One-Component Systems

On the assumed isomerism between red and yellow mercuric oxide and on the surface-tension of solids. *W. Ostwald. Zeit. phys. Chem.* **34**, 495 (1900). — It is shown that the difference in electrical potential detected by Cohen (4, 697) is not due to a real difference between red and yellow mercuric oxide, but to the increased solubility of very fine particles over a coarse-grained substance. It is shown experimentally that the solubility of mercuric oxide varies perceptibly with the fineness of the solid phase, and that this same phenomenon can be observed with other substances, though to a lesser extent. *W. D. B.*

On the physical chemical relations between aragonite and calcite. *H. W. Foote. Zeit. phys. Chem.* **33**, 740 (1900). — Aragonite can be obtained by quick precipitation from a hot solution; but conductivity measurements and solubility determinations in presence of potassium oxalate show that calcite is the more stable form. While there is no evidence that calcite is ever the less stable form, the solubilities do approach somewhat with rising temperature, so that we are justified in concluding that the change to calcite is accompanied by an evolution of heat. Above 50°, and in the presence of a liquid phase, aragonite apparently starts to change spontaneously into calcite. *W. D. B.*

On the vapor pressures of a series of benzene compounds. *B. Wöringer. Zeit. phys. Chem.* **34**, 257 (1900). — The author has determined the pressure-temperature curves for sixteen substances from a temperature of 0° to a pressure of 800 mm, and has pointed out qualitative relations between pressure differences and constitution. The curve for mesitylene as determined cuts the curves for nine other substances; but, unfortunately, the curve for mesitylene is the one out of the whole, about which the author is least certain. *W. D. B.*

On the thermal properties of normal pentane. *J. Rose-Innes and S. Young. Phil. Mag.* **47**, 353 (1899). — From a study of the temperatures, pressures, and volumes of isopentane over a wide range of volumes, the relation

$$p = bT - a$$

at constant volume, a and b being constants, was found to hold with considerable accuracy. The present paper is a similar study of normal pentane, but over a smaller range of volumes. The deviations from the empirical relations are small. *H. T. B.*

The Joule-Thomson thermal effect; its connection with the characteristic equation, and some of its thermodynamical consequences. *E. F. J. Love. Phil. Mag.* **48**, 106 (1899). — From a consideration of the formula assigned to the Joule-Thomson effect, taken as a function of the temperature, and the characteristic gas equation, the author endeavors to show some theoretical basis to the various formulas proposed by different investigators, including those of Kelvin, Boyle-Charles, van der Waals, Rose-Innes and Clausius. Thermodynamic consequences are then discussed and a new method for calculating the ratio of the two specific heats of a gas is given, based on the relation between the intrinsic energy of a gas and its volume. *H. T. B.*

On the thermal conductivity of water. *S. L. Milner and A. P. Chattock.*