

Fungal flora of Ullung Island (III) — on some polyporoid fungi —

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울릉도의 균류상 (III)

— 수종의 구멍장이버섯류에 관하여 —

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ABSTRACT: Fresh fungi were collected during field trips to Ullung Island from August, 1990, to September, 1991. Among them, some polyporoid fungi were recognized to the species. Thirty three species were identified, among which nine fungi were confirmed new in Korea and registered here with descriptions. These fungi are *Auriporia aurulenta*, *Ceriporiopsis gilvescens*, *Ceriporiopsis subvermispora*, *Gloeophyllum trabeum*, *Junghuhnia separabilima*, *Oligoporus stipticus*, *Oxyporus similis*, *Phellinus laevigatus*, and *Polyporus melanopus*.

KEYWORDS: Ullung Island, polyporoid fungi

Following the first and second reports (Jung, 1991a, 1991b) of "Fungal flora of Ullung Island" series, more fresh fungi were collected through four field trips from Ullung Island of the Gyung-sangbuk-do from August, 1990, to September, 1991. The first collection was done for 5 days in August of 1990, the second collection for 4 days in October of 1990, the third collection for 5 days in July of 1991, and the fourth collection for 4 days in September of 1991, from the Do-dong to Seonginbong course of Ullung-eup, the Cheonbu to Seonginbong course of Buk-myeon, the Tonggumi area and the Taehwa area of Seo-myeon.

A total of 124 samples of polyporoid fungi were gathered, including 24 specimens once collected in the year 1989, and about three fourths of the samples were identified to the species. The rest of them were reserved for later work because most of them were too young, sterile, or abnormal for identification. For the observation of specimens, methods of Largent *et al.* (1977) and Jung (1987) were applied. Total identified fungi amount

ed to 1 order, 4 families, 22 genera, and 33 species. Among them, two genera and nine species were confirmed new in Korea and are presented here with new Korean names and English descriptions. The unrecorded genera are *Auriporia* and *Ceriporiopsis*. And the unrecorded species are *Auriporia aurulenta*, *Ceriporiopsis gilvescens*, *Ceriporiopsis subvermispora*, *Gloeophyllum trabeum*, *Junghuhnia separabilima*, *Oligoporus stipticus*, *Oxyporus similis*, and *Polyporus melanopus*, all of which belong to the family Polyporaceae, and *Phellinus laevigatus* which belongs to the family Hymenochaetaceae.

Taxonomy

The polyporoid fungi treated here belong to 4 families of the order Aphyllophorales, which are Schizophyllaceae, Climacodontaceae, Hymenochaetaceae, and Polyporaceae. The genus *Schizophyllum* is here classified under the Schizophyllaceae, *Climacodon* under the Climacodontaceae,

Phellinus under the Hymenochaetaceae, and the other 19 genera under the Polyporaceae. All the identified species were found to be wood-rotting fungi. Most of them were white rot fungi, but among them, nine species of *Antrodia*, *Auriporia*, *Daedalea*, *Fomitopsis*, *Gloeophyllum*, and *Oligoporus* were brown rot fungi. For the taxonomy and descriptions of identified taxa, the system of Donk (1964) was followed and the classification of Gilbertson and Ryvarden (1986-1987) was usually applied. And the colored illustrations of Breitenbach and Kränzlin (1986) and Imazeki *et al.* (1988) were frequently consulted for references.

Key to families of Aphylophorales

- a. Basidiocarp pleurotoid; gills longitudinally split or grooved, composed of two adjacent plates **Schizophyllaceae**
- a. Basidiocarp polyporoid; gills usually absent, if present, not split or grooved but entire ... **b**
- b. Basidiocarp brown to dark-colored, permanently darkening in KOH; hyphae colored; setae usually present; clamp connections absent **Hymenochaetaceae**
- b. Basidiocarp white, light- to bright-colored, if brown, not permanently darkening in KOH; hyphae hyaline or colored; setae absent; clamp connections present or absent **c**
- c. Hymenophore hydroid; tissue coriaceous tough when fresh, cartilaginous hard when dry; hyphae monomitic **Climacodontaceae**
- c. Hymenophore typically tubulate, often poroid, irpicoid or lamellate; tissue various; hyphae mono- to trimitic **Polyporaceae**

Schizophyllaceae 치마버섯과

1. *Schizophyllum commune* Fr.: Fr. 치마버섯

Habitat: *Alnus*, *Fagus*, *Populus*, hardwood

Remarks: This species has no related groups in the Aphylophorales and is now placed in its own family. It occurs on dead branches of various hardwood trees and seems to be a common fungus in Ullung Island.

Specimens: between Jeo-dong and the 1st rest place, Ullung-eup, SNU 891017-100; log house of

Nari Basin, Buk-myeon, SNU 900807-3, SNU 91 0719-27, SNU 910719-52; Wildlife Reservation of Nari Basin, Buk-myeon, SNU 901003-22, SNU 910924-84.

Hymenochaetaceae 소나무비늘버섯과

2. *Phellinus laevigatus* (Fr.) Bourd. et Galz. Hym. France, p.264, 1928. 가지진흙버섯 (新稱)

Fruitbody resupinate, even, often somewhat nodulose on vertical surface, corky, finely pored, cinnamon brown at first, grayish brown later; pores rounded, 6-8/mm; tubes up to 5 mm long, layered; context thin, 1 mm thick, corky fibrous.

Hyphae dimitic; generative hyphae 2-2.5 μ m wide, hyaline, thin-walled, septate without clamps; skeletal hyphae 2.5-4 μ m wide, brownish yellow, thick-walled; setae subulate, with a swollen base, thick-walled, dark brown, 10-20 \times 4-6 μ m; basidia clavate, 8-12 \times 4-6 μ m; basidiospores ovoid to ellipsoid, 4-5 \times 2.5-3.5 μ m.

Habitat: hardwood

Remarks: This species occurs on the underside of dead branches of fallen hardwood trees.

Specimens: between the 1st and 2nd rest places, Ullung-eup, SNU 891015-49.

Climacodontaceae 수염버섯과

3. *Climacodon septentrionalis* (Fr.) Karst. 수염버섯

Habitat: *Sorbus*

Remarks: This species was growing in an extensive rosette form on a stump of *Sorbus*, causing a white rot.

Specimens: between the 1st and 2nd rest places, Ullung-eup, SNU 891015-21, SNU 901003-61.

Polyporaceae 구멍장이버섯과

4. *Antrodia albida* (Fr.) Donk, Persoonia 4:339, 1966. 흰주름구멍버섯 (흰그물송편버섯의 改稱)

Fruitbody effused-reflexed to pileate, tough when fresh, rigid when dry; pilei narrowly imbricate, up to 2 cm wide, protruding 0.5 cm, up to 1 cm thick, dimidiate; upper surface appressed velutinous, glabrous later, zonate, smooth to slightly sulcate, white to cream-colored; margin sharp; pores angular, elongated to sinuous on vertical

surface, 2–3/mm, concolorous; tubes 0.5 cm long, concolorous; context up to 2 mm thick, tough, white.

Hyphae dimitic; generative hyphae 2–4 (–5) μm wide, thin-walled to thick-walled, septate with clamps; skeletal hyphae up to 4–6 μm wide, thick-walled to rather solid, rarely branched; basidia 20–25 \times 8–10 μm ; basidiospores cylindrical, smooth, 9–12 \times 3–4.5 μm .

Habitat: *Pinus*, *Thuja*

Remarks: This species used to be called *Trametes albida* and occurs on dead conifer trees in Ullung Island. *Antrodia mollis* (구멍주름버섯) was the only Korean *Antrodia* but, according to the recent classification, has been recombined under the genus *Datronia* and is now called *Datronia mollis*. As the type species of *Antrodia* is *A. serpens*, the Korean generic name (구멍주름버섯屬) of *Antrodia* needs to be changed and is here renamed as 주름구멍버섯屬 (改稱). To observe the rules formulated by the Korean Code Committee of Mycological Nomenclature (한국말 버섯이름 통일위원회, 1978), all the Korean names of *Antrodia* species are recommended to use the basic Korean name 주름구멍버섯.

Specimens: between Cheonbu and Nari Basin, Buk-myeon, SNU 900807-1; beyond Daewonsa Temple, Ullung-eup, SNU 910717-1.

5. *Antrodia sinuosa* (Fr.) Karst. 좀달주름구멍버섯 (좀달구멍버섯의 改稱)

Habitat: *Fagus*

Remarks: This species has been known by its synonym, *Poria vaporaria*, in Korea and occurs on dead *Fagus crenata* var. *multinervis* in Ullung Island.

Specimens: Wildlife Reservation of Nari Basin, Buk-myeon, SNU 901003-18, SNU 910924-68.

6. *Auriporia aurulenta* David, Tortic et Jelic. Bull. Soc. Myc. Fr. 90(4): 360, 1974. 순황금구멍버섯 (新稱)

Fruitbody resupinate, usually soft, somewhat loosely attached, up to 2 mm thick, with a fruity odor; pores angular, 4–5/mm, yellow to orange yellow; tubes 1 mm long, concolorous; context brown, less than 1 mm thick; margin narrow, light concolorous.

Hyphae thin- to rather thick-walled, 2–4 μm wide, septate with clamps; lamprocystidia fusiform, thick-walled, encrusted at the apex, 25–35 \times 8–11 μm ; leptocystidia lageniform, thin-walled, 50–80 (–110) \times 8–10 μm long; basidia narrowly clavate, 20 \times 5–6 μm ; basidiospores ellipsoid to pip-shaped, smooth, 4–4.5 \times 2.5–3 μm .

Habitat: hardwood

Remarks: This species occurs on dead fallen branches of hardwood trees.

Specimens: beyond the 2nd rest place, Ullung-eup, SNU 891015-58.

7. *Bjerkandera adusta* (Willd.: Fr.) Karst. 줄버섯

Habitat: *Fagus*, *Morus*, *Sorbus*, hardwood

Remarks: This species is commonly found on dead wood of *Fagus crenata* var. *multinervis* and some other hardwood trees.

Specimens: beyond the 1st rest place, Ullung-eup, SNU 891015-20; across Cheonyeon Air-con, Ullung-eup, SNU 891017-96, 891017-97; between Nari Basin and Seonginbong, Buk-myeon, SNU 900807-21; between Nari Basin and log-mud house, Buk-myeon, SNU 901003-38.

8. *Ceriporiopsis gilvescens* (Bres.) Doman., Acta Soc. Bot. Pol. 32:731, 1963. 밀구멍버섯 (新稱)

Fruitbody resupinate, soft, then ceraceous, tightly attached, up to 1 mm thick; pores angular to rounded, often becoming labyrinthine, (2–) 3–5 /mm, whitish, then ochraceous with a pinkish tint; margin fimbriate to distinct, whitish at first, concolorous later.

Hyphae 2–4 μm wide, rather thick-walled, often encrusted, uncommonly septate with clamps; basidia clavate, 15–18 \times 5 μm ; basidiospores subcylindrical to oblong ellipsoid, smooth, 4–5 \times 2 μm .

Habitat: *Alnus*

Remarks: This species grows on dead wood of hardwood trees.

Specimens: below Seonginbong, Buk-myeon, SNU 901003-59.

9. *Ceriporiopsis subvermispota* (Pil.) Gilbn. et Ryv., Mycotaxon 22: 364, 1985. 큰밀구멍버섯 (新稱)

Fruitbody resupinate, soft and separable when

fresh, fragile when dry, up to 1 mm thick; pores angular, with thin dissepiments, 3–5/mm, whitish or cream-colored; subiculum thin, white, soft to tough; margin finely fibrillose, narrow, white.

Hyphae 2–3 μm wide, thin-walled, commonly septate with clamps; basidia clavate, 10–15 \times 4–5 μm ; basidiospores allantoid, smooth, 4.5–5.5 \times 1–1.5 μm .

Habitat: *Pinus*

Remarks: This species was found on pine tree and is differentiated from *C. gilvescens* by its typical allantoid spores.

Specimens: around Tonggumi area, Seo-myeon, SNU 900808-68

10. *Coriolus brevis* (Berk.) Aoshi. 송곳니구름버섯

Habitat: *Alnus*, *Pinus*, *Robinia*, hardwood

Remarks: This common species has been called *C. consors* until recently and grows broadly on trunks of dead hardwood trees like *Quercus*. These days, there is a tendency to recombine the species of this genus under the genus *Trametes*, but it seems to be convenient to keep the present genus *Coriolus* for the time being until the recombined names are fixed for general use.

Specimens: between Daewonsa Temple and the 1st rest place, Ullung-eup, SNU 891015-9-1, SNU 891015-12; beyond the 1st rest place, Ullung-eup, SNU 891015-23; between the 1st and 2nd rest places, Ullung-eup, SNU 910717-21.

11. *Coriolus hirsutus* (Wulf.: Fr.) Quél. 흰구름버섯

Habitat: *Alnus*, *Fagus*, hardwood

Remarks: This is a common species growing on dead hardwood trees and was frequently found on fence logs of log house and log-mud house designated as cultural properties of Ullung Island.

Specimens: between Nari Basin and Seonginbong, Buk-myeon, SNU 900807-27; log house of Nari Basin, Buk-myeon, SNU 910719-26, SNU 910719-28; log-mud house of Nari Basin, Buk-myeon, SNU 910719-46, SNU 910719-47, SNU 910719-48, SNU 910719-49; Wildlife Reservation of Nari Basin, Buk-myeon, SNU 910719-64, SNU 910924-77, SNU 910924-80, SNU 910924-82.

12. *Coriolus pubescens* (Fr.) Quél. 흰옹털구름버섯

Habitat: *Fagus*

Remarks: This species grows gregariously on dead or fallen hardwood trees.

Specimens: Wildlife Reservation of Nari Basin, Buk-myeon, SNU 910924-78.

13. *Coriolus versicolor* (L.: Fr.) Quél. 구름버섯

Habitat: *Alnus*, *Fagus*, *Sorbus*, hardwood

Remarks: This is a very common species which is known as "cloud mushroom (雲芝)" to the public. It occurs everywhere as long as there are dead trees and branches of various hardwood trees and works as a very important wood-rotting fungus in Ullung Island.

Specimens: the 1st rest place, Ullung-eup, SNU 891015-14; beyond the 1st rest place, Ullung-eup, SNU 891015-18, SNU 891015-22, SNU 891015-24, SNU 891015-25; *Cryptomeria* forest before Bongrae Pokpo, Ullung-eup, SNU 891016-65-1; between Cheonyeon Air-con and the 1st rest place, SNU 891017-98; between Nari Basin and Seonginbong, SNU 900807-11, SNU 900807-29; around Tonggumi area, Seo-myeon, SNU 900808-72; Wildlife Reservation of Nari Basin, Buk-myeon, SNU 901003-21; log-mud house of Nari Basin, Buk-myeon, SNU 910719-50; below Seonginbong, SNU 910924-122.

14. *Daedalea dickinsii* (Berk.: Cooke) Yasuda. 등갈색미로버섯

Habitat: *Pinus*

Remarks: This species causes a brown rot originally on trunks of dead hardwood trees.

Specimens: beyond Daewonsa Temple, Ullung-eup, SNU 910923-1.

15. *Daedaleopsis tricolor* (Bull.: Fr.) Bond. et Sing. 삼색도장버섯

Habitat: *Sorbus*

Remarks: This is a common wood-rotting fungus and occurs gregariously on trunks and branches of recently dead hardwood trees of mainland mountains but was collected only twice from *Sorbus* in Ullung Island.

Specimens: between the 1st and 2nd rest places, Ullung-eup, SNU 891015-41; between Nari basin and Seonginbong, Buk-myeon, SNU 900807-32.

16. *Fomes fomentarius* (L.: Fr.) Fr. 말굽버섯

Habitat: *Fagus*

Remarks: This species is known as a powerful wood-rotting fungus on hardwood trees but was found only once on *Fagus crenata* var. *multinervis* in Ullung Island.

Specimens: around Seonginbong, Ullung-eup, SNU 910923-57.

17. *Fomitopsis pinicola* (Swartz.: Fr.) Karst. 소나무잔나비버섯

Habitat: *Alnus*

Remarks: This is a powerful wood-rotting fungus causing a brown rot on conifer trees, while *Fomes fomentarius* is another one causing a white rot on hardwood trees. But the specimen collected from Ullung Island was from a hardwood tree, *Alnus*.

Specimens: Virgin forest of Seonginbong, Buk-myeon, SNU 901003-47; log-mud house of Nari Basin, Buk-myeon, SNU 910719-53.

18. *Gloeophyllum trabeum* (Fr.) Murr. N. Am. Fl. 9:129, 1908. 작은조개버섯 (新稱)

Fruitbody sessile, pileate, coriaceous tough, rigid when dry; pilei imbricate or laterally attached, up to 6 cm long, protruding 2.5 cm, up to 6 mm thick, dimidiate; upper surface somewhat uneven, finely tomentose, becoming glabrous, weakly zonate, cinnamon brown, then grayish brown; pores irregular, rounded, elongated, or even daedaloid, 3–4/mm, ochraceous to ochraceous brown; tubes up to 5 mm long, concolorous; context up to 2 mm thick, tough, cinnamon brown.

Hyphae dimitic; generative hyphae 2–3.5 μ m wide, thin- to thick-walled, hyaline, septate with clamps; skeletal hyphae 3–5 μ m wide, brownish yellow, thick-walled; cystidia fusiform, thin-walled, 25–30 \times 5–6 μ m; basidia narrowly clavate, 25–30 \times 6–7 μ m; basidiospores cylindrical, smooth, 6.5–8 \times 3–4 μ m.

Habitat: *Pinus*

Remarks: This species is known to decay wood products used in construction work (Breitenbach and Kränzlin, 1986). It was found on a pine tree in Ullung Island.

Specimens: between Nari Basin and Seonginbong, Buk-myeon, SNU 900807-15.

19. *Irpex lacteus* Fr. 기계충버섯

Habitat: *Fagus*, hardwood, unknown

Remarks: This is a very common species which occurs on fallen branches of dead hardwood trees and can be found easily throughout the island.

Specimens: between the 1st and 2nd rest places, Ullung-eup, SNU 891015-50-1, SNU 891015-51; below Seonginbong, SNU 900807-47; around Tonggumi area, Seo-myeon, SNU 900808-59; Virgin forest of Seonginbong, Buk-myeon, SNU 901003-51; between the 1st and 2nd rest places, Ullung-eup, SNU 910923-10; between the 2nd rest place and Seonginbong, Ullung-eup, SNU 910923-27; Wildlife Reservation of Nari Basin, Buk-myeon, SNU 910924-73.

20. *Junghuhnia nitida* (Fr.) Ryv. 살색구멍버섯

Habitat: *Fagus*

Remarks: This species used to be called *Poria eupora* before and occurs on hardwood trees.

Specimens: Communal habitat of *Tsuga sieboldii*, *Pinus parviflora*, and *Fagus crenata* var. *multinervis*, Taehwa, Seo-myeon, SNU 901002-9.

21. *Junghuhnia separabilima* (Pouz.) Ryv., Persoonia 7:18, 1972. 큰살색구멍버섯 (新稱)

Fruitbody resupinate, effused-reflexed, tough and separable when fresh, brittle when dry, up to 2 mm thick; pores angular to irregular, with thin and lacerate dissepiments, 6/mm, whitish buff to pinkish buff; subiculum thin, white, fibrous; margin tomentose, whitish, then cream-colored.

Hyphae dimitic; generative hyphae 1.5–2 μ m wide, thin-walled, septate with clamps; skeletal hyphae 2–4 μ m wide, thick-walled; cystidia clavate to fusiform, thick-walled, apically encrusted, 60–85 \times 6–10 μ m; basidia clavate, 16–20 \times 5–6 μ m; basidiospores ovoid to ellipsoid, smooth, 4–4.5 \times 3–4 μ m.

Habitat: unknown

Remarks: This species is very similar to *J. nitida* but is known to differ in having a rhizomorphic margin (Gilbertson and Ryvarden, 1986).

For a confident identification of this species, an authentic specimen needs to be examined for comparison.

Specimens: Seonginbong, SNU 900807-55.

22. *Oligoporus caesius* (Schrad.: Fr.) Gilbn. et Ryv. 푸른손등버섯

Habitat: *Acer*, *Fagus*

Remarks: This species is known to occur on both hardwood and conifer trees (Gilbertson and Ryvarde, 1987) but was found from hardwood forests in Ullung Island.

Specimens: between the 2nd rest place and Seonginbong, Ullung-eup, SNU 910923-23; Wildlife Reservation of Nari Basin, Buk-myeon, SNU 91 0924-71.

23. *Oligoporus stipticus* (Pers.: Fr.) Gilbn. et Ryv., N. Am. Polypor. p.485, 1987. 흰손등버섯 (新稱)

Fruitbody sessile to pileate, fleshy and soft when fresh, rigid when dry; pilei in small clusters, up to 3 cm wide, protruding 1.5 cm, up to 1.5 cm thick, dimidiate; upper surface glabrous, somewhat rugose, azonate, white to ivory white; pores round to angular, usually with thin and lacerate dissepiments, 6-7/mm, concolorous; tubes up to 7 mm thick, concolorous; context up to 1 cm thick, fissile, white.

Hyphae monomitic; generative hyphae 3-6 μ m wide, thin- to rather thick-walled, septate with clamps, often gelatinized; basidia clavate, 13-18 \times 4.5-5.5 μ m; basidiospores short cylindrical or cylindrical, smooth, 4-5 \times 2.5 μ m.

Habitat: *Alnus*

Remarks: This species is similar to *O. tephroleucus* but the latter has typical allantoid spores.

Specimens: Seonginbong, SNU 901003-60.

24. *Oligoporus tephroleucus* (Fr.) Gilbn. et Ryv. 적색손등버섯

Habitat: *Alnus*

Remarks: This species has been called *Tyromyces lacteus* for a long time and was found on a bench log of Wildlife Reservation of Nari Basin.

Specimens: Wildlife Reservation of Nari Basin, Buk-myeon, SNU 901003-29.

25. *Oxyporus ravidus* (Fr.) Bond. et Sing. 이끼 흰살버섯

Habitat: unknown

Remarks: This one is known to occur on trunks and stumps of dead hardwood trees (Ito, 1955; Park, 1991).

Specimens: Virgin forest of Seonginbong, Buk-myeon, SNU 900807-37, 900807-49.

26. *Oxyporus similis* (Bres.) Ryv., Norw. J. Bot.

19:233, 1972. 구멍흰살버섯 (新稱)

Fruitbody resupinate, coriaceous and separable when fresh, rigid when dry, up to 1 mm thick; pores circular to angular, 5-6/mm, pale buff to pinkish buff, with thin and fimbriate to lacerate dissepiments; margin 2 mm wide, fertile or sterile, finely tomentose to fimbriate, whitish.

Hyphae monomitic, 2-4 μ m wide, thin- to moderately thick-walled, occasionally branched, septate without clamps; cystidia common, clavate, apically encrusted, 25-50 \times 6-8 μ m; basidia clavate, 13-18 \times 4-5 μ m; basidiospores ellipsoid to ovoid, smooth, 3.5-4.5 \times 2.5-3 μ m.

Habitat: hardwood

Remarks: This species has a resupinate habit and is easily differentiated from the pileate fruitbody of *O. ravidus*. Morphologically, this species is similar to the species of *Perenniporia* but microscopically differs in having simple-septate hyphae.

Specimens: beyond Daewonsa Temple, Ullung-eup, SNU 891015-7.

27. *Perenniporia medulla-panis* (Fr.) Donk 흰구멍버섯

Habitat: *Fagus*

Remarks: This species occurs on dead tree of *Fagus crenata* var. *multinervis* in Ullung Island.

Specimens: between the 2nd rest place and Seonginbong, SNU 891017-106.

28. *Perenniporia subacida* (Peck) Donk 금빛흰구멍버섯

Habitat: *Sorbus*

Remarks: This is a very common wood-rotting fungus usually growing on conifer trees of parks, forests, and mountains of the mainland, but it was collected only once from *Sorbus* in Ullung Island.

Specimens: *Cryptomeria* forest before Bongrae Pokpo, Ullung-eup, SNU 891016-66.

29. *Polyporus arcularius* Fr. 좀벌집구멍장이버섯 (좀벌집버섯의 改稱)

Habitat: *Alnus*

Remarks: The genus *Polyporus* which is now accepted world-widely consists of stipitate species with dimitic hyphal system of generative and binding hyphae. In that sense, it seems to be more natural to place the present species, formerly called *Favolus arcularius*, into the genus *Polyporus*.

Thus, the Korean name of the species is changed by applying the Korean basic name of the genus *Polyporus*.

Specimens: log-mud house of Nari Basin, Buk-myeon, SNU 910719-51.

30. *Polyporus melanopus* Fr. 검은발구멍장이버섯 (新稱)

Fruitbody stipitate, terrestrial, tough corky when fresh, stiff when dry; pileus circular, solitary, up to 5 cm across, plane to slightly depressed; upper surface finely velutinous, azonate, even, leather brown to gray brown, margin thin and strongly undulating; stipe cylindrical, up to 3.5 cm long, velutinous, brown black; pores circular to angular, 6–7/mm, whitish; tubes 1–2 mm long, somewhat decurrent along the stipe; context 1–2 mm thick, firm, somewhat friable when dry.

Hyphae dimitic; generative hyphae 2–4 μ m wide, thin-walled, septate with clamps; binding hyphae 2.5–4 μ m wide, thick-walled, arising from skeletal hyphae, frequently branched, aseptate; hyphal ends clavato-capitate; basidia clavate, 20–25 \times 6–7 μ m; basidiospores cylindrical, smooth, 6–8 \times 3 μ m.

Habitat: unkonwn

Remarks: This species is known to occur on buried wood of hardwood or conifer trees (Gilbertson and Ryvarden, 1987).

Specimens: Virgin forest of Seonginbong, Buk-myeon, SNU 900807-46.

31. *Pycnoporus cinnabarinus* (Fr.) Karst. 주걱간버섯

Habitat: *Fagus*

Remarks: This species occurs on trunks of dead *Fagus crenata* var. *multinervis* in Ullung Island.

Specimens: Wildlife Reservation of Nari Basin, Buk-myeon, SNU 910924-79, SNU 910924-81.

32. *Schizopora paradoxa* (Fr.) Donk 좁구멍버섯

Habitat: *Acer*, *Populus*, *Sorbus*

Remarks: This species has been known as *Poria versipora* for a long time. It widely occurs on dead trees of various hardwood species and works as an important wood-rotting fungus throughout the country. It was found on several common hardwood trees in Ullung Island.

Specimens: between Jeo-dong and the 1st rest

place, Ullung-eup, SNU 891017-99; the 1st rest place, Ullung-eup, SNU 910923-3; beyond the 2nd rest place, Ullung-eup, SNU 910923-19.

33. *Trichaptum abietinum* (Fr.) Ryv. 웃솔버섯

Habitat: *Pinus*

Remarks: This is a very common species which always occurs in conifer forests and works as an important wood-rotting fungus on conifer trees like *Pinus* of mainland mountains. It was found only twice in Ullung Island.

Specimens: around Tonggumi area, Seo-myeon, SNU 900808-60; between Nari Basin and log-mud house, Buk-myeon, SNU 901003-39.

Conclusion

Some polyporoid fungi were collected from Ullung Island from August, 1990, to September, 1991, and were detected to the species according to the recent classification systems. They represented 33 species of 22 genera in 4 families of the Aphyllophorales and, among them, two genera and ten species were confirmed as unrecorded taxa of Korea. There were three common or frequent species, *Coriolus hirsutus*, *C. versicolor*, and *Irpex lacteus*, which must be dominant species on hardwood trees and apparently played an important role in the forest ecology of Ullung Island.

As most of the polyporoid fungi live on wood substrate, they always occur to the distribution of local host trees of the island. Most fungi grow on hardwood trees and, due to the poor distribution of conifer trees, just a few fungi were found on conifers. *Fagus crenata* var. *multinervis*, *Alnus*, and *Sorbus* were best host trees on which three fourths of fungi studied were collected. *Pinus* was the best host among conifer trees and on which five uncommon species of the island, *Antrodia albidia*, *Ceriporiopsis subvermispora*, *Daedalea dickinsii*, *Gloeophyllum trabeum*, and *Trichaptum abietinum*, were found. Compared with the fungal flora of the mainland, the fungal diversity was generally low but showed a tendency of several dominant species adapted to the island environments to show a broad distribution and of uncommon fungi including unrecorded species to show a unique

local distribution.

摘 要

1990년 8월에 5일간, 10월에 4일간, 1991년 7월에 5일간, 9월에 4일간, 도합 4차례에 걸쳐 채집한 100점의 표본과 1989년에 채집한 24점의 표본을 포함하여 총 124점의 구멍장이버섯류의 표본을 분류한 결과 이들 표본의 약 3/4이 최종적으로 동정되어 도합 1목, 4과, 22속, 33종으로 확인되었다. 그중 2속은 국내미기록속 그리고 9종은 국내 미기록종으로 판명되어 우리나라의 균류목록에 새로이 추가되었다.

이들 미기록속 균류는 구멍장이버섯과의 황금구멍버섯屬(新稱, *Auriporia*)과 밀구멍버섯屬(新稱, *Ceriporiopsis*)이며, 미기록종 균류는 소나무비늘버섯과의 가지진흙버섯(新稱, *Phellinus laevigatus*)와 구멍장이버섯과의 순황금구멍버섯(新稱, *Auriporia aurulenta*), 밀구멍버섯(新稱, *Ceriporiopsis gilvescens*), 큰밀구멍버섯(新稱, *Ceriporiopsis subvermispora*), 작은조개버섯(新稱, *Gloeophyllum trabeum*), 큰살색구멍버섯(新稱, *Junghuhnia separabilima*), 흰손등버섯(新稱, *Oligoporus stipticus*), 구멍흰살버섯(新稱, *Oxyporus similis*) 및 검은발구멍장이버섯(新稱, *Polyporus melanopus*)이었다. 또한 한국말 버섯이름 통일 위원회(1978)의 명명규칙에 따라 *Antrodia*를 구멍주름버섯屬에서 주름구멍버섯屬으로, *Antrodia albidula*를 흰그물송편버섯에서 흰주름구멍버섯으로, *Antrodia sinuosa*를 좀털구멍버섯에서 좀털주름구멍버섯으로, *Polyporus arcularius*를 좀벌집버섯에서 좀벌집구멍장이버섯으로 각각 改稱하였다.

울릉도의 삼림은 침엽수의 제한된 분포로 대부분 구멍장이버섯들은 활엽수 특히 너도밤나무(*Fagus crenata* var. *multinervis*), 오리나무(*Alnus*), 그리고 마가목(*Sorbus*)의 죽은 나무와 나무가지에 서식하고 있었으며 동정된 표본의 3/4에 이르는 균류가 이들 활엽수에서 발견되었다. 침엽수 중에서는 소나무(*Pinus*)가 가장 좋은 기질을 제공하고 있으며 본 조사과정에서는 5종의 균류가 소나무에서 발견되었다. 또한 울릉도에서는 흰구름버섯(*Coriolus hirsutus*), 구름버섯(*C. versicolor*) 및 기계충버섯(*Irpex lacteus*)이 가장 흔한 우점종으로서 울릉도 삼림의 중요한 목재부후균류로 작용하고 있었다. 울릉도의 구멍장이버섯류는 전반적으로 육지의 균류상에 비하여 제

한된 균류의 분포상을 보이고 있었으며, 섬의 환경에 잘 적응된 종류가 섬전역을 통하여 광범위하게 분포하는 반면에 미기록종을 포함한 일부 고유종들이 다수 출현하여 울릉도 균류상의 특징을 규정짓고 있었다.

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Plate 1

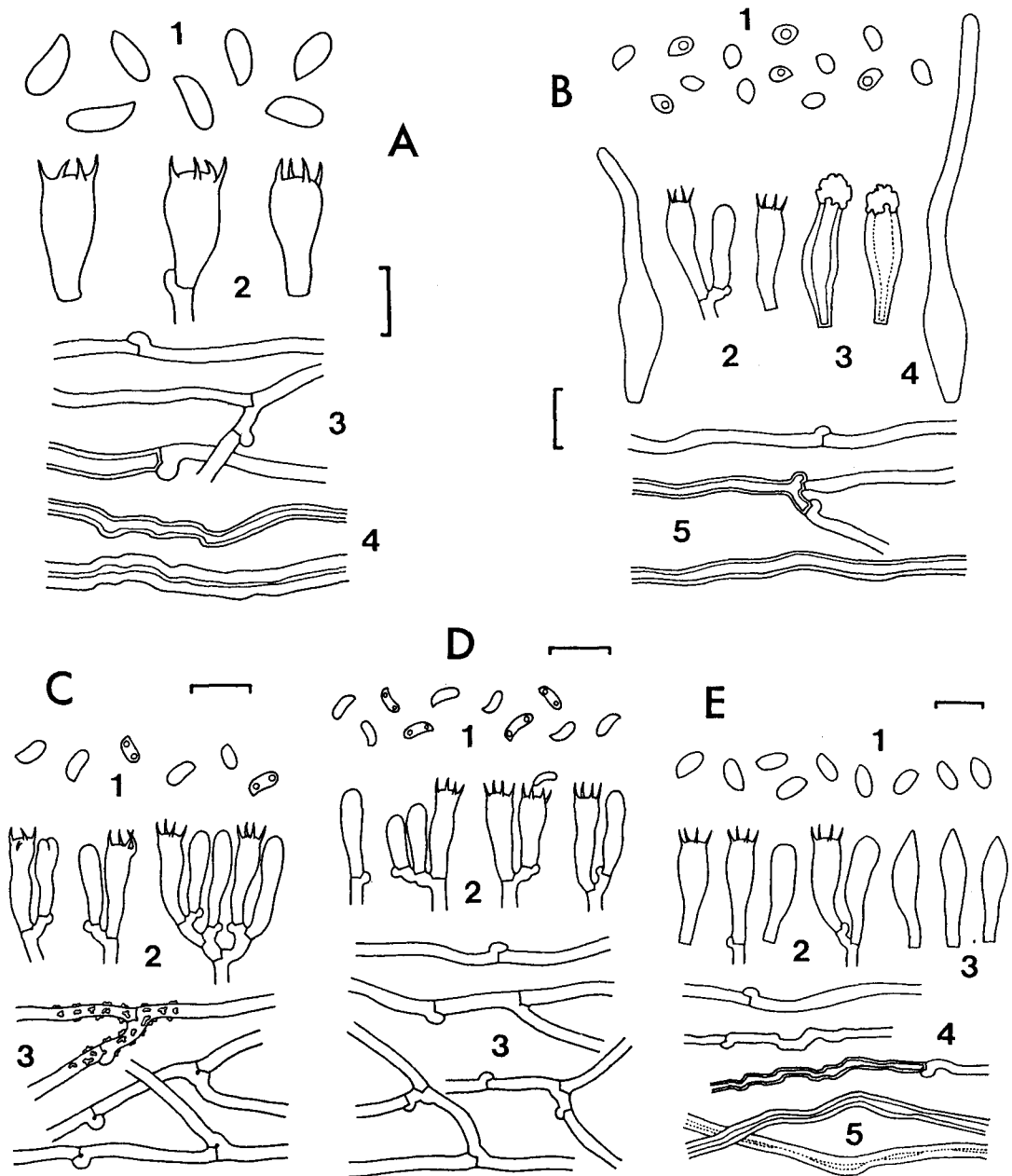
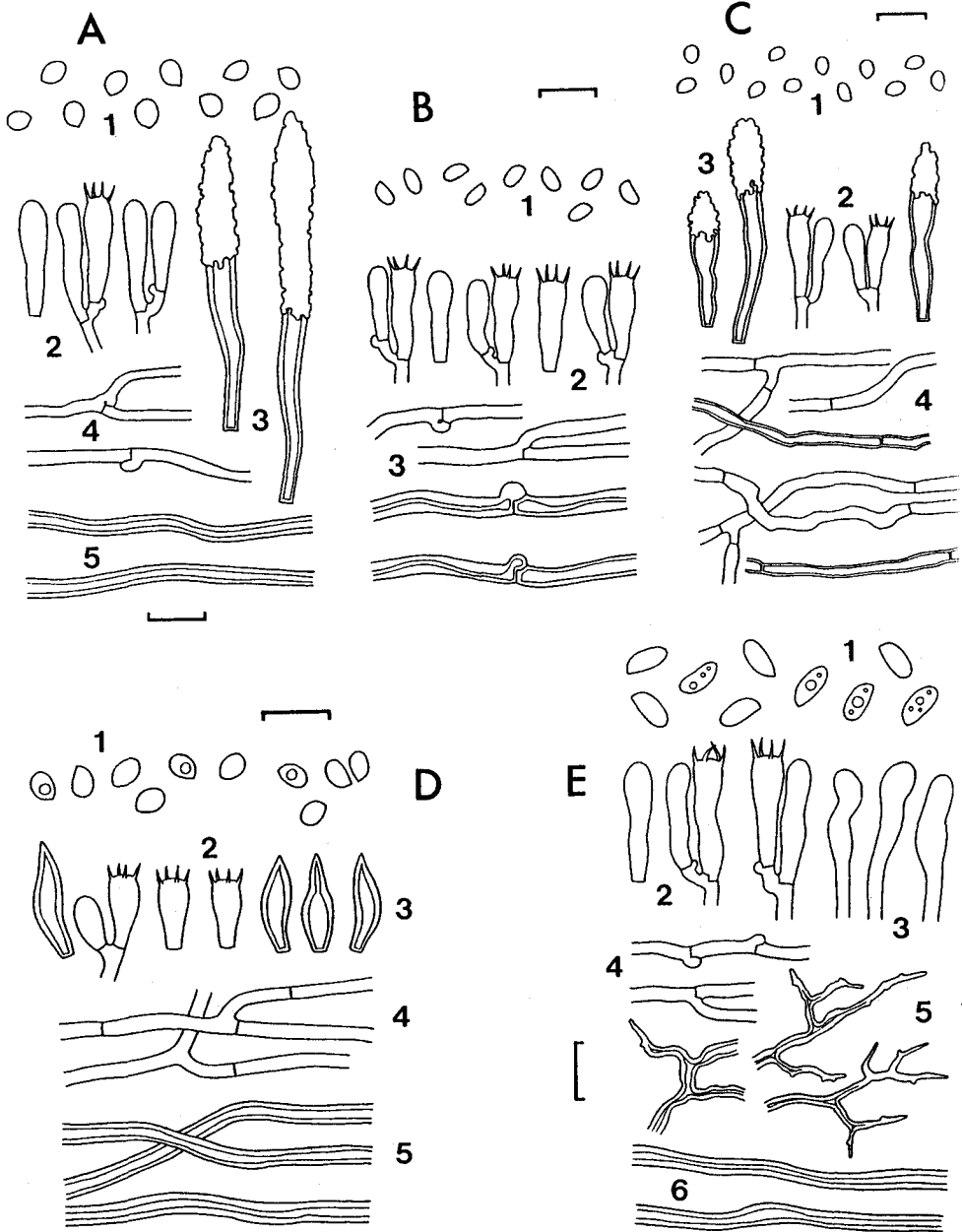


Plate 1. Microscopic structures (bars=10 μ m)

- A. *Antrodia albida*: 1) basidiospores, 2) basidia, 3) generative hyphae, 4) skeletal hyphae
 B. *Auriporia aurulenta*: 1) basidiospores, 2) basidia, 3) lamprocystidia, 4) leptocystidia, 5) hyphae
 C. *Ceriporiopsis gilvescens*: 1) basidiospores, 2) basidia, 3) hyphae
 D. *Ceriporiopsis subvermispora*: 1) basidiospores, 2) basidia, 3) hyphae
 E. *Gloeophyllum trabeum*: 1) basidiospores, 2) basidia, 3) cystidia, 4) generative hyphae, 5) skeletal hyphae

Plate 2

**Plate 2.** Microscopic structures (bars=10 μ m)

- A. *Junghuhnia separabilima*: 1) basidiospores, 2) basidia, 3) cystidia, 4) generative hyphae, 5) skeletal hyphae
 B. *Oligoporus stipticus*: 1) basidiospores, 2) basidia, 3) hyphae
 C. *Oxyporus similis*: 1) basidiospores, 2) basidia, 3) cystidia, 4) hyphae
 D. *Phellinus laevigatus*: 1) basidiospores, 2) basidia, 3) setae, 4) generative hyphae, 5) skeletal hyphae
 E. *Polyporus melanopus*: 1) basidiospores, 2) basidia, 3) hyphal ends, 4) generative hyphae, 5) binding hyphae, 6) skeletal hyphae