

= *Tricholoma pardinum* =

Tricholoma pardinum , commonly known as spotted tricholoma , tiger tricholoma , tigertop , leopard knight , or dirty trich , is a gilled mushroom widely distributed across North America and Europe , as well as parts of Asia . It is generally found in beech woodland in summer and autumn . Two subspecies have been described from southern Europe . First officially described by Christiaan Hendrik Persoon in 1801 , *Tricholoma pardinum* has had a confusing taxonomic history that extends over two centuries . In 1762 , German naturalist Jacob Christian Schäffer described the species *Agaricus tigrinus* with an illustration corresponding to what is thought to be *T. pardinum* , and consequently , the name *Tricholoma tigrinum* has been used erroneously in some European field guides .

The fruit body of *Tricholoma pardinum* is an imposing mushroom with a pale grey cap up to 15 cm (6 in) in diameter that is covered with dark brownish to greyish scales . The gills are whitish , and are not attached to the stout white to pale grey @-@ brown stalk . The spore print is white . One of the more toxic members of the genus *Tricholoma* , the species has been implicated in a number of episodes of mushroom poisoning , probably because it is a large , attractive mushroom with a pleasant smell and taste , and it bears a superficial resemblance to several edible species , like *Tricholoma terreum* . Ingesting *T. pardinum* ? even in small quantities ? results in a severe , persistent gastroenteritis caused by an unknown mycotoxin .

= = Taxonomy = =

Christiaan Hendrik Persoon described this species as *Agaricus myomyces* var. *pardinus* in 1801 , although he queried whether it was a distinct species . However , the German naturalist Jacob Christian Schäffer had in 1762 published *Fungorum qui in Bavaria et Palatinatu circa Ratisbonam nascuntur Icones* , in which he described a mushroom he called *Agaricus tigrinus* . The illustration accompanying the name fits what we now know as *Tricholoma pardinum* , although the description is less clear . To confuse matters further , Elias Magnus Fries used the name *Agaricus tigrinus* in his 1821 work *Systema Mycologicum* , in accordance with Bulliard 's 1782 description , which now corresponds with *Lentinus tigrinus* . In his 1838 work *Epicrisis systematis mycologici : seu synopsis hymenomycetum* , Fries assigned a different fungus again to the binomial name and linked it to Schäffer 's 1762 description . French mycologist Lucien Quélet reclassified it as a species in 1873 , giving it its current binomial name . Italian mycologist Alfredo Riva has noted that Swiss mycologist Louis Secretan provided a description forty years before Quélet , in his 1833 work *Mycographie Suisse* , and queried why it was ignored . He has proposed the fungus be written as *Tricholoma pardinum* (Secr .) Quél . However , Secretan 's works are generally not recognised for nomenclatural purposes because he did not use binomial nomenclature consistently .

There has been confusion over which scientific name to use for over two hundred years . *Tricholoma tigrinum* has been used in some European field guides , but has been applied in error to this species . The uncertainty was such that Czech mycologists Josef Herink and František Kotlaba suggested in 1967 that both designations were incorrect , and proposed the new name *T. pardalotum* .

Tricholoma pardinum lies within the subgenus *Pardinicutis* of *Tricholoma* , a grouping of similar species characterised by greyish , brownish , or pallid caps that are woolly or covered in small scales , spores with a length between 8 and 11 micrometres , and abundant clamp connections in the hyphae . Molecular analyses suggest that *T. pardinum* is closely related to *T. huronense* , *T. mutabile* , and *T. venenatum* . *Tricholoma pardinum* var. *filamentosum* is an uncommon variety , described in 1983 by Carlo Luciano Alessio , which produces mushrooms with more fibrillose caps and stalks than the typical variety . It is found in southern Europe , where it associates with chestnut and spruce trees . Another variety has been described as *T. pardinum* var. *unguentatum* , characterised by daintier mushrooms that have a greasy coating on their caps .

The specific epithet *pardinum* is derived from the Latin *pardus* " leopard " , referring to its mottled or spotted cap . The generic name derives from the Greek *trichos* / ????? " hair " and *loma* / ????? " "

hem " , " fringe " , or " border " . Common names include striped tricholoma , spotted tricholoma , tiger tricholoma , poison trich , leopard knight , and tigertop . Dirty trich was a name coined by author Gary H. Lincoff in response to a publisher 's request for a more accessible name than its binomial one for North American guidebooks .

= = Description = =

The fruit body is a medium @-@ sized mushroom , with a cap 6 ? 10 cm (2 @. @ 5 ? 4 in) in diameter , though larger specimens occasionally reach 15 cm (6 in) . The cap is initially hemispherical before flattening with maturity , and has a broad , shallow umbo . The cap margin is initially curled inwards but uncurls as it matures . The cap surface is silvery @-@ grey and covered with concentrically patterned darker scales of a grey , brown or blackish colour that grow paler toward the cap margin , Secretan noting its resemblance to the cap of *Sarcodon imbricatus* . The gills are free (unattached to the stalk) , white and thick , may have a yellow or greenish tint , and may drip water , as may the top of the stalk when broken . With age , the gill edges can become jagged and rough . The gill spacing is rather variable , ranging from distant to crowded ; typically , between 100 ? 120 gills extend fully from the stalk to the edge of the cap , with a variable number of lamellulae (shorter gills not extending fully from stalk to cap margin) .

The stout stalk may be white , pale grey or pale brown , and is thicker at the base . The texture of the stalk surface ranges from fibrillose (appearing to be made of coarse fibers arranged longitudinally) to more or less smooth , and the stalk base will stain a dirty brown to yellow colour when bruised . It is 3 @. @ 0 ? 8 @. @ 0 cm (1 @. @ 2 ? 3 @. @ 1 in) high and 1 @. @ 5 ? 2 @. @ 0 cm (0 @. @ 6 ? 0 @. @ 8 in) wide , with the base 2 @. @ 5 ? 4 @. @ 0 cm (1 @. @ 0 ? 1 @. @ 6 in) in diameter , and bruises a dirty yellowish colour . There is no ring or volva . The flesh is whitish and has a pleasant mealy smell and taste . Variety *filamentosum* has a mealy odour and taste reminiscent of cucumber .

The spore print is white , and the oval to oblong spores are 7 @. @ 5 ? 9 @. @ 5 ?m long by 5 @. @ 0 ? 7 @. @ 0 ?m wide . Spores are smooth , hyaline (translucent) , nonamyloid , and have a prominent hilum . The basidia (spore @-@ bearing cells) are cylindrical to club shaped , four spored , and measure 39 ? 50 by 8 @. @ 0 ? 9 @. @ 6 ?m . The cystidia present on the gill edge (cheilocystidia) are thin walled , hyaline , have a short stalk and a spherical apical portion , and measure 29 ? 41 by 12 ? 21 ?m ; cystidia are absent from the gill face . The cap cuticle ranges in cellular form from a cutis (in which the hyphae are bent over , running parallel to the cap surface) to a trichoderm (with hyphae emerging roughly parallel , like hairs , perpendicular to the cap surface) ; the hyphae comprising the cuticle are cylindrical , and measure 2 @. @ 0 ? 9 @. @ 0 ?m wide with a club @-@ shaped tip up to 11 ?m wide .

= = = Similar species = = =

Tricholoma pardinum mushrooms may be confused with several edible grey @-@ capped members of the genus *Tricholoma* , and some authorities recommend leaving all grey @-@ capped *Tricholoma* mushrooms for experienced hunters . There are several superficially similar European species that could be mistaken for *T. pardinum* . The smaller *T. terreum* lacks a mealy smell and cap scales , is darker coloured and less robust , and has smaller spores measuring 5 ? 7 @. @ 5 by 4 ? 5 ?m . The edible *T. argyraceum* somewhat resembles *T. pardinum* ? but with finer scales , and gills and bruised parts that yellow with age . Unlike the preferentially montane *T. pardinum* , these lookalikes tend to fruit at lower elevations . *T. atosquamosum* is smaller and darker than *T. pardinum* , and has a peppery aroma . *T. orirubens* has fine dark scales and pinkish gills , brittle flesh , and is generally smaller . *T. myomyces* is smaller than *T. pardinum* , has a thin , fibrous partial veil on young specimens , and elliptical spores measuring 5 ? 6 by 3 @. @ 5 ? 4 ?m . The edible and highly regarded *T. portentosum* is of a similar size , though has a uniform grey cap that is never scaled .

In North America , *Tricholoma pardinum* can be confused with *T. nigrum* and forms of *T. virgatum*

that have more streaked rather than spotted caps . A form of *T. pardinum* in North America can be nearly white with pale scales , and may be confused with the whitish edible species *T. resplendens* . Microscopically , the presence of clamp connections sets *T. pardinum* apart from most other members of the genus , although the similar @-@ looking (though more tan @-@ coloured) *T. venenatum* also has them . According to Alexander H. Smith , *T. huronense* is closely related , but can be distinguished from *T. pardinum* by its narrower gills , its tendency to form drops of reddish liquid on the gills and stalk , and an ash @-@ grey and scaly stalk surface .

= = Distribution and habitat = =

Tricholoma pardinum is found across Europe , where it is more common in the south . It is abundant in the Jura Mountains in eastern France . The species is found in Belgium and Germany , but has not been recorded from the Netherlands or the British Isles . A historical record from Estonia has been discarded because no herbarium specimens could be found . In Asia , it has been recorded from Izmir Province in southwestern Turkey , China , and Sado Island in Japan . It is found widely across temperate North America , where Santa Cruz County and Sierra Nevada in central California in the west of the continent , and the central Appalachians in the east form the southern limits of its distribution . *T. pardinum* is commonly associated with conifers in the Rocky Mountains and Pacific Northwest , and with tanoak (*Lithocarpus densiflorus*) and madrone (*Arbutus* spp .) in California . The mushroom can be abundant in some years , especially warmer years with higher rainfall , yet missing or rare for several years in between . In Europe , it is found on chalky soil in woodland with beech and fir in summer and autumn , where it prefers areas of some elevation . Although it may be found in groups or fairy rings , it most commonly occurs singly .

= = Toxicity = =

Tricholoma pardinum is one of several poisonous members of the genus *Tricholoma* ; its large size , fleshy appearance , and pleasant smell and taste add to the risk of it being accidentally consumed . It was responsible for over 20 percent of cases of mushroom poisoning in Switzerland in the first half of the 20th century . Many cases of poisoning arise in the Jura Mountains . Eating it causes highly unpleasant gastrointestinal symptoms of nausea , dizziness , vomiting , and diarrhea . These arise 15 minutes to 2 hours after consumption and often persist for several hours ; complete recovery usually takes 4 to 6 days . Sweating and anxiety may be evident , and disturbance in liver function has been recorded . Cramping may occur in the calves . In one case , seven people and a cat suffered severe symptoms after sharing a meal that contained only two mushroom caps . The toxin , the identity of which is unknown , appears to cause a sudden inflammation of the mucous membranes lining the stomach and intestines .

These symptoms may be severe enough to warrant hospitalisation . Treatment is supportive ; antispasmodic medicines may lessen colicky abdominal cramps , and activated charcoal may be administered early on to bind residual toxin . Intravenous fluids may be required if dehydration has been extensive , especially with children and the elderly . Once gastric contents are emptied , metoclopramide may be used in cases of recurrent vomiting .