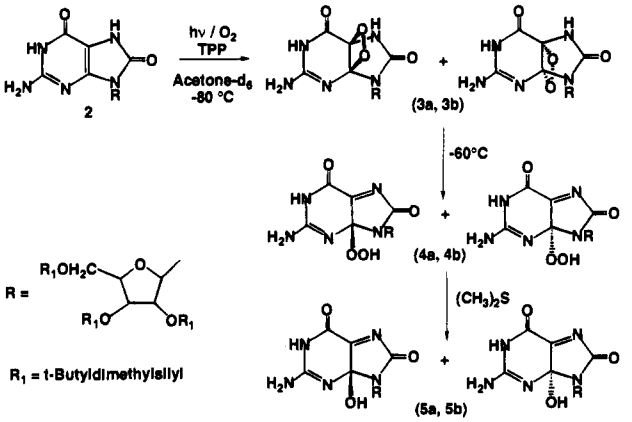
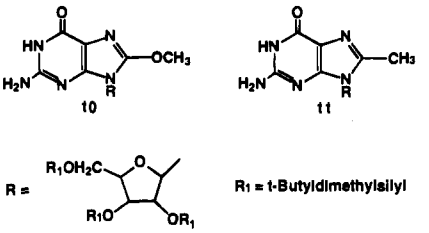
Additions and Corrections

Photosensitized Oxygenation of a 7,8-Dihydro-8-oxoguanosine Derivative. Formation of Dioxetane and Hydroperoxide Intermediates [*J. Am. Chem. Soc.* **1995**, *117*, 474−477]. CHIMIN SHEU AND CHRISTOPHER S. FOOTE*

Page 475, Scheme 2: Hashmarks were indistinguishable in the published version of this scheme, see below:



Page 476, compound **11**: A methyl group was omitted from the published structure of **11**:



JA955005O

Total Gene Synthesis: Novel Single-Step and Convergent Strategies Applied to the Construction of a 779 Base Pair Bacteriorhodopsin Gene [*J. Am. Chem. Soc.* **1994**, *116*, 8799−8800]. GUO-QIANG CHEN, ISAAC CHOI, BANUREKHA RAMACHANDRAN, AND J. ERIC GOUAUX*

Page 8799: Subsequent to the publication of our work, two papers describing a substantially similar approach have come to our attention (Prodromou, C.; Pearl, L. H. *Protein Eng.* **1992**, *5*, 827−829; Sandhu, G. S.; Aleff, R. A.; Kline, B. C. *BioTechniques* **1992**, *12*, 14−16) and together with the related studies of Ye *et al.* (Ye, Q. Z.; Johnson, L. L.; Baragi, V. *Biochem. Biophys. Res. Commun.* **1992**, *186*, 143−149) were not sufficiently emphasized.

JA955001J

Excited Triplet State of *N*-(9-Methylpurin-6-yl)pyridinium Cation as an Efficient Photosensitizer in the Oxidation of Sulfur-Containing Amino Acids. Laser Flash and Steady-State Photolysis Studies [*J. Am. Chem. Soc.* **1995**, *117*, 127−134]. BRONISLAW MARCINIAK,* GORDON L. HUG, JAROSLAW ROZWADOWSKI, AND KRZYSZTOF BOBROWSKI

Page 129: The last sentence of the first paragraph **Preparative Irradiation. Preparation of the Pyr−Pyr Dimer** should read as follows: The photoproduct was identified as the 4,4′-

dimeric, reduced pyridine compound (Pyr−Pyr dimer, Scheme 1) on the basis of ^{1}H NMR, IR, UV−visible, and MS analysis, as well as by analogy to the spectroscopic data for the Pyr−Pyr dimer first presented in ref 19 (Skalski, B.; Steer, R. P.; Verrall, R. E. *J. Am. Chem. Soc.* **1991**, *113*, 1756−1762).

JA955004W

Book Reviews

A Practical Approach to Chiral Separations by Liquid Chromatography. Edited by G. Subramanian (Canterbury). VCH: Weinheim. 1994. xvi + 405 pp. $105.00. ISBN 3-527-28288-2.

This book attempts to give the readers some practical insights into chiral separation in pharmaceutical industry and bioanalytical chemistry. The editor has assembled experts mostly from Europe and a few from the United States to write individual chapters of the book.

The book begins with a brief discussion of chirality and its importance in industry. This is followed by a review of molecular modeling applied to chiral chromatography. The treatment of Pirkle-type chiral stationary phases is systematic and readable even for one with limited experience in molecular modeling. Important contributions of several people have been critically reviewed, including molecular modeling of CSP−analyte complexes. The chapter on regulatory implications mainly dealt with the requirements of the United Kingdom but assumed the similarity of regulations in other nations. The information given here is rather nontechnical, and much of this is found in other parts of the book. The editor should have avoided such redundancy.

The discussion of molecular imprinting on silica gel and polymeric material by chiral template molecules and their applications in prep-scale separations is noteworthy. This is an area which has not received due attention and exposure prior to this review. The major classes of chiral stationary phases (CSPs) are discussed in separate chapters. The treatment of cyclodextrin-bonded phases is up-to-date and thorough. Both the reversed phase and normal phase applications have been discussed. The chapter on polysaccharide phases gives an excellent review of cellulose tricarboxylate phases and their applications to prep-scale separations. A lot of practical insights have been given regarding the prep-scale use of these columns.

One of the major developments in the past 10 years is the use of protein-based chiral columns for enantioselective separations. Various ways of immobilization of proteins to chromatographic supports are discussed, and many applications of these columns are outlined, including microcolumn techniques. Chapter 8 deals with polyacrylamide−silica composite phases and their applications in chiral chromatography. A wealth of information is found in this chapter, but the awkward construction of sentences makes it difficult to read. There is also some repetition of material found in Chapter 6. There is an error in the labeling of Figures 8−27 and 8−28. Chapter 9 is devoted to the use of chiral counterions in the mobile phase for separation of enantiomers. Both the normal and reversed phase chromatography using counterions as the chiral selector are adequately discussed.

Separations by chiral selectors dissolved in the mobile phase are discussed in Chapter 10. In addition to the use of chiral selectors in HPLC mobile phase, the author has briefly outlined their uses in TLC and capillary electrophoresis. The recent use of proteins and cyclodextrins as mobile phase additives has been mentioned. Much of the information found in this chapter can be found in other chapters of the book. The final two chapters deal with the applications of chiral separation in pharmaceutical industry and bioanalytical chemistry. Some of the same information can be found in Chapter 2.

One of the positive qualities of this book is its coverage of literature. Most of the chapters have references that are as recent as 1992 and some go as far as 1993. A second salient feature is the emphasis on practical applications. A major annoyance is the repetition of the same information in several chapters of the book. This may be unavoidable when many authors from different parts of the world contribute to the same book. This book is one of the four or five books that appeared since 1988 dealing with chiral separations, and it deserves to be in the possession of anyone who is actively involved in academic or industrial research in chiral separations by liquid chromatography.

Pothen Varughese, *Indiana University of Pennsylvania*

JA945151E

Phase Transfer Catalysis. Fundamentals, Applications and Industrial Perspectives. By Charles M. Starks (Cimmaron Technical Associates), Charles L. Liotta (Georgia Institute of Technology), and Marc E. Halpern (Sybron Chemicals, Inc.). Chapman & Hall: New York and London. 1994. xiv + 668 pp. $89.95. ISBN 0-412-04071-9.

This book is the third monograph on phase-transfer catalysis (PTC) published in the past three years. The first monograph, *Phase Transfer Catalysis. Selected Problems and Applications* (Goldberg, Y. Gordon Breach Science Publishers: Philadelphia, PA, 1992, ISBN 2-88124-870-5), is as the title mentions limited in scope. After an introduction to Basic Principles of PTC, it discusses PTC in the Chemistry of Nitrogen-Containing Heterocyclics, PTC in Organometallic Chemistry, PTC in Metal-Complex Catalysis, Triphase PTC Catalysis, Asymmetric PTC, and Nontypical Variants of PTC. This book is based on 1333 references which are enumerated in the order they are cited, and therefore, previous books and reviews in this field can be easily detected. There is a comprehensive review of this book by M. Makosza (*J. Am. Chem. Soc.* **1995**, *117*, 839).

The second monograph, *Phase Transfer Catalysis* (Dehmlov, E. V.; Dehmlov, S. S. VCH: New York, 1993, ISBN 1-56081-206-0), is the third revised edition of the book with the same title and, therefore, can be considered the classic monograph on PTC. This book cites 3650 references which are presented in alphabetical order and follows the organization of the previous editions, i.e., *Ion-Pair Extraction, Mechanism of PTC, and Practical Applications of PTC*. The alphabetical order of references has the great advantage of being almost equivalent to an author index. The less comprehensive and more expensive book by Goldberg does not compete with the standard work of Dehmlov and Dehmlov. A comparative review of these two books is available (Theil, F. *Angew. Chem., Int. Ed. Engl.* **1994**, *33*, 1669).

The present book is coauthored by the person who coined the name PTC (Starks) together with an academic (Liotta) and an industrial (Halpern) practitioner in this field. Although Starks and Liotta have coauthored one of the first books on PTC, *Phase Transfer Catalysis. Principles and Techniques* (Academic Press: New York, 1978), the present book is assembled in a completely different way from their previous book and from other monographs available in this field. This book provides the first critical discussion of the fundamentals of PTC, its applications, and perspectives for practitioners from both academic and industrial laboratories, and therefore, it is not only a monograph but also a practical guide to PTC. The book starts with a brief chapter presenting the Basic Concepts in Phase-Transfer Catalysis (i.e., basic steps, rate of reaction, anion transfer and activation, effects of reaction variables on transfer, and intrinsic rates and characterization of phase transfer catalysts). References 5 and 10 of this chapter are identical. The next two chapters, PTC Fundamentals I and II, discuss in great detail all structural and reaction factors and the way they affect the distribution of ion pairs including hydroxide ions between organic, aqueous, and solid phases. PTC Fundamentals II includes the first-time description of a computer analysis that handles the most complicated PTC processes developed by Liotta for chemists with no special experience in kinetic analysis. This enables the experimentalist to understand how the detailed kinetics of various PTC steps affect