APPARATUS, ETC.

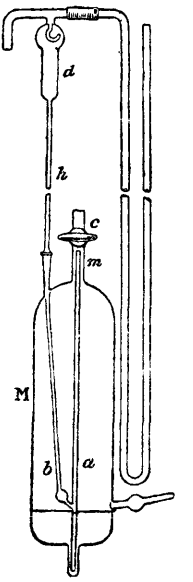
Colour Standards of Colorimetric Assays. H. V. Arny and C. H. Ring. (*J. Ind. and Eng. Chem.*, 1916, **8**, 309-317.)—The authors have already described the solutions employed by them for making colorimetric standards (ANALYST, 1913, **38**, 394, and 1915, **40**, 452), and the present paper deals with the application of such colour solutions to the estimation of ammonia by Nessler's reagent; nitrate determination by the phenol-sulphonic and method; nitrates with sulphanilic acid and a naphthylamine salt; vanillin in conjunction with bromine water and ferrous sulphate; uric acid by Riegler's method, in which phosphomolybdic acid is the reagent employed; salicylic acid together with ferric chloride solution; and finally phosphates when allowed to react with ammonium molybdate. In all cases a comparison of the colour values obtained by the Lovibond tintometer, using red, yellow, and blue glasses, was made beside the authors' coloured solutions. Full details, for which the original paper must be consulted, are given dealing with the variations obtainable under different conditions of dilution, acidity, etc. H. F. E. H.

General Applicability of the Paper Pulp Filter to Quantitative Analysis. S. L. Jodidi and E. H. Kellogg. (*J. Ind. and Eng. Chem.*, 1916, **8**, 317-319.)—Experiments were made in the application of the pulp filter to the quantitative estimation of barium and sulphuric acid as barium sulphate of silver and hydrochloric

acid as silver chloride, and of potassium and ammonium as platinichlorides. The results were found to be as accurate as those obtained with standard filter paper, and, in addition, the pulp filter has the advantage of saving considerable time and labour.

H. F. E. H.

New Safety Valve. M. S. Losanitch. (*Chem. News*, 1916, **113**, 218.)—The device shown in the diagram is adapted to prevent the back-flow of water in water-pumps. The cylindrical vessel M is connected with the pump by means of a rubber tube, and has a glass tap *c* for the admission of air when necessary. It contains a branched tube, not exceeding 2·5 mm. in diameter, one arm of which, *a*, extends almost to the tap *c*, while the other, *b*, is fused through the wall of the vessel and is connected with the tube *h*, so that its total length is about 80 cm. The top of the tube *h* is widened into the space *d*, and is connected with the vessel from which air is to be pumped. Before using the valve, mercury is introduced into the cylindrical vessel until the meniscus is just below the lower edge of the arm *b*. When backflow of water occurs the vessel M is filled, and the pressure forces the column of mercury up the tube, closing both arms, and shutting off the connection with the vessel connected with *d*. With the increase in pressure the mercury rises in the tube *h*, and when it reaches its maximum the tap *c* is opened to allow the water to flow away through the water-pump, and is then closed again, so that communication between the pump and the vessel is again established.



C. A. M.

Unit of Viscosity Measurement. P. C. McIlhiney. (*J. Ind. and Eng. Chem.*, 1916, **8**, 433-435.)—It is often wrongly thought that viscosity measurements, made with the usual practical types of viscosimeters, cannot be simply expressed in terms of the units of absolute viscosity. This, however, is not the case, and it is highly desirable that the indications of the various commercial instruments should be reduced to a uniform standard. The C.G.S. unit of absolute viscosity is inconveniently large, and has no recognised name. A proposal has been made to call it the "poise," in honour of Poiseuille, and this might be adopted. The centipoise (1 cp = 0·01 p) would then be the practical unit, being, in fact, almost identical with the viscosity of water at 20° C. Thus for all practical purposes the viscosity of an oil expressed in centipoises would be its specific viscosity—*i.e.*, its viscosity as compared with water at 20° C. The author has tabulated the equivalents in centipoises of the arbitrary readings given by the Saybolt, Engler, and Redwood viscosimeters, all instruments capable of giving results of sufficient accuracy for industrial purposes. It is suggested that the existence of a universal scale of viscosity would have the result of extending the use of viscosity as a general physical constant outside the field of the oil industry. The tables of equivalents published neglect the effect of

the different specific gravities of the various liquids tested, but the uncorrected viscosities may be corrected, if desired, by multiplying by the density of the liquid at the temperature of the experiment as compared with water at 4° C. J. F. B.