

= *Leucopholiota decorosa* =

Leucopholiota decorosa is a species of fungus in the Tricholomataceae family of mushrooms . Commonly known as the decorated Pholiota , it is distinguished by its fruit body which is covered with pointed brown , curved scales on the cap and stem , and by its white gills . Found in the eastern United States , France , and Pakistan , it is saprobic , growing on the decaying wood of hardwood trees . *L. decorosa* was first described by American mycologist Charles Horton Peck as *Agaricus decorosus* in 1873 , and the species has been transferred to several genera in its history , including *Tricholoma* , *Tricholomopsis* , *Armillaria* , and *Floccularia* . Three American mycologists considered the species unique enough to warrant its own genus , and transferred it into the new genus *Leucopholiota* in a 1996 publication . Lookalike species with similar colors and scaly fruit bodies include *Pholiota squarrosoides* , *Phaeomarasmium erinaceellus* , and *Leucopholiota lignicola* . *L. decorosa* is considered an edible mushroom .

= = Taxonomy and naming = =

The species now known as *Leucopholiota decorosa* was first described by Charles Peck in 1873 , based on a specimen he found in New York State ; he placed it in *Tricholoma* , then considered a subgenus of *Agaricus* . In 1947 , Alexander Smith and Walters transferred the species into the genus *Armillaria* , based on its apparent close relationship to *Armillaria luteovirens* ; the presence of clamp connections in the hyphae , the amyloid spores , and the structure of the veil and its remnants . The genus *Armillaria* , as it was understood at the time , would later be referred to as a " taxonomic refugium for about 270 white @-@ spored species with attached gills and an annulus . " Smith later transferred the species to the genus *Tricholomopsis* ; however , he neglected the amyloid spores , the recurved scales of the cap cuticle , and the lack of cells known as pleurocystidia , features which should have ruled out a taxonomic transfer into the genus . In 1987 , the species was transferred yet again , this time to the genus *Floccularia* .

The appearance of a specimen at a 1994 mushroom foray in North Carolina resulted in a collaboration between mycologists Tom Volk , Orson K. Miller , Jr. and Alan Bessette , who renamed the species *Leucopholiota decorosa* in a 1996 *Mycologia* publication . *Leucopholiota* was originally a subgenus of *Armillaria* , but the authors raised it to generic level to accommodate *L. decorosa* , which would become the type species . In 2008 , Henning Knudsen considered *L. decorosa* to be the same species as what was then known as *Amylolepiota lignicola* , and considered the two names to be synonymous . However , Finnish mycologist Harri Harmaja rejected this interpretation . Originally , Harmaja believed *Lepiota lignicola* sufficiently distinct from other similar taxa to deserve its own genus *Amylolepiota* , which he described in a 2002 publication . He changed his mind in 2010 , writing " the differences between the type species of both genera are small and are thus best considered as differences at the species level " ; with this he transferred the taxon to *Leucopholiota* , and it is now known as *Leucopholiota lignicola* , the second species in genus *Leucopholiota* .

The genus name *Leucopholiota* means " white Pholiota " (from ?????? , leukós) , referring to the gills and the spores ; it was proposed in 1980 by Henri Romagnesi who originally described it as a subgenus of *Armillaria* . The specific epithet *decorosa* , though intended for " elegant " or " handsome " , actually means " decent " , " respectable " , " modest " , or " decorous " . *L. decorosa* is commonly known as the " decorated Pholiota " .

= = Phylogenetics = =

Phylogenetic analysis based on evidence from ITS and large subunit ribosomal RNA sequence data have not confirmed that *Leucopholiota decorosa* belongs in the Tricholomataceae family . However , the analysis does show it to be phylogenetically related to *Phaeolepiota aurea* , a species of unclear status in the Agaricales , and it confirms that *L. decorosa* does not belong in the family Agaricaceae . According to the species authors , *L. decorosa* would fit best in the Biannularieae tribe of the Tricholomataceae as described by Rolf Singer in his comprehensive monograph on the

Agaricales . This tribe also contains the genera *Catathelasma* and *Armillaria* .

= = Description = =

The caps of *L. decorosa* , initially conic or hemispherical in shape , later expand to become convex or flattened in maturity . The caps are typically between 2 to 6 cm (0 @. @ 8 to 2 @. @ 4 in) in diameter , with surfaces covered with many small curved brown scales . The edge of the cap is typically curved inwards and may have coarse brown fibers attached . The cap is cinnamon brown , darker in the center . The gills are spaced together closely ; they have a narrow (adnexed) attachment to the stem , and their edges are " finely scalloped " . The stem is 2 @. @ 5 to 7 @. @ 0 cm (1 @. @ 0 to 2 @. @ 8 in) tall by 0 @. @ 6 to 1 @. @ 2 cm (0 @. @ 2 to 0 @. @ 5 in) thick , and like the cap , is covered with scales from the bottom to the level of the annular zone ; above this point the stipe is smooth . The partial veil is made up of brown fibers " that flare upward as an annulus . " It is roughly the same thickness throughout the length of the stem , or may be slightly thinner near the top . The flesh is white and thick , and has a firm texture ; its odor is indistinct , and the taste either mild or bitter . The spore deposit is white .

The spores are hyaline (translucent) , roughly elliptical in shape , have thin walls , and are amyloid , meaning they absorb iodine stain in Melzer 's reagent . Additionally , in acetocarmine stain , they appear binucleate (having two nuclei) . They have dimensions of 5 @. @ 5 ? 6 (more rarely 7) by 3 @. @ 5 ? 4 @. @ 0 μ m . The spore @-@ bearing cells , the basidia , are club @-@ shaped , translucent , and four @-@ spored . The cheilocystidia (cystidia on the gill edge) are club @-@ shaped and 19 @-@ 24 by 3 ? 5 μ m . The cap cuticle is a trichodermium ? a type of tissue composed of erect , long , threadlike hyphae of same or different lengths , and originating from an interwoven layer of hyphae that ascends gradually until terminal cells are somewhat parallel to each other . The trichodermal hyphae are thin @-@ walled , measuring 7 @. @ 6 ? 22 @. @ 0 μ m , and stain yellowish in Melzer 's reagent . The hyphae comprising the cap tissue are thin @-@ walled and 5 ? 10 μ m in diameter , while those of the gill tissue are also thin @-@ walled , and 3 @. @ 5 ? 7 @. @ 0 μ m , and interspersed with oleiferous cells (characterized by strongly refractive , homogeneous contents) . Clamp connections are present in the hyphae of all tissues .

= = Edibility = =

According to one field guide published in 2006 , *Leucopholiota decorosa* is edible , based on the following comment by McIlvaine and MacAdam , written in 1900 : " it is of good consistency and flavor , having a decided mushroom taste . " Other older sources report the edibility as unknown .

= = Similar species = =

The species *Pholiota squarrosoides* has a similar outward appearance , but it may be distinguished by its brown spores and sticky cap surface underneath the scales . In the hedgehog pholiota (*Phaeomarasmium erinaceellus*) , the overall size is smaller ? cap diameter 1 to 4 cm (0 @. @ 4 to 1 @. @ 6 in) ? and the spores are cinnamon @-@ brown . Some species in the genus *Cystoderma* also appear similar , but can be distinguished by microscopic features , like the presence of spherical (rather than club @-@ shaped) cells in the cuticle of the cap , and also their habitat ? *Cystoderma* usually grows on soil , rather than wood .

The only other species of *Leucopholiota* , *L. lignicola* , may be distinguished from *L. decorosa* by the following characteristics : free gills in *L. lignicola* compared with adnexed gills in *L. decorosa* ; *L. lignicola* tends to grow on the wood of Birch , and preferably in old @-@ growth forests ; *L. lignicola* is restricted to boreal forest , compared to *L. decorosa* that grows in temperate regions ; *L. lignicola* has a wide distribution throughout northern coniferous forests in Eurasia .

= = Habitat and distribution = =

Leucopholiota decorosa is a saprobic species , deriving nutrients from decaying organic matter , particularly the rotting branches and stumps of deciduous trees . One field guide notes a preference for sugar maple . It grows singly or in bunches , clustered together at the base of the stem . In Ohio , it typically fruits from late September to mid November .

In addition to its known distribution in mostly eastern North America , *Leucopholiota decorosa* has also been collected from France . In 2007 , it was reported from the Astore District of Pakistan , at an altitude of about 3 @, @ 600 m (11 @, @ 800 ft) .