



Annual Report 1972-1973

TO THE PROVOST OF THE UNIVERSITY:

SIR,

The calendar year 1972 was designated as the Centennial Year of the Arnold Arboretum, and the special program held the last week in May was described in the previous report of the Director. The second half of the year was no less a busy one for the staff, since the publicity continued to draw additional visitors and groups to the grounds.

When the Olmsted Sesquicentennial was celebrated nationally in the month of October 1972, the Arnold Arboretum, being in part the handiwork of [Frederick Law Olmsted](#), was also involved. Dr. and Mrs. Richard Howard attended the opening of the national exhibit at the Mellon Gallery of Art in Washington. The Boston observance consisted of a small display and a reception in City Hall, with the announced theme a plan to revitalize Boston's parks. Later Brookline staged a more formal program and offered, among other visits to the area of Olmsted's influence, bus tours of the Arnold Arboretum guided by members of the staff.

Throughout the fiscal year the assistance of Volunteers, a group established for the Centennial program, was most effective. After a training program the Volunteers have been helping in nearly every aspect of the work of the Arboretum. We are deeply indebted to these men and women for their contributions of time and talents.

An innovation, tried experimentally for three weekends during the spring, was the use of a rented, jeep-drawn, two-unit, open seated vehicle for transporting visitors around the grounds. An amplifying system permitted the guides, who were either staff or Volunteers, to comment to groups of fifty people during a fifty minute ride. The fee charged produced a small profit, and the surney rides elicited a most favorable public reaction.

STAFF

Dr. Lorin Nevling, Jr., resigned his position as Curator of the Arnold Arboretum and Coordinator of Botanical Systematic Collections. This is a critical position to the operation of the herbaria in Cambridge, and a replacement will be sought immediately.

Dr. Bernice Schubert and Dr. Richard Howard were named honorary vice presidents of the First Latin American and the Fifth Mexican Botanical Congresses. Dr. Howard was also

elected president of the American Association of Botanical Gardens and Arboreta. Dr. Carroll Wood was elected vice president of the Southern Appalachian Botanical Club. [Mr. Alfred Fordham](#), Propagator for the Arboretum, was honored by the International Lilac Society with an Award of Merit.

COMMUNITY SERVICE

The role of the Arnold Arboretum and its staff in community affairs has grown in scope and significance in recent years. The bequest of [James Arnold](#) was accepted by the Harvard Corporation to create a collection of all of the hardy trees, shrubs, and herbaceous plants. Nine years later, the Corporation transferred the land to the City of Boston and agreed that the grounds should be open at all reasonable hours. Thus the Arboretum is both a scientific collection and a public park.

Many of the visitors expect the staff members to be present at all times, facilities to be available to them, and someone on hand to answer their questions in person or by telephone. From mid-April to mid-June, in the last few years, the administration building has been staffed on weekends and holidays. Although the Volunteers have helped, the need still arises for professional staff members to be present, with the concomitant administrative problems of overtime, adjusted work-weeks, or special employees. This weekend duty is expensive to the organization, and unwelcome in a society accustomed to Monday through Friday work schedules.

The professional competence of the staff and the resources of the organization are well known, and are subject to many requests for services from many levels of society. These include requests for plant identification and sources of plant material, information on culture or plant disease, aid in landscape design, conduct of classes or tours, presentations of lectures, and donations of plants for worthy environmental improvement programs. It is apparent now that the requests exceed the abilities of a limited staff. Many requests, if fulfilled, exact the sacrifice of professional staff time more profitably devoted to research and publication. Some critical decisions regarding this role of the Arnold Arboretum must be made in the near future.

The Arnold Arboretum staff handles all questions regarding toxic plant materials, excluding only mushrooms, for the Boston Poison Center of the Children's Hospital. Such calls are most frequent in the spring and the fall, and are received at the administration building during working hours but referred to the home telephones of several staff members after hours. In the course of the year the calls averaged thirty a week, and involved seventy-four different plants. About half the evening calls are from doctors or emergency staffs of hospitals. Realizing the need for public information on this subject of potentially poisonous plants, the Arboretum staff made poisonous plants the theme of its exhibit at the Spring Flower Show, plans an issue of *Arnoldia* on the subject, and has been engaged in the development of an educational film on the topic.

The Arboretum has a few houses on the grounds in Jamaica Plain and on the Case Estates in Weston. Staff members who occupy these houses are in effect resident guards against fire and vandalism, and are sources of information for visitors to the collections. These duties often span the full twenty-four hours of a day. No matter what community they live in, the staff members are called upon for professional services. Arboretum staff members try to be helpful representatives of Harvard in response to requests from the communities of Jamaica Plain, Boston, Cambridge and Weston, in particular. Reaching the school teacher, offering the invitation for a class under her direction to visit the Arboretum, but instructing her ahead of time what to see and what to tell. Workshops and classes for teachers of botany and biology in the Boston area have been conducted regularly at the Arboretum in Jamaica Plain and at the Case Estates in Weston.

Community service by the staff in many ways has become a major role of the Arnold Arboretum.

HORTICULTURE

Man and nature combined to make the care of the grounds more difficult during the past year. Throughout the Centennial year the appearance of the grounds received more than usual attention. We are obviously understaffed to have perfect maintenance of 265 acres in Jamaica Plain with twelve regular men, or of 110 acres in Weston with four men. However, the Arboretum does not need to be mowed to lawn level as long as the plants are cared for properly, labels are in place, and debris kept to a minimum. Each of these aspects has presented special problems. It is almost generally true that the quality of machinery has decreased. Most aggravating is the unavailability of replacement parts for otherwise satisfactory equipment.

Vandalism remains a great problem, along with the growing carelessness of some of the visitors. The administration building was broken into three times during the year, and equipment was stolen. An alarm system has now been installed so that any window or door broken for entry signals the Harvard Police Department in Cambridge. They in turn call a member of the staff and the Boston Police who must investigate. Within the building, rooms and sections are locked, often with chains and padlocks. The increased inconvenience nearly eliminates the opportunity for voluntary staff work evenings or weekends.

We have also suffered a great increase in the theft of labels from the living collections. Our records are such that important data is not lost, since all plants are mapped, but our ability to present a labeled collection is sorely tested.

The national adoption of three-day weekends for holidays has only added to the problems of maintaining the Arnold Arboretum. The weekend of April 14-16, Patriot's Day, was unusually pleasant. As a result, young people congregated in large numbers, and the after-dark assembly is best described as a mob. By Tuesday morning the conifer collection and the hillside near the main gate at the administration building resembled a windblown dump; the area was

literally covered with paper, bottles and cans. It required the work of the full grounds crew for the rest of the week to pick up the debris. Unfavorable publicity appeared in the Boston papers, and a petition was received from the neighbors to "Save the Arnold Arboretum."

A meeting was arranged with the [Park Commissioner](#), and the Boston Police, and as a result we have received significantly more police attention. It has also been possible, with the cooperation of the Traffic and Parking Commissions, to declare three bays in entrance areas as tow zones after dark. Further consideration must be given to more adequate fencing, restricted hours of admission, and perhaps an admission charge. The City does not contribute to the cost of maintaining a clean arboretum, and the Arboretum budget cannot supply additional guards or labor without eliminating some other program.

Nature, too, had a role in the exceptionally cool and wet spring of 1973. There may be lasting effects from major infestations of canker worm on plants of *Carya*, *Juglans*, *Quercus*, *Acer* and *Tilia*; of anthracnose on *Carya*, *Quercus* and *Platanus*, and of blight on species of *Juniperus*. Although sprays will control such outbreaks, they must be used judiciously, and the recurrent rain washed away the material used before it was fully effective.

In spite of these difficulties, the Arnold Arboretum remains an excellent and attractive collection. Additional plantings were made during the year, and the total inventory of hardy plants is now larger than at any time in the past century.

The Case Estates of 10 acres are located in the town of Weston, thirteen miles from the plantings in Jamaica Plain. The land is used primarily as a nursery for young plants propagated in the greenhouses at Jamaica Plain, and for the permanent holding of taxa for which there is neither room nor desire in the Jamaica Plain area. Some special display collections are maintained at the Case Estates, and one building is available for lectures, classes and meetings. The area is attractive, and parking has not become a problem, so the number of visitors and groups to the Case Estates is increasing. Classes and lectures held during the year, day or evening, were well attended by persons who will not venture into the city.

Discussions continue with the Sidewalk Committee of the Town of Weston regarding the development of a bicycle path and sidewalk along the hazardous Wellesley Street frontage.

THE HERBARIUM

Last year's report noted the award of a grant, renewable annually for five years, from the National Science Foundation to the Harvard Botanical Institutions for support of curatorial activities in the herbaria and the libraries. The grant (GB33856XI) is shared by the Arnold Arboretum, the Botanical Museum, the Farlow Herbarium and Library, and the Gray Herbarium.

During the first year of operation, the new funds permitted additional mounting of herbarium specimens to make available the backlog of unmounted and often unstudied collections. Additional personnel were hired for the insertion of the increased number of specimens mounted, and one person was assigned the task of checking our holdings against

recently published monographs. Some aid was allotted to the purchase of supplies and materials, and in a future year, when space is acquired for them, additional herbarium cases will be purchased. Allocations to the library will be discussed later.

During the year 29,319 specimens were mounted and inserted, bringing the total for the herbarium of the Arnold Arboretum to 1,000,559 mounted specimens, of which 151,609 are of cultivated plants and are housed in Jamaica Plain.

The Arboretum received 6,182 specimens in exchange, and 5,953 under a subsidy program. The purchase of the 5,000-sheet herbarium of the Hesse Baumschule in Germany is especially valuable, since this herbarium was built up as a study collection of plants cultivated in Germany. The collection is on oversized sheets, with data handwritten on them. Several of the Volunteers have undertaken the task of remounting the specimens and preparing typed, long lasting labels.

The Hesse Herbarium will be added to the collections of cultivated plants in Jamaica Plain, and can be accommodated in available cases and space. The housing of specimens in Cambridge, however, is increasingly difficult. At present, over 2,053 cardboard boxes, representing approximately 14 steel cases, are used on top of existing cases. These boxes of specimens can be reached only by ladders, and so are difficult to use, and constitute a barrier interfering with the circulation of air in the building. A report on the space problem, with recommendations for readjustments and new space, as an addition to the building, has been submitted to the administration of Harvard University. For some immediate relief of the crowded conditions for the housing of staff and collections, the Botanical Museum made some space available to the Museum of Comparative Zoology in exchange for space in the Agassiz Museum contiguous with the third floor of the Harvard University Herbaria building. Renovations should be completed in the next year and offer some relief- primarily as office-laboratory space.

Requests for the loan of herbarium specimens, noted as greatly increased last year, continued at the increased rate. Such requests are filled with specimens from both the Arnold Arboretum and Gray Herbarium collections, and with cultivated specimens from Jamaica Plain when appropriate. From the several collections, 23,237 specimens were sent as 190 loans to 59 institutions in the United States, and to 33 institutions in 20 foreign countries.

The outgoing loans averaged 122 specimens. For staff and student research, 7,007 species were borrowed as 96 loans from 36 institutions, and averaged 73 specimens. Student use accounted for 36% of the loans and 45% of the specimens.

The additional help made possible by the grant was also applied to the wood and fruit collections. These are being upgraded by the removal of undocumented materials, while the collections remaining are now placed in sealable plastic bags to reduce the danger of spillage and infestation, and to maintain cleanliness.

The history of the wood collections has been compiled by Dr. Ralph Wetmore. While the Arboretum many years ago assumed responsibility for the collection through the work of Professor I. W. Bailey, it appears, on a legal basis, that the material was accumulated and maintained in the early years with funds from the Department of Biology and the [Bussey Institution](#), and only later the Arnold Arboretum. Resolution of the proper responsibility for the wood specimens has not been made. The space currently occupied by the collection in the Harvard University Herbaria building is more urgently needed, and the collection will be moved to new basement quarters in the Botanical Museum. The NSF grant will permit the acquisition of new slide holders to replace the old-style wooden boxes now in use, resulting in considerable compaction.

The normal research activities of the staff were disrupted by the special demands of the Centennial year program. This is clearly reflected in the reduced bibliography of published papers. Schedules are returning to normal, and the following types of research activities are in progress: floristic studies are the work of Dr. Howard on the Lesser Antilles; Dr. Hu on the flora of Hong Kong and the New Territories; Dr. Nevling on the flora of Veracruz, Mexico; and Dr. Wood and associates on a generic flora of the Southeastern United States. Monographic and other systematic studies were undertaken by Dr. Howard, who completed a treatment of the Piperaceae in the Lesser Antilles, and a study of Jacquin's Enumeratio; Dr. Robertson, who is completing a treatment of the Rosaceae for the generic flora project; and Dr. Schubert, who continues her studies of Dioscorea and Desmodium. Dr. Sponberg is working toward a revision of *Rehder's Manual*, with current emphasis on the Theaceae. Dr. Weaver is studying tropical Gentianaceae. Drs. Hartley and Perry have completed an enumeration and key to the species of *Syzygium* in Papua, New Guinea. The staff is supervising the studies of two students investigating *Lonchocarpus* and *Portlandia*.

LIBRARY

The curatorial grant from the National Science Foundation has permitted improvement in the facilities and care of the library collections. For Jamaica Plain, used library stacks were purchased, and painted by the grounds staff during the winter. The addition of nearly 3,000 running feet of shelving has alleviated crowded conditions and will permit expansion. In Cambridge the old steel card cabinets holding the general catalogue have been replaced with modern wood and plastic files, greatly increasing the convenience of use through smaller drawers. File cabinets were added to the Torrey Card Index.

The reading room has been reorganized in a more pleasing and practical manner. A new compact table-top microfiche reader was obtained. The grant has also permitted an increase in the retrospective binding of old publications and periodicals.

The holdings of the library of the Arnold Arboretum were increased by 1,296 items to a total of 81,909 catalogued volumes. Currently 637 periodicals are received by the Gray Herbarium and Arnold Arboretum, forming a truly excellent library for botanical and

horticultural research. Additional microfiches of herbaria and books are purchased jointly, with the current holding comprising 9,222 microfiche cards.

Books charged within the library totaled 4,579 during the year, with 1,338 volumes charged outside of the library. A survey of the use of the library in Cambridge over a period of several months revealed a ratio of 8-3-1 in use by staff, students, and visitors.

[Stephanne Sutton](#), Honorary Research Fellow, has completed a [biography](#) of [Joseph Rock](#), plant collector for the Arnold Arboretum for many years. A publisher is being sought for this manuscript.

EDUCATION

The educational program of the Arnold Arboretum involves formal teaching at Harvard; participation in the guidance of graduate and undergraduate students; noncredit informal courses at the Arboretum in Jamaica Plain and Weston; many public lectures, radio and TV appearances; a publication program which includes our regular journals as well as newspaper and magazine articles not cited in scientific bibliographies, and many displays and exhibits.

Dr. Carroll Wood offered Biology 103, an elementary course in the taxonomy of vascular plants. Twenty-two regular students plus auditors made this the largest class in this subject in nearly two decades. He offered research courses Biology 96 and 91r to special students, and cooperated with Professor P.B. Tomlinson in teaching a summer school course in tropical botany, which met in Miami and in Cambridge. Dr. Howard presented Biology 209, an advanced class in the phylogeny and evolution of flowering plant families. Dr. Schubert and Dr. Wood were undergraduate advisors for the Biology Department, and combined to conduct the botanical seminars held in Cambridge. Seven staff members were involved in teaching noncredit courses at the Arboretum involving adults and Harvard-Radcliffe students.

TRAVEL AND EXPLORATION

The travels of the Arboretum staff may be for field work, meetings, or lectures, but each trip provides an opportunity to make botanical observations, collect special materials for staff research, or obtain photographs useful in teaching. Dr. Hu spent eight months of the past year in Hong Kong. She offered courses at Chung Chi College in taxonomy and local flora, and involved students in obtaining material for her work toward a flora of the area. Dr. Wood took two classes to Florida, and preserved a considerable number of plant parts from which an artist can prepare illustrations supporting his work on the generic flora of the Southeastern United States.

Dr. Schubert and Dr. Nevling both attended meetings in Mexico and collected in the state of Veracruz. Dr. Gillis, a research fellow, visited several islands in the Bahamas, as well as the Turks and Caicos, seeking new collections and illustrative material for his research. [Dr. Weaver](#) visited Venezuela and Colombia to collect tropical members of the Gentian family.

Dr. Spongberg traveled to South Carolina in the spring, and on the way north visited botanical gardens to obtain record material for his work on a revision of *Rehder's Manual*.

To increase the collection of lilac cultivars in the Arnold Arboretum, Mr. Hebb visited the Royal Botanical Gardens in Ontario, Canada, where the newer European varieties are grown which we have been unable to obtain directly from Europe.

GIFTS AND GRANTS

The income from the endowment of the Arnold Arboretum and the special Mercer Trust covers only 75% of the expenditures of the organization. Gifts and grants make up the difference and offer the only means of meeting the inflation of costs in the present economy without reducing the activities and number of the staff. We are most grateful for the repeated annual gifts from the Friends of the Arnold Arboretum.

Memorial gifts have been offered to the Arboretum on many occasions, and are gratefully received. Such gifts are usually associated with plantings on the grounds, and less frequently with the library. Such gifts are acknowledged and recorded in a special file. Numerous generous gifts of plant materials have been received from nurseries, and individuals have donated a number of books useful to the staff as library resources. Grants from the National Science Foundation, the Massachusetts Council on Arts and Humanities, the Tozier Fund, the Atkins Fund, and several private foundations have supported specific projects.

RICHARD A. HOWARD, Director