Plan Short Course Program

THE 1961 SHORT COURSE at the University of Rochester, Rochester, N.Y., will open Sunday, July 23, with a two-hour buffet supper and end about 4:30 p.m. Wednesday, July 26, according to the local chairman, N.H. Kuhrt of Distillation Products Industries. In between there will be much activity.

Classes are scheduled for Monday morning, afternoon, and evening, also on Tuesday morning, Wednesday morning and afternoon. On Tuesday afternoon there will be a visit to Kodak Park, including a general tour and a visit to the industrial laboratory of Kodak. At the latter there will be a demonstration of the newest and finest analytical equipment from gas chromatography to nuclear magnetic resonance (NMR). That evening the short course students will visit the George Eastman House, which has a world-famous museum of photography. Concluding the visit probably will be an old-time movie (pre-TV vintage) in the Dryden theater.

Housing for the short course, Dr. Kuhrt reports, will be Hoeing hall, a new dormitory. Meals will be served cafeteria style in the Women's Center on the campus. Lectures will be at the Lower Strong Auditorium.

Program chairman for the three-day course on "Newer Lipid Analyses" is Raymond Reiser of Texas A & M, who with his committee is seeking papers on assays for insecticides, herbicides, fungicides, and drugs; use of infrared, ultraviolet, and mass spectra; nuclear magnetic resonance; location of double bonds; isotopic assay; measurement of unsaturation; separation and estimation of phospholipids, individual glycerides, cholesterol and other sterols; gas chromatography, including fatty esters and related compounds, steroids, radiation measurement, and high-temperature methods; column and thin-layer chromatography.

Among the speakers will be R.T. Holman, C.R. Scholfield, J.M. Hamilton, H.K. Mangold, H.J. Dutton, James Mead, and S.R. Lipsky.

The registration fee will be announced soon. Inquiries may be sent to the American Oil Chemists' Society at 35 E. Wacker drive, Chicago 1, Ill.

• *Fatty Acids*

December production of fatty acids classified under Categories No. 1 to No. 12 totalled 36.9 million pounds, down 4.5 million pounds from November and down 1.6 million pounds from December 1959 acording to the Fatty Acid Producers' Council, New York. Production of tall oil fatty acids as defined by Category No. 13 was 7.0 million pounds, the same as the November 1960 level.

Disposition of all fatty acids, except Category No. 13, amounted to 37.8 million pounds compared to 40.5 million pounds in November 1960, and 38.2 million pounds in December 1959. For Category No. 13 disposition totalled 7.2 million pounds. Disposition, as a total of all types now in the census, was 45.0 million pounds in December *versus* 47.7 million pounds the previous month.

Finished goods inventories for Categories No. 1 to No. 12 were 49.6 million pounds on December 31, up 1.4 million pounds from the end of November. Work-in-process stocks, as a total for all categories, was 21.2 million pounds, unchanged from the November 30 figure.

Add to Committees

J.L. Trauth of Emery Industries, Cincinnati, O., has been succeeded as chairman of the subcommittee for the analysis of commercial fatty acids of the Fat Analysis Committee by Richard Dreyer, also of Emery Industries, according to V.C. Mehlenbacher, F.A.C. chairman.

Succeeding D.H. Wheeler of General Mills and S.F. Herb of E.R.R.L. on the Spectroscopy Committee, according to R.T. O'Connor, chairman, are Paul Magidman of the Eastern Regional Research Laboratory, Philadelphia, and Seymore Goldwasser of Lever Brothers Company, Edgewater, N.J. These appointments have been confirmed by the president of the Society, R.W. Bates.

• *New Books*

TECHNOLOGY OF NONMETALLIC COATING, by A. Ya. Drinberg, E.S. Gurevich, and A.V. Tikhomirov; translated and edited by E. Bishop (Pergamon Press, 531 pp., 1960, $15). This book is a translation of a text book originally published in Russia in 1957. In his foreword to the English edition the translation editor states that the book was intended for use in training chemical engineers who plan to specialize in the field of nonmetallic coatings. However a somewhat different concept of the purpose of the book is given by the authors who imply in their foreword that the book, although of interest to engineering, technical, and scientific personnel, is intended for industrial workers. These workers apparently are given more technical training than we would give to a shop foreman but less than we would ordinarily expect a chemical engineer to have.

From the contents of the book it is evident that "technology of nonmetallic coatings" is restricted to properties, selection, and methods of application of coatings and to related subjects pertinent to their commercial utilization. Information on the chemistry, synthesis, and manufacture of coating materials is not included. The term "nonmetallic coatings" covers not only organic coatings but also oxide, phosphate, and cement coatings.

Within the limits just indicated the authors try to cover all aspects of the field, ranging from theoretical principles of anticorrosion protection to design of painting shops. Although this breadth of coverage necessitates brief discussions, treatment of most topics is adequate to put them in proper perspective and to form a basis for further reading and study. In addition to those already mentioned, subjects discussed include: properties of painting materials and their interaction with the painted surface; principles of coating formation; properties of coatings; aging of coatings; preparation of metal surfaces before applying coatings; inorganic nonmetallic coatings; organic linings and greases; paint coatings on metal; painting and varnishing of wood; decorative and imitative coatings; painting and lacquering of fibrous materials; painting of plaster and concrete; equipment for preparing metals for application of coatings; tools, apparatus, and equipment for painting and varnishing; equipment for artificial drying; and transport equipment. The first 95 pages of the book are devoted to basic principles; the remaining pages deal with the practical aspects of correct application of suitable coatings to various substrates.

The book measures approximately 6 x 10 in. Printing, done by the photo-offset process from typed copy, is clear, as are the drawings. Binding is adequate. Indexes covering authors, subjects, and standard Soviet specifications are provided. The subject index is not as extensive as could be desired. An appendix containing 12 tables of pertinent data is included.

Apart from its value as a source of general background on coatings and their application, the book is of interest to American readers because of the information it contains on Soviet coatings technology. Thus coatings that meet official specifications are usually cited as examples of specific types of coatings. Tables have been provided that give properties of many of these specification coatings. Other tables contain performance data on Soviet painting equipment, such as paint spray guns. As would be expected, nearly all of the literature references are to Soviet sources. Undoubtedly many of these sources are not now, but should be, known to American readers.

Because of its great emphasis on practical considerations, the reviewer believes that the book would have only limited value to the great majority of scientists directly engaged in research on coatings. However it should be interesting and useful to anyone primarily concerned with ultimate utilization of coatings in industry.

H.M. TEETER, Northern Regional Research Laboratory, Peoria, Ill.

PHYSICAL METHODS OF ORGANIC CHEMISTRY, 3rd ed., Vol. I, Part IV, edited by Arnold Weissberger (Interscience Publishers Inc., New York, 904 pp., 1960, $26). The comments this reviewer made in examining Part II and III of

this fine series apply equally well to Part IV. Many of the striking advances in organic chemistry during the past two decades have been the direct consequence of the rapid development and application of physical methods. Since 1946, when the first edition was published, we have seen dramatic improvements in older physical methods as well as the introduction and "perfection" of many new methods. This fine series of books has kept up with the progress by timely revisions.

Part IV of this series represents an excellent fusion of the very new with the not so new, but all are up to date, authoritative, and critically written. The present volume has the following subjects and authors:

Microwave Spectroscopy (B.P. Dailey)
Nuclear Magnetic Resonance (H.S. Gutowsky)
Paramagnetic Resonance Absorption (G.K. Fraenkel)
Determination of Magnetic Susceptibility (P.W. Selwood)
Potentiometry (C. Tanford and S. Wawzonek)
Conductometry (T. Shedlovsky)
Determination of Transference Numbers (M. Spiro)
Electrophoresis (D.H. Moore)
Polarography (O.H. Müller)
Controlled-Potential Electrolysis (L. Meites)
Determination of Radioactivity (B.M. Tolbert and W.E. Siri)
Mass Spectrometry (D.W. Stewart)

It is difficult to see how any chemical library can be without the entire series. The present volume is easy to read, it is well illustrated, it has an excellent balance of theory and practice, and it is free of obvious errors. The present volume has a cumulative subject-index, which is, of course, the most useful of all as it covers the subject matter of all four parts.

Although there are relatively few direct references to fat chemistry, it is difficult to see how any organization concerned with the chemistry, physics, or physical chemistry of fats and derivatives can be without the entire series.

DANIEL SWERN, Eastern Regional Research Laboratory, Philadelphia, Pa.

LOW-TEMPERATURE TECHNIQUES, by F. Din and A.H. Crockett (Interscience Publishers Inc., 209 pp., $6.50). This is a concise, easy-to-read presentation of the principles involved in low-temperature techniques. A small, relatively slim book, it is packed with important information demonstrating the wide range of uses for low-temperature techniques. Discussions include production and measuring of low temperatures, low-temperature techniques in the laboratory, properties of materials at low temperatures, gas separation and refrigeration in industry, and the storage, transport, and uses of liquefied gases. Emphasis is on the practical aspects of the subject, making it valuable to all industry and scientific investigators interested in working with low temperatures. It is generously illustrated with figures and tables of data and contains lists of recommended reading for those wishing additional information. A seven-page index is appended.

MADELINE G. LAMBOU, Southern Regional Research Laboratory, New Orleans, La.

HOMOLYTIC AROMATIC SUBSTITUTION, by G.H. Williams, Birkbeck College, London (Pergamon Press Inc., New York, 133 pp., 6⅝ x 10 in., 1960, $7.50). This book is Vol. 4 in a series of monographs on organic chemistry. The other volumes are: Vol. 1. Waters—"Vistas in Free Radical Chemistry;" Vol. 2. Tofchiev *et al.*—"Boron Fluoride and Its Compounds as Catalysts in Organic Chemistry;" Vol. 3. Janssen—"Synthetic Analgesics. Part 1. Diphenylpropylamines;" Vol 5. Jackman—"Applications of Nuclear Magnetic Resonance Spectroscopy in Organic Chemistry."

Volume 4 consists of seven chapters, an author index and a subject index. These are as follows: Chapter 1, General Introduction (general characteristics of homolytic reactions, homolytic and heterolytic aromatic substitution); Chapter 2, Theoretical Treatments of Aromatic Substitution (introduction, general assumptions of the isolated molecule and transition state methods, isolated molecules approach, transition state approach, influx of the reagent, general discussion); Chapter 3, Homolytic Arylation Reactions (introduction, arylation with diazo and azo compounds, arylation with diacyl peroxides and analogous substances, arylation with aryl radicals obtained by photolysis); Chapter 4, Quantitative Investigation of Homolytic Arylation (reaction mechanism, relative rates of arylation, ratios of isomers, partial rate factors for phenylation); Chapter 5, Intramolecular Arylation (introduction, experimental methods, reaction mechanism); Chapter 6, Alkylation (homolytic alkylation reactions, quantitative study of homolytic alkylation); Chapter 7, Hydroxylation and Some Other Substitution Reactions (hydroxylation, benzoyloxylation, acetyloxylation, halogenation, amination and amidation, mercuration); Author Index; Subject Index.

The branch of organic chemistry which is concerned with the reactions of free radicals, although fairly young, has grown and continues to grow with remarkable vigor and at a prodigious rate. Such has been its growth that the production of a comprehensive treatise on the whole of the field would now be extremely difficult, if not impossible. The stage has now been reached when its subdivision for the purpose of book writing has become necessary.

This book is concerned with one group of free radical reactions, namely, those in which substitution of atoms or groups (usually hydrogen) attached to aromatic nuclei is effected by free radicals of various kinds. While the emphasis in this book is on the theoretical aspects of the homolytic substitution reactions, their preparative use has also been considered and ample references are included to the original literature (to December, 1958) and to review articles when available. This book should therefore serve as a useful source of information to the reader who is interested in the practical applications of these reactions.

After a brief introduction there is a chapter devoted to a general survey of the methods of theoretical approach to aromatic substitution in general, and homolytic substi-

tution in particular. In the following chapters these ideas are applied in a discussion of the results of a number of homolytic substitution reactions.

R. Ray Estes, A.E. Staley Manufacturing Company, Decatur, Ill.

Research as a Science. Zetetics, by Joseph T. Tykociner (Electrical Engineering Research Laboratory, University of Illinois, XI + 205 pp., paper cover, 8½ x 11 in., 1959, available from Joseph T. Tykociner, 306 West Iowa street, Urbana, Ill., $2). This book is not at all concerned with the administration of research. Rather the author's stated aim is to establish a basis for the collection and systematization of all information about research itself, including the creative process. This reviewer's first reaction was that this book would have little interest for the readers of the Journal, but further consideration of its contents led to a modification of that opinion.

Research activity has now reached a stage of development unprecedented in its scope and its influence on human affairs. It involves many branches of science and engineering; it is reported to give occupation to about 1% of the manpower of our country, and it consumes a considerable part of our national budget. In fact, our very existence and survival may depend upon it. For this reason alone any attempt to improve available information about research deserves our consideration.

The book is divided into two parts. Part One (144 pages) sets forth Principles and Aims while Part Two presents an Inventory of the Arts and Sciences with notations regarding their areas. The author makes use of 13 tables and seven figures more clearly to develop and depict his thoughts regarding research as a science.

Waldo C. Ault, Eastern Regional Research Laboratory, Philadelphia, Pa.

Lipid Metabolism, edited by Conrad Bloch (John Wiley and Sons Inc., New York, 411 pp., 1960, $10.50). This book is a collection of reviews on selected topics in lipid metabolism by the leading research workers in the various fields. As stated by the editor in the preface, it is planned as a "companion to Hanahan's Lipid Chemistry," and, as also stated by the editor, it "does omit some important subjects." However the failure of this book to cover every aspect of lipid metabolism in no way detracts from the very superior treatment that each chapter gives the subjects which are included.

The eight areas covered by this book, and the authors of each, are as follows: 1. Enzymatic Mechanisms of Fatty Acids Oxidation and Synthesis, by David E. Green and Salih J. Wakil; 2. The Metabolism of the Unsaturated Fatty Acids, by James F. Mead; 3. The Metabolism and Function of Phosphatides, by R. J. Rossiter and K. P. Strickland; 4. Metabolism of Glycerides, by Bengt Borgstrom; 5. Lipolytic Enzymes, by Morris Kates; 6. Hormonal Regulation of Fatty Acid Metabolism, by Robert G. Langdon; 7. Formation and Metabolism of Bile Acids, by S. Bergstrom, H. Danielsson, and B. Samuelsson; 8. Chemistry and Metabolism of Bacterial Lipides, by F. Asselineau and E. Lederer.

The chapters are outlined in detail in the Table of Contents, and all chapters are themselves carefully divided into captioned sections and subsections. The literature covered by these reviews includes all of 1958, some of 1959, and a scattering of references to the 1960 literature. Most chapters include a brief discussion of the earlier research in the subject area in order to develop the background although the great bulk of the space and references are devoted to the most recent work.

The treatment is not a simple review but includes a critical discussion of the pros and cons and especially of interpretation. The excellent coverage of the literature and the critical evaluation of it make this book especially valuable to researchers as well as to students and teachers of lipid metabolism.

Several of the chapters are invaluable in that they cover areas that have not been reviewed so thoroughly previously. Examples are the chapters on Lipolytic Enzymes, Hormonal Regulation of Fatty Acid Metabolism, and the Chemistry and Metabolism of Bacterial Lipids.

These chapters have wisely been given more space than the others.

The reviewer recommends this book most highly to all teachers, students, and research persons interested in the field of lipid metabolism.

RAYMOND REISER, Texas Agricultural Experiment Station, College Station, Tex.

• *New Literature*

BURRELL BULLETIN No. 841. A six-page bulletin, describing the Burrell Kromo-Tog, Model K-7, a new ionizing instrument for gas chromatography. Burrell Corporation, 2223 Fifth avenue, Pittsburgh 19, Pa.

SIZING CHART BULLETIN (JSC-1). A 4-page chart showing how to size sliding gate regulators and control valves. OPW-Jordan, 6013 Wiehe road, Cincinnati 13, O.

MODEL 184-B PROCESS VAPOR FRACTOMETER. Eight data sheets describing sensing units, programmer chassis, pneumatic control accessory, building block sampling systems, and column materials for process stream applications. Also a 6-page booklet, "May We Help You?" telling about supporting services available for instrument users. Perkin-Elmer Corporation, Norwalk, Conn.

A REVIEW OF COST STUDIES IN AGRICULTURAL UTILIZATION RESEARCH. Southern Utilization Research and Development Division, Box 19687, New Orleans 19, La. (Reprint No. 2021).

CENCO HYVAC S14. A booklet giving details of installation, operation, and maintenance of mechanical vacuum pump for industrial and laboratory use. Central Scientific Company, a Division of Cenco Instruments Corporation, 1700 Irving Park road, Chicago 13, Ill.

TECHNICAL BULLETIN No. VOR-1260. A 50-page bulletin covering refining processes and equipment systems for the fats and oils industry, including degumming and alkali-refining systems. Podbielniak Inc., Division of Dresser Industries Inc., 341 East Ohio street, Chicago 11, Ill.

COLOR TRENDS. An eight-page booklet showing today's preferences in house colors. Monsanto Chemical Company, Plastics Division, Springfield, Mass.

STRAINERS. A 12-page catalog (No. 6008) listing self-cleaning "Y" types and start-up strainers for steam, air, gases, and liquids. Leslie Company, 507 Grant avenue, Lyndhurst, N. J.

PRICE LISTS. Two catalogs describing prices and parts for sodium peroxide bombs, oxygen combustion bombs, and bomb calorimeters (No. 61-1), also pressure reaction apparatus (No. 61-2). Parr Instrument Company, 211 53rd street, Moline, Ill.

NCR CATALOG. Eight pages summarizing the complete line of high vacuum mechanical and diffusion pumps, valves, gauges, accessories, portable pumping systems, coaters, furnaces, freeze-drying equipment, etc. NCR equipment Corporation, 160 Charlemont street, Newton 61, Mass.

HI-PRESSURE INDICATING ROTAMETER. Bulletin 131 covering drawings, dimensions, and capacity tables of #1400 Series. Brooks Instrument Company Inc., Hatfield, Pa.

ENGINEERING PROFESSIONALISM IN INDUSTRY. A 104-page booklet reporting the findings of the Professional Engineers Conference Board of Industry, in cooperation with the National Society of Professional Engineers, 2029 K street N.W., Washington 6, D.C.

• *Received in the Journal Office*

Written in German and English are two scientific bulletins from Academie Polonaise des Sciences, Warszawa, Palac Kultury 1 Nauki, Poland, Vol. VIII, Nos. 8 and 9.

A six-page booklet reports the November 10 report of Shri Ramdas Kilachand, president, before the Bombay Oilseeds and Oils Exchange Ltd. at the 33rd annual meeting.

A bulletin from Acta Polytechnica Scandinavica (Ch. 10 281/1960), Stockholm, Sweden, treats of the "Thermophilic Digestion of a Mixture of Domestic Sewage Sludge and Cellulose Materials," by L. Enebo and S.O. Pehrson.

The Information Division, Organization for European Economic Co-operation, 2 Rue Andre Pascal, Paris, France, has published a report on "Non-Ferrous Metals Statistics for 1959, Trends for 1960."

A technical bulletin "Estudos Agronomicos," Vol. 1, 1960 (January-March), includes an article in English on "The Soils of Portuguese Guinea," by A.J. Da Silva Teixeira. Publication address is Rua Rodrigo da Fonseca, 103.4., Lisboa 1, Portugal.

Vote by Mail

Active members of the American Oil Chemists' Society were sent election ballots as of February 6, 1961, for the 1961-62 ticket, headed by A.R. Baldwin, who will automatically become president on May 1. Deadline for voting will be April 3. Announcement of the results will be made at the May 1 meeting in St. Louis at the Sheraton-Jefferson hotel.

Two corrections should be made in the election story in the February issue (p. 27): Raymond Reiser has not been on the Governing Board during the past year; the meeting will be held in St. Louis, not Dallas.

Holds Convention

The Oil Technologist's Association of India, Kanpur, held the 16th Annual Conference of Oils and Oil-Based Industries in December. Those industries included were oil milling, solvent extraction, refining and hydrogenation, soaps, paints and varnishes, and allied industries.