

On the Diversity and Taxonomic Evaluation of Wood-Decaying Fungi from Ajanta Forest Caves, Maharashtra, India

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ABSTRACT

An the present investigation, 89 specimens of wood-decaying fungi were collected between the viewpoint and Ajanta cave of the famous ecotourist spot of Ajanta forest, research was carried out during year 2014 to 2021. Specimens were identified according to macroscopic characteristics on site and also in microscopic details in the laboratory. As far as we know we are reporting for the first time the diversity of wood-decaying fungi from Ajanta Forest, which consists of 28 genera and 39 species. Among these 35 species were annual and 4 species were perennial. Most dominating to rarely observed genus were *Trametes* Fr (5 species) followed by *Leucocoprinus* Pat (3 species), *Auricularia* Bull (2 species), *Favolus* Fr (2 species), *Hypoxyylon* Bull (2 species), *Lentinus* Fr (2 species), *Phellinus* Quéf (2 species), whereas *Cellulariella* Zmitr. & Malysheva, *Cerrena* S.F. Gray, *Daedaleopsis* Schroet, *Daldinia* Ces. & de Not, *Duportella* Pat, *Earliella* Murrill, *Flavodon* Ryvardeen, *Funalia* Pat *Ganoderma* P. Karst, *Hexagonia* Pollini, *Lopharia* Kalchbr. & MacOwan, *Phanerochaete* P. Karst, *Phlebiopsis* Julich, *Phylloporia* Murrill, *Pleurotus* (Fr.) P. Kumm, *Pseudofavolus* Pat, *Pycnoporus* P. Karst, *Scytinostroma* Donk, *Schizophyllum* Rr, *Truncospora* Pilát, and *Xylaria* Hill ex Schrank represent single genera.

KEY WORDS: AJANTA CAVE, MACROSCOPIC, MICROSCOPIC, SPECIMENS,

INTRODUCTION

Ajanta forest is located in Sillod and Soygaon Tehsil Area of Aurangabad district in Maharashtra, India. The world famous Ajanta cave is situated at 20° 33' 8.56" N 75° 42' 1.57" E. Specimens were collected in between Ajanta caves and upper view point of Ajanta forest. Basidiocarp of macro-fungi are formed only when ecological conditions are favorable, but their mycelia exist on humus, plant litter, and decaying wood for a long period. Macro-fungi fruiting on woody substratum are usually saprobes or pathogens causing root rot, butt rot, heart rot, and decay of wood, branches, and twigs. Studies of Wood-decaying fungi were initiated with the launch of studies in Indian fungi. The first Indian record of Wood-decaying fungi could be traced back to work (Klotzsch, 1832) in his paper Indian Polyporaceae. Later few Indian Polypores described by (Berkeley, 1839).

Bose was the first Indian mycologist to provide comprehensive account on wood-decaying fungi from Bengal (Bose, 1919a,b,c, and 1927a,b,c). He took special efforts to publish a book entitled "Genera of Indian Polypores" in which he

was the first to describe the diversity and taxonomy of Indian Polypores (Sharma, 2000). Checklist of 256 species of Aphyllophorales fungi from Western-ghats of Maharashtra state have included 170 species from 10 poroid families and 86 species from 20 non-poroid families (Ranadive et. al 2011). 10 Genera and 13 species of gilled fungi collected from Pune and Western Ghats of Mahabaleshwar and Mulshi have also been described by Senthilarasu (2014). Similarly, 27 genera and 23 species of wood-rotting fungi from Asti-1 have been described by Mali, (2015). India represents about 20 species under genus *Trametes* from that, 5 species have been reported from Nanded and Parbhani Districts of Marathwada region of Maharashtra (Mali, 2016). 22 genera and 27 species of wood-decaying fungi have also been reported from Soygaon, District Aurangabad India, recently by Gore and Mali, (2023). As far as we know we are reporting for the first time the diversity of wood-decaying fungi from Ajanta Forest are 3a caves, Aurangabad, India, which consists of 28 genera and 39 species. Among these 35 species are annual and 4 species are perennial.

MATERIAL AND METHODS

Wood-decaying fungi were collected 15 to 20 days after heavy rainfall month of July to November from year 2014-

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2021 from various region of Ajanta forest near Ajanta cave. The Basidiocarp of fungi is first photographed at the site then noted down morphological features by using a hand lens (20 X) dimension, color, shape, consistency, upper sterile surface, lower fertile surface, margin, context, tubes, and pores per mm in the field book and then specimens are dried naturally under sun light or using 200 watt bulb maintaining temperature 40-55°C. Microscopic observations were done by taking free hand thin section cutting of Basidiocarp with the help of sharp razor blades, stained and studied in 10% KOH, Lactophenol, and Melzer's reagent under 40X and 100X Magnification (Olympus CX 41) in laboratory. Then specimens of macro-fungi were kept in brown paper packets as per international mycological herbarium guidelines according to date of collection, locality, host name, altitude, latitude, longitude, and classification of species. Naphthalene balls were placed in each herbarium packet to avoid insect attack.

RESULTS AND DISCUSSION

28 genera and 39 species of wood decaying fungi were identified according to morphological and microscopic character from collected 89 specimen are as follow (Table-1 and Photo plate-1).

***Auricularia mesenterica* (Dicks.) Pers:** Basidiocarp annual, resupinate to pileate, 0.7–27.2 × 0.5–10.1 cm, up to 0.3 cm thick, moist dependent, bracketed, soft jelly like. Pileus 0.5–3.4 × 0.3–0.5 cm, up to 0.3 cm thick, ear like, hairy, forming greyish white to brownish black. Lower fertile surface smooth to slightly wrinkled, purplish brown to coffee brown. Context very thin, jelly like when fresh. Hyphal system monomitic, generative hyphae 3–6 µm wide. Spores 8–13 × 5.5–6.5 µm, ovoid to reniform.

***Auricularia nigricans* (Sw.) Birkebak, Looney & Sánchez-García:** Basidiocarp annual, pileate, moist dependent, soft jelly like. Pileus 0.9–3.8 × 0.5–2.7 cm, up to 0.4 cm thick, ear like, attached with the help of short stalk like apparatus narrowly attached, velvety hairy, tuft of hairs forming greyish white to almost brownish black. Lower fertile surface smooth, purplish brown to coffee brown. Context jelly like when fresh, homogeneous. Hyphal system monomitic, generative hyphae 3–5 µm wide. Spores 14–16.5 × 5.5–7.5 µm, allantoid.

***Cellulariella acuta* (Berk.) Zmitr. & Malysheva:** Basidiocarp annual, pileate, sessile. Pileus 8.9–15.4 × 5.1–8.4 × 0.7–2.6 cm thick near base, semicircular. Upper surface sterile, concentrically zonate, sulcate, yellowish white to dark blonde. Lower fertile surface poroid to maize like 1–4 mm wide pores, yellowish white to pale yellow. Context up to 0.8 cm wide. Tubes up to 1.8 cm wide. Hyphal system trimitic, generative hyphae 2–3 µm wide, skeletal hyphae up to 3.5–6.5 µm wide, binding hyphae 2.5–4 µm wide. Spores 5.5–7 × 2–3 µm, cylindrical.

***Cerrena caperata* (Berk.) Zmitr:** Basidiocarp annual, pileate, sessile. Pileus 1.3–4.2 × 1–2.4 × 0.2–0.4 cm, appanate, dimidiate. Upper sterile surface, tomentose, chocolate brown to grayish brown. Lower fertile surface

poroid, 3–5 per mm, round to angular, cinnamon to deep chocolate-brown. Context 0.1–0.2 cm thick. Tubes 0.1–0.2 cm long, cinnamon brown. Hyphal system trimitic, generative hyphae 1–2 µm wide, skeletal hyphae 3–5 µm wide, binding hyphae 2–4 µm wide, Spores 6.5–9 × 2–3.5 µm, cylindrical.

***Daldinia concentrica* (Bolton) Ces. & De Not:** Basidiocarp annual, globose, 1.6–3.8 × 1.5–3.3 × 1.1–2.4 cm, hemispherical, hard when fresh, brittle to charcoal like on drying, purple brown to brownish black. Fertile surface smooth, glabrous, composed of single layer spore bearing flask like organ, perithecial 1–2 mm wide, tubular to lanceolate, slightly papillate ostioles. Context composed of alternating zonation and each zone represent seasonal growth. Perithecia 800–1100 × 300–500 µm, lanceolate, small, crowded in a single layer beneath the thin crust. Asci 200–260 × 7–12 µm, cylindrical, 8-spored. Spore 12–17 × 5–7 µm, elliptic-fusiform.

***Daedaleopsis confragosa* (Bolt : Fr.) Schroet:** Basidiocarp annual, pileate, sessile, dimidiate. Pileus 12.3–17.4 × 8.1–10.3 cm, up to 2.7 cm thick near base, semicircular, appanate, azonate to concentrically zonate, sulcate, yellowish white to dark blonde. Lower fertile surface poroid, lamellate to maize like up to 1mm wide pores, pastel yellow to buff. Context up to 2 cm wide. Tubes up to 0.7 cm wide. Hyphal system trimitic, generative hyphae 2–4.5 µm wide, skeletal hyphae up to 4–6 µm wide, binding hyphae 3–4 µm wide. Spores 9–11 × 2–3 µm, cylindrical.

***Cerrena caperata* (Berk.) Zmitr:** Basidiocarp annual, pileate, sessile. Pileus 1.3–4.2 × 1–2.4 × 0.2–0.4 cm, appanate, dimidiate. Upper sterile surface, tomentose, chocolate brown to grayish brown. Lower fertile surface poroid, 3–5 per mm, round to angular, cinnamon to deep chocolate-brown. Context 0.1–0.2 cm thick. Tubes 0.1–0.2 cm long, cinnamon brown. Hyphal system trimitic, generative hyphae 1–2 µm wide, skeletal hyphae 3–5 µm wide, binding hyphae 2–4 µm wide, Spores 6.5–9 × 2–3.5 µm, cylindrical.

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***Daedaleopsis confragosa* (Bolt : Fr.) Schroet:** Basidiocarp annual, pileate, sessile, dimidiate. Pileus 12.3–17.4 × 8.1–10.3 cm, up to 2.7 cm thick near base, semicircular, appanate, azonate to concentrically zonate, sulcate, yellowish white to dark blonde. Lower fertile surface poroid, lamellate to maize like up to 1mm wide pores, pastel yellow to buff. Context up to 2 cm wide. Tubes up to 0.7 cm

wide. Hyphal system trimitic, generative hyphae 2–4.5 μm wide, skeletal hyphae up to 4–6 μm wide, binding hyphae 3–4 μm wide. Spores 9–11 \times 2–3 μm , cylindrical.

***Duportella tristicula* (Berk. & Broome) Reinking:**

Basidiocarp annual, crust-like or resupinate, 0.5–24.1 \times 0.4–3.9 \times 0.02–0.1 cm thick when young, initially arises as small velvety brown patches growing in all direction to form a large fruiting body, papery thin and brittle on drying, smooth, brownish grey dark brown Fertile surface smooth and shiny, velvety when young, dark brown to coffee brown. Context papery thin. Hyphal system dimitic, generative hyphae 2–3.5 μm wide, skeletal hyphae 2.5–4 μm wide, Spores 8.5–11 \times 3–5 μm , ellipsoid.

***Earliella scabrosa* (Pers.) Gilb. & Ryvar den:**

Basidiocarp annual, resupinate, effused reflexed to pileate, 0.5–14.9 \times 0.4–8.7 \times 0.2–0.6 cm. Pileus 0.5–6.9 \times 0.3–3.4 \times 0.2–0.6 cm, semicircular, light zonate, sulcate, glabrous, creamy white to reddish brown. Lower fertile surface poroid, 1–3 pores per mm angular to iripicoid yellowish grey. Context up to 0.2 cm thick, Tube up to 0.4 cm wide. Hyphal system trimitic, generative hyphae 2–3.5 μm wide, skeletal hyphae 3.5–5 μm wide, binding hyphae 3–5 μm wide. Spores 7–9 \times 3–4 μm , cylindrical to oblong ellipsoid.

***Favolus grammocephalus* (Berk.) Imazeki:**

Basidiocarp annual, pileate. Pileus 5.7–11.2 \times 4.2–6.7 cm and up to 0.7 cm thick at the base, applanate, dimidiate to flabelliform, yellowish white to ochraceous to pale brown. Lower fertile surface poroid 3–4 per mm pores, round to angular, yellowish white to brownish yellow. Context 0.1–0.4 cm wide. Tubes 0.1–0.2 cm long. Stipe 0.3–0.6 \times 0.3–0.5 cm, laterally attached. Hyphal system dimitic, generative hyphae 2.5–5 μm wide, skeleto-binding hyphae 4.5–7 μm wide, Spores 5–6 \times 2–3 μm , ellipsoid.

***Favolus roseus* Lloyd:**

Basidiocarp annual, pileate. Pileus 3.6–5.8 \times 1.9–4.6 \times 0.1–0.7 cm, semicircular, greyish golden yellow to yellowish brown. Lower surface fertile poroid, 1–2 per mm, hexagonal to pentagonal, pale yellow to orange yellow. Context up to 0.2 cm wide toward the base. Tube up to 0.5 cm wide. Stipe 0.1–0.5 \times 0.3–0.4 cm, lateral to eccentric. Hyphal system dimitic, generative hyphae 2.5–5 μm wide, skeleto-binding hyphae 2.5–6 μm wide, Spores 8–12 \times 3.1–5.1 μm , cylindrical.

***Flavodon flavus* (Klotzsch) Ryvar den:**

Basidiocarp annual, resupinate to effused-reflexed 1.8–42.7 \times 0.8–13.2 \times 0.1–0.7 cm thick. Pileus 1.5–33.9 \times 0.3–1.7 cm up to 0.7 cm thick, applanate, glabrous when matured, grayish yellow to olive grey. Lower fertile surface poroid, pores or lamellate or teeth 1–2 per mm, lemon yellow to ochraceous. Context up to 0.2 cm wide. Tubes up to 0.5 cm long, olive yellow. Hyphal system dimitic, generative hyphae 2.5–6 μm wide, skeletal hyphae 3.5–6 μm wide. Spores 5–7 \times 2.5–4 μm , broadly ellipsoid.

***Funalia leonina* (Klotzsch) Pat:**

Basidiocarp annual, pileate. Pileus 0.6–9.1 \times 0.5–5.8 \times 0.7–1.9 cm thick near the base, applanate, smooth, covered with stiff persistent and strigose hairs, yellow white to pale yellow to ochre orange

Lower fertile surface poroid, pores 1–2 per mm, toothed, iripicoid to maize like, cream to orange brown. Context up to 1.2 cm thick. Tubes up to 0.6 cm wide. Hyphal system trimitic, generative hyphae 3.5–6 μm wide, skeletal hyphae 3–5 μm wide, binding hyphae 2.5–3.5 μm wide. Spores 11–14.5 \times 3.5–5 μm cylindrical.

***Ganoderma mediosinense* J.D. Zhao:**

Basidiocarp annual, pileate. Pileus 10.3–12.9 \times 7.2–8.4 and up to 3.1 cm thick near stipe juncture, semicircular, glabrous. Upper surface often covered with a cocoa brown powder of deposited spores, faint reddish brown to dark reddish brown. Lower fertile surface poroid round, pores 3–4 per mm, cream when young to pale brown when old. Context up to 2.4 cm wide. Tubes up to 0.7 cm deep. Stipe 5.3–8.9 \times 0.7–1.4 cm. Hyphal system trimitic, generative hyphae 1.5–3 μm wide, skeleton-binding hyphae 2–5.5 μm wide, binding hyphae 1.5–3 μm wide. Spores 9–11 \times 5–6.5 μm , ovoid to ellipsoid.

***Hexagonia* sp. 1:**

Basidiocarp annual, resupinate, effused-reflexed to pileate. Pileus 4.2–8.9 \times 2.5–3.7 \times 0.3–2 cm, semicircular, sterile, zonate, sulcate, glabrous, greyish brown to tobacco brown. Lower fertile surface poroid 1 per mm wide, angular to hexagonal, teak brown to brownish grey. Context up to 0.7 cm wide. Tubes up to 1.3 cm long. Hyphal system trimitic, generative hyphae, 2–3.5 μm wide, skeletal hyphae 3.5–6.5 μm wide, binding hyphae 3–4 μm wide. Spores 5–7 \times 3–4.5 μm , cylindrical.

***Hypoxylon haematostroma* Mont:**

Basidiocarp annual, resupinate, 0.5–12.3 \times 0.5–5.5 \times 0.1–0.4 cm, hard. Fertile surface minutely papillate, cinnabar red to reddish brown. Context papery thin, homogenous, solid, dark brown. Perithecia long tubular 900–2300 \times 200–600 μm . Ostioles are lower than stromatal surface. Asci 150–200 \times 6–9 μm , broadly cylindrical, 8-spored, septate at base. Spore 15–18 \times 5.5–8.5 μm , elliptic-fusiform.

***Hypoxylon rubiginosum* (Pers.) Fr:**

Basidiocarp annual to perennial, resupinate, 0.9–16.2 \times 0.5–6.9 \times 0.1–0.3 cm, hard when fresh, brittle when dry purplish brown to amaranth. Fertile surface papillate, rusty brown when fresh, purplish black when mature. Context homogenous. Perithecia 200–400 \times 1500–4000 μm , spherical to obovoid, black. Ostioles are lower than stromatal surface umbilicate, inconspicuous. Asci cylindrical, 8-spored, septate at base, hyaline. Spore 11–15 \times 5–6 μm , ellipsoid- inequilateral.

***Lentinus connatus* Berk:**

Basidiocarp annual. Pileus 6.3 cm in diameter, plano-convex with slightly uplifted margin, smooth, faint creamy to yellowish orange when young, golden yellow to greyish brown when mature. Gills decurrent, 9–11 per cm, close to rather crowded, pink white to ochraceous. Stalk 5.6 \times 0.7 cm, central, equal, solid, brittle, yellowish white to golden yellow. Hyphal system dimitic, generative hyphae 5.5–8 μm wide, skeleto-binding hyphae 2.5–5 μm wide. Spores 6–8 \times 2.5–3 μm .

***Lentinus squarrosulus* Mont:**

Basidiocarp annual, caespitose, gregarious. Pileus up to 6.2 cm in diam., infundibuliform, chalky white to pinkish buff to ochraceous.

squamose to squarrose. Gills 9–12 per cm, deeply decurrent, white to pale buff. Stalk 2.4–5.5 × 0.9–1.3 cm, central, eccentric also covered with flocculose squamules, concolorous with pileus. Context up to 0.2 cm thick. Hyphal system dimitic, generative hyphae 2.5–4 µm wide, skeletal binding hyphae 2–2.5 µm wide. Spores 5–7.5 × 1.7–2.5 µm, cylindrical.

***Leucocoprinus birnbaumii* (Corda) Singer:** Basidiocarp annual. Pileus 2.9–4.6 cm in diameter, sub-globose, finally campanulate or expanded, truncate at apex, creamy white sometimes pale brown at centre. Gills free 11–14 per cm, moderately crowded, creamy white. Stalk 4.2–5.6 × 0.3–0.9 cm, cylindrical with swollen base, hollow, white powdery coating on the surface. Context thin, soft, chalky white. Annulus present. Hyphal system monomitic, generative hyphae 4.4–11 µm wide. Spores 7–10 × 5.5–6.5 µm, ellipsoid.

***Leucocoprinus cepistipes* (Sowerby) Pat:** Basidiocarp annual. Pileus 3.7–8.4 cm in diameter, obovoid then conical, finally comanulate or expanded, truncate at centre, chalky white with pale pink tints. Gills free 15–18 per cm, rather crowded, creamy white. Context thin, soft. Stalk 4.5–8.6 × 0.5–1.1 cm, cylindrical but broader below to give a sub-bulbous base, with powdery coating on the surface. Annulus present. Hyphal system monomitic, generative hyphae 3.5–5 µm wide. Spores 7–10 × 5–7 µm, ovoid.

***Leucocoprinus cretaceus* (Bull.) Locq:** Basidiocarp annual. Pileus 4.7 cm in diameter, conico-comanulate to umbonate or expanded, truncate at centre, chalky white with pale tints. Gills free 13–17 per cm, rather crowded, creamy white. Context thin, soft. Stalk 6.2 × 1.1 cm, cylindrical but broader below to give a sub-bulbous base, with powdery coating on the surface. Annulus present. Hyphal system monomitic, generative hyphae 3–5 µm wide. Spores 7–9.5 × 4.5–6.5 µm, ellipsoid to ovoid.

***Lopharia cinerascens* (Schwein.) G. Cunn:** Basidiocarp annual, crust-like, resupinate, effused-reflexed to pileate, 0.5–5.9 × 0.4–3.4 cm up to 0.1 cm thick. Pileus 0.5–4.1 × 0.3–0.5 cm up to 0.1 cm thick, sometimes semicircular, zonate, sulcate, velvety to tomentose, clay to smoky brown. Lower fertile surface, smooth, cracked when mature, olivaceous brown to smoky to brownish black. Context thin, homogenous. Hyphal system monomitic, generative hyphae 3.5–6 µm wide. Spores 7–9 × 3–4 µm, cylindrical to ellipsoid.

***Phanerochaete sordida* (P. Karst.) J. Erikss. & Ryvarden:** Basidiocarp annual, resupinate, 5.6–15.3 × 4.2–9.4 cm, up to 0.3 cm thick, membranous, creamy white to pale yellow brown. Fertile surface smooth, cracked on drying, creamy white to straw yellow when fresh, on drying pale yellow to pale yellow brown. Context papery thin. Hyphal system monomitic, generative hyphae 3.5–6.5 µm wide. Spores 5.5–8 × 3–5 µm, broadly ellipsoid.

***Phellinus allardii* (Bres.) S. Ahmad:** Basidiocarp perennial, resupinate to pileate, 9.8 × 7.9 × 4.3 cm. Pileus 1.4 × 0.5 cm, usually imbricate, reddish brown and covered with a

tomentum. Lower fertile surface poroid, round, regular, pores 6–8 per mm, yellowish brown when young. Context very thin, sometimes almost absent. Tubes stratose, up to 0.2–0.4 cm deep in each layer, umber brown. Hyphal system dimitic, generative hyphae 2–3 µm wide, skeletal hyphae 3–4 µm wide. Spores 5–6 × 3.5–4 µm, broadly ellipsoid to subglobose.

***Phellinus badius* (Berk. ex Cooke) G. Cunn:** Basidiocarp perennial, pileate, sessile. Pileus 10.2 × 5.4 × 5.8 cm, hoof-shaped to unguulate. Upper sterile surface glabrous, weakly zonate, sulcate, yellowish brown to brownish black. Lower fertile surface poroid, round, pores 4–5 per mm. Context up to 2.1 cm thick, homogenous. Tubes up to 0.3 cm deep in each layer ferruginous brown. Hyphal system dimitic, generative hyphae 3–4 µm wide, skeletal hyphae 4–5 simple septate, wide. Spores 6.5–7.5 × 6–6.5 µm, broadly ellipsoid to subglobose.

***Phlebiopsis crassa* (Lév.) Floudas & Hibbett:** Basidiocarp annual, resupinate, 0.5–10.8 × 0.5–6.7 × 0.1–0.2 cm thick when fresh, purplish pink to purplish grey to pale violet to violet brown to brownish grey. Fertile surface when young velvety gradually surface become smooth, cracked on drying, grayish violet to purplish grey to violet to grayish brown. Context papery thin on drying, dense, smooth, homogenous. Hyphal system monomitic, generative hyphae 2.5–8.5 µm wide. Spores 6–8 × 3–4 µm, narrowly ellipsoid.

***Phylloporia pectinata* (Klotzsch) Ryvarden:** Basidiocarp perennial, pileate, solid. Pileus 14.2 × 9.1 × 0.7–5.8 cm, semicircular, applanate, sulcate, brownish yellow to brownish black. Lower fertile surface poroid, round, pores 5–6 per mm, yellowish brown to dark brown. Context up to 1.1 cm thick, duplex, yellowish brown to almost blackish. Tubes up to 0.3 cm deep, arranged in layer yellowish brown to brown. Hyphal system monomitic, generative hyphae 1.5–5 µm wide. Spores 3–3.5 × 2–3 µm, globose to sub-globose.

***Pleurotus ostreatus* (Jacq.) P. Kumm:** Basidiocarp annual, pileate. Pileus 7.1 × 4.8 cm, pleurotoid, spatulate to flabelliform, grey white to cream white. Gills decurrent, 7–10 per cm, white to grey white. Stalk reduced or substipitate 0.7 × 0.6 cm, cylindrical, lateral or eccentric, creamy white at base, slightly greyish at upper part. Context thin, homogenous creamy white. Hyphal system monomitic, generative hyphae 3–6.5 µm. Spores 7.5–12 × 2–4 µm, cylindrical.

***Pseudofavolus tenuis* (Fr.) G. Cunn:** Basidiocarp annual, resupinate, effused-reflexed to pileate, 2.2–5.3 × 0.8–3.6 × 0.1–0.3 cm. Pileus 2.1–5.2 × 1.4–3.1 × 0.1–0.3 cm, semicircular, glabrous, zonate, sulcate, dark brown. Lower fertile surface poroid 1–2 per mm wide, hexagonal, brownish grey. Context up to 0.1 cm wide. Tubes up to 0.2 cm long. Hyphal system trimitic, generative hyphae up to 3 µm wide, skeletal hyphae 2–4.4 µm wide, binding hyphae up to 3 µm wide. Spores 8.8–14.7 × 2.9–4.4 µm, cylindrical.

***Pycnoporus sanguineus* (L.) Murrill:** Basidiocarp annual, effused reflex to pileate. Pileus 2.3–6.2 × 1.2–3.7 × 1.1–2.2 cm thick at the base, semicircular, glabrous, smooth, sulcate, pale orange to cinnabar red. Lower fertile surface poroid, 4–6 per mm pores, round, tomato red to brick red. Context up to 1.9 cm thick near base. Tubes up to 0.3 cm wide. Hyphal system trimitic, generative hyphae hyaline, 2.5–3.5 µm wide, skeletal hyphae 2–5 µm wide, binding hyphae 2–3 µm wide. Spores 5–6 × 2–2.5 µm, cylindrical.

***Scytinostroma duriusculum* (Berk. & Broome) Donk:** Basidiocarp annual, resupinate, 0.5–12.2 × 0.5–6.7 cm, up to 0.5 cm thick when fresh, creamy white to ochraceous. Fertile surface smooth, when touched gives hair-like or velvety sensation, creamy white to dull yellow when fresh, on drying pale yellow to ochraceous. Context thin, smooth, homogenous, pale yellow to dull yellow. Hyphal system dimitic, generative hyphae 1–4 µm wide, skeletal hyphae 1–6.5 µm wide. Spores 5–7 × 4.5–7 µm, globose to subglobose.

***Schizophyllum commune* Fr:** Basidiocarp annual, pileate. Pileus 0.5–3.3 × 0.5–3 cm, 0.2–0.4 cm thick near the base, flabelliform to kidney shape, semicircular, velvety with tufts of woolly small hairs, greyish to dark greyish brown. Lower fertile surface falsely gilled, separating along the gill's edge, dichotomously branched, and greyish brown. Context up to 0.1 cm wide. Pseudogills 0.3 cm thick. Hyphal system monomitic, generative hyphae 4–7.5 µm wide. Spores 4–7 × 2–3 µm, suballantoid.

***Trametes cingulata* Berk:** Basidiocarp annual, pileate. Pileus 2.8–5.3 × 1.4–3.9 × 0.9–1.4 cm, semicircular to applanate, glabrous, zonate, sulcate, yellow white, later becoming sooty black. Lower fertile surface poroid, 3–6 per mm pores, round, shiny on the light incident, yellowish white to pale yellow. Context up to 0.7 cm thick. Tubes up to 0.5 cm wide. Hyphal system trimitic, generative hyphae 2–3 µm wide, skeletal hyphae 3–5 µm wide, binding hyphae 1–3 µm wide. Spores 4–5 × 3–3.5 µm, broadly ellipsoid.

***Trametes ellipsospora* Ryvarden:** Basidiocarp annual, resupinate to effused reflex to pileate. Pileus 2.4–5.2 × 1.6–3.9 × 0.1–0.4 cm thick, semicircular, applanate, strigose hairs, shiny, sulcate, weakly zonate, yellow white. Lower fertile surface poroid 3–5 per mm pores, angular, iripicoid, cream to ochre orange. Context up to 0.2 cm thick. Tubes up to 0.2 cm wide. Hyphal system trimitic, generative hyphae 2–3 µm wide, skeletal hyphae 2.5–5.5 µm wide, binding hyphae 1.5–3.5 µm wide. Spores 3–5 × 2–3.5 µm, ellipsoid.

***Trametes gibbosa* (Pers.) Fr:** Basidiocarp annual, pileate. Pileus 8.4–12.3 × 4.1–6.8 × 0.5–1.4 cm, semicircular, applanate, glabrous, light zonate, sulcate, cream white to ochraceous. Lower fertile surface poroid 1–4 per mm wide, lamellate to deadaleoid or maize like, cream white to pale straw. Context up to 1 cm wide. Tubes up to 0.4 cm long. Hyphal system trimitic, generative hyphae 2–4 µm wide, skeletal hyphae 3–5 µm wide, binding hyphae 2–4 µm wide. Spores 4–5.5 × 2–2.4 µm, oblong ellipsoid.

***Trametes hirsuta* (Wulfen) Lloyd:** Basidiocarp annual, pileate. Pileus 4.2 × 2.3 × 0.1–0.4 cm thick, semicircular, applanate, hirsute, sulcate, weakly zonate, greyish white to greyish faint brown. Lower fertile surface poroid 3–4 per mm pores, circular to angular, cream to greyish white. Context up to 0.2 cm thick. Tubes up to 0.2 cm wide. Hyphal system trimitic, generative hyphae 2.5–4.5 µm wide, skeletal hyphae 3–5.5 µm wide, binding hyphae 2–3.5 µm wide. Spores 6–8.5 × 2–3 µm, cylindrical.

***Trametes variegata* (Berk.) Zmitr:** Basidiocarp annual, effused-reflexed to pileate. Pileus 2.8–3.7 × 2.8–3.1 × 0.1–0.2 cm, papery thin, weakly sulcate, zonate, papery thin, greyish brown to violet brown. Lower fertile surface poroid 1–2 per mm wide, hexagonal to angular, brownish grey to cream grey. Context up to 0.1 cm wide. Tubes up to 0.1 cm long. Hyphal system trimitic, generative hyphae hyaline, 2–4 µm wide, skeletal hyphae 1.5–3 µm wide, binding hyphae 1.5–3 µm wide. Spores 9–13 × 4–4.5 µm, cylindrical.

***Truncospora tephropora* (Mont.) Zmitr:** Basidiocarp perennial, resupinate, 5.6–47.2 × 2.9–10.3 cm up to 1.9 cm thick at centre, hard when fresh, woody hard on drying. Lower fertile surface poroid, 4–6 per mm pores, round, greyish yellow to blonde. Context papery thin to almost absent. Tubes 0.1–1.9 cm wide, duplex or in a layer, light brown to coffee brown. Hyphal system trimitic, generative hyphae 2–3.5 µm wide, skeletal hyphae 3–4.5 µm wide, binding hyphae 1.5–3 µm wide. Spores 4.5–6 × 3–4.5 µm, broadly ellipsoid.

Figure 1: Photo plate -1

Photo Plate-1



Xylaria hypoxylon (L.) Grev: Basidiocarp annual, erect, up to 2.3 cm in length, corky, flattened, simple or branched, the lower part grayish black to black. Perithecia develop beneath the sporocarp surface showing protruding papillae

of the perithecial necks. Perithecia with conspicuous ostioles. Asci cylindrical, 95–115 × 5–5.5 µm, 8-spored. Ascospores 11– 14.5 × 5–6 µm, ellipsoid-inequilateral.

Table 1. Distribution and host name of wood-decaying fungi from Ajanta forest

Sr.no	Scientific name	Host	Date	Altitude	Latitude & Longitude	Collection Number
1	<i>Auricularia mesenterica</i> (Dicks.) Pers.	<i>Boswellia serrata</i> Roxb.ex Colebr.	15/11/19	502m	20°32'55"N 75°42'05"E	VUG/VPM-801
2.	<i>Auricularia nigricans</i> (Sw.) Birkebak, Looney & Sánchez-García.	<i>Azadirachta indica</i> A.Juss.	04/09/14	554m	20°32'53"N 75°42'13"E	VUG/VPM-84
3.	<i>Cellulariella acuta</i> (Berk.) Zmitr. & Malysheva,	<i>Tectona grandis</i> L.f.	20/08/16	551m	20°32'55"N 75°42'10"E	VUG/VPM-257
4.	<i>Cerrena caperata</i> (Berk.) Zmitr.	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	04/09/16	551m	20°32'55"N 75°42'10"E	VUG/VPM-345
5.	<i>Daedaleopsis confragosa</i> (Bolt : Fr.) Schroet	<i>Butea monosperma</i> (Lam.) Taub.	18/07/21	508m	20°32'57"N 75°42'05"E	VUG/VPM-815
6.	<i>Daldinia concentrica</i> (Bolton) Ces. & De Not.	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	02/10/19	418m	20°33'01"N 75°42'09"E	VUG/VPM-726
7.	<i>Duportella tristicula</i> (Berk. & Broome) Reinking	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	30/10/16	557m	20°32'53"N 75°42'13"E	VUG/VPM-686
8.	<i>Earliella scabrosa</i> (Pers.) Gilb. & Ryvarden	<i>Boswellia serrata</i> Roxb.exColebr.	15/11/19	500m	20°32'55"N 75°42'07"E	VUG/VPM-799
9.	<i>Favolus grammocephalus</i> (Berk.) Imazeki	<i>Bougainvillea spectabilis</i> Willd	18/07/21	419m	20°36'06"N 75°42'04"E	VUG/VPM-820
10.	<i>Favolus roseus</i> Lloyd,	<i>Nyctanthes arbor-tristis</i> L.	18/07/21	419m	20°36'06"N 75°42'04"E	VUG/VPM-819
11	<i>Flavodon flavus</i> (Klotzsch) Ryvarden	<i>Santalum album</i> L.	30/10/16	558m	20°32'55"N 75°42'10"E	VUG/VPM-689
12.	<i>Funalia leonina</i> (Klotzsch) Pat.	<i>Tectona grandis</i> L.f.	15/11/19	503m	20°32'56"N 75°42'06"E	VUG/VPM-796
13.	<i>Ganoderma mediosinense</i> J.D. Zhao	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	04/09/16	410m	20°33'09"N 75°42'03"E	VUG/VPM-349
14.	Hexagonia sp. 1	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	20/08/16	551m	20°32'55"N 75°42'10"E	VUG/VPM-255
15.	<i>Hypoxylon haematostroma</i> Mont	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	20/08/16	411m	20°33'04"N 75°42'03"E	VUG/VPM-260
16.	<i>Hypoxylon rubiginosum</i> (Pers.) Fr.	<i>Hardwickia binata</i> Roxb.	02/10/19	521m	20°32'54"N 75°42'10"E	VUG/VPM-727
17.	<i>Lentinus connatus</i> Berk	<i>Tectona grandis</i> L.f.	20/08/16	550m	20°32'55"N 75°42'11"E	VUG/VPM-259
18.	<i>Lentinus squarrosulus</i> Mont	<i>Nyctanthes arbor-tristis</i> L.	18/07/21	418m	20°33'04"N 75°42'06"E	VUG/VPM-904
19.	<i>Leucocoprinus birnbaumii</i> (Corda) Singer	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	18/07/21	501m	20°32'57"N 75°42'07"E	VUG/VPM-816

Table 1 Continue

20.	<i>Leucocoprinus cepistipes</i> (Sowerby) Pat	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	18/07/21	500m	20°32'58"N 75°42'06"E	VUG/VPM-818
21.	<i>Leucocoprinus cretaceus</i> (Bull.) Locq.	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	18/07/21	501m	20°32'57"N 75°42'07"E	VUG/VPM-811
22.	<i>Lopharia cinerascens</i> (Schwein.) G. Cunn	<i>Nyctanthes arbor-tristis</i> L.	30/10/16	557m	20°32'53"N 75°42'13"E	VUG/VPM-687
23.	<i>Phanerochaete sordida</i> (P. Karst.) J. Erikss. & Ryvardeen	<i>Santalum album</i> L.	30/10/16	558m	20°32'55"N 75°42'10"E	VUG/VPM-690
24.	<i>Phellinus allardii</i> (Bres.) S. Ahmad	<i>Butea monosperma</i> (Lam.) Taub.	20/08/16	556m	20°32'53"N 75°42'14"E	VUG/VPM-254
25.	<i>Phellinus badius</i> (Berk. ex Cooke) G. Cunn	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	20/08/16	432m	20°33'09"N 75°42'02"E	VUG/VPM-264
26.	<i>Phlebiopsis crassa</i> (Lév.) Floudas & Hibbett	<i>Tectona grandis</i> L.f.	20/08/16	550m	20°32'55"N 75°42'11"E	VUG/VPM-258
27.	<i>Phylloporia pectinata</i> (Klotzsch) Ryvardeen	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	02/10/19	442m	20°36'06"N 75°42'04"E	VUG/VPM-725
28.	<i>Pleurotus ostreatus</i> (Jacq.) P. Kumm.	<i>Pistacia integerrima</i> J. L. Stewart ex Brandi	30/10/16	410m	20°33'11"N 75°42'05"E	VUG/VPM-696
29.	<i>Pseudofavolus tenuis</i> (Fr.) G. Cunn	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	30/10/16	557m	20°32'53"N 75°42'13"E	VUG/VPM-685
30.	<i>Pycnoporus sanguineus</i> (L.) Murrill	On Angiospermic wood	25/10/21	410m	20°33'02"N 75°42'11"E	VUG/VPM-908
31.	<i>Scytinostroma duriusculum</i> (Berk. & Broome) Donk	<i>Bougainvillea spectabilis</i> Willd.	20/08/16	410m	20°33'07"N 75°42'05"E	VUG/VPM-266
32.	<i>Schizophyllum commune</i> Fr	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	20/08/16	501m	20°32'58"N 75°42'05"E	VUG/VPM-267
33.	<i>Trametes cingulata</i> Berk	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	01/10/21	501m	20°32'55"N 75°42'06"E	VUG/VPM-855
34.	<i>Trametes ellipsospora</i> Ryvardeen	<i>Hardwickia binata</i> Roxb.	02/10/19	439m	20°32'54"N 75°42'10"E	VUG/VPM-728
35.	<i>Trametes gibbosa</i> (Pers.) Fr.	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	25/12/21	500m	20°32'57"N 75°42'07"E	VUG/VPM-862
36.	<i>Trametes hirsuta</i> (Wulfen) Lloyd.	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	06/09/21	410m	20°33'08"N 75°42'05"E	VUG/VPM-844
37.	<i>Trametes variegata</i> (Berk.) Zmitr	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	30/10/16	453m	20°33'07"N 75°42'03"E	VUG/VPM-693
38.	<i>Truncospora tephropora</i> (Mont.) Zmitr	<i>Tectona grandis</i> L.f.	01/10/21	503m	20°32'58"N 75°42'07"E	VUG/VPM-854
39.	<i>Xylaria hypoxylon</i> (L.) Grev	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis	06/09/21	410m	20°33'08"N 75°42'05"E	VUG/VPM-845

CONCLUSION

In this study we are reporting for the first time the diversity of wood-decaying fungi from Ajanta Forest, which consists of 28 genera and 39 species. Among these 35 species were annual and 4 species were perennial. Most dominating to rarely observed genus were *Trametes* Fr (5 species) followed by *Leucocoprinus* Pat (3 species), *Auricularia* Bull (2 species), *Favolus* Fr (2 species), *Hypoxylon* Bull (2 species), *Lentinus* Fr (2 species), *Phellinus* QuéL (2 species), whereas *Cellulariella* Zmitr. & Malysheva, *Cerrena* S.F. Gray, *Daedaleopsis* Schroet, *Daldinia* Ces. & de Not, *Duportella* Pat, *Earliella* Murrill, *Flavodon* Ryvarden, *Funalia* Pat *Ganoderma* P. Karst, *Hexagonia* Pollini, *Lopharia* Kalchbr. & MacOwan, *Phanerochaete* P. Karst, *Phlebiopsis* Julich, *Phylloporia* Murrill, *Pleurotus* (Fr.) P. Kumm, *Pseudofavolus* Pat, *Pycnoporus* P. Karst, *Scytinostroma* Donk, *Schizophyllum* Rr, *Truncospora* Pilát, and *Xylaria* Hill ex Schrank represent single genera.

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