

AGRICULTURE AND LIFE SCIENCES news

May 1982

Building Plans Go Forward

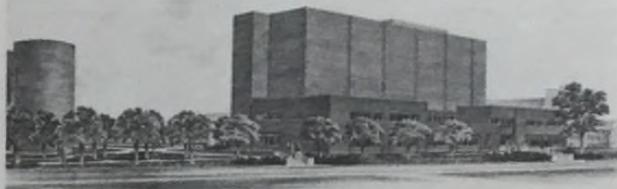
Major new construction at the college will modernize teaching and research programs and will meet revised state and federal safety regulations.

Since the early 1940s, Roberts, East Roberts, and Stone Halls have been inadequate for teaching needs, as well as expensive to maintain and heat. These buildings, along with Caldwell and Comstock Halls, were declared obsolete and unsafe by the state's Office of General Services. The State University Construction Fund (SUCF), which has jurisdiction over state-owned facilities on the Cornell campus, had scheduled them for imminent demolition.

The college requested the SUNY administration to consider renovation instead, but a subsequent study by a university committee concluded that to meet SUNY code specifications, renovation would cost substantially more than would new structures. With further deterioration of the buildings, Cornell and SUNY proceeded with replacement plans in 1976.

Plans that were ultimately adopted involve the construction of two new buildings, with expected occupancy dates of late 1984 or early 1985. Roberts, East Roberts, and Stone will be taken down, and Comstock and Caldwell Halls will be retained for use by the university. Comstock for computer sciences and Caldwell for some biology and other classrooms. That the university will be able to upgrade these buildings whereas the college could not, is largely because of the different criteria used by Cornell and SUNY in financing renovations.

The new buildings, temporarily named Academic I and Academic II, will be financed through SUCF. Academic I, costing \$17.75 million and with 102,000 square feet, will be built first. It will be next to Teagle Hall and face Barton and will house the entomology department, Media Services, and some biological sciences



Groundbreaking for Academic II is expected to take place this year with completion of the building in 1985. This artist's sketch shows the building facing Barton Hall, between the new biological sciences building and Teagle Hall. Levatich and Hoffman are the architects.



New biological sciences building, located on what was previously Lower Alumni Field, houses the sections of neurobiology and behavior and ecology and systematics.

classrooms. Academic I, costing \$13.8 million and with 92,000 square feet, will be located at the west end of the Ag Quad, now open land. It will house offices of the college's administration, Cooperative Extension, the Cornell agricultural experiment station, international agriculture, the

landscape architecture program, and the departments of education and communication arts. Academic II was designed by the Ithaca architectural firm of Levatich & Hoffman; Academic I will be designed by the Eggers Group of New York City. A combination of renovation and

new construction, the Large Animal Research and Teaching Unit (LARTU) will enable expansion of basic research programs, complementing the more applied programs now in existence at various off-campus locations. To adjoin the green barns, located east of Morrison Hall, it will accommodate dairy cattle, sheep, goats, calves, ponies, swine, and beef cattle for studies in physiological and biochemical aspects of reproduction, lactation, growth, digestion, pregnancy, and nutrient use. One of the two existing green barns will be upgraded as part of the project. The new 7,000 square foot, \$1.05 million addition, funded through the university and repaid through rents paid by this college or by private contributions to the university, was designed by Fred H. Thomas Associates of Ithaca. Current predictions are for a December 1982 completion date.

In the planning stages for 12 years, a new biological sciences building now houses the sections of neurobiology and behavior and ecology and systematics, both in the division of biological sciences. When these sections were created in 1965, their location in Langmuir Laboratory next to the county airport was considered temporary.

With the addition of the new building, on the corner of Tower Road and Garden Avenue on what was formerly Lower Alumni Field, faculty members and students no longer have to commute, and have more convenient access to the rest of the university. The building also provides up-to-date safety features such as sophisticated ventilation systems in laboratories.

The \$15.5 million, 132,000 square foot building was paid for entirely by private gifts to the university. Architects for the project were Hugh Stubbins and Associates, a well-known firm in Cambridge, Mass.

Egner Named Associate Provost

Joan Roos Egner, associate dean of the college and professor of education, has been appointed associate provost of Cornell University.

She will be responsible for coordinating university affirmative action efforts for all academic appointments and for university planning, including the assessment of academic space needs, allocation, and use.

Egner will serve on a quarter-time basis from April 1 through June 30 and full time for a five-year term effective July 1.

Cornell President Frank H. T. Rhodes said, "She brings to the task a wide familiarity with Cornell's



academic programs, demonstrated effectiveness in a major administrative position, and a deep personal commitment to affirmative action."

Provost W. Keith Kennedy, former dean of the college, added, "We are most fortunate" to have her join the executive staff. "She is an experienced

academic administrator with strong dedication to equal opportunity and to excellence in teaching, research, and public service."

She became associate dean of the college in 1978 after two years as associate director of both the office of research and the agricultural experiment station at Ithaca.

Egner joined the faculty in 1964 as a lecturer, was appointed assistant professor in 1965, associate professor in 1969, and professor in 1977.

She has served on a number of committees at Cornell, including the Provost's Advisory Committee on the Status of Women, the Executive Committee on Women's Studies, and the Campus Governance Review Committee.

Before coming to Cornell she was a

teacher in public schools in New York, Pennsylvania, and Ohio for seven years, and was a visiting professor at the Pennsylvania State University.

As a professor of education at Cornell, Egner conducted extensive research on such subjects as regional educational development and designed a curriculum to help high school and college students make occupational decisions.

She has taught courses on education administration and organization and on the development of personnel in colleges.

A native of Pennsylvania, Egner is a 1952 graduate of Pennsylvania State College at East Stroudsburg, Pa. She earned her master's degree at Penn State and her doctorate at Cornell.

Geneticist at N.Y. State Experiment Station Wins Medal

Desmond D. Dolan, a plant geneticist and horticulturist with the Agricultural Research Service (USDA) at the N.Y. State Agricultural Experiment Station in Geneva, has been awarded the Frank N. Meyer Memorial Medal.

Given each year since 1920, the medal is awarded by the American Genetic Association to outstanding plant researchers. Also winning the medal this year is Charles M. Rich of the University of California at Davis.

The medal's namesake was a scientist with the USDA's Office of Foreign Seed and Plant Introduction, who died in the 1920s in the Yangtze River during an expedition.

As coordinator of the Plant Introduction Station at Geneva, Dolan has carried out research on introduced plants potentially valuable to plant breeders and maintains germ plasm for a large number of vegetable and forage crops. The station makes specific crop introductions available to researchers at state and federal experiment stations throughout the country, as well as to commercial breeders. Receiving data on the performance of these new plants, it systematically compiles and publishes the information in newsletters, annual reports, and regional publications.

In his 40 years of research, Dolan has contributed to solutions of a wide range of problems in genetics, physiology, and pathology. These include successfully breeding tomato and watermelon cultivars, identifying a physiological leaf-roll of potato caused by boron deficiency, developing a technique for screening muskmelon varieties resistant to fusarium wilt, and evaluating pea seed fungicidal treatments for the control



of damping off and root rot.

Receiving B.S. and M.S. degrees from McGill University and a Ph.D. (1946) in genetics and plant breeding from Cornell, he has been at the Geneva Experiment Station since 1953.

His wife, Eloise, and three of their children are also Cornellians. Eloise (Kelly) Dolan, a member of the well-known Kelly Bros. nursery and catalog business family, graduated in 1944 from the College of Home Economics; their son William received a B.A. in 1973 and an M.B.A. in 1976; Thomas received a B.A. in 1977; and John is currently an M.B.A. candidate. Their daughter, Anne, graduated from SUNY-Oswego.

Dolan is a member of the American Society of Agronomy, the Botanical Society of America, the American Chemical Society, the American Phytopathological Society, the Crop Science Society of America, and the American Society of Horticultural Science. He is also a member of the Society of Sigma Xi and Alpha Zeta, the honorary fraternity of agriculture.

In 1972, he received the USDA's Merit Award for Outstanding Service.

Nutritional Surveillance Program Combats Hunger

A significant percentage of this planet's population suffers from undernourishment or other forms of malnutrition, despite the fact that there is enough food to feed the world.

About 20 developing countries have some sort of program to monitor food supplies and the nutritional status of their citizens to avoid crises, but their success has been limited.

Developing nations and others that want to organize surveillance systems to combat hunger may turn to a newly established program and resource center at Cornell for help, support, and information.

The Cornell Nutritional Surveillance Program (CNSP), in the division of nutritional sciences, is supported under a cooperative agreement with the U.S. Agency for International Development. Its purpose is to gather theoretical and practical information, and to provide support and training to people from developing countries who want to develop such programs.

"Malnutrition is a result of social and economic poverty," explains John B. Mason, project director. "It affects the growth, development, and survival of children, and the health, activity, and well-being of adults."

Mason points out that conventional means of tackling malnutrition have proved inadequate: "Success has been limited and transitory because the causes of the problem still exist. Also, there seldom have been adequate resources to make significant and lasting changes."

"Nutrition can be improved, though," he asserts, "by upgrading the standard of living of the undernourished, through real income, food

availability, the environment, and access to services."

The key to alleviating and preventing malnutrition is economic development, particularly in agriculture, says Mason, and through food distribution and public health measures.

"In certain cases, a country's vulnerability to critical food shortages and famine can be reduced," Mason says. "But, adequate and regular collection of information is essential for effective governmental and international agency decision-making."

CNSP will provide that critical link between information on malnutrition and its causes, and recommend action to deal with hunger and malnutrition.

In addition to reviewing and disseminating information on the present state of knowledge in nutritional surveillance, and training and supporting those involved in developing surveillance programs, CNSP will establish a resource center. It will have available specialists, research and training materials, and relevant literature.

Located in the division of nutritional sciences, a joint unit of this college and the College of Human Ecology, CNSP will draw on the resources of both colleges. Faculty members from the department of agricultural economics, for example, are working closely with the program, as are experts in statistics, agriculture, and rural development.

Principal investigators are Jean-Pierre Habicht, the James Jamison professor of nutritional epidemiology, and Michael Latham, director of the International Nutrition Program at Cornell.

—Susan S. Lang

Pothole Prevention Pays

Potholes will cost \$35 billion nationally this year in vehicle repairs, wasted fuel, and lost time—an average of \$200 a year per motorist. Only approximately 1.5 percent of this amount is spent on actual repair of the holes.

Delayed rebuilding of the worn-out roads also costs money. Estimates indicate continued deterioration would raise the price tag \$2 billion in New York State if the remedial work is deferred just three years. Detecting road weaknesses before they become potholes is the key to saving money.

Lynne H. Irwin, associate professor of agricultural engineering and leader of the Cornell local roads program, directed a pothole workshop in Ithaca last fall. More than 125 highway superintendents, public works directors, and highway equipment representatives from as far away as Phoenix, Ariz., attended.

Featured was a Danish falling weight deflectometer, which Irwin is evaluating to see how its performance compares to other types of devices owned by the Army Corps of Engineers and the Federal Highway Administration. Cornell is the only university in the United States to own such a device.

Trailer-mounted, the deflectometer registers pavement weaknesses



At pothole workshop, Prof. Lynne Irwin demonstrates a falling weight deflectometer to

superintendents and other employees of highway departments.

through a control box hooked by wire to a small computer in the back of a truck or other towing vehicle. Stopped every 100 feet or so, the machine has a plate that is lowered to the road; a weight is then dropped at varying heights, and the recorded shock vibrations indicate the pavement's strength—the greater the deflection, the weaker the road. The device simulates the passage of a fully-loaded semi-truck, moving at approximately 40 mph.

The figures, processed through a large Cornell computer, reveal whether roads should be fixed imme-

diately or whether the work can be delayed a few years. The results indicate the amount of material needed for the most economical method of rehabilitation. One mile of a 22-foot wide road with a 1-inch overlay of asphalt costs \$25,000, so avoiding unnecessary work yields large savings.

The pothole workshops are part of the Cornell local roads program, which provides local highway officials with technical assistance and training. Directed by Prof. James W. Spencer for its first 20 years, and by Irwin since 1973, the program celebrated its 30th anniversary in 1981.

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Myron D. Lacy Dies, Animal Scientist

Myron D. Lacy, professor emeritus of animal science, died Jan. 26, 1982, at his winter home in Lake Park, Fla. He was 73.

Lacy, who retired in 1971, was instrumental in initiating the New York Beef Cattlemen's Association, which now has more than 660 members, the Bull Testing Program in New York State, and the "500 Beef Club," which set standards for cattle producers.

He also was well-known for developing consumer-oriented and agricultural education programs through Cornell Cooperative Extension. One of the most effective and widely publicized was the Beef Cattleman's Short Course, providing instruction and practical experience in all phases of beef cattle production and management.

He was author of numerous bulletins, publications, and reports for those involved in livestock production, and served as a consultant to the U.S. Department of Agriculture.

A native of Marble Falls, Texas, Lacy earned a B.S. degree from Texas A&M University (1930), and an M.S. degree from Iowa State (1931), where he had taken additional courses toward a Ph.D. degree.

Prior to joining what was then the department of animal husbandry at Cornell, Lacy worked as county agent for Cooperative Extension in Clinton County, Iowa.

He was a recipient of the 1966 National Science Extension Award of the American Society of Animal Science (A.S.A.S.). In 1955, he received the Swift and Company Founder Centennial Award of the A.S.A.S., and in 1967 was honored by the New York Beef Cattlemen's Association.

He is survived by his wife, Ivyl Lacy, of Lake Park, Fla.; a daughter, Myrna Rooney, of Houston, Texas; a son, Richard Lacy, of Minneapolis, Minn.; and seven grandchildren.

Memorial donations can be made to the Lacy-Miller Scholarship Fund, College of Agriculture and Life Sciences, 242 Roberts Hall, Cornell University, Ithaca, NY 14853.

Hullar Elected Director of Research



Theodore L. Hullar has been elected director of research for the college and director of the Cornell University Agricultural Experiment Station. His appointment is for a five-year term.

He succeeds Noland L. VanDemark, who is teaching and conducting research in the department of animal science after serving as director of research for seven years.

Hullar came to Cornell in 1979 as associate director of research and of the experiment station and as adjunct professor in the department of natural resources.

Prior to his Cornell appointment, he was the deputy commissioner for programs and research in the N.Y. State Department of Environmental Conservation for four years, where he managed the major programs and coordinated environmental research of the 2,800-member department. A major responsibility was preservation

of agricultural land.

As a member of the faculty of the State University of New York at Buffalo from 1964 to 1974, he served as associate dean of the graduate school for two years and participated in designing research programs relating to the social implications of environmental quality issues. He also served as a tenured associate professor of medicinal chemistry, specializing in the biochemistry and chemistry of coenzymes and of nucleotides, essential materials in cell metabolism.

Hullar was a member of the N.Y. State Agricultural Resources Commission and currently is the secretary-treasurer of the Northeast Regional Association of Experiment Station Directors. He received his bachelor's degree and doctorate from the University of Minnesota.

—Susan S. Lang

Gift Benefits Maple Syrup Research

More than 205 acres of land at Lake Placid have been given to Cornell for research on sugar maple trees and production of syrup.

Given by Henry H. and Mildred A. Uihlein, the land is in two parcels of 8.15 acres and 197 acres and includes most of the sugar maple tree acreage that has been leased by Cornell for many years. Robert R. Morrow, professor of forestry and director of the sugar bush project since it started, said, "The long-term availability of these maple woodlands is vital to the continuation of Cornell's sugar maple research and education program."

The smaller parcel will be used for long-term study of the planting and early growth of strains of maple trees that are genetically capable of producing sweeter sap than average trees. This study will be made in conjunction with the USDA Forest Service Laboratory at Burlington, Vt.

The large parcel includes the trees that college researchers have used for studies of sugar bush management and collection of sap with tubing. Morrow said a third area of research, starting this year, will be on energy efficiency in converting the sap to syrup.

He predicts that by using a vapor compression evaporator, it will be possible to produce syrup with about one-quarter to one-third of the current amount of energy required for this process.

Many publications have been written describing research carried out here, and the maple bush and sugar house have served as a demonstration area for the state's maple producers. Annual production of syrup in the state is valued at more than \$6 million.

The Uihleins, longtime supporters of agricultural research at the college, have previously given adjoining land and money to help the potato industry. Disease-free potato seed is now produced by a tissue culture technique in the Henry Uihlein II Laboratory and is grown on the adjoining land for replication and distribution to growers.



Correction

This picture of Sally Strickholm '81 should have accompanied the article about her in the last issue. In place of the wrongly identified picture of Carole Friedman Bister Ph.D. '81, who was featured in another article. We regret the error and apologize for any confusion it may have caused.

Energy Project Probes Causes of Wood and Coal Stove Fires

A team of specialists at the college is trying to reduce the number of fires caused by the improper installation and operation of many of the 800,000 wood and coal stoves in homes across the state.

During the 1980-1981 heating season, the number of homes damaged or destroyed by such fires soared to nearly 4,000, double the 1979 figure, even though the major causes of stove-related fires have been publicized.

A statewide survey, funded by a \$102,385 grant from the N.Y. State Energy Research and Development Authority, is under way to learn why the number of fires has increased.

James P. Lassoie, assistant professor of natural resources, is directing the survey. He is assisted by Tommy L. Brown and Gary Goff, research assistants, both in the department of natural resources. The project has three main components: telephone interviews, field inspections, and a review of fire department records.

Expected to reach 4,500 to 4,800 homes, the phone survey will locate residences using wood or coal stoves, and will gather basic information from owners regarding types of equipment, fuel usage, and certain aspects of operation and maintenance practices.

A detailed inspection of 700-800 of the homes reached through the phone survey will identify potential stove safety problems and determine why they exist. The fieldwork also will include an evaluation of the types of safety services and information sources used by residents.

Finally, the Cornell researchers will examine the records of fire departments to identify suspected causes of stove-related fires, and some homes that have had fires will be inspected. The local availability and effectiveness of stove installation and inspection services will be inventoried.

"The rapid increase in the number of stove-related fires has developed despite the existence of a wide variety of informational sources and services pertaining to the safe use of wood and coal for fuel," Lassoie points out.

"Many homeowners fail to recognize the safety hazards, lack financial resources, and know little about costs associated with proper maintenance," Lassoie adds. "Often, they fail to obtain necessary fire detection and fighting equipment and do not plan a safe course of action should a fire occur."

Homeowners also may fear insurance policy cancellations and rate hikes, as well as potentially restrictive actions on the part of fire and building departments, should they seek safety inspection services.

The Cornell project will result in recommendations leading to possible changes in legislation regarding installation and inspection services and requirements, in governmental and private sector policies, and in the dissemination of stove safety information.

The survey is scheduled for completion by September 1982. A final report will be the basis for a statewide campaign aimed at encouraging wood and coal stove safety.

—Yong H. Kim

Placement Director Helps Students Shape Futures

In trying to find a job, many people operate on the belief that they can, at the final hour, send resumes to employers and sit back and wait for responses. This is a faulty assumption, says William N. Alberta, new coordinator of career planning and placement.

Alberta believes that people need three main kinds of information if they are to choose and land a job that is right for them. These are: knowledge of self; knowledge of job and career options; and knowledge of effective job search techniques. His office provides the materials and services that students and graduates need to gather this information and to turn it into a successful job or career.

"Students should start planning as freshmen for what they plan to do when they leave Cornell," he says. Alberta points out that many people come here with unclear ideas about their future plans. "In my previous counseling work I discovered that many students had spent no more than four or five hours with their guidance counselors during their entire time in high school. It's not surprising that decisions made with such minimal professional help often tend to be unsound.

"I sometimes jokingly tell students that they spend more time choosing a stereo system than a career path. Students generally laugh at this and nod in agreement, but the whole matter has a very serious side. There are too many people already who are unhappy with their jobs—I don't want any of our students to join them."



William Alberta (standing) goes over materials with a student in the career planning and placement office.

A major service offered by Alberta's office is an extensive library that includes information on careers, employers, internships, full-time jobs, job search techniques, and summer employment. He stresses the importance of the latter. "We go to a great deal of trouble to uncover all kinds of summer jobs relating to our students' fields of interest. I encourage our students very strongly to make the most of their summers. A summer work experience can help a student to gather very valuable information about his or her likes and dislikes, for example, and about the job possibilities in a particular field. It can also provide the kind of material employers like to see on a resume."

In addition to working with

students in groups, Alberta reserves a segment of his time each week for individual appointments. "I believe that to be of greatest service to our students, I must be in touch with their needs. I thoroughly enjoy the individual work but must, of course, limit it." He also runs an informal "rap session" every Wednesday afternoon.

Each semester he conducts a workshop series on self-assessment, resume writing, employer contacts, job search methods, and interviews. His approach is geared toward "helping people take an active rather than passive role in shaping their futures."

The obvious routes of job hunting—employment agencies and newspaper ads—provide access to only a small percentage of the actual

numbers and types of positions available, and these advertised openings have a sizable amount of competition. Alberta believes that "there is a wide range of options open to each of our graduates. A person shouldn't choose from several options when there are several dozen available."

With imagination, resourcefulness, and the knowledge that sooner or later something good will turn up if they conduct a thorough, active search, job seekers can often bypass the standard frustrations. By researching an organization's needs and understanding their own, they may be able to forge an entirely new job for themselves.

Having worked since he was 12, Alberta had exposure to a myriad of jobs over a long period of time, allowing him to start reflecting at an early age on what he wanted to do. His experiences led him to the SUNY College at Oswego for a bachelor's degree and to a master's degree in 1977 from Cornell in counseling and student personnel administration in higher education.

Before assuming his present position, he was an assistant dean at Herkimer County Community College, where he administered the career planning and placement center.

He and his wife, Sherry, a special education teacher at Ithaca High School, are currently looking for an old farmhouse to renovate and fill with antiques and his pieces of woodwork.

Community Projects Serve as Models

What are some common characteristics of successful community development projects in rural areas? For three years, James C. Preston, professor of rural sociology, has looked at such projects in upstate New York to find out.

The seven communities studied, all with populations under 10,000, were selected on the basis of nominations and suggestions from Cooperative Extension agents.

Residents of one town, Marathon, were concerned about the decline in business and population. The idea of a maple festival as a way to promote the area was first proposed in 1959, but it took 12 years of planning and of ironing out problems before the first one was held. When it was, 15,000 people attended the first day.

The two-day festival has a sugar shack where people can watch and sample maple syrup while it's being made, a pancake fest, a chicken barbecue, music and live entertainment, exhibits, craft demonstrations, and homemade goods for sale.

Nearly everyone in the town is involved in the festival, including civic organizations, fraternal groups, and churches. Profits from the event are used for improvements in the village and town.

Major bonuses have been a new sense of confidence and civic pride, development of personal skills, and closer ties among generations.

Other community action projects in the study were: an arts and crafts center in Malone, converted from an

old textile mill; a health care facility, housing for the elderly, and a children's daycare center, all in Groton; a public library from what had been an unused grocery store in Salamanca; a senior citizens' rental housing complex in Sinclairville, renovated from a school building; apartments for senior citizens in Sherburne; and a new medical clinic in Woodhull, which grew out of the residents' efforts to find a replacement for their retiring (and sole) doctor.

In all of these cases, good communication within the organization and in the community at large was present. Meetings, agendas, progress reports, and fundraising were publicized in the local newspapers, which gave full support and coverage of project activities.

Sustained leadership, usually involving four or five people, was another important characteristic. Most of these people had previous experience either in community action in general, or in at least one aspect, such as publicity. They committed themselves to several years of work and inspired others to maintain interest. Frequently, they had access to other community leaders. In Sinclairville, for example, the president of the action organization was a local school administrator and had access to the school board, as well as experience in applying for grants and funds.

To help others use these same successful approaches in development projects, Preston has written two extension bulletins, *Rural Community Action: A Series of Case Studies of Action Projects in Small New York State Communities*, describing the seven case studies, and *Leaders' Guide*,

to *Community Action*. Co-author of the bulletins is Katherine Halton, a research assistant in rural sociology.

A slide set was made also, and the first one sold is being used in Cameroon, Africa, by a former graduate student, as part of a rural education project to involve local people in their own development projects.

The bulletin, *Rural Community Action: A Series of Case Studies of Action Projects in Small New York State Communities*, is available for \$4.50, and *Leaders Guide to Community Action* for \$2.50, from: Distribution Center, 7 Research Park, Cornell University, Ithaca, NY 14850. The slide set is available for \$43 from: Audiovisual Research Center, 8 Research Park.

A grant to the college from the Louis J. Taber family made the research possible. The fund was established in 1964 to study ways of building and maintaining strong rural communities that could develop resources in order to adapt to rapid change.

The late Louis Taber was master of the National Grange from 1923 to 1941. He served under six presidents on committees studying agriculture and world food problems, ran for the U.S. Senate seat from Ohio, was president of the Ohio Council of Churches, and received the state's highest honor, the Governor's Award.

He was nationally known as a breeder of registered Jersey cattle and was a founder and later president and board chairman of the Farmers and Traders Life Insurance Co. of Syracuse.

His surviving son, Paul, retired in 1976 as vice president of public relations for Agway.

Turfgrass Research Program Receives \$30,000 Gift

Cornell's research program on fusarium blight of Kentucky bluegrasses, one of the most comprehensive in the nation, has been awarded a \$30,000 gift from the Ben O. Warren Foundation of Palos Hills, Ill.

Fusarium blight occurs throughout the United States, but especially where Kentucky bluegrasses are subjected to severe summertime stresses. The blight, caused by a fungus, appears as dead patches of grasses on lawns, golf courses, and other areas. It is not recognizable until it has reached an advanced state.

Cornell's program, headed by Richard W. Smiley, associate professor of plant pathology, is seeking to control the disease by finding optimum cultural management procedures, resistant varieties, and fungicides.

Warren, the former owner of Warren's Turf Nursery, the world's largest producer of turfgrass sod, has a long record of introducing innovative technology for use in turfgrass production and maintenance.

Since the mid-1970s, when the college's turfgrass research efforts began focusing on fusarium blight, more than \$250,000 has been spent studying it. Among industry supporters of the research are the Sod Grower's Association of Mid-America, the American Sod Producers' Association, the Musser International Turfgrass Foundation, and the Connecticut Association of Golf Course Superintendents.

Everyone Suddenly Pays Honor to a Geneticist Most Persistent



Joak Manning, NYT Pictures

This article first appeared in the February 1982 issue of Cornell Alumni News and is reprinted with permission.

When geneticist Barbara McClintock '23, PhD '27 was presented the Lasker Award, considered the most prestigious American prize for medical research, late last year, the citation praised her "unparalleled achievement in first discovering, alone among scientists, that certain genetic elements are not static . . . but can be moved from one location to another on DNA, the genetic material of heredity."

For her pioneering work with maize, McClintock had been named the day before by the McArthur Foundation as its prize fellow laureate, receiving an award that guarantees her \$60,000 a year, tax-free, for life. The foundation said it chose McClintock for the award because: "Her discovery was the basis of today's research in gene exploration, such as gene splicing and human engineering."

She has also won a \$50,000 prize from Israel's Wolf Foundation, and there is now speculation in the scientific world that she might one day be awarded a Nobel Prize for her discoveries.

But McClintock, whom more than one scientist has described as a "genius," has not always found the scientific community so receptive to her ideas.

Since 1941 she has worked at Long Island's Cold Spring Harbor Laboratory, raising corn on small plots of land on the laboratory grounds, crossing varieties of maize and, for nearly four decades, carefully examining the resulting plants. In her observations of corn seedlings, she noticed something that would one day revolutionize the thinking of cell geneticists.

She observed that some parts of the leaves of some seedlings were losing color, while other parts of the leaves were gaining colors. This, she concluded, could mean that genetic material was somehow being rearranged, a conclusion that contradicted one of the basic, and it seemed at the time inviolable, tenets of genetics—that genes were arranged on chromosomes in fixed patterns.

"I figured this was something terribly basic," she would explain to a reporter years later. "I came to the conclusion that one cell had lost something that the other had gained."

By 1947 she was prepared to explain her theory that genetic material was not fixed, that indeed it was being rearranged in the corn seedlings she had so scrupulously observed. Reporting her findings in 1951 at the Cold Spring Harbor Symposium, a gathering attended by biologists from around the world, she was met with



Two stages in the life of Barbara McClintock '23. At left, she holds the Lasker Award for medical research received in November 1981 at the Hotel St. Regis in New York City. Above, she poses next to the old plant breeding shed near the Ag Quad in 1929 with colleagues who were also to become notable geneticists: (left, standing) C. R. Burnham, a postdoctoral resident at the time; Marcus Rhoades, Ph.D. '32; and Prof. Rollins A. Emerson, plant breeder, for whom Emerson Hall is named; and kneeling, George W. Beadle, Ph.D. '31, a Nobel laureate and college president in later years, and Emerson's dog Pudgie. The men carry bags to hold pollen from corn tassels.

"stony silence," and concluded that her work was being ignored. Thereafter she continued her research on the genetics of maize with little further attention to reporting the results, and with a single-minded dedication that she says caused some people to label her "crazy" or "absolutely mad at times."

Today scientists believe that McClintock's discoveries could conceivably lead to discovery of how viruses cause infection, to an understanding of how cancer cells are formed, or shed light on the evolutionary process, but her theories are not easy to understand and she feels that her work has been misunderstood frequently by journalists who attempt to write about it. Still, after decades of working to unravel genetic mysteries and trying to explain her conclusions to colleagues who could or would not understand, she shows little interest in being vindicated.

"It's too much at once," she told a *New York Times* reporter recently. "I'm 79 and at my age I should be allowed to do as I please and have my fun." Her fun, McClintock says, would be to continue her lifelong work in the peace and solitude of her laboratory at Cold Spring Harbor where, unlike most American scientists, she still works primarily with a microscope and without the aid of computers.

In the parlance of a celebrity-mad world, one might say that Barbara McClintock has been "discovered." Yet even as the praise for her work continues to mount, she presses forward with another complex project. With a number of scientists from Central America, she is studying the knobs on varieties of maize in an attempt to chart patterns of movement among Central and South American Indian tribes, a project Prof. Adrian Srb, genetics, calls "monumental."

"But she always had an open mind about things," Srb notes. "If other scientists reject the idea that there are UFOs, which many of them do, McClintock probably would not decide until she could either prove or disprove their existence."

Her open mind, obviously, was what enabled Barbara McClintock to see what others did not on the leaves and kernels of maize. Genetic material, she had been told, simply did not move around on a chromosome. But she observed otherwise, and waited patiently for the scientific world's eyesight to improve.

"I've known a lot of famous scientists," says Marcus Rhoades, PhD '32, who posed with McClintock for the famous photograph of geneticists on the Cornell campus in 1929 that appears above. "But the only one I thought really was a genius was McClintock. By God, she's good—there's no question about that."

In the photograph, McClintock stands with Prof. Rollins Emerson, chairman of plant breeding, and three of his students, all of whom would go on to become well-known figures in the field of genetics, C. R. Burnham, a post-doc from Wisconsin, and George W. Beadle and Rhoades, graduate students.

Although she was an instructor in botany at the time the photograph was taken, McClintock, already noted for her ability to use a microscope, sometimes worked as a kind of informal adviser to Emerson's students in plant breeding.

Microscopes were kept in Stone Hall, and Burnham, Beadle, and Rhoades would bring samples of their plantings there to examine. McClintock, in turn, made use of the field space behind Fernow Hall to cultivate plants she wished to examine.

She would move on to the University of Missouri in the 1930s, and then to the Carnegie Institution of

Washington, DC lab on Long Island in 1941.

Rhoades is now a professor emeritus of botany at Indiana University. He has written a biography of his mentor, Emerson, and is a member of the National Academy of Sciences.

Burnham, who held his PhD from Wisconsin, was a National Research Council fellow working on corn cytogenetics at Cornell in 1929. He has published more than sixty articles in scientific journals, dealing with his work on corn, beans, flax, barley, wheat, and tomatoes, is a fellow of the American Society of Agronomy, and holds the Distinguished Service Award of Sigma Xi and the Gamma Sigma Delta Award of Merit.

Beadle, who earned his PhD in '31, is a geneticist who shared the 1958 Nobel Prize in medicine and physiology with two others. *Time* magazine named him one of its Men of the Year in 1960, and he served as chancellor of the University of Chicago until he retired in 1968. He has continued research into Teosinte, a Mexican plant he regards as the wild ancestor of corn.

Emerson is referred to as a "born investigator and experimenter" and the "spiritual father of his students" by Rhoades. Emerson published a "masterful analysis of plant color inheritance" in 1921. Before his death in 1947, he was a member of the National Academy of Sciences, the American Philosophical Society, the American Society of Naturalists, of which he was president in 1923, and the Genetics Society of America. "Above all," wrote Rhoades in a biographical memoir published by the National Academy of Sciences, "he tried to encourage independent thinking."

—Fred Wilcox

Alumnus Profile: Robert Ladd



Robert A. Ladd relaxes on his farm with daughter, Merle Ladd Silverman '72, and his grandchildren.

Robert D. Ladd's career, primarily as a management consultant coordinating contracts between private companies and government agencies, has involved working with well-known political figures.

One of his most interesting appointments was as executive secretary to Vice President Richard Nixon in 1953 and 1954. Ladd, class of '43, was executive vice president of the U.S. Jaycees in Tulsa, Okla., when a co-worker, a friend of Nixon's, asked him to work on the Nixon staff at the Republican National Committee. Working for the committee in the summer of 1952, he was asked by the vice president-elect to become his administrative assistant.

For two years, he attended Congressional committee hearings when Nixon was unable to, escorted prime ministers and other visiting dignitaries around the Capitol, accompanied the vice president on tours, and acted as an all-around office manager for the vice president.

At the request of Herbert Hoover, Ladd became general manager of the Citizens' Committee for the Hoover Report for the next two years. President Truman had asked ex-president Hoover to leave retirement to develop proposals for streamlining the executive branch of the government, and the resulting commission was continued by Eisenhower. A series of task forces studied various topics and problems and made recommendations. This was followed by fund raising and lobbying by the Citizens' Committee to have the most important recommendations enacted by Congress. When its work ended, Ladd became an independent consultant.

For several years, he owned and operated the Research Management Corporation in Washington, and is now president of his own company, Haverhill International, Ltd. His work

involves mostly agricultural and energy projects, with energy technologies increasingly occupying his time. He helps coordinate activities of research and development companies, particularly in obtaining government contracts for new forms of energy such as nuclear fusion. His early training in management came from Harvard, where he earned an M.B.A. degree in 1947.

A former president of the Cornell University Club of Washington, Ladd frequently meets with guidance counselors and students, and has found that high school students are often told by counselors not to bother applying to Cornell or other leading universities and colleges because they are unlikely to be accepted. He disagrees with this attitude.

The biggest favor parents and educators can do for young people, he says, is to set high goals. Then, even if the aims are not reached, the self-discipline and knowledge that are developed will be worthwhile. Backed by the necessary programs and skills, he notes, students should be prepared to take risks, including the possibility of rejection.

This is what he and his wife, Carol '43, attempted to do with their five children, along with gently prodding them toward Cornell by saying, "You can go to any college you want, as long as it's on the Cornell campus."

Such loyalty toward the university comes from an unusually strong affiliation with it. Ladd is the son of the late Carl Ladd, dean of the Colleges of Agriculture and Home Economics from 1932 to 1943 and a professor of farm management. Virtually all of the family's friends and activities were related to Cornell, and Ladd and his brother, Carl Jr., even got a bit of a head start in their college educations; they were the first students in the home economics nursery school,

started to give undergraduates practice in working with young children.

The family lived on Bryant Avenue, and in the early 30s, Dean Ladd bought a farm in Freeville. Each weekend the Ladd boys went there to care for the draft horses and other animals, gaining the farm experience their father wanted them to have.

While an undergraduate at Cornell, Bob played hockey, was on the Intrafraternity Council, belonged to Quill and Dagger and to Scarab, was president of Seal and Serpent in his senior year, and president of the prom committee. He played polo as a freshman, coached by Frank Page. Page, a legend to generations of Cornellians, gave the players a deceptively simple piece of advice: "Always be careful. If you're around horses, sooner or later you're going to get hurt."

These words stuck, proving useful in subsequent decades of raising ponies and Arabian horses, first in Potomac, and now in Poolesville, Md. The hobby was a family venture and adventure, with shared lessons, riding clubs, and responsibilities.

Four of Ladd's five children attended Cornell. Danny '70 and Charlie '75 were on the polo team; Danny is now a financial officer with Booz, Allen, & Hamilton, a major consulting firm specializing in foreign military contracts, and Charlie is a captain in the Army. Merle '72 attended the School of Architecture, Art, and Planning and is an architect. Phebe Clark, who graduated from the College of Agriculture and Life Sciences in 1981, majored in animal science and is a graduate student at the University of Missouri, studying animal physiology. Robin graduated from Wellesley in 1966 and went on to receive a doctorate in the theory of learning at the University of Minnesota.

After Phebe Clark's graduation last spring, the children presented their parents with a plaque thanking them for their educations. "Once in a while, they thought we were too old-fashioned and strict," Ladd says, "but now they say they understand what we were trying to do. Making them work hard at school and around the house, and encouraging them to have jobs while they were in college, is starting to make sense."

Although all the children are on their own, the Ladds' home and time are still filled. Besides horses, they raise chocolate-colored Labrador retrievers, a relatively obscure color in Labradors. Carol is considered a premier breeder of this dog nationally, and is continually busy with clients and veterinarians. The animals have been bought throughout the United States, and in Kenya, Greece, and Canada.

Bob is an active member of the college development committee, and was successful in persuading a foundation to donate a farm to the College Fund that netted more than \$1 million when sold. He notes that private funds can often make a crucial difference to students. "I know how hard it is for farm youngsters to come here. Farmers, while they have assets, generally don't have enough money. I feel strongly that we should make sure there are enough scholarship funds to enable worthy students to attend."

The Carl E. Ladd fund, started in 1944 in honor of his father, is used for this purpose. It was instigated by the parents of Bernard Potter '43, now head of the N.Y. State Agricultural Society and a Cornell trustee, who were close friends of Dean Ladd. Even today, Ladd continues to receive notes from grateful students, describing what the scholarship has meant to them.

EXTRA

A L U M N I U P D A T E



Fund Promotes Study of Co-ops, Intl. Development

The James E. and Velva L. Rose Family Scholarship has been established to encourage the study of agricultural cooperatives and international development.

James Rose '32 had a long career as a manager of agricultural cooperatives. He was division head, manager, and organizer of retail cooperatives for the Grange League Federation Exchange, Inc. in Ithaca; general manager of the Wisconsin Farm Supply Company in Madison; distribution manager for Midland Cooperatives in Minneapolis; and bulk products director for Federated Cooperatives in Saskatoon, Saskatchewan, the largest purchasing and supply cooperative in Canada.

He directed special projects and the agricultural chemicals division of the International Cooperative Petroleum Association, which serves national and regional cooperatives in North Africa, Asia, and Europe.

In Paraguay, Rose was an adviser



James E. Rose

to the union of cooperative advisers for the U.S. Agency for International Development (USAID). He was also an agricultural business consultant, with a special emphasis on the handling of fertilizers for USAID in Vietnam.

As a member of the U.S. Volunteer Development Corps in Thailand, he recommended and improved the organization and management of multipurpose agricultural cooperatives for the Thailand government in Bangkok. At the request of the United Nations Food and Agriculture Organization, he advised the Iranian Ministry of Cooperation and Rural Affairs on cooperative organization, management, and training.

For several months in 1975, at the request of Agricultural Cooperative Development International and the Philippine government, he studied cooperative rice marketing and made recommendations regarding the organizational structure and management of

the Philippine cooperative marketing system.

He served on the boards of Northwest Cooperative Mills in St. Paul, Minn.; National Cooperatives, in Alberta Lea, Minn.; Central Farmers Fertilizer Co., in Georgetown, Idaho; Select Seeds, in Fort Wayne, Ind.; and United Cooperatives, in Alliance, Ohio.

While a Cornell undergraduate, he was made a member of Alpha Zeta, was a staff member of the *Cornell Countryman*, and was on the College of Agriculture crew 1929 to 1932.

The scholarship was started by his wife, Velva, and the Rose children, Gerald L. Rose, Lawrence E. Rose, and Marilyn R. Espinoza. Friends and colleagues also have supported the fund. Others who would like to contribute to the James E. and Velva L. Rose Family Scholarship can send their gifts to the Office of Development and Alumni Affairs, 242 Roberts Hall.

Thompson Scholarship Renamed and Expanded

The Homer C. Thompson Memorial Fund has been renamed the Homer C. and Clara S. Thompson Scholarship Fund and will be expanded by gifts from their sons, John F. Thompson Ph.D. '44, and David D. Thompson B.A. '43, M.D. '46, and their families. The original fund was established in 1976 by friends, colleagues, and members of the family of Homer Thompson following his death.

One of the nation's foremost authorities on vegetable physiology and production, Homer Thompson retired in 1951. He was one of the early leaders of the college's faculty, of which he was a member for 33 years, including 30 as head of the department of vegetable crops.

A native of Montgomery County, Md., he received B.S. (1909), M.S. (1923), and Ph.D. (1926) degrees from Ohio State University. He came to Cornell in 1918 and was appointed head of the vegetable crops department in 1921, completing his graduate work while holding that position.

Best known for his training of graduate students, Thompson had trained more than half the people in the United States who held advanced degrees in vegetable crops by the time he retired. He and some of his students developed methods of reducing or eliminating premature seed formation in a number of crops.



discovered the importance of shallow cultivation of vegetable crops, and did research on the handling and storage of vegetables.

Thompson wrote *Vegetable Crops*, a standard textbook used in most agricultural colleges in this country and in many parts of the world since its first publication in 1923. The fifth revised edition was published in 1957 with Prof. William C. Kelly (Ph.D. '45) as co-author. He also wrote *Sweet Potato Production and Handling*, and *Asparagus Production*, and many articles and bulletins.

After his retirement, Thompson was head of the plant industry department and director of research and education of the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica, for three years. He frequently served as an agricultural consultant to other countries and as a student adviser at Cornell. At one time he taught crop-growing techniques on campus to 102 Peace Corps volunteers headed for Peru.

He was named "Vegetable Man of the Year" in 1960 by the Vegetable

Growers' Association of America and in 1965 was elected a fellow of the American Society for Horticultural Science, which he had served as president in 1925. He was also a fellow of the American Association for the Advancement of Science.

In 1968, Cornellians honored him with a 50th anniversary reception, and in 1970 his alma mater presented him with its Centennial Award. In 1975, the department of vegetable crops at Cornell named their research facility in Freeville the Homer C. Thompson Vegetable Research Farm and Laboratory in his honor.

Professor Thompson's wife, Clara, a native of West Unity, Ohio, graduated from Ohio State University with bachelor's and master's degrees in nutrition. She was a member of the American Association of University Women, the Campus Club, the Agricultural Circle, Daughters of the American Revolution, and the Dewitt Historical Society. Until her death at 92 in January 1981, she continued to reside at their family home.

Throughout their long affiliation with Cornell, the Thompsons opened their Fairmount Avenue home to students, with Sunday dinners a regular event. Clara Thompson was known to faculty members and students for her interest in and sensitivity to people.

The fund was established and expanded with the particular goal of assisting students with financial need, in recognition of the Thompsons' commitment to students.

Geneva's Bullis Fund Grows

In 1976, Nettie A. Bullis of Pittsford, N.Y., started an endowment fund for the N.Y. State Agricultural Experiment Station, adding to it in 1978. She established it in memory of her brother, Charles R. Bullis of Macedon, N.Y., who had a life-long interest in plant breeding. She requested that its income be used for plant hybridization research, with emphasis on student training.

Following Nettie Bullis's death in 1979, the experiment station was named a beneficiary in her will. As a result, the Charles R. Bullis endowment principle is now \$204,265.

The income from the fund annually will support two graduate research assistantships, including essential research support costs, in the areas of vegetable and fruit hybridization.



The study of white mold resistance of snap beans is supported by the Bullis grant. Shown are resistant (left) and susceptible (right) bean plants.

First Cornell Classic a Success

Nearly \$6,000 was added last fall to the Harrison-Trimberger-Slack Fund through the Cornell Classic, planned and run by student members of the Dairy Science Club. Held for the first time this year, the sale is expected to become an annual event.

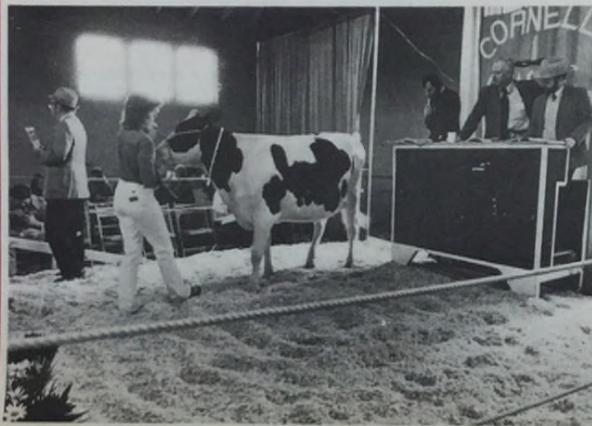
Auctioneer Thomas Coyne '55 shared the gavel with Craig Wilcox, pausing often to tell anecdotes to the large audience gathered in the judging pavilion. H. Joseph Pendergast '38 served as ringman.

Fifty-three registered Holsteins were sold for a total of \$83,500. The first animal in the ring, a bred heifer, topped the sale at \$4,600 for her owner Gregory Schintzius of South

Wales, N.Y. She was purchased by James Repard, Holcomb, N.Y.

Consignors at the Classic had the opportunity to contribute a percentage of their proceeds to the fund.

Seniors Janice A. Richardson and Mark Masler, with help from Mark Sheffer, club president, were in charge of the sale. With guidance from Thomas Coyne and faculty and staff members of the animal science department, students worked through the summer selecting animals and advertising the sale in state and national magazines. At sale time, they worked around the clock in six-hour shifts washing, clipping, and caring for the animals.



LuAnn Poole '81 leads a cow around the ring at the first Cornell Classic as Gary Janssen (third from right) reads pedigrees and Thomas Coyne '55 and Craig Wilcox sell 53 registered Holsteins to benefit the Harrison-Trimberger-Slack Fund. Joseph

Pendergast '38 (far left) acts as ringman, taking bids from buyers. Janssen and Coyne are with the sales firm of G. J. S. Coyne Inc., Avon, N.Y. Wilcox is with Harris Wilcox, Inc., of Bergen, N.Y.

Retired Ag Teacher Honored

Because he inspired them to set higher goals for themselves, four former students of Donald G. Robinson '41 have successfully completed a drive to establish a scholarship to pay tribute to him.

A committee of four college alumni, Richard H. Popp '61, chairman, Richard L. Wing '56, David H. Shearing '62, and Kenneth A. Mattingly '70, contributed money and solicited funds from former high school classmates, friends, and people in farm-related businesses to set up the scholarship.

Robinson, president of the ALS Alumni Association in 1965, taught vocational agriculture for 28 years at Letchworth Central School in Castile, retiring in 1974. Through his encouragement and guidance, he sent many students to Cornell over the years. One, Kenneth King, is now dean of

the College of Life Sciences and Agriculture at the University of Maine.

Robinson and his wife, Thelma Drake '42, H.E., also sent their children to Cornell: Laura '65; Constance '66; Donald Jr. '68; and Robert '70.

Having faith in their abilities, Robinson kept prodding his students to do more. Popp says, "He was an exceptional motivator. Before I had him as a teacher, I had never considered going to a four-year college and wasn't sure if I would go to college at all. He made us all really toe the line. He wanted us to be the best in everything we tried, whether in class or in FFA (Future Farmers of America) competitions."

The scholarship will go to students from the Letchworth Central School area, and other areas in western New York, majoring in the teaching of vocational or production agriculture, with preference given to college juniors and seniors.

Alumnus Receives Crops Award

Gerald O. Mott, who earned a doctorate in soil science in 1940, has received the 1981 DeKalb Crop Science Distinguished Career Award. The award, given by the Crop Science Society of America, is for outstanding service nationally and internationally

in the field of crop science.

Mott, who was on the faculty of Purdue University from 1939 to 1968, is a professor in the department of agronomy at the University of Florida. For more than 45 years, he has been teaching and conducting research in the areas of forage production, forage evaluation, and pasture management.

College of Agriculture and Life Sciences Alumni Association

Lifetime Membership Fund

The college's Lifetime Membership Fund was established in the tradition of the university's founder, Ezra Cornell, who, with his gift of \$500,000, established the first endowment for Cornell. The College of Agriculture was the personal creation of Ezra Cornell, intended to fulfill the ideal of service to agriculture through the training of youth in applied technology.

The Lifetime Membership Fund is a continuation of that tradition and funding ideals. The lifetime members listed below have brought the fund almost halfway to our 1,000-member goal.

Robert S. Abernethy '81
Morton Adams '33
Judith Adler '71
Norman W. Allen '44
Philip P. Allen '50
E. Patrick Alleyne GR
Peter J. Ambrose '70
Louis H. Amsler '70
Thomas G. Angstadt '81
R. Wayne Arnold SP
Stephen L. Arnold GR
Woodrow W. Assi GR
Daniel A. Atkins '72
Richard J. Atwater '72
Horacio Ayala GR
Abateni Ayanaba GR
Edgar E. Backlund '50
Robert A. Bain GR
Sterling C. Bain, Jr. GR
E. Vreeland Baker
Dale E. Bandy GR
O. Cleon Barber '43
Edwin T. Bardwell '26
Robert B. Barnes '68
David S. Barr '77
Barry Batinkoff '67
George H. Batt '38
Walter M. Baurle '48
J. Christopher Bauernfiend '36
Donald M. Bay '55
M. Lawrence Bayern '49
James B. Bays '74
William E. Bean '51
Albert J. Beard, Jr. '52
Ronald L. Beck '61
George B. Becker '47
Douglas F. Beech '72
William H. Besgen '68
William A. Bigham, Sr. '44
Robert W. Bitz '52
Stewart L. Black '53
George E. Blackburn '43
John M. Bloxom, Jr. '55
James E. Bobnick '61
Robert A. Boice '56
Maurice C. Bond GR
Esther Schiff Bondareff '37
Elton A. Borden '41
Gregory Borglum '41
K. P. Bovard '50
Benjamin O. Bradley '34
Roger E. Bradley SP
Warren F. Brannon GR
John M. Bredemeyer III '73
George W. Briggs '44
Roland C. Briggs '57
Chester W. Brown '27
Lyle A. Brown '65
Robert R. Brown II '77
W. Dale Brown '39
John M. Brubaker '59
William R. Buchholtz '78
Gary G. Buerman '77
John J. Burkholder, Jr. '68
K. Douglas Butler, Jr. GR
David L. Call '54

Mary L. Call '54
Nathan F. Call '76
Peter R. Call '79
Philip R. Call '81
Richard C. Call '52
Robert V. Call, Jr. '50
Christine V. Capone GR
Alvin F. Carruth '53
Gordon B. Carruth '71
James E. Carter '60
Julian M. Carter '37
Harry A. Centner '70
James G. Chamberlain '59
Laurence E. Chapman '52
Earl A. Chase SP
Robert J. Chaves '64
Shao Lin Chen GR
H. Lawrence Clark GR
John G. Cobey '66
Arnold D. Cohen '50
Richard G. Colby '78
Edmund A. Comans '55
Charles L. Conley '27
Fred L. Conner '77
Solomon Cook '42
Kenneth L. Coombs '35
Walter Couto GR
Roger W. Cramer '34
Harold L. Creal '19
Charles R. Crispin, Jr. '71
James R. Crist '54
Gordon Cummings '48
Merrills L. Dake '26
Daniel M. Dalrymple '28
Jesse E. Dalrymple '37
Philip H. Davis '50
Wallace H. Day '68
D. Robert Deal GR
William L. Dearcop '62
Ellis I. DeGroff '43
Peter E. Demnitz '49
Clarence S. Denton '18
Derl I. Derr '51
James A. Deutsch '74
Jeffrey A. Dewey '76
Gabriel L. Diaz-Saavedra '81
Edwin J. Dietz GR
Jeffrey A. Diver '68
Otto C. Doering III '62
James M. Dorney GR
Margaret A. Doss '79
Leonard C. Douglas '66
Irving Drantch '41
Edward A. Dubiel '40
Russell E. Dudley '29
Roger D. Dutcher GR
Joan R. Egner GR
Gordon H. Eibert '32
William S. Ellsworth '32
Dwight H. Emanuelson '57
Jane Brody Engquist '62
Rudolph M. Evanco SP
Douglas E. Evans '72
Robert L. Falace '57
Richard E. Felton '57
Louis Ferraro '65

Edwin D. Fessenden '54	Raymond E. Johnson '54	Gary R. Mullen GR	Ralph R. Spence, Jr. '77
Linda Finke GR	Lynn A. Jones '66	John A. Nelson '58	William A. Staempfli, Jr. '53
Robert H. Foote GR	Robert Trent Jones SP	Donald R. Nesbitt '40	Morris Stambler '64
Michael F. Forward '81	Wallace G. Jones '42	Gerald R. Newby '73	George H. Stevens '52
Marvin R. Foster '65	William A. Jones '39	Paul E. Newman GR	Donald G. Stevenson, Jr. '55
Ann Willis Frame GR	Kenneth S. Joy SP	David J. Nolan '49	Charles H. Styer '67
Jay P. Friebling '76	John T. Kangas '38	Shirley S. Norton '52	Eloise L. Styer '67
Myron M. Fuerst '30	Pereira-da-silva Kass GR	David R. Ophardt '73	Theodore H. Superak GR
Gerald R. Fuller '53	Hoshio Kawamura GR	J. Roy Orton SP	Marcia Stofman Swanson '61
David L. Gale '46	Karen A. Kearney '77	Santiago Osorio GR	Donald A. Swart '53
Philip D. Gellert '58	Linda J. Keene '77	Charles R. Osterhoudt '54	Peter I. Tack '43
Philip H. Gibson '61	S. Robert Kelder, Jr. '62	Charles E. Palm GR	Richard Talsott '65
John L. Gilbert, Jr. '73	W. Keith Kennedy GR	David J. Palmer '54	Connie Taller-Steinburg GR
Warren H. Giles '50	John E. Ketz '72	Leonard M. Palmer '32	Bruce D. Talmage '80
Charles J. Gimbrone '50	Joseph Kijak '65	William H. Palmer '40	John H. Talmage '52
Lawrence W. Goichman '66	Joseph P. King '36	George Parsons '32	John A. Tarr '53
Margery T. Goodnough '41	John Konwiser '57	Jerome K. Pasto '38	Mary Woulfe Taylor '38
Toby D. Gottfried '59	William J. Koster '31	Norval S. Peabody III GR	Albert K. Tobey '36
Paul A. Gould '67	Benjamin A. Kriegler '78	Ronald W. Pedersen '61	Judith McNeal Torgerson '70
Lucile E. Graham '81	Jan W. Kubiak '65	Oscar A. Penoyer SP	Robert W. Totman '50
Irving Granek '35	Steven S. Kuwahara '62	Kirkwood E. Personius '52	George W. Trimmerberg '65
Robert E. Graves '65	Robert D. Ladd '43	David H. Phillips '77	Michael B. Troner '64
Phillip Green, Sr. '64	Adrian C. Langdon SP	Edward K. Pickrill, Jr. '55	Clifford E. Tubbs '65
Marion L. Greenhalgh '76	Edward F. Lanigan '48	Frank E. Pinder GR	Peter F. Tudda SP
John R. Groves '39	Rhonda S. Lathwell '75	Andrew J. Piscione '65	Boyd A. Turner '40
Filippo Guani '80	James M. Lawrence '69	Kenneth E. Pollard '58	Jose A. Valdes '62
Irwin C. Gunsalus '35	Gilbert Levine '49	Kevin Pond '77	Lawrence M. Vaughan '23
Thomas L. Gurrentz '80	Burt G. Lewis '31	Paul J. Poplock '64	Jose Luis (Lugo) Vivaldi GR
Charles A. Guzewish '38	Mervin Lewis '41	Bernard W. Potter '43	Horst Von Oppenfeld '50
John A. Haight '49	John J. Link '50	Van R. Powley '50	Bruce A. Wagman '79
Albert C. Hand, Jr. '53	John W. Lloyd '49	Duncan A. Rankin '57	Tom B. Waldeck '60
J. Alex Hash GR	Arthur L. Lord '38	Arthur C. Rawle '70	Henry Waldorff '55
Andrew B. Hashimoto GR	John P. Lowens '65	Merle W. Reese '33	John R. Walker SP
Barton M. Hayward '52	Lauro Lujan-Claire GR	Anthony S. Rerecich '66	Robert L. Wanner, II SP
Rosalie W. Hemingway '63	Flower MacMillen '57	James F. Ritchey '54	W. Barlow Ware '47
Lothar Herz '55	Glenn O. MacMillen '54	Todd J. Roberts '80	Stanley W. Warren '27
Leslie J. Herzog '77	Douglas H. Manly '50	Donald G. Robinson, Sr. '41	Clarence E. Waters '65
Wilbur R. Hesseltine '44	Donald H. Marden '58	Glenn F. Robinson SP	W. Harrison Wheeler '24
Edwin W. Hicks '31	Hartley V. Martin '41	John G. Robson '51	Christine White GR
Andrew G. Hilen GR	Howard W. Matott '39	Jean F. Rowley '54	Nathaniel E. White '41
Hubert G. Hill '52	Robert H. Maxwell GR	John J. Ruskiewicz '57	Ralph H. Whitehead '41
Edward B. Hiscar '81	James J. Maynard '63	Edgar T. Savidge '67	Donald C. Whiteman '39
Edward Hih-Hwa Ho GR	Stanley B. McCaleb GR	Marian S. Schindler '73	Lynn Robert Wightman '62
W. Gifford Hoag '31	Barbara McClintock '23	Daniel E. Schlafer '72	G. Harris Wilcox '43
Russell O. Hodnett '47	James J. McConnell '59	Ralph A. Schmidt '77	Charles E. Wille '50
John Hoff GR	Lillian Rabe McNeill '24	Carl E. Schoenacker '40	Ronald D. Wilson '36
Joan Schoff Hoffman '52	Donald F. Meister '42	August Schumacher '29	Theodore W. Winsberg '52
Charles J. Holsass '55	Henry D. Mertz '50	Robert D. Sears '62	Robert F. Winship '37
Katharine M. Holden '33	Robert K. Metz, Jr. '63	Edward B. Seifried '72	Ralph E. Winsor '57
Roger M. Hopkins '38	Betsy Lockrow Meyer '60	Virginia Allen Sibley '29	David R. Wood '63
G. Michael Hostage '54	James H. Michaelis '71	David Simon '67	Peter W. Wood GR
Howard W. Hruschka '37	Allan D. Mitchell '50	Bayla Schlossberg Singer '60	DeGraft Woodman '17
Don E. Huddleston '33	R. Kimberly Mitchell, Jr. '59	Ralph R. Smalley '50	Linda M. Woodward '78
William F. Hueg, Jr. '48	Robert K. Mitchell '26	Allen O. Smith '60	William W. Woodward '51
Mansur Imami '62	Samuel U. Mitchell '53	David T. Smith '52	John W. Wysong '53
Anthony F. Incalcaterra, Jr. '76	Lewellyn S. Mix '48	Naomi Leith Smith '53	Stuart E. Young '71
Jay S. Jacobson '55	Raymond S. Morrell '40	Robert S. Smith '42	Carl Yunker '47
George S. Jameson '27	Roger N. Moseley '52	Waldo G. Smith '33	Benjamin J. Zaitz '77
William R. Jenkins '70	Michael A. Moses '75	Milton G. Soper '43	Charles F. Zambito '64
Rolf Jesinger '65	George B. Mueller '54	Alexander E. Spence GR	

Lifetime Members Fund Grows

Thanks to You, We're Halfway There

The college's Lifetime Membership Fund is more important than ever for scholarships and teaching.

With continuing federal cutbacks, a top-quality college education may soon become harder for institutions to provide and out of reach to many worthy students.

There is now a concern at colleges and universities across the nation that education will revert to what it was a few decades ago, a privilege reserved largely for the affluent.

If this were to occur, it would be far more than any one person's loss: we all would be diminished. An educated nation is a strong nation, one able to act intelligently and with foresight in a crowded, complex world. Analytical thinking, creativity, adaptability—all become increasingly important if we are to sustain our present quality of life.

Our college, from its start, has been an unusually democratic and open one, recruiting outstanding students from all backgrounds and income levels. We have been fortunate to have had strong support from state and federal agencies, as well as from private individuals. Such support enabled us to become the number one agricultural college in the country and to produce graduates who have contributed substantially to agricultural advances worldwide.

To maintain the diversity of our student body and the quality of our educational programs, the ALS Alumni Association has formed a committee to increase the number of lifetime memberships to 1,000, thereby creating an endowment of \$100,000. Each life membership fee will be invested and the

proceeds applied directly to student aid and innovative programs. The association's expenses will not be taken from the lifetime membership fund but will continue to come from annual fees.

The response to our lifetime membership effort to date has been enthusiastic. Memberships have come from around the world, from Singapore, Nepal, and Japan; from Waseca, Minn., and Hilton Head, S.C., and from Fly Creek, Brooklyn, and Nesoonset, N.Y. In one family, seven alumni recently become life members.

Won't you join other alumni to build this vital \$100,000 fund?

Yes, I want to become a lifetime member of the ALS Alumni Association.

Name _____

Address _____

- \$100 Lifetime membership
 \$35 First installment of a three-year commitment to a lifetime membership

Please make your checks payable to the ALS Alumni Association and mail to 242 Roberts Hall, Ithaca, NY 14853.

Remember, with a paid-up lifetime membership you will receive a certificate suitable for framing and an ALS decal.

Ag Society Honors Cornellians

At the N.Y. State Agricultural Society's 150th anniversary meeting in Albany last January, Robert S. Smith, professor emeritus of agricultural economics, was honored for his years of service in advising farmers on capital needs and estate planning.

Alumnus Harold L. ("Cap") Creal '19 received his second distinguished service citation (his first was in 1965) from the society. He was cited for his contributions as a pioneer in farm organizations, farm planner, and life-time farmer.

Discussing the past and ongoing effects of research and education on agriculture were J. Murray Elliot, professor of animal science, William D. Pardee, professor of plant science, and Bernard F. Stanton, professor of agricultural economics.

The society, with a presentation from Governor Hugh L. Carey, honored eight farms, four of which had been in the same family for 300 years, and four for 100 years. Among the century farms is one owned and operated by Stephen N. Kimball '71 and his sister, Susan Kimball Abers '81, of Kennedy, N.Y. Susan Abers is a full partner with her brother, father, and husband in operating the 835-acre dairy farm.

Honored also was the century farm of Arlie Greene, Berlin, N.Y., father of alumnus Wesley Greene '73, M.S. '76.

Another 100-year farm cited is owned by William Peck of Schuylerville, N.Y., whose daughter Cynthia is a junior at the college.

Premiered at the event was a multimedia show on New York agriculture, produced by Media Services.



June 11 Ceremony to Dedicate Ag Quad Trees

A ceremony dedicating trees donated for the Ag Quad restoration and development project will take place at 5 p.m. June 11, in front of Mann Library.

During the ceremony, Dean David L. Call will pay tribute to the 44 private donors whose gifts are making the project possible.

A glass-enclosed map, to be on permanent display in the lobby of Mann, will mark and explain the species of trees, the names of the donors, and people honored.

Planning for the project started in 1975, and the first tree was planted by the Floriculture Club in 1977.

Round-up '82 Scheduled

Round-up '82, sponsored by the ALS Alumni Association, will be held Saturday, September 18. All alumni and friends are invited to attend.

Starting at 10 a.m. in Barton Hall, the program will include recognition of outstanding alumni and 50-year (1932) grads.

At noon, there will be a barbecue in Barton, followed at 1:30 p.m. by a football game between Cornell and Princeton.

Details about tickets for Round-up '82 will be available in late summer from the alumni association office, 242 Roberts, Ithaca, NY 14853.

Fund Started for Ag Education Majors

Teacher shortages are being felt in physics, mathematics, industrial arts and, to a lesser degree, in other fields. In vocational agriculture, however, the continuing shortage of teachers at the high school and two-year college levels is critical, says Richard W. Tenney, assistant professor of agriculture and occupational education.

To help attract students to the field and thereby ease the shortage, the Teachers of Agriculture Fund has been started. Through the fund, scholarships will be awarded to undergraduates majoring in agricultural education.

Compared with 1960, 300 percent more college students are studying agriculture in 1982, but only 25 percent more are studying agricultural education. "There are two positions for every agricultural education graduate," Prof. Tenney says.

The excess of teachers in the 1970s caused college students to enter other professions, he notes. The trend has continued, with too few people realizing there is a continuing shortage in vocational education, and that the

pendulum has also swung back in other teaching fields.

One result of this has been a greater number of teachers hired who lack provisional certification. Last year, 18 uncertified agricultural education teachers were hired on an emergency basis in this state, "a poor sign," Tenney says. They are not as well trained as their certified counterparts, and their lack of preparation often causes lower quality instruction for students. Untrained teachers are also less likely to succeed and be hired for a second year, resulting in a high rate of teacher turnover which in turn affects program quality.

In addition, the lack of teachers has contributed to a retrenchment in vocational education programs both in New York and across the nation, despite the fact that agriculture is the biggest industry in the state and nationally, and that 40 percent of the population works in agricultural-related jobs.

For further information about the Teachers of Agriculture Fund, contact Glenn O. MacMillen, Office of Development and Alumni Affairs, 242 Roberts Hall. Gifts, which are tax-deductible, can be made in tribute to an individual, group, or school.

News and Notes

Dear Alumni:

Stan Warren wears a big smile these days. The response to his 1,000 lifetime membership campaign is very gratifying. He's a confident man. He tells me not to underestimate him, the campaign, or the alumni. "We'll have 1,000 by December 31," he claims, "and that's only the beginning. The more the association does to support the college, the greater the response." I tend to believe Stan. He knew what he was talking about in Ag Ec 1 and as an "Emeritus" he's even more convincing!

Our alumni are great. The response to last year's quadrangle beautification project was very heartening. Your gifts successfully matched the \$20,000 challenge. Also, nine alumni ordered trees as memorials or tributes to friends, family, faculty, and alumni. Beautification plans have been complicated by recent trustee action. The new administration building, currently referred to as Academic 1, is now planned for the west end of the quadrangle. This will somewhat delay and potentially alter our plans. We'll get started right away, but the master plan has yet to be developed.

It takes all kinds. The college's most unusual gift this year has to be the proceeds from the sale of a VW car. Other gifts include shares in a development corporation that holds patents and inventions in which the college may be interested, in-kind gifts including snowmobiles, semen for the beef cattle program, trees, shrubs, advertising space in a national trade

magazine, and a collection of insects from Central and South America.

Matching gifts are also very important. With increasing frequency, gifts from alumni and friends are matched by the employer. Sometimes two to one or even three to one. A \$100 gift may wind up as a \$400 gift.

Reunion weekend is special to many alumni. Reunion classes include all those that end in 2 or 7—52, 62, 72 and 57, 67, 77, etc. It's a fun time to renew acquaintances and relive the "good old days." This year's ALS program includes a booth at Barton Hall, a tree dedication ceremony on the Ag Quad (5 p.m., Friday, June 11), followed by the dean's wine and cheese party in Mann Library lobby (ya'll come!). The Saturday morning Alumni Association reunion breakfast at North Campus Union starts at 7:45 a.m.

Round-up '82. Plans for this year's Round-up are well under way. The date—September 18. The program starts at 10 a.m., luncheon at 12 noon, and the football game at 1:30 p.m. If you have been to one, you won't miss it. If you have never attended, you'll want to circle the date and join us. Six hundred Cornellians can't be wrong. The Round-up is traditionally scheduled for the first home game and we're sorry it falls on Rosh Hashanah this year.

Glenn O. MacMillen
Assistant to the Dean

Alumni Breakfast to Be Held June 12

The annual reunion breakfast, sponsored by the college Alumni Association, will be held at 7:45 a.m., June 12, at the North Campus Union.

New officers and directors will be elected during the brief annual meeting, and alumni and recently retired faculty members will be honored.

Dean David L. Call will recap some of the past year's highlights, activities, and special events.

All alumni and friends are invited.

Reservations are necessary due to space limitations.

No tickets will be mailed in advance; reserved tickets will be available at the door.

Please return reservations by June 1 to:

Glenn O. MacMillen
ALS Alumni Affairs Office
242 Roberts Hall
Cornell University
Ithaca, NY 14853

RETURN COUPON

() Yes I plan to attend the ALS reunion breakfast and annual meeting on June 12, 1982.

() Enclosed is my check for _____ reservations @ \$5 each.

Please make checks payable to ALS ALUMNI ASSOCIATION.

Name: _____ Class _____

Address: _____

Alumni to Write History of Grange

The Grange was a strong force in shaping their and many others' lives, say fraternal twins Susan and Karen Draves, both class of 1981, and they would like to recapture this disappearing way of life for future generations.

They plan to write a book, *A View of the Grange: Through Photographs, Oral History, and Documents of Its Members*, about the heritage and the way of life exemplified by the members of the farm organization, with publication expected in 1984.

Although the Grange is a familiar name to many people, Karen and Susan explain, few nonmembers realize the magnitude of its contribution.

Formed in 1867, one of the organization's first challenges was to help farmers unite against railroad monopolies, which were charging exorbitant rates to transport their products. Its founder, Oliver Hudson Kelly, envisioned it as a politically active organization and also as a cultural and social bastion of rural life.

It played a central role in launching free rural mail delivery, rural roads, rural electrification, agricultural colleges, and Cooperative Extension. In addition, its members proposed and pushed for such legislation as the Pure Wool Act, which set standards for modern protective regulations, and worked to obtain a cabinet status for the U.S. Department of Agriculture.

From the time of the Grange's founding, the Draveses note, it has been in favor of equal rights for women and in 1867 acted on its beliefs by giving women voting rights in all of the organization's decisions. Today, they add, it continues in this tradition and supports the women's rights movement.

In compiling materials for the project, they will spend much of their time researching the Grange's national archives, housed at Cornell. They also will spend a year visiting with Grange members in nine Northeastern states,



Twins Karen (left) and Susan (right) Draves, both class of '81, research history of the Grange at the University's library annex.

observing and recording what they are concerned is "a vanishing landscape" of small family farms.

Most of the remaining research time will be spent going over questionnaires mailed to Granges, taking photographs, and collecting memorabilia such as poems, songs, and bits of folklore.

The Draveses' grandparents and parents belonged to the organization, and they themselves have been members, in their hometown of Scotia, N.Y., since they were five.

A grant from the National Endowment for the Humanities supports the project, and Granges in the Schenectady area have raised funds for it through small contributions and bake and craft sales.

Clarence Schmid, a member of the

Grange for nearly 40 years and currently deputy master in Schenectady County, says, "Since the Grange organization has played a very important role in the agricultural and social lives of people living in rural areas, I believe a project depicting some of the highlights of the Grange movement is well worth recording...[Its accomplishments] have enriched the lives not only of those in agriculture, but also the well-being of every citizen of our nation."

Serving as the project's advisers are Eugene C. Erickson, professor and chairperson of rural sociology, Peter J. Trowbridge, assistant professor of landscape architecture, and Gould P. Colman, Cornell archivist.

Erickson remarks, "Karen and Susan Draves are undertaking a

phenomenal effort. Imagine rendering the fabric of rural America by documenting in photos and through the memories of people the role of the Grange movement in the development of the small towns and surrounding rural areas.

"The sweep of change is upon us. The numbers who have spent a lifetime in this important movement are dwindling. Without a documentary such as this, one of the stories of those who have dedicated their lives to the movement might never be told."

Those who have diaries, notes, songs, or other Grange memorabilia they would like to share with the authors can send them to: Susan Draves, Karen Draves, 730 Sacandaga Road, Scotia, NY 12302.

Gerald Hill New Public Affairs Officer



Gerald H. Hill has been named public affairs officer for the college. He succeeds James B. Bays, now in charge of Cornell's midwest regional office in Chicago.

Hill will work closely with Glenn O. MacMillen, assistant to the dean, as assistant director of the college's alumni association and as executive director of the N.Y. State 4-H Foundation.

A New York State native, Hill

served for several years as a Cooperative Extension agent in Clinton County, responsible for community development programs in agriculture, housing, natural resources, energy, and economic development.

He is a graduate of the State University of New York at Plattsburgh and holds a master of professional studies degree in community and regional development from Cornell.

Cornell Soil Judging Team in National Competition

A student soil-judging team at Cornell will compete in the National Soil Judging Contest scheduled this spring at the University of Arkansas. Sixteen teams representing seven regions of the United States will participate.

Teams from Cornell and the Pennsylvania State University will represent the Northeast as a result of their high standing in the Northeast Regional Soil Judging Contest held recently at Penn State.

At the regional competition, the Cornell team placed second with a total score of 3,194, 58 points behind Penn State. Other teams that competed in the Northeast event were the University of Maryland, Delaware Valley College (Pa.), the University of Maine, the University of Rhode Island, and Rutgers University.

Raymond B. Bryant, assistant professor of soil classification and survey in the department of agronomy, was the coach, with graduate student Debra Schultz of Ithaca serving as assistant coach.

In individual placings, Steve Major '82 of Endwell, N.Y., captured third

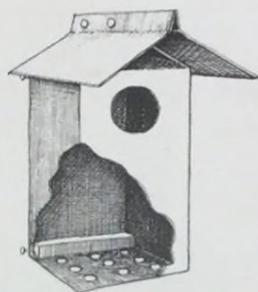
place; Nancy Washer '82 of Rye, N.Y., seventh; and Ali Phillips '83 of Washington, D.C., tenth. Other members of the team were Edward Blouin '85 of East Northport; Catherine Law '82 of Croton; David Van Lieshout '82 of Albion; Jacalyn Wolf '83 of Port Washington, all from New York State; and Laurie Newman '82 of Elkins Park, Pa.

The 1982 National Soil Judging Contest at the University of Arkansas is an academic competition sponsored by the student section of the American Society of Agronomy.

Soil judging, Bryant explains, tests the contestant's knowledge of soil properties in terms of soil types, color, structure, texture, consistency, mottling, drainage, infiltration, permeability, water-holding capacity, slope, runoff, erosion, and classification. The aim is to determine soil properties correctly for different uses, including suitability for septic tank absorption fields, construction of dwellings with basements, local roads and streets, and agricultural purposes.

—Yong H. Kim

Rallying to the Bluebird's Aid



To make a bluebird house from two milk cartons: 1) open the top seam of one carton; 2) spray the interior with black paint to make the birds feel more secure; 3) cut a 1-1/2 inch hole, located identically to the one for a wooden house [described in article]; 4) with a paper punch, make 2 holes in the flap at the top of the carton and in the roof section to be cut from the other carton, lining up the holes with those in the flap; 5) for rigidity and to drive nails into, put 2 blocks of wood, each 1 inch square and 3 3/4 inches long, into the carton, one placed along the back interior bottom and the other along the upper back interior; 6) into each, drive one tiny nail through the carton in each end of the blocks, leaving 1/4 inch sticking out; 7) make several rows of small holes in the bottom of the carton for drainage; 8) close the top of the carton by placing brass paper clips through the punched holes of the flap and roof section; 9) cut 1/2 side out of the second container (including a fold), 6 inches long, for the roof; 10) wrap fine wire around each nail at the top and bottom of the carton several times; and, 11) wind the loose ends of the wire around the nails, which have been driven into a tree or post, to erect the house.



almost always building their nests in tree cavities, such as those created by woodpeckers, or in the knotholes of wooden fence posts. While sparrows and starlings prefer ready-made holes, unlike the bluebirds they do not require them.

Both sparrows and starlings are aggressive, quick to oust bluebirds and their young from nests. The balance can be tipped in favor of the bluebirds, however, through custom-designed boxes and specific box installations that are optimal for them and less attractive to their competitors.

One person who has been studying, banding, and photographing bluebirds for 40 years is environmental educator Richard B. Fischer. A professor in the department of education, and holder of a doctorate in ornithology, Fischer is devising inexpensive bluebird boxes from recycled materials such as milk cartons. In a field near campus, he has placed boxes, made of assorted materials, at varying heights and distances from each other, to see which configurations attract the most bluebirds.

He has described his observations, as well as step-by-step backyard ventures, in the *Environmental Interpreter* and other publications. Readers may have seen his numerous articles in the *New York Times* on such topics as attracting wintering birds to feeders, and the benefits of wild plants, and in *Ranger Rick's Nature Magazine*, on a variety of nature projects for children. (He is a volunteer advisory editor for the latter publication.)

To make a wooden bluebird box, he recommends inside dimensions of 4 1/2 to 5 inches square for the floor, 10 inches for the height, and that the bottom of the entrance be about 7 inches from the floor. The top of the entrance hole to the underside of the

roof should be no greater than 2 inches. The entrance hole should be exactly 1 1/2 inches in diameter: the bluebird can squeak through, but it is too small for the starling. Hinge the roof to allow for regular inspections and to make sure no other species (or predator) has usurped it, and for cleaning.

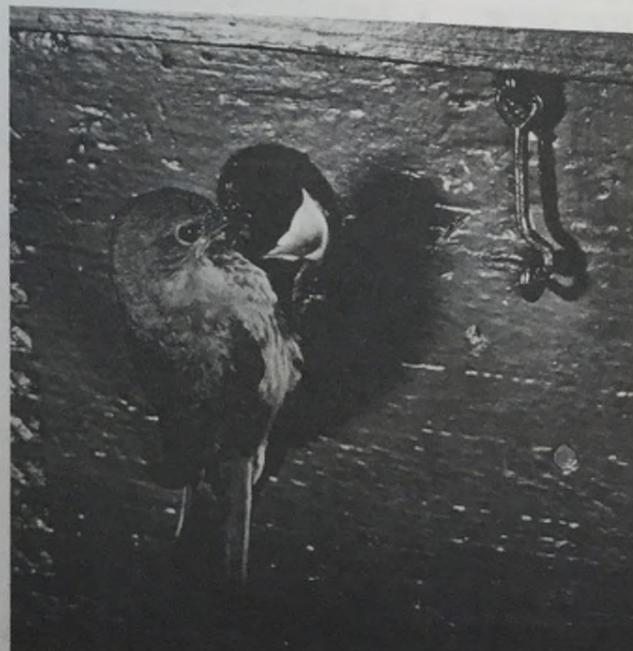
The sparrow can get into this house, but neither it nor the starling likes nest sites as low as 4 or 5 feet from the ground, while the bluebird does. The bluebird, also in contrast, prefers its house mounted on a post in the open, at least 100 feet from the nearest cover. (continued on next page)

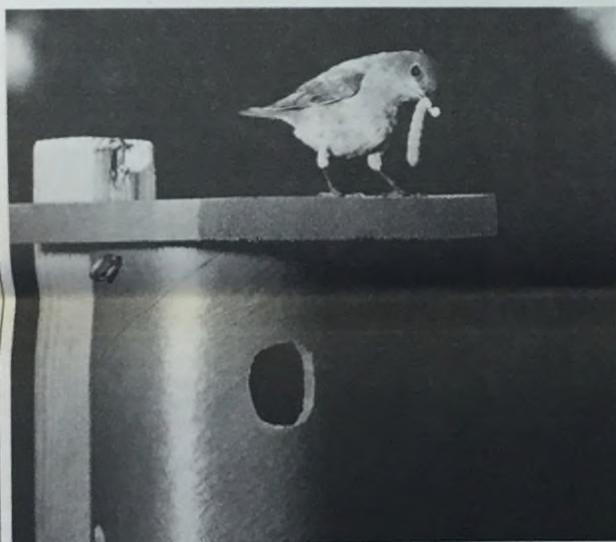
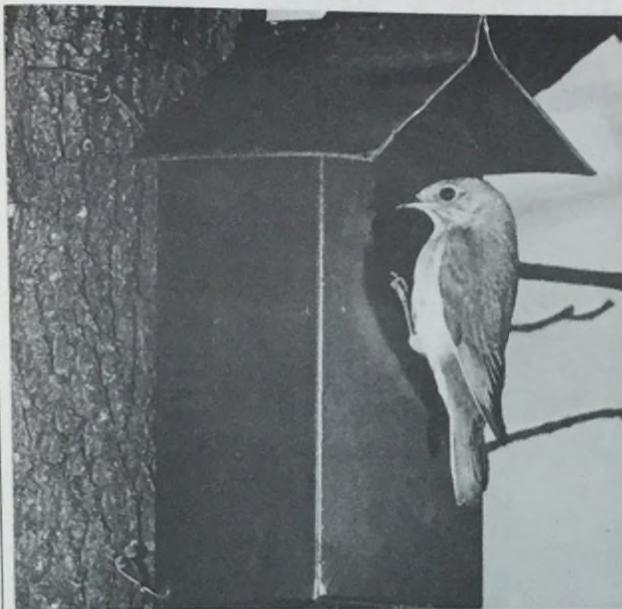
Once frequently spotted in pastures, orchards, suburbs, and even in urban areas, the bluebird has become a memory for many of us.

Estimates indicate that the population of the eastern bluebird has dropped 90 percent since 1935. It declined as a result of pesticides, residential and commercial development, nest-site competition from other species, and widespread substitution of metal fence posts for wooden ones.

Two million died between 1947 and 1955 from a curious hazard: hoping to find shelter, the wintering birds entered tall tobacco-barn smokestacks in the South that had rain caps but no screens to prevent entry. After they had gone down the slippery, hooded pipes, they were unable to get back out. (The smokestacks now are equipped with screens.)

The major cause of the population decline is the intense competition for nesting sites between the bluebird and the imported house sparrow and starling, both of which have spread in ever larger numbers to remote areas. Bluebirds are a cavity-nesting species,





Bluebird houses, properly located, whether made of milk cartons (left) or of wood (right), will encourage the reappearance of this imperiled bird.

Just when it looks as though everything has been taken care of by foiling the sparrow and starling, Fischer warns, the otherwise likable house wren enters the picture. The male wren has the unadmirable trick of pecking holes in eggs of cavity-nesters in his vicinity. He does this because he likes to cover all his bases when selecting a mate. When a female responds to his loud singing and courting, he takes her on a tour of several nesting cavities in which he has already built partial nests. If she accepts, she will pick the partial nest that suits her and complete it.

Wrens prefer to be near some cover and to have their nest in a tree, so the solution here is to erect bluebird houses on a post or on a solitary tree, and locate them at least 200 feet (twice the usual requirement) from the nearest cover.

Another threat to the bluebird is the blowfly, or green bottle fly. It lays its eggs in the nest, and when the birds hatch, the fly's maggots attach themselves to the newborn birds and suck their blood, often killing them. They do this at night when there is little risk of their being eaten by the adult bird. Fischer advises lightly sprinkling the empty box with rotenone (the kind used on parakeets and

canaries) or pyrethrum to prevent this. When the young birds have left the nest, toss the nest out, and dust the house again with rotenone, to get it ready for the next brood.

Bluebirds depend almost exclusively on wild berries to sustain them in the winter, and these foods have been greatly reduced in recent years. In winter the birds, mainly found in outlying areas in the summer, sometimes move closer to houses in their food search.

Plantings of berry-bearing shrubs, trees, and vines can make a decisive difference in the birds' survival. Of particular benefit is the American holly, with berries that stay on the tree until late winter and then soften just when other kinds of berries have disappeared. Multiflora rose is an important shrub, with a dependable, heavy crop of fruit.

Sources of winter berries also include sumac, high-bush cranberry, spicebush, mountain ash, flowering dogwood, wild grapes, privet, amur honeysuckle, moonseed, and inkberry.

Although rare at winter feeders, bluebirds can occasionally be lured there with raisins or other fruits and berries, chopped unsalted peanuts, or chopped suet.

An invaluable help to bluebirds is to leave standing those trees that are dead or dying, particularly solitary ones in pastures or other grassy places. Since bluebirds are open-country residents, dead trees in the middle of a woodlot are not useful to them; they are necessary, however, for nuthatches, chickadees, woodpeckers, and many others.

Coming across a bluebird was likely to have been a heralded event even when it was a prominent species. It has a direct, expressive song, a pure contralto, which seems perfectly to fit its gentle disposition. It is a diminutive bird, which makes its color all the more intense, a dart of unexpected ultramarine in the air.

Prof. Fischer enjoys witnessing his students' and friends' reactions when they catch their first sight of bluebirds on trips to the research fields and known hideaways. "With an eagle, the sheer size and flight are impressive. While the bluebird is small, its color has a profound effect on people. They usually are completely silent, speechless, as they watch it."

There is good reason to believe the bluebird can be saved. In the last decade or so, with its plight better known and its habitat requirements increasingly publicized, people

throughout the United States and Canada have rallied to its cause. Starting alone with a few bluebird houses in 1957, amateur ornithologist William Highhouse has since been joined by a dozen friends in building, installing, and keeping a close watch on 250 bluebird houses in a 20-mile radius of Warren, Pa. The effort had fledged 14,000 bluebirds through the spring of 1981.

In one Canadian project, bluebird boxes have been put up on 2,500 miles of trails. The network of trails and side-trails stretches from near Winnipeg, Manitoba, to Saskatoon, Saskatchewan, and the houses are protectively monitored by an impressive army of volunteers. It is estimated that 5,000 bluebirds are fledged there each year.

"Thousands of agricultural and semi-rural areas afford ideal conditions for bluebirds, but they desperately need nest boxes," Prof. Fischer says. He adds, "Because the bluebird is New York's state bird, it would be particularly appropriate for New Yorkers to join in the campaign to restore this favorite among songbirds."



Ag Country Fair

Visitors to the Ag Country Fair watch honeybees through an observation hive. The fair, held last fall on the Ag Quad, featured live country music, exhibits, games, homemade food, and demonstrations of ruminant physiology and horse care. Open to the public, it was co-sponsored

by the Alfalfa Room Board and the University Union Programming Board. More than two dozen groups participated, including the Pomology Club, the Dairy Science Club, the Wildlife Society, and Ag Ambassadors.

Dairy Days Attracts Over 350 Farmers

Despite bitter cold that gripped the Northeast, more than 350 dairy farmers attended this year's "Dairy Days" at the college in January. This event is held annually to keep dairy farmers up to date on research developments and trends affecting the dairy industry.

Awards of merit were presented to Ronald W. Space '53, a dairy farmer in Freyville, and Elmer E. Clapp Jr., M.S. '46, director of special sire programs at Eastern Artificial Insemination Cooperative, Inc. in Ithaca, by J. Murray Elliot, professor of animal science. Space and Clapp were honored for their contributions to the state's dairy industry and to the programs of the animal science department.

In his keynote address, Congressman Gary A. Lee (R-33rd District) criticized the Reagan administration's treatment of the dairy industry. He warned that the industry is in for difficult times, particularly as a result of the 1981 farm bill. "Some short-term hardships will be forthcoming," Lee predicted. "The historic—and vital—link between dairy price supports and parity has been broken."

Among topics discussed by specialists from Cornell and other institutions were the future of national dairy markets, financing the dairy operation, and the use of computers as farm management tools.

Presentations also included use of natural bovine growth hormone that makes it possible to increase milk yields dramatically in cows, progress made in Cornell's \$1.5 million, four-year project aimed at making a modern dairy farm energy-efficient, proper care of foot and leg problems in dairy cows, use of somatic cell counts as a means of screening for mastitis infections, and on-farm milk quality control.

Highlights of the presentations included:

—Milk production by 1990 may hit the 16,000-pound mark per cow per year, with annual production nationally ranging from 120 billion to 124 billion pounds. This will lead to increased competition for markets, which will, in turn, require more efficient management of farms.

—Financing dairy farms in the next decade will require more effort and expertise than was needed in the past. Investment per farm is likely to continue to climb at unbelievable rates. Innovative financing methods, such as leasing, may be useful but must be evaluated carefully.

—As dairy farm businesses continue to expand in coming years, requiring even larger investments in livestock, machinery, land, and buildings, they are expected to become more complex. This will necessitate increased use of computers on the farm as vital management tools.

—Research and development will continue at a high rate, and new technologies, such as embryo transfer, estrus synchronization, electronic identification of cows for record-keeping, computerized feeding systems, and automatic milk recording are at, or near, the point of widespread use on farms.

—If research results at Cornell continue to demonstrate the growth hormone to be an effective stimulant in milk production, this technology could be developed for on-farm application within the next 10 years.

The two-day program was sponsored jointly by the Cornell Cooperative Extension dairy committee and the department of animal science.

—Yong H. Kim

New Course Focuses on the "Whole Scientist"

For those who aspire to be a "whole scientist," a new graduate-level course is being offered. Dealing with the human side of the scientist as well as the intellectual side, this one-of-a-kind seminar is for graduate students, research personnel, and visiting scientists on campus, regardless of their affiliation or specialization.

"Seminar on Nurturing Scientific Creativity" is taught by Noland L. VanDemark, professor of animal science and formerly the college's director of research.

VanDemark said that his course takes a philosophical approach to complex issues and problems relating to creative thinking and problem-solving, with special emphasis on the human elements that make up a scientist.

"Throughout history," he said, "people's lives have become more and more complicated. Each move forward has brought with it new problems to be dealt with. As a result, today's complex society continues to face ever-increasing demands to solve problems which, if left unsolved, would threaten to destroy mankind and civilization."

Citing one of many societal as well as human obstacles that hamper the full development of the creative abilities of individuals, he commented that American educational systems deal largely with the intellectual side of people, while neglecting the emotional.

"Many educators believe that this education of half persons is a considerable deterrent to developing individual creativity," he noted.

In his course, VanDemark focuses on ways for people to deal with perceptual, emotional, cultural, and environmental roadblocks, as well as

educational, institutional, and governmental interferences and deterrents.

"I want to help people grow as whole persons—as well-balanced persons—not just intellectually," he remarked. "If individuals are happy, they're going to be more productive."

VanDemark was director of research and director of the Cornell University Agricultural Experiment Station from 1974 to 1981. Last summer he assumed teaching and research responsibilities in the department of animal science.

Before coming to Cornell he was professor and chairman of the department of dairy science at Ohio State University for ten years and on the faculty of the University of Illinois for 16 years.

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VanDemark first developed and taught a similar course at Ohio State and offered the course at Cornell on a trial basis last year, receiving positive reactions.

The new course consists of ten, two-hour sessions each semester, with enrollment limited to 15 students per section.

—Yong H. Kim

Researchers at Cornell beginning to analyze the chemical interactions in a system that generate signals

Using the nervous system of a lobster as a model, Ronald W. Warrick, assistant professor of biology and behavior, is studying the role of neurons that control movements and posture. His research, which is sponsored by the National Institute of Muscular Dystrophy, contributes fundamental information on the mechanisms of coordination and on the neural basis of behavior.

Unlike the brains of other animals, such as human beings, the brains of small numbers of the nervous system are situated in ganglia, small masses of nervous tissue that control part of the body. Each ganglion contains fewer than a thousand neurons. As a result, the nervous system can be observed both directly in a lobster and experimentally by electronically monitoring its electrical activity.

All body movements are controlled by reciprocal activation of extensors and flexors, and on and off by specific neurons that control complex nerve cell activity.

In the lobster, the single nerve fiber, called a "command fiber," can activate a single muscle contraction. Responses that result in flexed or relaxed postures are produced by neurons that produce a "central pattern generator," which is a network of neurons that signal these generators to turn on chemicals, serotonin, and other neurotransmitters that can mimic these responses and induce different postures.

When injected with a command fiber, lobsters go into an extended posture, and tails raised; this is the posture that is seen when demonstrating a lobster's ability to demonstrate a posture. Another, an injected command fiber, the other hand, results in a hunched position, similar to a stance. While both of these postures are extremes, they are extensions of lobster behaviors.

Harris-Warrick is studying the effects of these command fibers on a generation of postural neurons that command fiber systems. He is studying the command fiber system (called a neurotran) that controls the command cell. Alternatively, each neuron can serve as a generalist, controlling the system of the lobster's extensibility of all cells.

It is possible that these types of responses are found in other human beings. In animals, a class of neurotransmitters (serotonin and related substances) modulate movement. Natural brain stimulation mimicked by administration of amine makes another makes the extended position have been implicated.

The Lobster and the "Mind-Body Problem"

Researchers at Cornell are now beginning to analyze the complex chemical interactions in the nervous system that generate simple behaviors.

Using the nervous system of the lobster as a model, Ronald M. Harris-Warrick, assistant professor of neurobiology and behavior, is examining the role of neurons that induce simple movements and postures. His research, which is sponsored by the Muscular Dystrophy Association, will contribute fundamental information on the mechanisms of normal muscle coordination and on the neurobiological basis of behavior.

Unlike the brains of vertebrates such as human beings, which contain billions of nerve cells, lobsters have small numbers of these cells distributed in ganglia, small masses of nervous tissue that control a local part of the body. Each ganglion has fewer than a thousand large, distinct nerve cells. As a result, behavior can be observed both directly in the lobster and experimentally through electronically monitored cells in petri dishes.

All body movement requires a reciprocal activation of muscle extensors and flexors, and these are turned on and off by specific chemicals and complex nerve cell connections.

In the lobster, the stimulation of a single nerve fiber, called a "command fiber," can activate a complex pattern of muscle contraction and relaxation responses that results in either a flexed or relaxed posture. The neurons that produce these postures are in a "central pattern generator," in which a network of neurons interact with one another. The command fibers signal these central pattern generators to turn on. Two related chemicals, serotonin and octopamine, can mimic these command fibers and induce different postures in lobsters.

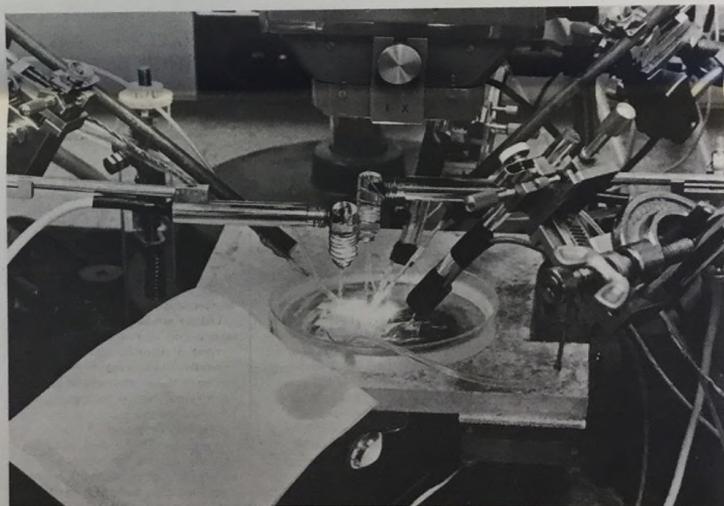
When injected with octopamine, lobsters go into an exaggeratedly extended posture, their claws forward and tails raised; this position resembles that seen when one lobster is demonstrating submissiveness to another. An injection of serotonin, on the other hand, results in a flexed or hunched position, tails tucked under, similar to a stance of aggressiveness. While both of these responses are extremes, they are, nevertheless, extensions of lobsters' natural, daily behaviors.

Harris-Warrick now is studying the effects of these compounds on identified neurons that are involved with generation of posture. Octopamine and serotonin may interact with the command fiber system, either activating the command nerve cell or functioning as the chemical signal (called a neurotransmitter) released by the command cell when activated. Alternatively, each chemical may serve as a general alert to the entire system of the lobster, increasing the excitability of all posture-controlling cells.

It is possible that a variation of these types of responses occurs in human beings. In a number of animals, a class of compounds called biogenic amines (which include serotonin and related chemicals) seems to modulate movements. When the natural brain stimuli of rabbits are mimicked by administering amines, one amine makes them flex and another makes them assume an extended position. The amines also have been implicated in the control of



Ronald Harris-Warrick electronically monitors the "conversation" of lobster neurons in a petri dish.



walking in cats. Many of these same amines, including serotonin, exist in humans.

This research, pointing to the important role of natural chemicals in producing identifiable behavior, may help address another issue—the "mind-body problem." Since ancient times, philosophers, and more recently, neurobiologists and psychologists, have been asking: are the mind and body one or two entities?

There are two primary branches of scientific philosophy regarding this question. One, dualism, holds that the mind and body are separate, leading in effect to distinct lives, a "ghost" inside a body. But, argue opponents of this view, if the mind were in fact non-physical, occupied no space, and were independent of the brain, how could

drugs, fevers, or strokes, for example, cause changes in behavior and perception?

The major school favoring the counterview to dualism is materialism, which regards the mind and body as one inseparable neural product. According to this theory, each person is born with a unique biochemical-neurobiological makeup, but one that will be greatly influenced by his or her environment.

Materialists believe that a person's neurobiological inheritance affects the way the environment is perceived, and that the environment can in turn change that person's brain biochemistry. The brain thus has tremendous plasticity, its cells "talking" to one another, incorporating life experiences and the situation at hand, and then

filtering this information through its own unique, genetically and environmentally colored "glasses" to produce a perception or action.

Using the computer as an analogy, the mind's processes do not depend so much on the system's raw products (whether neurons or diodes), but on the "software," or how the system's mechanical components are instructed to act. The brain has evolved to have maximum flexibility and plasticity to change its software program.

If the chemical mechanisms that generate simple behaviors of the lobster in Harris-Warrick's research eventually prove to be true for humans, the materialist theory would be given a substantial boost.



Programming Board. More than two hundred members of the Dairy Science Club, the Wildlife

educational, institutional, and governmental interferences and deterrents.

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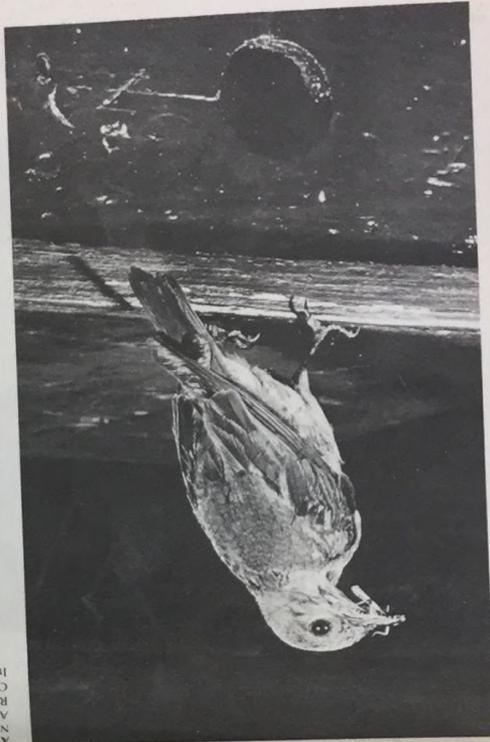
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—Yong H. Kim

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Catalog Available from Fruit Testing Assn.

New and time-tested varieties of apples, cherries, grapes, elderberries, peaches, mulberries, nectarines, raspberries, pears, and other fruits are available through the N.Y. State Fruit Testing Cooperative Association. It offers the largest array of fruit stock in the country.

One apple variety being featured this year, Liberty, can be grown without fungicides (disease-controlling sprays). Introduced in 1978, it is a quality dessert apple, has excellent processing characteristics, and has withstood temperatures of minus 20 without injury.

The N.Y. State Fruit Testing Cooperative Association, started in 1918, is a non-profit nursery that works with the N.Y. State Agricultural Experiment Station at Geneva in testing

fruits. Members grow, test, and report on newer varieties and selections, providing an important service to the fruit industry and to home growers.

Annual meetings are held at the research station and feature a large exhibit of fruits, tours of station plantings, and a program of talks by fruit specialists. The next meeting, open to the public, will be September 16.

Membership is open to anyone who would like to grow new fruits and report on their performance.

To receive the 1981-1982 catalog, return the coupon below. Because the end of the ordering and planting season is drawing near, those who would like to plant this spring may want to request catalogs by phone.

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Planning Starts for New Food Science Lab

Students, the state's dairy and food industries, and consumers will benefit from a state allocation of \$650,000 for the planning of major improvements to the food processing and development laboratory of the food science department.

Dean David L. Call said, "Approval of the funds is recognition that the food industry is a significant component of the state's economy and that the college plays a critical role in the success of that industry."

Cornell's program serves both the food industry and the state's consumers by training students for various food and dairy manufacturing firms, regulatory agencies, food marketing firms, food handlers, and the restaurant industry.

Teaching, research, and extension programs in the department will expand in line with current and projected industry needs. The only such department in the state, food science applies engineering and processing technology to agricultural products.

The present lab, located in Stocking Hall, has changed little since it was built in 1923. "The equipment and facilities are inadequate and contradict the principles of sanitation and manufacturing procedures that we endeavor to teach students and dairy and food industry personnel. We have been unable to provide enough

trained people for New York's industry; this will allow expansion," Call said.

The high-technology laboratory will be used to teach the practical aspects of food processing, preservation, packaging, and storage. It will be designed for unit operations typical of the processing operations in industry, with special emphasis on dairy products manufacturing.

Research and development in milk and dairy product processing, food fermentation, cereal processing, and meat storage and processing will be conducted. Assistance and technical advice will be available to all components of the food processing industry in the state, including small plants, of which there are approximately 3,000.

Other areas of study will include problems related to food safety, nutritive values, wholesomeness, sanitation, and complex governmental regulations affecting food manufacturers. The training and service facility also will study problems of energy efficiency in food processing and will assist small food processors with product and process development.

Modernization of the department's facilities received strong support from the Council of Agricultural Organizations, the New York Farm Bureau, and the college's Food Science Advisory Council, which is composed of leaders in the state's food industry and representatives of consumer organizations and regulatory agencies.

—David I. Stewart