

δ -sodium molybdate is lowered to an abnormal extent by small quantities of sodium sulphate. No explanation can so far be suggested for this marked discrepancy between observation and theory.

J. C. P.

Vaporisation of Solid Substances at the Ordinary Temperature. II. CONSTANTIN ZENGELIS (*Zeit. physikal. Chem.*, 1906, 57, 90—109. Compare Abstr., 1905, ii, 143).—The earlier observations have been extended, and the substances found to volatilise at the ordinary temperature include many peroxides, hydroxides, sulphides, halides, nitrates, carbonates, sulphates, phosphates, chlorates, and chromates. The power of absorbing the vapours seems to be specially characteristic of silver (see *loc. cit.*), and is attributed to the resistance offered by this metal to the oxidising action of the air, and to the fact that silver acts as a comparatively strong reducer. Experiments are described indicating that silver is a more powerful reducer than has generally been supposed. Thus, when a dilute ferric chloride solution is heated for two hours at 80° with silver leaf or powder, 48 per cent. of the ferric salt is reduced to ferrous salt; acidified dichromate also is reduced by prolonged heating with silver leaf; silver reduces solid copper sulphate to sulphide at temperatures below 150°.

It is noteworthy that when silver leaf is placed in dry contact with one of the foregoing substances which are volatile at the ordinary temperature, the silver is attacked only at points which are not in contact with the other substance. It is therefore the vapours of these substances which act on the silver, and it is thought probable that in their very attenuated condition they have in some way undergone dissociation. It is considered that the phenomena of radioactivity lend support to this hypothesis of a dissociation.

J. C. P.

Simple Toluene Regulator and Shaking Machine for Thermostats. HARALD LUNDÉN and WM. TATE (*Medd. k. Vetensk. Akad. Nobelinstitut*, 1906, 1, No. 5, 1—4).—The regulator is a simplified form of that described by Dony-Hénault (Abstr., 1905, ii, 142). The vertical tube from the regulator bulb is bent twice on itself so as to form a system of three parallel tubes. The descending tube is of larger diameter than the ascending tubes, the lower half of the reservoir so formed and the length of tube from this to the mercury in the ordinary U-limb being filled with calcium chloride solution.

For a description of the shaking machine the original must be consulted.

H. M. D.

Action of the Alkali and Alkali-earth Metals on a Molecule of Water. ROBERT DE FORCRAND (*Ann. Chim. Phys.*, 1906, [viii], 9, 234—241).—Representing by *A* and *B* the thermo-chemical equivalents of the equations H_2O (solid) + *M* (solid) = *MOH* (solid) + *H* (gas), and MOH (solid) + *M* (solid) = M_2O (solid) + *H* (gas), respectively, in which *M* represents Li, Na, K, Rb, Cs, Ca/2, Sr/2, Ba/2, Mg/2, or Zn/2, the metals can be divided into two series; in the first series comprising Na, K, Rb, and Cs, the values for *A* + *B* increase, and the values for *A* - *B* decrease with the atomic weights of the metals; further, the