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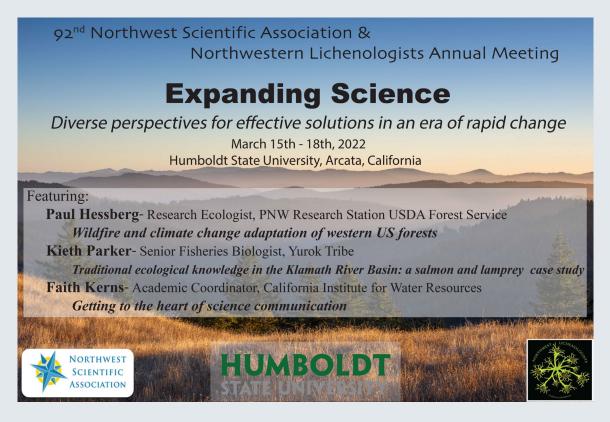
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#### **Upcoming NWL Events**

#### 2022 Annual Meeting

The NWL meeting is held annually in conjunction with the Northwest Scientific Association meeting. This usually happens in mid to late March. Locations are different each year, chosen from within the greater Pacific Northwest area. The annual meeting typically has four components: talks that present ongoing or completed lichen research (we try to keep this as casual and informal as possible); a workshop on a particular lichen topic, genus, or area; field trips to some local spots of interest; and evening socializing, usually at a local restaurant.



#### <u>Recent NWL Events</u>

#### 2021 NWL Certification Exam and Training

By Amanda Hardman

#### What is the certification for?

Certification demonstrates competency in a particular group of species in a particular region. This includes field and laboratory identification and recognition of rare or listed species. Our initial certification program is for macrolichens in the Pacific Northwest.

#### Why is there a certification program?

- to promote and encourage professional development, growth, and renewal
- to enhance the visibility of the profession
- to maintain and promote high standards of performance by all members of the profession
- to publicize and exemplify the <u>Code of Ethics</u>

The 2021 NWL certification and training was held at the Cispus Learning Center in the Gifford Pinchot National Forest near Randle, Washington (Photo 1). This facility offers classrooms, housing, and abundant opportunities to explore the lichen flora of the Western Washington Cascades. We rented three buildings to house most of the participants, while a few others came ready to camp. Eleven participants joined the two facilitators, Amanda Hardman and John Villella. Six of the group challenged themselves to a written exam which covered the characters, look-alikes, and habitats of 76 rare PNW species. The written challenge was followed up with an FIA lichen indicator field exam where Amanda and the six examinees had two hours to find as many epiphytic macrolichens as they could. Meanwhile, John and the other five participants did a practice plot just downstream. Major substrates in the test plot included Franquia purshiana, Acer macrophyllum, Acer circinatum, Pseudotsuga menziesii, Thuja plicata, and Tsuga heterophylla. Habitat was a mix of denser, shadier conifers and areas covered by more open hardwood canopy and shrub pockets. This mix of micro-climates provided for a diversity of lichens. Following the field challenge, the test group returned to Cispus to spend the evening independently identifying the collections while the trainee group worked together to identify species and explore the rich flora around campus. Fifty-two species, including eleven cyanolichens, were collected from the test plot. Species that were only collected one time included Alectoria sarmentosa, Cladonia bellidiflora, Hypogymnia inactiva, Hypogymnia tubulosa, Lobaria scrobiculata, Melanohalea multispora, Parmelia hygrophila, Peltigera membranacea, Physcia tenella, Platismatia stenophylla, and Xanthomendoza hasseana. Two participants passed the field test and are now eligible to retake the written exam the next time it is offered. The Cispus Center provided a quiet and comfortable place to work and stay. This facility, which is normally bustling with school kids, was completely empty except for the NWL group, a few staff, and a couple of campers. We had a rainstorm which led to a morning power outage, but camp stoves allowed us to make coffee, and headlamps powered our scopes. Everyone came vaccinated against Covid-19, rapid tests were done before

gathering, masks were deployed indoors, and no one got sick. We will be organizing the next event in Oregon, stay tuned for details.





#### **Upcoming Workshops / Courses**

We have not been informed of any upcoming workshops or short courses. It is likely that the Siskiyou Field Institute will have a short course on either lichens or bryophytes during autumn of 2022. Stay tuned: <u>https://siskiyoufieldinstitute.org/</u>



The North Cascades Institute often has short courses on lichens: <u>https://ncascades.org/</u> Also check the <u>NWL Lichen News</u> for information on upcoming talks and guided hikes.



News and Projects from NW Lichenologists at Home and Abroad

(Generally in the order received)

#### Searching for Umbilicaria phaea var. coccinea in Eastern Washington

Meaghan Petix School of Biological Sciences, Washington State University (WSU) meaghan.petix@wsu.edu

On a sunny winter day in February, a group of four lichenologists/lichen-enthusiasts (Dr. Jessica Allen and Chandler Lymbery from EWU, and Courtney Matzke and Meaghan Petix from WSU) met up for a socially distanced lichen foray to try to relocate a population of Umbilicaria phaea var. coccinea that had been previously documented near Vantage, WA (Grant County), along the Columbia River. The previous month this species had been discussed during an IUCN SSC Lichen Specialist Group -- Lichen Red Listing workshop, organized and led by Jessi, where participants gathered to work on publishing a Global Red List Assessment for this species and other potentially threatened lichen species. Umbilicaria phaea var. coccinea is endemic to the northwestern continental United States, where it has been found in northern California, Oregon, and Washington. Known populations in Washington are very sparse and the assessors were curious if the population near Vantage, WA, could be relocated as this might impact the area and extent of occurrence. A collection had been made by Elroy Burnett (esteemed botanist, lichen enthusiast, and Caliciales specialist) back in 1997 and is now accessioned in the Burke Herbarium at the University of Washington. Our group was able to use the coordinate and location description from this herbarium voucher to pin-point our search and we were all exuberant (and honestly, a bit shocked) when we quickly found this charismatic lichen right near the coordinate! Jessi first found one small individual thallus on a rock (which we initially thought might be the only one), but then we were amazed to find a considerable population when we went atop a basalt rock bench. We searched for a while around other rock outcrops, on both sides of the highway, but we didn't find other occurrences. We were all curious about what more intensive survey efforts along the Columbia River might uncover; hopefully those efforts could happen in the near future. This bright red lichen was one I've been wanting to see for the past few years, and I feel incredibly lucky that I was able to see it and have such a fun day lichenizing with a great group!



#### Effects of the COVID Pandemic on Lichenology

We recently reached out to discover how the COVID pandemic has affected the work of lichenologists. Thanks to those who contributed!

#### From Sarah Norvell:

Conducting lichen research during the COVID-19 pandemic has provided a meaningful respite from the relative chaos that has become life outside of lichens. I have adapted to sharing my dinner table with my microscopes, the hours spent with them preferable to some spent with relatives these days. I have relished each one of my solo fieldwork trips this season, no social distancing needed between myself and the trees. And finally, while I have thoroughly enjoyed my alone time with the lichens this year, the pandemic has also brought me closer to lichenologists from across the globe. I find myself secretly hoping that Zooming into conferences (and NW Lichenologist Symposiums!) will remain a part of our changed world.

#### From Bruce McCune:

My initial shock from COVID-19 restrictions was figuring out how to teach lab classes online (hmm... well, I survived that but would prefer in-person both for my sake and the students). Meanwhile, I took on many building projects and home repairs, temporarily eliminated my backlog of lichen IDs, and finished off a big effort on terricolous *Aspicilia* (now <u>published</u> in our monograph series). I still had lots of outdoor activities, but with more in-state travel and less distant travel, targeting our special groups of interest (*Dermatocarpon*, brown *Lecidea*, *Leptogium* and *Scytinium*, yellow *Rhizocarpon*, *Stereocaulon*, and *Umbilicaria*). Fortunately, we were able to keep lab and herbarium work running on at least a few cylinders most of the time, for which I greatly appreciate my hardworking, dedicated team.

#### From Jack Massie:

Before the pandemic, I had given many PowerPoint presentations on lichens - to community groups, organizations, professional groups, as well as specific groups; for example, Okanogan Highlands Alliance, Cowiche Canyon Conservancy, and Central Washington University's Fall Science Series.

I also led lichen field trips, complete with lichen checklist, color photos of the most common species of a particular area and specimens in a tailgate presentation before going into the field.

All this came to a screeching halt when COVID hit. Just when there was a small window, it was slammed shut again with the increasing cases now.

## Status of *Pannaria* "*rubiginella"* and *Hypotrachyna riparia* at Fishermen's Bend Day Use Area

#### From Charity Glade

I have some unfortunate news to report on the populations of two rare lichens known from Fishermen's Bend: *Pannaria* "*rubiginella*" and *Hypotrachyna riparia*. First, a little background on the *Pannaria* species and why the epithet is in quotes: Bruce McCune, Matthias Schultz, and Terry Fennell wrote about the *Pannaria* population at Fishermen's Bend, located east of Salem, OR, in 2019 (unpublished manuscript). It had been recorded first as *P. rubiginosa*, then *P. rubiginella*. DNA was extracted and tested in 2018.

"In January 2018, we sequenced a new specimen of "*Pannaria rubiginella*" from Fishermen's Bend in Oregon. That sequence turned out to not match *P. rubiginella* from South America, where the species is described from (Jørgensen & Sipman 2004). This left the status of the Pacific Northwest populations uncertain. Only one specimen represented in GenBank (from Coronation Island in coastal Alaska) had an ITS sequence close to ours, and it had also been misnamed *P. rubiginella*."

I had joined Terry, Bruce, and two additional botanists on a 2018 visit to Fishermen's Bend to look for this and other lichens. Pannaria "rubiginella" was abundant in much of the forested Day Use Area and Bruce pointed out that all three PNW species of *Hypotrachyna* occurred within meters of each other along a short stretch of the Santiam River. The habitat at Fishermen's Bend, with abundant ash trees near a bend in the river which likely increases the site's humidity, was uniquely suited to host these species (Fennell, pers. Comm., McCune et al. 2019). The 2020 Beachie Creek Fire, sadly, burned up the vast majority of trees on site, including the ash and Doug fir that had hosted the *Pannaria*. There had been additional sites at the Santiam State Park until a fire swept through in 2019, after which only one Pannaria site was found, with unsuccessful subsequent efforts to relocate it (*ibid*.). The Beachie Creek fire re-burned the area at low to moderate intensity. Additional sites are not known exist elsewhere along the Santiam. I visited Fishermen's Bend twice this year. Seeing that the dramatically altered upland portion of the park was no longer supportive habitat, I focused my time on the narrow strip of riparian trees and shrubs remaining along the Santiam River. During the first visit I found the uncommon Hypotrachyna revoluta and common H. sinuosa but did not relocate the H. riparia site Bruce had found in 2018. On my second visit I scoured the remaining riparian habitat farther east (at

Bruce's suggestion) and found a single thallus of *H. riparia*. I'm hopeful that the population extends farther along and across the river beyond Fishermen's Bend, and that the site will eventually be repopulated.

Jørgensen, M., and H. J. M. Sipman. 2004. A revision of the *Pannaria rubiginosa* complex in South America. Nova Hedwigia 78(3-4):311-327.

McCune, B., M. Schultz, and T. Fennell. 2019. *Pannaria* in the Pacific Northwest. [Unpublished manuscript.] Dept. of Botany & Plant Pathology, Oregon State University, Corvallis, Oregon.



#### Lichen CitiSci Community Science Experience

Do you like hiking in California wilderness areas managed by the US Forest Service? Are you curious about lichens and interested to learn more about air quality? Combine these passions by collecting lichens for the USFS to help us learn more about air quality in wilderness areas! Join Lichens CitiSci and get trained on how to identify and collect lichens for air quality monitoring while also exploring beautiful wilderness. Volunteers will learn all of the details while moving through our online digital training toolkit at their own pace and connecting with other volunteers.

Most of the mountains in California have an abundance of wolf lichen (*Letharia vulpina*). By sustainably collecting small quantities of the wolf lichen we can measure the concentrations of pollutants present in its tissue to learn about pollutants that are present in the air.



Left: *Letharia vulpina*, also known as wolf lichen, being collected for air quality monitoring. Right: beautiful mountain landscapes visited while participating in this community science experience.

Picture this: while on your hike in the wilderness you stop for lunch and see some trees just dripping with wolf lichen. Then you take an extra 30 minutes to collect, record the location, put things away in your backpack and you're done! Interested in getting involved? Get in touch for more information!

https://lichenscitisci.org/

lichencitisci@gmail.com

@lichencitisci

Lichens CitiSci Team [Adrienne Kovasi + Hanna Mesraty]

#### **Lichen Stereo Cards**

From Fred Rhoades

When viewed at six inches across or less, with your eyes lax (imagine focusing on something far behind your computer screen), these stereo images cross/overlap, creating 3D lichen masterpieces.

Cladonia rangiferina Sulfur Creek Lava Flow, Mt. Baker, WA © 2014 Fred M. Rhoades



Lichen miscellany Prince Phillips' steps trail, Genovesa Isl, Galapagos, Ecuador © 2017 Fred M. Rhoades



Marine iguana, lichens and blue-footed booby Santa Cruz Isl, across from Eden Isl, Galapagos, Ecuador © 2017 Fred M. Rhoades



# **Parmelia saxatilis on red alder bark Rock Trail, Larabee State Park, WA** © 2019 Fred M. Rhoades



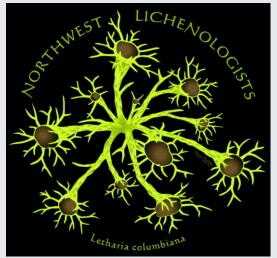
# **Trypethelium aeneum** Prince Phillips' steps trail, Genovesa Isl, Galapagos, Ecuador © 2017 Fred M. Rhoades





### Lichen Apparel and Publications

#### Letharia columbiana apparel



Northwest Lichenologists offers hats, tote bags, patches, and a variety of tshirts featuring the NWL *Letharia columbiana* icon. Please visit our <u>online store</u> for prices and ordering information.



#### **Monographs in North American Lichenology** A series sponsored by Northwest Lichenologists

Northwest Lichenologists aim to produce a series of reasonably-priced, peer-reviewed, paperback academic books on lichens, with a focus on topics of regional interest, such as generic monographs, annotated state lists, ecological works, local floras, and symposium proceedings. Our purpose is to provide an outlet for very long papers and books of wide interest but that are too long for regular scientific journals. Volumes will be produced sporadically. We expect 0-2 volumes per year. Works on any aspect of lichenology will be considered.

For ordering information, please use <u>Monographs</u> under the "Store" tab at the new NW Lichenologists website.

Order by credit card using PayPal from www.nwlichens.org

#### Monographs in North American Lichenology, Vol. 5

## *Revision of the* **Aspicilia reptans** *Group in Western North America, an Important Component of Soil Biocrusts*

*Aspicilia* in the broad sense is one of the most common and speciose genera of saxicolous lichens in the world. It is also a common genus in the biological soil crusts of arid and semi-arid parts of North America, as well as on other continents. Analysis of DNA sequences and morphology from *Aspicilia* in soil crusts revealed previously unrecognized species that are ecologically, geographically, morphologically, and genetically distinct. Six previously unrecognized species are described. The new species are mostly infertile, primarily terricolous, and are separable in most cases by a key to subtle differences in morphology, anatomy, and secondary chemistry.

Although we have released a <u>free pdf</u>, we have made a small, limited print run. These are available for \$30, first come, first serve. Because we do not plan to reprint these, they are guaranteed to become a collectible -- be sure to have a full set!

McCune, B. & J. Di Meglio. 2021. **Revision of the** *Aspicilia reptans* **Group in Western North America, an Important Component of Soil Biocrusts**. <u>Monographs in North American</u> <u>Lichenology</u> 5: 1-92. ISBN: 978-0-9790737-5-5

## Revision of the *Aspicilia reptans* group in western North America, an important component of soil biocrusts

BRUCE MCCUNE AND JOSEPH DI MEGLIO



2021

Monographs in North American Lichenology Vol. 5

Northwest Lichenologists

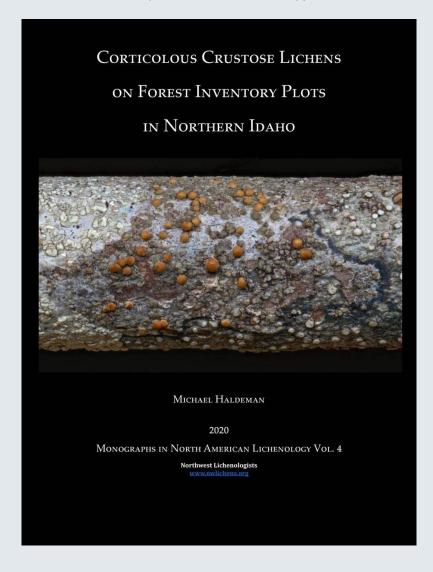
www.nwlichens.org

## *Corticolous Crustose Lichens on Forest Inventory Plots in Northern Idaho*

This richly illustrated monograph provides excellent habitat and substrate preferences for barkdwelling crustose lichens and lichenicolous fungi in the northern Rocky Mountains of Idaho. Four main sections describe habitats, lichen species, occurrences for each phorophyte species, and lichenicolous fungi. It should prove useful throughout the Pacific Northwest region.

Haldeman, M. 2020. Corticolous Crustose Lichens on Forest Inventory Plots in Northern Idaho. Monographs in North American Lichenology 4: 1-71. ISBN: 978-0-9790737-4-8

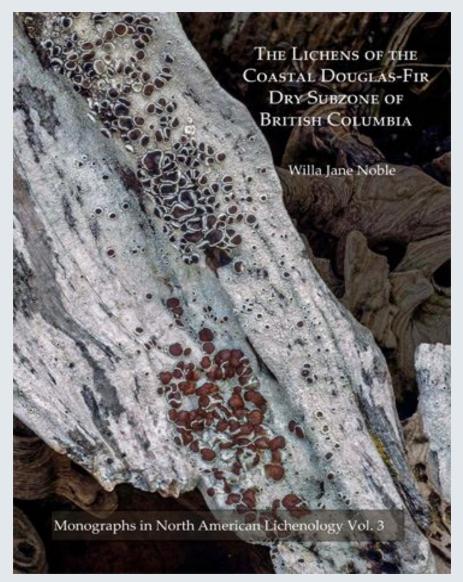
Free pdf download available. Print copies are available, but supplies are limited. Order now!



#### The Lichens of the Coastal Douglas-Fir Dry Subzone of British Columbia

The single most valuable book for people interested in learning the crustose lichen flora west of the Cascade Range has been Willa Noble's unpublished Ph.D. dissertation. This massive work contains an excellent lichen flora for a portion of British Columbia. But its importance extends well beyond that. It is an indispensable reference work for lichen studies from Alaska to northern California.

Noble, W. J. 1982, Reprinted in 2017 with nomenclatural updates by Michael Haldeman. **The Lichens of the Coastal Douglas-Fir Dry Subzone of British Columbia**. <u>Monographs in</u> <u>North American Lichenology</u> 3: 1-260. Pbk. \$30. Keys and full descriptions, B/W line drawings of spores. ISBN-13: 978-0-9790737-2-4



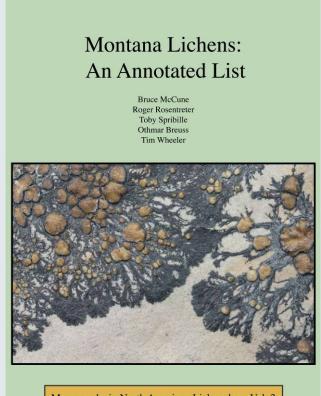
#### Montana Lichens: An Annotated List

Why would a non-Montanan lichenologist want one? This is the first comprehensive summary of the occurrence, literature references, and ecological context for lichens in any state or province in the Pacific Northwest or northern Rocky Mountains. Because we also include reports from adjoining states and provinces, the book should be useful in a broad area. The monograph will be an invaluable reference for people delving into either crustose lichens or macrolichens.

So far, a total of 1074 species are documented from Montana. Of these, 283 species are new for the state and 19 are new to North America. We discuss the rare, threatened, and endangered lichens of Montana. Priorities for surveys and monitoring are evaluated by placing species in one of eight categories, based on all combinations of global rarity, ease of detection, and habitat vulnerability.

You will also find new names for a number of old friends. Do you recognize *Lobaria anomala*? *Scytinium palmatum*? *Circinaria rogeri*? Dig in and find out.

McCune, B., R. Rosentreter, T. Spribille, O. Breuss and T. Wheeler. 2014. **Montana Lichens: An Annotated List.** <u>Monographs in North American Lichenology</u> 2: 1-183. Pbk. \$30. ISBN-13: 978-0-9790737-1-7



Monographs in North American Lichenology Vol. 2

#### Biotic Soil Crust Lichens of the Columbia Basin

Why write a book for identifying soil crust lichens? We have three reasons: (1) they are ecologically important, (2) they can be difficult to identify with existing sources, or they are omitted altogether, and (3) they should be more widely recognized for what they are.

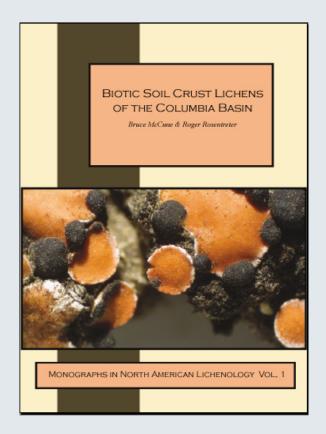
Macrolichens are much better known in North America than crustose lichens, but most of the lichens found in biotic crusts are crustose lichens. Keys and line drawings for macrolichens from the Pacific Northwest and northern Rocky Mountains are provided by Goward et al (1994), McCune and Goward (1995), and Goward (1999). Brodo et al. (2001) and McCune and Geiser (1997) provided color photos for selected species. Despite these resources, almost none of the lichen species growing in biotic crusts in the Pacific Northwest have been illustrated with color photos in sufficient magnification and detail for confident identification. We hope that this book will help to relieve that problem.

Lichens in soil crusts are often difficult to identify. Currently available books for identifying lichens do not illustrate the critical features needed for identification. We try to fill this need by providing photographs of all of the species at the necessary scale – ranging from what you can see with a hand lens to what you can see through a compound microscope. Wherever possible, we emphasize macroscopic features, but in many cases microscopic characters make the task much easier and help to confirm the identification.

This book is aimed at both technical and naturalist audiences. We hope that the use of color photographs will help someone without much experience, while we strive to provide the technical details needed for more certain identification.

McCune, B. and R. Rosentreter. 2007. **Biotic Soil Crust Lichens of the Columbia Basin.** <u>Monographs in North American Lichenology</u> 1: 1-105. Pbk. \$30. Fully illustrated in color. ISBN-10: 0-9790737-0-7.

\*\*\* Reprinted in 2018 with updates to nomenclature and much improved color rendition! If you are already a regular user you will love the reprint, easily worth the \$30 for a new copy. \*\*\*



#### Sample page from Biotic Soil Crust Lichens of the Columbia Basin:

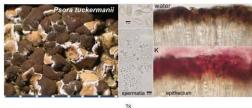
#### Key S - Pale-edged Brown Squamules, Apotheciate

1a Squamules orange, pinkish orange, or brick red. Squamules medium-sized, generally 2-4(6) mm diam, flat to concave in the center, upper cortex partly prinose or not proinose; medulla usually Ke, P- (in our area with no substances or trace of norsisticit, narely K+Y to R, P+O (norsticitic); an acid-deficient chemotype is also common and widspervale, a hyposalacianic acid chemotype is seattered throughout the range of the species; very common on highly calcareous, exposed soils, where it is almost always present *Psora centat* (Tayl.) Reinke, which occurs south of the Columbia Basin, is similar in some ways to both *P*. *Acceptions* and *Psore decipiens* (fledow). Hoffm. (Psora centat (Tayl.) Reinke, which occurs south of the Columbia Basin, is similar in some ways to both *P*. *Acceptions* and *P corebrioms*, but is distinguished by the large squamules that are strongly depressed in the center and contain norsticitic acid (K+Y to O, P+O). *Psora decipiens* also has a norsticitic acid schemotype, but that species is arctic-alpine.]

1b Squamules some shade of brown or gray-pruinose over brown

Squamules some shade of brown or gray-prunose over brown. 2a Edges of squamules not principes but uptured and exposing the pale lower surface; thallus C+ pink, KC+R or pink (gyrophoric and locanoric acids). Squamules 1-7(11) mm diam, concave with an ascending margin: upper strike pale to dark brown, often olive in the shade; apothecid adark brown to blackish, occasionally olive tinged; hallus containing gyrophoric and locanoric acids; on soil or rock, usually associated with soil or moss over rock or rock erevices, often among mosses; widespread in western N Am, at all elevations in our area

- 2b Edges of squamules pruinose, upturned or flat; thallus C-, KC-3A pothecia reddish brown; thallus light to dark brown. Squamules 1-5(7) mm diam, pale brown to medium brown (to pale greenish brown when shaded), epruinose to distinctly white prunose along the margin, convex to slightly concave; apothecia generally reddish brown to medium brown, convex and immarginate even when young; epitymenium K+R (like all *Psort* spp.); most common on HC1+ rock and on soil in crevices in HC1+ rock, but also on HC5 substrates; one of the most frequent *Psort* spp. in the West, specially on exposed calcarcous soils and in rock crevices 3b Apothecia black; thallus dark brown, whitish, or greenish tan
  - sponecia isace; inalitis aare, orown, winisa, or greenisn ian 4 Apothecia magrinal. Squamies becoming strongly convex with numerous fissures, though occasionally slightly to deeply dimpled in the center, to 8 mm diam, variable in color from completely white prunisoe on highly calcaroous substrates to dull vellowish brown, olive brown, pole tan, or greenish tan on more acidic substrates; often forming thick mounds of squamules; thallus containing atranorin; widespread and common, especially on calcaroous soils Porus cerebriformis W.A. Weber





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#### **Booklets**

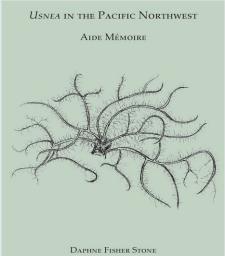
#### Usnea in the Pacific Northwest, Aide Mémoire

by Daphne Fisher Stone, illustrated by Hannah Wilson and Rachel Werling

Inspired by an "Aide Mémoire" booklet produced by the British Lichen Society, this booklet provides a compact reference to Usnea in the Pacific Northwest with black and white line drawings, identification tips, and more. It should be useful to professionals and beginners alike. At the top of each page is a general statement about where the species is found in the Pacific Northwest. Each page shows several sketches. At the top left is an "icon" intended to show the general growth form. The icons used are tufted and bushy; pendulous without fibrils; pendulous with fibrils; and several with a special form or coloration, including Usnea lambii, U. longissima, and U. silesiaca. On the top right is an illustration of a large branch, cut in half lengthwise and also cut across the branch. This shows the relative thickness of the cortex (C), medulla (M), and axis (A), a useful tool for identification. Below the first two sketches are one or two sketches showing characters on main and secondary branches. A few words indicate characters that are typical of the species, such as soralia shape, isidia, papillae, and dents in the main branches. You may notice that on most species I do not describe branching patterns. This is because most *Usnea* thalli that are collected are not perfect, mature thalli, so branching patterns are not usually obvious. The bottom of each page lists similar species and some differences between them and the highlighted species. At the end of the booklet is an illustrated glossary.

Stone, D. F. 2018. *Usnea* in the Pacific Northwest, Aide Mémoire. Northwest Lichenologists, Corvallis, Oregon, U.S.A. ISBN: 978-0-9790737-3-1 (pbk.)

Cost: \$12 per copy + \$3 for domestic shipping and handling for 1-10 copies. (For example, 3 copies would be 3 \* \$12 + \$3 = \$39. One copy is \$15 including shipping. Follow this link to order.



#### <u>Miscellaneous</u>

#### Lichen Blitz



#### Are you interested in hosting a NW Lichenologists lichen-blitz?

Once or twice a year NWL members come together for a multiday fieldtrip to a lichen-rich area in the Pacific Northwest of North America. The purpose is to get to know each other, and learn from each other while doing what we love to do: "lichenize." These gatherings bring together much expertise. Our collaborative efforts typically result in an inventory list of species encountered, often uncover noteworthy finds (rare species, disjunct populations, others of conservation concern), and thus far one undescribed species.

If you manage a natural area, and are interested in hosting a lichen-blitz, please contact us. We are a low-maintenance group that usually camps or bunkhouses in remote locations. Formal permission to collect lichens is naturally required. NWL will periodically review its blitz requests and optional associated donations; a foray to the best candidate area will then be scheduled.

Donations will be used to support the educational, nonprofit purposes of NW Lichenologists.

Contact the secretary of NW Lichenologists