



# Wellesley College Friends of Horticulture

# Fall 2008 NEWS

## PLANT POWER: The Resurgence of Botany at Wellesley

by Kristina Niovi Jones, Director, Wellesley College Botanic Gardens



This is an exciting time for botany at Wellesley College — we are building back to our historic strength in this field, just as the world is again realizing the importance of understanding plants. At the Friends of Horticulture's June 2008 Annual Meeting, Peter Fergusson and Kristina Jones reflected on the remarkable history of botany at Wellesley. Here are some highlights of Kristina's remarks including a vision for the future that is shaped by that past but articulated by an eminent French botanist who would fit right in at Wellesley!

The architects of botany at Wellesley, from Henry Durant at the College's founding through Susan Hallowell, Margaret Ferguson, Helen Davis, and Harriet Creighton, never fail to inspire me as I read their ideas again and again, because the vision that they shared – of plants and botanic gardens as powerful educational resources – rings so true today. Our times have in common some fundamental issues, such as how to feed and provide energy for an increasingly demanding human population. Witness Margaret Ferguson's clairvoyance, as she wrote in 1925:

*"It would not have occurred to one in the middle of the last century that the problem of the world's energy supply could have a special interest for the students of plants. But today, in response to the fear that has been expressed lest the supply of energy stored in the earth should be exhausted, we are turning to the plant for a solution of the problem.*

*Accordingly, we find the trained chemists and physicists joining with the botanists in an endeavor to secure a knowledge of that process by which the green cells of plants are able, not only to make use of the energy of the sun in manufacturing the basal foods of the world, but, in addition, to so hold and store that energy that it becomes available for*

*other purposes... When scientists have come to understand, and learned to apply, the complex process by which plants achieve this unique result, we need have no further fear regarding the exhaustion of the world's energy supply."*



Class of 2012 members participated in New Student Plant Give Away choosing from five varieties of potted houseplants. A new offering this year was the very popular rooted sprouts of Lucky Bamboo (*Dracaena sanderiana*). Although called "bamboo" this plant is actually a member of the lily family, native to Africa and Southeast Asia.

Such fears took a holiday for several decades, along with worries about crop production during the "green revolution." Interest in botany declined for a time as well, perhaps because people largely took plants for granted. Plants still do photosynthesis better than we can, but there is a recent surge of improvements – look up "artificial photosynthesis" on the web for some exciting new ones – in response to the growing need for alternatives to petroleum. Reliance on a few genetically depauperate crops for the majority of the world's food supply no longer makes sense either. There is an abundance of activity in such areas as biomimetic technology, sustainable agriculture, ecosystem services and countless current applications of plant science. Students are well aware of the issues, and those at Wellesley have a distinct advantage in the rich array of botanical resources available to them, thanks to the foresight of Margaret Ferguson and company.

So how are we building botany to make full use of the Margaret Ferguson Greenhouses, Alexandra Botanic Garden, and H. H. Hunnewell Arboretum? Before giving some

specific examples, I want to share excerpts from the epilogue of a remarkable book, *In Praise of Plants*, written by Francis Hallé in 1997, and translated from the French in 2002 (Timber Press). Hallé expresses, better than I ever could, a view of botany that resonates deeply, and lays out a vision that captures my goals for the reinvigoration of botany at the College:



*Continued on page 5*

# Notes from the Director – Fall 2008

I'll try to keep these short, as you've already heard plenty from me in the cover article. The best news is the hiring of Alden Griffith as our first Botany Fellow. Alden is full of ideas and enthusiasm, and you will be hearing a lot about him over the next couple of years. He brings to Wellesley his wife Katie Alt Griffith, also a PhD plant ecologist, and Violet, who at age one has limited botanical expertise but I suspect that will change. Dean Shennan graciously appointed Katie as a Visiting Scholar, so we are getting a great two-for-one deal, truly multiplying opportunities for students to get involved in botany. Welcome Alden, Katie, and Violet!



Kristina Jones leading a tour during Reunion 2008.

The Botany Walks of the Week have been a great success. Many people have participated by designing and executing a walk, including students from Wellesley Energy and Environmental Defense who did an Earth Week walk in April, each of the staff, and some Friends docents. Gail put together a "kids' favorites" walk in the greenhouses. The themes have ranged from specific families, such as

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Ray Pace, newsletter layout

the Rose family when so many trees in that family were in bloom in the spring, to plants introduced into cultivation by 17<sup>th</sup> century plantsmen John Tradescant, the Elder and the Younger. A "Wellesley highlights" walk was put in place for Reunion, where it served as an excellent self-guided tour for alums who couldn't make the scheduled tours. The walks will continue outdoors as long as the weather permits, and then move into the greenhouses for the winter.

Summer in the Science Center was pretty chaotic, with lots of construction work including window replacements in all of Sage. The new windows are beautiful and should hold in the heat much better over the winter, and the greenhouses survived having scaffolding and cranes overhead. Despite the construction, our summer student interns, Christine Kang and Catherine Libbey, planted another productive "three sisters" garden of corn, beans, and squash in the back courtyard next to the research greenhouses.

The outdoor gardens thrived with the frequent summer rains, with excellent survivorship in the new miniature conifer collection and a bounty of nectar-producing flowers in the butterfly garden. The steps through the Creighton Educational Garden and the "sitting rocks" at the top have been magnets for people seeking a beautiful spot for lunch or a coffee break. And when Yui Suzuki, new faculty in Biology, asked whether we had any milkweed he could use to raise the insects he studies, I could point to several species right there. It's a wonderful mix of beauty and utility, exactly what we strive for in the gardens.

Summer for me also means a trip to the Rocky Mt. Biological Laboratory in Colorado, where I have a long-term research project going. At 10,000' elevation, the natural areas around the RMBL are very responsive to changes in climate, as the timing of snowmelt

dictates the length of the (short) growing season. Some very interesting projects at the RMBL have demonstrated unforeseen consequences of climate change, such as the work of Abe Miller-Rushing, whom you may have heard speak at Wellesley last spring. Abe has found that the Aspen Sunflower, like most of the plants there, emerges and blooms earlier in years with earlier snowmelt. However, those earlier dates still carry the threat of a hard frost, and the sunflowers literally get nipped in the bud if they are too far along when a frost hits. So, a longer growing season is not necessarily a boon for plants. This winter there was a lot of snow, the road to the RMBL didn't get plowed until the first week of June, and the wildflowers were amazing, the best I've seen in years.

There are many research projects going on in the Botanic Gardens, a sampling of which will be presented at an informal symposium so that interested students and volunteers can find out what's happening and get involved. The next newsletter will provide brief summaries, so stay tuned!

Best wishes for a glorious autumn in the garden,

*Kristina*

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Field Science is a family affair.  
Kristina's daughter Zoe helping to string out a plot in Colorado.

# The Cameron Garden

by Nancy Dean Kingman '53, WCFH Alumna Co-Chair Emerita



**T**he Cameron Garden has matured into a quiet oasis on a busy campus with white blooming spring shrubs, herbs, and a few choice perennials. It is a pleasant tribute to two Wellesley alums who cared about plants.

A botany student of Margaret Ferguson for whom the greenhouse complex is named, Emma Couch Cameron,

Wellesley '22 was a passionate gardener. After Mrs. Cameron died in 1987, her daughter Diana Cameron Pierce '53, and granddaughter Hilary Pierce Jackson '82 spearheaded a family effort to donate a gift to Wellesley for a commemorative garden. In 1991, when the Visitor Center was built, an appropriate location emerged between the new building and the first greenhouse range. Landscape architect Dorothy Thorndike DS'75 designed the space as a sensory garden full of fragrant plants. Framed by the newly relocated Botany Annex and the Visitor Center pergola, the Cameron Garden is anchored by an imposing Japanese cedar (*Cryptomeria japonica*). During warmer

months, the addition of tables and chairs makes it a welcome spot for lunch and conversation.

Diana Cameron grew up amid her mother's lovely gardens in Milton. After graduating from Wellesley with a degree in English, Diana trained as a teacher. Alongside marriage to Lawrence Pierce and the birth of five children, Diana found time for community involvement and charitable works. Her garden, while not on the scale of her mother's, was enjoyed by her entire family. It is now tended by her daughter, Hilary Pierce Jackson '82.

Sadly, Diana Cameron Pierce passed away this past spring after a lengthy illness. But the garden she helped found continues to flourish while nurturing the Wellesley College community and the many visitors to the Ferguson Greenhouses. ☘

## Botany Fellow Alden Griffith

**W**elcome Alden Griffith — “I’m delighted to return to the East Coast and see the fall colors for the first time in seven years!” says new WCBG Botany Fellow Alden Griffith. With a B.A. in Biology from Wesleyan University and a freshly-minted PhD in Environmental Studies from the University of California, Santa Cruz, Alden is looking forward to teaching and including students in original ecological research, both on campus and around New England. Although his dissertation research focuses on the mechanisms of plant invasion, Alden is a botanical generalist in an era of scientific specialization, with a strong background in natural history, field botany, systematics, plant population biology, statistics, plant ecology and ecosystems, and global change. Colleague Holly Alpert '97 says, “I’ve never seen him leave his hand lens or his field guide at home.” Alden is also a skilled instructor, inspiring his students in seven different courses for three academic departments at UCSC. In 2005, he won an award in recognition of his excellence in teaching.

At Wellesley, Alden will be leading yearly senior seminar courses (this spring will

focus on plant invasions) and will teach Field Botany, a new upper-division course. Having completed his dissertation research in the Great Basin Desert, he is currently planning and developing new local research projects (happily, these won’t involve kneeling on the hot desert soil and measuring tiny grasses under prickly shrubs!). Some ideas in the works include examining the demography of several native and nonnative species of in the genus *Polygonum*, and exploring the possibility that native plants facilitate invasive plants via their pollinators. He looks forward to interacting with students, staff, and WCFH volunteers to help develop ideas and probe their great botanical knowledge.

Botanic Gardens Director Kristina Jones developed the concept of a two to three year Botany Fellow position after Visiting Assistant Professor My Lien Nguyen's inspirational year teaching Ethnobotany at the College in 2006-2007. Approval for the new position was quickly granted from the Dean of the College with initial funding to come from an endowment set up by Harriet Creighton to support the teaching of botany at Wellesley.



Alden was the outstanding candidate in a search that garnered over seventy applications from scholars around the world. Friends of Horticulture staff and members assisted Kristina with administrative support, participation in the Search Committee, and evaluations of the finalists’ lectures. WCFH also provided lunch for all the lecture attendees.

Along with Alden, we also welcome his wife, Wellesley College Visiting Scholar Katie Alt Griffith, a PhD plant ecologist; and daughter Violet, a delightful one-year-old with a botanical name.

You can expect to hear more from Alden in the upcoming months. And if you’re on campus, he welcomes you to bring along a hand lens and field guide and botanize in the botanic gardens with him! ☘

# Growing Curious: Pereskia

## Is this truly a cactus?

by Nobuko Maeda, WCFH Docent

One day as I walked in the Ferguson Greenhouses' Begonia House, a pretty rose colored flower caught my eye. For a little plant, it had fairly big petals with shiny leaves, also relatively large. The label said *Pereskia grandifolia*. Near by I found a slightly bigger plant with orange flowers named *Pereskia bleo*. While *P. grandifolia*'s flower opened flat, *P. bleo*'s flowers looked cup-shaped. The olive green stems were covered with bunches of spines. Walking on into the Tropical House, I found another interesting plant labeled "*Pereskia aculeata*, Barbados Gooseberry, Cactaceae, Tropical America." The family name surprised me. I would not have guessed that my new plant friends were cacti. I grew curious about these three plants; my journey of discovery into this plant genus had begun.

The genus *Pereskia* (per-ESS-kee-uh) was named after Nicolas-Claude Fabri de Peiresc (1580-1637), a French naturalist of the early 17<sup>th</sup> century. While interesting to find out, the name didn't say much about the plant. On the other hand, a species name identifies some characteristic of the plant; in this case, *grandifolia* "big leaves," *aculeata* "spines or prickles," and *bleo* is the plant's name in its native Brazil.

Knowing that a cactus's spines are the modified leaves, I looked more closely. Careful observation shows the leaves and spines of *Pereskias* grow from whitish cushions on the stems called areoles, an important feature of cacti. The fruits also show the cactus characteristic: the inferior ovary is imbedded in the stem, which becomes part of the cactus fruit. While the stems and leaves of *Pereskias* are not typical of cactus, they share the characteristics of their flowers, areoles, and spines with cactus. I still needed to find out why these plants were not in the Desert House.

Another trip to the reference books taught me even more about the genus. I used mainly *The Cactus Family* by Edward F. Anderson, Timber Press, 2001. Cactus study seems to be a rather young, on-going field. Cacti are essentially American plants,

Wellesley's *P. aculeata* is relatively big and looks old. Along the length of vine illustrated at right on left branch, young green shoots with green leaves stand up, and the plant's growing tips are mostly green with leaves. As shown on the right branch, the lower grey-brown, woody, fissured stem has lots of spines. Is this truly a cactus?



and European botanists found it difficult to get live samples, especially at the early stage of botanical studies. To have a good collection of preserved plant material is also problematic as cacti are succulents. When the water is removed to make dry herbarium specimens, they are very much changed from the original plants. There is another big problem: no fossils of cacti have been found to pinpoint their origin. But one thing is clear: because cacti are American natives, scholars believe cacti evolved after the ancient land mass of Gondwana separated sufficiently into Africa and South America. The earliest possible time for the family's origin could be as early as one hundred million years or as late as thirty million years before the present time.

*Botanists divide the cactus family into three (sometimes four) subfamilies: Pereskia subfamily which have leaves; Opuntia subfamily which have the special little prickles called glochids; and Cactus subfamily which are leafless cacti. Four-fifths of all known cactus species are leafless cacti.*

"*Pereskia* is generally accepted as the genus that most likely resembles what may have been the first cactus" (Anderson, p.38). Other than the persistent leaves, there are other reasons why *Pereskia* is believed to show an early stage in the development of the cactus family. Their seeds are thought to retain the largest number of primitive characteristics in the family, and they carry out the special photosynthetic process called crassulacean acid metabolism (CAM), which is unique to cacti. But they also conduct gas exchange during the day in a process called C3 metabolism, which is shared with a majority of flowering plants.

Some believe *Pereskia* originated from the central part of South America; Peru, Bolivia and Brazil, where the climate is not as dry. Finally, this explains why they keep leaves like many other plants and don't have to sit in the Desert House with the other cacti.

Now I have a little clearer idea about genus *Pereskia*. It is definitely a cactus, and a primitive one at that. Come visit the fascinating *Pereskias* in their various locations in the Ferguson Greenhouses to get a glimpse of what the first cacti may have looked like. 



The flowers of *P. grandifolia* (left) and *P. bleo* (right) look a bit like rose flowers: one long pistil is surrounded by a lot of bright stamens in the center of the colorful petals.

Sometimes *P. grandifolia* is called Rose Cactus, and *P. bleo*, Wax Rose. The flower arrangement seems similar to a rose, but the gradual transition from bracts to sepals to petals is the typical cactus flower arrangement.

## PLANT POWER: *Continued from page 1*

*"Botany with a capital B is collection, conservation, and analysis in museums. It is those who publish Latin diagnoses and DNA sequences, curves and graphs, in specialized journals using only the most rigorous if inelegant terminology... Botany does not enjoy the image of enlightenment, evoking instead the image of the ivory tower, esoteric and dusty, rather than the garden of Eden. Not unexpectedly, this official Botany is shrinking, the administrative powers not replacing its teachers when they disappear, no longer paying for the care of its historical collections, allowing instead the invasion of its laboratories by more aggressive and marketable enterprises... this official Botany is in the process of disappearing while the classrooms are full of students with a passion for plants."*

*"Very happily, there is another botany, unofficial and alternative, one fully alive and abundant... This botany is not very orthodox in the eyes of official science, not very concerned with clearly drawn boundaries, and is in fact poorly distinguished from agricultural biology, militant environmentalism, homeopathy, and the art of living, gastronomy, and magic. This botany quite simply belongs to those who love plants..."*

*"I am not satisfied with a two-faced botany. I would like to see a unified science, open to the entire world... rigorous but without jargon, accepting of amateur abilities, capable of satisfying the passions of the very young, restoring the primacy of observation, associating fieldwork with research in the laboratory, combining plant geography with the study of fossils, ethnobotany with mathematics, genetics with the analysis of form, knowing how to call on the most advanced biological techniques without repudiating the value of traditional tools..."*

*"The human species needs plants, especially in these times of degraded environments. This is why, in one form or another, official or alternative, knowledge of plants is resurgent in our culture despite the commotion it causes, as a dandelion keeps reappearing in the same place despite attempts to remove it."*

*"It is the entire plant, from its roots to its flowers, in its soil, with its uses through the ages, that is important... The gardener and his or her accomplices, including the horticulturist and the herbalist, the grape grower and the healer, the landscape painter and the poet... do not doubt their responsibility for maintaining a very ancient knowledge of life, full of the future and indissolubly linked to the human species."*

We are so fortunate that the college administration has always supported botany at Wellesley, notably by providing the horticultural staff, and that endowments secured by Wellesley's early architects of botany support maintenance of the plant collections. Botany didn't fade as much at Wellesley as it did at so many colleges and universities, and we are in a fabulous position to meet the resurgence of interest in this field.

Student enthusiasm and interest in an Ethnobotany class taught by visiting faculty My Lien Nguyen in 2007 gave rise to the Botany Fellow position (see page 3 for more about this), to

provide more botanical offerings. Our new Botany Fellow, Alden Griffith, will teach Field Botany in Fall 2009 (the first time in over a decade it will be offered at Wellesley) and a seminar on invasive species this spring, and mentor student research in botany. With these additions, the study of plants once again is becoming better represented in the Wellesley curriculum, as they join "Environmental Horticulture" (BISC 108), "The Biology of Plants" (BISC 207), "Designs for Life: The Biomechanics of Animals and Plants" (BISC 322), a Political Science seminar "People, Agriculture, and the Environment," the Friends of Horticulture-sponsored "Introduction to Botanical Art" (EXTD 115), and several other courses in organismal biology, ecology, conservation biology and environmental science. The greenhouses are hopping!

In addition to the formal curriculum, the educational outreach in which the Friends of Horticulture are such crucial partners engages a broad audience with botany. Friends volunteers passionate about plants and Wellesley students with a range of plant-related interests make a powerful mixture, coming together at events such as the Mystical Tree Tour and the Greenhouse Light Show, and in the GNats (Garden Naturalists) group. We are increasing opportunities for students, Friends, staff and faculty to work together on projects, such as developing greenhouse displays of economic plants and their products, monitoring activity of butterflies and caterpillars in the butterfly garden section of the Creighton Educational Garden, charting the growth of the miniature conifers in another section of that wonderful garden, recording the timing of budburst and other

*Continued on page 11*



Margaret Ferguson Greenhouses: May, 13, 1926.



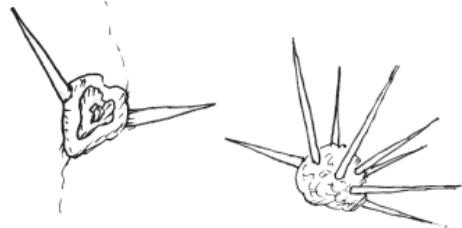
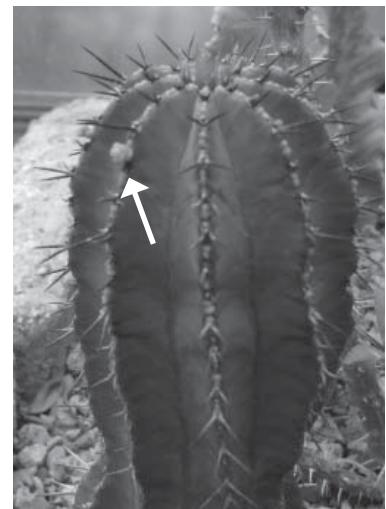
The newly restored and relocated Botany Annex attached to the Ferguson Greenhouses with the Science Center beyond: June 1, 2008,

# Spotlight on Euphorbiaceae: Beyond Poinsettias

by Carol Govan and Gail Kahn

A funny thing happened on the way to writing about the Euphorbia (spurge) family. This article has been over three years in process, with numerous revisions. It just kept getting longer: one version would have taken up this entire newsletter! An obvious explanation is Carol's severe and highly contagious case of botanical enthusiasm, compounded by Gail finding ever more fascinating facts. But there really is a lot to say about the Euphorbiaceae, a large and diverse clan of 283 genera and 7300 species, with over 60 specimens residing in the Ferguson Greenhouses. We've finally arrived at the six most fascinating things about euphorbs, as they are affectionately known, with examples from the greenhouse collection.

Photo on right: In the Desert House's Euphorbia Planter, this young *Euphorbia fruticosa* is blooming with tiny yellow flowers along the ridges between the paired spines. (See arrow)



Euphorbia paired spines and  
Cacti areole with spine cluster.  
Spines are modified leaves.

## Convergent Evolution

In the Desert House, an African *Euphorbia ammak 'variegata'* and a South American cactus *Cereus hexagonus* cozy up to one another in the center bed, looking like they could be twins. Docents often use these specimens to explain the concept of convergent evolution: the independent development of similar traits by organisms living in similar environments. Dry desert habitats have resulted in spines instead of leaves, and accordion-pleated, succulent stems in both these unrelated species. There are many succulent euphorbias in the Desert House, and the way to distinguish them from cacti is to look at the spines. Members of the Cactaceae or cactus family have several spines rising out of a swelling called an areole, while euphorbs usually have only two spines (formerly paired stipules at the base of each leaf).

## Fantastic Flowers

During the winter months, poinsettias (*Euphorbia pulcherrima*) are often grown in the Seasonal Display House. This favorite holiday ornamental is worthy of a close examination. The showy red leaf-like bracts are not the flower! The yellow and green cups in the middle of these bracts are the tiny inconspicuous flowers. The female flower is elevated on a stalk surrounded by several male flowers with bi-lobed anthers that look like Mickey Mouse ears, filled with pollen. Both the female and male flowers arise out of a cup-like structure called a cyathium, composed of fused smaller bracts with distinctive nectar glands on the rim to attract pollinators. The nectar gland on a poinsettia looks like a green open mouth. The crown of thorns (*Euphorbia milii*), a plant constantly flowering in the Desert House, is another striking example of a euphorbia flower. The enlarged false flower, called a pseudanthium, has five shiny nectar glands and two showy bracts that surround the tiny flowers. The chenille plant (*Acalypha hispida*) in the Warm Temperate House is a showy example of the tiny, wind-pollinated flowers of this genus. These flowers are dioecious (imperfect flowers with males and females on separate plants); only the female plants are grown in the greenhouses. The fuzzy appearance of their pendulous red inflorescences is due to the many feathery-branched styles, giving rise to its common name, chenille (the French word for caterpillar).



Poinsettia  
cyathium with  
maleflowers and  
one female flower.

## Beautiful Foliage



Copper leaf or Jacob's coat (*Acalypha wilkesiana*), also grown in the Warm Temperate House, has many cultivars. The common names refer to the bronzy-green leaves mottled with copper, red, or purple. The inconspicuous spike of flowers with feathery white styles reveals its relationship to the chenille plant. Cultivars of croton (*Codiaeum variegatum*) achieve an incredible color variation of green, red, yellow, orange and purple shades in equally varied patterns, and the greenhouses display many varieties. (This plant's common name should not be confused with the genus *Croton*, also a euphorbia but not sold as an ornamental.) Why are the leaves so colorful, and not the flowers? Do you have a guess?

The Jatropha has a beautiful leaf.  
This plant is currently being studied  
as a possible source of biofuel.

## Toxic Sap

A notable trait of the Euphorbiaceae is their latex: the sticky, milky sap which in many species can cause skin irritation. This latex is what makes many spurge poisonous and gives the family its common name: “spurge” means to purge or cleanse. The Latin name of the family comes from Euphorbus, a Greek physician who used the latex as a purgative. Milkbrush (*E. tirucalli*) in the Desert House provides a potent example of the sap’s toxicity. In the southern bed, you can still see the stump of a huge milkbrush, cut down when it grew too tall for the greenhouse. The white glue-like sap of this species is especially irritating, and WCBG staff always used protective gear and a pole saw when cutting it back. Even so, airborne sap got into mucus membranes in the eyes, ears and nose, with an effect that Tony Antonucci, WCBG Greenhouses Senior Horticulturist described as “having an atomic fireball on your eyes for days.”



Threeseeded Mercury—a common annual weed that bugs enjoy—with 3-parted capsule in bract (Mercury's sandals).

## Invasive Weeds

Poisonous sap is an excellent strategy for a euphorb to avoid being grazed on. It is such a successful tactic that some non-native spurge, particularly leafy spurge (*Euphorbia esula*), are noxious weeds in the Midwest and northwest U.S., invading rangelands and rendering them unusable for cattle and horse grazing. Cyprus spurge (*E. cyparissias*) is the spurge most commonly found as a weed in our New England yards and gardens. It is not native to this area but very, very happy in places like the arboretum meadows. Another common garden weed is the Three-seeded Mercury (*Acalypha rhomboidea*) named for its three seeds in one three-parted capsule or fruit. A close look reveals a wonderful lobed bract holding three tiny round fruits. The bracts look like Mercury’s winged sandals.

## Economic Importance

Tapioca (*Manihot esculenta*), found in the Collection Support House, is widely used as a food staple and is one of the top ten food crops in the world. The tuber (underground swollen stem), which is eaten like a potato, contains hydrogen cyanide (HCN) and must be soaked in water and drained several times before cooking. It is also known as cassava, manioc, and arrowroot starch. A new plant is planned to replace our late, beloved rubber tree (*Hevea brasiliensis*) which showcased the economic importance of rubber, made from the tree’s sticky latex. The substance was a botanical curiosity until Charles Goodyear developed the process of vulcanization in 1839, rendering it stable in extremes of heat and cold.



In addition to economic importance, Tapioca also has an interesting leaf.

Obviously, there’s a lot more we could say about euphorbs! But instead, we invite you to explore them on your own in the Ferguson Greenhouses and beyond. Use the Botanic Gardens Database: <http://aranea.wellesley.edu/BG/index.cfm> to assist your quest. We predict that you’ll soon develop a case of euphorbia euphoria, just as we did. 

## BOTANY SAMPLED



Wellesley College  
Botanic Gardens' Visitor Center  
September 18–October 23, 2008

An Exhibit by WCFH Certificate in Botanical Art & Illustration Students

The tradition of botanical art and illustration continues today with renewed interest in a vigorous course of study here at the Wellesley College Botanic Gardens. Our students come from near and far. Some come to the discipline for the artistic experience and find a fascination with plants and the underlying science. Others with a passion for plants look to botanical art as a means for improving observational skills.

Most who participate in our botanical art classes find the experience an exciting and personally rewarding challenge. The dedicated enroll in our certificate program. In this exhibit sixteen of them share their art and their thoughts about botanical art:

Sandy Adams, Ruth Camber, Deborah Bacon Cassady, Barbara DeGregorio, Susan Everitt, Pamela Gordon, Carol Govan, Esther Klahne, Carrie Megan, Suellen Perold, Beatrice Pettit-Barron, Nancy Savage, Ruth Starratt, Lucy Sur, Lorene Waresmith, and Joyce Westner.



Euphorbia obesa are found growing in the Northern Cape region of South Africa. Typically they are found growing under the protection of low shrubs in sandy soils in the presence of small boulders.



### **Introduction to Botany through Drawing**

8 Thursdays: 9:30 a.m.–12:30 p.m.

Jan. 22, 29; Feb. 5, 12, 26; March 5, 12, 19

BAC 09 111

Study and draw elementary plant morphology. From live specimens observe, record, and label examples of topics covered in **Carol Govan's** lectures. All abilities welcome. Course fee includes a copy of the required text: *Botany for Gardeners*. Final CBA project is journal of microscope dissection notes, drawings, field sketches and other assignments.

Members \$225 / Non-Members \$ 275

### **Experienced Watercolor Painting**

7 Wednesdays: 1:00 p.m.–4:00 p.m.

Jan. 28; Feb. 4, 11, 25; March 4, 11, 18

WCC 09 202

Discover your own vision and means with **Susan Swinand** in this course for those with prior watercolor experience. Group critiques develop critical and analytical skills while trying to determine why a painting works or how it might be improved. With the opportunity for intense observation in the Ferguson Greenhouses, heighten your awareness and ability to see and discover a personal language of form and color.

Per 7-class series: Members \$200 / Non-Members \$250

### **The Authentic Garden: Cultivating a Sense of Place**

Thursday, January 29, 2009, 7:00 p.m. – 8:30 p.m.

Mass Bay Community College, Wellesley, MA

WLS 09 010

What would an “authentic” American garden look like? How would we garden if we weren’t still borrowing from European or Eastern traditions? In this lecture **Claire Sawyers**, author of *The Authentic Garden*, will outline the five principles she believes can lead Americans to create gardens grounded in the history and landscape of their place, gardens that connect to and fit within our lives.

Members \$20 / Non-Members \$25



### **Local Genus—*Genius loci***

WLS 09 011

### **Using Native Plants to Emphasize Garden Context**

Friday, January 30, 2009, 9:30 a.m.–12:30 p.m.

Hunnewell Building, Arnold Arboretum, Jamaica Plain, MA

**Claire Sawyers** urges gardeners to approach a site with no pre-conceived notions, to observe first — to determine the *genius loci*, or the spirit of the space — before sketching a plan or lifting a spade. She shares her philosophy on native plants and tells how to plant them in “believable” combinations as a way to capture a sense of place.

Members \$48 / Non-Members \$56

### **Winter Tree Observations**

Evergreen Trees: Saturday, Jan. 31, 10:00 a.m.–2:30 p.m. HOR 09 061  
Deciduous Trees: Saturday, Feb. 7, 10:00 a.m.–2:30 p.m. HOR 09 062

Winter is a great time to identify trees based on their overall structure and twig and bud characteristics. Close observation can also reveal clues to the adaptive strategies of various tree species. Begin indoors under the guidance of **Carol Govan** carefully looking at twigs and other tree parts, discovering family and genus similarities, and examining indicators of the stages of the growth cycle that might occur too high in the tree to easily observe outdoors. After lunch go outside into the College’s Botanic Gardens to identify trees, observing both large and small scale details. Bring a lunch and hand lens and dress for cold weather.

Per session: Members \$50 / Non-Members \$65

### **Observational Drawing II**

5 Fridays 9:30 p.m.–12:30 p.m.

BAC 09 221

February 6, 13, 27; March 6, 13, 2009 / Snow Date: Friday, March 20

Take your observational drawing further under the careful guidance of **Jeanne Kunze** in this class of skill refinement and media exploration. Emphasize morphological representation from direct observation. Introduction of varied papers and media will assist you in finding an artistic voice and a confident drawing style.

5-week session: Members \$ 225 / Non-Members \$ 275

## **ON LOCATION!**

### **The Arizona-Sonora Desert Museum**

#### **Focus on Cactus**

**4 days: Wed., April 1 – Sat., April 4, 2009**

Feeling stuck when it comes to drawing cactus? Come to the Arizona-Sonora Desert Museum in Tucson, Arizona and enjoy a four day intensive with Susan Fisher and the ASDM staff on this prickly subject. Begin with easy field sketches on the grounds of the stunning Arizona-Sonora Desert Museum. Listen to experts who can talk cactus from sun up to sunset and provide you with an in-depth look at cacti subjects. Explore the rudiments of form, as you work in graphite then add color with colored pencil or watercolors — your choice. Take home a field sketching journal and fond memories of a unique desert experience.

All abilities welcome. Fee includes only 4 days of class instruction. Travel, accommodations, food, and other expense not included.

Contact WCFH Office for more details.

**BAC 09 220:** Members \$ 295 / Non-Members \$ 400

### **Color Mixing for Artists with Susan Fisher**

4 days: Registration 9:30 a.m. Workshop 10:00 a.m.– 2:30 p.m.  
Tuesday, February 17 – Friday, February 20, 2009      BAC 09 113  
Snow Date: Saturday, February 21, 2009

Learn how to mix the colors you want, not the ones you end up with through trial and error. Color mixing guru **Susan Fisher** teaches an easy system for combining colors consistently to achieve the broadest possible spectrum for any “wet” medium including watercolor, gouache, acrylics, oils, inks, alkyds or egg tempura. All are welcome, with no prerequisites. Daily homework assignments will be given.

Members \$ 325/ Non-Members \$ 390

### **Great New Annuals and Perennials to Feed Your Plant Habit**

Thursday, March 5, 2009, 7:00 p.m. – 8:30 p.m.

Mass Bay Community College, Wellesley, MA

WLS 09 030

Although he has been evaluating new plants and working with plant breeders for over two decades, **Allan Armitage** has often noted that “just because it is new does not mean it is better.” Join this renowned plantsman as he shares his thoughts on his favorite plants, along with some humorous stories and more than a few opinions.



Members \$20 / Non-Members \$25

### **Designing Women: Beatrix Farrand and Ellen Shipman**

Monday, March 23 10:00 a.m. coffee; 10:30 a.m. program  
Book sale and author signing following program

Wellesley College Science Center

HOR 09 070

*Co-sponsored with Arnold Arboretum of Harvard University,  
Boston Junior League Garden Club, Garden Club of the Back Bay,  
and Wellesley College Friends of Horticulture*

Garden historian **Judith Tankard** will explore the careers of Beatrix Farrand and Ellen Shipman, two of America’s most influential garden designers of the early twentieth century. While both were noted for their luxuriant private gardens, their influences differed; Farrand drew her inspiration from her vast knowledge of European gardens and study of horticulture with C. S. Sargent, while Shipman was deeply influenced by traditional American country gardens. Tankard will highlight visible examples of their work today, including some lesser-known gardens recently restored and opened to the public.

Members \$15 / Non-Members \$18

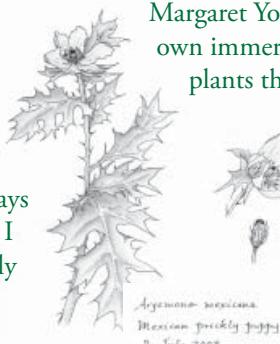
# The Friends of Horticulture: Some Varied Perspectives

From docent-led tours of the College's Margaret Ferguson Greenhouses, H.H. Hunnewell Arboretum, and Alexandra Botanic Garden, to public programs in horticulture and botanical art, the Wellesley College Friends of Horticulture (WCFH) aims to inspire and educate the College and broader communities. "The Wellesley College Botanic Gardens (WCBG) does a great job of engaging people with plants and nature, due in large part to the Friends of Horticulture," says Director Kristina Jones. "A plant collection, no matter how wonderful, is just a plant collection if it doesn't have enthusiastic interpreters to share its mysteries and excitement."

The flip side is the wealth of experience that volunteer docents garner. "I've led a number of tours with third and fifth graders this year," says Vivi Leavy '62. "I am impressed by what they know and how keenly they can observe. I always learn something from them. Of course, I love the docent classes. You can't possibly learn enough the first time through. I might take the arboretum course every

year. It is fun to now recognize a few of my favorite trees and know interesting facts such as that the eye of the horse chestnut flower turns from yellow to red when it has been fertilized."

Kristina explains WCFH's role in supporting student activities: "In addition to their fabulous outreach programming for the general public, the Friends greatly enhance special events such as the Mystical Tree Tour and the Greenhouse Light Show, which draw in students who might not otherwise participate in plant-related activities. The Friends also support student internships and research, increasing opportunities for botanically inclined students at Wellesley."



Margaret Young '71 describes her own immersion in the world of plants through the Friends of Horticulture: "I have always gardened and been drawn to botanical art for its beauty and its scientific accuracy. I decided to try

an introductory drawing class at WCFH called 'Plant Painting for the Petrified.' I am delighted to find that after only a year I can produce a painting of forsythia that anyone will recognize as forsythia! I have come to see and know nature differently as a result of my time painting... I am so thankful to Wellesley once again for broadening my mind and feeding my spirit."

Mary-Alice "Liz" Ewing Raymond '44 says, "It has been my privilege to serve on many College boards and now – the best job in the world – volunteer at the Wellesley College Botanic Gardens' Visitor Center for the Friends of Horticulture. We greet people from all over the world. Reunion this past June brought enthusiastic alums to tour the greenhouses and botanic garden. Most exciting were the numbers of young children with reunioning mothers who came to do activities in the Visitor Center and the greenhouses. Do come visit us. There's lots to see and learn!" ♣



## Dorothy Dudley Thorndike DS '75



Dorothy sharing her knowledge and love of plants with some young visitors on a tour of the Ferguson Greenhouses in spring 2001

As this newsletter was going to press, we received the sad news that Dorothy Thorndike passed away on September 11, 2008. Dorothy was an advocate of the Ferguson Greenhouses and an active Friends volunteer for as long as most of us can remember. From leading guided tours of the greenhouses to keeping our "What's in Bloom" board up-to-date, she was a dynamic force who always strived to keep learning and to be actively useful.

After graduating from Wellesley College's Davis Scholar program in 1975, Dorothy operated a landscape planning business for 25 years. She possessed a great sense of design as well as a great sense of humor—caring about the plant first of all, with a "right plant, right place" philosophy. The lovely Cameron Garden next to the Botanic Gardens' Visitor Center is a fine example of her aesthetic sensibility. (See article page 3)

Dorothy and her dry wit will be missed at volunteer activities. She is survived by her husband John, and her son and his family who have requested that memorial contributions in her name may be made to Wellesley College Friends of Horticulture and Cummings School of Veterinary Medicine at Tufts University. As Dorothy would have said, "Well—there you have it." ♣



WCFH New England Flora 2008 students  
discovering the meadow habitat  
of Observatory Hill in the Botanic Gardens.

Left to right: Patricia Buchanan '57,  
Kathy Folino, Barbara DeGregorio,  
and Sandy Adams '59

## PLANT POWER: *Continued from page 5*

phenological events as part of a national effort to characterize plant responses to climate change, tracking survival and reproduction of the 26 native species still going strong on the green roof, checking for gaps in flowering to help ensure a steady food supply for pollinators, and identifying and documenting the myriad grasses and forbs in the distinctly different meadows in the arboretum and botanic garden. There is so much to do, and so much to learn, right here!

Botany is such a delicious combination of aesthetic appeal, natural wonders, scientific rigor, and relevance to society. We are working to help it shed its sometimes dusty image and be broadly welcoming, heeding Margaret Ferguson's words of guidance for botany at Wellesley, after the opening of the greenhouses in the 1920's:

*"As we look toward the larger opportunities that are being presented to us, it is our purpose that the department shall stand, primarily, in the future as in the past, for the dignity and educational value of its scientific work. At the same time we shall not fail to emphasize the humanistic aspects of our subject; and we shall endeavor to form a center that shall be of interest to all."* ♣

## WELLESLEY COLLEGE FRIENDS of HORTICULTURE

www.wellesley.edu/WCFH email: horticulture@wellesley.edu office: 781-283-3094

Name: \_\_\_\_\_

Address: \_\_\_\_\_

email \_\_\_\_\_

Phone: home \_\_\_\_\_ Phone: work \_\_\_\_\_

Cell phone \_\_\_\_\_ If applicable: Wellesley Class \_\_\_\_\_

\_\_\_\_\_ I would like information on volunteering at WCFH.

### MEMBERSHIP GIFT

for the academic year July 2008-June 2009

To join the Friends of Horticulture by making a gift on-line using a credit card, please follow the instructions on the Membership page of our website.

Benefactor:	\$2500	Sponsor:	\$100
Patron:	\$1000	Member:	\$50
Supporter:	\$500	Young Alum:	\$15
Donor:	\$250	5 most recent classes	

SEPARATE CHECK FOR MEMBERSHIP ENCLOSED \$ \_\_\_\_\_  
made payable to: Wellesley College Friends of Horticulture.

### PROGRAM REGISTRATION

Section #	Class title	Fee
_____	_____	_____
_____	_____	_____
_____	_____	_____

SEPARATE CHECK FOR PROGRAMS ENCLOSED \$ \_\_\_\_\_  
made payable to: Wellesley College Friends of Horticulture.

Mail to: Wellesley College Friends of Horticulture  
106 Central Street  
Wellesley, MA 02481-8203

CANCELLATIONS AND REFUNDS: You may cancel a registration and receive a partial refund by calling the WCFH office at 781-283-3094 ext. 4 at least one week prior to the first class. A cancellation fee (\$5 or 25% of the cost of the course, whichever is greater) will be deducted. Special cancellation policies apply to overnight trips. We regret that no refunds or credits can be given for class cancellations less than one week prior to the start of the class or for classes you have not attended.

### Docent Training — Ferguson Greenhouses

*A new training class for our volunteer docents*

Mondays from 9:30 a.m.–12:30 p.m. Jan. 12, 26; Feb. 2, 9, 23, 2009

Shake off your winter doldrums and learn to how to share the wonders of our collections under glass with other plant-starved New Englanders. Instruction will be on the history of our Botanic Gardens, the plants in the collection, and how to design and give tours of the Ferguson Greenhouses for specific visiting groups.

For more details on volunteer opportunities or for a volunteer application, please contact the Friends Office at 781-283-3094 x 4 or email [horticulture@wellesley.edu](mailto:horticulture@wellesley.edu).

WELLESLEY COLLEGE  
Friends of Horticulture  
Science Center  
106 Central Street  
Wellesley, MA 02481-8203



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## 4<sup>th</sup> Annual Greenhouse Light Show

**Wednesday, December 10, 2008 5 – 8 p.m.**

Discover the fascinating world of plants as you tour the theatrically lit greenhouses. Enter at the Greenhouse Visitor Center, where there will be activity centers and docents ready to lead tours of the show. You are also welcome to explore the show at your own pace (bring a flashlight if you have one).

Children are welcome as long as they can keep their grownups from running amok!

## Greenhouse Kids' Time

**Mondays: 1 – 4 p.m.**

**December 29, 2008 (Winter Vacation Week)**

**January 19, 2009 (Martin Luther King, Jr. Day)**

**February 16, 2009 (Presidents' Day)**

The Margaret C. Ferguson Greenhouses host special afternoons of fun family activities on winter vacation days. Crafts and scavenger hunts introduce kids of all ages to the amazing plant world through art and science. Drop in at any time between 1 p.m. and 4 p.m. to share the warmth and wonders of the greenhouses.

All children must be accompanied by an adult.

