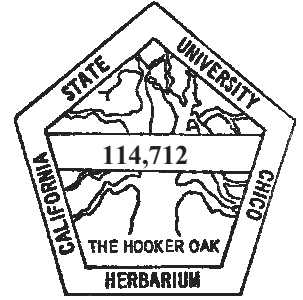




# Friends of the Herbarium

The Chico State Herbarium  
California State University, Chico



Volume 21 Number 1  
April 2015

## Newsletter

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### 5th Annual Plant Photo Contest for Students

**Sponsored by the Friends  
of the Chico State  
Herbarium**

**Open to 6th—12th grade  
students**

**Submission Deadline:  
May 1st.**

**All entries including the  
winning photos will be on  
display at the Chico State  
Herbarium  
OPEN HOUSE  
Friday, May 8th**



2014 Winning Photo —by Byrn Thomas  
Chico High School

Check out the Friends of the Herbarium website for details.

### Celebrating 20 years of FOH Support

The Friends of the Herbarium celebrated the start of their 20th year of support for the Chico State Herbarium with a Wildflower Phyto-blitz at the Vina Plains Preserve on April 18th. A summary of the event along with a comparison between the 2015 and 1995 surveys will be in the Fall Newsletter—Stay Tuned!





The **Friends of the Chico State Herbarium**, California State University, Chico, was formed to help maintain the high quality of work 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 Herbarium** operates under the 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 January 1 of each year.

#### BOARD OF DIRECTORS

Linnea Hanson	Elena Gregg
Rob Schlising	Tom Griggs
Adrienne Edwards	Tim Hanson
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Lawrence Janeway	
Herbarium Curator	
Newsletter co-Editor	
Colleen Hatfield	
Herbarium Director	
Newsletter co-Editor	

#### Newsletter

#### Volume 21 Number 1

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

## FOH New Board Members

At the start of this new year, the Friends of the Chico State Herbarium were thrilled to add two new Board Members, Tom Griggs and Tim Hanson. The Board is so excited that these two individuals graciously agreed to volunteer their time to serve on the Board. Both Tom and Tim bring much to the Board. Tom conducted his graduate work at Chico State studying the *Orcuttia* tribe of grasses and went on to obtain his Ph.D. from U.C. Davis. He has since worked throughout the Central Valley on acquiring and managing preserves and on a multitude of restoration projects, including starting the Sacramento River Riparian Restoration Program in 1989, during his time spent working for The Nature Conservancy. In 2002 he joined River Partners, working towards developing restoration designs that not only function as a riparian plant community but also provide high quality habitat for various wildlife species. Tom retired from River Partners in 2013. Tom is no stranger to the Friends of the Chico State Herbarium as he served as a Board Member from 1999 to 2002.



Tom Griggs (above) and Tim Hanson (below) join the FOH Board of Directors



Tim also conducted his graduate work at Chico State studying the rare species *Monardella venosa* and graduating with his Masters in Biology in 2012. Tim has worked as a botanist on the Plumas National Forest and has helped with the ongoing research being conducted at the Vina Plains Preserve. Currently Tim works for the Geographical Information Center conducting vegetation mapping. Tim is also no stranger to the Chico State Herbarium as he worked as a Herbarium Assistant from 2010 to 2011.

With the addition of Tom and Tim, the Friends of the Chico State Herbarium Board is now composed of 9 Members, all of whom have a wonderfully varied background, knowledgebase, and above all, a concern and passion for the Chico State Herbarium. We are looking forward to 2015!

## 2015 Jokerst Award Winner

In February the Friends of the Chico State Herbarium received applications for the 2015 Jim Jokerst Award. This year Clara Buchholtz, a Biology Department graduate student at Chico State, was the recipient of the Jokerst Award. Clara proposes to use the Award to help her expand on the data she collected in 2014 for her research project looking at the relationship between manzanita leaf gall aphid parasitism rates and host density. Her research will involve collecting galls on the leaves of two species of manzanita, *Arctostaphylos manzanita* and *A. patula*. We look forward to finding out the results of her research which will be presented at the fall FOH annual meeting! For more information on the Jokerst Award visit the FOH web page.

## Chico State Herbarium Accessions during 2014

Sixteen years ago Vern Oswald started the annual tradition in this newsletter of summarizing all of the collections accessioned into The Chico State Herbarium during the preceding year by county and collector. Here is the summary for 2014. The total number of accessions for 2014 was 2034 specimens.

We continue to owe a HUGE debt of gratitude to our volunteer mounting specialist and plant collector extraordinaire, Lowell Ahart. Aside from a few exchange sheets that came to the herbarium already mounted, and the bryophytes and lichens, that are accessioned into the collection in folded paper packets rather than mounted, Lowell has mounted almost all of the specimens accessioned into the herbarium in 2014. In fact, Lowell has mounted almost all of the specimens accessioned into the herbarium each year since 1995! For 2014, this means that Lowell prepared about 1500 beautifully mounted specimens that were accessioned into the collection during the year (and many more that haven't been accessioned yet), all as a volunteer! Thank you once again, Lowell, for your continuing contribution of countless hours of invaluable time and service to further the goals of The Chico State Herbarium and northern California botany.

All new incoming specimens are databased before they are filed. The databasing during the past year (and filing) has mostly been done by our wonderful volunteer, Cindy Weiner, with much help from Emily Meigs Doe, Herman Gray, Mari Moore, Bob DeLucie, and Aurelia Gonzales.

Also, thanks also to all of the collectors for their time spent collecting, identifying, and making labels for all of the specimens that they contributed to the herbarium. A tremendous amount of time goes into this process and I know that most, if not all, of this time is volunteer time on the part of the collectors.

The following table summarizes the plant specimens accessioned into The Chico State Herbarium during 2014, based on plant group, local collectors, and county.

–Lawrence Janeway, Herbarium Curator

2014					
GRAND TOTAL	2034	COLLECTORS		TOTAL CALIFORNIA	1962
		– more than 8 collections -		– top 10 counties -	
Lichens	5	Lowell Ahart	967	Butte	565
Mosses	433	Lawrence Janeway	334	Plumas	199
Liverworts	20	Dean Wm. Taylor	181	Mendocino	172
Hornworts	1	David Isle	116	Colusa	136
Club mosses	2	Barbara Castro	69	Lassen	122
Horsetails	3	John Dittes	18	Glenn	97
Ferns	12	Julie Kierstead Nelson	17	Nevada	91
Conifers	3	Tim Hanson	11	Modoc	83
Flowering plants	1558			Tehama	62
				Shasta	56



**Have some free time on Fridays?**

**Consider volunteering at the Chico State Herbarium.**

**Great chance to share quality time with fellow botany lovers and really help the Herbarium out.**

Contact : Lawrence Janeway at [LJaneway@csuchico.edu](mailto:LJaneway@csuchico.edu) or  
Colleen Hatfield at [chatfield@csuchico.edu](mailto:chatfield@csuchico.edu)

## Upcoming Workshops Sponsored by Friends of the Herbarium\*

### **Butte County Butterflies and Their Host Plant Affinities —May 21, 2015, Thursday. 9AM-5PM.**

The workshop, led by Professor Don Miller of Chico State will cover: 1) an introduction to the systematics, taxonomy and biology of butterflies; 2) evolutionary and biogeographic aspects of butterflies and their larval food plants; 3) an introduction to the major families of butterflies in Butte County; 4) a representative survey of some local butterfly species and their habitats. Mounted specimens from the Chico State Entomology Collection will be used for this exploration. An optional follow-up fieldtrip will take place on Friday, May 22nd at no additional charge. The fieldtrip will provide the opportunity to observe and identify butterflies in selected habitats in Butte County. Class size is limited to 15 participants; class will be cancelled if there are not a minimum of 6 registered participants. Registration closes May 13th.



### **Riparian Vegetation: Individual Plant Species' Adaptations to River Processes —June 13, 2015, Saturday. 8AM—2PM.**

Plant species that compose riparian vegetation are variously adapted to the river processes of sediment erosion and deposition, flooding duration, and the hydraulics of moving water (and sediments). Each species' response to these processes creates the different structural types of riparian vegetation. Led by restoration ecologist, Dr. Tom Griggs, workshop participants will explore the structure of riparian plants from the edge of the channel upslope to the top of the floodplain at the Willow Bend Reserve. Workshop participants will meet in the field. Class size is limited to 15 participants; class will be cancelled if there are not a minimum of 5 registered participants. Registration closes June 10th.



Photo by Jessica Hammond

### **Introduction to Native Bees as Pollinators—mid July, 2015, Thursday. 9AM—5PM.**

Led by Rob Schlising and Rob Irwin, this workshop will focus on native bees of Northern California. The workshop will emphasize identifying key characteristics of the native bees and the natural history of the local native bees. Workshop participants will become familiar with how to identify local native bees using preserved bee specimens and dichotomous keys. There is the possibility of an optional Field Trip on Friday following the workshop. This field trip, also led by Schlising and Irwin is not part of the workshop and there is no additional fee. Class size is limited to 18 participants; class will be cancelled if there are not a minimum of 10 registered participants. Exact date TBD.




### **Fall Harvest: Edible and Medicinal Roots, Barks, and Fruits of California—October 10, 2015, Saturday, 10AM—4PM**

As the colors of the landscape change and the days shorten, we are reminded that autumn has arrived. While many plants wither away, others simply shift their energy resources in order to survive the impending winter. Tellur Fenner, clinical herbalist, will guide participants in an exploration of the diverse array of edible and medicinal biennial and perennial plants found growing throughout California, with an emphasis on those native to the region. The morning session will consist of an interactive lecture/slideshow; in the afternoon we'll stroll the trails of nearby Bidwell Park where we'll observe more closely the great diversity of plant specimens growing there. Registration closes October 2, 2015.



### **\*General Workshop Information:**

All workshops require advanced registration. Unless otherwise noted, registration for the workshop is \$120.00 business, \$100.00 personal, \$90.00 for members of Friends of the Herbarium and \$40.00 for students (limit 2 seats). Pay by check or to pay by credit card, call Emily at 530-898-5356. All workshops unless otherwise noted are held in Holt Hall 129 on the CSU Campus. Check out the FOH Workshop website for more details on each of these workshops, registration information as well as updates on these and future workshops at [www.csuchico.edu/biol/Herb/Events.html](http://www.csuchico.edu/biol/Herb/Events.html). 

## 2014 FOH Fall Photo Contest

Every Fall and Spring the Friends of the Herbarium hosts a photography contest – to celebrate California’s diverse flora. The Spring contest is for people under the age of 18, while the Fall contest is open to all ages. Last Fall’s contest drew in some excellent, artistic and diverse photographs. The 3 photos that captured the most attention of the judges (FOH board members and associates of the Herbarium) were - Spencer Dykstra’s crisp, well composed photo of *Cypripedium montanum* winning the top honors, followed by Marjorie McNairn’s photo of the glistening, spiraling seed structures on *Cercocarpus betuloides* and a landscape view by Spencer of a buckeye tree. Flowers, seeds and a plant in context with its habitat could not have represented the beauty, in all its forms of our native flora.



1st Place Winner: *Cypripedium montanum* by Spencer Dykstra



2nd Place Winner: *Cercocarpus betuloides* by Marjorie McNairn



## Biodiversity from the Perspective of a Tropical Plant

In early February, the Friends of the Herbarium had the pleasure of hosting Dr. Lee Dyer, Professor and Director of Ecology, Evolution and Conservation at the University of Nevada Reno. Dr. Dyer presented at the Omicron Seminar Series with the Chico State Department of Biology. Dr. Dyer generously shared his diverse research experience including his primary study system, the tropical plant genus, *Piper*, and interactions between the plant, its herbivores and parasitoids. Frequent visits to Ecuador, where he has five Ecuadorean field assistants, enables him to help build our scarce knowledge on plant-herbivore-parasitoid interactions and also document the diversity of the understudied parasitoid guild. He is also actively engaged in chemical ecology, studying the effects of plant allelochemicals on interactions between plants and herbivores. He also builds on this system to understand the importance of biodiversity and the problems associated with the rapid loss of diversity. Dr. Dyer established Caterpillar.org, a site that is devoted to documenting and sharing knowledge about the diversity and ecology regarding, you guessed it, caterpillars. Dr. Dyer hosts Earthwatch volunteers on a regular basis in Ecuador where they contribute to his continued study of climate change and caterpillars. The seminar was stimulating and engaging and the Friends were happy to provide this opportunity for students, faculty of Chico State and Friend supporters. The Friends



*Amastus nr. Hyaline*, an herbivore of *Piper* (photo courtesy of Caterpillar.org)

## Collecting Plants on 26 October 2013

by Lowell Ahart

Peter Ahart (my brother) and I decided to take a little trip to northern Butte County. I wanted to go to Jones Meadow to see if I could find any *Elatine* (waterwort) for Hamid Razifard (a Doctoral Candidate at University of Connecticut). We went through Paradise to Stirling City where we turned right and went east then north. The road was rough from Stirling City. We crossed the water ditch and then the West Branch Feather River. We continued on to the northeast to Bald Mountain Lookout. There is a large planted *Sequoiadendron giganteum* (giant sequoia or big tree) here. There are several areas in Butte County where big tree has been planted, but this tree is the oldest. There were many mature cones on the ground and I collected a few. There were green female and white male cones on the lower branches and I collected a few twigs. Then I got a little bark. When I got home I cut the green female cones in half and put them in the press with the branches. I broke up an old mature cone for scales and seeds. Thus with all these parts I was able to make an excellent herbarium sheet.

From Bald Mountain Lookout we drove north to Jones Meadow. There were many people about, so we continued on to Philbrook Reservoir. Most of the reservoir was dry, so I went out into it and looked for plants to collect, but things were dried up. I crossed the creek and on a silt flat saw many nice small *Muhlenbergia filiformis* (pull-up muhly) that I collected by putting in a plastic bag until I could later press them. As I continued east I found more and different plants to collect. I went back to the pickup and we continued on to Snag Lake. The lake was dry, but I went out to the middle where there is a small drainage. There were a few plants in the moist area, one being *Taraxia tanacetifolia* (tansy-leaved evening-primrose). We drove on to where there is a snow lake close to the road. We stopped here and I went east to the "Lily Pond." The pond was dried up and had nothing to collect. We then went on to Butte Meadows, Highway 32, Chico, Honcut, and home. Once home, I put the collected plants into my plant presses.

The next day I worked on labels for the 20 collections. I didn't find any *Elatine* on the trip, but did collect several notable plants among the 20 collections I made this day:

- Ahart 19,206 *Sequoiadendron giganteum* (giant sequoia, big tree) – This could be added to Oswald's Butte County flora if a revision is done. There are other plantings of this tree in Butte County, therefore it also could be added to the text in Vern Oswald's Selected Plants revised by Janeway.
- Ahart 19,212 *Chenopodium rubrum* var. *humile* (red goosefoot) – This is a new record for Butte County.
- Ahart 19,225 *Taraxia tanacetifolia*, until recently known as *Camissonia tanacetifolia* (tansy-leaved evening-primrose) – A new record for Butte County.

It was a long and dusty rough-road day, but I got 20 collections and three can be added to the Butte County flora. **Wow! All right!!**



*Sequoiadendron giganteum* (giant sequoia, big tree). Herbarium record 19,206 collected by L. Ahart



*Taraxia tanacetifolia*—tansy-leaved evening-primrose. A new record for Butte County. Herbarium record 19,225 collected by L. Ahart



## Recent Workshops in Review

### Inspirations from Recent Lichen Workshops (by Robert D. Fischer).

It all started during the January 2009 Northern California Botanist Symposium. Friends of Chico State Herbarium (FOH) board member Jenny Marr decided to check out two folks from the California Lichen Society (CALs) who were manning an information table for their organization, Janet Doell and Tom Carlberg. Janet is the founder of CALs from the Bay Area and Tom is a mycologist turned passionate lichenologist from Arcata. When asked by Jenny if either wanted to teach a lichen workshop for the FOH they looked at each other and Tom said “sure”. Three months later Chico became a new center in the spread of lichen knowledge. Seven years, and seven generally full, early-March workshops later, in the FOH sponsored **Identifying Lichens to Genus**, the symbiosis of two botanical organizations is still going strong.

Compared to botanists, there are almost no lichenologists around. It isn't taught at most schools. I believe it is Tom's perspective that if you can't grow them from scratch then lure them away from other biological disciplines. It is what happened to him at Humboldt State University 16 years ago.

Many of the distinguishing characteristics for lichens tend to be very small, subtle, or chemical in nature. Just seeing some of the nearly 1900 California species that surround us requires new kinds of “looking” skills. Tom's one day workshop totally opens the door to this new world. Learning lichens to species does require a bit more work but determining the macrolichens of Butte County to genera, with Tom's key, is fully doable (and fun). Like plants, the more carefully one looks the more one sees, this world is covered with their highly varied thalli (vegetative bodies).

For me, winter is my lichen time. I do plants the rest of the year, unless Tom is visiting (I try not to let him catch me with just flowers in my bag). The rainy season brings out their best. In the Central Valley, what spring is to flowers winter is to lichens, at least when it comes to bright and richer colors. The leafy lichens become soft and wavy, jelly lichens swell becoming larger and darker. And, when the moss greens, like matting for a picture, it enhances the world of lichens around them. Naturally, being perennials, lichens are available for year-round study and discovery.

*I find myself inspecting little granules as it were on the bark of trees ---  
little shields or apothecia springing from a thallus ---  
such is the mood of my mind ---  
and I call it studying lichens.  
Henry David Thoreau*

**Wreath Making with Native Plants—December 6th, 2014** (by Jennifer Jewel). On Saturday December 6th, Chico State Herbarium Board member Adrienne Edwards and Friend of the Herbarium, Jennifer Jewell once again led a general interest workshop on creating holiday wreaths with native plants for the Friends of the Herbarium workshop series. The third year running, the workshop was festive and congenial. Twenty or so attendees enjoyed one another and the 3 hours in early afternoon spent learning about the botany and ethnobotany of different native plants good for making holiday decorations, followed by hands-on construction of wreaths (and a few swags) for them to take home. Adrienne and Jennifer once again this year collected a diverse range of plant materials that attendees used to craft fragrant, beautiful one-of-a-kind decorations to celebrate the season. Attendees included some repeats from previous years, some adults with their parents, and some parents with young children enjoying family time together while learning, creating and supporting the herbarium.

The cost of the workshop was again a great deal for all of the materials included and a large numbers of attendees made two wreaths, or made one and took home materials for their second one. Redwood, cedar, manzanita, salvia, artemisia, toyon, bay, buckbrush, Oregon grape, buckeyes, and pine cones were among the native plants represented in the materials provided.



Workshop Leader, Tom Carlberg  
with workshop participants



## Recent Workshops in Review Continued

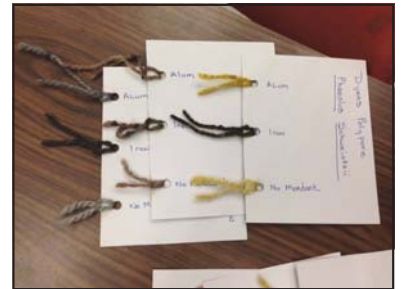
### Growing Plants In Containers Workshop – March 28th, 2015 (by Elena Gregg)

On Saturday, March 28th, Ernesto Sandoval lead a half day workshop on gardening in containers. Ernesto has ample experience to draw on in conducting this workshop since he is the current curator of the UC Davis Conservatory. Ernesto started the workshop by discussing our local climate and how the climate and physical needs of plants makes living in a pot here in the northern central valley a challenge for plants. He further broke down the requirements of an ideal pot and ideal planting medium. He talked about how important it was to have a balanced, well draining soil medium and conducted a demonstration using multiple glass containers holding a variety of different soils and mediums including our typical valley clay loam soil, two kinds of sands, peat moss, and three different soil mixes that the Conservatory uses to further prove the point. For each of these soils and mediums, he poured in water to show how the water moved through the soil and how fast. He then discussed the nutrient requirements of plants and how fast those nutrients are depleted from the soil when in pots. Ernesto ended the day with a brief discussion on amending soils in gardens and methods of forming, in essence, large scale raised beds as a landscaping tool. By the end of the workshop I had a whole new perception of pots and how to successfully grow plants in pots!



### Dyeing with Mushrooms—January 24th, 2015. (by Jennifer Jewell).

On Saturday January 24th, the Friends of the Chico State Herbarium offered a general interest hands-on workshop on creating and working with Mushroom Dyes, led by Chico plants-woman and naturalist, Sherri Scott. The 4 hour plus workshop was well attended by a dynamic group of eager participants from various areas of interest - educators, biology students, amateur naturalists and a large group of fiber artists from the larger region all enjoyed the information, activities and each other. Leader Sherri Scott was well-prepared and well-organized as she covered an incredible depth of information on the ecology of fungi and mushrooms, enjoying looking for and finding them as well as her vast experience in collecting and preparing them for using as dyes. Throughout the course of the workshop, pots of water came to a boil around the Herbarium and as each pot was ready Sherri interspersed her informative talks and slides with information on choosing and using several different mordants (to help fix the pigments of each fungus on different fabrics, for instance silk, wool, cotton, etc.) including alum and iron. Sherri had participants prepare “sample cards” and throughout the day each participant was able to create a card with samples using plain white wool boiled in the different preparations (without mordant, with Alum, with Iron) for each of three different fungi (Jack o Lantern, Indian Paint and Dyer’s Polypore as well as one Lichen (the vivid spring green, Wolf Lichen) . While the fabric/weaver/dyers of the crowd took copious notes on amount of mordant, amount of pigment material, and length of boiling time, the naturalists in the audience oohed and ahed over the scents and colors emanating and emerging from pots around the room. The difference a mordant can make as well as the range of beautiful colors possible from the natural world was enjoyed by everyone.



One of the really interesting things in my mind about this workshop was the diversity of people and interests it brought together and the different skills/knowledge each group brought to the room to be shared with everyone there. It was a wonderful example of finding commonality and the natural world/the Herbarium being both the catalyst for it but also (we trust) the beneficiary of such overlap as people go deeper into their interests and become more invested in protecting the natural resources that these interests are based on and celebrate. I hope the Friends offer and advertise more workshops of this kind to fill out the much-needed technical workshops.







Workshop Leader, Jim Shevock, on the field trip (upper) and Jim verifying a team's findings (lower). (Photos: L. Hanson)

### Bryophyte Sampling and Inventory Techniques: How To Find The Rare and Unusual Species (by Linnea Hanson)

Jim Shevock led this two day workshop on January 7 and 8, 2015. Jim has been a bryophyte researcher for the last 15 years and has collected bryophytes throughout the world. Jim began the workshop with information on how to collect mosses and general information about mosses. After lunch we went out to Upper Bidwell Park and collected mosses in teams. We were to find as many different mosses as we could on different substrates. We examined our mosses on the second day to determine if they were indeed different. In teams, we had Jim inspect our moss collections, 10 mosses at a time. Jim identified the mosses in each packet and let us know if they were indeed different. We continued this process until all of the mosses in our collections were identified. We learned that there were about 45 different mosses along this one trail in Upper Bidwell Park. Jim then talked to us about the mosses we had collected and their key characteristics.

Several of us commented that we felt like folks who are first learning how to identify flowering plants because mosses are so different. We all felt like we were being introduced into a whole new world that we really had not explored before. It was very enlightening. And with Jim's expertise, very educational.

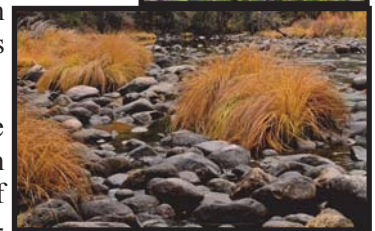
### Reflections on *Carex* Workshops over the Years (by Robert Fisher, a local botanist who has enjoyed 25, or more, FOH workshops over the years.)

In mid-November of 2014, Friends of Chico State Herbarium (FOH) sponsored a long-awaited *Carex* workshop led by Lawrence Janeway. Over the last 12 or so years (I am only discussing the years I have known him) Lawrence has taught 3 such classes but the first couple were only two years apart, so it has been a long *Carex*-free dry spell. The point was driven home by how quickly pre-signup occurred — seemingly a pent-up demand.

I view Lawrence (one of my few botanical role models) as one of the more knowledgeable general botanists in Northern California. Twenty-two years ago his Master's Thesis on Butte County Cyperaceae was published. And, in the last 12 to 14 years his passion for his pet subject hasn't seemed to diminish. As curator for the Chico State Herbarium Lawrence has also added major relevancy to our local plant world by being the point man for every Californian, and occasional North American, researcher or botanical author seeking specialized data buried in Chico State's ever-expanding curated specimens.

In my mind, distinguishing *Carex* is not a casual endeavor and it doesn't surprise me that my memory of the first two *Carex* classes with Lawrence had me sharing with a room full of agency people (folks employed for their botanical services) and only a handful of botany students. In recent years many more of what I call botanical hobbyists, as I consider myself, are now part of the FOH taxonomy workshops. Out of a full class of 18 in Lawrence's last workshop I believe a third of us represented this last category.

The November class was also notable to me for its single-minded focus. When given the choice between discussing basics, or on our own try to identify some freshly collected sedge from Chico Creek, the class wanted to try their hand at keying, preferring action over words. Many workshop participants clearly had some skills in playing with *Carex* but a few arrived with nothing but passion for a new plant subject. Lunch break almost had to be forced. Few seemed inclined to stop work. It looked like the majority would have eaten lunch at their station and kept on working if given the option. So goes my impression of the day. Lawrence's teaching style hadn't changed much over the years, a sound and systematic approach to identifying *Carex*, but this was a better than average class based on enthusiasm alone. Of course, my attitude might have been colored because the dormancy of winter was upon us and I really appreciated the plant fix.



*Carex comosa* (above) and  
*Carex nudata* (below)  
(Photos: R. Fisher)

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## Recent Publications worth checking out!

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### This is a honey of a book

*California Bees and Blooms* is a honey of a book by four biologists of the University of California. Authors Gordon Frankie (an entomologist at UC Berkeley) Robbin Thorp and Rollin Coville (entomologists at UC Davis) and Barbara Ertter (a botanist at UC Berkeley) are professionals at the top of their fields. The main subject matter is from the Urban California Native Bee Survey started by Frankie in 2003. However one does not need to be an urbanite or a gardener to find much interesting information and much enjoyment in this colorful book. And the authors have an appealing style of writing.

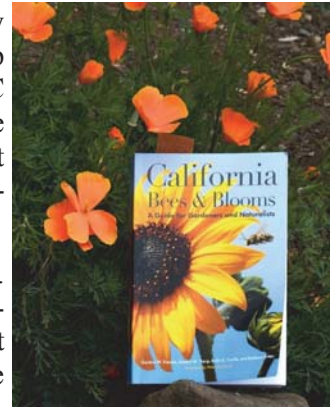
They use the non-native honeybee for the main diagram to define bee body-parts. This is good, since the honeybee is nearly ubiquitous in lowland California and is available for anyone to observe close-up, and then use to compare features on less familiar—but still readily available—native bees. There are chapters on the five major bee families the authors have documented as having “urban bees” that can also be seen in the wild.

Identifying most of the about 1600 kinds (!) of native bees known in California to species level is difficult—sometimes even for bee specialists. But chapters in this book help you i.d. about 25 genera of these little animals that are the commonest in urban gardens. If you have a dissecting scope you can compare wing venation in different groups, but without the scope you can go on sizes, colors, hair patterns and behaviors. Short descriptions of different genera and species have helpful comments that distinguish similar-looking species. The photos are very helpful for identifying California bees, and are very beautiful as well.

This book promotes enjoying bees in gardens and in nature even if you are not sure of their “names.” The authors note that foraging to collect pollen or nectar by some kinds of bees is “leisurely,” in others is very fast, and in others is known as “buzz pollination.” A fascinating chapter describes enemies of bees—some of which you easily see on regular nature walks or in gardens. One interesting section covers nesting. There is a lavishly illustrated chapter showing major urban “bee blooms” documented by these authors, listing which kinds of bees you are most likely to see on these blooming plant species. And there is an important chapter on conservation of native bees.

This reviewer attests to the fact that many of these native bees DO show up if you “plant for them.” You can use flowers that are “beautiful” as long as they also provide lots of pollen and nectar. This book may help you realize that in the garden or in the field, observing blooms WITH the bees on them can actually enhance your enjoyment of plants, or, as one might say, can illustrate a state of “beauty and the bees.”

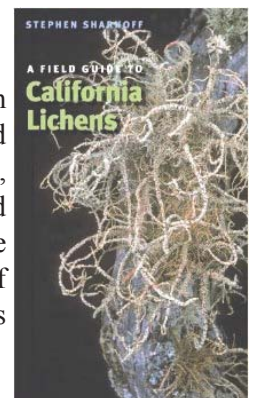
review by R. Schlising 🐝



### *A field Guide to California Lichens* By Stephen Sharnoff

This guidebook has beautiful color photographs of the lichens of California. The introduction covers the textures, internal structures, external structures, reproductive structures, colors and chemistry, lichens and their environment, lichens and people and finally studying, collecting, conserving, and identifying lichens. The photographs and descriptions of the lichens are divided into foliose, fruticose, crustose and squanulose and mushroom lichens. Descriptions of those terms are included in the introduction of external structures. Most of the macrolichen species of California are included with a substantial sampling of crustose lichens. Keys to the lichens in this book are not included.

reviewed by L. Hanson



## Recent Publications worth checking out!

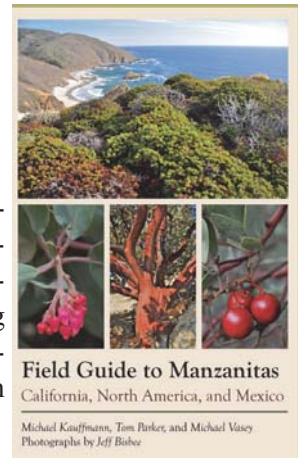
### *A Field Guide to Manzanitas: California, North America, and Mexico*

By Michael Kaufmann, Tom Parker and Michael Vasey

Photographs by Jeff Bisbee

Manzanita's center of biodiversity is in the California Florisitic Province, where they provide woody shrub diversity. Ranging from the Sierra Nevada to coastal bluffs along the Pacific Ocean, from temperate rainforests along the North Coast to arid mountain slopes in Southern California, a wealth of manzanita species and subspecies can be found in an astonishing array of environments. This field guide provides color images of the world's manzanitas, descriptions, simplified keys by region, and range maps. Coming from Backcountry Press on May 1, 2015.

reviewed by L. Hanson



### *Phylogeography of California: An Introduction*

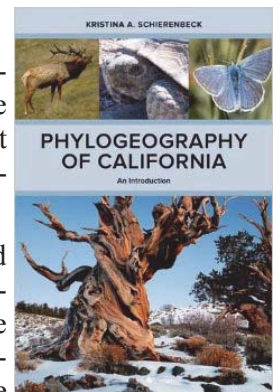
By Kristina Schierenbeck

The goal of this book is to examine and interpret evolutionary history of the biota in California in a geologic context. The book begins with a brief geologic history of the formation of the landscape on which California species have evolved. It highlights the historical processes that shaped California, the Cenozoic era featuring the Paleogene and Neogene Periods and the Quaternary Geologic and Climatic Changes.

This is followed by a description of the arrival of the ancestors of the California biota. And finally the divergences within each major taxonomic group are examined. A survey of the phylogeography of the flora and fauna of California is organized by major organismal groups. These include conifers, flowering plants, insects, fishes, amphibians, reptiles, bird, mammals, and marine mammals. This book summarizes and synthesizes the literature of the past 50 years on the evolution and diversification of these biota of California.

Comparing patterns of many organisms provides evidence needed to construct questions that are narrower than those previously posed about the colonization of taxa now living in California. Readers are provided with an evolutionary perspective of the basis of regional conservation and a context for how the California biota may respond to a rapidly changing environment due to global climate change. This book provides a context for landscape-level conservation efforts throughout the biogeographic provinces that roughly define the state of California.

reviewed by L. Hanson



## Friends Board Lends a Hand at the Mount Lassen Chapter of CNPS Wildflower Show



Lawrence Janeway and Elena Gregg



Tom Griggs



Rob Schlising and Tim Devine



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