

CL.—*The Effect of Gas Pressure on the Colour of
Halogen Vapours.*

By ALEXANDER SHEARER and ROBERT WRIGHT.

IT was recently shown (J., 1929, 1364) that the deeper colour of iodine vapour in the presence of a gas as compared with that in a vacuum was independent of the nature of the gas used, and took

place even when the iodine vapour was unsaturated. It was suggested that this "Dewar" effect might be attributed simply to the pressure of the inactive gas.

A further series of absorption spectra photographs has now been made, in which the iodine vapour was submitted to different air pressures ranging from zero to about 2 atm. The iodine was contained in a Lilburn flask, as previously described, but in the present case the flask was connected to a manometer and a compression pump. Throughout the whole series a deepening of colour was produced step by step with increase of pressure (see Fig. 1).

Bromine vapour was examined under its own vapour pressure and when mixed with air at atmospheric pressure. The presence of the air produced a very slight increase in absorption (see Fig. 2). The ultraviolet absorption spectrum of chlorine was also examined, in a tube of about 20 cm. length with quartz ends. The pressure of the chlorine was reduced to about 0.5 atm., and its absorption spectrum photographed; air was then admitted and a second photograph taken. The pressure of the air produced no change in the absorptive power of the chlorine (see Fig. 3).

GLASGOW UNIVERSITY.

[Received, March 12th, 1930.]
