INTERFERENCE EXPERIMENT WITH ELECTRICAL WAVES.

BY PROF. VON LANG.

The experiment described corresponds to the well-known acoustical one of Quincke. The electrical wave from a Righi's exciter is divided into two parts with unequally long paths; after joining, the partial waves interfere, which is demonstrated by a Branly's Coherer. If the one wave is successively lengthened, both waves will be alternately strengthened and weakened, and as many as four maxima and minima can be easily shown. The experiments were made with tubes of nearly 60 millim. diameter. Tubes with half that diameter did not show the phenomenon. If in one of the two tubes a paraffin cylinder is introduced which entirely fills it, the position of the maxima and minima is displaced, from which the refractive index of paraffin can be calculated. The author found for it 1.65-1.70. Similar experiments with sulphur gave for its refractive index 2.33-2.37. These numbers are considerably higher than the values found by Righi, which were, for paraffin 1.43; for sulphur 1.87. The length of the electrical waves in these experiments was 80 millim., the diameter of the knobs of the exciter 106 millim.—*Wiener Berichte*, Oct. 24, 1895.

ON ELECTRIFIED ATOMS.

To the Editors of the Philosophical Magazine.

GENTLEMEN,

I find that the view expressed by me in my paper "On the Relation between the Atom and its Charge" (*Phil. Mag.* Dec. 1895, p. 541), that a negatively electrified atom moved more rapidly than a positively electrified one in the same electric field, was arrived at from different reasons by Professor Schuster, and given by him more than five years ago in the Bakerian Lecture for 1890. I am glad to find that this view is held by so eminent an authority, and regret that I had previously overlooked such strong evidence in its favour. There is another result given in the same Bakerian Lecture which I ought to have quoted. I allude to Mr. Stanton's interesting experiments on the escape of electricity from a hot copper rod surrounded in one case by oxygen and in another by hydrogen.

I am, Gentlemen,

Yours very sincerely,

Cavendish Laboratory, Cambridge,
January 20, 1896.

J. J. THOMSON.