

NEW BOOKS.

VICTOR V. RICHTER'S ORGANIC CHEMISTRY OR CHEMISTRY OF THE CARBON COMPOUNDS, edited by PROF. R. ANSCHÜTZ. Authorized translation by EDGAR F. SMITH, Professor of Chemistry, University of Pennsylvania. Third American from the eighth German edition. VOL. I, CHEMISTRY OF THE ALIPHATIC SERIES. Philadelphia: P. Blakiston's Son & Co. 625 pp. Price, \$3.00.

There are at present three pretty clearly defined classes of works on organic chemistry: (1) elementary text-books, which aim to give a systematic account of the general principles of the science and of the more important typical compounds and their relations to each other; (2) larger text-books, containing large quantities of material necessarily omitted from books of the first class, —material which the student will find very useful to have always at hand on his study-table or at his laboratory desk, but most of which no student can ever master in all of its detail; and (3) hand-books, aiming to give a complete record of the facts of the science now known. The book before us is one of the best of the works of the second class. The work of revision, which is imperatively necessary at frequent intervals in this subject, has been ably executed by Professor Anschütz. The translation by Professor Smith is clear and very satisfactory. It is impossible to avoid some errors in proof-reading, of course, but such errors appear to be very infrequent.

The discussion of the general principles of nomenclature, on p. 57, is too short to be satisfactory, and the attitude assumed toward the proposals of the Geneva Commission is disappointing. Also the promise that "the more important suggestions of the commission will receive full consideration under the various classes of bodies" is not fulfilled in such a manner that a beginner is likely to get a clear idea of the Geneva nomenclature from the book.

The brief, clear, historical treatment of many topics is a very excellent feature and adds greatly to the value of the book.

W. A. NOYES.

TRAITÉ D'ANALYSE CHIMIQUE QUANTITATIVE PAR ELECTROLYSE. PAR J. RIBAN, Professeur Chargé du d'Analyse Chimique, etc., L'Université de Paris. Paris: Masson et Cie, 1899. vi + 304 pp.

This volume consists of four parts. The first part considers

certain elementary physical subjects, indispensable to those carrying out determinations in the electrolytic way, such as the laws relating to the electric current, apparatus for its measurement and for its control, as well as descriptions of various forms of apparatus used in electrochemical analysis. The subject-matter is presented in a clear, complete, and interesting form.

The second part deals with the electrolytic determination of the individual metals and non-metals. The author first mentions arsenic, which cannot be fully deposited electrolytically, and then gives a very extended account of the various suggestions which have been made for the estimation of antimony. Perhaps the order of presentation is of little moment, but experience has led the reviewer to the opinion that it is better to commence with simple acid solutions, *e.g.*, copper in nitric acid, and gradually advance to those examples, which from natural conditions are more difficult to handle. This portion of the book is very complete in its presentation of the methods of all persons who have labored in this field. Here and there names of authors appear incorrectly spelled, and attached sometimes to methods which did not originate with them. This, however, is immaterial, for the student of the volume is given a very exhaustive description of what has been achieved, and is left to ascertain for himself which methods are the most satisfactory for his purposes.

The separation of the metals constitutes the third section. The first example is that of antimony from tin in a solution of sodium sulphide. This is far from being an easy problem. The method is beset with difficulties which even the most experienced have had trouble to remove.¹ The numerous methods given for other separations have in nearly all instances proved entirely satisfactory.

In the fourth part the author gives very excellent and explicit directions for the analysis, in the electrolytic way, of many alloys and commercial products. For this he deserves the thanks of all interested in the extension of the methods which have been successfully worked out for two or three metals when present in the same solution. On page 275 the student is directed in analyzing cinnabar, to dissolve it in hydrobromic acid, and after neutralizing with caustic potash and adding an excess of

¹ See *Ztschr. angew. Chem.* (1897), Heft 10; *Ztschr. Elektrochemie*, 4, 245.

potassium cyanide to proceed with the determination of the mercury. Time would be saved and disturbing constituents be eliminated by simply digesting the mineral with sodium sulphide, in which it is soluble, and after the removal of the insoluble parts by filtration, proceeding as directed under the determination of mercury. It is a great pity that literature references are omitted from the entire text.

Tables, showing the E. M. F. of various batteries, factors for the calculation of certain electrolytic data, electrochemical equivalents, the intensity of current expressed in volumes of electrolytic gas with their equivalents in amperes, resistances of metals and alloys, etc., etc., conclude the book, which is well printed and illustrated. It deserves a prominent place in electrolytic literature.

EDGAR F. SMITH.

PHYSICAL CHEMISTRY FOR BEGINNERS. BY DR. CH. VAN DEVENTER.

With an Introduction by PROF. J. H. VAN'T HOFF. Authorized American edition from the German edition, translated by BERTRAM B. BOLTWOOD. New York: John Wiley and Sons. 1899. x + 156 pp. Price, \$1.50

THE ELEMENTS OF PHYSICAL CHEMISTRY. BY J. LIVINGSTON R. MORGAN, PH.D. New York: John Wiley and Sons. 1899. viii + 299 pp. Price, \$2.00.

The reviewer has already¹ called attention to the need of a text-book on physical chemistry presenting the main facts and theories of this important branch of the science in a form not demanding too much preparation in physics or mathematics on the part of the student, and he is much pleased to note the appearance of these two books which go far towards filling this need. With such books at hand there is no reason why instruction in physical chemistry should not be given in even our smaller universities and colleges. A knowledge of the rôle that ions play in the reactions of analytical chemistry throws such a flood of light on that subject that it ought to be acquired by the student at the same time he is practising analysis in the laboratory. Instead of deferring the study of physical or theoretical chemistry until after courses in qualitative and quantitative analysis have been completed, it should be taken up along with them. The danger of work in analytical chemistry degenera-

¹ See the review of Clarence L. Speyers' "Text-Book of Physical Chemistry," in this Journal, 20, 389 (1898).