

*Quantitative Pharmaceutical Chemistry: containing Theory and Practice of Quantitative Analysis applied to Pharmacy.* By Prof. Glenn L. Jenkins and Prof. Andrew G. DuMez. (McGraw-Hill Publications in Pharmacy.) Pp. xxiii + 408. (New York: McGraw-Hill Book Co., Inc.; London: McGraw-Hill Publishing Co., Ltd., 1931.) 17s. 6d. net.

THIS book bases a four years' course of quantitative analysis for students of pharmacy on the various methods of assay described in the United States Pharmacopoeia and National Formulary. It may be questioned whether such a course, even for pharmaceutical students, will give the groundwork which is desirable, seeing that the methods are intended only for standardised articles of a high degree of purity. So far as it goes, however, the course is judiciously arranged; the typical processes are, in general, adequately explained and questions and problems are set at the conclusion of the exercises. The details of some of the processes should have been criticised for the edification of the student, who may be left with the impression that it is usual, in the electrolytic assay of mercury, to employ a cathode weighing 700-800 gm. when the expected increase in weight is about 0.3 gm., or that in the determination of nitrogen by the Kjeldahl process there is no likelihood of loss of ammonia by the addition of strong soda solution to the diluted acid solution in an open flask.

The book is well printed and is remarkably free from typographical errors. A few loose statements are apparent; for example, it is explained that a 0.2 per cent solution of sodium chloride just acidified to litmus paper with nitric acid must not be heated since chlorine may be lost thus:  $6\text{HCl} + 2\text{HNO}_3 \rightarrow 3\text{Cl}_2 + 4\text{H}_2\text{O} + 2\text{NO}$ . A more serious error is that the student is directed to determine colorimetrically the pH of alcoholic solutions. The technique of repeated ether extractions should have included the more usual and convenient practice of blowing off the ether layers instead of running off the aqueous layer.

J. R. NICHOLLS.

*Chemical Composition: an Account of the Methods by which Atomic Weights and Molecular Formulae have been Determined.* By Dr. A. K. Goard. Pp. viii + 304. (London: Sidgwick and Jackson, Ltd., 1931.) 5s.

TWENTY-SEVEN years ago, Miss Ida Freund wrote a book on "The Study of Chemical Composition" which at once acquired a permanent value by reason of the fact that it was made up very largely of appropriately selected quotations from original sources. Miss Freund's book (which has long been out of print) was, however, too expensive to be used extensively by students, and was mainly a source of information and inspiration for those who were responsible for the teaching of chemistry in schools or universities.

It appears certain that Dr. Goard must have been amongst their number, since he has set himself the task of handing on, in a more elementary form and at a much lower price, the doctrines which formed the subject of the larger work. He has carried out

his task in a way which appears to be entirely satisfactory, since the shortness of many of his chapters must be very encouraging to his readers; but for a real test of success it would be necessary to discover what impression the book has made on the author's own classes at Marlborough, or on other juvenile readers who have been introduced by it to a section of chemical theory which can be made very dull, but can also form the subject of a rather fascinating story.

The reviewer is too hardened a chemist to make this test in his own person, but would commend the book to those who are in a position to use it for this purpose, since he is certain that nothing but good can come from closer contact between the beginner of to-day and the scientific pioneers of yesterday.

*Lehrbuch der physikalischen Chemie.* Von Prof. Dr. Karl Jellinek. Fünf Bände. Lieferung 10 (Band 4): *Die Lehre von der Statik chemischer Reaktionen (Schlussteil) und die Lehre von der chemischen Kinetik.* Erste und zweite Auflage. Pp. 288. (Stuttgart: Ferdinand Enke, 1931.) 26 gold marks.

PROF. JELLINEK'S detailed treatise provides the worker in physical chemistry with a survey of the theory and experimental investigations which is at the same time exhaustive and comprehensible. Great care is taken not to pass over points of difficulty, and all the equations used are deduced in full, numerical applications in most cases making their significance perfectly clear. Unlike some treatises, it takes full account of work done in Great Britain and the United States, so that it is international in character. The references to the literature are very complete, and it is clear that the author has made extensive use of original papers.

The present volume extends the treatment of liquid solutions begun in the preceding one, and deals with equilibria in weak electrolytes. The activity function is used throughout, and since such matters as neutralisation curves, buffer solutions, and indicators are included, the volume contains much of interest to biochemists as well as to investigators in pure physical chemistry and technical workers. The text is very clearly printed, and numerous curves and diagrams are included.

The book may be strongly recommended as forming a part of what is undoubtedly the most important and authoritative treatise on physical chemistry of the time. Although the detailed treatment makes it suitable for the specialist, the careful explanations given of all the theories are such as could usefully be read by students able to understand German.

*Solvents.* By Dr. Thos. H. Durrans. (Monographs on Applied Chemistry, Vol. 4.) Second and revised edition. Pp. xv + 180. (London: Chapman and Hall, Ltd., 1931.) 10s. 6d. net.

THE term 'organic solvent' has acquired an altogether new meaning during the past year or so in connexion with the various sections of the plastic industry, particularly cellulose lacquer and