

\*In this case the block here produced, has been cut out so deep from the trunk of this black oak, as to include, **93** with the bark and all the newly formed layers of wood, eighteen others which had been formed when the chop mark was made. Judging from the appearance of the block, and the segment of the circle formed by its outside, I should suppose that the tree was about one foot in diameter, and was at present in a youthful and vigorous state of vegetation. The block distinctly exhibits the new wood as being in every way perfectly united over the whole of the chop mark. Immediately over the chop mark there is much horny wood in which no concentrical layers are visible; but on one side of the chop mark, and where the concentrical layers appear to be a perfectly natural continuation of those into which the chop mark had been made, there can be counted no more than twelve additional concentrical layers. These new layers differ very much in thickness one from another, and altogether measure as much in diameter as the eighteen which had been previously formed. The whole or a part of the epidermis, or outside bark though which the chop mark was made, apparently still remains with a perfectly formed new bark so closed over it as to leave nothing more than a scar or cicatrice where the chop mark had been made.

The witnesses testify, that this chop mark was shewn as having been made in the year 1791; now thirty-nine years ago, in accordance with which, if the hypothesis that each concentrical layer denotes the lapse of a year, be correct, there should have been found that number of concentrical layers; but there are no more than twelve; and consequently, the testimony of the witnesses, or the evidence derived from this hypothesis must be rejected. There is nothing whatever, in addition to this hypothesis, to impeach the credibility of the witnesses.

\*I have nowhere met with the mention of any one single instance, in which the number of the concentrical layers, **94** which could be distinctly counted, in the transverse section of the trunk of any forest tree, of a foot or more in diameter, had been found exactly to correspond with the years of its age, as otherwise well and positively known and ascertained. Yet it is most manifest, that until the regular, uniform, and exact coincidence between

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mechanism concealed beneath a skin inert and opaque—we are compelled to trust for all our notions of the manner in which a plant performs its vital functions; to inductions from data about which, in many cases, there must always, from the nature of things, be some kind of uncertainty. In such circumstances, can we wonder that great diversity of opinion has existed among physiologists, respecting many of the phenomena of vegetable life; or that multitudes of erroneous theories have obtained belief almost without question.”—*Essay on Vegetable Physiology, by Armstrong, Prof., &c., Washington College, Virginia, chap. 15; The Farmers' Register, by Ruffin, vol. 7, No. 7.*