shortage of fluorite suitable not only for spectroscopic trains, but also for achromatic combinations as well.

SOURCE OF SAMPLES OF FLUORITE TESTED FOR TRANSPARENCY

Quite recently the Adam Hilger Co., Limited, obtained some samples of fluorspar from South Africa. These deposits which occur to the south of Ottoshoop, in the Zeerust district of the Transvaal, have apparently been worked for some time in connection with the supply of fluorspar for gold refineries and for steel making plants. The Geological formation appears to be of the nature of a large pipe in the dolomite of the Transvaal system. The spar is colourless and has been shewn by chemical analysis to be of great purity.

EXPERIMENTAL ARRANGEMENTS FOR TESTING

The fluorite spectrograph specially constructed for vacuum work by McLennan, Ainslie and Fuller' was used to test samples of this fluorite over the spectrum range available which was to below 1400 A.U. The source of light used was the vacuum carbon arc in the type of lamp developed by McLennan, Ainslie and Fuller. The only difference in the experimental details adopted was that a small absorption chamber to contain the fluorite samples was inserted between the arc and the slit of the spectrograph. The whole apparatus could then be evacuated and spectrograms taken of the light transmitted by each sample. The time of exposure was from 30-45 minutes, a steady carbon arc being maintained by a current of 10 amperes at 100 volts. At frequent intervals spectrograms were taken with no fluorite in the absorption chamber in order to test the light from the source. In every case these spectrograms showed the carbon bands at $\lambda = 1464$ A.U and at $\lambda = 1430$ A.U. Schumann plates prepared by the Adam Hilger Co. were used throughout the experiments.

The following table is a summary of the tests.

¹ McLennan, Ainslie and Fuller, Proc. Roy. Soc. Jan., 1919.

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