



Friends of the Herbarium

Biological Sciences Herbarium
California State University, Chico

Newsletter

Vol. 6 No. 3

February 2001

!! MARK YOUR CALENDARS !!
Friends of the Biological Sciences Herbarium
Annual Meeting

October 27, 2001

Look for details in the next *Newsletter*

.....
Jim Jokerst Field Botany Award winners
announced for 2001
– see pages 2 - 3 –

.....
Ballot for members of the Board of Directors
Please Vote
– see insert –

.....
more
Friends of the Herbarium
Workshops
– see insert –

Remember, at least half of your registration fees help support the Friends activities on behalf of the Herbarium.

.....
Time to renew annual memberships
in Friends of the Biological Sciences Herbarium
– Please Renew –

MESSAGE FROM THE BOARD

The academic year is rapidly coming to a close and the Friends of the Biological Sciences Herbarium February (!) *Newsletter* is finally in your hands. It is also past time for election of the Board of Directors, which is normally completed by May 1, and for membership renewal notices, which also are sent out around May 1. You will find these two items inserted into this newsletter, along with the current list of upcoming workshops. Robin Fallsheer is leaving the Board after six years of service, including being one of the founding members of the Friends of the Biological Sciences Herbarium and maintaining the Friends' membership database. Early this year Robin started full time employment with California Department of Fish and Game in Stockton – congratulations Robin. Gail

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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

John Dittes
Robin Fallscheer
Tom Griggs
Linnea Hanson
Lawrence Janeway, newsletter editor
Richard Lis
Caroline Warren

ADVISORS

Kristina Schierenbeck
Herbarium Director
Kingsley Stern
previous Director

Newsletter

Volume 6 Number 3

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

— 2001 WINNERS —

Jim Jokerst Field Botany Award

Congratulations to the *Jim Jokerst Field Botany Award* winners. The year 2001 awards were given to **Gavin Blosser**, for his studies of the mycorrhizal fungi in the soils of vernal pools, and to **Colby Boggs**, for his study of the reproductive biology of the canyon dudleya. A summary of

Colby Boggs' project is presented on page 3; a summary of Gavin Blosser's project will be printed in the next newsletter. Gavin and Colby will be presenting short updates of their research to the Friends of the Herbarium Annual Meeting on October 27.

Two awards are offered each

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Accessions into CHSC during 2000

Last year Vern Oswald started what I hope will be an annual tradition in this newsletter. Vern summarized all of the collections accessioned into the herbarium during 1999 by county and collector. Here is the same set of summaries for 2000. Vern prepared the summary of accessions by county, and I prepared the summary by collector.

The Biological Sciences Herbarium accessioned a few less specimens than in the past few years, but was still plenty busy: 2320 collections were accessioned into the herbarium during 2000. This compares to 2681, 2831, and 3681 collections during 1997, 1998, and 1999, respectively.

We continue to owe a debt of gratitude to our mounting specialist, Lowell Ahart. Aside from a few exchange sheets that were already mounted, Lowell prepared about 2300 beautifully mounted specimens for the herbarium during 2000. Thank you, Lowell, for your continuing contribution of countless hours of valuable time and some associated expenses to further the goals of the Biological Sciences Herbarium. Also, many thanks to Vern Oswald for continuing to do most of the accessioning (assigning an herbarium number to each specimen and recording this information) and filing of all of these specimens into the herbarium collection.

The following table lists the plant specimens accessioned into the University Herbarium during 2000. LJ

SUMMARY

California accessions (counties with 5 or more):

Butte	461	Lassen	75	Sutter	10
Colusa	75	Modoc	10	Tehama	486
El Dorado	18	Plumas	130	Trinity	9
Glenn	143	Shasta	32	Yolo	8
Humboldt	6	Sierra	27	Yuba	40
Inyo	15	Siskiyou	9		
Lake	28	Sonoma	5		

Contributions of local collectors (with 10 or more):

Lowell Ahart	392	Loren Gehrung	40	Anna Pinskey	14
Laura Bogni	27	Beth Hendrickson	37	Gary Schoolcraft	95
Caleb Casey	20	Lawrence Janeway	301	Tim Stofer	24
Barbara Castro	184	Jenny Marr	48	Heidi West	127
Julie Cunningham	116	Terry Nelson	18	Jean Witzman	30
Jeffren Gautschi	18	Vernon Oswald	83		

Reproductive Biology of *Dudleya cymosa* subsp. *cymosa*

A project by 2001 Jim Jokerst Field Botany Award winner Colby Boggs

Crassulaceae contains many interesting succulent taxa. The genus *Dudleya* is one of four genera within this marvelous family of plants found within the political and geographic boundaries of Butte County. Forty-four species of *Dudleya* are recognized with only two species extending into northern California and southern Oregon. The canyon dudleya, *Dudleya cymosa* subsp. *cymosa*, is one species found on the rocky outcrops and cliffs of northeastern California with a disjunct distribution as compared to other members of the genus. The center of distribution lies within a 100 mile radius of San Diego that includes Baja California and the southern Channel Islands. The ecology inherent to dudleyas promotes speciation through reproductive isolation. The taxonomic interest within the genus has been the main focus of study, but ecological information is lacking.

My investigation into the reproductive biology and ecology of the canyon dudleya will shed light on the mechanisms that allow its persistence through time. Goals of my

research include: 1) to quantify flower visitors and elucidate the pollinator guild, 2) to quantify nectar production and sugar concentration of the nectar produced, 3) to assign a proper breeding system via field cross-pollination experiments, 4) to quantify seed production as a measure of female reproductive success in response to different pollination treatments, and 5) seed germination requirements and seed viability from different pollination treatments.

I chose this project because of my interest in plant ecology. More specifically, I wish to apply knowledge of ecological parameters for conservation of rare plant taxa. Reproductive biology is an integral focus for meaningful conservation. Plants that do not reproduce efficiently due to anthropogenic influences are functionally extinct. Without ecological knowledge for each



taxon of interest, preservation is literally fruitless. This idea moves away from single-species conservation to community conservation, where plant-pollinator interactions become a vital decision-making part in the conservation of rare, threatened, and endangered plants. Just because the immediate habitat is intact does not mean a plant is free from extinction pressures, especially if the primary pollinator does not have a safe corridor to reach the plant.

The research is currently being carried out among and between three populations of *Dudleya cymosa* subsp. *cymosa*. They are located within the Big Chico Creek Ecological Preserve, Upper Bidwell Park, and Butte Creek Canyon. All populations being studied are found on the south rims of Big Chico Creek Canyon and Butte Creek Canyon. The field investigations will be complete after plant senescence in mid-June. Seed germination experiments and tests for seed viability will be complete by late August or early October. 🐾

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Message from the Board

Kuenster has volunteered to fill in behind Robin on the Board, pending approval in the Board elections. Gail obtained her Master's degree from CSU Chico in 1994 with the thesis "The population and reproductive biology of *Erythronium multiscapoideum* (Liliaceae) on and off a serpentine outcrop." She currently works for California Department of Water Resources in Red Bluff, where she is in charge of most of the rare plant work and some of the revegetation projects conducted out of that office. Barb Castro has volunteered

to take care of the Friends' membership database. Thank you Gail and thank you Barb! LJ

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Flora Buttensis

but would like a copy of the published version. Vol. 2, No. 1, missing pages 26-33, "Supplement to the Butte County checklist. Part VI. Reference Lists." Vol. 2, No. 2, "Syllabus for the medicinal and edible native plants of Butte County, CA." 81 pages. Vol. 2, No. 3, missing pages 12-15, "Second supplement to the Butte County checklist. Computer, data base, and punched card appli-

cations in plant taxonomy and floristics: a preliminary bibliography." Vol. 4, No. 1, missing pages 56-59, "Rare and endangered plants of Butte County, California. CSUC want list." Vol. 4, No. 2/3, "California floristics bibliography." 265 pages. Was there ever a Volume 7? LJ

Continued from page 2

Jokerst Award

spring, and each winner receives a cash award of \$250. Watch for the announcement for the 2002 award in the October newsletter. Applications will be due by February 1, 2002. LJ

Yes! I would like to join!

____ Student.....\$5.00
____ Individual\$10.00
____ Contributing\$25.00
____ Sustaining\$100.00
____ Lifetime\$1,000.00
____ Donation\$ _____

This is a renewal for 2001

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

Name _____
Organization _____
Address _____

City _____
State _____ Zip Code _____
Phone no. _____
E-mail _____

Flora Buttensis needed for the herbarium library

Flora Buttensis (Vol. 1, No. 3, 1980) is recognized as the "starting point" for the *Manual of the Vascular Plants of Butte County, California*. Produced by Mary Sue Taylor, with articles by several local botanists, *Flora Buttensis* also served as an outlet for many other aspects of the floristics of Butte County and vicinity in the early 1980s. Because of its historical

importance to local floristics I have been trying to assemble a complete set of *Flora Buttensis* for the Biological Sciences Herbarium library. Thanks to a generous donation by Rob Schlising, I have been able to add to the few issues of *Flora Buttensis* already in the herbarium library and am now much closer to having a complete set. There are still a few issues and miscellaneous pages missing from this set. Do any of the read-

ers of this *Newsletter* have full or partial sets of *Flora Buttensis* that they can either donate to the herbarium, or loan to me to make copies for the herbarium?

Issues of *Flora Buttensis* missing from the herbarium library set are: Vol. 1, No. 3, "Checklist of the ferns and seed plants of Butte County, California." 90 pages. The herbarium has a pre-publication version of this,

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Friends of the Biological Sciences Herbarium

California State University, Chico

Chico, CA 95929-0515

(530) 898-5381

ADDRESS CORRECTION REQUESTED

UPCOMING WORKSHOPS

SPONSORED BY THE
FRIENDS OF THE BIOLOGICAL SCIENCES HERBARIUM
CALIFORNIA STATE UNIVERSITY, CHICO

INTRODUCTION TO KEYING GRASSES (POACEAE). Tom Griggs.
September 8, 2001, Saturday.

INTRODUCTION TO KEYING THE SUNFLOWERS (ASTERACEAE). John Dittes.
September 22, 2001, Saturday.

DNA ANALYSIS: POPULATION GENETICS AND SPECIES DETERMINATIONS. Kristina Schierenbeck
October 13, 2001, Saturday.

INTRODUCTION TO KEYING CYPERACEAE. Lawrence Janeway.
December 8, 2001, Saturday.

*** This list is also available at www.csuchico.edu/biol/Herb/Events.html ***
Check there for updates and additions to the workshop list.

TO REGISTER FOR WORKSHOPS:

Please make checks payable to:
"Friends of the Biological Sciences Herbarium"

include your name, address, and phone number and mail to:

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

INTRODUCTION TO KEYING GRASSES (POACEAE). September 8, 2001, Saturday.

Trying to identify an unknown grass with any taxonomic key can be intimidating before you understand the special terminology and the nuances of the key you are using. This workshop will immerse you in *The Jepson Manual* key to the Poaceae. The workshop is tailored for both beginners and pros. The class will work through identifying three to four species per hour, mostly as a group, and everyone with their own sample and dissecting microscope. This workshop is led by Tom Griggs, Adjunct Professor at CSU Chico.

Please bring forceps, dissecting needle, 6" millimeter ruler, and a copy of *The Jepson Manual*.

The workshop will meet Saturday, September 8, 2001, from 9:00 a.m. to 5:00 p.m. in Holt Hall room 129 at CSU Chico. The registration fee is \$45.00 regular, \$80.00 corporate (\$35.00 for members); please register in advance. The class is limited to 16 participants (class cancelled without a minimum of 5 participants). For more information about workshop content please contact Tom Griggs at (530) 898-5294 or <tgriggs@jps.net>. For information about registration or directions please call the Herbarium at (530) 898-5381.

INTRODUCTION TO KEYING THE SUNFLOWERS (ASTERACEAE). September 22, 2001, Saturday.

With over 1,300 genera and 21,000 species recorded, the sunflower family (Asteraceae) is the largest plant family in the world, and with over 207 genera represented, it is also the largest family in California. Come and learn the taxonomy of this remarkably diverse group with John Dittes, local botanist and private consultant. John will lead this one-day workshop during which participants will key as a group and individually, using *The Jepson Manual*. John will provide fresh specimens from Butte, Tehama, Plumas, Lassen, and Sierra Counties. Beginners, as well as those wishing to brush up on their skills, are invited.

Please bring forceps (tweezers), dissecting needle, and a 6" millimeter ruler. You are also invited to bring any plants you may have been wondering about. If possible, also bring a copy of *The Jepson Manual* (we have several copies to loan to those who need them); we can direct you to sources for *The Jepson Manual* if you contact us ahead of time.

The workshop will meet on Saturday, September 22, 2001, from 9:00 a.m. to 4:30 p.m. in Holt Hall room 129 at CSU Chico. The registration fee is \$45.00 regular, \$80.00 corporate (\$35.00 for members). Please register in advance; class size is limited to 16 participants (class cancelled without a minimum of 5 participants). For more information about workshop content please contact John Dittes at (530) 895-0349 or <jcdittes@cs.com>. For more information about registration or directions please call the Herbarium at (530) 898-5381.

DNA ANALYSIS: POPULATION GENETICS AND SPECIES DETERMINATIONS.

October 13, 2001, Saturday.

DNA analysis is all the rage these days in the biological sciences: from the study of variation among populations of a single species, to the study of the distinctions and relationships among related species, to the study of relationships between Families, Orders, Classes, and even Kingdoms of organisms, to the study of species diversity in various ecological contexts. Even the standard "Linnean" system of classification of organisms is experiencing flux as a result of contemporary DNA studies. In this workshop we will explore what DNA analyses are used for and why, and what it means to "run a gel." The various acronyms and catch-phrases used in DNA analysis, such as AFLPs, RAPDs, "nuclear ribosomal ITS regions," "plastid gene *rbcl*," etc., will be explained. Participants will gain hands-on experience in running a gel.

Dr. Kristina Schierenbeck is a member of the faculty of the Biology Department at CSU, Chico, and teaches classes in Evolutionary Biology, Plant Systematics, and Research Techniques. Dr. Schierenbeck has received several grants to study relationships in *Arctostaphylos*, *Carpobrotus*, and *Clarkia* using various DNA techniques and has several graduate students working with her on these and other similar projects.

The workshop will meet Saturday, October 13, 2001, from 9:00 a.m. to 4:30 p.m. in Holt Hall room 129 at CSU Chico. The registration fee is \$45.00 regular, \$80.00 corporate (\$35.00 for members of Friends of the Herbarium); please register in advance. The class is limited to 16 participants (class cancelled without a minimum of 5 participants). For more information about workshop content please contact Kristina Schierenbeck at (530) 898-6410 or <kschierenbeck@csuchico.edu>. For more information about registration or directions please call the Herbarium at (530) 898-5381.

INTRODUCTION TO KEYING CYPERACEAE.

December 8, 2001, Saturday.

Although Cyperaceae has far fewer species in California than the largest plant families in the state, Asteraceae with about 750 species and Poaceae with about 430 species, it still has about 205 species in California and more than 3,600 species worldwide. Because of the genus *Carex*, the most speciose genus in California with about 135 species, the Cyperaceae tends to be avoided by many botanists. This workshop, led by Lawrence Janeway, curator of the Herbarium at CSU, Chico, is an introduction to keying the Cyperaceae, using *The Jepson Manual*. Dry, pressed material representing the major genera of Cyperaceae in California, and some of the smaller genera, mostly collected in northern California, will be provided for use by all members of the class keying together, each person with their own specimen and dissecting scope. Herbarium labels will be provided for those participants who would like to take home their sample material for later reference. Terminology for this notoriously difficult group will be explained and illustrated as it is encountered during the keying process.

Please bring forceps (tweezers – the sharper, the better), dissecting needle, 6" millimeter ruler, and a copy of *The Jepson Manual*.

The workshop will meet on Saturday, December 8, 2001, from 9:00 a.m. to 5:00 p.m. in Holt Hall room 129 at CSU, Chico. The registration fee is \$45.00 regular, \$80.00 corporate (\$35.00 for members). Please register in advance; class size is limited to 16 participants (class cancelled without a minimum of 5 participants). For more information about workshop content please contact Lawrence Janeway at <ljaneway@compuserve.com> or (530) 899-7434. For information about registration or directions please call the Herbarium at (530) 898-5381.

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At least half of workshop registration fees go to help support the Friends activities on behalf of the Herbarium. The corporate rate provides the opportunity for companies and agencies to demonstrate an added commitment to the Herbarium and its place as a valuable resource to the botanical community.

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