No. 55
Spring 2021

LASTHENIA

NEWSLETTER OF THE DAVIS BOTANICAL SOCIETY

LICHEN COLLECTIONS GO ONLINE

When a botanist spends many years living in the Pacific Northwest, they begin to notice, then come to appreciate, the many groups of sessile organisms that don't flower. In that cold dampness, flowers are absent for most of the year, and the forest floor is instead illuminated by gems of fungi, set against lacy pillows of bryophytes and lichens. When I was thus dazzled by the fungus-lichen-bryophyte display 25 years ago, two very active organizations provided an instant community of fellow enthusiasts: the Puget Sound Mycological Society and the Seattle Lichen Guild. There were outings and shows, talks given and feasting, and the northwest foggy gloom was handily dispelled. The Seattle Lichen Guild held a monthly potluck dinner & group keying session in a classroom upstairs from the research lab at the University of Washington Botany Department where I was a postdoc, and I happily ate good food and learned lichen chemistry tests. I developed a small lichen collection in this very pleasant way, ID'd under the guidance of Katie Glew, the Guild's organizer.

Years later, when I was a botanist at Yosemite National Park, circumstances conspired to put me in charge of setting up a lichen survey of Yosemite National Park. Fortunately for me, several experts stepped up to mastermind this complex, multi-year undertaking, which resulted in a robustly vouchered flora,[1] many new park records and some new state records, published in 2013.[2]

Jennifer Poore organizing the 1500 specimen Yosemite Lichen Flora collection. Photo: A. Colwell

Soon after I arrived at DAV last year, I spoke with Shirley Tucker, nationally recognized lichen specialist and longtime benefactor to the herbarium. She inquired about the whereabouts

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THE CONSERVATORY AND COVID CHALLENGES, CONTINUED

In the last *Lasthenia*, I recounted some of the challenges and opportunities the Botanical Conservatory faced during the campus closure beginning in March 2020. Several months later, the lights and the future do shine more brightly on the Conservatory, as you will see.

Before accentuating the positive, we must report how very much we miss the efforts of our student employees. Before the pandemic we had ten student workers, as well as between four and ten interns and volunteers each quarter. Now we have just four student employees, and, due to social distancing, we cannot have interns and volunteers. The truth of the saying, "One year's weed equals seven years' seed," means we will need to spend additional time in the next several years catching up on maintenance of our outdoor plantings.

Conservatory staff were partially exempted from the end-of-year campus shutdown to tend to living collections that needed regular care. Ernesto and a couple of students watered and made sure equipment was functioning properly. Marlene Simon, the other Conservatory career staff member, has been very active in tending to the collections throughout the pandemic and has been an invaluable presence.

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IN THIS ISSUE

CONSERVATORY (CONT. FROM PAGE 1)

Biological Orchard and Garden, also known as "The BOG." Photo: E. Sandoval

In the Fall 2020 issue of *Lasthenia*, we reported the addition of new lights in our support greenhouse; now we can add that we've replaced nearly all the metal halide lamps in the Conservatory Greenhouse with new, energy-saving LEDs. When we can have visitors again, they'll notice the LEDs spread out the light more evenly and aren't noisy. The new lights also, of course, use much less energy. It's much quieter in the Conservatory and safer, now that the danger associated with the very hot glass-encased metal halide lamps is gone.

Looking forward to Spring quarter and beyond, we will need to hire a number of new students as we start preparing the number of plants we grow specifically for classes planned for an in-person Fall quarter. And then, of course, there's also the work to keep the indoor and outdoor weeds from smothering the plants we do want to grow.

Finally, you'll note, elsewhere in this issue, that although we haven't had a lot of visitors that we have had steadily increasing donations toward our efforts. Thank you to all who have supported us this past year as we prepare for a post-Covid Conservatory!

E. Sandoval

The lack of activity on campus led to an increase in thefts from the outdoor collections adjacent to the Conservatory. We replaced our aged and deteriorating wood fences with taller, all-metal fencing that should deter illegal entry.

The Botanical Conservatory tours for UC Davis undergraduates, as well as K-12 and community college students in the region, were cancelled beginning in March 2020; but we have managed some course support and outreach via online lectures and presentations, as well as assisting instructors and TAs with photography and video work in and around the Conservatory. During Fall quarter Marlene co-facilitated a 6-week houseplants course for 30 freshmen. She has also taught several seminars on houseplants and propagation for the Nature RX staff and student wellness program.

The new conservatory lighting. Photo: E. Sandoval

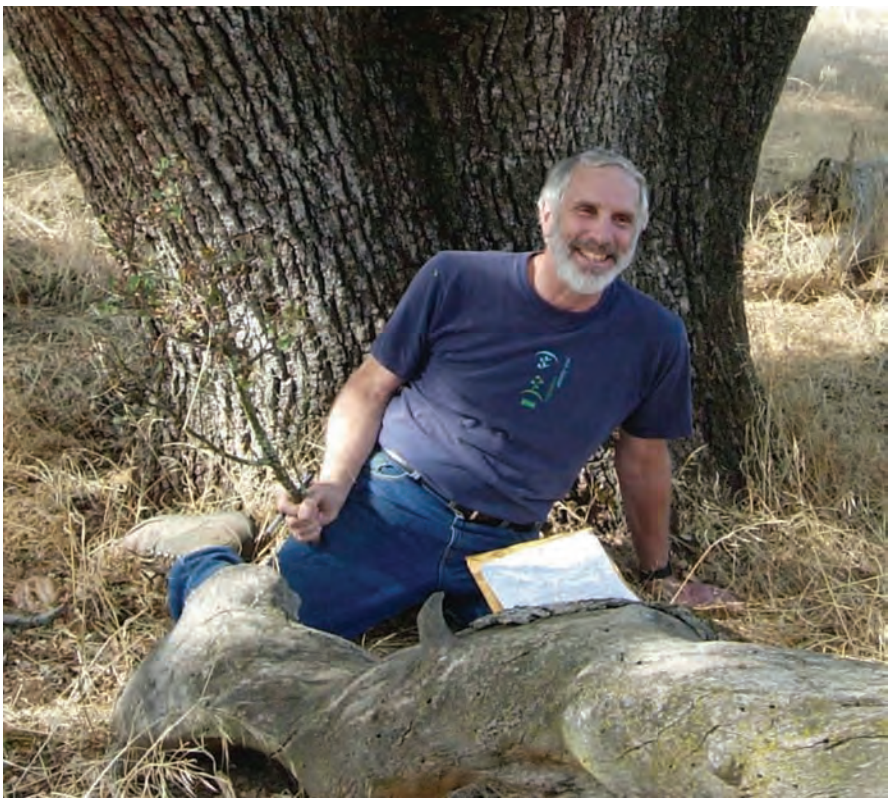
As another part of our outreach efforts, I have continued my lectures to cacti and succulent societies. Thanks for the popularity of remote programs, I gave several lectures on propagation to Texas clubs just before and after January's terrible storm that, among other things, wreaked havoc on people's personal collections. I also presented a houseplants lecture to a Master Gardener conference and have done several virtual tours of the Conservatory for UC Davis courses as well as for our annual Biodiversity Museum Day, which occurred online in February. Tabatha Yang, from the Bohart Museum of Entomology, spearheaded this effort and set up an online Crowd Fund where we raised over $5,000 to support this annual event. Additional donations can be made here: https://give.ucdavis.edu/Donate/YourGift/BIOFUND

The new security fence protects the outdoor collections. Photo: E. Sandoval

TRIBUTE TO MICHAEL BARBOUR

What comes to mind for an American botanist when the name Michael Barbour is mentioned? *Larrea*, *Cakile*, coniferous forests, vernal pools, *Terrestrial Plant Ecology, Terrestrial Vegetation of California*, indefatigable field researcher, enthusiastic teacher, irreplaceable friend? All of that and much more crossed our minds when we learned that, after a long fight with Lewybody-Parkinson's disease, Mike died peacefully at home in Winters on January 7. He is survived by his wife Valerie, daughter Julie, son Alan, stepson Steven, five grandchildren, and generations of grateful colleagues and students.

Michael was born on February 24, 1942, in Jackson, Michigan. After graduating with a BS in Botany from Michigan State University in 1963, he went on to obtain his PhD in Botany from Duke University in 1967. That same year, Michael was hired as an assistant professor in the Department of Botany at UC Davis. For the following half century, plant ecology in California has been unimaginable without Professor Michael Barbour.



Michael Barbour. Photo: courtesy of Valerie Whitworth

His research was extensive and notably varied. He studied almost every ecosystem in the state. After working on population structure and ecophysiology of creosote bush in the Mojave Desert, Michael studied salt tolerance and competiveness of Californian salt marsh plants, vegetation of coastal dunes and beaches along the Pacific coast, demography of endemic plants in Inyo County's Eureka Valley, vegetation of the Alabama Hills under Mt. Whitney, regeneration of red and white fir in the Sierra Nevada and the northern Coastal Range, old-growth forests of the Lake Tahoe Basin, conifer forests in the San Bernardino Mountains, and vegetation of vernal pools in the Central Valley. His major questions were always: "What determines the distribution of individual plant species?" and "What is responsible for the uniqueness of particular plant communities?"

Michael's long professional career was not focused solely on California. He studied desert seed banks in different vegetation types in South Australia, morphology and cytology of creosote bush in Argentina, dune and scrub vegetation in Israel, beach vegetation along the Gulf of Mexico, mixed forests in the Baja California's Sierra San Pedro Martir, age structure of *Quercus pyrenaica* woodlands in Spain, vernal pools in Portugal, and population structure of *Pinus canariensis* stands on the island of Tenerife.

While Michael's research contributions are extensive, his teaching and textbooks also have had a far-reaching influence. Michael taught introductory Botany/Plant Biology, often in partnership with others. To assist his teaching, he co-authored two Botany/Plant Biology textbooks in several editions; one of them, *Botany: An Introduction to Plant Biology*, was for a time the best-selling text on that topic in the U.S. He also regularly taught an undergraduate course on California plant communities. Students loved this class, and all of them remember field trips that helped them to see Californian nature in a completely new way.

The graduate course on Plant Community Ecology, taught with John Menke and Marcel Rejmánek, was definitely more demanding, but students did not complain. Handouts provided in this class are still used for reference by many former students. Michael was a leading author of three editions of the textbook *Terrestrial Plant Ecology*. For many years, this was the only textbook on the subject. He also co-edited *Terrestrial Vegetation of California*, together with his mentor and colleague, Jack Major. With his former major professor at Duke University, W. Dwight Billings, Michael coedited two editions of *Vegetation of North America*. Finally, he co-edited two notably approachable popular books on California's flora and vegetation: *California's Changing Landscapes* and *California's Botanical Landscapes*. They will be enjoyed by both lay and professional readers for many years to come.

Michael was awarded the UC Davis Distinguished Teaching Award by his colleagues in the Academic Senate. For his work with Spanish colleagues, he was awarded an honorary degree from The Department of Farmacia at Universidad Complutense, Madrid, and the medal of Universitas Legionensis from the University of Leon, Leon, Spain.

Michael's family have asked that donations in his name be made to the UC Davis Center for Plant Diversity Herbarium. Gifts can be made online at https://give.ucdavis.edu/AHER/222142 or by mailing a check to the UC Davis Foundation, in memory of Michael Barbour, 202 Cousteau Place, Suite 185, Davis, CA 95618.

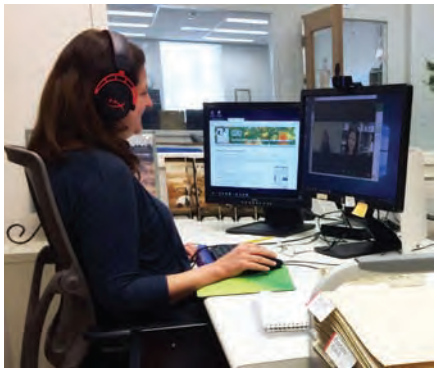
M. Rejmánek & T. Rost

HOW THE UC DAVIS CENTER FOR PLANT DIVERSITY ADAPTED DURING THE PANDEMIC

On a typical day in 2019, the herbarium bustled with staff, faculty, students, volunteers, visiting researchers and field botanists. We had mounters, filers, label makers, volunteers adding location information (georeferencing) to specimens in the database, and students taking digital images of California plant specimens for our NSF project. 2020 began with more of the same: We held the Herbarium Tea and Biodiversity Museum Day as usual. Then, coronavirus changed everything.

Our new Curator, Alison Colwell, had started on March 16; the campus closure came only a few days later. In the first phase of the campus shutdown, almost all campus activity was prohibited. The herbarium was suddenly quiet, aside from our essential services of plant identifications for the Veterinary Medical School and Ag Extension.

As spring quarter began remotely only a week later, we took on a new role, helping herbarium director Dan Potter and his teaching assistants get the Spring quarter California floristics and plant taxonomy class labs started in remote teaching format. In addition to providing specimen images, staff prepared images of flowers from the Conservatory and associated gardens and dissected them to show diagnostic features, and put together a virtual tour of the herbarium using an iPhone.



Teri instructs a student working remotely via Zoom from her temporary office in the mounting room. Photo: A. Colwell

Once it became clear that students would not be returning to campus soon, we arranged for our student workers to work remotely on label data corrections and georeferencing projects for Symbiota, our online specimen database. If it were not for having the database online, and participating in the NSF-funded California Phenology Project, we would not have been able to offer remote work which benefited both the students and the herbarium. Of the 10 student employees at the time we closed, seven worked remotely in some way. This required obtaining cameras and microphones for our computers and for me to become comfortable hosting one-on-one Zoom sessions for training and to review work. It seemed strange at first but became a functional routine.

As reopening progressed, we rearranged the herbarium workrooms so that each person could work in a different room or at a distance of at least 25 feet. Jennifer Poore, our Junior Specialist, played a key role in generating new material for students to work on remotely by imaging from her solitary imaging room workspace. We also had two volunteers working remotely online, and one volunteer mounter, Lynn Russell, mounting specimens at home with "curbside pick-up" of mounting supplies and unmounted specimens. Ellen Dean helped throughout the year answering questions by email and phone, and Tom Starbuck made weekend database fixes.

On March 25th, we entered phase 3 and can have more people in the herbarium at once, while still masking, distancing, etc. We are delighted that we have been able to continue to serve our community, albeit on a limited scale and look forward to more activity in the herbarium as we move to phase 4 (full operations. We will continue to follow state, county, and university guidelines in reopening safely and we hope to be back to full working capacity and able to welcome all of our friends back in person soon.

T. Barry

DBS WEATHERS THE PANDEMIC

We all hope we're seeing the waning of the pandemic, although it will affect the remainder of the 2020-21 DBS year. A review of the Coming Events listed in the Spring 2020 issue of *Lasthenia* shows how much had to change; here's how the society has responded.

Some events were simply cancelled in 2020: Picnic Day's traditional displays and tours and the spring Arboretum/Conservatory plant sales. In 2021 Picnic Day will be "virtual"; the venerable and much-loved wildflower display will be deferred another year. The Botanical Conservatory will not present a virtual program, however, the South African bulbs and native California wildflowers in the Botanical and Orchard Garden will be at their peak for members who can visit the campus. The Arboretum has shifted to online ordering from an extensive plant list, with plant pickup by appointment.

The society's 2020 spring program meeting was held via Zoom, with the annual election of the board conducted online and announced at the meeting. Andrew Latimer's talk on California's changing forests translated effectively to the new world of screen sharing, an expression new to most of us in May 2020. The planned field trip to Pine Hill was cancelled, as were all other off-campus group activities, per campus mandate.

By Fall, increased proficiency with Zoom enabled two graduate students to deliver polished presentations on their research, which was supported in part by the society's student research grants. The traditional pizza feast for graduate students (and others) preceding the program didn't occur, of course, and was missed. But we were delighted to see a number of distant members from such places as Washington and Idaho joining the program. In December Alison put together a very successful program dependent on remote technology by gathering conifer images from members and inviting their comments as the images were displayed. Actual discussion, almost conversation, ensued.

The Board has continued to meet, by Zoom of course. And some things haven't been affected: *Lasthenia* and other membership communications have continued. But the Board is very much looking forward to planning a calendar of activities that actually brings people together to share our plant-related interests; we're hoping it will be in late 2021.

K. Mawdsley

RECENT GIFTS

Ellen Dean Herbarium Endowment
Albert & Barbara Grigarick
Louis & Georgette Grivetti
Barbara Evoy & Jeffrey Mount
Marla Knight *in memory of Dean Wm. Taylor*
Marcel & Eliska Rejmánek

Herbarium Endowment
Elizabeth Bernhardt & Ted Swiecki
Jason Carter
Beth Lowe Corbin *in memory of June McCaskill*
Lewis Feldman
Ron, Diana & Nora Glick
Brenda Grewell & Stephen Kidner
Judy Jernstedt
Franz Kegel
Marla Knight *in memory of Dean Wm. Taylor*
Gregory J. Lee *in memory of June McCaskill*
Staci Markos & Craig Norvell
Patrick McGuire
Sue Nichol
Lesley & John Randall
Kevin Rice
Mandy Tu & Philip Rogers
Petra & Ron Unger *in memory of John Anderson*
Lorraine Van Kekerix
Katherine & Jim West *in honor of Ellen Dean*
Valerie Whitworth & Michael Barbour
Gary Zamzow

In memory of Michael Barbour
Beth Lowe Corbin
Ellen Dean & Tom Starbuck
John C. Hunter
Lynn & Robert Kimsey
Roderick Macdonald
Kate Mawdsley
Roswita D. & Robert F. Norris
Tom & Ann Rost
Jean & Scott Shepard
Prem Hunji & Richard Turner

DBS Student Grants Fund
Gerald Dickinson
Ron, Diana & Nora Glick
Brenda Grewell
Albert & Barbara Grigarick
John Hunter
Marla Knight *in memory of Dean Wm. Taylor*
Patrick McGuire
Marcel & Eliska Rejmánek
Kevin Rice
Mandy Tu & Philip Rogers
Petra & Ron Unger *in memory of John Anderson*
Katherine & Jim West *in memory of Jack Major, June McCaskill*
Valerie Whitworth & Michael Barbour

Jack Major Endowment
Mary M. Hekner

Conservatory Operations
John Berger
Timothy Devine
Reynotta Hoberecht
Judy Jernstedt
San Francisco Succulent & Cactus Society

Conservatory gifts in kind
John Brittnacher

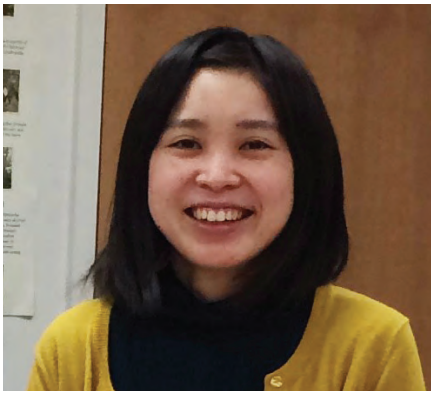
Conservatory Endowment
Gerald Dickinson
Judy Jernstedt

Thank you!

LAW FAMILY ENDOWMENT STUDENT AWARDS

One of the many pleasures of this curatorship that I have inherited from Ellen is the privilege of bestowing the Law Family Endowment student award on our outstanding student helpers. This year we honor two recent UC Davis graduates from the class of 2020.

Karen Kyutoku learned about herbaria in Dan Potter's California floristics class, and began volunteering with us in January 2020 doing specimen filing. After the campus shut down last March, Karen was one of several student helpers we moved to remote data entry. She picked this up quickly and we asked her to start scoring the phenology of imaged specimens for an NSF grant. A few months later, when it appeared that she might not be able to return to Japan after graduation, she requested we sponsor her to train in the STEM-OPT program (Optional Practical Training for foreign students, which extends the term of their student visa for voluntary training in their field of interest). Karen has been a superb assistant for these past nine months, working on increasingly complex curatorial projects with diligence. Karen was strongly affected by the beauty of moss gardens in Japan from a young age and this early interest will likely translate to graduate studies in bryology before long.



Karen Kyutoku. Photo: courtesy of K. Kyutoku

Mabel Yuan began working in the herbarium in July 2019. Her biggest project was to hunt down the specimens whose accession numbers didn't transfer properly when the old database was moved to the new one and fix them. Her independent work on this long task earned her a special place in Teri and Ellen's hearts. Mabel got interested in herbaria for a surprising reason: her Sacramento high school had an herbarium! Her older siblings were in the "botany" specialty at the high school so she followed them into it, but the inspiration she got from her science teacher specifically lingered with Mabel. When she had to choose a major at UC Davis, the Agricultural and Environmental Education major was an "Aha!" moment. Mabel has just been accepted into the UC Davis Teaching Credential-MA Program. Starting in July, she will jump right into passing her inspiration forward: teaching a variety of high school ag classes in our area, including: Ag Biology, Ag Chemistry, Botany, Floriculture, and Sustainable Food Systems.

Mabel Yuan. Photo: courtesy of M. Yuan

A. Colwell

SUGGESTIONS CONCERNING THE LICHEN HERBARIUM

By Shirley Tucker

The lichen collection I have started and left at UCD includes only California material, plus a few exceptions. Ideally, it should be increased by additional collections of California lichens until all the common species are included. There are over 1000 species of lichens reported from California so far; undoubtedly many species occur in the state which have not been reported in the literature. In about one year of intensive collecting in the state, I've found about 30 such unreported species. The biggest problem is identification, particularly of the crustose forms. I can offer the following helpful hints about collecting and maintaining the collection:

The introduction to Shirley Tucker's typewritten instructions to John Tucker in 1968 detailing how to curate and improve the newly-created DAV lichen collection. Photo: A. Colwell

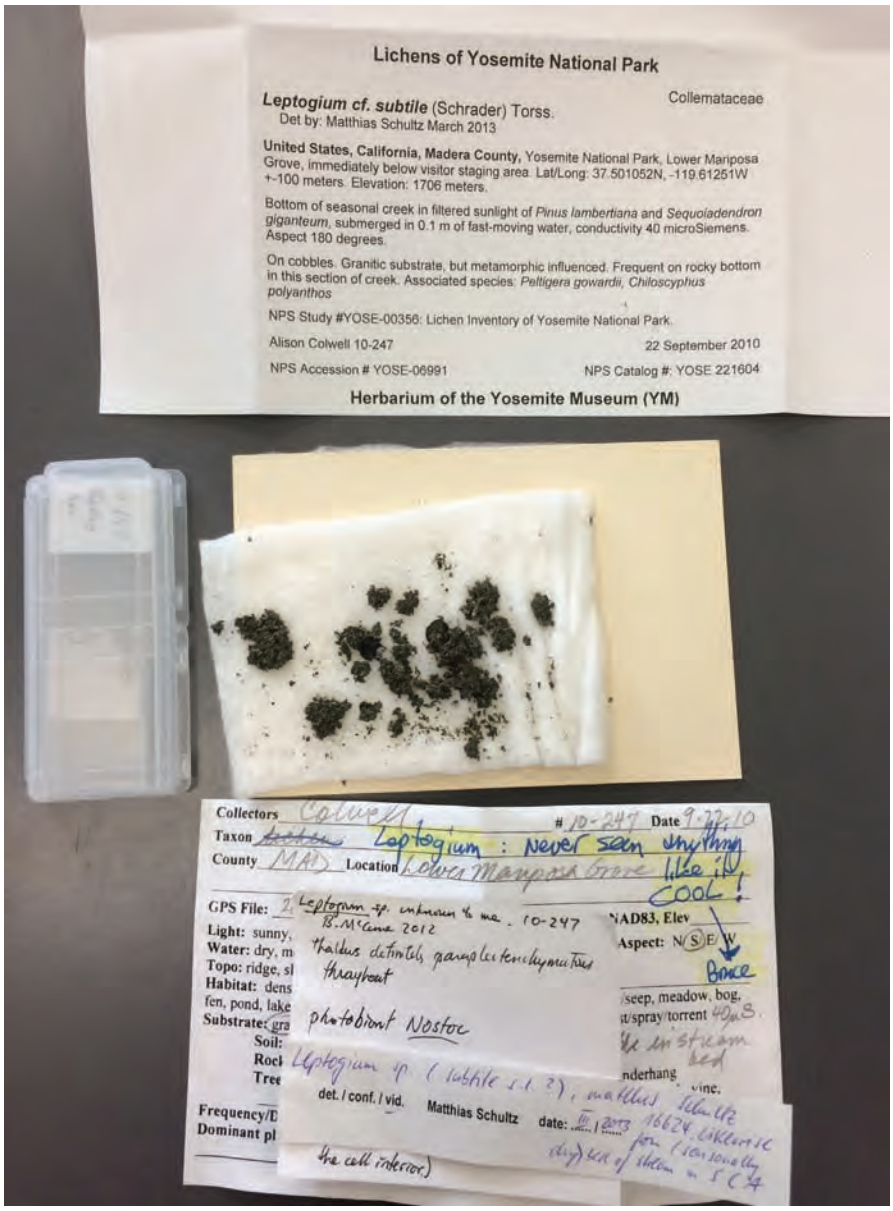
of the Yosemite specimens from that survey project, as she wanted to verify those collections for her checklist of the lichens of California. As it happened, I knew where the specimens were stored, and was able to obtain permission to remove the collection from Yosemite to complete its curation and to turn it over for further study to Shirley and Rikke Naesborg, the lichen curator at Santa Barbara Botanic Garden.

Getting the specimens curated was a big task, including organizing 1700 specimens, creating a Yosemite Museum online presence on the Consortium of North American Lichen Herbaria (www.lichenportal.org), uploading all label data there, and rehousing about half of them as they were still in field packets. Jennifer Poore, our Junior Museum Scientist, did the lion's share of this work, falling in love with lichens in the process. When I am fully vaccinated, I will deliver these 20 boxes to Santa Barbara Botanic Garden, where Shirley and Rikke will do additional curation work, such as stabilizing the soil crust specimens, and identifying those specimens not fully identified. These national park specimens remain property of the U.S. Government, but will be housed as a long term loan at SBBG.

This effort, which is significant for California lichenology, dovetailed nicely with curating the DAV lichen collection, which is significant to us. Our collection was begun with two hundred specimens from Shirley Tucker in 1968. The excerpt above is from typewritten lichen curation instructions Shirley provided to John Tucker (then the Director and her brother-in-law), beginning with a vision that the collection would grow to hold a representative of each California species. Specimens were added early on from R.A. Anderson, W.A. Weber (Colorado), David Showers, S. Shushan, G.H. Snodgrass, M. A. Hewlett, and a set of UK specimens collected by Richard Bernhardt. More recent additions feature more specimens from Shirley Tucker, Alaska specimens collected by Jack Major, Stebbins Cold Canyon Reserve specimens collected by Judy and Ron Robertson, and Quail Ridge Reserve specimens from several collectors. It has thus grown to 2,000 specimens from 14 countries, representing just under 400 species. The number of known California species has also grown since 1968, to about 1900 species, so we need to keep at it! I have donated my Seattle collections toward Shirley's goal.

Lichen taxonomy is entering a golden age in California, with a growing cohort of dedicated researchers, events and opportunities for interested people to get involved. The California Lichen Society (CALS)(www.californialichens.org) publishes the open access *Bulletin of the California Lichen Society* twice yearly. The collecting coverage is now dense enough that rarity can be inferred. CNPS rarity rankings have been established for 14 lichen species, and 19 are on the USFS Survey and Manage list for Region 5 (California). The contributions of California lichenologists are important as lichens perform key ecosystem services such as moderation of nutrient

Our lichen specimens are housed upright in paper packets in custom boxes. Photo: A. Colwell



Inside a lichen packet: this small lichen is suspended between two squares of cotton batting. A square of cardstock provides stiffness. Original field notes, any analyses and name changes are tucked behind the card. In this case, there is a slide with a dissection of a key trait. An image of the slide can be linked to the specimen online as part of the "extended specimen." Photo: A. Colwell

cycling in the forest canopy, soil stabilization, pioneer colonizing of many surfaces, acting as a humidity buffer, and providing nesting material, habitat and food for animals. The work lichenologists do is also urgent, as lichens are disappearing from urbanizing areas, many being sensitive to air pollution such as ozone and nitrogen deposition.

The progress can be attributed in large part to the multifarious support provided by Shirley Tucker, who has contributed many specimens, done much research, provided articles and organizational support to CALS. In addition, she has funded lichen curation at the UC Davis herbarium, Santa Barbara Botanical Garden and at UC Berkeley. Her connection to, and support of, UC Davis herbarium was described in No 44 of *Lasthenia* in Summer 2015.[3]

In case you are wondering what our collection looks like, lichen specimens are typically housed in paper packets which allow lichens to retain some three-dimensionality, especially necessary when lichens are collected attached to bark or rock substrate, and placed upright in boxes. We are printing new labels directly on the packet paper, although older specimens, when rehoused, will have the original labels glued to the front of the new packet. An archival piece of card is put in as a stiffener, and a piece of cotton padding is placed over the specimen to protect it and to keep it from sliding to the bottom of the packet, as lichen collections are stored upright in boxes. Although a few herbaria are imaging their lichen specimens, the consensus to date is that it is generally not worth imaging a lichen specimen as key traits are either too small, are internal or are chemistry reaction results. Some of our lichen specimens have slide preparations of microfeatures included in the packet, and we do have the ability to include an image of the slide mount with the data entry on CNALH. The ability to link other information besides label data to our specimen database entries in the new online databases is an important capability of online databases—it allows us to make freely available not only specimen images, but to tie in other related information, such as Genbank numbers if DNA has been sequenced, publication citations if the specimen is part of a research study or flora, existence of tissue samples, soil samples and potentially many other useful pieces of information. This concept of the "extended specimen" is considered a centerpiece of the modernization of museum collections.[4]

A. Colwell

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1 Hutten, M., U. Arup, O. Breuss, T. Esslinger, A. Fryday, K. Knudsen, J. Lendemer, C. Printzen, H. Root, M. Schultz, J. Sheard, T. Toensberg, and B. McCune (2013). Lichens and Lichenicolous Fungi of Yosemite National Park, California. *North American Fungi* 8:1–47.

2 Lendemer, J.C., K. Knudsen, and A.M. Fryday (2010). New and interesting lichens, lichenicolous and allied fungi from Yosemite National Park, California, U.S.A. *Opuscula Philolichenum* 8:107–120.

3 Download *Lasthenia* issue No. 44 here: https://herbarium.ucdavis.edu/pdfs/Lasthenia/lasthenia%20summer%202015.pdf

4 See National Academy of Science Report at: https://www.nationalacademies.org/our-work/biological-collections-their-past-present-and-future-contributions-and-options-for-sustaining-them

UPCOMING EVENTS!

The Arboretum & Public Garden plant sales are being held online again this spring, on **April 29–May 3 and May 20–24**. After placing an order, customers will schedule an appointment for curbside, contactless pick up of their order at the Arboretum Teaching Nursery. A 10% discount is by the Arboretum & Public Garden to Davis Botanical Society members. Find the plant lists and details here: https://arboretum.ucdavis.edu/plant-sales.

Thursday, May 6, 6:45 P.M. DBS Spring Meeting: elections, business, and a presentation by Alison Colwell on the parasitic plants in the genus *Aphyllon* (formerly part of *Orobanche*). To be held on Zoom, details have been emailed to members.

Saturday, May 15: DBS Field trip to Pine Hill is CANCELLED. Steve Schoenig, Member-at-Large organizing this field trip, will arrange a fall field trip or alternative event.

Ceanothus (See-I-Know-This) Keying Group: Host Mike Bower will alert interested members when this group can meet again, likely late summer. To join the list, email Mike: madbotanist@gmail.com.

A note about this issue

Members reading the printed copy of this issue should notice a major change: the photos are in full color. Other changes are less obvious: because this issue is printed digitally rather than by offset technology, the ink is slightly different, as is the color of the masthead.

Do you like it? Comments pro and con are welcome!

LASTHENIA

LASTHENIA, the Newsletter of the Davis Botanical Society, is published in collaboration with the staff of the UC Davis Botanical Conservatory and Center for Plant Diversity.

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