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50 Years of Floriculture and Ornamental Horticulture at Cornell University

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A BRIEF HISTORY

Although 1963 was the 50th Anniversary of the Department of Floriculture and Ornamental Horticulture at Cornell University, the subject was first introduced when Liberty Hyde Bailey in 1889 initiated a general course in horticulture. In a speech in 1891 he advocated general instruction in the subject of floriculture and ornamental horticulture.

Floriculture activities were centered in the Department of Horticulture under the guidance of Professor Bailey. The first course in landscape gardening was given in the fall of 1893, and in 1896, a course titled Floriculture was given by L. H. Bailey and E. G. Lodeman. Apparently this was not met with much favor as the course was not given again for a number of years. In 1909 a course was given in greenhouse management and in 1911 there were 4 courses under the heading of Floriculture.

With the aid of Professor John Craig, L. B. Judson and others, Professor Bailey in those early days studied the effect of artificial light on the growth of greenhouse plants, cultivation of the American carnation, chrysanthemum and peony, effect of etherization on greenhouse plants, and certain aspects of variation in stocks and snapdragons.

The titles in the following partial list of Experiment Station Bulletins give us some insight as to the research and extension publications of this period.

1891 Bulletin 30—Some preliminary studies on the influence of the electric arc lamp upon greenhouse plants—L. H. Bailey
1892 Bulletin 41—On the comparative merits of steam and hot water for greenhouse heating—Fred W. Card
1895 Bulletin 90—The China asters; with remarks upon flower beds—Liberty Hyde Bailey
1896 Bulletin 91—Recent chrysanthemums—Michael Barker
1896 Bulletin 111—Sweet Peas—L. H. Bailey and A. P. Wyman
1896 Bulletin 121—Suggestions for the planting of shrubbery—L. H. Bailey
1897 Bulletin 127—A second account of sweet peas—A. P. Wyman and M. G. Kains
1897 Bulletin 128—A talk about dahlias—Wilhelm Miller
1897 Bulletin 136—Chrysanthemums of 1896—L. H. Bailey and Wilhelm Miller
1898 Bulletin 147—Fourth Report upon Chrysanthemums—Wilhelm Miller
1908 Bulletin 246—Shade trees—their care and preservation—A. D. Taylor
1908 Bulletin 259—The peony—J. Eliot Coit.
1910 Bulletin 278—Classification of the Peony—L. D. Batchelor
1912 Bulletin 319—Winter flowering sweet peas—A. C. Beal
1913 Bulletin 320—Culture of the sweet pea—A. C. Beal
1914 Bulletin 342—Classification of garden varieties of the sweet pea—A. C. Beal

It is interesting to read some of the early bulletins. For instance, in 1908 W. Miller in Cornell Bulletin 147, titled Fourth Report on Chrysanthemums writes as follows:

> "The chrysanthemum industry in New York State probably involves more capital than the growing of peaches. When the chrysanthemum craze began in America in 1888, there were loud complaints from those florists who thought there would be no great popularity after the first fever was passed. At first the chrysanthemum seriously infringed for six weeks upon the year-round favorites, the rose, carnation and violet, but it must now be considered one of the four staples of greenhouse culture."

FLORICULTURE, A SEPARATE DEPARTMENT

Floriculture was first organized as a separate department of the College of Agriculture in 1913 when Professor E. A. White was called from the Massachusetts Agricultural College to assume the headship.

Dean Liberty Hyde Bailey wrote in his 1912-13 Annual Report, "The old Department of Horticulture has now been divided into three more or less natural units. One of these units is Pomology which was separated some years ago. At present floriculture and vegetable-gardening are being separated as coordinate departments. This means the enlargement of the floricultural and vegetable-gardening work and expresses the desire of the College to adequately serve these great interests in the state."

Professor Ralph W. Curtis was active in the Department of Landscape Art in the College of Agriculture from 1913 until 1922, at which time the phases having to do primarily with plant materials and country planning were amalgamated with floriculture in a reorganized *Department of Floriculture and Ornamental Horticulture.*

The College of Agriculture retained responsibility for instruction in the selection, care, and use of plant materials in landscape design, in country planning, and for extension teaching in landscape art, that is, in the development of extension service for the improvement of country life by means of better planning of rural communities and of both public and private properties within them, and

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arrangement of plant materials for the beautification of homes and rural public properties.

The design and construction phases of landscape art were transferred to the College of Architecture.

Dr. White served as head of the department from 1913 until his retirement in 1939 and was succeeded by Dr. L. H. MacDaniels from 1940, until Dr. K. Post became head in 1955 and served for several months before his untimely death. In 1956, upon Dr. L. H. MacDaniels' retirement, Dr. John G. Seeley was appointed head of the department.

RESEARCH, EXTENSION, RESIDENT INSTRUCTION

Throughout the years the department has been concerned with programs of research and extension of interest and value to commercial florist, nursery, arborist and turfgrass industries as well as to home gardeners. Another major responsibility has been undergraduate and graduate instruction.

Research

In 1913, Dr. A. C.Beal, previously an assistant to Professor John Craig, was given supervision of the research. Dr. Beal was assisted first by A. C. Hottes, then by A. W. W. Sand, and then in the late twenties by A. M. S. Pridham.

During the early years of the department and through the twenties most of the research was taxonomic in nature with theses, monographs and bulletins on various garden plants.

Some representative titles are:

1916 Extension Bulletin 9—Gladiolus studies I—Botany, History & Evolution—A. C. Beal
1916 Extension Bulletin 10—Gladiolus studies II—Culture and hybridization—A. C. Hottes
1916 Extension Bulletin 11—Gladiolus studies III—Varieties of the garden gladiolus—A. C. Hottes
1925 Extension Bulletin 112—Bearded iris—Austin W. W. Sand
1931 Extension Bulletin 212—Growing China asters—A .C. Beal and K. Post
1931 Extension Bulletin 213—Sweet peas—A. C. Beal
1932 Extension Bulletin 220—The Peony, a flower for the farmer —A. C. Beal
1932 Extension Bulletin 231—The Gladiolus—Its history, classification and culture—A. M. S. Pridham
1931 Exp. Stat. Bulletin 519—Studies of the genus delphinium—Earl I. Wilde
1934 Exp. Stat. Bulletin 588—History, culture and varieties of summer flowering phloxes—A. M. S. Pridham

After Dr. Beal's death in 1929, the research activities were carried on by A. M. S. Pridham who concentrated on herbaceous plant materials, and later was in charge of experimental work with woody plants. In October 1930, Kenneth Post, who came from Michigan State College, devoted his attention to the cultivation of plants under glass and in cloth houses and expanded this field of research until his untimely death in 1955.

During the thirties research shifted from taxonomic studies to the field of applied physiology and this trend received impetus as improved greenhouse, nursery and laboratory facilities and equipment became available. Research with turfgrass was given some attention during the thirties and forties but became a major part of the department with the establishment of research plots in 1956, and a full-time professorial position in turfgrass management in 1961.

At present 24 formal research projects deal with various floriculture and ornamental horticulture subjects. A few representative projects are listed:

1. Establishment and maintenance of permanent grass sod on home and institutional grounds, parks, and highways.
2. Foliar analysis as a tool for investigation of the nutritional requirements of floriculture crops.
3. Absorption, utilization and loss of organic and inorganic materials by and from above ground plant parts.
4. Factors affecting aeration in greenhouse soils and their relationships to root diseases and to the growth and flowering of plants.
5. Cytogenetic studies of ornamental plants.
6. Chemical weed control in florist and nursery crops, gardens, and turfgrass.
7. Effect of temperature and photoperiod on growth and flowering of snapdragons, lilies, and carnations.
8. Investigations in the propagation of woody ornamentals.

In the last 25 years there have been 175 research articles based on departmental research and published in various scientific journals and bulletins. Through the extension program the research information has been put into practice in the floriculture and ornamental horticulture industries and gardens both within and outside of New York State.

Extension teaching

Throughout the history of floriculture and ornamental horticulture at Cornell, staff members have conducted extension work through lectures, tours, short courses, newsletters, correspondence and other media.

As early as 1912, some members of the resident teaching staff gave public lectures and aided in preparation of landscape plans for private individuals. In 1917, New York became the second state to inaugurate official extension work in floriculture and ornamental horticulture by employing in the Department of Landscape Art a full-time project leader, Professor J. P. Porter, later transferred to the Department of Floriculture and Ornamental Horticulture. By 1922, emphasis changed to community projects such as demonstrations of landscaping of schools, churches, libraries, grange halls and public parks. In the late twenties and thirties an extension program of planting demonstrations and lectures on landscaping home grounds and rural school grounds was started. The program on landscaping, planting care and care of home grounds is still active with much of the program conducted through county agent offices.

Throughout the years many college publications on gardening subjects have been available. In 1915, E. G. Davis and R. W. Curtis had an extensive bulletin titled *The Home Grounds* while in the 20's there were *The flower garden*, *The planting and care of trees and shrubs*, and *The design and development of school grounds* as well as mimeographed leaflets on lawns, rock gardens, propagation, etc. As present there are at least 35 Cornell Extension bulletins on various aspects of home gardening from culture of garden plants to terrariums and house plants.

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Because of the increased demand for home gardening information, many county agricultural extension services have added trained horticultural personnel to their staffs.

A full scale extension program for 4-H Club members became a reality in 1948 and at present about 9000 4-H Club members participate in floriculture and ornamental horticulture projects in New York State. In one county there are 372 projects. In 1963, 4-H Club members planted more than 3000 rose bushes and 128,000 gladiolus corms in their home gardens. Several have been national winners in Home Grounds Improvement.

During the thirties Miss Lucille Smith established an extension program through the County Home Demonstration offices. A full-time specialist continues the educational program on flowers and plants for indoor home decoration as well as outdoor gardening.

It is interesting to read a paragraph written by Professor E. A. White in the 1918 Annual Report of the College of Agriculture, "The Department of Floriculture is one of the few departments in the College in which no one is employed for extension work. The florists have problems which they want solved, and they would welcome assistance from the College. A man should be engaged who could keep in touch with the florists and who would be available also for giving lectures on floricultural subjects which are called for from time to time. For this work a man should be selected who has had wide experience of a practical nature. He should have had a thorough training in plant pathology and entomology, so he could assist in solving the insect and disease problems with which the florists have to contend."

During the thirties members of the resident staff worked with commercial interests primarily nurserymen and florists. The first Short Course for Nurserymen was in 1930. The first one for florists was in 1928. Annual extension short courses are still held. In 1941, a full-time extension specialist was appointed to conduct an educational program with greenhouse operators, but after World War II extension responsibilities were adjusted so that five part time extension specialists could conduct an expanded program for commercial nurserymen and florists, and are doing so today. Emphasis has been placed on working through County Agents in those areas having high concentrations of greenhouses and nurseries but also working directly with industry members in other areas. Newsletters, bulletins, trade paper articles, short courses, tours, conferences, personal visits, and correspondence are activities in the extension program.

In 1948, the First Annual Turfgrass Conference was held on the Cornell Campus and was attended by persons professionally interested in growing better turf for parks, golf courses, athletic fields, institutional grounds, cemeteries, and home lawns. With the appointment of a part-time specialist in 1961, the turfgrass extension program has expanded, and is an important asset to extension education.

Resident Instruction

Instruction of undergraduates has been a major responsibility of the department since its inception and many graduates have entered various horticultural endeavors. There have been about 675 graduates in floriculture and ornamental horticulture plus many special students, students in the two and 3 year winter programs, and graduate students.

Presently there are 22 departmental courses in herbaceous and woody plant materials, plant propagation, commercial greenhouse crop production, principles of flower arrangement, retail flower store management, nursery crop production, turfgrass management, freehand drawing, and landscape design.

Graduate study is an important phase of instruction and since 1915 there have been 150 Master of Science and doctorate degrees awarded to graduate students in floriculture and ornamental horticulture. Many are in important positions on horticultural industries, botanical gardens, arboreta, and related fields. Some have continued in the college education field; at present about 38 are in academic positions at 28 universities or colleges in the United States or abroad.

PHYSICAL FACILITIES

Greenhouses, gardens, nurseries, classrooms, laboratories and offices are essential for research, resident instruction and extension teaching.

Greenhouses

Late in 1889 or early in 1900, eight hundred dollars procured from Federal funds were used to build the first greenhouse at Cornell. Professor Bailey worked on the building himself.

For many years, Floriculture greenhouses were located in the area where the Plant Science Building is now located. One of these was moved to the Cornell Test Gardens and attached to the Feld House; the other Test Garden greenhouse was the original Botany greenhouse formerly southeast of Sage. Both were in use until partially destroyed by fire and the remains of one has been reerected for the Cornell Plantations.

A new range of modern greenhouses was constructed at the upper end of Tower Road in 1925-26 and is presently being used for research and instruction. Four orlyt greenhouses were added in 1950 and a new 125 foot greenhouse in 1954. The Conservatory greenhouse was added to the Plant Science Building in 1931.

Gardens and Nurseries

The herbaceous plant garden, later designated Miss Lua Minns Memorial Garden, was established in 1914 at the corner of Garden Avenue and Tower Road. The location was regarded as temporary since the site was to be used for building purposes. It was not moved, however, to its present location adjacent to the Plant Science Building until 1960 when its former site was designated for the new Malott Hall.

Previous to 1913, a tract of land of about 8 acres on the Bool farm had been set apart for research with ornamental plants. This area was devoted largely to a rose test garden where variety tests on hardiness and adaptation to various soil conditions were conducted in cooper-

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ation with the American Rose Society. Here also were planted a large number of peony varieties whose nomenclature was verified by departmental staff in cooperation with the American Peony Society.

In 1923-25, the trial plots originally on the Bool farm were moved to a more accessible tract of about 10 acres located between Forest Home and Varna. This area, known as the Cornell Test Garden—Department of Floriculture and Ornamental Horticulture has been increased in size and is still in use.

The plots for nursery crop research are located primarily on the Bool farm on Route 13 with some plots on land in East Ithaca.

Turf research plots first set up in 1956 in the area now occupied by Hasbrouck Apartments were established in a permanent location near Route 13 and the Ornamentals Nursery in 1960. Research plots also have been in use in a Nassau County Park on Long Island since 1957.

Ornamentals Laboratory on Long Island

To be of greater service in research and extension with commercial florists on Long Island, Cornell and the U. S. Department of Agriculture with the help of the New York State Florists Club and other florists and nurserymen established the Cornell-U.S.D.A. Ornamentals Laboratory at Farmingdale in 1948, with its own laboratory building and greenhouses being built in 1951. These were supplemented by new greenhouses donated by the New York Florists Club in 1962.

Plant Science Builiding

Classrooms, laboratories and offices of the Department of Floriculture were housed in many buildings and locations throughout the years. The new Plant Science Building conceived before World War I came into being in 1930-31. The 1931 Annual Report of the College stated "Floriculture is now believed to be the best equipped of any such department in the United States."

Freehand drawing, housed for many years on the top floor of East Roberts, moved into its present facilities on the fifth floor of Mann Library when completed.

Commercial Floriculture

Florist's Short Course

The first annual short course for commercial florists at Cornell was a five day meeting January 19-23, 1931. Dean A. R. Mann in his opening remarks stressed the need for research work in floriculture at the University. He stated "Probably no other University is at present better equipped for this type of work than the New York State College of Agriculture and no line of work is in so great need for research as floriculture." Keneth Post, instructor in floriculture, who had arrived on campus the previous autumn outlined the purpose of the short course, "Getting acquainted and gathering new ideas being of prime importance."

More than 90 people were registered for the talks on greenhouse crop production and management as well as the greenhouse tour. Some of the talks were:

Propagation of greenhouse plants—Kenneth Post, Cornell

Calendulas and sweet peas—George J. Ball, West Chicago, Ill.

New perennials for cut flowers—Miss Lua A. Minns, Cornell

Commercial production of gladioli—A. M. S. Pridham, Cornell

Production costs—A. M. Lowman, Elmira Heights, N. Y.

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A few of the growers in attendance at the first Short Course—Can you identify them?

The Flower Fashion Promenade held at the first Florist's Short Course

Soils and fertilizers—Kenneth Post, Cornell
Commercial rose production—John Lemon, Richmond, Indiana
Bookkeeping for florists—M. P. Catherwood, Cornell
Greenhouse plant diseases—L. M. Massey, Cornell
Greenhouse insects—W. E. Blauvelt, Cornell
Cyclamen, begonias, hydrangeas — Ivar Ringdahl, Rome, N. Y.
Propagation of orchids—Lewis Knudson, Cornell
Orchard culture—Joseph Manda, West Orange, N. J.

Part of the Short Course had subjects for retailers. There were:

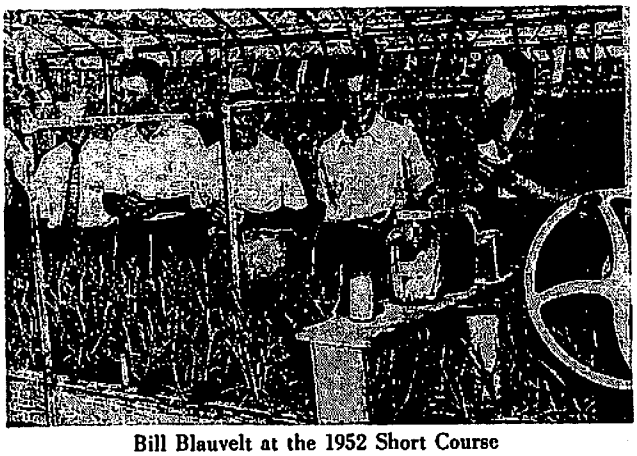
The retail store—S. S. Pennock, Philadelphia, Pa.
Carbon dioxide for better keeping quality of cut flowers—N. C. Thornton, Boyce Thompson Institute, Yonkers, N. Y.
Chemicals for improving keeping quality of cut flowers—A. M. S. Pridham, Cornell
Factors in advertising—L. Tuthill, New York, N. Y.

A demonstration of floral design attended by 250 people was conducted with Professor E. A. White discussing and demonstrating fundamental principles of arrangement of flowers and plants. This was followed by floral design demonstrations by Max Schling of New York City, Mr. Mahoney of Boucher's Flower Shop, Rochester, Mr. Hillary of Saltford's Flower Shop, Poughkeepsie, and Mr. Harold Pratt of Pratt's Flower Shop, Ithaca.

All of the bouquets and corsages were displayed at a flower fashion promenade in Bailey Hall, attended by more than 1000 people.

The Short Course concluded with a banquet at which E. L. D. Seymour of the Florists Exchange spoke on "Present-day problems in floriculture."

Although the length and format have changed, short courses for commercial florists have been held annually ever since, with the 34th being held in October 1963.



Bill Blauvelt at the 1952 Short Course

Wat Dimock and friends discuss lilies at the 1959 Short Course

Research

Floriculture research has been strong at Cornell throughout the years. During the 1930's Dr. Kenneth Post conducted extensive experiments on the effect of temperature and daylength on growth of many floriculture

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crops. Nutrition of sweet peas was a major research problem.

Soil moisture, preparation and aeration entered the research studies in the 40's and nutrition of greenhouse crops received special emphasis. Further research on the intricacies of temperature and photoperiod and chrysanthemum growth led to year around flowering. Weight grading and controlled flowering of orchids were other facets of research.

The program continued on through the fifties and sixties with low temperature conditioning of flowers, propagation with mist, plant nutrition, tissue analysis, soil substitutes, and more precise data on temperature and photoperiod effects on snapdragons, poinsettias, lilies and carnations.

Graduate assistants play a major part in conducting research investigations as part of their training. Most of the commercial floriculture graduate students who received degrees at Cornell are contributing to floriculture in their present positions.

SOME OF THE EARLY RESEARCH THESIS TITLES OF INTEREST TO FLORISTS

For Bachelor of Science degree

1896—J. C. Blair. The physics of glass roofs, or what is the best glass for greenhouse purposes.
1905—H. W. Hochbaum. The commercial status of the American carnation.
1908—H. B. Frost. Some aspects of variation in Matthiola (stocks) and Anthirrhinum majus (snapdragon).
1914—A. C. Hottes. The garden gladiolus: its botany, breeding, and cultivation.
1917—D. B. Carrick. The botany, culture, and history of the Pelargonium (geranium).

For Master's degree

1915—Lucile Marshall. Women's work in horticulture.
1916—J. J. Pollock. Cost accounting with florist crops.
1917—Lua A. Minns. A study of the primulas grown under glass in America.
1918—E. C. Volz. Studies on the keeping qualities of cut flowers.
1918—Chin Lan Chien. A study of the genus Lilium; its adaptation to forcing and to seed production.
1921—Harold A. Pratt. A study of cost accounting and a proposed greenhouse cost system.
1922—Kai Tso Lau. A comparative study of floriculture in China and America.
1925—Clement G. Bowers. The propagation of orchids from seed.
1931—R. G. Thompson, Jr. A study of the problems involved in the cutting, storing, packing, and shipping of cut flowers.
1932—J. C. Ratsek. The effect of daylight on the growth of orchid seedlings.

RESEARCH SINCE 1931

Research has been an important segment of the department with many research projects conducted directly by staff members and others as graduate student thesis research. It would be impossible to list all of the many research articles that have been in various scientific journals and bulletins. The following list is just a sample and shows the extent and variety of subject matter.

1931—Reducing the day length of chrysanthemums for the production of early blooms by the use of black sateen cloth—K. Post
1932—Effects of daylength on growth of orchid seedlings—J. Ratsek
1933—Cut-flower production under cloth—K. Post
1933—Bank sand as a medium in which to grow chrysanthemums—A.M.S. Pridham
1934—Effects of daylength and light intensity on vegetative growth and flowering of the China aster—K. Post
1934—Temperature as a factor in bud differentiation and flowering of stocks—K. Post
1937—Effect of excess fertilizers on roses, snapdragons, and chrysanthemums—K. Post and Robert S. Bell
1938—Effect of mineral nutrient deficiencies and excesses upon the vegetative growth and flowering of sweet peas—K. Post
1939—Effect of temperature on splitting of carnations—A. J. Szendel
1940—Relationship of temperature to flower bud formation in chrysanthemums—K. Post
1940—Bud formation, abscission and flower production of gardenia as affected by light and temperature—C. G. Keyes
1941—Problems in forcing Easter lilies—K. Post
1941—Species hybrid of calendula, its F_2 population and its tetraploid—C. Weddle
1942—Effects of daylength and temperature on growth and flowering of some florist crops—K. Post
1943—Automatic watering of greenhouse crops—K. Post and J. G. Seeley
1943—Effect of various nitrate levels on the growth and production of greenhouse roses—J. G. Seeley
1943—Low temperature and flower bud development of azalea—K. Post
1946—The rate of photosynthesis of greenhouse roses—J. E. Howland
1946—Some factors affecting flowering of Daphne cneorum—J. E. Howland
1946—Foliar dieback of the greenhouse snapdragon—J. E. Howland
1946—Saintpaulia leaf spot and temperature differential—Frances Elliott
1947—Year-around chrysanthemum production—K. Post
1947—The constant water level method of watering—K. Post and J. G. Seeley
1948—Automatic watering of potted plants—J. G. Seeley
1948—Soil nitrate levels for roses—J. G. Seeley and K. Post
1949—Bottom break production of rose plants as influenced by location in the greenhouse, methods of watering, and soil texture—A. M. Kofranek & C. W. Fischer
1949—The response of greenhouse roses to various oxygen concentrations in the substratum—J. G. Seeley

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1950—Photoperiod and bud formation on chrysanthemum cuttings—K. Post and H. Kamemoto

1950—Mineral nutrient deficiencies and leaf burn of Croft lilies—J. G. Seeley

1951—Some effects of daylength on tuberization, flowering, and vegetative growth of tuberous-rooted begonias—C. A. Lewis

1952—Time of production of roses as influenced by season and method of cutting—H. C. Kohl and K. Post

1952—Daylength and temperature in relation to growth and flowering of orchids—G. B. Rotor, Jr.

1952—Some effects of low soil temperatures upon the growth of poinsettia—A. M. Kofranek

1953—Long term holding of cut flowers—C. Fischer

1953—The effect of water absorption before low-temperature dry-storage on the development of blue color in Better Times roses—J. W. Mastalerz

1954 &

1955—Chrysanthemum temperature studies — H. M. Cathey

1954—Gladiolus weed control experiments—A. Bing

1957—Responses of bench grown chrysanthemums to maleic hydrazide—E. N. Powell and R. C. Andreasen

1959—Effects of supplementary illumination on the growth and time of flowering of snapdragon—H. L. Flint and R. Andreasen

1960—Influence of day and night temperatures on the flowering of poinsettia—R. W. Langhans and R. A. Larson

1960—Growth and flowering of snapdragons as affected by night temperatures adjusted in relation to light intensity—R. O. Miller

1960—Relative effects of light duration and intensity on growth and flowering of winter snapdragon—H. L. Flint

1961—The effect of photoperiod and temperature on initiation and flowering of snapdragon—E. A. Maginnes and R. W. Langhans

1961—Dinitro for weed control in gladiolus—A. Bing

1961—How long does it take for gladiolus to flower?—A. Bing

1962—The influence of day and night temperatures and photoperiod on the growth and flowering of the Easter lily—D. R. Smith and R. W. Langhans

1962—Heating requirement of plastic greenhouses—R. Sheldrake Jr. and R. W. Langhans

1962—Weed control for the commercial gladiolus grower A. Bing

1962—Nutrient content of Croft lily from juvenile to mature stages during forcing in three fertilizer regimes—J. W. Boodley

1963—Influences of temperature and photoperiod on flower bud initiation in poinsettia—R. A. Larson and R. W. Langhans

1963—Quantitative measurements of morphological changes in the shoot apex of poinsettia in the transition from the vegetative to the reproductive state R. A. Larson and R. W. Langhans

1963—Artificial soils for commercial plant growing—J. W. Boodley and R. Sheldrake Jr.

Graduate Students

Harold A. Pratt '21—Retail florist, Ithaca, N. Y.

J. H. Brooks, 3rd '33—Retail florist business, Cincinnati, Ohio

A. J. Szendel '39—Professor of floriculture in Poland

George A. Beach '39—Professor of floriculture, Colorado State University

Frances Elliott Gramling '43—Commercial flower production in South Carolina

Joseph E. Howland '45—O. M. Scott & Sons, lawn specialists

Curtis G. Keyes '46—Flower grower and retailer, Pittsfield, Mass.

John G. Seeley '48—Professor of floriculture at Cornell

Harold E. Gray '48—Sales manager, Lord & Burnham Company

A. M. Kofranek '50—Professor of floriculture, University of California

Haruyuki Kamemoto '50—Professor of floriculture, University of Hawaii

Charles W. Fischer, Jr. '50—Commercial florist, Atlantic City, New Jersey

Harry C. Kohl, Jr. '50—Professor of floriculture, University of California

Leonard E. Carrier '51—Commercial carnation grower, California

Gavino Rotor, Jr. '51—Commercial orchid production, Tennessee

Charles A. Lewis '51—Horticulturist, Sterling Forest Gardens, Tuxedo, N. Y.

Donald B. Lacey '51—Extension floriculturist, Rutgers University

Richard C. Andreasen '52—Commercial chrysanthemum grower, Stuart, Fla.

Thomas J. Sheehan '52—Professor of floriculture, University of Florida

John W. Mastalerz '53—Professor of floriculture, Pennsylvania State University

Henry M. Cathey '55—Horticulturist, United States Department of Agriculture

Jacob H. Tinga '56—Professor of floriculture, Virginia Polytechnic Institute

Robert W. Langhans '56—Professor of floriculture, Cornell University

Robert O. Miller '58—Professor of floriculture, Ohio State University

Harrison L. Flint '58—Professor of ornamental horticulture, University of Vermont

Francisco Hilario '61—Instructor of floriculture, University of Philippines

Roy A. Larson '61—Professor of floriculture, North Carolina State University

Joe J. Hanan '62—Professor of floriculture, Colorado State

Theodore Bruszewski '63—Graduate assistant in floriculture, Pennsylvania State University

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Derek R. Smith '63—Floriculture research, England
Jon F. Scholes '63—Commercial nurseryman, Utah
William Morton '63—Research fellow, Wageningen, Holland

Undergraduate Instruction

Although the program of graduate studies often is more easily seen because of the research projects and publications, instruction of undergraduates is a major responsibility. We are proud of the many graduates who are in the field of floriculture and are making their contribution to the industry. Not only are there fellows in New York State such as: Herb Abrams, Paul Newman, Bob Hollenbeck, John Brookins, Herb Lehde, Henry Reinke, Bill Meachem, Herb Forbach, Jr., Steve Dalsimer, Joe Robbins, Pete Gardner, Bob Gambino, Jim Gugino, Ken, Ron and Rus Felthousen, Carl Gortzig, Tom Gilas, Brad Bearce, Don and Charles Jayne, Herb Saltford, Don Phelps, Myron Watkins, Otto Keil, Russ Weiss, Al Krautter, Bill Hannell, Bill Fronmuller, Ed Brown, Carmen Cosentino and many others in various parts of New York State, but we also think of others such as: Charles Fischer Sr. and Jr., Alex Laurie, Joe Johnston, Roy Wilcox, Ed Ludwig, Gurney Mann, Herman Schenkel Sr. & Jr., Harold Yoder, William Starke, Claire Maier, Hi Korematsu, M. T. Fossum, John Holden, Joe Cefalo, Ed Manda, Len Parker, Doug Dillon, Leonard Carrier, Gilbert Gude, Joe, Bill and John Pinchbeck, Ramsey Yoder, Ludwig Fetzer, Bill Edwards Jr., Barclay Brown, John Bodger, John Blaser, Bob Thompson, Seward Besemer and others scattered throughout the nation.

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Dr. A. M. Kofranek with Bird of Paradise plants

Easter Lily bulb production was concentrated in the area of Northern California and Southern Oregon, centered around Crescent City. As is true of most agriculture commodities the number of growers is getting smaller, but the farms and production are getting bigger. This usually means a better and more consistent quality. The planting stock was planted in November and harvested the following late September.

Easter Lilies in bloom—1700 foot rows

Colorado

We had the opportunity to visit a few carnation growers in the Denver area.

These are undoubtedly the most organized group of growers in the United States. It is somewhat of a natural situation (1) they are growing one crop and (2) they almost have to band together to market their product. It is rather amazing other groups of growers haven't banded together. I am sure there are difficulties, but the benefits appear to outweigh these.

A majority of the carnations in Denver were grown on a two-year rotation and a few were grown for the 3rd and 4th year. As disease control improves, I am sure we will see more 3 and 4 year crops. Perhaps the most interesting development was the use of corrugated fiberglass construction. I visited two large fiberglass covered ranges 60,000 or so square feet each. The crops looked good and comparable with glass grown. These house as well as all of the glass houses were air-conditioned. Even though Denver is a mile high their summer temperatures sometimes get quite warm and they feel their cooling has improved summer production.

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YOUR EDITOR,

Bob Langhans