

30 Rue de Cléj  
Paris. April 17, 1889.

Dear Sir

1174

I forgot to add a description of some experiments on attraction by vibration, which I think are allied to the electric effects of attraction of vibrating columns of ether ("resonance"). The experiments were made by me in the late Dr. Guthrie's laboratory about 5 or 6 years ago.

Tuning forks weighing some 6 or 7 pounds were taken. In putting such a fork into vibration by a blow on a block of lead, pieces of cardboard about 5 inches long,  $3/4$  inch broad, and  $1/8$  inch thick (about) could be suspended floating in the air below the vibrating prong. The column of air was evidently in "resonance" between the prong and

the piece of cardboard. So, I think the "resonance" of the ether columns between an "electric" body and a piece of substance it attracts - is due to the same cause: or it is a <sup>rarefaction</sup> ~~resonance~~ of the air in the one case and a rarefaction of the ether in the other which produces the tendency to approach. But I would venture to refer more particularly to the two articles sent, as an illustration of this, - which I believe will be found of interest.

I am

Yours truly

J Tolson Preston

P.S. I am not aware of attraction effects on so large a scale (with forks) having been tried. Of course molecular vibrations are incomparably more intense than those of the largest forks. "Heat waves are now held to be 'electric', it may be worthy of note.

11/7<sup>th</sup> 30 Ave de la Clef  
Paris April 14. 1889.

Dear Sir

I have never seen it explained how ether, if it be an aëiform body — and it cannot be a solid — apparently from the disruptive phenomenon of the lightning flash — could vibrate stably along a wire open (through molecular interactions at the sides).

Yet it (ether) appears to vibrate along wires somewhat in analogy with air in tubes, or like even the longitudinal vibration of rods somewhat. The recent experiments with Fessenden's tube (described in Nature April 4, p 548) have shown nodes to exist in wires, analogous to acoustic effects.

Now in 1876 I published two articles out of twelve in "Engineering" (enclosed) concerning a possible mode of

vibration of an aëiform body analogous to a solid body — which applies to the electric effects apparently. In fact in the second article (enclosed), I have so applied it.

I believe that whether these views (as regards the electric effects) are substantially true or not, there is enough suggestive matter therein to make the articles worth reading — and the first (No 5) appears to be necessary thus in theory, in so far as the form of vibration described appears to be certainly possible.

I venture to send the articles to you, and would like to publish them again (in view of the recent discoveries in electricity), if it were considered they would interest readers.

I am

Yours truly

S. Tolson Prestor

Prof. G. F. Fitzgerald F.R.S.---

Noting myself, but unfortunately  
I am unable to appreciate Heertge's  
and Maxwell's views sufficiently to  
judge whether I could recommend them  
to the Editor. You have specially gone  
into the ~~and~~ recent views on electricity  
I believe; and I think in any case  
the articles will interest. No 5 appears  
to contain a truth of wide application.

11/74