

## Fungal flora of Ullung Island (II) — on some resupinate fungi —

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## 울릉도의 균류상 (II) — 수종 배착성균류에 대하여 —

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**ABSTRACT :** Fresh materials were obtained during collection trips to Ullung Island in October, 1989, and August, 1990. Among them, some resupinate fungi were identified. Seven fungi were confirmed new in Korea and are recorded here with descriptions. They are *Gloeocystidiellum karstenii*, *Peniophora lilacea*, *Phlebia cremeo-alutacea*, *P. deflectens*, *P. livida*, *Resinicium bicolor*, and *Hymenochaete corrugata*.

**KEYWORDS :** Ullung Island, resupinate fungi

Soon after the first report (Jung, 1991) of "Fungal flora of Ullung Island" series, a follow-up research on the fungal flora was carried out in this island again. As introduced in the first report, fresh samples were collected twice from Ullung Island of the Kyongsangbuk-do. The first collection was done from October 12, 1989, for a week along the To-dong to Songinbong and the Chodong to Songinbong courses of Nam-myon (which is now raised to the status of Ullung-up). And the second one was done from August 6, 1990, for five days along the To-dong to Songinbong course of Nam-myon, the Chonbu to Songinbong course of Puk-myon, and the Tongkumi area of So-myon.

A total of 175 samples, 107 ones during the first collection and 68 ones during the second collection respectively, were gathered from three courses and one area of Ullung Island. Out of them, 62 samples were recognized as resupinate fungi mostly with smooth hymenophores. Among

these fungi, some corticioid, stereoid, and xanthochroic fungi were detected to the species. Eight species were identified and, except one stereoid fungus, confirmed new to Korea and are presented here with descriptions.

These unrecorded species are *Gloeocystidiellum karstenii*, *Peniophora lilacea*, *Phlebia cremeo-alutacea*, *P. deflectens*, *P. livida*, *Resinicium bicolor*, and *Hymenochaete corrugata*. In descriptions, color names were adopted from the "Methuen Handbook of Color" without using citation numbers. And for habitats, host name, location on the host, kind of substrate, and frequency of occurrence are recorded in details as often as possible. For the frequency of fungal occurrence in the research area, five degrees are used in descriptions: rare, uncommon, occasional, common, and frequent in the order of increasing degree of frequency. And the Romanization system for Korean proper names used in the text and field informations was quoted from the Korean Gazetteer publicized in January,

1984, by the Ministry of Education.

### Taxonomy

The resupinate fungi treated here belong to several families of the order Aphyllophorales which differ from one another in many features as outlined in the key to families below. Genera *Gloeocystidiellum*, *Peniophora*, *Phlebia*, and *Resinicium* are typically classified under the Corticiaceae. But the stereoid genus *Xylobolus* is a taxon of the Stereaceae and the xanthochroic genus *Hymenochaete* of the Hymenochaetaceae. For the taxonomy of the Corticiaceae, commonly used keys of Parmasto (1968), Eriksson *et al.* (1973-1984), and Hjortstam *et al.* (1988) were applied. And the system of Eriksson *et al.* was frequently consulted for descriptions and the colored illustrations of Breitenbach and Kränzlin (1986) for references. For other families, well-known keys of several authors (Lindsey and Gilbertson, 1978; Reeves and Welden, 1967; Chamuris, 1988) were partially utilized and other available taxonomic sources were used.

#### Key to families of Aphyllophorales

1. Basidiocarp brown to dark-colored, permanently darkening in KOH; hyphae colored; setae usually present; clamp connections absent.....Hymenochaetaceae
1. Basidiocarp white, light- to bright-colored, if brown, not permanently darkening in KOH; hyphae hyaline or colored; setae absent; clamp connections present or absent.....b
1. Basidiocarp invariably resupinate; texture soft, arachnoid, hypochnoid, pelliculose, ceraceous, to membranaceous; hyphal system monomitic.....Corticiaceae
1. Basidiocarp resupinate, effused-reflexed, to sessile-pileate; texture tough, coriaceous, to ligneous; hyphal system monomitic to trimitic.....Stereaceae

### Family Corticiaceae

#### 고약버섯과

Key to subfamilies of Corticiaceae

- a. Gloeocystidia present, usually darkening in sulfobenzaldehyde; basidiospores amyloid.....Gloeocystidielloideae
- a. Gloeocystidia present or absent, and if present, basidiospores not amyloid.....b
- b. Subiculum separable; subicular hyphae not gelatinizing.....Hyphodermoideae
- b. Subiculum not readily separable; subicular hyphae gelatinizing.....Phlebioideae

### Subfamily Gloeocystidielloideae

#### 굳은고약버섯亞科 (新稱)

#### *Gloeocystidiellum* Donk emend. Donk, *Fungus* 26:8, 1956. 굳은고약버섯屬 (新稱)

Basidiocarp annual or perennial, resupinate, ceraceous when fresh, firm to hard, membranaceous to coriaceous when dry, adnate, thin to thick; hymenial surface smooth to tuberculate, often cracked. Hyphal system monomitic; hyphae hyaline, usually thin-walled, septate, usually without clamps; gloeocystidia cylindrical, usually submerged, positive to sulfobenzaldehyde; basidia narrowly clavate, normally with 4 sterigmata; basidiospores hyaline, ellipsoid or varying in shape, smooth or verruculose, amyloid.

Type species: *Gloeocystidiellum porosum* (Berk. & Durt.) Donk

Remarks: This genus is characterized by the presence of gloeocystidia and the amyloidity of spores but the presence of clamps, the reaction of hyphae to cotton blue, and the nature of spores should be considered together (Eriksson and Ryvarden, 1975).

#### 1. *Gloeocystidiellum karstenii* (Bourd. & Galz.) Donk, *Fungus* 26:9, 1956. 툼굳은고약버섯 (新稱)

Basidiocarp resupinate, effused, ceraceous, becoming firm with age, hard on drying, adnate, at first thin, then thickened and layered up to 1 mm; hymenial surface pale yellow, light yellow, turning grayish orange later, smooth and continuous, becoming uneven and tuberculate, deeply rimose on thickening; margin not especially differentiated.

Hyphae 2.5-3.5  $\mu\text{m}$  wide, septate, without clamps, thin and inconspicuous in the subiculum, dense and united in the subhymenium; gloeocystidia

55-65×6-8 μm or more in thickening hymenium, abundant, tubular, often pinched at the tip, with oily contents, sulfobenzaldehyde-positive; basidia 20-25×4-5.5 μm, narrowly clavate, with 4 sterigmata; basidiospores (5.5-) 6-7×3.5-4.5 μm, ellipsoid to oblong, verruculose, amyloid.

Habitat: rare on a fallen branch of dead *Sambucus*.

Remarks: The SNU specimen is typical and fits every description of references very well. This species is distinguished by the spore ornamentation which needs to be studied in Melzer's reagent.

Specimens: between the 1st and 2nd rest places of To-dong to Sŏnginbong course, Nam-myŏn, No. 891015-39.

### Subfamily Hyphodermoideae

#### 목재고약버섯亞科 (新稱)

#### *Peniophora* Cooke, *Grevillea* 8:20, 1879. 곱질고약버섯屬 (新稱)

Basidiocarp annual or perennial, resupinate, ceraceous to coriaceous, adnate or rolling off from the margin; hymenial surface effused or warty, bright in color; margin finely fimbriate when young. Hyphal system monomitic; hyphae hyaline under the microscope, light-colored to the eye, septate, with or without clamps, often thick-walled when old; cystidia always present as encrusted metuloids or sulfocystidia; dendrohyphidia usually present; basidia medium to large, subclavate to subcylindrical, with four sterigmata; basidiospores hyaline, generally allantoid but sometimes ellipsoid, smooth.

Type species: *Peniophora quercina* (Fr.) Cke.

Remarks: This genus is a big one with more than 20 species and is well-distinguished in many respects (Eriksson *et al.*, 1978). Its species are usually characterized by the bright fruitbody color, the red spore-print, and the presence of sulfocystidia, dendrohyphidia, or metuloids.

2. *Peniophora lilacea* Bourdot & Galzin, *Bull. Soc. Myc. France* 28:403, 1912. 자색곱질고약버섯 (新稱)

Basidiocarp resupinate, effused, orbicular, then

confluent, ceraceous, adnate, 0.1 mm thick; hymenial surface pale orange to somewhat flesh-colored, smooth and continuous, whitish-pruinose; margin finely fimbriate or not especially differentiated.

Hyphae thin- to somewhat thick-walled and yellowish when mature, septate, with clamps; subhymenial hyphae 2-3 μm wide, dense and indistinct; subicular hyphae 3-4 μm wide, parallel to the substrate; sulfocystidia (40-) 55-80×7-10 μm, abundant, fusiform to subcylindrical, tapering to the apex or obtuse, sometimes transversely septate when old; dendrohyphidia 1.5-2 μm wide, common to abundant, often obscuring the hymenium, richly branched, asperulate; basidia 30×7-8 μm, subcylindrical, somewhat constricted, with 4 sterigmata; basidiospores 8.5-10×5-6 μm, ellipsoid.

Habitat: rare on a fallen branch of unknown hardwood.

Remarks: The SNU No. 891017-94 has much smaller spores (12-15×7-9 μm in Eriksson *et al.*, 1978) and basidia (40-60×8-10 μm in Eriksson *et al.*, 1978) and could be a variety of the species or a species of its own. To make a final decision, authentic specimens are required for comparison and more collections need to be made from Ullung Island.

Specimens: across Chŏnyŏn Air-Con of Chŏdong to Sŏnginbong course, Nam-myŏn, No. 891017-94.

### Subfamily Phlebioideae

#### 야고고약버섯亞科 (新稱)

#### Key to genera of Phlebioideae

- a. Hymenial surface smooth, tuberculate, odontoid, phlebioid, meruloid, or poroid; halocystidia absent; asterocystidia absent.....*Phlebia*  
 a. Hymenial surface smooth, granular, or odontoid; halocystidia present; asterocystidia present or absent.....*Resinicium*

*Phlebia* Fries emend. Donk, *Fungus* 27:8, 1957. 야고고약버섯屬 (新稱)

Basidiocarp resupinate, ceraceous, subgelatinous in the subhymenium, then firm to corneous on

drying; hymenial surface smooth, tuberculate, folded, or varying in shape. Hyphal system monomitic; hyphae embedded in a gelatinous matrix, septate, normally with clamps, thin- or somewhat thick-walled; cystidia absent or present, thin- or thick-walled, smooth or encrusted; basidia normally narrowly clavate, with 4 sterigmata; basidiospores allantoid to ellipsoid.

Type species: *Phlebia radiata* Fr.

Remarks: The fruitbodies of *Phlebia* have hard corneous texture on drying and, microscopically, have a gelatinous matrix with hyphae embedded in it and small spores of allantoid to ellipsoid shape. Members of *Phlebia* were the most common corticioid fungi in hardwood forests of Ullung Island.

#### Key to species of *Phlebia*

- a. Hyphae septate, without clamps except some scattered ones on basal hyphae...*P. deflectens*
- a. Hyphae septate, with clamps.....b
- b. Hymenial surface smooth; cystidia fusiform, with encrustation.....*P. cremeo-alutacea*
- b. Hymenial surface tuberculate; cystidia subulate, without encrustation.....*P. livida*

#### 3. *Phlebia cremeo-alutacea* (Parm.) Larsson & Hjortstam, Mycotaxon 5(2):478, 1977. 황아교교약버섯 (新稱)

Basidiocarp resupinate, effused, ceraceous, becoming membranaceous, closely adnate, 0.1 mm thick; hymenial surface yellowish white, then cream-colored, smooth; margin pruinose, thinning outward, white, then concolorous.

Hyphae 2-3  $\mu\text{m}$  wide or sometimes more, septate, with clamps, vertical and densely interwoven in the subhymenium; cystidia 55-70 $\times$ 8-12  $\mu\text{m}$ , common or varying in number, fusiform, thick-walled up to 3  $\mu\text{m}$ , projecting or embedded, apically encrusted, or sometimes naked when embedded; basidia 20-25 $\times$ 4-5  $\mu\text{m}$ , subclavate to clavate, with 4 sterigmata; basidiospores 4-4.5 $\times$ 2-2.5  $\mu\text{m}$ , ellipsoid.

Habitat: rare on a fallen branch of dead *Alnus*.

Remarks: From the SNU specimen, a few inconspicuous cystidia similar to sulfocystidia were observed indicating that the fungus examined

could belong to the genus *Metulodontia* but it didn't develop a tuberculate surface of *Metulodontia* at all. So the identification of this species may hold good when some reliable specimens are examined for a final determination.

Specimens: between the 1st and 2nd rest places of To-dong to Songinbong course, Nam-myön, No. 891015-34.

#### 4. *Phlebia deflectens*(Karst.) Ryvarden, Rep. Kevo Subarc. Res. Stat. 8:150, 1971. 큰아교교약버섯 (新稱)

Basidiocarp resupinate, effused, initially orbicular, soon confluent, ceraceous, hardened on drying, closely adnate, thin, up to 0.2 mm thick; hymenial surface whitish, yellowish white, or cream-colored, then grayish orange, smooth and continuous, becoming minutely warted; margin thinning outward, soon determinate or entire.

Hyphae 2-3.5 (-6)  $\mu\text{m}$  wide, thin-walled or sometimes moderately thick-walled, septate, normally without clamps, sometimes with scattered clamps in the subiculum, densely united in the subhymenium; cystidia 50-90 $\times$ 5-6  $\mu\text{m}$ , varying in number, often few, cylindrical; basidia 25-35 $\times$ 3.5-5  $\mu\text{m}$ , narrowly clavate, with 4 sterigmata; basidiospores 4.5-5.5 (-6) $\times$ 2.5-3  $\mu\text{m}$ , ellipsoid.

Habitat: occasional on a trunk or fallen branches of dead *Fagus* or *Sambucus*.

Remarks: This species is uncommon according to the literature (Eriksson *et al.*, 1981) but occurs occasionally in Ullung Island. The fruitbody color is known to vary a lot and all the SNU specimens have rather pale colors.

Specimens: beyond the 2nd rest place of To-dong to Songinbong course, Nam-myön, No. 891015-59; across Chönyön Air-Con of Chö-dong to Songinbong course, Nam-myön, No. 891017-82; between Nari Basin and Songinbong of Chönbu to Songinbong course, Puk-myön, No. 900807-23.

#### 5. *Phlebia livida* (Fr.) Bresadola, Atti Accad. Sci. Lett. Arti Ag. ser. III, III:105, 1897. 금아교교약버섯 (新稱)

Basidiocarp resupinate, effused, orbicular, becoming broadly confluent, ceraceous, then corneous, adnate, 0.1-0.8 mm thick or more in tubercles; hymenial surface yellowish white, soon pale yellow

low, light yellow, to butter yellow with a grayish or brownish orange tint, smooth, soon irregularly tuberculate, often with a filling of crystals in tubercles; margin thinning outward or finely fimbriate.

Hyphae 2-3  $\mu\text{m}$  wide in the subhymenium, up to 5  $\mu\text{m}$  wide in the base, septate, with clamps, thin-walled and vertical in the subhymenium, often with a mass of yellow crystals in the subiculum, somewhat thick-walled and horizontal in the base; cystidia 45-50 (-65)  $\times$  3.5-5 (-6)  $\mu\text{m}$ , varying in number, often few, subulate, often subcylindrical; basidia 20-25  $\times$  3.5-4 (-5)  $\mu\text{m}$ , subclavate, with 4 sterigmata; basidiospores 4.5-5.5 (-8)  $\times$  2-2.5 (-3)  $\mu\text{m}$ , subballantoid.

Habitat: common on fallen branches of dead *Sambucus* or unknown hardwood (possibly *Fagus*).

Remarks: Two morphologically similar but microscopically different types are mixed in SNU specimens. SNU 891015-47 looks like a typical specimen of *P. livida* but other SNU specimens vary a little and don't fit referring descriptions well under the microscope. These SNU specimens have rather cylindrical cystidia and much larger spores suggesting a relationship with *Gloeocystidiellum ochraceum* or a possibility to be a species of its own.

Specimens: between the 1st and 2nd rest places of To-dong to Songinbong course, Nam-myön, No. 891015-36, No. 891015-37, No. 891015-47; beyond the 2nd rest place of To-dong to Songinbong course, Nam-myön, No. 891015-60.

***Resinicium* Parmasto, Consp. Syst. Cort. p. 97, 1968. 수지고약버섯屬 (新稱)**

Basidiocarp annual, resupinate, ceraceous, closely adnate; hymenial surface smooth, granular, or odontoid; margin pruinose. Hyphal system monomitic; hyphae indistinct, usually agglutinated, hyaline, thin-walled, septate, with clamps; halocystidia with an apical halo; asterocystidia present or absent; basidia clavate, with (2-) 4 sterigmata; basidiospores hyaline, cylindrical, smooth, not amyloid.

Type species: *Resinicium bicolor* (Fr.) Parm.

Remarks: The unique character of this genus is the presence of halocystidia which are easily recognized under the microscope. Otherwise, *Re-*

*sinicium* has a strong affinity with *Phlebia*.

**6. *Resinicium bicolor* (Fr.) Parmasto, Consp. Syst. Cort. p. 98, 1968. 수지고약버섯 (新稱)**

Basidiocarp resupinate, effused, subceraceous, closely adnate, thin, less than 0.1 mm thick; hymenial surface whitish to yellowish white, odontoid, with small conical aculei, porose-reticulate between aculei; aculei up to 0.2 mm long, crowded, pilose at the apex; margin pruinose, thinning outward.

Hyphae 2-3  $\mu\text{m}$  wide, normally thin-walled, septate, with clamps, agglutinated or united; halocystidia common, capitate with a swollen halo at the apex, halo 7-25  $\mu\text{m}$  across, stalk up to 30  $\mu\text{m}$  long; asterocystidia common, pointed with a stellate crystal mass at the tip, crystal mass up to 8  $\mu\text{m}$  across, stalk 20-30  $\mu\text{m}$  long; basidia 20-23  $\times$  5.5-6  $\mu\text{m}$ , clavate to narrowly clavate, with 4 sterigmata; basidiospores 5.5-7 (-8)  $\times$  2-3  $\mu\text{m}$ , cylindrical, adaxially straight or slightly concave.

Habitat: rare on a fallen branch of dead *Sambucus*.

Remarks: This species is characterized by its unique halocystidia and asterocystidia. It is reported that *R. bicolor* plays an important role as a wood-decomposer in conifer forests (Eriksson *et al.*, 1981) but it was found only once on a dead *Sambucus* in Ullung Island, which seems to be a rare case.

Specimens: between the 1st and 2nd rest places of To-dong to Songinbong course, Nam-myön, No. 891015-42.

## Family Stereaceae

### 꽃구름버섯科

***Xylobolus* Karsten emend. Boidin, Rev. Mycol. 23:340, 1958. 거북버섯屬 (이태수, 한국균학회지 18: 248, 1990)  $\rightarrow$  거북꽃구름버섯屬 (改稱)**

Basidiocarp perennial, resupinate, effused-reflexed, to pileate, confluent, coriaceous to ligneous, thick; surface tomentose, sulcate; hymenial surface smooth or tuberculate; context thick, dense, stratified, separated from the tomentum by a brown band (cuticle). Hyphal system dimitic; generative hyphae hyaline, thin-walled, usually sep-

tate, without clamps; skeletal hyphae yellowish brown, thick-walled, usually aseptate; cystidia of two kinds; skeletocystidia yellowish brown, thick-walled, encrusted; acanthocystidia hyaline, thin-walled, with protuberances; basidia narrowly clavate, with 4 sterigmata; basidiospores hyaline, ellipsoid to cylindrical, smooth, thin-walled, amyloid.

Type species: *Xylobolus frustulatus* (Pers.:Fr.) Boid.

Remarks: The Korean name "거북버섯속" proposed by Lee (1990) is against the rules formulated by the Korean Code Committee of Mycological Nomenclature (한국말 버섯이름 통일안위원회, 1978). According to the Article Number 1 of the rules, the genus is named after the Korean name or scientific name of the type species and this generic name should be included in all the specific names of the genus (기본종의 우리말 또는 학명을 속명으로 정하고 그 이름을 전종명에 넣는다). As the type species of *Xylobolus* is *X. frustulatus* and its Korean name is "거북꽃구름버섯", its Korean generic name should follow the name of the type species and the Korean generic name "거북버섯屬" should be changed to "거북꽃구름버섯屬".

7. *Xylobolus frustulatus* (Pers.:Fr.) Boidin, Rev. Mycol. 23:341, 1958. 거북꽃구름버섯

Basidiocarp resupinate, orbicular, soon broadly confluent, apileate, hard and woody, usually 1-1.5 mm thick, sometimes becoming thicker; hymenial surface yellowish white or cream-colored with an orange white tint, smooth or finely tuberculate, often cracked into small polygons; context brownish, narrowly stratified; margin abrupt or often inconspicuously reflexed.

Hyphae 3-4  $\mu$ m wide, thin- to somewhat thick-walled, septate, without clamps, sparsely branched, hyaline to yellowish brown; skeletocystidia 5-6  $\mu$ m wide, uncommon, moderately thick-walled, barely or not projecting; acanthocystidia (20-) 25-30 $\times$ 3.5-5  $\mu$ m, abundant, tapering toward the apex; basidia 20-30 $\times$ 5  $\mu$ m, elongated clavate, with 4 sterigmata; basidiospores 5-6 $\times$ 2-3  $\mu$ m, ellipsoid to broadly ellipsoid.

Habitat: common on stumps or fallen branches of dead *Alnus*, *Sambucus*, or unknown hardwoods

(possibly *Ulmus*).

Remarks: This species commonly occurs in hardwood forests of Ullung Island and must be a representative species of the Stereaceae. It is known to have distinct fruitbodies with a cracked surface (Chamuris, 1988), but the specimens from Ullung Island have a less conspicuous frustose surface.

Specimens: between the 1st and 2nd rest places of To-dong to Songinbong course, Nam-myon, No. 891015-26; across Chonyon Air-Con of Cho-dong to Songinbong course, Nam-myon, No. 891017-74, No. 891017-74', No. 891017-85.

Family Hymenochaetaceae

소나무비늘버섯과

*Hymenochaete* Léveillé, Ann. Sci. Nat. Bot. III, 5:150, 1846. 소나무비늘버섯屬

Basidiocarp annual or perennial, resupinate, effused-reflexed, to pileate, confluent, papery, coriaceous, to firm, usually thin; hymenial surface even to colliculose; context with or without cuticle, darkening in KOH. Hyphal system monomitic; hyphae hyaline to yellowish brown in KOH, thin- to thick-walled, often agglutinated, septate, without clamps; setae reddish brown, subulate to ventricose, thick-walled; paraphysoid hyphae simple or branched; basidia clavate or subclavate, with 4 sterigmata; basidiospores hyaline, mostly ellipsoid to allantoid, smooth, not amyloid.

Type species: *Hymenochaete tabacina* (Sow.:Fr.) Lévé.

Remarks: This is one of big genera which belong to brown fungi and typically has colored simple-septate hyphae permanently darkening in KOH and unique brown setae throughout the hymenium (Reeves and Welden, 1967).

8. *Hymenochaete corrugata* (Fr.) Léveillé, Ann. Sci. Nat. Bot. III, 5:152, 1846. 민소나무비늘버섯 (新稱)

Basidiocarp resupinate, orbicular, soon confluent, corky to firm, adnate, up to 0.3 mm thick; hymenial surface yellowish brown, light brown, to dark brown, even to colliculose, initially continuous, finely setulose; context stratified; margin

thinning outward or abrupt.

Hyphae 2-3  $\mu\text{m}$  wide, somewhat hyaline to yellowish brown, thin- to moderately thick-walled, septate, without clamps, commonly branched; setae 40-65 $\times$ 6-10  $\mu\text{m}$ , abundant, conical to subulate, sometimes distorted or radicated, thick-walled (wall up to 4  $\mu\text{m}$  thick), occurring in overlapping strata, projecting up to 25  $\mu\text{m}$ ; basidia 10-17 $\times$ 3.5-4  $\mu\text{m}$ , subclavate, with 4 sterigmata; basidiospores 4.5-6 $\times$ 1.5-2 (-2.5)  $\mu\text{m}$ , suballantoid.

Habitat: occasional on a stump or fallen branches of dead *Fagus* or unknown hardwoods.

Remarks: This species occurs in somewhat dry habitats and were occasionally collected on trail sides along the To-dong to Songinbong and Chodong to Pongrae Pokpo courses.

Specimens: beyond Taewonsa of To-dong to Songinbong course, Nam-myon, No. 891015-6, No. 891015-9; near the *Cryptomeria* forest before Pongrae Pokpo, Nam-myon, No. 891016-65.

### Conclusion

Some corticioid, stereoid, and xanthochroic fungi collected from Ullungdo in October, 1989, and August, 1990, were identified to the species and classified according to recent systematic schemes. They represented 8 species of 5 genera from 3 families, the Corticiaceae, the Stereaceae, and the Hymenochaetaceae, of the Aphyllophorales. Two common species, *Phlebia livida* and *Xylobolus frustulatus*, seemed to play an active role in decomposing wood substrates as dominant species in the hardwood forests of Ullung Island.

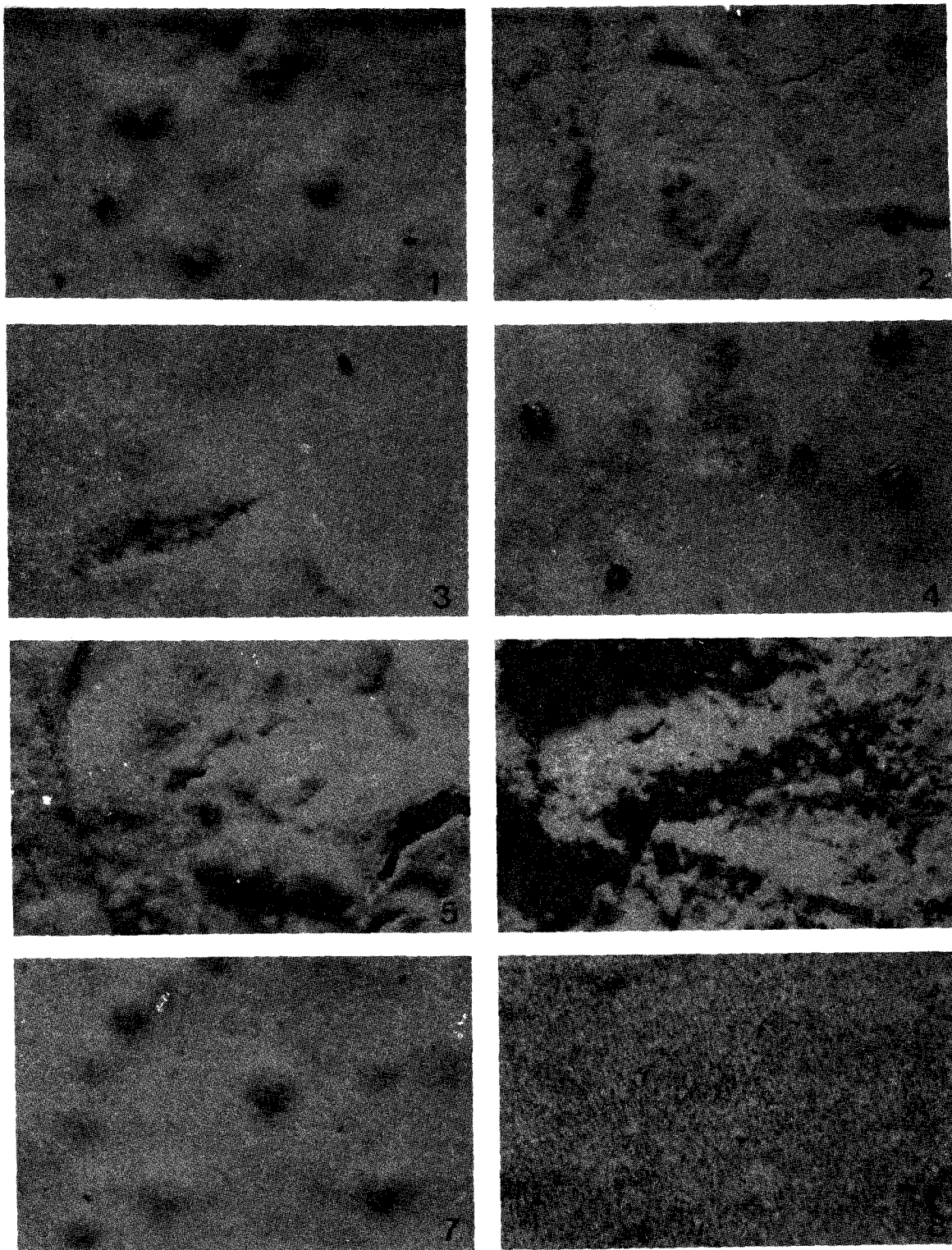
Distribution of conifers was generally poor and host trees were limited to hardwoods, so the resupinate fungi were related with hardwoods and usually occurred on fallen branches or dead trees in hardwood forests of the island. Some hardwoods like *Sambucus*, *Alnus*, and often *Fagus* were good host trees for the growth of resupinate fungi. Most fungi were found in moist forests of valleys or along trails where enough moisture and shade are kept well all the time. Certain fungi adapted to these habitats among the non-poroid

resupinate Aphyllophorales, *Athelia epiphylla* and *Hyphoderma setigerum* treated in the first report (Jung, 1991) and *Phlebia livida* and *Xylobolus frustulatus* studied in this report were growing dominantly in Ullung Island.

### 摘 要

1989년 10월 12일부터 일주일간 실시한 답사과정에서 발견한 107점의 표본과 1990년 8월 6일부터 닷새간 실시한 답사과정에서 발견한 68점을 포함하여 도합 175점의 표본이 울릉도에서 채집되었다. 이들 중에서 62점이 주로 평탄한 자실층 구조를 갖는 배척성 균류들이었으며, 그중 일부 고약버섯류, 꽃구름버섯류, 및 소나무비늘버섯류가 최종적으로 동정되어 8종으로 확인되었다. 그 중 7종은 국내 미기록종으로서 우리나라의 균류분포목록에 새로이 추가되었다. 이들 8종의 균류들을 과별로 이름을 나열하면 고약버섯과의 *Gloeocystidiellum karstenii* (뜸굵은고약버섯, 新稱), *Peniophora lilacea* (자색겉질고약버섯, 新稱), *Phlebia cremeo-alutacea* (황아교고약버섯, 新稱), *P. deflectens* (큰아교고약버섯, 新稱), *P. livida* (금아교고약버섯, 新稱), 및 *Resinicium bicolor* (수지고약버섯, 新稱), 꽃구름버섯과의 *Xylobolus frustulatus* (거북꽃구름버섯), 그리고 소나무비늘버섯과의 *Hymenochaete corrugata* (민소나무비늘버섯, 新稱)이다.

울릉도는 지면의 경사가 심하고 지형의 변화가 크며 산림의 조성이 풍부하지만 울릉도의 배척성 균류는 침엽수의 제한된 분포로 육지에 비교하여 제한된 종류의 균류상을 보이고 있으며, 주로 계곡과 등산로를 따라 그들과 습기가 잘 유지된 지역의 딱총나무屬(*Sambucus*), 오리나무屬(*Alnus*), 및 너도밤나무屬(*Fagus*)의 죽은 나무와 나무 가지에서 다수의 균류들이 채집되었으며, 섬의 환경에 잘 적응된 일부 균류들, 특히 제 1보(정학성, 1991)에서 언급한 흰부후고약버섯(*Athelia epiphylla*)과 목재고약버섯(*Hyphoderma setigerum*) 그리고 본보에 기재한 금아교고약버섯(*Phlebia livida*)과 거북꽃구름버섯(*Xylobolus frustulatus*)이 섬의 활엽수림지역에서 우점종으로 자라고 있었다.



**Plate I**



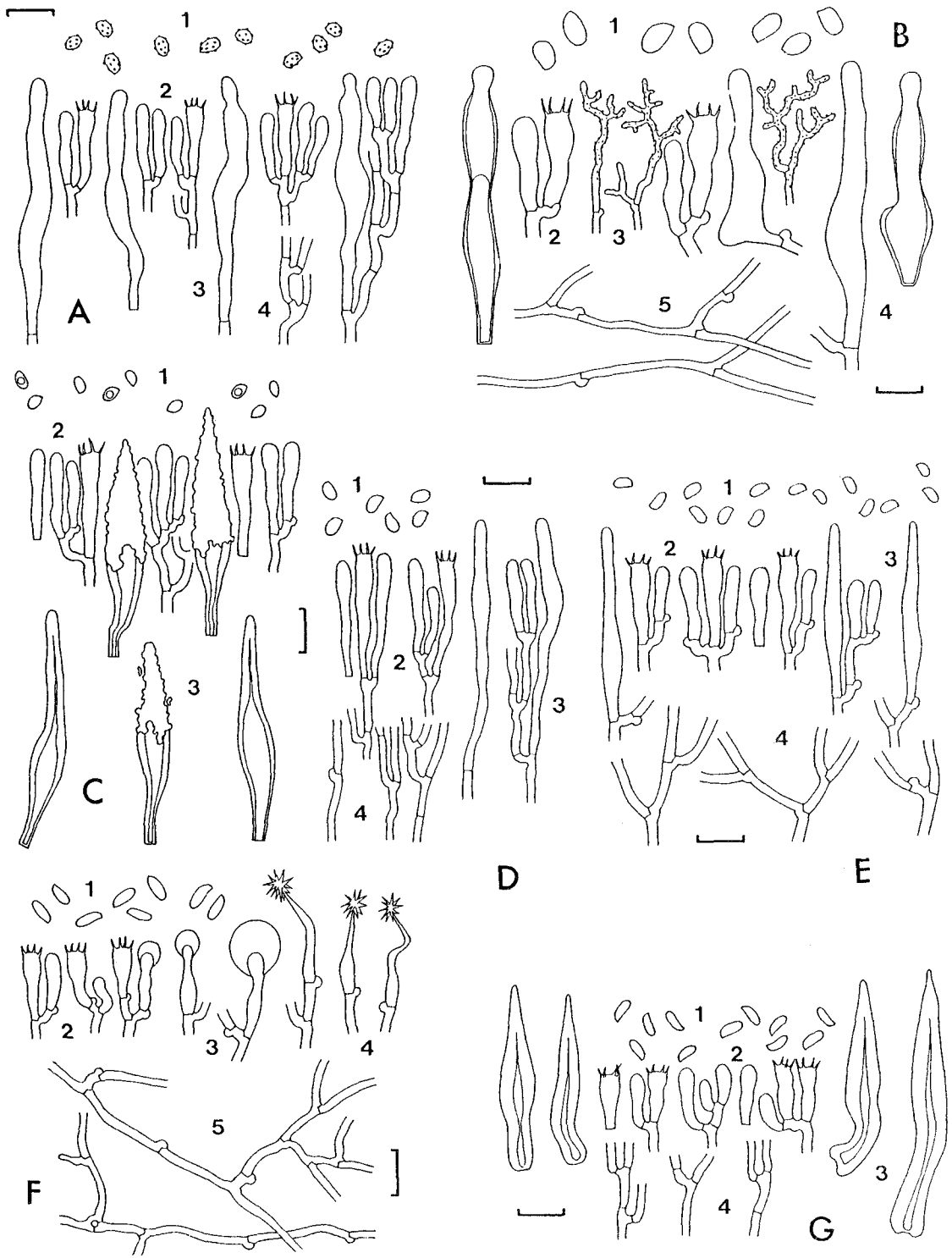


Plate 2

## Explanation of Plates

### Plate 1. Hymenial surfaces

1. *Gloeocystidiellum karstenii*, ×60
2. *Peniophora lilacea*, ×60
3. *Phlebia cremeo-alutacea*, ×60
4. *Phlebia deflectens*, ×60
5. *Phlebia livida*, ×30
6. *Resinicium bicolor*, ×30
7. *Xylobolus frustulatus*, ×60
8. *Hymenochaete corrugata*, ×60

### Plate 2. Microscopic structures (bars=10 µm)

- A. *Gloeocystidiellum karstenii*: 1) basidiospores, 2) basidia, 3) gloeocystidia, 4) hyphae
- B. *Peniophora lilacea*: 1) basidiospores, 2) basidia, 3) dendrohyphidia, 4) sulfocystidia, 5) hyphae
- C. *Phlebia cremeo-alutacea*: 1) basidiospores, 2) basidia, 3) cystidia
- D. *Phlebia deflectens*: 1) basidiospores, 2) basidia, 3) cystidia, 4) hyphae
- E. *Phlebia livida*: 1) basidiospores, 2) basidia, 3) cystidia, 4) hyphae
- F. *Resinicium bicolor*: 1) basidiospores, 2) basidia, 3) halocystidia, 4) asterocystidia, 5) hyphae
- G. *Hymenochaete corrugata*: 1) basidiospores, 2) basidia, 3) setae, 4) hyphae

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