Publications

Book reviews

Clinical Uses for Essential Fatty Acids, edited by David F. Horrobin (Eden Press Inc., 4626 St. Catharines St. W., Montreal, Quebec, Canada, 1982, 214 pp. $35).

This book purports to inform clinicians of possible therapeutic uses of essential fatty acids. It appears in reality to be a 214-page advertisement for oil of evening primrose under the trade name of Efamol. Suspicion is immediately aroused when one finds that the magic potion alleviates or cures schizophrenia, atopic eczema, rheumatoid arthritis, mastalgia, high serum cholesterol, vascular sensitivity in pregnancy, Sjogren's syndrome, alcoholism, alcohol withdrawal syndrome, tardive dyskinesia, obesity, premenstrual syndrome, tremors, and last but not least, brittle nails. It brings to mind the travelling medicine men of the Old Wild West. With two exceptions, this book is a collection of unscientific, uncontrolled, or poorly controlled, subjective experiments and anecdotes. A few examples suffice to illustrate the point.

Let us start with brittle nails. This three-page article describes four case histories in which the patients were given two capsules (amounts not given) of Efamol three times a day together with pyridoxine 25-50 mg/day and ascorbic acid 2-3 g/day. The subjective observations of nail improvement are then described. There is a comment that this a part of large study on Sjogren's syndrome and sicca syndrome, frequent symptoms of which are brittle nails. There were no controls and no description of objective assessment.

Then there is the treatment of vascular sensitivity in pregnancy. This again is a three-page report. Five women constituted the experimental group and a similar group was given no therapy with Efamol. The results consist of two sentences. One tells us that the experimental group had a lower vascular sensitivity than controls and refers us to a figure of evoked changes in diastolic blood pressure which is unitelligible to those uniformed in cardiology. The control is inappropriate. Why not use safflowerseed oil which contains a similar amount of linoleic acid to Efamol and no γ-linolenic acid?

An obesity study should be mentioned because the implication is that individuals can continue to eat their regular diet and that Efamol may help "burn off fat." I thought grapefruit did that! Here one group was given Efamol and the control, liquid paraffin. Again, why not an appropriate vegetable oil lacking γ-linolenic acid? In this study subjects were asked to rate their hunger and they were weighed at the clinic biweekly. Of those reporting hunger to be decreased, 9 were from the experimental and 9 from the placebo group. There was no significant difference in weight loss between groups. Other studies in this volume, however, do claim some success with use of Efamol in obesity. All studies, whatever the outcome, suffer the same lack of appropriate controls and/or subjective judgements.

Publications

And so this volume goes on. One study after another, different disease states maybe, but the same lack of control, lack of double-blind methodology, and subjective judgements. The theme running through the book is that, in many diseases, subjects may be suffering a defect in the $\Delta 6$ desaturase and therefore lack the ability to make sufficient 20:3ω6 and 20:4ω6, precursors of the 1- and 2-series prostaglandins (PG). Special emphasis is placed on the possible lack of PGE_1 arising from 20:3ω6 which ingestion of 18:3ω6 in Efamol corrects. There is an irritating trend in most articles to quote work which appears to be sound. Then a jump is made to invoke a role for PGE_1 and therefore the possible therapeutic use of Efamol. Such jumps frequently cite the editor and his colleagues and the journal cited is frequently *"Medical Hypotheses"*. In other words there may be some basis in accepted scientific "fact" and then one is shifted to the editor's fancy.

That an enzyme defect such as in the $\Delta 6$ desaturase is the underlying cause of some diseased states is not without attraction and some scientific basis. That it is involved in the etiology of so many diseases gives reason to pause. Anyone working in the fatty acid and PG fields knows how low 20:3ω6 levels are in tissues under normal circumstances and therefore how little PGE_1 is likely to be produced. Strangely, most of the investigators in this collection did not choose to determine either 20:3ω6 levels or PGE_1 production by any tissue. Such studies, if fruitful, would allay fears regarding the lack of validity of the claims.

Two exceptions to the general rule of articles in this volume are those by Robert Zurier and by S.C. Cunnane. Zurier gives what is essentially a review of the role of PGE_1 in alleviating experimental models of inflammation. Much of this work is pharmacological rather than nutritional. Some mention is made of study with Efamol. Cunnane reviews work in the area of EFA and zinc interrelationships. Controls include use of safflowerseed oil and tissue levels of 20:3ω6 were determined. These scientists enjoy a scientific respectability but one cannot help but wonder about the company they keep in this volume.

This book has the following uses. It brings together in one volume much of the unscientific claims that have been made for oil of evening primrose. It serves as a primer on how not to do a scientific experiment. Its dangers outweigh its uses. It may give hope to physicians and their patients that they can eventually cure some of man's most intractable diseases using this facile treatment.

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

Advances in Nutritional Research, Vol. 4, edited by Harold H. Draper (Plenum Publishing Corp., 233 Spring St., New York, NY 10013, 1982, 344 pp., $39.50).

Topics covered in the present volume of this series include "Vitamin-Responsive Genetic Abnormalities" by S. H. Mudd, "Vitamin D Binding Proteins" by J. B. Haddad, "Vitamin D Compounds in Human and Bovine Milk" by B. W. Hollis, B. A. Roos and P. W. Lambert, "Dietary Protein, Metabolic Acidoses and Calcium Balance" by J. T. Brosnan and M. E. Brosnan, "The Nutritional Significance, Metabolism and Function of myo-Inositol and Phosphatidylinositol in Health Disease" by B. J. Holub, "Neurobiology of Pyridoxine" by K. Dakshinamurti, "Carnitine Biosynthesis: Nutritional Applications" by H. P. Broquist and P.R. Borum, "Insect Nutrition: A Comparative Perspective" by W. G. Friend and R. H. Dadd, "The Nutrient Requirements of Cultured Mammalian Cells" by W. T. Bettger and R. G. Ham and " Fatty Acid Metabolism in the Neonatal Ruminant" by R. C. Noble and J. H. Shand. Personally, I find a volume of this type particularly useful when faced with wild statements quoted secondhand and out of context from publications of food faddists and pseudo-nutritionists. Houlb, for instance, discusses reported alterations in inositol metabolism in "assorted" diseases where no definitive interrelationships have been established. Similarly, it is to be hoped that the megavitaminists can be deflated by Mudd's scientific review of the extremely limited number of cases in which an unusually large intake of a particular vitamin is demonstrably beneficial.

There seems to be a relatively high proportion of material in this volume that will be of interest to lipid biochemists. The quality of presentations remains excellent. On balance, this series seems to provide more for the reader's money than does the corresponding series "Annual Review of Nutrition."

Lloyd A. Witting
Supelco Inc.
Bellefonte, PA 16823

Advances in Nutritional Research, Vol. 5, edited by Harold H. Draper (Plenum Publishing Corp., 233 Spring St., New York, NY 10013, 1983, 257 pp., $39.50).

This volume of **Advances in Nutritional Research** concentrates on the importance of nutritional management in disease and nutrition in the etiology of disease. The first chapter by R.H. Bower and J.E. Fischer deals with the nutritional management of hepatic encephalopathy. Chapter 2 by F. Chytil and D.E. Ong is on cellular retinol - and retinoic acid-binding proteins, a subject of much current interest especially in oncology. Nutrition and 3-methlindole-induced lung injury is covered by J.R. Carlson and T.M. Bray. The next chapter by K.A. Jørgensen and J. Dyerberg deals with platelets and atherosclerosis and is essentially a review of eicosanoid metabolism in platelets and its significance in atherosclerosis and hemostasis. R.J. Merritt, F.R. Sinatra and G.A. Smith discuss nutritional support of the hospitalized child. This chapter includes nutritional assessment, therapeutic techniques, management of preterm neonates, intractable diarrhea, short-bowel syndrome, and inflammatory bowel disease. The following chapter by

J.W.T. Dickerson is on nutrition of the cancer patient and includes a discussion of the effects of treatment on nutrition. Chapter 7 by B. Shane and E.L.R. Stokstad deals with the relationship among folate, vitamin B_{12} and methionine metabolism. Joyce L. Beare-Rogers reviews *trans* and positional isomers of common fatty acids. This is a balanced review of a field that has remained controversial so far as health implications are concerned. N.J. Rothwell and M.J. Stock discuss diet-induced thermogenesis and G.R. Herzberg deals with the influence of dietary fatty acids on lipogenesis.

As has been the case with previous volumes, the overall quality of the chapters is very good. The chapters have reference lists which include titles, a useful feature in review articles. This volume will be of interest to nutritionists and clinicians. At $39.50 it is by current standards, a good buy.

Patricia V. Johnston

New publications

Permanence of Organic Coatings (STP 781), edited by G.G. Schurr, ASTM, 1916 Race St., Philadelphia, PA 19103, 1982, 132 pp., $15.95 ($12.75 for ASTM members). Based on a symposium on regimens for predicting permanence of decorative and protective surfaces, held Jan. 21, 1981, in Orlando, Florida.

Riegel's Handbook of Industrial Chemistry, 8th Edition, edited by James A. Kent, Van Nostrand Reinhold, 135 W. 50th St., New York, NY 10020, 1983, 1008 pp., $59.50.

1982 Registry of Mass Spectral Data, updated database on magnetic tape, compiled by Fred W. McLafferty, John Wiley & Sons Inc., 605 Third Ave., New York, NY 10158, 1982, 72,944 spectra on 61,962 compounds, $4,000.

Information Retrieval in Chemistry and Chemical Patent Law, edited by Martin Grayson, John Wiley & Sons Inc., 605 Third Ave., New York, NY 10158, 1983, 116 pp., $17.95.

How to Write and Publish a Scientific Paper, 2nd Edition, by Robert A. Day, ISI Press, 3501 Market St., University City Science Center, Philadelphia, PA 19104, 1983, 180 pp., $17.95 (clothbound), $11.95 (paperback).

1983 National Fire Codes, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, 1983, 16 volumes for $191 or individual volumes for $20; 2-volume **1983 National Fire Codes Supplements**, $50.

Chromatography in Biochemistry, Medicine and Environmental Research, I, edited by Alberto Frigerio, Elsevier Scientific Publishing Co., PO Box 211, Amsterdam, The Netherlands, or 52 Vanderbilt Ave., New York, NY 10017, 1983, 278 pp., $72.25.

Essential Oils Analysis by Capillary Gas Chromatography and Carbon-13 NMR Spectroscopy, by V. Formacek and K.H. Kubeczka, 1982, John Wiley & Sons Inc., 605 Third Ave., New York, NY 10158, 373 pp., $112.

Practice of Thin Layer Chromatography, 2nd Edition, by Joseph C. Touchstone and Murrell F. Dobbins, John Wiley & Sons Inc., 605 Third Ave., New York, NY 10158, 1983, 405 pp., $40.

Advances in Chromatography, Vol. 21, edited by J. Calvin Giddings, Eli Crushka, Jack Cazes and Phyllis R. Brown, Marcel Dekker Inc., 270 Madison Ave., New York, NY 10016, 1983, 360 pp., $49.75.

Encyclopedia of the Alkaloids, Vol. 4, by John S. Glasby, Plenum Press, 233 Spring St., New York, NY 10013, 1983, 391 pp., $65.

The Soyfoods Industry and Market: Directory and Datebook 1983, by William Shurtleff and Akiko Aoyagi, The Soyfoods Center, PO Box 234, Lafayette, CA 94549, 1983, 115 pp., $75.

1983 Chromatography Supplies Catalog, Supelco Inc., Supelco Park, Bellefonte, PA 16823, 240 pp., free.

Gordon and Breach Science Publishers will run four-color illustrations of relevant artwork with papers published in *Molecular Crystals and Liquid Crystals/Letters* or its other journals at no charge to authors. Color art will be printed in a section of color plates, while black-and-white illustrations will accompany the text. Four-color artwork may be submitted either as negatives or glossy positives. For more information, contact Director of Production, Gordon and Breach Science Publishers, One Park Ave., New York, NY 10016.