Chemistry

Chemical Principles with particular Application to Qualitative Analysis

By Prof. John H. Yoe. Pp. ix+311. (New York: John Wiley and Sons, Ltd.; London: Chapman and Hall, Ltd., 1937.) 13*s*. 6*d*. net.

THE keynote of this book is the correlation of reactions and phenomena encountered in qualitative analysis with the student's training in the theoretical principles of inorganic and physical chemistry. All teachers recognize that qualitative analysis should form a part of the student's training, and too frequently it remains almost a separate compartment of the student's knowledge with little or no correlation with the rest of his chemical knowledge.

Prof. Yoe's book is comprehensive. There appears to be no type of reaction or physico-chemical phenomenon likely to be met with in a well-directed course of qualitative analysis but what is discussed. For example, the nature of solution, oxidation-reduction reactions, co-ordination and stereoisomeric co-ordination compounds, neutralization and hydrolysis, theory of indicators, determination of hydrogen ion concentration, the preparation and properties of colloids, adsorption phenomena, crystal structure, atomic structure and even the quantum theory are some of the topics dealt with. To most chapters there are illustrative set problems, answers being supplied to the numerical ones.

Bearing in mind the size of the book, the range of its contents is surprisingly large. In some cases the result is a lack of clarity undoubtedly due to too great compression. An example of this is the chapter on the electrical theory of matter, radioactivity and atomic structure, which occupies rather less than seven pages, in which the neutron is not specifically mentioned.

As an introduction to specialized text-books and monographs, for which all students do not have time or inclination to study, such a book as this has a useful place in the student's library. C. S. G.

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.) Second edition. Pp. xxv+466. (New York and London: McGraw-Hill Book Co., Inc., 1937.) 21*s*.

THE gratifying reception accorded to this excellent text-book on its first appearance has led the authors and publishers to issue a new edition, which has been largely revised in order to bring the subject-matter into conformity with the many changes made in the official methods of analysing pharmaceutical materials in the latest issues of the United States Pharmacopœia and the National Formulary. The theoretical matter has also been brought up to date, while the number of assay exercises has been increased. In addition, the contents have been rearranged, being now divided into three parts instead of four as in the original edition. This compression has been achieved by deleting the section on ultimate analysis and by incorporating the chapters on *p*H determinations, electro-analysis, etc., which originally represented non-official procedures, with the other physico-chemical determinations such as refractive index, specific rotation, etc. These are now all contained in Part 2, while, as before, Part 1 deals with gravimetric, volumetric and gasometric methods. The third section is devoted to special procedures such as the assay of alkaloids and volatile oils and the determination of the constants of fats, waxes, resins and balsams.

The volume is well written and produced, and although all the methods advocated are not official in Great Britain, nevertheless they will be found useful to those who are interested in the application of quantitative analysis to pharmaceutical materials.

G. R. D.

The Drama of Chemistry:

How Man deals with Atoms. By Prof. Sidney J. French. (The University Series: Highlights of Modern Knowledge.) Pp. vii+170. (New York: The University Society; London: Chapman and Hall, Ltd., 1937.) 4*s*. 6*d*. net.

IT requires confidence and wide knowledge to give a stimulating account in a small space of the work of the chemist through the ages, to discuss something of the future of the science and to suggest how a more detailed knowledge of it may be obtained. Dr. French has tackled his difficult task boldly.

The section dealing with organic and biological chemistry is not so satisfactory as those portions dealing with phenomena of solution and with atomic structure. Certain drawbacks are inevitable in a work of this kind. Formulæ of some organic compounds need revision and expansion, and the account of Pasteur's resolution of racemic acid is inaccurate. The author surely does not believe that sucrose has been synthesized, that amino acids cannot be condensed together and that Willstätter had nothing to do with the elucidation of the structure of chlorophyll!

It may also seem strange that an account of the development of our knowledge of atomic structure can be given without mentioning the names of Sir J. J. Thomson and Lord Rutherford. While later workers are referred to, Prof. F. Soddy's pioneering work on the isotopic forms of the elements is overlooked. On the other hand, "Henry Armstrong", according to Dr. French, was famous for having dared to oppose Arrhenius's dissociation theory and is described with Louis Kahlenberg as being "chief among the hardy rebels".

In spite of these criticisms, Dr. French has given us a most readable and brief account of what he aptly describes as "The Drama of Chemistry".

C. S. G.

Practical Organic Chemistry

By A. J. Mee. (Dent's Modern Science Series.) Pp. x+284. (London: J. M. Dent and Sons, Ltd., 1937.) 5*s*.

THE author has managed to compress nearly three hundred experiments into this little volume, which is intended to be used in conjunction with a text-book