

Additions and Corrections

On the Origin of Proximity Effects on Reactivity: A Modified MM2 Model for the Rates of Acid-Catalyzed Lactonizations of Hydroxy Acids [*J. Am. Chem. Soc.* 1987, 109, 3698]. ANDREA E. DORIGO and K. N. HOUK*

In the calculation of transition-state energies, some of the dipole moments were read in with the right magnitude but the wrong sign, due to the use of an equivalence statement and the convention in the MM2 code for assigning dipole moments. Specifically the lp (lone pair)-O₂, H-O₂, lp-O₃, and C-O₁ bonds defined in Figure 10 of the paper were assigned values of μ equal to +0.9, -1.115, +0.9, and -0.44 D, but they should have the opposite signs. In order to avoid this problem, the dipole moments must be defined, not obtained by equivalence statements. The activation energies derived with these correct dipole moments support the conclusions of the paper and are listed in the following publication: Dorigo, A. E., Houk, K. N. *Advances in Molecular Modeling*; Liotta, D., Ed.; JAI Press: Greenwich, CT, 1988; Vol. I, pp 135-188. We thank Professor Frederic Menger and Michael Sherrod (Emory University) for discussions which caused us to locate this problem.

Book Reviews*

Physical Methods of Chemistry. Second Edition. Volume IIIA. Determination of Chemical Composition and Molecular Structure, Part A. Edited by Bryant H. Rossiter (ICN Pharmaceuticals, Inc.) and John F. Hamilton (Eastman Kodak Company). John Wiley and Sons: New York. 1987. xi + 624 pp. \$110.00. ISBN 0-471-85041-1.

This volume contains a collection of chapters covering a wide range of techniques and methods for the determination of structure or composition of materials. The intended audience for the book is "intelligent scientists, technically trained but perhaps inexperienced in the topic to be discussed" and the intent is to provide that audience with a resource from which it can be easily determined if the method or technique discussed would be of use in any work that is contemplated. On the whole, this objective seems to have been achieved. Each chapter begins with some introductory material and is followed by a brief discussion of the theoretical background needed for an understanding of the material presented later and some discussion of the instrumentation required along with costs for the equipment in about 1983 dollars. The presentations are readable with only a few typographical errors and do not seem to assume too much about the background of the reader.

The chapters in the book are "Infrared and Raman Spectroscopy" by James R. Durig and Joann F. Sullivan, 131 pages with 234 references; "Rotational Spectroscopy" by Marlin D. Harmony and Alice M. Murray with 60 pages and 72 references and a bibliography of 15 books related to theory and experiment; "Atomic Spectrometry Methods" by James D. Winefordner and Michael S. Epstein with 234 pages and 155 references; "Neutron Activation Analysis" by Vincent P. Guinn with 78 pages and 36 references; "Mass Spectrometry: Principles of Instrumentation and Techniques" by John Roboz with 69 pages and 184 references; "X-Ray Spectrometry" by L. S. Birks and John V. Gilfrich with 37 pages and 16 references; and "Radiotracer Techniques" by Jan Rydberg and Gregory R. Chopin with 85 pages and 36 references.

Norman E. Heimer, *University of Mississippi*

Heterogeneous Catalysis: Principles and Applications. Second Edition. By G. C. Bond (Brunel University). The Clarendon Press, Oxford University Press: New York. 1987. x + 176 pp. \$39.95. ISBN 0-19-855526-1.

Basic theoretical principles of heterogeneous catalysis are discussed throughout the thirteen chapters of this elementary textbook. Each chapter is followed by a number of challenging questions directed toward the student reader. A bibliography of selected books and review articles

pertinent to each chapter is included at the end of the book. Chapters 1 through 6 present fundamental aspects of chemisorption and catalysis on metals and oxides. Chapter 5 deals with the kinetics of catalyzed reactions. Chapter 7 discusses the preparation and use of various catalysts, while the remaining six chapters are devoted to major applications of catalyzed reactions in the heavy chemical industry. For example, topics in these chapters include the manufacture of synthesis gas and derived chemicals; catalytic cracking and reforming of petroleum; the manufacture of alkenes and their reactions and isomerizations; the synthesis and oxidation of ammonia; and the role of catalysts in atmospheric pollution control. Less than 1 page is devoted to the use of heterogeneous catalysis in the fine-chemicals industry. Consequently, some catalytic reactions of great utility to synthetic organic chemists, such as reduction of nitro compounds, nitriles, ketones, double bonds, and the techniques involved, are not discussed in any detail. However, the book does contain a wealth of fundamental concepts in heterogeneous catalysis that would be of value particularly to synthetic organic chemists who may have received little training in these concepts. The book is interesting, well organized, and well written and it certainly deserves to be within reach of those persons who often in the course of their work reach for heterogeneous catalysts.

Allan Hydorn, *Warner-Lambert Company*

The Alkaloids. Volume 27. Edited by Arnold Brossi (National Institutes of Health, Bethesda, Maryland). Academic Press, Inc.: Orlando, Florida. 1986. ix + 437 pp. \$95.00. ISBN 0-12-469527-2. Also available in softcover: \$69.95. ISBN 0-12-469527-2.

This volume is a valuable addition to the series in that it serves to inform one of recent advances made in various areas of alkaloid chemistry. The book is divided as follows: Chapter 1, Alkaloids from *Tabernaemontana*, by B. Daneli and G. Palmisano; Chapter 2, Corynantheine, Yohimbine and Related Alkaloids, by C. Szántay, G. Blakö, K. Honty, and G. Dörnyei; Chapter 3, Pyrrolidine Alkaloids, by G. Massiot and C. Delaude; and Chapter 4, Metabolic Transformations of alkaloids, by J. P. N. Rosazza and M. W. Duffel.

The first chapter (*Tabernaemontana* Alkaloids) is, in essence, an updated review on this family of alkaloids. Initial discussions focus upon the skeletal variations derivable from tryptophan and secologanine, of which this large family of compounds is comprised. Table I lists over several hundred entries documenting the presence of these alkaloids in plant species. Table II correlates specific compounds with their melting points and species of origin and gives reference to previous volume(s) of *The Alkaloids* series. The rest of the chapter is dedicated to isolation

*Unsigned book reviews are by the Book Review Editor.