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Documenting the underexplored macrofungal diversity of Hazaribag amidst anthropogenic pressures: Year 2026 perspective

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Abstract

The district of Hazaribag located in the Chotanagpur plateau in Jharkhand, is a cradle to a large number of diverse macrofungi amidst its sub-humid climate and dense tropical dry deciduous forests. This thriving ecological niche is a repository of vastly understudied wild mushrooms that supports an array of species across Basidiomycota and Ascomycota. However, due to lack of systematic taxonomical surveys the mushroom flora of this region remains largely unmapped. The Santhal, Munda, Oraon, Ho, Birhor and Sauria Paharia tribes possess profound traditional ecological knowledge, utilizing wild mushrooms as key non-timber forest products (NTFPs). Mushrooms are a symbol of pride and natural wealth for them, a source of cost-free seasonal nutrition, dietary supplement and also bring therapeutic remedies. Furthermore, gathering and selling these wild varieties offers sustainable seasonal livelihoods, making local mycology deeply intertwined with the region's cultural legacy. In our present survey, the total collection of twenty mushroom species belonged to thirteen families and one division Basidiomycota. Five mushrooms belonged to Polyporaceae; two mushrooms each from Stereaceae, Hymenochaetaceae, Pluteaceae; one mushroom each from Laetiporaceae, Mycenaceae, Ganodermataceae, Schizophyllaceae, Crepidotaceae, Clitocybaceae, Callistosporiaceae, Tremellaceae and Tricholomataceae.

Keywords: Chotanagpur plateau, environmental conservation, Hazaribag, Jharkhand, mushrooms, non-timber forest products

Introduction

The forests of Jharkhand including Hazaribag offer a unique habitat of canopy forming forests, dominated by Sal (*Shorea robusta*) and Asan (*Terminalia tomentosa*) (Mishra *et al.*, 2025; Vishal *et al.*, 2024)^[11, 13]. Along with several other species of trees, these together form an ideal microclimate and provide an abundant supply of organic matter in the forest ecosystem which significantly helps in the proliferation of a diverse range of mushrooms. These wild macrofungi in turn act as primary decomposers to propagate the nutrient cycle, soil formation and formation of symbiotic mycorrhizal networks that sustain dominant flora. For generation after generation, indigenous tribal communities of Hazaribag - the Santhal, Munda, Oraon, Ho, Birhor, Sauria Paharia and others (Premi, 2014; Singhal *et al.*, 2021, Gautam & Singh, 2022; Dubey & Soy, 2021)^[1, 2, 7, 10] have preserved and passed on profound traditional knowhow of edible (Singh *et al.*, 2025; Kumar *et al.*, 2024)^[6, 9], inedible (Greeshma *et al.*, 2015)^[5] and poisonous mushrooms (Gouvinhas *et al.*, 2024; Wijesekara & Xu, 2025)^[4, 14]. These tribes forage on wild mushrooms as crucial non-timber forest products (NTFPs) of nutraceutical importance. Moreover, collection of wild edible mushrooms for local trade also offers an economic safety net, supporting sustainable livelihoods during peak monsoon (Sharma & Deogharia, 2009; Giri *et al.*, 2025; Tiwari *et al.*, 2018)^[3, 8, 12]. Our active interaction during field visits opened new vistas for the traditional ecological knowledge (TEK) held by these tribes (Yadav *et al.*, 2026)^[15]. Knowledge about mushroom diversity of Hazaribag regarding the phenology, edibility and toxicity is vast, yet it remains completely unmapped and orally confined. Mushroom diversity of Hazaribag is critically overlooked through almost all aspects in baseline scientific literature even though they are collected, consumed or avoided without ever being documented in regional or national herbaria. In simple terms, lack of taxonomic identification primarily locks down the

biochemical, ecological and nutritional potential of Hazaribag's mushrooms from regional, national as well as global scenario. To overcome these major scientific blind spots, our present study is gently focused to bring some spectacular diverse mushrooms before the scientific community.

Material and methods

Study area and field sampling

The district Hazaribag lies between 23.5° N to 24.4° N and 85.1° E to 85.9° E with an elevation of 613 - 615 m above sea level (asl) having a total area 4302 sq. km. It is situated on the Chotanagpur Plateau of Jharkhand, India.

A number of mushrooms were collected during field survey from the deciduous forest patches of the region. Strategically planned intensive and regular field surveys were conducted during the peak monsoon (July to August, 2026) corresponding with optimum relative humidity (80% - 95%) and ambient temperatures (24°C – 32°C) conducive to mushroom development.

Field collection protocol and in-situ documentation

Mature, fresh and undamaged sporocarps (mushrooms) were carefully collected using a sharp stainless-steel scalpel and a small hand trowel so as to extract total specimens along with their complete underground bases (volva i.e. mycelial attachments). These specimens were wrapped loosely in aluminium foil or wax paper and stored in dry partitioned baskets to prevent post harvest damage and water accumulation. Before preservation, structural details and special interesting traits were documented in field notebook. High-resolution digital photographs capturing the pileus, lamellae or pores, stipe, attachment types and substrate interaction were captured under natural lighting. Each specimen that was collected was assigned a unique field index number (e.g. HZ/NAG/BOT/2026-001, 002 etc) and details of the collection site, date of collection and micro-habitat was also recorded. Spore prints were also initiated immediately upon arriving at the department laboratory on dual-colored index cards (half-white and half-black) under dust-free covers.

Laboratory processing and macro-morphological evaluation

To prevent autolysis and insect infestations, mushroom specimens were safely opened in the Botany Laboratory within 4-5 hours of collection. Superficially adhered dirt and dust, forest debris etc were removed carefully using fine camel-hair brushes. Detailed macro-morphological examinations were performed, like pileus diameter(cm), shape, colour, margin striation, texture, lamellae spacing(mm), stipe length(cm), veil remnants (annulus) and the presence of a volva.

Wet preservation techniques

For long-term archival storage and anatomical preservation in the departmental fungarium, the specimens of mushrooms designated for morphological reference were offered to wet preservation. Considering the differential pattern of water content and fragility of tissue structure of the collected mushrooms two specific chemical fixatives were deployed based on pigment stability of the taxa.

Standard Fungal Preservation Solution (FAA):

The majority of the fleshy macrofungal specimens were fully submerged in a standard solution of Formalin-Aceto-Alcohol (FAA) mixed in the following volumetric ratio:
10% Formaldehyde (Fisher Scientific, 37-41% assay)
5% Glacial Acetic Acid (Qualigens, 99.9%)
50% Alcohol (99.9% Ethanol)
Distilled Water

Modified HESLER's Solution (for colour retention):

For fragile or highly pigmented specimens prone to rapid bleaching in standard alcohol mixtures, a modified Hessler's fluid was prepared to fix natural tones. The formulation comprised:

Formalin: 50 mL (Fisher Scientific, 37-41% assay)

Zinc Chloride (ZnCl₂): 25 g (Fisher Scientific)

Glycerol: 50 mL (Fisher Scientific)

Distilled Water: 900 mL

Specimens were gently transferred into heavy-gauge, clean and transparent jars filled with the designated preservation fluid, ensuring complete immersion without crowding or crushing of the pileus. The lids of the jars were sealed hermetically using petroleum jelly layers to prevent evaporation and atmospheric oxidation.

Specimen labeling and archiving

External tags were externally attached to each mushroom specimen jar with a chemical-resistant label printed on archival paper. The label specified the assigned accession number, generic/specific epithet, precise collection locality (including GPS coordinates), forest type, date of collection, collector's name and the preservation fluid formulation used. The wet-preserved vouchers were cataloged and systematically stored within the dark specimen cabinets of the departmental fungarium for future micro-morphological and taxonomic referencing.

Result and Discussion

The field visits conducted during peak monsoon (July - August, 2026) in Hazaribag, has opened up significant information on macrofungal diversity of this region as well as its seasonal distribution and tribal socio-economic reliance. Some of the studied species and their features are discussed as following:

Daedaleopsis confragosa (Acc No. HZ/NAG /BOT/2026-53):

It is a saprophytic macrofungi of Basidiomycota (family Polyporaceae) found growing on dead and decaying wood in sal forest near Nagwa (Table 1, Fig 1a). Fruiting body is semi-circular, fan-shaped or shelf-like. It measures 5 to 8 cm wide, grayish and is attached directly to the wood without a distinct stipe. Bracket like structures are persistent throughout the year in their natural habitat. It is inedible due to its extremely tough, corky texture.

Laetiporus sp (Acc No. HZ/NAG/BOT/2026 -31):

It has parasitic and saprophytic nature, belongs to Basidiomycota (family Laetiporaceae). Orange-to-peach upper surface and a lighter, faded pore surface underneath, margins are soft, lobed, grow in overlapping, fan-shaped shelves measure 5 - 9 cm across. It is inedible (Table 1, Fig 1b).

***Trametes* sp (Acc No. HZ/NAG/BOT/2026 - 36):**

It is a saprophytic fungus, belongs to Basidiomycota (family Polyporaceae) that attach directly to dead and decaying wood in a shelf-like or semicircular arrangement in overlapping tiers (Table 1, Fig 1c). It is pale brownish or ochre-colored, darker near margin and fainter at the centre. It is inedible due to tough, leathery and woody texture. Being tough and fibrous, it can survive all year round. The underside is entirely flat and packed with tiny, distinct pores instead of gills.

***Stereum hirsutum* (Acc No. HZ/NAG/BOT/2026- 51):**

It is a saprophytic fungus commonly called false turkey tail. The fruiting body is shelf-like, thin, fan-shaped brackets, semi-circular that fuse laterally into overlapping tiers attached directly to the base of the log (Table 1, Fig 1d). It is a saprophytic fungus belongs to Basidiomycota (family Stereaceae). It has distinct concentric zones of color, blending bright orange, yellow, brownish-grey and a pale white or cream margin. The smooth underside has no pores, no gills. It is inedible due to its tough, thin and leathery texture. It has no culinary value.

***Mycena leaiana* (Acc No. HZ/NAG/BOT/2026-119):**

It is a small saprophytic fungus commonly called orange mycena belongs to Basidiomycota (family Mycenaceae) has a bright orange color and a sticky, gelatinous coating on the cap and stipe (Table 1, Fig 1e). Pileus 1-4 cm wide; Stipe 3-7 cm long, hollow. Edges are striking bright red-orange, gills are attached to the stipe, closely packed, uniquely marginate. It is neither popular as an edible mushroom among the locals, nor confirmed to be toxic.

***Ganoderma sessile* (Acc No. HZ/NAG/BOT/2026-120):**

It is a saprophytic prominent wood decaying fungi of Basidiomycota (family Ganodermataceae). It is characterized by its shiny, varnished laccate upper surface and its distinct lack of a defined stipe (Table 1, Fig 1f). It is reported to be rich in bioactive molecules and polysaccharides. Semicircular in outline, irregularly kidney-shaped; planoconvex; surface with a lacquered-looking outer crust; edges are radially wrinkled having white margins. It is inedible due to its tough texture.

***Fuscoporia gilva* (Acc No. HZ/NAG/BOT/2026- 48):**

They form a cluster of small, shelf-like, saprophytic bracket fungi growing in overlapping tiers on a weathered wooden log (Table 1, Fig 1g). They are commonly called mustard-yellow polypore and belong to Basidiomycota (family Hymenochaetaceae). The upper surfaces display warm yellowish-brown to orange-amber tones near the edges, with orange - red wavy margins. It is velvety, finely textured outer margin. The undersurface is packed with incredibly tiny, almost invisible pores. Stipe is completely absent; the brackets attach directly to the wood in overlapping shelves or small groups. Fruiting bodies are strong and persistent. It is inedible due to its tough texture.

***Schizophyllum commune* (Acc No. HZ/NAG/BOT/2026 - 121):**

It is a highly aggressive saprophytic fungus, commonly called split-gill mushroom, has small, fan-like or wavy fruiting body that are directly attached to wood without a distinct stipe (Table 1, Fig 1h). It is creamy yellow and

grayish-white to grayish-brown, has a grayish-brown, wavy, scalloped, lobed, deeply incised margin. It is dense yet spongy body texture. Gills are pale, radiating gill-like folds that split lengthwise down the middle. It belongs to Basidiomycota (family Schizophyllaceae), the unique gills on its underside, split longitudinally down the center. It is generally considered inedible in an around Jharkhand, however, it is actively collected, properly cooked and consumed as a traditional food in some parts of Northeast India where it is appreciated for its chewy texture.

***Crepidotus* sp (Acc No. HZ/NAG/BOT/2026- 49):**

It is a saprophytic fungus that belongs to Basidiomycota (family Crepidotaceae). The fruiting body is small 0.5 to 5 cm in diameter, convex, semicircular, fan-shaped (Table 1, Fig 1i). Margins of the fruiting body are yellowish to brownish orange in colour which roll inward. Thin and delicate, rubbery caps attach directly to wood like small shelves, fans or semicircular brackets. Stipe absent. It is inedible being too small and fleshless to have any culinary value.

***Volvariella bombycina* (Acc No. HZ/NAG/BOT/ 2026 - 118):**

They are small, round, whitish fungal fruiting bodies in an early button stage with speckled brown caps sprouting from a decaying wood crack of a log (Table 1, Fig 1j). They are commonly called silky rosegill, silky sheath, tree mushroom. It starts as egg-shaped body, matures into a bell shape. It is pure white with brown spots on pileus. Volva having tan-to-brown colour at the base of the stem was observed. It is saprophytic fungi that belongs to Basidiomycota (family Pluteaceae). No clear confirmation regarding its palatability was recorded.

***Trametes versicolor* (Acc No. HZ/NAG/BOT/ 2026 - 33):**

It is a saprophytic species with distinct concentric rings showing alternating bands of dark brown and a pale white or cream margin (Table 1, Fig 1k). It has a wavy, lobed and smooth margin that belongs to Basidiomycota (family Polyporaceae). It is one of the common polypore fungi found in forests of Jharkhand. It is woody and has whitish to pale micro-pores on the underside. The fan-shaped or lobed brackets grow on decaying wood. It is too tough and woody to be eaten as a culinary mushroom.

***Stereum* sp (Acc No. HZ/NAG/BOT/2026 - 46):**

Fan-shaped or lobed brackets, soft fruiting body, growing on decaying wood that belongs to Basidiomycota (family Stereaceae). The fruiting body develops concentric bands of tan and beige to orange-brown, with patches near the bases with soft margins having wavy edges (Table 1, Fig 1l). The fruiting body can crack with pressure; undersurface is almost poreless, smooth. They are not known to be toxic or poisonous, unpalatable due to their texture.

***Favolus gramocephalus* (Acc No. HZ/NAG/ BOT/2026- 52):**

It is a saprophytic mushroom with a wavy, fan or cup shaped cap growing out of a decaying log (Table 1, Fig 1m). Bright orange in colour having radial fibers and darker small scales near the stipe base. It belongs to Basidiomycota (family Polyporaceae) with wavy, irregular, flabelliform, lobed edges having rough texture and porous underneath.

Stipe is very short and stout, glabrous (smooth), resembling the colour of pileus. It is generally considered inedible as the flesh is highly coriaceous and tough, making it impossible to chew or digest comfortably.

***Tropicoporous* sp (Acc No. HZ/NAG/BOT/2026- 117):**

It is a saprophytic macrofungi with a resupinate, effused-reflexed to completely pileate (bracket-shaped) up to 1 cm thick and 20 cm diameter. It belongs to Basidiomycota (family Hymenochaetaceae) with margins that darken from the center outward to shades of dark rusty-brown, black (Table 1, Fig 1n). Fruiting body is sessile does not have smooth outline, multiple layered, semicircular, fan-shaped, irregular. The upper surface is radially cracked or crusted and underside features a porous surface, colored in shades dull brown. They are rock-hard, dense and woody, making them completely impossible to bite, chew, or digest.

***Clitocybe* sp (Acc No. HZ/NA/BOT/2026- 43):**

It is a saprophytic macrofungi that grow in cluster of white, broad-capped circular mushrooms with a minute blue hue at the center of pileus (Table 1, Fig 1o). It is a large ground-dwelling gilled mushroom of Basidiomycota (family Clitocybaceae). The margin of fruiting body is regular, entire, very soft and smooth. Texture is smooth and friable. Stipe is slender, white, 3 - 4 cm long, soft. It is inedible.

***Macrocybe* sp (Acc No.HZ/NA/BOT/2026- 54):**

It is a saprophytic impressive gigantic gilled mushroom (Table 1, Fig 1p). It becomes massive, heavy, clustered with time and belongs to Basidiomycota (family Callistosporiaceae). Big fleshy pileus 10-14 cm, convex, creamy white to light brown, fused at the thick base, broad, flat, no sharp umbo. The surface was smooth, dry and usually ranged from creamy white to pale tan. Entire margin, slightly cracked at some places. It had soft, rough pileus and stout stipe. Stipe very thick, 12-15 cm long and has no long tapering pseudorhiza. Joined at the base and lacks veil. Not a popular edible mushroom.

***Tremella fuciformis* (Acc No. HZ/NAG/BOT/ 2026 - 45):**

It is universally known as the snow fungus, white jelly mushroom, or silver ear (Table 1, Fig 1q). This highly prized jelly fungus belongs to Basidiomycota (family Tremellaceae). It is easily recognizable for its distinct translucent, gelatinous appearance and its massive popularity in dishes and skincare products. Local community finds it inedible as it is practically tasteless on its own but is

highly valued, edible mushroom known for its delicate, crunchy and gelatinous texture. It easily absorbs the flavours of whatever it is cooked with.

***Volvopluteus gloiocephalus* (Acc No. HZ/NA /BOT/2026- 50):**

It is a saprophytic macrofungi belongs to Basidiomycota (family Pluteaceae) that grows on compost, garden soil or any other place rich in organic matter (Table 1, Fig 1r). Fruiting body appears whitish with a light grey-brown colour, slightly sticky, shiny centre. The gills are free from the stem. The margin is entire, regular, non-striate, slightly incurved, smooth, pileus viscid when moist, smooth, glabrous, stipe smooth, longitudinally fibrillose-silky, fragile-fleshy. Although it is non-toxic and safely edible, but locals do not recommend for foraging or consumption in Jharkhand due to its toxic look-alikes.

***Ganoderma* sp (Acc No.HZ/NA/BOT/2026- 115):**

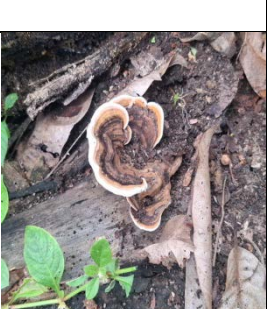
It is a highly distinct group of wood-decaying polypores, commonly known as shelf fungi, bracket fungi, or varnished conks (Table 1, Fig 1s). They are useful in traditional medicine and belongs to Basidiomycota (family Polyporaceae). It is a saprophytic macrofungi, hard, woody, shelf-like bracket, sessile, growing on wood. Big and fused mass with reddish-brown to dark brown, with distinct concentric growth rings. Lobed surface is entire, wavy, lighter brown colour at the growing edge. It is rigid, woody, corky and impossible to bend or crush with bare hands. They are completely inedible due to their rock-hard, woody texture but are medicinally valuable.

***Infundibulicybe gibba* (Acc No.HZ/NA/BOT/ 2026-116):**

It is a saprophytic macrofungi commonly called funnel cap that grow on moist, humus rich soil. It is a widespread, ground-dwelling gilled mushroom which is easily recognized by its classic, elegant funnel shape and light, pastel coloration (Table 1, Fig 1t). It belongs to Basidiomycota (family Tricholomataceae) has pileus 2-5 cm, deeply infundibuliform, hygrophanous, light brown with darker centre, margin wavy, uplifted, striate. Gills are decurrent, crowded, whitish-cream with central stipe, thin, pale, 2-4 cm. It is generally considered a mediocre or poor-quality edible mushroom by the locals and they strongly advised against eating it because it looks nearly identical to several small, white, ground-dwelling mushrooms in the *Clitocybe* genus (like *Clitocybe rivulosa*), which are deadly poisonous and cause severe muscarine poisoning.

Table 1: Macro-morphological features of the mushrooms collected from Hazaribag, Jharkhand.

Sl No	Acc No. and Botanical name	Site of Collection; GPS	Image in actual habitat	Macro-morphological features of the mushrooms								
				Pileus diameter (cm)	Shape	Colour	Margin striation	Texture	Lamellae spacing (mm)	Stipe length (cm)	Veil	Volva
1	Acc No. HZ/NAG/BOT/2026- 53 <i>Daedaleopsis confragosa</i>	Nagwa; Lat: 23.98762322° Long: 85.36738878°; Alt:616 m asl		5 - 8	Semicircular, fan-shaped brackets growing shelf-like from the wood.	Grayish	Lobed sometimes entire	Rough upper surface marked with faint concentric rings.	< 1	Broad, small, bright orange-yellow droplets visible near the lower attachment point.	None	None
2	Acc No. HZ/NAG/BOT/2026- 31 <i>Laetiporus</i> sp	Nagwa; Lat: 23.98764232° Long: 85.36737868°; Alt:616 m asl		7 - 11	Shelf-like, fan-shaped growth attached to decaying wood	Orange-to-peach upper surface and a lighter, faded pore surface underneath.	Lobed	Rough upper surface	None	None	None	None
3	Acc No. HZ/NAG/BOT/2026- 36 <i>Trametes</i> sp	Nagwa; Lat: 23.98763232° Long: 85.36737868°; Alt:616 m asl		7 - 9	Fan-shaped, attached horizontally to a rough tree trunk	Pale brownish or ochre-colored, darker near margin and fainter at the centre.	Undulated margin	Rough upper surface	None	None	None	None
4	Acc No. HZ/NAG/BOT/2026- 51 <i>Stereum hirsutum</i> (false turkey tail)	Nagwa; Lat: 23.98763233° Long: 85.36737867°; Alt:616 m asl		9 - 10	Shelf-like, thin, fan-shaped brackets, semi-circular that fuselaterally into overlapping tiers attached directly to the base of the log.	Orange-brown to tan upper surfaces with concentric color bands or zones and distinct, lighter whitish margins.	The edges are distinctly wavy and rippled, resembling partly drawn curtains	Corky and woody	None	Short	None	None
5	Acc No. HZ/NAG/BOT/2026-119 <i>Mycena leatiana</i> (orange mycena)	Nagwa; Lat: 23.98763233° Long: 85.36739867°; Alt:616 m asl		1 - 4	Pileus 1-4 cm wide; Stipe 3-7 cm long, hollow. Initially oval or bell-shaped, flattening out as it matures.	Starts as a vivid reddish-orange colour before fading to a dull yellow-orange with age.	Edges are striking bright red-orange	It features a sticky or slimy texture when wet.	< 1, attached to the stipe, closely packed, uniquely marginate	3-7 cm long	None	None
6	Acc No. HZ/NAG/BOT/2026-120 <i>Ganoderma sessile</i>	Nagwa; Lat: 23.98763243° Long: 85.36737767°; Alt:616 m asl		10 - 12	Semicircular in outline, irregularly kidney-shaped; planoconvex; surface with a lacquered-looking outer crust;	Brownish red overall, in old age becoming dark brown overall;	Radially wrinkled, white margins.	Smooth surface, whitish to pale micro-pores brownish when young	None	Often lumpy near the point of attachment to the wood.	None	None

7	Acc No. HZ/NAG/BOT/2026-48 <i>Fuscoporia gilva</i> (mustard-yellow polypore)	Nagwa; Lat: 23.98763233° Long: 85.36737737°; Alt: 616 m asl		1 - 3	Cluster of small, shelf-like bracket fungi growing in overlapping tiers on a weathered wooden log	Upper surfaces display warm yellowish-brown to orange-amber tones near the edges	Orange -red wavy margin	Velvety, finely textured outer margin	Packed with incredibly tiny, almost invisible pores	None	None	None
8	Acc No. HZ/NAG/BOT/2026-121 <i>Schizophyllum commune</i> (split-gill mushrooms)	Nagwa; Lat: 23.98763237° Long: 85.36737736°; Alt: 616 m asl		3 - 4	Small, fan-like or wavy caps that attach directly to wood without a distinct stem.	Creamy yellow and grayish-white to grayish-brown	Grayish-brown, wavy, lobed, or deeply incised margin	Dense yet spongy body texture.	<1, features pale, radiating gill-like folds that split lengthwise down the middle	None	None	None
9	Acc No. HZ/NAG/BOT/2026-49 <i>Crepidotus</i> sp	Nagwa; Lat: 23.98763249° Long: 85.36737727°; Alt: 616 m asl		2 - 3	Pileus small 0.5 to 5 cm in diameter, convex, semicircular, fan-shaped	Yellowish, brownish orange	Rolls inward toward the gills.	Thin and delicate, rubbery	Radiate outward from the lateral point of attachment to the wood.	Stipe absent	None	None
10	Acc No. HZ/NAG/BOT/2026-118 <i>Volvariella bombycina</i> (silky rosegill, silky sheath, tree mushroom)	Nagwa; Lat: 23.98763239° Long: 85.36737627°; Alt: 616 m asl		3 - 4 (early button stage)	Small, round, whitish fungal fruiting bodies in an early button stage with speckled brown caps sprouting from a decaying wood crack of a log. It starts egg-shaped, matures into a bell shape.	Pure white with brown spots.	Entire	Delicate but firm	Not observed	Short	None	cup-shaped
11	Acc No. HZ/NAG/BOT/2026-33 <i>Trametes versicolor</i>	Nagwa; Lat: 23.98763240° Long: 85.36737630°; Alt: 616 m asl		15 - 17	Fan-shaped or lobed brackets growing on decaying wood	Distinct concentric rings showing alternating bands of dark brown and a pale white or cream margin.	Wavy, lobed and smooth margins	Woody, whitish to pale micro-pores on the underside	None	None	None	None
12	Acc No. HZ/NAG/BOT/2026-46 <i>Stereum</i> sp	Nagwa; Lat: 23.98763240° Long: 85.36737630°; Alt: 616 m asl		10 - 14	Fan-shaped or lobed brackets, soft fruiting body, growing on decaying wood	Concentric bands of tan and beige to orange-brown, with patches near the bases.	Wavy edges soft margins	Soft, can crack with pressure, almost smooth undersurface.	None	None	None	None

13	Acc No. HZ/NAG/BOT/2026- 52 <i>Favolus grammacephalus</i>	Nagwa; Lat: 23.98763241° Long: 85.36737631°; Alt: 616 m asl		4 - 5	Mushroom with a wavy, fan- or cup-shaped cap growing out of a decaying log.	Bright orange, radial fibers and darker small scales near the stipe base	Wavy, irregular, flabelliform, lobed edges	Rough, porous underneath	None	Short and stout, glabrous (smooth), matching the pileus color.	None	None
14	Acc No. HZ/NAG/BOT/2026-117 <i>Tropicoporus</i> sp	Nagwa; Lat: 23.98763241° Long: 85.36737741°; Alt: 616 m asl		18 - 20	Resupinate, effused-reflexed to completely pileate up to 1 cm thick and 20 cm diameter.	Darkens from the center outward to shades of dark rusty-brown, black.	Not smooth outline, multiple layered, semicircular, fan-shaped, irregular.	Radially cracked or crusted upper surface. The underside features a porous surface, colored in shades dull brown.	None	Sessile	None	None
15	Acc No. HZ/NA/BOT/2026-43 <i>Clitocybe</i> sp	New area; Lat: 23.99586679° Long: 85.34973780°; Alt: 613 m asl		6 - 7	Cluster of white, broad-capped circular mushrooms with a minute blue hue at the center of the pileus.	White all over but central depression has a bluish hue.	Regular, entire, very soft and smooth	Smooth and friable.	< 1	Slender, white, 3 - 4 cm long, soft.	None	None
16	Acc No. HZ/NA/BOT/2026-54 <i>Macrocybe</i> sp	New area; Lat: 23.99586689° Long: 85.34973783°; Alt: 613 m asl		28 - 30	Big fleshy pileus 10-14 cm, convex, creamy white to light brown, fused at the thick base, broad, flat, no sharp umbo	Cream-white with brownish scales slightly cracked	Entire, slightly cracked at some places.	Soft, rough pileus and stout stipe	< 1	Very thick, 12-15 cm long, stout and has no long tapering pseudorhiza. Joined at the base	None	None
17	Acc No. HZ/NAG/BOT/2026- 45 <i>Tremella fuciformis</i> (snow fungus)	Nagwa; Lat: 23.98763244° Long: 85.36737634°; Alt: 616 m asl		2 - 8	Growing on dead hardwood logs	Translucent, jelly-like thin lobes, watery-white	Thin, crinkled, seaweed-like, frilly	Soft, gelatinous, jelly-like, translucent, wobbly	None	None	None	None
18	Acc No. HZ/NA/BOT/2026- 50 <i>Volvopluteus gloiocephalus</i>	New area; Lat: 23.99586699° Long: 85.34973733°; Alt: 613 m asl		1.5 - 2	Grow on compost, garden soil.	Cap colour whitish with a light grey-brown, slightly sticky, shiny centre.	Entire, regular, non-striate, slightly incurved, smooth	Pileus viscid when moist, smooth, glabrous, stipe smooth, longitudinally fibrillose-silky, fragile-fleshy.	Free from stipe, crowded, lamellulae present, edge entire.	Twisted, hollow-ish, and not attached to a termite root.	None	Sac-like white tissue

19	Acc No. HZ/NA/BOT/2026-115 <i>Ganoderma</i> sp	New area; Lat: 23.99586689° Long: 85.34973743°; Alt: 613 m asl		12 - 14	It is a hard, woody, shelf-like bracket growing on wood. Big fused mass.	Reddish-brown to dark brown, with distinct concentric growth rings	Lobed, entire, wavy, zonate, lighter brown at growing edge.	Thick, hard woody	None	Sessile	None	None
20	Acc No. HZ/NA/BOT/2026-116 <i>Infundibulicybe gibba</i> (Funnel cap)	New area; Lat: 23.99586688° Long: 85.34973744°; Alt: 613 m asl		56 - 8	Grow on moist, humus rich soil, pileus 2-5 cm, deeply infundibuliform, hygrophanous	Light brown with darker centre	Wavy, uplifted, striate.	Flesh thin.	< 1, gills decurrent, crowded, whitish-cream.	Stipe central, thin, pale, 2-4 cm.	None	None

asl= above sea level

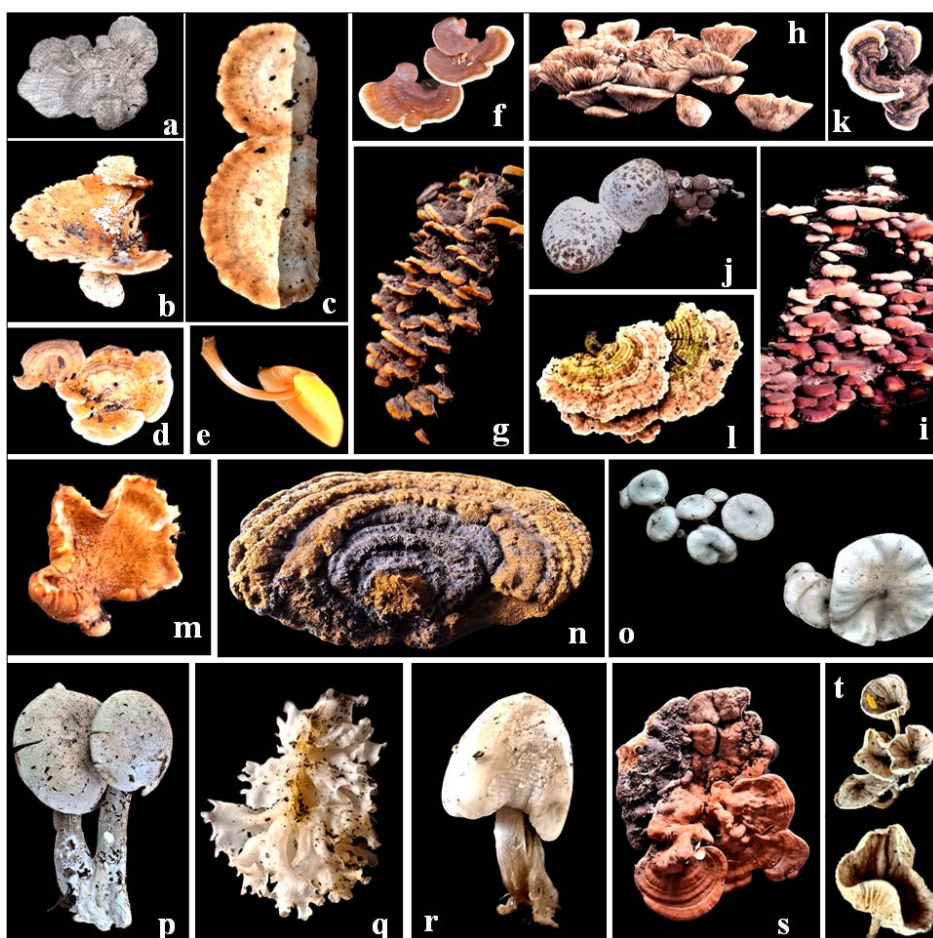


Fig 1: The mushrooms growing in their natural habitat – (a) Acc No. HZ/NA/BOT/2026- 53 : *Daedaleopsis confragosa*, (b) Acc No. HZ/NA/BOT/2026- 31: *Laetiporus* sp, (c) Acc No. HZ/NA/BOT/2026-36: *Trametes* sp, (d) Acc No. HZ/NA/BOT/2026- 51: *Stereum hirsutum*, (e) Acc No. HZ/NA/BOT/2026- 119: *Mycena leaiana*, (f) Acc No. HZ/NA/BOT/2026-120: *Ganoderma sessile*, (g) Acc No. HZ/NA/BOT/2026-48: *Fuscoporia gilva*, (h) Acc No. HZ/NA/BOT/2026-121: *Schizophyllum commune*, (i) Acc No. HZ/NA/BOT/2026- 49: *Crepidotus* sp, (j) Acc No. HZ/NA/BOT/2026- 118: *Volvariella bombycina*, (k) Acc No. HZ/NA/BOT/2026-33: *Trametes versicolor*, (l) Acc No. HZ/NA/BOT/2026- 46: *Stereum* sp, (m) Acc No. HZ/NA/BOT/2026-52: *Favolus gramocephalus*, (n) Acc No. HZ/NA/BOT/2026- 117: *Tropicoporous* sp, (o) Acc No. HZ/NA/BOT/2026-43: *Clitocybe* sp, (p) Acc No. HZ/NA/BOT/2026-54: *Macrocybe* sp, (q) Acc No. HZ/NA/BOT/2026-45: *Tremella fuciformis*, (r) Acc No. HZ/NA/BOT/2026- 50: *Volvopluteus gloiocephalus*, (s) Acc No. HZ/NA/BOT/2026-115: *Ganoderma* sp, (t) Acc No. HZ/NA/BOT/2026-116: *Infundibulicybe gibba*

Conclusion

The diverse wild macrofungi of Hazaribag signify an essential intersection of ecological dynamics and indigenous

cultural heritage. To prevent data loss, comprehensive taxonomic classification, ethno-mycological surveys and targeted habitat conservation initiatives must be prioritized.

Formally documenting this underexamined repository is crucial to preserve a major pillar of Jharkhand's natural biodiversity. In our present survey, the total collection of twenty mushroom species belonged to thirteen families and one division Basidiomycota. Five mushrooms belonged to Polyporaceae; two mushrooms each from Stereaceae, Hymenochaetaceae, Pluteaceae; one mushroom each from Laetiporaceae, Mycenaceae, Ganodermataceae, Schizophyllaceae, Crepidotaceae, Clitocybaceae, Callistosporiaceae, Tremellaceae and Tricholomataceae. Almost all mushrooms that were collected in the present study were saprophytic and inedible in nature. These results demonstrate a pressing need for specific conservation frameworks aimed at protecting this rich fungal diversity prior to its irreversible disappearance from the ecosystem.

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