



The Director's Report
Arnold Arboretum
1990-1991

Front Cover: The Boston Park Rangers are always willing to help orient visitors to the Arnold Arboretum.
Photo by RÁCZ and DEBRECZY.

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Robert E. Cook, Director

The Arnold Arboretum of Harvard University
125 Arborway, Jamaica Plain, Massachusetts 02130
1992



Nearly 110 years ago, on December 30, 1882, Harvard University and the City of Boston entered into a historic collaboration. On that day President Charles Eliot and the city's park commissioners signed an indenture that would permit the development of the Arnold Arboretum's scientific collections while incorporating the Arboretum landscape into the Boston park system "at all reasonable times [to] be open to the inspection of the public." It was a new, grand idea.

Over a century later, the importance of the collaboration was celebrated at another newly created park in the heart of the City. Last spring I joined the Mayor of Boston and the Friends of Post Office Square to plant and dedicate six large specimen trees on "permanent loan" from the Arboretum to the park. Dug and balled by hand on our grounds and transported to the site by several sixteen-wheel trailer trucks, these trees remain a part of our collection, loaned to the City as a return on its investment in the Arboretum made many years ago. It was a day to recall the words of John Ruskin:

Let it not be for present delight,
nor for present use alone;
Let it be such work as our descendents
will thank us for,
And let us think that a time is to come
when men will say,
See! This our Fathers did for us.

The unique collaboration between the City and Harvard University continues to flourish to the present day. Collaboration is a theme that will reappear throughout my Director's Report for 1990-91. In these difficult financial times when all institutions are defining their priorities in the face of limited resources, creative collaborations offer a great hope for the having of new, grand ideas.

Facing page: An overview of the recently completed park in Post Office Square, Boston. Photo by Peter Vanderwarker.

LIVING COLLECTIONS

Although we spent much time during the past year reviewing the management of our woody plants and planning for their future care, it is the ongoing statistics of accession and deaccession that measure the growth of the collection. Between July 1990 and June 1991, the number of living plants in our records grew to 14,390, representing the addition of 664 plants and the loss through deaccession of 340. The total number of taxa in our Living Collection is now 5,511.

A living collection also requires constant monitoring. Last year our staff provided comprehensive field checks for 12 of our 64 ground-map quadrants and for 11 of the 14 beds in the Bradley Collection of Rosaceous Plants. Nearly 2,000 record and display labels were replaced, and 3,359 individual plants received field checks.

A second ongoing activity of critical importance involves the maintenance of our computerized plant records. The following gives some indication of the scope of this database: it contains names for a total of 694 families of plants, 817 genera, and 11,326 taxa including synonyms; 418 literature references; information on 1,890 institutions, nurseries, or individuals responsible for providing us with plant material; data on 23,831 accession lots representing 15,720 lineages; and records for 24,722 plants of which, as noted above, 14,390 are alive in the collection. Finally the database contains detailed descriptions and background information for over 8,000 taxa.

The greenhouse also experiences an influx of accessioned material each year. Over 860 lots of seeds, plants, or cuttings came into our propagating facility last year. Approximately 400 of these were new additions to the collection, 146 were repropagations to replace plants that are old or in poor condition, 250 were for future sale or exchange with nurseries or other botanical institutions, 60 will support horticultural research. And as one of the participating institutions in the Center for Plant Conservation, 6 lots form part of our endangered species collection.

We also provided over 1,330 items of plant material to research institutions, botanic gardens, nurseries, and individuals around the world, including distributions of *Chionanthus retusus*, *C. virginicus*, and *Rubus lasiostylus* var. *hubeiensis* to readers of *Arnoldia*. Samples of *Taxus*, *Amelanchier*, *Pinus*, and numerous species in the Oleaceae, Berberidaceae, and

Aquifoliaceae families were supplied to researchers for studies in molecular systematics.

Two collecting trips were mounted by the Arboretum in the past year. One trip to northeastern Mexico secured collections of *Taxus globosa* for analysis of the anti-cancer drug taxol. Other high-altitude taxa that may prove hardy at the Arboretum were also collected. A second trip obtained collections from the temperate beech and rain forests of southern Chile.

Curation

Taxonomic curation of our Living Collection also continued with support from an Institute of Museum Services grant to fund a major verification of our rhododendron holdings. This project has highlighted a number of unique taxa in the collection, and the results will provide the basis for future acquisitions. Our holdings in other genera (*Celtis*, *Carpinus*, *Ostrya*) were also evaluated by our horticultural taxonomist.



A close-up of the flowers of *Liriodendron chinense x tulipifera*, which flowered in the Arboretum for the first time in 1991. Photo by Rácz and Debreczy.



Superintendent Pat Willoughby, along with pruners John Olmsted and Dave Moran, shows off the Arboretum's new bucket truck. Photo by Gary Koller.

Equally important to curation is the vouchering of accessions when they first come into flower. Fine spring weather in 1991 brought a number of new accessions into bloom for the first time in many years: *Calycanthus occidentalis*, *Decaisnia fargesii*, *Fortuneria sinensis*, *Helwingia japonica*, *Lindera erythrocarpa*, *Liquidambar acalycina*, *Liriodendron tulipifera* x *chinense*, *Magnolia biondii*, *Magnolia fraseri*, *Magnolia officinalis* var. *biloba*, *Nyssa sinensis*, *Prunus ssiiori*, *Sinojackia rehderiana*, *Sinojackia xylocarpa*, *Staphlea holocarpa* var. *rosea*, and *Xanthoceras sorbifolium*.

Bussey Brook was the site of a major landscape renovation project that led to the development of the Linda J. Davison Rhododendron Path under the guidance of landscape architect Julie Meservy. Rusted chain-link fence and metal railings were removed, and the stream bed was diversified with wading pools and waterfalls. Through the judicious placement of large stepping and sitting stones, a serene, contemplative space surrounded by rhododendrons and naturalistic ground covers was created.

The upgrading of the display of specimens in the Larz Anderson Bonsai Collection was helped along significantly by a generous gift from the Arnold Arboretum Associates, which allowed us to construct a set of six elegant stands for our growing collection of Chinese penjing.

Landscaping also continued in the Bradley Collection of Rosaceous Plants. In addition to major plantings from material propagated in our greenhouse, we installed a permanent granite cobblestone edging to define the perimeter of each bed. A fieldstone retaining wall was constructed to integrate the Bradley Bench into its surrounding landscape and plantings. We also initiated a major project to upgrade the turf throughout the garden.

After twenty years of service, our Hi-Ranger, an aerial bucket truck critical for tree work, was retired last summer and replaced with a customized Ford F700 fitted with a new aerial lift capable of tree work to heights of 52 feet.

In preparation for developing our master plan, the Living Collection staff devoted much time to long-range planning. Out of this effort has come a document that reviews and updates our collection policy, prescribes guidelines for the management of the landscape, and defines the roles of our library and herbarium in Jamaica Plain as critical resources for the Living Collection Department. During the coming year we will continue to review the system whereby we manage our collections from the accession of seeds into the greenhouse through the lifetime of a plant on the grounds.

Case Estates

We also evaluated the role of the Case Estates as a support facility for our Living Collection. This farm land in Weston, Massachusetts, was given to the Arboretum half a century ago. In former years it served as a nursery for plant material destined for Jamaica Plain. In recent years its use by the Living Collection Department has diminished to insignificance. In 1985, forty acres of land were sold to the Town of Weston.

The Case Estates has also served as a supplementary, suburban site for our education programs and as a convenient location for the Fall Plant Sale. Because the land is no longer needed to support the Living Collection, we have relocated the grounds staff stationed at the Case Estates to our main collections in Jamaica Plain. We will continue to hold classes at the Estates for the foreseeable future. In September, the Arnold Arboretum

Arboretum Associate
Kathleen Warren at the
1991 Rare Plant Auction.
Photo by Susan Hardy-
Brown.



Associates mounted another successful rare plant sale and auction under the energetic and able leadership of Ellen McFarland. The Case Estates will continue to be the site of this very popular annual event.

RESEARCH PROGRAMS

The woody plants of our Living Collection continue to be an important resource supporting research projects at Harvard University and other institutions around the world. Through a collaboration with Professor Robert Jansen at the University of Connecticut, studies of the evolutionary relationships among species have used molecular technology to analyze DNA extracts from the green tissues of plants. Researchers in the past year have examined taxa of the Oleaceae, Berberidaceae, and Aquifoliaceae families. Scientists at other institutions have requested live material from the genera *Pinus*, *Taxus*, and *Amelanchier* for molecular systematic analyses. *Arnoldia* editor Peter Del Tredici continued his studies on seed dormancy and seedling developmental morphology in *Ginkgo biloba*, for which he was awarded a Ph.D. from Boston University.

A major new study comparing eastern Asian with eastern North American floras was initiated by Dr. Jun Wen, a Putnam Fellow, who came to the Arboretum in March, 1991. She will employ both traditional morphological and modern molecular approaches to understand how these geographically separated but closely related floras evolved from common ancestors.

Other research projects involving the Living Collection have included the study of alkaloids in *Picea*, root nodulation in tree legumes, pathogenicity in *Torreya taxifolia* (an endangered species from Florida), human immunological responses to a variety of tree pollens, and continuing studies on mycoplasma-like organism (MLO) disease in lilacs and ash. Three different biotechnology research firms sampled our *Taxus* collection to assess variation in the production of taxol, a drug that has shown remarkable powers to reverse the devastating effects of cancer. Finally, Professor Michael Dirr, on sabbatical leave from the University of Georgia, spent the spring and summer at the Arboretum as a Putnam Fellow, conducting research on propagation and collaborating with Gary Koller, our Senior Horticulturist, to revise and update a book on urban street trees.



Prunus sargentii in early spring bloom at the Arboretum. Photo by RÁCZ and DEBRECZY.

In Cambridge we are participating in a major new research direction with the combined collections of the Harvard University Herbaria (HUH). In collaboration with the Harvard Museum of Comparative Zoology, we have appointed Dr. James Beach, a national expert on electronic databases and computer networking. This appointment represents our strong commitment to the national and international computerization of systematic collections, not only as a research resource but also as a critical resource for conservation management. In the coming years this commitment will bring us to a position of leadership in the rapidly developing field of database networks.

Database Management

Already we have developed three new software systems: an herbarium management system, a Gray Index Card database, and a Type Specimen database, the last two of which are automatically cross-referenced to share information. The HUH has also begun using bar coding to catalogue its type specimens to facilitate the future editing and generating of lists.

In a meeting at Harvard last January, representatives from the New York Botanical Garden, the Smithsonian Institution, the Missouri Botanical Garden, the California Academy of Science, and the Field Museum in Chicago initiated a new collaborative project with us to create a National Type Specimen Database to capture information for 90 percent of the type specimens in the United States located in the ten largest herbaria. Because of the state of our software development, it was decided that this database would initially be centered at the Harvard University Herbaria.

Computerization has also made the combined botany libraries in Cambridge and our library in Jamaica Plain much more accessible to researchers. Both libraries have computer terminals with direct access to Harvard's HOLLIS cataloguing system, and the library in Cambridge has also established a link with OCLC (Ohio College Library Catalog) to facilitate acquisition and cataloguing. This modernization has led to a significant increase in the use of these resources.

Center for Asian Botany

Through the successful identification of external grant funds, the three major projects of the Center for Asian Botany have expanded during the past year. In collaboration with the Smithsonian Tropical Research Institute and the Harvard Institute for International Development, Dr. Peter Ashton has established long-term forest resource management sites in five different Asian countries in close cooperation with local government research agencies. These sites are the Pasoh Forest Reserve, Peninsular Malaysia; Lambir National Park, East Malaysia; Huai Kha Khaeng Wildlife Sanctuary, Thailand; Sinharaja World Heritage Site, Sri Lanka; and Makut Forest Reserve, India. Five additional sites are under consideration for future research programs.

This work combines plant demographic and wildlife studies of tropical forest dynamics in controlled plots with the results of silvicultural experiments to increase our understanding of the biological and socioeconomic value of forest resources and to test predictive models for optimizing forest management. This research has been supported by the John Merck Fund, the John D. and Catherine T. MacArthur Foundation, the W. Alton Jones Foundation, the Rockefeller Foundation, the U.S. Agency for International Development, and the National Science Foundation.

Plant samples collected in Kalimantan, Borneo, drying in the sun. This material was collected for the National Cancer Institute for anti-cancer and anti-AIDS screening. Photo by John Burley.



Under the direction of Dr. David Boufford, research also continued on the massive project to revise and translate the *Flora of China*. The first volume, including the Lamiaceae, Verbenaceae, and the Solanaceae, will be sent to the publisher in early 1992. With supplementary funding from the National Science Foundation, two undergraduates spent the summer working with Dr. Bryan Dutton, the Arnold Arboretum editor for the *Flora of China* project.

In September we received an additional three years of support from the National Cancer Institute for botanical exploration and inventory in Southeast Asia. For the past five years we have collaborated closely with Indonesia's Herbarium Bogoriense, the most important botanical resource in the region, to mount field expeditions throughout Indonesia in order to acquire plant samples for screening anti-AIDS and anti-cancer properties at NCI laboratories in Maryland. The resources of the Arnold Arboretum and the Herbarium Bogoriense are critical for the proper identification of sampled plant species. Correct identification is, of course, absolutely crucial in the event that a particular species warrants future re-collection.

Indonesian Biodiversity Database

Based on the experience gained in the NCI program, Dr. John Burley of the Arboretum staff, along with the Nature Conservancy, the World Bank, the U. S. Agency for International Development, and Indonesian scientific agencies, has been developing a new collaborative program to create a

National Biodiversity Database that will assemble information on the plant and animal resources of Indonesia, one of the biologically richest regions in the world. During the first phase of the program, survey and inventory efforts will focus on Kalimantan (Indonesian Borneo)—a little-studied region that is currently undergoing rapid deforestation through timber harvesting. Through careful coordination with the geographical information systems maintained by the Nature Conservancy, our specimen-level database software will support the broader development of resource management and conservation guidelines for Indonesian government agencies.

In addition, we plan to develop a program of direct institutional support for the Herbarium Bogoriense with the assistance of the Global Environmental Facility funded by the World Bank, including enhanced efforts to provide training and exchange opportunities for Indonesian scientists. Building on the strength of our Asian collections, supporting our growing relationship with Indonesia, and collaborating with other Asian countries will be major objectives for the Arnold Arboretum over the next decade.

PUBLIC PROGRAMS

Over the past decade, public programs at the Arnold Arboretum have grown dramatically. In 1987, for instance, total expenses for our adult educational offerings were \$77,000. Four years later they have grown to more than \$300,000. No formal program for children existed at the Arboretum prior to 1984; today more than 2,500 schoolchildren visit each year, and our efforts to provide training for Boston-area teachers will be expanding. As we enter a decade of growing financial constraints, public programs (which depend upon grants, fees, and philanthropic support) will require careful planning and management to insure their fiscal soundness and continued success.

Because of its broad geographical reach and long tradition of excellence, the publication of *Arnoldia* is one of our most important educational endeavors. We spend approximately \$80,000 a year to produce four issues and the annual Director's Report. Last year the paid circulation was approximately 3,800, an increase of 10 percent over the previous year. Of the eighteen articles published last year, three were on history and ecology, one

on economic botany, and the remainder covered systematics and horticulture, including articles on fringe trees (*Chionanthus* sp.), *Ginkgo biloba*, the ghost bramble (*Rubus lasiostylus* var. *hubeiensis*), and the Chinese wax shrub (*Sinocalycanthus chinensis*), and urban soils.

A second important, but little noted, educational program brings young student interns to the Arboretum each summer to gain both practical involvement in landscape maintenance and formal horticultural training. To provide them with a more diverse experience, interns are assigned to several different parts of the Arboretum, including the greenhouse, the library, plant records, and the grounds. Last summer saw sixteen young men and women selected from a pool of seventy applicants from across the country and from several European nations.

Celebrating a centennial of adult instruction in horticulture, our education program last year was larger than it ever has been, with over 250 class offerings and a 20 percent increase in course registrations. Students attended symposia on perennials, wildflowers, Japanese design, and garden

Putnam Fellow Mike Dirr, of the University of Georgia, leading one of his popular evening walks at the Arboretum. Photo by Jean Eisenstadt.



history. They explored propagation of unusual woody and herbaceous plants by conventional and tissue culture methods. Through a generous donation from a long-term supporter, students worked with new microscopes in the lab section of our introductory botany classes. We were especially pleased to have Dr. Michael Dirr of the University of Georgia teaching in the program, including his very popular 7:30 A. M. walks in the Living Collection.

Last year also saw the publication of *A Reunion of Trees* written by Dr. Stephen Spongberg of the Arboretum staff and supported by a grant from the National Endowment for the Humanities. This beautifully illustrated book, published by Harvard University Press, tells the story of eighteenth- and nineteenth-century plant exploration, especially in the Orient, and traces the introduction of newly discovered species into Europe and North America. *Reunion* focuses on the particular contribution of the Arnold Arboretum to these discoveries, and, in a specially prepared map of the grounds, shows the location of over one hundred species referred to in the text. A second book, titled *New England Natives*, has been written by Sheila Connor, the Arboretum librarian, and will be published by Harvard University Press in the coming year.

Children's Program

The Children's Program began seven years ago as an effort to promote an appreciation of the natural world among children growing up in an urban setting. Over the years, it has broadened its reach to include teachers as critical builders of learning. During the past year over 2,500 children from Grades 3 through 6 participated in sixty-one field study classes at the Arboretum, including seed biology, forest ecology, tree species diversity, and the pollination of flowers. Working with the Joseph Lee School in Dorchester, our staff began to adapt these experiences to schoolyard science lessons conducted at the schools.

As with so many of our programs at the Arboretum, our educational efforts with children could not be accomplished without the dedicated service of volunteers. Over forty individuals contributed time to the Children's Program last year. Coming from a wide variety of backgrounds, they share a love of children and the Arboretum. Often student teachers from Simmons College will volunteer to satisfy certain course credits. The



A gracefully shaped flowering dogwood in bloom at the Arboretum. Photo by RÁCZ and Debreczy.

Junior League of Boston, in addition to providing us with generous financial support, also contributed ten volunteers last year. Ruth Wilson, who has worked with the program since its inception, received a Volunteer Recognition Award from the League for her work at the Arboretum. Sue Carman, a psychiatric nurse, has volunteered in the program for three years. Sue says her work with the Arboretum has become her regular stress-release outlet—her special mental health “provider.” As with all our volunteers, we deeply appreciate the loyal support of these individuals.

For the past five years, the Arnold Arboretum has collaborated with other area institutions to train teachers through the Museum Institute for Teaching Science (MITS). This program, until recently funded by the National Science Foundation, introduced teachers to the resources of participating organizations. In 1990, the Arboretum trained thirteen teachers in plant sciences during an eight-day summer workshop—with four follow-up meetings during the school year. A new endeavor has grown out of our work with MITS, called “Scientist in Electronic Residence.” Run by the Massachusetts Corporation for Electronic Telecommunications, this series

of five hour-long, live TV broadcasts featured Dr. Peter Del Tredici in direct dialogue with approximately 700 primary school students on such subjects as tree architecture and plant propagation.

Also based on the network of contacts established through participation in MITS, the Arboretum initiated planning last year for a significant expansion of our teacher-training program. With funds from the Stratford Foundation, the General Cinema Corporation, the Arthur D. Little Foundation, and an anonymous donor, we developed a program to disseminate a new kindergarten through sixth-grade curriculum created at Cornell University. It is called LEAP (LEarning About Plants).

Using plants as a friendly medium for teachers and students alike, this curriculum teaches basic life-science concepts through direct, hands-on activities with materials easily obtained from the local grocery store and plants commonly found in the schoolyard. This past summer, we held our first LEAP workshop for thirty-four teachers (although over seventy applied for the limited slots) from Boston-area schools. We are providing school-year support in the classroom as well, and we will be planning our workshop for next summer based on this year's success.

National Park Service

Another new collaboration of growing importance was initiated in the past year. In July the Arnold Arboretum signed a five-year cooperative agreement with the Frederick Law Olmsted National Historic Site and the Northeast Regional Office of the National Park Service to develop programs of mutual interest. Our first such effort involved a two-day workshop held at the Arboretum in August on historic landscape maintenance. Seventy-five professionals from the National Park Service and other organizations attended lectures on turf management, landscape preservation, and historic plant materials.

A second initiative with the National Park Service involves the creation of an experimental program of landscape interpretation for visitors to the Arboretum. This autumn a ranger from the Park Service was stationed at the Arboretum to provide overview information and general orientation. We plan to continue this program in the spring.

The third project for the coming year will be the development of a cultural landscape assessment of "Fairsted," the home of Frederick Law Olmsted in Brookline, Massachusetts. A team of horticultural and historical

experts from the Arboretum and the National Park Service will research the landscape history of the site and provide guidelines for future management and preservation.

Because the Arboretum and the Park Service possess complementary resources and expertise, and share common ties to landscape architecture through the work of the Olmsted firm in Brookline, this collaborative venture promises to develop into a major program benefiting both organizations.

ADMINISTRATION

The Arboretum remains in a strong financial position despite an increase in major expenditures over the past year for equipment and deferred maintenance. I have again created a relatively simplified rendering of our income and expenses for the last three fiscal years, which end on June 30. Our income has increased in all categories except Grants. It is especially heartening to see



The foundation is all that remains of an outbuilding, once part of the old Bussey Estate. It was cleaned up by the grounds crew last spring. Photo by Rácz and Debreczy.

a significant increase in gift support at a time when many nonprofit organizations are experiencing no growth or declines. This increase represents both growth in general contributions and several larger gifts for specific projects, such as the Davison Rhododendron Path and the LEAP education program.

A major rise in equipment expenses was due to the purchase of a new pickup truck and the replacement of our aerial lift truck. Nearly all of the increases in services purchased were due to special projects, such as the Rhododendron Path, the LEAP program, the renovation feasibility study, research programs in Southeast Asia, and preliminary work on the master plan.

For the fourth year in a row, we have generated an excess of both unrestricted and restricted income, which is added to our overall fund balances (Unrestricted Fund, Restricted Fund, Restricted Gift, Building Reserve). Altogether, this past year, we have been able to increase our Total Fund Balance by approximately \$275,000 to yield a total reserve of \$1,575,154.

	FY 1989	FY 1990	FY 1991
INCOME			
Endowments	2,118,173	2,251,906	2,550,576
Membership/Gifts	312,979	317,546	496,731
Enterprise	239,603	270,211	312,827
Grants	438,973	416,298	404,229
Education/Publications	176,107	263,970	287,290
TOTAL INCOME	3,285,835	3,519,931	4,051,653
EXPENSES			
Salaries	1,687,133	1,827,431	2,110,151
Supplies/Equipment	564,340	550,794	724,071
Facilities/Operations	383,971	384,164	351,491
Services	450,851	351,079	620,723
Travel	42,214	43,511	71,122
TOTAL EXPENSES	3,128,509	3,156,979	3,877,558
EXCESSES			
Unrestricted Excess	112,996	112,044	36,482
Restricted Excess	44,329	250,909	137,612
TOTAL EXCESS	157,325	362,953	174,094
TOTAL FUND BALANCES	926,816	1,300,478	1,575,154

The digging crew for the 1991 spring planting season, from left: Jim Nickerson, David Moran, Jim Papargiris, Carl Holmes, Bob Famiglietti, and John Olmsted. Photo by Peter Del Tredici.



As we approach a major building renovation and begin to develop new programs in teacher training, Asian botanical research, and educational interpretation, we will also begin to draw down these reserves.

A major problem successfully addressed in the past year was the existence of several active as well as abandoned underground oil storage tanks that were in violation of current environmental regulations. We removed these hazards and replaced them with double-walled, monitored tanks meeting current standards. Although a small amount of soil contamination was discovered and removed, the overall cost of the project was kept under \$150,000.

Renovation

With support from the Institute of Museum Services, we also hired The Primary Group, Inc., a Boston architectural firm, to conduct a feasibility study for the renovation of our main administration building, the Hunnewell Visitor Center. Completed last summer, this study identified a number of major structural and code-related problems in our century-old facility that need to be addressed as soon as possible. The floors of the herbarium wing require steel reinforcement. New utility systems must be installed, includ-

ing fire suppression equipment and climate control to protect our library holdings. Finally, to bring the building up to current standards, an elevator tower and stairwell, added to the exterior of the building, will give the disabled full access to all floors. Preliminary estimates place the cost of the complete renovation between \$2 and \$3 million.

A second major planning project got underway last summer with the initiation of our master planning process for the Jamaica Plain site. Following some delay during the past year while we raised supporting funds, we have now hired Sasaki Associates, Inc., of Watertown, Massachusetts, to provide overall guidance in the creation of the master plan. Although

The "Rare Plant Group," hosted by Catherine Hull, visited the Arnold Arboretum in the spring of 1991. Photo by Istvan Rácz.



additional funds must be identified, we initiated the planning last summer with perimeter and aerial surveys of our lands in Jamaica Plain.

A Landscape Master Plan

The master plan will focus on three major issues. First, it will address our future relationship with the public. Since our existing administration building functions poorly as a visitors' center, we envision a new and different facility serving this end in the future. Where would be the best location for such a facility and how would it relate to pedestrian and vehicular circulation? Clearly the resolution of these issues will have a profound impact on the way visitors experience the collections and landscapes.

Second, Sasaki will review the functional and aesthetic character of our boundaries and entrances. Although responsibility for the stone walls, fences, and gateways rests with the City of Boston, they are a critical interface with our neighbors and the general public. Since their appearance makes an important statement about the Arboretum, a long-term strategy for restoration and management is needed.

Finally, the master plan will define the role of peripheral parcels of land owned by the Arboretum, including the South Street tract, half of which is now owned by the City of Boston and half by Harvard University. While rather a derelict urban wildland now, the parcel occupies a key location connecting the core of the Arboretum to public transportation at the Forest Hills Station. Other parcels that will be evaluated include land currently owned by the State of Massachusetts adjacent to the State Laboratories on South Street, the Peter's Hill tract at the south end of the Arboretum, and the Walter-Weld tract adjacent to the Hebrew Rehabilitation Center for the Aged.

We have also received a major grant from the National Endowment for the Humanities to initiate a second, and complementary, planning effort in the coming year. This program will develop a long-range strategy for the educational interpretation of our collections and landscapes, including the history of their development. We will be collaborating closely with the National Park Service on this project.

PRIORITIES AND FUTURE DIRECTIONS

No product of planning is more important than the definition of priorities. Last summer I surveyed all the institutional activities that lay claim to our staff and financial resources, ranging from basic propagation of the Living Collection to our participation in the New England Spring Flower Show. It was most instructive to arrange these twenty-eight programs in a rough order of priority. Rather than repeat the detailed list here, I have compressed them into six broad areas, ranked in order of importance.

Institutional Priorities

- Maintenance and curation of the Living Collection and the historic landscape of the Arboretum
- Management of the library and herbarium collections in the Harvard University Herbaria
- Administration of facilities and support systems, including capital fund-raising for endowment
- Support of programs for botanical research involving the Living Collection and the Center for Asian Botany
- Development of educational programs through the publication of *Arnoldia*, the training of summer interns and elementary school teachers, and the conduct of continuing education
- Improvement of public service through the development of expanded interpretive programs and creative collaborations with organizations such as the National Park Service

A second product of our past year's planning has been a renewal of our commitment to a higher standard of performance in our programs, even if this means doing fewer things better. Like all institutions that provide services to multiple constituencies, the Arboretum has been reluctant to say no to growth and to new initiatives. The quality of our efforts has not always kept pace with the quantity. As we enter a decade of constrained resources, our commitment to high standards will force us to define our most important programs, to manage them more effectively, and to choose new opportunities with studied care.

In the Director's Report of last year, the initiatives I cited at the end of that report have begun to be realized. We have accomplished critical planning for a much-needed renovation of our main administrative facility, and initiated the development of a master plan for our landscape in Jamaica Plain.

Research with the Living Collection has expanded, especially through collaborations using the tools of molecular systematics. The Center for Asian Botany has successfully identified funding to support research programs for botanical inventory, forest resource management, and biodiversity conservation in tropical Southeast Asia. We continue our century-old collaboration with scholars in China, now revising their multivolume *Flora*.

Collaborations

At home we are expanding our training program for Boston-area teachers who urgently need assistance for teaching basic science concepts in their classrooms. Most promising of all, we have established a collaboration with the National Park Service and the Olmsted Historic Site that firmly defines our national significance and will greatly improve our educational value to the public and scholars alike.

Finally I turn again to the historic collaboration that gave birth to the Arnold Arboretum over a century ago. The City of Boston will always be the community that sustains our commitment to public service. Harvard University will always inspire our highest intellectual achievements by providing the incentive to address some of the most pressing concerns of our society at large.

In the end, though, our finest collaboration must be achieved with Harvard. The guidance and support of the University will enable us to identify the critical resources needed to fulfill the grand promise of our mission.



Robert E. Cook, Director

10 February 1992



A spruce tree, on "permanent loan" from the Arboretum, being planted at Post Office Square. Photo by Bob Howard.

**PUBLISHED WRITINGS
OF THE ARNOLD ARBORETUM STAFF**

1990-1991

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Michael Gormley, *Grounds Staff*
Dennis Harris, *Grounds Staff*
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* 1 July 1990 through 30 June 1991

