

*From what has been said, it appears, then, that some mere annual roots, and the roots of all trees, as well as the wood of most of our forest trees, exhibit the appearance, in a transverse section, of having been formed by a succession of concentric layers; that the wood of a variety of trees which are only the growth of the torrid zone, are obviously formed in the same way: and therefore, that such concentric layers cannot with certainty be pronounced to be the result of a succession of summer growths; or any one of them to be the growth of only one year, or of any other given space of time. It also appears, that the wood of some trees, of the growth of the temperate as well as of the torrid zone, does not, in a transverse section of it, exhibit the least appearance whatever of any concentric layers; and that in the wood of those trees, which is so constructed, the formation of such layers is said to be checked by accident, to be much affected by soil and situation, and even by the peculiarities of the successive seasons; and moreover, that they always become thinner and more *indistinct as the tree grows older, and that the fibers of the wood of some are very singularly disposed, appearing

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August, contained water. A chestnut tree, six feet in diameter, standing on the top of the wall, serves to mark its antiquity. Counting and measuring the annual layers of wood, where an axeman had cut into the trunk, I found them at nearly two hundred to the foot, which would give to this tree six hundred years. How much longer the wall had been standing, I saw no means of determining. A poplar, seven feet in diameter, standing in the ditch, allowing the thickness to the layers which I have found in like poplars, one hundred and seventy to the foot, would give nearly the same result, six hundred and seven years."—*The Globe newspaper*, 21st Sept. 1838.

"There have," says Goldsmith, "been two methods devised for determining the age of fishes, which are more ingenious than certain; the one is the circles of the scales, the other by the transverse section of the backbone. The first method is this. When the fish's scale is examined, through a microscope, it will be found to consist of a number of circles, one circle within another, in some measure resembling those which appear upon the transverse section of a tree, and supposed to offer the same information. For, as in trees we can tell their age by the number of their circles, so in fishes we can tell theirs by the number of circles in every scale, reckoning one ring for every year of the animal's existence. By this method, M. Buffon found a carp, whose scales he examined, to be not less than a hundred years old; a thing almost incredible, had we not several accounts in other authors which tend to confirm the discovery. Gesner brings us an instance of one of the same age; and Albertus of one more than double that period. The age of the skate and ray, that want scales, may be known by the other method; which is by separating the joints of the backbone, and then minutely observing the number of rings which the surface where it was joined exhibits. By this the fish's age is said to be known; and perhaps with as much certainty as in the former instance. But how unsatisfactory soever these marks may be, we have no reason to doubt the great age of some fishes. Those that have ponds often know the oldest by their superior size."—*Goldsmith's Animated Nature, Hist. Fishes, chap. 1.*