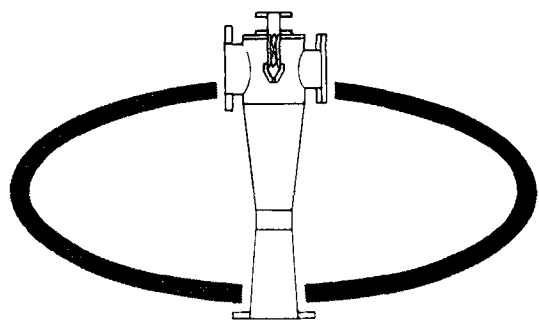


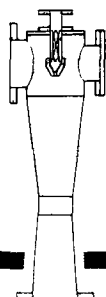
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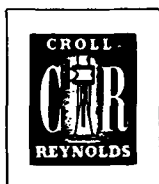
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BARROW-AGEE CUP—This trophy, donated by the Barrow-Agee Laboratories, Memphis, Tenn., for the highest proficiency in the Smalley cottonseed series, will be presented at the 1961 spring meeting in St. Louis. It is designed to honor the memory of E. R. Barrow and G. W. Agee, who through their foresight, diligence, and integrity did so much toward the organization of the Society and served as president in turn. The trophy will be permanently retired by a laboratory winning it three times.

• Other Associations

Charles E. Beach of John C. Stalford and Sons Inc., Baltimore, was elected president of the Chemical Specialties Manufacturers Association at the 47th annual meeting in Hollywood, Fla., Dec. 5-8.

The American Institute of Chemical Engineers, at the 53rd annual meeting in Washington, D.C., December 4-7, elected J.J. Healy, Monsanto Chemical Company, St. Louis, Mo., president for 1961.

Eugene H. Ott of the Ferbert Schorndorfer Division of the American Marietta Company, Cleveland, O., was installed as president of the Federation of Societies for Paint Technology at the 38th annual meeting in Chicago recently.

The Engineers Joint Council, national federation of engineering societies, elected James N. Landis, Bechtel Corporation of San Francisco, Calif., president at its recent New York meeting.

Offers Management Guide

A new guide for management and library administrators, "A Checklist for the Organization, Operation, and Evaluation of a Company Library," has been published by the Special Libraries Association, New York. Compiled by Eva Lou Fisher, formerly chief librarian for Lockheed Aircraft Corporation, the book answers many problems confronting management, research, technical, and administrative personnel.

Bound in paper, the 64-page booklet is presented in three parts: Part I on general problems of administrators and management, Part II on specific problems, and Part III on a plan. The price is \$2.

• *New Books*

BIOCHEMISTRY OF PLANTS AND ANIMALS, by M.F. Mallette, P.M. Althouse, and C.O. Claggett (John Wiley and Sons Inc., New York, 1960, 552 pp., \$8.50). This book is a descendant of previous texts on agricultural biochemistry written by the faculty of Pennsylvania State University. It has been modernized by the exclusion of soils, fertilizers, and pesticides, and the biochemical treatment has been brought up to date. Some of the extensive historical background of biochemistry has wisely been retained. The text, also wisely, includes a chapter on the physical properties of matter, which unfortunately is being omitted from many recent texts on biochemistry. The latter material is presented in an elementary manner with a minimum of mathematics.

The chapter on carbohydrates is limited to classification and structural formula, and even that is abbreviated. The reviewer believes that the polysaccharides could profitably receive more attention in a text with the stated objectives of this one.

Although the chapter on lipid[e]s does contain some chemical reactions, the same criticism of oversimplification made of the chapter on carbohydrates applies. The nomenclature used for glycerides is questionable, conforming to no accepted system. The list of references to lipid chemistry is out of date and inadequate.

The chapter on protein ignores the structure of the molecule except to describe it as a polypeptide. Peculiarly it includes sections on metabolism, on the biological action of amino acids, and on the biological properties of proteins. The space could well have been given to more chemical treatment since there is a chapter on protein metabolism. The chapters on enzymes, energy transfers, and biological oxidations are well done for a book of this nature.

There are 110 pages devoted to plant biochemistry. In reading this chapter, one gets the reaction again that the authors have tried to cover too much ground in a small book. The entire subject of the metabolism of germinating seeds is covered in about 1,000 words.

The rest of the book, about 220 pages, is devoted to animal biochemistry and is divided into chapters on Body Tissues 35 pages, Vitamins 48 pages, Mineral Metabolism 38 pages, Feeds 17 pages, Digestion 9 pages, Carbohydrate Metabolism 11 pages, Lipid Metabolism 10 pages, Protein Metabolism 32 pages, and Energy 18 pages.

The chapter on Body Tissues contains sections on muscle and nerve action, blood clotting, gas exchange, gastrointestinal hormones, insulin structure, and various hormones. Although this certainly adds to the readability of the chapter and ties structure to function, one wonders whether, in the obvious struggle for space, many of them could not have been treated in the metabolism chapters. Thus under fatty tissue is discussed the influence of the nature of the fat in the diet on the fatty acid composition of depot fat. The determination of the structure of insulin is discussed under pancreas. Actually there are 13 pages on glands and hormones, which is somewhat out of proportions to the 21 pages devoted to fat and carbohydrate metabolism combined.

The reviewer noted some error in the chapter on lipids and digestion. Simple lipids do not "yield only aliphatic alcohols and aliphatic monocarboxylic acids" on hydrolysis (p. 74); stearic acid is not the most abundant saturated fatty acid in animals' fat (p. 82); and only rare or unusual lecithins would not contain one saturated and one unsaturated fatty acid (p. 88). Also Vitamin A and the sterol esters are omitted from the waxes (p. 92).

It is not true that "tissue lipases resynthesize glycerides from absorbed glycerol and free fatty acids," and the idea that fatty acids are transported from the lumen of the intestine to the tissues as bile complexes (p. 439) has never even been proposed. Also it is highly improbable that "much, if not most, of the fat absorbed during digestion is absorbed as finely emulsified unhydrolyzed glycerides" if triglycerides are meant, as this is sure to be interpreted (p. 439).

The book is, in general, well written and easily understood. In some chapters one gets the feeling that it is

written too simply and "talks down" to the upper classman for whom it is intended.

In summary, this text is excellent as a survey of the entire field of biochemistry for undergraduate students who will go no further, such as nurses and home economics and general agriculture majors. It is wholly inadequate however to build upon for more advanced study, in which area it is no competitor for Fruton and Simmond's "General Biochemistry," also published by John Wiley and Sons.

RAYMOND REISER, Texas A & M College, College Station, Tex.

THE PRINCIPLES OF ELECTROPHORESIS, by Rene Audubert and Serge de Mende (The Macmillan Company, New York, 142 pp., 1960, \$7). The term electrophoresis was originally applied to the migration of charged colloidal particles in an electric field. Electrophoresis either in a liquid or in a supporting medium involves the direct application of the fundamental laws of electrochemistry. Both Rene Audubert and Serge de Mende are distinguished in this field of physical chemistry. In fact, their first chapter, General Properties of Electrolytes, reflects this familiarity with electrolytes. However their application of the principles of electrophoresis to problems of interest to lipid chemists is scanty, in fact, the term lipoprotein is not even mentioned in the index.

The remaining eight chapters are entitled Colloidal Systems, Electrokinetic Potential and Electrophoresis, Determination of Particle Mobilities, The Moving-boundary Method (*Tiselius*), Electrophoresis in a Supporting Medium, Techniques of Paper Electrophoresis, Preparative Electrophoresis in a Supporting Medium, and Some Applications of Electrophoresis. The application of electrophoresis to diseases of the cardiovascular system is mentioned briefly. However a much better discussion of this application is given in the recent book edited by Milian Bier entitled "Electrophoresis: Theory, Methods and Applications."

"The Principles of Electrophoresis" represents a physical chemist's approach to a study of colloidal systems. These principles will find increasing uses in the lipid field and will have to be applied in order to gain further knowledge of the nature of the lipid-protein complex in oil seeds as well as in animal tissue. In fact, further knowledge in regard to the nature and role of the lipoproteins in lipid metabolism may yield the answer to the atherosclerosis problem, which has been linked to an overconsumption of dietary fat by a large number of research workers in heart disease. However data obtained through the application of basic principles, such as electrophoresis, rather than epidemiological studies with human subjects represents the most logical solution to the present situation the fat and oil industry faces. Books such as "The Principles of Electrophoresis" are therefore of real interest to fat and oil chemists.

F.A. KUMMEROW, University of Illinois, Urbana, Ill.

THE PHYSICO-CHEMICAL CONSTANTS OF BINARY SYSTEMS IN CONCENTRATED SOLUTIONS, VOL. 3, SYSTEMS WITH METALLIC COMPOUNDS, by Jean Timmermans (Interscience Publishers Inc., 1322 pp. + xiii, 1960, \$36). This is one of a series of four volumes on binary concentrated solutions. For the series the author states he has considered all kinds of substances, elements or compounds, with the exception of metallic alloys, for solution concentrations largely between 10 and 90 weight per cent. The two preceding volumes dealt with organic compounds. Volume 3 is divided into four sections as follows: a) systems with two metallic salts (301 pp.), b) systems of water + salts of monovalent metals (398 pp.), c) water + salts of polyvalent metals (330 pp.), and d) metallic salts + other solvents (289 pp.).

The constants tabulated for the various solutions, based on an exhaustive compilation of literature data, are grouped under a) heterogeneous equilibria, b) properties of phases, and c) thermal constants. While this volume contains many data of interest to some users, too much space has been devoted to a few factors, such as freezing temperatures and densities. Insufficient data, if available, have been included for such properties as viscosity, surface tension, refractive

index, heats of mixing, dilution, etc., vapor pressure, boiling points, specific heat, etc.

For instance, 16 tables are devoted to the densities of water-potassium hydroxide solutions and 83 tables for water-sodium chloride solutions. A wide variety of conditions is covered in these tables, but naturally all of the data do not agree and the reader must then choose such data as he believes to be the most reliable. Elimination of faulty and needless data would have been more appropriate.

The source material was obtained from both foreign and American publications for a period from about 1840 to 1956. Authors and dates of publication are given in Volume 3, but the reader must consult another volume (No. 4?) for remaining details of the bibliographical references. No index is included, and it is necessary to study in some detail the organization used by the author. Practically all constants are given in the c.g.s. system. Printing is by the photo-offset method.

In this reviewer's opinion, this volume will have very limited use among workers in the fats and oils field.

O.L. BREKKE, Northern Regional
Research Laboratory, Peoria, Ill.

INTRODUCTION TO THE CHEMISTRY OF HETEROCYCLIC COMPOUNDS, by R.M. Acheson, Fellow and Tutor in Chemistry, The Queen's College, Oxford (Interscience Publishers Inc., New York, 342 pp., 1960, \$5). This 6 x 9 hardboard-covered book is divided into nine chapters.

These are Heterocyclic Analogs of Cyclopropane, Heterocyclic Analogs of Cyclobutane, Heterocyclic Analogs of Cyclopentadiene with One Heteroatom, Fused Ring Systems Involving Pyrrole, Furan, and Thiophene Rings, Heterocyclic Analogs of Benzene with One Heteroatom, Heterocyclic Analogs of Naphthalene with One Heteroatom, Compounds with Two Heteroatoms in a Five-Membered Ring, Compounds with Two Heteroatoms in a Six-Membered Ring, and Some Compounds with More Than Two Heteroatoms.

This text, addressed to senior and graduate-level students as well as to the professional organic chemists, will be of assistance in understanding one of the most complex branches of organic chemistry. In one volume, it gives a concise account of the more important properties and chemical reactions of the basic heterocyclic systems, using modern electronic and mechanistic concepts where possible, and alluding where appropriate to recent biochemical discoveries. This work will serve as a source book for the more important properties and chemical reactions of these systems. Sugars and alkaloids have been omitted; these, together with more detailed information on the above subject, can be found in the more comprehensive, multi-volume treatments of these subjects. A general bibliography is placed at the end of each chapter, with references as late as 1959, and review articles are generously cited.

R. RAY ESTES, A. E. Staley Manufacturing Company, Decatur, Ill.

ADVANCES IN SPECTROSCOPY, Vol. I, edited by H.W. Thompson (Interscience Publishers Inc., 363 pp., 1959, \$12.50). This book is intended as the first in a series of reviews which are to cover all the important aspects of spectroscopy. The purpose of the series is to provide collected authoritative surveys of recent progress in various fields, written by experts who have themselves contributed to this progress. The first volume achieves this purpose admirably. Eight topics have been reviewed by acknowledged experts with a well-balanced emphasis on both theory and experimental details. The reviews are well done and include many up-to-date references.

While much that appears is of little immediate use to the practicing spectroscopist, the new techniques and information developed in specialized studies have a habit of spilling over into other fields of spectroscopy. It is mandatory that some means be available to encourage this transfer of information. Reviews of this type seem the only way to cope with the growing problem of digesting the ever-increasing volume of published literature.

One question only the wisdom of publishing expensive, permanent volumes of this type when the reader might be better served by cheaper, paper-backed, lithographed pam-



S.S. Chang (1952) has been appointed associate professor in the department of Food Science at the College of Agriculture, Rutgers University. He will conduct research in edible fats and oils and in the chemistry of flavors.

Formerly he was senior research chemist for the A.E. Staley Company, Decatur, Ill., and before that research chemist for Swift and Company, Chicago.

Dr. Chang has served as reporter for several recent meetings of the American Oil Chemists' Society.

phlets. The number of topics which should be reviewed will require many more volumes, and the rapid progress of spectroscopy will surely make them out of date a few years after publication. The availability of less expensive volumes would assure wider circulation and contribute even more to the advances in spectroscopy.

D.A. Ramsay discusses the spectra of polyatomic free radicals (pp. 1-55), emphasizing the experimental methods and summarizing results obtained on many molecules.

Spectroscopy of the vacuum ultraviolet is the subject of the second review by W.C. Price (pp. 56-75). This is more of a literature survey with only a brief discussion of experimental techniques and results.

Two brief articles on the refractive index of air and the determination of the velocity of light are contributed by D.H. Rank. The best recent values by several new methods are tabulated.

High-resolution Raman spectroscopy is described by B.P. Stoicheff (pp. 91-174). An extensive treatment of results obtained on small molecules is provided within the framework of modern theory. A description of the source optics of Raman spectrometers is included.

The section on modern infrared detectors by T.S. Moss (pp. 175-213) is an excellent treatment of the several detectors with comparisons of both theoretical and actual performance. The newer semi-conductor detectors are included.

A. Elliott, in an article on the infrared spectra of polymers (pp. 214-287), discusses generally applicable techniques and theory and concludes with a valuable, extensive, classified bibliography. The topic of applications is limited to results obtained on cellulose, synthetic polypeptides, and proteins.

Rotational isomerism is the subject of the last section by N. Sheppard (pp. 288-354). Although the subject is limited to rotation about C-C bonds in saturated molecules, an extensive discussion and bibliography are given and are warranted. Rotational isomerism is described in substituted ethanes, polymethylene chains, cyclic compounds, polymers, and steroids.

R.O. CRISLER, The Procter and
Gamble Company, Cincinnati, O.

REVIEW OF TEXTILE PROGRESS, Vol. 10, 1958, edited by M. Tordoff and C.J.W. Hooper (U.S.A. Edition, Textile Book Publishers Inc., New York, 494 pp., 1960, \$8). "The Review of Textile Progress" originally appeared as a joint publication of the Textile Institute and the Society of Dyers and Colourists of England in 1950. It has served since that time the needs of both technologists and research workers for a concise guide and source of reference of the annual advances and techniques of the textile industry. The method used for dividing the subjects covered in Volume 10 is the same as used in the preceding nine volumes. A significant change has been made however in that the Butterworth Scientific Publications became, for the first time, a joint publisher with the original publishers and the publication has been given unrestricted distribution.

The high degree of authority and coverage earned by the earlier volumes of *Review of Textile Progress* has been maintained in Volume 10. The scope of the coverage may be discerned from the chapter headings: Physics and Chemistry of Fibrous Materials; Fiber Production; Conversion of Fibers into Finished Yarns; Fabric Production; Coloring of Textiles; Finishing of Textile Fabrics; Analysis, Testing, Grading, and Defects; Laundering and Dry-Cleaning; Building and Engineering; and Industrial Applications of Textiles. A running bibliography accompanies each chapter, and this is supplemented by comprehensive author and subject indexes.

The chief criticism leveled at the publication is the considerable lapse of time between the original publication and the citation in the *Review of Textile Progress*. In the case of Volume 10 the literature is covered very well through 1958, particularly that of English-speaking countries, and the *Review of Textile Progress* was published in England in 1959 but it was not published in the United States until 1960. The value of this annual review would be greatly increased by decreasing these time-intervals. Nevertheless the volume gives a clear picture of the progress made in the many areas of the vast textile industry of the world and should be much sought after by those having even a remote interest in this field.

JACK COMPTON, Institute of Textile Technology, Charlottesville, Va.

FOOD, THE YEARBOOK OF AGRICULTURE, 1959, edited by Alfred Stefferud (The United States Department of Agriculture, Washington, D. C., 736 pp., \$2.25). While this book has been written primarily for those who have a limited scientific background, it makes interesting and educational reading for all. Facts and truths on every aspect of food and health are presented in a logical manner while fallacies and fads are discussed but refuted.

The first part, under the heading, Backgrounds, includes the story of nutrition and a comprehensive list of answers to questions on nutrition which are often asked by the layman. A section on the nutrients includes discussions of the trace elements and unidentified substances in addition to fats, proteins, carbohydrates, vitamins, and water. Further sections provide information on the statistics of health, recommended allowances, food values, and the nutritive needs of individuals from infancy to old age. Quality and factors affecting food quality, subjects which are of interest to teachers of food processing and home economics, are discussed under 15 concise chapters which include the following items: animal products, fish, fruit, vegetables, and the roles of the Federal Trade Commission, the Food and Drug Administration, and the Public Health Service in controlling food quality. The contributions to the sections on preparation of food and costs and trends in the food market will be of particular interest to housewives and students of home economics. The final part of the book consists of discussions of food programs, which range from the school lunch program to the international task of "Feeding 6,280 Million."

The contributors to this volume faced a difficult task when they set out to provide "an authoritative, complete book that would put the complex subject of foods and nutrition into proper perspective," and they have completed their task remarkably well. The chapters on food fads and fallacies are particularly well written and provide good material for teachers in any area of foods as well as give clear, straightforward advice to laymen.

This book can be recommended to technicians in the food industries in addition to farmers, agriculture and home economics students, their teachers and parents. While those who are active in foods and nutrition research may not gather a great deal of new material from this volume, they may certainly benefit by reading these articles, which present clearly the needs of the public and the tremendous tasks which await the efforts of the expert.

PATRICIA V. JOHNSTON, University of Illinois, Urbana, Ill.

Longer shelf-life, gained through the intelligent use of antioxidants, has often spelled the difference between success and failure in marketing a food product. Key to the intelligent use of antioxidants is an understanding of their function. An easy way to obtain that understanding is through the following pieces of literature:

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- The Eastman family of Tenox food-grade antioxidants
- Which antioxidants for your fat-containing foods?
- Tenox antioxidants for more effective food packaging materials
- Tenox antioxidants for edible animal fats
- Effective stabilization of inedible animal fats with Tenox
- Tenox feed-grade antioxidants for poultry and animal feeds
- Tenox antioxidants for the fishing industry
- Mechanisms of fat oxidation

Eastman manufactures all the principal types of food-grade antioxidants in use today. We can, therefore, suggest without bias the most effective antioxidant for your product. For any of this literature about antioxidants, write to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSFORD, TENNESSEE.

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