

MYCOFLORA OF FAMILY *BOLETACEAE* *MRE.* OF HIGHLAND AREA

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I. Natural condition of Highland area

Highland area is the south area of Truongson mountains, including 4 provinces: Kon-tum, Gia-lai, Dak-lac and Lam-dong. The terrain of Highland have been divided by different mountains: Ngoc-linh, An-khe, Chu-dju, Chu-jangsin ... The average height of them is from 400 to 2200m compared with sea-surface. There are two seasons: rainy season and dry season. From may to november is the rainy season and the dry season is from december to august. The average rainfall is very high, from 1500 to 3600 mm, 95% from them fall in the rainy season. The average temperature in the year is about 18 - 23^oC. The average moisture is about 80 - 85%. The flora of plant of Highland area is very multiform: pine-leaved forest, broad-leaved forest, pine-broad-leaved forest and bamboo forest.

Natural condition of Highland area is very suitable for development of the macro-fungi, sp. the fungi of family Boletaceae Mre.

II. Materials and methods

Specimens were collected in the different areas of Highland: the range of mountains, plateau and different forests ... The specimens were kept in the botanical laboratory of Dalat University. The specimens were analyzed by methods of R. Singer (1962), Teng (1964), Trinh Tam Kiet (1981) ... and classified by methods of anatomy-morphology on base of papers of Iatrevskii (1913), Kuhner et Romagnesi (1953), Teng (1964), Trĩnh Tam Kiet (1981, 1996) ...

III. Results and discussion

There are 32 species of family Boletaceae Mre. in Highland area, belong to 9 genera: *Suilus Mich. ex Fr.* 5 species, *Xerocomus Quell.* 6 species, *Gyrodon Opat.* 1 species, *Boletinus Kal.* 1 species, *Boletellus Mur.* 1 species, *Tylopilus Karst.* 2 species, *Leccinum Gray* 2 species, *Boletus Dill. ex Fr.* 12 species and *Gyroporus Quell.* 2 species, of which the most abundant genus is *Boletus Dill. ex Fr.* and individual number of each species is the biggest.

Table 1: List of fungi species of family *Boletaceae* Mre. of Highland area

| N ^o | Scientific name | Site of growth | | | Meaning | | |
|----------------|--|--------------------|---------------------|--------------------------|---------|------------|--------------------|
| | | Pine leaved forest | Broad leaved forest | Pine broad leaved forest | Edible | Poiso-nous | Create micro-rhyza |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| I | <i>Suillus</i> Mich. ex Gray | | | | | | |
| 1 | <i>S. granulatus</i> (Fr.) Kuntze | + | | | + | | + |
| 2 | <i>S. piperatus</i> (Bull. ex Fr.)Kuntze | + | | | | + | |
| 3* | <i>S. bovinus</i> (L. ex Fr.)Kuntze | + | | | + | | |
| 4 | <i>S. luteus</i> L. ex Fr. | + | | | + | | + |
| 5 | <i>S. viscidus</i> L. ex Fr. | + | | | + | | + |
| II | <i>Xerocomus</i> Quell. | | | | | | |
| 6* | <i>X. rubellus</i> Kromb. | + | | | + | | |
| 7 | <i>X. badius</i> (Fr.)Kuhner | + | | + | + | | |
| 8 | <i>X. chrysenteron</i> Bull. ex Fr. | + | | + | + | | |
| 9 | <i>X. hemichrisus</i> Bull. ex Fr. | + | | | | + | + |
| 10 | <i>X. leolinus</i> Kromb. | + | | | + | | |
| 11* | <i>X. subtomentosus</i> Fr. | + | + | | + | | |
| III | <i>Gyrodon</i> Opat. | | | | | | |
| 12 | <i>G. lividus</i> Bull. ex Fr. | + | | | + | | |
| IV | <i>Boletinus</i> Kal. | | | | | | |
| 13 | <i>B. cavipes</i> Kal. | + | | | + | | |
| V | <i>Boletellus</i> Mur. | | | | | | |
| 14 | <i>B. ananas</i> (Curt.)Mr. | + | | | | + | + |
| VI | <i>Tylopilus</i> Karst. | | | | | | |
| 15 | <i>T. fellius</i> (Fr. ex Bull.)Karst. | + | | + | | + | |
| 16 | <i>T. alboater</i> (Schaeff.)Mr. | + | | | | + | |
| VII | <i>Leccinum</i> Gray | | | | | | |
| 17 | <i>L. crocipodium</i> Letel. | | + | | + | | |
| 18 | <i>L. scabrum</i> (Bull. ex Fr.)Gray | + | + | | + | | |
| VIII | <i>Boletus</i> Dill. ex Fr. | | | | | | |
| 19 | <i>B. queletii</i> Schulzer | + | | | + | | + |
| 20 | <i>B. calopus</i> Fr. | + | | + | | + | |
| 21 | <i>B. alpidus</i> Roques | | + | | | + | |
| 22 | <i>B. appendiculatus</i> Schaeff. ex Fr. | + | + | | + | | + |
| 23 | <i>B. satanas</i> Lenz. | + | | | | + | |
| 24 | <i>B. impolitus</i> Fr. | + | | | | + | + |
| 25* | <i>B. pachipus</i> Fr. | + | | + | | + | |
| 26* | <i>B. regius</i> Kromb. | + | | | + | | |
| 27* | <i>B. olivaceus</i> Schaeff. | + | | | | + | |
| 28* | <i>B. aereus</i> Bull. ex Fr. | | | + | + | | |
| 29 | <i>B. erythropus</i> (Fr.) Pers. | + | + | | + | | |
| 30 | <i>B. edulis</i> Bull. ex Fr. | + | | + | + | | + |
| IX | <i>Gyroporus</i> Quell. | | | | | | |
| 31* | <i>G. castaneus</i> Bull. | + | + | | + | | |
| 32 | <i>G. cyanescens</i> Bull. ex Fr. | + | | | + | | + |

Table 2: Number of species of genera and their meaning

| N ^o | Name of Genus | Number of Species | Edible mushroom (Species) | Poisonous mushroom (Species) | Create micorhyza (Species) |
|----------------|----------------------|-------------------|---------------------------|------------------------------|----------------------------|
| 1 | Suillus Mich. ex Fr. | 5 | 4 | 1 | 3 |
| 2 | Xerocomus Quell. | 6 | 4 | 2 | 1 |
| 3 | Gyrodon Opat. | 1 | 1 | | |
| 4 | Boletinus Kal. | 1 | 1 | | |
| 5 | Boletellus Mur. | 1 | | 1 | 1 |
| 6 | Tylopilus Karst. | 2 | | 2 | |
| 7 | Leccinum Gray | 2 | 2 | | |
| 8 | Boletus Dill. ex Fr. | 12 | 6 | 6 | 4 |
| 9 | Gyroporus Quell. | 2 | 2 | | 1 |

They usually grow in the pine forest of Lam-vien and Di-linh Highland. The species of the genus *Leccinum* Gray are rare [*L. crocipodium* Letel. and *L. scabrum* (Bull. ex Fr.) Gray]. Overview, we see that majority of the species of family Boletaceae Mre grow in the pine forest or pine-broad leaved forest (30 species), only two species of this family grow in the wide-leaved forest: *Leccinum crocipodium* Letel and *Boletus alpidus* Roques

20 species [*Suillus granulatus* (Fr.) Kuntze, *Xerocomus rubellus* Kromb., *Boletus edulis* Bull. ex Fr. ...] of 32 species can be used as food, 12 species (*Boletus satanas* Lenz., *Boletus impolitus* Fr., *Boletus pachipus* Fr. ...) are poisonous. However, 10 species (*Xerocomus hemichrisus* Bull. ex Fr., *Boletus queletii* Schulzer, *Gyroporus cyanescens* Bull. ex Fr. ...) of family Boletaceae Mre. can set up a mycorrhiza with plant. With obtained results, we see that the fungi species of family Boletaceae Mre. not only have a big meaning in the nature, but also in a people's life.

The most importance, there are the 8 species [(*) in the list |] that have not been published in the before scientific bulletin about Vietnam macrofungi flora, so they are not only the new species of Highland macrofungi flora, but also can be the new species of Vietnam macrofungi flora.

All fungi species of family Boletaceae Mre. in the Highland macrofungi flora appear the fruit body in the warm-moist season in the year, from may to november.

IV. Conclusion

There are 32 species belong to 9 genera of the *Boletaceae* Mre. in Highland: genus *Suillus* Mich. ex Fr. 5 species, genus *Xerocomus* Quell. 6 species, genus *Gyrodon* Opat. 1 species, genus *Boletinus* Kal. 1 species, genus *Boletellus* Mur. 1 species, genus *Tylopilus* Karst. 2 species, genus *Leccinum* Gray 2 species, genus *Boletus* Dill. ex Fr. 12 species and genus *Gyroporus* Quell. 2 species. The most importance, there are the 8 species [(*)

in the list] that have not been published in the before scientific bulletin about Vietnam macrofungi flora, so they are not only the new species of Highland macrofungi flora, but also can be the new species of Vietnam macrofungi flora.

V. References

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KHU HỆ NẤM HỌ BOLETACEAE MRE. VÙNG TÂY NGUYÊN

Lê Bá Dũng

Khoa sinh - Đại học Đà Lạt

Khu hệ nấm họ *Boletaceae Mre.* Tây Nguyên gồm 32 loài, thuộc 9 chi: *Suilus Mich. ex Fr.* 5 loài, *Xerocomus Quell.* 6 loài, *Gyrodon Opat.* 1 loài, *Boletinus Kal.* 1 loài, *Boletellus Mur.* 1 loài, *Tylopilus Karst.* 2 loài, *Leccinum Gray* 2 loài, *Boletus Dill. ex Fr.* 12 loài và *Gyroporus Quell.* 2 loài. 30 loài đã được ghi nhận phân bố trong rừng lá kim hoặc hỗn giao lá kim - lá rộng, chỉ có 2 loài phân bố trong rừng lá rộng. Tất cả các loài nấm của họ này đều hình thành quả thể vào mùa ẩm, ẩm trong năm (từ tháng 5 tới tháng 11).