



Annual Report 1965-1966

TO THE PROVOST OF THE UNIVERSITY:

SIR,

The event which dominated the past year at the Arnold Arboretum was the decision rendered by the Supreme Judicial Court of Massachusetts in the case of the [Attorney General vs. President and Fellows of Harvard College](#).

The Attorney General, alleging a breach of trust, had sought to compel the University to reverse its approval of a close association between the Arboretum and other departments of biological study at Harvard and of the location of certain activities and resources of the Arnold Arboretum in Cambridge, thereby forcing their return to Jamaica Plain. In a long opinion submitted by a majority of the Court (three justices) with two justices dissenting, the Court allowed for the continued close cooperation between the Arboretum and the University.

The Court also found that "the effects of the move do not show that inadequate consideration was given to probable results or that bad judgment was exercised."

The Court noted that

"What we have said disposes of the contention that the move itself, so far as carried out as voted, was a breach of trust. We disagree with the view of our dissenting colleagues that it is implicit in the Indenture that the place of such implied related activities as the library and herbarium, if established, be the place specified for the growing of the trees, shrubs and plants. The dominant consideration is that those things and only those things be done that will, in the good judgment of the Corporation, promote the express purposes of the Indenture."

The Court did question whether "the implementation of the resolution of January 19, 1953, does not, or may not, conform to its terms."

That resolution (cf. The Director's Report on the Arnold Arboretum, *Jour. Arnold Arb.* 35: 367-381. 1954) "calls for the retention at Jamaica Plain of such books and specimens as may be required to provide there a working library and herbarium'."

The "resolution required that the books and specimens to be housed at Cambridge be appropriately identified."

The Court found that an "implication from the master's observation... may be that the intention of the Corporation's vote has not been met."

The Court also ordered that

"The rescript shall provide that the county court retain jurisdiction of the cause and that the defendant shall file with the clerk within six months of rescript (a) a report to it by the Arnold Professor or other appropriate person that in the Corporation's judgment shows either that an adequate working library and herbarium exist at Jamaica Plain or recommends the steps to cause them to exist; (b) a report of its proposals or action to amplify the catalogue and general listing references; and (c) a report of its proposal or action in respect of a general designation on or within the Harvard University Herbarium."

The required report showing the nature of the herbarium and library for horticultural research which are maintained in Jamaica Plain has been approved by votes of the President and Fellows and transmitted to the single justice for the entry of the final decree. Since the decision of the Court in this litigation did not require the removal from Cambridge and the return to Jamaica Plain of all the books and specimens transferred in 1954, it is now possible for the staff to plan for permanent changes and improvements in the existing facilities in Jamaica Plain. Consequently, contracts were placed in the spring for (1) an additional unit at the Dana Greenhouses, constituting a one-third expansion; (2) air-conditioning of the laboratory for cytology and plant morphology; (3) new lighting in the library of the Administration Building; (4) changes in office arrangement.

In the Harvard University Herbaria in Cambridge equally important consideration must be given because of growth of collections and increase in personnel and visitors for whom facilities are now limited by the physical plant. The decision of the Supreme Judicial Court of Massachusetts was necessary before any new programs could be proposed. The staff believes that the present organization and locations will permit the goals of the Arnold Arboretum to be extended and is hopeful that the hesitation and uncertainty of the past are, indeed, over.

Two small sections of land have been officially incorporated into the Arnold Arboretum during the year. One piece of approximately five acres, including a house at 383 South Street, was in the title of the [Bussey Institution](#). With the taking of the major part of the Bussey Institution property by the Commonwealth of Massachusetts in 1963, this area, adjacent to the collections of the Arboretum, remained. It has been used by the Arboretum staff and the house has been occupied by a staff member as an essential guard post for one corner of the grounds.

The Corporation in a vote of June 6th approved that "the land shall be held and used for the general purposes of the Arnold Arboretum" and "in consideration the fair market value of \$71,000.00 be transferred from the Martha Dana Mercer Trust gift held for the purposes of the Arnold Arboretum to the Bussey Institution Endowment."

A second piece of land in the northwest corner of the Arboretum was isolated from the main collections and could not be developed because of the use and retention of ownership of an old roadway by the Department of Public Works. After many years of effort the title to this isolated right-of-way was transferred to the owners of the abutting property, Harvard University and the [City of Boston Department of Parks and Recreation](#), respectively, and its use given to the Arnold Arboretum. We deeply appreciate the efforts of the Commissioner, Mr. William J. Devine, and of his associates, Mr. Arthur J. O'Keefe and Mr. Daniel Byrnes, in making this land available. The expansion of the conifer collection and the development of additional plantings of ornamental apple trees in this area, along United States Route 1, will greatly enhance the site for visitors approaching Boston.

Much time was devoted by the staff to securing aid to defeat a bill submitted to the Massachusetts legislature ordering the construction of a ski tow within the Arnold Arboretum, on Peters Hill. Although the bill was filed by a representative living in Jamaica Plain, the legislature properly realized that passage and implementation of it would destroy a major collection of apples and crab apples, and defeated the bill by voice vote. The staff is grateful to the many Friends of the Arboretum whose aid in contacting their representatives and expressing their disapproval was essential in defeating the bill.

A pleasant occasion to record occurred on May 17 during the meeting of the Committee to Visit the Arnold Arboretum. At that time Mr. Edwin Small, of the National Park Service, representing Mr. Stewart L. Udall, Secretary of the Interior, presented the certificate officially recognizing the Arnold Arboretum as a National Historic Landmark. Mr. A.H. Parker, Jr., Chairman of the Committee, accepted the certificate for the Arnold Arboretum. Also present were Mr. Henry Scagnoli, representing John F. Collins, Mayor of the City of Boston; Mr. L. Gard Wiggins, representing Mr. Pusey and the Harvard Corporation; and Mr. Daniel Byrnes, representing Mr. Devine and the Department of Parks and Recreation. Earlier in the year a bronze plaque was placed on a gatepost at the main entrance to the Arboretum.

STAFF

The retirement of one staff member and the resignation of four others took place during the past year. Mrs. Lilian Burian, who had mounted herbarium specimens for ten years, retired on January 30th. Dr. Theodore Dudley, Assistant Horticultural Taxonomist, resigned to accept a position at the U.S. National Arboretum.

Mr. Peter Green, Horticultural Taxonomist, resigned to join the staff of the Royal Botanic Gardens, at Kew, and Dr. Keith Ferguson resigned to work as a Fellow on the Staff of the Flora Europaea Research Project. Dr. Mary Sanders accepted an appointment at the Mount Alto Campus of the Pennsylvania State University, and resigned her appointment as Research Associate. The appointment of Dr. Harrison Leigh Flint as Associate Horticulturist was approved by the Corporation to become effective near the end of the present fiscal year. Dr. Flint, whose research interests include problems of winter hardiness of woody plants, joins

us from the staff of the University of Vermont. Miss Dulcie Alicia Powell, formerly of the staff of the Institute of Jamaica, Kingston, Jamaica, was appointed Research Fellow, and will continue her work on the cultivated ornamental plants of tropical areas. [Miss Stephanie Barry Sutton](#) was also appointed a Research Fellow and continues her work toward a [biography of Charles Sprague Sargent](#) and a history of the Arnold Arboretum. The promotion of Dr. Thomas G. Hartley to be Associate Curator of Pacific Botany was approved by the Corporation, to become effective during the next academic year.

Five Mercer Research Fellows were appointed during the year for varying lengths of time. Dr. Charles Tseng, of Windham College, Putney, Vermont, is carrying on morphological studies in the Araliaceae. Mr. Pablo Legname, of the Instituto Lillo, Tucuman, Argentina, has undertaken studies on the unworked collections from Argentina in the herbarium of the Arnold Arboretum. Appointments as Mercer Fellows in the area of horticulture, for work with the living and herbarium collections, were made to Miss Sandra Shannon, of the University of Massachusetts; Mr. Frank Wolfe, of the University of Vermont; and Mr. William Gensel, of the University of Rhode Island.

HORTICULTURE

The drought which has plagued New England and which has been mentioned in several recent reports continued during the fall and winter of this past fiscal year. The records show that the calendar year 1963 ended with the total rainfall 7.93 inches below average, 1964 was 6.30 inches below normal, while 1965 had a deficiency of 16.76 inches from the 44 inches normally expected at the Arnold Arboretum. The first four months of 1966 were 3.26 inches below normal, but the drought appeared to be broken, at least temporarily, by occasional heavy showers during the early part of June. The effects of a long continuing drought, however, are very evident in the resultant loss of plants. Adding to the damage caused by the continued drought was a major storm on January 23rd with a heavy wet snow which remained on the branches of shrubs and trees. Colder weather following the storm caused the weighted branches to break. Bushes bent by the accumulation of snow remained frozen in abnormal positions. The damage is now particularly obvious in the collections of Thuja and Chamaecyparis, in many of the azalea plantings, and in the shrub collection and nursery area.

The planting program, drastically limited in the last two years, had to be resumed during the past spring because of the accumulation of plants in the nurseries. Over 1,000 plants were added to the living collections. One purpose of [Dr. Wyman](#)'s travels through Europe during the spring and summer of 1965 was to select from many sources, including botanic gardens, private gardens, nurseries, and the wild, plants worthy of introduction into the United States.

During the current fiscal year material of 930 species and varieties of 119 genera was received, recorded, and propagated at the Arboretum. Of several thousand individual plants now growing in the green house area, some will be ready for hardiness testing during the next year. These are included among the 167 shipments received during the year from 11 countries,

comprising 1,012 species and varieties. In addition, shipments of seeds received numbered 130 from 35 different countries, comprising 364 species and varieties. In response to specific requests, the staff of the greenhouses distributed 109 shipments of seeds, representing 306 species and varieties, to 15 different countries. Plants and vegetative propagating material formed 173 shipments of 1,009 taxa to ten countries. Included in these figures are twelve taxa of *Cornus*, *Ilex*, *Ligustrum*, *Magnolia*, *Malus*, *Pieris*, *Potentilla*, *Syringa*, and *Viburnum* which were offered to cooperating nurserymen as plants introduced or selected by the Arnold Arboretum and worthy of greater horticultural use.

Work on the registration of cultivars continued, the publications including a check list for the genus *Weigela* and one issue of *Arnoldia* devoted to newly registered names in various genera. Inquiries for information and for the proper registration forms still far exceed actual returns. A full discussion of the registration procedure is planned for the International Horticultural Congress scheduled for the summer of 1966, when the future of cultivar registration may become more evident.

Compilation of a listing of cultivars for the genus *Lantana* nears completion. Changes of various sorts have been made at Jamaica Plain, some on the grounds which will become apparent in better landscaped plantings, more convenient paths for visitors, or healthier specimens; others will result in more efficient use of the facilities in the buildings, both for research and maintenance. On Bussey Hill a new retaining wall of natural boulders was constructed so that a level path could be established. Heavy mulching and the laying of a plastic pipe from South Street to the top of the hill, making water available for the first time, will improve the condition of both old and new plantings and enhance the general appearance of the collections.

Adjacent to the oak collection on Bussey Hill a beginning has been made on the establishment of a collection of *Viburnum* species. At the base of Hemlock Hill many evergreen rhododendrons have been planted in mass. Work has commenced on the establishment of terraces and walks on the slopes below the bonsai house in the greenhouse area, using rocks obtained from the Case Estates in Weston. When completed, this will become the location for the smaller plants of the genetic dwarf conifer study collection. Larger plants will continue to be placed in the area of the chestnut collection. Much effort is being expended on the rehabilitation of the old Centre Street roadbed, obtained from the Department of Public Works by the [Department of Parks and Recreation](#).

The city has removed the work house, and the Arboretum has contracted for the excavation of the road to a depth of about 3 feet, using this excavated material for filling in a swampy area and a dangerous pond on the South Street tract. Much fill will be needed in the roadbed, but localized plantings will be used in the meantime. In cooperation with the Department of Parks and Recreation a six-foot chain link fence is being erected around the new property.

The chain link fence bordering the Arborway was painted during the summer by boys in the Job Corps, a project directed by the City of Boston. Also with the cooperation of the Department of Parks and Recreation, the gates to the Arboretum were closed to driving on week-ends during the months of May and June. With very few exceptions this practice has met with the approval of those commenting, since it permits individuals and families to walk without concern for automobiles. The problem of parking space on the periphery of the Arboretum remains unsolved.

An even more serious problem is the continued vandalism within the Arboretum, with malicious cutting and felling of trees and fires deliberately set in the collections. Since the City was unable to supply additional police protection, special police were hired for the summer months to patrol the grounds during the evening hours. With the cooperation of the planning office of the University and the Medical School branch of the Department of Buildings and Grounds, plans are being completed for a new garage facility to remove the mechanical equipment from its cramped and crowded quarters in the basement of the Administration Building.

CASE ESTATES

It is pleasant to record again a marked increase in the use of the Case Estates, both by individual visitors and by groups requesting special tours. In both spring and fall, classes were held as afternoon walks around the grounds, and in May an Open House was held on what, unfortunately, was a cold, rainy Sunday. Parking for visitors remains a problem both on Wellesley Street and near the barn. A display of mulching materials prepared for exhibit at the Spring Flower Show of the Massachusetts Horticultural Society, in 1964, aroused such interest that the plan was developed for use in Weston.

Two long beds, 6 by 100 feet, were prepared in the fall and planted in the spring. Each bed is divided into units ten feet long, permitting the use of 20 different kinds of mulching materials. Additions have been made to the exhibit collection of Hemerocallis. New taxa of Allium have been acquired by gift and purchase in the hope of establishing a new bed for next year. An experimental nursery planting of 132 trees was set out in the large field along Newton Street, and 89 trees of 37 species and varieties were added as display specimens in the same field.

The town of Weston was given 193 trees and shrubs in the fall of 1965 for planting in the town. All had been placed by spring, and a letter of appreciation for the gift was received from the members of the Weston Park and Cemetery Commission.

HERBARIUM

The decision of the Supreme Court granting permission to keep collections of the herbarium and library in Cambridge has made feasible a reexamination of the herbarium building and its facilities.

In 1954, when the collections were moved, the capacity of the building for the combined collections of the Arnold Arboretum and the Gray Herbarium was considered adequate for ten years' growth. It is now twelve years since the move occurred and the increase in the herbarium collections has exceeded what was expected, partly from the study and incorporation of previously unworked collections and partly from expanded and increased interest in plant groups and geographical areas not formerly studied by the Arboretum staff. A developing interest in the herbaceous plants of all floras has resulted in such material being studied, mounted, and inserted as a part of the Arboretum herbarium, rather than as formerly, being donated to, or exchanged with, other institutions, or even discarded. An increasing awareness of the importance of the floras of Africa and Australia, and the deficiency of our collections in these areas, have led to active efforts to increase our collections by gift or exchange with institutions working seriously on these floras. The collections so expanded will make available for research and teaching interesting representatives of the plant families characteristic of these parts of the world. As a result, the collections are increasing in a normal way for an active herbarium.

The number of staff, students, and visitors also increased since 1954 and should continue to do so. This, however, is straining the existing working facilities beyond capacity. A small table and simple microscope are inadequate to cope with the newer and more sophisticated taxonomic techniques which require laboratory space and, often, photographic equipment. The building has become inadequate both for the staff needs and for housing the collections. In fact, it has become necessary to store certain groups of specimens in cardboard boxes on top of the steel cases. In the horticultural herbarium in Jamaica Plain the situation for growth is more favorable.

Case space is adequate for a decade of expansion, and space for more cases and for special laboratory facilities in the Administration Building is available. During the year 18,647 specimens were mounted and added to the herbarium collections in Jamaica Plain and Cambridge, bringing the total number of sheets to 824,920. Also during the year 14,483 specimens were received, the greater portion by exchange. A very important addition to the horticultural herbarium was the gift of the herbarium of the Herb Society of America, which is now being appropriately marked to indicate its origin and inserted into the herbarium. Access to this collection will, of course, be available to members of the Herb Society when needed, but the specimens will also be available on loan to monographers for research studies, and to the staff for reference. Arrangements were made during the year to collaborate with the Universidad Nacional Autónoma de Mexico on the production of an ecologically oriented Flora of the State of Veracruz, Mexico. The study will be under the direction of Dr. Arturo Gomez Pompa, a former Mercer Research Fellow, now Director of the National Herbarium of Mexico. The staff of the Arnold Arboretum will collaborate in the study of the cultivated plants and by supplying assistance in herbarium, library, and research facilities. Dr. Lorin Nevling is expected to serve as coordinator for the rest of the staff.

LIBRARY

The status of the library of the Arnold Arboretum was also affected by the decision of the Supreme Court permitting the retention of books in Cambridge. Since a complete reorganization of the whole library is not now necessary, it has been possible to initiate a rearrangement of the horticultural library in Jamaica Plain to make it more easily usable. The work of cataloguing the material in the new arrangement will, of necessity, continue through the summer, but an important start has already been made this year.

The new arrangement will permit greater use of the library in association with the horticultural herbarium and make it easier to use the library in the reference room as an open-stack-library. In the catalogue of the combined libraries of the Arnold Arboretum and the Gray Herbarium in Cambridge the librarian, Mrs. Schwarten, is indicating the ownership of the book on each catalogue card, and for the Arboretum books, specially marking each one housed in Jamaica Plain. This work has been completed for about one-half of the catalogue and the whole task should be finished within this calendar year.

During the year 431 bound volumes were added to the library of the Arnold Arboretum. The total count of bound volumes is 53,295.

[Miss Stephanie Sutton](#) continues her work on the history of the Arnold Arboretum, on the [biography of Charles Sargent](#), and on the organization of the [historical correspondence](#) of the Arboretum. During the year Miss Sutton made a study trip to England to consult letters of Charles Sargent in the files of the Royal Botanical Gardens, Kew, the British Museum (Nat. Hist.), and at the library of the Royal Horticultural Society. The assistance rendered Miss Sutton in this search is gratefully acknowledged, as are the many photocopies of letters to and from Sargent which have been sent from many institutions and individuals in the United States. It is hoped that still other letters representing different periods or other facets of Sargent's life will be found.

EDUCATION

No formal courses were given by members of the Arboretum staff, but several of them were special lecturers in a course in Plant Geography, or supervised the work of students. Informal field classes were offered at Jamaica Plain under the direction of Dr. Wyman and on the Case Estates in Weston by Dr. Hartley.

A course in Plant Propagation was offered throughout the year by [Mr. Fordham](#). The staff took part in the regular series of weekly seminars held in the Herbaria in Cambridge. The Arboretum staff served as host to various visiting groups for conducted tours, special seminars, and general discussions or provided space and facilities for meetings. The horticultural judging and identification competition sponsored jointly by the University of Massachusetts, the Massachusetts Department of Agriculture, and the Boston Public Schools was held in the auditorium of the Administration Building.

The mid-winter meeting of the Northeast section of the American Society for Horticultural Sciences was held in the lecture rooms of the Biological Laboratories and in the Harvard University Herbaria in Cambridge. A special open house in Jamaica Plain and an invitation to visit all of the Arboretum facilities was extended to members of the Department of Biology of Harvard. The Arboretum was represented at many national and international meetings and several staff members attending usually presented papers.

TRAVEL AND EXPLORATION

The convenience and speed of air travel and the availability of federal and foundation grants to support field work and attendance at scientific meetings have made it possible in recent years for botanists and horticulturists to travel widely.

Dr. Dudley visited several gardens in New York, New Jersey, and Pennsylvania to collect specimens for the horticultural herbarium. Mr. Fordham continued his field studies of naturally occurring witches' broom in conifers in several New England states and visited six botanical gardens and arboreta in Ohio.

Dr. Howard and Dr. Nevling made two study trips to eastern Puerto Rico during the year. Dr. Nevling attended a symposium in Belem, Para, Brazil, and en route was able to do field work on plants of his specialty near Rio de Janeiro, in Venezuela, and in Trinidad. Dr. Schubert attended a council meeting of the Association for Tropical Biology, also in Belem, and spent a week collecting near there. Miss Sutton made a trip to England to carry on her biographical and historical investigations. Dr. Wood took part in one of the study trips to Puerto Rico and was able to have several weeks in the field in Florida where he collected from Tampa to the Florida Keys and northward to Jacksonville. Dr. Wyman completed his European trip during the present fiscal year. Members of the staff are most grateful to all those individuals who helped in various ways to make their trips both successful and interesting.

GIFTS AND GRANTS

Three grants were received by staff members from the National Science Foundation. Dr. Howard was awarded a grant for two years to study the biology and environment of the mossy or elfin forest in Puerto Rico. A one-year grant to Dr. Wood is a terminal grant for the project on the generic flora of the southeastern United States. The National Science Foundation has supported this work generously for the past ten years.

Dr. Bailey received a grant to continue his investigations of the leaf-bearing Cactaceae. In addition, a travel grant from the Association for Tropical Biology supported the work and travel of Dr. Nevling in Brazil. Special anonymous gifts were used to aid the travel of Dr. Wyman in Europe and of Miss Sutton in England.

An appeal to the Friends of the Arnold Arboretum brought renewed contributions from many loyal supporters. This assistance is used entirely for work in horticulture and on the grounds of the Arnold Arboretum unless otherwise designated. Certain groups of plants and

certain of the plantings in the Arboretum have their own special friends who designate the purposes of their gifts. It is a pleasure to carry out such wishes. Every year special gifts of books, herbarium specimens, botanical prints, plants, Kodachrome slides, and photographs are received from many sources. Special acknowledgment is sent directly to these donors for their interest in and generosity to the Arboretum.

PUBLICATIONS

The regular publications of the Arnold Arboretum are the [*Journal of the Arnold Arboretum*](#) and *Arnoldia*. The *Journal* was edited by Dr. Schubert and the four issues published during the year comprised 430 pages and 25 articles.

Publication of the letters from Charles Sprague Sargent to Reginald Somers Cocks, edited by Dr. Joseph Ewan of Tulane University, was completed in this period. A detailed bibliographic study of Grisebach's Flora of the British West Indian Islands was contributed by the British botanist William T. Stearn. A group of related papers on a new genus of palms by Dr. Harold E. Moore, Jr., and Dr. Natalie Uhl of the Bailey Hortorium and Dr. P.B. Tomlinson of the Fairchild Tropical Garden represent another of the interesting contributions published during the year.

During Dr. Wyman's absence *Arnoldia* was edited by Mr. Green. The twelve issues during the year contained a variety of articles on horticultural topics ranging from a check list of cultivars in Weigela to new and additional pictorial studies of tree barks. One issue devoted to plants which could be used to screen junk yards and dumps has been reprinted twice and, by request, rewritten slightly for other magazines.

A new section "*Arnoldia* Reviews" will appear from time to time to call attention to publications of interest in horticulture, botany, and forestry. A cumulative index to the nine volumes of the *Symbolae Antillanae* of I.

Urban was issued as a special publication. The Index was prepared by Miss Carroll and Miss Sutton, under the direction of Dr. Howard, who prepared a biographical sketch of Dr. Urban. A set of 18 postcards was printed to supplement and replace those already issued. In response to special requests cards of the bonsai, fall foliage colors, and winter scenes were included. Two new brochures with new maps of the Arnold Arboretum and the Case Estates were prepared by Miss Jeanne Taylor. The bibliography of the staff includes 56 articles and books published during the past fiscal year.

RICHARD ALDEN HOWARD, Director