

The Fungal Flora of Mt. Gyeryong National Park(I)

Jong Seong Park and Gwan Chull Shin

College of Agriculture, Chungnam National University, Daejeon 300-01, Korea

鷄龍山 地域의 菌類相에 관한 研究(I)

朴 鍾 聲 · 申 寬 澈

忠南大學校 農科大學

Abstract: The fungal flora of Mt. Gyeryong National Park was investigated for the foundation of the nature studying garden and the nature conservation of the area during the period of July to October 1981. The fungi growing wildly in the area were collected and classified into 19 families, 53 genera, 93 species of Basidiomycetes and 5 families, 7 genera, 8 species of Ascomycetes.

Species of *Amanita*, *Boletus*, *Suillus*, *Russula*, *Lactarius*, *Laccaria* and *Marasmius* were frequently observed during the hot and humid period. Well-developed communities of *Lactarius piperatus*, *Russula emetica* and *Ramaria* spp. were also found in Mt. Gyeryong. Unrecorded species of fungi in Mt. Gyeryong studied were not included in this report.

Introduction

The fungal flora of Korea has been extensively studied by a number of mycologists since Okada's investigation on Polyporaceae of Suweon area in 1932. Recently studies on higher fungi in the nature conservation areas have been emphasized. Lim(1958) reported 125 species of Basidiomycetes growing in Kwang Neung area, Kyong-gi Province and Lee, Y.W. listed 30 species of mushrooms in the area in the same year. Lee, Y.W.(1959) also reported 82 species of higher fungi from Cheju Province and Ulneung Island.

Hong(1974) reported 10 species of Ascomycetes and 11 species of Basidiomycetes growing in Mt. Naejang National Park. In 1976 Hong and Chung reported 9 species of Ascomycetes and 66 species of Basidiomycetes from Mt. Chi-ak area and they also listed 82 species of higher fungi found in Mt. Jogye neighbouring to Songkwang Temple in 1977. Lee, Y.W. and Cho (1976) listed 56 species of Basidiomycetes from Mt. Sobaek and Andong area. More investigations on fungi in Mt. Sobaek area were carried out by Lee, J.Y. and Cho (1977), Kim, S.S. *et al.* (1978), and Cho and Lee, J.Y. (1979).

Lee, J.Y.(1976) reported one Myxomycetes, two Ascomycetes and 53 species of Basidiomycetes found in Bulyeongsa area and he also reported one Myxomycetes, two Ascomycetes, 55 species of Basidiomycetes and one Fungi Imperfecti from Uljin area in the same year. Cho and Lee, J.Y.(1980) reported a list of 45 species of Basidiomycetes collected at Mt. Mudeung area and an additional list of 30 species of Basidiomycetes and 3 species of Ascomycetes found in the same area in 1981.

Some of the investigations reported previously were conducted under the research activity of the Korean Association for Conservation of Nature. Although many investigators have made intensive studies on the fungi in main nature conservation areas, the research on the fungal flora of Mt. Gyeryong National Park has not been conducted.

Mt. Gyeryong located in Kongju-Kun, Chungnam

Province is one of the national parks in Korea. Its forest has been well conserved for a long time. The region of Mt. Gyeryong National Park is quite humid through the year except the dry period of late spring. The average yearly precipitation is 1,280 mm. The temperature ranges -20 to 35°C and the average is 11°C. The soil is based on gneissose granite, pink felderstar granite, biotite granite and two mica granite, and the surface is covered with deep litter.

In Mt. Gyeryong, more than 700 species of higher plants and mosses, 160 species of animals and a large number of arthropods are distributed. Such a climatic, geological and biological condition is sufficiently favorable for the growth of fungi. It is assumed that lots of fungi are growing also in this area, considering the previous reports in other nature conservation areas.

Materials and Methods

In order to investigate the fungal flora of Mt. Gyeryong National Park, more than 200 higher fungi were collected in the area during the period of July to October 1981. Morphological and histological characteristics of the collections were examined and the habitats were investigated. The specimens of the fungi were dried at room temperature and stored. The classification was mostly based on the taxonomic system of Hongo and Singer.

In this study only Ascomycetes and Basidiomycetes were included.

Lists of Fungi from Mt. Gyeryong

Basidiomycetes 담자균강

Hymenomycetes 균실류

Agaricales 주름버섯목

Hygrophoraceae 벧꽃버섯과

Hygrophorus laetus (Fr.) Fr. 무지개벧꽃버섯

Schizophyllum commune Fr. 치마버섯

Tricholomataceae 송이과

Laccaria amethystina (Fr.) Berk. et Br. 자주줄각버섯

Laccaria laccata (Fr.) Berk. et Br. 줄각버섯

Clitocybe infundibuliformis (Fr.) Quél. 깔때기버섯

Lepista subnuba Hongo 자주방망이버섯아재비

Tricholomopsis platyphylla (Fr.) Sing. 넓은솔버섯

Armillariella tabescens (Fr.) Sing. 뿔나무버섯부처

Leucopaxillus giganteus (Fr.) Sing. 흰우탄버섯

Macrocystidia cucumis (Fr.) Heim var. *latifolia* (Lange) Imaz. et Hongo. 밤색낙엽버섯

Marasmius graminum (Libert) Berk. et Br. 풀잎낙엽버섯

Marasmius siccus (Schw) Fr. 애기낙엽버섯

Marasmius oreades (Fr.) Fr. 선녀낙엽버섯

Marasmius maximus Hongo. 큰낙엽버섯

Mycena haematopus (Fr.) Quél. 적갈색애주름버섯

Mycena sanguinolenta (Fr.) Quél. 주홍애주름버섯

Mycena pura (Fr.) Quél. 맑은애주름버섯

Xeromphalina cauticularis (Fr.) Kühner et Maire 가랑잎이끼살이버섯

Amanitaceae 광대버섯과

Amanita virosa Secr. 독우산광대버섯

Amanita vaginata (Fr.) Vitt. var. *puncta* (Cleland et Cheel) Gilbert 큰우산버섯

Amanita pantherina (Fr.) Secr. 마귀광대버섯

Amanita rubescens (Fr.) S.F. Gray 결막이광대버섯

Amanita muscaria (Fr.) S.F. Gray 광대버섯

Amanita longistriata Imai 긴골광대버섯아재비

Amanita vaginata (Fr.) Quél. var. *fulva* (Fr.) Gill. 고동색우산버섯

Amanita verna (Fr.) Vitt. 흰알광대버섯

Amanita citrina S.F. Gray 애광대버섯

Agaricaceae 주름버섯과

Lepiota procera (Fr.) S.F. Gray 갯버섯

Lepiota japonica Kawam. ex Hongo 불여우버섯

Agaricus campestris Fr. 주름버섯

Agaricus subrutilescens (Kanfm.) Hotson et Stuntz 진갈색주름버섯

Coprinaceae 먹물버섯과

Coprinus stercorearius Fr. 흰가루먹물버섯

Pseudocoprinus disseminatus (Fr.) Kühner 고깔먹물버섯

Bolbitiaceae 소똥버섯과

Conocybe lactea (Lange) Metrod 노란종버섯

Bolbitius vitellinus (Fr.) Fr. 노란소똥버섯

Agrocybe pediades (Fr.) Fayod 황토벧절버섯

Strophariaceae 독청버섯과

Naematoloma sublateritium (Fr.) Karst. 개암버섯

Pholiota nameko (T. Ito) S. Ito et Imai 나도팽나무버섯

Park and Shin: Fungal Flora of Mt. Gyeryŏng National Park

- Rhodophyllaceae 외대버섯과
Rhodophyllus murrarii (Berk. et Curt.) Sing. 노란꼭지버섯
- Gomphidiaceae 옷버섯과
Gomphidium rutilus (Fr.) Lund. et Nannf. 홍목버섯
- Boletaceae 그물버섯과
Suillus granulatus (Fr.) Kuntze 젓비단그물버섯
Suillus pictus (Pk.) Smith et Thiers 붉은비단그물버섯
Xerocomus chrysenteron (St. Amans.) Quél. 마른산그물버섯
Xerocomus subtomentosus (Fr.) Quél. 산그물버섯
Pulveroboletus retipes (Berk. et Curt.) Sing. 밤색갓그물버섯
Boletus erythropus Fr. 붉은대그물버섯
Boletus rubellus Kromb. 붉은그물버섯
Boletus edulis Fr. 그물버섯
Boletus pulverulentus Opat. 밤꽃그물버섯
Tylopilus felleus (Fr.) Karst. 쓴맛그물버섯
Leccinum rugosiceps (Peck) Sing. 붉은갓겉껍이그물버섯
- Strobilomycetaceae 귀신그물버섯과
Strobilomyces floccopus (Fr.) Karst. 솜귀신그물버섯
- Russulaceae 무당버섯과
Russula sanguinea Fr. 혈색무당버섯
Russula laurocerasi Melzer 밀짚색무당버섯
Russula xerampelina (Secr.) Fr. 포도무당버섯
Russula emetica (Fr.) S.F. Gray 무당버섯
Russula aurata Fr. 황금무당버섯
Russula pseudodelica Lange 흰무당버섯아재비
Russula virescens (Zanted.) Fr. 기와버섯
Russula flavida Frorst et Peck 노랑무당버섯
Russula senecis Imai 흙무당버섯
Russula foetens Fr. 깔대기무당버섯
Lactarius volemus Fr. 젓버섯
Lactarius piperatus (Fr.) S.F. Gray 굴털이
Lactarius chrysorrheus Fr. 노란젓버섯
Lactarius violascens Fr. 젓빛젓버섯
- Aphylophorales 민주름목
 Clavariaceae 국수버섯과
Clavicornia pyxidata (Fr.) Doty 좁나무싸리버섯
Clavulina cristata (Fr.) Schroet. 빗싸리버섯
Ramaria formosa (Fr.) Quél. 붉은싸리버섯
Ramaria botrytis (Pers.) Ricken 싸리버섯
Ramaria apiculata (Fr.) Donk 바늘싸리버섯
- Cantharellaceae 껌꼬리버섯과
Craterellus cornucopioides (Fr.) Pers. 빨나팔버섯
Cantharellus cibarius Fr. 껌꼬리버섯
- Polyporaceae 구멍장이버섯과
Microporus affinis (Blume et Nees) Kuntze 메꽃버섯부처
Polyporellus elegans (Fr.) Karst. 노란겨울우산버섯
Fomitopsis cytisina (Berk.) Bond. et Sing. 흑잔나비버섯
Coltricia cinnamomea (Fr.) Murr. 톱니겨우살이버섯
Trametes gibbosa Fr. 대합송편버섯
Daedaleopsis styracina (P. Henn. et Shir.) Imaz. 때죽도장버섯
Daedaleopsis tricolor (Fr.) Schroet. 삼색도장버섯
Elfvigia applanata (Pers.) Karst. 잔나비겉상
Coriolus versicolor (Fr.) Quél. 구름버섯
Coriolus hirsutus (Fr.) Quél. 흰구름버섯
- Thelephoraceae 굴뚝버섯과
Sarcodon aspratus (Berk.) S. Ito 향버섯(능이)
- Gasteromycetes 복근류
 Lycoperdales 말불버섯목
 Lycoperdaceae 말불버섯과
Lycoperdon perlatum Pers. 접박이 말불버섯
Lycoperdon pyriforme Pers. 좁말불버섯
Lycoperdon gemmatum Fr. 말불버섯
Lycoperdon umbrinum Pers. 너도마불버섯
Lasiosphaera nipponica (Kawam.) Kawam.) Kobay. 땀구알버섯
- Dacryomycetales 붉은목이목
 Dacryomycetaceae 붉은목이과
Guepinia sphathularia Fr. 허버섯
- Nidulariales 찻잔버섯목
 Nidulariaceae 찻잔버섯과
Crucibulum vulgare Tul. 찻잔버섯
- Sclerodermatales 이리알버섯목
 Calostomataceae 연지버섯과
Calostoma japonicum P. Henn. 연지버섯
Astraeus hygrometricus (Pers.) Morg 먼지버섯
- Ascomycetes 자낭균강
 Pezizales 주발버섯목
 Helvellaceae 안장버섯과
Leptopodia elastica Fr. 가늌대안장버섯
Helvella ephippioides Imai 굽은대안장버섯

Pezizaceae 추밭버섯과
Wynnea gigantea B. et C. 다발귀버섯
Patella scutellata (St. Amans) Morgan 주홍접시버섯
 Sphaeriales 콩버섯목
 Xylariaceae 콩꼬투리버섯과
Xylaria polymorpha (St. Amans) Grev. 콩꼬투리버섯
 Helotiales 고무버섯목
 Geoglossaceae 콩나물버섯과
Leotia lubrica Fr. 콩두건버섯
 Hypocreales 맥각균목
 Hypocreaceae 동충하초과
Cordyceps militaris Link 붉은동충하초
Cordyceps nutans Pat. 노린재동충하초

摘 要

本研究은 國立公園 鷄龍山地域의 自然保存 및 自然學習園造成의 基礎確立을 爲한 事業의 一環으로서 同地域에 發生하는 野生菌類의 分布狀을 究明하고자 實施하였다. 1981年 7月부터 10月の 高溫多濕期에 鷄龍山地域에 發生하는 野生高等菌類를 調査한 結果 擔子菌 19科 53屬 93種과 子囊菌 5科 7屬 8種이 確認되었다. 그中 優點種은 *Laccaria*, *Marasmius*, *Amanita*, *Suillus*, *Boletus*, *Russula*, *Lactarius*, *Lycoperdon*等에 속하는 것이었고 *Lactarius*, *Russula* 및 *Ramaria*의 큰 群落도 發見되었다. 本報告에는 國內記錄種만을 收錄하였다.

References

Cho, D.H. and J.Y. Lee (1980): The flora of higher fungi in Mt. Mudeung area (1). *Korean J. Mycol.* 8, 95~99.
 Cho, D.H. J.Y. Lee (1981): The flora of higher fungi in Mt. Mudeung area (2). *Korean J. Mycol.* 9, 73~76.
 Hong, S.W. (1974): Collection list of mushrooms in National Park, Mt. Naejangsan. A report on the scientific survey of National Park, Mt. Naejangsan, 83~92.
 Hong, S.W. and H.S. Chung (1976): Mushrooms of Mt. Chi-aksan area. A report on the scientific survey of Mt. Chi-aksan area, 67~80.
 Hong, S.W. and H.S. Chung (1977): Fleshy Basidi-

omycetes in Mt. Jogye, *Kor. J. Botany.* 20, 29~38.
 Imazeki, R. and T. Hongo (1957): *Coloured Illustration of Fungi of Japan* I. Hoikusha Pub. Co.
 Imazeki, R. (1965): *Coloured Illustration of Fungi of Japan* II. Hoikusha Pub. Co.
 Imazeki, R., T. Hongo and K. Tubaki (1970): *Common Fungi of Japan in Color*. Hoikusha Pub.Co.
 Inst. Nat. Capci., Chungnam Nat. Univ. (1981): The plan for construction of Nature Studying Garden. Chungchung Nam Do.
 Ito, S. (1955): *Mycological flora of Japan* 2(4). Yokendo
 Ito, S. (1957): *Mycological flora of Japan* 2(5), Yokendo
 Miller, O.K. (1978): *Mushrooms of North America*, E.P. Dutton, New York
 Okada, M. (1932): Polyporaceae growing in Suweon area. The 25th anniversary reearch report of Suweon Agr. Fore, Coll. 387~391.
 Kim, S.S., J.Y. Lee and D.H. Cho (1978): Notes on Korean higher fungi (4) *J. Seoul Women's Coll.* 3, 333~347.
 Kim Y.S. (1976): The taxonomic study on the genus *Amanita* in Korea. *Kor. J. Mycol.* 4, 1~10.
 Kim, Y.S. Y.H. Park and Y.B. Kim(1977): Revision of the genus *Russula* collected in Korea. *Kor. Mycol.* 5, 1~9.
 Korean Soc. Mycology (1978): Standard Korean names of mushrooms. *Kor. J. Mycol.* 2, 43~55.
 Lee, D.S. and Y.W. Lee (1957): A list of the Korean fungi, Part (1). *Bulletin of Forest Exp. Sta.* 1~43.
 Lee, D.S. Y.W. Lee (1958): A list of the Korean fungi, Part(2). *Bulletin of Forest Exp. Sta.* 1~33.
 Lee, Y.W. (1959): A list of the Korean fungi, Part (3) *Bulletin of Forest Exp. Sta.* 1~9.
 Lee, J.Y. (1957): The list of the fungi of Korea. Seoul High School 1~9.
 Lee, J.Y. (1976): *Fungi of Bulyeongsa valley*. A report on the scientific survey of Bulyeongsa valley. 59~65.
 Lee, J.Y. (1976): Mycoflora in the forests of Uljin

Park and Shin: Fungal Flora of Mt. Gyeryong National Park

- valley. *J. Seoul Women's Coll.* 5, 261~269.
- Lee, Y.N. and D.H. Cho (1976): Basidiomycetes on Mt. Soback and Andong areas with some addition to the Korean flora. *Kor. J. Microbiol.* 14, 57~64.
- Lee, Y.W. (1958): Important 30 species of edible mushrooms growing in Kwang Neung. *Yuklim* 26, 46~53.
- Lee, Y.W. (1959): Higher fungi of Dagelet Island. *Kor. J. Botany* 2, 22~24.
- Lee, Y.W. (1959): A list of higher fungi of Quel-part island. *Report of Forest Experiment Station* 8, 137~144.
- Lim, J.H. (1958): The list of the mushrooms of Kwangneung. *J. College Lib. Arts and Sci, Korea Univ.* 3, 96~114.
- Lim, J.H. and B.K. Kim (1972): Taxonomic investigations on Korean higher fungi (1). *Kor. J. Pharmacol.* 3, 11~20.
- Rinaldi, A. and V. Tynadalo (1972): *Mushrooms and other fungi*. Hamlyn Pub. Group. Ltd. 31.
- Udagawa, S. and K. Tubaki (1978): *The Illustration of Fungi 1 and 2*. Kodansha Pub. Co.
- Ueki, H. (1936): The flora of Hwasan and Suweon area. *Bull. of the Agr. and Fore. Coll. Suigen.*

(Received February 2, 1982)