Ask any parent: naming the new baby is usually a challenge. A little over a year ago, we sought to improve our public communications by combining our newsletter and education catalog into a single publication. But what to call this merger?

Like expectant parents, we spent weeks sorting through lists, soliciting the ideas of friends, and writing down inspirations in the middle of the night. Options included names in fashion (Scion), old family names (Wilsonia), and names of honored personages (somewhere there must be a newborn named Linnaeus). As with babies, the “we’ve got it” moment took its time to arrive.

The choice that won the day is Silva, a name that speaks to our past as well as our future. Silva (Latin for trees or forests) acknowledges the Silva of North America, the monumental contribution to the literature of botanical science that director Charles Sprague Sargent wrote over a century ago. The first volume came out in 1890, one of the fourteen that would eventually compose a comprehensive reference of all forest trees growing in North America. Sargent built the Silva on his work as the federally appointed surveyor of the nation’s forest resources, part of the Tenth Census of the United States that began in 1879. Although the Silva was not part of his Census work, it did provide him the collaborations with field botanists and opportunities for travel that proved essential to a work of such enormous scope. After two decades of research and writing, Sargent published the last volume of the Silva of North America in 1902; today it is still among our finest guides to American trees.

The name Silva also speaks to the future. We are undertaking a major commitment to enhance the scope of our research program through large investments in staff and facilities. Our research will continue to focus on increasing knowledge about woody plants, whether they grow in the gardens of urban Boston or the forests of Borneo. We will disseminate that knowledge through the kinds of educational offerings that will be listed in Silva twice a year. I have no doubt that Sargent would have given us his proud parental approval.

—Robert E. Cook, Director of the Arnold Arboretum

More information about the Arboretum’s long-range plans can be found at our website, arboretum.harvard.edu.
Summer Program 2005
The Landscape Institute

The Landscape Institute will offer a five-week summer program that begins July 25. Courses are offered in residential landscape design, historical design elements, plant identification, modeling the landscape, natural history, field botany, construction layout, perspective drawing, and garden design. For course listings and schedule, go to arboretum.harvard.edu/landscape.

Registration begins June 20.

The Landscape Institute provides professional education for students who wish to pursue a career in landscape design, landscape history, or landscape preservation; carry out research; develop a heightened awareness of the landscape; or refine skills needed for work in public agencies, private practices, historic preservation organizations, and planning boards.

Classes are conducted in either a seminar or studio format to encourage direct student-faculty interaction, exchange of ideas among students, and student-instructor critiques. Limited enrollment in courses and a diverse, experienced faculty of landscape professionals and academics help students develop an informed approach to their work.

The Landscape Institute
The Landscape Institute provides opportunities for beginning and advanced studies in landscape design, practice, and management, garden history, and the preservation of historic landscapes. For more information, call 617.495.8632 or go to arboretum.harvard.edu/landscape.html.
Interview with Stuart Davies

Stuart Davies is a tropical ecologist and taxonomist specializing in the plants and ecosystems of Southeast Asia. In 2003 he succeeded former Arboretum director Peter Ashton as director of research for the Arnold Arboretum’s collaboration with the Smithsonian Institution’s Center for Tropical Forest Science. A large part of that collaboration is inventorying and monitoring eight large-scale plots in six South and Southeast Asian countries. As part of this long-term project, Stuart is investigating the evolution of these exceptionally species-rich forests as well as developing new approaches to conserving the remarkable biodiversity of the region.

Q. How did your interest in working with tropical forests begin?

A. I had first become interested in conservation issues in tropical countries during my travels in India and Thailand before engaging in any research in tropical forests. Then, after receiving my undergraduate degree in ecology at Sydney University, I worked for two years on the taxonomy of the genus Acacia at the Royal Botanic Gardens in Sydney. Part of that work involved field collecting in tropical areas of northeastern Australia. That was pretty exciting and it was the second thing that got me inspired to work in the tropics.

So I started searching for graduate programs that would enable me to work in tropical forests in a developing country. Rather idealistically, I thought I might be able to contribute towards solving some environmental and social problems through my research. Naturally, things turned out to be far more complex than I had thought.

I wrote to several professors and researchers who I was told might be able to advise me on the best graduate programs in tropical biology and forest management. My first letter—to Peter Ashton, here at Harvard—set off a pretty amusing set of events. A letter from the department of organismic and evolutionary biology arrived in Sydney while I was on a hiking trip in northern Thailand. When I called home for news, I was told that I must call Peter Ashton immediately. I was so excited that I called him right away. Unbeknownst to me, it was 3am Boston time. As a sign of things to come, Peter, although a touch foggy, was not the least bit irritated and asked with great enthusiasm, “Are you coming?” to which I replied, “definitely”—just 30 minutes after I had heard of the offer and without even considering any alternatives. It turned out to be a great opportunity, and I have worked on tropical forests ever since.

Q. Your work is based in a strong research commitment to the forests of Southeast Asia. How did that arise?

A. As part of my graduate studies I was extremely fortunate to spend three full years living in north Borneo, in the Malaysian state of Sarawak and in Brunei. At the time, the Center for Tropical Forest Science (CTFS) and its Malaysian counterparts were starting a 50-hectare (125-acre) forest research plot in Lambir Hills National Park, so I became involved right away. With my Ph.D. research underway, I took a consultancy job to establish four small plots in four different forest types in Brunei. Being involved with the Lambir plot and the smaller Brunei plots enabled me to learn about the tree flora of the area, which is among the most diverse in the world.

In addition to the research opportunities offered by these forests, living in Sarawak and Brunei was simply a great experience. Our field station in Lambir became a little cultural crossroads. Our collaborators came from Japan,
time that research in Latin America expanded dramatically, most of it conducted by people from the U.S. Today, the vast majority of tropical forest research is being done in Central and South America; this work has been hugely important in the development of tropical forest science.

It is the Asian and African tropics that are in most need of the products of research, however. The Asian tropics are bounded by the two most populous nations on earth, India and China, one of which, China, has the world's fastest growing economy; and the African tropics have the world's most severe social and economic problems. Clearly these problems have placed and will continue to place serious pressure on the remaining forest resources of these regions. Particularly in Asia, it is critical that researchers work more closely with forest users and managers to develop strategies to minimize impacts and to maintain large areas without

continued

Q. With respect to your interests in both diversity and ecological dynamics, what distinguishes these forests from those elsewhere in the world?

A. Asian forests are unique in a whole range of ways. The most striking difference from forests in Africa and Latin America is the extraordinary dominance of species in a single family, Dipterocarpaceae. Our CTFS-Arnold Arboretum Asia plots are all dominated by species in the genera Shorea, Hopea, Dryobalanops, Dipterocarpus, and Anisoptera, all of which are dipterocarps. Most of these trees are huge, growing to 70 meters (280 feet) in height and over two meters (seven feet) in diameter. They are a spectacular symbol of Asia's forests. Of course, their timber is also a large part of the value of Asia's forests.

Q. What is the purpose of monitoring large pieces of tropical forest?

A. The core element of the CTFS-AA program is to monitor populations of individuals of all tree species in representative forests of Southeast Asia. That means we tag, map, and measure the size of every single tree in typically 50 hectares of forest in each of six countries. We are now monitoring over 1.4 million trees in about 3,000 species. We remeasure the trees every five years. This gives us a wide range of information on the dynamics of tropical forests that provides a critical baseline from which to conduct research on the origin and maintenance of the extraordinary diversity of tropical forests, on the function of tropical forests, and on how best to conserve, manage, and sustainably use tropical forests and their biodiversity for human benefit.

Q. Is the research being done in Asian forests similar to research in tropical forests around the globe? How will the research be used?

A. There are wide variations in the amount of research being conducted in the three main areas of tropical forest—Latin America, Asia, and Africa. Although historically, South and Southeast Asia had by far the most, research activity in that region waned around the 1970s, the same time that research in Latin America expanded dramatically, most of it conducted by people from the U.S. Today, the vast majority of tropical forest research is being done in Central and South America; this work has been hugely important in the development of tropical forest science.

Award of Merit

Jack Alexander recently became the 48th recipient of the highly prestigious Award of Merit given by the International Plant Propagators Society. Jack, who has completed over 28 years of service as an Arnold Arboretum propagator, is the second staff member to receive the award, following the late Al Fordham.
We believe that building capacity for research within each of our partner countries will have an important effect on forest conservation.

Second, we have begun a reforestation and forest restoration project. From our office at the National Institute of Education in Singapore, we have started working with the Singapore National Parks board to investigate the possibility of growing native species in degraded habitats around parks and reserves. The methods we are developing in this project will be applied to other countries in the region. There is great interest in Asia in growing trees both for timber and for restoring sensitive areas such as watersheds and park boundaries.

I believe that these new initiatives, coupled with our core research on the forests of tropical Asia, give us an excellent opportunity to influence the future of the great forests of Asia.

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Boston Teens Climb Trees

Arboretum arborist John Del Rosso provides instruction for the Summer Youth Horticulture Crew of the Franklin Park Coalition. The ten Boston teenagers, who help with landscape projects at Franklin Park, visited the Arboretum for an introduction to the care of trees.
Rejuvenating the Lilac Collection

Stephen Schneider, Assistant Superintendent

Four years ago the Arnold Arboretum began the task of renovating its beloved lilac collection. At that time, many of the plants were suffering from a strange, unknown disease that robbed them of bud, root, and shoot growth. Leaves were spotted and curled, and in the worst cases the bark blackened before the plant finally died. Initial tests indicated that several viruses were running rampant in the collection, including the tomato ringspot virus (ToRSV). Vectors of this virus were found to include the dagger nematode (*Xiphinema americanum*); the virus was also spread mechanically from one plant to another during pruning. While ToRSV certainly didn’t help the plants, it was not certain that the virus alone could cause the severe damage seen in the collection, so a close look at the area’s maintenance procedures was instigated.

Maintaining the lilacs has always been difficult. Renovations were done in the 1980s to simplify the task by planting groundcovers in large beds. Ironically, it was discovered years later that these changes created more problems than they solved. By 1999, hearty groundcovers were competing with lilacs for water, nutrients, and root space. The large beds added to the amount of weeding that had to be done by hand. Erosion problems developed between the groundcover mats, and weeds that moved into the groundcovers themselves proved impossible to eliminate. Added to all these external pressures was a five-year drought with no relief in sight. Lilac plants were being removed fifty at a time with no sign of a slowing trend.

The latest renovation began with removing as many groundcovers as possible and rebuilding the hill’s eroding banks with compost and turf. Supplemental irrigation was provided during periods of drought. Sterile pruning practices were adopted to slow the transmission of disease through the collection. A monitoring component was added to the weekly hand mowing to detect and remove noxious vines that had been choking out lilacs. As a result, the number of removals started to dwindle and replanting began.

The renovation project is now nearing completion. Last fall, the final phase of bank restoration began. Thirty-eight new plants were added in September alone. Members of the grounds staff put in countless hours of hard work under extremely difficult conditions. Their dedication has been memorialized in a collection that only four years ago was half its size and on the brink of extinction. With stability achieved and expansion well underway, the lilac collection can now be assured of its rightful place in the botanical world—admired by managers of sister collections around the world, by experts such as those of the International Lilac Society, and by the thousands of visitors who show up at the Arboretum every year to celebrate Lilac Sunday.

Above In May 2004, Arboretum horticulturists brought a spectacular specimen of *Syringa* ‘Purple Haze’ from the greenhouse area to its new home in the lilac collection.
Through the Arnold Arboretum’s Field Studies Program, Boston-area schoolchildren study how flowers develop into fruit, observe the dispersal of seeds in the fall, and learn how indigenous people relied on native trees to survive. Beginning this past fall, a new pilot program expands this learning to include explorations of ongoing ecological changes on Hemlock Hill.

The new program, “Hemlock Hill: A Changing Ecosystem,” enables fifth-grade students to study the many ecological impacts of the hemlock woolly adelgid. First detected on the Arboretum’s Hemlock Hill in 1997, this introduced insect feeds with lethal effect on the native eastern hemlock (*Tsuga canadensis*). Sadly, many hemlock trees have been lost. At the same time, however, the hemlocks’ demise has created opportunities for other plant species to grow. The new program investigates these ecological changes as part of our larger effort to support science learning in the public schools.

Working in collaboration with Boston teachers, Arboretum staff members Nancy Sableski and Richard Schulhof designed the field study to support the designated theme for the fifth-grade life science curriculum, “Populations and Ecosystems.” Working in small groups led by volunteer guides, students study the hemlock woolly adelgid through hand lenses and look for signs of decline in infested trees. They then visit study plots to survey populations of both eastern hemlock and black birch (*Betula lenta*). After observing the decline of the hemlock and the resulting opportunities for new plant species, students are asked to make predictions about the future of the forest on Hemlock Hill.

This past spring and fall, Nancy recruited Boston fifth-grade classrooms to participate in the pilot program. Evaluation of the new program will not be completed until spring 2005. So far, students as well as teachers have responded with enthusiasm. Students are highly engaged by the opportunity to learn about ecology through a real-world case study. Although many are saddened by the loss of the hemlocks, they have found a kind of silver lining in the establishment of new trees and the promise of a new hardwood forest. Perhaps most important, their feedback indicates that the story of Hemlock Hill can serve to greatly enhance the Arboretum’s contributions to science learning.

As part of the new Changing Ecosystem field study, students survey eastern hemlock and black birch populations on Hemlock Hill.
Helping Visitors Find Their Way

Jon Hetman, Development Manager

Perhaps you’ve recently been surprised by seeing large new signs, black with brilliant white lettering, announcing your arrival at the Arboretum’s gates. Near the Arborway gate you may have noticed other new signs, similar but smaller, that list vehicular rules; or signs at the Forest Hills MBTA Station giving directions to the Visitors Center and footpath; or near the ponds, marking a bus turnaround. All these signs are part of a new long-term effort to improve communications with Arboretum visitors.

This project emerged out of discussions held about improving visitor services that occurred during the Arboretum’s recent strategic planning process. We recognized a need to identify the collections more clearly and to provide more assistance to visitors as they explore the landscape. To achieve these goals, Sylvia Winter, Arboretum landscape project manager, and Caroline Richardson, manager of horticultural information, are taking the lead in developing a master plan that will specify standardized signage for visitor wayfinding and orientation. Working in collaboration with environmental graphic designer Jon Roll and landscape architect Carol Johnson, we hope to complete the plan by early 2006.

We look forward to providing new tools for orientation, new maps for the Visitors Center and the web, and new ways to transmit information about the collections that will greatly enrich the learning and enjoyment of the broad and diverse audience we serve. Stay tuned!

Advanced-Placement Biology Class

Hemlock Hill has become an annual destination for students at English High School in Jamaica Plain. The advanced-placement biology class, led by teacher Paul Muller and Arboretum staff, explores the ecological changes associated with the eastern hemlock’s nemesis, the woolly adelgid.
This past September, taxonomist Jianhua Li and I traveled to Jiangxi Province in Central China to participate in a conference celebrating the 70th anniversary of the Lushan Botanical Garden. The Arboretum has enjoyed a long relationship with the Lushan Garden; many plants in our collection originated as seed sent from there during the 1930s and 40s. Professor Hu Xianxu, one of the garden’s founders, studied at Harvard’s Bussey Institution, where he formed close personal ties with Professors C. S. Sargent and J. G. Jack. After acquiring his Ph.D. in 1925, he returned to China, where he became one of that country’s foremost botanists and intellectuals. In several respects, the Arnold Arboretum, and especially its extensive research collections, served as a model for the Lushan Botanical Garden.

After presenting our papers at the conference, Jianhua and I took the opportunity to collect seeds and cones in the surrounding mountains, famous for a diverse flora that includes numerous conifers as well as deciduous trees such as Liriodendron chinense, Pterostyrax corymbosa, and Diospyros glaucifolia. Our collecting efforts focused on two species in the genus Stewartia that are found throughout the area. One of them, Stewartia rostrata, has dark, nonexfoliating bark and produces three-inch-wide white flowers in late spring, while the other, Stewartia sinensis, has beautiful, reddish, exfoliating bark with smaller white flowers that open later in the summer. The two species have been taxonomically confused ever since they were described; we hope that with the material collected on this trip, we will be able to resolve this confusion and successfully introduce new germplasm of these two rare trees.

Landscape Institute’s 2004 graduation
Twenty students received the Certificate in Landscape Design at the Landscape Institute’s 2004 graduation ceremonies. In addition, Institute director John Furlong (left) announced the selection of Kate Cardamone (center) as recipient of the Faculty Award for Excellence, recognizing her outstanding teaching. Pauline Cross Reeve (right) received the Outstanding Student Award and, as the chosen representative of the graduating students, gave a talk on the profession of landscape design.
Family Activities in the Lilac Collection

The lilac collection at the Arnold Arboretum is famous for the display of blooms that delight spring visitors with both sights and scents. Within the collection is a wide variety of leaf shape and flower color, form, and fragrance. Explore these variations with your children when you come to the Arboretum. Tear out this page and bring it along when you visit.

Numbers on the map correspond to plants that are included in our self-guided lilac tour. Beginning in early May these plants are marked with signs. While exploring, please remind children that the Arboretum's plants are part of a special collection; it is therefore not permitted to pick flowers, leaves, or fruits, nor to climb trees.

Are the flowers open or closed?
Can you see the difference between a flower bud and an open blossom? Compare these plants:

#5 ‘Bailbelle’ Tinkerbelle™
(notice the dark pink buds that open to lighter pink blossoms)
#6 ‘Albert F. Holden’
(notice the silver color buds that open to purple blossoms)

Smell test
Do all lilacs smell the same to you?
Test your sense of smell and compare the fragrances. Are they similar or different? In what way? For centuries, sweet-smelling perfumes have been made from lilac flowers. Which scent do you like the best? Compare these plants:

#5 ‘Bailbelle’ Tinkerbelle™
#7 ‘President Lincoln’
#8 ‘Mme. Lemoine’

How many different colors of lilac flowers can you find?
Not all lilacs are purple. Throughout the collection, notice the variety of colors, including white, pink, light purple, dark purple, and blue-purple. Compare these plants:

#1 ‘St. Margaret’ (white flowers)
#3 ‘Paul Thirion’ (reddish-pink flowers)
How many petals does a lilac flower have?

Most lilacs have flowers with four petals; these lilacs are referred to as having a single flower form. Other lilacs have eight or more petals and are referred to as having a double flower form. Compare these plants:

- #7 ‘President Lincoln’
  (4 petals, single flower form)
- #8 ‘Mme. Lemoine’
  (8 or more petals, double flower form)

What shape is a lilac leaf?

We often think of a lilac leaf as being heart-shaped, but not all lilac leaves are the same. Compare these plants:

- #17 ‘Kabul’ (cut-leaf or fern-leaf lilac)
- #18 ‘Father John Fiala’ (common lilac)

The botanical name for the common lilac is Syringa vulgaris. Many of today’s popular lilac cultivars are derived from the common lilac. Although lilacs are part of our heritage, they are not native to the United States; two species are native to Europe, while 22 species are native to Asia. We do know that lilacs were brought to the United States by the early settlers and were planted in the gardens of George Washington and Thomas Jefferson.
Volunteer Profile
Plant Information Hotline Team

By Caroline Donnelly Richardson

What are the little green caterpillars that are eating the leaves of my maple trees? When is the right time to prune my lilacs? What is the abnormally shaped growth on the leaves of my oak tree?

These questions and hundreds more are fielded each year by a dedicated team of volunteers who staff the Arboretum’s Plant Information Hotline. Available free of charge, the Hotline is staffed February through December on Monday afternoons from 1pm to 3pm. In addition, voicemail messages received at other times are checked and responded to several times each week. And with the advent of email, the Hotline volunteers also respond to questions that come through the Arboretum’s general email address, arbweb@arnarb.harvard.edu.

A team of five volunteers share the challenges of answering questions related to the care of woody plants. One volunteer per week staffs the Hotline, and all work cooperatively to answer questions on a wide range of topics. Among them, the Hotline volunteers have given between three and fifteen years of service to the Arboretum. When asked what they enjoy about their role, all spoke of the satisfaction that comes from helping people find answers to their gardening questions. Volunteers agree that callers are delighted to speak to a “real, live person” and receive personal attention. Discussing the problem with someone knowledgeable helps to enhance a caller’s understanding of plant biology, proper plant care, and symptoms of pests and diseases. Volunteers often have to encourage callers to have patience with their plantings because there may be no quick fix for the problem.

Volunteers have said they are consistently astounded by the diversity, rather than the similarity, of the questions they receive. Researching the answers is both a challenge and part of the satisfaction of their role since it expands their own knowledge. Along with the seasons, the questions on the Hotline change. This year, topics have included hemlock woolly adelgid, winter moth caterpillar, crabapple foliar diseases, tar spot on maples, and maintenance of peach and fig trees. Among perennial topics are ways to control poison ivy and bamboo and to outwit chipmunks and squirrels. And without fail, every spring brings a flurry of questions about lilacs.

Unusual calls stand out in volunteers’ memories. One was the call received from a woman in Nevada whose mother and brother live in Boston. She was calling on their behalf because they wanted to know what type of tree was planted at the corner of Marlborough and Gloucester Streets. Our Hotline volunteer went beyond the call of duty by taking a field trip to the spot. A call back to Nevada via cell phone made for a very satisfied client.
Summer at the Arnold Arboretum
Horticultural Internships

Each year when the grounds are at their greenest and plant growth is most robust, fourteen horticultural interns arrive from near and far for work and study. Work runs the spectrum from sharpening lawnmower blades and running chippers to pruning woody plants, potting up seedlings, and computer-mapping the living collections, all hands-on alongside Arboretum staff.

Study revolves around twice-weekly classes in plant identification, pests and diseases, weeds, pruning, planting and transplanting, taught by Arboretum staff.

Field trips are an important part of the experience. They begin with the Emerald Necklace, Boston’s Olmsted-designed park system of which the Arboretum is a part, and range outward to include botanical gardens, estates, and parks around New England.

For more on this learning experience, go to arboretum.harvard.edu/programs/intern.html.
Spring Walking Tour for Members
Saturday, April 30, 2005

What better way to celebrate the end of a cold New England winter than to explore nature’s reawakening at the Arnold Arboretum? Welcome the arrival of spring with a guided walking tour of the living collections on Saturday, April 30 at 10am. This special tour offering is available to all members of the Friends of the Arnold Arboretum as an opportunity to connect with the staff and survey beautiful and intriguing highlights in the Arboretum’s landscape.

Tours will begin in front of the Hunnewell Building, where members are invited to enjoy light refreshments starting at 9:30am. Walks will cover considerable ground and last approximately 2 hours. This offering is free, but interested parties must reserve space by calling the membership office, 617.524.1718 x165, by Monday, April 18. The program will commence rain or shine, so please dress for the weather and wear comfortable walking shoes.

Members
Make a Difference

Help us grow!
Join the Friends of the Arnold Arboretum and receive:

- Free or discounted admission to gardens and arboreta worldwide
- Subscription to Arnoldia, our quarterly magazine of horticulture and botany, and Silva, our semiannual newsletter, adult education catalog, and visitor guide
- Free plants at our Members’ Fall Plant Sale
- A 10-percent discount on books and gifts at the Arboretum bookstore
- Membership rate on courses and lectures
- Discount on plant purchases at participating nurseries

Please join today at one of the following membership levels to begin receiving your benefits. Additional benefits are offered at the Sustaining Level and above.

Student/Teacher . . . . $20
Individual . . . . . . . . . $35
Household . . . . . . . . . $50
Sustaining . . . . . . . . . $100
Organization . . . . $150
Sponsor . . . . . . . . . . $200
Patron . . . . . . . . . . $500
Benefactor . . . . . . . . $1000

Your membership with the Friends of the Arnold Arboretum helps support our 265-acre landscape and living collections, research programs, and public and professional education.

Please contact the membership office at 617.524.1718 x165, or email membership@arnarb.harvard.edu for more information.

See page 27 for a membership form.