

VII. *An Account of an Experiment, concerning an Endeavour to produce Light thro' a Metallick Body, under the Circumstances of a Vacuum and Attrition. By Mr. Fr. Hauksbee, F. R. S.*

**I**T may be remembred, what success I had in producing Light through Bodies, such as Sealing Wax, Pitch, and common Sulphur; which gave me some probability, that under the same Circumstances I might likewise make some such Discovery thro' a Metallick Body. Accordingly I caused a Glass Hemisphere to be made very strong: To this Hemisphere I procured another, of Burnish Brass, exactly made, to fall with its Brim about an Inch within the Glass, that I might the better cement them together; which I did securely from any ingress of the Air in that part. Thus, when joined, it became nearly a Globe; only the Diameter thro' its *Axis*, was somewhat more than its transverse Diameter, which was a disadvantage to its Strength, as the sequel of this relation will discover. In this manner I exhausted all its Air, as least nearly so, and then put it on the Machine to give it a circular Motion, as usual in such Experiments. I applyed my Hand to the Brass Hemisphere in Motion, but no Light could be discover'd within: I then rubb'd it with a Deal Stick, but the success was the same. Afterwards I applied a piece of Sealing Wax, which has in itself a very Electrical Quality: This Wax, rubbing roughly on the Brass, seem'd to shake the Parts of it; nevertheless there did not any the least glimpse of Light appear. I then held the Flame of a Candle to the Brass in Motion, which something more than warm'd

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a Circle on it; hoping by this means, to excite or obtain some Discovery from it. Yet, notwithstanding a smart Attrition was made on that part, it was altogether unsuccessful. Being tir'd, I let in the Air, and suspended my farther tryals till the following Night. At which time, when I had exhausted the Air from within the Globe, I began the Attrition with a Coal Cinder; which being somewhat rough, I thought it might shake the Parts of the Metall, and put them into such a State or Mode, as to exhibit an Appearance of Light: But this, and whatever else I then did try, was to no purpose. In this exhausted State I left the Globe on the Engine, to consider a little what farther tryals to make; with what Bodies, and in what manner to proceed with them: But to my great surprize, in about an Hour after (being in the next Room) I heard a Noise almost as loud as a Musket when fir'd; and I immediately coming into the Room, found the Globe broken all to pieces (I mean the Glas half of it) and the Brass Hemisphere on the Ground; which I took up, and found several bruises it had received from the violent strokes of the broken Glas, which had dispersed itself in pieces all over the Room. A large looking Glas, at least three Yards distant from it, was crack'd almost from top to bottom, and quite cross the middle, by a blow it received from a fragment of it; for where it struck the Glas, the Cracks proceeded from it every way, like so many *Radii* drawn from a Center. Thus were the Experiments ended; and, as I hinted before, this Accident I believe proceeded from the unconformableness that the Figure of the compounded Globe had to a perfect Sphere, altho' it did not differ so much to sight, as to make me suspect any such Consequence. From these Experiments I may safely conclude, that if there be any such Quality as Light to be excited from a Brass Body, under the fore-mention'd Circumstances, all the Attritions of

the several Bodies used for that purpose, have been too weak to force it from it. And indeed, considering the closeness of the Parts of Metall, and with what firmness they adhere, entangle, or attract one another, a small degree of Attrition is not sufficient to put their Parts into such a Motion, as to produce an Electrical Quality; which Quality, under the fore-mention'd Circumstances, I take to be the Appearance of Light in such a Medium.

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VIII. *Johannis Freind, M. D. Oxon. Prælectionum Chymicarum Vindiciæ, in quibus Objectiones, in Aëtis Lipsiensibus Anno 1710. Mense Septembri, contra Vim materiæ Attrahtricem allatæ, diluuntur.*

**E**Mittenti mihi Lectiones *Chymicas*, suspicio fuit, ne in *Chymicorum* offensionem caderem, quod nullo Authore artem utilissimam Fabulis atque Opinionum commentis, quibus isti quidem jam nimium diu eam incluserant, exuere ausus sim, suâque in luce integram collocare: Eos autem, qui aliquo veritatis Studio ducerentur, ita æquos fore confusus sum, ut Scriptori gratiam habituri essent, qui in hâc Philosophiæ parte novum aliquid ediderit; ipsamque primus ad naturæ principia, firma scilicet atque indubia, revocarit. Sed res ea, secus atque ego existimaveram, accidit: *Aëtorum* quippe *Lipsiensium* Editores, qui neque Experimenta à me prolata, neque modum, quo ea ad naturæ leges perpendere aggressus sum, ne attingunt quidem; principia ipsa, quæ jamdiu pro certissimis habita sunt, quibusque innititur mea omnis rerum *Chymicarum* explicatio, convellere sunt conati: Hocque primo impetu faciunt; posthabitâ libri ipsius enar-