= Lactarius argillaceifolius =

Lactarius argillaceifolius is a species of fungus in the Russulaceae family . The mushrooms produced by the fungus have convex to flattened drab lilac @-@ colored caps that are up to 18 cm (7 @.@ 1 in) wide . The cream @-@ colored gills are closely spaced together and extend slightly down the length of the stem , which is up to 9 cm (3 @.@ 5 in) long by 3 @.@ 5 cm (1 @.@ 4 in) thick . The mushroom produces an off @-@ white latex when injured that stains the mushroom tissue brownish .

The species is found in eastern North America , with a range extending from Canada to northeastern Mexico . It has also been found in pine plantations in Brazil , where it is probably an introduced species . Lactarius trivialis is a European counterpart that is similar in appearance . In addition to its distribution , it can be distinguished from L. argillaceifolius by differences in preferred habitat and color differences in the gills , cap , and latex . The L. argillaceifolius variety megacarpus , a larger form with caps up to 27 cm (11 in) wide , occurs under coast live oak and tanoak in the Pacific Coast states and Baja California . Variety dissimilis , described on the basis of a single specimen from South Carolina , differs from the main form in the microscopic structure of the cap cuticle .

= = Taxonomy and classification = =

The species was first described by American mycologists Lexemuel Ray Hesler and Alexander H. Smith in their 1979 monograph on the North American species of Lactarius . The type specimen ? collected by Smith from Oak Grove , Livingston County , Michigan , in July 1972 ? is housed at the University of Michigan Herbarium . Hesler and Smith simultaneously published the varieties dissimilis and megacarpus , collected from South Carolina and California , respectively . The variety megacarpus is commonly known as the " vulgar milkcap " .

Smith and Hesler classified L. argillaceifolius in subgenus Tristes , in stirps Argillaceifolius . This grouping of related species , which includes L. fumaecolor , is characterized by the gelatinous cuticle of the stem .

= = Description = =

The cap is 4 ? 18 cm (1 @.@ 6 ? 7 @.@ 1 in) wide , and initially convex to broadly convex before flattening out with a depressed center . The cap margin is curved inward , and often remains that way into maturity . The cap surface is covered with fine soft hairs when young , but later becomes smooth ; it is slimy and sticky when wet . The color of the cap ranges from lilac @-@ brown when young , fading to lilac @-@ tan or pale lilac @-@ gray and eventually to pale tan or pinkish @-@ buff at the center . The gills are attached to slightly decurrent (extending somewhat down the length of the stem) , broad , and packed together closely . They are cream @-@ colored when young , and later develop pinkish tones near the margin . In maturity , they become flushed with brownish @-@ orange . The color stains buff to olive @-@ brown to dark brown when bruised .

The stem is 6 ? 9 cm (2 @.@ 4 ? 3 @.@ 5 in) long by 1 @.@ 5 ? 3 @.@ 5 cm (0 @.@ 6 ? 1 @.@ 4 in) thick , and nearly equal in width throughout or tapering downward . Its surface may be slimy or dry , depending on the moisture in the environment . It is whitish , but in age becomes spotted with brownish stains . The flesh is firm , and white to buff . Its odor is not distinctive , while its taste is mild or slowly becomes slightly acrid . The latex is creamy @-@ white on initial exposure , and stains the gills grayish @-@ brown to dark brown or olive @-@ brown ; its taste is mild or slowly becomes slightly acrid . Older fruit bodies tend to have less abundant and weaker @-@ tasting latex . The spore print is pinkish @-@ buff . The edibility of L. argillaceifolius is unknown . The cap surface will turn yellow to orange when a drop of dilute potassium hydroxide is applied .

= = = Microscopic characteristics = = =

The spores are roughly spherical to broadly elliptical , and measure 7 ? 11 by 7 ? 8 µm . They are ornamented with warts and ridges that sometimes form a partial reticulum (a pattern of interconnected ridges) , with prominences up to 1 µm high . The spore are hyaline (translucent) and amyloid , meaning that they will absorb iodine when stained with Melzer 's reagent . The cap cuticle of young specimens is made of a tissue type known an ixotrichoderm , which contains gelatinized hyphae of different lengths arranged in roughly parallel fashion . As the mushroom matures , the cap cuticle gradually becomes an ixolattice ? characterized by branching , entangled , gelatinous hyphae . The basidia (the spore @-@ bearing cells) are four @-@ spored , and measure 45 ? 52 by 9 ? 10 @.@ 5 µm . The pleurocystidia (cystidia on the gill face) are abundant , and relatively long ? between 60 ? 140 µm long by 6 ? 14 µm thick . The cheilocystidia (cystidia on the gill edge) measure 32 ? 67 by 6 ? 9 µm .

= = = Varieties = = =

Lactarius argillaceifolius var. dissimilis , a variety reported from South Carolina , is nearly identical in appearance , but it has white latex that tastes bitter then acrid . The structure of the cap cuticle differs from the nominate variety in that it has dextrinoid (staining yellowish or reddish brown with Meltzer 's reagent) incrustations on the hyphae . The variety megacarpus has a larger cap (up to 27 cm (11 in) wide with flesh that is up to 3 cm (1 @.@ 2 in) thick) , and white and unchanging latex with an acrid taste . Its stem measures 16 to 20 cm (6 @.@ 3 to 7 @.@ 9 in) long by 4 to 5 cm (1 @.@ 6 to 2 @.@ 0 in) wide near the top . Microscopically , the spores of var. megacarpus are more reticulate than the nominate variety .

= = = Similar species = = =

Lactarius trivialis is a European species that is similar in appearance to L. argillaceifolius , and they are often confused for each other . L. trivialis can be distinguished by gills that stain brown when exposed to the latex , and a preference for growing in conifer- and birch @-@ rich boreal and subalpine forests . Variety megacarpus may be confused with L. pallescens , a smaller paler @-@ colored species with latex that stains gills lilac rather than brown .

= = Habitat and distribution = =

Like all Lactarius species , L. argillaceifolius is mycorrhizal . The fruit bodies of Lactarius argillaceifolius grow scattered or in groups on the ground under hardwoods , especially oak , from July to October . It is often one of the first mycorrhizal mushrooms to fruit in forests dominated by oak and hickory . The fruit bodies are slow to develop and are long @-@ lasting . The species is found from eastern Canada south to Florida , and west to Minnesota and Texas . It is common in northeast Mexico . The mushroom has also been reported from southern Brazil (state of Santa Catarina) growing in association with pine (Pinus elliottii) plantations , where it has probably been introduced with pine seedlings brought by settlers . L. argillaceifolius var. megacarpus has been collected from Baja California , California , Oregon , and Washington , where it grows in association with coast live oak and tanoak .