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Spalting and the Way Wood Rots

Bacteria and fungi begin to attack wood whenever they get into it – which may be while the tree is very much alive or after it is dead. At first, they consume the cell contents, and may stain the wood without weakening it. Two groups of fungi attack the structure of the wood itself: white rot and brown rot types. Brown rot fungi are characterized by a "brown mass usually cracked into cubes." Brown rot fungi are very common in leaf litter. White rot fungi (four times as common as brown rot species) turn the wood into a pale, soft, stringy substance.

Wood rots the fastest if it is warm, 70 to 90 degrees Fahrenheit, and quite moist, with a water content of 20%-30%. (Wood takes in and releases moisture as the atmospheric humidity changes around it. Under 20% is considered dry wood, though if kept indoors it will eventually range from 8%-14% water; 12-18% is common outdoors.) If wood is under water or otherwise kept completely saturated, without air, it will keep, sometimes for hundreds of years. Wood that is kept dry, as furniture and house timbers, will generally not rot. Dry rot fungi, however, can overcome the lack of moisture by transporting water some distance, and by breaking down sugars to release water.

When different species of white rot fungi come in contact with each other in a piece of wood, they produce a mass of tangled hyphae as a barrier, a process known as spalting. These rubbery masses of hyphae are dark colored, and in cross section look like single or double dark lines running through the wood, almost as though they were drawn with a pen. Often there are color and texture differences between wood in the different zones. Some spalting lines may also mark a place where growth of the fungus stopped for a time. Spalted wood is highly prized by wood turners, who make bowls and other objects from it. It should be handled with care, because some people are allergic to the sawdust from spalted wood.