

BOOK REVIEWS

LARS MELANDER: *Isotope Effects on Reaction Rates*. Ronald Press, New York, 1960. 181 pp. \$6.00.

This small book is described by the author as "a brief presentation of the main principles of kinetic isotope effects, with no attempt being made to cover the entire field". It is the best review now available, and most workers in this field will want a personal copy for convenient reference.

Chapter 2 on general theory is excellent. It assumes a knowledge of the material on transition state theory covered by Frost and Pearson in *Kinetics and Mechanism*, 1953, Chap. 5, but proceeds clearly from that point. There are astonishingly few errors in the book. The only one detected in this chapter was a relation between imaginary frequency and curvature of the potential energy surface (rather than square root of this curvature) on p. 11.

Chapter 3 on mathematical methods for evaluation of isotope effects from experimental data is hard reading, but especially valuable for reference, serving a similar function in this book to Chap. 8 in Frost and Pearson on analysis of complex non-isotopic reactions.

Chapters 4-6 on hydrogen isotope effects are less valuable in view of the excellent and more detailed earlier review by Wiberg [*Chem. Rev.* 55, 713 (1955)], but do include more recent references.

Chapters 7-9 on heavy atom (C, N and S) isotope effects are written primarily from the approach of a physical chemist rather than of an organic chemist concerned with establishing reaction mechanisms. This reviewer was surprised to find no references to the work of Bourns, Fry or Saunders. These are the people whom he would have thought of first as the pioneers in the area of heavy atom isotope effects for mechanistic studies. Nevertheless there are 106 references, including 24 in 1958 and 4 in 1959, and there is a good five-page index.

C. GARDNER SWAIN

Progress in Drug Research. Edited by ERNST JUCKER (Editor): Virkhauer Verlag, Basel and Stuttgart, 1959. 607 pp., 68 Sw. Fr.

This first volume of a new series *Progress in Drug Research* was in fact published in 1959 but has just been received by the reviewer. It is planned to bring out a new volume annually and each is to contain some six to eight chapters written by authorities in the particular fields. As the science of drugs covers a very extensive field, the articles may extend to pure chemistry through pharmacology to medicine and in fact such a spread is evident in this volume. It follows therefore that the book is uneven and the mode of treatment of the various topics varies widely although each endeavours to give a certain amount of background so that the reviews are not designed only for specialists. The first chapter is an extensive treatment (115 pp.) of ion exchange resins and their use in pharmacy and medicine; this review like all but two in the book is written in the German language, the others being in English. There follows a shorter account of cholesterol and its relation to atherosclerosis and an extensive treatment of the biology and chemotherapy of worm infections. An account of the various drugs used as anthelmintics is followed by the longest chapter (177 pp.) in the book dealing with the placebo problem. The last two chapters stand in sharp contrast. A. H. BECKETT gives an interesting account of the importance of stereochemistry, the shape of the molecules, in the design and biological activity of drugs and attempts to give a more logical approach to the design of new substances of chemotherapeutic value. The final chapter is a non-critical catalogue of the most important drugs discovered in the last five years. All chapters are fully documented with up-to-date references (numbered separately on each page) to the original literature and it is clear that the editor has succeeded in providing a useful and valuable cross-section of the very wide literature of this important science. No author or subject index is provided. The general format and presentation of the book are excellent.

A. W. JOHNSON