



The tree was a perfect combination of elements, each of them reflecting the years of the giant's growing. In the center lay the heartwood. It was the supporting column of the mature tree. Heartwood is dead, it cannot grow, but it will not decay or fail the tree by losing strength as long as the rest of the tree remains intact and in balance with its surroundings. Girding the central column was the sapwood. Through it ran the pipelines that carried water from the roots to the leaves. As the inner layers of sapwood lose their vitality, they join the center column as heartwood. Surrounding the

sapwood was a thin but vital layer known as the cambium. Each year, stimulated by auxins, or hormones, this layer produces both new bark and new sapwood on its outer and inner surfaces. Lying outside the cambium layer was the part of the tree known as the phloem. Just as the sapwood carried water from the roots up to the leaves, the phloem carried food down from the leaves to the rest of the tree. As growth continued within the cambium layer, the phloem was pushed out to become true bark. And beyond the phloem was that bark, the means by which the tree protected itself against heat and cold and some enemies.

These transitions, sapwood to heartwood, cambium layer to sapwood and phloem, and phloem to bark will continue as long as the tree is alive. When they stop, the tree will die. Its heartwood will fail soon after that, and all the chemicals the tree contains will circulate again as the tree becomes the victim of weather, fire, insects, and time. It is the chemical harmony of the forest, and if anything approaches perfection on this planet, it is that.

Caras, Roger *The Forest*. New York: Holt Rinehart Winston, 1979