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On experiments with Röntgen rays

Augusto Righi

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LIII. *Intelligence and Miscellaneous Articles.*

ON EXPERIMENTS WITH RÖNTGEN RAYS.

To the Editors of the Philosophical Magazine.

GENTLEMEN,

ALLOW me to avail myself of your Magazine to make some remarks about the Memoirs of Messrs. Oumoff and Samoiloff (Phil. Mag. October), and of Messrs. J. J. Thomson and Rutherford (Phil. Mag. November).

The experiments of Messrs. Oumoff and Samoiloff do not, in my opinion, resemble very closely those of my own experiments on electrical shadows to which they refer, but they have rather much likeness with those, concerning the production of Röntgen's shadows with the electrical method, which I published in two Notes on the 1st of March (*Rendiconti della R. Accad. dei Lincei*). They have therefore the same analogy with those afterwards published by Prof. Silvanus P. Thompson (Phil. Mag. August). No doubt that Messrs. Oumoff and Samoiloff had no knowledge of the previous publications above mentioned.

As to the Memoir of Messrs. Thomson and Rutherford, I beg to observe that the fact proved at pages 395 and 396 (viz. that a thinner layer of air may offer a greater resistance than a thicker one) has already been described by myself in a Note on the 3rd of May (*Rend. della R. Accad. dei Lincei*). In that Note I recalled also some experiments I had formerly made, which proved that an analogous phenomenon may be produced by ultra-violet rays, and also without the action of any radiation at all.

In the complete Memoir read before the R. Academy of Bologna on the 31st May ("On the Propagation of Electricity through Gases traversed by Röntgen's rays"), I have described with more particulars all these phenomena, and also others that I obtained with Röntgen's rays.

I am, Gentlemen,

Yours faithfully,

AUGUSTO RIGHI,

Professor of Experimental Physics,
in the University.

Bologna (Italy), November 11th, 1896.

VOLUME MEASUREMENT OF AN AIR THERMOMETER BULB.

BY WALTER G. CADY.

In all constant volume air thermometry where high temperatures are involved, it is frequently necessary to determine the volume of the glass bulb used; such a bulb softens at a low red