



Wellesley College Friends of Horticulture

Fall 2009 NEWS

Wellesley's Women of Botany

by Gail Kahn, WCFH Administrative Manager
Photographs courtesy of Wellesley College Archives

Wellesley College's history in botanical science is as long-standing as the College; a rich, many-stranded legacy molded in large part by its women botany faculty. This is an introduction to these women – some well-known, others less familiar – who shaped the early direction and resources for plant science at Wellesley. We are all beneficiaries of their achievements whether Wellesley alums, other College community members, or visitors to the Wellesley College Botanic Gardens.

A Legacy of Research

In 1875 Henry Durant, Wellesley College's founder, made a commitment to a female professoriate and to the education of women in science. He became acquainted with **Susan Hallowell** through her work in the Harvard laboratories of Louis Agassiz and Asa Gray. Like many of this first generation of American

women scientists, Hallowell did not have a Ph.D. or a string of research papers. However, she was a gifted organizer and instructor. Appointed by Durant as Chair of Natural

History, Hallowell quickly realized that this was too large an academic area. She divided the discipline into zoology and botany and chose to become Chair of Botany, her particular area of interest.

While awaiting Wellesley's College Hall to be completed and the College to open, Susan Hallowell visited many colleges to study their laboratories and libraries, forming a shopping

list of what she wanted for Wellesley. With Durant's financial backing, Hallowell developed the department's herbarium, built up the botany library, and provided modern lab equipment including a microscope for each student. Most importantly, she instituted a teaching methodology centered upon research. The Botany Department's section of the 1877-8 College calendar states, "Students are encouraged to make independent observations and self reliant searches; and, avoiding hasty inference from partial data, to form judgments of things noted, and correctly describe the results of their observations."

In the early years of the College, Henry Durant invited the great British plant explorer Sir Joseph Hooker to tour Wellesley's laboratories and classrooms. Hooker commended Susan Hallowell on the laboratory research being undertaken by her students. When he informed her that botany students in England were taught watercolor painting, Hallowell



Back of photograph taken at Miss Ferguson's home:
Botany Department 46 Dover Road, Wellesley
Back Row – left to right Mrs. Pulling, Haining, Mayne (grad), Sawyer, Davis, Ferguson, Bliss, Seelye
Front row – left to right Thomas, Moore, Clark, Bancroft, Dr. Pulling, Nathan P.
September 20, 1922

arranged to send all her first year botany students to a Wellesley College art teacher for a weekly lesson in watercolor. "Quickened powers of observation resulted – no doubt, the purpose of the course," said Louise North, class of 1879.

A Legacy of Scientists

In Susan Hallowell the College had a forceful personality intent on building the nascent department's strength in botanical science. At Wellesley, as at many women's colleges, the early female faculty developed a close community with each other and with promising

Continued on page 6

In 1927, botanist C. Stuart Gager praised her insight to create a Department of Botany at a time when "professors of botany were almost as scarce as blue roses. Wellesley was in the front rank of pioneers in America in the establishment of her Chair of Botany in 1878, and was probably the first woman's college in the world to have a separate chair."

Notes from the Director

Fall 2009 – Hello from Wellesley!

We had a somewhat cool, dry, and late spring this year, followed by a very wet June and July. Many of our trees were defoliated, mostly by winter moths, and the extra rain helped them to leaf out for a second time once the moth caterpillars pupated. There have also been lots of rabbits and far more deer sightings on campus than in previous years. Butterfly numbers seem lower so far, but I did see a clear-winged hawkmoth (always a thrilling sight!) sharing a *Monarda* flowerhead with a bumblebee in the butterfly garden. Bumblebees and solitary bees seem plentiful, despite the addition of several colorful hives of honeybees in the Arboretum, part of new biology professor Heather Mattila's research. (see page 3.)

A big spring highlight was the Smoothie Night – Spring Break Preview in the greenhouses, where desert plants were coming into bloom, forced branches from the gardens and bulbs in bloom supplied a taste of spring in March, and lots of students crowded in to see! There were lines out the door, Gail had to run out for more supplies, and Friends volunteers kept churning out smoothies to over 100 students per hour. It was especially great to see Horticulture students showing friends around “their” greenhouses, pointing out plants whose stories they knew. We hadn't asked them to do this, but seeing that made me think we should tap their energy and excitement as docents for the spring show next year...

The spring also brought nice additions to the outdoor gardens. Johanna Lake's poetry walk (profiled in the previous newsletter) went up, in its more permanent incarnation and booklets providing the complete poems excerpted on the signs were set out in new brochure boxes made by David Scott of the North Quabbin Woods sustainable forestry collaborative, out of local Northern White Cedar. Two of these boxes hold poem booklets and maps of the Botanic Gardens, one holds the journal from Laura Steven's Favorite Spot project at Paramesium Pond (dozens of people have added their thoughts to the journal that Laura started and put out by the bench in May), one holds butterfly garden informational brochures, and the last does the same for the dwarf conifer garden. Visitors can now take self-guided tours and do the poetry walk, anytime and at their leisure. We keep having to refill the boxes, so they seem to be doing their job!



The Science Center is humming with 104 students doing research this summer. Botany Fellow Alden Griffith and I are co-mentoring two students: Brachi Schindler '11 is studying insect colonization on the green roof garden, and Melanie Kazenel '10 is characterizing the soil and vegetation in the meadow below the Observatory, in preparation for a long-term experiment in edible forest gardening. Alden also has two students helping with his research on how invasive plants influence the pollination success of native plants: Alexandra Hatem '12 and Sooyeon Kho '11 are setting up experimental plots, observing pollinator behavior,

hand-pollinating flowers and bagging developing fruits before they explode and release their seeds – this is the kind of summer experience that set me on a path towards becoming a field biologist.

Two other pairs of students are gaining hands-on experience with plants here this summer: Christina Tran '11 and Danielle Good '11 are our Botanic Gardens interns, working with our staff to identify and remove invasives, mulch, water, transplant seedlings and cuttings, and generally get to know the plants indoors and out. They are also doing projects of their own – Christina is testing the lead-accumulating abilities of mustard plants grown in different soils, and Danielle is learning about plants that produce spices in preparation for this year's Greenhouse Light Show: *Spice of Life*.

New this year are two Farm Fellows, Samantha Lowe '10 and Tyler Blangiardo '09, planting and tending the student farm plots on the “North 40” and in the courtyard garden behind the greenhouses. We've had a couple of summer field trips to local farms, including a very inspiring trip to Christy Raymond's beautiful, organic White Barn Farm (Christy is the granddaughter of Liz Raymond '44, one of our most dedicated volunteers). Students from the Horticulture class, who had grown lettuces and herbs from seed and propagated garlic and scallions, were thrilled to add their plants to the farm plots. Next year the class will start more farm crops from seed in the greenhouses, strengthening connections between the fledgling farm and the college curriculum.

This fall brings two long-term projects to the Botanic Gardens. We will be part of a small network of botanic gardens across the U.S. establishing matching “climate change gardens” in a project managed by the Chicago Botanic Garden (whose President is a Wellesley alumna: Sophia Siskel '91). Also, we are working with Dave Jacke, author of “Edible Forest Gardens,” to develop an edible forest garden and a natives-only forest garden, for comparison. Both of these projects are full of possibilities for class research and student independent research projects, and both lend themselves to volunteer involvement. You'll hear more about these as they develop this year. I am also excited to welcome the first Dorothy Thorndike Intern. It's going to be a fun year!

Best wishes for a beautiful fall season,

Kristina Niovi Jones, Director
Wellesley College Botanic Gardens
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Botanic Gardens interns Danielle Good (left) and Christina Tran (right) check out the farm garden behind the greenhouses. See page 4 for story.

Bees in the Annex

by Heather Mattila

Assistant Professor, Biological Science Department

Animals that live in social groups often forage as a collective for resources that they then share. The coordination of foraging effort becomes particularly intriguing when large groups are faced with the challenge of executing an efficient search using individuals who have limited cognitive capacity, as occurs in colonies of social Hymenoptera (bees, ants, and wasps). Each day, without a leader or specific instructions, hundreds to millions of workers comb their colony's surroundings to discover new food resources, to check the availability resources that were visited previously, or to follow their nest mates' signals such as the famous waggle dance directing them to profitable food items. Honey bees in particular have evolved astonishingly complex recruitment systems in which workers are optimally allocated to the tasks needed in order to acquire more food.

My recent studies suggest that one way that a colony can enhance the productivity of its foraging effort is by increasing the genetic diversity of its work force through multiple mating by its queen.

Diverse colonies have higher rates of foraging, larger stores of food, and, ultimately, enjoy greater long-term growth and

reproduction than colonies that have limited genetic diversity. The goal of the summer experiment in the Annex greenhouse is to determine the importance of a genetically diverse social environment for galvanizing the foraging and communication activity of workers. In other words, is a worker more likely to visit a food resource and then advertise its presence to her nest mates if she is in a colony filled with a diverse assortment of workers of varied genetic background than if the colony were filled only with other members of her own immediate family? For a task such as foraging, the success of which relies heavily on building momentum among the collective through discovery, signaling, and recruitment, I hypothesize that a genetically diverse social environment is an important part of stimulating workers to focus on acquiring and sharing information about a newly available resource.

Students who worked in the greenhouse with Heather last summer: Morgan Carr-Markell '10, Jane Park '11, Annie Smith '11, April Yeaney '12 and Rachel Kery '12. Michael Smith from Princeton also worked there at the end of the summer. 



Dorothy's Internship

Dorothy would be delighted! Your generous outpouring of gifts given in memory of Dorothy Dudley Thorndike DS '75 will work to instill a love of plants in the next generation of students. In addition, her husband John and family are working with the Friends to continue this legacy by establishing a fund that would perpetually honor Dorothy's skills and devotion to horticulture by endowing a student internship in her name at the Wellesley College Botanic Gardens (WCBG). The first Thorndike internship has been underwritten and through further gifts the Friends of Horticulture hopes to grow the moneys enough to meet the internship endowment guidelines set by the College. By the time you read this newsletter, a Wellesley student will have been selected and will already be on the job.

The students participating in the Dorothy Thorndike WCBG Internship program will have a direct positive impact on the teaching mission. The student intern will:

- Be an important liaison between the WCBG and the student population at Wellesley, working to tailor programs and publicize events that will draw other students into botany and environmental studies.
- Work on interpretation of the plant collections and habitats, looking for creative ways to tell the stories of the plants and the animals that depend on them, so as to engage other students and the public. Dorothy was great at this, and we will look for intern candidates with her enthusiasm and creativity for infusing visitor experience with lively curiosity and scientific perception.
- Promote appreciation and understanding of the WCBG collections, increasing the possibilities for research projects and using the collections for teaching and exploring.
- Make a difference with plants—in her fellow students and in herself. As an environmental optometrist, she will provide tools for us to overcome our plant blindness.
- Be the latest link in a long chain of stewardship of Wellesley College's uniquely beautiful landscape.



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Memorial gifts for the Dorothy Thorndike Internship may be made to Wellesley College Friends of Horticulture. 

Wellesley Girls Can Farm

by Farm Fellows Samantha Lowe '10 and Tyler Blangiardo '09

All across campus, food is a huge topic of discussion. This trend moves beyond talk of peppermint stick pie and other traditional Wellesley favorites. Students today want to know how and where their food is sourced and to make sure that it meets green standards. For some, growing their own food is an option. Tyler Blangiardo and Samantha Lowe are two of lucky ones doing just here at Wellesley. While working the land this summer, they found time to blog – complete with video slideshows – about their summer farming experiences. (See sidebar for extract from blog.)

When asked about the Late Blight that this year ravaged potato and tomato crops up and down the east coast, Tyler and Samantha calmly report, “Actually, our tomatoes are pretty disease free; they’re just taking longer than usual to ripen.”

They are working on a Tanner presentation and hoping the Farm Fellowships will find funding to become permanent positions occupied by different students each year.

Our summer project was the brainchild of Jo Murphy '09 and Eliza Murphy '10, two sisters who came to Wellesley College from the distant land of Framingham, Massachusetts. Jo and Eliza worked on farms for years, most recently founding one right on campus. At their urging, the College arranged for them to farm a 30 by 50 feet plot of land at the community garden on Weston Road, a five minute walk from the college entrance nearest to the Ville (This is piece of College property often called the “North 40”. See article about WWI and WWII farms on page 5.). They also procured a smaller plot behind the Greenhouse and a collection of large growing pots called EarthBoxes (www.earthbox.com) on the Bates terrace. Jo and Eliza led a group of students in cultivating these plots, organically growing fruits, vegetables and herbs to sell to the Wellesley dining halls and El Table, a student-managed food coop in Founders Hall.

With Jo graduating and both sisters going to Colorado for the summer to do larger scale farming, they wanted other students to continue and expand their efforts. Thus the Farm Justice Fellowship was born. Jo solicited applications from the student body, selected two people, and secured funding from the Class of 1957 Green Fund and the Botanic Gardens. We, the 2009 Farm Fellows, are Tyler Blangiardo, an environmental studies major who just graduated in June and Samantha Lowe, a rising senior majoring in math. Neither of us had any previous farming experience, but with two weeks of training from Jo and Eliza and the generous assistance of the greenhouse staff, we had high hopes. We envisioned regular farmer’s markets on campus, involving local children in growing the food and perhaps starting to sell to the campus center cafeteria over the summer as well as donating to local shelters.

Most of these plans were thwarted by the fact that the sun did not appear until well into July. A man who has maintained a nearby community garden plot for 50 years told us that it has been the worst growing season in decades. We appreciated the overcast weather because it was more pleasant to work in, but it was less helpful in terms of generating produce. Few of the plants died but most did not grow as much as we’d hoped. After a month and a half, all we had to show for harvest was boxes upon boxes of lettuce and Swiss chard, both of which thrive in cool, damp environments.

Since this was not enough for a farmer’s market, we donated it to a food pantry in Cambridge and two shelters in Framingham. Since the weather has improved, the crops have looked much better. However, most still did not fruit in time to sell to students doing summer work before they left for the remainder of August. We hope to finally have that farmer’s market when the school year starts, and also to work with a student organization called Regeneration to raise awareness on campus for local, sustainable agriculture. 🌱



Samantha standing next to the 5 foot asparagus shoot at the North 40 plot.



Tyler planting seeds early in the season in farm plot behind greenhouses.



...and the lettuce grew and grew...



Samantha Lowe (left) and Tyler Blangiardo (right) about to harvest more Swiss chard.

15th July 2009 VISIT TO WHITE BARN FARM IN WRENTHAM, MA

From <http://wellesleygirlscanfarm.tumblr.com/> about their visit to the home and farm of WCFH volunteer Liz Raymond '44.

We, Professor Kristina Jones, some of the greenhouse staff and the greenhouse interns took a trip to the gorgeous home of Mary-Alice Ewing Raymond, who curiously goes by “Liz”. I thought that Liz was 60 judging by her appearance, energy, and articulateness. She’s 87.

I want to be this woman when I grow up.

Part of the Wellesley College class of 1944, Liz was born in this house. Her mother (Wellesley College class of 1912(!)) was born in this house as well. Liz married her childhood sweetheart (again, at this house) and they were together for 61 years after that. Now her granddaughter, Christy Raymond, runs an organic farm

on the family land (www.whitebarnfarm.org/). Liz is still heavily involved with Wellesley. In fact, she just won [Syrena Stackpole] award from the Alumnae Association in recognition of her “extraordinary loyalty and devotion to our alma matter”.

Christy’s assistant Christian Kantlehner showed us around the beautiful farm, and then gave us sweet potatoes and pop corn to grow on our plots at school. Liz and her daughter fed us an unbelievably delicious lunch composed mostly of food grown right there. Also, they give us the most sublime cream puffs in the history of time.

This is my favorite day of the summer so far. 🏡

To hear more about their activities visit Tyler and Samantha’s blog – wellesleygirlscanfarm.tumblr.com/
And be sure to check out other food stories on the College’s website:

www.wellesley.edu/PublicAffairs/Releases/2008/062608.html www.wellesley.edu/PublicAffairs/Releases/2009/031609.html

Wellesley College Farmers in World Wars I and II

During both World Wars, one of the many ways that Wellesley College faculty, staff and students responded to the call of service to their country was by farming. In response to President Wilson’s request for increased food production during World War I, Margaret Ferguson helped establish the All College War Farm staffed by the Wellesley Farmerettes. In the spring of 1918, farm work started on twenty acres of land along Weston Road, the plot known colloquially as the “North 40.” During its single season of operation, approximately six-hundred student volunteers were involved in the project. The Farmerettes had to contend with extensive work to amend poor soil, with weather issues, and with an old Ford truck dubbed “Henry” that took a fair share of beating. By the fall, the Farmerettes had harvested so much corn, beans, tomatoes and potatoes that the students and their advisors could not process it all. They sold as much as they could locally, and then carted the rest to Boston to be sold at bargain prices. But Margaret Ferguson felt it was worth all the effort, especially since it highlighted to the community and the Farmerettes themselves that, in the words of Henry Durant, “women can do the work.”

By contrast, the College’s farming efforts during World War II weren’t nearly as massive an undertaking. In response to the realities of rationing and food shortages, President Roosevelt’s “food for victory” program called for Americans to grow their own vegetables. Victory Gardens were established in homeowner’s yards and on public lands. When a local florist offered to teach classes in vegetable cultivation to Wellesley townspeople, several hundred people showed up, eager for instruction. the College did all it could to support the Victory Garden effort. In

1943, the College opened up its “North 40” property to townspeople who wanted to create vegetable plots there. Seedlings grown in the Ferguson Greenhouses were made available to home gardeners. Under the auspices of the Botany Department, twenty student volunteers created a demonstration vegetable garden and performed soil testing. Wellesley students also responded to a call for “unskilled but sturdy workers who are willing to work seven or eight hours a day, six days a week, weeding and packing vegetables and fruit” on farms nationwide. 🏡



Courtesy of Wellesley College Archives

Self-proclaimed “farmerettes” pose with botany professor Margaret Ferguson, fourth from the left, who supervised the WWI vegetable gardens.

Women of Botany *Continued from page 1*

students, resulting in lineages of faculty mentors & protégées. Under Hallowell's auspices, the Botany Department began cultivating a line of prominent botanists.

Clara Eaton Cummings came to Wellesley as a student in 1876 and continued on as a faculty member after her graduation, eventually becoming

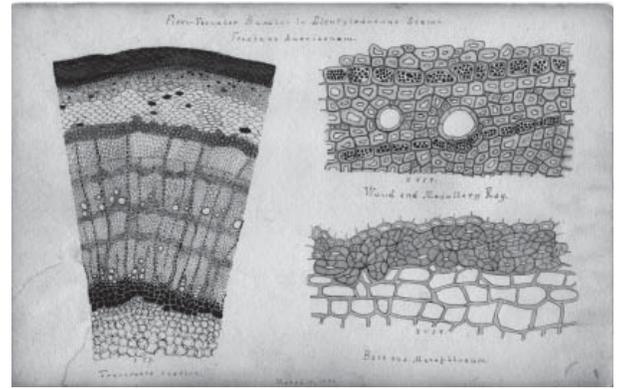
Professor of Cryptogamic

Botany. Cummings was internationally recognized for her contributions to lichenology. She wrote numerous scientific papers, and her work on lichens of Alaska and Labrador was an important addition to the systematics of that group. Cummings

was conservative in her categorization of specimens. Since she didn't leap to proclaim new species, other bryologists received credit for discoveries that she had made. Many lichens in Wellesley College's herbarium collection were hers, and now reside at the New York Botanic Gardens.

Margaret Clay Ferguson was Hallowell's most noted protégée. Upon her arrival at

Wellesley in 1888, Hallowell convinced her to major in botany and appointed her as an instructor in 1893. When Ferguson returned to the College after receiving a B.S. and Ph.D. from Cornell, Hallowell reappointed her to the faculty and in 1904 selected her as the next department head. Ferguson was a loyal protégée of her beloved mentor, singing her praises in person and in print and defending Hallowell's lack of publication. Ferguson continued Hallowell's tradition of department building. She designed the 1922 greenhouse complex, acquired funding for the outdoor botanic gardens, and added chemistry, physics and zoology as requirements for botany majors. Under Ferguson's tenure, Wellesley's Botany Department became one of the leading undergraduate plant science departments in the U.S. and she is reputed to have trained more woman botanists than any other scientist of the time. In addition to her teaching and administrative skills, Ferguson was a noted researcher as well as a skilled illustrator. Her landmark 1904 paper on *Pinus strobus* became a standard for plant life histories. In 1929 she was named the first woman president of the Botanical Society of America.



Fibro-Vascular Bundles in Dicotyledonous Stems.
Fraxinus Americanum (White Ash)

Left: Transverse Section. X 73.
Top right: Wood and Medullary Ray. X 438.
Bottom right: Bast and Mesophloem. X 438.
March 14, 1891 by Margaret Clay Ferguson

Harriet Creighton was mentored by Margaret Ferguson, who directed her to Ferguson's own alma mater, Cornell, for graduate work after her graduation from Wellesley in 1929. On her first day at Cornell, Creighton met Barbara McClintock, and scientific history was made. She and McClintock co-authored a paper in 1931 that provided the first conclusive evidence of the chromosomal basis of genetics. McClintock went on to receive the Nobel Prize in 1983 for her work in cytogenetics. Harriet Creighton returned to Wellesley in 1940 as professor of botany, rising through the ranks to become the Ruby F. H. Farwell Professor

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Creighton Education Garden

As a tribute to Miss Creighton, the Harriet B. Creighton Botanic Gardens Fund was established in summer 2005 to stabilize the embankment by the greenhouses with a new stone wall and to develop an educational garden. Starting this dream toward reality was a generous lead gift by Gertrude K. Dever, a long time supporter of horticulture at Wellesley.

While in the WAVES during WWII, Gert and Harriet struck up a lifelong friendship. They were both teachers who were passionate about their students and education. After retirement, Gert and Harriet gardened and traveled together for many years.

When Harriet died, Gert found comfort in carrying out some projects at Wellesley College that she knew Harriet would have approved of – the Education Garden was one of those projects. Last spring at the age of 97, Gert Dever passed away.

We were delighted when Gert would visit and see the garden's seasonal progress, and when she could not visit in person, she took pleasure in hearing about the activities of the Friends of Horticulture and the Botanic Gardens.

Now after three growing seasons, the garden is thriving and has fast become a place where faculty, staff, and students frequently gather. WCFH hopes to formalize a teaching area in the garden as a grateful acknowledgement of Gertrude Dever's steady advocacy for this special place. We envision a destination where faculty and students come to review collected nature samples, begin or end field trips, talk about plants and science, or simply sit and enjoy the garden.

Teaching and Wellesley were so important to both Harriet and Gert, that they would definitely approve of enriching this special area for the College family and our many visitors.

Thanks for Being Friends



Mary Allen listens to Harriet Creighton at her 90th birthday party in the Visitor Center

This summer with many retirements around campus, WCFH celebrated the retirements of two long-time supporters and Steering Committee members – Rosamond White, Administrative Director of the Science Center, and Mary Allen, out-going Academic Director of the Science Center and *Jean Glasscock Professor of Biological Sciences*. Both Roz and Mary have been instrumental in the development of WCFH over our twenty-five year history. We are sincerely thankful for their steady guidance and shared wisdom. And wish them happy planting as they grow into retirement. 🏡



Roz White celebrates the Creighton Education Garden with Gertrude Dever. (See sidebar on page 8.)

Greenhouse Palms

by Gail Kahn

Palms (Arecaceae) are a group of monocots that bear woody tissue, with habits that are tree-like or shrub-like. Although they grow in a variety of habitats, the greatest diversity of palm species is found in tropical forest regions. The most striking characteristic of a palm is its leaves, which may be entire (unsegmented), feather shaped (pinnate), or fan shaped (palmate).

Palms have always been part of the College greenery providing beauty, education, and even religious ritual items over the years. Wellesley's first building, College Hall, contained a planting area in its center atrium whose changing horticultural display included palms. College Hall corridors were the students' winter walking zones, serving the same restorative purpose that a winter visit to Ferguson Greenhouses does.

Early photos of the Ferguson Greenhouses show palms in the Tropic House, in much the same places as they are today. The silver thatch palm (*Coccothrinax argentea*) near the door to the Seasonal Display House could be as much as 75-100 years old. Its distinctive feature is a mat on its trunk composed of fibers from old leaf bases. Horticulturist lore passed down from Joe Jennings

and Del Nickerson is that the largest of the Tropic House palms are descendants of those in College Hall. Unfortunately, there are no written records to back up this assertion.

One of the realities of greenhouse life is that specimens can grow too tall for their lodgings, and the palm collection is no exception. A species of *Veitchia* behind the Tropic House bench has recently been cut for this reason, though the seed it produced still remains on the trunk for collection and propagation. Few single-trunked palm species will naturally branch, so removing the growing point results in killing the plant. At times the horticulturists have moved overly large palms to areas of the Science Center rather than destroying them. On one memorable occasion, a large fishtail palm



College Hall's Central Atrium filled with palms

Wellesley College Archives

in the Science Center toppled onto one of the administrative staff.

In order to add new stock to the greenhouse palm collection, an assortment of over a dozen new palms has recently been purchased. These new palms are slow growing, and many send up multiple leaders, making them ideal for greenhouse cultivation. Come and visit them in person or go online to see a listing on the palms in the Ferguson Greenhouse collection. www.wellesley.edu/WCFH

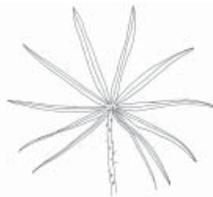
Palm Illustrations: *Calyptrocalyx albertsiana*, *Licuala grandis*, *Chamaerops humilis* by Rebecca Saunders '61; *Caryote uren*, *Hyophorbe lagenicaulis* by Carol Govan 🏡



Calyptrocalyx albertsiana



Licuala grandis



Chamaerops humilis



Caryote uren



Hyophorbe lagenicaulis

Women of Botany *Continued from page 6*

of Botany and director of the Botanic Gardens. A dedicated researcher and excellent teacher, she was committed to botanical education and was instrumental in founding the Friends of Horticulture. Creighton loved Wellesley and was proud to name herself a botanist in an era when many scientists disdained the word as old fashioned. "We have to change the climate of opinion concerning botany. We are students of plants and plants are important in the modern world. Botanists of the World, Unite!"

Legacy of Pedagogy

Excellence in education has been a hallmark of Wellesley throughout the years. Not all the Botany faculty women were prominent scientists, but many were skilled teachers, inspiring their students and earning their heartfelt affection.

Grace Cooley enrolled at Wellesley in 1881 after several years of teaching high school, and held a faculty position at the College for 21 years. Cooley made important early collections of vascular plants and lichens. Her trip with Clara Cummings to Alaska resulted in her discovery in the alpine meadows above Juneau a new species of buttercup that bears her name:



Cooley's buttercup, *Ranunculus cooleyae*. She was not especially prolific in publishing and never rose beyond assistant professor. She returned to teaching in public schools in 1904, where

the welfare of women schoolteachers was a particular concern to her.

Mary Bliss, who was trained as a teacher by Margaret Ferguson, sought throughout her career to live up to Ferguson's standards and was thrilled to be promoted to assistant professor in 1916. "What I am as a scholar and a teacher is largely the result of your example and influence," she told Ferguson. WCFH Volunteer Emerita Eleanor Viens '33 recalled her botany class with Miss Bliss: planting a student research

garden in the arboretum, identifying specimens, and being given a feast of strawberries following the final exam.

Botanist **Alice Ottley** was Margaret Ferguson's niece. Like her aunt, she received a degree from



Cornell in 1904, and went on to acquire an M.A. from Wellesley and Ph.D. from the University of California. Afterward, Ottley spent her entire academic career at

Wellesley. She and her aunt worked on research projects together, and shared a home near the College. They also traveled on collecting expeditions to the West Coast and Australia. In 1942 Ottley inherited the direction of the greenhouses and botanic gardens.

Mabel A. Stone spent nearly 20 years at Wellesley as a student and Botany faculty member. After her early death in 1923, two of her former students proposed a project in her memory: "We agree that the only fitting memorial would be a living one that would grow from year to year and that could be enjoyed by the entire college." Margaret Ferguson enthusiastically took up their cause, praising Stone's "deep interest in her chosen field of study and devotion to her work as a teacher." Wellesley College alumnae raised sufficient funds to

establish the Mabel A. Stone Cryptogam House in the Ferguson Greenhouses.

A Legacy of Botanical Resource

From the earliest days of the College when the Durants made their home conservatory available to the Botany Department, Wellesley students have had access to greenhouses for their studies. Margaret Ferguson was among the Botany faculty members who conceived of greenhouses as a living laboratory attached to classroom space. The greenhouse that was part of the 1907 Botany Annex to Dower House first served that purpose, but Ferguson's wishes for a "laboratory under glass" came to full fruition with the complex of greenhouses built on Observatory Hill in 1922. In 1946 they were named the Ferguson Greenhouses in recognition of her leadership and vision.

The Botany Department also desired a campus area set aside for a botanical collection and outdoor laboratory. It was Margaret Ferguson's considerable scientific reputation and skill as a fundraiser that persuaded the Trustees in 1920 to designate a portion of the College grounds for the development of gardens. Two large endowments from Mrs. Robert Shaw in memory of her father, Horatio Hollis Hunnewell, and from Mr. and Mrs. Cordenio Severance in memory of their daughter, Alexandra were used to establish and maintain two contiguous gardens named the Hunnewell Arboretum and the

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Helen Davis sitting by the newly created stream and bridge in the Alexandra Botanic Gardens.

Programs

- All classes are held in the WCBG Visitor Center unless otherwise noted.
- Materials Lists may be found on our website on the Courses page.
- For more information on the programs and courses, visit www.wellesley.edu/WCFH or contact WCFH at 781-283-3094 to be sent the 2009-2010 Program Brochure.
- During the academic year when the College is in session, parking on campus is restricted. Use of the Davis Parking Garage or carpooling from off-campus is strongly encouraged.

Hands-On: Plant Ecology

Explore key concepts in plant ecology with environmental scientist **Katie Alt Griffith**. Start with a lecture inside and then move outdoors for observational studies and other structured field activities. Note: the botanic gardens contain stairs and uneven surfaces.

Sat., Sun., Mon., Oct. 10-12

9:00 a.m. – 12:00 p.m. HOR 10 020

Members \$75 / Non-Members \$90

Watercolor for Beginners

Explore the charms of this free flowing medium with **Nan Rumpf**. Experiment with washes, glazes, working wet into wet, developing form through value, and creating interesting shapes. Practice brush strokes, lifting, and color mixing.

4 Saturdays, Oct. 24, 31; Nov. 14, 21

1:00 – 4:00 p.m. WCC 10 101

Members \$125 / Non-Members \$160

4 Saturdays, Feb. 27; Mar. 6, 13, 20

1:00 – 4:00 p.m. WCC 10 102

Members \$125 / Non-Members \$160

Elements of Drawing: Getting it Right

Are you a beginner or an advanced artist in need of a foundational approach to drawing? Learn to represent plants in this class with **Jeanne Kunze** is designed to produce accurate observation and definition of shape — both essential to artistic renderings, botanical or not.

Sat., Oct. 17, 24, 31; Nov. 7, 14

9:30 a.m. – 12:30 p.m. BAC 10 121

Members \$225 / Non-Members \$275

The Gardens of Paris

Maureen Bovet, Wellesley DS'92, shows us well-known historic parks — as well as several exciting new Paris gardens.

Monday, Oct. 19, 2009 HOR 10 030

2:00 p.m. tea, 2:30 p.m. lecture

Members \$10 / Non-Members \$13

Conifers for Urban Sites

Mount Auburn Cemetery's Horticultural Curator **Dennis Collins** will go outside to use the Arnold Arboretum's vast collection of conifers to show those suitable for smaller spaces. LOCATION: Bussey Street Gate, Arnold Arboretum, Jamaica Plain

Saturday, Nov. 7, 2009

10:00 a.m. – 12:30 p.m. HOR 10 050

Members \$30 / Non-Members \$35

Greening Up Your House: Growing Indoor Plants

WCBG Senior Greenhouse Horticulturist, **Tony Antonucci** shows how your houseplants can be grown more safely without the use of pesticides or chemical fertilizers. Get your hands dirty and discover proper techniques for repotting, dividing, and pruning pot bound plants with their masses of tangled roots. **Special Topic:** learn various methods to successfully create your own indoor kitchen garden.

2 Wed. evenings, Oct. 21, 28

7:00 p.m. – 9:00 p.m. HOR 10 040

Members \$36 / Non-Members \$45

Eat Your View: Native Edible Plants for Your Gardens

New England Wild Flower Society's Botanic Garden Director, **Scott LaFleur** discusses using ornamental plants and edible plants in a design that blurs the lines between a beautiful and a functional garden.

Monday, Jan. 25, 2010 HOR 10 060

10:00 a.m. coffee; 10:30 a.m. program

Members \$15 / Non-Members \$18

Constructing an Environmentally Engineered Home and Landscape

Marie Stella highlights the integrated process of building an energy efficient, sustainable house and seamlessly blending it into a responsibly managed landscape including rain gardens, buffer zones, vegetated roof, and green architecture. LOCATION: Wang Campus Center, Wellesley College

Monday, Mar. 22, 2010 HOR 10 070

10:30 a.m. coffee; 11:00 a.m. program

Members \$15 / Non-Members \$18

Pruning Basics

WCBG Senior Gardens Horticulturist **Tricia Diggins** teaches you to make cutting edge decisions about nearly every pruning job from house plants to large trees outdoors. The Arboretum can be damp under foot in early spring. Please dress appropriately for the weather.

Saturday, Apr. 3, 2010

9:00 a.m. – 12:00 p.m. HOR 10 080

Members \$20 / Non-Members \$25

More Classes of Interest...

More Details Online and in Program Brochure or Contact WCFH Office.

It's A Small World— Macro-Digital Photography

*Zoom in ...
and discover Macro-Photography.*

Complete list of requirements will be available online or contact WCFH office.

Friday, Mar. 12, 2010

Snow Date: Friday, Mar. 19, 2010

10:00 a.m. – 4:00 p.m.

smART Business: Creative Management For Artists

*It's a New Year!
Get Inspired and Get Organized!*

3 Wednesdays, Jan. 6, 13, 20, 2010

Snow Date: Wednesday, Jan. 27

10:00 a.m. – 3:00 p.m.

Winter Tree Observations

Gymnosperms: **Evergreen Trees**

Saturday, January 30, 2010

10:00 a.m.–2:30 p.m.

Gymnosperms: **Deciduous Trees**

Saturday, February 6, 2010

10:00 a.m.–2:30 p.m.

Drawing Flowers and More

Friday, Jan. 8 – Sunday, Jan. 10, 2010

Snow Date: Monday, Jan. 11

9:30 a.m. – 3:30 p.m.

Veils of Color: Egg Wash

3 Fridays, Jan. 15, 22, 29, 2010

Snow Date: Friday, Feb. 5

9:30 a.m. – 3:30 p.m.

History of Botanical Art

Mon., Feb. 15 – Wed., Feb. 17, 2010

Snow Date: Friday, Feb. 19

9:00 a.m. – 12:00 p.m.

Elements of Drawing: Value and Form

Sat., Feb. 27; Mar. 6, 13, 20, 27, 2010

Snow date: Saturday, Apr. 3

9:30 a.m. – 12:30 p.m.

ON THE ROAD

with the Friends of Horticulture

Wednesday, June 23, 2010

Watch WCFH newsletters and website for the announcement of a one-day garden tour in nearby New England. Or contact the Friends' Office to be sent details as they are available.



Women of Botany *Continued from page 8*

Alexandra Botanic Garden. The principle aim of the Botany Department was to maintain the natural beauty of these areas, to reintroduce native wildflowers and shrubs, and to plant a selection of climate-hardy specimens for enjoyment and study. Along with Margaret Ferguson, assistant professor of botany **Helen Davis** was the logical candidate to design and establish these gardens. Graduating from Wellesley in 1912, Davis was immediately hired by the department as an assistant in botany and curator of the Botany Museum. She went on to receive a M.A. and a Ph.D. in landscape gardening and plant culture, returning to Wellesley to pursue her academic career. A member of the Botany faculty for 35 years, Davis eventually became Director of the Botanic Gardens in 1930. An enthusiastic traveler, she used her sabbatical year in 1934-35 to take a round-the-world trip, visiting gardens in Asia, India, Egypt, and Europe. She looked upon gardening as “a bond between people of different tastes and cultures, and a key to understanding between them.”

In 1925, when work began in earnest on Wellesley’s outdoor gardens, Davis drew up plans, researched nursery catalogues,

and started placing orders. Throughout both gardens, Davis’s composition reveals the influences of both Frederick Olmsted and the Picturesque style of garden design. Ferguson and Davis grouped plants by families, following Engler and Prantl’s system of plant classification. “The entire scheme is bound together in its design by the little brook with its cascade and series of pools,” they concluded. In 1925 the *Christian Monitor* reported, “A new botanical garden, unlike that of any other college, is to be ready to serve as an auxiliary experiment station for Wellesley students of botany this fall.”

A Legacy of Nurture and Cultivation

In November of 1927, Wellesley College’s Department of Botany gathered to celebrate spacious new quarters atop Observatory Hill, attached to the five-year-old greenhouse complex. (Margaret Ferguson’s insistence on the direct connection of building to greenhouses had given the architects fits, but her pedagogical vision had won over their pragmatic objections. See WCFH News Spring 2006) The department’s new edifice was called simply the Botany Building; the zoology tower would not be added until 1930, and it would not be named Sage Hall until 1931.

After nearly 100 years as divided disciplines, in the 1960’s Botany and Zoology were brought back together into the single entity of the Department of Biological Sciences --- closer to Durant’s original vision when appointing Susan Hallowell as Chair of Natural History. Henry Durant’s vision of a female professoriate has been moderated to today’s gender-blind approach in faculty appointments, reflecting the change in societal support for women’s higher education and academic employment. Susan Hallowell’s focus on research has continued throughout the years. WCFH regularly supports the efforts of Wellesley students in independent scientific inquiry.

In the mid-20th century, organismal-level botany was eclipsed by the rise of molecular biology, microbiology and the ensuing laboratory-based approach to research. Regardless, the College along with its faculty and students continued to treasure the teaching resource of the Botanic Gardens. Today there is a resurgence of interest in botany, at Wellesley and beyond, especially in terms of how plants work at the cellular and molecular levels, how plants support ecosystem functions, and how they can be grown sustainably in order to feed the world.

The more all of us at the Wellesley College Botanic Gardens learn about these remarkable women who shaped plant science at Wellesley, the more in awe of them we become. The discovery that Susan Hallowell introduced the basics of botanical art to her botany students, an area that WCFH has actively pursued for the last 6 years, is only the latest revelation. From compost tea applications in the greenhouses to Margaret Ferguson’s assertion that plants will be the ultimate solution to the world’s energy problems, to Harriet Creighton’s insistence on the central importance of botany, we’re always rediscovering the relevance of these women’s teachings. As WCBG Director Kristina Jones has said, “Every time I think I’ve come up with a really good idea, I find that Margaret Ferguson has been there before me.” It simply serves to underscore that while science keeps progressing, wisdom is truly timeless.

Botany and Zoology

The mentor-protégée system at the College sometimes led to squabbles between departments over resources and students. One of the most rancorous and long-enduring was that between the departments of Botany and Zoology. It began in the early years of the College, when Zoology professor Mary Alice Willcox tried unsuccessfully to rename her department “Biology” and incorporate plant study. Even though this represented a remarkable amount of foresight on Willcox’s part (the departments merged, becoming the Department of Biological Sciences in the 1960’s), the action earned the wrath of Susan Hallowell. The faculty of the Botany Department stopped speaking to Zoology faculty. Interdepartmental discord became institutionalized; even 30 years after this incident, a Zoology instructor was advised not to socialize with Botany faculty. In Sage Hall the Botany and Zoology towers had different connectors for their microscopes so that the equipment could not possibly be shared. The most long-enduring echo of the squabble was in a name. When the Alexandra Botanic Garden was first designed in the 1920’s, the large pond at the end of the brook was designated the Lower Pool. After lotuses were planted there, it became known as Lotus Pool. The lotuses eventually failed to thrive, and the pond was renamed Paramecium Pond in the 1950’s or 60’s by the students who collected microorganisms there. Harriet Creighton deemed this name change “a triumph of Zoology over Botany.” 

NAME: _____
 ADDRESS: _____
 PHONE: Home: _____ Cell: _____
 EMAIL: _____

If applicable, Wellesley College Class _____ CBA student ? _____
 _____ I would like information on volunteering at WCFH.
 Mail this completed form and your payment to :
 Wellesley College Friends of Horticulture
 106 Central Street, Wellesley, MA 02481-8203

COURSE REGISTRATION

See programs and classes information and cancellation policy

Course ID#	Class title	Fee
_____	_____	_____
_____	_____	_____
_____	_____	_____

SEPARATE CHECK FOR PROGRAM FEES \$ _____
 made payable to: Wellesley College Friends of Horticulture
 WCFH cannot accept credit cards for course fees. Checks or cash only please.

MEMBERSHIP IN WCFH

(for the academic year July 2009-June 2010)

Membership Gift Payment Type (circle one):

Credit Card: MasterCard / Visa / AMEX

Account number: _____

Exp. date: Month : _____ Year : _____

or **SEPARATE CHECK FOR MEMBERSHIP GIFT**
 made payable to *Wellesley College Friends of Horticulture*

My membership gift for the current academic year \$ _____

Membership Levels

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

LOGO ITEMS FOR SALE

WCFH Tote Bags _____ at \$15h = \$ _____
 WCBG / WCFH Mugs _____ Pair(s) of mugs at \$15 = \$ _____
 WCBG Recycled Fleece Vest _____
 _____ Women's Medium \$40 each = \$ _____
 _____ Women's Large \$40 each = \$ _____
 _____ Men's Large \$40 each = \$ _____
 _____ Men's Extra-Large \$40 each = \$ _____
 Shipping / Handling at \$5 for each vest, tote, pair of mugs. = \$ _____

SEPARATE CHECK FOR LOGO ITEMS. **TOTAL = \$ _____**
 made payable to *Wellesley College Friends of Horticulture*
 WCFH cannot accept credit cards for merchandise. Checks or cash only please.

Logo Items for Sale



WCFH Travel Tote Bag \$15.
 Black polyester bag approx. 14" x 14" x 3" with web trim, front pocket with bright green Wellesley College Friends of Horticulture logo, mesh side pocket, flat bottom, and zip top closures.

WCBG / WCFH Mug 2 for \$15.
 Terracotta colored glaze on flower pot-shaped 14 oz. mug, dark green logo of Wellesley College Botanic Gardens on one side and Wellesley College Friends of Horticulture logo on reverse.

WCBG Recycled Fleece Vest..... \$40.
 Women's and Men's vests with full zipper front and lower security pockets 75% recycled polyester/25% polyester, decorative flatlock detailing at side front seam lines on women's vest and around front and back armholes on men's vest. Bright green logo of Wellesley College Botanic Gardens on left shoulder.

Women's Medium	Chest 36-38"	Hip 37-39"
Women's Large	Chest 39-41"	Hip 40-42"
Men's Large	Chest 43-46"	Hip 41-44"
Men's Extra-Large	Chest 47-50"	Hip 45-48"

Other sizes by special order and pricing.

To order your logo items, please use the form on left or go on-line to www.wellesley.edu/WCFH and print a logo merchandise order form.

Volunteer with the Friends



Wellesley College Botanic Gardens (WCBG) depends on its many Friends of Horticulture volunteers to assist the WCBG in gardening tasks, host campus events, lead tours, work on special research projects, and share their enthusiasm with other plant lovers.

Volunteer Meetings are the third Monday of the month.

2009 - 2010 VOLUNTEER TRAINING

Mondays 9:30 a.m. – 12:00 p.m.

GREENHOUSES:

Oct 26; Nov 2, 9, 16, 2009 Feb 1, 8, 2010

ARBORETUM:

Mar 20; Apr 5, 12, 26 May 17, 24, 2010

For more information about membership and volunteering, contact Friends of Horticulture.

781-283-3094

horticulture@wellesley.edu

SEE WHAT PLANTS ARE ... ALL ABOUT! Sundays, 1:30-4:00 p.m.

All About is a free series of family explorations with a multi-faceted approach combining science, close observation and art. Each independent session focuses on a particular feature or type of plant. This multi-age educational experience designed to appeal to all ages from tots to grandparents is an interactive, informal way to become familiar with botanical concepts through many learning pathways.

All children must be accompanied by an adult. However, even without a child to bring along, adults are encouraged to come and spend an engaging afternoon immersed in the natural world of the Botanic Gardens. Dress appropriately for going outdoors into the Botanic Gardens.



All About is taught by Wellesley College Visiting Scholar Katie Alt Griffith, a naturalist and environmental scientist with a strong interest in family education.

FREE, pre-registration by prior Friday at noon is required.

*Space is limited. Call 781-283-3094 or
email horticulture@wellesley.edu.*

Sunday, Oct. 25 Carnivorous and Parasitic Plants

Get up close and personal with some of the most unusual plants on earth!

Sunday, Nov. 22 Plants Dinosaurs Ate

We'll visit some greenhouse plants that would have been very familiar to these creatures.

Sunday, Mar. 21 Cacti and Desert Succulents

In the greenhouses we'll explore a desert plant's strategy for coping with its environment.

Sunday, Apr. 21 Seed Dispersal

We'll look at seeds of all sorts and discover how they move away from the mother plant.

Sunday, May 16 Flower Shapes and Colors

We'll explore how a flower's shape and color attracts the right pollinator for the plant.

GREENHOUSE KIDS' TIME

Mondays, 1:00-4:00 p.m.

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 and 4 p.m. to share the warmth and wonders of the greenhouses.

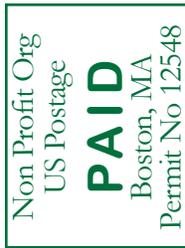


December 28, 2009 (Winter Vacation Week)

January 18, 2010 (Martin Luther King, Jr. Day)

February 15, 2010 (Presidents' Day)

FREE. All children must be accompanied by an adult.



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



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