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NEW ADDITIONS TO MACROFUNGI OF TELANGANA STATE, INDIA

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During field visit (2014-16) of some of the places of Telangana state viz., Amrabad, Anathagiri, Bhadrachalam, Eturnagaram, Mannanoor, Narsapur, and Vikarabad; twenty macrofungi, associated with litter, humid soil and wood logs, were collected, respectively. Out of these 20 macrofungi; seventeen spp are the new reports from Telangana state, India

Higher fungi consisting of gill fungi mushrooms, jelly fungi, stink horns, earth stars, puff balls, bracket fungi ecto-mycorrhizal fungi and others belongs to phylum Basidiomycotina. Among these some mushrooms are edible while others are poisonous. Bracket fungi attack woody plants and cause damage. Further some Mushrooms possess medicinal, insecticidal, hallucinogenic properties and other metabolites mushroom production is a multibillion dollar industry all over the world. Higher fungi including mushrooms have been reported from India from time to time (Amandeep et al. 2015, Atri *et al* 2000, 2003, 2005, Arya *et al.* 2008, Bhatt and Lakhanpal 1990, Borkar *et al.* 2015, Das 2010, 2014, Dwivedi *et al.* 2012, Gogoi and Parkash 2015, Thatoi and Kumar 2014, Kaviyarasan *et al* 2009, Kirk *et al* 2008, Kumar *et al.* 2015; Kumar and Kaviyarasan 2011, Lakhanpal 1997, 1993, 2014, Mani and Kumaresan 2009, Manoharachary *et al*. 2005, Nabakanta and Chhetry 2010, Natarajan 1995, Natarajan *et al.* 2005a,b, Patil 1995, Polashree and Joshi 2012, Prasher and Ashok 2013, Pushpa and Purushothama 2012, Rajendra *et al.* 2014, Ranadive *et al.* 2011, Saini and Atri 1995, Sarma *et al.* 2000, 2010, Smriti *et al*. 2014, Subramanian 1995, Tagade and Kawale 2014, Thind 1973, Thind *et al.* 1982, Thatoi 2014, Vishwakarma *et al*. 2011, 2012). However, there is no report of such macrofungi from Telangana state, hence an attempt was made to survey (2014-2016) and report the information, in the present communication.

Topography and Climate

Telangana State is situated on the Deccan Plateau, in the central stretch of the eastern seaboard of the Indian Peninsula Ranges between 15°50'-19°55' and 77°14'-78°50'E). The state has got 10 districts covering an area of 133, 103 km. The most important rivers of the province are Musi, Krishna, Manjira and Godhavari. It has become 29th state of India on 2nd June 2014. Dry deciduous, scrub Jungle forests and mixed forest types are distributed in Districts of Rangareddy, Khammam, Medak, Mahabubnagar, Warangal, Nizamabad and Adilabad. The annual rainfall is between 900 to 1500 mm in Northern Telangana and 700 to 900 mm in Southern Telangana, from the southwest monsoons. Various soil types include chalkas, red sandy soils, dubbas, deep red loamy soils, and very deep black cotton Soil. Telangana is a semi-arid area and has a predominantly hot and dry climate. Summers start in March, and reach peak in May with an average high temperatures to the 42°C (108°F) range. The monsoon arrives in June and lasts until September with about 755 mm (29.7 inches) of precipitation. A dry, mild winter starts in late November and lasts until early February with little humidity and an average temperatures of 22.23 °C (72.73 °F) range (Figure-1).

MATERIALS AND METHODS

Fruit bodies of macro-fungi were collected from humid soil, dead wood, litter, dung and others. Morphological and macroscopic features of the higher fungal fruit-bodies form

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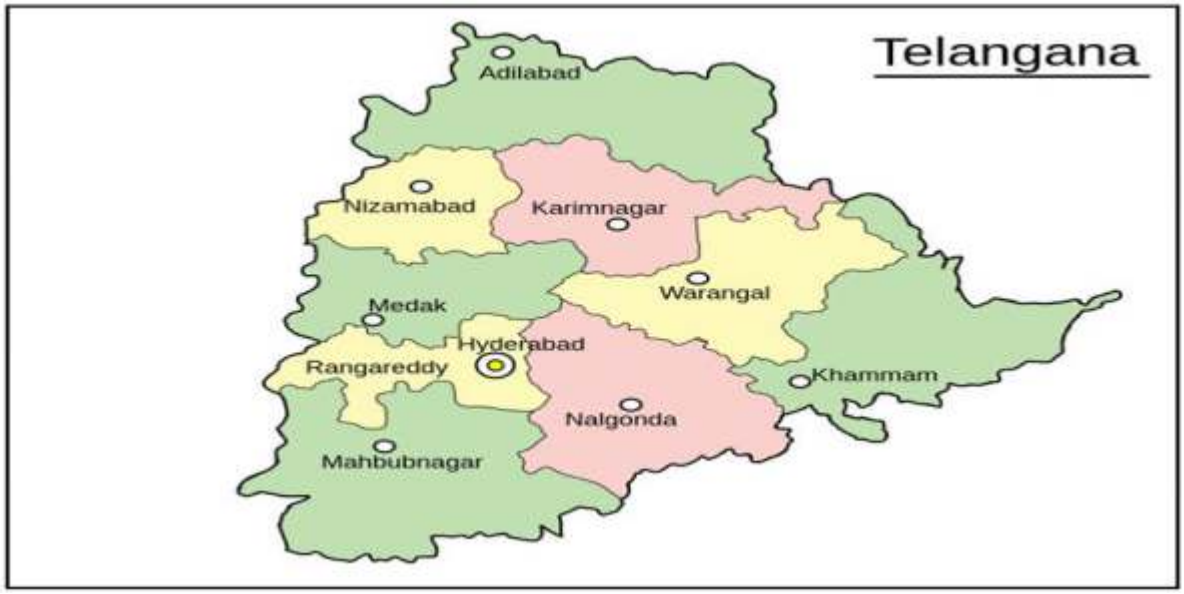

Figure-1.TELANGANA: Area Map of Sample Collection Site

the basis of their identification. The fresh fruit-bodies were sampled after taking photographs, and the morphological characters such as shape, size, colour, texture etc. were recorded. The steps followed in sampling or preparation of type specimen is collection including spore print, documentation and preservation. Drying of specimens, herbarium preparation, detailed morphological and anatomical studies were followed as per Keviyarasan *et al.* (2009). Collection sites selected for sampling were Amrabad, Anathagiri, Bhadrachalam, Eturnagaram, Mannanoor, Narsapur, and Vikarabad. The specimens thus collected were deposited as OUFH at Department of Botany, Osmania University, Hyderabad.

RESULTS AND DISCUSSIONS

India is rich in diversity and is blessed with diverse agro climatic zones, forest vegetation and soil conditions. The occurrence and distribution of basidimycetous have been worked out by many from Himalayas, Western Ghats and other parts of India (Atri *et al.* 2008, Brown *et al.* 2006, Gurudevan *et al.* 2011, Krishna *et al.* 2015, Kaviyarasan 2009, Lakhanpal 1993, Senthilarasu 2015, Senthilarasu and Kumaresan 2016, Ranadive *et al.* 2011, Thind 1973, 1982). However a large part of India remains unexplored though randomized reports are made from some parts of India. Telangana state with its diversified forest vegetation has been neglected except for the report of Krishna *et al.* (2015). The present study revealed the association of 20 higher fungi representing *Amanita* (4), *Ganoderma* (3), *Lenzites* (1), *Phellinus* (2), *Pluteus* (1), *Polyporus* (1), *Poria* (1), *Schizophyllum* (1), *Stereum* (1), *Trametes* (1) and *Volvariella* (4) of which *Amanita, Ganoderma* and *Volvariella* have been predominantly found. Earlier Krishna *et al.* (2015) have reported *Ganoderma applanatum*, *Phellinus igniarius* and *Schizophyllum commune* from Telangana. However, in the present investigations, out of 20 macrofungi; 17 spp form new additions to Telangana state, India. (Table-1).

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Table-1. List of Macrofungi from Telangana

Sl.No	Fungus	Habitat	Place & Date of collection	Accession No.
1.	*Amanita muscaria* var. *guessowii*. Vesley	Litter	BhadrachalamOct 3rd, 2015	OUFH 1001
2.	*Amanita battarae* (Boud)Bon	Litter	Eturnagaram Sept 15th 2015	OUFH 1002
3.	*Amanita pachycolea* Stuntzn	Litter, Humid soil	Bhadrachalam Sept15th, 2015	OUFH 1003
4.	*Amanita rubescens* Pers: Fr	Litter & Humid soil	Anantagiri Nov 20th, 2015	OUFH 1004
5.	* *Ganoderma applanatum* Karst.	Wood log	Narsapur Sept 20th, 2015	OUFH 1005
6.	*Ganoderma lucidum* (Curt: fr) Karst	Wood of *Delonix regia*	Vikarabad Nov 30th, 2015	OUFH 1006
7.	*Ganoderma resinaceum* Boudler	Wood log	Bhadrachalam Sept 30th, 2015	OUFH 1007
8.	*Lenzites betulina* (L) fr.	*Dalbergia* sp. Wood	Bhadrachalam Nov 15th, 2015	OUFH 1008
9.	**Phellinus igniarius* (L) Auol	Wood log	Bhadrachalam Nov 15th 2015	OUFH 1009
10.	*Phellinus gilvus* (schwein) Patt.	Wood	Bhadrachalam Dec 3rd, 2015	OUFH 1010
11.	*Pluteus bakeri* (Mun) Shaff	Humid soil	Amrabad Dec 8th, 2015	OUFH 1011
12.	*Polyporus grammocephalus* Ben.	Wood	Mannanoor Jan 15th, 2016	OUFH 1012
13.	*Poria auricoma* (Lev) Cooke	Wood log	Mannanoor Jan 20th, 2016	OUFH 1013
14.	**Schizophyllum commune* Fr.	Wood	Anantagiri Jan 25th, 2016	OUFH 1014
15.	*Stereum ostrea* (Blume & Nees) Fr.	Wood	Eturnagaram Dec 30th, 2015	OUFH 1015
16.	*Trametes versicolor* Lloyd	Wood	Mannanoor Jan 20th, 2016	OUFH 1016
17.	*Volvariella cubensis* (Murr)Shagg.	Litter	Eturnagaram Dec 30th, 2015	OUFH 1017
18.	*Volvariella pusilla* (Pers: Fr) Singer	Litter & Humid soil	Mannanoor Jan 20th, 2016	OUFH 1018
19.	*Volvariella terastia* (Berk & Br.) Singer	Litter	Bhadrachalam Jan 25th, 2016	OUFH 1019
20.	*Volvariella volvacea* (Bul. Ex Fr.) Singer	Litter	Bhadrachalam Jan 25th, 2016	OUFH 1020

OUFH= Osmania University Fungal Herbarium, *Reported earlier by Krishna *et al.* (2015).

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