Botanical Discoveries of Lewis and Clark

In the spring of 1805, captains Meriwether Lewis and William Clark sent a specimen of the narrow-leaf purple coneflower, *Echinacea angustifolia*, to President Thomas Jefferson. In his accompanying letter, Lewis described how the roots of this plant were used by the native people “frequently with the most happy effect in cases of the bite of the mad wolf or dog and also for the bite of the rattle snake.” Today the coneflower is one of the most widely used herbal remedies in the United States. *Echinacea* is just one of many indigenous American plants that the famed explorers documented during their legendary expedition. While on their mission to find a direct water route to the Pacific Ocean, Lewis and Clark were following President Jefferson’s directive to carefully examine the “soil and face of the country.” They collected and described over 200 plants in perfect detail, many of them previously unknown outside Native American culture.

*Botanical Discoveries of Lewis and Clark*, on view in the Church Exhibition Gallery in the Lyman Plant House through December 15, highlights the immense contribution Lewis and Clark made to our knowledge of North American botany. On the journey Captain Lewis tended the sick and injured. Although he undertook an intensive course in medical care before the expedition, he already had a knowledge of herbal remedies acquired from his mother, Lucy Meriwether, a well-known herbalist. Combined with the herbal knowledge gained from the Native Americans, Lewis was able to heal most ailments they encountered.

The exhibition is based on the book, *Common to This Country: Botanical Discoveries of Lewis and Clark* (New York: Artisan, 2003), written by Susan Munger (Smith class of 1964) and illustrated by Charlotte Staub Thomas. Susan Munger will present a lecture on Friday, November 12, at 7:00 pm in the exhibition hall, followed by a reception and book signing.

The exhibit captures U.S. botanical history by featuring ten of the plants encountered by the Corps of Discovery. The plants are brought to life through beautiful, botanically accurate watercolors by Charlotte Staub Thomas and are complemented by journal entries from the expedition plus other historical information. The viewer is given a snapshot of the botanical heritage of our continent as experienced 200 years ago. Images of the original herbarium specimens collected on the expedition by Meriwether Lewis (now housed in the Lewis and Clark Herbarium at the Academy of Natural Sciences in Philadelphia) are also on display, as well as specimens from the Smith College Herbarium.
It is amazing how fast things change. Since the last issue of our newsletter, the campus and the Botanic Garden have undergone both organizational and staff changes. Over the past year I have been lobbying to change the Botanic Garden’s reporting line from Facilities and Operations to an academic one. President Christ and Provost Bourque reviewed my proposal in which I made the case that the Botanic Garden is similar in function to the Art Museum. Both have curated collections of historical proportion, connections to the worldwide academic community, educational outreach programs, and exhibits and displays. We publish articles, maintain a “Friends” group, provide research materials for others, and have volunteer and student programs. My proposal was well received, and it was agreed that the Botanic Garden has much more to do with academics than facilities maintenance. As of July 1, I began reporting to Charles Staelin, Dean of Faculty. I hope that this reporting line leads to further academic growth for the Botanic Garden. It should be easier to promote interdisciplinary projects with the Dean’s support and assistance.

Along with the reporting line change, but not because of it, further staffing changes occurred. To streamline the maintenance of the “great outdoors” and allow us to concentrate on professional goals, it was decided that our academic stature and overall supervision would best be served by reducing our nonscholarly activities. We agreed to move three of our labor positions to the Grounds Department of the Physical Plant, and two of our outdoor positions were rewritten. We now have a Chief Gardener and a Chief Arborist. Tracey A. P. Culver, who formerly restricted her duties to the President’s Residence, accepted the first position. Tracey is now responsible for making sure that priorities are in order for all the campus gardens. John Berryhill, formerly Arboretum Assistant, accepted the latter. John, a certified arborist, will work with another trained arborist (Ken Chapin of Grounds) on the structural pruning of trees especially during the winter months. John will also maintain all shrubs not associated with specific gardens—a big task.

In the long run we hope that preventive maintenance will eliminate the need to outsource tree work. In years past this consumed such a large portion of our budget that further development of educational programs and the campus landscape was compromised. Giving up three laborers in a staff already stretched too thin was a difficult decision. However, with the departure of Joe Stoddart, Tom Gingras, and Kevin Forestall, who now work in the Physical Plant, we have passed on the duties of Boston ivy trimming, hedge trimming, leaf raking, and dead tree removal to the Physical Plant. These duties consumed a disproportionate amount of staff time. This new structure is admittedly an experiment, one accelerated by reduced budgets. It remains to be seen if the new division of labor will serve the campus as well as in days gone by when the Botanic Garden had twice the number of gardeners and laborers as it does today.
Who’s in Charge Here?

Given the recent changes in the Botanic Garden’s reporting lines and staffing, it may be useful to reflect upon the role of past directors and how they have shaped the Garden. Since I have personally known all the directors of the Botanic Garden except for William Ganong and have used the gardens extensively in my own teaching and research, I have had some opportunity to see how successive directors have approached their tasks and how the position itself has changed since the founding of the College.

The College landscape was initially only acres of meadow, orchard, and pastures sloping down to the banks of the Mill River and Paradise Pond. President Seelye made the initial decision to combine “the beautifying of the Campus with the formation of a scientifically arranged Botanic Garden” and engaged the landscape firm of Olmsted, Olmsted, and Eliot to draw up such a plan. The plan was approved in 1892, and in his report for 1894–1895, President Seelye informed the Trustees of the College that William Francis Ganong had been appointed as Professor and Chairman in the Department of Botany and as Director of the Botanic Garden. Ganong reported directly to the president. In Seelye’s opinion, “Professor Ganong has thus far fully justified our choice, showing broad and thorough scholarship, exciting unusual enthusiasm among the students, and carrying forward with great interest the plans of Messrs. Olmsted [sic] and Eliot which were authorized two years ago.”

He had been an instructor at Harvard University and held A.B. and A.M. degrees from the University of New Brunswick, another A.B. from Harvard, and a Ph.D. from Munich.

Ganong taught introductory botany and plant physiology, and served as Chairman of the Botany Department in addition to his duties as Director of the Botanic Garden. As Director, he worked with Edward J. Canning, who, as Head Gardener, taught a course in horticulture that was added to the curriculum in 1900. Ganong was a meticulous keeper of journals and other records; and for a number of years he reported annually to the Trustees on the pace of the Garden’s development, describing the establishment of the Systematics Garden, expansion of the Lyman Plant House, construction of the Rock Garden, and planting of the campus as an arboretum.

Ganong continued both as Director of the Botanic Garden and as Chairman of the Botany Department until his retirement in 1932. By that time, department chairs were elected, not appointed. With his departure, a new Chair of Botany was elected, but the position of Director of the Botanic Garden was left unfilled. Mr. Canning had left the College some years earlier, replaced by a series of head gardeners, and by the early 1930s the campus had grown so much beyond the scope of the original Olmsted, Olmsted, and Eliot plan that it resembled, “a crazy quilt…disastrously neglected and encroached on,” according to Dorothy May Anderson, a graduate of the Cambridge School of Landscape Design, who had been hired in 1935 by President William Allan Neilson as the College Landscape Architect.

President Neilson next created the position of College Horticulturist and hired William I. P. Campbell, who was trained at the Royal Botanic Garden in Edinburgh and came to Smith from the Gardens of the Nations at Radio City in New York. Campbell seems to have reported directly to the president. Within the year, the great Hurricane of 1938 brought down much of the campus arboretum, and Campbell was faced with the challenge of replacing it. This was scarcely done when, in 1943, Miss Anderson left the College. Bill Campbell took on her duties and, as the College’s facilities expanded after World War II, was charged with the task of incorporating buildings such as Wright Hall and the Center for the Performing Arts into the campus landscape. He did so with extraordinary skill, creating plantings of remarkable beauty. The bank on the south side of Wright Hall, set aside in the original garden for members of the heath and heather family, Ericaceae, was a prime example, with its rich combination of mountain laurels, flame azaleas and other deciduous rhododendrons, Pieris, and his favorite Scottish heathers.

When Dorcas Brigham, Assistant Professor of Botany, retired in 1947, Bill assumed some of her responsibilities as well, teaching the popular course in Horticulture through the 1960s. In 1961 when I came to Smith College,
Who’s in Charge continued

John Bak sustained the Botanic Garden’s operation.

Richard Munson (1985–1995) was the first director since Ganong to hold a Ph.D., from Cornell University, where he had concentrated in the taxonomy of cultivated plants. Easy-going by nature, he was, by his own admission, happiest when teaching or working in plant propagation or with heaths and heathers, the subjects of his ongoing research. Nonetheless, his professional competence was reflected in a decade of steady improvement in the Garden’s operation, during which time it became increasingly evident that the College had long since outgrown the old Olmsted landscape plan. Before he left to head the Holden Arboretum, he organized the search for the firm that would draw up the Landscape Master Plan. By the time he departed, work on the plan had begun, led by landscape architects Shavaun Towers (class of 1971) and Cornelia Oberlander (class of 1944). His assistant, Susan McGlew (class of 1983), became Interim Director for the following year, contributing greatly to the success of the centennial celebrations of the Lyman Plant House.

Kim Tripp (1996–1999), the first woman to serve as Director, came to Smith with a Ph.D. from North Carolina State University and extensive postdoctoral training. Her tenure began much as Bill Campbell’s first year in Northampton, marred by natural disasters that may have caused as much destruction on campus as the Hurricane of 1938. She had been here only a few months before an early December snowstorm ruined plantings that had been maturing through the decades, felling or damaging beyond repair scores of campus trees, including the weeping willows on the island in Paradise Pond. An even more devastating storm on April 1, 1997 took down the white cedar in front of Capen House. Once the largest tree of its kind in New England, its lower branches had framed the entrance to Capen Garden and generations of Campus School children had clambered on its several trunks. Kim was faced with the sad task of explaining to the campus community how many trees were lost and how long it would take to clean up the damage and replace them in a manner consistent with the new Campus Landscape Master Plan. In addition, Kim recognized the deteriorating condition of the Lyman Plant House and laid the groundwork for its recent renovation. On Kim’s departure to the New York Botanical Garden, where she serves as Vice President for Horticulture, Rob Nicholson, Conservatory Manager, effectively took on additional duties, overseeing the Botanic Garden for over a year until a new director was hired in 2000.

Our current director, Michael Marcotrigiano, earned his Ph.D. in Horticulture from the University of Maryland and came to Smith College from his faculty position at the University of Massachusetts, where he performed research and taught for 17 years. He arrived just in time to oversee the restoration of the Lyman Plant House and was faced with the necessity of not only moving the Botanic Garden’s offices, but also teaching horticulture and maintaining the health of the plant collections while the reconstruction was in progress. He also faced the equally daunting tasks of preserving the large trees in the vicinity of major construction sites, including the Campus Center and Fine Arts complex. He manages all these tasks with great humor and continues to plan for the future with careful thought to new plantings. As reported in this newsletter (see page 2), Michael’s proposal to change the reporting line of the Garden was accepted by the administration, bringing it back to the academic administration of the College, essentially where it was when the Garden was founded. It’s my guess his predecessors would approve.
Elizabeth Kirkland Roys '28 visited gardens in China, Japan, Korea, India, and what was then Siam, when touring Asia with her mother in 1926–1927. She recorded these visits through photographs and scholarly descriptions of not only the gardens she visited, but also the different conceptions of the garden in Chinese, Japanese, Korean, Indian, and Siamese culture. Her study included hand-drawn maps and lists of the plants and trees most commonly used in each type of garden.

This unique travel journal is contained in a set of five notebooks, which were discovered in the late Ms. Roys' attic after the death of her husband in 2002. In the summer of 2003, the Botanic Garden of Smith College was bequeathed this treasure trove, and I was fortunate enough to be assigned the task of cataloguing Roys' work for use in a future exhibit. Since then, I've been continually astounded by the breadth and depth of this documentation of landscapes largely untouched by Western and modern influences.

Roys describes a Japanese garden filled with maples at a Shinto temple on the island of Miyajima. Her exquisitely detailed photos of this garden include glimpses of a secluded tea hut and haunting views of the temple gate, completely surrounded by water at high tide. In China Roys visited (among many others) the gardens of the Summer Palace in Peking, the courtyard of the Temple of Confucius, and the garden of the Chang family in Nanking. The Korean notebook contains information about peasant gardens as well as an account of a tour through the gardens of Prince Yi in Seoul. Roys' study of Indian gardens includes descriptions of the gardens at the Taj Mahal and at the Palace at Delhi, as well as a comparison of mosque and Hindu temple gardens. In Siam, where Roys and her mother were fortunate enough to have an audience with the royal family, she documents not only the palace gardens, but also the garden at the tower of Wat Arun in Bangkok. Her photos of Siamese temple ruins give us a rare glimpse of gardens and stupas that may no longer exist.

The notebooks on Chinese gardens are the most extensive, and indeed the major part of the trip was in China, largely for nostalgic reasons. Roys was born in China in 1905. Her parents, Charles K. Roys and Mabel Milham Roys '00, were appointed as missionaries to Weihsien, Shantung Province, by the Board of Foreign Missions of the Presbyterian Church in the United States. Dr. Roys was chief surgeon at the teaching hospital in Weihsien until 1916, when the Royses were transferred to Tsinan. The family was forced to return to the United States in early 1920 when Dr. Roys was diagnosed with a brain tumor. Charles K. Roys died in September 1920, when Elizabeth was fifteen. Her younger sister Mary was ten years old.

Throughout her life, Mabel Milham Roys remained fervently committed to the work she and her husband had begun in China. Unable to continue this work alone, she remained in the United States, where she became the first woman to carry administrative responsibility in the foreign field for the Presbyterian Board. Her duties included the supervision of educational, medical, and evangelistic concerns in China, Japan, the Philippines, Korea, and Siam. The 1926–1927 trip was therefore also a business trip for Mrs. Roys, who wrote many detailed reports to send home about the social conditions and the missionary work in the countries she and her daughter visited.

(Continued on page 6)
Roys Notebooks continued

For Elizabeth Roys, the purpose of the voyage was to study botany and gardens. In her letters home, Mabel Roys often refers to her daughter’s love of the plant and tree species growing around temples and palaces. Elizabeth’s interest in botany and garden history is evident in the scrupulous care she used in compiling her notebooks. Her photography is magnificent, and every photo is accompanied by a detailed and informative typewritten caption that refers back to concepts in the text. She divides each notebook into sections based on garden type. For example, the notebook on Indian gardens begins with a discussion of the Indian conception of a garden. The rest of the text is devoted to temple gardens, tomb gardens, palace gardens and private gardens, and includes an appendix that lists tree species most frequently planted in temple gardens.

Roys studied botany at Smith, and the notebooks may have been created to fulfill an academic assignment upon her return. Roys’ fascination with botany was lifelong. After her graduation from Smith, she wanted to continue her studies but was denied admission to the Yale School of Forestry because of her gender. Instead she worked as a research assistant at Yale, cataloguing Asian woods, until her marriage in 1932. Although she became a full-time housewife, her interest in gardens never diminished. She helped establish a neighborhood garden club in Madison, Wisconsin, where she and her husband lived until her death in 1991. Roys was also a patron to Madison’s Olbrich Botanic Gardens.

The Botanic Garden and Smith College in general have inherited a treasure in these notebooks. Many of the gardens and buildings documented by Roys may no longer exist, owing to the effects of time and to the political unrest that plagued many Asian countries in the twentieth century. Of the existing gardens, certainly many must be dramatically altered in appearance. A future exhibit about Elizabeth Roys and her Asian garden tour for the Church Exhibition Gallery in the Lyman Plant House will help us share her remarkable travels and work with the Smith community and the public at large. I hope to continue my study of Roys and her notebooks by retracing her steps across Japan, China, Korea, Thailand, and India, to discover what has become of the gardens she so lovingly described.

In a 1926 letter introducing Roys to his Asian colleagues, Dr. Ganong, Professor of Botany and first Director of the Botanic Garden at Smith College, announces the academic purpose of her voyage:

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Prince Yi is here shown standing in the doorway of his "Pavilion of the Lotus Pool" in his estate near Seoul.

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House and Garden is a convenient way of looking at the world for many people, organizing space, line, color, texture, and form of both domains to form a pleasing whole. Most people are aware that neither house nor garden is ever “done” but are continual, with the processes of growth and decay, trial and error, stylistic drift and restoration. That an original house design or construction was not quite right and, like a chipped wall, can finally be stood no more, is a common experience to all homeowners. That gardens can change over time and that an occasional hard hand is needed to reorganize is, however, a surprise to new initiates who think of outdoor spaces as merely “exterior decorating” that need little care once plunked in place like a new divan.

Conservatories, as gardens within a structure, present the best and worst experiences of House and Garden. Not only do we have to organize the space (the garden) in an educational yet pleasant manner, but we have to be able to disguise and maintain the physical plant (the house) that surrounds it and keeps the elements at bay. If either of these two elements is wrong then the whole suffers.

The Cool Temperate house, one of our two large volume greenhouses, was added to the Lyman Conservatory complex in 1981 and received little alteration during our most recent renovations. New glazing was applied to the roof, while an automated interior shade system, ceiling fans, and an automated misting system were added. It served as a holding tank for plants from the other greenhouses undergoing repair, and for a while was a crowded depot.

With renovations complete and some degree of stasis returned, the Cool Temperate house seemed to suffer compared to the newly refurbished houses. The original scheme was for plants from four geographic groupings: Asia, Australia/New Zealand, Africa, and the Americas. Grown here are species that are neither tropical nor hardy outside, from high altitudes within the tropical zone where they might be subject to frost, or those regions flanking the equatorial tropical zone, both Northern and Southern hemispheres. The original plantings, now 25 years old, had become oversized, hitting the roof in the case of the date palm and creating a dense canopy, a tough environment for the understory plantings, which suffered and became leggy.

The walkway had been a rectangle within a rectangle, abutting the northern wall. This always seemed odd to us, adding more sidewalk than necessary in an inelegant design. Delving into the history of the construction and examining old blueprints, we saw that the north walkway was, in fact, part of a buttressing system designed to hold back the pressure from the outside slope that formerly came down against the northernmost wall. Since the latest renovation removed this slope, the design was freed from engineering and load-bearing considerations.

This presented us with the opportunity to imagine a new temperate world order. Fortunately, monies were available from endowed funds (a generous bequest from Louise Spetnagel, class of 1929) and could be used toward a total refurbishment of the paths and plantings.

We took advantage of this opportunity to add new economically important plants to each geographic region. These include arrow bamboo from Asia, *Pseudosasa japonica*; highland coffee from Africa, *Coffea moorei*; and a number of other species from each region, including *Dianella tasmanica*, *Globularia kirilowii*, and *Poa fortunei*.
Temperate World Order continued

(Continued from page 7)

Coffea arabica; Australian peppermint gum, Eucalyptus radiata, the oil of which is used therapeutically; and the Latin American rosita de cacao, Quararibea funebris, used for flavoring chocolate.

Our goals for the new walkway systems were these:

1. Optimize presentation with all plantings not too far from walkways.
2. Accommodate class groups.
3. Occupy minimum square footage.
4. Amplify the “four quadrants” theme.
5. Allow for maintenance of plantings and large specimens.
6. Impact the “maximum headroom” area in the center of the greenhouse as little as possible, allowing for the growth of some taller tree species.
7. Improve the surface for wheelchairs and meet all accessibility codes.

What required our greatest attention was determining the best layout for the new path system. Staff were encouraged to submit designs. Some designs were variations on the rectangle within a rectangle, others had curving paths and oval or circular gathering spaces. We rated each design by square footage free for planting, whether old specimens would have to be moved or eliminated, and which best met the seven criteria. During this process other designs emerged.

We winnowed 20 designs down to three and then one finalist, submitted by Madelaine Zadik. The new design also freed space in the northeastern corner. We decided to create a rockery there, complete with a waterfall, which meant that waterlines and fin-tube heating were rerouted to accommodate the new change in elevation.

Twenty-five years of experience showed us the track of the sun and where not to plant tall material, avoiding the effect of foliar sails blocking the sustaining sun. Once we saw where the new path and planting areas would be, we began moving large specimens and removing those that no longer were in scale or in the correct quadrant.

As the chainsaw whirred it was remarkable how open and sunny the space became. Trunks from the more exotic trees were given to Ken Ertel, a local artisan who turns wooden bowls. He was enthused to be working with such rarities as Sahara cypress, carob, avocado, and silk oak.

With the redesign, as open area increases, the House and Garden known as Cool Temperate is evolving toward a newly refurbished space, a tool for the education of Smith students for generations to come.
DNA in Hawaii
Magdalena Zopf ’06

I spent this past summer working as an intern in the Botany Department of the National Museum of Natural History, Smithsonian Institution. My work was funded through the Smith College Botanic Garden, made possible by a donation from Deanna Bates, in honor of Georgia Anne Thomas, M.D. ’69, and sponsored at the Smithsonian by Dr. W. John Kress, chair of the Botany Department. Under his guidance, I worked with postdoctoral fellow Dr. Chelsea D. Specht on the molecular phylogeny of the genus Heliconia. The goal of this project (to be finished after my departure) is to define the evolutionary relationships between and among heliconia species. In the simplest terms, I was working to obtain and analyze genetic information that would lead to the creation of a “family tree” of the genus.

Our relatively small project was, nonetheless, representative of much of the work done by the curators in the Smithsonian Botany Department. These scientists are fundamentally systematists; their work consists of collecting and documenting plant species, classifying them, and researching the implications of these classifications. They maintain and augment the nation’s herbarium. This was somewhat novel for me when I arrived at the Smithsonian. My concept of curation had been shaped by a childhood spent among curators of art museums, where much emphasis was on the public reception of their collections. But then, many things were new to me upon my arrival in Washington, D.C., and, later in Hawaii.

I began my internship at the Smithsonian fresh from Dr. Carolyn Wetzel’s Plant Physiology Laboratory class at Smith. Her introduction merged perfectly into my new world; from my first day, the terms and ideas to which she had introduced me were everywhere. Dr. Specht elaborated on these concepts in my training (and during shuttle rides, plane breaks, over drinks after work, and overlooking Hawaiian valleys—talk of our science and its practice enlivened it all). Dr. Specht was a wonderful mentor, effective in her role because of her own curiosity. Her answers to my questions were always richly detailed. Her broad spectrum of knowledge was evident, both when she trained me for lab work and when she guided me through my first collecting trip. Because she had only recently begun her fellowship at the museum, we began to learn the nuances of the Smithsonian’s LAB (Laboratories of Analytical Biology) facilities together. Our procedure for gathering data was typical for work of this nature: DNA for all species of Heliconia for which we had material was extracted from silica-dried or frozen plant tissue; specific regions of this DNA were amplified using PCR; the PCR products were cycle sequenced; and the resulting chromatograms were aligned and analyzed. The challenge of our work was in finding informative gene regions of the Heliconia DNA. With the bananas (family Musaceae) and the gingers (Zingiberaceae), among others, the heliconias (Heliconiaceae) are part of the group of tropical monocots known as the Zingiberales. In 2001, Kress et al. performed an analysis similar to that which I began with Dr. Specht, but at the family level. Species-level analysis of Heliconia is complicated by the fact that there is relatively little genetic variation among species. Without sufficient genetic variation, it is difficult to discern the

(Continued on page 10)
branching order of the genetic tree. Therefore, the majority of my time was spent seeking a gene region with sufficient variation among species’ base pair composition to be phylogenetically informative.

The week I was able to spend with Chelsea collecting Heliconia specimens at Lyon Arboretum in Hawaii exposed me to another side of the systematic biologist’s experience. Ray Baker, Research Associate at Lyon and our liaison, knows every valley of the arboretum like the back of his hand. His help was indispensable in place that is more jungle-like than gardenesque. We may have been only fifteen minutes from downtown Honolulu, but winding our way up narrow trails and around dense, tropical plantings on a quest for the elusive specimen, I began to comprehend the exhilaration of field work. The plants—their habits, leaf and flower morphologies, their coloring—have a vibrancy that is not captured by chromatograms.

Like many Smith women, landscape, and all that the term encompasses, fascinates me. Mentors in the Department of Biological Sciences and the Landscape Studies Program at Smith have guided me on explorations of architecture, population genetics, urban sociology, horticulture, and more. This summer, I went “micro” and entered a new world—that of the molecular botanist. The Smithsonian LAB, my daytime home for much of ten weeks, was an environment structured around carefully designed procedure, a place where I reduced fresh plant tissue to microliters of liquid, only to see it blossom again on my computer screen in the form of genetic sequences.

The individuals who helped me to discover this new way of experiencing the world are a tremendous group. I was honored to have the opportunity to work with them, and am indebted to Smith College, the National Museum of Natural History, and, perhaps most importantly, to the donor who foresaw the value of my experience and made it possible.

For the Friends of the Botanic Garden Advisory Committee, chaired by Clara Batchelor ’72, is sponsoring an exhibit that will be held next year in the Church Exhibition Gallery in the Lyman Plant House. Smith alumnae who are landscape architects, landscape designers, landscape gardeners, or garden designers are invited to participate in the exhibition, which will be entitled Designed Landscapes: A Smith College Alumnae Exhibit. It will open to the public on April 30, 2005, and will be on view during commencement and reunion weekends, remaining in the gallery through the end of the summer.

To participate and have your work included in this exhibit, log on to the Botanic Garden’s Web site at www.smith.edu/garden and look for “Exhibitions” for an application. Applications are due February 15, 2005.
Debbie Klein AC ’06 has been a work-study student since arriving on campus in the fall of 2003. She worked with Tracy Omar, our Collections Manager, and got very interested in the trees on campus. Deb expressed interest in working on an exhibit to create greater public understanding of what the Garden is all about. Fortunately, we were able to hire her as an intern for the summer, with her position supported by the Friends of the Botanic Garden.

Deb took lots of wonderful photographs of the Botanic Garden and our collections over the summer. Since we had some down time in the Church Exhibition Gallery, she worked on putting together a smaller interim exhibit featuring some of her photos and providing some facts about the Botanic Garden. That filled the gallery during the time when it would have been empty before the current Lewis and Clark exhibition opened. Her banana photo on page 11 was featured in that exhibit. Here are some additional photos and interesting facts from that exhibit.

**Did you know?**

- **Capen Garden** is named after Miss Bessey Capen, one of the first female graduates of MIT, who taught botany at Smith in the late 1870s.
- The oldest plant in the Lyman Conservatory is the large cycad (*Encephalartos altensteinii*) in the Palm House. It was planted in the greenhouses by William Ganong and his students in the winter of 1895–1896.
- **Capen Garden** is the oldest alpine garden in North America. It contains over 2000 different plants.

*Anemone canadensis* is a new addition to the Ranunculaceae family in the Systematics Garden.

*Paeonia 'Garden Treasure'* is a new addition to the Systematics Garden.
Each fall we gratefully acknowledge the volunteers who have given so generously of their time to the Botanic Garden. When we stop to reflect on how much this group has done, we are truly amazed. From July 1, 2003 through June 30, 2004, the Smith College Botanic Garden volunteers gave guided tours to 46 groups, 80% of which were local school children, for a total of 1160 people. While some of these groups may have visited even without guided tours, clearly we were able to give them a genuinely educational experience they would not have had otherwise.

Moreover, our lovely renovated facility would have an empty reception desk on the weekends were it not for the support of these dedicated individuals! Visitors are greeted by smiling faces and knowledgeable people who can answer questions and direct them to what is blooming or what is of particular interest that day. And we are able to manage the 15,000 people that come through the doors to see the Spring Bulb Show.

I truly do not know how we would manage without the volunteers and I am very grateful that they are such a wonderful bunch! Many, many, many thanks to the following people who have given so much of themselves in support of what we do:

- Julie Abramson
- Susan Bagnall
- Leigh Bailey
- Maryjane Beach
- Hut Beall
- Mary Benoit
- Janet Bissell
- Diane Bowman
- Bethany Burgee
- Elizabeth Caffrey
- Elizabeth Caffrey
- Diana Carroll
- Betty Conway
- Kathryn Drake
- Barbara Drollette
- Pearl Edwards
- Lisa Ferree
- Gail Gaustad
- Theora Gilliam
- Jay Girard
- Ellice Gonzalez
- Mina Harrison
- Eileen Hodge
- Rita Horn
- Debra Hosley
- Carol Jachym
- Anne Keppler
- Irene Kubert
- Mary Laprade
- Kathy Lewis
- Kathleen Lovell
- Tinka Lunt
- Susette Lyons
- Sanat Majumder
- Sigi Marrocco
- Joan Martin
- Celia Martyn
- Irene Montague
- Tish Murphy
- Kate O'Connor
- Connie Parks
- Marion Rhodes
- William Rice
- Ann Rivard
- Robin Silva
- Elizabeth Singer
- Barbara Smith
- Kingsley Sullivan
- Kathleen Teagno
- Lynn Vennell
- Elsa Vitols
- Eva Weber
- Rosalie Weinberg
- Donna Zaeske

We are recruiting new volunteers to add to our ranks. The Botanic Garden needs people who are interested in leading tours through the greenhouses and gardens as well as staffing our reception and exhibition area. Other projects include developing thematic tours, providing hospitality for events such as the opening of the Spring Bulb Show, and assisting with exhibitions. (Please note that none of the volunteers do any hands-on work with plants as union regulations do not permit it.)

The annual volunteer training program is scheduled for three days: Wednesday, Thursday, and Friday, January 19, 20, and 21, each day from 9:00 am to 4:00 pm. The sessions are followed by weekly training tours and monthly meetings. The training includes a history of the Botanic Garden; tours of the conservatory, including commercial, medicinal and food plants; some basic botany and horticulture; and techniques for guiding visitors and school groups. In exchange for the training, volunteers are required to volunteer at the Botanic Garden for at least one full year, including leading tours, and attending the monthly meetings.

To request an application call 413-585-2742 or email garden@smith.edu. Volunteer applications can also be downloaded from our website: www.smith.edu/garden.
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Debora W. Tuck
Marion Woolam
A few years ago I attended the northeast regional meeting of the American Association of Botanic Gardens and Arboreta that was held at the lovely Planting Fields Arboretum on Long Island. After the formal lectures were over, we went on tours of various gardens and finally to a retail nursery specializing in tender exotic plants. On the grounds of the nursery I happened upon a thick planting of bananas. The proprietor told me that it was a grove of *Musa basjoo*, the Japanese or mountain fiber banana. It had overwintered successfully for years in the Zone 7 (USDA Plant Hardiness Zone Map) climate of eastern Long Island. Vigorous suckering had resulted in a substantial grove. As remarkable as this seems, when I researched this species I found out that it is the hardiest banana of all. While much of the popular literature claims that this plant has its origins in the subtropical Ryukyu Islands of southern Japan, some authorities claim there are no bananas native to Japan. A good look at the literature only adds to the confusion. The *Flora of China* says “long and widely cultivated in China, but native to Japan and Korea.” The *Flora of Korea* lists it as native, and the *Flora of Japan* says native to Japan’s Ryukyu Islands. The only safe thing to say about its origin is that it is Asian and upland.

*Musa basjoo* has typical banana leaves but is one of the shorter bananas, usually not exceeding 14 feet at maturity. It bears nonedible fruit, but will not fruit in climates without long warm seasons. What it offers is a lush tropical look with large bright green leaves hovering high above most herbaceous landscape plants. It imparts an exotic tropical feel, something Victorian gardeners would have loved.

Last fall I decided to experiment. I planted a *Musa basjoo* in the bed in front of Lyman above the steam tunnel. The goal was to see if we could overwinter it without bringing it into the Conservatory. The steam tunnel is a wide underground cement structure that feeds campus buildings with steam heat derived from the Smith power plant. The colder it is outside, the greater the demand for heat on campus and the hotter the tunnel gets. This keeps the soil above the tunnel warmer than normal during the winter months. Last winter was unusually cold to say the least. We hit -17ºF with many days below zero. To put it in perspective, two 25-foot tulip poplars froze to death on Burton lawn. So, how did the banana do? Just fine. It popped out slowly this spring, and with a little (actually a lot of ) fertilizer and some hot sun it has tripled in width and is nearly twice the height it was last year. How can a banana survive when a tulip poplar succumbed? Bananas are not trees. They are herbs and do not develop a woody trunk. What you see above ground are big leaves with big stiff petioles that overlap each other. Celery plants are similar—what you eat and most of what you see is leaf and petiole with the stem and growing point down at the base. With bananas, the growing point is just below the soil line. After the first frost kills the foliage, the plants are cut back just above soil grade and mulched with a foot or more of hay. To successfully overwinter only the growing point and some roots below need to survive. It appears that even with -40ºF wind chill the steam tunnel kept the banana’s growing point warm enough. This is likely the only banana plant in Massachusetts to survive outdoors last year. Steam tunnel horticulture is now my specialty!

If you live in USDA Plant Hardiness Zone 6 or higher you may want to consider a winter hardy banana for your garden. In Zone 5 you may need a very protected spot or some other warm microclimate to get the plant through the winter. Remember, bananas love it warm so they will not pop up with the tulips, but once they do show their leaves, their growth rate is amazing.

Michael Marcotrigiano

*Musa basjoo* is now available from several mail order companies that advertise on the World Wide Web. Below are a few that carry this banana, but since I have not purchased *Musa* from any of these companies please do not take this as a personal endorsement. MM

http://www.bbbulbs.com
http://www.plantdelights.com
http://www.avantgardensne.com/musbas
http://www.portlandpalms.com
http://www.going-bananas.com
# Garden Gifts Order Form

You can see pictures of all these items on our web site: [http://www.smith.edu/garden/giftorderform.html](http://www.smith.edu/garden/giftorderform.html)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
<th>Color/Size Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botanic Garden T-Shirts with Logo</td>
<td>$15</td>
<td>Willow Green, Slate, Eggplant, Teal, Natural, or Royal (L &amp; XL only) 100% Cotton, S, M, L, XL, 2XL</td>
</tr>
<tr>
<td>Botanic Garden Sweatshirts with Logo</td>
<td>$25</td>
<td>Teal, Maroon, or Natural 100% Cotton, S, M, L, XL, 2XL</td>
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<tr>
<td>Botanic Garden Canvas Tote Bags with Logo</td>
<td>$10</td>
<td>Open Tote—18”×19”×4½” Green or Navy  Zippered Tote—22”×15”×5” Black or Natural</td>
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<tr>
<td>Botanic Garden Aprons with Logo</td>
<td>$15</td>
<td>24”×28” with two pockets, Forest Green</td>
</tr>
<tr>
<td>Centennial T-Shirts</td>
<td>$15</td>
<td>“A Century of Women on Topsoil” Brown or Forest Green, 100% cotton, S, M, L, XL</td>
</tr>
<tr>
<td>Botanic Print</td>
<td>$25</td>
<td><em>Theobroma cacao</em> (chocolate tree) from Lyman Plant House, 7” × 10” Limited signed edition by Pamela See ’73</td>
</tr>
<tr>
<td>Botanic Garden Mugs</td>
<td>$5</td>
<td>White ceramic with black logo</td>
</tr>
<tr>
<td>Handbook on Troughs</td>
<td>$7</td>
<td>76 page booklet by the N. Amer. Rock Garden Soc.</td>
</tr>
<tr>
<td>Butterfly Gardening in New England</td>
<td>$5</td>
<td>35 page booklet by the NE Wild Flower Society</td>
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<tr>
<td>Postcards – Set of 6 assorted cards</td>
<td>$3</td>
<td>Bulb Show, Capen Tulip Garden, Mum Show, Olmsted Campus Plan, Lyman Conservatory in Fall</td>
</tr>
<tr>
<td>Note Cards – Set of 7 assorted cards</td>
<td>$10</td>
<td>Conservatory in Winter, Bulb Show, Bat Flower, Silky Stewartia Flower, Frog in Pond, Broccoli ‘Romanesco’, Japanese Tea Hut by Judy Messer</td>
</tr>
<tr>
<td>Botanic Prints</td>
<td>$25</td>
<td>Mugs</td>
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<td>Celebrating a Century</td>
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**TOTAL** $________

Members of the Friends of the Botanic Garden take 10% off the total

**TOTAL ENCLOSED** $________

Name: ____________________________

Address: ____________________________

City/State: __________________ Zip: ______

Email: ____________________________

Please make checks payable to The Friends of the Botanic Garden and send to:

The Botanic Garden of Smith College
Lyman Plant House
Northampton, MA 01063
Attention: Garden Gifts

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**Botanical Watercolors by Charlotte Staub Thomas**

From the book, *Common to This Country: The Botanical Discoveries of Lewis and Clark* (see article on page 1). Gigliè prints from the original watercolors. They are digitally photographed and printed with special, large format ink-jet printers using acid free paper and archival inks. Each is signed and numbered. Unframed prints are $150 plus $15 shipping. Framed prints from the exhibition are $200.
Calendar of Events — Fall 2004

All events are free unless noted otherwise

Exhibition: Botanical Discoveries of Lewis and Clark

October 15 - December 15, 2004
Church Exhibition Gallery
Lyman Plant House

From the book
Common to This Country: Botanical Discoveries of Lewis and Clark
Text by Susan Munger (Smith class of 1964)
Illustrations by Charlotte Staub Thomas
Featured are ten beautiful and botanically accurate illustrations by Thomas together with entries from Lewis’s journal, descriptions of the plants, and stories related to their discovery.

Annual Fall Chrysanthemum Show

November 6 - 21, 2004
10:00 am to 4:00 pm daily
Lyman Conservatory

A Smith horticultural tradition since the early 1900s!

An outstanding display featuring mums trained into cascading forms rarely seen outside of Japan, as well as large specimen flowers, and student hybrids.

Opening Lecture for the Mum Show

Behind the Scenes at Rockefeller Center Gardens

David Murbach, Manager of the Gardens Division of Rockefeller Center, takes us on a tour of the gardens, including the roof gardens and chrysanthemums, as well as the hunt for and installation of the annual Christmas tree.

Friday, November 5, 2004, 7:00 pm
Seelye Hall Room 106
Followed by a reception and preview of the Chrysanthemum Show in the illuminated Lyman Conservatory. Refreshments will be served.

Lecture: Hybrid Urban Landscapes

Walter Hood
Professor of Landscape Architecture and Environmental Planning
University of California, Berkeley

Monday, October 18, 2:40 pm
Neilson Browsing Room

Lecture: Wetlands Restoration

An overview of the environmental and political issues surrounding the use of wetlands

Paul Wetzel
Research Associate,
Department of Biological Sciences, Smith College

Tuesday, November 16, 9:00 am
Campus Center Room 205

Orchid Sale

Thursday December 16
1:00 - 7:00 pm
Friday December 17
9:00 am - 2:00 pm
Church Exhibition Gallery
Friends receive 10% discount

The Botanic Garden’s orchid collection has increased dramatically over the last several years, through donations from well-known orchid breeders, bequests of established collections, and confiscations by USDA inspectors. The conservatory renovations, especially the new fogging system, have greatly improved our growing conditions, and our orchid collection is growing by leaps and bounds.

We’ve been dividing the orchids and are looking forward to finding new homes for our excess plants. Some of the plants are quite unusual and would not easily be found elsewhere. We are offering a variety of species and hybrids, including members of the following genera: Bulbophyllum, Paphiopedilum, Oncidium, Dendrobium, Maxillaria, and Phragmipedium, plus many more.

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All events can be found online at www.smith.edu/garden
You are invited to join

The Friends of the Botanic Garden of Smith College

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- Invitations to show previews and receptions

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You may also join the Friends or renew your membership online using a credit card at http://www.smith.edu/friends

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