Additions and Corrections

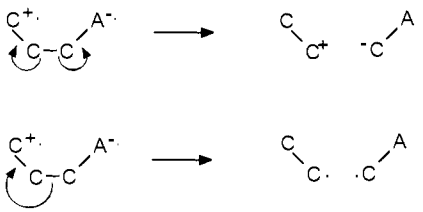
Cubyl Cation [*J. Am. Chem. Soc.* **1990**, *112*, 3225–3226]. PHILIP E. EATON,* CHENG-XI YANG, and YUSHENG XIONG

Page 3226, left column, line 29: $\Delta S^{\ddagger}$ should be −1.5 eu.

Photolysis of Covalent Compounds Composed of Stable Anions and Cations. Transient Absorption Studies on Coordination Complexes Formed from the Triphenylcyclopropenyl Cation and Malonitrilo, Acetonitrilo, and Fluorenyl Anions [*J. Am. Chem. Soc.* **1991**, *113*, 3773–3781]. NORBERT J. PIENTA,* ROBERT J. KESSLER, KEVIN S. PETERS, ERIN D. O'DRISCOLL, EDWARD M. ARNETT, and KENT E. MOLTER

Cleavage of intramolecular radical ion pairs to pairs of ions or radicals is shown correctly below in Scheme II. Thus, if one apportions one electron of the central bond to each of the radical ion parts, the anion/cation pair is formed. Alternatively, if the electron pair of the central bond is formally shifted to the radical cation portion, the pair of radicals is produced. We thank P. Maslak (Penn State) for bringing this to our attention.

Scheme II. Fragmentation of a Radical Ion Pair to Radicals or Ions



An Approach to Organic Ferromagnets. Synthesis and Characterization of 1-Phenyl-1,3-butadiyne Polymers Having a Persistent Nitroxide Group on the Phenyl Ring [*J. Am. Chem. Soc.* **1991**, *113*, 9803–9810]. KATSUYA INOUE, NOBORU KOGA, and HIIZU IWAMURA*

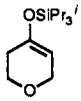
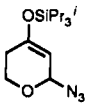
Page 9804, right column: In Scheme II, protected hydroxyamine 3-[*t*-BuN(OH)]-4-$ClC_6H_3C{\equiv}CC{\equiv}CC(CH_3)_2OH$ should be numbered **5** and the old number **5** for protected nitroxide 3-[*t*-BuN(O•)]-4-$ClC_6H_3C{\equiv}CC{\equiv}CC(CH_3)_2OH$ should be **5a**. Reagent PPTS and reaction conditions EtOH, 55 °C leading to new **5a** should read Ag_2O and Et_2O. In line 8 of the last paragraph, **5** should be **5a**.

Page 9808, left column: In line 3 of paragraph 3, **5** should be **5a**.

Page 9809, right column: In line 3, **4′** (X = Y = TEMPO) should be removed.

New Trialkylsilyl Enol Ether Chemistry. Direct β-Azido Functionalization of Triisopropylsilyl Enol Ethers [*J. Am. Chem. Soc.* **1992**, *114*, 767–769]. PHILIP MAGNUS* and JÉRÔME LACOUR

Entry 6 in Table I should read across as below:

entry	substrate	product	conditions (% yield)
6	 **13**	 **14**	as for **5** (>90% crude)

Book Reviews*

Electroresponsive Molecular and Polymeric Systems. Volume 2. Edited by Terje A. Skotheim (Brookhaven National Laboratory). Marcell Dekker, Inc.: New York, Basel, and Hong Kong. 1991. xi + 300 pp. $125.00. ISBN 0-8247-8422-7.

The second volume of this series lives up to the ambitious goals set out in its 1990 predecessor. This volume consists of five chapters, dealing with nonlinear optics (NLO) (the origin of NLO effects in low-dimensional structures, materials displaying second-order effects, and materials displaying third-order effects) and conducting polymers (processable materials and promising applications). The authors of the chapters range in expertise from theoretical physicists to organic chemists, and as such, represent the remarkable breadth of interest in these fields.

The three chapters on NLO do give some introductory theory but go on to concentrate on organic/polymeric materials. None of these chapters provide the simplest conceptual explanation of NLO effects which beginners might need. However, with a little background from other sources, these chapters offer a lucid discussion of materials displaying second- and third-order nonlinear susceptibilities. The first chapter gives a quantum field discussion of the origin of NLO susceptibilities in linear and cyclic polyenes, and in rigid-rod polymers. The next two chapters consider the materials science of molecular and polymeric systems displaying NLO effects. These chapters give some background theory but concentrate on the synthesis, processing and characterization of materials. These sections are well-written and should provide stimulation to newcomers to this research area.

Despite the number of excellent reviews of conductive polymers, the chapter by Reynolds and Pomerantz is the first extensive discussion of processable materials in this class. The problem of processability has long been recognized, and numerous methods are being investigated to develop useful materials. This compilation provides a timely review of work from many laboratories. The fields of NLO and conductive polymers are still at the point that chapters on "*promising* applications" are pertinent. The literature review of applications for conducting polymers includes only one patent citation.

The individual chapters are uniformly readable, and the structures and figures are clear and concise. A number of tables present data from various sources for direct comparison. The literature coverage is excellent with extensive coverage to the end of 1989 and some citations from 1990. The index is small, although this does not detract from the book's readability because each chapter is divided into short, well-defined sections. Within the confines of the chapter titles and space, and with a major emphasis on material structures and properties, the authors of each of these chapters have prepared first class reviews.

That the fields covered by this volume, and by the previous volume, are developing to quickly, and promise so much, simply goes to emphasize the value of this series. The series title encompasses a number of specialist areas, and meaningful research will only result from interdisciplinary understanding or collaborations. The reviews in this series will be a great aid to those working on electroresponsive materials, or those in one of the bordering disciplines who might want to branch into this fascinating area.

David M. Collard, *Georgia Institute of Technology*

Studies in Natural Products Chemistry, Stereoselective Synthesis (Part E). Volume 8. Edited by A. Rahman (University of Karachi). Elsevier: New York. 1991. 499 pp. $200.00. ISBN 0-444-8967-1.

This book is the eighth volume in the series and comprises twenty-two articles offering various topics relating to the stereoselective synthesis of natural products. In the first article Krief employs organoselenium chemistry to provide original solutions to the difficult problem of constructing adjacent quaternary carbon centers. Through his cembrene diterpene syntheses, McMurry demonstrates the value of titanium-induced carbonyl coupling reactions for the synthesis of macrocyclic hydrocarbons. Articles by Wenkert, Kreiser, and Shizuri explore general approaches to sesquiterpene natural products. Shizuri's approach is especially interesting since it uses an anodic oxidation of phenols as a key step. Danilov and Shibaev present the chemical synthesis and biochemical applications of phosphopolyprenols and their glycosyl esters. Various

*Unsigned book reviews are by the Book Review Editor.

aspects in the synthesis of gibberellins and analogs are discussed by Adam. Helmchen provides a stimulating account of cyclopentanoid natural product synthesis via asymmetric Diels–Alder (ADA) reactions. Several different types of ADA reactions are discussed along with the synthesis of new and effective chiral auxiliaries developed in the author's laboratories.

Three informative articles by Takahashi, Vedejs, and Czyzewska on the synthesis of medium- and large-membered-ring compounds provide a wealth of information on various chemical reactions. Wasserman reports how selective manipulations of tricarbonyl compounds allow the synthesis of β-lactam antibiotics, isoquinoline, indole, and Erythrina alkaloids. In a short but interesting report, Trost demonstrates how palladium-catalyzed enyne cyclizations open new horizons for ring construction. Soti describes recent advances from his laboratories on the synthesis of indole alkaloids. An article by Kirby and Cain discusses the methylmuconate pathways, stereochemistry, and mechanism of enzymic reactions. This is followed by Defaye's and Gelas's review of the synthesis of thio-oligosaccharides and their reactions with enzymes. Nishizawa reports on a metal-free thermal glycosylation and synthetic study of cyclo-L-rhamnohexaose, and Johnson covers the synthesis and chemistry of carcinogenic adducts of DNA. Basha describes the synthesis and structure activity of novel conformationally restricted analogs of norepinephrine. A particularly interesting article by Spitzner explores sequential Michael additions in the synthesis of natural products. It is suggested that the reaction of enolates with Michael acceptors offers advantages over other methods, i.e. the Diels–Alder reaction, for the construction of certain bicyclic compounds. The last two articles consist of a report by Voelter and Kapurniotu on strategies for the total syntheses of thymosins, and a lecture on the chemistry of organoboranes by H. C. Brown. The final article by Brown is truly a joy to read, as he guides the reader through his life-long contributions to borane chemistry.

Although some of the articles are rather short, they are all very informative and well-written. This book is a welcome addition to the previous volumes in the series. This is an important series which is valuable as a reference source to researchers interested in natural products chemistry.

Daniel L. Comins, *North Carolina State University*

Topics in Current Chemistry. Volume 153. Advances in the Theory of Benzenoid Hydrocarbons. Edited by Ivan Gutman (University of Kragujevac, Yugoslavia) and Sven J. Cyvin (University of Trondheim, Norway). Springer-Verlag: New York. 1990. 269 pp. $96.00. ISBN 0-387-51505-4.

This issue of *Topics in Current Chemistry* presents 14 chapters on a variety of subjects; the unifying theme is theoretical chemistry related to benzenoid aromatic hydrocarbons. However, the first chapter (by L. J. Allamandola) belies the general scheme and, instead, presents an excellent summary of the (spectroscopic) evidence for the existence of polycyclic aromatic hydrocarbons (PAHs) in space. It is possible that the final conclusion, that PAHs are more abundant than all other interstellar polyatomic molecules combined, provides a compelling justification for the following chapters.

Ensuing chapters present discussions of several of the current research areas related to benzenoids. Chapters by P. C. Hiberty (on the question of σ and π delocalization energies and bond length distortion), D. L. Cooper, J. Garratt, and M. Raimondi (spin-coupled valence theory for benzenoids), and D. J. Klein (semiempirical valence bond methods) are interesting and instructive. The remaining chapters are also of interest, but primarily oriented toward topological (Huckel) and graph theoretical characterizations of benzenoid problems, possible reflecting the research interests of the two editors of this volume.

The editors state that their aim is to document the vigorous research taking place in the theoretical chemistry of benzenoid compounds. That aim is certainly accomplished if theoretical chemistry is defined as limited to graph/topological and valence-bond type theoretical treatments. This should not be taken as a criticism. This is a useful and interesting book, and there is no doubt that it ought to be a part of every scientific institutional library. I recommend its careful perusal (and possible acquisition?) for those who have an interest in the applications of valence bond, graph theoretical, and topological ideas in chemistry.

William C. Herndon, *University of Texas at El Paso*

Annual Review of Biophysics and Biophysical Chemistry. Volume 20. Edited by D. M. Engelman, Ch. R. Cantor, and T. D. Pollard. Annual Reviews, Inc.: Palo Alto, CA. 1991. 620 pp. $55.00. ISBN 0-8243-1820-X.

This volume is a collection of 23 papers that are divided into several categories. The introductory paper by Britton Chance deals with the optical method, which has a biophysical theme that is just as viable now as it was in the past. Nevertheless, this prefatory chapter takes the form of a general review of developments of the classical optical method in optical spectroscopy and describes its appliation to organelles and tissue spectroscopy. Cell and tissue fluorometry in vivo and in the freeze-trapped state led to two- and three-dimensional imaging of localized biochemical events. The new field of time-resolved spectroscopy for quantitation of pigment concentration and for imaging is also described.

The next four papers focus on the structural principles of proteins and DNA. The question of protein-stability as well as water–protein interactions is explored in detail.

The third chapter in this book falls under the heading "Structure and Function". It contains a collection of ten papers covering the following topics: the structure-function of voltage-gated ion channels; bacterial chemotaxis; molecular logic of intracellular signal transduction networks; the zipper-like folding of collagen triple helices; the structure and function of lipoproteins; the structures of photosynthetic reaction centers; the chloramphenicol acetyltransferase; the models for receptor-mediated cell phenomena; the mechanism of bacteriorhodopsin's light-driven proton pump; the conformational aspects of small linear peptides; and the biochemistry of genetic recombination. These are discussed in light of the latest achievements in their respective fields.

The last chapter, "Emerging Techniques", reviews some aspects of NMR methods, scanning probe microscopes, mass spectroscopy for analysis of protein structure, ultrasonic velocimetry of biological compounds, and fluorescence microscopy for direct observation and manipulation of single DNA molecules.

Most of the authors are well recognized experts and have done a good job in citing their own and other's works. The reader has the opportunity to find more related literature to the desired topics by means of a good citation index after each article in this collection. The information given in the articles should help both the biophysically oriented reader who is advanced in the discussed topics as well as the less experienced one.

A. Ottova-Leitmannova and H. T. Tien, *Michigan State University*

Intermolecular Forces: An Introduction to Modern Methods and Results. Edited by P. L. Huyskens, W. A. P. Luck, and T. Zeegers-Huyskens. Springer-Verlag: New York, Berlin, and Heidelberg. 1991. 490 pp. $149.00. ISBN 0-387-53410-5.

This is a multi-authored volume divided into three sections. General Aspects; Spectroscopic Methods; and Other Methods. While the goal set forth by the editors in compiling this book as a compendium of information for advanced students and researchers in fields that involve intermolecular interactions is laudable, it fails to meet its title of representing modern methods and results. Many of the chapters contain few references more recent that 1980, and often these newer citations are only to the chapter author's own work. The chapter on molecular dynamics computer simulations of hydrogen-bonded liquids by P. Bopp is a notable exception. Overall, however, the book cannot be recommended for those who are interested in the forefront of research in this area.

Thermophysical Properties of Liquid Crystals. By A. L. Tsykalo (Odessa Technological Institute of Refrigeration, USSR). Gordon and Breach Science Publishers: New York. 1991. xvi + 420 pp. $95.00. ISBN 2-88124-322-3.

As the title would imply, this book is a treatise on the physical properties of liquid crystals. It is divided into five parts covering nematic, smetic, cholesteric, chiral nematics, and mixed liquid crystal systems. It is translated from German manuscripts and is, overall, well written and clear. It cannot, however, by highly recommended as there are few references after 1980. For a field developing as dynamically as that of liquid crystals, a more up-to-date accounting would be expected.