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Study on tree inhabiting Mushrooms in Tirunelveli Corporation area, Tamil Nadu, India

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Abstract

The diverse array of fungi and their inherent beauty hold a significant position in the biological realm. Numerous research works have aimed to record the global fungal biodiversity. However, only a small portion of the total fungal diversity has been thoroughly reported, and mycologists are persistently uncovering the uncharted and concealed resources. Studies on macrofungi have attracted considerable interest from both scientists and the general public due to their crucial contributions to human welfare, the food industry, medicinal products, and biodegradation processes. The aim of the current research was to document the diversity of various macrofungal species in the Tirunelveli Corporation area of Tamil Nadu. Surveys were carried out during the rainy season from October 2023 to February 2024 across different sampling locations. The macrofungi were collected, identified, preserved, and all specimens were photographed. This study identified 32 mushroom species belonging to 19 families within the Tirunelveli Corporation area, with the majority classified under Polyporales, comprising 13 species, followed by Agaricales with 12 species. The findings of this study highlight the high species richness of the survey site.

Key words; Diversity, Fungi, Survey, Fruiting bodies, Wood

Introduction

Fungi are the second most diverse group of organisms on Earth after insects. They exhibit a wide range of shapes, colors, and lifestyles, thriving in all kinds of habitats, including extreme environments like Antarctica. Macrofungi have historically been regarded as a unique and complex group of organisms that was hard to study primarily due to the ephemeral nature of their basidiocarps, which appear sporadically. Out of an estimated 1.5 million species, around 1,40,000 could be classified as macrofungi, but only 10% (14,000) are currently identified. Karim *et al*. (2013) recorded about 69,000 fungi, including 46,124 from two major classes: Basidiomycetes and Ascomycetes. Around 7,000 species are known for their edibility, with more than 3,000 considered prime edible species, and 2,000 species suggested possessing medicinal properties. Macrofungi play significant roles in ecosystems

as mutualists, pathogens, decomposers, or saprotrophs. Their contributions to nutrient cycles and wood decay are essential for maintaining ecosystem health, making them important resources for conservation (Wu *et al*., 2019).

Numerous studies have been explored in India regarding mushroom diversity. It is estimated that India has around 27,000 species of fungi, with about 1,069 identified as edible. Globally, researchers estimated there are over 2,000 species of wild edible mushrooms, with India reporting around 283 of these (Choudhary *et al*., 2015). According to Panda *et al*. (2019), the total number of documented 1,200 mushroom species in India, with 300 to 315 categorized as edible. Meena *et al*. (2020) identified 60 genera of mushrooms from the orders Agaricales, Polyporales, and Russulales, totaling 132 species in India.

The global exploration of macrofungi is still insufficient. Researchers struggle to identify the different macrofungal species in ecosystems. This is due to challenges in classification, a shortage of skilled mycologists, and limited comprehensive long-term studies that have been published (Hyde *et al*., 2019; Khalid, 2021). This study aims to investigate the distribution and occurrence of macrofungal species on the Tirunelveli Corporation area, Tamil Nadu, India.

Material and Methods

Study area

Tirunelveli Municipal Corporation (TMC) is situated on the global map between the 08° 8' to 09° 23' latitude and 77° 09' to 77° 54' longitude. It spans an area of 108.65 square kilometers. The city is located 81 kilometers north of Kanyakumari and 712 kilometers south of Chennai. Established in 1994, the corporation includes Tirunelveli Municipality, Palayamkottai Municipality, Melapalayam Municipality, 15 village panchayats, and one Town Panchayat. The Corporation is organized into four zonal offices. The Tamirabarani River is the lifeblood of the city, providing the primary source of drinking water. Tirunelveli district is known for its rich plant diversity, hosting around 200 species of flowering plants. The area's natural barriers, diverse habitats, moderate rainfall and climate have contributed this distinct plant diversity.

Survey, collection, preservation and processing of macrofungi

Field trips were conducted in the region from October 2023 to February 2024 to survey the area. These trips occurred weekly at various locations. Fruiting bodies with stipes were carefully collected using a scraper, knife, or forceps. Each sample was preserved in a mixture of 15 ml alcohol, 25 ml formalin, and 100 ml distilled water, following to standard protocols. Photographs were taken in their natural habitats to aid accurate identification.

Details such as the location, date of collection, and the growth habit of each species were recorded in a field diary at the time of collection.

Identification of macrofungi

Specimens were identified based on relevant literature, including works by Alexopolous *et al*. (1996), Ellis and Ellis (1990), Jordan (1995), Moser (1983), and Phillips (1981). Their identified samples were verified using resources like mycokeys (www.mushroomexpert.com and www.mycokeys.com). The current names for each specimen were checked and updated at the Index Fungorum website (https://www.indexfungorum.org/Names/Names.asp).

Results and Discussion

Deadwood material, such as stumps, woods, stems, branches, and shallow dead roots beneath topsoil, was carefully inspected on both sides of the tracks and along the bound aries of water bodies. The deadwood was thoroughly examined for the presence of mushrooms. The identification of mushroom species was conducted by closely analyzing the fruiting bodies, considering factors such as color, shape, size, cap texture, and the presence or absence of gills, among other characteristics.

On the field collection, mushrooms were observed growing on litter, dirt, branches, main trunks, and stumps. Main trunk woods have the highest species richness of any substrate.

Mushrooms were observed thriving on the decayed wood of eight distinct tree species, along with some unidentified tree (UTS). The identified trees included *Ficus racemosa* (Moraceae), *Polyalthia longifolia* (Annonaceae), *Azadirachta indica* (Meliaceae), *Casurina equsitifolia* (Causurinaceae), *Albizzia lebekk* (Fabaceae), *Prosopis julifera* (Fabaceae), *Delonix regia* (Fabaceae) and *Peltophorum pterocarpum* (Fabaceae). *Trametes* was the most prevalent mushroom, reaching heights of up to 20 feet in the wood of Ficus racemosa, with approximately 47 clumps recorded. Additionally, three distinct species *Dacryopinax spathularia, Schizophyllum commune*, and *Xylaria longipes* were documented within a single *Polyalthia* wood. Furthermore, two species, *Mycena adscendens* and *Marasmius oreades*, were noted in a pile of dried brown outer fibrous coconut husk.

Diversity and distribution

The study identified 32 mushroom species belonging to 19 families within the Tirunelveli corporation area (Table: 1). The majority of these fungi were classified under the Polyporales with 13 species, followed by the Agaricales with 12 species (Fig: 1). The

Boletales, Dacrymycetales, Cantharellales, and Auriculariales each had only one species represented. An assessment of species abundance among the families revealed that the Polyporaceae was the most prevalent, comprising nine species, while the Xylariaceae, Mycenaceae, Meruliaceae, Fomitopsidaceae, and Agaricaceae each included two species, with the remaining families represented by single species. The earlier reports suggest that total macrofungal diversity of India is about 850 species (Kakati and Chutia, 2009).

Discussion

A total of 32 different species of deadwood fungi, distributed into 19 different families, were recorded in the study area. The majority of these species are belonging to the Polyporaceae family. Many previous studies proved that deadwood serves as a good substrate for fungal growth, providing a significant source of organic material, which encompasses simple sugars and complex biopolymers such as cellulose, hemicellulose, and lignin (Pastorelli *et al*., 2023).

The distribution, composition, abundance, and diversity of different mushroom species were affected by their particular local environments, the growth substrates (tree trunk, branch, fallen twigs), and the species of the host trees. This observation aligns with many prior studies that have demonstrated the distribution of wood-decaying mushroom species is contingent upon factors such as the species of tree, the age of the tree, the specific area of the deceased tree, and the type of forest. Among the 32 mushroom species identified in this research, *Trametes* and *Schizophyllum commune* were observed to be more prevalent than the others. The fruiting bodies of a few fungi such as *Coprinus comatus, Psilocybe cyanescens, Amanita vaginata, Mycena adscendens, M. filopes* and *Laccaria laccata* are short lived, they survive for 6 hours to 24 hours. The fruiting bodies of *Schizophyllum commune, Lentinus squarrosulus, Dacryopinax spathularia, Daedalea quercina, Pycnoporus cinnabarinus, Cerioporus squamosus, Xylaria longipes and Daedalea dickinsii* are reported for 4 – 6 days. The fruiting bodies of *Ganoderma applanatum* and *Trametes versicolor* are recorded in the host tree wood for more than a month. The fruiting bodies of *Cerioporus squamosus* (Fig.: 2h)**,** *Ganoderma applanatum* and *Trametes versicolor* are semicircular to fan-shaped brackets (Table: 2). Distinct gills are recorded for *Psilocybe cyanescens* (Fig.: 2g)*, Marasmius sullivantii, Lentinus squarrosulus, Laccaria laccata* (Fig.: 4g) and *Schizophyllum commune.* The fruiting body is corky in *Pycnoporus cinnabarinus* (Fig.: 3j)*, Daedalea dickinsii* (Fig.: 2f)*, D. quercina* (Fig.: 3a)*, Ganoderma applanatum* (Fig.: 3d)*,* and *Trametes versicolor* (Fig.: 3i)*.* The fruiting body is fleshy in *Mycena adscendens* (Fig.: 3h)*, M. filopes* (Fig.: 4b), *Gymnopilus penetrans* (Fig.: 3e)*, Lentinus squarrosulus* (Fig.: 3g)*, Coprinus comatus* (Fig.:

2k), *Psilocybe cyanescens*(Fig.: 2g), *Auricularia angiospermarum* (Fig.: 2e) and *Amanita vaginata* (Fig.: 2c). The fruiting body is papery in *Podoscypha petalodes, Pycnoporus sanguineus* (Fig.: 4d), *Cerioporus squamosus* and *Phlebia coccineofulva* (Fig.: 3j). The fruiting body is funnel shaped in *Picipes badius* (Fig.: 2a), *Podoscypha petalodes* (Fig.: 2b) and *Coniophora puteana* (Fig: 2l). The majority of the species are saprophytes and a few are parasites (*Cerioporus squamosus*).

The genus *Trametes* is widely distributed across the globe, successful in all major climatic zones (Olou *et al*., 2020). The differences in mushroom composition, diversity, and abundance observed in this study across various growth substrates can be contributed to several factors. The diversity of fungi is significantly affected by the quality of deadwood, which is influenced by the physicochemical properties associated with tree species and their stage of decay (Purahong *et al*., 2018; Yang *et al*., 2021). It is well-established that the characteristics of deadwood play a crucial role in the processes of colonization and growth (Yang *et al*., 2021). Different tree species yield wood that varies in dimensions, as well as in its physical and chemical properties. Deadwood can originate from either softwood or hardwood species and may consist of heartwood or sapwood. Variations in chemical composition, including lignin, secondary metabolites such as phenolics and tannins, nutritional content, and physical hardness, can be observed among different types of deadwood (Purahong et al., 2018; Jomura et al., 2029). The chemical and physical characteristics of wood can either help or obstruct fungal growth. Furthermore, a thick bark serves as both a structural and chemical barrier against fungal invasion, thereby influencing the rate of colonization and, in turn, the composition and abundance of fungal species (Yang *et al*., 2021).

Thirty two species of Mushrooms across 19 families that grow on trees were recorded from various wooden surfaces during the rainy seasons. Besides, the development of sporocarps was chiefly influenced by environmental conditions such as temperature, rainfall, and humidity. However, certain tree-associated mushrooms, including *Ganoderma applanatum*, were also observed during the summer months, with this species being firmly attached to the host trees. Current research indicates that the Polyporaceae family of macrofungi exhibits significant species richness. Additionally, the overall diversification of wood-dwelling macrofungi suggests that a few places in the study area maintain a distinctly clear and self-sustaining wild environment. More number of species recorded from the riverbank of Tamirabarani, school and college campuses and behind the Government office buildings. The undisturbed habitats demonstrated the highest species richness and diversity

of macrofungi. Numerous studies have indicated that the diversity and abundance of fungi inhabiting deadwood are influenced by microclimatic factors (such as temperature, light intensity, and humidity), which are also affected by vegetation cover and composition (Zabel and Morrell, 2020; Yang *et al*., 2021; Yerisetouw *et al*., 2023), as well as elevation (Purahong *et al*., 2018). These factors likely account for the variations in mushroom species richness, abundance, and diversity across different habitats.

Conclusion

A total of 32 (19 different families) diverse mushroom species were identified in the Tirunelveli Corporation area of Tamil Nadu. The majority of these species belong to the Polyporaceae family. *Trametes* and *Schizophyllum commune* were the most prevalent species, exhibiting specific habitat preferences. The distribution, composition, abundance, and diversity of the various mushroom species varied based on their local habitats, growth substrates (parts of trees), and the species of host trees. The highest species richness and abundance were observed in branches and main trunks, with the main trunk exhibiting the greatest species diversity. In summary, the different mushroom species demonstrated varying preferences for habitat, growth substrate, and tree species.

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Table 1: Diversity of wood fungi in Tirunelveli Corporation area

S.No	Name of Fungi	Class	Habitat	Family	Order
1.	*Amanita vaginata* (Bull.) Fr.	Agaricomycetes	Sticks, small stem	Amanitaceae	Agaricales
2.	*Cerioporus squamosus* (Huds.) Quel.	Agaricomycetes	Dead hardwood	Polyporaceae	Polyporales
3.	*Coniophora puteana* (Schmach.) P.Karst.	Agaricomycetes	Wood	Coniophoraceae	Boletales
4.	*Coprinopsis lagopus* (Fr.) Redhead, Vilgalys & Moncalvo.	Agaricomycetes	Vegetable refuse	Psathyrellaceae	Agaricales
5.	*Craterellus cornucopioides* (L.) Pers.	Agaricomycetes	Deadwood	Cantharellaceae	Cantharellales
6.	*Auricularia auricula Judae* (Bull.) Schrat.	Agaricomycetes	Deadwood	Auriculariaceae	Auriculariales
7.	*Dacryopinax spathularia* (Schwein.) G.W.Martin	Dacrymycetes	Decaying wood	Dacrymycetaceae	Dacrymycetales
8.	*Daedale quercina* (L.) Pers.	Agaricomycetes	Decaying wood	Fomitopsidaceae	Polyporales
9.	*Daedalea dickinsii* Yasuda	Agaricomycetes	Decaying hardwood	Agaricaceae	Agaricales

10.	*Daldinia concentric* (Bolton) Ces. & De Not.	Sordariomycetes	Hard wood	Xylariaceae	Xylariales
11.	*Erastia salmonicolor* (Berk& Broome) Burds.	Agaricomycetes	Tree	Polyporaceae	Polyporales
12.	*Ganoderma appalanatum* (Pers.) Pat.	Agaricomycetes	Fallen logs and stumps	Ganodermataceae	Polyporales
13.	*Gymnopilus penetrans* (Fr.) Murrill	Agaricomycetes	Hardwood]	Cortinariaceae	Agaricales
14.	*Gymnopus dichrous* (Berk. & M.A. Curtis)	Agaricomycetes	Cluster on sticks	Omphalotaceae	Agaricales
15.	*Laccaria laccata* (Scop.) Cooke.	Agaricomycetes	wood	Hydnangiaceae	Agaricales
16.	*Lentinus squarrosulus* Mont.,	Agaricomycetes	Decaying wood	Polyporaceae	Polyporales
17.	*Marasmius sullivantii* Mont.	Agaricomycetes	Hardwood	Marasmiaceae	Agaricales
18.	*Microporus xanthopus* (Fr.) Kuntze	Agaricomycetes	Decaying wood	Polyporaceae	Polyporales
19.	*Mycena adscendens (*Lasch) Mass Geest.	Agaricomycetes	Twigs, bark and wood	Mycenaceae	Agaricales
20.	*Mycena filopes* (Bull.Fr.) P. Kumm	Agaricomycetes	Leaves in damp places	Mycenaceae	Agaricales
21.	*Coprinus comatus* (Fr.) Kuhner	Agaricomycetes	Decaying tree stumps	Agaricaceae	Agaricales
22.	*Picipes badius* (Pers.) Zmitr. &Kovalenko	Agaricomycetes	Wood	Polyporaceae	Polyporales
23.	*Podoscypha petalodes* (Berk.) Pat.	Agaricomycetes	Deadwood	Meruliaceae	Polyporales
24.	*Psilocybe cyanescens* Wakefield	Agaricomycetes	Wood	Hymenogastraceae	Agaricales
25.	*Pycnoporus cinnabarinus* (Jacq.) P. Karst.	Agaricomycetes	Decaying deadwood	Polyporaceae	Polyporales
26.	*Pycnoporus sanguineus* (L.) Murrill	Agaricomycetes	Dead hardwood	Polyporaceae	Polyporales
27.	*Schizophyllum commune* Fr.	Agaricomycetes	Hardwood sticks	Schizophyllaceae	Agaricales
28.	*Steccherinum ochraceum* (Pers.) Gray	Agaricomycetes	Decaying wood	Steccherinaceae	Polyporales
29.	*Trametes lactinea* (Berk.) Sacc.	Agaricomycetes	Decaying wood	Polyporaceae	Polyporales
30.	*Trametes versicolor* (L.) Pilat	Agaricomycetes	Decaying wood	Polyporaceae	Polyporales
31.	*Tyromyces chioneus* (Fr.) P. Karst.	Agaricomycetes	Dead hardwood	Agaricaceae	Agaricales
32.	*Xylaria longipes* Nitscke	Sordariomycetes	Hard wood	Xylariaceae	Xylariales

Table 2: Characteristics of fruiting body of the wood fungi in Tirunelveli Corporation area

S.No	Name of Fungi	Common name	Description
1.	*Amanita vaginata*	Grisette	Caps grayish brown, initially egg shaped, and then expands to become flat. The central point of the cap with a

			small raised area. The pellicle is white.
2.	*Cerioporus squamosus*	Dryad's saddle	Yellow brown coloured pileus is semicircular, flattened, upper surface. Pores made up of tubes packed together closely.
3.	*Coniophora puteana*	Cellar fungus	The middle part of fruiting bodies is yellow, due to maturing spores; the border is white, thinly webby. With age, crinkles and warts appear on the surface.
4.	*Coprinopsis lagopus Saprophyte*	Harefoot mushroom	Short-lived fungus, the fruit bodies lasting only a few hours before dissolving into a black ink the shape of the cap becomes more conical or convex, and finally flattens out, with edges curved upward.
5.	*Craterellus cornucopioides*	Black trumpet	The fruiting body is shaped like a funnel expanded at the top, the stalk seamless with the cap, mature fruiting body is very dark (dark brown to black) and has the shape of a slightly wrinkled, narrow funnel with a hollow center.
6.	*Auricularia auricular*	Wood ear, jelly ear, Jew's ear	The outer surface of the lobed fruit body is tan-brown with a purple tinge. The inner surface is smooth.
7.	*Dacryopinax spathularia*	Orange Jelly Fungus	Individual fruit bodies have rounded stalks and flattened blade-like or fan-like upper portions. Gelatinous fruit bodies are yellow-orange.
8.	*Daedalea quercina*	Mazegill fungus	Cap is fan-shaped in outline; dry; smooth whitish when fresh, but grayish in mature. Pore surface maze-like, with thick walls
9.	*Daedalea dickinsii*	-	Basidiocarp sessile, annual to perennial, pileus dimidiate, applanate to triquetrous, margin usually dull; pilear surface pale ochraceous to pinkish buff, inner parts often brownish in old specimens, glabrous, smooth or with scattered nodulae or irregularly rough, concentrically sulcate or not, pores usually circular, partly elongated to daedaleoid, dissepiments thick and smooth; context tough corky, pinkish buff..
10.	*Daldinia concentric*	Cramp balls	Hemi-spherical, with a hard, friable, shiny black fruiting body
11.	*Erastia salmonicolor*	-	Annual, margin more or less watery white to pale pinkish brown, fimbriate at extreme edge, within cottony or appearing waxy, wide; pore surface orange, drying pale pinkish brown or older tubes usually darkening to blood red, glancing, pores round to angular, 3-5 per mm, edges rather narrow.
12.	*Fibroporia radiculosa*	Brown-rot fungus	Brown rot fungus that causes decay in roots and butts of living trees. It produces conks that are resupinate to effused-reflexed, with a grayish-brown to brown pore surface and a white to cream-colored margin.
13.	*Ganoderma applanatum*	Artist's conk	Fruiting body is thick, hard as leather, woody-textured, and inedible bruising yellow to brownish, becoming dark brown in age. Upper surface of the fruiting body is covered with reddish brown conidia

14.	*Gymnopilus penetrans*	Common Rustgill	The cap of is smooth to slightly scaly and brownish orange-yellow to reddish yellow The veil is whitish to pale yellowish Starting convex but soon flattening with an uneven edge
15.	*Gymnopus dichrous*	-	Cap is red-brown to brown, wrinkled, lined in maturity. Gills are whitish, and attached becoming pinkish in age
16.	*Laccaria laccata*	Deceiver	Cap is initially convex and become almost flat-topped at maturity. The irregular gills are widely spaced. The broad, deep gills are widely spaced and interspersed with shorter gills
17.	*Lentinus squarrosulus*	White shitake	Pileus convex when young with depressed center, umbilicate to deeply infundibuliform at maturity, tough, coriaceous on drying; Stipe central or eccentric, concolorous with the pileus, fleshy, tough, cylindrical to slightly tapering downwards.
18.	*Marasmius sullivantii*	-	Cap convex, becoming flat; not pleated; bald; becoming faintly lined at the margin; dry; reddish orange or rust-colored. Gills white or with the edges faintly pinkish at first
19.	*Microporus xanthopus*	Yellow-footed Polypore	Paper-thin polypore is recognized by its funnel shape and yellow 'foot' (basal disc) attaching the central yellow stem to the substrate. The smooth shiny cap patterned in concentric zones of brown, yellow and black with a pale yellow margin. Minute pale pores extend down the stem.
20.	*Mycena adscendens*	Frosty bonnet	The cap is white and small. It is hood shaped, but flattens with maturity. The gills are free or attached to the stem by a line; they are broad, distantly-spaced
21.	*Mycena filopes*	Iodine Bonnet	*Pileus* conical to campanulate, finely innate-fibrillose, with the fibrils gradually splitting, very pale to almost white, greyish at the centre darker, paler to almost whitish towards the margin. Lamellae ascending, narrowly adnate, rarely decurrent with a small tooth, whitish to pale grey or with a brownish tinge, as a rule not turning pinkish. *Stipe* hollow, equal, straight or somewhat curved, terete, fairly firm, at first entirely pruinose or minutely puberulous, glabrescent for the greater part, pale to fairly dark grey-brown, paler to almost white at the apex, the base covered with long, coarse, flexuous, whitish fibrils.
22.	*Picipes badius*	Black-footed polypore or black-leg	Fruiting body upright, growing solitary or in groups, convex, then become flat or funnel-shaped in maturity, upper cap surface is smooth and glossy, but develops radial wrinkles as it ages. The color of the cap is brown, often darker in the center and lighter-colored at the margins. Pores are round and with decurrent tubes
23.	*Podoscypha petalodes*	Wine Glass Fungus	Rosette shaped fruiting body light brown to orange brown in color with concentric zones. Present in Gregarious form, Margin smooth and wavy, 1–1.9 cm long stipe.

24.	*Psilocybe cyanescens*	Wavy caps	A viscid, peelable, caramel-brown cap that fades as it dries, and usually becomes wavy as it expands, blueing of the flesh and stem, fleeting veil, cap obtusely conic to conic-convex at first, soon broadly convex, then flat with an undulating or wavy margin; *Gills:* adnate to subdecurrent, yellowish brown or orangish brown
25.	*Pycnoporus cinnabarinus*	Cinnabar polypore	Fruiting body sessile, habitat solitary to gregarious, of consistency coriaceous to corky. Pileus is dimidiate or elongated, of orange ocher color to pale orange. The color is intense when the specimen is growing, mature or dry specimens are pale. Pileus smooth or warty,
26.	*Pycnoporus sanguineus*	Tropical Cinnabar Bracket	The whole fruiting body is bright orange; pileus shortly and sessile or sometimes overlapping, solitary to gregarious habitat, leathery, coriaceous to corky consistency, Semicircular pileus of dimidiate, flabelliforme, bright orange red when young and only reddish orange when ripe, velutinous surface to glabrous, zoned; acute margin, from smooth to wavy thin, sterile
27.	*Schizophyllum commune*	Split-gill mushroom	The caps are white or grayish hairs. They grow in shelf-like arrangements, without stalks. The gills, which produce basidiospores on their surface, split when the mushroom dries out,
28.	*Steccherinum ochraceum*	Ochre spreading tooth	Young and pale; with age the central part of the fruiting body usually turns more intensely ochre. Upper surface grooved and hairy to velvety; with more or less concentric zones of color and texture; grayish to brownish or whitish; margin white
29.	*Trametes lactinea*	Latte bracket	Basidiome: annual, solitary, imbricate, sessile, applanate, semicircular, 4060 x 25 42 x 10mm (at the base), 2-5mm (at the margin), corky to woody hard when dry. Pileus: off-white to cream when fresh, soft to velvetty to touch, with age become warted or with irregular outgrowth specially near the base, azonate, sometime very slightly concentrically sulcate and zone near the margin. Margin entire to weakly lobed, obtuse and relatively thick, concolorous with the pileus.
30.	*Trametes versicolor*	Turkey tail	Cap shows typical concentric zones of different colors, and the margin is always the lightest. Underneath a layer of tomentum is a black layer, topping the whitish flesh. The mushroom is stalkless and the cap is rust-brown or darker brown, sometimes with black zones. The cap is flat, up to 8 × 5 × 0.5–1 cm in area. It is often triangular or round, with zones of fine hairs. The pore surface is whitish to light brown, with pores round and with age twisted and labyrinthine. 3–8 pores per millimeter.
31.	*Tyromyces chioneus*	White cheese	The fruit bodies are semicircular to fan-shaped brackets Cap: Up to 12 cm across and 8 cm deep; convex;

		polypore	semicircular to kidney-shaped; very finely velvety at first, becoming bald and, in old age, developing a crusty surface that becomes wrinkled or shriveled; pore Whitish
32.	*Xylaria longipes*	Dead moll's fingers	Club-shaped fruit body younger specimens fairly gray or fairly brown, but they darken with age, becoming black. Surface often becoming cracked and scaly with maturity

Fig 1: Diversity of wood inhabiting fungi

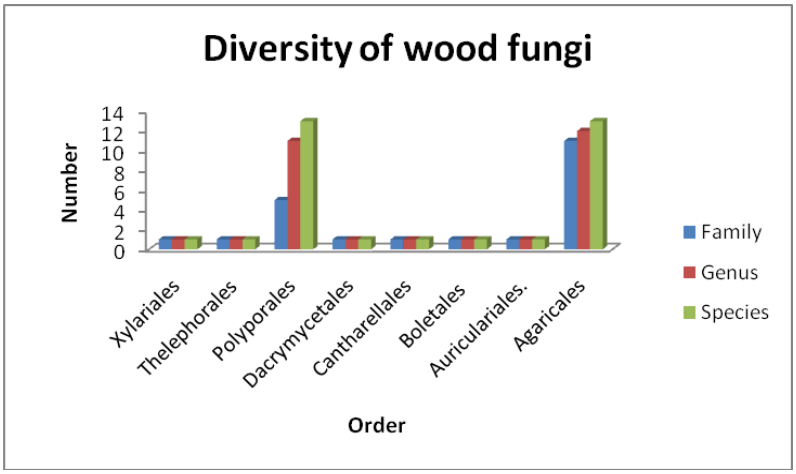


Fig 2: Diversity of fungus at Tirunelveli Corporation area

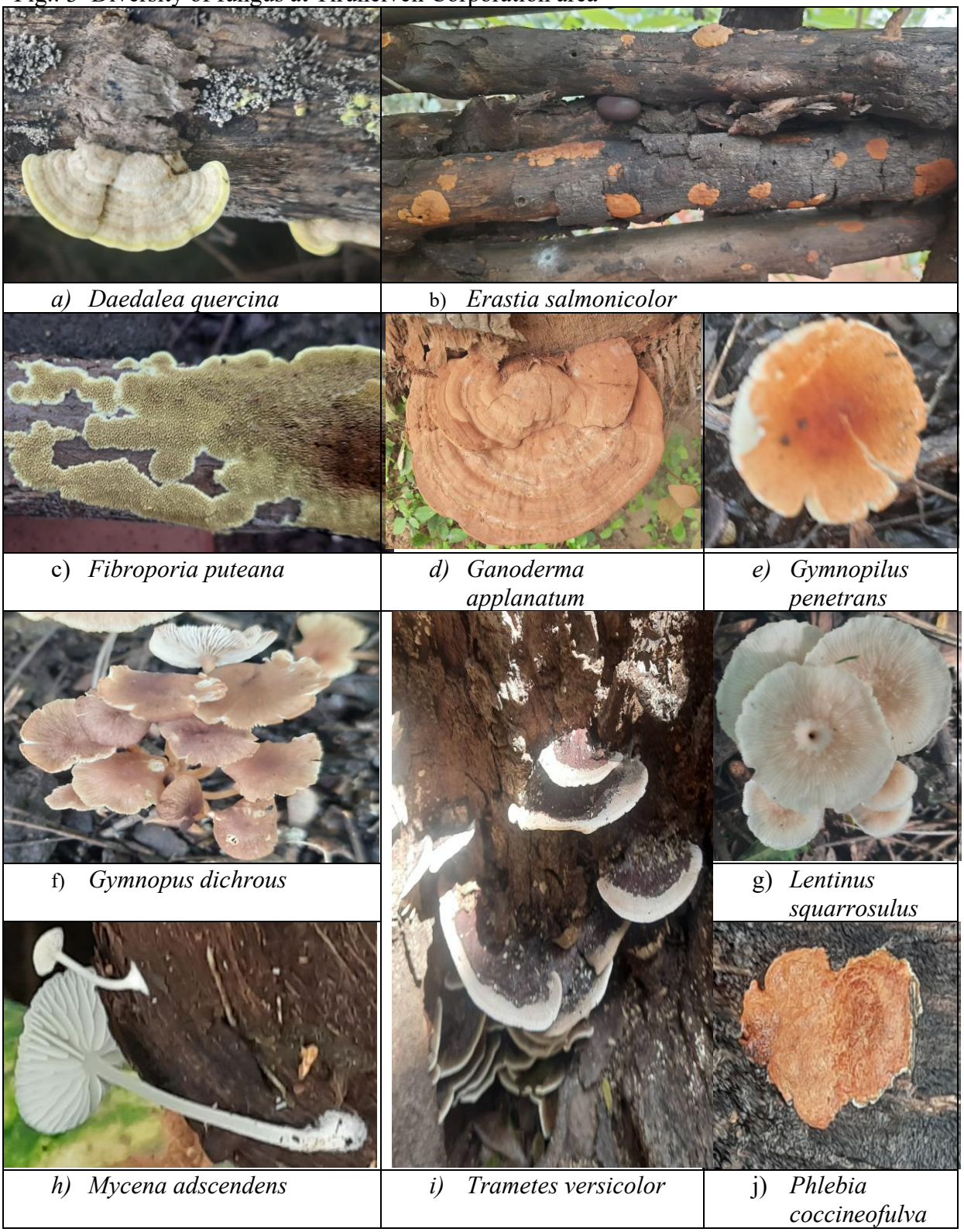
a) *Picipes badius* | b) *Podoscypha petalodes* | c) *Amanita vaginata*

d) *Xylaria longipes* | e) *Auricularia angiospermarum* | *f) Daedalea dickinsii*

g) Psilocybe cyanescens | *h) Cerioporus squamosus* | *i) Coniophora puteana*

j) Pycnoporus cinnabarinus | *k) Coprinus comatus* | *l) Coniophora puteana*

Fig.: 3 Diversity of fungus at Tirunelveli Corporation area



a) *Daedalea quercina*

b) *Erastia salmonicolor*

c) *Fibroporia puteana*

d) *Ganoderma applanatum*

e) *Gymnopilus penetrans*

f) *Gymnopus dichrous*

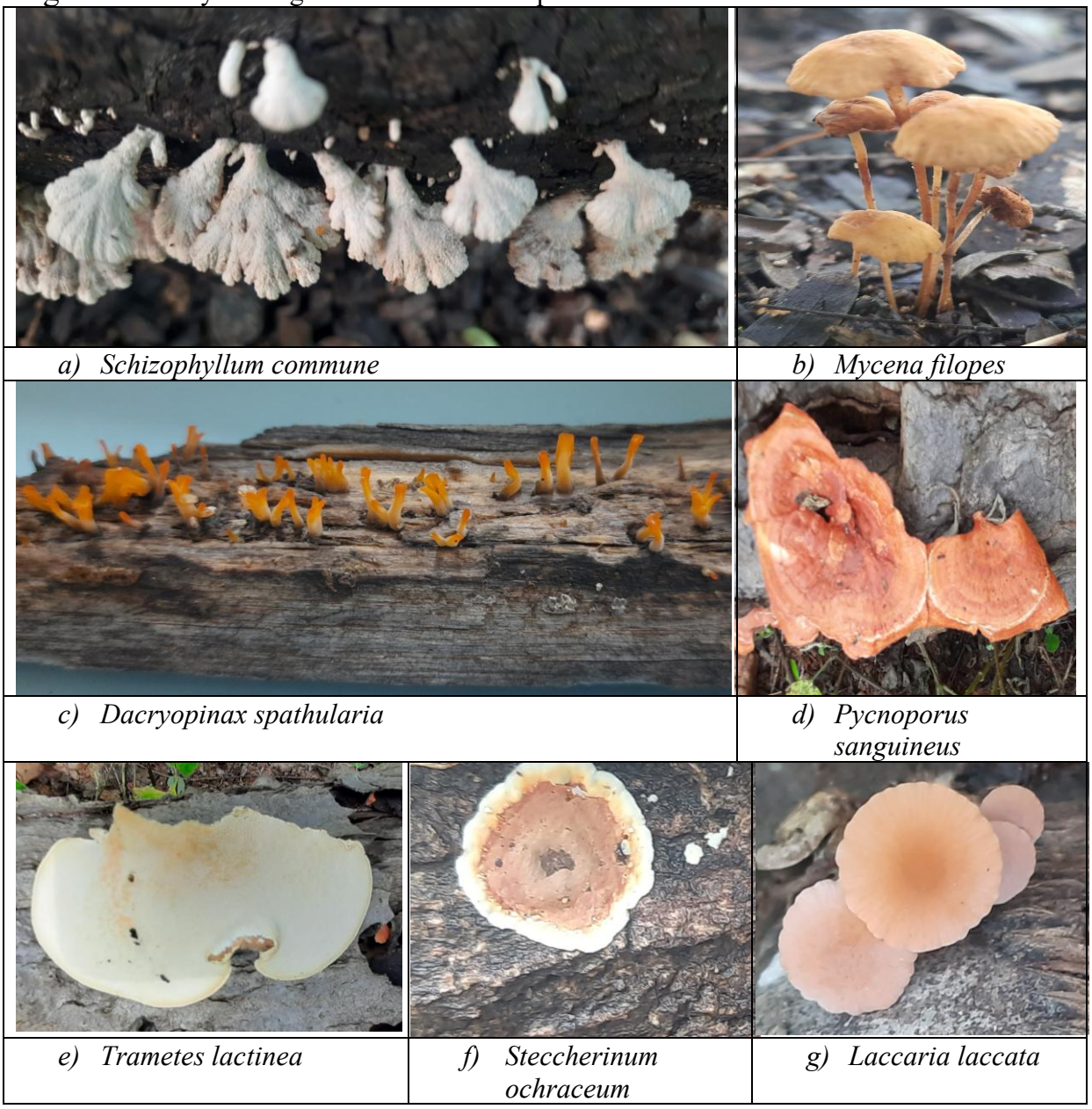
g) *Lentinus squarrosulus*

h) *Mycena adscendens*

i) *Trametes versicolor*

j) *Phlebia coccineofulva*

Fig.: 4 Diversity of fungus at Tirunelveli Corporation area



a) *Schizophyllum commune* b) *Mycena filopes*

c) *Dacryopinax spathularia* d) *Pycnoporus sanguineus*

e) *Trametes lactinea* f) *Steccherinum ochraceum* g) *Laccaria laccata*

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