

Taxonomic Investigations on Korean Higher Fungi(VI)

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韓國產高等菌類의分類學的研究(第6報)

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ABSTRACT: More than one-hundred-twenty specimens of *Basidiomycetes*, *Ascomycetes* and slime molds were collected in Seoul National Polytechnic University Campus during the period from June 1984 to November 1987 and examined for identity. They were classified into 25 families, 53 genera and 81 species. Among them, one genus and 2 species were confirmed as unrecorded taxa in Korea. The unrecorded genus was genus *Hapalopilus* and was named "Band Dal Busut" in vernacular. The unrecorded 2 species were *Hapalopilus rutilans* and *Hygrophorus nitratus*. They were named "No Lan Ban Dal Busut" and "Jil San Beot Geot Busut," respectively and their characteristics were here reported.

KEYWORDS: *Basidiomycetes*, *Polyporaceae*, the genus *Hapalopilus*, *Hapalopilus rutilans*, *Hygrophoraceae*, *Hygrophorus nitratus*

The past reports of taxonomic studies by various investigators in Korea were reviewed in the previous reports (Kim and Lim, 1972; Kim, 1978).

To find new species of higher fungi in Korea, the authors have collected and classified these fungi since 1966. The results have been published since 1970 (Kim and Lim, 1970; Kim and Lim, 1972; Kim *et al.*, 1976a and b; Kim, 1978; Park *et al.*, 1985).

Since 1985, five reports on fungal taxonomy have appeared. Bok and Shin (1985) reported that nine species and four varieties of the genus *Lactarius* were newly found mushrooms in Korea. In 1986 they also reported that four species and one variety of the genus *Russula* were newly found in Korea.

Park *et al.* in 1986 collected more than 300 specimens of higher fungi in Mt. Jiri and reported that seven species among the *basidiomycetes* collected were newly found in Korea.

In 1987 they also reported that four species among the *basidiomycetes* collected in Mt. Mu-hack were newly found in Korea.

Yang *et al.* (1987) reported that two species of the *basidiomycetes* in Cheju Island were newly found in Korea. The present paper reports the finding of two unrecorded species of *basidiomycetes* in Korea.

Materials and Methods

More than 120 specimens of higher fungi were collected by the authors in Seoul National Polytechnic University campus during the period from June 1984 to November 1987. Then the authors examined and identified them, comparing with those species described in the bibliography. New species were photographed and sketched. Also their microscopic features were observed. Most of

the specimens were dried at 40°C in an electric oven with air ventilation. After dried, they were transferred to the original containers, kept at room temperature, and stored at Department of Environmental Engineering, Seoul National Polytechnic University, Seoul, 139-240, Korea.

Description of two unrecorded species in Korea

Hygrophoraceae

Hygrophorus

Hygrophorus nitratus(Pers. ex Pers.) Fr. 질산뿔꽃버섯(신칭)

Hymem. Eur., p.421, 1874

Hygrocybe nitrata(Fr.) Wunsche, Die Pilze, p.112, 1877

Camarophyllus nitratus, Ricken Vademekum Fur Pilzefreunde, p.197, 1920

Fruiting body:

Pileus: 3.5~4.8 cm wide, convex, then expanded, striate, center shallowly depress, margin irregular, light brown, often yellow brown at margin when fresh, dry pale.

Lamellae: Whitish cream becoming tinged with pileus color, close.

Context: Whitish cream, taste soap, smell nitrous, margin of Pileipellis(hyphae) 23~28×3~4 μm and Pileipellis hyphae 18~34×2~5 μm size.

Stipe: 3.5~5×0.6~0.7 cm, white yellow brown, darkening towards the base, hollow.

Spore: Spore print white, 7~9×4~6 μm size, Melzer solution amyloid, elliptical~oval.

Basidia: 31~35×6 μm size, clavate, with four sterigmata.

Habitat and Distribution: Grow amongst grass. season summer, in Korea and Europe.

Polyporaceae

Hapalopilus (반달버섯속 신칭)

Hapalopilus rutilans(Pers. ex Fr.) Karst. 노란반달버섯(신칭)

Bull. Torr. Bot. Club, 31: 416, 1904., N. Am. Fl. 9: 80. 1908., North. *Polyp.* 35. 1914; South *Polyp.* 34, 1915.

Fruiting body:

Fruiting body 2~5×1, 4~4 cm wide, upper sur-

face slightly convex, smooth to somewhat undulating~tuberculate, tomentose~velutinous yellow brown to ocher~brown, KOH immediately color the surface of the pileus an intense violet. 1~2.5 cm thick where attached bracketlike, semicircular to reniform, broadly attached to the substrate, margin slightly incurved, smooth and sharp-edged.

Tubes: 2~4 angled~rounded to oblong pores per mm, the lower surface with the 4~10 mm thick pore layer is gray brownish to yellow brown.

Context: Cinnamon-brown, lighter toward the upper surface of the pileus, primarily corky-soft fresh fruiting body, then fibrous, tough. Margin of pileipellis(hyphae) 60~62×4~5 μm and pileipellis hyphae 35~50×3~4 μm size.

Spore: 3~5×2~3 μm, elliptical~oval

Basidia: 15×3~5 μm size, clavate with 4 sterigmata

Habitat and Distribution: Grow on dead wood of fallen or attached branched and trunks(popular, birch, beech, fir), season summer, in Korea and Europe.

摘 要

1984年 6월부터 1987年 11월까지 佛岩山 기슭에 있는 서울産業大學 캠퍼스에서 採集한 韓國産 菌類 120餘種을 觀察한 結果, 未記錄屬 1屬과 未記錄種 2種을 同定하였기에 報告하는 바이다. 未記錄屬은 반달버섯속 *Hapalopilus*이고 未記錄種은 질산뿔꽃버섯 *Hygrophorus nitratus*(Pers. ex Pers.) Fr. 와 노란반달버섯 *Hapalopilus rutilans*(Pers. ex Fr.) Karst.이다.

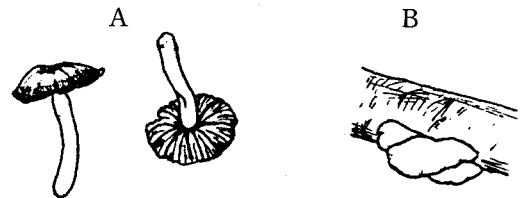


Plate 1. A) *Hygrophorus nitratus*(Pers. ex Pers.) Fr. B) *Hapalopilus rutilans*(Pers. ex Fr.) Karst.

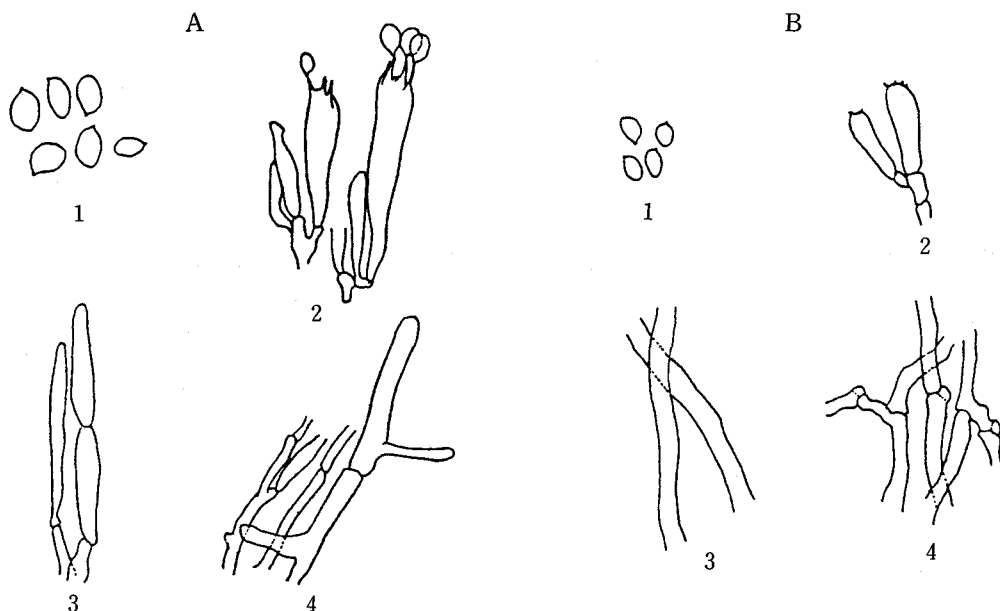


Plate 2. A) *Hygrophorus nitratu* (Pers. ex Pers.) Fr.
 1: spore, 2: Basidia, 3: Margin of Pileipellis, 4: Pileipellis hyphae
 B) *Hapalopilus rutilans* (Pers. ex Fr.) Karst.
 1: Spore, 2: Basidia, 3: Margin of Pileipellis, 4: Pileipellis hyphae(with clamp)

References

- Breitenbach, J. and Kranzlin, F.(1984): *Fungi of Switzerland*, Vol. I, *Ascomycetes*, Verlag Mykologia, Luzern, 310pp.
- Breitenbach, J. and Kranzlin, F.(1986): *Fungi of Switzerland*, Vol. II, *Non-gilled Fungi (Heterobasidiomycetes, Aphyllophorales, Gastromycetes)*, Verlag Mykologia, Luzern, 412pp.
- Bakshi, B.K.(1971): *Indian Polyporaceae (On Trees and Timber)*, Indian Council of Agricultural Research, New Delhi, 246pp.
- Bok, J.D. and Shin, G.C.(1985): Taxonomic Studies on the Genus *Lactarius* of Korea(I) *Kor. J. Mycol.* **13**: 249-262.
- Bok, J.D. and Shin, G.C.(1986): Taxonomic Studies on the Genus *Russula* of Korea *Kor. J. Mycol.* **14**: 237 - 244.
- Brodie, H.J.(1975): *The Birds Nest Fungi*, University of Toronto Press, Toronto and Buffalo, 199pp.
- Corner, E.J.H.(1970): *Supplement to "A Monography of Clavaria and Allied Genera"*. Verlag von J. Cramer, Liechtenstein, 299pp.
- Dickinson, C.H. and Lucas, J.(1983): *The Encyclopedia of Mushroom*, Cresent Book, New York, 280pp.
- Donk, M.A.(1963): *The Generic Names Proposed for Agaricaceae*, Verlag von J. Cramer, Liechtenstein, 321pp.
- Donk, M.A.(1966): *The Generic Names Proposed for Hymenomycetes*, Verlag von J. Cramer, Liechtenstein, 168pp.
- Farr, M.L.(1981): *How to Know the True Slime Molds*, The Pictured Key Nature Series. 132pp.
- Flegner, L.S.(1980): Ultrastructural and development of *Mutinus caninus* and the occurrence of a light spored basidium. *Mycologia*, **72**: 1001.
- Guzman, G.(1983): *The Genus Psilocybe*, J. Cramer, Liechtenstein.
- Hawksworth, D.C., Sutton, B.C. and Ainsworth, G. C.(1983): Ainsworth & Bisbys' *Dictionary of the Fungi*. Commonwealth Mycological Institute, Kew, 455pp.
- Halling, R.E.(1983): *The Genus Collybia (Agaricales)*. J. Cramer, Liechtenstein, 148pp.
- Hesler, L.R. and Smith, A.H.(1963): *North American Species of Hygrophorus*, Tenessi Press, Knoxville, p.167-169.
- Imazeki, R. and Hongo, T.(1981): *Colored Illustrations of Mushrooms*, Cresent Book, New York, 280pp.

- tion of Fungi of Japan*. Vol.I, Hoikusha Publishing Co., Osaka, 181pp.
- Imazeki, R. and Hongo, T.(1983): *ibid*, Vol.II, 238pp.
- Ito, S.(1955): *Mycological Elora of Japan*. Vol.II, 293, Yokendo L.T.D., Tokyo.
- Kim, B.K. and Lim, J.H.(1970): Taxonomic Investigations on Korean Higher Fungi(I). *Kor. J. Pharmacogn.* **3**: 11-19.
- Kim, B.K. and Lim, J.H.(1972): Taxonomic Investigations on Korean Higher Fungi(II). *Kor. J. Mycol.* **1**: 13-17.
- Kim, B.K., Choi, E.C., Chung, K.S. and Lee, Y.S. (1976): Taxonomic Investigations on Korean Higher Fungi(III). *Kor. J. Pharmacogn.* **7**: 199-208.
- Kim, B.K., Kim, D.H., Choi, E.C. and Shim, M.J. (1976): Taxonomic Investigations on Korean Higher Fungi(IV). *Kor. J. Mycol.* **4**: 17.
- Kim, B.K.(1978): Taxonomic Investigations on Korean Higher Fungi(V). *Yakhak Hoeji*, **22**: 91-114.
- Kobayashi, Y. and Shimizu, D.: *Iconography of Vegetable Wasps and Plant Wo*, Hoikusha Publishing Co., Osaka, 281pp.
- Lange, M. and Hora, F.B.(1978): *Guide to Mushrooms and Toadstools*. Collins, London, 257pp.
- Lee, J.Y. and Hong, S.W.(1985): *Illustrated Flora & Fauna of Korea*, Vol.28: *Mushrooms*, Ministry of Education, Seoul, Korea, 962pp.
- Miller, O.K.(1981): *Mushrooms of North America*, Elsevier-Dutton Publishing Co. Inc., New York, 368pp.
- Moser, M.(1978): *Agarics and Boleti*, Geoffrey Kibby Consultant, Ronald Rayner, London, 535pp.
- Mazzer, S.J.(1976): *A Monographic Study of the Genus Pouzarella*, J. Cramer, Liechtenstein, 191pp.
- Park, W.H., Kim, T.H., Roh., I.H. and Kim, B.K. (1985): Taxonomical Studies on Korean Higher Fungi(I). *Kor. J. Pharmacogn.* **16**: 61-64.
- Park, S.S., Cho, D.H. and Lee, J.Y.(1986): The Flora of Higher Fungi in Mt. Jiri Area(I). *Kor. J. Mycol.* **14**: 247-255.
- Park, S.S., Cho, D.H. and Lee, J.Y.(1987): The Flora of Higher Fungi in Mt. Muhack Areas(III). *Kor. J. Mycol.* **15**: 71-75.
- Pegler, D.N.(1986): *Agaric Flora of Srilanka*. Her Majesty's Stationary Office, London, 519pp.
- Phillips, R.(1981): *Mushrooms and other Fungi of Great Britain and Europe*. Pan Books, London, 288pp.
- Peterson, H.(1971): *Gomphus and Gloeocantharellus in North America*, J. Cramer, Liechtenstein, 144pp.
- Peterson, H.(1975): *Ramaria subgenus Lentoramaria with Emphasis on North American Taxa*. J. Cramer, Liechtenstein, 261pp.
- Singer, R.(1986): *The Agaricales in Modern Taxonomy*. Koeltz Scientific Books, Koenigstein, Germany, 912pp.
- Smith, A.H.(1947): *North American Species of Mycena*. J. Cramer, Liechtenstein, 521pp.
- Smith, A.H.(1975): *A Field Guide to Western Mushroom*. Univ. of Michigan Press, Ann Arbor, 280pp.
- Smith, A.H., Smith, H.V. and Weber, N.(1979): *How to Know the Gilled Mushrooms*, Wm. C. Brown Company, Iowa, 344pp.
- Ureda, D. and Isawa, M.(1987): *Mushroom Illustration*, 223pp.
- Wright, J.E.(1987): *The Genus Tulostoma (Gasteromyces)*, A World Monography, J. Cramer, Berlin, Stuttgart, 338pp.
- Yang, S.C., Oh, D.C. and Lee, J.Y.(1987): The Mycoflora of Aphyllophorales in Cheju Island. *Kor. J. Mycol.* **15**: 131-134.