Additions and Corrections

Diastereoselective Ester Enolate Alkylations. Asymmetric Syntheses of 3-Alkyl-3-carbomethoxy-2-*exo*-methylenecyclohex-5-en-1-ones [*J. Am. Chem. Soc.* **1992**, *114*, 3937–3943]. ARTHUR G. SCHULTZ* and RICHARD E. TAYLOR

The absolute configurational assignment reported for the product of methylation (**3a**) of enolate **12** has been found to be in error.

Page 3938: An X-ray crystallographic structure determination of a material that is related to derivative **4a** by chemical interconversion necessitated a re-evaluation of the configurational assignment determined as shown in Scheme II. The conversion of **4a** to **10** which had originally produced material with an optical rotation reported to be $[\alpha]^{27}{}_{D}$ +7.62° (*c* 3.66, $CHCl_3$) was repeated. The 1,2-dimethyl-1-acetylcyclohexane now obtained gave optical rotations of $[\alpha]^{24}{}_{D}$ −4.0° (*c* 0.84, $CHCl_3$) and −4.5° (*c* 0.80, Et_2O) consistent with opposite absolute configurational assignment for all structures shown in Scheme II.

Page 3939: On the basis of the X-ray crystallographic determination and attendant experimental information, the rationale for diastereoselectivity presented in Figure 1 should be disregarded.

Excited-State Photoreactions of Chlorine Dioxide in Water [*J. Am. Chem. Soc.* **1992**, *114*, 4856–4860]. ROBERT C. DUNN and JOHN D. SIMON*

During the preparation of the above manuscript the assignment of two of the three OClO excited states was inadvertently reversed. At the end of the third paragraph of the introduction the sentences "Coupling to the low-lying $^2B_2$ excited state gives rise to dissociation into O and vibrationally hot ClO. The $^2A_1$ state is dissociative, forming O_2 and Cl, presumably via the photoisomerized intermediate ClOO." should be replaced with, "Coupling to the low-lying $^2A_1$ excited state gives rise to dissociation into O and vibrationally hot ClO. The $^2B_2$ state is dissociative, forming O_2 and Cl, presumably via the photoisomerized intermediate ClOO." In addition, Figure 4 should be amended to reflect these assignments.

These corrections do not change any of the conclusions of the paper. We apologize for any confusion this may have caused.

*Book Reviews**

Cage Hydrocarbons. Edited by George A. Olah (University of Southern California). John Wiley & Sons: New York. 1990. xv + 432 pp. $69.95. ISBN 0-471-62292-3.

This collection of 10 chapters by 16 contributing authors on various aspects of cage hydrocarbon chemistry is dedicated to Paul von Ragué Schleyer (University of Erlangen) to commemorate his 60th birthday and the 30th anniversary of his discovery of a simple preparation of the tricyclic cage molecule adamantane. The book starts with an introduction by E. M. Arnett (Duke University), a long-time friend and collaborator of Paul Schleyer.

The first chapter by honoree Paul Schleyer describes his 30 years of research in cage hydrocarbons starting from his discovery of a simple preparation of adamantane (which incidentally launched his illustrious career at Princeton) by acid catalyzed rearrangement of tetrahydrocyclopentadiene to the isomerization of pagodane to dodecahedrane. The chapter is well composed with historical anecdotes. Not only adamantane but also the chemistry of diamantane (Congressane), triamantane, and isomeric tetramantanes are discussed, including the conception of a trivial name "bastardane" for one of the tetramantane isomers. Adamantane rearrangement mechanisms along with the author's collaborative involvement in the isomerization of pagodane to dodecahedrane (albeit in low yield) are also covered. Finally, the author discusses his theoretical prediction and the experimental realization of 1,3-dehydro-5,7-adamantdiyl dication, a unique T_d symmetry, 4c–2e bonded, three-dimensional dication. There are 74 references.

The second chapter by M. A. McKervey (University College, Cork, Ireland) and J. J. Rooney (The Queen's University, Belfast, Northern Ireland) covers catalytic routes to the synthesis of adamantane and its homologues. As a scientific competitor to Schleyer, McKervey developed several practical synthetic methods for the preparation of diamondoid hydrocarbons. The authors cogently cover not only various synthetic aspects but also the selective functionalization chemistry of the diamondoid hydrocarbons. There are 58 references.

The third chapter by T. S. Sorensen and S. M. Whitworth (University of Calgary) elaborates on the superacid route to bridgehead 1-adamantyl cation. The conversion of tetrahydrodicyclopentadiene to adamantane involves an innumerable number of isomeric structures (so called adamantane-land structures), and the authors have systematically probed the possible structure and energetics of the intermediate isomeric carbocations under superacid conditions. There are 68 references.

G. A. Olah in Chapter four discusses carbocations of cage hydrocarbons under long-lived superacid conditions as well as their isomerizations and electrophilic reactions with strong electrophiles. The discussion includes extensive NMR spectroscopic characterization of 1-adamantyl, 1- and 4-diamantyl, isomeric triamantyl, dodecahedryl, and *seco*-pagodyl cations. Even dications of diamantane, pagodane, and

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*Unsigned reviews are by the Computer Software Review Editor.

dodecahedrane are included. Furthermore, electrophilic reactions such as hydrogen–deuterium exchange, nitration, formylation, oxygenation, and alkylation of adamantane and diamantane are also covered. There are 78 references.

A. G. Yurchenko (Kiev Polytechnic Institute) reviews fragmentation and transannular routes to cage hydrocarbons. The discussion centers primarily on the cyclization of bicyclo[3.3.1]nonyl derivatives to adamantane skeleton. There are 94 references.

Chapter six by P. Müller and J. Mareda (University of Geneva) covers bridgehead reactivity of cage hydrocarbons in solvolysis reactions. The bridgehead reactivities of a variety of bicyclic and tricyclic and polycyclic molecules are computed and analyzed. There are 85 references.

G. Maier, H. Rang, and D. Born (University of Giessen) in Chapter seven discuss stabilization of cage molecules through steric hindrance by *tert*-butyl groups. The discussion includes fascinating chemistry directed toward synthesis of tetrakis(*tert*-butyl)tetrahedrane. Poly-*tert*-butyl-substituted cyclopropenium salts and pyramidal cations are also covered. There are 119 references.

Chapter eight by A. de Meijere (University of Göttingen) pertains to the chemistry of homologues of barrelene, bullvalene, and benzene. The discussion centers on the preparation, structure, and reactivity studies on these intriguing molecules. There are 101 references.

L. A. Paquette (The Ohio State University) in Chapter nine discusses in detail the [*n*]peristylane–polyhedrane connection. Starting from the synthesis of [3]-, [4]- and [5]peristylane skeletons, the discussion culminates with the preparation of the ultimate cage hydrocarbon, the highly symmetrical pentagonal dodecahedrane and its derivatives. There are 79 references.

In the final chapter, W. D. Fessner and H. Prinzbach (University of Freiburg) cover their excursion into the synthesis of pagodane, a closely related isomer of dodecahedrane, and its isomerization to dodecahedrane. There are 88 references.

This well-referenced, well-written book by leading practitioners in the field of cage hydrocarbons is not exhaustive. Many areas of cage hydrocarbons such as cubanes, prismanes, etc. are not covered, but this does not in any way diminish the value of this book. It is highly recommended as reference material in the area of cage hydrocarbons. The book has both author and subject indexes.

G. K. Surya Prakash, *University of Southern California*

Inclusion Compounds. Volume 4. Key Organic Host Systems. Edited by J. L. Atwood (University of Alabama), J. E. D. Davies (Lancaster University), and D. D. MacNicol (University of Glasgow). Oxford University Press: Oxford, New York, and Tokyo. 1991. xiv + 511 pp. $98.00. ISBN 0-19-855292-0.

The area of host–guest chemistry has seen a surge of interest in recent years, which is quite evident by the increased number of journal articles being published in this area of Chemistry. Consequently, many significant advances have occurred since the first additions to the series Inclusion Compounds (Volume 1–3, 1984). This progress in the field resulted in the need for two additional volumes. Volume 4 in this series, presented in the same style as the first three volumes, is a comprehensive survey (19 authors, 11 chapters) that highlights many of the recent accomplishments in the field with a particular emphasis on structural chemistry.

The compilation includes several well-known and recently designed host systems (alicyclic diols, calixarenes, acetylenic alcohols, scissor-type hosts, lariat ethers, pyridine analogs, cyclophanes). Special attention is placed on presenting the design of host systems based on crystal structure data. For many of the chapters, this process involves a comparative study of the inter- and intramolecular forces and also of the cavities in the host lattice for a series of analogous compounds. From these studies, it becomes clear that the host molecule takes advantage of one or more of the following properties for incorporation of specific guest molecules: shape, size, or electrostatic forces (e.g. hydrogen bonds, anion complexation). From the known structural information of analogous compounds, many of the chapters progress to the design of tailor-made host molecules or crystal structures for specific inclusion behavior. The effort put toward the design of new host systems is not profitable if the molecules are synthetically unobtainable. Several of the authors provide a schematic representation and discussion of the syntheses of the host molecules. The structural data, when coupled with the synthesis information, provide a clear picture of the difficulties that are present in designing new inclusion specific host systems.

Despite being a multicontributor book, the quality and uniformity of the chapters is unusually high and is nicely supplemented with up-to-date references to the primary literature. This allows for easy reading. Additionally, the material demands that the reader "actively participate" by analysis of the crystal structure packing diagrams. These figures are generally clear and concise, essential for comprehension of the material. Though the book presents the structural chemistry of inclusion compounds in depth, it only briefly discusses their application (solid-state reactions, catalytic behavior); however, this is a minor drawback considering the aim of the monograph. In all, this book is a valuable overview of a large and rapidly expanding field and serves as a good introduction to and review of the structural chemistry of host–guest systems.

Kraig A. Wheeler, *University of Texas, Austin*

Polymer Latexes: Preparation, Characterization, and Applications. ACS Symposium Series 492. Edited by Eric S. Daniels, E. David Sudol, and Mohamed S. El-Aasser (Lehigh University). American Chemical Society: Washington, DC. 1992. x + 462 pp. $99.95. ISBN 0-8412-2305-X.

This book was developed from a symposium sponsored by the Division of Polymeric Materials: Science and Engineering and the Division of Colloid and Surface Chemistry at the 201st National Meeting of the American Chemical Society in Atlanta, GA, April 14–19, 1991. It consists of an introductory overview by the editors and 27 chapters in typescript form. There are indexes of authors, their affiliations, and subjects.

Cycloaddition Reactions in Carbohydrate Chemistry. ACS Symposium Series 494. Edited by Robert M. Giuliano (Villanova University). American Chemical Society: Washington, DC. 1992. x + 182 pp. $49.95. ISBN 0-8412-2429-3.

This book was developed from a symposium sponsored by the Division of Carbohydrate Chemistry at the 200th National Meeting of the American Chemical Society in Washington, DC, August 26–31, 1990. It consists of 11 chapters in typescript form, including an introductory overview chapter by the editor. There are indexes of authors, their affiliations, and subjects.

Polymer Yearbook 7. Edited by Richard A. Pethrick (University of Strathclyde, UK). Associate Editors G. E. Zaikov (USSR Academy of Sciences, Moscow) and T. Tsuruta and N. Koide (Science University of Tokyo, Japan). Harwood Academic Publishers: Philadelphia. 1991. ix + 456 pp. $95.00. ISBN 3-7186-5075-4.

This work is the most recent member of a series "...designed to be a useful and practical current awareness source book for polymer scientists." Unfortunately, I can find little in this book to enable me to urge readers to purchase it at its rather stiff price. The section on Physical Properties, Synthesis and Applications of Thermoplastic Polymers is composed of extracts from dated (1975–1983) secondary literature sources, which are likely to be available at any good university library, and treats basically what are commodity materials. The review section contains five subheadings: The Effect of Dyes on the Degradation of Fibre Forming Polymers; Significance and Application of the Dynamic Rheological Method in Kinetorheology Part I; Kinetic Control of Drug Release by Biodegradable Polymers; Polyfunctional Compounds of Polymerizing Systems; Photooxidation of Aliphatic Polyamides. Quantitative Aspects. The text contains many spelling errors as well as portions that are unintelligible, presumably because of linguistic limitations. Consider, for example, this passage on p 47: "In the process of photooxidation of PA using near UV-radiation, effect representing quadratic chain stopping and branching of the oxidation intermediate products if the chain reactions are observed." Further, the graphic representations are hand drawn and hand lettered. The references for this section are entirely from unattainable Russian journals, and no connection to leading references in western journals is made. It would be most useful to know where this extensive Russian body of work fits into the western rubric.

The section on the Progress of Polymer Science in Japan (1988) is the best part of this book, but it would be easier and more current to obtain more complete coverage by ordering the English Edition of Polymer Preprints Japan directly from the Society of Polymer Science Japan.

The section on Current Awareness, which treats technical conferences held in Russia, suffers from the same problems described for the Review Section.

The last four sections (Polymer Books Published in Russian, 1988; New Book Titles; Compilation of Dissertation Abstracts in Polymer Science; Calender of Meetings) might be of some historical interest, but I find nothing there that would stimulate me to urge our acquisitions librarian to purchase this work in these times of shrinking funds.

J. A. Moore, *Rensselaer Polytechnic Institute*