



UNIVERSITY of CALIFORNIA
**BOTANICAL
GARDEN**

Volume 25, Number 1

Published by the UNIVERSITY OF CALIFORNIA BOTANICAL GARDEN at Berkeley

Winter 2000

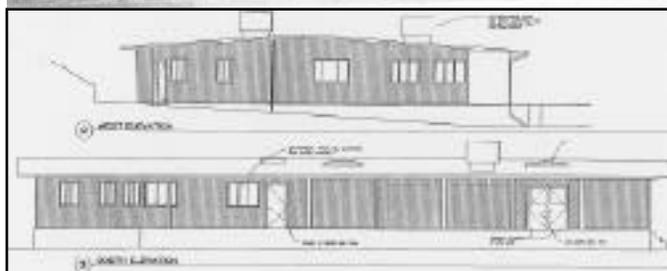
DIRECTOR'S COLUMN

Center for the Study of Plant Conservation

The Garden enters the twenty-first century with an exciting new role in research on plant conservation sponsored by the University of California. Research will focus on plants from Mediterranean-type climate regions—in particular, the quintessentially California bioregion described in *The Jepson Manual* as the California Floristic Province. Encompassing the area west of the Sierra Nevada Crest, extending into southwestern Oregon and northern Baja California, this bioregion is familiar to us through its defining feature of cool, wet winters, and hot, dry summers. To conduct research, the Garden will begin construction this winter of the Center for the Study of Plant Conservation, and next summer, we will erect associated greenhouses. Why make the study of the Mediterranean-type climate a keynote for the new century?

In five areas within earth's temperate latitudes, Mediterranean-type climates are caused by cold water upwelling along the western coast. As the summers are dry in these climatic regions, plants grow mainly during the cool, winter season, whereas plants in the world's other bioregions have adapted to grow during the warm season. As a result, plants in regions with Mediterranean-type climates share many similarities. For example, most montane regions in the northern hemisphere share common plant species or genera, and almost all are perennial.

The coastlines that make possible this distinctive bioregion will, however, experience enormous population pressures over the next 50 years. This year, the global human population reached 6 billion, and the United Nations projects that over the next 50 years, we may add nearly 4 billion more people. Two-thirds of the world's human population now lives within 100 miles of an ocean, inland sea, or freshwater lake, while fourteen of the world's fifteen largest megacities



Formerly managed by the Department of Environmental Health and Safety, the building on Centennial Drive to be converted into the Center for the Study of Plant Conservation was known as the Strawberry Canyon Chemical Facility. The University is sponsoring the transformation of the building into the Garden research laboratories.

under “moderate” to “high” pressure from human development, Mediterranean-type bioregions will experience direct—potentially traumatic—impact from our activities.

Despite the risks, Mediterranean-type bioregions have not thus far been targeted for protection. Unlike rainforests (which seem exotic and charismatic due to distance), we experience Mediterranean-type bioregions as familiar, even mundane. There is no “Save the Mediterranean-Type Climate Zones” organization. We don't even have a “Mediterranean-Type Climate Zones Action Network.” Yet the biota of these regions is no less special than those of the rainforest.

To lead in assessing the risks to biodiversity in Mediterranean-type bioregions and to develop conservation strategies, the Garden will begin by building the Center for the Study of Plant Conservation. The Center's core of

a support area for large equipment, and a computer lab. In addition, the Center will house a plant growth facility, including growth chambers, a headhouse for potting and harvesting experiments, an outdoor research garden and research greenhouses featuring computerized climate control and monitoring. As studies repeatedly show how social interaction fosters intellectual creativity, the entire Center will be designed to create opportunities for intellectual exchanges among scientists. There will be offices for nine resident and visiting scholars and students, a conference room, and a lunch room.

This environment will be especially crucial to accommodate two kinds of research—basic research, driven by intellectual curiosity, and applied research, directed toward conserving the biodiversity of Mediterranean-type bioregions. The scientific enterprise thrives best when scientists pursue basic and applied research simultaneously. Basic science can, for example, yield unforeseen dividends for applied science—as illustrated by our research on lupine populations at the Bodega Marine Reserve. The dramatic and rapid changes in shrub density suggests that seed consumption by deer mice plays an important role in the population dynamics of these shrubs. Recently, however, when we expanded our research to the lupine populations at the Lanphere Dunes Unit of the Humboldt Bay National Wildlife Refuge, we learned that lupines had become invasive weeds. Introduced at the turn of the century to stabilize coastal sand dunes, they now over-run the diverse, attractive native dune mat vegetation. Since insights from our Bodega Reserve research points to the importance of deer mouse feeding behavior on lupine populations, our basic science research help us to understand the invasive lupines of the Lanphere-Christian Reserve. To test this hypothesis, we are currently running experiments that will inform future management decisions.

The Garden's Center for the Study of Plant Conservation may ultimately develop many bioregional management

strategies for Mediterranean-type climate. In the past, conservation efforts tended to protect small patches of land to save particular target species, but these preserves have often not proved sustainable. For example, biotic communities change through time, often in a relatively predictable sequence called ecological succession. When a target species thrives only in one stage, it becomes vulnerable to disturbances that affect the preserve, whether they are as minor as a tree's falling or as major as a fire. After a disturbance the ecological succession is reset, and the target species must migrate to other patches at the optimal stage for its survival. Yet if a preserve has become an island in an uninhabitable urban or intensive agricultural matrix, opportunities for the migration of the target species suffer. Moreover, such small preserves are unusually vulnerable to changes outside the preserve, such as invasive species or reduced air or water quality.

Further research is needed to improve management strategies, prompting biologists and managers to join with other professionals to attain a more complex goal: bioregional management of biodiversity. Within this context, scientists in the twenty-first century will include humans and our activities within the natural world, thus enabling us to consider and manage for the integrated effect of our activities upon biodiversity.

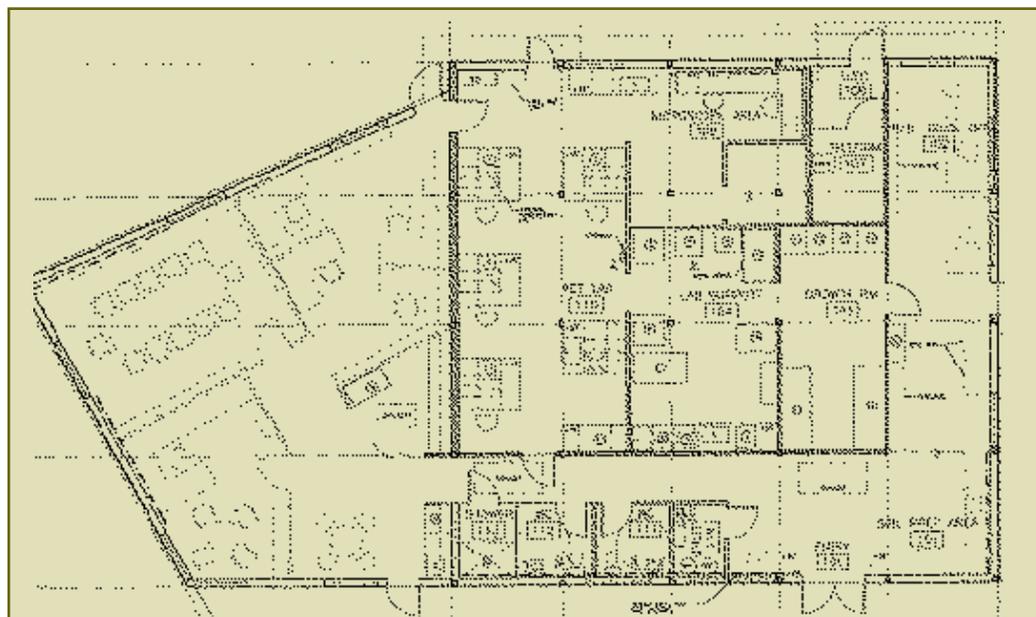
Living in the Bay Area, we are acutely aware of the complexities and trade-offs inherent in preserving biodiversity, while accommodating human needs. The Garden's Center for the Study of Plant Conservation will address these issues by taking the following steps:

- 1) forming an international network of botanical gardens and arboreta to coordinate research on managing the biota of Mediterranean-type regions;
- 2) facilitating and participating in interactions among the numerous parties who affect and benefit from these bioregions;
- 3) publicizing the value of these regions and the risks they face; and

4) educating the public about how to manage these regions to preserve biodiversity, while accommodating the inevitable human growth.

In the meantime, the Garden looks forward to building the Center for the Study of Plant Conservation to meet the new challenges of preserving the biodiversity of our own Mediterranean-Type Bioregion—we invite you to join us in watching the construction of the new building!

—Ellen Simms, Director



More Renovations at the Garden

Lead Building Maintenance Worker Gerald Ford recently completed the renovations to the Garden's carpentry workshop in the corporate yard. The workshop now has a high roof designed to allow better conditions for working with longer pieces of wood. The 30 year old shingle roof was a particular challenge Gerald notes!

The renovated workshop is the first part of a plan to upgrade the corporate yard. Future plans include: upgrading the electrical system, a major drainage project designed to divert rain water run-off away from the Mexican and Central American area, the addition of storage units and relocation of the staff lunchroom to the Barn.

The renovation to the carpentry workshop in the yard are now complete. (photos on this page by Candice Schott and Janet Williams)



Built in the 1930s, the Desert-Rainforest House is slated for demolition this winter as part of the University's campus-wide deferred maintenance program. A new greenhouse will be built on the same foundation footprint as the current greenhouse. Interestingly enough, this exact spot was the site of the cowshed when the Garden was a dairy farm.

As of press time, we are planning to build a temporary structure adjacent to the parking lot to house the Desert Collection during construction of the replacement house. The construction is due to begin in the spring.



The long term renovation of African Hill project has made great strides with horticulturist Lawrence Lee overseeing the planting of some new accessions.

Plant accessions had become so hybridized and weedy that they had to be removed from the African section. Rocks are being reset to accommodate new plantings. In the future a variety of succulents, bulbs, shrubs and annuals will be planted to demonstrate the amazing diversity of South African flora.

—Janet Williams



While beautiful, the South African Babiana (left) had become so hybridized that they had to be removed.

Above, part of a newly planted African Hill garden bed showing the centerpiece the *Aloeplicatilis* from South Africa. This was originally in the bed and removed during reconstruction and then replaced. Overall, the bed contains plants from winter rainfall areas of South Africa which are highly adaptable to the Californian climate. Other plants included in this new bed are species *Pelargoniums*, new accessions of the Babiana and other unusual bulbs such as *Gethyllis* species.

GARDEN NOTES

Congratulations to Garden Faculty Advisory Committee member **Nan Crystal Arens**, who received a 1999 Hellman Family Research Grant, established by Warren Hellman to help junior faculty at a crucial stage in their careers.

Distinguished visitors to the Garden recently include:

- Dr. Eric Hágsater of the Herbario AMO in Mexico City (herbarium of the Asociación Mexicana de Orquideología) visited the Garden August 12, 1999. He was able to identify several orchids in the genera *Epidendrum* and *Encyclia*.
- Dr. Wolfgang Bopp, Curator of the newly developing National Botanic Garden of Wales visited October 13. Dr. Bopp was very interested in our Mediterranean collections, as that is the theme of the new garden in Wales. They have built an enormous glass house in which to showcase plants from the five Mediterranean climates areas of the world.
- Dr. Yuan T. Lee, Professor of Chemistry emeritus at UC Berkeley, visited the Garden October 29 and met with Curator **Holly Forbes**. He is interested in developing a conservation component at a proposed botanical garden in Taiwan.

Faculty Curator **Dr. Robert Ornduff** attended the 10th anniversary celebration of the Garden Conservancy in Charleston, South Carolina in October.

Horticulturist **Judith Finn** attended a Pest Management Conference in San Rafael presented by UC Cooperative extension on October 15, "Managing New Pests by IPM Principles." This included some very worrisome problems that are challenging local arborists such as the new epidemic of Oak Bark Beetles and Ambrosia Beetles that are threatening our California Live Oaks (*Quercus agrifolia*), Red Gum Psyllid Lerp, which is killing *Eucalyptus*, Bronze Birch Borer, and the progression of fire ants up the coast ("Them").

Horticulturists **Eric Schulz** and **Peter Klement** attended the regional AABGA meeting at the Getty Center in Los Angeles. They attended the talks by the building architect, site architect, and garden designer. Additional topics included wildlife as garden hazards and methods to cope with wildlife problems as well as fire safety and irrigation.

Curator Holly Forbes attended the *Ex Situ Plant Conservation Symposium: Strategies for Survival* hosted by the Chicago Botanic Garden in September. *Ex situ* refers to efforts that occur "off-site" or "out of habitat." These *ex situ* research efforts are not meant to replace, but rather support, in-habitat conservation efforts. Excellent talks were

given on topics of resources for restoration efforts, botanical networks, research on plant genetics, seed research, and related subjects. Participants attended from Australia, Canada, England, India, Italy and the U.S. One of the sponsors of the symposium was the Center for Plant Conservation (CPC), of which the Garden is a participating institution. The CPC is the only national organization dedicated exclusively to the conservation of endangered plants native to the United States. The information presented during the symposium has direct application to the Garden's plant conservation activities. For example, the impact of seed collection on a population of rare plants in Florida was studied over a period of years and the information was used to plan seed collection at a level that would not negatively impact the population. Holly also attended the national meeting of the CPC held in October, hosted jointly by the Chicago Botanic Garden and the Morton Arboretum.



—HollyForbes

SeedExchangeList

The Garden's *Seed Exchange List* is made available to over 600 botanical and other research institutions world wide for research and display purposes. The last issue of the seed list was published in 1998 in which we offered 144 collections. From those collections we filled 1,980 orders. The Garden receives, on average, 30% of all new accessions through exchange of seeds with other institutions.

Seeds of California natives which are wild-collected are in great demand. Holly Forbes and horticulturists **Roger Raiche** and **Chris Carmichael** traveled in northern California in mid-October collecting seed of California native plants for the upcoming exchange list.

The Garden recently received generous support towards part of the cost of producing our *Seed Exchange List* from the Donations Committee of the East Bay Chapter of the California Native Plant Society, for which we are grateful. The Garden has a long and special history with this chapter and greatly appreciates the members' interest and support—not just for the seed list but for many Garden activities.

If you are interested in helping to support this aspect of work here at the Garden—and it really is work essential to growing our collection—then we would be delighted to hear from you, please call Janet Williams in the Development office at 643-2937. If you have any questions about the seed list itself please contact Curator Holly Forbes, at 643-8040.

EDUCATION AT THE GARDEN

Education opportunities in the Garden are growing in every area. In addition to the Cal students from biology, paleontology and soil engineering departments who have come for years, the Garden increasingly has become an educational resource for other departments and for students and faculty from other northern California colleges and universities. It is not unusual for weekend visitors to observe clusters of students on class visits. On one Saturday in October, students from five different colleges were exploring concepts as diverse as plant adaptations, landscape design, biodiversity, and esthetics. This Spring the Garden will become the weekly classroom for students taking a course in creative writing at Cal. To encourage every faculty member at the University to get to know the Garden better, Director Ellen Simms gave each one a Garden pass. She invited each to visit the Garden and discover ways to incorporate our magnificent collection into their teaching efforts. We are looking forward to their visits and assisting them in making our collection accessible to their courses and students.

The primary interpretation of the Garden for pre-college students and the general public continues to be shouldered by the knowledge, dedication, passion and commitment of our fabulous docents. On most days, 50-60 children and their teachers and parent chaperones have eyes, minds and hearts opened to the wonders of plant life, ecology, biodiversity and ethnobotany by the stories, activities, props and enthusiasm of our docents. We are indeed fortunate to have such outstanding educational volunteers. I appreciate their diverse efforts that produce our wonderful programs and service. It is very simple. Without their efforts, the Garden wouldn't have reached over 14,000 children and adults through tours last year. Thank you all, with a special "thank you" to Linda Govan for her Herculean efforts in making sure that docents are in the Garden to lead the tours.

Barbara Lyss continues to spearhead our efforts to provide interpretive material to the thousands of visitors who enjoy strolling through the Garden on their own. Thanks to Alison Mills, visitors have a refreshed, rotating set of brochures that highlight seasonal changes in the Garden. We are looking for funds to expand our publication of brochures for the public.

Our outreach programs into the schools now reach over 1,000 students and more than 75 teachers annually. In addition to one-hour programs, we are now providing teacher training to implement the most recently developed curriculum units—*Botany on Your Plate* and *California Habitats Alive*. Each unit provides 6-8 hours of classroom instruction and related school garden activities. Because the term "botany" is not mentioned in the new California State Educational Standards, teachers are asking for help in finding appropriate "fits" for plant and gardening activities. As we

work in our four partnership schools and with diverse teacher training efforts, we understand how we can better support teachers needs in local school change efforts. For example, while we help teacher Barbara Edwards at Oxford Elementary School in Berkeley develop a butterfly garden, we are looking for ways to give every child at Oxford opportunities to participate and learn what is necessary to involve families and the community effectively in supporting their school.

Such efforts in schools is developing opportunities for the Garden to reach out to audiences who traditionally are not frequent visitors. On October 2, 1999 the Garden hosted 250 students, siblings, parents, grandparents, teachers and the principal from its partner school, Lazear Elementary School in Oakland. In order to welcome these families, most of whom are Hispanic, docents and Cal students who spoke Spanish greeted them as they arrived and helped with directions throughout the day. Special thanks go to Lee Anderson our lead greeter, who delighted everyone with Garden history and information about the collection and to "greeter international" Dawn Keremitsis. We are looking forward to building on this experience to involve volunteers from Lazear in more Garden programming. Brush up on your Spanish and join us!

—Jennifer M. White, Education Director



Above, Lazear School children and their families enjoy lunch at the Garden. Lee Anderson (left) led a tour of the Garden in Spanish and education program volunteer Cathy Barrett helped interpret "Foods of the Americas." Right, docent June Cheit helps Berkeley school students learn about biodiversity. (photos by Jennifer White and Janet Williams)



Garden Tours in the Desert and Urban Southwest

Fifteen Garden volunteers, some with spouses, participated in the “Arizona Sonora Desert Trip” for volunteers. They spent a whirlwind six days in the Arizona desert in September with Horticulture Manager David Brunner, who was born and raised in the Tucson area and generously invoked his connections and influence to provide the widest possible spectrum of experiences for the group.

Included in the itinerary were a variety of nurseries, from huge, wholesale operations to large wholesale/retail establishments, to small, select, specialty ones.

The UCBG group was received everywhere with incredible warmth (not to mention that temps were usually in the 90s) and hospitality. We visited private gardens as well as the Arizona-Sonora Desert Museum, the Tucson Botanical Garden, the Boyce-Thompson Arboretum and the Desert Botanical Garden. There was even time to visit a few museums and art galleries including Frank Lloyd Wright’s Taliesin West and, for the determined shoppers in the crowd, to shop.



Above, the education director at the Tucson Botanical Gardens spoke to the UCBG volunteers. Right, at the summit of Mt. Lemmon—a highlight of the Garden trip to Arizona. (photos by Barbara Lyss)



A highlight was a trip up Mt. Lemmon in the Santa Catalina Mountains east of Tucson. The group climbed to about 9,500 feet, ascending from the forest of giant Saguaros, through the northernmost fringe of the Sierra Madrean savannas, up through Blue and Silver Oak woodlands, beyond Pleistocene-relict Arizona Cypress forest, past Ponderosa Pine montane forest, into Canadian Spruce and Fir forests and finally to the Sub-alpine Firs near the summit. We stopped to botanize in each zone, and marveled at the incredible diversity of everything, on just one mountain. It was a splendid, fun-filled adventure!

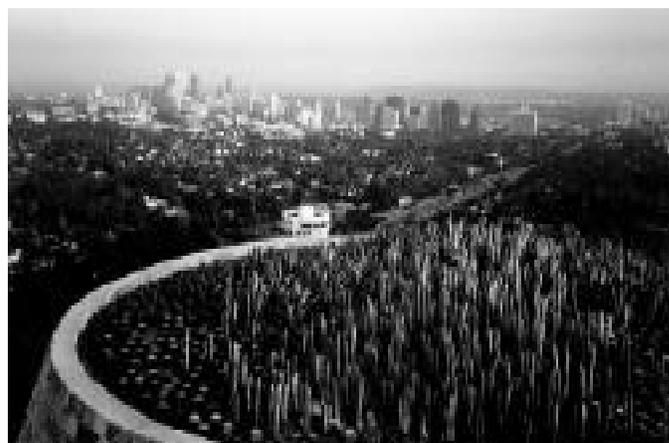
The UCBG “Peerless Public Gardens of Los Angeles” trip saw 16 Garden members, escorted by Roger Raiche and Nancy Swearingen, spend two days in November visiting gardens in the Los Angeles area.

We toured the gardens of UCLA on a chartered campus transit bus. Our first stop was the Sculpture Garden, a greensward punctuated by rows of mature sycamore trees, fringed with groupings of smaller trees and shrubs, and enclosed on all sides by University buildings. Strategically located on the 5-acre site are some 60 contemporary sculptures, all by well-known artists, all donated to the University. It was breathtaking!

Our next stop was in Bel Air, on a street so narrow that our bus couldn’t park. The Hannah Carter Japanese Garden occupies a steep hillside site, and incorporates all the symbolism, fine craftsmanship and impeccable care of a traditional Japanese garden.

Then back to the campus to take a look at the Mildred J. Mathias Garden, UCLA’s counterpart of our Garden. The dominant feature of the Mathias Garden is the creek that meanders through it with luxurious sub-tropical plantings along its edges.

At the Getty Center group members dispersed to indulge their special interests, but reconvened for a tour of the gardens with Roger. At one point, our group swelled to 30 or more, as other Getty visitors joined us. A highlight was watching the changing colors of the cactus garden as the sun set. The ranks of cacti seemed to glow as if lit from within.



The cactus garden at the Getty. (photo by Janet Ruyle)

The following day, we visited the Descanso Gardens, originally a private estate, and then a professional camellia nursery. We marvelled at the roses still flowering and the sasanqua camellias already in bloom. At The Huntington, Roger led us on a highlight tour of the gardens and group members had time to peek into the Gallery and the Library. Everyone agreed that exploring peerless public gardens was an excellent way to spend a couple of days in Los Angeles!

—Nancy Swearingen

The Sick Plant Clinic Buzzes with Activity

Some creep through the door to the Ornduff Room on the first Saturday of the month, cradling their sick plants discreetly encased in brown paper bags. Others seem to burst through the door with bravado fully expectant that the huge gnarly tree branch they deposit with ceremony will surely be the most noteworthy of the sick, diseased or dubious specimens brought in for discussion at this session of the UCBG Sick Plant Clinic. Held here since 1990, the Clinic has become a real tradition at the Botanical Garden.

Dr. Robert Raabe, UC Professor Emeritus of Plant Pathology and former Associate Director of the UCBG, started the clinic about seventeen years ago on campus as a way of providing diagnostic experience for his graduate students. Dr. Nick Mills, UC Professor of Insect Biology joined forces with Dr. Raabe in 1993 as a permanent part of the volunteer Sick Plant Clinic team. Dr. Anne Gaybrik, a student and now associate of Dr. Raabe's, comes along each month to help out with the pathology side of things. Between the three of them and the crew of regulars, there isn't much hope of a disease going undetected or an insect undiscovered; a rare virus or insect causes great excitement and interest among those present. The reference books and the microscopes are out and in constant use such that Sick Plant Clinic attendees are given a thorough education about the causes of their plant's malady and how to improve its growing conditions—not just a quick fix answer about how to save the plant's life.

This attention to detail comes as a welcome diversion to some, to others a real bonus they can use in their professional careers, as many of the regular attendees are volunteers from the Alameda County Master Gardener Program, devoted to being at the clinic out of interest and as part of their ongoing professional training. Long-time Garden volunteers, Elizabeth Waterman, Emma Connery and Leonard Skinner are usually there helping out and their input is also much valued by all connected with the clinic.

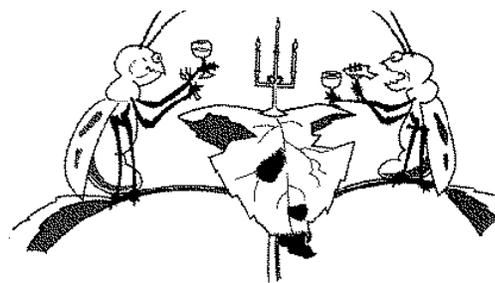
No matter who is asking the question though, it does not seem to faze the experts—the same detailed, patient

explanations are given to everyone. Whether to a first time attendee—

say the nine year old who attended with her sick rose leaves at last October's clinic (“Wow! You mean this leaf had *three different bugs* chew it up? How Gross!”)—or to the regular attendees, back again with an old problem with which they continue to struggle. Many confess that finding a new affliction in their garden is a source of delight because they look forward to taking it in to the clinic and chatting about it with the experts.

The clinic is held on the first Saturday of the month from 9:00 a.m. until noon, and attendance is growing steadily. At the height of the bug and disease season in summer, around 40 people per session may turn up needing help for their plants. They certainly get more than they bargained for—not only do they get expert information, the plant clinic is really “an event” with the love of plants and science the driving force behind the easy discussion and good hearted banter. Participation in the plant clinic is free to all and no Garden admission is required for those attending the clinic. The Sick Plant Clinic is supported as a program of Membership services at the Garden.

—JanetWilliams



Dr. Raabe examines a sick leaf...

Jessie West, a volunteer, and Dr. Mills man the microscopes...

Dr. Gaybrik provides an explanation to a visitor...
(photos by Janet Williams)



Volunteers At The Garden— How They've Grown

Some of today's volunteers—right, Francine Henderson, a driving force behind our seed packaging and sales operations, pictured here at a Spring Plant Sale. Below, Dick Emory and Tom Colby are volunteer propagators with other talents as well—they even built the greenhouse roof above them! Volunteering at the Garden has grown since its inception in the 1970s. (photos by Jennifer White)



Thirty years ago, there were no volunteers, at least no formally recognized ones, at the Garden. This began to change in the early 1970s under the aegis of director Robert Ornduff, who recognized the need to enhance the Garden's educational mission to the community and believed that the way to do this was to recruit volunteers to lead tours.

The first 11 docents graduated from training in 1974. This group and those who followed included enthusiastic and dynamic leaders who implemented all kinds of schemes for drawing attention to the Garden and supplementing its bare-bones budget. In the meantime, horticulturist Judith Finn began to encourage a few volunteers to help with horticultural chores.

Out of the Docents came the Volunteer Propagators, the early Friends of the Botanical Garden, and the Garden Shop. Each initiative attracted new volunteers, who in turn created new projects and activities.

Today we have more than 250 volunteers on the roster. Volunteers help the Curator with various projects including cleaning and packaging seeds for exchange with other gardens and for sale; volunteers help the Garden's professional propagator; volunteers help arrange and put on our programs and plant sales; and volunteers help staff booths at public information events throughout the community. Our volunteers allow us to do a great many things that we couldn't otherwise do. We are very grateful for the thousands of hours they give us!

—Nancy Swearingen

Behind the Scenes Tour & Director's Tour

On October 20 a number of Garden supporters joined us for a different look at the Garden. Dr. Ellen Simms lead a group on a *Director's Tour* which traversed the Garden looking not just at specimens in the collection which illustrated aspects of the Director's work as a plant population biologist but also looking at plants she found scientifically fascinating, or plants that she just plain likes!

This group then merged with another group to attend the *Members Only Behind the Scenes Tour* held in the corporate yard. Guests were led on tours of Greenhouses 1 & 2, the new accessions nurseries and the actual propagation house itself. This was a rare opportunity to hear about the intricacies of the propagation process at the Garden as it was explained in detail by our plant propagation expert John Domzalski. Judith Finn, David Brunner and Elaine Sedlack led the other tours with extensive informed commentary about the plants. As attendee Gladys Eaton—truly a Garden Guardian Angel—said after the tours, “the greenhouses are fabulous but it's the enthusiasm from the staff that I just love!” After the tours, everyone enjoyed the refreshments on what had to be the hottest October day for quite some time!

We thank everyone who participated and particularly those docents and volunteer propagators who attended and went out of their way to let us know that, as docent Ramona Davis put it, “despite hanging around the place for all these years I really did learn some new things—it was very interesting!”

—Janet Williams

Guests were treated to fascinating and rare looks at treasures of the Garden during the Behind the Scenes and Director's Tours. (photos by Candice Schott)



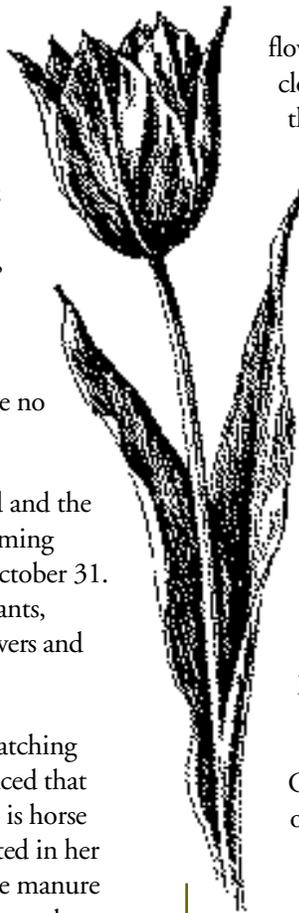
THE DOCTOR SAYS

Fragrant tulips listed in *The American Gardener* 78 (5): 43-48 include the following: species tulips, *Tulipa sylvestris*, *T. biflora*, *T. saxatilis*, *T. bakeri*, and *T. aucheriana*; early tulips, 'Prince of Austria', 'Prinses Irene', 'Generaal de Wet', 'Keizerskroon', and 'Bellona'; double early, 'Abba', 'Electra', 'Monte Carlo', 'Peach Blossom', and 'Schoonoord'; mid season, 'Annie Schilder' and 'Salmon Jewel'; and late flowering, 'Ballerina', 'Orange Favorite', 'Dillenburg', 'Angelique', 'Creme Upstar', and 'May Wonder'. (*T. saxatilis* and *T. bakeri* require no cold period to flower.)

Perhaps the largest garden show in the world and the first ever to be held in China was the 1999 Kunming Horticultural Exposition held from May 1 to October 31. The focus was on gardens, flowers, and other plants, related technology and equipment, and rare flowers and trees. *Greenhouse Grower* 17(10): 13.

A gardener in the southeast claims that by watching horses, cattle and deer feed in a pasture, she noticed that neither horses nor deer feed in areas where there is horse manure. Using this information, she experimented in her garden and found that wherever she placed horse manure (aged, not fresh) around plants, the deer did not eat those plants. *Mother Earth News* 176: 10.

Generations ago, Navajos added juniper ash to their foods as a general practice. It is not known whether this was done for flavoring or for food value but recent research in Utah has shown that adding the ash makes up for the lack of calcium in present diets of the Navajos in parts of the southwest. The ash from branches and needles is not only a good source of calcium but also of iron and magnesium. One teaspoon of juniper ash is roughly the equivalent of the calcium in a cup of milk. Interestingly, ash doesn't add particularly noticeable flavors but when added to cornbread, gives it a gritty quality. *Utah Science* 59 (1): 10-11.



According to *Successful Farming* 97 (6): 58-59, flowers that can be eaten include nasturtium, mint, clover, dandelion, oregano, basil, and thyme. Flowers that should not be eaten include azalea, crocus, foxglove, hydrangea, larkspur, periwinkle, rhododendron, trumpet flower, philodendron, sweet pea and wisteria.

The Gerber Baby Food Company has decided that its products should have zero detectable pesticide residues and also that its contract growers must eliminate the most toxic pesticides on their crops. *The Amicus Journal* 21 (3): 13.

According to an article in *Greenhouse and Production* 19 (8): 9, a new color in the carnation 'Moonshadow' has resulted from a patented gene from petunias which the developers call blue. It is proposed to add the gene to rose and other flowering plants.

In *Fine Gardening* 70: 6 is a tip for using old Christmas trees. The branches either are cut off or left on but the trees are put firmly in the soil and used as supports for summer vines such as sweet peas and morning glories.

Available now are picnic utensils (knives, forks, and spoons) made of corn starch. These are biodegradable and decompose in 30 to 40 days in a normal compost pile. *Mother Earth News* 175: 14.

—Dr. Robert Raabe

WishList

We're half way towards a new thermal transfer printer for the propagation house operations here at the Garden, for the use of the volunteer propagators in raising plants for the plant sales and in the New Plants Program! We recently received a donation from long time Garden supporters Dr. and Mrs. Klaus Dehlinger, towards this printer (total cost \$4,000), and thank them for moving us a big step closer. This printer would help us to label plants clearly and with more information. Donations toward this item would help a great number of people working in the Garden. If you have any questions please call Janet Williams at 643-2937 or Curator Holly Forbes at 643-8040.



Children and families from the Lazear School explore the "Foods of the Americas" Marketplace. (See story on page 7)

Affiliated Nurseries

The Garden is pleased to present the following nurseries offering a 10% discount on plant materials to UC Botanical Garden members (remember to present your membership card at time of purchase):

Copacabana Nursery
234 Hall Drive, Orinda
510-254-2302

The Dry Garden
6556 Shattuck Avenue, Berkeley
510-547-3564

East Bay Nursery
2332 San Pablo Avenue, Berkeley
510-845-6490

Grand Lake Ace Garden Center
4001 Grand Avenue, Oakland
510-652-9143

Magic Gardens
729 Heinz Avenue, Berkeley
510-644-1992

Smith & Hawken
1330 10th Street, Berkeley
510-527-1076

Thornhill Nursery
6250 Thornhill Drive, Oakland
510-339-1311

Westbrae Nursery
1271 Gilman Street, Berkeley
510-526-7606

Yabusaki's Dwight Way Nursery
1001 Dwight Way, Berkeley
510-845-6261

Donation Advisory

"Do our donations *really* go to the Garden?" We hear this question repeatedly and want to reassure you that *yes*, most emphatically *yes*, your donations do come directly to the Garden.

All unrestricted gifts go into our general fund which support Garden operations. All proceeds from Garden activities such as the Shop, plant sales, admissions and facility rentals also go directly into this fund.



New Members

The Garden welcomes the following new members:

Mr. John Andrews, Jr.
Mr. David Barts
Mr. Mark Blackburn
Ms. Abigail Bornstein
Ms. Ada Carino Ramsay
Mr. Simon Carr Ellison and Ms. Joan Desens
Ms. Colleen Cassidy
Mr. Tom Condit and Ms. Marsha Feinland
Ms. Susa Condliffe Kessler
Oranood and Andrew Cowell
Mr. Paul Da Silva
Ann Dallman and Reynaldo Cordero
Chris Davidson and Sharon Christoph
Ms. Carol Drucker
Ms. Laura Duke
Ms. Darlene Fong and Mr. Robert Dister
Ms. Karuna Fosselius
Ms. Norma Fox
Ms. Tamar Freeman
Mr. Leroy French
Mrs. Nancy Frizzell
Mr. David Gilley
Mrs. Marilyn Goldhaber
Ms. Jesse Greenman
Ms. Susannah Hays
Ms. Victoria Hird
Ms. Suzy Holsinger
Hsin-Ling Hsu
Bamlei and Ron Jones
Mr. Charles Kitts
Ms. Kathryn Mitchell Ladra
Mr. Michael LaPointe
Mr. David Lindberg and
Mr. Clay Van Batenborg
William and Pamela Lucke
Ms. Lisa Maynard
Mr. Donald Michener
Marsha and Robert Moore
Ms. Andrea Moss
Ms. Margaret Mould
Ms. Liz Moxon
Mr. Mark Nasoni
Ms. Nancy Ann Nelson
Carolyn and Andrei Pestovski
Ms. Nancy Priddis
Mr. Glenn Rogers
Mrs. Isabella Rosekrans
Tia and Dave Rosen
Ms. Sigrid Sachs
Ms. Sau San
Mr. Michael Sasso, Potrero Gardens, Inc.
Mr. Norman Saylor
Ms. Peggy Schafer
Mr. Jeff Schoeter
Ms. Roxanne Spring and Mr. Lee Miltier
Mr. Cliff Stevens
Mr. Mark Tilley
Ms. Susan Tufenkian
Mr. Rock Van Schoiack
Ms. Regina Voorhies
Ms. Barbara Ward
Mr. Robert Watts
Edward and Robin Wenrick
Ms. Cornelia White
Mr. Brian White
Ms. Rachel Whiteside
Ms. Karen Wieckert and Mr. Roger Hall
Ms. Lynn Winter

The Garden Shop

Plants, Books & Gifts
Open Every Day of the Week
10:30a.m. to 4:30p.m.

Members receive
10% discount
Gift Certificates Available

Ms. Mary Wood
Ms. Cathryn Yost
Mr. John Zentner
David and Suzy Ziegler

Grateful Thanks

The Garden wishes to thank these members who have made a substantial gift over and above membership:

Mr. Gary Ashley
Joseph and Clara Barbaccia
Dr. J. E. Bowen-Williams
Ronni and John Brega
Mr. Simon Carr Ellison and Ms. Joan Desens
Ms. Margaret Chase
Allan and Lynda Chasnoff
Ms. Eleanor Crary
Mr. Chris Davidson and Ms. Sharon Christoph
Ms. Ramona Davis
Frank and Janice Delfino
Mr. Robert Epstein and Ms. Amy Roth
Ms. Marylyn Galatis and Ms. Sandy Lundgren
Dr. Anne Goetsch
Mrs. Marilyn Goldhaber
Marvin Hiemstra and Lloyd Neilson
Ms. Elizabeth Hook
Ms. Toni Klassen
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Mr. Peter Lyman and Ms. Barrie Thorne
Ms. Marjorie Maher
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Jennifer and Marshall White
Ms. Elise White
Patricia and George Wolf
Ms. Mary Wood
Jacqueline and John Woodfill
Hillsborough Garden Club
Rock & Rose Landscaping

In Appreciation

The Garden offers appreciation and thanks to these donors for their generous contributions:

Bill and Elly Bade
Wallace Gorrell
Sacramento Cactus and Succulent Society
Mr. Thomas Charles Weston
Ms. Pamela Woy

Special Thanks

The Garden would like to honor and thank those supporters making substantial donations:

Ms. Janet Anderson
John and Virginia Chin
Klaus and Jean Dehlinger
Mr. and Mrs. Theodore Geballe
Ms. Marion Greene
Mary and Richard Schroter
Mrs. Myrtle Wolf
Ms. Vicki Wynn, Diablo Women's Garden Club

In Memory

The Garden offers appreciation and thanks for gifts in memory of:

Dr. Alan Bearden from:
Ms. Marta Puebla Falicov

Dorothy V. King from:
Rosellen and James Carlo
Mr. Richard Dowell
Roy and Veronica Evans
Mrs. Masa Gin
Mrs. M.F. Jacobs
Ms. Carol Jacobs
Ms. Helen Johnson
Ms. Janet King
Ms. Lucy Sandretto
Ms. Roma Stradcutter
Mr. Gary Torre
Ms. Marie Wiesner

Elly Platou from:
Mr. Stephen Platou and family
Desiderio and Karen Zamudio

Gifts In Kind

The Garden offers appreciation and thanks for gifts in kind:

Dr. Bernard Dietz
Mrs. Gladys Eaton
Mr. Don Forman
Mr. Douglas James
Mr. Charles Lim
Ms. Dawn Loretz
Monterey Bay Nursery
Dr. Robert Ornduff
Mr. Andrew Pohlman
Mr. Laurence Pringle
Mr. Scott Rankin
Rosendale Nursery
Suncrest Nurseries
Marshall and Jennifer White

Every mailing of calendars, Newsletters, flyers, etc. we get a great number of returned mail due to address changes. Each returned piece costs the Garden a minimum of fifty cents. You can help us avoid these extra charges by updating your address changes with us as soon as possible. Thank you for your cooperation.

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Roger Raiche, Horticulturist
Eric Schulz, Horticulturist
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Policy, & Management

Newsletter

Janet Williams, Editor

The Garden Shop	510/642-3348
Entrance Kiosk	643-2755
Administration	642-6849
Director's Office	643-8999
Education	495-2805
Development	643-2937
Tours/Rentals	642-3352
Plant Collections	643-8040
Volunteers	643-1924
Fax	642-5045

E-mail: garden@uclink4.berkeley.edu
Web Site: <http://www.mip.berkeley.edu/garden/>

CALENDAR OF EVENTS

In this millennium year, which marks the 110th Anniversary of the University of California Botanical Garden, we plan to celebrate by offering a special program series "Great Grapes and Old Roses." During the year we will explore as many aspects of "Old Roses" and "Great Grapes" as we can, including talks and demonstrations on landscaping; workshops on flower arranging and winemaking; day trips to see roses and taste wine and, of course, there will be extra special roses and grapes available for sale, too.

In addition, we will offer some of our perennially popular programs and we have some other exciting trips planned, too. Do plan to join our celebration!

SATURDAY JANUARY 15, 2000 - 9:30 am ROSE PRUNING

It's time to prune your roses right after New Years. Do it right this time! A hands-on workshop with the Garden's rose expert Peter Klement will give you all the right information and techniques for getting the job done. Bring your clippers.

Members \$20, Non-members \$27.50

SATURDAY JANUARY 22 - 9:30 am ROSE PRUNING

A repeat of last Saturday's workshop.

SATURDAY FEBRUARY 20 - 10 am EARLY RHODODENDRONS

The Garden's red rhododendrons usually bloom in time for Valentine's Day, but just to be sure, we thought we'd wait a week to invite you to stroll through the Dell with Horticulturist Elaine Sedlack to admire and learn about our fabulous rhodies.

Members \$5, Non-members \$10

SATURDAY MARCH 11 - 10 am LANDSCAPING WITH ROSES

Noted Rosarian Bill Grant has spent many years growing, studying and talking about roses! He's currently very active consulting with the City of Adelaide (Australia) for their upcoming celebration of Wine and Roses in the year 2001, and lectures widely, both in the U.S. and abroad. We've enticed him to come to Berkeley to share all kinds of ideas about landscaping with roses. Of course there will be special roses available for purchase!

Members \$15, Non-members \$20

SATURDAY MARCH 25 - 10 am REPEAT-BLOOMING ROSES FOR SMALL GARDENS

Heritage rose specialist Greg Lowry, owner of Vintage Roses in Sebastopol, will remove all the frustrations you may have experienced in trying to grow roses. Everyone loves Old Roses, but they either get too big, or they only bloom once. Most of us have small spaces that we want to make the most of! Greg has the answers! And we'll have the plants!

Members \$15, Non-members \$20

Familiar Offerings . . .

FIRST SATURDAY OF EVERY MONTH - 9 a.m. to noon SICK PLANT CLINIC

First Saturday of the Month: January 1, February 5, March 4 and April 1. Strange creepy-crawlies devouring your favorite plants? Bring your sick plants to see Dr. Bob Raabe, UC Plant Pathologist, and Dr. Nick Mills, UC Entomologist and their outstanding assistants for free diagnosis and prescription.

9 Sessions beginning FEBRUARY 16 ART IN THE GARDEN

Do you want to learn how to draw plants and flowers? Are you an artist already and looking for congenial company and an inspiring scene? Join our popular and continuing class in nature drawing and painting. Karen LeGault, whose work has been exhibited locally and internationally, welcomes beginners as well as accomplished artists. (9 Wednesdays beginning February 16)

Members \$125, Non-members \$150

Upcoming Travel Adventures . . .

GARDENS OF THE DELAWARE VALLEY April 25-May 5, 2000

This trip takes us to a prime garden area of the United States at its most spectacular time of year. We will visit famous gardens, such as Longwood, Winterthur, and Chanticleer, the Morris Arboretum, the Scott Arboretum and more. You'll witness May Day festivities at Bryn Mawr College, and meet a bevy of outstanding gardeners.

POLAR BEARS 2000 CHURCHILL, MANITOBA

Churchill, Manitoba, on the shores of Hudson's Bay, is the "Polar Bear Capital of the World." We'll take the train from Winnipeg to Churchill and back, viewing Arctic taiga and tundra and extraordinary summer wildflowers, and doing our best to observe real polar bears in action! Call Nancy Swearingen for more information and detailed itineraries at (510) 643-1924.

For information about any of these events call Nancy Swearingen 510-643-1924

University of California Botanical Garden
200 Centennial Drive, #5045
Berkeley, California 94720-5045

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