

## The Flora of Higher Fungi in Mt. Jiri Areas(II)

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### 智異山 一帶의 高等菌類(II)

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**ABSTRACT:** Higher Fungi were collected in Mt. Jiri National Park areas from May, 1986 to October, 1987. These higher fungi were identified. As a result of identification, *Cystoderma granulosum*(Fr.)Fayod, *Melanoleuca verrucipes*(Fr.)Sing., *Inocybe mixtilis*(Britz)Sacc., *Cortinarius pholideus*(Fr.)Fr., *Lactarius uvidus* var. *uvidus* Hesler & Smith, *L. vellereus* var. *vellereus* Hesler & Smith and *Boletellus ananas*(Cur.)Murr. were newly recorded in Korea.

**KEYWORDS:** *Cystoderma granulosum*, *Melanoleuca verrucipes*, *Inocybe mixtilis*, *Cortinarius pholideus*, *Lactarius uvidus* var. *uvidus*, *L. vellereus* var. *vellereus*, *Boletellus ananas*.

#### Tricholomataceae 송이과

##### *Cystoderma granulosum*(Fr.) Fayod 파립낭 피버섯(新稱)

Konrad & Maublanc, *Agaricales*, 1:88, 1848.

Singer, *Agaricales*, 448, 1949: *Agaricales*, 479, 1975.

Imazeki, R. and T. Hongo, *Col. Ill. Fung. Jap.* vol.II, 51, pl.16, f. 96, 1965.

Smith, A.H., *How to Know the gilled mushroom*, 100, 1979.

Lange, M. and F.B. Hora, *Collins Guide to Mushrooms and Toadstools*, 128, 1985.

*Agaricus granulosus* Batsch, *Elench Fung.* 1:79, 1873-Fries, *syst. Myc.* 1:24, 1821.

*Lepiota granulosa* S.F. Gray, *Nat. Arr. Brit. pl.* 1:602, 1821.

Pileus 1.5-5.0 cm broad, convex to broadly convex and flat with slight umbo at center, soon expanded, ochre-yellow tending to brown-ochre, bright ochre-yellow with surface, often becoming indistinctly radially wrinkled with age, furfuraceous and granulose, margin overhanging, appearing toothed. Lamellae adnexed or slight adnate, close, broad, whitish. Stipe 2.5-6.0 cm long, 0.2-0.6 cm

thick, pale yellowish-flush above ring, densely granular below ring and concolorous as pileus, indistinctly formed ring and pieces of margin of pileus hanging. Flesh whitish, unchanged. Taste and smell not distinctive.

Spores 4.5-5.5(-6.7)×3.0-3.7 μM, elliptical, smooth, spore print white, nonamyloid, basidia 6.0-7.5×21.0-30.0 μM, clavate, clamp connection present.

Habitat: Scattered or clustered on the ground, in conifer, oak and mixed woods. Early summer to autumn. Edible.

Distribution: Korea(Mt. Jiri), Japan, Europe and North America.

##### *Melanoleuca* 배꼽버섯속(新稱)

##### *Melanoleuca verrucipes*(Fr.) Sing. 흑얼룩배 꼬버섯(新稱)

Singer, *Schweiz. Zeitschr. Pilzk.* 17:56, 1939: *Agaricales*, 247, 1949: *Agaricales*, 296, 1975.

Imazeki, R. and T. Hongo, *Col. Ill. Fung. Jap.* vol. I, 24, f. 55, 1957.

*Armillaria verrucipes* Fr. in Que'it, *Champ. Jura Vosg. Suppl.* 1:137, 1872.

*Agaricus verrucipes* Fr. *Hymen. Eur.* 43, 1874.

*Glyphila verrucipes* Que'l., *Enchir. Fung.* 10,

1886.

*Mastoleucomyces verrucipes* Kuntze, Rev. Gen. pl. 2:861, 1891.

Pileus 2.5-5.0 cm broad, convex to flatten with distinct umbo, expanding to flat or with low knob with age, smoky-brown to darkish brown at the center, light dark to greyish-brown, viscid when moist, fading on margin, inrolled when dry. Lamellae sinuate or slightly adnexed, close, broad, whitish. Stipe 2.4-4.0 cm long, 0.4-0.7 cm thick, slightly swollen towards the base, whitish and mealy at apex, smoky-brown to darkish-brown minutely hairy, whitish to drying. Flesh white or tinged ochraceous in pileus, brown to dark towards the base in stipe.

Taste not distinctive, smell strong mushroomy.

Spores 8.2-9.0(-9.7) × 4.5-6.0 μM, elliptical, minutely warty, amyloid, spore print white, basidia 6.0-7.5 × 22.5-27.0(-30.0) μM, clavate, cystidia 6.0-7.5(-9.0) × 22.5-37.5 μM, clavate.

Habitat: Scattered or clustered on ground, in lawns and on pastures, under hardwoods and conifers. Later spring to later summer.

Edible.

Distribution: Korea(Mt. Jiri), Japan and Europe.

### Cortinariaceae 끈적버섯과

*Inocybe mixtilis* (Britz.) Sacc. 잡색담버섯(新稱)

*Inocybe mixtilis* (Britz.) Sacc. = *I. paludinella* (Peck) Sacc.

Saccardo, Syll. Fung. 5:789, 1887.

*Inocybe trechispora* (Berk.) Karst.

Karsten, Hattsv. 1:465, 1879.

Kühner & Romagnesi, Fl. Analyt. Champ. Super. 231, 1953.

Singer, *Agaricales*, 576, 1975.

Grund, D.W. and D.E. Stuntz, Nova Scotian *Inocybe* V., *Mycologia*, 72(1), 670, 1980.

*Agaricus trechispora* Berk. Outl. Brit. Fung. 156, pl. 8, f. 6, 1860.

*Agaricus mixtilis* Britz, Hym. Sudbayern, 4: 152, 1885.

Pileus 1.5-3.0 cm broad, campanulate, becoming expanded with umbo or broadly umbo, glabrous and unbroken on the umbo subrimose to distinctly rimose toward the margin, silky when dry, slightly viscous when wet, not truly viscid, pale cinnamon-

buff to reddish yellow at center, ochre-yellowish at margin. Lamellae adnexed to narrowly adnate, moderately broad, moderately close, pallid gray. Stipe 2.5-4.0 cm long, 0.2-0.5 cm thick, thickness equal at up and bottom, marginate bulbous, densely white pruinose in length, pallid yellow. Flesh white, unchanging. Taste spermatic, smell not distinctive.

Spores 8.0-10.5 × 5.0-6.0 μM, angular in outline, with nine to ten prominent nodules, spore print dull brownish, basidia 22.5-28.0 × 7.5-9.0(-11.5) μM, short clavate, pleurocystidia 45.0-55.5(-60.0) × 13.5-18.0 μM, hyaline, broadly ventricose above short pedicel, wall thick 4.5-6.0 μM, cheilocystidia 37.5-52.5 × 13.5-18.0 μM, broadly ventricose above short pedicel, hyaline, wall 4.5-6.0 μM thick, cystidia at apex of stipe resembling the cheilocystidia.

Habitat: Solitary or gregarious on the ground under woodland and grassland. Summer to autumn. Edibility unknown.

Distribution: Korea(Mt. Jiri), Japan and North America.

**Cortinarius pholideus** (Fr.) Fr. 해진풍선끈적버섯(新稱)

Fries, Epicr. Myc. 282, 1838-Monogr. Hymen. Suec. 2:55, 1863.

*Agaricus pholideus* Fr. Obs. Myc. 2:21, 1818; Syst. Myc. 1:219, 1821.

Imazeki, R. and T. Hongo, *Col. Ill. Fung. Jap.* vol. II, 80, pl. 24, f. 153, 1965.

Singer, *Agaricales*, 602, 1975.

Lange, M. and F.B. Hora, *Collins Guide to Mushrooms and Toadstools*, 168, 1985.

*Agaricus psammocephalus* Bull. Herb. Fr. pl. 586, f. 1. 1793.

*Cortinarius arenatis* Fr. Epicr. Myc. 283, 1838.

Pileus 4.0-8.0 cm broad, hemispherical to bell-shaped, convex to nearly flat or with central umbo, ochraceous-buff to rust brown, often darker at the center, sometimes wavy at the margin, covered with small darker rusty brown fibrils and scales. Lamellae adnexed, moderately broad, violaceous at first then clay buff, finally pale rusty brown.

Stipe 3.5-7.0 cm long, 0.5-1.2 cm thick, violet in stipe apex, swollen to bulbous at base, dirty ochraceous dark towards the base, conspicuous scales of darkish brown fibrillose below the dis-

tinctly zonate ring attaching, cortina pale brown. Flesh pallid to ochraceous buff, tinged violaceous at apex of stipe, darker towards the base. Taste pleasant, smell faint.

Spores  $7.0-8.0 \times 4.5-5.0 \mu\text{M}$ ; broadly elliptic, rough, spore print rust, basidia  $22.5-37.5 \times 7.5-9.0 \mu\text{M}$ , clavate.

Habitat: Scattered under conifer and deciduous woods. Summer to autumn. Edible.

Distribution: Korea(Mt. Jiri), Japan, Europe and North America.

### Russulaceae 무당버섯과

#### *Lactarius vellereus* var. *vellereus* Hesler & Smith 흰털젖버섯아재비(新稱)

Hesler, L.R. and A.H. Smith, *North American Species of lactarius*, 197, 1979.

Pileus 7.0-15.0 cm broad, convex than depressed at center at first, eventually becoming funnel-shaped, dry, velvety to tomentose, white, ochraceous to tan or ochre-tinged overall with age. Lamellae adnate to slightly decurrent, clearly distant, broad, thickish, some forked, pallid with bright ochre at edges, ochraceous brown with age. Stipe 2.5-6.0 cm long, 0.8-2.5 cm thick, cylindric, seldom narrowed downwards, hard, white, glabrous in age and tinged yellow. Flesh white, yellowish-hard with age, sharply acrid, smell present,  $\text{FeSO}_4$  reaction reddish on cut surface. Milk white, unchanged or slightly yellow on the gills when dry.

Spores  $7.5-9.5 \times 6.5-8.5 \mu\text{M}$ , broadly ellipsoid to subglobose, covered with small warts connected by fine lines in part, basidia  $39.0-48.0 \times 9.0-12.0 \mu\text{M}$ , with four sterigmata, clavate, macrocystidia of pleurocystidia  $80-100 \times 6.0-9.0 \mu\text{M}$ , fusoid, obtuse, sphaerocysts of pileus cuticle  $10.0-25.0 \times 7.0-20.0 \mu\text{M}$ , clavate or slightly rounded.

Habitat: On soil, under deciduous or mixed woods. Summer to autumn.

Distribution: Korea(Mt. Jiri) and North America.

#### *Lactarius uvidus* var. *uvidus* Hesler & Smith 물젖버섯아재비(新稱)

Hesler, L.R. and A.H. Smith: *North American Species of Lactarius*, 337, 1979.

Pileus 4.0-8.0 cm broad, convex to convex-umbonate or nearly plane, finally plane-depressed,

slightly zonate or distinctly zonate, vinaceous buff, lilac or violet grey, occasionally with one or two distinctly darker bands, sticky when moist, margin pruinose, incurved at first.

Lamellae adnate to decurrent, moderately broad, close, creamy-white at first. soon pale ochre, later, dull yellowish ochre. Stipe 3.5-6.0 cm long, 0.6-1.2 cm thick, thickness equal at up and bottom, not or only rarely spotted, dirty whitish to pale dull, often stained ochraceous around the base, hollow.

Flesh whitish, stained dull lilaceous when cut, eventually stained pinkish tan to darkish brown, cuticle of pileus green to olive in KOH(2.5%). Milk white, becoming tinged lilac on lamellae and stipe, surface stained dull lilaceous when bruise. Taste mild becoming bitter.

Spores  $9.0-11.0 \times 7.0-8.5 \mu\text{M}$ , subglobose to broadly ellipsoid, ornamentation as widely spaced bands, ridges with scattered particles present, prominences  $0.5-1.0 \mu\text{M}$  high, spore print pale yellow, basidia  $42.0-48.0 \times 9.0-12.0 (-13.5) \mu\text{M}$ , clavate, macrocystidia of pleurocystidia  $40.0-80.0 \times 6.0-10.0 \mu\text{M}$ , obtuse at first, becoming tapered to acute apex, cheilocystidia  $30.0-40.0 \times 6.0-10.0 \mu\text{M}$ , similar to macrocystidia but smaller.

Habitat: Scattered to gregarious under aspen and mixed woods. Summer to autumn, Unedible.

Distribution: Korea(Mt. Jiri) and North America.

### Strobilomycetaceae 귀신거물버섯과

#### *Boletellus ananas*(Cur.) Murr. 비늘밤그물버섯(新稱)

*Boletus ananas* Curtis, Amer. Journ. Sci. II, 6:251, 1848.

*Strobilomyces pallescens* Cooke be Masee, Grevillea 18:5, 1889.

*Boletus isabellinus* Peck, Bull. Torr. Club. 24:146, 1897.

Smith, A.H. and H.D. Thiers, The *Boletes* of Michigan, 381, 1971.

Singer, *Agaricales*, 833, 1975.

Pileus 4.0-12.0 cm broad, hemispheric to convex, with margin incurved strongly, expanding to broadly convex-expanded, surface dry and scaly, scales of fascicles of fibers forming large woolly squarrose to subimbricate scales more erect

toward the disc, fade scarlet or deep vinaceous, vinaceous-red to pale tan mixed olive-yellow fibrils with age. Tubes depressed around the stipe, 0.8-1.3 cm long, angular, moderately wide, yellow, often tinged with turning blue when touched, yellowish-brown or reddish-brown when exposed to air. Stipe 6.0-12.0 cm long, 0.6-1.2 cm thick, equal or slightly enlarged downward, solid, becoming sordid-pinkish, subfibrillose to fibrous, rare with annular remnant from the veil. Flesh whitish to yellowish in the pileus, staining blue when cut, white or pallid in the stipe. Taste mild, smell not distinctive, context yellow to brown in KOH, surface olive-yellow in  $\text{NH}_4\text{OH}$ , context green in  $\text{FeSO}_4$ .

Spores 16.5-21.0(-24.0)  $\times$  7.5-9.0  $\mu\text{M}$ , longitudinally ridged by thin wing arranged in a slightly spiraled pattern, apex with a small often in distinct pore, basidia 34.5(-25.5)-48.0  $\times$  10.5-13.5(-16.5)  $\mu\text{M}$ , clavate, cystidia 25.5-48.0  $\times$  6.0(-5.2)-15.0  $\mu\text{M}$ , fusoid, hyaline.

Habitat: On soil of broad-leaved and mixed woods. Summer to early autumn. Edibility un-

known.

Distribution: Korea(Mt. Jiri), Europe and North America.

### 摘 要

1986年 3월부터 1987年 10월까지 智異山 一帶에서 自生하는 韓國産 高等菌類 70餘種을 採集하여 同定한 結果 韓國産 未記錄種으로 確認한 것은 다음과 같으며 이들에 대하여 普通名을 新稱하였다.

*Cystoderma granulosum*(Fr.) Fayod(과립낭피버섯)

*Melanoleuca verrucipes*(Fr.) Sing.(흑얼룩배꼽버섯)

*Inocybe mixtilis*(Britz.)Sacc. (잡색땀버섯)

*Cortinarius pholideus*(Fr.) Fr.(해진풍선끈적버섯)

*Lactarius uvidus* var. *uvidus* Hesler & Smith(흰털젓버섯아재비)

*L. vellereus* var. *vellereus* Hesler & Smith(물젓버섯아재비)

*Boletellus ananas*(Cur.) Murr. (비늘밤그물버섯)

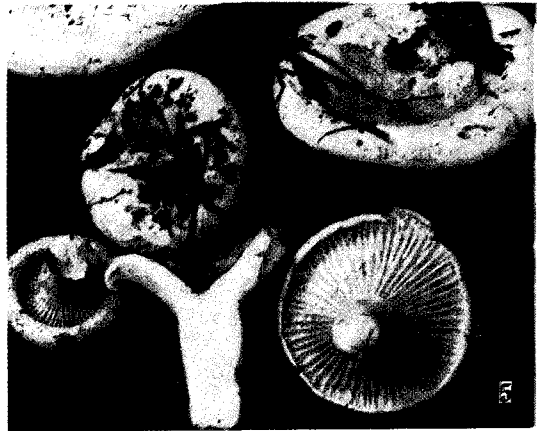
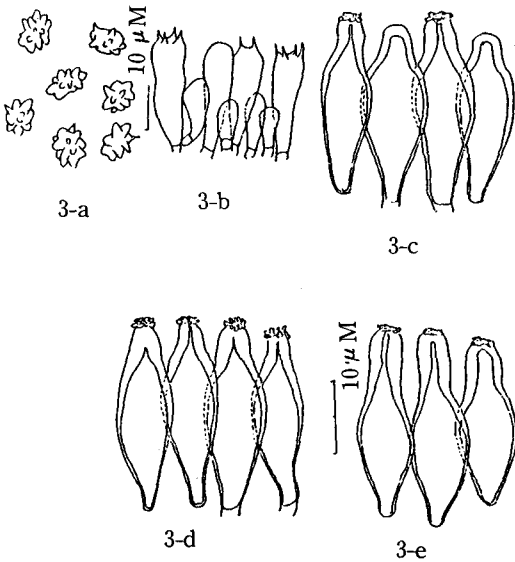
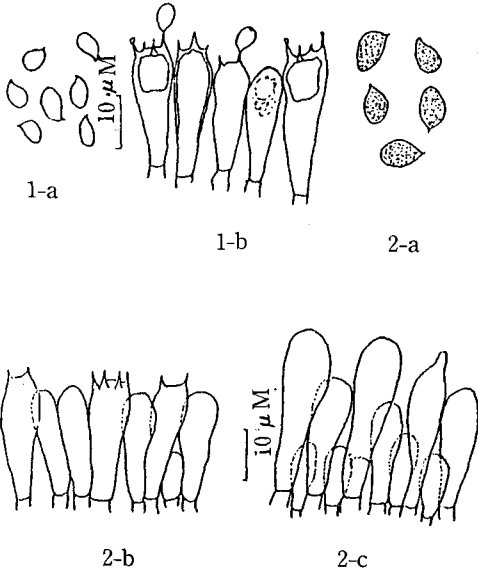


Plate 1

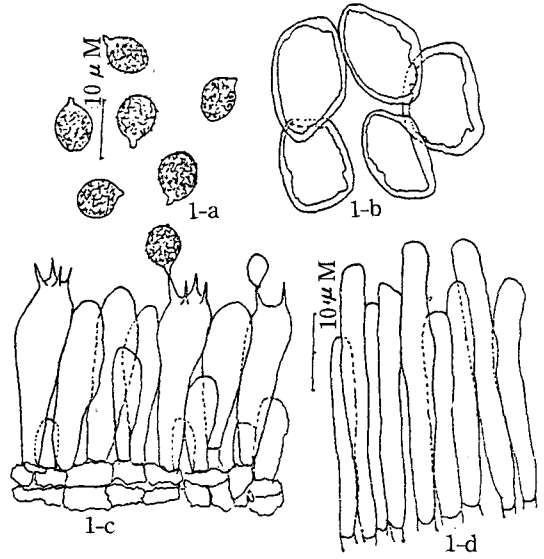
- 1. *Cystoderma granulatum*(Fr.)Fayod×1/3
- 2. *Melanoleuca verrucipes*(Fr.)Sing.×1/3
- 3. *Inocybe mixtilis*(Britz.) Sacc.×1/3

- 4. *Cortinarius pholideus*(Fr.)Fr.×1/3
- 5. *L. vellereus* var. *vellereus* Hesler & Smith×1/3
- 6. *Lactarius uvidus* var. *uvidus* Hesler & Smith×1/3
- 7. *Boletellus ananas*(Cur.)Murr. ×1/3



**Plate 2**

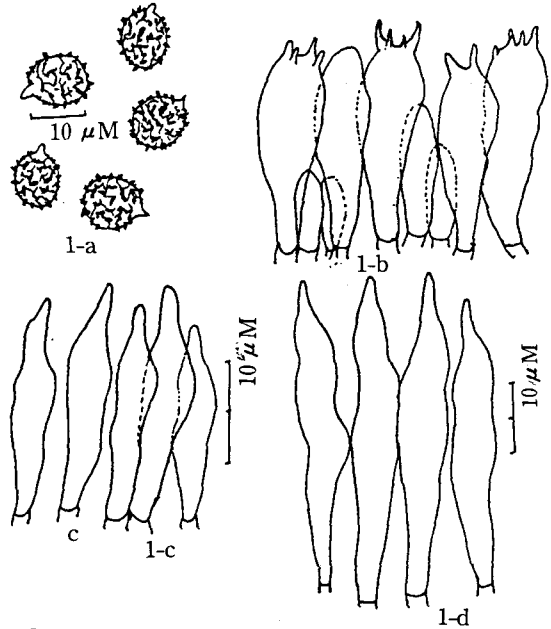
1. *Cystoderma granulatum* (Fr.) Fayod  
1-a, spores  
2-b, basidia
2. *Melanoleuca verrucipes* (Fr.) Sing.  
2-a, spores  
2-b, basidia  
2-c, cystidia
3. *Inocybe mixtilis* (Britz) Sacc.  
3-a, spores  
3-b, basidia  
3-c, cheilocystidia  
3-d, pleurocystidia  
3-e, cystidia at apex of stipe



**Plate 3**

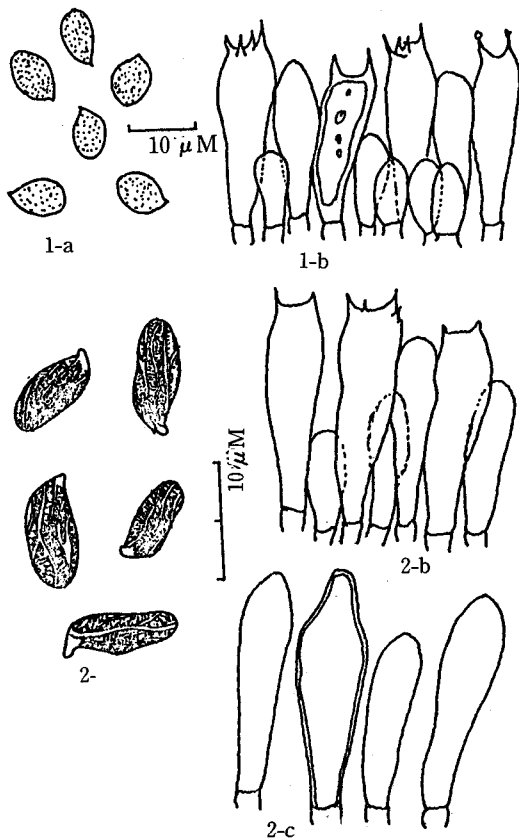
1. *Lactarius vellereus* var. *vellereus* Hesler & Smith

- 1-a, spores
- 1-b, sphaerocysts
- 1-c, basidia
- 1-d, pleurocystidia



**Plate 4**

1. *Lactarius uvidus* var. *uvidus* Hesler & Smith  
1-a, spores  
1-b, basidia  
1-c, cheilocystidia  
1-d, pleurocystidia



### Plate 5

1. *Cortinarius pholideus* (Fr.) Fr.
  - 1-a, spores
  - 1-b, basidia
2. *Boletellus ananas* (Cur.) Murr.
  - 2-a, spores
  - 2-b, basidia
  - 2-c, cystidia

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