



# THE JEPSON GLOBE

A Newsletter from the *Friends of The Jepson Herbarium*

VOLUME 32 NUMBER 2, Fall 2022

## Director's Column: Speciesism and Biodiversity

By Brent D. Mishler

A former postdoc, Brian Swartz, and I have a new book forthcoming called *Speciesism in Biology and Culture*. It is an edited work with chapters by experts in a number of different areas that touch on this general topic including genetics, religion, law, conservation, energy, anthropology, etc. It follows on from my recent book *What, if Anything, are Species?* which I introduced in my last column for *The Jepson Globe* 31(1), 2021. That book argued that the species level in biology is arbitrary, while the new book explores what this means for human attitudes and behavior.

Speciesism is the view that humans are exceptional, distinct from and superior to the rest of life, and have the right to manipulate/use/destroy other "species" at will. Most people are unconcerned about, even unconscious of, our arrogant treatment of other living things from a position of assumed superiority.

One very important topic that is relevant to readers of *The Jepson Globe* is the biodiversity crisis. Humans have blithely destroyed natural habitats for our uses at an increasing rate over the last few centuries. California is unfortunately a poster child for this trend. Speciesism runs deep; even many of those who express concern about the crisis and are conservationists still think in a speciesist manner, sadly. They still see the crisis as being all about humans: e.g.,  
(*Director's Column continued on page 2*)



Vincent Medina and Louis Trevino at the construction site for 'oṭṭoy, their new Ohlone cafe on the UC Berkeley campus. Photo credit: San Francisco Chronicle

## Collaboration with Ohlone Cultural Leaders Results in Changing a Common Name in the *Jepson eFlora*

By Roxanne Andersen

Botanists tend to focus on Latin names (for good scientific reasons) but common names are incredibly important in different ways and contain information about the history, location, and use of plants. The Jepson Herbarium includes recognized common names in the *Jepson eFlora* and seeks out the most current information about names along with the botanical facts about a plant. Just recently, the common name for *Claytonia perfoliata* was changed to "rooreh," a change that came about from a conversation that started on the Jepson Workshop Fifty Plant Families in the Field.

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## Herbaria: A Critical Resource for Floristic Studies

By Nina House, California Botanic Garden

Throughout my graduate career, herbaria have played a very important role and will continue to in the coming years. For the past three years, I have been a botany master's student at the California Botanic Garden (CalBG) in Claremont, California. Having successfully defended my thesis in June of 2022, I will be continuing with my Ph.D. in botany at CalBG in the fall of 2022.

For my master's thesis, I conducted a floristic inventory of the Manter and Salmon Creek watersheds in the southern Sierra Nevada, Tulare County. Floristic studies involve the thorough documentation of plant life in a region, completed through the collection of voucher specimens and detailed field notes. After being identified, voucher specimens are deposited in herbaria. For this reason, floristic studies are vital for the continued growth of herbaria. One study can produce thousands of vouchers specimens, each of which provide context for where plant species grow,  
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### ALSO IN THIS ISSUE

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During that workshop, Joan Hamilton brought to our attention issues with the common name used in the *eFlora* for *Claytonia perfoliata* which we had listed as miner's lettuce. Joan was aware of the issues because she had produced a video sponsored by Mount Diablo Interpretive Association featuring two Ohlone Cultural leaders, Vincent Medina and Louis Trevino.

The video, entitled *Native to Right Here: the plants and animals of Tuushtak* (YouTube: <https://youtu.be/3Eimf-BPF7o>) shows Vincent and Louis walking below their most sacred peak, Tuushtak, aka Mount Diablo, describing plants and animals. In the video, they point out the error of using miner's lettuce as the common name for *Claytonia perfoliata*. The plant has been enjoyed by native people for thousands of years and in Chochenyo, the local Ohlone language, is called rooreh and is also referred to as Indian lettuce. In the video they point out "it seems unfair to give miners all the credit of this deli-


cious food when it's been cultivated and stewarded by Native communities here in California for so long."

Vincent and Louis are the founders of mak-'amham/Cafe Ohlone (<https://www.makamham.com/>), which started in 2018 near the UC campus. As the only Ohlone restaurant in the world, they opened it "to provide a physical space for our Ohlone people to be represented in the culinary world with



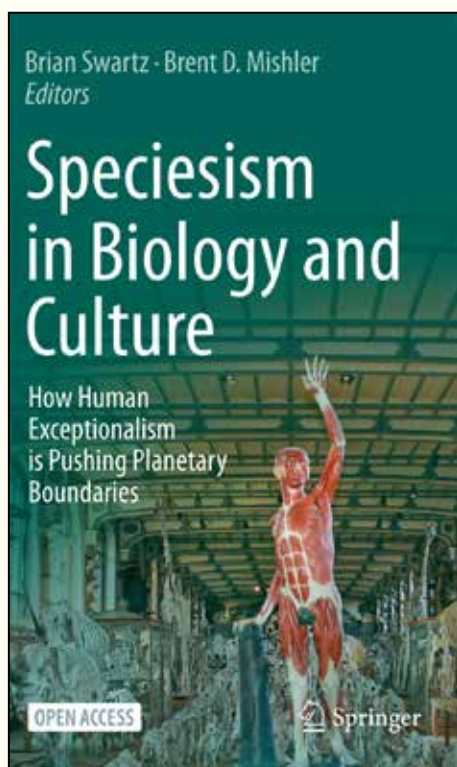
Rooreh (*Claytonia perfoliata*). Photo by Chris McCarron.

a curated space that represents our living culture; and to educate the public, over Ohlone cuisine, in a dignified, honest manner about the original and continuous inhabitants of this land." This summer they are opening 'ottoy: A Collaboration Between Café Ohlone and the Hearst Museum at UC Berkeley located in the Anthropology and Art Practice Building.

Along with cafe administrator Deirdre Greene, Vincent and Louis made their case to the Jepson Herbarium for changing the common name. The change was made this summer and can be seen here [https://ucjeps.berkeley.edu/eflora/eflora\\_display.php?tid=19632](https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=19632) 

*Interested in trying rooreh and other native foods?*

*'ottoy was just getting ready to open when we were getting ready to print. Reservations are available on their website [www.makamham.com](http://www.makamham.com)*




(Continued from page 1)

"we need green space for recreation, watersheds for human use, carbon storage to allow us to keep burning fossil fuels," and so on. Few and far between are arguments to preserve biodiversity *for its own sake*. Yet, of course, other living things have value and a right to exist equal to humans.

The viewpoint needed to combat speciesism is to realize that humans are but one of millions of lineages occupying the planet, with no more (or fewer) rights than any other. We need to share the planet fairly with our relatives (the whole rest of the tree of life). It is now

abundantly clear that all living things are literally related to each other in one massive genealogy. Some are closer relatives, some further, but all share a common history and all live together in one big house.

The book is in press with Springer and will be out soon. Due to funding from an A.W. Mellon grant (that also funded a seminar series that gave rise to the book), it will be open access and thus freely available for download. We will post the link on the front page of our website (<https://ucjeps.berkeley.edu/>) as soon as it is available. 

"Given the problematic nature of the species concept, its overemphasis in some contexts, and especially given the ecological and economic importance of both extant populations and, in an evolutionary context, entire lineages, it is exciting to contemplate the ways in which ecological theory can break loose from the constraints of a narrow focus on species as the organizing unit." — Paul Ehrlich & John Harte in the Foreword to the book.

## Jepson eFlora Revision 10

Revision 10 of the *Jepson eFlora* has been released online! Below is a summary of the changes.

### ADOXACEAE

Adoxaceae changed to Viburnaceae (conserved name)

### AGAVACEAE

*Yucca jaegeriana* added, as native

### CACTACEAE

*Cylindropuntia californica* var. *parkeri* changed to *Cylindropuntia bernardina*

### CAMPANULACEAE

*Downingia ornatissima* var. *eximia* changed to *Downingia ornatissima* var. *mirabilis* (replacement name)

### CRASSULACEAE

*Sedum laxum* subsp. *eastwoodiae* changed to *Sedum eastwoodiae*

*Sedum laxum* subsp. *flavidum* changed to *Sedum flavidum*

*Sedum marmorense* added, as native

*Sedum obtusatum* subsp. *boreale* changed to *Sedum kiersteadiae*

*Sedum obtusatum* subsp. *paradisum* changed to *Sedum paradisum*

*Sedum obtusatum* subsp. *retusum* changed to *Sedum sanhedrinum*

*Sedum oreganum* removed, not in California

*Sedum paradisum* subsp. *paradisum* recognized, as native

*Sedum paradisum* subsp. *subroseum* added, as native

*Sedum patens*, added, as native

*Sedum radiatum* subsp. *depauperatum* added, as native

*Sedum radiatum* subsp. *radiatum* recognized, as native

*Sedum rubinosum* added, as native

*Sedum stenopetalum* subsp. *ciliosum* added, as native

*Sedum stenopetalum* subsp. *stenopetalum* recognized, as native

### POLYGONACEAE

*Chorizanthe aphanantha* added, as native

*Chorizanthe eastwoodiae* added, as native

### ROSACEAE

*Acaena pinnatifida* var. *californica* changed to *Acaena californica*

*Holodiscus discolor* var. *cedrorum* added, as native

### VIBURNACEAE

*Sambucus nigra* subsp. *caerulea* changed to *Sambucus mexicana* (name with priority)



*Yucca jaegeriana*. Photo by Jim Morefield.



*Sedum kiersteadiae* on the Pacific Crest Trail near Parks Creek summit on the Trinity/Siskiyou County divide. Photo by Julie Kierstead.



*Chorizanthe aphanantha*. Photo by Keir Morse.

## Ixchel González Ramírez, New Outreach Project and Distinguished Fellowship

### Outreach Video Features the University and Jepson Herbaria

The University and Jepson Herbaria served as a backdrop for a new Spanish-language science outreach video. In the video, 4th year Integrative Biology graduate student Ixchel González Ramírez, a student in Brent Mishler’s lab, walks us through some of the many tools she uses on a daily basis to study her favorite group of plants: liverworts. She highlights the importance of studying plants and explains how her work as evolutionary biologist is similar to that of a detective. The video is entirely in Spanish, as part of the six-part series “[Un Vistazo al Laboratorio](#)” aimed to give the Spanish-speaking public an opportunity to have a closer experience with different fields of science.

The video (which also features English subtitles) was the result of a great group effort led by UC Berkeley’s Science at Cal. The draft of the scenes and story were put together by Ixchel. But it was the director, Valerie V. Ekko (4th Year Psychology and Arts



“Lights, Camera, Jepson!” From left to right: Valerie V. Ekko, Elise Matera, Joshua Simone Santellan, and Ixchel González-Ramírez. Photo by Staci Markos.

Practice Student, UC Berkeley), and Joshua Simone Santellan (Video First Assistant Director) who Ixchel said “really took the filming to the next level and produced a very high quality video that I couldn’t have imagined.” Many of the shots show spaces in the herbarium, with futuristic cool lighting. There is also a stellar appearance of museum

scientist Gabrielle Rosa and beautiful shots of some of the specimens. Big thanks to the Herbarium staff for facilitating the filming!

The video was produced by [Science at Cal](#) in collaboration with the [Consulate General of Mexico](#) in San Francisco as a part of the [Bay Area Science Festival](#). Science at Cal is a non-profit organization at UC Berkeley that brings the wonder and excitement of UC Berkeley STEM research to the community. All of their events and programs are free and geared towards public audiences. “I loved getting to work with Ixchel and the five other scientists involved in this project. It was so fun to see the labs turn into movie sets, but it meant even more knowing that the final product would have such an important impact reaching Spanish-speaking and Latinx communities in the East Bay and beyond,” said Elise Matera, Public Engagement Specialist at Science at Cal. 📍

### Fellowship in Plant Science Research from Oak Spring Garden Foundation Awarded to Herbaria-Associated Student

Ixchel González-Ramírez, a 4th year graduate student in the Mishler lab, is broadly interested in the evolutionary history of liverworts and she is also an avid “methods empiricist” – which means that she loves spending hours writing code to try to model evolution. For her dissertation, she has been working on *Asterella californica*, a west coast endemic, as well as on big scale diversity patterns of liverworts.

Earlier this year, she was awarded the 2022 Fellowship in Plant Science Research by the [Oak Spring Garden Foundation \(OSGF\)](#). OSGF is an organization dedicated to “inspiring and facilitating scholarship and public

dialogue on the history and future of plants, including the culture of gardens and landscapes, and the importance of plants for human well-being.”

The Foundation is based in Upperville, Virginia, where they are home to beautiful gardens, outstanding landscapes and a sustainable farm. The organization hosts several programs that support artists and scientists and encourage interdisciplinary dialogue around plants. Ixchel was in residency at OSGF for five weeks this summer where she focused on writing her first dissertation chapter: “Being here is giving me not only the gift of peaceful time to write, but also the amazing experi-

ence of learning from artists, gardeners, farmers, and staff. I feel extremely flattered by this award, and very thankful to all the people that have received me with open arms.” 📍



A glimpse at the greenhouse in OSGF farm..  
Photo by Ixchel González Ramírez.

## The Lichen Corner

### Collaborations with Local Artists Bring New Life to the Collections

By Klara Scharnagl, Tucker Curator of Lichenology

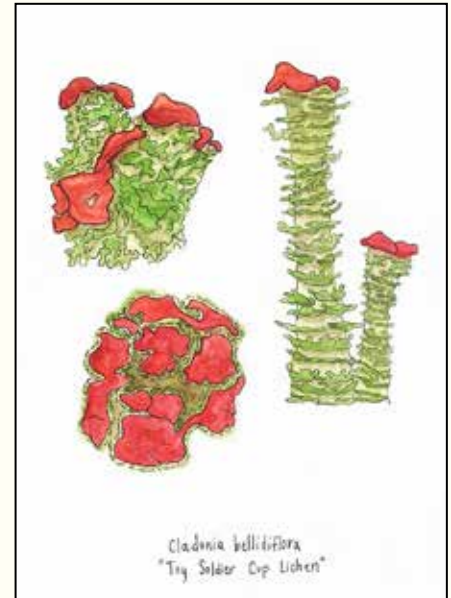
Over the past year, I had the wonderful opportunity to work with multiple local artists. Each reached out to me to do some work with the lichen collection in the herbarium.

Juniper Harrower is a local artist who explores the interactions of multispecies entanglements under climate change and is the founder of SymbioArtlab as well as the Art+Science initiative at UC Santa Cruz. Juniper photographed lichen specimens as part of a larger national exhibit about the many forms that algae take. Her work in this show not only spread awareness about lichen herbarium specimens, but also about the idea that lichens contain algae, and are therefore a potential form that algae can take! Lichens are a symbiotic association between filamentous fungi and a photosynthetic partner – this is usually a green algal partner, but can also be cyanobacteria. When Juniper came to the collection, I pulled out a number of different specimens representing different lichen growth forms, which would in turn represent the different forms that algae within the lichenized state can take. Lichen growth forms include crusts, which are very

flat against or even partially embedded within their substrate; foliose lichens, which are more three dimensional and leafy looking, and have clear stratification in cross section; and fruticose lichens, which are also three dimensional but have a more bushy or strand-like appearance. Juniper's lichen photographs from our collection were part of the show *Confluence* at the Cameron Art Museum from January 27th through April 24th, 2022.

Julia Beery, a science illustrator and also one of our wonderful herbarium volunteers, reached out to me to get to know more about lichens. She brought in some specimens, which we keyed out together. The more Julia learned about lichens, the more she wished to do a piece on lichens. We brainstormed some ideas, but ultimately it was left to her to decide what she was most excited about. Julia decided to do a piece on lichen mimicry, the way that many animals look like lichens or use lichens for camouflage. Some plants do, too! Julia and I spent a lot of time discussing which species to include and how best to represent them. Julia's work, which includes both paintings and 3D models, will be displayed in one of the windows outside the herbaria, along with some lichen specimens from the collection that are associated with lichen mimesis. The full display will be completed in time for Fall semester 2022.

During the spring, one of the undergraduate students in my lab, Olivia DiMichele, expressed an interest in working more directly with the lichen collections. We explored the collections together and discussed ways in which we could make these cabinets of specimens in their paper packets more visible to visitors to the herbarium. We decided to work in the *Cladonia* cabinets,



*Cladonia bellidiflora* illustration by Olivia DiMichele.

which face one of the main hallways and work benches in the herbarium and which have a lot of interesting species for her to potentially focus on. Olivia chose three lichen species to focus on, and she took time to explore the specimens in each folder, making note of collection dates, collectors, and locations. She then made three posters, one for each species, which included facts about the lichens, histories of the collectors, and her own beautiful illustrations of each *Cladonia*. Olivia DiMichele graduated Berkeley in spring 2022 with a Bachelor of Arts degree in Landscape Architecture, a minor in Sustainable Environmental Design, and a minor in Spanish Language and Literature. She now works as a Landscape Architectural Designer in New York City. Her posters will be put on display within the herbarium at the end of summer 2022.

Collaborations with artists not only bring beautiful visuals of our specimens and our work to a wider audience, they also bring a fresh and unique perspective to the organisms and specimens we study. It is a joy to work with artists and I look forward to many ongoing and future projects. 🌱



The Confluence exhibition, including images by Juniper Harrower. Photo by Juniper Harrower.

## Environmental Outreach in the Modern Era: Virtual Workshops from the Jepson Herbarium

This year, with support from the Institute of Museum and Library Sciences (IMLS), the Jepson Herbarium developed a new facet of our long-standing outreach program – a series of virtual mini-workshops designed around twelve topics that are key to biodiversity studies.

The goals of the program are to broaden the accessibility of the educational opportunities offered by the Herbarium while inspiring people to develop an interest in scientific principles and an appreciation for the natural world.

Building on the success of the Jepson Herbarium YouTube channel (which is focused on identifying California native plants), this new series will include virtual workshops on the basic principles of plant biology and identification, ecosystems and ecology, climate change, and cutting-edge theories of phylogenetics and conservation biology.

Virtual workshops offer many advantages – more people may join, participants can join from anywhere (no need to travel), and a larger audience can view recorded content after the workshop is complete. Additionally, YouTube videos on scientific topics have been shown to successfully reach diverse audiences and inspire further interest in science.

The workshops will also advance floristic studies by engaging members of the botanical community in virtual events that are interactive and collaborative. Workshop participants are often experts in their local flora and provide critical data for the *Jepson eFlora*. Because virtual workshops reach a broader audience, especially people in rural areas, they expand the Herbarium's network of local experts that in turn share their knowledge with the *Jepson Flora Project* to improve species distribution information, descriptions of morphological variation, and detection of newly established non-native species.

To date, we have held three mini-workshops:

**Fiddleheads: Fern life cycles and identification by Carl Rothfels**

**Introduction to Bryophytes by Brent Mishler**

**What's that called? Flowers and leaf terminology for plant identification by Bruce Baldwin and Susan Fawcett**

The content from those workshops is already posted online via the YouTube Channel for the University and Jepson Herbaria: [https://www.youtube.com/channel/UC-OH10pj\\_71K6SI73aaz\\_GA/playlists](https://www.youtube.com/channel/UC-OH10pj_71K6SI73aaz_GA/playlists).

Two more mini-workshops will be held this fall:

**California Seaweeds: Seashores, kelp forests and climate change by Kathy Ann Miller**

**A big world in a small package: Lichen biology, identification, and conservation by Klara Scharnagl**

In 2023, we will be offering seven more mini-workshops!

For more information and to sign up, please visit our website: <https://ucjeps.berkeley.edu/workshops/>

*The 2023 workshops will be announced later this year.*



*Asplenium viride*. Photo by Raavre AndersLarsson.



*Primula hendersonii*. Photo by Staci Markos.



*Syntrichia* Photo by Brent Mishler.

### Photos from our Field Workshops

Workshop photos (left to right and top to bottom): 50 Plant Families in the Field: San Francisco Bay Area by Staci Markos; Two Shastas by John Game; *Calystegia soldanella* (in Mendocino) by Klara Scharnagl; 50 Plant Families in the Field: Monterey Bay by Roxanne Andersen; *Hymenoxys cooperi* (in the White Mountains) by Staci Markos; Flora of Northern Inyo County by Staci Markos; Flora of the Northern Mendocino Coast by Klara Scharnagl; Native Plants of the Central Valley's UC Merced Vernal Pool Grasslands Reserve by Staci Markos.



## An Interactive Session on Spatial Phylogenetics at the 6th North American Congress for Conservation Biology

By Israel Borokini, David H. Smith  
Conservation Research Postdoctoral Scholar

Spatial phylogenetics integrates the evolutionary history of all taxa in a study area to make a more realistic estimation of biodiversity and has important conservation applications (for more info, see [The Jepson Globe 24 #1](#)). This phylogeny-based biodiversity estimate can be used to determine pri-

orities for establishing new protected areas. Spatial phylogenetics combines the phylogeny with distribution data of the terminal taxa and can also include other biological attributes of taxa. Spatial phylogenetics changes the conservation paradigm from species-based to landscape based, and can be conducted at different spatial scales. In light of increasing climate and land use changes, spatial phylogenetics offers better assessment of conservation prioritization because the evolutionary history of the resident taxa in an area can be used to evaluate the causes of their current distributions and resilience to future global change.

An interactive session on spatial phylogenetics was presented on July 18, 2022, during the 6th North American Congress

for Conservation Biology, held in Reno, Nevada. Presenters were: (1) Brent Mishler, the Director of University and Jepson Herbaria, UC Berkeley; (2) Julie Allen, an Assistant Professor at University of Nevada, Reno; (3) Matthew Kling, a postdoctoral scholar in the Department of Biology at University of Vermont; (4) Israel Borokini, a postdoctoral scholar in Dr. Mishler's lab at UC Berkeley; and (5) Taliesin Kinser, a Ph.D. student at University of Florida. The session featured a general introduction to phylogenetics and spatial phylogenetics, different facets of phylodiversity, the use of the complementarity principle in conservation prioritization, and a demonstration of spatial phylogenetics using the vascular flora of Florida and Southeastern United States. A recording of this session is available for viewing on the University and Jepson Herbaria YouTube channel. <https://www.youtube.com/playlist?list=PLULUH7ENikDrDgT4ZJJOHaMaIGI7r22J>

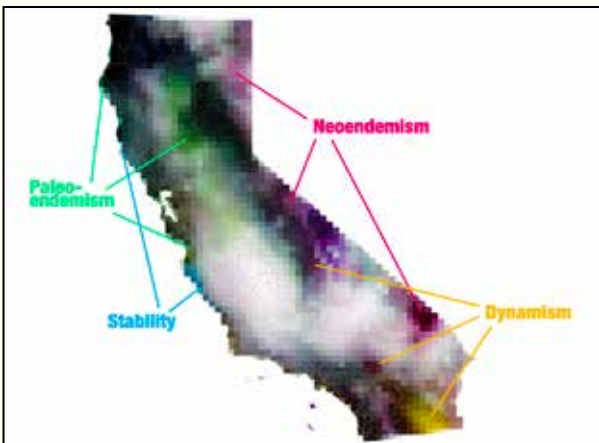


Figure from talk by Matt Kling, based on research published in 2018, *Phil. Trans. Roy. Soc. B.* 374: 20170397. <http://dx.doi.org/10.1098/rstb.2017.0397>

### Supporting Undergraduate Research

The Department of Integrative Biology (IB) has begun an exciting new program called the Summer Undergraduate Research Experience (SURE), which is intended to support undergraduates engaging in original, hands-on research and to explore graduate school opportunities with IB faculty. The Berkeley Natural History Museums have extended the program by providing support so additional students can participate.

This summer, the University and Jepson Herbaria supported Kendall Grajeda-Klingler, an undergraduate student from San Jose State University. Kendall is interested in the intersection of STEM and social justice and aims to help communities most impacted

by environmental damage. She will be working with Kyle Rosenblad, a graduate student in David Ackerly's lab, who is interested in climate change and plant conservation.

Kendall's project is to investigate the landscape genomics and ecophysiology of Lemmon's willow (*Salix lemmonii*) in montane meadows across the Sierra Nevada. *Salix lemmonii* forms habitat for endangered wildlife, provides medicine and weaving materials to indigenous communities, and guards against streambank erosion and ecohydrological degradation, thereby protecting water resources for people downstream. Taxa like *S. lemmonii* that depend on isolated habitat patches in montane meadows, face special



Kendall and Kyle admiring some willows in Tahoe National Forest, June 2022. Photo by Maryam Sedaghatpour.

challenges in moving or adapting in response to climate change. Kendall and Kyle's work explores how *S. lemmonii* will fare in a hotter, more drought-prone future.



## UC Presidential Postdoctoral Fellowship Recipient

We are pleased to welcome Dr. Christian Henry to the University and Jepson Herbaria and the Department of Integrative Biology at UC Berkeley, as a 2022 recipient of a prestigious UC Presidential Postdoctoral Fellowship, with co-mentors Bruce Baldwin and Felipe Zapata (UCLA). Christian received his Ph.D. from UCLA where he worked in the lab of Prof. Lawren Sack, Department of Ecology and Evolutionary Biology. Christian has a strong research background in comparative plant ecophysiology and a major interest in resolving and understanding evolutionary trends of plant adaptation in the California flora.

Christian's Ph.D. work focused on the significance of the leaf surface during drought. The leaf's surface is the locus for a multitude of physiological processes important in plant vitality and responses to the environment. Stomata are pores in the leaf epidermis, each consisting of two guard cells, which enable CO<sub>2</sub> uptake, necessary for photosynthesis, and help to regulate the loss of water vapor (transpiration) in the process. Plant species differ strongly in their stomatal responses to leaf dehydration. Leaf hairs (trichomes) also play important roles in plant function, including reflecting light, taking up water, and/or slowing transpiration via a thicker boundary layer. The multiple functions of leaf trichomes can explain several contradictory trends observed across floras. Christian's work identified specific adaptive and functional roles and constraints on stomata and trichomes. His approach has focused on physiological experiments on diverse species native to California with potential applications toward understanding and improving plant drought tolerance.

Christian's postdoctoral work will develop a phylogenetic computational framework of analyses, using a multifaceted approach to consider trait ecology and evolution. Climate and

trait variables will be mapped to detect phenotypic shifts across lineages. Current and future projected climate data for all geo-referenced herbarium specimens and for herbarium collections in species' native ranges, within and beyond California and Hawaii, will be extracted from the Consortium of California Herbaria (CCH) and the Global Biodiversity Information Facility (GBIF). This information will be used to determine associations of traits with climate across species ranges. Principal component analyses will be conducted to determine axes for climatic variation, followed by a phylogenetic analysis of variance (ANOVA) to examine trait evolution and the relationships of traits with environmental variables. This approach will test the lability of traits across environmental gradients and allow for the mapping of climate and trait variables to detect phenotypic shifts



Christian in the greenhouse at UCLA. Photo by Christian Henry.

across lineages. In summary, Christian's work will bring a new, functional ecology dimension to studies of California plant evolution and spatial patterns of Californian plant diversity. 🌱

### Jepson Videos now have Closed Captioning

This past summer, Acacia Danza transcribed all of the Jepson Videos that have been produced to date, which means that all Jepson Videos now have closed captioning! This will make them ADA compliant and will allow them to be used in more educational settings.

<https://www.youtube.com/c/JepsonHerbarium/videos>

Acacia graduated from UC Berkeley, Department of Integrative Biology in Spring 2022. She began working in the Herbaria imaging lab on the Fern project as an undergraduate in April 2019, transcribed specimen labels remotely for us during the pandemic, and came back to the imaging lab to work in-person for the 2021-2022 school year where she imaged over 6,000 specimens. As one of the few experienced students who returned to work at the

Herbaria after the pandemic, her expertise and familiarity with the collections were instrumental in our successful re-opening of the imaging lab after a 18-month closure. After graduation, Acacia worked with Amy Kasameyer on the transcription project and we are incredibly grateful for her efforts.



*Fremontodendron decumbens*. Our video on *Fremontodendron* was released June 17, 2022. Photo by Staci Markos.

## Thank you to our Lifetime Members!

Lifetime Members provide generous support to the *Jepson eFlora* and the Jepson Workshop program, and each year we hold a day-long outing where we visit a floristically interesting place, have lunch, and include time for discussion among members, the Director, and the Curator.

This year, John Stebbins was kind enough to help us work with the Sierra Foothill Conservancy and arrange a trip to Kennedy Table Mountain, near Fresno. We visited the Topping Ranch conservation easement property and are grateful to our hosts, Bart and Cindy Topping, for the opportunity to spend time in this special place. We also thank Craig Poole who explained the ancient geological origins and mineral composition of the unique landscape. Russell Kokx, Rodney Olsen, and Chris Winchell provided expertise on the local flora and fauna.

As we explored the property, we were treated to a large vernal pool that supports many rare or endangered species of plants and animals. The most significant plant encountered was *Castilleja campestris* subsp. *succulenta* (succulent owl's clover), an endangered taxon, found only in the southern valley vernal pools.

We sincerely thank all *Friends of the Jepson Herbarium* for their continued support! Because of our members, the Herbarium has been able to maintain its core programs and expand its educational offerings. We have also continued our partnerships with the California Native Plant Society, Cal-IPC, Calflora, GBIF, state and federal agencies, and many private consulting firms across the state. We hope that all of these activities continue to help further protection and understanding of the native flora of California. 📍



Bruce Baldwin (left) discussing vernal pool species. Photo by Chris Winchell.



The top of Kennedy Table Mountain. Photo by Maynard Moe.

(Continued from page 1)

when they grew there, and the disturbances and threats that they face. In this way, floristic work is also an important step in the process of making informed conservation efforts.

Floristic studies not only produce



herbarium specimens, but also rely heavily on ones that already exist. Using sources like the Consortium of California Herbaria, I began my study by making a draft checklist of the collections that had been previously made in my study site. This informed my field work by identifying botanical black holes and historical locations of rare plant occurrences. Additionally important is the observation and annotation of these historical specimens. During a visit to the University and Jepson Herbaria (UC/JEPS) in March of 2022, I was able to look at several herbarium specimens that had been collected in my study site. Several of these were taxa that I was not able to relocate during my study. It is especially important to annotate

Nina House at the southern edge of my study site. Half of the study area was located in the Domeland Wilderness, a remote area of the Sierra Nevada with relatively little in the way of botanical documentation. Photo by Ming Posa.

these specimens, as confirming their identification confirms their historical presence in the study site.

During my visit, I annotated several specimens, including *Galium trifidum* subsp. *subbiflorum*, which was collected by Twisselmann in 1962, and *Rumex salicifolius* var. *salicifolius*, collected by H. M. Hall and H. D. Babcock in 1904. Annotating species of conservation concern was also very important to me, and I was able to confirm the identification of *Hosackia oblongifolia* var. *cuprea*, collected in my study site by Bacigalupi in 1958.

Visiting the Berkeley Herbaria was an important part of my floristic project. I am so grateful for the time I spent there, the plants I got to see, and the people I got to meet during my trip. I look forward to visiting again in the future, during my Ph.D. research and beyond! 📍

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California Phylodiversity Project  
Systematics and ecology of *Syntrichia*

### Jepson Curator:

Bruce G. Baldwin  
*Jepson eFlora*  
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## Highlight from the Collections

*By Kathy Ann Miller, Curator of Algae*

In 1909, W.A. Setchell, the first director of the University Herbarium, identified *Pelagophycus porra*, the elk kelp, from a collection drifting at the entrance to Tomales Bay, Marin County. We now know that this species typically grows at depths of ~ 30 m or more from the south side of Santa Cruz Island, Santa Barbara County, to Baja California, Mexico. It has a large gas-filled float that helped this specimen drift 500 miles north against the powerful south-flowing California Current. Other seaweeds may, over time, extend their ranges north as the Current weakens and coastal waters warm.



Left Image: #UC141535 is a specimen of *Pelagophycus porra* collected by W.A. Setchell.

Below: An example of drift *Pelagophycus*.  
Photo by Kathy Ann Miller.

