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Front cover: *Texosporium sancti-jacobi*. Image by Janet Good. See lead article.

# Bulletin of the California Lichen Society

VOLUME 14

No. 2

WINTER 2007

## *Texosporium sancti-jacobi*, a rare endemic lichen of western North America: is it evanescent under drought conditions?

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### Abstract:

*Texosporium sancti-jacobi* (Tuck.) Nádv. is discussed as an ephemeral lichen in areas with low rainfall.

In summer of 2005, at Cabrillo National Monument in San Diego on Point Loma, Andrea Compton, a National Park Service ecologist, and I were surveying lichens on the Bay Trail. This trail is on the inside of the peninsula along the edge of San Diego Bay, and one can see the city of San Diego and in the distance Otay Peak and to the south Baja California. We climbed down a steep slope below the trail on to a bluff covered with coastal sage scrub and the beautiful endemic shrub *Euphorbia misera* Benth. The area was particularly rich in *Lepraria xerophila* Tønsberg on soil and is one of the few known sites of an undescribed terricolous *Buellia*. We soon started spotting abundant amounts of thalli of *Texosporium sancti-jacobi* (Tuck.) Nádv. (Figure 1 & Figure 2) on detritus, San Diego spike moss, wood fragments, rabbit dung, and soil. It is usually hard to spot *Texosporium* but it was everywhere with yellow-to-green neon mazaedium of the fertile apothecia. We had to watch where we stepped and decided to withdraw from the area to protect the population but estimated there were about 200-300+ individual thalli.

In summer of 2006, my good friend and photographer Rolf Muerter was working for me shooting lichens for a brochure that will eventually be published for Cabrillo National Monument. We dropped down on the bluff to photograph *Texosporium*, but I was perplexed when I only found one small thallus with two apothecia. Because we needed to get a good shoot that day we withdrew to

photograph other lichens. Andrea Compton thought I might have gone down too far to one side of the bluff, but I was pretty sure I was in right area. We agreed to survey the area during an upcoming project to more accurately estimate the population's distribution and numbers on the bluff.

In June, 2007, Janet Good, my lab assistant, and I went to survey the bluff and photograph *Texosporium* for the brochure project. This time we spent over an hour on the bluff—I was in the right spot-- and I only found one dead thallus on detritus, lacking apothecia with only decaying thalline



Figure 1. *Texosporium sancti-jacobi* growing on spike moss. Notice the thallus without apothecia on left hand side of the picture. Image by Janet Good. (repeated in color on front cover)



Figure 2. *Texosporium sancti-jacobi* growing on twig with *Caloplaca* species at Torrey Pines National Monument. Image copyrighted by Rolf Muertter.

margins. Nonetheless other lichens were abundant like *Lepraria xerophila* which grows in dry maritime conditions.

What happened?

There is a rainfall station at Lindbergh Field, the main airport, near Point Loma in San Diego (<http://www.sdcwa.org/manage/rainfall-lindbergh.phtml>). From October 2004-September, 2005, after a long drought in California since 1998, the station reported rainfall 222% higher than average, 22 inches vs. an average of 10-10.5 inches. The figures are not in yet for the rain year of 2005-2006 but coastal San Diego County had a dry winter, drier than most of southern California. The winter of 2006-2007 is the driest in southern California in 120 years of record keeping.

In 2005 Andrea and I saw the 200-300+ individuals of *Texosporium* during the record rainfall year of 2004-2005. We saw just a few thalli in both 2006 and 2007, years during a developing drought episode that hopefully will end in the rain year of 2007-2008. The obvious hypothesis is *Texosporium sancti-jacobi* is an ephemeral lichen, especially under rainfall averages lower than ten inches a year.

We are accustomed to think of lichens as slow-growing and perennial in western North America. In temperate climates like the Czech Republic or the southern Appalachian Mountains where it rains almost every month, or in an oceanic climate like Great Britain, ephemeral lichens, lichens which grow and fruit in one season, are a common component of the biota.

One well-known genus of mostly ephemeral fungi and lichenized fungi is *Thelocarpon*. These are tiny perithecioid species with scant thalli. Vězda studied the genus *Thelocarpon* on a wooden post of his garden fence in the Czech Republic for two years (Poelt and Vězda 1990). Fruiting bodies only occurred for a few months each year and would disappear in hot dry summer months. New ones would later arise from existing thalli or from new thalli. Jana Kocourková found that *Thelocarpon* thalli persisted for several years in moist favorable sites in the Czech Republic, but were not tolerant of excessive desiccation and disappeared. In favorable microhabitats it was possible to collect ripe fruiting bodies year round (Kocourková-Horaková 1998).

In summer of 2007 I surveyed a *Texosporium* site that I discovered with bryologist Tarja Sagar in November, 2003 in the Santa Monica Mountains (Knudsen 2003) I was measuring the locations of individual populations within a fifty foot range of accuracy so the data could be used in a model to predict if dust from a nearby housing project would affect populations on the ridge (which had become dedicated open space.) We had recorded our original *Texosporium* locations in 2004. While two small populations were in expected locations, others were not found, and two new populations were discovered along the ridge top. A scattered number of probable thalli were found that were infertile but they were hard to distinguish in field from the infertile thalli of *Trapeliopsis bisorediata* and possibly a *Trapelia*, both with a similar whitish phenocortex. This habitat is favorable enough for *Texosporium* to persist and fruit in 2007, the worst drought year in southern California ever recorded. But the ridge is near Ventura County which had higher rainfall than most of southern California. I queried Bruce McCune about possible evanescence of *Texosporium* and he commented: "I do remember in some places seeing a fair amount of sterile thalli, much less than the fertile material. We were reading plots and were being plagued by a sterile crust -- then we found it fertile and it was *Texosporium*. So I suppose that if the apothecia came and went, it might seem more variable in abundance than it really was." (McCune, pers. comm. 2007). McCune's observations are probably based on conditions similar to the Los Angeles County site, where there is sufficient rainfall for many thalli to persist from year to year.

The site at Point Loma is obviously drier, with persisting thalli rare during drought conditions. Under unfavorable conditions *Texosporium* appears to be evanescent. This needs further quantitative study through the monitoring of existing populations with plots set out and studied for presence/absence over time in relation to rainfall totals.

In the hymenium of *Texosporium*, after the asci are totally disintegrated, the paraphyses form a mazedium containing mature dark one-septate ascospores with a black coat of short hyphae surrounding each one formed from the paraphyses, a unique feature called an "episporium" (Tibell & Ryan 2004). This hyphal coating has been discussed as hypothetically acting the same as a seed coat to maintain spore viability for a prolonged period, preventing desiccation, as well as protecting spores from ultra-violet light (McCune & Rosentreter 1992).

We do not know how long spores can persist on a site, in the soil or in desiccated rabbit dung.

The breakdown of paraphyses forming a mazedium leaves the apothecial cup empty after dispersal. The cylindrical apothecial structures may be ephemeral, falling off after spore dispersal, whether thalli persist or not, instead of a fertile hymenium regenerating. Actually the atrophy of the apothecial structure or regeneration of the hymenium may both occur depending on microhabitat conditions.

*Texosporium sancti-jacobi* is a rare lichen currently listed on the California Natural Diversity Database's Special Vascular Plant, Bryophyte, and Lichen List (2007). This listing means it should at least be surveyed for on public lands if expected or reported in an area and given management consideration in California. The Conservation Committee has discussed an evaluation of its status with continued reports of the occurrence of *Texosporium*.

In California, *Texosporium sancti-jacobi* occurs in thin-soiled openings in coastal sage scrub or chaparral, free of non-native weeds and recent disturbance, though it could easily pioneer areas that were historically disturbed. Reports at least in California are usually based on just a few thalli (Riefner, pers. comm.) and no sites have been carefully monitored over time using quantitative methodology. Of 14 sites reported by Riefner and Rosentreter (2004) only at one site was *T. sancti-jacobi* reported to be locally common and at all the rest of its sites it was rare or very rare. McCune and Rosentreter (1992) report it as being rare at sites in Idaho, Oregon, and Washington and as well as Charis Bratt (2002; Bratt, pers. comm) on Santa Catalina Island and San Clement Island and Aliso Canyon in northern Santa Barbara County. Reports of it being locally common may have been observations made during favorable conditions.

Before a new report is made by the Conservation Committee to the California Department of Fish and Game's California Natural Diversity Database, the question of the evanescence of *T. sancti-jacobi* has to be addressed. Just tallying sites where *T. sancti-jacobi* has occurred and basing a re-evaluation on the number of its reported occurrences is not satisfactory. Some sites reported may be transitory. Others may be areas where the species has or will persist for long periods of time, though it may be absent, rare or common in various years depending on local conditions. Figures based on just fruiting specimens may ignore infertile thalli in the area. A deeper

understanding of *T. sancti-jacobi* is needed before its current listing is revised. People reporting *T. sancti-jacobi* should include in their reports at least subjective information on number of individuals seen (separate thalli) and if populations are small should refrain from collecting them. People should also if possible return to sites regularly and publish their observations or at least post them on the CALS listserv or send them to Eric Petersen, chairperson of the Conservation Committee. Quantitative scientific studies are necessary of the life cycle of *Texosporium*, but anecdotal reports can be of important secondary value, including locating good sites for further quantitative studies or informing the policy of the Conservation Committee.

*Texosporium sancti-jacobi* is typical of our knowledge of most lichens in North America, rare or common. While we have good developing taxonomic knowledge of many genera and species, we have insufficient knowledge of their distribution, life cycles, and ecological amplitude.

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*Vulpicida canadensis*. Photographed near his home in Weaverville, northern California, by Eric B. Peterson.

## New Records of Lichenicolous Fungi for California

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### Abstract:

The lichenicolous fungus *Licheniconium lichenicola* is reported new for North America. Six lichenicolous fungi—*Cercidospora caudata*, *Clypeococcum hypocenomycis*, *Diplolaeviopsis ranula*, *Stigmidium pumilum*, *Stigmidium tabacinae*, and *Unguiculariopsis thallophila*—and the host lichen *Toninia tristis* ---are reported new for California.

*Cercidospora caudata* Kernst is known from *Caloplaca* species in Europe and North America. It produces conspicuous black pseudothecia usually on the apothecia of the host and generally has 8 spores per ascus with 1-septate heteropolar spores (cells very unequal, the lower one usually narrow like a tadpole tail) (Navarro-Rosinés et al. 2004). It is probably frequent in California.

Cited specimens: Orange County: Santa Ana Mountains, lower Fremont Canyon, slope above Santiago Creek, 33° 47' 26" N 117° 43' 40" W, on *Caloplaca squamosa*, Oct. 6, 2007, Knudsen 9000 (UCR); Santa Barbara County: Santa Barbara, Bridle Ridge 34° 27' 25" N 119° 46' 01" W, 1624 m, 580 m, on apothecia of *Caloplaca subsoluta*, Oct. 27, 2005, Knudsen 4259.2 w/ Melody Hickman (UCR); San Bernardino County: Granite Mountains, Sweeney Granite Mountains UC Reserve, Granite Cove on apothecia of *Caloplaca* sp., Oct. 1998, Tucker 36277 (SBBG).

*Clypeococcum hypocenomycis* D. Hawksw. occurs in North America and Europe on the thallus of *Hypocenomyce scalaris* and has perithecioid ascomata and olive brown 1-septate spores (Ertz 2004). The host *H. scalaris* is common on the wood and bark of conifers and broad-leaved trees with acid

bark, especially when charred, and the lichenicolous fungus is expected to be common in suitable sites in California.

Cited Specimens: Riverside County: San Jacinto Mountains, San Bernardino National Forest, north fork of the San Jacinto River, 33° 47' 50" N 116° 47' 50" W, 1624 m, on squamules of *Hypocenomyce scalaris*, April 16, 2007, Knudsen 8297 (UCR) & Kocourková (PRM 909119).

*Diplolaeviopsis ranula* Giralt & D. Hawksw. has open pycnidia and 1-septate conidia, similar to *Lichenodiplis lecanorae*, but slightly curved, greenish, guttulate, and longer. It was described from Spain (Giralt & Hawksworth 1991) and also reported from Europe in (Roux et al 2006). It has been reported from Georgia and Kentucky in North America (Diederich 2003). It is confined to the *Lecanora strobilina* group. It was collected on *L. strobilina*, which occurs along the coast of southern and central California.

Cited Specimens: San Diego County: Point Loma, Point Loma Ecological Reserve, Navy property south of McClelland Road, south of waste management facility, east of cemetery 32° 42' 46" N 117° 15' 37" W, 79 m, on apothecia of *Lecanora strobilina*, chamise chaparral, old growth, with some *Rhus integrifolia*, May 1, 2007, Knudsen 8311 w/ Andrea Compton (UCR, PRM 848910); May 10, 2007, Knudsen 8351 (PRM 848908).

*Licheniconium lichenicola* (P. Karst.) Petr. & Syd. is a rare species characterized by conidiomata 100–200 µm diam., tall conidiogenous cells (6–)8–13(–15) x 2–3.5(–4.5) µm and ellipsoid truncated, verruculose conidia of (4–)6–8(–9) x 3–4(–6) µm. It is known so far from Europe in Finland (the type

locality), Germany, Luxembourg, Spain, and the Czech Republic, and from Africa on the Canary Island of La Gomera. It grows on various *Physcia* species, including *P. aipolia*, *P. dubia*, *P. semipinnata* and *P. tenella*, as summarized in Kocourková & Boom (2005).

Cited Specimen: Santa Barbara Canyon: Santa Rosa Island, Arlington Canyon, 33° 58' 26" N 120° 8' 28" W, 120 m, on thallus of *Physcia aipolia*, July 20, 2007, Kocourková & Knudsen (PRM 909120).

*Stigmidium pumilum* (Lett.) Matzer & Hafellner has been reported from a number of *Physcia* species in Europe, New Zealand, South America and North America (Triebel & Cáceres 2004). It forms a thin net of hyphae with ascomata on thallus but it can also occur on apothecia. It was collected on thallus of *Physcia tribacia* and *P. aipolia*. It is expected to be frequent in California on *Physcia* species.

Cited Specimens: San Luis Obispo County: north of Cayucos, on state property in Estero Bluffs, rock outcrop above beach, 35° 18' 19" N 120° 48' 58" W, 52 m, on thallus of *Physcia tribacia*, Dec. 16, 2005, Knudsen 4640 (UCR, hb. Etayo); Santa Barbara County, Santa Rosa Island, Arlington Canyon, northeast of Smith Highway, 33° 58' 26" N 120° 8' 28" W, 120 m, on thallus of *Physcia aipolia*, July 20, 2007, Kocourková & Knudsen (PRM 909121).

*Stigmidium tabacinae* (Arnold) Triebel in North America was reported from *Toninia tristis* in northern Arizona (Triebel et al. 1991). *Stigmidium* species have mostly 1-septate hyaline spores and, except for *S. psorace* group, lack interascal filaments. It was collected on *Toninia tristis* (Th. Fr.) Th. Fr. on soil. Both the lichenicolous fungus and the host are reported new to California. Since the host is apparently rare, the parasite is expected to be rare in California.

Cited specimens: San Bernardino County: Granite Mountains, Sweeney Granite Mountains UC Reserve, near Granite Cove above seasonal streambed on north-facing slope, 34° 47' 6" N 115° 39' 17" W, 1360 m, on squamules of *Toninia tristis* Dec. 3, 2005, Knudsen w/ Silke Werth 4479.1 & 4479.2 (UCR) 4479 (hb. Etayo).

*Unguiculariopsis thallophila* (P. Karst) W. Y. Zhuang has been reported from a number of species of *Lecanora* in Europe (Diederich and Etayo 2000). It was recently reported from North America by Diederich (2003). The species has simple hyaline spores and urceolate, almost closed apothecia with a

thick margin as well as K+ reddish exciple and excipular hairs. It was collected on *Lecanora subrugosa* Nyl. on a fir tree, *Abies concolor*, in San Bernardino Mountains. This is the second report from North America. A related species, not reported from North America yet, *U. lesdainii*, occurs only on *Lecanora saligna* (*U. thallophila* does not) but even though *L. saligna* is much more common in California than *L. subrugosa*, we have not found it yet. *Unguiculariopsis letharii* on *Evernia prunastri* was identified by Diederich on Tucker 37101 from Gold Hill, Jackson Co., NW of Medford, Oregon (SBBG).

Cited Specimen: San Bernardino County: San Bernardino Mountains, San Bernardino National Forest, Arctic Circle, 34° 14' 38" N 116° 58' 48" W, 2010 m, on apothecia of *Lecanora subrugosa* with *Vouauxiella lichenicola*, Knudsen 2073 w/ Chris Wagner (UCR, hb. Etayo).

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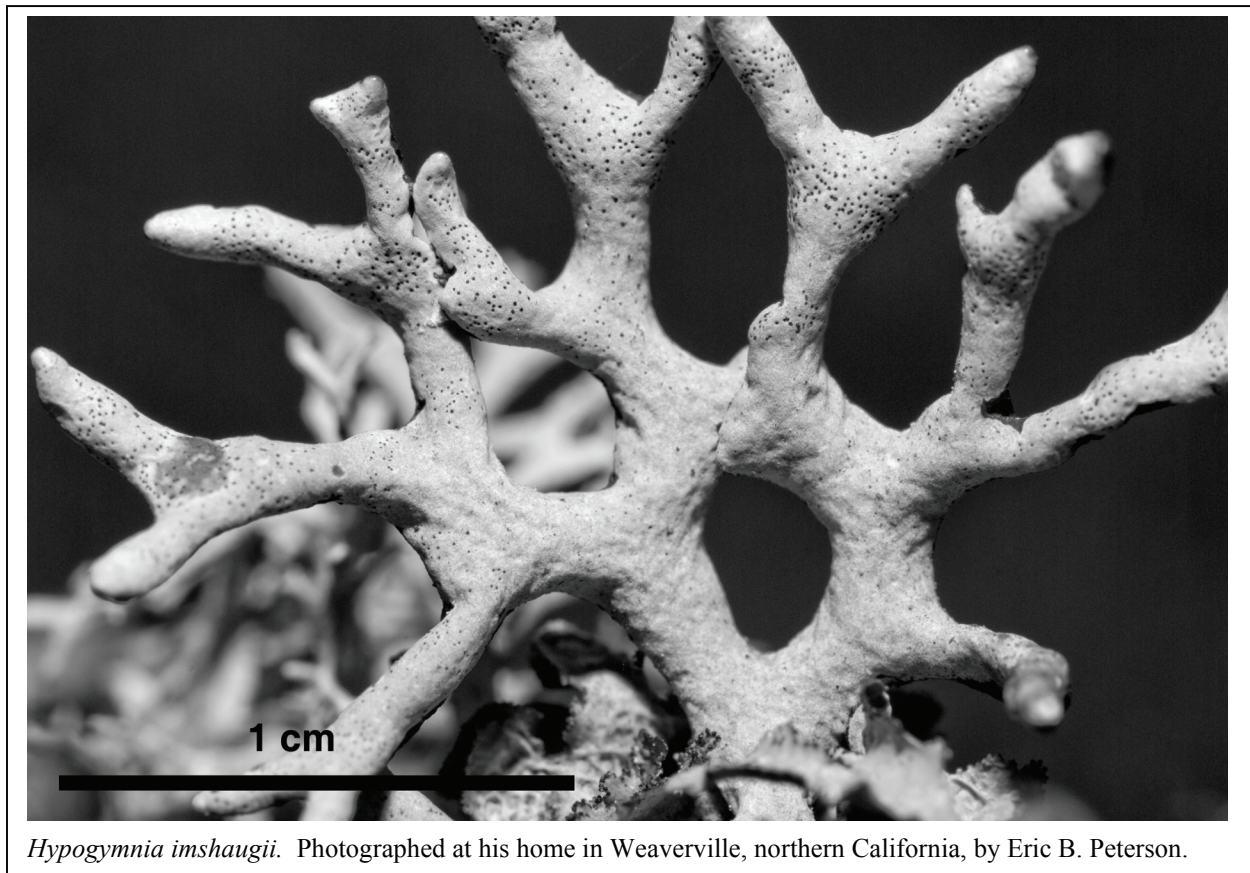


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*Hypogymnia imshaugii*. Photographed at his home in Weaverville, northern California, by Eric B. Peterson.

## *Cladonia firma*, Sponsorship for the CALS Conservation Committee

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### Executive Summary

*Cladonia firma* (Nyl.) Nyl. occurs at scattered locations in maritime habitats in Europe and is locally abundant. In North America it is known from only four populations in California on the southeast side of Morro Bay, in Los Osos and at Montana d'Oro State Park in San Luis Obispo County.

*Cladonia firma* occurs on soil and detritus on stabilized sand dunes in California, in pure stands or intermixed with other lichens and mosses forming biotic soil crusts, covering areas up to several meters. When dry the large primary squamules, which resemble leaves, become desiccated and curl-up, exposing the white undersides. From this fact is derived the vernacular "popcorn lichen." *C. firma* is easily visible to the naked eye and its squamules are the largest of any member of the genus *Cladonia* in California.

When *Cladonia firma* was first collected it was locally abundant in the Los Osos area, and was still reported as being locally abundant recently (Ahti and Hammer 2002), though neither author had personally visited the area in the last decade and a half. Unfortunately, since the discovery of the populations, housing developments have spread through the area severely reducing local habitats and extirpating populations. Existing populations are in decline and ultimately in danger of extirpation, especially from invasive veldt grass (*Ehrharta calycina* Sm.) (Knudsen and Lendemer 2006.)

In California, the Los Osos populations need to be protected through posting and possibly fencing of remaining habitat as well as acquisition of any significant populations on private property. On state park and BLM lands the populations need to be inventoried and

mapped and a management plan developed and implemented. It is proposed for listing on the California Natural Diversity Database's (CNDD) Special Vascular Plant, Bryophyte, and Lichen List with a Global Rank of G4-2 but a local rating of 1-1.

### TAXONOMY

**Accepted scientific name:** *Cladonia firma* (Nyl.)  
Nyl. Bot. Z., 1861: 352, 1861.

**Common name:** Popcorn lichen

**Type specimen and location:** PORTUGAL: Algarve, marim in glareosis maritimis, elevation about 5 m. C.N. Tavares: Lichenes Lusitaniae selecti exsiccati No. 39 (H! neotype)

**Basionym:** *Cladonia alcicornis* var. *firma* Nyl., Syn. Lich., 1: 191, 1858.

**Synonyms:** *Cladonia foliacea* var. *firma* (Nyl.)  
Vain.; *Cladonia nylanderi* Cout.

### DESCRIPTION

The thallus is squamulose and the squamules are persistent forming small clumps, 2-25 cm. in diameter, often sterile and without podetia when young. It is conspicuous when dry because the large squamules roll inward, are upright and densely packed together, exposing white or brown, esorediate undersides. The primary squamules are the largest in California, up to 25 mm. long and 10 mm. wide, deeply cleft and digitate with often secondary crenulation. They are up to 250  $\mu$ m thick. The crenulations of squamules elongate into digitate straps at the end of which squamules form. It is this process of elongation that gives the species its complex form. In undisturbed sites, *C. firma* forms contiguous populations. In mildly disturbed sites, *C.*

*firma* readily fragments, eventually forming new thalli that are tangled, attenuated structures of interconnected squamules, stalked pycnidia, and podetia with secondary squamules. This ability to regenerate, even if turned completely underside down, is well-adapted to the sandy maritime sites *C. firma* favors.

The thallus does not usually grow directly on the sand in the Los Osos and Montana de Oro populations, but actually favors openings in the maritime dune scrub or openings formed by the death of maritime chaparral where the sand is covered with a thick layer of detritus and there is abundant rabbit dung. It also grows on mosses. These sites are generally level or gently inclined.

The lower surfaces of the squamules are corticate with periclinal prosoplectenchyma and covered with a thick white fibrous coat of fine hyphae. In older squamules, this coat can blacken, probably due to interaction with soil or bacteria. Usually the fibrous coating eventually thins or disappears and the cortex turns dark brown. This can appear in fresh specimens to have a bluish tint to some people.

The upper surface of the squamules is a green to olive, sometimes becoming brown. It is glaucous because of a syncortex, an upper and uneven gelatinous coating up to 100  $\mu\text{m}$  thick, punctuated with pits and valleys where the gelatinous layer is often as thin as 5  $\mu\text{m}$ . This variation of thickness gives the surface a bumpy texture which is probably functional because water accumulates between the thick bumps in lower areas on the squamule surface and can easily be absorbed where the gelatinous layer is thin. The eucortex *in sensu* Knudsen is formed of mostly anticlinal prosoplectenchyma and is 30-50  $\mu\text{m}$  thick beneath the upper syncortex.

The podetia usually begin from the center of the primary squamules, arising to a height of up to 15 mm, sometimes branching, but narrow, usually 1 mm in diameter. Several podetia can arise from one squamule. The podetia surface is corticated and covered with bumps which are nascent squamules but can develop into new podetia. The podetium is cup-bearing, the cup usually abruptly flaring out as in *C. fimbriata*. The cups are usually shallow, 2-3 mm in diameter, and often one to three podetia arise from the center to form a second tier, resembling *C. cervicornis*. Sometimes secondary squamules develop around the rim of the cup.

The apothecia are brown and usually developed sessile or stalked on the rim of cups. The ascospores are hyaline, simple, and 14-17 x 2-4  $\mu\text{m}$ .



*Cladonia firma*, Knudsen 7261 (UCR). Characteristic look of large squamules when dry. Image © Janet Good 2007, printed with permission.



Podetia of *Cladonia firma*, usually one-tiered. Image © Janet Good 2007, printed with permission.

The pycnidia are brown, urn-shaped, sessile or stalked, arising on the edge of cups, on the sides of podetia, and from upper surface of primary squamules. The conidia are sickle-shaped, 5-7 x 1  $\mu\text{m}$ . Fine rhizohyphae, acting as anchors, can occur on the underside of thalli.

**Similar species and distinguishing characteristics:**

*Cladonia firma* can be easily determined by its primary and persistent squamules, the largest in California. The key in *Lichen Flora of the Greater Sonoran Area*, Vol. 2 (Ahti and Hammer 2002) works well for determining all *Cladonia* collected so far in San Luis Obispo County.

*Cladonia firma* (Nyl.) Nyl. belongs to the cervicornis group. All species of this group have tiered podetia. *Cladonia cervicornis* can easily distinguished from *C. firma* because the squamules of *C. firma* are distinctly larger and *C. firma* contains atranorin which *C. cervicornis* lacks.

There are atranorin-rich populations of an undescribed species in western North America, reported by Ahti and Hammer (1990). This species occurs in scattered populations from northern California to southern California, but has not been collected in San Luis Obispo County. It is easily distinguished from *C. firma* by its much smaller squamules and keys out as *C. cervicornis* in the key in *Lichen Flora of the Greater Sonoran Area*, Vol. 2 (Ahti and Hammer 2002)

**BIOLOGICAL CHARACTERISTICS**

**Growth form:** squamulose.

**Reproductive method:** spores or conidia or fragmentation.

**Dispersal agents:** wind, rain, and natural disturbance.

**Substrate and specificity:** on soil, detritus, moss on stabilized sand dunes.

**Habitat and specificity:** maritime habitat.

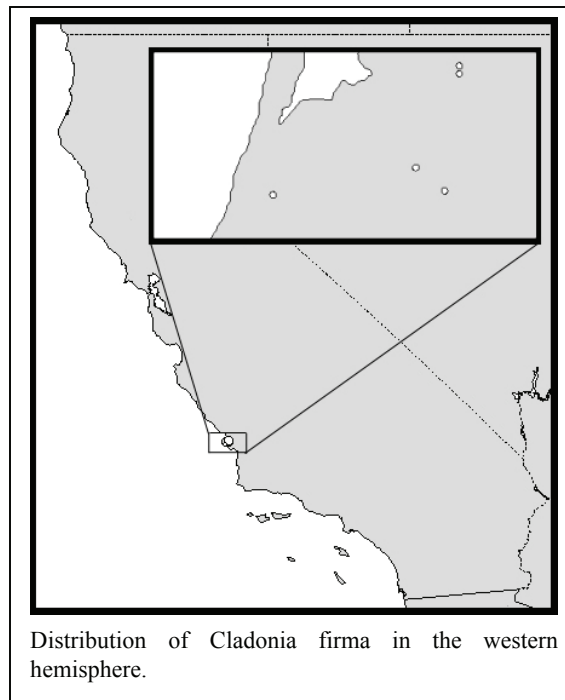
**Pollution sensitivity:** unknown.

**Ecological function:** soil stabilization, often forming biological crusts with other lichens and mosses.

**GEOGRAPHY**

**Global:** *Cladonia firma* is abundant locally in Spain and Portugal with populations scattered in sandy maritime habitats around the Mediterranean as well as on the Canary Islands and the Channel Islands of Great Britain (Knudsen and Lendemer 2006; Ahti and Hammer 2002.) In North America, *Cladonia firma* is restricted to Los Osos area in San Luis Obispo County.

**Local:** In recent surveys we have observed only two major populations of *C. firma*, one in Los Osos and one in Montana de Oro State Park. Both contain thousands of individuals. The main population occurs on land owned by BLM and California State Parks, called Powell 1 east of Bayshore Drive, in area pf 35°



19' N, 120° 49' W, elev. 33-50 m, and occurs also on the adjoining properties Powell 2 & 3. The second main population is on ridge of stabilized dune above the Sandpit parking lot in Montana d'Oro State Park, 35° 18' N 120° 52' W, elev. 58 m We observed only two smaller populations. One was on a vacant lot in Los Osos where it occurred on detritus under several decorticate and lichen-covered shrubs s/e corner of South Bay and Nipomo Street, 34° 18' N 120° 49' W, elevation 36 m. The other site is under BLM control, the Cordoniz property east of Bayview Heights & Calle Cordoniz, 35° 18' N 120° 49' W, elev. 78 m, which appears in decline due to disturbance and Veldt grass (Knudsen and Lendemer 2006). The sites are vouchered at the UCR Herbarium and can be accessed on the public database [http://sanders5.ucr.edu/lichensflat\\_index.php](http://sanders5.ucr.edu/lichensflat_index.php). [Coordinate precision reduced to protect precise locations.]

**POPULATION TRENDS**

Because of the division of populations through urban development of the area, *Cladonia firma* populations have been reduced and isolated through habitat reduction. Hiking, domestic animals, horseback riding, invasive grass, and off-road vehicles have further reduced populations through disturbance of sensitive stabilized Baywood fine sand

(Knudsen and Lendemer 2006). The extant populations need to be inventoried and surveyed and any remaining populations discovered.

#### THREATS

**History:** *Cladonia firma* was initially locally abundant when first collected in late eighties (Knudsen and Lendemer 2006). The major reduction in the population came with the development of the Baywood/Los Osos area. Uncontrolled land use and domestic animals, especially dogs and horses, as well as invasive grasses have further disturbed, reduced, or extirpated populations.

#### PROTECTION

Land management should be coordinated across the State Park, Bureau of Land Management, and private land holdings. For secure conservation of this and other species in the Los Osos/Baywood area dune systems, lands with appropriate habitat should be acquired and consolidated by a single management entity, perhaps expanding the state park system, or forming an Area of Critical Environmental Concern under the BLM. Continued and aggressive programs to reduce Veldt grass (*Ehrharta calycina* Sm.) are necessary to protect *C. firma* and sensitive vascular plants in stabilized dune habitat.

Large populations need special protection from local land use for recreation as was already done at the Elfin Forest site with fencing and elevated walkways and classified as preserves.

#### CONSERVATION STATUS SUMMARY

*Cladonia firma* in the Los Osos/Baywood is in long-term decline. It will eventually be extirpated from North America through habitat degradation.

*Cladonia firma* is well-adapted to moderate natural disturbance through seasonal flooding and non-domestic animal land use (Knudsen and Lendemer 2006). At this time, the populations overall appear to not have reached a level that they could not adequately sustain itself with monitoring and management. Though this conclusion needs to be verified through inventory and mapping. Protection of the remaining populations is possible and the long-term decline to extirpation can be halted through management.

#### SPECIFIC CONSERVATION RECOMMENDATIONS

**Recommended Global Rarity Rank:** G4

Although, the number of populations is unknown, the species is known to occur sporadically

over a large geographic area in and around the Mediterranean and the Channel Islands.

**Recommended Global Threat Rank:** 2

Although the exact threat is unknown, human population and tourism pressures in the core of the species range (the Mediterranean and Channel Islands) have likely reduced the number of populations and will probably continue to do so in the future.

**Recommended Local Rarity Rank:** S1

Only a small number of populations that were once contiguous are known to exist in North America and remaining appropriate, but un-colonized habitat is limited.

**Recommended Local Threat Rank:** 1

The populations have been reduced and fragmented by development. Although much of the remaining populations exist on public land, these populations remain vulnerable to fragmentation and extirpation by recreational use of the land including hiking, dog walking, and horseback riding. Veldt grass (*Ehrharta calycina* Sm.) is a serious threat to stabilized dune habitat and native species of non-vasculars like *C. firma* and vascular plants.

**Recommended List:** 2

The species is undoubtedly rare in California. If the species is subsequently reported to be rare throughout its range in and around the Mediterranean Sea, then it may be moved to list 1B.

#### RELEVANT EXPERTS AND KNOWLEDGABLE LOCAL BOTANISTS.

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- Knudsen, K., Lendemer, J.C. 2006. *Cladonia firma* in San Luis Obispo County, California. *Bulletin of the California Lichen Society* 13(2): 29-34.

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**A Sincere Thanks**

The California Lichen Society again thanks our Life, Benefactor, Donor, and Sponsor memberships of 2007. Their support helps in our mission.

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joins our previous life  
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Stella Yang &  
Stephen Buckhout  
Kathleen Faircloth  
Trevor Goward  
Lori Hubbart  
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and Jacob Sigg  
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L David Williams

## *Sulcaria isidiifera*, Sponsorship for the CALS Conservation Committee

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### TAXONOMY

**Accepted scientific name:** *Sulcaria isidiifera* Brodo.

**Common name:** splitting yarn lichen.

**Type specimen and location:** U.S.A., California, San Luis Obispo County, Los Osos Oaks State Reserve, Los Osos Valley Road, altitude 100 ft., in *Adenostoma fasciculatum*. Bratt 3871 (SBBG), et. J. Larson, 8 Jan 1984 (holotypus:CANL; isotypi: US, hb. BRATT).

**Synonyms:** none.

### DESCRIPTION

From Brodo (1986): Thallus dull yellowish-white grading into light brown and reddish-brown at the more exposed tips; rarely shades of olive-gray in places ... 3-5 cm long; main branching isotomic to anisotomic-dichotomous, with more-or-less perpendicular spinulose branches developing from splits in the thallus; branches splitting lengthwise and opening into rather wide linear soralia filled with spinulose isidia and spinules, often with brown tips; main branches 0.3 - 0.5mm wide ... very brittle ... . Apothecia and pycnidia not seen.

### Similar species and distinguishing characteristics:

Many filamentous fruticose lichens can be initially mistaken for *Sulcaria isidiifera*: *Alectoria sarmentosa*, some species in the genus *Usnea*, *Bryoria spiralifera* and other pale species in the genus *Bryoria*. No other lichen has longitudinal soralia that split open to reveal isidia.

### Biological characteristics:

**Growth form:** fruticose, filamentous, caespitose  
reproductive method: isidia. Fertile material unknown.

**Dispersal agents:** gravity, wind, animals.

**Substrate and specificity:** within coastal scrub, it is not specific, appearing on *Adenostoma fasciculatum*, *Quercus dumosa*, *Quercus agrifolia*, *Ceanothus ramulosus*, and unidentified shrubs.

**Habitat and specificity:** old-growth coastal chaparral scrub.

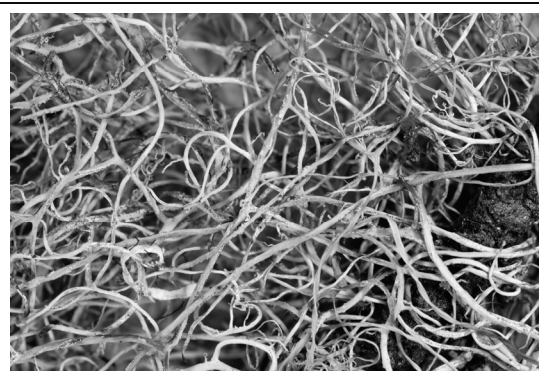
**Pollution sensitivity:** unknown.

**Ecological function:** unknown.

### GEOGRAPHY

**Global:** Occurs only in the type locality, distributed sporadically within an area less than seven miles across.

**Local:** Occurs only in the type locality, distributed sporadically within an area less than seven miles across. There are nineteen records available from herbaria online, an unknown number from herbaria that do not have online catalogs (COLO, IRVC, US; Reifner 1995), and a number of private collections also exist. Five of these online records have location information suitable for mapping, and all lie within a three-mile circle. One anecdotal location (Reifner



*Sulcaria isidiifera*, Knudsen 4613 (UCR). Image © Janet Good 2007, printed with permission. (repeated in color on back cover.

1995) extends the area of occupancy by four miles.

#### POPULATION TRENDS

Unknown.

#### THREATS

**History:** Development is a serious threat to this lichen, given its apparent preference for coastal environs, which are highly desirable for real estate development. The communities of Los Osos and Baywood have grown significantly since the discovery and description of this taxon in 1984 and 1986. It is certain that populations of this lichen have already been removed in the course of development



of the communities, as several remaining populations are interspersed with residential neighborhoods and community structures (schools).

**Future:** Coastal chaparral is vulnerable in two ways: one is through development and two is its short fire history cycle. Old-growth coastal scrub is not a rapidly-increasing habitat.

#### PROTECTION

Many of the occurrences are within the boundaries of state parks: Montana de Oro State Park, Morro Bay State Park, Los Osos Oaks State Reserve. Reifner (1995) states that it is most abundant at Montana de Oro. Others are on unregulated lands, or on private property.

*Sulcaria isidiifera* is listed as G1/S1.1 by the California Department of Fish and Game (2007).

#### SPECIFIC CONSERVATION RECOMMENDATIONS

**Recommended Global Rarity Rank:** G1

**Recommended Global Threat Rank:** .1

**Recommended Local Rarity Rank:** S1

**Recommended Local Threat Rank:** .1

**Recommended List(s) (CNPS equivalent):** 1B

Recommended conservation / management actions (consider site maintenance, monitoring, research, amendments to existing management plans, agencies/organizations to be involved, etc.)

#### RELEVANT EXPERTS AND KNOWLEDGABLE

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*Pseudocyphellaria anthraspis*. Photographed on Mount Tamalpais field trip by Michelle Caisse.

## Lichen FAQ

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### Q. What is a lichen?

A. A lichen is a symbiosis between a fungus and a photobiont. The photobiont can be an alga (mostly green) and/or a cyanobacterium. About 10% of the lichens are considered to be cyanolichens – that is lichens that have cyanobacteria as the primary photobiont. In either case, the photobiont performs photosynthesis providing nourishment for the fungal partner. The fungal partner in turn provides a habitat for the photobiont that includes moisture and proper exposure to light.

### Q. What is the nature of this symbiosis?

A. There is no mistake that both partners get something out of the relationship – the photobiont is provided a habitat (moisture, filtered light) by the fungus and the fungus obtains nutrients (carbohydrates) from the photobiont. However, many feel like the photobiont gets the short end of the stick. It has been shown that the fungus kills photobiont cells but, because the photobiont reproduces faster than its cells are killed, the lichen persists. In some lichens the photobiont is actually penetrated by the fungi in order to transfer the carbohydrates produced via photosynthesis. So, it's not like the photobiont is a very "willing partner". When you look in a microscope and see the algae they really look like they are imprisoned by the fungal hyphae.

### Q. How is a lichen classified?

A. A lichen is named according to the fungal partner. The photobionts have their own separate names. Most lichens are Ascomycetes, the cup fungi. About half of the 30,000 or so Ascomycete species form lichens. A handful of lichen species are Basidiomycetes, which are related to the common mushroom. There are about 14,000 species of lichens in habitats ranging from arctic to rainforest to desert.

### Q. What is known about lichen evolution?

A. Not much as they haven't left a very complete fossil record as they don't contain anything hard like a skeleton or shell that can be preserved in rock. Recently, however, the Chinese found a 600 million

year old fungus-alga symbiotic organism in marine fossils that they believe to be an ancestor of the land based lichens. Previously, the oldest fossil lichen (400 million years old) was found in Scotland and is land based. So, this new find provides evidence that the lichens could have had early ancestors in the sea. Because lichens are formed from diverse groups of fungi it is thought that they actually evolved on several distinct occasions so they cannot, as a group, be placed on a single branch on the tree of life.

### Q. Can a particular species of lichen have more than one species of photobiont?

A. For most cases, a particular lichen species is always composed of the same fungus and photobiont. There are, however, some interesting exceptions. There are some lichen species that associate with different photobionts in different geographical areas in their range. Also, some lichen species can have both an alga and a cyanobacterium as photobionts concurrently. Even more interesting, some lichens can actually change from having a green alga as their photobiont to having a cyanobacterium through their life cycle. Having said all this, the normal case is that there is just one species of photobiont that is associated with a particular fungal species. It should be noted that relatively few photobiont species take part in lichen partnerships resulting in many fungal partners having the same species of alga and/or cyanobacterium as their photobiont partners.

### Q. What kinds of algae are found in lichens?

A. Most are green algae, a few are golden algae, and one is a brown alga. Incidentally, the one with the brown alga is *Verrucaria tavaresiae* which was found right here on our coast by Dr. Richard Moe of UC Berkeley. In temperate areas there are three photobionts that are most common. *Trebouxia* is the most common green algae found in lichens and is rarely found free-living outside of a lichen, However, many other algae that are found in lichens are found free-living. *Trentepohlia* is the next most common algae and finally *Nostoc* is the most common

cyanobacteria. Both *Trentepohlia* and *Nostoc* can be found in our area in free-living forms.

**Q. What is a cyanolichen?**

**A.** A cyanolichen is a lichen with a cyanobacterium as its photobiont. If you cut into a cyanolichen you can usually see (especially with a hand lens) that the photobiont is more of an intense blue-green color rather than the bright grass green of green algae. Quite often, but not always, cyanolichens are dark colors like brown, grey, or black.

**Q. What's so special about cyanolichens?**

**A.** Cyanolichens contain cyanobacterial photobionts. Most of the known cyanobacterial photobionts perform nitrogen fixation. This means that cyanolichens produce nitrogen in a form that plants require from atmospheric nitrogen that plants cannot utilize. Cyanolichens are important in colonizing areas where plant life is absent such as newly exposed surfaces caused by volcanic eruptions, land slides, etc.

**Q. How can a lichen have both a cyanobacterium and a green alga as photobionts?**

**A.** Most lichens containing both types of photobionts are very efficient and many can be found as some of the first life forms to inhabit newly exposed areas. For example some of the first colonizers at Mount St. Helens after the eruption of 1980 were lichens containing both cyanobacteria and green algae. In this type of relationship, the green alga is usually contained inside the thallus as one would expect and the cyanobacterium is concentrated in separate structures that are often visible to the naked eye on the surface of the lobes. These are called cephalodia. They usually look like a darker patch or glob. In this way, in habitats void of nitrogen, the lichen can use its cyanobacterial partner to produce the necessary nitrogen while the green alga supplies carbohydrates.

**Q. Can the lichen forming fungi be free living? And what about the photobionts – can they live on their own as well?**

**A.** Separated from its photobiont in culture, most lichen fungi are a blob looking nothing like the lichen. In many cases, cyanobacteria look pretty much the same whether they are free living or in a lichen. Green algae, however, can look very different free living in culture than they do inside a lichen.

**Q. Does the photobiont satisfy all the fungus' nutritional needs?**

**A.** No, the photobiont provides starches and sugars, the results of photosynthesis but the lichen has other needs as well.

**Q. How does the lichen obtain nutrients other than that which the photobiont can provide?**

**A.** The lichen absorbs lots of substances through the air, rain, splashes of water, and even fertilizers in some cases in the form of man made chemical fertilizers as well as bird droppings, etc. Remember that the lichen has no roots like a vascular plant or mycelium like a mushroom to obtain nutrients.

**Q. How do lichens reproduce?**

**A.** The photobionts reproduce asexually right inside the lichen. However, when we talk about reproduction of a lichen we refer to how the fungi propagates. The fungi can reproduce either asexually or sexually or both. Some species of lichens are capable of both sexual as well as asexual propagation. Still others only reproduce by sexual means while others reproduce only asexually (vegetatively).

**Q. So how does asexual reproduction occur?**

**A.** There are a variety of structures that can be present on a lichen that contain both photobiont and fungi that can separate from the lichen and grow to form a new lichen thallus. Examples of such structures are soredia, blastidia, isidia, and lobules. Typically, they are scattered by small animals, mites, ticks, wind and rain to new locations. Additionally, spores that are produced by mitosis, called conidia, are released from structures called pycnidia into the air and again may disperse by a number of means to an eventual landing place next to a suitable photobiont. There the conidia will germinate, forming fungal threads that it will use to seek out and envelope the photobiont to form a lichen.

**Q. What about sexual reproduction?**

**A.** This is complicated and nobody has actually observed it happen but here is what we think occurs. A spore called a conidia is released from a pycnidia structure on a lichen. The conidiospore finds its way to a tiny thread (trichogyne) on a lichen surface and attaches itself. Both the trichogyne and conidia are haploid. A fruiting body (ascomata) containing diploid cells grows in this place. Meiosis occurs and haploid spores develop inside the ascomata that eventually are released into the air. The spore must

find a partner of the right type of photobiont in order to make a new lichen. Now this next part has been observed – the spore germinates and sends out hyphal threads that explore for a photobiont. When the threads find the correct species then they envelope the photobiont and a new lichen is formed.

**Q. Do lichens kill trees?**

**A.** No. Lichens are not parasites. They just hang on to a tree and really do no direct damage.

**Q. How fast do lichens grow?**

**A.** There is variability of course, but as a rule of thumb, lichens are slow growers. Generally, growth rates are somewhere between a few millimeters to a few centimeters per year. Species found in arctic/alpine or desert areas have much slower growth rates than specimens found in optimal habitats such as coastal-influenced regions. Some specimens have been found that are over 1000 years old. Our familiar *Ramalina menziesii*, dripping from our oaks, has shown growth rates of up to 90 mm/yr. Many crustose lichens that we commonly see on rocks grow about 2 millimeters per year. Lichen growth occurs in spurts when growing conditions are suitable due to the amount of light and water available. Lichens become dormant when growing conditions deteriorate and can stay viable for up to 10 years in this state at cool temperatures.

**Q. What kind of surfaces do lichens grow on?**

**A.** Bark, wood, rocks, mosses, soil, dead vegetation, leaves, pinecones, manmade objects, etc. Most lichens are particular as to the type of substrate they live on, with some species being more of a “generalist” than others. Some lichens are found only on a specific type of rock (calcareous, siliceous, sandstone, granite, etc.) or the bark of a certain type of tree (smooth bark deciduous, conifer, oak, chaparral shrubs, etc.). Still others use manmade objects like wooden fences, barns, metal junk, sidewalks, mortar, roofing shingles, etc. as substrates. In the tropics many lichens are found growing on leaves.

**Q. In what kind of habitats do lichens grow?**

**A.** Lichens occur in very diverse habitats. Lichens are found on every continent in about every habitat you can think of from forest to desert to tundra to grassland to cities and towns. Not all lichens occur in all habitats, however. Most are very specialized due to environmental conditions, climate, geography, substrate. Furthermore, many lichens are

particular to certain micro-habitats such as the north side of a rock, sunny surfaces exposed to lots of nitrogen, wet seeps, dry washes, even rabbit poop.

**Q. Are lichens of any use to humans?**

**A.** Some examples of lichen usage by humans:

- ancient Chinese and Egyptian medicines
- a food to many native peoples
- fabric dyes
- a component of perfumes and cosmetics
- the little “trees” you see in model railroad displays are lichens
- a component in litmus paper
- a means of dating old surfaces (the surface must be older than the lichen growing on it)
- pollution monitors (some are quite sensitive to pollution)
- possible sources of new antibiotics and medicines

**Q. What makes lichens different colors?**

**A.** Lichens manufacture a variety of different chemical substances, many of which are acids. These substances are often responsible for the coloration of the lichen. Identification of the substances in lichens is a valuable clue to the identity of the lichen. Additionally, the substances produced by some lichens can protect the lichen in the following ways:

- substances with a bitter taste may prevent animals from eating a lichen
- certain substances prevent the lichen from absorbing toxic metals by detoxification
- some substance protect against too much UV radiation
- some substances help to dissolve essential mineral nutrients
- gas exchange within the lichen may be improved by the presence of certain substances.

**Q. I have heard that hummingbirds construct their nests of lichens and spider silk. Do any other animals make use of lichens?**

**A.** Reindeer (caribou), deer, mountain goats, moose, pronghorn, squirrels, spruce grouse, and wild turkey eat lichens. Up to 50% of the caribou diet is lichens. Many arthropods, slugs and snails are efficient grazers of lichens. At least 50 species of birds (mergansers, thrushes, chickadees, hawks, etc.) use lichens as nesting material. I recently witnessed two Bushtits gathering tufts of *Usnea* and flying back

to insert it into their nest. Northern Flying Squirrels utilize lichens as a major component in their nests as well. Lichens also provide a protective habitat for many insects. Birders often observe warblers, nuthatches, wrens, and other insectivorous birds foraging among lichens on a tree branch. Some moths have evolved to mimic lichens for protection – it is extremely difficult to see the moth against a background that is identical.

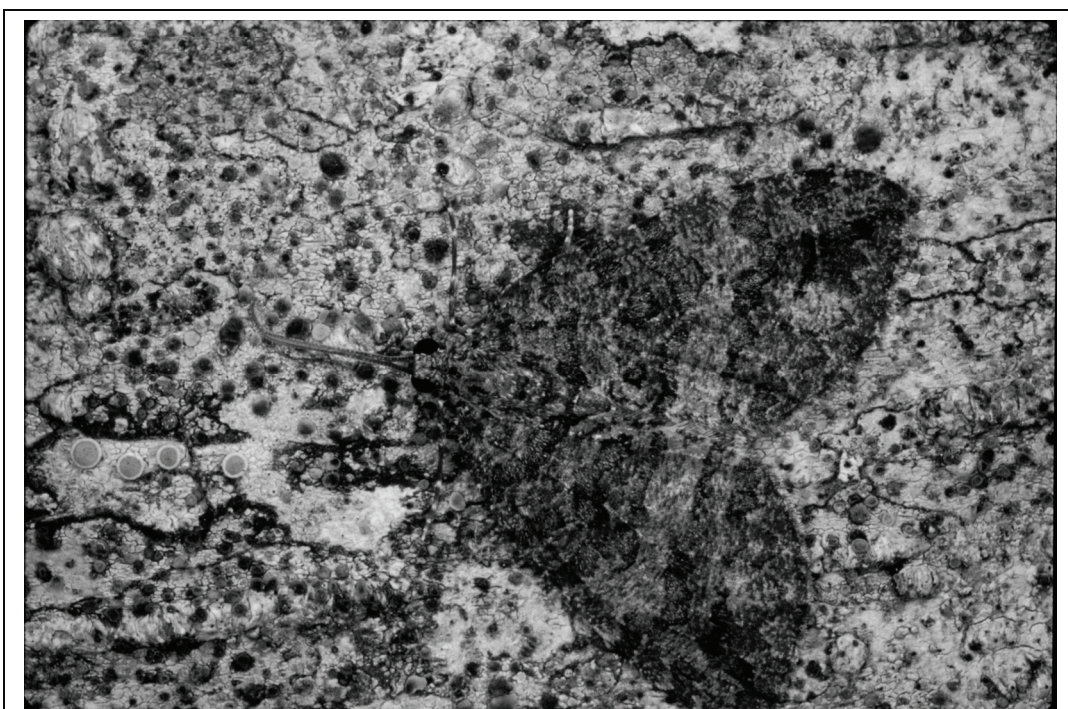
**Q. How sensitive are lichens to air pollution?**

**A.** They are very sensitive, especially to sulphur dioxide, which is a by-product of burning fossil fuels. Some species of lichens are very intolerant of air pollution where as others can stand varying degrees of it. Many of the lichen species that we see regularly around here (*Ramalina*, *Usnea*, *Teloschistes*, and most of the cyanolichens) are very intolerant which says something positive about the quality of the air in Sonoma County. Lichens have been used in many studies that document either deterioration or improvement of air quality depending on the trend in lichen growth. If lichens are disappearing or are

reduced in numbers over time then the air quality is worsening. If, on the other hand, lichens are more numerous then the air quality is improving.

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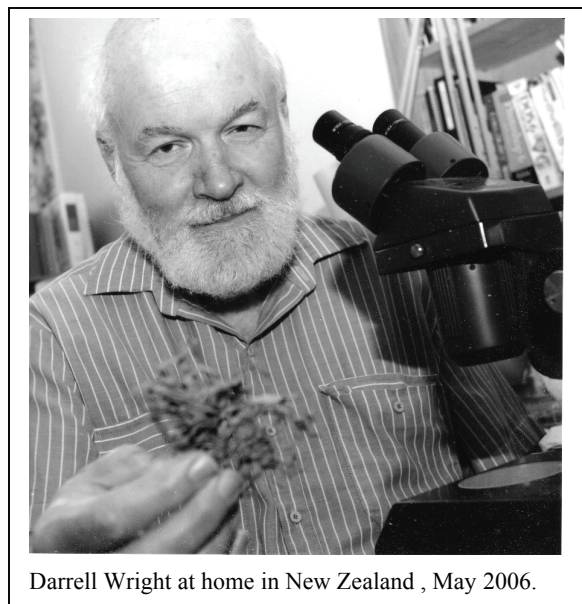


Moth attempting to blend with lichens on the trunk of an Alder tree. Image by Eric B. Peterson.

## The Story of the Darrell Wright's Lichenological Legacy

Bill Hill  
141 Lansdale, Fairfax CA 94930  
aropoika@earthlink.net

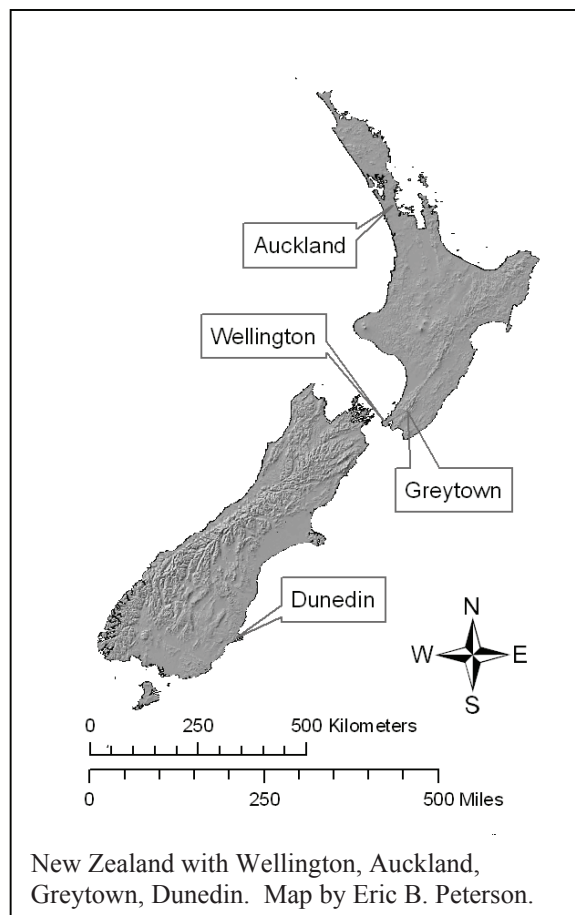
Over the course of his life in the Bay Area, Northern California, and New Zealand Darrell Wright studied and collected lichens, about 6000 specimens from his beloved Marin County, approximately another 1000 after he moved to Arcata, and finally another 1000 or so in New Zealand before he died of cancer in March 2007 at home with his wife Janet Collinson in Greytown NZ, near the south end of the North Island not far from Wellington.



Darrell Wright at home in New Zealand, May 2006.

I want to relay to you the story of preserving the legacy of his lichenological work. The story really begins years before in Marin County, California. Darrell grew up there in the town of San Anselmo. Marin County was one of his favorite lichen haunts. I spent many a Saturday tromping around in west Marin looking for lichens with Darrell.

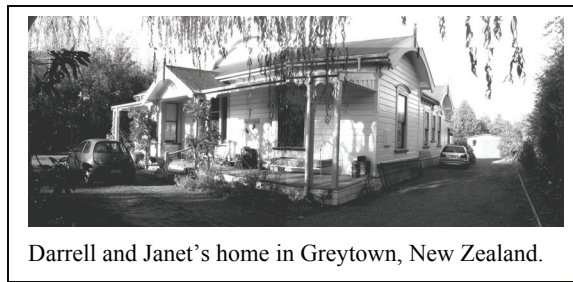
Darrell was one of the people instrumental in making the California Lichen Society a dynamic organization of amateurs and professionals "to promote the appreciation, study and public awareness of California lichens". As the first editor of the Bulletin of the California Lichen Society, he made it into a journal of scientific value, yet able to speak to and encourage total beginners in the intricacies and



New Zealand with Wellington, Auckland, Greytown, Dunedin. Map by Eric B. Peterson.

joy of lichenology. CALS owes much for its existence and character to Darrell.

In late October 2006 Darrell wrote an email to me from New Zealand announcing that he was diagnosed with cancer which had spread to liver and chest, and asked of me a 'big favor' – would I see to it that his collections are deposited to local herbaria?

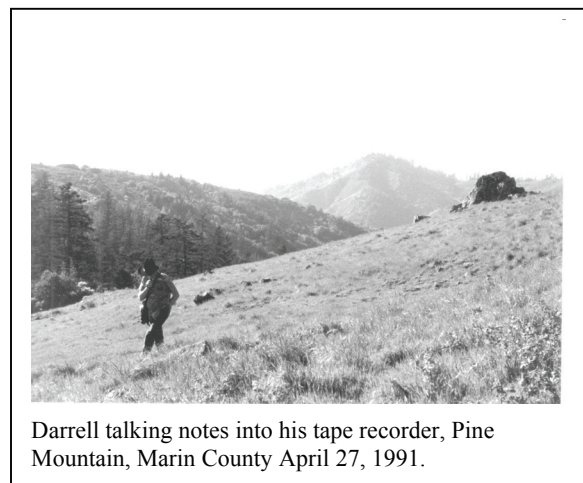


Darrell and Janet's home in Greytown, New Zealand.

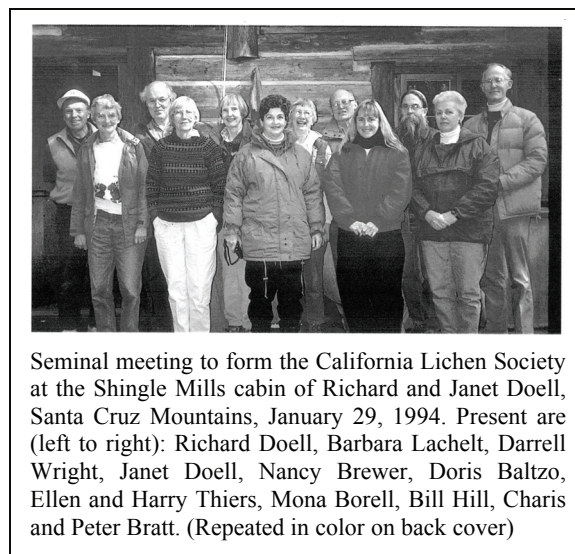


Darrell and Janet in happier times.

The New Zealand couple and their wedding cake.



Darrell talking notes into his tape recorder, Pine Mountain, Marin County April 27, 1991.



Seminal meeting to form the California Lichen Society at the Shingle Mills cabin of Richard and Janet Doell, Santa Cruz Mountains, January 29, 1994. Present are (left to right): Richard Doell, Barbara Lachelt, Darrell Wright, Janet Doell, Nancy Brewer, Doris Baltzo, Ellen and Harry Thiers, Mona Borell, Bill Hill, Charis and Peter Bratt. (Repeated in color on back cover)

“It would be a shame if these collections weren't available to California workers. Some are vouchers for stuff I published.” Various herbaria were considered but we finally settled on the Harry Thiers Herbarium at San Francisco State University as the main repository. This was Darrell's favorite herbarium, perhaps because it was most welcoming for him when Harry Thiers was there with his great interest in lichens and his favorite fungal genus *Boletus*, but also because SFSU had the most extensive collection of California lichens anywhere. Dennis Desjardin, a former student of Harry Thiers and now the director of the Harry Thiers Herbarium, was delighted to receive and curate Darrell's lichens, as you can see from this excerpt from his email:

“San Francisco State University has the largest fungal and lichen herbarium west of the Mississippi and one of the top 5 in the US. We house over 60,000 identified fungal specimens (of global distribution) and well over 18,000 lichen specimens (mostly of California and Pacific Northwest origins). The National Science Foundation awarded me a grant of \$350,000 a little over 1.5 years ago to renovate the infrastructure of the herbarium with all new cabinets on a compactor system. This afforded us the opportunity to open every specimen

packet, check for insects or mold damage, refreeze and redry all specimens on deposit here, and then reorganize the specimens into the new cabinets in new specimen trays. Currently our state-of-the-art facility holds 120,000+ herbarium specimens of fungi, lichens and plants with plenty of room for growth. They are curated daily (nomenclature updated, checked for insect infestations, sent on loan all over the world to qualified institutions).

Our California lichen specimens are unmatched by any other herbarium, especially local Bay Area taxa. Darrell felt that SFSU was the perfect repository for his specimens and I have agreed to accept them, accession them, and curate them into the future. Making room for 8000 specimens is not a simple task, nor is accessioning them into our collection in the proper taxonomic framework. This will take many hours of labor which my herbarium will provide for free just so that Darrell's specimens have a good home where they will be available for study by any interested researchers and available for loan to any institute."

After the initial email exchange with Darrell in October 2006 I didn't hear from him for quite a long time – not unusual for Darrell as he gets involved in his focused way and I assumed he just went on to continue organizing his collections for shipment. As it turned out, his chemotherapy was considered successful by January, and he seemed to have a new lease on life. But then on March 14, 2007 I received a distressing email from Janet Collinson that "it has all turned to custard" and that Darrell was progressively weaker and was dying. When I then earnestly asked questions about his database and collections information, his reply via Janet was "Bill will know" – I wish I had such confidence! I had tears in my eyes when she finally wrote "He has asked me to thank you for your friendship and camaraderie, and also for the work you are doing. . . . He sends his warmest regards to you all, oh what else can I say Bill. We have had our ups and downs, but I don't regret a moment of it. . . ."

Darrell died on the bright sunny warm fall afternoon of March 24, 2007 with his life work in lichens cut short before he could get it all organized.

He had written numerous articles, and delighted us with occasional emails as 'Down Under Darrell' with his lichen discoveries in New Zealand for our CALS 'californialichens' yahoo group. In his new found lichen paradise of New Zealand Darrell also helped with the Usnea section of a revised Lichen Flora of New Zealand with David Galloway. Back in 1992 he had printed a 300 page catalog "Notes on Marin County lichens with macrolichen collection and chromatography appendix" and had hopes for writing a "Flora of Marin County Macrolichens" but that never happened. Darrell also made an extensive TLC study of the genus *Parmotrema* in Marin County.

What remained now was to ship his collection to SFSU. But how to get them there – Janet was at a complete loss, having just lost her beloved husband and not really knowing lichens that well, say nothing about his 'database' and computer files! In New Zealand Darrell had discovered that the nearest herbarium with any expertise at all was the "Te Papa



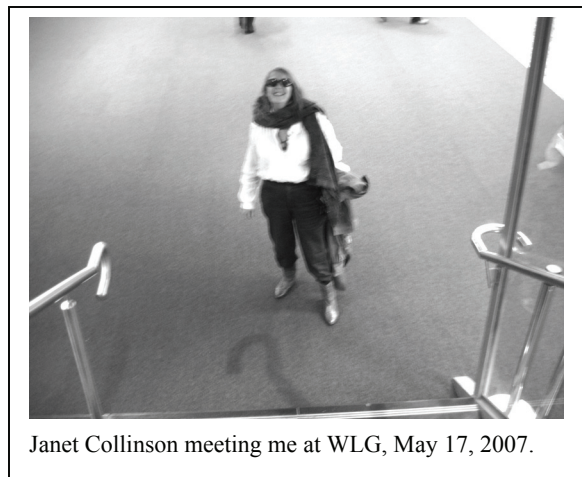
The mountain pass to wellington (and the striking similarity with california coastal mountains).

Tongarewa"/Museum of New Zealand in Wellington, about an hour's drive away over a winding mountain pass. David Galloway, the primary lichenologist of New Zealand, was far away in Dunedin at the south end of the South Island.

I contacted David Galloway and he referred me to Patrick Brownsey at Te Papa, and we agreed to have Te Papa expedite the shipment through customs to SFSU. However they could not pay the shipping, nor did SFSU have a budget for it either. Thus the CALS Board began to consider how to help and we formulated the **Darrell Wright Memorial Fund** with the somewhat broader mission of "preserving and honoring the legacy of Darrell Wright's lichenological work". After considering various definitions of 'funds' we settled on a 'board restricted



fund' which is established by board motion, states how the money is to be used, and that at any time the board can modify the purpose or even abolish the fund. At this point we did not even know the cost, but the Fund would at least provide a vehicle for paying the transport costs for this important collection. Besides the cost, there was still the question of who was actually going to do the task -- and most efficiently considering the resources available without losing the associated data and scientific value of the collection. It was at this point, knowing how



Janet Collinson meeting me at WLG, May 17, 2007.

familiar I was with Darrell's work, that a friend suggested that I travel to New Zealand and help Janet. At first I was reluctant because of the expense, but I agreed to go for one month and Janet was much relieved and grateful.

The first thing we did was to pay a visit to TePapa, see the room where we might package the shipment, and meet Barry Sneddon who ended up being our liaison there. We investigated shipping companies, with Janet being particularly familiar with "Grace Removals" through her antique furniture interest and business. We also learned that TePapa sends herbarium specimens by DHL airfreight, but this was too large a quantity for that. We needed to go by 'slow boat' and after checking several carriers finally settled on DHL ocean freight as they were the best price we could find that also ships to the Port of Oakland near San Francisco. Door to door delivery



Barry Sneddon in the workroom at Te Papa.

would cost considerably more, and the shipment must still pass customs, so we were willing to pick up the shipment in Oakland when it arrived. There was not only the lichen collection, but the associated research resources (manuscripts, data files, reprints, chromatographic plates, books and references), and we estimated two one-cubic-meter 'Covpak' reinforced cardboard containers would do the job. After discussing issues about shipping containers with the companies – did you know that the US no longer allows imports on wooden pallets, and that used but sturdy banana boxes also would not pass customs/agricultural inspection? – we bought the two cubic-meter shipping cartons with plastic pallets and the cardboard boxes to contain everything from Packaging Products Limited in Lower Hutt, a suburb of Wellington for the bargain of NZ\$129.61 (at less than half the cost it would have been from the shipping companies) – our first expense. The next couple weeks were taken in preparing everything to be boxed. I spent many days just studying and backing up Darrell's computer files and making sense of the order of things to retain its information value. Darrell had left off databasing and making printed packets for his Northern California specimens, and much of that and the New Zealand material was only in less well labeled sandwich bags, with the 'data' still on audio tapes at his workbench. The specimens were in shoeboxes in a closet and two homemade cabinets with carefully crafted drawers.

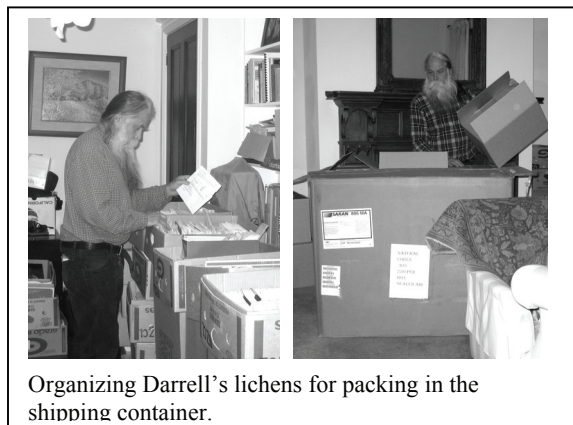


Darrell's lichens in shoeboxes in a closet and in his carefully hand-crafted cabinet.

Janet and I sorted, organized, and boxed the shipment at Darrell's study. Then with a large van brought the packed boxes and assembled the shipping containers at the shipping warehouse in the Lower Hutt suburb of Wellington. There DHL had promised that they would email us (Janet, me, Dennis Desjardin) when the shipment was finally onboard the ship. Although the cost was still not completely determined, it would be approximately NZ\$1000 (or US\$750 at that time), and CALS would reimburse TePapa for paying the shipping cost – our second expense.

I returned home, waving a warm goodbye to Janet after developing a great friendship with her over the weeks that we had worked together. We waited for word of the shipment. Nothing. I went to Finland for a month to meet relatives and dig into my 'roots', visit the herbarium in Helsinki, and attend a wonderful fieldtrip at the Lammi Biological Field Station with Ted Ahti and the Nordic Lichen Society. Finally at the most inopportune time while I was still in Finland, there was an email from Dennis Desjardin – the shipment had arrived. It was waiting at a warehouse at the Port in Oakland to be picked up and storage charges would ensue if it was not retrieved soon! Dennis was about to leave for a conference in

Louisiana but he rented a truck (and forklift to pick up the two pallet-containers), ran back and forth to customs (where they mainly asked 'what is a lichen', and didn't even open the containers!) and personally drove the shipment to temporary storage at SFSU.



Organizing Darrell's lichens for packing in the shipping container.



Vanload ready to go to DHL shipping.



Janet and Maori worker tugging to secure the container straps.

Although we avoided extra storage charges there was still an unanticipated \$590 total cost of *retrieving* the shipment which Dennis paid from his own pocket. Shortly thereafter, Dennis and I disassembled the shipment, and after putting the specimens through routine fumigation via freezer and warm air dryer, Darrell's lichens are now in two herbarium cabinets at SFSU, available for study and continued curation. There are 28 trays of Marin lichens, 15 trays of 'non Marin', 4 trays of NZ, and 4 trays of miscellaneous lichens including collections by others, some which may need to be returned.

With just enough accumulated in the Darrell Wright Memorial Fund at this point from six donors, CALS was able to reimburse the two major expenses of shipping Darrell's lichens to SFSU -- to Dennis Desjardin for the \$590 'arrival cost', and TePapa for their shipping invoice of NZ\$1098 (US\$823 including \$30 wire transfer fee).

Darrell's life is a story of dedication and excitement with the discovery of lichens. Darrell was one of the few who was familiar enough with technology to use it to record scientific detail and many of his Marin lichen records are already in his Dbase IV datafiles. With very little more work they can be ported to a modern herbarium database and available online (perhaps before many other significant herbaria even get started). But there is

much work still to be done, especially with continuing where he left off with his data entry and identifying the unknowns. Although Dennis Desjardin at SFSU is writing a grant that includes curation of Darrell's collection, we hope to also establish a cooperative relationship between CALS and SFSU for volunteer help.



Wright's Hill (coincidentally!) - a favorite haunt of Darrell's in the hills just to the west of Wellington. New Zealand looks so much like Northern California, which may be why Darrell felt so 'at home' there.



Dennis Desjardin at SFSU with Darrell's lichens.

We invite you to help with your donation to the Darrell Wright Memorial Fund and to help with the collection at SFSU. You can send your tax deductible donations to CALS, Box 472, Fairfax CA 94978, earmarked 'Darrell Wright Memorial Fund', and contact us if you can help with the collection. We at CALS are delighted to add this effort to our continuing unique relationship between amateurs and professionals.

## News and Notes

### DARRELL WRIGHT MEMORIAL LICHEN WALK AZALEA HILL, MARIN MUNICIPAL WATER DISTRICT SEPTEMBER 29, 2007

This was a beautiful, sunny, warm day in Marin County. We gathered at the parking lot on the Fairfax-Bolinas Road at the head of the Azalea Hill trail. We were honored with the presence of Wilma Follett, coauthor of *Marin Flora*, published just this year. Wilma came to tell us of her memories of Darrell. She said she first knew of Darrell when he discovered *Calycadenia truncata* DC. a yellow-flowered calycadenia on Mt. Burdell in 1977. (It was not rediscovered in Marin Co. until 1997 by Doreen Smith, in the same area as Darrell's original discovery). Darrell also had developed a list of the flora of Deer Park, an area in Marin County near where he was raised. Even from New Zealand, Darrell contacted Wilma to assist in her pursuits of the Marin Flora to tell her the exact locations of the California pinefoot, *Pityopus californicus* (Eastw.) H.F. Copel. Wilma remembered Darrell's wonderful base voice. They also shared an interest in the Russian language.

Susan Bazell, CALS member and also an artist whose watercolors appear in books like *The Life of an Oak* by Glenn Keator and *Conifers of California* by Ronald M. Lanner, told us that Darrell was her first informal wildflower instructor. She remembers when he led his first lichen field trip at Boot Jack Camp in Mt. Tam State Park when lichens began to draw his attention from vascular plants. Darrell and Susan's husband would speak Russian on short wave radio. We also learned that Darrell would play chess using Morse code with Ham radio friends.

Azalea Hill would have been one of the trails taken by Darrell in his search for lichens in Marin County. The hike is not long and at the top of the hill, where we stopped for lunch, there is a beautiful view of the North San Francisco Bay area with Alpine and Laganitas Lakes below.

At our lunch spot we reminisced more about Darrell. Bill Hill, CALS president, had spent many years accompanying Darrell on forays in Marin County. Darrell was meticulous in the cataloging of his collections and produced a document almost 300 pages in length, recording his lichen collection data and TLC information. We hope to use this to produce an accurate checklist of the lichens of Marin County.

Steve Sharnoff, coauthor of *Lichens of North America*, shared that he remembered Darrell as "not afraid of a challenge" and "ready to go into territory where others feared to tread" referring to Darrell's in-depth examination of the genus *Usnea*. See the CALS bulletin Vol. 8 No. 1. This article received more requests for reprints than any other CALS article.

Judy remembered meeting Darrell for the first time on the CALS field trip to Lake Pillsbury in 1997. She remembered his using a tape recorder throughout the trip as his field notebook. Darrell continued to use this method of recording his lichen field trips. Bill Hill brought back his tape collection when packaging up Darrell's collection from New Zealand to return to the U.S.

Darrell Wright was one of the founding members of CALS. He was the first editor of the CALS Bulletin. And after one short hiatus, became editor again before moving to New Zealand. After he moved to New Zealand in 2000 he began to collaborate with David Galloway at the New Zealand museum working on the genus *Usnea* in New Zealand.

Many of Darrell's articles fill the Bulletins from his 'Guide to the Macrolichens of California: Part 1, The Orange Pigmented Species', Vol. 7 No. 1 to his work from New Zealand: 'California and New Zealand: Some Lichnological Comparisons', Vol. 10, No. 1. In 2004, Darrell worked with Louise Lindblom to coauthor the description of *Xanthoria pollinarioides* L. Lindblom & D.M. Wright, the CALS mystery lichen discovered by Greg Jirak back in 2000.

Darrell was a political activist. He stressed the conservation of lichens. He even opposed publication of a Lichens of California book because he felt it would be detrimental to the conservation of lichens.

We miss Darrell and his contributions to lichenology in California and New Zealand. We can continue to honor him by curating his collection now housed at San Francisco State University and using the information he gathered to increase our knowledge of the lichens of the Bay Area.

Participating: Janet and Richard Doell, Bill Hill, Michelle Caisse, Stephen Sharnoff, Susan Bazell, Irene Winston, Dana Miller, Daniel Kushner, Ken Howard, Wilma Folette, Ron and Judy Robertson.

*Contributed by Judy Robertson.*

**VASCO REGIONAL PRESERVE,  
CONTRA COSTA CO.  
OCTOBER 20, 2007 10:00AM**

Vasco Regional Preserve is a very unique 1,339 acre park in the East Bay between Brentwood and Livermore. For thousands of years, Vasco Caves was an ancient gathering spot for American Indians. East Bay Regional Park District Naturalist Mike Moran met us at an unremarkable spot on Vasco Road and we drove over dirt roads through private land into the Preserve. The sight of the sandstone outcrops with caves scoured out by wind and water was spectacular. Chartreuse *Acarospora* tinged most every outcrop. It was a privilege to participate in a lichen survey of this unusual area. The grassland has been grazed by sheep and cattle and *Xanthoria* was richly growing on the few oaks and buckeye trees. The rocks were covered with crustose species. Doris Baltzo, one of CALS founding members, had done a preliminary lichen survey of Vasco Caves in the late 1990s. We used her list as well as the one CALS had put together from the 1998 Brushy Peak trip as our baseline. Michelle Caisse and Debbi Brusco took photos of most every lichen collected. These photos will be on the CALS website.

*Contributed by Judy Robertson.*

**BRUSHY PEAK REGIONAL PRESERVE,  
CONTRA COSTA CO.  
OCTOBER 27, 10:00AM**

The following week, we met Mike Moran, LARPD naturalist Sharon Peterson, and Katie Colbert, naturalist from Sunol-Ohlone Regional Wilderness to visit Brushy Peak. Sharon Peterson had led our foray in 1998 to Brushy Peak.

Brushy Peak is only a few miles from Vasco Caves and the landscape is very similar. Brushy Peak is named for the oak and buckeye wood that crowns the hillside in the middle of the park. We explored the same spots as our 1998 visit.

The East Bay Regional Parks system has asked CALS to help formulate management guidelines for

both Preserve. We are still in the middle of identifying the many crusts collected. Although we did not see any rare species, what is rare is this unique habitat for so many lichen species. CALS will work with the Parks department to help formulate a best practices statement for lichen preservation in the area.

*Contributed by Judy Robertson.*

**\*\*\* MEMBERSHIP DUES INCREASE \*\*\***

Beginning in 2008, the basic membership dues for the California Lichen Society will increase slightly: **individual domestic memberships will be \$20, and individual international memberships will be \$25.** These prices are in U.S. dollars, of course. Other levels of membership (Family, Sponsor, Donor etc.) remain unchanged. The increase is designed primarily to offset increases in postage rates, especially international rates. Members renewing or new members joining before 2008 will pay according to the current rates.

*CALS Board.*

**\*\*\* CALS EDUCATIONAL GRANTS \*\*\***

CALS is pleased to offer small academic grants to support student research on the lichens of California and/or neighboring states. The Educational Grants Committee administers the Educational Grants Program, with grants awarded to a person only once during the duration of a project.

CALS is currently offering two educational grants in the amounts of \$1,000 and \$1,500. The grants may be given to two different persons, or one person may apply for both grants.

Interested students are encouraged to contact Lori Hubbard, Chair of CALS Educational Grants Committee [lorih@mcn.org](mailto:lorih@mcn.org).

*CALS Educational Grants Committee.*

### California Lichen Society – Educational Grants Application

**Date submitted** \_\_\_\_\_

**Name of applicant** \_\_\_\_\_

**Mailing address** \_\_\_\_\_

**Email** \_\_\_\_\_

**Phone number(s)** \_\_\_\_\_

**Title of the project** \_\_\_\_\_  
\_\_\_\_\_

**Estimated time frame for project** \_\_\_\_\_

**Describe the project:** Use a separate sheet and 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.

**Describe the final product:** You are obligated to submit an article to the CALS Bulletin, based on dissertation, thesis, etc. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Budget:** Summarize intended use of funds. If you received or expect to receive grants or other material support, show how these fit into the overall budget.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

\_\_\_\_\_

**Academic support:** Submit one letter of support from a sponsor, e.g., an academic supervisor or major professor, should accompany your application. The letter can be enclosed with the application, or mailed separately to the CALS Grants Committee Chair.

**Your signature** \_\_\_\_\_

Examples of the kinds of things for which grant funds may be used if appropriate to the objectives of the project: Expendable supplies • Transportation • Equipment rental • 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.

**CALS YTD Profit & Loss Statement 11/25/2007**

<b><u>INCOME</u></b>		<b><u>EXPENSES</u></b>	
D Wright Memorial Fund Donations	\$1,545.00	2007 Calendar	\$1,360.00
Donations Received		Bulletin Expenses	
General Donation	\$ 132.00	Bulletin Other Expense	\$ 109.88
Student Grants Donation	\$ 70.00	Bulletin Postage	\$ 747.09
TOTAL Donations Received	\$ 202.00	Bulletin Printing	\$2,761.49
Interest & Other Income	\$ 13.23	TOTAL Bulletin Expenses	\$3,618.46
Membership Fees		Darrell Wright Memorial Fund	\$1,413.19
Benefactor Membership	\$ 500.00	Government Fees	\$ 50.00
Donor Membership	\$ 635.00	Membership software	\$ 450.00
Family Membership	\$ 495.00	Mini Guide Printing	\$1,463.00
Foreign Surcharge	\$ 240.00	Other Sales Expense	
Individual Membership	\$2,064.00	Other Postage	\$ 84.07
Life Membership	\$ 500.00	TOTAL Other Sales Expense	\$ 84.07
Sponsor-Institution Membership	\$ 315.00	Sales Tax Paid	\$ 226.02
Student-Fixed Income Membership	\$ 241.50	<b><u>TOTAL EXPENSES</u></b>	<b><u>\$8,664.74</u></b>
<b>TOTAL Membership Fees</b>	<b>\$4,990.50</b>	<b><u>OVERALL TOTAL</u></b>	<b><u>\$ 413.86</u></b>
Retail Sales			
Bulletin Back Issues	\$ 40.00		
Calendar 2007	\$ 538.50		
Mini Guide CA Lichens-Retail	\$ 197.62		
Notecards Pack	\$ 103.38		
Other-Retail	\$ 34.32		
Postage-Retail	\$ 110.40		
Posters-Retail	\$ 31.30		
SoCal Mini Guide	\$ 188.33		
<b>TOTAL Retail Sales</b>	<b>\$1,243.85</b>		
TOTAL Sales Tax Received	\$ 56.55		
<b>Wholesale Sales</b>			
2007 Calendar	\$ 189.60		
Mini Guide CA Lichens-Wholesale	\$ 776.00		
Notecard Packet	\$ 24.00		
Postage-Wholesale	\$ 37.87		
TOTAL Wholesale Sales	\$1,027.47		
<b><u>TOTAL INCOME</u></b>	<b>\$9,078.60</b>		

## Upcoming Events

### ANNUAL MEETING

CALS will be hosting our Annual Meeting this year on January 26, 2008. A full day of activities is planned, and any member may attend any part of the day, or all of it. We begin with a field trip to Mount Burdell. Later in the day will be our customary pot-luck dinner, followed by CALS general meeting, and in turn followed by a talk by Dr. Thomas H. Nash III of Arizona State university.

#### **Mt. Burdell Fieldtrip:**

January 26, 2008 10am to 3pm

Mt. Burdell Open Space Preserve is part of the Marin County Open Space District. A loop hike goes through grassland, oak and buckeye woodland with some rock outcrops.

We will spend the day exploring the area for lichens and enjoying the sights of the Bay Area from this 1500 foot high mountain. Bring a lunch and meet at the Open Space Preserve gate.

From Highway 101 in Novato (Marin County) exit #463 (San Marin Drive/Atherton Avenue). Head west on San Marin Drive for about 2.5 miles. Turn north (right) unto San Andreas Drive, and continue about 0.5 mile. Look for and park near the Open Space gate.

#### **Cals Annual Potluck Dinner And General Meeting:**

January 26, 2008 Dinner at 5:00pm. General meeting at 6:30

Brickyard Landing Clubhouse

After our trip to Mt. Burdell, we will drive across the Richmond Bridge to meet at the Brickyard club for our annual general meeting and pot luck. Please bring a favorite dish to share. CALS will provide drinks, dessert, and tableware.

#### **Presentation by DR. Tom Nash III, Arizona State University:**

Dr. Nash will talk on multiple topics. For one, he will talk about The International Association of Lichenologists meeting to be held in Asilomar in July 2008 (IAL6), including the planning, activities, field trips, and 'thumbnail' sketches of some of the people who will be attending. For another, he will discuss current HNO<sub>3</sub> work with lichens in southern California.

### Directions to Brickyard Landing Clubhouse

From Marin:

Drive east on 580 and come across the San Rafael-Richmond bridge. Take the second exit, Canal Blvd., and turn right or south onto Canal. Continue on Canal about half a mile until the divide in the road ends and the road narrows and bends slightly to the right. Slow down and look carefully for Seacliff Drive which heads off to the right. Head up over the hill and stay on this road (Brickyard Cove Rd.) past one stop sign. You will soon come to a group of five large condominiums on your right. Drive in at the main entrance on Brickyard Way, turn right almost immediately onto Brickyard Cove Lane, drive past the tennis courts and park. Enter at the swimming pool gate. The clubhouse is straight ahead.

From the East Bay:

Drive west along 580 to Canal Blvd., turn left onto Canal and proceed as above.

### INTRODUCTION TO THE FOLIOSE AND FRUTICOSE LICHENS: A BEGINNING LICHEN IDENTIFICATION WORKSHOP MERRITT COLLEGE, OAKLAND SATURDAY, FEBRUARY 9, 2008 10 A.M. TO 4 P.M.

Foliose and fruticose lichens will be the emphasis of this workshop. We will discuss the nature and history of the lichens and then learn basic lichen morphology, using prepared specimens as examples. Spot tests will be demonstrated. Collection, preparation and preservation of specimens will be discussed. We will use a variety of keys to identify unknown specimens or specimens brought by the participants. Participation is limited to 15 persons. Please contact Judy Robertson jksrr@aol.com to register. Please bring a lunch. Coffee, tea and snacks will be provided.



**SO BE FREE ANNUAL MEETING  
MARCH 24-27, 2008  
COLUMBIA RIVER GORGE SCENIC AREA**

For information about this gathering for moss, liverwort and hornwort enthusiasts, contact [wjharpel@earthlink.net](mailto:wjharpel@earthlink.net), or go to the SO BE FREE web site: <http://ucjeps.berkeley.edu/bryolab/trips/sobefree.php>.

**NORTHWEST LICHENOLOGISTS  
ANNUAL GENERAL MEETING  
MARCH 26-28, 2008  
UNIVERSITY OF MONTANA, MISSOULA, MONTANA**

Held in conjunction with the Northwest Scientific Association, these meetings are filled with talks, field trips, and socializing with other lichenologists and bryologists.

Local host will be Andrea Pipp. Katie Glew is serving as liaison between NWL and NWSA. Go to the NWL website (<http://www.nwlichens.org/>) for more information.

**MITCHELL CANYON, MT. DIABLO STATE PARK  
APRIL 12, 2008 10AM TO 3PM**

Mitchell Canyon is on the North side of Mt. Diablo and has not been part of any lichen inventory of the State Park. Join us to see if we can add more lichen species to our study of Mt. Diablo. We will meet at the Mitchell Canyon Road entrance area at 10am. Bring a lunch.

**SIXTH INTERNATIONAL LICHENOLOGICAL  
SYMPOSIUM, IAL 6/ABLS JOINT MEETING  
JULY 13-19, 2008 MONTEREY PENINSULA,  
ASILOMAR CONFERENCE GROUNDS**

The International Association for Lichenology (IAL) and the American Bryological and Lichenological Society (ABLS) are holding this year's joint symposium in California! Join lichenologists and bryologists from around the world for one of lichenology's most significant meetings. The primary host and organizer is Dr. Thomas H. Nash III of the University of Arizona. Assisting co-organizers are the British Lichen Society, the California Lichen Society, and Northwest Lichenologists; these organizations are providing itineraries and logistics for field trips, and some of the supporting services at the seminar.

Events at the symposium include a reception, presentations, poster sessions, workshops, discussion sections, banquets and field trips.

This is the first time the IAL is meeting in the California, providing us with a once-in-a-lifetime opportunity. Regular registration deadline is December 31, 2007. See the IAL website, set up just for the seminar: [http://www.lichenology.org/IAL6\\_ABLs](http://www.lichenology.org/IAL6_ABLs).

**ONGOING LICHEN IDENTIFICATION WORKSHOPS,  
MARIN COMMUNITY COLLEGE  
THE SCIENCE CENTER, ROOM 191, 2<sup>ND</sup> AND 4<sup>TH</sup>  
FRIDAYS, 5:30 TO 9:00 PM**

We encourage you to attend these enjoyable workshops at the Community College.

Dr. Paul DiSilva has graciously allowed us to use the classroom and scopes. Patti Patterson organizes the logistics. We bring our own lichens and work with each other to identify them. There are usually snacks. Parking at the college is \$3, however, there often is free parking on the side road next to the campus.

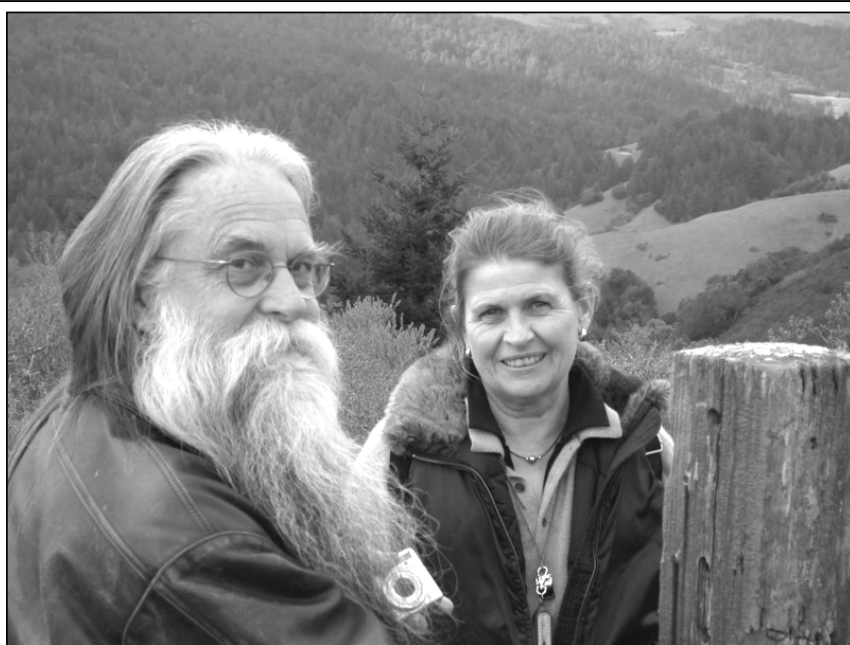
## President' Message: Changes

This is a time again for changes. With this issue of the bulletin we again have an election of officers of the Board. I am leaving as president, having been in this position for three terms (6 years), the longest for any CALS president so far. I want to thank all of the members of our board for all of their hard work and balanced considerations, often on controversial issues. I hope that we have done well for CALS, and hope for the best with the next board. In addition to me leaving the position of president, Sara Blauman is leaving as our secretary - I want to especially thank her for her

consistent good record keeping of our board meetings, timely correspondence with members - especially the new ones, for the wisdom of her input in our considerations, and for bringing a modern online membership record keeping package (eTapestry) to our attention. Also Kathy Faircloth is leaving as our treasurer. It has been a pleasure working with her in keeping our financial records in order and I have to thank her for especially for tending to the reports and communications regarding our nonprofit status. Michelle Caisse, our vice president has offered to remain on the board but I want to thank her especially for her diligent efforts with being our webmaster and for the balance, persistence and consistency she has given us in our board considerations. I thank Tom Carlberg, our Bulletin editor for his considered input in our board decisions as well and his consistent work with the task of collecting and editing the content of our Bulletins every six months. This task of course would not be done without Eric Peterson taking on production editing so seamlessly. I would be amiss if I didn't also thank him for so often helping the board with his sage considerations, and for keeping the Conservation Committee going on with its work as well - and all of this in the midst of moving his whole life from Reno NV to Weaverville CA and adding another daughter to his family!

We continue to grow and mature as a widespread group of amateurs and professionals involved with the joys and depths of lichenology. Our membership as of December 2007 stands at 223 members currently getting this bulletin, with 10 life members. Each year we pick up a few new members, replacing the few that have left. I see our maturity developing with the continuing survey fieldtrips for local parks, our taking on the support to preserve Darrell Wright's legacy, AND now being at the epicenter of the upcoming IAL6 meeting of the International Association of Lichenologists in Monterey California in July 2008. This is an opportunity of a lifetime - come and be part of it! The world of lichenology has come to our doorstep. Find more info at the IAL website: [http://www.lichenology.org/IAL6\\_ABLS](http://www.lichenology.org/IAL6_ABLS). Download the latest circular for more details.

--Bill Hill



Kathy Faircloth and me in our Marin County 'backyard' of Roy's Redwoods. Photo by Judy Robertson.

# The Bulletin of the California Lichen Society

Vol. 14, No. 1

Summer 2007

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The deadline for submitting material for the Summer 2008 CALS Bulletin is 30 April 2008.

### Back cover:

- A) Seminal meeting to form the California Lichen Society at the Shingle Mills cabin of Richard and Janet Doell, Santa Cruz Mountains, January 29, 1994. Present are (left to right): Richard Doell, Barbara Lachelt, Darrell Wright, Janet Doell, Nancy Brewer, Doris Baltzo, Ellen and Harry Thiers, Mona Borell, Bill Hill, Charis and Peter Bratt. Photography by Bill Hill. See article on page 52.
- B) *Sulcaria isidiifera*, Knudsen 4613 (UCR). Image © Janet Good 2007, printed with permission. See article on page 45.

