Methodology

Methods development update

Wiley melting point

At the Nov. 24, 1986, meeting of the Industrial Edible Fats and Oils Analysis Committee, one of the AOCS official methods reviewed was the Wiley Melting Point Method for Normal Fats Cc 2-38 (81). The consensus was that the Wiley melting point method should be dropped as the official method for determining melting points of fats.

The committee recommended that the Dropping Point for Hydrogenated and Non-hydrogenated Fats and Oils Cc 18-80 (83) be adopted as the official method for determining melting points. The committee proposed that the Wiley melting point method be revised for the *1987 Additions and Revisions to Methods* to reflect (a) the fact that the dropping point method is the preferred method and should be used in place of the Wiley melting point method, and (b) that the Wiley method will be declared a surplus method in 1990 and deleted from the *AOCS Official Book of Methods and Recommended Practices.*

Notice of the proposed change in the melting point method is being presented now to solicit comments from users of the method. Anyone with comments about the change should contact the AOCS technical director no later than June 1, 1987.

Fourth methods edition

Publication of the fourth edition of the *AOCS Official Book of Methods and Recommended Practices* has been projected for 1989. The format and style of the fourth edition are open for consideration.

The recommendation of one AOCS committee was that the fourth edition have a ring binder similar to the present binder and that the page size be increased to 8 1/2″ by 11″, with the rounded corners eliminated. Pages would have a Mylar strip reinforcing the ring binding area. As the current two-volume set does not store well, it was suggested that the set of methods be issued in four volumes, with each volume containing convenient topic areas.

Currently, there is no suggestion for changing the written style of the methods. Suggestions for style uniformity will be made by the *JAOCS* staff editor, and examples prepared for submission to the Uniform Methods Committee at the May 1987 annual meeting in New Orleans.

Dave Berner
AOCS Technical Director

Publications

Book reviews

Plasma Lipoproteins, Part A: Preparation, Structure and Molecular Biology (Methods in Enzymology, Vol. 128), edited by Jere P. Segrest and John J. Albers (Academic Press Inc., 6277 Sea Harbor Dr., Orlando, FL 32887, 1986, 992 pp., $89.50).

This book is the latest addition to the well-known series, **Methods in Enzymology**. In the past 20 years, tremendous advances have taken place in our understanding of the structure, metabolism, physiological function and, recently, the molecular biology of plasma lipoproteins. As is usually the case, these advances have occurred as a result of the development of new methodologies. Until now, there was no comprehensive book on methods used in the field of lipoproteins.

This book is one of two volumes dealing with methods in plasma lipoprotein preparation, structure and molecular biology. The second, Vol. 129, has not yet been published; it will deal with methods in the characterization, cell biology and metabolism of plasma lipoproteins.

This volume consists of five sections. The first section, an overview of the field, has four chapters. They are Introduction to Plasma Lipoproteins, Molecular and Cell Biology of Lipoprotein Biosynthesis, Comparative Analysis of Mammalian Plasma Lipoproteins and Impact of Technology on the Plasma Lipoprotein Field. The second section, also with four chapters, deals with the different ultracentrifugal approaches to the preparation of plasma lipoproteins. The third section has 15 chapters on methods dealing with isolation and physical-chemical characterization of plasma lipoproteins. This section begins with delipidation of plasma lipoproteins, followed by isolation and characterization of individual apoproteins, and ends with a chapter on thermodynamics of apolipoproteins and phospholipid associations.

There are 15 chapters in the fourth section, which is concerned with the structure of intact and reconstituted plasma lipoproteins. The methods described in this section include electrophoresis, electron microscopy, NMR, circular dichroism, immunochemistry, reconstitution, chemical cross-linking and lipoprotein-liposome interactions. The last section also contains 15 chapters and describes techniques of molecular biology as applied to plasma lipoproteins.

As is the case with the previous volumes in the series, the overall quality of this book is high. It is well organized and well edited. This is a much needed methodology book in the field of lipoproteins, and as such, can be highly

recommended, despite its relatively high price, to all investigators involved in lipoprotein research.

George K. Chacko

Lipoprotein and Cholesterol Metabolism in Steroidogenic Tissues, edited by Jerome F. Strauss III and K.M.J. Menon (George F. Stickley Co., 210 W. Washington Square, Philadelphia, PA 19106, 1985, 259 pp., $35).

This book presents the proceedings of a symposium on lipoproteins and cholesterol metabolism in steroidogenic tissues held at Laval University, Quebec, Canada, June 30–July 1, 1984, in conjunction with the 7th International Congress on Endocrinology. According to the editors, the purpose of the meeting was to bring together investigators interested in cholesterol and lipoprotein metabolism to review the rapidly expanding knowledge of sterol metabolism in steroid-synthesizing cells.

The book contains 35 papers dealing with different aspects of cholesterol and lipoprotein metabolism, with emphasis on regulation of de novo cholesterol synthesis, lipoprotein uptake, intracellular cholesterol transport and cholesterol side chain cleavage reactions. The authors are experts in their fields and in general, the quality of the papers is high. However, this reviewer was disappointed to note that the presentations by John Dietschy and Michael Brown, referred to in the preface, are not found in the book. This book will be of interest to those professionals engaged in research on cholesterol and lipoprotein metabolism in general, and in steroidogenic tissues in particular.

George K. Chacko
Department of Physiology
and Biochemistry
Medical College of Pennsylvania
Philadelphia, PA 19129

Solubility and Related Properties (Drugs and the Pharmaceutical Sciences, Vol. 28), by Kenneth C. James (Marcel Dekker, 270 Madison Ave., New York, NY 10016, 1986, 432 pp., $69.75 US and Canada, $83 elsewhere).

Current books in the area of solubility are primarily theoretical in nature and deal with low polarity molecules. The treatment of solubility in the present book is aimed toward practicality and extends its scopes to polar systems. However, theoretical treatments and derivation of the equations describing solubility and its relationships to both solute and solution are extensive.

Discussions of the liquid state and solutions and solubility, the "like-dissolves-like" classification of solubilities, the hydrophilic-hydrophobic balance in solubility and the effects of dielectric constant are presented. Further chapters concern ideal, regular and nearly regular solutions, solute-solute and solvent-solvent interactions, solute-solvent complexation, the distribution law and aqueous solubilities of electrolytes and nonelectrolytes. The chapters are clearly written and well illustrated, with figures to explain many of the physical chemical concepts presented.

The theoretical treatments of the various concepts presented are mathematically rigorous, although a considerable amount of practical material may be gained from the book without a detailed understanding of them. The book will be of interest to those with interests and responsibilities in the area of solvent selection for pharmaceutical and cosmetic formulations.

E.G. Perkins

Handbook of Lipid Research, Vol. 4: The Physical Chemistry of Lipids, From Alkanes to Phospholipids, by Donald M. Small, with contributions from B.M. Craven, Yvonne Lange, G.G. Shipley and J. Steiner (Plenum Press, 223 Spring St., New York, NY 10013, 1985, 692 pp., $89.50 US and Canada, $107.40 elsewhere).

This latest addition to the **Handbook of Lipid Research** series represents an encyclopedic collection of data and information concerning the physical chemistry of lipids. The material presented has only been available scattered throughout the literature. Its collection into one place and the addition of new material, as well as interpretation of the data, represent a monumental piece of work.

It is gratifying to know that such a book is available. It begins with the usual chapter on the definitions and structures of lipids. Chapter two presents material on the general properties of lipids conferred by the aliphatic chain. Subsequent chapters cover the physical states of lipids (solids, mesomorphic states and liquids); lipid classification based on interactions with water; x-ray crystallographic studies of aliphatic lipids; cholesterol crystal structures (adducts and esters); aliphatic hydrocarbons; substituted aliphatic hydrocarbons (alcohols and acids); substituted aliphatic hydrocarbons (soaps and acid soaps); glycerides; sterols and sterol esters; phospholipids; and the molecular dynamics of bilayer lipids.

A series of five appendices details thermal, density, viscosity, surface tension and solubility data for alkanes, alkanols, fatty acids, soaps and glycerides. A last appendix gives the major endothermic phase transition temperatures for phospholipids in excess water. The volume abounds in graphic material and figures to explain the data presented. A comprehensive bibliography at the end of each chapter and at the end of the appendix allows further entry to the literature. There is an author index and what appears to be a comprehensive subject index. This book will become an indispensable resource for teachers, researchers, students and all persons requiring access to physicochemical data on lipids.

E.G. Perkins

Publications

The Elements of Graphing Data, by W.S. Cleveland (Wadsworth Inc., 7625 Empire Dr., Florence, KY 41042-0668, 1985, 323 pp., $27.95 cloth, $18.95 paperback).

In this era of computers, data can be generated quickly in amounts too great for understanding. For instance, a supercomputer can generate so much data that the only way to determine the relationships of the data is to present them graphically.

Most data from experiments or other methods of collection can be better understood when presented graphically. Graphing of data can be accomplished for the purpose of data analysis or as a means of communication to present data to others. This book presents graphing methods for both of these purposes. Understanding such methodology will result in clearer and more efficient graphical presentation for both data analysis and presentation.

Topics considered are principles of graph construction, graphical methods and graphical perception. Each chapter has many subsections wherein the various types of graphs are discussed along with the various methods of perception of graphical data. An index of graphs used is given, as is a text index. There is also a list of references to the graphs and graphing methods that allows further reading. The book contains many examples of graphs of all types.

There are now many computer programs available for the preparation of graphs. These range from the very simple to the complex menu-driven that incorporate statistics into the output. However, these programs presume that the user has a firm grasp of the principles of graphing, so that the proper graph is prepared from the desired data. A reading of this book will prepare a user and allow the preparation of clear and useful graphs. This small volume should be available to all who prepare graphs of data for either analysis or presentation.

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

New books

Health Effects of Polyunsaturated Fatty Acids in Seafoods, edited by Artemis P. Simopoulos, Robert R. Kifer and Roy E. Martin, Academic Press Inc., 6277 Sea Harbor Dr., Orlando, FL 32887, 1986, 473 pp., $45.

Recent Advances in Separation Techniques—III, Symposium Series, edited by Norman N. Li, American Institute of Chemical Engineers, 345 East 47 St., New York, NY 10017, 1986, 208 pp., $22 AIChE members, $44 nonmembers.

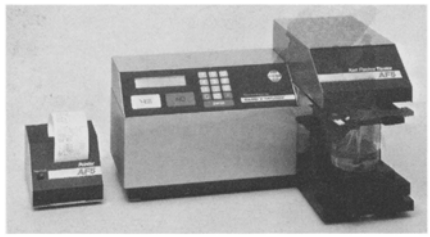
New Products

PROCESS AID

The Davison Chemical Division of W.R. Grace & Co. offers TriSyl silica, a product to selectively remove soaps, phospholipids and trace metals from vegetable oils. The powder, which has been approved by the U.S. Food and Drug Administration, was developed by Grace Laboratories to replace bleaching earths in oil processing. Contact: Grace/Davison Chemical Division, PO Box 2117, Baltimore, MD 21203.

EMULSIFIER

Eastman Chemical Products Inc. introduces Myvatex Monoset food emulsifier, a peanut butter stabilizer. The beaded, nonhygroscopic product is prepared from hydrogenated vegetable oils and distilled monoglycerides. It can be blended with other ingredients or added alone to dry feeding systems. Contact: Eastman Chemical Products Inc., Foods Group, PO Box 431, Kingsport, TN 37662.



TITRATOR

Baird & Tatlock's AF5 automatic titrator has been redesigned to include automatic sample weighing, computer interface and wider sample measurement parameters. Features include a sealed sample vessel, septum and sliding seal, microprocessor and printer. Program variables include delay titration, adjustable end point time and titration rate control. Contact: Vector Marketing, PO Drawer 18, Valley Cottage, NY 10989.

SAFETY FILM

Your Health Matters, a 14-minute video from Industrial Training Systems Corp., is designed to teach employees how to handle chemicals safely. The program stresses appropriate work practices, proper protective equipment and how to locate information on potential hazards. Contact: Industrial Training Systems Corp., 20 W. Stow Rd., Marlton, NJ 08053.

HPLC DETECTOR

The programmable UVIS-203 HPLC