BOOK REVIEWS

Bentley's *TEXTBOOK OF PHARMACEUTICS*, revised by Harold Davis. Sixth Edition. Pp. xiv + 1078 (including 302 illustrations, and Index). Baillière, Tindall and Cox, London, 1954. 42s.

The sixth edition of Bentley's *Textbook of Pharmaceutics* is now on sale at 42s. as against 30s. for the fifth edition. This is not a high price to pay for a modern textbook which deals with almost every aspect of the Pharmaceutical Society's Syllabus, including blood products and plasma substitutes. To these a new chapter is devoted.

The chapter on enzymes includes notes on hyaluronidase, streptokinase and streptodornase but rennin, papain and diastase are still of importance to the pharmacist, and to these no reference is made. While admitting the need for compression, one would have liked to see a special chapter on biological substances such as insulin and heparin instead of referring to these only under the title of the "Injectiones." They bulk too large in the pharmacist's day to merit such cavalier treatment. The section on "Biological Assays" again illustrates the author's desire to keep the book within reasonable limits but, if compression is carried too far, the result is of less value than a reference to another work dealing more fully with the subject. Chromatography and ion exchange on the other hand are extensively dealt with and the chapter on medical gases is welcomed. New features are a section on infra-red drying and the use of ultra-sonic vibrations in emulsification. The index to the volume is rather incomplete and sometimes inconsistent, for example, pepsin and pancreatin, which occupy a page of text, are not indexed, and injectio ergometrinæ maleatis and injectio insulini protaminati cum zinco bear their full latin names but injection of ergometrine tartrate and injection of globin zinc insulin bear only their English titles.

This book is a good introductory textbook on pharmaceutics and as such offers a useful survey of a very complex and difficult field. It is frankly impossible to produce in one volume a complete treatise on the many branches of the subject and, for the advanced student, it is essential to read widely. To assist the student, something more than reference to original work is necessary, and the book would be greatly increased in usefulness if the author recommended sources of further reading, particularly in specialised textbooks on aspects which cannot be adequately dealt with in this volume. The present-day student is too prone to study only his lecture notes and must be encouraged to seek the wider view.

The book is well printed on good paper and misprints are few. Dr. Davis and his collaborators are to be congratulated on a fine achievement for which many teachers are grateful, and it is in the spirit of improving a good book that the reviewer offers these suggestions. J. P. TODD.

METHODEN DER ORGANISCHEN CHEMIE (Houben-Weyl). Volume VII. Oxygen Compounds II, Part I, Aldehydes. Fourth Edition. Edited by Eugen Müller. Pp. xxiii + 556 (including 2 illustrations and Index). Georg Thieme Verlag, Stuttgart, 1954. D.M. 82.00.

Volume VII is the third of fourteen such volumes to be published as the fourth edition of Houben-Weyl. Volume VII, the second of the series to deal with compounds containing oxygen, is to be presented in two parts, of which the present volume on aldehydes is the first. As with earlier volumes of this edition,

considerable attention has been paid to detail. The book is excellently referenced and claims in this respect to be complete up to October, 1953. Considerable emphasis has been given once again to preparative methods, numerous examples with practical details and yields being given for all the more important routes. The subject-matter is divided systematically, each subsection in part A being devoted to one of the main chemical routes used for the production of aldehydes. These include: direct introduction of the aldehyde group into aromatic compounds, reactive methylene groups and olefines (oxo reaction); introduction of the aldehyde (or acetal) group by condensation reactions (Aldol, Michael, Grignard, etc.); rearrangement and splitting of hydro-aromatic and heterocyclic rings; reduction of carboxylic acids and their derivatives; decomposition reactions (ozonolysis, etc.); rearrangement of aldehydes with retention of aldehyde function. The remainder of the book (part B) is devoted largely to a review of standard aldehyde derivatives, and the substitution and removal of aldehyde groups. A short, but valuable discussion of reactivity and oxidation of aldehydes in relation to their stabilisation and purification is also included. Optically active aldehydes, and aldehydes derived from isotopic carbon are briefly mentioned. The volume is excellently indexed and clearly printed. The use of small (but none the less clear) type for paragraphs which deal with experimental procedures, makes the book easy to follow and use, and, moreover, outweighs the disadvantage to English readers of the German text.

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(ABSTRACTS *continued from page* 77).

test were used to differentiate between drugs blocking the neuromuscular junction by competition and those acting by depolarisation. The chicken muscle is very sensitive to depolarising drugs, to which it also reacts by a contracture, and is relatively insensitive to competitive agents, while the reverse is true in the mouse. Also, pretreatment with neostigmine aided identification of the type of blockade in the mouse since subsequent paralysis by competitive blocking agents was reduced whereas a depolarisation block was increased. In the study the chicken gastrocnemius was stimulated tetanically through the sciatic nerve for 0·2 second every 10 seconds. Drugs were injected either into the superficial wing vein or into the external jugular. In the mice, injections were made into the tail vein. Compounds of the methonium series with methylene chain 2 to 10 carbon atoms in length, in addition to neuromuscular paralysis, caused contracture of the chicken gastrocnemius, excepting penta- and hexamethonium, which only caused paralysis. The paralysis by tri-, tetra-, penta-, hexa-, hepta- and octa-methonium were reversed by tensilon and eserine. Tensilon also enhanced the contracture where this developed. With this series, in mice, paralysis with small doses of all members was antagonised by neostigmine. However, with larger doses neostigmine enhanced paralysis by all but hexa- and penta-methonium. Introduction of two ether oxygen atoms into the polymethylene chain did not alter the type of block produced, but changed the potency disproportionately to the change in total chain length. Similarly, after replacement of methylene groups by two phenyl groups without changing total chain length, the agents still acted by depolarisation. However, similar transposition of groups with two *cyclo*hexane groups produced substances causing competitive block. Replacing the quaternary ammonium groups by pyridine, pyrrolidine or *iso*propyldimethylammonium groups did not change the type of paralysis. However, ethyl, butyl, benzyl or nitrobenzyl substitution of one of the *N*-methyl groups formed compounds with competitive blocking properties.

G. P.