

Additions and Corrections

Coenzyme B₁₂ Is Coordinated by Histidine and Not Dimethylbenzimidazole on Methylmalonyl-CoA Mutase [*J. Am. Chem. Soc.* **1995**, *117*, 7033–7034]. RUGMINI PADMAKUMAR, SHINICHI TAOKA, RAGHAVAKAIMAL PADMAKUMAR, AND RUMA BANERJEE*

Page 7034: The following should appear in the Acknowledgements. We would like to thank Dr. Ian Scott (Texas A&M) for the gift of the pMEX2/pGP1-2 strain that was constructed in the laboratory of Dr. Peter Leadley²³ (Cambridge University).

(1) McKie, N.; Keep, N. H.; Patchett, M. L.; Leadley, P. F. *Biochem. J.* **1990**, *269*, 293–298.

JA955026I

Book Reviews *

Two-Dimensional NMR Spectroscopy. Applications for Chemists and Biochemists. By William R. Croasmun (Kraft General Foods Technology Center) and Robert M. K. Carlson (Chevron Petroleum Technology Company). VCH Publishers: New York. 1994. xix + 958 pp. \$125.00. ISBN 1-56081-664-3.

This imposing book attempts to provide an introduction to the explosion of improved NMR techniques, with each expert contributor providing a separate chapter reviewing developments in a particular area, for example, peptides, proton-detected heteronuclear experiments, and experimental aspects of two-dimensional NMR. Although the "two-dimensional" remains in the title from the first edition, multi-dimensional experiments are also treated. While the target audience for the book is supposedly practicing chemists and biochemists, there is something for everyone from the beginner to NMR expert in the text.

By compiling a number of separate contributions from different authors, both the depth and style fluctuate considerably. Repetition is also a problem: popular experiments like ROESY and HMQC are mentioned half a dozen times. Finally, in the interests of completeness, too much material has been included, often uncritically. Cataloging over 50 different water suppression techniques without really making a selection of the *best technique* in each category does nothing to help a scientist wishing to use the water suppression technique and get on with the work at hand. With so many different options available, many of which are out of date or have well-known drawbacks, it is essential to narrow the field of pulse sequences in the interest of clarity and brevity.

For the NMR literate, the excellent Chapter 3 on modern proton-detected heteronuclear experiments provides a comprehensive guide to the most useful experiments, with enough mathematics to make the results understandable. It would be good required reading for a graduate student who has some knowledge of NMR but is unfamiliar with the latest wrinkles. Likewise, the chapters dealing with specific assignment problems in peptides, oligosaccharides, and nucleic acids will be extremely useful to researchers interested in these areas. It is surprising, given the undeniable importance of the field, that a section devoted solely to the NMR spectroscopy of larger proteins is conspicuously absent.

In summary, this book certainly contains a lot of useful information. It would be much better, however, if it were about half as long.

A. J. Shaka, *University of California, Irvine*

JA945054L

Correlations, Transformations, and Interactions in Organic Crystal Chemistry. Edited by Derry W. Jones (University of Bradford, U.K.), and Andrzej Katrusiak (Adam Mickiewicz University, Poland). Oxford University Press: New York. 1994. xiii + 325 pp. \$75.00. ISBN 0-19-855826-0.

*Unsigned book reviews are by the Book Review Editor.

Proceedings of the Eighth International Symposium on Organic Crystal Chemistry held at Poznan-Rydzyna, Poland, July 26–30, 1992.

JA955284F

Aquatic Chemistry Interfacial and Interspecies Processes. Edited by Chin Pao Huang (University of Delaware), Charles R. O'Melia (The Johns Hopkins University), and James J. Morgan (California Institute of Technology). American Chemical Society: Washington, DC. 1994. xiv + 412 pp. \$124.95. ISBN 0-8412-2921-X.

Advances in Chemistry Series 244. Developed from a symposium sponsored by the Division of Environmental Chemistry, Inc., at the 203rd National Meeting of the American Chemical Society, San Francisco, CA, April 5–10, 1992.

JA955224+

Radiation and Public Perception: Benefits and Risks. Edited by Jack P. Young (Oak Ridge National Labs) and Rosalyn S. Yalow (Veterans Affairs Medical Center). American Chemical Society: Washington, DC. 1994. xiii + 346 pp. \$69.95. ISBN 0-8412-2932-5.

Advances in Chemistry Series 243. Developed from a symposium sponsored by the Division of Nuclear Chemistry and Technology, Chemical Health and Safety, and Environmental Chemistry, Inc., at the 203rd National Meeting of the American Chemical Society, San Francisco, CA, April 5–10, 1992.

JA955223H

Materials Chemistry an Emerging Discipline. Edited by Leonard V. Interrante (Rensselaer Polytechnic Institute), Lawrence A. Caspar (University of Wisconsin–Madison), and Arthur B. Ellis (University of Wisconsin–Madison). American Chemical Society: Washington, DC. 1995. xviii + 570 pp. \$79.95. ISBN 0-8412-2809-4.

Advances in Chemistry Series 245. Developed from a symposium sponsored by the Division of Industrial and Engineering Chemistry, Inc., at the 204th National Meeting of the American Chemical Society, Washington, DC, August 23–28, 1992.

JA955283N

Inorganic Synthesis, Nonmolecular Solids, Volume 30. Edited by Donald W. Murphy (AT&T Bell Labs) and Leonard V. Interrante (Rensselaer Polytechnic Institute). Wiley: New York. 1995. xvii + 302 pp. \$60.00. ISBN 0-471-30508-1.

This special topics volume differs from the usual volumes by its focus on synthesis of nonmolecular inorganic solids and in the fact that it includes selected syntheses reprinted from earlier volumes in addition to new contributions. The choice of reprinted syntheses is selective rather than comprehensive. The authors focus on syntheses

of materials that either are not widely available commercially in high purity or illustrate a generally useful methodology of approach to a specific type of inorganic solid. The new syntheses in this volume include both solicited and contributed syntheses. The authors try to fill gaps in materials types and synthetic approaches, as well as to include specific materials that are likely to be of broad current interest, such as oxide superconductors.

JA955282V

Solubilization in Surfactant Aggregates. Edited by Sherril D. Christian and John F. Scamehorn (University of Oklahoma—Norman). Marcel Dekker, Inc.: New York. 1995. xiii + 545 pp. \$195.00. ISBN 0-8247-9099-5.

This book covers topics ranging from fundamental studies of solubilization to practical technological applications of the phenomenon. This current reference reviews the solubilization of organic materials into surfactant aggregates, including micelles, vesicles, and admicelles. Written by more than 30 internationally acclaimed experts from academia and industry, this book details methods of measuring solubilization that utilize both classical and newer instrumental techniques. This book also presents the historical background of solubilization, outlines mathematical models for describing solubilization, examines solubilization in polymeric surfactants, considers thermodynamic and kinetic aspects of micellar solubilization, discusses the importance of solubilization in detergency and separation processes, and describes various means of reporting and representing solubilization results.

JA955217L

Dictionary of Plastics and Rubber Technology, Volume 2: English to German. Edited by M. S. Welling. Pentech Press: London. 1994. 193 pp. \$42.00. ISBN 0-7273-0412-7.

This dictionary is based on the second edition of the author's *German-English Dictionary of Plastics and Rubber Technology*, which has recently been published as Volume 1 of a two-volume work. The dictionary covers every aspect of plastics technology, including polymer physics and chemistry, properties, testing, mixing, and compounding processes whereby polymers are converted into finished and semifinished products. It also includes the latest terminology relating to plastics recycling and waste disposal, environmental technology, CAD/CAM/CAE and computer controls, quality assurance, and engineering polymers.

JA9552205

Organic Reactions, Volume 47. Edited by Leo A. Paquette (The Ohio State University). Wiley: New York. 1995. ix + 576 pp. \$95.00. ISBN 0-471-11737-4.

The volumes of *Organic Reactions* compile critical discussions of the more important reactions. Each chapter is devoted to a single reaction, or a definite phase of a reaction, of wide applicability. Subjects are presented from the preparative viewpoint. Particular attention is given to limitations, interfering influences, effects of structure, and the selection of experimental techniques. Chapter headings include (1) Lateral Lithiation Reactions Promoted by Heteroatomic Substituents and (2) The Intramolecular Michael Reaction. There are indexes and cumulative chapter titles, authors, and topics.

JA955222P

Frontiers in Analytical Spectroscopy. Edited by D. L. Andrews (University of East Anglia) and A. M. C. Davies (Norwich Near Infrared Consultancy). Royal Society of Chemistry: Cambridge, U.K. 1995. viii + 248 pp. £62.50. ISBN 0-85404-730-1.

This book presents a topical review of the wide range of spectroscopic techniques developed and employed in recent years. It exhibits links between a great variety of spectroscopic methods, some aspects of which can be overlooked by practitioners. It embraces techniques ranging from the spectroscopic imaging of polyethylene to the use of mass spectrometry on spacecraft. It is pitched at a level that will suit specialists in any area of spectroscopy. It provides a "bird's-eye" view of the frontiers that are currently being explored.

JA955211W

Derivative Spectrophotometry: Low and Higher Order. By Gerhard Talsky (Technische Universität München). VCH: Weinheim and New York. 1994. xiv + 228 pp. \$145.00. ISBN 3-527-28294-7.

This book is a miniature encyclopedia covering all of the important features of derivative spectrophotometry. A wealth of information is power-packed into 228 pages in a volume measuring only $5/8 \times 7 \times 9 \ 5/8$ in., which takes very little shelf space. It has a linen-type hardcover and is printed on acid-free, chlorine-free paper designed to last a lifetime.

The text is efficiently written and goes directly to the point. The author does not waste words and yet, step-by-step, covers the material thoroughly. The text includes development, theory, instrumentation, practical aspects, and applications. It focuses primarily on UV-vis spectra because, usually being broad and poorly defined, they are ideally suited to deconvolution by differentiation.

In Chapters 2 and 3 various ways of generating derivative spectra, from first order to sixth order and higher, are described. In fact, reference is made to the work of Sasaki who reported the thirteenth derivative of the UV-vis spectra of a mixture of 11 food dyes. The problems as well as the advantages of higher-order differentiation of signals are clearly illustrated throughout the text.

Noise sources and noise elimination by filtering and smoothing are discussed in Chapter 4. These include graphical, mechanical, and optical methods; spacially delayed spectra; analog and digital differentiators; and special devices. At the end of this chapter, guidelines for generating derivative spectra are presented in the form of Twelve Commandments.

Chapter 5, the final chapter, contains a tabulation of 489 applications, compiled into 57 tables according to the spectroscopic method and chemical classifications. Only general observations and comments are made with no specific example or in-depth analysis being given here.

Overall, the book has 161 figures, 81 tables, and a whopping 828 references covering the subject from its inception in 1953 up to 1991. This book is a must for those using or planning to use derivative spectrophotometry and is also recommended reading for those who are idly curious. The \$145.00 price tag is steep, but this book is worth every dollar.

Edmund R. Malinowski, *Stevens Institute of Technology*

JA955141T

Inorganic Chemistry of Main Group Elements. By R. Bruce King (University of Georgia). VCH: New York. 1995. xx + 326 pp. \$75.00. ISBN 1-56081-679-1.

There is a growing genre of "McChemistry" books in our science that tend to provide a fast, simple overview of an area, usually as an upgrade for graduate students who have been educationally malnourished in their baccalaureate degrees. The niche that these books fill is becoming distressingly large, and this volume fulfills the need for such a text in main group chemistry. Indeed the author states, "The book is designed to be a text for a one-quarter or one-semester graduate level course as well as a first source of general information on the chemistry of main group elements for research workers in other fields" (page v).

The book deals solely with the descriptive chemistry of the main group elements with a systematic approach (if one accepts the "metallurgists' interpretation" of the periodic table). Thus there are chapters on hydrogen, carbon, the heavier elements of group 14, nitrogen, the heavier elements of group 15, the chalcogens, the halogens and the noble gases, boron, the heavier elements of group 13, and the alkali and alkali earth metals. Included in the book are chapters that cover the d^{10} metals (zinc, cadmium, and mercury) and the lanthanides with actinides. Each chapter starts with a brief overview of the important concepts followed with sections on the elements, ion chemistry, hydrides and halides, oxides, and special topics. The sections on the elemental properties oddly give precise information on the NMR active nuclides but seems to be quite hesitant to offer more primary physical and electrochemical properties usually included in these sections. The book is well referenced and does live up to its stated purpose of pointing chemists to the recognized authorities in the different areas. Of the 230 references cited in the first five chapters, only 20 were published after 1989. This fact causes one to ponder the meaning of the authors statement that "the chapters of this book present the highlights of the descriptive chemistry of the main groups elements..." (page xvii).

The treatment of such a vast area of chemistry in such a small volume

is by necessity light but in this case is also uneven. The author is prone to provide interesting asides in a less than systematic fashion (for example, the injuries suffered by the discover of (SN)_x are described but we are told little about the discoverers of other compounds). The manuscript is reasonably well written with few typographical or chemical errors (the ones that this reviewer observed were in fact likely caused by compression of the text during revision). The diagrams however, are a great liability to this volume. One can often only make sense of a diagram if he or she has seen a better one before. It is common to see element symbols confusingly stacked up one on top of the other in these diagrams with bonds in odd positions.

It is true that chemistry is an interdisciplinary science with students from varied backgrounds conducting research in areas in which their knowledge may be weak. This text does not pretend to be an authoritative treatment but more an index to the literature of main group chemistry. This text is less intimidating and more suitable for teaching than many of the definitive volumes on this area of chemistry. It is also true however that this book should rapidly proceed to a second edition with better diagrams, more recent material, and a more even treatment of detail. A research chemist seeking access to the literature on main group chemistry should still initially consult the standard texts rather than this text. For an academic seeking a text for an advanced level course on descriptive chemistry, this book will be adequate when revised.

Melbourne J. Schriver, *Memorial University of Newfoundland*

JA9451574

Flame Spectrometry in Environmental Chemical Analysis: A Practical Guide. By Malcolm S. Cresser (University of Aberdeen). The Royal Society of Chemistry: Cambridge, U.K. 1994. x + 108 pp. £29.50. ISBN 0-85186-734-0.

This book is intended as a "user-friendly", introductory guide to the practical use of flame atomic spectrometry in environmental analysis. It is designed for those who wish to obtain accurate and precise analytical results "rapidly, safely, inexpensively and with minimal mental effort". The book is thin and completely unimposing in its use of mathematics and theory.

Flame Spectrometry in Environmental Chemical Analysis: A Practical Guide consists of nine chapters and grew out of the authors more than 20 years of experience in teaching and training environmental scientists in the use of atomic spectrometric methods. The book is clearly and concisely written with an abundance of references to the original literature for those users who want to obtain additional information.

The first four chapters are on the principles and instrumentation. Chapter 1 treats the nature of flame atomic absorption, atomic emission, and atomic fluorescence spectrometry, while instrumentation is covered in Chapter 2. Chapter 3 covers interferences and how to eliminate or minimize their effects. Chapter 4 is concerned with optimization of parameters in flame spectrometric methods. These chapters are quite practical with very little discussion of theory. For some this will be the major weakness of the book, but the author has purposely chosen to exclude mathematical details for the audience intended.

Chapter 5 deals with sample preparation (treatment and storage, dissolution, slurry atomization, and speciation), but in only eight pages. Chapter 6 introduces several useful accessories for atomic spectrometric instruments, including those used for cold vapor mercury determinations, hydride generation, sampling boats and cups, and several other applications. Unfortunately, electrothermal atomization is not discussed except in Chapter 7 in conjunction with specific elemental determinations. This omission is probably the result of trying to limit the coverage to "flame" atomic spectrometry. However, one wonders why cold vapor methods and other "flameless" methods are discussed.

Chapter 7 is a good introductory guide to the atomic spectroscopy of twenty-eight selected elements. Speciation is also briefly mentioned (one page) in this chapter. Because of the increasing need for methods that distinguish specific chemical forms of elements, particularly in the environmental sciences, this sparse treatment seems a little too limited for this reviewer. Chapter 8 (four pages), on assessing the quality of analytical data, also seems extremely limited. While quality control and the need for reference materials are briefly discussed, no mention of statistical data treatment is given in this chapter entitled *How Do I Know I'm Getting the Right Answer?* The final chapter is a brief (3 page), but welcome, discussion of safety in flame spectrometry.

The books' major strengths are its clear and concise discussions of practical issues in atomic spectrometry and its good, up-to-date referencing of the literature for additional readings. Its major shortcomings are in its lack of detail and its qualitative discussions. This reviewer would have preferred to see a book of this nature focus on the data obtained, on the assurance that these data are of high quality, and on the interpretation of the results.

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JA955113A

Coating and Drying Defects: Troubleshooting Operating Problems. By Edgar B. Gutoff (Tufts University), Edward D. Cohen (DuPont), and Gerald I. Kheboian (TAPPI, Chapter 10). J. Wiley and Sons: New York. 1995. xv + 287 pp. \$69.95. ISBN 0-471-59810-0.

Coating defects occur due to a variety of reasons. Continuous web coating processes are sequences of complex operations that are usually run at high speeds and, in the case of photographic films, under difficult lighting conditions. Defects are hard to detect, and when they are present, they must be taken care of, even when defect troubleshooting can severely affect production. An engineer from a photographic film company once put it this way: *you do not want to find the defect over the face of your loved ones on the pictures taken during a very special occasion.* Paper coating and magnetic tape coating operators also have very good reasons to prevent defects in their products.

This book is a collection of information and how-to procedures designed to detect, learn about the causes, and find a way to eliminate defects. The book is intended for *manufacturing and control personnel, the operators and supervisors that are directly involved in the production of coated products, and the engineers and scientists who are involved in the design and production of coated products.* I believe these objectives are amply fulfilled. This book belongs in the operation and control rooms of all web coating companies, large and small. It is a valuable reference source and has updated and helpful material that can be used to attack a large amount of coating problems.

Chapter I on Troubleshooting or Problem Solving Procedure is an interesting collection of general problem solving techniques that reflects the many years of practical experience of the leading authors (Gutoff and Cohen). The warnings given to avoid the *initial name syndrome* are a point in case. Volunteers at the Oxley Nature Center in Tulsa are warned against giving the names of animals and plants to school children during their marvelous nature tours. An ancient Osage tradition is behind this practice: once an animal or plant is named, the person that uses the name thinks that he/she knows all about it and may even think that he/she owns it. The authors of this book use very similar arguments here to warn readers against naming a defect before you have learned more about it. Incorrect names can give the wrong impression about the causes of the defect and steer the search for solutions in the wrong direction. Most of the defects in coated webs are covered in this book. The sources of defects named start with feed preparation and are followed by surface tension-driven defects, static electricity, drying, and problems associated with web handling. Coating methods span roll coating, slot, extrusion, slide, and curtain coating. References are up-to-date and include patents, journal articles, presentations to congresses, and books.

Ed Gutoff and Ed Cohen have many years of accumulated industrial practice. They taught parts of AIChE's practical coating course and were instrumental in developing AIChE's biannual coating symposium into a truly international event. Ed Gutoff was awarded the most important recognition of the coating experts, the Tallmadge award, which is named after the pioneer of coating science, John Tallmadge of Drexel University. Including Mr. Kheboian, it will be hard to find a better set of people to put together such an important collection of coating expertise.

Ramon L. Cerro, *The University of Tulsa*

JA955143D

Advances in Chromatography. Volume 35. Edited by Phyllis R. Brown (University of Rhode Island, Kingston) and Eli Grushka (Hebrew University of Jerusalem). Marcel Dekker Inc.: New York. 1995. xviii + 448 pp. \$165.00. ISBN 0-8247-9361-7.

This volume will make an excellent addition to any analytical chemist's collection. The volume contains four chapters on capillary electrophoresis, one chapter on chiral stationary phases (CSPs), one chapter on ion-pair ion-interaction chromatography, one chapter on

applications of chromatographic techniques for gasoline characterization, and one topic on error sources in chromatographic quantification. One general comment about the volume is in order here. I wish the editors had grouped the chapters on the basis of separation technique.

Chapter 1 on Optical Detectors for Capillary Electrophoresis provides a very good overview of optical detection schemes. The citations are current. An added table comparing different detection schemes along with appropriate references would have made the article excellent.

Chapter 2 on CE-MS is very informative and to the point. This chapter can be used as is in any graduate level class that deals with hyphenated methods. The applications described are very good as well as interesting.

Chapter 3 introduces the reader to basic concepts of CE with a minimal amount of equations and mathematics. A detailed explanation of parameters that affect CE separations is provided with adequate examples as well as ample references. The section on capillaries has been treated well by the authors. All in all, this chapter will serve as a good introduction to a novice in CE. However, the reader must be aware of the fact that the title of the chapter, namely Approaches to Optimization of Experimental Parameters in Capillary Electrophoresis, is rather misleading. This chapter is strictly a review article. If the reader hopes to find comprehensive schemes or flow charts that will help in method development, the reader will definitely be disappointed.

Chapter 4 provides a good historical perspective on the evolution Pirkle-type CSPs. However, I tend to disagree with the biased conclusion that implies that the "Pirkle Approach" is more rational in CSP development.

Chapter 5 is a comprehensive review of applications of CE in pharmaceutical analysis. The applications are very interesting and are current.

Chapter 6 is a very good review on chromatographic analysis of gasolines. Citations are current. The author's conclusions should attract the attention of academic institutions.

Chapter 7 is on ion-pair chromatography. I did not see anything exceptionally new except some new references. However, more than 50% of the references are older than 5 years. I wish the editors had not considered these for publication.

The last chapter is on error sources in chromatographic quantification. I found the chapter to be informative. A chromatographer should be aware of the pitfalls pointed out by the author. However, a chromatographer working in the fast-paced industrial environment has very little time to worry about the error sources. It may not be an understatement to say that rugged methods developed following the general optimization principles appear to be more than adequate for the analytical chemists in the industry.

Ravi Ravichandran, Boehringer Mannheim Corporation

JA9551648

Carbon Dioxide Chemistry: Environmental Issues. Edited by Jan Paul and Claire-Marie Pradier (Royal Institute of Technology, Stockholm). The Royal Society of Chemistry: Cambridge. 1994. xi + 405 pp. £62.50. ISBN 0-85186-634-4.

This book is a compilation of the Proceedings of an International Symposium on CO₂ chemistry, organized by the Swedish Chemical Society and held in Hemavan, Sweden, on September 20–24, 1993. The editors have organized a positive discussion of the current technology and prospects of dealing with the increasing levels of carbon dioxide in the atmosphere. They separate the text into five sections that discuss environmental issues of the greenhouse gas but, more significantly, that describe what is already known about the chemistry of the molecule. Much of the chemistry described in each paper is accompanied by the economic feasibility of using the described technology. The conference was originally intended to focus on possible ways to not only save the planet but also "if possible 'make a buck' out of it."

The first (and largest) section deals with catalysis, which is introduced by one of the editors as the only viable and profitable alternative to the accumulation of carbon dioxide. Fundamental thermodynamic data about CO₂ introduce the challenges for conversion of the gas to useful feedstock. The section includes discussion of the economics and challenges of large-scale conversion of carbon dioxide

emissions and the problems encountered with current catalytic technologies. Strategies involving electro- and photochemistry and chemisorption on transition metal surfaces are presented. Various catalyst choices are discussed. There are discussions of surface chemistry and of alternatives to hydrogen gas often required to reduce carbon dioxide.

The Biology section describes the conversion of carbon dioxide by bacteria, plants, and mammals. The enzyme, ribulose-1,5-bisphosphate carboxylase (Rubisco), that fixes CO₂ in the reductive pentose cycle is the focus of many of these papers. The adaptations of plants and bacteria to use Rubisco efficiently are discussed. Mammalian CO₂ chemistry is described through bicarbonate formation and transport by hemoglobin.

Gas Separation discusses removal methods to eliminate the release of carbon dioxide into the atmosphere. These methods include the technology of membranes, amine solutions, polymers, and solid agents. The areas of application and the advantages and disadvantages of each procedure are presented.

Oceanography, or the sequestration of carbon dioxide in the oceans, has long been considered the "easy" way out of the greenhouse problem. Discussion includes the economics of pipelines to get the gas to deep enough levels that it wouldn't be immediately released back into the atmosphere. Experiments suggest a mechanism that could keep it at the depths of the ocean. The formation of the solids that utilize carbon dioxide in their formation is also described. Sinking carbon dioxide into the oceans is suggested as a possible short-term solution to be used until the catalytic processes are able to catch up. When the gas resurfaces in *n* years, the catalytic conversions could be utilized.

Other Aspects including artificial photosynthesis, tandem electro- and photochemical processes, and polymerization are described in the final section.

The subject index is extensive and can easily direct the reader to his/her specific interests, and several references follow each paper. The "gloom and doom" perspective of global warming typically presented within a discussion of a greenhouse gas is refreshingly absent from the text.

Wendy Lou Elcesser, Indiana University of Pennsylvania

JA945155J

Electrochemistry in Organic Synthesis. By J. Volke (J. Heyrovský Institute of Physical Chemistry) and F. Liška (The Institute of Chemical Technology, Prague). Springer-Verlag: Berlin, Heidelberg, and New York. 1994. 153 pp. \$67.00. ISBN 0-387-57533-2.

This little book, which is ideally suited to the bench-top synthetic chemist, gives a concise introduction to the electrosynthesis of organic compounds. There are essentially two parts of the text: a chapter on experimental details, which includes a brief presentation of methodology, and two chapters surveying electrode reactions. The latter, which constitutes the main part of the book, contains approximately 300 equations in a format geared to rapid browsing. This is good because there is no index. The cited references are all up-to-date, almost completely to articles published in the last 30 years, although the last 30 pages contain only four citations to review articles on indirect mediated redox reactions and the use of electrogenerated acids and bases.

The book can be viewed as a 1990s version of Fry's *Synthetic Organic Electrochemistry* and, before that, Fichter's classical *Organische Elektrochemie*. Reminiscent of the latter, the main chapter on electrode reactions contains about a dozen experimental procedures taken verbatim from the literature. This feature should promote the use of electrochemical methods by persons who are not trained in these techniques. The organization of the chapters on electrode reactions is based on reaction types and is similar to parts of the more complete, multi-authored work *Organic Electrochemistry*, edited by Baizer and Lund.

James Q. Chambers, University of Tennessee (Knoxville)

JA9551502