Northwest Lichenologists Newsletter
March 2007

Compiled by Katherine Glew, Ph.D.
University of Washington
Herbarium, Burke Museum
Assistant Editor: Dana Ericson

Peter Nelson gringo57702@yahoo.com
Lichens in Central Alaska:
The NPS Central Alaska Network's (CAKN) vegetation monitoring program had an eventful field season that including collecting terricolous lichens and mosses across the vast landscapes of Denali National Park and Yukon Charley Rivers National Preserve. Carl Roland, James Walton, Peter Nelson, Larissa Lasselle, Abbie Ganglof and Sarah Stehn made up the two field crews working in Denali while another crew composed of Luke Bruenner, Jay Scelza and Brian Dykstra worked in Yukon Charley.

Crews in Denali surveyed a diversity of habitats, including lowland taiga, rocky alpine areas and alpine tundra, all north of the Alaska Range. So far, the species list from published and unpublished collections for Denali includes 359 lichens, though many new species are added after each round of taxonomic determinations. The ID work is ongoing for this year's collections so it is not clear how many new lichen records and localities for the park were found this year. However, crews accidentally encountered *Lobaria hallii* and found a Multiclavula spp., which would be new records for the park. Also, several new localities we found of *Dermatocarpon rivulorum* that add to the single previous known location while en route to plots.

Next year, it looks like crews will be going onto the south side of the Range, which will likely yield more oceanic species, like *Usnea longissima*, which occurs in Denali State Park nearby.

Peter Nelson is currently working as a contractor for the USFS in Corvallis, OR, splitting his time between working for Linda Geiser on lichen related topics and the other half for the Natural Resource Information System (NRIS) water module. He, along with Tim Wheeler, are slowly plodding forward on their Chilean lichen project, including identifying the samples they collected last year and designing the corresponding online lichen field guide. They will have a rough draft of the field guide completed by February 2007.

==========

Linda Geiser lgeiser@fs.fed.us

The US Forest Service has consolidated lichen community and elemental analysis data from across national forests of the US in a major revamping of our website. The new URL is: http://gis.nacse.org/lichenair. The website has updated links, new photographs and drawings, regional publications regarding lichens & air quality, climate change, &

water quality. Users can query the database and zoom to orthophotoquads of individual sites or groups of sites. Its possible to ask questions like, 'Where has *Hypogymnia oceanica* been found?' or 'What air-pollution sensitive lichens occur on Mt Hood National Forest and where, specifically, have they been found?', or 'Where in the Pacific Northwest can elevated lead levels be found in lichens?'.

Doug Glavich has been finishing a study of the distribution and habitat requirements of Survey and Manage aquatic lichens in the Northwest Forest Plan area (northern California, western Oregon and western Washington). Doug has recently written a new key to *Dermatocarpon* of the Pacific Northwest, which can be accessed from our revamped website in the publications sidebar (gis.nacse.org/lichenair). He and Linda Geiser, together with Peter Neitlich and Sarah Jovan, are exploring the idea of developing critical loads of nitrogen and sulfur deposition based on lichen community response. Both the National Park Service and US Forest Service are interested in developing North American counterparts to European critical loads for a variety of ecosystem indicators-- to use to guide policy and regulatory decision making. Linda Geiser is part of a research team sponsored by the National Park Service project to better understand the accumulation and ecological effects of organic contaminants (agricultural and industrial chemicals, combustion products, flame retardants) in national park ecosystems. The website for this project, The Western Airborne Contaminants Assessment Project is http://www2.nature.nps.gov/air/studies/air_toxics/wacap.cfm.

Peter Nelson and Linda Geiser are working on a set of lesson plans for students, teachers and naturalists to study lichens, especially in an air quality context. We have titles on our website (gis.nacse.org/lichenair under the sidebar 'fun with lichens'). We welcome input or contributed lesson plans!

Linda Geiser
Ecologist
USDA-Forest Service
Pacific Northwest Region Air Program

==========

David Wagner davidwagner@mac.com

BRYOPHYTE WORKSHOPS IN EUGENE, OREGON

Bryophytes I: All the Basics. April 15-16-17-18, 2007. The first day is Sunday, so we can start this one with a field trip. The idea is to get direct experience with the common species in their natural habitat and talk about bryophyte ecology. Then three subsequent classroom days will provide coverage of about 70 important species. Emphasis in this workshop is sight recognition of the species studied, learning the basic terminology to describe them, and characteristics of the major families.

Bryophytes II: Advanced Techniques. April 25-26-27-28, 2007. Three days of classroom work followed by a day in the field. This workshop emphasizes using technical keys to identify bryophytes. It is designed for people who have had Bryophytes I or similar training. This year special emphasis will be given to liverworts because of the publication last year of Doyle and Stotler's keys to California liverworts. Norris and Shevock's will be emphasized for mosses.

Travel and lodging are the responsibility of the participants; Dave will offer suggestions. Sandwich lunches are provided during the classroom days. Participants are responsible for lunches and transportation on field days; carpools encouraged.

Fee: $300.00 Class size is limited. To reserve a space, send $25 deposit (non-refundable processing fee). The $275 balance is due April 2. Please send check or money order (payable to Northwest Botanical Institute) to:
NW Botanical Institute
P.O. Box 30064,
Eugene OR 97403-1064
Please use checks or money orders; credit cards cannot be processed. A receipt will be provided at the workshop. An invoice can be provided upon request ahead of time, if needed.

Early registration is a good idea; he already has six signed up for Bryophytes II.

David H. Wagner, Ph.D.
Northwest Botanical Institute
P.O. Box 30064
Eugene, OR 97403-1064
davidwagner@mac.com
541-344-3327
Photo web site, with bryophyte images:
http://web.mac.com/davidwagner/iWeb/Site/Site%20page.html

==========

Roger Rosentreter <Roger_Rosentreter@blm.gov>, Botanist, Idaho State Office

Biological soil crust ID and ecology workshop

There are still openings in the National Training Center course on:
Biological soil crust ID and ecology workshop. taught by Drs Jayne Belnap and Roger Rosentreter This year the course is offered in sunny, **Lake Mead, NV. March 13-15**, 2007 (Tu W Th)

Class:BLM-2007-0313-Lake Mead, NV 1730-41
Course: Biological Soil Crusts: Ecology and Management
Course Code: BLM-TC-1730-41
Class Dates: 03/13/2007 – 03/15/2007 Tu W Th

Course Description: Describes the types of soil crusts and their importance in maintaining rangeland and soil health.

- Identifying soil crusts
- Importance of soil crusts.
- Effects of management actions on soil crusts.

Objectives: To educate land management personnel and public land users about biological soil crusts and why they are an integral part of the ecosystem. As a result of attending this class and field exercises, the trainee will be able to:

(1) Identify the major components of Biological soil crusts;

(2) Distinguish biological soil crusts from physical or chemical soil crusts;

(3) Determine what soil types and plant communities have high potential for biological soil crusts;

(4) Identify the ecological and hydrological roles filled by biological soil crusts;

(5) Assess impacts of different types and intensities of activities on biological soil crusts

(6) Develop management alternatives and guidelines that maintain ecological functions of biological soil crusts

(7) Integrate biological soil crusts assessment into routine monitoring procedures

Target Audience: Ecologists, biologists, range specialists, and botanists.
Tuition: **$200 for non-BLM Employees**
Course Tuition (for agency employees): $0.00
Length: 2 1/2 days
Contact: Mark Phillips (602)-906-5552; e-mail: Mark_Phillips@blm.gov
Secondary Contact: Earl Russell (602)-906-5635; e-mail: Calvin_Russell@blm.gov
Categories: Renewable Resources and Life Sciences

Classroom (Location): To be determined (Lake Mead, NV)

==========

ANNOUNCING FOUR DAY WORKSHOP: EPIPHYTIC CRUST LICHENS OF THE INTERIOR PACIFIC NORTHWEST

with CURTIS BJÖRK, TOBY SPRIBILLE AND TIM WHEELER
STILLINGER HERBARIUM, UNIVERSITY OF IDAHO,
MOSCOW, IDAHO, July 24-28, 2007

WHAT WE'LL ACCOMPLISH:
The workshop will include:

- crustose lichen morphology and terminology
- collecting technique
- field and lab identification
- crustose lichen photography
- lichen ecology
- lichen chemistry, including the use of thin layer chromatography (TLC).

We will use our draft keys to epiphytic lichens of British Columbia as a reference. Prior experience with lichens is helpful, but experience with crustose lichens is not necessary. We also encourage participants to bring their own material to use and identify during the course.

After an introduction to basic technique and terminology on Wednesday morning, we will leap into action with the first field trip: a quick excursion to the nearby University of Idaho Experimental Forest. On Thursday morning, we will travel south into old-growth ponderosa/Douglas fir forests in Asotin County, Washington with a view down into the spectacular Grande Ronde Canyon. Our Friday outing will take us to the forests of the St. Maries River Valley. Material collected in our outings will provide the hands-on opportunity to dive into advanced technique.

LOGISTICS: Box/sack lunches will be provided Wednesday through Friday. Saturday will be a chance to finish up identifications, and will conclude with an evening social. Dissecting and compound microscopes, chemical reagents and diagnostic keys, will be provided, as well as field trip transportation. Please bring your preferred collecting tools, bags and hand lens.

Fee: $275.00; student fee: $150.00. Class size is limited to 30 participants. To reserve a space, send $50 deposit (non-refundable processing fee) to Curtis Björk, by the registration deadline of January 31, 2007. The balance is due April 30, 2007. Please send check or money order to Curtis Björk, c/o Stillinger Herbarium, University of Idaho, Moscow, ID 83843. Please use checks or money orders; credit cards cannot be processed. A receipt/invoice will be provided at the workshop or sooner if requested.

WHO WE ARE: Curtis Björk has worked in field botany for fourteen years, and is the curator of lichens and bryophytes at the Stillinger Herbarium, University of Idaho. His current work is in ecology and floristics of crust lichens of the interior northwest US and southern British Columbia. Toby Spribille's work is currently concentrated on the epiphyte crust lichens of the Pacific Northwest, the lichen flora of the eastern Mediterranean and the systematics of epiphytic lecideoid lichens; he is based out of the University of Göttingen, Germany. Tim Wheeler is a freelance lichenologist and photographer based out of Arlee, Montana, currently working on a guide to the lichens of the Valdivian rainforest of Chile and the crusts of western Montana.

For more information, contact Curtis Björk (cbjork@onewest.net).

==========

ANNOUNCING: THE BRITISH COLUMBIA EPIPHYTIC CRUSTOSE LICHEN FLORA PROJECT: CONNECTING THE DOTS.

From: Toby Spribille (tspribi@uni-goettingen.de), **Curtis Björk** (cbjork@onewest.net), **Trevor Goward** (tgoward@interchange.ubc.ca) and **Tor Tønsberg** (tor.tonsberg@bm.uib.no)

Though spotted owls and many other birds and mammals depend on trees, they don't actually grow on them. Lichens, of course, are different.

In recent years we have become fascinated by the epiphytic crustose lichens of our region. To date, we have passed more than 30,000 specimens under our collective microscopes. So far we have documented some 550 species – a number that grows larger by the day. Included in this count are scores of species that still appear to have no names. During the same period, we have undertaken floristic studies in three of British Columbia's forest regions and one national forest in Montana. In each study, the resulting list of epiphytic lichens has exceeded 275 species. Rather astonishingly, we found that epiphytic lichen species (especially crustose lichens) often far outnumber vascular plants and bryophytes combined!

We've decided to formalize our project by announcing its main objective: a flora of the epiphytic crustose lichens of British Columbia. When published, this will constitute Part III of Trevor's "Lichens of British Columbia" series, and will follow roughly the same format. As with earlier volumes, we hope our work will be useful not just in B.C., but also in adjacent states and provinces. And to hedge our bets, we intend to incorporate several species known from surrounding regions, though not yet specifically recorded from B.C.

Funding for the flora project has yet to be secured. For the time being, we are looking forward to additional field work of the sort we have already undertaken. We hope our fellow lichenologists in both Canada and the U.S. will support this project by: (1) sending along difficult or otherwise interesting specimens; (2) letting us know of opportunities for floristic research on epiphytic crusts; and (3) joining us at workshops (see announcement in this issue of the newsletter).

Here's to fruitful collaboration in the years ahead!

==========

Curtis Björk cbjork@onewest.net

Recent and ongoing projects include curating and revising the lichen collection at the University of Idaho as part of his duties as the Curator of Lichens and Bryophytes at the Stillinger Herbarium. In the course of this and other recent work, Curtis has taken a particular interest in the genus Arthonia, and he is accumulating a collection in these

genera with the short-term aim of giving names to a some species new to science. The Idaho efforts have culminated in a new catalogue of Idaho lichens coauthored with Toby Spribille.

Trevor Goward and Curtis have launched their lichen identification service this year, having put through about 8000 lichens from Alaska, Alberta, and British Columbia. Field work this summer has given them the opportunity to delve into the epiphytic lichen flora of the dry portions of the Interior Douglas Fir zone, work that revealed surprising species richness and some complex ecological patterns.
Box 131 Clearwater
BC V0E 1N0, Canada

==========

Trevor Goward tgoward@interchange.ubc.ca
Trevor is pleased to announce that Ways of Enlichenment is really, truly nearing completion. That said, he could still use some more data points for four maps, as follows: (1) Lichen Hotspots, i.e., readily accessible places with exceptional lichen diversity or abundance. So far I have plenty of localities for B.C., but am rather weak on regions north (to the Arctic Ocean), south (to the Bay area) and east (to the leeward slopes of the Rockies). (2) Lichen Break Points, i.e., areas of transition between, say, fog zone lichens and other coastal lichens, temperate lichens and boreal lichens, wet side lichens and dry side lichens, base-loving lichens and acid-loving lichens, forest lichens and grassland lichens, and so on. (3) Cyanomorphs (also called symbiodemes) for any of the following species: *Peltigera aphthosa, P. britannica, Lobaria amplissima, Lobaria silvae-veteris, Nephroma articum, Sticta oroborealis*. (4) Substrate Use by *Lobaria pulmonaria*, i.e., localities where this species generally occurs: (a) only on rock; (b) also on branches and trunks of deciduous trees; and (c) also on conifer branches. If you think you have data for any of these maps, I hope you'll drop me a line at tgoward@interchange.ubc.ca. By way of enticement, I'm offering a free, signed copy of the book (that is, once it's published!) to anybody willing to step forward as a regional contact person on these and other similar items.

==========

Report from NW Lichenologist Field trip to Opal Creek,
Willamette National Forest, Sept. 2006
by **John Villella** <johnvillella@yahoo.com>

The Opal Creek Wilderness Area is a 35,000 acres low elevation ancient rain forest located on the western slope of the Northern Oregon Cascades. This forested area is dominated by Douglas-fir, Western Hemlock and Western Red Cedar. There are also many undisturbed streams and extensive rock outcrops, not to mention several old mine openings. During this three day foray into Oregon's largest remaining ancient forest many rare and interesting lichens were seen.

This workshop drew 29 lichenologists (and a few bryologists) from across the country as well as California and the Northwest. The days were spent exploring the area, making collections. Tin the evenings we keyed our collections and watched informal presentations given by the participants. Presentations included a wide range of topics: mites associated with *Pertusaria*, ecology of *Texosporium sancti-jacobi* in Oregon, and lichens of South America's Valdevian rain forest, just to mention a few.

The OSU Lichen/Bryophyte Study Group visited the area in 1994 and compiled an extensive list. Between 2001 and 2006 John conducted annual lichen workshops in the area and added several lichens to this list. Using this as a starter list, we concentrated on crustose species and in total 40 new species were added to the known flora of Opal Creek. Although these were mostly crusts several new macrolichens were also found. This brings the total number of lichens known from the Opal Creek Wilderness to 173. For a complete list of species known from Opal Creek see: http://discussion.crustose.net//index.php/topic,41.0.html

The following were some of the newly added species.

Candelariella vitellina

After Bruce McCune gave an intriguing presentation describing the species of *Candelariella* found in the West, this many-spored species was found.

Calicium glaucellum

Chaenotheca bruneolla

Chaenotheca hygrophila

Several of the buildings at the Opal Creek Ancient Forest Center date to 1930 when the camp was a mining town. Pin lichens were observed to be common and prolific on these old buildings and three new species were added.

Koerberiella wimmeriana

This was collected from a streamside rock and is only the second site for this lichen in Oregon.

Leptogium tacomae

This newly described *Leptogium* was found growing as an epiphyte in an open setting near one of the extensive rock outcrops that was explored.

Phylliscum demangeonii

Collected from several dry outcrops and was observed to be both free-living and parasitic.

Protoparmelia badia

This was found on granitic rock at one of the higher elevation sites.

Rhizocarpon cinereonigrum

Rhizocarpon distinctum

Rhizocarpon grande

Rhizocarpon geographicum

Rhizocarpon lecanorinum

Several participants made collections from this genus and a total five species were found.

Rinodina disjuncta
An infertile epiphyte on Alder, this was observed to be very common in Opal Creek.

Xanthoparmelia mougeotii
Despite all the rocky habitat at Opal Creek, this rare species is the only *Xanthoparmelia* to be found so far.

John Vellella's fertile ***Parmotrema.***
We will be doing a TLC for this lichen. If you have ideas for species, let John know.

Fertile Parmotrema population found by The Evergreen State College mycology class at Weatherwax City Park, Ocean Shores, Washington
Image by John Villella

==========

Kerry Knudsen <KK999@msn.com>

Judy and Ron Robertson collected the first record of *Acarospora dispersa* H. Magn. in western North America in Mt. Diablo State Park in "Rock City" on sandstone at 1640 feet. (#8326B). The species forms verrucareoles. It usually has a single immersed reddish disc. Around the disc there is a reddish stain on thallus. The areoles are usually dispersed and 1 mm across, sometimes somewhat lobed. The thallus is usually a pale brown, with an interrupted algal layer in well-developed specimens. Spore size is usually 4-6 x 2 microns, but is variable. All spot tests are negative.

Acorospora dispersa. Photo taken by Judy Robertson

Kerry originally determined the species for Dick Harris from the Ozark UPS holotype, collected by Green in South Carolina. It is quite common in southeastern North America (NY has approximately 60 specimens) to Ohio (James Lendemer collection). He has not seen it from Sonoran study area. Kerry will be glad to verify your collections. He plans to write a short paper about species, as there is limited information available.

Acarospora dispersa is a member of the *smaragdula* group with interrupted algal layers and thin paraphyses. It looks similar to *A. smaragdula* sensu strictu, especially when several areoles are separating. *A dispersa* differs from *A. smaragdula* in lacking norstictic acid and usually having one apothecia per areole. *Acarospora hassei* Herre, also has one apothecia per areole but has a chasmolithic thallus and is a rare species from California. *A. dispersa* is epilithic with a wider ecological amplitude, appearing similar to some morphs of the European *A. smaragdula* var. *lesdainii* (but that species has norstictic acid). *A. dispersa* has wide range and is expected in Pacific Northwest.

The *Acarospora* treatment by Kerry Knudsen in Vol. 3 of the Sonoran lichen flora will cover forty species and describe six new species. A montane species, *A. oreophila*, is expected in the Pacific Northwest.

Kerry Knudsen is currently working with Jack Elix and Valerie Reeb on a paper for Nova Hedwiga, "A Preliminary Study of the Genus Acarospora in South America"

covering fifteen species, one new to science. Valerie Reeb recently visited the famous Paris herbarium to hunt down the types of *Acarospora bella* and *Acarospora xanthophana.*

Kerry Knudsen and Jack Elix are publishing a new *Lepraria*, *L. santamonicae*, in the spring *Bryologist*, and two other new *Lepraria* species with J. C. Lendemer as third author: *L. adhaerens* in the spring 2007 volume of "Opuscula Philolichenum" and *L. texta* in Vol. 3 of the Sonoran lichen flora.

Kerry Knudsen, Lichen Curator
The Herbarium
Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124.
kk999@msn.com Knudsen@ucr.edu
951-8273601 (herbarium) 951-4428135 (cell)

==========

Sharon Eversman eversman@montana.edu
Sharon has lichen and bryophyte reprints and past copies of the Lchenologist to give away (1998 – 2005). The reprints are a collection from many people, plus some reports from various places.

If you are interested, please contact her. Sounds like she would be willing to send them on if you are interested. She is looking for people who are in need of references.

Sharon Eversman, PhD
Department of Ecology
Montana State University
Bozeman, MT
59717-0346

==========

Katherine Glew kglew@u.washington.edu
With the assistance of volunteers Chris Barnes and Dan Paquette, the University of Washington Herbarium has now posted its collection of Washington lichens through the Burke Museum Herbarium Web site:
http://www.washington.edu/burkemuseum/collections/herbarium/walichen.php

This is a static list, but within the next two years, it is hoped that the herbarium collection of lichens from the Pacific Northwest will be databased and available in a search form on the Internet. The collection list has been updated to current taxa, but several species may be listed by historical names.

Currently the WTU Lichen Collection has been organized geographically by state within the Pacific Northwest making it easier to search for loan material.

In the past two years, the WTU Herbarium has been collecting plants, lichens and bryophytes from the San Juan Islands. For lichens, previous collections were mainly restricted to the larger islands of San Juan, Lopez, Shaw and Orcas. This recent project involves the smaller islands owned by The Nature Conservancy, Bureau of Land Management and private individuals. Many of the smaller islands are refuges for birds and marine mammals. Having the chance to collect on the islands is an exciting opportunity to fill the void in our knowledge of species found on the islands. It is hoped that these collections will assist in the further preservation of this unique ecosystem.

Since the publication of the Lichens of North America by Brodo, Sharnoff, and Sharnoff it was determined that the most common *Placopsis* in the Pacific Northwest is *P. lambii.* I would be interested in obtaining information about the distribution of the true *Placopsis gelida* in PNW. If you have voucher specimens to verify distributions of the latter, please send the information to Katherine Glew kglew@u.washington.edu
This would be a fun project to clarify the distribution of both species.

Short notice on potetually rare lichens:
A new form of *Sagiolechia* has been observed on trees and driftwood in the San Juan Islands and the northeast corner of the Olympic Peninsula. Katie will be writing a paper with Tor Tønsberg, describing the species.

Two forms of fertile *Usnea* pendants were found in the Puget Sound region. Rick Droker found what appears to be a distinctly pendant *Usnea rigida*, not a typical growth form for that species.
Linda and Victor Rantala collected a fertile *Usnea* with soredia from along I-5. We are hoping to find more material to determine if this is some sorediate form under stress to form apothecia or a new combination of characters.