solutions in isopropylamine–diethyl ether mixtures. The magnetic susceptibility of Cs18C6 crystals was measured from 1.7 to 270 K with an SHE Corp. Model VTS Squid susceptometer. The compound is essentially diamagnetic, with only about 1% unpaired spins. Single-crystal EPR spectra show the presence of two overlapping lines. One has $g = 2.0023$ and a line width of ~0.75 G, independent of temperature from −135 to +51 °C. The other line has a smaller g value (~2.0016) and shows g anisotropy upon rotation. It has a line width that broadens from ~1.25 G at −135 °C to ~3.5 G at +31 °C.

The stoichiometry suggests two possibilities for this compound, $Cs^+18C6{\cdot}e^-$ and $Cs^+(18C6)_2{\cdot}Cs^-$. The former interpretation is favored for three reasons: (1) Previous optical spectra of 1:1 Cs18C6 films did not show the characteristic peak of Cs^- at ~1000 nm[3,5] but rather a single peak at 1500 nm attributed to trapped electrons.[5] When crystals of Cs18C6 were dissolved in methylamine, dry annealed films produced by solvent evaporation also showed only the electride peak at 1500 nm. (2) Crystals of $Cs^+18C6{\cdot}Na^-$ have been synthesized and analyzed.[10] Therefore, if a ceside were to form, one might expect it to have the stoichiometry $Cs^+18C6{\cdot}Cs^-$ rather than $Cs^+(18C6)_2{\cdot}Cs^-$. (3) Polycrystalline samples of Cs18C6 have dc powder conductivities that vary logarithmically with $1/T$. The band gap over the temperature range −54 to +10 °C is ~0.6 eV, thus verifying localization of the electron (or electron pair). This gap appears to be too small for a ceside salt.

These results show that it is possible to prepare stable crystalline samples of stoichiometry Cs18C6. Although the compound could be a ceside salt (if so, this is the first stable ceside), it is more reasonably described as an electride in which the electrons are trapped in potential wells at ~0.6 eV, below the conduction band. Electron spin pairing leads to a diamagnetic ground state. Although the concentration of unpaired spins is high enough to be easily measured, we cannot be certain at this time whether this is an intrinsic bulk property of the pure compound or is the result of defects. Work is in progress to grow better crystals for diffraction studies and to carry out quantitative single-crystal EPR studies.

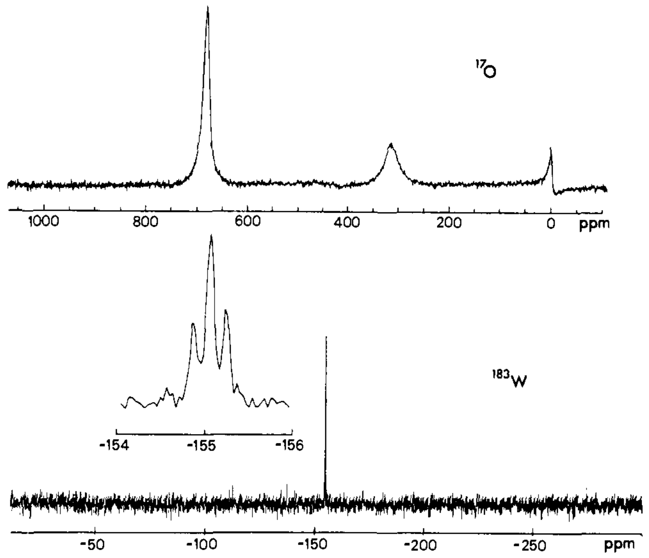
Acknowledgment. This work was supported by the National Science Foundation under Grant No. DMR-79-21979. Funds for part of the cost of the Squid susceptometer were provided by NSF Grant No. DMR 80-12899. We are grateful to Margaret Faber, John Papaioannou, Tim Peterson, and Donald Ward for their help.

Registry No. $Cs^+18C6{\cdot}e^-$, 82065-73-4.

Additions and Corrections

Heteropolypentatungstobisphosphonates. Cyclopentane-Like Pseudorotation of an Oxometalate Structure [*J. Am. Chem. Soc.* **1981**, *103*, 7665–7666]. P. R. SETHURAMAN, M. A. LEPARULO, M. T. POPE,* F. ZONNEVIJLLE, C. BRÉVARD, and J. LEMERLE.

Page 7665: In Figure 2 the line in the ^{183}W NMR spectrum was not reproduced. Figure 2 below shows the missing line.



New Multidentate Ligands. X. Chelating Tendencies of *N,N'*-Diglycylethylenediamine-*N'',N'',N''',N'''*-tetraacetic Acid and Ethylenediamine-*N,N'*-di(acetylglycine)-*N,N'*-diacetic Acid [*J. Am. Chem. Soc.* **1970**, *92*, 4223]. R. J. MOTEKAITIS and A. E. MARTELL.*

It has come to our attention that Figure 3 in this paper was omitted in the final printing process and that the figure that appeared as Figure 3 is a duplicate of Figure 1. Because of this error the results described in our paper have been misinterpreted and our conclusions have been questioned.

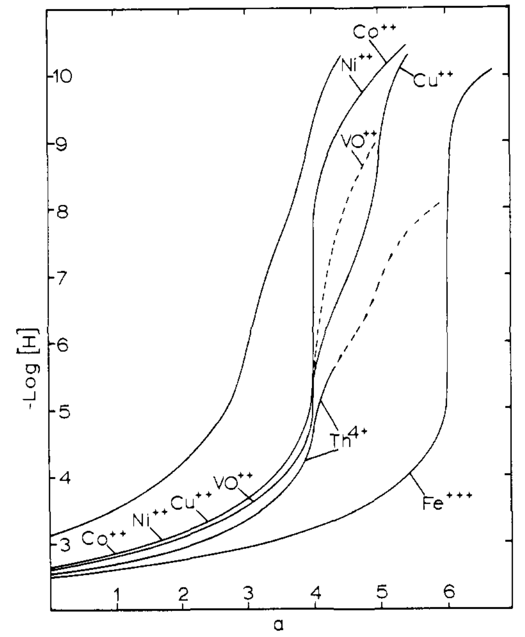
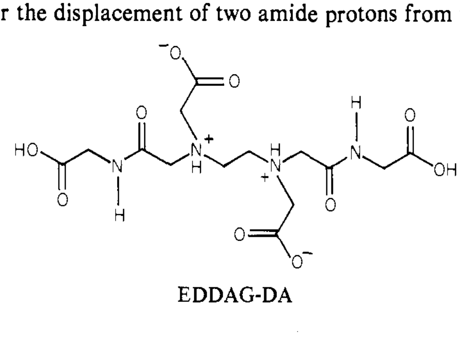


Figure 3. Potentiometric equilibrium curves for 1:1 molar ratios of metal ions to EDDAG-DA: the unlabeled curve represents the titration of pure ligand; broken lines represent precipitation; a = moles of 0.10 M base added per mole of ligand; concentration is 0.0010 M in ligand and metal ion; solution contains 0.10 M KNO_3; t = 25 °C.

The correct Figure 3, presented here, provides experimental proof for the displacement of two amide protons from the ligand EDDAG-DA by the Fe(III) ion to form a very stable Fe(III) chelate compound. This is the first example of the formation



EDDAG-DA

of a stable Fe(III) chelate involving the displacement of amide protons from the ligand.

Displacement Stereochemistry and Product-Formation Selectivities in the Solvolysis of Cyclooctyl *p*-Bromobenzenesulfonate [*J. Am. Chem. Soc.* **1982**, *104*, 201]. J. Eric Nordlander,* Philip O. Owuor, Donna J. Cabral, and Jerome E. Haky.

Several of the values for k_{EtOH}/k_{ROH} reported in Table III are imprecise.

The correct values are given below.

Table III (corrected values)

solvent	unrearranged products	rearranged products
80% EtOH, 20% H_2O	0.65	0.65
60% EtOH, 40% TFE	1.34	1.13
50% EtOH, 50% TFE	0.75	0.86
40% EtOH, 60% TFE	0.67	0.64

Propagation of Redox Reaction through a Quinoid Polymer Film on an Electrode [*J. Am. Chem. Soc.* **1982**, *104*, 28]. M. Fukui, A. Kitani, C. Degrand, and L. L. Miller.*

Captions to Figures 8, 9, 10 were omitted during printing and should be as follows.

Figure 8. Anodic peak currents for electrodes **2** in the presence of 0.2 mM IV. (a) i_p^a for cycle 5 corrected by subtracting i_p^a for cycle 4 and i_p^a for IV on cleaned carbon. (b) i_p^a for cycle 24 corrected by subtracting i_p^a for cycle 25 and i_p^a for IV on cleaned carbon.

Figure 9. Cyclic voltammogram for **2** (Γ_i = 4.8 nmol cm^{-2}) in the presence of 0.2 mM V.

Figure 10. Cyclic voltammogram for **1** in 40% ethanol–60% water. Electrode prepared by dip-coating from a 0.2% solution.

The MNDOC Method, a Correlated Version of the MNDO Model [*J. Am. Chem. Soc.* **1981**, *103*, 1413]. W. Thiel.

Page 1415, Table IV: E_{el}^A for carbon should read −120.133645 eV. The published results are correct since they are based on the parameter value given above.

Oxidation of Ketals to Orthocarbonates: A Double Baeyer–Villiger Reaction [*J. Am. Chem. Soc.* **1982**, *104*, 1769–1771]. William F. Bailey* and Mei-Jue Shih.

Page 1770, Table II, third column: $C_7H_{15}OH$ (**14**) is the alcohol produced from **13**.

Oxidation of Mandelic Acid by Fenton's Reagent [*J. Am. Chem. Soc.* **1982**, *104*, 1185]. Cheves Walling,* Kalyani Amarnath, and Curt B. Campbell.

Dr. Curt B. Campbell's name was inadvertently omitted from the list of authors, which should read Cheves Walling,* Kalyani Amarnath, and Curt B. Campbell.

*Book Reviews**

Environmental Management Handbook for the Hydrocarbon Processing Industries. By James D. Wall (Hydrocarbon Processing). Gulf Publishing, Houston, Texas. vi + 227 pp. $16.95.

This is intended to be "a manual of practices and technologies for managers, designers and environmental specialists...". Unfortunately, it falls far short of this goal. The main problem appears to be poor editing. The "manual" is actually a compilation of presentations and articles, most of which date before 1974. The unevenness in the selections is apparent even in the first technical section, on wastewater treatment. An article on activated carbon use is followed by one on powdered carbon. But no comparison is made between the two. This is followed by State-of-the-Art Wastewater Treatment, dated 1970.

There are some good papers. In the section on wastewater, the contributions from Fluor, Exxon, and Dorr-Oliver on activated-sludge-unit design, mutant bacteria, and incineration, respectively, are well-done and useful. In the air pollution control section, the article by National Air Oil Burner on flares and that by ARCO on flue gas desulfurization are professionally prepared and valuable. Exxon's paper on Thermal de-NO_x describes selective reduction of NO_x, giving performance data as well as problems and prospects for its use. The two preceding papers, also dealing with NO_x emission control, are badly dated; catalytic reduction processes have made significant advances since these were written.

The remainder of the book has articles on odor, noise, and spills. They are interesting but not detailed enough for design nor recent enough to show state-of-the-art. An exception is that on use of lead sheathing for noise control.

Overall, this compilation cannot be recommended as either a practical manual or a status report.

Jack Winnick, *Georgia Institute of Technology*

Biogeochemistry of Amino Acids. Edited by P. E. Hare (Geophysical Laboratory, Carnegie Institute of Washington), T. C. Hoering (Geophysical Laboratory, Carnegie Institute of Washington), and K. King, Jr. (Lamont-Doherty Geological Observatory). John Wiley & Sons, New York. 1980. xviii + 558 pp. $56.00.

This book is a collection of 39 papers presented at a conference on the Biogeochemistry of Amino Acids held at Arlie House, Warrenton, Virginia (October 21–November 1, 1978) sponsored by the Carnegie Institute of Washington and the National Science Foundation. It is divided into four sections: I. Distribution and Characterization of Proteins, Peptides and Amino Acids (17 papers); II. Techniques and Methods (4 papers); III. Kinetics and Mechanisms (7 papers); and IV. Applications: Geological, Archeological and Biological (11 papers). Each section is introduced by a short summary written by the editors who, by their high standing in the area of organic geochemistry, are eminently suited to this task.

Of importance to the understanding of amino acid biogeochemistry is the understanding of the preservation of amino acids and their polymers the proteins over geological time. The papers in section I deal with diagenetic changes in protein structure, particularly of collagen, the principal component of vertebrate hard tissue. They also make clear that while the microstructure of fossils may be preserved, chemical changes may be great and contamination is an ever present problem. Such problems are discussed and criteria are suggested that may be of value in overcoming the inherent difficulties associated with diagenetic changes in the amino acid composition of fossils.

The second section is perhaps not very well defined as a distinct section in that many papers in the book describe in some detail the techniques and methods used. Nevertheless, the papers presented are of interest and place in perspective some of the analytical methods of current use in biogeochemistry. The paper by Kvenvolden detailing the findings of a small (13 laboratories) quality control assessment study is of particular interest. The disappointingly high interlaboratory variability observed is of great concern.

A basic understanding of chemical kinetics and reaction mechanisms is essential for an informed approach to resolving the many problems a study of amino acid biogeochemistry raises. The papers of section III are very important to the overall biogeochemical picture in this respect. They particularly illustrate the complex nature of racemization even in the relatively simple and well defined laboratory environment where matrix effects, pH, temperature, metal ion concentrations, leaching, peptide structure, and specie differences are controlled and can be studied individually.

Each of the papers in sections I, II, and III contribute knowledge that is important in pursuing the complexities of applying amino acid racemization rates and diagenetic changes in fossil amino acid composition to geochronology, paleotemperature estimations, and stratigraphic correlations of marine sediments. This is the important subject matter of section IV. It highlights the many problems of making the step from simulated to real geological environments.

The book is a valuable contribution to research in amino acid biogeochemistry. It places in proper perspective the inherent problems

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*Unsigned book reviews are by the Book Review Editor.