

= Daedaleopsis confragosa =

Daedaleopsis confragosa , commonly known as the thin walled maze polypore or the blushing bracket , is a species of polypore fungus in the family Polyporaceae . A plant pathogen , it causes a white rot of injured hardwoods , especially willows . The fruit bodies are semicircular and tough , have a concentrically zoned brownish upper surface , and measure up to 20 cm (8 in) in diameter . The whitish underside turns gray @-@ brown as the fruit body ages , but bruises pink or red . It is found all year and is common in northern temperate woodlands of eastern North America , Europe , and Asia . The species was first described from Europe in 1791 as a form of *Boletus* , and has undergone several changes of genus in its taxonomic history . It acquired its current name when Joseph Schröter transferred it to *Daedaleopsis* in 1888 .

= = Taxonomy = =

Daedaleopsis confragosa was first described scientifically under the name *Boletus confragosus* by English naturalist James Bolton , in his 1791 work *An History of Fungusses* , growing about Halifax . He reported finding specimens on old trees near Fixby Hall , and having specimens sent to him from Darlington . The species has been shuffled between several genera in its taxonomic history : *Daedalea* by Christian Hendrik Persoon in 1801 ; *Trametes* by Gottlob Ludwig Rabenhorst in 1844 ; *Polyporus* by Paul Kummer in 1871 ; *Stigila* by Otto Kuntze in 1891 ; *Lenzites* by Patouillard in 1900 ; *Agaricus* by William Alphonso Murrill in 1905 ; and *Ischnoderma* by Ivan Zmitrovich in 2001 . It was transferred to its current genus , *Daedaleopsis* , by German mycologist Joseph Schröter in 1888 . *D. confragosa* is the type species of the genus *Daedaleopsis* .

Several varieties have been described . L. Ljubarskii published var. *bulliardi* and var. *rubecens* in 1975 . Both of these varieties were published invalidly are not considered to have independent taxonomic significance : variety *rubescens* is folded into synonymy with the main variety , while variety *bulliardi* is now considered synonymous with *Trametes suaveolens* . Variety *tricolor* , proposed by Appollinaris Semenovitch Bondartsev and Rolf Singer in 1953 , is now the independent species *Daedaleopsis tricolor* . Bondartsev described the form *sibirica* in 1953 , but this is also no longer independent .

The polypore has acquired several vernacular names , including " thin @-@ maze flat polypore " , " thin walled maze polypore " , " blood @-@ stained bracket " , and " blushing bracket " . The latter name refers to its characteristic bruising reaction . James Bolton referred to it as the " rugged boletus " .

= = Description = =

The shelflike or bracketlike fruit body is fan @-@ shaped to semicircular , and typically measures 5 ? 15 cm (2 ? 6 in) in diameter , and up to 2 cm (0 @.@ 8 in) thick . Its upper surface is broadly convex to flat , dry , smooth to somewhat hairy , and usually has concentric zone lines . Its color ranges from reddish @-@ brown to brown to grayish , sometimes becoming blackish in maturity . The cap surface may have an umbo at the point of attachment to the substrate . Fruit bodies are leathery to corky when moist , but become hard and rigid when dry . The flesh is white to pinkish to brownish and tough . The underside of the fruit bodies features tiny pores measuring about 0 @.@ 5 ? 1 @.@ 5 mm in diameter . They are white to tan to brown , but will develop pinkish or reddish tones if bruised . Pore shape is highly variable , ranging from circular to elongated , to mazelike , to gill @-@ like . The tubes are up to 1 @.@ 5 cm (0 @.@ 6 in) long . The fruit body lacks a stalk , as the shelf attaches directly to the substrate . The inedible fruit bodies have no distinctive odor and a slightly bitter taste .

The spore print is white ; spores are cylindrical , smooth , and measure 7 ? 11 by 2 ? 3 ?m . The basidia (spore @-@ bearing cells) have a shape ranging from cylindrical to club @-@ shaped , and dimensions of 20 ? 40 by 3 ? 5 ?m . The hymenium features numerous hyphidia (modified terminal hyphae) , which measure 2 ? 3 ?m . The hyphal system of *Daedaleopsis confragosa* is

trimitic , meaning that there are three types of hyphae in the fruit body : skeletal hyphae , which provide structural support , are thick walled , measuring 3 ? 7 ?m in diameter ; generative hyphae , responsible for new growth , can be either thin- or thick @-@ walled , may contain clamps , and measure 2 ? 6 ?m ; binding hyphae , thick @-@ walled and much branched , are 2 ? 5 ?m .

The polypore is used in ornamental paper making , whereby the fruit bodies are pulped , pressed , and dried to produce sheets with unusual textures and colors .

= = = Similar species = = =

Cerrena unicolor (formerly *Daedalea unicolor*) is a common polypore species with a mazelike pore surface that can resemble *D. confragosa* . It can be distinguished by its thinner fruit bodies , a black line in the flesh , and the way that the tubes often break into irregular flattened teeth in maturity . *Daedalea quercina* , common on oak , has a larger fruit body up to 20 cm (8 in) in diameter and 1 ? 8 cm (0 @. @ 4 ? 3 @. @ 1 in) thick , and its pore surface is more distinctively labyrinthine (maze @-@ like) . It causes a brown heart rot , where carbohydrates are removed from the inner heartwood , leaving brownish , oxidized lignin .

= = Ecology and distribution = =

Daedaleopsis confragosa is a lignicolous fungus that produces a decay of sapwood . It causes white rot , a type of wood decay in which lignin is degraded and cellulose remains as a light @-@ colored residue . The fruit bodies grow singly or in groups , sometimes in tiers , in the wounds of living trees . Its preferred host is willow , but it has also been found on birch and other hardwoods . Fruiting usually occurs from June to December , but the hard shelves can persist year @-@ round . In North America , the species is most common in eastern locales , but rare in western regions . It is common in Europe , and is one of the 100 most common fungi in the United Kingdom . Its European range extends east to the Urals . In Asia it is widely distributed , having been recorded from China , western Maharashtra (India) , Iran , and Japan .

The fruit bodies are popular among fungus @-@ loving beetles . In a Russian study , 54 species from 16 families in the Coleoptera complex were recorded using the fungus ; the most common were *Cis comptus* , *Sillcaxis affinis* (Ciidae) , *Tritoma subbasalis* , *Dacne bipustulata* (Erotylidae) , *Mycetophagus multipunctatus* , *M. piceus* (Mycetophagidae) , and *Thymalus oblongus* (Trogossitidae) .

= = Bioactive compounds = =

The triterpenes 3? @-@ carboxyacetoxyquercinic acid , 3? @-@ carboxyacetoxy @-@ 24 @-@ methylene @-@ 23 @-@ oxolanost @-@ 8 @-@ en @-@ 26 @-@ oic acid , and 5? , 8? @-@ epidioxyergosta @-@ 6 @,@ 22 @-@ dien @-@ 3? @-@ ol (ergosterol peroxide) have been isolated from *D. confragosa* . Lectins from *D. confragosa* , tested against rabbit and human erythrocytes , were determined to have anti @-@ H serological specificity .

Analysis of the lipid and fatty acid composition revealed that *D. confragosa* contains 20 @. @ 1 % total lipids (mg / g dry weight) , 32 @. @ 9 % neutral lipids , 53 @. @ 8 % phospholipid , and 13 @. @ 3 % glycolipids . An analysis of hydroxy fatty acid content showed that *D. confragosa* contains , as a percentage of total fatty acids , 0 @. @ 02 % 7 @-@ hydroxy @-@ 8 @,@ 14 @-@ dimethyl @-@ 9 @-@ hexadecenoic acid and 0 @. @ 01 % 7 @-@ hydroxy @-@ 8 @,@ 16 @-@ dimethyl @-@ 9 @-@ octadecenoic acid .