

almost adequate, yielding to this reviewer 9 out of 10 test items with hardly any more ingenious compromise with the French system of nomenclature than is normally required when perusing the German or English treatises.

Two significant questions might be raised about the entire Pascal work: (1) Is it a good reference work? (2) Is it worth buying? The answer on both counts appears to be yes. To this reviewer, the Pascal treatise is much more exhaustive and critical than expected. It is evidently a work of care and devotion, and suffers only from not incorporating more of the modern bonding ideas. It promises to be extremely useful not just to the researcher in inorganic chemistry but also (here is where the Pascal is superior to the Gmelin) to the reader who wishes to study in depth some aspect of inorganic chemistry in a lively but authoritative source. The "New Treatise" deserves a place in every inorganic library.

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Fermente. Hormone. Vitamine und die Beziehungen Dieser Wirkstoffe Zueinander. Dritte Erweiterte Auflage in Drei Bänden. Band II. Hormone. Edited by ROBERT AMMON, Homburg/Saar, and WILHELM DIRSCHERL, Bonn/Rhein. Georg Thieme Verlag, Herdweg 63, Stuttgart, Germany. 1960. xxiv + 897 pp. 18.5 × 26.5 cm. Price, Ganzleinen, DM. 148.—(\$35.25); Subskriptionspreis, DM. 125.80 (\$29.95).

In 1938, Ammon and Dirscherl wrote a 400 page volume on enzymes, hormones and vitamins. In the present (third) edition this work has been expanded into 3 volumes and contains contributions by the two editors and by numerous collaborators. The second volume deals with the hormones in the broad sense of the term. For example, there is a chapter on tissue hormones by P. Holtz which discusses not only substances involved in the transmission of neural impulses, etc., but also, e.g., the pharmacological effects of the phosphorylated derivatives of adenine. The hormones of the invertebrates are reviewed by the late G. Koller, and Pohl has written on plant hormones. The main chapters on the hormones of the higher animals were contributed by Dirscherl (insulin, glucagon, estrogens, progestational hormones and androgens), Jost (sex hormone effects on embryos), Ammon (diabetes mellitus, hormones of the gastrointestinal tract, relaxin), Voss (anterior hypophysis and pars intermedia), Nowakowski (posterior hypophysis), Verzár (physiology of the adreno-cortical hormones), Tamm (chemistry and metabolism of adrenal steroids), Abelin (thyroid), F. Holtz and Ponsold (parathyroid), Comsa (thymus), and P. Holtz (adrenal medulla). The coverage of the literature extends into 1958.

The book deals in varying thoroughness with virtually all aspects of this vast field such as structure proofs and laboratory syntheses of the hormones, their physiological and pharmacological effects, correlations of structure with activity, biological and chemical assay methods, hormone metabolism, histology and embryology of the endocrine glands, etc., and even with some clinical considerations. It is obvious that a single volume does not allow comprehensive coverage of these subjects. Anyone familiar with a given area is not likely to find much new in interpretations but may well encounter citations of papers (particularly European ones) which he had not seen previously.

Among the various sections dealing with steroid chemistry, the one written by Tamm undoubtedly will appeal most to the specialist in this field. It is patterned in part on the classical review by Reichstein and Shoppee (*Vitamins and Hormones*, 1, 345 (1943)), and like it gives rather extensive structural correlations between various adrenal steroids. The chapter concludes with a brief but well organized discussion of the metabolism of the corticoids. Although the sections on the chemistry of the steroidal sex hormones are on a rather elementary level, they give many details which can hardly be of interest to a reader with such a background in chemistry. One can't help wondering why the author would choose to discuss such syntheses as the one of progesterone from hydoxycholeic acid if the important routes from the sapogenins to the sex hormones are not being mentioned. The section on the metabolism of these substances is much more comprehensive, but as there is little integra-

tion of the data and little emphasis on the quantitatively important pathways (particularly of the C₁₉-steroids) a beginner may well get lost in the maze of details. The adrenogenital syndrome although briefly mentioned in several chapters is not discussed in a manner which would indicate the great contributions which its study has made to the understanding of steroid metabolism.

There are quite a few misstatements in this volume. Some are being pointed out: Contrary to a statement on p. 343, androgenic assays of urine give no information about that fraction of the 17-ketosteroids which is derived from the testis; in the treatment of rheumatoid arthritis by high doses of steroids (which incidentally was discovered by Hench and not by Hechter), fluorohydrocortisone is not a substance of choice (p. 475); the estradiol melting at 178° (formula, p. 190) has the 17 β -configuration, compound 27 on p. 280 has a 17 α -hydroxy, compound 15 on p. 331 and on p. 339 has a 6 β -hydroxy group, and compound 22 (p. 332) is not "uranedione."

The volume has only a token index (6 pages) but a detailed one will be issued free of charge after the completion of the last volume.

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Tables of Spectrum Lines. By A. N. ZAIDEL', V. K. PROKOF'EV and S. M. RAISKII. Pergamon Press Ltd., Headington Hill Hall, Oxford, England. 1961. xliii + 550 pp. 17.5 × 24 cm. Price, \$14.00.

This volume contains lists of the principal lines in atomic spectra which are useful for identification and practical spectral analysis. The lists are less complete than some tabulations which exist, such as the M.I.T. Tables, but they are more complete than less specialized handbooks of physical and chemical data. The volume should be very useful in this intermediate range of completeness, size and cost.

The Introduction states that: "The first part of the volume lists 41,468 spectrum lines of 60 elements" in order of decreasing wave length between 8000 and 2000 Å. The second part "contains 23,392 spectrum lines of 93 elements, arranged by elements." The third part contains eight auxiliary tables of ionization potentials, sensitive lines, most intense lines and other physical data on the chemical elements, which are related to the spectra.

The original edition of these tables was published in the U.S.S.R. in 1952. The present edition has Preface and Introduction in English, German and French, which explain the use of the tables, and give more details on the arrangement and significance of the data.

The volume is substantially bound and it is printed clearly on good quality paper. It appears to be entirely suitable for daily use directly in the spectroscopic laboratory.

DEPARTMENT OF CHEMISTRY
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Silicones. Edited by S. FORDHAM, Ph. D. Philosophical Library Inc., 15 East Fortieth Street, New York 16, N. Y. 1961. xi + 252 pp. 14.5 × 22 cm. Price, \$10.00.

This British book was written by 13 experts from the Research and Silicones departments of the Nobel Division of ICI at Ardeer, Scotland. It consists of two sections, one on Organosilicon Chemistry and the other on Industrial Manufacture and Applications of Silicones. Readers should not expect a complete treatise on the chemistry of organosiloxanes or an exhaustive technical handbook on their manufacture, but the book is a reasonably good summary of modern belief, fact and practice concerning those silicones which are produced on a commercial scale.

The first section comprises a compact but comprehensive chapter on the Chemistry of Organosilicon Compounds by J. M. C. Thompson, and a discussion of the physical chemistry, structure and special properties of organosiloxanes, presumably by Dr. Thompson and the editor. The second section begins with a chapter on World Production and Market for Silicone Products by J. Stafford. The next chapter concerns the manufacture of chlorosilanes and their

conversion to various silicone oils, resins and elastomers, written by J. Drake, D. B. Peters and S. McGuire. Special chapters are then devoted to the properties and uses of silicone fluids and lubricants (by W. D. Garden), silicone Rubber (by J. Ames) and Silicone Resins (by E. A. Mason). These are followed by chapters on electrical properties and applications of silicones (by P. Johnson), Silicone Masonry Water Repellents (by W. D. Garden), Treatment of Textiles (by J. A. C. Watt) and miscellaneous uses of silicones, including leather, by D. G. Stratton, together with a section on Silicones in Polishes by J. D. Somerville.

The authors have done their respective jobs well, and if any fault can be found it is that not all of the variations in style and in terminology have been combed out. For instance, one finds on opposite pages of the same chapter the names diphenyldichlorosilane and dichlorodimethyl silane. Similarly, ethyl-phenyl is hyphenated but methyl phenyl is not. Occasionally there are pronouns without antecedents in the same paragraph, and occasionally sentences are strung together with commas, or one finds no commas where there ought to be some. Americans have been taught to expect more nearly perfect use of the language on the Eastern side of the Atlantic.

There are many good parts to the book, and the chapter on Organosilicon Chemistry (with its 221 references and thorough coverage) is one of these. The part on identification by means of infrared spectra is detailed and very well done. Perhaps the very best portion, in the opinion of your reviewer, is the section devoted to Special Properties of Silicone Rubbers, pages 176 to 190.

Those who are concerned with the technical aspects of silicone polymers will want to have this most recent book to add to the few others which appeared before it. Some day, it is hoped, there will be a really definitive book to add to the lot, a book which explores the *theory* behind adhesion, probes the *reason* for the peculiar properties of silicones, and *explains* the peculiar properties of the silicon-oxygen bond. Readers who cannot wait that long may do well to acquire the present volume.

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BOOKS RECEIVED

November 10, 1961–December 10, 1961

- G. M. BADGER. "The Chemistry of Heterocyclic Compounds." Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1961. 498 pp. \$12.00.
- WALTER G. BERL, Edited by. "Physical Methods in Chemical Analysis." Volume IV. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1961. 476 pp. \$16.00.
- KAREL BLÁHA. "Preparativní Reakce V Organické Chemii." Díl VI. "Reakce Organokovových Činidel." Publishing House of the Czechoslovak Academy of Sciences, Vodičkova 40, Praha 2, Czechoslovakia. 1961. 954 pp. Kčs. 105, --.
- A. S. COFFINBERRY AND W. N. MINER, Edited by. "The Metal Plutonium." The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Illinois. 1961. 446 pp. \$9.50.
- H. J. EMELEUS AND A. G. SHARPE, Editors. "Advances in Inorganic Chemistry and Radiochemistry." Volume 3. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1961. 463 pp. \$12.50.
- R. GAY. Cours de Cristallographie." Livre III. Première Partie. "Radiocristallographie Théorique." Gauthiers-Villars et Cie., 55, Quai des Grands-Augustins, Paris 6, France. 1961. 278 pp. 38 NF.
- T. W. GOODWIN AND O. LINDBERG, Edited by. "Biological Structure and Function. Proceedings of the First IUB/IUBS International Symposium held in Stockholm, September 12–17, 1960." Volume I. Academic Press Inc., (London) Ltd., 17 Old Queen Street, London, S. W. 1, England. 1961. 363 pp. \$10.50.
- W. D. OLLIS, Edited by. "Recent Developments in the Chemistry of Natural Phenolic Compounds." Proceedings of the Plant Phenolics Group Symposium. Pergamon Press Ltd., Headington Hill Hall, Oxford, England. 1961. 237 pp. \$12.00.
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- JOHN D. ROBERTS. "Notes on Molecular Orbital Calculations." W. A. Benjamin, Inc., 2465 Broadway, New York 25, N. Y. 1961. 156 pp. \$4.95.
- JOSEPH ROSIN. "Reagent Chemicals and Standards with Methods of Testing and Assaying them; also the Preparation and Standardization of Volumetric Solutions and Extensive Tables of Equivalents." Fourth Edition. D. Van Nostrand Company, Inc., 120 Alexander Street, Princeton, New Jersey. 1961. 557 pp. \$14.50.
- N. N. SEMENOV. "The Chain Mechanism of the Decomposition of Halogenated Paraffins." From: Uspekhi Khimii, Vol. XXI, No. 6, 1952, pp. 641–713. Translated from Russian. PST Cat. No. 77. Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. 1961. 114 pp. \$1.25.
- DONALD D. VAN SLYKE AND JOHN PLAZIN. "Micrometric Analyses." The Williams and Wilkins Company, Baltimore 2, Maryland. 1961. 89 pp. \$4.50.
- B. C. L. WEBBON, Scientific Editor. "Pure and Applied Chemistry." Volume 3. Nos. 1–2. "Applied Chemistry Section, Toxicology and Industrial Hygiene Division, in conjunction with Permanent Commission and International Association of Occupational Health. Proceedings of the International Symposium on Maximum Allowable Concentrations of Toxic Substances in Industry held in Prague, Czechoslovakia, April 1959." Butterworths, 4–5 Bell Yard, Temple Bar, London, W. C. 2, England. 1961. 373 pp. Subscription per volume, \$18.00.
- M. M. WOOLFSON. "Direct Methods in Crystallography." Oxford University Press, 417 Fifth Avenue, New York 16, N. Y. 1961. 144 pp. \$4.80.
- L. YOUNG. "Anodic Oxide Films." Academic Press Inc., (London) Ltd., 17 Old Queen Street, London, S.W. 1, England. 1961. 377 pp. \$11.00.