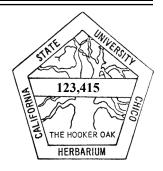


# **Friends of the**

# Herbarium

The Chico State Herbarium California State University, Chico



### Volume 27 Number 1

May 2021

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*10th Annual California Native Plant Photo Contest Organized and Sponsored by Friends of the Herbarium* 

Newsletter



**Grand Prize Winner:** Gaylene Kinzy Female metallic sweat bee in *Penstemon palmeri* (Continued on page 3



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 Chico State Enterprise 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.

#### BOARD OF DIRECTORS

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#### *Newsletter* Volume 27 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.

### **All Things Botanically Related** On-going virtual monthly presentations update

When the Herbarium and the Friends of the Herbarium could no longer hold workshops starting over a year ago, we missed connecting with like-minded botany lovers. After some brainstorming, we collectively decided to start a monthly series of virtual presentations given by guest speakers covering a wide range of botanically related topics. We selected the third Thursday of each month for the guest's presentation. Our first presentation was last October and since that time, we have had nine (9) presentations. **Important-Iy**, recordings of all of these presentations are available on the Friends of the Herbarium website as well as the Herbarium website—check them out! Also keep an eye on these two websites for more information on future scheduled presentations. Below is a list of upcoming presentations as well as past presentations:

**Upcoming Presentations:** 

• *Gardening in Fire Landscapes* by Adrienne Edwards and Rachel Schleiger—August 19, 2021

Previous Presentations:

- Two Presenter: Gall Size, Parasitoid Phenology and Ant Mutualism may Explain the Success of the Galling Wasp, <u>Disholcaspis</u> <u>eldoradensis</u> by Drew Gilberti and Vigor, Phenology, and Genotype: How Plant Traits Explain Variation in Herbivory on <u>Quercus</u> <u>lobata</u> by Constantine Raether—June 17, 2021
- *Plants of Vernal Pool Landscapes in the Chico Area* by Rob Schlising—May, 2021
- *Herbaria: Collectively Saving Plant and Fungal Biodiversity* by Barbara Thiers—April, 2021
- Digging Dirt—the Edaphic Factor in Restoration and Management of Seasonal Wetlands in the Northern Sacramento Valley by Joe Silveira—March, 2021
- *Diversity of Orchids in North America* by Linnea Hanson— February, 2021
- Region-specific Phenological Responses to Climate and Climate Change in <u>Streptanthus tortuosus</u> (Brassicaceae) by Natalie Love—January, 2021.
- Living with Bumblebees by John Whittlesey—November, 2020.
- Ecology of Butterflies and Their Host Plants by Don Miller— October, 2020.
- Biology of the Small, Ephemeral Geophyte—'Steer'shead' (<u>Dicentra uniflora</u>, Papaveraceae) by Rob Schlising— October, 2020.

Again as a reminder, recordings of all previous presentations can be found on the Friends website as well as the Herbarium website.

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## 10<sup>th</sup> Annual California Native Plant Photo Contest Results

### By Tim Hanson

Thanks to everyone who submitted a photo to the Friends of the Chico State Herbarium—California Native Plant Photo Contest! We look forward to seeing the beautiful submissions every year, and the extraordinary circumstances of the past year made this year's entries particularly inspirational.

The 2021 contest had the most entries we've ever received and the photos beautifully highlight the amazing plants, landscapes, and ecological interactions in the state.

Congratulations to the winners!

Visit our website (friendsofthechicostateherbarium.com) for a gallery including all of this year's photos.



Honorable Mention:

Sharon Strauss Erysimum menziesii



### **Honorable Mention:**

Clint Bettiga "Don't forget: beautiful sunsets need cloudy skies." - Paulo Coelho

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### Chico State Herbarium accessions during 2020

By Lawrence Janeway, Herbarium Curator

Twenty-two years ago Vern Oswald started the annual tradition in this newsletter of summarizing all of the collections newly accessioned into The Chico State Herbarium (CHSC) during the preceding year by county and collector. Here is the summary for 2020.

The total number of new accessions for 2020 was 866 specimens, as documented in our herbarium database (at www.cch2.org/portal/). This is a smaller number than the herbarium has accessioned in previous years (there were 1020 accessions in 2019 and 1618 in 2018). However, this is not a result of any slacking on the part of the herbarium staff, volunteers, or student helpers. Although the campus was closed due to Covid-19 concerns through most of 2020, during which volunteers, visitors and most students have not been allowed into the herbarium, we were still able to incorporate a significant number of new specimens into the collection!

As we have done for many years now, all new incoming specimens are databased before they are filed. The databasing during the past year (and filing of the specimens) has been accomplished by our wonderful volunteers Cindy Weiner, Nancy Groshong, and Mari Moore, and by students Aspen Fairley and Katie Gillis. Aspen was able to work from home during the campus closure, thanks to our database now being accessible online.

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, Lowell has mounted almost all of the specimens accessioned into the herbarium each year since fact, Lowell has mounted almost all of the specimens accessioned into the herbarium each year since 1995! For 2020, this means that Lowell prepared more than 840 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.

Also, thanks to all of the collectors, as shown below, 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.

		Accessioned in 202	0		
by Plant Group		by Collector		by County	
GRAND TOTAL:	866	LOCAL COLLECTORS		TOTAL CALIFORNIA:	661
		<ul> <li>more than 5 collections –</li> </ul>		<ul> <li>– top 10 counties –</li> </ul>	
Club mosses	5	Lawrence Janeway	290	Butte	194
Ferns	14	Lowell Ahart	221	Shasta	121
Conifers	1	Barbara Castro	41	Lassen	60
Flowering Plants	846	Belinda Lo	20	Nevada	60
		Sara Taylor	6	Modoc	58
		Don Lepley	6	Plumas	45
				Siskiyou	40
		Special mention:		Trinity	12
		Peter Zika (at WTU)	105	Tehama	8
		Richard E. Brainerd (at OSC)	10	Los Angeles	8
				Special mention:	
				Washoe Co., Nevada	51

The following table summarizes the new plant specimens accessioned into The Chico State Herbarium during 2020.

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### The Rare Onion named for Jepson

By Rob Schlising

As recently as 1989 a variety of Allium sanbornii (Sanborn's Onion), was considered different enough to be formally published as a species on its own-Allium jepsonii (Jepson's Onion). The name honors one of California's early premier botanists, Willis L. Jepson, whose name today also graces the major California herbarium (the Jepson Herbarium), and the major statewide flora (The Jepson Manual and the Jepson eFlora). This onion has somewhat showy flowers (white, with a pink stripe on each perianth part. While this bulb-bearing plant is not particularly remarkable in many ways, it does have a few interesting features. For example, it occurs only on outcrops of serpentine in a small area of cen-



Three inflorescences of Allium jepsonii in early flower

tral Butte County (and has a couple of disjunct populations in the foothills of the Sierra Nevada to the south).



Open capsule of *A. jepsonii*, showing two seeds and the dried flower part (5mm grid in the background).

The late Susan Bazell, then a volunteer in the Chico State Herbarium, joined the present author in studying the biology of this rare species for four years (2008 through 2011) at a serpentine site just south of Paradise Lake. Here are some highlights of what we learned. Watch for a more detailed and indepth report in an upcoming issue of Madroño.

The density of flowering individuals in the large study plot did not vary over the years, but the stem bearing the single leaf and the single inflorescence varied from 20 to 26 cm high. The number of flowers per plant (with 50 plants counted each of four years) varied from 21 to 30 over the years, with an average of 26 flowers in the umbel. But only 54% of these flowers set fruit with seeds. The commonest flower visitor was a bombyliid fly (*Bombylius facialis*) and we thought it was probably the major pollinator. When we covered umbels tightly with lightweight tissue paper to prevent cross-pollination, the plants set significantly fewer seeds than did plants with uncovered umbels, suggesting that cross pollination was beneficial for seed produc-

tion. The fruits (capsules) of untreated plants had their seeds counted each year, and rather surprisingly only 1 or 2 of the 6 ovules per ovary matured into roundish black seeds.

We planted seeds (unwatered) in the field in late summer and checked for seedlings in the winter. *Allium jepsonii* showed winter seed germination typical of geophytes (bulb- and corm-plants) in our Mediterranean climate. The seedlings showed the type of "self-planting" that is becoming known for other California geophytes like *Triteleia*, *Brodiaea* and *Odontostomum*. The base of the single

#### (Rare Onion—Continued from page 5)

cotyledon (seed leaf) elongated greatly, pushing the future bulb of the seedling/young plant deeper into the soil, probably helping it withstand the stressful dessication of the surface soil during the coming hot and dry summer. Seedlings of Jepson's Onion produced only the single cotyledon, no other leaves the first year, and the green, aboveground cotyledon dried up when the adult plants also dried by midsummer. It is not known how many years of growth it takes before a young plant can flower. It is believed that all of the mature bulbs do not grow aboveground stems each year, or at least do not flower each year.

The Inventory of Rare and Endangered Plants of California gives Jepson's Onion the rarity status of "California Rare Plant Rank 1B.2 (fairly endangered in California)." It is considered rare because of its very limited geographic range in northern California. Although designated a "sensitive" species by the US Forest Service and therefore managed to ensure long-term viability on Forest Service lands, Jep-



Bombylius facialis hovering while visiting an inflorecence of *A. jepsonii*. Note long tongue in flower. Photo by Susan Bazell

son's onion does not have the status of a Federal or State listing of "threatened" or "endangered."

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### Herbarium Update

By Colleen Hatfield

Chico State University announced that it would reopen to the public on June 7th, 2021. This is good news for the Herbarium as we have sorely missed our volunteers as well as seeing you all. Please note that University guidelines will apply and you must contact either the curator (Lawrence Janeway) or the herbarium director (Colleen Hatfield) to fill out the appropriate forms. We anticipate being able to start up workshops again in late August so stay tuned and check the Friends website for updates over the summer.

Luckily, we were able to continue to image our specimens and post the images to the Consortium of California Herbaria (CCH2.org) over last summer thanks to grant funding from the National Science Foundation as part of the California Phenology Thematic Collections Network. Under that grant we were able to image over 30,000 specimens in our collection. We have been able to continue to image specimens for now thanks to a generous donor who is funding a technician to continue to work on the imaging project. We are currently at over 50,000 of our specimens imaged, approximately 40% of our collection.

We are looking forward to having our dedicated volunteers return to help us in the Herbarium. They have been instrumental in helping us put the Chico State Herbarium on the map as being one of the largest regional herbaria in California and the West. If you are interested in helping, please feel free to reach out to the curator or herbarium director for information.

Foremost, we want to thank each and every one of you for your dedication and support of the Herbarium during these challenging times!! **THANK YOU!!!** 



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### Herman Gray, MD — Memories

#### by Linnea Hanson

Herman Gray passed away October 29, 2020. He volunteered in the Chico State Herbarium from 2013 to 2017. Lawrence Janeway noted that Herman entered 1,130 specimens into the database while volunteering in the Herbarium. His work at the computer entering data kept him current with plant names he said. And he had great admiration for the specimens that Lowell Ahart would bring in to add to the herbarium collection. Lawrence also shared that a query of the Consortium of California Herbaria (CCH2) on-line shows that the Chico State Herbarium has 17 specimens collected by Herman.



Herman was born on November 14, 1923 in Wuppertal-Elberfeld, Germany, to Alfred and Luise Fried Grunebaum. Although the Grunebaums practiced Christianity, their family had Jewish origins. Since the Nazi government persecuted Jewish citizens, Herman was sent to boarding school in England until his family escaped Germany. Herman's family immigrated to the United States in 1937 and Alfred changed their family name to Gray. A high school teacher in Klamath Falls, Oregon, introduced Herman to his life-long passion for birdwatching. He wanted to become a biologist but his father wanted him to study medicine. Herman specialized in leprosy. He served in the Army in World War II and became a U.S. citizen. In 1952 Herman married Baukje "Bea" Sluis a nurse who had immigrated from the Netherlands. They became medical missionaries and moved to Nigeria to the Bernue Leprosy Settlement. Their sons, Mark and Stan were born in Nigeria. The Grays moved to Chester. California so their sons could finish high school in the United States. After that they went back to Nigeria and established health clinics, returning to the United States in 1987.

Herman and Bea settled in Chico and Herman worked for Del Norte Clinics as the Medical Director and practiced at the Orland Family Health Center. Linnea's husband, Harold Carlson, worked for Del Norte Clinics as their Director of Planning and Development. Linnea met Herman and Bea at the annual holiday parties and enjoyed hearing about the many experiences they had in Nigeria. Herman continued to work as a physician into his mid-90s, at Paramex Screening Service and the State Department of Rehabilitation.

Herman was an avid birdwatcher and was a volunteer docent at Gray Lodge and for Snow Goose Festival field trips. Herman became interested in plants and took courses at Chico State in the late 90's, botany from Kingsley Stern and plant ecology from Doug Alexander and Rob Schlising. He led walks on Table Mountain for OLLI.

Herman wanted to learn more about the plants in the area and knew Linnea worked for the Forest Service as a botanist after meeting at Del Norte Clinic holiday parties. Herman volunteered on the Feather River Ranger District from 2001 through 2004 when he was in his late 70s and early 80s. He helped with rare plant surveys and the District herbarium. Herman always had a couple of medical journals in his backpack to read at lunch time. He brought a book on the Wildflowers of Europe to the Ranger Station that all of us botanists enjoyed seeing the wildflowers we have in common. At the beginning of each field season the Ranger District had a training day for all employees to review safety and policies for the District. One year a forester tried to explain the concerns with Hepatitis C and Herman raised his hand and asked if he could add to the explanation since he was a medical doctor. The rest of the District employees were amazed that a medical doctor was on the botany crew that field season! Herman was a treasure to work with, and will be missed.

# New, Future and Rumored Botanical Resources

by David Popp

There are some amazing flora references now available or soon to be available that we wanted to share with you. The information below is provided by the different publishers websites where you can get more information. The new resources include:

### Out now:

### Flora of Oregon. Volume 2: Dicots A-F

Authors: Stephen C. Meyers, Thea Jaster, Katie E. Mitchell, Tanya Harvey, and Linda K. Hardison, Editors.

Continuing its presentation of plant knowledge that is comprehensive and broadly relevant, OregonFlora and BRIT Press are proud to offer Flora of Oregon Volume 2: Dicots A–F. Including 30% more taxa than in Volume 1, there are dichotomous keys, distribution maps, and descriptions for 1,668 native and naturalized vascular plant taxa, 785 of which are accompanied by pen and ink illustrations. Thirty-nine dicot plant families are treated, including the major families of composites, mustards, stonecrops, heaths, and legumes. Front chapters highlight plants in the broader world via three engaging chapters accompanied by 96 full-color photographs: plant-insect interactions, landscaping and gardening with native species, and the connections between floras and herbaria. Appendices list cultiva-

tion features of over 300 Oregon natives appropriate for gardening and landscaping, native garden taxa that support beneficial insects, Oregon plants that are hosts to butterfly larvae, and—for the first time ever published—specialist solitary bee species and the Oregon plant taxa they associate with. Volume 2 is completed with an illustrated glossary, references, author biographies, and an index of all scientific and common names of treated taxa. A valuable reference for land managers, policy-makers, naturalists, wildflower enthusiasts, historians, teachers, and students of all ages, Volume 2 expands the resources OregonFlora offers to all who appreciate the natural beauty and biodiversity of Oregon. 861 pages.

Published by OregonFlora and BRIT Press. Publication Date: December 2020. \$85.00. Hardback. SKU: 978-1-889878-61-4, UPC/ISBN: 978-1-889878-61-4 Save 10% when you purchase volumes 1 and 2 together

#### The Vascular Plants of Northwestern California

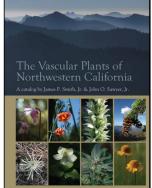
A catalog by James P. Smith, Jr. and John O. Sawyer, Jr.

This 272-page book provides a checklist of the native and naturalized vascular plants that occur in northwestern California. By vascular plants, we mean lycophytes (traditionally called fern allies), ferns, conifers, and flowering plants. Escaped ornamentals, plants growing at abandoned home sites, and crops are also included if they have become established and persist without our assistance. This is a more inclusive definition than the one used in the second edition of the Jepson Manual, which is the primary reason that we show many more plants as occurring in northwest California.

This catalogue documents the occurrence of 158 families, 901 genera, 3376 species, and 3811 taxa (subspecies and varieties) in the region. To provide some perspective, there are more vascular plant species in northwestern California than in 39 states!

Published by CNPS Press. Publication Date: 2020. \$ 24.00





(Continued on page 9)

#### (Floral References Continued from page 8)

# **Book List: New, Future and Rumored - Continued**

### <u> A Flora of Napa County</u>

#### by Jake A. Ruygt

A Flora of Napa County is a complete guide to the native plant life of the Napa Valley. Nearly 1,700 taxa (native and naturalized) are described with habitat preferences, blooming period, and abundance. The book includes supplemental information on climate, geography, Native American uses, wildlife habitats, and more. The book is 510 pages, including 90 pages of reference photos and illustrations

Published by CNPS Press. Softcover. Publication Date: December 1, 2020. \$ 39.95 ISBN 0943460603, 9780943460604

### Herbarium: The Quest to Preserve and Classify the World's Plants

by Barbara M. Thiers

Since the 1500s, scientists have documented the plants and fungi that grew around them, organizing the specimens into collections. Known as herbaria, these archives helped give rise to botany as its own scientific endeavor.

Herbarium is a fascinating enquiry into this unique field of plant biology, exploring how herbaria emerged and have changed over time, who promoted and contributed to them, and why they remain such an important source of data for their new role: understanding how the world's flora is changing. Barbara Thiers, director of the William and Lynda Steere Herbarium at the New York Botanical Garden, also explains how recent innovations that allow us to see things at both the molecular level and on a global scale can be applied to her-

baria specimens, helping us address some of the most critical problems facing the world today. At its heart, Herbarium is a compelling reminder of one of humanity's better impulses: to save things—not just for ourselves, but for generations to come. 304 pages.

**Note**: if you are interested in hearing Dr. Thiers presentation as part of the ongoing series of "All Things Botanically Related", click on Events on the Friends website and scroll down.

Published by Timber Press. Publication Date: December 8, 2020. \$23.79 Hardcover. ISBN-10 : 1604699302 ISBN-13 : 978-1604699302

## Hot off the press:

### Plant Galls of the Western United States

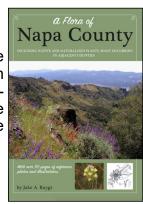
by Ronald A. Russo

Beautiful and bizarre, plant galls are growths of various shapes, sizes, and colors produced in response to invading organisms. Describing 536 species of galls and their causative agents, Plant Galls of the Western United States explores this unique realm with stunning photos and fascinating information about the life cycles of the organisms involved.

A photographic guide to 536 species of plant galls found west of the Rockies including 120 new to science and 232 that have never appeared in a field guide before. Contains more than 150 species from most of the deserts of the western states. 400 pages

Published by Princeton Field Guides, 149. Publication Date: April 20, 2021. \$24.49. Flexibound. ISBN-13: 978-0691205762

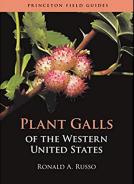
(Continued on page 10)



Herbarium

The Quest to Pres





(Floral References Continued from page 9)

# **Book List: New, Future and Rumored - Continued**

### In the works and coming soon

#### The Klamath Mountains: A Natural History

Michael Kauffmann, Editor

The first comprehensive look at the natural history within the Klamath Mountains Geological Province is in the works!

Available in: Paperback, PDF. Published by Backcountry press. Coming in 2021

#### Wildflowers of California's Klamath Mountains

Julie Kierstead Nelson and Julie Knorr, Michael Kauffmann, Editor

This is a second edition (previous title: Wildflowers of the Trinity Alps) and it will have 105 new species. Features plants found within the premier wilderness areas of northwest California's Klamath Mountains. This collection is representative of the most common, beautiful, and unique species in one of the most biodiverse temperate mountain ranges in the world.

Available in: Paperback, PDF Published by: Backcountry Press Coming in 2021, due out in at the end of the year

#### Lupines of California

Stuart Wilson with the help of Teresa Sholars, the author of the genus Lupinus in the Jepson Manual of California Plants.

Photographs all 104-plus species and varieties of the genus Lupinus in the state and more.

CNPS this summer?

Stuart Wilson

# **Book List: New, Future and Rumored - Continued**

### In the Works

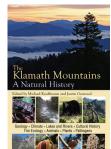
### Gardening in Fire Landscapes

by Adrienne Edwards and Rachel Schleiger

Edwards and Schleiger note that this book is motivated by the fact that destructive wildfires are becoming larger, hotter, and more frequent. Since 2000, an average of 7.1 million acres have burned across the US, more than double

the average acreage that burned in the 1990s (Congressional Research Service, 2021). In 2020, wildfires burned 10.3 million acres, and roughly 60% was in California (> 4 million acres), Oregon (> 1 million acres), and Washington (> 700,000 acres). At the same time, more people are choosing to live adjacent to fire-prone wildlands. In California alone, at least 25% of the 11 million residents live in the Wildland - Urban Interface, where development meets or intermingles with undeveloped wildlands.

There are online resources and a few books that provide limited, generalized guidance on designing and maintaining landscapes to minimize wildfire risks to property. However, there is no com-(Continued on page 11)







Teresa Sholars



Adrienne Edwards



Rachel Schleiger



#### (Floral References Continued from page 10)

prehensive guide for minimizing wildfire risks while optimizing the ecological integrity of wildland areas. Living in fire-prone landscapes should not mean that you must scrape all vegetation hundreds of feet away from structures. Nonetheless, many residents and regulators interpret "defensible space" for protection against wildfires in just this extreme. People care about where they live. This book gathers resources not just on fire safety, but the nuances of landscaping and gardening specific to different wildland communities. There are no one-size-fits-all guidelines for living in fire landscapes. Our motivation for writing this book is to provide a detailed reference for fire-scaping that is specific to the varied habitats of West Coast states.

Gardening in Fire Landscapes will be a unique guide for anyone living in the wildfire-prone areas of California, Oregon, and Washington. This book will empower readers to evaluate fire risks, and to evaluate fire risk management impacts on their environment. We will include specific recommendations, examples, and links to additional resources for planting and maintenance. Overall, this book will be an essential resource for people living and working in fire-prone landscapes.

Timber Press-2022?

#### Wildflowers of California - 2022?

By Nick Jensen

Aiming for about 1000 common plants found in California

(A Timber Press Field Guide) Flexibound?

and finally .....

#### Field Guide to Manzanitas

By <u>Michael Kauffmann</u>, <u>Michael Vasey</u> and <u>Tom Parker</u> with Photos by Jeff Bisbee 2nd Edition

Manzanita's center of biodiversity is in the California Floristic Province, where they are the "rock stars" of woody shrub diversity. Ranging from the Sierra Nevada mountains to coastal bluffs along the Pacific, 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.

Field Guide to Manzanitas presents an assimilation of images, descriptions, and range maps to better understand these plants through:

Color plates for identifying the world's manzanitas Accurate and updated range maps 28 manzanita hot-spots for finding them in the field Spectacular photos from across North America Simplified keys by region Discussion covering endemism, ecology, and evolution of the genus

The second edition eBook is available for immediate download. Hard copy will ship in late July.

Source: https://backcountrypress.com/book/field-guide-to-manzanitas/



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### Friends of the Chico State Herbarium

May 2021

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### Friends of the Chico State Herbarium

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