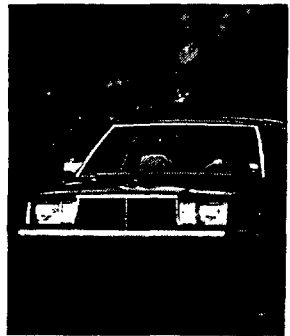
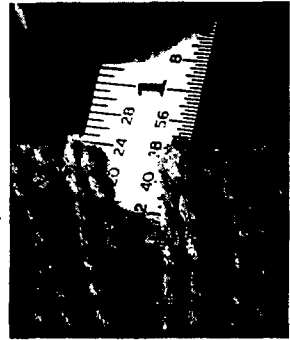
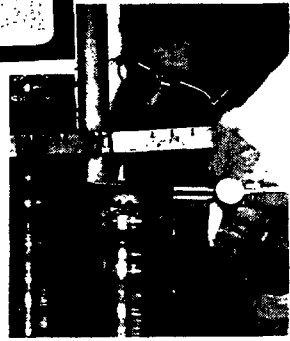


Monsanto

PLAINTIFF'S EXHIBIT

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Annual Report 1980

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*Italics identify
Monsanto's trademarks.*

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Monsanto Company, headquartered in St. Louis, today is the fourth largest U.S. chemical company. It has investments in 169 manufacturing plants, laboratories and technical centers in 21 nations. Its products are sold in more than 120 nations.

Monsanto's operating organization includes five operating companies—Agricultural Products, Chemical Intermediates, Industrial Chemicals, Plastics & Resins, and Textiles—plus Fisher Controls International, Inc., a majority-owned subsidiary; and Monsanto International, which coordinates operations outside the United States in conjunction with the operating companies and manages worldwide joint ventures.

To Our Shareowners

1980 Review of the Year

Research and Innovation

Financial Report

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John W. Hanley,
Chairman and Chief
Executive Officer,
before a portrait of John
F. Queeny, who
founded Monsanto in
1901.

production base, and the Company purchased a modern polyester plant in Fayetteville, North Carolina, at a cost very substantially lower than that of expansion or new construction.

At about the same time, however, technical advances by our customers led to stringent new technical performance requirements for polyester filament. Monsanto's fiber technology, realistically, did not meet the challenge in a timely way. No world producer has had a profitable polyester filament business in the past three years. But in a sorely depressed market, our Company's losses became disproportionately severe.

The fact that we have since achieved a potential breakthrough in polyester filament technology is a case of too little too late. We have withdrawn from the business, reached agreement in principle to sell a portion of our facilities to Fiber Industries, Inc. (FII), and agreed to work with FII to bring to commercial fruition the next generation product produced in our laboratories. We hope to capture some portion of the rewards of invention for this technical breakthrough, if the product is greeted enthusiastically by the world's consumers.

That decision resulted in a charge to 1980 earnings of \$69 million, or \$1.90 per common share.

A major concern growing out of our decision was the future of the employees involved. Most management and professional personnel were redeployed within Monsanto. For employees who could not be redeployed, Monsanto mounted a program of counseling and assistance in finding other positions, and this has met with some success.

A second troublesome decision was to end Monsanto's 67 percent participation in Aiscondel, S.A., our Spanish subsidiary. Aiscondel faced increasingly severe problems in the late 1970s, compounded by a depressed Spanish economy. During 1979 and 1980, remedial steps included workforce reductions, process improvements and the elimination of the weakest operations. Efforts also were made to sell parts of Aiscondel, but the financial losses continued.

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In February, 1981, Monsanto transferred all of its interests in Aiscondel so as to allow it to continue in operation with full Spanish ownership. Monsanto previously established a provision for a write-off which reduced 1980 after-tax earnings by \$39 million or \$1.07 per common share.

During the year, we further refined our options toward improving the unsatisfactory situation at our major Seal Sands acrylonitrile complex in the United Kingdom. Dramatic changes in user markets, including our own withdrawal from the European nylon market, have contributed to an overcapacity for acrylonitrile. Task forces are exploring a variety of alternatives open to us. While we do not see a complete short-term solution to the situation, we are confident we will see year-to-year improvement.

Building on Strengths

Monsanto's steps in 1980 to build aggressively on its strengths were characterized by our capital spending strategy and direction of resources to enhance our current successes. Our capital spending reached a record \$781 million. Excluding \$52 million of capitalized interest from this total, spending was up 29 percent above 1979. The emphasis here is on leadership positions—for today and tomorrow.

During 1980, a plant expansion for *Roundup* herbicide was completed in Belgium. In the rough economic weather of 1980, the robust performance of our agricultural herbicides business throughout the year buoyed Monsanto. Nearing completion now is a third plant for *Roundup* in North Carolina, which will increase capacity by nearly 50 percent, and a fourth unit is on the drawing boards.

Silicon is another clear example of support for leadership positions. A current expansion will make the Company's electronic-grade silicon plant in South Carolina the world's largest, witness to Monsanto's commitment to be the leading supplier to the semiconductor industry.

Capital spending will support a technology achievement that enables Monsanto to make maleic anhydride from butane instead of benzene—a process with competitive advantages in raw material cost, reliability, and environmental considerations. Con-

struction is underway on the world's largest plant to produce this important chemical intermediate.

An expanded exploration and production program, directed by our Oil & Gas Division, is now investing more than \$100 million a year to help ensure adequate feedstocks. Monsanto has proven reserves of approximately 130 million barrels of oil and equivalent gas—an asset with future net revenues estimated at \$1.774 billion, or a present, discounted value of such revenues estimated at \$575 million. This is described in detail in the Financial Review section of this report.

As the capital program feeds our growth, funding is also directed toward nourishment of today's successful businesses. This includes a firm management commitment to the continued strength of our detergents and phosphates business, traditionally a solid income producer. It is further illustrated by our *Saflex* windshield interlayer and rubber chemicals businesses, which have been well positioned for the eventual turnaround of the automotive industry. And it is evident in the joining of a series of related products into the Nutrition Chemicals & Development Division, which is patterned after the early charter of our agricultural products group.

This constructive use of our resources is linked to another area we seek to nourish—technology.

Research and Technology

The Company's bold approach to research and new technologies reached a dramatic level of visibility in 1980. Research and development expenditures for the year rose 27 percent, to \$204 million. We are determined to maintain the R&D momentum that will generate new products and processes for the decades of the '80s and '90s.

Our strengths are based on continuing research, on process technology, on frontier probes, and above all on the men and women of our technical community.

1980 Review of the Year

Research and Innovation

Financial Report

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Indicative of our commitment is our new laboratory facility, which adds 30 percent to research space at our St. Louis headquarters. Much of the addition will be devoted to our intensive agricultural R&D program, which now boasts several herbicides in tests leading toward commercialization.

Our continuing silicon research supports our major commitment to that product line.

Our process technology capabilities are exemplified by the maleic anhydride process mentioned above.

Research on the frontiers of technology includes our molecular biology activities, which encompass our studies in recombinant DNA. We are optimistic about our work in DNA techniques with living plant cells, and similar research has the potential of providing new industrial processes and new health care products.

In a closely related area, the Company purchased a \$20 million interest in Biogen, a genetic engineering company with laboratories in Switzerland. Through our venture-capital companies, Monsanto has held equity since the late 1970s in two other leading genetic engineering firms, Genex and Genentech.

In mid-1980 Monsanto acquired approximately a 30 percent interest in Collagen Corporation, which has developed proprietary methods of processing and purifying a protein building block from animal sources for use in repairing human tissue.

These equity investments give Monsanto windows on new technology and the flexibility to broaden our range. Because of Monsanto's emphasis not only on current strengths but also on bold, innovative steps, and because of the strength of our technical community, this report focuses importantly on research and innovation within the Company. (See special section, page 21.)

Monsanto Personnel Strengths

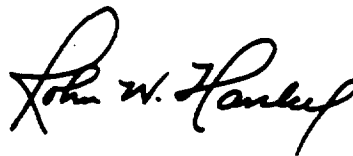
As we have built for the future in our product lines, we have also built for the future in management strength. While we will sorely miss the contributions of our Vice Chairman H. Harold Bible, who retired in January, organizational moves in recent years have enabled us to develop unusual depth and breadth of management. That management

team is now largely in place—from Finance Committee Chairman James J. Kerley, President Richard J. Mahoney, and Vice Chairman Louis Fernandez, throughout the Company's ranks.

In a broad sense, Monsanto employees in every part of the corporation are the essence of the report that follows. We have asked for their support and service in the face of trying times, and we have received it. The Company's future strength is in them.

The decade ahead presents challenges, but it also offers a range of opportunities for growth and profitability that is unprecedented.

Thus, in our 80th anniversary year, we look ahead fully confident that we have the product programs, technical resources and, most importantly, the human resources to achieve a future worthy of the best of our distinguished past.



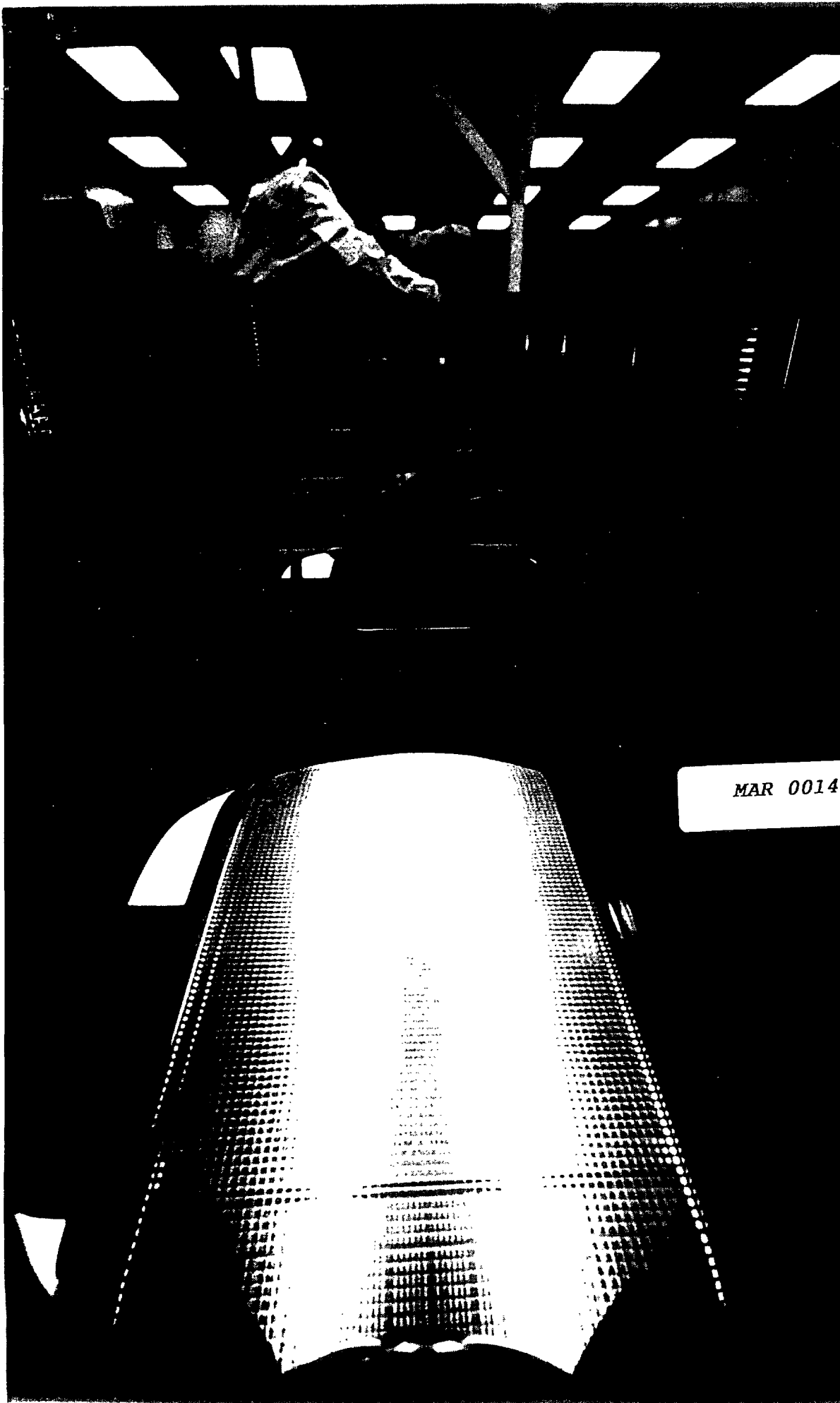
John W. Hanley
Chairman of the Board and
Chief Executive Officer

March 10, 1981

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Right: Polished silicon wafers reflect ceiling lights during production in South Carolina, while an operator monitors wafer thickness.



1980 Review of the Year

Research and Innovation

Financial Report

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Current Performance

Monsanto's consolidated net sales in 1980 increased to \$6.574 billion, a 6 percent increase over 1979. Net income for 1980, depressed by write-offs totaling \$108 million and recession-impacted demand, fell to \$149 million, with primary earnings per common share of \$4.10 compared with \$9.11 in 1979.

The dividend paid on a common share during 1980 was increased by \$0.20 to \$3.55.

Monsanto Agricultural Products Company set sales and operating income records in 1980. Total sales were \$1.012 billion, a 21 percent increase over 1979. Operating income rose 22 percent from \$329 million to \$401 million.

Monsanto Chemical Intermediates Company had a merchant market sales increase of 13 percent to \$966 million in 1980, but operating income fell from \$116 million in 1979 to \$18 million in 1980. The unit manages the production of basic intermediate chemicals, with approximately 60 percent used by other operating units and the remainder sold to the merchant market.

Oil & Gas Division sales grew to \$125 million, a 54 percent increase over 1979.

Monsanto Industrial Chemicals Company reached \$1.578 billion in sales, up 4 percent from 1979. Operating income, affected by higher energy and raw material costs as well as general weakness in the economy, fell from \$202 million in 1979 to \$133 million.

Monsanto Plastics & Resins Company, which manufactures plastics raw materials, resin products and fabricated products, had

1980 sales of \$1.384 billion, a decline of 2 percent. Sales revenues from ongoing businesses were at prior year levels, while consolidated operating losses of \$111 million reflect the \$66 million pretax write-off associated with Monsanto's withdrawal from the Company's Spanish subsidiary.

Monsanto Textiles Company recorded an operating loss of \$261 million, reflecting in part a pretax charge of \$121 million related to withdrawal from polyester filament. Sales revenues fell 3 percent to \$1.041 billion.

Weak demand, excess capacity and low pricing for U.S. polyester filament and European acrylic fiber, plus higher costs and low plant utilization rates led to operating losses.

Fisher Controls International, Inc., a worldwide leader in the manufacture of process control equipment, is owned approximately two-thirds by Monsanto and one-third by The General Electric Company Limited of the United Kingdom.

Fisher recorded 1980 sales of \$593 million, up 19 percent from the previous year. Operating income was \$72 million in 1980, compared with \$44 million in 1979.

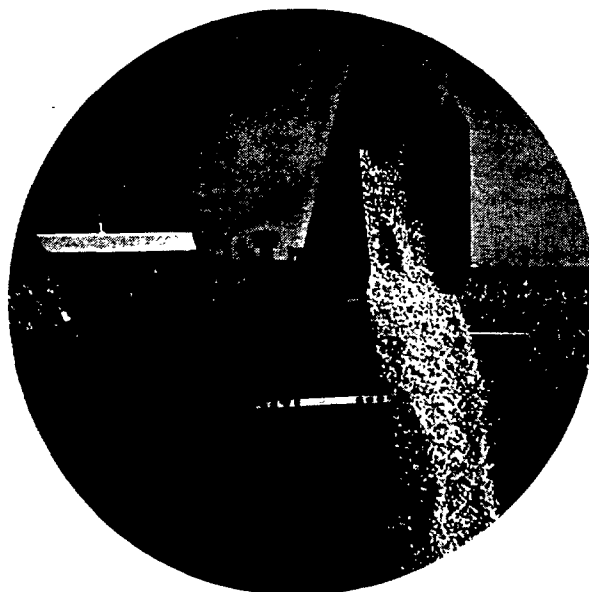
Monsanto International experienced sales increases in all world areas, with a substantial growth rate in the Asia-Pacific sector. For the year, ex-U.S. sales—including exports from U.S. plants—grew to \$2.601 billion, equivalent to 40 percent of total Monsanto Company sales.

Operating income from International business made a strong contribution to the Company's performance despite the economic downturn in many areas of the world and the write-off associated with the withdrawal from Aiscondel in Spain.

Left: A broad expanse of architectural glass laminated with *Saflex* interlayer is a feature of the Forum des Halles in Paris.

Center: *Lasso* herbicide is used widely to control grassy weeds in corn and soybeans.

Right: A Monsanto-operated drilling rig explores for natural gas in Wyoming.



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Agricultural Products

	Sales	Operating Income	Total Assets
1980	\$1,012.3	\$400.8	\$802.7
1979	839.9	328.8	660.2
1978	734.4	303.8	629.0
1977	654.0	274.3	579.4
1976	573.2	242.0	463.4

With sales passing the \$1 billion mark for the first time, Monsanto Agricultural Products Company set sales and operating income records in 1980. This performance occurred in spite of a general world economic slowdown and bad weather in several major markets.

The strong growth was led by the Company's highly successful herbicides. *Lasso*, *Roundup*, *Avadex BW* and *Machete* herbicides all reached record volumes in 1980. The sales of ammonium nitrate for fertilizer and blasting products were also at a record level during the year.

Lasso, used to control grassy weeds in corn and soybeans, continued to be the largest selling herbicide in the United States. *Roundup*, with broad application as a post-emergent herbicide for agricultural and industrial uses, again was the Company's fastest growing product, especially in ex-U.S. markets.

Sales of *Roundup* were aided by new and more intense uses in existing markets and by geographic expansion into new markets. In the United States, registered use of *Roundup*

was extended to forestry applications. Key registrations were received for agricultural use in Japan and in the Soviet Union.

The People's Republic of China has potential to become a large market for *Roundup*, *Lasso* and other Monsanto herbicides. During 1980, a Company delegation visited China to strengthen marketing and product development efforts there.

To supply rapidly growing demand, the Company started production of *Roundup* in a fully integrated plant in Antwerp during 1980. In North Carolina, construction is on schedule for 1981 start-up of a third facility for *Roundup*.

Monsanto sees strong future markets for agricultural products, both existing and new. World population is expected to increase from today's 4 billion people to 6 billion by 1995.

During 1980, existing technology for the Company's successful herbicides was extended to new candidates in field trials.

Looking beyond existing proprietary herbicides technology, Monsanto is actively engaged in the investigation of plant growth regulators to improve yields of major crops.

Still further ahead, much of the revolutionary agricultural technology for the 1990s and beyond will come from research in cell biology and genetic engineering. Through recombinant DNA techniques, for example, scientists hope to develop new plant strains with desirable qualities such as greater disease resistance and higher yields.

To support its commitment to agriculture, the Company will complete an advanced new laboratory and test farm in Brazil in 1981. The Company will expand its research laboratory in Belgium by 50 percent.



Significant growth for *Roundup* herbicide results from special application equipment. A rope-wick wiper permits selective control of weeds without harm to this soybean crop.

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Chemical Intermediates

	Sales	Operating Income	Total Assets
1980	\$965.7	\$ 17.8	\$1,178.6
1979	858.6	115.5	1,123.4
1978	523.2	75.1	849.8
1977	522.0	128.0	735.9
1976	498.2	156.7	611.1

Intercompany sales, not included in the above, made on a market price basis were \$165.3, \$151.9, \$116.3, \$129.5 and \$117.2 for 1980 through 1976, respectively.

In the fourth quarter, Monsanto Chemical Intermediates Company completed start-up of an expanded 8-billion-pound-a-year petrochemical plant. Together with an existing unit, the plant more than doubled capacity at Monsanto's Chocolate Bayou site to manufacture olefins and aromatics, intermediate chemicals used to produce a broad range of industrial and consumer products.

This new plant is a joint project with Conoco Inc., aimed at strengthening Monsanto's hydrocarbon-based feedstock position. Advanced technology results in energy savings of 5.8 trillion Btu a year over previous production methods.

A complementary crude oil processing unit at Conoco's refinery site at Lake Charles, Louisiana, will provide feedstock for the Texas plant. The Lake Charles unit, also jointly owned by Monsanto and Conoco, began start-up at the end of 1980 with a capacity of 100,000 barrels of crude per day.

For the year, this operating unit felt a

decline in overall volume, though dollar sales to external customers increased 13 percent due to higher prices.

Petrochemicals recorded a year-to-year dollar sales increase of 10 percent. Sales of process chemicals increased 3 percent.

As the U.S. recession cut into chemical demand for internal and external sales, market conditions softened. This in turn led to a 15 percent year-to-year decline in plant capacity utilization. Although this improved during the fourth quarter, operations were at 75 to 80 percent capacity for the year.

Plans for producing maleic anhydride from butane were increased when a Pensacola, Florida, plant under construction was scaled up by 30 percent.

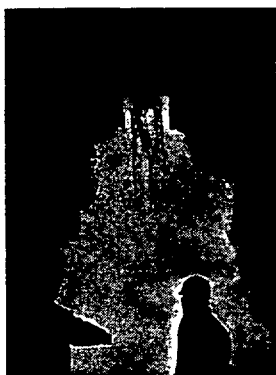
Oil & Gas Division

For the fifth consecutive year, Monsanto increased its oil and gas reserves by discovering more than it produced. In 1980, the Company invested \$135 million on exploration, development and acquisition of producing properties.

Monsanto participated in drilling fifty-one net exploratory wells in 1980, compared to 20 net in 1979; an additional 81 development wells were drilled. Of the total, 76 percent were oil or gas producing.

The division added 3.9 million barrels of oil and 64.0 billion cubic feet (BCF) of gas to its proven reserves. After oil and gas sales, proven year-end reserves totaled 29.7 million barrels of oil and 618.6 BCF of gas.

Most of the oil and gas produced is not used directly by Monsanto, but traded or sold for liquid feedstocks needed by the petrochemical operations. Net sales were \$125 million, a 54 percent increase over 1979.



Left: At a training session for Monsanto's phosphorus emergency response team, molten slag from a phosphorus furnace makes a dramatic backdrop.

Center: Reinforced plastics made with maleic anhydride are used in new model cars to reduce weight, thus helping increase miles-per-gallon of gasoline.

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Industrial Chemicals

	Sales	Operating Income	Total Assets
1980	\$1,577.6	\$132.6	\$1,113.0
1979	1,513.8	202.1	984.1
1978	1,290.1	218.7	849.6
1977	1,156.4	211.9	750.3
1976	1,108.6	220.1	651.9

Intercompany sales made on a market basis were \$45.3, \$44.1, \$26.6, \$24.0 and \$22.9 for 1980 through 1976, respectively.

In April, 1980, Monsanto Industrial Chemicals Company began operation of its new electronic-grade silicon plant in South Carolina. The following month, Monsanto's Board approved plans to boost the capacity still further, which will make it the largest such plant in the world.

Silicon, used by the semiconductor industry in electronic devices including computers, calculators, digital displays and electronic games, is also produced by Monsanto in Missouri and in Malaysia.

For the year, the operating company's sales of detergent and phosphate products increased by 1 percent.

Worldwide dollar sales of plasticizers were up 8 percent, and rubber chemicals sales up 2 percent, in spite of both businesses being severely affected by the automobile and housing market declines.

The Rubber Chemicals Division is

developing a new product line called *Santoprene* thermoplastic rubber. A multi-million-pound pilot plant, built in 1980, will be used to support the market development program.

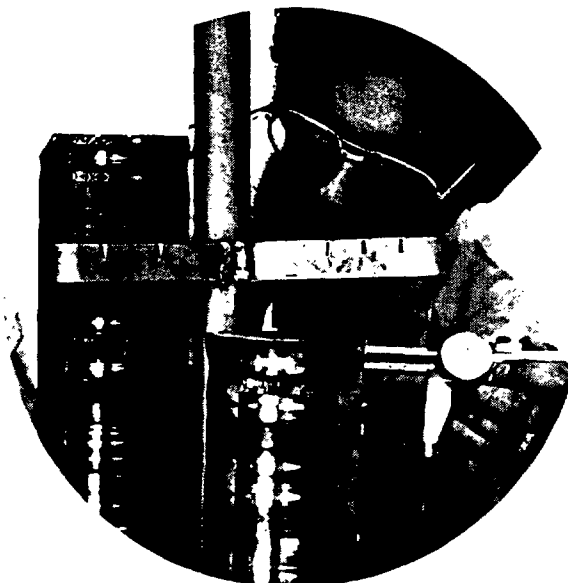
Investments in Europe, where Monsanto is the leading manufacturer of rubber chemicals and instruments, were made to modernize the product form of rubber chemicals, enabling customers to handle them in the most modern equipment and to improve industrial hygiene. Four new testing instruments were also introduced there.

Nutrition chemicals sales increased 16 percent. The new *Alimet* liquid methionine, an amino-acid feed supplement for poultry and swine, has enjoyed a successful marketing debut. The liquid form of the product is currently produced in West Virginia, and a 100-million-pound plant at the Chocolate Bayou, Texas, site is planned for 1983 completion.

Specialty chemicals had a 5 percent increase in sales in 1980, led by strong volume in *ACL* swimming pool products. The division continued its investment program to support its world leadership in aspirin production.

Prism separators, introduced in 1979, have had encouraging acceptance. *Prism* is a proprietary hollow fiber system that separates hydrogen from other gases in plant exhaust streams. The potential for the product includes hydrogen recovery in future synfuel projects, such as coal gasification.

Record sales of catalyst and equipment for Monsanto Enviro-Chem Systems, Inc., which provides engineering services and pollution control equipment, led to improved performance for the product line in 1980.



Left: Monsanto plasticizers provide flexibility and other qualities to plastics.

Center: Silicon crystal ingot growth is monitored during production at Monsanto's South Carolina plant.

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Plastics & Resins

	Sales	Operating Income	Total Assets
1980	\$1,383.8	\$(110.5)	\$1,000.0
1979	1,414.2	9.6	1,110.7
1978	1,223.6	57.6	1,088.2
1977	1,111.2	76.3	891.9
1976	1,018.7	100.8	752.9

Monsanto Plastics & Resins Company sales in 1980 declined 2 percent from 1979 levels; sales were at, or exceeded, 1979 levels in all world areas except North America. Several major factors were responsible for the decline in year-to-year operating income, including operating losses and the write-off associated with Monsanto's withdrawal from Aiscondel, the majority-owned Spanish subsidiary. A softening European economy and reduced plant utilization caused by weak automotive and housing industries in North America were other contributing factors.

Lustran ABS plastic felt the impact of the economic downturn chiefly in the automotive and housing sectors, with other major markets less severely affected.

Three new grades of *Lustran* were introduced during 1980 as a result of an accelerated technical program to help

support the Company's position as a leading ABS supplier.

Vydyne R glass/mineral reinforced nylon was selected by American Motors Corporation to mold the rocker arm covers for its 1981 model six-cylinder vehicles.

Sales of *Fome-Cor* board, polystyrene foam laminated between two layers of liner board, were also affected by the slump in the housing and automotive industries. The product's major uses are in manufactured housing and home residing, as a headliner in automobiles and as a graphic arts board.

Lustrex polystyrene maintained its worldwide 1979 sales level. A new grade was introduced during the year for such uses as dinnerware and drink cups and lids.

The Company's newest fabricated product, *Spray Guard* rain flaps, was adversely affected by a 30 percent downturn in new truck sales. However, the future still looks bright for this product.

During 1980 Monsanto's new *AstroTurf-8* synthetic turf system became commercial. The system will help the Company continue to expand sales into the high school, small college and municipal markets.

Blownware had another solid performance in 1980, with improved profitability despite the recessionary environment.

Sales of *Saflex* polyvinyl butyral interlayer for use in laminated safety glass for automobile windshields declined. However, sales for laminated architectural glass applications increased.

In the other resin areas, paper chemicals, formalin and *Gelva* specialty adhesive resins recorded modestly higher sales, while other resins declined from previous year levels.



Left: *Fome-Cor* board is widely used in the graphic arts market for mounting photographs and prints and for point-of-purchase displays.

Center: The Forum des Halles shopping complex in Paris contains 3,500 square meters of glass laminated with *Saflex* interlayer. Architectural uses of the laminate continue to grow.

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Textiles

	Sales	Operating Income	Total Assets
1980	\$1,041.1	\$(261.1)	\$1,019.5
1979	1,069.4	(168.7)	1,022.7
1978	963.2	(29.2)	1,050.1
1977	884.3	(39.0)	1,011.2
1976	853.5	(1.2)	947.5

In January, 1981, Monsanto announced its decision to withdraw from the polyester filament segment of the textiles industry.

The withdrawal results in the closure of the polyester filament plant at Guntersville, Alabama, and the older of two facilities at Fayetteville, North Carolina.

Monsanto reached agreement in principle to sell certain assets related to polyester filament to Fiber Industries, Inc. (FII), a subsidiary of Celanese Corporation. Under the agreement FII would pay Monsanto \$30 million for the assets, including the newer plant at Fayetteville, plus up to \$8 million more to ensure the continuation for one year of the research to develop Monsanto's new in-line texturing technology. The agreement also provides for potential future payments for technology and patent rights.

In conjunction with the shutdown of the plants, the Company will cease marketing

Bidim engineering fabric made of polyester filament.

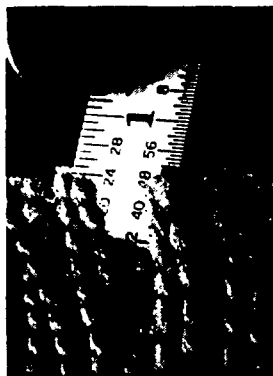
Monsanto Textiles Company performance was affected negatively by several major factors in addition to the write-off related to polyester filament. Depressed selling prices together with weak demand through the year resulted in unacceptable polyester filament losses.

Excess capacity and soft demand in the European acrylic fiber markets kept acrylic fiber operations there in a loss position. Monsanto has a strong raw material base in Europe plus excellent technology. During the year, two acrylic producers withdrew from the European market, and further rationalization is probable.

The downturn in the U.S. housing market also cut into demand for nylon used in carpets. Despite this, carpets of *Ultron* nylon in the first year of Monsanto's program for *Wear-Dated* carpets retained sales volume, in large part due to the strength of this consumer warranty program. Retailers have called this program the best sales-closing tool ever for carpets.

Late in the year, the operating company introduced *Ultron* Z nylon, a fiber with advanced soil-shedding characteristics for easy cleaning. In the fourth quarter, demand and pricing for carpet nylon improved dramatically.

U.S. sales of *Acrilan* acrylic fiber, including U.S. exports, remained strong. Monsanto strengthened its acrylic product line in 1980 with the introduction of two new bicomponent products—*Pa-Qel* acrylic for the apparel market and *Remember* acrylic for the handcraft yarn market. Acrylic pricing in the United States improved in January, 1981.



Left: Carpet pile of new *Ultron* Z nylon provides the consumer with the most advanced soil-shedding characteristics for easy cleaning.

Center: Monsanto carpet technical service representatives work closely with customers to ensure quality end products.

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Fisher Controls

	Sales	Operating Income	Total Assets
1980	\$593.1	\$71.9	\$412.8
1979	496.7	44.4	353.3
1978	284.2	37.0	202.5
1977	263.5	37.9	181.7
1976	210.8	24.3	148.6

Fisher Controls' totals for 1980 and 1979 reflect the operations of a new subsidiary, Fisher Controls International, Inc., formed by Monsanto and The General Electric Company Limited of the United Kingdom. Totals for 1978 and prior years reflect the operations of Monsanto's then existing wholly owned subsidiary, Fisher Controls Company, Inc.

Fisher Controls International, Inc., recorded strong North American sales of control valves and instrumentation in 1980 despite the economy. New orders and production of industrial process controls were also at record levels in North America.

Somewhat offsetting U.S. progress were weak European product demand and closure of Fisher's Brazilian manufacturing plant and three small European facilities.

Fisher Controls is a leading supplier of instrumentation equipment and systems, control valves and regulators. These

products are used broadly throughout the chemical, petrochemical, power, paper, metal processing, and oil and gas industries.

Fisher control room instrumentation provides computer technology to control manufacturing processes. In mid-year, Fisher introduced *PROVOX* instrumentation, a major new family of digital process control systems. The new instrumentation, which uses microcomputer technology in controlling process variables for optimum production, was demonstrated at international trade exhibitions.

Fisher also introduced a high performance pressure controller to its line of pneumatic instruments, which measure process variables in the field.

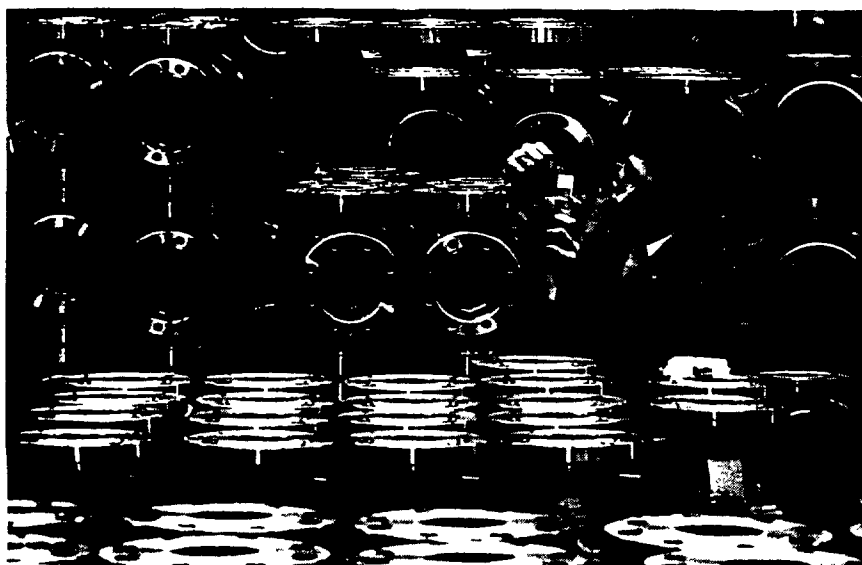
Fisher's control valve products are used in a wide variety of process control applications—from low pressure gases to critical service in cryogenic, high temperature, ultra-high pressure, toxic or radioactive fluid systems.

Two new control valve lines were introduced during 1980. High performance rotary control valves broaden the line of products for general service applications. A new family of high pressure globe-type valves was designed for high technology markets, where severe service requires valves that can withstand elevated temperatures, high pressures and erosive flow.

Fisher Controls employs over 10,000 people at 45 manufacturing and service centers in 11 countries. Sales offices staffed by engineers with extensive experience in selecting and applying control products and control technology are located in principal cities of the world.

Research and Innovation

Financial Report



Fisher control valve components are prepared for assembly. Globe and rotary valves serve the process and energy industries, in service from mild to severe conditions such as cryogenic, high temperature or high pressure.

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International

Monsanto International posted another sales record for 1980. Consolidated sales outside of the United States, including U.S. exports, were \$2.601 billion and represented 40 percent of Monsanto's total net sales. Export sales from U.S. manufacturing locations, continuing a strong contribution to international sales, reached a high of \$1.026 billion.

Consolidated international operating income, including operating profits from U.S. exports and the Company's share of net income from overseas affiliates, was \$151 million—a 4 percent decrease from 1979 and equivalent to 67 percent of total corporate operating profit.

In spite of deteriorating economic conditions in major world markets, underlying product strengths led to an international sales increase of 10 percent. Major contributors include agricultural chemicals, particularly *Roundup* herbicide, increased exports to Asia-Pacific markets and solid growth in Brazil.

In the Europe-Africa area, sales were \$1.431 billion, a 6 percent increase over 1979. Consolidated operating income of \$25 million was negatively affected by a \$66 million pretax charge associated with the withdrawal from the Spanish subsidiary, Aiscondel, which eliminates a significant drain on future earnings.

Demand for herbicides achieved record levels in 1980. Deliveries of *Roundup* herbicide from the new fully integrated plant at Antwerp began during 1980.

Sales of *Saflex* interlayer for laminated safety glass reached record levels, with a significant expansion in architectural applications. Production of *Butvar* resin, the principal raw material for *Saflex*, is to be expanded at the Antwerp plant by 45 percent.

In the Canada-Latin America area, sales increased by 11 percent to \$649 million, generating \$79 million in operating income. Continued strong U.S. export sales there, significant sales growth in Brazil, and income from affiliated companies were major contributors.

Two new plants completed their first full year of operation in Brazil, one producing *Roundup*, *Lasso* and *Machete* herbicides, the other for *Santicizer* 160 plasticizer. Monsanto also plans to build a new polystyrene plant in Brazil, with start-up scheduled for 1982.

In Mexico, the joint venture IRSA, 39 percent owned by Monsanto, continued strong growth.

The Asia-Pacific area continues to produce the most rapid growth, with 1980 sales of \$521 million, a 23 percent increase over 1979. Consolidated operating income was \$47 million.

Significantly expanded U.S. exports to Japan, Korea, Singapore, Malaysia and the People's Republic of China contributed to the gain in sales. Demand increased for herbicides, chemical intermediates, plastics and fibers, although profit margins were trimmed by escalating raw material and distribution costs.

In New Zealand, Monsanto Australia Ltd. expanded its manufacturing position by acquiring a 65 percent interest in Revertex Industries (NZ) Ltd., a producer of industrial resins and chemicals.



Agricultural research at the Monsanto laboratory in Louvain-la-Neuve, Belgium, is carried out in a regulated environment with temperature, light and moisture controlled by computer.

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Social Responsibility

In Mississauga, Ontario, a Monsanto employee led a local drive to build a special hospital burn center; Ruabon plant management established an emergency planning program with village officials in North Wales; Australian employees taught underprivileged youth in Sydney how to build and repair boats.

In a variety of ways every day, Monsanto employees reach out to their communities. Similarly, the Company itself demonstrates social responsibility in its commitment to the health, safety and fulfillment of our employees, to the satisfaction of our customers and the well-being of our home communities.

This philosophy takes traditional and newer forms of corporate responsibility, the most visible being contributions. Monsanto and its philanthropic arm, the Monsanto Fund, in 1980 gave a total of more than \$7.2 million to health, welfare, educational, cultural, youth and civic or community organizations. That equates to 1.4 percent of the average annual pre-tax earnings for the 1977-1979 period.

During 1980, the Fund program matched \$300,000 in employee contributions to educational and cultural organizations and hospitals. Total contributions by Monsanto Fund and employees to United Way organizations amounted to more than \$4.2 million.

(The Company will furnish to shareowners upon request a report of the contributions made during 1980 by the Monsanto Fund, listing the names of donees and the amount contributed to each organization.)

Another vital measure of social responsibility is a company's attitude toward safety of its employees, customers and communities.

Safety in the workplace was emphasized again during 1980, and 140 Monsanto locations worldwide were cited by management for improved safety records. Monsanto's safety record is one of the best in an industry that is historically one of the safest in the United States.

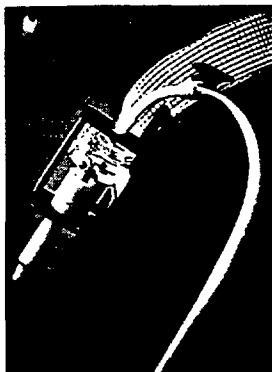
Environmental and Worker Health

During 1980, environmental and health protection continued to become more and more an integral part of the way the Company does business, rather than an extraordinary expense. Stewardship for the protection of human health and the environment is shared by corporate organizations dedicated to these purposes and by all of the operating, research, and major supporting staff units.

The 1980 worldwide capital and operating expenditure of about \$251 million for health and environmental protection was largely caused by compliance with laws and regulations at all levels of government. Nearly 900 employees work full-time to deal with workplace and product safety issues.

Working with trade associations and other companies, Monsanto was able to influence many proposed laws and regulations to ensure their prudent effectiveness.

A computerized Medical and Environmental Health Information (MEHI) system, brought on-line in 1980, provides data about materials, workplace exposures, and worker medical and employment histories. This information—contained in the largest such system in industry—is invaluable in main-



Left: An air sampling device is worn by an employee to monitor air quality.



Center: A Monsanto Fund grant has been approved for the National Humanities Center in North Carolina, an institute for advanced cultural studies.

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taining and documenting workplace safety.

Similar large-scale efforts were begun in 1980 in the areas of waste treatment and disposal, and in auditing environmental protection at plants. Gains were made in activating several major plant antipollution facilities and in protecting important products.

In recent years, changes in availability and cost of energy have spurred new efforts on energy conservation and more energy-efficient manufacturing processes. While these are primarily cost-reduction steps, they also provide a clear benefit for society.

The economic downturn of 1980 reduced production rates at U.S. plants, lowering levels of energy efficiency. However, Monsanto plants worldwide achieved a 21 percent reduction in energy consumption, compared to the pre-oil embargo base year of 1972, and saved \$141 million in energy costs. The corporation's 1985 goal is a 35 percent reduction with projected annual fuel savings of more than \$300 million.

Difficult business decisions in 1980 brought other challenges to the social aspects of the Company's operations. Employee layoffs caused by the decision to leave the polyester filament business activated a Company-wide program to assist affected individuals. The impact was eased through placement of employees in other jobs within Monsanto where possible, employment counseling services, and cooperative efforts with state employment commissions and other employers in the areas. In some cases, the Company provided educational training where employment opportunities redirected an individual's career path. Within a month, a large percentage of the affected employees were placed in new assignments.

Monsanto's commitment to employee fulfillment is reflected in an emphasis on advancement opportunities for minorities and females. In 1980, minorities and women made up 8.6 percent of Monsanto's management employees and 19.6 percent of all professional employees. Significantly, minorities and women now hold 3.4 percent of the top 3,000 jobs in the Company — compared to only 0.6 percent in 1976.

The Company gave vivid expression to its policy of doing business with minority-owned firms. In 1980 purchases from these firms totaled more than \$27 million. Deposits of more than \$41 million were maintained in minority-owned banks. During the year, Monsanto signed a contract with the nation's largest minority-owned insurer for the reinsurance of \$61 million in coverage.

An important way employees contribute to the governmental process is through the Monsanto Citizenship Fund, a voluntary political action committee formed in 1976.

Contributors to the Fund can ear-mark their contributions to individual political candidates or allow the contributions committee of the Fund to select the candidates to be supported. A separate Monsanto Florida Citizenship Fund has been created by employees in that state, to support Florida state and local candidates.

(More information on the Citizenship Fund is available through the Corporate Governmental Affairs Department in St. Louis.)

Through its concern about employees, and its concern for the total environment, Monsanto strives to reflect a philosophy of both an economic and social commitment to the world in which we live.



Left: Monitoring the workplace environment at Monsanto includes plant noise measurement.

Right: Hollow fiber bundles undergo testing in St. Louis. Research is aimed at further defining applications based on proprietary technology.

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Research and Innovation

Financial Report

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Commitment to Tomorrow:

Research and Innovation



Above: A developmental "liquid crystalline" polymer produces molded parts with grainy structures which resemble wood more than plastic.

Left: Hollow fiber research, at Monsanto's research center in North Carolina, builds on the early success of *Prism* separators for industrial gases and explores other potential applications.

The first employee ever hired by Monsanto was Dr. Louis Veillon, a chemist. Eighty years ago he helped plan, engineer and build the Company's first plant, and established Monsanto as a technology-based company. His successors in 1981 face very different challenges, but their work will shape the Company's future no less decisively.

This report reflects our determination to maintain the R&D momentum that will generate the new products and processes of that future.

Support for Innovation

The Company's R&D expenditures rose 19 percent in 1979 to a record \$161 million, another 27 percent in 1980 to \$204 million, and will increase this year to approximately \$230 million.

Representative of this commitment was the 1980 completion of a new research building in St. Louis to house agricultural research and the Molecular Biology Center. It represents a 30 percent increase in research space at the site.

Monsanto's attitude toward innovation includes funding that emphasizes longer-term opportunities, technology objectives designed to encourage a spirit of scientific adventure, and the development of attractive career and incentive plans for its technical community.

Recognition is important to innovative scientists and engineers. The Company's Fellow Program, which has evolved since the late 1940s, recognizes the contributions of those who choose scientific and engineering careers rather than management positions.

During 1980 Monsanto established two awards to acknowledge publicly outstanding technical achievements of employees. The Edgar M. Queeny Award, named for the former chairman, will be given for the development of significant, proprietary technology.

The award carries a \$50,000 prize. The Dr. Charles Allen Thomas/Dr. Carroll Hochwalt Award, named for former officers and leaders in Monsanto's scientific research, will recognize a fundamental contribution in science or engineering. It carries a \$25,000 prize.

Today's Research Directions

Monsanto's growth and profitability depend in large measure on its technological options and choices for new directions.

Selectivity is one key to a successful R&D program: Identify the right targets and provide the major resources needed for technological leadership. Another key is interdisciplinary cooperation: Chemists must work with biologists, engineers, computer scientists, and many other disciplines to ensure that Monsanto's technology is "out front" in its chosen areas.

Monsanto has built up successful research teams in a number of specific areas of technology that are crucial today and will be decisive in the future. We also have identified a select number of new fields of technology that offer exceptionally attractive business opportunities. Our technological efforts will focus on four main areas:

1. Traditional areas of strength, such as chemical engineering systems, catalysis, polymer science and agricultural chemistry.
2. New materials and systems, such as electronic materials and membrane separations.
3. Life sciences, including plant biology, animal nutrition, molecular biology and biotechnology.
4. Alternate feedstocks to replace oil and gas.

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Traditional Strengths

The past year was one of important progress, particularly in support of current products.

Proprietary Monsanto technology for the manufacture of maleic anhydride uses butane as a feedstock instead of benzene. Butane is a plentiful co-product of natural gas production; it offers advantages in raw material cost and availability, and is faced with fewer environmental questions.

Support of agricultural products extends worldwide, with a new laboratory in Brazil nearing completion and the laboratory in Belgium scheduled for expansion.

In St. Louis, one focus of corporate research is on new ways to manufacture existing and future products. Exploratory catalysis research uses the latest equipment including laboratory-scale reactors controlled by microprocessors. Research teams have made extensive use of a novel metal atom reactor which facilitates the design of new catalysts.

New Materials and Systems

New technologies are being explored in silicon production. We have devised and put in place automated production and have greatly enhanced quality. We are also probing wholly new ways to produce electronic grade silicon.

Monsanto's *Prism* separators, which made a commercial debut in 1979, use bundles of hollow fibers to remove hydrogen selectively from process or waste gas streams. Extensions of this technology to other industrial gas separations are under active investigation.

New materials research includes work on phenolic foam board products to respond to fire safety and dimensional stability concerns. New thermoplastic rubber products, now in customer testing, appear to offer cost and performance advantages in industrial rubber applications.



Above: Fundamental exploration is underway to determine new ways to control pests, based on basic science.

Left: Monsanto researchers conduct basic studies in plant photosynthesis to better understand the processes which contribute to improved crop yields.

Right: With cell biology techniques, researchers seek to modify major plant species in an effort to improve crop yields and quality.

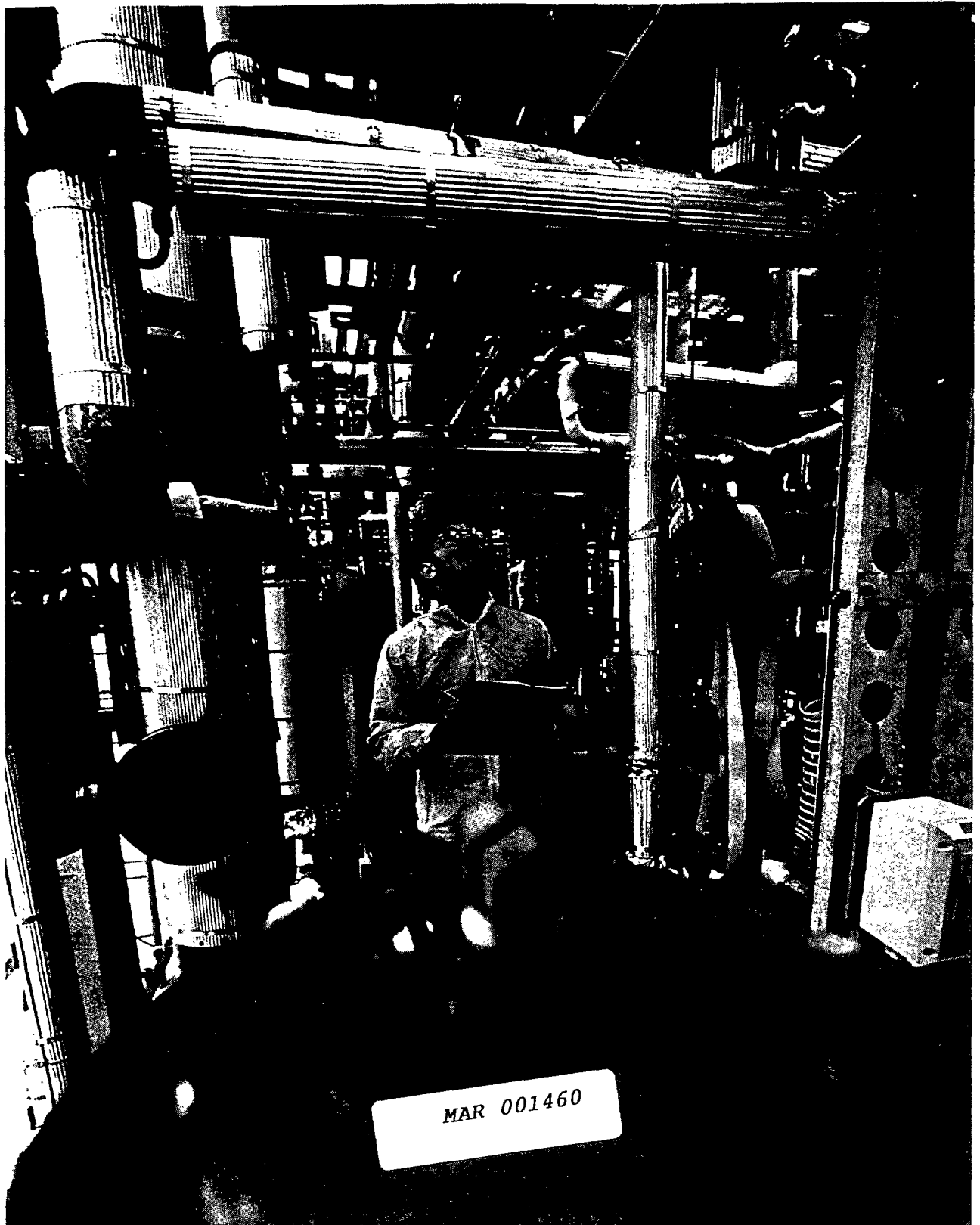
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The field of biochemistry—
the chemistry of living cells—
represents perhaps the
most significant new research
direction for Monsanto.

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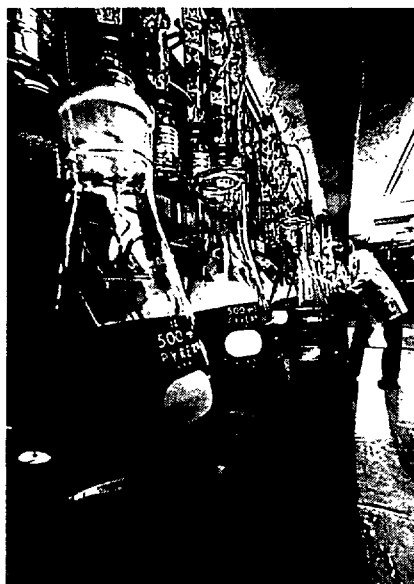
Monsanto's growth and profitability depend in large measure on its technological options and choices for new directions.

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Above: Test laminates with *Saflex* are prepared at Monsanto's research laboratory in Belgium. Further growth of automotive use of *Saflex* is expected in markets outside the United States.

Right: At Monsanto Textiles Company's Decatur Technical Center, a technician monitors fiber testing.



Left: Process data are recorded at Monsanto's maleic anhydride unit in St. Louis. The new butane process is incorporated in a plant under construction in Florida.

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Life Sciences

Agricultural research has provided new proprietary herbicide candidates, which are in tests leading toward commercialization. These new products show excellent potential for selective preemergence control of annual and perennial weeds in important crops.

Studies continue to evaluate possible plant growth regulator chemicals, which would increase the yield of crops under a wide range of environmental conditions. In addition, exploratory research is underway on novel ways of decreasing the impact of pests.

We are making efforts to extend our other businesses that relate to food and nutrition and have greatly increased research in nutritional chemicals. A major target is enhanced feed efficiency in animals: more meat from less grain in less time at lower cost.

The field of biochemistry—the chemistry of living cells—represents perhaps the most significant new research direction for Monsanto.

The next decade will see a major thrust by Monsanto aimed at the development of biological products or products made by biological action.

Biochemistry will provide solutions to many of society's problems in areas such as nutrition and health. Possible products include novel animal feed supplements and various means to improve yields of important crops. Work will also involve "bioprocess development"—including the use of recombinant DNA techniques and fermentation to develop low cost and environmentally attractive methods for producing chemicals. Several projects are already underway.

While we have been involved in a range of molecular biology activities in recent years—including recombinant DNA research through investments in new companies in this field—Monsanto in 1979 formal-

ized commitment to this area by establishing a Molecular Biology Center. Staffing of this Center is underway to create a major new skill base in molecular biology.

This new corporate research thrust is being coordinated with the Company's researchers in Agricultural Products, Chemical Intermediates and Nutrition Chemicals.

Alternate Feedstocks

Today more than 80 percent of Monsanto's product line depends on hydrocarbons derived from oil and gas. During the next 20 years, gas produced from coal will become an important feedstock, replacing traditional petrochemicals in many processes. This period of transition to new kinds of raw materials provides attractive opportunities to devise new synthetic routes to important chemicals. Monsanto pioneered the use of carbon monoxide as a feedstock in our acetic acid process, which reached commercial production in 1970. Monsanto will build on this skill base in catalysis and process engineering to create new methods to synthesize key chemicals from the products of coal gasification and liquefaction.

New Opportunities

Monsanto's New Ventures Group seeks new opportunities outside the chartered areas of the operating companies by acquisitions.

In 1980 Monsanto acquired Radiation Dynamics, the leading producer of electron beam processing equipment. This technology is now used to heat-shrink food wrap, cure

tire components and sterilize medical supplies. We believe it has considerable additional potential.

In 1980, Monsanto also acquired approximately a 30 percent interest in Collagen Corporation. The company's name comes from collagen, the main protein building block of skin, bone and other tissues. Collagen Corporation has developed proprietary methods of processing and purifying this protein from animals to replace lost or defective tissue in humans.

Monsanto purchased a \$20 million interest in Biogen, a genetic engineering company. Biogen is known for using recombinant DNA techniques to produce interferon, an antiviral agent.

The New Ventures group also oversees Monsanto's venture capital effort, which takes investment positions in new areas of technology.

In addition, Monsanto has established joint research programs with major groups in selected universities. This combination of two great resources—Monsanto skills in applied science and university skills in selected areas of chemistry, chemical engineering, physics, biology and medicine—should prove to be a productive partnership.

Innovation—the National Climate

Monsanto regards innovation as vital not only for the Company's future success, but also the economic vitality of entire countries.

As an American-based multinational corporation, Monsanto is concerned about the decline in U.S. industrial R&D.

Monsanto believes there is an opportunity for a national effort to improve capital investment by restructuring U.S. tax policies, and to provide greater incentives for R&D by revisions in the patent system.

The motivation for undertaking costly programs of high-risk R&D is the profit potential inherent in the protection afforded by patents. Unfortunately, developments over the last several decades have eroded the traditional rights of patent holders.

For example, product registration, characterized by lengthy pre-market testing and regulatory review, has effectively reduced the patent term well below the 17 years intended. A U.S. Environmental Protection Agency study estimates the commercially usable patent term for a new pesticide may be effectively reduced to about 12 years by the time the product is approved for marketing. The industry estimates the usable patent life of a new pesticide can be as short as 8 to 10 years.

As one step to return the patent system to its position as a major incentive for innovation, Monsanto believes the term of patent protection for regulated products and their uses should be extended to restore the years of patent life lost in the review process.

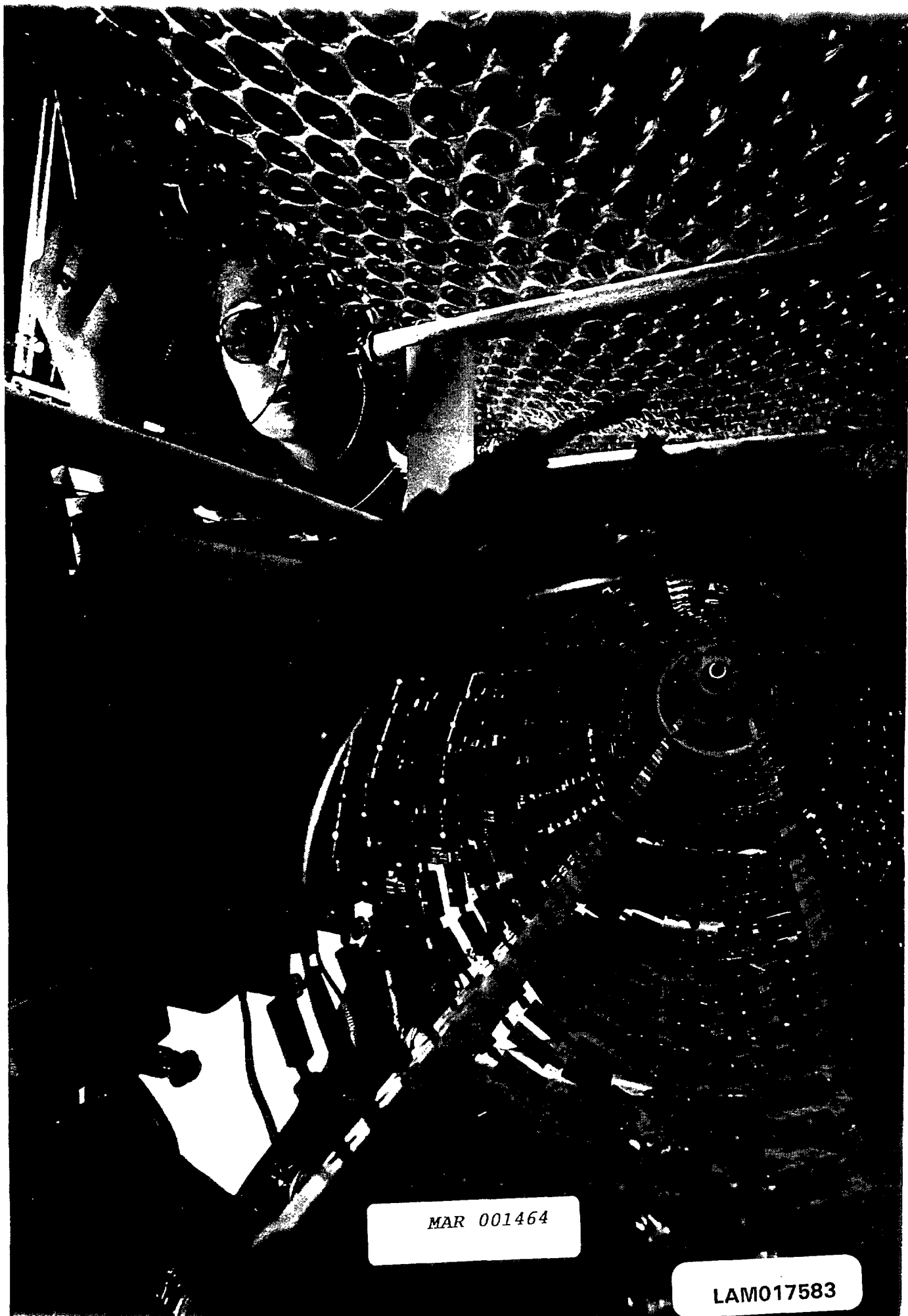
With steps such as this, the climate for innovation in the United States can be enhanced if there is a complementary impetus for innovation within individual companies. This is the challenge to industrial corporations.

Through Monsanto's commitment to research and its healthy climate for innovation, the Company should be well served in the ninth and tenth decades of its history. ■

Right: Process science research uses this metal atom reactor in an exploratory program seeking novel ways to synthesize catalysts.

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Left: These solid-state machines accelerate electrons to several million volts. Made by Radiation Dynamics, which became a Monsanto subsidiary in 1980, they are used to irradiate a variety of products.

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Responsibilities for Financial Data

Management Report

Monsanto Company management is responsible for the integrity of all financial data, whether audited or unaudited, included in this Annual Report. The consolidated financial statements have been prepared in accordance with generally accepted accounting principles consistently applied in all material respects, except where otherwise noted, and reflect necessary estimates by management. Where acceptable alternative accounting principles exist, as described in the Summary of Significant Accounting Policies on page 50, management has used its best judgment in selecting those principles that, in the circumstances, reflect fairly the consolidated financial position, results of operations and changes in financial position of Monsanto. All financial information in this Annual Report is consistent with that in the consolidated financial statements.

The management of Monsanto is responsible for establishing and maintaining a system of internal accounting control. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of control procedures. The objectives of a system are to provide management with reasonable, but not absolute, assurance that assets are safeguarded against loss from unauthorized use or disposition, and that transactions are executed in accordance with management's authorization and recorded properly to permit the preparation of financial statements in accordance with generally accepted accounting principles.

Because of inherent limitations in any system of internal accounting control, errors or irregularities may occur and not be detected. Also, projection of any evaluation of the system to future periods is subject to the risk that procedures may become inadequate because of changes in conditions, or that the degree of compliance with the procedures may deteriorate.

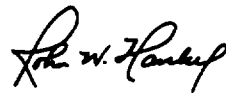
However, management believes that the continuing viability of Monsanto's internal accounting controls is maintained by: (1) the selection and training of personnel; (2) a division of responsibility in all organizational arrangements; (3) the establishment and communication of accounting and business policies; and (4) a program of internal audits with follow-up, when necessary, by management. Management further believes that Monsanto's internal accounting controls provide reasonable assurance that assets are safeguarded against material loss from unauthorized use or disposition, that transactions are executed with proper authorization and that the financial records are reliable for preparing financial statements and other

data and maintaining accountability for assets.

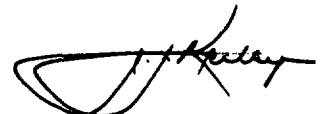
As ratified by shareowner vote at the 1980 Annual Meeting, Deloitte Haskins & Sells, an international firm of independent auditors, examined the consolidated financial statements contained in this Annual Report. Their examination was made in accordance with generally accepted auditing standards, which provide for limited tests of the accounting records and other auditing procedures. The principal result of this examination is the expression of an opinion, which appears on page 65, as to the fairness of the presentation of the consolidated financial statements in accordance with generally accepted accounting principles.

At management's request, Deloitte Haskins & Sells also performed a study and evaluation of the system of internal accounting control of Monsanto Company and its United States subsidiaries in effect during the year ended December 31, 1980, for the purpose of expressing an opinion, on the system. This opinion is found on page 65.

The Audit Committee of the Board of Directors is responsible for reviewing and monitoring Monsanto's internal controls, financial reports and accounting practices. The membership of the Committee consists of four non-employee directors. At periodic meetings, the Committee discusses audit and financial reporting matters with representatives of financial management, the internal audit function and Deloitte Haskins & Sells. The independent auditors and the director of the internal audit function have full and free access to meet with the Audit Committee—with or without the presence of management representatives—to discuss the results of their examinations, the adequacy of internal accounting controls and the quality of financial reporting.



John W. Hanley
Chairman of the Board
and Chief Executive
Officer



James J. Kerley
Chairman of the Finance
Committee
(Chief Financial Officer)

February 23, 1981

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Financial Review

(Dollars in millions, except per share)

Description of the Business

Monsanto Company was incorporated in 1933 under Delaware law and is the successor to a Missouri corporation, Monsanto Chemical Works, organized in 1901. The Company is a multinational corporation engaged directly and through subsidiaries in the manufacture and sale of a widely diversified line of chemicals, plastics, fibers and other products derived principally from petroleum and natural gas, along with other raw materials. Monsanto chemicals, plastics and fibers are marketed as raw materials and intermediate products, and also are converted by Monsanto into finished products. Within Monsanto there are five operating units and Fisher Controls International, Inc., a two-thirds owned subsidiary. The five operating units are Monsanto Agricultural Products Company, Monsanto Chemical Intermediates Company, Monsanto Industrial Chemicals Company, Monsanto Plastics & Resins Company, and Monsanto Textiles Company.

Certain major chemicals, such as acrylonitrile, styrene monomer, nylon salt, phosphorus and phenol are used by several Monsanto operating units as intermediate "building block" materials. To control process development and reduce manufacturing costs, the Chemical Intermediates Company is responsible for the management of the manufacturing operations related to most of these materials. However, each operating unit that uses the "building block" chemicals in the manufacture of end products is considered as if it were the joint owner of the manufacturing facilities and shares the product manufacturing costs and investments based on its

annual production commitment. Each operating unit's share of these costs and investments is reflected as part of its respective financial data.

Economics of Major Markets

The demand for Monsanto's products comes from many sectors of the economies served by the Company. Monsanto sells little of its product directly to end-users. Generally, the Company supplies materials to other industries which, in turn, manufacture the end products identifiable to the consumer. Monsanto's consolidated sales—as a percentage by end-use industries served—are shown in the following table.

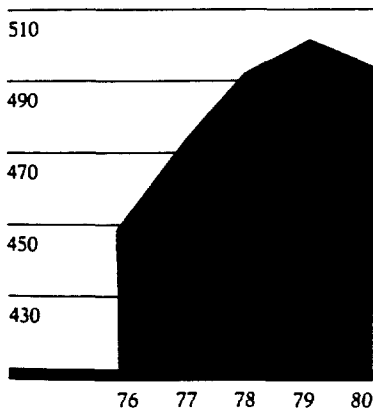
Sales Percentage By End-Use Industry Served

	1980	1979	1978
Agriculture	17%	14%	15%
Construction & equipment	13	14	13
Motor vehicles	11	13	16
Apparel	11	11	11
Chemical industry	8	7	4
Carpets and home furnishings.....	7	8	8
Pharmaceuticals, soaps & toiletries.....	7	8	7
Appliances, furniture & fixtures	5	5	6
Packaging.....	6	6	4
Other.....	15	14	16
	<u>100%</u>	<u>100%</u>	<u>100%</u>

Because Monsanto supplies materials to a wide variety of industries, the demand for its products is influenced by growth trends in a number of end-use markets. The accompanying charts depict the growth trends in several of these end-use markets in the United States, as well as the trends in U.S. chemical

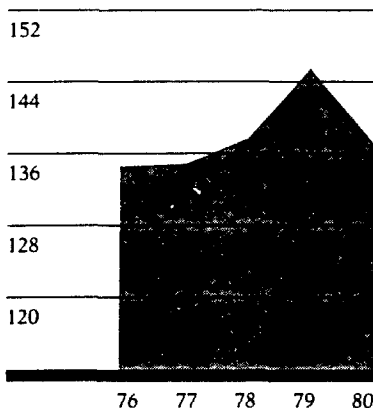
Consumer Spending on Goods

billions of 1972 dollars



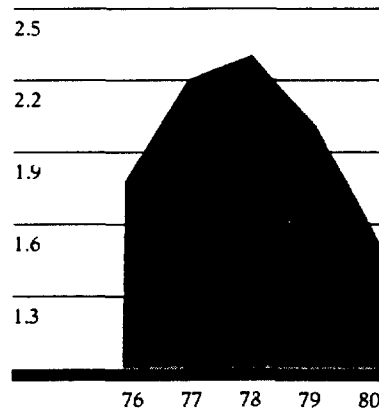
Textile Mill Production

year 1967 = 100



Total New Housing Units

millions of units



production and industrial production of major world areas of particular interest to Monsanto.

World economic growth in 1980 was characterized by a sharp cyclical downturn experienced in most industrial countries. This recession was due to restrictive economic policies enacted in late 1979 and 1980 to slow down accelerating rates of inflation caused partly by rising energy prices. The basic industries were particularly hard hit reflecting the drop in motor vehicle sales and construction. Several developing countries (e.g., Mexico and Brazil), however, continued to experience relatively strong growth but at the expense of higher rates of inflation.

In the U.S., consumer markets of importance to Monsanto weakened significantly, particularly the durable goods sector. Growth in real (inflation-adjusted) consumer spending for all goods declined 1.6 percent in 1980—with durable goods spending (automobiles, appliances, etc.) falling 7.5 percent. Real expenditures on nondurables (clothing, drugs, cosmetics, etc.) rose only 0.8 percent, the lowest advance since the 1974-75 recession.

For 1980, motor vehicles sales—automobiles and trucks—declined 2.7 million units or 18.9 percent from 1979. Record high interest rates, erosion of consumer purchasing power, and higher operating costs and prices contributed to the deterioration of this market. The situation was exacerbated for U.S. automobile producers by the continued growth of market share of ex-U.S. manufacturers offering fuel-efficient cars. However, the emphasis on lighter cars is creating new opportunities for lightweight materials, such as plastics.

The housing sector, another key market, also experienced a precipitous fall-off in 1980 with conventional and manufactured units down 25 percent or 500,000 units. The decline can be primarily attributed to record high mortgage and interest rates and reduced savings flows to financial institutions.

The underlying demographic and investment factors remain strong, and the housing industry is expected to recover as interest rates recede.

The squeeze on consumer income and anxiety concerning interest rates and the recession also contributed to a decline, in real terms, in furniture, appliance and furnishing purchases. However, food and clothing sales rose modestly in 1980 as consumers channeled a larger portion of their discretionary income toward "lower ticket" items.

Nonresidential investment (i.e., business construction and equipment) was depressed in 1980, falling 3.4 percent after four solid years of growth. Higher borrowing costs and a deteriorating economy contributed to the decline. This sector of the economy is expected to record strong growth in the 1980's, providing increasing demand for various Monsanto products.

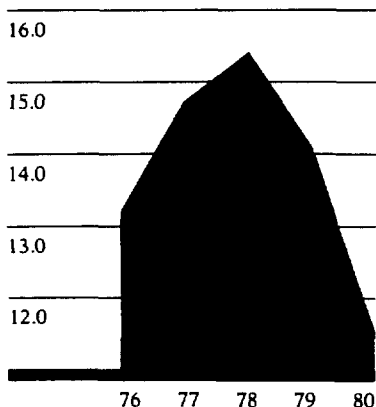
As a result of the general weakness in the domestic and export markets and the need to keep inventories lean, textile mill industry production declined 5.5 percent in 1980. Industry-wide chemical and synthetic materials production fell by 5.3 percent—after four years of strong growth.

The agricultural sector is relatively independent of general economic fluctuations and continues to provide strong demand for Monsanto herbicide products. Combined acres planted of corn and soybeans (crops historically most important to Monsanto) increased to record levels in 1980. Efforts to improve agricultural production will also continue world-wide, providing a growing market for agricultural chemicals.

In areas outside the U.S. of importance to Monsanto, growth generally weakened during 1980, especially in the second and third quarters. These declines were in sharp contrast to strong growth of the prior year. Western European and Canadian industrial production is estimated to have declined

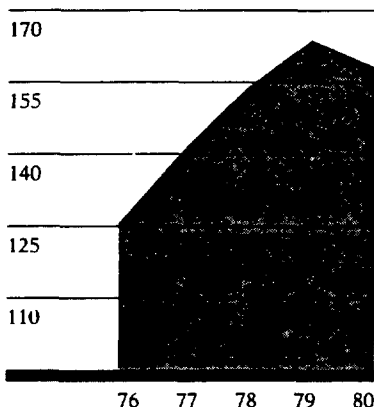
New Motor Vehicle Sales

millions of units



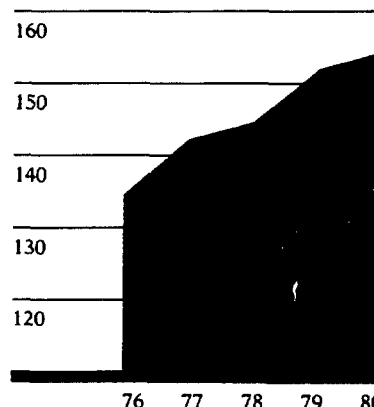
Nonresidential Investment

billions of 1972 dollars



Corn and Soybean Acres

millions of acres



in 1980, while Japan's industrial output rose an estimated 7.5 percent in 1980. Industrial activity accelerated in Brazil, and Mexico continued to benefit from oil wealth. Overall, the 1980 recession can be characterized as a transition year—as governments attempted to control inflation through restrictive economic policies. The world economy is expected to remain relatively weak during early 1981, but to resume growth to a more stable path in the latter half of the year.

Review of the Results of Operations

The following discussion reviews Monsanto's results of operations for 1980 vs. 1979 and 1979 vs. 1978. A discussion of the effects of inflation on Monsanto begins on page 43.

Consolidated Sales, Net Income and Earnings per Share

	1980	1979	1978
Net sales	\$6,573.6	\$6,192.6	\$5,018.7
Net income	148.8	331.0	302.6
Earnings per share:			
Primary	4.10	9.11	8.29
Fully diluted	4.06	9.03	8.21

1980 vs. 1979. Sales for 1980 reached \$6.574 billion, a 6.2 percent increase over 1979. This increase was principally driven by higher selling prices, as physical volumes for 1980 declined 5.6 percent from 1979 levels. Recessionary factors in the U.S. and in Europe were the primary reasons for the decline in sales volumes. Declining demand from two of Monsanto's largest customer industries—automotive and housing—impacted the results of Monsanto's petrochemicals, industrial chemicals, plastics and man-made fibers businesses. In contrast, 1980 volume gains were recorded from agricultural products and the Fisher Controls subsidiary.

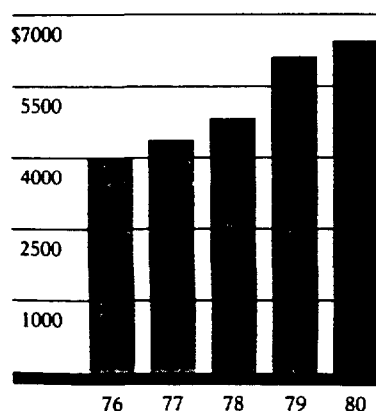
Net income for 1980 was \$148.8 million compared

with net income of \$331.0 million for 1979. The lower net income reflected the sensitivity of chemical industry profits to physical volumes. In addition, two major unusual factors occurring in the fourth quarter of 1980 significantly impacted the decline. The Company decided to terminate all of its interests in Aiscondel, S.A., a two-thirds owned Spanish plastics subsidiary. This decision resulted in a charge of \$38.7 million or a penalty of \$1.07 per primary share. The Company also withdrew from the polyester filament business, incurring a charge of \$69.0 million, \$1.90 per primary share. Both Aiscondel, S.A., and the polyester filament business have experienced losses from operations in recent years.

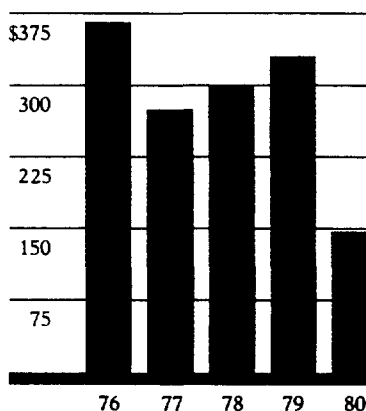
Prior to these unusual factors, Monsanto's earnings for 1980 would have been \$7.07 per primary share, a decline of 33.2 percent from 1979 earnings of \$10.58 per primary share as adjusted for writeoffs of \$1.47 per primary share from the withdrawal from European nylon operations and certain ex-U.S. plastics businesses in that year. The disappointing results for 1980 were due in large part to recessionary conditions in the U.S. and Europe. In response to these conditions, and beginning early in 1980, Monsanto launched a program to improve profitability and to conserve working capital. While this program was successful overall, it did have the effect of reducing earnings as the Company absorbed idle capacity costs significantly higher in 1980 than had been experienced in 1979. In addition, the chemical industry in general, and Monsanto in particular, was unable to raise prices sufficiently to offset higher raw material and other costs. Gross profit margins declined from 22.1 percent in 1979 to 19.6 percent in 1980, excluding the unusual factors for both years discussed above.

A change in accounting for interest costs—as required by a new Financial Accounting Standards Board Statement—had a positive effect on 1980 profitability. In 1979 and prior years, all interest

Net Sales



Net Income



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costs were charged to expense as incurred. In 1980, Monsanto capitalized \$51.6 million of interest costs that relate to financing construction-in-progress expenditures. As a result, net income was increased \$27.5 million, or \$0.76 per primary share. The required capitalization of interest costs moderated the earnings impact of a significant increase in interest costs incurred—from \$123.3 million in 1979 to \$163.4 million in 1980. These costs were driven principally by the issuance of commercial paper, the relatively high interest rates in 1980 and additional financing costs associated with the Aiscondel, S.A. subsidiary.

Analysis of Change in Primary Earnings per Share

	Increase (Decrease) in Primary Earnings per Share	
	1980 vs. 1979	1979 vs. 1978
Operating Income:		
Selling prices	\$13.86	\$ 9.18
Sales volume and product mix	(3.85)	3.15
Raw material prices	(5.27)	(8.02)
Other manufacturing costs	(5.87)	(2.74)
Shutdown costs	(1.50)	(1.67)
Start-up costs	(0.46)	(0.10)
Nonmanufacturing expenses	(2.15)	(1.88)
Decrease in operating income	<u>\$ (5.24)</u>	<u>\$(2.08)</u>
Other Causes:		
Interest costs incurred	\$ (0.54)	\$(0.30)
Interest costs capitalized	0.76	—
Other income credits—net	(0.19)	1.01
Effective tax rate	0.20	2.15
Shares outstanding	—	0.04
Increase from other causes	<u>\$ 0.23</u>	<u>\$ 2.90</u>
Net increase (decrease)	<u>\$ (5.01)</u>	<u>\$ 0.82</u>

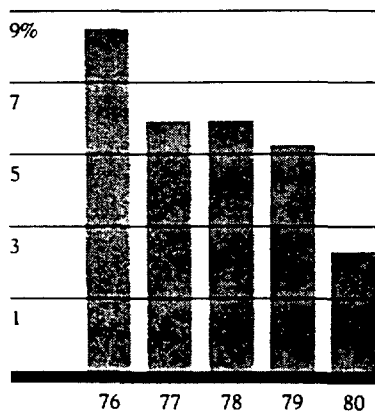
Other nonoperating factors influence a comparison of 1980 results with the prior year's. Interest income in 1980 was \$36.4 million, down sharply from \$63.6 million of interest income in 1979. In 1980, there were foreign currency translation and transaction gains of \$1.2 million, net of taxes, as compared with losses of \$32.1 million, net of taxes, in 1979. The effective tax rate was 27.7 percent for 1980 as contrasted to 31.2 percent for 1979, primarily reflecting higher investment tax credits.

1979 vs. 1978. For 1979, Monsanto's consolidated sales were \$6.193 billion—a 23.4 percent increase over 1978 sales of \$5.019 billion. The revenue gain includes the first full-year results of two partially owned subsidiaries—Aiscondel, S.A., and Fisher Controls International, Inc. Adjusting for these factors, the year-to-year sales gain was approximately 19 percent and was almost evenly split between higher sales volume and increased selling prices.

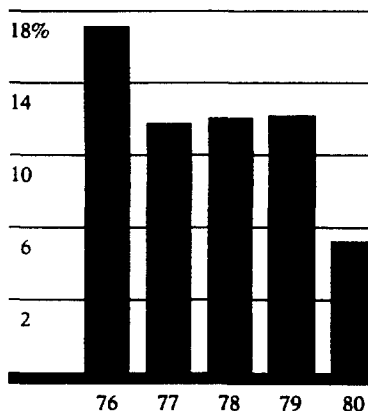
Net income for 1979—\$331.0 million—was the second highest in the history of the Company and represented a nine percent year-to-year improvement. While improved sales volumes and higher year-to-year selling prices helped to offset some part of higher raw material and conversion costs, two important contributors to the level of net income were a higher level of interest income (\$63.6 million in 1979 versus \$35.6 in 1978, pretax) and a substantially lower effective tax rate for 1979.

The gross profit margin was 20.4 percent in 1979 vs. 25.4 percent in 1978. For 1979, Monsanto's profitability was affected severely by the absorption of costs associated with the closing of some of its unprofitable businesses and the restructuring of others. The shutdown costs of Monsanto's European nylon operations and certain ex-U.S. plastics businesses resulted in 1979 pretax charges of \$105.1 million—equal to \$1.47 per primary share on an after tax basis. In 1978, the sale of the Company's high density poly-

Net Income—Percent of Sales



Net Income—Percent of
Average Shareowners' Equity



MAR 001470

ethylene business resulted in a \$10.1 million pretax gain.

The lower effective tax rate for 1979 (31.2 percent) as compared to 1978 (47.5 percent) reflects a lower U.S. statutory rate, significantly higher credits from domestic international sales corporations, decreased losses of ex-U.S. subsidiaries for which no tax benefits are available and a reversal of \$16.8 million of deferred income taxes due to a change in U.K. tax laws for stock relief.

Raw Materials and Energy

	1980	1979	1978
Purchased raw material	\$2,459.0	\$2,345.2	\$1,538.4
Purchased energy	531.4	484.7	375.2

Purchased raw material prices advanced approximately 25 percent in 1980, following an approximate 30 percent increase in the prior year.

Feedstocks—crude oil and refined products—are a very significant area of purchases by Monsanto. These feedstocks have, in recent years, been subject to considerable price escalation due to world political and market conditions. Decontrol of domestic crude oil prices and continued increases in foreign crude oil prices will result in higher costs for these feedstocks. In 1980, to improve its petrochemical raw material position, Monsanto started up a new ethylene and co-products facility jointly owned with Conoco, Inc. The joint venture also provides for a complementary crude oil processing unit, starting up in early 1981, to provide feedstock to the new ethylene and co-products facility. In addition, Monsanto engages in oil and gas exploration activities, which primarily support the feedstock supply program of the Company (see Oil and Gas Reserve Data on page 47).

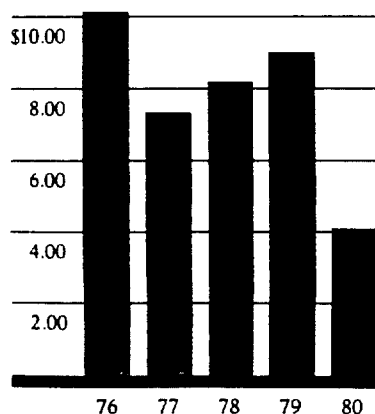
Purchased energy prices increased 9.6 percent in 1980 over 1979 and 29.2 percent in 1979 over 1978. Such price increases for energy reflect many of the same economic and political conditions which affect raw material prices.

Research and Development

	1980	1979	1978
Research and development costs	\$204.4	\$161.3	\$135.9
As a percent of sales	3.1%	2.6%	2.7%

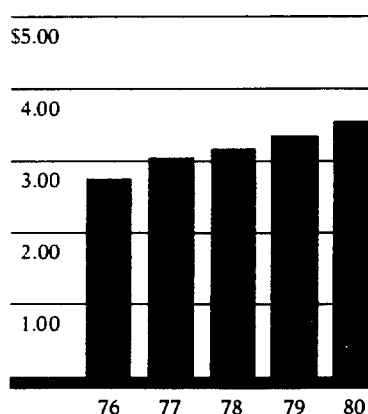
Research and development costs increased 26.7 percent in 1980 as compared to 1979 and 18.7 percent in 1979 as compared to 1978. A continuing commitment to generate new products and processes, and particularly intensive agricultural products and electronic materials programs account for these increases. Supplementing this substantial commitment to research funding were three investments in high technology companies in 1980. In February, the Company acquired all of the common stock of Radiation Dynamics, Inc., a company involved principally in the manufacture and sale of high-voltage electron accelerators and in developing irradiation processes and irradiated products. In July, the Company purchased a minority interest in Collagen Corporation, a developer of patented and proprietary methods of processing and purifying collagen (a protein that is the building block of skin, bone, tendon, and other tissue) from animal sources into products which can be implanted in the human body to replace lost or defective tissue. In October, the Company acquired an equity interest in Biogen, S.A., a company based in Switzerland engaged in the field of molecular biology and recombinant DNA research. These three investments totaled some \$57 million.

Earnings per Share



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Dividends per Share



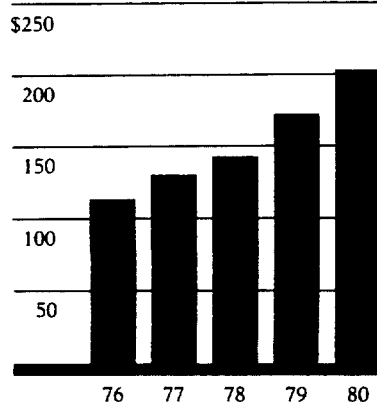
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The table below sets forth the dollar amount and percentage of Monsanto's consolidated net sales contributed by each operating company and Fisher Controls and each product group during the last three years.

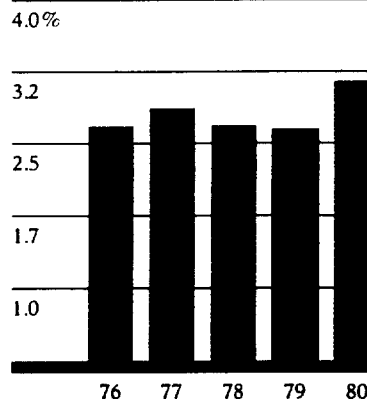
Sales by Product Group

	1980		1979		1978	
Agricultural Products:						
Herbicides, insecticides & other products	\$1,012.3	15.4%	\$ 839.9	13.6%	\$ 734.4	14.6%
Chemical Intermediates:						
Petrochemicals	643.5	9.8	585.1	9.4	288.4	5.7
Process chemicals	196.8	3.0	192.1	3.1	160.9	3.2
Oil & gas production and exploration	125.4	1.9	81.4	1.3	73.9	1.5
	965.7	14.7	858.6	13.8	523.2	10.4
Industrial Chemicals:						
Detergents & phosphates	405.3	6.2	399.9	6.5	348.5	6.9
Specialty and nutrition chemicals	385.1	5.9	353.8	5.7	324.1	6.5
Rubber chemicals	298.5	4.5	292.5	4.7	255.6	5.1
Plasticizers	299.4	4.5	278.2	4.5	228.1	4.5
Electronic materials and chemical & environmental systems	189.3	2.9	189.4	3.1	133.8	2.7
	1,577.6	24.0	1,513.8	24.5	1,290.1	25.7
Plastics & Resins:						
Plastic materials	793.2	12.1	799.2	12.9	661.1	13.2
Resin products	378.2	5.8	404.7	6.5	355.2	7.1
Fabricated products	212.4	3.2	210.3	3.4	207.3	4.1
	1,383.8	21.1	1,414.2	22.8	1,223.6	24.4
Textiles:						
Man-made fibers	1,041.1	15.8	1,069.4	17.3	963.2	19.2
Fisher Controls:						
Valves, regulators & electronic process controls	593.1	9.0	496.7	8.0	284.2	5.7
Total consolidated	\$6,573.6	100.0%	\$6,192.6	100.0%	\$5,018.7	100.0%

Research and Development Expenditures



Research and Development Expenditures—Percent of Sales



Foreign Currency

	1980	1979	1978
Gain (loss) from:			
Foreign currency transactions and translation of ex-U.S. subsidiaries' financial statements	\$ 15.5	\$(35.8)	\$(27.7)
Translation of ex-U.S. affiliated companies' financial statements	(17.5)	2.3	(14.1)
Forward exchange contracts	13.5	6.6	13.5
Before-tax gains (losses)	11.5	(26.9)	(28.3)
Related income taxes	10.3	5.2	4.2
After-tax gains (losses)	\$ 1.2	\$(32.1)	\$(32.5)
Per primary share	\$ 0.03	\$(0.88)	\$(0.89)

Of the total gain (loss) on foreign currency transactions and translation of ex-U.S. subsidiaries' financial statements, losses of \$2.7 million, \$22.3 million, and \$5.9 million were classified in cost of goods sold in 1980-1978, respectively. The remaining pretax gain (loss) on foreign currency of \$14.2 million, \$(4.6) million, and \$(22.4) million for 1980-1978,

respectively, is reflected in other income-net.

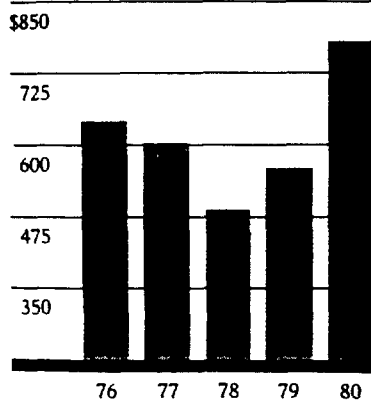
For 1980, hedging gains were larger and revaluation losses were smaller than in 1979. The higher hedging gains in 1980 were attributable to the strong appreciation in both the Japanese yen and the United Kingdom pound over the course of the year, and the fact that these are the two currencies in which hedging was maintained at a relatively high level. The smaller revaluation losses were attributable to the general weakness of the Continental European currencies, where the Company has significant net liability exposures, and the early 1980 restructuring of financing in the Company's major Brazilian subsidiary.

In 1979, after-tax foreign currency losses of \$32.1 million were experienced. A significant amount of 1979's losses was generated by the devaluation of the Brazilian cruzeiro. Foreign currency losses of \$32.5 million for 1978 do not reflect a full year's impact of hedging, since the program was begun in the latter part of that year. As the U.S. dollar generally devalued against other major currencies in 1978, the unhedged impact is reflected in that year's after-tax losses. Financial Accounting Standards Board Statement No. 8 (FAS No. 8) requires that working capital items

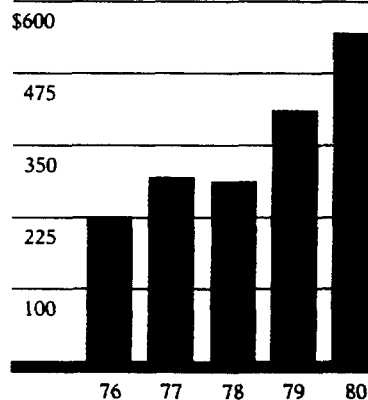
Quarterly Foreign Currency Gains (Losses)

	1980		1979		1978	
	After Taxes	Per Primary Share	After Taxes	Per Primary Share	After Taxes	Per Primary Share
First quarter	\$ 5.9	\$ 0.16	\$ 6.4	\$ 0.18	\$(12.8)	\$(0.35)
Second quarter	(12.8)	(0.35)	(10.4)	(0.29)	(2.7)	(0.07)
Third quarter	5.3	0.15	(17.4)	(0.48)	(12.5)	(0.35)
Fourth quarter	2.8	0.07	(10.7)	(0.29)	(4.5)	(0.12)
Total year	\$ 1.2	\$ 0.03	\$(32.1)	\$(0.88)	\$(32.5)	\$(0.89)

Capital Expenditures



Depreciation Expense



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(except inventory) and long-term debt—when denominated in foreign currencies—are to be translated at current exchange rates. The net balance sheet amounts translated at the current rates of exchange determine the level of translation gains or losses that are charged immediately to earnings. In Monsanto's case, except in a limited number of countries, these net balance sheet amounts represent a net liability exposure. The Company has consistently maintained that translation gains or losses resulting from the FAS No. 8 rules are unrealized and may never be realized. The reflection of these unrealized gains or losses in reported earnings can cause large fluctuations which obscure the underlying results of operation. Furthermore, because inventory and property, plant and equipment are translated at historical rates under FAS No. 8, the gains or losses included in earnings were—in direction and magnitude—different from what many perceived to be the economic effect of the change in currency rates.

The Financial Accounting Standards Board (FASB) has now *proposed* foreign currency translation rules that Monsanto believes to be, in general, superior to the existing FAS No. 8 rules. Under the FASB's proposal, virtually all assets and liabilities would be translated at the current rate. Furthermore, translation gains or losses would be deferred in a shareowners' equity account until realized. Under these proposed rules—which are not yet effective and will not likely be finalized for implementation in 1981, if ever—Monsanto would generally be in a net exposed asset position as compared with the generally net exposed liability position under FAS No. 8. Had these proposed rules been in place for 1980-1978, the Company would not have reported foreign currency *translation* losses or gains in those years and its forward exchange contracts position might have been significantly different.

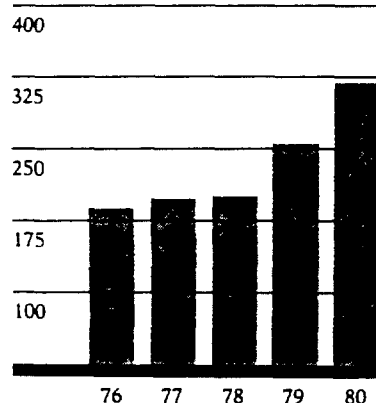
Quarterly Results

	Net Sales	Cost of Goods Sold	Net Income	Earnings per Common Share	
				Primary	Fully Diluted
1980:					
First quarter...	\$1,822.5	\$1,330.4	\$164.2	\$ 4.53	\$ 4.49
Second quarter...	1,548.6	1,281.7	23.2	0.64	0.64
Third quarter...	1,538.7	1,308.8	29.6	0.81	0.81
Fourth quarter...	1,663.8	1,555.1	(68.2)	(1.88)	(1.88)
Total year	<u>\$6,573.6</u>	<u>\$5,476.0</u>	<u>\$148.8</u>	<u>\$ 4.10</u>	<u>\$ 4.06</u>
1979:					
First quarter...	\$1,623.8	\$1,153.7	\$161.8	\$4.44	\$4.40
Second quarter...	1,526.8	1,264.9	59.5	1.64	1.63
Third quarter...	1,496.7	1,178.4	98.9	2.73	2.70
Fourth quarter...	1,545.3	1,335.0	10.8	0.30	0.30
Total year	<u>\$6,192.6</u>	<u>\$4,932.0</u>	<u>\$331.0</u>	<u>\$9.11</u>	<u>\$9.03</u>
1978:					
First quarter...	\$1,342.7	\$ 903.4	\$135.7	\$3.71	\$3.67
Second quarter...	1,185.0	885.1	76.1	2.09	2.07
Third quarter...	1,187.0	918.5	46.8	1.28	1.27
Fourth quarter...	1,304.0	1,036.6	44.0	1.21	1.20
Total year	<u>\$5,018.7</u>	<u>\$3,743.6</u>	<u>\$302.6</u>	<u>\$8.29</u>	<u>\$8.21</u>

Monsanto's quarterly consolidated sales typically exhibit the seasonality of the agricultural products segment of the Company's business. Agricultural

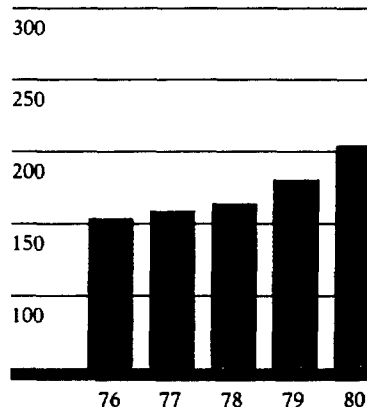
Raw Material Cost Index

1972 = 100



Selling Price Index

1972 = 100



products accounted for 15.4 percent, 13.6 percent and 14.6 percent of consolidated sales in 1980-1978, respectively. Of the total agricultural products sales, 38.9 percent, 44.0 percent and 48.1 percent were concentrated in the first quarter of 1980-1978, respectively. In addition to this seasonal factor, 1980's last three quarters' sales, while slightly higher than the comparable quarters of the prior year because of selling price increases, were nevertheless depressed by the lower volumes resulting from the recession. The sales for 1979, as contrasted with the comparable 1978 quarters, exhibited strong second and third quarter performances. This performance was due to accelerated customer purchases in anticipation of price increases from rapidly rising costs of raw materials in that year. The fourth quarter 1979 sales, however, began to exhibit the softening of customer demand that carried into and depressed sales volume for 1980.

Net income is even more seasonally affected by the agricultural products segment of the Company's business because of the relatively greater profitability of this operating unit. Agricultural products accounted for 190.7 percent, 67.5 percent, and 48.1

percent of consolidated operating income for 1980-1978, respectively. Following its sales pattern, agricultural products' operating income is heavily concentrated in the first quarter. Of the total agricultural products operating income for the year, 42.3 percent, 52.3 percent and 55.6 percent was reported in the first quarter of 1980-1978, respectively. Beyond the seasonal factor, 1980's quarterly net income pattern reflects the effects of the recession, most notably in the second and third quarters as compared to the prior year. The second and, particularly, the third quarter of 1980 also include higher idle plant costs incurred to control inventory levels during these difficult periods. In contrast, the second and third quarters for 1979, compared to 1978, reflect the earnings impact of significant sales gains resulting from strong volume in those quarters. As mentioned in the sales discussion above, 1979's fourth quarter results were impacted by decreased demand.

Unusual factors also affecting the 1980 vs. 1979 and 1979 vs. 1978 comparison of quarterly operating results are indicated in the table below.

Unusual Items, by Quarter

	1980		1979		1978	
	Increase	(Decrease) in	Increase	(Decrease) in	Increase	(Decrease) in
	Net Earnings	Primary EPS	Net Earnings	Primary EPS	Net Earnings	Primary EPS
First Quarter:						
Capitalized interest	\$ 4.9	\$ 0.14	\$	\$	\$	\$
Second Quarter:						
Capitalized interest	5.3	0.14				
Europe nylon operations shutdown cost			(42.7)	(1.18)		
Third Quarter:						
Capitalized interest	8.3	0.23				
Reversal of prior periods' income taxes	14.9	0.41	16.8	0.46		
Gain on sale of high-density polyethylene business					7.1	0.20
Fourth Quarter:						
Capitalized interest	9.0	0.25				
Changes in accounting estimates —						
LIFO provision			(8.1)	(0.22)		
Effective tax rate			12.3	0.34		
Aiscondel withdrawal and closing costs ..	(38.7)	(1.07)	(10.5)	(0.29)		
Polyester filament withdrawal and closing costs	(69.0)	(1.90)				

The 1980 third quarter reversal of prior periods' income taxes reflects a change in accounting estimate of the effective tax rate, which amount principally relates to the first quarter. The 1979 third quarter reversal of prior periods' income taxes is the effect of

a change in U. K. tax laws. Changes in accounting estimates for the LIFO provision and the effective tax rate in the fourth quarter of 1979 were not significant to any other quarter of that year.

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Common Stock Data

	1980	1979
Dividends per Common Share:		
First quarter	\$0.85	\$0.80
Second quarter	0.90	0.85
Third quarter	0.90	0.85
Fourth quarter	0.90	0.85
Total year	\$3.55	\$3.35
Dividend Payout Percentage	86.6%	36.8%

	1980		1979	
	High	Low	High	Low
Common Stock Prices:				
First quarter	\$62¼	\$46½	\$52½	\$45
Second quarter	54¼	42¼	54⅝	46⅝
Third quarter	59½	50½	60¼	49¼
Fourth quarter	70¼	50¼	62	53

	1980	1979
Shareowners' Equity		
Per Common Share	\$77.63	\$77.20
Number of Common Shareowners	82,441	85,608

The number of common shareowners as of February 23, 1981, was 81,003. Monsanto's common stock is traded principally on the New York Stock Exchange. Other than in connection with small acquisitions in 1974 and 1975, the Company has not had a public offering of common shares in recent history. Again, generally in connection with acquisitions, the Company last issued convertible securities in the 1969-1974 period. Currently, Monsanto has convertible preferred stock, convertible debentures and convertible loan stock outstanding. In addition, common shares are regularly issued under employee stock option plans. The total common shares reserved for convertible securities and stock option plans was 2,821,625 at December 31, 1980. A treasury stock acquisition program is in place to mitigate the dilutive effect of the issuance of common shares under stock option plans and outstanding convertible securities. However, certain financial criteria permitting purchases under the program were not met in 1980 and, accordingly, no treasury shares were acquired under it. Also, the Company has an employee stock purchase program whose requirements are immediately funded with the purchase of treasury shares.

The Company has paid dividends on its common shares—without interruption or reduction—since 1928. The dividend is paid quarterly and has been increased in each of the past eight years. Due to the depressed level of earnings, the dividend payout percentage jumped in 1980. In 1979, the dividend payout percentage was more indicative of dividend payouts in recent years, although the Company's dividend policies are not tied to a set payout percentage.

Pension Plans' Funding Status

1980	
Actuarial present value of accumulated plan benefits:	
Vested	\$ 775.5
Nonvested	114.7
Total	890.2
Net assets available for benefits	1,260.3
Excess of assets	\$ 370.1

1979	
Actuarial present value of accumulated plan benefits:	
Vested	\$ 863.2
Nonvested	28.9
Total	892.1
Net assets available for benefits	957.1
Excess of assets	\$ 65.0

Monsanto provides pension benefits for substantially all of its employees. The funding of these obligations represents a significant future commitment by the Company. Pension expense for 1980-1978 was \$97.7 million, \$92.3 million and \$84.2 million, respectively, and represents 7.2 percent, 7.5 percent and 8.0 percent, respectively, of salaries and wages for those years.

The above tables for 1980 and 1979 reflect the combined funding status for U.S. and ex-U.S. pension plans representing 96 percent and 97 percent, respectively, of pension expense. This accumulated benefits information was determined in accordance with the requirements of FASB Statement No. 36, "Disclosure of Pension Information." Under these requirements, it is not permissible to use a salary increase assumption. Accordingly, the accumulated benefits in the above table represent vested and nonvested benefits that have been accrued based on employee service and earnings to date. The plans' assets in the table are stated at market values determined at the end of each respective period.

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Annual valuations of the major pension plans are made by an outside firm of actuaries to determine funding requirements and pension expense. The "entry age normal" actuarial method is used. In 1980, all actuarial assumptions were reviewed and most were changed to some extent. The key actuarial assumptions used in 1980 for the largest domestic plans include an annual average investment return on pension assets of 7.5 percent (7.0 percent in 1979) and an average salary increase, when applicable, of 6.5 percent (6.0 percent in 1979). In 1980, Monsanto increased the contribution to one major pension plan to the maximum deductible amount for tax purposes. The net impact of the changes in the major domestic pension plans' assumptions and funding was to decrease pension expense for these plans by \$1.0 million. In addition, these changes resulted in an increase in 1980 actuarial present value of *nonvested* accumulated plan benefits, and a corresponding decrease in *vested* benefits, of approximately \$83 million.

The plans' status and assumptions are reviewed regularly by the Company's outside actuaries and the Pension and Savings Funds Committee of the Board of Directors. The Company believes that the methods and assumptions used, in the aggregate, are reasonable for the purpose of determining the annual pension funding requirements and pension expense.

In the actuarial valuation process, an actuary calculates the present value of prospective benefits to estimate the amount of funds needed to provide benefits in future years to all employees then covered by a pension plan. There are various actuarial methods to budget the present value of prospective benefits that are to be financed. Some methods do not develop unfunded prior service costs (sometimes referred to as "unfunded actuarial liability"). The actuarial method used by the Company—"entry age normal"—tends to develop relatively large unfunded prior service costs and is followed because it levels out pension costs as a percent of future payroll. Unfunded prior service costs are generally amortized over 10-30 year periods.

Monsanto believes that the funding of its pension plans is financially sound. Subsequent to December 31, 1980, the Company approved an increase in the benefits under certain major domestic plans. These increases will result in higher pension expense and greater accumulated benefits in future years.

Review of Liquidity and Capital Resources

The following discussion reviews Monsanto's ability to generate cash and describes its principal capital resources.

Cash Flow Statement

	1980	1979	1978
Sources of cash:			
Income before income taxes	\$ 205.7	\$ 481.1	\$ 576.3
Depreciation and obsolescence	546.9	412.7	288.3
Current provision for income taxes	(24.2)	(167.2)	(197.2)
Cash provided by operations	728.4	726.6	667.4
Outside financing:			
Long-term (including \$225.0 of commercial paper in 1980)	266.3	55.4	284.9
Net short-term	5.7	20.3	79.1
	1,000.4	802.3	1,031.4
Requirements for cash:			
Capital expenditures	780.5	565.9	479.9
Dividend payments	128.4	121.2	115.4
Debt reduction	59.2	93.3	133.2
Net change in working capital, excluding cash and short-term debt	(29.9)	123.6	56.8
Other—net	122.9	(25.4)	96.8
	1,061.1	878.6	882.1
Increase (decrease) in cash	(60.7)	(76.3)	149.3
Cash at beginning of year	271.3	347.6	198.3
Cash at end of year	\$ 210.6	\$ 271.3	\$ 347.6

In the above table, cash is defined to include time deposits, certificates of deposit and short-term marketable securities.

Cash provided by operations increased slightly in 1980 as compared to 1979, despite the decline in results of operations, principally reflecting significant 1980 non-cash write-offs for Aiscondel, S.A. and the polyester filament business. Cash provided in 1979 increased over 1978, reflecting the effects of non-cash write-offs in 1979 for European nylon operations and ex-U.S. plastics businesses. While cash is generated by operations throughout the year, significant receipts from agricultural product sales are concentrated in the first quarter. Tax and dividend payments are made quarterly during the year. For 1980-1978, the cash generated by operations has significantly exceeded debt reduction and dividend requirements.

Long-Term Liquidity and Capital Resource Measures

	1980	1979	1978
Capital expenditures for the year	\$ 780.5	\$ 565.9	\$ 479.9
Total commitments for uncompleted property additions at year-end	\$ 138.2	\$ 191.6	\$ 146.2
Long-term debt at year-end	\$1,370.5	\$1,202.5	\$1,223.5
Long-term debt-to-capitalization ratio	32.8%	30.2%	32.2%
Interest coverage (times)	1.9	4.9	6.6

The interest coverage (times) shown in the above table excludes the effect of capitalized interest in 1980.

Capital expenditures for 1980, excluding \$51.6 million of capitalized interest, were 28.8 percent higher than in 1979; expenditures in 1979 were 17.9 percent higher than 1978. Expenditures for capital equipment have typically been financed by a combination of cash provided from operations and long-term debt. In 1980, no major long-term financing was made for the current capital expenditure program, but rather commercial paper was used as a bridge to what the Company hopes will be a more attractive long-term debt market in 1981. The long-term debt-to-capitalization ratio increased in 1980 compared to 1979, reflecting the issuance of commercial paper expected to be refinanced on a long-term basis. Over the long term, the Company expects its long-term debt-to-capitalization ratio to approximate the current level.

The decline in interest coverage ratio in 1980 reflects significant non-recurring charges, recession depressed earnings and sharply increased interest costs, including higher bank loans of Aiscondel, S.A.

The Company has made extensive use of pollution control and industrial development bond financing when the project qualifies. Because of the tax-free nature of these obligations, the associated interest rates are quite favorable. Total outstanding pollution control and industrial development bond obligations at December 31, 1980, were \$184.4 million. While the Company will continue to pursue this form of financing when available in the future, the individual issues have generally not exceeded \$10 million in the past and the average offering has been substantially smaller.

In addition to the use of long-term debt, the Company has occasionally used other forms of financing, principally lease arrangements and joint venture arrangements involving take-or-pay contracts. These alternative forms of financing are used when the effective interest cost is attractive or the nature of the capital project requires their use. Frequently, such arrangements are "off balance sheet" under existing generally accepted accounting principles. While not reflected in the above table's

ratios, the Company does consider these arrangements as part of its total debt capacity. The Company will continue to use lease, joint venture and other innovative financing arrangements in the future as appropriate, but the extent of their use in the Company's overall financial structure is impossible to predict.

Substantially all of the assets reflected in Monsanto's financial statements are free from lien and are not used to collateralize debt. Accordingly, these assets represent a source of additional debt capacity. The Company has no present plans to pursue this source of debt financing. In addition, covenants of various existing debt agreements restrict, to some extent, the incurrence of debt through the encumbrance of Monsanto's assets.

Monsanto is involved in oil and gas exploration activities and owns reserves whose current value is not reflected in the accompanying financial statements. See "Oil and Gas Reserve Data" on page 47. Because crude oil is important to the chemical industry as feedstock, Monsanto intends to increase its oil and gas exploration activities in the future. The Company's proved reserves represent a valuable asset that could be used to increase its total debt capacity.

Short-Term Liquidity and Capital Resource Measures

	1980	1979	1978
Working capital	\$1,226.4	\$1,322.7	\$1,295.7
Current ratio	2.1:1	2.2:1	2.5:1
Short-term debt	\$ 238.8	\$ 233.1	\$ 212.8

The Company's working capital level has remained high, although the current ratio has decreased somewhat in recent years. Management believes that a working capital ratio of approximately 2:1 is desirable. The higher ratios of prior years reflect a temporary excess cash position because the Company pre-borrowed funds for capital expansion at attractive long-term rates. Early in 1980, working capital needs were affected by the recession, requiring higher than expected short-term financing. The Company moved quickly as the recession developed, however, to control inventory levels and postpone, when appropriate, capital expenditures to conserve cash. As the year progressed, however, the actions to control inventory and postpone some capital expenditures could not totally offset the on-going needs of the Company, resulting in a somewhat diminished level of working capital at the end of 1980.

During 1980, the Company began raising funds in the commercial paper market. These funds were generally available at rates below the rates on the Company's lines of credit. Because the Company intends to refinance a major portion of the commercial paper borrowings on a long-term basis, and has the ability to do so under existing revolving

credit agreements, \$225.0 million of commercial paper outstanding at December 31, 1980, is classified as long-term debt.

The Company has available \$400.0 million of existing domestic revolving credit, \$200.0 million of Euro-currency revolving credit and \$457.1 million through ex-U.S. subsidiaries' short-term facilities. Only \$141.3 million under these existing credit arrangements was utilized at December 31, 1980, all of which related to short-term facilities of ex-U.S. subsidiaries. Commercial paper and short-term lines of credit are intended to be used by the Company to finance seasonal working capital needs and to provide "bridge" financing until more attractive rates prevail in long-term debt markets.

Supplemental Financial Data Adjusted for the Effects of Changing Prices

	Historical Cost	Adjusted for General Inflation (In Average 1980 Dollars)	Adjusted for Changes in Current Costs
Net sales	\$6,573.6	\$6,573.6	\$6,573.6
Cost of goods sold, excluding depreciation and depletion	5,149.0	5,216.3	5,161.5
Depreciation and depletion expense . .	327.0	478.3	493.9
Marketing, administrative and technological expense	887.4	887.4	887.4
Other expense and income — net	4.5	4.5	4.5
Income taxes	56.9	56.9	56.9
Net income (loss) from operations	\$ 148.8	\$ (69.8)	\$ (30.6)
Income (loss) from operations per primary share	\$ 4.10	\$ (1.93)	\$ (0.85)
Gain from decline in purchasing power of net amounts owed		\$ 134.4	\$ 134.4

Monsanto's financial statements appearing in the Annual Report outside of this section are prepared in accordance with generally accepted accounting principles, which include the concept of historical cost. Under this concept, inventory and property generally are reported at the amounts originally paid and do not reflect subsequent changes in (1) the general purchasing power of the dollar, (2) the current cost of replacing the asset, or (3) the amount for which the asset could be sold—its market value.

The Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 33 FAS No. 33), entitled "Financial Reporting and Changing Prices," which requires the disclosure in the above table of selected data under two different

sets of assumptions. One set of data—the "constant dollar" disclosures—reflects the adjustment of the historical cost financial statements for changes in the general purchasing power of the dollar. The second set of data—the "current cost" disclosures—reflects adjustments based on estimates of the current cost to replace, in kind, existing assets. The current cost data attempt to measure the impact of price changes which are specific to Monsanto.

Only the following specific items are adjusted in the current year under the constant dollar and current cost disclosures: inventories; property, plant and equipment; cost of goods sold; and depreciation and depletion expense. Income tax provisions are not adjusted for the inflation effects.

Monsanto generally believes that the current cost method best reflects some impacts of inflation. However, in most years the difference between the current cost and constant dollar methods will not be significant, particularly given the subjective estimates involved in making these computations. In a period of inflation, the result is the same—historical cost earnings overstate the ability of most manufacturing companies to generate cash flow for the growth of the business and the growth of dividends in a "real" sense. Inflation must first be "financed" from historical cost earnings by increased expenditures to replace worn out and obsolete facilities. While these facilities will not be replaced in their current form as the computational methods of the data suggest—technological advances will be incorporated as replacement occurs and some facilities will never be replaced—nevertheless, the impact reflected in the FAS No. 33 data is a useful approximation of some inflation effects. However, impacts from inflation can be mitigated by management actions and, from the shareowners' perspective, through the existence of debt.

Recognizing the impact of rising costs in selling prices is frequently mentioned as one way management responds to inflation. Cyclical over-capacity in the chemical industry, aggravated by the recent recession, allowed Monsanto to pass along only a portion of the higher costs in selling prices as the market for many products will not currently support full cost pass-through. Accordingly, to maintain profitability in an inflationary environment, the Company continually searches for ways to reduce costs. Improved technology, increased productivity and programs such as the Company's successful energy conservation efforts allow Monsanto to remain competitive from a selling price standpoint, while mitigating some of the impact of rising costs. In addition, the Company is constantly reviewing its businesses to determine those whose long-term economics will not justify continued investment. Monsanto has disposed of several such businesses in recent years.

To the extent that creditors also bear some of the impact of inflation, shareowners' equity is protected.

Selected Financial Data

	1980	1979	1978	1977	1976
Historical Cost, as reported:					
Net sales	\$6,573.6	\$6,192.6	\$5,018.7	\$4,594.5	\$4,270.2
Net income	148.8	331.0	302.6	275.6	366.3
Primary earnings per share	4.10	9.11	8.29	7.46	10.05
Total assets	5,796.4	5,539.1	5,035.7	4,350.1	3,959.1
Net assets	2,808.2	2,781.8	2,579.4	2,400.9	2,252.5
Long-term debt	1,370.5	1,202.5	1,223.5	1,030.6	915.4
Dividends per common share	3.55	3.35	3.175	3.025	2.75
Constant Dollar Data, in average					
1980 dollars:					
Net income (loss) from operations	(69.8)	193.2			
Net income (loss) from operations per primary share	(1.93)	5.31			
Net assets	3,942.8	4,143.5			
Current Cost Data, in average					
1980 dollars:					
Net income (loss) from operations	(30.6)	213.0			
Net income (loss) from operations per primary share	(0.85)	5.86			
Net assets	4,063.9	4,226.3			
Increase in specific prices of inventory and property over (under) increase caused solely by general inflation	(278.7)	108.8			
Other Data, in average					
1980 dollars:					
Net sales	6,573.6	7,028.6	6,337.6	6,246.2	6,179.8
Gain from decline in purchasing power of net amounts owed	134.4	139.3			
Dividends per common share	3.59	3.85	4.04	4.13	4.00
Market price of common stock at year-end	\$ 65.54	\$ 63.99	\$ 57.16	\$ 76.74	\$ 124.81
Average Consumer Price Index	246.8	217.4	195.4	181.5	170.5

An approximation of the net effects of inflation borne by creditors is shown in the table on page 43 as "gain from decline in purchasing power of net amounts owed."

Shown in the preceding table are a statement of net income from operations and certain other information for the year ended December 31, 1980, adjusted for changing prices in accordance with FAS No. 33, and the historical cost information reported in the primary financial statements for the same period. The increase in current cost of inventories and property, plant and equipment for the year ended December 31, 1980, stated in average 1980 dollars, was \$234.9 million. This amount was \$278.7 million less than the increase that would have been caused solely by general inflation. At December 31, 1980, the current cost of inventory and property, plant and equipment (net of accumulated depreciation) was \$1,340.3 million and \$4,047.9 million, respectively, stated in year-end 1980 dollars.

Net income (loss) from operations reflects higher depreciation and depletion expense and cost of goods sold. Income taxes have not been adjusted for these higher costs, resulting in a tax provision on a net loss from operations for the constant dollar and current cost data as compared to an effective tax rate of 27.7

percent under historical cost.

Adjustments for general inflation have been made using the Consumer Price Index-All Urban Consumers as required by FAS No. 33. The amounts reported as the estimated current costs are calculated as described below. These estimates, although based on the best judgments of management, are not necessarily indicative of either the amounts for which the assets could be sold or the cost at which such assets might be replaced in the future.

Inventories determined on a FIFO basis were used to approximate inventories on a current cost basis. Cost of goods sold as determined on a LIFO basis, or techniques that approximate the results obtained on a LIFO basis, was used to approximate cost of goods sold on a current cost basis. The current costs (specific prices) of property, plant and equipment were generally estimated using appropriate construction and equipment indices. Accumulated depreciation and depletion for the current cost of existing facilities and related expenses, were estimated using the same methods and rates as used in the historical cost financial statements.

Certain additional historical cost, constant dollar and current cost data appear in the table above.

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Operating Unit Segment Data

	Net Sales	Operating Income (Loss)	Total Assets	Depreciation and Obsolescence	Capital Expenditures	Research and Development
1980						
Agricultural Products	\$1,012.3	\$ 400.8	\$ 802.7	\$ 44.5	\$ 74.1	\$ 41.3
Chemical Intermediates	965.7	17.8	1,178.6	85.6	308.4	30.9
Industrial Chemicals	1,577.6	132.6	1,113.0	88.2	181.3	51.6
Plastics & Resins	1,383.8	(110.5)	1,000.0	135.7	88.3	36.1
Textiles	1,041.1	(261.1)	1,019.5	180.8	99.6	33.3
Fisher Controls	593.1	71.9	412.8	10.5	22.8	11.2
Eliminations		(2.0)				
Unallocated corporate expenses ..		(39.3)		1.6		
Total operating	6,573.6	210.2	5,526.6	546.9	774.5	204.4
Income charges—net		4.5				
Nonoperating assets			269.8		6.0	
Total consolidated	\$6,573.6	\$ 205.7	\$5,796.4	\$546.9	\$780.5	\$204.4
1979						
Agricultural Products	\$ 839.9	\$ 328.8	\$ 660.2	\$ 38.4	\$ 43.4	\$ 29.6
Chemical Intermediates	858.6	115.5	1,123.4	76.4	222.2	21.9
Industrial Chemicals	1,513.8	202.1	984.1	71.1	126.7	39.9
Plastics & Resins	1,414.2	9.6	1,110.7	78.0	91.6	32.7
Textiles	1,069.4	(168.7)	1,022.7	138.4	59.1	30.1
Fisher Controls	496.7	44.4	353.3	9.1	18.9	7.1
Eliminations		(8.2)				
Unallocated corporate expenses ..		(36.6)		1.3		
Total operating	6,192.6	486.9	5,254.4	412.7	561.9	161.3
Income charges—net		5.8				
Nonoperating assets			284.7		4.0	
Total consolidated	\$6,192.6	\$ 481.1	\$5,539.1	\$412.7	\$565.9	\$161.3
1978						
Agricultural Products	\$ 734.4	\$ 303.8	\$ 629.0	\$ 34.6	\$ 57.5	\$ 26.9
Chemical Intermediates	523.2	75.1	849.8	36.2	185.7	15.8
Industrial Chemicals	1,290.1	218.7	849.6	61.1	88.2	34.0
Plastics & Resins	1,223.6	57.6	1,088.2	69.5	91.9	29.1
Textiles	963.2	(29.2)	1,050.1	80.6	44.5	25.0
Fisher Controls	284.2	37.0	202.5	5.1	9.0	5.1
Unallocated corporate expenses ..		(31.3)		1.2		
Total operating	5,018.7	631.7	4,669.2	288.3	476.8	135.9
Income charges—net		55.4				
Nonoperating assets			366.5		3.1	
Total consolidated	\$5,018.7	\$ 576.3	\$5,035.7	\$288.3	\$479.9	\$135.9

The above data should be read in conjunction with the "Segment Information" note on page 63.

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World Area Segment Data

	Net Sales		Operating	Total	Capital
	Outside	Inter-	Income	Assets	Expenditures
	Customers	Area	(Loss)		
1980					
United States	\$4,464.4	\$ 534.5	\$255.4	\$4,256.0	\$636.8
Europe-Africa	1,377.8	59.2	(43.8)	1,026.3	102.7
Canada-Latin America	459.2	4.0	24.2	291.3	27.1
Asia-Pacific	272.2	27.4	12.9	176.1	7.9
Eliminations		(625.1)	0.8	(223.1)	
Unallocated corporate expenses			(39.3)		
Total operating	6,573.6	—	210.2	5,526.6	774.5
Income charges—net			4.5		
Nonoperating assets				269.8	6.0
Total consolidated	\$6,573.6	\$ —	\$205.7	\$5,796.4	\$780.5
1979					
United States	\$4,233.7	\$ 451.0	\$564.2	\$3,840.3	\$430.7
Europe-Africa	1,316.6	65.5	(66.8)	1,198.3	96.9
Canada-Latin America	409.1	4.6	3.6	300.5	26.8
Asia-Pacific	233.2	26.2	20.4	181.0	7.5
Eliminations		(547.3)	2.1	(265.7)	
Unallocated corporate expenses			(36.6)		
Total operating	6,192.6	—	486.9	5,254.4	561.9
Income charges—net			5.8		
Nonoperating assets				284.7	4.0
Total consolidated	\$6,192.6	\$ —	\$481.1	\$5,539.1	\$565.9
1978					
United States	\$3,631.1	\$ 338.2	\$630.7	\$3,264.9	\$337.9
Europe-Africa	848.2	56.9	15.2	1,147.7	114.7
Canada-Latin America	385.8	1.7	10.0	308.6	16.1
Asia-Pacific	153.6	23.7	10.5	158.4	8.1
Eliminations		(420.5)	(3.4)	(210.4)	
Unallocated corporate expenses			(31.3)		
Total operating	5,018.7	—	631.7	4,669.2	476.8
Income charges—net			55.4		
Nonoperating assets				366.5	3.1
Total consolidated	\$5,018.7	\$ —	\$576.3	\$5,035.7	\$479.9

The above data should be read in conjunction with the "Segment Information" note on page 63.

International operating results were strong during the early part of 1980. However, as the year progressed, offshore results were adversely affected by deteriorating economic conditions in the major world markets. Total consolidated international sales reached \$2,601.1 million in 1980, compared to \$2,365.3 million in 1979 and \$1,697.7 million in 1978. For 1980, aggregate exports of products manufactured at plant locations in the United States reached \$1,026.4 million, an increase of 19.7 percent over the comparable \$857.4 million in 1979. These export sales included \$491.9 million in 1980 and \$406.4 million in 1979 which were sold directly to ex-U.S. customers. Finished products which were exported to Monsanto locations around the world and then resold to customers (resales) amounted to \$434.5 million in 1980 and \$372.8 million in 1979. Intercompany transfers of raw materials from the U.S. to ex-U.S. plants represented another \$100.0 million in 1980 and \$78.2 million in 1979. The growth in 1980 and 1979's export sales and resales was aided by favorable U.S. manufacturing economics and the lagged effect of the

weakness of the U.S. dollar in recent years. The 1980 rate of increase in exports was slower than in previous years due to new Monsanto production units offshore supplying markets that previously had been served by U.S. manufactured products.

Total consolidated international operating income, including U.S. operating profit on exports and equity in the net income of ex-U.S. affiliates, was \$150.8 million in 1980 compared to \$157.8 million in 1979 and \$145.2 million in 1978. Operating income in 1980 was heavily impacted by slowing economies in many countries. Europe-Africa's operating income in 1980 was also adversely affected by the \$66.3 million provision, before income taxes, for the withdrawal from Aisconcel, S.A. In 1979, Europe-Africa's operating income reflected a pretax charge of \$77.4 million related to the shutdown of the European nylon operations and \$15.6 million for the planned closing of certain product lines in Aisconcel, S.A. Canada-Latin America's operating income for 1979 included a \$12.1 million charge related to the closing of a plastics business and \$8.5 million relating to the

maxi-devaluation of the Brazilian cruzeiro.

The Company has been making the difficult decisions to resolve its ex-U.S. business problems. During the year, options were identified toward improving the unsatisfactory situation at the major acrylonitrile complex at Seal Sands, United Kingdom. Dramatic changes in user markets, including Monsanto's own withdrawal from the European nylon market, have contributed to the overcapacity of acrylonitrile. Task forces are exploring a variety of open alternatives. While no short-term solution to the situation is seen, year-to-year improvement should be forthcoming.

The following information reconciles ex-U.S. sales and operating income as shown in the above world area segment data to consolidated international sales and operating income, which includes U.S. sales and pretax profits for export shipments and the Company's equity in the net income of ex-U.S. affiliates.

International Sales and Operating Income

	1980	1979	1978
Sales by ex-U.S. subsidiaries:			
Europe-Africa	\$1,437.0	\$1,382.1	\$ 905.1
Canada-Latin America ..	463.2	413.7	387.5
Asia-Pacific	299.6	259.4	177.3
	<u>2,199.8</u>	<u>2,055.2</u>	<u>1,469.9</u>
U.S. export sales	1,026.4	857.4	648.3
Inter-area eliminations	(625.1)	(547.3)	(420.5)
Total consolidated international sales	<u>\$2,601.1</u>	<u>\$2,365.3</u>	<u>\$1,697.7</u>
Operating income (loss) of ex-U.S. subsidiaries:			
Europe-Africa	\$ (43.8)	\$ (66.8)	\$ 15.2
Canada-Latin America ..	24.2	3.6	10.0
Asia-Pacific	12.9	20.4	10.5
	<u>(6.7)</u>	<u>(42.8)</u>	<u>35.7</u>
U.S. export operating profit, net of allocated administrative expenses	141.8	174.3	120.9
Equity in ex-U.S. affiliates' net income	15.7	26.3	(11.4)
Total consolidated international operating income	<u>\$ 150.8</u>	<u>\$ 157.8</u>	<u>\$ 145.2</u>

Oil and Gas Reserve Data

The availability and the price of crude oil as it has affected the chemical industry in the recent past, and as it will affect it in the future, is important to Monsanto. The Company's exploration and production operation has, for many years, explored successfully for and produced crude oil and natural gas. The crude oil is used as a trading vehicle to obtain the various hydrocarbon-related raw materials that the

Company needs in its operations. In recognition of the importance of its oil and gas exploration and production activity, Monsanto established a separate Oil and Gas Division in mid-1980.

In recent years, Monsanto has expanded its exploration efforts for hydrocarbon reserves. At the present time, its exploration activities are concentrated in the United States and in selected other world areas. The effort is currently concentrated in liquid-prone areas where the Company can make maximum internal use of the production.

Certain reserve and related data regarding the Company's oil and gas activities follow. The following definitions are important to understanding these data:

Proved Oil and Gas Reserves are the estimated quantities of crude oil, natural gas, and natural gas liquids which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions, i.e., prices and costs as of the date the estimate is made. Prices include consideration of changes in existing prices provided only by contractual arrangements, but not on escalations based upon future conditions.

Proved Developed Oil and Gas Reserves are reserves that can be expected to be recovered through existing wells with existing equipment and operating methods.

Proved Undeveloped Oil and Gas Reserves are reserves that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for completion.

Estimated Future Net Revenues are computed by applying current prices of oil and gas (with consideration of price changes only to the extent provided by contractual arrangements) to estimated future production of existing proved oil and gas reserves, less estimated future expenditures (based on current costs) to be incurred in developing and producing the proved reserves, and assuming continuation of existing economic conditions.

Present Value of Estimated Future Net Revenues is computed using a discount factor of 10 percent applied to the Estimated Future Net Revenues.

Reserve Recognition Accounting (RRA) is an accounting method that reflects:

1. Proved oil and gas reserves as assets in the balance sheet;
2. Additions to proved reserves and changes in valuations of proved reserves in the income statement; and
3. All costs associated with finding and developing additions to proved oil and gas reserves, together with all costs determined to be nonproductive during the current period, in the income statement.

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RRA is prescribed by the Securities and Exchange Commission for supplemental disclosure only and is the basis used in determining the results of oil and gas producing activities reflected in the "Summary" included in this section. The "value" assigned to proved reserves under RRA is the present value of the estimated future net revenues from those reserves.

However, the basic financial statements include the Company's oil and gas activities under the successful efforts method of accounting, which does not recognize the value of reserves as assets, reflects income only to the extent that oil and gas are sold, and provides for capitalization of costs to find reserves and drill and develop successful wells.

Net Quantities of Proved Reserves

	United States		Canada		Total	
	Oil (1)	Natural Gas (2)	Oil (1)	Natural Gas (2)	Oil (1)	Natural Gas (2)
Proved developed and undeveloped reserves:						
December 31, 1979	27.3	554.9	1.2	58.8	28.5	613.7
Revisions of previous estimate	(0.1)	(14.3)		(10.1)	(0.1)	(24.4)
Purchases of minerals-in-place	0.1	1.3			0.1	1.3
Extensions, discoveries and other additions	3.9	62.1		1.9	3.9	64.0
Production	(2.6)	(33.6)	(0.1)	(2.4)	(2.7)	(36.0)
December 31, 1980	<u>28.6</u>	<u>570.4</u>	<u>1.1</u>	<u>48.2</u>	<u>29.7</u>	<u>618.6</u>
Proved developed reserves:						
December 31, 1979	<u>25.1</u>	<u>452.1</u>	<u>1.1</u>	<u>56.2</u>	<u>26.2</u>	<u>508.3</u>
December 31, 1980	<u>26.5</u>	<u>449.4</u>	<u>1.0</u>	<u>45.6</u>	<u>27.5</u>	<u>495.0</u>

- (1) Stated in millions of barrels. Does not include natural gasoline and liquified petroleum gases produced from other companies' natural gas processed in Company plants of 1.9 million Bbls.
- (2) Stated in billions of cubic feet (Bcf). Does not include residue gas applicable to other companies' natural gas processed in Company plants of 4.4 Bcf of gas.
- (3) Oil and gas reserves relating to royalty interests are not available and, therefore, are not included in the net quantities of proved reserves. Monsanto's share of production from these royalty interests in 1980 was not significant.

In determining the estimated future net revenue data which follow, current prices were based on actual 1980 year-end selling prices for oil and gas. In accordance with the SEC's requirements, effects of

future price decontrol or inflation were not considered. Similarly, future expenditures were determined by using the actual 1980 year-end cost levels to develop and produce reserves.

Estimated Future Net Revenues of Oil and Gas Reserves at December 31, 1980

	United States	Canada	Total
Proved developed and undeveloped reserves:			
1981	\$ 61.9	\$ 5.8	\$ 67.7
1982	86.6	7.1	93.7
1983	93.0	6.3	99.3
Remainder	<u>2,137.4</u>	<u>75.0</u>	<u>2,212.4</u>
Total	<u>\$2,378.9</u>	<u>\$94.2</u>	<u>\$2,473.1</u>
Proved developed reserves:			
1981	\$ 70.9	\$ 6.0	\$ 76.9
1982	84.7	7.1	91.8
1983	78.5	6.2	84.7
Remainder	<u>1,450.3</u>	<u>70.5</u>	<u>1,520.8</u>
Total	<u>\$1,684.4</u>	<u>\$89.8</u>	<u>\$1,774.2</u>

MAR 001484

Present Value of Estimated Future Net Revenues of Oil and Gas Reserves

	United States	Canada	Total
Proved developed and undeveloped reserves:			
December 31, 1980.....	\$535.0	\$39.7	\$574.7
December 31, 1979.....	\$331.8	\$30.5	\$362.3
Proved developed reserves:			
December 31, 1980.....	\$482.5	\$38.6	\$521.1
December 31, 1979.....	\$317.0	\$30.1	\$347.1

A summary of oil and gas producing activities using RRA and an analysis of the net change in present value of estimated future net revenues for the year ended December 31, 1980 follows. This summary is prescribed by the Securities and Exchange Commission. Monsanto recommends that the RRA results be evaluated with caution and an awareness of the inherent limitation of any prescribed method for determining changes in value. Changes in the discount rate, future selling prices, costs or reserve estimates made in developing the RRA data could significantly affect the results. As indicated above, the future selling prices and costs used in calculating the present value of oil and gas reserves are based on current—not probable future—selling prices and costs. As a result, the present value calculated using the RRA technique is—if the recent trend of oil and gas selling price increases continues—a conservative estimate of the value of these reserves.

The results of oil and gas activities in the Summary do not include the operation of natural gas plants, which operations are included in the product group data on page 36. Monsanto's historical cost financial statements include pretax earnings of \$27.6 million corresponding to the oil and gas activities reflected in the Summary. No interest costs or general corporate expenses have been allocated to either the historical cost or RRA results of oil and gas activities. Aggregate property acquisition costs, costs of uncompleted exploratory wells and major development costs that have been deferred pending further evaluation and, accordingly, are not reflected in the Summary, were \$76.8 million as of December 31, 1980. With respect to this amount, valuation allowances of \$6.6 million were provided during the period. Total valuation allowances related to the deferred costs were \$19.1 million as of December 31, 1980.

Summary of Oil and Gas Producing Activities for the Year Ended December 31, 1980

	Change In Present Value of Estimated Net Revenues	RRA Results of Oil & Gas Producing Activities
Additions to estimated proved reserves, gross	\$101.8	\$101.8
Revisions to estimates of reserves proved in prior years:		
Changes in prices	221.3	221.3
Other	(26.7)	(26.7)
Accretion of discount	36.2	36.2
Total additions and revisions	332.6	332.6
Evaluated acquisition, exploration, development and production costs incurred, including valuation allowances		(142.6)
Present value of estimated future development and production costs	(43.6)	(43.6)
Expenditures during 1980 that reduced estimated future development costs at December 31, 1979	8.3	
Purchase of reserves in place	3.4	
Sales of oil and gas and value of transfers, net of production costs of \$34.9	(88.3)	
Net change	\$212.4	
Additions and revisions to proved reserves in excess of evaluated costs		146.4
Provision for income taxes		71.4
After-tax results		\$ 75.0

MAR 001485

LAM017604

Summary of Significant Accounting Policies

Management has selected the following accounting principles from acceptable alternatives in preparing the consolidated financial statements of Monsanto Company and Subsidiaries (Monsanto). Except as described below, these principles have been consistently applied in all material respects.

Basis of Consolidation

The consolidated financial statements include Monsanto Company (Company) and its majority-owned subsidiaries with continuing operations. Significant intercompany transactions have been eliminated in consolidation.

Investments in affiliates in which Monsanto has an ownership interest greater than 20 percent, but which are not majority-owned, are accounted for by the equity method.

Depreciation

Monsanto generally uses the straight line method of computing depreciation; however, the sum of the years digits method is used for most domestic assets placed in service prior to January 1, 1972.

Income Taxes

Investment tax credits are recorded under the "flow through" method of accounting as a reduction of income tax expense in the year in which they are used to offset the Federal income tax liability.

Income taxes have not been provided on the undistributed earnings of ex-U.S. subsidiaries since any taxes on dividends received from those subsidiaries would be substantially offset by foreign tax credits. Also, income taxes have not been provided

on a substantial portion of the undistributed earnings of domestic subsidiaries, including domestic international sales corporations (DISC's), whose distribution would be subject to additional taxes, because Monsanto intends to indefinitely reinvest those earnings.

Inventory Valuation

Inventories are stated at the lower of cost or market. The term "cost" represents, in the case of raw materials and supplies, actual cost, and with respect to finished goods and goods in process, standard cost which approximates actual cost. Standard cost includes elements for direct labor, raw material and manufacturing overhead based on practical capacity. The cost of substantially all domestic inventories is determined by the last-in, first-out (LIFO) method. The cost of other inventories is generally determined by the first-in, first-out (FIFO) method.

Reclassifications

Certain items, principally deferred income taxes, have been reclassified from a noncurrent to a current classification in the Statement of Consolidated Financial Position at December 31, 1980, in accordance with Financial Accounting Standards Board Statement No. 37 and generally accepted practice for similar items. These reclassifications were not significant in prior years and the net effect on the Statement of Consolidated Financial Position at December 31, 1979, is included in "other-net" in the Statement of Changes in Consolidated Financial Position for the year ended December 31, 1980.

MAR 001486

Statement of Consolidated Income

Monsanto Company and Subsidiaries

(Dollars in millions, except per share)

	1980	1979	1978
Net Sales	\$6,573.6	\$6,192.6	\$5,018.7
Cost of Goods Sold	5,476.0	4,932.0	3,743.6
Marketing and Administrative Expenses	617.9	551.6	453.2
Technological Expenses	269.5	222.1	190.2
	6,363.4	5,705.7	4,387.0
Operating Income	210.2	486.9	631.7
Other Expense and Income:			
Interest expense	111.8	123.3	102.8
Other income—net	107.3	117.5	47.4
	4.5	5.8	55.4
Income Before Income Taxes	205.7	481.1	576.3
Income Taxes	56.9	150.1	273.7
Net Income	\$ 148.8	\$ 331.0	\$ 302.6
Earnings per Common Share:			
Primary	\$ 4.10	\$ 9.11	\$ 8.29
Fully diluted	4.06	9.03	8.21

MAR 001487

LAM017606

The above statement should be read in conjunction with page 50 and pages 56 through 64 of this report.

Statement of Consolidated Financial Position

Monsanto Company and Subsidiaries

(Dollars in millions, except per share)

Dec. 31, 1980 Dec. 31, 1979

Assets

Current Assets:

Cash	\$ 44.8	\$ 43.7
Time deposits and certificates of deposit	104.3	94.2
Short-term securities—at cost which approximates market	61.5	133.4
Trade receivables, net of allowances of \$43.4 in 1980 and \$35.6 in 1979	1,105.9	1,085.1
Miscellaneous receivables and prepaid expenses	228.2	192.1
Inventories	832.3	909.9
	2,377.0	2,458.4

Investments and Other Assets:

Investments in affiliates	158.2	129.8
Other	152.1	133.1
	310.3	262.9

Property, Plant and Equipment, at Cost:

Land	57.0	55.9
Buildings	670.3	619.9
Machinery and equipment	4,628.4	4,086.0
Mineral rights and oil and gas properties	352.0	314.1
Construction-in-progress	365.9	452.8
	6,073.6	5,528.7
Less accumulated depreciation and depletion	2,964.5	2,710.9
	3,109.1	2,817.8
	\$5,796.4	\$5,539.1

MAR 001488

LAM017607

Monsanto accounts for its oil and gas production and exploration activities under the "successful efforts" method of accounting. The above statement should be read in conjunction with page 50 and pages 56 through 64 of this report.

Dec. 31, 1980 Dec. 31, 1979

Liabilities and Shareowners' Equity

Current Liabilities:

Accounts payable	\$ 425.8	\$ 585.4
Wages and commissions	105.4	105.2
Income and other taxes	60.2	66.7
Miscellaneous accruals	320.4	145.3
Short-term debt	238.8	233.1
	1,150.6	1,135.7

Long-Term Debt

1,370.5 1,202.5

Deferred Credits and Other Liabilities:

Deferred income taxes	338.1	295.4
Other	26.3	39.8
	364.4	335.2

Minority Interests in Subsidiaries

102.7 83.9

Shareowners' Equity:

Preferred stock—authorized, 10,000,000 shares without par value, issuable in series; outstanding, 123,139 shares in 1980 and 158,181 shares in 1979; involuntary liquidation preference, \$35 per share, or an aggregate of \$4.3 in 1980	0.3	0.3
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Common stock—authorized, 100,000,000 shares, par value \$2 each; issued, 36,978,084 shares in 1980 and 1979	73.9	73.9
---	------	------

Additional contributed capital	651.8	652.9
Reinvested earnings	2,122.7	2,102.3

2,848.7 2,829.4

Less common stock in treasury, at cost (808,435 shares in 1980 and 946,916 shares in 1979)	40.5	47.6
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2,808.2 2,781.8

\$5,796.4 \$5,539.1

MAR 001489

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Statement of Changes in Consolidated Financial Position

Monsanto Company and Subsidiaries

<i>(Dollars in millions)</i>	1980	1979	1978
Source of Working Capital:			
Net income	\$ 148.8	\$ 331.0	\$ 302.6
Charges not affecting working capital:			
Depreciation, depletion and obsolescence	546.9	412.7	288.3
Deferred income taxes	60.0	(17.1)	76.5
Other—net	(88.2)	(59.9)	24.8
Working capital from operations	667.5	666.7	692.2
Outside financing—net of unexpended funds from industrial development bonds	266.3	55.4	284.9
Property disposals	8.4	35.7	47.3
Other—net		49.6	
	942.2	807.4	1,024.4
Application of Working Capital:			
Property, plant and equipment additions	780.5	565.9	479.9
Dividends	128.4	121.2	115.4
Debt reduction	59.2	93.3	133.2
Other—net	70.4		80.2
	1,038.5	780.4	808.7
Increase (Decrease) in Working Capital	\$ (96.3)	\$ 27.0	\$ 215.7
Changes in Elements of Working Capital:			
Increase (decrease) in current assets:			
Cash	\$ 1.1	\$ (21.7)	\$ 27.1
Time deposits and certificates of deposit	10.1	(53.1)	30.7
Short-term securities	(71.9)	(1.5)	91.5
Trade receivables, net	20.8	179.9	214.2
Miscellaneous receivables and prepaid expenses	36.1	(14.7)	87.1
Inventories	(77.6)	189.1	(5.6)
	(81.4)	278.0	445.0
(Increase) decrease in current liabilities:			
Accounts payable	159.6	(188.7)	(103.4)
Wages and commissions	(0.2)	(19.4)	(16.5)
Income and other taxes	6.5	10.7	9.5
Miscellaneous accruals	(175.1)	(33.3)	(39.8)
Short-term debt	(5.7)	(20.3)	(79.1)
	(14.9)	(251.0)	(229.3)
Increase (Decrease) in Working Capital	\$ (96.3)	\$ 27.0	\$ 215.7

MAR 001490

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The above statement should be read in conjunction with page 50 and pages 56 through 64 of this report.

Statement of Consolidated Shareowners' Equity

Monsanto Company and Subsidiaries

(Dollars in millions, except per share)

	Preferred Stock	Common Stock	Additional Contributed Capital	Reinvested Earnings	Treasury Stock
Balance, January 1, 1978	\$0.6	\$73.7	\$650.6	\$1,705.3	\$(29.3)
Net income				302.6	
Dividends:					
Preferred—\$2.75 per share				(0.6)	
Common—\$3.175 per share				(114.8)	
Conversion of \$2.75 Preferred Stock to common stock	(0.2)	0.2			
Shares issued under employee stock ownership and option plans			0.8		3.2
Shares purchased					(12.8)
Other			0.1		
Balance, December 31, 1978	0.4	73.9	651.5	1,892.5	(38.9)
Net income				331.0	
Dividends:					
Preferred—\$2.75 per share				(0.5)	
Common—\$3.35 per share				(120.7)	
Conversion of \$2.75 Preferred Stock to common stock	(0.1)		(1.3)		1.4
Shares issued under employee stock ownership and option plans			0.3		4.5
Shares issued upon conversion of Monsanto Limited convertible loan stock			0.2		2.0
Shares reclassified from Miscellaneous Investments					(4.4)
Shares purchased					(12.4)
Other			2.2		0.2
Balance, December 31, 1979	0.3	73.9	652.9	2,102.3	(47.6)
Net income				148.8	
Dividends:					
Preferred—\$2.75 per share				(0.4)	
Common—\$3.55 per share				(128.0)	
Conversion of \$2.75 Preferred Stock to common stock			(1.9)		1.9
Shares issued under employee stock ownership and option plans			0.3		7.1
Shares issued upon conversion of Monsanto Limited convertible loan stock			0.2		2.1
Shares purchased					(4.0)
Other			0.3		
Balance, December 31, 1980	\$0.3	\$73.9	\$651.8	\$2,122.7	\$(40.5)

MAR 001491

LAM017610

The above statement should be read in conjunction with page 50 and pages 56 through 64 of this report.

Notes to Financial Statements

(Dollars in millions, except per share)

Business Combinations

On February 21, 1980, Monsanto acquired substantially all of the common stock of Radiation Dynamics, Inc. (RDI) for \$31.9 in cash in a transaction accounted for under the purchase method. The results of RDI's operations subsequent to the date of acquisition have been included in Monsanto's 1980 consolidated financial statements. The effect of including RDI in Monsanto's 1979 consolidated financial statements on a pro forma basis would not be material.

On February 28, 1979, Monsanto signed an agreement with the General Electric Company Limited (GEC), an English limited company, that provided for the formation of a new corporation consisting principally of Fisher Controls Company, Inc., a then wholly owned subsidiary of the Company engaged in the manufacture of valves, regulators, controllers and process controls instrumentation, and similar operations of GEC. GEC contributed net assets with an estimated fair value of approximately \$70.0 and received 33.5 percent of the common shares of the new corporation, Fisher Controls Corporation of Delaware, whose name was changed to Fisher Controls International, Inc. (FCII) in 1980. Monsanto contributed net assets with a book value of approximately \$134.0 and received 66.5 percent of the common shares of FCII. The transaction was accounted for under the purchase method with no excess of cost over fair value of the GEC operations' net assets.

The effective date of the transaction was specified as January 1, 1979. Accordingly, the results of FCII's operations are included in the accompanying consolidated financial statements for all of 1979 and 1980. The effect of including FCII in Monsanto's 1978 consolidated financial statements on a pro forma basis would not be material.

MAR 001492

Shutdown Costs

In January 1981, the Board of Directors approved the withdrawal from the polyester filament business in the United States. Accordingly, 1980 cost of goods sold includes a provision for losses of \$121.2, or \$69.0 (\$1.90 per primary share) net of related tax effects. In connection with the withdrawal from this business, the Company has an agreement in principle with a subsidiary of Celanese Corporation to sell certain polyester manufacturing facilities and related technology at Fayetteville, North Carolina, and certain patent rights. The parties are required under the Hart-Scott-Rodino Act to refrain from consummating the transaction for twenty days after submission to the Federal Trade Commission of requested data, which data were submitted on February 23, 1981. The remaining related manufacturing facilities will be shut down and facilities that do not have alternative future uses within the Company will be disposed of as soon as practical. This business had sales of approximately \$134.0 in 1980.

In December 1980, Monsanto's Board of Directors approved a decision to terminate all of its interest in Aiscondel, S.A., a majority-owned Spanish subsidiary. Cost of goods sold for 1980 includes a provision for losses of \$66.3, or \$38.7 (\$1.07 per primary share) net of related tax effects, as a result of this decision. Pursuant to the December 1980 Board authorization, the Company has entered into an agreement to sell its interest in Aiscondel, S.A. to the minority partners for a nominal amount. As part of this agreement, the Company obtained a revision of certain intercompany obligations of Aiscondel and agreed to guarantee a new \$12.6 line of credit on behalf of Aiscondel. In addition, the Company will pay certain debts of Aiscondel which had previously been guaranteed by the Company.

The Company has not included Aiscondel's assets, liabilities or results of operations in the consolidated financial statements subsequent to November 30, 1980. On a U.S. dollar basis, Aiscondel had sales of approximately \$126.0 for the eleven months then ended.

In June 1979, the Board authorized withdrawal from nylon operations in Europe. Accordingly, the related nylon manufacturing facilities were shut down by the end of 1979 and are in the process of being disposed. Also in June 1979, the Board authorized the shutdown or sale of all of the operations of an ex-U.S. subsidiary in the plastics business. In December 1979, the Board approved the closing of certain product lines of Aiscondel. Monsanto recorded provisions for losses related to these actions in 1979 of \$105.1 in cost of goods sold or \$53.2 (\$1.47 per primary share) net of related tax effects.

As of December 31, 1980, the remaining accruals for the losses discussed above have been reduced to \$246.1, which amount is principally included in

accumulated depreciation and depletion (\$71.3) and miscellaneous accruals (\$110.4). The reduction in accruals results from actual expenditures for shutdown or withdrawal costs, disposal of certain facilities, and operating losses subsequent to the recording of the provisions. The remaining accruals are estimated to be sufficient to absorb any additional costs related to these actions.

Depreciation, Depletion and Obsolescence

Charges to expense were:

	1980	1979	1978
Depreciation and depletion	\$327.0	\$294.9	\$265.5
Obsolescence	219.9	117.8	22.8
	<u>\$546.9</u>	<u>\$412.7</u>	<u>\$288.3</u>

The above table includes depreciation, depletion and amortization expense related to oil and gas production and exploration activities (see "Oil and Gas Activities" note). Obsolescence expense for 1980 and 1979 included \$187.5 and \$93.1, respectively, related to "Shutdown Costs" discussed above. The weighted average assigned life for U.S. machinery and equipment is approximately 11 years.

Pension Plans

Most Monsanto employees are covered by noncontributory pension plans. The expense related to these plans was \$97.7, \$92.3 and \$84.2 in 1980-1978, respectively. These amounts include charges applicable to current service and amortization of unfunded prior service costs over periods generally ranging from 10 to 30 years. It is Monsanto's policy to fund pension costs accrued.

Certain changes in the actuarial assumptions for Monsanto's major pension plans were approved in 1980 and became effective on January 1, 1980. These changes were adopted to reflect more current assumptions with respect to projected future events and conditions. All actuarial assumptions were reviewed and most were changed to some extent. The major assumptions changed were those with respect to the investment rate of return and the annual rate of increase in salaries. The investment return assumption was changed from the 7.0 percent that had been used for prior years to 7.5 percent for 1980. The salary increase assumption was changed from a uniform 6.0 percent for prior years to a set of age-dependent assumptions which had an overall average of 6.5 percent for 1980. Monsanto also increased the contribution for one major pension plan to the maximum deductible amount for tax purposes. The net effect of these changes was to decrease 1980 pension expense by approximately \$1.0.

Estimated benefit and asset information for plans representing 96 and 97 percent of total pension expense for 1980 and 1979, respectively, is presented below on an aggregate basis as of December 31 of each year. Net assets were measured at market value at those dates and year-end accumulated benefits were estimated from actuarial valuations made earlier in the year. Subsequent to December 31, 1980, increased benefit levels under the Company's major domestic plans were approved. Amounts presented below do not include the effect of these increases.

	1980	1979
Actuarial present value of accumulated plan benefits:		
Vested	\$ 775.5	\$863.3
Nonvested	114.7	28.9
Total	<u>\$ 890.2</u>	<u>\$892.2</u>
Net assets available for benefits	<u>\$1,260.3</u>	<u>\$957.8</u>

Technological Expenses

Technological expenses consisted of the following:

	1980	1979	1978
Research and development	\$204.4	\$161.3	\$135.9
Engineering, commercial development and patent	65.1	60.8	54.3
	<u>\$269.5</u>	<u>\$222.1</u>	<u>\$190.2</u>

Interest Costs and Income

Beginning January 1, 1980, Monsanto began capitalizing interest costs related to construction-in-progress expenditures in accordance with Financial Accounting Standards Board Statement No. 34. In prior years, all interest costs were expensed as incurred. Total interest cost incurred during 1980 was \$163.4, of which \$51.6 was capitalized. The net effect of adopting Statement No. 34 was an increase in 1980 net income of \$27.5 (\$0.76 per primary share).

Interest income included in other income-net for 1980-1978 was \$36.4, \$63.6 and \$35.6, respectively.

Equity in Affiliates

Monsanto's equity in the net income (loss) of affiliates, including foreign currency gains or losses on translation of financial statements, totaled \$17.3, \$25.8 and \$(10.1) in 1980-1978, respectively, and is included in other income-net.

Foreign Exchange

Net exchange gains (losses) resulting from foreign currency transactions and translation of foreign currency financial statements were \$11.5, \$(26.9) and \$(28.3) in 1980-1978, respectively, including a gain (loss) of \$(17.5), \$2.3 and \$(14.1), respectively, related to the translation of equity affiliates' financial statements.

Earnings per Common Share

Income and the number of shares used in the computation of earnings per common and common equivalent share were determined as follows:

	1980		1979		1978	
	Primary	Fully Diluted	Primary	Fully Diluted	Primary	Fully Diluted
Income						
Net income	\$148.8	\$148.8	\$331.0	\$331.0	\$302.6	\$302.6
Preferred dividends	(0.4)		(0.5)		(0.6)	
Interest (less tax) on:						
Loan stock of Monsanto Limited	0.3	0.3	0.3	0.3	0.3	0.3
Debentures of Monsanto International Finance Company		0.3		0.3		0.4
	<u>\$148.7</u>	<u>\$149.4</u>	<u>\$330.8</u>	<u>\$331.6</u>	<u>\$302.3</u>	<u>\$303.3</u>
Number of Shares						
(In thousands)						
Weighted average shares:						
Outstanding	36,061	36,061	36,068	36,068	36,212	36,212
Incremental shares for outstanding stock options	25	187	5	24	9	11
Shares issuable upon conversion:						
Loan stock of Monsanto Limited	202	202	242	242	259	259
Debentures of Monsanto International Finance Company		147		174		194
\$2.75 Preferred Stock		155		191		248
	<u>36,288</u>	<u>36,752</u>	<u>36,315</u>	<u>36,699</u>	<u>36,480</u>	<u>36,924</u>

Income Taxes

The U.S. and ex-U.S. components of income before income taxes were as follows:

	1980	1979	1978
U.S.	\$211.6	\$526.9	\$624.2
Ex-U.S.	(5.9)	(45.8)	(47.9)
	<u>\$205.7</u>	<u>\$481.1</u>	<u>\$576.3</u>

The components of income tax expense were:

	1980	1979	1978
Current:			
Federal	\$ (5.0)	\$126.1	\$164.3
State	4.6	16.0	16.8
Ex-U.S.	24.6	25.1	16.1
	<u>24.2</u>	<u>167.2</u>	<u>197.2</u>
Deferred:			
Federal	19.0	44.2	69.3
State	2.8	4.0	6.1
Ex-U.S.	10.9	(65.3)	1.1
	<u>32.7</u>	<u>(17.1)</u>	<u>76.5</u>
	<u>\$56.9</u>	<u>\$150.1</u>	<u>\$273.7</u>

A change in tax laws in the United Kingdom during 1979 resulted in a reversal of deferred taxes of \$16.8 (\$0.46 per primary share), which amount is reflected in deferred foreign income tax expense for 1979. These deferred taxes were established in prior years for differences in book and tax bases of U.K. inventories.

Investment tax credits for 1980-1978 were \$48.5, \$28.4 and \$28.0, respectively.

The sources of timing differences in the recognition of revenue and expense for tax and financial statement purposes and the tax effect of each were:

	1980	1979	1978
Additional depreciation and obsolescence for (book) tax purposes	\$ (7.6)	\$(22.1)	\$58.6
Reversal of deferred taxes related to U.K. inventories		(16.8)	
Net change in accrual for pension expense	(4.5)	14.8	0.7
Intangible drilling and development costs	14.6	11.0	8.0
Interest capitalization	23.4		
Other items—net	6.8	(4.0)	9.2
	<u>\$32.7</u>	<u>\$(17.1)</u>	<u>\$76.5</u>

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Monsanto's effective income tax rate differed from the federal statutory rate due to the following factors:

	1980	1979	1978
Federal statutory rate	46.0%	46.0%	48.0%
Investment tax credit	(23.6)	(5.9)	(4.9)
Tax treatment afforded earnings of DISC's	(12.4)	(4.9)	(2.9)
Losses of ex-U.S. subsidiaries for which no tax benefits are currently available	19.0	1.8	4.8
U.K. stock relief, including reversal of previously deferred taxes		(5.1)	
Ex-U.S., state and local income taxes	0.7	1.1	3.3
Other	(2.0)	(1.8)	(0.8)
Effective income tax rate	27.7%	31.2%	47.5%

Undistributed earnings of subsidiaries for which additional taxes in the event of distribution have not been provided were:

	1980	1979	1978
Ex-U.S. subsidiaries	\$ 77.7	\$ 78.2	\$ 80.0
Domestic subsidiaries, including DISC's	290.5	218.1	159.5
	<u>\$368.2</u>	<u>\$296.3</u>	<u>\$239.5</u>

Ex-U.S. net operating loss carryforwards for which no tax benefits have been recorded were approximately \$121.3 at December 31, 1980, and expire in various years beginning in 1981.

Miscellaneous receivables and prepaid expenses on the Statement of Consolidated Financial Position as of December 31, 1980, includes \$10.0 of deferred income taxes.

Inventories

Inventories consisted of the following:

	1980	1979
Valued on a FIFO basis:		
Finished goods	\$163.9	\$194.6
Goods in process	68.8	74.4
Raw materials	99.5	113.4
Materials and supplies	130.1	121.4
Valued on a LIFO basis	370.0	406.1
	<u>\$832.3</u>	<u>\$909.9</u>

The LIFO method used by Monsanto does not identify inventories by classification (i.e., finished goods, goods in process, raw materials, materials and supplies).

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Inventories at December 31, 1980 and 1979 would have been \$509.3 and \$429.3, respectively, higher than reported if the FIFO basis of inventory valuation (which approximates current cost) had been used for all inventories.

Key Employee Bonus

Data relating to the Monsanto Management Incentive Plan of 1974 were:

	1980	1979	1978
Maximum allowable addition to bonus reserve		\$12.0	\$14.5
Actual charge to expense (and addition to bonus reserve) as determined by the Executive Compensation and Development Committee of the Board of Directors		\$11.9	\$ 8.4
Bonus Awards:			
Number of directors and officers	2	25	25
Number of other key employees	73	488	471
Amount	\$0.7	\$12.6	\$ 9.5
Balance in bonus reserve at year-end	\$4.7	\$ 5.4	\$ 6.7

The bonus award amounts for 1979 and 1978 include respective five-year accumulated award payments to 33 and 36 officers and employees of \$1.8 and \$1.6 for the long-term incentive program established under the Monsanto Management Incentive Plan of 1974.

Guarantees, Leases and Other Commitments

Monsanto was contingently liable as guarantor of bank loans and for discounted customers' receivables totaling approximately \$50.7 at December 31, 1980. This amount includes \$25.8 related to guarantees of loans of affiliates.

Rent expense under operating leases with a term of more than one month was approximately \$71.0, \$62.2 and \$54.9 in 1980-1978, respectively.

Minimum rental commitments for future years under operating leases with initial or remaining terms of one year or more at December 31, 1980, were approximately:

1981	\$17.9
1982	15.1
1983	12.4
1984	8.4
1985	6.9
After 1985	33.4
	<u>\$94.1</u>

Commitments in connection with uncompleted additions to property aggregated approximately \$138.2 at December 31, 1980.

Long-Term Debt

Long-term debt, exclusive of current maturities and repayable in U.S. dollars, except where indicated, was as follows:

	1980	1979
Monsanto Company:		
8% notes due 1985	\$ 100.0	\$ 100.0
7½% promissory notes due 1982/1986	9.9	12.3
4¾% promissory notes due 1993	58.0	62.7
8½% sinking fund debentures due 2000	174.4	175.0
9½% sinking fund debentures due 2000	89.7	84.0
3¾% income debentures due 2002	91.0	91.0
4¼% income debentures due 2008	50.0	50.0
8¾% sinking fund debentures due 2008	198.9	200.0
4½%-7½% industrial development bond obligations due 1983/2009	184.4	156.7
Capitalized lease obligations	12.4	13.7
Commercial paper, 14½%-20½%(a)	225.0	
Other	1.4	1.3
Monsanto International Finance Company:		
4½% sinking fund debentures due 1985 (b)	10.0	12.5
Monsanto International N.V. (Netherlands Antilles subsidiary):		
8¾% sinking fund debentures due 1985	1.8	3.2
Monsanto Limited (United Kingdom subsidiary) (British pound):		
5% loan stock due 1982/1986(c)	9.7	11.0
Other	29.8	31.7
Monsanto (Suisse) S.A. (Swiss subsidiary) (Swiss franc):		
6½% sinking fund debentures due 1986. .	26.6	30.1
Monsanto Europe, S.A. (Belgian subsidiary) (Belgian franc):		
9% bank loan due 1982/1986	0.4	0.5
9¾%-11½% bank loans due 1982/1988(d)	80.9	100.0
9¾% bonds due 1982/1991	12.6	14.3
Aiscondel, S.A. (Spanish subsidiary):		
9%-19½% bank and commercial loans due 1981/2015(e):		
U.S. dollar		32.0
Spanish peseta		16.9
Other	3.6	3.6
	\$1,370.5	\$1,202.5

Notes:

(a) This amount of commercial paper outstanding at December 31, 1980, has been included in the Long-Term Debt because the Company intends to refinance these borrowings on a long-term basis, and long-term financing is available under credit agreements described in "Short-Term Debt and Bank Credit Arrangements" note.

(b) These debentures are currently convertible into the Company's common stock at \$86 per share, subject to adjustment under certain conditions.

(c) This loan stock is convertible into the Company's common stock at a rate equivalent to \$55 per share, subject to adjustment under certain conditions.

Of the total loan stock originally issued in 1969, 63 percent has been retired through December 31, 1980, by conversion into 294,872 shares of the Company's common stock.

(d) The interest rates on these bank loans will be reduced by a government subsidy ranging from 4.0 percent-2.8 percent, which expires in 1981. Monsanto has the option of repaying these loans in 1981.

(e) At December 31, 1980, Aiscondel is not included in the consolidated financial statements. See "Shutdown Costs" note.

The amounts shown in the above table for 1980 are net of related unamortized debt discount.

Maturities and sinking fund requirements on long-term debt are \$36.7, \$48.9, \$41.6, \$38.8 and \$142.2 for the five years ending December 31, 1981 through 1985, respectively.

Covenants of certain loan agreements restrict maximum borrowings and dividend payments. It is not anticipated that additional future borrowings will be affected by these restrictions, and none of the Company's reinvested earnings were restricted as to dividend payments at December 31, 1980.

Under various parallel loan agreements, Monsanto has borrowed \$92.4 in pounds sterling from United Kingdom companies and has made United States dollar loans to the U.K. companies or their subsidiaries aggregating \$90.4 as of December 31, 1980. These agreements require the parties to either make additional loans in the respective currency or repay loans whenever the exchange rate varies by a predetermined percent. At December 31, 1980, no additional amounts were due to or from any of the parties. As both parties to the agreements have the legal right to offset in case of default by the other party, the parallel transactions are reflected net in the accompanying financial statements. Interest rates on the sterling loans are 2½ percent to 2¾ percent higher than the interest rates on the corresponding dollar loans. Maturity dates of the loans range from 1982 through 1986.

Substantially all long-term debt of subsidiaries is guaranteed by the Company.

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Short-Term Debt and Bank Credit Arrangements

Short-term debt included the following:

	1980	1979
Notes payable to banks	\$187.2	\$168.6
Commercial paper	14.9	
Current portion of long-term debt	36.7	64.5
	<u>\$238.8</u>	<u>\$233.1</u>

In March, 1980, the Company amended its domestic Revolving Credit/Term Loan Agreement with 21 banks to increase the commitment to \$400.0 from \$150.0, and terminated \$150.0 of open domestic short-term lines of credit. The amended Agreement provides for a five-year revolving credit, with any borrowings outstanding at the end of that period convertible into a three-year term loan. Interest on borrowings under the revolving credit is at the prime rate of the agent bank, Citibank, N.A., and interest on borrowings under the term loan will be one-quarter percent above the then Citibank prime rate. The Company also has \$200.0 committed under Eurocurrency Revolving Credit Agreements dated August 1, 1980. These Eurocurrency commitments are subject to mandatory reduction after four and one-half years and terminate at the end of seven years. Interest rates for the Eurocurrency agreements are $\frac{1}{2}$ percent- $\frac{5}{8}$ percent above the prevailing London or Luxembourg interbank offer rate. No borrowings were made under either the amended Revolving Credit/Term Loan or Eurocurrency Agreements through February 23, 1981.

Because these Agreements provide the ability to refinance the Company's commercial paper borrowings on a long-term basis, which the Company intends to accomplish through use of these Agreements or other sources of borrowings, \$225.0 of commercial paper outstanding at December 31, 1980, has been included in Long-Term Debt.

In addition, certain ex-U.S. subsidiaries have short-term loan facilities aggregating approximately \$457.1, under which loans totaling \$141.3 were outstanding at December 31, 1980. Interest on these loans is related to various ex-U.S. bank rates.

Legal Proceedings

Monsanto is a party to a number of lawsuits arising in the normal course of business. The more significant litigation is discussed below.

On March 17, 1978, the EPA filed suit in the United States District Court for the Northern District of Illinois against Outboard Marine Corporation of Waukegan, Illinois. The action is based on several federal pollution statutes and seeks recovery of civil penalties and the removal of polychlorinated biphenyls (PCB's) allegedly discharged by Outboard Marine into Waukegan Harbor and North Ditch, a tributary of Lake Michigan. In November, 1978, Monsanto was joined as a third-party defendant from whom indemnity or

contribution was sought for products allegedly sold by it to Outboard Marine. The EPA filed an amended complaint on July 22, 1980, asserting claims directly against Monsanto as the manufacturer of the products allegedly discharged by Outboard Marine. The EPA seeks a mandatory injunction requiring Monsanto and Outboard Marine jointly and severally to clean up the alleged PCB contamination. Monsanto has filed a crossclaim against Outboard Marine seeking indemnity or contribution for any losses it may incur. In a separate but related action, the State of Illinois has filed suit against Outboard Marine seeking substantially identical relief as that sought by the EPA. Outboard Marine has filed a third-party complaint in the Illinois action seeking indemnity or contribution from Monsanto. Monsanto is vigorously defending its position in both actions.

The Company is one of several defendants in a number of lawsuits arising out of the use by the United States government of an herbicide known as agent orange in the Vietnam war. The first lawsuit in which the Company was served as a defendant was filed on February 1, 1979. Many of these actions have been consolidated for pretrial purposes in the United States District Court for the Eastern District of New York. The actions allege death, illnesses and birth defects resulting from exposure of United States and Australian Vietnam war veterans to agent orange. On December 26, 1980, the court granted plaintiffs' motion for class certification and dismissed the Company's and other defendants' third party complaints against the United States government. The Company and other defendants are seeking immediate appeal of these rulings. The Company will vigorously defend these actions.

On June 11, 1979, Monsanto was joined as a defendant in the first of a number of lawsuits arising out of a tank car derailment which occurred on January 10, 1979, in Sturgeon, Missouri. The initial actions were filed in state and federal courts in Missouri and in a state court in Illinois. During 1980, the Missouri state court cases were dismissed and refiled in Illinois state court. There are currently approximately 70 cases pending in the Illinois state courts, involving about 120 plaintiffs, and one case, involving 53 plaintiffs, pending in Missouri federal court. As a result of the refileing in Illinois, it is no longer possible to determine accurately the amount of damages claimed in those cases. The Illinois cases seek "in excess of" \$1.0 actual damages and "in excess of" \$0.7 punitive damages while the Missouri claim is for \$2.6 actual damages. The cases have been filed against the railroad which had control of the tank car, the manufacturer of the tank car and the manufacturer of an allegedly defective coupling

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device, as well as against Monsanto. Plaintiffs, who are residents and property owners in Sturgeon and workers involved in the cleanup of the spill of orthochlorophenol crude, allege against Monsanto that the Company negligently failed to warn of the alleged hazards of this material, failed to properly containerize the chemical and supplied an unreasonably dangerous product. In a separate suit filed in Missouri federal court, the railroad has sued Monsanto, the tank car manufacturer and the coupler manufacturer, seeking a determination of responsibility for expenses of the cleanup. In all of these cases, Monsanto has filed a third-party complaint against the company which conducted the cleanup, seeking indemnity or contribution for any judgment which may be rendered against the Company. Monsanto is vigorously defending each of these lawsuits.

On February 21, 1980, a federal jury in the Northern District of Illinois returned a \$3.5 antitrust verdict against Monsanto. The Company's trial counsel has advised that there are substantial bases for appeal. Any final judgment would be trebled.

While the results of litigation cannot be predicted with certainty, management believes, based upon the advice of Company counsel, that the final outcome of such litigation will not have a material adverse effect on Monsanto's consolidated financial statements.

Capital Stock

The outstanding preferred stock is stated at \$2.24 per share, has a cumulative dividend of \$2.75 per share and is convertible into the Company's common stock. The conversion rate of 1.12 shares of common for each share of preferred is subject to adjustment in certain events under antidilution provisions. The Company issued 39,241, 30,120 and 96,505 common shares upon conversion of 35,042, 26,931 and 86,194 preferred shares in 1980-1978, respectively. The 1980 and 1979 issuances included 39,241 and 28,552 shares, respectively, from treasury stock. Of 2,330,510 preferred shares originally issued in the period 1969 through 1974, a total of 2,207,371 preferred shares has been converted to 2,471,899 shares of common stock through December 31, 1980. The outstanding preferred stock may be redeemed solely at the Company's option at \$73 per share (the voluntary liquidation preference).

The Company also issued 40,775 and 41,138 shares out of treasury stock in 1980 and 1979, respectively, upon exercise of conversion rights by

holders of convertible loan stock issued by Monsanto Limited, a United Kingdom subsidiary. There were no conversions of loan stock in 1978.

No common shares were issued in 1980, 1979 or 1978 for conversion of convertible debentures issued by Monsanto International Finance Company.

The Company held 58,106 and 55,174 shares of its common stock for specific purposes (principally for distribution to participants in the Employee Stock Purchase Plan) at December 31, 1980 and 1979, respectively. These shares are included in Common Stock in Treasury.

There were 2,821,625 shares of common stock reserved for the following purposes at December 31, 1980:

	Shares
Conversion of \$2.75 Preferred Stock	137,916
Stock option plans	2,372,332
Conversion of convertible loan stock of	
Monsanto Limited	176,400
Conversion of debentures of Monsanto	
International Finance Company	134,977
	<u>2,821,625</u>

Stock Option Plans

The status of authorized common shares for stock option plans and the changes occurring during 1980 were:

	1969 and 1974 Plans	
	Shares Under Options Outstanding	Shares Available For Grant
At January 1, 1980	1,238,239	1,153,128
Grants	252,700	(252,700)
Exercises	(15,285)	
Cancellations	(53,011)	49,261
At December 31, 1980	<u>1,422,643</u>	<u>949,689</u>

Options outstanding at December 31, 1980, were granted at prices ranging from \$44.50 to \$92.88, or a weighted average of \$62.37 per share. Options for 932,529 shares were exercisable at December 31, 1980. The options exercised during the year had been granted at prices ranging from \$32.50 to \$61.44 per share.

Stock appreciation rights (SAR's) are authorized to be granted at the same time the related non-qualified options under the 1974 Plan are granted. In addition, SAR's may be granted retroactively for any unexercised non-qualified options under either the 1974 or 1969 Plan. The exercise of an SAR cancels the related option; conversely, the exercise of an option cancels the related SAR. At December 31, 1980, SAR's with respect to options for 371,821 shares were outstanding; of these, 262,371 were exercisable. In 1980, SAR's with respect to options for 58,350 shares were granted; 1,700 were exercised; and 15,700 were cancelled.

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Oil and Gas Activities

Revenue and cost information concerning the Company's worldwide oil (crude oil, condensate and natural gas liquids) and gas related activities follows.

The Company's net revenue (gross revenue less production costs) from oil and gas production from proved developed oil and gas reserves for 1980 was \$88.3 (\$84.1 United States and \$4.2 ex-U.S.). These net revenue amounts exclude royalty interests and the operation of natural gas plants, which were \$1.6 and \$5.8, respectively, in 1980.

The aggregate amount of capitalized costs (including construction-in-progress) relating to oil and gas producing activities and the aggregate amount of the related accumulated depreciation, depletion and amortization (DD&A), at December 31, 1980, were as follows:

	United States	Ex-U.S.	Total
Proved properties:			
Gross capital	\$307.8	\$13.7	\$321.5
DD&A	107.8	5.9	113.7
Unproved properties:			
Gross capital	68.8	8.0	76.8
DD&A	15.7	3.4	19.1

Costs incurred in oil and gas producing activities for the year ended December 31, 1980, were as follows:

	United States	Ex-U.S.	Total
Property acquisition	\$ 32.9	\$ 2.6	\$ 35.5
Exploration	44.9	10.5	55.4
Development	44.4	0.3	44.7
Production	39.7	1.4	41.1
DD&A	11.8	0.6	12.4
Amortization of undeveloped leases	6.0	0.6	6.6

Segment Information

Operating Unit and World Area segment data for 1980-1978 required by Financial Accounting Standards Board Statement No. 14 appear on pages 45 and 46 of this Annual Report and are integral parts of the accompanying financial statements. The following discussion should be read in conjunction with that data.

The impact of adopting Financial Accounting Standards Board Statement No. 34 in 1980 (see "Interest Costs and Income" note) was not material to the results of any of the operating units or world areas.

Operating Unit Segment Data: The principal product lines included in each operating unit are shown in the "Sales by Product Group" data on page 36. Total sales between operating units (made on a market basis) were \$249.8, \$229.7 and \$169.5 in 1980-1978, respectively. These sales were not significant for any operating units except Chemical Intermediates (\$165.3, \$151.9 and \$116.3 in 1980-1978, respectively) and Industrial Chemicals (\$45.3, \$44.1 and \$26.6 in 1980-1978, respectively).

Unusual or nonrecurring charges or credits to operating income were as follows: Textiles operating loss for 1980 included a charge of \$121.2 relating to withdrawal from the polyester filament business; Plastics & Resins operating loss for 1980 included a charge of \$66.3 relating to withdrawal from Aiscondel, S.A., a majority-owned Spanish subsidiary; Textiles operating loss for 1979 included a charge of \$77.4 relating to withdrawal from the European nylon business; Plastics & Resins operating income for 1979 included charges of \$12.1 relating to the shutdown of a plastics business and \$15.6 for the closing of certain product lines of Aiscondel, S.A.; and Plastics & Resins operating income for 1978 included a credit of \$10.1 from the sale of the high density polyethylene business. The Fisher Controls amounts for 1980 and 1979 reflect the operations of a new corporation formed by Monsanto and the General Electric Company Limited (See "Business Combinations" note).

Profit derived from intercompany sales is the principal item reflected in eliminations in arriving at the consolidated totals. Certain corporate expenses, primarily those related to the overall management of the Company, were not allocated to the operating units. Nonoperating assets principally include cash, short-term securities, time deposits and investments.

World Area Segment Data: Inter-area sales, which are sales from one Monsanto location to another Monsanto location in a different world area, were made on a market basis. Export sales included in United States net sales to outside customers were as follows:

	Europe-Africa	Canada-Latin America	Asia-Pacific	Total
1980	\$68.5	\$182.4	\$241.0	\$491.9
1979	55.7	178.3	172.4	406.4
1978	73.2	135.3	101.6	310.1

Unusual or nonrecurring charges or credits to operating income were as follows: United States operating income for 1980 included a charge of \$121.2 relating to withdrawal from the polyester filament business; Europe-Africa operating income for 1980 included a charge of \$66.3 relating to withdrawal from Aiscondel, S.A., a majority-owned Spanish

subsidiary; Europe-Africa operating income for 1979 included charges of \$77.4 relating to withdrawal from the European nylon business and \$15.6 for the closing of certain product lines of Aiscondel, S.A.; Canada-Latin America operating income for 1979 included charges of \$12.1 relating to the shutdown of a plastics business and \$8.5 relating to the maxi-devaluation of the Brazilian cruzeiro; and United States operating income for 1978 included a credit of \$10.1 from the sale of the high density polyethylene business.

Inter-area receivables and the profit derived from inter-area sales are the principal items reflected as eliminations in arriving at the consolidated totals. World area operating income (loss) for 1979 was restated from that previously reported to reflect a consistent method of allocating the inter-area items for the periods presented. Unallocated corporate expenses and nonoperating assets are the same as those described for the Operating Unit Segment Data.

Following is a reconciliation of ex-U.S. operating income and total assets as shown on page 46 to the Company's equity in the net income (loss) and net assets of consolidated ex-U.S. subsidiaries:

	1980	1979	1978
Operating income (loss):			
Europe-Africa	\$ (43.8)	\$ (66.8)	\$ 15.2
Canada-Latin America	24.2	3.6	10.0
Asia-Pacific	12.9	20.4	10.5
	(6.7)	(42.8)	35.7
Income charges—net	48.2	56.7	80.5
Income taxes	10.9	(69.5)	13.7
Net (loss) of consolidated ex-U.S. subsidiaries	\$ (65.8)	\$ (30.0)	\$ (58.5)

	1980	1979	1978
Total assets:			
Europe-Africa	\$1,026.3	\$1,198.3	\$1,147.7
Canada-Latin America ...	291.3	300.5	308.6
Asia-Pacific	176.1	181.0	158.4
	1,493.7	1,679.8	1,614.7
Total liabilities	699.9	918.4	1,025.3
Net assets of consolidated ex-U.S. subsidiaries	\$ 793.8	\$ 761.4	\$ 589.4

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Independent Auditors' Opinion on Financial Statements

To the Shareowners of Monsanto Company:

We have examined the statement of consolidated financial position of Monsanto Company and Subsidiaries as of December 31, 1980 and 1979, and the related statements of consolidated income, shareowners' equity and changes in financial position for each of the three years in the period ended December 31, 1980. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, such consolidated financial statements present fairly the financial position of Monsanto Company and Subsidiaries at December 31, 1980 and 1979, and the results of their operations and changes in their financial position for each of the three years in the period ended December 31, 1980, in conformity with generally accepted accounting principles consistently applied during the period except for the change, with which we concur, in 1980 to the method of capitalizing certain interest costs as described in the "Interest Costs and Income" note to the financial statements.



Saint Louis, Missouri
February 23, 1981

Independent Auditors' Opinion on System of Internal Accounting Control

To the Shareowners of Monsanto Company:

We have made a study and evaluation of the system of internal accounting control of Monsanto Company and its United States subsidiaries in effect during the year ended December 31, 1980. These companies constitute approximately 75 percent of consolidated total assets at December 31, 1980 and approximately 68 percent of consolidated revenues for the year then ended. Our study and evaluation was conducted in accordance with standards established by the American Institute of Certified Public Accountants.

The "management report" on page 30 explains the responsibility of management of Monsanto Company to establish and maintain a system of internal accounting control and the broad objectives and inherent limitations of a system of internal accounting control.

In our opinion, the system of internal accounting control of Monsanto Company and its United States subsidiaries in effect during the year ended December 31, 1980, taken as a whole, was sufficient to meet the objectives referred to above insofar as those objectives pertain to the prevention or detection of errors or irregularities in amounts that would be material in relation to the financial statements of Monsanto Company and its United States subsidiaries.



Saint Louis, Missouri
February 23, 1981

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Ten-Year Summary

Monsanto Company and Subsidiaries

(In millions, except per share and where italicized)

	1980	1979
Operating Results		
Net sales	\$6,574	\$6,193
Operating income	210	487
Interest expense	112(1)	123
Income taxes	57	150
Net income	149(1)	331
Percent of net sales	2.3%	5.3%
Percent of average shareowners' equity	5.3%	12.3%
Earnings per common share:		
Primary	\$ 4.10(1)	\$ 9.11
Fully diluted	4.06	9.03
Year-End Financial Position		
Total assets	\$5,796	\$5,539
Working capital	1,226	1,323
Property, plant and equipment—gross	6,074	5,529
Property, plant and equipment—net	3,109	2,818
Long-term debt	1,371	1,203
Shareowners' equity	2,808	2,782
Other Data		
Per common share:		
Dividends	\$ 3.55	\$ 3.35
Shareowners' equity	77.63	77.20
Property, plant and equipment additions	\$ 781	\$ 566
Depreciation, depletion and obsolescence	547	413
Year-end:		
Shareowners:		
Common	82,441	85,608
Preferred	871	952
Common shares outstanding	36.2	36.0
Employees	61,836	63,926

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(1) Beginning January 1, 1980, Monsanto began capitalizing interest costs related to construction-in-progress expenditures in accordance with Financial Accounting Standards Board Statement No. 34, "Capitalization of Interest Cost." In 1979 and prior years, all interest costs were expensed as incurred. The effect of the new accounting principle was to decrease interest expense by \$51.6 and increase net income for 1980 by \$27.5, or \$0.76 per primary share.

(2) As of January 1, 1974, the Company and certain of its domestic subsidiaries changed their method of inventory valuation for substantially all United States inventories from the FIFO basis to the LIFO basis. The effect of this change was to decrease 1974 income by \$77.5, or \$2.26 per primary share.

1978	1977	1976	1975	1974	1973	1972	1971
\$5,019	\$4,595	\$4,270	\$3,625	\$3,498	\$2,648	\$2,225	\$2,087
632	610	668	547	550	406	216	178
103	86	80	56	43	39	37	39
274	248	251	230	251	173	81	66
303	276	366	306	323(2)	238	122	94
6.0%	6.0%	8.6%	8.4%	9.2%	9.0%	5.5%	4.5%
12.2%	11.9%	17.3%	16.4%	20.0%	17.2%	9.7%	7.8%
\$ 8.29	\$ 7.46	\$10.05	\$ 8.63	\$ 9.25(2)	\$ 6.90	\$ 3.49	\$ 2.65
8.21	7.37	9.77	8.22	8.73	6.54	3.40	2.63
\$5,036	\$4,350	\$3,959	\$3,451	\$2,938	\$2,545	\$2,237	\$2,154
1,296	1,080	1,106	1,150	968	855	677	547
5,167	4,745	4,208	3,620	3,157	2,852	2,765	2,735
2,605	2,409	2,090	1,660	1,312	1,152	1,133	1,170
1,224	1,031	915	845	587	579	576	558
2,579	2,401	2,253	1,977	1,755	1,484	1,294	1,226
\$3.175	\$3.025	\$ 2.75	\$ 2.55	\$ 2.30	\$ 1.90	\$ 1.80	\$ 1.80
71.26	66.16	61.79	56.62	51.39	44.26	39.05	37.16
\$ 480	\$ 607	\$ 647	\$ 528	\$ 313	\$ 205	\$ 168	\$ 205
288	296	226	173	172	170	194	187
86,775	85,021	84,647	91,725	98,542	98,964	104,369	110,490
1,156	1,404	1,956	2,836	3,709	3,855	3,939	3,897
36.2	36.3	36.4	34.8	34.1	33.4	33.0	32.8
62,851	61,519	61,903	59,242	60,926	58,277	57,891	59,271

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Directors and Officers

Board of Directors

John W. Hanley, St. Louis
Chairman of the Board and Chief
Executive Officer

Edmond S. Bauer, St. Louis
Chairman of the Board and President,
Fisher Controls International, Inc.

Donald C. Carroll, Philadelphia
Dean of The Wharton School,
University of Pennsylvania

C. Raymond Dahl, San Francisco
Chairman of the Board,
Crown Zellerbach Corporation

Louis Fernandez, St. Louis
Vice Chairman of the Board

J. William Fisher, Marshalltown, Ia.
Former Chairman of the Board,
Fisher Controls Company, Inc.

Richard I. Fricke, Montpelier, Vt.
President,
National Life Insurance Company

James J. Kerley, St. Louis
Chairman of the Finance Committee

Howard M. Love, Pittsburgh
President, National Steel Corporation

Richard J. Mahoney, St. Louis
President

Jean Mayer, Medford, Mass.
President, Tufts University

Buck Mickel, Greenville, S.C.
Chairman of the Board,
Daniel International Corporation
(a subsidiary of Fluor Corporation)

Edward L. Palmer, New York
Chairman of the Executive
Committee,
Citicorp and Citibank, N.A.

Francis E. Reese, St. Louis
Senior Vice President

Monte C. Throdahl, St. Louis
Senior Vice President

Margaret Bush Wilson, St. Louis
Attorney,
Wilson, Smith and McCullin

Committees of the Board of Directors

Audit

Jean Mayer
Buck Mickel
Edward L. Palmer
Margaret Bush Wilson

Executive

Louis Fernandez
John W. Hanley
James J. Kerley
Richard J. Mahoney
Margaret Bush Wilson

Executive Compensation and Development

Richard I. Fricke
Howard M. Love
Buck Mickel

Finance

Donald C. Carroll
C. Raymond Dahl
J. William Fisher
John W. Hanley
James J. Kerley
Richard J. Mahoney
Edward L. Palmer

Nominating

C. Raymond Dahl
Howard M. Love
Buck Mickel

Pension and Savings Funds

Donald C. Carroll
Louis Fernandez
Richard I. Fricke
James J. Kerley
Jean Mayer

Officers

Chairman of the Board and Chief Executive Officer

John W. Hanley

Vice Chairman of the Board

Louis Fernandez

President

Richard J. Mahoney

Chairman of the Finance Committee

James J. Kerley

Executive Vice President

Francis J. Fitzgerald

Senior Vice Presidents

Robert L. Berra
Francis E. Reese
Howard A. Schneiderman
Monte C. Throdahl

Group Vice Presidents

Robert E. Burke
C. Preston Cunningham
Earle H. Harbison, Jr.
Nicholas L. Reding

**Vice President, Secretary
and General Counsel**
Richard W. Duesenberg

Vice Presidents

Constantine E. Anagnostopoulos
Alfred W. Andrews
Leonard A. Cohn
Harold J. Corbett
S. Allen Heininger
Joseph T. Nolan
Sam Pickard
Ernest S. Robson, Jr.
Francis A. Stroble

Treasurer

John A. Rolls

Controller

Michael F. Mee

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Annual Meeting

The next Annual Meeting of the shareowners of Monsanto Company will be held at 1:45 p.m., Friday, April 24, 1981, at the Company's General Offices, 800 N. Lindbergh Blvd., St. Louis County, Mo. A formal notice of the meeting, together with a proxy statement and form of proxy, is being mailed to each shareowner.

10-K Report

A copy of Monsanto Company's Form 10-K Report filed with the Securities and Exchange Commission for 1980, which contains additional information relating to Monsanto, can be obtained by writing to: Shareowner Relations Department, Monsanto Company, 800 N. Lindbergh Blvd., St. Louis, Mo. 63166.

Transfer Agents

Morgan Guaranty Trust Company
of New York
The Boatmen's National Bank
of St. Louis

Registrars

The Chase Manhattan Bank, N.A.
St. Louis Union Trust Company

Monsanto Company

800 North Lindbergh Boulevard
St. Louis, Missouri 63166

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