The low solubility of **7** in the usual polar electrochemistry solvents (acetonitrile, methylene chloride, etc.) has, so far, thwarted our attempts to grow salts electrochemically. We have, however, been able to prepare a TCNQ salt but so far only in the form of microcrystalline powder. Preliminary ESR measurements on this solid give a g value of 2.0039 and a line width of 4 G, indicating that the spins seem to be observable only on the TCNQ molecules at 4 K. To date we measured only compressed powders of the TCNQ salt and found a resistivity of 0.6–1 Ω cm, comparable to TTF TCNQ.

We are currently attempting to improve crystal growth of the TCNQ salt as well as prepare other salts of HMTTeF and synthesize TMTTeF.[26]

Acknowledgment. We thank S. H. Bertz for helpful discussions and some initial work related to cyclopentene dianion, E. A. Chandross for helpful suggestions and critical reading of the manuscript, and R. S. Hutton and W. M. Walsh for solid-state ESR measurements.

Registry No. 2, 75415-78-0; **3**, 23586-46-1; **4**, 80631-57-8; **5**, 80631-58-9; **6**, 80631-59-0; **7**, 80631-60-3; **7** TCNQ salt, 80631-61-4.

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(26) A nonfulvenoid organic compound containing four tellurium atoms has recently been reported: D. J. Sandman, J. C. Stark, G. P. Hamill, W. A. Burke, B. M. Foxman, International Conference on Low Dimensional Conductors, Boulder, CO, August 9–14, 1981. See also: Shibaeva, R. P.; Kaminskii, V. F. *Cryst. Struct. Commun.* **1981**, *10*, 663.

(27) This weakening of the endocyclic C=C bond is probably due to transannular nonbonded Te–Te interactions in the five-membered ring and across rings. A six-membered ring isomer[28] would be expected to be less strained and consequently not show as dramatic a shift.

(28) A referee has correctly pointed out a fact, which has also not escaped our notice, that the synthetic method could also yield the six-membered ring isomer. The only way to resolve this structural problem is via X-ray crystallography. Dr. E. M. Engler has kindly supplied us with a sample of HMTSF·TCNQ for this purpose.

Additions and Corrections

Total Syntheses of (±)-Daunomycinone: Regiospecific Preparations of (±)-7,9-Dideoxydaunomycinone and 6,11-Dihydroxy-4-methoxy-7,8,9,10-tetrahydronaphthacene-5,9,12-trione [*J. Am. Chem. Soc.* **1981**, *103*, 6378]. Frank M. Hauser* and Subbarao Prasanna, Department of Chemistry and Biological Sciences, The Oregon Graduate Center, Beaverton, Oregon 97006.

Page 6380: The three lines under Scheme II beginning with endo-18, exo-19,20, and endo-4 do not belong with this paper.

Carbon-14 Kinetic Isotope Effects in the Menschutkin-Type Reaction of Benzyl Benzenesulfonates with *N*,*N*-Dimethylanilines. Variation of the Effects with Substituents [*J. Am. Chem. Soc.* **1979**, *101*, 266]. Hiroshi Yamataka and Takashi Ando,* The Institute of Scientific and Industrial Research, Osaka University, Suita, Osaka 565, Japan.

The reaction temperature shown in eq 1 and Table I should be 35 °C.

Catalysis of Ester Aminolysis by Divalent Metal Ions [*J. Am. Chem. Soc.* **1981**, *103*, 3233–3235]. R. M. Propst III and L. S. Trzupek,* Department of Chemistry, Furman University, Greenville, South Carolina 29613.

Page 3234: The correct value for the second-order rate coefficient, k, in eq 1 is 1.5×10^{-4} M^{-1} s^{-1}, not 1.5×10^{-1} as shown.

Facile Reduction of Carbon Dioxide by Anionic Group 6B Metal Hydrides. Chemistry Relevant to Catalysis of the Water-Gas Shift Reaction [*J. Am. Chem. Soc.* **1981**, *103*, 3223]. Donald J. Darensbourg,* Andrzej Rokicki, and Marcetta Y. Darensbourg, Department of Chemistry, Tulane University, New Orleans, Louisiana 70118.

Page 3223, Table I: Two sets of numbers were interchanged. The ^{13}C NMR data for HC(O)OCr(CO)$_5^-$ is δC(eq) = 216.0 and δC(ax) = 222.7; for HC(S)SCr(CO)$_5^-$ the δC(eq) = 218.0 and the δC(ax) = 225.4 ppm.

Optically Detected Magnetic Resonance Evidence for Carcinogen–Nucleic Acid Interaction in the Tetrahydro-9,10-epoxybenzo[*e*]pyrene–DNA Adduct [*J. Am. Chem. Soc.* **1981**, *103*, 5257–5259]. Steven M. Lefkowitz and Henry C. Brenner,* Department of Chemistry, New York University, New York, New York 10003.

Page 5258, left column, first paragraph: The limits of error in the ODMR frequencies should be ±2 MHz (megahertz), rather than ±2 GHz, as printed. The ODMR frequencies themselves are in GHz.

Transition-Metal Complexes of Vitamin B$_6$ Related Compounds. 3. X-ray, Mössbauer, and Magnetic Properties of a Binuclear Iron(III) Complex Containing an Unusual Pyridoxal Derivative [*J. Am. Chem. Soc.* **1980**, *102*, 6040]. Gary J. Long,* James T. Wrobleski, Raju V. Thundathil, Don M. Sparlin, and E. O. Schlemper, Departments of Chemistry, University of Missouri—Rolla, Rolla, Missouri 65401, and University of Missouri—Columbia, Columbia, Missouri 65201.

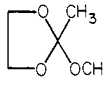
The space group and the extinctions reported in the abstract and on page 6041 are in error. The correct space group is *Pbca* and the correct extinctions are odd k absent for $0kl$, and l absent for $h0l$, and odd h absent for $hk0$. The structure was refined in the correct space group and all the structural results presented in the paper are correct.

Structure of Palytoxin [*J. Am. Chem. Soc.* **1981**, *103*, 2491–2494]. Richard E. Moore* and Giovanni Bartolini, Department of Chemistry, University of Hawaii, Honolulu, Hawaii 96822.

The authors deeply apologize for misspelling the name of Professor Josef Dadok (not Datok) in the acknowledgment of this communication and a preceding communication on the periodate oxidation of *N*-(*p*-bromobenzoyl)palytoxin [Moore, R. E.; Woolard, F. X.; Bartolini, G. *J. Am. Chem. Soc.* **1980**, *102*, 7370].

Ortho Ester Hydrolysis: Direct Evidence for a Three-Stage Reaction Mechanism [*J. Am. Chem. Soc.* **1979**, *101*, 2669]. M. Ahmad, R. G. Bergstrom, M. J. Cashen, Y. Chiang, A. J. Kresge,* R. A. McClelland,* and M. F. Powell, Department of Chemistry, University of Toronto, Scarborough College, West Hill, Ontario M1C 1A4, Canada.

We have detected an error in our calculation of the hydronium-ion catalytic coefficient for the hydrolysis of 2-methyl-2-methoxy-1,3-dioxolane (**11**) in biphosphate buffers:



11

The correct value is $k_{\mathrm{H}^+} = (1.50 \pm 0.03) \times 10^4$ M^{-1} s^{-1} rather than the $k_{\mathrm{H}^+} = (1.50 \pm 0.03) \times 10^3$ M^{-1} s^{-1} originally reported. This correction requires reversal of our original conclusion that hydrolysis of this ortho ester does not undergo a change in

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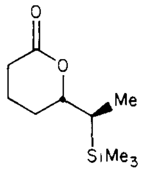
rate-determining step, inasmuch as the revised rate constant is now significantly greater than the value measured in hydrochloric acid solutions, $k_{H^+} = (1.40 \pm 0.03) \times 10^3\ M^{-1}\ s^{-1}$.

Thermolysis of 2-Methoxy-2,5,5-trimethyl-Δ^3-1,3,4-oxadiazoline. Carbenes from Thermal Fragmentation of a Carbonyl Ylide Intermediate [*J. Am. Chem. Soc.* **1981**, *103*, 2473]. Michel Bekhazi and John Warkentin,* Department of Chemistry, McMaster University, Hamilton, Ontario L8S 4M1, Canada.

Page 2474, first full paragraph, left column: The last line should read "intermediates" not JA5M89Ci.

Silicon-Directed Baeyer–Villiger Reactions. Stereospecific Synthesis of Olefinic Acids and Esters [*J. Am. Chem. Soc.* **1980**, *102*, 6894–6896]. Paul F. Hudrlik,* Anne M. Hudrlik, Gopalpur Nagendrappa, Tilahun Yimenu, Edward T. Zellers, and Evelyn Chin, Department of Chemistry, Howard University, Washington, D.C. 20059, and School of Chemistry, Wright and Rieman Chemistry Laboratories, Rutgers University, The State University of New Jersey, New Brunswick, New Jersey 08903.

Page 6895, Scheme I, structure **9** should be as follows:



9

Book Reviews*

Manganese Compounds as Oxidizing Agents in Organic Chemistry. By Deither Arndt (BASF AG). Translated by Chester Claff, Jr., and edited by Donald G. Lee. Open Court Publishing Co., Lasalle, Illinois. 1981. xvii + 344 pp. $55.00.

The text of which this book is a translation and revision originally appeared in "Methoden der Organischen Chemie" (Houben-Weyl), 4th revised edition, in 1975. The date when the revision was completed is not stated, but a casual examination disclosed no references later than 1979. The translation is very smooth and offers no obstacles at all.

About half the book is devoted to oxidations by permanganate, and most of the remainder is devoted to manganese dioxide, with small sections of manganese(III) and -(IV) complex salts, manganate(V), and manganate(VI), reflecting the importance of the respective reagents. The emphasis is on practical preparative methods, and 70 experimental procedures are described. A vast amount of material has been collected and carefully organized into a very succinct text, augmented by extensive tables of reaction conditions, products, and yields. The permanganate chapter alone contains 1020 references.

There is an enigmatic 5-page section apart from the references, headed "Bibliography", which includes not only secondary literature (books and reviews), but many references to the primary literature. Perhaps they are intended to be "benchmark" papers or papers of special significance, but nothing is stated about it. The revision for the principal purpose of bringing the subject up to date has resulted in a number of new and recent citations in the reference section. The preface notes that the most important development in oxidation by manganese compounds in recent years is the use of phase-transfer techniques, allowing permanganate oxidations to be carried out in solvents in which simple potassium permanganate is not soluble (e.g., the use of "purple benzene"), and that "the updating consists primarily of a description of the use of phase transfer procedures...". Unfortunately, such a description is well hidden if it is there, for the subject is not mentioned in the very detailed table of contents, and there is no subject index to the book—only a product index. There is a List of Preparations, but none of them includes the term "phase transfer" in the title. There are, however, some references to books and journal papers that describe the use of phase-transfer reagents.

It is certainly useful to have this valuable work available in English, and at a price substantially lower than that of a volume of the Houben-Weyl series.

Chemistry, Quantum Mechanics and Reductionism. By H. Primas (Swiss Federal Institut of Technology). Springer-Verlag, New York. 1981. xii + 451 pp. $37.50.

Though not intended to be a textbook, this monograph is a good choice for advanced students of quantum mechanics and quantum chemistry and others who are looking for perspective, challenge, and inspiration. This book discusses the nature and development of quantum mechanics and its relationship to chemistry. Primas argues that "the ultimate objective of a theory is not to determine numbers but to create a large, consistent abstract structure that mirrors the observable phenomena". He sees a philosophical and practical need for more general theories which combine chemical theories with the pioneer (pre-1932) quantum mechanics for small systems. He believes the drive to study isolated systems may lead researchers to miss important connecting facts and holistic pictures as epitomized repeatedly with references to the Einstein–Podolsky–Rosen correlations.

Much of the book may be considered to be philosophy. Some readers will find this and the author's frequent personalized comments not to their taste. However, the value of the discussion includes the fact that it can be healthy for scientists to recognize the paradigisms of their work. With numerous instances of repitition and rewording, Primas does not fail to make clear the philosophical, sociological, and psychological bases upon which theorists have in the past and do at present practice their trade. The author is lavish with references, offering an important aid to those interested in the history of quantum mechanics and the philosophy of science.

Primas is dissatisfied with the Copenhagen interpretation of quantum mechanics (epistemic viewpoint), and prefers to adopt the paradigm that understanding of the behavior of matter is possible (ontic viewpoint). Whether these viewpoints are really different is not treated satisfactorily.

To overcome the apparent inability of pioneer quantum mechanics to describe classical systems, several workers have developed algebraic, quantum logical, and other techniques. These are discussed in detail by Primas.

Theoretical quantum chemistry, Primas believes, is, in its present pioneer quantum mechanical framework, inappropriate because it does not address many of the important theoretical concepts of chemistry. He notes that chemists look to the semiempirical methods of quantum chemistry for inspiration instead, and that "the success of this craft remains a central enigma for theoreticians". He argues that, for example, detailed quantum mechanical studies of the water molecule do not tell us about the substance water or its temperature. In other words, some chemical phenomena cannot be deduced from pioneer quantum mechanics, and, moreover, classical chemical phenomena cannot be reduced to pioneer quantum mechanics. Statistical mechanicians who use data from pioneer quantum mechanics may find this irrevelant. Counterintuitive suggestions are made, such as the assertion that pioneer quantum mechanics does not justifiably lead to a notion of molecular structure or the suggestion that a Hartree or Hartree–Fock approximation may be asymptotically correct in the limit of an infinite number of fermions, i.e., for large molecules. Primas provides an alternative to the Born–Oppenheimer structure concept, and one suspects research to find a asymptotically exact Hartree-like approximation is ongoing.

It is sometimes said that philosophy is like a dense woods which one struggles through, examining in detail all that is there, and that on emerging one knows nothing more than when entering. An examination of the philosophical aspects of quantum chemistry is fun, and the book is likely to be informative to theoretical and experimental chemists, but there is little to aid such researchers in what they are already doing. Perhaps the most valuable message in "Chemistry, Quantum Mechanics and Reductionism" is optimism for theory, that there is a need for new theories, and that if quantum theoreticians occasionally abandon reduc-

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* Unsigned book reviews are by the Book Review Editor.