

You are here :: Home :: Didgeridoo :: Making :: Split Wood Didges :: What is Wood Part 1

What is Wood Part 1

Some information on what exactly makes wood, wood.

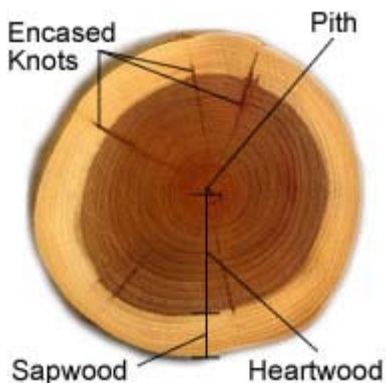
I have written this page because when I started out making didgeridoos, I had very little appreciation for wood. As time goes on and my knowledge increases, so does my appreciation and respect for the material I am using.

Hardwood and Softwood

Wood is classified / divided into two categories, hardwoods and softwoods. I was wrong when I thought, as the words imply, that the difference was how hard the wood was, it isn't. Simply put, hardwood trees surround their seed with a protective layer. Fruit trees are a good example, and so are nuts such as Sweet Chestnut. The category that defines softwoods is 'gymnosperms' meaning naked seed and 'angiosperms', meaning covered seed. Trees are further sub-divided into families, group's of species and singular species. Some softwoods may be more suitable for making didgeridoos than hardwood, however in general terms hardwood makes for better didgeridoos.

The Bits That Make Wood

The Pith



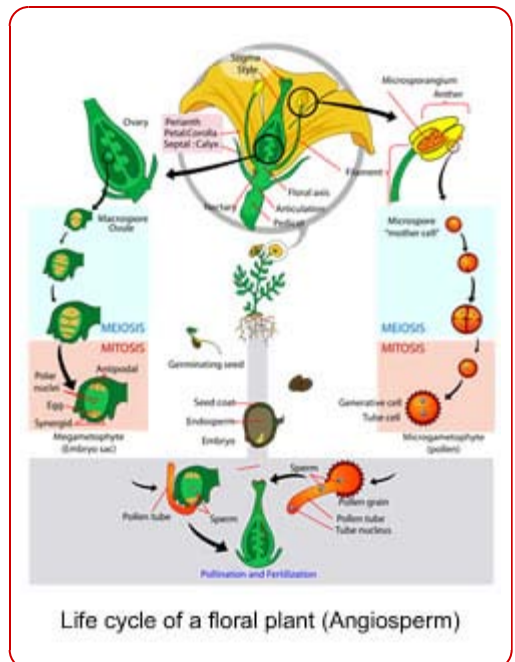
The Pith is the (relatively) soft, central part, or core of the wood, surrounded by the growth rings made of heartwood and sapwood.

The pith will vary on size from tree to tree and species to species. Some timber such as Yew will often start to rot from the inside out so while a piece of timber looks okay from the outside it may be rotting on the inside. In fact there are a number extreme examples of this - using the Yew tree as an example, it can grow quite a large trunk which over time becomes hollow with the branches then lowering to the ground and taking root or seeding. This is commonly referred to as Fairy Rings.

Heartwood and Sapwood

This is the inner part of the wood. Different species and different trees within the same species will all have different sized heartwood. When a tree grows, the part of it that is growing conducts sap. This is called the sapwood. Once the wood is established, for example the inner part of trunk of a tree, the middle of it no longer needs to grow so stops conducting sap. This is called the heartwood. In the same example, on the outer portion of the trunk, the wood is still growing and therefore you will have both sapwood and heartwood. The higher up a tree you go and/or the younger the tree the greater the amount of sapwood.

Depending on the species the contrast in colour between the two woods can be used to great aesthetic effect. About the most vivid example of this is Yew which has a very pale and light sapwood compared to the heartwood.

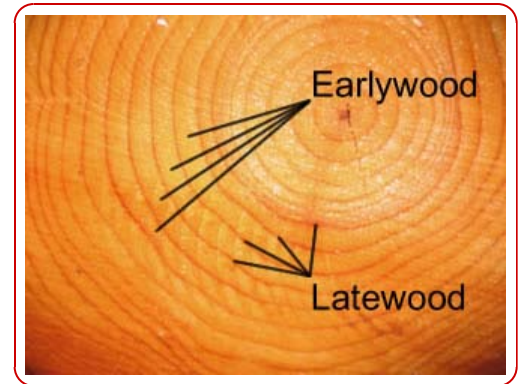


Life cycle of a floral plant (Angiosperm)

Growth Rings

Growth continues in wood so long as conditions allow. This is divided into a growing and dormant season. As this cycle of growth and dormancy repeat new layers of growth occur. These are called the growth rings.

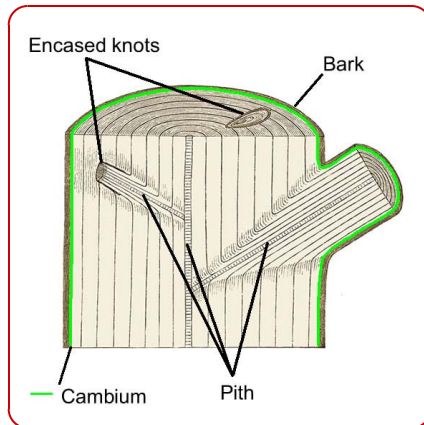
The thickness and density of the rings depends on the species and the environment the tree grows in. Commonly accepted as a general rule, that the number of rings in the cross section of the wood denotes the age of the tree in years, this is not always the case. Some woods such as Yew can stop growing for a number of years and there have been a number of records that show certain Yew not growing for decades and even centuries. Many woods have rings that are both dark and light in colour, this is called earlywood and latewood.



Earlywood and Latewood

When you can see visible darker and lighter rings in the wood, it shows a more detailed progress of the growth. The wood that forms earlier in the year, is called 'earlywood' and as it is older it tends to be denser and therefore darker in colour. The lighter part of the ring is the latewood and because the cell structure is younger and less dense it tends to be lighter. As with many things in nature there are exceptions to that general rule.

Cambium



There is a very thin layer between the wood itself and the bark. This is called the 'cambium', this is where the growth occurs. If the growth occurs inside the cambium, it adds to the sapwood, and if on the outside of the cambium then it is bark. The cambium layer changes with the seasons. During the growing time of year the cells in the layer contain more water, are more pliable and softer, with the result that bark removal is relatively easy. During winter months the cells thicken and bark removal becomes more difficult. Bare this in mind if you want to make a didgeridoo with the bark still attached, or if you wish to remove some bark for painting.

Bark

The bark as we all know is on the outside of the wood. The bark has two layers, the inner (living) and outer (dead) layer. The inner layer conducts sap and assists in the growth of the tree. The outer layer is the bark that has been replaced by new living bark. Different species produce different types of bark. It comes in all manner of textures and a wide range of colours. Bark such as that found on Yew can be deep purple in colour and be very flake, and is comparatively thin. Oak has a more constant texture, thicker and tougher. Other woods vary just as much. Double check the ends of the wood to see how thick the bark is, as I have lost a couple of potential didgeridoo's due to the wood being too thin after the bark has been removed.



Rays

When I first saw rays in wood I thought it was marks left by the craftsman who had been sloppy in sanding the wood. The rays are actually cells in the wood that grow horizontally. Softwoods rarely have rays that are visible, however, Hardwoods have a different cell structure and can quite be seen. In fact in some woods the rays can add to the aesthetics of the grain.

Knots



This is another of those 'but a knot is a knot' sections. They're knot (ho hum, couldn't resist). A knot originates from the pith of the wood and grows outwards from the main stem. It starts to form the branches as tree grows. The same applies to branches sporting smaller limbs. As the tree grows the branches/limbs get bigger.

When a branch or limb is detached the cambium also dies and no further growth occurs. However, as the tree continues to grow, and girth increases, the knot or broken stem, becomes encased by the new growth. Ultimately the knot can become completely encased by the new growth and not visible from the outside of the wood. What's more, is that often bark from the outside of the broken branch/limb will also be encased in the new growth. Often the bark that is encased with the knot deteriorates in time, creating a loose knot.

This is extremely relevant to didgeridoo's as hole's or gaps along its length that allow air to pass through affect the sound greatly. By looking and being aware of the knots in the wood you are using, you can determine if any extra work is needed, or if they are likely to cause problems in the future.

[Back to top of page..>>](#)

[Back to How to Make a Wooden Didgeridoo Index...>>](#)

