

Diversity of Macrofungi from North Maharashtra-II

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ABSTRACT

Macrofungi (Mushrooms) are an important and integral component of the ecosystem. Mostly mushrooms are fleshy, sub fleshy or sometimes leathery, umbrella like sporophore, saprophytic in nature. The survey was conducted in rainy and winter season of 2016 in 3 different places which included Mountains, Grassland and Forest areas of North Maharashtra. A total number of eleven species belonging to ten genera were recorded viz. *Aminita pantherina* (Fr.) Krombh, *Coprinus brunnaeofibrillos* Dennis, *Coprinus comatus* (Mull) Pers. *Daedalia stereoides* (Bull.) Fries, *Fomes conatus* (Weinm.) Gill, *Ganoderma lucidum* (Leys.) Karst., *Gymnopilus chrysopellus* (Berk & Crutis) Murril, *Lactarius deliciosus* (L., Fr.) Gray., *Pholiota kodiakensis* Sm.& Hesler *Pleurotus flabellatus* Sacc., and *Polyporus bicolor* Jungh.

Key words: Macrofungi, Pimpalner, North Maharashtra

INTRODUCTION

Macro fungi are generally mushrooms, which possess fleshy, sub fleshy, leathery, umbrella like fruiting bodies, which bears spore producing gills. These macro fungi are edible or poisonous. Mushrooms are seasonal fungi with diverse importance in the forest ecosystem.

Mushrooms have been extensively studied in most of the parts of India. Berkely (1852) described 15 species of mushrooms in his 'Decades of Fungi' from Darjiling. Latter on Murrill (1915), Saini and Atri (1981, 1982, and 1984), Natarajan and Raman (1980) made a major contribution in Boletaceae. Sathe and Deshpande (1979) discovered new genus *Chlorolepiota* of Agaricales from India

Contribution to knowledge of Indian Aphylophorales, Agaricales and Polyporales by Natrajan (1995), Natarajan et al (1980, 1985), Bakshi (1971), Vaidya and his colleagues (1987, 1990, 1991, 1993), Sharma (1995), Patil and Thite (1978), Patil et al. (1979,1995), Nanda (1996). Recently various workers studied on macro fungi, Bhosle et al (2010), Randive et al (2011), Nagadesh and Arya (2012), Adnan et al (2012), Shauket et al (2012), Kumari and Atri (2012), Hakimi et al (2013), Lakhanpal (2014), Senthilarasu (2014), Borkar et al (2015), Patil (2019).

New additions of macro fungi to science were made by Aravindakshan and Manimohan (2013) discovered new species of *Mycena* from Kerala, Das et al (2013) find three new species of *Russula* from Sikkim, Kaur et al (2013) discovered two new species of *Agaricus* from Punjab.

MATERIAL METHODS

Regular field trips were carried out during 2015 in rainy and winter seasons at Pimpalner, Toranmal forests. Macroscopic observations like shape, size, colour of fruiting bodies were made at time of collection. Collected fruiting bodies of fungi packed in polythene bags and holes were made to bags for aeration, collected samples brought to laboratory on same day to avoid decay for further work. Microscopic details were studied by free hand sections mounted in 10 % KOH, stained with 1 % Congo red solution. Some sections were mounted in Cotton Blue. Identification of fungi with the help of Lakhanpal (1996), John Ramsbottom (1969), Peter Roberts and Shelley Evans (2011), Hakimi et al (2013) and other relevant literature.

RESULTS & DISCUSSION

Taxonomic Account:

1. ***Amanita pantherina*** (Fr.) Krombh. Habitat: In wood land growing on ground, in debris, in clusters in rainy season, non edible. Cap 3-12 cm in diameter, initially hemispherical, colour dark brown to yellowish brown, veil remnants forming pointed white warts on upper surface. Gills free, crowded, white in colour. Stipe 4-12 cm long, up to 2 cm in diameter, unequal tappers towards the tip, white in colour. Spores globose, smooth, non amyloid, white, 6-11x 5-8 μ m
2. ***Coprinus brunnaefibrillos*** Dennis Habitat: In wood land growing on ground, in debris, in clusters, in rainy season, non edible. Pilius up to 5 cm in diameter, cylindrical – campanulate, surface greyish. Stipe up to 6x0.4 cm, white attenuate. Spores black, ovoid to ellipsoid, 8-11x 4-7 μ m.
3. ***comatus*** (Mull.) Pers. Habitat: In wood land growing on ground, in debris, in rainy season, non edible. Basidiocarp fleshy, deliquescent, up to 5 cm long. Pilius conical, white, stipe central, veil present or absent, spores black, sub globose to ellipsoidal.
4. ***Daedalia stereoides*** Fries Habitat: In wood land, growing on dead wood, in rainy season, non edible. Fruiting body effuse, sessile with narrow base, single, 3-7x2-5x1 cm, upper surface white to buff, zonate, hymenial surface white, pores irregular to daedaloid or irpicoid, rarely sub circular, extending up to margin, 1-2 per mm, basidiospores hyaline, thin walled, cylindrical- ellipsoid, 3-6x1.5-2.2 μ m.
5. ***Fomes connatus*** (Weinm.) Gill Habitat: In wood land, growing on dead wood, in rainy and winter season, non edible. Sporophore sessile, broadly effused from which pilei develop, usually imbricate, convex to sub granulate, corky becoming stiff and brittle when dry, light in weight, 2-10x2-8x0.5-5 cm. Upper surface grayish black. Basidiospores hyaline, sub globose, ellipsoid, thin walled 3-4 μ m in diameter.
6. ***Ganoderma lucidum*** (Leyss.) Karst. Habitat: In wood land, growing on dead wood, in rainy and winter season. Sporophore perennial, stipitate, sometimes sessile, corky becoming woody later, 10-12x10-12x3-4 cm, may grow up to 30 cm or more, stalk lateral or central, up to 10 cm long, 0.5-4 cm thick, upper surface shiny with laccate crust or creamish, turning brown, 2-10 mm thick, hymenial surface whitish or creamish, turning brown latter, pores small, brown, 90-250 μ m in diameter, basidiospores brown, thick walled, minutely verrucose, truncate, 8-10x5-6.7 μ m.
7. ***Gymnopilus chrysopellus*** (Berk & Curtis) Murril Habitat: In wood land growing on ground, in debris, in clusters, in rainy season, non edible. Pilius up to 3 cm broad, convex, latter depressed, smooth to fibrillose, orange, margin irregular, lamellas adnate, yellowish brown. Stipe up to 3x0.5 cm, surface smooth, yellowish brown, veil absent. Spore 5.6-7x2.8-4.2 μ m, ellipsoid, verruculose.
8. ***Lactarius deliciosus*** (L. Fr.) Gray. Habitat: In wood land growing on ground, in debris, in rainy season. Cap convex, orange, becoming weakly funnel shape, smooth, slightly slimy when fresh, diameter up to 5cm. Stipe 3x2 cm, yellowish to orange.
9. ***Pholiota kodiakensis*** Sm. & Hesler Habitat: In wood land growing on ground, in debris, in rainy season. Pilius up to 4 cm broad, convex to planoconvex, surface with appressed scales, light orange, margin.



Fig. 1: **A:** *Amanita pantherina* (Fr.) Krombh, **B:** *Coprinus brunnaefibrillos* Dennis, **C:** *Coprinus comatus* (Mull.) Pers.
D: *Daedalia stereoides* Fries, **E:** *Fomes conatus* (Weinm.) Gill, **F:** *Ganoderma lucidum* (Leyss.) Karst., **G:** *Gymnopilus chrysopellus* (Berk & Curtis), **H:** Murril *Lactarius deliciosus* (L.Fr.) Gray, **I:** *Pholiota kodiakensis* Sm. & Hesier, **J:** *Pleurotus flabellatus* Sacc., **K:** *Pleurotus flabellatus* Sacc., **L:** *Polyporus bicolour* Jungh.

incurved, lamellae adnate, olive brown, stipe up to 4x0.4 cm, cylindrical, solid, surface with fine scales, light yellow. Spores yellowish brown, 4.2-5.6 x 2.8-3.5 µm, ovoid to ellipsoid, smooth.

10. **Plurotus flabellatus** Sacc. Habitat: In wood land growing on dead wood, in rainy and winter seasons. Peltus white, with context 0.5-1mm. Thick, amellae densely crowded, stipe absent, spores 6-9 µm long.

11. **Polyporus bicolor** Junghabitat: In wood land growing on dead wood, in rainy and winter seasons. Sporophore annual, sessile, reflexed, single or imbricate, coriaceous when fresh, rigid when dry, usually 5-15 x 4-7 x 0.3x 0.6 cm, upper surface rough, broadly zonate, white greyish, hymenial surface light brown, pores regular, round, minute, 6-7 per mm, extending to margin, basidiospores globose, hyaline, 5.3-6 x 4.3-5.4 µm.

CONCLUSION

The saprophytic macrofungi play an important ecological role in bio deterioration to maintain the balance of forest ecosystem. Some of them have high medicinal value while some cause wood rotting. The present article reports eleven species of macrofungi among them *Daedalia stereoides* (Bull.) Fries, *Fomes conatus* (Weinm.) Gill, *Ganoderma lucidum* (Leyss.) Karst., *Gymnopilus chrysopellus* (Berk & Crutis) Murril, *Pleurotus flabellatus* Sacc., and *Polyporus bicolor* Jungh. Found on dead and decaying wood. While *Aminita pantherina* (Fr.) Krombh, *Coprinus brunnaeofibrillos* Dennis, *Coprinus comatus* (Mull) Pers. *Lactarius deliciosus* (L., Fr.) Gray. and *Pholiota kodiakensis* Sm. & Hesler found saprobes on soil and dead and decaying debris.

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