

Covering letter to the Hypothesis, Dec. 7 1675

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Cambridge Dec. 7. 1675.

Sir

I have sent you the papers I mentioned, by Iohn Stiles. Vpon reviewing them I find some things so obscure as might have deserv'd a further explication by schemes, & some other things I gues will not be new to you though almost all was new to me when I wrote them. But as they are I hope you will accept of them though not worth the ample thanks you sent. I remember in some discourse with M^r Hook I happend to say that I thought light was reflected not by the parts of glas, water, air or other sensible bodies, but by the same confine or superficies of the æthereal Mediums, which refracts it, the rays finding some difficulty to get through it in passing out of the denser into the rarer Medium, & a greater difficulty in passing out of the rarer into the denser; & so being either refracted or reflected by that superficies, as the circumstances, they happend to be in at their incidence, make 'em able or unable to get through it. And for confirmation of this I said further, that I thought the reflexion of light at its tending out of glas into air would not be diminisht or weakend by drawing away the air in an Air-Pump, as it ought to be if they were the parts of air that reflected. And added that I had not tryed this Experiment, but thought he was not unacquainted with notions of this kind. To which he replied that the notion was new & he would the first opportunity try the experiment I propounded But upon reviewing the papers I send you, I found it there set down for tryed; which makes me recollect that about the time I was writing those papers I had occasionally observ'd in an Air-pump here at Christs College, that I could not perceive the reflexion of the inside of the glas diminished in drawing out the Air. This I thought fit to mention least my former forgetfulnes through having long laid aside thoughts on these things, should make me seem to have set down for certain what I never tryed

Sir I had formerly purposed never to write any Hypothesis of light and colours, fearing it might be a means to ingage me in vain disputes: but I hope a declard resolution to answer nothing that looks like a controversy (unles possibly at my own time upon some other by occasion) may defend me from that fear. And therefore considering that such an Hypothesis would much illustrate the papers I promisd to send you & having a little time this last week to spare: I have not scrupled to describe one so far as I could on a sudden recollect my thoughts about it, not concerning my self whether it shall be thought {p}robable or improbable so it do but render the papers I send you {and} others sent formerly more intelligible. You may see by the <459v> scratching & interlining 'twas done in hast & I have not had time to get it transcribd, which makes me say I reserve a liberty of adding or altering it, & desire that you would return those & the other papers when you have done with them. I doubt there is too much to be read at one time but you'll soon know how to order that At the end of the Hypothesis you'l see a paragraph to be inserted as is there directed; I should have added another or two but I had not time. But such as it is. I hope you will accept it. Sir I am

Your humble servant

Is. Newton.

Rec. Dec. 8. 75

Began to read it before the Society Dec. 9.

Answ. this letter Dec. 11. and desired his permission to retain a copy of all these papers.
