

Additions and Corrections

Investigation of Metal Ion Uptake Reactivities of [3Fe-4S] Clusters in Proteins: Voltammetry of Co-Adsorbed Ferredoxin-Aminocyclitol Films at Graphite Electrodes and Spectroscopic Identification of Transformed Clusters [*J. Am. Chem. Soc.* 1991, 113, 6663-6670]. JULEA N. BUTT, FRASER A. ARMSTRONG,* JACQUES BRETON, SIMON J. GEORGE, ANDREW J. THOMSON, and E. CLAUDE HATCHIKIAN

Page 6670, end of paragraph at upper left: The order of K_d values should read $Cd^{2+} \leq Zn^{2+} \ll Fe^{2+}$.

Binding of Thallium(I) to a [3Fe-4S] Cluster: Evidence for Rapid and Reversible Formation of $[Tl3Fe-4S]^{2+}$ and $[Tl3Fe-4S]^{1+}$ Centers in a Ferredoxin [*J. Am. Chem. Soc.* 1991, 113, 8948-8950]. JULEA N. BUTT, ARTUR SUCHETA, FRASER A. ARMSTRONG,* JACQUES BRETON, ANDREW J. THOMSON, and E. CLAUDE HATCHIKIAN

Page 8949, legend to Figure 1: The term " m " in the two equations should be omitted as should the statement "where m is the number of Tl^+ ions bound". Since m is effectively equal to 1, this does not affect the results or conclusions.

Book Reviews*

Laser Light Scattering in Biochemistry. Edited by S. E. Harding (University of Nottingham), D. B. Sattelle (University of Cambridge), and V. A. Bloomfield (University of Minnesota). The Royal Society of Chemistry: Cambridge. 1992. xii + 452 pp. £59.50. ISBN 0-85186-486-4.

This book was developed from a U.K. Biochemical Society Meeting held at the University of Cambridge, September 13-15, 1990. The papers presented at the symposium are organized under the following sections: Part I: Techniques; Part II: Macromolecules; Part III: Macromolecular Assemblies. There is a good subject index; the affiliations of the authors are given in the heading of each paper.

New Trends in Radiopharmaceutical Synthesis, Quality Assurance, and Regulatory Control. Edited by Ali M. Emran (University of Texas Health Science Center, Houston). Plenum Press: New York and London. 1991. xii + 520 pp. \$125.00. ISBN 0-306-44035-0.

This book was developed from a symposium sponsored by the Division of Nuclear Chemistry and Technology of the ACS at its 200th National Meeting in Washington, DC, August 27-30, 1990. The typescript contributions are organized under the following headings: 1. New Trends in Radiopharmaceutical Synthesis, Quality Assurance and Regulatory Control; 2. Application with Positron Emitting Radioisotopes; 3. Application with Radiometals; 4. Radiopharmaceutical Synthesis via Organometallics; 5. Automation and Computer Applications; 6. Radiopharmaceutical Quality Assurance; 7. Regulation and Control of Radiopharmaceutical Production. There is a brief subject index; a list of contributors and their affiliations would have been helpful.

Organic Geochemistry. Advances and Applications in Energy and the Natural Environment. Coordinating Editor: David Manning (Manchester University). Manchester University Press: Manchester and New York. Distributed in the U.S. and Canada by St. Martin's Press: New York. 1991. xxvi + 662 pp. \$130.00. ISBN 0-7190-3684-4.

This book grew out of the 15th Meeting of the European Association of Organic Geochemists held at Manchester University in September 1991. The short papers, which represent the long abstracts to the posters presented at the meeting, are subdivided according to the following headings: 1. Petroleum geochemistry: case histories; 2. Petroleum

geochemistry: source processes, secondary migration and reservoir processes; 3. Petroleum geochemistry: molecular characterisation; 4. Rates and mechanisms of (bio)geochemical processes including diagenesis and maturation: early diagenesis; 5. Rates and mechanisms of (bio)geochemical processes including diagenesis and maturation: thermal maturation; 6. Palaeoenvironmental determination including climate change; 7. Production, deposition and characterisation of macromolecular sedimentary organic matter; 8. Organic geochemistry of non-hydrocarbons; 9. Environmental geochemistry, including pollution studies; 10. Interaction between organic and inorganic geochemical processes; and, finally, 11. New technologies and novel analytical schemes applied to the study of sedimentary organic matter. There is an author index, but no subject index.

Food Safety Assessment. ACS Symposium Series 484. Edited by John W. Finley (Nabisco Brands, Inc.), Susan F. Robinson (American Chemical Society), and David J. Armstrong (U.S. Food and Drug Administration). American Chemical Society: Washington, DC. 1992. x + 478 pp. \$99.95. ISBN 0-8412-2198-7.

This book was developed from a symposium sponsored by the Division of Agricultural and Food Chemistry at the 200th National Meeting of the ACS at Washington, DC, August 26-31, 1990. After a short preface by the editors, it consists of 35 papers organized under the following headings: Perspectives: Past and Present; Risk Assessment; Laboratory Testing of Ingredients; Evaluation Guidelines; Computer Modeling of Risk Assessment; Assessing Microbial Safety in Food; Impact of Diet; and Evaluation of Specific Foods. There are indexes of authors as well as their affiliations and subjects.

The Chemistry of Functional Groups. The Chemistry of Amidines and Imidates. Volume 2. Edited by S. Patai and Z. Rappaport (Hebrew University, Jerusalem). J. Wiley and Sons: New York. 1991. xvi + 918 pp. \$495.00. ISBN 0-471-92457-1.

This is another in the excellent volumes on the chemistry of functional groups which began in 1964 and covers (in good detail) virtually every functional group in organic chemistry.

This volume, a sequel to the 1975 edition, is written by authors from around the world attesting to the continued interest and value of the imidate and amidine moiety. The present work contains progress in this area over the past 15-16 years, and by the size of the volume (850 pages)

*Unsigned book reviews are by the Book Review Editor.

interest in these systems is not dropping off.

The volume contains work on a wide variety of disciplines (analyses, theory, syntheses, electrochemistry, radiochemistry) and all are written well, although this reviewer was not pleased with the general graphics, especially in this day of beautiful computer-generated displays.

Present in this volume on Amidines and Imidates are the following chapters: General and Theoretical Aspects; Structural Chemistry; Stereochemical Aspects; Detection and Determination; Mass Spectra; Thermochemistry; Recent Synthetic Advances; Reactions and Synthetic Uses; Cyclic Imidates; Chemistry and Synthesis of Guanidino Derivatives; Rearrangements; Basicity and H-Bonding; Electronic Effects; Radiation Chemistry; Catalysis by Amidines; Electrochemistry.

The effort is a worthwhile collection of recent studies for those who find interest in this functional group and the ever-growing biological significance they show. Therefore, all research libraries will want to have this comprehensive treatise available to their users.

A. I. Meyers, *Colorado State University*

Organic Electrochemistry. An Introduction and a Guide. 3rd ed, revised and expanded. Edited by Henning Lund (Aarhus University) and Manual M. Baizer (University of California, Los Angeles, and University of California, Santa Barbara). Marcel Dekker: New York. 1991. xxiv + 1550 pp. \$195.00. ISBN 0-8247-8154-6.

The first edition of this book, edited by the late Manuel Baizer, appeared in 1973 and has served admirably as an introduction to the area of organic electrochemistry with emphasis on electrosynthesis. The original work was updated and expanded (with the aid of the current co-editor, Henning Lund) about a decade later, and this third edition follows after a similar interval. The latest expansion, weighing in at >1500 pages, is probably approaching the limit for a single-volume work. Nevertheless, the original organization and plan, which have been followed in the present edition, were very sound, and the book provides a cohesive treatment with minimal overlap among the separately authored chapters.

Several new authors have contributed to this edition, joining a veritable Who's Who of workers in the area of organic electrochemistry. New chapters are included on Reduction of Azomethine Compounds, Biomass, Photoelectrochemistry (with emphasis on organic transformations), and Paired Electrosynthesis. The updating of the other chapters seems adequate with much research from the last decade being included. As in earlier editions, many of the chapters contain extensive citations to the literature so that the work falls somewhere between its original designation as an "introduction" and a comprehensive review.

The four chapters in the section on Principles and Methods were particularly appealing to this reader. The topics range from the thermodynamics and kinetics of electrode reactions to the specific techniques used to study such processes. In spite of the broad coverage, the chapters appear to be a useful guide to the scientist wishing to know what can be learned or achieved by organic electrochemistry. This was one of Manual Baizer's principal intentions when he inaugurated this work.

The production of the book is of generally high quality, although there is a wide variation in the style and format of molecular structures. This is an excellent new edition of a fine book which will continue to find an appreciative pool of readers.

Dennis H. Evans, *University of Delaware*

Molecular Mechanisms for Sensory Signals. Recognition and Transformation. By Edward M. Kosower (Tel Aviv University). Princeton University Press: Princeton. 1991. 438 pp. \$79.50. ISBN 0-306-43183-1.

This is an important book covering a wide variety of sensory systems. The author develops his themes from a global and a molecular point of view. He presents the general picture in each section covering the essential ingredients for understanding; this then leads him to discuss the sensory events in detail. Chemotaxis deals with molecular recognition

and covers a wide variety of molecules from amino acids to peptides and other molecular systems. A complete picture of membranes, ions, and neurotransmission is presented on a quantitative basis. In prokaryotic organisms where chemotaxis abounds, Dr. Kosower gives the reader a complete picture of the multiple steps involved.

Dr. Kosower then proceeds to pheromones and taste. Once again, the reader is able to relate the stimuli of chemotaxis to insect recognition and on to the molecular basis of taste. Many molecular systems are presented for pheromone recognition and an even broader array of molecules is discussed as taste ligands for higher organisms. The author deals with olfaction in a similar vein in which the molecular systems cover a vast variety of molecular types. Dr. Kosower offers us a comprehensive treatment of olfactory detection and neurotransmission and discusses clearly the involvement of olfactory G proteins.

In like manner, the visual sensory system is discussed from the detection through all the steps involved on a molecular level. The enzyme cascade based upon the rhodopsin system is covered as are the molecular events involved in the retinyl molecules. The final chapters of this book deal with other receptor channels in much the same way. I particularly liked the final chapter dealing with learning and memory. This is an area quite remote from my chemical interests. It was fascinating for me to see various models used for habituation and sensitization. As in the other chapters, Dr. Kosower also presents a molecular basis for learning and memory. Obviously, the area is still in its infancy, but it is exciting to realize that even subtle brain processes can be interpreted on a molecular basis. This is a seminal book that ties it all together.

Murray Goodman, *University of California, San Diego*

Modern Spectroscopy. 2nd Edition. By J. Michael Hollas (University of Reading). John Wiley & Sons: Chichester, New York, Brisbane, Toronto, and Singapore. 1992. v + 407 pp. \$29.95. ISBN 0-471-93077-6.

This is the second edition of *Modern Spectroscopy*. I was generally impressed by the first edition, and the changes and additions in the second represent nothing but improvement. The scope of the book is considerable. It covers the topics typical for an introductory book on spectroscopy. These include introductory chapters on quantum mechanics, interaction of radiation with matter, and group theory. There are also the mandatory chapters on rotational, vibrational, and electronic spectroscopy. The chapter on electronic spectroscopy is particularly extensive, covering atoms, di- and triatomic, organic molecules, and ligand field theory. All these chapters are well-done, but by the nature of their subjects they contain little material that is not available elsewhere.

What distinguishes this book from most on elementary spectroscopy is the inclusion of material on photoelectron spectroscopy and lasers and a general discussion of experimental techniques including those using laser (including multiple photon) and Fourier transform techniques. Today a clear preponderance of spectroscopic work is done with these techniques, but often introductory texts still stress only simple absorption and emission spectroscopy.

I believe this book scores a clear success in giving a general introductory overview of modern work in spectroscopy. There are a few omissions, e.g., spectroscopies based on electron and nuclear spins, but this is inevitable. Probably my only quibble with the book is that while many topics are treated, there is not great rigor in the development of some of the conclusions. Yet, at worst, the book is sufficiently well-written that the lack of detail should simply motivate students to delve further.

Finally, a word seems in order as to what level of students I find this book to be appropriate. My feeling is that it would make an excellent supplemental text for an undergraduate physical chemistry course emphasizing spectroscopy or say a graduate quantum mechanics class dealing with spectroscopic examples. For a graduate class on spectroscopy, it could be the principal text, but it would in turn need to be supplemented by more advanced treatments.

Terry A. Miller, *Ohio State University*