

Taxonomical Studies on Korean Higher Fungi(I)

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Abstract—To find new species of Basidiomycetes in Korea, 15 species were collected in the medicinal plants garden of Sook Myung Women's University during the period from May to November, 1983. Of them, 11 species were identified and classified into 10 genera and seven families. Among these species, *Macrocyttidia cucumis*(Pers. ex Fr.) Heim and *Melanoleuca verrucipes* (Fr.) Singer were found to be unrecorded species in Korea. Also their two genera are newly found ones in Korea. They were named "*Bahm Saek Min Būsūt*" and "*Hin Bol Lock Būsūt*" respectively and their characteristics were here reported.

Keywords—Basidiomycetes • *Macrocyttidia* • *Melanoleuca*

Recent reviews on the taxonomy of Korean Basidiomycetes and related higher fungi were made by several scientists: Kim and Lim reported a list of higher fungi of Korea, 30 species of which were Ascomycetes.¹⁾ Lee and Chung published a report of Species of Korean Basidiomycetes.²⁾ Kim summarized 600 species of higher fungi found in Korea.³⁾ In 1978 Korean Society of Mycology decided to unify vernacular names of mushrooms that had been found in Korea and published a list of standardized Korean names of 585 species and varieties.⁴⁾

In that same year Lee *et al.* reported ten species of higher fungi as newly found taxa in Korea.⁵⁾ Kim *et al.* also found seven species of agarics new in Korea.⁶⁾ Cho and Lee found four unrecorded species in the northern part of Kyung-sang Bukdo Province.⁷⁾ Cho *et al.* reported that ten unrecorded species were found in Mt. Sobaek.⁸⁾ Cho and Lee found three unrecognized species in a bamboo forest in the southern part of Korea.⁹⁾ They also found four species in Mt.

Mudeung.¹⁰⁾ Yokoyama *et al.* found *Descolea flavoannulata* in Korea as well as in other parts of Far Eastern Asia.¹¹⁾ Cho and Lee again reported five undescribed species in Mt. Mudeung.¹²⁾ Lee made extensive studies on the higher fungi in the several famous mountains and reported that 15 species were new in Korea.¹³⁾

In 1982 Park and Shin surveyed the fungal flora of Mt. Gye Ryong¹⁴⁾. Simultaneously Lee *et al.* found four unrecorded species and an unrecorded genus in a pine forest near Suweon City¹⁵⁾. Lee and Lee made an extensive survey of Ascomycetes in Korea, reporting 26 unrecorded species of them¹⁶⁾. In the same year Lee *et al.* again reported four unrecorded species of Basidiomycetes in the pine forest¹⁷⁾. La and Shin collected wood rotting fungi in the Suweon Campus of Seoul National University, finding an unrecorded genus and two unrecorded species among them¹⁸⁾. Kim *et al.* found three unrecorded species of the genus *Boletus*¹⁹⁾. In 1983

Lee and Kim found an unrecorded species, *Cantharellus lutescens* in a pine forest near Suweon.²⁰⁾ Shin and La found an unrecorded species, *Oidium oxalidis* parasitizing *Oxalis corniculata* in Suweon²¹⁾. In 1984 Sung *et al.* found an unrecorded species, *Cercospora capsici* infecting pepper plants in a greenhouse in Jinju City²²⁾.

So far 101 species of higher fungi were added to the previous list of 600 species, totaling to more than 700 species. Since there are more than 2,500 species of mushrooms in the United States and 1,500 species in Japan, the authors endeavored to find more species of the fungi in Korea. This paper reports two unrecorded species in Korea.

Experimental

Fifteen species of higher fungi were collected by the authors in the Medicinal Plants Garden of Sookmyung Women's University during the period of seven months from May to November, 1983. Among these, 11 species were carefully examined and identified, comparing with those species described in the references. New species were photographed and sketched and also their spores were done through a microscope. Most of them were dried at room temperature to make specimens and are stored at College of Pharmacy, Sookmyung Women's University, Seoul 140, Korea.

The classification and identification were mainly made on the basis of Singer system²³⁾, Imazeki and Hongo system²⁴⁻²⁵⁾ and Dickinson and Lucas²⁶⁾.

I. Description of Two New Species in Korea

Tricholomataceae

Macrocystidia

(Korean name: *Bahm Saek Min Būsūt*)

Macrocystidia cucumis (Pers. ex Fr.) Heim

(Korean name: *Bahm Saek Min Būsūt*)

Imazeki, R. and T. Hongo: *Colored Illustrations of Fungi of Japan* Vol. I, p. 36. Hoikusha Co., Osaka (1957).

Dickinson, C. and J. Lucas: *The Encyclopedia of Mushrooms*. Crescent Books, New York (1983).

Fruiting body:

Pileus: dark brown, paler around the edge and dry, 10~20 mm broad, conical to bell shaped, striate almost to center when wet, margin of pileus upcurved than gill, cuticle powdery. Fresh: brown, thin, fragile. Gills: free, first white, after fleshed color, pale yellowish, upsplitted when old, center nearly triangularity on broadening gill. Stipe: 2.9 cm~1.3 cm long, 1.0~2.5 mm thick, dark brown to black, paler at the apex, hairy flesh solid, finally hollow. Spores: 8.5×4 μ size, narrow ellipsoid, smooth, in Melzer reagent light yellow.

Habitat and Distribution:

Grows in small groups or is scattered on damp rich soil, along woodland paths, banks of streams and in pastures, in garden, in wood ground, roadside between *Gramineae* grasses. This small dark brown fungus is easily recognized by its strong fleshy or cucumber smell. New in Korea; Japan, America, and Europe.

Occurrence: May to August.

Tricholomataceae

Melanoleuca (Korean name: *Bol Lock Būsūt*)

Melanoleuca verrucipes (Fr.) Sing.

(Korean name: *Hin Bol Lock Būsūt*)

Imazeki, R. and T. Hongo: *Colored Ill. of Fungi of Japan*. Vol. I, p. 28, Hoikusha Co., Osaka (1957).

Fruiting body:

Pileus: 2.3~6 cm broad, center gradually to plane, convex then flat, with a central hump (broadly umbonate), surface smooth, white but center a little brown. Fresh: white powdery smell. Gills: white, sinuate, or decurrent, or adnate, crowded. Stipe: 2~5 cm long, 3~4 mm thick, slightly swollen at the base, root origin

split, root surface brown or black granular on a white base. Spores: $8.9 \times 5.5 \mu$ size, ellipsoid with a wart, in Melzer reagent warts blue-violet.

Habitat and Distribution:

Grow in groups under willow in garden, in woodland ground, New in Korea; Japan, Europe.

Occurrence: July to October.

II. The List of Identified Species

Basidiomycetes
Homobasidiae
Hymenomycetes
Agaricales

Pleurotaceae

1) *Schizophyllum commune* Fr.

Tricholomataceae

2) *Laccaria laccata* (Fr.) Berk. et Br.

Agaricaceae

3) *Lepiota pseudogranulosa* (Berk. & Br.) Sacc.

4) *Lepiota atrosquamulosa* Hongo

Boletaceae

5) *Boletus rubellus* Krombh.

Aphylliphorales

Clavariaceae

6) *Clavulina cristata* (Fr.) Schroet.

Polyporaceae

7) *Daedaleopsis tricolor* (Fr.) Schroet.

8) *Coriolus versicolor* (Fr.) Quél.

Gasteromycetes

Hymenogastrales

Sclerodermataceae

9) *Scleroderma cepa* Pers.

Conclusion

Eleven species among 15 mushrooms collected were identified and the following two species were recognized to be new to Korea: *Macrocystidia cucumis* (Pers. ex Fr.) Heim and *Melanoleuca verrucipes* (Fr.) Sing. These were found to be new species that belong to unrecorded

genera in Korea.

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The Explanation of Plates

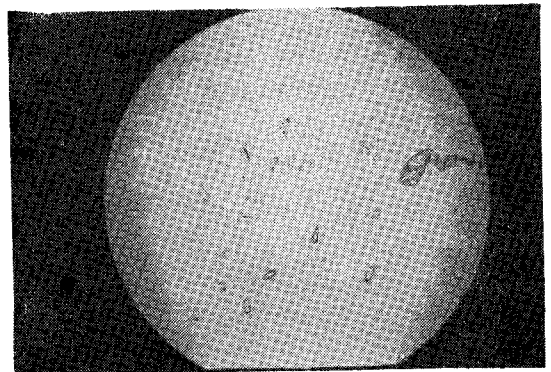
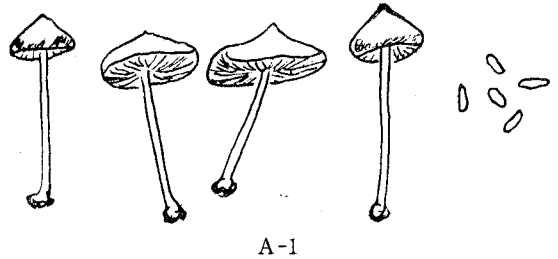
Plate I : A-1 *Macrocystidia cucumis* (Pers. ex Fr.) Heim carpophores $\times 1$ ca.

A-2 spores $\times 400$

Plate II : B-1 *Melanoleuca verrucipes* (Fr.) Sing. carpophores $\times 1$ ca.

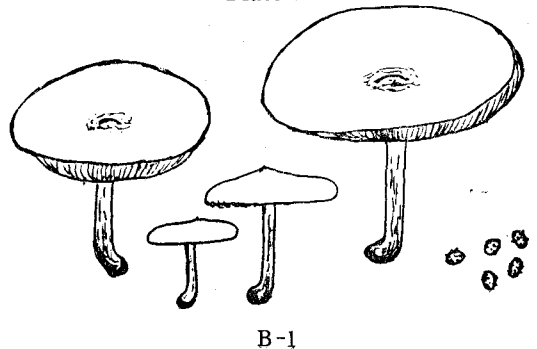
B-2 spores $\times 400$

Plate I

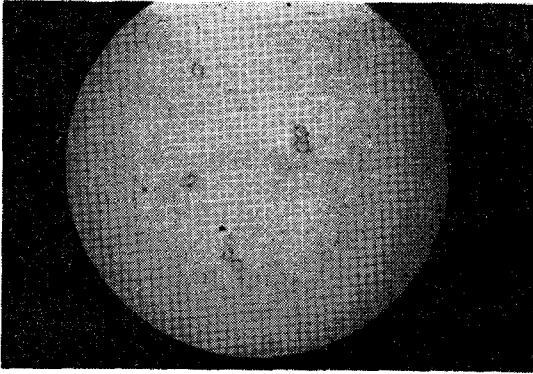


A-2

Plate II



B-1



B-2

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