

news

A Statutory College of the State University of New York, at Cornell University, Ithaca, NY

APRIL 1979

College Celebrates 75-Year Milestone

by RICHARD A. SPINGARN

Whistles blew, church bells pealed, parade floats flowed by in jubilant triumph. A banquet, rich in food from the University farm, ushered in a new era. In 1904, the first three days of the year were the earnest pursuit for State affiliation, Cornell had won the prize.

"Cornell! I Yell Cornell! I Yell Yell Yell Agriculture!" proclaimed Isaac P. Roberts, the first professor of agriculture. He saw his most ardent dream come to fruition. Cornell's School of Agriculture had become Cornell's New York State College of Agriculture.

On Saturday, May 12, 1979, after three-quarters of a century, the college to the people of this continent, this nation, and the world, the New York State College of Agriculture and Life Sciences will again celebrate.

The festivities will begin at 10:00 A.M. on the

and will include tours of College facilities, faculty forums on subjects of importance to agriculture, and demonstrations of Cornell's innovations in agriculture. At 6:00, a multimedia presentation entitled "75 Years of Commitment to the People of N.Y.S." will be shown in Statler Hall. At 6:30, a reception and banquet will begin in Barton Hall, featuring food and beverages produced in New York State and developed through methods pioneered by the College. Dean David L. ... students, and the general public. (If you wish to attend, see p. 13 for more details.)

The banquet will also be attended by ... The menu will offer seafood chowder produced by the Department of Food Science and step loin and boneless, rib steaks, tenderized ...

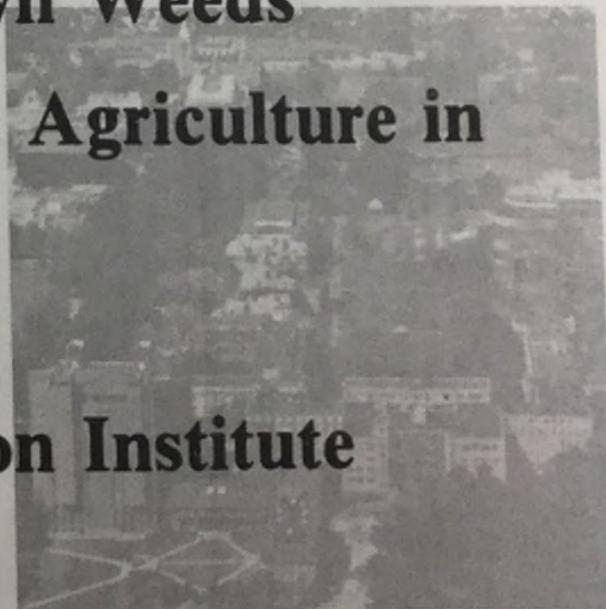
vented in the Department of Animal Science. Fruit and vegetable varieties developed in Ithaca and at the Agricultural Experiment Station in as rolls and pastries made from wheat strains bred by College geneticists and plant breeders.

These foods represent the harvest of a productive relationship between citizens and scientists. Research to help the farmer yields new processes and techniques. Farmers' questions ... more research. This ... as a tradition ... the beginnings of agricultural education.

Until the mid-1800s, knowledge about agriculture was passed from father to son and from farmer to farmer. Farmers eschewed what scientific methods there were and even discouraged any kind of formal instruction in their use. It was popularly felt that a student of agriculture would not return to the farm but aspire to "higher" professions such as medicine, law, or the ministry.

It was in this atmosphere that Ezra Cornell, a man of unusual foresight and inventiveness with a deep interest in agriculture in New York State, donated his 300-acre ...

A recent photograph of the Agriculture Quadrangle, reflecting solid progress and growth since the early 1960s.



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Bugs for Poets

Boyce Thompson Institute

and more

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The survey, conducted by Everett C. Ladd, Jr., and Seymour Martin Lipset, sampled a total of 4,000 faculty members and university presidents. The respondents were asked to "name the five departments nationally in your discipline that have the most distinguished faculties."

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University of Wisconsin at Madison was ranked second with 10 percent, and Iowa State University was third ... The Division of Biological Sciences at Cornell, whose faculty is composed largely of members of the College of Agriculture and Life Sciences, was rated eighth in the biology department ... choice. This reflects the growing strength of the biological sciences at Cornell.

In addition, Cornell was ranked ...

New Liberty Hyde Bailey Professors

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AGRICULTURE AND LIFE SCIENCES news

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College Celebrates 75-Year Milestone

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Whistles blew, church bells pealed, parade floats flowed by in jubilant triumph. A banquet, rich in food from the University farm, ushered in a new era. It was May 12, 1904. Just three days earlier, after a long and earnest pursuit for State affiliation, Cornell had won the prize.

"Cornell I Yell Cornell I Yell Yell Yell Agriculture," telegraphed Isaac P. Roberts, who, as the University's first professor of agriculture in 1874, saw his most ardent dream come to fruition. Cornell's School of Agriculture had become Cornell's New York State College of Agriculture.

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and will include tours of College facilities, faculty forums on subjects of importance to agriculture, and demonstrations of Cornell's innovations in agriculture. At 6:00, a multimedia presentation entitled "75 Years of Commitment to the People of N.Y.S." will be shown in Statler Hall. At 6:30, a reception and banquet will begin in Barton Hall, featuring food and beverages produced in New York State and developed through methods pioneered by the College. Dean David L. Call cordially invites alumni, friends, students and prospective students, and the general public. (If you wish to attend, see p. 13 for more details.)

The banquet will also be attended by distinguished speakers and guests who have made valuable contributions to agriculture and education. The menu will offer seafood chowder produced by the Department of Food Science and strip loin and boneless rib steaks tenderized through a mechanical process in-

vented in the Department of Animal Science. Fruit and vegetable varieties developed in Ithaca and at the Agricultural Experiment Station in as rolls and pastries made from wheat strains bred by College geneticists and plant breeders.

These foods represent the harvest of a productive relationship between citizens and scientists. Research to help the farmer yields new processes and techniques. Farmers' questions are the seeds of more research. This kind of cooperation is a tradition with its roots in the beginnings of agricultural education.

Until the mid-1800s, knowledge about agriculture was passed from father to son and from farmer to farmer. Farmers eschewed what scientific methods there were and even discouraged any kind of formal instruction in their use. It was popularly felt that a student of agriculture would not return to the farm but aspire to "higher" professions such as medicine, law, or the ministry.

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We're Number One!

The faculty of the College of Agriculture and Life Sciences is ranked first in the nation in agriculture and forestry, according to a recent survey published in the *Chronicle of Higher Education*.

The survey, conducted by Everett C. Ladd, Jr., and Seymour Martin Lipset, sampled a total of 4,000 faculty members at four-year colleges and universities across the nation. The respondents were asked to "name the five departments nationally in your discipline that have the most distinguished faculties."

Forty-two percent rated the College among the top five and 13 percent put it as their first choice. The

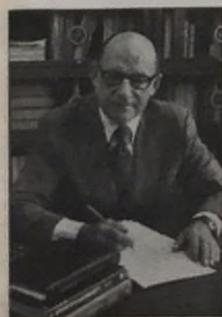
University of Wisconsin at Madison was ranked second with 10 percent, and Iowa State University was third with 9 percent.

The Division of Biological Sciences at Cornell, whose faculty is composed largely of members of the College of Agriculture and Life Sciences, was rated eighth in the biology category of the survey and came in sixth as the respondents' top choice. This reflects the growing strength of the biological sciences at Cornell.

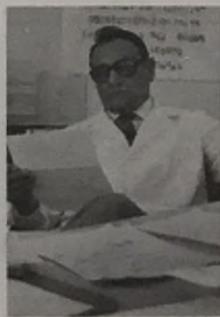
In addition, Cornell was ranked among the top five in chemistry, physics, engineering, and philosophy.

New Liberty Hyde Bailey Professors

see page 2



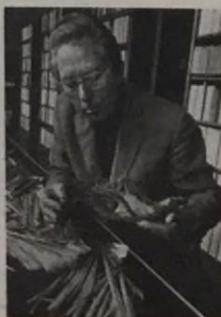
Walter Federer



William Hansel



Donald McCormick



Harold Moore



Wendell Roelofs

Five Named Liberty Hyde Bailey Professors

Five professors in the College of Agriculture and Life Sciences have been honored by the Cornell University Board of Trustees with Liberty Hyde Bailey Professorships. Those singled out most recently for this award are Walter T. Federer, William Hansel, Donald B. McCormick, Harold E. Moore, Jr., and Wendell L. Roelofs. They were recommended by a committee of distinguished faculty members.

The Liberty Hyde Bailey Professorships, established by the College in 1972, recognize outstanding faculty who have national and international reputations in agriculture and related sciences. This new group brings the total of active Bailey Professorships to nine.

Walter T. Federer, professor of biological statistics, is known throughout the world for his work on the theory, analysis, and application of statistical designs. His more than 270 publications include the textbooks *Experimental Design—The Theory and Application and Statistics and Society*.

Federer's research encompasses a wide sweep of statistical methods and procedures dealing with the design and analysis of experiments, combining results from several experiments, statistical genetics, and medical statistics.

Among his many honors are election as a Fellow of the American Statistical Association, American Association for the Advancement of Science, Royal Statistical Society, and Institute of Mathematical Sta-



tistics. Federer has served as executive secretary and chairman of the Committee of Presidents of Statistical Societies for eight years, and he was one of only ten Americans given membership in the International Statistical Institute in 1974.

William Hansel has an international reputation for his work in animal physiology, especially for leading research on dairy cow reproduction. He has found ways to control when cows come into heat so that an entire herd can be artificially inseminated at one time, with very high conception rates.

As new chairman of the Section of Physiology in the Division of Biological Sciences and the Department of Physical Biology in the College of Veterinary Medicine, Hansel holds a joint appointment with the College of Agriculture and Life Sciences. His honors include the Animal Physiology and Endocrinology Award of the American Society of Animal Science, the New York Farmers' Award for contributions to agriculture in the Northeast, the Borden Award of the American Dairy Science Association, and the National Association of Animal Breeders Award.

In recognition of his pioneering research on vitamins, **Donald B. McCormick** was chosen by the American Institute of Nutrition this year for the Osborne and Men-



del Award in experimental nutrition. He is best known for his studies on the chemical structure and metabolism of riboflavin. Among his many publications, he is coauthor of *Vitamins and Coenzymes*, which will soon be published in a revised edition.

McCormick is a professor in the Division of Nutritional Sciences and the Division of Biological Sciences. He has also received a Guggenheim Fellowship and the Mead Johnson Award of the American Institute of Nutrition.

Harold E. Moore, Jr., professor of botany and former director of the Liberty Hyde Bailey Hortorium, is a world authority on the biology and classification of palms. From Western Samoa to Cuba and New Caledonia, Moore's research has covered almost as much of the globe as palms themselves, one of the world's most economically important plant families.

The editor of *Principes*, the journal of the Palm Society, since 1957, Moore is also the author of *African Violets, Gloxinias, and Their Relatives* and coauthor of *Hortus Third*, a dictionary of the plants cultivated in the United States and Canada.



Moore is a member of the board of directors of the Palm Society, the Fairchild Tropical Garden, and the Organization of Tropical Studies. He has been a Guggenheim Fellow and received the Founders Medal of the Fairchild Tropical Garden.

Wendell L. Roelofs is professor of insect biochemistry in the Department of Entomology at the N.Y.S. Agricultural Experiment Station in Geneva. Instrumental in the discovery of the process by which insects use chemicals called pheromones to sexually attract each other, Roelofs has not only identified many pheromones but developed a method of isolating them in hours. It used to take months or even years.

Since developing this technique, Roelofs has become a leader in synthesizing sex attractants similar to those made by the insects themselves. He has contributed greatly to the science of controlling insects without having to depend entirely on insecticides. The implications of his work were underscored in 1977 when Roelofs was named coreipient of the Alexander von Humboldt Award for the year's most significant contribution to American agriculture.



Egner Becomes Associate Dean

Joan Roos Egner, professor of education administration, has been appointed associate dean of the College of Agriculture and Life Sciences.

The associate director of the Office of Research and the Cornell University Agricultural Experiment Station for the past two years, Egner becomes the top administrator next to the dean. She succeeds James W. Spencer, who has been named special assistant to Cornell President Frank Rhodes.

In the Department of Education, Egner taught courses on education administration and organization and on the development of college personnel. She has served as the graduate faculty representative for the field of education and as associate editor of *Educational Administration Quarterly*. She has also worked with many University committees dealing with administrative, personnel, and educational issues.

Egner has conducted extensive research on regional education development and has designed a curriculum to help high school and college students in making career choices (*ALS News*, April 1978).

A native of Pennsylvania, Egner did her undergraduate work at the State College in Stroudsburg and received her M.Ed. degree from Pennsylvania State University. In 1965 she completed her doctorate at Cornell and joined the College faculty. She has been a teacher and administrator in public schools in New York, Pennsylvania, and Ohio.

In announcing Egner's appointment, Dean David L. Call cited her extensive knowledge of the College and its research component. "In her role in the Office of Research, she has demonstrated outstanding administrative ability," he said.



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Alumni Association Scores Successful Membership Drive

The College of Agriculture and Life Sciences Alumni Association membership drive, which began in October 1978, is the most successful ever. Seven hundred new members have signed up so far.

The Alumni Association helps keep the College great through the participation of its members. They stay in touch with their College, spread its reputation far and wide, and arouse the interest of prospective students. They also support pro-

grams to recognize the achievements of students and faculty.

The dues are only \$4 a year, or \$10 for three years, and this includes a subscription to the *Cornell Countryman*, published seven times a year. In addition to informing you about Cornell, the *Countryman* provides valuable experience for the students who write and edit it. Alumni Association dollars partially support its operation.



I want to join the hundreds of fellow alumni who are now members of the Alumni Association of the College of Agriculture and Life Sciences.

I will get the *Cornell Countryman* seven times a year for the full term of my membership.

I am enclosing \$4 for a one year membership

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205 Roberts Hall
Cornell University, Ithaca, NY 14853

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205 Roberts Hall, Cornell University Ithaca, New York 14853

A Fertile History with a High Yield

from page 1 farm in Ithaca for the institution that would bear his name. And if it weren't for Ezra Cornell's concern about farming, the whole university might not exist today.

In 1865, Ezra Cornell and Andrew D. White secured federal funding for the University through the Morrill Act, legislation that supported colleges with programs in agriculture and the mechanical arts. This provided the impetus necessary for the realization of Ezra Cornell's hope to "... find an institution where any person can find instruction in any study." Cornell became New York's land-grant university, with a mandate not only to teach and conduct research in agriculture, but to share the fruits of those pursuits with the people of the state.

Cornell University opened its doors in 1868 with 412 students, 30 of whom were in agriculture. Right from the beginning, the institution could boast of an outstanding agriculture faculty. George Chapman Caldwell was recruited as professor of agricultural chemistry and James Law as professor of veterinary science. In 1874, Isaac P. Roberts, professor at Iowa Agricultural College, arrived as Cornell's first professor of agriculture and was given the task of organizing the Agriculture College.

Roberts was able to draw on his experience in Iowa to give the study of agriculture at Cornell a solid direction. In the early years he was especially concerned with building up the University farm and, perhaps more important, with improving the College's relations with farmers in the state.

Roberts traveled to farms throughout the state to help increase production, and he set up adult classes in Ithaca. This began the College's long tradition of service to the people. Under his leadership, the N.Y.S. Agricultural Experiment Station in Geneva was established. With the passage of the Hatch Act in 1887, federal funding was available for organizing the Cornell University Experiment Station. Both stations served to expand agricultural research in New York State.

Largely because of this added Hatch support, Roberts and University President Charles Kendall Adams were able to bring Liberty Hyde Bailey to the faculty as professor of horticulture. By the end



Comstock, Stone, Roberts, and East Roberts Halls as they appeared around 1918.

of his first year, Bailey already displayed extraordinary talent as both a teacher and researcher. Roberts came to depend on Bailey as an articulate liaison with farmers, farm organizations, students, and political leaders.

It was only logical, then, that when Roberts retired as director in 1903, Bailey was chosen as his successor. By this time, with a growing faculty and student body, the College could not continue to flourish as a privately endowed institution. Bailey, therefore, devoted his years as dean to transforming this regionally oriented agriculture school into a state institution with a broader scope and reputation.

The state affiliation that came in 1904 accelerated the College's expansion. Ground was broken in 1905 for Roberts Hall. Bailey led a group of students in pulling the plow that turned the first furrow on what is now the Agriculture Quadrangle. Construction on East Roberts and Stone Halls started soon thereafter, and during the next decade, 14 buildings were completed.

While Bailey was dean, more than 15 new departments were established, including farm crops, botany, entomology, plant pathology, rural sociology, and rural education. The faculty grew from 11 professors in 1903 to close to 100 ten years later. In that period, enrollment jumped from fewer than 100 students to over 1,000. It was the largest enrollment in any college of agriculture in the country.

Bailey also developed systems through which information about agriculture and rural life could be

disseminated. He organized a New York State Extension Service in 1906. His reputation as a scientist and prolific writer drew hundreds of letters seeking advice, and he would reply diligently.

In 1913, Congress passed the Smith-Lever Act, providing for the growth of state extension services. State farm bureaus, staffed with county agents, were established in each county. Each College department appointed extension professors to inform the agents of the latest advances in farm technology. The act brought about a consolidation and reorganization of extension services, to assure close cooperation

among federal, state, and local governments.

The accomplishments of Bailey's administration laid the foundation for the outstanding achievements in research, instruction, and extension that can now be credited to the College. Each and every department has made contributions to the improvement of agriculture and to the improvement of life in general. The following is just a minute sampling of some of them.

The first enzyme was discovered by James P. Sumner, a breakthrough that eventually brought him the Nobel Prize. In 1930, Leo Norris found that vitamin B is a vitamin complex, rather than a single vitamin as was previously thought. Large strides have been taken to develop more reliable ways to breed animals through artificial insemination. Methods for freezing foods were pioneered at both Cornell and the Geneva Station. Hardy varieties of fruits, vegetables, and grains bred in Ithaca and Geneva have increased yields while, in many cases, even improving taste. The dairy cow is not the same animal it was 50 years ago because of the College's advances in genetics, feeding practices, and herd management. Milk production per cow has increased threefold on many farms in New York State. Through the Program in International Agriculture, cooperative efforts with developing countries have tackled many problems of

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Liberty Hyde Bailey is dwarfed by the volumes he wrote or helped write during his lifetime.

Editor's note: Much of the historical information in this article was obtained from Education and Agriculture: A History of the New York State College of Agriculture at Cornell University, by University archivist Gould P. Coleman, published by Cornell University in 1963. The help of Dr. Charles E. Palm, former dean of the College of Agriculture and Life Sciences, is also gratefully acknowledged.



Liberty Hyde Bailey mans his plow to turn the first furrow on the Agriculture Quadrangle, breaking ground for the construction of Roberts Hall. This plow, incidentally, will be displayed on campus on May 12.

Deans' Garden to Embellish Campus

The Cornell campus abounds in beauty—from the trees and mosses thriving around Beebe Lake to the awesome view from high above Cayuga's waters. Perhaps most inspiring and appreciated are the exquisite gardens where the plant kingdom springs forth in eloquence.

In tribute to the deans of the College of Agriculture and Life Sciences, another garden will soon be planted in the alcove formed by Warren Hall and the adjacent auditorium.

Since the 1930s, this has been the site of a garden used for teaching. But, by the mid-70s, age had taken its toll, and innovative plans for landscaping and planting were needed. The Cornell Plantations, which maintains 2,500 acres of University land, gave the job to landscape architecture students in the College of Agriculture and Life Sciences.

Marvin I. Adleman, coordinator of the Landscape Architecture Program in the Department of Floriculture and Ornamental Horticulture, assigned the expansion and restoration to eighteen of his students as an exercise in applying the concepts and techniques studied in the classroom. Armed with facts about soil, light, and weather conditions and with information about the plants already growing there, the students worked to design a garden with species that would thrive in this environment.

A winter view of the site of the Deans' Garden.



"The garden area is unique because of its protected northern orientation," explains Adleman. "It is located in a zone between a major building and the natural wooded areas and trails of the Plantations."

Of all the plans submitted, the Plantations chose one by Mike Camann and Jean Kavanagh because of its imaginative and functional design. Both students went on to participate in more extensive studies of the ecology of the site and helped compile a list of new plants to be integrated with those still in the garden.

More than 25 different species of ornamental plants will be growing in the Deans' Garden when the project is completed in two years. Dogwood, boxwood, witchhazel, rhododendron, azalea, and pachysandra will be just a few of the names on the tags in front of each variety.

"A great deal of thought and care has gone into selecting the plants that will go into the Deans' Garden," says Richard M. Lewis, director of the Plantations. "There are several species planted now that cannot be found anywhere else in this area. These have great value for students studying botany and ornamental horticulture. Also, we want new plants that will demonstrate how different plant materials grow."

Funds for building, planting, and sustained maintenance of the Deans' Garden are a gift of John K. Hoff Ph.D. '63 and Carol M. Hoff '62. John Hoff is president of AG International, a firm specializing in agricultural development, municipal landscape construction, and irrigation. Through the generosity of the Hoffs, construction of the Deans' Garden will start within the next few weeks.

In addition to providing a natural laboratory for students, the Deans' Garden, with its many paths and benches, will be a serene atmosphere for study and outdoor receptions. A bronze plaque will honor the deans of the College.

75 Years

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farming and food production.

New York State's Cooperative Extension has expanded through the years to include offices in each of the state's 57 counties, plus the five boroughs of New York City. Now with the use of computers and the mass media, extension keeps farmers abreast of new practices in agriculture and even reaches the state's urban areas. For example, through the Urban Gardening Program, the slums of New York City have blossomed with vegetable plots grown by city dwellers who have learned to plant, harvest, and preserve their own food (ALS News, April 1978).

In 1971 the College changed its name to the New York State College of Agriculture and Life Sciences, to reflect its breadth and diversity. Students can now choose subjects from microbiology to communications, from landscape architecture to international agriculture. The facilities have also grown to accommodate the College's scope. Seventeen main buildings house everything from a herbarium to a weather station.

Enrollment has increased to almost 3,000 undergraduates and 1,000 graduate students. And there are 20,000 living alumni worldwide. The faculty, numbering over 425 at the professional rank, has distinguished itself through teaching, research, and extension activities.

As the New York State College of Agriculture and Life Sciences celebrates its 75th year, its extraordinary history of innovation and success is proudly recalled. It is not just a history of invaluable contributions to agriculture. But, since agriculture is life's sustenance, it is a record of service to humanity.

The College does not only look back. It looks forward to a future of continued progress and excellence.

Noble Elected Cooperative Extension Head

Lucinda A. Noble has been named director of Cooperative Extension for the N.Y.S. College of Agriculture and Life Sciences and N.Y.S. College of Human Ecology at Cornell University. Her predecessor, David L. Call, is now dean of the College of Agriculture and Life Sciences.

Formerly associate director of Cooperative Extension, Noble is a professor of community service education and an associate dean in the College of Human Ecology. She is the first woman to head Cooperative Extension in New York State. As director, she manages the off-campus informal education programs of the two colleges through a network of 57 county extension offices, New York City office, and other regional and statewide projects.

Noble has a B.S. degree in home economics from Cornell, M.S. in extension administration from the University of Wisconsin, and Ph.D. in child development and family relationships from the University of North Carolina.

Born and raised on a farm in Linwood, Livingston County, Noble was a home demonstration agent in Genesee County before joining Cornell in 1956 as instructor in extension and assistant state leader of home demonstration agents. She was appointed associate director of Cooperative Extension in 1974, has served



on many University committees, and is a member of the graduate faculty in the field of education.

Noble is a member of the extension honorary society Epsilon Sigma Phi, the American and New York State Associations of Home Economics, the Adult Education Association of the U.S.A., the State Association for Continuing Education, and the National and State Association of

Extension Home Economists.

A former member of the Federal Extension Service's Urban Task Force, Noble is currently serving on the Division of Agriculture Executive Committee for the National Association of State Universities and Land-Grant Colleges and the Advisory Council on Adult Learning Services of the State Education Department.

Where the Grass is Always Greener— CALs Turfgrass Program

Most people take grass for granted. It is such a common sight that it is easy to forget how much planning and care goes into growing and maintaining the lawns by highways, in parks, and on golf courses, not to mention in your own backyard.

In New York State alone, close to 1.2 million acres are planted in grass, making it one of the largest crops in the state. More than a half-billion dollars is spent each year on maintenance alone. All across the country, billions are spent on seed and sod, lawn mowers and spreaders, fertilizers and pesticides, irrigation equipment, and on the labor to keep lawns lush.

It stands to reason, therefore, that Cornell, as New York's land-grant university, is committed to conducting research aimed at eliminating some of the problems associated with growing grass. The findings are disseminated to benefit the burgeoning turfgrass industry and conscientious home gardeners alike.

A large part of the turfgrass program in the College of Agriculture and Life Sciences is devoted to studying diseases that can turn a rich green lawn into a series of ugly brown splotches. The trouble is finding out which disease is causing the problem and then coming up with ways of controlling it.

Richard W. Smiley, associate professor of plant pathology, is doing just that. In experimental plots statewide, from Old Forge to Oyster Bay, and right here in Ithaca, he is looking for cures to diseases like *Helminthosporium leaf spot*, *dollar spot*, and *Fusarium blight*. He is evaluating grass varieties for resistance, chemicals for effectiveness and safety, and even weather conditions for their influence on the growth of both diseased and healthy grasses.

For instance, Smiley and his associates are testing some 22 different fungicides not only to determine how they affect the particular organisms at which they are aimed, but also to see what they do to the life surrounding the target. "We're trying to find out what these chemicals are doing to everything else besides the disease they are meant for," explains Smiley. "It is important that the non-target effects be recognized, so that management procedures can be refined."

Smiley's main interest, however, is in *Fusarium blight*, a common disease in New York State and perhaps the least well understood. It attacks Kentucky bluegrass, one of



Mill River Golf Club, Oyster Bay, N.Y. Some College turfgrass specialists spend a lot of time here, not so much playing golf as searching for safe and effective ways to keep the greens and fairways free of diseases and harmful insects.

the most desirable species for beauty and durability. *Fusarium blight* is especially ubiquitous in southeastern sections, including Long Island and suburbs to the north of New York City. It is here that the state's turfgrass industry is the largest, with many sod farms as well as the myriad lawns in residential areas.

"After nearly two decades of concentrated research, no one can explain how *Fusaria* cause the damage they do," says Smiley. "We do know, however, that they can knock the devil out of turfgrass, not only in this state, but in a band extending from Washington, D.C., to the West Coast."

It is commonly thought that the *Fusarium* fungus in itself is the cause of *Fusarium blight*, a logical assumption that may have been steering plant pathologists in the wrong direction. But Smiley feels that the condition of the grass, not the fungus, brings on the disease. Since *Fusaria* can be found in almost every lawn, even healthy ones, Smiley surmises that the organisms remain harmless until the grass is weakened to the point that it can resist no longer.

"Since some of the fungicides that

control *Fusarium blight* often have no effect on the *Fusaria* and sometimes even cause more grass to become infected, I think the fungi simply colonize grass that is already dying," Smiley explains. "Is the grass first coming under stress? Has the temperature been too hot? Has it been watered too much? Or has too much weed killer been applied?"

Smiley claims that his hypothesis explains all the known cases of *Fusarium blight*. "Some members of the old school don't think very much of this theory," Smiley remarks. "But I think it presents a challenge for future research, and I hope it will redirect some fruitless efforts to control the disease."

The study of diseases is only one part of the turfgrass program at Cornell. At the Agricultural Experiment Station in Geneva, N.Y., Haruo Tashiro, professor of entomology, is searching for better ways to control the insects that, in and of themselves, cause untold damage to thousands of acres of grass each year. The hungry pests do not discriminate between lawns in commercial cultivation, where they destroy millions of dollars' worth of grass, and the lawns of backyard enthusiasts, where they can easily gobble up a whole weekend's toil.

Like Smiley, Tashiro works with growers, golf course managers, and homeowners throughout the state to help control insect infestations. He is often in Westchester County and western New York, trying to thwart the advance of the western Japanese beetle, the sod webworm, and the bluegrass billbug. He also battles ants and hairy chinch bugs.

The only entomologist in the state who specializes in the insects plaguing turfgrass, Tashiro is always seeking measures that are practical, effective, and safe. "It is impossible to come up with good treatments without first studying the biology of the insect in question," says Tashiro. "If we can determine where it hibernates, both in its immature stages and as an adult, and predict

when and where it will lay its eggs, then we can time the application of insecticides to correspond to the period when a particular insect can most easily be killed."

One of the biggest problems in relying on insecticides for control is that the methods used by the commercial grower often cannot be adopted by inexperienced home gardeners. Some of the substances are so toxic that they are dangerous to apply, and they may damage the environment.

For this reason, Tashiro is working to find grass varieties that are naturally resistant to some insects. Through the Integrated Pest Management principle (ALS News, November 1978), he is hoping to develop a comprehensive system for insect control based on all the available information about the insects and the grasses themselves. Insecticides would be only one valuable tool.

Each year Tashiro and Smiley get together with other turfgrass specialists at Cornell to compile their findings. These are published in a concise pamphlet, *Cornell Recommendations for Turfgrass*, which is distributed to professional managers and Cooperative Extension agents. An invaluable guide to controlling diseases, insects, and weeds, it also provides clear information about different grass species, seed mixtures, soil testing, and fertilization.

A new member of the team, A. Martin Petrovic, assistant professor of turfgrass science, has been appointed to serve as the turfgrass program leader and the College's liaison with industry. There are 18 industry groups in the state that have turfgrass interests, and part of Petrovic's job will be to keep them abreast of the latest theories and techniques.

Petrovic will also evaluate different grass varieties from many parts of the country and even Europe, in hopes of finding hardy and productive strains. His findings are to be released every five years in a computer summary that contains an assessment of each strain's attributes, including heat tolerance, winter hardiness, and weed resistance.

Although much of the information about new varieties and methods is used by industry, Cooperative Extension applies a lot of it to questions about managing home lawns. "Part of our job is to equip extension agents with the knowledge to identify and solve the problems associated with home lawns," says Robert E. Kozlowski, coordinator of the home and grounds extension program. "They are ready to advise anyone on how to plant and maintain a lawn."

Kozlowski makes sure that news of turfgrass research reaches agents throughout the state and, ultimately, individual home gardeners. He hosts training sessions, keeps an up-to-date resource library for agents, and has developed slide shows and films on lawn care and management that are shown to diverse audiences.

"We have some of the finest minds in plant pathology, entomology, and horticulture all working to find better ways to grow turfgrass," Kozlowski says. "Through Cornell's connection with Cooperative Extension, those minds can be tapped to benefit one of the state's largest industries, as well as individuals just interested in having an attractive lawn."

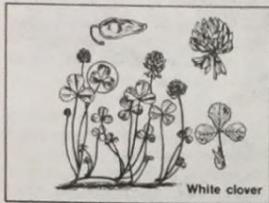


This is what *Fusarium blight* can do to a home lawn.

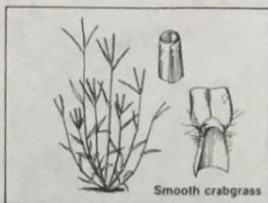
Controlling Lawn Weeds

by ARTHUR BING,

Professor of Ornamental Horticulture



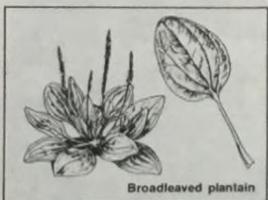
White clover



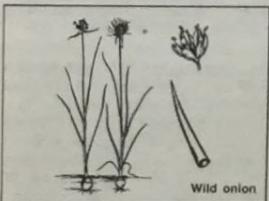
Smooth crabgrass



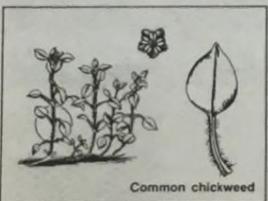
Common dandelion



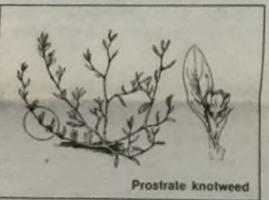
Broadleaved plantain



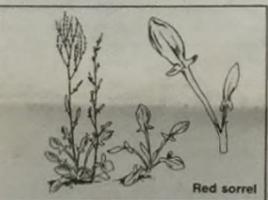
Wild onion



Common chickweed



Prostrate knotweed



Red sorrel

Weeds are undesirable plants that detract from the appearance of a lawn. The degree to which weeds are undesirable, though, depends upon what satisfies the homeowner. White clover, a weed to one person, may be an attractive plant to another. At any rate, weeds are aggressive competitors and can take over a lawn if proper measures are not taken to keep them in bounds.

The first step in developing a weed-free (or at least relatively weed-free) lawn is to grow healthy, vigorous turf. Weak grass is easily invaded by weeds. Select grass varieties that do well under the soil, climatic, shade, and cultural conditions that prevail in your specific lawn area. Improve soil structure by incorporating organic matter, and lower the acidity with limestone where necessary. Apply adequate fertilizer. Water less frequently, but apply enough to soak down through the root zone. Keep the turf strong by mowing often to a height of one-and-a-half or two inches. Control insects and diseases that leave open areas, which can readily be taken over by weeds.

Although weeds can be a problem in a vigorous lawn, the pressure is not as great as it is in poor turf. In small lawns with few weeds, hand pulling is practical and good physical exercise. Where weeds are more numerous or difficult to remove, and in larger lawns, chemicals are more efficient.

Crabgrass is one of our more plentiful lawn weeds. It germinates in the spring when the soil warms up. By applying herbicides such as Dacthal, Betasan, Balan, Tupersan, or Ronstar G at the time forsythia is in bloom, germination of crabgrass is prevented. Follow the directions on the container for rates, precautions, and methods of application. With all the chemicals except Tupersan, an effect left in the soil for up to four months will prevent reseeding of desirable grasses.

Dandelions and plantains are broadleaved weeds that grow for many seasons and are called peren-

nials. Dandelion has a deep tap root, any part of which can grow into a new plant. It will regrow unless the entire root is removed. This type of weed is best controlled by spraying with a growth regulator that enters the leaf and moves through the entire plant, thus killing it. The well known 2,4-D, sprayed on the foliage of dandelion, plantain, and many other nongrassy weeds, will give excellent control. Also, wild onions should be sprayed for several consecutive years with 2,4-D, in the spring just before mowing starts.

Compounds like 2,4-D must be kept away from the foliage of desirable plants. Use the amine forms or low volatile ester formulations to avoid injury from the fumes. To reduce injury from drift, use a larger nozzle opening and low pressures to produce a coarser spray. These materials are more safely applied in early spring or late fall when fewer leaves of desirable plants are exposed. Summer treatments could also cause damage to good grasses.

Clover and chickweed are resistant to 2,4-D, so they should be sprayed with a chickweed-clover control formulation containing silvex or dicamba (Banvel D). Spray chickweed in the spring, before it flowers, to prevent a new crop of seed. Prostrate knotweed, red sorrel (sour grass), and some other 2,4-D-resistant weeds are best controlled with sprays of dicamba. This herbicide is long-lasting and can leach into the soil, where it is picked up by the roots. It may cause serious injury to the roots of trees or shrubs. Read the restrictions on the label.

Combinations of 2,4-D, silvex, dicamba, and others are sold for controlling a wide variety of weeds. If a weed is not deterred by several repeat treatments of these chemicals, have it identified by a botanist, county extension agent, or by the Bailey Hortorium at Cornell to find out if there is a suitable method of control.

College Researchers Achieve Breakthrough in Rose Production

Cornell University scientists have found ways to double and, in some cases, triple the production of greenhouse roses during the winter.

The dramatic jump in flower yield was made possible by growing roses under high-intensity discharge (HID) lamps, similar to those used widely as street lights.

In addition, the greenhouse atmosphere is enriched with a healthy dose of carbon dioxide to speed up the photosynthetic process of the rose plant. Carbon dioxide is one of the vital ingredients all plants use for growth and development.

The work is expected to make a major contribution to the rose industry in the Northeast where cloudy weather often impedes rose production in winter. It also will make more roses available to consumers.

Robert W. Langhans, professor of floriculture, headed a team of researchers in developing the method.

"Our work will enable the rose industry in this part of the country to compete with growers in other areas, especially California. It also will help keep rose prices from escalating," he says.

In winter, rose plants without supplemental light from HID lamps

produce one flower per plant every two weeks, whereas those receiving high-intensity light send out one flower per plant every week from mid-October through mid-April, Langhans notes.

The researchers have tested 12 rose varieties, and every one produced more flowers, averaging 26 roses as compared with 13 from plants receiving no extra light. The varieties tested include such popular varieties as Forever Yours, Bridesmaid, and Golden Wave.

A variety named Mary Devor was exceptionally productive, yielding 45 roses, compared with a normal 15, thus tripling its yield, Langhans reports.

"With most varieties, we can at least double the production during the winter," he says.

In addition to natural light, the rose plants receive supplemental light from 6 A.M. through midnight from a high-intensity discharge lamp called a high-pressure sodium light.

Besides this artificial light, the level of carbon dioxide in the greenhouse atmosphere is boosted to 1000 parts per million to enhance plant growth. The natural atmosphere contains about 300 ppm of carbon dioxide.

Additional light and carbon dioxide accelerate the food-manufacturing process of the plant, thus helping to increase flower yield, Langhans explains.

Rose growers in Upstate New York and in other areas of the Northeast are already using the Cornell method.

And the study is continuing, focusing on the effects of high-intensity lights on the longevity of the rose plant. Indications are that plants may stay in production longer than the normal life span of four years.

"If the life of the plant could be extended one or two more years, a substantial reduction in the cost of replacing the plants could be achieved," Langhans says.

Building upon the success with roses, Langhans and his team are now testing a similar method to increase the production of chrysanthemums. Along with roses, mums are among the most popular year-round commercial flower crops grown in New York State.

Grow Your Own Flowers

The answer to raising an outstanding flower garden is to start with strong, healthy plants.

In a bulletin, "Flowers from Seed," written by Professor Ernest F. Schaufler, professor of floriculture at the N.Y. State College of Agriculture and Life Sciences at Cornell University, the secrets of producing sturdy plants indoors or outdoors are revealed.

The bulletin outlines the methods, materials, and timing schedules to be followed for maximum success. Information is included on sowing seed directly in the garden, in seed beds outdoors, in cold frames and hotbeds, and on sowing seed indoors. Also, a section is included on starting seeds that do not germinate easily.

The bulletin is available for 35 cents from county Cooperative Extension offices or from Mailing Room A, Building 7, Research Park, Ithaca, N.Y. 14850.

BTI to be Dedicated

The new building that houses the Boyce Thompson Institute for Plant Research will be dedicated on April 24, 1979. Construction of the facility was completed this past summer, making it the latest addition to the Cornell campus.

The Institute was originally located in Yonkers, N.Y., but has moved to Ithaca to accommodate its expanding research needs. The Institute is internationally known for its work in such fields as the regulation of plant growth, the chemical and biological control of pests, and the study of the effects of air pollution on plants.

The dedication ceremonies, to be held in the James Law Auditorium, will be attended by distinguished members of the University administration and faculty, as well as dignitaries from Washington, D.C., and New York State. The ceremonies will begin at 10:00 A.M. Guided tours of the new building will be conducted from 2:00 to 5:00.

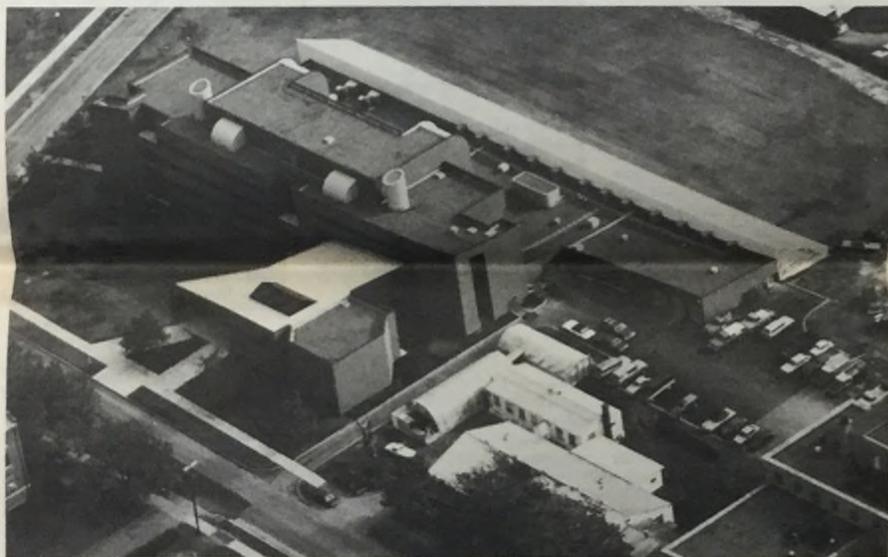
On April 25 and 26 a seminar entitled "Linking Basic Research to Crop Improvement in Less Developed Countries" will be held in the new building. Speakers from the College of Agriculture and Life Sciences and other agricultural institutions will participate in discussions on such topics as biological nitrogen fixation, crop improvement, and the biological control of insects.

A banquet featuring keynote speaker Dr. Eloise Clark of the National Science Foundation will be held on the 25th at 7:00 P.M.

The dedication ceremonies and the symposium are open to the public. Advance reservations are needed for the banquet.

For more information and reservations contact:

Richard C. Staples
Boyce Thompson Institute for
Plant Research
Tower Road
Ithaca, New York 14853
(607) 257-2030



L. L. Pechuman — Ward of the Flies

Of all the things that come out in spring, flies are one of the least wanted. Imagine, after a cold winter, you are strolling through the woods, savoring the signs of new life, when the needle-like jaws of one of these thirsty beings snaps you out of your reverie. The most intimidating of all are the horse flies and deer flies, especially when they conspire in relentless swarms.

These bugs may seem worthless to you, but L. L. Pechuman loves the critters, even the ones that grow as big as your thumb. He has amassed a collection of more than 40,000 horse fly and deer fly specimens. And he is now making plans to give the whole thing to the College of Agriculture and Life Sciences.

Professor L. L. Pechuman is an entomologist, curator of the 4,000,000-specimen University Insect Collections, a leading authority on trilliums, and an adopted member of the Tonawanda Band of the Seneca Indians. His life's work, however, has been to find and identify horse flies and deer flies.

These insects, members of the family Tabanidae, are ruthless pests to both man and beast. They don't have many natural predators. Insecticides and repellents are of little avail.

"The only way we're going to find a weak spot in these flies is to study each and every species—their habits and the conditions under which they live," says Pechuman. "This is something I've been trying to do, because besides being annoying to us, they do a lot of damage to livestock."

More than 3,000 horse fly and deer fly species have been described by entomologists worldwide. In New York State, they rank second only to black flies in inflicting injury on domestic and wild animals. Milk production in dairy herds falls off severely when the bugs launch their hungry attacks.

"I have seen herds of dairy cattle in a state bordering on panic due to the presence of hundreds of horse flies," Pechuman remarks. "It's not unusual to see cattle streaming with blood."

Horse flies are named for their appetite for horses. Deer flies, however, are no less voracious. Both are responsible for transmitting equine infectious anemia, a fatal disease that is carried as the parasites prance from horse to horse.

Incidentally, a reliable test for the anemia, developed by Leroy Coggins of the N.Y.S. Veterinary College at Cornell, has virtually eliminated the threat of this disease.

The flies can also transmit some diseases to humans. Mostly, though, they are an intrepid nuisance, pestering fishermen, lumbermen, roadworkers, and almost anyone who spends time in wooded and swampy areas.

Pechuman works seven days a week to accurately identify all the specimens he receives or catches. "It takes a lot of experience to know where to look," he says.

In 1969 Pechuman was seeking a species of horse fly caught only once before in the Gila Wilderness near Silver City, New Mexico. It was first identified in 1897 by entomologist C.H.T. Townsend, when the mule he was riding was bitten. No one had been able to find one since.

Pechuman went to the Gila Wilderness and insisted on riding a mule about the same time of year that Townsend did more than 70 years earlier. Pechuman was in about the same place, too, when his mule reared in pain. He has subsequently identified many more of this species from the same spot.

Pechuman joined the Cornell faculty in 1962, after working in industry for almost 25 years. Cornell Ph.D. in hand, he had started out with the Ortho Agricultural Chemical Division of Standard Oil. Rising through the ranks to district manager for most of the Northeast, he was promoted to senior research scientist.

"I woke up one day and realized I was tired of it," he says, taking long puffs at his cigar. "I've never regretted the move, either, even though I took a huge salary cut."

Pechuman now has some 20 insect species named after him, including the aphid *Macrosiphum pechumani* and the wasp *Tachysphex pechumani*, reflecting the respect that other entomologists have for his work. "If I send someone a specimen or some information that is particularly helpful for his work in identifying a new species, that scientist may give me credit out of gratitude," he explains. "I even have a few parasites to my name."

At Cornell, Pechuman directs one of the largest university insect collections in the world. Rows and



Pechuman examines a horsefly that he caught near Ithaca. The Cornell Drawer to which he is about to return it contains over 100 horsefly specimens of the same species.

rows of cabinets fill the entire fourth floor of Comstock Hall, where students, professors, and entomologists from all over the world come to identify and classify specimens.

This collection was started in 1871 by John Henry Comstock, who founded the first department of entomology in the country at Cornell. It was Comstock who invented the Cornell drawer, now popular worldwide for storing insect specimens because it contains moveable trays for each individual species.

As a reference source, the collection is outstanding because all families of insects are well represented. Aside from attracting schol-

ars from all over the world, its versatility reaches to extension specialists who identify insects for farmers and even household gardeners through Cornell's Insect Pests and Plant Disease Diagnostic Laboratory.

Insects sent in through extension are screened by the laboratory, and unusual species are identified with the use of the collection. For example, when a carload of lumber sent to western New York was found infested with beetles, it was necessary to use the collection and research an entire genus before the bug's origin was determined. Without access to a complete source, it would have been impossible to find the lumber supplier.

"Entomologists everywhere are welcome to use the facilities, which continue to grow with unusual specimens," says Pechuman. "There's only one problem. They rarely tell you when they're coming."

W. I. Myers Professorship Nears Full Endowment



The W. I. Myers Professorship of Agricultural Finance is on its way to becoming the first fully endowed chair in the College of Agriculture and Life Sciences. With gifts totaling more than \$710,000, and the recent addition of a challenge grant, the \$750,000 necessary for complete funding is well within reach.

The Chair is a memorial to William Irving Myers, former dean of the College of Agriculture and Life Sciences. Myers was a professor of farm finance at Cornell for 23 years before becoming dean, a position he

This portrait of W. I. Myers hangs in Mann Library.

held until 1959.

He was also the principal architect of the national farm credit bank system, which provided the framework for recovery from the Great Depression. It remains the foundation on which institutions of agricultural finance are built today.

Myers was appointed second governor of the Farm Credit Administration by President Franklin D. Roosevelt. He advised Presidents Truman and Eisenhower in the field of agricultural finance, as well as New York State governors, the State Legislature, and numerous commissions, committees, foundations, and businesses.

Endowment for the Chair has come from foundations, financial institutions, and other enterprises concerned with agriculture. Faculty, alumni, and friends have also participated generously in this tribute.

Holder of the W. I. Myers Professorship will be able to work unhindered by financial pressures. The Chair's occupants will also attract outstanding junior faculty and students.

Robert S. Smith, professor of farm finance, has been named the first W. I. Myers Professor. He has enjoyed a distinguished career as a consultant and teacher for more than 35 years (ALS News, April 1978).

Recycled Chicken Manure Yields High Protein Feed

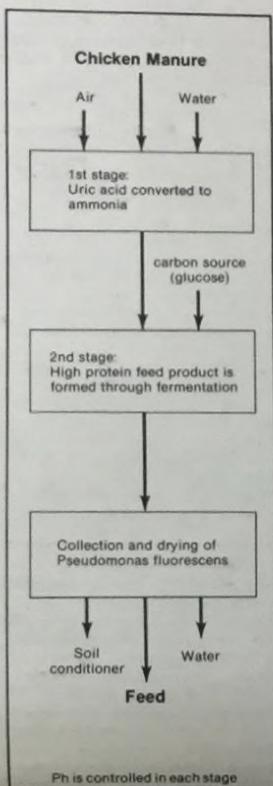
The chicken is one of the most generous of all animals. Its eggs supply us with a near-perfect source of protein. Its succulent meat is highly nutritious and low in fat. Chicken products give us an almost endless variety of appealing and inexpensive meals.

Chickens also provide abundant amounts of nitrogen-rich fertilizer to renourish the soil from which they receive their sustenance. Their generosity in this case, however, is often overwhelming.

If the manure is spread too thickly, the excess can be borne by wind and rain to lakes, streams, and reservoirs, contaminating water supplies and inhibiting recreation. This is not only injurious to the environment, but can spell financial ruin for the farmer, who, through an array of legal suits, is sometimes deemed responsible for the pollution. For the many poultry producers with operations near urban areas, where land for safe disposal is harder to come by, it means paying to truck the waste away or, possibly, spending some long days in court.

Researchers at Cornell may have found a way out of this dilemma. By converting the manure to a protein-rich feedstuff, they have found a solution that is at once economically feasible and ecologically sound. And there is an added dividend. The process also eliminates the smell.

"Our system solves the problems of disposal while turning manure into a nutritious feed," says Richard E. Austic, associate professor of animal nutrition. "It has the potential to satisfy both the farmer and the environmentalist." Austic, along with Michael L. Shuler of Cornell's School of Chemical Engineering and microbiologist Harry W. Seeley, Jr., have worked to perfect this efficient system.



Their product contains as much as 40 percent protein, making it desirable as a supplement to daily rations. It is high in lysine and methionine, amino acids necessary for growth and survival, which are

found in much lower quantities in common feeds.

"This product could conceivably replace high-protein supplements that the farmer usually has to buy, such as soybean meal, fish meal, and meat and bone meal," Austic says.

In addition to providing protein value, the recycled manure is especially useful as a source of energy. Each gram contains 3.61 Calories. Even soybean meal, although higher in protein, has only 2.5 Calories per gram.

This fact makes the recycled supplement more attractive economically, because farmers may be able to reduce the amount of grains fed in each day's ration. Since the feed is derived from an overabundant waste product, the only cost is related to processing.

The system itself is not all that complex, since chicken manure is rich in nitrogen, a component of protein. Nitrogen cannot be used by the animals, however, until the processing converts it back to protein.

The manure is first slurried with water and poured into a vat where its uric acid content is broken down to form ammonia. The ammonia is then piped into a second vat, and a source of carbon, such as glucose, is added. The carbon and the ammonia ferment to yield virtually pure cultures of *Pseudomonas fluorescens*, a single-cell protein.

This whole procedure takes only three or four hours. But Austic and his team are now trying to streamline it further by eliminating the first vat stage and introducing a specially designed microbe that can break down uric acid when glucose is in the same container.

There are some by-products that accumulate during recycling, regardless of which system is used. The

residue, composed of matter the chickens were unable to digest, can be spread as a non-toxic and odorless soil conditioner. The water can be remixed with more unprocessed manure to begin the fermentation anew.

The feed is then oven-dried, ground into morsels, and included in the daily ration. Through feeding trials, Austic has found that more than 20 percent of a chick's diet can be composed of the recycled manure without causing adverse effects on growth and feed consumption.

Austic is quick to admit that, however promising this process may seem, there is still a great deal of work to be done before it can be put into practice on a large scale. For one thing, although farmers will not have to buy protein supplements and worry about manure disposal, the investment in equipment and maintenance may be prohibitive for producers with fewer than 50,000 chickens. Also, the sophisticated design will require considerable technical prowess.

Despite these considerations, Austic remains optimistic about the system's feasibility. "About one-half of the poultry operations in the country are of sufficient size to make manure recycling cost-effective," he says. "If information could come from a central source like Cooperative Extension, with agents regularly offering advice about maintenance and general management, the necessary know-how would be readily available through an established network."

The wide-scale use of chicken manure as a nutritious feed supplement may be a perfect answer to one of the most difficult problems facing the poultry industry. The same technical principles may also be applied to other livestock wastes, making for an efficient solution to a growing problem. The farmer will become much less susceptible to fluctuations in feed prices. Moreover, the environment will be cleansed of yet another source of contamination.

Bugs for Poets

If you wanted to study insects, a Cornell course catalog would be a good place to see how broad a subject entomology really is. You would find courses on the biology, physiology, and chemistry of the insect world. You could also find out about how to kill these creatures when they start eating your fruits, vegetables, and grains. But among the many pertinent courses listed in the Department of Entomology, there is one with an especially striking title—"Insects and Man."

Scores of students from all over the University take *Entomology 200* to learn why insects, often disparagingly referred to as bugs and grubs, are valuable to mankind.

Twice a week Edgar M. Raffensperger, professor of economic entomology, brings poems, paintings, and music to his lectures to demonstrate the insect's importance to cultures throughout the world. "Most everybody thinks that insects are distasteful and mysterious and that they are to be destroyed," Raffensperger says. "Well, I want to change people's attitudes. Insects were, and still are, essential to life on this planet."

Take the louse, for example. Raffensperger claims that humans may owe a great debt to lice, because they could be responsible for the

development of our opposable thumbs. Thousands of years ago our ancestors would remove lice from each other's heads, an act of hygiene that became a social custom. The agility of the thumb helped to refine finger movements to the point that something as small as a louse could be picked out of the hair. "They wouldn't have needed that dexterity just to work with tools," Raffensperger observes. "And since pulling lice led to social touching, lice may just have been essential to the evolution of man as a social animal."

Students taking "Insects and Man" do learn how insects affect agriculture, as the propagators of plants and manufacturers of food and as the ravagers of crops. They study how insects have influenced world religions, military campaigns, and art. They learn about the ingenious construction of their nests, which has left its mark on some of man's own architecture.

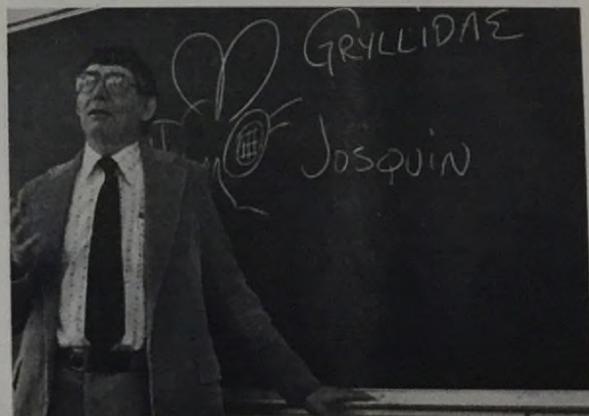
Raffensperger also lectures on insects' long evolution and remarkable genetic success. Their persistent adaptability is attributable, in part, to the fact that all insects have six legs, so that they are actually walking on two tripods. "For humans, walking is the process of catching yourself before you fall down," Raffensperger exclaims. "Insects have a solid and balanced stance, even when they're running. Furthermore, birds had to give up two legs when they got wings. Flying insects didn't."

Even medicine has depended on insects. Before antibiotics became the remedy for infection, maggots were widely used to clean wounds. The hungry grubs ate dead flesh and secreted a chemical that slowed down the bacterial advance.

As pests, maggots are infamous, but as healers they are unrenowned. So it is with most insects. Their contribution to life and civilization is obscured by their often unfounded reputation as a curse to humanity. Raffensperger strives to get this point across to his students.

And, by all indications, he is

Raffensperger in the act.



Learning About Agriculture in Albany

by JUDITH DAVID,
Communication Arts '79

Many students come to the College of Agriculture and Life Sciences with a less-than-accurate idea of what their new school is like. It doesn't usually take long for them to see that the "Cow College" is more than just teaching better farming techniques and that the "farmers" are also into research and working with state agencies and lawmakers to arrive at sound, workable legislation for everyone involved with agriculture in New York. For two agricultural economics students, this revelation came a bit sooner, when they had the chance last spring to work first-hand with the legislators and staff who make the state's agricultural and environmental policy.

Larry Pesesky '78 and Bill Karol '79 were just two of 20 Cornell students and 170 other students from around the state who participated in the N.Y.S. Legislative Intern Program from January to May of last year. Assigned to either specific

legislators or committees in the State Assembly or Senate, students had the chance to research and draft legislation, respond to constituent requests, follow legislation as it traveled through the legislative process, and, in general, get a better understanding of how policy is made.

Pesesky was assigned to the Assembly Committee on Agriculture. According to Cary Kessler, Pesesky's supervisor, Pesesky's presence was "invaluable" because of his ability to help out in most any subject the committee dealt with. "Larry provided a missing link in the office because of his association with the Agriculture College and his knowledge of farming economics," Kessler commented.

While working for the Agriculture Committee, Pesesky took charge of all its legislative memoranda from start to finish. He researched bills, learned of support or opposition to the measures, and dug up their history and fiscal implications—a task "enough in itself for a whole session," says Kessler, who is legis-

lative assistant to former Agriculture Committee Chairman I. W. Bianchi. In addition, Pesesky looked into the Agricultural Bargaining Act, state milk industry legislation, and agricultural district legislation. The latter was a topic he had studied at Cornell.

One of Pesesky's more interesting tasks was to gather background information on the "Dog Bill," a piece of legislation labeled by the *New York Times* as "one of the most controversial issues of the 1978 legislative session." The bill touched on a number of areas for establishing identification and licensing of dogs and evoked much emotion. According to Pesesky, legislators were inundated with phone calls and letters, and many lawmakers said they thought only the death penalty and abortion were hotter issues.

When he wasn't researching, Pesesky found time to stand in for Bianchi, representing him in meetings of the Task Force on Food, Farm, and Nutrition Policy in Albany and at Cornell and in meetings with legislators and repre-

sentatives of the Departments of Environmental Conservation and of Agriculture and Markets.

Just down the hall, Bill Karol was having much the same kind of experience, but in a different subject area. Assigned to the Committee on Environmental Conservation, he conducted research on different pieces of environmental legislation, particularly as they applied to agriculture. Having some agricultural background from his classes and knowing a little about pesticides, Karol assumed responsibility for looking through all the environmental conservation departmental bills and weeding out all those of minor importance to agricultural agencies. He compiled all the important bills into one voluminous piece of legislation and followed its progress as it passed through committee and floor debate and, finally, into law.

Karol also worked on waste water legislation and was instrumental in arranging meetings among his committee, the Department of Environmental Conservation, the Farm Bureau, and Cornell, so they could work together on a number of different issues.

Like Pesesky, Karol also had a special project. In keeping with his conservation assignment, he arranged a drive to recycle waste paper for all legislative offices. His other duties included serving as clerk for the Subcommittee on Land Use and representing G. Oliver Koppell, former chairman of the Assembly Committee on Environmental Conservation, at a drug abuse conference and a seminar on the Legislative Intern Program.

Both students felt they had had positive experiences, as did their supervisors and coworkers, who agreed that the initiative and interest of the two young men brought them more and more challenging assignments. Pesesky, a native of Horseheads, N.Y., grew up with some knowledge of agriculture. But to Karol, who hails from outside Boston, it was a whole new scene.

"I'm basically a city boy and didn't have much insight into agriculture," he remarked. "I got a little taste when I first got to Cornell, but from my work in the Legislature, I learned much more about agriculture and land. I also learned that everything has to come from somewhere, and things like milk don't just come from the supermarket."

After having been in Albany as legislative interns, Pesesky and Karol have the benefit of knowing more not only about politics and the legislative process, but also about the large and varied role the College of Agriculture and Life Sciences plays in New York State. As one of Karol's coworkers said, "Cornell goes out of its way to make itself available to the Legislature for consultation and information. They seem to have a noted person in every field of agriculture and land use, and these people are willing to help us however they can."

To Larry Pesesky and Bill Karol, and the people they worked with, the word agriculture has taken on a whole new meaning, and all in one semester.

Editor's note: In the spring of last year Judith David went to Albany herself to participate in the Legislative Intern Program. She worked closely with N.Y.S. Assemblyman Angelo Orazio in preparing energy conservation legislation.

Time For A Change?

by ROBERT R. HOPKINS, Director
CAL'S Office of Career Planning and Placement

Thinking about changing jobs or careers?

Every year, millions of Americans change jobs. Many change for a new challenge, wider horizons, or just more money. Others want a fresh start, a return to the labor market after bringing up a family, serving in the military, or finishing school. Some are picking up because funding for their positions was cut or because of a personality clash. Whatever the reason, if you are an Agriculture and Life Sciences alum, "You have a friend at Cornell."

Located in Room 16 Roberts Hall, the College's Career Planning and Placement Office looks mostly like a library. A large reading table and shelves of career planning resource books, job hunting guides, and listings of available jobs line two sides of the small but friendly facility. There are also displays of specialized periodicals, hints on how to write an effective resume, bulletins of federal and state employment information, as well as other brochures of interest to job seekers. If you cannot visit the office here, some of these data and

related services are available by mail.

Although our primary concern is the needs of present students, the Alumni Placement Service, created in 1978, also assists career advancement efforts of College alumni. This service consists of the "Job Opportunity Listing," "Candidates Available Listing," and a referral service. These are aimed at helping alumni and employers bridge the information gap that may critically handicap the job seeker and deprive the employer of a good choice of qualified applicants.

The Alumni Placement Service is not an employment agency; neither alumni nor students should assume that "the College will get me a job." All the resources we offer require intelligent and diligent personal effort to result in a successful job search.

The "Job Opportunity Listing" is the most widely used alumni service. This monthly publication offers a review of the many available positions received by our office. Restricted to positions consistent with the curricula and specializations of

the College, it usually contains several hundred entries for beginning, mid-level, and advanced positions. Agribusiness, government, and nonprofit organizations, as well as research and teaching, are represented. A nominal fee of \$7 is required for a one-year subscription.

Alumni who wish to have their availability made known to a number of employers at one time may choose to register for the "Candidates Available Listing." Published quarterly, it consists of brief resume summaries, grouped by educational program area. The applicant writes his or her own summary, which is presented to prospective employers in an anonymous listing.

Each listing without screening is sent to more than 400 employers, who can obtain detailed resumes from the Placement Office so that they can contact the job seeker. There is no charge for this service.

The referral service provides a screening system. Resumes are placed on file, and as special requests are received from recruiters, the file is reviewed for qualified candidates. Alumni must specifically register for this service and authorize the office to refer their resumes. Resumes are not sent to present or past employers. Although at present this service is a matter of manually comparing resumes and jobs, there are plans to introduce a computerized matching system.

The Career Planning and Placement Office will be happy to review resumes, job strategies, and resources available for alumni. So whether you are a serious job hunter or just cautiously testing the water, we can help you. To obtain more information or to register with the Alumni Placement Service, write us at 16 Roberts Hall, or call (607) 256-2215.

Editor's note: Bob Hopkins is always in need of more information about available positions. If you know of any job related to agriculture or the life sciences that is now open or that will open shortly, please contact him. Summer job openings are also welcome.

If you or your employer recruit on a college campus, consider recruiting at CALS. To arrange a visit or schedule interviews, contact Hopkins at the above address.



The busy Office of Career Planning and Placement. Hopkins coaches a student preparing for a job interview while other students research career opportunities.

Walleyes May Return to N. Y. S. Waters

The anglers of New York State sorely miss the walleye. Until about 15 years ago, this member of the perch family, robust in both size and flavor, thrived in Lake Erie. But with the virtual death of the lake, fishing lines now seldom spring to meet the challenge of the walleye's bite.

Other states bordering the Great Lakes attract avid walleye fans from all over the country. Minnesota, with an abundance of these great fish, sells more fishing licenses to visitors than any other state. Besides reaching weights of up to 25 pounds, walleyes are great eating, boasting mild and flakey meat without a fishy taste or odor. They are a boon to tourism.

Conservationists are also fond of the walleye because it has a voracious appetite for some fish that are too prolific, such as minnows and yellow perch.

With New York State sportsmen, commercial fishermen, and ecologists all eager for the return of the walleye, researchers in the College of Agriculture and Life Sciences are striving to breed the fish in captivity and then restock the lakes. At Cornell, this project is directed by John G. Nickum of the New York State Cooperative Fishery Research Unit, under the auspices of the U.S. Department of the Interior.

"The intensive culture of walleyes is an incomplete science," says Nickum, who has a courtesy appointment in the Department of Natural Resources. "No one yet has succeeded in rearing enough of them entirely from egg to adult under intensive hatchery conditions. And it would take up too much pond area to breed them on a large scale under natural conditions."

Young walleyes are particularly finicky, demanding to be served under just the right conditions and only accepting food that satisfies their discriminating palates. When bred in troughs with a white background, the newly hatched fish are so attracted to the light that they reject all forms of live and premixed feeds. When reared in dark troughs, they feed very poorly, if at all.

"Unless an optimum level of light is reached, young walleyes will suffer mass starvation," says Nickum. "The light's intensity seems to be less important than uniformity, as long as the fry can see what they're eating."

Temperature is another factor that makes controlled breeding of walleyes difficult. Under natural conditions, the fry feed best when the water is around 70° Fahrenheit. In the hatchery, this temperature must be maintained for up to 18 months, until the fish are of marketable size.

The cost of energy to heat the water threatens to make large-scale breeding prohibitively expensive. But Nickum is considering the possibility of reusing the warm water discharged by electric power plants. "We can only use water from plants powered by fossil fuels," Nickum remarks. "This would mean, of course, that hatcheries for breeding walleyes would have to be located near such facilities."

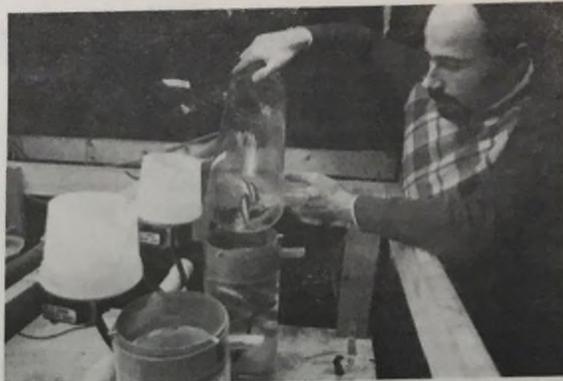
Like many fish, walleyes are cannibalistic. If they are not fed diets that are both good-tasting and nutritious, most of a young school can destroy itself. So far, one of the most promising ways to prevent this has been to gradually change their ration from live to formulated feed. However, the correct transition rate

has not yet been pinned down.

A good part of Nickum's search for the right feed and environment for intensive walleye culture is supported by the Sea Grant Program, in which Cornell University and the State University of New York have formed a partnership for research related to the state's waterways. The U.S. Department of Commerce has designated this consortium one of the 12 Sea Grant Colleges in the country.

More than 15 million New Yorkers live in counties bordering either the Great Lakes or the Atlantic, and the Sea Grant Program is committed to sharing its research findings with the people through its nine extension offices located throughout the state. The extension program's services include seeking ways to protect coastal areas, finding more efficient methods of processing seafood, and developing plans to increase tourism and boost commercial and sport fishing.

Once Nickum and his team of



researchers can breed walleyes reliably in captivity, a now dormant stimulus to commerce in New York will be awakened. The prospects are good. "Walleye culturists now speak in terms of 'when we succeed' rather than 'if we succeed,'" Nickum says. "Given the current state of the art, the management need, and the potential commercial market, I believe that intensive walleye culture will come of age within the next ten years."

Sea Grant researcher Luciano Corazza adds walleye fingerlings to a verticle rearing unit. Water is pumped from the bottom, forcing the feed to remain suspended. Nickum has found that this "mini silo" arrangement improves growth and survival rates. The unit is experimental. A production model would be 10 to 30 feet in diameter and up to 20 feet deep.

Today's Students—Tomorrow's Alums

by GLENN O. MACMILLAN
Assistant to the Dean

An old cliché goes, "Today's youth are tomorrow's leaders." The College of Agriculture and Life Sciences Fund and Alumni Association understand this and are looking for ways to involve students in their affairs. The funds raised, the recruiting, and the programs sponsored by both organizations in 1985, 1990, and 2000 will come from today's undergraduate and graduate students.

Students are already involved; they are a voice being heard. Mary Maxon '79 and Howard Judelson '81 are student members of the Board of Directors of the Alumni Association. Carole Zimmerman '79 and Brad Grainger '80 are members of the Fund Advisory Committee. Student members often become active alumni members. Anita Decker Wright '75, now vice-president of the Alumni Association, was a student member as an undergraduate. Pam Murtaugh '73 is a former member of the Alumni Association and presently serves on the Fund Advisory Committee. She, too, was a student member.

Several excellent on-campus activities sponsored by the Alumni Association can achieve their goals only with active student involvement. Members of Ag Pac and other

student organizations assist with the College's Open House each fall. Planning programs, arranging for accommodations, conducting tours, and explaining student life are all part of the involvement activities. Students' assistance last fall hosting high school visitors made possible a program that could not have been conducted by staff and alumni.

The College has for several years accepted an increasing number of student transfers from two-year colleges. Many of them decide to come to Cornell after attending a "transfer open house" held each spring. Our students are not only involved in the execution of this event, but they plan most of the activities. They easily relate to the interests and concerns of prospective students.

Many students are reluctant to assist in fund raising. A phonathon, however, provides an opportunity to help without a big time commitment and without that dreaded face-to-face contact. This year, two phonathons were scheduled, and the "aggies" took on the "artsies". The money they raised was only one part of the program's worth. Group participation and the opportunity to assess the needs of the College added to the value of the program. There is room for more

student involvement, and it is hoped that future phonathons will draw a larger number of students.

Students can also help in the Admissions, Placement, and Development Offices in the College, which operate in crowded quarters with too much work and too little staff. Their assistance often leads to a concern and a desire to be part of the planning and the execution of on-campus programs.

There have been requests by students for programs that can be conducted on-campus by and for students, and we expect that their efforts will be channeled into establishing such activities. An active, involved student body can help recruitment, fund raising, and placement in the '80s and '90s keep pace with all our needs.

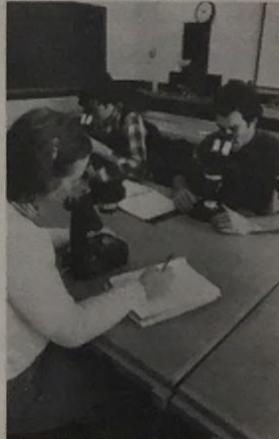
Editor's note: Glenn MacMillan has recently been appointed Assistant to the Dean and Development Officer for the College. He comes to his new position with years of experience in both agriculture and fund raising. He was raised on a farm in Schoharie County, New York. After graduating from the College in 1954, he spent 20 years with New York State Cooperative Extension's 4-H Program and eventually rose to become executive director of the 4-H Foundation. MacMillan succeeds Brad Carruth.



Contrast

Left: The first microscope ever owned by Cornell. John Stanton Gould presented it to John Henry Comstock in 1873 for the newly established Department of Entomology.

Right: Pomology students peer into three new microscopes given to the Department of Pomology. They are a gift of Robert R. Brown '77 and his father Ralph R. Brown '53 in the name of Orchard Dale Fruit Farms, Waterport, N. Y.



Cornell's International Nutrition Program and Its Philippine Project

by MICHAEL C. LATHAM,
Professor of International Nutrition and
Director, Program in International Nutrition

The Program in International Nutrition in the Division of Nutritional Sciences serves as a focal point for training, research, and service in the important area of nutrition and food problems of low-income countries. Founded in 1963, it is generally recognized as the leading program of its kind in the United States.

Today, there are nine core faculty members in the program and some 35 graduate students majoring in international nutrition, many of them doing the Ph.D. degree. An additional 30 students are minoring in international nutrition. About half of the students are Americans, and the remainder come from abroad, representing 17 countries in Asia, Africa, the Caribbean, and Latin America.

Most students undertake research in developing countries. The faculty of the program are currently involved in major research projects in Kenya, Bolivia, and the Philippines and have associations or minor projects with institutions in many other countries, including Jamaica, Guatemala, Indonesia, Yemen, Panama, and Ecuador.

One of the most extensive of the overseas projects now underway is in the Philippines. The work there is designed to help prevent vitamin A deficiency, the leading cause of childhood blindness in Southeast Asia. Cooperating in this research are Dr. Florentino Solon, executive director of the Nutrition Center of the Philippines, and Dr. Tomas Fernandez of the Cebu Institute of Medicine, one of the Philippines' leading medical schools.

In 1973, the first year of the project, we began to investigate the underlying causes of vitamin A deficiency and the extent of the problem on the island of Cebu. Fifty-seven percent of the children under 16 were found to have deficient or low levels of vitamin A in the blood, and eye examinations revealed drying of the surface of the eye and other signs pointing to an advanced condition. Almost 60 percent of the blindness discovered was apparently due to vitamin A deficiency.

A two-year pilot project was then undertaken to test the feasibility and effectiveness of three different interventions, each designed to raise levels of vitamin A. One of these interventions included public health measures to improve sanitation and control disease, education in nutrition and hygiene, and instruction in growing vegetables and fruits high in carotene, a form of vitamin A. Professor Henry Munger of Cornell's Department of Vegetable Crops assisted with the horticultural aspects of this project.

The two other interventions were the provision of a high-dose capsule of vitamin A to all children every six months and the addition of vitamin A to packets of monosodium glutamate (MSG), a widely consumed food seasoning. MSG was found to be the only commonly eaten product that satisfied the criteria for enrichment.

Each of these intervention strategies was evaluated in 12 communities, representing urban and rural

areas throughout the island of Cebu. Some 1700 children were followed for nearly three years. All three interventions were found to be associated with a reduction in the eye signs of vitamin A deficiency. But only the MSG fortification program resulted in a really significant increase in the blood levels of vitamin A. Since the amount of vitamin A in the blood is often used to gauge vitamin A nutritional status, this strategy offered the hope of correcting vitamin A deficiency before it had a chance to cause eye damage.

The next step in the Philippines project will be supported in part by a new \$145,000 grant from the U.S. Agency for International Development. Together with the staff of the institutions in the Philippines, researchers and nutritionists from Cornell will conduct an evaluation of MSG fortification in three provinces over the next three years. If this proves to be an effective and economical way to raise vitamin A levels in an entire region, it could lead to a national fortification program.

In the meantime, the Philippines Departments of Health and of Agriculture are adopting some of the public health and horticultural activities that were tested in Cebu. With all of these measures combined into a national program, blindness caused by vitamin A deficiency could be virtually eliminated in the Philippines.

Editor's note: Michael C. Latham is a physician and public health nutritionist with broad experience in developing countries throughout the world. In addition to directing the Philippines project, he is currently overseeing two programs in Kenya to improve general nutrition and control parasite infections.

Nutrition Fellowship Established

A \$5,000 matching gift marks an auspicious beginning for the new Richard H. Barnes Fellowship, established in memory of the late dean of the Graduate School of Nutrition.

Designated for graduate study in nutrition, the fellowship reflects Barnes's strong interest in students, which dates back to his arrival at Cornell in 1956. He reorganized the nutrition program as a distinct graduate school, and under his leadership, it grew into one of the country's foremost centers for nutrition education, research, and public service.

When the Graduate School of Nutrition evolved into the Division of Nutritional Sciences, a joint unit of the College of Agriculture and Life Sciences and College of Human Ecology, Barnes was named James Jamison Professor of Clinical Nutrition. He held that chair until his retirement two years ago.

A renowned biochemist, Barnes

College Announces New High-Yielding Wheat

Farmers can look forward to using a new, improved variety of soft, white winter wheat—the type most often grown in New York.

It's the highest yielding variety developed so far by plant scientists at the College of Agriculture and Life Sciences.

Consumers will benefit from this kind of wheat because it is the main ingredient for cookies, cakes, crackers, and shredded wheat. The red wheat of the Midwest is used for bread, and South Dakota's durum wheat is used for spaghetti and macaroni.

The new wheat will be called Purcell in honor of Robert W. Purcell, former chairman of Cornell University's Board of Trustees and now a presidential counselor at Cornell. An alumnus of Cornell, Purcell has given major gifts to his alma mater in recent years.

In announcing the new variety, Mark E. Sorrells, assistant professor of plant breeding, said that one of the outstanding features of this wheat is its ability to produce high yields. It is capable of outproducing all the existing varieties in New York. It also has good milling and baking qualities.

Sorrells, who joined the Cornell faculty last year to take charge of the cereal breeding programs, made the final arrangements for release of the new variety. The College released it recently to the seed industry for seed production.

He points out that Purcell has a five-bushel-an-acre yield advantage over Houser, a Cornell variety being readied for general use this fall.

In 10 years of field tests, Purcell has averaged 65 bushels an acre, 11 bushels more than Arrow and 8 bushels more than Ticonderoga—both Cornell varieties now dominating the state's wheat farming.

"Because of its outstanding yield and good test weight, the new variety will eventually replace Arrow wheat," Sorrells noted. Arrow was introduced in 1971.

Purcell is a product of 18 years of work initiated by Neal F. Jensen, who retired last fall and is well known for his work in developing superior varieties of wheat, oats, and barley for New York farmers.

It is the latest in a series of Cornell wheat varieties with reduced height—a feature important to minimize crop losses resulting from lodging caused by heavy rains or strong winds.

Among other attributes, it has good "test weight", a quality sought by baking and breakfast industries because wheats with high test weights yield more flour and wheat products. It has resistance to two important wheat diseases—loose smut and powdery mildew.

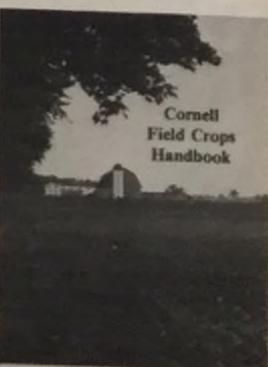
With initial seed production to get under way this fall, the new wheat is expected to be ready for general use in 1980. Adequate seed supplies will be available for the 1981-1982 growing season.

Cornell Field Crops Handbook Available

A new handbook containing basic information about the production of field crops has been prepared by Cornell University agronomists for Northeast farmers.

The "Cornell Field Crops Handbook" includes information on cultural practices; insect, weed and disease identification and control; soil and water management; pasture and forage production; and small grains culture. Examples, tables, illustrations, and sample calculations are included to help farmers apply the information to their own farm and soil conditions.

The 150-page handbook can be purchased for \$3 from county Cooperative Extension offices or from Cornell University, Mailing Room A, Building 7, Research Park, Ithaca, N.Y. 14850.





You, your family, and friends
are invited to come celebrate
Our 75th Anniversary



Join the Festivities
May 12, 1979
Ithaca, New York

Begin your day on the Agriculture Quadrangle

10:00 A.M. **Tours of College facilities**
-3:00 P.M. **Activity centers**—participate in presentations, demonstrations,
and exhibits of the College's many contributions to agriculture

Faculty Forums

1:30 **Inflation and Agriculture—What's Ahead?**
-3:00 (President Carter's chief inflation fighter Alfred E. Kahn is invited
as the main speaker)

3:30 **Serving the People Through Science and Education.**
-5:00 Trends in the following topics will be discussed by outstanding
faculty:

- Plant sciences
- Animal production
- Food science and marketing
- Communities and institutions

Birthday Banquet

6:00 Alice Statler Auditorium
-6:30 P.M. **Premier multimedia event**—"75 Years of Commitment and
Service to the People of New York State."

6:30 Barton Hall
-7:30 **Reception** featuring New York State cheeses, fruit juices, and
Cayuga white wine from grapes developed at the Geneva
Experiment Station

7:30 Barton Hall
Food and beverages produced in New York State largely through the
College's innovations in agriculture and food production.

Keynote speakers
Frank H. T. Rhodes
President of Cornell University
Clifton R. Wharton, Jr.
Chancellor of the State University of New York

YES! I would like to attend the multimedia event, the reception, and
the birthday banquet.

Please reserve _____ dinners at \$10 per person.

Name _____

Address _____

Amount enclosed _____

To be sure of a place at the banquet, reply by May 1. Mail your
reservations and check payable to *Cornell University* to:

Office of the Dean
New York State College of Agriculture and Life Sciences
122A Roberts Hall
Cornell University
Ithaca, New York 14853

Faculty in Brief

Honors

Richard E. Austic, associate professor of animal nutrition, received the 1978 Poultry Science Association's Research Award for outstanding research published in its journal, *Poultry Science*.

Leroy L. Creasy, professor of pomology, has been elected vice-president of the Phytochemical Society of North America, which promotes research into plant biochemistry. He will assume the presidency next year.

George L. Good, associate professor of floriculture and ornamental horticulture, was the recipient of the 1978 New York State Nurserymen's Hall of Fame Award.

Edward C. Raney, professor of zoology emeritus, was named an honorary member of the American Fisheries Society in recognition of his many years of work for the society and his leadership as a fisheries consultant.

Nelson J. Shaulis, professor of pomology and viticulture at the Geneva Experiment Station, was named professor of viticulture emeritus during a special program honoring his achievements in teaching and promoting grapevine physiology and vineyard management.

Robert D. Sweet, chairman of the Department of Vegetable Crops, was named the first "distinguished member" of the Northeastern Weed Science Society, in recognition of his studies on weed control of vegetable crops.

Harold B. Tukey, Jr., professor of floriculture and ornamental horticulture, has been elected vice-president of the International Society for Horticultural Science. When he assumes the presidency in 1982, he will be the second American to head this international organization since it was formed in the late 1800s.

Peter L. Steponkus, associate professor, and Steven C. Wiest, graduate student, in agronomy, were chosen for the 1978 Kenneth Post Award by the American Society for Horticultural Science, for their outstanding research in ornamental horticulture.

Bruce T. Wilkins, associate professor of natural resources, has been named the new president of the national Sea Grant Association.

Milton Zaitlin, professor of plant pathology, has been elected a Fellow of the American Phytopathological Society in recognition of his research and teaching in plant virology.

The following faculty members were promoted from associate professor to professor, effective November 1, 1978:

Paul T. Feeny, ecology and systematics
Richard B. Root, ecology and systematics (2/1/79)

Maurice J. Tauber, entomology

The following faculty members were promoted from assistant to associate professor:

Louis D. Albright, agricultural engineering

Douglas A. Paine, agronomy
William Reissig, entomology (Geneva)

New department chairman since November 1, 1978:

Joe P. Bail, education

New professors are:

Randolph Barker, agricultural economics

Paul Barkley, agricultural economics

Theodore L. Hullar (adjunct), natural resources, associate director of the Cornell Agricultural Experiment Station and associate director of research

Eric Thorbecke, H. E. Babcock Professor of Economics and Food Economics, nutritional sciences

New associate professors are:

Dale Bauman, animal science

James L. Compton, education

New assistant professors:

Klaus Beyenbach, physiology

W. Bruce Currie, animal science

Gene A. German, agricultural economics

William C. Ghiorse, microbiology

Robert B. Gravani, food science

E. Peter Greenberg, microbiology

Lana L. Hall, agricultural economics

Michael N. Kazarinoff, nutritional sciences

James A. Marsh, poultry science

Dennis D. Miller, food science

Alan J. Sawyer, entomology

Larry Walker, agricultural engineering

The following faculty are on sabbatic leave for the spring 1979 semester:

David J. Allee, agricultural economics—working with EPA project to evaluate management procedures for controlling water pollution, in Ithaca, N.Y., and Corvallis, Oregon.

Richard E. Austic, poultry science—working with Hoffmann-LaRoche on the effect of coccidiostats on electrolyte and water metabolism in the chicken.

William S. Bowers, entomology (Geneva)—research at University of Florida, Gainesville.

Douglas J. Lathwell, agronomy—working with Soil Science Department at the University of Reading, England.

Gerald W. Olson, agronomy—working as soil scientist with USDA Soil Conservation Service.

Edward A. Schano, poultry science—intensive study in poultry reproductive physiology.

Donald H. Wallace, vegetable crops—completing project on dry beans and cowpeas at Michigan State University.

William D. Youngs, natural resources—writing textbook and visiting aquaculture facilities.

The following new grant awards have been reported since August 14, 1978:

Richard D. Aplin, agricultural economics—NYS Agr. & Markets, "Alternative locations for fluid milk processing plants." \$43,740

Donald W. Barton, director's office (Geneva)—Penn. State Univ., "NE regional pesticide impact assessment program." \$27,266

Stephen E. Bloom, poultry science—Canadian Wildlife, "Mutagenic and cytotoxicity testing in herring gull eggs." \$4,750

John B. Bourke, food science (Geneva)—NYS Agr. & Markets, "Commercial feed analysis." \$162,000

William S. Bowers, entomology (Geneva)—USDA/ESCS, "Anti-juvenile hormone analogs." \$16,330

C. Arthur Bratton, agricultural economics—USDA/ESCS, "Farm production expenditure survey." \$5,000

Tommy L. Brown, natural resources—US Corps of Engineers, "Impact of manipulating lake levels on recreational boating." \$52,930

Sea Grant, "Tourism development studies on the Great Lakes." \$9,216

Willard F. Cronney, agronomy—SCS, "Soil, water, and resources of NYS." \$106,000

Eddie W. Cupp, entomology—USDA/SEA, "Development of entomopathogenic fungi as biocontrol agents for blackflies." \$6,000

W. Bruce Currie, animal science—NIH, "Receptors and calcium binding in myometrial membranes." \$113,820

Peter J. Davies, botany—USDA, "Role of fruits in the induction of whole plant senescence." \$40,000

James A. Dunn, education—SED, "ISSOE student guidance and personalized programs." \$38,143

Alan R. Edsall, education—SED, "Field test student reporting system, phase IV." \$46,005

Robert G. Heigesen, entomology—Texas A&M, "Integrated Pest Management." \$18,000

R. Brian How et al., agricultural economics—USDA/ESCS, "Organizing the farm business for farmer-to-consumer direct marketing." \$27,675

George W. Hudler, plant pathology extension—SEA, "Selection and care of urban trees." \$101,700

SEA, "Urban trees program for public officials and municipal arborists." \$65,000

Bruce M. John, rural sociology—NYS Ed. Dept., "Migrant health and nutrition education." \$65,751

NYS Ed. Dept., "Migrant medical services education." \$78,274

SED, "Summer enrichment program." \$34,659

William T. Keeton, neurobiology and behavior—NSF, "Sensory mechanisms of the homing pigeon." \$73,759

and Stephen T. Emlen, neurobiology and behavior—NSF, "Avian orientation." \$404,071

Raymond C. Loehr, agricultural engineering—EPA, "Resource conservation and utilization in animal waste management." \$119,840

USDA/SCS, "Water quality lagoon evaluation." \$9,200

Robert P. Mortlock, microbiology—NIH, "Evolution of enzymatic activities." \$230,612

Karl J. Niklas, botany, genetics and development—NSF, "Chemotaxonomy of paleozoic plant fossils." \$9,405

Joseph Novak, education—NSF, "Strategies for learning emphasizing the nature and role of concepts." \$126,600

Ralph L. Obendorf, agronomy—SEA/CR, "Growth and seedling vigor of soybeans." \$81,280

M. Anandha Rao, food science (Geneva)—DOE, "Handbook for energy conservation in food canning plants." \$17,331

William H. Reissig, entomology (Geneva)—SEA, "Identification of apple maggot attractants." \$5,000

Texas A&M, "Integrated Pest Management." \$18,400

Daphne A. Roe and Donald B. McCormick, nutritional sciences—USDA, "Assessment of human riboflavin status using pyridoxamine (pyridoxine) 5'-phosphate oxidase." \$130,000

Wendell L. Roelofs, entomology (Geneva)—NSF, "Behavioral thresholds in moth pheromone perception." \$80,923

Rockefeller Fdn., "Ecology and chemistry of insect-microbe interactions in the spermosphere." \$54,000

USDA, "Pheromones of scale insect pests." \$60,000

Carl L. Schofield, natural resources—DEC, "Dynamics and management of Adirondack fish populations." \$20,000

G. Wilbur Selleck, vegetable crops (Geneva)—DEC, "Nitrates in turf." \$45,000

John Sherbon, food science—Dairy Research Fdn., "Determination of cheese yields and relationships to milk composition." \$12,000

Richard C. Staples, Boyce Thompson Institute and Ronald J. Kuhr, entomology—Ford Fdn., "Conference on linking basic research to crop improvement programs in the LDCA." \$8,750

Peter L. Steponkus, agronomy—SEA/CR, "Adaptive drought tolerance of cereal crops." \$50,000

Keith H. Steinkraus, food science (Geneva)—Amstar Corp., "Milky disease bacteria." \$9,500

Bik-Kwoon Tye, biochemistry—NSF, "DNA replication and repair in *E. coli*." \$22,305

Peter J. VanSoest, animal science—Nat. Cancer Inst., "Analysis of samples from a dietary fiber study." \$20,998

L. Dale VanVleck, animal science—SED, "Development of best linear unbiased prediction cow index procedures for USDA-DHIA cow indexes." \$12,000

Helen C. Veres, education—NEW/DOW, "Assessment of learning needs of New York City adults." \$38,840

Bruce T. Wilkins, natural resources—Sea Grant, "Advisory service efforts on critical issues of NY bight." \$10,000

Christopher F. Wilkinson, entomology—HEW, "Mode of action of insecticide synergists." \$80,125

O. C. Yoder, plant pathology—USDA, "Role of ploidy level and genotype in adaptability of *Brassica* to cell culture techniques." \$60,000

O. C. Yoder, William E. Fry, and James R. Aist, plant pathology—Special Comp., "Factors controlling development of a plant disease." \$79,000

William D. Youngs, natural resources—Great Lakes Fishery Commission, "Evaluation of barrier dams to adult sea lamprey migration." \$29,375

Milton Zaitlin, plant pathology—Special Comp., "Interaction of plant viruses with their hosts." \$57,000

Controlling Road Dust—A Costly Problem

Bumpy roads and jolting potholes will, at best, frazzle nerves and, at worst, cause serious accidents. With all the money spent on road construction and repair, though, it's hard to understand why these problems persist year after year.

"Pavement design is a complicated problem, involving the need to make efficient use of materials and engineering know-how," explains Lynne H. Irwin, associate professor of agricultural engineering. "Road pavements, more than any other type of structure, have the lowest factors of safety and are often neglected because defects accumulate slowly."

Irwin, who holds a joint appointment in Cornell's College of Engineering, now heads the Local Roads Program, which began as a Cooperative Extension project to provide technical assistance to local agencies responsible for road design.

"Through research, we try to find better materials, techniques, and designs. Through teaching, both in the field and in the classroom, we try to share our ideas," says Irwin, winner of the 1978 Outstanding Faculty Award from Cornell student members of the American Society of Agricultural Engineers.

Most of his research is directed toward rural roads, which, surprisingly, account for about 70 percent of all the roads in the country. For city dwellers and travellers of the nation's superhighways, it may be hard to believe that 2.2 million miles of road—54 percent of all roads in the country—have dirt or gravel surfaces. In New York, the second most highly populated state, one-quarter

of the roads are not paved. These are often farm-to-market arteries, representing the backbone of today's food distribution system. Yet, their surfaces are being worn away at an astounding rate.

Nearly all such roads lose at least one inch of their surface each year. Per mile of road, this is equivalent to more than 500 tons of dirt or gravel annually, or an average of 1.5 tons a day.

The cost of replacing the gravel is staggering. Nationwide, \$1 billion a year would have to be spent on repair.

"The best way to solve this problem is to control the dust that is kicked up by each passing vehicle," Irwin says. "As the dust blows away, sand and gravel particles become dislodged, and eventually they wind up in the ditch."

Highway crews usually use petroleum products such as asphalt or heavy fuel oil to hold dust down. But because of rising oil prices, this is becoming too expensive. Irwin is now experimenting with various kinds of salts to control the dust clouds.

Sodium chloride and its chemical cousin calcium chloride have been used for this purpose for some time. Irwin is interested in applying them in liquid form. Calcium chloride penetrates the surface to about three inches and draws moisture from the air, keeping the road damp and strengthening it for up to six months. Sodium chloride, on the other hand, crystallizes on the surface and holds the dust particles together.

Irwin is quick to point out that



Lynne Irwin (left) chats with local highway officials during an experiment with sodium chloride.

while these salts are the same as those used for de-icing, they are applied in such small amounts that they should not contribute to corrosion.

The College of Agriculture and Life Sciences at Cornell is the only such institution in the country where farm-to-market road research is carried out. And it has a long history, starting back in the mid-20s. The Local Roads Program was established in 1950 to help improve the local road system in New York State.

Recent projects have included studying highway drainage design,

finding ways to avoid using unnecessarily expensive materials in constructing infrequently travelled roads, and even using waste materials in road building.

"I hope that this research will improve some of the methods and materials used in road construction and repair," Irwin says. "Through our extension programs we are educating community engineers today, and perhaps some of our students will be making better decisions about our roads in the future."

Letters to the Editor

Dear Editor:

I have thoughtfully read the article "Don't Blame Uncle Sam for Rising Food Prices" (ALS News, November 1978). At 81, I continue to be angry at the present price of bread, when we have a super-abundant harvest of corn and wheat: Pepperidge Farm white loaf, 1 lb., 65¢, whole wheat, 69¢; Arnold, same prices except for occasional 1-day competitive sales; the much advertised Roman Meal, 73¢. The double packaging—wax paper and plastic bag—is wasteful and unnecessary. Even if the customer should buy only a loaf of bread, it is wrapped again, in a brown paper bag.

Why can't we force down these prices by a return of the privately owned and operated bakery in towns like mine—6,000-8,000 persons—all over the U.S.? Thus, advertising, transportation, machine packaging, distribution costs, would be eliminated. Must a baker, operating independently, belong to a union, and must he employ union help? Is the cost of modern ovens prohibitive? If store rentals would be too high, a purchasing post on set days, two or three a week, could be established at a community centre and operated by an organization of concerned housewives. In some communities there would be a Farmer's Market.

You advise people to eat fewer processed foods. Fast food restaurants I never patronize, nor would I buy TV dinners. However, I cannot avoid purchasing shredded wheat or bran, by which I have been regulating my system for 30 years, long before the present "fiber" craze. Shredded

wheat was originally 25¢ for a package of 9 biscuits, each layer separated by a cardboard. The process of producing shredded wheat remains the same; each layer of three is now wrapped in sealed wax paper, a nuisance to open, and the price is 63¢. There has been no change in the processing of all bran (I do not buy raisin and other fancy types); the price, originally possibly 35¢, is now 83¢. I tried to buy it in bulk at a health store, but it was kept in a bin and I found insects in my parcel.

Jessica Van Horson '18
Windy Hill Road
Westbrook, Conn. 06498

Dear Editor:

I must admit I was surprised how moved I was by your Agriculture and Life Sciences News (April 1978), after glancing indifferently at many other alumni publications during the past few years.

Right from the start, I was pleased to see that Professor William Keeton was elected a Liberty Hyde Bailey Professor. I was one of the tens of thousands of students he has informed and entertained in Bio 101.

Then I was relieved to find out that ALS is "No Longer a Man's World." I remember going to "college night" at my high school in Flushing, N.Y. The Cornell representative came up to me, the only woman in the room, and said that I must have made a mistake and come to the wrong room; that room was for Cornell's Agricultural College. He said that there weren't many facilities available there for women and that I'd

probably feel very uncomfortable.

Luckily, I ignored his "encouragement," applied and was readily accepted. I graduated in 1973 with a B.S. in wildlife biology, a "man's field." I'm still breaking barriers today as an environmental specialist in the federal government....

Moving on... I recognized another face in a photograph. I worked for James Spero during the summer of '71. I taught indoor gardening and elementary embryology to urban youngsters in Brooklyn. It was a rewarding experience for us young teachers, as well as our wide-eyed students. I'm happy to see that Mr. Spero is still helping people "grow hope"....

The idea of a mini-course in career planning is great. Many students unfortunately discover that those courses for an easy "A" don't help much in your future career. I think ALS is better than most colleges in

preparing students for the real world by giving them saleable skills. Much I learned there has come in handy in my career in environmental science and wildlife biology....

Thank you, Mr. Editor, for taking me back through my entire four-year experience at Cornell in 12 short pages.

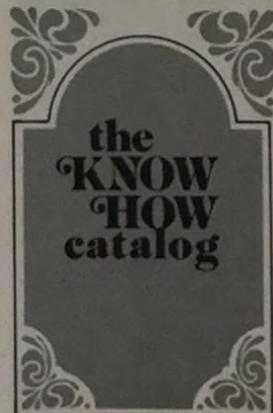
Ms. Denise Meridith '73
12066 Milton Street
Wheaton, Maryland 20902

Dear Editor:

We want to tell you what a great job you folks are doing with Agriculture and Life Sciences News. It's jam-packed with good reading material and we've enjoyed every word of it.

Keep it coming!

Doc and Katy Abraham
WOKR-TV, Channel 13
Rochester, New York 14623



The Know How Catalog lists thousands of leaflets, brochures, packets, and booklets containing information gleaned from research conducted in the College of Agriculture and Life Sciences and College of Human Ecology. These publications give advice about gardening, farming, home maintenance, and much more; some are sure to interest you and your family. Most of the material is very inexpensive and some is free.

The Catalog itself is available at no charge from:
Mailing Room
7 Research Park
Cornell University
Ithaca, New York 14850

AGRICULTURE AND LIFE SCIENCES

News

APRIL 1979

A Statutory College of the State University of New York, at Cornell University, Ithaca, NY

College Celebrates 75-Year Milestone

by RICHARD A. SPINGARNS

What is new, Ithaca, has to be perked up. The 75th anniversary of the New York State College of Agriculture and Life Sciences is being celebrated in a big way. A banquet, with a fund-raising dinner, will be held on the campus of the college on the evening of April 11. The celebration will be held in the newly renovated Roberts Hall, which was dedicated in 1975.

Inside: The new Roberts Hall, which was dedicated in 1975, is the centerpiece of the college's 75th anniversary celebration. The building, which was designed by the architect I. M. Pei, is a masterpiece of modern architecture. It features a central tower and a series of interconnected wings that create a sense of unity and purpose. The interior is bright and airy, with large windows that let in plenty of natural light. The building is a testament to the college's commitment to excellence and innovation.

We're Number One! The new Roberts Hall, which was dedicated in 1975, is the centerpiece of the college's 75th anniversary celebration. The building, which was designed by the architect I. M. Pei, is a masterpiece of modern architecture. It features a central tower and a series of interconnected wings that create a sense of unity and purpose. The interior is bright and airy, with large windows that let in plenty of natural light. The building is a testament to the college's commitment to excellence and innovation.

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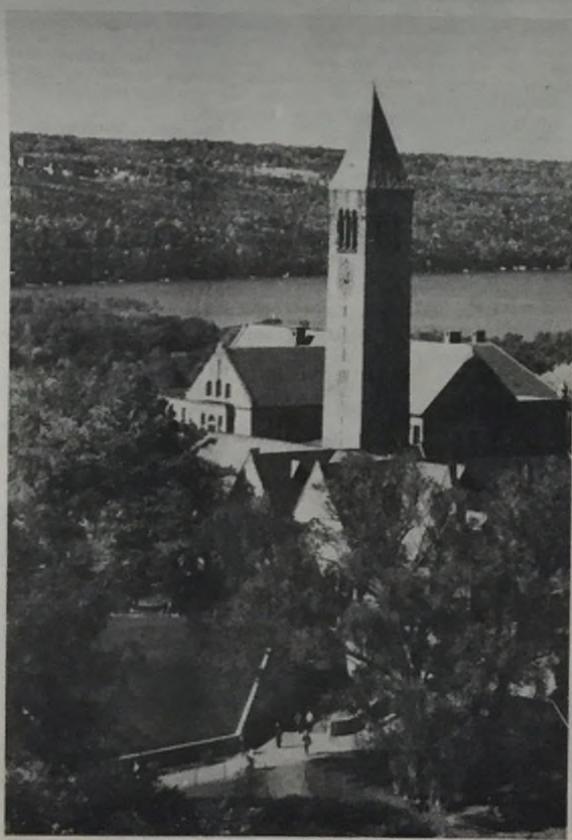
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