

REVIEWS

The object of this department of the Journal is to issue, as promptly as possible, critical digests of all Journal articles that bear upon any phase of Physical Chemistry.

General

The additive properties of the atoms. *S. Meyer. Ber. chem. Ges. Berlin, 33, 1918 (1900).* — If a common property of the elements be a periodic function of their atomic weights, which stands in relation to the atomic volume curve, and if this property be reckoned in a first approximation from the property of the compound, one may expect that this number will only be calculated exactly when the atomic volumes are added to the molecular volume. If one obtain a difference due to expansion or contraction, the position of this property will be displaced on the atomic volume curve in the direction of the maximum or minimum. The magnetization numbers for the halogen compounds and also for some of the oxides are considered. The atomic heat of oxygen cannot be calculated directly, as most oxides are formed with volume contraction.

C. G. L. W.

A comparison of Rowland's mercury thermometers with the Callendar-Griffiths platinum thermometer. *C. W. Waidner and F. Mallory. Phil. Mag. 48, 1 (1899).* — The object of the present work was to explain, if possible, the discrepancy between the mechanical equivalent of heat deduced by the direct method of Joule in Rowland's experiments with the electrical method of Griffiths. Various papers have already been reviewed (2, 504) giving the purport of this work. The present paper is a careful description of a comparison of the mercury thermometers with a platinum thermometer.

H. T. B.

Heat of combination of metals in the formation of alloys. *A. Galt. Phil. Mag. [5] 49, 405 (1900).* — Mixtures and alloys were dissolved in nitric acid and the difference taken as the heat of combination. With zinc and copper, there is a minimum negative heat effect with about 15-20 percent copper, and a maximum positive heat effect with about thirty-eight percent copper. Alloys of silver and copper show little or no heat of combination.

W. D. B.

Hydrometers of total immersion. *A. W. Warrington. Phil. Mag. [5] 48, 498 (1899).* — In order to avoid the error due to the projecting thread, the author slips platinum rings over the neck of a hydrometer until the instrument has practically the same density as the liquid and makes the last adjustment by changing the temperature of the liquid, the hydrometer being totally immersed. Instances are given in which this method has been employed.

W. D. B.