

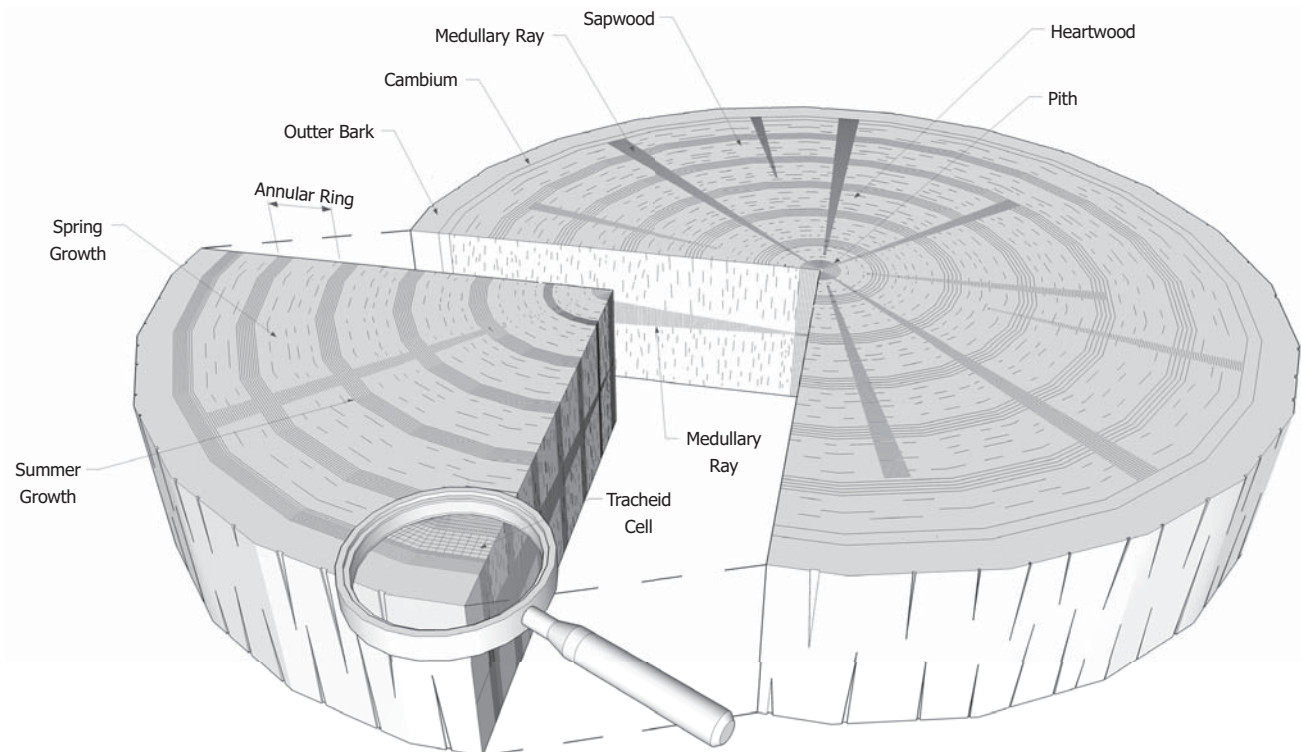
Wood

II.1 Wood Structure

Figure II-1 shows the cross-section of a softwood tree. The outer bark protects the tree from injury and loss of vital fluids (sap). Just under the bark is the thin cambium sheath of active growth cells that create new bark outside and new growth inside. This new growth is the immature sapwood, which transports water and nutrients from the roots to the leaves. (In conifers sap moves upward almost entirely through the sapwood). As the wood matures its function is less to do with ac-

tive transport and more to do with storage of resins and gums forming the heartwood of the tree. This inner portion of the tree is gradually sealed off from the growth process and serves primarily as the tree's structural backbone. The heartwood is less subject to decay, insect attack, and shrinkage than the active sapwood. At the very center of the heartwood is the first-year growth of the seedling tree, called the pith.

Figure II-1
Wood Structure



The enlarged section of a tree trunk shows the annual growth pattern of the tree. During the winter the tree stores most of its wa-

terly sap in the root. The medullary rays that run at right angles to the axis are an alignment of additional storage cells that provide nutri-