

# Publications

## Book Reviews

**Nutrition and Physical Fitness**, 11th Edition, by George M. Briggs and Doris Howes Calloway, (CBS College Publishing, Holt, Rinehart and Wilson, 383 Madison Ave., New York, NY 10017, 1984, 729 pp., \$28.95).

This new edition of *Nutrition and Physical Fitness* reflects extensive revision. Of particular note is the addition of many topics, often controversial ones, throughout the text. These are presented in most chapters under the heading "Health Considerations."

The first chapter deals with food and its relation to physical fitness. It explains the science of nutrition, its importance and how it is studied. It also provides a list of general nutrition resources. The following chapters give standard coverage of carbohydrates and fiber, fats and alcohol, protein and amino acids, and digestion and absorption of nutrients. Two chapters on energy provide the basics in the area and discuss regulation of nutrient intake, activity and metabolism, and obesity and underweight. Five chapters are devoted to vitamins and five to water and minerals including one on the newer trace minerals. The next chapters deal with sources of nutrients and non-nutrients and food beliefs and eating patterns. A chapter on applied nutrition, "Theory into Practice," follows. The next four chapters deal with nutrition under special circumstances and at various stages of the life cycle. These include sports and physical activity, pregnancy and lactation, infancy and childhood and nutrition and dental health. The final chapter provides a global perspective on malnutrition. There is an appendix of 15 tables and a supplementary reading list for all chapters, which is particularly useful.

The authors are to be commended for their handling of the "health considerations" sections. These appear to be current and remarkably free of personal bias.

This book is meant to serve primarily as a text for an introductory course in nutrition and to provide a sound basis for further advanced or independent study. This task is done very well. It is, however, also meant to serve as a text for non-major students taking a one-time course in nutrition. Several chapters are particularly useful for this purpose. They include the first chapter, which explains what nutritional science is and how it is studied, and the chapter on sources of nutrients and non-nutrients, which includes discussions on food additives, food enrichment, food labeling and food buying. The chapter on food beliefs and eating patterns also will be of interest to non-majors. For an individual who is looking for an innovative approach or wants to be entertained, this is perhaps not the book. For a sound, accurate and current text with objective accounts of controversial issues in nutrition, this book is hard to beat. By today's standards it is, at \$28.95, a bargain.

Patricia V. Johnston

**Leukotrienes and Other Lipoxygenase Products**, edited by Priscilla J. Piper (John Wiley and Sons Inc., 605 Third Ave., New York, NY 10158, 1983, 353 pp., \$61.95).

This volume is the proceedings of the annual symposium of the Institute of Basic Medical Sciences, Royal College of Surgeons of England, held in October 1982. Although the book was published more than a year after the symposium

it is still useful, particularly to those new to the leukotriene and lipoxygenase product field.

The proceedings are a collection of more than 40 articles and include the biochemistry of leukotrienes, their assay by different procedures, their stability and their roles in various physiological systems. Naturally, there is a preponderance of articles dealing with inflammation, allergy and immune responses. There also are articles on cardiovascular actions of the leukotrienes, including the possible role of some lipoxygenase products in platelet aggregation. Several papers deal with the leukotrienes known as the slow reacting substance of anaphylaxis and with possible inhibitors for use as bronchodilators.

It is a useful book which brings together a lot about this rapidly emerging area of eicosanoid chemistry and physiology. The price is high for a publication of many brief articles and will mean that the book will mostly be found in libraries and not on private bookshelves.

Patricia V. Johnston  
University of Illinois  
Urbana, IL 61801

**Oxy-Radicals and Their Scavenger Systems, Vol. I, Molecular Aspects**, edited by G. Cohen and R. A. Greenwald, **Vol. II, Cellular and Medical Aspects**, edited by R. H. Greenwald and G. Cohen (Elsevier Science Publications Co., 52 Vandervilt Ave., New York, NY, 399 pp., \$70 and 420 pp., \$79.25 or \$125 for the set).

These two volumes are described as the proceedings of the Third International Conference on Superoxide and Superoxide Dismutase held in Ellenville, New York, October 3-8, 1982. The proceedings of the previous conference in this series (Malta, 1979) also were published by Elsevier. It should be noted immediately that the title of these books is more descriptive of the contents than was the title of the conference. Various investigators frequently are more concerned with the hydroxy radical than with superoxide, and the superoxide oxide dismutase is recognized as constituting only one portion of the interrelated protective systems. Each volume contains about 35 papers arranged by topic and about 30 somewhat more heterogeneous poster papers. Poster session papers are limited to four pages each throughout both volumes. Topics included in Volume I are oxygen radical reactions; metal catalyzed oxy-radical production; measurement of SOD and oxy-radicals; chemistry of superoxide dismutase, and SOD-physiological role. Volume II includes SOD in body fluids and tissues; oxy-radical production by cells; oxy-radical production by cellular toxins; oxy-radical mediated tissue damage; oxygen toxicity, and diagnostic and therapeutic aspects.

Greenwald takes a full page to list the pathological processes in which oxy-radicals may be implicated. Some of these are quite well known and are represented by topic headings above. Others, such as aging and cancer, are not as straightforward. One might, for instance, contrast the activation of certain carcinogens by oxy-radicals with the therapeutic use of certain antitumor agents, which appear to act via the production of oxy-radicals. Definitely not a straightforward situation.

In many ways, this pair of volumes might be described as

*(Continued on page 1544)*

## Publications

(Continued from page 1540)

the first really successful effort to put the "whole ball of wax" together in one place at a time. The breadth of coverage is very impressive, and there is something for everyone. The sequence of topics and chapters permits a logical and systematic presentation of the diverse aspects of a complex interrelationship. This field has matured to the point where there are sufficient data to begin to present a really coherent picture.

Each section, including those containing poster papers, is followed by a discussion section that frequently brings out areas of conflict or permits clarification of hazy points.

In general, text figures and tables are quite well produced. The usual problems associated with camera-ready copy appear frequently, but tend to be of the relatively harmless type. Examples from Volume I include the reference to a chapter elsewhere in the book that was not inserted (p. 26); unexplained blank sections in a line (p. 122 and p. 240); grammatical lapses as, "If this was the case, . . ." (p. 118); and duplicated lines (p. 52 and 53). This book can be strongly recommended to anyone interested in the problems associated with aerobic life or the battle to avoid "going rancid on the hoof."

Lloyd A. Witting  
Supelco Inc.  
Bellefonte, PA 16823

**Basic Food Chemistry**, 2nd edition, edited by Frank A. Lee (Avi Publishing Company, Westport, CT, 1983, 564 pp., \$35.00).

This new second edition of the established text has been updated and expanded to include chapters on water and solutions, colloids and minerals. Other chapters have been rewritten. Each chapter contains a summary and suggested list of supplementary reading material. The material is suitable for use as a text at the undergraduate level as well as a general reference on food chemistry for laboratory workers and others. Topics covered are photosynthesis, water and solutions, colloids, carbohydrates, lipids, proteins, enzymes, vitamins, minerals, flavor, natural colors, browning reactions, food colorings, alcoholic fermentations, baked products, milk and milk products, coffee, tea, cocoa and chocolate, meat and meat products, and fruits and vegetables. This reviewer has used the book as textual material in both elementary and advanced food chemistry classes. It has been helpful in answering many questions in the area of food chemistry, and students have found it easily understandable. It is a useful book to have present on one's personal bookshelf at the office, however, much of the time it's not there—the students have borrowed it.

E. G. Perkins

**Practical Aspects of Modern High Performance Liquid Chromatography** (Proceedings, December 7–8, 1981, West Berlin), edited by I. Molnar (Walter de Gruyter, New York, 1983, 449 pp., 170 DM).

This book is the result of a symposium with the same title. Although it is now somewhat dated, the book contains a considerable amount of useful and interesting information which, when extrapolated, can be of assistance in many separation problems. The volume contains 23 chapters dealing with some aspect of high performance liquid chromatog-

raphy (HPLC), usually relating to a biochemical problem. However, there are several chapters of interest which cover the more basic aspects of HPLC which are not usually discussed. The effects of mobile phase composition on the retention behavior of oligosaccharides in reverse phase HPLC as well as their quantitative structure relationships are discussed in two chapters. The question of whether the shape of the silica (spherical or irregular) influences column selectivity also is addressed and is worth reading. A discussion of the retention mechanisms which are operable under various HPLC conditions also is useful reading for all chromatographers. Finally, a discussion of the selection of optimal conditions in HPLC with low volume, small bore packed columns provides both a detailed theoretical and practical treatment of value. The book is enhanced by a separate index listing of, and definitions of, the symbols used throughout the volume. A detailed subject index which deals with column packings, individual compounds and other terms is more than comprehensive. The book contains adequate literature citations as entries into the literature. Although dated, the book is recommended to practicing chromatographers. They will find it interesting and useful.

E. G. Perkins

**Advances in Chromatography**, Volume 23, edited by J. C. Giddings, E. Grushka, J. Cazes and P. R. Brown (Marcel Dekker, New York, 1984, 272 pp., \$49.75).

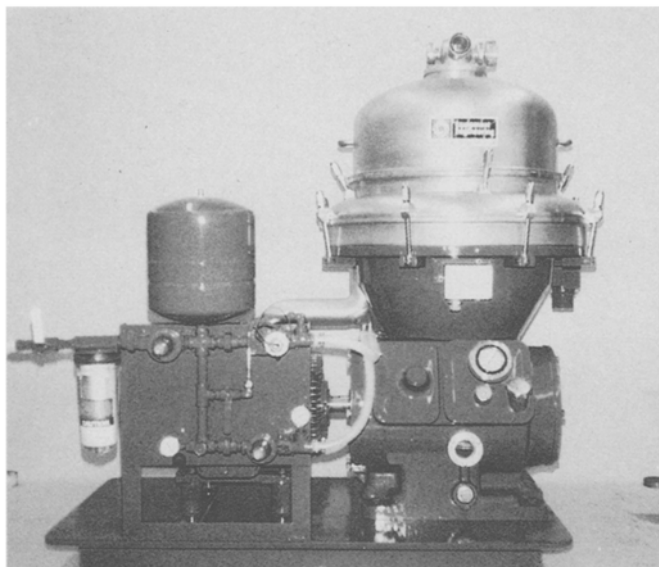
This book is volume 23 in the continuing series concerning advances in chromatography. The volume consists of reviews of the latest techniques by leading researchers in the fields addressed. The reviews deal with both the theoretical and applied sides of the techniques. In the present volume six such techniques are discussed: laser spectroscopic methods for detection in liquid chromatography; low temperature high performance liquid chromatography for separation of thermally labile species; heparin sepharose affinity chromatography-heparin, protein interactions, enzyme purification, chromatography and inverse gas chromatography for the study of polymers, hydrocarbon oxidation and chemical kinetics. The book contains an author index as well as an adequate subject index. Chapter contents are listed in detail under the general table of contents headings. The biographic citations at the end of each chapter are generally up-to-date. This book is recommended to experienced chromatographers who desire to keep up with the latest state of the art techniques of separations, and who wish to obtain new ideas that may assist them in their research.

E. G. Perkins

**Encyclopedia of the Alkaloids**, Vol. 4, edited by J. S. Glasby (Plenum Press, New York, 1983, 319 pp., \$65.00).

This is a continuing series; volume 4 of the encyclopedia covers the literature to the end of 1981 and includes those new compounds discovered since volume 3 was published. Some additional information concerning new or corrected structures or new information concerning some alkaloids covered in the preceding volume also is included. The book is organized in alphabetical order and has the general format of alkaloid name, empirical formula, melting point, organic chemical structure, a brief paragraph describing the compound and its occurrence including its specific rotation

# CENTRIFUGE SERVICES



## Replacement Parts

B-214C \* SRG-214 \* VO-194 \* S-194 \* PX

## Bowl Repair & Balance

Alfa-Laval \* Westfalia

## Rebuilt Models with Warranty

Solid Bowl \* Self Opening \*

Continuous Solids Discharge



757 East Murry Street  
Indianapolis, Indiana 46227  
(317) 783-5496  
Telex 27-6125 EQPMT ENG

## Publications

and a literature reference to the compound. The book contains a formula index, which lists empirical formulae in ascending order of carbon atoms. Listed under each formula is the name of a compound to which the formula corresponds and a page on which the compound can be found. The book will be useful to those involved in research with alkaloids and provides a convenient resource to find the structures of often obscure compounds of the alkaloid class.

E. G. Perkins

**Mutagenicity Testing and Related Analytical Techniques**, edited by R. W. Frei and U. A. Th. Brinkman (Gordon and Breach Publishers, 1981, 320 pp., \$46.50).

This is a book composed of papers presented at the 10th Annual Symposium on the Analytical Chemistry of Pollutants held in Germany in 1980, and many of the papers presented have been published previously in journals. The subject of environmental contaminants is of wide interest in both the lay and scientific press. It has been further indicated that much of the incidence of human cancer may result from exposure to environmental mutagens or carcinogens. Therefore, although aimed at a specialized audience, the contents of this book should be of interest to a wide variety of technical readers. Many of the papers present advanced analytical techniques of gas chromatography and mass spectrometry which also will be of interest. The contents of the papers deal with a wide range of topics from compounds in drinking water, aromatic amines and automobile exhausts to analysis of fibers. The quality of the papers is somewhat uneven and, while many of them contain short tables of contents, others do not. Furthermore the usefulness of the volume is very limited since there is no index. In order to find items of interest, readers must check the general table of contents and then scan the articles searching for relevant items.

E. G. Perkins

**Liquid Chromatography in Environmental Analysis**, edited by J. F. Lawrence (Humana Press, Clifton, NJ, 1984, 392 pp., \$55.00).

This book is a major contribution to the literature on the applications of high performance liquid chromatography (HPLC) to the analysis of environmental materials. Although not comprehensive in its coverage of the environmental areas, it presents a valuable collection of information in selected areas. The book contains eight chapters. The first concerns quality assurance, material which is especially timely since it is a very neglected area—the practice of producing really reliable data is dependent on many variables and factors which must be controlled, and these are discussed here. Analysis of polycyclic aromatic hydrocarbons is a useful chapter which covers important areas such as column and mobile phase selection for optimum separations and also presents useful information concerning the spectrophotofluorimetric data on these compounds. In addition, several examples of applications are given. The HPLC of pesticide residues, including clean-up, extraction procedures and applications, is discussed in chapter 3. Especially welcome is chapter 4, which is of interest to those in the detergent area. The methodology and analysis

## Publications

of anionic, nonionic and cationic surfactants and their related compounds is discussed in detail. Chapters 5 and 6 devote a total of 120 pages to the relatively new areas of trace metal and anion analysis by HPLC. Examples of practical applications of this methodology also are given. The chapter which deals with the use of HPLC as a clean-up technique may be particularly useful to many analysts. This technique may be used successfully for clean-up or isolation of components from complex matrices for further (quantitative) HPLC from which interfering components have been removed. Such clean-up can be used as such or as an enrichment tool for mass spectrometry or combination gas chromatography-mass spectrometry. It also has been used as a clean-up method for radioimmunoassay and radioisotope enrichment. The information in the remaining chapter deals with sample injection and column switching techniques for optimum separations, etc. When combined with the appropriate clean-up technique and analytical column HPLC this presents the analyst with a formidable tool for separation and analysis. Each chapter listed in the table of contents contains a detailed list of chapter contents, which is valuable in locating items of interest. The index appears to be comprehensive although short. Each chapter contains a lengthy and fairly current bibliography. The figure legends are detailed enough that many separations could be initiated from this material alone. This book is recommended to experienced chromatographers who deal with HPLC on a routine basis. They will find it enjoyable and valuable reading.

E. G. Perkins

**The Maillard Reaction in Foods and Nutrition**, edited by G. R. Waller and M. S. Feather (American Chemical Society, Washington, D.C., 1983, 585 pp., \$59.95).

This volume represents papers presented at the second international meeting concerning itself solely with the Maillard reaction, which was held at the ACS meeting in Las Vegas, Nevada. The Maillard or non-enzymatic browning reaction occurs between sugars and amino groups whether they are in simple or complex sugars, carbohydrates, amino acids or proteins. Thus it contributes to both desirable and undesirable properties of foods from the aspects of flavor, aroma and nutrition. The book is divided into areas dealing with chemical aspects; flavors, tastes and odors; food technology; nutritional aspects; Maillard reactions in vivo, and toxicological effects, including mutagenic effects. The individual chapters within these subdivisions make up a total of 29 chapters. Of special interest to scientists engaged in the area of fat stabilization with antioxidants will be the chapters dealing with antioxidants from Maillard-type reactions. Such mixtures were prepared from arginine-xylose and histidine-glucose mixtures. The contributors are an international group of scientists actively working in the laboratory on these problems. Many of the same scientists previously attended the first such meeting held at Uddevalla, Sweden, in 1979, and are established investigators in this field. The diversity of material in this volume precluded an in-depth review of all chapters, however they all present the latest results in many areas applicable to food science. The chapters concerning the formation of mutagens as a result of this reaction in diverse food systems certainly will provoke fur-

ther controversy regarding the safety of foods cooked in certain traditional ways. The data presented should spur continued and additional research in these areas. Apart from the wide interest the subject matter of the book will generate, it is perhaps more important in a book of this type that the information, much of it a review by nature, is put together in one volume that is easily accessible. Previously much of this work was published in many journals of diverse subject matter, often in other countries, which made its use by many scientists limited. The authors and editors have made a notable contribution by organization and publication of this volume. It should be very useful to a broad segment of persons carrying out research and development in the food industry in the areas of improving the nutritional value, safety, flavor and odor of food products.

E. G. Perkins  
University of Illinois  
Department of Food Science  
Urbana, IL 61801

## New Publications

**Perry's Chemical Engineers' Handbook**, 6th. Edn., edited by Robert H. Perry (deceased), Don W. Green and James O. Maloney (assistant editor), McGraw-Hill Book Company, 1221 Ave. of the Americas, New York, NY 10020. 1984, 2,336 pp., \$74.50 until October 31, \$89.50 thereafter.

**Process and Utilization in Agriculture, Vol. II, Parts 1 and 2, Plant Products**, edited by Ivan A. Wolff, CRC Series in Agriculture, CRC Press, Inc., 2000 Corporate Blvd., N.W. Boca Raton, FL 33421, 1984, Part 1 727 pp., \$92.50, Part 2 735 pp., \$92.00.

**Handbook of Vitamins: Nutritional, Biochemical, and Clinical Aspects**, Food Science and Technology Series, Vol. 13, edited by Lawrence J. Machlin, Marcel Dekker, Inc., 270 Madison Avenue, New York, NY 10016, 1984, 632 pp., \$79.50 (U. S. and Canada), \$95.25 (all other countries).

**Soya Bluebook '84**, American Soybean Association, PO Box 27300, St. Louis, MO 63141, 1984, 238 pp., \$25.

**Practical Absorption Spectrometry**, Techniques in Visible and Ultraviolet Spectrometry, Volume III, by A. Knowles and C. Burgess, Chapman and Hall, 733 Third Ave., New York, NY 10017, 1984, \$39.95.

**Principles of Adsorption and Adsorption Processes**, by D. Ruthven, John Wiley and Sons, 603 Third Ave., New York, NY 10158, 1984, 433 pp., \$49.50.

**Chemical Engineering Software Guide**, a reference report from CAE Consultants Inc., 41 Travers Ave., Yonkers, NY 10705, 1984, \$28 post-paid in the U.S., add \$5 for air mail postage.

**Trading Rules 1984-85**, National Cottonseed Products Association, 2400 Poplar Ave., PO Box 12023, Memphis, TN 38182-0023, 248 pp., free to members, \$10 for non-members.