

## Book Reviews

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**Principles of Bioinorganic Chemistry.** Stephen J. Lippard and Jeremy Berg. University Science Books, Mill Valley, CA. 1994. xvii + 411 pp. 17.5 × 25 cm. ISBN 0-935702-73-3, \$30.00.

Written by two experts in the field, this book provides a valuable introduction to bioinorganic chemistry. Material is developed from basic principles, and the text will be accessible to readers with a good background in undergraduate chemistry. After four introductory chapters, the text is developed around a range of biochemical topics.

Chapter 1 provides a general overview of topic coverage. Chapter 2 reviews some essential aspects of metal–ligand coordination chemistry, while Chapter 3 introduces structural and functional properties of proteins, nucleic acids, coenzymes and cofactors. After a descriptive and nonmathematical review of physical methods in Chapter 4, subsequent chapters develop key areas of modern inorganic biochemistry. Chapter 5 discusses the selection, uptake, and assembly of metal-containing centers and cofactors in biological macromolecules. Chapter 6 considers the regulation of metal ion levels *in vivo*, focusing on iron and mercury in particular. This leads into a discussion of the control and utility of metal ion concentration gradients through ion channels. Chapter 7 considers the structural role of metal ions in the folding of proteins and nucleic acids, which is further developed in Chapter 8 which details the physicochemical factors underlying metal ion binding and their functional role. Chapter 9 discusses electron-transfer proteins, while Chapter 10 reviews the chemistry of a select group of nonredox enzymes (including carboxypeptidase A and thermolysin, alkaline phosphatase, carbonic anhydrase, alcohol dehydrogenase, and nuclease enzymes). Chapter 11 discusses atom- and group-transfer chemistry, with particular emphasis on proteins mediating oxygen transport, oxygen atom transfer, reduced oxygen species, and coenzyme B12-dependent reactions. Chapter 12 develops current ideas on the role of protein environments in defining the chemistry of bound metal cofactors. The final chapter reviews a number of frontier areas in bioinorganic chemistry.

The text is well-illustrated with half-tone and two-color drawings, while the subject index provides ready access to key topics. Two useful features include a listing of more specialized references at the end of each

chapter and several study problems. The low cost of the text should make it an attractive buy for students and advanced workers who require an overview of modern bioinorganic chemistry.

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**Organic Reactions. Volume 47.** Editor-in-Chief Leo A. Paquette. John Wiley & Sons, Inc., New York. 1995. xiii + 576 pp. 16 × 23 cm. ISBN 0-471-11737-4. \$95.00.

Volume 47 of *Organic Reactions* consists of two chapters. The first is "Lateral Lithiation Reactions Promoted by Heteroatomic Substituents" (by Robin D. Clark and Alam Jahangir, 314 pages); it reviews heteroatom-facilitated lithiation reactions in the elaboration of carbocyclic aromatic and heteroaromatic systems. The second chapter covers "The Intramolecular Michael Reaction" (by Daniel Little, Mohammed R. Masjedizadeh, Olof Wallquist, and Jim I. McLoughlin, 238 pages). The chapters are presented in the traditional *Organic Reactions* format, i.e., they are from the preparative viewpoint with particular attention given to limitations, interfering influences, effects of structure, and the selection of experimental conditions. Several detailed examples of the reaction and significant modifications are presented in each chapter. Also included in each chapter are tables of almost all reported examples of the reaction.

Both chapters contain an exhaustive list of up-to-date references. The book includes cumulative chapter title, author, and chapter and topic indexes for volumes 1–47.

The preface contains a biographical sketch of Theodore (Ted) Le Suer Cairns, a long-standing member of the Advisory Board of *Organic Reactions*, who died on September 26, 1994.

The volume, like its predecessors, is recommended to all organic chemists; it is particularly suggested as part of the series for inclusion in institutional libraries.

Staff

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