

not very satisfactory because of the strong absorption of the complex cation in this region of interest, 300–350 μ . The compound $[\text{Cr}(\text{NH}_3)_6][\text{Ni}(\text{CN})_5] \cdot 2\text{H}_2\text{O}$ is orthorhombic with lattice parameters of 11.72 ± 0.05 , 11.65 ± 0.05 , and 22.69 ± 0.05 Å. It has eight molecules per unit cell and for a molecular weight of 379.0 it has an estimated density of 1.625 g/cm^3 . The experimental density by flotation in methylene dibromide-toluene mixtures is 1.60 ± 0.03 . The structure of $\text{Ni}(\text{CN})_5^{3-}$ is being determined by means of X-rays by K. N. R. working with Professor J. A. Ibers.

Having had this much success, it will be of interest to attempt the isolation of $\text{Co}(\text{CN})_5^{3-}$ (as the monomer⁶) and $\text{HCo}(\text{CN})_5^{3-}$, both of which are believed to be present in solution,⁷ but neither one has been isolated

(6) A. W. Adamson, *J. Am. Chem. Soc.*, **73**, 5710 (1951).

(7) J. Kwiatek, I. L. Mador, and J. K. Seyler, *Advances in Chemistry Series*, No. 37, American Chemical Society, Washington, D. C., 1963, p 201.

as a crystalline solid salt. We will also attempt the isolation of salts of $\text{Pd}(\text{CN})_5^{3-}$, of $\text{Pt}(\text{CN})_5^{3-}$, and, with a different cation, of $\text{Au}(\text{CN})_5^{2-}$. None of these species exists in quantity in solution,¹ but perhaps the proper counterion will cause these to precipitate and shift the equilibria toward their formation. Investigations of this type are in progress.

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Book Review

Sauerstoff, System-Nummer 3, Lieferung 5, Gmelins Handbuch der anorganischen Chemie. [Oxygen, System Number 3, Section 5, Gmelins Handbook of Inorganic Chemistry.] Verlag Chemie, G.m.b.H., Weinheim/Bergstrasse. 1963. xviii + 548 pp. 17×25 cm. 104 Figures. In German. Clothbound \$102.50.

Sauerstoff, System-Nummer 3, Lieferung 6, Gmelins Handbuch der anorganischen Chemie. [Oxygen, System Number 3, Section 6, Gmelins Handbook of Inorganic Chemistry.] Verlag Chemie, G.m.b.H., Weinheim/Bergstrasse. 1963. 363 pp. 17×25 cm. In German. Clothbound \$69.50.

These two volumes are the fifth and sixth to appear dealing with oxygen, and essentially all of the two volumes is devoted to water. The literature coverage is complete through 1949, but one finds references to numerous papers published as late as 1963.

A significant fraction (324 pages) of Volume 5 is devoted to physical properties of water, but chemical properties are also covered in this volume. There are chapters on "Chemical Behavior of Water," "Behavior of Water as a Solvent," and "Behavior of Water on Irradiation."

Most of Volume 6 is devoted to "Isotopic Kinds of Water." This volume also contains chapters on "Water Ions" (including recent references pertaining to H_3O_4^+), "Electrochemical Behavior of Water," and "Systems of Water with Organic Solvents."

A short review cannot describe the many topics covered in

these volumes, the high quality of which support the solid reputation of Gmelins Handbook.

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BOOKS RECEIVED

March 1966

- MIHALY T. BECK, Editor. "Proceedings of the Symposium on Coordination Chemistry." (Tihany, Hungary, 1964.) Akademiai Kiado Publishing House, Budapest, Hungary. 1965. 11 + 484 pp. \$15.00.
- R. COLTON. "The Chemistry of Rhenium and Technetium." John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1966. v + 185 pp. \$8.50.
- P. G. DE GENNES. "Super-Conductivity of Metals and Alloys." W. A. Benjamin, Inc., 1 Park Ave., New York, N. Y. 1966. ix + 274 pp. \$12.50.
- GEORGE I. SACKHEIM. "Atomic and Molecular Orbitals." Stipes Publishing Co., 10-12 Chester St., Champaign, Ill. 1965. 65 pp. \$1.40 (paperback).
- P. A. S. SMITH. "Open-Chain Nitrogen Compounds." W. A. Benjamin, Inc., 1 Park Ave., New York, N. Y. 1966. vii + 531 pp. \$35.00.
- WESLEY W. WENDLANDT and HARRY G. HECHT. "Reflectance Spectroscopy." John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1966. v + 298 pp. \$12.00.