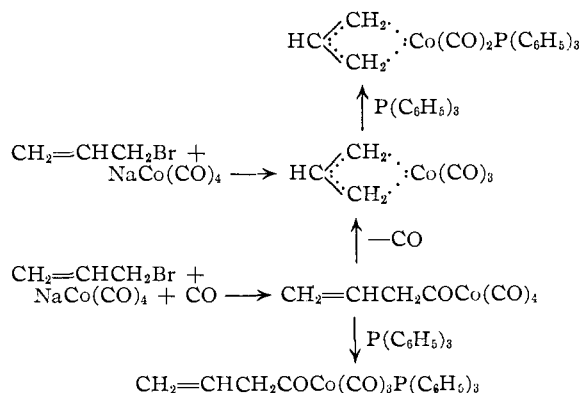


$\text{RCo}(\text{CO})_4 \rightleftharpoons \text{RCOC}(\text{CO})_3$  and  $\text{RCOC}(\text{CO})_3 + \text{P}(\text{C}_6\text{H}_5)_3 \rightarrow \text{RCOC}(\text{CO})_3\text{P}(\text{C}_6\text{H}_5)_3$ . This latter reaction constitutes a very convenient preparation of these complexes, an 86% yield of acetylcobalt tricarbonyl triphenylphosphine being obtained by treating excess methyl iodide with  $\text{NaCo}(\text{CO})_4$  at  $0^\circ$  in the presence of excess triphenylphosphine.  $\text{RCo}(\text{CO})_4$  should be formed as the primary product of the addition of  $\text{HCo}(\text{CO})_4$  to olefins; this reaction cannot be carried out in the presence of triphenylphosphine, because triphenylphosphine reacts with  $\text{HCo}(\text{CO})_4$  to give apparently  $\text{HCo}(\text{CO})_3\text{P}(\text{C}_6\text{H}_5)_3$ , which is unreactive at  $0^\circ$ . The reaction of  $\text{HCo}(\text{CO})_4$  with a large excess of 1-pentene, followed by the addition of triphenylphosphine, has led to the isolation of a hexanoylcobalt tricarbonyl triphenylphosphine, m.p.  $82-86^\circ$  (dec.). *Anal.* Calcd.: C, 64.3; H, 5.20. Found: C, 64.5; H, 5.30.  $\text{HCo}(\text{CO})_4 + \text{C}_5\text{H}_{10} \xrightarrow{\text{P}(\text{C}_6\text{H}_5)_3} \text{C}_5\text{H}_{11}\text{Co}(\text{CO})_4$

Allylcobalt tricarbonyl<sup>2</sup> reacts quite differently from simple alkylcobalt compounds. Treatment of it with triphenylphosphine liberates one mole of CO and yields allylcobalt dicarbonyl triphenylphosphine, m.p.  $132^\circ$  (dec.). *Anal.* Calcd.: C, 66.3; H, 4.85. Found: C, 66.3; H, 5.29. On the

other hand, reaction of allyl bromide with  $\text{NaCo}(\text{CO})_4$  and CO in the presence of triphenylphosphine gives 3-butenoylcobalt tricarbonyl triphenylphosphine, identical with the product obtained from 3-butenoyl chloride, in spite of the fact that it has been shown<sup>2</sup> that 3-butenoylcobalt tetracarbonyl is converted on standing into allylcobalt tricarbonyl.



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## BOOK REVIEWS

**Progress in Inorganic Chemistry.** Volume Edited by F. ALBERT COTTON, Department of Chemistry, Massachusetts Institute of Technology, Cambridge, Massachusetts. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1959. ix + 566 pp.  $16 \times 23$  cm. Price, \$14.50.

This is the first in an annual series of volumes devoted to "...maintaining effective, fruitful communication among the different branches of inorganic chemistry...". If the high standards generally typical of the contributions to this first volume are maintained, this series may well prove to be almost equally of interest and value to workers in the other fields of chemistry as well.

The seven largely unrelated topics reviewed in this volume are: Cyclopentadienyl and Arene Metal Compounds (G. Wilkinson and F. A. Cotton), Interstitial Compounds of Graphite (G. R. Henning), Uber Schwefel-Stickstoff-Verbindungen (M. Becke-Goehring), Metal-Ammonia Solutions (W. L. Jolly), Isocyanide Complexes of Metals (L. Malatesta), The Effect of Inner Orbital Splitting on the Thermodynamic Properties of Transition Metal Compounds and Coordination Complexes (P. George and D. S. McClure), and The Structure and Properties of Mixed Metal Oxides (R. Ward). It is an unfortunate but unavoidable fact that, owing to publication schedules, such discussions must always be incomplete relative to the current literature. For example, it is regrettable that the discussion of the structure of ferrocene and related species could not include more recent considerations of ionic models.

It is refreshing to find that, in accordance with stated editorial policy, these discussions reflect no efforts at oversimplification designed to appeal to a particular reader audience. At the same time, these discussions reveal only limited evidence of consciousness of a need to conform to the "sophisticated" approach.

The significance of this series to the literature of inorganic chemistry is best seen in context with the closely related series entitled "Advances in Inorganic Chemistry and Radiochemistry," Vol. 1 (Academic Press Inc., 1959)

edited by Emel us and Sharpe. Together these two new series provide ample evidence of the rapid postwar expansion and growth of the field of inorganic chemistry. It is to be hoped that editorial co-operation will minimize duplication of topics in succeeding volumes.

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**Glutathione.** Biochemical Society Symposium No. 17 held at Senate House, University of London on 15 February, 1958. Organized and Edited by E. M. CROOK, New York: Cambridge University Press, 32 East 57th Street, New York 22, N. Y. 1959. 115 pp.  $16 \times 25$  cm. Price, \$4.50.

"Glutathione," the subject of the Biochemical Society's 17th symposium, brings to the interested reader in condensed form both background and recent work on this ubiquitous substance, and supplements well the more comprehensive earlier American summary, "Glutathione: A Symposium," published in 1954. Different authors cover different facets of the subject.

Of special interest in the first chapter, "Chemistry and Biochemistry of Glutathione," by F. A. Isherwood, are considerations of the  $pK$  values of the different titratable groups in glutathione and speculations as to possible ring structures of the molecule which could explain certain of its properties. Pointed objections are made, however, by a discussant, N. W. Pirie. In the second chapter, "Techniques for Determining Glutathione," Christine G. Thomson and Heather Martin compare three selected methods and provide data to show their specificity, reliability and degree of concordance when applied to different test materials. Pirie makes the suggestion here that the method of deproteinizing used in analyses on tissue extracts may affect the values obtained for the proportions of the reduced and oxidized forms of glutathione. In the third chapter,