



# THE JEPSON GLOBE

A Newsletter from the *Friends of The Jepson Herbarium*

VOLUME 20 NUMBERS 1 & 2, Summer 2009

## Director's Column

By Brent D. Mishler

As initially reported in 2001 (*Globe* V12, #1) the Jepson Herbarium has had a long period of positive influence on the process of developing UC Merced. Our engagement in this process was due initially to the influence of Rod Park, Chair of the Jepson Trustees, and former Acting Chancellor for the fledgling Central Valley campus. Rod was concerned with the environmental impacts the early campus plan would have, and brought in faculty and staff from the Jepson Herbarium to advise on the situation. We had a major role in the decision to move the campus off the main vernal pool sites towards the southwest, where the initial phase has now been built on an old golf course.

The campus received its final 404 permit from the U.S. Army Corps of Engineers in April, and on that occasion Rod wrote this nice note to me: "This all started over 10 years ago! Your contributions were essential and created the good decisions and compromises that led to the final resolution of this challenge. Many thanks and congratulations." We are continuing to stay engaged; I am currently serving on a committee (chaired by herbarium research associate Eric Berlow) preparing a strategic plan for the UC Merced Campus Vernal Pool Reserve, to be proposed as a UC Natural Reserve System site, which will wrap around the new campus and provide unique research and teaching opportunities.



## "Beginnings" at UC Merced

By Staci Markos

In May 2009, the first full senior class of UC Merced completed commencement ceremonies. The occasion was graced by a keynote address from First Lady Michelle Obama whose remarks focused on encouraging the students to have hope, work hard, and give back to their communities.

It was the spirit of the UC Merced students, their immediate and extended families and community members that convinced Mrs. Obama to deliver her first commencement speech as First Lady to the graduates of UC Merced. She was "inspired" and "touched" by the students' perseverance, creative community-based letter writing campaign, and media outreach (including a YouTube video and Facebook campaign).

*Continued on page 3.*

## The Napa County Flora




By Jake Ruygt

My interest in the flora of Napa County was born following the culmination of my final year at UC Davis. It had been my goal to become a wildlife biologist and in that pursuit I was required to complete a course in plant taxonomy and plant ecology. These two courses required some time in the field collecting and identifying wild plants. I was captured by the beauty of vernal pools near Dixon and the diversity of wildflowers west of Winters. The wildlife biologist career didn't take off but I was thoroughly infected by the botany instructions I received from John Tucker and Jack Major at UC Davis, so in 1976 I began to scour Napa County in my free time to find out what plants grew near my home.

I began a small collection of pressed plants, gathered from hikes at first a few miles from home and then further afield. I found that collecting specimens allowed me the opportunity to restudy them periodically as I trained

*Continued on page 2.*

### ALSO IN THIS ISSUE

-  Illustrations in the new *Manual*
-  Adventures in Baja California
-  Plants and People

Cover photo: Rod Park (left) and Aris Demetrios in front of "Beginnings." Photo by Catherine Park.



*Astagalus claranus* (a near Napa County endemic).  
Photo by Jake Ruygt.

myself in plant identification. Many mistakes in identification were made in the first years as my recognition of plant morphology progressed and the specimens served an important part in correcting the errors. My appreciation of the value of collections as historic vouchers of plant distribution came later. I still refer to my personal collections to assess plant variability and sometimes, previously unrecognized taxa still come to light.


Around 1980, after joining the California Native Plant Society, I met other persons interested in the flora of Napa County, including Richard Weston, Joe Callizo, and Juanita Doran. Frequent hikes with them proved to be a valuable tool to support or counter my plant identifications. A computer database was being developed at Pacific Union College (PUC) in Angwin and I was anxious to participate. As I gained confidence in identification I began to compile area plant lists. My pace of collection increased. By 1985, I considered working on a publishable flora of Napa County. About this time, the PUC computer database ran aground and my wife and I purchased our first computer. I began entering my collection records into a database and several years later, began to compile my collection and location lists into a database that contained data “fields” including a brief morphological description, habi-

ton and state park ranger Bill Grummer. The second edition of this effort was completed in 1996.

In early 2001, I began converting my database into a text format. A second text draft followed, including more specific distributional data and voucher records for uncommon taxa. I acquired flora lists completed by Peter Raven (c. 1953), Milo Baker (1954), Jack Major (1963), and others. Much time was spent in herbaria tracking down voucher collections reported by these individuals and others for species that I have not observed or collected myself. Keys to families, genera, and species were formulated. I prepared simple line drawings over the course of a several years. A few copies of the second draft of the “text rich” Napa Flora were distributed in 2003 to put my flora text and keys to the test in the field. The current working draft has also incorporated a considerable amount of data that became available via the Consortium of California Herbaria. This also

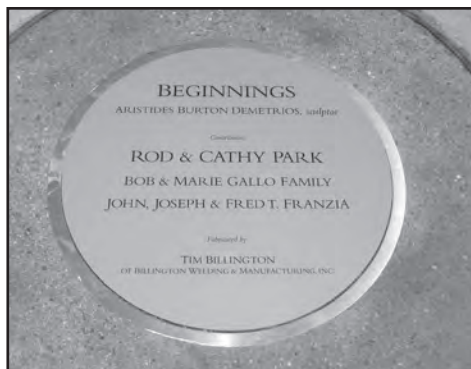
generated some additional field work as dozens of new taxa were revealed. To improve the credibility of the taxa included in the flora, I have sought the expert determination of taxonomic specialists for many of my collections. This flora draws together extensive records of thousands of voucher collections, partial floras, location lists, and personal field experiences gathered over the last 33 years. Nearly all of the taxa included in the flora will be supported by herbarium specimens. The text format and taxonomy will resemble *The Jepson Manual*. Approximately 1,690 taxa will be discussed including about 1,210 native and 480 non-native taxa. The text will also include discussions on climate, geography, and invasive plants.

The Napa County flora is approaching completion but many hours of work remain to put the pieces together. It has been an exciting experience to discover the richness of the flora of Napa County. At the same time, with rapid changes occurring to our native plant communities, it has been distressing to see my work becoming as much a historic record of what was, as it should be a useful guide for amateur and professional botanists. If you are interested in the Napa County flora or would like to help test the keys, please feel free to contact me at [jruygt@comcast.net](mailto:jruygt@comcast.net).





*Erythronium helenae* (a near Napa County endemic).  
Photo by Jake Ruygt.



Photos by Mary Bromage

The ceremony was also adorned by a new sculpture that was recently installed. "Beginnings," pictured above, is a magnificent 40' high piece in the central courtyard of the UC Merced campus. The two enfolded, burnished stainless steel arms are metaphors for a growing, germinating seed and for the embrace of a caring university that values both its students and its local community.

"Beginnings" was inspired by former Acting Chancellor Rod Park in 2006 and conceived by noted American sculptor Aris Demetrios. Rod and his wife, Cathy, were the primary donors and visionaries for the project. In addition, generous donations by the Bob and Marie Gallo family and John, Joseph, and Fred T. Franzia of Bronco Winery made the work possible.

At the Jepson Herbarium, we are proud to have been involved in the decision making process regarding the placement of UC Merced. As we first wrote about in the April 2001 issue of the *Globe*, faculty and staff affiliated with the University and Jepson Herbaria worked closely with key decision makers regarding the footprint of the campus. Rod Park, Trustee of the Jepson Herbarium, was one of those very influential people.

UC Merced represents something new in the UC system. Part of the mission of UC Merced is to reach out to communities in the Central Valley, a traditionally under-served population, and start encouraging families to think about college as a feasible option for their children. It's working;

applications to University of California campuses from Central Valley residents have increased 41 percent and admissions have risen 45 percent since Fall 2004.

Michelle Obama recognized the importance of UC Merced when she accepted the invitation to speak at graduation. With "Beginnings," Rod Park, Aris Demetrios, the Gallo family, and the Franzia brothers also recognized and celebrated its significance.

Mrs. Obama perfectly captured the philosophy of the campus in her address. To the graduating class, she said, "Remember that you are blessed. Remember that in exchange for those blessings, you must give something back. You must reach back and pull

someone up. You must bend down and let someone else stand on your shoulders so that they can see a brighter future. You are the hope of Merced and of this nation...be the realization of our dreams and the hope for the next generation. We believe in you."

The students of UC Merced have proven to be exceptional students and the campus will no doubt have an immeasurable impact on the Central Valley and the families and communities there.



Michelle Obama with Rod Park in the upper left. Photo: Getty Images

**California Botanical Society  
Job Position Open**

The California Botanical Society, which publishes the quarterly journal *Madroño*, founded by Willis Linn Jepson in 1915, is looking for a part time (approx. 8 hours per week) administrative assistant to help manage memberships/subscriptions, keep records, respond to member queries, requests for back issues, and other related tasks. Good organizational skills are a must. Proficiency with email, fax, Microsoft Word, Excel essential. Knowledge of Filemaker Pro helpful. Might appeal to someone with a strong interest in botany who would like to support the cause, and earn some supplemental income as well. Work in the Jepson Herbarium during weekday open hours with Tom Schweich (Treasurer), Heather Driscoll (Corresponding Secretary), and Kim Kersh (Membership Chair). For further information please contact Kim at the Jepson Herbarium (510) 643-7008  
kersh@berkeley.edu

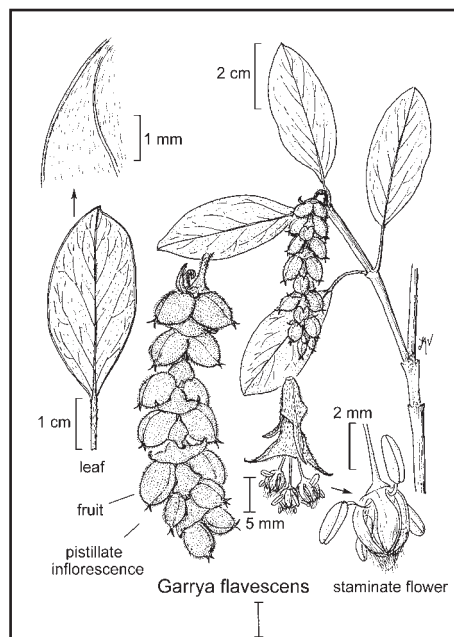
# New and Improved Illustrations for The Jepson Flora: Manual to the Vascular Plants of California

By Linda Ann Vorobik, Ph.D.

As staff illustrator for the original *Jepson Manual* and the *Jepson Desert Manual*, I was excited about updating illustrations for the upcoming *Jepson Flora: Manual to the Vascular Plants of California*. What an opportunity: to improve the drawings that I use both as a botanist and as a teacher of plant identification.

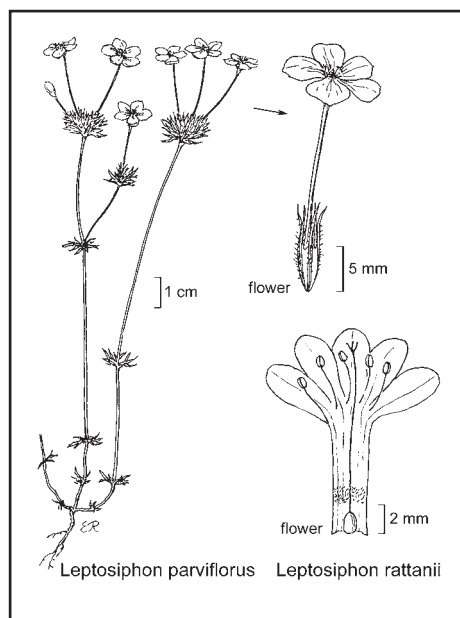
I have been working at improving drawing accuracy, utility, and attractiveness by:

1. Relabeling drawings with updated nomenclature. Information from contributors flows through editors to me to ensure all spelling is correct.
2. Incorporating corrections from Editorial Staff and Contributors. Corrections include new drawings, fixing original drawings, or merely changing a scale bar.
3. Improving label placement. Original illustrations were often very crowded; I have done my best to re-compose them so that it is clear which drawing belongs to which plant taxon.
4. Reorganizing drawings so that all illustration entries appear alphabetically. Sounds easy, doesn't it? Not so. The original drawings were fit as tight as puzzle pieces, with, in some cases, four to five taxa on one ninth of an illustration page. In genera that have been extensively revised, putting the art in a new order has been the mental equivalent of Killer Sudoku!
5. Standardizing and repositioning scale bars. All scale bars have been replaced with an electronically created bar, to improve the look of illustrations. Also, in many cases scale bars have been re-positioned so that it is easier to estimate the size of the plant part measured.
6. Adding illustrator's initials to all drawings. Initials for each artist were added to all illustrations. Emily Reid (initials ER), Linda Vorobik (LAV), Karen Klitz (KK or K in a box), Bobbi Angell (BA), Sarah Young (SY), and Leslie Randall (LBR), listed in decreasing order of number of drawings, contributed the illustrations in the original *Jepson Manual*. Emily Reid's initials were left off her drawings in the first edition.
7. Making all illustrations electronic. One ninth of an illustration page is called by staff an illustration "unit." At the end of the project all revised illustration units will be electronic for ease of archiving and for later use in other projects.



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Not only will the illustrations be easier to use, but the new *Manual* will include 20 plates of additional drawings, including some additional rare plants and weeds, some drawings from the *Jepson Desert Manual*, and some drawings of genera that were not represented before. Two of these plates (18 additional units) were supported by the wonderful response to the challenge grant I issued (thank you!).



All users of the *Manual* are somewhat uneasy about the end result of the explosion of new data resulting from the last two decades of molecular taxonomy: mountains of revised nomenclature. The Jepson Flora Project staff is aware of this, and through text and illustrations, is trying to make this extensively revised volume as easy to use as possible. Feedback I have received from botanists and students of botany especially motivates me to make all possible improvements to the revised illustrations. 🌿

## Figures:

1. Garryaceae: *Garrya flavescens*. A rare plant from northern California and an illustration addition to the new *Manual*.
2. Polemoniaceae: *Leptosiphon* species. *Leptosiphon* is a genus segregated from *Linanthus*, resulting in much relabeling and reorganization of drawings for these genera.

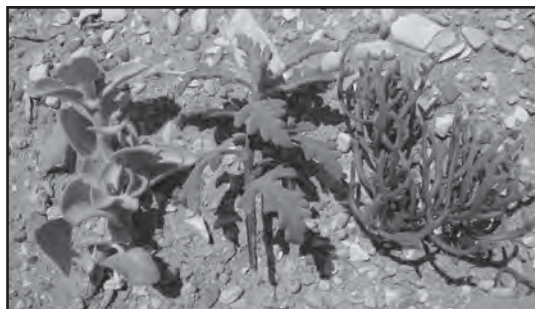
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## Adventures in Baja California By Chris DiVittorio

In late winter of 2009, supported by a grant from the Heckard Endowment fund of the Jepson Herbarium, fellow graduate student Ben Carter and I took two trips to the mountains and deserts of Baja California to botanize, with specific intent on finding sunflowers and bryophytes. As a bryologist, Ben went to find out if the deserts—not a traditional hot spot of moss diversity—could yield any surprises. As an ecologist, I was interested in finding as many species of the genus *Encelia* as possible.

These perennial shrubs radiated into about 20 species and varieties that have a dizzying variety of leaf morphologies and (presumably) water use strategies. They live in very different habitats, from coastal sand dunes to extinct volcanic cinder cones, and despite all these differences they are nearly indistinguishable genetically. Where the different species come into contact, they hybridize, and this could be of evolutionary significance if hybridization allows for exchange of genetic material among species. Thus, we were looking for areas of hybridization. An example of one published case of hybridization between two *Encelia* species is shown above. The green, succulent, dissected leaved species on the right is *E. ventorum*, endemic to sand dunes on the central Pacific coast of Baja California. The farinose, entire leaved species on the left is *E. palmeri*, it grows in the low desert flatlands between the Vizcaíno Peninsula and La Paz. The middle “species” is actually a hybrid between the other two species. Despite being intermediate between both parental species in all measurable characters, and the observation that it is only found in contact zones between the parental species, these hybrids were originally described as a separate species, *E. laciniata*, in the early part of the last century. Progeny testing supported this conclusion, and I would like test this hypothesis experimentally.

While it was easy to find the sunflowers, the less-conspicuous mosses did not advertise their locations making it difficult to locate many in the arid desert environment. However, all it took was a gain of about 3,000 meters to the top of the Sierra San Pedro Mártir in central Baja California where the desert scrub gave way to chaparral and then coniferous forest to find all the moss Ben could want. Many trails were buried under snow here at the highest point on the peninsula, and we got unsurpassed views of the Pacific Ocean to the west and the Sea of Cortez to the east. The National Observatory of Mexico is located here because of the elevation and lack of light pollution from surrounding populations...this region is very remote! The remoteness of the peninsula keeps the wilderness wild, but also makes it logistically difficult to explore. However, for enthusiasts of deserts (or beaches!) the peninsula makes an amazing botanical excursion. February was an ideal time for seeing annuals, with desert *Eschscholzia*, *Coreopsis*, *Abronia*, and many others flowering in great abundance. Perennials can flower much later into mid-summer, especially in coastal areas that are inundated by summer fog. 🌿



*Encelia palmeri* on the left, *E. ventorum* on the right, and their purported F1 hybrid in the middle.



Ben Carter, 2009.

## THE JEPSON HERBARIUM PROJECTS & RESOURCES

### The Jepson Flora Project

*The Jepson Manual & Jepson Desert Manual*  
Online Interchange for California Floristics  
Online Horticultural Database

*A Flora of California* (electronic)

### Educational Services & Resources

Botanical Workshops & Courses  
Plant Identification

2,200,000+ Worldwide Plant Specimens  
Botanical Library & Archives

### Publications & Research Projects

*Constancea*: UC publications in botany

**Director:** Brent Mishler

Deep Green Plant Phylogenetics: Novel  
Analytical Methods for Scaling Data from  
Genomics to Morphology

Moorea Biocode Project (a complete inventory  
of an island ecosystem)

Systematics and ecology of *Syntrichia*

**Curator:** Bruce G. Baldwin

Systematics and Evolution of Calif. tarweeds  
and relatives (tribe Madieae, Compositae)

Unravelling the dynamics of mating-system  
evolution in tribe Collinsieae

**Curator of Ecology:** David Ackerly

Niche conservatism, functional trait evo-  
lution, and the diversification of the Cali-  
fornia vernal pool flora

Ecological Flora of California

Evolution and origin of the California flora

**Curator of Monocots:** Chelsea D. Specht

Evolution and biogeography of Calif. alliums  
Systematics and evolution of *Heliconia*

Floral developmental evolution in the tropical  
gingers (Zingiberales)

**Curator of W. N. Am. Botany:** Barbara Ertter

*Flora of Mount Diablo & Flora of the East Bay*

North American Potentilleae

**Trustees:** Vice Chancellor Emeritus Roderic  
Park, Chairman; Vice Chancellor Emeritus  
Beth Burnside; UC Botanical Garden Director

Paul Licht; Professors John Taylor and Brent  
Mishler (ex officio)

**Administrative Curator:** Andrew Doran

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Project Manager: Staci Markos

Manag. of Collections Data: Richard Moe

Scientific Ed.: Tom Rosatti, Doug Goldman

Admin. Assistant: Edith Summers

Managing Editor: Margriet Wetherwax

**Research Associate:** Bridget Wessa

**Archivist:** Amy Kasameyer

**Collections Manag. Staff:** Kelly Agnew,  
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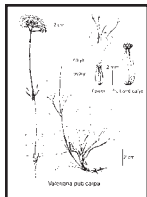
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**Development & Globe Editor:** Staci Markos

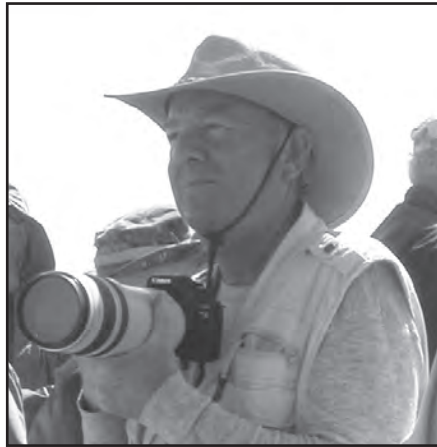
PLANTS and PEOPLE

**The Jepson Herbarium thanks the following people for giving in response to our summer fund drive and challenge grant in support of additional illustrations for the new Manual.**

Lisa Acree	David Matson
Lowell Ahart	Kate F. Mawdsley
Jim Alford	Shirley M. McPheeters
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Leslie Burkhart	Neal Miura
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Richard & Trisha Burgess	
Gerald & Buff Corsi	
Wilma & William Follette	
Gordon & Jutta Frankie	
Noel & Patricia Holmgren	
Ann & John Pinzl	
Barbara & Roland Pitschel	
Timothy & Joan Kask	
Charles & Kati Quibell	
David C. Randall & Susan Conard	
Harlan M. & Ann Richter	
Jeanette & Darwin Sainz	
Judson & Joyce Vandever	
Marshall & Jenny White	



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**In Memorium  
Larry Abers**

Larry Abers, a lover of native plants and plant photographer whom many of us knew from wonderful botany field trips, lectures, and walks that he led or took part in, died before dusk on the evening of July 30th in the company of his friends and fellow plant-o-philes, while camping at Tuolumne Meadows with a Jepson Herbarium Workshop "Alpine and Subalpine Flora of Yosemite National Park". For years, Larry has educated many to the joys of botany, and organized numerous lectures for the community. He touched us all with his generosity - Larry arrived to Yosemite with his ingeniously designed, one-of-a-kind camp kitchen; he was working away setting it up when the Jepson van pulled in, and was utterly delighted to be doing it!

Larry's work in native plant education and conservation will be very missed. We feel sad at our lost opportunity in getting to know him better.

Caption: Larry Abers on the boat to Santa Cruz Island with a Jepson workshop (2008). Photo by Anna Larsen.

**The Jepson Herbarium is pleased to announce the recipients of the 2009 Awards from the Lawrence R. Heckard Fund of the Jepson Herbarium; an endowment fund established to support California floristic research facilitated through the Herbarium.**

DiVittorio, Chris  
*Encelia* evolution

Ertter, Barbara  
Potentilleae systematics

Guilliams, Matt  
*Plagiobothrys* systematics

Larsen, Anna & Scott Simono  
Angel Island flora

Moore, Abby  
*Grindelia* population genetics

Schultheis, Lisa  
*Downingia yina* publication

Shade, Jessica  
*Lupinus nanus/L. bicolor* relationships

Simms, Ellen  
Perennial lupine evolution



Larry Heckard, 1983

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Address \_\_\_\_\_

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- I would like to contribute to the Annual Fund:  
\_\_\_\_ join the *Friends* or \_\_\_\_ renew membership  
(\$35 individual / \$50 family).
- I would like to support the new *Manual* with my gift of \_\_\_\_\_.
- Please acknowledge me as a sponsor of \_\_\_\_\_  
(indicate genus name, e.g., *Lilium*, family name, e.g., Poaceae, or other  
category) by printing my name in *The Jepson Manual*  
(for gifts of \$1,000 or more, see side bar). See [http://ucjeps.berkeley.edu/  
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*All gifts are tax deductible as prescribed by law.*

*Thank you for supporting the Herbarium and its programs!*



## GIVING

**The University and Jepson Herbaria are feeling the effects of the serious California budget crisis.** The state funds coming into the University Herbarium have been permanently cut 28%, with the possibility of more cuts to come next year. Endowment return, a primary source of support for the Jepson Herbarium, is caught in a serious downward trend. Staff and faculty are on a 4-8% furlough (depending on salary level) starting on the first of September. We need our *Friends* more than ever!

### GIFTS TO SUPPORT THE NEW MANUAL

**\$2,500** Support taxonomic work in a particular family

**\$1,000** Show enthusiasm for your favorite genus

**SPONSORSHIP OPPORTUNITIES** are exclusive and will be available on a first-come, first-served basis. With approval from the donor, gifts at the \$1,000 level and above will be acknowledged in the front pages of *The Jepson Manual*. See the Herbarium web site for an up-to-date, complete list of families and genera that have already been sponsored.

### ANNUAL SUPPORT

**\$35/\$50** Basic membership in *Friends of the Jepson Herbarium*



**FRIENDS OF THE JEPSON HERBARIUM**  
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## **Jepson Herbarium Public Programs**

### **Remaining classes in 2009**

#### **SEPTEMBER**

*Botanical Field Sketching*

*September 12–13, 2009*

*Intermediate Plant Identification: Spotlight on*

*Asteraceae and Grass-like Plants*

*September 26–27, 2009*

#### **OCTOBER**

*An Introduction to Herbarium Specimen Curation*

*October 10, 2009*

#### **DECEMBER**

*Evolution and Diversity of Mushrooms*

*December 12–13, 2009*

### **Preview of a few 2010 workshops**

*Tropical Bryology (Costa Rica)*

*Fifty Plant Families in the Field*

*Racomitrium*

*Introduction to Morphology and Plant ID*

*Poaceae*

*Rare Flora of Kings Canyon*

*Flora and Ecology of the Steens Mtns*

*Ferns of Hawaii*

For more information, contact Cecile Shohet  
(510) 643-7008, [cshohet@berkeley.edu](mailto:cshohet@berkeley.edu) or visit our Web site: <http://ucjeps.berkeley.edu/jepwkshp.html>