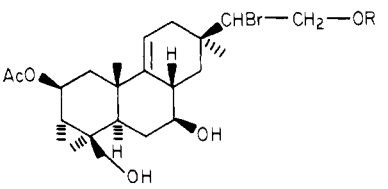
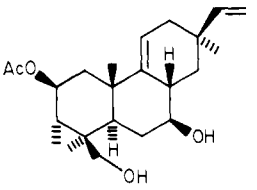
Additions and Corrections

Marine Natural Products: Parguerol, Deoxyparguerol, and Isoparguerol. New Brominated Diterpenes with Modified Pimarane Skeletons from the Sea Hare *Aplysia dactylomela* [*J. Am. Chem. Soc.* **1982**, *104*, 6415]. FRANCIS J. SCHMITZ,* DENNIS P. MICHAUD, and PAUL G. SCHMIDT

Page 6416, Chart II: Structures **8** and **16** should have a β-angular methyl group at C-10. Structure "T" should be **11** with a vinyl group at C-13 indicated with a wedge.

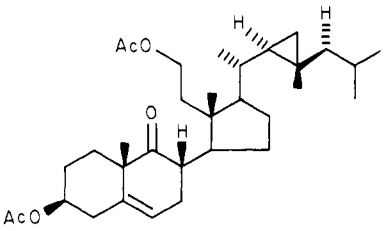


8, R = H
16, R = Ac



11

Page 6418, Chart III: The 8β-substituent in structure **22** should be H instead of CH_3.



22

Book Reviews

Marine Natural Products. Chemical and Biological Perspectives. Volume V. Edited by P. J. Scheuer (University of Hawaii). Academic Press, New York. 1983. xviv + 442 pp. $69.50.

The fifth volume in Paul Scheuer's series on marine natural products continues not only the format of the earlier volumes but also the high quality of its predecessors. Each of the seven chapters is written by an active worker in the field reviewed and each is well written and extraordinarily free of typographical errors.

The first two chapters deal with chemotaxonomy of sponges and biosynthesis of marine metabolites, respectively, and may be of more interest to specialists in these areas than to organic chemists. The chapter on chemotaxonomy presents an array of interesting structures, many of which have been isolated quite recently, but the bulk of the discussion centers around the specific sources of these compounds and possible relationships between species. K. D. Barrow's chapter on biosynthesis illustrates graphically the difficulties associated with this field of research, which is still in its infancy, and provides an introduction to the limited amount of work which has been done.

Chapters 3 through 6 are devoted to the chemistry of dineoflagellate sterols, constituents of the genus *Laurencia*, marine indoles and echinoderm saponins. While all of these chapters are informative well-written reviews of the classes of compounds discussed, K. L. Erickson's chapter on *Laurencia* constituents and D. J. Burnell and J. W. ApSimon's on saponins were particularly interesting to this reviewer. The genus *Laurencia* has proven to be a rich source of structurally interesting natural products, particularly terpenes, and Erickson's chapter provides an excellent comprehensive and timely review of the field. The chapter on Echinoderm saponins provides an interesting review of an area in which many apparent natural products have been found to be artifacts arising during isolation. This review is particularly important since many of these artifacts have been incorrectly reported in earlier work as natural products.

The final chapter is a fairly short review and tabulation of marine biopolymers, many of which show quite interesting biological activity. This chapter will probably appeal more to specialists in the field than to organic chemists in general.

This excellent book should be of interest to any chemist specializing in nautral products and certain chapters will also be of interest to marine biologists and biochemists. It is to be hoped that succeeding volumes in this series continue to maintain the standard of excellence of this volume and its predecessors.

John W. Huffman, *Clemson University*

Advances in Chemical Physics. Volume 53. Edited by I. Prigogine (University of Brussels) and S. A. Rice (University of Chicago). John Wiley & Sons, New York. 1983. ix + 402 pp. $55.00.

Volume 53 of this well-established series contains 4 articles. Egelstaff provides a critical review of New Experimental Studies of the Structure of Fluids, with emphasis on X-ray and neutron diffraction. Experiments on krypton have demonstrated the importance of three-body and higher-order terms in the intermolecular potential, and the author stresses the need for computer simulations and analytic theories taking these terms into account. Adelman has written a long and informative article on Chemical Reaction Dynamics in Solution. His treatment of condensed-phase chemical reaction dynamics is based on the so-called molecular-time-scale generalized Langevin-equation-method The fundamental idea is to describe the dynamics of the reacting species plus 1 or 2 solvation shells in detail; the effect of the bulk solvent is then modeled as a he-

atbath. Applications of the method to treat dynamics of I_2 recombination in CCl_4 and ethane are reviewed. The article by Collins on Solitons in Chemical Physics is particularly timely in view of intense current interest in nonlinear dynamics. Solitons in 1d spin systems, the Φ^4 model, molecular crystals, polyacetylene, and atomic lattices are considered, and there is a very stimulating discussion of the possible applicability of these concepts to problems of intramolecular dynamics. The contribution of Pfeifer, A Deductive Approach to Reduced Dynamics and Entropy in Finite Quantum Systems, deals with the venerable problem of the description of irreversibility in finite closed quantum systems. The exposition is mathematical but clear. In summary, this volume contains four articles of exceptional interest, even when judged by the exalted standards of the series.

Gregory Ezra, *Cornell University*

Advances in Molten Salts Chemistry. Volume 5. Edited by G. Mamantov (University of Tennessee). Elsevier Science Publishers, Amsterdam and New York. 1983. x + 280 pp. $85.00.

The topics included in this volume are the following: structural investigations of molten salts by diffraction methods (Enderby and Biggins); vibrational spectroscopy of molten salts and related glasses and vapors (Brooker and Papatheodorou); room temperature molten salt systems (Hussey); and the extraction of metals by molten salt electrolysis of sulfides (Minh and Yao). The first topic critically examines and reviews what is known about the structure of molten salts from investigations based principally on neutron diffraction, X-ray scattering, Raman spectroscopy, and X-ray absorption and fine structure (EXAFS) measurements. The advances since 1970 have shown that the preferred structural analyses for solids (neutron diffraction; X-ray diffraction) are now able to yield experimental results for liquids that can be compared with theoretical predictions at remarkable levels of detail. The review is both authoritative and timely. The topic of structural investigations is continued in the second contribution, but more from the viewpoints of the vibrational spectroscopist. The number of citations (more than 600 references) confirms the rapid progress in this field. This has been possible largely due to advances in the past decade in two areas, namely the emergence of new data acquisition techniques and the refinements in instrumentation leading to more reliable spectrometers. Results are critically assessed and concisely reviewed. This contribution provides a benchmark for those wishing to relate advances in this area of molten salts to the results from other methods. The subject of the third topic in this volume is that of molten salts that are liquid in the range of room temperatures (~25 °C). The salt systems in this review fall largely into three categories: haloaluminates, chlorocuprates, and tetraalkylborides. A wide range of physicochemical, electrochemical, and spectroscopic techniques have been used in the recent period to characterize these systems from the fundamental aspects as a class of novel solvents and to evaluate their potential as candidates for advanced concepts in energy storage and in electroplating. The present review examines the accomplishments in this area from these viewpoints. The scope has been limited to anhydrous room temperature molten salt systems, i.e., hydrate melts and the closely related range of ultra-concentrated aqueous solutions are excluded. In the fourth topic, the state of the art of extractive electrolysis of molten sulfides, and multicomponent salt systems containing sulfides, is developed. This is done through an informative summary of accomplishments in this area of molten salt chemistry; it is clear that while this approach has been demonstrated as feasible for the extraction of a variety of nonferrous and ferrous metals, many practical problems remain. This will continue as an area of interest for some time to come.

Experts and nonexperts will find this volume informative and useful.

George J. Janz, *Rensselaer Polytechnic Institute*

Joseph Black, 1728–1799, A Commemorative Symposium. Edited by A. D. C. Simpson (Royal Scottish Museum). The Royal Scottish Museum, Edinburgh. 1982. viii + 69 pp. £4.00.

Joseph Black was one of the greatest chemists who ever lived. He discovered carbon dioxide, invented the concept of specific heat, and formulated Black's law for the temperature of mixtures. He was a popular chemistry teacher at the Edinburgh Medical School. His lectures profoundly affected the thinking of James Watt and others who helped to shape modern science. He was also a successful practicing physician. Unless one has just been published, there is no modern, in-depth biography of Black. However, Henry Guerlac, a winner of the Dexter Award of the History of Chemistry Division, has written a biographical sketch of Black for the "Dictionary of Scientific Biography", and numerous other historians have written about the impact of Black's work. This lack of a much needed Black biography makes the publication of these seven important and interesting papers, which were presented at the Royal Scottish Museum in the 250th anniversary year of his birth, welcome to chemists and chemistry teachers. In these papers, obviously, the symposium organizers could not present the balanced view of Black a biographer would have. However, they have succeeded in highlighting some facets of the man's life and work. The papers include an outline biography, discussions of the philosophical background of Black's work, science in Scottish Universities of Black's time, his career as a physician, his work on heat, and his chemistry teaching and how it was profoundly influenced by Lavoisier. Black was converted from a firm belief in the phlogiston theory to the new chemistry of Antoine Lavoisier, and this is shown by a study of how the notes of Black's lectures changed over the years. The illustrations selected by the editor greatly enhance the effectiveness of this collection of papers.

Chemists, teachers, and historians of chemistry owe a debt to gratitude to the Royal Scottish Museum for arranging to have these valuable papers edited and published.

Daivd H. Kenny, *Michigan Technological University*

Organometallic Chemistry. Volume 11. Edited by E. W. Abel (University of Exeter) and F. G. A. Stone (University of Bristol). The Royal Society of Chemistry, London. 1983. xvi + 549 pp. £77.00.

This volume of the "Specialist Periodical Reports" surveys the literature for the calender year 1981. The one exception is Chapter 16, Organometallic Compounds in Biological Chemistry, which covers 1980 and 1981. As stated in the Foreword, this volume is similar in format to previous volumes and the "authors remain under pressure to condense the continued growth of the literature of organometallic chemistry". Thus, there is little critical appraisal of the work covered.

The 17 chapters are arranged as follows: Group I: The Alkali and Coinage Metals (J. L. Wardell); Group II: The Alkaline Earths and Zinc and its Congeners (J. L. Wardell); Group III: Boron (J. H. Morris); The Carbaboranes, including their Metal Complexes (J. B. Leach); Group III: Aluminum, Gallium, Indium, and Thallium (P. G. Harrison); Group IV: The Silicon Group (D. A. Armitage); Group V: Arsenic, Antimony, and Bismuth (J. L. Wardell); Metal Carbonyls (J. A. Connor); Organometallic Compounds containing Metal–Metal Bonds (B. T. Heaton); Substitution Reactions of Metal and Organometal Carbonyls with Groups V and VI Ligands (D. A. Dwards); Sigma-Bonded Organometallic Compounds of Transition Elements of Groups IIIA to VIIA (D. J. Cardin and R. J. Norton); Complexes containing Metal–Carbon σ-Bonds of the Groups Iron, Cobalt, and Nickel (A. K. Smith); Metal–Hydrocarbon π-Complexes (J. A. S. Howell); π-Cyclopentadienyl, π-Arene, and Related Complexes (W. E. Watts); Homogeneous Catalysis by Transition-metal Complexes (C. White); Organometallic Compounds in Biological Chemistry (B. Ridge); Diffraction Studies of Organometallic Compounds (I. W. Nowell).

The major strengths of this book are its organization and thorough coverage of the literature. Thus, for the practicing organometallic chemist, it is relatively simple to survey what has been done in a particular area of interest. Eight of the chapters contain Bibliographies which list references (and titles) of pertinent work not explicitly mentioned in the text of the chapter. This, presumably, is in keeping with the "pressure to condense" philosophy.

The comprehensive nature of the book makes it an indispensable reference book for the organometallic chemist.

Michael Lattman, *Southern Methodist University*

Annual Reports on the Progress of Chemistry. Volume 78. 1981. Section A, Inorganic Chemistry. Senior Reporter: J. D. Donaldson (The City University, London). The Royal Society of Chemistry, London. 1981. xvi + 390 pp. $95.00.

The 13 chapters of this report follow the pattern that has been established in the past with two major exceptions. The traditional separate chapter on organometallic chemistry has been deleted. The authors of the reviews on individual elements now cover organometallic chemistry in their chapters. The second major change is the addition of a chapter dealing with advances in industrial chemistry. The topics to be covered in this chapter will vary from year to year. The present chapter treats the following subjects: chlor-alkalis, inorganic fertilizers, sulfuric acid, other sulfur compounds, industrial gases, hydrogen peroxide and persalts, halogens, boron, aluminum, silicon, nitrogen, phosphorus, arsenic and antimony, metal compounds, pigments, and electronic chemicals. The addition of a chapter on industrial inorganic chemistry is appropriate. Teachers of chemistry who are cognizant of the need for introducing industrial chemistry to students should welcome this timely and concise resource.

The remaining subject-matter chapters cover s- and p-block elements (Chapters 2–5), d- and f-block elements (Chapters 7-11), and radiochemistry (Chapter 12). This volume also welcomes a new senior reporter.

The prose throughout the report is soporifically concise and, by design, noncomprehensive. Nevertheless, this series of reports continues to be a valuable tool in the armament of chemists who wish to wage the relentless battle of "keeping up with the literature".

B. Jack McCormick, *Wichita State University*