

faster with reference to oxygen than as calculated by the law of the inverse square root of the density, hydrogen and carbon monoxide at about the calculated rate, while helium apparently effuses more slowly than it should. It is suggested that argon and carbon dioxide fall into line quantitatively if we assume that the expression for an actual gas differs from that for an ideal gas by a term depending on the K of the Joule-Thomson effect. This hypothesis requires that helium should show a negative value for K .
W. D. B.

On the passage of argon through thin films of india-rubber. *Lord Rayleigh, Phil. Mag. [5] 49, 220 (1900).*—Argon passes an india-rubber film more readily than nitrogen, but not in such a degree as to render the diffusion process a useful one for the concentration of argon from the atmosphere.
W. D. B.

Note on the source of energy in diffusive convection. *A. Griffiths, Phil. Mag. [5] 47, 522 (1899).*—From theoretical considerations and neglecting heat of combination, the heat absorbed, when a solution of density greater than water diffuses upwards through a tube of section A , is independent of the height of the tube and of the velocity of flow and may be expressed thus :

$$H = KgTA.$$

The author refers to the apparatus described in his paper on "Diffusion Convection" and further calculates the rate at which work is done by diffusion in the apparatus.
H. T. B.

A study of an apparatus for the determination of the rate of diffusion of solids dissolved in liquids. *A. Griffiths, Phil. Mag. [5] 47, 530 (1899).*—The apparatus consists of a vessel divided into two compartments by a diaphragm, and so arranged that diffusion of an aqueous salt solution can take place, through vertical tubes, from the lower compartment to the upper compartment containing pure water. When in operation, the water and solution are renewed at intervals of about a week, to determine the amount of salt diffused. The apparatus has not so far proved successful on account of many sources of error, which are enumerated by the author, but hopes are entertained of its ultimate success.
H. T. B.

Velocities

On the transformation of cinchonine. *R. Wegscheider, Zeit. phys. Chem. 34, 290 (1900).*—It was found by Skraup that the addition and transformation products, caused by the halogen acids, stand in a constant ratio which is independent of the time. The author shows that this result is incompatible with the hypothesis of the addition-product being an intermediate step. The article is a very interesting one, in that it makes clear the importance to the organic chemist of making quantitative studies.
W. D. B.

On the disintegration of platinum and palladium wires at high temperatures. *W. Stewart, Phil. Mag. [5] 48, 481 (1899).*—Reviewed (3, 184) from *Wied. Ann.* 66, 88 (1898).

On the rate of explosion in gases. *D. L. Chapman, Phil. Mag. [5] 47, 90 (1899).*—Accepting the suggestion that an explosion is essentially similar to a