= Mycena nidificata =

Mycena nidificata is a species of fungus in the Mycenaceae family of the Agaricales . First collected in 2000 and reported as a new species in 2007 , it is known only from Kanagawa , Japan , where it grows on the floor of oak forests . The dark brown irregularly wrinkled cap measures up to 25 mm (1 @.@ 0 in) in diameter . The cap is supported by a thin stem up to 50 mm (2 @.@ 0 in) long , which is covered at the base by a whitish hairlike growth , and attached to white , cord @-@ like rhizomorphs ? aggregations of mycelium that resemble plant roots . The underside of the cap features thin , distantly spaced grayish gills that have distinct veins running between them . At a microscopic level , distinguishing characteristics include the inamyloid spores (turning dark blue to black when stained with Melzer 's reagent) , the club @-@ shaped cheilocystidia (cystidia on the gill edges) with finger @-@ like appendages , the diverticulate cells in the outer layer of cap and stem , and the presence of clamp connections .

= = Taxonomy , naming , and classification = =

Mycena nidificata was first collected in 2000 by Japanese mycologist Haruki Takahashi , and reported as new along with seven other Mycenas in a 2007 publication . The specific epithet is derived from the Latin word nidificata , meaning " nidificate " ? " to make a nest " . Its Japanese name is Yamiiro @-@ kunugitake (?????????) .

According to Takahashi , the inamyloid spores , the diverticulate cap cuticle hyphae , and the dark pigment in the gill hyphae suggest that the fungus is best classified in the section Hiemales of the genus Mycena . Because of its medium @-@ sized , partly collybioid fruit bodies (i.e. , small to medium @-@ sized with white spore prints and convex caps , similar to species once placed in the genus Collybia) , the white cord @-@ like rhizomorphs , and its distinctly intervenose gills , it has an isolated position within the section .

= = Description = =

The cap is initially conical to convex to bell @-@ shaped , then flattened in age , ultimately reaching 10 to 25 mm (0 @.@ 4 to 1 @.@ 0 in) in diameter . The center of the cap is irregularly wrinkled to pitted , but less so toward the grooved margin . It is hygrophanous (changing color as it loses or absorbs water) , dry , initially pruinose (covered with what appears to be a fine white powder) , but soon becomes smooth . The color is blackish @-@ brown at the center , dark brown to reddish @-@ brown farther outward , and becoming much paler at the margin ; sometimes the cap is evenly dark brown . The flesh is up to 1 mm thick and white , and does not have any distinctive taste and odor . The stem is 40 to 50 mm (1 @.@ 6 to 2 @.@ 0 in) long by 1 @.@ 5 to 2 mm (0 @.@ 059 to 0 @.@ 079 in) wide , cylindrical , slightly enlarged at the base , central , slender , and hollow . The stem surface is dry , pruinose over the entire length , and does not become smooth with age . It is pale brownish at the top , and gradually becomes dark brown toward the base . The base is covered with a white mycelial hairlike growth (a tomentum) that is attached to white cord @-@ like rhizomorphs on the substratum . The gills are fused to the stem , and distantly spaced , with between 15 and 18 gills reaching the stem . The gills are up to 2 @.@ 5 mm broad , thin , grayish , and have distinct veins running between them . The gill edges are the same color as the gill faces .

= = = Microscopic characteristics = = =

The spores are roughly ellipsoid and measure 8 ? 11 by 5 ? 6 µm . They are smooth , colorless , inamyloid , and thin @-@ walled . The basidia (the spore @-@ bearing cells) are 28 ? 35 by 7 ? 8 µm , club @-@ shaped , and mostly four @-@ spored . The abundant cheilocystidia (cystidia on the gill edge) are club @-@ shaped , measure 30 ? 45 by 10 ? 15 µm , and form a sterile gill edge . They have several irregularly cylindrical to knob @-@ like apical appendages measuring 3 ? 11 by 2 ? 5 µm , which are colorless and thin @-@ walled . Pleurocystidia (cystidia on the gill face) are

absent in M. nidificata . The hymenophoral (hymenium @-@ bearing) tissue is made of smooth , thin @-@ walled hyphae that are 6 ? 26 µm wide , cylindrical (but often inflated) , and contain brownish pigment in the cytoplasm . These hyphae are dextrinoid , meaning they will turn reddish to reddish @-@ brown in the presence of Melzer 's reagent . The cap cuticle is made of parallel , bent @-@ over hyphae that are 3 ? 10 µm wide , cylindrical . The hyphae are smooth or covered with scattered , warty or finger @-@ like diverticulae . Under the cap cuticle is a layer of parallel hyphae containing cytoplasmic brownish pigment . The hyphae are dextrinoid , and contain short and inflated cells that are up to 40 µm wide . The stem cuticle is made of parallel , bent @-@ over hyphae 3 ? 8 µm wide , which are similar in appearance to the hyphae of the cap cuticle . The caulocystidia (cystidia on the stem) are relatively sporadic ; they are cylindrical , diverticulate , colorless , thin @-@ walled , and measure 45 ? 60 by 4 ? 8 µm . The stem tissue is composed of longitudinally arranged , cylindrical hyphae that are 10 ? 25 µm wide , dextrinoid , smooth , and have cytoplasmic brownish pigment . Clamp connections are present in the stem tissues , and at the septa at the bases of the basidia .

= = = Similar species = = =

Mycena granulifera , a species originally described from Brazil , is comparable to M. nidificata in having inamyloid spores , club @-@ shaped cheilocystidia with finger @-@ like outgrowths , and diverticulate cap cuticle hyphae . M. granulifera differs in forming a whitish , wrinkled cap and club @-@ shaped to roughly spindle @-@ shaped pleurocystidia . Mycena nidificata also bears some resemblance to the European species M. flos @-@ nivium , which is distinguished by having cylindrical , amyloid spores , gills without veins between them , and an absence of cord @-@ like rhizomorphs .

= = Habitat and distribution = =

Mycena nidificata is known only from Kanagawa , Japan . The mushroom is found growing solitary or scattered , on dead fallen twigs in forests dominated by the oak species Quercus castanopsis . Fruiting occurs from May to September .