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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. Gard
- 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

(continued on page 2)

50 Years of Floriculture

(continued from page 1)

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.

(continued on page 3)

50 Years of Floriculture

(continued from page 2)

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 respon-

sibility 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 re-erected 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-

(continued on page 4)

50 Years of Floriculture

(continued from page 3)

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 Building

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.