

AGRICULTURE AND LIFE SCIENCES news

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Swine Research and Teaching Barns

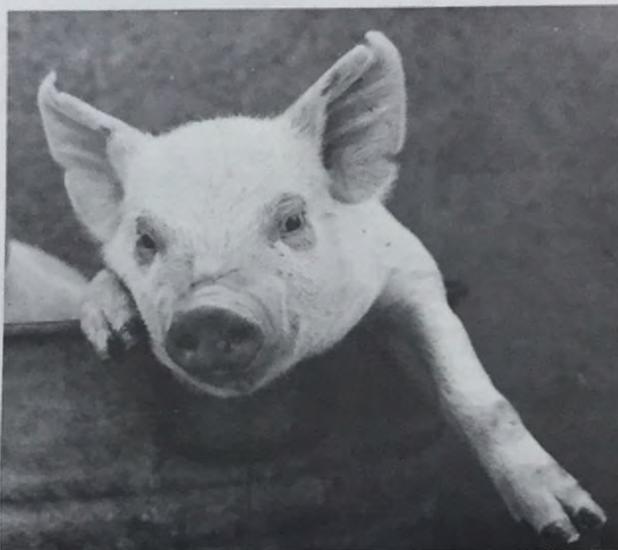
Spunky, curious, and (cautiously) friendly, it's obvious that pigs have been defamed. Residents of the Cornell swine barns on Pine Tree Road, however, get plenty of admiration from professors and students.

Watched at night by students taking behavior courses, attended to by the staff during farrowing (the birth of piglets, which happens nearly every day there), studied by classes in animal science, agricultural engineering, vegetable crops, veterinary science, and others throughout the university, the 450-500 pigs are continually in the limelight.

Pigs' cardiovascular and digestive systems are similar to humans' so the animals make good subjects for research. Nationally, thousands of pigskins are used each year by hospitals as temporary dressings for human burn victims, with the risk of a recipient's body rejecting a pigskin less than if the skin were from a human donor.

Excessively long labor and its complications, such as stillbirth, is another area of human medicine that may be helped by research on swine. Dean Boyd, assistant professor of animal science and director of the swine research and teaching facility, is studying how mortality can be reduced during birth and the preweaning period. According to Boyd, 6 percent of all pigs are stillborn, and another 13 to 25 percent die before they're weaned, representing a substantial economic loss to farmers. At least 80 percent of the research at the barns focuses on these problems, he noted.

If the time of farrowing could be predicted accurately, an attendant could help with complications and



offset losses. Also, if the process were shortened, the incidence of stillbirths could be reduced. During a long labor, the uterus is contracting much of the time, cutting down on the supply of oxygen received by the baby pigs and causing a dangerously high buildup of lactic acid, resulting in stillborn or weak pigs at birth.

It has been demonstrated that a prostaglandin injection prior to farrowing (after day 111 of gestation) causes birth to occur the following day. Professors Boyd and B. W. R. Butler (reproductive physiologist) are using it in combination with the hormone relaxin to make farrowing more

predictable and are trying to determine if the latter will elicit decreased farrowing time.

Baby pigs are prone to hypoglycemia, or low blood sugar, and if they're also runts of the litter, the first two to three days of the preweaning period is risky and too often fatal. Smaller pigs can't compete well for milk with the rest of the litter and therefore need to have larger reserves of glycogen to carry them through until they can compete or are moved to another litter with fewer pigs.

By being fed a specially formulated feed in late gestation, a sow may be able to partition a greater amount of

nutrients to the fetal pigs so they will have larger reserves of liver glycogen. Adding extra fat to the diet has produced some improvement, but the most promising possibility seems to be a synthetic carbohydrate.

Why pigs start and stop eating is being explored by Richard Houpt, professor of physiology at the College of Veterinary Medicine, and his wife Katherine, assistant professor of physiology.

Are obese pigs and people "porking out," or are they overly efficient storers of fat? Pigs eat nine to 12 small meals a day. They eat for 10-20 minutes, stop, then resume eating a few hours later. In the past, it was thought that animals and people stopped eating when their stomachs stretched, thus making them feel full. It appears, though, that a gastrointestinal hormone, cholecystokinin, is a more important factor in inhibiting food intake. It's naturally released when food reaches the small intestine. When it is injected into pigs even at an early stage of their meal, the animals stop eating.

The Houpts have learned that the hormone is activated more when the osmoconcentration (density of nutrients in what is consumed) is highest. Even when small in volume, a meal rich in nutrients tells the eater to stop sooner. Water with meals will dilute this rich osmoconcentration (dieters, take note), enabling larger—sometimes too large—portions to be consumed.

The trend of physiological thinking is that in order for an organism to become hungry, this hormone, which puts the brakes on eating, has to first

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Riha Chosen Charles Pack Research Professor

Susan J. Riha has been chosen as the Charles Lathrop Pack Research Professor of Forest Soils, becoming the first woman to hold the chair.

She succeeds Earl F. Stone, an internationally known scientist who served in the chair from 1948-1978. Former holders of the endowment were Lars Gunmar Romell (1928-1934) and Robert F. Chandler (1935-1947). The endowment was started to "aid in the advancement of forestry by means of investigations of the problems of soil in relation to forest production."

Before coming to Cornell, Prof. Riha was a research assistant in the agronomy and soils department at Washington State University, where she received her PhD in 1980. As part of her research there, she worked on



Susan Riha (second from right) with students Laurie Newman (left), Rebecca Stude, and Todd Culver.

projects for the U.S. Forest Service and the Weyerhaeuser Company, studying nutrient cycling in forest soils. She received a master's degree in plant and soil science from the University of Massachusetts and a bachelor's degree from Smith College, where she majored in religion. She taught at both Smith and Hampshire colleges before getting her PhD.

Because her grandparents owned a farm, she had a general interest in agriculture but never seriously consid-

ered a career in science until she taught a course in soils for non-majors at Hampshire College. The field became more compelling as she taught, she said, because, "Science is open-ended and flexible; it incorporates changes and deals with them in a constructive way."

What she particularly likes about her subject area is the long-range planning entailed in studying forests, knowing that what is discovered today could have significant economic and

ecological implications for the future.

Wood, she said, is so central to everyone's existence that people often overlook such items as paper and chipboard, used in everything from kitchen counters to stereo equipment, and the thousands of other products in daily use. Yet there has been relatively little research done to increase productivity, and in the Northeast, she pointed out, research and development have lagged behind the West and Southeast.

Prof. Riha is investigating when, in what form, and how much nitrogen is taken up by trees, hoping eventually to determine under what circumstances nitrogen is limiting tree growth. She also is studying the transport of water through soil to tree roots to isolate where the major resistance to water flow lies in the soil-plant system. Her theory is that this resistance may be in the roots, and that different species of trees growing in the same stand may have varying ability to take up water.

Her future research may include studying the effects of acid rain on forest soils and hybrid poplar production on soils to which sludge has been added.

"Living Mulch" Improves Soil and Yields, Reduces Need for Fertilizer

A major problem confronting agriculture is how to maintain a well-structured, productive soil without taking it out of production. Researchers at ALS believe they have a solution: grow vegetables in a field of clover.

The researchers discovered that by employing this new concept of "living mulch," crop yields were improved by as much as 75 percent when nitrogen fertilizer was used in amounts far below the recommended quantities. Besides cutting down on fertilizer, the living mulch system can maintain productivity on intensively farmed land, and in some cases even improve it.

The vegetable specialists consider their finds with corn a breakthrough because, when grown with clover, the vegetable reaps the benefit of the legume's ability to produce nitrogen from the air (with the help of nitrogen-fixing bacteria in the nodules of the legume roots).

"The result is the same as if the corn were fixing part of its own nitrogen," reported Professors Peter Minotti and Robert Sweet, and graduate student Thomas Vrabel, in the department of vegetable crops.

The equivalent of about 60 gallons of gasoline is required to produce, transport, and apply 100 pounds of nitrogen fertilizer, the recommended amount per acre. It has been estimated that 9.9 million tons of nitrogen were applied to U.S. farmland in 1978, using the equivalent of about 11.9 billion gallons of gasoline.

When tried in the past, legumes were found to compete with corn and actually reduce yields. The Cornell scientists discovered, however, that when legumes are suppressed with growth-regulating chemicals, they will release some of their previously fixed nitrogen to the corn's advantage.

"Intensive cropping systems, characteristic of so much of American agriculture, often lack stability because organic matter levels are not maintained and soil structure breaks down from overuse," explained Sweet.

"In the long run, this results in significant yield reductions because when soil is not in good 'tilth'—well aggregated, aerated, and loose—it prevents crops from being able to withstand the stress of too much or too little water or intense heat."

By growing a crop such as corn with clover, soil can be conditioned without having to use the several tons of manure per acre necessary to replenish the soil every year. Since most cash-crop farmers cannot raise animals also, obtaining manure is extremely difficult and costly.

Grasses also are promising as a mulch, because they are easier to establish, improve soil structure faster than legumes, and their thick, fibrous roots save significant amounts of fertilizer by preventing leaching.

This year, 40 types of legumes and as many kinds of grasses are being tested, as well as a variety of vegetables. Selected follow-up experiments have been planned in four locations in cooperation with the U.S. Soil Conservation Service, the Agway Research Center, and Cornell Cooperative Extension. The mulches will be compared with conventional and no-till systems.

Microclimates, altered dramatically by the use of living mulches, also will be scrutinized. Different mulches attract new sets of insects, slugs, rodents, and diseases, and more research is necessary to minimize any ill effects of using a legume or grass with a crop.

Although Cornell researchers are not yet prepared to make recommendations, some farmers throughout the Northeast, and in Central and South America are excited by the concept and began experimenting with it this past growing season.

Sweet, Minotti, and Vrabel hope to issue recommendations for general use next year after analyzing data from their own research and that from farmers experimenting with these mulches.

—Susan Lang

Student Regains Voice During Senior Year



It started as a typical day in gym class nine years ago when Sally Strickholm '81 fell and shattered her larynx, losing her voice.

Sally was in and out of hospitals for the next two years and underwent 29 operations to keep her breathing passages open and to regain her voice, the latter unsuccessfully. During those operation-packed years, she was extremely upset and pessimistic. But she gradually decided it was pointless to "spend the rest of my life crying over spilled milk" and proceeded to make the best of it.

Not having a voice didn't handicap her dancing lessons, which she had started when she was a child. Twelve years old when the accident happened, Sally practiced diligently enough to be accepted as an apprentice in the New Jersey Classic Ballet Company.

Art was another serious pastime for her. She was lucky, she said, her high school (in Demarest, N.J.) had an unusually strong art program offering courses in painting, art history, commercial art, printing, and sculpture, and she took every course available.

Deciding to become an architect, she came to Cornell's College of Architecture, Art, and Planning for three semesters. "I started getting itchy," she recalled, "and began to research different fields." Landscape architecture seemed to fit her needs, and she transferred to the program here.

Humanizing urban areas is her goal as a landscape architect, and she hopes to work for one of the larger commercial firms. Meanwhile, she is considering graduate school for a master's degree in architecture/journalism or architecture/business.

In the 1980 spring semester, Sally conceived the idea of starting a student magazine in landscape architecture. She and a group of students launched *Perspectives*. Distributed to students, professors, and others in the department, as well as to ALS alumni of landscape architecture, the magazine comes out once each semester.

Staffed by seven students, *Perspectives* has illustrations, articles about new trends and issues in landscape architecture, and an update on alumni. Jeanette Knapp, editor in the education department, is the magazine's editorial adviser, and Marvin Adleman, professor and chairman of landscape architecture, the administrative adviser.

A big role in the magazine, Sally emphasized, was played by Rosemarie Tucker, department secretary. "The magazine never would have gotten off the ground without her. We took her all kinds of problems and questions. She did just about everything possible to help start and to run it."

Exams and hectic schedules seem to have little effect on Sally. Cool nerves, she mused, is one benefit of her accident. The event gave her an overview of her life that she doubts she would have had otherwise.

Raised without a formal religion, she still considers herself not religious in the traditional sense and doesn't want to follow any given teachings because they are "too subject to varying interpretation." But, said Sally, "I place my faith in the quality of life and people's commitment to it. I think everything alive has essence and value."

Last spring, after nine years of speaking in a whisper, Sally underwent the first in a series of operations in New York City that should eventually fully restore her voice. To make sound, vocal cords must meet and then open again when a breath is taken; Sally's accident had left her vocal cords bowed, preventing contact. The treatment, until recently considered too experimental by Sally, involves injecting Teflon into vocal cords to permanently enlarge them, enabling them to close.

To help develop her voice, particularly its range of tone, she took lessons from Tanya Stremlin, vocal coach for the Cornell chorus and the Cornell Glee Club.

At this interview, her voice was a little hoarse but totally audible. "I called a while ago to talk to my mother. My improvement had been so rapid, she didn't recognize me: she thought it was my sister calling with a cold. My family is ecstatic."



Richard Bradfield Dies; Retired Agronomy Professor

Richard Bradfield, 85, professor of agronomy for more than four decades, former department chairman and university trustee, died May 1 in Bedford, Pennsylvania after a heart attack.

Bradfield had been a professor emeritus since 1962. Bradfield Hall, which houses the agronomy and atmospheric sciences departments, was named in his honor in 1968 to recognize his distinguished work in agriculture.

After he retired from Cornell, Bradfield continued as a consultant to the

Rockefeller Institute, work he began in 1941. He also served as a consultant to the University of Hawaii and as a senior fellow of the East-West Center and the East-West Food Institute. Since 1972, he had been a visiting professor at the University of Florida's Center for Tropical Agriculture.

He was named head of the agronomy department at Cornell in 1937, a position he held until 1952. He began his career as a teacher at the University of Missouri in 1920 and continued at Ohio University in 1930. He received his education at Otterbein College where he obtained a bachelor's degree in 1917 and Ohio State University where he received a doctoral degree in 1922.

He received many academic honors, including a Guggenheim Fellowship in

1927 and a fellowship from the American Association for the Advancement of Science in 1935.

Bradfield was elected faculty representative to the Board of Trustees in 1956 and served a five-year term. He wrote many articles on agriculture and agronomy and was co-author of *Campaigns of Hunger*, published by Belknap Press of Harvard University in 1967.

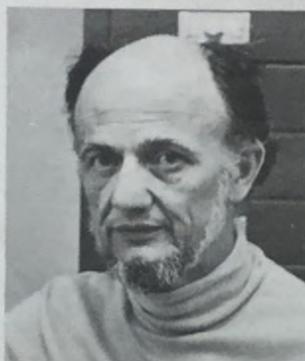
He is survived by his wife, the former Hannah Stillman; five sons, Richard, Jr., of Breezewood, Pennsylvania; Robert, of Orinda, California; Stillman, of Kalamazoo, Michigan; David, of Cincinnati, Ohio; James, of Pacifica, California; a daughter, Patricia Easel, Athens, Ohio; and 11 grandchildren.

Five Named Liberty Hyde Bailey Professors

Five professors in the College have been elected Liberty Hyde Bailey Professors. Those honored July 14 by the University's Board of Trustees are Roderick Clayton, Andre Jagendorf, John E. Kinsella, Raymond C. Loehr, and William F. Mai.

Bailey professorships provide recognition for 10 distinguished faculty members who have national and international reputations in agriculture and related sciences. Liberty Hyde Bailey was dean of the College from 1904-1913, and was a central figure in its development. Recommendations for the prestigious honor are made by David Call, ALS dean, upon the advice of a committee of faculty members.

Advancement of Science. He received BS and PhD degrees from the California Institute of Technology.



Jagendorf, also a specialist in photosynthesis, focuses his research on the processes involving chloroplasts, the cell organelles in green parts of plants that contain chlorophyll pigments and function in photosynthesis and protein synthesis.

A member of the National Academy of Sciences and a Fellow of the American Academy of Sciences, Jagendorf is a recipient of the Charles F. Kettering Award of the American Society of Plant Physiologists. He is a professor of plant physiology in the section of plant biology. Jagendorf received an AB degree from Cornell and a PhD from Yale University.

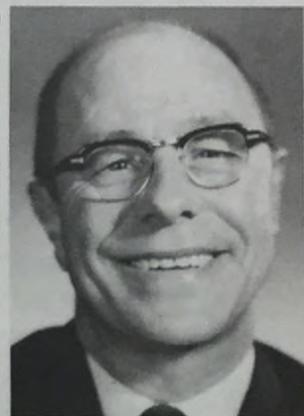
logical functions. He is also involved in research on flavor chemistry.

A recipient of the Borden Award from the American Dairy Science Association, Kinsella received a BSc from the National University in Dublin, Ireland and MS and PhD degrees from Pennsylvania State University.



Raymond Loehr, a civil and agricultural engineer, was director of the environmental studies program in the College from 1972-1980. He is recognized internationally for his work in agricultural waste management, pollution control, and residue utilization.

Loehr, who teaches in both this college and the College of Engineering, was instrumental in planning and establishing the Agricultural Waste Management Laboratory. He has managed several multidisciplinary projects, and initiated several new waste management courses at Cornell. He received BS and MS degrees from the Case Institute of Technology and a PhD from the University of Wisconsin.

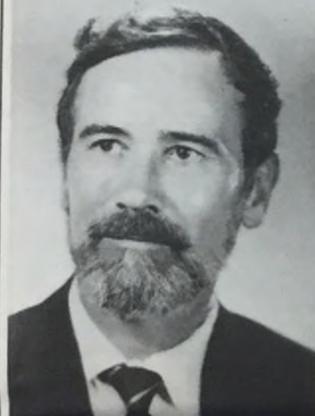


Mai is an international authority on nematodes, minute soil-dwelling parasites that take a heavy toll on agricultural and horticultural crops throughout the world. His research has led to improvements in planting procedures for fruit trees and in nematode control for vegetable and nursery crops in the Northeast.

He is a recipient of the Certificate of Merit from the Society of Nematologists, the 1979 Adventures in Agricultural Science Award of Distinction, and the Award of Merit from the Northeastern Division of the American Phytopathological Society. He is also an elected Fellow of the American Phytopathological Society. Mai received a BS from the University of Delaware, and a PhD from Cornell.



Kinsella, chairman of the department of food science and director of the Institute of Food Science, is a specialist in food biochemistry and physical properties of food proteins. His current research is on the isolation and characterization of the physical properties of proteins from soybeans, yeast, and milk. He is conducting research on essential fatty acid metabolism and its relationship to prostaglandins, which are made from dietary polyunsaturated fatty acids and control several vital physio-



Clayton, professor of biology and biophysics, is well-known for his research in photosynthesis, particularly for isolation of the photosynthetic reaction center in plant tissues where the primary conversion of light into chemical energy takes place.

A member of the section of plant biology in the division of biological sciences, Clayton was elected into the National Academy of Sciences in 1977 and is an elected Fellow of the American Academy of Arts and Sciences and the American Association for the

Diseases and Environmental Damage of Trees and Shrubs

Diagnosing the diseases of trees and shrubs can be difficult and frustrating to home gardeners and even to commercial horticulturists. An easy-to-use reference book that will help, *Diseases and Environmental Damage of Trees and Shrubs*, is being written by Wayne Sinclair and Warren Johnson, with photography by Howard Lyon, and is scheduled for publication in 1983. Sinclair is a professor of forest pathology, Johnson a professor of entomology, and Lyon a photography specialist in plant pathology, all at ALS.

This book, an encyclopedic reference, is the second and final publication of a project that began 16 years ago. The first book, *Insects that Feed On Trees and Shrubs*, written by Johnson, required 10 years to produce. One person in the project worked for four years exclusively collecting specimen materials.

One of the major features that distinguishes both the earlier and new

book is the large number and the exceptional quality of the color photographs. Of its approximately 500 pages, *Diseases and Environmental Damage of Trees and Shrubs* will contain 230 color plates. The photographs will represent symptoms and signs of disease as a diagnostician would see them: first, a distant shot, then a closeup, and then a blowup as it would appear under a hand lens.

The accompanying text will have elaborate information on how to diagnose diseases and on the biology of the causal agents, in language understandable to the non-specialist.

Approximately half the troubles afflicting trees and shrubs are caused by environmental insult: temperature extremes, nutritional deficiencies, air pollution, herbicides used on lawns or nearby fields, or improper planting. Many diseases caused by living agents are greatly influenced by environmental factors. By understanding how woody plants react to specific stresses, people can in many cases prevent problems. For example, there is a particular disease affecting Douglas fir that is able to get a foothold only in crowded plantings; spacing the trees farther apart will avoid this problem.

Whenever possible, the book will present such preventive techniques and practices.

The book is directed at anyone interested in the care and maintenance of trees and shrubs, including plant pathologists, botanists, entomologists, horticulturists, environmentalists, horticulture teachers, plant science students, and home gardeners.

Because of its quality, it will be expensive to produce (close to \$1 million). A commercial publisher would have to price it at around \$100 per copy. Cornell University Press, with a mandate to publish high quality academic works at a lower price, will underwrite part of the publication costs. The balance must be raised through donations from interested individuals, the horticultural industry, and philanthropic institutions. For further savings the authors will forgo royalties.

Those interested in supporting projects that have as their goal the converting and recording of knowledge for the non-specialist may get further information by writing to the Office of Development and Alumni Affairs, Roberts Hall, Cornell University, Ithaca, NY 14853.

Ag Engineering Student Receives Senior Service Award

Christopher J. Nichols, an agricultural engineering major, received the 1981 Senior Service Award from the ALS Alumni Association during reunion activities. Nichols, from Ashland, Oregon, was cited for outstanding leadership and service.

Two other seniors, Beth Snelbaker of Mechanicsburg, Pennsylvania, and Susan Glenn of Eastchester, New York, were given honorable mention.

Dean David L. Call and Alumni Association President J. Michael Holloway praised the graduating seniors, who were selected by a committee of students, professors, and alumni.

In 1980, Nichols was named the "Student Agricultural Engineer of the Year" by the American Society of Agricultural Engineers, becoming the first Cornell student to win the title since it was first awarded by the society in 1969. He has accepted a position with the Oswald Equipment Company in Garden City, Kansas.

Fruit Growers and Cornell Community



Cultivating grapes in May 1926

Driving past the apple-laden trees of the Cornell Orchard on NYS Route 366, and then seeing the display racks of shiny, robust fruits in the salesroom, could make growing apples seem almost effortless. But the high quality of apples that we're used to is the culmination of years of research in production, harvesting, and post-harvest handling. An orchard that produces top-quality fruit requires intensive, sophisticated work throughout the year.

In the Northeast and other humid areas, apple scab—brown, crustlike lesions that appear on the skin—has always been a problem. When M. B. "Pete" Hoffman, now professor emeritus in the department of pomology, began teaching in 1941, apple growers in New York State and elsewhere were spraying trees with lime sulphur to control the disease. Hoffman, working with his colleagues Joseph Oskamp and Jack Batjer, began investigating the effects of this fungicide on photosynthesis and on soil conditions. He discovered that lime sulphur reduced photosynthesis by 30-50 percent, an effect which caused a drastic reduction of growth.

Analyzing soil samples under trees sprayed with this substance, Oskamp, Batjer, and another Cornell pomologist, Prof. Damon Boynton, found that it made the soil acid, thus creating further stress for the trees, which like neutral soil. They also studied soil drainage and nutrients, and their findings were the underpinning of the Orchard Location Service, begun here in 1940 (now defunct).

Both the photosynthesis and soil research influenced chemical companies in their development of nontoxic fungicides as a substitute, and by the early 1950s, apple production doubled.

As part of his extension work, Prof. Hoffman traveled around the state for the Orchard Location Service and drilled holes in the soils of existing and potential orchards to help farmers determine the land's suitability for fruit production. As a result, many orchards on poorly drained soil were eliminated, saving growers substantial amounts of money. Selecting optimal orchard sites improved the yield per acre for New York fruit growers.

Storage improvements for apples have been dramatic. It used to be that the fruit cellar, with its dirt floor, was an adequate storage method. The process was aided by growing apples noted for their good keeping qualities, such as Golden Russet and Roxbury Russet.

With the development of the urban market and the commercial apple industry, and fewer but improved apple varieties being grown, there was a need to store apples for a longer time. Before refrigeration, cold air

was introduced into an insulated structure at night, which was then circulated by gravity or forced through by fans. This later gave way to electrically refrigerated warehouses. In the new method, however, certain apple varieties were found to develop a storage disorder known as brown core.

In 1937, based on British research, Pomology Professor Robert Smock began experiments on controlled atmosphere storage. He learned that by increasing carbon dioxide levels and lowering oxygen levels, the normal rate of respiration (which leads to senescence) could be further slowed. His findings played an essential role in making possible the long-term storage of apples, resulting in fruit that is still in nearly prime condition almost a year after picking.

The study of growth regulators by Professor Emeritus Louis Edgerton focused on regulators that bring trees to flowering and fruiting stages as quickly as possible so that farmers can realize a rapid return on their investment and maintain a consistent, high annual production.

Research Today

Research currently being carried out by members of the pomology department includes experiments to get larger yields of quality fruit. Frequently, this results in greater stress on the trees such as nutrient imbalance, making it more vulnerable to physiological disorders and reduced



Checking results of grafting experiment for hardier varieties, 1928

production. One project, led by Gene Oberly, associate professor of pomology, is evaluating major and minor nutrient elements in relation to maximum yields of high quality fruit. The tissue analysis program can monitor the needs of trees during the production year as a basis for fertilizer recommendations for the following year. This has a dual benefit: fruit growers will be able to reduce their investment in fertilizer, and fertilizer-caused pollution will be reduced.

The red color in apples is economically important because of its appeal to consumers. Some plants contain

related compounds that are natural defense mechanisms against disease. Professor Leroy Creasy heads a project that is trying to increase the quality of fruits and to enhance the natural means of disease resistance in grapevines. Russet (the corky blotches on apples), why it occurs on Golden Delicious apples, and how it can be prevented, has also been studied by Prof. Creasy.

Late spring frosts, which can partially or wholly eliminate a year's apple production, pose a perennial problem. If a method could be found to delay fruit trees' flowering by even a few days, potential losses could be averted. The method by which the plant controls its bud growth and development is being investigated by pomology professor Loyd Powell. He is studying aspects such as the ratio of growth-promoting substances to growth inhibitors in controlling bud growth, physiological differences in normal- and late-blooming varieties, and how the shoot apex controls growth of the lateral buds.

Professors David Blanpied and Frank Liu are jointly researching post-harvest changes in apples. Through their combined studies, Blanpied is developing a commercial scrubber to remove from storage rooms excessive amounts of ethylene, a naturally occurring gas that ripens fruit. He is also examining the effects of humidity and calcium on various physiological disorders that develop in apples, and is working on ways to safely lower still further the 3 percent oxygen level now widely used in commercial storage areas.

Warren Stiles, associate professor in pomology, is looking at how factors in the production system affect one another. He is investigating orchard floor management techniques and how they influence water use, availa-



Served by Pomology Department



bility of nutrients, and rate of fruit growth, and what adjustments need to be made in the rest of the system if one component is changed. In addition, he is exploring economical alternatives to pruning as a method for controlling tree growth.

Walter Kender is chairman of the pomology department and holds a joint appointment at the NYS Agricultural Experiment Station in Geneva, where his research focuses on air pollution effects on fruit crops.

Much of the department's research is carried out at the Cornell Orchard in Ithaca (as well as the Cornell-owned orchard in Sodus, and one the College started in Lansing in 1969). Students in pomology agricultural engineering, and other ALS departments visit the orchard to study the techniques and materials used in pruning, grafting, pest control, storage, handling procedures, and other aspects of managing a commercial orchard.

The sales room, a popular feature for both university and town residents since its opening in 1908, is open five to seven days a week (depending on the season) and currently handles for sale and research 30,000 bushels of apples a year plus other fruits, such as cherries, peaches, plums, pears, strawberries, raspberries, and apple cider.

The manager, Don Kenyon '65, has worked on various fruit farms for 21 years, including Cornell's for the past nine. During the harvesting season, there are 12-20 full time pickers working whatever schedule the harvest requires. In addition to the pickers, there are about 15 other people who take care of trucking, handling, storage, grading, sales, and cider-making during the harvest. This work has to be distributed and coordinated among the orchards in Ithaca, Lansing, and Sodus. The employees are in constant movement and seem to take the hectic pace in stride and good humor.

Although harvesting season is the busiest, there is always plenty of work to do. When the trees break dormancy in early spring and when the first green starts to poke through, prunings from the winter are cleaned up and the first fungicide is put on. (There is a total of approximately 12 sprays applied from then through August, including insecticides, additional fungicides, and growth regulators.) Herbicides are applied to remove ground covers beneath trees, larger areas of grass are mowed, and bees are moved in. Whips (one-year-old trees) are planted, fences mended, posts put in, and machinery and equipment repaired.

At the end of June, cherries are harvested. This is followed by harvesting of peaches, nectarines, apricots, plums, and pears.



August Schmitt Butterfly Collection



Prof. LaVerne Pechuman with some of August Schmitt's collection

Some of lepidopterist August Schmitt's butterflies look like patches of sunlight; others like surrealist paintings, with eyes and chevron horizons.

The thousands of butterflies Schmitt gave to Cornell's entomology department started arriving at Comstock Hall in 1975. Today there are 30,000 butterflies, with over 4,000 still to come. LaVerne Pechuman, entomology professor and curator of the Cornell insect collection, said that Schmitt's donation is "one of the out-

standing reference collections in the world."

Emigrating from Germany when he was 17, Schmitt said he "went crazy when I saw the butterflies in this country. There were really very few in Germany, it was too cold."

Now retired, he was a machinist for the Grumman Aircraft Company. For years, he and his wife Clara spent several mornings a week showing the collection to Long Island schoolchildren, who came to their Northport, N.Y. home by busloads.

Schmitt's favorites are the bird-wings or Ornithoptera, a rare group of very large, intensely colored butterflies found in the South Pacific and Southeast Asia; he's also partial to the families to which *Speyeria* and *Parnassius* belong.

His most prized specimens were acquired by traveling and making contacts with professional collectors in Australia, New Guinea, Ecuador, Peru, Columbia, Brazil, and Africa. He accompanied them on some of their trips, but to have done the collecting himself, he said, would have

been a full-time job.

Schmitt said he chose Cornell because of the scientific usefulness the collection would have. He didn't want to sell and disperse it or donate it to a museum where it might be locked up in vaults and rarely seen by anyone.

He spends day and night sorting through and cataloging the remaining butterflies, a process he estimates will take him another five years. But, he said, it is exactly how he wants to spend his time. "To me, it's my life. There's nothing so beautiful or wonderful as a butterfly."



Charles Walcott Named Ornithology Director

Charles Walcott, formerly professor of neurobiology and behavior at the State University of New York at Stony Brook, science educator and a noted researcher in the physiological bases of animal behavior, has been named executive director of the University's Laboratory of Ornithology.

Walcott also will serve as professor of neurobiology and behavior in the Division of Biological Sciences. He is the fourth director of the laboratory since its founding in 1957 for amateur and professional ornithologists.

"Dr. Walcott will bring to Cornell a unique combination of talents," said Joseph H. Hickey, professor emeritus of wildlife ecology at the University of Wisconsin, Madison, and chairman of the laboratory's search committee.

"He has been active in bringing scientific research to the public through work on natural history television shows for WGBH at Boston and a television series on basic biology. His bird navigation work is imaginative and close to the great research conducted by the late William Keeton at Cornell. He will be a leader of great resourcefulness and potential value to the laboratory."

A member of the Stony Brook faculty since 1967, Walcott is best known for his research on the sensory bases of navigational ability of homing pigeons. With support from the National Institutes of Health and the National Science Foundation, he has been attempting to determine how homing pigeons use the earth's mag-



netic field to find their way home. The pigeon navigation research will continue at Cornell, where the subject was studied by William Keeton, the Liberty Hyde Bailey Professor of Biology until his death in 1980.

Walcott, who received a bachelor's degree in biology from Harvard University in 1956 and a PhD in zoology from Cornell in 1959, also has studied the behavior of spiders and worked with students studying wolves, dolphins, and right whales. He has taught at Cornell, Harvard, and Tufts,

and served for seven years as chairman of the department of cellular and comparative biology at Stony Brook.

His involvement in science education over the past 25 years has included work as a photographer, producer, director, and consultant for natural history television programs such as "Discovery," "Exploring Nature," and "NOVA." Most recently, Walcott served as director for scientific content in the Children's Television Workshop series, "3,2,1 Contact." He was director of the Ele-

mentary School Science Study, a project involving educators from Harvard, MIT, and Cornell, aimed at improving the teaching of science in elementary schools.

The Laboratory of Ornithology, the only facility of its type in the nation, is for the most part a financially independent department of Cornell. Co-founders of the laboratory were the late professor Arthur A. Allen, who pioneered the teaching of avian biology and developed a broad research program on living birds, and the late professor Peter Paul Kellogg, an expert in the field of electronics and acoustics who devised methods and equipment to record the sounds of birds in their natural environment. Allen served as the laboratory's first director, and Kellogg established the laboratory's Library of Natural Sounds.

Laboratory facilities are located in the Sapsucker Woods Sanctuary, a 180-acre preserve of woodland, ponds, and wetlands near Cornell. More than 35,000 visitors including students, researchers, artists, families, and clubs, tour the laboratory each year. Among the laboratory's programs are the Peregrine Fund, a long-term effort to propagate peregrine falcons in captivity for release to the wild; the Library of Natural Sounds, the world's largest collection of recorded avian sounds; and the Data Records Program, which compiles and analyzes statistical data from hundreds of observers in the U.S. and Canada.

EXTRA

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



Laurence MacDaniels, Conservationist



At 93, Laurence MacDaniels has the perspective of a person who has traveled through two very different centuries. MacDaniels, professor emeritus of floriculture and ornamental horticulture, plant anatomist, staunch conservationist, has witnessed the sweeping changes in life made possible by technology and the radical changes to the planet as a result.

Of these changes, he said the ones of greatest benefit are medical. Where once such diseases as tuberculosis and diphtheria virtually controlled people's fate, deciding whether they would lead productive lives or even reach adulthood, now infectious diseases in this country pose relatively small risk. Other technologies, MacDaniels believes, may not have such clearcut benefits.

Solitude, being able to walk through the country and see miles of nothing but fields and woods, was something people took for granted when he was growing up in Oberlin, Ohio, and he often went for walks by himself to study plants and birds. Another loss is the sense of community. A favorite pastime of children in those days was following the lamp-lighter around the town, going from corner to corner as the lamps were filled with kerosene, talking to neighbors and playing as they went, a type of activity that electricity and television have displaced. Having lived without gadgets, he knows that a decent standard of life is possible without them but also realizes that they're easy to get used to.

Over the years people living in Ithaca have seen his eloquent, well-reasoned articles in the local paper about the need to safeguard natural resources and the difficulty in accepting the fact that there is, he said, no

alternative but to do so.

Many people, he observed, "are not particularly concerned about the present situation and believe that somehow we will muddle through our problems, that the future is bright. I am impressed by the hard data that show it is possible to populate the earth beyond its carrying capacity; it is possible to pollute the air, soil, and water so they do not support a meaningful life; it is possible to poison the oceans so they will no longer be a great source of food."

MacDaniels has been active for decades in conservation work. His efforts have included helping to save the 100 glens along Cayuga Lake by preventing dumping and excessive lumbering; serving as president of the Cayuga Lake Preservation Association, which has prevented a number of projects (including a nuclear power plant) potentially harmful to the lake; acting as co-chairman of the New York chapter of Nature Conservancy; and serving as chairman of the Greenbelt Committee, a group of local residents that helped put aside natural areas in Tompkins County for recreational and ecological habitat use.

Cayuga Lake became a passion of his in the early 1900s. When he first visited Ithaca, it was as a member of the 1910 Oberlin College football team that played against Cornell on Percy Field below the Ithaca Gun Company. He next came here in 1912 as a graduate student assistant in entomology and later shifted to botany, where he worked with Prof. Arthur Eames. They collected plants for study around the Cayuga Lake Basin, paying particular attention to an extensive cattail marsh that was a home to redwinged blackbirds.

Continued on Extra 4

Two Receive Outstanding Alumni Award

Two long-time supporters of the college were recognized for their service and contributions during reunion activities on June 13. Myron M. Fuerst '29 of Rhinebeck, New York and John H. Talmage '52 of Riverhead, New York, shared the 1981 "Outstanding Alumni" award presented by the college's Alumni Association.

The award was announced by J. Michael Holloway, Alumni Association president.



Fuerst, an active member of the ALS Development Committee and the Cornell University Council, is president of Fuerst Brothers, Inc. in Rhinebeck and a marketing consultant in agribusiness. He has held many posts in the field of agriculture—president of the North Atlantic Section of the American Society of Animal Science, member of the National Livestock Committee of the American Farm Bureau Federation, president of the Eastern Angus Association, director of Herdwatcher, one of the original computer programs for cattle records, and director of the International Beef Breeders, the American Angus Association, the Farm Equipment Manufacturers Association, and Stissing National Bank. He is currently a trustee of Agriservices Foundation and a member of the Dutchess County Industrial Development Agency.

John Talmage is a partner in the farm business of H. R. Talmage and Son. Other partners are members of his family, all graduates of Cornell.

The farm has 220 acres of potatoes, 10 acres of cauliflower, 40 acres of small grain, and greenhouse tomatoes, and sells 500,000 rooted geranium cuttings annually to the greenhouse industry.



Active in several business organizations, Talmage is a director of Agway, Inc.; Curtice Burns (finance committee chairman); H. P. Hood, Inc.; Tryae Truck and Equipment Company; and the Suffolk County Federal Savings and Loan Association. He is a former board member of the Pro-Fac Cooperative, the Long Island Farm Bureau, and the Empire State Potato Club.

From 1966 to 1968, Talmage served on the NYS Commission for the Preservation of Agricultural Land, appointed by Governor Rockefeller. From 1970 to 1974, he was a member of the Suffolk County Executive's Farmland Preservation Committee, which drew up the first purchase of a development-rights farmland program to be put into effect in the United States.

Talmage is a member of the Cornell University Board of Trustees Alumni committee on trustee nominations. He was a member of the committee that helped to establish the New York Foundation Potato Seed Farm at Lake Placid and was chairman of the Long Island Horticultural Research Laboratory, formerly the Cornell-Long Island Vegetable Research Farm.

—David Stewart

Liberty Hyde Bailey's "The Holy Earth" Re-Issued

The Holy Earth, first published in 1915, was a book extolling country life and nature. Written by Liberty Hyde Bailey shortly after he retired as dean of ALS, the book was a culmination of Bailey's earlier observations and writings.

"It was an important book in its time for the ideas and ideals expressed. It remains no less today," said David Bates, director of the Liberty Hyde Bailey Hortorium here. "Reading *The Holy Earth* is an enlightening experience, for it is possessed of universal truths. Broadly conceived, it is an ecological

statement for humanity—a forerunner of the spaceship-earth analogies that are set forth today."

In the book, Bailey argues for an understanding of nature and for the recognition that the earth's rich diversity of life forms are what sustain us both physically and spiritually. Bailey also covers such topics as war, workmanship and materials, and food adulteration.

The Holy Earth is available for \$4.95 from the Cornell Distribution Center, 7 Research Park, Ithaca, NY 14850. Checks should be made payable to Cornell University.

Joseph King, ALS '36, Receives SUNY Distinguished Alumni Service Award

Over four decades of alumni service by Joseph P. King '36 have resulted in several millions of dollars, large tracts of land, and many other gifts to the college.

In recognition of his efforts, the Confederation of Alumni Associations of SUNY (State University of New York) honored King this year with the Distinguished Alumni Service Award. He was presented the award during a dinner held at the Americana Inn in Albany on April 11.

This is the fifth year that the SUNY Alumni Confederation has bestowed the award, its most prestigious, which recognizes dedication to an alumni program, interest, enthusiasm, ability to motivate others, and years of service. The first recipient was Helen Bull Vandervort, a 1926 graduate of the College of Human Ecology at Cornell.

King, who co-majoring in animal science and agricultural economics here, decided shortly after graduation to make "a lifetime commitment to the University." He has served as president of the College of Agriculture alumni association, chairman of the Rochester area Cornell Fund (alumni and annual giving), president of the Cornell Club of Rochester, chairman of the Cornell centennial campaign in Rochester, and the chairman of the ALS development committee. In 1956, he held four of these posts simultaneously.

In 1970, he became co-founder of the college's alumni giving fund; it was the first time graduates had been asked to make annual, unrestricted gifts. Charles E. Palm, then dean of the college, asked him to be chairman



E. V. Baker (left) congratulates Joe King. Baker also received a Friend of the College plaque and lifetime membership in the Alumni Association for his many years of contributions to the College.

of the first three-year effort, setting the goal at \$100,000.

"I'm not interested," replied King. "Make that one million dollars and I'll take the job." Dean Palm made it a million, King took on the job, and the fund drive reached its goal on schedule.

Since King's early involvement with the college's development committee, this private support mechanism has grown steadily, according to Glenn MacMillen, head of the office of development and alumni affairs. In fact, 1980 was a banner year, with more than \$3.5 million received from alumni and friends. Today, ALS can point to more than \$7.5 million in endowed funds.

As a member of the development committee, he worked to secure several major gifts to the college, including a large tract of farmland and an

endowed professorship. "His dedication has helped put this college far ahead of its contemporaries in seeing the need for and involving private and corporate support for public colleges," MacMillen said.

He played an important role, also, in Cornell's five-year, \$230 million national campaign launched in 1975. The goal for gift solicitations for the Rochester area was around \$920,000, approximately twice what had been given there in the preceding five years. It quickly became clear that campaign planners had underestimated the effectiveness of alumni such as Joseph King, and the Rochester goal was raised to \$2.2 million. When the campaign ended on December 31, 1980, the Rochester area had brought in \$5 million, more than double the increased goal.

A Cornell trustee for 10 years, he chaired the committee on state relationships, and served on the development advisory, audit, and executive committees. During his tenure as trustee, he was chairman of the ALS advisory council, and a member of the advisory council of the College of Veterinary Medicine.

Commenting on the selection of King for the Distinguished Alumni Service Award, Dean David L. Call said, "Our college and the State University system would be much stronger if there were more Joe Kings to salute."

Former ALS dean and now Cornell University provost, W. Keith Kennedy, said, "King is truly an exceptional individual."

—David Stewart

From Glenn MacMillen

Dear Alumni:

Your ALS Alumni Association is about to write another chapter in its history of support for the College.

The Board of Directors of the Association has set a goal of 1,000 lifetime members by the end of 1982. Professor Emeritus Stan Warren has agreed to head a committee of ten to help reach this goal. The campaign will be launched this November with the annual solicitation letter.

The Alumni Association has provided strong support for College programs in recent years. It always seems, though, that needs exceed means. Student organizations and faculty look to the Alumni Association for help with new projects. Often, Dean Call can provide assistance through unrestricted gifts to the College, but sometimes it would be more appropriate for aid to come from non-college sources.

It is intended that all money received from lifetime members be invested and the proceeds used to continue present programs and to lend support that will ensure the future excellence of our College and its programs.

Lifetime membership is only \$100. It can be paid in three annual installments of \$35 each. Stan Warren's letter, to be sent later this month, will give complete details.

We hope that you will join us in reaching this ambitious goal. Your Association and your College will be the ultimate benefactors.

—Glenn O. MacMillen
Assistant to the Dean

Family Business Saved While Alum Worked Toward Ph.D.

For more than seven decades, the Friedman family grocery business thrived, starting from a produce stand and eventually becoming an eight-store supermarket chain in western Pennsylvania. Then, after several years of wage-price controls in the supermarket industry, a national price war initiated by a major chain, and escalating inflation, Friedman's Foodlands starting having heavy losses in 1973.

Shortly after Carole Friedman Bitter returned to the firm as president in 1976, the bank that held a large loan on the business threatened to call the note for repayment. Before the bank's action, a grocery wholesaler had attempted to buy Friedman's Foodlands for a price far below its true worth, an offer the bank wanted the business to accept. There had been no profits in three years, and the business was headed toward a fourth year of losses.

Armed with experience as the youngest manager of a 160-chain store

(Stop 'n Shop), an MBA from Northeastern University, two-thirds of a PhD in agricultural economics from Cornell (which she completed this spring), and the full backing of her father, Harold, who had owned the business since 1938 and was now chairman of the board, Carole took on the job of trying to save the company.

First, employees in all positions—cashiers, bakers, managers—were queried about the strengths and weaknesses of the stores and asked for suggestions. A consumer survey followed, asking people why they shopped at Friedman's and what their impressions were.

Carole discovered many characteristics that had been ignored in its advertising. The most important was the personalized, friendly feeling of the stores, their local quality. Other likable aspects were the reliably high quality of the fresh produce, and the delis and bakeries with food prepared daily on the premises by store employees. Customers wanted low prices, which the national discount chains could give them, but they also cared about less tangible features.

A new ad program played up the differences between Friedman's and its competitors. Other steps included changing banks to get a better interest rate, improving cash flow by stocking inventory that would move faster,

checking items at competitors' stores and then making Friedman's prices more comparable, avoiding over-scheduling of labor, and dropping one badly located store. A bonus system was initiated to give employees a percentage of improvements in profit over the previous year, and a twice-yearly evaluation of all store managers and supervisors was begun.

This past year, Friedman's eight stores, which are in a 22-mile radius of Butler, Pennsylvania, did an impressive \$30,000,000 business and made a healthy profit.

With grocery stores earning less than one cent on the dollar in the past 10-15 years, and with competition for that slim profit tough, staying ahead will be no small effort.

Added to Carole's more than full-time job is her consulting work in the field of electronic funds transfer systems (in which money deposits and other transfers are exchanged electronically, without checks) and acting as director-at-large of the National Council of Northeastern University. She was recently nominated as a director of the Food Marketing Institute, the leading trade association in the retail industry, and is a member of both the east regional and national committees for Independent Operators of FMI, the institute's Member Services Committee, and its Operating Executives Council. She also serves as

the first woman vice-president of the Butler Area Chamber of Commerce.

Her husband Frederick also puts a substantial amount of time in his work as manager of start-up projects in the nuclear industry for the Westinghouse Electric Corporation, so there is mutual understanding and co-operation about their careers. Their juggling of personal time goes back to when Carole was first getting a doctorate here and Frederick commuted from Butler to his job in Pittsburgh. They alternated weekends driving the 14-hour round trip between Ithaca and Butler.

She said she found the doctoral program in agricultural economics "an excellent experience, because it is flexible; the program is geared toward the particular interests and talents of each student." Her faculty advisers were Max Brunk, Wendell Earle, and Irwin Blackstone.

Writing her thesis took four years, while she ran a company and commuted out of town on weekends. It wouldn't have been possible, Carole said, if she hadn't prepared a detailed outline of her topic, electronic fund transfer systems. The 17-page outline was divided into functional, orderly chapters, which provided a goal and made all the difference, she said, in the complex writing job that followed.

Mazza Returns as Legislator

When Guy Mazza graduated in 1974 from the College of Agriculture and Life Sciences, he represented only himself. Today, seven years later, he represents 140,000 people within the Town of Hempstead in Nassau County, and more broadly all the people of the State of New York. Specifically he represents the citizens from the communities of Bellmore, Merrick, North Bellmore, North Merrick, Levittown, Salisbury and East Meadow. He is their Assemblyman, their voice and mind in Albany for the thousands of problems, large and small, that affect people's lives in today's complicated society.

During a July 24 visit to the campus, Assemblyman Mazza talked with *ALS News* about his days as a Cornellian, his work as a state legislator, and his plans for the future.

"I first became involved in politics as a youngster because of my father, who was Deputy Town Clerk in Hempstead, a town composed of approximately 850,000 people. He was an active Committeeman in our home town for the Republican Party, and participated extensively in political campaigns. I would help him distribute campaign literature door to door and I also accompanied him to many political functions. I became active in the local Republican Club and remained active while at Cornell, although I didn't participate in campus government or campus politics.

"When I graduated from Cornell, I became a biologist in the Town of Hempstead's department of conservation and waterways. Later I became an associate engineer in the Grumman Aerospace Corporation until December 1980. Following Al



D'Amato's election as United States Senator from New York, Tom Gulotta resigned as New York State Assemblyman to succeed Mr. D'Amato as Hempstead's Presiding Supervisor. I was nominated by the Republican Party to run for the vacated Assembly seat in a special election held on April 7, 1981. I won and became the new Assemblyman in the 13th Assembly District. I will fill the position until November 1982, at which time I hope to be re-elected.

"Life in Albany is like going back to college: you're away from home much of the time but continue to reside in your home district. I am in Albany 4 or 5 days each week, where I propose and act on legislation. I then return home to Long Island where I work with interested parties on specific legislation and deal to a great extent with community concerns. Involvement in community affairs is vital in order to ensure responsive representation. I am fortunate in being in a position where I can help people who need assistance. Specific problems may be solved by

contacting a state agency on a constituent's behalf or directing him to the appropriate federal, county or town office.

"No matter what your field of education, you have much greater input as a legislator. Most legislators are attorneys, but I think it is important to have a broad representation in the State Assembly. I major in biology and natural resources, because I think they are important in maintaining the quality of our lives. There are many miles of coastline on Long Island, as well as environmental concerns throughout the entire state, enabling me to put my knowledge to good use.

"Cornell has been a great influence on my career, and I'm here today to see how I can be more involved with Cornell concerns. I'm talking with various people to find out how the legislature interacts with Cornell and with Cooperative Extension. Cooperative Extension is important on Long Island because it provides a wide variety of information ranging from advice to homeowners on their lawns and gardens to addressing broader concerns such as the condition of Long Island's groundwater.

"Cornell students who are interested in a political career, if they are not already participating in home politics, should at least become involved in campus government. Also, they should involve themselves in community affairs in Ithaca or at home. That will give them a better feeling for what people need and want, and an understanding of how to best assist with their concerns."

John Layer Memorial Fund

The first two awards from the John W. Layer Memorial Fund were made last spring to Michael Kiechle '81 and Charles Sackett '83, each receiving \$50.

The endowment fund encourages participation in meetings and other activities of the American Society of Agricultural Engineers (ASAE) by agricultural engineering undergraduates who are members of the society's student branch. The fund honors John Layer (BS '51, MS '57), an agricultural engineering professor and member of the Cooperative Extension staff for 21 years. He died in 1975 at age 47, following a long illness with the rare disease, amyotrophic lateral sclerosis (Lou Gehrig's Disease).

Layer worked with growers and extension agents on storage structures, greenhouse mechanization, heating and ventilation systems, and livestock engineering programs. He was a leader in ASAE, having served as chairman of the committee to plan and conduct the North Atlantic Section Meeting of the ASAE in 1965, and was on the planning committee of the national meeting held at Cornell in 1959.

His wife, Marie Waterbury Layer (Home Economics '51), is a food and nutrition leader in Cornell Cooperative Extension in Tompkins County. Katherine, their daughter, is a 1978 graduate of ALS (Communication Arts) and an editor for the Instructional Materials Service on campus. Their son John is a 1981 graduate of Purdue University (agricultural engineering).

Those wishing to contribute to the fund should contact the Office of Development and Alumni Affairs, 242 Roberts Hall.

Cornell Classic Holstein Sale

The Cornell Dairy Science Club will host the Cornell Classic, a new event, on November 14 at 11:00 a.m. in the Livestock Pavilion. This will be the first Registered Holstein dairy consignment sale to be held at Cornell in several years and the first to be run by students. Fifty top quality consignments from across New York State will be featured.

Murray Elliot, animal science professor, is faculty adviser. Mark Masler '82 and Janice Richards '82 are in charge of the event. They are being assisted by Mark Sheffer '82, president of the dairy science club, and other club members.

GJS Coyne, Inc., a dairy livestock auctioneering company, will provide the sale management, with Tom Coyne and Craig Wilcox acting as auctioneers.

Many breeders have opted to donate a percentage of their net to the Harrison-Trimberger-Slack Dairy Evaluation and Selection Fund. Commissions on all sales will be 12 percent.

Selections for the sale have been made by the senior members of the Dairy Science Club. The New York Holstein-Friesian Association Office in Ithaca is also supporting the event.

A wine and cheese reception will be held on the preceding night, Friday, in the Judging Pavilion.

Willman 4-H Dairy and Livestock Fund Established

It was almost 50 years ago that Harold A. Willman, professor of animal science, began crisscrossing New York State, working with thousands of farmers and their families. Even though he retired in 1964, he remains actively involved in 4-H activities and other Cornell Cooperative Extension programs.

At one time, it was claimed that Willman knew more farmers and agricultural leaders and had visited more farms in the state than almost anyone else. He still remembers his former 4-H members by the hundreds and can tell you about their careers and families.

A new endowment fund honors the man who continues to be active at the age of 80. The Willman 4-H Dairy and Livestock Fund is also a tribute to his wife, Louise, who assisted him and is well known to generations of 4-H volunteers.

The fund supplements state and federal appropriations in advancing activities that contribute to the personal development of youths in 4-H animal science programs.

Born on a farm in Kane (McKean County), Pennsylvania, Willman completed junior projects in swine, poultry, and dairying. After high school, he studied at the Clarion (Pennsylvania) State Teachers' College and taught in a rural Pennsylvania school for two years.

Later, he earned a BS degree in animal husbandry from Penn State and an MS degree from the University of Minnesota. He had special training in wool grading and advanced work at Iowa State in the physiology, growth, and reproduction of animals.

After serving as a Cooperative Extension agent in Pennsylvania, Willman came to Cornell in 1929 and devoted his attention to the youth phase of dairy and livestock work in the state. At the time of his retirement, 4-H animal project enrollments had increased from 1,564 to more than 12,000, and the program had expanded greatly.

His many 4-H livestock and dairy judging teams and livestock entries always ranked high in national and international shows, nearly always placing at or near the top. Prof. Willman was a popular judge of livestock and officiated at more than 300 shows during his career.

Willman prepared numerous bulletins, lesson guides, record books, visual aids, and service letters on all phases of livestock for leaders and 4-H members. One of the most valuable publications was a 4-H handbook published by the Cornell University Press.

He has been cited for his efforts by many organizations, including the New York Holstein-Friesian Association, the New York Jersey Club, and the New York Chapter of the Future Farmers of America.

After retirement, he became active in New York State 4-H Foundation programs, managed the New York Meat Animal Show and Sale, served in a public relations capacity for the State Fair, and prepared many teaching aids for youth group leaders and teachers. Chief among these materials was a set of 100 slides on horse judging and a pictorial program that is now used across the U.S. and Canada. Recently, he has added 75 new classes to the horse judging program, "You Be the Judge."

In Prof. Willman's own words come reasons for making contributions to the newly established fund: "Former 4-H'ers, who are now parents or grandparents, want today's youth to have many of the experiences that benefited them."

Contributions to the Willman 4-H Dairy and Livestock Fund, a tribute to a half century of dedicated service to farm families and the dairy and livestock industry, can be sent to the NYS 4-H Club Foundation, East Roberts Hall, Cornell University, Ithaca, NY 14853, or Glenn O. MacMillen, Office of Development and Alumni Affairs, 242 Roberts Hall.

—David Stewart

Special Programs in Action

Several special programs have been receiving welcome consideration from alumni and friends. They are in support of a variety of special programs in tribute to or memory of alumni and/or friends.

Ag Quad Beautification - In addition to the \$20,000 matching grant, gifts and pledges totaling \$13,983 have been received and gifts are still coming in. Specific plans for the additional trees and shrubbery will be made in the near future.

W. T. Keeton Professorship Fund - A \$25,000 challenge gift has been made. Also a \$25,000, five-year pledge received. Other gifts bring the total up to \$84,500. This fund will provide funds to be used at the discretion of the Keeton Professor for teaching and research programs.

Whetzel-Westcott Lectureship Fund - To provide for visiting lecturers in the

Plant Pathology Department. Gifts to date total \$9,000.

Harrison-Trimberger-Slack Dairy Cattle Evaluation and Selection Fund - Total cash and pledges \$23,280. Additional revenues are expected from the Cornell Classic Holstein Consignment Sale, November 14. This fund is to aid programs designated by the professor coaching the dairy judging team.

Agricultural Leaders' Fund - An endowment fund designed to provide recognition to outstanding agricultural leaders. Gifts may be given in tribute or in memory of an individual. When gifts exceed \$2,000 the name of the person honored will be added to a special plaque outside Dean Call's office in Roberts Hall. Total received to date, \$10,962. Three alumni and friends have been honored by having their names appear on the plaque: Edmund Fallon, Max Shaul '42, and John I. Miller.

Alan Westheimer Memorial Fund - This memorial to Alan Westheimer '77 has been established by family, fraternity brothers, and friends. Gifts to date total \$8,793. It will annually send a student (Alpha Gamma Rho) to Israel for a term's study.

Willman 4-H Dairy & Livestock Fund - A tribute to former 4-H livestock specialist Professor Emeritus Harold A. Willman. His friends, former 4-H members and leaders (often three generations) have established this tribute totaling over \$12,000. Income from the fund will aid 4-H youth development program.

Whiton Powell Memorial Fund - A goal of \$5,000 for an endowment fund has been established by friends and colleagues of Whiton "Pete" Powell, a former librarian at Mann Library. A matching gift of \$2,500 started the fund. Other gifts total \$1,660.

Teachers of Agriculture Fund - A fund designed to provide incentive for students who intend to teach vocational agriculture. A brochure promoting the fund is to be mailed by the end of the year. Gifts and pledges total \$1,350.

Alumni interested in learning more about our programs should contact Glenn O. MacMillen at the Office of Development and Alumni Affairs, ALS, 242 Roberts Hall, Cornell University, Ithaca, NY 14853. Gifts can be made by writing a check payable to Cornell University with the name of the fund.

College Advancement Fund Provides Flexibility in Programs

Gifts from alumni and friends continue to provide flexibility and innovation within the college's programs and projects. Last year ALS received over \$40,000 for the College Advancement Fund. This fund receives all gifts that are not designated for a specific purpose. In most cases, they provide that extra bit that makes ALS the best ag college in the world.

The following are examples of programs funded:

- Ag Economic Scholarship
- Donor Recognition Program
- Mexican Exchange Program
- Student Dairy Science Club (for publications)
- Bus Service for out-of-state youth visiting ALS
- "Perspective" (student landscape architect publication)
- Microscopes for neurobiology and behavior labs
- Student livestock show
- Minority apprenticeship program
- American Indian Project
- Equipment for micro-computer learning stations
- Auto-tutorial module
- Career Fair Program developed by AG PAC
- Books and periodicals for Mann Library
- Visual aids equipment
- Special college oral history project

Continued from EXTRA 1

The marsh, which trapped silt from nearby streams and provided nutrients and a spawning ground for fish, was filled in to make solid ground. When it disappeared, the great flocks of blackbirds left, the lake started to fill with silt, and weed growth and eutrophication accelerated along the shore. This left a lasting impression on him, he said, and helped launch him into becoming an active conservationist.

Another area of particular concern to him is world hunger. One solution he supports is the increased use of tree crops, particularly nut-bearing trees, as an alternative food source. As one of the foremost nut tree experts in the Northeast, he has written many articles and bulletins on this subject. He is working with Arthur Lieberman, professor of landscape architecture, exploring the cultivation of tree crops on unproductive or marginal lands both as a source of food and as a soil erosion preventive.

MacDaniels donated 20 acres of land in Covert to Cornell in 1978 (under a life-income agreement) for research on tree crops and is assembling on this site superior trees for creation of a gene bank. Much of the research will be carried out with money given by him to the project.

With Robert Langhans, professor in the floriculture and ornamental horticulture department, and several graduate students, he is working on a method of cloning endangered plants, such as certain species of orchids. The hope is to create a method of tissue culture that is easy and economical enough that commercial nurseries will be able to use the procedure and no longer take irreplaceable plants from rain forests and other vanishing habitats.

Prof. MacDaniels' career as a teacher began at Oberlin College,

where he was an assistant in dendrology, the study of trees and shrubs. In 1912 he began graduate studies at Cornell. He got his PhD in 1917 and was appointed assistant professor of pomology, but shortly afterward took a leave of absence to participate in World War I research activities. He spent two years with the Botanical Raw Products Committee of the National Research Council and the Bureau of Aircraft Production, using his knowledge of wood structure to provide guidance and assistance in selecting types structurally sound for propellers and other parts of aircraft.

Toward the end of this period, he became involved in relief work in Asia Minor with the Near East Relief Foundation. Even then, he was able to continue his horticultural work. Because the trains traveled so slowly between countries, he observed the native trees and netted specimens from the thick swarm of insects that clung to the train.

He returned to Cornell in 1921, and from 1923 to 1940, he was professor in the department of pomology, researching apple pollination, tree wounds and bracing, and the anatomical aspects of flower and fruit abscission.

His career was not exclusively lab work but included travel to faraway islands and remote jungle areas. During a sabbatical leave in 1926-27, he worked with the Bishop Museum of Honolulu, making a botanical survey of the fei banana in Fiji, Tonga, Samoa, and Tahiti, and in later years continued the survey in such areas as New Caledonia, the New Hebrides, and Canton Island. He also collected specimens of tropical plants for his own anatomical work and for the Bailey Hortorium. His wife of 65 years, Frances, went along on many of these and other trips to help collect



materials.

From 1940 until his retirement in 1956, he was head of the department of floriculture and ornamental horticulture. Under his direction, courses in horticulture, taxonomy, and plant propagation were added or strengthened through cooperation among departments. This attracted a group of graduate students who went on to become prominent at other universities and experiment stations, as well as in industry.

Among his many publications is the textbook, *Introduction to Plant Anatomy*, which he wrote with the late Prof. Eames in 1925.

Last year, he was awarded the Lytell Lily Cup from the Royal Horticultural Society of London. He is the first Cornellian and only the third U.S. scientist to receive the award since it was started in 1939. It is given

for significant advancement of knowledge on the culture of garden lilies. MacDaniels was instrumental in founding the North American Lily Society in 1947 and served as the first president of the society for two years and then for a second time in 1956. In recognition of his achievements, the society honored him with its E. H. Wilson Award in 1966. Also in 1966, he was awarded the Wilder Medal by the American Pomological Society.

Both MacDaniels and his wife have been active in civic and campus affairs and have served as heads of the Ithaca Council of Social Agencies. They have two daughters, Carolyn Miller and Ellen Speers.

While his 93 years have slowed him down, they haven't made him care less. His sense of urgency about the amount of work left to be done "before the world wakes up to see what it has irretrievably lost, and before it is so hungry that it's too late," is felt throughout his conversation.

New Edition of the Know How Catalog

A new edition of *The Know How Catalog* has been issued by Cornell Cooperative Extension. It lists bulletins, leaflets, and other materials prepared by this college and the College of Human Ecology.

Hundreds of items on gardening, crafts, farming, home maintenance, child care, nutrition, money management, energy, ecology, and many other topics, are listed.

Free copies of *The Know How Catalog* are available from county extension offices or from: Distribution Center C, Research Park, Cornell University, Ithaca, NY 14850.

Buying a Horse, Not Trouble

The horse has a new place in modern society. Few animals evoke the depth or intensity of feeling generated by the horse, especially among youths. The 4-H horse program, which is the major thrust of the total extension horse program, attempts to use this attraction of horses to youngsters, and through an informal educational program, provides learning opportunities that not only help young people to learn more about horses, but also to learn more about themselves. "As with all 4-H animal programs, the real focus of the horse program is on youth development," said Samuel Sabin, professor of animal science and extension horse specialist.

The horse industry is based on recreation, claims Sabin, and because of this, the use of horses must be fun, exciting, or provide some other form of personal pleasure and satisfaction. This in turn would suggest that the more knowledge the horse enthusiast has of the horse, why it behaves as it does and how it functions, the greater the pleasure potential for the user. According to Sabin, probably the hardest lesson for any horse owner to learn is that the majority of uses humankind makes of equines is totally opposed to the kinds of activities and behavior patterns developed in the 60 million years during which the horse has evolved. As a consequence, when humans train and use horses, they must try to totally eliminate the horses' instinctive responses. In actuality, the psychology of training horses is very similar to the psychology of training humans, and as Sabin points out, this can be directly applied by youngsters in their interactions with peers and adults.

The 4-H horse program in New York, coordinated at the state level by Sabin, includes a variety of educational and competitive activities, many of which were developed by him and are now used on a national basis. Sabin has been very active in the development of bulletins designed especially for kids, as well as in the preparation and development of slide tape programs, and has now begun work on videotapes, which he feels is



the direction most audiovisual educational materials will take in the near future.

"At one time I was able to answer most of the questions I received and, with the exception of veterinary care, could respond to most of the requests for my assistance based on my own studies and experience," said Sabin. "As a result of the tremendous growth of the industry and the explosion of publications dealing with horses, the questions and requests now being received are much more complex and sophisticated, and frequently, it is impossible to provide the help that is needed." Despite the difficulty of providing service to the horse industry, there are still many opportunities to be of assistance. One of the ways in which Sabin feels he can be of most help is in counseling prospective buyers. The title of one of his publications, "Buy a Horse, Not Trouble," summarizes his feelings.

Horse ownership is expensive. Any prospective buyer should be thor-

oughly aware of these costs and should realistically evaluate them, as well as his or her sincerity of interest in equines. For example, the cost of a good horse is frequently equal to that of a new automobile. The cost of feed and bedding will probably be at least \$750 per year. Farrier expenses will add \$50-\$100 per year and veterinary costs, at least another \$100 per year. Clothing for the primary rider could range from \$100 to several thousand dollars, depending on the degree of activity. Clothing for other family members who do occasional riding could easily reach \$50 per person per year. Tack and equipment is also expensive, with saddles now averaging \$400-\$500.

In addition, there are incidentals such as insurance for the horse (5-10 percent of the insured value per year), travel expenses, trailering or vaning charges, show entry fees, club or organizational dues, subscriptions, and a host of other expenses that probably would not be encountered

unless there were a close and personal involvement with horses.

The horse, unlike cars or snowmobiles, requires daily care and attention, day after day, week after week, throughout the entire year. Unless this devotion to the well being of the horse, with its consequent commitment of time, energy, and money can be made, horse ownership is strongly discouraged.

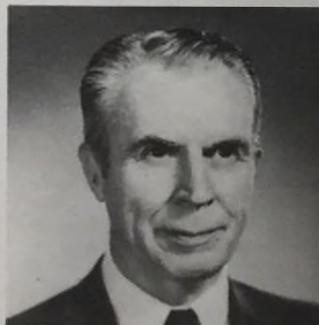
In his bulletin "Buy a Horse, Not Trouble" Sabin offers suggestions and procedures that will help the novice horse enthusiast make informed decisions and avoid making serious mistakes in selections. One particular recommendation, even for the experienced horse person contemplating a purchase, is to arrange for the horse in question to be thoroughly examined by a competent equine practitioner. Another suggestion for both buyers and sellers is to always insist that a written sales contract be drawn up and signed by all parties.

Another extension bulletin, "Feeding Horses," provides sound scientific information on the nutritional needs of horses and how to meet these needs under a variety of conditions. This publication was written by Prof. Harold Hintz, equine practitioner, who holds a joint appointment in the animal science department and the department of large animal medicine, obstetrics and surgery, in the Veterinary College.

A basic and comprehensive bulletin for horse owners is "A Horse Owner's Guide," written by N. B. Haynes, DVM; Hintz; and Herbert Schryver, DVM. Haynes is now in private practice, and Schryver is the director of Equine Research at Cornell.

Copies of these bulletins can be obtained at a nominal cost through Cooperative Extension offices in each county, or by ordering directly from the Distribution Center, 7 Research Park, Cornell University, Ithaca, NY, 14850.

An extensive selection of movies, slide tape programs, and other publications can also be obtained through Extension offices.



Charles R. Henderson, statistical geneticist and professor emeritus of animal science, has received the Herman-Von-Nathusius Medal, the highest award given by the German Society of Animal Production. He is the third American to receive the gold medal since it was first given in 1928.

Presented in Grub, Germany on June 10, the award was in recognition of his "significant contributions to the science of animal production and successful transfer of scientific results to the practice of animal breeding, as

Animal Science Professor Receives German Gold Medal

well as invaluable support of junior scientists."

Henderson has made major theoretical contributions to statistics, and his statistical methods have been applied not only to his own field of genetics but also to many other fields, such as sociology, psychology, and economics.

He is generally recognized as the leading world authority on sire evaluation for production traits in livestock. The application of his research has resulted in a large increase in milk production and at lower cost to farmers, making milk more economical for consumers.

In the Northeast alone, the milk production of artificially inseminated dairy cattle has increased by 39 percent, and genetic progress represents 43 percent of the total gain. This has resulted in over \$3 billion extra dollars in gross income to farmers in the northeastern United States since 1957.

Based on his pioneering work in the design of a sample program for testing and selection of sires, the New York Artificial Breeders Cooperative

in 1950 became the first in the U.S. to embark on a systematic program that is now the basis of all artificial insemination programs worldwide.

Prof. Henderson was instrumental in building Cornell's New York Dairy Records Processing Laboratory into a source of data for genetic research, and many genetic theories have been substantiated from the data collected there.

He also helped establish computer processing procedures for beef and sheep breeding records similar to that for dairy records. His work with Extension personnel and with state and national cooperatives has provided almost immediate distribution of research findings to farmers throughout the country.

Henderson received B.S., M.S., and Ph.D. degrees from Iowa State University. He has received the highest research awards of the American Society of Animal Science and the American Dairy Science Association and was elected a Fellow of the American Statistical Association in 1969.

NOVEMBER 1981

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Institute for Comparative and Environmental Toxicology

A new interdisciplinary center, the Institute for Comparative and Environmental Toxicology (ICET), has been established here.

The institute is a culmination of over a decade of program expansion in the field of toxicology at Cornell. In 1980, Cornell became the only institution in New York State and one of few in the country to offer formal graduate degree programs in environmental toxicology.

Growing concern about the potential hazards of synthetic chemicals, coupled with the deteriorating quality of the environment, have led to a demand for information and specialists that far exceed supply, thus mandating the need for such a center.

Its mission will be to facilitate graduate level training, to encourage collaborative research, and to inform the general public, governmental agencies, and industry and consumer groups on matters relating to environmental toxicology.

Operated on campus, ICET receives broad policy direction from a board composed of: ALS dean David Call; Human Ecology dean Jerome Ziegler; College of Veterinary Medicine dean Edward Melby; director of the Division of Biological Sciences Robert Barker; and director of the Division of Nutritional Sciences Malden Nesheim. Christopher Wilkinson, professor of insecticide chemistry and toxicology, is the new Institute director.

The Institute plans to have a full-time extension specialist who will act as a leader in developing and distributing information to the public. This will be in the form of bulletins, press releases, workshops, short courses, and other educational programs, all geared, according to Prof. Wilkinson,



Christopher Wilkinson, director of new Institute

"toward upgrading the level of understanding so that people can make more reasonable risk assessments" about given substances.

There will also be an annual symposium and workshop on campus that will focus on different aspects of toxicology and deal with emerging problems. Key people from industry, government, and the academic sector will be invited to participate.

The institute will draw upon the expertise of 25-30 faculty members in a number of Cornell units. In addition to the primary colleges and divisions, which will share administrative and operating expenses, there will be faculty members from the School of Engineering, the Program of Science, Technology, and Society, the Law School, and the Boyce Thompson Institute for Plant Research.

Additional facilities at Cornell asso-

ciated with the institute include the toxic chemicals laboratory, the NYS veterinary diagnostic laboratory, and the EPA center for ecosystems research.

Areas of specialization in environmental toxicology that will be given initial priority in ICET's programs are:

- biochemical—mechanisms of interactions among toxins in living organisms;
- nutritional—interaction of nutrients and toxins;
- genetic—toxin interaction with genetic material, e.g., carcinogenesis;
- ecotoxicological—transport, fate, and general disposition of toxins in ecosystems;
- veterinary—effects of drugs or toxicants on veterinary animals; and
- public policy—social and political aspects of toxicology-related decisions.

Farm Accident Rescue Publication

Farming is all too frequently accompanied by fatal or serious accidents. The specialized nature of farm machinery and the often remote field locations add to the difficulty of rescue and first aid.

Farm Accident Rescue, a publication written by several agricultural safety engineers (including Cornell professors Dale Baker and Robert Parsons), is a source of comprehensive information on the topic. It is also a basic training manual for fire department and rescue squads and for emergency medical technicians who service rural and farming areas.

The 33-page booklet describes recommended safety procedures for helping victims of accidents involving machinery, electricity, pesticides, anhydrous ammonia, chemical fires, silo gas, and other aspects of agricultural operation.

There is also a *Safety* audiovisual catalog available from the Cornell Audio-Visual Center that lists 16-mm. films used to train groups of people in accident prevention and rescue.

Farm Accident Rescue (NRAES-10, \$2) is available through the Cornell Distribution Center, 7 Research Park, Ithaca, NY 14850, with checks payable to Cornell University. Copies are also available at county Cooperative Extension offices, where prices may vary. Copies of the audiovisual catalog are available free by writing to *Safety*, Cornell Audio-Visual Resource Center, 8 Research Park, Ithaca, NY 14850.

Conneman New Director of Instruction

George J. Conneman, professor of agricultural economics, has been appointed director of instruction in the College.

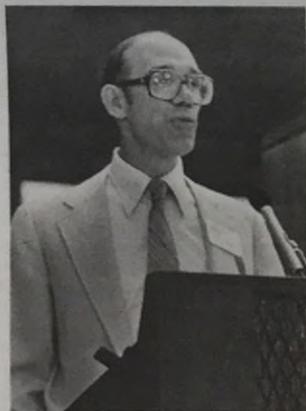
"George Conneman brings to his new position a reputation as an outstanding teacher, knowledge of the College's programs, active involvement in New York's agriculture, and a high level of energy and enthusiasm," Dean David Call said in announcing the appointment.

Conneman, who succeeds J. Robert Cooke, will be responsible for the development and administration of the overall teaching program of the College, which has expanded dramatically over the years.

In 1903, there were two dozen courses available to 114 students. Today, about 800 courses are offered, and the student population consists of approximately 3,000 undergraduates and 1,000 graduate students.

A member of the faculty at Cornell since 1956, Conneman is an authority on farm business management and finance. He has been involved with the Banker's School of Agriculture for many years and has taught courses in farm management and real estate appraisal to undergraduates.

In 1975, the senior class of the College presented him with the Professor of Merit Award for excellence in



teaching and advising. Graduating seniors in 1981 selected him as an Honorary Faculty Representative for the commencement ceremony.

His research interests are diverse and have included supply response on dairy farms, projection trends of milk production and consumption, land resource adjustments on dairy farms, and regional differences in dairy farming. He has also been actively involved in Cornell Cooperative Extension programs.

Conneman received BS and MS degrees at Cornell and a PhD degree from Pennsylvania State University. He and his wife Francie live at 111 Warwick Place.

—Susan S. Lang

Rural Communication Research Program Started

Although there are 81 communication research centers in the U.S., until recently none had rural communication as a focus. Last March, the Cornell department of communication arts started such a program.

"It is important that all segments of society be served equally by efficient communication systems," said Donald Schwartz, department chairman. "A concentrated program of applied research is needed to focus existing knowledge in communication on the problems of rural areas and on the food and agriculture industry."

There are many applied communication research needs unique to rural areas. Among them are rural and farm people's needs for agricultural information, employment information systems in areas that are economically distressed, and communication within the USDA and land-grant university administrative system, as well as public understanding of the food and agriculture industry.

Anticipating and evaluating future trends in media will be an important part of this program. For example, more agricultural information may be distributed through the use of computers. There's an experiment called Green Thumb going on in Kentucky, where farmers' home computers are plugged into their local Cooperative Extension offices via telephones. When they want information on

weather, for instance, they just punch in their request on the computer, which relays the signal to the Extension computer file and directly gives farmers the latest hourly weather report from Washington, DC.

Accessibility, convenience, quality of information, and many other factors need to be considered to determine whether this (or any other new medium) is a good supplement to or substitute for traditional information routes.

The rural communication research program here will capitalize on the department's strengths in communication planning and strategy, organizational communication, development communication, and survey research methods. Those areas will be extended by collaboration with faculty members in other departments at Cornell.

A broad data base of communication studies in rural areas is being assembled, and after its analysis, project grants will be sought from appropriate sponsors.

Contracts also will be accepted for rural opinion polls or communication program evaluations from state, federal, or international agencies.

For more information, contact Donald F. Schwartz, Department of Communication Arts, 307 Roberts Hall, Cornell University, Ithaca, NY 14853.

Urban Gardening Update

Cornell Cooperative Extension's New York City gardening program, funded by the U.S. Department of Agriculture to improve nutrition among the poor, is an unqualified success. Each office in the five boroughs and at Gateway National Recreation Area in Brooklyn has a field staff with the professional background to teach gardening and nutrition. The program circulates a gardening and nutrition newsletter to 5,000 readers, sponsors an annual gardeners' harvest fair with competitions for home-grown produce and homemade foods, and conducts plant clinics, general-audience gardening classes, and food preservation workshops. By the end of the 1980 growing season, there had been 3,536 gardens on 373 sites; 485,000 pounds of produce; \$520,000 worth of produce; 1,174 workshops; and 35,025 participants.



Continued from page 1

wear off. The Houpts' research may provide insight not only into why some people become fat, but also could lead to the production of a large pig in a short time using a minimal amount of feed.

Donald Lisk, professor of vegetable crops and director of the toxic chemicals laboratory, is studying how pigs fare on corn that has been grown on sludge, a sewage byproduct. Usually, animals who eat such crops suffer liver and kidney damage because chemicals, heavy metals, and other contaminants in the sludge are passed on through the plants.

In his tests, Lisk has found no damage to pigs who are fed only the corn itself, minus the stalks and leaves. He will look next to see what consequences there are to second generation pigs whose mothers were fed the corn. If successful, the project could partially solve the problem of sludge disposal.

New York, mainly a dairy state, has a relatively small swine population. But the ALS swine facility, which each year handles around 1,500 pigs (primarily the Yorkshire breed), was ranked third in the nation for number of production registered litters in 1980. A production litter is one in which the total weight of the litter at 21 days is 105 pounds or more. They are in the process of employing a second breed to take advantage of crossbreeding and the strengths of a second breed (Duroc).

The pigs don't stay long at the Cornell barns but are shipped off for slaughter or research; sows have the largest tenure and often stay until after their third litter. Possibly to make parting easier, the pigs aren't named. That doesn't mean, though, that a large Duroc boar in the far corner of one barn can't be called "Old Grumpy," which barns manager Dave Kirtland fondly called him as he woke the pig to greet his guest.

When a person enters the barns, the pigs immediately sense whether it's a stranger, and if so, squeal in unison, bolting all at once for their outdoor pens. Their curiosity immediately gets the best of them, however, and they run—a few steps forward and several back, looking like a chorus line—until they finally work their way close



"Old Grumpy"

enough to get their noses petted.

A few of them, those too young to have developed the typically long, bristly coat, are sunburned. After several weeks of sun they get used to it, but their skin never tans.

Why do pigs roll in mud? They don't do it to offend anyone, Kirtland explained, but because they lack sweat glands and need to keep cool. Their relative the hippopotamus spends much of its time in water for the same reason.

While pigs aren't intelligent, he said, they train easily. Yet, because of their weight—200 pounds at five months and 700-900 at maturity—and their ability to run up to twenty, heavy-footed miles an hour, he wouldn't recommend them as pets. They like to chew ("they'll take a glove right out of your pocket") and can root up a garden in minutes.

Still, after seeing the upturned nose, thick eyelashes, and silk-velvet skin of a baby pig...



Nation's Agricultural Agents Met Here

More than 2,200 Cooperative Extension agricultural agents and their families from throughout the U.S. were here this summer for the 66th annual meeting of the National Association of County Agricultural Agents. NACAA is a 5,300-member organization that serves as an important link between people and the land grant universities and colleges.

The meeting, held August 16-20, had the theme, "A Time of Change, A Time of Challenge." The focus was on the role of Cooperative Extension agents in helping agricultural producers and consumers face the challenges of this decade.

Cooperative Extension, with agricultural agents working in virtually all 3,000 counties in all 50 states and the Virgin Islands, is one of the largest off-campus educational institutions in the world.

Hosting the five-day event were the NYS Association of County Agricultural Agents, ALS, and Cornell Cooperative Extension. Chairman of this year's event was Robert Becker, a regional specialist in vegetable crops stationed at the NYS Agricultural Experiment Station in Geneva.

Leslie N. Firth, president of NACAA, described the organization as "the focal point of the delivery system" for making research-based information available to a wide audience, including farmers and consumers.

The annual meeting, he said, "provides a forum to further professional improvement of agricultural agents so as to serve the people more efficiently, as mandated by law since the beginning of the nationwide Cooperative Extension in 1914. This annual meeting is one way in which they can scrutinize their role and strengthen their effectiveness as educators."

This is the second time in 20 years that New York State has hosted the annual event; in 1961, NACAA met in New York City. It's the first time since 1972 that the conference has been on a college campus.

Heading the list of speakers on the program was Secretary of Agriculture John R. Block. He said that restoring the profitability of farming in the U.S. is a top priority of the Reagan admin-

istration. Block stressed that profitability is a must for farmers to insure an adequate supply of food for the nation and the world.

In a news conference following his keynote address, Block said the U.S. will not use food as a weapon and called Carter's grain embargo against the Soviet Union a disaster. "Food is a very effective tool of peace if we are a reliable supplier," he said.

Speaking before Block, David L. Call, dean of the College, warned that the phenomenal agricultural productivity the nation has experienced in the past will not come automatically, unless research is stepped up to achieve new breakthroughs in agricultural technology.

Welcoming the delegates was Lucinda Noble, director of Cornell Cooperative Extension. Other featured speakers included Robert Delano, president of the American Farm Bureau Federation, and J. Roger Barber, commissioner of the NYS Department of Agriculture and Markets.

New York agriculture, which annually generates more than \$2.5 billion in cash receipts, is the single largest industry in this state, thus contributing significantly to the state's economy. Agricultural agents have played an important role in the growth of this industry. New York had its first agent in 1911; now, there are 160 agents serving all 57 counties of the state and the boroughs of New York City.

To show New York's agricultural industry in action, the conference program featured day-long tours of diverse segments of the state's agriculture including dairy, beef, swine, poultry, and vegetable farms, along with orchards, greenhouses, vineyards, wineries, food processing plants, a farm equipment manufacturing firm, and a sawmill.

There were also tours of a modern dairy farm (owned by Ronald Space '53) near Ithaca where a large team of Cornell researchers is working to create an energy self-sufficient farm, and of the ALS Animal Science Teaching and Research Center at Harford.

—Yong Kim

Profile of the Class of '85

Number of Applicants	2712
Number of Matriculants	616
In top 10% of high school class	75%
Male	50%
Female	50%
Minority	16%
Non-resident	18%
SAT Scores:	
Verbal Mean	585
Math Mean	635
Distribution of Freshmen Among Program Areas:	
Agricultural & Biological	
Engineering	55
Animal Sciences	123
Applied Economics & Business	
Management	79
Behavioral & Social Sciences	52
Biological Sciences	162
Environmental Studies	68
Food Science	25
General & Special Programs	22
Plant Sciences	30
Fall 1981 Transfers:	
Number of Applicants	770
Number of Matriculants	233
Male	50%
Female	50%
Non-resident	17%
Previous Schools:	
Agricultural & Technical College	105
Community College	42
SUNY 4-year	23
SUNY Specialized	1
Other New York State	12
Out-of-State	46
Foreign	4
Distribution of Transfers Among Program Areas:	
Agricultural & Biogocical	
Engineering	14
Animal Sciences	57
Applied Economics & Business	
Management	28
Behavioral & Social Sciences	25
Biological Sciences	21
Environmental Studies	29
Food Science	3
General & Special Programs	12
Plant Sciences	43



Dean Call attends Arizona reunion, class of '54, held in Phoenix last April by the Cornell Club of Maricopa County. From left to right: Seelye Pratt '54, vice-president of the Cornell Club; Carolyn Call, Dean David Call '54, Mary Gentry Call '54; and Rodger Wagner '54, area Cornell Fund chairman. Photo by Don Gehrig '35, president of the Cornell Club of Maricopa County.

NYS Agricultural Society to Hold 150th Anniversary Meeting



Bernie Potter (left), new Ag Society president, with Charles Riley, outgoing president

The NYS Agricultural Society will hold its 150th anniversary meeting in Albany on January 7, 1982. The day-long seminar and meeting will feature internationally known speakers addressing the "Changing Scene of New York Agriculture."

Four 300-year-old farms in New York that are still owned by descendants of the original owners will be recognized by Governor Hugh Carey, as will the four families, for the 1982 awards.

Awards for superior reporting on agriculture will also be presented, and a Cornell multi-media show on New York agriculture will be premiered.

The Agricultural Society was started in 1832 to enhance stability in

the farming industry. Members provided a forum for information exchange and education and originated the State Fair in 1841.

According to the chairman of the Society, James Earl of Unadilla, NY, "The Agricultural Society is the oldest, continuously operated organization of its kind in the nation devoted to supporting a viable agricultural industry in the state, today and in the future."

Anyone interested is invited to the meeting and evening banquet. Information is available from the NYS Agricultural Society, c/o of the NYS Department of Agriculture and Markets in Albany.

Mason Weinrich '82 Wins Book Collection Contest

Mason Weinrich '82 has won a first prize of \$250 in a campuswide book contest for his collection, Whales, Dolphins, and Porpoises. The Arthur and Mary Marden Dean Book Collection is held every two years, with Cornell professors and others serving as judges. Collections contain 35-50 books and are judged for imagination and taste.

Weinrich, a student in the division of neurobiology and behavior, said he's loved these ocean mammals since he was a kid in New York City and hopes to go on to get a PhD in animal behavior, with whales as his research focus.

A couple of years ago, he helped a friend collect data on the humpback whale near Provincetown, Rhode Island, which led to his current project of watching and counting this species for the Gloucester (Massachusetts) Fishermen's Museum. Spending weekends from May through October and the last two summers in Gloucester, he spotted far more whales than anyone thought were there. He is looking at whales' relationship to their environment, particularly the quantity and types of their food supply. Originally a personal venture, the project has become

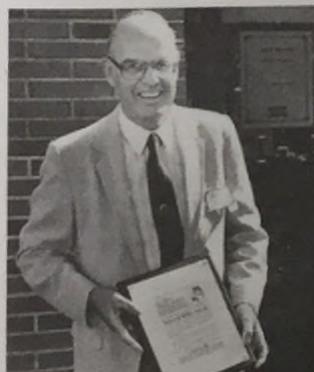
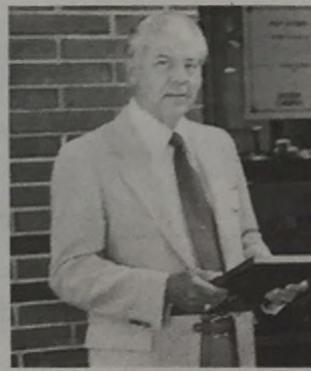
a more formal independent study overseen by John Heiser, director of the Shoals Marine Laboratory at Cornell.

Second and third prizes and three honorable mentions also were awarded in the book collection contest, with topics this year ranging from American Railroad to the Bibliography of James Joyce.

Previous contest winners from ALS were: Stephen Busack '66, third prize; Christian Elwell '69, third prize; Michael Wysor '71, second prize; and Jay Landsman '79, first prize.

The contest was started in 1966 in honor of Arthur and Mary Dean. Arthur Dean (Arts '19) was on the Cornell Board of Trustees for 30 years and was chairman for twelve. He played a major role in the building of Olin Library, raising funds and traveling around the world to get ideas for what an outstanding research library should contain. Later, he and his wife donated to the library a collection of papers from the period of the French Revolution, considered the most important such collection outside of Paris. Dean, a former lawyer with Sullivan and Cromwell, a firm in New York City, served as a U.S. ambassador three times.

Retiring faculty members honored by alumni at June reunion breakfast



Five newly retired members of the faculty received recognition for their long service to the College during the annual alumni breakfast. Association President Michael Holloway '74 of Rochester (at right in photo above) presented plaques of appreciation to (clockwise) Robert P. Story, agricultural economics; Howard G. Andrus, education; Robert S. Smith, agricultural economics; Samuel T. Slack, animal science; and Arden F. Sherf, plant pathology. Reporting to the alumni on association activities were vice-presidents Stuart Lamb '63 (top photo in right column) of Cobleskill and Louis Matura '58 of Kemptville, Ontario, Canada (bottom).

If the *Agriculture and Life Sciences News* is addressed to a son or daughter who no longer maintains a permanent address at your home, please clip the address label and return it with the correct address to Office of Development and Alumni Affairs, 242 Roberts Hall, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY 14853.

DATED MATERIAL

Agriculture and Life Sciences News
New York State College of
Agriculture and Life Sciences
Roberts Hall
Cornell University
Ithaca, New York 14853

188,000 strong. Empire Farm Days, largest agricultural extravaganza in the Northeast this year, attracted more than 188,000 people to Cornell's Animal Science Teaching and Research Center at Ithaca, 15 miles from Ithaca. The August 11-13 event featured more than 300 exhibits, including Cornell's methane digester now ready for adoption by dairy, poultry, and swine farmers. Empire Days are sponsored by the Empire State Fairs Club, New York State Gas and Electric, the New York State Farm Equipment Club, and the New York Farm Equipment Dealers' Association.



The Trout That Didn't Get Away

There are fish stories, and then there are fish stories: this one belongs in the latter category.

Early last May, Daniel Sisler, professor of agricultural economics, and his friend Garry King, went fishing for small brook trout in Little Moose Lake near Old Forge, New York.

Around 50 yards from the dock in seven feet of water, Sisler's line seemed to snag, as though it were hitting bottom, and looked as though it would break. Soon there was tugging that quickly became more lively, and it was clear that on the other end of the line there had to be a big fish.

Because of the shallow water, the fish couldn't get away by pulling straight down, so it had to move quickly sideways. "This was a remarkably good fighting fish by any standards," said Sisler.

It was 35-40 minutes before they got it close enough to the boat to see it. Because they had set out to catch small fish, all they had brought along besides their lines was a stream net. When the lake trout came into view, King said, "I don't think we can get even the fish's head in the net. What are we going to do?"

They considered beaching it, but there was no real beach nearby. They next went looking for a dock, but for various reasons had to pass four until they found one that could be used. That took another 40 minutes.

King took over the rod for a minute and got out of the boat. The next sound Sisler heard was King's feet flying out from under him as he fell flat on his back on the slippery, algae-covered dock—but he didn't lose the fish. Pulling the line in, with it frequently coming close to breaking, King hauled the fish onto the dock apron.

They went to a nearby lodge and found that the trout was 39" long and weighed 19 pounds, 2 ounces. Having left the fish in the lodge's cooler temporarily, Sisler was leaving the building when he ran into Mark Webster, Arts '70, former Cornell lacrosse player and now a physician in Old Forge. Two winters ago, Webster had caught a 25-pound lake trout while ice fishing, the largest ever known to have been taken in that lake. He went into the cooler to look at Sisler's fish and found a jaw tag almost totally embedded as a result of the fish's growth.

Reading the tag, Mark Webster found that it was one his father, Dwight Webster, professor of natural resources, had placed there back in 1955, when the fish was four years old. That meant the fish was 30 years old, the oldest recorded in this state.

Dwight Webster, head of the Adirondack Fishery Research Program, had estimated the fish's age in November 1955, based on its scale patterns. (AFRP was started here in 1951 to study trout populations in the Adirondacks in order to improve management methods, which include examining characteristics of fish that would be desirable to perpetuate.)

Many of the Adirondack lakes, according to Prof. Webster, have somewhat larger and older fish than in other lakes because they are less heavily fished; the high attrition rate in public waters due to fishing makes it far less likely that a fish will reach a grand old age.

Meanwhile, the trout means a first for Dan Sisler: after 40 years of fishing, including such places as Indonesia, East Africa and the Northwest Territory, he has decided to have this catch mounted.

Open House '81

Open House, a chance for high school students and their parents to visit the state colleges at Cornell, will be held Saturday, November 14.

The annual event is sponsored by ALS, the College of Human Ecology, and the School of Industrial and Labor Relations.

Visitors will be given an overview of Cornell and the three colleges' academic programs, along with a tour of the campus. They will also meet current students and faculty and staff members. In addition, the morning program will include information on admissions and financial aid.

In the afternoon, visitors can attend the Cornell vs. Columbia football game, participate in a variety of optional activities, or explore the campus on their own.

For more information, contact the Admissions Office, 195 Roberts Hall.

Howard Andrus Named Professor Emeritus

Howard G. Andrus, a leader in guidance, testing, and placement at Cornell for 35 years, has been named professor of guidance and personnel administration emeritus by the Cornell University Board of Trustees. He retired in July.

A professor of education at the College, Andrus was director of the University's guidance and testing center, which was created when the education-vocational guidance center merged with the testing and service bureau. That center is now merging with the combined guidance and testing office.

Andrus came to Cornell in 1946 as a vocational adviser in the guidance center, working primarily with veterans. From 1948 to 1959, he was director of the University's educational placement bureau, helping students and alumni from all divisions of the University find teaching or administrative positions in public and private schools and colleges.

A 1938 graduate of Houghton College, Andrus taught English and social studies before his military service. He earned a master's degree in education (1947) and a Ph.D. in guidance and personnel administration (1951), both from Cornell.