

15 Albert Park
Highbury
W.

19/45

30 Apr. 94

Dear Sir

I cannot sufficiently thank you for your kindness in giving me so many and such valuable suggestions; I should not have supposed that any one would take so much trouble for a stranger.

I hope that when the evidence is sufficient, my only aim also will be to know what is true. But while the case is being tried I think there may be a useful place for counsel as well as for jury.

If I understand your ~~view~~ suggestion you do not make the complete distinction which my friend Serrard does between the electric discharge between the electrodes,

and the cathode-rays which start from the - pole and are unaffected by the position of the + one. He regards these as absolutely unconnected, except to the extent that the second are only produced by an electrode while it is excited by an intermittent discharge, and considers the cathode rays no more a part of the electric circuit than the rays of light from an electric lamp are part of the electric circuit which includes the filament. I have taken my ideas so much from him that I hardly understood that you thought the rays were, or might be, a part of the electric circuit; I thought his view and Crookes's were the only ones in the field.

His experiments (and mine since) failed to detect any difference in the time of lighting up of particles of phosphorescent sulphides at opposite

ends of a 4 foot tube, when seen in a very rapidly rotating mirror. I had no means of measuring the velocity of my mirror, which was simply spun on pivots by a jet of compressed oxygen; it did not detect any displacement when the same two particles were illuminated by a flash of light. So there was no proof that the cathode rays travelled as fast as light. But it seemed certain that the mirror would have shown a displacement if the velocity had not been many times greater than the ordinary velocity of molecules. I knew of the experiments you mention on the velocity of formation of striae, but Lenard regarded those as having nothing whatever to do with the velocity of cathode-rays, but as belonging to the electrical discharge.

Again gratefully thanking you,
I remain
19/45 Yours faithfully
Edmund Catchpole.