

contained for the most part in footnotes, are difficult to trace, owing to the incompleteness of the subject index and the absence of an author index. The book is well produced, and there are 186 diagrams in the text. It is not proposed to issue a translation of the second volume of the original work, dealing with general organic chemical reactions.

J. R.

*A Concise Summary of Elementary Organic Chemistry.* By Dr. F. H. Constable. Pp. xii+149. (London: Methuen and Co., Ltd., 1929.) 4s. 6d.

THIS book is intended to suit the needs of scholarship candidates and others who have not completed their university course. They are expected to have studied the subject elsewhere, since the main facts are merely summarised without discussion. For example, we are tersely told that "on being heated dry the  $\alpha$ -hydroxyacids become cyclic double esters (lactides) and may give lactic acids", and "a diazonium salt gives nuclear substitution products (Sandmeyer's reaction) in the presence of suitable catalysts". Occasionally, very brief explanatory notes introduce topics such as optical isomerism, tautomerism and the structure of benzene, but the isomerism of maleic and fumaric acids has been unaccountably omitted.

The use of such books is not without danger, since the mental discipline involved in revision is invaluable, but the present summary is probably much fuller and more compact than private notes are likely to be, and for that reason it will be welcomed by teachers and students. Moreover, it is probable that in using it for revision the student who is beginning to appreciate the subject will frequently need to search the pages of his books of reference in order to comprehend fully the notes which are available here.

The use of the term 'straight chains' is unfortunate, but the general arrangement of the material is good and misprints are infrequent. The book may well justify the author's boldly expressed hope that it "may help to shorten the time and labour spent on elementary work, so that the earnest student may the more rapidly be in a position to make his own contribution" to this very wide subject.

*Volumetric Analysis: with a Chapter on Simple Gravimetric Determinations.* By A. J. Berry. (Cambridge Physical Series.) Fourth edition. Pp. vii+154. (Cambridge: At the University Press, 1929.) 6s.

THAT this little book has established its position is shown by the fact that three fresh editions have been called for since its first appearance in 1915. Little remains, therefore, except to offer one or two suggestions.

The varying strengths of 'normal' solutions of, for example, potassium bi-iodate (p. 5), according as it functions as an acid or as an oxidising agent, would be avoided by the use of 'molar' solutions, a scheme gaining much favour abroad. Examples are given (pp. 98 and 99, not pp. 96 and 97 as in the index) of the use of potassium iodate as

oxidising agent, but the practically valuable bromate process for antimony (atomic weight 121.77, not 120.2 as given on p. 144) is worthy of inclusion. Mention might advantageously be made of units of volume to the possible exclusion of the chapter on simple gravimetric determinations, the merits of the inclusion of which in a book entitled externally simply "Volumetric Analysis" appears uncertain.

These comments, however, in no wise detract from the general utility of a book of this type, for a large field is covered in relatively little space and at small cost, while the revision which the frequent editions permit keeps a useful little volume up-to-date.

B. A. E.

*Applied Chemistry; a Practical Handbook for Students of Household Science and Public Health.* By Prof. C. Kenneth Tinkler and Helen Masters. Vol. 1: *Water, Detergents, Textiles, Fuels, etc.* Second edition, revised. Pp. xii+296. (London: Crosby Lockwood and Son, 1929.) 15s. net.

EXAMINATIONS involve courses, and these necessitate text-books, so that the diligent student may imbibe just so much of a particular subject as will enable him or her to pass and no more—all most satisfactory for the student but a disaster from the point of view of the acquisition of real culture and of the knowledge how to learn. However, the sin is that of the senate and the framers of a syllabus, and must not be visited on the humble writers of text-books.

In this case the subject is that of household and social science, now elevated to the status of a degree, and the science that of applied chemistry, which is of sufficient magnitude to be dealt with in two volumes. The fact that this is the second edition, and the status and achievements of the joint authors, are sufficient to guarantee that the book is thoroughly and carefully done, and our own perusal of the volume has satisfied us on this point. But how sad and how dull to be forced to learn the chemistry of everyday life in such a manner so as to pass an examination—how the students must envy their forbears who lived in the days of the old still room books such as the "Closet of Sir Kenhelm Digby" and from them really learned domestic science.

All the same, we congratulate the authors on a very satisfactory production.

E. F. A.

*The Foundations of the Theory of Dilute Solutions.* Papers on Osmotic Pressure, by J. H. Van't Hoff; and on Electrolytic Dissociation, by Svante Arrhenius. (Alembic Club Reprints, No. 19.) Pp. 67. (Edinburgh: Oliver and Boyd; London: Gurney and Jackson, 1929.) 2s. 6d.

WITHOUT waiting for a jubilee, which is not due for another eight years, the editor of the Alembic Club Reprints has provided an English translation of the papers by van't Hoff on osmotic pressure and by Arrhenius on electrolytic dissociation, which appeared in the first volume of the *Zeitschrift für physikalische Chemie* in 1887. These will be of real value to teachers and students alike, since they will