

Organic Chemistry

By Prof. G. Bryant Bachman. (International Chemical Series.) Pp. x+432. (New York and London: McGraw-Hill Book Co., Inc., 1949.) 36s. 6d.

THIS introduction to organic chemistry is designed as a one-year course for non-chemistry majors in the United States. In Great Britain it could be used by students taking subsidiary chemistry; but more particularly it appears eminently suitable for students taking the general degree in chemistry.

In thirty chapters, Prof. G. B. Bachman provides a lucid survey of organic chemistry, based on the electronic theory of valency, and, without overloading with detail, emphasis is placed on the application of organic compounds to everyday living. The International Union of Chemistry system of naming organic compounds is described, together with notes on pronunciation, which with the probable exception of that for -yl (as in methyl and devyl) would find acceptance in Great Britain. Then follow chapters on systematic aliphatic and aromatic chemistry. Optical isomerism is used to introduce an outline of the mechanisms of aliphatic substitution and addition reactions, while the aromatic section is preceded by a chapter on resonance and a brief account of aromatic substitution. Heterocyclic compounds are not neglected in an admirable survey, although this perpetuates the misleading concept of the superaromaticity of furan. There are also excellent chapters on the chemistry of body processes, chemical constitution and colour, chemical constitution and physiological action, and on synthetic polymers. To each chapter is appended sets of exercises and problems.

The production is well up to the standard of the International Chemical Series, though some of the illustrations are rather trivial. S. H. HARPER

Journal of the Institute of Metals

Editor: Lieut.-Colonel S. C. Guilan; Assistant Editor, Major W. G. Askew. Vol. 74, 1948. Pp. xxxviii+804+57 plates. (London: Institute of Metals, 1948.) £3.

THIS volume contains three special lectures and twenty-eight papers, 166 pages of correspondence and discussion, and an index, and one must say immediately that, in every way, it upholds the high standard that one has learned in the past to expect from the Institute of Metals. The Autumn Lecture, by Prof. G. Wesley Austin, on "The Metallurgical Resources of Scotland", the presidential address by Sir Arthur Smouth, in which the history of the Institute is surveyed and its future discussed, and the May Lecture by Prof. A. O. Rankine on "The Search for Minerals by Physical Methods", provide a change from the twenty-eight specialized scientific and technological papers. The latter, which are concerned in the main with metallography, the industrial aspects of the Institute's interests, theoretical metallurgy, and the common ground between the metallurgist and the engineer, add substantially to knowledge in all these fields.

It is, perhaps, invidious to choose for special mention any specific papers where the general level is so high, and any such choice must inevitably reflect the particular interests of the reviewer. To him, however, the papers on "The Equilibrium and Kinetics of Order-Disorder Transformations in Alloys", by Prof. Borelius; on "The Calculation of Loads Involved in Metal Strip Rolling", by Cook

and Larke; on "The Determination of the Elastic Moduli of Aluminium Alloys in Tension and Compression", by Grover, Munro and Chalmers; on "The Measurement of the Damping Capacity of Metals in Torsional Vibration", by Cottell, Entwistle and Thompson; on "The Relationship between Stress and Strain for Homogeneous Deformation", by Voce; and on "The Solubility of Hydrogen in Liquid and Solid Aluminium", by Ransley and Neufeld, indicate at any rate some of the particularly interesting papers presented. In addition to these, and as would be expected from the history of the Institute, constitutional work on alloys of high standard is presented in many systems. Further, the industrial interests of the Institute are, directly or indirectly, reflected in many papers, several of which refer to the cracking of alloys, particularly those of aluminium, at temperatures in the region of the solidus.

The work of the editor and of all those concerned with the preparation of the volume deserves the highest praise.

Molybdenum: Steels, Irons, Alloys

By R. S. Archer, J. Z. Briggs and C. M. Loeb, Jr. Pp. xii+394. (London: Climax Molybdenum Co. of Europe, Ltd., 1948.) Free.

THE importance of molybdenum as an essential ingredient of many alloy steels and cast irons is now so well established as to need no stressing. A volume, therefore, which contains a full discussion of the effects of the addition of this element clearly serves a useful purpose. In the book under review, the effects of molybdenum on the structure and properties, both at normal and elevated temperatures, together with the manner in which it may be introduced, are fully discussed. A final chapter dealing with the use of this element in a variety of alloys for special purposes illustrates the unexpectedly wide range of its importance. In magnetic materials, in electronic devices, as elements for thermocouples, in alloys of constant elastic modulus, and even in materials for the dental profession, molybdenum-containing materials find application. There are indications that the compilers have been, perhaps, somewhat enthusiastic in their recommendations of these materials, but the volume is none the less of real value.

Biological Actions of Sex Hormones

By Dr. Harold Burrows. Second edition, entirely revised and reset. Pp. xiii+615. (Cambridge: At the University Press, 1949.) 42s. net.

IT is only four years since the first edition of Dr. Burrows's "Biological Actions of Sex Hormones" appeared (*Nature*, 159, 182; 1947). The purpose of the book was to provide a comprehensive survey of literature on the sex-hormones up to the period 1941-42. It has now been amended by the inclusion of fresh material, references being made to some papers published as late as 1947. Its emphasis, however, is still mainly on pre-war work, and Dr. Burrows has not cited several valuable recent reviews on such subjects as ovulation and adreno-gonadal relationships. Nor does he mention the Laurentian Conference discussions or the reviews in *Vitamins and Hormones*.

Shortcomings, however, are inevitable in all books which set out to review a vast subject. The reader has enough reason to be grateful to Dr. Burrows for the work he has done.