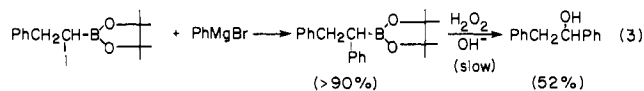


reacted similarly to yield 62% of the boronic ester, which was hydrolyzed with sodium borate in hot aqueous ethanol to the crystalline derivative **7**, mp 104–106 °C (from ether/petroleum ether).⁶ Cyclohexanone with a solution of **2a** gave the enethiol ether **8**, 83% in crude product, 71% after treatment with aqueous ethanolic sodium borate and then sodium hydroxide to remove boron compounds and distillation. The yield of **8** from phenylthiomethyltrimethylsilane was 65%.¹¹ Enethiol ethers were also prepared from **2a** and butyrophenone, bp 130 °C (0.1 mm), 82%,⁶ and from **2a** and benzophenone, mp 69–70 °C,² 71%.

One potential use of the α -(phenylthio)alkaneboronic esters (**3** and **6**) is as precursors of carbonyl compounds. The pinacol boronic ester group has proved unexpectedly resistant to hydrolysis or oxidation, but cleavage of **3a** with *N*-chlorosuccinimide under basic conditions has given high yields of hemithioacetals or dimethyl acetals.¹² Another use is the conversion of **1a** or **3a** (R = C₄H₉, CH₂Ph) to α -iodoalkaneboronic esters (70–77%) with methyl iodide and sodium iodide in dimethylformamide³ for 3 days at 25 °C. α -Haloalkaneboronic esters are of interest for their carbon-carbon bond-forming reactions with Grignard or lithium reagents^{13,14} and as precursors to boronic acids which may bind to enzymes.¹⁵ Carbon-carbon bond formation has been demonstrated with the sequence illustrated (eq 3).



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References and Notes

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Additions and Corrections

Flash Photolysis of Na⁺, C⁻(Ph)₂CH₂CH₂C⁻(Ph)₂, Na⁺. Redox Potential of 1,1-Diphenylethylene and Rate Constant of Dimerization of Its Radical Anion [*J. Am. Chem. Soc.*, **99**, 4612 (1977)]. By H. C. WANG, E. D. LILLIE, S. SLOMKOWSKI, G. LEVIN, and M. SZWARC,* Department of Chemistry, State University of New York, College of Environmental Science and Forestry, Syracuse, New York 13210.

Because of an inadvertent error, the "wrong" Figure 7 was published. The correct figure is presented here.

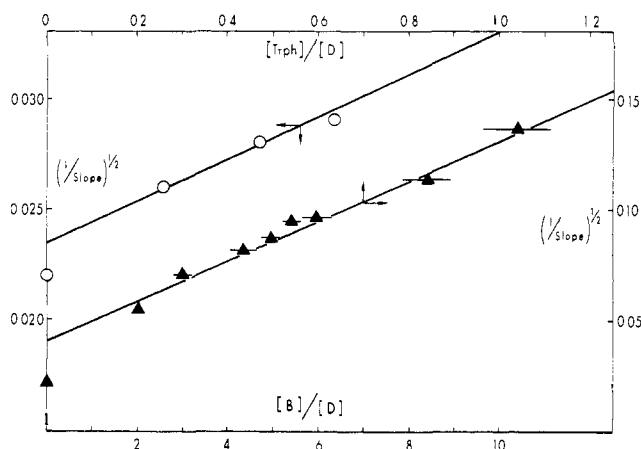


Figure 7. The square root of reciprocals of the corrected slopes of the lines $1/\Delta(\text{OD } 470)$ vs. time (see caption to Figure 6) plotted as functions of $[\text{Trph}]/[\text{D}]$ (triangles) or $[\text{B}]/[\text{D}]$ (circles).

Cyclic Peptides. 17. Metal and Amino Acid Complexes of *cyclo*(Pro-Gly)₄ and Analogues Studies by Nuclear Magnetic Resonance and Circular Dichroism [*J. Am. Chem. Soc.*, **99**, 4788 (1977)]. By VINCENT MADISON, CHARLES M. DEBER, and ELKAN R. BLOUT,* Department of Biological Chemistry, Harvard Medical School, Boston, Massachusetts 02115.

Page 4790, first column, 15th line from the bottom: Read "the molecular weight of *cyclo*(Pro-Gly)₁", rather than "the molecular weight of *cyclo*(Pro-Gly)₂".

Page 4797, first column, line 12: Change "Table IV" to read "Table II".

Page 4797, column 2, third paragraph, line 14: Change "Table VIII" to read "Table IV".

Page 4797, fourth paragraph, lines 11 and 12: Change "Figure 4 and Table X" to read "Figure 2 and Table XI".

Application of Linear Dichroism to the Analysis of Electronic Absorption Spectra of Biphenyl, Fluorene, 9,9'-Spirofluorene, and [6.6]Vespirene. Interpretation of the Circular Dichroism Spectrum of [6.6]Vespirene [*J. Am. Chem. Soc.*, **99**, 6861 (1977)]. By JACOB SAGIV,* AMNON YOGEV, and YEHUDA MAZUR, Department of Isotopes and Department of Organic Chemistry, The Weizmann Institute of Science, Rehovot, Israel.

Page 6868, column 1, line 1 should be: "... fluorene transitions lead to *z*- and *y*-polarized exciton pairs having opposite sign in the CD spectrum, while the transversal *x*-polarized bands ...".

Page 6868, column 2, line 13: the phrase "... while bands of symmetry A lead to positive $\Delta\epsilon$ " should be omitted. This part of the sentence was printed twice.

Page 6869, ref 36 should read as follows: "Note that $G = 7.6$ corresponds to an angle $\phi \approx 40^\circ$, while x-ray determinations²⁶ show ϕ to be 63° ...".

Crystal and Molecular Structure of Perfluorobenzof[1,2:3,4:5,6]tricyclobutene [*J. Am. Chem. Soc.*, **99**, 6916 (1977)]. By RANDOLPH P. THUMMEL,* JAMES D. KORP, IVAN BERNAL, RICHARD L. HARLOW, and R. L. SOULEN, Departments of Chemistry, University of Houston, Houston, Texas 77004, University of Texas, Austin, Texas 78712, and Southwestern University, Georgetown, Texas 78626.

We would like to point out that a parallel study [R. E. Cobbleidick and F. W. B. Einstein, *Acta Crystallogr., Sect. B*, **32**, 1908 (1976)] on the same system carried out at room temperature shows an excellent agreement of structural parameters.

New Synthetic Reactions. Stereoreversed Cyclobutanone Formation Utilizing Selenoxide as a Leaving Group [*J. Am.*

Chem. Soc., **99**, 7601 (1977)]. By BARRY M. TROST* and PAUL H. SCUDDER, Department of Chemistry, University of Wisconsin, Madison, Wisconsin 53706.

Table I, last entry should read <2 (Normal) and >98 (Reverse).

On p 7604 (2nd column, 4th and 5th lines from bottom) and in Table VI, compound no. **9** and **10** should be **29** and **30**.

7 should be



On the Regioselectivity of the Catalyzed and Uncatalyzed Diels-Alder Reaction [*J. Am. Chem. Soc.*, **99**, 8816 (1977)]. By BARRY M. TROST,* JOACHIM IPPEN, and WILLIAM C. VLADUCHICK, Department of Chemistry, University of Wisconsin—Madison, Madison, Wisconsin 53706.

Page 8117, Table I: The ratio for entries 3, 4, and 6 in the last column should have appeared as $>50:<1$ not as $>50:<31$.

Book Reviews*

Advances in Heterocyclic Chemistry. Volume 21. Edited by A. R. KATRITZKY and A. J. BOULTON. Academic Press, New York, N.Y. 1977. ix + 486 pp. \$49.00.

The selection in this latest addition to the series consists of four chapters on structures not reviewed before, three on classes that have been reviewed before (in this series or elsewhere) and are thus updating contributions, and one on a reaction type.

Tellurophenes and thienopyridines are relatively new subject areas and thus have required only short reviews. The cyclic peroxides, 1,2-dioxetanes, and cyclic hydroxylamines, isoxazolidines, are almost as new to the research world, and also needed only short chapters for thorough review. Another chapter reviews pyrrolopyrimidines, the chemistry of which has burgeoned in the last 20 years. A short chapter on oxazolones brings that subject up to date since it was originally reviewed in this series in 1965. The chemistry of tetrazoles, the last major review of which appeared in 1965 in Elderfield's "Heterocyclic Compounds" series, requires over 100 pages to bring the subject abreast of the times. Finally, [2 + 2] cycloaddition and cycloreversion is the subject of a substantial chapter which concentrates on those examples in which a heterocyclic nucleus is itself one partner in cycloaddition.

The chapters have been contributed by thirteen experts from six countries. They have done a generally fine job, although unfortunately not all of them have disclosed the date on which their literature searches terminated.

Analysis of Essential Oils by Gas Chromatography and Mass Spectrometry. By YOSHIRO MASADA (Kyoto College of Pharmacy). Wiley/Halsted Press, New York, N.Y. 1976. ix + 334 pp. \$37.50.

This is actually a second, revised edition of a book first published in Japanese in 1968. The bulk of the book (90%) is in English this time. The author's prime motivation for this edition was the large amount of new information that has accumulated, and the greatly increased application of the methods. Most of the book takes up individual essential oils, such as sage oil, in arrangement according to botanical source. For each is given a one-page general description, including origin, significance, use, etc., tables of physical constants, mass spectra

of some components, a full-page gas chromatogram taken by the author, and an extensive bibliography. This part is all in English with a short Japanese summary for each oil. Part Two of the book consists of short, general discussions of essential oils, gas chromatography, and mass spectrometry in Japanese. An untitled appendix lists a large number of component compounds by name and structure, in no discernible order, with their boiling points and relative retention times (limonene = 1.00).

Analysis and Testing of Adhesive Bonds. By G. P. ANDERSON, S. J. BENNETT, and K. L. DEVRIES. Academic Press, New York, 1977. xviii + 255 pp. \$21.00.

This book is oriented toward engineering and is primarily concerned with fracture mechanics. Of interest to chemists is Chapter 5, "Chemical and Physical Aspects of Adhesive Fracture."

Analytical Aspects of Mercury and Other Heavy Metals in the Environment. Edited by R. W. FREI and O. HUTZINGER. Gordon and Breach, New York, N.Y. 1976. vii + 196 pp. \$19.50.

This book is a response by analytical chemists to the rise in concern with contamination and the many questions that it has raised about validity of past results, reliability and precision of present methods, suitability of methods to a particular application, sampling methods, etc. It is a collection of reviews contributed by an international assortment of chemists. In addition to the assessments of different analytical methods, there is an attempt to place the subject in perspective. In the opening chapter, for example, it is pointed out that the earth receives an estimated 100,000 tons of mercury in rain and snow annually, arising largely from the natural transport of surface deposits of mercury ores. There are extensive bibliographies, and some experimental directions. The lack of an index is noticeable.

The Chemistry and Technology of Leather. Volume 4. Edited by F. O'FLAHERTY, W. J. RODDY, and R. M. LOLLAR. Robert E. Krieger Publishing Co., Huntington, N.Y. 1977. viii + 440 pp. Price ?

This volume originally appeared in 1965 as part of the ACS Monograph Series. It has been out of print, but has now been reprinted by a new publisher. It is largely devoted to analytical aspects of leather and its processing.

* Unsigned book reviews are by the Book Review Editor.