

It has been often said, not only that the age of a tree may be ascertained by the number of its concentric layers; but that their closeness or distance from each other indicates the slowness, or the rapidity of their growth. The concentric layers of the wood of the live oak, (*quercus virens*), are very close, and it is very hard and heavy. The concentric layers of the wood of the white cedar, (*thuya occidentalis*), which grows near the falls of the Potomac, are also very close; as many as one hundred and seventeen have been found in a log of little more than thirteen inches in diameter; but the wood is very light, soft, and fine grained. Yet the closeness of the concentric layers of the wood in these two species of trees, differing so widely in all other respects, is said to shew the extreme slowness of their growth. (o) The rapid growth of the catalpa, and the loblolly pine, is said to be proved by the great width of their concentric layers. (p) But the wood of the locust, (*robinia pseudo acacia*), is finer in its grain than any of the oaks, and much harder, when seasoned, than any of them, except the live oak. The locust converts its sap into perfect wood every third year; which is not done by oaks in less than every tenth or fifteenth year; and at twenty-five years of age it yields twice the mass of wood of any other tree. (q)

The eminent botanist who has given us the most full, accurate, and instructive account of all our forest trees, appears to have frequently adverted to this general opinion, that the concentric layers in the wood of such trees afforded evidence as well of their progress in vegetation as of their age. In speaking of the white cedar, (*cupressus thyoides*), he says, that 'the concentric circles are always perfectly distinct, even in stocks of considerable size; but their number and compactness prove that the tree arrives at its full growth only after a long lapse of years. I have counted two hundred and seventy-seven annual layers in a trunk twenty-one inches in diameter, and five feet from the ground; and forty-seven in a plant only eight inches thick at the surface, which proved it

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body below it. And though several years have elapsed, the latter has not been able to overtake the former. The upper part of the tree, rooted in the air, vastly out-grew the under rooted in the earth. Therefore it must have drawn either its whole or chief sustenance from the atmosphere. Indeed between the bark and the wood of most trees, and of the locust particularly, we find the chief channel of their juices; and the communication of those juices was utterly cut off so that neither portion of the tree could supply the other.'—*Arator*, by John Taylor, of Caroline, p. 85.

(o) 1 Mich. Am. Sylva, 59; 2 Mich. Am. Sylva, 359.—(p) 1 Mich. Am. Sylva, 330; 2 Mich. Am. Sylva, 289.—(q) 2 Mich. Am. Sylva, 11.