BOOK REVIEW

Radioactive Tracers in Biology. By MARTIN D. KAMEN, Mallinckrodt Institute of Radiology, Washington University Medical School, St. Louis, Missouri. Academic Press Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1951. xiv + 429 pp. 16 × 23.5 cm. Price, $7.50.

Biophysics is one of the in-between sciences; the diversity of detailed information in Professor Kamen's Second Edition of Radioactive Tracers in Biology illustrates this scientific sharing. His book is intended for biologists who have a working knowledge of general physics and for physicists who have a knowledge of elementary biochemistry and physiology. The book is practically unique in its field; certainly no other good summary of biological tracer work is available.

The first two chapters systematically supply background on the physical basis of radioactive phenomena. Many instruments for radioactive assay are next described in satisfactory detail. The theoretical discussions point up the practical use of isotopes as tracers. The author has made a strenuous effort to specify the unique usefulness of radioactive tracers; he has also described limitations of tracer methods and emphasized the errors that may easily entrap the thoughtless or naive investigator. The latter part of the book presents detailed summaries up to 1949 on tritium, carbon-11 and carbon-14, phosphorus-32, sulfur-35, the radioactive isotopes of alkali metal and alkaline earths, halogens, and a number of other elements such as iron and arsenic. For each tracer the techniques of bombardment and the chemical manipulations required to prepare the isotope for its biological application are presented in principle, at least, and frequently in detail. Technical tricks in the application and measurement of the isotope are indicated, for example, syntheses are given of tagged molecules containing the isotope as well as examples of calculations. Kamen has chosen as illustrations a number of important physiological and biochemical mechanisms elucidated using tracers. Finally, for each isotope, the hazards to the researchers are defined and an estimation, or at least an opinion, as to the tolerance limits for humans is stated. The repeated use of one symbol to represent different quantities in equations was bothersome, as was the too frequent discovery of typographical errors. As compared with the first edition, the printing and paper appear better. The addition of a considerable amount of new material has improved this book as a reference without detracting from its usefulness as a text. Five appendices not in the first edition are welcome; these give (a) a compilation of general references (b) a list of interesting radioactive nuclides and (c) discussions of units and standards. Newcomers in the field will appreciate the typical working rules for a radiochemistry laboratory (appendix iii). In its current form the book is an excellent summary with a long list of carefully selected references.

DIVISION OF PHARMACOLOGY AND TOXICOLOGY
DEPARTMENT OF RADIATION BIOLOGY HAROLD C. HODGE
SCHOOL OF MEDICINE AND DENTISTRY
THE UNIVERSITY OF ROCHESTER
ROCHESTER 20, NEW YORK

BOOKS RECEIVED

December 10, 1951–January 10, 1952

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE. "Rearrangements Moleculaires et Inversion de Walden." Colloques Internationaux. Centre National de la Recherche Scientifique, 13, Quai Anatole-France, Paris (7e), France. 1951. 152 pp. 2.000 frs.

R. N. HASZELDINE AND A. G. SHARPE. "Fluorine and its Compounds." John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1951. 153 pp. $1.75.

WILLIAM V. HOUSTON. "Principles of Quantum Mechanics—Non-relativistic Wave Mechanics with Illustrative Applications." McGraw-Hill Book Company, 330 West 42nd Street, New York 18, N. Y. 1951. 288 pp. $6.00.

HORSTMAR HECHT. "Praparative Anorganische Chemie." Springer-Verlag, Reichpietschufer 20, (1) Berlin W 35 (West-Berlin), Germany. 1951. 216 pp. DM 19.80.

FRANZ KAINER. "Polyvinylchlorid und Vinylchlorid-Mischpolymerisate." Springer-Verlag, Reichpietschufer 20, (1) Berlin W 35 (West-Berlin), Germany. 1951. 698 pp. DM 60.—.

ISIDOR KIRSHENBAUM. Edited by George M. Murphy and Harold C. Urey. "Physical Properties and Analysis of Heavy Water." National Nuclear Energy Series. Manhattan Project Technical Section. Division III—Volume 4 A. McGraw-Hill Book Co., 330 West 42nd Street, New York 18, N. Y. 1951. 438 pp. $5.25.

CHARLES PALACHE, the late HARRY BERMAN, AND CLIFFORD FRONDEL. "The System of Mineralogy." Seventh Edition. Volume II. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1951. 1124 pp. $15.00.

F. RADT (edited by). "Elsevier's Encyclopaedia of Organic Chemistry." Series III. Carboisocyclic Condensed Compounds. Supplement to Volume 14. The Elsevier Press, 402 Lovett Boulevard, Houston, Texas. 1951. Pages 1S-938S. Set Sub. $66.00, Series Sub. $77.00, Single Vol. $88.00.

SYMPOSIA OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY. "Carbon Dioxide Fixation and Photosynthesis." Number V. Academic Press Inc., 125 East 23rd Street, New York 10, N. Y. 1951. 342 pp. $6.80.

DENIS TAYLOR. "The Measurement of Radio Isotopes." John Wiley and Son, Inc., 440 Fourth Avenue, New York 16, N. Y. 1951. 118 pp. $1.50.

D. W. WOOLLEY. "A Study of Antimetabolites." John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1951. 269 pp. $5.00.