

Publications

Book reviews

Nutrition and the Immune Response, by J. Dwight Stinnett (CRC Press, 2000 Corporate Blvd. N.W., Boca Raton, FL 33431, 1983, 150 pp., \$52.50, \$60 outside U.S.)

The author starts this volume with a brief historical perspective of malnutrition and disease. He then deals with normal resistance to infection in a concise and enjoyable account of the cells and organs of the immune system, humoral components of the system, cellular interactions in specific immune responses, and assessment of host defense systems. In Chapter 3 he discusses nutrition and metabolism, including brief descriptions of the structure and function of all nutrients. Chapter 4 deals with the assessment of nutritional status and Chapter 5 with malnutrition and adaptive metabolism. These background chapters are followed by ones on protein-calorie malnutrition and host defense, and single nutrients and host defense. The author concludes with a personal opinion of what this means in clinical practice. He comes out strongly against the increasing practice of using tests of immune function as a quantitative measure of malnutrition, thus differing from other authorities in the field.

Overall this is a useful book. The author is an immunologist and, as one would expect, the chapters in this area are his strongest. The chapter on single nutrients and host defense is weaker and incomplete. To readers of *JAACS*, the cursory treatment of fats and immunity will be disappointing. The author, however, does give a critical assessment of research in this emerging area. This is the major strength of the book. As is true for many CRC publications, the price of this volume is somewhat excessive for the amount of information it contains.

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Phospholipids in the Nervous System, Vol. 11: Metabolism, edited by Lloyd A. Horrocks, G. Brian Ansell and Giuseppe Porcellati (Raven Press, 1140 Avenue of the Americas, New York, NY 10036, 1982, 400 pp., \$44).

This volume contains the collected papers of a symposium and abstracts of posters presented at a satellite symposium of the International Society for Neurochemistry held in Birmingham, England, in September 1982.

The book consists of 27 major articles followed by 44 abstracts. The articles deal with many aspects of the metabolism of phospholipids in the functional activity of the nervous system. These include chapters on phospholipid synthesis by interconversion reactions, deacylation, and acylation of phospholipids in the brain, metabolic turnover of arachidonyl groups in brain membrane phosphoglycerides, studies on phospholipid metabolism in the "insulted" brain, studies on sphingomyelinase, etherphospholipids, phosphoinositides and calcium gating, and many others. All of this information is put into perspective for us by R.H. Michell in an article entitled, "Perturbed Lipid Metabolism in the Brain: Not So Much a Summing-Up, More a Provocation." Michell admonishes the "classical" neurochemist for continuing to make the obviously invalid assumption that changes in lipid metabolism in a region such as the cerebral cortex can be interpreted as changes in a single metabolic pool. He goes on to criticize studies such as those on "insulted" brains which suggest perturbations in inositol lipid metabolism. He points out how scanty is the knowledge of processes modifying inositol lipid metabolism in neural tissues compared to that of peripheral tissues. After these two general criticisms he deals in detail with individual studies, their flaws and their methodological problems. His overall criticism appears to be that lipid neurochemistry has remained uninfluenced by the subtleties of modern neurobiology both in terms of ideas and experimental approaches. Such fallacies in this field have been pointed out many times, but in the setting of this volume they are particularly significant. It may well be fruitful for the researcher to read Michell first and then read the rest keeping in mind Michell's admonitions and clearly stated possible alternate experimental approaches. While I cannot be enthusiastic about all of these, there are many excellent suggestions.

This is a useful volume. It brings together much of the thought about phospholipid metabolism and neural function through 1981. It is enhanced by Michell's thought-provoking essay.

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Chemical Derivation in Analytical Chemistry, Vol. 2: Separation and Continuous Flow Techniques, edited by R.W. Frei and J.F. Lawrence (Plenum Publishing Corp., 233 Spring St., New York, NY 10013, 1982, 298 pp., \$39.50, \$47.40 outside U.S. and Canada).

Most readers will come to this series with a somewhat more limited concept of derivatization than that espoused by the editors. Apparently any permanent or temporary modifica-

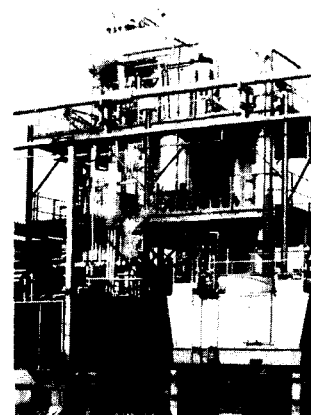
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tion of an analyte's properties is viewed as derivatization, as is any reaction or lack of reaction in the presence of the analyte producing a measurable parameter. The following comments are not made to criticize the editor's frame of reference, but rather to make the point to the potential reader that the range of material covered is far greater than might be anticipated from the title. The first volume in this series (Vol. 1: Chromatography, 1981), for instance, contained a long chapter by Frei on reaction detectors. It seemed a bit strange at the time to see the postcolumn reactor in which an organic acid, phenol or polythionate, reacts with cerium (IV) to produce fluorescent cerium (III) considered under the heading of derivatization. Another variant described was determination of carbamate pesticides by inhibition of the production of a fluorescent product from an added reagent by cholinesterase. In this case a negative peak, a decrease in baseline fluorescence, is indicative of the elution of the analyte. The second volume begins with a chapter on flow injection analysis, a nonsegregated stream variation of the familiar autoanalyzer concept. A relatively large proportion of the chapter is dedicated to detection methods such as ion selective electrodes, electrochemical detectors and redox electrodes. Chapter 2 focuses largely on the use of ion-pairing reagents in sample work-up. Presence of the ion-pairing reagent results in altered distribution coefficients for appropriate analytes in solvent partitioning. Chapter 3 discusses "immobilized enzymes as pre- or postcolumn modification reagents in liquid chromatography." Comparing and contrasting Chapters 2 and 3, it is perhaps easier to accept a transient ion pair as a derivative than it is to view NADPH production as derivatization. In one such sequence, creatine kinase isoenzymes in a chromatographic eluent stream are determined by production of ATP from creatine phosphate, which in the presence of glucose, NADP, hexokinase and glucose-6-phosphate dehydrogenase results in NADPH formation. Chapter 4 considers the resolution of optical isomers by gas and liquid chromatography. Classically, the resolution of racemates has usually depended on derivatization with an optically pure reagent with formation of a pair of diastereoisomers. Linder has extended this to include the use of chiral stationary phases, enantioselective ion pairing and sorbents with chiral cavities. Chapter 5 discusses precolumn chemical derivatization in liquid chromatography. Emphasis is on UV or fluorescence detection but electrochemical, LC-atomic adsorption and radiochemical derivatization are considered. This chapter by Lawrence will possibly come closest to a potential reader's preconception of the volume's content. The final chapter by Page and Conacher considers the pros and cons of derivatization in the chromatographic determination of food additives. Analytes covered include emulsifiers and stabilizers, artificial sweeteners, antioxidants, preservatives, synthetic food colors, gums and waxes. In general, both gas chromatographic and liquid chromatographic methods are considered for each type of analyte. Sample work-up is usually easier and there is less frequently a need for derivatization in HPLC.

On the basis of the first two volumes, this appears to be a very reasonable and useful new series. The editors may have limited potential sales because of their choice of a somewhat misleading title for the series. As noted above, emphasis is frequently placed on formation of a detectable

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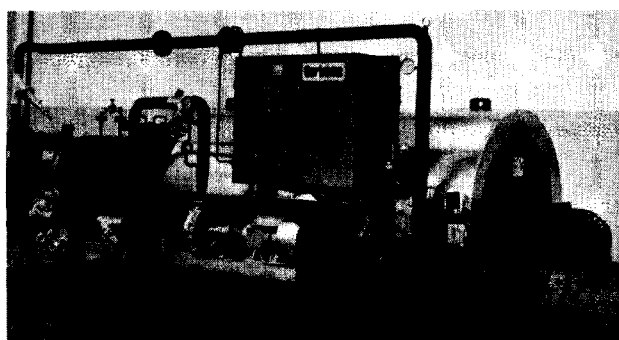
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reaction product rather than a chemical derivative of the analyte per se. At other times, formation of transient or loose complexes which facilitate separations but do not necessarily contribute to detectability is treated as derivatization. All of this is very practical, useful information of value to the analyst, but may not be expected from the title. At first glance, one mistakenly might assume that perhaps only the chapter on food additives might be of interest to oil chemists. This volume, however, is invaluable to anyone performing analyses regardless of analyte type.

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New publications

McCutcheon's Emulsifiers & Detergents and Functional Materials, North American Editions 1983 (2 volumes) and International Edition 1983 (1 volume), McCutcheon's Division, the Manufacturing Confectioner Publishing Co., 175 Rock Rd., Glen Rock, NJ 07452, 1983, \$40 each volume. Emulsifiers & Detergents, North America, 306 pp.; Functional Materials, North America, 256 pp.; International Edition, 317 pp.

Rodd's Chemistry of Carbon Compounds Supplement to Volume 1: Aliphatic Compounds, edited by M.F. Ansell, Elsevier Science Co. Inc., 52 Vanderbilt Ave., New York,

NY 10163 or PO Box 211, 1000 AE Amsterdam, The Netherlands, 1983, 404 pp., U.S. and Canada, \$115; Dfl. 270 elsewhere.

An Introduction to the Biotechnology of Oils and Fats, study by M.K. Schwitzer, 33 Shepherd's Hill, Highgate, London N6 5QJ, England, 1983, 240 pp., £650 in Europe, US \$1000 elsewhere.

Pesticide Formulations and Applications Systems: Second Conference (STP 795), ASTM, 1916 Race St., Philadelphia, PA 19103, 1983, 111 pp., \$11.20 ASTM members, \$14 nonmembers.

Encyclopedia of Shampoo Ingredients, by Anthony L.L. Hunting, Micelle Press Inc., PO Box 653, Cranford, NJ 07016, 1983, 480 pp., paperback, \$75.

Data Prediction Manual, chapters 1,2,3,4,12 (with loose leaf binder), edited by Ronald P. Danner and Thomas E. Daubert, American Institute of Chemical Engineers, AIChE Publications Sales, Dept. C, 345 E. 47th St., New York, NY 10017, 1983, \$125 AIChE members, \$150 nonmembers, \$10 charge on overseas orders.

Peanut Industry Guide, National Peanut Council, 1000 16th St., NW, Suite 700, Washington, D.C. 20036, 1983, 132 pp., \$40 NPC members, \$50 nonmembers.

Advances in Prostaglandin, Thromboxane, and Leukotriene Research, Vols. 11 & 12 (2-volume set), edited by Bengt Samuelsson, Rodolfo Paoletti and Peter W. Ramwell, Raven Press, 1140 Avenue of the Americas, New York, NY 10036, 1983, 1151 pp., \$115. Proceedings of the Fifth International Prostaglandin Conference, May 1982, Florence, Italy.

From Avi Publishing Co. Inc., 250 Post Rd. E., Westport, CT 06880:

Chocolate, Cocoa & Confectionery: Science & Technology, 2nd Edition, by Bernard W. Minifie, 1982, 735 pp., \$55.

Food Products Formulary, Vol. 4: Fabricated Foods, edited by Marilyn J. Inglett and George E. Inglett, 1982, 146 pp., \$38.

Physical Properties of Foods, edited by Micha Peleg and Edward B. Bagley, 1983, U.S. \$45, \$49.50 elsewhere. From the Sixth Basic Symposium of the Institute of Food Technologists.

Current Topics in Nutrition and Disease, Vols. 6 & 7, Alan R. Liss Inc., 150 Fifth Ave., New York, NY 10011. Vol. 6: Clinical, Biochemical, and Nutritional Aspects of Trace Elements, edited by Ananda S. Prasad, 1982, 577 pp., \$96. Vol. 7: Clinical Applications of Recent Advances in Zinc Metabolism, edited by Ananda S. Prasad, Ivor E. Dreosti and Basil S. Hetzel, 1982, 197 pp., \$26.

Membrane Lipids: Structure, Functions, Applications, edited by Reinhard Marcuse, Scandinavian Forum for Lipid Research and Technology, c/o SIK, Box 5401, S-402 29 Göteborg, Sweden, 1983, 154 pp. Proceedings of a Lipidforum Symposium held October 1982, Copenhagen.

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