

SDA continues cuphea funding

Research to domesticate cuphea, a wild plant native to Mexico and the U.S., is continuing with the support of the soap and detergent industry.

The Glycerine and Oleochemical Division of The Soap and Detergent Association (SDA) has agreed to continue funding research on cuphea, seen as a potential oleochemical feedstock source, particularly of lauric and capric fatty acids. Meeting in conjunction with SDA's annual meeting in Boca Raton in late January, the SDA division was given an update on cuphea domestication research conducted at Oregon State University, a pilot program involving cooperation and funding from industry, federal and state governments and academia.

As their share of the cooperative program, SDA member-industries have provided approximately \$92,500 per year for the past three years for the program. At its recent meeting, the division agreed to channel funding from industry for 1987 and 1988.

"This is a unique program, exemplifying cooperating between private and government sectors," Anita Kuemmel, SDA's director of industry information, said, noting

that crop development of cuphea will have practical significance for the industry.

U.S. companies in the surfactant and detergent industry hope cuphea can be developed as a crop due to its diverse fatty acid content, ranging from C₈ to C₁₈. Eyed most closely is its lauric fatty acid content, as there currently are no domestic sources for this fatty acid. Instead, U.S. industries rely on coconut and palm kernel oils imported from Southeast Asia and the Philippines.

"People are willing to take a risk for something they feel will pay off for them, although there are no guarantees," Kuemmel said, calling it a "long-range project."

In his report to SDA, Steven J. Knapp, principal investigator for cuphea domestication research at Oregon State, said field evaluation and seed production are planned for Medford, Oregon, this year. He noted that three cuphea species—*C. lutea*, *C. laminuligera* and *C. viscosissima*—are better adapted to Medford than to Corvallis, Oregon (the location of Oregon State). A fourth species—*C. lanceolata*—may be better adapted to Corvallis. The

first two species—*C. lutea* and *C. laminuligera*—produce moderate to high lauric acid percentages and relatively high yields, and are adapted to vacuum harvesting. The other two species produce very high capric acid percentages.

Knapp noted that researchers increased germplasm collection during 1986, and a number of breeding projects were undertaken. His presentation included a report on cuphea plantings made during 1986, the effect of harvesting methods on seed yield and quality, field trials to determine the optimum time of planting and rate of seeding, and efforts to establish methodology for analyzing medium chain length fatty acids in cuphea.

Problems still needing more attention include proper stand establishment, planting and harvesting techniques and crop culture. Knapp noted seed shattering and scattering are primary problems seen in trials. One encouraging finding noted was that green seeds can have the same fatty acid content as mature seeds. Thus, although pods may develop at different times, this may not be an obstacle.

Over 900 attend SDA annual meeting

The Soap and Detergent Association annual meeting in Boca Raton, Florida, Jan. 29-Feb. 1, 1987, drew more than 900 participants. Talks at the meeting ranged from rousing speeches on America's mission at home and abroad to a number of more industry-applied presentations.

In a technical presentation, AOCS member Karl Zilch of Emery Chemicals spoke on the effect of additives and fatty acids on soap bars. Zilch noted that in soap bar manufacturing, consideration must be given to such properties as color, color stability, odor and fragrance, cracking, mashing, foaming and lathering, richness and creaminess, cosmetic appeal and bar design. A

number of these properties are directly related to the quality of the raw materials used, the fatty acid composition of the raw materials and additives that may be included.

Monobasic acids, dibasic acids and their derivatives can improve the properties of soap bars, Zilch said. Dibasic acids, for example, can act as anticracking or antimushing agents, while branched chain acids can be incorporated as superfatting or conditioning agents to impart excellent skin feel. Likewise, derivatives of these and other monobasic acids can affect skin feel. The addition of fatty acid-coated calcium carbonate provides superfatting properties and can lower manufacturing costs because

less is required than if other superfatting agents were used.

The quality of fatty acids used in soap bars directly affects consumer acceptance of the bar, particularly as fragrance is an important property, Zilch said. Processing methods and the condition of the process equipment used are important in determining the quality of the fatty acids. The fatty acid odor profile is very important, Zilch noted, adding that very good color and very low-odor feedstocks can be obtained from fats and oils by standard kettle boiling and continuous processing. "However, to obtain the stringent properties they desire, various soap makers find it necessary to purchase the very best

and most expensive fats and oils available and then further refine or purify them before using them." This, he explained, is due to variability in raw materials.

He said fatty acid-coated fillers are often added to soap bars to improve the internal structure and hardness, to add whiteness and abrasiveness, or to improve storability. However, excessive amounts are avoided as they impart brittleness, adversely affect foaming, lathering and overall appearance and can damage process equipment.

Zilch said the preferred fillers are those that form salts with fatty acids—calcium carbonate, calcium hydroxide, magnesium carbonate, zinc oxide and zinc carbonate. The result is a smooth, superfatted feel.

Another hurdle for soap manufacturers is cracking, he said. "Although cracking does not generally affect the performance of a bar, it does have a negative effect upon eye appeal and can result in the fracturing of the bar into smaller portions, which again is an unfavorable result," he said, noting that the addition of dibasic acids decreases cracking and also improves lathering properties.

Work with adding pelargonic acid to soap bars has revealed improved flash foam, lather volume and richness and creaminess performances, he said. Meanwhile, research has shown that while branched chain acids are more expensive than naturally occurring fatty acids for preparing a basic soap bar, they can serve as superfatting agents for developing unique soap bar products.

Speaking on "Oleochemistry: Low Tech to High Tech," AOCS member E. Charles Leonard of Witco Corp.'s Humko Chemical Division noted that collaboration among the scientific community, business, labor and government is essential today for technological and economic development. Leonard, outlining the prospects for high technology application to the fats and oils industry, said it is not difficult to imagine future production of medicinal chemicals from botanicals on acreage once devoted to soybeans and corn. He cited predictions for a surplus of petro-

leum supplies through the year 2000, accompanied by explosive growth of genetic engineering, which will revolutionize agriculture, medicine and industry.

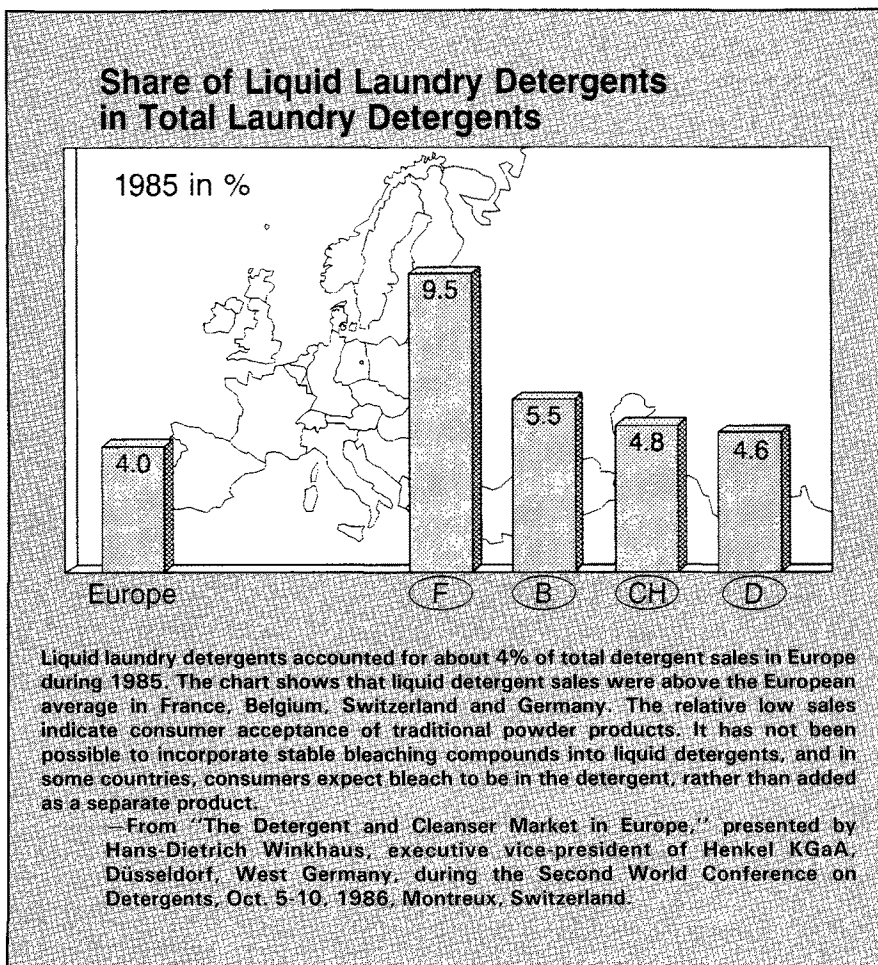
Currently, the world vegetable oil market is valued at about \$7 billion, with the market for edible uses such as baking ingredients, margarine, salad dressings and cooking oils totaling \$4 billion, Leonard noted. The U.S. market for specialty chemical derivatives of vegetable oils totals approximately \$400 million.

While the sources for the major organic chemicals are natural gas, crude oil and coal, some organic chemicals cannot be produced practically from these sources. These include fatty acids and their derivatives ranging in chain length from 12 to 22 carbons, which can be derived from such feedstocks as inedible and edible tallow, rapeseed

oil, coconut oil, palm oil and fish oils. Of these, coconut oil prices fluctuate the most.

Citing Calgene Inc.'s work to genetically engineer commodity oilseeds such as rapeseed and soybeans to produce high-priced specialty oils now derived principally from coconut and palm kernel oils, Leonard said, "If this program were to be successful, a seed bearing coconut oil could be grown within 50 miles of Memphis, and the dire effects of coconut oil prices or the vagaries of typhoons or of Philippine politics would no longer exist."

Leonard also cited plant breeding work for commercial oilseed crops: the development in Canada of canola oil, a low erucic rapeseed oil; SVO Enterprises' development of a high oleic sunflowerseed oil for edible and specialty chemical uses; the University of Idaho's success-



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ful development of a rapeseed with 20% higher erucic acid content for industrial applications; and work at Oregon State University to domesticate and improve the oilseed cuphea.

"For our own business area, the ultimate in genetic engineering would be to produce botanicals with seeds that contain tallow or coconut oil or palm oil that can be grown on acreage, say, in the mid-south," Leonard said, adding, "To the oleochemical producer, the millennium will have arrived when there will be low temperature equivalents to present-day organic reactions and unit operations. I am convinced that high technology will bring oleochemistry to the dawn of this new day, and not too many years hence."

Leonard cited current work in Japan, Europe and the U.S. using enzymes to allow esterification of fatty acids with alcohols at 70 C, low temperature interesterification of fats and oils, low temperature fat splitting and low temperature hydrolysis of fatty nitriles to fatty amides. He noted, however, that more research and development will be needed before commercial processing of any significant extent can be done with this tool.

Michael J. Dolan, technical services manager for Monsanto Chemical Co.'s Detergents Division, reviewed detergent agglomeration technology. Noting that spray drying dominates laundry powder production, Dolan said agglomeration, however, has shown significant capacity growth in the last 10 years, becoming the principal commercial technique for producing automatic dishwashing compounds. It also accounts for an increasing amount of granular laundry detergent production, as well as some specialty product manufacturing. "Improved technology, tailored raw materials and a better fundamental understanding have contributed to this growth in agglomeration processing," he said.

Dolan noted that agglomeration was first applied to producing automatic dishwashing compounds in the 1950s. In the mid-1960s, the twin-shell blender was introduced, and a detergent agglomeration

process using the pan agglomerator was patented. The rotary drum agglomerator then was patented in 1971. "This equipment was specifically designed for detergent agglomeration, and was a milestone in detergent manufacturing. The rotary drum has since become the most widespread detergent agglomerator unit in the U.S.," he said.

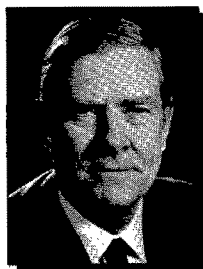
During the late 1970s and early 1980s, interest accelerated, culminating in the installation of over 10 new units in a five-year period, most for automatic dishwashing compounds, but also some laundry product capacity. Agglomerated detergent volume, showing steady growth, is nearly one billion pounds a year. "This represents over 95% of dry consumer autodish and nearly 10% of laundry detergent volume," Dolan said, predicting continuing growth and possible expansion to industrial and institutional products.

Agglomeration offers the capacity and continuous processing attributes of a spray tower while being less energy and capital intensive, Dolan said, adding, "At the same time, agglomeration gives significantly better product aesthetics and uniformity than dry blending and rivals spray drying on these criteria. Agglomeration does not completely duplicate the flexibility of a dry blending operation,

but it is much more amenable to multiple product types than a spray tower. For example, both autodish and laundry can be made in the same unit."

Technical sessions also included two talks on eye irritation testing. John F. Griffith of Procter & Gamble Co. noted that eye irritancy testing, which once was only a technical issue between consumer product producers and regulatory agencies, has become a difficult public relations issue for consumer product companies and their trade associations. Griffith spoke on "The Low-Volume Eye Irritation Test: A More Predictive and More Humane Approach to Eye Irritancy Evaluation," while Betty M. Kong of Colgate-Palmolive Co. spoke on "The Evolution of an Alternative to the Draize Eye Test."

Meanwhile, Werner P. Meier of Procter & Gamble GmbH, West Germany and chairman of the Technical Commission of the Association Internationale de la Savonnerie et de la Detergence (AIS) spoke on "Regulatory and Professional Topics in the European Detergent Industry." In a talk geared primarily to industry management, Randall N. Conway of QualPro Inc. spoke on "The Role of SPC [statistical process control] in an Environment of Continuous Improvement."



John W. Johnstone Jr.

SDA officers

John W. Johnstone Jr., president and chief operating officer of Olin Corp., has been elected chairman of The Soap and Detergent Association (SDA) for a one-year term.

Other officers include Stephen P.

Donovan Jr., group vice-president of Procter & Gamble Co., vice-chairman; Theodore E. Brenner, SDA staff, reelected president and secretary; Robert F. Bartlett, The Hewitt Soap Co., reelected treasurer; June A. Stahl, Stahl Soap Corp., reelected assistant treasurer.

Newly elected to SDA's board of directors are Sheldon N. Lewis, The Clorox Co.; A. Carter Fergusson, Alex C. Fergusson Co.; and Ashley W. Lutz, Union Carbide Corp.

Directors reelected include Tom Edwards, Amway Corp.; A. Courtenay Shepard, Colgate-Palmolive Co.; Andrew O. Wikman, Ethyl Corp.; William F. Beck, FMC Corp.; John R. Cookson, Lever Brothers Co.; Michael E. Miller, Monsanto Co.; Elva D. Walker, National

World Conference on

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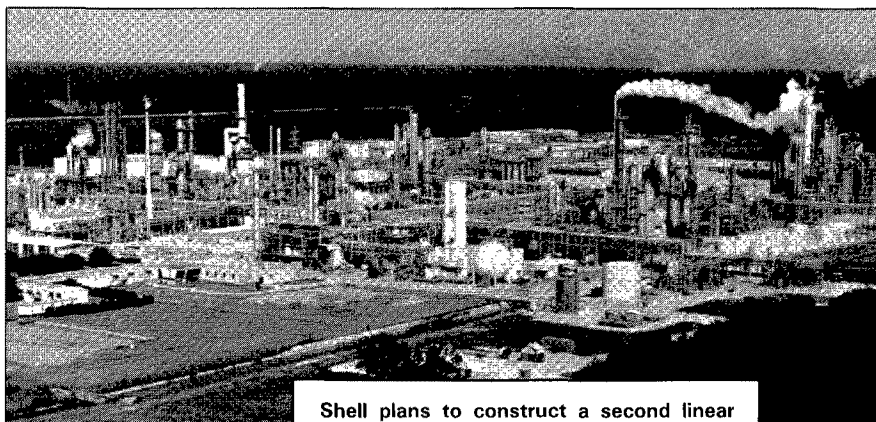
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Purity Soap & Chemical Co.; Stanley R. Haladyna, Novo Laboratories Inc.; J. Roger Hirl, Occidental Chemical Corp.; Donald E. Haupt, Shell Chemical Co.; Charles A. Aldag, Sherex Chemical Co. Inc.; A. Brian Macaulay, SBS Products Inc.; Jack F. Mayer, Texize Division of Dow Consumer Products Inc.; John D. Burns, Vista Chemical Co.; and William E. Setzler, Witco Corp. Johnstone and Donovan also serve on the board.

Retiring as directors are Allen H. Howland, Original Bradford Soap Works Inc.; James A. Hartlage, Stepan Co.; and John H. Bees, Union Carbide Corp.



Shell plans to construct a second linear higher olefins unit at this facility at Geismar, Louisiana.

New R&D center

Vista Chemical Co. has approved plans to design a new research and development facility and acquire a site for it in Georgetown, Texas, 25 miles north of Austin.

The 121,000-square-foot facility will be built on a 20.7-acre tract. Construction is scheduled to begin in October 1987, with completion set for 1989. Over 60 Vista Chemical employees will relocate to the Georgetown area when the new facility is completed. Currently, the company's R&D department is housed in space leased from Conoco Inc. in Ponca City, Oklahoma. The lease runs through mid-1989.

New ventures

Lion Corp. of Japan and Henkel KGaA of West Germany have formed Lion Henkel Corp., a new joint venture company for toiletries, based in Tokyo, Japan.

The new company will concentrate on such products as hair colors and liquid shoe polish. Lion owns 51% of the company, while Henkel holds 49%.

In addition, the two companies have set up Henkel Lion Corp., a mouth hygiene business, in Düsseldorf, West Germany. In this firm, Henkel owns 51%, while Lion holds 49%.

Meanwhile, Kao Corp. of Japan and Beiersdorf Co. of West Germany have formed a joint venture

company, Guhl Ikebana Co., in West Germany to produce and sell hair care products. The products previously were produced by Beiersdorf and sold by Kao, mainly in West Germany. The two companies have equal shares in the new firm.

Shell expansion

Shell Chemical Co. has announced plans to construct a second major linear higher olefins unit at its Geismar, Louisiana, facility.

The new unit, using Shell's Higher Olefin Process (SHOP) technology, will have the capacity to produce 535 million pounds of alpha olefins a year, as well as significant internal olefin capacity. This will bring the total annual capacity at Geismar to more than 1.3 billion pounds.

"Shell is presently the world leader in the production of linear higher olefins. This expansion significantly increases the Geismar plant capacity, further strengthening Shell's leadership," according to Don E. Haupt, business center manager for Shell's detergent and ethylene oxide/ethylene glycol business.

Linear higher olefins, which are versatile chemical intermediates, are enjoying rapid growth in such uses as linear low density polyethylene, synthetic lubricants, synthetic acids, laundry detergents,

shampoos and gasoline additives, according to the company.

Construction was slated to begin in early 1987, with completion set for 1989.

Japan facility

Kao Corp., a leading Japanese oleochemical firm, is constructing an \$88-million fatty ester plant at Wakayama, near Osaka, Japan. Completion is expected in the first half of 1988.

The new facility will increase the company's capacity for producing fatty chemicals from fatty alcohol more than three times. The firm said this will allow development of new products.

Stepan project

Stepan Co. has announced plans to construct a prilling tower for production of powdered quaternaries at its Millsdale manufacturing facility in Joliet, Illinois. The company said it also would increase liquid bulk storage capacity and install additional drum-off facilities.

The firm said the expansion would support the quaternary product line it acquired when it purchased Onyx Chemical Co.

In other company action, Stepan

has transferred Bettina M. Nuter, customer service representative, from Northfield, Illinois, to its newly instituted customer service department in Anaheim, California.

Emery expands

Emery Chemicals has announced plans to expand its solvent separation facilities at Cincinnati, Ohio. The \$21-million project is slated to increase Emery's separation capacity by over 50%.

The company said the expansion will enable it to meet market demand for oleic acids and its own internal needs.

The expansion also will include improving the design and efficiency of existing separation facilities, which produce both oleic acids and pressed stearic acids. The entire project is slated to be completed before 1989.

Horizon plant

Horizon Chemical has begun constructing its first alkyl polyglycoside (APG) surfactant facility in Crosby, Texas, east of Houston. Start-up is slated for April 1987.

The facility, an intermediate scale unit, will provide test market quantities of Horizon's line of APG products. Start-up capacity will be five million pounds a year, with provisions for future expansion, according to the company.

Chinese venture

Sunnyland Industries Ltd. in Hong Kong, a wholly owned subsidiary of First Allied Corp. Bhd. (FACB), has signed a joint venture contract with Dalian Oil and Fat Chemical Plant and Dalian International Company Ltd. to establish an oleochemical plant in Dalian, China.

Under the contract, the three partners have agreed to set up a joint venture company called Dalian First Oleochem Ltd. Total investment cost is estimated at U.S. \$25.7 million.

The facility is slated to have an annual production capacity of 18,000

metric tons (MT) of fatty acids and 2,000 MT of glycerine. A portion of the products will be exported. This will be China's first facility using palm oil products as a major feedstock. FACB will supply approximately 9,000 MT of palm oil feedstocks from Malaysia a year for the facility.

Oleochemicals

Oleochemical sales in the European Economic Community (EEC) should be expected to increase by 2.5% annually through 1990, according to a market study by Frost & Sullivan. In "Oleochemicals in the EEC," the marketing research firm said sales in constant-dollar terms would rise from \$1.53 billion to \$1.74 billion between 1985 and 1990.

While the European surfactant market is dominated by linear alkylbenzene sulphonates (LAS) and fatty alcohols, the report predicted fatty alcohols will take precedence in Europe as they have in Japan and the U.S. According to Frost & Sullivan, demand for fatty alcohol surfactants will increase 2.4% per year, and LAS tonnage will grow only 0.7% per year.

However, the report said fatty acids producers will continue to suffer the effects of excess capacity. Current capacity exceeds EEC output by 25%. The trend of several Asian countries toward producing higher value-added products for export is likely to worsen the problem, the report predicted.

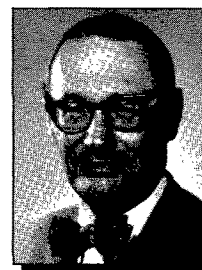
Solvent markets

Forecasting industrial solvents to have a total market value of \$2.5 billion in the U.S. in 1990, a Frost & Sullivan report says government restrictions on use will determine which solvents will experience market growth and which will decline.

The report, "The U.S. Market for Industrial Solvents," describes government policies and how they affect markets. It notes that government regulations have produced a "technological revolution" in the

paints and coatings industry, the industrial solvent area most affected by regulation. The report also covers the structure of the industry, marketing distribution methods, types of solvents and industry profiles.

According to the study, vegetable oil extraction used 275 million pounds of solvents worth \$52 million in 1985. Oil extraction was seventh in the volume of use, behind coatings, metal cleaning, adhesives and sealants, printing inks, dry cleaning, and polishes and cleaners. Total solvent use was approximately 10 billion pounds, valued at \$2.59 billion. Cosmetics and toiletries were the eighth highest use, at 265 million pounds worth \$64 million.



Helmut Stupel

Stupel retires

Helmut Stupel, manager of technical planning for Shell Chemical Co., Houston, Texas, retired March 1, 1987, after 28 years with the Shell group of companies.

An expert on detergents, Stupel has authored two books, approximately 120 papers on surfactants and detergents and 23 patents. Born in Austria 67 years ago, Stupel earned his doctorate in chemistry in 1943 from the Technical University in Vienna. He fled his homeland by skiing over the Alps into Switzerland near the end of World War II, then lived in Switzerland for 13 years. He joined Shell International in The Hague, The Netherlands, in 1959, and worked for the Shell group in England before coming to New York to work for Shell Chemical in 1963. When Shell moved its main

office from New York to Houston in 1970, Stupel also moved with the company. In 1978, he was named consultant for detergent products by Shell Chemical, the highest technical title attainable within the company.

Stupel has become an American citizen. He and his Swiss-born wife Rosalie have four children, each born in a different country—Switzerland, Holland, England and the U.S.—who range in age from 22 to 28.

Stupel joined AOCS in 1965 and has been very active over the past 10 years in planning sessions and symposia for annual meetings and world conferences.

Unlike many who retire, Stupel is not planning to set up a consulting business. Instead, he intends to take courses in quantum mechanics "for fun" at Rice University in Houston. "This is a very esoteric branch of physics," he admits, explaining that it has always been an area of interest "and now I will have the time."

Stupel's outlook on life is very upbeat. "I am a very happy man—a very fortunate man," he will say.

Henkel buys

Henkel KGaA of Düsseldorf, West Germany, by the end of 1986 had acquired the European market of the Beecham Group LBC of London, a British manufacturer of pharmaceutical and cosmetic products.

In the transaction, Henkel acquired 75% of the shares of four concerns: Ceresit GmbH in Unna, West Germany; two British companies, Unibond PLC and Cobydex PLC in Camberley; and Rubson S.A. in Rueil-Malmaison, France.

Meanwhile, Henkel's sister company in the U.S., Henkel Corp. of Minneapolis, Minnesota, has announced it is acquiring Oxy Process Chemicals Inc., based in Morristown, New Jersey, from Occidental Petroleum. Oxy Process Chemicals previously was the process chemicals division of Diamond Shamrock Corp.

News briefs

With the retirement of AOCS member **Helmut Stupel**, **David Scharer** has been promoted to fill Stupel's position at **Shell Chemical Co.** Scharer previously was supervisor of detergent applications at Shell's laboratory. He will continue as business manager of enhanced oil recovery at Shell's Detergent & EO/EG Business Center and also will serve as business manager of research and business integration. Scharer recently became a member of AOCS.

National Distillers and Chemical Corp. (NDCC) has elected **Douglas L. Allen** and **Mark J. Anton** as executive vice-presidents and **Francis L. Brophy** as senior vice-president. Allen, president of the NDCC Chemical Group since 1986 and a vice-president since 1982, heads the company's chemical operations, comprised of USI Chemicals and Emery Chemicals. NDCC also has appointed **Linda J. Pavony** to the corporate office of assistant secretary.

DeSoto Inc. has sold its automotive coatings business and its related Westland, Michigan, plant to a wholly owned subsidiary of **Red Spot Paint & Varnish Co. Inc.** Also, DeSoto announced it has purchased the remaining 850,000 shares of DeSoto common stock owned by Sears.

Bob Brady has been named executive vice-president of the **Cosmetic, Toiletry & Fragrance Association.**

PPG Industries in January announced it had acquired **Mazer Chemicals Inc.**, a manufacturer of specialty chemicals used in personal care, pharmaceutical, food and cleaning products.

Sam F. Segnar has been named chairman of **Vista Chemical.**

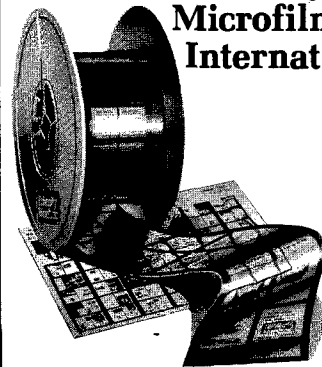
FMC Corp.'s Spanish subsidiary, **Foret S.A.**, has purchased the natural sodium sulfate business of the Barcelona-based **Union Salin-**

era de España S.A. Foret manufactures chemicals for the detergent, paper, glass and textile industries.

Albright & Wilson Inc., a unit of **Tenneco Inc.**, has acquired **Chemrich Inc.** of Westwego, Louisiana, a manufacturer of oil and gas production chemicals. Chemrich will continue operations as a wholly owned subsidiary of Albright & Wilson. The acquisition marks the company's entry into the production of specialty oilfield chemicals.

Ralston Purina Co.'s Polymer Division has appointed **Robert W. Sanders** and **Christopher Bonney** as project leaders. Sanders is responsible for application studies in size press and coating technology, while Bonney is assigned to coating application studies and involvement with mill evaluation of soy polymers.

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Surfactants & Detergents Publications

Cosmetic Analysis: Selective Methods and Techniques (Cosmetic Science and Technology Series, Vol. 4), edited by P. Boré (Marcel Dekker Inc., 270 Madison Ave., New York, NY 10016, 1985, 552 pp., \$85 US and Canada, \$102 elsewhere).

Cosmetics have evolved from very simple mixtures to the very complex combinations of components found in today's preparations. This has resulted in increasing demand for suitable analytical methodology for use in quality control and formulation. The techniques detailed in this book entail interesting applications of some of the more sophisticated analytical methodology to cosmetic preparations used in our daily lives.

The nine chapters contain information on applications of spectral analysis of polymers in cosmetics (principally IR and NMR-proton and carbon-13), voltammetry in cosmetic analysis and gas chromatographic determination of mercaptoacetic acid in hair waving and depilatory products. Two chapters discuss the characterizations and

identification of synthetic high polymers and quaternary ammonium compounds using pyrolysis gas chromatography. The applications of high performance liquid chromatography to the analysis of preservatives and oxidative hair dyes in cosmetic formulations also are detailed. Further chapters cover the trace analysis of volatile compounds using headspace gas chromatography and the use of ion exchange chromatography for the analysis of protein derivatives and specific amino acids.

The usefulness of the book is enhanced by a large appendix (225 pages) devoted to the polymers used in cosmetics, termed a spectral library. Each material is detailed as to its chemical structure and properties, physical properties, infrared spectrum and proton and carbon-13 NMR spectra. When possible, the interpretation and peak assignments are provided.

The book contains numerous end-of-chapter references and a comprehensive subject index. It is an invaluable aid in the analysis of today's complex cosmetic formulations. Although the use of lipids

in such formulations is limited, the material in this book should be of interest to those involved in lipid pharmacology, product formulation and analysis.

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New books

Surfactant Biodegradation: Second Edition, Revised and Expanded (Surfactant Science Series, Vol. 18), by R.D. Swisher (Marcel Dekker Inc., 270 Madison Ave., New York, NY 10016, 1987, 1,120 pp., \$149.75 US and Canada, \$179.50 elsewhere).

Interfacial Phenomena in Apolar Media (Surfactant Science Series, Vol. 21), edited by Hans-Friedrich Eicke and Geoffrey D. Parfitt (Marcel Dekker Inc., 270 Madison Ave., New York, NY 10016, 1987, 432 pp., \$89.75 U.S. and Canada, \$107.50 elsewhere).

Polyunsaturated

Fatty Acids

A monograph edited by Wolf-H. Kunau and Ralph T. Holman, 258 p. Hardbound—\$20 for AOCS members and students, \$30 for nonmembers.

This monograph records the contributions of twenty noted researchers who contributed to the 1975 AOCS symposium on unsaturated fatty acids. The symposium was premised on the increasing need to combine separate disciplines in lipid research. Speakers thus were invited who specialized in chemical, physical and biochemical properties of lipids. Topics included biosynthesis, oxidation and regulation of metabolism, analysis, chemistry/physicochemistry, and experimental and clinical data. Illustrations and references enhance this collection.

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Surfactants & Detergents Calendar

1987

April

Joint symposium, Perfume—The Product and the Person, sponsored by the British Society of Perfumers and Society of Cosmetic Scientists, April 6–7, 1987, The Grand Hotel, Eastbourne, England. Details: Society of Cosmetic Scientists, Delaport House, 57 Guildford St., Luton LU1 2NL, England.

May

Short Course, Introduction to Polymer Chemistry, May 4–8, 1987, University of Missouri-Rolla, Rolla, Missouri. Contact: Coatings Continuing Education, Department of Chemistry, 142 Schrenk Hall, University of Missouri-Rolla, Rolla, MO 65401-0249.

Short Course, Physical Testing of Paints and Coatings, May 11–15, 1987, University of Missouri-Rolla, Rolla, Missouri. Contact: Coatings Continuing Education, Department of Chemistry, 142

Schrenk Hall, University of Missouri-Rolla, Rolla, MO 65401-0249.

June

Oil and Colour Chemists' Association Conference 1987, June 17–20, 1987, Eastbourne, England. Theme "Advances and Application of Science and Technology in Surface Coatings." Contact: Director and Secretary, Oil and Colour Chemists' Association, Priory House, 967 Harrow Rd., Wembley, Middlesex HA0 2SF, England.

September

AOCS Short Course on Fatty Acids, Sept. 13–16, 1987, Kings Island Resort, Ohio. Contact: Meetings Manager, AOCS, PO Box 5037, Station A, Champaign, IL 61820.

Cosmetic Science Update '87, Joint Conference on Dandruff, Nails, Hair Growth and Hair Dyes, Sept. 17–18, 1987, Munich, West Germany, hosted by the German Society of Cosmetic Chemists.

Details: Dr. R. Müller, German Society of Cosmetic Chemists, c/o Dralle GmbH, Gründgensstr. 6, 2000 Hamburg 60, West Germany.

October

1987 Annual Meeting and Paint Industries' Show, Federation of Societies for Coatings Technology, Oct. 5–7, 1987, Convention Center, Dallas, Texas. Details: Federation of Societies for Coatings Technology, 1315 Walnut St., Philadelphia, PA 19107.

1988

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.

Next Month in JAOCS

Determination of Individual Tocopherols by Derivative Spectrophotometry

Analysis of Milkfat by HPLC

Characterization of Peanut Oil Triacylglycerols by High Performance Liquid Chromatography, Gas Liquid Chromatography and Electron Impact Mass Spectrometry

Biochemical Modification of Fats by Microorganisms: A Preliminary Survey

Neutral Sugar Analysis of Polysaccharides from the Seed Epidermis of *Brassica campestris*

Determination of Oil in Sunflowerseeds

Effect of Wax Content of Flow Properties of Rice Bran Oil
Comparison of Solvent Extraction Characteristics of Rice Bran Pretreated by Hot Air Drying, Steam Cooking and Extrusion

Surfactants and Detergents

Studies on Surface Activity on Linear Alkylbenzene Sulfonates II. Effect of Water Hardness

Rapid Quantitative HPLC Analysis of Polyethoxylated Nonionics

An Improved Method for Evaluating Detergent Builders for Water Hardness Control

Latest in Lipids

Studies of Lipoproteins and Fatty Acids in Maternal and Cord Blood of Two Racial Groups in Trinidad

Platelet Changes after a Saturated Fat Meal and Their Prevention by Dazmegrel, A Thromboxane Synthetase Inhibitor

Effect of Hypothyroidism on the Lipid Composition of Rat Plasma and Erythrocyte Membranes

Biokinetics of and Discrimination Between Dietary *RRR*- and *SRR- α* -Tocopherols in the Male Rat

Role of the Lymphatic System in the Transport of Absorbed 7,12-Dimethyl-Benzanthracene in the Rat

Time Course of Incorporation of 20-Carbon Polyunsaturated Fatty Acids in a Human Keratinocyte Cell Line

The Formation of Lysophosphatidylinositol Phosphate in Human Platelet Microsomes

Nonenzymatic Hydrolysis of Phosphatidylcholine Prepared as Liposomes and Mixed Micelles

Methods

Measurement of Lipid Peroxidation In Vivo: A Comparison of Different Procedures

Analysis of Volatile Fatty Acids in Biological Specimens by Capillary Column Gas Chromatography