Publications

Book reviews

Advances in Thin Layer Chromatography: Clinical and Environmental Applications, edited by Joseph C. Touchstone (John Wiley & Sons Inc., 605 Third Ave., New York, NY 10158, 1982, 521 pp., $55).

This volume represents the proceedings of the second biennial symposium on TLC held in Philadelphia in December 1980. Eight of the 41 chapters deal with lipids. These include: effect of humidity on TLC of PL, detection methods for lipids, plasma lipids, cholesterol in biological fluids, bile acids, skin surface lipids and urinary-free cortisol and cortisone. There are also seven chapters on mycotoxins. This coverage is not limited to aflatoxins. Trichothecenes receive considerable space and there is a discussion of multimycotoxin screening. Another chapter of possible interest to oil chemists covers analysis of gossypol in feeds.

Ten of the first twelve chapters, approximately 25% of the book, are devoted to descriptions or applications of available materials and equipment as described by the manufacturers. Such chapters are normally authoritative and professionally done. Both the authors and editor usually recognize the obvious need to avoid crass commercialism. The footnote on page 31: "The system described in this section is under development by ---, Inc. Write for details." by an author from ---, Inc., should perhaps have had the second sentence edited out. Many readers may find the repeated use of "reverse phase" rather than "reversed phase" jarring. Typos and related errors abound. On page 213, MO is defined as mono-olein but is obviously methyl oleate, and on page 375 "aflatoxon" appears in the chapter title.

Quantitation is still being cited as having come of age for TLC or preferably HPTLC. To cope with the inadequacies of man, automated spotting seems desirable if not mandatory. The miniscule submicroliter samples volumes tolerated in HPTLC may make necessary the production of these plates with preabsorbent zones. This is an excellent, informative book with many chapters of interest to oil chemists.

Lloyd A. Witting

Biological/Biomedical Applications of Liquid Chromatography IV, Chromatographic Science Series, Vol. 20, edited by Gerald L. Hawk (Marcel Dekker, 270 Madison Ave., New York, NY 10016, 1982, 396 pp. $55)

This series within a series continues with selected papers from the International Liquid Chromatography Symposium IV at Amsterdam during April 1981. The 25 selected papers in this volume include several each on proteins and peptides, a number on drug monitoring, three on catecholamines, two on fat-soluble vitamins and various other sundry topics. By and large the authors have provided interesting examples of the applications of HPLC.

After the three preceeding volumes of selected papers, hopefully all potential purchasers will have come to understand the basis of the selection process.

Lloyd A. Witting
Supelco Inc.
Bellefonte, PA 16823

Cholesterol Systems in Insects and Animals, edited by Jacqueline Dupont (CRC Press Inc., 2000 Corporate Blvd., NW 24 St., Boca Raton, FL 33431, 1982, 153 pp., US $54, $64 outside US).

After a long hiatus, several useful books on cholesterol and related sterols have appeared in the past few years. The volume under review is one of them. The book contains five chapters devoted to: Sterols and Insects, by H.W. Kircher; Cholesterol and Membranes, by Rosemarie Ostwald; Cholesterol Transport, by S.Y. Oh; Cholesterol Catabolism and Bile Acid Metabolism, by Satindra Goswanie and Jacqueline Dupont; and Cholesterol Balance and Whole Body Kinetics, by Jacqueline Dupont. All the chapters represent concise, state-of-the-art reviews; the first two represent areas which

have not received much attention in other books on sterols that have appeared recently.

The chapter on sterols in insects reviews sterol utilization by and metabolism in insects with a special section devoted to the insect molting hormone, ecdysone. This chapter also has a useful appendix which gives the common and scientific names of the insects discussed in the text and a glossary of the trivial and systematic names of the sterols mentioned in the text. This chapter comprises one-third of the book. The chapter on cholesterol and membranes begins with a brief discussion of membrane function and composition. This is followed by discussions of membrane structure in general and the influence of cholesterol on membrane structure in particular. The latter material is timely and useful. The third essay, on cholesterol transport, represents a good review of a rapidly developing field of research. It presents a brief summary of the metabolism of each type of lipoprotein molecule as well as discussions of cholesterol flux in tissues and cholesterol esterase metabolism. There are relatively few references to papers published after 1978, which may reflect a long preparation time for this volume. However, it does give an excellent background for understanding this complex field. The fourth chapter is a brief review of the formation of bile acids from cholesterol, their intestinal metabolism (absorption, secretion and enterohepatic circulation) and their functions. There is also a discussion of the regulation of bile acid metabolism. The final chapter is devoted to cholesterol balance and cholesterol kinetics. The author reviews the various methods for carrying out balance studies and discusses their utility. There is also an excellent discussion of cholesterol kinetics describing the meaning and measurement of body pools and their interpretation. Simulated analysis and modeling are also discussed.

This book will be of value to anyone with an interest in cholesterol metabolism and will be of special interest to persons working on insect systems. There is enough of value here to recommend it to any reader of *JAOCS* whose interests run to physiology and biochemistry of lipids.

The book is well produced and has a good subject index. It is this reviewer's prejudice that an author index is also very useful, but its preparation consumes both time and capital. There are a number of typographical errors, especially in the bibliographies, which should have been detected. Overall, this book will be a useful, and used, addition to most libraries.

David Kritchevsky
The Wistar Institute
of Anatomy and Biology
Philadelphia, PA 19104

Regulation of Serum Lipids by Physical Exercise, edited by Eino Heitanen, (CRC Press, Inc., 2000 N.W. 24th St., Boca Raton, FL 33431, 1982, 174 pp., US $64, $74 outside US).

The editor of this volume has brought together 15 contributions with the aim of estimating the power of regular exercise and its intensity in the regulation of plasma lipid and lipoprotein concentrations. The first part consists of six chapters on aspects of characterization of lipoproteins and their metabolism. The individual chapters cover synthesis and catabolism; isolation and determination of lipoproteins; lipids as a risk factor of coronary heart disease; regulation of lipoprotein metabolism by nutritional factors; hormones in the regulation of lipoprotein metabolism; and environmental factors and lipoproteins.

The second part, dealing with exertion, lipoproteins and their metabolism, consists of seven chapters on the following topics: dynamic exercise tests, exercise training and serum lipids; the effect of continuous, long-term exercise on serum lipids; effect of exercise on hormones regulating lipoprotein metabolism; exercise and lipolytic enzymes; response of serum lecithin cholesterol acyltransferase activity to exercise training, and relation between serum lipids and physical exercise in children.

The final section is under the heading of metabolic and cardiovascular diseases and exercise. There are chapters on physical training in obesity and diabetes mellitus; antihypertensive medication and physical training; and prognostic and preventive value of exercise in coronary heart disease.

This is a slim volume so many of the chapters are short, concise reviews. They are generally well written and have generous lists of references. This is a good attempt to bring together appropriate subject matter to address the area of the effects of regular exercise on serum lipids. It will be of interest to those working in the area as well as to individuals concerned with their own serum lipid profile and exercise pattern (or lack of). At $64 for 174 pages, however, I suggest you make use of the library. It is decidedly overpriced.

Sourcebook on Food and Nutrition, Third Edition, edited by Ioannis S. Scarpa, Helen C. Kiefer and Rita Tatum (Marquis Publications, Marquis Academic Media, 200 E. Ohio St., Chicago, IL 60611, 1982, 549 pp., $49.50 plus $3 postage and handling fee).

This sourcebook is a compendium of dietary information on current topics. It is compiled from previously published articles from a wide variety of sources. Many articles were originally published in respected peer-reviewed journals and magazines for the layman; others originated from less reliable sources. The 400 articles included were chosen from a list of 5,000 possible selections.

The articles are under three main headings: Dietary Directions in the 1980s, Nutrition from Conception through Adolescence, and Adulthood and the Golden Years. A fourth part gives resources for further information.

As would be expected in this type of publication, the quality and scientific accuracy of the contributions varies. They range from excellent and accurate brief reviews on vitamins, minerals, obesity, the salt question and others to articles offering dubious nutritional advice. While some contributions on vitamins and minerals are sound, others are

less so. Which ones does the uninformed believe? This attempt to give opposing points of view is commendable in many respects and much of this makes for enjoyable reading. Nevertheless, it has its hazards. The articles by Gottlieb are a case in point. Flippant and sometimes inconsistent with views of informed nutritionists, they are in poor taste and sometimes downright offensive.

All the big issues are here: sodium and whether to reduce its intake, monosodium glutamate, vitamin B_{15}, fructose, caffeine, saccharin, cholesterol, the fetal alcohol syndrome, and fad diets.

The book is said to be designed as a reference for librarians, dieticians, researchers, food scientists, biochemists, students, physicians, and anyone interested in nutrition. I doubt that many serious scientists will find this a useful reference source for scientific facts. It is, however, a handy reference to current thought and controversy. While I have my reservations regarding the misleading nature of some articles, I should note that the editors give some appropriate warnings in the preface and at the beginning of some articles.

There is a lot of reading in this sourcebook if not a lot of depth. It is, therefore, probably resonably priced by today's standards.

Patricia V. Johnston
Department of Food Science
University of Illinois
Urbana, IL 61801

Analytical Chemistry of Rapeseed and its Products — A Symposium, edited by J.K. Daun, D.I. McGregor and E.E. McGregor. (The Canola Council of Canada, 301-433 Main St., Winnipeg, Manitoba Canada R3B 1B3, 193 pp., $5 Canadian).

This text is a compendium of methodology papers presented at an international symposium concerning the Analytical Chemistry of Rapeseed held May 5-6, 1980, in Winnipeg. The text is organized into sections providing: an introduction outlining why the symposium was held; an overview of analytical procedures used to characterize rapeseed and its products; papers dealing with the analysis of glucosinolates; a collection of papers concerning the analysis of varied constituents of rapeseed and finally a list of symposium participants.

The text appears to be a detailed record of the proceedings of this symposium and should provide the reader with a reference for establishing major analytical methods used by symposium participants from Sweden and Canada for analysis of varied constituents of rapeseed. Much of this text contains detailed procedures written on a basic level for practical application in the laboratory. Because this is a compendium of methods, the reader will not find procedures written in the concise style of an analytical journal. However, many of the procedures outlined could be followed directly by the technologist at the laboratory bench. On the whole, analytical procedures have been clearly detailed to enable ready application by others. This text also presents a useful discussion of analytical methods with the intent of recommending which procedures should be utilized for a specific analysis and how the data should be expressed to maximize consistency in data presentation and thus interlaboratory comparisons of analytical results.

On the whole, this publication will be most useful to laboratories that need a reference for practical analysis of varied constituents of rapeseed and rapeseed products.

M.T. Clandinin
University of Toronto
Toronto, Ontario

New publications

Solvent Guide, 2nd Edition, Burdick & Jackson Laboratories Inc., 1953 S. Harvey St., Muskegon, MI 49442, 1982, 150 pp., $9.95, $13.95 outside the U.S. Reference manual on 58 high purity solvents, designed for chromatographers, spectroscopists and laboratory chemists.

CHETAH (Chemical Thermodynamic Energy Hazard Evaluation) Update to ASTM Data Series Publication DS 51, available free from William Hulse, ASTM Standards Development Division, 1916 Race St., Philadelphia, PA 19103.

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Advances in Thin Layer Chromatography: Clinical & Environmental Applications, edited by Joseph C. Touchstone, Wiley-Interscience, John Wiley & Sons Inc., 605 Third Ave., New York, NY 10158, 1982, 521 pp., $55.

1982 Annual Book of ASTM Standards, Parts 41 and 42, ASTM, 1916 Race St., Philadelphia, PA 19103, 1982. Part 41 – 194 standards covering general nonmetal test methods, statistical methods, space simulation, particle size measurement, laboratory apparatus, resource recovery, solar energy, compatibility and sensitivity of materials in oxygen enriched atmospheres and metric practice, 1584 pp., $64. Part 42 – 93 standards covering emission, molecular and mass spectroscopy, chromatography, resinography, microscopy, computerized systems and surface analysis, 788 pp., $36.

Lipid Analysis, 2nd Edition: Isolation, Separation, Identification, and Structural Analysis of Lipids, by William W. Christie, Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY 10523, 1982, 207 pp., $18 softcover, $50 hardcover.

Amphoteric Surfactants, Surfactant Science Series Vol. 12, edited by Bernard R. Bluestein and Clifford L. Hilton, Marcel Dekker Inc., 270 Madison Ave., New York, NY 10016, 1982, 343 pp., $55.

Two reports in French, with easy to understand tables, are available from the Institut National de la Recherche Agronomique, Laboratoire de Recherches et d'Etudes sur l'Economie des Industries Agricoles et Alimentaires, 3, rue du Caducée – B.P. 333, 94153 Rungis Cedex, France. **Les huiles végétales alimentaires – Marchés et produits 1980**, 70 pp., for 120 francs, covers the French, EEC and world markets of edible vegetable oils. **Tourteaux et autres matières riches en protéines**, 86 pp., for 150 francs, focusses on the French, EEC and world markets of high protein feeds, including oilseed meals and fishmeal.

Preparation, Properties and Industrial Applications of Organofluorine Compounds, edited by R.E. Banks, Halsted Press, John Wiley & Sons Inc., 605 Third Ave., New York, NY 10158, 352 pp., 1982, $84.95.

Methane: Fuel for the Future, edited by Patrick McGeer and Enoch Durbin, Plenum Press, Plenum Publishing Corp., 233 Spring St., New York, NY 10013, 334 pp., 1982, $42.50. Proceedings of a world conference held during September 1981 in Vancouver, British Columbia.

Thermodynamics of Polymer Solutions, by Michio Kurata, MMI Press Polymer Monograph Series Vol. 1, Harwood Academic Publishers, PO Box 786, Cooper Station, New York, NY 10276, 1982, 294 pp., $94.

Polymer Compatibility and Incompatibility: Principles and Practices, edited by Karel Šolc, MMI Press Polymer Monograph Series Vol. 2, Harwood Academic Publishers, PO Box 786, Cooper Station, New York, NY 10276, 1982, 464 pp., $97.50.

Methods for Emission Spectrochemical Analysis, 7th Edition, sponsored by ASTM Committee E-2 on Emission Spectroscopy, ASTM, 1916 Race St., Philadelphia, PA 19103, 1982, 1114 pp., soft cover, $49, 20% discount for ASTM members.

Liquid Filtration Catalog, The McIlvaine Company, 2970 Maria Ave., Northbrook, IL 60062, 1982, three sections in two large three-ring binders, $95. Information on European and North American liquid filtration industry.

Flow Measurement Engineering Handbook, by R.W. Miller, McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020, 1983, 960 pp., $59.95.

Food Process Engineering, edited by Henry G. Schwartzberg, Daryl Lund and John L. Bomben, American Institute of Chemical Engineers, 345 East 47 St., New York, NY 10017, 1982, 191 pp., soft cover, $40, $20 for AIChE members. Book is based on technical sessions held at AIChE 1979 and 1980 national meetings.

Sources and Production Economics of Chemical Products, 3rd Edition, Chemical Engineering, McGraw-Hill, 1221 Avenue of the Americas, New York, NY 10020, 1983, 325 pp., $345.

New Products

DRUM VENT

Justrite Manufacturing Company has a new stainless steel drum vent Model 8-306 which provides pressure relief to protect drums of corrosive flammable liquids against explosive overpressure. A spring-operated valve opens within 5 psi whenever internal drum pressure builds to that level. In the event of fire exposure to the drum, a fusible, blow-out plug melts at 160 F to provide emergency venting and prevent drum rupture. Ignition sources are prevented from reaching drum contents by a built-in flame arrester screen. The vent installs in a 2-inch NPS bung opening at the end of a horizontally stored drum. Contact: Justrite Manufacturing Co., 2454 Dempster St., Des Plaines, IL 60016.

OXYGEN ANALYZER

A compact, panel-mounted digital oxygen analyzer, from Neutronics Inc., monitors, analyzes and provides alarm contacts and a controlling output signal for a variety of process analysis and safety applications. The electrochemical oxygen sensor measures the absolute percent of oxygen by volume without interference from