BOOK REVIEWS

TEXTBOOK OF QUANTITATIVE ANALYSIS. Third Edition. *By I. M. Kolthoff and E. B. Sandell.* Pp. xv + 727 and Index. Macmillan and Co. Ltd., London. 1952. 30s.

The textbook of Quantitative Inorganic Analysis by Kolthoff and Sandell has become well-established because of the first two editions. In this third edition, the contents have been brought up to date and the survey of physical and physicochemical analytical methods has been rewritten and enlarged. Other changes include the complete revision of the chapter dealing with quantitative separation and the inclusion of a qualitative and quantitative discussion of the Brönsted theory of acids and bases. As in the previous editions, in order to facilitate the use of the book for instruction purposes, the authors have made use of three different types of print, namely, the finest to indicate informative material, an intermediate type to indicate advanced work, and the largest for material suitable for an elementary course. A number of problems are included at the end of each chapter.

The book is divided into four principal sections—gravimetric analysis, volumetric analysis, physical and physicochemical methods of analysis, and analysis of complex materials. The sections on gravimetric and volumetric analysis, which comprise more than three-quarters of the book, are subdivided into a treatment of the theoretical principles, a discussion of the practical work (including the apparatus and technique) and finally an adequate description of many types of determinations. These two main sections can be highly recommended for students of chemistry and pharmaceutical chemistry. The authors stated in their preface to the first edition that it seemed desirable to have available a book that could be used as an introductory text and which in addition would have the more or less comprehensive character of an advanced textbook, so that it would be suitable for use in beginning and advanced courses in analytical chemistry. In this edition, as in the previous ones, the authors have certainly achieved the object in the main sections of the book. The section on physical and physicochemical methods of analysis can only be regarded as an introduction to instrumental analysis, and this is the intention of the authors.

In these days of expensive books, many of which seem to be priced out of the students' financial reach, it is a pleasure to commend the publishers and the authors upon this excellently produced book at the reasonable price of thirty shillings.

A. H. BECKETT.

ANTIBIOTICS: A Survey of their Properties and Uses. Second Edition. Pp. xii + 290 (including 24 illustrations and Index). The Pharmaceutical Press, 17, Bloomsbury Square, London, W.C.1. 1952. 25s.

The 6 years which have elapsed since the earlier edition of this book (*Penicillin: Its Properties, Uses, and Preparations*) have seen a continuous and intensive research campaign directed towards the fuller exploitation of existing antibiotics and to the discovery of new. The surveying of the present position of these drugs must have been a correspondingly formidable task and the authors are to be congratulated on the readable manner of their presentation, which avoids the pitfalls of the "scientific digest" and yet confines the information within less than 300 pages. The original method of approach to the subject has been retained and there is very little modification to the sequence of chapters and their titles. The reader is first brought up-to-date on penicillin and then

given a similar but briefer account of other antibiotics, chiefly streptomycin, chloramphenicol, aureomycin, and terramycin. The most notable expansion is the chapter on Standards and Methods of Assay, now twice its original length, and one wonders whether this may lead to an increased interest in antibiotics on the part of public analysts. Veterinary practice, which was only mentioned briefly in the first edition, now has a complete chapter.

The pharmacist will find two uses for this book; firstly, as an aid to his own work in the compounding, packing and storing of antibiotic formulations, and secondly, as a source of up-to-date general information on the basic properties of the drugs and their clinical use. For the former, a pharmacist (himself in retail practice) describes the setting-up of an aseptic room and the extemporaneous preparation of various formulations in common use. Attention is drawn to the lack of precise information on the stability of many of these and one would have wished to have seen a little more on the effect of the container on shelf-life. A further small point of criticism is the list of commercial products which is hardly worthy of the title "Chapter II", and might better be included as an Appendix. These are, of course, only minor matters and the practising pharmacist will be well advised to have this book convenient to the dispensing counter even though he may not wish to consult any of the 841 references to scientific papers. Certainly the student who has mastered its contents need have no fear of the examiner. A. G. FISHBURN.

A STUDY OF ANTIMETABOLITES, by D. W. Woolley. Pp. xiii + 269 (including Index). Chapman and Hall, London. 1952. 40s.

The principle of drugs competing with natural metabolites has become important in the study of drug action. It was first conceived by Ehrlich, during his experiments on immunity and developed by Michaelis and his co-workers and by Quastel and Wooldbridge in their work on enzymes. Clark propounded the idea of "receptors" and recognized the competitive antagonism between structurally related drugs such as atropine and acetylcholine. Further impetus was given to the idea by the important observations of Wood, who found that the bacteriostatic action of sulphonamide drugs was reversed completely and competitively by *p*-aminobenzoic acid, which is regarded as the natural metabolite. Now, many other examples of drug antagonism can be explained by this form of interference and the hypothesis of antimetabolites provides a fundamental theory for explaining modes of drug action. This book, written by Dr. Woolley of the Rockefeller Institute, provides a critical survey of the discovery and principles of antimetabolites; and from a close examination of experimental evidence summarises our factual knowledge in developing the theory and applying it in physiological processes, biochemistry, chemotherapy and pharmacology. The relationship of structurally related drugs is discussed and an attempt is made to explain why some drugs, having quite dissimilar structures, may have similar effects. Among the important drugs which are dealt with are folic acid, vitamin K, the antihistamines, antithyroids, sex hormones and antibiotics. Finally the book presents practical suggestions for the synthesis and testing of antimetabolites and a most thorough bibliography. While Dr. Woolley has presented the essential facts up to 1950, he has rightly emphasised that there are still many difficulties in accepting the theory, and it will require considerable modification as time goes on and further factual knowledge is obtained. This book should be closely studied by all those who are engaged in producing or examining the actions of new chemical compounds. G. F. SOMERS.

HALE-WHITE'S MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS, 29th Edition by A. H. Douthwaite. Pp. viii + 512 (including Index). J. and A. Churchill, Ltd. 1952. 20s.

The first edition of this book was published 60 years ago and the present author has been responsible for the 10 editions which have appeared during the past 21 years. It is no mean task to undertake revision of a textbook on a subject which frequently changes and rapidly extends its frontiers. The continued success of this enterprise is well reflected in the appearance of the 29th edition—a fitting tribute to the popularity and usefulness of this type of textbook. In previous editions much information was given about the character and nature of drugs, but in the new edition, this part of the text has been considerably revised and condensed to permit more extensive discussion of the actions and uses of drugs. This pharmacological bias has added greatly to the value of the book, which now includes an account of most of the recent work on the subject. The contents are arranged in three major sections. The first deals with definitions, pharmaceutical matters and general principles of prescribing; the second with substances which are used chiefly for their local action, and in the third section are the substances used chiefly for their general action. This arrangement of the subject-matter is convenient for describing the materia medica but is less well adapted for pharmacological description. For example, it might be anticipated that the analgesics drugs would be described in one section but the only reference in the index leads to page 286 where the antipyretic drugs, acetanilide, phenazone, phenacetin and amidopyrin are discussed, and these are separated from the salicylates by a chapter on cinchona and the drugs used in the treatment of malaria, whilst the more potent analgesics are discussed in the section on opiates on pages 199 to 211. The disadvantages of this arrangement are also apparent in the description of veratrine under local anæsthetic drugs; *iso*nicotinyl hydrazide in the vitamin chapter is pharmacologically isolated from the other tuberculostatic drugs described under antibiotics. A method of presenting the subject in a completely logical fashion however has not yet been described, and this is therefore only a minor criticism of a textbook which continues to maintain its reputation for its clarity of exposition.

ANDREW WILSON.

(ABSTRACTS *continued from p. 653.*)

Tetanus Toxoid, Rapid Specific Preventive Action of. M. Raynaud and E. A. Wright. (*Nature, Lond.*, 1953, **171**, 797.) The injection of 500 Lf doses of tetanus toxoid into mice completely prevented local tetanus and death from 1 MLD of tetanus toxin given subcutaneously 24 hours later. Toxoid from another laboratory was used, administered intravenously to ensure that the protection was not a local effect or dependent on the toxin and toxoid being made from the same strain of organism. Protection lasted only a short time, no protection being observed 6 days after injection of the toxoid. Since no antibodies have been detected in the first days after the administration of toxoid, the most probable explanation is that the toxoid acts either by prior blocking of the hypothetical receptor substance in the central nervous system or by competitive inhibition of the action of the toxin. G. B.

G. R. BOYES

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