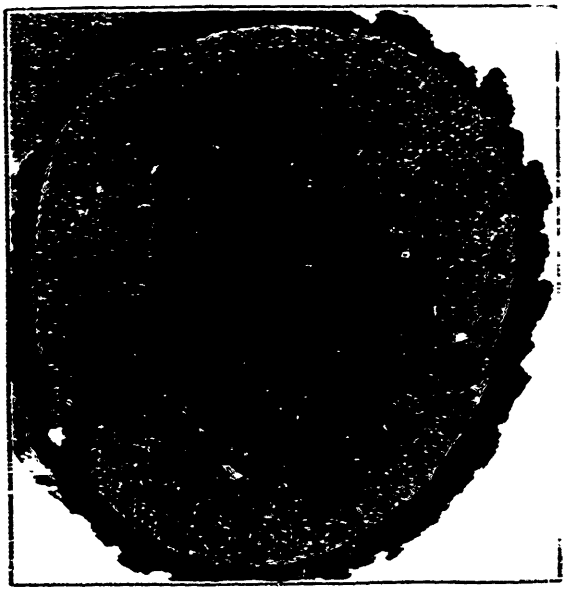

Fig. 2225. (from Primer of Forestry, by Pinchot.) Cross-section of Black Oak. The silver grain, the rings of annual growth, and the dark heart wood and lighter sapwood are visible, and the line between the rough, corky outer bark and the thinner and lighter colored inner bark may be seen.

The heart wood is not essential to the growth of the tree, except to give it stiffening and strength. Old trees may often be found making good annual growth when the heart wood is rotted away, leaving the trunk quite hollow.

The Sapwood, so called because it contains the moving sap of the tree, is the outer or new wood next to the bark. It is softer and more sappy than the heart wood, and is usually easily distinguished from it by its lighter color.

The First or Inner Bark, is a thin layer of bark next to the sapwood. It is composed of a number of layers of soft, flexible, but very tough fiber. In some kinds of trees it is much more prominent than in others. In the basswood it is quite plentiful, and at one time was used largely for strings in greenhouse and nursery practice, but the fiber of the Raffia palm is now used in place of it.

The Rind or Outer Bark, as it appears upon a young stem or branch is made up of three thin layers. On the outside is a soft green layer, which gives the green color to fresh growing shoots. On the outside is the epidermis, or cuticle, a thin, smooth, transparent covering like tissue paper. Between these is the corky layer, which does not show at first, but gradually develops as the wood ripens, and hides the green layer beneath it. This corky layer is at first usually of some shade of brown, and gives to the young wood its peculiar color, by which an experienced grower may readily distinguish varieties by the bark alone. The bark of the Northern Spy apple tree, for example, is a dark, reddish brown, while that of the Yellow Transparent is of a brownish yellow.

On the surface of the bark of young stems may often be noticed small oval spots or patches, usually of a different color from the epidermis. These are the lenticles, formed by a group of corky cells. In the cherry they are very large and prominent, forming horizontally on the trunk; on the apple they are smaller and more numerous and form perpendicularly.

Fig. 2224.
The deeply ridged bark of the locust after Craig

THE SHEDDING OF THE BARK.

The bark retains these three distinct layers only for a short time. As the tree or branch becomes older, the corky layer gradually increases in thickness, and after a time bursts the epidermis, and be-