

## ANNUAL MEETING ELECTS SLATE, TACKLES TARWEEDS

The 2005 Annual Meeting on May 19 in the Blanchard Room of the Davis Public Library was our usual combination of quickly dispatched business, an outstanding and well-illustrated talk, and enthusiastic conversation over refreshments. After a summary of the year's events, President Dan Potter presented the slate of officers for 2005/06, which was elected by acclamation. New officers are shown in the box on the right.

Bruce Baldwin, Willis Linn Jepson Professor and Curator of the Jepson Herbarium at UC Berkeley (and a Davis Ph.D. with Don Kyhos) led us through the evolution of familiar and (figuratively) exotic tarweeds, from the humble *Hemizonias* to the spectacular Hawaiian silverswords. Bruce's phylogenetic research has documented changes in a number of traditional genera in the group—some have returned to earlier names; others have new ones. He spent the afternoon before his talk updating the synonymy in our collection, a traditional and much appreciated professional courtesy.

And then we visited, asked Bruce more questions, ate and talked on into the evening. The good turnout confirms the decision to move our program meetings off campus. Look for more great plant talks in 2005-06.

*K. Mawdsley*

## LASTHENIA

LASTHENIA, the Newsletter of the Davis Botanical Society, is published by the Society in collaboration with the staff of the UC Davis Botanical Conservatory and Center for Plant Diversity.

*Editor:* Kate Mawdsley

*Contributors:* D. Crosby, E. Dean, T. Metcalf, E. Sandoval, K. Mawdsley

*Design:* Susan Gloystein Cotterel

*Layout:* Ellen Dean

### OFFICERS

*President:* Ernesto Sandoval

*President-elect:* Deborah Canington

*Membership Vice President:* Bill McCoy

*Secretary:* Michelle McMahon

*Treasurer:* Robert Rhode

*Past President:* Dan Potter

*Members at Large:* Leah Gardner Miller, Don Crosby, Eva Bayon

*Student Member at Large:* Jennifer Petersen

*Ex officio:* Jean Shepard, Tim Metcalf, Kathy Sachs Barrientes, Kate Mawdsley



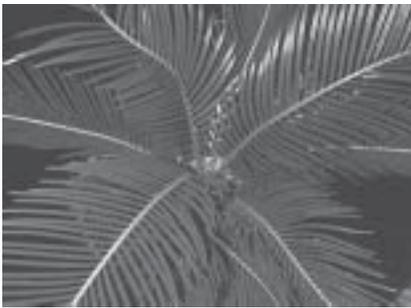
Center for Plant Diversity  
Section of Plant Biology  
One Shields Avenue  
University of California  
Davis, CA 95616  
0942



# LASTHENIA

NEWSLETTER OF THE DAVIS BOTANICAL SOCIETY

## GIFFORD CYCAD GARDEN IS HERE!



*The leaves of Sago Palm (Cycas revoluta)*

Botanical Conservatory Staff recently put together a proposal to establish the Ernest Gifford Cycad Garden. By the time you read this article, the Robbins Hall cycads from the large planter boxes and those planted in the

courtyard will have been transplanted to ground beds around Storer Hall. Steve's Tree Moving Service will professionally transplant the larger cycads including Ma & Pa, a coning female and male pair of *Cycas revoluta*, to a more suitable and highly visible location on the south side of Storer Hall where students, staff, and faculty and campus visitors are sure to be enthralled by their beauty and ancient plant status.

With the move of the Plant Biology teaching labs to the Sciences Lab Building, Tim and Ernesto have decided that the area around the main entrance of Storer Hall will be an ideal growing area. This location provides



*The leaves and seed cone of Encephalartos ferox (Zulusand Cycad)*  
Photo: Ernesto Sandoval

excellent winter sun exposure, great protection from cold weather, and increased visibility. Also, the gardens will be educationally valuable and critical to plant morphology, biology, and geography classes being taught at UC Davis and at other schools in the region. A portion of a grant from the Elvina J. Slosson Horticultural Foundation will fund labeling and

*continued on page 5*

## ELLEN SAYS GOODBYE

With both regret and excitement, I am stepping down as Director and Curator of the Center for Plant Diversity, and moving on to a new career as a botanist for an environmental consulting firm. It has been an honor to be involved in the transformation of the herbarium at UC Davis into the Center for Plant Diversity. It would never have happened without all of your support, and seeing the pride of ownership on everyone's face has been the biggest reward for the long hours of work.

This past spring has been the busiest spring we have ever had in the herbarium, with many visitors coming to see the new facility, several open houses, tours, and wide interest in using our spacious new work room. Many more botanists have stopped by to curate our specimens and identify their own. From my own experience, having

*continued on page 2*



*Ellen Dean with husband Tom Starbuck and daughter Margaret on the Sagehen field trip*  
Photo: Landon Scarlett

## IN THIS ISSUE

Gifford Garden Completed .....	1
Society Profiles .....	2
Spring and Summer Trips .....	3
Toxic Cycads .....	4
Student Grant Recipients .....	.5
Desert Collecting .....	6

## DIRECTOR'S CORNER

### ELLEN SAYS GOODBYE CONT. FROM PAGE 1

the specimens rearranged phylogenetically makes them much more useful for specimen identification. Recently, I collected a new weed for California, a tree with compound leaves. Having all the compound leaf families together in one aisle made it much easier for me to match this unknown with our specimens. Thanks again to all the volunteers and students who helped us move and rearrange our specimens.

We have been very fortunate to have a group of volunteers who have helped us with specimen, library, and slide curation for the past six months: Bill McCoy, Don and Nancy Crosby, Gerald Dickinson, Gordon Harrington, Denny Nolet, and Kate Mawdsley. For part of the spring,

Phyllis Graham also helped us curate our slide collection. It was a pleasure to work with such a great group.

It is my hope that our members and volunteers will continue to support the Center in whatever way is possible, so that it continues to grow and mature into the type of world-class research and outreach facility that I know it can be. I will still be hanging around, as I have research projects to finish in the herbarium, and I will certainly see you at Botanical Society lectures and trips. Thank you for all you have shared with me.

### CONSERVATORY

The Conservatory, as well as the new teaching laboratories and greenhouse, are dedicated to helping students encounter the wonder of plants in an

accurate, compelling, and lasting way. We have an opportunity to extend that effect in the plantings around the new building and throughout the Life Sciences district. Even the professionally landscaped areas on the north and west sides of the Science Laboratory Building incorporate more varied plant selection than has been usual on campus, based on suggestions from Conservatory and other PLB teaching staff as well as Warren Roberts from the Arboretum. Amending soil, finding and placing tons of rocks, and planting the two entry beds in time for the June 2d dedication added a level of excitement and urgency to the usual heavy spring class and tour schedule.

The end of May and beginning of June were so full, we realized we would not be able to display the *Amorphophallus titanum* bloom ("The return of Ted the Titan") that was developing. So we lent the plant to the Conservatory at Golden Gate Park in San Francisco. Its flowering for them on Memorial Day generated international interest and record-breaking numbers of visitors. They returned the plant in mid-June along with funds to replace a five-year-old desktop computer and purchase a bar-code scanning hand-held computer to help with plant record keeping.

Managing Historical Collections: The Plants and the Pests was the theme of this year's Education and Research Greenhouse Curators' meetings hosted by the New York Botanical Gardens and Lehman College in The Bronx, New York. Ernesto gave a presentation on the use of Palm Pilots in curating a collection, and I was on a panel discussing planning, building, and commissioning new institutional greenhouses. We are both energized and inspired by the gardens and conservatories we visited and the people we talked with.

We couldn't have gone to New York were it not for an emergency hire of Pamela Riley as a Nursery Tech, funded in part by a grant from the Davis Botanical Society. With her help, we will be able to meet our deadlines as well as catch a short vacation before the fall craziness because a very capable person has been added to our staff.

T. Metcalf

### SOCIETY PROFILES

Kathy Sachs Barrientes

Kathy Barrientes, recently appointed Director of Development for the Natural Sciences in the new College (former Division) of Biological Sciences, was excited about the strong positive response to the fund campaign for the Ernest Gifford Cycad Garden, when she was tapped to be *Lasthenia's* interview subject for this issue.

A longtime Davisite and faculty child (her father is Prof. Emeritus of Environmental Horticulture Roy Sachs, of *Gerbera* fame), Kathy arrives in her new position from the Dept. of Viticulture and Enology, where she was Executive Assistant to the Chair. She also has a long history of volunteering for her children's schools, including numerous fund-raising events, and completed a certificate in fund-raising management at Indiana University's School of Philanthropy. Her UCD Bachelor's degree, achieved as a re-entry student in 2003, is in Organizational Studies and English.

Kathy's area of responsibility in the College encompasses fund-raising for the Sections of Plant Biology and Evolution and Ecology, the Center for Plant Diversity, the



Botanical Conservatory, and Bodega Marine Laboratory. She expressed pleasure at reconnecting with Davis, and with the Herbarium, as a historical library of California plants. She planned the major donors' events for the Science Laboratory dedication in June and then moved on to the campaign for the Gifford Cycad Garden. (Read more about this project in Ernesto Sandoval's article on page one.)

We are delighted to have Kathy's campus savvy, verve, and enthusiasm supporting the Herbarium and Botanical Conservatory. You'll enjoy meeting her at one of our events soon.

K Mawdsley

## FROM THE PRESIDENT

No plant lover can fail to identify with Ellen's desire to spend more time in the field with living plants (especially one like myself who works in the Conservatory!). So we wish her all the best and thank her for all she has done for the Herbarium and the Botanical Society in her ten years at UC Davis. I will never forget the first time she

explained to me the importance of training undergraduates, especially in the field of botany. The planning and monitoring of the design of the new herbarium facilities, and the successful move and simultaneous reorganization of the collections, are her most outstanding and lasting achievements. But we will also remember her humor and resolution

in the face of frustration and the caring way she welcomed students, researchers, other visitors and volunteers to the wonderful world of pressed plants. We look forward to her future visits as a researcher; the tradition of hospitality is well established.

E. Sandoval

## SPRING AND SUMMER FIELD TRIPS MEMORABLE FOR MEMBERS

We were blessed with a wonderful spring with plentiful rain, and it translated into a fantastic year for wildflowers. Those who attended the Davis Botanical Society spring field trip to Ring Mountain Preserve and the summer field trip to Sagehen Creek will remember those days for some time to come.

Kate Mawdsley led 15 enthusiastic participants on a loop hike at Ring Mountain, on the Tiburon Peninsula. The trail winds



Eva Bayon at Ring Mountain  
Photo: Ellen Dean

up a hill, straddling a rich coastal prairie with many native grass species, oak/bay woodland, and serpentine outcrops. At the top, we were rewarded with a lovely view of the San Francisco Bay, while on the way up we saw carpets of Pitted Onion (*Allium lacunosum*) and Goldfields (*Lasthenia gracilis*). We also got a good look at the endangered Oakland Star Tulip (*Calochortus umbellatus*) and Marin Western Dwarf Flax (*Hesperolinon congestum*). Kate added a new



Leichtlin's mariposa lily.  
Photo: Margaret Starbuck

*Triteleia* to her "life plant list", Long Rayed *Triteleia* (*Triteleia peduncularis*). I spent some time investigating the weeds near the beginning of the trail, finally getting a good look at *Vicia benghalensis*. It was an honor to climb the hill with veteran mountaineer Mary Major, whose husband Jack trained so many outstanding alpine botanists at UC Davis.

Leah Gardner Miller was in charge of the trip to Sagehen Creek, meeting



Giant Paintbrush  
Photo: Margaret Starbuck

us in the parking lot at 6,000 feet with granola bars in hand. The floral display along the trail was overwhelmingly beautiful, with five species of lupine, Sierra Rein Orchid (*Plantantera leucostachys*), Leichtlin's Mariposa Lily (*Calochortus leichtlinii*), Corn Lily (*Veratrum californicum*), three species of Indian Paintbrush (*Castilleja*), and Blue-Eyed Mary (*Collinsia torreyi*), to name just a few of the species we saw. The weather was perfect, as we wound our way through Aspens, Pines, Firs, and meadows.



Leah Gardner Miller at Sagehen Creek  
Photo: Ellen Dean

In planning these trips, we took note of what our field trip survey respondents said they wanted – mountain vistas and botanically interesting areas. We thank both Kate and Leah for organizing these wonderful trips. If any members would like to organize a future wildflower trip, please let our new President, Ernesto Sandoval, know at [jesandoval@ucdavis.edu](mailto:jesandoval@ucdavis.edu).

E. Dean

## GIFTS TO THE ERNEST GIFFORD CYCAD GARDEN

Eleanor M. Buehler  
Deborah & Shad Canington  
Eric Conn  
Sonia Cook  
Donald & Nancy Crosby  
Gerald L. Dickinson  
Ray F. Evert  
Herbert Fong  
Benjamin S. Henry  
Judith A Jernstedt  
Anton M. Kofranek  
Norma J. Lang  
Susan G. Larson  
Jeanette & Jonathan Lewis  
Mary C. Major  
Julian Maloof  
& Stacey Harmer  
Katherine Mawdsley  
& William McCoy  
Debbie R. Maynard  
Jack R. Maze  
Jocelyn Morris  
Dan E. Purcifull  
Calvin O. Qualset  
Elizabeth C. Quick  
David Randall  
& Susan Conrad  
Lawrence Rappaport  
Richard T. Riding  
Alison C. Roberts  
Warren G. Roberts  
Roy M. Sachs  
Robert D. Snider  
Alan Stemler  
Ivan J. Thomason  
Joe M. Traynor  
John M. Tucker  
Shirley & Kenneth Tucker

*Thank you  
for your  
support!*

## TOXIC CYCADS IN HONOR OF THE ERNEST M. GIFFORD CYCAD GARDEN

Cycads are seed-bearing, dioecious Gymnosperms, forerunners of today's conifers. Their order—Cycadales—is small, with only three families, four subfamilies, and some 285 species in 11 genera. Although their fossils go back over 230 million years to Permian times, cycads dominated the flora in Mesozoic times, 130 to 200 million years ago. In fact, the Mesozoic has been called “the Age of Cycads” (although zoologists prefer to call it “the Age of Dinosaurs”). Lacking the herbivore's long teeth or sharp claws, the plants fought back with violent poisons they developed for the purpose. They carry them to this day.

Unlike today's conifers, a cycad's cones can be a yard long and weigh 85 lbs, and a single seed may weigh as much as two ounces. Cycad reproduction is unique, the male's pollen germinating inside the female to produce motile sperm that then migrate internally into the ovary just as in animals—see David L. Jones' *Cycads of the World*, (Smithsonian Institution, 2002).

Cycads are endemic to much of the tropics and subtropics, especially in Africa, Mexico, Caribbean and Pacific Islands, Australia, Indonesia, and southern parts of Japan, China, and India. Only *Zamia integrifolia* is native to North America—Florida and southern Georgia—but Sago palm (*Cycas revoluta*) and fern palm (*C. circinalis*) are common imports. Many do look like palms, but the two groups are only distantly related.

On a 1697 visit to Western Australia, the Dutch explorer Vlamingh may have become the first European to suffer the violent vomiting, diarrhea, and vertigo that come with eating cycad seeds—in his case, seeds from *Macrozamia reidlei*. Many later explorers of Australia, including Capt. James Cook, reported similar symptoms. All cycad species and all parts of each plant are toxic,



*Seeds and part of the leaf of Sago Palm, (Cycas revoluta)*

but humans usually fall victim to the large, attractive seeds, while pets and livestock are poisoned by the foliage. A fleshy pulp (sarcotesta) surrounds each seed and apparently is sweet, so some people even develop a taste for it—not a good idea, with the flesh often as toxic as the seed.

Vlamingh's symptoms were typical of a brief encounter, but longer exposure would have led to amyotrophic lateral sclerosis (ALS, the Lou Gehrig disease); cycads are the only plants known to cause such irreversible damage to nerves, loss of speech and mobility, and slow but certain death. The disease was common among Chamorros—the native people of Guam and the Northern Marianas Islands—who for centuries have used a starch called *fadang* (arrowroot) extracted from the seeds and trunk of *Cycas circinalis* for food. The starch is carefully and repeatedly leached with water to remove the soluble poisons, after which it can be eaten safely in tortillas, soup, or porridge. Unleached starch is very toxic.

## OTHER RECENT GIFTS

The most dangerous use is the intoxicating drink made by partial fermentation of the crushed fruit. It is consumed on festive or ceremonial occasions, and children and young people are strictly forbidden to try it. Like the toxic *fugu* fish of Japan, it is said to cause a tingling sensation in the mouth, and of course, the danger alone would be enough to attract some people.

Cycads have long been associated with widespread livestock poisonings, especially in Australia where the culprits are mostly *Macrozamia* species. The main effect in cattle is paralysis—"zamia staggers"—while in sheep it most often causes liver failure. With few wild cycads in our own country, pets—especially dogs—become the victims of cultivated cycads; a dog may develop symptoms within minutes after chewing on a cycad leaf. The leaves and fruit also are toxic to fish and birds; there is no antidote or cure, and stricken animals usually die.

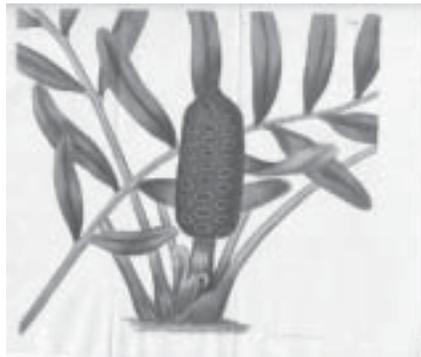
Poisoning is caused by a simple substance, methylazoxymethanol (MAM) that occurs in the plant combined with a sugar; the poison is called cycasine when the sugar is D-glucose and macrozamin when it is primaverose. Another neurotoxin,  $\beta$ -methylamino-L-alanine (BMAA), also is present. MAM reacts with DNA to initiate cancer, birth defects, mutations, and neurotoxicity, and it doubtless would damage the cycad, too, were it not deactivated by the

sugar portion. However, we and other animals regenerate the MAM by hydrolysis with digestive enzymes, and poisoning is sure to follow.

But what about cycads as ornamentals? Just be careful! There is evidence that cycads may be toxic via skin as well as mouth, so they should be handled with care—no open wounds or licking of exposed fingers (wear gloves). Children should be cautioned to avoid the pretty red or yellow fruits, and as with any toxic plant, keep cycads out of the reach of little kids and pets. Dr. Gifford's cycads seem to thrive in Davis, and no doubt many others will also. Hooray for the new cycad garden!

*D. Crosby*

*Dr. Crosby is author of The Poisoned Weed: Plants Toxic to Skin (Oxford University Press, 2004).*



*Seed cone and leaves of Florida Arrowroot (Zamia integrifolia)*

## GIFFORD CYCAD GARDEN (CONT. FROM PAGE 1)

interpretive signage for these amazing specimens and other drought-tolerant plants.

Dr. Gifford was very influential in propelling the UC Davis Botany program to the top in the nation, served as editor for the *American Journal of Botany*, co-authored the book *Comparative Morphology of Vascular Plants*, and published research on many topics, including cycads. This garden will honor Dr. Gifford's research on cycads and his

many other contributions to botany, especially here at UC Davis.

The Ernest Gifford Cycad Garden is being funded by private donations from a solicitation letter mailed to over 100 potential donors. If you are interested in making a donation for an endowment to maintain the garden, please contact Tim and/or Ernesto for details.

*E. Sandoval*

### June McCaskill Memorial Fund

Anonymous  
Kathy Barrientes  
Virginia & Donald Ford  
Diane E. Forrest  
Staci Markos  
& Craig Norvell  
Herbert & Maxine Schmalenberger

### Jack Major Memorial Student Grant Fund

Mary C. Major

### Herbarium Endowment

Kathy Barrientes  
Kirk T. Ehmsen  
Diane L. Forrest  
Jerry Fritzsche  
William McCoy  
Rockefeller Foundation  
Maxine Schmalenberger

### Conservatory Operations

Anonymous  
Carole Ludlum

### Herbarium Operations

William McCoy

### Gifts of Books

Mary T. Burke  
Ellen Dean  
Gordon Harrington  
Grady L. Webster

*Thank you  
for your  
support!*

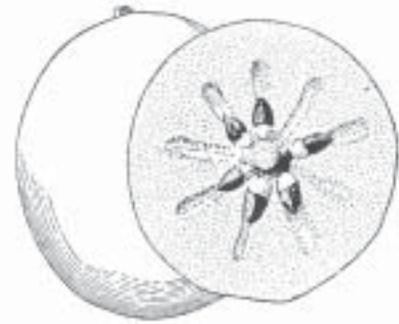
SCIENCE LABORATORY  
BUILDING OPENS

Six months of celebrations of the new Herbarium and Conservatory facilities were capped by the formal dedication of the building June 6. Here, Tim Metcalf and Ernesto Sandoval engage some of the visitors who toured the new greenhouse on the roof of the building that day.

2005 STUDENT GRANTS  
AWARDED

Tropical fruit, native aspen stands, and our most familiar native plants are the subjects of the student projects selected for 2005 DBS Student Grant Awards.

The E. Eric Grissell grant will assist Jennifer Petersen's study of the evolutionary patterns in *Chrysophyllum* (Sapotaceae) and the origins of *Caimito* (*C. Cainito*), also called star apple. Her project combines systematics, population biology, and ethnobotany; in addition to sampling wild and cultivated species from the Antilles and Central and South America for DNA analysis, she will interview residents about the uses and cultural importance of the plant.



*Star Apple, Chrysophyllum cainito*

Jennifer is a doctoral student with Dan Potter in the Plant Biology Graduate Group.

Tim Kuhn's Master's project in Restoration Ecology will study the influence of environmental variability and management actions on understory diversity of northern Sierra Nevada aspen stands. The project, awarded the Jack Major grant, is directly related to Kuhn's work as a hydrologist on the Plumas National Forest; he hopes the results will contribute to understanding and reversing the rapid decline of aspen stands in the region. Tim is working with Kenneth Tate, Cooperative Extension Rangeland Watershed Specialist.

Shannon Smith will compare molecular phylogeny and morphological diversity in the genus *Eschscholzia* (Papaveraceae), our much loved and planted poppies. He will collect plants from known populations in California and six other Western states, using data from herbarium labels as one source to locate plant populations. He will also prepare voucher specimens and population samples for the UC Davis Herbarium after he has completed his molecular and morphological analyses. Dan Potter is also Shannon's major professor in the Plant Biology Graduate Group.

K. Mawdsley

WEBSTER ADDS ASA GRAY AWARD  
TO ENGLER MEDAL

It is a distinct pleasure to scoop the American Society for Plant Taxonomy's journal, *Systematic Botany*, and announce that Professor and Herbarium Director Emeritus Grady L. Webster was announced as the 2005 Asa Gray Award recipient at Botany 2005, the annual conference of the Botanical Society of America and allied professional organizations.

The Asa Gray Award is the highest honor given by the American Society of Plant Taxonomist (ASPT) and is a lifetime achievement award for outstanding work in the field of plant systematics. The award was presented at the association's annual banquet by President Richard J. Jensen. In what he

described as "very short remarks," Grady noted he was particularly gratified to receive the distinction in Austin, Texas, site of this year's meetings and his home town. In fact, he said, it was his most delightful experience in Austin since his 50th high school reunion.



*Phyllanthus angustifolius*

A life-long student of the family Euphorbiaceae, Grady identifies his doctoral dissertation on *Phyllanthus* (he's still working on treatments for floras of many parts of the world), published over three years in the *Journal of the Arnold Arboretum*, and his 1994 *Synopsis* of the family as

perhaps his most important (of many) publications.

Congratulations seem almost superfluous, but we offer them anyway.

K. Mawdsley

## NEW COLLECTIONS

### TIM AND ELLEN'S GREAT DESERT ADVENTURE



View at the Granite Mountains Desert Research Center, Photo: Tim Metcalf

With all of California heading off to Death Valley last March, Tim Metcalf, Conservatory Director, and I (Ellen Dean, Herbarium Director), decided to take a half day off (in combination with a three-day UC Davis holiday) to visit the Mojave Desert.

Tim had the great idea of visiting the Granite Mountain Desert Research Center, a UC reserve that is located in the Mojave National Preserve, south of Death Valley (San Bernardino County). Center Director Jim Andre is an expert on the flora of the Mojave Desert and was a huge help, reserving a small trailer for our use, and organizing an amazing team of California Native Plant Society Desert



Jim Andre (second from right) explaining the identification of *Hymenoclea* subspecies

Chapter members for a collecting trip on the morning of March 25.

On that day, we met Jim and the Desert Chapter group (Steve Hartman, Ileene Anderson, Dave Tibor, Rolf Muertter, and Assistant Reserve Manager Megan Ludlow) along Hwy 40 just west of Ludlow. Jim first took us to a site to look for (not collect) the rare White-Margined Beardtongue

(*Penstemon albomarginatus*). We did not locate this beautiful plant, but yours truly did find (and photograph) another rare plant while using a far-flung shrub – the Pink Funnel Lily (*Androstephium breviflorum*) – which caused quite a stir (old hat to Jim, of course). My photograph of that species is now mounted and filed in a folder at the herbarium (we had no specimens of that species – as is the case for many rare plants).



Pink Funnel Lily



Rambling Milkweed  
Photo: Jim Andres

We then continued on to a beautiful collecting site southeast of the town of Ludlow along old Route 66. Jim chose the site for maximum plant diversity and set the group to work finding plants, while I pressed plants as fast as I could.

It was a wonderful, confusing, and productive several hours. The group found two species each of *Dalea*, *Eschscholzia*, and *Lepidium*, several species each of *Phacelia*, *Chorizanthe*, *Cryptantha*, *Camissonia*, *Pectocarya*, and *Chaenactis*, two subspecies of



Gravel Ghost, *Atrichoseris platyphylla*  
a common desert herb

*Hymenoclea*, and many other typical desert pavement/wash species, including several species new to me, such as Rambling Milkweed – *Sarcostemma hirtellum*. The Desert Chapter members enjoyed learning about pressing plants, and we obtained many beautiful specimens for the herbarium. We are very grateful for their help.

After the group broke up, Tim and I continued collecting on our own



Tim at the Cadiz dunes

in the area south of Hwy 40, but we met up with Jim again the next day for another Desert Chapter outing to Amboy Crater and the Cadiz Dunes. We also continued to collect on our way back to Davis. It was a memorable and fun trip – and the 100 plus specimens are already mostly labeled (thanks to Kate Mawdsley's capable help!). Perhaps we can organize another Davis Botanical Society/CNPS expedition this coming year.

*E. Dean (including photos, except as noted)*