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The California Lichen Society seeks to promote the appreciation, conservation and study of the lichens. The interests of the Society include the entire western part of the continent, although the focus is on California. Dues categories (in $US per year): Student and fixed income - $10, Regular - $18 ($20 for foreign members), Family - $25, Sponsor and Libraries - $35, Donor - $50, Benefactor - $100 and Life Membership - $500 (one time) payable to the California Lichen Society, P.O. Box 472, Fairfax, CA 94930. Members receive the Bulletin and notices of meetings, field trips, lectures and workshops.

The Bulletin of the California Lichen Society (ISSN 1093-9148) is edited by Tom Carlberg, <tcarlberg7@yahoo.com>. The Bulletin has a review committee including Larry St. Clair, Shirley Tucker, William Sanders and Richard Moe, and is produced by Richard Doell. The Bulletin welcomes manuscripts on technical topics in lichenology relating to western North America and on conservation of the lichens, as well as news of lichenologists and their activities. The best way to submit manuscripts is by e-mail attachments or a CD in Word Perfect or Microsoft Word formats. Submit a file without paragraph formatting. Figures may be submitted as line drawings, unmounted black and white glossy photos or 35mm negatives or slides (B&W or color). Contact the Production Editor, Richard Doell, at <rdoell@sbcglobal.net> for e-mail requirements in submitting illustrations electronically. A review process is followed. Nomenclature follows Esslinger and Egan's 7th Checklist on-line at <http://www.ndsu.nodak.edu/instruct/esslinge/chcklst/chcklst7.html>. The editors may substitute abbreviations of author's names, as appropriate, from R.K. Brummitt and C.E. Powell, Authors of Plant Names, Royal Botanic Gardens, Kew, 1992. Style follows this issue. Reprints may be ordered and will be provided at a charge equal to the Society's cost. The Bulletin has a World Wide Web site at <http://ucjeps.berkeley.edu/rlmoe/cals.html> and meets at the group website <http://groups.yahoo.com/group/CaliforniaLichens>.

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Front cover: *Flavoparmelia subcapitata* (Nyl. *ex* Hasse) Hale *ex* DePriest & B. Hale, San Diego County, southern California, has distinctive capitate soralia with farinose soredia. Portion of thallus shown on dead branch of *Salvia mellifera*. X9. Photograph by Rick Riefner.

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Flavoparmelia subcapitata Rediscovered in Southern California

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Of the four species of the foliose genus *Flavoparmelia* occurring in North America, *Flavoparmelia subcapitata* (Nyl. ex Hasse) Hale ex DePriest & B. Hale is the diminutive one with lobes usually 1-3mm across and less than 5mm wide overall. *F. subcapitata* also has distinctive hemispheric or capitate soralia with usually farinose soredia (see Nash & Elix, 2002 for detailed description and genus key).

In 2001, only three species were reported as occurring in North America by Brodo. But *F. subcapitata* had only been reported in North America by Hasse (1913): "On twigs at San Diego, Alderson (communicated by S. H. Parish); determination by the late Doctor Stizenberger. The sterile specimen is too fragmentary to allow a full description." Only recently was it collected in Baja California by Jack Elix and Tom Nash. Thus in the Sonoran lichen flora it is reported as "apparently limited to NW Baja California and previously in southern California." (Nash & Elix, 2002). Since then *F. subcapitata* has been collected by Tom Nash in Baja Sur, extending its range south. On a global scale, *F. subcapitata* is not uncommon and occurs in southern and western Europe, Macronesia, South America, central and south Africa, and New Zealand (Nash & Elix, 2002).

Rick Riefner was sure he had collected *F. subcapitata* in 2001 at two locations, where it was uncommon growing on chamise, *Adenostoma fasciculatum*, and black sage, *Salvia mellifera*. Both sites were relatively close with one in Del Mar, near Del Mar High School, at the end of Del Mar Scenic Parkway, and the other in Soledad Canyon near the junction of 5 & 805 freeways. He sent a specimen to ASU for verification but the specimen was misplaced and was never verified. Kerry Knudsen has recently verified Rick Riefner's

Flavoparmelia subcapitata on dead branch of *Ceanothus verrucosus.* X 1. Photograph by Rick Riefner.

collections after studying the Elix and Nash specimens at ASU.

Kerry Knudsen is not particularly interested in macrolichens and in 2004 collected twigs of *Adenostoma fasciculatum* covered with the beautiful *Chrysothrix granulosa* while searching for terricolous and saxicolous crusts on eroded sandstone bluffs above St. Elijo Lagoon, an ecological preserve of the Fish and Game Department the UCR Herbarium is surveying. He sent a duplicate to lichenologist James C. Lendemer at the Academy of Natural Sciences of Philadelphia. During his tenure as associate curator at the ASU Lichen Herbarium Lendemer had studied *F. subcapitata* and recognized it immediately on the twig with *C. granulosa*. He analyzed it using thin-layer chromatography and found it contained as expected for the genus protocetraric acid and caperatic acid in the medulla.

Kerry Knudsen recently returned to St. Elijo Lagoon and did an informal survey for *F. subcapitata*. It occurs in a few acres of south coast maritime chaparral and was collected only so far on the twigs and small branches of *Adenostoma fasciculatum. F. subcapitata* was most commonly associated with the south coast endemic *Chrysotrix granulosa* and with *Parmotrema hypotropum* and even small amounts of *Usnea*. In the same general area the common and larger species *F. caperata* occurs on the bigger branches of *Quercus dumosa*, a characteristic shrub of south coast maritime chaparral.

Southern maritime chaparral in Del Mar, San Diego County, southern California, dominated by *Adenostoma fasciculatum* (chamise), *Salvia mellifera* (black sage), *Ceanothus verrucosus* (wart-stemmed ceanothus), *Xylococcus bicolor* (mission manzanita), *Quercus dumosa* (Nuttall's scrub oak), *Cneoridium dumosum* (bush rue), *Yucca schidigera* (Mojave yucca) and *Rhamnus crocea* (red berry). Photograph by Rick Reifner.

Rick Riefner Jr. made a third collection of *F. subcapitata* recently in Del Mar again, this time near the north extension of Torrey Pines Reserve, at the end of Del Mar Scenic Parkway on twigs and branches of chamise and black sage.

Due to the extensive development of San Diego County, chaparral has been greatly reduced in its range. Nonetheless, Hasse, Orcutt and others collected in the coastal area of San Diego County and we have only one historic report from California. It is unknown if *F. subcapitata* was ever abundant at the north end of its range, but nine collections from Baja California at ASU suggests that its current three sites are in the natural northern limit of its range in North America.

Until further collections are made in southern California, it is suspected the limiting factor in its northern range may be a combination of marine influence and historical accident. The substrates it has been collected on so far are among the most common shrubs in southern California.

Selected specimens: California: San Diego County: R.E. Riefner Jr. 01-62, 01-77, & 05-15 (UCR); Knudsen 1939A (UCR & hb. Lendemer) & 2574 (UCR, SDNHM, NY) <http://www.herbarium.ucr.edu/UCRDB.html>.

Special thanks to Shirley Tucker for reviewing this article and to Andrew Sanders, curator of the UCR Herbarium and my co-collector on both trips to St Elijo Lagoon.

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Nash III, T.H.& J. Elix. 2002. Flavoparmelia. In: Nash III, T.H., & Ryan, B.D., Gries, C., Bungartz, F. Lichen Flora of the Greater Sonoran Desert Region, 1: 194-196.f

Lichen Inventory of Pinnacles National Monument

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Abstract
In February of 2003 a lichen inventory of Pinnacles National Monument was conducted to provide park managers with a better understanding of their lichen resources. Three weeks of collecting produced 419 specimens, comprising 195 species in total from 67 different genera. One hundred and twenty-one of these species were first recordings for the Monument. Two new occurrences of the globally rare Texosporium sancti-jacobi *were discovered and range extensions were documented for two existing occurrences.*

Introduction
Pinnacles National Monument is located in western San Benito County in central California, about 40 miles inland from the Pacific Ocean, and 80 miles south of the San Francisco Bay Area. Together, the Mediterranean climate and composition of habitat types found at Pinnacles make it a hot-spot for lichen diversity. The rock outcrops for which Pinnacles is named are a key habitat for a great diversity of the park's lichen flora. In addition, the oak woodlands and open scree slopes amid the chaparral support prolific and unique lichen communities.

There have been relatively few lichen studies at Pinnacles considering its rich lichen diversity and long history as a protected landscape (designated as a National Monument in 1908). It was not until 1984 that C. W. Smith of the University of Hawaii at Manoa conducted the first formal lichen study of Pinnacles. Smith examined the corticolous lichen species within the Monument to assess local air quality conditions (Smith 1990). In 1983, Dr. Denis Desjardin discovered *Texosporium sancti-jacobi* (Figure 1), a globally rare lichen species, in the Monument. Follow-up surveys of *T. sancti-jacobi* habitat and associated lichen species were conducted by McCune and Rosentreter in 1991 and Bratt in 2002 (McCune and Rosentreter 1992, Bratt 2002). In 2002, S. Jovan established a permanent lichen monitoring plot at Pinnacles as part of the Forest Health Monitoring Program and assessed macrolichen species composition within the plot (NPS collection permit).

Despite these studies, a comprehensive lichen species list for Pinnacles was lacking and the need for an inventory still existed. In January 2003 the Inventory and Monitoring program, part of the National Park Service, funded a lichen inventory of Pinnacles. The framework for a systematic and comprehensive lichen inventory was established and the initial collection effort was undertaken in February 2003 (Benson 2003).

Methods
Using the National Park Service vegetation map for Pinnacles, lichen collection sites were identified in eight different vegetation communities (California buckeye, chaparral, grassland, holly-leaved cherry, oak woodland, riparian woodland, rock, and *Selaginella*/rock scree). At each site a one hectare area was searched for at least 30 minutes and the search was halted when 20 minutes had passed and no new species were found. The search effort focused on microhabitats associated with high lichen diversity (i.e. moist soils, rock outcrops, standing dead trees). A voucher specimen of each different lichen species observed was collected and later processed for storage in an herbarium.

A portion of the collections was identified at biweekly lichen identification sessions offered by the California Lichen Society (CALS). The remainder of the specimens were sent out to professional lichenologists for identification.

Results

During the three-week collection period, a total of 11 collection sites were visited, one site in each of the vegetation communities listed above except for the rock and *Selaginella*/rock scree communities which had three and two collection sites respectively. The inventory produced 419 collection specimens, comprising 195 species in total from 67 different genera (Table 1). One hundred and twenty-one of these species were first recordings for the Monument.

Two new occurrences of *T. sancti-jacobi* were discovered as part of the inventory. This brings the current total of *T. sancti-jacobi* occurrences in Pinnacles to six. In addition, range extensions were documented for two previously known occurrences of *T. sancti-jacobi*. Prior to this inventory, all *T. sancti-jacobi* records for Pinnacles were noted growing on

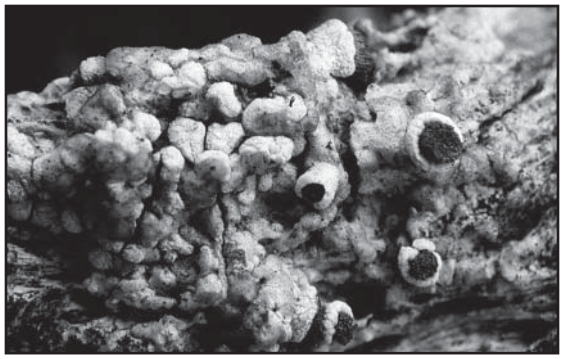

Fig. 1 Texosporium sancti-jacobi on downed log at Pinnacles National Monument. Photograph by Richard Doell.

old rabbit pellets. These new sightings document *T. sancti-jacobi* on the following substrates: dead *Selaginella* twigs, soil, other soil lichens, and a large downed log in the early stages of decay (bark missing but outer wood still hard).

A complete reference collection was compiled and is housed at the Pinnacles herbarium. The remainder of the specimens reside at the Santa Barbara Botanic Garden herbarium.

Discussion

The first collection phase of the Pinnacles lichen inventory was very successful, capturing a large portion of the park's lichen diversity. I estimate the inventory is 80% complete and expect that adding more sites in each vegetation community searched will uncover additional lichen species. Furthermore, establishing collection sites in the four vegetation communities not represented in this study (digger pine woodland, herbaceous, coastal sage scrub, and barren) may also contribute additional species to Pinnacles' lichen species list.

Table 1. Species list from the 2003 Pinnacles lichen inventory. Nomenclature follows that of Esslinger and Egan (1995).

Species

Acarospora cf. *glaucocarpa* (Ach.) Körber
Acarospora obpallens (Nyl.) Zahlbr.
Acarospora schleicheri (Ach.) A. Massal.
Acarospora socialis H. Magn.
Acarospora thelococcoides (Nyl.) Zahlbr.
Aspicilia caesiocinerea (Nyl. *ex* Malbr.) Arnold
Aspicilia calcarea (L.) Mudd
Aspicilia californica Rosentreter (Rosentreter 1998)
Aspicilia cf. *contorta* (Hoffm.) Kremp.
Aspicilia cinerea (L.) Körber
Aspicilia contorta (Hoffm.) Kremp.
Aspicilia sp.
Buellia disciformis (Fr.) Mudd
Buellia penichra (Tuck.) Hasse
Buellia sequax (Nyl.) Zahlbr.
Buellia stillingiana J. Steiner
Buellia turgescens Tuck.
Caliciales
Caloplaca bolacina (Tuck.) Herre
Caloplaca chrysopthalma Degel
Caloplaca demissa (Körber) Arup & Grube
Caloplaca flavorubescens (Hudson) J. R. Laundon
Caloplaca ignea Arup
Caloplaca impolita Arup
Caloplaca oregona H. Magn.
Caloplaca sp.
Caloplaca trachyphylla (Tuck.) Zahlbr
Candelaria concolor var. *effusa* (Tuck.) G. Merr. & Burnham
Candelariella aurella (Hoffm.) Zahlbr
Candelariella rosulans (Müll. Arg.) Zahlbr
Candelariella sp.
Candelariella terrigena Räsänen
Candelariella vitellina (Hoffm.) Müll. Arg
Cephaloziella cf. *divaricata*
Chrysothrix chlorina (Hoffm.) Müll. Arg
Cladonia asahinae J. W. Thomson
Cladonia chlorophaea (Flörke *ex* Sommerf.) Sprengel
Cladonia fimbriata (L.) Fr.
Cladonia ochrochlora Flörke

Cladonia pyxidata (L.) Hoffm.
Cladonia subulata (L.) F. H. Wigg.
Cladonia verruculosa (Vainio) Ahti
Collema cf. *polycarpon* Hoffm.
Collema furfuraceum (Arnold) Du Rietz
Collema nigrescens (Hudson) DC.
Collema subflaccidum Degel.
Cyphelium inquinans (Sm.) Trevisan
Cyphelium tigillare (Ach.) Ach.
Dermatocarpon miniatum (L.) W. Mann
Dermatocarpon reticulatum H. Magn
Dimelaena oreina (Ach.) Norman
Dimelaena radiata (Tuck.) Müll. Arg. (Matzer et al. 1996)
Dimelaena thysanota (Tuck.) Hale & Culb.
Diploschistes diacapsis (Ach.) Lumbsch
Diploschistes gypsaceus (Ach.) Zahlbr.
Diploschistes muscorum (Scop.) R. Sant.
Diploschistes scruposus var. *scruposus*(Schreber) Norman
Diplotomma alboatrum (Hoffm.) Flotow
Endocarpon pusillum Hedwig
Evernia prunastri (L.) Ach.
Flavopunctelia flaventior (Stirton) Hale
Flavopunctelia soredica (Nyl.) Hale
Fuscopannaria californica (Tuck.) P.M.Jörg.
Fuscopannaria coralloidea P.M. Jørg.
Fuscopannaria cyanolepra (Tuck.) P.M. Jørg.
Fuscopannaria pacifica P.M.Jorg.
Fuscopannaria praetermissa(Nyl.) P. M. Jørg.
Fuscopannaria sp.
Hypocenomyce scalaris (Ach.) M. Choisy
Hypogymnia imshaugii Krog
Imshaugia aleurites (Ach.) S. F. Meyer
Kaernefeltia merrillii (Du Rietz) Thell & Goward (Thell & Goward 1996)
Lecania cf. *dubitans* (Nyl.) A. L. Sm.
Lecanora gangaleoides Nyl.
Lecanora hybocarpa (Tuck.) Brodo
Lecanora muralis (Schreber) Rabenh
Lecanora pseudomellea B. D. Ryan
Lecanora sierrae B. D. Ryan & T. Nash
Lecanora sp.
Lecanora strobilina (Sprengel) Kieffer
Lecanora varia (Hoffm.) Ach.
Lecidea atrobrunnea (Ramond *ex* Lam. & DC.) Schaerer
Lecidea auriculata Th. Fr.
Lecidea beringeriana (A. Massal.) Nyl.
Lecidea cf. *austrocalifornica* Zahlbr.
Lecidea fuscatoatra Nyl.
Lecidea fuscoatra var. grisella (L.) Ach.
Lecidea lapicida var. *lapicida* (Ach.) Ach.
Lecidea lapicida var. *pantherina* (Ach.) Ach.
Lecidea mannii Tuck
Lecidea protabacina Nyl.
Lecidea tessellata Flörke
Lecidella carpathica Körber
Lecidella elaeochroma (Ach.) Hazsl.
Lecidella euphorea Zahlbr.
Lempholemma cladodes (Tuck.) Zahlbr.
Leproloma membranaceum (Dickson) Vainio
Leptochidium albociliatum (Desmaz.) M. Choisy
Leptogium cf. *californicum* Tuck.
Leptogium cf. *lichenoides* (L.) Zahlbr.
Leptogium palmatum (Hudson) Mont.
Leptogium pseudofurfuraceum P. M. Jørg. (Jørgensen 1997)
Letharia columbiana (Nutt.) J. W. Thomson
Letharia vulpina (L.) Hue
Lichinella nigritella (Lettau) Moreno & Egea
Lichinella stipatula Nyl.
Melanelia exasperatula (Nyl.) Essl.
Melanelia glabra (Schaerer) Essl.
Melanelia glabroides (Essl.) Essl.
Melanelia multispora (A. Schneider) Essl.
Melanelia subargentifera (Nyl.) Essl.
Melanelia subelegantula (Essl.) Essl.
Melanelia subolivacea (Nyl.) Essl.
Melanelia tominii (Oxner) Essl.
Micarea sp.
Mycocalicium subtile (Pers.) Szat.
Neofuscelia subhosseana (Essl.) Essl.
Ochrolechia subpallescens Vers.
Ochrolechia upsaliensis (L.) A. Massal.
Parmelia hygrophila Goward & Ahti
Parmelia sulcata Taylor
Parmeliella cyanolepra (Tuck.) Herre
Parmelina quercina (Willd.) Hale
Peltigera ponojensis Gyelnik
Peltigera rufescens (Weiss) Humb.
Peltula euploca (Ach.) Poelt
Peltula obscurans var. *hassei* (Zahlbr.) Wetmore
Phaeophyscia constipata (Norrlin & Nyl.) Moberg
Phaeophyscia decolor (Kashiw.) Essl.
Phaeophyscia hispidula (Ach.) Essl.
Phaeophyscia orbicularis (Necker) Moberg
Physcia adscendens (Fr.) H. Olivier
Physcia aipolia (Ehrh. *ex* Humb.) Fürnr.
Physcia biziana (A. Massal.) Zahlbr
Physcia caesia (Hoffm.) Fürnr.
Physcia dimidiata (Arnold) Nyl.

Physcia dubia (Hoffm.) Lettau
Physcia phaea (Tuck.) J. W. Thomson
Physcia stellaris (L.) Nyl.
Physcia tenella (Scop.) DC.
Physcia tribacia (Ach.) Nyl.
Physconia americana Essl. (Esslinger 1994)
Physconia californica Essl.
Physconia enteroxantha Nyl.) Poelt
Physconia isidiigera (Zahlbr.) Essl.
Physconia perisidiosa (Erichsen) Moberg
Placynthiella icmalea (Ach.) Coppins & P. James
Placynthiella uliginosa (Schrader) Coppins & P. James
Pleopsidium flavum (Bellardi) Körber
Polysporina simplex (Davies) Vezda
Protoparmelia badia (Hoffm.) Hafellner
Psora globifera (Ach.) A. Massal.
Psora nipponica (Zahlbr.) Gotth. Schneider
Psora pacifica Timdal
Psora russellii (Tuck.) A. Schneider
Psora tuckermanii R. Anderson *ex* Timdal
Punctelia subrudecta (Nyl.) Krog
Ramalina farinacea (L.) Ach
Ramalina leptocarpha Tuck.
Ramalina menziesii Taylor
Ramalina puberulenta Riefner & Bowler
Ramalina subleptocarpha Rundel & Bowler
Rhizocarpon bolanderi (Tuck.) Herre
Rhizocarpon distinctum Th. Fr.
Rhizocarpon geographicum (L.) DC.
Rhizoplaca chrysoleuca (Sm.) Zopf
Rhizoplaca melauophthalma (DC.) Leuckert & Poelt
Rinodina bolanderi H. Magn.
Rinodina confragosa (Ach.) Körber
Rinodina conradii Körber
Rinodina glauca Ropin
Tephromela atra (Hudson) Hafellner
Texosporium sancti-jacobi (Tuck.) Nádv.
Toninia ruginosa subsp. pacifica Timdal
Trapelia involuta (Taylor) Hertel
Trapeliopsis californica McCune & Camacho
Trapeliopsis flexuosa (Fr.) Coppins & P. James
Trapeliopsis granulosa (Hoffm.) Lumbsch
Trapeliopsis wallrothii (Flörke) Hertel & Gotth. Schneider
Umbilicaria phaea Tuck.
Umbilicaria polyphylla (L.) Baumg.
Usnea hirta (L.) F. H. Wigg.
Usnea substerilis Mot.
Vouauxiella lichenicola (Lindsay) Petrak & Sydow
Xanthoparmelia angustiphylla (Gyelnik) Hale
Xanthoparmelia coloradoënsis (Gyelnik) Hale
Xanthoparmelia cumberlandia (Gyelnik) Hale
Xanthoparmelia mexicana (Gyelnik) Hale
Xanthoparmelia sp.
Xanthoria candelaria (L.) Th. Fr.
Xanthoria elegans (Link) Th. Fr.
Xanthoria fallax (Hepp) Arnold
Xanthoria hasseana Räsänen
Xanthoria oregona Gyeln. (Lindblom 1997)
Xanthoria polycarpa (Hoffm.) Rieber

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Miriquidica mexicana in Southern California

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Miriquidica mexicana Rambold, Sipman & Hertel was reported growing on acid stones on the soil in scarce desert scrub in Baja California generally near the coast (Nash et al 2004}. It is easy to overlook. It covers small areas up to 5 cm. or more and appears usually dark brown when dry, greenish when wet. Through a hand-lens or under a dissecting scope, the thallus is distinctive with close-packed squamulose areoles, similar to the *Lecidea atrobrunnea* group, and small black lecideine apothecia. There's a fairly good color picture of *M. mexicana* in Vol. 2 of the Sonoran lichen flora.

Important characteristics of *M. mexicana* for identification are spores ca. 6-10 x 3.2-4.5 µm, a greenish epihymenium, and a dendrite or spidery black prothallus. (For full description see Vol. 2 of the Sonoran flora.) It also may contain lobaric acid replacing miriquidic acid. On Oct. 29, 2004, while collecting Aspicilia species in southern California, Bjorn Owe-Larsson collected *M. mexicana* on a rock-strewn flat area below Sandstone Peak at the west end of the Santa Monica Mountains in Ventura County. The specimen contained only miriquidic acid. On Oct. 30, 2004 Bjorn Owe-Larsson and Kerry Knudsen collected it again on a rock outcrop in juniper-piñon pine woodland in the San Bernardino National Forest on a plateau beneath the Santa Rosa Mountains. This specimen also contained miriquidic acid. Like some specimens it did not have a well-developed prothallus.

Since then Kerry Knudsen and Kate Kramer collected it in the Red Shanks (*Adenostoma sparsifolium*) chaparral in Garner Valley between the San Jacinto Mountains and Thomas Mountain ridge where it contained miriquidic acid too (Lendemer, pers. comm.).

Hasse (1913) and William Weber et al (1987) reported *Miriquidica scotopholis* (Tuck.) B.D. Ryan & Timdal as occurring in southern Californica. Nash et al (2004) reported not seeing any collections of *M. scotopholis* from southern California. This species is endemic to coastal areas from at least San Francisco (its type locality) to Washington. The thallus of *M. scotopholis* looks similar to *M. mexicana.* It differs in having lecanoran apothecia which eventually become lecideine, convex and reddish-brown. The spores of *M. scotopholis* are 8-11 x (3-)4-5 microns and larger than *M. mexicana* overall and the epihymenium is brown. These are the best distinguishing characters. In the field, and even under a dissecting microscope, *M. scotopholis* could be easily confused with *M. mexicana* without some experience with both species. The description in Sonoran flora is slightly misleading because *M. scotopholis* can have a black fimbriate prothallus.

We wondered if *M. scotopholi*s in southern California was mistaken for the newly named *M. mexicana*. But on Feb. 15, 2004, Kerry Knudsen collected *M. mexicana* and *M. scotopholis* growing together in the Menifee Hills in Wildomar, California, in Riverside County in chamise chaparral. It is thus assumed that reports of *M. scotopholis* are correct but that older collections in southern California may be either *M. scotopholis* or *M. mexicana* or even possibly other spe-

cies. The full extent of the distribution of *M. mexicana* in California is unknown and currently Sandstone Peak in the Santa Monica Mountains marks its northern limit.

Selected specimens: *Miriquidica mexicana*: Ventura County: Sandstone Peak: rubble field over thin-soiled habitat: 34° 07.266'N 118° 56.049'W, elevation 890 meters, Bjorn Owe-Larsson #9118 with Kerry Knudsen (UPS); Riverside County: Piñon Flats: rock outcrop: 33° 35.266'N 116° 26.214'W, Bjorn Owe-Larsson #9169 (UPS) and same location, Knudsen #1996 (UCR, hb. Lendemer); Garner Valley: along Pacific Crest Trail: on granite stones: 33° 34.228' N 116° 34.456'W, elevation: 1498 meters, Knudsen #2113 with Kate Kramer (UCR, hb. Lendemer).

Miriquidica scotopholis: Riverside County: Wildomar: Menifee Hills: Irish Mountain: on granite rocks: 33° 37.210' N 117° 14.104'W, elevation: 617 meters, Knudsen# 2394 (UCR).

Special thanks to Shirley Tucker for reviewing this manuscript.

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Items for Sale

CALS has the following items for sale. Checks should be made out to The California Lichen Society.

1. *A CALS mini guide to some common California Lichens*, text by Janet Doell, photography by Richard Doell. A pocket sized book illustrating 41 lichen species, with an introduction, glossary, and descriptive notes for each photo. Designed for anyone interested in the natural world who would like to learn something about lichens in California. Price $10.00 (tax included), $12.00 if mailed. To order contact Janet Doell at 510 236 0489, or e-mail her at <rdoell@sbcglobal.net>.

2. *A CALS mini guide to some Southern California Lichens*, text by Janet Doell, photography by Richard Doell. Almost identical to the first mini guide in design and layout, this book also has an index. All photographs were taken in southern California especially for this book. Many of the lichen genera depicted, and some of the species, are also present in more northerly counties. To order contact Janet Doell as outlined above.

3. CALS lichen poster. This colorful 30" x 20" poster features 21 lichens. Photographs by Richard Doell. You can see a picture of the poster at the CALS Web site: <http://ucjeps.berkeley.edu/rlmoe/cals.htm>. Price $5.00 (tax included), $7.00 if mailed. To order contact Janet Doell as outlined above.

4. Still a few copies left – 2004 and 2005 *Lichens of the Sonoran Desert Region* Calendars, 16 pages spiral bound 8 ½ inches wide by 11 inches high, produced by CALS member Frank Bungartz. $15 (tax included) (plus postage if mailed). To order contact Bill Hill at <aropoika@earthlinknet>. These are worth it for the pictures alone.

5. For lichen identification supplies, including chemical kits, please contact Charis Bratt at 805 967-7043 or e-mail her at <ccbratt@compuserve.com>. She can not mail chemicals due to postal restrictions, so you would have to make other arrangements for delivery of chemical kits.

Literature Review: The Lichen Hunters by Oliver Gilbert
The Book Guild, Great Britain, 2004. 207 pp., 14 pages of photographs.

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Olivier Gilbert's *The Lichen Hunters* is a lichenologist's memoir. It is a great read with fourteen pages of engaging color pictures.

First of all *The Lichen Hunters* is an informal history of the British Lichen Society, from its founding and first field trips, to the publishing of the British flora and the churchyard lichen movement, right through to a critique of lichenology in the UK today – with its new gap between professionals and amateurs and its best lichenologists diverted from science into well-paying consulting work and confidential reports. The first two chapters especially concentrate on the BLS and would definitely be of interest to members of CALS and ABLS.

The next five chapters are a remembrance of lichen hunts from islands out in the cold Atlantic to the highest peaks of Scotland, from dank lagoons to century-old orchards, from the abandoned air strips of WW2 to remote snow fields, from Stonehenge to Ireland. These adventures fill in the details of the history of modern British lichenology in an oblique and impressionistic manner with only scattered dates and many asides. The stories are told with an enjoyable informality as if we are sitting around a table at a pub listening to Oliver over a pint and a shot. The only thing missing is Brian Coppins or Alan Fryday interrupting to tell their versions of events, no doubt equally subjective.

And truly Oliver's memoir is a story of his friends. In these pages you can meet the young Peter James, Alan Fryday ensconced in motel rooms doing lichen surveys in lonely rural areas, William Purvis just out of school being hired to edit the British flora, or Brian Coppins collecting *Micarea* as he smokes a pipe. As to be expected too, when these friends get together to collect, each finds at the same site something their eye alone could find.

The final chapter is particularly memorable and is called "The Six Stages of Lichenology," a kind of wisdom guide for lichenologists. The first stage is when it is a joy to see your first *Acarospora* or *Hypogymnia* or *Caloplaca*, when everything is new. The second stage is when you have a good grasp of lichens in general and you have to put a little effort into learning something new each time you go out in the field or sit down at your microscope. One may at this stage find your first new county record or to ID a species to genus you need to seek an expert's verification. The third stage is when you really get into it, seeking out new habitats and adventures, and seeing with new eyes old haunts you thought you knew so well. No doubt in America at this stage you are not far from the road or just a couple hours from a restaurant. But you are becoming a little obsessed, definitely ambitious. In the fourth stage one has become knowledgeable enough that one begins to seek out the places where lichenologists have never gone before and one's trips become hardy work too as one tackles mountain tops and foreign locations. In America no doubt you are far from your car and a paved road now! Oliver says a certain amount of "monomania" is necessary to reach this stage and that is no doubt true.

The fifth stage is more subtle. One begins to explore habitats generations of lichenologists have ignored because they are dull in terms of biodiversity or in polluted or disturbed areas. In one of his adventures, illustrating this stage, Oliver spends two hours hunting around a disturbed saline lagoon to find his first lichen, *Lecanora dispersa*, which in the opinion of the British flora is the most pollution-tol-

erant of all lichens. (I must add here that the most beautiful, abundant and hearty populations of *L. dispersa* I have seen are in Griffith Park in the center of Los Angeles.) But by the end of a long, dreary day Oliver found a *Caloplaca* new to science.

The sixth stage is for old hands and the wise. One has made discoveries, seen exotic habitats, grown in knowledge, made thousands of collections. The drive and even egomania has begun to slacken and the initial joy returns. Familiar lichens are once again greeted with wonder and affection. And one becomes more laid back and mellow and one's lichen friends become a greater joy too. One can sit down with friends and *us* strangers as Oliver does in this book and enjoy just remembering the adventures past as each new day in the field or at the scope makes new memories.

While we are not all driven to become professionals, may we all, at whatever level in lichenology we feel comfortable at, reach the sixth stage of the lichenologist's spiritual path. It would be an accomplishment worth achieving in any endeavor.

I wish Hasse and Herre and Bruce Fink had written a memoir like Oliver's. I hope Tom Nash or Cliff Wetmore or Dick Harris or someday Bruce McCune or Roger Rosentreter or any other adventurer would write a similar memoir of their years as lichenologists. Oliver Gilbert's book is living introduction to a field of biology full of joys, and exciting as any other, and in need of new recruits in each generation.

Oliver is currently putting his lifetime's experience of the lichens of the British Isles into editing the new edition of the British Lichen Flora which is expected out in 2007.

In the latter part of the book Oliver occasionally mentions taking off a day now and then during his lichen adventures to get kidney dialysis. And then leaves us hanging at the end of the book wondering what happened to him. He did get a kidney transplant recently. But he has had some serious complications that have not dampened his enthusiasm or slowed down his work on the flora. Alan Fryday wrote to me, saying, "In short he is an example to us all, and when ever I am feeling hard done by, I think of Oliver and his refusal to be downhearted, and his spirit revives me."

The easiest way to get a copy of *The Lichen Hunters* for an American and the cheapest is to order it from Amazon UK <http://www.amazon.co.uk>. Special thanks to Alan Fryday and Shirley Tucker for reviewing this mss.

Editor's note – Oliver Gilbert passed away on the fifteenth of May, 2005.

Errata:

The identification of *Hypogymnia duplicata* from the University of California Santa Cruz foray (Bulletin of the California Lichen Society 11(2), p. 51) was incorrectly attributed to an unusual specimen of *H. imshaugii*. Chemical testing determined that the specimen in question was indeed *H. imshaugii*.

California Page

Kerry Knudsen
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Crossosoma is the journal of the over fifty-year-old professional group called the Southern California Botanists. For the second year in a row the editor bryologist Carl Wishner has put out a whole non-vascular issue. The main article in Vol. 28, Number 1 is "Lichens on rock and biological crusts enhance recruitment success of rare *Dudleya* species (Crassulaceae) in Southern California" by Richard E. Riefner, Jr., Peter A. Bowler, Thomas W. Mulroy, and Carl Wishner. This is an important ecological paper on the inter-relations of rare *Dudleya* and lichens, bryophytes, and cyanobacteria. It is complemented with 12 pages of color pictures of *Dudleya* habitats. The issue is rounded out by an article on three rare lichens and what they reveal of our knowledge of lichen distribution in California. The issue is a deal for five dollars postpaid to Alan Romspert, Treasurer, Southern California Botanists, Inc., Department of Biology, California State University, Fullerton, California 92834

Frank Bungartz, a CALS member who received his doctorate in lichenology with Tom Nash at ASU, has been publishing his study of one-septate saxicolous *Buellia* in a number of journals including *The Bryologist* in the last two years. Every one of these articles has been illustrated with Frank's excellent pictures. The most important article was published in *Mycotaxon*, July-September, 2004, "New and previously unrecorded saxicolous species of *Buellia* s.l. with one-septate ascospores from the Greater Sonoran Desert Region." This contains a key to all the species of *Buellia* in his study area and a table of where to find descriptions for each species. Frank's work will culminate in his treatment of *Buellia* in Vol. 3 of the Sonoran flora which will bring his work together in an easily accessible form. His work is very important in understanding California's lichen flora because many of the species he has studied occur here, especially along the coast and on the Channel Islands.

Frank and his wife Frauke are currently living in Germany. Frank is writing a glossary of lichenological terminology which will be published online as part of LIAS, the Global Information System for Lichenized and Non-Lichenized Ascomycetes <http://lias.net> This is an effort to standardize usage of terminology in lichenology and is definitely needed. I have seen a draft and it is a great resource which is very useful. Frank can be contacted at: Botanische Staatssammlung München, Abteilung Mykologie, Menzinger Str. 67, D-80638 München, Germany, <bungartz@bsm.mwn.de>.

Clifford Wetmore is one of the great American lichenologists. Each year he publishes studies on the genus *Caloplaca* in *The Bryologist.* In the Winter 2004 issue was "The Sorediate Corticolous Species of *Caloplaca* in North and Central America." Most of these taxa do not occur in California, though several could be discovered here. One newly recognized species does, *Caloplaca presimilis* Wetmore, having been collected near the coast from Riverside County at Santa Rosa Plateau and at Bay Springs in the San Jacinto Mountains north to Contra Costa and Sonoma Counties. If you ever determined a *Caloplaca* with Brodo's key as *C. chrysophthalma,* an eastern American species, you probably collected *C. presimilis.*

Wetmore will be doing the *Caloplaca* treatment for Vol. 3 of the Sonoran flora.

James Lendemer, who co-authored the article on *Flavoparmelia subcapitata* in this issue of the Bulletin and a new CALS member, is the editor and publisher of the experimental lichen journal *Opuscula Philolichenum.* Vol. 2 was just published and is available online for free at <http://clade.acnatsci.org/lendemer/opus.html> in pdf format. Of special interest to California readers are peer-reviewed articles on *Acarospora epilutescens, Polysporina lapponica,* and Part One of a floristic study of the Santa Monica Mountains. Only about fifty hard copies are published and distributed for free to make official the taxonomic acts, which in this issue involves several rare California lichens and new *Lepraria* and *Opegrapha* species from back east, for instance.

News and Notes

CALS Field trip to Modoc County
Sept. 25-26, 2004

About 13,000 square miles of the northeastern corner of California are covered by a thick accumulation of geologically young volcanic rocks. Although a variety of volcanic forms can be found here – lava flows, ash, volcanic fragments, mudflows, obsidian, and volcanic domes and mountains, the larger part of this area is a high plateau averaging 4500 feet – the Modoc Plateau – a small corner of the much larger Columbia Plateau in eastern Oregon, Washington, and southern Idaho. Lava Beds National Monument is situated in Siskiyou County, on the western edge of the Modoc Plateau.

The Cascade Range forms the western margin of this young volcanic province, and includes Mount Shasta and Mount Lassen. On the eastern margin of the Modoc Plateau is the Warner Range, an uplifted mountainous part of the plateau, which is bounded on the east by the Great Basin Province, into which the Modoc Plateau merges geologically and floristically. The Warner Range rises to an elevation of 9,983 feet in Eagle Peak near the southern end. The range consists of the oldest volcanics of the Modoc Plateau – interbedded andesitic lava flows, rocks of explosive origin, and lake deposits, dated by plant fossils from the Oligocene to the Miocene age. A cap of Warner basalt tops these rocks. There is also a small area of glacial till on the top of the range.

The Warner Range has been uplifted at least 5,000 feet and tilted toward the west along the tremendous Surprise Valley Fault. Where the land slopes relatively gently to the high central ridgeline from the west, on the eastside, the range rises abruptly in dizzying cliffs.

The dry lakebed on the east side of the Warner Mountains is the remnant of Pleistocene Lake Surprise. Hot springs and mud volcanoes can be found in and around Surprise Valley.

Much of the Modoc Plateau is a broken landscape of basalt boulders, often encrusted with colorful lichens. Even at the higher elevations, such as on Hat Mountain, the highest peak in Lassen County, basalt rocks are thickly coated with *Umbilicaria*. For many years Federal agencies have issued commercial and private, decorative rock collecting permits in some of the more accessible areas, such as on the Madeleine Plain near Termo, California.

A variety of habitats and substrates are available for lichens to colonize within the Warner Mountains. Trees, shrubs, volcanic rocks, soil, cliffs, flat lava rock, soil, stream banks, fens, mineral springs. White fir, whitebark pine, lodgepole pine, Jeffrey and ponderosa pine, sugar pine, western white pine, Washoe pine, incense cedar, western juniper, and curl-leaf and birch-leaf mountain mahogany are available and have the potential to harbor corticolous species. Shrubs such as dogwood, serviceberry, hawthorn, rock spiraea, bitterbrush, chokecherry, bittercherry, Modoc plum, coffeeberry, and the sagebrushes are also possible habitat for lichens.

With the knowledge that a variety of lichens could be found in the area and that it had barely been explored, Cheryl Beyer, CALS member and Forest Botanist for the Forest Service in the Warner Mountains, in conjunction with Mike Dolan, who has been with the Bureau of Land Management in Modoc County for over 14 years, encouraged the Society to begin a survey of the area. Mike is involved in the process of issuing rock collecting permits in the Madeleine Plain area and was interested in evaluating whether or not this practice should continue as the rocks are covered with lichens.

13 members of CALS looked forward to participating in this weekend field trip to the area. Most participants traveled to Alturas on Friday, and met at the Black Bear restaurant for a supersized dinner meal. At 8:30 Saturday morning we met at the Supervisor's Office of the Modoc National Forest. Our first stop was the Madeleine plain site. The large, flat rocks there have been 'mined' as landscape rock. They are lovely cinnamon brown, flagstone-type rocks. We spent the morning taking photos

and reference specimens to catalog what was growing there.

After lunch some of the group went to another site on Ash Valley road west of Hwy 395. Not everyone got to this site as the Doell's VW, which has previously gone everywhere, suffered a flat tire. That evening, some went to the local Basque restaurant for dinner, while others went right to the Forest Service office, had pizza and salad and started looking at the day's collections with microscopes we had brought. Janet and Richard Doell gave a slide presentation of slides that they had accumulated over the years, with no reference specimens however, and the audience tried to put likely names on them. Richard's photos are a pleasure to see, the colors and subject so well done. Many of the photos were of Alaska lichens and the foliage included was spectacular. After the slide presentation, many stayed to do more lichen identification.

Sunday morning we met at 8:30 again, but drove east into the Warner Mountains. Our first stop was at the Slough Reservoir, east of Cedar Pass. We piled into 4 wheel drive vehicles, and attempted to drive further into the wilderness to Soldier Creek. We stopped at a site along the way and were treated to lovely views of the surrounding area. A fallen tree across the road brought out the loggers in the group, and Don Brittingham had a saw and rope and some of the group took turns at sawing and pulling and cut the road clear only to be stopped a hundred yards or so down the way by thick undergrowth brush. We turned around and headed back to Slough Reservoir for lunch. In the afternoon, the group split up and some when to the steep Eastern side of the Warners and collected the vagrant *Dermatocarpon reticulatum* H. Magn. Others went to the north of Alturas. We met back at the Forest service office that evening, to do more identification.

Participating were: Janet and Richard Doell, Sara Blauman, Tom Carlberg, Kathy Faircloth, Cheryl Beyer, Nancy Hillyard and Dan Norris, Don Brittingham, Bill Mattson, Bill Hill, Judy and Ron Robertson, and Mike Dolan.

Sites:

1) Cedar Pass is in Modoc County at the crest of the Warner Mountain range. The elevation at the Pass is approximately 6400′. The habitat is *Artemisia* with *Cercocarpus,* Red Fir, Western Juniper.

2) The Termo site is in Lassen County, east of Hwy 395. It is BLM land at an elevation of 5950′ The habitat is Juniper woodland with outcrops of flat volcanic rocks.

3) **Holbrook Canyon** is also in Lassen County, west of Hwy 395. This is a rocky canyon, elevation 5100′, with *Cercocarpus*, Western Juniper.

4) The Ash Valley road location is in Lassen county and is the site of an old a gravel pit west of Holbrook Canyon.

5) The Soldier Creek area is in the Warner Mountains, east of Cedar Pass. The elevation at our collecting site was 6850′ and the habitat was a volcanic outcrop in Red Fir, *Cercocarpus*.

6) Joseph Creek Basin is on the West side of the Warner Mountains. The elevations for the collections ranged from 6400′ to 7300′. The habitat is Ponderosa Pine to Red Fir forests with streamside habitat.

7) Mill Creek is on the East side of the Warner Mountains. The elevation at the collecting site was 7400′.

8) Bald Mountain is north of Cedar Pass on the crest of the Warner Mountains. It is a rounded mountain top of exposed rocks at 7500′**.**

9) Patterson campground is in the southern part of the Warner Mountains. The elevation is 7100′.

10) Mosquito Creek is also in the southern Warner Mountains, elevation 6660′.

11) The Hwy 299 site is in Modoc County, 30 miles SW of Alturas. The habitat is Juniper scrub.

Collectors: Sara Blauman SB; Nancy Hillyard NH; Boyd Poulsen BP; Judy and Ron Robertson JR

Species:

Acarospora fuscata (Nyl.) Arnold. Cedar Pass, Joseph Creek NH, JR

Acarospora strigata (Nyl.) Jatta. Patterson Pass NH

Acarospora thamnina (Tuck.) Herre. Termo JR, SB

Alectoria imshaugii Brodo & D. Hawks. Joseph Creek JR

Alectoria sarmentosa (Ach.) Ach. Joseph Creek JR

Amandinea punctata (Hoffm.) Coppins & Schied. Termo JR

Aspicilia cinerea (L.) Körber. Termo, Ash Valley Rd. JR

Aspicilia caesiocinerea (Nyl. ex Malbr.) Arnold Termo SB
Aspicilia contorta (Hoffm.) Kremp. Termo NH
Bellemerea alpina (Sommerf.) Clauzade & Rou.Joseph Creek JR
Bryoria fremontii (Tuck.) Brodo & D. Hawks. Joseph Creek JR
Bryoria fuscescens (Gyelnick) Brodo & D. Hawks.Joseph Creek JR
Buellia alboatra (Hoffm.) Th. Fr. Joseph Creek, Ash Valley NH, JR
Buellia disciformis (Fr.) Mudd. Ash Valley NH
Caloplaca epithallina Lynge. Termo JR
Caloplaca jungermanniae (Vahl) Th. Fr. Soldier Creek JR
Candelaria concolor (Dickson) Stein. Cedar Pass, Termo JR
Candelariella terrigena Rasanen.Termo JR
Candelariella vitellina (Hoffm.) Mull. Arg. Cedar Pass JR
Cladonia carneola (Fr.) Fr. Holbrook Canyon JR
Cladonia fimbriata (L.) Fr. Joseph Creek JR
Dermatocarpon miniatum (L.) W. Mann. Termo, Patterson Camp. NH, JR
Dermatocarpon reticulatum Magnusson. Soldier Creek JR
Endocarpon pulvinatum Th. Fr. Soldier Creek JR
Hypocenomyce scalaris (Ach.) Choisy. Termo JR
Hypogymnia imshaugii Krog. 299, Cedar Pass, Joseph Creek NH, JR
Lecanora argopholis (Ach.) Ach. Termo NH
Lecanora bicincta Ram. Cedar Pass JR
Lecanora cenisia Ach. Cedar Pass, Ash Valley NH, JR
Lecanora muralis (Schreber) Rabenh. Cedar Pass JR
Lecanora polytropa (Hoffm.) Rabenh. Bald Mtn., Mosquito Creek, NH, JR
Lecanora pseudomellea B.D.Ryan. Cedar Pass JR
Lecanora rupicola (L.) Zahlbr. Cedar Pass, Bald Mtn., Soldier Creek JR
Lecanora sierrae B.D. Ryan. Termo JR
Lecidea atrobrunnea (Ramond ex Lam. DC.) Schaerer. Mosquito Creek, Termo NH, JR
Lecidea auriculata Th. Fr. Patterson Camp NH
Lecidea tessellata Florke. Cedar Pass, Termo NH, JR
Lecidella stigmatea (Ach.) Hertel & Leuckert. Patterson Camp. NH
Leptogium lichenoides (L.) Zahlbr. Holbrook Canyon JR
Letharia columbiana (Nutt.) J.W. Thomson. 299, Termo JR, JC
Letharia vulpina (L.) Hue. Joseph Creek JR
Lobothallia alphoplaca (Wahlenb.) Hafellner. Termo JR, SB
Melanelia disjuncta (Erichsen) Essl. Holbrook Canyon JR
Melanelia elegantula (Zahlbr.) Essl. 299, Termo, Soldier Creek NH, JR
Melanelia exasperatula (Nyl.) Essl. Ash Valley NH
Melanelia subolivacea (Nyl.) Essl. 299, Cedar Pass, Ash Valley NH, JR
Nodobryoria abbreviata (Mull. Arg.) Common & Brodo. 299, Joseph Creek JR
Parmelia hygrophila Goward & Ahti. Cedar Pass JR
Parmeliopsis ambigua (Wulfen) Nyl. Joseph Creek JR
Peltigera ponojensis Gyelnik. Holbrook Canyon, Joseph Creek JR
Peltigera rufescens (Weiss) Humb. 299, Holbrook Canyon, Joseph Creek, NH, JR
Physcia biziana (Mass.) Zahlbr. Holbrook Canyon JR
Physcia caesia (Hoffm.) Furnr. Holbrook Canyon JR
Physcia dimidiata (Arnold) Nyl. Termo JR
Physcia dubia (Hoffm.) Lettau. Patterson Camp. NH
Physconia enteroxantha (Nyl.) Poelt. Cedar Pass, Termo JR
Physconia isidiigera (Zahlbr.) Essl. Ash Valley NH
Placidium lacinulatum (Ach.) Breuss. Patterson Camp. NH
Placynthiella uliginosa Coppins & P. James. Joseph Creek JR
Pleopsidium flavum (Bellardi) Korber. Cedar Pass, Termo JR
Pseudephebe miniscula (Nyl. ex Arnold) Brodo & D. Hawksw. Cedar Pass, Termo JR
Pseudephebe pubescens (L.) M. Choisy. Soldier Creek, Bald Mtn. JR
Psora nipponica (Zahlbr.) Gotth.Schneider. 299 JR
Psora tuckermanii R Anderson ex Timdal. Holbrook Canyon JR, 299
Rhizocarpon geographicum (L.) DC. Joseph Creek JR
Rhizocarpon grande (Florke ex Flotow) Arnold. Cedar Pass JR
Rhizoplaca chrysoleuca (Sm.) Zopf. Termo, Soldier Creek JR
Rhizoplaca melanopthalma (DC.) Leuckert & Poelt. Termo NH, JR
Sporostatia testudinea (Ach.) A. Massal. Joseph Creek JR
Staurothele areolata Sweden. 299, Cedar Pass, Termo, Mill Creek NH, JR

Staurothele drummondii (Tuck.) Tuck. Mill Creek JR
Trapeliopsis flexuosa (Fr.) Coppins & James. Termo JR
Tremolecia atrata (Ach.) Hertel. Joseph Creek JR
Tuckermanopsis platyphylla (Tuck.) Hale. Joseph Creek JR
Umbilicaria hyperborea (Ach.) Hoffm. Termo, Holbrook Canyon, Cedar Pass NH, JR
Umbilicaria krascheninnikovii (Savicz) Zahlbr. Cedar Pass JR
Umbilicaria torrefacta (Lightf.) Schrader. Termo, Holbrook Canyon, Ash Valley NH, JR
Umbilicaria virginis Schaerer. Soldier Creek JR
Xanthoria candelaria (L.) Th. Fr. Ash Valley NH
Xanthoria elegans (Link) Th. Fr. Cedar Pass JR
Xanthoria fulva (Hoffm.) Poelt & Petutschnig. Termo JR
Xanthoria montana L.Lindblom. Holbrook Canyon JR

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Reported by Judy Roberson and Cheryl Beyer.

Field trip to Robert Louis Stevenson State Park, Napa Co. Saturday, November 13, 2004

Robert Louis Stevenson State Park is not only the site of the home of the famous author, but it also includes Mt. St. Helena, an uplift of volcanic rock which towers over the area at an elevation of 4300 feet. Highway 29 divides the park into east and west. Many hikers trek to the top of Mt. St. Helena on the West side of the highway. Our lichen group of 7, went east towards Table Rock and the Palisades, more volcanic outcrops. The parking lot is surrounded by mixed evergreen forest, and big leaf maples. The elevation is approximately 2200 feet. We stayed for a short time in the area to observe the moss-covered maple trunks with the cyanolichens: *Pseudocyphellaria anthraspis* (Ach.) H. Magn., *Peltigera collina* (Ach.) Schrader and *Leptogium* species. Another maple trunk was dense with the tiny lichen *Waynea californica* (= *W. stoechadiana*) (Abbassi Maaf & Roux) Roux & Clerc, luckily on the trail side of the trunk. Walking up the trail we had the opportunity to see lichens commonly found on soil banks in the mixed evergreen forests. *Peltigera membranacea* (Ach.) Nyl. with *P. collina* (Ach.) Schrader and *Leptochidium albociliatum* (Desnaz,) Choisy were rich along the moss-covered banks. We also observed *Leptogium platynum* (Tuck.) Herre, *Leptogium corniculatum* (Hoffm.) Minks and *L. lichenoides* (L.) Zahlbr. at a few locations, and many *Cladonia* species including *Cladonia chlorophaea* (Flörke) Sprengel, *C. ochrochlora* Flörke , and *C. fimbriata* (L.) Fr. *Cladonia macilenta* Hoffm. was common on the bases of the Douglas fir trunks. Our stops at snags were rewarded with pin lichen species. On the fallen branches and twigs we found *Platismatia glauca* (L.) Culb.& C. Culb., *P. herrei* (Imshaug) Culb.& C. Culb, *Usnea* species, and on conifer trunks we found *Punctelia subrudecta* (L.) Ach. and *Parmelia sulcata* Taylor.

We talked about the fact that often we do not see much lichen growth on ponderosa pine, but when we looked closely we found *Hypocenomyce anthracophila* (Nyl.) P. James & Gotth. in the grooves of

the bark. Close to an opening in the forest where we planned to eat lunch, we saw our first occurrence of *Ophioparma rubricosa* (Müll Arg.) S. Ekman. RLS has many manzanita shrubs and the *Ophioparma* can be found on the dead branches that are laying on the ground. This first site was on the base of a dead Douglas fir trunk. The *Ophioparma* was close by the crustose lichen *Ochrolecia oregonensis* H. Magn. Our hike was the day after a rain in Napa County and the reddish apothecia of the *Ophioparma* were quite spectacular.

Our lunch spot was a flat grassy area with gray pine and some rock outcrops. *Umbilicaria phaea* Tuck., *Lecanora mellea* W. A .Weber, *L. muralis* (Schreber) Rabenh., *Lecidea atrobrunnea* group, *Rhizocarpon geographicum* (L.) DC., Aspicilia species, and the foliose *Xanthoparmelia cumberlandia* (Gyelnik) Hale were common on the rocks.

On a manzanita shrub close by we observed *Physcia stellaris* (L.) Nyl. with *P. adscendens* (Th.Fr.) H. Olivier, *Physconia americana* Essl., *Xanthoria polycarpa* (Hoffm.) Rieber, *Parmelina quercina* (Willd.) Hale, *Melanelia* species, *Trapeliopsis flexuosa* (Fr.) Coppins & P. James, a very small start of *Letharia columbiana* (Nutt.) J.W. Thomson, one thallus of *Evernia prunastri* (L.) Ach. and many healthy *Hypogymnia imshaugii* Krog specimens. We searched the pebbles for *Polysporina simplex* (Davies) Vezda and also found some *Aspicilia* specimens appearing to become fruticose, the areoles quite cylindrical and tall.

After lunch we continued on heading toward the *Tremolecia atrata* (Ach.) Hertel site. There were some lovely scenic spots where we could see much of the Napa Valley. Along the way we found some new lichens for the day: *Psora globifera* (Ach.) A. Massal, *Umbilicaria polyrrhiza* (L.) Fr., and an outcrop with *Xanthoparmelia mougeotii* (Schaerer) Hale covering quite a large area and *Caloplaca citrina* (Hoffm.) Th. Fr. in an under hang area below.

Another outcrop had *Trapeliopsis wallrothii* (Flörke) Hertel & Gotth. in abundance and we tested the thallus with bleach to see the C+ red reaction. After the rain, the squamules and apothecia were quite swollen.

We finally reached the *Tremolecia* site. The red smudges of the thallus on the rock are difficult to see because of the many colors in the volcanic outcrops, but once spotted the rock face was quite rich with the lichen and it was quite a treat for everyone to observe this lichen which is described as an arctic species but was occurring in an area of chaparral at an elevation of 3400 feet.

Participating were: Lawrence Glacy, Don Brittingham, Bill Hill, Irene Winston, Susan Bazell, Judy and Ron Robertson.

Reported by Judy Robertson.

Field trip to San Bruno Mountain Park January29,2005

San Bruno Mountain Park is a 2,326 acre, urban park located in San Mateo County, south of the city of San Francisco. Surrounded by development, the area is most known for the endangered populations, including the San Bruno Mountain Elfin Butterfly. Elevations reach 1314 feet and at about 3.5 miles from the coast of the Pacific Ocean, the top of the peaks are windswept with coastal fog creating good habitat for many coastal lichen species.

This trip was initiated by Jake Sigg and the Yerba Buena CNPS chapter. Twenty-three persons, mostly CNPS members attended. With a small printed guide authored by Mikki McGee, a preliminary lichen list and simple key to the foliose and fruticose lichens made by Judy Robertson, we started the walk from the parking lot to the radio towers.

Much of the trail goes through chaparral of *Baccharis pilularis* with some clearings of grass and small rock outcrops. We started looking at the *Cladonia* species in the grassy areas close to the parking lot. *Cladonia chlorophaea* (Flörke ex Sommerf.) Sprengel, *C. coniocraea* (Flörke) Sprengel, *C. furcata* (Hudson) Schrader and *C. squamosa* var. *subsquamosa* (Nyl. *ex* Leighton) Vainio were all within a 5 or 6 feet of one another.

As we walked the trail up the slope, the number of lichens occurring on the shrubs increased and changed in species distribution. Common on the twigs was the crust *Bacidia heterochroa* (Müll. Arg.) Zahlbr. The number of fruticose lichen competed

with the foliose for space. Common were *Flavoparmelia caperata* (L.) Hale, *Flavopunctelia flaventior* (Stirton) Hale, *Heterodermia leucomelos* (L.) Poelt, *Hypotrachyna revoluta* (Flörke) Hale , *Parmelia sulcata* Taylor, *Parmotrema chinense* (Osbeck) Hale & Ahti, *Physcia adscendens* (Fr.) Olivier, *Melanelia species* with the fruticose *Evernia prunastri* (L.) Ach. The further we ascended up the slope we encountered more *Teloschistes chrysophthalmus* (L.) Th. Fr. and *T. flavicans* (Sw.) Norman, *Usnea wirthii* Clerc and *Usnea rubicunda* Stirton.

We stopped at various places along the way and used our key to identify the lichens. Just below the Radio Towers parking lot at 1225 feet we began to encounter the coastal species of lichens: *Buellia halonia* (Ach.) Tuck., *Buellia stellulata* (Taylor) Mudd, *Lecanora pinguis* Tuck., *Niebla homalea* (Ach.) Rundel & Bowler, *Parmotrema crinitum* (Ach.) Choisy, and *Pertusaria californica* Dibben. Also present were *Dimaleana radiata* (Tuck.) Hale & Culb., *Diploschistes scruposus* (Schreber) Norman and *D. muscorum* (Scop.) R. Sant., *Lecanora rupicola* (L.) Zahlbr., *Lecanora gangaleoides* Nyl., foliose lichens *Physcia dubia* (Hoffm.) Lattau, *Punctelia stictica* (Duby) Krog, *Xanthoparmelia cumberlandia* (Gyelnik) Hale, *X. mexicana* (Gyelnik) Hale, *Xanthoria candelaria* (L.) Th. Fr., *Neofuscelia verruculifera* (Nyl.) Essl., *Parmelia saxatilis* (L.) Ach., and our common *Flavoparmelia caperata* (L.) Hale and *Flavopunctelia flaventior* (Stirton) Hale. Many other crusts were present, unidentified. We also wanted to see what was growing on the asphalt at the parking lot. The moist air encourages lots of growth and we found *Caloplaca* and *Candelariella* sp. with *Lecidella asema* (Nyl.) Knoph & Hertel, *Neofuscelia verruculifera* (Nyl.) Essl., Physcia dubia (Hoffm.) Lattau, *Punctelia stictica* (Duby) Krog. and *Xanthoparmelia cumberlandia* (Gyelnik) Hale all thriving very well.

The day was lovely and from the peak, we could see from the Pacific Ocean to the cities surrounding the San Francisco Bay. As the day ended, we were encouraged that so many lichens were still growing so richly in the middle of such a large urban area .

Reported by Judy Robertson.

Cals Annual Meeting and Birthday Party
Januard 29, 2005

Following the CALS field trip to San Bruno Mountain (see p. 16 this issue) on January 29, 2005, the participants relocated to the Brickyard Landing Clubhouse in Point Richmond for the CALS Annual Meeting and 11th Birthday Party. The organization appears to be healthy and fiscally sound, so a little celebration was definitely in order.

Members started arriving at Brickyard Landing around four o'clock, and not too long after that the Board of Directors held their meeting. Subjects discussed included the CALS treasury balance of $11,228, student grants, the CALS library, a revised membership brochure, field trips, CALS' web presence, and a quarterly Board meeting schedule.

The usual alchemy occurred around six o'clock and a fine pot luck dinner with delicious variety appeared on the long tables resurrected from the clubhouse closet. The traditional birthday cake ended the meal.

The best treat of the evening followed, a lecture by CALS member Susanne Altermann,a student at UC Santa Cruz, about her recent work on the genus *Letharia.* We learned that there was more to *Letharia* than our two old friends *L. vulpina (*sorediate) and *L. columbiana* (fertile). People have been studying the morphology of *Letharia* for over fifty years. In recent times DNA sequencing applied to these two species has confirmed that *L. vulpina* and *L. columbiana* do not appear to interbreed at all. Furthermore, *L. vulpina* can be divided into two lineages, one along the coast ranges and the other in the inland mountains; and *L. columbiana* consists of four genetically distinct lineages.

Algal partners have also been investigated and although most *Letharia* are adaptable to a number of algal lineages, *L. vulpina vulpina* always pairs up with a *Trebouxia* of the same lineage. Susi is now continuing the study of this symbiotic species complex. If the fungal partner of a lichen is able to exchange its algal partner for one more suited to particular climate conditions, for instance, it would have an effect on the adaptability and success of the lichen over time, as would genetic diversity within

and between lineages. Susi's article on this subject appeared in the December 2004 CALS bulletin. If you are interested in helping Susi in her work by supplying *Letharia* specimens from certain locations in the west you can reach her at: <salter@biology.ucsc.edu> for details.

Next on the agenda was an informal Annual Meeting of the Society. President Bill Hill presided, and reported that new members coming into the Society were mostly Fungus Faire participants and contacts through the CALS yahoo group. The group discussed the possibilities of doing more in the area of outreach activities to include teachers and school children, and the possibility of coordinating CALS field trips with Conservation Committee activities and with members engaged in research.

The meeting was adjourned at 8:50 pm after a full day of lichen related activity.

Reported by Janet Doell

Exploring for Myxomycetes (Slime Mold)
led by Don Kowalski
Saturday, February 12, 200

This was a great day! Eighteen of us met at the College of the Redwoods in Fort Bragg for a slide presentation by Dr. Don Kowalski, expert on Myxomycetes and then a walk through the nearby Mendocino Coast Botanical Gardens learning about these fascinating organisms.

Don is a dynamic speaker and field trip leader, getting everyone involved. He started by telling us about these interesting organisms that are a 'pulsating, throbbing mass filled with tens of thousands of diploid nuclei'. Their life cycle includes an acellular plasmodium, vegetative stage when they feed on bacteria, plant debris; and a sexual, reproductive phase when they produce the fruiting structures that are so diverse and unique.

He showed us slides of many different Myxomycetes, some of which he has described as new species. His work on montane species is especially rich. He said that when March and April came, the lowland species disappeared, so living in Chico, he would go in late spring to the margins of snow melts on Mt. Shasta or Mt. Lassen and find very perfectly formed fruiting bodies at the edge of the snow melt. Many of these species are ones he described as new.

A professor at Chico State for 26 years, Don taught mycology but is interested in the entire natural world. He is a docent at the Mendocino Botanical garden, he has led many lichen, mushroom and bryophyte classes and field trips, and he loves fishing as well.

At the Botanical Gardens, we found many specimens of Myxomycetes looking in eucalyptus litter, turning over rotting logs and on pine needles, various twigs and leaf surfaces.

Participating were: Sara Blauman, Debbi Brusco, Bill Hill, Greg Jirak, Lori Hubbart, Dot Johnson, Ricky Leyva, Barbara and Roland Pitschel, Jen Riddell, Judy and Ron Robertson, Jack and Caroline Schooley, Teresa Sholars, Margie Smith, Jessica and Loren Wilson.

Reported by Judy Robertson.

Introduction to the Foliose and fruticose Lichens Workshop
UC Berkeley Herbarium
Saturday, April 9, 2005

There were only 5 of us on this Saturday, but we had a great day. Judy Robertson led the workshop with Nancy Hillyard, Bill Hill, Steve Jolly, and Michelle Caisse participating. Using a teaching set of lichens, we studied lichen morphology in the morning and spent the afternoon doing identification. Steve and Michelle had brought some lichens so we used those and the ones we had worked with in the morning to go through the identification process. It was a beneficial day. Thank you to Dr. Richard Moe for arranging our use of the Berkeley meeting room, setting up the microscopes and letting us in and out of the Herbarium for the day.

Reported by Judy Robertson

Field trip to Rock Spring Mt. Tamalpais State Park, April 23, 2005

The weather on Mt. Tam is known to be very unpredictable and this day was no exception. A rain the previous evening had cleared the air and sun was shining as we turned off Highway 101 towards Stinson Beach and Mt. Tamalpais. Looking ahead, however, we could see the clouds hiding the summit. We arrived at the parking lot to find cold wind and cloudy skies. This was reminiscent of the same field trip led by Barbara Lachelt in April a few years ago.

Twelve hardy individuals donned the warmest clothes we had brought to begin the short walk across the road heading for a large oak and serpentine outcrops. Marin County is blessed with quite a large and diverse lichen flora. On the oak ahead we expected to see over 30 species of lichens, easily visible and recognizable. We started at the twigs to find *Xanthoria polycarpa* (Hoffm.) Rieber, *Physcia adscendens* (Fr.) H. Olivier, to the larger branches to find the lichens so common in the area: *Parmotrema arnoldii* (Du Rietz) Hale, *Flavopunctelia flaventior* (Stirton) Hale, *Hypotrachyna revoluta* (Flörke) Hale, *Parmelia sulcata* Taylor, *Melanelia subolivacea* (Nyl.) Essl. Moving to the trunk of the tree, we found *Peltigera collina* (Ach.) Schrader, *Pseudocyphellaria anomola* Brodo & Ahti, and *P. anthraspis* (Ach.) H. Magn., *Sticta limbata* (Sm.) Ach., and *S. fuliginosa* (Hoffm.) Ach. Lovely *Physconia americana* Essl. was green from the rain. The wet lichens became somewhat of a challenge to recognize, all looking more green than their recognizable color. There were crusts of *Ochrolechia subpallescens* Vers. and we almost overlooked the fruticose lichens *Ramalina farinaceae* (L.) Ach., *Evernia prunastri* (L.) Ach., and *Usnea arizonica* Mot.

In this area are quite a few flat spots where cyanobacteria and soil lichens thrive. The rain the previous day was a plus for us because the *Collema* and *Leptogium* species were swollen and much more noticeable in the black, cyanobacteria masses. *Leptogium tenuissimum* (Dickson) Körber, *Collema tenax* (Sw.) Ach., *Endocarpon pusillum* Hedwig, *Placidium* sp. could be found along the margins of these clearings and *Dermatocarpon miniatum* (L.) W. Mann was nestled in the small rocks where the water pools.

We then moved on to the serpentine rock outcrops nearby. This is a good site for the tiny-lobed *Xanthoparmelia mougeotii* (Schaerer) Hale, the soralia erupting on the surface. *Stereocaulon* contrasted with *Sphaerophorus globosus* (Hudson), *Lecidella stigmatea* (Ach.) Hertel & Leuckert and *L. asema* (Nyl.) Knoph & Hertel grew side by side. *Rimularia insularis* (Nyl.) Rambold & Hertel was common on the *Lecanora rupicola* (L.) Zahlbr. *Lecanora gangaleoides* Nyl. and *Tephromela atra* (Hudson) Hafellner grew close together. *Xanthoparmelia* sp, *Punctilia stictica* (Duby) Krog, *Parmelia saxatilis* (L.) Ach. were abundant. On the knobby outgrowths of the rocks, *Thelomma mammosum* (Hepp) A. Massal was common. Four to five *Cladonia* species were on the rock or at the base: *Cladonia furcata* (Hudson) Schrader, *C. fimbriata* (L.) Fr., *C. ochrochlora* Flörke , *C squamosa* var. *subsquamosa* (Nyl. *ex* Leighton) Vainio, *C cervicornis* ssp. *verticillata* (Hoffm.) Ahti. On mosses were *Ochrolechia upsaliensis* (L.) A. Massal and *Trapeliopsis wallrothii* (Flörke) Hertel & Gotth. *Solenospora crenata* (Herre) Zahlbr., the small *Psora*-looking lichen was on one of the outcrops. *Peltula euploca* (Ach.) Poelt grew in a small depression on rock where the water must pool a bit. Over 50 species of lichens were recognizable and many others were present but not identified.

We headed back to the picnic tables by the parking lot for lunch. After lunch we walked toward Mt. Theater to find *Sarea resinae* (Fr.) Kuntze on Douglas fir resin, then walked to an area close by where we saw *Dendriscocaulon intricatulum* (Nyl.) Henssen growing on Madrone bark. The small specimens were surrounded by other cyanolichens: *Nephroma parile* (Ach.) Ach., *Pannaria rubiginosa* (Ach.) Bory, *Pseudocyphellaria* sp., *Lobaria pulmonaria* (L.) Hoffm., *Peltigera collina* (Ach.) Schrader, *Sticta limbata* (Sm.) Ach., and *Leptogium* sp. Close by on the Douglas fir trunks were *Platismatia herrei* (Imshaug) Culb. & C. Culb and *P. glauca* (L.) Culb & C. Culb., *Tuckermannopsis orbata* (Nyl.) M.J. Lai, *Cladonia macilenta* Hoff., *Ochrolechia oregonensis* H. Magn., and *Usnea ceratina* Ach.

On our return we stopped by a serpentine swale to see a squamulose, bright orange *Caloplaca* species presumed to be *C. squamosa* (de Lesd.) Zahlbr.

The last stop was at the rocks by the picnic area. Here *Physcia erumpens* Moberg can be found. This is one of the few *Physcia* species with a black lower surface and it is quite common on the shady side of a large boulder there. The last stop was an oak next to the parking lot where *Hyperphyscia adglutinata* (Flörke) H. Mayrh. & Poelt cover an entire side of the trunk. Quite spectacular!

Attending were: Marge Gibbs, John Federchek, Ken Howard, Michelle Caisse, Sara Blauman, Kathy Faircloth and her son Steven, Boyd Poulsen, Bill Hill, Judy and Ron Robertson and visiting us from New Hampshire was Deb Levin with her daughter Sara. The field trip was led by Judy Robertson.

A list of the lichens on Mt. Tam prepared by Judy and Ron Robertson for the State Parks system appeared in the last issue of the CALS Bulletin (Vol. 11 No.2).

Reported by Judy Robertson.

A Sincere Thanks

The California Lichen Society would like to thank our benefactor, donor, and sponsor memberships in 2005. Their support is greatly appreciated and helps in our mission to increase the knowledge and appreciation of lichens in California. There have been no Life Memberships so far in 2005, but in 2004 we had three, including Trevor Goward whom we inadvertently missed listing in the December 2004 bulletin. We sincerely apologize for the error and list again here last year's Life Memberships.

2004 Life:	2005 Benefactor:	2005 Donor:	2005 Sponsor:
Irene Brown	E. Patrick Creehan, M.D.	Les Braund	Philippe S Cohen
Kathleen Faircloth		Bill Hill	Lawrence Janeway
Trevor Goward		John Pinelli	Patti Patterson
		Boyd Poulsen	Dan Holtman
		Curt Seeliger	
		Susan B Wainscott	
		Peter Warner	

CALS Educational Grant Awarded For 2005

For 2005, CALS announced the availability of two educational grants in the amounts of $1,000 and $1,500. The Board of Directors decided that one person could apply for both grants.

The CALS Educational Grants Committee is pleased to announce that both grants, for a total of $2,500, have been awarded to Susanne Altermann, of U.C. Santa Cruz, for her research on the genus *Letharia*.

For her dissertation research project, Susanne is studying the phylogeographic structure of *Letharia vulpina* 'vulpina' *and Letharia vulpina* 'lupina' and their *Trebouxia* green algal partners throughout their geographic range in Western North America.

Her work should provide much-needed information on how *Letharia* populations in one region are genetically related to those of other regions. We look forward eagerly to reading about the results of her research.

Upcoming Events

Armstrong Redwoods State Park
Led by Doris Baltzo
September 17, 2005 10 am to 2 pm

Strolling through this beautiful old-growth redwood forest, we will see some of the tallest and oldest trees remaining in this part of California. The Parson Jones Tree is about 310 feet high; the Colonel Armstrong Tree is more than 1,400 years old.

During the 1880's, this area was set aside as a "natural park and botanical garden" by Colonel James Armstrong, an early-day lumber man who recognized the beauty and natural value of the forests he harvested. Today, the ancient redwood forest within the park is the largest remaining old-growth redwood forest in Sonoma County. It is a living reminder of the magnificent primeval redwood forest that covered much of this area before logging operations began during the 19th century.

Along with the coast redwoods in this grove there are also a number of other trees including tan oak, California laurel, and big-leaf maple. In springtime, the forest floor is carpeted with clover-like redwood sorrel, trillium, fairy bells, and redwood orchids. In winter, mushrooms, mosses, lichens, and liverworts exhibit their fantastic shapes and colors. On our field trip to this State Park we will see at least 5 species of Usnea including *Usnea longissima* Ach.

Doris Baltzo, longtime CALS member and *Usnea* expert will help us discern the field marks for each species.

Meet at the Park parking lot outside the entrance at 10 am. Bring a lunch. No collecting will be permitted.

Information in this announcement was obtained from the Website: <www.parks.sonoma.net/Armstrng.html>.

Pinnacles National Monument
San Benito Co.
October 14-16, 2005

Rising out of the chaparral-covered Gabilan Mountains, east of central California's Salinas Valley, are the spectacular remains of an ancient volcano. Massive monoliths, spires, sheer-walled canyons and talus passages define millions of years of erosion, faulting and tectonic plate movement. Within the monument's boundaries lie 24,000 acres of diverse wildlands. The monument is renowned for the beauty and variety of its spring wildflowers. A rich diversity of wildlife can be observed throughtout the year.

The rock formation of Pinnacles National Monument divides the park into East and West Districts which are connected by trails, but not by a vehicle road. More than 30 miles of trails access geological formations, spectacular vistas and wildland communities.

Shelly Benson, a CALS member working for the Park Service, completed a survey of this area (See also p. 3, this issue). CALS has the opportunity to continue the project. We will camp nearby. Watch for more information on the CALS regular and Yahoo Websites.

Information in this announcement was obtained from the Pinnacles Website: <http://www.nps.gov/pinn/>.

Visit to the ASU Herbarium in Tempe, Arizona
November 11-13, 2005

Dr. Tom Nash has approved our visiting the ASU Herbarium on this Veteran's Day weekend. One of the purposes of this visit is to continue to develop a California Lichens Reference Collection for use by CALS members. Participants will bring their own specimens for identification or identification verification. Duplicates of specimens will then be placed in the CALS Reference Collection.

We will stay in the nearby area. Look for more information on the CALS regular and Yahoo Websites.

Before visiting the Herbarium, we suggest exploring the ASU Website; <http://ces.asu.edu/ASULichens>.

You can query the ASU database as part of SIENet, the Southwest Environmental Information Network; sign up to participate in the Lichen Specimen Exchange; learn more about the Sonoran Desert Lichen Flora Project, even selecting individual field trips that contributed to the Project; find out Who is Who in the ASU Herbarium and participate in PBL400, A Lichenology Class, with an interactive Teaching format.

SF Mycological Society Fungus Fair
Oakland Museum
December 2005

No date has been set for the Fungus Fair for 2005, but this is quite a spectacular event. CALS has been hosting a display for many years, even before the formal organization of the Society. Bill Hill sets up a table with microscopes, always a big hit with young and old alike. Seeing lichens, up close and personal, is a new experience for all age folks. For the last 2 years, Irene Winston has moved the display into the cutting edge by keeping us updated with the latest information about Lichen Phylogeny, much of her data coming from the Tree of Life project.

Please let us know if you can help with the display and please plan to attend. Watch for more information on the CALS regular and Yahoo Websites and at <http://www.mssf.org/ffairs.html>.

Ongoing Lichen Identification workshops
College of Marin
2nd and 4th Wednesdays, 5:30-8:30 pm

Dr. Paul daSilva has been willing to let CALS use one of the College of Marin classrooms with microscopes for bimonthly lichen identification workshops. Patti Patterson has been our coordinator and we have had a good number of participants, mostly from the Marin area.

The address of the College is:
College of Marin Science Center, Room 191
835 College Avenue
Kentfield, CA 94904

The scheduled day is now Wednesdays, changing back to Fridays in September. More information on the CALS regular and Yahoo Websites.

Lichen ID workshops at Sonoma State University are being postponed until we can find a home for the meetings on campus. Darwin Hall is in the middle of a renovation project.

Announcements

CALS library announcement

The California Lichen Society is very pleased to announce the institution of a lending library of literature relating to the field of lichenology, made possible through the generosity of Stephen Sharnoff. The library consists of 1105 entries, mostly photocopies of articles from journals, proceedings of symposia, presentations, technical reports, theses and dissertations, in whole or in part. These photocopies have been gathered from more than 300 sources. There are also approximately 40 books.

The "card catalog" for the library is available online at <http://crustose.net/~cals/library>, as a searchable Excel file. A data dictionary for the library is also at that location. Borrowing from the library is possible for members, in good standing, of the California Lichen Society only. The rules are as follows: 1) requests for literature based on the library record shall be made electronically to <calslibrary@yahoo.com>; 2) loans are made for no more than one month; 3) literature is to be returned at the end of that time at the expense of the borrower.

The Society would like to express its gratitude to Stephen; the library is a valuable resource for CALS members, and we recognize the time and effort required to assemble such a collection. Thanks, Steve; happy lichenizing!

Subject headings in the CALS library

Acid rain
Air
Amphibian
Animal
Animal, small mammal
Basidiolichens
Bibliography
Biomass
Bird
Book
Community
Compound
Conserve
Conserve, soil
Culture
Dating
Environment
Evolution
General
Growth
History
Human
Human, Africa
Human, Asia
Human, dye
Human, east North American Plains
Human, Europe
Human, food
Human, general
Human, Latin America
Human, New Zealand
Human, Northwest
Human, perfume
Human, Pharmaceutical
Human, Southwest
Invertebrate
Lab
Large mammal
List
Metal
Miscellaneous
Misc. wildlife
Morphology
Nitrogen
Physiology
Plan
Radiation
Reindeer
Reindeer, large mammal
Small mammal
Soil
Storage
Substrate
Symbiosis
Taxon
Toxic
Tropics
Water

Central Sierra Study Group

The Central Sierra Lichen Study Group was formed after a meeting of three at a coffee house in Murphys, California earlier this year. Present were Barry Boulton, a very active member in local and regional environmental organizations and an avid nature photographer; Dr. Tom Hofstra, an adjunct professor of Botany at Columbia Community College; and myself, Boyd Poulsen.

We have just had our third monthly outing, which took place at the U.S. Bureau of Reclametion's New Melones Dam and Recreation Area. We were greatly assisted by the presence of Bureau rangers Patti Guida and Leanne Ryan. The area is always a great early spring bird and wildflower place for those of us in snow country. Up to this point we have spent most of our outings discussing what lichens are, lichen morphology and reproduction, along with naming those species that we recognize.

On our last trip we went to Tuolumne Table Mountain which is a volcanic mudlfow that followed the ancient Stanislaus River bed. After

hardening, it was surrounded by softer materials which eroded away, leaving a long meandering structure. We were delighted to have Ron Robertson along on this outing to share his knowledge of both lichens and bryophytes.

We are a small but determined group and after the end of this most spectacular wildflower season we expect to be joined by some local CNPS folk. Anyone interested in joining in may contact Barry Boulton (209)795-5400, Tom Hofstra (209) 588-2861, or Boyd Poulsen (209) 795-5400.

Minutes of the California Lichen Society General Meeting January 29, 2005.

Location: Club House, Brickyard Landing, 1223 Brickyard Cove Lane, Point Richmond

The meeting was called to order by President Bill Hill at 8:00 pm, January 29, 2005, at the Brickyard Landing Clubhouse in Point Richmond following the San Bruno Mountain State Park field trip, annual potluck dinner, and Letharia slide show by Susi Altermann. This was an informal meeting so the reading of the previous meeting's minutes, treasurer's report, and committee reports were not done.

Officers Present:

Bill Hill, President, presiding
Boyd Poulsen, Vice President
Sara Blauman, Secretary
Kathy Faircloth, Treasurer

Minutes: None.

Treasurer's Report: None.

Committee Reports: None.

Old Business: None

New Business: What's happening with the Lichen Society - President Bill Hill reported that most CALS new members come from the Fungus Faire and the cals yahoo group. Bill mentioned that there has been a surge of interest in Myxomycetes amongst the membership and that Stephen Sharnoff donated reference materials on both lichens and slime molds to CALS and that these would be available in the CALS library.

Outreach – Discussion on how CALS could expand current outreach activities to include teachers and school kids. A suggestion was made to prepare and disseminate packets of learning materials for teachers targeted at various age groups

Field Trips – Field Trip Chairperson Judy Robertson reported that the CALS Field Trips should be coordinated with the activities going on in the conservation committee and possibly various researchers such as Susi Altermann.

The meeting adjourned at 8:50 pm January 29, 2005.

Sara Blauman, Secretary

Report on the CALS Conservation Committee Meeting

The Conservation Committee of the California Lichen Society (CALS CC) met with representatives of the California Department of Fish & Game's Natural Diversity Database (NDDB), the California Native Plant Society (CNPS), and other interested parties, including the Herbarium at the University of California Riverside (UCR), in order to develop a process to assess lichens for rarity. The meeting took place in Sacramento, CA on January 14 - 15, 2005. While this report is intended primarily to publicize the process that was developed, additional highlights from the meeting are of interest to lichen conservationists in general. I ask reader's forbearance for all the acronyms in this report.

The first day of the meeting was devoted to discussion of process development, and to evaluation of the criteria used to assess rarity. Both NDDB and CNPS are concerned with species rarity, and while CNPS does not at present specifically address lichens, there are six lichens included in NDDB's Special Vascular Plants, Bryophytes, and Lichens list <http://www.dfg.ca.gov/whdab/pdfs/spplants.pdf>. The presence of both CNPS and NDDB representatives is an indicator of the growing realization that lichens are an integral part

of ecosystem processes. Their reliance on the CALS CC for scientific evaluation of species' rarity was stressed. After extensive review of both the CNPS and NDDB ranking criteria, it was decided to use the NDDB ranking criteria for the CC sponsorship form. Both ranking systems are described in the pdf file at the URL listed above.

An important part of the discussion concerned the differences between lichen and plant rarity, including broad vs. narrow endemism, rarity resulting from rates of evolution, lichen "relicts," and island phenomena. One of the greatest differences between lichens and plants is the scale of rarity. Rare lichens are frequently rare across an entire landscape, such that they are endemic to an entire region, e.g. northwest North America, or the Pacific Northwest coast. Rare vascular plants are often restricted to particular soil types (e.g. serpentines or ultramafics) and specific geographic localities, resulting in extremely narrow endemics, such as the Humboldt Bay wallflower (Erysimum menziesii ssp. eurekense), which grows only along a thirteen-mile strip of northern California's coast.

A key point for CALS CC, NDDB and CNPS was the consideration of species that fall into the "not enough information" category. Both NDDB and CNPS already have ample experience with species about which little is known. It encompasses uncertain taxonomy or problems of nomenclature, newly-published species, or species that are undercollected for various reasons. These difficulties frequently result in plant species being assigned ranks of lesser urgency. CALS CC members acknowledged this concern, and addressed it by prioritizing their initial list, limiting the initial efforts to those species that would not fail due to the above listed problems.

CALS CC had already decided to use a sponsorship system in which individuals assume responsibility for a particular species, agreeing to compile and summarize the best available information about the species taxonomy, range, distribution, abundance, biology, reproduction, population trends, and threats to the species.

The most important result of this meeting is the process developed by the Conservation Committee, with the input of NDDB and CNPS personnel. Briefly, it consists of eight steps: 1) creation of a "brainstorming" list; 2) prioritizing of the list; 3) data collection for species accounts; 4) completion of the sponsorship form for each species; 5) publicizing the information summarized on the form for public and peer response; 6) additional data collection based on peer response; 7) a second period of response; and 8) list assignment, including rank. Each step in the process has a completion date associated with it; steps 1 and 2 were completed before the meeting ended. Step 3 is to be completed before the next CC meeting in October 2005, and list assignment is expected to take place in April 2007, at which point the completed list of recommendations would be available to biologists, administrators, land managers and the general public.

The CALS Educational Grants Program

CALS is pleased to offer small academic grants to support research on the lichens of California and/or neighboring states. Typical grants are for about $500.00, but amounts are dependent on the number of applicants, and the CALS budget. The Educational Grants Committee administers the Educational Grants Program, with grants awarded to a person only once during the duration of a project.

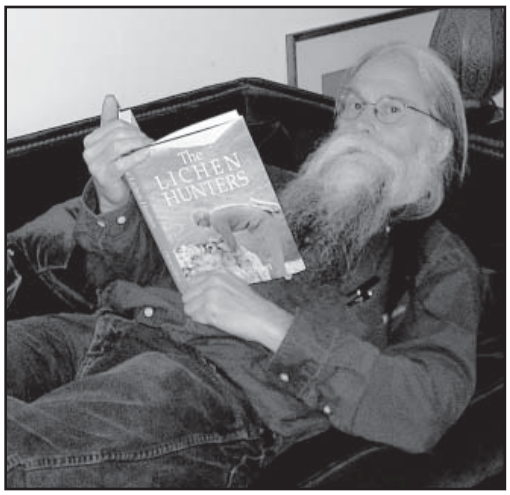
Students are encouraged to submit grant proposals for 2006 containing the following information:

1. Title of the project. Applicant's name, address, phone number, e-mail address. Date submitted.
2. Estimated time frame for project.
3. Description of the project. Briefly and concisely 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 lichens.
4. Description of the final product: We ask you to submit an article to the CALS Bulletin, based on dissertation, thesis or other work.
5. Budget. Summarize intended use of funds. If you received or expect to receive grants or

(continued on page 28)

President's Message

Comparisons



Recently I was reading about the history of the British Lichen Society (BLS) in "The Lichen Hunters" by Oliver Gilbert, and musing over comparisons of CALS with the BLS and our neighbor the Northwest Lichen Guild (NWLG). I had not even finished reading the book when sadly I learned from the lichens-l email by William Purvis that Oliver Gilbert had died. The BLS was formed in 1958 and has a rich and solid history. We ourselves have accumulated some history since we began in 1994 but are a relatively new upstart with the NWLG being around even before us with an informal newsletter, annual meetings and forays. Remember that we came to being because some of us kept meeting each other year after year in tending the lichen exhibit at the annual December San Francisco Mycological Society Fungus Fair, and decided to form a Lichen Society. It is interesting that when we formed, Janet Doell immediately garnered us a Federal Nonprofit Corporation status ("501c3"), something which the NWLG did not even have. But then the NWLG developed a 'lichen identification certification' program - mostly to allow certified 'legal' environmental assessments of the northwest forests. Our surveys are primitive in comparison, although we now have a Conservation Committee attempting to determine systematically our rare and endangered lichens.

We're basically an informal bunch, subsisting nearly entirely by donations. We have never charged for our fieldtrips, workshops, lectures, seminars, or symposia. Despite our informality our CALS Bulletin is of scientific merit. Albeit small and nothing quite like "The Lichenologist", it is a scientific journal complete with peer review of articles -- thanks to its founding editor Darrell Wright (1994 - 1996 and again 2000 - 2001), and subsequent editorial leadership of Dick Moe (1997 - 1999), Cherie Bratt (2001 - 2003), and now Tom Carlberg, with Richard Doell doing the production editing in recent years and editorial assistance from Isabelle Tavares, Shirley Tucker, William Sanders, and Larry St Clair variously throughout the time. We currently have a paid membership (which gets you the bulletin) of 193 worldwide, including 139 California addresses.

Although we began with some very qualified 'official' lichenologists amongst us, including for instance Harry Thiers, Charis Bratt, and Isabelle Tavares, I am envious of the BLS beginning with the expertise and resources of the British Museum at their disposal, with members regularly having their identifications checked by experts there - maybe if the Smithsonian were in San Francisco. Somehow occasionally taking some of our specimens to Bruce Ryan at ASU isn't quite the same.

Like Oliver Gilbert's excursions to the Flannan Isles, St. Kilda and North Rona, Cherie Bratt has brought us to 'her' Channel Islands by Santa Barbara, but (hint hint) we have yet to visit the Farallones. We do try to develop checklists from our fieldtrips - but pale compared with the thoroughness of the BLS (e.g. their Churchyard lichen recording), and I am stunned by how well they have scoured - and know - the lichens of every loch and isle of their 315,134 km² territory. Of course we do have a rather wide range

of habitats in our 410,000 km² California - much unexplored for lichens; and we do tend to 'annex' nearby states such as Nevada, Oregon, and Arizona for occasional fieldtrips! There must be many undescribed species still lurking between our deserts, mountains, and coastal forests. In comparison, I dare say we have just begun.

Cyberlichens

Besides another major meeting of the Conservation Committee, our newest activity is to revive our Database Committee, as well as experimenting with a web presence at <http://crustose.net/~cals>(thanks to Michelle Caisse), so come see how its growing. At our April 23 board meeting on Mt Tam we reformed the Database Committee with Michelle Caisse, Sara Blauman, and me/Bill Hill as membership (with additional help currently from Eric Peterson, Kerry Knudsen, Darrell Wright, Tom Carlberg, and Dick Moe). The idea of a Database Committee was first instigated by Charis Bratt some years ago to create a distribution listing/map of lichens in our region. At the time we vowed to catalog the lichens at the Harry Thiers herbarium at San Francisco State University (SFSU, which we believe to be one of the best representations of California lichens), but that task has yet to happen. (I DID scan images of all 13 of the Harry Thiers field notebooks and uploaded them online, so that any of us *could* now help transcribe them into database form. That would be a great start for a big chunk of the collection listing. Do let us know if you want to help.)

Meanwhile Cherie has cataloged online the collections at the Santa Barbara Botanical Garden (see now at <http://seinet.asu.edu/collections/selection.jsp>) using the database system developed at ASU. Our committee hopes to develop an effective, easy to use, database system for our members, and is now collecting information on how members and herbaria currently catalog collections, what database fields they are using, what they like and don't like about their current methods, and what we want our data entry and storage system ultimately to be. You can help us by answering the survey at <http://sonic.net/~mcaisse/LichenDBUserSurvey.html> We are hoping to develop something for lichens (but may end up for 'everything') that is non-proprietary, open source, and "so efficient for data entry and retrieval that everyone will want to use it".

In past President's Messages, I keep harping on how to make computers and the 'information revolution' work for advancing lichenology. I was re-energized with this bent after finding "The Unfinished Revolution" (2001)-by Michael Dertouzos, director of the MIT computer science lab. His thrust is how we now must make computers work for us, rather than the other way around, and goes about discussing how this will happen – and is already beginning to, especially with the internet. There was much in it to inspire me regarding our collections computer database, library catalog, and even computer assisted lichen identification.

I muse at how Isabelle Tavares at UC Berkeley would hedge in her inimitable way about the identity of a particular *Usnea* specimen. She would say "I can't do anything about this taxon until I see the type specimen"... but the type specimen typically is unavailable. Well if lichen (or any other) taxonomy is going to get 'unstuck', we will need to be able to 'see' the type specimen without actually having it right in front of us! I suspect this means that the world's type specimens have to be microscopically and anatomically 'photographed', chemically and genetically analyzed, and otherwise 'sniffed' and recorded into a universally accessible database, so one won't usually need to have the actual specimen in hand to answer that question about it – after all that question, and the answer, are only information, the currency of our cyber-era.

The Identification Bottleneck – This is an especially recurrent theme with us. As there seems to be less and less funding for lichenology, we may have to do it without much support, cooperatively bit by bit where we can. Who will pay herbarium curators to database the collections, say nothing of organizing and identifying all the unknowns, so we can have an idea of what was the flora of our planet and how

it might be changing?

At our recent board meeting we were considering how CALS could do more lichen surveys requested of us, and Judy reminded us that she does not have the time to adequately finish identifying material from one survey before the next one comes along. We need a more accessible way to have help with hard to identify specimens (such as with reference collections and accessibility to other lichenologists willing to help). We need more people willing to make lists for surveys we are asked to do.

That very evening I got an email from Doris Baltzo asking "Wouldn't it be nice if there were a list of all the lichen courses being given in the US, and I could then send them a few of my unidentified collections of these years, to help teach students to identify them? I.e. – WHO is now teaching lichens and could use what I have?" At SFSU Dennis Desjardin told me there were boxes full of undetermined lichens collected by Harry Thiers that are not even incorporated into the herbarium collection. Everybody has unidentified specimens. Not surprisingly I have nearly a roomful of such 'unidentified' material!

All of this 'unprocessed' material, if in reasonable condition and with important collection information still available (on the packets, in collection notebooks, etc.) is a goldmine of potential new discoveries and knowledge of lichen distributions in the past. They should not just be discarded. But how are we to deal with this enormous legacy? I'm hoping a bit of the answer may be there in cyberspace. In this regard I like the start Ed Uebel has made online at <http://groups.yahoo.com/group/LichenClass/>

... just some thoughts on where we've been and where we may be going, as we go fearlessly onward.

Bill Hill <aropoika@ earthlink.net>

(continued from page 25)

other material support, show how these fit into the overall budget.

6. Types of things for which grant funds may be used if appropriate to the objectives of the project include: Expendable supplies; transportation, equipment rental; laboratory services, salaries, living expenses. (CALS does not approve grants for outright purchase of high-end items such as cameras, computers, software, machinery, or for clothing.)

6. Academic status: State whether you are a graduate student or undergraduate student.

7. Academic support: One letter of support from a sponsor, such as an academic supervisor or major professor, should accompany your application. The letter can be enclosed with the application, or sent separately to the CALS Grants Committee Chair.

8. Your signature, as the person performing the project and the one responsible for dispersing the funds.

The Education Grants Committee brings its recommendations for funding to the CALS Board of Directors, and will notify applicants as soon as possible of approval or denial.

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 a short article to the CALS Bulletin.
3. Submit any relevant rare lichen data to the California Natural Diversity Data Base using NDDB's field survey forms.

How To Submit An Application

Please send your grant application to Lori Hubbart, Chair of CALS Educational Grants Committee:

<lorih@mcn.org> or Lori Hubbart, P.O. Box 985, Point Arena, CA 95468.

CALS Educational Grants Program Committee: Lori Hubbart and Shirley Tucker.

The Bulletin of the California Lichen Society

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Contents

The deadline for submitting material for the Winter 2005 CALS Bulletin is November 5, 2005.

Back cover: Images from Lichens of Modoc Co., California. Clockwise from upper left: *Rhysoplaca melanophthalma*, *Lecanora muralis*, *Letharia columbiana*, *Melanelia subolivacea*, *Pleopsidium chlorophanum*, *Hypogemnia imshaugii*, *Umbilicaria krascheninni kovii* and *Caloplaca ignea.* Phographs by Richard Doell. (See also report on p. 13.)

Some Modoc Co. Lichens (captions overleaf)