

## Notes on the genus *Entoloma* of Korea( IX )

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### 한국산 외대버섯 속의 기록( IX )

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#### Abstract

Many species of the genus *Entoloma* were collected at Mt. Jiri National Park, Mt. Baikyung National Park, Mt. Sunun Provincial Park and Mt. Balwang from June, 1991 to september, 1991.

These sepecies were identified. According to the results, *Entoloma convexum*, *E. roanense*, *E. clavipes*, *E. tephreum*, *E. ochraceum* and *E. weberi* were newly recorded in Korea.

These species were described and their Korean names were designed.

KEY WORDS : genus *Entoloma*, *E. convexum*, *E. roanense*, *E. clavipes*, *E. tephreum*, *E. ochraceum* and *E. weberi*.

In Mt. Jiri, National Park and Mt. Baikyung National Park, these are dominant gorests of *Carpinus lanifera*, *Quereus serrata*, *Q. mongalica* and *Abies nephroleis*. In Mt. Jiri National Park and Mt. Baikyung National Park, the species were colleted around areas of Whaom-Sa and Baikyung-Sa along the hiking route.

In Mt. Sunun Provincial Park, these forests of *Camellia japonica* and deciduous forests. The species were collected around of Sunun-Sa and along the valley.

In Mt. Balwang, these are compesed mixed deciduous and needle. The species were collected from the areas of road sides of south vally of it.

#### *Entoloma convexum* Stevenson 원추외대버섯(신칭)

Stevenson, Kew Bull. 16 : 235, pl.13, fig.87, 1962.

Pileus 4.0-4.4cm broad, conic to convex, disc papillate, striate from margin to disc, margin inrolled rarely, yellowish brown.

Lamellae at first white becoming to yellowish brown with pink, broad wide, edges concolororus.

Stipe 4.0-4.5cm long, 2.0-3.0mm thick, whitish yellow, cylindrical, stuffed, concolorous with surface.

Spores 11.5(-8.5)-13.0×9.0(-6.0)-10.0(-12.0)μm, globose in out line, with five or angles, angles obtuse, pleurocystidia and cheilocystidia absent, pileipellis 35.0-45.0×5.0-10.0μm, clavate, rarely with pigment, hyphae of stipe trama 27.5-65.0×10.0-12.5μm, cylindrical.

Habitat : Solitary on the soils of grass. Summer. Edibility unknown.

Distribution : Mt. Jiri National Park.

Specimens studied : CHO-2437 collected from areas Whaom-Sa on 12th of August, 1991.

Discussions : The most distinctive characters of this rather conic than, convex *Entoloma* : pileus strongly striate, larger spores.

*E. roannese* Hesler 양피외대버섯(신칭)

Hesler, Beih. Nova Hedwigia 23 : 105-106.

Pileus 3.7-5.0cm broad, convex, rarely convex-conic, finally expanding, rarely slightly broadly umbo, grayish-brown, hygrophanous, glabrous, striatulate when moist. Context thin, white to pallid. Odor and taste mild.

Lamellae adnexed, nearly subdistant to close, broadest in front or middle, whitish to pallid pink or flesh pink, edges even, concolorous.

Stipe 4.5-7.5cm long, 2.0-3.0cm long, 2.0-3.0cm thick, concolorous, apex purinose, base white myceloid.

Spores 8.5-(-7.5)-9.0(-9.5) × 6.0-8.0 μm, ventricose, pleurocystidia and cheilocystidia absent, pileipellis 40.0-77.5 × 5.0-6.3 μm, filamentous, rarely with pigment.

Habitat : Clustered or scattered on soils or deciduous. Summer. Edibility unknown.

Distribution : Mt. Baikyung National Park.

Specimen studied : CHO-2483 Collected from areas of Baikyung-Sa on the 24th of August, 1991.

Discussions : The grayish brown pileus and stipe are rather distinctive. It is very close to *R. occidentalis* (not recorded in Korea) in which the pileus and stipe are avellaneous; and more distantly related to *E. avellaneum* (not recorded in Korea), which has spore 10-14 × 6.0-8.5 μm.

*E. clavipes* Hesler 배불뚝이외대버섯(신칭)

Hesler, Beih.nova Hedwigia 23 : 84, fig.202, 1967.

Pileus 3.5-4.2cm broad, broadly convex or slightly campanulate, finally plane with depressed, rarely broadly umbonate, hydrophanous, grayish brown or smoky grayish, brown, appressed-fibrillose, margin even, not striate. Context white, thick on disk, thin on margin. Odor mild, taste slightly farinaceous.

Lamellae emarginate, white, becoming dingy pink, crowded or slightly close, rather narrow, mixed long and short, edges rough, concolorous.

Stipe 6.0-7.0cm long, 2.0-4.0mm thick, whitish gray, white at base, apex white purinose, elsewhere slightly fibrillose, tapering upward from a clavate base, attaching white floccose-myceloid at base, hollow, white.

Spores 7.0-9.0 × 5.0-7.0 μm, elliptical in outline, mostly with six angles in side view, rarely with one guttulate, angles obtuse, basidia 27.5-32.5 × 5.0-7.5-8.8 μm, clavate, 4-spored, ventricose, cheilocystidia pleurocystidia absent, pileipellis 25-40 × 7.5-10 μm, clavate, with ventricose, slightly filamentous, pleurocystidia 62.5-75 × 23.8-27.5 μm, fusoid, ventricose.

Habitat : Clustered on soils of forests with deciduous. Summer. Edibility unknown.

Distribution : Mt. Sunun Provincial Park.

Specimen studied : CHO-2453 collected from areas of Sunun-Sa of Mt. Sunun Provincial Park on 17th of August, 1991.

Discussions : Hesler says that spores are ovoid, but author observed elliptical spores.

***E. tephreum* Hesler 화산층외대버섯(신칭)**

Hesler, Beih. Nova Hedwigia 23 : 95-96, 1967.

Pileus 2.2-4.2cm broad, broadly umbilicate to expanding, margin striate, grayish dark or grayish brown, disc darkish, shiny, not viscid, hygrophanous, appering silk under lens. Context thin, fragile, graysih, Odor and taste farinaceous.

Lamellae close, pallid pink, grayish dark to pinkish, very broad, transversely rivulose, edges even, concolorous.

Stipe 4.5-5.5cm long, 1.5-2.5mm thick twisted, whitish gray, fragil, easily splitting, silky-shining, solid to hollow.

Spores 7.5-(-7.0)-9.0 × 6.0(-5.0)-7.0(-7.5), ovoid or subglobose in out line, mostly with five angles, angles often irregularly or obscurely, basidia 25-28.8 × 8.8-11.3 $\mu$ m, clavate, with pigment, 2-4 spored, pleurocystidia and cheilocystidia absent, hyphae of pileus trama 55-95 × 7.5-10 $\mu$ m, filamentous, hyphae of stipe trama 107.5-180 × 7.5-17.5 $\mu$ m, long clavate or filamentous.

Habitat : Clustered on soils of road. Summer. Edibility unknown.

Distribution : Mt. Sunun Provincial Park.

Specimen studied : CHO-2455 collected from areas of Sunun-Sa on the 17th of August, 1991 are larger, the pileus margin even and pileocystidia are present.

***E. ochraceum* Hesler 엽최외대버섯(신칭)**

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

Pileus 4.0-8.0mm broad, hemispheric-campanulate to conic, papillate umbonate, slightly expanding "ochraceous buff" to yellow, umbo white, silky, margin in rolled and striate to disc. Context thin, concolorous of surface.

Lamellae narrowly attrached, at first pinkish buff, medium broad, nfary subdistant, edges concolorous.

Stipe 2.0-3.0cm long, 1.0-1.5mm thick, concolorous with the pileus, white-purinose above, equal.

Spores 9.0-12 × 9.0-11.0(-12.0) $\mu$ m, guadrate, with four angles, angles obtuse, pleurocystidia and cheilocystidia absent. Pileipellis 55-70 × 10-12.5 $\mu$ m, clavate, hyphe of stipe trama 87.5-105 × 6.3-12.5 $\mu$ m, cylindrical or filamentous.

Habitat : Scattered on soil of grass. Summer. Edibility unknown.

Distribution : Mt. Balwang.

Specimen studied : CHO-2389 collected from areas of Mt.Balwang of the first of August, 1991.

Discussions : This species have quadrate spores.

***E. weberi* Murr. 거미외대버섯(신칭)**

Murr. *Mycologia* 43 : 236, 1951.

Pileus 15-30cm broad, convex to plane a papillate umbo, avellaneous-umbrinous, faintly checked, glabrous, margin concolorous, thin, striate, becoming somewhat lobed or split. Context thin, whitish, unchanging. Odor farinaceous, taste farinaceous to bitter.

Lamellae sinuate, rather crowded, plane when young, in age becoming 8mm broad, behind, edges uneven.

Stipe 9.0-12cm long, 7.0-9.0mm thick, subequal, pale avellaneous, the base white, glabrous.

Spores 9.0(-8.0)-10.5×5.5-8.0µm, subglobose in out line, at times obscurely five or six angles, pleurocystidia and cheilocystidia absent, rarely with one oil drop.

Habitat : Clustered on soils of road. Summer. Edibility unknown.

Specimens studied : CHO-2358 collected from areas of Mt. Balwang on the first of August, 1991.

Discussions : Murrill suggested that nearest relative is probably *E. cokeri*(not recorded in Korea)

要 約

한국산 외대버섯속의 많은 종류가 지리산국립공원, 백양산국립공원(내장산국립공원의 일부) 선운산국립공원 그리고 발왕산에서 1991년 6월부터 9월 사이에 채집된 것을 동정하였다.

그 결과 *Entoloma convexum*(원추외대버섯), *E.*

*roanense*(양피외대버섯), *E. clavipes*(배불뚝이외대버섯), *E. tephreum*(화산층외대버섯), *E. ochraceum*(엽초외대버섯) 및 *E. weberi*(거미외대버섯)은 한국산 미기록종으로 확인되었다.

이 종들에 대하여 분류학적 기재와 한국보통명을 신칭하였다.

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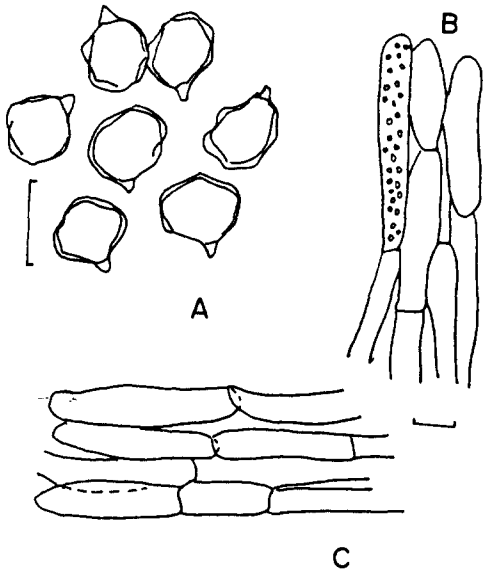


Fig. 1. Microscopic features of *E. convexum*(bar 10 $\mu$ m) A. spores, B. pileipellis, C. hyphae of stipe trama.

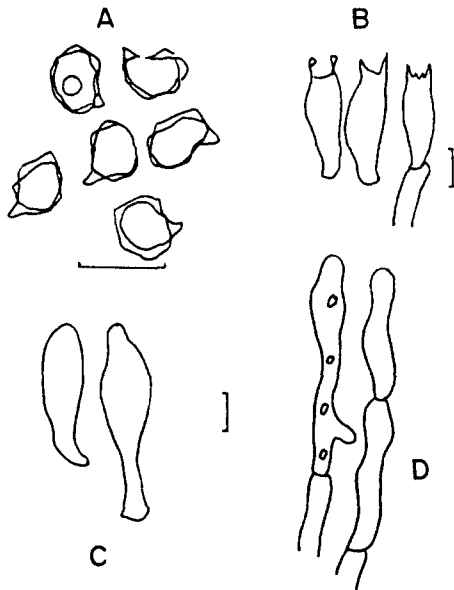


Fig. 2. Microscopic features of *E. roanense*(bar 10 $\mu$ m) A. spores, B. basidia, C. pileocystidia, D. pileipellis

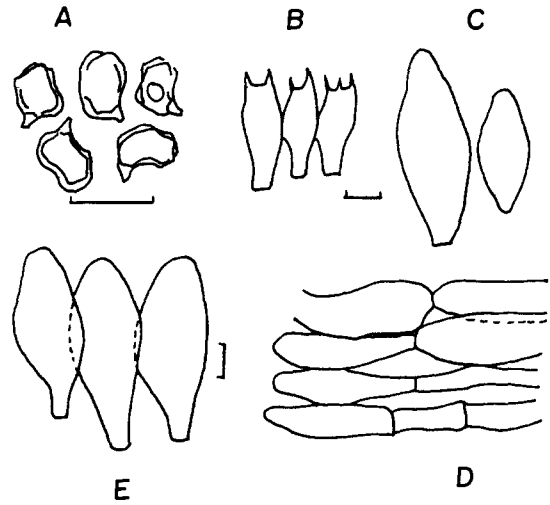


Fig. 3. Microscopic features of *E. clavipes*(bar 10 $\mu$ m) A. spores, B. basidia, C. cheilocystidia, D. pileipellis, E. pilocystidia.

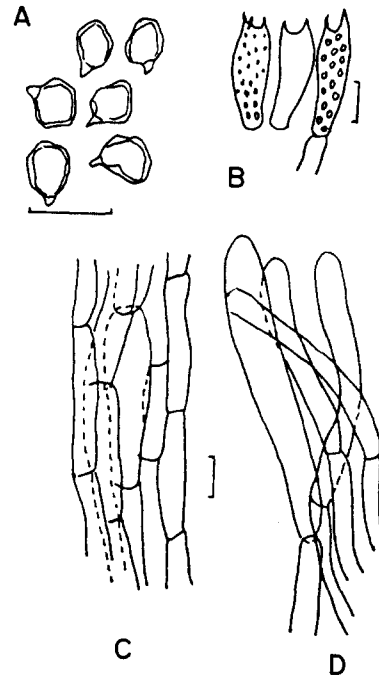


Fig. 4. Microscopic features of *E. tephreum*(bar 10 $\mu$ m) A. spores, B. basidia, C. hyphae of pileus trama, D. hyphae of stipe trama

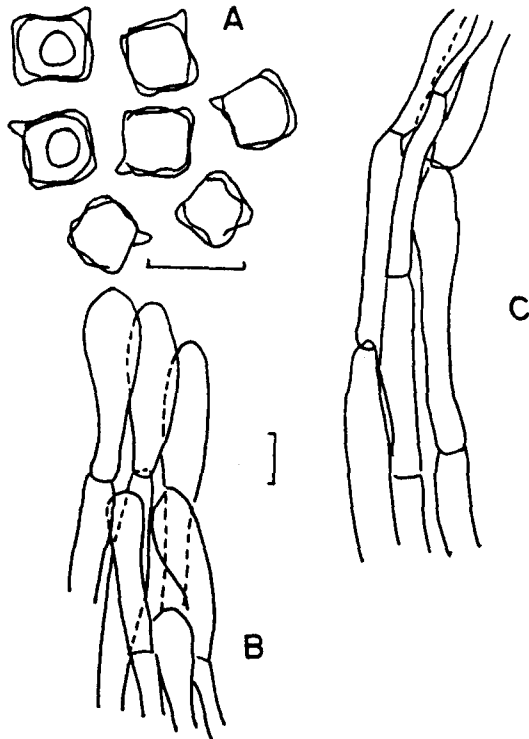


Fig. 5. Microscopic features of *E. ochraceum* (bar  $10\mu\text{m}$ ) A. spores, B. pileipellis, C. hyphae of stipe trama.

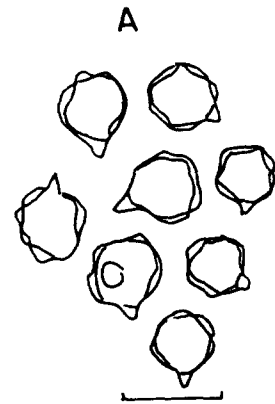


Fig. 6. Microscopic features of *E. weberi* (bar  $10\mu\text{m}$ ) A. spores.