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Documentation & Statistical Analysis of Diversity of Microfungi of Sanjay Gandhi National Park, Maharashtra, India

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Abstract

The present paper aims at studying the diversity of phyllospheric, rhizospheric soil and aquatic microfungal flora of Sanjay Gandhi National Park (SGNP) and its 10% peripheral area with statistical analysis of the diversity data to draw inferences about microfungal diversity. For analysis, the study area was divided into five zones, defined over a span of three ranges and a 10% peripheral area. Standard methods and keys were followed for the isolation and identification of fungi from different substrates, with routine microscopic work supplemented by scanning electron microscopy and molecular methods for some novel fungi. A total of 334 isolates obtained included 186 litter fungi (55.69%), 77 soil fungi (23.05%), 43 foliicolous fungi (12.87%), and 28 water fungi (8.38%). A total of 231 species in 121 genera were documented, of which 120 genera belong to Ascomycota and one to Basidiomycota. The study resulted in the publication of three new species, 13 new records for India, and two new records for Maharashtra. *Aspergillus* was dominant with 23 species, followed by *Diatrype* and *Meliola* (eight species each). In statistical analysis, we first examine differences in observed species richness across the zones using dummy variable regression and Kruskal-Wallis Test, with species count as the dependent variable. Both yielded similar statistically significant (p-value<0.01) differences in mean and median species counts, respectively. Dissimilarity in species composition, analysed by pairwise Jaccard Dissimilarity Index, was above 82% in all cases, with only one species common in all the zones. In diversity indices, Gini-Simpson's was above 0.9 for all the zones, and Shannon's was maximum (=4.4118) for Yeoor [South] and minimum (=2.7185) for Peripheral areas. Pielou's evenness index was maximum (=0.9954) for Krishnagiri range and minimum (=0.9539) for Yeoor [South]. True diversity (based on Shannon's Index) was highest (=82) for Yeoor [South] and lowest (=15) for Peripheral. Thus, based on systematics and statistical analysis, it can be concluded that SGNP exhibits a very rich diversity of microfungi.

Keywords – Diversity Indices – Jaccard Dissimilarity Index – Kruskal-Wallis Test – Microfungal flora – Regression – Sanjay Gandhi National Park – Species Richness – True Diversity.

Introduction

Sanjay Gandhi National Park (SGNP), Borivali, commonly known as Borivali National Park (BNP) or "Krishnagiri Upwan", is situated in the extreme north of Mumbai. The National Park lies between longitude 72º53' E to 72º58' E and latitude 19º8' to 19º21' N (Khawarey 2000), and covers area of 103.09 km^2 spanning over three districts, *viz.*, Mumbai Suburbs (towards the south

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and west), Thane (towards the east) and Palghar (towards the north). The Sanjay Gandhi National Park (SGNP) is one of the few national parks in the world entirely lying within the limits of a bustling metropolis (Mumbai Metropolitan Region, India) and also being one of the most visited national parks. It is a part of the spur of Western Ghats, regionally known as Sahyadri ranges, that shoots off westerly. Due to its proximity to the Arabian sea, humid climate and heavy summer rainfall during monsoon (from June to October), altitude ranging from sea level to about 1500 feet, numerous water courses and hilly terrain, the flora presents a very vast picture ranging from most dominant southern moist mixed deciduous forest to the west coast semi-evergreen forests; from having two freshwater lakes to the small portion of the Park (about 1.5%) on the banks of the Vasai creek (also known as Bassein) showing mangrove patches and other characteristics of a typical coastal estuarine zone. These factors offer ideal niches for the occurrence of diversified flora and fauna. The flora of the national park has been touched upon in several notable floristic works available as a part of the wider region of Maharashtra and India, however, the most comprehensive floristic work with an exclusive focus on Sanjay Gandhi National Park was done by Pradhan et al. (2005). Unique bio-geographical characteristics of the national park, aforementioned, in turn, provide a congenial environment for the growth of a large variety of numerous fungal species occupying various niches. However, only sporadic publications are available on certain aspects of microfungal flora of SGNP. Deshmukh & Verekar (2014) documented keratinophilic fungi from selected soils of SGNP. Sharda et al. (2015) studied the fungal diversity of regions with anthropogenic activity in some green zones of the Mumbai Metropolitan Region, including some parts of SGNP. Chahar & Belose (2018) reported the diversity and distribution of Arbuscular Mycorrhizal Fungi (AMF) of five trees of medicinal importance from the Thane region of SGNP. Dubey & Pandey (2017 & 2019) documented follicolous fungi of SGNP as a part of a larger project on foliicolous fungi of Maharashtra. Thus, there was a huge gap to be filled with regard to the comprehensive study of micro-fungal flora of such a rich region. To fulfil this gap, microfungal explorations were carried out in this unexplored area for a period of four years, from 2016 to 2020. The three forest ranges (Tulsi, Krishangiri, and Yeoor) and 10% adjoining areas of the National Park were thoroughly explored and investigated during the field tours.

Materials & Methods

A total of six field tours were undertaken during 2016–2020 to SGNP and its 10% peripheral areas. All major forest areas, along with core and buffer areas, were surveyed in different seasons, *viz.*, monsoon, post-monsoon, winter and summer to study the diversity of phyllospheric, soil, mangrove and aquatic microfungal flora of the National Park.

The three forest ranges (Tulsi, Krishangiri and Yeoor range) and 10% adjoining areas of the National Park were thoroughly explored and investigated during the field tours. The samples collected during exploration tours included live plant materials, foliicolous plant specimens, litter samples, rhizospheric soil and water samples. All voucher specimens were brought to the laboratory for further processing. Litter samples include dried, decaying plant specimens (wood, logs), infected samples of fallen leaves, twigs and other litter. The Global Positioning System (GPS) coordinates of collection locations were also recorded. QGIS 2.8 Wien version was used for plotting GPS data to prepare a survey map showing collection sites visited during the field tours, and also plotted on Google Map, given along with range map of SGNP (source: forest authorities) (Fig. 1). Fig. 2 shows an overview of the study area. For fungal taxonomic studies, the samples were subjected to three kinds of microscopic examinations (Fig. 3).

Fresh samples were examined using a stereo microscope as soon as they were brought to the laboratory. If no fungal presence was visualized, the samples were subjected to moist chamber incubation (Hawksworth 1974, Cannon & Sutton 2004) for a few days to facilitate resident fungal flora to sprout, grow and exhibit. Third, in order to achieve maximum recovery of the fungi living/lived on the substrate, samples were subjected to the particle plating method developed by Bills & Polishook (1994) and perfected by Bhat (2010). The isolation of soil and aquatic fungi was done by dilution plating method (Waksman 1922) and serial dilution method (Warcup 1950),

respectively. Potato Dextrose agar (PDA), Potato Carrot agar (PCA) and Malt extract agar (MEA) media were used for the isolation of fungi. The slides showing vegetative, asexual and sexual structures of fungi were observed under Olympus compound microscope model CX-41 and, microphotographs were captured with the attached DP22 and DP27 cameras. The identification and description of fungi were made with the help of various books, monographs and reviews published in standard journals and books. Ainsworth et al. (1973) and von Arx (1981) offers keys to most of the groups of fungi. Barron (1968) and Barnett & Hunter (1972) were also consulted for the lower group of fungi. Fungi forming spores in pycnidia or acervuli were identified by literature provided by Nag Raj (1993) and Sutton (1980). For anamorphic Ascomycota, Ellis (1971, 1976), Ellis & Ellis (1985) and Seifert et al. (2011) were preferred. Fungi belonging to Ascomycetes were identified by Dennis (1978), Pande (2008) and Hanlin (1998). Bitunicate ascomycetes were studied with the help of Sivanesan (1983). Hosagoudar (1996, 2008, 2012, 2013) were consulted for the identification of Black mildew fungi. Cummins & Hirsukta (1983) was preferred for the identification of various rust and smut species. For soil fungi, Gilman (1945), Nagamani et al. (2006) and Guarro et al. (2012) and for aquatic fungi, Ingold (1942, 1975) were consulted. Scanning Electron Microscopic (SEM) study was performed for new and rare fungal species with Zeiss Scanning Electron Microscope Model EVO 18-12-97.

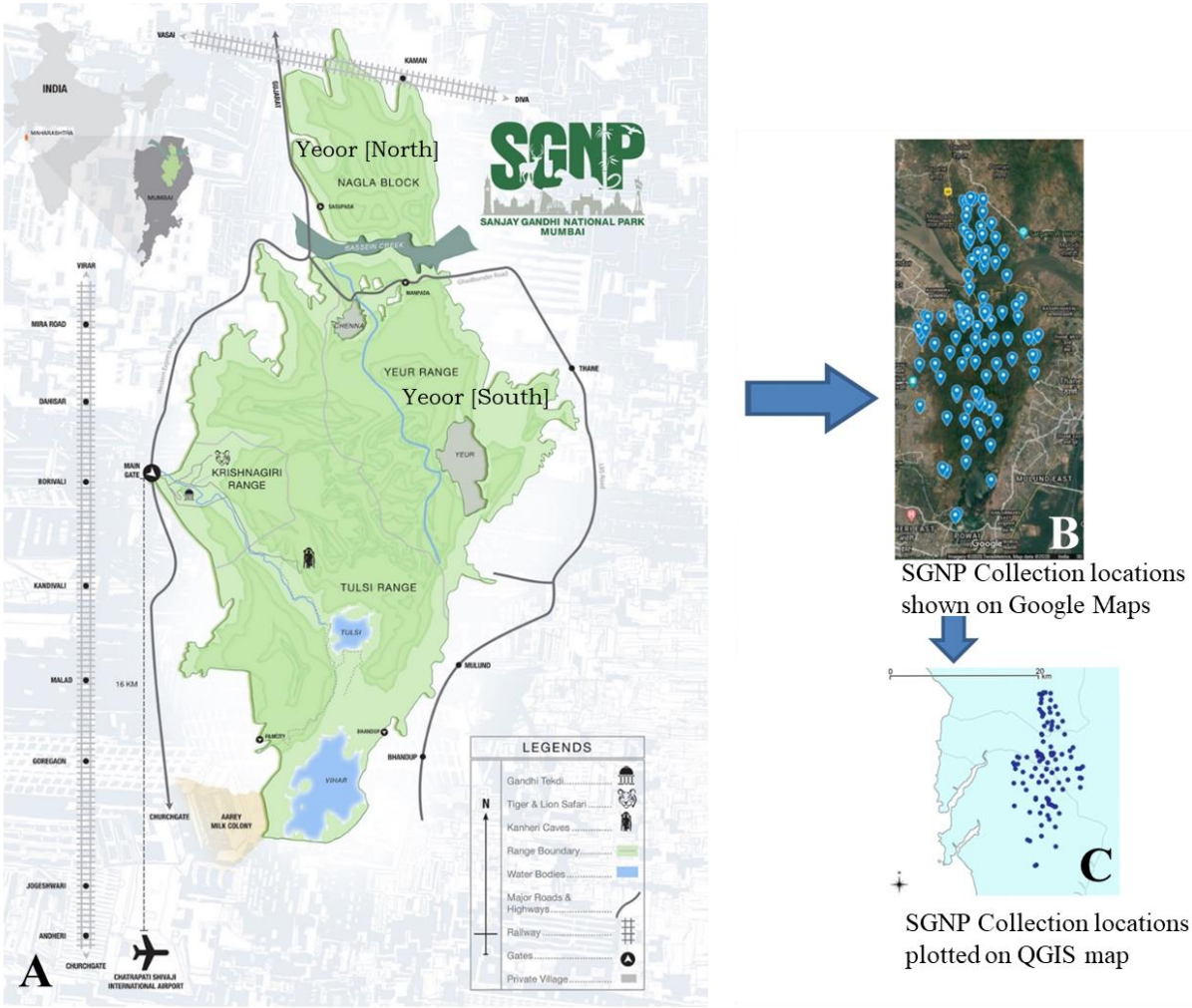

Fig. 1 – Map of SGNP showing collection locations. A Map of SGNP ranges provided by forest authorities. B GPS data of collection locations plotted on Google map. C Survey map prepared by plotting GPS of collection locations using QGIS 2.8 Wien version

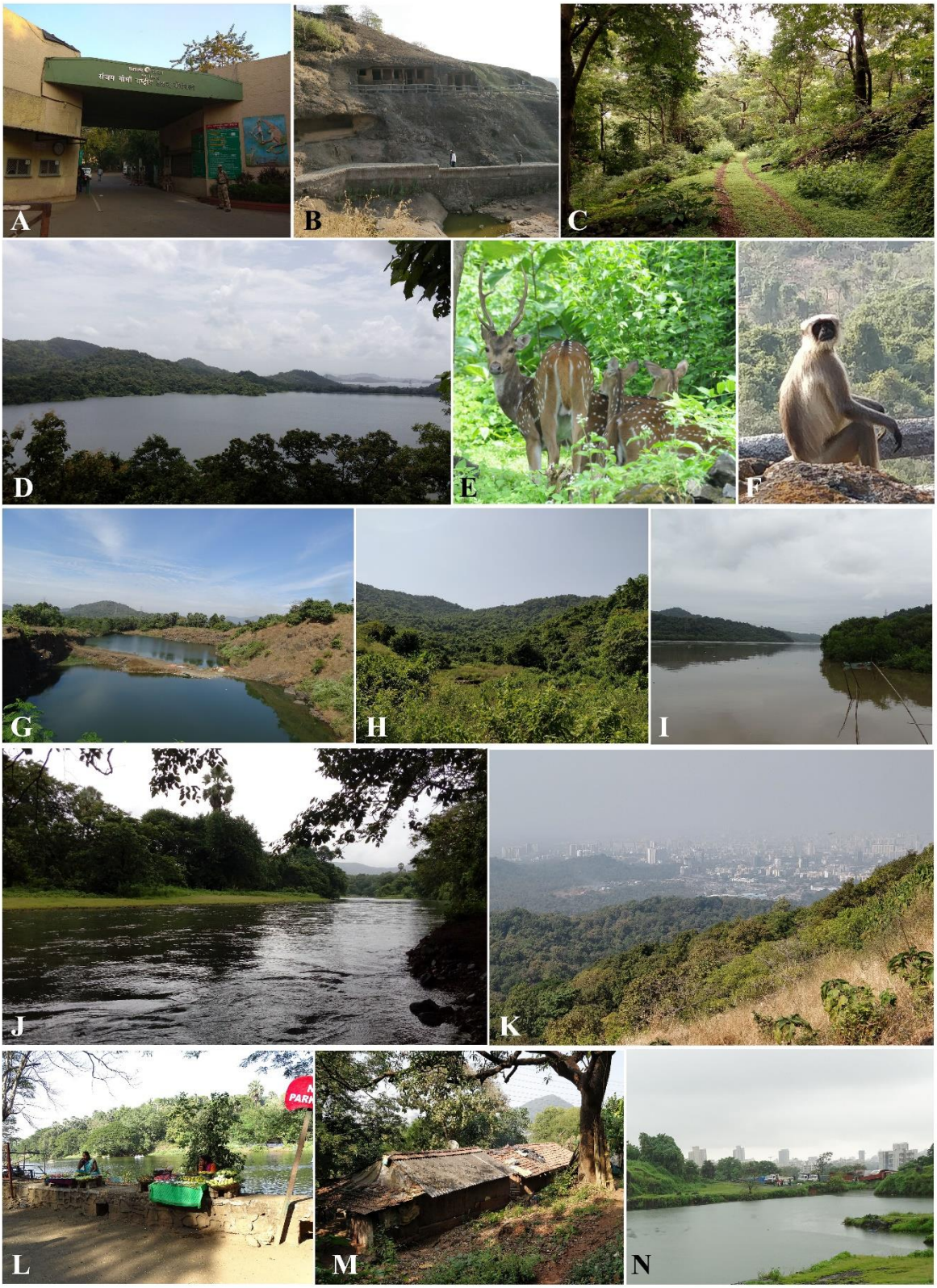

Fig. 2 – Overview of Sanjay Gandhi National Park. A Entrance gate of SGNP. B Kanheri Caves. Tulsi Range (C–D): C Forest. D Tulsi Lake. E–F Wildlife in Tulsi and Krishnagiri ranges, respectively. G Yeoor [North] range. H Yeoor [South] range. I Vasai Creek with mangroves on shores. J Dahisar river flowing through Krishnagiri range forest. K View of city from Yeoor [South] range forest. L Boating area in Krishnagiri range, frequented by tourists. M Village in SGNP. N Human settlements just outside the SGNP forests.

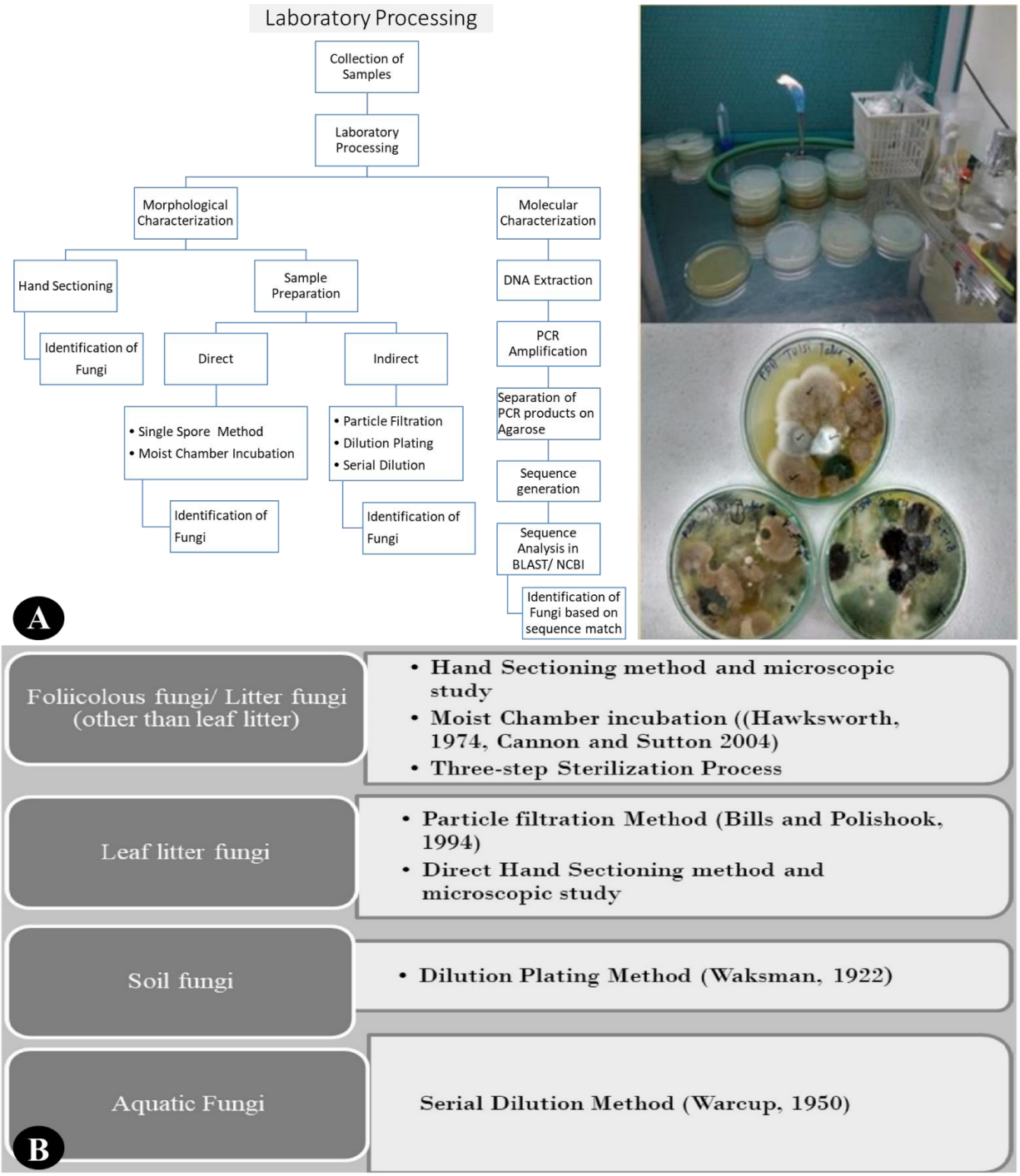

Fig. 3 – A general framework of laboratory techniques and steps followed for processing and characterization of fungal samples. B Specific methods used for isolation of different types of fungi from different classes of substrates.

DNA extraction, PCR amplification, DNA sequencing and phylogenetic analysis were carried out for selected species as per the standard protocol as follows: Genomic DNA was isolated from a pure colony grown on PDA, PCA, and MEA media plate for five days. Approximately, 2 cm^2 of mycelium taken from the growth front of the cultures was scraped off the surface of the medium and was transferred to an extraction tube, following a rapid and simple DNA extraction protocol (HiPurA™ Fungal DNA Purification Kit). The ITS gene region, internal transcribed spacer region 1, 5.8 ribosomal RNA gene, and internal transcribed spacer region 2 were amplified using the primers ITS4/ITS5 (White et al. 1990, Liu et al. 1999). Ribosomal nuclear, large subunit (nucLSU)

(partial) was amplified using primers LROR/LR7 (Vilgalys & Hester 1990) with the help of PCR System using Applied Biosystems ProFlex. The amplified PCR products were purified with HiPurA™ PCR Product Purification Kits per the manufacturer's instructions. Purified PCR products of these marker genes were checked on a 1.2% agarose electrophoresis gel stained with ethidium bromide (0.5 μg ml^{-1}). They were directed to sequencing using BigDye®Terminator v3.1 Cycle Sequencing Kit and ABI 3100 DNA analyzer (Perkin Elmer, Applied Biosystems, Foster City, CA, USA). Sequences obtained were submitted to NCBI. The best-fit model was chosen on the basis of the Bayesian information criterion (BIC). The phylogeny was inferred using the maximum likelihood method based on the model mentioned above. Tree branches were tested based on 1000 ultrafast bootstrap (UFBoot) support replicates as well as with an SH-like approximate likelihood ratio test (SH-like aLRT) with 1000 replicates.

The isolates were assigned to respective genera and species using the aforementioned approaches based on morphology, SEM, and molecular phylogeny. The recent taxonomic position of fungal taxa was verified from the online databases, such as Index fungorum (http://www.indexfungorum.org) and Mycobank (http://www.mycobank.org).

Statistical Methodology

A posteriori statistical analysis was carried out to examine the diversity of microfungi in the study area. The first requirement was to define appropriate subregional units for the analysis. Forest ranges constitute the simplest units. However, two exceptions have been made; first, the peripheral area is defined as a separate unit to include areas outside the national park often with little or no vegetation; second, areas falling under Yeoor Range to the north of Vasai Creek are defined as Yeoor [North] as they form a separate natural ecological unit in contrast with those lying in south of the creek, which is defined as Yeoor [South]. Consequently, five areas are defined as sub-regional units, *viz.*, Krishnagiri, Tulsi, Yeoor [North], Yeoor [South] and Peripheral. While Peripheral areas themselves do not constitute a range for the sake of brevity, 'ranges' collectively refer to all five subregional units. Also, 'ranges' and 'zones' are used interchangeably. Each of the zones defined above has some unique features that set them apart from each other and therefore form natural units fit for comparative analyses. Krishnagiri Range is a forest area open to visitors and a popular tourist spot. Tulsi Range at its edge near its border with Krishnagiri Range houses the famous Kanheri caves complex, the most popular tourist spot of SGNP. Most of the area of the Tulsi range is hilly, falls under the core zone, and is home to two major lakes, *viz.*, Vihar and Tulsi. Yeoor [South] lies to the east of Tulsi range, is mostly hilly, and merges into the city in east, separated from Yeoor [North] by Vasai (Basein) Creek. On the border with the city, the distinction between city and forest is often very sharp with the absence of anything like a transition zone in-between. Yeoor [North] is a mix of hilly and plain terrain, on its edges has a semirural feel to it due to a mix of more vegetation and less of human settlements, bordered by Vasai Creek in the South.

For the purpose of the analysis, we define species richness as the number of observed species. We approach the analysis of the fungal diversity at two levels, *viz.*, species richness and diversity indices, since multiple approaches provide much deeper, richer and more nuanced insights. Our approach to the analysis is outlined in Fig. 4.

As the level of species richness is defined as a number of observed species, we analyze the difference in species richness across the zones and calculate pairwise dissimilarity in species composition between zones, as well as the number of species common in all the zones as a percentage of the total. At the level of diversity indices, we combine information on a number of species and the number of isolates to calculate two widely used measures of fungal diversity and calculate a measure of evenness, and finally, to compare among zones, we calculate the true diversity by converting respective Shannon's index into an effective number of species. Analysis of species richness is consistent with the approach adopted in Dubey & Pandey (2019), and calculation of diversity indices is consistent with, for instance, Naseem & Kayang (2021). The choice of modelling strategy has been kept as simple as possible so that results are easy to interpret and appeal to a much wider range of audience. This comes especially handy in designing

conservation strategies. The details of the aforementioned approaches are as follows:

For analysing the difference in species richness across the five zones, an additive dummy variable, Classical Normal Linear Regression Model (CNLRM), estimated by Ordinary Least Squares (OLS), of the following functional form was developed:

$$\widehat{SpsCount} = \beta_0 + \beta_1 Dyn + \beta_2 Dys + \beta_3 DT + \beta_4 DK \ldots\ldots (1)$$

Where SpsCount, 'Species Count' is the number of species found at a given location; Dyn is Yeoor range [North] dummy; Dys is Yeoor range [South] dummy; DT is Tulsi range dummy and DK is Krishnagiri range dummy. Intercept term β_0 represents the mean SpsCount for Peripheral chosen as the benchmark category against which all the comparisons are made. It is to be noted that a species can be found at more than one location, however, at any given location a species have been counted only once. Here, species count is used as a dependent variable, which is a measure of species richness because it is the simplest measure of biodiversity. Range (or zonal) dummies are used as independent variables since biodiversity in any given range (or zone) is a result of a whole set of biotic and abiotic ecological factors due to their unique characteristics detailed earlier, allowing range (or zonal) dummies to be used as proxy for those ecological factors.

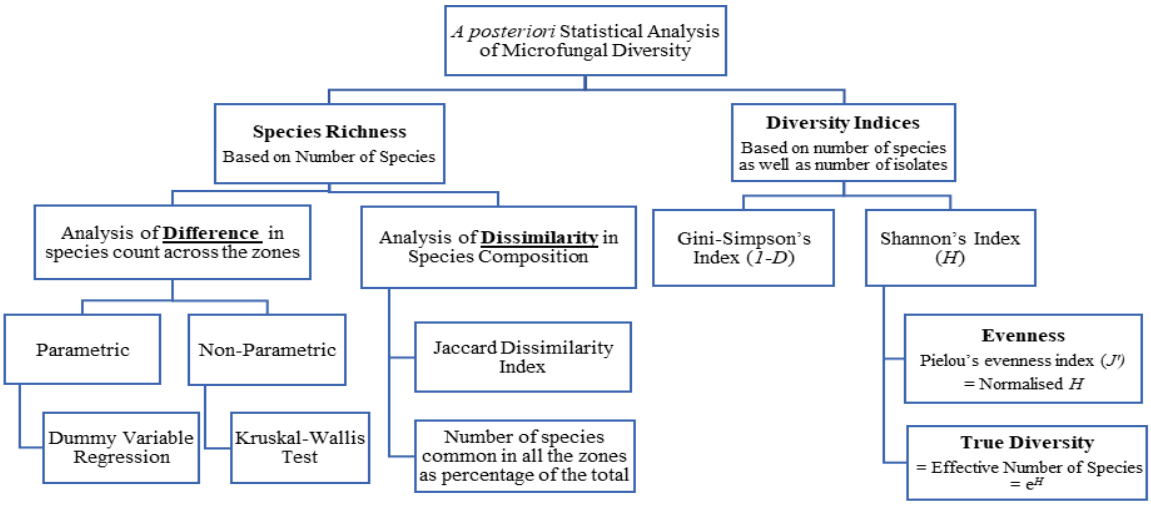

Fig. 4 – Framework for *a posteriori* statistical analysis of diversity of microfungi

In the OLS model, F-test is used to test the null hypothesis that all the estimated slope coefficients are simultaneously equal to zero i.e., there is no difference in the mean species count across the ranges (or zones). Thus, rejection of the null hypothesis would imply a statistically significant difference in the mean species count, thus observed species richness, across the ranges (or zones). Regression diagnostics were conducted to ensure that OLS assumptions are complied with to avoid getting erroneous conclusions (Greene 2011, Gujarati 2014). An OLS model was tested for residual normality and homoskedasticity. The null hypothesis of normality of residuals was tested using the Chi-square test. The null hypothesis of no heteroskedasticity of residuals was tested using two tests, *viz.*, Breusch-Pagan test and White's test. Residuals when not normally distributed make f-, z-, t- and Chi-square- tests suspect as all of them are founded upon the assumption of residual normality. The absence of homoskedasticity can cause overestimated statistical significance of estimated coefficients, and as the t-test is theoretically related to F-test, heteroskedasticity can theoretically affect F-test too. Details of models and associated regression diagnostics have been discussed in references (Greene 2011, Gujarati 2014). In nature, often species distribution doesn't follow a normal distribution – there are some areas which contribute a disproportionately high number of species, whereas there are areas which throw up much fewer species. In such a situation, it helps to have a measure unaffected by outliers, such as median; and to have non-parametric tests which make no assumptions about the underlying distribution. Kruskal

Wallis Test (Spiegel et al. 2012) is one such non-parametric test, which tests the null hypothesis of no difference in median species count across the zones.

To study dissimilarity in species composition, we first calculated the Jaccard Similarity Index (Gotelli & Ellison 2004). This index (JSI) gives the similarity of species composition between two locations, taking values from 0 to 1. Therefore, the index is subtracted from one (1-JSI) to give a measure of dissimilarity. Jaccard Similarity Index (JSI), between any two locations (X & Y), is given by:

$$JSI = \frac{n(X \cap Y)}{n(X \cup Y)} = \frac{n(X \cap Y)}{\mathrm{n(X)} + \mathrm{n(Y)} - \mathrm{n(X \cap Y)}} \quad \ldots\ldots(2)$$

Where n(X∩Y) is the number of species common to both ranges (or zones), n(X∪Y) is the total number of species, and n(X) and n(Y) are the numbers of species in ranges (or zones) X and Y, respectively. Therefore, Jaccard Dissimilarity Index (JDI) = 1-JSI

We, then calculate diversity indices for all the five zones. The two indices calculated are Simpson's index and Shannon's index (Jost 2006). These diversity indices are used to measure the diversity of fungi by combining data on the number of isolates (evenness) and the number of distinct species (species richness), unlike species richness, which is solely based upon the latter.

Simpson's index measures the probability of two randomly selected isolates belonging to the same species. It takes values from 0 to 1. It is given by the formula –

$$D = \sum_{i=1}^{S} {p_i}^2 = \sum_{i=1}^{S} (n_i/N)^2 \quad \ldots\ldots(3)$$

Where n_i = number of isolates of i^{th} species, N = total number of isolates of all species, and S= number of distinct species. Thus, the lower the value of the index, the probability of two isolates belonging to the same species also lowers, thus higher the diversity, and vice versa. However, such interpretation tends to be counter-intuitive. Hence, its complement (*1-D*) known as Gini-Simpson's index (Jost 2006) follows naturally from the laws of probability has been used, which is easy and intuitive in terms of interpretability, as higher values correspond to higher diversity.

The Shannon's index quantifies the uncertainty (or entropy) associated with correctly predicting the species to which next isolate belongs to. Therefore, the higher the value, more the uncertainty, thereby higher the diversity. It is calculated as follows:

$$H = \sum_{i=1}^{S} p_i \ln(1/p_i) \quad \ldots\ldots\ldots(4)$$

Where $p_i = n_i/N$, n_i = number of isolates of i^{th} species, N = total number of isolates of all species, S= number of distinct species, and ln = natural logarithm.

Pielou's evenness index *J′* (Pielou 1995) is a measure of the species evenness. It is essentially a normalized Shannon's index, bounded by zero and one. Higher values correspond to more equitable distribution, with *J'*=1 representing a perfectly equitable distribution where all species are equally abundant. The general formula for normalizing a given X is,

$$X_{normalized} = \frac{X - X_{min}}{X_{max} - X_{min}} \quad \ldots\ldots\ldots(5)$$

The Shannon's index takes a minimum value when all isolates belong to one single species, making $p_i = 1$, resulting in $\ln(1/p_i) = 0$, therefore $H_{min} = 0$; whereas the maximum is achieved when the probability of observing all species is equal, i.e., $p_i = 1/S$, which results in $\sum_{i=1}^{S} p_i = 1$ and $\ln(1/p_i) = \ln(S)$, therefore $H_{max} = \ln(S)$. Thus, by normalizing Shannon's index, we get Pielou's evenness index (*J′*) as follows:

$$J' = \frac{H}{\ln(S)} \quad \ldots\ldots\ldots(6)$$

Next, in order to compare diversity among zones, we convert diversity index into true diversity by transforming Shannon's index as follows (Jost 2006):

$$ENS_H = e^H \ldots\ldots (7)$$

Where ENS_H is the effective number of species, and 'e' is Euler's number or natural base. ENS_H is usually rounded down to the nearest integer to have a meaningful interpretation. The effective number of species, calculated from a diversity index, is equivalent to the number of equally abundant species in a hypothetical assemblage for the same value of the given diversity index (Gotelli & Ellison 2004). It is important to convert Shannon's index to the effective number of species (ENS_H) in order to make meaningful comparisons among different zones, with regard to the diversity since direct comparison of a diversity index is misleading due to its highly nonlinear nature (Jost 2006). For example, assume that the first zone has $H_1 = 4$ and the second zone has $H_2 = 5$. Direct comparison, solely on the value of *H*, will lead us to conclude that the latter is 25% more diverse than the former. However, by converting to true diversity, we find that the effective number of species for the first forest type (e^4) and second forest type (e^5) are 54 and 148, respectively. Thus, the difference in true diversity is 174.07%, and not 25%. Also, note that true diversity (effective number of species) is not the same as species richness (observed number of species) since former adjusts the latter by accounting for evenness (total number of isolates or individuals, in case of higher plants). Hence, the effective number of species is always less than or equal to the observed number of species. The only time these two are equal is when all species are represented by an equal number of isolates, which is a special case of perfect evenness where Pielou's evenness index $J' = 1$.

Finally, in case of conflict between Simpson's and Shannon's index, the results of the latter are chosen over the former. There is a reason why Shannon's index has been chosen to calculate the effective number of species. The reason is that Shannon's index weighs both common and rare species equally, unlike Simpson's index and species richness, which overweigh common species and rare species (Gotelli & Ellison 2004).

Gretl (Cottrell & Lucchetti 2021) was used for Regression analysis, SciPy library of Python was used for Kruskal-Wallis Test, and for others MS-Excel was used.

Results

From 334 fungal isolates, a total of 231 species were identified based on morphological characters, backed by SEM images and molecular techniques for species requiring further detailed studies. These species included a total of 146 species from 186 isolates of litter fungi, 39 species from 43 isolates of foliicolous fungi, 36 species from 77 isolates of soil fungi and 20 species from 28 isolates of water fungi (Fig. 5A). The fungi are enumerated location-wise in Table 1. The total number of species does not add up (to 241), since nine species were found on more than one type of substrate, hence were not double-counted at arrival in the total. To elaborate, three species, *viz.*, *Cladosporium cladosporioides*, *Memnoniella echinata*, and *Rhizopus microsporus* were isolated from both litter and soil samples, while seven species were isolated from both soil and water *viz.*, *Aspergillus brasiliensis*, *A. fumigatus*, *A. nidulans*, *A. niger*, *A. sydowii*, *Rhizopus nigricans* and *Trichoderma harzianum*. Dominant genera (Fig. 5B) in terms of the number of species included *Aspergillus* (23), followed by *Diatrype* and *Meliola* (each 8), followed by *Monodictys* (6), followed by *Hypoxylon*, *Penicillium* (each 5), followed by *Arthrinium*, *Colletotrichum*, *Dictyosporium*, *Fusarium*, *Periconia*, *Spiropes*, *Stachybotrys*, *Trichoderma* (each 4). A checklist of microfungal species documented during the studies is presented in Table 6.

The present study led to the publication of three new species, *viz.*, *Elotespora mumbaiensis* (Dubey 2021), *Mycoenterolobium borivialensis* (Dubey & Pandey 2020) and *Heteroconium tulsiense* (Dubey & Pandey 2022).

There were seven aquatic fungal species isolated from water bodies of peripheral areas, *viz.*, Powai Lake, Chena Lake, near Ghodbunder and Vasai Lake, remaining from water bodies of forest areas. Similarly, nine soil fungal species were isolated from the peripheral areas. Of litter fungi, only two species were isolated from peripheral areas, while the rest were from forest areas. All foliicolous fungi were found exclusively in forest areas.

Fig. 6 shows microscopic images of some of the uncommon species collected in the study. Fig. 7 shows scanning electron microscopic photographs of some of the interesting species

encountered during the study. Fig. 8 shows some of the taxa identified by molecular phylogenetic analysis, which was applied to the ITS sequence data using the maximum likelihood (ML) method (identified species are highlighted in bold).

Two OLS models were developed (Table 2) to analyze observed species richness: Model 1 with original functional form stated earlier (equation 1) and Model 2 with the natural logarithm of Species Count as a dependent variable on the account of violations of OLS assumptions by Model 1. Violations of CNLRM assumptions by Model 1 included non-normal and heteroskedastic residuals. However, Model 2 was free from violations of CNLRM assumptions. As seen from the regression output for both models in Table 2, both showed a highly statistically significant difference (p-value < 0.01 for F-test for both models) in mean Species Count across the ranges (or zones). They also showed highly statistically significant (p-value < 0.01) coefficients of dummies for the Yeoor range [North] and Yeoor range [South]. Additionally, Model 2 showed statistically significant coefficients for dummies of Krishnagiri (p-value < 0.05) and Tulsi range (p-value < 0.10). However, Model 1 was retained due to its functional simplicity and ease of interpretability, even though Model 2 showed lower AIC and higher adjusted R^2. Kruskal-Wallis Test (Table 3) showed a p-value < 0.01, implying a highly statistically significant difference in median species count across the ranges (or zones). OLS model, despite the violation of CNLRM assumptions, was retained as its result was consistent with the result of the Kruskal-Wallis test. Thus both, OLS and Kruskal Wallis Test, revealed a highly statistically significant difference (p-value < 0.01) in mean and median species count (respectively), thereby, observing species richness across the ranges (or zones). As seen in Table 4, the calculated JDI was highest (98.97%) between Krishnagiri and Yeoor [North], while the lowest calculated JDI (82.35%) was between Yeoor [North] and Peripheral areas. Out of 231 total recorded species, only one (less than 1% of total) species, *viz.*, *Aspergillus nidulans*, was common in all the ranges (or zones).

As given in Table 5, Gini Simpson's index (*1-D*) was found to be highest (=0.9582) for Yeoor [North] range, lowest (=0.93) for peripheral areas and 0.9911 for the whole study area. Shannon's index (*H*) was found to be highest (=4.4118) for Yeoor [South] range, lowest (=2.7185) for peripheral areas and 5.1740 for the whole study area. Pielou's evenness index (*J′*) was 0.9507 for the whole study area. Krishnagiri range showed the most equitable distribution with the highest *J′* (= 0.9954), whereas Yeoor [South] was the most uneven (*J′* =0.9539). The effective number of species was highest (=82) for Yeoor [South] range, lowest (=15) for peripheral areas and 176 for the whole study area.

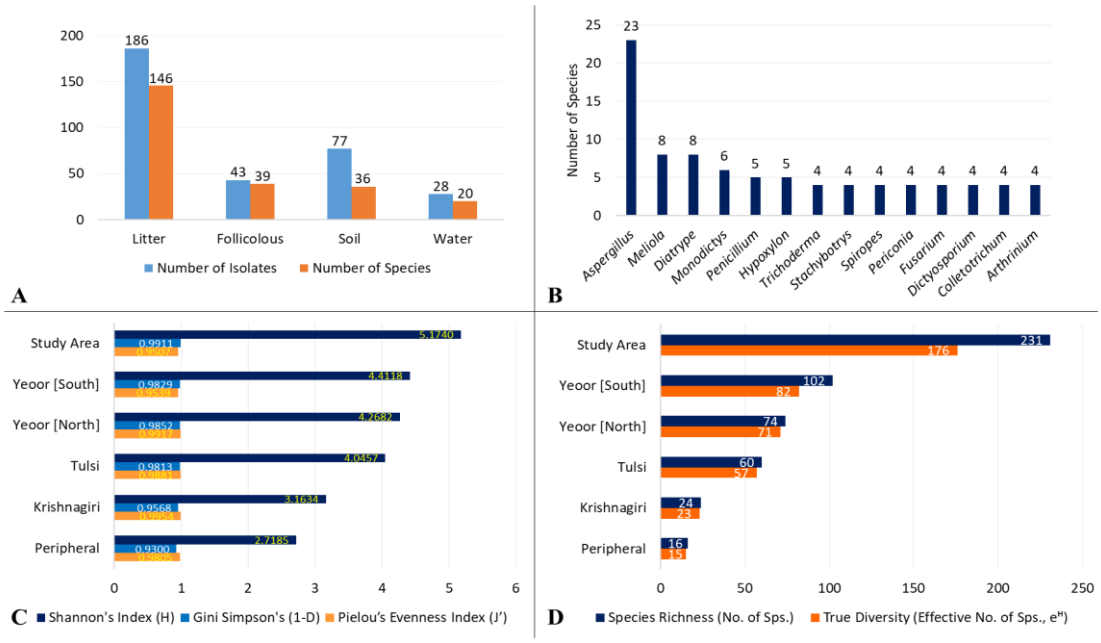

Fig. 5 – A Total number of fungal isolates and number of species according to substrates. B Fungal

genera with highest number of species. C Indices of diversity (Shannon's and Simpson's) and Pielou's Evenness. D Species Richness and True Diversity (Effective number of species, based on Shannon's index)

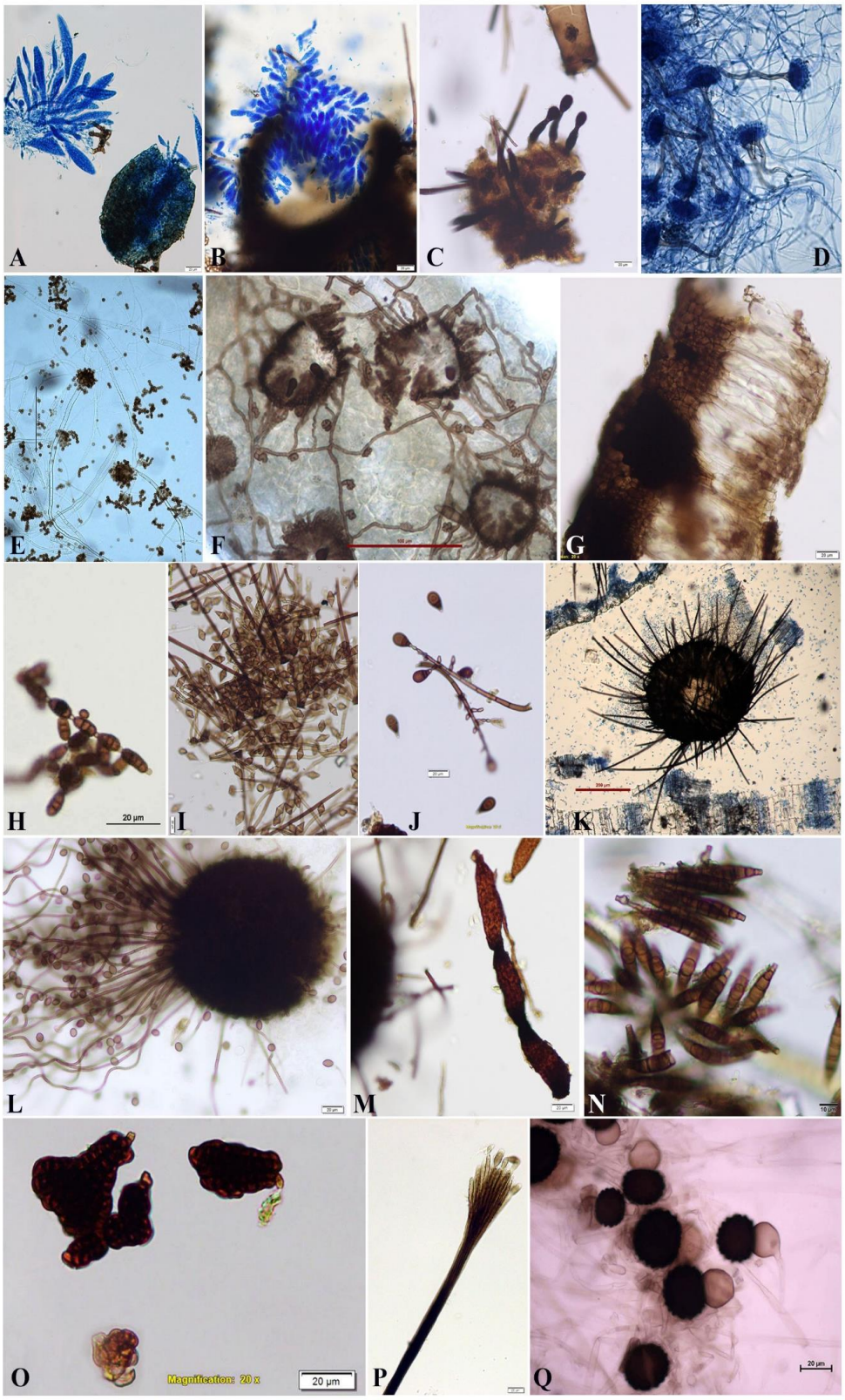

Fig. 6 – Microscopic images of some microfungi from SGNP. A *Acanthohelicospora scopula*. B *Acanthonitschkea pulchella*. C *Acrogenospora ellipsoidea*. D *Aspergillus nidulans*. E *Aspergillus niger*. F *Asterina woodfordiae*. G *Bagnisiella apiculospora*. H *Bahusandhika intercalaris*. I

Beltrania mangiferae. J *Brachysporiella gayana*. K *Chaetomella acutiseta*. L *Chaetomium globosum*. M *Elotespora mumbaiensis*. N *Janetia heterospora*. O *Mycoenterolobium borivaliense*. P *Spiropes clavatus*. Q *Zygorhynchus* sp. Scales: A–D, G–J, L, M, O–Q = 20 µm, E = 500 µm, F = 100 µm, K = 200 µm, N = 10 µm.

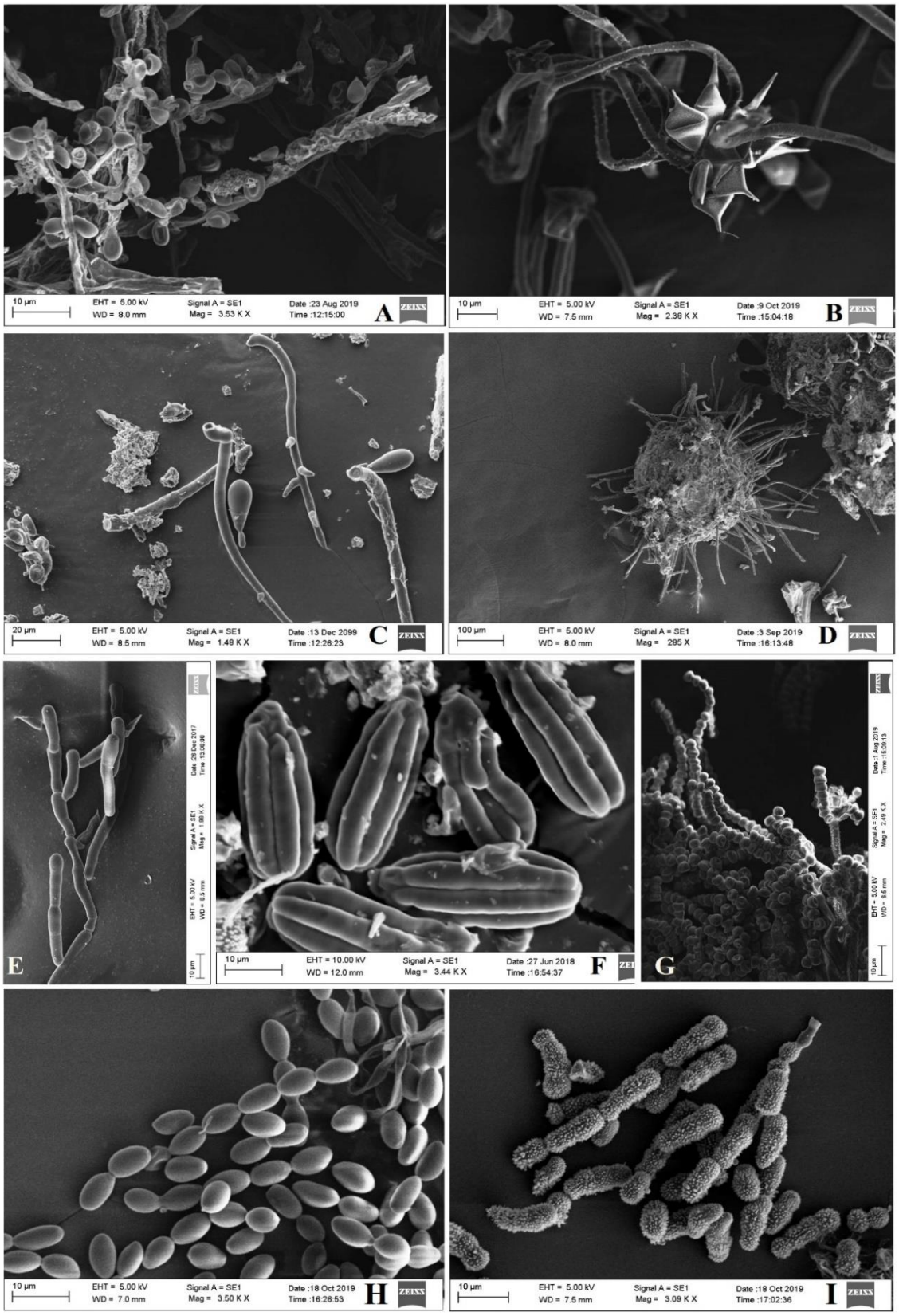

Fig. 7 – SEM images of some microfungi from SGNP. A *Arthrinium sporophlaeum*. B *Beltraniella*

spiralis. C *Brachysporiella gayana*. D *Chaetomella acutiseta*. E *Dendryphion vinosum*. F *Dictyosporium elegans*. G *Memnoniela echinata*. H *Sorocybe resinae*. I *Torula herbarum*. Scale bars: A, B, E–I = 10 µm; C = 20 µm; D = 100 µm.

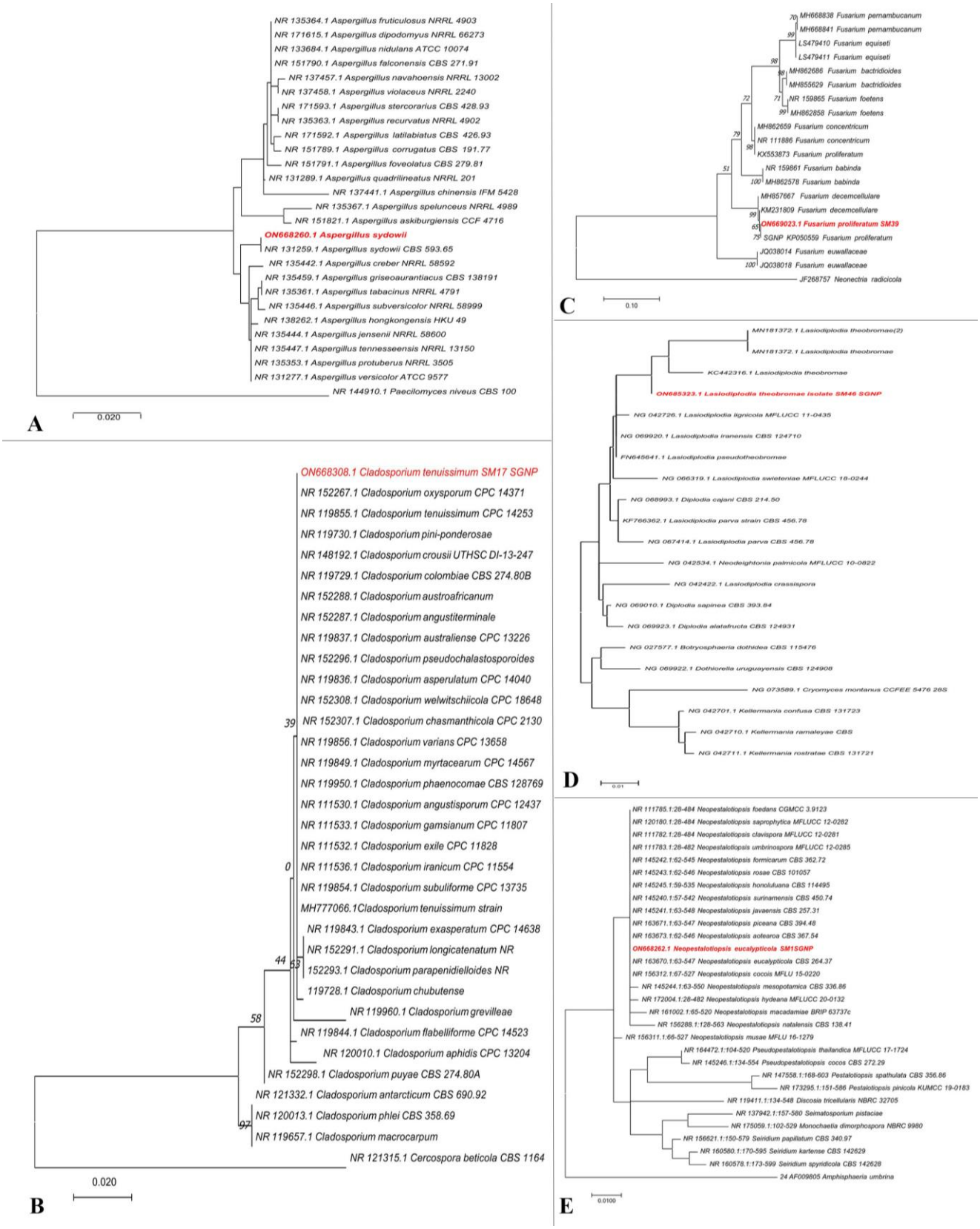

Fig. 8 – Molecular phylogenetic analysis by maximum-likelihood (ML) method based on ITS sequence data (Bootstrap =1000 times). The sequence of identified species are highlighted in **red**

bold (Kimura 1980). A *Aspergillus sydowii*. B *Cladosporium tenuissimum*. C *Fusarium proliferatum*. D *Lasiodiplodia theobromae*. E *Neopestalotiopsis eucalypticola*.

Table 1 Location-wi se details of species.

Range	Location with number of species under parentheses	Fungal Species	
	Karnal Pada (12)	Litter (4)	*Cladosporium cladosporioides*, *Ellisembia bambusicola*, *Monodictys nitens*, *Zygosporium gibbum*
		Soil (4)	*Aspergillus flavipes*, *Aspergillus fumigatus*, *Aspergillus* sp. 6, *Thielavia* sp.
		Water (4)	*Fusarium solani*, *Penicillium oxalicum*, *Trichoderma harzianum*, *Trichoderma viride*
Yeoor [North]	Nagla Block (32)	Litter (26)	*Acanthohelicospora guianensis*, *Arthrinium bambusae*, *Arthrinium sporophlaeum*, *Brachysporiella gayana*, *Brevistachys globosa*, *Canalisporium nigrum*, *Cephalotrichum microsporum*, *Coniothyrium eucalypticola*, *Corynespora cassiicola*, *Diatrype americana*, *Diatrype caryae*, *Diatrype loranthi*, *Dictyosporium heptasporum*, *Elotespora mumbaiensis*, *Hypoxylon chrysoconium*, *Hypoxylon nummularium*, *Diatrype macounii*, *Hysterium tamarindi* , *Janetia* sp., *Janetia indica*, *Monodictys castaneae*, *Monodictys cerebriformis*, *Neoacanthostigma septoconstrictum*, *Neopestalotiopsis eucalypticola*, *Pseudopithomyces maydicus*, *Sporidesmiella* sp.
		Follicolous (4)	*Meliola allophyli-serrulati*, *Microxiphium doratopsis*, *Periconia lateralis*, *Sarcinella allophyli*
		Soil (2)	*Aspergillus* sp 4, *Trichoderma harzianum*
Yeoor [North]	Sarjamori (21)	Litter (19)	*Acanthohelicospora scopula*, *Acrodictys irregularis*, *Angustimassarina acerina*, *Angustimassarina italica*, *Angustimassarina populi*, *Aquilomyces rebunensis*, *Brevistachys* sp., *Cheiromycella* sp., *Diatrype lijiangensis*, *Diatrype macounii*, *Fracchiaea callista*, *Harpographium fasciculatum*, *Hypoxylon investiens*, *Hysterium pulicare*, *Kamalomyces bambusicola*, *Lasiodiplodia mahajangana*, *Monodictys nitens*, *Rhytidhysteron thailandicum*, *Torula* sp.
		Follicolous (2)	*Meliola agrostistachydis*, *Meliola holigarnae*
Yeoor [North]	Sasunavaghar (9)	Litter (4)	*Memnoniella echinata*, *Monodictys nitens*, *Paradictyoarthrinium hydei*, *Pithomyces ellisii*
		Follicolous (4)	*Catenularia cubensis*, *Colletotrichum gloeosporioides*, *Corynespora masseeanum*, *Leptoxyphium glochidion*
		Water (1)	*Rhizopus nigricans*
Yeoor [North]	Sasunavaghar Foothills, Near Stream (4)	Soil (3)	*Aspergillus nidulans*, *Cladosporium cladosporioides*, *Eurotium* sp.2
		Water (1)	*Penicillium glabrum*
Yeoor [South]	Kavesar (17)	Litter (8)	*Aspergillus melleus*, *Diplocladiella scalaroides*, *Exserohilum elongatum*, *Janetia indica*, *Monodictys cerebriformis*, *Monodictys melanocephaloides*, *Pseudoacrodictys* sp., *Torula herbarum*
		Follicolous (3)	*Beltrania mangiferae*, *Ciliochorella mangiferae*, *Ectophoma multirostrata*
		Soil (6)	*Aspergillus brasiliensis*, *Aspergillus flavipes*, *Aspergillus fumigatus*, *Aspergillus nidulans*, *Aspergillus niger*, *Penicillium chrysogenum*
Yeoor [South]	1140 (11)	Litter (8)	*Circinotrichum olivaceum*, *Colletotrichum acutatum*, *Corynespora cassiicola*, *Diatrype enteroxantha*, *Lacellina macrospora*, *Sordaria fimicola*, *Torula herbarum*, *Zygosporium masonii*
		Soil (3)	*Aspergillus fumigatus*, *Aspergillus niger*, *Zygorhynchus* sp.

Table 1 Continued.

Range	Location with number of species under parentheses	Fungal Species	
Yeoor [South]	Ovale (6)	Litter (3)	*Paradictyoarthrinium diffractum*, *Phaeoisaria clavulata*, *Rhexoacrodictys erecta*
		Follicolous (3)	*Asterostomula* sp. 2, *Beltraniella spiralis*, *Cladosporium herbarum*
Yeoor [South]	Panchpakhadi (13)	Litter (9)	*Chaetosphaerulina bambusae*, *Coniochaeta* sp., *Corynespora cassiicola*, *Dendryphion vinosum*, *Paradictyoarthrinium diffractum*, *Spiropes melanoplaca*, *Stachybotrys echinatus*, *Volutina concentrica*, *Xenosporium indicum*
		Soil (4)	*Aspergillus candidus*, *Aspergillus jaipurensis*, *Aspergillus niger*, *Penicillium chrysogenum*
Yeoor [South]	Pankhand (51)	Litter (27)	*Bahusandhika indica*, *Bahusandhika intercalaris*, *Brevistachys globosa*, *Chaetomium globosum*, *Coniothyrium* sp., *Ellisembia bambusicola*, *Janetia indica*, *Lacellina macrospora*, *Miyoshiella triseptata*, *Monodictys cerebriformis*, *Monodictys putredinis*, *Moorella speciosa* , *Paradictyoarthrinium diffractum*, *Periconia britannica*, *Periconia cambrensis*, *Pithomyces ellisii*, *Pithomyces pulvinatus*, *Rhizopus microsporus*, *Rhytidhysteron thailandicum*, *Sorocybe resinae*, *Sporidesmium ehrenbergii*, *Sporidesmium* sp., *Stachybotrys charatum*, *Stachybotrys levisporus*, *Temerariomyces acutulus*, *Tharoopama trina*, *Torula herbarum*
		Follicolous (9)	*Alternaria chlamydospora*, *Alysidium* sp., *Ampelomyces quisqualis*, *Asterina woodfordiae*, *Asterina wrightii*, *Asterostomula* sp. 1, *Balladyna ugandensis*, *Colletotrichum dematium*, *Sarcinella loranthacearum*
		Soil (15)	*Aspergillus brasiliensis*, *Aspergillus fumigatus*, *Aspergillus nidulans*, *Aspergillus niger*, *Aspergillus pseudoelegans*, *Aspergillus* sp. 2, *Aspergillus* sp. 3, *Aspergillus westerdijkia*, *Diplodia caffera*, *Emericella nidulans*, *Emericella rugulosa*, *Fusarium* sp., *Memnoniella echinata*, *Trichocladium asperum*, *Trichoderma asperellum*.
Yeoor [South]	Yeoor 111 (3)	Litter (3)	*Dictyosporium micronesicum*, *Fusarium proliferatum*, *Hermatomyces sphaericoides*
Yeoor [South]	Yeoor 1136 & 1137 (2)	Litter (2)	*Hermatomyces tucumanensis*, *Hysterium angustatum*
Yeoor [South]	Chena Lake forest (12)	Litter (8)	*Acanthostigma perpusillum*, *Acrodictys erecta*, *Arthrinium sacchari*, *Berkleasmium abuense*, *Chaetosphaeria innumera*, *Cladosporium colocasiae*, *Corynespora cassiicola*, *Didymobotryum rigidum*
		Soil (4)	*Aspergillus fumigatus*, *Aspergillus nidulans*, *Chaetomium globosum*, *Trichoderma harzianum*
Yeoor [South]	Yeoor Hills (8)	Litter (6)	*Diatrype stigma*, *Dichotomopilus pseudoerectus*, *Dictyoarthrinium sacchari*, *Dictyocheirospora indica*, *Elotespora mumbaiensis*, *Paecilomyces* sp.
		Soil (2)	*Aspergillus flavipes*, *Aspergillus niger*
Tulsi	Vihar Ropvatika (16)	Litter (11)	*Bahusandhika rhombica*, *Chaetomella acutiseta*, *Diatrype macounii*, *Dictyosporium elegans*, *Dinemasporium polygonum*, *Ellisembia leptospora*, *Ernakulamia cochinensis*, *Ernakulamia* sp., *Janetia indica*, *Monodictys paradoxa*, *Repetophragma calongei*
		Follicolous (5)	*Asterostomella* sp., *Colletotrichum lindemuthianum*, *Fusicoccum* sp., *Meliola hyptidis*, *Pseudocercospora viticicola*
Tulsi	No. 37 (1)	Soil (1)	*Penicillium digitatum*
Tulsi	No. 53 (1)	Soil (1)	*Aspergillus niger*
Tulsi	No. 63 (1)	Water (1)	*Aspergillus versicolor*
Tulsi	Parimandal road (3)	Litter (2)	*Stigmina* sp., *Taeniolella breviuscula*
		Follicolous (1)	*Beltrania malaiensis*

Table 1 Continued.

Range	Location with number of species under parentheses	Fungal Species	
Tulsi	Tulsi Lake Road (3)	Soil (3)	*Aspergillus nidulans, Emericella rugulosa, Thielavia* sp.
Tulsi	Near Tulsi Lake (9)	Litter (5)	*Acanthonitschkea pulchella*, *Pithomyces ellisii*, *Sordaria fimicola*, *Stachybotrys* sp., *Stauronema sacchari*
		Soil (4)	*Aspergillus fumigatus*, *Aspergillus* sp. 5, *Talaromyces pinophilus*, *Trichoderma harzianum*
Tulsi	Tulsi Lake (8)	Water (8)	*Aspergillus brasiliensis*, *Aspergillus flavus*, *Aspergillus fumigatus*, *Aspergillus nidulans*, *Aspergillus niger*, *Aspergillus ochraceus*, *Penicillium citrinum*, *Trichoderma* sp.
Tulsi	Near to Vihar Lake (2)	Litter (1)	*Acrodictys bambusicola*
		Soil (1)	*Aspergillus westerdijkia*
Tulsi	Vihar Lake (1)	Water (1)	*Aspergillus terreus*
Tulsi	Tulsi Range Forest (6)	Litter (6)	*Brevistachys globosa*, *Dictyoarthrinium sacchari*, *Janetia heterospora*, *Kamalomyces indicus*, *Lasiodiplodia theobromae*, *Sordaria fimicola*
Tulsi	Tiger Area (4)	Litter (4)	*Gyrothrix circinata*, *Heteroconium* sp., *Junewangia globulosa*, *Kirschsteiniothelia atra*
Tulsi	Magar Dam (1)	Litter (1)	*Natantiella ligneola*
Tulsi	Kanheri Caves & nearby areas (6)	Litter (5)	*Acrogenospora ellipsoidea*, *Arthrinium euphorbiae*, *Bagnisiella apiculospora*, *Mycoenterolobium borivialensis*, *Phaeoisaria clematidis*
		Soil (1)	*Aspergillus* sp.1
Krishnagiri	Shilonda Trail (9)	Litter (4)	*Diatrype atlantica*, *Dictyosporium cocophilum*, *Epicoccum nigrum*, *Exosporium gymnemae*
		Follicolous (5)	*Alternaria citri*, *Amazonia elaeocarpi*, *Cercospora apii*, *Erysiphe tectonae, Meliola buteae*
Krishnagiri	Near Dahisar river (1)	Litter (1)	*Periconia jabalpurensis*
Krishnagiri	Lake (2)	Water (2)	*Aspergillus germanicus*, *Trichoderma* sp.
Krishnagiri	Krishnagiri Upwan, Near boating lake (5)	Litter (1)	*Moorella speciosa*
		Soil (4)	*Aspergillus nidulans*, *Aspergillus niger*, *Emericella rugulosa*, *Eurotium* sp. 1
Krishnagiri	Krishnagiri Forest (8)	Litter (5)	*Botryosporium longibrachiatum*, *Sordaria fimicola*, *Spiropes capensis*, *Spiropes clavatus*, *Spiropes guareicola*
		Follicolous (3)	*Meliola holarrhenae*, *Meliola ixorae* var. *macrospora*, *Meliola mitragynae*
		Soil (1)	*Fusarium concentricum*
Peripheral	Chhena (3)	Litter (2)	*Hypoxylon rogersii*, *Monodictys cerebriformis*
		Water (1)	*Aspergillus terreus*
Peripheral	Ghodbandar (1)	Water (1)	*Aspergillus sydowii*
Peripheral	K.N. Shaikh Quarry (1)	Soil (1)	*Aspergillus nidulans*
Peripheral	Keshav Nagar (1)	Soil (1)	*Trichoderma harzianum*
Peripheral	MLDC Quarry (1)	Soil (1)	*Aspergillus fumigatus*
Peripheral	Thakur Village (1)	Soil (1)	*Rhizopus nigricans*

Table 1 Continued.

Range	Location with number of species under parentheses	Fungal Species	
Peripheral	Plantation, Near Akurli (1)	Soil (1)	*Trichoderma harzianum*
Peripheral	Powai Lake (2)	Soil (1)	*Aspergillus nidulans*
		Water (1)	*Aspergillus parasiticus*
Peripheral	Ramgad Nursery & Plantation (2)	Soil (2)	*Aspergillus flavipes, Aspergillus niger*
Peripheral	Shingte Quarry (1)	Soil (1)	*Aspergillus sydowii*
Peripheral	Vasai Creek (6)	Soil (2)	*Emericella rugulosa, Rhizopus microsporus*
		Water (4)	*Aspergillus flavus, Aspergillus niger, Penicillium citrinum, Rhizopous* sp.

Table 2 OLS regressions.

Models		**Model 1**	**Model 2**
Dependent Variable		**SpsCount**	**ln(SpsCount)**
Const	**Coefficient**	**1.8182**	**0.3888**
	(Std. error)	(2.4462)	(0.2624)
	t-ratio	0.7433	1.4810
	p-value	0.4618	0.1465
Dyn	**Coefficient**	**13.7818**	**2.1270**
	(Std. error)	(4.3759)	(0. 4695)
	t-ratio	3.1500	4.531
	p-value	0.0031 ***	0.0000***
Dys	**Coefficient**	**11.8485**	1.8196
	(Std. error)	(3.6466)	(0.3912)
	t-ratio	3.2490	4.651
	p-value	0.0024 ***	0.0000***
DT	**Coefficient**	**2.6104**	**0. 6762**
	(Std. error)	(3.2689)	(0. 3507)
	t-ratio	0.7986	1.928
	p-value	0.4294	0.0612*
DK	**Coefficient**	**3.3818**	**0.9506**
	(Std. error)	(4.3759)	(0.4695)
	t-ratio	0.7728	2.025
	p-value	0.4443	0.0498**
Number of observations		44	44
F(4, 39)		4.4587	8.1510
p-value (F-test)		0.0046***	0.0001***
R-squared		0.3138	0.4553
Adjusted R-squared		0.2434	0.3995
Akaike Information Criterion (AIC)		313.7851	117.3470
Chi-square test for normality of residual (*p*-value)		0.0000***	0.6713
White's test for heteroskedasticity (*p*-value)		0.2344	0.4537
Breusch-Pagan 's test for heteroskedasticity (*p*-value)		0.0000***	0.6709

Standard errors in parentheses.
*p<0.1, ** p< 0.05, ***p<0.01

Table 3 Kruskal-Wallis Test.

Calculated Test Statistic	19.8738
p-value	0.0005***

Table 4 Jaccard Dissimilarity Index.

	Yeoor [North]	Yeoor [South]	Tulsi	Krishnagiri	Peripheral
Yeoor [North]	0.0000				
Yeoor [South]	0.9202	0.0000			
Tulsi	0.9365	0.9200	0.0000		
Krishnagiri	**0.9897**	0.9587	0.9367	0.0000	
Peripheral	**0.8235**	0.9273	0.8824	0.9189	0.0000

Note: Only one species *viz., Aspergillus nidulans* (less than 1% of total) was common to all the ranges and peripheral areas.

Table 5 Diversity Measures.

	Peripheral	Krishnagiri	Tulsi	Yeoor [North]	Yeoor [South]	Study Area [Whole]
Simpson's (D) = $\Sigma p_i^2 = \Sigma(n_i/N)^2$	0.0700	0.0432	0.0187	0.0148	0.0171	0.0089
Gini Simpson's (*1-D*)	0.9300	0.9568	0.9813	0.9852	0.9829	0.9911
Shannon's (H) = $\Sigma\ p_i * \ln(1/p_i)$	2.7185	3.1634	4.0457	4.2682	4.4118	5.1740
Pielou's Evenness Index (*J'*) = $H/\ln(S)$	0.9805	0.9954	0.9881	0.9917	0.9539	0.9507
True Diversity = Effective number of species (Based on H) = e^H	15	23	57	71	82	176
Species Richness = Number of species	16	24	60	74	102	231

Table 6 Checklist of Micro-fungi documented from Sanjay Gandhi National Park.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
1	*Acanthohelicospora guianensis* (Linder) Y.Z. Lu & K.D. Hyde 2018	Tubeufiaceae	Decaying wood	Litter	BSI(WC) 209208	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
2	*Acanthohelicospora scopula* (Peck) Rossman & W.C. Allen, 2016	Tubeufiaceae	Decaying wood	Litter	BSI(WC) 209277	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
3	*Acanthonitschkea pulchella* (Sacc.) Nannf. 1975	Nitschkiaceae	Bark litter	Litter	BSI(WC) 210601	08-09-2016	India	Maharashtra	Near to Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
4	*Acanthostigma perpusillum* De Not. 1865	Tubeufiaceae	Bark litter	Litter	BSI(WC) 209294	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
5	*Acrodictys bambusicola* M.B. Ellis 1961	Pezizomycotina	Dry twig	Litter	BSI(WC) 210617	20-08-2017	India	Maharashtra	Near to Vihar Lake, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
6	*Acrodictys erecta* (Ellis & Everh.) M.B. Ellis 1961	Pezizomycotina	Dead Stem	Litter	BSI(WC) 209287	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
7	*Acrodictys irregularis* R.F. Castañeda, Gusmão & Guarro 2007	Pezizomycotina	Fallen bark	Litter	BSI(WC) 209252	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
8	*Acrogenospora ellipsoidea* D.M. Hu, L. Cai & K.D. Hyde 2010	Hysteriaceae	Wood	Litter	BSI(WC) 210635	07-09-2016	India	Maharashtra	Kanheri caves, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
9	*Alternaria chlamydospora* Mouch. 1973	Pleosporaceae	*Ficus religiosa* L.	Foliicolous	BSI(WC) 196370	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
10	*Alternaria citri* Ellis & N. Pierce 1902	Pleosporaceae	*Actephila* sp.	Foliicolous	BSI(WC) 205313	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
11	*Alysidium* sp.	Botryobasidiaceae	Unknown foliicolous	Foliicolous	BSI(WC) 205462, 563	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
12	*Amazonia elaeocarpi* Hosag., D.K. Agarwal, H. Biju & Archana 2007	Meliolaceae	*Bahunia* sp.	Foliicolous	BSI(WC) 205393	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
13	*Ampelomyces quisqualis* Ces. 1852	Phaeosphaeriaceae	*Cordia* sp.	Foliicolous	BSI(WC) 210638	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Hibiscus esculentus L.	Foliicolous	BSI(WC) 210639	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Malachra capitata (L.) L.	Foliicolous	BSI(WC) 210640	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Nyctanthes arbor-tristis L.	Foliicolous	BSI(WC) 210641	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Pavetta indica L.	Foliicolous	BSI(WC) 210642	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
14	*Angustimassarina acerina* Jayasiri, Thambug., R.K. Schumach. & K.D. Hyde 2015	Amorosiaceae	Dry twig litter	Litter	BSI(WC) 209258	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
15	*Angustimassarina italica* Tibpromma, Camporesi & K.D. Hyde 2017	Amorosiaceae	Decaying bark	Litter	BSI(WC) 209263	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
16	*Angustimassarina populi* Thambug. & K.D. Hyde 2015	Amorosiaceae	Dead stem	Litter	BSI(WC) 209262	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
17	*Aquilomyces rebunensis* Kaz. Tanaka & K. Hiray 2015	Lentitheciaceae	Decaying bark	Litter	BSI(WC) 209264	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
18	*Arthrinium bambusae* M. Wang & L. Cai 2018	Apiosporaceae	Dead twig	Litter	BSI(WC) 209242	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
19	*Arthrinium euphorbiae* M.B. Ellis 1965	Apiosporaceae	Dead twig	Litter	BSI(WC) 210602	07-09-2016	India	Maharashtra	Kanheri caves, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
20	*Arthrinium sacchari* (Speg.) M.B. Ellis 1965	Apiosporaceae	Dead twig	Litter	BSI(WC) 209268	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
21	*Arthrinium sporophlaeum* Ces. 1863	Apiosporaceae	Dead twig	Litter	BSI(WC) 209232	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
22	*Aspergillus brasiliensis* Varga, Frisvad & Samson 2007	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205539	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205537	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range (South), Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205507	20-08-2017	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
23	*Aspergillus candidus* Link 1809	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205535	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
24	*Aspergillus flavipes* (Bainier & R. Sartory) Thom & Church 1926	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205453	25-01-2017	India	Maharashtra	Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205386A	20-12-2017	India	Maharashtra	Karnal Pada, Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205536A	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range (South), SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205364A	19-08-2017	India	Maharashtra	Ramgad Nursery, Peripheral of Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
25	*Aspergillus flavus* Link 1809	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205284	08-09-2016	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205519	26-01-2017	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205515	21-08-2017	India	Maharashtra	Vasai Creek, Peripheral to SGNP, Thane	Rashmi Dubey & Amit D. Pandey
26	*Aspergillus fumigatus* Fresen. 1863	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205374A	21-08-2017	India	Maharashtra	Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205542	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Isolated from Soil	Soil	BSI(WC) 205538	22-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205384A	08-09-2016	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205496A	20-12-2017	India	Maharashtra	Karnal Pada, Sarjamori, North of Vasai Creek, Yeoor Range [North], SGNP, Palghar	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205522A	20-10-2018	India	Maharashtra	Near Tulsi lake, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205536A	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range (South), SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205362A	19-08-2017	India	Maharashtra	MLDC Quarry, Peripheral of Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
27	*Aspergillus germanicus* Varga, Frisvad & Samson 2011	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205389A	23-12-2017	India	Maharashtra	Lake of Krishnagiri range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
28	*Aspergillus jaipurensis* Samson,Visagie & Houbraken 2014	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 210065	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
29	*Aspergillus melleus* Yukawa 1911	Aspergillaceae	Leaf Litter	Litter	BSI(WC) 205554 - 205555	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
30	*Aspergillus nidulans* (Eidam) G. Winter 1884	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205495	21-12-2017	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205509	23-12-2017	India	Maharashtra	Tulsi road, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205513	23-12-2017	India	Maharashtra	Upwan, Near boating lake, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205540	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205374A	21-08-2017	India	Maharashtra	Chena Lake, Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205513	23-12-2017	India	Maharashtra	Upwan, Near boating lake, Krishnagiri Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205536A	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range (South), SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205284	08-09-2016	India	Maharashtra	Tulsi lake, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
30	*Aspergillus nidulans* (Eidam) G. Winter 1884	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205363A	19-08-2017	India	Maharashtra	K.N. Shaikh Quarry, Peripheral of Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205371A	20-08-2017	India	Maharashtra	Powai lake, Peripheral to Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
31	*Aspergillus niger* Tiegh. 1867	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205376A	21-08-2018	India	Maharashtra	Upwan, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205534	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205541	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205453	25-01-2017	India	Maharashtra	Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205281	08-09-2016	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205284	08-09-2016	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205369A	20-08-2017	India	Maharashtra	No. 53, Tulsi Lake Road, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205535	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Isolated from Soil	Soil	BSI(WC) 205537	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range (South), SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205538	22-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205539	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205542	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205536A	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range (South), SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205365	19-08-2017	India	Maharashtra	Ramgad Plantation, Peripheral of Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205515	21-08-2017	India	Maharashtra	Vasai Creek, Peripheral to SGNP, Thane	Rashmi Dubey & Amit D. Pandey
32	*Aspergillus ochraceus* G. Wilh. 1877	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205536B	19-10-2018	India	Maharashtra	Tulsi lake, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
33	*Aspergillus parasiticus* Speare 1912	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205522C	20-08-2017	India	Maharashtra	Powai lake, Peripheral to SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
34	*Aspergillus pseudoelegans* Frisvad & Samson 2004	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205541	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
35	*Aspergillus* sp. 1	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205372A	07-09-2016	India	Maharashtra	On the way to Kanheri Caves, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
36	*Aspergillus* sp. 2	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205534	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
37	*Aspergillus* sp. 3	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205542	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
38	*Aspergillus* sp. 4	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205387A	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
39	*Aspergillus* sp. 5	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205511	23-12-2017	India	Maharashtra	Near Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
40	*Aspergillus* sp. 6	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205386A	20-12-2017	India	Maharashtra	Karnal Pada, Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar	Rashmi Dubey & Amit D. Pandey
41	*Aspergillus sydowii* (Bainer & Sartory) Thom & Church 1926	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205360A	21-08-2017	India	Maharashtra	Shingte Quarry, Peripheral of Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205516	10-09-2016	India	Maharashtra	Ghodbandar, Thane	Rashmi Dubey & Amit D. Pandey
42	*Aspergillus terreus* Thom 1918	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205520	26-01-2017	India	Maharashtra	Near Vihar lake (stangnant water), Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
42	*Aspergillus terreus* Thom 1918	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205517	20-08-2017	India	Maharashtra	Vihar lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205514	21-08-2017	India	Maharashtra	Chena Lake, Yeoor Range [South], Outside Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
43	*Aspergillus versicolor* (Vuill.) Tirab. 1908	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205506	20-08-2017	India	Maharashtra	Mori no 63, Tulsi Road, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
44	*Aspergillus westerdijkia* Frisvad & Samson 2004	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205370A	20-08-2017	India	Maharashtra	Near to Vihar lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205554	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
45	*Asterina woodfordiae* V.P. Sahni 1964'	Asterinaceae	*Woodfordia fruticosa* (L.) Kurz	Foliicolous	BSI(WC) 205489	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
46	*Asterina wrightii* Berk. & M.A. Curtis 1875	Asterinaceae	*Lagerstroemia* sp.	Foliicolous	BSI(WC) 205461	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
47	*Asterostomella* sp.	Asterinaceae	*Bauhinia tomentosa* L.	Foliicolous	BSI(WC) 205409	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
48	*Asterostomula* sp. 1	Asterinaceae	*Ficus hispida* L.f.	Foliicolous	BSI(WC) 205395	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
49	*Asterostomula* sp. 2	Asterinaceae	Unknown plant	Foliicolous	BSI(WC) 205410	24-10-2018	India	Maharashtra	Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
50	*Bagnisiella apiculospora* M.S. Patil & S.D. Patil 1985	Dothideaceae	Dead twig	Litter	BSI(WC) 210618	07-09-2016	India	Maharashtra	Kanheri caves, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
51	*Bahusandhika indica* (Subram.) Subram. 1956	Pezizomycotina	Dead twig	Litter	BSI(WC) 205590	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
52	*Bahusandhika intercalaris* (E.K. Cash & A.M.J. Watson) Subram. 1956	Pezizomycotina	Dead twig	Litter	BSI(WC) 205591	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
53	*Bahusandhika rhombica* (V. Rao & de Hoog) J.L. Crane & A.N. Mill. 2016	Pezizomycotina	Dead twig	Litter	BSI(WC) 210100	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
54	*Balladyna ugandensis* Syd. 1939	Parodiopsidaceae	*Combretum* sp.	Foliicolous	BSI(WC) 205371	23-01-2017	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
55	*Beltrania malaiensis* Wakef. 1931	Beltraniaceae	Unknown plant	Foliicolous	BSI(WC) 205360	23-01-2017	India	Maharashtra	Parimandal Road, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
56	*Beltrania mangiferae* Munjal & J.N. Kapoor 1963	Beltraniaceae	*Mangifera indica* L.	Foliicolous	BSI(WC) 205357	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
57	*Beltraniella spiralis* Piroz. & S.D. Patil 1966	Amphisphaeriaceae	Unknown plant	Foliicolous	BSI(WC) 205358	24-10-2018	India	Maharashtra	Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
58	*Berkleasmium abuense* Chouhan & Panwar 1981	Pleosporales	Dead stem	Litter	BSI(WC) 210603	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
59	*Botryosporium longibrachiatum* (Oudem.) Maire 1903	Pezizomycotina	fallen stem	Litter	BSI(WC) 210619	07-09-2016	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
60	*Brachysporiella gayana* Bat. 1952	Sordariales	Dead stem	Litter	BSI(WC) 209209	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Dead stem	Litter	BSI(WC) 209220	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
61	*Brevistachys globosa* L. Lombard & Crous 2016	Stachybotryaceae	Dead stem	Litter	BSI(WC) 209228	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Dry twig	Litter	BSI(WC) 205585	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead stem	Litter	BSI(WC) 210604	19-10-2018	India	Maharashtra	Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
62	*Brevistachys* sp.	Stachybotryaceae	Dead stem	Litter	BSI(WC) 209284	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
63	*Canalisporium nigrum* G.Z. Zhao 2012	Pezizomycotina	Dry twig litter	Litter	BSI(WC) 209283	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
64	*Catenularia cubensis* Hol.-Jech. 1982	Chaetosphaeriaceae	*Cocos nucifera* L.	Foliicolous	BSI(WC) 210636	21-12-2017	India	Maharashtra	Sasunavaghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
65	*Cephalotrichum microsporum* (Sacc.) P.M. Kirk 1984	Microascaceae	Fallen culms	Litter	BSI(WC) 210036	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
66	*Cercospora apii* Fresen. 1863	Mycosphaerellaceae	*Blumea* sp.	Foliicolous	BSI(WC) 205359	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
67	*Chaetomella acutiseta* B. Sutton & A.K. Sarbhoy 1976	Chaetomellaceae	Dead stem	Litter	BSI(WC) 209218	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
68	*Chaetomium globosum* Kunze 1817	Chaetomiaceae	Isolated from Soil	Soil	BSI(WC) 205373	21-08-2017	India	Maharashtra	Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
69	*Chaetomium globosum* Kunze 1817	Chaetomiaceae	Leaf Litter	Litter	BSI(WC) LL 1	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
70	*Chaetosphaeria innumera* Berk. & Broome ex Tul. & C. Tul. 1863	Chaetosphaeriaceae	Dry stem	Litter	BSI(WC) 209211	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
71	*Chaetosphaerulina bambusae* A. Pande & V.G. Rao 1997	Tubeufiaceae	Dead bamboo twigs	Litter	BSI(WC) 209205	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
72	*Cheiromycella* sp.	Pezizomycotina	Dry bark	Litter	BSI(WC) 209265	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
73	*Ciliochorella mangiferae* Syd. 1935	Pestalotiopsidaceae	*Ochrocarpos longifolius* Benth. & Hook.f. ex T. Anderson	Foliicolous	BSI(WC) 205367	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
74	*Circinotrichum olivaceum* (Speg.) Piroz. 1962	Xylariaceae	Dry bark	Litter	BSI(WC) 210006	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
75	*Cladosporium cladosporioides* (Fresen.) G.A. de Vries 1952	Cladosporiaceae	Dry bark	Litter	BSI(WC) 209253	20-12-2017	India	Maharashtra	Karnal Pada, Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205495	22-12-2017	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
76	*Cladosporium colocasiae* Sawada 1916	Cladosporiaceae	Dry bark	Litter	BSI(WC) 209271	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
77	*Cladosporium herbarum* (Pers.) Link 1816	Cladosporiaceae	*Nyctanthes arbor-tristis* L.	Foliicolous	BSI(WC) 210637	24-10-2018	India	Maharashtra	Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
78	*Colletotrichum acutatum* J.H. Simmonds 1968	Glomerellaceae	Dry twig	Litter	BSI(WC) 210009	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
79	*Colletotrichum dematium* (Pers.) Grove 1918	Glomerellaceae	*Elusine corocana* (L.) Gaertn.	Foliicolous	BSI(WC) 196371	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
80	*Colletotrichum gloeosporioides* (Penz.) Penz. & Sacc. 1884	Glomerellaceae	*Erythrina* sp.	Foliicolous	BSI(WC) 205364	21-12-2017	India	Maharashtra	Sasunavaghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
81	*Colletotrichum lindemuthianum* (Sacc. & Magnus) Briosi & Cavara 1889	Glomerellaceae	*Chromolaena odorata* L.	Foliicolous	BSI(WC) 210643	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
82	*Coniochaeta* sp.	Coniochaetaceae	Dead Wood	Litter	BSI(WC) 209222	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
83	*Coniothyrium eucalypticola* B. Sutton 1971	Coniothyriaceae	Dead twig	Litter	BSI(WC) 209245	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
84	*Coniothyrium* sp.	Coniothyriaceae	Dead twig	Litter	BSI(WC) 209231	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
85	*Corynespora cassiicola* (Berk. & M.A. Curtis) C.T. Wei 1950	Corynesporacaceae	Dead twig	Litter	BSI(WC) 205577	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead twig	Litter	BSI(WC) 205582	20-12-2017	India	Maharashtra	Karnal Pada, Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Leaf litter	Litter	BSI(WC) 210008	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Leaf litter	Litter	BSI(WC) 205588	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
86	*Corynespora masseeanum* (Teng) P.M. Kirk 2014	Corynesporascaceae	Unknown plant	Foliicolous	BSI(WC) 205478	21-12-2017	India	Maharashtra	Sasunavaghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
87	*Dendryphion vinosum* (Berk. & M.A. Curtis) S. Hughes 1958	Torulaceae	Stem litter	Litter	BSI(WC) 205361	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
88	*Diatrype americana* Ellis & Berl. 1902	Diatrypaceae	Dead Wood	Litter	BSI(WC) 209223	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
89	*Diatrype atlantica* Lar.N. Vassiljeva 2004	Diatrypaceae	Dry twig litter	Litter	BSI(WC) 209300	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
90	*Diatrype caryae* Lar.N. Vassiljeva & S.L. Stephenson 2009	Diatrypaceae	Dry twig litter	Litter	BSI(WC) 209206	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
91	*Diatrype enteroxantha* (Sacc.) Berl. 1902	Diatrypaceae	Bark litter	Litter	BSI(WC) 209117	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
92	*Diatrype lijiangensis* Thiyagaraja & Wanasinghe 2019	Diatrypaceae	Dead stem	Litter	BSI(WC) 209249	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
93	*Diatrype loranthi* Tend. 1971	Diatrypaceae	Dead twig	Litter	BSI(WC) 209238	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
94	*Diatrype macounii* Ellis & Everh. 1890	Diatrypaceae	Dead stem	Litter	BSI(WC) 209279	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Dry twig litter	Litter	BSI(WC) 209255	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
95	*Diatrype stigma* (Hoffm.) Fr. 1849	Diatrypaceae	Dead stem	Litter	BSI(WC) 209286	22-10-2018	India	Maharashtra	Yeoor Hills, Yeoor East, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
96	*Dichotomopilus pseudoerectus* X.Wei Wang & Samson 2016	Chaetomiaceae	Leaf litter	Litter	BSI(WC) 205443	26-01-2017	India	Maharashtra	Yeoor Hills, Yeoor East, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
97	*Dictyoarthrinium sacchari* (J.A. Stev.) Damon 1953	*Apiosporaceae*	Dried stem	Litter	BSI(WC) 209269	22-10-2018	India	Maharashtra	Yeoor Hills, Yeoor East, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dried stem	Litter	BSI(WC) 210620	19-10-2018	India	Maharashtra	Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
98	*Dictyocheirospora indica* (I.B. Prasher & R.K. Verma) J. Yang & K.D. Hyde 2018	Dictyosporiaceae	Dry twig litter	Litter	BSI(WC) 209293	22-10-2018	India	Maharashtra	Yeoor Hills, Yeoor East, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
99	*Dictyosporium cocophilum* Bat. 1951	Dictyosporiaceae	Dry twig litter	Litter	BSI(WC) 210621	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
100	*Dictyosporium elegans* Corda 1836	Dictyosporiaceae	Dead Bark litter	Litter	BSI(WC) 205362	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
101	*Dictyosporium heptasporum* (Garov.) Damon 1952	Dictyosporiaceae	*Livistona chinensis* (Jacq.) R.Br. ex Mart.	Foliicolous	BSI(WC) 209216	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
102	*Dictyosporium micronesicum* Matsush. 1981	Dictyosporiaceae	*Roystonea regia* (Kunth) O.F.Cook	Foliicolous	BSI(WC) 205363	17-12-2019	India	Maharashtra	Yeoor 111, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
103	*Didymobotryum rigidum* (Berk. & Broome) Sacc. 1886	Pezizomycotina	Twig litter	Litter	BSI(WC) 209297	21-08-2017	India	Maharashtra	Near Chena Lake, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
104	*Dinemasporium polygonum* Crous & Verkley 2012	Xylariomycetidae	Dry twig litter	Litter	BSI(WC) 209270	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
105	*Diplocladiella scalaroides* G. Arnaud ex M.B. Ellis 1976	Pezizomycotina	Dead Bark litter	Litter	BSI(WC) 210098	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
106	*Diplodia caffera* Matsush. 1996	Botryosphaeriaceae	Isolated from Soil	Soil	BSI(WC) 205534	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
107	*Ectophoma multirostrata* (P.N. Mathur, S.K. Menon & Thirum.) Valenz.-Lopez, Cano, Crous, Guarro & Stchigel 2017	Didymellaceae	*Calliandra haematocephala* Hassk.	Foliicolous	BSI(WC) 196373	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
108	*Ellisembia bambusicola* (M.B. Ellis) J. Mena & G. Delgado 2000	Pleosporomycetidae	Stem litter	Litter	BSI(WC) 210606	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			On stem litter	Litter	BSI(WC) 209251	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
109	*Ellisembia leptospora* (Sacc. & Roum.) W.P. Wu 2005	Sordariomycetes	Stem litter	Litter	BSI(WC) 209290	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
110	*Elotespora mumbaiensis* Rashmi Dubey 2021	Pezizomycotina	Dead Twig	Litter	BSI(WC) 209219	22-10-2018	India	Maharashtra	Yeoor Hills, Yeoor East, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead Twig litter	Litter	BSI(WC) 205597	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
111	*Emericella nidulans* (Eidam) Vuill. 1927	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205543	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
112	*Emericella rugulosa* (Thom & Raper) C.R. Benj. 1955	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205513	23-12-2017	India	Maharashtra	Upwan, Near boating lake, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205542	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205522B	19-10-2018	India	Maharashtra	Tulsi road, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205522B	19-10-2018	India	Maharashtra	Tulsi road, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205375A	21-08-2017	India	Maharashtra	Vasai (Creek) Bridge, Peripheral of Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
113	*Epicoccum nigrum* Link 1816	Didymellaceae	Branch litter	Litter	BSI(WC) 205378	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
114	*Ernakulamia cochinensis* (Subram.) Subram. 1996	Pezizomycotina	Dry bark litter	Litter	BSI(WC) 209289	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
115	*Ernakulamia* sp.	Pezizomycotina	Dry twig litter	Litter	BSI(WC) 209272	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
116	*Erysiphe tectonae* (E.S. Salmon) U. Braun & S. Takam 2000	Erysiphaceae	*Tectona grandis* L.f.	Foliicolous	BSI(WC) 205369	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
117	*Eurotium* sp. 1	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205377A	19-08-2017	India	Maharashtra	Upwan, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
118	*Eurotium* sp. 2	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205495	19-08-2017	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
119	*Exosporium gymnemae* P.N. Singh & S.K. Singh 2015	Pezizomycotina	Branch litter	Litter	BSI(WC) 205389	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
120	*Exserohilum elongatum* Hern-Restr. & Crous 2018	Pleosporaceae	Dead Bark litter	Litter	BSI(WC) 205577A	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
121	*Fracchiaea callista* (Berk. et M.A. Curtis) Sacc. 1882.	Nitschkiaceae	Stem litter	Litter	BSI(WC) 210607	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
122	*Fusarium concentricum* Nirenberg & O'Donnell 1998	Nectriaceae	Isolated from Soil	Soil	BSI(WC) 210066A	19-08-2017	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
123	*Fusarium proliferatum* (Matsush.) Nirenberg ex Gerlach & Nirenberg 1982	Nectriaceae	Leaf Litter	Litter	BSI(WC) LL 2	17-12-2019	India	Maharashtra	Yeoor 111, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
124	*Fusarium solani* (Mart.) Sacc. 1881	Nectriaceae	Isolated from Water	Water	BSI(WC) 205496B	20-12-2017	India	Maharashtra	Karnal Pada, North of Vasai Creek, Yeoor Range [North], SGNP, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
125	*Fusarium* sp.	Nectriaceae	Isolated from Soil	Soil	BSI(WC) 205543	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
126	*Fusicoccum* sp.	Botryosphaeriaceae	Unknown plant	Foliicolous	BSI(WC) 196373A	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
127	*Gyrothrix circinata* (Berk. & M.A. Curtis) S. Hughes 1968	Nectriaceae	Leaf Litter	Litter	BSI(WC) 210066	22-01-2017	India	Maharashtra	Tiger Reserve Areas, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
128	*Harpographium fasciculatum* (Sacc.) Sacc. 1880	Pezizomycotina	Leaf litter	Litter	BSI(WC) 205374	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
129	*Hermatomyces sphaericoides* Koukol & G. Delgado 2018	Hermatomycetaceae	Leaf litter	Litter	BSI(WC) LL 3	17-12-2019	India	Maharashtra	Yeoor 111, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
130	*Hermatomyces tucumanensis* Speg. 1911	Hermatomycetaceae	Leaf litter	Litter	BSI(WC) 210608	18-12-2019	India	Maharashtra	Yeoor 1136 & 1137, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
131	*Heteroconium tulsiense* Rashmi Dubey 2022	Antennulariellaceae	Dry twig litter	Litter	BSI(WC) 209274	22-01-2017	India	Maharashtra	Tiger Reserve Areas, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
132	*Hypoxylon chrysoconium* Berk. & Broome 1873	Xylariaceae	Dead wood	Litter	BSI(WC) 209213	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Dead wood	Litter	BSI(WC) 209241	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
133	*Hypoxylon investiens* (Schwein.) M.A. Curtis 1867	Xylariaceae	Dead Bark litter	Litter	BSI(WC) 209266	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
134	*Hypoxylon nummularium* Bull. 1790	Xylariaceae	Dead wood	Litter	BSI(WC) 209221	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
135	*Hypoxylon oodes* Berk. & Broome 1873	Xylariaceae	Dead wood	Litter	BSI(WC) 209225	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
136	*Hypoxylon rogersii* A. Pande 1979	Xylariaceae	Dead stem	Litter	BSI(WC) 209237	21-08-2017	India	Maharashtra	Chhena, Outside Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
137	*Hysterium angustatum* Alb. & Schwein. 1805	Hysteriaceae	Dead stem	Litter	BSI(WC) 209207	18-12-2019	India	Maharashtra	Yeoor 1136 & 1137, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
138	*Hysterium pulicare* Pers. 1794	Hysteriaceae	Dead stem	Litter	BSI(WC) 209257	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
139	*Hysterium tamarindi* Tilak & R. Rao 1966	Hysteriaceae	Dry bark litter	Litter	BSI(WC) 209281	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
140	*Janetia* sp.	Pezizomycotina	Dead twig litter	Litter	BSI(WC) 209230	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
141	*Janetia heterospora* Rashmi Dubey 2021	Pezizomycotina	Dead Wooden log	Litter	BSI(WC) 210615	19-10-2018	India	Maharashtra	Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
142	*Janetia indica* B.S. Reddy, V. Rao & Manohar. 2004	Pezizomycotina	Dry twig litter	Litter	BSI(WC) 205594	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dry wood	Litter	BSI(WC) 205596	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dry twig litter	Litter	BSI(WC) 209204	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Dry twig litter	Litter	BSI(WC) 209214	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Dry twig litter	Litter	BSI(WC) 209226	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Dead Wood	Litter	BSI(WC) 209235	20-12-2017	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Dry twig litter	Litter	BSI(WC) 209246	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead Wood	Litter	BSI(WC) 205595	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
143	*Junewangia globulosa* (Tóth) W.A. Baker & Morgan-Jones 2002	Pezizomycotina	Laef litter	Litter	BSI(WC) 205378A	22-01-2017	India	Maharashtra	Tiger Reserve Areas, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
144	*Kamalomyces bambusicola* Y.Z. Lu & K.D. Hyde 2017	Dothideomycetes	Dead bamboo stem	Litter	BSI(WC) 209256	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
145	*Kamalomyces indicus* R.K. Verma, N. Sharma & Soni 2008	Dothideomycetes	Stem litter	Litter	BSI(WC) 210622	19-10-2018	India	Maharashtra	Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
146	*Kirschsteiniothelia atra* (Corda) D. Hawksw. 2014	Dothideomycetes	Dead stem litter	Litter	BSI(WC) 205376	22-01-2017	India	Maharashtra	Tiger Reserve Areas, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
147	*Lacellina macrospora* M.B. Ellis 1957	Pezizomycotina	Leaf Litter	Litter	BSI(WC) 210007	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Leaf Litter	Litter	BSI(WC) 210003	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
148	*Lasiodiplodia mahajangana* Begoude, Jol. Roux & Slippers 2010	Botryosphaeriaceae	Leaf Litter	Litter	BSI(WC) 209203	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
149	*Lasiodiplodia theobromae* (Pat.) Griffon & Maubl. 1909	Botryosphaeriaceae	Dead wood	Litter	BSI(WC) 210623	23-12-2017	India	Maharashtra	Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
150	*Leptoxyphium glochidion* H. Yang & K.D. Hyde 2014	Capnodiaceae	*Wrightia tinctoria* R. Br.	Foliicolous	BSI(WC) 210644	21-12-2017	India	Maharashtra	Sasunavaghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
151	*Meliola agrostistachydis Hosag & Rajkumar 2005*	Meliolaceae	Unknown foliicolous plant	Foliicolous	BSI(WC) 209267	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
152	*Meliola allophyli-serrulati Hosag. & T.K. Abraham* 1998	Meliolaceae	Dry leaf twig litter	Litter	BSI(WC) 210645	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
153	*Meliola buteae* Hafiz Khan, Azmatullah & Kafi 1955	Meliolaceae	*Butea monosperma* (Lam.) Taub.	Foliicolous	BSI(WC) 196384	26-01-2017	India	Maharashtra	Shilonda Trail, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
154	*Meliola holarrhenae* Hansf. & Thirum. 1948	Meliolaceae	*Holarrhena pubescens* Wall. ex G. Don	Foliicolous	BSI(WC) 205370	07-09-2016	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
155	*Meliola holigarnae* F. Stevens 1928	Meliolaceae	*Holigarna* sp.	Foliicolous	BSI(WC) 201754	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
156	*Meliola hyptidis* Syd. & P. Syd. 1910	Meliolaceae	*Plectranthus* sp.	Foliicolous	BSI(WC) 196393	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
157	*Meliola ixorae* var. *macrospora* Hosag. 1990	Meliolaceae	*Ixora* sp.	Foliicolous	BSI(WC) 205375	22-01-2017	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
158	*Meliola mitragynae* Syd. & P. Syd. 1913	Meliolaceae	*Mitragyna parvifolia* (Roxb.) Korth.	Foliicolous	BSI(WC) 196410	23-12-2017	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
159	*Memnoniella echinata* (Rivolta) Galloway 1933	Stachybotryaceae	Leaf Litter	Litter	BSI(WC) 210609	21-12-2017	India	Maharashtra	Sasunavaghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205539	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range, SGNP, Thane	Rashmi Dubey & Amit D. Pandey
160	*Microxiphium doratopsis* (Speg.) Speg. 1918	Coccodiniaceae	*Terminalia chebula* Retz.	Foliicolous	BSI(WC) 210646	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
161	*Miyoshiella triseptata* (Shoemaker & G.P. White) Réblová 1999	Pleosporomycetidae	Dead stem litter	Litter	BSI(WC) 210624	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
162	*Monodictys castaneae* (Wallr.) S. Hughes 1958	Pezizomycotina	Dead stem litter	Litter	BSI(WC) 209240	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
163	*Monodictys cerebriformis* G.Z. Zhao & T.Y. Zhang 2004	Pezizomycotina	Dead stem litter	Litter	BSI(WC) 209276	21-08-2017	India	Maharashtra	Chhena, Outside Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead wood litter	Litter	BSI(WC) 209210	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Bark litter	Litter	BSI(WC) 209224	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dry twig litter	Litter	BSI(WC) 209280	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
164	*Monodictys melanocephaloides* Goh & K.D. Hyde 1999	Pezizomycotina	Dry twig litter	Litter	BSI(WC) 209247	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
165	*Monodictys nitens* (Schwein.) S. Hughes 1958	Pezizomycotina	Bark litter	Litter	BSI(WC) 209254	20-12-2017	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Dead wood litter	Litter	BSI(WC) 209236	20-12-2017	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Dead stem litter	Litter	BSI(WC) 209244	21-12-2017	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
166	*Monodictys paradoxa* (Corda) S. Hughes 1958	Pezizomycotina	Bark litter	Litter	BSI(WC) 209264A	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
167	*Monodictys putredinis* (Wallr.) S. Hughes 1958	Pezizomycotina	Fallen Twig litter	Litter	BSI(WC) 205592	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
168	*Moorella speciosa* P.Rag. Rao & D. Rao 1964	Pezizomycotina	Leaf litter	Litter	BSI(WC) 210610	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Leaf litter	Litter	BSI(WC) 210614	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Twig litter	Litter	BSI(WC) 210625	23-12-2017	India	Maharashtra	Krishnagiri upwan near boating area, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
169	*Mycoenterolobium borivaliense* Rashmi Dubey 2020	Pezizomycotina	Decaying bark	Litter	BSI(WC) 210626	07-09-2016	India	Maharashtra	Kanheri caves, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
170	*Natantiella ligneola* (Berk. & Broome) Réblová 2009	Boliniaceae	Leaf litter	Litter	BSI(WC) LL 4	22-01-2017	India	Maharashtra	Magar Dam, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
171	*Neoacanthostigma septoconstrictum* (Promp. & A.N. Mill.) Boonmee & K.D. Hyde 2014	Tubeufiaceae	Dead stem	Litter	BSI(WC) 209215	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
172	*Neopestalotiopsis eucalypticola Maharachch., K.D. Hyde & Crous 2014*	Pestalotiopsidaceae	Palm fruit	Litter	BSI(WC) 210611	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
173	*Paecilomyces* sp.	Aspergillaceae	Dry twig litter	Litter	BSI(WC) 209291	25-01-2017	India	Maharashtra	Yeoor Hills, Yeoor East, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
174	*Paradictyoarthrinium diffractum* Matsush. 1996	Paradictyoarthriniaceae	Dead stem litter	Litter	BSI(WC) 209278	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Dead stem litter	Litter	BSI(WC) 210004	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead stem litter	Litter	BSI(WC) 210613	24-10-2018	India	Maharashtra	Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead stem litter	Litter	BSI(WC) 210005	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead stem litter	Litter	BSI(WC) 209292	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead stem litter	Litter	BSI(WC) 209285	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead stem litter	Litter	BSI(WC) 210627	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
175	*Paradictyoarthrinium hydei* N.G. Liu & J.K. Liu 2018	Paradictyoarthriniaceae	Dead wood litter	Litter	BSI(WC) 209239	21-12-2017	India	Maharashtra	Sasunavaghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
176	*Penicillium chrysogenum* Thom 1910	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205535	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205536	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range SGNP, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Isolated from Soil	Soil	BSI(WC) 205536	21-10-2018	India	Maharashtra	Kavesar, Yeoor Range SGNP, Thane	Rashmi Dubey & Amit D. Pandey
177	*Penicillium citrinum* Thom 1910	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205384A	08-09-2016	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205515	21-08-2017	India	Maharashtra	Vasai Creek, Peripheral to Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
178	*Penicillium glabrum* (Wehmer) Westling 1911	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205498	21-12-2017	India	Maharashtra	Foothills at Sasunavghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
179	*Penicillium oxalicum* Currie & Thom. 1915	Aspergillaceae	Isolated from Water	Water	BSI(WC) 205500	20-12-2017	India	Maharashtra	Karnal Pada, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
180	*Penicillium* sp.	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205368	20-08-2017	India	Maharashtra	No. 37, Tulsi Lake Road, Tulsi Range	Rashmi Dubey & Amit D. Pandey
181	*Periconia britannica* M.B. Ellis 1976	Pleosporales	Dead stem litter	Litter	BSI(WC) 209227	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
182	*Periconia cambrensis E.W. Mason & M.B. Ellis* 1953	Pleosporales	Stem litter	Litter	BSI(WC) 210628	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
183	*Periconia jabalpurensis* D.P. Tiwari & P.D. Agrawal 1972	Pleosporales	Stem litter	Litter	BSI(WC) 205114	23-12-2017	India	Maharashtra	Near Dahisar river, Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
184	*Periconia lateralis* Ellis & Everh. 1886	Pleosporales	*Pongamia pinnata* (L.) Pierre	Foliicolous	BSI(WC) 209267A	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
185	*Phaeoisaria clavulata* (Grove) E.W. Mason & S. Hughes, 1953	Diatrypaceae	Dead twig litter	Litter	BSI(WC) 210629	24-10-2018	India	Maharashtra	Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
186	*Phaeoisaria clematidis* (Fuckel) S. Hughes 1958	Diatrypaceae	Dead twig litter	Litter	BSI(WC) 210010	07-09-2016	India	Maharashtra	Kanheri caves, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
187	*Pithomyces ellisii* V.G. Rao & Chary 1972	Didymellaceae	Dead twig litter	Litter	BSI(WC) 205379	08-09-2016	India	Maharashtra	Near to Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Dead twig litter	Litter	BSI(WC) 205387	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dead twig litter	Litter	BSI(WC) 209234	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
188	*Pithomyces pulvinatus* (Cooke & Massee) M.B. Ellis 1965	Didymellaceae	Dead twig litter	Litter	BSI(WC) 205584	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
189	*Pseudoacrodictys* sp.	Pezizomycotina	Dead stem litter	Litter	BSI(WC) 210616	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
190	*Pseudocercospora viticicola* (J.M. Yen & Lim) J.M. Yen 1980	Mycosphaerellaceae	*Woodfordia fructicosa* (Roxb.) Bedd.	Foliicolous	BSI(WC) 205372	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
191	*Pseudopithomyces maydicus* (Sacc.) Jun F. Li, Ariyaw. & K.D. Hyde 2015	Didymosphaeriaceae	Dead stem litter	Litter	BSI(WC) 210630	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
192	*Repetophragma calongei* J. Mena, Silvera & Gené 2009	Dothideomycetes	Dead stem litter	Litter	BSI(WC) 209215A	23-01-2017	India	Maharashtra	Vihar Ropvatika, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
193	*Rhexoacrodictys erecta* (Ellis & Everh.) W.A. Baker & Morgan-Jones 2002	Pezizomycotina	Dry twig litter	Litter	BSI(WC) 210041	24-10-2018	India	Maharashtra	Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
194	*Rhizopus* sp.	Rhizopodaceae	Isolated from Water	Water	BSI(WC) 205515	21-08-2017	India	Maharashtra	Vasai Creek, Peripheral to Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
195	*Rhizopus microsporus* Tiegh. 1875	Rhizopodaceae	Isolated from Soil	Soil	BSI(WC) 205515A	20-08-2017	India	Maharashtra	Vasai (Creek) Bridge, Peripheral of SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Leaf litter	Litter	BSI(WC) LL 5	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
196	*Rhizopus nigricans* Ehrenb. 1821	Rhizopodaceae	Isolated from Water	Water	BSI(WC) 205499	21-12-2017	India	Maharashtra	Sasunavaghar, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205367A	19-08-2017	India	Maharashtra	Outside Mahindra & Mahindra, Thakur Village, Peripheral of SGNP , Mumbai	Rashmi Dubey & Amit D. Pandey
197	*Rhytidhysteron thailandicum* Thambug. & K.D. Hyde 2016	Patellariaceae	Stem litter	Litter	BSI(WC) 209205A	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			wood	Litter	BSI(WC) 209250	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
198	*Sarcinella allophyli* Hosag. 2006	Englerulaceae	Dry leaf twig litter	Litter	BSI(WC) 210647	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
199	*Sarcinella loranthacearum* Hosag., Jac. Thomas & D.K. Agarwal 2011	Englerulaceae	Unknown plant	Foliicolous	BSI(WC) 205377	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
200	*Sordaria fimicola* (Roberge ex Desm.) Ces. & De Not. 1863	Sordariaceae	Dead stem litter	Litter	BSI(WC) 209275	22-01-2017	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Twig litter	Litter	BSI(WC) 209298	23-12-2017	India	Maharashtra	Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			wood	Litter	BSI(WC) 210097	08-09-2016	India	Maharashtra	Near to Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Stem litter	Litter	BSI(WC) 209282	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
201	*Sorocybe resinae* (Fr.) Fr. 1849	Amorphothecaceae	Dry twig litter	Litter	BSI(WC) 210002	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
202	*Spiropes capensis* (Thüm.) M.B. Ellis 1968	Pezizomycotina	Fallen leaf Litter	Litter	BSI(WC) 205382	07-09-2016	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
203	*Spiropes clavatus* (Ellis & G. Martin) M.B. Ellis 1968	Pezizomycotina	Fallen leaf Litter	Litter	BSI(WC) 205384	22-01-2017	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
204	*Spiropes guareicola* (F. Stevens) Cif. 1955	Pezizomycotina	Fallen leaf Litter	Litter	BSI(WC) 205386	22-01-2017	India	Maharashtra	Krishnagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
205	*Spiropes melanoplaca (Berk. & M.A. Curtis) M.B. Ellis 1968*	Pezizomycotina	Fallen leaf Litter	Litter	BSI(WC) 210632	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
206	*Sporidesmiella* sp.	Pleosporomycetidae	Dry twig litter	Litter	BSI(WC) 209243	10-09-2016	India	Maharashtra	Nagla Block, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
207	*Sporidesmium ehrenbergii* M.B. Ellis 1958	Pleosporomycetidae	Dry twig litter	Litter	BSI(WC) 205589	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
208	*Sporidesmium* sp.	Pleosporomycetidae	Dry twig litter	Litter	BSI(WC) 209219A	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
209	*Stachybotrys charatum* (Ehrenb.) S. Hughes 1958	Stachybotryaceae	Dry twig litter	Litter	BSI(WC) 205586	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
210	*Stachybotrys echinatus* (Rivolta) G. Sm. 1962	Hypocreales	Dry twig litter	Litter	BSI(WC) 210633	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
211	*Stachybotrys levisporus* (Subram.) Yong Wang bis, K.D. Hyde, McKenzie, Y.L. Jiang & D.W. Li 2015	Hypocreales	Dry twig litter	Litter	BSI(WC) 205590	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
212	*Stachybotrys* sp.	Stachybotryaceae	Dry twig litter	Litter	BSI(WC) 209229	23-12-2017	India	Maharashtra	Near to Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
213	*Stauronema sacchari* Syd., P. Syd. & E.J. Butler 1916	Pezizomycotina	Fallen leaf Litter	Litter	BSI(WC) 209270A	23-12-2017	India	Maharashtra	Near to Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
214	*Stigmina* sp.	Mycosphaerellaceae	Fallen leaf Litter	Litter	BSI(WC) 210634	23-01-2017	India	Maharashtra	Parimandal road, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
215	*Taeniolella breviuscula* (Berk. & M.A. Curtis) S. Hughes 1958	Mytilinidiaceae	Dry twig litter	Litter	BSI(WC) 210605	23-01-2017	India	Maharashtra	Parimandal road, Tulsi range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
216	*Talaromyces pinophilus* (Hedgc.) Samson, N. Yilmaz, Frisvad & Seifert 2011	Aspergillaceae	Isolated from Soil	Soil	BSI(WC) 205511	23-12-2017	India	Maharashtra	Near Tulsi lake, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
217	*Temerariomyces acutulus* B. Sutton 1993	Pezizomycotina	Leaf litter	Litter	BSI(WC) LL 6	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
218	*Tharoopama trina* Subram. 1956	Pezizomycotina	Fallen stem litter	Litter	BSI(WC) 209217	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
219	*Thielavia* sp.	Chaetomiaceae	Isolated from Soil	Soil	BSI(WC) 205386A	20-12-2017	India	Maharashtra	Karnal Pada, Sarjamori, North of Vasai Creek, Yeoor Range [North], SGNP, Palghar	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205522A	20-10-2018	India	Maharashtra	Near Tulsi lake, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
220	*Torula* sp.	Torulaceae	Dry twig litter	Litter	BSI(WC) 209259	20-12-2017	India	Maharashtra	Sarjamori, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
221	*Torula herbarum* (Pers.) Link 1809	Torulaceae	Dry twig litter	Litter	BSI(WC) 205578	21-10-2018	India	Maharashtra	Kavesar,Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dry twig litter	Litter	BSI(WC) 205581	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
			Dry twig litter	Litter	BSI(WC) 210612	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
222	*Trichocladium asperum* Harz 1871	Chaetomiaceae	Isolated from Soil	Soil	BSI(WC) 205543	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range, SGNP, Thane	Rashmi Dubey & Amit D. Pandey
223	*Trichoderma asperellum* Samuels, Lieckf. & Nirenberg 1999	Hypoceraceae	Isolated from Soil	Soil	BSI(WC) 205543	23-10-2018	India	Maharashtra	Pankhand, Ovale, Yeoor Range, SGNP, Thane	Rashmi Dubey & Amit D. Pandey
224	*Trichoderma harzianum* Rifai 1969	Hypoceraceae	Isolated from Soil	Soil	BSI(WC) 205511	23-12-2017	India	Maharashtra	Near Tulsi lake, Tulsi Range, SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205374A	21-08-2017	India	Maharashtra	Chena Lake, Yeoor Range, SGNP, Thane	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205387A	10-09-2016	India	Maharashtra	Nagla Block, Yeoor range, SGNP, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
			Isolated from Water	Water	BSI(WC) 205496B	20-12-2017	India	Maharashtra	Karnal Pada, North of Vasai Creek, Yeoor Range [North], SGNP, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205366	19-08-2017	India	Maharashtra	Plantation, Near Akurli, Peripheral of SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Soil	Soil	BSI(WC) 205361A	19-08-2017	India	Maharashtra	Keshav Nagar, Peripheral of SGNP, Mumbai	Rashmi Dubey & Amit D. Pandey
225	*Trichoderma* sp.	Hypocreaceae	Isolated from Water	Water	BSI(WC) 205510	23-12-2017	India	Maharashtra	Tulsi lake, Tulsi Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
			Isolated from Water	Water	BSI(WC) 205521	26-01-2017	India	Maharashtra	Lake in Krishanagiri Range, Sanjay Gandhi National Park, Mumbai	Rashmi Dubey & Amit D. Pandey
226	*Trichoderma viride* Pers. 1794	Hypocreaceae	Isolated from Water	Water	BSI(WC) 205497	20-12-2017	India	Maharashtra	Karnal Pada, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
227	*Volutina concentrica* Penz. and Sacc. 1902	Nectriaceae	Dead stem litter	Litter	BSI(WC) 209233	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
228	*Xenosporium indicum* Panwar, Purohit & Geholt 1973	Tubeufiaceae	Dry twig litter	Litter	BSI(WC) 209260	20-10-2018	India	Maharashtra	Panchpakhadi, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey
229	*Zygorhynchus* sp.	Mucoraceae	Isolated from Soil	Soil	BSI(WC) 205538	22-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], SGNP, Thane	Rashmi Dubey & Amit D. Pandey

Table 6 Continued.

Sr. No.	Fungus	Family	Host	Substrate Type	Collection Number	Date	Country	Province	Locality	Collected By
230	*Zygosporium gibbum* (Sacc., M. Rousseau & E. Bommer) S. Hughes 1958	Pezizomycotina	Bark litter	Litter	BSI(WC) 209254A	30-09-2018	India	Maharashtra	Sasunavaghar Foothills, Near Stream, North of Vasai Creek, Yeoor Range [North], Sanjay Gandhi National Park, Palghar Dist.	Rashmi Dubey & Amit D. Pandey
231	*Zygosporium masonii* S. Hughes 1951	Pezizomycotina	Dry leaf litter	Litter	BSI(WC) 210040	21-10-2018	India	Maharashtra	1140, Kavesar, Yeoor Range [South], Sanjay Gandhi National Park, Thane	Rashmi Dubey & Amit D. Pandey

Discussion

The present study provides an important contribution with regards to the structure of a microfungal component in the forests of Sanjay Gandhi National Park. This is one of the most important components of forest ecosystems since microfungi play a crucial role in the long-term dynamic stability of forest ecosystems as nutrient recyclers, mutualists and pathogens. To our knowledge, the present study is the first and most comprehensive work on the microfungal flora of the SGNP. This is in contrast to the aforementioned earlier studies, *viz.*, Deshmukh & Verekar (2014), Sharda et al. (2015) and Chahar & Belose (2018), which were limited in their scope with respect to the extent of geographical coverage of the national park and also in the extent of coverage of microfungal flora. In the present study, we also compare the microfungal flora of the national park with its 10% peripheral area. To maintain the taxonomic vigour, we also opted for scanning electron microscopy and molecular taxonomy for some selected species to confirm their identity.While most of the floristic works (both higher and lower plant groups) generally tend to be enumerative and descriptive, the present work is among the very few to also include a statistical analysis of microfungal diversity. This approach is consistent with the approach to microfungal diversity studies, such as the one previously done for the enumeration and analysis of foliicolous microfungal flora in the Konkan region of Maharashtra (Dubey & Pandey 2019). As detailed in the results, the study resulted in isolating a large number of fungal isolates from diverse substrates, such as litter, foliicolous, soil and water, leading to the publication of three new species while revealing several new records for India and the state of Maharashtra.

To analyze the differences in observed species richness, which is defined as the observed number of species at a given location, among ranges (or zones) of the study area, two OLS models were developed. Model 1, with the original functional form (equation 1) stated earlier, showed a highly statistically significant difference (p-value < 0.01 for F-test) in mean species count across the ranges (or zones). However, it was marred by violation of several OLS assumptions, *viz.*, non-normal and heteroskedastic residuals. The question then comes down to whether these violations are causing F-test in Model 1 to be statistically significant when it is actually not. As we have shown, Model 2 (which is the modification of Model 1 with the natural logarithm of species count as a dependent variable) essentially confirms the results of Model 1 without violating OLS assumptions. Similar insight was also obtained by Dubey & Pandey (2019) in their regression analysis of the difference in species richness across the districts of Konkan, Maharashtra, India.

There are several reasons for the observed violation of OLS assumptions in Model 1. To begin with, species count data was not normally distributed. There are several reasons. In nature, the distribution of species count is often not normal (or even roughly bell-shaped) as there is often the presence of some extremely large outliers and many small values relative to the mean. For instance, there is an unusually large observation (SpsCount =51) of Pankhand in Yeoor [South] Range, whereas most of the locations in the peripheral area have SpsCount=1. This can happen due to various reasons, such as habitat heterogeneity and ecological factors that make some places highly suitable for the growth of organisms (in this case, microfungi), while the opposite may be true for other places. In the case of microfungi at any given time, there are often areas in forests that have an unusually high number of infected plants (hence an unusually high number of microfungi). At the same time, there are other areas in forests with little or no infected plants, indicating a very small number of microfungi. Also, quite often, a lot of plant litter gets heavily spread in a relatively small area within a forest as a result of flow due to precipitation and altitudinal gradient. All these contribute to the observed non-normality of the species count variable. Heteroskedasticity is largely due to habitat heterogeneity.

Since the normal (or roughly bell-shaped) distribution of the dependent variable is usually the requirement for parametric analyses, a non-parametric approach (such as Kruskal-Wallis Test) becomes indispensable. The greatest advantages of this approach are that it tests medians, which are unaffected by outliers, and makes no assumptions about the underlying distribution. Kruskal-Wallis Test showed a highly statistically significant (p-value < 0.01) difference in median species count across the ranges (or zones). However, OLS Model 1 was retained due to its simplicity and

more importantly, because its result was in line with the result of the Kruskal-Wallis Test. The results of these two approaches suggest a few things. First, within the parametric framework in this study, violation of OLS assumptions in Model 1 was not strong enough to cause misleading results. Second, it is always imperative to analyze the results in a non-parametric paradigm and compare results, as a violation non-normal distribution of species count data combined with a violation of other CNLRM assumptions can easily lead to misleading conclusions. Third, when similar results are obtained (as in the case of OLS models 1 & 2), the model choice should not be solely based on some restricted criteria, such as lower AIC and (or) higher adjusted R^2 but also be dictated by functional simplicity and ease of interpretability.

Dissimilarity in species composition was measured by Jaccard Dissimilarity Index. High values of pairwise JDI (minimum 82.35%) with only one species common in all zones indicate highly dissimilar species composition among the zones within the study area. Thus, some estimated coefficients were statistically insignificant in Model 1; all the zones show high dissimilarity in species composition. Therefore, in drawing any conclusion about observed species richness of a particular region, regression/ Kruskal-Wallis test results should always be seen in conjunction with a measure of dissimilarity in species composition because it is possible that while there may not be a statistically significant difference in mean and (or) median species count across the ranges (or zones), there may be high dissimilarity in species composition between the ranges (or zones).

Coming to the diversity indices, the two indices provide conflicting results. Gini-Simpson's index (*1-D*) was found to be highest (=0.9582) for Yeoor [North] range, whereas Shannon's index (*H*) was found to be highest (=4.4118) for Yeoor [South] range. As mentioned earlier, bias is introduced in Simpson's index in the presence of unevenness as it is more heavily weighed on common species. Shannon's index, on the other hand, is free from such bias as it weighs both species, common as well as rare equally. This is actually the case here. Pielou's evenness index (*J′*) for Yeoor [South] (*J′* = 0.9539) is lower than that for Yeoor [North] (*J′* = 0.9917), making the former more uneven than the latter. Therefore, based on the value of the preferred measure of Shannon's Index, Yeoor [South] is most diverse. Yeoor [South] is also the most diverse in terms of species richness, having the highest number of species (=102). Another thing to note is that all the zones show a Gini-Simpson index value of above 0.9, virtually indistinguishable from each other (Table 5 and Fig. 5C). Similar is the case with Shannon's index, though somewhat better. However, when converted to the true diversity, i.e., the effective number of species (Table 5 and Fig. 5D), the difference is much more pronounced. For instance, Shannon's index for Yeoor [South] is about 9.05% higher than the Tulsi range but true diversity for Yeoor [South] is about 43.86% higher than the Tulsi range. The difference is much more dramatic between peripheral areas and Yeoor [South], Shannon's index for Yeoor [South] is about 62.29% higher than peripheral areas but true diversity for Yeoor [South] is about 446.67% higher than peripheral areas. It thus shows the importance of comparing true diversity, instead of a diversity index, when comparing different areas. Though a diversity index provides invaluable information for a given area, it may greatly blur the difference in diversity when comparing different areas. This is in agreement with Jost (2006).

Therefore, based on the enumeration of species, including new species and new records, results of statistical analysis of the difference in species richness, dissimilarity in species composition, diversity indices, and true diversity, it can be concluded that the study area exhibits an extremely rich diversity of microfungi.

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Accessibility of data

Fungal Specimens are deposited in the fungal herbarium of Botanical Survey of India, Western Regional Centre, Pune (BSI). The relevant data on which statistical analysis is based is given in Table 1.

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