

Friends of the Herbarium

Biological Sciences Herbarium
California State University, Chico

Newsletter

Vol. 2 No. 3

March 1997

Friends of the Biological Sciences Herbarium

present more

Friends of the Herbarium Workshops

THROUGH the spring and summer months, the Friends of the Biological Sciences Herbarium is continuing its series of workshops covering various topics to help increase your interaction with plants through drawing and keying and your understanding of some of the ecological relationships of plants. See pages 3 and 4 for the details.

- Botanical Illustration
- Introduction to Plant Identification
- Butterfly Valley Botanical Area
- Revegetation at Walker Mine
- Fire Ecology

JOIN US for one or more of these great workshops. Remember, at least half of your registration fees help support the Friends activities on behalf of the Herbarium.

ANNUAL FIELD EVENT

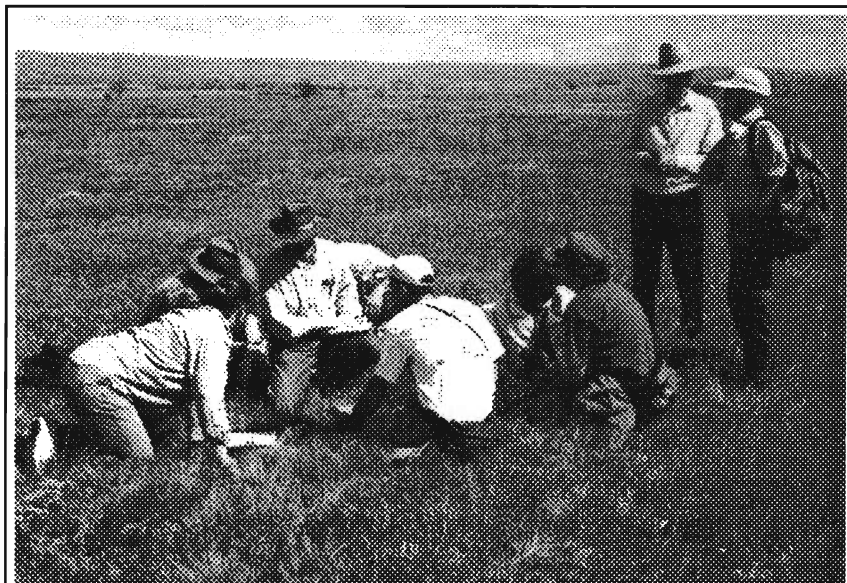
The Board of the Friends of the Biological Sciences Herbarium would like your ideas and suggestions in regards to an annual field event. The Friends have a General Meeting in the fall, and we like the idea of having an event in the spring. The Friends field day at Vina Plains, monitoring *Dodecatheon* and creating a list of plants in bloom on that date in 1995 was a huge success. We chose Vina again in 1996, however the response was not as great as the first year. The value of an annual plant count with varying numbers of botanists with differing levels of familiarity of the local flora seems questionable.

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Annual Field Event

Perhaps spring, being THE FIELD SEASON for many botanists, is just not going to be a good time for such a gathering of botanists, but we would like to try the concept a little longer. If you know of a monitoring project or other type of study which could benefit from the expertise of the members of the Friends of the Herbarium for one day each year, preferably during the spring or summer, send us the details. The study site should be in California, north of Sacramento, and east of the coastal region. RF



Inaugural Field Event, 1 April 1995, at Vina Plains Preserve

LICHENS!

Last 15-16 March about 15 intrepid explorers of botanical wonders met to learn how to identify lichens. Led by Cherie Bratt of the Santa Barbara Natural History Museum, the group worked through the lichen keys in Hale & Cole's *Lichens of California* using ten specimens from California and Oregon provided by Cherie. These ten specimens now make up a beginning reference collection for each of the workshop participants. The lichen keys do present some challenges, but the satisfaction of successfully keying a new organism is well worth the effort. While many of the key characters may easily be discerned with the naked eye or with a hand lens, others require a dissecting scope, or,

LICHENS!

especially in the case of crustose lichens (those lichens making the colorful splotches on rocks), also may require the use of a compound microscope. The group also gained experience using some of the chemical tests that are often used to identify lichens. These tests, such as using potassium hydroxide ("K"), use color changes in the lichen thallus in the presence of the chemical to determine the presence or absence of various acids. When previously looking at lichen keys and seeing the need for chemical tests, I always felt rather intimidated, but after this workshop I think I'll be OK tackling these tests myself!

That was just the first day! The second day was a rainy one, so half of the group forayed into the foothills and above to collect more lichens. They brought this material back to the classroom and graciously shared it with the other half of the class as we all gained more practice keying lichens and added more specimens to our new personal ref-

erence collections. The half of the class that stayed out of the rain (!) learned more from Cherie about lichen collecting equipment and techniques, and was regaled by tales of Cherie's collecting experiences on the various Channel Islands off the coast of Santa Barbara and southern California.

All and all, an extremely rewarding experience. LJ

CALIFORNIA LICHEN SOCIETY

If you have an interest in lichens, whether to identify them, study them, or just enjoy them, consider joining the California Lichen Society. This organization, in its third year now, was founded "to promote the appreciation, conservation, and study of the lichens. The focus of the Society is on California, but its interests include the entire western part of the continent."

This Society produces an excellent newsletter: *Bulletin of the California Lichen Society*. The current issue has beautiful color photographs of coastal lichens on the cover, and includes updated keys to the genus *Ochrolechia*, a checklist of the lichens of San Clemente Island, other lichen notes, and announcements of numerous Society activities

Dues are \$15.00 per year payable to The California Lichen Society, 1200 Brickyard Way #302, Point Richmond, CA 94801. LJ

FRIENDS OF THE HERBARIUM WORKSHOPS

BOTANICAL ILLUSTRATION. 26 April, Saturday

Local illustrator, Judy McCrary, will lead this one day workshop on botanical illustration. The workshop will concentrate on pencil and ink, although other media may be explored depending on the interest of the participants. Please bring an HB pencil and ink pens, nibs, and black ink; these and other basic materials will be available for purchase at the class. Class will meet from 10:00 am to 4:00 pm in Holt Hall Room 129 at CSU, Chico. Class size is limited to 15 participants; older children are welcome to register. Registration for the class is \$25.00 for members of Friends of the Herbarium and \$35.00 for non-members. Please register at least 10 days ahead if possible. For more information about the course, please contact Judy McCrary at 916/589-1418. For information about registration or location, please call the Herbarium at 916/898-5381.

INTRODUCTION TO PLANT IDENTIFICATION. 10 May, Saturday.

Jenny Marr, Masters Degree alumnus of CSU, Chico, will lead this one-day introduction to plant identification. This workshop will introduce participants to keying plants using *The Jepson Manual*. Jenny will provide fresh material of local plants for the class to key together. Please bring forceps (tweezers), dissecting needle, and 6" millimeter ruler. If possible, also bring a copy of *The Jepson Manual*. (We only have a few copies to loan to those participants without them; we can direct you to sources for *The Jepson Manual* if you contact us ahead of time.) The workshop will meet from 9:00 am to 5:00 pm in Holt Hall, Room 129, at CSU, Chico. 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. Please register at least 10 days ahead, if possible. For more information about course content please contact Jenny Marr at 209/445-5386(w), 209/741-1980(h), or jmarr@water.ca.gov. For information about registration or location, please call the Herbarium at 916/898-5381.

BUTTERFLY VALLEY BOTANICAL AREA WORKSHOP. 14 June, Saturday.

Come and explore one of the botanical areas on the Plumas National Forest: the Butterfly Valley Botanical Area. This workshop will consist of basic plant keying, talks about the various plant habitats (including the *Darlingtonia* seeps inhabited by two species of carnivorous plants), and an introduction to a few of the tree lichens with a discussion of their role in assisting scientists in gauging airborne pollutants. Jim Battagin, a local botanical consultant, will lead this walk. Suggested tools for the day include *The Jepson Manual*, a hand lens, and a metric ruler. The workshop will last about four hours so bring a lunch. Meet at 10:00 am at the Mount Hough Ranger Station visitor parking area, along Hwy 70/89, 3 miles northwest of Quincy. The class is limited to 18 participants. The fee is \$25.00 for members of Friends of the Herbarium and \$35.00 for non-members. Please register at least 10 days ahead, if possible. For more information about course content, including time and place to meet, please contact Jim Battagin at 916/281-6489 or drgoose@psln.com. For information about registration, please call the Herbarium at 916/898-5381.

REVEGETATION EFFORTS AT WALKER MINE. 25 July, Friday.

Jim Battagin, a local botanical consultant, will lead this one day field trip on the revegetation efforts he has been involved with at Walker Mine. Walker Mine is an old copper mine north of the town of Portola in Plumas County. The mine itself is on private property but the tailings are on National Forest land. The Chico Genetic Resource Center, U.S. Forest Service, has been involved in growing the plants for the

revegetation from cuttings and seeds that have been collected in the Walker Mine area. This will be an all day field trip, so please bring a sack lunch and water. The fee is \$25.00 for members of Friends of the Herbarium and \$35.00 for non-members. Please register at least 10 days ahead, if possible. For more information about the class, including time and place to meet, please contact Linnea Hanson at 916/345-6229. For information about registration, please call the Herbarium at 916/898-5381.

FIRE ECOLOGY. 23 August, Saturday.

Joann Fites will lead this one day workshop on fire ecology in the mixed conifer forests of the Sierra Nevada. Joann is a Landscape and Ecosystem Ecologist with the US Forest Service and is doing research in fire history and vegetation interaction in the west side Sierra. The class will look at pre-European settlement fire patterns and interactions with vegetation and compare this with present day fire interactions. The workshop will meet at 9:00 am in Holt Hall, Room 129, at CSU, Chico for a short slide program, and then car-pool up Hwy 32 to Deer Creek and Mill Creek to look at examples of fire and to look at evidence of past fire and vegetation response. 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. Please register at least 10 days ahead, if possible. For more information about course content please contact Joann Fites at 916/836-0408 or fitesk@psln.com. For information about registration, please call the Herbarium at 916/898-5381.

Look for **MORE WORKSHOPS** in the fall, including repeats of our popular workshops on keying grasses, comps, and sedges. Watch for details in the next newsletters.

FRIENDS OF THE HERBARIUM WORKSHOPS

Registration Form

Botanical Illustration, 26 April	___ \$25.00 (member)	___ \$35.00 (non-member)
Intro to Plant Identification, 10 May	___ \$25.00 (member)	___ \$35.00 (non-member)
Butterfly Valley, 14 June	___ \$25.00 (member)	___ \$35.00 (non-member)
Reveg at Walker Mine, 25 July	___ \$25.00 (member)	___ \$35.00 (non-member)
Fire Ecology, 23 August	___ \$25.00 (member)	___ \$35.00 (non-member)

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

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In the last *Newsletter* we announced the fall 1996 winners of the **Jim Jokerst Field Botany Award**, noting that the winners gave short presentations about their research at the General Meeting last 26 October. For those of you who couldn't attend that event, we present summaries of their research as detailed in their applications for these awards. The next *Newsletter* will announce the new group of winners of the **Jim Jokerst Field Botany Award**.

Phenotypic Plasticity: Does *Ailanthus altissima* have what it takes to colonize the riparian habitat?

A project by Jim Jokerst Field Botany Award winner **Deborah Topp**

Ailanthus altissima is considered a weed because it is a non-native plant that grows in disturbed sites. Unplanned *A. altissima* can often be found along railroad tracks, freeways, abandoned lots, and in the upper terraces of creek banks. Most of the sites previously mentioned are fairly xeric except for the riparian system. However, *A. altissima* does not grow along the water's edge in the riparian habitat, a place where *A. altissima* must respond to anoxic conditions. Why does such a fiercely invading plant not establish itself along the edge of a waterway? Is inhibition strictly due to the anoxic conditions or are there other aspects regulating this successful weed?

The goal of this project is to determine the capacity in which *A. altissima* can endure anoxic conditions. In order to determine this, three criteria of phenotypic plasticity will be addressed: 1) Anatomical -- presence of aerenchyma, 2) Biochemical -- alteration of standard glycolysis, and 3) Mechanistic -- mechanisms which exclude phytotoxins. The outcome of this greenhouse-based research, to be completed in 1997, will help determine how to manage *Ailanthus altissima* in riparian and other systems.

Seed Biology of *Chamaesyce hooveri* at Vina Plains Preserve

A project by Jim Jokerst Field Botany Award winner **Caroline Warren**

My research project is an ecological and biological study of the rare summer annual, *Chamaesyce hooveri*, an endemic plant from the Euphorbiaceae family that grows in vernal pools at Vina Plains Preserve and in other vernal pools in California. Little research has been done on the biology of this plant. I am also studying biotic and abiotic factors influencing seed production and germination, and how these factors relate to its rarity. My ultimate goal is to contribute to the vernal pool conservation effort by adding to our knowledge of a California rare plant inhabitant.

After having worked with Dr. Rob Schlising [of CSU, Chico] on a vernal pool plant survey at Vina Plains Preserve during the spring and summer of 1995, I have become familiar with the ecology of the Preserve, including plant communities and distribution of *C. hooveri*. This plant germinates and completes its life cycle during the hottest part of the summer, and is one of the few native plants that can survive the harsh conditions of the pool floor. It grows in only four or five pools at Vina Plains and is usually associated with one of the species of the rare grass *Orcuttia*. *Chamaesyce hooveri* is interesting to me because of its adaptations not only to severe climatic conditions, but to a soil that evidently will support few species. Part of my project has been the analysis of soil from *C. hooveri* habitat, and I am planning to expand the analysis to include other pools where it grows and to compare pool soil to upland soils. I am planning a greenhouse study to compare growth of *C. hooveri* to another summer annual, *Lolium*, to determine whether this plant is specialized to the soil or to hydrologic conditions. Since efforts to create vernal pools by human manipulations have concentrated mainly on the hydrology of pools and have overlooked other factors, I think that investigation of soil variables is long overdue.

Last summer I collected seed and soil samples for germination experiments and soil analysis. I designated 10m x 5m plots in three pools at Vina Plains Preserve and surveyed plant density in them. I recently expanded my study of seed biology of *C. hooveri* to include soil macronutrient factors, structure changes during dry-down, and related adaptations of the plant's seed dispersal mechanisms and germination requirements. This summer I also will be collecting field data at Vina Plains on depth of germination of seed, seed production, insect visitors and seed predators, and ballistic dispersal mechanisms of *C. hooveri*. I hope to complete this project by the spring of 1997.

Yes! I would like to join!

____ Student.....\$5.00
____ Individual\$10.00
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____ Sustaining\$100.00
____ Lifetime\$1,000.00
____ Donation\$ _____

This is a renewal for 1997

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