Friends of the Herbarium

The Chico State Herbarium
California State University, Chico

Volume 23 Number 2
October 2017

Newsletter

Articles in this Newsletter:

Friends of the Herbarium Annual Meeting

The Role of Ecological Restoration in a Changing World

Tom Gardali
from
Point Blue Conservation Science

Saturday
4 November, 2017
5:00 p.m.

170 Holt Hall
Chico State University

Free Admission!

Everyone is also invited to:

Friends' Annual Meeting
4:30-5:00 p.m.
Holt Hall 170

Open House/Reception
6:15 p.m.
Holt Hall 129
Native Plant Photo Contest
Taco Bar

Tom Gardali, Guest Speaker

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, in particular the curator's position. Scientific and academic pursuits as well as community outreach are the focus of the group. The Friends also offer low cost workshops and classes on various botanical topics.

The **Friends of the Herbarium** operates under the auspices of the Research Foundation at the California State University, Chico, and as such enjoys non-profit status and has access to the use of University classrooms and equipment.

Memberships are renewed on January 1 of each year.

Newsletter
Volume 23 Number 2

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 wel-

For all upcoming workshops and how to register: Friends' website: www.friendsofthechicostateherbarium.com. All workshops are in the Herbarium, Holt Hall 129 on the CSU Chico campus unless noted otherwise.

October 21: Tree Identification

Led by Linnea Hanson and Emily Doe, this workshop will focus on trees found in Northern California urban landscapes. The workshop will include a tour of the Chico State campus where workshop participants will visit approximately 40 different trees. They will learn about key characteristics that distinguish individual species and the generalities and similarities between tree species to help group trees into families. The workshop will continue in the Chico State Herbarium where samples from various trees will be explored in greater detail. Saturday: 9am-4pm. **Note: this workshop qualifies for International Society of Arborists (ISA) units.**

Back by popular demand: Wreath Making with Native Plants –early December

Bring native plant beauty and cheer into your Holiday Season! Learn about native plants and preserve them in a naturally fragrant native plant wreath. Led by Jennifer Jewell, host of "Cultivating Place" on NPR and Adrienne Edwards, you will create a fragrant and beautiful wreath appropriate for the holidays.

Check out the Friends' website as exciting new workshops get added in the near future.

Tara

Alan

We have one new student (Tara Godinez) and two returning students (Alexandria Willis and Alan Mata) working in the Herbarium this semester. Experienced volunteers are instrumental in training and guiding students in the nuances of the Herbarium. Have time on Friday? Consider volunteering. We would love to have you! Contact :

Lawrence Janeway at LJaneway@csuchico.edu
or Colleen Hatfield at chatfield@csuchico.edu

Another plant new to the flora of Butte County: *Streptanthus tortuosus* var. *pallidus*, pallid jewelflower

by Lowell Ahart

On 2 June 2016, Peter Ahart (my brother) and I drove from Honcut to Highway 162 north of Oroville. We turned off onto Forbestown Road and continued on to the turnoff to Feather Falls. Not far along Lumpkin Road we crossed McCabe Creek and the mountainside there had been burned in a wildfire the summer before. As we drove along I looked at the plants. There was a tall mustard that I did not recognize but we didn't stop. We continued on to Feather Falls, and then to Tamarack Flat which is northwest of Little Grass Valley Reservoir. I could see we were too early for many plants, so we started back. Not far from Tamarack Flat, at the meadow where I had seen many *Botrychium* in the past, we stopped and I collected violets for Peter Zika [*Viola macloskeyi, Ahart 20,908; V. bakeri, Ahart 20,909; V. glabella, Ahart 20,910; V. tomentosa, Ahart 20,911*]. Then we drove back to my home near Honcut.

The mustard was puzzling me so on 4 June 2016, I returned to McCabe Creek. A little way past the creek is a good place to park. I walked back towards McCabe Creek and collected the mustard [*Ahart 20,917*] and a few other plants. I then decided to go to Ponderosa Way and see where the fire had started. I got there and parked and collected more plants. The *Sidalcea* was in bloom and the insects were interesting, so I collected some [*S. asprella* ssp. *asprella, Ahart 20,933*]. I then returned to my pickup and went farther down Ponderosa Way. In a little ways, I again spotted the mustard. The road is steep and narrow here so I could not park. I went on a ways farther and turned around when I got past the burned area. I could see the mustard above the road but it was too steep for me to safely climb, so I did not collect any here.

When I got home I keyed the mustard that I collected to *Streptanthus tortuosus* var. *pallidus*. This is not recorded from Butte County and even though varieties have been lumped in The Jepson Manual 2 it is still a good find. All Right!!

Streptanthus tortuosus var. *pallida*
(Ahart 20917) CHSC 116998

Sidalcea asprella ssp. *asprella*
(Ahart 20933) CHSC 116992

[Curator's note. In JM2 no varieties are recognized under *Streptanthus tortuosus*. However, a note there says "Highly variable, needs study." This indicates to me that some of the varieties of *S. tortuosus* that have been lumped in JM2 may ultimately regain recognition, perhaps also with the recognition of new varieties, once detailed studies are conducted. In fact, one new taxon has recently been recognized: *Streptanthus tortuosus* ssp. *truei* (Al-Shehbaz. 2013. Harvard Papers in Botany 18(1): 13–15, f. 1), which is only known from one area along Middle Yuba River in Nevada County. And it just so happens that Lowell Ahart collected this in 1979: *Ahart 1,213*. *Streptanthus tortuosus* ssp. *truei* has already been added to the on-line CNPS Inventory of Rare and Endangered Plants as CRPR 1B.1, which means "Rare or endangered in California and elsewhere" and "Seriously endangered in California."]

Highlights from Recent Workshops

The Friends had a productive and diverse series of workshops since the last Newsletter. Collectively, 61 workshop participants learned about a wide range of interesting and relevant topics. Below are the highlights of the workshops offered since the last Newsletter. (Photos are by author unless otherwise noted.)

Lichen Identification to Genus—March 18, 2017

by Robert Fischer

Tom Carlberg has taught the Friends of Chico State Herbarium's Lichen Workshop for 9 consecutive years. His skills have grown from being a macro lichen specialist to one of Northern California's top micro lichenologists. He is currently the president of the California Lichen Society. Tom teaches an engaging workshop. During this year's workshop, it hit me (again, I'm sure) just how challenging a one-day course in lichenology is, because there is not a lot from other sciences to carry over/relate to! The complexity of lichen expression (which isn't even understood today), the morphology, diminutive size, the all new specialized language that is critical to its discussion, make for a lot to absorb and integrate in one day. The only off-sets I can think of that make this manageable is that folks seem to instinctively know what a lichen is, and folks are curious. A lot of small strange non-lichen things are out there in the field, but folks almost never collect a dried liverwort or even a jelly fungus on the fieldtrip portion of the workshop. There were 12 attendees for this year's March class. Seven lived within 50 miles of Chico, and five traveled up from the Bay Area and Placerville. One year this class drew two people from the Los Angeles area.

Tom Carlberg, workshop leader
Photo by Tom Voltz, workshop registrant

We had rain for this year's class but it didn't stop anyone from wanting to spend some time in the field to collect specimens for study. The real issue is with the lichens: the keys are written for dry specimens. But it worked out fine, since folks started with their algae-based lichens, which do not absorb as much water as the cyanobacteria jelly lichens, thus giving the latter more time to dry down before observation with the 'scopes.

Plant Collection and Making Herbarium Specimens—April 29, 2017

by Linnea Hanson

Emily Doe and Linnea Hanson led a workshop on plant collecting. We started the day with a tour of the Chico State Herbarium. We explained how to get collecting permits from state and federal land owners, how to choose a location, how to collect the specimens, and collection book information. We had samples to press and samples to mount so that participants could become familiar with how the process is completed. Sample labels were also described.

The following day we went in the field and the participants collected and pressed specimens. They

Crustose lichen
By Julene Johnson, workshop registrant

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each wrote the information to make a label. The participants were very excited to be making their first collections.

The collected specimens were then dried in the dryer at the Herbarium, labels were made and a herbarium specimen was made, which was then submitted to the Herbarium for inclusion in the collection. The participants were very pleased with their completed specimen sheets.

Riparian Ecology along the Middle Sacramento River: Understanding Riparian Ecology from the Perspective of Flowing Water—May 11, 2017
by Tom Griggs

A beautiful late spring day greeted 15 workshop participants as we trekked across three different floodplains along the Sacramento River west of Chico.

At the first site at Pine Creek Unit of U.S. Fish & Wildlife Service along Hwy 32 we stood above a bank swallow colony which had excavated about 500 burrows into the rich alluvial cutbank. This floodplain soil also produced large vigorous riparian trees. We then traveled to the Pine Creek Unit of the California Fish and Wildlife south of Hamilton City,

where we hiked across the floodplain and examined sediment (soil) textures from pure silt to different sized sands to the gravels and cobbles near the bank. Vegetation responses to the sediment sizes and the flow velocities were examined. Lastly, we traveled to the mouth of Chico Creek to compare water quality differences with the river and to see the depth of last winter's flood depth as evidenced by beaver-chews on a willow trunk well above our head-height! Special thanks to my co-presenters: Michael Rogner from River Partners and Stefan Lorenzato from the California Department of Water Resources.

Introduction to the Serpentine Ecosystem—July 1, 2017
by Lois Horst, Poughkeepsie, NY

A dozen or so people met at Bedrock Park in Oroville for a day-long investigation into the geoecology of serpentine areas. It was a remarkably varied group, with some participants coming from UC Davis area, Chico, Paradise, and even one (that would be me!) all the way from New York State, to learn about the serpentine ecosystems that can be found in a number of areas in California. We had two geologists, some botanists, a social worker, a college professor or two, a librarian, a landscape designer, and a geology museum curator along.

The workshop used Highway 70, since it neatly traverses the Plumas National Forest—a prime area for viewing serpentinite. We started out the day at the Yankee Hill overlook with a talk by Hugh Safford – the leader of the workshop, and Regional Ecologist for the Pacific Southwest Region of the U.S. Forest Service. There we learned about the Central Valley, Cascade volcanics, and the vegetation we could see. We discussed at which elevation foothill pines are replaced by Ponderosa pines and the transition of chaparral into ponderosa forest.

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At our next stop, at the Pulga Bridge turnout, Dr. Safford spoke on the geological history that brought about this unique and appealing landscape. We learned that serpentinite (the state rock of California) has its beginnings deep in the earth. The formation we were investigating is called the Feather River Serpentinite, and this body of massive rock is about 75 miles long, running roughly from the North Fork of the Feather River to south of the Middle Fork of the American River. On both sides of this body of rock are faults—the Melones Fault to the east and the Rich Bar Fault to the west. Radiometric dating has shown the rock to be nearly 400 million years old. Current thinking places this rock as a piece of the earth's mantle. How it reached the surface is a matter still under discussion, though in consideration of the faults on both sides of the serpentinite it may be connected with a subduction zone that also led to the development of the Sierra Buttes and other formations.

Serpentinite is in most cases created from igneous rocks, such as pyroxene and olivine or peridotite, and the process includes a long submersion in water. Macronutrients in the rock are dissolved away, leaving behind higher concentrations of heavy metals. After serpentinization, the resulting rock is soft and slick and can contribute to sliding and faulting. The rock's appearance is smooth or even greasy looking, which we found out could be slippery when clamoring up a canyon in search of plant material. The rock color we came across on our field trip was mostly a soft grayish-green, with a lovely sheen to it. After weathering, the rock can be brownish.

We continued on to Serpentine Canyon, where there is a large pull-off on the left heading towards Quincy. There we took a break, had lunch in what little shade could be found, and then explored up the rock-strewn canyon bed to look at endemic plants. Serpentine soils are decidedly poor in nutrients with an excess of magnesium and some heavy metals which creates a challenging growing medium. The participants reminded me of a band of mountain goats as they wandered up the rocks, stopping frequently to admire and ponder the tough little plants in evidence including a number of eriogonums and monardellas which thrive on the extreme conditions of soils derived from serpentine.

Native Bees as Pollinators—August 10, 2017
by Rob Schlising

Rob Irwin (Resource Conservationist with Sacramento River Forum) presented the "Introduction to Native Bees as Pollinators" workshop on 10 August. He gave beautiful, detailed Powerpoint presentations on bee natural history, morphology, sociality, parasites, and evolution. These talks were alternated with keying sessions of pinned bee specimens. On the next day a portion of the class went on an optional fieldtrip to two major sites (open red fir forest and alpine meadow) in high elevation Butte County to observe bees in the field. There were plenty of bees to watch and learn, but it turned out to be a disappointing year for seeing bumble bees in sites where they usually were very abundant. Rob posted a number of items on the internet for class attendees to examine. These included those superbly illustrated Powerpoints given during the indoor workshop and a series of pictures taken on the fieldtrip. He also included pictures of bee specimens observed on that trip, referring to them as the "Late-summer bee fauna of Humbug Summit." He included "bee information resources," with websites for identification, maps, biology, and pictures of bees. His amazing list of "bee taxa in Northern California" listing numbers of species in all genera that are known occur in this part of the state, was also made available to workshop participants.

Fall Native Plant Photo Contest Continues….

This is our 7th year for showcasing stellar photos from photographers who use their talents to capture the variety and beauty of our native flora. ***The photos submitted this year will be showcased at the annual meeting for the Friends on November 4th.*** There are four photo categories which include Landscape and Close-up. Last year we added a new category of "non-judged" photographs for those who wanted to share their passion but didn't want to be part of the competitive categories. But wait! This was also the year of the solar eclipse crossing the US—so of course we HAD to add this category—native plants during the eclipse. Since we weren't at the prime spot for the event, we will see if we get entries for this category—we have our fingers crossed!

Left and top photo courtesy of John Whittlesey. Photo to the right courtesy of Nate Harrison, Reno NV

Yes, I Would Like to Join/Renew/Contribute!

- ☐ Student $20
- ☐ Individual $35
- ☐ Sustaining $100
- ☐ Lifetime $1,000
- ☐ Jim Jokerst Award ..... $_____
- ☐ Annual Fund ..... $_____
- ☐ Endowment ..... $_____

Total **$_____**

☐ This is a membership renewal for 2018 #

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Organization _____

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City _____

State _____ Zip Code _____

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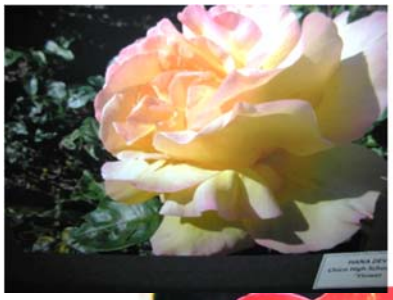
Please make your check payable to: CSU University Foundation (include membership or donation on the memo line).
The CSU University Foundation is a 501c(3) non-profit organization.
Mail to: Chico State Herbarium, c/o Biological Sciences Dept., California State University—Chico, Chico, CA 95929-0515

JOIN US FOR OUR ANNUAL MEETING - SATURDAY, NOVEMBER 4TH
GUEST SPEAKER, RECEPTION AND NATIVE PHOTO DISPLAY
EVENTS START WITH ANNUAL MEETING AT 4:30; HOLT 170

7th Annual Student Spring Photo Contest Results

We launched our 7th Annual Student Photo Contest this last spring. Unlike past years, all of the photos came from Chico High School and in particular their Photography Class. The prevailing theme across many photos was—- wait for it—- Roses. We had over 30 entries from the students and though the majority focused on the rose garden on the Chico State campus, we also had some interesting entries that showed variety and imagination.



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California State University, Chico
Chico, CA 95929-0515
(530) 898-5356