Additions and Corrections

The Bicarbonate Proton in Carbonic Anhydrase Catalysis [*J. Am. Chem. Soc.* **1983**, *105*, 980]. Y. Pocker* and Thomas L. Deits

Page 984, legend to Figure 3: the concentration values should read $[HCO_3^-] = 0$ (●), 2.24×10^{-2} M (■), 3.25×10^{-2} M (▲), 7.56×10^{-2} M (♦).

The error is one of transcription and alters none of the data in the remainder of the manuscript, nor the conclusions reached.

Regiochemistry, Stereochemistry, and Mechanism of Addition of Trifluoroacetic Acid to (*Z*)-Cyclooctene [*J. Am. Chem. Soc.* **1984**, *106*, 1427]. J. Eric Nordlander,* Kirtivan D. Kotian, Dwight E. Raff, II, F. George Njoroge, and Jeffry J. Winemiller

Page 1428: The mean-value bars in footnote 13 are misplaced. The footnote should read:

(13) Let t_p = the time of exposure to the reaction medium of product ester formed at a given concentration of reactant **1** and t_{99} = the time for 99% completion of the addition reaction. Then

$$t_p = t_{99} - (1/k)\ \ln\ ([\mathbf{1}]_0/[\mathbf{1}])$$

$$\bar{t}_p = -(0.99[\mathbf{1}]_0)^{-1} \int_{[\mathbf{1}]_0}^{0.01[\mathbf{1}]_0} t_p\, d[\mathbf{1}] = 0.793 t_{99}$$

The correct equations were used for the calculations in the article.

Organolanthanide and Organoyttrium Hydride Chemistry. 6. Direct Synthesis and ^{1}H NMR Spectral Analysis of the Trimetallic Yttrium and Yttrium–Zirconium Tetrahydride Complexes, $\{[(C_5H_5)_2YH]_3H\}\{Li(THF)_4\}$ and $\{[(CH_3C_5H_4)_2YH]_2[(CH_3C_5H_4)_2ZrH]H\}$ [*J. Am. Chem. Soc.* **1984**, *106*, 4454–4460]. William J. Evans,* James H. Meadows, and Timothy P. Hanusa

Page 4458: Several of the coupling constants listed in the caption to Figure 4 are incorrect. The caption should read as follows:

High-field resonances of the 500-MHz ^{1}H NMR spectrum of $\{[(CH_3C_5H_4)_2YH]_2[(CH_3C_5H_4)_2ZrH]H\}$ (**5**): (a) observed spectrum in C_6D_6; (b) simulated spectrum using $^2J_{AB} = 1$ Hz, $^2J_{AC} = 7.6$ Hz, $^1J_{AY} = 15$ Hz, $^2J_{BC} = 14.9$ Hz, $^1J_{BY} = 20$ Hz, $^3J_{BY} = 2$ Hz, $^1J_{CY} = 14.9$ Hz, $J_{BB} = 5$ Hz, $J_{YY} = 3.5$ Hz, and line width = 2.9 Hz.

The coupling constants cited in the text are correct and were used in calculating the simulated spectrum.

Quantum Chemical Calculation of the Enzyme–Ligand Interaction Energy for Trypsin Inhibition by Benzamidines [*J. Am. Chem. Soc.* **1984**, *106*, 4584]. Gábor Náray-Szabó

Plots in Figures 3–5 should be corrected. It is the whole molecule rather than the C_6H_4X moiety for which the calculated electrostatic interaction (Figure 3), hydration (Figure 4), and net binding (Figure 5) energies should be plotted vs. ΔG_{exptl}. Consequently, the horizontal energy scales in these figures are in error. However, the fair correlation is maintained even if the correct values from Table III are used in the plots.

Book Reviews[*]

Homogeneous Catalysis with Metal Phosphine Complexes. Edited by Louis H. Pignolet (University of Minnesota). Plenum, New York. 1983. XVI + 489 pp. $69.50.

The field of transition-metal catalysis has undergone an incredible growth during the past decade, and industrial uses of homogeneous catalysts are increasing. This up-to-date, timely treatise by experts in the field provides an excellent survey of the techniques and methodology required to determine catalytic reaction pathways by using a case-study approach.

Following a delightful first-hand account of the history of phosphine complexes by Joseph Chatt (10 pages) is a thorough, detailed, and knowledgeable survey of mechanistic studies of catalytic reactions using spectroscopic and kinetic techniques, by C. A. Tolman and J. W. Faller (98 pages). Then, in sequence, Nancy L. Jones and James A. Ibers discuss structurally characterized transition-metal phosphine complexes of relevance to catalytic reactions (22 pp). John M. Brown and Penny Chaloner treat asymmetric hydrogenation reactions using chiral diphosphine complexes of rhodium (26 pp). Alan L. Balch discusses binuclear phosphine bridged complexes: progress and prospects (43 pp). Alan R. Sanger discusses hydrogenation and hydroformylation reactions using binuclear diphosphine-bridged complexes of rhodium (19 pp). Thomas B. Rauchfuss discusses functionalized tertiary phosphines and related ligands in organometallic coordination chemistry and catalysts (16 pp). Devon W. Meek discusses polydentate ligands and their effects on catalysis (36 pp). Robert H. Crabtree discusses cationic rhodium and iridium complexes in catalysis (17 pp). Bálint Heil, Lászlo Markó, and Szilárd Törös discuss hydrogenation reactions of CO and CN functions using rhodium complexes (21 pp). Daniel H. Doughty and Louis H. Pignolet discuss decarbonylation reactions using transition-metal complexes (29 pp). D. Max Roundhill discusses homogeneous catalysis of oxidation reactions using phosphine complexes (22 pp). T. Adrian George discusses catalysis of nitrogen-fixing model studies (31 pp). Finally, Norman L. Holy discusses polymer-bound phosphine catalysts (37 pp).

The style is uniform, enjoyable, and comprehensible throughout, and the book is well referenced (1591 references) and indexed. This book will be widely read by the organometallic community.

John H. Nelson, *University of Nevada, Reno*

NMR in Molecular Biology. By Oleg Jardetzky and G. C. K. Roberts. Academic Press, New York. 1981. 681 pages. $70.00.

The role of NMR in biochemistry, physiology, and medicine has undergone rapid expansion in the 1970's linked to advances in Fourier transform techniques and superconducting magnet technology. Drs. Jardetzky and Roberts have prepared a critical and detailed survey of biophysical NMR studies of proteins, nucleic acids, and lipid membranes. NMR studies of integrated systems of physiological or medical interest are generally not covered. This monograph is a welcome addition to texts of the last decade on the same subject by Dwek (1973) and James (1975).

While not intended as a source text on theoretical aspects of NMR, the opening three chapters (140 pages) contain a discussion of relevant theory, dealing primarily with spin relaxation and molecular motion, paramagnetic interactions, and chemical exchange phenomena. These chapters provide a critical and rather detailed review of approaches that have been used in biochemical systems. They are intended for reference as opposed to pedagogy, however, and do not convey physical content as well as other recent, more physically oriented texts. Subsequent chapters systematically review structural and dynamical studies of amino acids and peptides (Chapter 5), nucleic acid bases, nucleosides, and nucleotides (Chapter 6), peptides and proteins (Chapters 7 and 8), and protein dynamics (Chapter 11).

The characterization of enzyme mechanisms and ligand binding sites

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[*] Unsigned book reviews are by the Book Review Editor.