

= *Tylopilus tabacinus* =

*Tylopilus tabacinus* is a species of bolete fungus in the Boletaceae family . It is characterized by a tawny @-@ brown cap measuring up to 17 @.@ 5 cm ( 6 @.@ 9 in ) in diameter , and a reticulated stem up to 16 @.@ 5 cm ( 6 @.@ 5 in ) long by 6 cm ( 2 @.@ 4 in ) thick . A characteristic microscopic feature is the distinctive crystalline substance encrusted on the hyphae in the surface of the cap . The species is known from the eastern United States from Florida north to Rhode Island , and west to Mississippi , and from eastern Mexico . It is a mycorrhizal species , and associates with oak and beech trees . The edibility of the mushroom is unknown .

= = Taxonomy = =

The species was first described by American mycologist Charles Horton Peck in 1896 under the name *Boletus tabacinus* . Peck collected the type specimens in red clay on the bank of a roadside ditch in Alabama . William Alphonso Murrill transferred the species to his then newly described genus *Ceriumyces* in 1909 ; this genus has since been subsumed into *Boletus* . Rolf Singer moved the species to *Tylopilus* in 1944 . Although Singer considered *B. tabacinus* to be the same species as *Boletus pisciodorus* , this opinion was contested by William Alphonso Murrill , who , after examining the type specimens of both species , considered them to be distinct . Murrill 's conclusion was later corroborated by Alexander H. Smith and Harry D. Thiers in the 1971 monograph of boletes . In 1945 , Singer defined the varieties *amarus* and *dubius* that he collected in Florida .

= = Description = =

The caps of the fruit body initially have a rounded shape , but later become broadly convex and eventually flattened in age ; they reach dimensions of 4 @.@ 5 ? 17 @.@ 5 cm ( 1 @.@ 8 ? 6 @.@ 9 in ) wide . The color ranges from yellowish @-@ brown to orangish @-@ brown to tobacco brown . The cap surface is dry with a somewhat velvet @-@ like texture , although in larger specimens the surface is areolate ( divided into small areas by cracks ) . The cap margin is even and wavy .

The tubes on the underside of the cap ( comprising the hymenium ) are dark brown to cinnamon @-@ brown . The angular to circular pores are lighter in color than the tubes and number about 1 ? 2 pores per millimeter , while the tubes are up to 1 @.@ 4 cm ( 0 @.@ 55 in ) long . The pore surface is depressed around the stem . The cap flesh is white , but typically stains purplish @-@ buff or pinkish @-@ buff when cut . The stipe typically measures 4 ? 16 @.@ 5 cm ( 1 @.@ 6 ? 6 @.@ 5 in ) by 2 @.@ 5 ? 6 cm ( 1 @.@ 0 ? 2 @.@ 4 in ) thick . When young , it is bulbous , but matures to become more or less equal in width throughout . Its color is roughly the same as the cap , although it tends to be slightly darker in the upper portion , where it is reticulate ( covered with a net @-@ like patterns of ridges ) . The odor of the mushroom has been described variously as " not distinctive , fruity , fishy , or pungent " , while the taste is indistinct to slightly bitter . The edibility of the mushroom is unknown . The variety *amarus* is similar in appearance , but has bitter @-@ tasting flesh , while variety *dubius* has a lighter colored @-@ cap and less distinctive reticulations on the apex of the stem .

Fruit bodies produce a spore print ranging in color from pinkish @-@ brown to reddish @-@ brown . The spores measure 10 ? 17 by 3 @.@ 5 ? 4 @.@ 5 ?m , and are fusoid ( somewhat spindle @-@ shaped ) to elliptical . Spores have a smooth surface , and a plage ( a depressed area where the spore was once attached to the basidium via the sterigma ) . The spore walls are thin , up to 0 @.@ 2 ?m . They are pale yellow to cream green in a solution of potassium hydroxide , pale yellow @-@ rust in Melzer 's reagent , and blue in Methyl blue ; without stain , they appear hyaline to pale yellow . The cap cuticle is an interwoven trichodermium ? a cellular arrangement whereby the hyphae are of roughly equal length and arranged perpendicularly to the surface . The terminal ( end ) cells of the trichodermium are 6 @.@ 5 ? 11 @.@ 5 ?m in diameter , and roughly equal in width throughout their length . They are encrusted with a crystalline substance , a feature that is uncommon in the Boletaceae . The hyphae of the tubes are 5 @.@ 0 ? 13 @.@ 0 ?m in diameter . Clamp

connections are absent from the hyphae .

The basidia ( spore @-@ bearing cells ) of *T. tabacinus* are club @-@ shaped and measure 23 @. @ 5 ? 37 @. @ 0 by 8 @. @ 5 ? 13 @. @ 0 ?m . The pleurocystidia ( cystidia found on the inner surface of the tubes ) are 45 @. @ 0 ? 60 @. @ 0 by 6 @. @ 5 ? 12 @. @ 5 ?m , lanceolate ( lance @-@ shaped ) to narrowly fusoid @-@ ventricose ( enlarged in the middle and somewhat spindle @-@ shaped ) . Cheilocystidia ( cystidia on the outer edges of the tubes ) are absent . The caulocystidia ( cystidia on the stem ) form the reticulations on the stem ; they are usually club @-@ shaped and measure 21 @. @ 0 ? 40 @. @ 5 by 6 @. @ 5 ? 10 @. @ 5 ?m .

= = = Similar species = = =

*Boletus pisciodorus* is similar in form to *Tylopilus tabacinus* . Unlike , *T. tabacinus* however , *B. pisciodorus* has spores that are hyaline in mass , and dark yellowish @-@ brown rather than hyaline when viewed with a light microscope . Further , *B. pisciodorus* has a fishy odor that is apparent in both fresh and dried specimens .

= = Habitat and distribution = =

*Tylopilus tabacinus* forms ectomycorrhizal associations with oaks , and fruit bodies are usually found solitarily , scattered , or in groups on sandy soil under oaks or in mixed oak @-@ pine woods from July to September . In the United States , the mushroom is distributed from Florida north to Rhode Island , and west to Mississippi . It has also been collected from a montane cloud forest of Mexican Beech ( *Fagus grandifolia* var. *mexicana* ) in the state of Hidalgo , Mexico . The occurrence of the mushroom is " occasional to fairly common " . The varieties *amarus* and *dubius* are rare , known only from their original collection locations in Gainesville , Florida .