in a very cursory manner. In the chapter on the control of metabolism, the role of the hormones is hardly touched upon. A fair number of names of investigators have been included along with their contributions to Biochemistry but in spite of this the founder of modern enzyme chemistry, J. B. Sumner, has not been mentioned in the chapter on enzymes.

It is somewhat difficult to decide exactly for whom this book is primarily intended. One might wonder whether it is somewhat oversimplified from the standpoint of the student of Science while still remaining beyond the grasp of the layman. It could however be useful to any beginner in Biochemistry as an aid in quickly acquiring a bird's eye view of cellular metabolism before becoming lost in details. This would no doubt be particularly true for undergraduates and a fair proportion of medical students.

Outside of the field of cellular metabolism the book has little to offer. If future editions appear it might be desirable to add a certain amount of new material dealing with other areas of Biochemistry, since a short volume of this sort can no doubt fill a real need provided that the field is adequately covered.

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Annual Review of Nuclear Science. Volume 9. Co-editors: EMILIO SEGRÈ, University of California, and LEONARD I. SCHIFF, Stanford University. Associate Editors: GERHART FRIEDLANDER, Brookhaven National Laboratory, and WALTER E. MEYERHOF, Stanford University. Annual Reviews, Inc., Grant Avenue, Palo Alto, California. 1959. vii + 625 pp. 16 × 23 cm. Price, $7.00 (U.S.A.); $7.50 (elsewhere).

Persons anxious to keep abreast with the wide variety of subjects included under the heading of nuclear science would do well to read the series, "Advances in Nuclear Science." Volume 9 is the most recent addition. It contains 15 chapters written by nineteen authors under the editorship of Emilio Segrè, University of California, and Leonard I. Schiff, Stanford University.

Of the fifteen chapters in the book, only three are related to chemistry. There is a chapter on technetium and astatine in which the author discusses the available information on the various valence states of these elements and points out the difficulties of studying the chemistry of astatine. The chemistry of astatine has to be inferred from tracer experiments since the element has only short half-life isotopes, 8.3 hour At^{210} being the longest lived isotope. The second chemistry chapter describes solvent extraction in radiochemical separations. The applications of several chelating and ion association systems are mentioned and their uses in separating elements of interest to radiochemists in the atomic energy field are emphasized. The third chapter to deal with chemistry is the biochemical effects of ionizing radiation. Changes in carbohydrate, fat and protein metabolism caused by radiation damage are considered, as well as changes in enzymes and nucleic acids. The use of chemicals to heal or protect the body from radiation is briefly mentioned.

In addition to the chapters on chemistry, there are several chapters presented in a simple enough manner to be interesting to a large number of chemists. The chapter on the experimental clarification of the laws of beta radioactivity reviews many of the recent experiments which have affected our ideas of beta decay, *e.g.*, non-conservation of parity, the deviation from one of the ratio of the square of the coupling constants for Fermi and Gamow–Teller radiations, and the polarization of the electron wave. The recent experimental results which have shed some light on the nature of the fission process are summarized in a comprehensive chapter on nuclear fission. The rather complicated field of plasma research and controlled fusion is summarized in an interesting review which describes some of the properties of plasmas, their instabilities, the basic types of machines which have been constructed to test some of the theories, and, finally, the present state of the field. The experience with fast subcritical, zero power, and experimental reactors in the U.S.A., Great Britain and the U.S.S.R. are reviewed in a chapter on fast reactors. In addition, there is a discussion of the influence of various parameters on fast reactors as calculated by multigroup transport theory and some of the engineering problems encountered in designing fast reactors.

Of less interest to chemists, but nevertheless excellent reviews, are chapters on nuclear photo-disintegration, pion-nucleon interaction, strange particles, high energy nuclear reactions, electronics associated with nuclear research, economics of nuclear power, vertebrate radiobiology, and cellular radiobiology.

The entire series, "Annual Review of Nuclear Science," is an excellent set of books summarizing the recent information in fields associated with nuclear science. Volume 9 is a valuable addition to the series, and is highly recommended to scientists interested in the subjects mentioned in the review. All the articles are well documented and the references serve as good bibliographies for those people interested in obtaining more detailed information about the subject being discussed.

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Technique of Organic Chemistry. Volume I. Physical Methods of Organic Chemistry. Part I. Third Completely Revised and Augmented Edition. Edited by ARNOLD WEISSBERGER. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1959. xii + 918 pp. 16 × 23.5 cm. Price, $24.50.

The contents of this highly regarded reference work under the editorship of A. Weissberger have undergone a marked revision from the form in which they appeared in the Second Edition (1949). The general organization very closely resembles that of the earlier edition in that each editor of a section presents first the theoretical fundamentals of his subject in what is generally a clear-cut and concise manner. Following this are practical applications and in many cases, sample calculations. The reader may thus select a method applicable to his own problem and pursue further information in the long and up-to-date series of references.

The chapters now appear as: I, Automatic Control; II, Automatic Recording; III, Weighing; IV, Determination of Density; V, Determination of Particle Size and Molecular Weight; VI, Temperature Measurement; VII, Determination of Melting and Freezing Temperatures; VIII, Determination of Boiling and Condensation Temperatures; IX, Determination of Vapor Pressure; X, Calorimetry; XI, Determination of Solubility; XII, Determination of Viscosity; XIII, Determination of Properties of Insoluble Monolayers at Mobile Interfaces; XIV, Determination of Surface and Interfacial Tension; XV, Determination of Osmotic Pressure.

The chapters on Automatic Control, Automatic Recording, Weighing and Particle Size and Molecular Weight are completely new. The principles and theory of automatic control are given "in reasonably non-mathematical form" and examples are shown with special emphasis on temperature control.

Chapter II, Automatic Recording, is essentially very practical and should be useful, as after a brief analysis of recorder characteristics there is discussion of the commercial recorders now available with their special characteristics and sources of supply. Included are the circuit diagrams for many.

Chapter III, Weighing, is developed in minute detail, with nearly fifty pages on the knife-edge balance and several pages on weights and standardization. The reviewer would have welcomed here more detail on the newly appearing one-pan rapid-weighing balances.

Chapter IV, Density, has new material on molecular volumes, and volume changes on mixing. Uses and measurement of gas and vapor density are new.

Chapter V, Particle Size and Molecular Weight, has sixty pages devoted briefly to ten methods differing in principle, including about twenty-five variations. Each is treated rather briefly, therefore with some inevitable duplication with later chapters. Extensive references help to make up for any brevity of treatment.

Chapter VI, Temperature Measurement, covers about the same ground in the new edition as in the earlier one and there seem to be few new references.