second cork, through which pass a tapped delivery tube and the stem of a large bulb tube. The material from which the gas is to be evolved is placed on a perforated plate supported on rubber stoppers at the bottom of the cylinder, the lower end of the funnel stem reaching below this plate. Perforations are provided in the walls of the cylinder in order that the acid from the bulb tube may circulate in the cylinder and bottle. W. P. S.

Universal Apparatus. FRANZ MICHEL (*Chem. Zeit.*, 1912, **36**, 138).—In appearance the apparatus resembles a large vacuum desiccator provided with screw-clamps, so that the upper and lower portions can be firmly fixed to each other. The upper portion is of Jena resistance glass, the lower being of copper, nickel, cast iron, or porcelain; the joint is made tight by means of an asbestos ring which has been soaked with rubber solution.

The apparatus can be used for treating volatile and easily decomposable substances in a protecting atmosphere. T. S. P.

An Early Physical Chemist: M. W. Lomonossoff. ALEXANDER SMITH (*J. Amer. Chem. Soc.*, 1912, **34**, 109—119).—A biographical sketch of the Russian chemist, Lomonossoff (1711–1765), and an appreciation of his work. E. G.

Some Lecture Experiments. CONSTANTIN ZENGELIS (*Zeitsch. phys. Chem. Unterr.*, 1911, **24**, 137—142).—An account of the methods by which the author demonstrates (1) *Faraday's law.*—A pair of tubes, *A* and *B*, with taps at the base are joined to each other by another tube containing a tap which can be opened or shut as required, wires are connected for the passage of an electrical current, and they are filled with an *N*/10-solution of an alkali sulphate in the presence of an indicator (such as litmus or phenolphthalein). Another similar pair of tubes, *A'* and *B'*, containing the exact equivalent of another alkali sulphate are placed in series, an electric current passed, and the change of colour shown by the indicators noted; the connecting taps are then closed, and the contents of *A* and *B'* and of *A'* and *B* respectively mixed, when the original colour of the solutions will be regenerated.

(2) *Positive and negative catalysis* as shown by the interaction of sulphurous acid and hydrogen iodate:

$$3H_2SO_3 + HIO_3 = 3H_2SO_4 + HI$$
$$5HI + HIO_3 = 3H_2O + 3I_2;$$

the duration of the reaction is noted in the case of varying concentrations and in the presence of different acids, the end point being sharply marked by the sudden separation of iodine; with 6·4 grams of sulphurous acid and 17·8 grams of iodic acid, each in a litre of water, the reaction was completed in 38·28 seconds (compare Landolt, Abstr., 1886, 658).

(3) *The ignition of a mixture of nitric oxide and carbon disulphide.*—A wide-necked flask is filled with nitric oxide, a few c.c. of carbon disulphide added, closed with a glass plate, and heated until ignition takes place.

(4) *The burning of carbon disulphide in oxygen.*—A strong bottle

closed with a two-holed stopper: the larger opening is fitted with a silver or porcelain tube, the other one with a narrower brass tube connected outside with a source of oxygen, which after entering the bottle bends round into the other tube; carbon disulphide is placed in the bottle, heated, and the vapour ignited in the stream of oxygen at the mouth of the bottle.

(5) *The high temperature produced by burning aluminium in oxygen.* —The aluminium is heated in a Hessian crucible into which a stream of oxygen is introduced (compare Zengelis, Abstr., 1904, ii, 232, and *Elektrochem. Zeitsch.*, 1903, 10, 109; see also **Abstr.**, 1905, ii, 65; 1910, ii, 1106). F. M. G. M.