An endearing aspect of botanic gardens is that the plants endure, while the cast of human characters changes over time. One of the most matriarchal trees of the Lyman Conservatory Palm House, *Theobroma cacao*, is probably the oldest chocolate tree grown in a nontropical zone in the United States. It bears the accession number 6918PA, which signifies the Botanic Garden acquired it prior to the advent of our current accession numbering system. Since 1971, new plants receive a number that includes the year as the last two digits.

The lineage of this plant was unclear until a few years ago when a newspaper clipping from the *Daily Hampshire Gazette* dated May 28, 1953, came to light. A photo showed a researcher on a ladder in the tree, but more importantly the caption revealed the cacao’s provenance:

> On top of a six-foot ladder, six-foot-three Thomas Enders of Avon, Conn., a Yale senior, inspects the seed pod of a cocoa tree received at Smith College from the Brooklyn Botanical [sic] Garden in 1931. To grow these pods, containing the seeds which are ground into chocolate, it is necessary to hand pollenate [sic] the blossoms each July.

So our cacao tree, which has offered thousands of flowers and hundreds of pods and seeds over the generations, began as a tree growing in Brooklyn during the Great Depression.

Two years ago we had, for some still unexplained reason, a banner year for pod and seed formation with over 100 pods, probably the greatest production ever. Some of these were used by students in the Economic Botany class to produce chocolate products, and some seed was propagated by Collections Manager Elaine Chittenden for distribution (see page 14 of *Spring 2011 Botanic Garden News*).

One of the botanic gardens we gave a robust two-year-old plant to was the original source, the Brooklyn Botanic Garden. So last fall, some eighty-one years after being planted at Smith, the mama cocoa tree sent one of its progeny back from whence it came. Their curator was happy to receive the plant and have the original lineage returned, and we were happy to restore the lineage to their glasshouses. When we say to other gardens “we owe you one,” it may take us eighty years to respond, but the best species are worth waiting for.
Calling Former Horticulture Students!

Greetings to former horticulture students of Smith College!

T he Order of Bloom study has been a staple of horticulture classes at Smith College since the mid-1980s, when it was initiated by Richard H. Munson, director of the Botanic Garden from 1984 to 1995. Students spend the last two months of the spring semester making a weekly walk to designated plants on campus to observe and record bud break, leaf out, and flowering times for roughly 50 species of trees and shrubs.

Phenology, the study of recurrent biological processes as impacted by climate, has been of increasing interest in the last several decades due to the perceived current or future impacts of climate change on the behavior of animal and plant species. In recent years, the Botanic Garden has worked with Jon Caris of Smith College’s Spatial Analysis Lab to map the Order of Bloom walk and capture this annual data in order to identify trends that may impact plant/pollinator relationships and crop cycles, not to mention horticultural displays. For example, for the last several years, lilacs have bloomed too early for the traditional Reunion bouquets at Alumnae House.

We need your help! If you participated in this project between 1984 and 2003, we want your data. Even just a few “snapshots” from previous decades would add a vital dimension to our ability to draw meaningful conclusions over time. Please contact Horticulture Lab Instructor Gaby Immerman at gimmerma@smith.edu or (413) 585-2745 if you have an old Order of Bloom study among the Smith papers in your attic. Thank you!

Friends Reunion Award

In 2012 the Friends of Smith College (Athletics, Botanic Garden, Libraries, and Museum of Art) initiated a new reunion award in conjunction with the Alumnae Association. All reunion classes are eligible for the Friends Reunion Award, which goes to the class with the greatest percentage of members in any of the Friends groups this fiscal year. The award is presented along with the other reunion awards on Ivy Day. Alumnae have until May 10 to join one or more of the Friends groups to increase the class participation rate. Last year the winner was the class of 1962.
Summer Internship Going Strong

In 2005, the Botanic Garden launched its summer intern program with six students and a general sense that Smithies were looking for more opportunities to engage in a meaningful way with the campus landscape. Seventy-one students and several thousand groundcover plugs later, the Smith College Botanic Garden Summer Internship has blossomed into a respected professional training program. We’ve expanded to include students from the University of Massachusetts, Amherst College, and Hampshire College. The program has had a major impact on both the students we’ve served and the Botanic Garden’s capacity to meet its programmatic and landscape stewardship goals.

Interns spend seven weeks on the crew taking care of basic landscape maintenance tasks and the remaining time in weeklong rotations with the chief arborist, manager of living collections, conservatory manager, and the gardeners responsible for named gardens such as Capen Garden or the Systematics Garden. Students also have the opportunity to pursue an independent project that offers a deeper engagement with an aspect of botanic garden management of particular interest to them. The result is a diverse array of products that have enriched the Botanic Garden, including the Capen Garden brochure (Janice Wilson in 2007), site designs for our Native Tree Arboretum (Tobin Porter-Brown 2008), Lyman Pond renovation (Sarah Allen 2008), and tree hazard evaluation tools and protocols (Mo Speller 2006, Alex Julius 2007, Sarah Motti 2008, and Jen Rioux 2012). These examples only scratch the surface of the accomplishments and skills-building opportunities afforded to students by summer projects.

With funding through the Smith Summer Research Fellowships (SURF!) program, Botanic Garden interns have pursued academic and research-based projects, including expansion and renovation of the Smith College Herbarium (Ariana Albano 2009 and Mikaela Sanders 2012), assessment of African violet leaf variegation (Rachel Rock-Blake 2007), and development of an ecology curriculum linking the Botanic Garden and the Museum of Art (Sabrina Montenigro 2011), under the supervision of biology faculty Jesse Bellemare and Virginia Hayssen, and Botanic Garden director Michael Marcotrigiano. This summer will see our first collaboration with geoscientists, with intern Alana McGillis ’15 supporting research conducted by professor Amy Rhodes on soil conditions in hemlock and hardwood forests, anticipating the effects of hemlock loss due to widespread infestation of the invasive pest, hemlock woolly adelgid.

Student projects also involved other departments. Gary Hartwell, a project manager in Facilities Management, approached us in 2010 for assistance with state mandated eradication of invasive species along the Mill River. For the last three seasons students including Brittany Innis (2010–12) and Angela Oliverio (2010) have tagged, mapped, and removed ten target species. Additionally, they have offered educational workshops to other students and the general public, worked with field staff from the New England Wild Flower Society, conducted research on best practices, and underwrote Emily Peake’s 2011 project of developing a sustainability map of Smith’s efforts to reduce resource consumption and green the campus through projects like the Ford Hall green roof.

In 2012 we launched a deeper partnership with the Stockbridge School of Agriculture at UMass. Nicolas Borcy, an arboriculture student at Stockbridge, spent five months as our first arboriculture intern, working closely with Chief Arborist John Berryhill and Landscape Manager Jay Girard to care for campus trees and, in particular, to support and maintain the 60 new trees planted to restore the collection in the wake of the destructive 2011 October storm (see Spring 2012 issue of Botanic Garden News). This summer, Stockbridge horticulture student Ruth Ayers will complete her five-month internship at Smith, with Plant, Soil, and Insect Sciences major Christopher Copeland joining us in May as this year’s dedicated arboriculture intern.

One of the most gratifying aspects of our program’s success is the exciting opportunities it has afforded our graduates. A number of former interns, including Tracy Murphy AC ’09, Rachael Cain ’08, Alex Julius ’09, and Rachel Rock-Blake ’09, have gone on to pursue graduate degrees in horticulture and related fields. Smith interns have parlayed their skills and experience into internships and professional placements at institutions including the Arnold Arboretum (Alex Julius ’09), the Morris Arboretum (Mo Speller ’08, Jessa Finch ’12), and the Iowa Arboretum (Lesley Joplin ’09). This summer Jen Rioux ’15 will be our first connection to the Polly Hill Arboretum on Martha’s Vineyard, and Brittany Innis ’13 is headed to the Holden Arboretum for a year-long curatorial internship. Our first graduate-level intern, Rebecca Bernardos, is now completing her masters at UMass and will be the curatorial intern at the New England Wild Flower Society’s Garden in the Woods. Our colleague Bob Gutowski at the Morris Arboretum wrote in to say, “Send us more interns! Smith College on a resume gets attention here.”

Photograph by Pamela Dods ’08
The beauty and fire of nature have inspired poets for as long as poetry has existed, and the Spring Bulb Show is a veritable garden of delights for anyone seeking the spark of inspiration. The poetry courses that we have had the opportunity to take at Smith College introduced us to some amazing contemporary poets—among them Li-Young Lee, Jean Toomer, and Louise Glück, who are represented in the gathering of poems presented here. The very first poem we discussed in Annie Boutelle’s poetry workshop was “Irises” by Li-Young Lee. How was he able to make a flower mysterious, sexual, powerful, ambivalent, hopeful, and human—all at the same time? It was thrilling to experience. The shapes, colors, smells and textures in this stunning array of blooming are reflected in poetry’s rhythms, sounds, and images. We hope the poems we have chosen provide a complementary lens through which to see these marvels of the natural world. We invite you to let the poems act as a kind of guide, an adjoining corridor to the experience of the viewer as you move through the profusion and diversity of blossoms and foliage here. Immerse yourself in the intimate practice of the senses on the page, as well, observing the ways a poem can conjure a treasure map and lead us into the wonders that language, too, can offer, bewildering and powerful in its unfurling petals, alive and burning with color.

Janan Scott ’13 and Liliana Farrell ’13

Janan Scott ’13 was born in Nicosia, Cyprus, and has lived a somewhat nomadic existence with roots scattered in many places including Pakistan, Kenya, France, and Baltimore. She is happiest in the woods and particularly enjoys making lentil soup, eating salad, and keeping word lists. She believes that spending time upside down is rejuvenating; she knows that family is precious, friendship is rare, and that poetry is an act of surrender. A senior Poetry concentrator and Afro-American Studies major at Smith, Janan has been fortunate to work as an intern at the Poetry Center for two years, where she has cultivated meaningful relationships with visiting poets, students, faculty members, staff, and poetry-loving folks from the community. She is feeling ready to graduate and is very excited for the future, knows deeply that the universe will, somehow, deliver.

Liliana Farrell ’13 is an English Language and Literature major, Film Studies minor, and Poetry concentrator. She has interned at the Poetry Center since 2011, working with director Ellen Doré Watson, Jennifer Blackburn, and Janan Scott to coordinate and promote events. After she graduates, Lily hopes to write for television (so in immediate post-grad terms, be a script reader or script supervisor) or be an assistant for a person who does what she ultimately wants to do. She’d also like to live in an apartment and maybe get a French bulldog with whom she can practice her limited French and watch Grey Gardens.
What would it be like to tour the Amazon rainforest with the world’s foremost botanical authority on the region, namely, Sir Ghillean Prance? In June 2009 I had the benefit of participating in an eight day riverboat excursion on two forks of the Amazon, the Rio Solimões and the Rio Negro, with staff and trustees of the National Tropical Botanic Garden of Hawaii and Florida. From our mobile riverboat base near Manaus, Dr. Prance and our hosts gave us an intense and intensely rewarding tour of this corner of the Amazon basin.

What has been called the rainforest doesn’t prepare the casual visitor for the immensity of how water rules this world. The Amazon rainforest might more accurately be called a water forest. The annual rains from thousands of square miles flow, accumulate, and collect, annually flooding massive acreages for months at a time with an additional 30 foot layer of water stretching along the thousands of miles of riverbank. The people and organisms of the forest have evolved to tolerate and even benefit from the annual inundation but at times it seems to be an ecosystem where biological rules are in abeyance, refored, or partially suspended. Insects, arachnids, and fish magnify in size; birds abound in number of species and specialization; and mammals are mostly small and are more prone to fly or climb.

Also along with Dr. Prance was his wife Ann, a highly educated and insightful woman who has lived the hardscrabble life in Brazil’s rough neighborhoods but also dined with royalty, the while raising two daughters who have gone on to be accomplished in their fields. She is a nimble conversationalist, who has taught herself to be an expert on Amazonian birdlife. Lastly, and equally important, was Moacir Fuentes, the owner of the riverboat company and Prance’s longtime collaborator in exploring these waters. Despite growing up on the river, Mo still has the capacity to get excited about discovering and locating species. A genuinely funny-boned man, he is a comedic, naturalist masterpiece. Like the Prances, he gladly shares his profound love of the Amazon ecosystem and its people with many tour groups.

This trio along with the able crew of Mo’s ship shepherded our group of 20 enthused naturalists around in motorized wooden longboats. It was remarked at one point that we were “punting the Amazon.” Cutting amidst the flooded forest, our hosts pointed out the major assemblages of plants, sudden ecological shifts in soil types, and the individual species of plants, birds, and animals in this exploding box of wonders. Every 15 minutes seemed to reveal a bird or plant species new to us all, but Ian, Mo, and Ann rarely were stumped.

Botanists arrange plants into families, whose members bear genetic and physical similarities to each other. Three hundred plant families exist in the Amazon, some huge in numbers of species like the legumes or laurels, some tiny with just a species or two. A classically trained botanist like Prance relies on a series of decisions, working his way through a network of choices to pin a plant down to family, then genus, and finally species.

Probing through the flooded Amazon forest in wooden longboats. Photograph by Rob Nicholson

But there are over 1500 tree species in the Amazon and species counts in a single hectare can reach 250, more than all the forests of the New England states combined. Dr. Prance knows many at a glance by their foliage texture, their branch architecture, their fruits, and especially their flowers when they can be had. These are all clues to identity filed away in his vast memory bank of botanical characters, ready to be sorted and collated into the right deduction. But even the veteran botanist was occasionally stumped. To hear, “I’m really not sure, we’ll have to check the books when we get back to the boat,” made you feel you had stumbled onto something special and pointed to the unending complexity of the Amazon ecosystem.

In a short span of days I saw giant anacondas and boa, primitive archaeopteryx-like hoatzin birds, and electric blue morpho butterflies flashing on/off, on/off as they flittered upriver. Flocks of yakking parrots and a parade of novel flowers, new to a 30-year veteran of botanical gardens, served as constant and welcome surprises.

Our boats in high water were skirting over the tops of small trees, seemingly in mid canopy, and epiphytes were at water level or just underneath it. Epiphytic orchids and bromeliads, which would normally be spotted from ground level with binoculars and tantalizing us with their so close but so far away beauty, were now within reach. We could peer into spectacular orchids, magnificent spikes of micro-orchids or gaudy trusses of prom-ready Cattleya violacea. One particular beauty, a Galeandra devoniara, was perched atop the spire of a dead trunk. Its sculptural setting and inherent beauty were dodging a dire aquatic fate its lower brethren.
Amazon cont’d

(Continued from page 5) succumbed to, and its pollination success this year was being measured by inches as the river still rose.

We started one day with a short punt to the fabled Amazon water lily, *Victoria amazonica*, with its four foot wide round leaves with an upturned edge. These remarkable leaves have a network of veins beneath that include inflated cells to give them buoyancy. Dr. Prance explained the complex pollination of these primitive plants, which involves their petals curling closed and trapping the laggard pollinator beetles for the night.

Prance speaks the King’s English in measured tones, does suffer through familiar questions with patience and aplomb, and though he could run any environmental ministry in the world, he seems equally comfortable as a minister in a rural British church. If his ministry were to have a mission it is salvation of the forest and the peoples within it. His parish covers millions of hectares and his botanical flock includes not only billions of green lives but also the people whose lives depend on them.

*Cobolos*, the river people who carry the mixed blood of Europe and Amerindians, eke out a living along the network of rivers with a combination of fishing, farming, and extraction of forest products such as Brazil nuts. We stopped in a number of villages, and these interactions helped to clarify Prance’s mission and enlisted new recruits in the battle to sustain not only the forest but also the people beneath its foliage and on its banks. Watching a classroom in a plank riverside school full of children learning about photosynthesis on the day the world’s pre-eminent Amazonian botanist was visiting was a coincidence that seemed ordained by a higher power.

Perhaps the botanical highlight of the trip for me was an old friend that I had propagated and grown at the Smith College Botanic Garden. The moonflower, *Selenicereus wittii*, is an odd epiphytic cactus (one of only three in the Amazon) that clasps to trunks of trees in the *igapó* or flooded forest. The late painter Margaret Mee did a stunning rendition of the species, along with numerous other Amazonian flowers. She needed, however, multiple trips upriver to complete sketches of both the foliage and the elusive night-blooming flower (see Spring 2010 newsletter, page 3). Dr. Prance was instrumental, while director at the Royal Botanic Gardens, Kew, in acquiring a collection of her work, and it was clear in his recounting of the tale, standing in the pounding Amazonian rain near the lone specimen we found, he has immense respect and affection for his lost friend. She somewhere smiled.

The idea that I may live a very long life now includes a dreadful nightmare. I fear I will be sitting, ancient and surrounded by a group of small children, and whisper, “I saw the Amazon forest with the famous explorer Ghillean Prance. It was a marvel of intricate beauty that taxes the human vocabulary for superlatives. I wish you could have seen it. I’m sorry we didn’t do more to save it.”

Oropendola nest. These birds are communal breeders and produce hanging woven windsocklike nests that can be up to 6 feet long.

Winning Mum

The latest mum hybrid inducted into the Chrysanthemum Hall of Fame was bred by KK (Keighley) Lane ’15. She made the cross between cultivars ‘Brunswick’ and ‘Reno’ in the fall 2011 horticulture class. It was then grown and shown at the Fall Chrysanthemum Show in 2012, when the public voted it the winner.

You can see the Hall of Fame online at: www.smith.edu/garden/exhibits/alumnemumexhibit/mumalumshall.html
Beatrix Jones Farrand: Gender Inequity & Early American Landscape Architecture

Jacqueline Maasch ’15

Despite her contributions to the development of American landscape architecture, Beatrix Farrand maintained the title of landscape gardener throughout her fifty year career. Examining Farrand’s career in light of this choice illuminates a number of broader issues, namely: the significant presence of women in landscape professions in the late nineteenth and early twentieth centuries; why, despite this presence, many remained in relative obscurity; and why, despite the fate of many of her female contemporaries, Farrand herself endures as a prominent figure in the history of landscape architecture.

Beatrix Jones Farrand (1872–1959) was born in New York City to a socially prominent family. Her early interest in horticulture flourished in her private studies with Charles Sprague Sargent, the first director of Harvard University’s Arnold Arboretum. Upon concluding her studies, Farrand traveled abroad and gained appreciation for the European traditions of landscape design. There she found inspiration in the gardens of England and Italy, particularly the designs of Gertrude Jekyll, whom she would count as a major influence.

In 1895, Farrand opened her own office in New York City. It was then that she began to refine her creative vision, which was notable for balancing formalism with naturalism; emphasizing functionality and maintenance; a painterly yet reserved color palette; and an architectural nature, lent by artful hardscape elements and plants with sculptural forms. Farrand would go on to contribute to the campuses of Yale and Princeton, the estates of Morgans and Rockefellers, the Santa Barbara Botanic Garden, the gardens of Woodrow Wilson’s White House, and many other projects. In 1899, she was invited to cofound the American Society of Landscape Architects (ASLA), a professional association seeking to define and legitimize the burgeoning field of landscape architecture. Farrand was the only woman among eleven founding members, and the only female fellow until 1918.

Today, Farrand is often referred to as America’s first female landscape architect, and even at times as “[almost] the female equivalent of America’s most well-known landscape architect, Frederick Law Olmsted” (Brown 1). Interestingly, Farrand herself preferred the title of landscape gardener, a title that carried both English and female connotations. While this may be seen to reveal her admiration for Europe and its design heritage, it may also be viewed as a reflection of gender inequity in the discipline she helped found. Nevertheless, it is crucial to realize that despite this inequity, women were in fact engaging in landscape activities and professions — and in relatively significant numbers.

As artistic and domestic endeavors, gardening and garden design came to be suitable pastimes for women of privilege in the nineteenth century. A proliferation of public parks, arboreta, display gardens, garden clubs, and horticultural literature marketed toward women reflected and encouraged this trend (Komara 25). However, obstacles presented themselves when a woman sought to transition her interest in the landscape from avocation to vocation. These obstacles, mainly in education and employment, were reinforced by the emergence of landscape architecture.

As a young discipline, landscape architecture underwent a process of self-definition. Frederick Law Olmsted, Sr., the “father” of American landscape architecture, sought particularly to dissociate the discipline from what he considered the fussy, informal, and picturesque nature of small-scale, residential garden design (Komara 27). By adopting the name landscape architecture, practitioners borrowed legitimacy from the well-established and male-dominated field of architecture. In so doing, they effectively rejected what was seen as the more domestic, amateur, and female occupation of landscape gardening, through which women practitioners had found a niche in residential design.

Meanwhile, formal training for women in the “landscape arts” existed, but was largely separate and unequal. Farrand’s contribution to the 1910 book Vocations for the Trained Woman never mentions landscape architecture as a career for women. She lists educational programs that accept women, all of which train for careers in landscape gardening. While male-only programs taught civic design, urban and suburban planning, park and cemetery design, and university and campus design — subjects deemed appropriately rigorous for landscape architects — many women’s curricula only superficially covered such matters. They were also shorter, leading Farrand to doubt that these offered adequate preparation for a successful career (Farrand 92).

(Continued on page 8)
Farrand cont’d

Disparities in curricula reflected and perpetuated inequity in the workplace: women were not being trained to undertake large-scale commissions, nor were they earning them. As pioneer landscape architect John Nolen commented, “Public prejudice would operate against a woman’s being trusted with public work” (Tankard 36). These prejudices included the beliefs that women are not suited to physical labor; are distracting to men in the workplace; are less capable of leading and supervising; are less capable of the more learned aspects of design, which involve mathematics, drafting, and engineering; and are therefore better suited to design activities that emphasize beauty, decoration, and detail. Employment in male-run firms was also hard to find. Consequently, Farrand was not the only woman to found her own firm, and to build her staff with promising young women who would otherwise face difficulty in securing employment.

Though Farrand broke gender barriers by earning nonresidential commissions, she conceded that most work available to women was neither public nor lucrative (Farrand 92). The MIT-trained Marian Cruger Coffin agreed, and suggested that most women would be “very foolish to take up the profession as a means of support” (Ben-Joseph et al. 14). Therefore, women pursuing landscape professions were those who could afford education, travel, and overhead, and who could cull their early clientele from a long list of social connections.

Like many women practitioners of her time, Farrand was criticized for both her gender and her social status; Olmsted dismissed her as a “dabbler,” while another colleague accused her of running a “bedroom practice” between cards and tea (Tankard 33, 31). In reality, the quality of Farrand’s work stands out even among that of her male associates. Furthermore, she was highly prolific; it is inconceivable that she could execute nearly 200 projects for sheer amusement between social engagements.

Farrand certainly benefited from a cultured upbringing and prestigious education, though such privilege was typical for female landscape professionals. Therefore, other factors must explain her exceptional and enduring recognition. Her lifetime accomplishments can be attributed to personal merits: intelligence, integrity, ambition, work ethic, business sense, and taste. These translated into a productive career and unique ability to earn commissions otherwise reserved for men, namely, university campuses, large estates, and botanic gardens.

Besides limited education and employment opportunities, two factors have prevented women practitioners from earning their rightful place in history. First, gardens are ephemeral: they grow, change, and die back over time. Second, women were primarily relegated to small-scale residential design, which has drawn less attention in the historical (male-centric) literature. Consequently, evidence of their work has often disappeared from both the physical world and collective memory. Farrand, however, left a lot behind to be “rediscovered.” The survival of several of her designs, notably Dumbarton Oaks in Washington, D.C.; her founding status in the ASLA, whose membership now exceeds 15,000; and the archives of her blueprints, essays, journals, and correspondence at the University of California at Berkeley allow a better understanding of Farrand than is possible for many of her female contemporaries (Tankard 38). In sum, Farrand’s place in history was solidified both by her remarkable accomplishments and the volume of surviving evidence.

While historians attempt to raise awareness of female contributions to the field, it appears landscape architecture as a discipline is still struggling to remedy an entrenched gender bias. In 2004, women represented only 24% of landscape architects working in the private sector, 34% of professionals in the public sector, and 24% of professionals in academia (Salaries 1). These findings imply slow progress in overcoming gender inequity, but progress nonetheless. These are no longer the days when even the most successful women in the field struggled to maintain financial independence, and forwent the title of landscape architect.

References


1929 sketch for the John D. Rockefeller Garden (today known as the Abby Aldrich Rockefeller Garden), Seal Harbor, Maine. North Wall, Moon and Service Gates. From the Beatrix Jones Farrand Collection, UC Berkeley, Environmental Design Archives
I have a cousin in Portland, Oregon with a vacation house on the beach south of the city. Because of this, and professional meetings, I’ve been to Portland several times and have experienced its culture. It is a very green city, both literally and figuratively, and has many characteristics I can relate to Northampton — recycling and biking fanatics, foodies, and a relaxed open and accepting community. It is slanted so far in a “natural” direction that a TV comedy series, Portlandia, spoofs its culture, with one episode mocking its restaurant goers. Not only do they insist that it is local, organic, and a heritage chicken variety, but they demand to know about its upbringing. Did it get to play with other chickens? This is a place where the city council is likely to call a meeting to find a more sensitive term for “politically correct.”

All kidding aside, Portland has many built attractions that, because of its beautiful natural surroundings, may go unnoticed. I reviewed the rather recently constructed Chinese Garden in the Fall 2005 issue of Botanic Garden News (page 9). On my last trip I discovered that my cousin knew the operations director of the World Forestry Center, who was willing to give my wife and me a personal tour. I know how reluctant overworked directors can be to take a half day or more dealing with a visitor, so I jumped at the opportunity.

The operations director, Mark Reed, was gracious, approachable, and knowledgeable. He shared his thoughts and information freely and with passion. The World Forestry Center has an interesting evolution that began as a celebration of the 100th anniversary of the Lewis and Clark expedition to the Oregon Territory. A great fair was planned. Construction in northwest Portland began in 1904. Work was completed on schedule and nearly two and a half million people attended. The fair helped bring about increased interest in the city and led to the subsequent population growth of Portland.

As a part of the fair an extraordinary forestry building was constructed. Built with whole timbers, it was, at the time, the world’s largest log cabin. It was constructed of hundreds of giant fir logs, which were configured in a style that created a vast cathedral-like interior. The building touted Portland as the largest lumber manufacturing city in the United States. It was an era when great pride was achieved by mastering giant trees.

When the fair finally ended, the early plan to demolish the building was scrapped and a private foundation was created in the 1920s aimed at keeping the building as a viable tourist destination. With the Oregon Centennial planned for 1959, exhibits and building improvements were made. In time, however, the building went into disrepair. In 1964 a fire, of unknown cause, destroyed the highly combustible building. The logs burned with so much fury that the light could be seen downtown and ashes fell for miles.

Determined civic leaders met and decided that a forestry education museum should replace the building. Architect John Storrs designed the new log-cabin-like structure, which opened in 1971. In the 1980s the mission of the facility was expanded to reflect forestry on a global, rather than regional scale, and the name was changed in 1986 from the Western Forestry Center to the World Forestry Center. With the name change came a host of opportunities for novel displays and exhibits that focused less on the lumber industry.

Today, the center is a great destination for school groups and is focused on education. It has moved far beyond its lumber origins. The permanent displays include an exhibit of woods called Our World’s Forests. It is much different than our Woods of the World exhibit in Lyman Plant House. In front of a gigantic curved wall is a map of the world with markers indicating where certain tree species are native, also providing information on how each species is used by the local cultures. Flip books provide information on wildlife associated with these forests.

Several interactive exhibits aimed at a level that youngsters can understand take you around the world. These include the Trans-Siberian Railway where you sit in a train and watch moving scenery though your window. Text tells you about the people who depend on the boreal forests for their living.

Nearby, a Chinese tour boat gives you “a ride” on the Songhua Lake in the Chanbgai (Continued on page 10)
Forestry Center continued

Mountains, where population pressure threatens some of China’s premiere temperate forests. A few yards further and you step into an all-terrain vehicle and see Kruger National Park in South Africa, possibly your first encounter with a subtropical forest. Move along and you enter a canopy crane that “lifts” you into the treetops of an Amazonian rainforest. Younger visitors might then take a highly realistic simulated river raft adventure on the local Clackamas river and have their picture taken as they traverse the rapids or hideout in the forest, viewing animals (fake, of course) that live under the forest. For those not afraid of heights, a lift takes you into the simulated canopy of a tall forest, where you can note creatures and plants that live at different altitudes. You can find out why forests are important to nearby rivers by becoming an “underwater explorer.” For those interested in commercial forestry you can go to exhibits that teach you about forest stewardship, let you become a virtual “smokejumper,” or, if you like big toys, you can mount the giant timberjack harvester.

The Botanic Garden at Smith College has a cross-section of a 177-year-old elm tree. We labeled the annual growth rings with significant Smith College and Northampton events. The World Forestry Center’s tree cross section is of a tree germinated in 1323, making it over 500 years older than ours! Its annual rings are marked with historical dates for a variety of world events. If only trees could talk!

One of the most curious exhibits is the Armed Willow. The displayed tree trunk has a few inches of a rifle barrel sticking out of one side and the stock end sticking out the other side. Careful analysis indicates that the weapon, a .22 caliber rifle, was left in the crotch of the willow tree in the 1960s and the tree “consumed” it as it grew. Somewhere, an elderly visitor could be saying, “Darn, that’s where I left that gun.” Nearby, a petrified wood exhibit adds the final touch to the series of tree displays.

I saw two interesting and attractive exhibits in the Center’s large, adaptable temporary exhibits area. The first, a wonderful photographic display, was entitled The Forest through the Eyes of the Forester. Only being in such forests would be more impressive. The second celebrated the International Year of the Forest and was a world view of the status of forests. These temporary exhibits were at a level that adults would enjoy, although I must say that even the children’s exhibits were fascinating for me. When I visit museums today, with the emphasis on interactive exhibits, I am often disappointed with the imbalance between learning and play. The World Forestry Center has managed, much to their credit, to lure children into an exciting scene and teach them life lessons on how important trees are to the planet’s weather, animals, and world economics.

Next time you are in Portland, make this a destination. It is a gem hiding, appropriately, in the woods.

To learn more about The World Forestry Center go to www.worldforestry.org
Blood of the Dragon

Rob Nicholson

...the tree is covered with a rough bark, very thin, and easy to be...wounded with any small tool...which being so wounded in the Dog dates [midsummer]...yield forth drops of a thick red liquor...called Dragons tears or Sanguis Draconis...

John Gerard, Herball, or, Generall Historie of Plantes. 1597

The Botanic Garden of Smith College has been functioning in three different centuries, but there are very few plants in our collection that we know we can make the same claim about. For many plants such as the prickly cycad, *Encephalartos altensteinii*, in Palm House, we have the details of when we got them and from where. But in the early years, our garden did not always keep detailed records about the plants in the collections. In the 1970s we began a very structured record keeping system and we now maintain precise records about each new plant we acquire, including in some cases where in the wild the new accession was collected. Our current accession numbers include the year we received the plants, but those that predate the current system are followed by the suffix “PA.” All information is now in a computerized database, but we still have the card file with the old records.

While the card file provides some information about the older conservatory plants, a recent vetting of conservatory PA accessions by Marisal Dobbins ’15 found that only about 20% of the 500 of our oldest accessions had any documentation as to when and from where we received them. The remaining mystery accessions are now prime candidates for purging, making room for newer and better material with proper documentation or usefulness for education.

One of the PA accessions was a large specimen planted in ground in the Palm House, identified in the records only as *Dracaena draco*, 6360PA. No information other than that exists for a plant that may even be a century old. We have dutifully pruned it for decades, a thick trunk ten feet high from which new stems arise and grow upward. I have always felt the identification was a bit suspect as it looked nothing like photos I have seen of *Dracaena draco*, with its distinctive candelabra branching structure, but I attributed its atypical architecture as being an artifact of being grown outside its native climatic conditions. *Dracaena draco* is native to the subtropical Canary Islands, but it got planted long ago in a lowland tropical conservatory. After reading accounts about the red sap coming from the leaves, I set up a ladder to reach the foliage and tugged and cut; nothing. A long perusal of Internet images came up with three possible candidates, and I sent foliage to John Trager, a Huntington Botanical Gardens specialist in arid plants. He felt that one of the three suspects, *Nolina longifolia*, may be possible. The plant edged ever closer to the chain saw list despite its apparent old age, but out of respect for the elderly (I am now there), I did one last search. I was stunned when I found a photo of a plant that looked very much like ours, housed in the large domed Climatron of the Missouri Botanical Garden. The caption read, “*Dracaena umbraculifera*, a native of the island of Mauritius. According to Wyse Jackson, it is now almost certainly extinct in the wild. But the Garden has grown a specimen for about 100 years. ‘It is quite an iconic symbol of the Garden’s long-term commitment to plant conservation.’” (See www.sciencebyseltzer.com/one-list-for-all-the-worlds-plants/dracaena-umbraculifera.)

Could it be possible we had a misidentified specimen of a rare plant that may be extinct in the wild? I had met the current director of Missouri Botanical Garden, Dr. Peter Wyse Jackson, at a conference in South Africa, so I shot him an email explaining our situation. As Mauritius is an area he is keenly interested in,
nurseries on the East Coast and that one eventually became part of our collections long ago. A quick perusal of records in the college archives found a few morsels but no definitive bit of information. In 1895/6 we received from the Missouri Botanical Garden a “gift of 44 species of succulent plants,” while in the same year we did receive plants from Fairmont Park but not specifically a Dracaena. Lastly a record dated 26 May 1896 states, “The great central bed of the Palm House has plants placed directly in the earth to allow them to form as freely and naturally as possible, not having been in position only about three weeks, they are not yet established.”

It is a bit odd that the value of this possible Dracaena could shift so dramatically based on the species identification. The Botanic Garden was fairly close in the initial identification, and I thought of one of my late father’s favorite expressions, “Right church, wrong pew.”

(Continued from page 11)

CONSERVATION AND HORTICULTURE:
A BIBLIOGRAPHY OF DRACAENA UMBRACULIFERA JACQ.

Dracaena umbraculifera

This plant is another of suspect origin. Originally it was thought to be part of the Mauritina flora, but it has also been suggested as originating from Java. However, the first description of it in 1797 stated it was found on the island of Mauritius. From then on it started to appear in a number of prominent collections in Europe, and was introduced to Britain through the west London nursery of Loddiges in 1818, who claimed to have the only plant in England at that time.

In 1842, the first elements of doubt regarding its origin were created when Monza Botanic Garden recorded it as coming from both Mauritius and Java. It is now only grown in a handful of botanic gardens and has not been recorded in the wild since its first description.

From the Royal Botanic Gardens, Kew. For the full chronology see: http://www.kew.org/conservation/cpdu/dracaena.html

Hand Models

It is not too often that we get a plant that is a subject of serious scientific inquiry and can be used to great effect in educational pranks. The Catasetum orchids are a subject of great interest due to their hair-trigger release mechanism that launches a pollen sac onto the unsuspecting pollinator. We have brought plants from our collection to MIT for high speed videography and this resulted in an article in the scientific journal Plant Signaling and Behavior and our newsletter (see High Tech Botany Part II, in the Spring 2007 Botanic Garden News, page 15). We also lent our entire collection of Catasetum orchids for a year to Harvard researcher Dr. Jacques Dumais who delved into the biophysics of the mechanism.

Now back within our glasshouses the “cats” are sending up spikes of flowers again, and with no research in sight we enlisted a few student interns to be “hand models,” providing scale for photographs of the flowers. This also includes touching the hair-triggers that release the mousetrap action of the pollinium release, usually striking and adhering to a fingernail. We of course don’t let the students know this will happen and the reactions ranged from a reserved “whoa” to a shriek and a six inch jump.

A first blooming of an intergeneric hybrid of Catasetum × Clowesia resulted in an interesting spawn, seeming to have a loaded pollinium but no hair-triggers. No region that was touched would stimulate the release, so this seems to be a hybrid that is an evolutionary dead end.

Virtually all plants in our collection may be the subject of scientific inquiry, and “research” is but one of the justifications listed in our collections policy rationales. To date no collections justification for “comedy” has been included, but like the sage once said, “The future is unwritten.”
Our first STRIDE scholar, Jenna Zukswert ’13, is graduating and heading out to the University of British Columbia (UBC) for graduate school. She will be working on a master of science degree in forestry, as part of the Belowground Ecosystem Group. Her plan is to study litter decomposition, but broadly she’s interested in studying forest ecology and biogeochemistry, particularly the effects of trees on soil and ecosystem processes. She says, “Working at the Botanic Garden in collections was definitely a highlight of my time at Smith, and I feel so fortunate to have had that opportunity!”

Madeline Franz ’15, STRIDE Scholar in collections 2010–13, is heading off to New Zealand in the fall to study at the University of Otago in Dunedin, where she’ll focus her botanical studies on the ecology and diversity of local flora.

Sammy Lyon ’08, took Landscape Plants and Issues in fall 2007 and Horticulture in spring 2008. She told us that she is now directing a youth film program in the evenings, coordinating a service learning program at the Environmental Charter School in South Los Angeles. Additionally, she’s still consulting at her old job as a project manager for a three month water challenge project with seventh graders and writing a social justice service learning curriculum for the after school program of an organization in New York City.

Tobin Porter-Brown, Hampshire College ’09, summer intern in 2008, is now co-manager of Book and Plow Farm, a recently launched project of Amherst College. See page 3 for more about what other past summer interns are now doing.

Student Updates Gaby Immerman and Madelaine Zadik

Current STRIDE scholar Karen Yu ’16 (working at the Botanic Garden in education and exhibitions) will spend the summer at Georgia Tech in their Aquatic Chemical Ecology summer research program. The two students selected for the summer internship at the Royal Botanic Gardens, Kew, in London are Ada Comstock Scholar Emily Crowly ’14 (also a summer intern here in 2012) and Laila Phillips ’15, both biology majors. Katherine Dyemek ’14, another biology major, will be participating in the summer internship at National Museum of Natural History at the Smithsonian Institution.

Horticulture Field Guides

Isabel McCagg ’13, Architecture major and Landscape Studies minor, brought her design background to this assignment when she took the class in 2012, and her notebook is filled with beautiful drawings. She really enjoyed getting a more scientific and practical foundation to plant identification and landscape maintenance, and found the class to be invaluable to her continued work in design and planning. Here are reproductions of a few of her notebook pages.
Spatial Analysis of Index Seminum

Part of my work as the curatorial intern at the Botanic Garden involved filling Index Seminum orders, and I was curious to see where in the world we were sending our list and who was requesting seed.

As both a Botanic Garden intern and Spatial Analysis Lab assistant at Smith College, I have had the amazing opportunity to apply my knowledge of GIS (geographic information systems) mapping software to the botanic garden world. We decided that a visual representation in the form of a map would be a great way to analyze the information.

The map above shows the 258 institutions to whom we sent the list in 2012, with the highest number in Germany, followed by France. Of those, 107 institutions requested seed and a total of 1070 seed packets were sent out.

Index Seminum is a list of seeds we make available to other botanical institutions as part of an international seed exchange.

Brittany Innis ’13

Brittany Innis is the first student to be a Smith College Botanic Garden summer intern (2010 and 2011), academic year curatorial intern (2011–12), as well as educational intern (2012–13). She can proudly say that she has worked in every aspect of the Botanic Garden. This year she has been putting together a mobile audio tour of Lyman Conservatory. After graduation, she is heading to the Holden Arboretum in Ohio for a year-long curatorial internship.

Most Popular Seeds

The following were the most requested species from the Botanic Garden’s Index Seminum 2011–12. Data were compiled by STRIDE scholar Madeline Franz ’15. Numbers in parentheses indicate number of requests/number of fulfilled requests.

**Seeds collected in the wild in Massachusetts, Maine or Connecticut**
- Erythronium americanum (19/10)
- Medeola virginiana (18/16)
- Prunus maritima (18/9)
- Symlocarpus foetidus (17/12)
- Clintonia borealis (15/15)
- Nemopanthus mucronatus (15/15)

**Seeds and spores collected from outdoor cultivated plants at the Botanic Garden**
- Arisaema dracontium (10/5)
- Houstonia caerulea (10/2)
- Sedum takesimensse (10/9)
- Podophyllum versipelle (9/9)
- Rhododendron hippophaeoides (9/9)

**Seeds and spores collected from cultivated plants in Lyman Conservatory**
- Myrmecodia platyrea (15/9)
- Microgramma megalophyllum (13/11)
- Echeveria canaliculata (12/11)
- Holmskioldia tettensis (12/7)

- Anthurium podophyllum (11/3)
- Chamaedorea metallic (11/8)
- Lecanopteris crustacea (11/8)

This year as in the past, wild-collected seed was most requested. This does not seem to be simply a coincidental preference for the species that we offer from the wild, as wild-collected were chosen over cultivated even when the same species were offered. In all but one year over the last eighteen years, there were three (or more) times as many requests for the wild-collected seed as for cultivated seed. It is also clear that requesting institutions have a strong preference for wild-collected seed with documented collection locations. This makes sense as many botanic gardens worldwide seek to preserve biodiversity. Wild-collected seed is from populations, which typically have larger numbers of individuals than plants in cultivation. Additionally, in cultivation cross-pollination may occur among closely related species that might not come in contact with each other in their native habitats but do when growing in garden collections.
Sazanami, Hanami, and Collections Collaboration

Elaine Chittenden

Last December the Botanic Garden received a request for a map of all campus cherry trees. Student Linh Le ’15, social event coordinator of Sazanami, Smith’s Japanese Culture Club, initiated a collaboration between Sazanami and the Botanic Garden. Le asked for a map showing the locations of all the cherry trees for an event called hanami, which means “flower watching.” The event was celebrated on Sunday, April 14 from 12:30 to 4:00 pm in the Campus Center Carroll Room.

In January, Curatorial Intern Emily Peake ’13 and Curatorial Assistant Emily DiPadova ’16 were given the task of mapping the cherry trees. Both of them had previous experience using GIS (geographic information systems) and quickly got to work on the map. First, they improved an existing campus base map, and then imported location data of all cherry trees on campus, which I provided. They appropriately depicted the trees using an image of a cherry blossom, reflecting the color of each tree’s blossom in the hue of the symbol. There are 36 cherry trees on campus, representing 13 different types. The final document contains a map with information on each plant. The map provides for a self-guided tour, and Sazanami may provide guided tours as well. The map is now available online at www.smith.edu/garden/Gardens/cherrymap.pdf.

The Botanic Garden is always happy to see student interest in our plant collection. We were delighted to be able to provide the information requested. We are lucky that we have students with the ability and interest to produce a high quality product combining botanic garden data and GIS.

Go Botany

Polly Ryan-Lane

The Botanic Garden contributed images of our plant collection to Go Botany, an interactive website for identifying New England flora, including nonnative plants found growing in the region. Created by the New England Wild Flower Society in collaboration with the Yale Peabody Museum, Montshire Museum of Science, and the Chewonki Foundation, Go Botany is funded by the National Science Foundation.

Go Botany features traditional dichotomous keys to over 3,500 species, with information on plant characteristics and habitat plus photographs and plant distribution maps. The website is set up for everyone from the novice to the expert, so you can start with a simple key or a more advanced key, and it includes a glossary of botanical terms. Additionally, the site provides useful resources for teachers.

Images of plants from the Smith College Botanic Garden collection on the Go Botany website include Abies homolepis, Cercidiphyllum japonicum, Nigella sativa, Paeonia lactiflora, Phellodendron amurense, Pinus thunbergii, and Tricyrtis hirta. All the photographs were taken as part of my project to photographically document the plants in our collection.

New Stone and Sculpture Garden

Michael Marcotrigiano

Landscape Architect Nancy Denig ’68, in conjunction with the Department of Geosciences, has designed a new garden that features huge rocks of various types “harvested” from New England. Among the stones is the sculpture entitled Aperiodic Penrose Alpha, created by sculptor/mathematician Helaman Ferguson in collaboration with Marjorie Senechal, Louise Wolff Kahn Professor Emerita in Mathematics and History of Science and Technology. The sculpture is inspired by mathematical patterns called tilings, discovered by the mathematician and physicist Sir Roger Penrose. The sculpture stands on a base of tiles that are part of a pattern that never exactly repeats (aperiodic). First installed in Burton Hall in 1995, the sculpture has been moved to the garden.

Positioned between McConnell Hall and Burton Hall, this geology teaching garden is being planted this spring with a variety of plants, mostly native. Species include Rhus hirta, staghorn sumac; Ilex glabra, inkberry; Betula lenta, yellow birch; Acer rubrum, swamp maple; Rhus aromatica, fragrant sumac; and large plantings of Panicum virgatum, the native switch grass. This formerly unused area now has plenty of granite seat walls and will become a peaceful gathering place as well as a useful outdoor laboratory. Geology Professor John Brady is producing a brochure about the rocks in the garden.

Check out this useful reference tool at: http://gobotany.newenglandwild.org

Rhus aromatica

Spring 2013
Botanic Garden News
The Botanic Garden of Smith College
Northampton, MA 01063

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