

the greatest Motion before Action, I can only observe to swell, and look larger, on the almost immediate Application of Water.

X. *Part of two Letters from the Rev. Henry Miles, D.D. & F.R.S. to Mr. Henry Baker, F.R.S. containing some Electrical Observations.*

I.

Dear Sir,

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Read April 17. 1746. ON my making use of one of my Boxes fill'd with Pitch, Wax, &c. for the Person to be electrify'd to stand upon, after using it a little while successfully, I got the Man who assist'd to wipe the Surface of the Pitch, &c. with a dry clean Cloth, suspecting, from the Place it had stood in, some Dampness might lodge thereon. This being done, for my Satisfaction I set up the Box on one Side, and held a Thread of Trial at a proper Distance, and found it to attract and repel the same: But, on setting it down, and standing upon it, by no means could it be made appear that I was electrify'd, or any other Person who stood thereon afterwards. I thereupon took another Box of the same sort, but made use of it without wiping it, and it performed well. This I have not yet repeated, but intend to do it.

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In a Pint-Bottle of Flint-Glass I have some small Pieces of brass Leaf, and the Bottle hermetically sealed. Upon trying whether the excited Tube would much affect the said Leaf, I was at first disappointed in my Expectations; for tho' the Tube was so well excited, as that, upon bringing it near the Bottle, strong and loud Snaps were given, there was hardly any sensible Motion in the brass Leaf, till I thought of warming the Bottle at the Fire; and then there was a considerable one, tho' not what I expected before I made any Trial. But I suspect the Bottle to be too thick; for, on trying a common Flask, which we sealed in the Fire, the Leaf which I had put in was very strongly both attracted and repelled a great many times.

One odd Circumstance I will tell you, and detain you no longer: Upon my lifting up the Tube hastily by chance, I observed the Leaf to be powerfully attracted by the Sides of the Bottle or Flask next to the Tube: This put me on trying purposely what the Effect would be, if, when a Person held Either in his Hand sideways, so as the Neck was parallel with the Horizon; I took the excited Tube, and moved it up and down towards and from the Floor, at 3 or 4 Inches from the Bottle, successively, as fast as I could, without hazarding my striking against it; upon which the brass Leaf was as successively attracted and repelled, or seemed to follow the Motion of the Tube, or was affected, as it would have been if I had beat the Air upon it, tho' in a very inferior Degree, as you will suppose; and thus it would be, if the Tube was held at a greater Distance; and in the Flask, I carried my Hand so as that the Tube described a Circle about it, at the Distance of 6 or 7 Inches, the Whole of the Leaf would be put into a constant, re-

regular Gyration, which would hold as long as I could well continue the Motion. This seem'd to me strange, that if I brought the Tube near, and removed the same slowly, no Motion (especially in the Bottle) was observed, or what was next to none; and yet, that this sudden Motion of the Tube should produce such an Effect; but I think it may be thus accounted for: While the Tube is held near the Bottle, &c. for any time, the Leaf-Brafs is kept in a State of Repulsion; and therefore, under that Confinement in the Bottle, is motionless; but, on my sudden withdrawing the Tube, the Side of the Glass opposite the Leaf serves as an Attractive to it, while the Side on which it lay repels it; and thus, by the Motion of the Tube mention'd, there is a constant Succession of Attraction and Repulsion. I am, in hopes soon to kiss your Hand at *Crane-Court*,

Dear Sir,

Your very affectionate Friend,

Tooting, March 20.

1745-6.

and obliged humble Servant,

H. Miles.

II.

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Dear Sir,

IT may be hardly worth while to tell you, that I fir'd common Spirit of Wine, at the Distance of 25 Feet, the *Effluvia* being convey'd by 3 Persons and 2 Laths of Deal, ty'd together thus: The
Person

Person to be electrify'd immediately standing on a Cake of Wax, and holding one End of the Lath, another Person standing about the Middle of the Distance on another Cake, and supporting the Lath, and a third Person at the further End, who held the other End of the Lath, and fir'd the Spirit; and sometimes held the Spoon, while a fourth Person fir'd them by Repulsion. In this Experiment, instead of common Thread, I used Silver and Gold Twist, or what, I think, the Ladies call Plate; and I have Reason to think this much better than the former.

I am so far from being of Abbé *Nollet's* Mind, that I think no Sort of Glass is Proof against the Effects of a moist Air. I conclude this from Mr. *Watson's* Experiments and my own. — I told you before where I kept my Tube; and I can assure you, I find as great a Difference as can well be in the same Tube, between what it is one Day and the next, even when I have seen no great Reason to expect, from any sensible Change in the Air, it should be so. But whence arises that we call Moistness in the Air? I have many times known, that the Wind being N. and N.E. and tho' it has rained all Day incessantly, the Air has been as dry (so far as I could judge from natural Hygrometers, and from my Tube) as in a fair Day; and than some fair Days, drier, by the same Indications.

I begin to think, that, by careful Practice, the glass Tube may be brought to be a good Hygrometer for the Air. I wish the Theory of the Air were more diligently and accurately considered: Certainly it has been neglected; so Mr. *Locke* thought, a little before he died; and said, The imperfect Discourse of Mr.

Boyle's, which was printed after his Decease, was the best Account we had. And what has been done since?

I was going to tell you (for I write in a Hurry, that I may not lose the Conveyance which offers), that I believe Cushions, the Case Hair-cloth, and the Stuffing of Horse-hair, may be made to answer instead of Wax-Cakes. I have one not 3 Inches thick in the Middle, even when it is not compress'd, which will do well. Pardon the Trouble I give you, and permit me to acknowledge, that I am, with all Sincerty,

Dear Sir,

Your most affectionate, and

April 16. 1746.

very much obliged humble Servant,

H. Miles,