in addition to other products, are formed) studied in recent years by Japanese workers. However, the $RHgX-CO_2(CO)_8$ reaction differs considerably from these reactions which involve more reactive organometallic reagents in over-all mechanism and in that it proceeds cleanly and does not give a mixture of products when carried out properly.

Our studies of this reaction and its extensions, with the aim of defining more fully its scope and its mechanism, are continuing.

Acknowledgments. The authors are grateful to the U. S. Army Research Office (Durham) for generous support of this work. This investigation was supported in part by Public Health Service Fellowship 5-F1-GM-32,971 (to R. J. S.).

[13] National Institutes of Health Predoctoral Fellow.

Dietmar Seyferth, Ralph J. Spohn[13]
Department of Chemistry, Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

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Additions and Corrections

Halomethyl-Metal Compounds. XII. The Action of Sodium Iodide on Phenyl(trihalomethyl)mercury Compounds. A New Method of Dihalocarbene Generation. [*J. Am. Chem. Soc.*, **89**, 959 (1967)]. By DIETMAR SEYFERTH, MICHAEL E. GORDON, JEFFREY YICK-PUI MUI, and JAMES M. BURLITCH, Department of Chemistry, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139.

In Table I, the last entry in the third column [Product (yield, %)] should read: 2,2-Dichlorocyclopropyl acetate (14) and $CH_3CH(CCl_3)O_2CCH_3$ (7).

A Reinterpretation of the Nuclear Magnetic Resonance Spectrum of Cyclobutene [*J. Am. Chem. Soc.*, **89**, 2047 (1967)]. By E. ALEXANDER HILL, Department of Chemistry, University of Wisconsin—Milwaukee, Milwaukee, Wisconsin 53201, and JOHN D. ROBERTS, Gates and Crellin Laboratories of Chemistry, California Institute of Technology, Pasadena, California 91109.

On page 2049, the legend to Figure 1, b and c, should read: b, vinyl hydrogens of a cyclobutene mixture of -2,2,3-d_3 and -1,3,3-d_3; c, methylene hydrogens of the same mixture as in b.

Inversion Barriers of Pyramidal (XY_3) and Related Planar (=XY) Species. [*J. Am. Chem. Soc.*, **89**, 3396 (1967)]. By G. W. KOEPPL, D. S. SAGATYS, G. S. KRISHNAMURTHY, and SIDNEY I. MILLER. Department of Chemistry, Illinois Institute of Technology, Chicago, Illinois 60616.

On page 3400, column 2, line 14 add the following sentence: Configurationally stable rather than optically active phosphites are known (ref 20f). On page 3401, column 2, line 8 [6.1.0] should read [4.1.0]. On page 3402, in the Isotopes Effects section: deuterium ions should read deuteronium ions. On page 3404, column 1 delete the last paragraph. In Table I, for $SnCl_3^-$, $\nu_1 = 297$; for PT_3, $k_\delta/l^2 = 3.0825$; for IO_3^-, $\nu_2 = 390$. In Tables I, II, and III, delete all entries for NF_3, NCl_3, and PI_3. In Table III, delete the last entry for =NF.

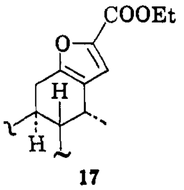
We now have a program in which any set (or sets) of force constants can be introduced into the calculation to replace those generated from the input data. By this technique, we generated V_i (kcal/mole) as follows: NF_3, 56–59; PF_3, 29–66; PI_3, 43; AsF_3, 36–41; AsI_3, 25–40. Five or six trials with arbitrary force constants for PF_3 gave equally arbitrary values of V_i = 29–66 kcal/mole.

The Synthesis of 3-(2′-Deoxy-D-ribofuranosyl)adenine. Application of a New Protecting Group, Pivaloyloxymethyl (Pom) [*J. Am. Chem. Soc.*, **89**, 5439 (1967)]. By MALCOLM RASMUSSEN and NELSON J. LEONARD. Department of Chemistry and Chemical Engineering, University of Illinois, Urbana, Illinois 61801.

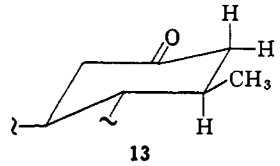
On pages 5439, 5441, 5442, and 5444, the preferred name for **2** is 3,5-di-O-(*p*-chlorobenzoyl)-2-deoxy-D-ribofuranosyl chloride.

Total Synthesis of Racemic Methyl Vinhaticoate. [*J. Am. Chem. Soc.*, **89**, 5497 (1967)]. By T. A. SPENCER, R. M. VILLARICA, D. L. STORM, T. D. WEAVER, R. J. FRIARY, J. POSLER, and P. R. SHAFER. Department of Chemistry, Dartmouth College, Hanover, New Hampshire 03755.

On page 5498 formulas **17** and **13** should appear as shown here, rather than as published.



17



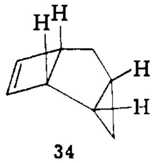
13

One Electron Transfer Oxidation of 7,12-Dimethylbenz[*a*]anthracene, a Model for the Metabolic Activation of Carcinogenic Hydrocarbons [*J. Am. Chem. Soc.*, **89**, 5508 (1967)]. By JOSEF FRIED and DOROTHY E. SCHUMM. Ben May Laboratory for Cancer Research and Department of Chemistry and Biochemistry, University of Chicago, Chicago, Illinois 60637.

On page 5509, column 2, lines 4 and 6, VII should read VIII.

The Photochemistry of 2,3-Homotropone [*J. Am. Chem. Soc.*, **89**, 5633 (1967)]. By LEO A. PAQUETTE and OSVALDO COX. Department of Chemistry, The Ohio State University, Columbus, Ohio 43210.

On page 5637, structure **34** should read



34

Book Reviews

Dielectric Behavior of Physically Adsorbed Gases. By ROBERT L. MCINTOSH, Head, Department of Chemistry, Queen's University, Kingston, Ontario, Canada. Marcel Dekker, Inc., 95 Madison Ave. New York, N. Y. 1966. xii + 160 pp. 16 × 23.5 cm. $9.75.

Professor McIntosh is a leading expert in the field of dielectric properties of adsorbed gases, and his monograph comprises a comprehensive discussion of this topic. He gives a nicely balanced account of the difficulties involved, both experimental and theoretical, and discusses many of the specific studies reported in the literature to date. Although quite a few of these investigations have emanated from his own laboratory, he seems to be as knowledgeable in discussing the work of others as he is in discussing his own.

After an introductory chapter, the various theoretical treatments relating the static polarization of a thin film adsorbed on a powdered solid to the measured dielectric constant are discussed. Inasmuch as this polarization is highly sensitive to the boundary conditions (or more bluntly, to the shape of the sample) even for bulk materials, it is not surprising to find that no completely satisfactory theory exists which would allow one to make the connection between the dielectric constants of a powdered sample with and without adsorbate and the polarization of the molecules in the adsorbed film. The several approximate treatments which have been put forward are critically discussed in this part of the book.

A chapter concerned with the theory of frequency-dependent polarization follows. Here, the changes in the general theory required to deal with adsorbed films are hardly considered, for the simple reason that almost no results are available which bear on this problem. Thus, this chapter pretty much consists in a review of Fröhlich's discussion of the Debye theory for the frequency-dependent polarization of bulk materials. A chapter on experimental techniques follows, and the remaining half of the book is devoted to results obtained for specific systems. The author considers data for polar and nonpolar gases adsorbed on porous and nonporous solids, including some investigations of the frequency dependence of dielectric constants. A chapter concerned with the effects of sorbed water on the dielectric properties of polymers, cellulose, starch, and proteins is included in spite of the fact that this is, strictly speaking, outside the purview of the book's title. The conclusions drawn from most of the studies of gases adsorbed on solids can be summed up in a few phrases: molecular polarization does not seem to be sensitive to surface heterogeneity or to the density in a given layer of the film; the polarizations of nonpolar adsorbates are nearly unchanged as one goes from monolayer to multilayer films, and the values obtained are nearly the same as those for the bulk liquids; however, changes in the polarization for polar molecules indicate that rotational motion is more hindered in monolayer films of these substances than it is in the second and higher layers or than in the bulk liquids. Thus, measurements of this kind would seem to be a potential method of obtaining information about the nature of the electric fields at solid surfaces. However, no quantitative or even semiquantitative estimates of this kind are discussed, undoubtedly because of the difficulties in obtaining a reliable theory relating macroscopic to microscopic dielectric properties of adsorbed films.

Thus, this book comprises a competent treatment of the present knowledge concerning its subject matter. However, the subject is a rather narrow one and is not of vital importance to most chemists. One might well ask: is this monograph really necessary, especially since Dr. McIntosh has contributed a chapter which deals with the same material as this book to the two-volume treatise entitled "The Solid-Gas Interface," edited by E. A. Flood and also published by Marcel Dekker. Upon comparing the two, it is apparent that the chapter consists in a condensed version of the book in almost all respects. The chapter is certainly more readable and contains a brief discussion of essentially all the physically significant facts about the dielectric behavior of adsorbed films which were brought out in the book. Except for a specialist actually working in the field or for a person considering work in the field, the chapter is to be recommended over the book. In a sense, it is unfortunate that the timing was so close for these two publications, since it left the author with little choice but to cover the same ground twice.

William A. Steele
Department of Chemistry, The Pennsylvania State University
University Park, Pennsylvania 16802

BOOKS RECEIVED, *November 1967*

M. P. CAVA and M. J. MITCHELL. "Cyclobutadiene and Related Compounds." Academic Press Inc., 111 Fifth Ave., New York, N. Y. 1967. 503 pp. $22.00.

EUGENE A. DAVIDSON. "Carbohydrate Chemistry." Holt, Rinehart and Winston, Inc., 383 Madison Ave., New York, N. Y. 1967. 441 pp. $11.96.

FEDERICO GRABIEL. "Theory of Energy Transfers and Conversions." John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1967. 217 pp. $10.95.

HERBERT OERTEL. "Strossrohre. Shock Tubes. Theorie, Praxis, Anwendungen. Mit einer Einführung in die Physik der Gase." Springer-Verlag, Mölkerbastei 5, A-1010 Wien, Germany. 1966. 1030 pp. $80.00.

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S. WALKER and H. STRAW. "Spectroscopy." Volume 2. "Ultraviolet, Visible, Infrared and Raman Spectroscopy." Barnes and Noble, Inc., 105 Fifth Ave., New York, N. Y. 1967. 386 pp. $6.75.