

Optics

The Technique of Definition. By Arthur Cox. Pp. 331. (London and New York: The Focal Press, Ltd., 1943.) 15s.

THE Focal Press is to be congratulated in having secured Mr. Cox as the author of this volume on camera lenses and allied optical equipment. The book gives a non-mathematical account of lens defects and describes the various lens combinations employed in photographic objectives to improve the definition and increase the aperture. Very useful information about the focus, angular field, aperture and type of lens has been tabulated and illustrated for a wide range of lenses produced by many different firms.

Several tables giving figures for depth of focus are included, but perhaps overmuch attention is given to this in view of its dependence on the nature of the subject being photographed and the extent to which the lens is corrected. There are also sections on methods of testing, the use of polarizing screens, colour filters and infra-red filters, and reference is also made to the reduction of reflexions at glass-air surfaces by the deposition of thin films on the surfaces.

Photographers should find the book of considerable value, enhanced as it is by many diagrams of an instructive and original character. The weakest part is the title. The book is neither a treatise on optics nor one on the technique of definition, but is a book on photographic optics; it is described as such, oddly enough, on the dust cover, but not in the book itself. However, it is the contents that matter, not the title.

W. D. W.

An Introduction to Organic Chemistry

By Dr. J. W. Baker. (Dent's Modern Science Series.) Pp. vii+177. (London: J. M. Dent and Sons, Ltd., 1941.) 3s.

THE book provides an admirable general introduction to the subject and will commend itself both to student and teacher for its simplicity of approach. The latter is achieved by concentrating attention on the structure, reactions and inter-relationships of the more important groups which continually recur in organic compounds by a study of the simplest members containing them. This restriction of scope undoubtedly has great advantages, but it inevitably deprives organic chemistry of what is, to many students, one of its most attractive features, its association with naturally occurring compounds of biological significance. Excellent detailed accounts of some fifty-six experiments, illustrated with clear line drawings, are included at the end of each chapter.

Theoretical Organic Chemistry

By Dr. J. B. Cohen. Revised edition by Dr. P. C. Austin. Pp. xv+622. (London: Macmillan and Co., Ltd., 1942.) 10s.

THIS "entirely revised edition" retains many of the features which characterized the earlier editions. The rapid growth of organic chemistry, however, makes the task of the reviser ever more difficult, and although an earnest attempt has undoubtedly been made to bring this 'classic' up to date by the addition of new chapters, after forty years surely nothing less than complete re-writing and the provision of an entirely new set of diagrams can erase the inevitable signs of age. Much material of

purely historical significance might have been sacrificed; petroleum as an illuminant is relatively unimportant compared with its value as a motor fuel. The latter topic receives far too little attention, an omission which is all the more serious in view of the growing importance of the petroleum industry as a source of basic organic chemicals such as olefines, butadiene, isopropyl alcohol and acetone. No mention is made of the direct production of nitroparaffins from hydrocarbons, and subjects such as plastics and catalytic hydrogenation are given inadequate treatment. Greater care might have been taken in ensuring accuracy, particularly in the new chapter on compounds of biological importance; xanthophyll is not an oxide of carotene, ergosterol has long been known to possess twenty-eight carbon atoms, and different molecular formulæ for cholesterol are given on different pages.

E. R. H. JONES.

The Subject Index to Periodicals, 1941

Issued by the Library Association. Pp. x+204. (London: Library Association, 1943.) 77s.

THE Subject Index to Periodicals, 1941, issued by the Library Association, appears only some ten months after its predecessor, thus making up to some extent the loss of time incurred in 1940-41 and encouraging the hope that the Index can weather the storm without a gap in the sequence of its volumes or excessive delay in publication. This reduction of the time lag in publication is particularly welcome in some fields and should further enhance the value of the Index if it can be maintained or further reduced. The Continental periodicals previously indexed are no longer obtainable and their place has been taken by the following British and American publications, carefully selected by a sub-committee: *Anglo-Soviet Journal*; *Bulletin of the Friends' Historical Association*; *Bulletin of Spanish Studies*; *Comparative Literature Studies*; *Conveyancer*; *France Libre*; *Horizon*; *Modern Law Review*; *Music Review*; *Plastics*; *Religion in Education*; *Silk and Rayon*; *Soil Science*; *Transactions of the Leeds Philosophical and Literary Society*. As previously, the Index is compiled on the plan of the "dictionary catalogue", articles being entered under specific headings in alphabetical order. With some important exceptions periodicals covered by *Science Abstracts A* and *B*, the *Index Medicus*, *Agricultural Index*, *Engineering Abstracts and Index*, *Photographic Abstracts* and a few other specified publications are not indexed.

Textile Fibres under the X-Rays

By Dr. W. T. Astbury. Pp. 54. (London: Imperial Chemical Industries, Ltd., 1943.) n.p.

WE all know the remarkable progress made by Dr. Astbury in the X-ray study of textile fibres. What some of us do not realize, however, is the elegance of the structural relations underlying this new knowledge; many of them are enmeshed in a large and somewhat obscure body of literature. In this monograph (of which the publishers say that, owing to the paper restrictions, they cannot distribute copies freely in Great Britain) the essentials of the subject are presented with exceptional clarity, brevity and charm. It is just enough to whet any inquirer's appetite, and the well-produced plates add the appropriate garnish. All the X-ray photographs are of the original size, enabling the rotation formulæ illustrated in the first two figures to be applied directly.

F. IAN G. RAWLINS.