REVIEWS

The Vitamin Co-factors of Enzyme Systems. By F. A. ROBINSON. Pergamon Press Inc., 44-01 21st St., Long Island City, NY 11101, 1966. ix + 896 pp. 15.5 × 23 cm. Price $25.

"The Vitamin Co-factors of Enzyme Systems" is a timely replacement of the author's earlier book, "The Vitamin B Complex," which was published in 1951. Most of the material from the earlier book has been incorporated in the present volume, in addition to a rather extensive collection of recent knowledge concerning the role of the B complex vitamins as enzyme co-factors.

Earlier books on vitamins were concerned principally with their importance in nutrition and deficiency syndromes, but during the past two decades, a considerable number of studies have been conducted to establish the enzyme co-factor function of the vitamin B complex and its role in metabolic processes. Robinson emphasizes this revolutionary new concept of vitamin B activity.

The volume is composed of an Introduction, a Conclusion, and nine chapters dealing with the B complex vitamins, including thiamine, riboflavin, nicotinic acid, pyridoxine, pantothenic acid, lipoic acid, biotin, folic acid, and vitamin B_{12}. The chapters on folic acid, vitamin B_{12}, and lipoic acid are new additions; *p*-aminobenzoic acid, choline, and inositol are not included in the book because their co-factor function is obscure. Each chapter is divided into subsections for the convenience of the reader. The references which are cited at the end of each section are well selected, but include only those published up to 1963.

The author's discussion of the close inter-relationship between these co-factors and the fundamental basis for the need of these vitamins in proper and sufficient amounts in biological systems is inadequate. His relegation of this area to the 5-page conclusion section may lead the reader to overlook the dynamic aspect of these co-factors acting in biological systems as an interdependent group.

This book is well-organized, the facts are clearly presented, and it serves as an excellent reference source for information about the vitamin B complex.

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The Chemistry of Heterocyclic Compounds: Multi-Sulfur and Sulfur and Oxygen Five- and Six-Membered Heterocycles. Part I. By DAVID BRESLOW and HERMAN SKOLNIK. Interscience Publishers, a division of John Wiley & Sons, Inc., 605 Third Avenue, New York, N. Y. 10016, 1966. xxii + 610 pp. 15 × 22.5 cm. Price $33.00.

Part One of the twenty-first volume in the Weissberger series of "The Chemistry of Heterocyclic Compounds" maintains in quite adequate fashion the objective of this series to record the definitive chemistry of heterocyclic compounds. The authors' intent "to review the literature selectively and eclectically," establishing what is valid and denying insubstantial claims, has been followed throughout; an authoritative work has resulted.

This volume deals with the preparation, structure, properties, reactions, and uses of the five-membered heterocycles containing sulfur and oxygen; Part Two will cover the six-membered systems. As an indication of the extent of this subject, over 200 parent heterocycles falling within this classification have already been listed in the *Ring Index*. Among the types of cyclic compounds included in Part One are the following: sulfite and sulfate esters of glycols, anhydrides of sulfite esters of 2-hydroxy acids, anhydrides of 1,2-disulfonic acids, trithioles, esters of γ-hydroxysulfonic acids (sulfones), anhydrides of β-sulfocarboxylic acids, sulfonphthaleins, dithioles (cyclic disulfides), α-lipoic acid derivatives, 1,2-dithiolium salts, dithioacetals of sugars and steroids, and esters of trithiocarbonic acid. Known compounds are exhaustively tabulated, but the literature has been selectively rather than thoroughly summarized. The literature has been reviewed through 1962, which unfortunately predates most of the chemistry known for the 1,3-dithiolium salts.

Physiological properties are noted, but the pharmaceutical chemist will find this volume valuable more for the variety of cyclic systems shown that may be obtained from such common intermediates as glycols and hydroxy acids. Some of these heterocycles have already found use as protective groups in organic syntheses, and many show unique reactivities. A great deal of interest is presently being devoted to these compounds, as judged from the high percentage of contemporary references.

The authors are to be congratulated for a fine job, particularly in regard to interpreting some of, the older literature; discussions of crystallographic, spectroscopic, and conformational studies are included. While we must wait for the appearance of Part Two for the index, a ten-page Table of Contents will be found helpful.

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Nonionic Surfactants. Vol. I. Edited by MARTIN J. SCHICK. Marcel Dekker, Inc., 95 Madison Avenue, New York, N. Y. 10016, 1966. xxv + 1085 pp. 17 × 24 cm. Price $43.50.

"Nonionic Surfactants" is the first volume in a series designed to review the current knowledge of surfactants. The size of this volume, in excess of 1000 pages, reflects the rate at which the science and technology of this group of surfactants has grown since their introduction in 1930. The manufacture of nonionic surfactants now constitutes a sizeable fraction of the total production of all surfactants and it seems certain that these agents will find applica-