THE FLUORESCENCE OF ACETONE VAPOUR.

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THE fluorescence of acetone was first observed by Gelbke\(^1\) the observations being extended by Damon and Daniels\(^2\) as well as by Norrish and his co-workers. According to the latter, who have investigated the subject in detail, the fluorescence consists of three bands devoid of structure with maxima at $\lambda \; 5117$, $\lambda \; 5572$ and $\lambda \; 6095$. In the course of an investigation on the Raman effect in ketones, the author had occasion to take a picture of the fluorescence spectrum of acetone in the vapour state when it was observed that the bands were not devoid of structure but actually consisted of a number of diffuse bands superposed upon a continuous spectrum, the structure being most pronounced in the band with maximum at $\lambda \; 5117$. Although precise measurement was not possible, the following approximate values were determined with the help of a high dispersion spectrograph.

$\lambda \; 5058 \; (d), \; 5070 \; (d), \; 5081 \; (d), \; 5140 \; (d), \; 5152 \; (d), \; 5171 \; (d), \; 5186 \; (s), \; 5548 \; (d), \; 5570 \; (d)$ and $5594 \; (d)$.

The bands at $\lambda \; 5140$ and $\lambda \; 5548$ are considered doubtful.

A similar fine structure was also observed in the case of the next higher homologue, methyl ethyl ketone. These observations are evidently connected with the discrete character of the absorption spectrum of acetone vapour first observed by Norrish, Crone and Saltmarsh\(^3\) but in view of the fact that the data given by the different workers\(^4,5\) are conflicting, a detailed discussion is not attempted.

\(^1\) Gelbke, *Jahrbuch der Radioaktivität*, 1913, 1, 10.
\(^2\) Damon and Daniels, *J.A.C.S.*, 1933, 55, 2363.
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