= Tricholoma vernaticum =

Tricholoma vernaticum is an agaric fungus of the genus Tricholoma native to the Pacific Northwest region of the United States . The fungus was originally described in 1976 as a species of Armillaria when that genus was more inclusive ; it received its current name twenty years later . The stout fruit bodies (mushrooms) have moist white to grayish caps (later becoming grayish @-@ brown with age) , a membranous ring on the stipe , and an odor resembling cucumbers . Mycorrhizal with conifers , the fungus fruits in the spring or early summer , with its mushrooms appearing on the ground singly or in groups at high elevations , often at the edge of melting snowbanks . The edibility of the mushroom is unknown , but it has a strong unpleasant odor and a mealy taste .

= = Taxonomy = =

The species was originally described from California as Armillaria olida by mycologists Harry D. Thiers and Walter Sundberg in 1976 . The type specimen was collected on May 6 , 1972 , in the Crystal Basin Recreation Area in El Dorado County . Thiers and Sundberg classified it in the section Ponderosa of genus Armillaria due to its inamyloid spores , but noted that its relationship to other species was unclear . They also noted the similarity of the form and color of its cap to species in section Constricta of genus Lyophyllum .

Thiers and Sundberg used a broad species concept of Armillaria , including species with a white spore print , gills attached to the stipe , and a ring formed from a partial veil , regardless of their ecological preferences . Today , Armillaria is restricted to wood @-@ rotting species that form black rhizomorphs , and several mycorrhizal former Armillaria have since been transferred to Tricholoma . The name Tricholoma olida was unavailable for this species , because it was previously used in 1920 by Josef Velenovský , so Kris Shanks proposed the new name T. vernaticum . The specific epithet refers to its growth in the spring . The previous epithet olida derives from the Latin olidum , meaning " stinking " or " smelling " .

Tricholoma vernaticum is classified in the subgenus Contextocutis of the genus Tricholoma on account of its clamp connections and interwoven hyphae in the cap cuticle .

= = Description = =

The cap is convex to broadly convex before flattening out in age , and reaches diameters between 5 and 17 cm (2 @.@ 0 and 6 @.@ 7 in) wide . The surface is dry to moist , smooth , and in maturity appears to be made of flattened fibers arranged radially . As the mushroom ages , the cap color changes from white to fuscous (dusky brownish grey) or brown , usually with olive , grayish or pale tan regions . The cap margin , initially curved downward , lifts up and becomes lobed or irregular with age . The flesh is thick and white , with a strongly farinaceous odor similar to cucumber or watermelon rind . Gills initially have an emarginate (notched) to adnate attachment to the stipe , but pull away as the mushroom matures to become seceding or almost free from attachment . They are thick and closely spaced , and whitish in color , sometimes developing pale pink tints . The solid stipe measures 4 ? 14 cm (1 @.@ 6 ? 5 @.@ 5 in) long by 1 @.@ 3 ? 3 @.@ 5 cm (0 @.@ 5 ? 1 @.@ 4 in) thick , and is either equal in width through its length or slightly club @-@ shaped . It has a dry surface , and a texture that is smooth to silky fibrillose above the ring , and appressed fibrillose to scaly below the ring . The ring , located in the middle to upper half of the stem , is sometimes inconspicuous . The edibility of the mushroom is unknown with certainty , although it has been noted to have a strongly farinaceous taste , and an unpleasant odor " strongly reminiscent of rotting white potatoes . "

The spore print is white . Spores are elliptic (or narrowly so) , and measure 8 ? 12 by 4 @.@ 8 ? 6 @.@ 2 µm . There are clamp connections present in the hyphae . The basidia (spore @-@ bearing cells) are four @-@ spored , club @-@ shaped , and measure 23 ? 30 by 8 ? 10 µm . The hymenium lacks cystidia . The cap flesh comprises homogenous , interwoven hyphae that are 3 ? 5 µm in diameter , while the cap cuticle is a 200 ? 300 @-@ micrometer thick layer of interwoven ,

gelatinous hyphae up to 4 µm in diameter .

= = = Similar species = = =

When collected in its typical habitat and during the appropriate season , Tricholoma vernaticum mushrooms can be readily identified because of their prominent characteristics : white color , stocky fruit body , farinaceous odor , and ring on the stipe . Tricholoma lookalikes in the same geographic region grow at lower elevations , typically in autumn . T. portentosum has a gray cap , a stipe with yellow tints , and lacks a ring , while T. mutabile has violet tones in its cap and also lacks a ring . Other lookalikes include Hygrophorus subalpinus and H. camarophyllus , but these species have broad , waxy gills , and lack the characteristic odor of T. vernaticum .

= = Habitat and distribution = =

Fruit bodies of Tricholoma vernaticum grow singly or in groups under conifers in late spring and early summer . A fairly common species throughout its range , it is found at high elevations in California north to Oregon and Washington . It is a snowbank fungus , meaning it is commonly found at the edge of melting snowbanks . Fruit bodies are often buried under humus , forming hardly visible " mushrumps " , apparent only as cracked bumps on the ground .