

*P. S.* It is now several years since I first observ'd the very considerable expansion of the semi-metallic substance call'd *zink*, *spelter*, or *toot-anag*; and propos'd it as more fit for the purpose of making compound pendulums, and metalline thermometers, than brass; as its expansion seem'd considerably greater, and its consistence, when gently hammer'd, not much inferior. With the same view I have made trial of several other metallic compositions, besides what is above set down; but they all prov'd much inferior to zink in expansion, and most of them in consistence.

It seems, that metals observe a quite different proportion of expansion in a fluid, to what they do in a solid state: For regulus of antimony seem'd to shrink in fixing, after being melted, considerably more than zink.

LXXX. *A Remark concerning the Sex of Holly.* By Mr. John Martyn, F. R. S. Professor of Botany in the University of Cambridge.

Read May 30, 1754. **T**HE holly, *agrifolium*, or *aquifolium*, is describ'd, by all the authors that have come to my knowlege, as bearing hermaphrodite flowers: But if an observation, which I have lately made, is right, this tree is male and female in different plants. I have, in my garden at Streatham

Streatham in Surrey, six pretty large plants, with differently-variegated leaves, now in full flower, three males, and three females, growing in pairs, and a male growing by itself, in another part of the garden. The female is that which has been describ'd by authors, and I do not know that any one has describ'd, or even taken the least notice of, the male.

The male flower, as well as the female, is monopetalous, cut deeply into four segments, with a very small empalement, divided also into four parts. It has four conspicuous chives, which sustain yellow summits, in which is great plenty of *farina*; but has nothing like either style, or ovary.

The female flower has, beside its essential part, the ovary, four short filaments, which have hitherto been taken for chives, or male organs of generation; but as I cannot perceive that they bear any summit, or yield any *farina* or fecundating dust, I rather believe, that they are tubes, which assist in conveying the impregnating particles to the seeds; which opinion seems, in some measure, confirm'd by the germ being placed in the lower-part of the seed, according to Cæsalpinus, who ranges this tree among those *quarum semina cor in inferiore parte habent*.

Ray has placed it among the *arbores flore fructui contiguo*: But, if my observation is just, it ought to be remov'd to the *arbores flore a fructu remoto*.

It must also be remov'd from the *tetrandria tetragynia* of Linnæus to the *diœcia tetrandria*. But if the four filaments in the female flower should be found, on a more accurate observation by better eyes than I am blest'd with, to be real chives, and to contain a fecundating dust; it will belong to the *polygamia*.  
But

But whether the tree, which I verily believe to be purely female, is really so, or hermaphrodite, this I am sure of, at least, that the other is purely male; and even in this case my observation is new.

This observation was made on Saturday last, May 25, 1754. I have taken the first opportunity of communicating it, that, as the holly is now in flower, other botanists of the Society may have an immediate opportunity either of confirming or contradicting what I have here related.

*Addition to Dr. Martyn's Paper upon the Sex of the Holly.*

THE Royal Society having done me the honour of referring the consideration of the sex of the holly to me, in consequence of Dr. Martyn's observations thereupon; I accordingly first examin'd, in company with that excellent botanist Mr. Miller, the holly-trees in the botanical garden at Chelsea. We there found, as Dr. Martyn had, that the flowers were of different sexes; but not as those in the doctor's garden, male and female upon different plants, but female and hermaphrodite upon different plants. I afterwards, both at Hampstead, and at the duke of Argyll's at Whitton, observ'd several trees bearing male flowers, others female flowers. Hence it appears, that not only Dr. Martyn's observation of the holly being male and female in different trees is well founded, but also that it is male, female, and hermaphrodite, upon different trees: And I should not wonder, if upon a still farther examination, as in the mulberry,

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that the male and female flowers of the holly should be found, not only upon different, but upon the same tree: Or even, as in the *empetrum*, or berry-bearing heath, that some holly-trees should be found bearing only male flowers, others bearing only female flowers, others only hermaphrodite flowers, others both male and female, others both male and hermaphrodite, others female and hermaphrodite, others still bearing flowers male, female, and hermaphrodite, upon the same tree. The holly, therefore, as Dr. Martyn has justly observ'd, should be remov'd, in the system of Linneus, from the *tetrandria tetragynia*; but not to the *diœcia tetrandria*, but rather to the class *polygamia*, and to the order *trioïcia*.

July 26, 1754.

William Watfon.