## • *Names in the News*

M. E. MASON ('66) has been appointed Vice President at International Flavors and Fragrances, Inc.

Pacific Vegetable Oil Corporation (PVO) has elected D. P. KAVANAGH ('63) vice president and principal resident executive for the foods, industrial chemical and catalyst divisions recently acquired from Drew Chemical Corporation. Mr. Kavanagh was formerly vice president and general manager for Drew Chemical, which he joined in 1969. He has an extensive background in production and marketing. Before joining Drew, he was production manager and then general sales manager for the edible oils division of Swift & Co., Chicago. In addition to its Drew division activities, PVO markets Saffola safflower oil-based foods on the West Coast and in selected markets, and supplies vegetable oils for industrial uses. It is also involved in handling and marketing agricultural commodities.

**M. E. Mason**

**D. P. Kavanagh**

J. W. MCKEE, JR., President of CPC International, has been elected for a three-year term to the Board of Trustees of the United States Council of the International Chamber of Commerce. The U.S. Council is composed of leading American businessmen concerned with international trade and investment and monetary affairs. The U.S. Council, as one of the 42 national groups of the Paris based International Chamber of Commerce, seeks to promote international economic growth through private enterprise. CPC International is a multinational food producer with operations in some 40 countries on every continent. Mr. McKee is also a trustee of the Council for Latin America and a member of the board of directors of The Chicago Board of Trade and the Grocery Manufacturers of America.

The appointment of R. E. HELLAND to the position of Executive Vice President and Assistant General Manager of Capital City Products Company was announced by J. R. Herd, President. Capital City manufactures a wide variety of edible oil products such as shortenings, salad oils, margarines, hard butters and specialty fats for industry. Mr. Helland joined the company in November, 1969, as Vice President and Director of Manufacturing. Prior to coming with Capital City Products, he was associated with Jeno's, Inc. of Duluth, Minnesota, and for 12 years was associated with various shortening and oil plants of the Procter & Gamble Company.

Alpine Aromatics, Inc. of Metuchen has announced the appointment of EMIL BUONGIORNO as Coordinator of the Fragrance Division. His appointment will further expand the fragrance and technical service capacities of Alpine Aromatics. Mr. Buongiorno was formerly associated with the Research and Development Division of Lever Brothers Company, and more recently with the Givaudan Corporation, where he was creative perfumer of fragrance development for colognes, cosmetics, soaps and detergents. Alpine is a major producer of fragrances for toilet goods, soaps, cosmetics, aerosols and industrial deodorants. Products are marketed under the trade names of Aldor and Alpine.

H. K. GARDNER ('64) has been appointed Head of Oilseed Products Investigations in the Engineering and Development Laboratory of USDA's Southern Marketing and Nutrition Research Division. Mr. Gardner has been Acting Head of the Oilseed Products Investigations for more than a year, during which time he has been responsible for research on new processes and treatments for cottonseed, peanuts and other oilseeds, and the adaptation of such processes and treatments to commercial operations. He has presented a number of papers at various meetings of oilseed processors. He has published some 25 technical papers, and holds two public-service patents. As a member of the group responsible for development of the filtration-extraction process for oilseeds, he received the USDA Superior Service Award in 1956. He was also a member of the Cotton Batting Research Team which received the Superior Service Award in 1965 for development of Cotton Flote, an improved cotton batting.

**H. K. Gardner**

HENRY YOUNG has been appointed Director, Research and Development of the August C. Stiefel Research Institute, Inc., Division of Stiefel Laboratories, Inc., Oak Hill, New York. Dr. Young has 20 years of experience in the development of cosmetics, toiletries and pharmaceutical proprietaries.

F. G. ARMSTRONG has been named Executive Director of The New York Academy of Sciences. He will replace the retiring Executive Director, Rear Admiral E. S. Schanze, U.S. Navy (Ret.). Dr. Armstrong, whose degree is in psychology, was with the United States Steel Foundation for 13 years. His most recent responsibility with the Foundation was as Director of Research and Projects. For ten years before that he served on the graduate faculty of Lehigh University, Bethlehem, Pa., as an instructor, a professor and in administration.

## National Peanut Council Presents Golden Peanut Research Award to A.E. Waltking

A. E. WALTKING ('60), technical coordinator—Best Foods, a Division of CPC International, has received the 11th annual Golden Peanut Research Award as "scientist of the year." Mr. Waltking is the first industrial scientist to receive the award.

The award is given by the National Peanut Council to the scientist who has done the most during the past year in improving peanut quality and utilization. Mr. Waltking was selected on the basis of his contributions to quality control procedures in the processing of peanuts.

Mr. Waltking has published five research papers and has authored two patents. His professional affiliations include the American Oil Chemists Society and the American Chemical Society. He is also an active member of the sub-committees of both the American Oil Chemists Society and the American Association of Cereal Chemists working in collaboration with the U.S. Food and Drug Administration for the purpose of eliminating or controlling problem areas in the consumers food supply.

The National Peanut Council consists of the growers from each of the major peanut states, the sheller associations from each of the growing areas, the associations representing the peanut salters, the peanut butter manufacturers and the makers of peanut candy.

# Treated Soybean Meal Boosts Livestock Feed Efficiency

Specially treated soybean meal is boosting the feed efficiency of livestock under tests at the University of Illinois. Gains and major improvements in overall feed efficiency have been recorded, according to University animal nutritionists.

The unusual research project is being supervised by E. Everett Hatfield, noted Illinois animal nutritionist. Working under a $10,000 grant from the National Soybean Processors Association, Dr. Hatfield hopes to unlock the secrets of protein utilization in ruminants.

Dr. Hatfield is recording results with a unique research theory. He treats 50% soybean meal with formaldehyde or other chemicals, then feeds it to lambs and cattle. His objective is to pass the treated high-quality soybean meal through the rumen—or first stomach—of ruminants, and into the abomasum—the "true" stomach. There, in the animal's true stomach, the dietary protein which has not been altered in the rumen can be absorbed and utilized.

It is no secret to ruminant nutritionists that bacteria in the animal's rumen tend to "break down" and alter the quality of the soybean meal protein. Their primary goal is to by-pass these active rumen bacteria, and deliver the protein-rich soybean meal into the animal's true working stomach.

The soybean meal is first treated with a rather inexpensive formaldehyde treatment then it is usually pelleted. This protects it from the rumen bacteria, and allows the protein to be more completely utilized by the animal.

"The amino acids in certain proteins can actually be more beneficial if they are not first 'digested' or 'altered' by the rumen bacteria," Dr. Hatfield explains. "Our test livestock gained faster, and used feed more efficiently, when they were fed the 'treated' soybean meal."

Next step in Dr. Hatfield's nutritional studies is to pinpoint which of the individual amino acids limit the actions of their neighbors. Now that the amino acids can be by-passed through to the animal's "true" stomach, the Illinois nutritionist wants to assure that each essential amino acid is fully available for utilization. Any amino acid that limits another, must be identified so that effective supplementation can be accomplished.

If Dr. Hatfield's nutritional studies are a complete success, U.S. beef producers could well realize improved feeding efficiency, dairymen could boost milk production, and the nation's soybean growers would have an expanded market for their soybeans.

# Bibby and Humphreys & Glasgow Sign World Wide Agreement

J. Bibby Food Products Ltd. and Humphreys & Glasgow Ltd. announce that they have entered into a worldwide agreement to collaborate in the design and construction of plants for the oils and fats processing industries. Through this agreement with J. Bibby, Humphreys & Glasgow will be able to provide its overseas clients with access to Bibby's extensive technology and experience in processing.

This agreement, which is of a type common in the petrochemical industry, has hitherto been rare in the oils and fats field; it will enable Humphreys & Glasgow, London SW1, England, to satisfy the growing demand for plants of this type backed by production expertise, especially important in countries where the existing background experience in design and operation is less developed.

In addition to technical collaboration in plant design and construction, the agreement will allow Humphreys & Glasgow to provide consulting services, training for plant operators and in certain cases advice on product packaging and marketing. In a supporting role, the research and development facilities of both companies would also be available.

# Food Protein Research and Development Center at A&M

Texas A&M University is establishing an international protein research organization in its expanding program to develop better and cheaper human food and feeds.

The facility will be called the Food Protein Research and Development Center, as authorized during a recent meeting of the A&M System Board of Directors.

Activities of the center will combine and place new emphasis on A&M's Oilseed Products Research Center and the Chemurgic Research Center, which have been in operation for several years. The main goal will be to improve markets for oilseed products and unharvested fish.

The center will be administered by the Texas Engineering Experiment Station, of which F. J. Benson is director. Mr. Benson said activities will be cooperative between the staffs of the Agricultural Experiment Station and the Engineering Experiment Station.

The man who will head up the Food Protein Research and Development Center is K. F. Mattil ('44), now director of food products research in the Engineering Experiment Station.

Dr. Mattil said research emphasis will be on foods. The center will work closely with the university's recently authorized Institute of Food Science and Engineering and all other food science activities on campus. It will have an international character in recognition of increasing world demand for low cost protein foods.

Texas A&M has for some time had research programs on cottonseed, peanuts, sunflowers, coconuts, fish and micro-biological proteins. Of these, cottonseed, peanuts and fish are receiving most of the attention, since they are major crops in the state.

Dr. Mattil said development of cheaper protein foods is of tremendous sociological importance because low income groups in the United States and other countries cannot afford the luxury of an adequate protein diet based on meat, milk and eggs.

An then there is the economic angle. Dr. Mattil said the food industry is looking for and spending much money on development of low cost alternatives to the usual protein foods. Such low income groups are considered to be potential customers.

He said Texas A&M is considered a leader in oilseed products development work because of its years of experience and expertise in this field of technology. That reputation should be further enhanced with the formation of the Food Protein Research and Development Center.

He pointed out that Texas is the most advanced in production of glandless cottonseed, and the state next year will have the nation's first plant for the output of food-grade, degossypolized flour from glanded cottonseed.

"We at Texas A&M have made some important breakthroughs in food applications of glandless cottonseed, in the processing of sunflower seed, and expect within the next year to have a position of leadership in the processing of peanuts for protein products," Dr. Mattil said.

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caused no inhibition of oleic acid uptake or esterification. The results indicate that the significance of kinetic data describing intestinal fatty acid absorption which were obtained from experiments conducted in vitro is highly questionable, and that suitable models for in vivo uptake kinetics have yet to be developed. However, analysis of the in vitro kinetic data suggests that the intestinal mucosal membrane does not function as a simple lipid interface with respect to fatty acid absorption.

METABOLISM OF CHOLESTANE-3$\beta$,5$\alpha$,6$\beta$-TRIOL. II. IDENTIFICATION OF TWO MAJOR NEUTRAL METABOLITES IN THE RAT. H. G. Roscoe and M. J. Fahrenbach (Dept. of Metabolic Chemotherapy, Ex. Therapeutics Res. Sec., Lederle Labs. Div., Am. Cyanamid Co., Pearl River, New York 10965). *J. Lipid Res.* 12, 17–23 (1971). Rats were given a single oral dose of cholestane-3$\beta$,5$\alpha$,6$\beta$-triol-4-$^{14}$C, and their feces were collected. The two major neutral metabolites were separated and isolated by use of solvent fractionation and chromatographic methods. The metabolites were identified as cholestane-3$\beta$,5$\alpha$-diol-6-one and a mixture of long-chain fatty acid esters of cholestane-3$\beta$,5$\alpha$,6$\beta$-triol. Cholestane-3$\beta$,5$\alpha$-diol-6-one was identified using thin-layer and gas-liquid chromatography, infrared spectroscopy and the spectrum produced by reaction with 65% sulfuric acid. The mixed esters of cholestane-3$\beta$,5$\alpha$,6$\beta$-triol were subjected to basic hydrolysis, and the steroid moiety was identified using the same techniques employed for cholestane-3$\beta$,5$\alpha$-diol-6-one. The fatty acids were analyzed by gas-liquid chromatography of their methyl esters.

THE SUBCELLULAR DISTRIBUTION OF PLATELET LIPIDS LABELED BY ACETATE-1-$^{14}$C. D. Deykin (Dept. of Med., Beth Israel Hosp., and Harvard Med. Schl., Boston, Mass. 02215). *J. Lipid Res.* 12, 9–11 (1971). The lipids of intact human platelets were labeled in vitro with acetate-1-$^{14}$C, and the distribution of radioactivity in individual fatty acids and in lipid classes was examined in platelet subcellular fractions separated by sucrose density gradient ultracentrifugation. The distribution of newly formed fatty acids among individual lipid classes was similar in all subcellular components, and no highly unusual or characteristic lipid metabolic pool was present in either the soluble, membrane or granule fractions.

THE PHOTOMETRIC DETERMINATION OF GANGLIOSIDES WITH THE SULFO-PHOSPHO-VANILLIN REACTION. A. Saifer and N. I. Feldman (Biochem. Dept., Isaac Albert Res. Inst., Kingsbrook Jewish Med. Cen., Brooklyn, New York 11203). *J. Lipid Res.* 12, 112–15 (1971). A simple, quantitative method is described for the photometric determination of gangliosides. The precedure is based on the sulfo-phospho-vanillin reaction, and does not require prior hydrolysis. It has been shown that the reaction is probably due to oxidation by sulfuric acid of the sphingosine moiety which results in the formation of aldehydes or ketones or both which then react with the phosphoric acid-vanillin reagent to produce a rose-colored complex. The reaction permits the determination of the amount of ganglioside present in a sample; and, together with the resorcinol reaction to measure the NANA content, it can be used to determine whether a purified ganglioside is a mono-, di-, or trisialoganglioside.

ON THE AUTOXIDATION OF VITAMIN D PREPARATIONS II. THE AUTOXIDATION OF ERGOCALCIFEROL. M. M. Amer, A. K. S. Ahmad and S. P. Varda (Anal. Chem. Dept. Faculty of Pharm., Cairo Univ., Cairo, U.A.R.). *Fette Seifen Anstrichmittel* 72, 1040–45 (1970). Ergocalciferol was used as a model for the autoxidation studies of Vitamin D. It was shown that ergocalciferol is sensitive to light, moisture and heat in the presence of oxygen. The autoxidation proceeds through isomerisation to a carbonyl compound without the development of peroxidic groups.

VITAMIN REQUIREMENT OF FISHES. H. Mann (Inst. for Fish Res. Hamburg, Ger.). *Fette Seifen Anstrichmittel* 72, 1079–83 (1970). Vitamin requirement of fresh water fishes, especially of carp and trout is dealt with. For fishes in natural water, this requirement is met by the feed. However, if the fishes are held in ponds or traps, vitamins must be incorporated into the feeds (pellets). As in the case with other domestic animals, at low levels of vitamins or in their absence symptoms of deficiency relating to growth, muscle atrophy and nervous disorders are observed. The hitherto known symptoms of deficiency in fishes and their daily vitamin requirement per kilogram weight of fish or per kilogram feed are summarized in a table.

# Commerce Releases Figures on Trade With East Europe

Two-way trade between the United States and Eastern Europe during the third quarter of 1970 totaled $126.3 million, the U.S. Department of Commerce reports. The total is compared with $135.7 million in the previous quarter and $111.5 million in the third quarter of 1969.

Principal U.S. exports to Eastern Europe during the quarter were agricultural products and crude materials. They included $4.1 million in soybean oilcake and meal to Hungary, $1.7 million to Poland and $1.4 million to Czechoslovakia; $4.3 million in animal and vegetable oils, fats and waxes to Poland; $2.4 million in wheat to Poland and $2.2 million to Romania; $3.5 million in lifting and loading equipment to the U.S.S.R.; and $3 million in computers and parts to East Germany.

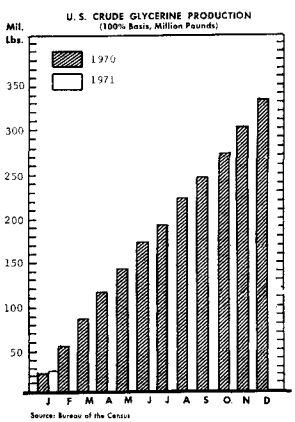
The 94th Quarterly Report on Export Control can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or any U.S. Department of Commerce field office.

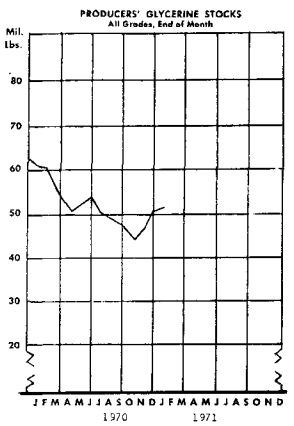
# Glycerine Production Statistics

According to the U.S. Department of Commerce, production of crude glycerine (including synthetic) for January 1971 totalled 27.7 million pounds, down 3.3 million pounds from December 1970 (revised), but up 0.5 million pounds from January 1970.

At the end of January, producers' stocks of crude and refined glycerine totalled 52.8 million pounds, up 2.5 million pounds from December (revised), but down 8.4 million pounds from the end of January 1970.

The December 1970 crude and refined glycerine production and stocks were revised as follows, in thousands of pounds, 100% basis: crude production, from 31,070 to 30,922; refined production, from 31,740 to 31,757; crude stocks, from 20,748 to 20,751; refined stocks, from 29,794 to 29,573. These revisions have lowered the total stocks level from 50,542,000 to 50,324,000 pounds and raised domestic disappearance from 20,627,000 to 20,697,000 pounds.




# • Drying Oils and Paints

CASHEWNUT SHELL LIQUID DISTILLATION RESIDUE—ITS UTILIZATION IN COATINGS. T. Ramalingan, B. G. K. Murthy, M. A. Sivasamban and J. S. Aggarwal (Regional Res. Lab., Hyderabad). *Paintindia* 20(10), 29–31 (1970). The properties of varnishes prepared by copolymerizing the residue obtained during the isolation of cardanol from cashewnut shell liquid with drying oils, resins, and polymerizable monomers are discussed.

PROTECTION BY PAINTS. K. S. Rajagopalan and S. Guruvih (Central Electrochemical Res. Inst., Karaikudi-3). *Paintindia* 20(10), 23–8, 31 (1970). The first part of this review article

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covers the chemistry of organic coatings, their resistance to deterioration and ageing, and the mechanism and inhibition of corrosion of metals. The primers discussed include red lead and chromates, and the principal vehicle discussed is cashewnut shell liquid. This raw material is potentially widely available in India. Current work with this vehicle and the results of exposure tests carried on at various locations are mentioned.

## • Detergents

SODIUM PERBORATE AND HYDROTOPES IN DISH WASHING PREPARATIONS. Anon. *Soap, Perfumery Cosmetics* 43, 705–9 (1970). A review of sodium perborate reactions and a discussion of the theory of hydrotopes. Applications of both are presented.

THE MANUFACTURE OF TOILET SOAP. SOURCES OF DEFECTS AND THEIR ELIMINATION. Anon. *Soap, Perfumery Cosmetics* 43, 787–91 (1970). This is an English translation of a technical bulletin published by Haarmann and Reimer G.m.b.h., Holzminden, W. Ger. The bulletin covers many of the common defects encountered in the production of toilet soaps. Solutions to the defects are given.

SPHERICAL FOAM CHROMATOGRAPHY. K. Maas (Org. Chem. Inst., Heidelberg Univ., Heidelberg, Ger.). *Fette Seifen Anstrichmittel* 72, 1032–37 (1970). In contrast to usual foam separation methods, in spherical foam chromatography, a current of air or nitrogen, saturated with the supporting phase (volatile organic or inorganic liquid) is circulated through the aqueous solutions. The advantages of this simple technique are: (1) enrichment of surface-active substance even from highly diluted solutions, and (2) speed of separation. Characteristic efficiency of the process (also as a function of the temperature) indicates varying degree of interaction between the molecules of water, surfactant and supporting phase. Variations of the process, such as continuous method etc. are dealt with.

FORMULATING DETERGENTS WITH LESS PHOSPHATES. R. D. Katstra (Continental Oil Co., Teterboro, N.J.). *Soap Chem. Specialties* 47(2), 36–42, 54–6, 107 (1971). Data on formulations which appear to have promise in the search for an effective laundry product that will satisfy both performance and environmental requirements are presented and discussed. Much of the discussion is concerned with trisodium nitrilotriacetate (NTA). (The article was written prior to the report of the Surgeon General and Administrator of the Environmental Protection Agency.) Another approach is use of higher levels of existing detergents. Experimental formulations and soil removal data on various fabrics are given.

CAR WASH DETERGENTS. T. M. Kaneko and J. W. Compton (BASF Wyandotte Corp., Wyandotte, Mich.). *Soap Chem. Specialties* 47(1), 11, 62, 121–3, 133–4 (1971). Factors which must be considered in developing and testing detergent systems for modern automatic car wash systems are discussed. Suggested formulations are given. Current research is directed toward removing the phosphates from these products.

STUDIES ON THE REPLACEMENT OF COCONUT OIL IN THE FATTY COMPONENT OF TOILET SOAPS. E. Szmidtgal. *Tluszcze, Srodki Piorace, Kosmet.* 14(3), 87–92 (1970). As a replacement for coconut oil in toilet soaps, 6% of linear sodium dodecylbenzene sulfonate was used in conjunction with tallow or distilled tallow acids. Stearine was added as needed. The color of the tallow or fatty acids should be about 7 mg I/100 ml of KI solution. The fatty component should contain about 45% oleic acid. The remainder should be made up of both stearic acid and a 1:1 mixture of stearic and palmitic acids. (Rev. Franc. Corps Gras)

SURFACE ACTIVE PROPERTIES OF ESTERS OF SACCHAROSE AND FATTY ACIDS. J. Broniarz *et al. Tluszcze, Srodki Piorace, Kosmet.* 14(3), 93–7 (1970). Aqueous solutions of saccharose and synthetic $C_5$-$C_9$ fatty acids or lauric acid were found to lower the surface and interfacial tension to the same degree as sodium dodecylbenzene sulfonate. Raffinose monostearate showed significantly better detergent power than saccharose monostearate. The saccharose esters dissolve best in chloroform. In polar solvents, such as methanol, ethanol, propanol-1, and butanol-1, the solubility of the esters was appreciable. In acetone, it was no more than 10%. (Rev. Franc. Corps Gras)

# SDA Reports Record High 1970 Soap and Detergent Sales

Soap and synthetic detergent sales rose to a new high in 1970, according to reports from 36 manufacturers participating in the Sales Census conducted by The Soap and Detergent Association.

These manufacturers, representing a major segment of the industry, had aggregate sales of 6,112,867,000 lb. and $1,642,918,000. Sales were up 2.7% in volume and 5.1% in value compared with the calendar year 1969, the previous high.

This was the 12th consecutive year that sales had established a new record.

Synthetic detergent sales in 1970 totalled 5,186,634,000 lb. and $1,266,353,000, up 3.5% in volume and up 5.2% in value from the year 1969.

Soap sales amounted to 926,233,000 lb. and $376,565,000 compared with 942,364,000 lb. and $359,970,000 in 1969.

# Hodag Chemical Corporation Receives Presidential "E" Award

The Presidential "E" Award for excellence in exporting was made to Hodag Chemical Corporation, Skokie, Illinois, at the 1971 Mid-America World Trade Conference in Chicago. The award was presented to S. E. Kent, president of Hodag, by R. L. McLellan, Assistant Secretary for domestic and international business, U.S. Department of Commerce, acting for the Secretary of Commerce of the United States.

The presidential award cited Hodag for making a significant contribution to the nation's export expansion program; for conducting an imaginative research and sales campaign abroad; and for aiding in producing a favorable U.S. balance of trade by expanding Hodag's market to more than 50 countries.

Hodag is a leading developer and manufacturer of surface active chemicals in the United States. The company's product line includes emulsifiers, surfactants, antifoam agents and other additives used in industries such as adhesives, pulp and paper, paint, pharmaceutical, cosmetics, food processing, sugar refining and other chemical specialties. Hodag's headquarters is at 7247 North Central Park Avenue, Skokie.

# Outlook for Chemicals in 1971

Shipments of chemicals and allied products are expected to reach $54 billion in 1971, up 9% from last year's total of $49.5 billion. Most of the increase will come from greater volume, with only 2% or so reflecting long-overdue increases in chemical prices.

Chemical industry profits, which fell in 1970, should climb back to the 1969 level of about $3.6 billion. Capital outlays in 1971 are expected to exceed $3.5 billion, up slightly from last year. Overseas investment will continue at a high level in 1971, about $1.5 billion. The chemical industry's balance of trade should also improve slightly this year—advancing to $2.6 billion from $2.5 billion in 1970. Meanwhile, companies in the industry continue to invest heavily in research and development programs. Total spending in 1971 should reach $2.5 billion, compared with $2.2 billion in 1970.

Even if 1971 does not shape up as a great year, it should be a good year for chemicals, and long-term prospects are even more encouraging. Much of the industry's profit and pricing difficulties stem from overcapacity, a good deal of which has resulted from companies outside the chemical industry looking for higher returns. The fact that returns have fallen should make investments in chemicals less attractive and help slow down the capacity build-up.