

## Notes on genus *Entoloma* of Korea (III)

Duck-Hyun Cho and Seong-Sick Park\*

Department of Biology, Chonju Woosuk University, Chonju, 565-800 and

\*Seonggi Girls High School, Masan, 630-150 Republic of Korea

### 韓國産 외대버섯屬의 記錄 (III)

趙德炫·朴聖植\*

全州又石大學 生物學科, 馬山聖旨女子高等學校

**ABSTRACT:** Eight species of genus *Entoloma* were collected from the areas of Mt. Naejang National Park, Mt. Jangan Provincial Park and Mt. Manduck and newly identified in Korea: *Entoloma squamodiscum*, *E. nigroviolaceum* var. *nigroviolaceum*, *E. subrhombisporum*, *E. spadix*, *E. fumosialbum*, *E. peckianum*, *E. strictius* var. *strictius* and *E. albatum*.

**KEYWORDS:** *Entoloma squamodiscum*, *E. nigroviolaceum* var. *nigroviolaceum*, *E. subrhombisporum*, *E. spadix*, *E. fumosialbum*, *E. peckianum*, *E. strictius* var. *strictius* and *E. albatum*.

#### *E. squamodiscum* Hesler 비듬외대버섯(신칭)

Hesler, *Beih. Nova Hedwigia* 23: 120-121, figs. 68-70, 1967.

Descriptions: Pileus 1.5-2.6 cm broad, at first broadly campanulate to plane, depressed to umbilicate when mature, rarely broadly infundibili-shaped when mature, whitish yellow to grayish yellow, rarely grayish brown to avellaneous, hygrophanous, fibrillose-squamolucose on disc, fibrillose-squamolucose olivaceous, margin stritulate to disc, not translucently striate when moist, serrulate or serrate. Context thin, tinged white. Odor slightly fragrant, taste mild. Lamellae white to whitish pink or tinged pinkish, finally avellaneous, decurrent, knife-shaped or ventricose, mixed short and long, close, medium broad, edges fimbriate, concolorous. Stipe 1.7-3.4 cm long, 1.0-2.0 mm thick, cylindrical, bent at base, at first white, whitish gray to whitish yellow, apex brownish yellow, pubescent, elsewhere glabrous, attaching white mycelium at base, solid to stuffed, finally hollow, white.

Spores 9.5-11.5×6.3-7.8 μm, mostly with 5-8 angles in side view, slightly nodulose, elliptical or slightly long quadrate in out line, basidia 17.5-27×10-12 μm, fusoid or clavate, 4-spored, subhymenium distinctive, cheilocystidia 50-57.5×30-47.5 μm, fusiform, inflated clavate, pleurocystidia 42.5-62.5×10-12.5 μm, clavate, apex acutic, hyphae from gill trama 27.5-50×6.3-10 μm, cylindrical, interwoven or subparaallel, pileipellis 65-82.5×8.0-10 μm, cylindrical with undulate.

Habitat: Scattered on solis of sedges weeds. Summer to autumn. Edibility unknown.

Distributions: Chonju city.

Specimens studied: CHO-1028 collected from areas at citizen park of Inhu-Dong on 2nd, July 1990.

Discussions: Characteristics of this species is similar to *Rhodophyllus bisporus* Hongo (not recorded in Korea), which is two-spored but this species is 4-spored and nodulose spores. In its odor, this species recalls *E. fragrans* Hesler (향버섯) in which the pileus is rosy grayish with "Isabella color" to pinkish buff fibrills.

(균모(갓)는 소형이고 배꼽모양으로 황갈색이며 올리브색갈의 인편이 분포한다. 가장자리는 줄무늬

This paper was supported in part by NON DIRECTED RESEARCH FUND, Korea Research Foundation, 1991.

가 있으며 툽니꼴이다. 주름살은 내린주름살이고 가장자리에는 미세털이 있다. 자루는 짧고 굽었으며 백황색으로 윗쪽에는 부드러운 털이 있으나 다른 곳은 밋밋하다. 포자는 중형이고 결절을 가지고 있으며 연낭상체와 측낭상체가 있다. 여름에서 가을에 걸쳐 사초과 식물의 흙에 산생한다. 본 종과 유사한 것으로 *Rhodophyllus bisporus* Hongo가 있는데 이 종은 2포자성인 점이 다르다.)

***E. nigroviolaceum*(Orton) var. *nigroviolaceum* Hesler 흑자색외대버섯아재비(신칭)**

Hesler, *Reih. Nova Hedwigia* 23 : 50-51, figs. 24-25, 1967. *Leptonia nigroviolacea* Orton, *Trans. Brit. Myc. Soc.* 43(2) : 296, 1960.

Descriptions: Pileus 1.0-1.3 cm broad, broadly convex or umbonate, expanding umbonate, truncately convex, disc depressed to umbilicate, darkish blue or darkish violaceous, with small darkish blue scales, over all or least on disc, disc rimosal, appeared on context, margin striate, uneven. Context thin, whitish blue. Odor idistinctive, taste farinaceous or slightly rancid. Lamellae adnate or slightly adnexed, white to pallid whitish, becoming pale pinkish buff, broad, crowded, edges even or faintly fimbriate, concolorous. Stipe 3.0-4.0 cm long, 1.5-3.0 mm thick, cylindrical or slightly tapering upward, enlarged downward, concolorous with pileus, squamulose-scaly, more densely at apex, attaching white-myceloid at base, stuffed to hollow, white.

Spores 9.0-12×6.0-8.0 μm, mostly with 6-7 angles in side view, elliptical or ovoid in out line, basidia 32.5-42.5×8.8-10.5 μm, clavate, 4-spored, hyphae from gill trama subparallel, hyphae 5.0-12 μm broad, subhymenium indistinctive, pileus trama radial, cheilocystidia and pleurocystidia absent, pileocystidia 40-52.5×12.5-20 μm. flask-shaped or slightly clavate, caulocystidia 25-35×5.0-6.3 μm, filamentous cylindrical, small tufts, hyphae from stem trama similar.

Habitat: Clustered or cespitose on soils with mosses. Summer. Edibility unknown.

Distributions: Mt. Jangan Provincial Park

Specimens studied: CHO-1025 collected from ares of Mt. Jangan, Jangsu-Kun, Chonbuk-Do on 22th, July 1990.

Discussions: Characteristics of this species is distinguished by its darkish blue pileus and stipe, squamulose-scale and lacks of cheilocystidia and pleurocystidia.

(균모는 소형이고 배꼽모양이며 흑청색으로 인편이 분포하며 가운데가 짙은 것이 있다. 주름살은 바른주름살이고 밀생한다. 자루는 원통형에 가깝고 균모와 같은 색깔이며 인편이 분포한다. 포자는 중형이고 연낭상체와 측낭상체는 없다. 여름에 이끼 속의 흙에 군생 또는 속생한다.)

***E. subrhombisporum* Hesler 연포자외대버섯아재비(신칭)**

Hesler, *Beih. Nova Hedwigia* 23 : 121, figs. 79-82, 1967.

Descriptions: Pileus 7.0-15 mm broad, truncately broadly convex to plane, depressed with a small umbo, hygrophanous, fibrillose-squamulose on disc, elsewhere glabrous, grayish brown or grayish brown with blue, translucently striate to disc from margin when moist, margin involute, even when dry. Context white, thin. Odor mild, taste slightly farinaceous. Lamellae adnate, subanexed, at first white to grayish brown, becoming pallid pinkish, close or slightly crowded, broad, edges uneven, concolorous. Stipe 3.0-4.0 mm long, 1.0-1.3 mm thick, grayish blue, whitish gray with blue at apex, cylindrical, slightly tapering upward, rarely fibrillose, longitudinally striate, white fibrillose cottony at base, stuffed to hollow, grayish white.

Spores 8.0-10×8.0(-7.0)-9.0 μm, mostly with 5 angles in side view, rarely with 6 angles, isodiametric, subglobose in out line, angles slightly acute, basidia 27.5-35×11.3-13.3 μm, clavate, slightly cylindrical, 4-spored, subhymenium distinctive, cheilocystidia 36-55×8.0-10 μm, ventricose, apex slightly blunt, occasionally appendiculate to subcapitate, pleurocystidia 40-60.5×5.0-9.0 μm, similar, hyphae from gill trama subparallel, pileocystidia 40-60×5.0-7.0 μm, ventricose, caulocystidia 40-75×3.5-6.0 μm, slender.

Habitat: Scattered on decay-woods of stump or among mosses. Summer to autumn. Edibility unknown.

Distributions: Mt. Manduck.

Specimens studied: CHO-1029 collected from

areas between Miruk-Sa and top of Mt. Miruk on 7th, July 1990.

Discussions: This species is similar to *Rhodophyllus rhombisporus* (not recorded in Korea), which appears to lack pleurocystidia, and *R. politus* (not recorded in Korea), in which the lamellae are at first white and the spores  $10-14.5 \times 7.0-9.0 \mu\text{m}$ .

(균모(갓)은 소형이고 가운데가 볼록한 배꼽모양이다. 섬유상인편이 배꼽에 있으며 회갈색이고 줄무늬는 습기가 있을 때 투명하다. 주름살은 바른주름살이고 자루는 짧고 회청색이며 원통형이다. 긴 세로줄이 있고, 근부에 섬유상의 솜털같은 것이 있다. 포자는 중형이고 거의 구형에 가깝고 연낭상체와 측낭상체가 있다. 여름에서 가을에 걸쳐 고목의 이끼류속에 산생한다.)

#### *E. spadix* Hesler 이삭외대버섯(신칭)

Hesler, *Beih. Nova Hedwigia* 23 : 24-25, 1967.

Descriptions: Pileus 3.0-5.0 cm broad, conic-campanulate or convex-campanulate to plane or umbonate, dry, brown or reddish brown, disc slightly dark, squamulose or fibrillose-scaly, slightly rimose to disc from margin in age, margin striate, even. Context yellowish brown with white, thin. Odor and taste mild. Lamellae 2.0-3.0 mm wide, adnexed, seceding when mature, at first white to brownish pink, finally reddish pink, close, narrowed in front, broad in behind, edges uneven, serrate or erode, concolorous. Stipe 6.0-9.0 cm long, 2.0-3.5 mm thick, slender, equal, tapering upward, concolorous with pileus, slightly whitish at base, reddish brown fibrillose-scaly, slightly twisted, bent at base, attaching white myceloid at base, hollow, yellowish white.

Spores  $11-13.5 \times 10-13 \mu\text{m}$ , quadrate, with 4 angles in side view, angles obtuse, basidia  $37.5-50 \times 13.8-14.4 \mu\text{m}$ , 4-spored, clavate, subhymenium distinctive, cheilocystidia and pleurocystidia absent, hyphae from gill trama  $5.0-9.0 \mu\text{m}$  broad, subparallel, pileocystidia  $77.5-87.5 \times 17.5-18.8 \mu\text{m}$ , slightly clavate, apex round, pileipellis similar.

Habitat: Solitary on soils with *Sasa borealis*. Summer. Edibility unknown.

Distributions: Mt. Naejang National Park.

Specimens studied: CHO-1022 collected from areas between Naejang-Sa and Wonjol-Am on 20

th, July 1990.

Discussions: This species is distinguished by its reddish brown color, its darker disc, fibrillose-squamulose or scaly pileus, quadrate spores.

(균모의 크기는 약간 소형이고 종모양으로 갈색이며 표면은 쪼지고 인편과 줄무늬가 있다. 주름살은 올린주름살이고 가장자리는 톱니꼴이다. 자루는 길고 약간 비틀리며 적갈색의 인편이 있다. 포자는 대형이고 정사각형의 모양이고 연낭상체와 측낭상체는 없다. 여름에 조릿대속의 흙에 단생한다.)

#### *E. fumosialbum* Murr(흰연기외대버섯(신칭))

Murr., *North Amer. Flora* 10 : 116, 1917.

Hesler, *Beih. Nova Hedwigia* 23 : 28, 1967.

Descriptions: Pileus 1.8-5.0 cm broad, broadly umbonate to expanding plane, depressed to umbilicate, whitish gray or grayish brown, rarely grayish dark with brown, striate to disc from margin, disc darker, glabrous, appearing satiny, margin inrolling, even, rarely upturning when mature. Context thin, white. Odor and taste indistinctive. Lamellae 2.0-4.0 mm wide, ventricose, sinuate with a decurrent tooth, white to tinged pink, slightly crowded, edges slightly undulate, concolorous. Stipe 4.5-8.0 cm long, 2.0-4.0 mm thick, slender, equal, satiny white, rarely white fibrillose-scales at apex, elsewhere glabrous, longitudinally striate, fragil, slightly twisted, hollow, white or whitish gray.

Spores  $8.0-9.5 \times 6.0-7.0 \mu\text{m}$ , mostly with 5-6 angles in side view, angles obtuse, ovoid or slightly elliptical in outline, basidia  $32.5-37.5 \times 8.8-10.3 \mu\text{m}$ , clavate, 4-spored, hyphae from gill trama subparallel, pileus trama radial.

Habitat: Scattered or clustered on humus of deciduous forests. Summer, Edibility unknown.

Distributions: Mt. Naejang national park.

Specimens studied: CHO-1033 collected from areas between Naejang-Sa and Wonjok-Am on 16th, August 1990.

Discussions: It is distinguished by grayish white pileus, sinuate gills, satiny white stipe. It may be related to *E. murrils*, which is pure white, thin flesh and more slender stipe. Hesler reported that context is thick, but we found thin context, and descriptions of elseothers are similar.

(균모는 소형이고 회백색이며 세로줄이 있고 주

름살은 흙파진주름살이고 밀생이며 가장자리는 물결형이다. 자루는 원통형이고 광택나는 백색이고 섬유상인편이 위쪽에 분포하고 다른 곳은 밋밋하고 비틀린다. 포자는 중형이고 연낭상체와 측낭상체는 없다. 여름에 낙엽활엽수림의 부식질에 산생 또는 군생한다.)

***E. peckianum* Peck 흙집외대버섯(신칭)**

Peck, *N. Y. State Mus. Ann. Rept.* 54 : 146, 1901.

Hesler, *Beih. Nova Hedwigia* 23 : 186-187, figs. 154-155, 182, 239, 1967.

Descriptions: Pileus 1.5-2.5 cm broad, broadly umbonate or umbonate, rarely slightly mammillate, becoming slightly campanulate, hygrophanous, darkish blue with brown, or darkish brown, fine scale, squamulose of darkish blue, rarely rimose at center, shining when wet, palwer when dry, drying in radial streaks, margin even. Context thin, whitish, dingy brownish when wet. Odor distinctive, taste mild. Lamellae adnexed abruptly round behind, ascending, white to pinkish, close, edges even, concolorous. Stipe 8.0-10 cm long, 2.0-3.0 mm thick, darkish blue or pale brown, whitish at base, minuate scale or fibrillose, longitudinally striate, cylindrical, attaching white mycellium at base, hollow, slightly whitish with blue.

Spores 9.0-11.5×7.5-8.0 μm, mostly with 5-6 angles in side view, rarely with one or two oil drops, elliptical in out line, basidia 25-46.3×10-11.3 μm, cylindrical or slightly clavate, 4-spored, sterigmats 3.8-6.3 μm high, hyphae from gill trama 75-110×8.8-10 μm, cylindrical praallel, subhymenium indistinctive, pileus trama radial, cheilocystidia 35-57.5×10-20 μm, vesiculose, apex round, pleurocystida 25-37.5×8.8-18.8 μm, vesiculose or ventricose, acutic at end, pileipellis 35-67.5×6.3-10 μm, cylindrical, parallel, pileocystidia 129.3-151.3×15-26.3 μm, ventricose, or vesiculose, caulocystidia 15.8-23.8×7.0-10 μm, cylindrical, hyphae from stem trama 25-30×5.0-7.5 μm, filamentous.

Habitat: Solitary or clustered on solis of grass and coniferous. Summer to autumn. Edibility unknown.

Distributions: Mt. Manduck.

Specimens studied: CHO-1027 collected from areas at road side of Gomti-Jae on 1st, July 1990.

Discussions: The characteristics of this species have darkish blue with brown pileus, slender stipe, relatively large spores, cheilocystidia, pleurocystidia, pileocystidia and caulocystidia. It is similar to *E. strictius* var. *cysytidiosum* (not recorded in Korea) in which the the pileus is grayish brown.

(균모는 소형이고 둥근형으로 흑청색이고 인편이 분포하며 가운데가 찢진 것도 있다. 주름살은 올린 주름살이다. 자루는 가늘고 길며 흑청색이고 미세 인편이 분포하며 긴세로줄이 있다. 포자는 중형이고 기름방울을 가지는 것도 있으며 연낭상체와 측낭상체가 있다. 여름에서 가을에 걸쳐 풀속의 흙에 단생 또는 군생한다.)

***E. strictius*(Pk.) Sacc. var. *strictius* Hesler 직립외대버섯아재비(신칭)**

Hesler, *Beih. Nova Hedwigia* 23 : 73-75, figs. 199, 1967. Sacc., *Syll. Fung.* 5 : 698, 1887. *Agaricus strictior* Pk., *N. Y. State Cab. Ann. Rept.* 23 : 88, 1873. *Rhodophyllus strictior*(Pk.) Sing., *Lilloa* 22 : 617, 1951.

Descriptions: Pileus 5.3-6.0 mm broad, campanulate, slightly broadly umbonate, rarely umbonate with acutic at disc, then expanded, hygrophanous, grayish brown or grayish dark with brown, paler when dry, scales darkish brown or slightly yellowish brown, upturning, more densely at disc, margin minutely striate, distinctive striate when moist, evne, Context thin, whitish or pallid white, brownish when moist. Odor and taste mild. Lamellae 4.0-6.0 mm wide, medium broad, knife-shaped, adnexed or slightly free, at first whitish, becoming pinkish, close or slightly crowded, edges undulate, concolorous. Stipe 10.5-11 cm long, 2.5-3.5 mm thick, slender, equal, slightly tapering upward, bent, paler concolorous with pileus, often twisted, silky-fibrillose at apex, attaching white mycellium clump, elsewhere glabrous, fragil, easily splitting longitudinally, base whitish, attaching white myceloid, hollow, white.

Spores 11-13×7.1-8.5 μm, mostly with 6 angles in side view, angles obtuse, rarely with one or two oil drops, ovoid or elliptical in out line, cheilocystidia and pleurocystidia absent, pileocystidia 62.5-90×12.5-22 μm, clavate, slightly sosome-shaped,

pileus trama radial, caulocystidia 33.8-61.3×10-15 μm, clavate, slightly ventricose, hyphae from stem trama 78-100×6.3-7.5 μm, subparallel, filamentous, clamp connection present of stem.

Habitat: Clustered on solis of *Sasa borealis*. Summer. Edibility unknown.

Distributions: Mt. Naejang National Park.

Specimens studied: CHO-1026 collected from areas between Naejang-Sa and Wonjok-Am on 20th, July 1990.

Discussions: Characteristics of this species is by its grayish brown, campanulate to umbonate, striatulate pileus, its long cylindrical stipe, whitish young gill, lacks of cheilocystidia and pleurocystidia.

Hesler didn't report whether pileus have scales, but we found scaly on pileus, and descriptions of elseothers are similar.

(균모(갓)은 중형이고 둥근모양으로 회갈색이며 줄무늬가 있다. 주름살은 올린주름살 또는 끝붙은 주름살이고 가장자리가 물결형이다. 자루(대)는 가늘고 길며 약간 비틀리고 하얀 군사덩어리가 군데 군데 붙어 있고, 긴 세로줄이 있다. 포자는 대형이고 연낭상체와 측낭상체는 없으나 자루의 군사에는 격새(고리)가 있다. 조릿대속에 무리지어 여름에 발생한다.)

#### *E. albatum* Hesler 흰배꼽외대버섯(아재비(신칭))

Hesler, *Beih. Nova Hedwigia* 23 : 144-145, figs. 89-90, 1967.

Descriptions: Pileus 1.7-3.1 cm broad, at first umbonate to broadly umbonate, somewhat expanded, finally broadly depressed-umbilicate, white, yellowish white, or tinged yellowish white, depressed-umbilicate, pallid yellowish, minutely and sparsely silky, dry, margin fine striate, even. Context white, thin. Odor distinctive, taste mild or slightly bitter. Lamellae 3.0-4.0 mm wide, medium broad, knife-shaped, adnate or distant, close, at first, becoming pallid pinkish in age, edges uneven, slightly fimbriate, concolorous. Stipe 6.0-7.5 cm long, 2.5-4.0 mm thick, cylindrical, slightly ventricose, white to pallid white, apex white purinose, elsewhere glabrous, attaching white myceloid at base, hollow, white.

Spores 8.5-10×6.5-7.0 μm, mostly with 5-6 ang-

les in side view, angles not sharp, elliptical in out line, cheilocystidia 40-67.5×7.5-10 μm, clavate or ventricose, pileocystidia 95×17.5 μm, clavate, very rarely present, pileipellis 82.5-137.5×13.8-17.5 μm, cylindrical, hyphae from stem trama 97.5-170×6.3-12.5 μm, filamentous, subhymenium indistinctive.

Habitat: Solitary or clustered on solis with fallen-leaves of *Sasa borealis*. Summer. Edibility unknown.

Distributions: Mt. Jangan Provincial Park.

Specimens studied: CHO-1024 collected from areas of Mt. Jangan, Jangsu-Kun, Chonbuk-Do on 22th, July 1990.

Discussions: This species is characterized by its white carpophores its medium sized spores, lacks of pleurocystidia, presence of ventricose cheilocystidia.

Hesler reported that pileus 7.0-12 mm broad, and lacks of pileocystidia and presence of caulocystidia, but we found the pileocystidia and not caulocystidia.

This species is near to *E. sericellum*(Fr.) Kummer(비단외대버섯) which pileus is convex or campanulate and medium sized spores.

(이 버섯은 자실체가 백색이며 균모는 소형이고 배꼽형에 가깝고 미세인편이 있으며 줄무늬가 있다. 주름살은 바른주름살 또는 떨어진 주름살이고 가장 자리에 미세 털이 있다. 자루는 원통형이고 윗쪽에는 미세가루가 분포하나 다른 곳은 밋밋하다. 포자는 중형이고 연낭상체는 있으나 측낭상체는 없다. 여름에 조릿대속의 낙엽의 흙에 단생 또는 군생한다. 이 종류에 유사한 것으로 균모가 불룩하여 종모양인 비단외대버섯이 있다.)

## 摘 要

1990년 여름에서 가을동안 국립공원 내장산, 도립공원 장안산 및 전주와 전주근교의 만덕산에서 많은 외대버섯속을 채집하였다. 내장산 국립공원에서는 등산로를 따라서 군데군데 발달한 조릿대(일명 신호대) 숲의 죽림과 활엽수림에서 채집하였다. 장안산 도립공원에서는 역시 등산로의 조릿대 숲에서 채집하였으며 만덕산에서는 곰티재의 길가와 낙엽 활엽수림에서 채집하였다.

이 외대버섯들을 동정한 결과 한국 미기록종으로

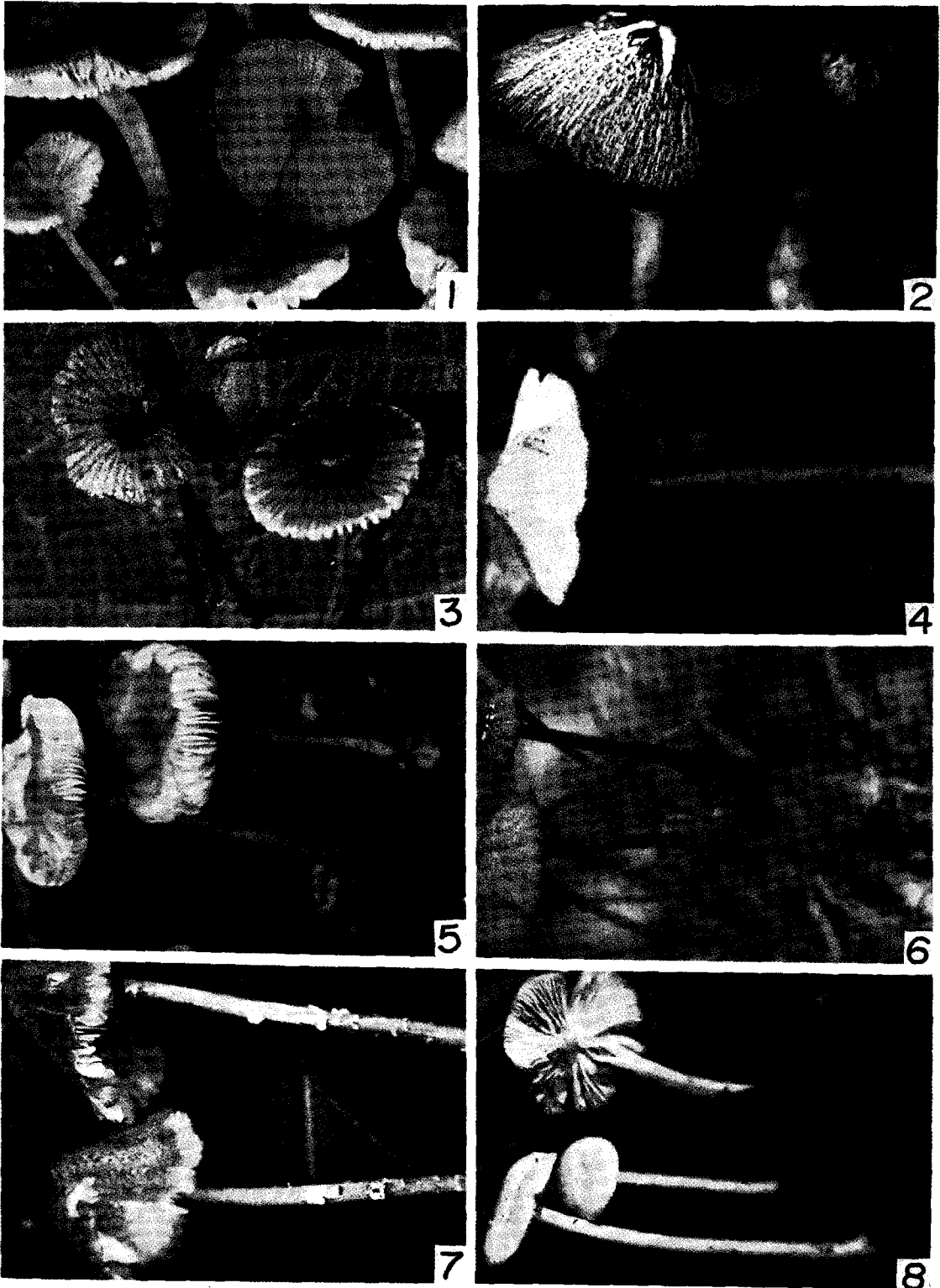


Plate I

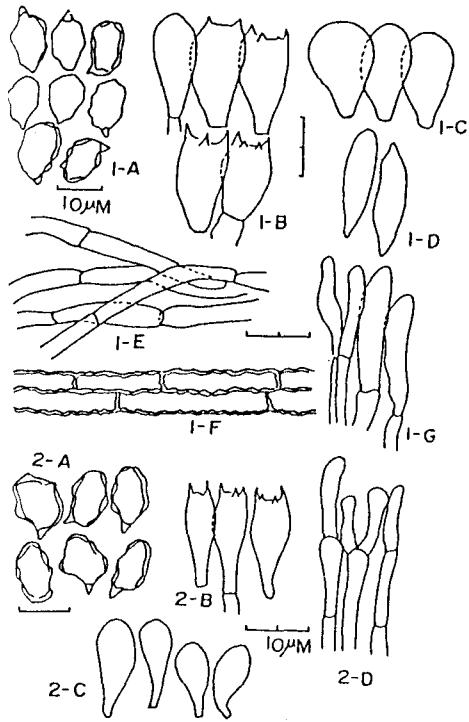


Plate II

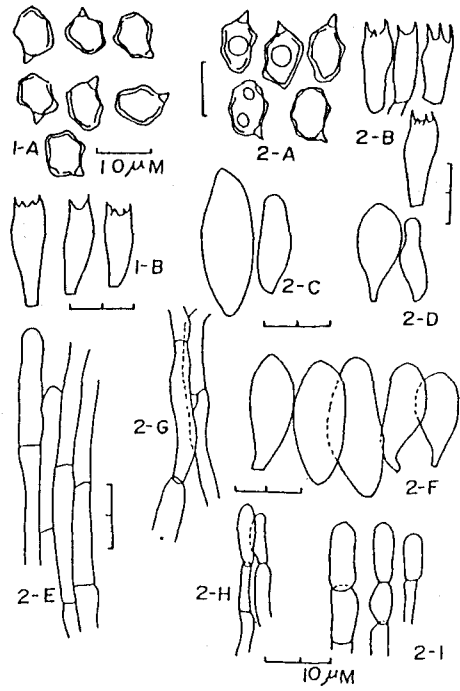


Plate III

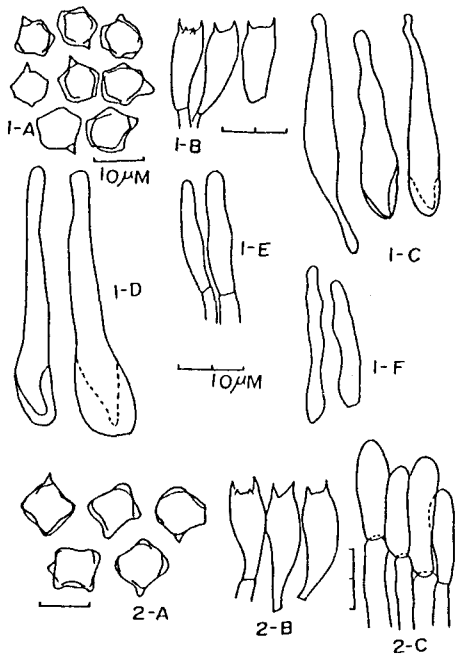


Plate VI

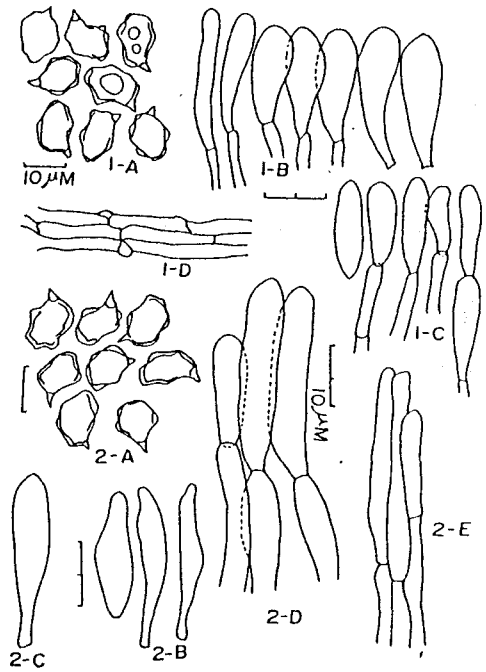


Plate V

**The Explanations of Plate I**

1. *E. squamodiscum*
2. *E. nigroviolaceum* var. *nigroviolaceum*
3. *E. subrhombisporum*
4. *E. spadix*
5. *E. fumosialbum*
6. *E. peckianum*
7. *E. strictius* var. *strictius*
8. *E. albatum*

\*Natural size 1/2

**The Explanations of Plate II**

1. 2. *squamodiscum*  
1-A, spores. 1-B, basidia. 1-C, cheilocystidia. 1-D, pleurocystidia. 1-E, hyphae from gill trama. 1-F, pileipellis. 1-G, hyphae from stem trama.
2. *E. nigroviolaceum* var. *nigroviolaceum*  
2-A, spores. 2-B, basidia. 2-C, pileocystidia. 2-D, caulocystidia and hyphae from stem trama.

**The Explanations of Plate III**

1. *E. subrhombisporum*  
1-A, spores. 1-B, basidia. 1-C, cheilocystidia. 1-D,

- pleurocystidia. 1-E, pileocystidia. 1-F, caulocystidia.
2. *E. spadix*  
2-A, spores. 2-B, basidia. 2-C, pileocystidia and pileipellis

**The Explanations of Plate IV**

1. *E. fumosialbum*  
1-A, spores. 1-B, basidia.
2. *E. peckianum*  
2-A, spores. 2-B, basidia. 2-C, cheilocystidia. 2-D, pleurocystidia. 2-E, hyphae from gill trama. 2-F, pileocystidia. 2-G, pileipellis. 2-H, hyphae from stem trama. 2-I, caulocystidia.

**The Explanations of Plate V**

1. *E. strictius* var. *strictius*.  
1-A, spores. 1-B, pileocystidia. 1-C, caulocystidia. 1-D, hyphae from stem trama.
2. *E. albatum*  
2-A, spores. 2-B, cheilocystidia. 2-C, pileocystidia. 2-D, hyphae from gill trama. 2-E, hyphae from stem trama.

확인된 것은 다음과 같으며 이들에 대하여 한국 보통명을 신칭하였다.

*Entoloma squamodiscum*(비듬외대버섯), *E. nigroviolaceum* var. *nigroviolaceum*(흑자색외대버섯아재비), *E. subrhombisporum*(연포자외대버섯아재비), *E. spadix*(이삭외대버섯), *E. fumosialbum*(흰연기외대버섯), *E. peckianum*(흙집외대버섯), *E. strictius* var. *strictius*(직립외대버섯아재비), *E. albatum*(흰배꼽외대버섯아재비).

**References**

- Bessette, A. and Sunberg, W. J. (1987): Mushrooms, Macmillan Publishing Co. pp. 1-170.
- Bon, M.(1987): The Mushrooms and Toadstools of Britain and North-Western Europe, Hodder and Stought. pp. 188-195.
- Cetto, B. (1987): Pilze, Band 2, BLV Verlagsgesellschaft: 526-567.
- Cho, D. H. (1992): The Mycoflora of Higher Fungi in Mt. Balwangsan Areas, *The Report of the KACN*, 30: in press.
- Cho, D. H. and Lee, J. Y. (1980): Fungal Flora in Bamboo Forests of Korea(II), *Kor. J. Mycol.* 8(1): 29-32.
- Cho, D. H. and Park, S. S. (1990): The Mycoflora of Higher in Mt. Kayasan National Park, *The Report of the KACN*, 28: 165-173.
- Cho, D. H. and Park, S. S. (1991): Notes on genus *Entoloma* of Korea(I), *Kor. J. Mycol.* 19(1): 11-17.
- Cho, D. H. and Park, S. S. (1991): Notes on genus *Entoloma* of Korea(II), *Kor. J. Mycol.* 19(2): 93-100.
- Cho, D. H. and Ryoo, C. I. (1991): The Mycoflora of Higher Fungi in Mt. Songni, *The Report of the KACN*, 29: 237-245.
- Dennis, R. W. G., Orton, P. D. and Hora, F. B. (1960): New Check List of British *Agarics* and *Boleti*, Cambridge University Press. PP. 63-65.
- Hesler, L. R. (1967): *Entoloma* in Southeastern North America, *Nova Hedwigia* 23, Verlag von J. Cramer, pp. 1-195.
- Hongo, T. (1960): The Agaricales of Japan 1-2(Rhodophyllaceae, Paxillaceae, Gomphidiaceae, Boletaceae and Strobilomycetaceae), *Acta Phytotax. Geobot* 18 (4): 97-112.
- Hongo, T. (1977): Higher Fungi of Bonin Islands I, *Mem. Nat. Sci.*(10): 31-41.
- Horak, E. (1980): *Entoloma*(Agaricales) in Indomalaya and Australasia, *Nova Hedwigia* 65, J. Cramer, pp. 1-352.
- Imazeki, R. and Hongo, T. (1987): Colored Illustrations of Mushrooms of Japan Vol. I, Hoikusha Publishing Co. pp. 225-264.



- Ito, S. (1955): Mycological Flora of Japan **2**(4): 433-448.
- Kim, S. S. and Kim, Y. S. (1990): Korean Mushrooms, Yupoong Publishing Co. pp. 172-181.
- Korean Society of Mycology(1978): Suggestion on "Standard Korean Names of Mushrooms in Korea", *Kor. J. Mycol.* **6**(2): 45-55.
- Kornerup, A. and Wanscher, J. H. (1989): Methuen Handbook of Color, Methuen.
- Lange, M. and Hora, F. B. (1963): Mushrooms and Toadstools, Collins St. James Places, pp. 173-183.
- Largent, D. L. (1977): The Genus *Leptonia* on the Pacific Coast of the United States, J. Cramer, pp. 1-286.
- Lee, J. Y. (1980): Coloured Korean Mushrooms, Vol. I, Academic Press, pp. 57-61.
- Lee, J. Y. and Cho, D. H. (1988): The Mycoflora of Higher Fungi in Mt. Wolchul, *The Report of the KACN*, **27**: 213-219.
- Lee, J. Y., Cho, D. H. and Kim, S. S. (1978): Notes on Korean Higher Fungi(IV), *Kor. J. Mycol.* **6**(1): 43-52.
- Lee, J. Y. and Hong, S. W. (1985): Illustratrd Flora and Fauna of Korea 28, Ministry of Education, pp. 560-570.
- Lee, T. S. (1990): The Full List of Recorded Mushrooms in Korea, *Kor. J. Mycol.* **18**(4): 233-259.
- Lee, Y. W. and Lee, D. S. (1957): A List of the Korean Fungi Part(I), *Bulletin of Forest Experiment Station*, Seoul, Korea: p. 24.
- Lincoff, G. H. (1981): The Audubon Society Field Guide to North America Mushrooms, Alfred A. Knof. pp. 642-648.
- Noordeloos, M. E. (1987): *Entoloma*(Agaricales) in Europe, *Nova Hedwigia* **91**, J. Cramer, pp. 1-149.
- Noordeloos, M. E. (1987): Flora Agraicina Neelandica, A. A. Balkema/Rotterdam/Brookfield, pp. 77-177.
- Noordeloos, M. E. (1988): *Entoloma* in North America, The species described by L. R. Hesler, A. H. Smith and S. J. Mazzer: type-studied and comments, Gustav Fischer Verlag, pp. 1-164.
- Park, S. S. and Cho, D. H. (1988): The Flora of Higher Fungi in Mt. Jiri Areas(II), *Kor. J. Mycol.* **16**(3): 144-150.
- Phillips, R. (1981): Mushrooms and other Great Britain and Europe, Pam Books, pp. 115-118.
- Singer, R. (1975): The Agaricales in modern Taxonomy, 3rd. ed. Gantner Vdillage, KG. pp. 912.

**Accepted for Publication on December 5, 1991**