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On the Ionisation Potentials of Magnesium and other Metals, and on their Absorption Spectra.

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[PLATES 7 AND 8.]

1. Introduction.

In a paper vecently published by the writer,* on the single-line spectrum of magnesium, experiments were described in which it was found that when magnesium vapour in a vacuum was bombarded by electrons it was possible if the electrons possessed the requisite amount of kinetic energy to cause the vapour to emit a radiation consisting of the single spectral line $\lambda = 2852.22$ Â.U. At the time these experiments were made and the paper was written it was not known by the author whether this line was the first member of the series whose frequencies are given by $\nu = (1.5, S) - (m, p_2),^{+}$ or of the series

* McLennan, 'Roy. Soc. Proc.,' A, vol. 92, p. 305 (1916).

+ In the symbolic equation $\nu = (n, X) - (m, Y)$, the frequencies are given by $\nu = \frac{N}{[n+X+x(n, X)]^2} - \frac{N}{[m+Y+y(m, Y_j)]^2}$, where N is Rydberg's number, n has a fixed value either integral or one of the numbers 1.5, 2.5, 3.5, i.e. and m has successive

value either integral or one of the numbers 1.5, 2.5, 3.5, etc., and m has successive integral values, each one giving the frequent v of a member of the series.

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