

analogous either to the vapour of mercury, zinc, and cadmium or to that of magnesium. With thallium then the results show that the vapour of the metal increases the conductivity of a Bunsen flame, and that at the same time as the added conductivity is contributed radiations of the wave-lengths $\lambda = 5350.65$ A.U. and $\lambda = 3775.87$ A.U. are emitted. It should be pointed out in this connection that Ramage,* who investigated the spectrum of Bunsen

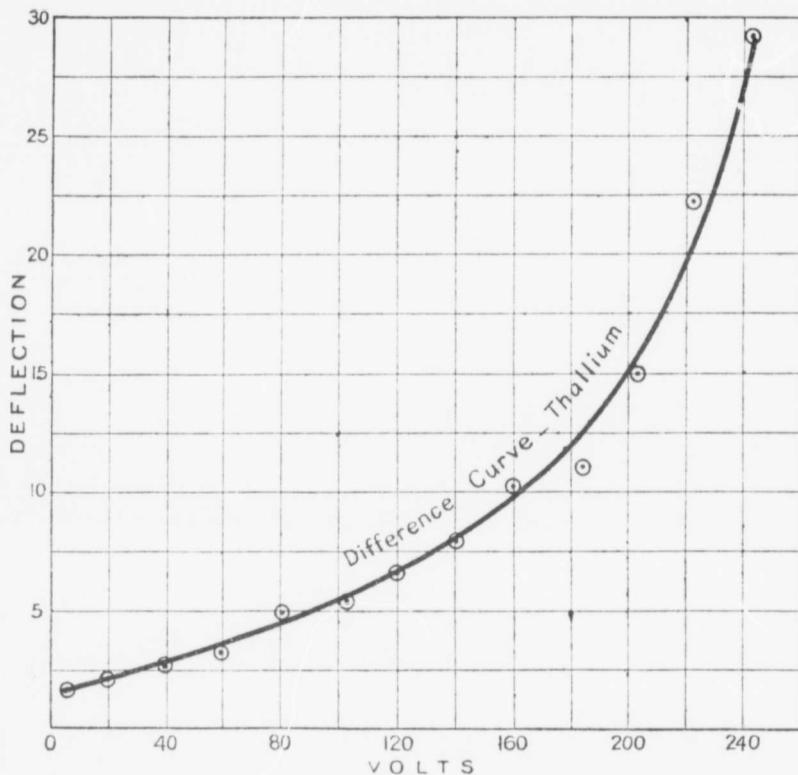


FIG. 8.

flames into which metallic thallium or a spray of the aqueous solutions of thallium salts was injected, found the line $\lambda = 5350.65$ A.U. to be the only one which came out in addition to the spectrum of the free flame.

5. Atomic Structure.

It was expected in undertaking these experiments to arrive at some definite information regarding the nature of the atomic structure of the

* Ramage, 'Roy. Soc. Proc.' vol. 70, No. 459, p. 1 (1902).