

Bulletin
of the
California Lichen Society



Volume 29 No. 1 Summer 2022

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The Bulletin welcomes manuscripts on technical topics in lichenology relating to western North America and on conservation of lichens, as well as news of lichenologists and their activities. The best way to submit manuscripts is by email attachments in the format of a major word processor (DOC or RTF preferred). Use italics for scientific names. Please submit figures in electronic formats with a resolution of 300 pixels per inch (600ppi minimum for line drawings); preferred minimum width for images is 2100 pixels, but widths down to 1050 pixels may be accepted. Email submissions are limited to 10MB per email, but large files may be split across several emails or other arrangements can be made. Contact Editor@californialichens.org for details of submitting illustrations or other large files. A review process is followed. Nomenclature follows Esslinger's cumulative checklist online at <https://www.ndsu.edu/pubweb/~esslinge/chcklst/chcklst7.htm>. The editors may substitute abbreviations of authors names, as appropriate from The International Plant Names Index - www.ipni.org/index.html. Style follows this issue. Electronic reprints in PDF format will be emailed to the lead author at no cost.

Volume 29(1) of the Bulletin of the California Lichen Society was issued on October 23, 2022.

Cover image: *Calicium* aff. *trachyloides* from Calaveras County. Photo by Ken Kellman. See article on page 1.

Notes on Interesting Lichen Collections from California

Kenneth Kellman

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ABSTRACT

Acolium chloroconium Tuck., *Lecanographa lyncea* (Sm.) Egea & Torrente, and *Ingvariella bispora* (Bagl.) Guderly & Lumbsch are reported from Northern Monterey County. A small indeterminate collection of *Agonimia* from Santa Cruz county is discussed. Another collection of *Calicium aff. trachylioides* is reported, this time from Calaveras County.

Acolium chloroconium Tuck. (Figure 1)

Monterey Co., Fort Ord Natural Reserve, Marina, CA. On bark of live oak in coastal dune scrub 36.67907°N, 121.77218°W, elevation 45 m., November 19, 2021. *K. Kellman & M. Perry 9410* (kmk).

While reviewing a piece of coast live oak (*Quercus agrifolia*) bark that I collected for the obvious *Pertusaria* thallus, I saw a small patch of yellow-green thallus with a single mature sessile mazaedium in the center. I immediately noticed the bright yellow collar surrounding the spores. Making sure not to disturb the rest of the mazaedium, I removed a few spores for microscopic examination. I found that they were 2-celled, brown, and measured 8-9.1 X 5-6 μ m.

Once named *Cyphelium chloroconium* (Tuck.) Zahlbr., this species is known only from Washington, Oregon and California. In California it has been most frequently collected in the southern counties, with one collection from Yosemite National Park (*Hasse 1185*, Min) and one collection from San Mateo county (*Gordon s.n.*, SFSU). Per the Consortium of North American Lichen Herbaria (CNALH 2022), this is the first collection since 1994, a gap of 27 years, and the first collection in Monterey County.

Lecanographa lyncea (Sm.) Egea & Torrente (Figures 2, 3)

Monterey Co., Fort Ord Natural Reserve, Marina, CA. On bark of live oak in coastal dune scrub. 36.67980°N, 121.77204°W, elevation 45 m., November 19, 2021. *Kellman 9413* (kmk, NYBG)

Monterey County, Carmel Highlands, CA. July 17, 2008. *Tehler 9410* (S)

The common script lichens in the southern San Francisco Bay area are *Opegrapha herbarum* Mont., and *Arthonia atra* (Pers.) A. Schneid. Their ascomata are fully carbonized and usually tightly closed lirellae, much longer than broad, with various degrees of branching, especially for the latter species. They are difficult for me to separate without examining spores. *Lecanographa lyncea* is macroscopically different in that the lirellae are open, with a distinct white pruina, and with widely varying length to width ratios (Figure 2). The spores are also radically different with (7) 8-9 septa, and much longer, measuring (23.4)26-33 x 2.5-3.8 μ m (Figure 3). Dr. James Lendemer was kind enough to perform TLC tests on the thallus confirming the presence of confluent acid and a trace of 2-O-methylmicrophyllinic acid.

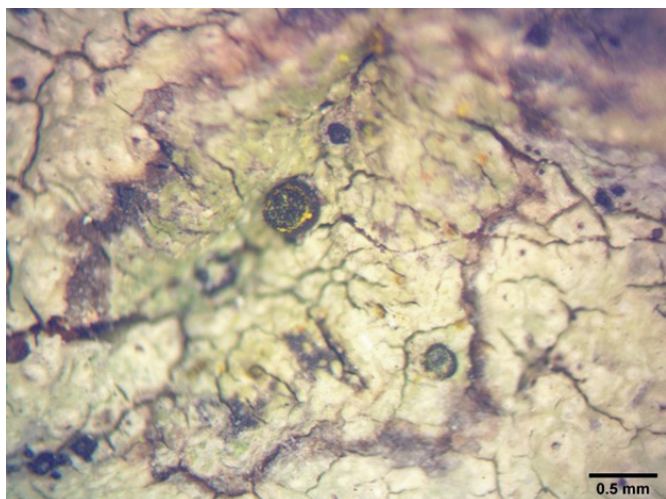


Figure 1. *Acolium chloroconium*. Note the yellow collar on the mazaedium. From Kellman & Perry 9410



Figure 4. *Ingvariella bispora* habit. Kellman & Peterson 9366a



Figure 2. *Lecanographa lyncea* habit on bark. Kellman 9413

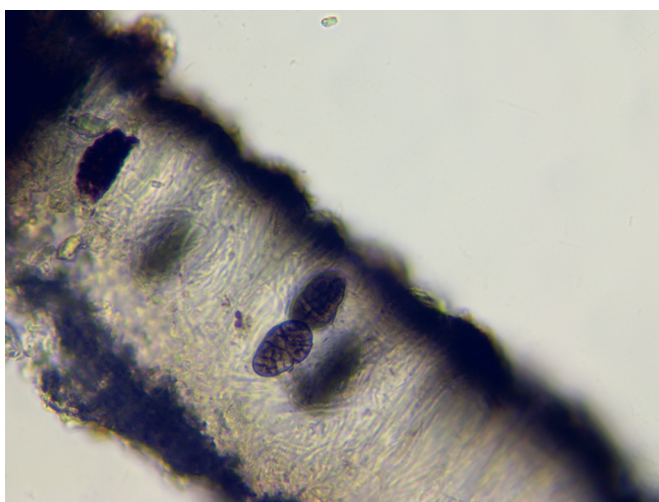


Figure 5. *Ingvariella bispora* spores from Kellman & Peterson 9366a

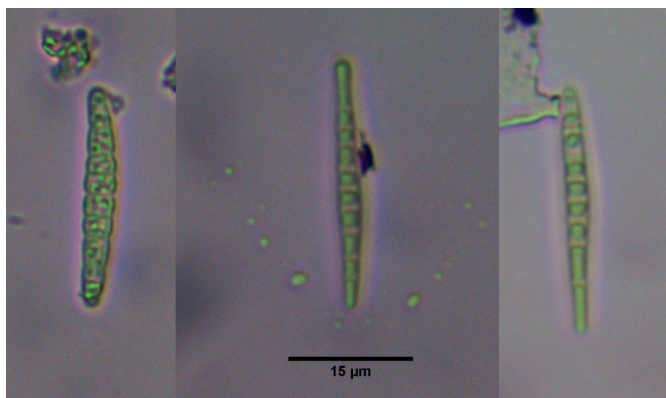


Figure 3. Spores of *Lecanographa lyncea* X600. From Kellman 9413

In the field, *L. lyncea* could be confused with *Phaeographis dendritica* (Ach.) Müll. Arg. and *Phaeographis smithii* (Leight) de Lesd. since these also have more or less open lirellae with white pruina. But the two *Phaeographis* species have a conspicuous raised white thallic layer surrounding the disk which is lacking in *Lecanographa lyncea*.

Prior to these two collections, *L. lyncea* was not known north of the Channel Islands in Santa Barbara County (CNALH 2022), so they represent a northward range extension of some 200 miles. Both collections are within 1 mile of Monterey Bay, and so *L. lyncea* should be sought in coastal areas of southern Monterey and San Luis Obispo counties.

Fort Ord Natural Reserve is part of the University of California Reserve system which protects unique and important habitats throughout the state. This 600 acre reserve is operated by UC Santa Cruz. It is dominated by maritime chaparral, with scattered coast live oaks. The soil is windblown sand from coastal dunes approximately 1 mile distant. It is ripe for further lichenological study and the managers welcome future CALS sponsored exploration.

Ingvariella bispora (Bagl.) Guderly & Lumbsch (Figures 4, 5)

Monterey Co., Rocks Ranch, on decaying granitic rock in cow pasture. 36.81395°N, 121.60977°W, elevation 315 m., May 14, 2021. *K. Kellman & L. Peterson 9366a* (kmk)

Rocks Ranch is a relatively recent acquisition of the Santa Cruz County Land Trust. In the spring of 2021, I was asked to survey the 2,600 acre property for bryophytes and lichens. It is a mixture of oak woodlands and cow pasture with large rock outcrops of varying geology. I

collected a chunk of decaying granitic rock, attracted by a lichen with lecanorine apothecia. Six months later, when I had a chance to examine the rock, I noticed a sandy brown thallus that had deeply excavated apothecia with whitish rims. Dissection revealed two brown muriform spores per ascus (Fig. 5).

Tom Carlberg (2012) documented *Ingvariella bispora* from Long Ridge Open Space Preserve in San Mateo County. His collection represented a large range extension from Santa Barbara County, and this collection starts to fill in the gap. This new location also is subject to marine fog, confirming his expansion of the climactic range of the species.

***Agonimia* sp.** Zahlbr. (Figures 6-9)

Santa Cruz Co., Forest of Nisene Marks State Park, on fragmented bark of a dead tanbark oak (*Notholithocarpus densiflorus*) tree in coast redwood forest. Along the Old Growth Loop trail. 36.98682°N, 121.90888°W, elevation 45 m., May 30, 2021. *Kellman 9374*. (kmk).

Per CNALH (2022), there are now 4 collections of *Agonimia* in California, and two are in Santa Cruz County. Rikke Reese Naesborg collected *Agonimia tristicula* (Nyl.) Zahlbr. in Big Basin State Park (*RRN 1472 UC*) and in Armstrong Redwoods State Natural Reserve (*RRN 1922 UC*) as part of her doctoral thesis. The third collection, also *A. tristicula*, is from Yosemite National Park (*Hutten 14196a YM*).

This new collection is sterile, and lacks cortical hairs so is therefore unidentifiable to species (McCune 2017). The thallus consists of small chains of blastidia-like segments that probably break off and start a new chain (Fig. 6, 7). Each of these segments is tiny, about 0.05-0.2 mm long, and barely visible even with a hand lens.

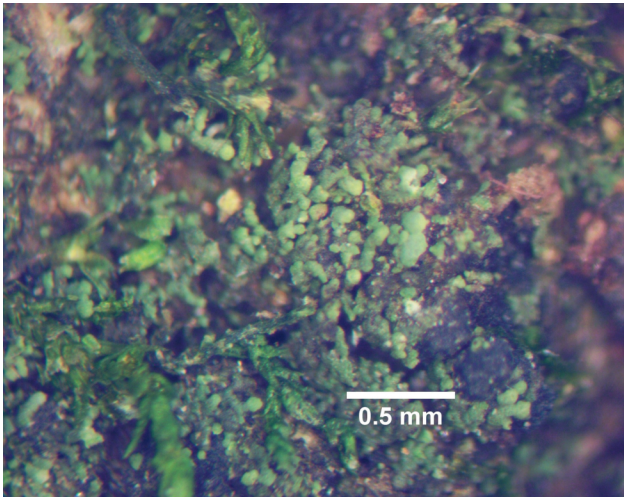


Figure 6. *Agonimia* sp. showing habit on bark. *Kellman 9374*

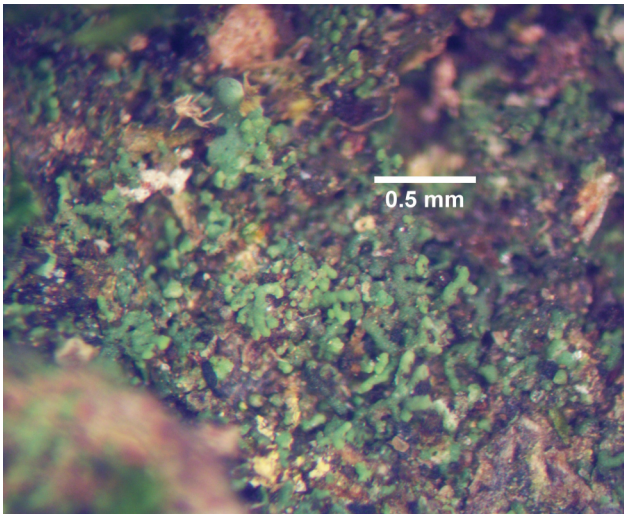


Figure 7. *Kellman 9374* habit showing a variety of sizes of thalli.

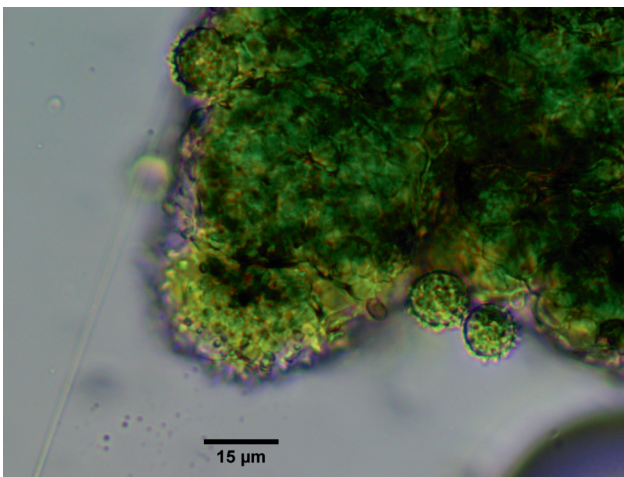


Figure 8. Light micrograph of *Kellman 9374*, showing spiked spheres. X600

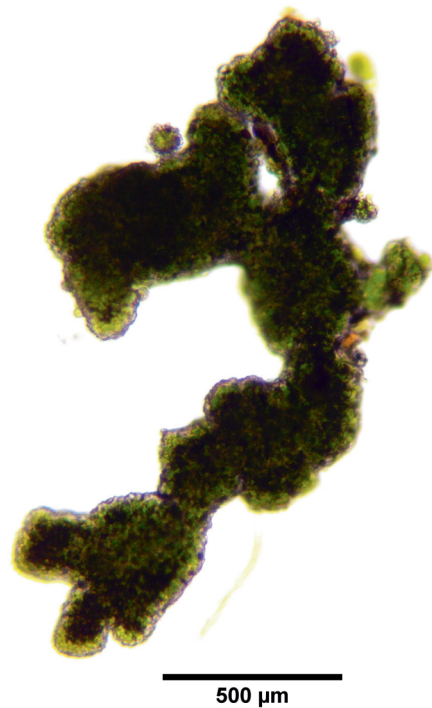


Figure 9. Light micrograph of thallus from *Kellman 9374* X1

No soredia or isidia are visible, however small spherical and spiny bodies form at the margins of the segments (Fig. 8). Figure 9 suggests that these spheres might act as soredia but they might also be the initial cells of the budding thallus. *Waynea californica* Moberg, which is difficult to see in its own right, dwarfs the *Agonimia* thalli. The pair, along with a pleurocarpous moss cover several square feet of bark on this rotting snag.

Calicium* aff. *trachyloides (Figures 10, 11)

Calaveras Co., Mokelumne Hill, on wood on an oak log in cow pasture atop Sport Hill. 38.29273°N, 120.69732°W elevation 540 m. November 29, 2021. *Kellman & Peterson 9419* (kmk).

Eric Peterson discussed this taxon in Dart et al. (2020). His hesitation in citing *C. trachyloides* arose from differences in thallus color and dif-

ferently shaped verrucae from the European photographs and descriptions. My collection from the Sierra Nevada foothills seems to fit the description of his collections from Quail Ridge (Napa County). The thallus is gray and well camouflaged by the wood (Fig. 10); ascomata sunken with no exciple exposed, mazaedial, 0.2-0.4 (0.6) mm diameter (Fig. 11); spores 2 celled, brown, 18-24.4(26.2) X 9.5-14.6, Avg 20.8 x 12.4 n=17. It keys directly to *Calicium trachylioides* in McCune (2017). Aside from Peterson's collections, James Lendemer made a collection in Riverside County, apparently in the same location as Tibell's original North American specimen, albeit 30 odd years later.

ACKNOWLEDGEMENTS

I would like to thank the managers of the Fort Ord Natural Reserve and The Santa Cruz Land Trust for permission to collect on their properties. I would also like to thank Dr. James Lendemer for helping me arrive at the genus *Agonimia*, and for performing the TLC test on the *Lecanographa*.

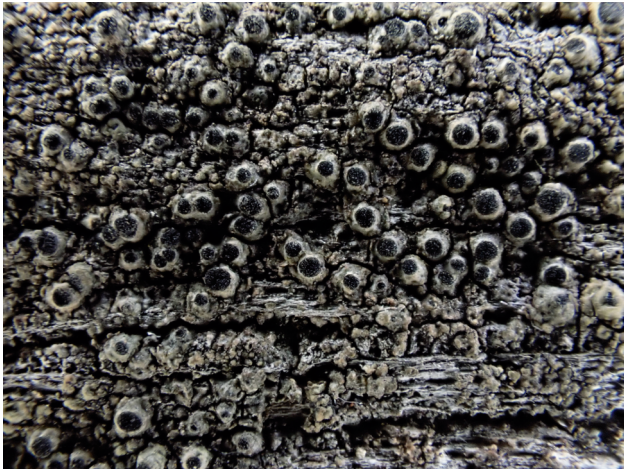


Figure 10. *Kellman & Peterson 9419*, habit

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- Consortium of North America Lichen Herbaria (CNALH). 2022. <http://lichenportal.org/cnalh/index.php>. Accessed on February 1, 2022.
- Dart, J., E. Peterson & J. Hollinger. 2020. New and interesting records of lichens from California. Bulletin of the California Lichen Society 27(1): 14-21.
- McCune, B. 2017. Microlichens of the Pacific Northwest. Volume 2: Key to the Species. Wild Blueberry Media, Corvallis, Oregon, U.S.A. iv + 755 pages.

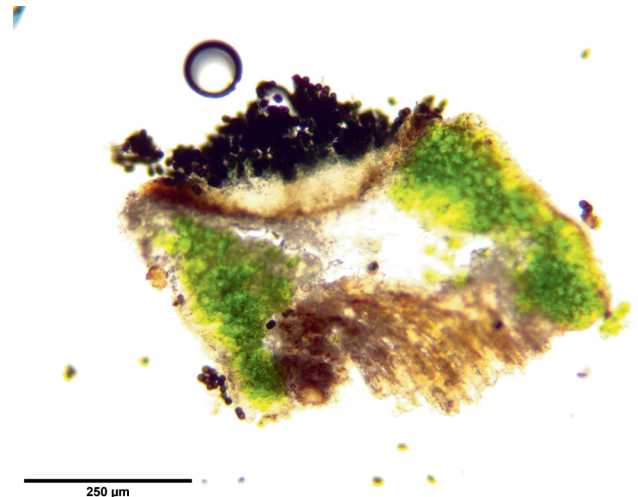


Figure 11. Section through mazaedium X100 from *Kellman & Peterson 9419*

CALS Grants Committee report for the 2021 Grant Cycle

Dear CALS members,

In 2021, the CALS Grants Committee received six grant applications, for a total of \$6,267. The research topics in the applications spanned widely from surveying for a rare lichen species to mapping of three-dimensional lichen growth to using lichens in forensic studies. Given the usual \$1,750 allocated to grants we thought the number of funded applications would be limited to two, but the Board gave us the great news that the Society had sufficient funds to support a third applicant.

Since all projects were well researched and most would contribute important information about the biodiversity and ecology of lichens, the Grants Committee evaluators decided to prioritize the student applicants that fulfilled all the application requirements. Thus, three of the projects were recommended for funding. The Board agreed to these recommendations. A short summary of the three awarded projects appear below.

I am very encouraged by the number of quality applications we are receiving. With the commitment of the Board to fund additional good and well researched projects, I hope this trend will continue.

Rikke Reese Næsborg, Grants Committee Chair

VAGRANT LICHENS IN NORTHERN CALIFORNIA

Principal investigator: Andrew Restrepo,
*Undergraduate Senior, The Evergreen State
College, 614 Boulevard Rd. SE, Olympia, WA
98501*

Funding provided: \$991

Summary: Vagrant lichen species are able to grow unattached to a substrate due to their rare growth form and are typically found in arid areas with thin soils, becoming much more common east of the Cascade crest. The Klamath-Siskiyou region is one area west of the Cascade crest where vagrant lichens appear to survive due to unique climatic and geographic conditions more typical of the Great Basin and Intermountain West. They represent a very small number of lichen taxa; in southern Oregon and northern California this includes the genera *Aspicilia*, *Dermatocarpon*, and *Xanthoparmelia*. Vagrant lichen populations appear to be particularly sensitive to human-induced habitat changes and invasion by non-native plant species.

The primary objective of this research is to document the presence of vagrant lichen populations and examine their relationships with native and/or non-native grasses around selected sites in Northern California. The secondary objective is to catalog the habitat types which support these vagrant lichen populations to allow for characterization of potentially endangered populations, and to initiate speculation about the historical distribution and ecology of vagrant lichens in the study areas. The data collected will aid in the consideration of the endangerment statuses of these lichen populations based on abundance and diversity within their habitat. It is hypothesized that if non-native grasses are negatively impacting

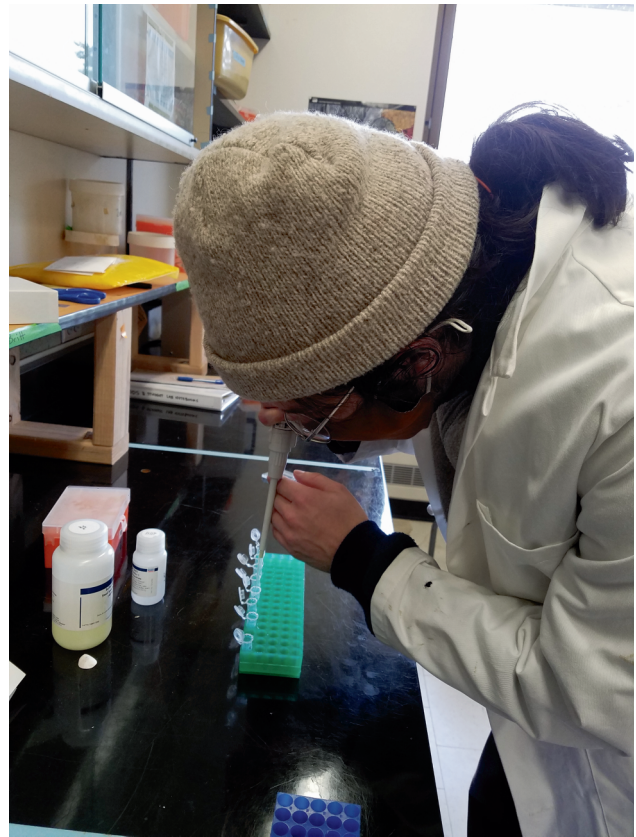
vagrant communities, then there will be lower vagrant population abundance in areas of non-native grass dominance. This negative correlation may indicate a negative influence by non-native grasses on vagrant lichen establishment and survival. However, in areas of native grass abundance it is predicted that there will not be a strong negative correlation between native grass abundance and vagrant lichen abundance.

THE OTHER CALIFORNIA: COLLECTING NIEBLA SOUTH OF THE BORDER

Principal investigator: Zachary Muscavitch,
*Graduate Student, Department of Ecology and
Evolutionary Biology, University of
Connecticut, Storrs, CT 06269*
Funding provided: \$1,000.00

Summary: Symbioses are ubiquitous in nature, and among them lichens, the association between a fungus and an alga or cyanobacterium, are especially successful with a presence in all terrestrial ecosystems. The global success of lichens is likely due in part to their flexible photobiont-mycobiont compatibility, allowing them to exploit a wide breath of niches. The photobionts have been suggested to modulate intraspecific chemical variation, shape ecological and geographic distribution, and govern dispersal mechanisms; however, these hypotheses remain mostly untested. My project aims to answer questions probing the symbiosis boundary, resolving the taxonomy and characterizing the specificity by which photobionts and mycobionts pair.

The distribution patterns of lichens make them challenging to monograph. Complete sampling of many cosmopolitan genera is near impossible, while endemic genera can be too small to test some evolutionary hypotheses. *Niebla* (Ramalinaceae) is a speciose group of



Andrew Restrepo in the laboratory preparing lichen samples for DNA sequencing. Photo by Britt Glenn.



Zachary Muscavitch collecting *Niebla* in the field in Baja California. Photo by Eduardo Gutierrez.

lichenized fungi (~70 spp.) and as such, is unique with its distribution limited almost exclusively to the western coast of North America with a few disjunct species in the deserts of western South America, and one species in southwestern Africa. Of the ~70 species of *Niebla*, 25 occur in mainland California, including only four strict endemics. The other Californian *Niebla* species extend south into Baja California, Mexico or are found on coastal islands. Many *Niebla* species, once abundant in mainland California, have been locally extirpated by coastal development and urban sprawl. Because of this loss, many species once found in southern California are now restricted to Baja, Mexico. To extend and complete my sampling of this West Coast endemic lineage, I plan to travel to Baja California, Mexico to collect additional specimens, which will form the basis of my dissertation.

DIVERSITY AND TAXONOMY OF LICHENIZED FUNGI IN SOME LOCALITIES OF COASTAL SCRUB IN THE SOUTH COAST OF SONORA, MEXICO.

Principal investigator: Eduardo Gutierrez Gomez, *Undergraduate Student, Universidad de Sonora, Hermosillo, Sonora, Mexico*
Funding provided: \$800.00

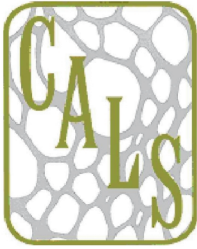
Summary: The state of Sonora, Mexico has 816 km of coastline most of which is considered an arid zone. Along the coast, the substrate available for lichen communities change with the latitudinal gradient. Approximately 3200 lichenized fungi have been collected in Sonora. Most of those were collected in the eastern part of Sonora, which is quite different from the coastal zone. Fog frequently occurs in the summer months along the coast of Sonora. It is probably most frequent between central Baja California and Southern California, although fog banks also occur at the Gulf of California

affecting the southern coast of Sonora and northern coast of Sinaloa. This work will focus on the diversity of coastal lichens including alpha, beta and gamma diversity, abundance, and taxonomy at different sites on the coast of Sonora, Mexico.

The project has three objectives: 1) Identify the collected lichens and analyze alpha, beta and gamma diversity of coastal lichens at different sites along a latitudinal and longitudinal gradient on the coast of Sonora, Mexico. 2) Compare the variation in lichen diversity between the different collection sites, taking fog gradients and different substrate types into account. 3) Contribute the collected data to the Consortium of North American Lichen Herbaria (CNALH) and Consorcio de Herbarios de Líquenes en América Latina (CHLAL). My hypothesis is that the lichen diversity will be significantly influenced by fog patterns, latitudinal and longitudinal gradients, and the different types of available substrates.



Eduardo Gutierrez is busy identifying lichens. Photo by Gilma De Leon.



California Lichen Society Grants Program

The California Lichen Society offers small grants to support research pertaining to the lichens of California. No geographical constraints are placed on grantees or their associated institutions, but grantees must be members in good standing of the California Lichen Society. The Grants Committee administers the grants program, with grants awarded to an individual only once during the duration of a project. Grant proposals should be brief and concise.

Grant Applicants should submit a proposal containing the following information:

- Title of the project, applicant's name, address, phone number, email address, and the date submitted.
- Estimated time frame for project.
- Description of the project. Outline the purposes, objectives, hypotheses where appropriate, and methods of data collection and analysis. Highlight aspects of the work that you believe are particularly important and creative. Discuss how the project will advance knowledge of California lichens.
- Description of the final product. We ask you to submit an article to the Bulletin of the California Lichen Society, based on the results of your work.
- Budget. Summarize intended use of funds. If you received or expect to receive other grants or material support, show how these fit into the overall budget. The following list gives examples of the kinds of things for which grant funds may be used if appropriate to the objectives of the project: expendable supplies, transportation, equipment rental or purchase of inexpensive equipment, laboratory services, salaries, and living expenses. CALS does not approve grants for outright purchase of capital equipment or high-end items such as computers, software, machinery, or for clothing.
- Academic status (if any). State whether you are a graduate student or an undergraduate student. CALS grants are also available to non-students conducting research on California lichens. CALS grants are available to individuals only and will not be issued to institutions.
- Two letters of support from sponsors, academic supervisors, major professors, professional associates or colleagues should be part of your application. These should be submitted directly from the author to the committee Chair.
- Your signature, as the person performing the project and the one responsible for dispersing the funds. All of the information related to your application may be submitted electronically.

Review: Members of the Grants Committee conduct anonymous evaluation of grant proposals once a year based on completeness, technical quality, consistency with CALS goals, intended use of funds, and likelihood of completion. Grant proposals received by November 1 each year will be considered for that year's grant cycle. The Grants Committee brings its recommendations for funding to the Board of Directors of the California Lichen Society, which has final say regarding approval or denial.

Grant Amounts: CALS typically offers four grants of \$1000-\$1500 each year. Typically grants are awarded to separate individuals, however depending on the quality of the applications and the amount of funding available, the committee maintains the option to disburse funds as appropriate. All grants are partially dependent on member contributions, therefore the amounts of these awards may vary from year to year.

Obligations of recipients: 1) Acknowledge the California Lichen Society in any reports, publications, or other products resulting from the work supported by CALS. 2) Submit an article to the Bulletin of the California Lichen Society. 3) Submit any relevant rare lichen data to California Natural Diversity Data Base using NDDB's field survey forms. See <http://californialichens.org/conservation> for additional information.

How to submit an application: Please email submissions or questions to the committee Chair at grants@californialichens.org by **November 1, 2022**. The current Chair is Rikke Reese Næsborg.

News and Notes

INTRODUCTION TO LICHEN IDENTIFICATION AND ECOLOGY

10am - 5pm on Saturday, November 5, 2022
McClellan Ranch Preserve, Cupertino,
California

This one-day workshop will focus on developing skills for identifying common Bay Area macrolichens (foliose and fruticose lichens) to genus. This workshop will include a classroom session where we will cover basic lichen anatomy and terminology, and discuss the roles lichens play in ecosystems such as supporting wildlife. We will also take a field trip to a nearby natural area to view lichens in their natural habitats, and we will have some lab time for students to work on identifying lichens with guidance from the instructor. Students will learn to recognize and distinguish between pollution-tolerant lichen communities that we often see in cities and the more pristine communities that occur in places with high air quality. After taking this course you will be sure to observe lichens, big or small, almost everywhere you go!

Registration: https://apm.activecommunities.com/cupertino/Activity_Search/introduction-to-lichen-identification-ecology/13644

Led by Jesse Miller

NAPA COUNTY LICHEN RESEARCH FEATURED IN NEW FIRE ECOLOGY BOOK

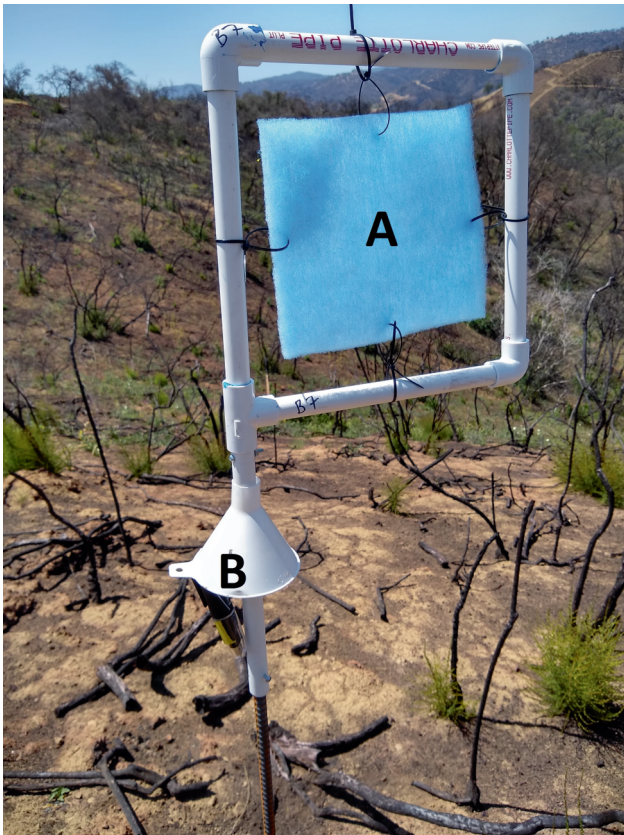
The UC Davis Quail Ridge Reserve is becoming quite an epicenter for lichen research. CALS members may remember the reserve from the 2019 annual meeting, but Jesse Miller has been leading lichen surveys there since 2017 (Adlam and Miller, 2018). His recent publication (with Allie Weill and John Villela) examining macrolichen diversity across chaparral patches

that had burned and regrown at different times in the past 100 years, demonstrated the presence of several “old growth” species on the preserve that appear to require upwards of 65 years before they re-establish (Miller et al. 2021).

In August 2020, most of the reserve burned during the massive LNU Lightning Complex fires, including nearly all of the chaparral areas that Jesse had previously surveyed. Since then, he and Jes Coyle have established a system of dust traps in the severely burned and partially burned former chaparral areas in order to document how quickly lichen propagules return. Their goal is to collect fungal and algal DNA from the dust every three months for three years to determine whether different lichen-forming species are limited by dispersal, or if their establishment is primarily limited by the availability of suitable substrate and environmental conditions. Jes received a small grant from Saint Mary’s College of California to sequence DNA from the first year of samples, which her undergraduate research student has been hard at work on all summer.



The team deploys the first dust traps in a high severity burn at Quail Ridge in May 2021, nine months after the fire. Already green shoots are returning!



Dust trap stations passively collect particulates and aerosols using an HVAC filter (A) and are accompanied by a data logger that records temperature and humidity.

Local author and illustrator, Robin Lee Carlson, accompanied Jesse and Jes on their initial visits to Quail Ridge as they set up the spore traps 9 months after the fire. Robin was conducting research and making sketches for her book about the recovery of ecosystems after fire and chose to feature lichens in one of her chapters. Her book, *Cold Canyon Fire Journals: Green Shoots and Silver Linings*, was released late this summer and is a beautifully narrated and illustrated first-person account of her journey to learn more about the role of fire in local ecosystems. Readers can find it at <https://www.heydaybooks.com/catalog/the-cold-canyon-fire-journals/>.



One year after deployment, the grasses have returned and the dust traps are collecting... plants! Are the lichens returning too?

Adlam, C.A. and J.E.D. Miller. *Macrolichens of the Quail Ridge Reserve, Napa County, California*. 2018. *Bulletin of the California Lichen Society* 15(1): 10-15
 Miller, J. E. D*, A. Weill*, and J. Villella. 2022. Increasing fire frequency reduces lichen diversity in a high-severity fire-adapted ecosystem. *Diversity and Distributions* 26: 454-462 doi: 10.1111/ddi.13295 (open access)

Jes Coyle

CALS BULLETIN CELEBRATES 30TH IN 2023

Have you noticed the volume number on this CALS Bulletin issue? It is number 29, which means that next year we will celebrate our 30th year of publication. We invite readers to contribute interesting historical notes, photographs or mementos to commemorate the occasion and well as share your ideas for contents. As always, in addition to technical articles, we welcome photos and notes about interesting lichens you have found around California (check out Cindy Todd's beautiful photo on the next page). We look forward to hearing from you!

Bulletin co-editors Jes Coyle and Justin Shaffer



Lace lichen in the hills of Pismo Preserve, Pismo Beach, California. Photo by Cindy Todd.

Joint Meeting of the California Lichen Society and the Northwest Lichenologists, 2022



FROM JESSE MILLER:

The California Lichen Society held a joint meeting with the Northwest Lichenologists in and around Arcata, California, in late March, 2022. After a two-year hiatus because of COVID, it was a great pleasure to reunite with our lichenological colleagues and friends, as we have every year in the history of CALS prior to the pandemic. Arcata made for an excellent setting for the meeting, with coastal dunes, old growth oak woodlands, and ancient redwood forests—all dripping with lichens--easily accessible from town.

Approximately 50 people attended our field trip, which was relocated from a planned destination the North Coast Range to Prairie Creek State Park because of poor weather conditions at higher elevations. We had nearly as many in attendance at the evening session at the D Street Community Center in Arcata. There, we opened

with a happy hour and then held an open board meeting, where we received reports from the conservation, outreach, and grants committees. We then held a festive potluck dinner followed by an engaging presentation by Dr. Klara Scharnagl, which my colleagues describe in more detail below. After cleanup was done, a few of us stayed late into the night, continuing the tradition of the annual CALS jam session.

It was my pleasure to present the *Ramalina menziesii* award to John Villella and the *Letharia* award to Jes Coyle at the meeting. John's award recognizes his substantial contributions to California lichenology over the last 15 years. As many of our readers know, John is one of the most skilled consulting lichenologists on the west coast. In addition to his extensive field surveys that have led to the preservation of numerous rare lichen populations, John served as the editor of the CALS Bulletin for five years

and solicited many new authors to contribute articles to the bulletin. John has also mentored a number of early-career lichenologists over the years.

Jes's award recognizes her excellence in editing the CALS Bulletin over the last four years. Throughout the pandemic, Jes kept the bulletin in publication, which helped CALS members remain connected when we could not gather in person. On top of editing the bulletin, Jes has also led production of the bulletin for multiple years, which is not normally part of the editor's work. Jes is also one of California's foremost lichen educators; she has mentored a number of undergraduates at St. Mary's College in various lichen-related projects over the last four years. On behalf of CALS, I want to thank John and Jes for all their contributions to our community.

I left the meeting with the impression that the state of California lichenology is strong. We saw robust attendance throughout the three days of events, and at the Saturday CALS meeting in particular. We advertised the meeting online more thoroughly than we have in previous years, and this seemed to attract a broader audience than we have had in the past. A number of new attendees were younger lichenologists, and it was exciting to see the energy and enthusiasm the younger generation brings to the field. Several first-time attendees became CALS members.

FROM SARAH CONWAY:

Oh to be surrounded by people who share your niche interests!

This year, many of us were lucky enough to attend the annual meetings of both the California Lichen Society and Northwest Lichenologists, as they were artfully scheduled

for the same spring weekend in Humboldt County, CA.

The festivities began on Thursday at the Cal Poly Humboldt campus in Arcata with fascinating talks on everything from vagrant lichens to transplant biomonitoring to distinguishing species of *Rhizocarpon* using patterns in their geometry and color. We even had visitors from Norway who happened to be in California searching for *Psora* samples to help clarify the taxonomy of the genus. Later that day, we all ventured inland after lunch to explore a private property in the white oak woodlands and scramble over rocky outcrops. We spent more time looking at lichens than the lovely view, of course!

The California microclimates made it possible for us to enjoy an entirely different excursion the following day. We headed out to the Samoa Dunes and Wetlands for a foggy jaunt and found *Nephroma laevigatum* galore along with many other coastal species. As if the day couldn't get any better, we all gathered afterwards in a lab at Cal Poly Humboldt to ID species found during our adventures and to learn more about *Psora* identification (thanks Annie and Einar!). A little dinner party at a Steve Sillett and Marie Antoine's house was the perfect ending to the NWL portion of the weekend.

Finally, the CALS events were all packed into one fun-filled Saturday following the two days sponsored by the Northwest Lichenologists. It included a trip to the Prairie Creek Redwoods, elk sightings, a potluck dinner, and lichen poetry readings by the brilliant Dr. Klara Scharnagl. A few of us defected and went back to the oak woodlands instead of the redwoods, braving wind and rain, all for the love of lichens! Reluctant to leave our fellow nerds and newfound friends, we stayed long after the

meeting ended to enjoy a well-deserved jam session. By the time we left the D Street Community Center late Saturday night, we were already looking forward to a time when we could all gather together again.

FROM ANNIE EVANKOW: AN INTERNATIONAL PERSPECTIVE ON THE NWL & CALS MEETING IN ARCATA, CA

I was relieved to meet my Ph.D. supervisor, Einar Timdal, at the baggage carousel in San Francisco, a few days before the CALS/NWL meeting. We planned the trip for over a year, without any certainty that we would be able to travel from Norway. One by one, the barriers dissolved. In September, UC Berkeley funded the trip. By October, I received my second vaccine dose. In November, The US allowed Europeans to visit again. I flew ahead of Einar, and up until I landed, I was convinced something would prevent me from coming. Einar was less fortunate. His plane turned around over Iceland, landed in Denmark, and after a second trans-Atlantic flight, he ended up in Newark for a night before arriving in California, a day late. We had arrived.

The joint NWL/CALS meeting did not disappoint. I live halfway around the world, and I am already trying to find the next time I can join one of these events. We drove up to Arcata from Berkeley with Klara Scharnagl, stopping to look at redwoods and their lichen epiphytes, including *Carbonicola anthracophila*, along the way. Humboldt was packed full of interesting talks, rock outcrops on Bald Mountain, and a joint dinner at Carmela's. I learned heaps about western lichens, fires, and biomonitoring. On at the Samoa Dunes, slowly meandering around the coastal pine forest, Einar reunited with collaborators while I met folks face-to-face that I had virtually interacted with on iNaturalist, Twitter, FB, and Zoom. We appreciated the

opportunity to present our ongoing *Psora* identification project at the microscopy workshop later that day and also loved getting a tour of Marie and Steve's incredible garden during the evening. On the way, we took some time to appreciate the redwoods and the blooming *Trillium ovatum* along the trail.

Einar and I came to California for the high diversity of arid, crustose lichens, primarily in the genus *Psora*. We took a detour to Arcata for the vibrant lichenologists. Thank you for welcoming us, driving us around, and sharing everything from specimens and suggestions to food, poems, and singalongs. The word for lichen in Norwegian is lav. During our time in Arcata with CALS, we felt the lav.

You can look at the iNaturalist observations folks made during the field days here:

Day 1: https://www.inaturalist.org/observations?nelat=40.89724604779145&nelng=-123.78587473913935&on=2022-03-17&place_id=any&swlat=40.86155345570847&swlng=-123.92689456030634&verifiable=any

Day 2: https://www.inaturalist.org/observations?nelat=40.837886074836966&nelng=-124.13805672756966&on=2022-03-18&page=2&place_id=any&swlat=40.82002618488809&swlng=-124.20856663815316&verifiable=any

Day 3: https://www.inaturalist.org/observations?nelat=41.38135844399693&nelng=-123.93384191275757&on=2022-03-19&place_id=any&swlat=41.345928240847&swlng=-124.07486173392456&verifiable=any

Blog post: <http://lichenhunting.blogspot.com/2022/07/california-field-meeting-with-northwest.html>

FROM TOM CARLBERG:

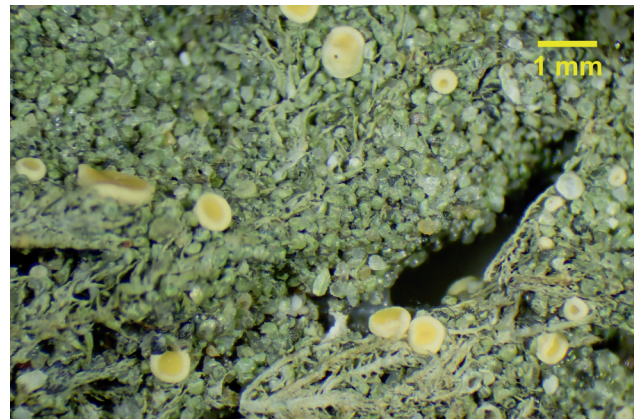
As far as I can remember, this was the first time since 2001 that the California Lichen Society and Northwest Lichenologists held joint seminars and field forays. Coincidentally enough, that previous meeting of lichenological minds was also held in Arcata, California, and included field trips to some very similar locations. The biggest difference in 2022 was the average age of the participants; while many 2001 folks were present in 2022, and are now somewhat grayer about the temples, the majority of this year's people were young! I love that lichens can inspire and impassionate all generations of humans, even if impassionate is not a verb.

I did not do much collecting on this trip, choosing instead to socialize with people I had not seen in a number of years, and idly talk about work, family, lichens, adventures, lichens, food, schedules, lichens, travel, lichens... well, you get the picture. The two most interesting specimens were given to me by others. Thank you Krissa and Sarah! I'm still working on one of them (see below). But it's not that there weren't lichens in abundance. The Samoa Dunes and Wetlands has epiphytes galore, including corticolous crusts and a diverse foliicolous community, and if you're in the right place there is also a small soil crust community. This kind of forested hypercoastal habitat is nearly the last of its kind in California, at least until you get down towards the Mendocino-Fort Bragg area.

I did the same at Bald Mountain, which we visited courtesy of Green Diamond Resource Company. It was just too pleasant to sit on a rock and listen to the great time everyone was having, and enjoy the slightly warm sun.

There had also been a day of presentations at Cal Poly Humboldt, courtesy of Northwest Lichenologists. I got to meet Einar Timdal, whom I have always admired for his early online database version of the *Bryologist's* regular print feature *Recent Literature on Lichens* (RLL), which was and is a fabulous compilation of lichen literature references. I know, it may not sound like much today, but in the late 90s it was the go-to source for lit searches.

And of course nothing rounds out the day like an evening of shared food and beverages. We had the great good fortune this year of doing that twice; once for Mexican food in Arcata, and then again for the traditional CALS potluck birthday celebration. I think a great time was had by all.



An unknown from the foredunes at Samoa Dunes and Wetlands; maybe *Absconditella*? Photo by Tom Carlberg.

President's Message

The California Lichen Society has roared back to life in 2022 after almost no in-person activities in the previous two years, and it has been a lot of fun. We kicked things off with a well-attended joint California Lichen Society-Northwest Lichenologists annual meeting in March. This was a huge success—see the article earlier in this issue for an in-depth summary of our activities in and around Arcata.

Soon after the annual meeting, many of our members and some newcomers got together for a weekend foray to Sugarloaf Ridge State Park. We had the pleasure of being joined by **Dan Levitis**, a naturalist with a background in lichen research (*Xanthoparmelia* population demographics), who helped guide our explorations. Most of the park has burned in at least one of two fires that have occurred there in recent years. Although some upland areas were really toasted, we were happy to see that a great diversity of lichens survived in areas that burned at lower severity. These lichen refugia included riparian areas, a number of rock outcrops, and many of the live oak woodlands. Several CALS members also joined a bioblitz that **Jennifer Rycenga** helped organize at Devil's Slide later in the spring.

A small delegation of CALS members—**Jes Coyle**, **Klara Scharnagl**, and myself—attended the American Bryological and Lichenological Society's annual meeting in Anchorage, Alaska, this summer, in conjunction with the Botanical Society of America's annual conference. This provided a fantastic opportunity to hear about cutting edge lichen research, network with colleagues from around the world, and visit exciting tundra, taiga, and wet forest lichen communities. If that sounds like a good time to

you, consider joining us for next year's meeting in Boise.

We have more exciting events planned for this fall, when the lichens will hopefully fluff up with abundant rains. **Jen Riddell**, one of California's foremost experts on air pollution effects on lichens, is organizing a public foray in Hopland (Mendocino County) the weekend of November 9. Overnight lodging and camping will be available, and it should be a great opportunity to explore a beautiful corner of the state. There will also be a few public lichen workshops and classes this fall and winter in the Bay Area—check out our calendar and social media for more info.

Supporting lichen research in California, especially for early career researchers, remains one of the top priorities for CALS. I am happy to report that the Board has voted in favor of my proposal to expand both the size and number of small research grants we offer this year. In previous years, we have funded two or three grants of \$750-1000, and this year we will consider funding up to four grants at \$1000-1500 each. We know that performing research is more expensive than ever, and we hope this modest increase in funding will lead to some exciting research in the years to come. Please see the detailed information on how to apply for a grant elsewhere in this issue.

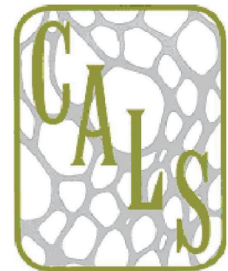
As happy as we are to be doing a lot of things in person again, the pandemic showed us that online resources and events can nicely complement IRL activities and expand our reach. Providing digital opportunities to engage with CALS is especially important since our membership spans a large geographic area. Our

Instagram following continues to grow (@californialichens), and we are excited to have **Caitlyn Allchin** joining our social media team. We have begun using Eventbrite to organize in-person events, which has helped us reach a broader audience, recruit new members, and bring in some donations. I am also happy to report that the CALS google calendar (californialichens.org/calendar) is now being updated again—you can see it on our website and add it to your own google calendar if you'd like. Finally, we hope to tackle a website update in the next few months but have yet to find a volunteer to lead this project. Please drop me a line if you know someone who would be interested in helping with this!

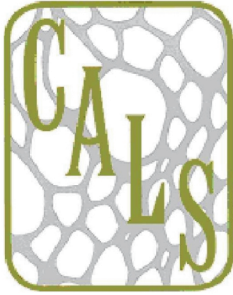
When I became the President of CALS at the end of 2021, my main goals were to expand our

outreach efforts, build a stronger community of California Lichenologists, and help the next generation of lichenologists establish themselves in our field. It is great to see that we seem to be making progress on all of these fronts, and I am very grateful to all the volunteers and donors who are making this possible.

See you in the field,
Jesse



The 2022 CALS annual meeting was a wonderfully intergenerational gathering. I got to spend some time on the trail with our youngest attendee, 7-year-old Analucia Vilella.



CALIFORNIA LICHEN SOCIETY

PO BOX 472, FAIRFAX, CALIFORNIA 94978

The California Lichen Society (CAL S) seeks to promote the appreciation, conservation, and study of lichens. The interests of the Society include the entire western part of the continent, although the focus is on California.

Members receive the Bulletin of the California Lichen Society (print and/or online access), voter rights in society elections, access to the CAL S community, and notices of meetings, field trips, lectures, and workshops.

Membership Dues (in \$US per year)

Student and fixed income (online eBulletin only) - \$10
Regular - \$20 (\$25 for foreign members)
Family - \$25
Sponsor and Libraries - \$35
Donor - \$50
Benefactor - \$100
Life Members - \$500 (one time)

Membership dues can be made payable to:
California Lichen Society, PO Box 472, Fairfax, California 94978

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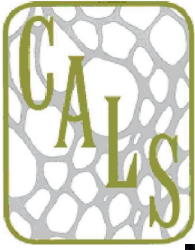
To join or renew online, please visit www.californialichens.org/membership

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Bulletin: Jes Coyle and Justin Shaffer, Editor@californialichens.org



Looking for lichens around Arcata at the 2022 NWL and CALS joint meeting!



The group investigates the lichens of old growth redwood forests at Prairie Creek State Park.



The finer points of *Usnea* identification can inspire a range of emotions as we learned at the Thursday field trip in the foothills.



There are always opportunities to lichenize— even in the parking lot while we're gathering to carpool!

Learn more in the meeting report on pg. 13 inside.

Photos by Jesse Miller