Over the past five years the demand for informal environmental education for schools in the Bay Area has increased dramatically. At the Botanical Garden the number of tours for school children has tripled over that time period, and our highly successful Rainforest Rap program (that focuses on tropical rainforest conservation and biology) has developed long waiting lists. Indeed, because the school curricula have focused on tropical ecology, most of the students who live in the Bay Area are now quite aware of the ecology of the tropical rainforest and of the threats to that ecosystem.

Magnificent California

But students of all ages are only dimly aware of the magnificence of the California biosphere. We all know about the coastal redwood being one of the world’s tallest plant species, and the bristlecone pine one of the oldest. But did you know that California has over 365 identified plant communities, (e.g., valley oak woodland), three times the average of other states, according to Dr. Michael Barbour of the UC Davis campus? And that there are more endemic plant species (i.e., species found nowhere else) in California than in any other state in the USA, almost double the number in Hawaii, which is next in line? With the exception of tropical forests, this endemic biodiversity is greater than any other terrestrial geographic region on earth! And, like tropical forests, there is massive destruction of natural habitat in California. While it is laudable to worry about the demise of the rainforest, here is a local phenomenon of equivalent proportions. Very little is being done to educate our children about problems in their own backyard.

Unfortunately, many teachers are ill-prepared or over-worked, and largely unable to teach adequately about California’s biodiversity and its preservation. They have turned, as they did with rainforest education, to the zoos, museums and gardens to help provide a rich and meaningful experience through informal science education on-site.

A New Kids Program

The University of California Botanical Garden, in response, has developed an innovative environmental education program for school-aged children, called California Alive! The Botanical Garden is uniquely suited to be a setting for such a program, as its 13-acre California section is arranged to simulate actual California habitats—redwood forests, Coast Range chaparral, alpine fell-fields, vernal pools of the San Joaquin Valley, pygmy forests of the Mendocino coast—the Garden even has a desert! By focusing on biological and ecological aspects of California’s rich fauna and flora, we seek to impress students with the importance of conservation and the need to minimize human impact on natural habitats.
The UCBG program *California Alive!* provides children with direct experiences with plants and animals. Specifically it encompasses:

a. Two initial visits to the school classroom by the Garden instructional staff, to make a mixed media presentation on the native animals and plants of the state, followed by a series of activities that stimulate inquiry about the natural environment, promote ecological problem-solving and involve "minds-on, hands-on" participation;

b. A class field trip to the Garden's outdoor California natives area, to visit stations situated strategically along the thirteen-acre site. Each station on the path has interactive displays, and a guide who engages small groups in a few activities as well as provide hands-on learning experiences that reinforce ideas with real examples that students discover "on their own."

c. In the third prong of the program the teacher selects a Garden-assisted community project that the class will get involved in, one with definable start- and end-points (helping with urban creek restoration, tree-planting, community gardens, and the like).

**Genesis of the Pilot Project**

The pilot project for *California Alive!* was a full year and a half in the making. The inspiration for the program developed from discussions with teachers, with Soozi de Mille of the Brooklyn Botanic Garden and with Jim Ratcliff, a former director of the Garden. Drs. David and Evelyn Potting up their own California succulents was one of the big hits of the *California Alive!* program this Spring.

Lennette generously provided funding for a research intern, Carmia Feldman, who helped design and supervise the program and also taught the in-school portion. Twelve research docents developed all of the learning activities for the diverse on-site stations in the Garden; Carmia was also assisted by five student volunteers from the UC campus who searched the scientific literature for solid information for the program, and by two additional docents who prepared activities to be used in the post-program booklet. The pilot program was given a real boost from four additional private donations, given by Myrtle Wolf, Marion Greene, Alan Harper and the California Native Plant Society, East Bay chapter. These funds have allowed the UCBG to bring 17 classes and 447 students to the Garden to participate in the premier of *California Alive!* Several of those classes were from Richmond Unified District schools. It quickly became clear to many of the volunteer instructors that over 90% of these kids had never even seen a redwood tree before, or a tadpole, phenomena most of us (and our usual visitors) completely take for granted. Most of the students from these classes did not want to leave the Garden at the end of their field trips. If we can locate funding, this program will become part of our standard curriculum, and we will be able to serve all the schools that we can.

**Special Thanks**

We wish to extend our gratitude to the donors, the staff and volunteers, without whom we would not have had a program. Special thanks are due to Carmia Feldman, who did an outstanding job, to Education Assistant Nancy Swearengen, who scheduled every visit and volunteer, and to the gardeners, Roger Raiche, Kurt Zadnik and Sean Hogan, who provided an alive California for us!

—Carol Baird
BOOK REVIEWS

The following special interest books about California oaks were received recently.

- **Oaks of California**
  A beautifully illustrated book, a real classic for anyone's library. Note: The Botanical Garden will host a lecture and book signing with wine and cheese by the authors on September 12 (see Calendar).

- **Compatible plants under and around oaks**
  Filled with good advice for anyone trying to preserve California oaks in their garden.

- **It will live forever: Traditional Yosemite Indian acorn preparation**
  A fascinating account of the native American method of processing acorns for food.

- **Seed to seedling, a California native oak curriculum for kindergarten through sixth grade children**
  Good information and activities for teachers, parents and anyone working with children.

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THE DOCTOR SAYS . . .

**Gardening Tips**

During the early part of the tomato fruiting season, you may have blossom end rot on the fruits. This is not a rot, but the blossom ends of the fruits fail to develop and are flattened. Secondary organisms may enter and eventually cause a rot. This problem results from uneven watering during fruit development. Plant physiologists have studied this and have found it is actually due to a calcium deficiency in the fruits. Our soils here are high in calcium so it is not a deficiency in the soil but just a failure to carry the calcium into the fruit. By keeping tomatoes adequately watered, this will not happen.

To prune your tomatoes to single stalks or to let them vine may be a question. The total yields will be about equal. If pruned, the fruits will be larger but not as many will be produced. Unpruned vines will produce more tomatoes but they will be smaller.

It rained this year during apricot flowering. This means brown rot may be a problem. The causal fungus enters through flowers, but once in the twigs, spreads both ways. Prune any dying branches 6 to 8 inches into good wood. If the branch continues to die, prune again.

The late rains this year favored sycamore anthracnose, so there will be a lot of leaf drop of infected leaves. The symptoms are a killing of the tissues down the veins in the leaves. Sycamore scale, which causes small yellow spots, also will cause defoliation. Both are difficult to control but neither will kill the trees.

The large flowered polyantha type primroses stop flowering as warm weather approaches. Though perennials in this area, they are unsightly in the summer and take up good space. One way to keep them is to dig them, put them in flats and store them under shrub or some shady place where they can be kept watered through the summer. In fall, they can be separated and started for winter bloom.

The hybrid cyclamen which do well in coastal gardens during winter also stop flowering in the summer. Leaves die but the fleshy bulb-like portion remains in the soil. Though it is partially above ground, sometimes it gets covered with soil and in cultivating, it may become damaged. Before the tops die, put in a marker so the location of the fleshy part is known.

Best control of powdery mildew on roses is attained by not letting the fungus become established. Start spraying new growth as it appears. Triforine is the only available fungicide though antitranspirants or baking soda have given control. Although not cleared as fungicides, antitranspirants are available. Baking soda is recommended at the rate of two teaspoons per gallon plus fine agricultural oil at recommended rates.

—Elly Bade

—Robert D. Raabe
FROM THE DIRECTOR

Spring is one of the busiest times of year in a garden. And at our Garden, it’s also a time that makes us proud and tired! Both literally and figuratively, the garden is at its peak.

This spring, our skillful team of horticulturists have coaxed their sections into colorful splendor, helped along by the cooperative winter rains. Once again, the number of visitors to the Garden has increased—matching almost predictably the lengthening and warming days of spring. Keeping stride, our programs and activities provided a remarkably diverse sampling of the many facets of the Garden—from birdwalk breakfasts, to wildflower identification classes, to university courses, garden tours, and Bug Days.

Our dedicated crew of docents led an impressive 106 scheduled tours, and presented four in-school programs, a special slide show and two displays at off-site festivals. Their tours alone shepherded nearly 1600 children and 900 adults on informative walks through the Garden. Fortunately, a new class of 16 docents also graduated after a rigorous year-long training class—just in time to help with the increased visitation.

As usual, the Friends’ Spring Plant Sale was a great success. Sixty-five volunteers worked for two days and grossed over $25,500 in receipts for the Garden. The sale reflects many months of behind-the-scenes work contributed by our team of volunteer propagators. Through their skills, we are able to share the Garden’s bounty with discriminating Bay Area plant enthusiasts.

Children’s Art Contest donors James and Irma Uren enjoy the Award Ceremony held on the Lawn this Spring (photos by Richard Anderson)

Our newest educational program, California Alive!, got off to a strong start with a pilot program involving 17 classes of 477 elementary students from all around the Bay Area. Featuring a hands-on introduction to California’s plants and habitats, the program stresses the importance of our native flora and the necessity for conservation (see page one.)

We’ve had our share of bulldozers, dirt piles and boulders in the Garden as work began on our new serpentine project. Chancellor Tien joined us for a special groundbreaking ceremony attended by Friends and supporters of the project. If all goes as planned, the dust and detours should be over soon and the finished display will provide a garden showcase of one of California’s special habitats and its endemic flora.

And, thanks to a special donation, the Garden hosted its second Children’s Art Contest, drawing nearly 600 entries from students in grades K-6. The winners and their families were hosted at a special award ceremony complete with prizes, games and refreshments. For many families, it was more than a chance to view the winning art, it was their first trip to the Garden—and we hope they’ll be back again.

And, at press time, we received notification from the Institute for Museum Services that we’ve been awarded a $75,000 grant for general operating support. The timing couldn’t be better. Given the State’s dismal budget situation, this means we’ll be able to continue programs and operations to match the growing demand. Stay tuned, the Fall program calendar is exceptionally diverse, offering something for everyone.

—Margaret Race
Visiting Scholar Revises Tour for the Garden

When Dr. Neil Beach arrived at the Botanical Garden for an interview with Dr. Robert Ornduff in July of last year, he had little idea what project he would be involved with other than wanting to learn more about the California flora. Meetings and conversations with Director Dr. Margaret Race and Education Coordinator Dr. Carol Baird followed, and the present project dealing with Native American uses of California plants got under way.

Dr. Beach is on sabbatical leave from Gettysburg College in Pennsylvania where he teaches courses in General Biology, Ecology and Plant Taxonomy in the Biology Department and a general education course in the general college curriculum for first year students titled First Year Colloquy. A two week visit with his daughter living in San Francisco in the summer of 1990 prompted Dr. Beach’s return to California to learn more about the state’s flora. Since he had spent two previous sabbaticals in Australia, he was familiar with many plants seen in California of Australian origin. He also recognized many weeds of the east coast introduced accidentally by the earliest northern European colonists as well as those introduced to the west coast by the Spanish settlers. Native California plants, however, were his main interest.

Neil grew up in Michigan where Native American artifacts are abundant and he has audited a course in Native American Art at Gettysburg College. So the project of redoing the trail through the California Native Section of the Garden was a natural extension of his long-standing interest in the ways of the first Americans. His stay at the Garden has provided him with opportunity to see a wide variety of native plants in a small space and to expand his knowledge about Native Americans of California.

Research throughout the State

Dr. Beach will expand his ecology class to include material from the west and the many California habitats he has visited. He is an avid photographer and has both habitat shots for ecology and close ups of many wildflowers for use in the taxonomy class. Neil says:

In my taxonomy class I always try and include uses of plants so students get more than just the names and habitats of plants from the course. This study has been fascinating because it has allowed me to learn

California plants in conjunction with early uses of those plants by the first occupants of the continent. We can learn much from Native Americans and the early writings of anthropologists and ethnobotanists about their uses of plants and their reverence for the earth and all its inhabitants, both plant and animal.

There have been previous self-guided trails in the California Native Section of the Garden beginning in 1969 through 1977. But things change. Some of the plants have died or been removed to other sites and only a few markers still exist as remnants of the earlier editions. The present effort will be an entirely new guide and will consist of plants and their uses prior to the arrival of Europeans. In its California Native Section, the Garden has plants from many locations within the state. So, in addition to the local Miwok and Pomo groups, the guide will cover uses of plants by other Native American tribes from different parts of the state. Dr. Beach has traveled to Joshua Tree National Monument and Anza-Borrego Desert State Park in southern California and Yosemite, Kings Canyon and Sequoia National Parks in order to learn about plants and the different tribes in those areas.

Nature Trail

The nature trail will consist of between 25 and 30 stops on a loop walk through the California section. Plants will be appropriately marked and the written material in the guide will list common name, scientific name and family, along with distribution of the plant and the particular use the plant had for Native Americans.

The brochure, which will be available in the fall, will be useful to teachers of the region who bring students to the Garden as part of the fourth grade unit on Native Americans. It will also be available at the Visitor’s Center for the public who wish to stroll through the California Native Section and learn how plants were used by the original inhabitants of California.
Love and Hate among the Composites

A few years ago a distinguished botanist wrote, “The Family Compositae or Asteraceae has attracted, fascinated, and even repelled botanists for over two centuries.” At various times of my life, this enormous, familiar, cosmopolitan and difficult plant family has had each one of these effects on me. My first reaction when I was an undergraduate was repulsion, having been faced with identifying many composites collected on an Indian reservation in central Oregon. This disgust was transformed to attraction when I spent a year in New Zealand working on a group of groundsels (Senecio) that occur in New Zealand and Australia. Finally, I engaged the Goldfield genus Lasthenia for my doctoral dissertation at Berkeley, and have developed an affection for the sunflowers and their diverse kin that has lasted to this day.

Some Terminology

The Compositae, or Asteraceae, is characterized by reduced flowers, called florets, that are aggregated into specialized inflorescences called capitula or heads. The family is large, with over 20,000 species and over 1300 genera. Life forms range from ephemeral annuals that count their life span in a matter of weeks, to long-lived trees; the family occupies virtually all habitable terrain except Antarctica. The Botanical Garden has a rich assortment of composites in all the geographical collections of the garden. In fact, much of the color contributed to African Hill in late spring and early summer, and in the North American area in late summer is due to members of this family.

Because of the specialized nature of the composite inflorescence and the reduced but often complex nature of the flower, the traditional difficulty associated with identifying members of this family is due to a terminology that developed to accommodate these distinctive features. However, the composite head and its component florets offer a rich array of useful key characters providing you “think small.” The “leaves” that one eats when devouring an artichoke (Cynara scolymus) are called phyllaries or involucral bracts, and represent modified leaves that surround the head of florets. The down that allows thistle fruits to drift along in the wind, the pappus, is a set of fine bristles, that sit atop the dry, single-seeded fruit called an achene, or more accurately in this family, a cypsela. These bristles, which take a myriad of forms or may be missing, are considered to represent a modified calyx, or set of sepals.

The flowers of most composites are really very ordinary, but also very small. If you can tease out one of the central flowers from the head of a composite (excepting members of the chicory tribe), and have a hand lens available, you will generally see a corolla made up of five fused petals, an inferior ovary on which a pappus of diverse forms is often present, and single style with a two-lobed tip, with the anthers united in a ring around the style. In many composites, the pollen is pushed out of the anthers by a piston effect of the style as it elongates, thus presenting the pollen to prospective insects or other pollinators. Because the pollen is in such close contact with the stigma of a single flower, many composites have what is called a self-incompatibility system that prevents pollen from an individual fertilizing its own flowers. (In some composites, notably many of our common weeds such as groundsel, sow thistle, star thistle, and salsify, plants lack self-incompatibility and are routinely self-pollinated or, in dandelions, produce seed without pollen. Thus, it takes only one of these “do it yourselfers” to invade your garden and leave dozens of offspring to occupy your weeding energy.)

The “petals” that form a ring around the outer perimeter of many composite heads are sometimes called petals, which is technically correct so long as one realizes that these “petals” are in fact the entire set of (usually) five petals of the florets that bear them. Instead of forming a symmetrical structure, however, these united petals are asymmetrically flared into a long showy structure called a ligule. These marginal ligulate florets are often sterile, and serve primarily to attract pollinators via their bright colors. The chicory tribe has heads that bear ligulate flowers only; chicory, dandelions and sow thistles are also members of this tribe.
Ornamentals

The composites have contributed some of the finest ornamentals to horticulture; these include marigolds (both "French" and pot), dahlia, zinnia, bachelor's buttons, gazanias, chrysanthemums, rudbeckias, coreopsis, cosmos, and many others. Interestingly, the Aztecs of Mexico saw the horticultural potential of marigolds long before the voyages of Columbus, and had developed a number of cultivated strains of this Mesoamerican plant. If you look at the European herbals published only a few decades after Columbus' voyages, you will see that marigolds quickly became favorite European garden plants after their introduction to the Old World. Why they are called "French marigolds" mystifies me.

Of Economic Importance

The composites are an important family from an economic standpoint, though perhaps not so important as one might predict from the enormous size of the family. Artichokes have been mentioned already; certainly in California, this is an important crop and the Artichoke Capital of the world is not far from Berkeley. Lesser known is the so-called Jerusalem artichoke (Helianthus tuberosus), whose tubers rather than heads are eaten. This is a species of sunflower that originated in North America; Jerusalem is a corruption of the Italian "girasola," or "turning with the sun," which sunflowers heads are reputed to do. Jerusalem artichokes are marketed locally as "Sunchokes," which is probably preferable to "Artiflower." Another important composite crop in California is safflower (Carthamus tinctorius), grown for its edible seed oil and to a lesser extent for dried flower arrangements. The common name alludes to the saffron color of the florets of this species, and the species name to its use in dyeing. On a worldwide basis, the sunflower (Helianthus annuus), also of American origin, is an important oilseed crop.

Native Composites

Composites are a conspicuous element of the California native flora. In fact, about 17% of the native vascular plant species in California are members of the sunflower family. In a good spring, one following a wet, mild winter, the slopes of our Coast Ranges, and what's left of our valleys are carpeted with showy displays of goldfields (Lasthenia species), tidy-tips (Layia spp.) and monolopias. These composites inspired many marvelous passages written by John Muir and other naturalists who were privileged to see the state in a somewhat more intact condition than it now is. Even some of our native thistles are strikingly beautiful when in flower, and, unlike their European cousins, are well-behaved members of their respective ecosystems.

Composites are not mysterious plants that defy identification. Possibly a good way to get to know them is to collect a few species whose names you know (such as the English daisy and dandelions of our lawns, pineapple weed of our paths and sidewalks, and salsify of our streetsides, and groundsel and sow thistle of our gardens), and give them a try in Munz or a local flora. This may help you begin to master the manageable but initially intimidating terminology that has grown up around this family, and give you confidence to tackle an "unknown" or two in our native flora.

—Robert Ornduff
GARDEN NOTES

Prize-winning orchids: Congratulations are in order for Botanical Garden staff members Jerry Parsons, Judith Finn and Gerald Ford for their stellar participation at the Pacific International Orchid Show held at Fort Mason in San Francisco this spring. Our staff horticulturists were invited to develop a special exhibit for the show that included specimens from our permanent collection and educational information about orchid biology and ecology. This display won 18 prize ribbons for its orchid specimens and the overall exhibit (8 first places, 8 seconds and 2 thirds). The exhibit was designed by Jerry Parsons and Judith Finn, and built by Gerald Ford. Educational material in the exhibit featured a series of original orchid drawings by Judith Finn that complemented the informational text about orchid biology. If you are interested in viewing photos from the display and learning more about orchids, stop by the Desert-Rainforest House in the Garden and see our temporary exhibit about their prize-winning effort!

Paphiopedilum venustum from the prize-winning display of orchids produced by the Botanical Garden

GreenStuff: The Botanical Garden’s day camp is in operation this summer, this year led by Carmia Feldman and Tegan Paige Churcher. Carmia is a gifted teacher who has a great deal of experience at the Garden, having taught Rainforest Rap for two years, and California Alive! for one year. Tegan is a Conservation Resource Studies student, and was the Art Director for the Lair of the Bear last year, so she really knows her arts and crafts. The four camp sessions filled early; some of the happy campers have attended GreenStuff for three or four years.

Serpentine Project: Through the generosity of Friends, the serpentine rocks and soil are now in place, after several weeks of earthmoving in the California section. Roger Raiche and Kurt Zadnik plan to move serpentine-adapted plants into the beds over the next five months, and develop an outstanding display that simulates the native plant community. The importance of serpentine and the specialized plants that grow on this formation will be treated in a future NEWSLETTER. Donors to the project were: Joan Mirov, Myrtle Wolf, Marion E. Greene, Francine Henderson, the East Bay Chapter of the California Native Plant Society, Ron Lutsko, Jr., Philip Johnson, Warren Roberts, Mr. & Mrs. John Mohr, David Bigham, Dick Turner, and the Friends of the Botanical Garden.

Travel: Elaine Sedlack attended the 50th Anniversary International Symposium presented jointly by the American Primrose Society, the Royal Horticultural Society and the Berry Botanic Garden, in Portland, Oregon, co-sponsored by the American Rock Garden Society and the Alpine Societies of British Columbia and England. She especially enjoyed talks by the Japanese delegation.

This year the annual meeting of the American Association of Botanical Gardens and Arboreta was held in the Ameriflora city of Columbus, Ohio in early June. The UCBG sent Dr. Margaret Race, the Director, as well as Daniel Campbell, Holly Forbes and Dr. Carol Baird.

—Carol Baird, with Margaret Race
PROGRAM HIGHLIGHTS

Have we Got a Fall for You!

Gala Events at the Garden

Our first major event of the autumn season is a grand celebration of the splendid new book, *Oaks of California*, from the California Oaks Foundation and Cachuma Press. The principal author, Dr. Bruce Pavlik of Mills College, will deliver a slide talk about our special California oaks, to be followed by a book signing, with wine and cheese, up at the Garden’s Oak Knoll.

A month later, we’ll stage our Chili Pepper Festival, a day long indulgence in the cultivation and culinary lore of the hot (and not-so-hot) chili that has spiced up eastern and western diets for 500 years and more. Kevin Doherty of *Ay Chihuahua!* will speak on the kinds of chilies and how to grow them. Keith Silverton of Berkeley’s *Fourth Street Grill* will follow with a talk on the culinary uses of chilies. Several well-known chefs in the area will demonstrate how to prepare chilies in various cuisines. Vendors will have samplings from Nigerian, Burmese, East Indian, Thai, Korean and Louisianan cuisines, and chili pepper paraphernalia will be available to the celebrants. The Garden will even have a Cajun band on the lawn, to set the tone for the day!

In early November the UCBG has the honor of hosting the nationally known author and landscape designer Rosalind Creasy (*The Complete Book of Edible Landscaping: Cooking from the Garden*) for a colorful presentation on integrating the treasures of your garden with the joy of cooking and feasting. Hers is the final presentation in our new series on Environmental Gardening.

Programs for “Culture Vultures”

Following right on the heels of the very successful Peninsula Garden tour is an August tour of the Rose Gardens of Sonoma County, featuring the Garden Valley Ranch rose farm and Korbel’s rose garden, led by “Dr. Chlorophyll” (Victor Yool, of Berkeley Horticultural Nursery) and Peter Klement, UCBG’s rosarian. And in September Helen Gustafson, the tea buyer for Chez Panisse, will present *Teas*, a program on the lore and ceremony of tea in western culture.

We are most pleased to offer a program by our very own Daniel Campbell, the Manager and Superintendent of the Garden, *Recreating Period Gardens*, a talk and slide show on historical gardens that you can recreate in your own California landscape. Daniel matriculated at Kew Gardens in England, and is well-known for his considerable breadth of knowledge, his historical perspective, and his wit and charm.

Programs for Gardeners

Have you ever wondered how you can combine your love of gardening and your strong conservation ethic, to produce an ecological landscape? You can create a garden that needn’t be a sump for chemical fertilizers, herbicides and pesticides. Our new series, *Environmental Gardening*, will provide you with the practical information to join this hot new approach to gardening.

You can also design a garden that is irresistible to butterflies. Biologist Ray Peterson, who has spent a good bit of his adult life attempting to charm various species of butterflies with color, texture and fragrance, will share the highlights of these adventures in a slide lecture, *Seducing the Butterfly*.

Dr. Chlorophyll pops up again in October, when he conducts a slide lecture on bulbs at the Botanical Garden. And the Propagation Series kicks off the same month when UCBG’s Martin Grantham and Wayne Roderick, Director Emeritus of the Tilden Botanic Garden lead a workshop on *Seeds and Seed Treatments*.

NOTE: At press time the final details of two developments relevant to Garden visitors were being worked out. One involves weekend shuttle service up the Canyon from BART, twice an hour, to begin in September. The other involves a possible reduction in parking fees. Watch your UCBG mailings for further information.

— Carol Baird
The Friends of the Botanical Garden welcome the following new members:

Sally C. Adams
Alice M. Anderson
Janet K. Anderson
Tom Appleton & Doris Wurman
Mr. & Mrs. Stephen Y. Ascher
Sonja Atalla-Mei
Ms. Elizabeth Baker
Gerta & George Barlow
Joan & John Bartulovich

Thomas C. Bland
John Kadel Boring
Elizabeth Boyd
Mrs. James B. Boyle, Jr.
Margaret Brentano
Jack & Alice Breslow
Dorothy Broadman
Zelda Bronstein
Irene Brown
Carol Burdick
Edward J. Burke

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(510) 642-3343 Visitor Center  •  (510) 642-0849 Administration
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In Honor
The Friends offer appreciation and thanks for gifts from these donors in honor of:

Elmer R. Grossman, M.D., on his retirement from the Berkeley Pediatric Medical Group, from his partners
- Ragna C. Boynton, M.D.
- Susan B. Fifer, M.D.
- James C. Gottlieb, M.D.

Barbara Donald, on her birthday, from her daughters, a book for the docent library.
Grateful Thanks
The Friends wish to thank these donors who have made a substantial gift over and above membership:
Janet Alderton
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Mr. & Mrs. Stephen Y. Ascher, for the Education program
Dr. Alan B. Harper, for the Education program
Drs. David & Evelyne Lennette, for the Director's Endowment

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The Friends offer appreciation and thanks for gifts in kind.
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Nancy & Jim Ullom
Langan Swent, from Iris & Norris Caddis
A Garden Bench has been donated in memory of Mabel Weeden, from her four sons.
A Garden Bench has been donated in memory of Jake Colin Baker (10/91-2/92)

Life Members
The Friends Board voted to give Life Membership to Stephen and Kay Onderdonk of the Southern California Council for their generous donations to the Garden, that have enabled us to establish the beautiful new sign at the entrance.
Life membership was also voted to a generous donor to the meeting room improvement project, a donor who wishes to remain anonymous.

MEMBERSHIP
The Friends of the Botanical Garden offers public education programs and provides independent funding to support the many needs of the Garden. You can enjoy and support the Botanical Garden year-round by becoming a member of the Friends of the Botanical Garden.

Membership benefits include:
• Newsletter
• Workshops, lectures, and tours
• Discount on Visitor Center purchases
• Discount on educational classes
• Early admission to Spring Plant Sale
• Discount subscription on American Horticulturist magazine
• Volunteer opportunities

Friends of the Botanical Garden Membership Application
Yes, I would like to support the U.C. Berkeley Botanical Garden as a member:

☐ Student*............................$10  ☐ Sponsor.............................$250
☐ Individual ....................$25  ☐ Patron ..............................$500
☐ Family..............................$35  ☐ Benefactor .....................$1000
☐ Contributing ....................$50
☐ Supporting .......................$100  ☐ New  ☐ Renewal

Name
Address
City/State/Zip
Telephone

Contributions are tax deductible. Please make checks payable to Friends of the U.C. Botanical Garden and mail to:
Friends of the Botanical Garden, U.C. Botanical Garden, Berkeley, CA 94720

*Full-time only.
Calendar of Events

JULY
PLANT CLINIC Sat, JULY 4
Bring your ill plants to see Dr. Robert Raabe, UC Plant Pathologist, even on July 4th! 9am-12, Meeting Room.

ROSE BUDDING AND GRAFTING Sat, JULY 18
Peter Knoll and Lizzie Lee will conduct a workshop on the propagation of roses. $10 members, $20 non-members. Meeting Room. 9am-noon.

AUGUST
PLANT CLINIC Sat, AUGUST 1
Bring your ill plants to see Dr. Robert Raabe, UC Plant Pathologist. First Saturday of the month, 9am-12, Meeting Room.

ROSE GARDENS OF SONOMA COUNTY Thurs, AUGUST 6
Bus tour to Raymond Reddell’s Garden Valley Ranch rose farm and garden with Dr. Chlorophyll, Victor Yool, manager of Berkeley Horticultural Nursery and Peter Knoll, rosinarian of the UCBG. Special guest: Barbara Barton, author of Gardening by Mail. Members $50, non-member $65. Reservations essential.

SEPTEMBER
PLANT CLINIC Sat, SEPTEMBER 5
Bring your ill plants to see Dr. Robert Raabe, UC Plant Pathologist. First Saturday of the month, 9am-12, Lower Meeting Room.

ENVIRONMENTAL GARDENING SERIES - Starts Thurs, SEPTEMBER 10
This new series provides you with the wherewithal to tie your environmental fervor to your everyday gardening activities. Meeting Room, each Thursday evening from 7pm-9pm. $5 members, $6 non-members, each session 1-6. $10 member, $15 non-members final session.

(1) Healthy Soil for Healthy Gardens
(2) Make Compost Happen!
(3) Worms Eat My Garbage
(4) Natural Pest Control
(5) If Plants Could Talk
(6) An Introduction to Permaculture
(7) Cooking from the Garden

CALIFORNIA OAKS: LECTURE & SIGNING Sat, SEPTEMBER 12
The UCBG is proud to present the principal author of the California Oak Foundation’s exquisite new publication, Oaks of California. Dr. Bruce Pavlik, in a slide talk and lecture about the diversity, history, and biology of the California oaks. A book signing that includes the other authors at the Oak Knoll will follow the presentation. Wine and cheese will be served. Begins at the Meeting Room. 3:00-5:30pm. Members $10, non-members $15. Reservations advised.

SEDUCING THE BUTTERFLY Sat, SEPTEMBER 19
Biologist Ray Peterson, who has spent a good bit of his adult life attempting to charm various species of butterflies in his garden, will share the highlights of his adventures in a slide lecture. Meeting Room. 10am-noon. Members $10, non-members $15. Reservations advised.

TEAS Sun, SEPTEMBER 20
Background, lore and ceremony of tea in western culture with Helen Gustafson, tea enthusiast and tea buyer for Chez Panisse. Helen will also tell us about her April 1992 London meeting with Mr. Twining of Twining Teas. Meeting Room 3-5pm. Members $10, non-members $15. Reservations essential.

ART IN THE GARDEN Sat, SEPTEMBER 26-NOV 14
The popular watercolor class at the Garden, offered on eight Saturday mornings from 9:30am to noon. Instructor: Judith Corning. All levels are welcome, including beginners. Meet at the Meeting Room. $50 members, $65 non-members.

FALL PLANT SALE Sun, SEPT 27
Huge selection of native and exotic treasures at this annual sale to benefit the Garden. Beautiful species of California natives, rhododendrons, cacti and succulents, shrubs and vines, orchids, and much more! Take advantage of this sale to prepare for your Fall Planting, before the winter rains. Choice books available too. Open to the public from 10 am to 3 pm.

OCTOBER
PLANT CLINIC Sat, OCT 3
Bring your ill plants to see Dr. Robert Raabe, UC Plant Pathologist. First Saturday of the month, 9am-12, Lower Meeting Room.

FRIENDS’ ANNUAL MEETING AND PICNIC Sun, OCT 4
Family picnic on lawn at noon, followed by Annual Meeting (1:00 pm) and tribute to Joan Mirv.

CHILI PEPPER FESTIVAL Sat, OCT 10
Background, cultivation and culinary lore, with stories of chilies in eastern and western culture. Two lectures in the Mather Grove Amphitheater will be followed by cooking demonstrations in and around the Meeting Room, including uses in the foods of Nigeria, Burma, East India, Thailand, Louisiana, Korea. Cajun-style band on the Lawn at 1:15 pm, open to the public. Day-long event, from 11:00 am to 3:00 pm. Held at the Botanical Garden. Ticket fee TBA.

BULBS Sat, OCT 17
Slide lecture with Victor Yool, Manager of Berkeley Horticultural Nursery, also known as Dr. Chlorophyll, for his column in that nursery’s newsletter. Fee includes annotated bulb list. Members $10, non-members $15. Space is limited, so reservations are essential.

RECREATING PERIOD GARDENS Sun, OCT 18
Daniel Campbell, the Manager and Superintendent of the Garden, presents a wonderful talk and slide show on historical gardens that you can recreate in your own California landscape. Meeting Room, 10am-noon. $10 members, $15 non-members.

For further information on classes and events, call the Visitor Center, 642-3343. To register for classes, send checks to UC Botanical Garden. No refunds the week before the class date unless class is cancelled. Pre-registration is suggested, as classes fill early.

The Garden is open every day of the year except Christmas from 9:00am to 4:45pm. Free public tours led by docents are given on Saturdays and Sundays at 1:30pm. Admission to the Garden is free.

Plants are for sale at the Visitor Center all year 642-3343

Friends of the Botanical Garden
University of California
Berkeley, California 94720
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