Additions and Corrections

Fluorine-Substituted Ferracyclopentadiene Complexes with an Unprecedented Fluorine Bridge between Boron and Carbon [*J. Am. Chem. Soc.* **1990**, *112*, 461]. CHAD A. MIRKIN, KUANG-LIEH LU, GREGORY L. GEOFFROY,* and ARNOLD L. RHEINGOLD

The formulation of compounds **2a,b** as fluorine-substituted ferracyclopentadienes with fluorine atoms bridging between boron and carbon atoms is incorrect. Instead of fluorine, the molecules have hydroxy substituents on the ferracyclopentadiene rings that are coordinated by the Lewis acid BF_3 and hydrogen bonded to the nitrogen atoms of the imine substituents. The initial conclusion of fluorine bridges was based on the crystal structures of the two molecules and was consistent with the preliminary spectroscopic data. However, it is well-known that X-ray crystallography does not distinguish well between fluorine and oxygen atoms because of similar scattering factors, although initially we had no reason to suspect the presence of a hydroxy group. Subsequent detailed spectroscopic analysis revealed inconsistencies with the initially proposed structure and instead led to the correct formulation of the compounds as hydroxy-substituted ferracyclopentadienes. Complete details will be reported in a full paper.

Structure and Basicity of Silyl Ethers: A Crystallographic and ab Initio Inquiry into the Nature of Silicon–Oxygen Interactions [*J. Am. Chem. Soc.* **1990**, *112*, 697–703]. SOROOSH SHAMBAYATI, JAMES F. BLAKE, SCOTT G. WIERSCHKE, WILLIAM L. JORGENSEN,* and STUART L. SCHREIBER*

Page 698: Figures 2 and 3 are mislabeled. The figure captions reading Figure 2 and Figure 3 should be interchanged.

Page 699: Entry 3 in Table I should read $H_3SiOSiH_3$ instead of H_3SiSiH_3.

Book Reviews

NMR: Principles and Applications to Biomedical Research. Edited by Jay W. Pettegrew (University of Pittsburgh School of Medicine). Springer-Verlag: New York. 1990. xvi + 618 pp. $69.00. ISBN 0-387-97094-0.

This book is somewhat schizophrenic in its attempt to, as the editor states in the preface, "...review the fundamental theory and principles needed to understand selected aspects of NMR and then demonstrate the application of these principles to important unsolved biomedical research questions". Undoubtedly a split personality is a problem for any book that endeavors to cover basic principles and medical applications in a single volume, because the field is simply too vast for such a treatment.

The first four chapters are dedicated to basic principles, relaxation theory, 2D, NMR, and solids. Each of these chapters is independently well written. In an excellent first chapter (Principles of Pulse NMR Spectroscopy), Professor Farrar describes the classical picture of NMR using both the Bloch and Bloembergen points of view. Basic concepts of the rotating frame, relaxation, and several fundamental pulse experiments are covered. This is a good, understandable introduction for a medical worker with limited background. However, it does not cover coupled spin systems in the rotating frame, and this topic is not explained in any of the other chapters, but is assumed knowledge for the purposes of Professor Bothner-By's excellent chapter introducing 2D NMR. Bothner-By's presentation is exceptionally lucid and immensely appropriate for the less well-versed medical researcher. His chapter is the most understandable description of 2D NMR for beginners that I have yet encountered. Dr. Woessner's chapter on relaxation is particularly appropriate in that it stresses water and aqueous sodium ions as examples of systems undergoing primarily dipolar and quadrupolar relaxation, respectively. These subjects both are important to later chapters on imaging and ion transport. Dr. Frye's chapter on solids NMR is well written and an excellent introduction to the principles and methods of solids NMR that is necessary for understanding later chapters involving work on membranes and metal accumulation in the brain. This chapter is also particularly appropriate since I anticipate that we shall witness an explosion in the use of solids NMR techniques for studying larger biomolecules in the coming years.

A chapter is dedicated to artificial intelligence techniques used in 2D experiments, which is primarily a description of the PROTEAN program developed at Stanford. In that chapter, NMR determination of the structure of a small cytochrome (b_{562}) is described. The organization of this book is such that the two chapters describing 2D spectroscopy, one a simplified discussion of the underlying principles (by Bothner-By) and the other a simple application (Jardetzky et al.), stand out somewhat like unwanted stepchildren. Although well written and informative in their own right, they seem, in this context, to be unrelated to the more medical subjects that are the apparent primary concern of this book.

In my opinion the value of this book for readers of *J. Am. Chem. Soc.* lies in the remainder of the chapters presented here. What I mean by this statement is that this book will probably be of most value for NMR-familiar people who wish illustrations of selected applications, problems, and procedures involving studies of clinical importance. (Good introductions to NMR theory and practice can be found in many places where more justice is done to them than here.) Those remaining spectroscopy chapters provide reasonably current descriptions of NMR spectroscopy uses in the context of clinically relevant themes. An introduction to surface coils is provided as well as chapters that include ^{31}P