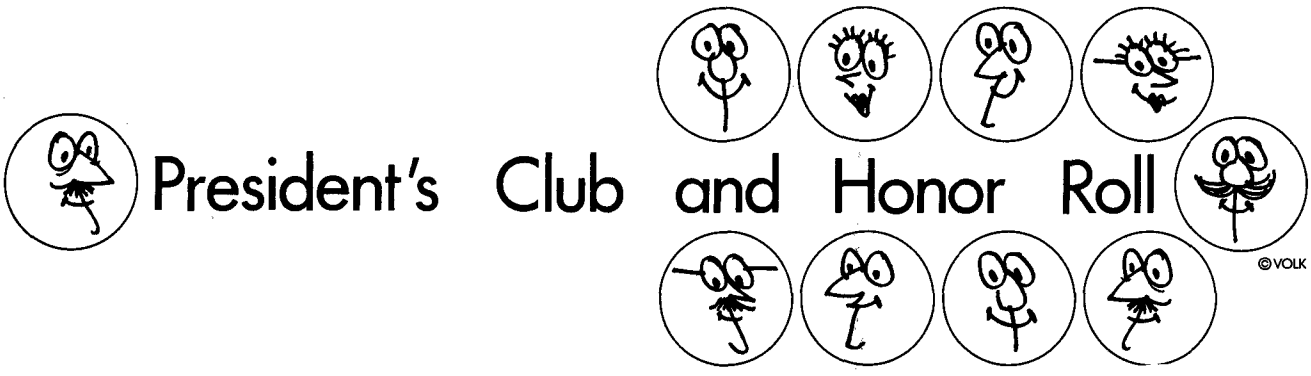

The members listed here have qualified for either the AOCS President's Club or President's Honor Roll. All current members who successfully recruit at least one new member qualify for Club membership. Successful recruitment of at least three new members is the qualification for the more prestigious Honor Roll. All Club and Honor Roll members will receive further recognition and the opportunity to participate in other special programs and activities. Special forms for use in recruiting new members are available from AOCS headquarters.

Sixteen

Stephen S. Chang

Thirteen

Ignacio F. Palencia

Eight

H.P. Gormley
Ralph T. Holman
Randall Wood

Seven

Syamal K. Bhattacharya
Michael G. Fader

Four

Robert R. Allen
Robert C. Hastert
Franklin P. Khym
Fernando Luna

Three

Arno Cahn
Arnold Gavin
Angelo V. Graci
Robert W. Johnson
Frank Naughton
Ragnar Ohlson
Emory T. Payne
Norman O.V. Sonntag
Benjamin F. Ward, Jr.

Two

James C. Clouse
Manuchehr Eijadi
David R. Erickson
Robert L. Garrett
Charles W. Hoerr
Joyce C. Kern
Richard V. Madrigal
Gerhard Maerker
Avinash P. Mardikar
W.W. Nawar
Robert E. Pitas
Jeanine Raulin
Alan J. Sheppard
Thomas H. Smouse
Barat Sreenivasan
Francis White
James W. White
Richard F. Wilson
James B. Yeates

One

Phillip Abend
Toshimi Akiya
Aldo Albertini
Verlin Allbritton
Gregory E. Anekwe
Phillip D. Ashkettle
George E. Barker
Fred O. Barrett
Fred Bauer
Irvin C. Bentz
Daniel R. Berger
Fred Bieri
Anthony P. Bimbo
Evan K. Binkerd
Douglas M. Bisset
Gary J. Blomquist
John E. Blum
Francis F. Borba
Sherman A. Boring
Dean K. Bredeson
Elmer C. Brinkley
Walter M. Budde
Travis L. Budlong
Rudolf Bunkfeldt
Robert Cain
Paritosh M. Chakrabarti
Rashid A. Choudry
Ronald L. Christenson
Jaime Cifuentes
William T. Coleman
Joe Crafton
W. Gale Cutler
James M. Day
Rabindra N. Day
William G. Doeden
Stanley Dominik
Robert L. Edwards
Richard R. Egan
Joseph G. Endres
Z.J. Farkas
Giles S. Farmer
David Firestone
Marvin W. Formo
Wilfred J. Frech
Earle Fritz
Frederick H. Fryer
Homero M. Garcia
William H. Garner

PROCEEDINGS

of the Symposium entitled

PHYTOSTEROLS

J. L. LASETER, Program Chairman

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conducted by the American Oil Chemists' Society at its 64th Annual Spring Meeting

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Frank D. Gunstone
Alfen J. Gustavsen
Frank C. Haas
Edward Hahn
James E. Haley
Nancy J. Haley
John M. Hasman
Y. Hoffmann
Kenneth Holt
Francis E. Horan
Ray Hough
Robert H. Hrushowy
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Robert Husch
Herbert T. Iveson
R. Cecil Jack
Richard C. Johnson
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Eric Jungermann
Jon J. Kabara
Peter Kalustian
Karl P. Kammann
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William R. Kittredge
Karl W. Klein
William H. Koester
Saburo Komori
David J. Kriege
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Fred A. Kummerow
John R. Ledin
Gabriel P. Lensack
Arieh Letan
Dorris A. Lillard
Robert C. Lindsay
William E. Link
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Ahmad M. Moustafa
Satoshi Nakasato
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George M. Neumunz
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Harold S. Olcott
Samuel E. Pack
Frank H. Passalaqua
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C. Oscar Schmidt, Jr.
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Sidney H. Shapiro
B.S.K. Shastry
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E. Richard Sherwin
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Norman H. Witte
Lloyd A. Witting
Arthur N. Wrigley
Kosaku Yasuda
Karl T. Zilch
Theodore J. Zwolanek

The individuals listed below have applied for membership in AOCS between August 1 and September 1, 1974.

Richard A. Arzapalo, sect. mgr., Avon Products, Inc., 1 Division St., Suffern, N.Y. 10901.

Carl W. Bailey, III, grp. lead., tall oil res., Westvaco Corp., P.O. Box 5207, Research Laboratory, N. Charleston, S.C. 29406.

Dennis J. Breitbart, grad. stu., Dept. of Food Science, University of Massachusetts, Amherst, Mass. 01002.

Jean-Paul Carreau, attache res., Centre National de la Recherche Scientifique, Hopital de Bicetre, Bicetre, France 94270.

Wing M. Chan, chem., Edible Oil Products, 24 Milestone, Ayer Hitam Rd., Kulai, Johore, W. Malaysia.

Winifred M. Cort, grp. lead., prod. dev., Hoffmann

(continued on page 662A)

AOCS National Meetings

Apr. 27-30, 1975—Dallas, Tex., Statler Hilton.

Sept. 28-Oct. 1, 1975—Cincinnati, Ohio, Netherland Hilton.

April 21-24, 1976—New Orleans, La., New Orleans Marriott Hotel.

June 5-8, 1976—Aspen, Colo., Summer Short Course: Glycolipids.

June 16-18, 1976—Hershey, Pa., Summer Short Course: Surfactants, Hotel Hershey and Country Club.

Other Organizations

Oct. 14,1974—Annual Joint Association of Official Analytical Chemists/Society of Cosmetic Chemists Symposium, Twin Bridges Marriott Hotel, Washington, D.C. Contact: Jack A. Lawrence, Reheis Chemical Co., 235 Snyder Ave., Berkeley Heights, N.J. 07922.

Oct. 14-18, 1974—Management Studies for Chemists, Urwick Management Center, Slough, Bucks, England. Contact: Dr. M.D. Robinson, The Chemical Society, Burlington House, London W1V 0BN, England.

Oct. 21-25, 1974—Liquid Analysis Instrumentation, Control, and Applications Seminar, sponsored by Leeds & Northrup, Leeds & Northrup Technical Training Center, North Wales, Pa. Contact: D.S. Luppold, Manager of Technical Training Center, Leeds & Northrup Co., North Wales, Pa. 19454.

Oct. 22-24, 1974—Symposium & Exhibit on Recent Developments in Research Methods and Instrumentation, sponsored by National Institutes of Health, National Institutes of Health, 9000 Rockville Pike, Bethesda, Md. Contact: Judith M. Summers, Office of Administrative Services, National Institutes of Health, Building 31, Room 1C-02, Bethesda, Md. 20014.

Oct. 23-24, 1974—International Technico-Economical Symposium, "Production and Consumption of Chemical Specialties, Multi-purpose Functional Chemicals, Market Directed Chemicals, Performance Products," Brussels-Hilton, Brussels, Belgium. Contact: i.b./c.c. Administration, Nieuwelaan 65, B-1820 Strombeek, Belgium.

Oct. 28-31, 1974—29th Annual Instrument Society of America's International Conference and Exhibit, New York Coliseum, New York, N.Y. Contact: Mr. Robert G. Hand, Assistant Manager, Publications and Education Services, Instrument Society of America, 400 Stanwix St., Pittsburgh, Pa. 15222.

Nov. 4-6, 1974—87th Annual Meeting of National Paint and Coatings Association, Hyatt Regency Hotel, Atlanta, Georgia. Contact: Paint Industry Housing Bureau, Atlanta Convention and Visitors' Bureau, 229 Peachtree St., N.E., Suite 1414, Atlanta, Ga. 30303.

Nov. 6-9, 1974—52nd Annual Meeting and 39th Paint Industries' Show of Federation of Societies for Paint Technology, Atlanta Civic Center, Atlanta, Ga. Contact: Federation of Societies for Paint Technology, 121 S. Broad St., Philadelphia, Pa. 19107.

Nov. 11-13, 1974—Safety in Chemical Laboratories & Chemical Pilot Plants Short Course, sponsored by The Center for Professional Advancement, S. Plainfield, N.J. Contact: Linda Carbonneau-Wussler, Assistant Registrar, The Center for Professional Advancement, 29 Division St., P.O. Box 997, Somerville, N.J. 08876.

Nov. 11-15, 1974—Solvent Extraction & Ion Exchange Short Course, sponsored by The Center for Professional Advancement, Edison, N.J. Contact: Linda Carbonneau-Wussler, Assistant Registrar, The Center for Professional Advancement, 29 Division St., P.O. Box 997, Somerville, N.J. 08876.

Nov. 14-15, 1974—Sterilization Techniques for Microbiological Control & Sterility Short Course, sponsored by The Center for Professional Advancement, E. Brunswick, N.J. Contact: Linda Carbonneau-Wussler, Assistant Registrar, The Center for Professional Advancement, 29 Division St., P.O. Box 997, Somerville, N.J. 08876.

Nov. 18-22, 1974— First National Meeting of Federation of Analytical Chemists and Spectroscopy Societies, Chalfonte-Haddon Hall, Atlantic City, N.J. Contact: George Heinze, Johnson & Johnson, 501 George St., New Brunswick, N.J. 08816.

Dec. 1-5, 1974—67th Annual Meeting, American Institute of Chemical Engineers, Hilton Hotel, Washington, D.C. Contact: Robert M. Jimeson, Federal Power Commission, Room 6112, 825 N. Capitol St., N.E., Washington, D.C. 20426.

Dec. 2-3,1974—Annual Meeting of the Society of Cosmetic Chemists, Americana Hotel, New York, N.Y. Contact: Mrs. Rose Sylbert, Society of Cosmetic Chemists, 50 E. 41st St., New York, N.Y. 10017.

Dec. 2-5, 1974—XIX International Dairy Congress, New Delhi, India. Contact: V. Kurien, 123 Vigyan Bhavan Annex, Maulana, Azad Marg, New Delhi 110011, India

Dec. 4-6, 1974—*Liquid Chromatography* Short Course, sponsored by The Center for Professional Advancement, E. Brunswick, N.J. Contact: Linda Carbonneau-Wussler, Assistant Registrar, The Center for Professional Advancement, 29 Division St., P.O. Box 997, Somerville, N.J. 08876.

Dec. 4-6, 1974—Intra-Science Symposium, "New Ideas in Genetic Disease with Special Reference to Membrane Structure," Miramar Hotel, Santa Monica, Calif. Contact: Ms. Marilyn Cheung, Intra-Science Research Foundation, P.O. Box 430, Santa Monica, Calif. 90406.

Jan. 16, 1975—Food and Your Well-Being II: Annual Symposium on Food Safety, Richard B. Russell Agricultural Research Center, Athens, Ga. Contact: Thota Hamsa, Student Chapter of IFT, Department of Food Science, University of Georgia, Athens, Ga. 30602.

Mar. 3-7, 1975—Twenty-sixth Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Cleveland Convention Center, Cleveland, Ohio. Contact: Peter M. Castle, 1975 Pittsburgh Conference, Building 401, Room 4A31, Westinghouse Research Laboratories, Beulah Rd., Pittsburgh, Pa. 15235.

April 14-18, 1975—Labex International 75, sponsored by UTP Exhibitions Ltd., Earls Court, London, England. Contact: Bevan M. Gilpin, Labex International 75, UTP Exhibitions Ltd., 121 King St., London, W6 9JG, England.

April 17-18, 1975—4th International Symposium on Metal Catalyzed Lipid Oxidation, sponsored by the Society of Chemical Industry, International Society for Fat Research, Biochemical Society, and Chemical Society, St. Bartholomew's Hospital Medical College, London, England. Contact: Dr. P.A.T. Swoboda, ARC Food Research Institute, Colney Lane, Norwich, NOR 70F, England.

May 4-8, 1975—2nd National Conference on Complete WateReuse, "Water's Interface with Energy, Air, and Solids," American Institute of Chemical Engineers, Palmer House, Chicago, Ill. Contact: Joel Henry, AIChE, 345 E. 47th St., New York, N.Y. 10017.

Aug. 3-9, 1975—X International Congress of Nutrition, sponsored by International Union of Nutritional Sciences, Kyoto International Conference Hall, Kyoto, Japan. Contact: Mr. Masao Kanamori, c/o Kyoto International Conference Hall, Takara-ike, Sakyoku, Kyoto 606, Japan. ■

NEW BOOKS

J. F. GERECHT, BOOK REVIEW EDITOR

International Symposium on Deterioration of Lipids, Proceedings, Edited by Henryk Niewiadomski (Panstwowe Wydawnictwo Naukowe, Warsaw, Poland, 1973, 292 p.).

This book is a compendium of 38 papers presented by scientists from 15 different countries at the "International Symposium on Deterioration of Lipids," held in Gdansk, Poland, June 1971. The editor has assembled an impressive list of international authorities to discuss various problems of fat oxidation, processing, and food uses. Included are five plenary lectures by H. Niewiadomski (Gdansk, Poland) on the influence of lipid deterioration on technology and final product, by G. Jacini (Milan, Italy) on minor components of oils, by R. Marcuse (Goteborg, Sweden) on metal catalyzed lipid oxidation, by J. Pokorny (Praha, Czechoslovakia), and by W. Zwierzykowski (Gdansk, Poland) on kinetics and thermodynamics of fat autoxidation.

The rest of the book contains a collection of short papers dealing with such topics as the effects of chlorophylls, tocopherols, phospholipids, and steroids upon the oxidation of various oils (fish, rapeseed, and sunflower), pro- and antioxidants, components in heated fats, selective hydrogenation of linolenic acid in rapeseed oil, peroxide-protein interactions, metal removal, and inactivation.

In any such multiauthor compilation the coverage is uneven both in nature and in depth. Particularly well written, important papers are those of Zwierzykowski, et al., on the kinetics and thermodynamics of lipid autoxidation, of R. Marcuse on TBA reactive oxidation products, of G. Hoffman, et al. (Vlaardingen, The Netherlands) on relative oxidation rates of synthetic diacyl triglycerides, and of A. Prevot, et al. (Paris, France) on GLC studies of oil volatiles.

This book is aimed at the researcher and focuses attention on the many problems needing further work in this continuing vital area of concern to lipid, food, and nutrition chemists. The editor is to be complimented for assembling an impressive list of contributors who are quite international in origin.

EDWIN FRANKEL
Northern Regional Research Center
ARS, USDA
Peoria, Illinois 61604

The Milk Fat Globule: Emulsion Science as Applied to Milk Products and Comparable Foods, H. Mulder and P. Walstra (Commonwealth Agricultural Bureaux, Farnham Royal, Bucks, England, and Centre for Agricultural Publishing and Documentation, Wageningen, The Netherlands, 1974, 296 p., ca. $15.30).

In this book, the authors use the milk fat globule as a

model with which to approach the science and technology of emulsions. They also deal effectively with the subject of milk fat in the various dairy products, i.e. cheese, butter, homogenized milk, ice cream, etc. Emphasis is on physical and colloidal chemistry of the lipid system. The fourteen chapter headings are as follows: "Structure of Milk," "The Fat in Milk," "Crystallization Behavior of Milk Fat," "The Fat Dispersion," "The Fat Globule Membrane," "Stability of the Fat Emulsion," "Changes in Fat Dispersion with Processing," "Creaming and Separation," "Homogenization," "Cream," "Fat Globules in Foam Products," "Isolation of Milk Fat," "Structure and Texture of Butter," and "Synthetic Fat Globules." There is liberal use of figures, including electron photomicrographs and tables. Each chapter includes a fairly extensive list of references, and, although the authors make no claim that their treatise is an exhaustive literature review, it is evident that they have covered the literature effectively through 1972. The index (eight pages) is adequate.

The milk fat globule contains most of the lipids and virtually all of the triglycerides of milk. Since milk fat is fundamentally important in human nutrition in the form of milk, diary products, and a wide array of processed foods, the practical value of this type of book to food technologists is readily evident.

Since there is no other book centered on the physical chemistry of milk fat in native and derived forms, and since the authors are outstanding authorities on the subject, the book clearly fills a need. The treatment is scholarly and critical but not burdened in its mathematics. For university textbook or reference purposes, this book is geared roughly at the advanced undergraduate to graduate levels. The authors have not attempted to cover the milk lipids in any depth from the standpoints of their biosynthesis, organic chemistry, or flavor chemistry. However, this is not an unreasonable limitation, since these matters have been and are being presented elsewhere adequately, e.g., the three volumes of *Lactation: A Comprehensive Treatise* edited by B.L. Larson and V.R. Smith (Academic Press, 1974) and *Odor and Flavor Compounds from Lipids* by D.A. Forss (*Progress in the Chemistry of Fats and Other Lipids*, Vol. XIII, Part 4, Pergamon Press, 1972).

To sum up, this book should be a valuable addition to the references used by food scientists and fats and oils technologists. It covers the science and technology of milk fat extremely well.

STUART PATTON
Department of Dairy Science
Pennsylvania State University
University Park, Pennsylvania 16802

Industrial Uses of Cereals: Symposium Proceedings, Y. Pomeranz, Symposium Chairman (American Association of Cereal Chemists, Inc., St. Paul, Minn., 1973, 417 p.).

This book is composed of the unedited proceedings of a symposium presented at the 58th Annual Meeting of the American Association of Cereal Chemists. It contains 22 chapters and subsections authored by 25 leading scientists from the USDA laboratories, universities, and industry. Four chapters are written by foreign contributors. According to Symposium Chairman, Y. Pomeranz, the purpose of this collection of papers is to provide a comprehensive survey on the industrial utilization of all cereals along with descriptions of structure, composition, functionality, and properties of whole grains and grain components.

Chapters 1 and 2 provide background information on the economic aspects and physical properties that influence industrial use of cereals. A wide variety of physical properties of cereals are discussed in Chapter 2.

Chapter 3, written in four parts, gives a detailed description of the structure and composition of the protein, starch, nonstarch polysaccharide, and lipid components of cereals along with industrial uses for these components. Methods also are given for the enzymatic and chemical modification of starch and protein.

In Chapter 4, various wet and dry processes for separation of the starch and gluten components of wheat are described, including recent process improvements. Fractionation of mill feeds and the Fesca, or direct centrifugation process, also are described.

Chapters 5, 6, and 7 are general in nature and deal, respectively, with the furfural industry, reaction of cereal proteins with vinyl compounds, and use of cereal grains as a source of industrial energy.

Industrial uses for corn starch, corn protein, and dry milled corn-derived products are discussed in three sections in Chapter 8. Also included are methods for chemical modification of starch for specific applications in paper, textile, and adhesive applications. This chapter also contains a short section on the industrial utilization of corn cobs.

The starch-gluten industry is described in Chapter 10 along with a review of industrial uses for wheat, wheat gluten, wheat flour, mill feeds, and other by-products. Work done at the USDA on the chemical modification of wheat flour for industrial uses also is discussed.

Chapters, 9, 11, and 12 review the physical properties, composition, and structure of sorghum grains and barley and oats, respectively. Wet and dry milling processes for sorghum are described in Chapter 9 along with the industrial utilization for sorghum. Chapter 11 gives an extensive review of malt and the malting and brewing processes, as well as uses for barley and barley by-products. All of these chapters provide extensive literature reviews.

Disposal of rice hulls is a critical problem because of current restrictions on burning. Chapter 13 describes the composition of rice hulls and considers several possibilities for industrial utilization.

Chapter 14, the concluding chapter, is an annotated bibliography on the industrial uses of cereals published in the last 25 years. Starches and starch derivatives are excluded. Over 2500 literature references are cited along with an index of subject matter. Papers are listed by author along with descriptive titles.

Many excellent papers are contained in this book dealing with the composition, fine structure, physical properties, functionality, and industrial nonfood uses of common cereal grains and grain components. For the most part, the papers are written in a scholarly style by recognized experts in cereal chemistry. Most of the papers provide comprehensive reviews of published literature, but they also contain results of work in progress by the authors.

This book will be of broad interest to industrial people in the wet and dry milling industries, as well as to industries that consume cereal products. It also should be a valuable reference book to university people (botanists, biochemists, and carbohydrate chemists) because of the breadth of subject matter covered—particularly in those chapters dealing with the structure and composition of cereal grains and grain components—as well as the annotated bibliography.

Readers of this *Journal* will be interested in those chapters that describe, in considerable detail, the lipid components of the various cereals.

As might be expected from an unedited book written by many authors of different backgrounds, style and perception of present and future potential for industrial utilization vary considerably. Also, the chapter headings do not adequately portray the subject matter. In spite of these shortcomings, this book is recommended highly.

E.F. PASCHALL
Moffett Technical Center
CPC International Inc.

Dudrow appointed manager of new section

Frank A. Dudrow, AOCS member, has been appointed manager of the newly created Fats and Oils Section of The Rust Engineering Company, Birmingham, Ala.

In his new position, Dudrow will be responsible for marketing and process engineering of the edible oil and fatty acid processes Rust has acquired from the German engineering firm of Lurgi Apparate-Technik.

Dudrow joined Rust in June 1973 as senior staff engineer of the Chemical Process Group. Prior to joining Rust, he served as project engineer, senior project engineer, and chief project engineer with Votator, Division of Chemetron, Louisville, Ky. He has a total of 28 years' experience in chemical engineering.

A graduate of Texas A & M with a batchelor's degree in chemical engineering, he holds patents in deodorizing and hydrogenation. ■

Liquid flow metering discussed in book by Olsen

Introduction to Liquid Flow Metering and Calibration of Liquid Flowmeters, by Lief O. Olsen, serves as an instruction manual for technicians and engineers engaged in metering liquids and calibrating liquid flowmeters.

It is a condensed review of the properties of liquids and the mathematical relations required in this work. References to more complete sources of properties of liquids, theoretical relations, and instructions for metering liquids are included.

Separate chapters discuss liquids and their properties as they affect flow, the theory of incompressible flow of liquids, and the measurements required in the metering of liquids. One chapter describes several different apparatus and their use in the calibration of liquid flowmeters. The last chapter contains brief descriptions of the many types of flowmeters, such as differential pressure, positive displacement, electromagnetic, and ultrasonic. It also includes a discussion of the physical principles involved in their design and use.

Copies are available at $.95 prepaid from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. ■

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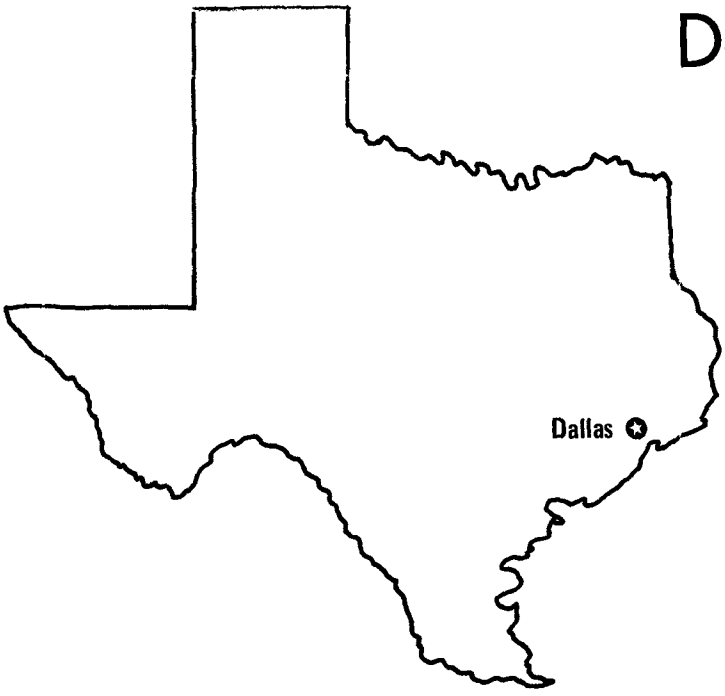
Cargill Building
Minneapolis, Minn. 55402

Bibliography on edible protein field now available

Because of the importance of the edible protein field, Research in Literature of Industry and Industrial Information Services, Southern Methodist University, Dallas, Tex., have compiled a comprehensive bibliography on this topic entitled, *Proteins from Petroleum and Industrial Wastes.*

This bibliography contains 1045 citations from the world's literature from 1969-mid-1973 in 103 pages. Included is a reprint of a lengthy review article, "Proteins from Petroleum," containing a history and literature survey of 140 entries on this topic from the early 1900s-1969. Together, the review and the current bibliography form a comprehensive record of research and publication in this field. The emphasis of the report is on the industrial manufacture of artificial single cell protein from hydrocarbons and other industrial wastes for use as food or animal feeds. The report covers protein manufacture, nutrition, and economics.

The price of this survey and bibliography is $50; payment must accompany order. *Proteins from Petroleum and Industrial Wastes* is available from: Industrial Information Services, Room 119, Science Information Center, Southern Methodist University, Dallas, Tex. 75275. ■



Dallas: Convention Site Center of Sports, Sightseeing Activity

Statistics

The hub of a metropolitan community of more than 1.5 million people, Dallas is the eighth largest city in the U.S. Easily accessible from all points, Dallas is one of America's major highway hubs with 7 spokes of the interstate highway system, as well as an additional 14 major highways leading to the city. By air, Dallas is the crossroads of the Southwest, with more than 800 daily flights by 8 major commercial airlines and 5 commuter airlines. The new Dallas-Fort Worth Airport, covering 18,000 acres in the heart of one of the most populated areas in the Southwest, is the world's largest and most modern airport facility.

"World Convention Dates" consistently reports Dallas among America's top cities in number of scheduled conventions and trade shows. Hotel and motel facilities reflect this part of the city's life with more than 28,000 first class, air conditioned rooms available and hundreds of additional rooms planned or under construction.

Sightseeing

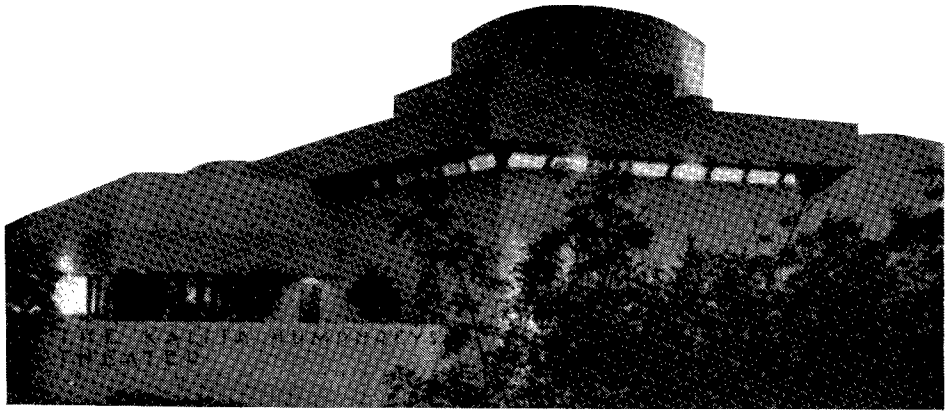
Sightseeing is fun and easy. It can begin with a top-of-the-skyline view from either of two downtown observation decks and then continue on the two daily bus tours of residential areas, points of scenic and historic interest, and Dallas's magnificent parks. The 18,000 acres of parks and recreation areas around the city welcome visitors with spectacular flowers chosen to provide beauty in all seasons of the year. The city also offers facilities for all kinds of amateur sports from year-round golfing to tennis and sailing.

There are sports spectaculars in all seasons—Southwest Conference collegiate football games in the 72,000 seat Cotton Bowl, the Dallas Cowboys in their new 65,000 covered seat Texas Stadium, collegiate basketball, American League baseball via the Texas Ranges, the Dallas Black Hawk pro ice hockey team, and the Dallas Tornado pro soccer club. Midget and stock car races and high powered dragsters roar at several speedways around the city, including the Dallas International Motor Speedway.

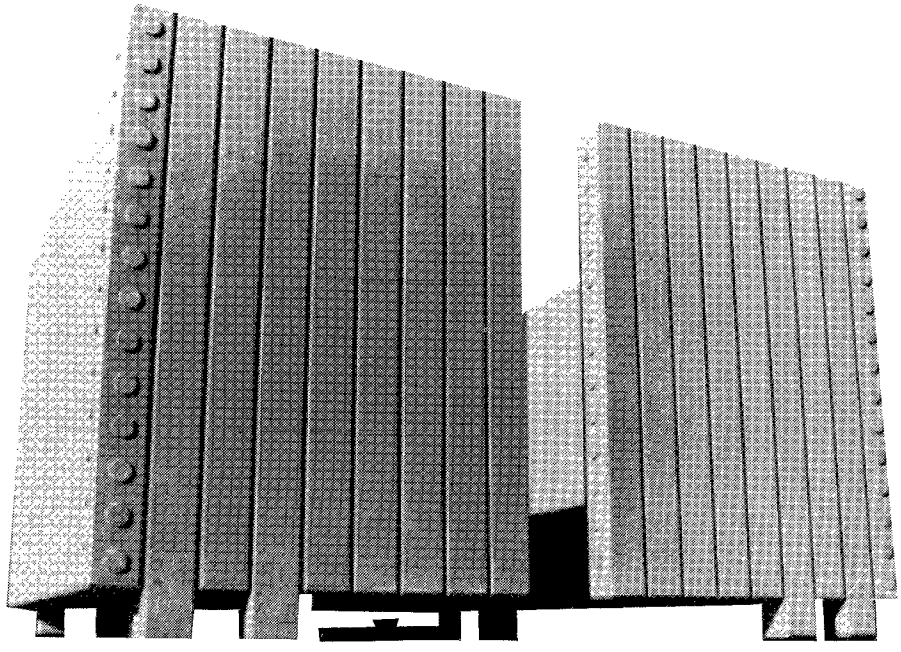
Professional golf is at its best at the Byron Nelson Classic in the spring or at the Civitan Open for women in the fall. There are numerous tennis clubs and public courts throughout the city. The world's top players, both men and women, compete in major tournements in Dallas each year and the World Championship of Tennis culminates its annual tour with the Finals here each May.

In the mid-cities area, just west of downtown Dallas via the Dallas-Fort Worth Turnpike, are several visitor attractions. The Southwestern Historical Wax Museum located in that area is open from 9 a.m.-10 p.m. daily. Six Flags Over Texas, a 145 acre family amusement park, opens its gates each spring with more than 85 rides, shows, and other attractions to fill a visitor's day or his entire vacation. Next door to Six Flags is the area's new sea life park, Seven Seas. Attractions in the 35 acre park include everything from penguins and sea lions to killer whales and aquatic performers. At Lion Country Safari near Grand Prairie on the Turnpike, visitors conduct their own African safari via the safety of their automobile while African game, including lions, cheetahs, ostriches, and other animals, roam the area.

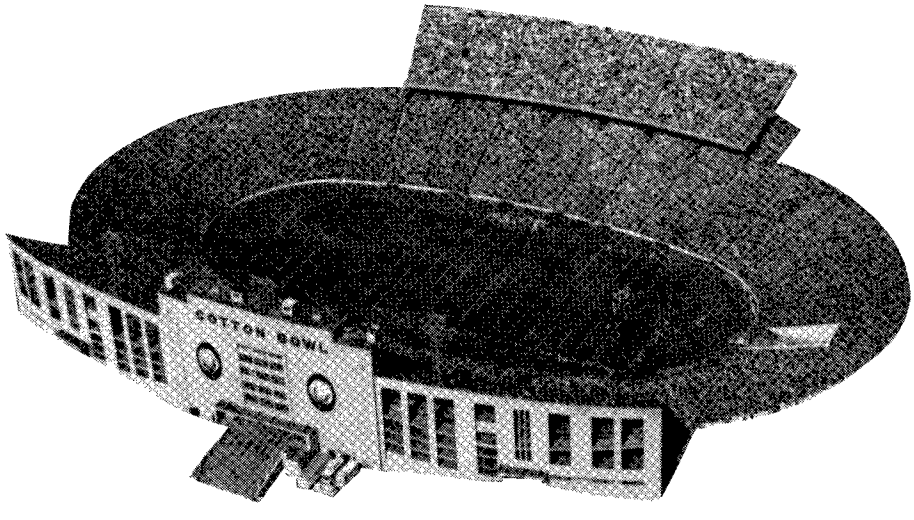
A few miles north of downtown Dallas is Sandy Lake Amusement Park, where the modern blends with the old West. Just 2 miles from downtown Dallas is Fair Park, home of the State Fair of Texas, the largest annual exposition in the U.S. Museums, including the Texas Hall of State, a shrine to 400 years of Texas history, Museum of Natural History, Aquarium, Garden Center, Museum of Fine Arts, Planetarium, and Health and Science Museum are all open year-round and are free to the public. Wax World, also at Fair Park, depicts in life-size figures and in sound an event in the life of each President. More exciting attractions are under construction or are in the planning stages.



Opened in 1959, the Dallas Theater Center provides pleasure for thousands each year through a repertory of plays presented in its 456 seat Kalita Humphrey Theater and the 74 seat Down Center Stage. This $1 million Center, the last completed building and only public theater designed by Frank Lloyd Wright, also incorporates a children's and teen theater and a graduate school of drama.



The John Fitzgerald Kennedy Memorial, a four-walled open cenotaph (empty tomb), was dedicated in June 1970. The land was donated by Dallas County, and the memorial was built with privately donated funds. Designed by a friend of the Kennedy family, New York architect Philip Johnson, the memorial is a 50 ft x 50 ft open roofed, concrete walled space enclosing an 8 ft black granite block with the name of John Fitzgerald Kennedy engraved on it.



The 72,000 seat Cotton Bowl has provided thrillling afternoons or evenings for football fans. It is the home stadium for the Southern Methodist University Mustangs, members of the Southwest Conference.

R.T. Holman wins 1974 Fachini Prize

Ralph T. Holman, current AOCS president and *Lipids* editor, has been awarded the Fachini Prize by the Italian Oil Chemists' Society. He received the prize, consisting of a gold medal and a diploma, in September during the 12th International Congress for Fat Research held at Sforza Castle, Milan, Italy.

The Fachini Prize is given every two years to a scientist of international renown for outstanding contributions in the field.

Holman, head of a research section at The Hormel Institute and professor of biological chemistry at the University of Minnesota, is one of the leading experts in the field of fatty acid metabolism. He is recognized for his work on the importance of polyunsaturated fatty acids in human nutrition.

At the International Congress for Fat Research, he presented four lectures on his recent research. ■

Call for Nominations 1975 Honored Student Awards

Nominations are solicited and will be accepted until November 15, 1974, for the 1975 AOCS Honored Student Awards. Graduate students at any North American institution of higher learning, in any area of science dealing with fats and lipids, who are doing research toward an advanced degree and who are interested in the areas of science and technology fostered by this Society, are eligible. The student must be a registered graduate student at the time of application. To receive the award, he must remain a registered graduate student and must not have received his degree or begun career employment prior to the AOCS meeting he is to attend. Selection of awardees is based upon educational qualifications and performance.

The awards provide funds equal to travel costs, plus $75.00 to permit attendance at a national meeting of the AOCS. In 1975, these meetings will be held April 27-30 in Dallas and September 28-October 2 in Cincinnati. Students will be awarded travel to the nearer meeting to allow as many awards as possible from the available funds.

Nomination forms may be obtained from AOCS Headquarters, 508 S. Sixth St., Champaign, Ill. 61820. Completed nominations should be returned before November 15, 1974, to: James G. Hamilton, HSA Committee Chairman, Department of Biochemistry and Nutrition, Hoffman La Roche, Inc., Nutley, N.J. 07110. ■

CALL FOR PAPERS

AOCS 66th Annual Spring Meeting

The Technical Program Committee has issued a call for papers to be presented at the AOCS 66th Annual Spring Meeting, April 27-30, 1975, in the Statler Hilton, Dallas, Tex. Papers on lipids, fats and oils, and all related areas are welcome.

Submit three copies of a 100-300 word abstract with title, authors, and speaker to Thomas H. Smouse, Research Scientist, Anderson Clayton Foods, 3333 N. Central Expy., Richardson, Tex. 75080.

The deadline for submitting papers is December 1, 1974. ■

abstracts

EDITOR: R. A. REINERS

ABSTRACTORS: N. E. Bednarcyk, J. E. Covey, J. C. Harris, S. F. Herb, F. A. Kummerow, T. Mares, B. Matijasevic, E. G. Perkins, and R. W. Walker

• Detergents

SPRAY DRIED DETERGENT COMPOSITIONS. V.R. Loureiro and A. Greenberg. *U.S. 3,816,352.* The compositions comprise alpha-olefin sulfonate, linear alkyl benzene sulfonate, starch hydrolysate, magnesium sulfate, sodium chloride, and a sulfate filler in certain relative proportions.

METHOD OF WASHING FABRICS. S.H. Sharman and M. Danzik (Chevron Research Co.). *U.S. 3,816,353.* The fabrics are contacted with an aqueous solution containing, as the detergent active material, 0.01–0.10% of polysulfonated alkylphenols produced by sulfonating C_{16}–C_{22} monoalkylphenols of not more than 20 mol percent para alkyl content with a sulfonating agent to incorporate an average of 1.5 sulfonic acid groups into the molecule. The product is then neutralized.

ALKYL AROMATIC POLYSULFONATE SURFACTANTS. R. Stechler, J.M. Folliot and M.J. Warren (Alcolac Inc.). *U.S. 3,816,354.* Mixed diphenylalkanes, obtained as by-products in the process of alkylating benzene with olefins or partially chlorinated paraffins, are converted into low cost biodegradable surfactants by sulfonation with oleum, sulfur trioxide, or chlorosulfonic acid. Neutralization with a basic material follows sulfonation to yield a hazy or cloudy heterogeneous liquid. The liquid is converted into a clear solution by the addition of a lower alkyl alcohol, lower alkyl ketone, glycol, diacetone alcohol, or dioxane. The surfactants thus obtained are useful in the preparation of emulsion or suspension homo- and copolymers that are resistant to polyelectrolytes and possess excellent mechanical stability and shear resistance.

POLYESTER SALTS CONTAINING QUATERNARY AMMONIUM GROUPS. E. Schmadel (Henkel & Cie). *U.S. 3,816,378.* The salts are obtained by polycondensation of N-alkyl-dialkanolamines with dicarboxylic acids, particularly maleic acid, and quaternization of the polyester with a haloacetic acid. Additional sulfonic acid groups can be introduced into the polyester molecule by reaction with an alkali metal hydrogen sulfite. The polyester salts are used as soil suspension agents in washing compositions.

DETERGENT FORMULATIONS. C.Y. Shen (Monsanto Co.). *U.S. 3,817,863.* The formulations comprise a surfactant and tetrasodium or tetrapotassium tetrahydrofuran-2,2,5,5-tetracarboxylate or its hydrates as a builder.

DISHWASHER DETERGENT COMPOSITION. C.R. Ries and G.C. Smith, Jr. (Procter & Gamble). *U.S. 3,817,869.* The composition comprises an ionizable salt as a major component, an alkali metal silicate, a chlorine-yielding bleach, and water soluble synthetic organic nonionic detergent. The ionizable salt is selected from the group consisting of alkali metal sulfates and the alkali metal salts of acetic acid and propionic acid. The composition, although sequestrant-free, cleans well and is nonfilming and nonspotting.

LAUNDERING COMPOSITIONS. R.H. Weiss. *U.S. 3,817,870.* The compositions contain a detergent surfactant and, as a builder, an alkali metal or ammonium salt of malic or citric acids. Sodium metasilicate is an optional ingredient. Phosphates are not needed.

SURFACTANTS FOR SOLVENT/WATER SYSTEMS AND TEXTILE TREATING COMPOSITIONS. K.W. Graff (ICI America Inc.). *U.S. 3,817,871.* The compositions comprise a cationic surfactant, an anionic surfactant, water, and an organic liquid. Also disclosed is a textile treating composition comprising a blend of a textile softening agent and the surfactant composition.

HEAVY DUTY MULTI-PURPOSE CLEANER. J. Bazan. *U.S. 3,817,875.* The cleaner contains the following active ingredients: (a) 75% of a combination of ammonium oxalate, hexachlorophene, 2,2-methylene-bis-(3,4,6-Trichorophenol) and ammoniumethylene diamine tetraacetate in the approximate ratio of 6:1.5:1, with a minor amount of ammonium orthophenylphenate; (b) 20% of a tertiary N- higher alkyldimethylbenzyl ammonium chloride combined with anhydrous sodium metasilicate in the ratio 2:3; and (c) approximately 5% water. When these ingredients are combined with other inert and known ingredients, a creamy composition results. This composition has a higher cleaning effectiveness than the sum of the active components.

COATED DETERGENT COMPOSITIONS. R.H. Pierce and E.W. Vessey (Philadelphia Quartz Co.). *U.S. 3,819,526.* The process for making an improved detergent composition consists in spraying a slurry of some ingredients onto other ingredients which have been pre-dried. Specifically, a hydrous alkali metal silicate or hydrous blend of silicate and other alkaline component is coated with a solution or slurry of other ingredients. The composite is then dried to give a free-flowing detergent. The resulting composition is very stable, contains a low concentration of insoluble material, and resists formation of insoluble material on storage.

STABILIZED AQUEOUS ENZYME COMPOSITIONS. J.S. Berry (Procter & Gamble). *U.S. 3,819,528.* The compositions comprise water, amylolytic enzyme, a water soluble calcium salt, an organic co-stabilizing agent selected from aliphatic glycols and 1,3-propanediol and, optionally, a nonionic or zwitterionic detergent. The compositions are useful in starch degrading applications.

ENVIRONMENTALLY COMPATIBLE LAUNDRY DETERGENT. J.C. Little, A.S. Teot and R.F. Harris (Dow Chem. Co.). *U.S. 3,819,538.* Surface active ingredients in the detergent have the formula $RO—((CH_2CH_2O)_n—CH_2)_x—CHR'COOM$. R is a hydrocarbon radical with 12–22 carbon atoms, R' is H or lower alkyl, n is an integer from 1 to 8, x is 0 or 1, and M is an alkali metal, amine, or ammonium radical. The detergents are highly effective, readily biodegradable, and especially responsive to nonphosphate builders.

PREPARATION OF DETERGENT COMPOSITIONS. M. Bloch and A. Koebner (Rewo Chemische Fabrik). *U.S. 3,819,539.* A nonirritating, tertiary amine-free detergent mixture comprises, as the active constituents, a quaternized tertiary amine and the corresponding tertiary amine N-oxide. In the process, a tertiary amine is reacted with a quaternizing agent to produce a mixture of the free tertiary amine and the quaternized tertiary amine. This mixture is then oxidized, thereby converting the free tertiary amine to the amine oxide.

SULFONATE DETERGENTS. S.C. Paviak (Gulf Res. & Dev. Co.). *U.S. 3,819,540.* The aqueous composition contains sodium alkene sulfonates or sodium hydroxy alkane sulfonates and a partially or fully neutralized copolymer of methyl vinyl ether and maleic anhydride in an amount sufficient to cause a viscosity increase.

LINEAR ALKYL GEMINAL DISULFONATES AS PHOSPHATE-FREE ACTIVES. V.P. Kurkov and S.H. Sharman (Chevron Res. Co.). *U.S. 3,819,691.* Heavy duty detergent active materials comprise organic geminal disulfonates of the formula, $XO_3S—CY(R)—SO_3X$, where R is a linear alkyl group of 14–29 carbon atoms, X is H or water soluble, salt forming cation, and Y is H, C(O)H, or $—CH_2—OH$.

SKIN MOISTURIZERS. II. THE EFFECTS OF COSMETIC INGREDIENTS ON HUMAN STRATUM CORNEUM. M.M. Rieger and D.E. Deem (Warner-Lambert Res. Inst. 170 Tabor Rd., Morris Plains, N.J. 07950). *J. Soc. Cosmet. Chem.* 25, 253-62 (1974). Elastic modulus, relaxation function, water absorption and water vapor transmission have been used to study the effect of typical cosmetic ingredients on human stratum corneum. The elastic modulus and the stress relaxation modulus are useful measures of the ability of various cosmetic materials to alter the viscoelastic behavior of stratum corneum. It

was demonstrated that typical cosmetic humectants increase the rate of transepidermal water loss in vitro. An attempt is made to explain this phenomenon.

BUNDLE TESTING. J.F. Pacheco, P.P. Carfagno, and D.S. Corliss (FMC Corp.). *Soap/Cosmetics/Chemical Specialties* 50(6), 29–34 (June, 1974). The use of bundle testing as a practical, realistic method for evaluating detergents is described. The Terg-O-Tometer method contains many limitations, especially when attempts are made to apply the results to field situations. Bundle testing involves actual family use of selected items followed by laundering under controlled conditions and evaluation of the results. The procedure used at FMC is described in detail. While bundle testing overcomes some of the problems of the Terg-O-Tometer procedure, such as the nature of the soil and its application, it has limitations of its own. Some of these restrictions are a limit to two comparisons at a time, with cross-comparisons not statistically possible, a minimum of 5 weeks per test, and a moderately high cost in terms of money and manpower. Although bundle testing is not suitable for screening, it can be of great value as a step between screening and actual field testing.

DETERGENT COMPOSITIONS. V. Lamberti (Lever Bros. Co.). *U.S. 3,821,115.* Low scum-forming detergent compositions are obtained when salts of C_{14} to C_{20} 4-hydroxyalkanoic acids are used as the sole detergent or in combination with another surface active agent.

AUTOMATIC DISHWASHING COMPOSITIONS. P.A. Finck (Colgate-Palmolive Co.). *U.S. 3,821,118.* A composition particularly adapted for washing dishes, glasses and silverware in an automatic dishwasher contains as the essential ingredients 1–20% sucrose, 0.5–10% of an enzyme and 40–95% of at least one water soluble organic and/or inorganic builder salt. The composition is free of halide bleaching compounds and reduces spotting and filming on the dishes, glasses and silverware.

SILICATED SODA ASH. R.E. Temple (Diamond Shamrock Corp.). *U.S. 3,821,119.* A method for preparing a particulate detergent builder comprises admixing liquid sodium silicate with anhydrous soda ash having a particle size of less than 200 microns at a temperature between 21C and 51C, passing the resultant wetted granules through an 8-mesh screen, and rapidly heating the screened material to over 100C.

PREPARATION OF WOOL WAX ALCOHOL PRODUCT. P.L. Julian. *U.S. 3,821,121.* A dispersing and emulsifying agent derived from wool grease is made by separating cholesterol from the unsaponifiables and replacing the cholesterol with β-sitosterol.

DETERGENT AND SHAMPOO COMPOSITIONS. H. Dixon (Beecham Group Ltd.). *U.S. 3,821,124.* Anionic detergent compositions for shampoos and household use have, as essential components, a synergistic combination of an iodate and an amine. The iodate is preferably sodium, potassium, or ammonium iodate, and the detergent is preferably sodium, potassium, ammonium, or an alkanolamine sulfated fatty alcohol having 1–3 ethylene oxide units per mole. The metal iodate preferably constitutes 0.25–0.5% of the composition. The anionic detergent is a nonsoap, nonsulfonate compound, and its synergistic action with the metal iodate is unrelated to the liberation of iodine.

COMPOSITION FOR IMPARTING NONPERMANENT SOIL RELEASE CHARACTERISTICS TO FABRICS. R.E. Dickson (Colgate-Palmolive Co.). *U.S. 3,821,147.* The composition comprises a polycarboxylate polymer having an acid equivalent weight of 110–175, and a water soluble amine. A preferred polymer is a copolymer of 2/3 methacrylic acid and 1/3 ethylacrylate. The composition is particularly useful for applying a soil release finish in the rinse cycle of a home laundry process.

BLEACHING PROCESS AND COMPOSITIONS. R.E. Montgomery (Procter & Gamble). *U.S. 3,822,114.* A process for activation of peroxygen bleaching agents comprises conjointly dissolving in aqueous solution certain peroxygen bleaching agents, certain aldehyde or ketone bleach activators, and buffering compounds. Concentrated dry bleach compositions containing these compounds are also disclosed.

FABRIC SOFTENING. M. Liebowitz, N.M. McHugh and H.D. Cross, III (Colgate-Palmolive Co.). *U.S. 3,822,145.* Polylower alkylenes, such as polyethylene, are applied to tumbling fabrics to be softened. The polyethylene is emulsified into a stable foam which is dispensed from a pressurized container onto damp wash in a clothes dryer.

FISHERMAN'S SOAP. La V.N. Morton (American Leisure Products, Inc.). *U.S. 3,822,211.* The composition consists of soap, anise oil, mulberry juice and cinnamon. The soap may be used to wash bait for preventing excessive human scent from remaining on the bait and for rendering the bait more attractive to fish. The fisherman may also wash his hands with the soap to prevent human scent from being transferred to the bait.

DETERGENT COMPOSITION. R. Pettigrew and P. Tissington (Lever Bros. Co.). *U.S. 3,822,222.* A fabric-washing detergent composition incorporates, as a detergency builder, 5–70% of a water soluble or dispersible salt of a linear C_{10} to C_{20} alpha-hydroxy monocarboxylic acid.

CREAMY RINSING AGENT. T. Sato, M. Katsumi, O. Kojima and T. Hara (Kao Soap Co.). *U.S. 3,822,312.* Aqueous creamy rinsing agent compositions for wigs and hair comprise the following components: (1) 1–7% of a quaternary ammonium salt having two long chain alkyl groups with 16–22 carbon atoms; (2) 0.1–5% of an antistatic agent; (3) 0.5–10% of a compound selected from the group consisting of glycols having up to 3 carbon atoms, glycerol, sorbitol, nonionic surfactants containing no ethylene oxide units or up to 10 moles of ethylene oxide in the molecule, polyalkylene oxide compounds having a molecular weight greater than 4000, and lower alkyl esters of higher fatty acids; and (4) 0.05–1% of an inorganic or organic salt having electrolytic properties.

COSMETIC COMPOSITIONS CONTAINING ANIONIC SURFACE ACTIVE AGENTS CONTAINING MONO- OR POLYHYDROXYLATED MONO- OR POLYETHER CHAINS AND A TERMINAL ACID GROUP. G. Vanlerberghe and H. Sebag (L'Oreal, Paris). *U.S. 3,822,346.*

PRODUCTION OF POWDERED DETERGENT. M. Kame, H. Koda and H. Igehara (Nippon Oils and Fats Co.). *U.S. 3,823,090.* Powdered detergent is prepared by homogeneously mixing a hydrase type enzyme with a nonionic surface active agent or a neutral or synthetic sizing agent and a detergent base.

TWO PART LIQUID CAR WASH SYSTEM. A.J. Lancz (Colgate-Palmolive Co.). *U.S. 3,823,094.* A liquid concentrate for automatic car wash machines is designed to be stored in two parts. One part contains 30–60% of $K_4P_2O_7$ and the

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• President's Club

(continued from page 648A)

LaRoche, Kingsland St., Bldg. 86, Nutley, N.J. 07110.

Robert W. Delashmit, oper. mgr., Palmco, Inc., P.O. Box 03380, 12005 N. Burgard Rd., Portland, Ore. 97203.

Bhalchandra A. Desai, tech. mgr., Edible Oil Products, 24 Milestone, Ayer Hitam Rd., Kulai, Johore, W. Malaysia.

Glenn L. Greene, sales rep., Hoffmann LaRoche, Nutley, N.J. 07110.

Ronald A. Grim, chem., National By-Products, Inc., P.O. Box 192, Mason City, Ill. 62664.

Angelo C. Ingala, res. asst., Swift & Co., Research and Development Center, 1919 Swift Dr., Oak Brook, Ill. 60521.

Robert F. Leifield, tech. mgr., Calsicat Div., Mallinckrodt, Inc., 1707 Gaskell, Erie, Pa. 16503.

David L. Logsdon, plt. mgr., C & Y Refinery, P.O. Box 3343, Charlotte, N.C. 28203.

Farhad Nikandjam, mgr. res. dev. qual. con. dept., Behshar Ind. Group Co., Paxan Corp., 70 General Zahedi Ave., Tehran, Iran.

Mitsuo Okahara, asst. prof., Dept. of Applied Chemistry, Faculty of Engineering, Osaka University, Yamada-Kami, Suita, Osaka, Japan 565.

Yuvadee Phornpiboonya, grad. stu., Biology Cept., St. John's University, Grand Central and Utopia Pkwys., Jamaica, N.Y. 11439.

Francis D. Richards, asst. mgr. qual. assur. san., Glidden-Durkee, 2333 Logan Blvd., Chicago, Ill. 60647.

Anthony W. Scotto, sr. res. techn., Sloan-Kettering Institute, 410 E. 68th St., New York, N.Y. 11572.

John J. Shuleva, res. chem., Glidden-Durkee, Div. SCM Corp., 16651 Sprague Rd., Strongsville, Ohio 44136.