

Letter from Newton to Henry Oldenburg, dated 14 December 1675

Author: Isaac Newton

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Cambridge
December 14th. 1675.

Sir

The notice you gave me of the Royal Societie's intending to see the experiment of glass rubbed to cause various motions in bits of paper underneath, put me upon recollecting my self a little further about it, & then remembring that if one edge of the brass hoop was laid downward the glass was as neare again to the table as it was when the other edge was laid downward & that the papers plaid best when the glass was nearest to the table: I began to suspect that I had set down a greater distance of the glas from the table then I should have done, for in setting down that experiment I trusted to the Idea I had of the bignes of the hoop in which I might easily be mistaken having not seen it of a long time. And this suspicion was increased by trying the experiment with an object glass of a Telescope placed about the 3^d part of an inch from the Table: for I could not see the papers play any thing neare so well as I had seen them formerly. Whereupon I lookt for the old hoop with its' glas, & at length found the hoop the glass being gone, but by the hoop I perceived that when one edge was turnd down the glas was almost the third part of an inch from the table & when the other edge was down which made the papers play so well the glass was scarce the 8th part of an inch from the Table. This I thought fit to signify to you that if the experiment succeed not well at the distance I set down it may be tryed at a less distance, & that you may alter my paper & write in it an eighth part of an inch instead of $\frac{1}{2}$ or $\frac{1}{3}$ of an inch. The bits of paper ought to be very little & of thin paper. <45v> Perhaps little bits of the wing of a fly or other light substances may do better then paper. Some of the motions as that of hanging by a corner & twirling about, & that of leaping from one part of the glas to another without touching the table happen but seldom but it made me take the more notice of them.

Pray present my humble service to M^r Boyle when you see him & thanks for the favour of the convers I had with him at spring. My conceit of trapanning the common Ether, as he was pleasd to expres it, makes me begin to have the better thoughts on that he was pleasd to entertein it with a smile. I am apt to think that when he has a set of experiments to try in his air pump, he will make that one to see how the compression or relaxation of a muscle will shrink or swell, soften or harden, lengthen or shorten it.

As for Registring the two discourses you may do it, only I desire you would suspend till my next letter, in which I intend to set down something to be altered & something to be added in the Hypothesis, being in the mean while

Sir

Your humble Servant

Is. Newton.

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For Henry Oldenburg Esquire at
his house about the middle
of the old Pal-mall
in Westminster

London

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M^r Newton to M^r Oldenburg concerning an Experiment of glas rubbed to cause various motions in litle bits
of paper underneath the glas.
