Lehrbuch der Organischen Chemie. ed. 12. Paul Karrer. Georg Thieme, Stuttgart, 1954. (U.S. distr.: Intercontinental Medical Books, New York). 949 pp. Illus. $14.20.

The burden of maintaining contact with new developments in chemistry is indeed heavy today, considering the large number of advances made in recent years. Thus, the investigator, teacher, and student are indebted to the labors of those who prepare reviews, monographs, textbooks, and the like, making the classification and distribution of chemical knowledge easier.

The volume under review represents the twelfth German edition of a series of organic chemistry textbooks which since 1927 have had wide usage and recognition throughout the scientific world. The renowned author of these classic reference books, Prof. Dr. Paul Karrer, is recognized as well for his many personal contributions to the field of organic chemistry.

In preparing this volume, the author modified his last edition in accordance with recent developments in experimental and theoretical organic chemistry. The new edition, however, is organized basically in the same manner as the previous issue. In the classical tradition the subject material is arranged strictly according to the nature and number of functional groups. In varying degrees, modifications of and additions to all chapters are to be found. As the preface states, it was the author's object to devote more room to organic reaction mechanisms as based on modern theoretical electronic concepts. New material in all phases of organic chemistry is to be found. It is possible to mention here only a few of the new topics that are covered.

The introduction to the text of a great number of reaction mechanisms is noticeable. The free radical and ionic mechanisms for the course of such reactions as isomerizations, halogenations, polymerizations, oxidations, alkylations, carbonyl condensations, acylations, and the like, are included. The author also considers the electronic-theoretical aspects of a variety of subjects, such as oxonium ions, free radicals, resonance states of molecules, ozonides, aliphatic and aromatoc diazo compounds, neighboring group influence, and Walden inversion. Recent advances in the chemistry of actylenes (Reppe syntheses), organometallic reactions, olefins, fluorohydrocarbons, phosphoric acid esters, silicones, and others, are reviewed. A complete section dealing with the chemistry of tropolones is introduced for the first time.

In the field of biological chemistry, the text presents up-to-date material of various metabolic pathways, such as the glucose-ethanol conversion, transamination reactions, peptide synthesis, hexose interconversions, and purine and pyrimidine biosyntheses. The recent developments in the chemistry of a variety of substances of biological importance, such as vitamin B_{12}, coenzyme A, sphingolipids, nucleic acids, folic acid and biotin, are also considered.

Professor Karrer's textbooks are well known for their material dealing with the chemistry of natural products. The new text presents some of the later advances in the steroid, alkaloid, antibiotic, and carotenoid fields. Of great interest is the material on the total synthesis of cholesterol, lycopene, α-carotene, β-carotene, and morphine. The chemistry of cortisone, corticosterone, aureomycin, terramycin, chloromycetin, and mycomycin is included. In the alkaloid field, the recent advances in the chemistry of the senecio, tropanal, curare, morphine, lupine, codeine, colchicine, ergot, and strychnine alkaloids are reviewed.

The use of isotopes in the elucidation of reaction mechanisms is discussed in a section devoted to isotopic organic chemistry.

Tables of miscellaneous information in organic chemistry are omitted from the new edition. The author has extended the section dealing with important dates in the history of organic chemistry to the year 1951.

The quality of the textbook itself is fine. The paper and binding are good. The present German edition will be printed shortly in the English, French, Spanish, and Italian languages. It is the opinion of the reviewer that although designed for the student of organic chemistry, the textbook is an excellent reference source for everyone interested in the field.

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The Challenge of Our Times: Contemporary trends in science and human affairs as seen by twenty professors at the University of Wisconsin. Farrington Daniels and Thomas M. Smith, Eds. Burgess Pub. Co., Minneapolis, 1953. 364 pp. Illus. $3.50.

This book, based on a course, "Contemporary trends in modern civilization," which has been taught at the University of Wisconsin since 1941, consists of 28 chapters, reworked by the 20 lecturers who contributed to the course. It thus represents another of the currently popular attempts to view as an integrated picture a problem that concerns a group of disciplines.

The book is divided into five sections. The first, "Science is everybody's business," contains five chapters that cover briefly: the control of nuclear fission and fusion as examples of scientific developments that profoundly affect society, the history of science, the application of science to modern technology, and the operation of a modern research laboratory. These are followed by two chapters in which the general problems of controlling science in the United States and in Russia, respectively, are treated.

In the second section, "Nations in turmoil," economics, history, genetics, geography, political science, sociology, and anthropology are fused in an eight-chapter view of the changing picture of the control of energy and the problems of agriculture, with diminishing death rates and high birth rates presenting new problems in politics and geography. This section includes chapters on Russia and the Communist way