

# Friends of the Herbarium

**Biological Sciences Herbarium**

**California State University, Chico**

## Newsletter

Vol. 3 No. 2

October 1997

### Friends of the Biological Sciences Herbarium

## Annual Meeting

4:00 pm Saturday

18 October 1997

Holt Hall Room 129

Reception at 3:00 pm



Introduction and Welcome

Report from the Board



### Jim Jokerst Field Botany Award

Introduction of recipients

Each recipient will present a short review of their research



### Special Presentations

"Introduction to the Flora of North America Project"

by Dr. Kingsley Stern

"Out of the lab and into the field:  
trials and tribulations in the study of *Vaccinium*"

by Loren Gehrung



### Distinguished Service Award

presented to Lowell Ahart

by Friends of the Biological Sciences Herbarium



### Dinner

Join us as the Friends of the Herbarium  
take Lowell out to dinner  
immediately following the Annual Meeting

### MESSAGE FROM THE BOARD

Be sure and come to the Friends of the Biological Sciences Herbarium Annual Meeting on 18 October. See the announcement adjacent to this message for details. Our annual meetings are always designed to be interesting and informative. This year's meeting is preceded by a special free workshop on Herbarium Practices. See page 3 for more information about this workshop. A reception will be held at 3:00 pm, between the workshop and the Annual Meeting; be sure to attend and meet your fellow Friends of the Herbarium. For more information about any of these activities, please call the Herbarium at 916/898-5381.

The weekend of the Annual Meeting is also CSU, Chico's Fall Festival, which in-

*Continued on page 2*





## Friends of the Herbarium

The **Friends of the Biological Sciences Herbarium**, California State University, Chico, was formed to help maintain the high quality of work that has been known to be associated with the herbarium. The primary purpose of the group is to provide community support for the herbarium. This includes raising funds for items that are not covered under the University budget. Scientific and academic pursuits are the focus of the group. The Friends also offers low cost workshops and classes on various botanical topics.

The Friends of the Biological Sciences Herbarium operates under auspices of the California State University, Chico, and enjoys non-profit status and has access to the use of University classrooms and equipment.

Memberships are renewed on May 1 of each year.

### BOARD OF DIRECTORS

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### Newsletter

Volume 3 Number 2

The Newsletter is published three times a year by the **Friends of the Biological Sciences Herbarium**, California State University, Chico. Subscription is free with membership. Submissions on herbarium related topics are welcome.

## Fall Festival\*

(including Homecoming/Parents Day activities)

### FRIDAY, OCTOBER 17

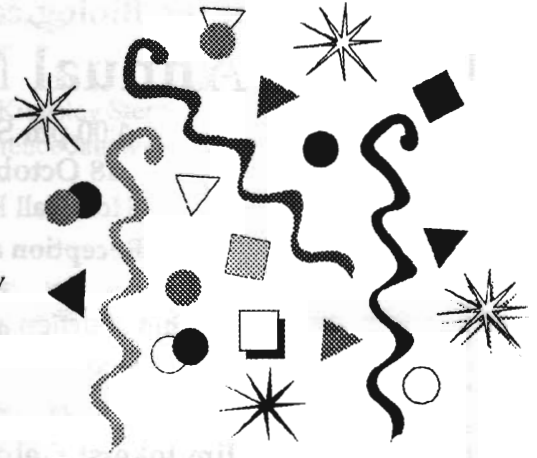
- ALUMNI ART SHOW  
9 A.M.-5 P.M., University Gallery, Taylor Hall
- DCBA FALL HARVEST  
10 A.M., downtown Chico
- VOLLEYBALL vs. ALUMS ♦  
6 P.M., Shurmer Gym
- FALL FESTIVAL CONCERT  
7 P.M., Harlen Adams

### SATURDAY, OCTOBER 18

- DCBA FALL HARVEST  
10 A.M., downtown Chico
- REGISTRATION FOR PARENTS ♦  
10:30 A.M., tent near Shasta Hall
- REGISTRATION FOR ALUMS ♦  
10:30 A.M., Sapp Hall
- CAMPUS WALKING TOURS  
10:30 A.M., tent near Shasta Hall
- ALUMNI ART SHOW  
9 A.M.-5 P.M., University Gallery, Taylor Hall
- UNIVERSITY FARM TOURS  
10:30 A.M., University Farm  
For more information, call the University Farm at 916-898-6343.
- FALL FESTIVAL PICNIC  
11:30 A.M., Whitney Hall patio
- PICTURES OF GOLDEN GRADS ♦  
11:45 A.M., BMU lobby
- ALUMNI LUNCH HONORING GOLDEN GRADS ♦  
NOON, BMU 108
- INTRAMURAL FLAG FOOTBALL CHAMPIONSHIP GAMES ☆  
NOON, University Stadium
- WOMEN'S SOCCER vs. HAYWARD ☆  
1 P.M., soccer stadium
- MEN'S SOCCER vs. HAYWARD ☆  
3:30 P.M., soccer stadium
- COLLEGE OF AGRICULTURE FALL FESTIVAL DINNER & INDUCTION CEREMONY  
6:30 P.M., University Farm Pavilion  
For more information, call the College of Agriculture at 916-898-5844.
- WOMEN'S VOLLEYBALL vs. SAN FRANCISCO ☆  
7 P.M., Shurmer Gym
- ANNIVERSARIES AND WALTZES—CSU, CHICO CHORAL CONCERT ★  
7:30 P.M., Laxson

Continued from page 1  
Message from the Board

cludes Homecoming and Parents Day. For those of you interested in attending Fall Festival activities in addition to the Friends of the Herbarium activities, the calendar of events for the Fall Festival is reproduced here (from *Chico Statements*, a magazine from CSU, Chico "published twice a year for alums, parents, faculty, staff, and friends of California State University, Chico"). Quite a weekend to come visit the CSU, Chico campus! LJ



REMEMBER: All calendar information is tentative at the time of publication and subject to change. For up-to-date details, please call

- ♦ Alumni and Parent Relations  
916-898-6472
- ♦ Office of the President 916-898-5201
- ☆ Sports Information 916-898-6470
- ★ University Box Office 916-898-6472. ~



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## FRIENDS OF THE HERBARIUM WORKSHOPS

### INTRODUCTION TO HERBARIUM PRACTICES. 18 October, Saturday.

Dr. Kingsley Stern, Emeritus Professor of Botany, and Lowell Ahart, plant collector *par excellence*, will lead this short workshop. They will give presentations on what is an herbarium and what it is for, herbarium management, and collecting, mounting and processing herbarium specimens. The workshop will meet from 1:00 pm to 3:00 pm in Room 129 of Holt Hall on the CSU, Chico, campus. The class is limited to 20 participants. This workshop is FREE, but please RSVP ahead of time if possible. For information about the workshop or about registration, please call the Herbarium at 916/898-5381.

### INTRODUCTION TO KEYING CAREX. 15 November, Saturday.

An introduction to keying *Carex* and the associated terminology, this workshop is led by Lawrence Janeway. Material of several species of *Carex* will be available for keying by all members of the class working together, each person with their own specimen; herbarium labels will be provided for those participants who would like to take home their sample material for later reference. Please bring forceps, dissecting needle, 6" millimeter ruler, and a copy of *The Jepson Manual*. The workshop will meet from 9:00am to 5:00pm in Holt Hall, Room 129, at CSU, Chico. The class is limited to 16 participants; the fee is \$25 for members of Friends of the Herbarium and \$35 for non-members. Please register at least 10 days ahead, if possible. For more information about the workshop, please contact Lawrence Janeway by e-mail at [lpjaneway@compuserve.com](mailto:lpjaneway@compuserve.com) or by phone-mail at 916/899-7434. For information about registration, please call the Herbarium at 916/898-5381.

### MORE KEYING CAREX. 28 February, Saturday.

A continuation ("Part 2") of the popular workshop "Introduction to Keying *Carex*," this workshop is also led by Lawrence Janeway. This workshop will start where "Introduction to Keying *Carex*" ended. It will involve keying only the first 2 or 3 samples together, as a refresher, and the rest of the day with participants keying other bulk collections of *Carex* at their own pace. Bulk collections of several species of *Carex*, not seen in the "Introduction to Keying" workshops, will be available for keying by all members of the class working together, each person with their own specimen. Again, herbarium labels will be provided for those participants who would like to take home their sample material for later reference. Please bring forceps, dissecting needle, 6" millimeter ruler, and a copy of *The Jepson Manual*. The workshop will meet from 9:00am to 5:00pm in Holt Hall, Room 129, at CSU, Chico. The class is limited to 16 participants; the fee is \$25 for members of Friends of the Herbarium and \$35 for non-members. Please register at least 10 days ahead, if possible. For more information about the workshop, please contact Lawrence Janeway by e-mail at [lpjaneway@compuserve.com](mailto:lpjaneway@compuserve.com) or by phone-mail at 916/899-7434. For information about registration, please call the Herbarium at 916/898-5381.

### INTRODUCTION TO FERNS. 14 March, Saturday.

Dr. Kingsley Stern, Emeritus Professor of Botany at CSU, Chico, will conduct a one day class on ferns. This workshop will lead participants through fern keys in *The Jepson Manual*, using (mostly) live local ferns. Please bring forceps, dissecting needles, and a ruler, along with a copy of *The Jepson Manual* (or Vern Oswald's *Manual of the Vascular Plants of Butte County*). The workshop will meet from 9:00 am to 5:00 pm in Room 129 of Holt Hall on the CSU, Chico, campus. The class is limited to 20 participants. The fee is \$25.00 for members of Friends of the Herbarium, and \$35.00 for non-members. If possible, please register at least 10 days ahead. For information about the workshop or about registration, please call the Herbarium at 916/898-5381.

Look for **MORE WORKSHOPS** in the spring, including workshops on keying with *The Jepson Manual*, wildland fire behavior, and others. Watch for details in the next newsletter.

**FRIENDS OF THE HERBARIUM WORKSHOPS**  
**Registration Form**

Herbarium Practices, 18 October	_____	FREE -- RSVP
Intro to Keying <i>Carex</i> , 15 November	_____	\$25.00 (member)    _____ \$35.00 (non-member)
More Keying <i>Carex</i> , 28 February	_____	\$25.00 (member)    _____ \$35.00 (non-member)
Intro to Ferns, 14 March	_____	\$25.00 (member)    _____ \$35.00 (non-member)

Please make your check payable to "Friends of the Biological Sciences Herbarium"  
and mail to:

**Friends of the Biological Sciences Herbarium**  
California State University, Chico  
Chico, CA 95929-0515

Name \_\_\_\_\_  
Organization \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Phone no. \_\_\_\_\_ E-mail \_\_\_\_\_

## WORKSHOP REPORTS

### Fire Ecology

On 23 August, JoAnn Fites-Kaufman and her husband Rusty came to Holt Hall with large slabs of wood bearing fire scars. After an informative lecture on fire ecology by JoAnn, we all got to examine the large slabs and try to determine when the fire occurred. We then ventured into the field and visited two spots that had very different fire histories, one a very dry slope and the other a very wet slope. A recent lightning strike on one tree at the first

stop was quite impressive and really brought the message home about fire in the Sierra Nevada. We all came away from the day with a better understanding of fire in the Sierran ecosystem.

### Soil Geomorphology

David Kelley lectured on soil geomorphology on Friday evening, 5 September, and continued on Saturday morning. It was very interesting to spend the day observing both the slides and the field trip from a soil perspective rather than focusing on the plants. The lectures were very informative and

for many of us it was a good introduction into a new area of study. We then ventured to the Tuscan Preserve on the Wurlitzer Ranch and examined the hillside learning that this is where the alluvium from the foothills and the floodplain form the river intersect. Vernal pools were then visited that David and company have built as mitigation. This piqued our interest and we hope we can return in the spring to examine this area further. LH



In the last *Newsletter* (June 1997), we announced the 1997 winners of the Jim Jokerst Field Botany Award. In that newsletter we printed a description of one of the winning projects, that of Samantha Mackey. In this issue of the *Newsletter*, on this page and the next page, we present descriptions of the projects of the other two winners, Mike Dunbar and Loren Gehring. All three of these descriptions were written by the applicants last March as part of their applications for the Jim Jokerst Field Botany Award. Come hear the current status of these projects at the Friends of the Biological Sciences Herbarium Annual Meeting on 18 October.

**The effects of bovine fecal products on native *Delphinium* ("Larkspur")  
located on Vina Plains Preserve.**

A project by Jim Jokerst Field Botany Award winner **Mike Dunbar**

**Project goal:** The goal of this project is to determine the effect of cattle feces, "cow pies," on the growth of native *Delphinium*. One test plot containing 100 plants will be used. The test plot will be split into four groups of 25, one control and three experimental. The three experimental groups will have 200 grams of fecal material placed at three, six, or nine centimeters from the base of the plant. Three aspects will be observed with weekly data collection including the following:

1) Measure and compare the average growth in height for each group. Measurements will be taken from the base of the inflorescence to the apex weekly. This aspect will focus on the individual growth of each plant to determine variability between the groups. I suspect that the average growth in height will be greater for the experimental groups.

2) Measure and compare chlorophyll content among the four groups. This aspect will focus on general plant nutrition. Field samples will be taken once, sometime between week 5 and week 9. Samples of five plants will be taken from each group to be used in the lab to determine content. I suspect that the chlorophyll content will be less in the control group.

3) Measure and compare the yield of each group. Measurements will be taken weekly for at least 9 weeks. Reproductive structures, i.e. flowers, will be counted weekly. Original reproductive structures will be compared to fruit structures that have developed by week 9. I suspect that the control group will have a lower yield.

**Considerations:** The reason I decided to do this particular project is two-fold. I want to compare the results of my 1995 field study with those of 1997. When I took Biology 258 (Ecology) each student was required to complete a "field project" of some sort and report the findings by the end of the semester. I chose to look at a striking purple wildflower known loosely for the spur-like protrusion from the base of each flower. Found on the Vina Plains Preserve, larkspur was easily accessible and provided a beautiful environment for study. The first study occurred during the spring term of 1995. That study included plant height as well as plant yield and ignored chlorophyll content. That data from 1995 will be included in this current study and used as reference material for comparison. No cattle feces were involved in the 1995 field study. Data concerning plant height and yield from 1995 will be valuable in determining the effects of the cattle feces.

As a graduating senior I think it is important to seize the opportunity to incorporate "hands on" experience outside of the lab. Independent study offers each student the opportunity to display independence and accountability that is vital to success. At Chico, students are fortunate to have the opportunity to do a great deal of group work. This group work is valuable because it teaches the importance of working as a team. Equally important is the student's ability to work as an individual. Independent study allows for the incorporation of concepts, builds a sense of self confidence, and forges professional references with faculty. I have been looking forward to this project and have enjoyed working with Dr. Schlising.

**Where:** The test plot is situated in the "Lassen Pasture" of the Vina Plains Preserve. Travelling north from Chico on Highway 99, turn right on Lassen Road. The northern perimeter of the preserve is divided into three pastures on your right. You will pass by the "Big Pool Pasture" and on by the "Safe Pasture" where you are likely to see the visiting cattle. Continuing east you come to the experimental "Lassen Pasture." Be careful crossing the fence. This fence has no stile!

**When:** The current field project was started on February 2, 1997. The entire field project will be completed and ready for presentation to the department on Friday, May 10, 1997 [in time for the First Annual Student Research Poster Symposium, sponsored by the Department of Biological Sciences -- ed.].

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## Field studies in *Vaccinium* section *Myrtilus*

A project by Jim Jokerst Field Botany Award winner Loren Gehring

### PURPOSE OF STUDY

The goal of this project is to resolve taxonomic and distributional questions about several species of *Vaccinium* (the genus that includes blueberries and huckleberries) which are closely related to each other in the section *Myrtilus*.

As part of my Master's Thesis project at CSU, Chico, I am attempting to clarify the taxonomic status of *Vaccinium coccineum* Piper through RAPD (DNA fingerprint) analysis. *Vaccinium coccineum* is a rare plant, considered "sensitive" by the U.S. Forest Service, and placed on CNPS (California Native Plant Society) List 3. It has a limited distribution, being found only in the Sierra on the Plumas and Tahoe Forests, and in the Siskiyou Mountains of northern California and southern Oregon. It is difficult to separate from *V. membranaceum* Hooker, a more common and widespread species. *Vaccinium coccineum* seems to vary from *V. membranaceum* only in berry color. Its berries are bright red, while those of *V. membranaceum* are purplish dark red. It has been suggested by Dr. VanderKloet, a specialist in the genus *Vaccinium*, that *V. coccineum* is a hybrid of *V. membranaceum* and another *Vaccinium*.

Dr. Vanderkloet suggests that *Vaccinium deliciosum* Piper is the other possible parent of *V. coccineum*. *Vaccinium deliciosum* is proposed for CNPS List 2; rare in California but more common elsewhere. Since I began this study I have visited many sites where either *V. coccineum* or *V. membranaceum* grows. I have also become familiar with most of the other species of *Vaccinium* found in northern California and southern Oregon. The consensus opinion of botanists I have queried is that the southern extent of the range of *V. deliciosum* is somewhere in the Cascade mountains of central Oregon.

If *V. deliciosum* is not found in the same range as *V. coccineum* it seems less likely that it could be a parent species of *V. coccineum*. *Vaccinium caespitosum* Michaux is a common, widespread species that is very similar in appearance to *V. deliciosum*. Both are low-growing plants with blue berries and small, obovate leaves. *Vaccinium caespitosum* is found in a variety of habitats, from mesic forest sites to meadow edges. *Vaccinium deliciosum* may be found in a very different habitat type. In the one site I visited, in the Three Sisters Wilderness in Oregon, *V. deliciosum* was growing out in a meadow, in the full sun.

I believe that herbarium specimens of *V. caespitosum* are being mistaken for *V. deliciosum*. Herbarium sheets rarely give habitat information, and the flowers and fruits, which would help to separate the species, do not press well. Also, the twigs of *V. caespitosum* are supposed to be puberulent or glandular, according to *The Jepson Manual*, while the twigs of *V. deliciosum* are not. Based on my field observations there is a range from puberulent to glabrous in the twigs of *V. caespitosum*.

### NEED FOR FURTHER STUDY

To be able to make conclusive statements about these taxa, I would need to make several more long-distance trips. It would be good to visit more than one population of *V. deliciosum*, to see if it always grows in meadows. Since this species is found in subalpine meadows of the Cascades, this is not an easy outing. It requires backpacking and camping out to get to it. I have also been searching for the locations of *Vaccinium* spp. annotated to *V. deliciosum* on herbarium sheets from the Jepson Herbarium. I have visited most of these sites and found the plants to be (in my opinion) *V. caespitosum* instead. I have two more sites to visit; one in the Marble Mountains Wilderness and the other in the mountains above Yosemite Valley. Again, these are trips involving long drives, as well as hiking and camping. Any funds awarded to this study would be used for travel expenses.

### SIGNIFICANCE OF THIS STUDY

The results of this study would be of interest to the California Native Plant Society, in compiling of future lists of rare plants (*V. coccineum* -- List 3, and *V. deliciosum* -- List 2), as well as the Forest Service, who manages the habitats of both these species. It would also have a bearing on future revisions of *The Jepson Manual*. Several journal articles could come out of this study as well.

### TIMEFRAME

I am currently working on the laboratory portion of this study. Field work in *Vaccinium* is done between May (flowering time) and September (fruits). I hope to do the remaining field work this summer, 1997. I will complete any remaining lab work, and write my thesis, next winter. I should be done by spring of 1998.

## One Day in the Life of a Plant Collector by Lowell Ahart

Vern Oswald and I are locating and collecting a variety of the sulfur-flower, *Eriogonum umbellatum*, for James L. Reveal. We have found the plant on serpentine outcrops in Butte, Plumas, Yuba, and Sierra counties. In the *Manual of Vascular Plants of Butte County, California*, these plants key to the variety *speciosum*, which typically grows in the Klamath Ranges of northwestern California. Dr. Reveal has realized for about 15 years that the northern Sierra Nevada plants are different, and he is now in the process of naming them as a new variety. Although we do not yet know the epithet for this new variety, the common names he has used are "Ahart's wild buckwheat" or "Ahart's sulfur-flower." Thus you can see my interest in supplying him with material from as many localities as possible!

On Saturday, 6 September, I decided to look on serpentine outcrops along Rim Road, above Concow, and on Sawmill Peak. I drove northeast on Highway 70 and turned left onto Rim Road just past the Rock House. In about four miles I began to see the sulfur-flower. I turned west onto a spur road and came to a McNab Cypress grove where I collected the sulfur-flower and a few other plants. I returned to Rim Road and continued northward to Flea Valley, where I had hoped to drive west to Sawmill Peak. However, the dirt road got poorer and poorer, and finally ended where it had slid down the mountainside. Consequently, I returned to Flea Valley and drove south on Concow Road where I entered a large serpentine area and again collected "Ahart's sulfur-flower." I went on to Concow, returned to highway 70, and headed south to Oroville.

Just before I got to Rich Gulch Road, I spotted a perennial bunchgrass on the west margin of the high-

way. I stopped and collected the grass for I did not recognize it. After returning home I went through the grass keys in *The Jepson Manual* by Hickman. No luck! I then tried *A California Flora and Supplement* by Munz. No luck! On 9 September, I visited Vern Oswald and by using a *Manual of the Grasses of the United States* by Hitchcock and Chase, we found that *Leptochloa dubia*, commonly called sprangletop, fit the grass I had collected. This sprangletop ranges from Oklahoma to Arizona and southward into Mexico. Disjunct populations also occur in southern Florida and Argentina. It apparently has not previously been recorded from California.

I then did the paperwork. The paperwork is very important and I have always done it promptly and as well as possible. Thus the label for the grass I collected is shown below.

I prepared a herbarium sheet and a loose duplicate specimen and label for the University Herbarium at Chico. Lawrence Janeway, the curator, can use the duplicate specimen for exchange. The prepared herbarium sheet has been given an accession number and is

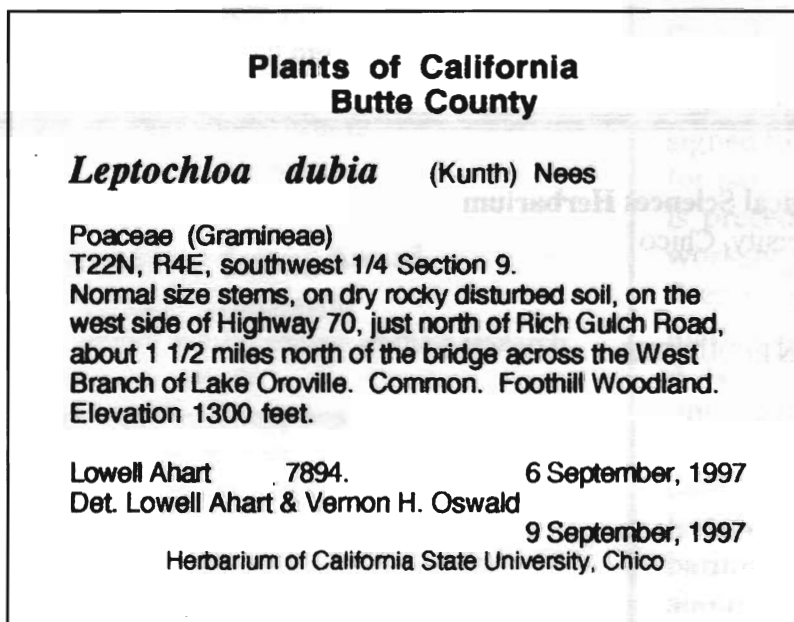
filed in the herbarium. Three duplicate specimens and labels will be sent to the University of California, Berkeley, in care of Barbara Ertter, their collections manager. One duplicate will go into the University-Jepson Herbarium, one may go into their reference collection, and one can be used for exchange. The specimens will be a record for the inclusion of *Leptochloa dubia* in *The Jepson*

*Manual* when it is revised. The specimens will also be important to those working on the *Flora of North America*.

All in all, I had a very good day.



Wow! All Right!!



## Yes! I would like to join!

\_\_\_\_ Student.....\$5.00  
\_\_\_\_ Individual .....\$10.00  
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This is a renewal for 1997.....

Please make your check payable to:

**"Friends of the Biological Sciences Herbarium"**

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### Friends of the Biological Sciences Herbarium

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### Friends of the Biological Sciences Herbarium

California State University, Chico

Chico, CA 95929-0515

916-898-5381

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