

## BOOK REVIEWS

*PROGRESS IN DRUG RESEARCH*. Vol. I. Edited by Ernst Jucker. Pp. 607, including 60 figures and 124 tables. Birkhäuser Verlag, Basle, 1959. Sw. fr. 68.00.

Pharmaceutical research has reached a stage of rapid development where the specialist investigator, absorbed with his own immediate interests, is finding it increasingly difficult to keep abreast of the general advance of the subject. *Progress in Drug Research*, which is to be published as an annual series under the editorship of Dr. Ernst Jucker, represents a constructive attempt to fill the gap which lies between the publication of original work and the specialist monograph. The aim is to present each year a select group of reviews on topics of current interest in pharmaceutical research, each by a recognised authority. In particular it is hoped to devote special attention to the subject of structure-action relationships. The first volume clearly demonstrates the international character of pharmaceutical research today. Of the seven contributions three originate from Germany, two from Switzerland, one from Great Britain and one from the United States, and the articles are published in the author's own language. The subjects range from the clinical problems associated with the use of placebos by Drs. H. Haas, H. Fink and G. Härtfelder to the physico-chemical properties of ion-exchangers and their use in Pharmacy and Medicine by Professor J. Büchi. The importance of fundamental physiological and biochemical studies to drug research is emphasised in the contribution of Drs. Tsung-Min Lin and K. K. Chen in cholesterol in relation to arteriosclerosis. Reviews of specific aspects of chemotherapy are provided by Dr. H.-A. Oelkers on worm infestation and Dr. J. Bally on chemical anthelmintics, whilst Dr. W. Kunz has produced an excellent review of the newer medicinal agents of the last five years. The latter will be of particular interest to British readers in view of the attention it draws to developments of continental origin, which may not be quite so familiar as those which derive from this country or the United States. Special interest also attaches to Dr. A. H. Beckett's interesting and thought-provoking contribution on stereochemical factors in biological activity. The importance of stereochemical factors in drug-action has long been known, and the value of the present article lies as much in the attention which it focusses on the problem, as in its lucid approach to the subject itself. The Editor of this volume is to be congratulated in producing a work of wide interest and great value to those engaged in pharmaceutical research. It is excellently referenced. Formulae, diagrams and tables are freely used and greatly assist the clear presentation of information throughout.

J. B. STENLAKE.

*BEHAVIOUR OF ENZYME SYSTEMS*. By John M. Reiner. Pp. xii + 317. Mayflower Publishing Co. Ltd., London, 1959. 52s.; and Burgess Publishing Co., Minneapolis.

This book has been written, in the words of the author in his "Forward for Timid Souls," "for those research workers who feel the need of tools for quantitative interpretation of the work . . . but . . . are in some doubt as to whether their mathematical training and facility are good enough for the mastery and use of a mathematical analysis of enzyme activity."

The text consists of the development of mathematical equations to describe the behaviour of enzyme systems in terms of the simple rate equations of chemical

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kinetics. This of course leads to some very elaborate expressions for overall reaction velocities, involving eight or more "velocity constants," and the situations become somewhat complicated when, as on p. 178, "neutral anti-inhibitor" is considered as "activator."

This work probably forms a useful collection of mathematical equations for workers in the field of enzyme kinetics, and the final chapter on the mechanism of enzyme action is particularly interesting though some might think that the author has dismissed the theory of protein semi-conduction somewhat too cursorily.

The book does raise the question whether the best method of analysis of these complex systems is by repeated application of simple kinetic equations, leading to expressions with a large number of hypothetical velocity constants. The systems themselves are so often, as the author points out, ill-defined and are made up of macromolecular substances; it may be stretching laws which were developed to explain the rates of reaction of simple compounds, rather far to apply them too freely to these complex systems in which mechanisms such as protein conduction could be important.

Although many of the mathematical equations in the book seem somewhat complicated, no very extensive knowledge of mathematics is needed to follow their development, and the text is well illustrated with graphs showing the form of plots to be expected under various circumstances. It is perhaps a pity that the author has devoted so much space to the development of theories that there is very little treatment of actual experimental results although many references to the literature are given. In a subject such as enzyme kinetics where the interpretation of results is still in the state of hypothesis rather than of theory, it is perhaps more sound to maintain greater emphasis on practical observations and their reliability than on purely theoretical treatment of mechanisms.

L. SAUNDERS.

*CLINICAL TOXICOLOGY.* By C. J. Polson and R. N. Tattersall. Pp. xi + 589 (including Index). English Universities Press, Ltd., London, 1959, 42s.

This is a fascinating book by the Professor of Forensic Medicine at Leeds University and the Assistant Physician at Leeds General Infirmary. The authors deal with about 65 poisons which they describe as being common, of practical importance or of personal interest. The treatment of each poison is discussed from statistical, historical, clinical and pathological viewpoints. There is an introductory chapter which concerns English Law on Poisons and includes a section on the conduct of a doctor when poisoning is suspected. Although recourse to the doctors defence society is suggested there is no mention of a consultation with a senior police officer. The outstanding features of this book are its literary style and the wealth of interesting information on poisons that it contains. Case histories cover the literature from 1752 to the present day and include many from the extensive experience of both authors. The reader can discover in the book not only what to expect if he accepts a Siberian's invitation to "come in and have a toadstool", but also what it is likely to cost him.

Only 9½ pages out of the 580 are devoted to the barbiturates which are at the moment the most common poisons and of these, 3½ pages describe 12 case histories. It is disappointing to the reviewer to see that the help that blood barbiturate levels can give to the clinician in assessing the length of time the patient will be in coma is not discussed at all. Similarly, salicylate and DNOC

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blood concentrations are not mentioned. Elsewhere the chemist may be irritated by the wide divergence in the manner of expression of concentrations (10 p.p.m., 0.001 per cent, 1 mg. per cent,  $\frac{1}{2}$  grain per ounce, etc.). The authors are obviously experts in their own fields and it is almost inevitable that, in this wide subject, when they stray into the edges of other sciences, errors or controversial opinions creep in. Evaluations of the reported concentrations of poisons in body fluids are in several places insecure; boron and boric acid (0.04 per cent representing 61 mg./100 g.) are typical examples and the section on ethyl alcohol needs revision. The presence of fluoride in early preparations of fluoroacetates has not been recognised, and surely fluoride produces a lowered, not a raised blood calcium level!

It is, however, these excursions into the many fields of toxicology that make this book what it is—a fascinating, readable book produced in excellent type at the reasonable price of 42s. Not only physicians and pathologists will enjoy and profit from this book; it is more than a textbook filling a gap in toxicological literature, it is a book that will be read with interest by all scientists and would-be murderers.

A. S. CURRY.