LII. *A Letter to the right honourable the Earl of* Macclesfield, *President of the* Royal Society, *from Mr.* Benjamin Wilson, *F.R.S. concerning ſome* electrical Experiments, *made at* Paris.

My Lord, Sept. 18, 1753, Great Queen-ſtr. London.

Read Dec. 6, 1753. ON the 7th of this month I was at the palace of St. German's near Paris, where I had the ſatisfaction of ſeeing Dr. le Monnier's experiment relating to the electricity of the air; of which an account was ſent me by Abbè Mazeas, and was read before our honourable Society in December laſt; and I obſerved, that though the wind was weſterly, and the air moiſt, yet the ſuſpended wire, at different times, attracted very light bodies, at very ſmall diſtances; the mean of which diſtances ſeem'd to be about $\frac{1}{10}$ of an inch.

Abbè Mazeas informed me, that Dr. le Monnier, ſome months ago, had read a paper, at a meeting of the Royal Academy of Sciences, in which he told them, that he had great reaſon to believe the electric matter did not come from the *earth* at all, but from the *air*. Upon my mentioning this to the Doctor, I found him ſtill of the ſame opinion.

As there was a convenient *apparatus* in his apartment, I propoſed making the experiments: for I always thought that the electric matter came from both, but principally from the earth; and that, probably, a difference of 10 to 1 would be perceived, upon making the experiments.

The machine was ſuſpended by ſilk lines, in ſuch a manner, that every part of it was not leſs than two feet diſtant from any non-electric. The lines were dried by a chafing-diſh of fire made with charcoal, as was likewiſe the glaſs globe; and every other precaution was ſtrictly obſerved, that ſeemed neceſſary for making the experiments.

The Doctor appeared to be well verſed in electrical inquiries, and ſhewed great judgment in conducting the whole. He got upon the ſuſpended *apparatus* himſelf, and rubbed the globe with both his hands; whilſt another perſon, who was likewiſe ſuſpended, turned the wheel of the machine. Cloſe to the globe was a ſlender ſlip of lead; at one end of which was faſtened ſome braſs tinſel, to ſerve as a collector of the electric matter. The other end of the lead had a communication with a tin tube, which was ſupported by ſilk lines about a foot in length: and as this tube hung higher than I could reach, another was hooked to it by means of a wire which hung down to a convenient diſtance.

As I ſtood upon the floor, I took hold of this laſt tube, whilſt the glaſs was rubbed, that the *apparatus*, and the perſons on it, might loſe as much of their natural electricity as poſſible under ſuch circumſtances. On removing my hand, and afterwards approaching the tube, ſometimes with my finger, and at other times with a key, we obſerved very ſmall exploſions, which were little more than juſt ſenſible.

I then deſired one of the Doctor's ſervants (who likewiſe ſtood upon the floor) to lay hold of the ſuſpended *apparatus* on which the Doctor was mounted, whilſt the friction of the globe was continued. Immediately

mediatley on approaching the tube as before, with my finger, and then with the key, a very great difference was obſerved; for now the exploſion was very large compared with the former trials. Doctor le Monnier deſired the experiments might be repeated; which was done ſeveral times, and, to all appearance, the differences were the ſame.

He was perfectly ſatisfied that the experiments were fairly made, and that the exploſion was much greater when the *apparatus* communicated with the *earth*, than when it communicated with the *air* only.

As ſeveral gentlemen of the Royal Academy of Sciences in Paris were of opinion that theſe experiments deſerved attention, I thought your lordſhip would not be diſpleaſed, if I did myſelf the honour of communicating them.

I am,

My Lord,

Your Lordſhip's moſt obedient;

and obliged humble ſervant,

Benjamin Wilſon.

For a ſeries of experiments and obſervations where the whole electrical apparatus was ſupported by electrics *per ſe*, ſee *Phil. Tranſ.* Vol. XLIV. p. 713—729—739, 740. See alſo Vol. XLV. p. 93—101 and Vol. XLVII. p. 371, 373. And Mr. Wilſon's *Eſſay*, and *Treatiſe, on Electricity*.