

LETTERS TO THE EDITOR

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THE BAND SPECTRUM OF
TANTALUM OXIDE

The spectrum of tantalum oxide was photographed in the visible region by using a Littrow model spectrograph. The sources of the spectrum were high current arcs between (1) tantalum rods, (2) carbon rods stuffed with tantalum oxide, in air; and arcs between tantalum rods in oxygen. A band system extending from λ 5500 to λ 3900 was obtained. Though the heads are not very prominent, it was possible to arrange more than twenty of these bands into a Deslandre's scheme.

The system corresponds to the α -system of zirconium bands investigated by Frances Lowater. Table I presents a few of the bands at the relevant corner of the Deslandre's table.

TABLE I

ν'' \ / \ ν'	0	1	2
0	22639.9	21490.0	20362.3
1	23348.7	22198.8	21071.1
2	24064.9	22920.0	21776.0

The values of W_e' (712.7), W_e'' (1161.6), $X_e'W_e'$ (1.95), $X_e''W_e''$ (5.85) compare favourably with the corresponding values for TiO, VO, CrO, MnO, ZrO, etc., molecules.

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