

In this lesson we will discuss the growth rings of trees

The vascular cambium is a thin layer of cells that exists between the inner bark and the wood. This layer produces wood to the inside and bark to the outside, and all this layer is vascular conducting tissue.

The term vascular means to be provided with vessels or ducts to convey fluids. In the case of trees, this fluid is water, also referred to as tree sap.

This vascular cambium layer expands by means of cell divisions.

As the vascular cambium adds cells to the layers of wood and bark around a tree, the width of the tree increases, and thus the total surface area of the vascular cambium itself increases. This is accomplished by constant cell division.

Wood is produced by the vascular cambium one layer of cell divisions at a time. We know from general experience that in many woods large groups of cells are produced together at certain discrete periods of time during the annual growth cycle. These collections of cells produced together over a discrete time interval are known as growth increments, or growth rings.

Cells formed at the beginning of the growth increment are called earlywood cells, and cells formed in the latter portion of the growth increment are called latewood cells.

In temperate portions of the world and anywhere else with distinct, regular seasons, trees form their wood in annual growth increments. All the wood produced in one growing season is organized together into a recognizable, functional entity that sometimes may be referred to as annual rings.

This terminology reflects a bias towards woods grown in temperate regions of the world. In many woods in the tropics, growth rings are not evident. So, a preferred, more precise, term is growth increment, or growth rings.

These growth ring patterns appear in both softwoods and hardwoods but differ in each because of the distinct anatomical differences between the two.

Thank you