

Nos. 43, 61, and 75 are boldly called masurium, illinium, and rhenium respectively, and a formula is given for the still unknown carbonate of aluminium.

*A Text-Book of Inorganic Chemistry.* Edited by Dr. J. Newton Friend. (Griffin's Scientific Text-Books.) Vol. 3, Part 2: *Beryllium and its Congeners.* By Joshua C. Gregory and Dr. May Sybil Burr (née Leslie). Pp. xxvi + 342. 18s. net. Vol. 7, Part 3: *Chromium and its Congeners.* By Reece H. Vallance and Arthur A. Eldridge. Pp. xxvi + 380. 18s. net. (London: Charles Griffin and Co., Ltd., 1926.)

THE two new sections of Dr. Friend's "Text-Book of Inorganic Chemistry" deal respectively with (i) beryllium, magnesium, zinc, cadmium, mercury, and (ii) chromium, molybdenum, tungsten, and uranium. They conform so closely to the pattern already established by earlier volumes of the series that very little special comment is called for. It may, however, be said that the type to which the successive volumes conform with increasing definiteness is that of a work of reference, which contains an array of facts which makes it almost impossible for the casual reader to discover any sections which can be read consecutively with any degree of enjoyment. For this reason, indeed, it appears likely that many of those who appreciate at their full value the merits of the "Text-book" will put the new volumes in their appropriate places on the shelf without attempting to 'read' them, but with the definite object of referring to them when a suitable opportunity arises. It may perhaps be regretted that the general editor of the series has discouraged his contributors from 'letting themselves go,' since the whole work might have been transformed by the introduction of a number of chapters in which the individuality of the authors was allowed to stand out, especially when dealing with the more exhilarating topics.

*A Systematic Qualitative Chemical Analysis: a Theoretical and Practical Study of Analytical Reactions of the more common Ions of Inorganic Substances.* By Prof. Geo. W. Sears. Second edition, revised. Pp. x + 165. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1926.) 10s. net.

THIS book commences with a brief account of the ionic theory of solution together with the laws of mass action and solubility products, and continues with the systematic analysis of cations and, finally, anions. The subject matter contains no new methods of analysis, but is based on the methods of Treadwell and similar standard works. The first section, dealing with mass action and solubility products, has been well written and is easily understood. The later sections, however, are in places somewhat confusing to the beginner. Statements such as "treat the filtrate by (10) and the residue by (2 c.)," or "treat the filtrate by (20). If there is a residue . . . treat by (7)," which are very common throughout the book, do not make the

scheme of analysis easy to follow. The book does not seem to have any advantage either in price or subject matter over the numerous other works on this subject.

### Organic Chemistry.

*A Student's Manual of Organic Chemical Analysis: Qualitative and Quantitative.* By Prof. J. F. Thorpe and Prof. M. A. Whiteley. Reissue with Appendix on New Methods of Organic Analysis, by H. ter Meulen and J. Heslinga. Pp. x + 250. (London: Longmans, Green and Co., Ltd., 1926.) 9s. net.

IT is an indication of the value of this work that a reprint has been required so soon. The new issue differs from the original volume reviewed in NATURE, Nov. 14, 1925, p. 707, in one particular only. At the end of the book there is added an appendix of 41 pages by H. ter Meulen and J. Heslinga on improved methods of ultimate analysis. These authors find that, if manganese dioxide is used instead of copper oxide, a lower temperature of combustion can be employed with resultant economy in tubes, etc. They describe a method whereby oxygen can be estimated by hydrogenation and absorption as water, allowance being made for unchanged carbon dioxide which is absorbed by soda lime. Nitrogen is estimated either by hydrogenation, using powdered nickel at 250° as a catalyst and titration of the ammonia produced, or by combustion with manganese dioxide and collection as nitrogen. Similarly, sulphur and the halogens are estimated by hydrogenation to the volatile acids. From the particulars given, several of the methods seem a considerable advance on those usually employed. The reviewer again recommends this book to all students.

*Theoretical Organic Chemistry.* By Dr. Francis Arnall and Francis W. Hodges. Part I. Pp. xi + 372. (London: J. and A. Churchill, 1926.) 10s. 6d. net.

THIS book has been written on the usual lines of organic chemistry text-books, but suffers from a desire to include too much information in too small a space. An endeavour is made to teach organic chemistry from the beginning to pass degree standard in 360 pages. The result is that a certain amount of explanatory matter has been omitted and the student will probably fail to obtain a clear and intimate knowledge of the subject without further assistance. For students preparing for examinations it is, however, eminently suitable, since it is remarkably extensive in scope, contains nothing unessential, and is quite up-to-date. Not only are the principal types of organic compounds described with the reactions, identification, and commercial application of their simpler representatives, but also there are chapters on synthesis, isomerism, tautomerism, stereoisomerism, ultimate analysis, molecular weight determination and estimation of typical groups. We have noticed that while a description of synthol is given, no