



BIODIVERSITY OF MUSHROOMS IN CENTRAL WESTERN GHATS OF KARNATAKA, INDIA

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ABSTRACT

The morpho-scientific categorization of 15 agaric species having a place with Agaricales gathered from dipterocarp woodlands of Western Ghats of Karnataka is quickly depicted, talked about and their geographic dispersion in India is introduced. Of these, *Crepidotus payettensis* is accounted for out of the blue from India. *Cyptotrama asprata*, *Hygrocybe acutoconica*, *H. alwisii*, *Oudemansiella furfuracea*, *Hypholoma subviride* and *Lactocollybia epia* are accounted for out of the blue from Karnataka State. The scientific categorization of *Oudemansiella furfuracea* and *Hypholoma subviride* contradicting to the present name in *Index Fungorum* is examined. Furthermore, an agenda of agarics including 121 species in 55 genera detailed from Western Ghats of Karnataka is likewise given based on distributed sources. By and large, 132 species in 60 genera having a place with Agaricales, Polyporales and Russulales are exhibited in this paper.

KEYWORDS : Basidiomycetes, Bibliography, Dipterocarp, Mushroom taxonomy, Tropical fungi.

INTRODUCTION

Mushrooms are occasional growths, which possess various specialties in nature in the woodland biological system they overwhelmingly happen during the stormy season and furthermore during spring when the snow dissolves. Mushrooms are in truth the 'natural product' of the underground parasitic mycelium. They are macromycetes framing naturally visible fruiting bodies, for example, agarics, boletes, jam growths, coral organisms, stinkhorns, section parasites, puffballs and flying creature's home growths they are plump, subfleshy, or once in a while

rough and woody and bear their prolific surface either on lamellae or coating the cylinders, opening out by methods for pores. The lamellate individuals are called agarics and the cylinder bearing poroid individuals, as boletes and polypores. Among growths, Basidiomycotina specifically have pulled in impressive consideration as a wellspring of new and novel metabolites with anti-infection, antiviral, phytotoxic and cytostatic action.

The Western Ghats is perceived as one of the world's eight „hottest hotspots“ of abnormal state of organic assorted variety and endemism (Myers et al., 2000). It falls in a tropical atmosphere and speaks to non-central tropical evergreen woodlands, and



harbors extraordinary parasitic decent variety notwithstanding all inclusive undermined verdure. A few types of agarics recorded just as new species depicted from Kerala (Farook et al., 2013), Maharashtra (Senthilarasu, 2014), and Tamil Nadu (Natarajan et al., 2005a) have not been recorded elsewhere up until this point. In Karnataka State, about 38,284.3 km² backwoods territory establishes 20% its land region. In spite of the fact that the thick backwoods of Western Ghats that spreads around 60% of the woods zone of Karnataka harbors immense number of parasitic species, a great part of the geographic territory has not yet been mycologically investigated especially for agaric organisms. Swapna et al., (2008), Pushpa and Purushothama (2011, 2012), Karun and Sridhar (2013, 2014, 2015), Karun et al., (2014), Ghate et al., (2014), Ghate and Sridhar (2015) and Greeshma et al., (2015) fragmentally announced the agaric mycota of Karnataka State, yet the degree of its assorted variety in Western Ghats of Karnataka remains ineffectively known. Agarics in the neighboring conditions of Kerala and Maharashtra have as of late been assembled and distributed by Farook et al., (2013) and Senthilarasu (2014), separately. In this paper, the agaric species experienced from dipterocarp woods of Kodagu and Shimoga locale of Western Ghats of Karnataka are accounted for. Moreover, because of need of accumulated information on the quantity of species bound to Western Ghats just as Karnataka, a check rundown of agaric species so far revealed from this locale is introduced dependent on truly distributed sources.

Bangalore (Bengaluru) is likewise called as a Garden city of India, situated at 12°58' and 12°97' N lat and 77°34' and 77°56' E longitudes with a wide scope of biological system. The floristic synthesis of this locale has been considered before by a few specialists, however the organism which structures a significant part of the environment has been to a great extent disregarded in a biodiversity ponders. The present examination is an endeavor to give an expansive picture of biodiversity of mushrooms having a place with the class Basidiomycetes in Bangalore. The overview were led from June 2007 to November 2010 out of 8 better places which included clean wildernesses and urban places in an around Bangalore. An all out number of 90 species in 48 genera having a place with 19 families in 05 requests were recorded, 28 species were observed to be recorded without precedent for India. Among the gathered species *Coprinus disperses* pursued by *Coprinus fibrillosis* and *Schizophyllum commune* was observed to be rich in their event. The Simpson and Sannon assorted variety biodiversity list was observed to be 0.8 and 1.24 separately. The nitty gritty report of the investigation has been displayed here.

The present examination was completed in the backwoods of five regions of Western Ghats of Karnataka which incorporates B.R. Slopes of Chamarajnar, H.D. Kote timberland of Mysore, Aaneakaadu backwoods of Kodagu, Bisle woodland of Hassan and timberlands of Chickmagalur locale speaking to four distinct environments, for example, grass, litter, wood and soil individually. The fruiting assemblages of macrofungi were gathered between August 2011 and August 2012. In a broad study an aggregate of 135 types of macrofungi having a place with 56 genera and 34 families were identified. Relationship of species was observed to be bounteous with litter pursued by wood, grass and soil individually Members of the family Agaricaceae were observed to be transcendent trailed by Polyporaceae, Marasmiaceae, Mycenaceae and Russulaceae. Types of macrofuring having a place with 18 different families were additionally recorded.

MATERIALS AND METHODS

Gathering outings were made to thick wet evergreen dipterocarp woods of Kadamakal Reserve Forest in Kodagu region and dipterocarp woodlands of Sirsi of Uttara Kannada region during rainstorm and post storm seasons. Kadamakal Reserve Forest close Manaduka, Kothanaduka and Uppangala is in the lower regions of the Ghats and lies at 12°30' N, 75°39' E at a height involved somewhere in the range of 400 and 600 m asl. Yearly precipitation is around 5,200 mm with a stamped dry period of 3-4 months. The regular vegetation has a place with the *Dipterocarpus indicus* Bedd. – *Kingiodendron pinnatum* (DC.) Harms – *Humboldtia brunonis* Wall. Sort of low height wet evergreen timberlands (Pascal, 1988). Albeit a few hundred plant animal varieties have been seen in the timberland itself, it is less rich and different than other tropical downpour woodlands in South East Asia or South America. Half of the species present in the Kadamakal Reserve Forest are endemic toward the Western Ghats and around 80% of the trees have a place with these endemic species (Pascal and Pelissier, 1996). Sirsi situated at Uttara Kannada region lies at 14.62°N, 74.85°E at a normal rise of 590 m asl. The woodlands close

Sirsi are wet deciduous timberlands commanded by *Vateria indica* L. The morpho taxonomic characters were embraced from Largent (1977) and Singer (1986). Shading terms and documentations in brackets are those of Kornerup and Wanscher (1978). All estimations and hues revealed for minuscule highlights were seen from dried material rehydrated in 10 % KOH, recolored in 2 % phloxine, cotton blue, cresyl blue and Melzers reagent. The estimations barring the apiculus and ornamentation were made on 50 basidiospores. The mean spore estimations are given in enclosures pursued by the scope of spore estimations with outrageous qualities in brackets. The spore remainder (Q) was gotten by mean length separated by mean width proportion of a spore in profile see. All exsiccate were stored at Herbarium of Kuvempu University Botany Laboratory (KUBL) and furthermore in close to home accumulations (Macrofungi Collection of India, MCI). The agenda on gilled mushrooms revealed from Western Ghats of Karnataka is readied dependent on legitimately distributed reports and the agarics announced from different locales of Karnataka are barred from the rundown. List Fungorum and Species Fungorum sites are for the most part pursued for the terminology and as of now acknowledged name, separately. Be that as it may, the contested genera and species are talked about and names acknowledged by present day creators are embraced for two or three species. The names of the species and creator references as announced in the referred to distributions are supplanted by at present acknowledged names with creator references. The agenda is sorted out sequentially by request, family, variety and species. The most remarkable species enrolled without portrayal in the legitimately distributed reports are prohibited from the rundown. A few revisions are made where orthographic variations found in the referred to productions.

COLLECTION OF MUSHROOMS

Various species display diverse fruiting phenologies, which fluctuate from month to month and at various heights and areas. In this manner a specific animal types may organic product at various seasons' are wide geographic separations or long rise inclination. Inspecting was finished utilizing quadrant technique each estimating 20 × 20 m. Aggregate of 80 examining plots in the over 8 testing locales were considered The accumulations of the mushrooms were made as proposed by Largent [17] from June 2011 to November 2012. Field characters, for example, propensity, living space, shading and size of the pileus, stipe and lamellae, nearness or nonappearance of annulus and so on., were noted from the new material, spore print was acquired and photos were taken in its normal natural surroundings. The shading phrasing utilized is that of Kornerup and Wanscher [18]. The examples were dried in sight-seeing over at 40-50°C and put away in sealed shut compartments with some naphthalene balls for further infinitesimal investigations.

CONCLUSION

An aggregate of 90 mushrooms including individuals from the request Agaricales (80 species), Aphyllophorales (05 species), Lycoperdales (3 species), Nidulariales and Sclerodermatales (one species each) were recorded in and around Central Western Ghats regions of Karnataka. The request Agaricales was observed to be predominant trailed by Aphyllophorales and Gasteromycetes in this district. Among Agaricales the family Tricholomataceae, trailed by Agaricaceae, Coprinaceae were observed to be predominant in this area Coprinus disseminatus pursued by Coprinus fibrillosus, Schizophyllum commune were observed to be plentiful and happen reliably all through stormy season. Litter decomposers and wood decay mushrooms were recorded to be high when contrasted with Coprophilous and Mycorrhizal frames. 12 species were observed to be consumable and 18 species were known to have restorative qualities. In any case, there is huge number of mushrooms whose financial significance isn't known, further examination help to abuse the valuable metabolites from these mushrooms.

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