

3. *Boletus nigrriaeruginosa* D.H.Cho, sp. nov.

Pileo 12~14cm lato, plano convexo, lightly viridulus, mosaicus, albis-viridis on discoideus, slightly depressus, rugolusus, promineus et depressus, protuberans. Carne crassa, alba, spongiosus. Tubulis 1.5~2.5 cm longo, xanth-brunneus, poris fetor, rubus-brunneus when bruised et exsiccatus, adnate, remote. Stipe 3~7cm longo, 1.3~2.0cm lato, alba, solide dein faretus, spongious, longitudunaliter lirelliformis on surface. xantho when bruised. Sporis 13~18.5×5~6.8 μ M fusoides, longis elliptical, basidiis 30~35×10~12.5 μ M clavaiformis, 4-sporis, cystidia 22.5~40×11.5~20 μ M, fusoides.

4. *Boletus nigrriaeruginosa* D.H.Cho, sp. nov. 흑녹청그물버섯(신칭)

Pileus 12~14cm broad, plane convex, lightly green, mosaic-shape, whitish green on disk, slightly depressed, rugolose, prominence and depression, protuberance. Context thick, white, sponge-shaped. Tube 1.5~2.5 cm long, yellowish brown, pores small, reddish brown when bruised and dry, adnate or remote. Stipe 3~7cm long, 1.3~2.0cm thick, white, solid to stuffed, sponge, deep furrow longitudinally on surface. changed yellow when bruised. Spores 13~18.5×5~6.8 μ M fusiform, with prominent, long elliptical, cell wall thick, seldom faintly with 3~4 oil drops, basidia 30~35×10~12.5 μ M clavate, 4-spored, cystidia 22.5~40×11.5~20 μ M, fusiform, hyphae from lamellae trama 65~125×6.3~12.5 μ M cylindrical.

Habitation : Scattered on the soils of broadleaved forests.

Distribution : Mt. Jiri.

Specimens studied : CHO-9505 (13 August 2005) collected Mt. Jiri of National Park in Korea.

5. *Boletus tabicinus* D.H.Cho, sp. nov.

Pileo 2.5~8.0cm crassa, convexo dein slightly plano. xantho with lemon color, viroad, marginalis down curvulus. Carne xantho, crassa. Poris xantho, irreguarellis circulus, tubulis 0.5~1.0cm longo, 2~3/mm, adnate or remote. Crane crassa, xantho, gustus et fetor none. Stipe 6.5~11cm longo, 8~13mm crassa,

slightly flexus, cylindratus, slightly slender at base, grandis net and deep lirelliformis net, xantho. solide concolori in surface, roughly longitudinaliter net on surface. Sporis $9\sim13.5\times3.5\sim4\ \mu\text{M}$ fusoides, longis elliptical, basidiis $20\sim24.3\times7.5\sim10.0\ \mu\text{M}$ clavatae, 4-spored, cystidia $31.3\sim41.3\times10\sim11.9\ \mu\text{M}$, clavaiformis.

6. *Boletus tabicinus* D.H.Cho, sp. nov. 담배색그물버섯(신칭)

Pileus 2.5~8.0cm broad, convex to slightly plane. yellow with lemon color, viroad, margin down curved. Context yellow, thick. Pores yellow, irreguarely circle, tube 0.5~1.0cm long, 2~3/mm, adnate or remote. Context thick, yellow, taste and smell none. Stipe 6.5~11cm long, 8~13mm thick, slightly bent, cylindrical, slightly slender at base, large net and deep furrow net, yellowish. solid, concolorous in surface. roughly longitudinally net on surface. Spores $9\sim13.5\times3.5\times4\ \mu\text{M}$ fusiforms, long elliptical, cell wall thick, seldom faintly with several oil drops, basidia $20\times24.3\times7.5\sim10.0\ \mu\text{M}$ clavae, 4-spored, cheilocystidia $17.5\sim25\times8.8\sim10\ \mu\text{M}$, pleurocystidia $31.3\sim41.3\times10\sim11.9\ \mu\text{M}$, clavate, hyphae from lamellae trama 1.3~2 μM wide.

Habitaion : Clustered on sand of broadleaved forest

Distribution : Mt. Pukhan

Specimens studied : CHO-8015 (13 July 2002) collected at Mt. Pukhan National Park of Korea.

7. *Cantharellus minor* f. *pallid* D.H.Cho, sp. nov.

Pileo 0.6~1.5cm crassa, infudibuliformis, plano convex or slightly convexo dein depressus. finally infudibuliformis. lightly xantho on discoideus marginalis pallid albi-xantho, irregularlaris dentatus, marginalis slightly down curvulus, striato from marginalis to discoideus. carnea crassa, concoloris surface. Lamellae decurrent, sparse, slightly xantho. Stipe 1~3cm longo, 1.5~3mm crassa, cylindratus, flexus, slightly xantho, solido dein favosus, upwards crassa. Sporis $7\sim9\times5\sim6\ \mu\text{M}$, subglobose, broad elliptical, basidiis $55\sim57.4\times7\sim8.8\ \mu\text{M}$, irregularis clavaviformis, clamp connection present at base, hyphae from stipe trama $22.5\sim50\times2.5\sim6.3\ \mu\text{M}$, cylindriatus, clamp conection present.

8. *Cantharellus minor* f. *pallid* D.H.Cho, sp. nov. 색바랜작은피꼬리버섯(신칭)

Pileus 0.6~1.5cm broad, funnel-shaped, plane convex or slightly convex to depressed. finally funnel-shaped. lightly yellow on disk, margin pallid whitish yellow, irregularly denticular, margin slightly down curved. striate from disk to margin. Context thin, concolorlous in surface.

Lamellae decurrent, sparse, slightly yellow, Stipe 1~3cm long, 1.5~3mm thick, cylindrical, bent, slightly yellow, solid to hollow, upwards thick. Spores $7\sim9\times5\sim6\ \mu\text{M}$, subglobose, broad elliptical, basidia $55\sim57.4\times7\sim8.8\ \mu\text{M}$, irregularly clavate, clamp connection at base, hyphae from lamellae trama $39.4\sim56.3\times4.4\sim8.8\ \mu\text{M}$, cylindrical, clamp connection present, hyphae from pileus trama $25\sim30\times2.5\sim5\ \mu\text{M}$, cylindrical, clamp connection present, hyphae from stipe trama $22.5\sim50\times2.5\sim6.3\ \mu\text{M}$ cylindrical, clamp conection present.

Habitation : Clustered on soils with sands near oak trees.

Distribution : Mt. Unjang.

Specimena studies : CHO-9577 (18 August 2005) collected at Mt. Unjang of Chollabuk-do in Korea.

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Fig. 1. *Boletus albopores* D.H.Cho.
1-A: fruiting body, 1-B: pores, 1-C: stipe



Fig. 2. *Boletus nigriaeruginosa* D.H.Cho.
2-A: fruiting body, 2-B: pores and stipe



Fig. 3. *Boletus tabicinus* D.H.Cho.
3-A: fruiting body, 3-B: pores and stipe



Fig. 4. *Cantharellus minor* f. *pallid* D.H.Cho.
4-A: fruiting body, 4-B: lamellae and stipe note(bar: 1cm)

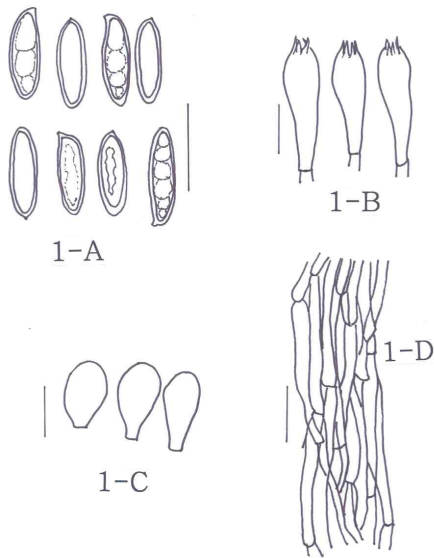


Fig. 5. *Boletus albopores* D.H.Cho.
1-A: Spores, 1-B: Basidia, 1-C: Cystidia,
1-D: Hyphae from lamellae trama(bars : 10 μ M)

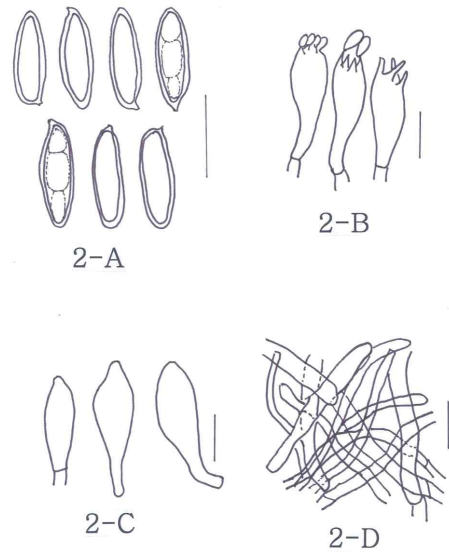


Fig. 6. *Boletus nigriaeruginosa* D.H.Cho.
2-A: Spores, 2-B: Basidia, 2-C: Cystidia,
2-D: Hyphae from lamellae trama(bars : 10 μ M)

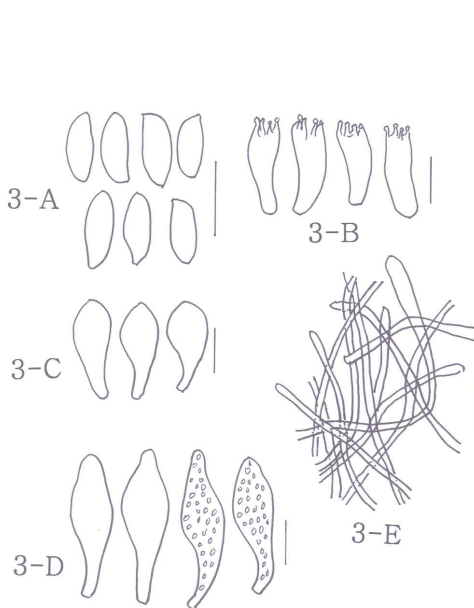


Fig. 7. *Boletus tabicinus* D.H.Cho.
3-A: Spores, 3-B: Basidia, 3-C: Cheilocystidia
3-D: Pleurocystidia, 3-E: Hyphae from
lamellae trama(bars : 10 μ M)

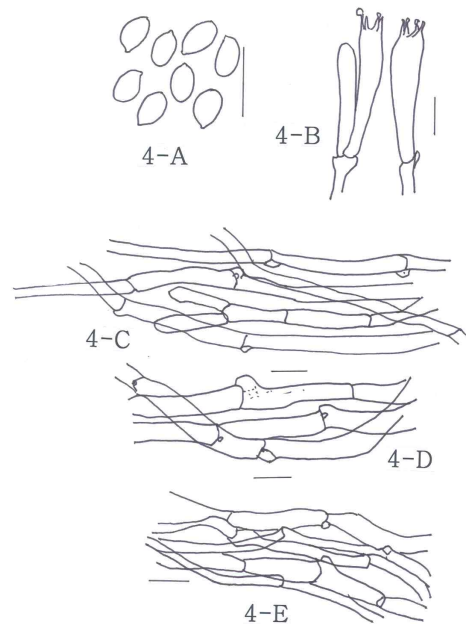


Fig. 8. *Cantharellus minor f. pallid* D.H.Cho.
4-A: Spores, 4-B: Basidia,
4-C: Hyphae from lamellae trama,
4-D: Hyphae from pileus trama,
4-E: Hyphae from lamellae trama(bars : 10 μ M)