

Nuclear Moments. NORMAN F. RAMSEY, Professor of Physics, Harvard University. John Wiley and Sons, Inc., 440 Fourth Ave., New York 16, N. Y., 1953. x + 169 pp. 15 × 23.5 cm. \$5.00.

Professor Ramsey is an authority in radiofrequency spectroscopy, which is the general experimental field from which most of our information concerning nuclear moments has been obtained. His fine little book contains four chapters from his section on "Nuclear Moments and Statistics" in Vol. I of *Experimental Nuclear Physics*, edited by Segré, plus a fifth chapter on the applications of radiofrequency spectroscopy to chemical and solid state studies.

The first two chapters deal with derivations of quantum mechanical formulas necessary for expressing the interactions between nuclear moments and molecular or applied external fields; the third deals with experimental procedures (molecular and atomic beams, nuclear resonance absorption and induction, paramagnetic resonance, ferromagnetic resonance, etc.); the fourth presents the results of nuclear moment studies and includes comprehensive tables as well as a discussion of resonance frequency shifts due to magnetic shielding effects.

The fifth chapter, on applications, is somewhat out of date already, even though it was written the most recently, because applications and developments have come so rapidly. This is especially true of nuclear resonance absorption. For example, each of the three proton resonance peaks shown corresponding to protons in CH₃, CH₂ and OH in ethyl alcohol has now been split into finer lines with the help of a new sample rotation technique. However, the main ideas needed for an introduction to the subject are given, and they are too numerous even to list: there are seventeen different paragraph headings alone in the chapter.

Radiofrequency spectroscopy studies have produced a large set of data on nuclear spins, magnetic moments and electric quadrupole moments which an eventually successful theory of nuclear structure must duplicate. There are indications that in time such studies may prove equally important in chemistry and, possibly, the solid state. A vigorous start has already been made. Professor Ramsey's book should have a continuing usefulness as a handbook of basic facts and concepts.

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Cationic Polymerization and Related Complexes. Edited by P. H. PLESCH, M.A., Ph.D., F.R.I.C. Academic Press, Inc., 125 East 23rd Street, New York 10, N. Y. 1953. xii + 166 pp. 22.5 × 14.5 cm. Price, \$4.00.

This book summarizes in detail the successful conference on Cationic Polymerization and Related Topics which was held at the University College of North Staffordshire in March, 1952. The book is composed of the contributions of the people who participated in the conference. Much of the success of the conference was due to the enthusiasm and energy of the editor of this book, P. H. Plesch.

For the most part, the enthusiastic and vigorous discussion has been transposed into words. Careful editing has resulted in a superior presentation of a rapidly developing subject. By now, most of the papers have appeared or will soon appear in the *Chemical Journals*. Thus in this book emphasis has been placed on results and the theoretical implications rather than experimental detail.

The book is divided into two portions: the first portion entitled "Complexes" and the second portion "Cationic Polymerization." The second portion is divided further into sections on Arylenes, Alkenes and a Summary. This summary of the second part by Professor F. S. Dainton is very good and is written in an especially lucid style. There is an appendix entitled "Carbonium Ion Reactions" which is a report of a symposium held at Leiden a week before this conference.

As always, new advances have been made in the field since the conference. If this were not a vigorously growing area, however, there would have been no reason for a conference. Furthermore, any book which reports an advance wave of an

area suffers in that the heights of the crest change rapidly. Thus the subject of aromatic complex formation has progressed so rapidly in the past two years that a new conference or summation is warranted soon. New significant advances in cationic polymerization have progressed at a slower rate, however, and thus the primary value of the book in the reviewer's opinion at the present time is in this area.

The book is highly recommended for anyone wishing to familiarize himself with the present status of cationic catalyzed polymerization.

In the reviewer's opinion, more books of this type in other areas of organic chemistry, particularly in the rapidly advancing and changing areas, would be helpful.

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BOOKS RECEIVED

July 10, 1954—August 10, 1954

JESSE P. GREENSTEIN. "Biochemistry of Cancer." Second Edition, Revised and Enlarged. Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1954. 653 pp. \$12.00.

CLIFFORD A. HAMPPEL (Edited by). "Rare Metals Handbook." Reinhold Publishing Corporation, 330 West 42nd Street, New York 36, N. Y. 1954. 657 pp. \$12.00.

C. E. KENNETH MEES. "The Theory of the Photographic Process." Revised Edition. Macmillan Company, 60 Fifth Avenue, New York 11, N. Y. 1954. 1133 pp. \$21.50.

E. H. ERICH PIETSCH (Editor). "Gmelins Handbuch der Anorganischen Chemie. Selen, Teil A. System-Nummer 10." Verlag Chemie, G.m.b.H., Weinheim/Bergstr., Germany. 1953. 184 pp. \$26.64.

E. H. ERICH PIETSCH (Editor). "Gmelins Handbuch der Anorganischen Chemie. Bor, System-Nummer 13." Verlag Chemie, G.m.b.H., Weinheim/Bergstr., Germany. 1954. 253 pp. In wrappers, \$33.60; cloth bound, \$34.80.

E. H. ERICH PIETSCH (Editor). "Gmelins Handbuch der Anorganischen Chemie. System-Nummer 62. Gold, Part 2." Verlag Chemie, G.m.b.H., Weinheim/Bergstr., Germany. 1954. 306 pp. \$40.32.

E. H. ERICH PIETSCH (Editor). "Gmelins Handbuch der Anorganischen Chemie. System-Nummer 62, Gold, Part 3." Verlag Chemie, G.m.b.H., Weinheim/Bergstr., Germany. 1954. 558 pp. \$74.88.

LÉON VELLUZ (Editor). "Méthodes et Réactions de l'Analyse Organique, Volume III, Réactions Colorées et Fluorescences." Masson et Cie, Editeurs, Libraires de l'Académie de Médecine, 120 Boulevard Saint-Germain, Paris VI, France. 1954. 296 pp. 2.750 fr.

LÉON VELLUZ (Editor). "Substances Naturelles de Synthèse," Volume VIII. Masson et Cie, Editeurs, Libraires de l'Académie de Médecine, 120 Boulevard Saint-Germain, Paris VI, France. 1954. 157 pp. Broché, 1.800 fr.; Cartonné toile, 2.200 fr.

LÉON VELLUZ. (Editor). "Substances Naturelles de Synthèse." Volume IX. Masson et Cie, Editeurs, Libraires de l'Académie de Médecine, 120 Boulevard Saint-Germain, Paris VI, France. 1954. 186 pp. Broché, 1.880 fr.; Cartonné toile, 2.280 fr.

P. G. WATSON. "Metabolic Integrations." W. Heffer and Sons, Ltd., Cambridge, England. 1954. 12 pp. Four shillings.

C. ZWICKER. "Physical Properties of Solid Materials." Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1954. 300 pp. \$8.75.