New Books

L.A. Witting, Book Review Editor

Dietary Fats and Oils in Human Nutrition, FAO-WHO [(Food and Agriculture Organization of the United Nations, Rome, and the World Health Organization, Geneva), Rome, 1977, 94 p., copies may be obtained free by writing to: Director, Food Policy and Nutrition Division, FAO, Via delle Terme di Caracalla, 00100 - Rome, Italy.]

This is a report of a committee of 19 member experts from 13 countries (J.F. Mead, chairman, A.J. Vergroesen vice-chairman, M.A. Crawford, reporter) convened in Rome, September 21-30, 1977. To quote the introduction, "This document is a synthesis of the papers presented and the subsequent discussion on them, and attempts to record the current status of knowledge in the subject of dietary fats and oils in human nutrition." Several things should be clearly understood regarding a "document" of this type. The need to convene an expert group arises when the current level of understanding of a problem area does not make available a simple, straightforward, generally acceptable status report, and diverse, possibly opposing, viewpoints must be accorded consideration. Usually only the final conclusions receive general attention, and these statements tend to be treated as gospel. In actuality, personal views advocated with what could be politely described as vigor and tenacity by one "expert," even speaking outside of his or her area of expertise, may achieve a prominence completely out of keeping with their scientific merit. It is not unknown for members to engage in polemics with each other or other interested parties after such meetings and position papers authored by individual participants and published in their own countries may differ significantly from the FAO-WHO publication. Attention should really focus on the reports and data considered particularly relevant by the group to the evolution of a hypothesis or resolution of differences in interpretation. References to data "in press" are therefore completely out of place in such a publication. The above comments refer to this type of document in general and are not to be considered criticisms of this specific publication.

This specific document could be criticized on at least three points. Attention is called to the excessive recommendation of a minimum essential fatty acid intake of 3% of calories for man and inadequately supported statements regarding the essentiality of linolenic and other longer $\omega 3$ fatty acids in man. A clear-cut distinction is not maintained between total fat available for consumption and fat consumed. This is particularly apparent when the fat "supply" (available) from Figure 5 is described (Table 17) as calories provided by total fat as a percentage of total calorie supply. This approach ignores well-known and well-documented fat wastage and losses during food preparation. A relatively large portion of the text centers on problems that may seem rather strange to a nation of soybean oil consumers. Rapeseed oil is, of course, the major vegetable oil crop of Canada, and large quantities are exported to Europe. Similarly various northern European countries and Britain have a significant interest in partially hydrogenated fish oils, with apparent consumption levels of 8.2 and 5.0 kg per capita per year in Norway and Peru, respectively. Consumption of erucic acid in rapeseed oil or the positional isomers of 22:1 occurring in partially hydrogenated fish oils has been linked to a transient intracellular fat accumulation in the myocardium and subsequent fibrotic changes seen in certain species of experimental animals. Via genetic selection the entire Canadian production of rapeseed oil has been switched from high erucic oil to low erucic oil. This was accomplished partially via economic pressure by the European purchasers. These same countries now find themselves producing, consuming, and exporting a product with similar physiological properties, partially hydrogenated fish oils, whose composition cannot be readily altered. There were rumors of intense lobbying efforts directed toward the experts. A wide variety of other topics including *trans* acids, pesticide residues, cyclopropenoid fatty acids, deep frying operations, solvent residues, diabetes, and cancer are touched upon. Atherosclerosis receives relatively little attention. Emphasis is on essential fatty acids and also on dietary fat level.

This is a rather important publication of which nutritionists and members of the oil and fat industries should be aware and indeed should study carefully. As a FAO-WHO publication, the recommendations included will receive considerable official attention by many not in a position to follow the scientific discussion in the actual text. You should be aware of the basis (or lack of adequate basis) for these recommendations.

LLOYD A. WITTING
Supelco, Inc.
Bellefonte, PA 16823

Handbook of Environmental Data on Organic Chemicals, by Karel Verschueren (Van Nostrand Reinhold Co., New York, 1977, 659 p., $37.50).

This book lists the environmental data on over one thousand compounds. This data is given in the form of physical and chemical data, air pollution data, water pollution data, and biological effects on microorganisms, plants, animals, and man. The book contains a 55-page introduction explaining the terminology, definition, and factors employed in such environmental measurements. The book contains 347 bibliographic citations; these are referred to in the data for each compound listed. There is a key reference to each of the cited environmental data.

I feel that this book should be accessible to every laboratory worker and supervisor who is involved with the handling of volatile organic chemicals. Wise use of the data in this book may help prevent otherwise unfortunate exposure to harmful environmental chemicals.

EDWARD G. PERKINS
University of Illinois
Department of Food Science
104 Burnsides Research Laboratory
Urbana, IL 61801

Ion Chromatographic Analysis of Environmental Pollutants, Edited by Eugene Sawiki, J.D. Mulik, and E. Wittgenstein, (Ann Arbor Science Publishers Inc., Ann Arbor, MI, 1978, 210 p., $28).

This book is devoted to the applications of ion chromatographic instrumentation to the analysis of inorganic anions and cations. Ion chromatography is a relatively new technique which uses ion exchange techniques to separate inorganic ions which are detected by conductivity. This book contains fifteen chapters in various subject areas written by experts who are involved with the technique. The chapters cover determination of atmospheric sulfur dioxide; analysis of ammonium ions in ambient aerosols;

anions in filter catch samples; air particulate analysis; combustion product anion analysis; and inorganic salts in color additives. This book represents one of the first attempts to organize the knowledge available concerning ion chromatography. The figures and tables are well done and legible, and the text is clearly written and quite free of typographical errors. The references used are of recent publication date with many from 1976 and 1977 journals. This book should be useful to anyone contemplating carrying out instrumental ion analysis.

EDWARD G. PERKINS
University of Illinois
Department of Food Science
104 Burnsides Research Laboratory
Urbana, IL 61801

Nutrition, Immunity, and Infection, Mechanisms of Interactions, by R.K. Chandra and P.M. Newberne (Plenum Press, New York, 1977, x + 246 p., $22.50).

In this interpretative monograph, Drs. Chandra and Newberne provide a concise summary of research findings on the effects of nutritional status and infection – individually and in combination – on immunocompetence in man and in laboratory animals.

In the introduction, the authors summarize the case for the significance of the interactions between nutrition, infection, and immunocompetence and point out the many difficulties involved in interpreting the data presently available. This chapter is followed by a concise description of the mechanisms of host defense, and the third chapter deals with the assessment of nutritional status in man. In Chapter 4, the authors survey the types of infections found in undernourished individuals, and in the next chapter, they consider the alterations in metabolic balance, hormonal and nutritional status, and host resistance associated with infection.

The next two, more lengthy, chapters deal with the major concerns of the monograph, namely, immunocompetence in undernutrition, and interactions of nutrition, infection, and immune response in animals. In the first of these, an account of the effects of malnutrition on the histomorphology of lymphoid tissues is followed by accounts of the effects on cell-mediated and humoral immunity, complement system, phagocytes, lysozyme, and other miscellaneous factors. In the second, the authors consider nutrition – infection interactions associated with deficiencies and excesses of major nutrients. Understandably, a consideration of the effects of protein-calorie malnutrition claims the largest proportion of space in this chapter since this has been studied extensively in man and in laboratory animals. Those interested in lipids will find the cursory treatment given to dietary fat disappointing. A consideration of the possible immunosuppressive activity of fatty acids, although controversial, would not have been out of place here.

In the penultimate chapter, the authors consider the biological implications of the complex interactions between nutrition, infection, and immunity. The topics considered here include infection-related morbidity and mortality, postoperative sepsis, parenteral hyperalimentation and infection, intergenerational effects of undernutrition, impaired immunocompetence and infection, nutritional deficiency, immunopathological disease, and aging, cancer, and autoimmunity and allergy. The authors also discuss in this chapter the question of nutritional status and the efficacy of prophylactic immunization and immunopotentiation in the management of the malnutrition-infection syndrome. In the final chapter, the authors list 25 areas in which they believe information is urgently needed if we are to solve the maze of nutrition-immunity-infection interactions.

The subject chosen by Chandra and Newberne is extremely complex, and it is a credit to their organizing ability that they have produced a concise and easily readable book. This monograph will be of interest to all *JAOCS* readers involved in nutritional studies.

PATRICIA V. JOHNSTON
Department of Food Sciences
University of Illinois
Urbana, IL 61801

Nutrition Planning, Vol. 1, No. 1, 1978, 147 p. (Community Systems Foundation, 1130 Hill St., Ann Arbor, MI, 1978, $22.50; 1979, $45.00).

Nutrition Planning, a new international journal of abstracts about food and nutrition policy, planning and programs, is part of the Nutrition Planning Information Service by Community Systems Foundation, Ann Arbor, MI, and is supported by a grant from the Office of Nutrition, United States Agency for International Development. The purpose of the journal is to provide practitioners and researchers throughout the world with current information about food and nutrition policy and programs reported in both published and unpublished works.

Between 120 and 150 documents will be selected and abstracted for each issue. Abstracts appear under the most appropriate of the ten following general subject categories: planning process and methodology, consequences of malnutrition, nutritional status assessment, nutrition education and home-centered activities, public health and curative measures, food processing, distribution and feeding programs, agriculture, economics, social and cultural aspects, and comprehensive programs. The editors of the journal have chosen a broad definition of nutrition planning which includes both undernutrition and overnutrition and uses knowledge about the nutrition intervention programs as well as knowledge about factors causing malnutrition. It is the editors' intent to cover experiences from all nations in order to learn how to reduce malnutrition. Priority is given to documents reporting original data, especially data showing nutritional effects of an action or a relationship between nutritional status and other factors. Methods and results of field interventions are also given priority. The definition of nutrition planning is not limited to highly focused governmental programs aimed at specific nutritional problems. In recognizing that malnutrition is frequently intertwined with other social and economic factors, the editors' intend to include abstracts of documents that analyze the effects of social and economic changes on nutritional status. This first issue sticks close to the goals for the journal and provides 129 abstracts from a variety of sources.

Most documents abstracted in the journal are available directly from the Nutrition Planning Information Service or from University Microfilms, International. Some documents are available free of charge, but for most there is a fee. Information on the availability of full-text copies follows each abstract. In addition to the abstracts, the journal publishes book reviews and encourages exchange of ideas via letters to the editor. The journal is well indexed providing geographic, source, and subject indices.

This journal will be of interest to those readers of *JAOCS* who are involved in nutrition policy and planning, public health and food distribution. This first issue is available gratis until January 1979. The subscription for the other two issues to be published in 1978 is $22.50, and, thereafter, the journal will be published quarterly. At a

subscription rate of $45.00 annually, this journal will probably not be found in many private libraries.

PATRICIA V. JOHNSTON
Department of Food Sciences
University of Illinois
Urbana, IL 61801

New Publications

Yearly Progress Report on Coconut Breeding 1977, 30 p., available from Publications Division, Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 Rome, Italy.

USDA researcher visits Iberia

NRRC's Tim Mounts, left, discusses deodorization of soybean oil with J. Vellozzo, right, director of Unigral Oil Refinery in Casablanca, Morocco, as American Soybean Association's Roger Leysen, center, serves as interpreter.

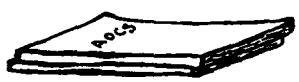
T.L. Mounts, a research leader on edible oils at the USDA's Northern Regional Research Center in Peoria, IL, traveled through Iberia and Morocco this past spring to acquaint oilseed crushers, technicians, and plant managers with the latest information on crushing, extraction, and processing techniques.

Mounts' trip was made under sponsorship of the American Soybean Association.

"The image of soybean oil in Portugal and Spain is quite poor," Mounts commented on his return. "This is generally attributable to both inadequate processing techniques and the consumer use of soybean oil, unhydrogenated, as a cooking oil. The absolute necessity for stainless steel deodorization equipment for production of a quality oil was emphasized in each country.

"Consideration of using brush hydrogenation was encouraged in Portugal and Spain," he said. "Due to limited use of soybean oil for high temperature cooking in Morocco, emphasis was placed on stabilization of finished oils by citric acid treatment."

Mounts was program chairman for the AOCS Short Course on Processing and Quality Control of Edible Fats and Oils held this past month at Michigan State University.



AOCS needs the following back copies of the *Journal of the American Oil Chemists' Society:* Volume 51(1974), July, Volume 52(1975), January, and Volume 53(1976), January; *Lipids:* Volume 12(1977) January and February.

The Society will pay $1.50 for each copy received in reusable condition. Send to AOCS, 508 South Sixth Street, Champaign, IL 61820.

the latest in Lipids

JUNE 1977