

In 1759 I found it was at seven feet (for a large swelling rendered it unfair to measure at five or six feet) a trifle about thirty four feet in circumference, and in 1778 I found it had not increased above half an inch in 19 years. This more entire reman of longevity merits some regard from the lovers of trees, as well as the hollow oak at Cewthorp in Yorkshire, which Dr. Hunter gives an account of in his edition of Evelyn's *Silva*, and calls it forty-eight feet round at three feet. I did not measure it so low; but in 1768 I found it at four feet, forty feet and six inches; and at five feet, thirty-six feet and six inches: and at six feet, thirty-two feet and one inch. Now, although this oak is larger near the earth than that in Hampshire, yet it diminishes much more suddenly in girth, viz. eight feet and five inches in two feet of height (I reckon by my own measures as I took pains to be exact. Suppose the diminution continues about this rate (for I did not measure so high) then at seven feet it will be about twenty eight feet in circumference, and the bottom fourteen feet contain six hundred and eighty six feet round or buyer's measure, or seventeen ton and six feet; and fourteen feet length of the Hampshire Oak is one thousand and seven feet, or twenty-five ton and seven feet, that is, three hundred and twenty feet more than the Yorkshire Oak, though that is supposed by many people the greatest Oak in England.

I am unwilling to conclude this account of washing the stems of trees without observing, that all the ingredients of vegetation united, which are received from the roots, stem, branches, and leaves

of a mossy and dirty tree, do not produce half the increase that another gains whose stem is clean to the head only, and that not ten feet in height. Is it not clear that this greater share of nourishment cannot come from rain? For the dirty stem will retain the moisture longer than when clean, and the nourishment drawn from the roots, and imbibed by the branches and leaves, must be the same to both trees. Then must not the greatest share of vegetative ingredients be conveyed in dew? May not the moss and dirt absorb the finest parts of the dew? and may they not act as a kind of screen, and deprive the tree of that share of air and sun which it requires? To develop this mysterious operation of nature would be an honour to the most ingenious, and the plain fact may afford pleasure to the owners of young trees; for if their growth may be increased by cleaning their stems once in five or six years (and perhaps they will not require it so often) if the increase is but half an inch yearly above the ordinary growth, it will greatly overpay for the trouble, besides the pleasure of seeing the tree more flourishing. Although the extra increase of my first washed beech was but four-tenths of an inch, the second was nine-tenths and a half, and the third nearly two inches, so the aggregate extra is above one inch and one tenth yearly; and the increase of the oak is eight-tenths. But calling it only half an inch, then six years will produce five cubic feet of timber, as the oak is eight feet round, and above twenty feet long, and six pence will pay for the washing; so there remains nine shillings and six pence clear gain in six years.

LETTER ON ELECTRICAL AND OTHER PHENOMENA.

[From M. *Jepinus* to Dr. M. *Gutbrie*.]

I Acknowledge the pleasure I have received in perusing your paper on the northern climate, and certainly it would be difficult to give, with more method and intelligence, a clear and distinct idea of the peculiarities of our climate, *quod malus Jupiter urget*, and which distinguish it from other countries of Europe, placed under a more mild and temperate sky.

I shall, therefore, comply, with pleasure, in giving a circumstantial account of the curious facts mentioned in your Dissertation, as seen and authenticated by me; and shall, at the same time, avail myself

of your permission to communicate the remarks and reflections I have made on reading your interesting Dissertation.

The uncommon phenomena alluded to in your paper were as follow:

During the last weeks of the year 1766 and the first of 1767, we had constantly very strong frost, with the calm, clear and serene sky which generally accompanies it in this climate; and during its prevalence, her Imperial Majesty having sent for me one morning, ordered me to go to the apartments of Prince Orloff, in another part of the palace, who, she said, had

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