Director Retires From Garden

To his students he is Professor Ornduff, but almost everyone else knows him as Bob. Dr. Robert Ornduff recently retired as Director of the UC Botanical Garden effective July 1, 1991, in order to resume full-time his academic career as Professor of Integrative Biology. During his tenure, a remarkable seventeen and a half years, Bob Ornduff not only turned the Garden completely around, to emphasize its nascent role as a public garden, but did so without sacrificing the collection’s hard-won reputation of excellence among members of the scientific community.

As Professor Bob Middlekauff has pointed out, one's first impression, on meeting Bob Ornduff, is necessarily colored by his imposing size. Bob is a large man who has a deep voice. He can be downright intimidating on first meeting. But if one judges from the innumerable letters of congratulation sent to him from our diverse community of Friends and scholars, much of his effectiveness has been due not to the force of a powerful and dominating personality, but to his inherent charm and wit.

The Early Years

From Portland, Oregon, his birthplace and home of his alma mater (Reed College), Ornduff went to New Zealand as a Fulbright Scholar, and then studied for advanced degrees in botany at the University of Washington (M.Sc.) and the University of California at Berkeley (Ph.D. 1961). After two brief stints as assistant professor (Reed College and Duke University), he returned to Berkeley to join the distinguished Botany faculty here.

He had already established himself as a fine systematist, having written on several tribes in the composite family, but his interests broadened, gradually encompassing reproductive biology and plant breeding systems (especially heterostyly), biogeography (especially of Mediterranean climate flora) and evolutionary relationships of flowering plants. In 1968 he became the Director of the Jepson Herbarium, and by the time he was appointed as Director of the Botanical Garden, he still held the Jepson position and had become the Director of the University Herbarium as well. He continued to hold all three directorships simultaneously, as well as the chairmanship of the Botany Department, until 1982 (a period of astounding scientific productivity as well), when he handed over the herbaria to other individuals. To his credit, we understand that he did find time to sleep at night!

Over the past 18 years, the California native plant section of the Garden has commanded more and more attention at the garden. The ecological arrangement by plant community and the overall development of the native area were actively encouraged by the Director. In
fact, Dr. Peter Raven, Director of the Missouri Botanical Garden, writes of Bob:

"Not only have you added greatly to our collective insight into the marvelous flora of our State, but you have taught students and other Californians what a privilege it is to live in the Golden State, especially if one understands its unique ecology. After all, as Herb Caen once wrote, 'A true Californian is one who understands that the hills are naturally a golden brown, interrupted briefly in winter by a greenish scum that soon disappears, returning them to their natural glory.' You deserve a major share of the credit for having made the UC Botanical Garden an exceptionally beautiful and outstanding display of California plants..."

Early on Bob Ornduff had recognized the desperate need of the academic and general public to be educated in matters of biodiversity, so he opened the doors of the heretofore research-oriented Garden to the inquiring public. He initiated programs for university students that involved on-site use of the Garden. He encouraged the development of the volunteer Docent program and the advent of public and school-aged tours. He hired an education coordinator and whole-heartedly supported the expansion of that educational mission to its present-day incarnation as a fully functioning department.

And Ornduff foresaw the need for a vital and effective support arm for the Garden, so he took an active role in meetings and other gatherings of the Friends organization from the very start. As a result, the Friends have flourished, and the interaction with staff is warm and cordial.

Celebration on the Lawn

But leadership is more than a matter of programs and projects and priorities, it is above all a matter of style. To celebrate that special Ornduff style, many Friends of the Botanical Garden and friends of Bob Ornduff collected on the lawn on Sunday, June 2. The event was coordinated by Friends Vice President Gladys Eaton, with Friends Assistant Deborah Darnell. Bob Riddell, the President of the Friends, acted as Master of Ceremonies. The Dean of the College of Natural Re-

added to all your academic responsibilities; there was no released time for the Garden. You haven’t even had a desk, let alone an office, at the Garden. And yet, through it all, the Garden has prospered... I hope that in the years ahead you will continue in your love and support for the Garden, now in a new role. We all look forward to your continuing participation.

—Carol Baird

Speaker par excellence

Perhaps Bob Ornduff’s most widely recognized talent is his ability as a speaker. Gladys Eaton says, “After hearing Bob speak extemporaneously and cleverly one afternoon at a campus affair, a friend confided that she felt we should clone Bob Ornduff and send him to other organizations to give them the advantage of his wit and charm.” For Elizabeth Hammond, a major donor to the Garden, “One of his most endearing qualities is an ability to present his vast botanical knowledge with wit and humor. It is consoling to me, that with all his talent, he has one modest short-coming—a difficult time growing Nerine.”

Among the Garden community probably the officers of the Friends organization have come to know Bob Ornduff best. The major benefit of being the first President of the Friends, for Jerry Carlin, was “…getting to know Bob. He is fun, smart, charming, a delightful presence. And he knows the names of all the plants. At least that’s what he told me.” Another perennial Board member, Jim Lattie, writes, “…There will be many Directors in future years, but somehow the Garden will never be quite the same to me. A great vote of thanks is owed to Bob Ornduff by the Garden, its staff and volunteers, and the greater community which they serve.” And current President Bob Riddell writes:

I know that your participation at the Garden has been a labor of love. In spite of the frustrations, you have stayed on for all these years. Being Director has simply been

sources, Dr. Wilford Gardner, spoke briefly about Ornduff's accomplishments, and acknowledged the contributions that Ornduff has made to the Garden.

A succession of people followed Dean Gardner to the microphone. Among them were Staff members such as Bobbi Ohs, the Public Relations officer, who stated that she was “…lucky to have worked directly with someone who, by the breadth of his undertakings, inspires me to expand my own.” Or volunteers such as Jim Jones who wrote: “You have gently led us to new insights about the flora and the world around us.” Or former students, such as Dr. Nancy Morin, who wrote:

Of the four years I spent as one of Bob’s students, one scene stands out in my memory: I was ‘shuffling sheets’ of Githopsis on the counter near Bob’s office, when he came out and watched over my shoulder. ‘That one looks different!’ he said, about one of the three sheets of what eventually turned out to be the only new species to emerge in my dissertation work. It took me a couple of years to accumulate evidence that it was a new species — but it only took Bob one glance to see that it probably was new. That wonderful intuition about what is different or interesting is one of the many things I treasure in him, and it has helped make the UCBG a marvelous and fascinating place!
We love your support!

Our First Annual BUG DAYS event was a smashing success. Over 600 (yes, six hundred!) people (big and little) attended the three day event, which featured LIVE insects and spiders from the San Francisco Insect Zoo, exhibits on pollination, carnivorous plants, plant defenses, and a set of displays focused on biological pest control. It was a real treat to watch kids, moms, dads, and grandparents parade through the meeting room over the three day period; they oohed and ahhed at the butterfly exhibit, petted the huge millipede, poked at the silkworms and cautiously approached the California tarantula.

Curiously, roles flip-flopped as children instructed parents in the nuances of entomology and botany. Many children became entranced by what they saw under the microscopes that had been set to view fly eyes, grasshopper wings, nectar guides and bee tongues. And everyone loved playing with the working models of the venus fly-trap and the pitcher plant. Most people were having just as much fun at the gift tables set up outside the room by the Visitor Center (Elly Bade and Francine Henderson) and S.F. Zoo Gift Center.

BUG DAYS is a cooperative event which could not have occurred without the very generous support of the Insect Zoo, which is in its own facility at the San Francisco Zoo. Some of the traveling insect displays from the Zoo were loaned to us, as well as several huge displays of pinned insects, and the staff (four indefatigable insect-lovers) to handle and provide instruction about the exhibits. Even Leslie Saul, the Director of the Insect Zoo and Curator of Insects, made time to attend our event and, as is typical of Leslie, enjoyed it so much she rolled up her sleeves and joined in as an instructor!

We also received help from the Palo Alto Junior Museum, whose models of carnivorous plants were loaned to us by Geoff Wong and John Walton. Instructors and guides were drawn from the Mills College science teaching program, our own docent program, and the entomology department on campus. We thank them all! A special thank you to Krishen Laetsch, who conceived of the joint venture and was instrumental in bringing it about.

Young admirer of silkworms investigates their voracious eating habits (photo by Alan B. Harper)

Docent Sandy Sobey introduces a visitor to a California millipede (photo by Alan B. Harper)
Spring 1992

The on-site Fall program will be severely curtailed, due to the impending major work on the parking lot (see the Calendar of Events on Page 16 for details of what will be offered). But the Program Committee and Education department are planning to have a very busy Spring program; in the works are:

1. **Tours**: (Costa Rica in January, South of France in April-May)

2. **Field trips**: Nature treks to local reserves, tours of local gardens

3. **Classes**: a beginning birding class in the Garden; a field identification class (wildflowers); intensive plant family identification; wildflower photography

4. **Gardening workshops**: rose pruning; gardening to attract butterflies, mushroom gardening, propagation; drought-minded gardening (irrigation techniques, plant selection, soil preparation); composting

5. **Talks**: Asian section of the Garden; carnivorous plants; natural pest control; edible wild plants; lavender; evening lecture series on topics related to conservation

6. **For kids**: the Second Annual BUG DAYS; DINO DAYS self-guided tour; story-telling event at the Grove; afterschool club; Green Stuff Day Camp

—Carol Baird

FROM THE DIRECTOR

Sunday, June 2, was a typical, gloomy, overcast, cold late spring Berkeley day in the Garden when the Friends held their annual al fresco luncheon for donors, followed by a warm and thoughtful farewell to me as director. I was described as “retiring” from the garden directorship; the fact is that I resigned the position in view of the strong likelihood that my replacement would be a full-time director, thus giving the garden the attention that it needs and deserves. I have been Director of the garden since 1973, and was beginning to feel like Director-for-Life.

At my retirement ceremony, many accolades were directed at me. Whatever improvements have occurred in the collections, facilities, and program during my tenure are not due to the efforts of a single individual. I have been blessed with an unusually capable and devoted garden staff, with exceptional generosity from the community, with enormous support from the Friends, and the College of Natural Resources, and with the activities of a remarkable set of volunteers who make labels, propagate plants, lead tours, organize symposia, and stock and staff our small but thriving visitor center.

The menu of public programs the garden now offers is broad, and we are increasingly serving the needs of Cal students. While our financial base continues to be slim, hopefully our value to the campus and community will be increasingly recognized by an increase in financial resources that would enable us to live up to our full potential as an educational and research resource.

I hope to be able to continue my association with the Garden in the future, not as an administrator, but as a botanist working with the collections. After all, it was the living plants in the Garden that first attracted me to the place!

—Robert Ornduff

Editor's note: Since the time that this letter was written, Dean W.R. Gardner has announced that Dr. Ornduff will continue at the Garden in the position of Curator of Collections.
Old-fashioned Roses

Hello, I collect old-fashioned roses. Tell me about this rose in your garden, . . . and . . . may I take a cutting?" This is the salute of the antique rose collector, a breed whose numbers have resurged after a lengthy decline. At one time old-fashioned roses were adored all over Europe and North America. But their popularity was eclipsed by the dazzling rise of modern roses, especially the Hybrid Teas that took over at the turn of the century.

The older varieties comprise a threatened gene pool. Old roses differ markedly from their modern counterparts—the old-fashioned roses are seasonal bloomers that are attractive as shrubs; they suggest a rustic environment, a cottage in the Cotswolds. They are survivors, and when they are gone their genetic heritage cannot be replaced. Like the "lost crops of the Incas," if the older varieties are not actively conserved we will soon lose them to history.

Heritage Rose Foundation

The Heritage Rose Foundation was formed by gardeners who were concerned with the loss of the old fashioned varieties. The Foundation's goal is to preserve old cultivars and foster public awareness of the value of these varieties. This national organization meets regularly at various sites around the country. This year the annual meetings took place in May, in Santa Rosa. The UC Botanical Garden sent three representatives to the Heritage Rose Foundation Conference this May: Daniel Campbell, the Garden Manager, Lizzie Lee, the Rose Propagator, and myself (I am the gardener responsible for maintaining our roses.) We went to the conference in Santa Rosa to learn the "How-tos" of collecting, maintaining and identifying lost varieties of roses.

At the conference there were talks on Luther Burbank's breeding experiments, classes identifying the characteristics of old rose varieties, and discussions on how other gardens around the country—and throughout the world—obtain and maintain their roses. We toured local rose gardens and perused old rose books, prints, catalogs, and histories. The conference also sponsored collecting trips in the Gold Country, where we were learned the collecting techniques used by other groups. For instance, in Texas (where else?) a group of "Rose Rustlers" goes out to old ranches and cemeteries and rustles up a "passel" of roses. Unlike cattle rustlers, the "rose rustlers" keep their "quarry" so that the old varieties can be maintained.

These collectors and other dealers bring their goods to the annual conference, where there is a veritable Moroccan Bazaar of Roses. We trade varieties, ideas, techniques, and descriptions, and we try to find out the original names of the roses that we have collected.

Old Roses in California

The history of roses in California goes back to the time of the Gold Rush. With the discovery of gold, newly rich Californians were able to import roses from France. Often new varieties of roses would appear here the same year that they were released to European gardeners. Even older varieties came into the state from the East by wagon train, in pots or as cutting. Perhaps they were sentimental favorites rooted from a wedding bouquet, or from Grandma's garden. Many of these bushes flowered and prospered, and can be found still growing in the gardens of old homes, at mine sites, and in old cemeteries.

Some of these older local varieties can also be found at the U. C. Botanical Garden. Many of these varieties are still mysteries; we have given them working names until we can identify their heritage. There is 'Portland from Glendora,' a garden rose collected in Glendora, California. This rose shows the features of an early hybrid perpetual, a class known as damask perpetual, because it shows leaf and flower characteristics of the
autumn damask rose from which it descended. This rose was probably hybridized in the first half of the nineteenth century. It may not have been a “state of the art” variety when it was brought to Glendora, but it is a good garden plant. In full sun it produces damask flowers, dark rose pink, continuously all summer; and here in the Botanical Garden, with our summer fog and wind, it is healthy and happy.

A later hybrid perpetual, with the collecting name “Miriam Wilkins,” to honor the founder of the Heritage Rose Foundation, graces our rose garden with very fragrant, open pink flowers. The plant was collected near Santa Rosa—but it simply doesn’t fit the description of any known named variety. It is unusual in that it suckers a bit, sending up new shoots about two inches from the mother plant and creating a small patch over time.

Our garden also has some of the world’s newest “old” roses. David Austin, a hybridizer in England, has created new crosses using the old-fashioned roses, and we have a few of his varieties, including ‘Wenlock’. This is a rich red rose, the darkest rose in the garden. It sits under the arbor behind the bench and masquerades as a hybrid perpetual. Compare it with ‘Miriam Wilkins’—both have the same flat flower form and sweet fragrance, but their growth habits are different. This new “old” rose is about one hundred years younger than its older cousin.

The ‘David Austin’ rose, which can be seen in the garden, is one of the varieties created by Graham Thomas, the noted author and painter. Thomas has written a number of books on old roses, many illustrated “by his own paintings and drawings. His classic, The Old Shrub Roses, made a case for old roses in their own right, and almost single-handedly revived interest in the old-fashioned and species roses as garden plants. The David Austin rose can be seen in the top corner of the rose garden, with other European varieties. Look for a full yellow, many-petalled flower. It is not hard to find this beauty.

Besides the ‘David Austin’, the garden has very few yellow roses. Yellow is a color found only in new rose varieties. In the nineteenth century there were no bright yellow roses. The color came to the modern rose garden through the French variety ‘Soleil d’Or’. The French breeder M. Pernet-Ducher of Lyon crossed a species rose called ‘Austrian Brier’ with a hybrid perpetual.

Using this cross as a base, he made more crosses among the resulting plants until he found a good garden plant, which he called the ‘Soleil d’Or’. The ‘Soleil d’Or’ can be found growing near the Araucaria in our rose garden, just outside the massive musk. Its grand parent, the Austrian Brier, can be seen nearby.

The roses in the garden are arranged in a way that would be familiar to an eighteenth-century gardener. Later, in the nineteenth century, roses were shown in flower shows as cut flowers, so growers emphasized the shape and color of the flower, disregarding the growth form of the bush. They would grow their plants in single-variety beds, a practice which can be seen in public rose gardens around the world. But, since at the Botanical Garden we grow earlier varieties of roses, we wanted to present them in an appropriate setting. Growing among the roses can be seen the dark-blue-flowered cultivar of Lavandula angustifolia ‘Hidcote’ (English lavender ‘Hidcote,’ named after the estate where this variety originated.)

Our goal is to retain many features of a garden of two hundred years ago. But these roses must manage to survive under a late twentieth-century Californian regime of low water consumption. Despite the fact that roses are great lovers of water, we are able to maintain our garden with small amounts of water, using a drip irrigation system. The water is applied directly to each rose bush, and the other species in the rose garden must fend for themselves. The roses do well, even though by late summer the soil is dry and the plants show some water stress. Early autumn is a good time to clean up the garden, dig up and divide some of the perennials, cut off old foliage, and prepare the plants for the winter rains. It is quite surprising how well old varieties of European and Eastern U.S. roses can grow in a water-limited garden of modern California. —Peter Klement
Down South

Friends from the Southern California Council in Los Angeles had the opportunity to attend a Garden program in their own city this summer. On July 12 the Friends sponsored a luncheon and lecture at the California Club, in downtown Los Angeles. The title was "On the Cutting Edge: Big Ideas Flourish in the Botany Labs at Cal".

Dr. Robert Raabe, Plant Pathology Professor and Associate Director of the Botanical Garden, informed and entertained guests about recent scientific advances made in botany labs on the Berkeley campus. He spoke on ice nucleation, soil water retention with polymers, powdery mildew, rapid composting, and disease-tracking genes. Guests found out about actual and possible uses for the research, and were treated to Dr. Raabe’s inside knowledge, which everyone enjoyed thoroughly. Many of the guests took notes to use in their own gardens, including tips on how to control powdery mildew, and the “art” of rapid composting. After his talk, Dr. Raabe answered questions from the many gardeners in the group.

Twenty-seven guests attended the luncheon, which was held in the Fireside Room of the California Club, in Los Angeles’ financial district. Southern California Council Co-chairs Mrs. Richard Hotaling, Mrs. Kingston McKee, and Mrs. Stephen R. Onderdonk helped plan and organize the luncheon, which is the first event held in Los Angeles for our Friends down south. In addition to Dr. Raabe, the Garden was represented by long-time Friend and Cal History Professor Robert Middlekauff, who held the 1991 Fletcher Jones Fellowship at the Huntington Library. The Garden’s new Director, Dr. Margaret Race, also attended the luncheon, taking the opportunity to meet several of the Southern California Friends.

Since Friends in Southern California do not have the luxury of making frequent visits to the Garden, the delegation from Berkeley brought a table display for the guests. It highlighted the different areas in the Garden with photographs, as well as educational programs, the upcoming annual Symposium, and Roger Raiche’s article in Pacific Horticulture about cultivars of native plants from UC Botanical Garden collections. To illustrate the scope and scientific value of the collections, the display also included six living plants from the Garden, complete with collection data, cultivation requirements, and characteristic habitat. California native bouquets created from the native area of the Garden served as centerpieces.

Summer 1991 marks the first year anniversary of the Southern California Council of the Friends, which was formalized during the Garden’s Centennial year. Thanks to the work of several dedicated volunteers, the Council has had terrific success in gaining greater exposure and enthusiasm for the Garden in Southern California. The Friends welcome the support of this energetic group, and hope to make programs in Southern California a part of their regular calendar.

—Bobbi Ohs


any expert gardeners have an excellent intuitive grasp of the basic botany that is applied to successful horticulture. This book attempts to bridge the gap (if there is one) between intuition, experience and the formalities of botany. It is not the first book to try this; a book with exactly the same title was published in 1957, written by taxonomist H.W. Rickett, and there are others.

Capon’s book is well written and very well illustrated; the level of accuracy is high, and it covers a broad range of topics. My chief criticism of the book is that it takes the traditional approach to an introductory botany course and orients the subject material for a “popular” audience. This works well for gardeners who want to know what botany is all about, but some aspects of botany are only of tangential practical importance, and Capon tends to overwhelm the reader with technical terms.

An approach that I find of greater general interest is that used by Kaufman et al. in their Practical Botany these authors start out with familiarities and then translate these to a general botanical framework. They range more widely than Capon, discussing soils, vegetative propagation, pests and diseases, greenhouses, photography, etc. Capon’s book, with its narrower focus, accomplishes what it sets out to do very well, but I think the road travelled is perhaps a less friendly one than that traversed by Kaufman and his co-authors.

—Robert Ornduff
Race Named Acting Director of UC Botanical Garden

Margaret Race has been named acting director of the University of California Botanical Garden at Berkeley, effective July 1.

Professor Robert Ornduff, Department of Integrative Biology UC Berkeley, who had served as Director, will return to full time responsibilities in the Department. He will retain the position of curator at the garden.

In announcing the appointment, Dean Wilford Gardner of the UC College of Natural Resources, Berkeley, said, “We look forward to the leadership that Dr. Race will bring to this position. The Botanical Garden has developed to a complex level where a new organizational structure is needed. With her excellent background and experience, Race will make valuable contributions in providing that structure for future development and growth of the Botanical Garden. Having directed the analysis of the Botanical Garden when it was transferred from the College of Letters and Sciences to the College of Natural Resources, Race is already a vital force in the Botanical Garden.”

The full-time, on-site position is a part of the new organizational structure at the Botanical Garden. Past directors have been full-time faculty members who have conducted their Garden responsibilities part-time with regular faculty loads. Additional restructuring at the Garden includes the formation of an academic advisory panel consisting of the chairs of Plant Biology, Integrative Biology, and Landscape Architecture as well as the director of the University Herbarium.

Former Assistant Dean in CNR

Race has been the Assistant Dean for Planning for the College of Natural Resources since 1988. Before joining CNR, Race served the University in the Office of the President, as Acting Director for Planning and Program Review for the Natural Reserve System, and earlier as a science policy analyst with the Division of Agriculture and Natural Resources. She has worked on a variety of natural resource and environmental projects including environmental release of genetically engineered microorganisms, coastal zone management, biological control, genetic resource conservation programs, Natural Reserve planning, and hardwood range management.

Race received a Ph.D. in zoology from UC Berkeley in 1979, where she studied population ecology of marine systems. After a postdoctoral year at Woods Hole Oceanographic Institution, she served four years as a faculty member in Stanford University’s Human Biology Program, which focuses on both the basic sciences and their policy implications.

Race said her top priorities at the Botanical Garden included developing better links with campus and academic programs and long range planning for the Garden and its collections.

“I also want to focus on expanding the Botanical Garden’s public outreach role to a variety of audiences—from school children to decision makers who need information about plant ecology and the environment,” she said.

In her capacity as Assistant Dean for Planning for the College of Natural Resources, she has worked with Garden staff, students, and volunteers on a building development committee, a management analysis project, a centennial anniversary committee, and a children’s art contest emphasizing the connection between people and plants.

Garden Community Welcomes Director

“We’re happy to have Dr. Race in this new full-time position,” says Holly Forbes, Assistant Curator. “Her expertise in many areas will be of great benefit to the Garden.”

Race, 42, is married and the mother of two children. She and her family live in Lafayette. Originally from Boston, Race enjoys the West Coast, and calls California her home. She is a garden enthusiast, and looks forward to working closely with the Garden’s support group, the Friends of the Botanical Garden.

“The Friends welcome Margaret Race as Acting Director,” says Gladys Eaton, Vice President of the Friends Board of Directors. “We have been working with Dr. Race for more than a year on various projects with the College of Natural Resources and the self-assessment process at the Garden. We look forward to the coming years with her leadership.”

—Suzanne Clark and Bobbi Ohs
New Signs of the Times

Welcome to the Garden!
The new entry sign for the Garden has recently been erected in place just outside the gate. It was designed by the architect Walter Thomas Brooks and built by Pischoff Construction. This fine redwood sign is much more obvious to the casual passerby than the old half-sized sign that it replaces. Its graceful lines and rustic image perfectly match the appeal of the Garden itself.

A burst of color: June and July were the months of peak bloom in the Garden this season, thanks in large part to the late March rains (but do not overlook the prodigious efforts of the horticultural staff!) Visitors were especially enchanted with the herb garden, the native section, the spectacular Puyas and the rose garden.

And scent: But the major single draw this summer was the Voodoo Plant. Once again, this obnoxious flower rose to the occasion, as it has for the last two seasons. The plant, an aroid of immense proportions, sends up a flower stalk almost overnight (see photo). The flower is a deep purple, rather like a nasty bruise; the fragrance is nothing short of disgusting. As is true of many plants in the aroid family, it is thermogenic, heating up in the latter part of the day so that it can volatilize its perfumes and attract its preferred pollinators (flies). Visitors find this plant to be, well, fascinating.

Garden projects: The new rock wall above the Japanese pool is now completed. This splendid stone work was executed by a local mason, Philip Johnson. And the Strawberry Creek trailwork has been finished, by the East Bay Conservation Corps—a fine job done by all. The Corps completed a number of other trail and bed projects in the two months they spent here.

The Best of: Holly Forbes and Kurt Zadnik were each recently awarded Distinguished Service awards by the University. And the readers of Focus magazine recently selected the U.C. Botanical Garden at Berkeley as the "Best Botanical Garden" in the Bay Area, quite an honor, especially considering the relatively brief time the Garden has been in the public view.

Sean Hogan, the horticulturist in charge of African Hill, has been invited to spend a month at Kirstenbosch Botanical Garden in South Africa. He will spend time under the tutelage of some of the Union's most renowned botanists. Sean plans to study higher elevation African plant associations, with an eye to helping redesign our African hill site.

Parking lot: The successful bidder for the new parking lot plans to begin construction in early September. Tearing up the existing lot will cause parking to be extremely tight for the next few months at the Garden. All visitors and volunteers are encouraged to car-pool or to use public transportation during the autumn. The new lot will have three tiers and hold considerably more vehicles; the University plans to install meters and charge a nominal fee. We plan to give you more information in the Fall newsletter.

—Carol Baird
Gardener Retires

Louis Caiazza, the Botanical Garden gardener and maintenance man, may be the only Garden employee ever to have worked under five different UCBG Directors, and at least that many Garden Managers. He began his service with the Garden on Friday, February 1, 1957, when T. Harper Goodspeed was still Director, and he plans to retire on October 1, 1991.

In an interview on a recent Spring day, Louis told me that at the time the garden position was advertised, he was a student of horticulture at the old Laney College installation on Grove Street. He applied for the job and was hired on the spot by the Garden Manager, Robert Dutton. Since the material at Laney College was a mere repetition of the material he'd already studied, he left academia behind and has never regretted the move.

Louis started out as an apprentice, weeding for one of the gardeners; he rapidly worked his way up to the level of grounds keeper for the cactus garden and African Hill, where he assisted Myron Kimmach, then Assistant Manager. By the early 1970s he was in charge of the Rhododendron Dell, which is to this day his favorite spot in the Garden.

The Botanical Garden was a very different place in those days, Louis noted. In place of the building now affectionately known as the “break room” was a huge boiler, and above it, at the current Tour Orientation site, stood a diesel tank, adjacent to a greenhouse that no longer exists. There were water tanks on African Hill, as well as in the Asian area and above the Rose garden. But perhaps you have noticed that in this ample description of then and now at the garden Louis alludes strictly to the physical plant, not the biological plant. The more we spoke, the more I began to suspect that something had happened along the way, something that interrupted Louis’ horticultural career, replacing it with an engineering career.

And then in a flash it all became clear. Louis was in the midst of describing an episode that involved the university. To pinpoint the incident in time, he explained that it had occurred before the accident. “What accident?” I blustered, having not known about any accident.

The Accident

Louis visibly warmed to his subject. It seems that on May 5, 1974 he had been using the little International Harvester tractor to haul some sand over to the new Herb Garden site. He successfully maneuvered around the freshly cut pine limbs on the tarred road, and was tractoring up the path above the Meeting Room when suddenly he heard a loud snap. The tractor began to roll back down the hill; it picked up speed rapidly, due to the heavy load. Before Louis could respond, the speeding tractor collided with an eight inch thick pine limb and flipped backward, throwing him off the seat of the tractor flat against the asphalt road. As the machine flew off toward the creek, the steering wheel struck Louis square in the back. Bystanders later told him that the tractor came within inches of striking his head.

His lower left arm suffered multiple breaks, his ribs were fractured, his back was sprained, and there were multiple contusions and abrasions. Louis was hospitalized for a full three weeks, and remained disabled for an entire year. His left arm caused him many problems; it simply didn’t heal properly. He still has pins in the elbow and a metal plate along the ulna. Needless to say, the heavy physical demands of maintenance gardening were no longer appropriate. And so, Louis began to take on even more of the repair, engineering, plumbing, electrical, and hydrological duties of the Garden.

But no mere accident could suppress the spirit of a Louis Caiazza. If he couldn’t throw his heart into gardening, then he would throw it into the physical plant. Perhaps there was always a native talent there anyway, for early in his employment at the Garden, way before THE ACCIDENT, Louis had become impatient with the “people down the hill” (the University folks) and had taken on all of the plumbing duties himself. At any rate, after the accident, he quickly became extremely capable and knowledgeable, but that didn’t keep the people down the hill from trying to put in 4 inch mains or new electrical lines without heeding his sage advice. Louis’ wry and ironic wit to this day allows him to poke fun at the powers that be, who were forever wiring pumps the wrong way or tying in water mains to abandoned lines only to find geysers erupting in the middle of the lawn or the edge of the herb garden pool.

Louis’ impish grin and lively sense of humor have earned him the affection of everyone in the Garden. Over the last 34 years he has contributed in countless ways to the growth, beauty and efficiency of the Garden. We all wish him the very best in his retirement (he plans a visit to Italy and a lot of fishing too), but hope he will return to regale us with his stories and jokes.

—Carol Baird
Will the Drought Devastate the Oaks?

Despite recent rains the drought continues. Parched soil, and a tinder dry landscape are clear evidence of the dry spell's devastation. Foremost among the many concerns that accompany the drought is the fear that it will lead to the further demise of California's oaks.

Conventional wisdom held that California oaks evolved under a harsh cycle of wet winters and dry summers for hundreds of years. But the last two droughts have forced us to look a little more closely at weather patterns, and specifically at rainfall patterns in relation to plant growth.

The truth is that oaks have evolved in an uncertain environment. We generally receive most rainfall in the winter months, but as we have rediscovered this year, sometimes it all comes at once, while in other years it is spread out more evenly.

The average rainfall in St. Helena over the past 83 years has been 33.71 inches per year. Using this average, the total accumulated deficit of rainfall there over the last five seasons has been approximately 50 inches.

How will this particular drought affect the oaks in California? According to R.H. Waring, "Periods of extended drought are not particularly harmful if trees have well developed root systems and canopies that capture sufficient sunlight, so they can photosynthesize when conditions are suitable. Shallow rooted trees growing in dense stands are usually susceptible to infrequent droughts". This is most obvious in the dense stands of weakened pines that are now dying of bark beetle attacks throughout California. Oaks in dense stands, especially on the top of knolls, are experiencing similar problems. The long-range effects on California's oaks will be varied, depending upon the particular tree, its drought tolerance characteristics, its microclimate, and its particular rooting pattern.

How to Care for Oaks in a Drought

What are the symptoms of drought stress in oaks?

Drought stress is often first noticed when the inner foliage of a tree begins to turn yellow and drop off. The tree maintains the newest foliage down to the last remaining terminal bud, as long as the roots remain healthy and viable. Other symptoms of drought stress are borer infestation, shortened growth shoots, and smaller leaves. If the branches of a tree begin to die back from the end, the roots are likely suffering to the point of root death. This kind of stress becomes increasingly difficult to correct, since stored energy is depleted when branches die.

If a tree is drought stressed, what can we do to help?

The best approach, of course, is to irrigate the tree. This works best if the irrigation corresponds to the time of root growth. Watering during hot summer days will favor disease fungi rather than the roots, so this may not accomplish much. [It is recommended] that oaks be irrigated on an infrequent basis, and that most irrigation take place in late spring, early summer, or fall, when the roots are growing. The irrigation must wet the entire soil profile where roots are growing. If the tree has lost roots, or is severely drought stressed during the summer, consult a professional prior to irrigating a favorite oak.

The very best thing anyone can do for their oak is to mulch the soil surface underneath the oak canopy and beyond. The mulch should preferably be organic, and should not compact under foot traffic. We find that the leaf and twig mulch produced by a chipper from tree prunings is the preferred material. The leaves break down immediately and provide nutrients for the oak, and chips, and the chips increase soil aeration. In addition, the results of a recent study indicate that the presence of grass competition and the absence of the humus layer on the soil surface in the root zone of trees inhibits fine root development. Mulch provides an environment most conducive to root growth.

—Denise Froehlich
John Britton Tree Service
How do oaks cope with stress? Since native oaks, like all trees, are subject to water stress, they have developed specific mechanisms for coping with California's dry summers. Oaks growing in deep alluvial soil put down long "sinker" roots to tap the capillary layer of water just above the water table during hot summer days. These trees therefore effectively resist drought by growing where water is available. Valley oaks (Quercus lobata) for instance, are not usually found in areas where the water table drops below 30 feet, because their sinker roots apparently do not penetrate that far. They become stressed when the water table is reduced by flood control measures, well use, or lack of ground water recharge during droughts.

Oaks growing on shallow soils tend to have more shallow root systems that resist drought by becoming as extensive as possible, thereby taking water from a larger soil area. When the soil moisture has been depleted for the season, and there is no other place from which to draw water, the trees become drought stressed. They adjust in two ways. The Coast Live Oak (Quercus agrifolia) seems to close its stomata (through which water is lost) more effectively in mid-day than the deciduous oaks, which continue to transpire at a high rate. Blue oaks (Q. douglasii), however, tend to drop their leaves early in the season to reduce overall water loss, and thereby avoid drought stress.

These scientific studies have been verified to a certain extent by recent reports of the drought's effects on California oaks. As early as the drought's second season (1987-88), Doug McReary of the University of California Cooperative Extension reported in the fall issue of "Oaks 'n' Folks" newsletter that brown oak trees dot California's landscape. The article described certain deciduous oaks in the Sierra foothills that dropped their leaves three months early in response to dry soils. In the Napa Valley we observed the same response on Blue oak and Coast Live Oak. The trees bounced back after adequate rains the next spring, although total rainfall for the season was below normal.

This past summer, in 1990, we saw many Coast Live oaks being attacked, and some being killed, by the Western Oak Bark Beetle (Pseudopityophthorus pubipennis), which is attracted to weakened trees. Those oaks that were attacked were in landscapes receiving little or no additional moisture from irrigation.

Another effect of the drought that has not been documented is the presence of the California Oak Worm. This pest is known to occur in periodic cycles; however, we have observed that its presence is also associated with drought. In the forest, defoliation caused by the insects may help reduce moisture demand by reducing transpirational losses of water from the leaves. Pruning to achieve this same goal is not recommended however, since at least 50 per cent of the foliage must be removed to achieve a reduction in transpiration. Removing 50 per cent of the branches would produce an unattractive and unhealthy tree, with the potential for serious decay problems in the future.

—Denise Froelich

We are grateful to the California Oaks Foundation, Denise Froelich and Karen Lee, for permission to reprint this article from the Foundation newsletter, California Oaks, Spring 1991.
New Members

Jane S. Andrews  
Jeff Anhorn  
Kate Baird  
Linda Lee Baptiste  
Marilyn Barrett  
Marion Bartlett & Nora Johnson  
Barbara Brandiff  
Tom Burke & Cynthia Bergst  
Janet L. Caprile  
Mary N. Clancy  
Louise C. Colombatto  
Jan & Al Coronado  
Ann R. Culhane  
Emma L. Davis  
Kathleen Dell’Aquila  
Kristie Dunkin  
Bertine & Max Eastman  
Mr. Murray Elliott  
Katherine Endicott  
Lowell & Vannee Etzel  
Janet Ewing  
Nancy Fenstermacher & David Ritchie  
Robert Feucht  
Neal D. Finkelstein  
Sandy Follett  
Anne Folson  
Lisa Formichi  
Rachael Freeman  
John C. Friedman  
Robert W. Feucht & Jennifer Bates  
Heather Galloway  
Arlene & David Getchell  
Marcia Gibney  
Bobbie Gibson  
Mr. Donald M. Gregory Jr.  
Velma Haesloop  
Gwendolyn J. Halpin  
Kateri A. Harrison  
Lee Hartman  
Sandra Hayashi  
Stephen Hayes  
Joanne A. Hickox  
Sean Hogan  
Myrtle Hsing  
R. Charles Husted Jr.  
Shirley M. Hyde  
Arielle Ikeda  
Don & Dorothy Jackson  
Patricia James  
Debra Johnson  
Michele C. Kennedy  
Karen Klimas  
Charlotte Knight  
Elizabeth Knight  
Beth Kóbold  
Pat Landsberg  
Melinda Rodgers Lassman  
John C. Lavine & Sharon V. Siskin  
Alice Ross Leon  
Cindy Lincoln  
David Lindeman  
Sean Lohmann  
Harold Mann  
Mary Escudero Marshall  
Joe Martines  
John Mayginnes  
Jake McGuire  
Ellen N. McKaskle  
John Mitchell  
Niloufar Mobashery  
Sheila Moran & Sarah Ore  
Ann Murphy  
Thomas P. Murphy  
Cyrus M. Musiker  
Brenda C. Naranjo  
Qui Nguyen  
Marcia Nolfi  
Mr. & Mrs. Ronald Oman  
Orvilla H. Pamp  
Shirley Parker  
Jeffrey Perloff & Jacqueline B. Persons  
Suzanne E. Porter  
Ann & Mike Richter  
Lori Rodefer  
Ellen Rosenau  
Carla Zingarelli Rosenlicht  
Lynn M. Rubin  
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Sara Schultz  
Mary Jane Sheridan  
Susan Signaigo  
David Smith  
Jim & Mary Smith  
Judith O. Smith  
Ralph I. & Todd C. Smith  
John F. Sorenson  
Sharon Spindel  
Susan Springer  
Richard Starkeyson  
Rebecca A. Sterbentz  
Jamie S. Stott  
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Lyn Talkovsky  
Marion H. Trentman  
Anne M. Wagner  
Ernie Wasson  
Karen Watanab  
Wynette Weaver  
Marie Whidenn  
Janice Wood  
Woodside-Atherton Garden Club  
Ellen F. Yamamoto

Grateful Thanks

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Mr. & Mrs. Jerome E. Carlin  
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Donald & Dorothy Jackson  
Mr. & Mrs. Peter Johnson  
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Jeffrey Perloff & Jacqueline Persons  
Piedmont Garden Club  
Mr. & Mrs. Ronald Oman  
Mary & John Ricksen  
Valere Scott  
William H. Tooley  
Ruth Townsend  
Virolab, Inc.  
Kathryn Welch  
Myrtle R. Wolf  
Woodside-Atherton Garden Club

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In Honor:

In honor of Dr. Robert Ornduff, on his retirement as Director of the Garden, for a display on aquatic plants:

Elly & Bill Bade
Gladys Eaton
Elizabeth W. Hammond
David & Evelyne Lennette

Mary & John Ricksen
Bob & Kay Riddell
John H. Smith
Myrtle R. Wolf

In Memory:

Ms. Annetta Carter, from Dr. Baki Kasapligil.
Laura Chipelone, founder of the Burlingame Garden Center, from Callie and Claude McRoskey, for the Rose Garden.
David Coronado, for the Mesoamerican Area, from Jan and Al Coronado
James Strachan (UC ‘36) from Charles W. Libbey, M.D. (UC ‘36), and from Mr. & Mrs. Ewald R. Hoffman.
Barbara Welf, from Mary and Richard Schroter.

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Daniel Campbell, for orchids
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David and Evelyne Lenette, for Educational equipment

We wish to acknowledge the many Gifts-in-Kind donated to the Garden and the Friends from April 1990–May 1991:

Lee Anderson
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John Hendrix
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Bernice Lindner
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Kenneth Murakami
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Dr. Robert Ornduff
Rick Palmer
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Eldon Rowe
Louis Sanso
Mary Schroter
Mary Stevens
Estate of Al Stout
George and Olive Waters
Alba and Bernard Witkin
Copacabana Gardens
Harmony Farm Supply
Landscaping by Harlow
Moraga Garden Center
San Marcos Growers
Saso Herb Gardens
Smith and Hawken

Annual Meeting and Family Picnic

The Major Gifts and Membership Committees have elected to honor James H. Jones at the Annual Meeting and Family Picnic of the Friends of the Garden on Sunday, October 27, 1991. Mr. Jones, a Volunteer Propagator and expert on orchid horticulture, has been a long time supporter of the Garden and was elected to Life Membership two years ago.

For donations given in honor of:
Gertrude Allen, on her birthday, from Elizabeth Waldron, Anita Navon, and Dorothy Cahill.
James Van Sicklen, from Judge and Mrs. John S. Cooper.

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
☐ Supporting .... $100  ☐ New ☐ Renewal

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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.S. Botanical Garden, Berkeley, CA 94720
*Full-time only.
Calendar of Events

PLANT CLINIC  Sats, SEPTEMBER, OCTOBER
Bring your ill plants to see Dr. Robert Raabe, UC Plant Pathologist. First Saturday of the month, 9 a.m.-12, Meeting Room. October meeting will be held at Oxford Tract greenhouse, corner of Hearst and Oxford Streets.

TREES  Sats, Suns, AUGUST
Tour of the Month brings you the outstanding trees in our collection, and how to know them. 1:30 pm. Visitor Center.

SEEDS, SOFTWOOD CUTTINGS  Sun, AUGUST 25
First of a series on plant propagation, with our horticulturist Martin Grantham. 1-4 p.m. Meeting Room. $8/ session, $20 for the series of 3 lectures, members, $12/ lecture, non-members.

PLANT DIVERSITY  Sats, Suns SEPTEMBER
Tour of the Month focuses on the marked diversity of plants found in the Garden. 1:30 p.m. Meet at the Visitor Center.

WATERCOLOR CLASS  Sats, SEPTEMBER 28–NOVEMBER 16
Judith Corning presents a set of 8 watercolor/drawing classes in the fall. 9:30 a.m.-12 noon. Meeting Room. $45 members, $55 non-members.

NINTH ANNUAL SYMPOSIUM  Sat, Sun SEPTEMBER 28–29
John Greenlee, leading authority on ornamental grasses, and Allen Paterson, David Streatfield, and Roger Raiche, will be featured speakers at this two-day symposium, Gardening with the Elements, with special focus on garden design that deals with small spaces, drought conditions and unpredictable weather. Morrisson Auditorium, California Academy of Sciences. $75 members, $90 non-members.

COMPOSTING  Sat, SEPTEMBER 21
Dr. Robert Raabe presents his famous workshop on the elements of slow, rapid and vermi-composting. There are two identical sessions: 10-11:30 a.m. or 1-2:30 p.m. Room 159 Mulford Hall, UC Campus. $5 members, $8 non-members.

PLANT TRAVELERS (Tour of the Month)  Sats, Suns, OCTOBER

HARDWOOD CUTTINGS  Sat, OCTOBER 20
Second in the propagation series with Martin Grantham. FULL.

ANNUAL MEETING  Sun, OCTOBER 27
Family picnic on lawn at noon, followed by Annual Meeting (1:00 p.m.) and tribute to James Jones (1:30 p.m.).

HERBS: How to use and enjoy them  Sun, NOVEMBER 3
Taught by Jerry Parsons and Diane Kothe featuring herbal projects — cooking, crafts, cosmetics and pest control.

COCOA AND THE STORY OF CHOCOLATE  Sun, NOVEMBER 24
Professor John West relates the fascinating history and uses of chocolate. A tasting will follow.

HOLIDAY DECORATION  Sun, DECEMBER 1
Our popular program with Wayne Roderick is repeated once again.

GRAFTING  Sun, JANUARY 12
Third in the propagation series with Martin Grantham. FULL.

COSTA RICA TOUR  JANUARY 9-24
Special botanical tour of Costa Rica to visit private gardens not normally open to the public. Includes two days at sister garden in Las Cruces (Wilson BG), Monteverde Reserve and Tortuguero National Park. Phone (510)671-2900 for details.

SOUTH OF FRANCE TOUR  APRIL 28–MAY 14
Antiquity, art and gardens in the South of France, led by M. Jean Feray, garden designer. Tour will visit Provence, Nice and more on the Cote d’Azur. Please contact France Tour, c/o UCBG, address below.

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 9:00 a.m. to 4:45 p.m. Free public tours led by docents are given on Saturdays and Sundays at 1:30 p.m. Admission to the Garden is free.