

Progress in Organic Chemistry. Volume 2. By J. W. Cook, D.Sc., F.R.S., Regius Professor of Chemistry, University of Glasgow, Fellow of University College, London (Editor). Academic Press, Inc., 125 East 23d Street, New York 10, N. Y. 1953. viii + 212 pp. 16 × 25.5 cm. Price, \$7.00.

The second volume edited by J. W. Cook, in what promises to be a series on "Progress in Organic Chemistry," contains six chapters on widely separated topics. Each chapter is written by a chemist who has made enough major contributions to enable his topic to be recorded here as progress. Thus, M. J. S. Dewar covers "Some Recent Developments in Theoretical Organic Chemistry" and M. Stacey, "Organic Fluorine Compounds." By the device of charts, D. H. R. Barton has clarified the structural interrelationships in "The Chemistry of the Triterpenoids." The chapter continues with a discussion of the basic organic chemistry involved in the many triterpenoid transformations and concludes with a lucid description of stereochemical configurations. In the chapter on "The Partial Synthesis of Cortisone and Related Compounds from Accessible Steroids," F. S. Spring does a creditable job of assembling and integrating the various routes to cortisone. The fact that the structural formula of cortisone acetate does not appear until three pages from the end of the chapter is perhaps an unintended indication that this once-complicated compound may have become as commonplace as ethanol.

"The Relationship of Natural Steroids to Carcinogenic Aromatic Compounds" by H. H. Inhoffen provides a good review of the subject. It is of incidental interest that the only references (4 out of 84) to work published since 1950 are those of the author. In "Some Recent Developments in Pyridine Chemistry," J. P. Wibaut presents a wide coverage of the organic chemistry of pyridine. This chapter and the others are not aimed at comprehensiveness, but do succeed in being concise and well organized. The volume is rather expensive when one compares its coverage with that of "Quarterly Reviews" or "Annual Reports of the Chemical Society."

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Selected Values of Physical and Thermodynamic Properties of Hydrocarbons and Related Compounds. Comprising the Tables of the American Petroleum Institute Research Project 44 Extant as of December 31, 1952. By FREDERICK D. ROSSINI, KENNETH S. PITZER, RAYMOND L. ARNETT, RITA M. BRAUN, AND GEORGE C. PIMENTAL. Carnegie Press, Carnegie Institute of Technology, Pittsburgh, Pennsylvania. 1953. ix + 1050 pp. 22 × 27.5 cm. Price, \$7.00.

This volume represents a compilation of the tables prepared, and in some cases more recently revised, in a ten-year period of the work of the American Petroleum Institute Research Project 44. A previous volume compiled the available data, as of May 31, 1947, for hydrocarbons in 358 pages of tables. The present work, however, is considerably more extensive and contains 747 pages of tables of data. The primary emphasis is still on hydrocarbons, but a start has also been made for related sulfur compounds by presenting 42 pages of tables of physical data for some of the latter.

A quotation from the preface very adequately describes the undertaking. "With regard to the physical and thermodynamic properties, the aims of the Project are as follows: To examine all the pertinent original data in the literature, plus all available unpublished data, and to appraise them critically; to correlate values of given properties with temperature or pressure, to obtain values for temperatures or pressures for which no data are available, and with molecular structure to obtain values for compounds for which no data are available; to make original calculations of thermodynamic and physical properties as necessary; to select and tabulate 'best' values of the properties; to prepare the selected values in a convenient form for use by industrial

and scientific laboratories; to publish descriptions of the original calculations and correlations; and to keep the tables of selected values of properties up-to-date with revisions at appropriate intervals."

The physical properties tabulated include: boiling point and pressure coefficient of the boiling point, refractive index, density, freezing point, viscosity, surface tension and critical constants. The more important thermodynamic properties include: heat and entropy of vaporization; heat and entropy of fusion; heat of combustion at 25° for both the liquid and gaseous states and the corresponding heat of formation, entropy and free energy of formation; and for the ideal gaseous state to high temperatures the heat-content function, the free-energy function, entropy and heat capacity. The compilation also contains an explanatory introduction, and a number of tables of fundamental constants, of conversion factors, and of thermodynamic properties of the important elements (oxygen, hydrogen, nitrogen, carbon) and some of their compounds. It is well supplied with indices to facilitate the finding of desired data.

The book has been printed by a photolithographic process, apparently with some reduction from the original typed manuscript. In this connection a certain occasional indistinctness of letters and figures has developed, as for example on pages 2 and 467. This minor point constitutes the only derogatory feature which the reviewer has noted in an otherwise most excellent piece of work.

This volume will prove extremely valuable to any physical chemist, organic chemist or chemical engineer who has occasion to deal with hydrocarbons and related compounds.

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BOOKS RECEIVED

February 10, 1954–March 10, 1954

LOUIS DE BROGLIE, RAYMOND DAUDEL, JEAN LECOMTE, JEAN WYART, ODILON CHALVET ET CLAUDE VROBLANT, MME PAULINE RAMART-LUCAS, CAMILIE SANDORFY, NGUYEN-QUANG TRINH, HENRI LUMBROSO, ALEXANDER LAFORGUE, ADOLPHE PACAULT, MME NICOLE LUMBROSO ET JEAN HOARAU, PAUL CHANSON. "Les Applications de la Mécanique Ondulatoire, A L'Etude de la Structure des Molecules." Revue D'Optique Theorique et Instrumentale, 165, Rue de Sevres 3 et 5, Boulevard Pasteur, Paris 15, France. 219 pp. 1953. 1600 francs.

J. N. DAVIDSON. "The Biochemistry of the Nucleic Acids." John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1954. 200 pp. \$2.25.

PAUL H. EMMETT, (edited by). "Catalysis," Volume I. Reinhold Publishing Corporation, 330 West 42nd Street, New York 36, N. Y. 1954. 394 pp. \$10.00.

C. G. B. GARRETT. "Magnetic Cooling." The Harvard University Press, Harvard University and John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1954. 110 pp. \$4.50.

SIR IAN HEILBRON AND H. M. BUNBURY, (editors-in-chief). "Dictionary of Organic Compounds." 4 Vols. Oxford University Press, 114 Fifth Avenue, New York 11, N. Y. 1954. Vol. I—654 pp., Vol. II—845 pp., Vol. III—838 pp. and Vol. IV—694 pp. \$78.00 set.

NATIONAL BUREAU OF STANDARDS. "Tables of Circular and Hyperbolic Sines and Cosines for Radian Arguments." Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1953. 407 pp. \$3.00.

J. TIMMERMANS. "Les Constantes Physiques Des Composés Organiques Cristallises." Masson Et Cie, Editeurs, Libraires De L'Academie De Medecine, 120, Boulevard Saint Germain, Paris vi, France. 1953. 557 pp. 5200 francs.