

On the Bunsen Flame Spectra of Metallic Vapours. 590

Bunsen flame, in so far as these experiments go, is exactly similar to the well known behaviour of sodium.

5. Results.

1. The results with mercury and cadmium vapours go to confirm the view that the frequency $\nu = (1.5, S) - (2, p_2)$, is a fundamental one. The fact that the cadmium line $\lambda = 2288.79 \text{ \AA.U.}$ came out in strongly burning flames also gives support to the view that the frequency $\nu = (1.5, S) - (2, P)$, possesses fundamental characteristics for cadmium atoms.

2. The experiments tend to support the view that, in the magnesium spectrum, the fundamental frequency is given by $\nu = (1.5, S) - (2, P)$. It is the one most easily stimulated in the spectrum of magnesium. When the line $\lambda = 4571.38 \text{ \AA.U.}$ has been observed by other spectroscopists, it has always been accompanied by other lines, including in some cases that of wave-length $\lambda = 2852.22 \text{ \AA.U.}$

3. The results obtained with thallium failed to give any indication of the fundamental frequencies in the spectrum of this element. It is probable that, with thallium, the fundamental spectral lines come far down in the ultra-violet region.

In conclusion, we wish to acknowledge the kind help of Mr. J. F. T. Young in taking some of the photographs.