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standing these phenomena will eventually lead to new strategies to control diseases and pests of plants.

> John Ohlrogge Department of Botany and Plant Pathology Michigan State University East Lansing, MI 48824-1312

Protein Engineering: Tutorials in Molecular and Cell Biology, edited by Dale L. Oxender and C. Fred Fox (Alan R. Liss Inc., 41 East 11th St., New York, NY 10003, 1987, 384 pp., \$36).

With original contributions by over 30 investigators, Protein Engineering is a comprehensive treatise outlining methodologies and principles used to analyze the structure and biological function of proteins. This volume is divided into four main subject areas, specifically examining (a) high-resolution biophysical techniques for determining protein structure (e.g., X-ray crystallography and nuclear magnetic resonance); (b) methods for modifying protein structure (e.g., site-directed mutagenesis and DNA synthesis) and analysis of the resultant modified proteins (e.g., protein purification, genetic strategies and kinetic analysis); (c) protein stability and design principles; and (d) the properties of various purposely modified proteins.

This hardcover volume is printed on quality paper and the text is supported by a large number of useful illustrations. The

appendix contains color and color-stereo versions of some of the same black and white illustrations in text chapters, together with reproductions of some newly determined structures. Because of its systematic, cross-sectional approach, the book should be of interest to individuals from a variety of disciplines and educational backgrounds (from advanced undergraduates to professional scientists). Also, as stated by the editors in the preface, this book will "be useful as a supplement to introductory biochemistry textbooks, and as a means for independent study by students and others with formal biochemical training.'

Hans P. Blaschek Department of Food Science University of Illinois Urbana, IL 61801

# **New books**

Topics in Lipid Research: From Structural Elucidation to Biological Function, edited by R.A. Klein and B. Schmitz, Royal Society of Chemistry, Burlington House, Piccadilly, London W1V OBN, England, 1987, 336 pp., £37.50 or \$65.

Annual Review of Nutrition, Vol. 7, 1987, edited by Robert E. Olson, Ernest Beutler and Harry P. Broquist, Annual Reviews Inc., 4139 El Camino Way, P.O. Box 10139, Palo Alto, CA 94303-0897, 1987, 587 pp., US \$31, elsewhere \$34.

Soybean Utilization, by Harry E. Snyder and T.W. Kwon, Van Nostrand Reinhold Co., 115 Fifth Ave., New York, NY 10003, 1987, 346 pp., \$49.95.

# Other Publications

The Institute for Local Self-Reliance has published a report, Substituting Agricultural Materials for Petroleum-Based Industrial Products, which focuses on nonfuel uses for plant material in the chemical industry. The 35-page report can be obtained from ILSR-Publications, 2425 18th St. NW, Washington, DC 20009, USA. Cost is \$37.

Additives in Foods, Part 1: Preservatives and Antioxidants, Layman's Guides No. 25, by Pamela M. Tew is available from the British Food Manufacturing Industries Research Association. The 17-page pamphlet covers function, applications and usage levels of major compounds and health concerns. Member price is £10; nonmembers is £20. Contact: British Food Manufacturing Industries Research Association, Randalls Road, Leatherhead, Surrey, England.

The publication Nickel can be obtained from The Nickel Development Institute, 7 King Street East, Toronto, Ontario, Canada. The quarterly brochure is available free to anyone interested in nickel applications.

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# **New Products**

# LINEAR ALCOHOL

Exxon Chemical has developed a linear alcohol from which ethoxylates, sulfates, ethoxysulfates and other specialty surfactants can be derived. The company says EXXAL L1315 has low odor and low color, and it biodegrades and wets rapidly. It has applications in wetting agents, foaming agents, industrial products and household detergents. Contact: Peter Ellis, Exxon Chemical Co., PO Box 3272, Houston, TX 77253-3272.

# **DISPLAY EQUIPMENT**

Pope Scientific's Digi-King line of digital display equipment is designed for long-range monitoring in production plants and research facilities. Digits are available in three sizes: 2.25", 4.75" and 7". Models can be connected to instruments such as analog/digital converters, BCD signal indicators, counter/timers and thermometers. Contact: Pope Scientific Inc., PO Box 495, Menomonee Falls, WI 53051.

# **BALANCE**

Brinkmann Instruments Inc. introduces the Sartorius automatic analytical filter-weighing balance. The balance has a weighing range to 200 g and readability to 0.1 mg. It also accommodates standard 8" × 10" filters. Contact: Brinkmann Instruments Inc., Cantiague Road, Westbury, NY 11590.

# POWDERED OMEGA-3

Pharmachem Laboratories Inc. has

# New Products

developed Pharmomega-500 SF, a dry form of omega-3 fatty acids. The company says the powder contains a minimum of 500 mg per gram of fish oil concentrate and is starch-free, sugar-free, preservative-free, cholesterol-free and stable. Contact: Pharmachem Laboratories Inc., 130 Wesley St, South Hackensack, NJ 07606.

### **CLEANING SYSTEM**

Del Crane Inc. offers a system using frozen carbon dioxide pellets to clean industrial machinery, food processing equipment and storage tanks. The company says the Cold-Jet "cryogenic" system eliminates cleaning agent disposal problems and is an alternative to abrasive blasting and chemical wash treatments. Contact: Del Crane Inc., 5988 Woodridge, Milford, OH 45150.

### **SOY PROTEIN**

Wenger Manufacturing Inc. offers a twin screw extruder which allows the production of textured soy protein from raw materials with low nitrogen solubility index (NSI) levels. The equipment eliminates the need for flash desolventizing equipment. Contact: Wenger Manufacturing Inc., Plant and General Offices, 714 Main St., PO Box 130, Sabetha, KS 66534-0130.

### **MICROWAVE DETECTOR**

The Enduro microwave level and

interface detector by CannonBear Inc. is designed to monitor solid and liquid height levels in tanks, hoppers, silos and conveyers. It can be used in fiberglass or metal vessels. Most maintenance can be done without opening the vessel or changing the level of its contents. Contact: CannonBear Inc., 711 S. Oak, Iowa Falls, IA 50126.



### **FLUID MEASUREMENT**

Ametek Inc. introduces the Model 572 fluid level measurement system for applications in tanks, wells and reservoirs. It features a microprocessor-based meter/controller, corrosion-resistant stainless steel wetted parts, programmable dual set points and fluorescent digital display. Contact: Ametek, Controls Division, 820 Pennsylvania Blvd., Feasterville, PA 19047.

### CIRCULATOR/BATH

Science/Electronics has designed a

circulator/bath unit to pump temperature-controlled liquids into other equipment. It also can be used as a thermostatic bath. Features include a 1.7 meter pumping head, maximum flow rate of 10 liters per minute, digital set points, 120 watts of cooling power and proportional temperature control. Contact: Science/Electronics Inc., PO Box 986, Dayton, Ohio 45401.

### CHROMATOGRAPHY LINK

Hewlett-Packard Co. offers an analog-to-digital interface module to connect computers to chromatographic instrumentation. The module has two independent, asynchronous data-acquisition channels, remote start/stop, front-panel control, and Loop or HP-IB communications. Contact: Inquiries Manager, Hewlett-Packard Co., 1820 Embarcadero Rd., Palo Alto, CA 94303.



# **MELT MONITOR**

The FP62 melting point instrument by Mettler automatically determines melting points via an optical system. Heating rates between 0.1 and 10 C/min in steps of 0.1 C can be selected; the temperature range extends from room temperature to 300 C. Contact: Mettler Instruments AG, CH-8606 Greifensee, Switzerland.

### **FLOW DRUM**

Thompson-Chemtrex has introduced a seal-less drum pump with a pump rate of 40 gallons per minute. It also has an 80-foot total discharge head and handles viscosities to 500 cps, densities to 1.8 specific gravity and temperatures to 160 F. Contact: Thompson-Chemtrex Inc., 921 Greengarden Rd., Erie, PA 16501-1591.



Used in conjunction with AOC\$ Official Method Ca9a-52 to determine the refining loss of free fatly acids, oil and impurities when the sample is treated with alkali solutions under test conditions. The method applies to crude peanut oil, crude coconut oil, crude corn oil, crude soybean oil (expeller and hydraulic), and crude cottonseed oil (expeller and hydraulic). Cup dimensions: 4 1/2 inch diameter and 4 1/8 inch depth. Capacity: 960 ml.

**Price** (Postage and handling extra) Carton of 6 cups: \$96/carton Broken cartons: \$20/cup

### **Order From**

American Oil Chemists' Society P.O. Box 3489 Champaign, IL 61821-O489 USA (continued from page 1368)

Cambridge, Massachusetts. Details: Meetings and Registration Manager, American Institute of Chemical Engineers, 345 E. 47th St., New York, NY 10017.

Northeast AOCS Section meeting, Nov. 3, 1987, Friar Tuck Inn, Cedar Grove, New Jersey. Topic: Industrial waste management. Contact: Anthony Montana, Henkel Process Chemicals Inc., 350 Mt. Kemble Ave. CN 1931, Morristown, NJ 07960-1931, telephone 201-267-1000.

AOCS dedication activities, Nov. 6-7, 1987, Champaign, Illinois. Symposium, "Fats and Oils: Looking Toward the Year 2000," organized by the North Central Section of AOCS, Nov. 6, Jumer's Castle Lodge, Urbana; dedication ceremonies Nov. 7 at the new AOCS headquarters, 1608 Broadmoor, Champaign. Contact: AOCS, PO Box 3489, Champaign, IL 61821-0489, telephone 217-359-2344.

1987 Annual Meeting and Conference on Biotechnology, American Institute of Chemical Engineers (AIChE), Nov. 15-20, 1987, New York City, New York. Annual meeting at the New York Hilton, Conference on Biotechnology at the Sheraton. Contact: Marie Stewart, Staff Director, Meetings and Expositions, AIChE, 345 E. 47th St., New York, NY 10017.

International Symposium on New Technology of Vegetable Proteins, Oils and Starch Processing. Nov. 16-20, 1987, Beijing, China. Contact: Fu Li Min, Vice-Chairman and Secretary General, Chinese Cereals and Oils Association, Ministry of Commerce Bldg., 45 Fu Xing Men Nei Da Jie, Beijing, People's Republic of China, or Prof. Dr. Ing. Friedrich Meuser, Institute of Food Technology, Technical University of Berlin, Sekr. GV 1, Seestrasse 11, D-1000 Berlin 65, Federal Republic of Germany.

North Central AOCS Section meeting, Nov. 17, 1987, Allgauer's Fireside Restaurant, 2855 N. Milwaukee, Northbrook, Illinois. Contact: Govind Mirmira, Kraft Inc., 801 Waukegan Rd., Glenview, IL 60025, telephone 312-998-3651.

Edible Oils and Fats Course, Nov. 17-19, 1987, Leatherhead Food R.A., Leatherhead, Surrey, England. Contact: Mrs. G.M. Mathias, Training Course Administrator, Leatherhead Food R.A., Randalls Road, Leatherhead, Surrey, KT22 7RY, England.

### December

Dietary Fat symposium, sponsored by the Northeast AOCS Section, Dec. 1, 1987, Holiday Inn Jetport, Newark, New Jersey. Contact: Anthony Montana, Henkel Process Chemicals Inc., 350 Mt. Kemble Ave. CN 1931, Morristown, NJ 07960-1931, telephone 201-267-1000.

Norcal AOCS Section meeting, Dec. 4, 1987, San Francisco, California. Details: Penny Wells, KabiVitrum Inc. 1311 Harbor Bay Pkwy., Alameda, CA 94501.

Biotechnology and the Food Industry—New Developments in Biotechnology Meeting the Challenges of the Food Industry, Dec. 10-11, 1987, Kensington Rainbow Suite, London, England. Details: Conference Secretariat, Society of Chemical Industry, 14/15 Belgrave Square, London SW1X 8PS, England.

# 1988

Separation Science and Biotechnology seminar, presented by the Washington Chromatography Discussion Group, Jan. 19-21, 1988, Ft. Lauderdale, Florida. Details: Mrs. Janet Cunningham, Barr Enterprises, PO Box 279, Walkersville, MD 21793.

Annual meeting, Food Processing Machinery & Supplies Association, Feb. 5-10, 1988, Buena Vista Hotel, Orlando, Florida. Contact: Food Processing Machinery & Supplies Association, 200 Daingerfield Rd., Alexandria, VA 22314.

Seminar, Concerns About the Food Supply in the 21st Century: Technology Transfer as It Affects Food and Health, March 3-4, 1988, Crystal Marriott, Crystal City, Virginia. Contact: IFT Headquarters, 221 N. LaSalle St., Chicago, IL 60601, telephone 312-782-8424.

1988 Mississippi Valley Oilseed Processors Association Annual Oilseed Processing Clinic, March 14-15, 1988, Monteleone Hotel, New Orleans, Louisiana. Details: Wayne E. Marshall, USDA/ARS, 1100 Robert E. Lee Blvd., PO Box 19687, New Orleans, LA 70179.

National Cottonseed Products Association (NSPA) annual meeting, May 12-14, 1988, Opryland Hotel, Nashville, Tennessee. Contact: NSPA, PO Box 12023, Memphis, TN 38112.

International conference on Diet,
Lipids and Cancer (Metabolism,
Membranes, Mechanisms), May
22-26, 1988, Yulara-Ayers Rock,
Northern Territory, Australia.
Contact: Dr. John R. Sabine.
Department of Animal Sciences,
Waite Agricultural Research
Institute, Glen Osmond, South
Australia 5064, Australia.

World Surfactants Congress II, May 24-27, 1988, Paris, France. Organized by ASPA, France; sponsored by the European Committee on Organic Surfactants and Their Intermediates, Avenue Louise 250, Bte. 102; B-1050 Brussels, Belgium.

63rd World Congress of the International Association of Seed Crushers, June 7-10, 1988, Hyatt Regency and Hotel Vancouver, Vancouver, British Columbia, Canada. Contact: Secretariat, Suite 801, 750 Jervis St., Vancouver, B.C., Canada V6E 2A9, telephone 604-681-5226, telex 04-352848 VCR.

8th International Symposium on the Biological Role of Plant Lipids, July 25-28, 1988, Budapest, Hungary. Details: Tardyné Lengyel Márta, Central Food Research Institute, Budapest, Herman Ottó ut 15, H-1022, Hungary.

Twelfth International Sunflower Conference, sponsored by the Yugoslav Association of Producers of Plant Oils and Fats and Yugoslav government entities, July 25-29, 1988, Novi

### Calendar Maria

Sad, Yugoslavia. Contact: Institute of Field and Vegetable Crops, M. Gorkog 30, 21000 Novi Sad, Yugoslavia.

Scientific Congress on Proteins in Food and Nutrition, Sept. 8-9, 1988, Vienna, Austria. Contact: Secretariat of the Scientific Congress on Proteins in Food and Nutrition, c/o Vienna Medical Academy, Alsterstrasse 4, A-1090 Vienna, Austria.

2nd International Symposium on Lipid Metabolism in the Normoxic and Ischemic Heart, Sept. 12-13, 1988, University of Limburg, Maastricht, The Netherlands. Contact: G.J. Van der Vusse, Department of Physiology, University of Limburg, PO Box 616, 6200 MD Maastricht, The Netherlands.

Cosmetic Science '88—Achievements and Aims, 15th International Congress of the International Federation of Societies of Cosmetic Chemists, Sept. 26-29, 1988 Grosvenor House, Park Lane, London, England. Contact: Society of Cosmetic Scientists, Delaport House, 57 Guildford St., Luton, Beds LU1 2NL, England.

ISF-JOCS World Congress 1988, Sept. 26-30, 1988, Tokyo, Japan. Contact: ISF-JOCS World Congress 1988, Secretariat, The Japan Oil Chemists' Society, 7th floor, Yushi Kogyo Kaikan, 13-11 Nihonbashi 3-chome, Chuoku, Tokyo 103, Japan.

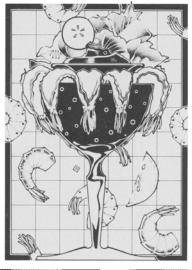
# 1989

Fats for the Future II, international conference on oils, fats and waxes, Feb. 12-16, 1989, Auckland, New Zealand, Contact: Jennifer Gray, Conference Secretary, 1989 Oils and Fats Conference, c/o Chemistry Department, University of Auckland, Private Bag, Auckland, New Zealand.

First Congress Eurolipid, international congress marking the centenary of the death of Michael Eugene Chevreul, June 7-9, 1989, Angers, France. Information: French Association for the Study of Fats (AFECG), 10A, rue de la Paix, 75002 Paris, France.

# The unofficial but recommended recipes of the American Oil Chemists' Society

This AOCS cookbook holds over 23O pages of recipes contributed by AOCS Governing Board members and spouses, Foundation Board members, Past Presidents, Section officers and headquarters staff. Order your copy to benefit AOCS and your palate–order extras to share with family and friends. Bon appetit!



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