

= *Mycena fonticola* =

Mycena fonticola is a species of fungus in the Mycenaceae family . First reported in 2007 , it is known only from central Honshu , in Japan , where it grows on dead leaves and twigs in low @-@ elevation forests dominated by oak trees . The fruit body of the fungus has a smooth , violet @-@ brown cap up to 2 @. @ 5 cm (1 @. @ 0 in) in diameter , and a slender stem up to 10 cm (3 @. @ 9 in) long . Distinguishing microscopic characteristics of the mushroom include the relatively large , distinctly amyloid spores (turning blue to black when stained with Melzer 's reagent) , the smooth , spindle @-@ shaped cheilocystidia (cystidia on the gill edge) , the absence of pleurocystidia (cystidia on the gill face) , the diverticulate hyphae of the cap cuticle , and the absence of clamp connections .

= = Taxonomy , naming , and classification = =

The fungus was first collected by Japanese mycologist Haruki Takahashi in 1999 , and described as a new species along with seven other Japanese *Mycenas* in a 2007 publication . The mushroom 's Japanese name is Izumino @-@ ashinagatake (?????????) . The specific epithet *fonticola* is derived from Latin , and means " dweller in fountain " .

According to Takahashi , various macro- and microscopic features suggest that this species is best classified in the section *Fragilipedes* (Fr .) Quél . , as defined by the Dutch *Mycena* specialist Maas Geesteranus .

= = Description = =

The cap is 1 to 2 @. @ 5 cm (0 @. @ 4 to 1 @. @ 0 in) in diameter , and ranges in shape from conical to convex to bell @-@ shaped . The surface has radially arranged shallow grooves extending almost to the center of the cap . The cap surface is somewhat hygrophanous (changing color as it loses or absorbs water) , dry , and smooth . It is colored violet @-@ brown when young , then becomes somewhat paler from the margin . The white flesh is up to 1 mm thick , and lacks any distinctive odor or taste . The stem is long and slender compared to the size of the cap , typically 7 to 10 cm (2 @. @ 8 to 3 @. @ 9 in) tall by 1 to 2 @. @ 5 mm (0 @. @ 04 to 0 @. @ 10 in) thick , cylindrical , slightly enlarged at the base , and hollow . It is grayish @-@ brown to violet @-@ brown at the top , gradually becoming violet @-@ brown on the lower portion . The stem surface is initially pruinose (appearing to be covered with a fine whitish powder) , but becomes smooth in age . The stem base bears large , bristle @-@ like coarse white hairs . The gills are adnexed (narrowly attached to the stem) , with between 23 ? 27 reaching the stem . The gills are up to 2 @. @ 5 mm (0 @. @ 1 in) broad , thin , and have a whitish or with a grayish hue ; the gills edges are the same color as the gill faces .

= = Microscopic characteristics = =

The spores are ellipsoid , smooth , colorless , distinctly amyloid (absorbing iodine stain from Melzer 's reagent) , thin @-@ walled , and measure 11 @. @ 5 ? 14 by 6 ? 8 μ m . The spore @-@ bearing cells , the basidia , are 17 ? 28 by 6 ? 8 μ m , club @-@ shaped , and four @-@ spored . The basidioles (immature or aborted basidia) are club @-@ shaped . The cheilocystidia (cystidia found on the gills edges) are 32 ? 39 by 5 ? 12 μ m , abundant , spindle @-@ shaped to roughly club @-@ shaped , often apically broadly rounded , smooth , colorless , and thin @-@ walled . They form a sterile gill edge . Pleurocystidia (cystidia on the gill faces) are absent in this species . The hymenophoral tissue (tissue of the hymenium @-@ bearing structure) is made of thin @-@ walled hyphae that are 7 ? 15 μ m wide , cylindrical , smooth , colorless , and dextrinoid (staining reddish to reddish @-@ brown in Melzer 's reagent) . The cap cuticle is made of parallel , bent @-@ over hyphae that are 2 ? 5 μ m wide , cylindrical , and densely covered with warty or finger @-@ like thin @-@ walled diverticulae that are colorless or contain cytoplasmic brownish pigment . The layer of

hyphae underlying the cap cuticle are parallel , colorless or with cytoplasmic brownish pigment , dextrinoid , and have short and inflated cells measuring up to 30 µm wide . The stem cuticle is made of parallel , bent @-@ over hyphae that are 3 ? 5 µm wide , and cylindrical . These hyphae are covered with scattered , thin @-@ walled warty or finger @-@ like diverticulae that can be either colorless , or contain brownish pigment in the cytoplasm . The flesh of the stem is made of longitudinally running , cylindrical hyphae that are 5 ? 17 µm wide , smooth , colorless , and dextrinoid . Clamp connections are absent in all tissues of this species .

= = = Similar species = = =

Mycena mustea is another similar *Mycena* that was discovered and reported concurrently with *M. fonticola* ; it differs in forming a pale grayish purple cap with a low and broad umbo . Microscopically , it has club @-@ shaped cheilocystidia with several apical short finger @-@ like outgrowths , and nondiverticulate hyphae in the stem cuticle .

= = Habitat and distribution = =

Mycena fonticola is known only from Kanagawa , Japan . Fruit bodies are found solitary or scattered , on dead leaves and twigs in low @-@ elevation forests dominated by the oak species *Quercus myrsinaefolia* and *Q. serrata* .