

Part 2 INDIVIDUAL WOOD DESCRIPTIONS

The linked description pages provide photographs and simplified descriptions for each of the wood types that have been formally described from the Columbia River Basalts. The diagnostic features given for each type are limited to those most easily seen by the amateur; for a more complete description, the reader should consult the references listed at the top of each page.

Wood is divided into two major types – the gymnosperms, or ‘softwoods’, are the more ancient types which include the conifers and *Ginkgo*; and the angiosperms, or ‘hardwoods’, evolved more recently. The angiosperms include all of the flowering plant families. Gymnosperms have a relatively simple anatomy. Because of this, there is not a large difference in anatomy between many genera or even families, so it can be difficult to positively identify conifer wood types, even with a microscope. Longitudinal elements known as tracheids make up most of the wood structure, providing the dual functions of support and transport within the tree. Horizontal elements known as rays occur in both angiosperms and gymnosperms, but in gymnosperms they are typically narrow and don’t show the variation often seen in the angiosperms. Angiosperms have more cell types and a more complex wood anatomy than the gymnosperms. The additional complexity results in more variation between different taxa, making it generally easier to distinguish between hardwood types.

Link to softwood descriptions: <http://www.evolvingearth.org/mcabee/fossilwoods/softwoods.zip>

Link to hardwood descriptions: <http://www.evolvingearth.org/mcabee/fossilwoods/hardwoods.zip>

An illustrated glossary is provided as Part 3 of this document to show examples of the terms used in the wood descriptions. Note that the glossary only shows the major anatomical features used in wood identification. This is not a comprehensive list – detailed identification can be complex and the interested reader should consult wood anatomy texts for additional information. There are a number of excellent references that treat the science of wood anatomy in great detail. One of the best books that we have found for a person getting started in wood identification is R. Bruce Hoadley’s “Identifying wood: accurate results with simple tools” (see bibliography at the end of this page for complete information).

Another excellent resource is the InsideWood online database, hosted by the North Carolina State University library:

<http://insidewood.lib.ncsu.edu/search>

This is a searchable database with thin section photographs for a large variety of modern and fossil hardwoods and a few softwoods. Anatomical features shown for the woods in the database are from the IAWA references listed below.

Hoadley, R. Bruce. 1990. Identifying wood: accurate results with simple tools. Taunton Press, Newtown, Connecticut. ISBN 0-942391-04-7

Panshin, A.J. & C. de Zeeuw. 1980. Textbook of wood technology. McGraw Hill series in forest resources, McGraw-Hill, Inc. ISBN 0-07-048441-4

(Note – there are earlier editions of this work which are generally less expensive and more readily available; the anatomy sections are similar in all editions)

Richter, H.G., D. Grosser, I. Heinz, P.E. Gasson (eds). 2004. IAWA list of microscopic features for softwood identification. IAWA Journal 25(1): 1-70.

Wheeler, E.A., P. Baas & P.E. Gasson (eds). 1989. IAWA list of microscopic features for hardwood identification. IAWA Bulletin n.s. 10(3): 219-332.