Elsevier's Encyclopædia of Organic Chemistry

Edited by F. Radt. Series 3 : Carboisocyclic Condensed Compounds. Vol. 14, Supplement, Triterpenes. Co-edited by Dora Stern. Pp. xxxii+939S–1346S+ Ind. 50. (New York and Amsterdam : Elsevier Publishing Co., Inc. ; London : Cleaver-Hume Press, Ltd., 1952.) £11 to subscribers.

IN the original Vol. 14 of this "Encyclopædia", published in 1940, 85 pages were devoted to a survey of the chemistry of the triterpenes. The fact that 407 pages of this supplementary volume are needed to summarize the literature belonging mainly to the period 1937–46 reflects the enormous amount of attention given to this considerable group of natural products during the decade. There seems every justification for the claim that the literature concerning the structures of the compounds is covered up to 1952. To a very large extent these structures have now been fully established, and several of the major groups of triterpenes have been inter-related. A number of gaps could now be filled by work which has been published since the appearance of the present volume, and much could now be written of the stereochemical relationships, which receive scarcely any mention.

The general characteristics of Elsevier's "Encyclopædia" are now so familiar that it is unnecessary to reiterate them. The usual excellence of production is maintained, and the features which are especially attractive in this volume include the following : the elaborate but beautifully clear charts illustrating conversions and reactions of the various groups of triterpenoids ; a systematic list of compounds arranged according to the carbon skeletons which their molecules contain ; and an alphabetical list of natural triterpenoids, grouped together in the index. It is quite an achievement to have found a misprint : this occurs in the first line, where the year 1945 is erroneously given as 1941.

It is a foregone conclusion that this volume is now in constant use by all workers in the field. It is safe to predict that it will also arouse the interest of a much wider circle of chemists.

Advanced Experiments in Practical Physics

By J. E. Calthrop. Second edition, revised throughout by Dr. J. A. Pryde. Pp. xvi+144. (London : William Heinemann, Ltd., 1952.) 10s. 6d.

IT is a pleasure to welcome the revised version of Mr. J. E. Calthrop's excellent book, even though it was not possible for this revision to be done by the original author. In producing the second edition, Dr. J. A. Pryde has accomplished a not too easy task in a very satisfying way, and, as is inevitable in such cases, certain alterations have been made, particularly in the section on electricity and magnetism, while new experiments dealing with valves, dielectric constant, conductivity and thick lenses have also been included.

To those who are not acquainted with Mr. Calthrop's book—and surely there can be few honours physics students in Britain who are not—it is only necessary to suggest that they should remedy this deficiency without delay. The book is designed specially for honours students and contains a series of fifty-five experiments grouped in three sections ; and although the experiments vary in their standard of difficulty, each one is interesting and should be of inestimable benefit to the student from the point of

view both of acquiring knowledge and of improving technique in practical work. The book concludes with a collection of additional problems and a list of useful books on the practical teaching of physics.

The standard of work set and presented by Mr. Calthrop was very high ; the new edition certainly preserves that standard, and the book can be thoroughly recommended.

General Topology

By Prof. Waclaw Sierpinski. Translated by C. Cecilia Krieger. Second edition. (Mathematical Expositions, No. 7.) Pp. xii+290. (Toronto : University of Toronto Press ; London : Oxford University Press, 1952.) 48s. net.

STARTING with the definition of a Frechet (V) space, and making no assumptions concerning the 'neighbourhoods' involved in the definition, Prof. W. Sierpinski proceeds, in Chapter 1, from derived set to closed and open sets. The open sets so defined are seen to satisfy the axioms for a topological space except that the intersection of two open sets may not be open. With these 'minimum' assumptions, several theorems on continuity, separation, connectedness and compactness are established ; these extend considerably the results in Chapter 1 of the first edition of the book.

In Chapter 2, axioms for a topological space are assumed. After spaces the topologies of which have a countable base have been considered, Hausdorff spaces which satisfy the first countability axiom are studied ; this makes a change from the first edition.

The remainder of the book covers approximately the same ground as the first edition, but with some deletions, some additions, and several improvements, notably in the shape of problems and examples. There are also changes in terminology to conform with standard usage introduced since the first edition was published.

The appendix by C. C. Krieger on cardinal and ordinal numbers is almost unchanged from the first edition. R. G. COOKE

Calculus

By Prof. C. R. Wylie, Jr. Pp. x+565. (London : McGraw-Hill Publishing Company, Ltd., 1953.) 48s.

THE distinctive feature of this first course in calculus is the great care taken by the author to make the subject interesting and intelligible to students of limited ability and small preliminary knowledge, who are told in advance the objective of each discussion, why a particular method is used, and what pitfalls have to be avoided. It is commendable that the author has scrupulously avoided the unsound arguments that occur in many elementary books. When the sound proof is too difficult for the beginner to understand, the theorem is stated without proof, for which a reference is given to a more advanced book.

The first chapter gives an excellent general outline of the leading ideas of both differentiation and integration. The later chapters go beyond most first courses, and include some account of physical applications, partial differentiation, multiple integration, Fourier series and differential equations. There are a great many examples (all with answers), a summary at the end of each chapter, an index, tables, formulæ from other branches of mathematics, and a glossary of technical terms. The only defect of the book is its high price. H. T. H. PIAGGIO