August brought us wonderful news for the Arboretum. We have been awarded $2,375,000 from the Government of Indonesia for a five-year contract to provide technical assistance as part of a $12,000,000 project to increase the capability of Indonesian scientists and government agencies to conserve the country's biodiversity and manage its natural resources.

Dr. John Burley of our staff has assembled an international team of experts drawn from Harvard University, London's Natural History Museum, the National Museum of Natural History, and the Rijksberharium of the Netherlands, and the Commonwealth Scientific and Industrial Research Organization (CSIRO) of Australia. The Arboretum is the lead institution in this collaborative effort, which is being funded by the World Bank through a program it manages called the Global Environment Facility (GEF).

Indonesia contains 10% of the world's tropical forests and is second only to Brazil in the richness of its fauna and flora. Many sectors of the economy are dependent upon the sustainable management of these resources. Yet 30% of the flora and 90% of the fauna are not fully described or scientifically documented. Indonesia's ability to maintain and enhance knowledge of its biodiversity is severely limited by a shortage of trained staff with expertise in botany and zoology, by inadequate storage and research facilities, by deteriorating zoological and botanical collections, and by a lack of modern computer technology and a system for information management.

With the Biodiversity Collections Project, the Arboretum will create an international model for biodiversity conservation through technical assistance to a developing country. This assistance will provide support for the restoration and development of zoological and botanical collections, the creation of biodiversity databases, and the training of Indonesian scientists in botany, zoology, information management, and resource conservation.

I believe this project will place the Arboretum in a clear position of future leadership in Asian systematic biology. More importantly, it will directly address the threat of species extinction and the loss of tropical biodiversity in the most fundamental way possible: by helping the Indonesians themselves to protect their environment and prudently conserve their natural heritage through the development, management, and wise use of knowledge about the fauna and flora of their country.

Boston Teachers Learn Arboretum Science

Richard Schulhof, Assistant Director for Education and Public Affairs

The need to better educate our children about science is well known, but education reformers are just discovering that much of the needed change must begin with teachers. Across the country, school systems are working not only to enhance the scientific knowledge of teachers but also to provide training in the inquiry-
based teaching methods that can succeed in engaging children in science learning. Yet in our larger cities this can be a daunting task. With only limited resources and under the pressures of urban classrooms, how can teachers increase their knowledge as well as reshape their teaching? In the Boston area, Arnold Arboretum summer workshops are proving to be at least a small part of the answer.

This past July the Arboretum hosted twenty-six teachers for an intensive two-week workshop led by school science program manager Diane Syverson and instructors Debbie Knight and Helen McElroy. Supported by a grant from the Dwight D. Eisenhower Math and Science Education program, the goal of the workshop was to provide advanced training for teachers from schools in Dorchester, Jamaica Plain, Hyde Park, Roxbury, and other nearby Boston communities.

All participating teachers were alumni of previous Arboretum workshops, thus permitting the group to hit the ground running with a particular emphasis on how living plants can be used to involve students in the excitement of actual scientific observation, questioning, and discovery. In the Arboretum landscape teachers examined “weeds” that can be found near the schoolyard and used for life science explorations, while indoors they conducted seed experiments that serve as models for scientific investigation.

As the workshop drew to a close, both project staff and teachers looked forward to continued learning during the school year through meetings at the Arboretum and classroom visits from Arboretum staff. In the words of one teacher, “I have discovered many new ways to use the Arboretum as a resource... I expect plant science to take off in my classroom.” With planning underway for next year’s workshop, plant science may be taking off across the Boston Public School system.

**Arboretum Open House, Sunday, October 16**

Join Arboretum staff for a special open house welcoming members of the Friends of the Arnold Arboretum and the larger Boston community. Scheduled to run from 2:00 to 4:00 pm, the event will feature tours of the landscape, greenhouse, and Hunnewell Building and offer opportunities to chat with Director Bob Cook and other staff about Arboretum plans and programs. Please mark your calendars. We look forward to seeing you this October!
The Library Is Back
Sheila Connor, Horticultural Archivist

Among my friends there are a few who, while otherwise quite mature and respectable, are intimidated by libraries. I know this because they often confide in me, expecting, I am sure, a certain amount of sympathy. Unfortunately, very little is forthcoming for this is an affliction that I simply cannot understand.

There is nothing like a library, and there are no two libraries that are alike. I can walk into one anywhere, and even if the classification scheme is unique and the titles are in a foreign language, I instantly feel a sense of order, stability, and security. I feel at home. That probably explains why throughout the year of our recently completed renovation of the Hunnewell Building I felt more than displaced, I felt lost. On occasion I found myself concocting any kind of excuse that would enable me to use another library. I not only missed what was inside the books, I missed how they looked and how they felt. I even missed how they smelled. (No, not that damp musty odor of books stored too long in the basement, just that slight hint of leather and library paste.)

The Arnold Arboretum’s library—books, journals, pamphlets, photographs, glass plates, maps, files, bindery equipment, and a good part of the archives—were packed up and shipped off for the duration. It is no mean feat to move a library. The classification sequence of the monographs and the organization of the journals must not be disturbed. In fact, everything must remain in order or chaos will reign upon its return. Although we came up with a scheme that allowed each shelf of books to be removed and stored in strong, ridged, sealable crates that would not only keep the books and the journals in order but would protect them during their year in limbo, there always loomed the possibility that a crate or crates would be misnumbered or somehow go astray.

Moreover, it was also possible that I had mismeasured the amount of new shelving needed even though I measured and figured it at least four ways from Sunday. Or worse yet, because the library was going to be rearranged, I may have totally miscalculated absolutely everything. So although I had missed the library sorely, you can understand that it was with both anticipation and genuine fear that I welcomed it back.

I am delighted to report that it fit. And through the combined efforts of an able assistant, the staff of the Botany Libraries, volunteers, summer interns, and a dedicated library committee, the library is now in better order than it was before the renovation occurred. Its setting has been so improved that now the quality of its surroundings matches the value of its content. With new lighting and paint, refinished floors, tables, and a whole range of appropriately sized new shelving, the library is better appointed than it was in 1892 when the Hunnewell Building first opened. I can say this with no disloyalty to Charles S. Sargent, the Arboretum’s first director, nor to Longfellow, Alden and Harlow, the building’s original architects. Of course, the climate control that we now have in the library and throughout the building had not yet been invented, but it would appear that Sargent had an innate fear of electricity (and perhaps of natural gas as well) for the Hunnewell Building was not lighted until after his death in 1927.

I should allay any fears that those familiar with the library

In May the Arnold Arboretum held a special event honoring the memory and accomplishments of Donald Wyman, Arboretum horticulturist from 1935 to 1970. Pictured here with a portrait of Dr. Wyman are Donald Wyman, Jr., and Donald Wyman Thomas.
might have concerning changes in its ambiance. The beautiful reading room—with its grand oversized table and walls of windows that allow a glimpse of the living collections, as well as the wonderful corridor space and alcoves with wooden shelving that extends all the way up to the high ceiling—looks brighter and cleaner but otherwise exactly the same. (Well, we do now have a whole complement of Harvard chairs around that wonderful table.) The most dramatic, and welcome, change has come in the stacks, the part of the library housed in the herbarium wing. Gone are the dark-green jerryrigged, recycled stacks that were shimmed to the ceiling and in constant danger of letting go. All have been replaced with light-colored metal shelving that is sturdy and stable, sized to fit oversized books and archival boxes as well as journals and monographs. Now that the atrium has been reopened—and glassed in on the library level—the core of light that passes through the center of this room imparts an extraordinary feeling of openness. We have also added something new, a special laboratory, a room set aside, dedicated and outfitted for the care and repair of books.

As for the content of the library, we have developed a mission statement—it is to provide and maintain a collection of scholarly materials on North Temperate Zone woody plants in support of the curatorial, research, and educational programs sponsored by the Arnold Arboretum. Thus the library reflects the Arboretum’s mission and, through its holdings in botany, horticulture, and related fields, supports its curation. With a collection whose range includes books and periodicals on arboreta and botanic gardens, botany and horticulture, and North Temperate Zone floras in general, plus monographs on North Temperate Zone plants, dendrology, ecology, forestry, landscape gardening, seaside plants, hedges, screens, and windbreaks (just to name a few), the library is in my estimation—and I think that those who have used it would agree—the best library in the nation, if not the world, dedicated to understanding, identifying, and growing woody plants.

So we are back to purchasing books and checking in journals. There is one other thing. There has been, for me, an unanticipated benefit derived from the renovation. The library is back in place, but it’s not back in exactly the same the place—everything has been shifted. So now when I walk through the stacks to retrieve a book I can no longer depend on rote; I now see titles that I once overlooked. The benefit is that I’ve discovered a whole library of new books.

Arboretum Assists Brookline Tree Inventory

Chris Strand, Outreach Horticulturist

The word is getting out about the long-term savings that can be achieved by planting trees in cities and suburbs. Trees make it less costly to heat and cool buildings; they absorb air pollution and provide a wide range of other environmental benefits. An article in last April’s New York Times described how the planting of 95,000 trees would reap an estimated net benefit of $38,000,000 over thirty years. This sort of cost-benefit analysis is prompting local communities to take a serious look at their urban trees.

This past spring the town of Brookline, working with the Arnold Arboretum, the University of Massachusetts, and the Brookline Greenspace Alliance, organized an inventory of its street trees as a first step toward managing its urban forest. Instead of sending professional arborists to complete the inventory, a process that can be prohibitively expensive, the town decided to organize teams of volunteers. Ninety-two volunteers signed up and agreed to participate in the five-day project.

On the first day of the project volunteers came to the Arnold Arboretum for a six-hour training session. As part of their training, volunteers learned to measure the DBH (diameter at breast height) of a tree, assess its condition, and iden-

Use of the Arboretum’s living collections for horticultural education is an ongoing focus in the work of outreach horticulturist Chris Strand.
tify its pruning needs. In addition, Richard Schulhof and I volunteered to use the Arboretum’s collections to teach the volunteers how to identify 23 common street trees. At the same time, we taught them how to use a dichotomous key.

On the remaining four days of the project the volunteers walked through the neighborhoods of Brookline measuring, assessing, and identifying trees. Project organizers were pleasantly surprised that each team of three volunteers completed an average of 250–300 trees per day. All totalled, the volunteer force inventoried 101 miles of roadway over the two weekends. Preliminary results indicate that Brookline has over 11,000 street trees (not including trees in yards or in parks). Using the data the volunteers collected, the University of Massachusetts will create a map and database to help the town develop management strategies for the trees.

On the Grounds

Peter Del Tredici, Assistant Director for Living Collections

For the Living Collections Department, staff, grounds crew, and interns alike, the summer of 1994 has been the summer of Peters Hill. Our renovation project began last autumn when, with the support of a grant from the Institute of Museum Services, former intern David Giblin was hired to review all of the plantings on Peters Hill. This spring, with David’s recommendations in hand, the process of plant removal began with specimens that were diseased or in poor condition or were deemed superfluous to the scientific needs of the Arboretum. In all, some 3,000 plants were evaluated, resulting in approximately 150 removals and 100 relocations of plants from Peters Hill into the core collections area on the other side of Bussey Street. Following these deletions, many of the remaining trees were pruned (for the first time in years), and invasive vines that had climbed into the crowns of many of them were removed. All of this work, of course, is preparatory to replanting Peters Hill with a new generation of collections-quality plants, which is scheduled to begin in the spring of 1995. Planning for this replanting was instituted this past spring and will be finalized over the coming winter. We hope to present the plan to readers of Arnoldia in an upcoming issue.

Less obvious than the work on the plantings, but no less important, was the completion of the clean-up of the “dump” on Peters Hill, located in the old stone quarry along Bussey Street. This monumental job, which actually began a year ago, was coordinated by superintendent Pat Willoughby with assistance from grounds crew member Don Garrick. With ancient mountains of brush reaching some 30 feet in height, the job was the Arboretum equivalent to...
the cleaning of the Augean stables. Construction as well as arboreal debris had been dumped there for countless years, and all of it had to be processed, sorted, and screened before it could be reused or hauled away. Stones were set aside for future construction projects, brush was ground up into woodchips, and metal and stumps were hauled off in 30-cubic-yard dumpsters (14 of them). The end result of all this effort was a tall mound of screened loam and another of woodchips that will be used to help future plantings off to a good start. As a final touch, a new gravel road was installed in the quarry, giving access to the area from above as well as from below. In effect, this project has transformed an old dump into a new recycling center where we will reprocess the massive amounts of woody debris generated by the living collections.

NEA Awards $25,000 for New Arboretum Program

The National Endowment for the Arts has awarded $25,000 to the Arnold Arboretum to introduce the study of landscape and landscape architecture as a new multidisciplinary subject for Boston-area classrooms. The program will be developed as part of the Arboretum's collaboration with the Frederick Law Olmsted National Historic Site in Brookline. Called Junior Parkmakers, the program will center on an Arboretum field trip complemented by activities and teacher's guide materials designed for classroom use. With an emphasis on outdoor exploration, program activities will seek to examine the landscape as a part of the human environment that can be understood from scientific, aesthetic, and social perspectives. The program will be developed in consultation with Boston area teachers and will be designed to address curriculum goals in science, the arts, and social studies. Pilot testing of the new field study is scheduled to begin in the fall of 1995.

Programs & Events

The Arboretum’s Education Department offers a wide variety of courses, programs, and lectures in horticulture, botany, and garden history. Come to the Arboretum this fall to study such diverse topics as tree identification, year-round garden maintenance, and horticultural writing. A selection of fall courses is shown here. For a complete catalogue of programs and events at the Arboretum, please call (617) 524-1718, ext. 162. Please note that fees shown in boldface are for members of the Arboretum. For information about becoming a member, please call (617) 524-1718, ext. 165.

ART 420 Horticultural Writing Workshop
Kim E. Tripp, Putnam Fellow, Arnold Arboretum
This new course will offer a hands-on opportunity to learn the ABCs of horticultural writing and publication. Students will explore creativity and technique through a series of reading and writing exercises and roundtable discussions. Horticultural references and computer resources will be illustrated. The class will discuss the range of publication opportunities for new authors and learn how to submit ideas to specific publications. Students can choose to be guided through the process of initial submission of a finished piece to an appropriate gardening publication. Limited enrollment.
Fee: $96, $110
6 Tuesdays, October 4, 11, 18, 25, November 1, 8/1:30-3:30 pm (Hunnewell Building)
An Arnold Arboretum course offered in cooperation with the New England Wild Flower Society.

WAL 273 Arnold Arboretum Landscape Architects and Designers Discussion Series
On three Thursday evenings in October, some of New England’s most highly respected landscape architects and designers will present their work and design philosophy. Each will illustrate his or her projects with slides, and explain the rationale and constraints that affected the outcome of the projects under discussion. The three architects and designers represent a range of design opinion, and the work shown in the series will encompass public, residential, and industrial projects.
In an informal discussion period following the lecture, audience members will be able to ask questions and further explore the thinking of the architect or designer.
WAL 270 Carol Johnson October 13
WAL 271 Michael Van Valkenburgh October 20
WAL 272 Susan Child October 27
WAL 273 Series Fee: $40, $46
Single Lecture Fee: $15, $18
3 Thursdays, October 13, 20, 27/ 7:30–9:00 pm
(Hunnewell Building)

Photographers Elise Laurenzi and Ken Druse discuss a scene.

ART 412 Landscape Photography Workshop
David Akiba, Photographer
This workshop will explore both technical and aesthetic approaches to color landscape photography using the peak of fall foliage color in the Arboretum as our laboratory. The Saturday class will begin in the Dana Greenhouse with a brief lecture and discussion of materials and equipment, and will be followed by a photographing field trip through the Arboretum. A critique on Tuesday evening will examine each student’s work, technically and visually. Participants will be encouraged to investigate new and more personal ways of rendering the colorful panorama of fall in the Arboretum. An equipment list will be sent on pre-registration.
Fee: $83, $92
Saturday, October 15/ 9:00 am–4:00 pm
(Dana Greenhouses and Arboretum grounds)
and Tuesday, October 18/ 6:30–8:00 pm (Dana Greenhouses)

HOR 264 Landscaping with Herbs: A Morning
with Jim Wilson
Jim Wilson, Co-host of The Victory Garden and Horticultural Writer
In researching his latest book, Landscaping with Herbs, Jim Wilson traveled to all corners of the United States to photograph the latest uses of herbs in garden landscapes of all sizes and styles. Jim will show slides of these wonderful gardens and talk about the newest and best herbs for landscaping, culinary, and craft uses. On the practical side, he will discuss the importance of soil preparation for herb culture and the long-term maintenance of herb gardens. Jim Wilson is known to the audience of The Victory Garden as the popular co-host; he is also a prolific garden writer and lecturer with several books to his credit.
Fee: $14, $18
Saturday, November 5/ 10:00 am–noon
(Hunnewell Building)
Co-sponsored by the Arnold Arboretum, Massachusetts Horticultural Society, the New England Wild Flower Society, and the Worcester County Horticultural Society

HOR 459 Multi-Season Perennials, Shrubs, and Trees Hardy in New England
Galen Gates, Chief Horticulturist, Chicago Botanic Garden
Many of the hardiest plants for New England are also star performers in the Midwest, where Galen Gates grows and evaluates them for the Chicago Botanic Garden. His plant enthusiasms are many, and he will introduce herbaceous and woody plants that are tough enough for the cold and wind of the Midwest, and therefore make fine candidates to try in New England.
Fee: $12, $14
Thursday, November 10/ 7:30–9:00 pm
(Hunnewell Building)

BOT 249 The Sex Life of Plants
James Martzn, Botanist and Horticultural Instructor
Over eons of time, plants have evolved reproductive strategies of great precision. Many angiosperms have developed complicated biochemical pathways to produce the bright colors and exotic perfumes that attract specific insect pollinators. The basic biology of reproduction in plants will be covered in this course, which is designed to meet the needs of gardeners and plant propagators.
Fee: $48, $54
3 Mondays, November 28, December 5, 12/ 6:30–8:30 pm (Dana Greenhouses)