

# UC Santa Barbara

## Educational Materials

### Title

Lichens of Sedgwick Reserve and Santa Barbara County

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### Author

Tucker, Shirley

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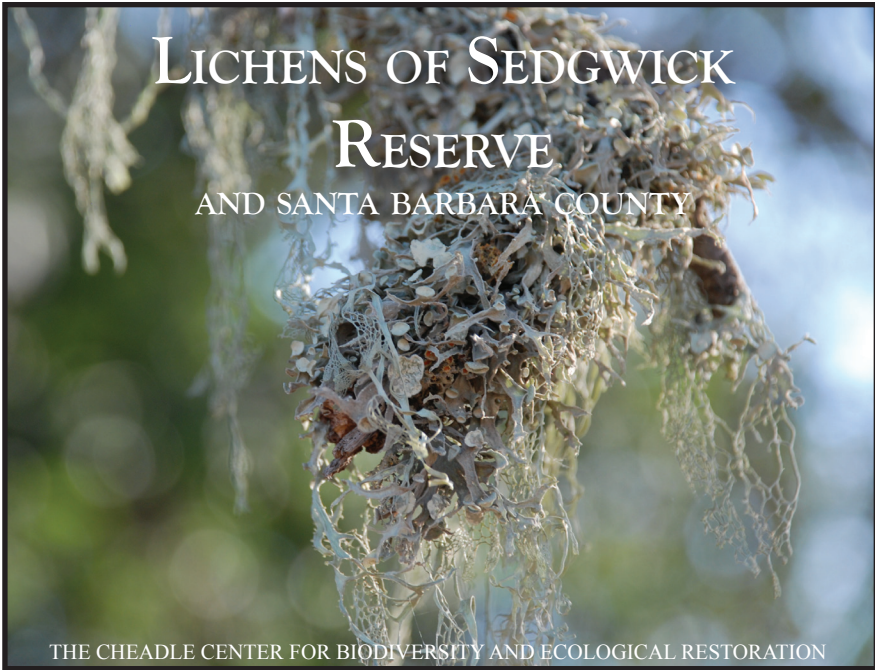
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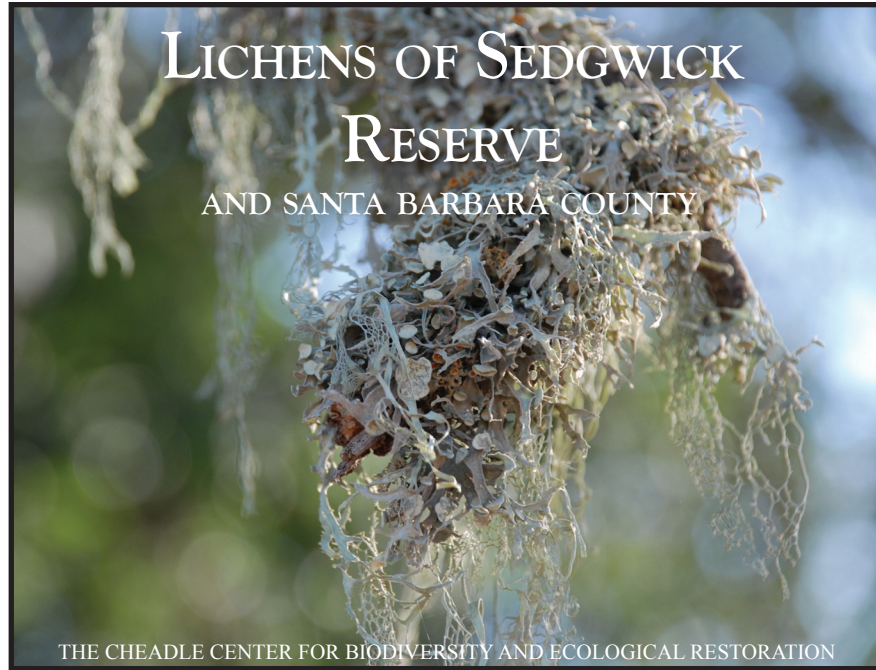
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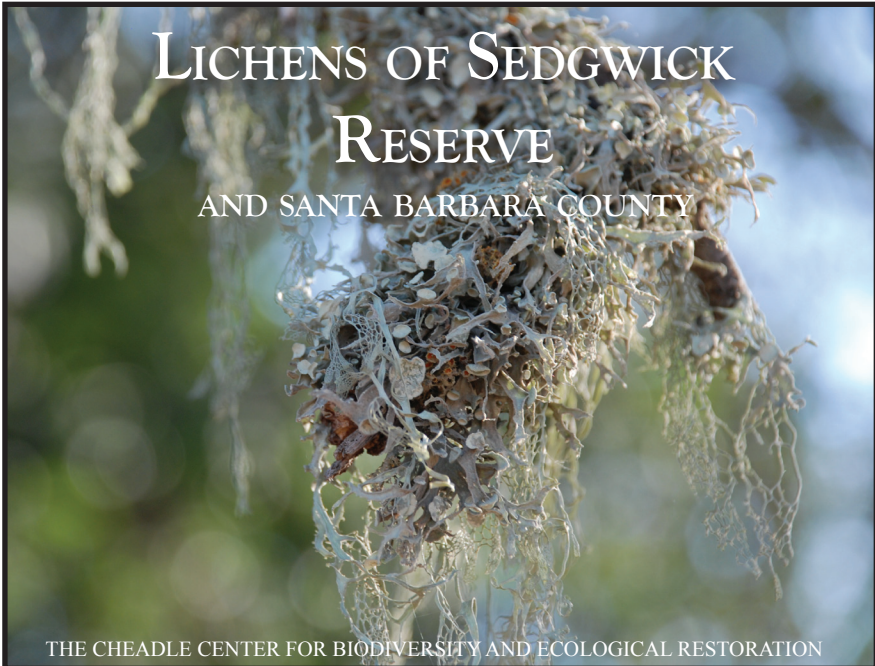
LICHENS OF SEDGWICK  
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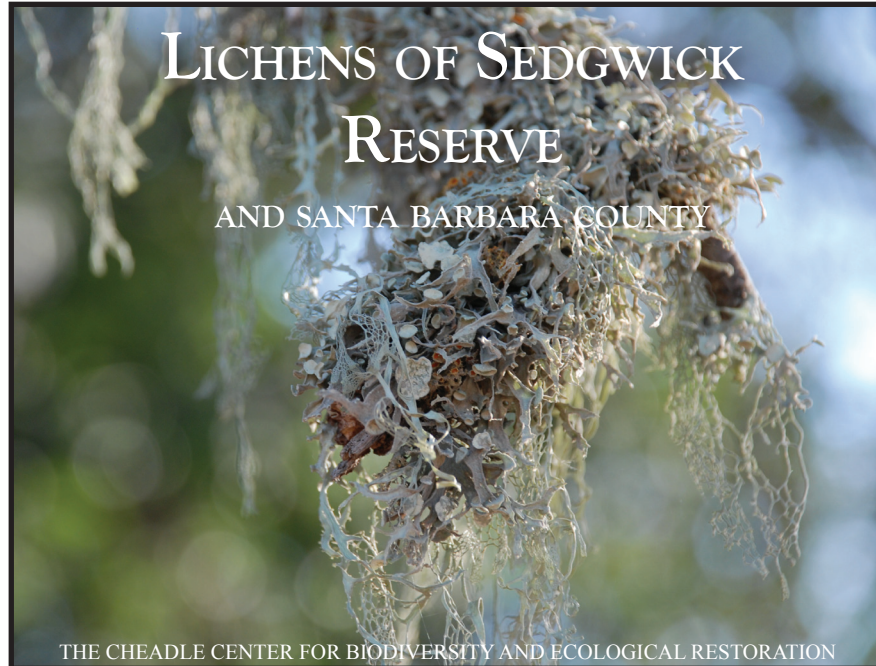
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<http://www.ccber.ucsb.edu>

**Text:** Shirley Tucker

**Photography:** Christopher Broughton, Heather Liu and Jennifer Thorsch

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## INTRODUCTION

Most visitors to Sedgwick Reserve in the Santa Ynez Valley do not immediately take note of the variety and abundance of the intricate and often colorful plant-like organisms that adorn trees, rocks and antiquated remnants of the bygone ranching era. Nearly 150 species of lichen have been identified to date on the 5,896 acre ecological reserve. Lichens serve as an indicator of many geophysical attributes that the UC Natural Reserve System was established to conserve: pollution-free environs, diversity of habitats and even the regularity of fog, a climate feature facing an uncertain future as climate patterns are altered due to human activities both near and far.

This guide is meant to bring awareness to the beauty and diversity of lichens. Descriptions are limited to information useful for field identification and technical terms are kept to a minimum. Most of the 56 species described in this guide are "macrolichens," large and sufficiently recognizable without chemical tests and microscopic examination (both essential for identifying many less noticeable lichens). A total of 150 species of lichens have been collected and identified at Sedgwick Reserve so far; many more are undoubtedly present and waiting to be found. A reference collection of lichens is maintained at Sedgwick Reserve's herbarium and at CCBER's herbarium on the University of California Santa Barbara (UCSB) campus.

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For those with an even greater interest in lichens, the collection at the Santa Barbara Botanic Garden contains over 40,000 specimens and is one of the most extensive collections of California lichens in existence.

Come see for yourself the beauty and allure of the lichens illustrated in this guide. Sedgwick Reserve is open to the public on the 2nd Saturday of each month when docents offer guided hikes throughout the vast property. Although disturbance to and collection of lichens is prohibited without a collecting permit, you will certainly have a new appreciation for lichens at Sedgwick Reserve. For more information about Sedgwick, please visit us on the web at <http://sedgwick.nrs.ucsb.edu/>.

### **Some Common Questions About Lichens**

#### **WHAT ARE LICHENS?**

Lichens are organisms characterized by symbiotic relationships between fungi and algae or bacteria. Since fungi do not produce their own food directly, they are often parasites or decomposers. Some fungi have developed a partnership with algae or bacteria in which the fungus provides a home for the algae or bacteria in exchange for nutrients. Studies indicate they are particularly sensitive to pollution and cannot survive where air quality is poor (high ozone or "smog").

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#### WHERE ARE LICHENS FOUND?

On tree bark and twigs, wooden fences, on rusted steel, rock, soil, and leaves.

#### DO LICHENS DAMAGE TREES?

No, lichens get their nutrition from algal photosynthesis.

#### HOW MANY LICHENS ARE THERE?

About 15,000 worldwide, about 1,500 in California, and at least 150 species at Sedgwick Reserve. Many, but not all, of the lichens found at Sedgwick can also be found in the rest of Santa Barbara County.

#### HOW DO LICHENS REPRODUCE?

Many lichens reproduce and spread asexually by *soredia* and *isidia*, tiny balls that contain both the fungus and the alga of a particular lichen species. These may occur on the surface or margins. Other lichens reproduce sexually by producing fungal spores in *apothecia*, circular, often cup-shaped structures on the lichen.

Lichens are classified by form:

**Fruticose:** upright, like a small branching tree

**Foliose:** growing flat, with upper and lower sides, and free edges

**Crustose:** growing flat and closely appressed against the bark or other surface, with no free edges; also referred to as "crusts."

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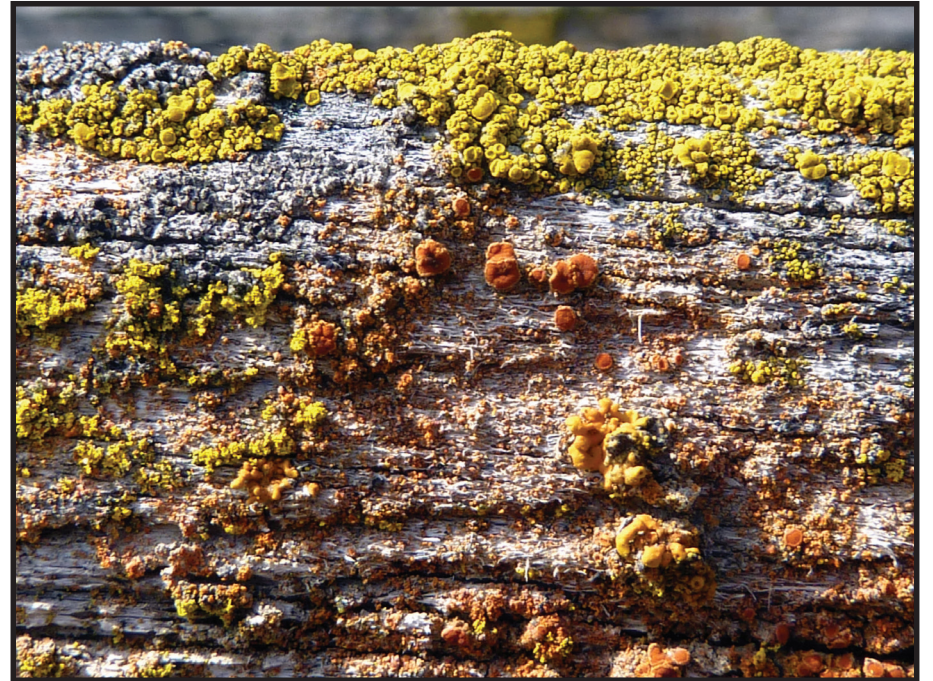
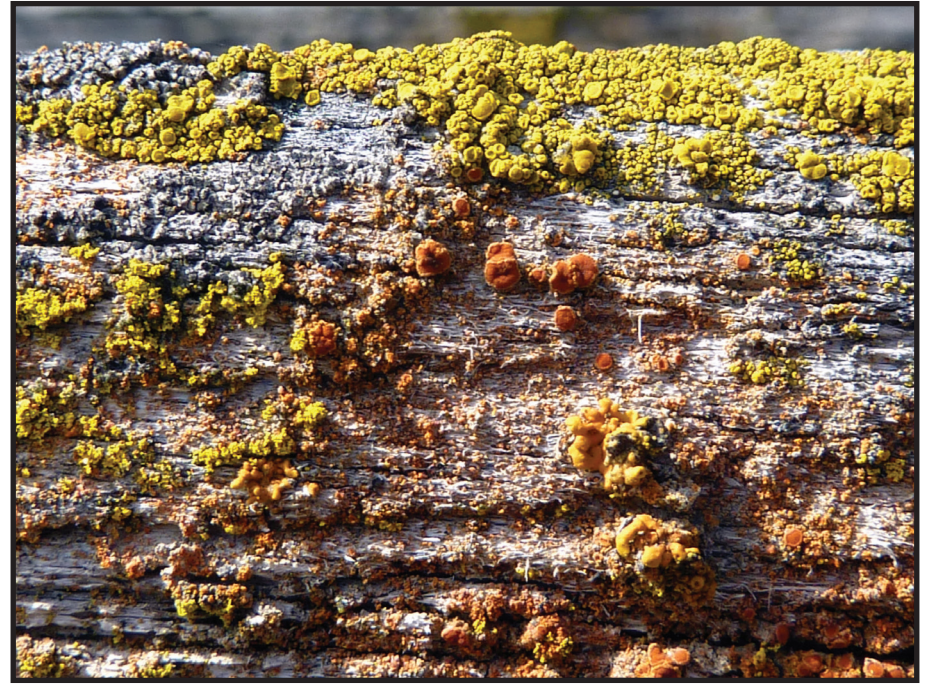
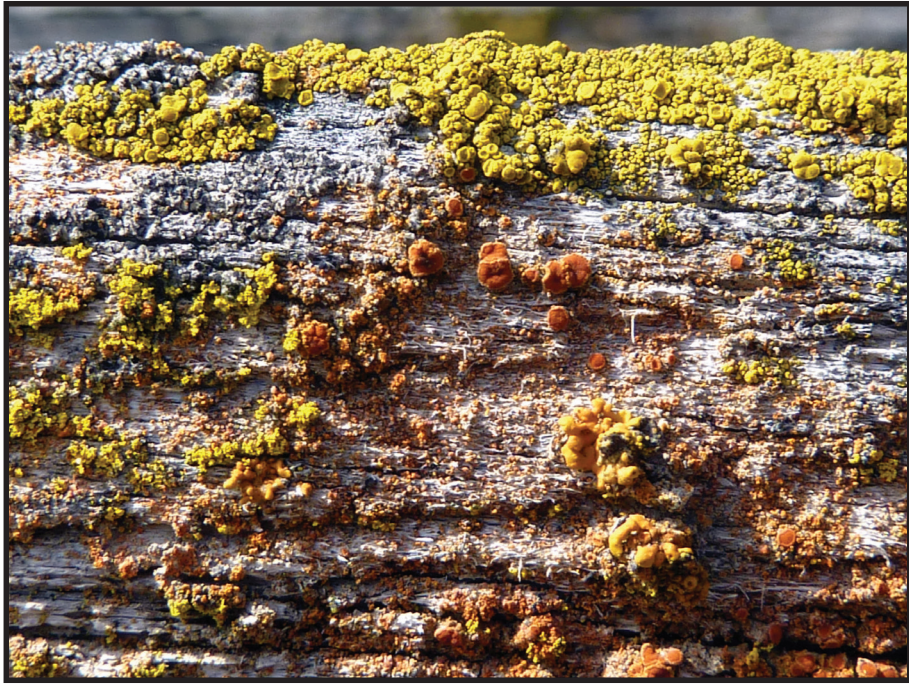
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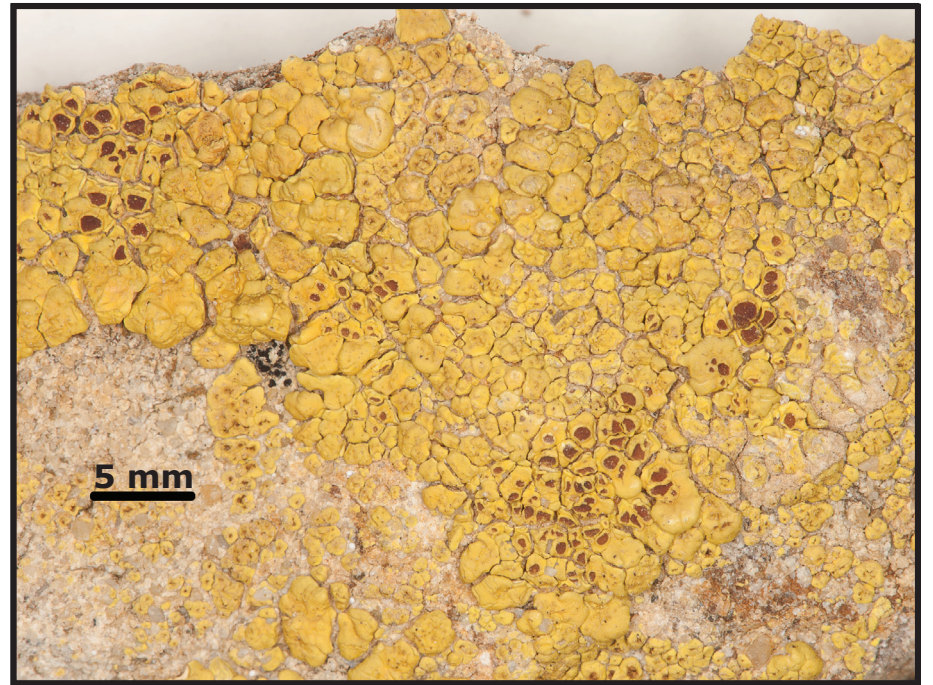
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Crustose Lichens

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Crustose Lichens

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**Common Name:** Yellow Cobblestone Lichen

**Scientific Name:** *Acarospora socialis* H. Magn.

**Form:** Crustose

**Substrate:** Rock

**Size:** Colonies range in size from about 1-10 cm (~ 1-4 in.)

**Comments:** This rock crust stands out because of its yellow color and areolate crust, in contrast to a similar yellow rock lichen, *Pleopsidium flavum* (p. 43), which has placodioid (lobate) margins. Each apothecium is sunken in an areole with the central disk some shade of brown. Two other species of *Acarospora* occur at Sedgwick; both are completely brown and inconspicuous rock crusts.

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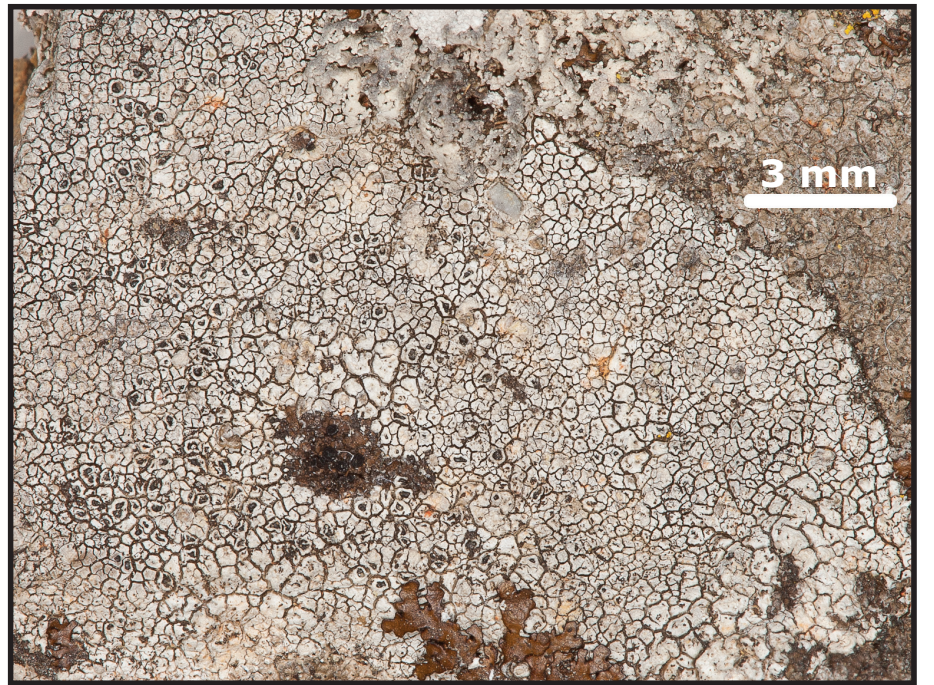
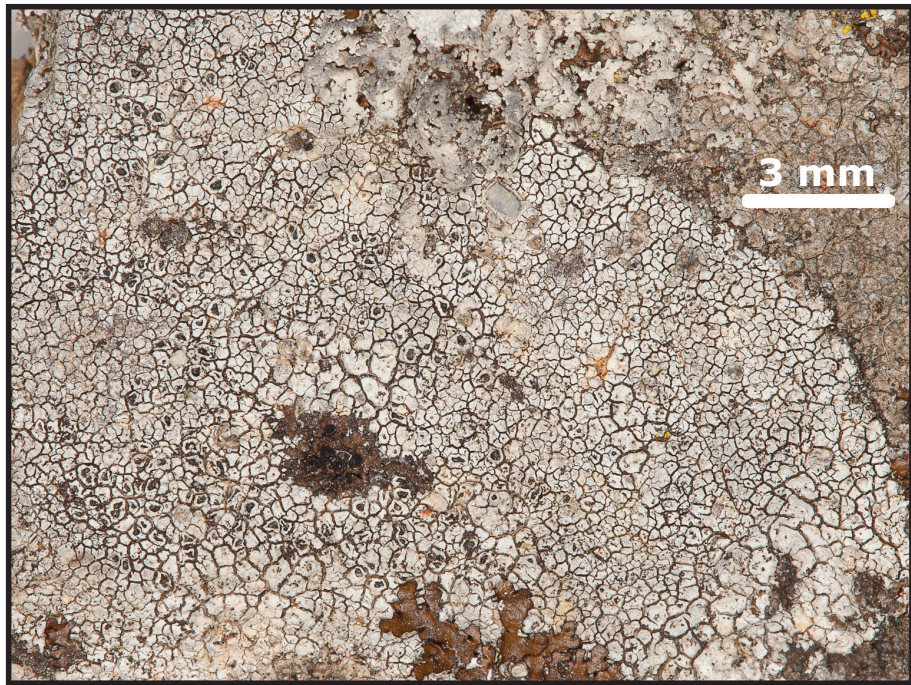
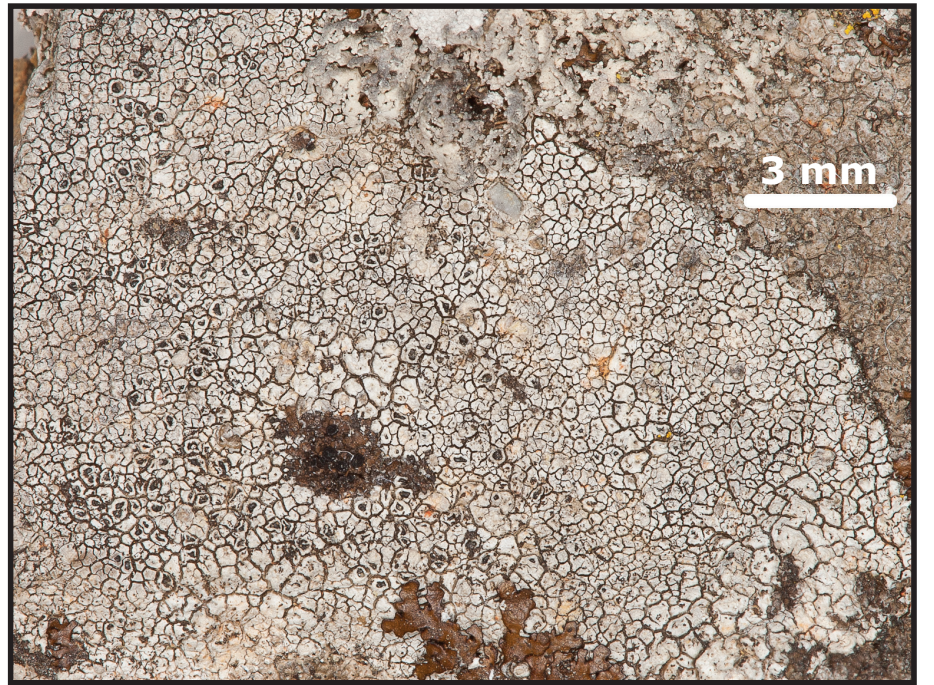
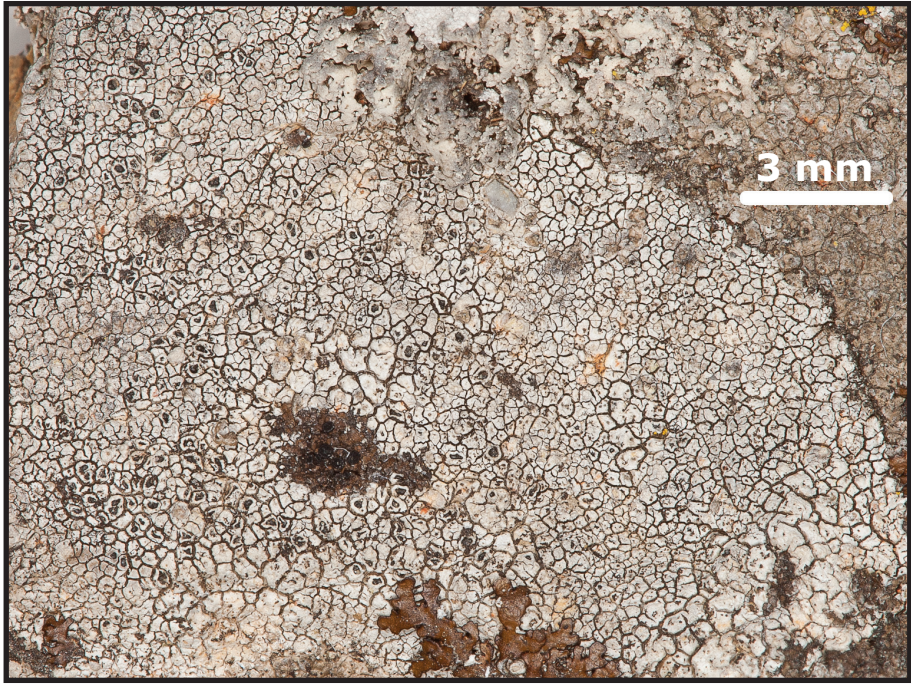
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**Common Name:** Sunken Disk Lichen

**Scientific Name:** *Aspicilia sp.*

**Form:** Crustose

**Substrate:** Rock

**Size:** Colonies range greatly in size from about 2-10 cm (0.75-4.0 in.); areoles up to 2 mm (0.2 in.) diameter

**Comments:** Species of *Aspicilia* are very common rock crusts in this area, but they are quite difficult to collect and to identify. The specimen from Sedgwick (near Figueroa Mountain Rd.) appears pale grey at a distance, and is composed of tiny areoles. Apothecia have a sunken black disk and a raised white rim; each is about the same size as an individual areole. Identifying features require microscopic or chemical analysis.

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**Common Name:** Black Button Lichen

**Scientific Name:** *Buellia triseptata* Nordin

**Form:** Crustose

**Substrate:** Wood

**Size:** Colonies up to 1 cm (0.5 in.) wide

**Comments:** This tiny white crust on wood has black button-like apothecia at the center. *Buellia punctata* is the most common of several species known in the area. Species of *Buellia* and some *Lecidea* can be identified only by spore type when viewed with a microscope. Distinguishing different *Buellia* species requires microscopic and/or chemical analysis.

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**Common Name:** Black Button Lichen

**Scientific Name:** *Buellia triseptata* Nordin

**Form:** Crustose

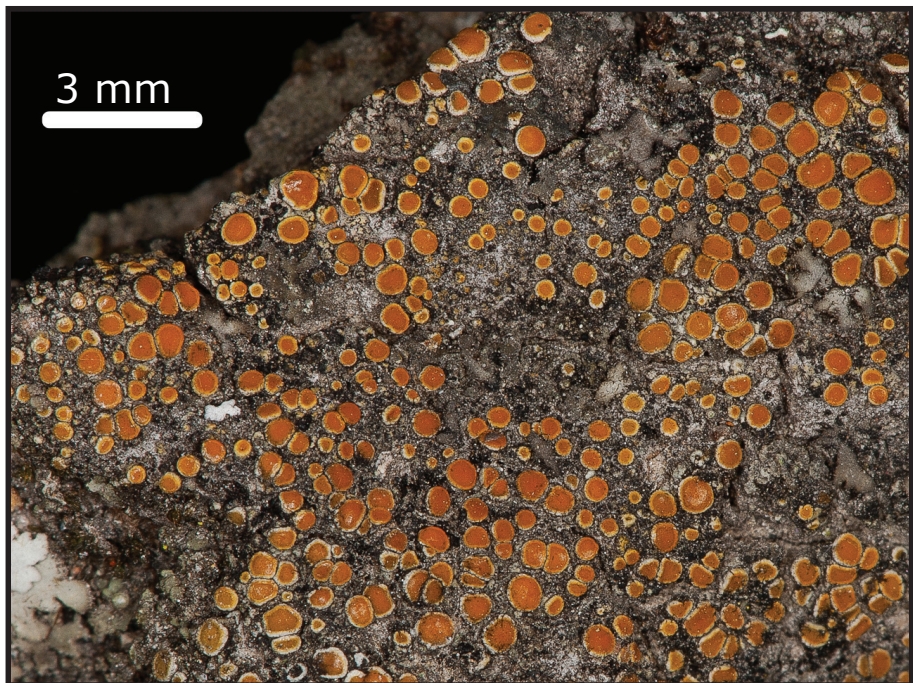
**Substrate:** Wood

**Size:** Colonies up to 1 cm (0.5 in.) wide

**Comments:** This tiny white crust on wood has black button-like apothecia at the center. *Buellia punctata* is the most common of several species known in the area. Species of *Buellia* and some *Lecidea* can be identified only by spore type when viewed with a microscope. Distinguishing different *Buellia* species requires microscopic and/or chemical analysis.

15





**Common Name:** Firedot Lichen

**Scientific Name:** *Caloplaca stanfordensis* H. Magn.

**Form:** Crustose

**Substrate:** Twigs and bark

**Size:** 1-4 cm diameter (0.5-1.5 in.)

**Comments:** Twelve species of *Caloplaca*, bright orange lichens, have been found at Sedgwick Reserve, including four on rock. Three others that are commonly seen on oak trunks are described here. *Caloplaca stanfordensis* has orange apothecia and a gray inconspicuous crust. *Caloplaca holocarpa* is similar, but with an orange crust. Neither has soredia.

17

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17

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**Scientific Name:** *Caloplaca stanfordensis* H. Magn.

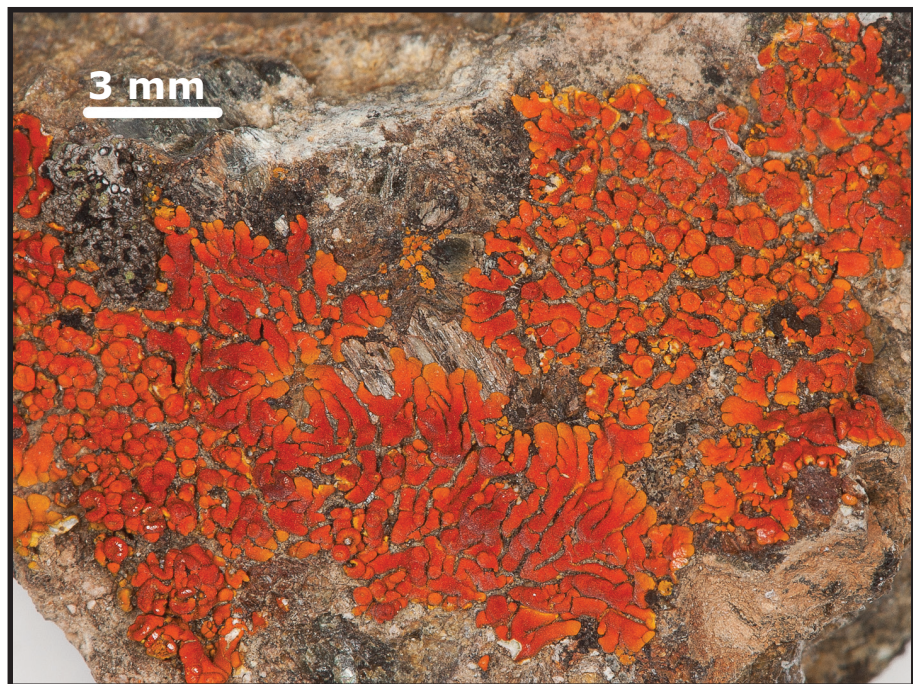
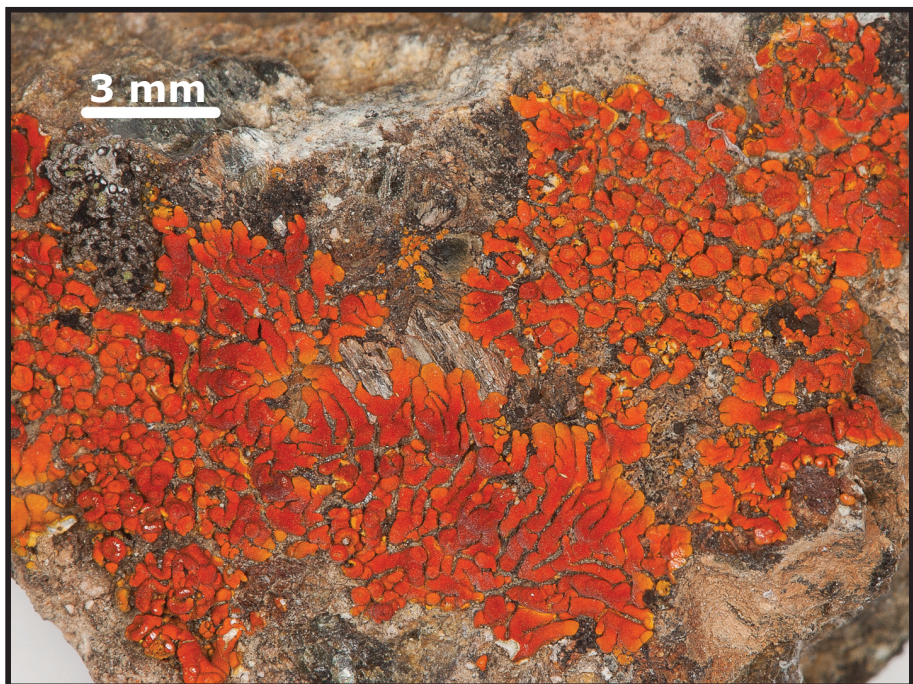
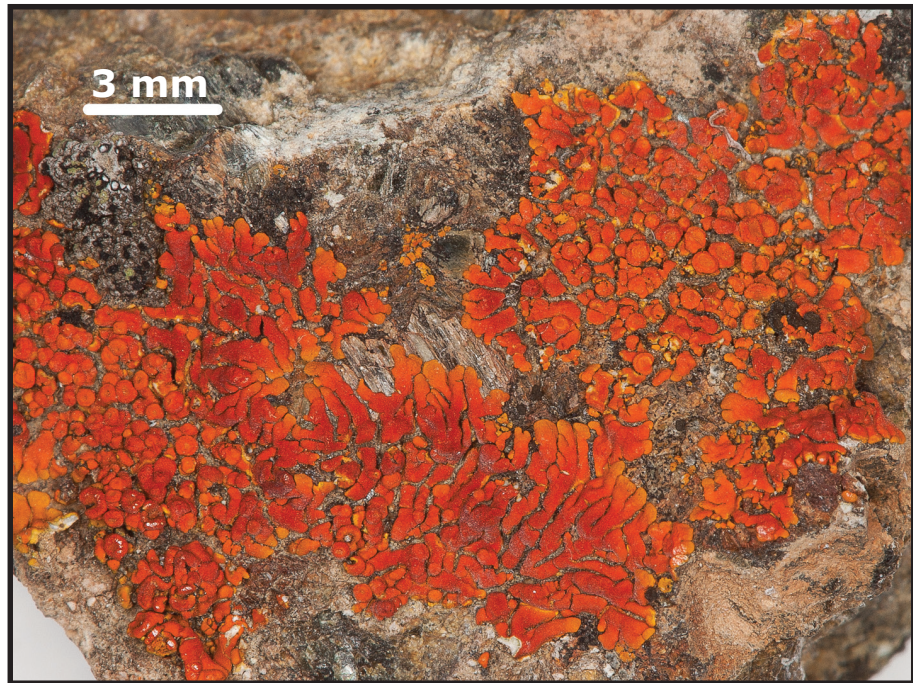
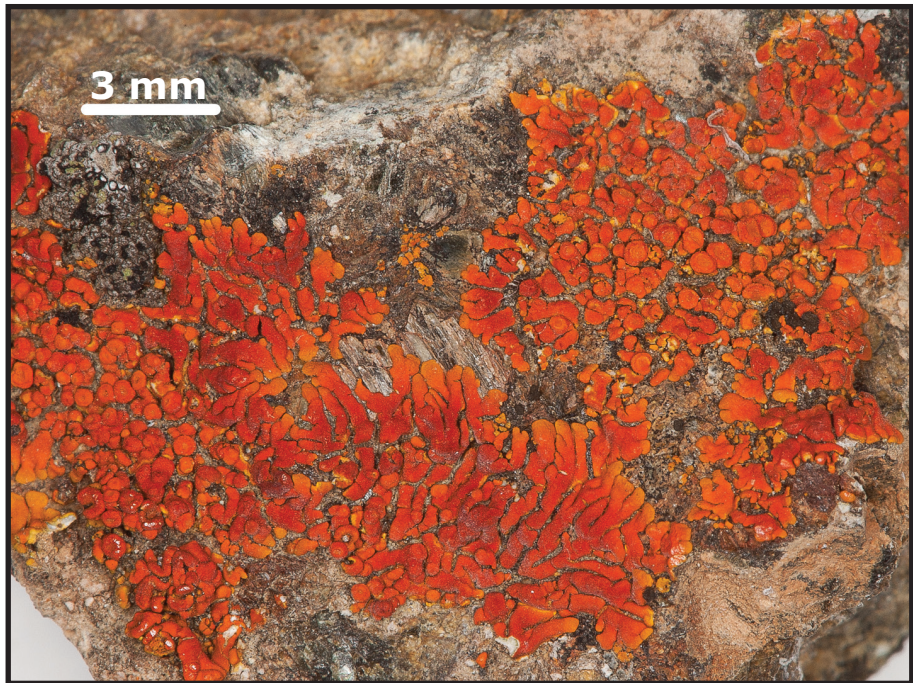
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17



**Common Name:** Flame Firedot Lichen

**Scientific Name:** *Caloplaca ignea* Arup

**Form:** Placodioid crust

**Substrate:** Rock

**Size:** 1-3 cm wide (0.5-1.5 in.)

**Comments:** This lichen forms brilliant orange to red-orange patches on rock. The margins are placodioid (somewhat lobed), and the center is dotted with orange apothecia. *Caloplaca impolita* is somewhat more yellow especially at the margins, while *Caloplaca ignea* is uniformly orange to red-orange.

19

**Common Name:** Flame Firedot Lichen

**Scientific Name:** *Caloplaca ignea* Arup

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**Size:** 1-3 cm wide (0.5-1.5 in.)

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**Common Name:** Flame Firedot Lichen

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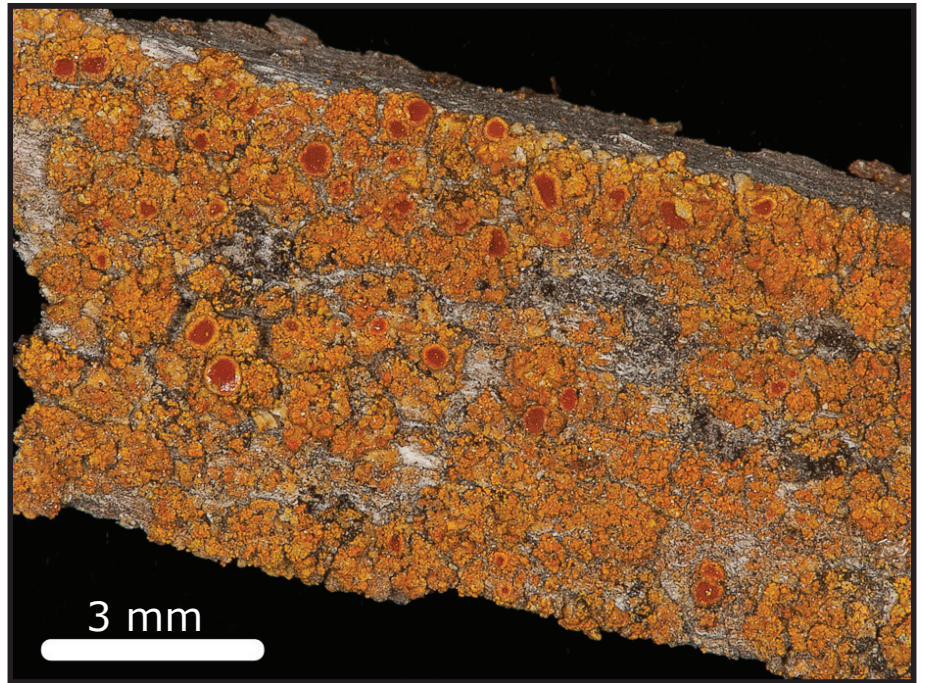
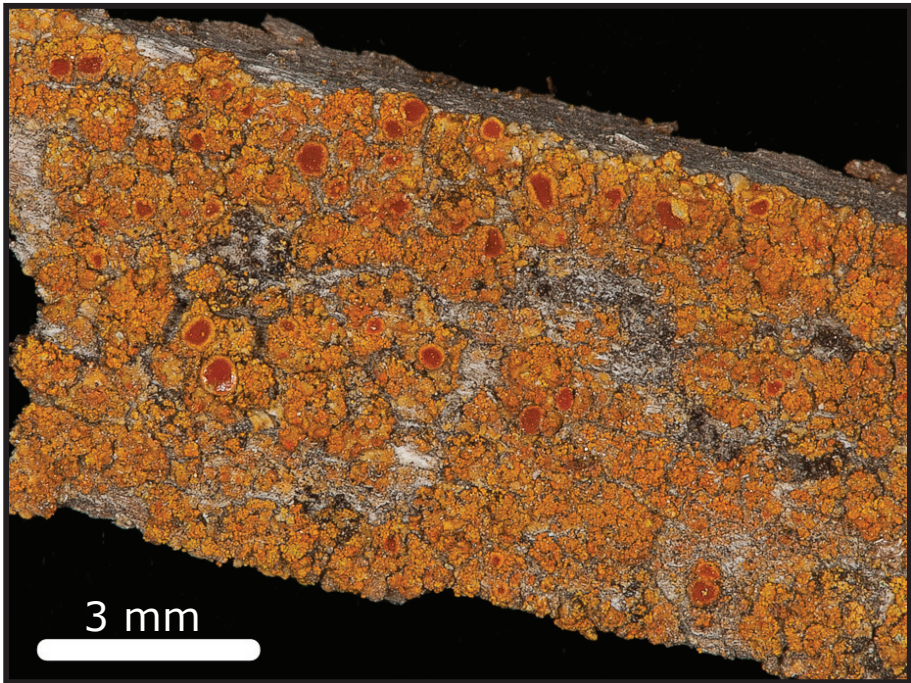
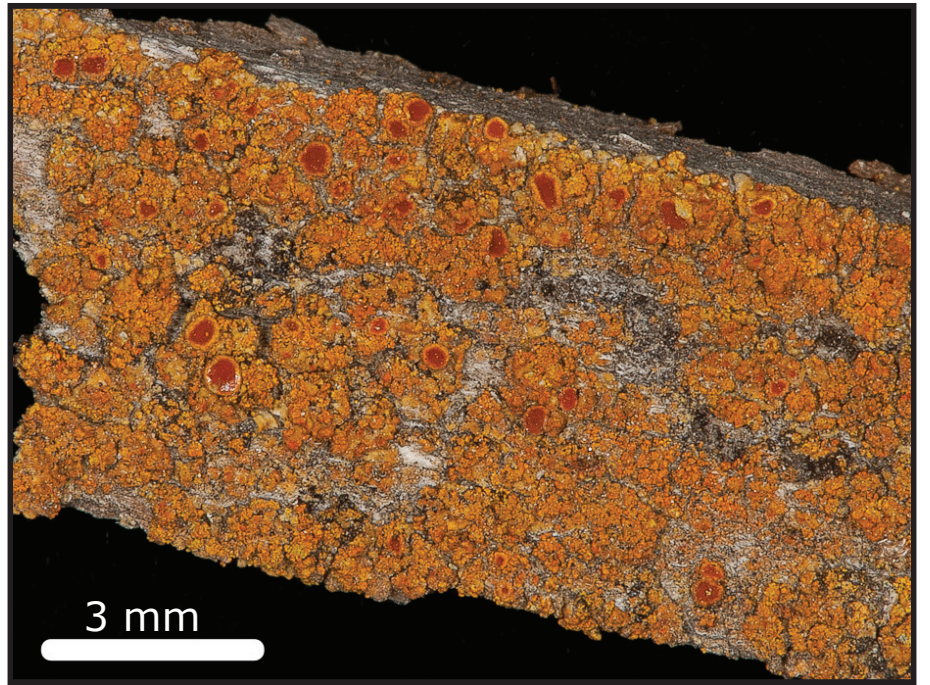
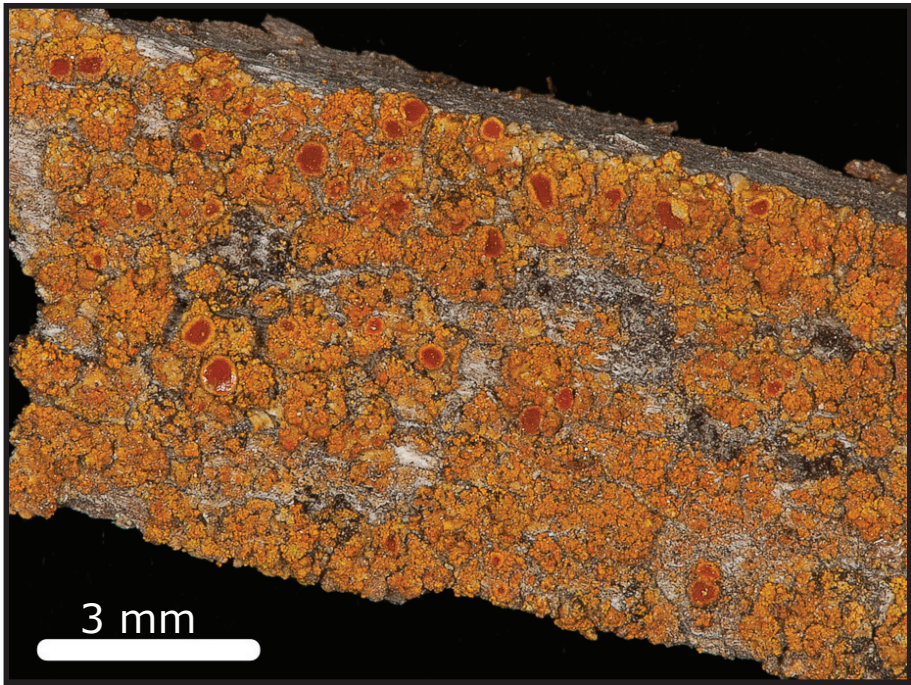
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19



**Common Name:** Orange Powdery Firedot Lichen  
**Scientific Name:** *Caloplaca microphyllina* (Tuck.) Hasse  
**Form:** Crustose  
**Substrate:** Bark  
**Size:** 1-4 cm (1-1.5 in.) diameter  
**Comments:** This lichen has an orange sorediate crust and is often found without apothecia.

21

**Common Name:** Orange Powdery Firedot Lichen  
**Scientific Name:** *Caloplaca microphyllina* (Tuck.) Hasse  
**Form:** Crustose  
**Substrate:** Bark  
**Size:** 1-4 cm (1-1.5 in.) diameter  
**Comments:** This lichen has an orange sorediate crust and is often found without apothecia.

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**Common Name:** Orange Powdery Firedot Lichen  
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**Form:** Crustose  
**Substrate:** Bark  
**Size:** 1-4 cm (1-1.5 in.) diameter  
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21



**Common Name:** Yellow Firedot Lichen  
**Scientific Name:** *Caloplaca persimilis* Wetm.  
**Form:** Crustose  
**Substrate:** Bark  
**Size:** 1-3 cm diameter (1-1.3 in.)  
**Comments:** This lichen has a sorediate mustard-yellow crust; orange apothecia may be present although they are never abundant.

23

**Common Name:** Yellow Firedot Lichen  
**Scientific Name:** *Caloplaca persimilis* Wetm.  
**Form:** Crustose  
**Substrate:** Bark  
**Size:** 1-3 cm diameter (1-1.3 in.)  
**Comments:** This lichen has a sorediate mustard-yellow crust; orange apothecia may be present although they are never abundant.

23

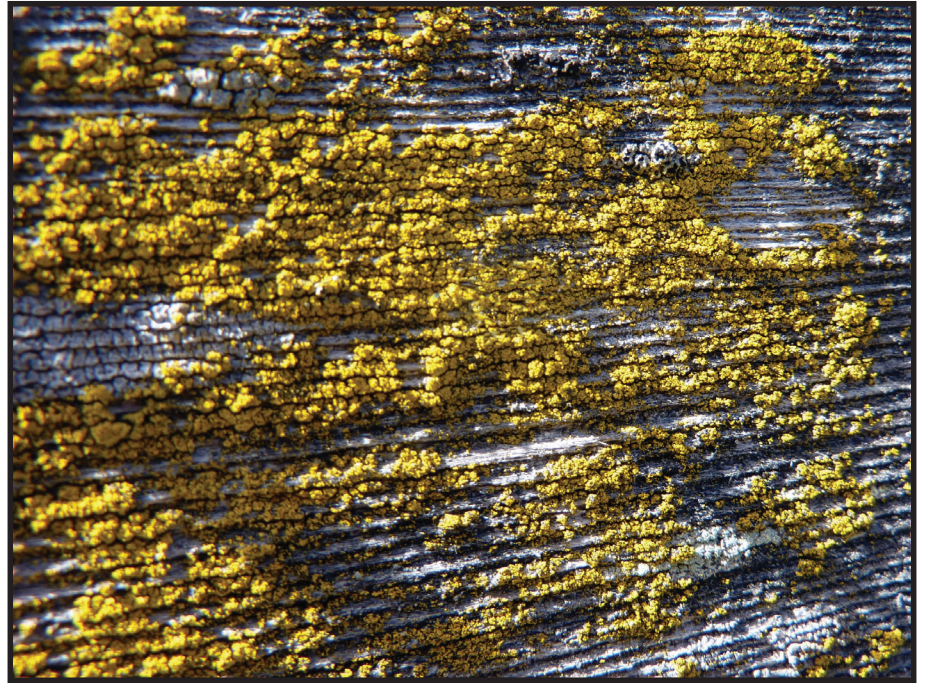
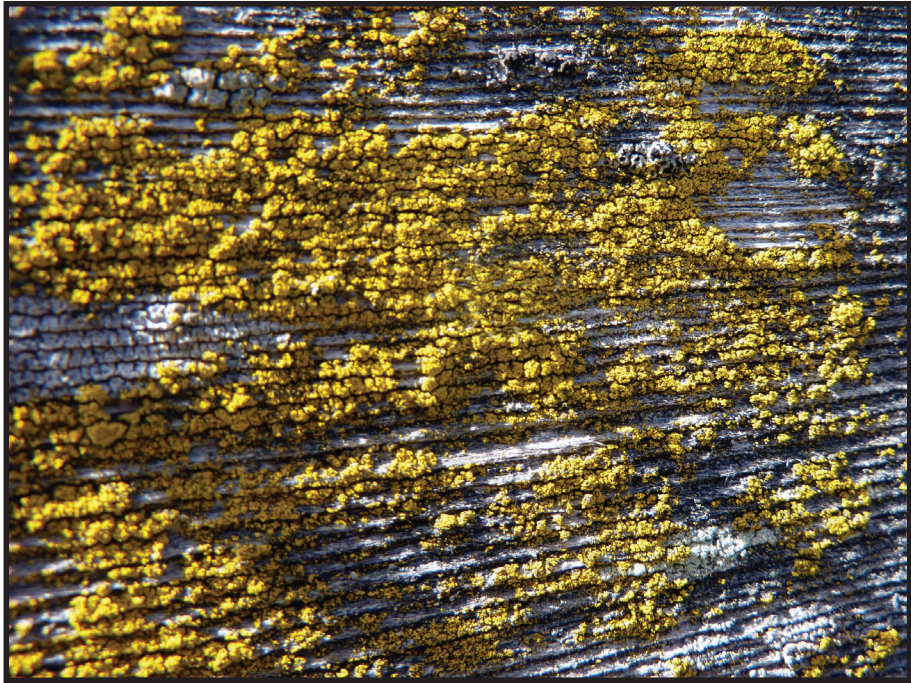
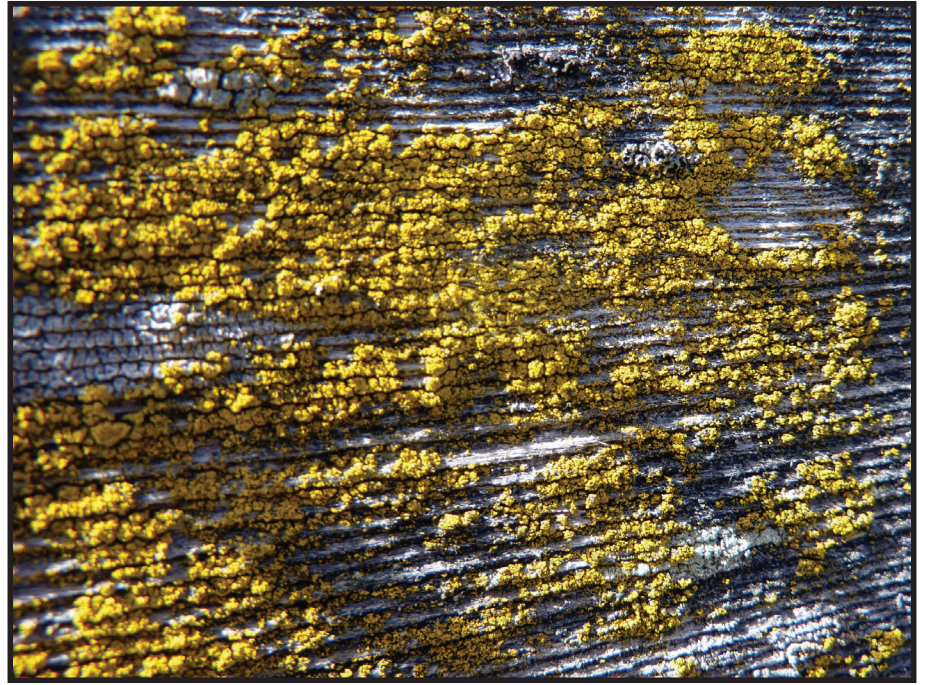
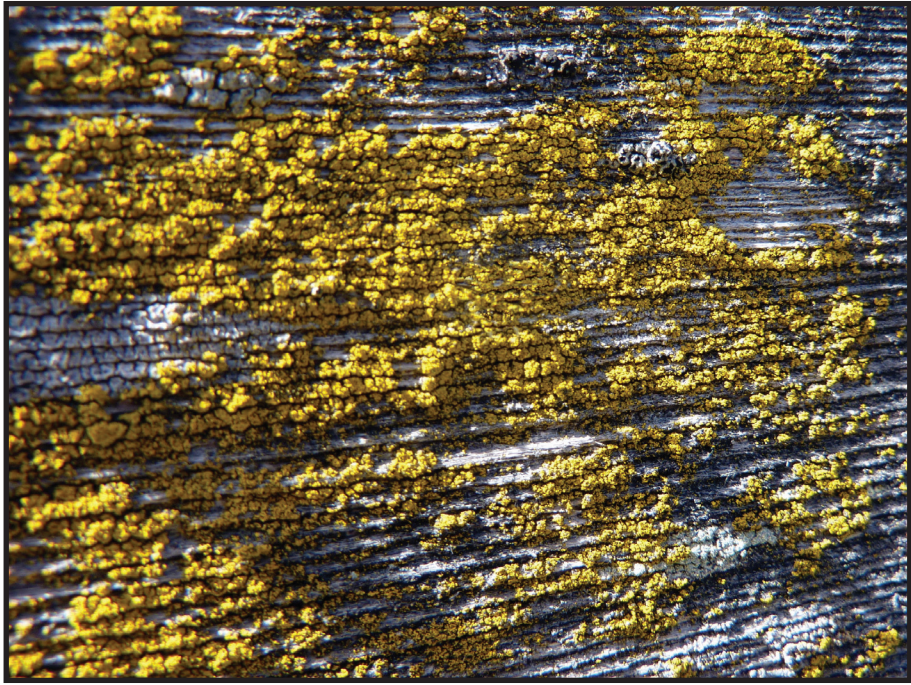
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23





**Common Name:** Yolk Lichen

**Scientific Name:** *Candelariella vitellina* (Hoffm.) Müll.

Arg.

**Form:** Crustose

**Substrate:** Wood, bark and rock

**Size:** From 0.5 cm (1/4 in.) wide, to much wider where patches merge as in the photo

**Comments:** This yellow lichen crust occurs on wood, bark, and rock in tiny patches among other lichens. The apothecia are the same color. Its color distinguishes it from the orange *Caloplaca* species, and its crustose form distinguishes it from the finely foliose yellow lichen *Candelaria* (p. 49), which is often intermixed.

25

**Common Name:** Yolk Lichen

**Scientific Name:** *Candelariella vitellina* (Hoffm.) Müll.

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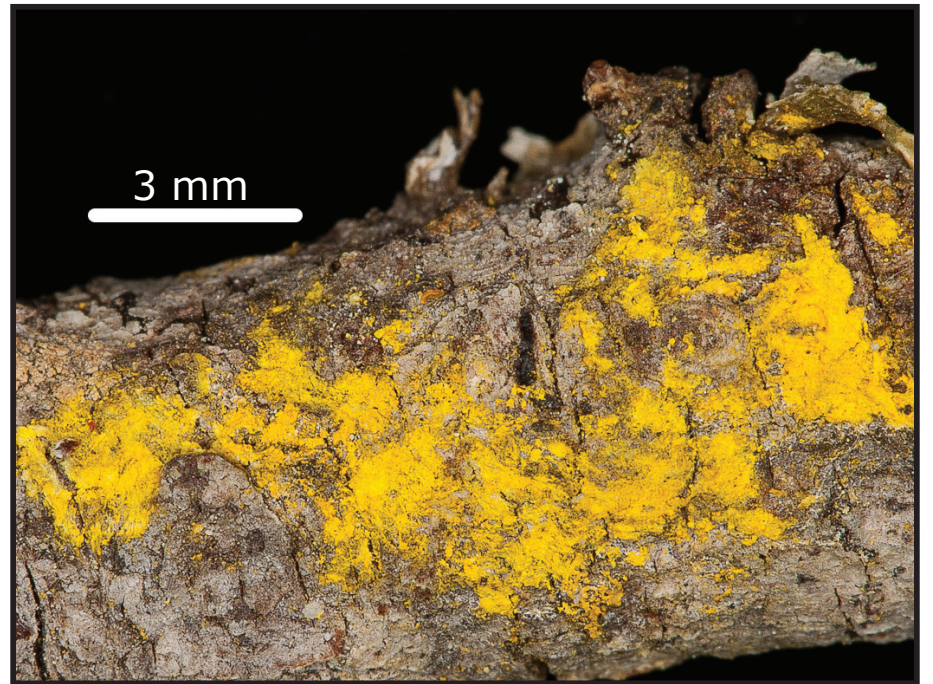
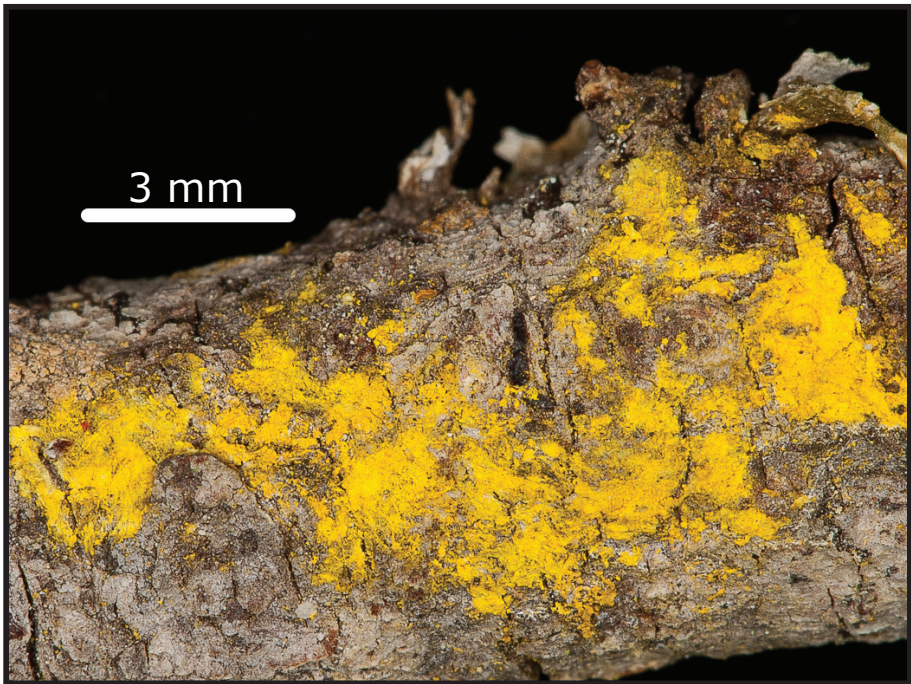
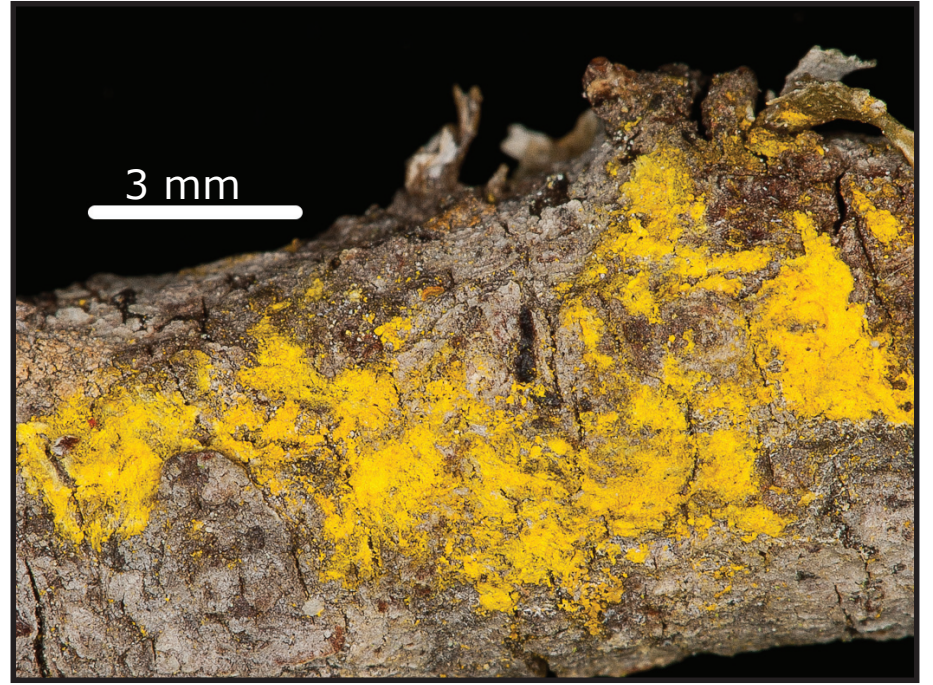
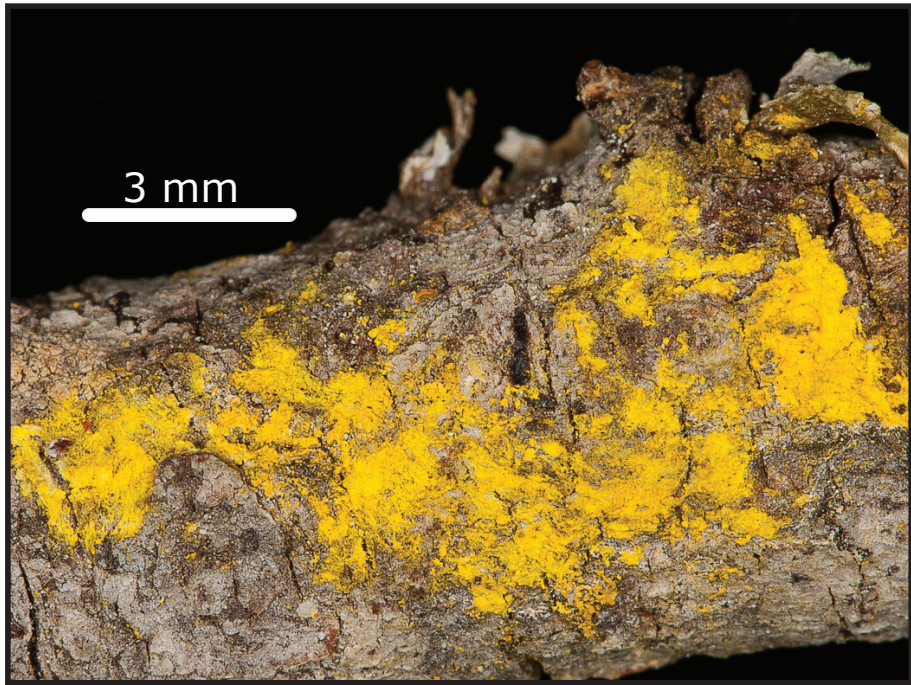
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25



**Common Name:** Western Gold Dust Lichen  
**Scientific Name:** *Chrysothrix xanthina* (Vain. ) Kalb  
**Form:** Leprose crust  
**Substrate:** Twigs and bark  
**Size:** 1-3 cm (0.5-1 in.) wide  
**Comments:** This lichen is lemon-yellow or yellow-green, and is entirely soredate, appearing as small webby patches on twigs and bark. This lichen has commonly been misidentified as *C. candelaris*.

27

**Common Name:** Western Gold Dust Lichen  
**Scientific Name:** *Chrysothrix xanthina* (Vain. ) Kalb  
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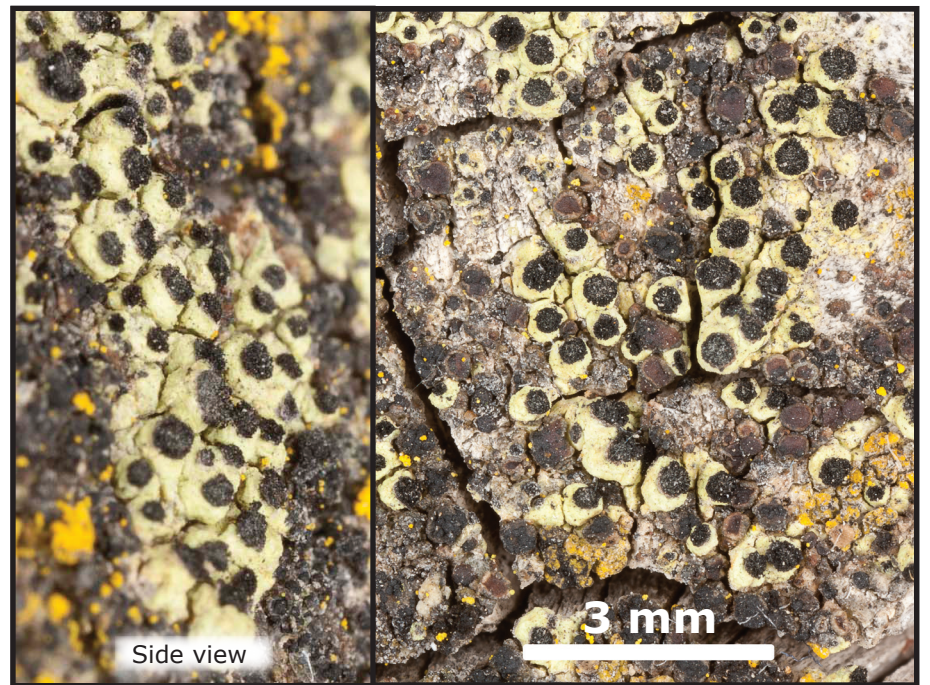
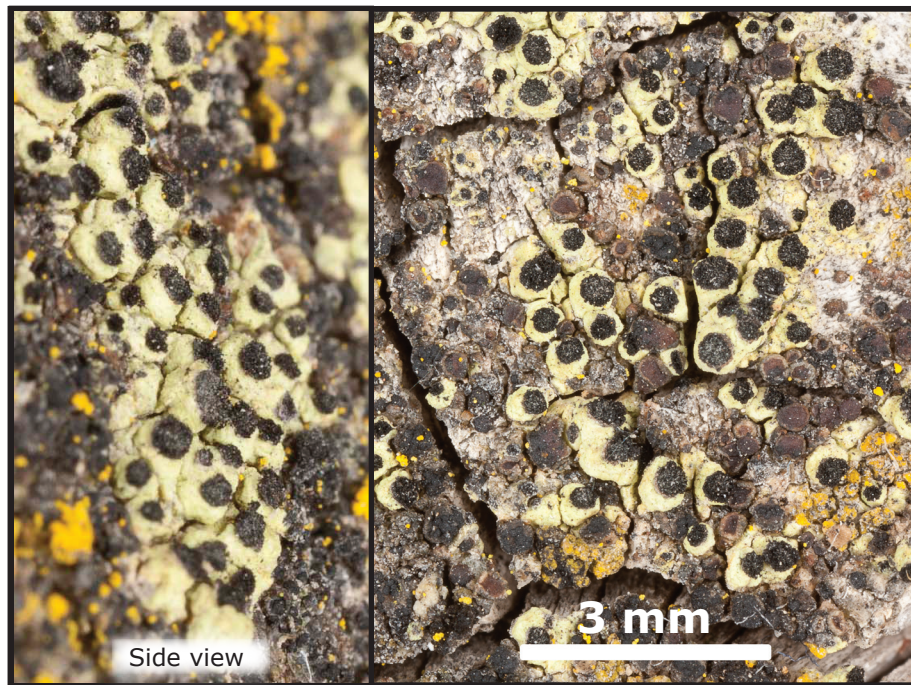
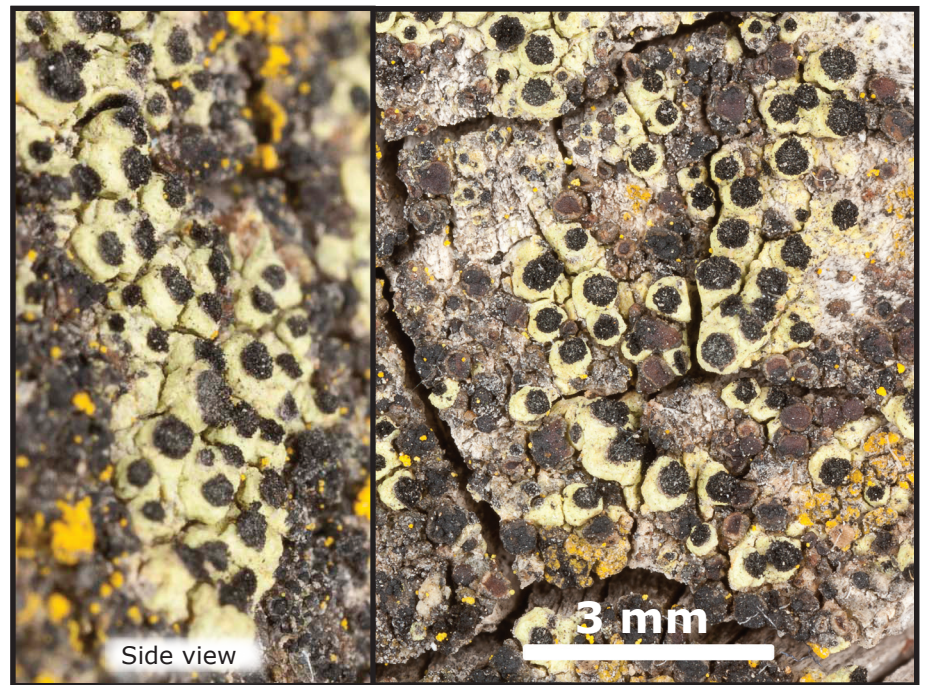
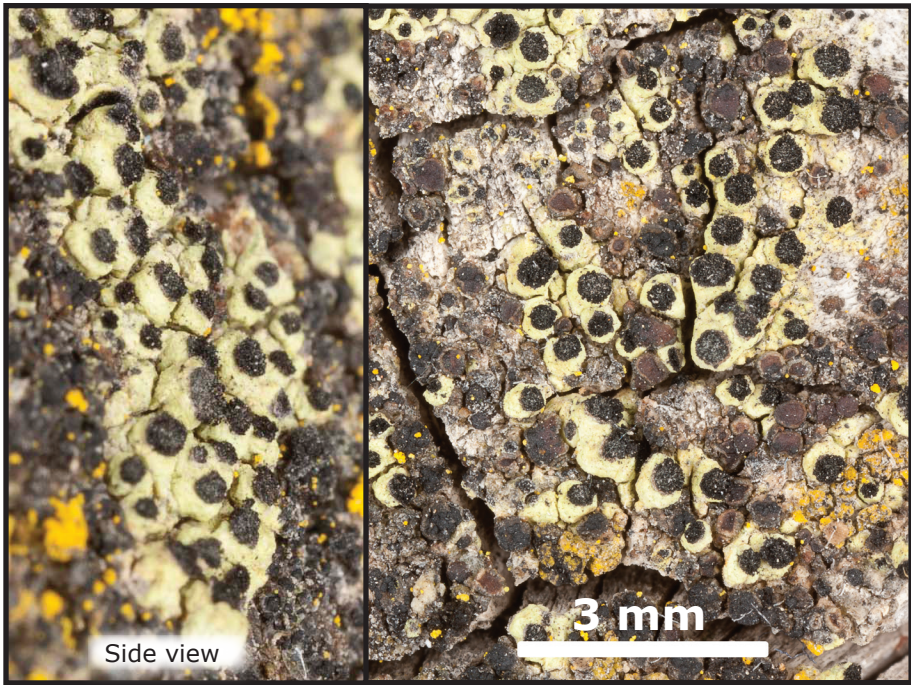
27

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27



**Common Name:** Soot Lichen

**Scientific Name:** *Cyphelium tigillare* (Ach.) Ach.

**Form:** Crustose

**Substrate:** Wooden boards and fence posts

**Size:** Warts are about 2 mm (0.2 in.) in diameter

**Comments:** This crustose lichen consists of numerous clustered greenish-gray warts (yellow after drying in the herbarium), each containing a bulging black fruiting structure, a mazaedium. Touching the mazaedium with a finger leaves a sooty mark, because the tiny black spores are free on the surface. Ten species occur in California, but only one at Sedgwick. Three other species occur in Santa Barbara County including two on the Channel Islands. Identification to species requires microscopic examination of the spores and mazaedium.

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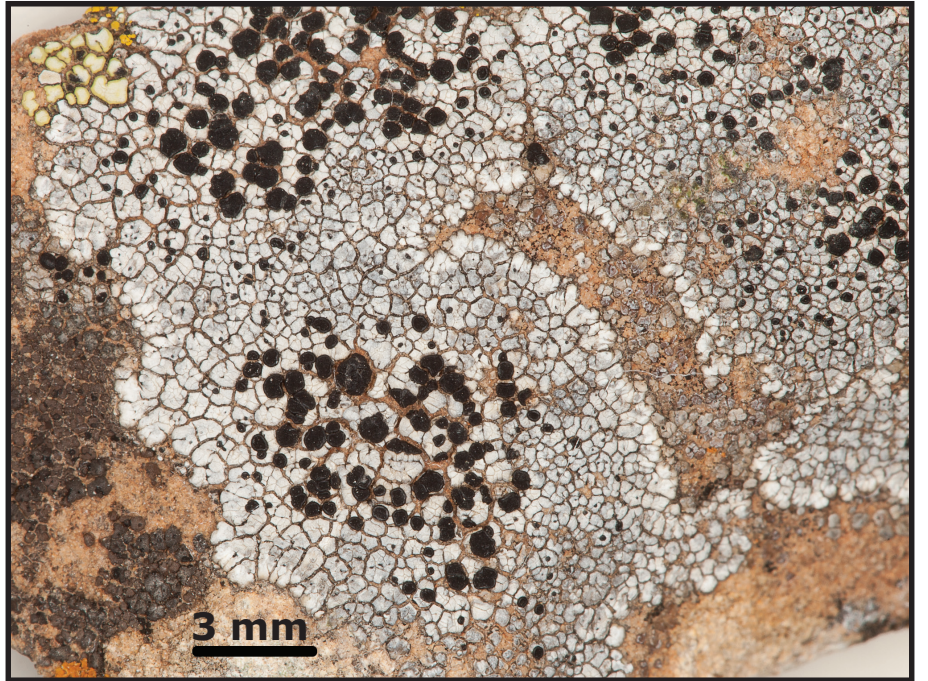
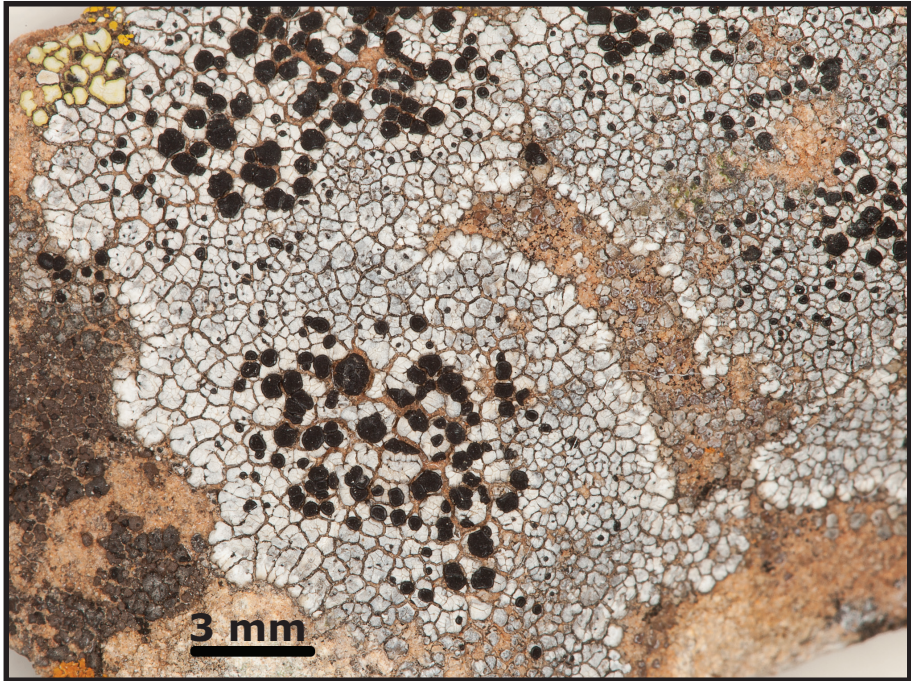
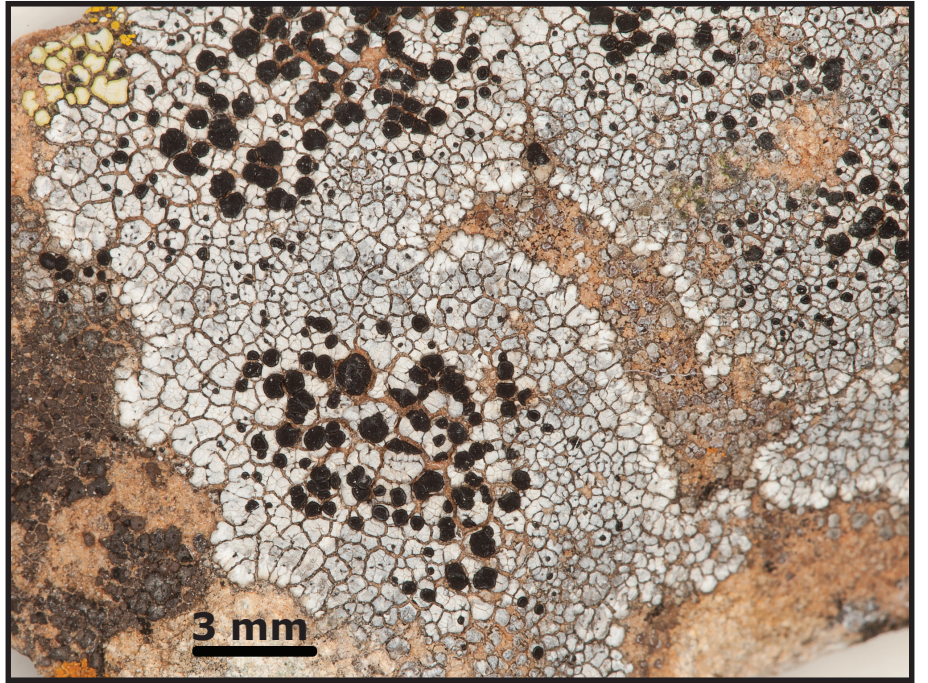
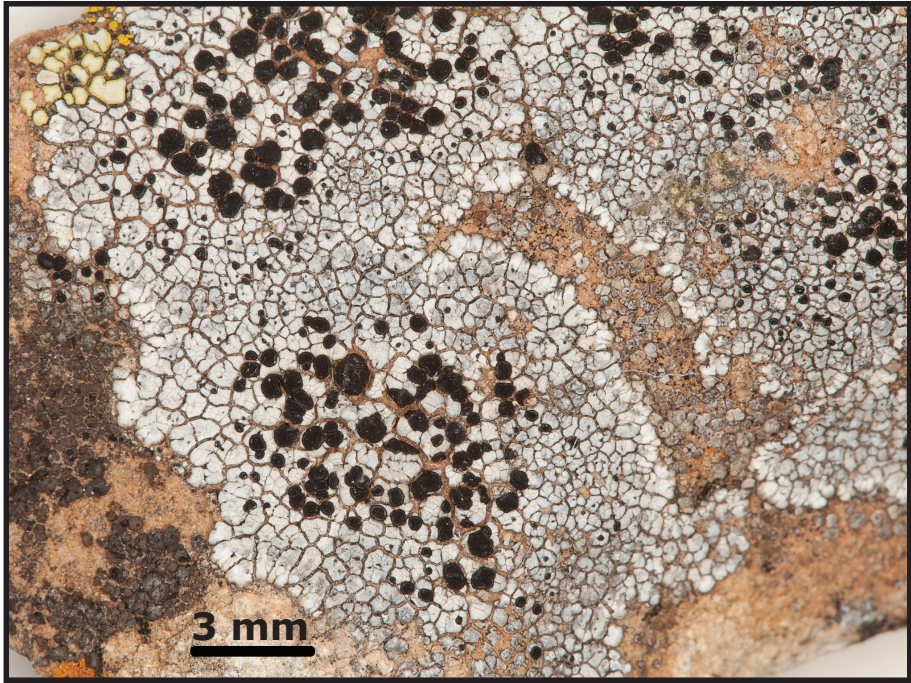
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**Common Name:** Silver Moonglow Lichen  
**Scientific Name:** *Dimelaena radiata* (Tuck.) Müll. Arg.  
**Form:** Crustose  
**Substrate:** Rock  
**Size:** Colony is approximately 1-4 cm (0.5-1.5 in.) wide  
**Comments:** This pruinose white to cream rock crust has an appressed thallus made up of areoles, tiny raised divisions, with those at center containing apothecia with black disks that are sometimes gray-pruinose. The thallus margins have radiating lobes. This species and *D. oreina* (with a gray-green thallus) both occur on rock in hills and canyons around Santa Barbara as well at Sedgwick Reserve.

31

**Common Name:** Silver Moonglow Lichen  
**Scientific Name:** *Dimelaena radiata* (Tuck.) Müll. Arg.  
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31





**Common Name:** Black-eyed Rim-Lichen  
**Scientific Name:** *Lecanora circumborealis* Brodo and Vitik.  
**Form:** Crustose  
**Substrate:** Twigs and bark  
**Size:** 1-2 cm (0.25-0.75 in.) wide  
**Comments:** This small pale crust has apothecia with black central disks and pale rims. It is inconspicuous, uncommon, and is a rare treat to find among other larger lichens on twigs and bark. This genus includes many species, all requiring microscopical study and chemical tests for identification. Twenty-three species of *Lecanora* have been identified from the Santa Barbara area, and seven so far from Sedgwick, with undoubtedly more to be found.

33

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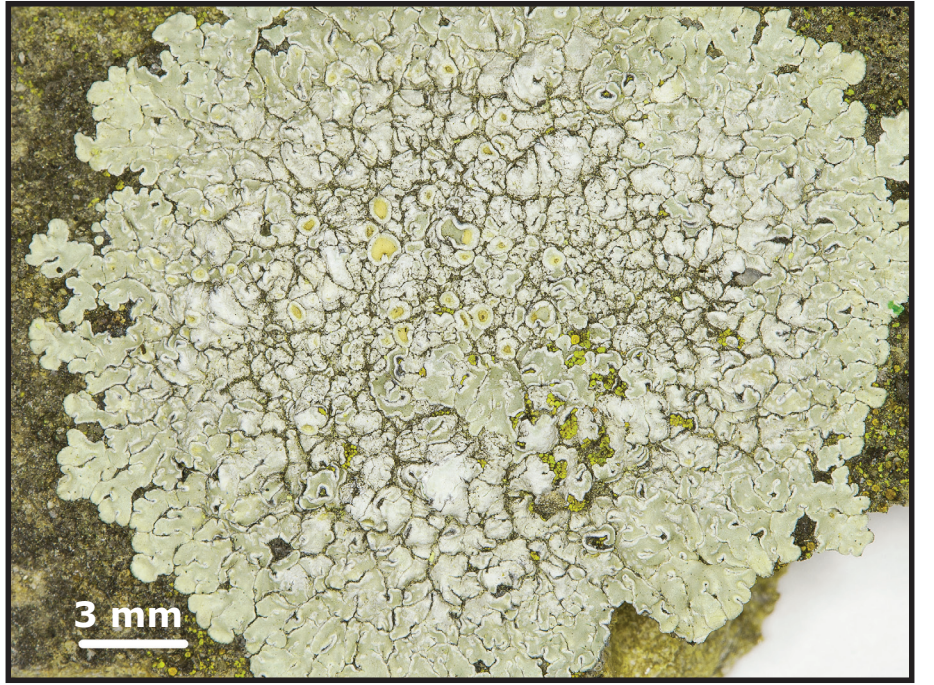
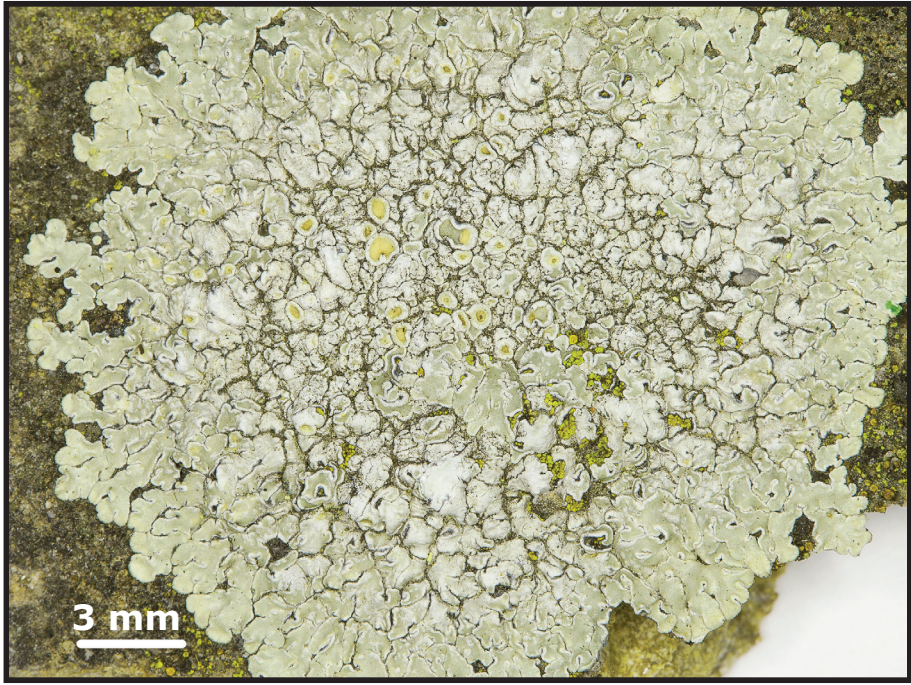
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33



**Common Name:** Stonewall Rim-Lichen

**Scientific Name:** *Lecanora muralis* (Schreb.) Rabenh.

**Form:** Crustose

**Substrate:** Rock

**Size:** 2.5-5 cm (1-2 in.) wide

**Comments:** This lichen is very common on rock throughout the west coast, across the continent to New England. It is pale green to whitish, areolate at center with placodioid (lobate) margins on the colony. The apothecial disks at center may be yellow, tan or pale orange, with lighter rims.

35

**Common Name:** Stonewall Rim-Lichen

**Scientific Name:** *Lecanora muralis* (Schreb.) Rabenh.

**Form:** Crustose

**Substrate:** Rock

**Size:** 2.5-5 cm (1-2 in.) wide

**Comments:** This lichen is very common on rock throughout the west coast, across the continent to New England. It is pale green to whitish, areolate at center with placodioid (lobate) margins on the colony. The apothecial disks at center may be yellow, tan or pale orange, with lighter rims.

35

**Common Name:** Stonewall Rim-Lichen

**Scientific Name:** *Lecanora muralis* (Schreb.) Rabenh.

**Form:** Crustose

**Substrate:** Rock

**Size:** 2.5-5 cm (1-2 in.) wide

**Comments:** This lichen is very common on rock throughout the west coast, across the continent to New England. It is pale green to whitish, areolate at center with placodioid (lobate) margins on the colony. The apothecial disks at center may be yellow, tan or pale orange, with lighter rims.

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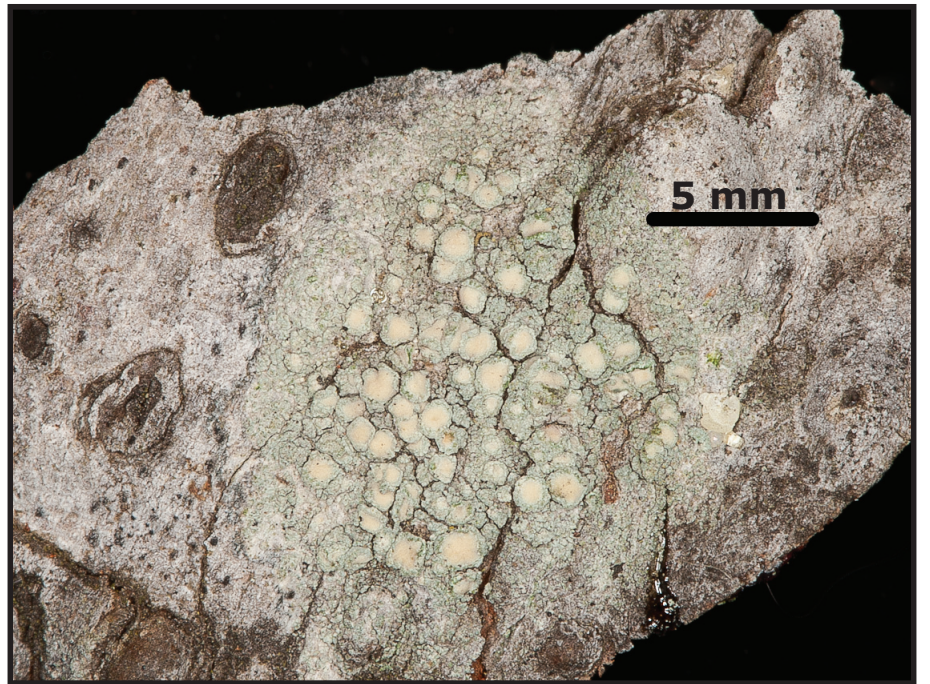
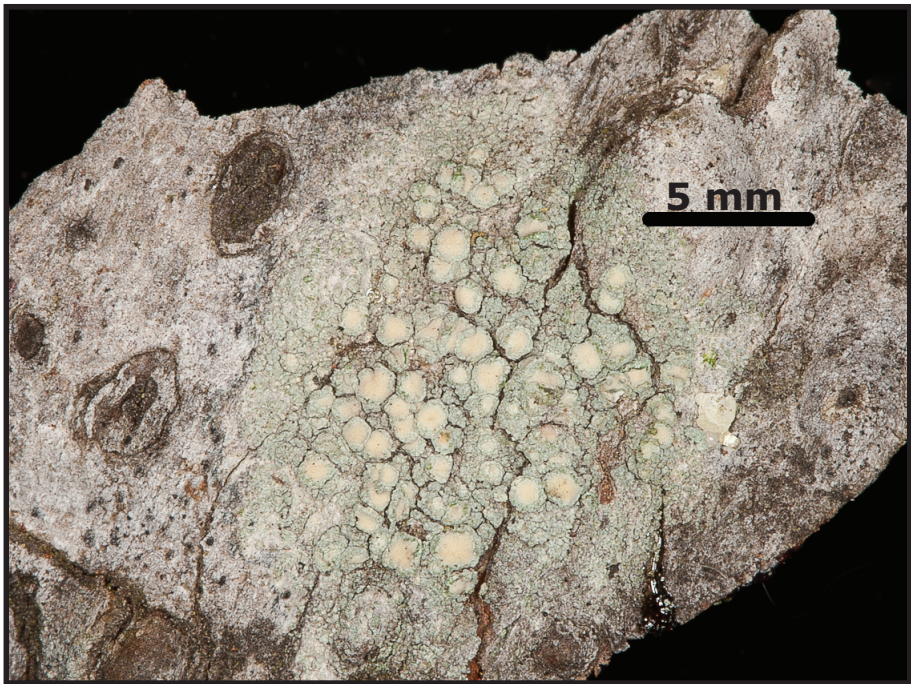
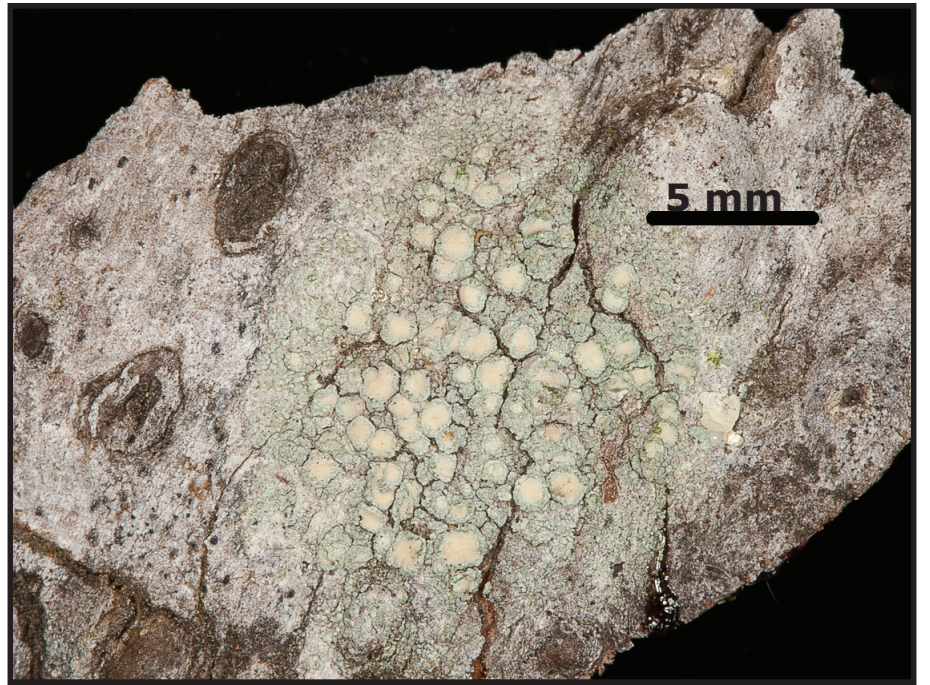
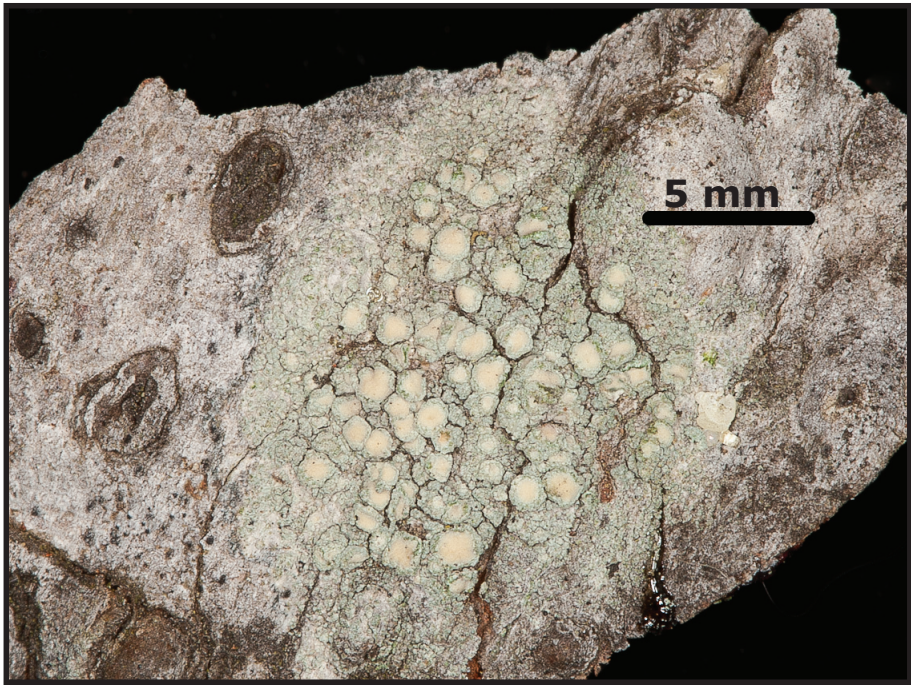
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35



**Common Name:** Mealy Rim-Lichen

**Scientific Name:** *Lecanora strobilina* (Spreng.) Kieff.

**Form:** Crustose

**Substrate:** Twigs, bark, and pine cone scales

**Size:** Colonies are up to 1 cm (0.5 in.) in diameter; apothecia are 0.3-0.4 mm ( 1/8 in.) diameter

**Comments:** This tiny crust is pale green, always with circular apothecia that have yellowish disks. Another species on bark at Sedgwick, *L. circumborealis* (p. 33), has black disks and pale rims on the apothecia. Species on rock include *L. mellea* and *L. muralis*. This genus includes many species, all requiring microscopical study and chemical tests for identification.

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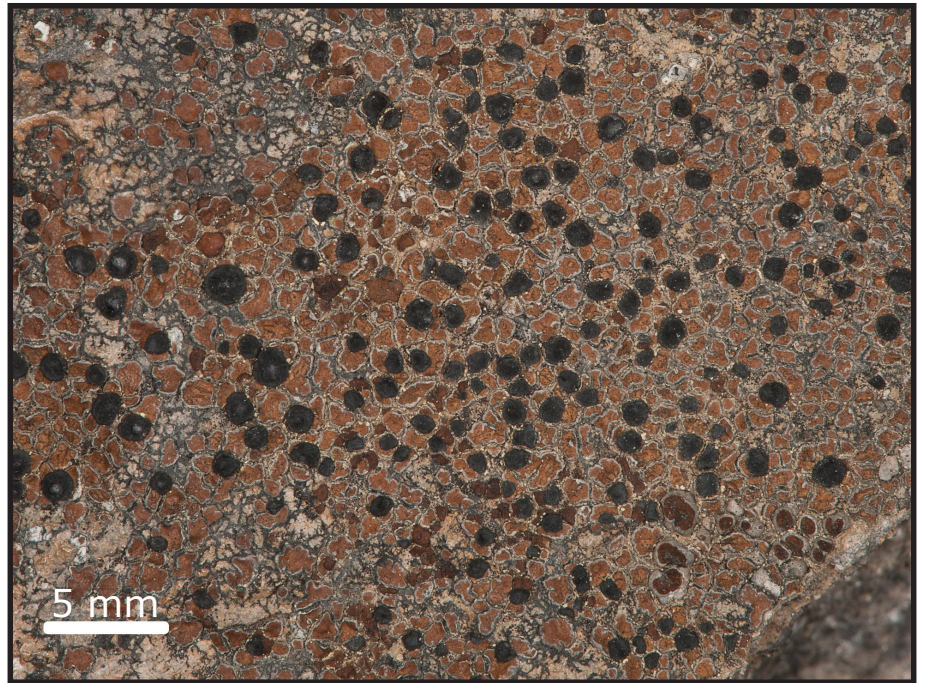
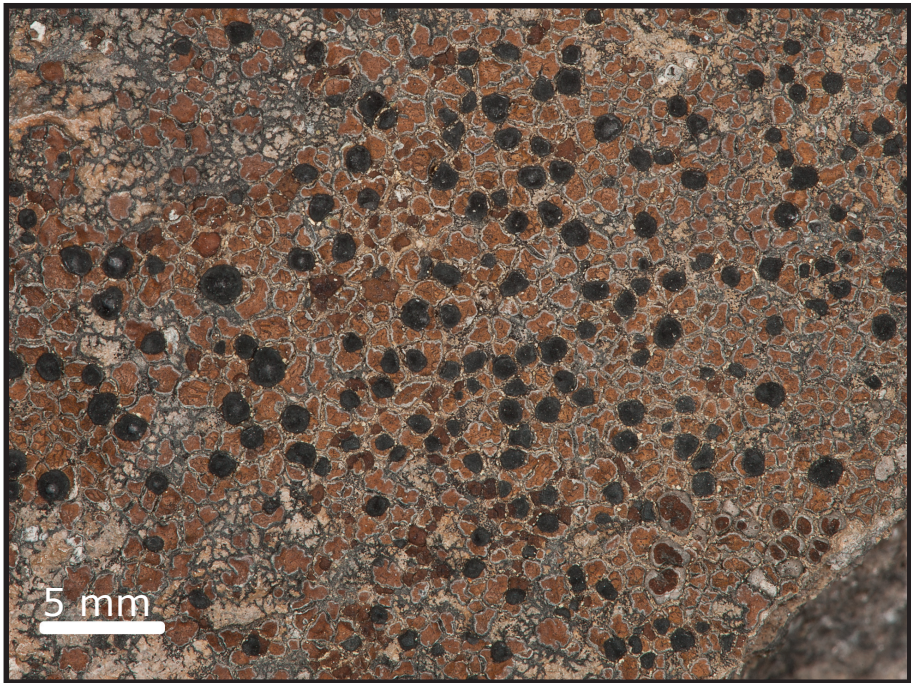
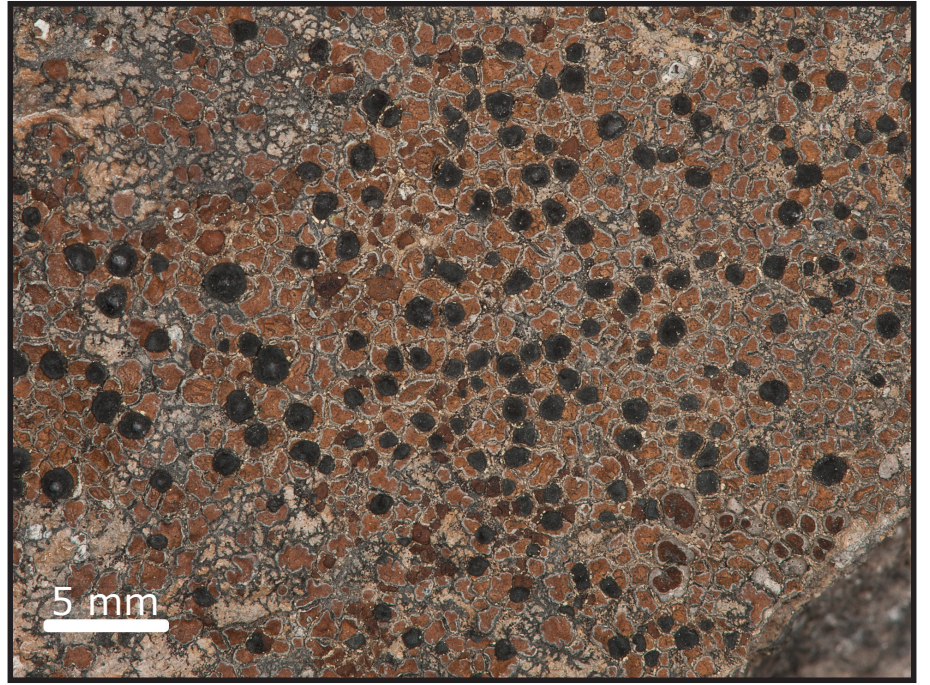
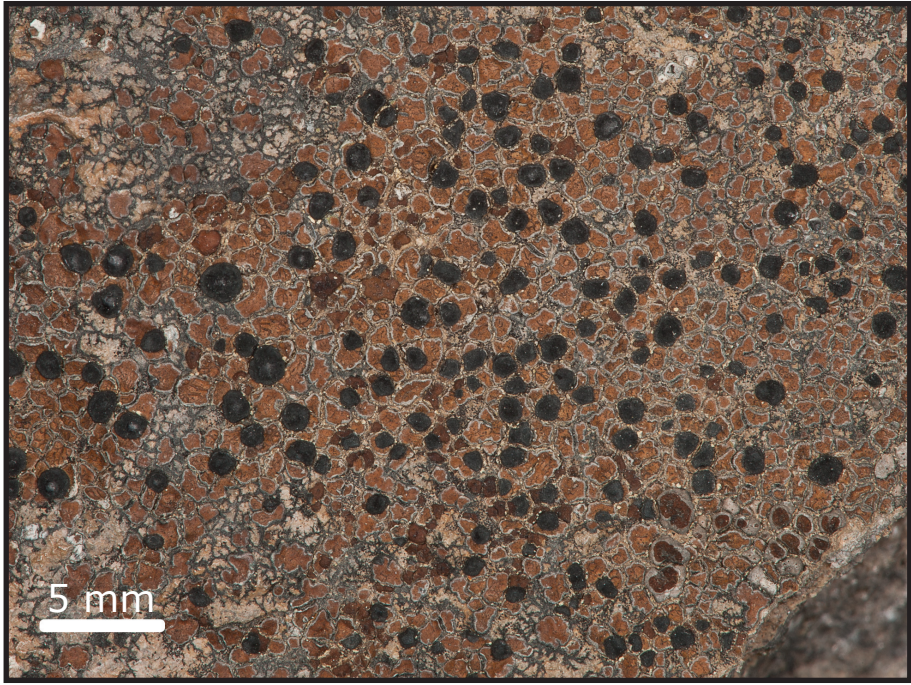
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37



**Common Name:** Brown Tile Lichen  
**Scientific Name:** *Lecidea atrobrunnea* (Ramond ex Lam. and DC.) Schaer.  
**Form:** Crustose  
**Substrate:** Acidic rocks such as granite  
**Size:** Colonies vary greatly in size from about 2-10 cm (0.7-4 in.); areoles up to 2 mm (0.2 in.) in diameter  
**Comments:** The crust of *Lecidea atrobrunnea*, that appears black from a distance, is composed of crowded tiny pale brown to reddish-brown areoles. Each areole may have a white, gray, or black margin. A black hypothallus or thin fungal base may be visible as a ring around the colony. Black apothecia up to 1.6 mm in diameter are common.

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39

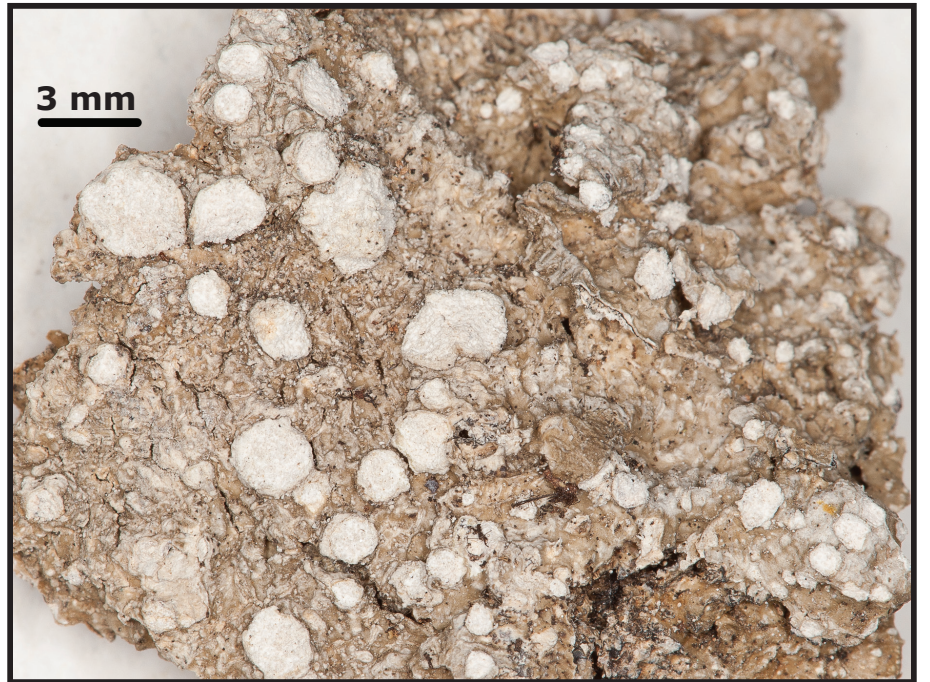
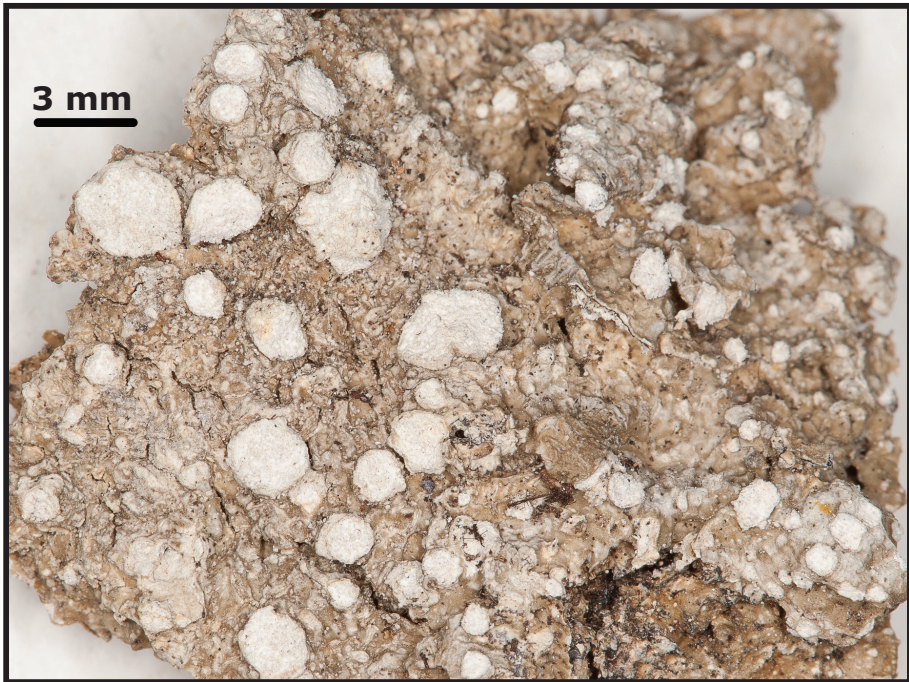
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39





**Common Name:** Soraliate Wart Lichen  
**Scientific Name:** *Pertusaria albescens* (Huds.) Choisy & Werner  
**Form:** Crustose  
**Substrate:** Twigs and bark  
**Size:** 2-4 cm (0.5-1.5 in. ) wide  
**Comments:** This lichen has a pale gray crust with circular white soralia (clusters of powdery soredia). It lacks apothecia. A closely similar species, *P. amara*, is also found at Sedgwick; it has a bitter taste, which is a diagnostic feature used to distinguish the two species.

41

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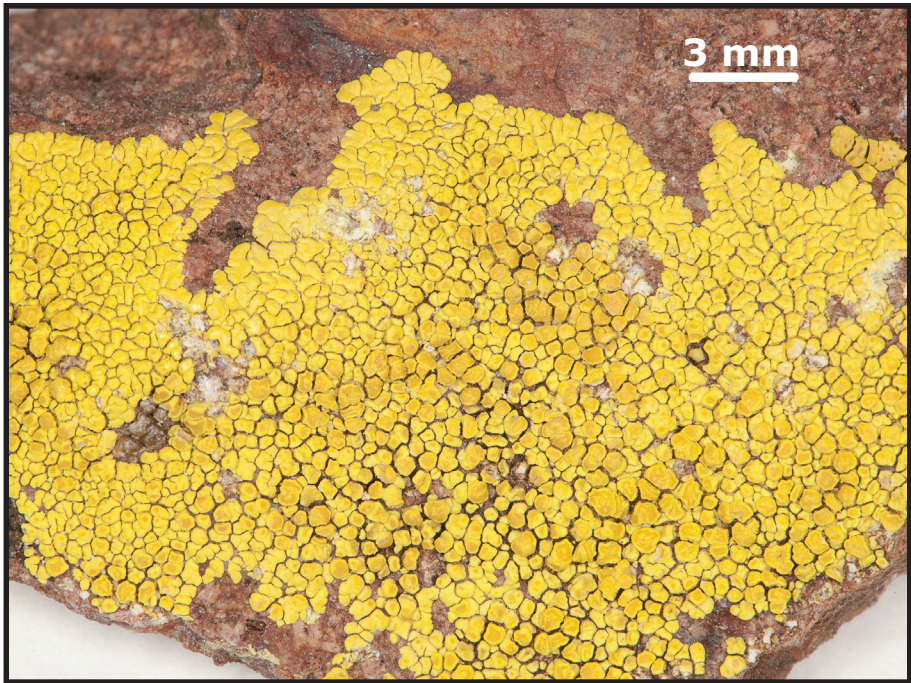
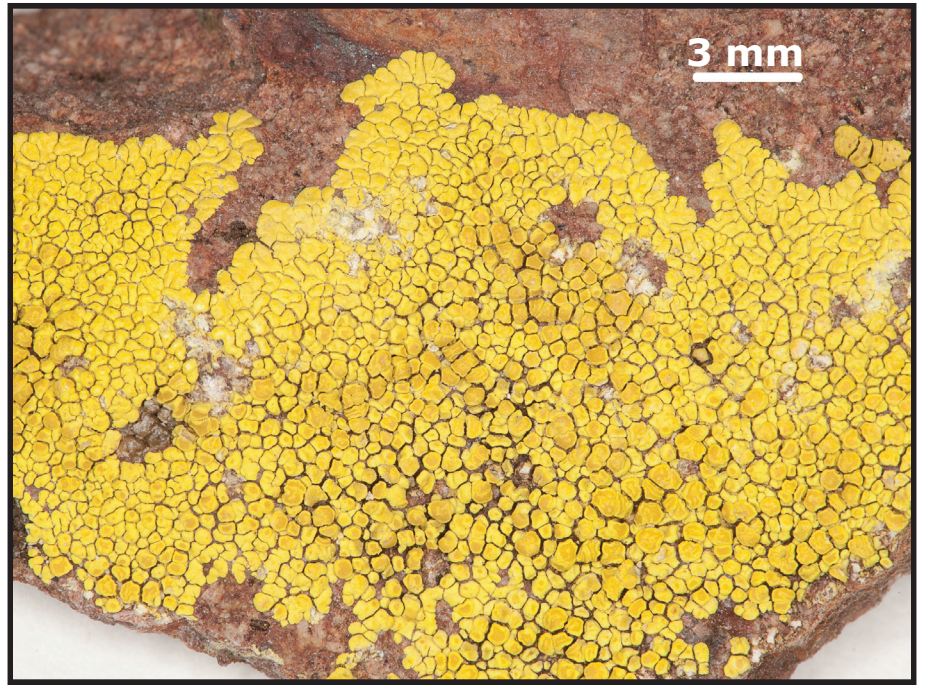
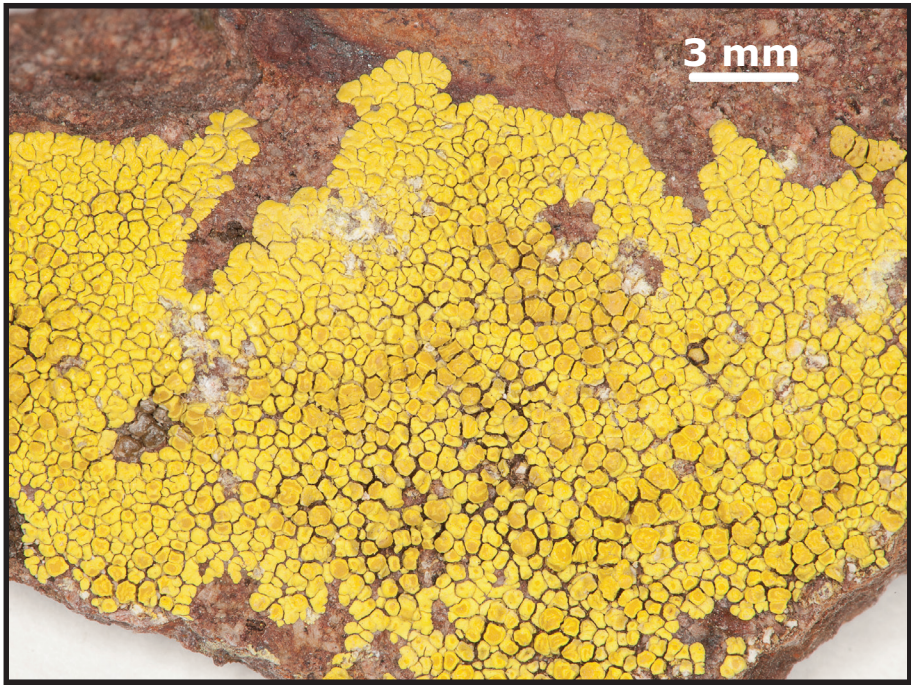
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41



**Common Name:** Gold Cobblestone Lichen

**Scientific Name:** *Pleopsidium flavum* (Bellardi) Körb.

**Form:** Crustose

**Substrate:** Rock

**Size:** 3-10 cm (1-4 in.) wide

**Comments:** The thallus of this brilliant yellow crust is made up of areoles, tiny raised areas crowded together, with lobed radiating marginal areoles. Sunken apothecia that are brown to tan or yellow occupy each of the more central areoles. This is a common lichen on rock and is distinguished from another yellow rock crust, *Acarospora socialis* (p. 11), by the lobate margin.

43

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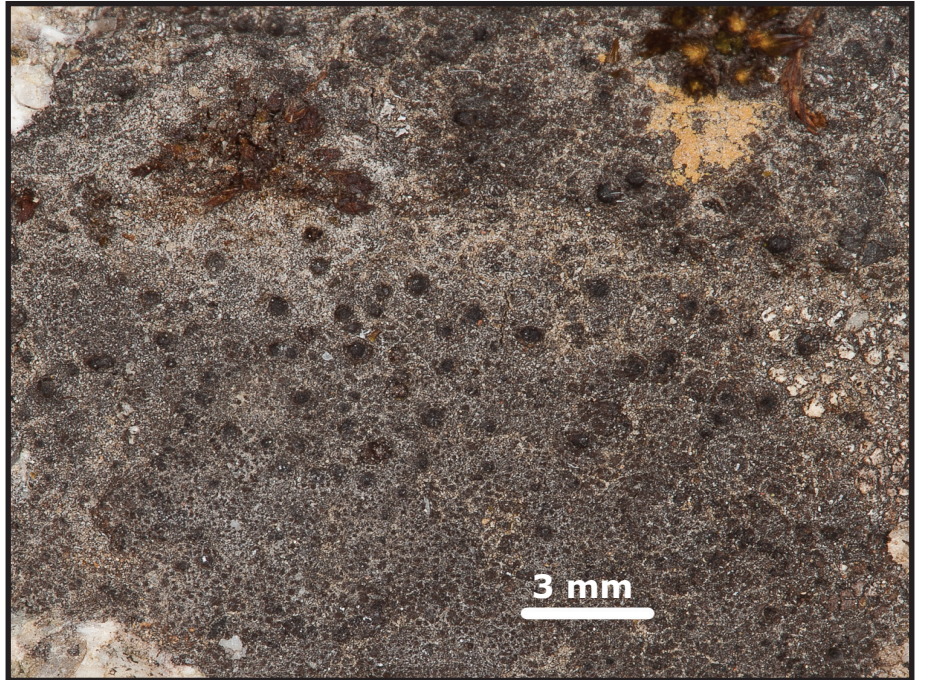
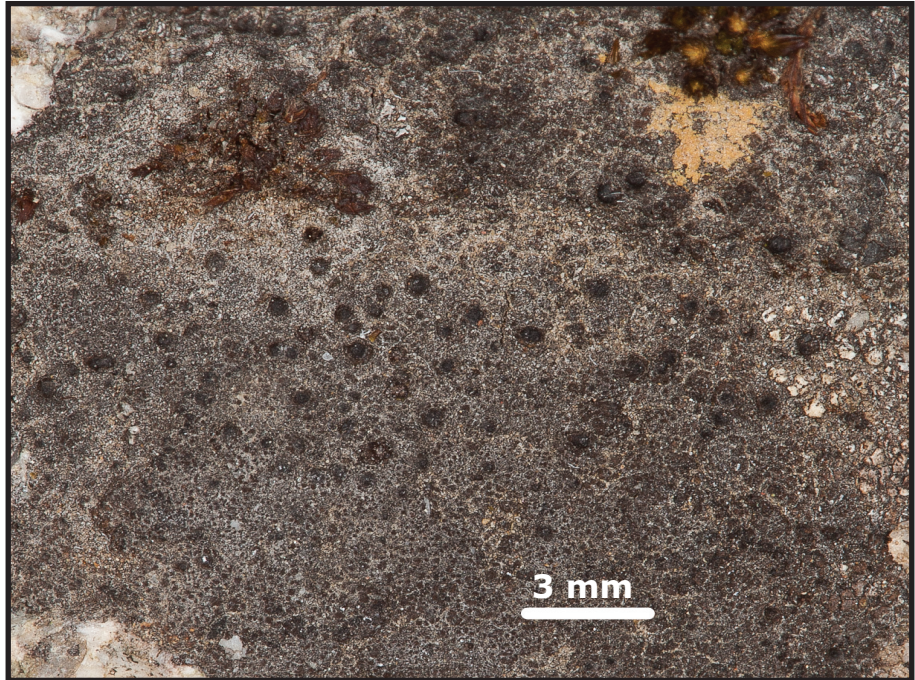
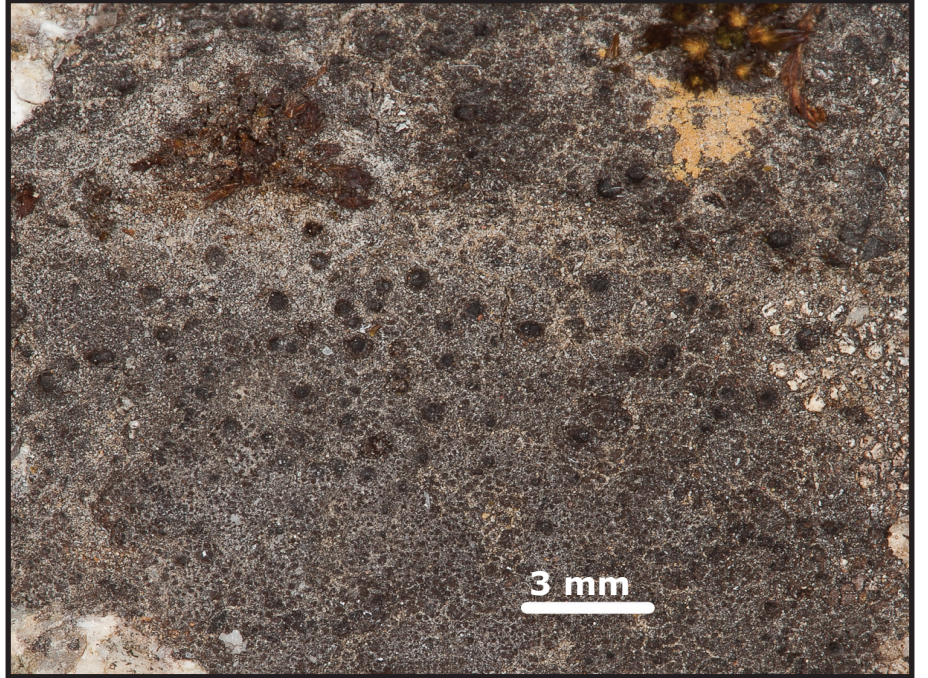
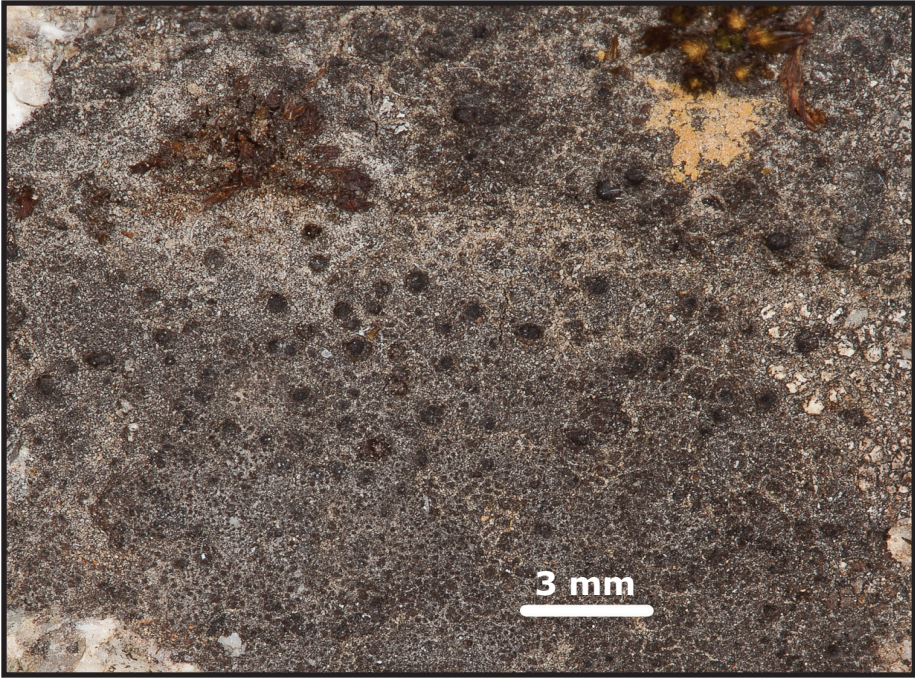
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**Common Name:** Tar Lichen

**Scientific Name:** *Verrucaria dolosa* Hepp or *Verrucaria* sp.

**Form:** Crustose

**Substrate:** Rock

**Size:** 1-6 cm (0.5-2.5 in.) wide

**Comments:** Several lichens form black tar-like patches on rock, and generally *Verrucaria* is the best guess as to genus. Species are very difficult to identify and require a microscope. Nine species have been collected and identified in the Santa Barbara region, especially at the Santa Barbara Botanic Garden, but only one has been collected at Sedgwick Reserve. Undoubtedly other species occur and remain to be collected.

45

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45



Foliose Lichens

47

Foliose Lichens

47

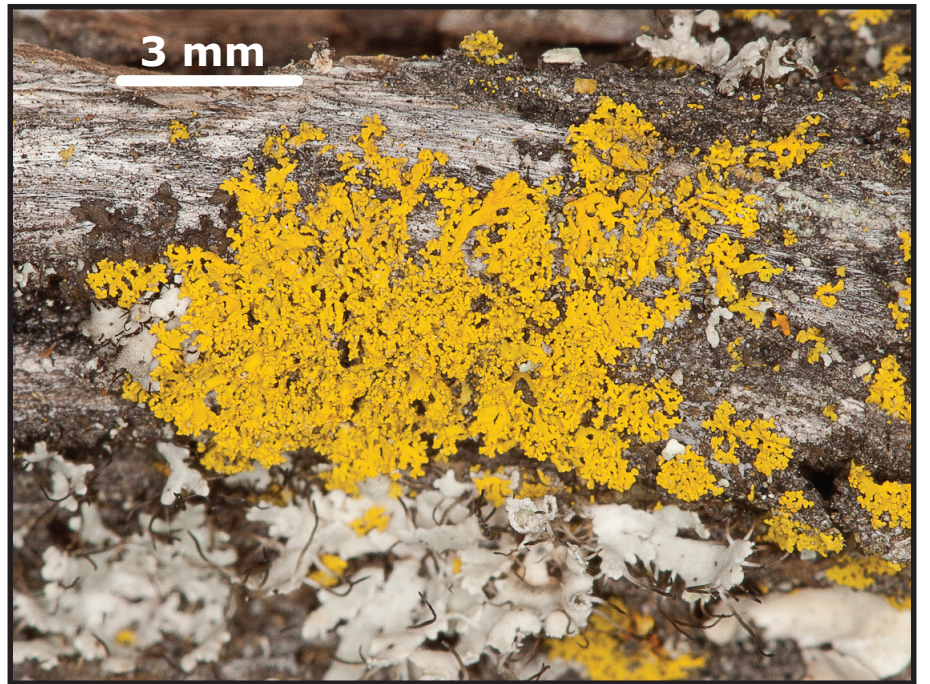
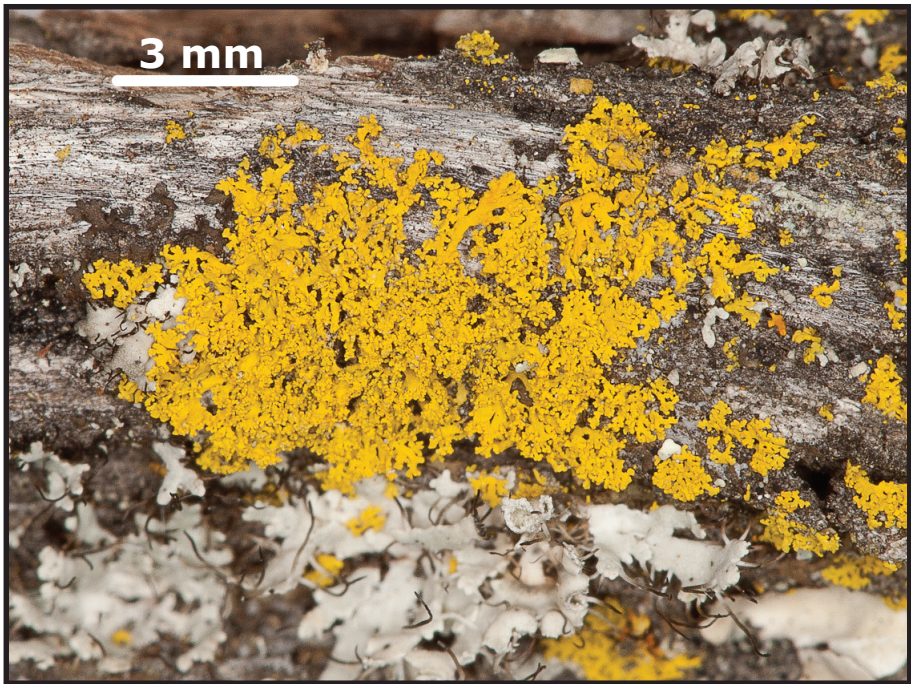
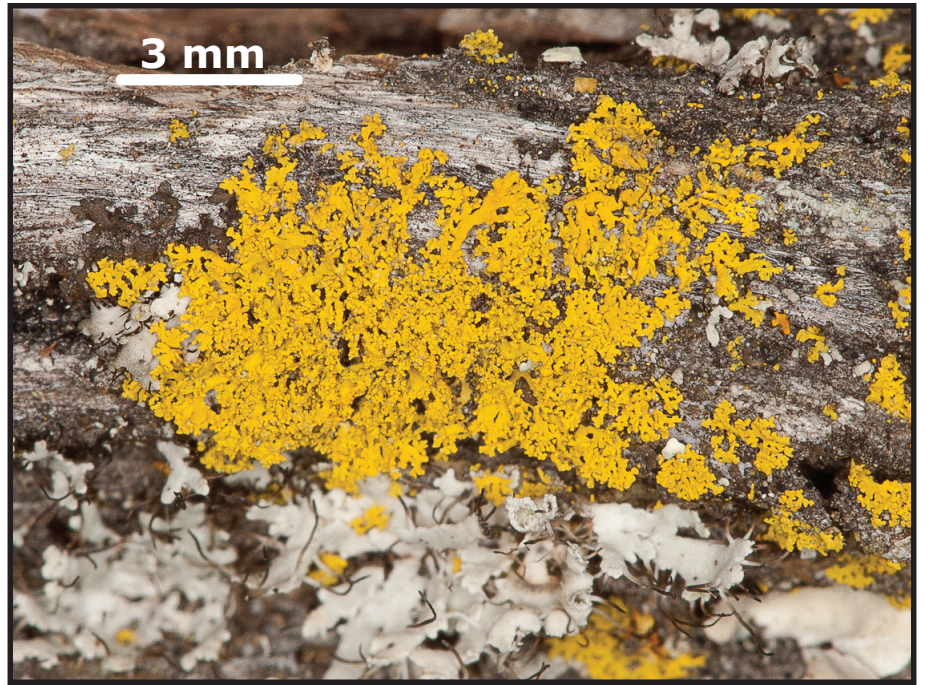
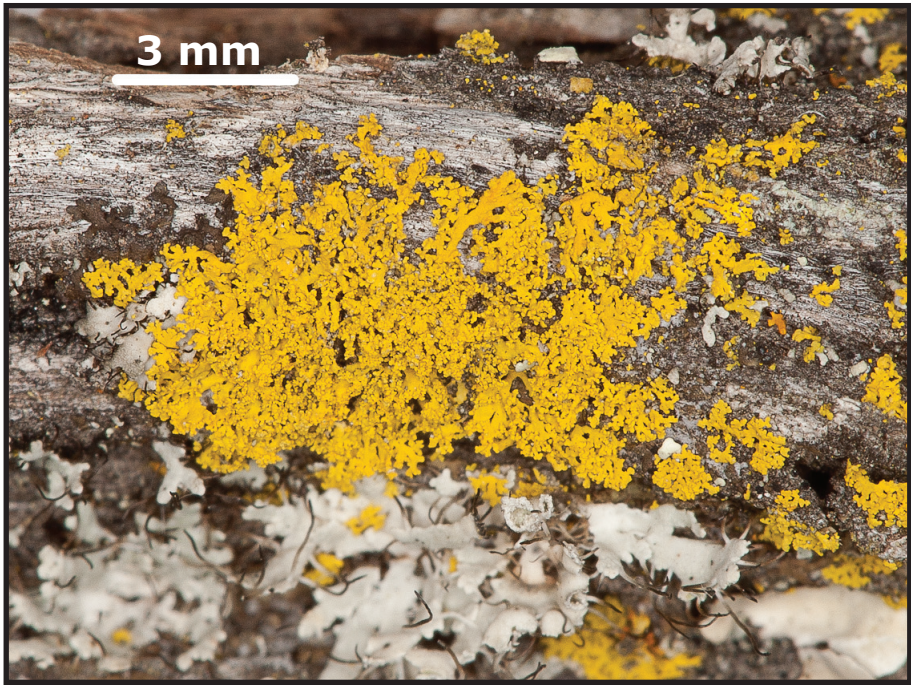
Foliose Lichens

47

Foliose Lichens

47





**Common Name:** Candleflame Lichen; Lemon Lichen

**Scientific Name:** *Candelaria pacifica* Westberg

**Form:** Foliose, tiny

**Substrate:** Twigs and bark

**Size:** 2-10 mm. (0.2-0.5 in.) diameter; individual branches 0.1-0.3 mm ( 0.2 in.) wide

**Comments:** This lichen is lemon yellow or yellow-green, and minutely foliose. It has soredia below the tips and margins, but these soredia are often difficult to see, even with a hand lens. *Candelaria* is distinguished from species of *Caloplaca* (orange crusts) and from species of *Xanthoria* and *Xanthomendoza* (orange to gold foliose forms, somewhat larger than *Candelaria*). The white lichen at the bottom of the photo is *Physcia adscendens* (p. 67).

49

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**Common Name:** Candleflame Lichen; Lemon Lichen

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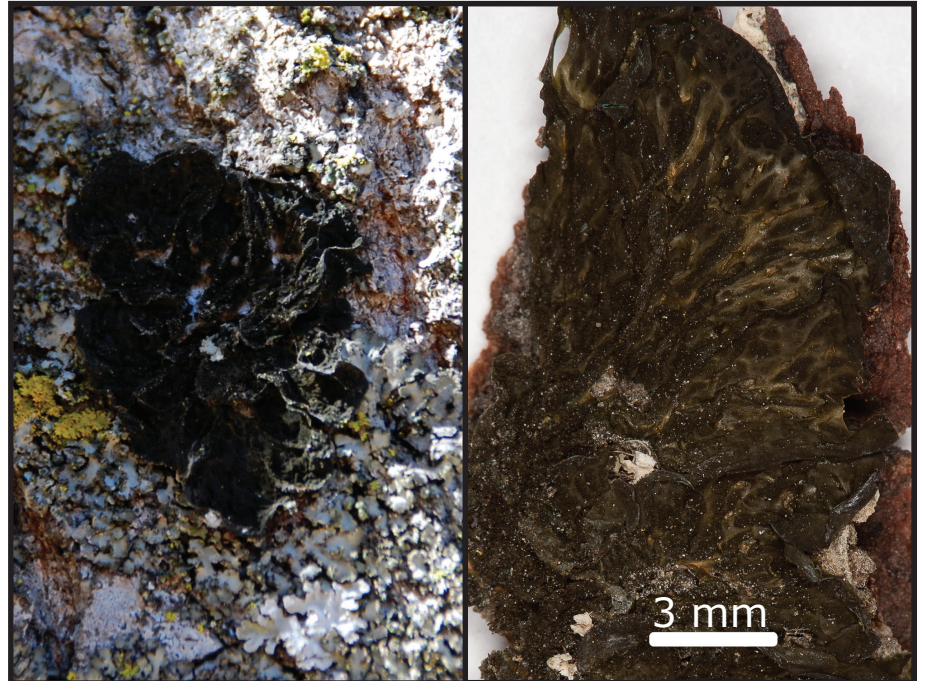
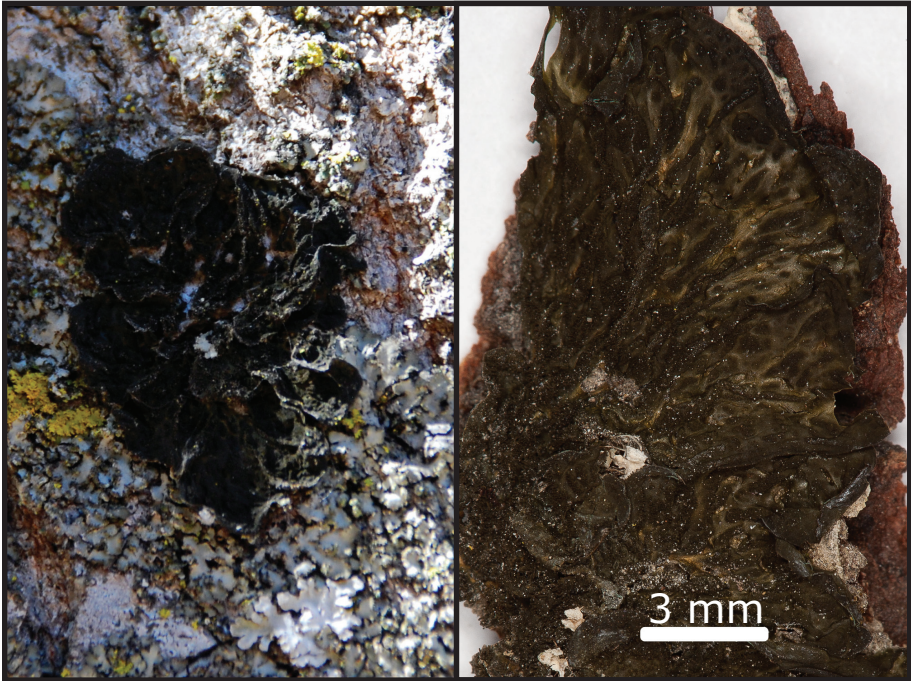
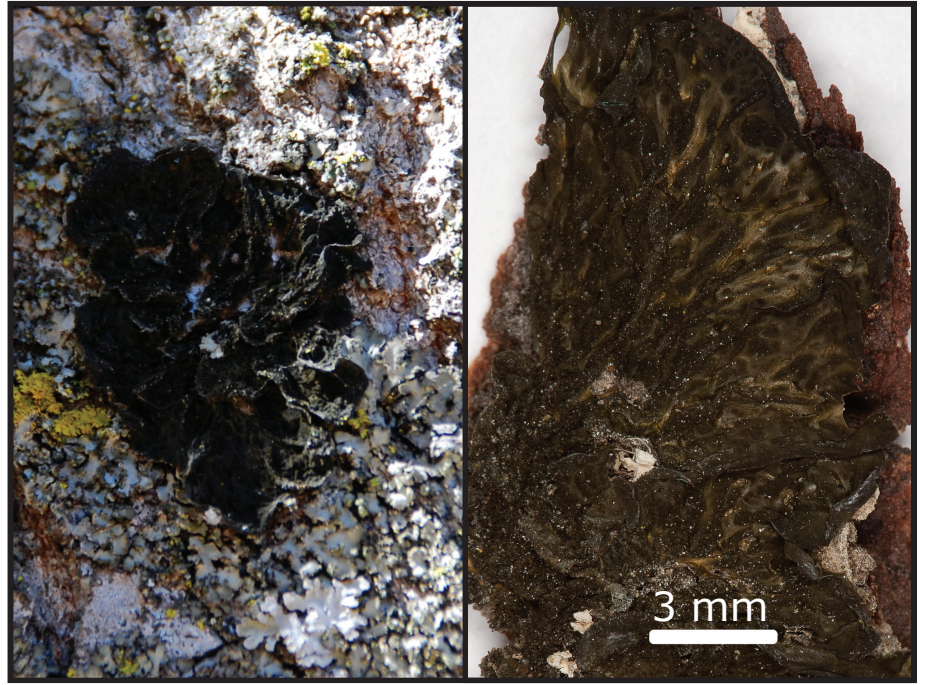
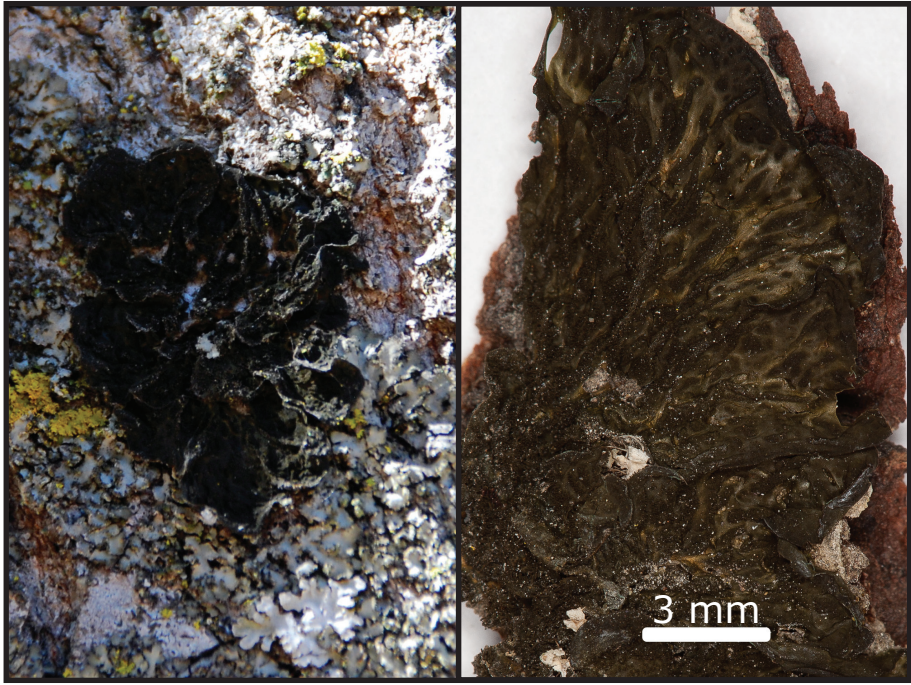
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49



**Common Name:** Blistered Jelly Lichen  
**Scientific Name:** *Collema furfuraceum* (Arnold) Du Rietz  
**Form:** Foliose  
**Substrate:** Bark  
**Size:** Thallus 1-3 cm (0.5-1 in.) wide; lobes 5-10 mm wide (0.25-0.5 in.)  
**Comments:** This lichen is black or dark brown, becoming rubbery or gelatinous when wet. The surface is often channeled, isidiate, and usually lacks apothecia. Four species are known at Sedgwick and only one in the Santa Barbara area.

51

**Common Name:** Blistered Jelly Lichen  
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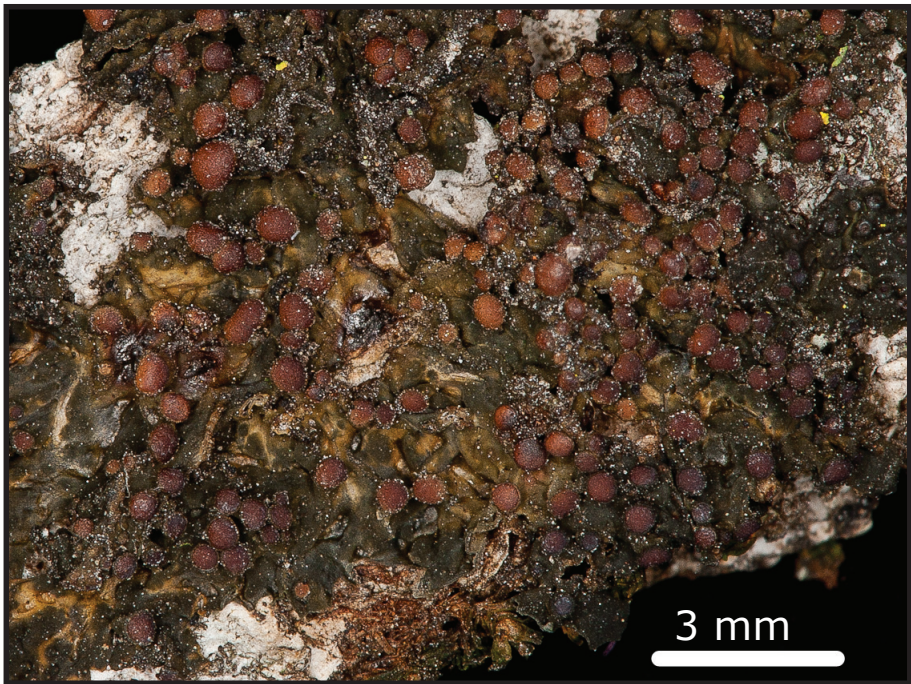
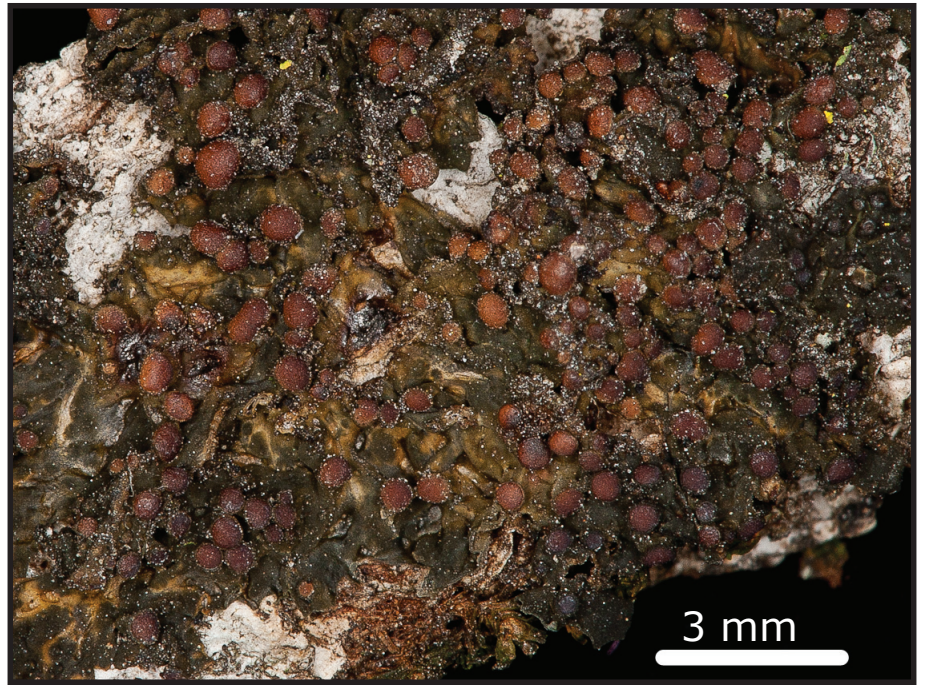
51

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51



**Common Name:** Blistered Jelly Lichen  
**Scientific Name:** *Collema nigrescens* (Huds.) DC.  
**Form:** Foliose  
**Substrate:** Bark  
**Size:** 1-5 cm wide (1-2 in.)

**Comments:** *Collema* species are black or dull gray foliose, and sometimes difficult to spot against the similarly colored bark. Its photobiont (algal partner) is a blue-green alga (now called a Cyanobacterium) which gives the dark color and is a nitrogen fixer. *Collema* species swell greatly as they absorb water, and become gelatinous in texture when wet. Thalli of *Collema nigrescens* have rounded lobes rather flattened on the bark, and abundant small apothecia, convex, 0.2-0.3 mm in diameter, and pinkish gray in color.

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**Comments:** *Collema* species are black or dull gray foliose, and sometimes difficult to spot against the similarly colored bark. Its photobiont (algal partner) is a blue-green alga (now called a Cyanobacterium) which gives the dark color and is a nitrogen fixer. *Collema* species swell greatly as they absorb water, and become gelatinous in texture when wet. Thalli of *Collema nigrescens* have rounded lobes rather flattened on the bark, and abundant small apothecia, convex, 0.2-0.3 mm in diameter, and pinkish gray in color.

53

**Common Name:** Blistered Jelly Lichen  
**Scientific Name:** *Collema nigrescens* (Huds.) DC.  
**Form:** Foliose  
**Substrate:** Bark  
**Size:** 1-5 cm wide (1-2 in.)

**Comments:** *Collema* species are black or dull gray foliose, and sometimes difficult to spot against the similarly colored bark. Its photobiont (algal partner) is a blue-green alga (now called a Cyanobacterium) which gives the dark color and is a nitrogen fixer. *Collema* species swell greatly as they absorb water, and become gelatinous in texture when wet. Thalli of *Collema nigrescens* have rounded lobes rather flattened on the bark, and abundant small apothecia, convex, 0.2-0.3 mm in diameter, and pinkish gray in color.

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53



**Common Name:** Common Greenshield Lichen  
**Scientific Name:** *Flavoparmelia caperata* (L.) Hale  
**Form:** Foliose, large  
**Substrate:** Bark, especially oaks, and wood  
**Size:** 5-20 cm (2-8 in.) diameter; ultimate lobes 5-13 mm (0.25-0.5 in.) wide  
**Comments:** This lichen is large, lobate marginally, and tightly attached to the bark, at least centrally. The upper side is green to yellow-green; the lower side is brown at the free margins, black at center. The granular soredia typically form first as circular soralia on the lamina surface, but soon form large continuous patches. It lacks the whitish flecks found in *Flavopunctelia flaventior* (p. 57). Apothecia are rare.

55

**Common Name:** Common Greenshield Lichen  
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55

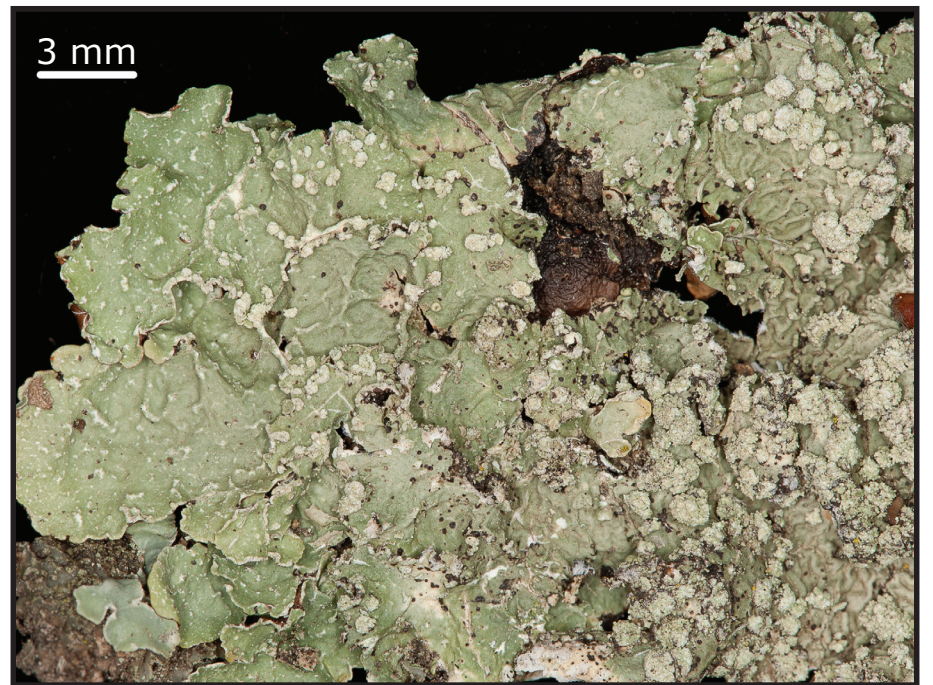
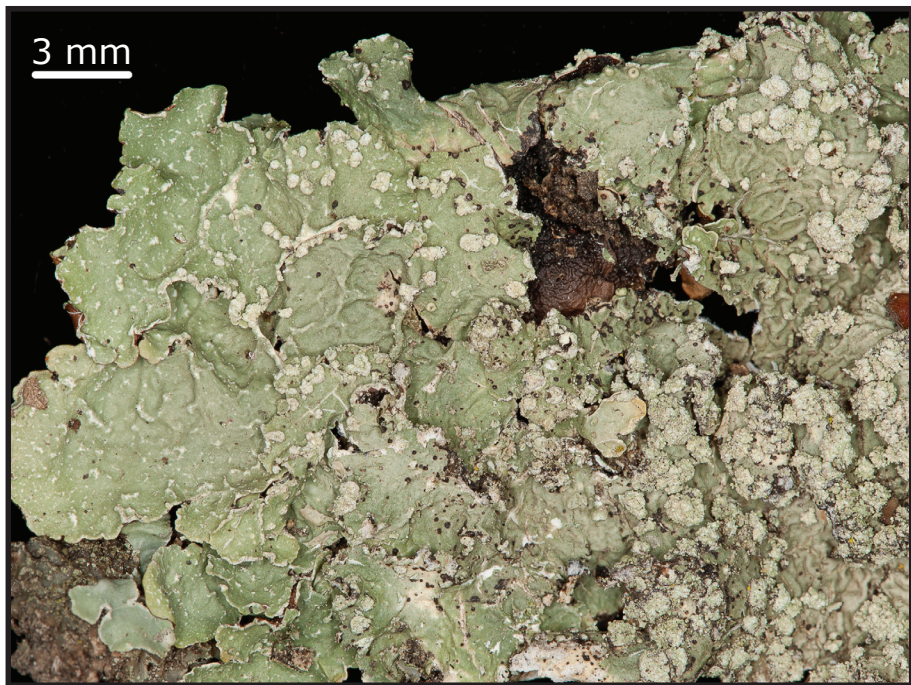
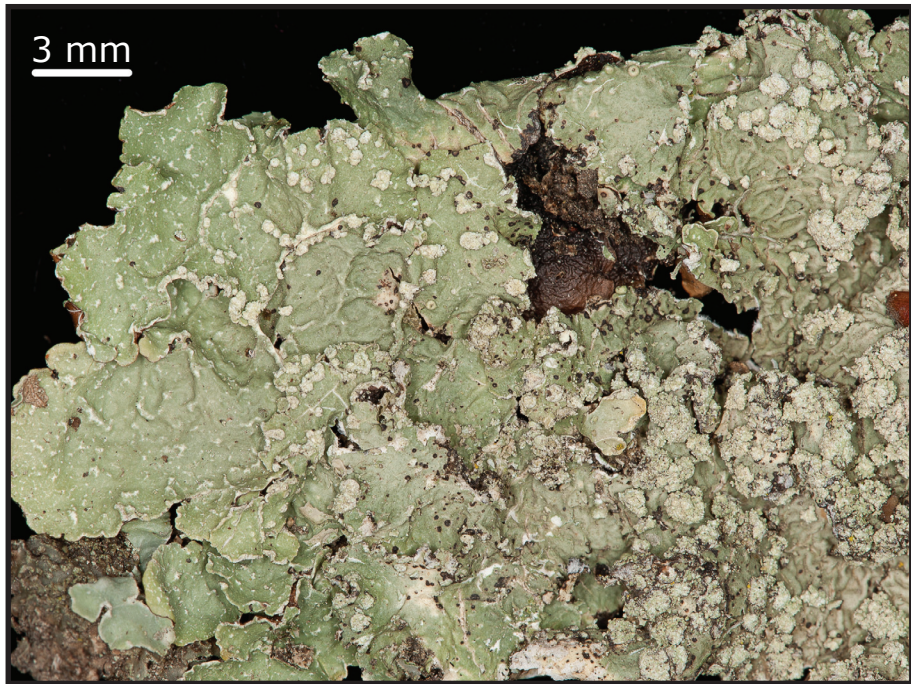
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55





**Common Name:** Speckled Greenshield Lichen  
**Scientific Name:** *Flavopunctelia flaventior* (Stirt.) Hale  
**Form:** Foliose, large  
**Substrate:** Bark and rocks  
**Size:** 5-20 cm. (2-8 in.) diameter; ultimate lobes 2-9 mm ( 0.1 - 0.4 in.) wide  
**Comments:** This common lobed lichen is conspicuous on large branches and trunks of oaks. It is tightly attached, with marginal lobes free. The upper side is yellowish-green with scattered white flecks near the margins; the lower side is brown at the margins, and black centrally. Soredia are common in round soralia on the upper surface and along the margins. Apothecia are rare. This lichen is easily confused with *Flavoparmelia caperata* (p. 55), which is more yellowish and lacks the white flecks typical of *F. flaventior*.

57

**Common Name:** Speckled Greenshield Lichen  
**Scientific Name:** *Flavopunctelia flaventior* (Stirt.) Hale  
**Form:** Foliose, large  
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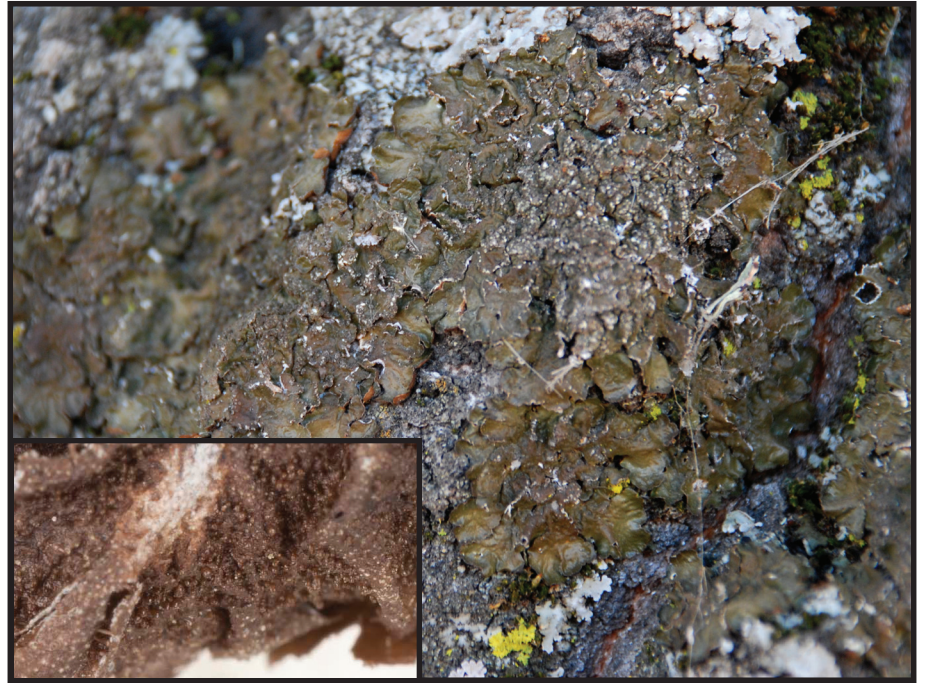
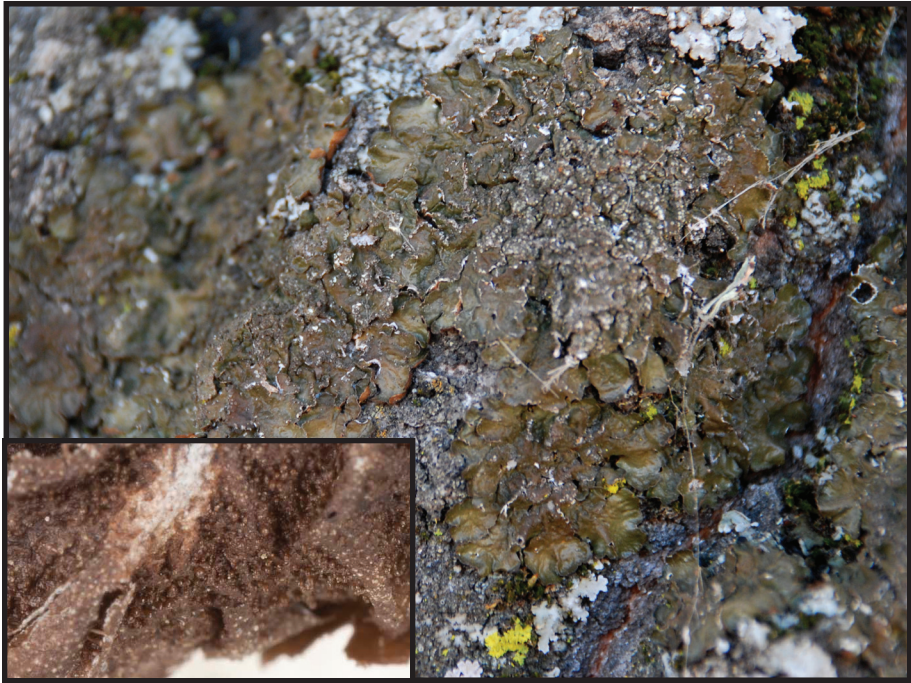
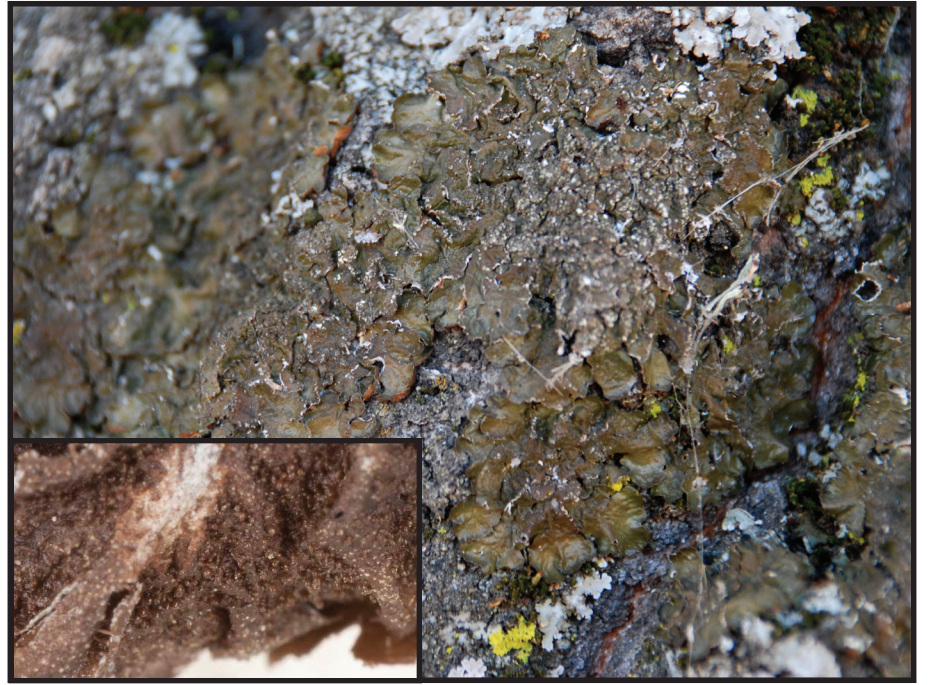
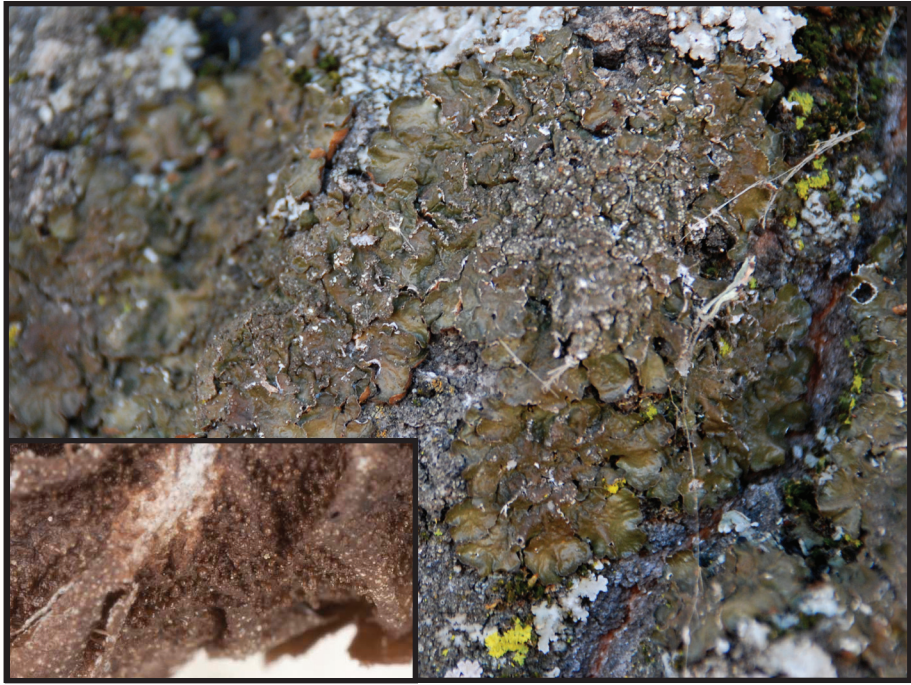
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57



**Common Name:** Abraded Camouflage Lichen

**Name:** *Melanelia subaurifera* (Nyl.) Essl.

**Form:** Foliose

**Substrate:** Bark

**Size:** Thalli are 3-7 cm (1.3-3 in.) diameter; lobes are 2-6 mm (about 0.25 in.) wide

**Comments:** Five species of *Melanelia* occur at Sedgwick. All are appressed with lobate and somewhat overlapping margins. The upper surface is brown when dry or dark olive green when wet. The underside is dark brown or black. *M. subaurifera* has tiny isidia crowding the margins and ridges, appearing granular or as white patches where isidia have been rubbed away. Similar isidia of *M. exasperatula* are shown in the inset photo. Other species differ in that some are apotheciate and lack isidia; others have larger, branched isidia.

59

**Common Name:** Abraded Camouflage Lichen

**Name:** *Melanelia subaurifera* (Nyl.) Essl.

**Form:** Foliose

**Substrate:** Bark

**Size:** Thalli are 3-7 cm (1.3-3 in.) diameter; lobes are 2-6 mm (about 0.25 in.) wide

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59

**Common Name:** Abraded Camouflage Lichen

**Name:** *Melanelia subaurifera* (Nyl.) Essl.

**Form:** Foliose

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59

**Common Name:** Abraded Camouflage Lichen

**Name:** *Melanelia subaurifera* (Nyl.) Essl.

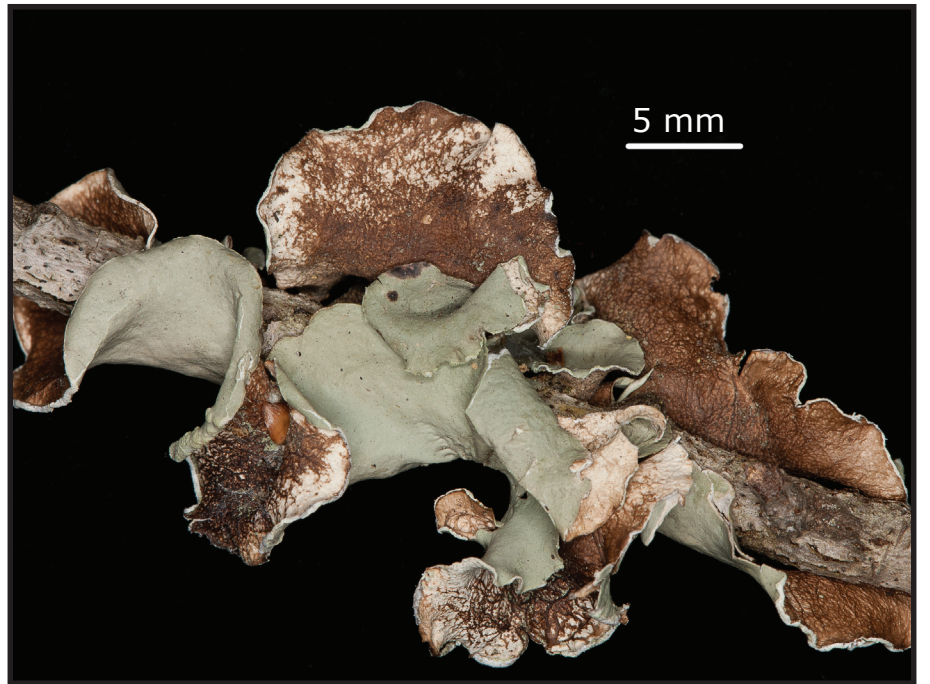
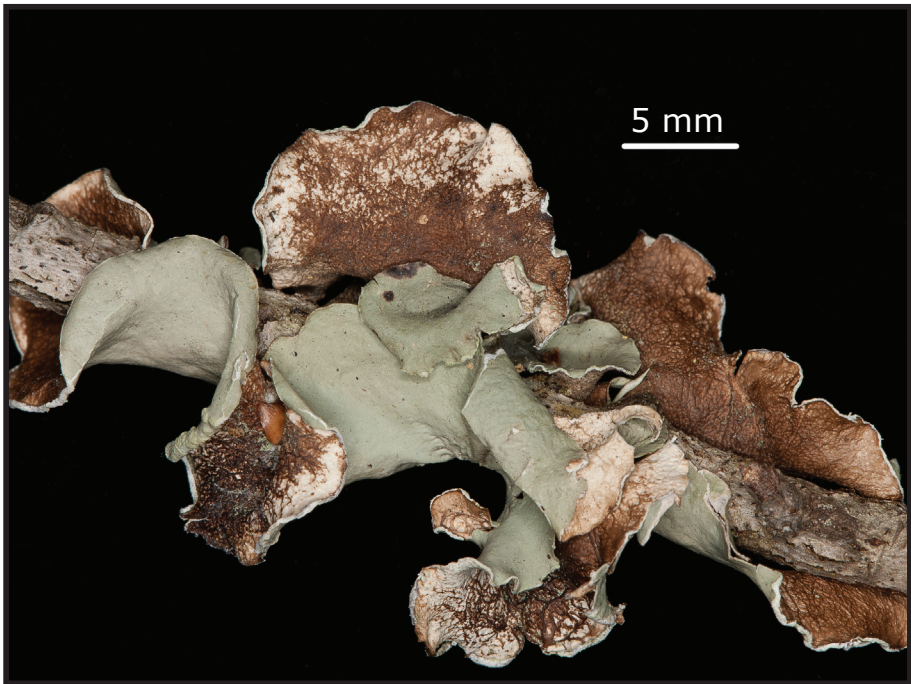
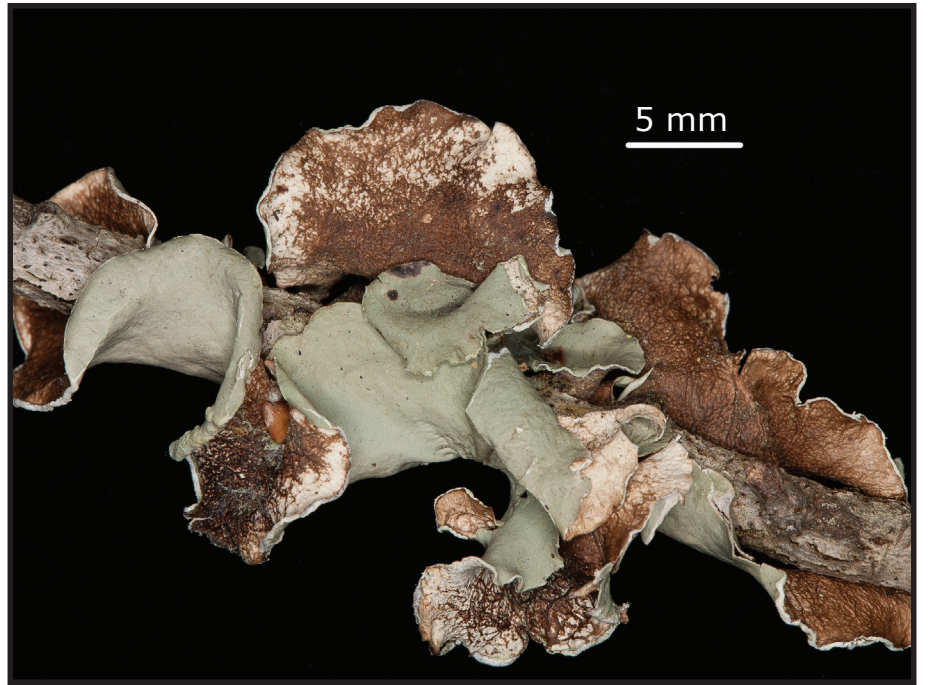
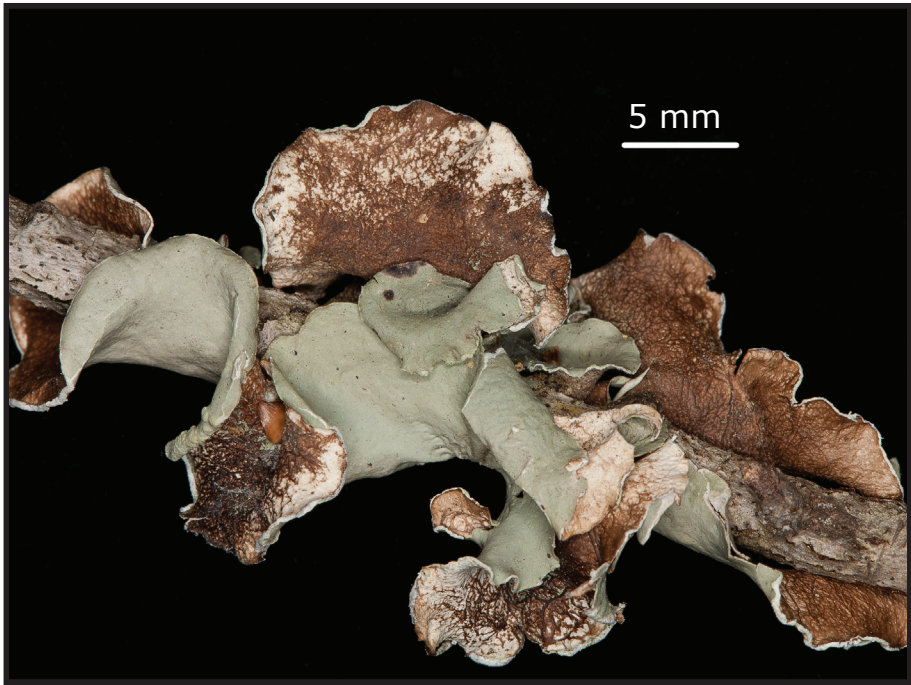
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59



**Common Name:** Bald Ruffle Lichen  
**Scientific Name:** *Parmotrema austrosinense* (Zahlbr.)  
Hale  
**Form:** Foliose  
**Substrate:** Twigs and bark  
**Size:** 4-10 cm (0.25-4 in.) wide  
**Comments:** *Parmotrema* species are large, foliose gray-green lichens, common on oaks in canyons around Santa Barbara, but rare at Sedgwick Reserve. *Parmotrema austrosinense* has rather thick, undulating lobes with marginal soralia, and is white below at the margins. It lacks the threadlike cilia along the margins that are present in another common species, *P. hypoleucinum*.

61

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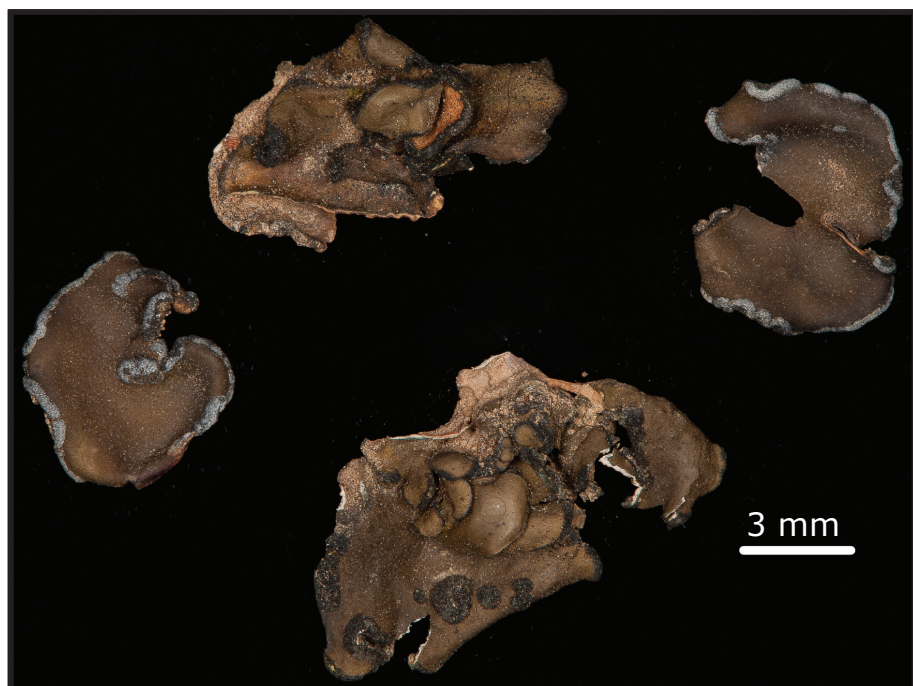
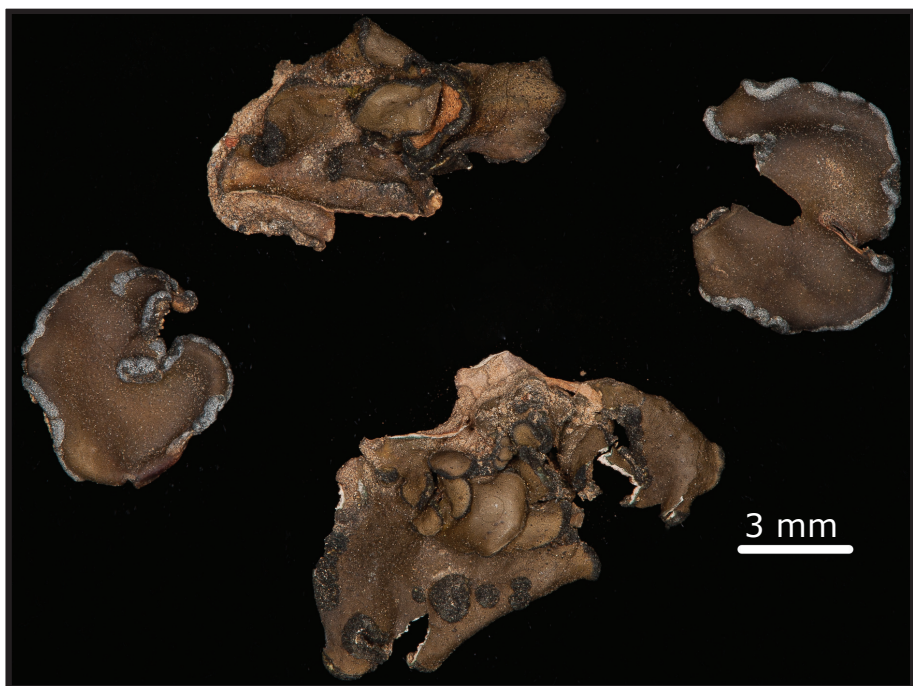
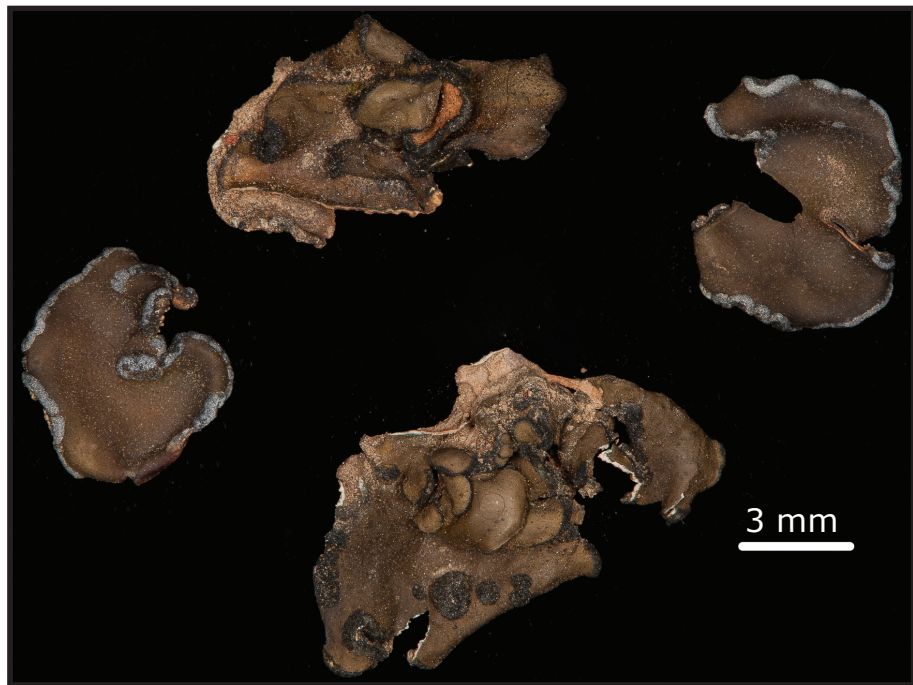
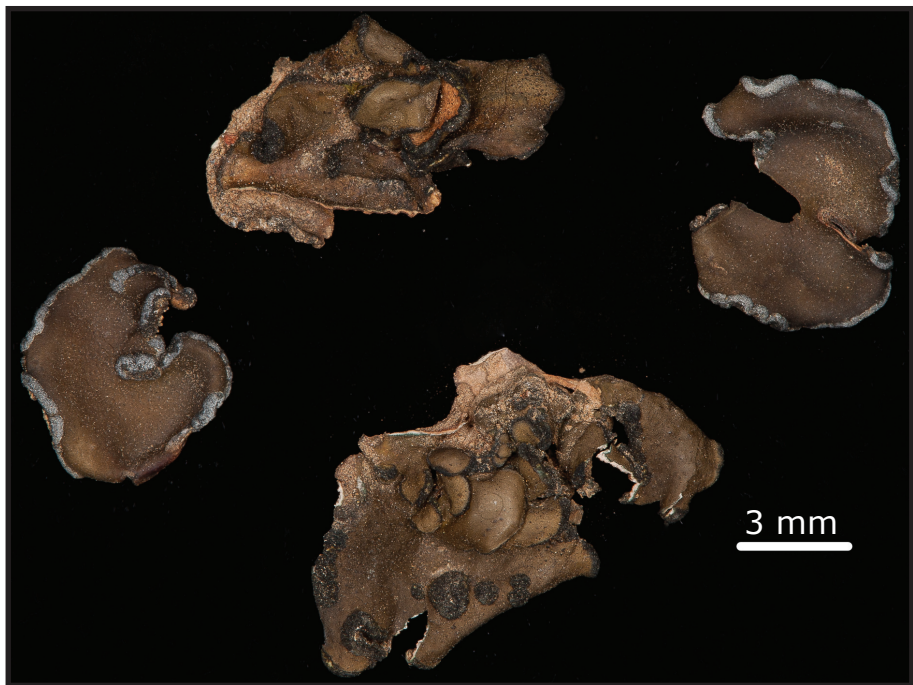
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61



**Common Name:** Powdery Rock Olive Lichen  
**Scientific Name:** *Peltula euploca* (Ach.) Poelt

**Form:** Foliose

**Substrate:** Rock

**Size:** 0.5-1 cm (0.2-0.5 in.) wide

**Comments:** This lichen forms tiny round brownish-gray squamules on rock, often in depressions where water accumulates. The edges of each squamule are thickened and sorediate.

63

**Common Name:** Powdery Rock Olive Lichen  
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**Size:** 0.5-1 cm (0.2-0.5 in.) wide

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**Form:** Foliose

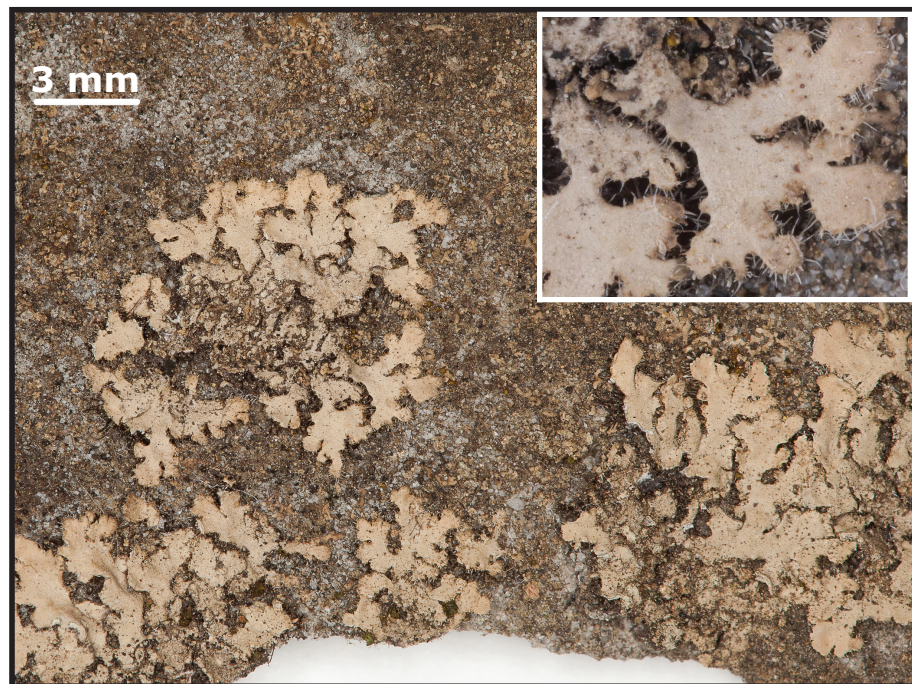
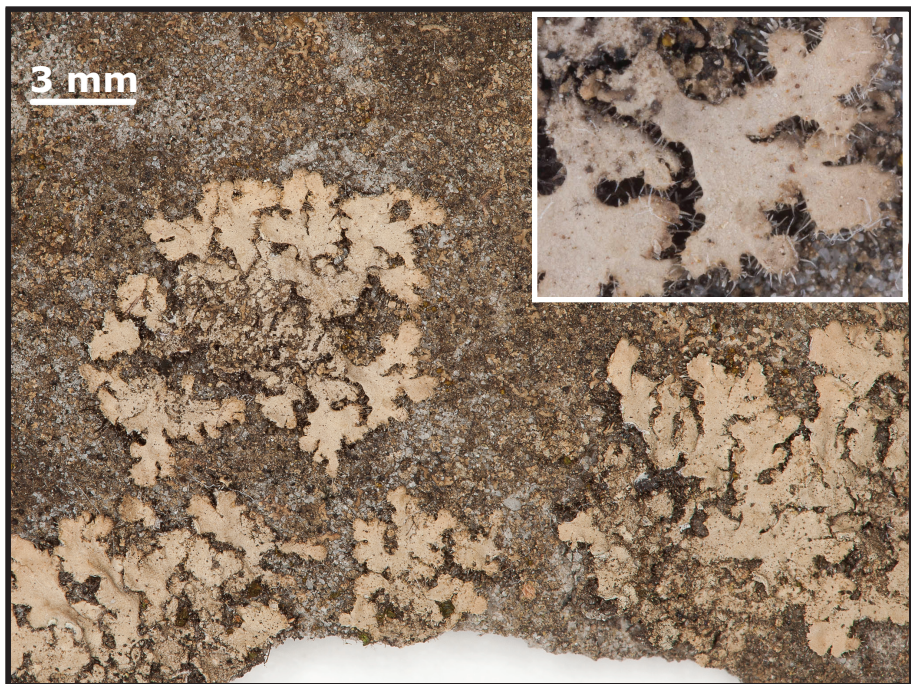
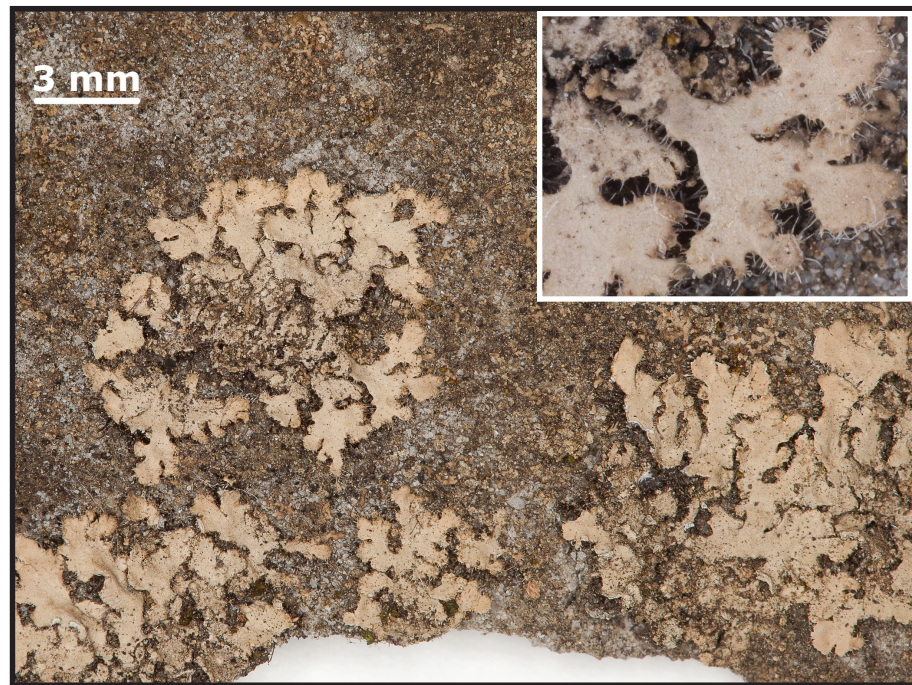
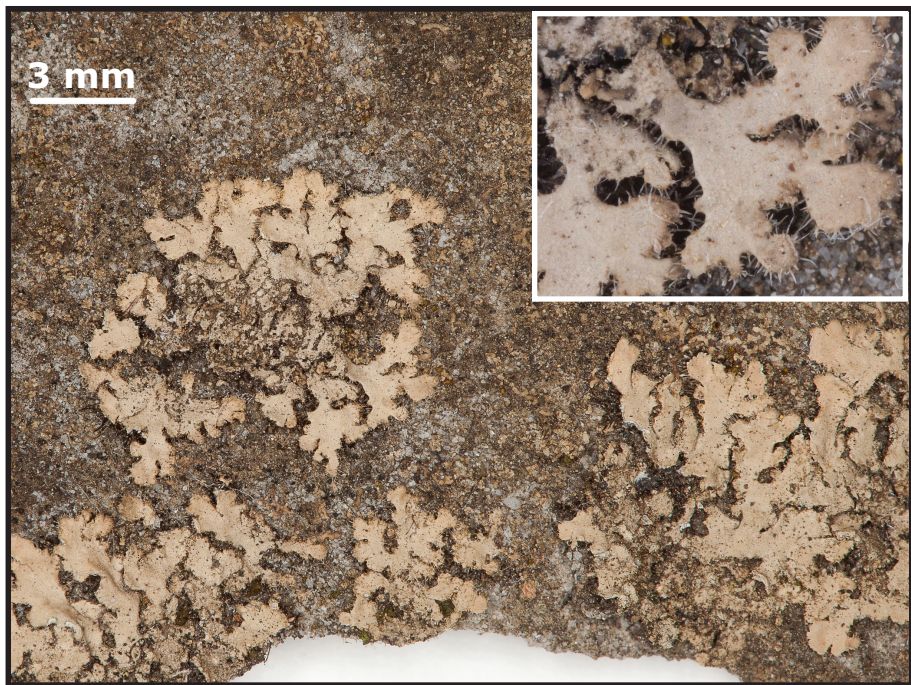
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**Comments:** This lichen forms tiny round brownish-gray squamules on rock, often in depressions where water accumulates. The edges of each squamule are thickened and sorediate.

63





**Common Name:** Hairy Shadow Lichen

**Scientific Name:** *Phaeophyscia hirsuta* (Mereshk.) Essl.

**Form:** Foliose

**Substrate:** Bark

**Size:** 1-4 cm (0.5-1.5 in.) in diameter; lobes 0.5-1.5 mm (0.2 in.) wide

**Comments:** This small and inconspicuous lobed lichen is appressed on twigs and bark, and gray to gray-brown above, black below. An unusual feature is the tiny colorless hairs on the lobe margins, visible with a hand lens. Soredia are present at the tips and along margins of lobes. Two other species of *Phaeophyscia* are found at Sedgwick and around Santa Barbara: *P. ciliata*, usually with apothecia but no soredia; and *P. orbicularis*, with protruding rhizines (black thick hairs) on the lobe tips.

65

**Common Name:** Hairy Shadow Lichen

**Scientific Name:** *Phaeophyscia hirsuta* (Mereshk.) Essl.

**Form:** Foliose

**Substrate:** Bark

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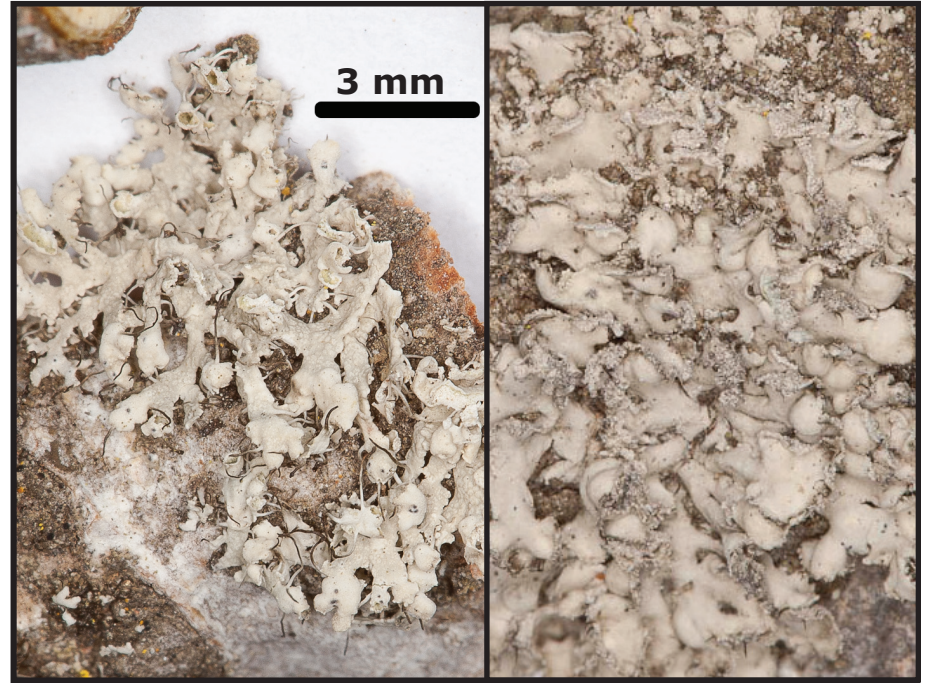
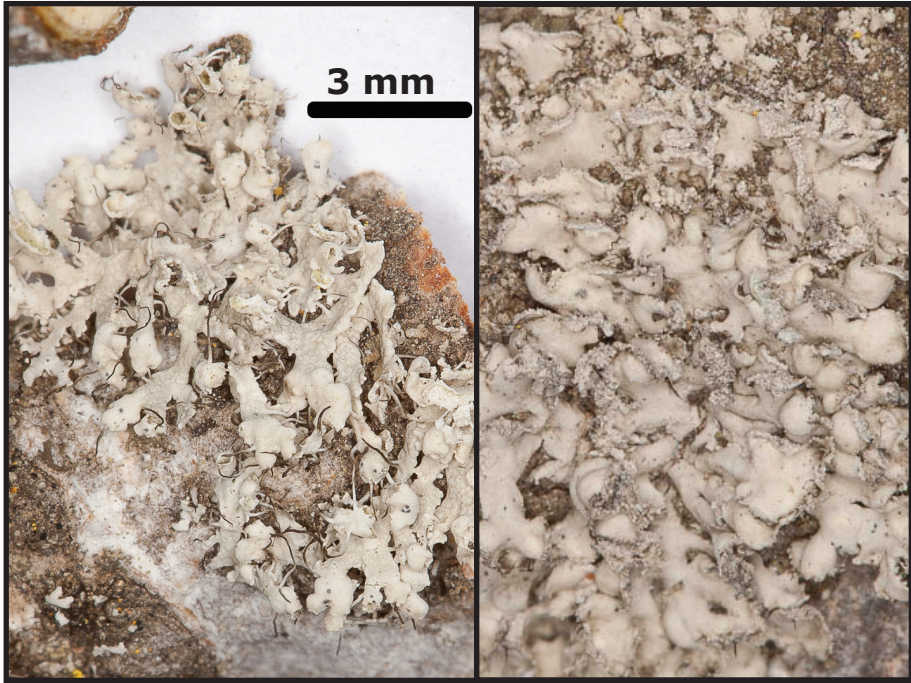
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65



**Common Name:** Hooded Rosette Lichen

**Scientific Name:** *Physcia adscendens* (Fr.) H. Olivier

**Form:** Foliose

**Substrate:** Twigs and bark

**Size:** 0.5-2 cm (0.25-0.75 in.) wide; lobes 1-2 mm (0.2 in.) wide

**Comments:** This tiny white lichen is best seen near twig tips, before larger lichens shade it out on older twigs. Its lower side is also pale, in contrast to species of *Phaeophyscia* which are black below. *Physcia adscendens* is unusual because it has large, black marginal hairs (visible in the image at left) and in having soredia present beneath helmet-shaped upright lobes, best seen with a hand lens. Apothecia are not usual. Eight species of *Physcia* have been found at Sedgwick Reserve and nine in the Santa Barbara area; this species and *P. tribacia* (p. 73) are the most common at Sedgwick.

67

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**Form:** Foliose

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**Size:** 0.5-2 cm (0.25-0.75 in.) wide; lobes 1-2 mm (0.2 in.) wide

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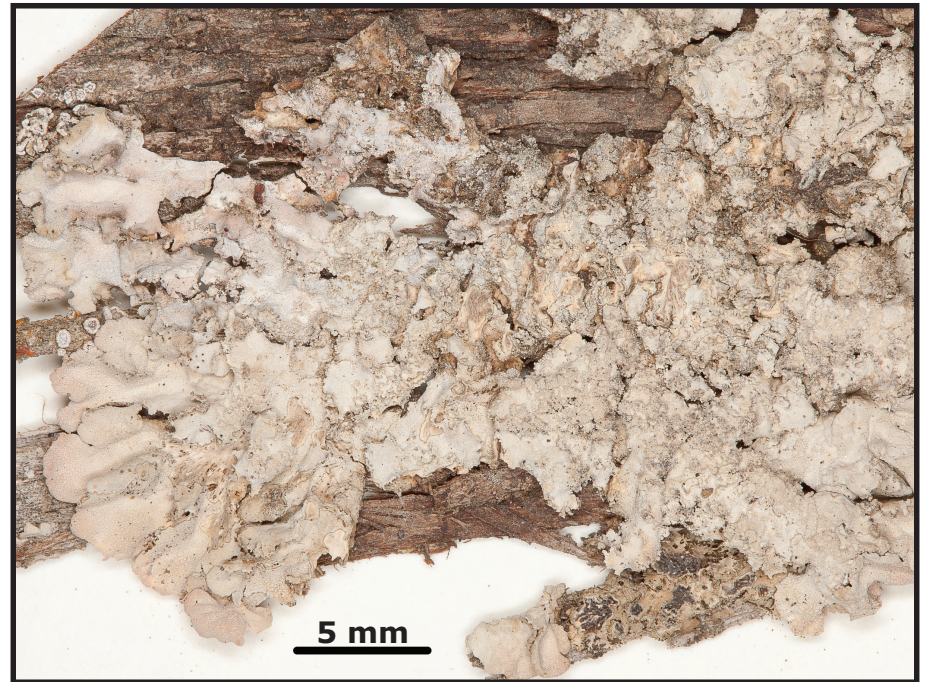
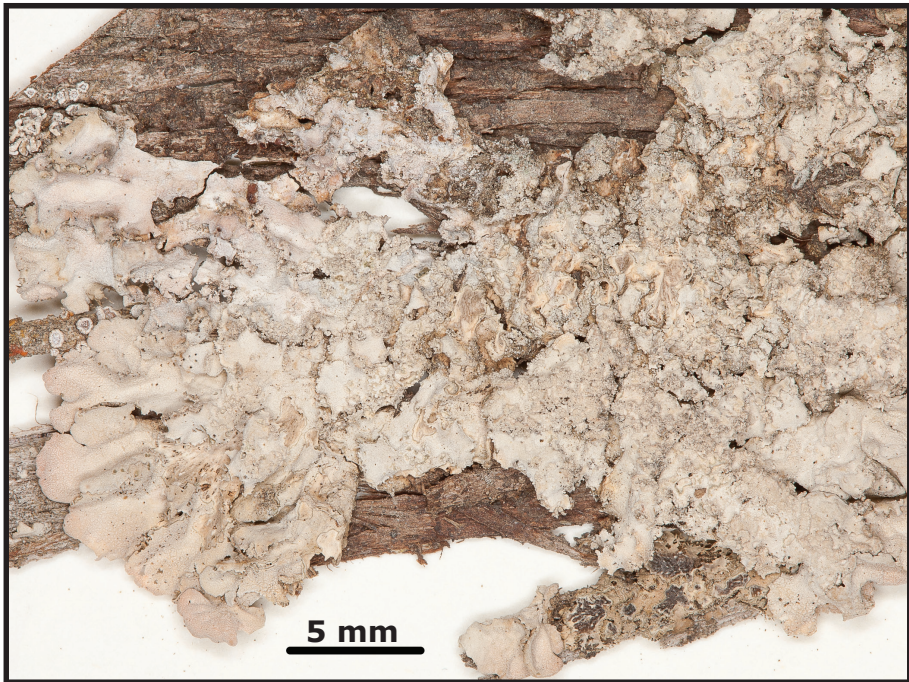
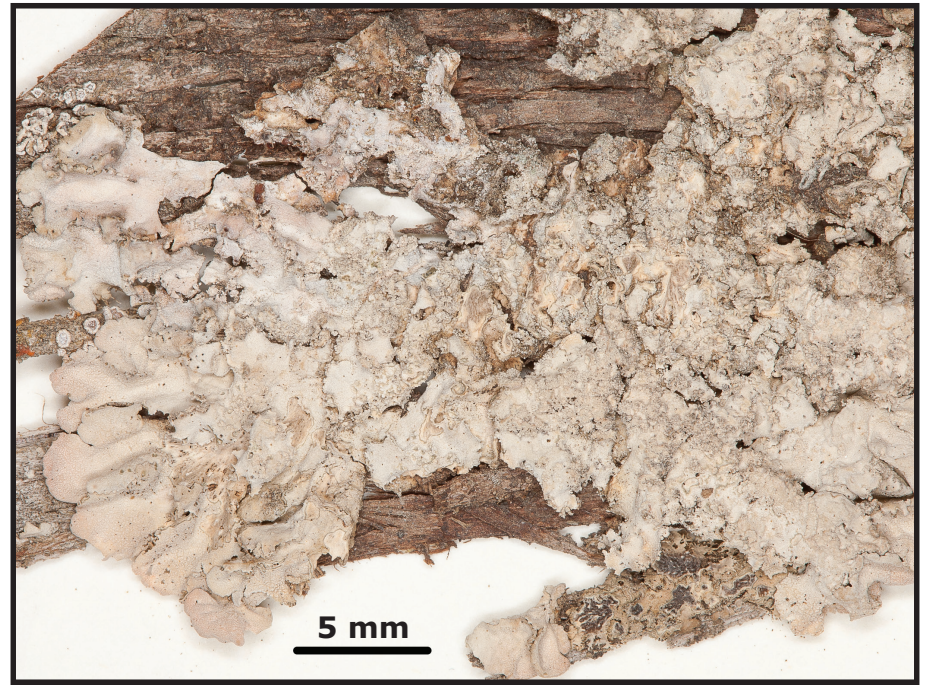
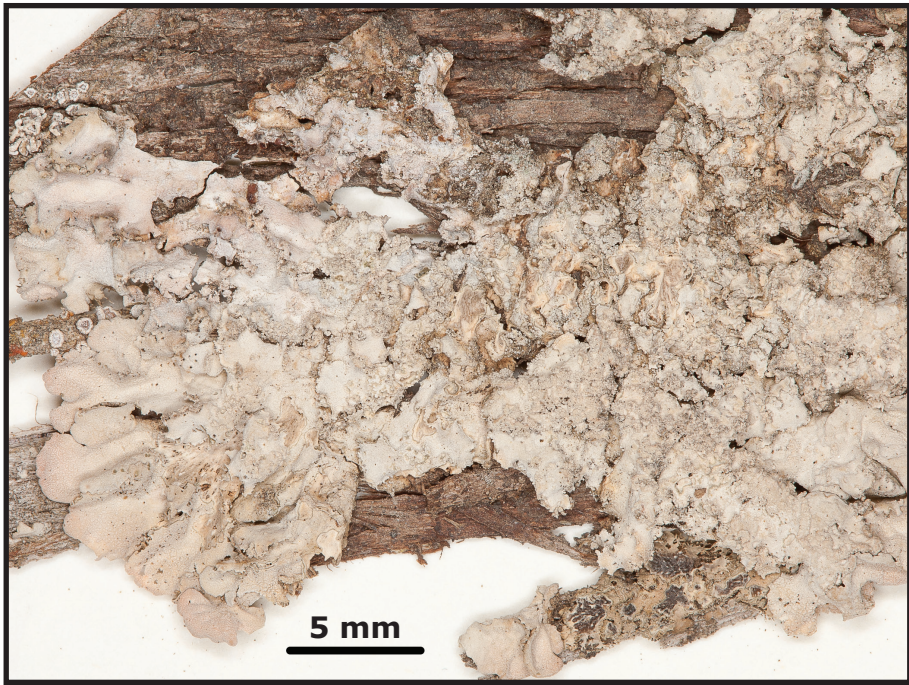
**Form:** Foliose

**Substrate:** Twigs and bark

**Size:** 0.5-2 cm (0.25-0.75 in.) wide; lobes 1-2 mm (0.2 in.) wide

**Comments:** This tiny white lichen is best seen near twig tips, before larger lichens shade it out on older twigs. Its lower side is also pale, in contrast to species of *Phaeophyscia* which are black below. *Physcia adscendens* is unusual because it has large, black marginal hairs (visible in the image at left) and in having soredia present beneath helmet-shaped upright lobes, best seen with a hand lens. Apothecia are not usual. Eight species of *Physcia* have been found at Sedgwick Reserve and nine in the Santa Barbara area; this species and *P. tribacia* (p. 73) are the most common at Sedgwick.

67



**Common Name:** Sorediate Rosette Lichen

**Scientific Name:** *Physcia dimidiata* (Arnold) Nyl.

**Form:** Foliose, small

**Substrate:** On bark or rock

**Size:** 2-3 cm (0.75-1.3 in.) in diameter

**Comments:** This small foliose white lichen has crenulate (finely-toothed) margins lined with inconspicuous soredia. The surface appears frosted from the abundance of crystals deposited on the surface. Apothecia are not found.

69

**Common Name:** Sorediate Rosette Lichen

**Scientific Name:** *Physcia dimidiata* (Arnold) Nyl.

**Form:** Foliose, small

**Substrate:** On bark or rock

**Size:** 2-3 cm (0.75-1.3 in.) in diameter

**Comments:** This small foliose white lichen has crenulate (finely-toothed) margins lined with inconspicuous soredia. The surface appears frosted from the abundance of crystals deposited on the surface. Apothecia are not found.

69

**Common Name:** Sorediate Rosette Lichen

**Scientific Name:** *Physcia dimidiata* (Arnold) Nyl.

**Form:** Foliose, small

**Substrate:** On bark or rock

**Size:** 2-3 cm (0.75-1.3 in.) in diameter

**Comments:** This small foliose white lichen has crenulate (finely-toothed) margins lined with inconspicuous soredia. The surface appears frosted from the abundance of crystals deposited on the surface. Apothecia are not found.

69

**Common Name:** Sorediate Rosette Lichen

**Scientific Name:** *Physcia dimidiata* (Arnold) Nyl.

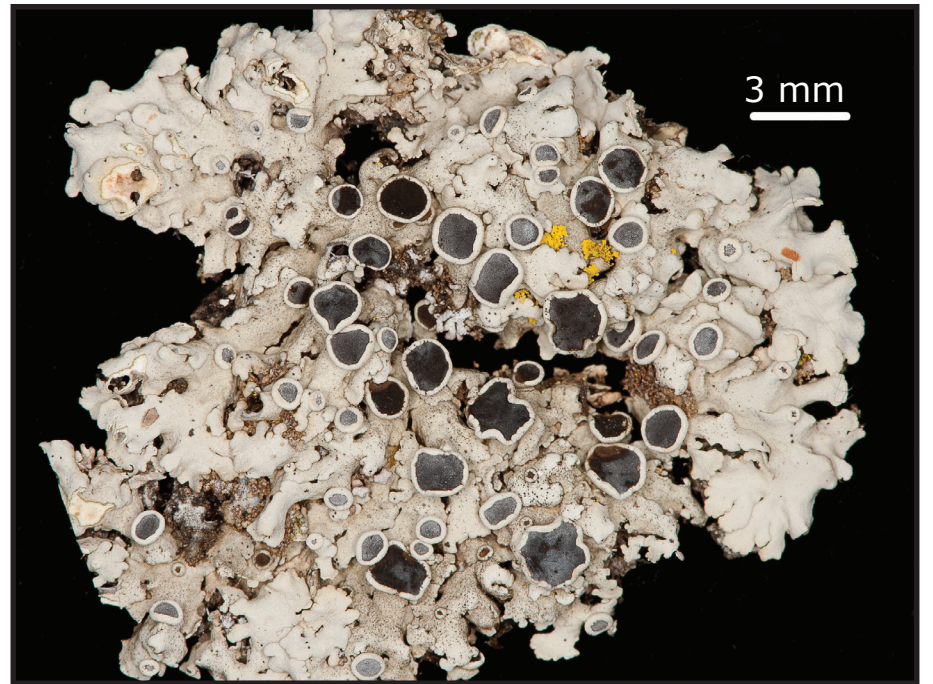
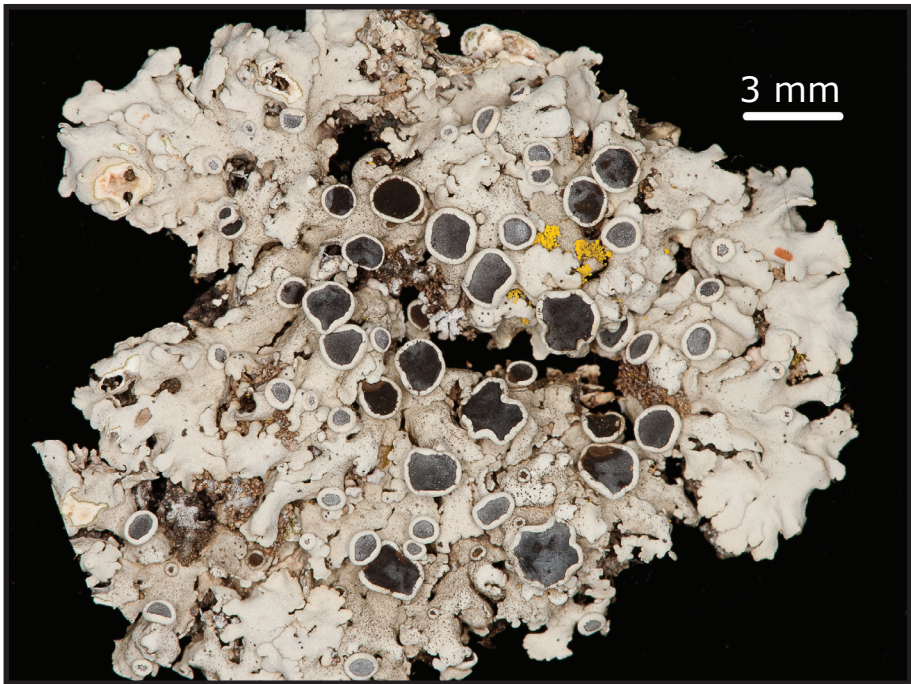
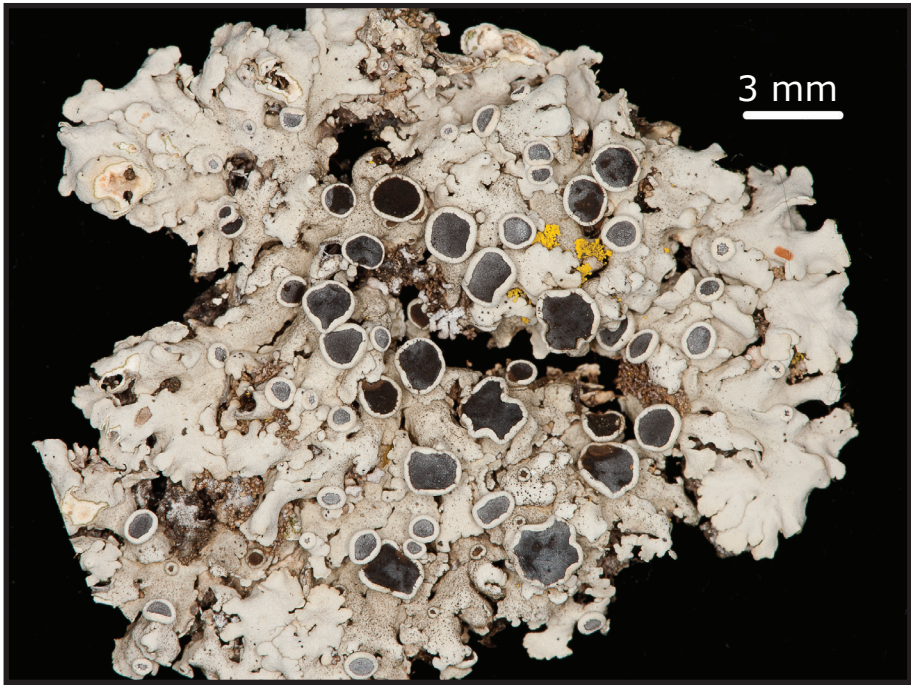
**Form:** Foliose, small

**Substrate:** On bark or rock

**Size:** 2-3 cm (0.75-1.3 in.) in diameter

**Comments:** This small foliose white lichen has crenulate (finely-toothed) margins lined with inconspicuous soredia. The surface appears frosted from the abundance of crystals deposited on the surface. Apothecia are not found.

69



**Common Name:** Star Rosette Lichen

**Scientific Name:** *Physcia stellaris* (L.) Nyl.

**Form:** Foliose, small

**Substrate:** Twigs, bark, and rocks

**Size:** Each colony is 2-3 cm (0.75-1.3 in.) in diameter; lobes to 1 mm (0.2 in.) wide

**Comments:** This small white foliose lichen has truncate (suarish) margins and lacks soredia and isidia. The upper surface is shiny white, the lower side white to tan. Apothecia with black, pruinose disks are common.

71

**Common Name:** Star Rosette Lichen

**Scientific Name:** *Physcia stellaris* (L.) Nyl.

**Form:** Foliose, small

**Substrate:** Twigs, bark, and rocks

**Size:** Each colony is 2-3 cm (0.75-1.3 in.) in diameter; lobes to 1 mm (0.2 in.) wide

**Comments:** This small white foliose lichen has truncate (suarish) margins and lacks soredia and isidia. The upper surface is shiny white, the lower side white to tan. Apothecia with black, pruinose disks are common.

71

**Common Name:** Star Rosette Lichen

**Scientific Name:** *Physcia stellaris* (L.) Nyl.

**Form:** Foliose, small

**Substrate:** Twigs, bark, and rocks

**Size:** Each colony is 2-3 cm (0.75-1.3 in.) in diameter; lobes to 1 mm (0.2 in.) wide

**Comments:** This small white foliose lichen has truncate (suarish) margins and lacks soredia and isidia. The upper surface is shiny white, the lower side white to tan. Apothecia with black, pruinose disks are common.

71

**Common Name:** Star Rosette Lichen

**Scientific Name:** *Physcia stellaris* (L.) Nyl.

**Form:** Foliose, small

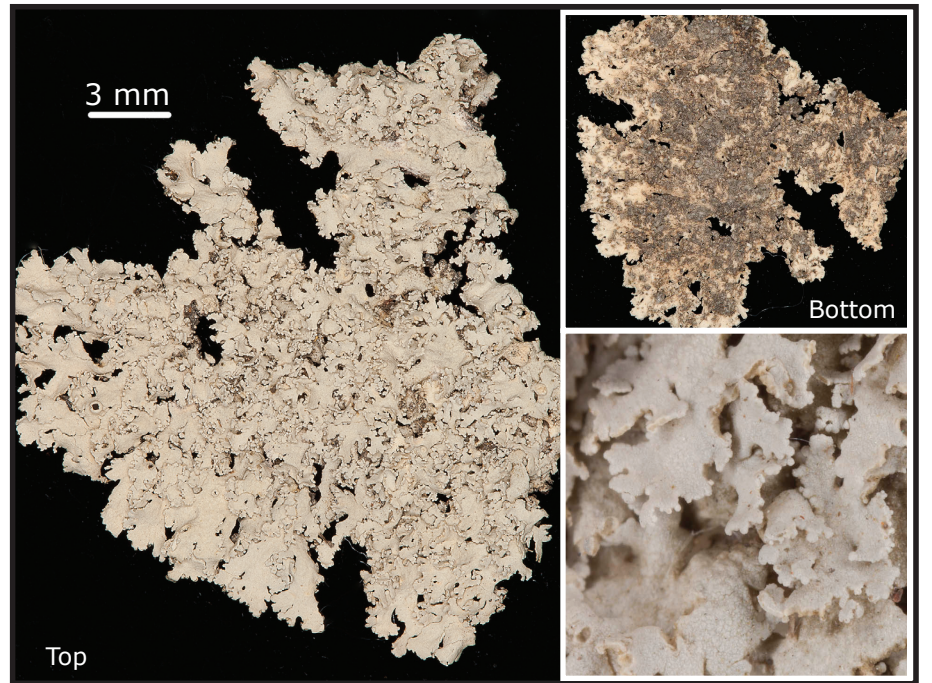
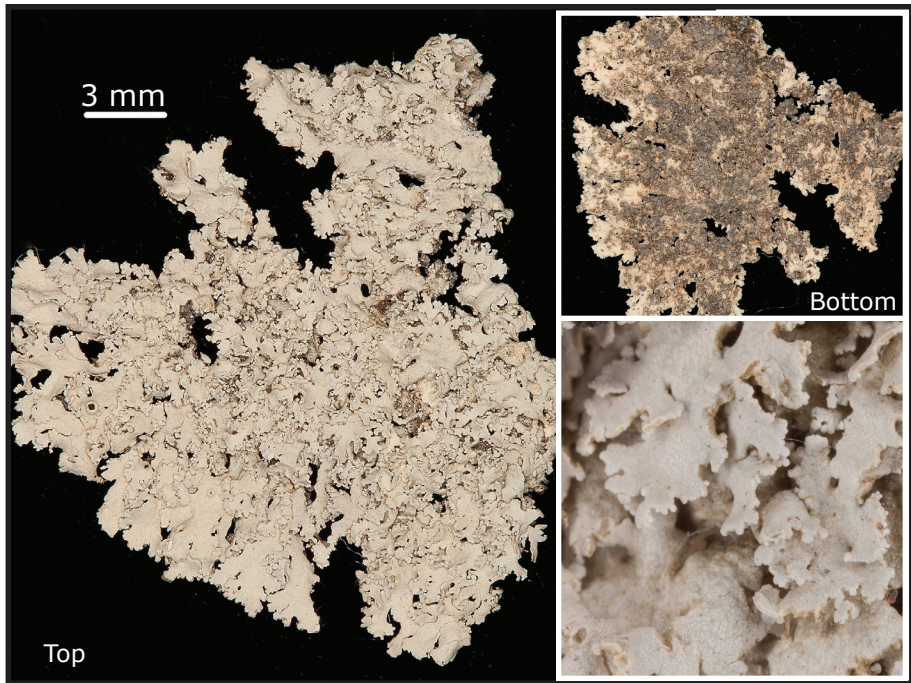
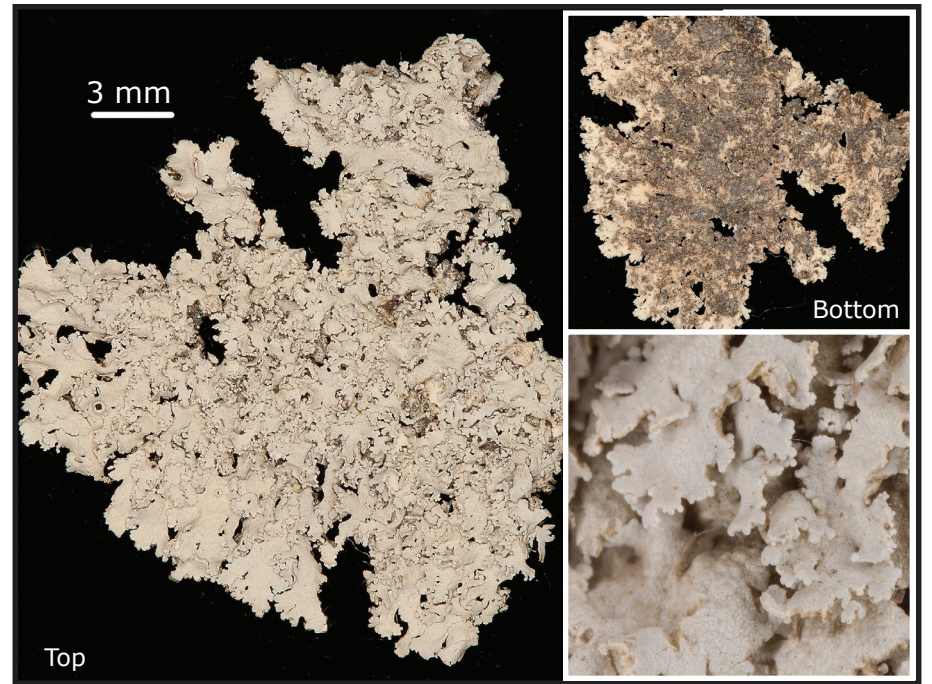
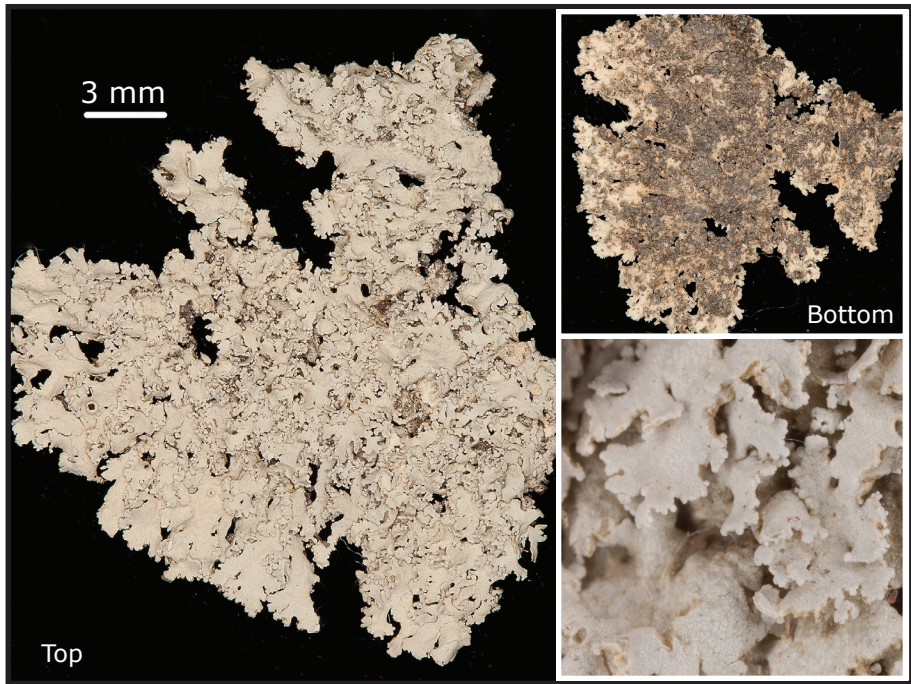
**Substrate:** Twigs, bark, and rocks

**Size:** Each colony is 2-3 cm (0.75-1.3 in.) in diameter; lobes to 1 mm (0.2 in.) wide

**Comments:** This small white foliose lichen has truncate (suarish) margins and lacks soredia and isidia. The upper surface is shiny white, the lower side white to tan. Apothecia with black, pruinose disks are common.

71





**Common Name:** Rosette Lichen

**Scientific Name:** *Physcia tribacia* (Ach.) Nyl.

**Form:** Foliose, small

**Substrate:** On rock usually, sometimes on bark

**Size:** 1-2 cm (0.5-1.0 in.) wide

**Comments:** This shiny white lichen has narrow, much branched lobes to 1 mm wide, and bears soredia below the tips. The underside is white, which is best seen on the edges of the lichen specimen of the top inset photo. The specimen appears darker toward the center from rhizines and attached debris. Apothecia are uncommon.

73

**Common Name:** Rosette Lichen

**Scientific Name:** *Physcia tribacia* (Ach.) Nyl.

**Form:** Foliose, small

**Substrate:** On rock usually, sometimes on bark

**Size:** 1-2 cm (0.5-1.0 in.) wide

**Comments:** This shiny white lichen has narrow, much branched lobes to 1 mm wide, and bears soredia below the tips. The underside is white, which is best seen on the edges of the lichen specimen of the top inset photo. The specimen appears darker toward the center from rhizines and attached debris. Apothecia are uncommon.

73

**Common Name:** Rosette Lichen

**Scientific Name:** *Physcia tribacia* (Ach.) Nyl.

**Form:** Foliose, small

**Substrate:** On rock usually, sometimes on bark

**Size:** 1-2 cm (0.5-1.0 in.) wide

**Comments:** This shiny white lichen has narrow, much branched lobes to 1 mm wide, and bears soredia below the tips. The underside is white, which is best seen on the edges of the lichen specimen of the top inset photo. The specimen appears darker toward the center from rhizines and attached debris. Apothecia are uncommon.

73

**Common Name:** Rosette Lichen

**Scientific Name:** *Physcia tribacia* (Ach.) Nyl.

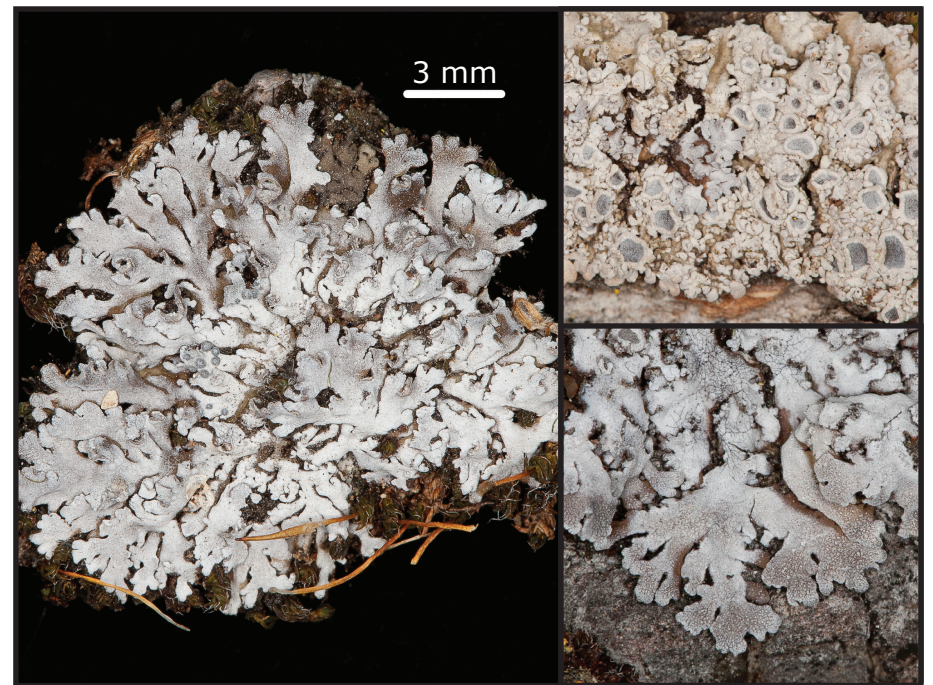
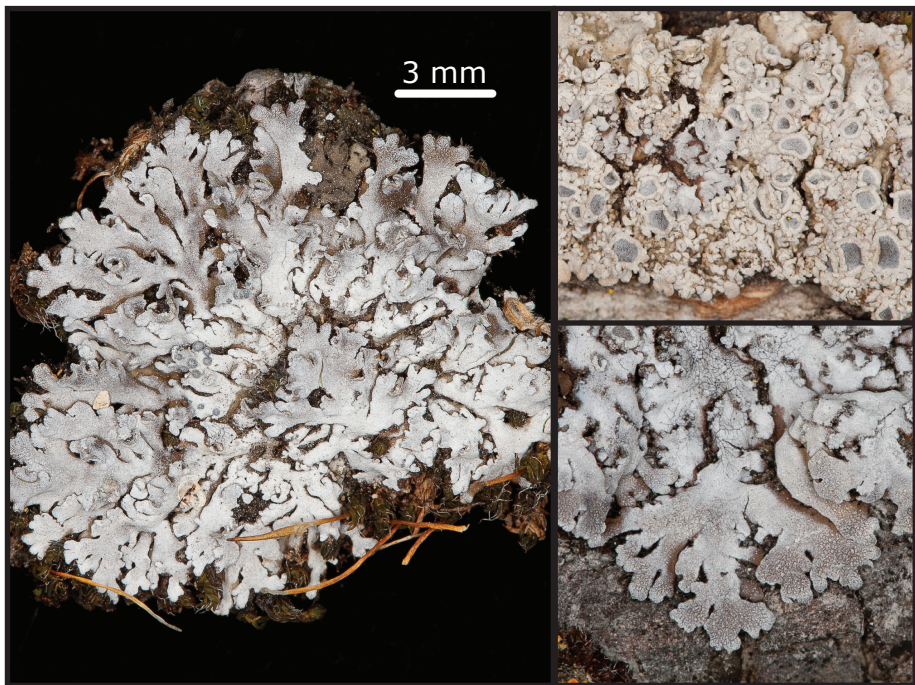
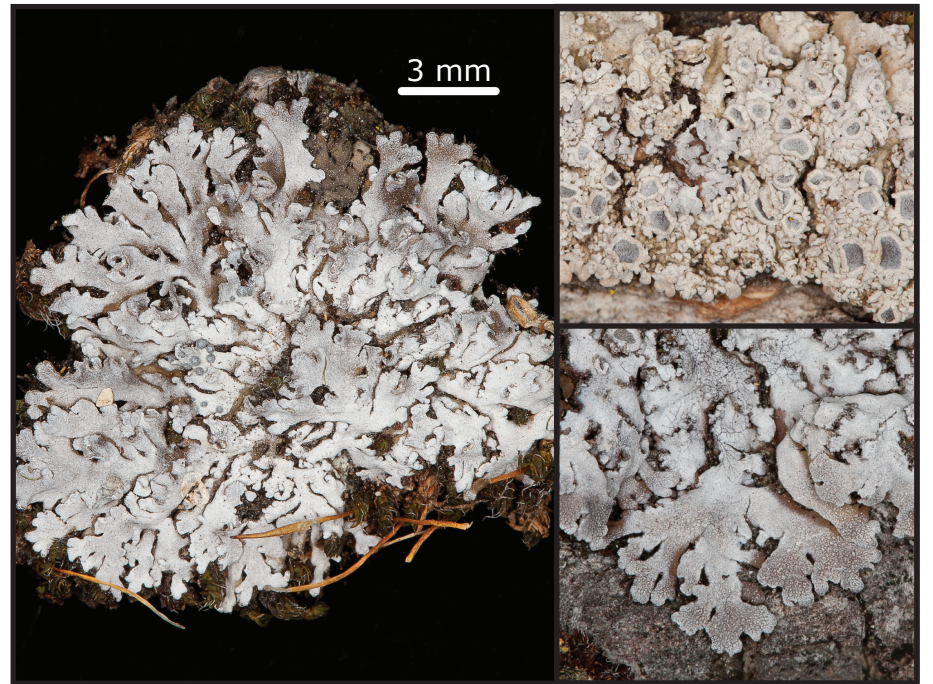
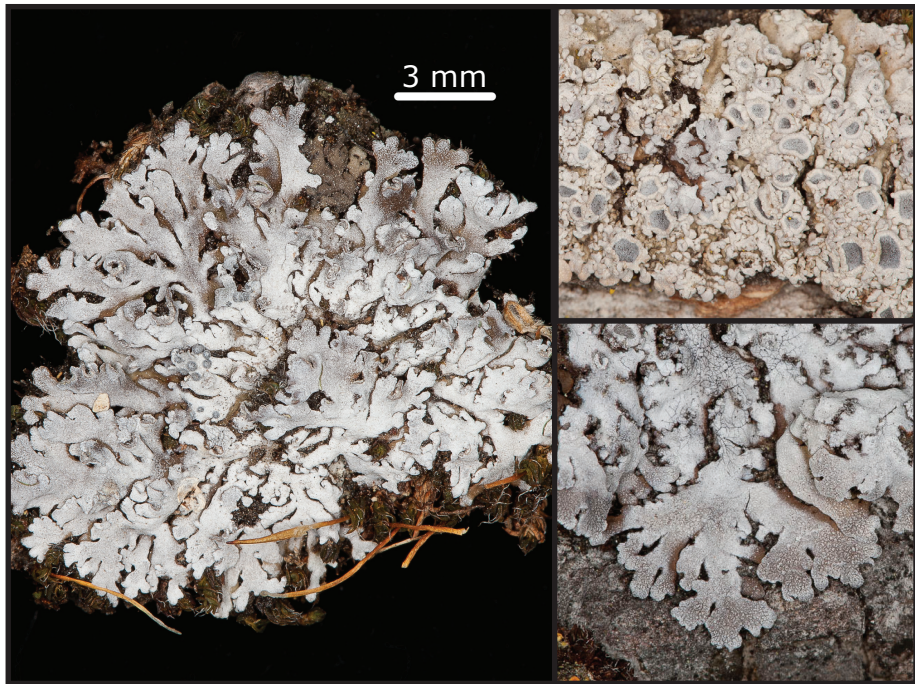
**Form:** Foliose, small

**Substrate:** On rock usually, sometimes on bark

**Size:** 1-2 cm (0.5-1.0 in.) wide

**Comments:** This shiny white lichen has narrow, much branched lobes to 1 mm wide, and bears soredia below the tips. The underside is white, which is best seen on the edges of the lichen specimen of the top inset photo. The specimen appears darker toward the center from rhizines and attached debris. Apothecia are uncommon.

73



**Common Name:** Frilled Frost Lichen

**Name:** *Physconia americana* Essl.

**Form:** Foliose

**Substrate:** Bark and wood

**Size:** Colonies are up to 10 cm diameter (4 in.); lobes are 1-2 mm (0.2 in.) wide

**Comments:** *Physconia* species are very common on oaks at Sedgwick, with five species present, but they are absent on the southern flanks of the Santa Ynez Mountains and in the Santa Barbara area. They are often mistaken for other genera such as *Physcia*. Their color is tan to brown or white-pruinose on the upper side (but varies greatly even within a species) and black below. Each species may also vary in pruinosity which masks the color. *Physconia* species have rhizines on the lower side that are squarrosely branched. This feature distinguishes *Physconia* from species of *Physcia* and *Phaeophyscia*, in which the rhizines are mostly unbranched or forked. *Physconia americana* is unusual in the genus in being very pruinose and in having apothecia (to 5 mm diameter), which are rarely seen in other species of *Physconia* at Sedgwick.

75

**Common Name:** Frilled Frost Lichen

**Name:** *Physconia americana* Essl.

**Form:** Foliose

**Substrate:** Bark and wood

**Size:** Colonies are up to 10 cm diameter (4 in.); lobes are 1-2 mm (0.2 in.) wide

**Comments:** *Physconia* species are very common on oaks at Sedgwick, with five species present, but they are absent on the southern flanks of the Santa Ynez Mountains and in the Santa Barbara area. They are often mistaken for other genera such as *Physcia*. Their color is tan to brown or white-pruinose on the upper side (but varies greatly even within a species) and black below. Each species may also vary in pruinosity which masks the color. *Physconia* species have rhizines on the lower side that are squarrosely branched. This feature distinguishes *Physconia* from species of *Physcia* and *Phaeophyscia*, in which the rhizines are mostly unbranched or forked. *Physconia americana* is unusual in the genus in being very pruinose and in having apothecia (to 5 mm diameter), which are rarely seen in other species of *Physconia* at Sedgwick.

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75

**Common Name:** Frilled Frost Lichen

**Name:** *Physconia americana* Essl.

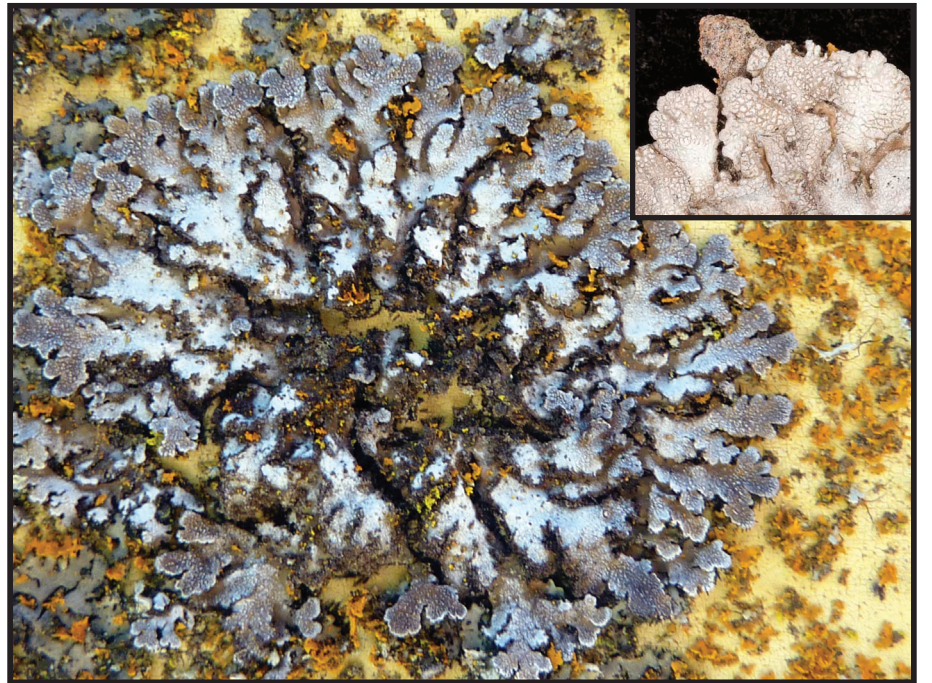
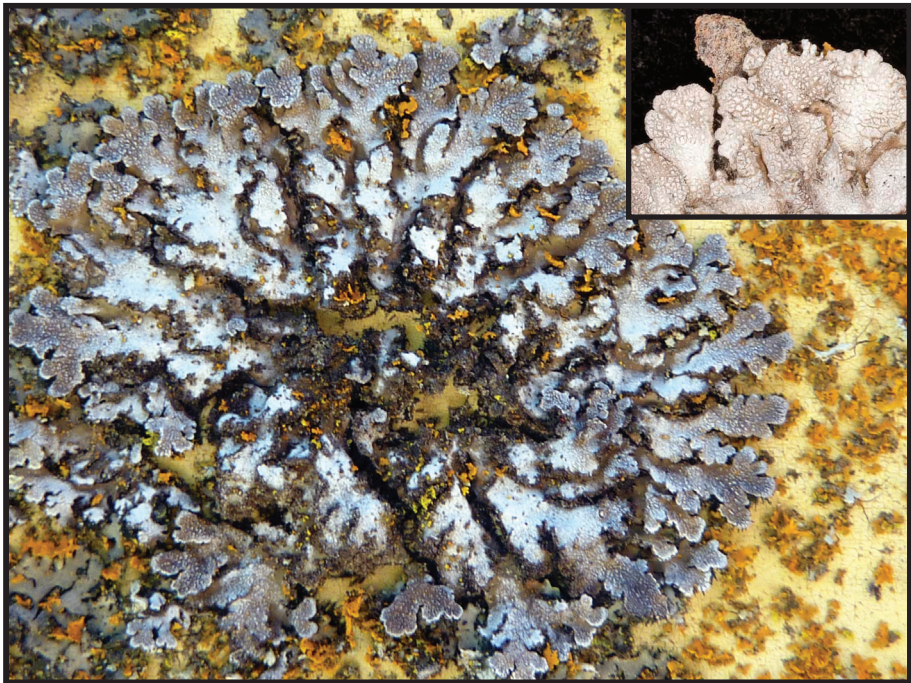
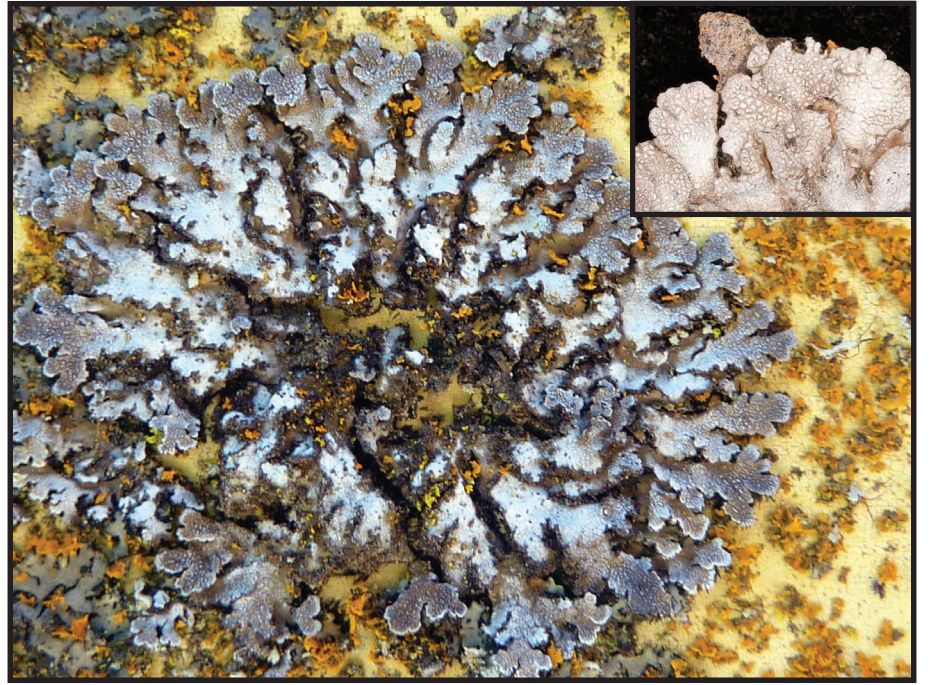
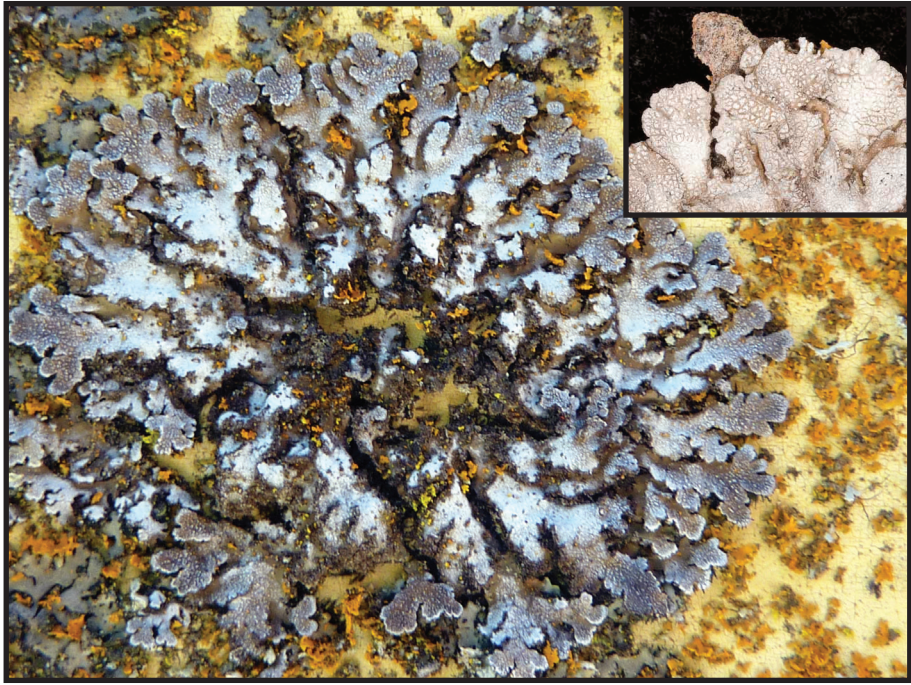
**Form:** Foliose

**Substrate:** Bark and wood

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75



**Common Name:** Bottlebrush Frost Lichen

**Scientific Name:** *Physconia isidiigera* (Zahlbr.) Essl.

**Form:** Foliose

**Substrate:** Twigs, bark or rock

**Size:** Colonies are usually about 5-7 cm (2-2.5. in.) in diameter, but may become more extensive; lobes are 1-2 mm (0.2 in.) wide

**Comments:** This species is the most common *Physconia* at Sedgwick. Lobes are rounded and partly overlapping, somewhat concave, and closely appressed to the substrate. The upper surface is gray to brown, and often white-pruinose, and the lower side pale tan at the edge but darker inward. This species is highly variable in appearance, depending on whether it is in sun or shade. Soredia are abundant, often as continuous marginal bands and in laminal patches toward the center. Few apothecia are seen. Another species, *Physconia enteroxantha*, is also similar, except for its yellowish medulla (inner tissue), visible at cracks or cuts. The thallus in the photograph was growing on metal of an abandoned farm machine, surrounded by small thalli of a *Xanthoria*.

77

**Common Name:** Bottlebrush Frost Lichen

**Scientific Name:** *Physconia isidiigera* (Zahlbr.) Essl.

**Form:** Foliose

**Substrate:** Twigs, bark or rock

**Size:** Colonies are usually about 5-7 cm (2-2.5. in.) in diameter, but may become more extensive; lobes are 1-2 mm (0.2 in.) wide

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77

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77

**Common Name:** Bottlebrush Frost Lichen

**Scientific Name:** *Physconia isidiigera* (Zahlbr.) Essl.

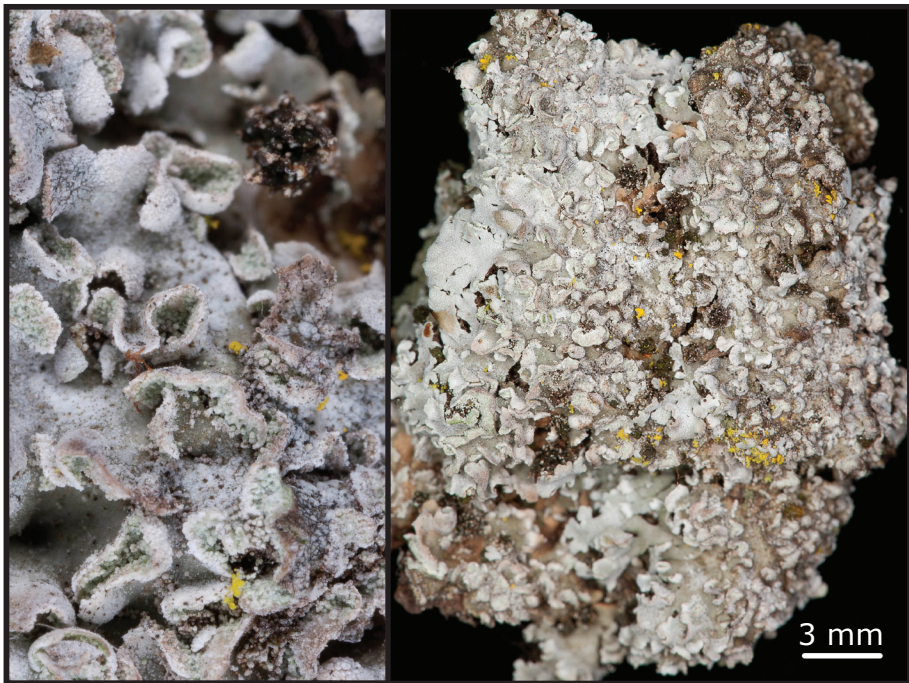
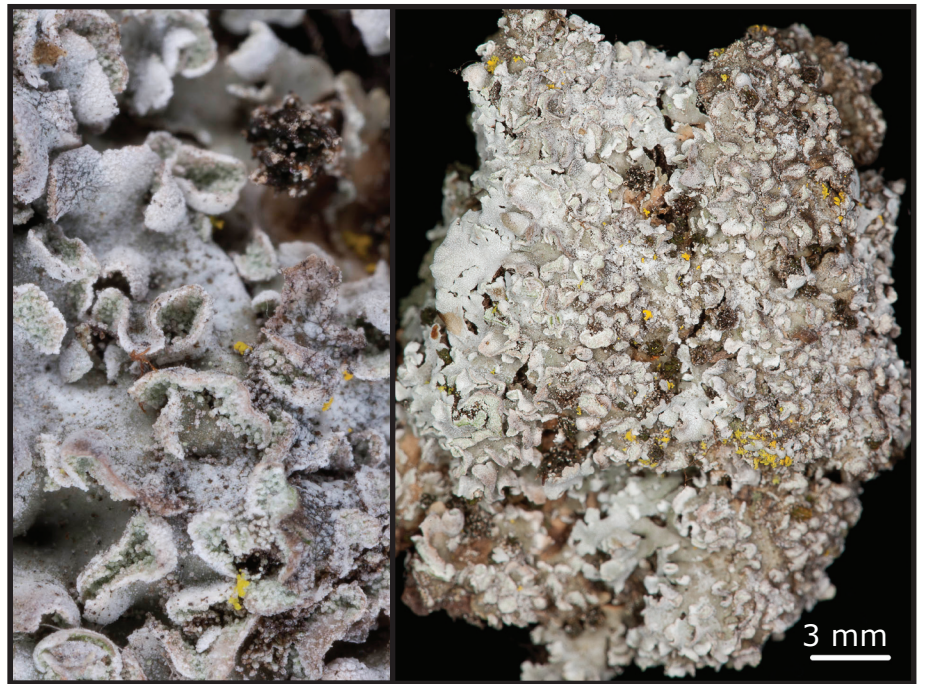
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**Comments:** This species is the most common *Physconia* at Sedgwick. Lobes are rounded and partly overlapping, somewhat concave, and closely appressed to the substrate. The upper surface is gray to brown, and often white-pruinose, and the lower side pale tan at the edge but darker inward. This species is highly variable in appearance, depending on whether it is in sun or shade. Soredia are abundant, often as continuous marginal bands and in laminal patches toward the center. Few apothecia are seen. Another species, *Physconia enteroxantha*, is also similar, except for its yellowish medulla (inner tissue), visible at cracks or cuts. The thallus in the photograph was growing on metal of an abandoned farm machine, surrounded by small thalli of a *Xanthoria*.

77



**Common Name:** Crescent Frost Lichen  
**Scientific Name:** *Physconia perisidiosa* (Erichsen) Moberg  
**Form:** Foliose  
**Substrate:** Bark or rock  
**Size:** Colonies up to 4 cm (1.5 in.) diameter; lobes 0.5-2 mm (0.2 in.) diameter  
**Comments:** This species resembles *P. isidiigera*, having gray to tan or brown, sometimes pruinose, appressed overlapping narrow lobes. The two species differ in soredia position: the soralia of *P. perisidiosa* are lip-shaped and at the upturned lobe tips, while soralia of *P. isidiigera* (p. 77) are more or less continuous along the margins.

79

**Common Name:** Crescent Frost Lichen  
**Scientific Name:** *Physconia perisidiosa* (Erichsen) Moberg  
**Form:** Foliose  
**Substrate:** Bark or rock  
**Size:** Colonies up to 4 cm (1.5 in.) diameter; lobes 0.5-2 mm (0.2 in.) diameter  
**Comments:** This species resembles *P. isidiigera*, having gray to tan or brown, sometimes pruinose, appressed overlapping narrow lobes. The two species differ in soredia position: the soralia of *P. perisidiosa* are lip-shaped and at the upturned lobe tips, while soralia of *P. isidiigera* (p. 77) are more or less continuous along the margins.

79

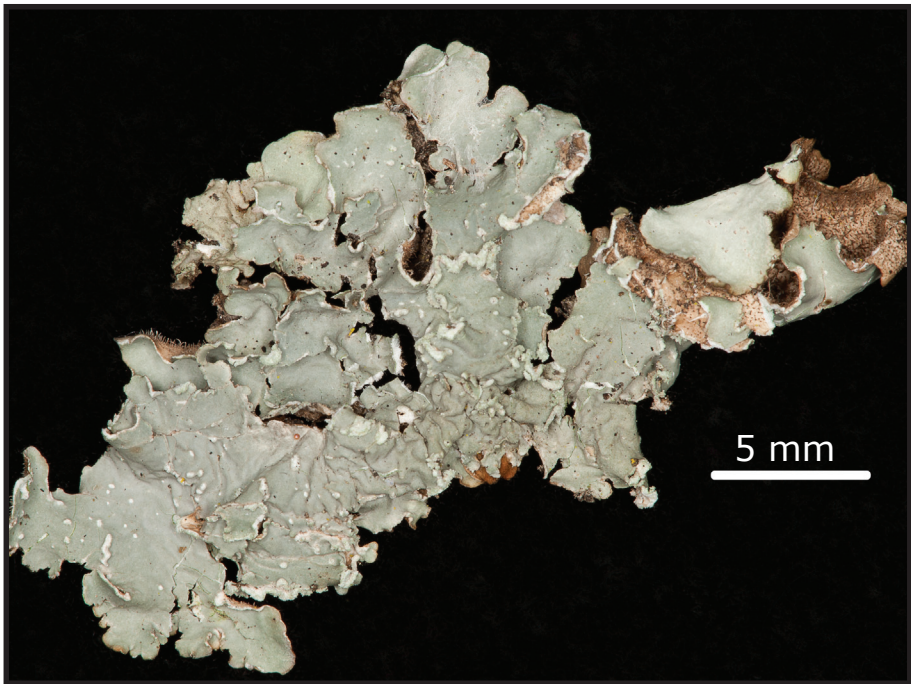
**Common Name:** Crescent Frost Lichen  
**Scientific Name:** *Physconia perisidiosa* (Erichsen) Moberg  
**Form:** Foliose  
**Substrate:** Bark or rock  
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79

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**Form:** Foliose  
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79





**Common Name:** Speckled Shield Lichen  
**Scientific Name:** *Punctelia jeckeri* (Roum.) Kalb

**Form:** Foliose

**Substrate:** Bark, twigs, or wood

**Size:** 3-5 (up to 15) cm wide (1-2 in., up to 6 in.); lobes 0.3-1 cm (0.2-0.4 in.) wide

**Comments:** This small lobed lichen is gray-blue above with pale dots, and may be either appressed or free of the substrate. Lobes are pale below. Soredia are present on the lamina. It occurs both at Sedgwick and in the Santa Barbara area, although it is uncommon. One other species, *P. punctilla*, can be found on rock in the hills and canyons around Santa Barbara and may be present on rocks at upper elevations on the Sedgwick Reserve.

81

**Common Name:** Speckled Shield Lichen  
**Scientific Name:** *Punctelia jeckeri* (Roum.) Kalb

**Form:** Foliose

**Substrate:** Bark, twigs, or wood

**Size:** 3-5 (up to 15) cm wide (1-2 in., up to 6 in.); lobes 0.3-1 cm (0.2-0.4 in.) wide

**Comments:** This small lobed lichen is gray-blue above with pale dots, and may be either appressed or free of the substrate. Lobes are pale below. Soredia are present on the lamina. It occurs both at Sedgwick and in the Santa Barbara area, although it is uncommon. One other species, *P. punctilla*, can be found on rock in the hills and canyons around Santa Barbara and may be present on rocks at upper elevations on the Sedgwick Reserve.

81

**Common Name:** Speckled Shield Lichen  
**Scientific Name:** *Punctelia jeckeri* (Roum.) Kalb

**Form:** Foliose

**Substrate:** Bark, twigs, or wood

**Size:** 3-5 (up to 15) cm wide (1-2 in., up to 6 in.); lobes 0.3-1 cm (0.2-0.4 in.) wide

**Comments:** This small lobed lichen is gray-blue above with pale dots, and may be either appressed or free of the substrate. Lobes are pale below. Soredia are present on the lamina. It occurs both at Sedgwick and in the Santa Barbara area, although it is uncommon. One other species, *P. punctilla*, can be found on rock in the hills and canyons around Santa Barbara and may be present on rocks at upper elevations on the Sedgwick Reserve.

81

**Common Name:** Speckled Shield Lichen  
**Scientific Name:** *Punctelia jeckeri* (Roum.) Kalb

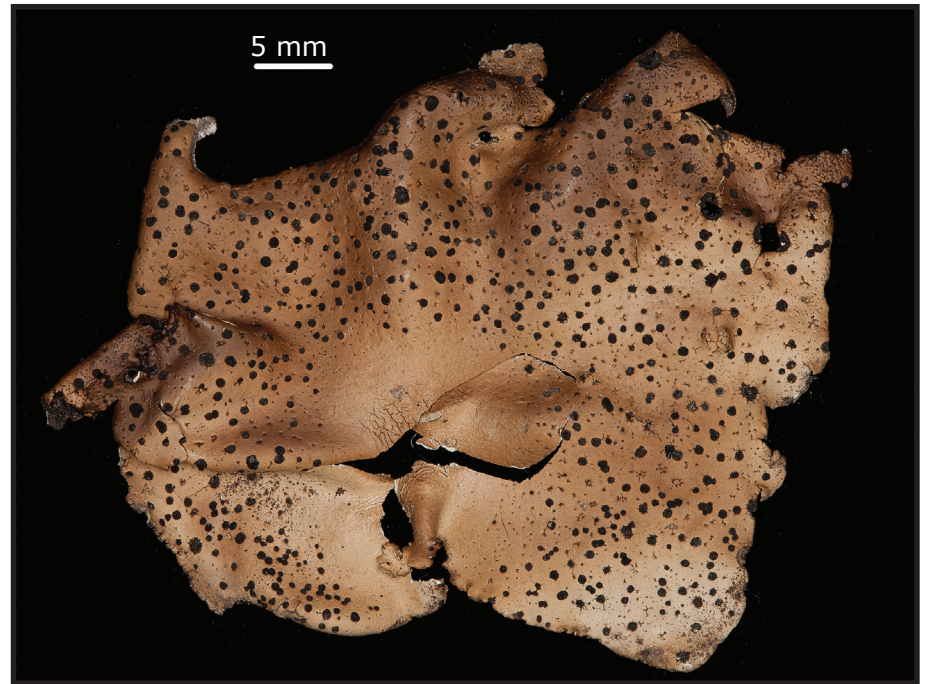
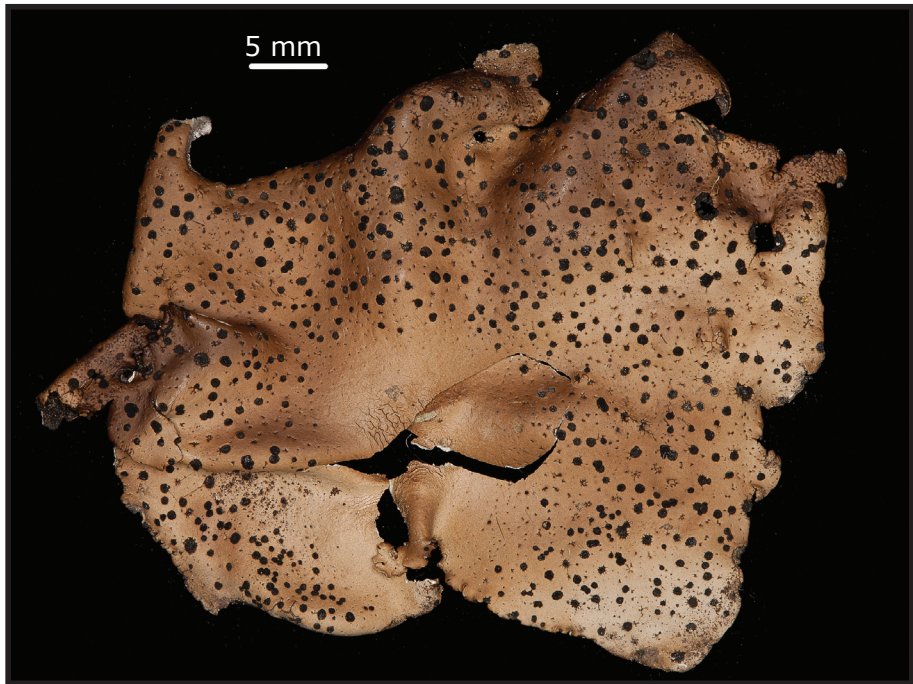
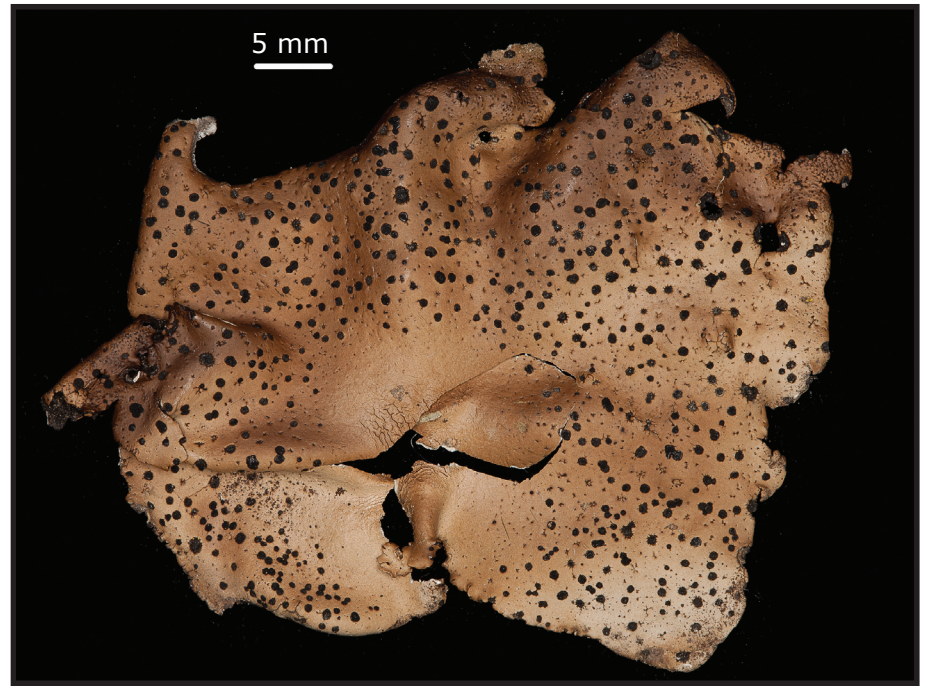
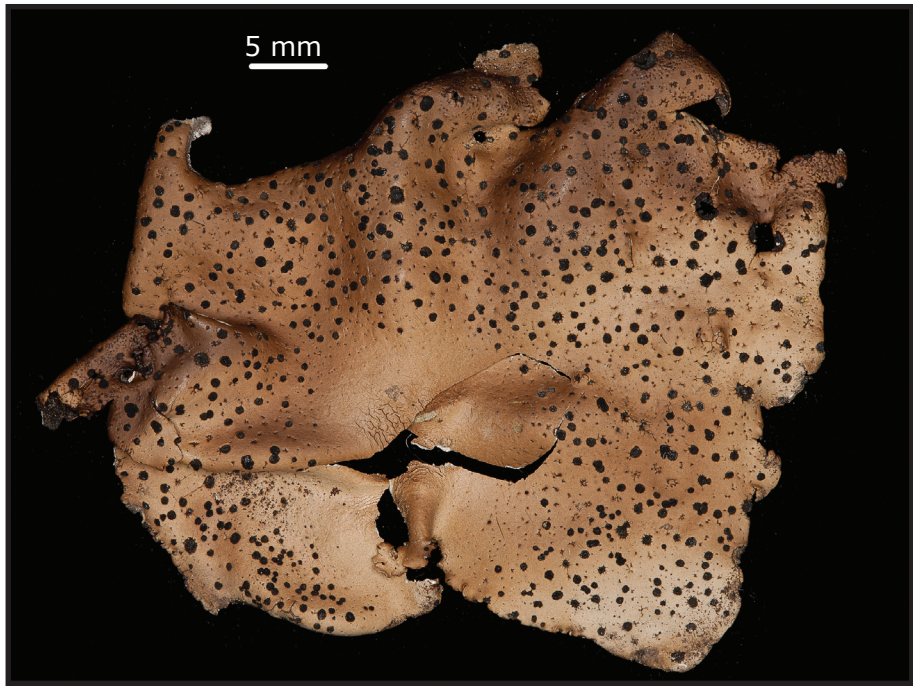
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**Substrate:** Bark, twigs, or wood

**Size:** 3-5 (up to 15) cm wide (1-2 in., up to 6 in.); lobes 0.3-1 cm (0.2-0.4 in.) wide

**Comments:** This small lobed lichen is gray-blue above with pale dots, and may be either appressed or free of the substrate. Lobes are pale below. Soredia are present on the lamina. It occurs both at Sedgwick and in the Santa Barbara area, although it is uncommon. One other species, *P. punctilla*, can be found on rock in the hills and canyons around Santa Barbara and may be present on rocks at upper elevations on the Sedgwick Reserve.

81



**Common Name:** Rock Tripe Lichen

**Scientific Name:** *Umbilicaria phaea* Tuck.

**Form:** Foliose plate or shield atop a short central stalk as attachment

**Substrate:** Rock

**Size:** Thalli 1-3 cm (0.5-1.3 in.) diameter; some montane species may reach 15 cm diameter (6 in.)

**Comments:** Although several species of *Umbilicaria* occur in Southern California, *Umbilicaria phaea* is the only one likely to occur at low elevations, and is the only species at Sedgwick Reserve. No species of *Umbilicaria* have been found in the Santa Barbara area, although they are likely to occur at higher elevations in the Santa Ynez range. Form is unusual: a circular, rigid, flat disk attached to rock by a central hold-fast or stalk. The lichen is pale to medium brown above and below, smooth, and often pruinose (with a white dusting). Apothecia are common and black.

83

**Common Name:** Rock Tripe Lichen

**Scientific Name:** *Umbilicaria phaea* Tuck.

**Form:** Foliose plate or shield atop a short central stalk as attachment

**Substrate:** Rock

**Size:** Thalli 1-3 cm (0.5-1.3 in.) diameter; some montane species may reach 15 cm diameter (6 in.)

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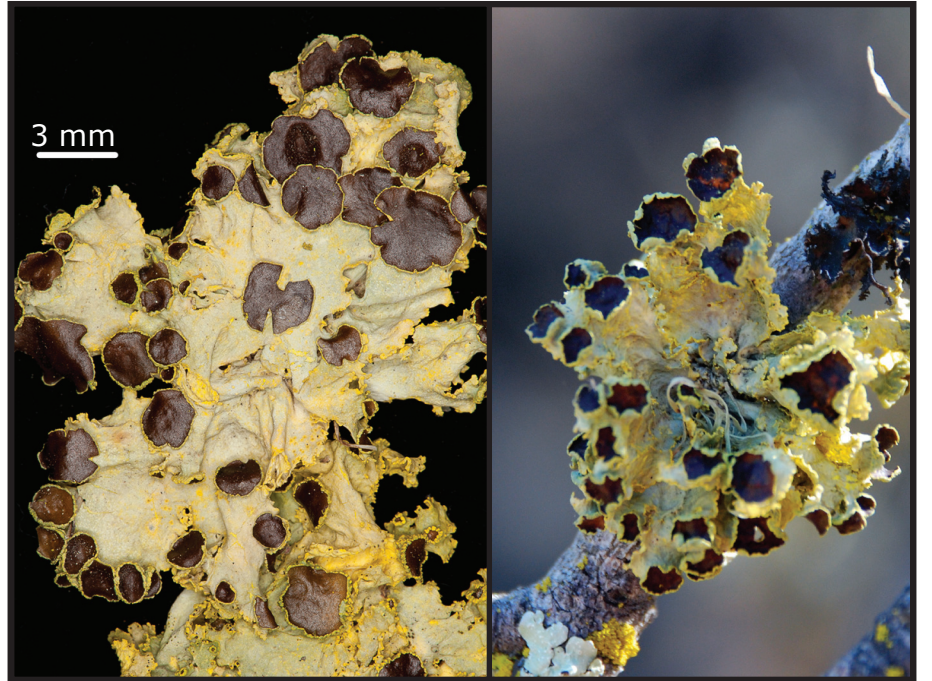
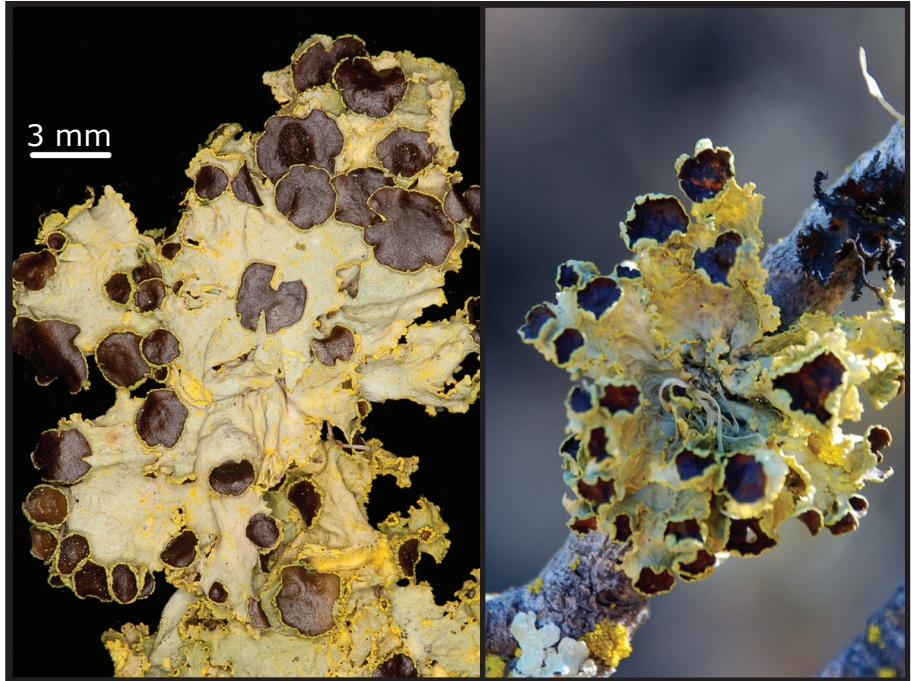
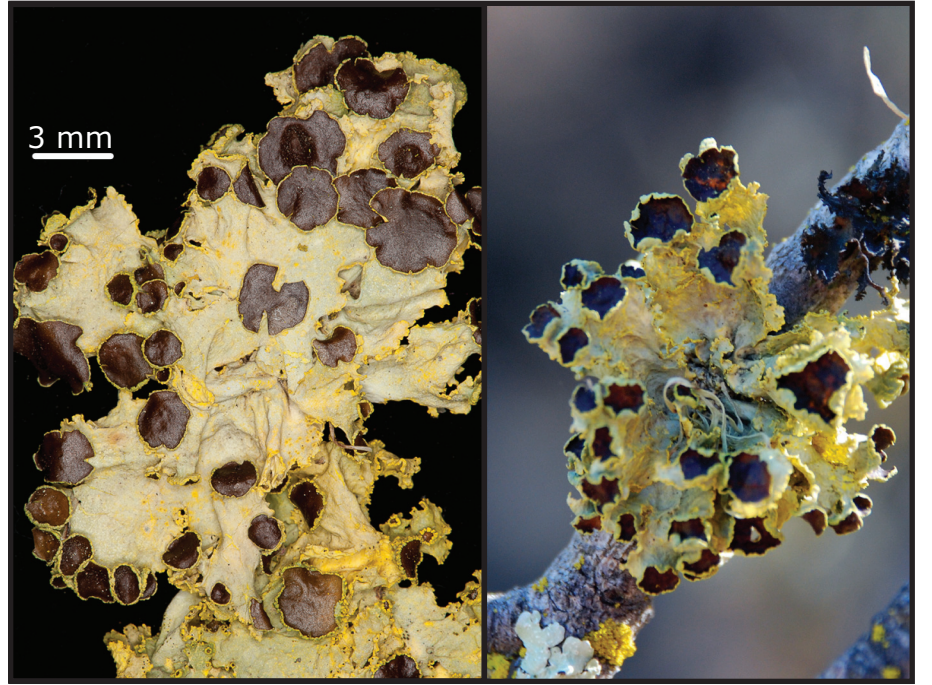
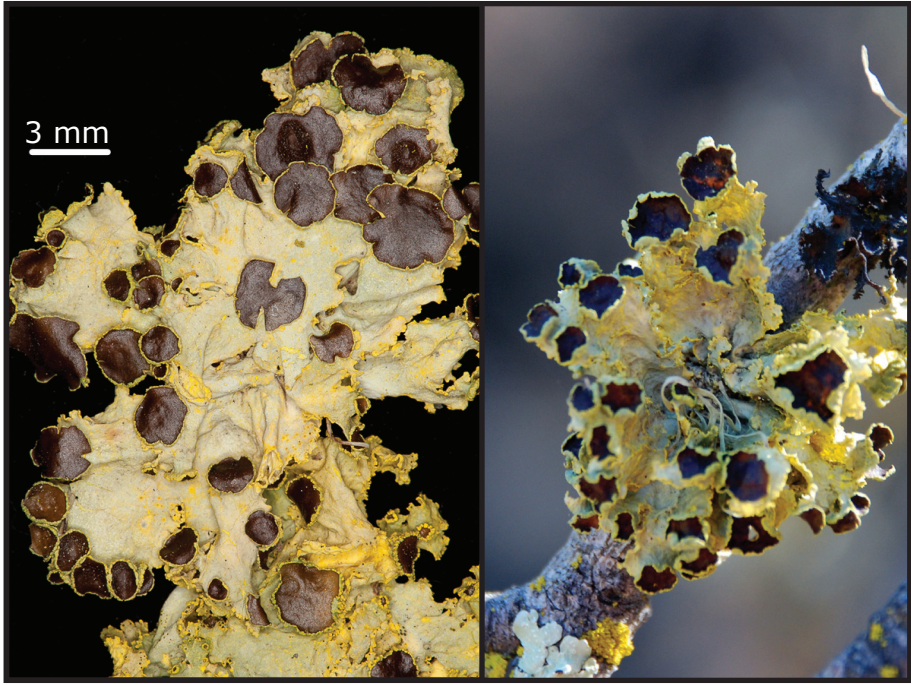
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83



**Common Name:** Brown-eyed Sunshine Lichen  
**Scientific Name:** *Vulpicida canadensis* (Räs.) J.E. Matts. & M. J. Lai  
**Form:** Foliose, rosette-forming  
**Substrate:** Twigs and bark of pine and other conifer trees  
**Size:** Thalli are 1-4 cm (0.5-1.5 in.) in diameter; lobes 2-4 mm (0.2-0.5 in.) wide  
**Comments:** This lichen is bright yellow, with upright ridged or wrinkled lobes, and attached at one point. Apothecia are common, having brown disks and yellow rims. It occurs only at the higher elevations and on pines at Sedgwick, and is not found in the Santa Barbara area.

85

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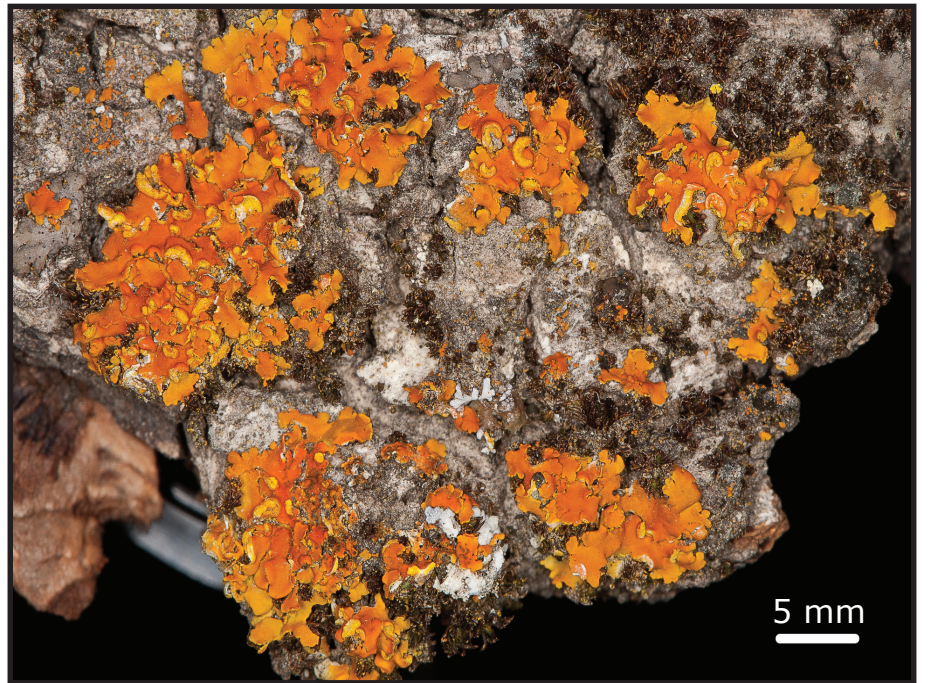
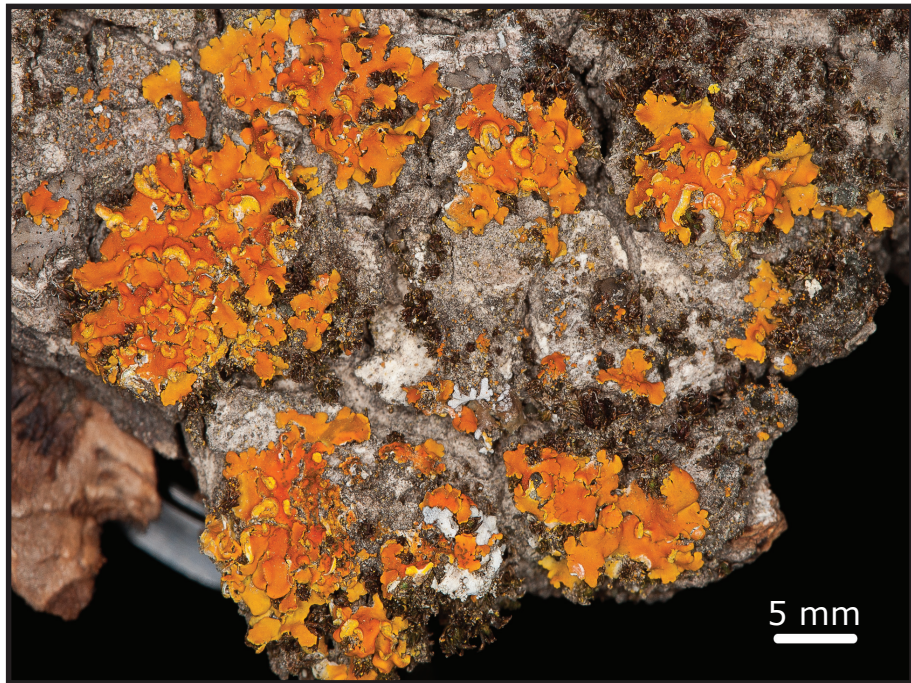
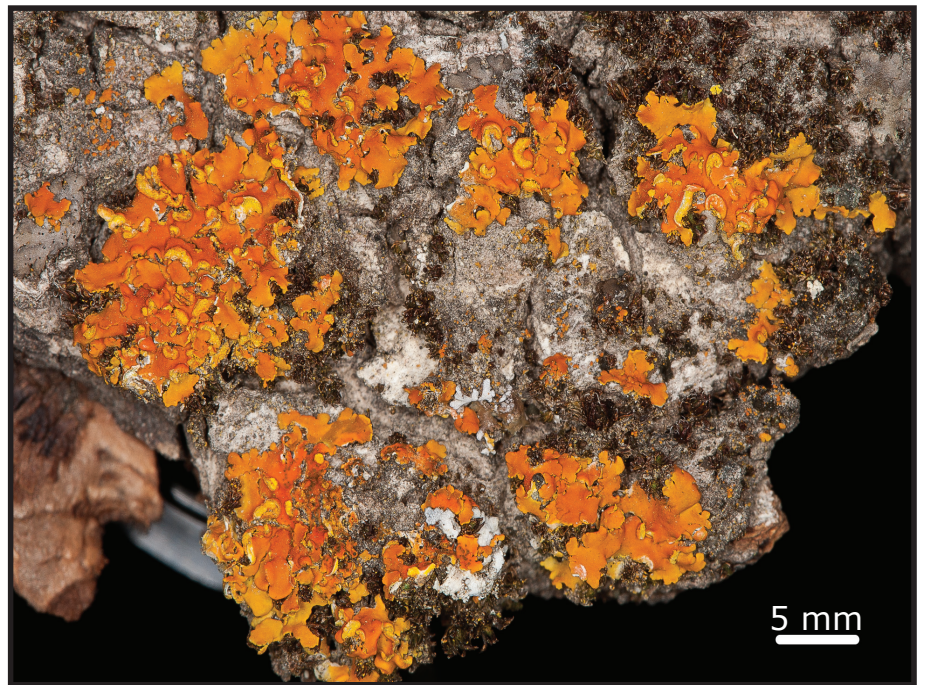
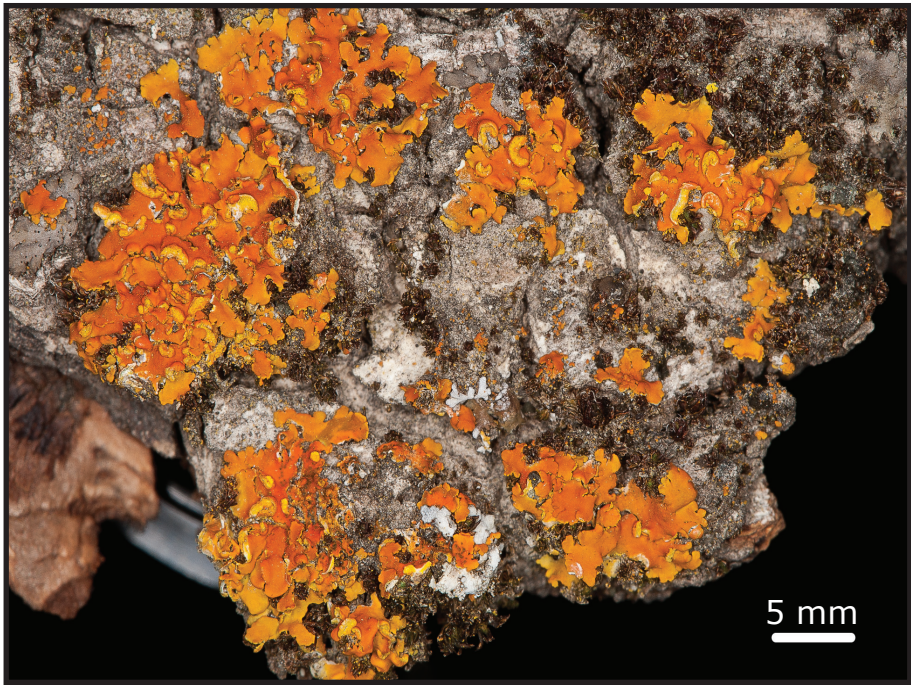
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**Common Name:** Hooded Sunburst Lichen

**Scientific Name:** *Xanthomendoza fallax* (Hepp) Søchting, Kärnefelt & S. Y. Kondr.

**Form:** Foliose

**Substrate:** Twigs and bark

**Size:** Thalli are 1-2 cm (0.5 -1.0 in.) diameter; lobes are 0.2-0.6 mm (0.2-0.25 in.) wide

**Comments:** *Xanthomendoza fallax* has tiny yellow-orange or orange flattened lobes, with the lower side white or pale yellow. Lobes are appressed or flattened on the substrate. Inconspicuous powdery soredia occur in gaping pockets at the lip-shaped lobe tips; apothecia are rare. Five species of *Xanthomendoza* occur at Sedgwick and in the Santa Barbara area. The genera *Xanthomendoza* and *Xanthoria* are very similar, and differ in features not visible without a microscope.

87

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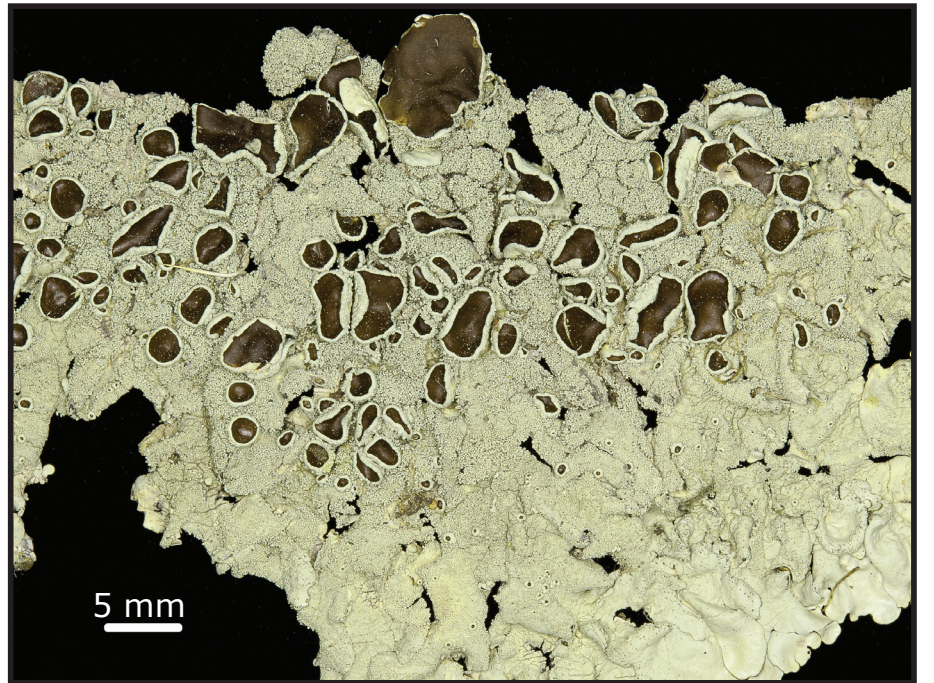
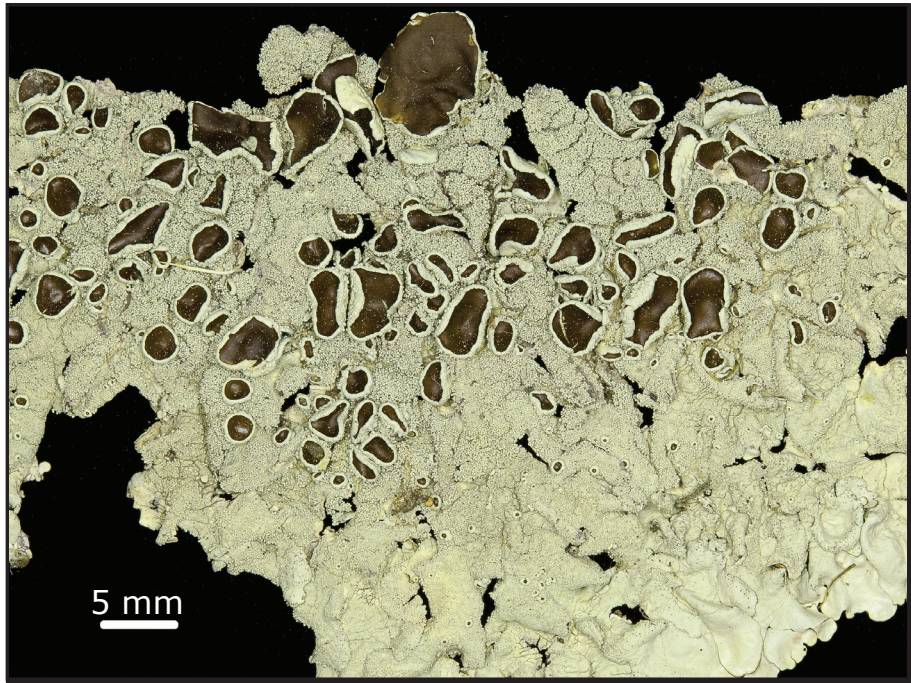
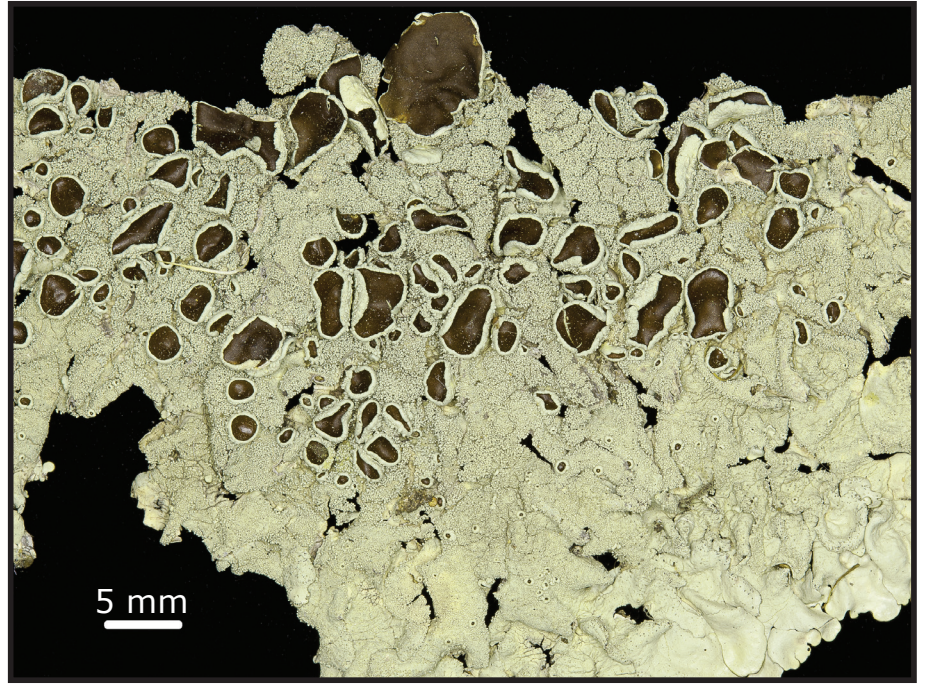
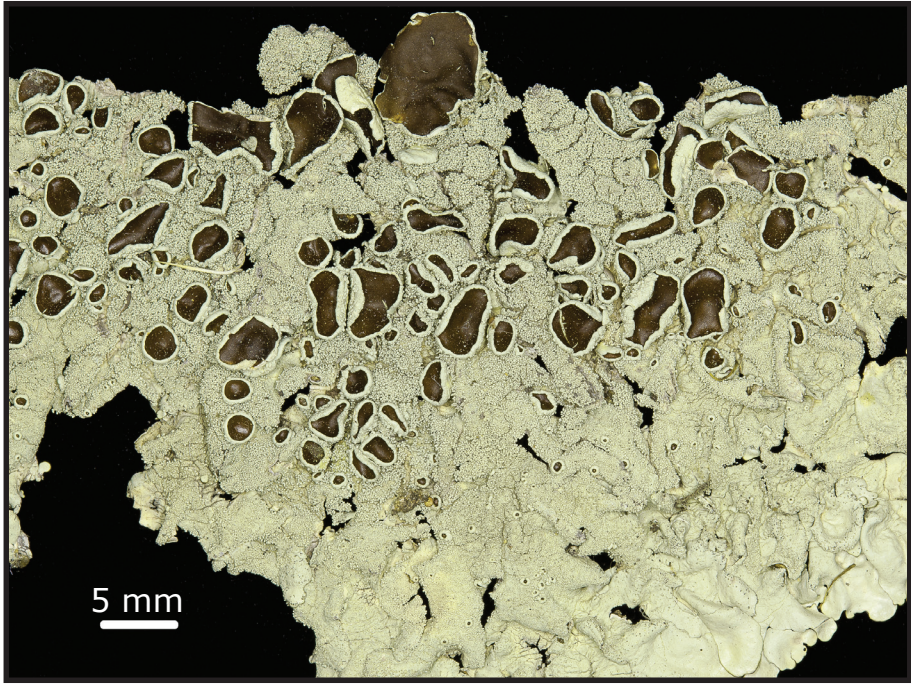
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87





**Common Name:** Salted Rock-Shield Lichen

**Scientific Name:** *Xanthoparmelia mexicana* (Gyel.) Hale

**Form:** Foliose, tightly attached

**Substrate:** Rock

**Size:** Individual thalli are 4-10 cm. (1.5-4 in.) wide; lobes 1-4 mm (about 0.2 in.) wide

**Comments:** Only one species of *Xanthoparmelia* has been reported from Sedgwick, although others are likely to occur. Ten species have been collected and identified from the Santa Barbara area. Species are difficult to collect and even more difficult to identify, most differing only chemically. All are closely attached on rock, fairly large, pale green to yellow-green above and pale to medium brown below (the specimen in the photograph is from the herbarium collection so the color has faded due to death of the algae.) The lichen is closely appressed to the rock surface except for the free lobes at the margins. *X. mexicana* is a common species in southern California, and is identified by the presence of abundant isidia (0.1-0.5 mm high) on the upper surface.

89

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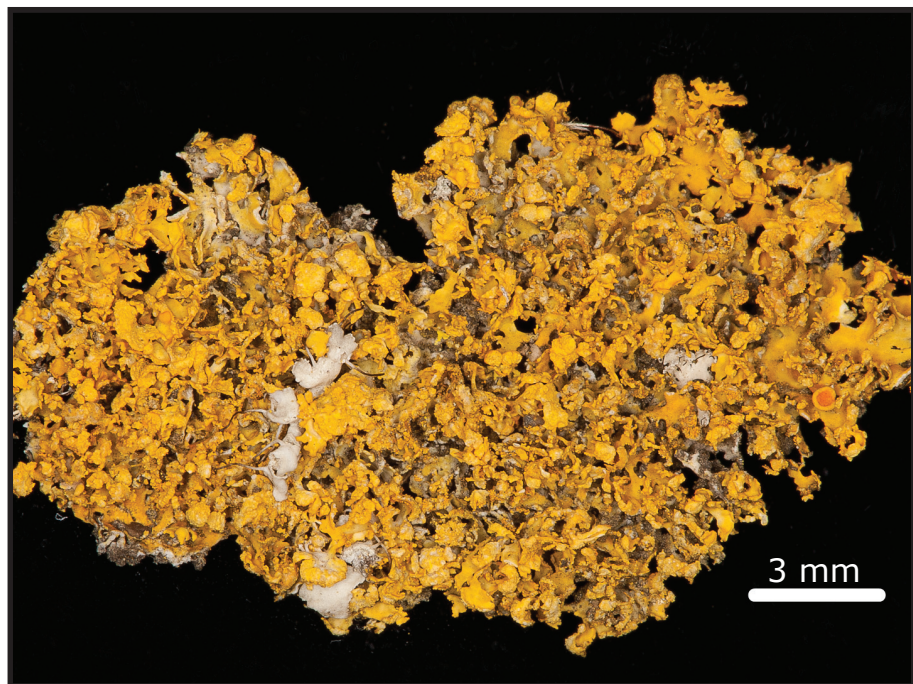
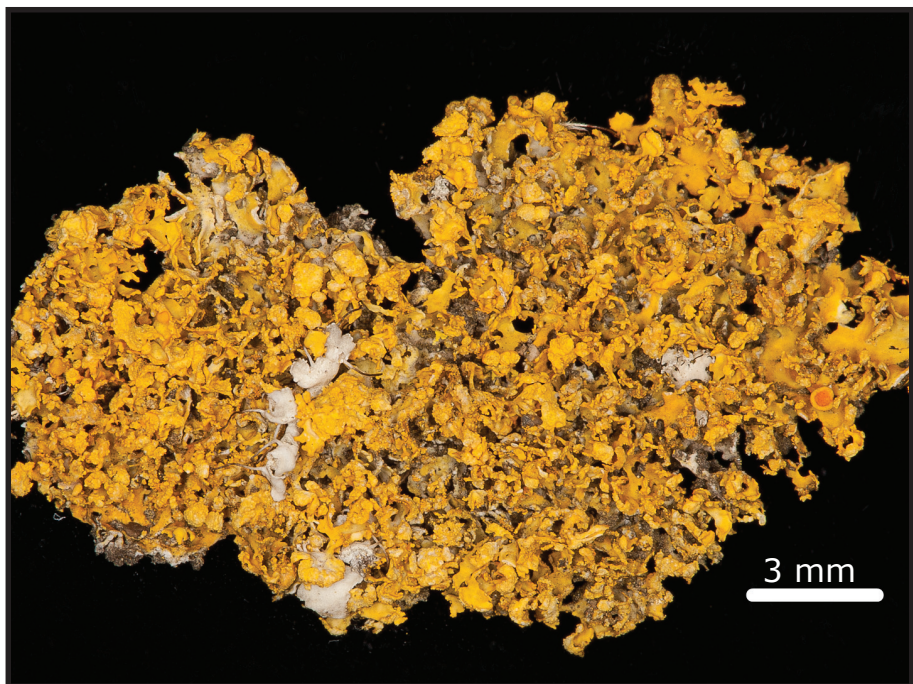
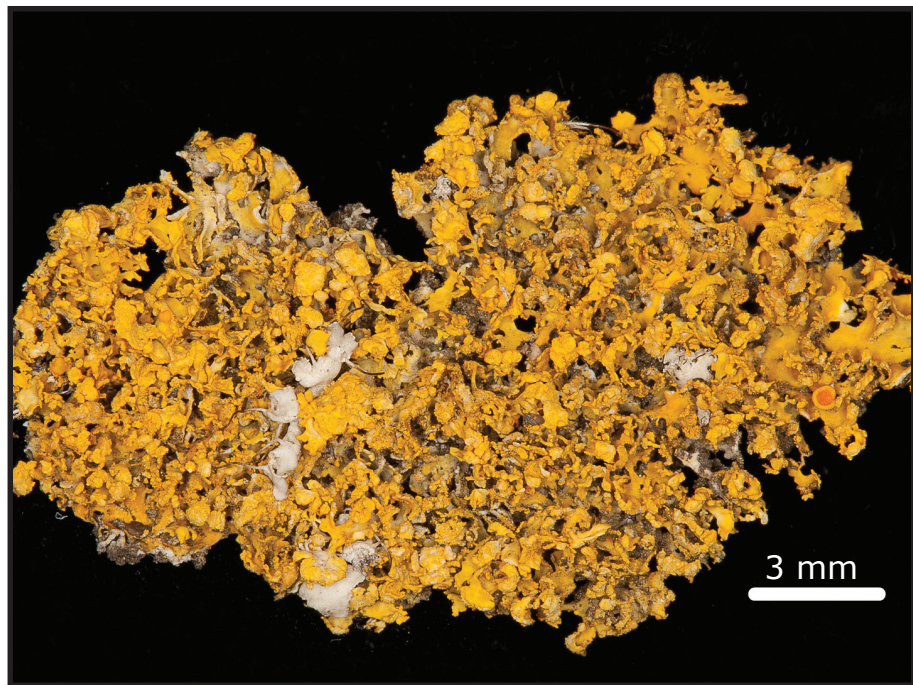
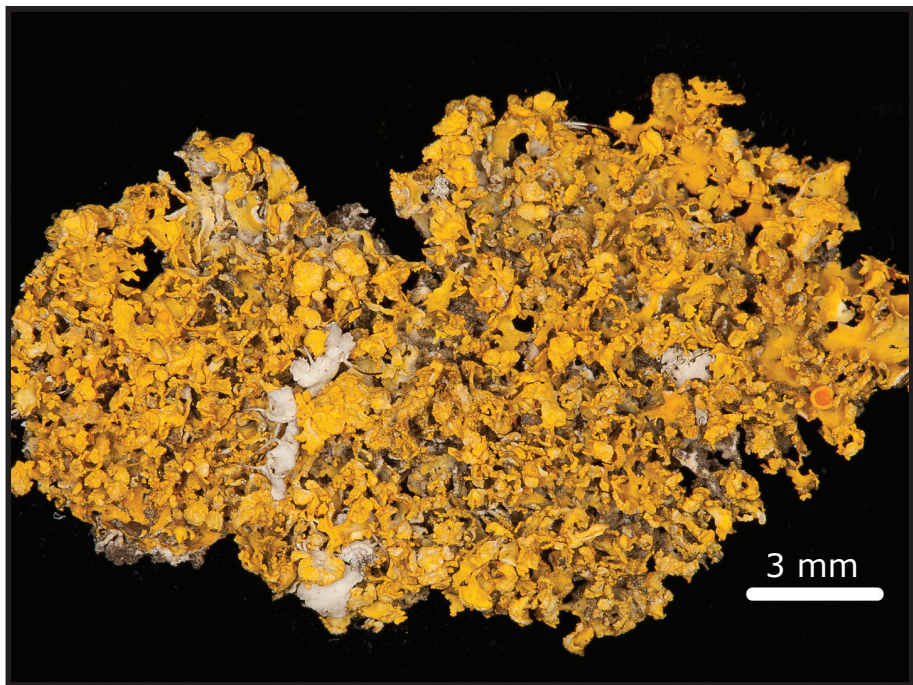
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89



**Common Name:** Upright Sunburst Lichen

**Scientific Name:** *Xanthoria candelaria* (L.) Th. Fr.

**Form:** Foliose to fruticose

**Substrate:** Bark and rock

**Size:** Thalli are up to 3 cm (to 1.3 in.) wide; lobes are 0.1-0.3 mm (0.2-0.3 in.) wide

**Comments:** Colonies begin as small cushions, but soon coalesce and become extensive. Form is highly variable in this species. Individual lobes are either flattened or almost cylindrical, often upright, yellow to pale orange above, and white to yellow below. Soredia occur at the lobe tips. Apothecia are rare. The genus *Xanthoria* is very similar in color, size, and appearance to *Xanthomendoza*. Lobes of *Xanthoria candelaria* are more upright, while those of *Xanthomendoza* (p. 87) are generally flattened parallel to the substrate. Five species of *Xanthoria* occur in the Santa Barbara area, and three of them are also found at Sedgwick Reserve.

91

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91



**Common Name:** Pincushion Sunburst Lichen

**Scientific Name:** *Xanthoria polycarpa* (Hoffm.) Th. Fr. ex Rieber

**Form:** Foliose

**Substrate:** Twigs, bark, rock, and wood

**Size:** Colonies are about 3 cm (1.3 in.) wide and become coalescent; lobes 0.2-0.7 mm (0.2 in.) wide with narrower tips

**Comments:** This lichen forms small, bright orange cushions tightly attached to the substrate and covered with orange apothecia. Lobes are convex, smooth, and shiny. Apothecial margins are smooth, compared to the ciliate margins of orange *Teloschistes* (p. 119) apothecia.

93

**Common Name:** Pincushion Sunburst Lichen

**Scientific Name:** *Xanthoria polycarpa* (Hoffm.) Th. Fr. ex Rieber

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93



Fruticose Lichens

95

Fruticose Lichens

95

Fruticose Lichens

95

Fruticose Lichens

95





**Common Name:** Smooth Powderhorn Lichen

**Scientific Name:** *Cladonia ochrochlora* Flörke

**Form:** Fruticose

**Substrate:** Soil and wood

**Size:** Podetia under 1 cm (0.5 in.) tall; basal squamules under 5 mm (0.2 in.) long

**Comments:** *Cladonia* species are rare in Southern California, but common or abundant elsewhere, such as coastal Northern California. Nearly 60 species are recorded for California, 21 for Santa Barbara County including two on the Channel Islands, but only two for the Santa Barbara area and none at Sedgwick. *Cladonia ochrochlora* is found nearby on the north flank of the Santa Ynez Mountains. Typical for *Cladonia*, this species has tiny foliose squamules at the base, and upright podetia or stalks covered with mealy soredia. Other *Cladonia* species may have small cups or swollen red or black tips on the podetia.

97

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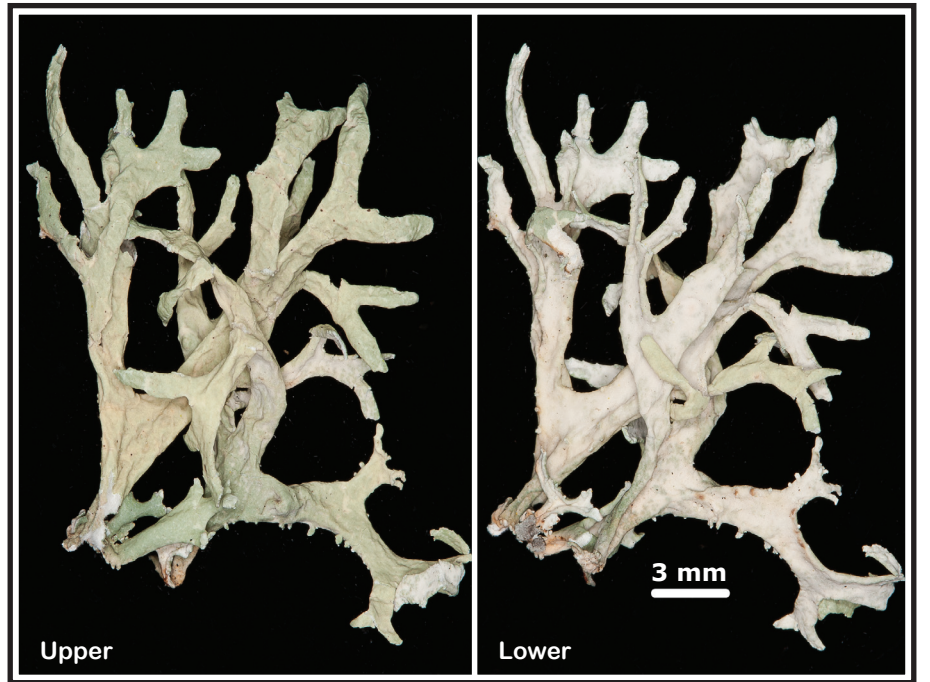
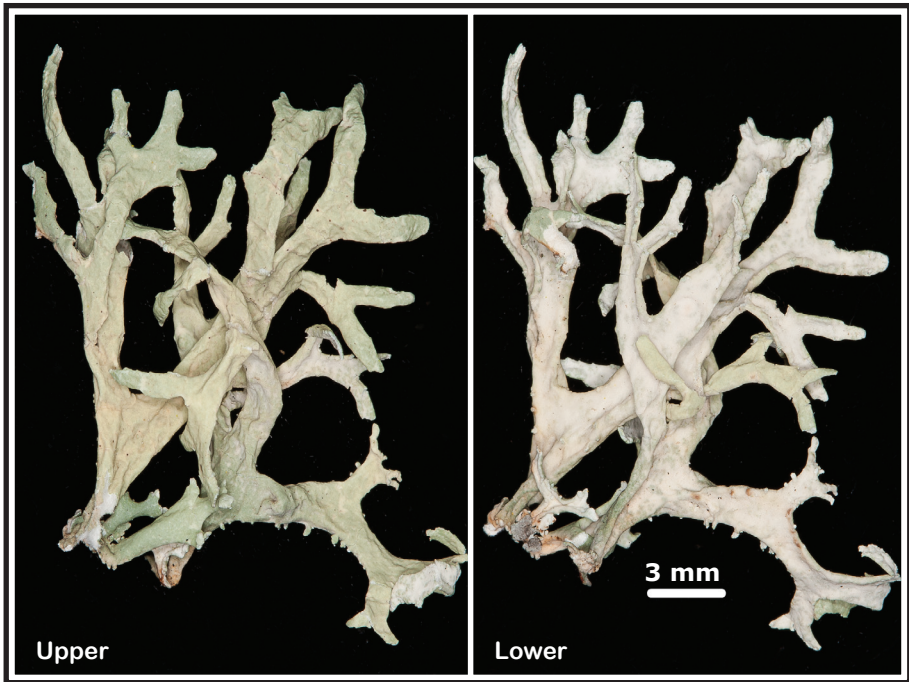
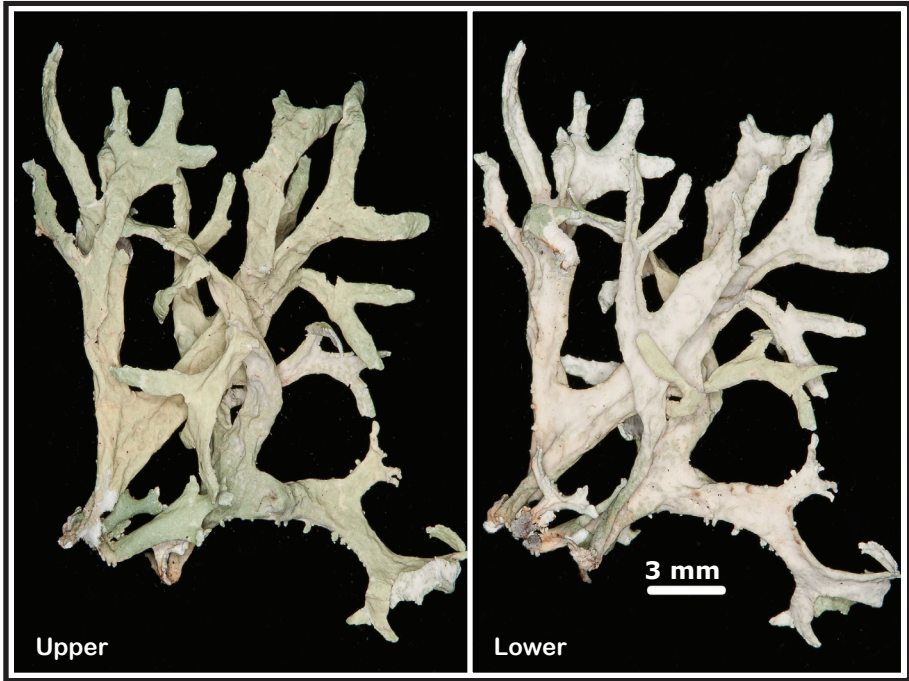
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97



**Common Name:** Oakmoss Lichen

**Scientific Name:** *Evernia prunastri* (L.) Ach

**Form:** Fruticose, shrubby

**Substrate:** Twigs and bark

**Size:** 2-3 cm (1-1.3 in.) tall; branches 1-2 mm (to 0.2 in.) wide

**Comments:** The dichotomously-branched (repeatedly forked) thalli are pale green or gray above, whitish below. The thalli of *Evernia* have a soft, almost rubbery texture and are not as brittle when dry as a *Ramalina*, a genus that appears very similar. Soredia may be present on ridges and margins, but apothecia are lacking. Each branch of this lichen is known to fork once yearly, so age of an individual can be determined by counting the number of forks per branch. This lichen often is found intermixed with *Ramalina*.

99

**Common Name:** Oakmoss Lichen

**Scientific Name:** *Evernia prunastri* (L.) Ach

**Form:** Fruticose, shrubby

**Substrate:** Twigs and bark

**Size:** 2-3 cm (1-1.3 in.) tall; branches 1-2 mm (to 0.2 in.) wide

**Comments:** The dichotomously-branched (repeatedly forked) thalli are pale green or gray above, whitish below. The thalli of *Evernia* have a soft, almost rubbery texture and are not as brittle when dry as a *Ramalina*, a genus that appears very similar. Soredia may be present on ridges and margins, but apothecia are lacking. Each branch of this lichen is known to fork once yearly, so age of an individual can be determined by counting the number of forks per branch. This lichen often is found intermixed with *Ramalina*.

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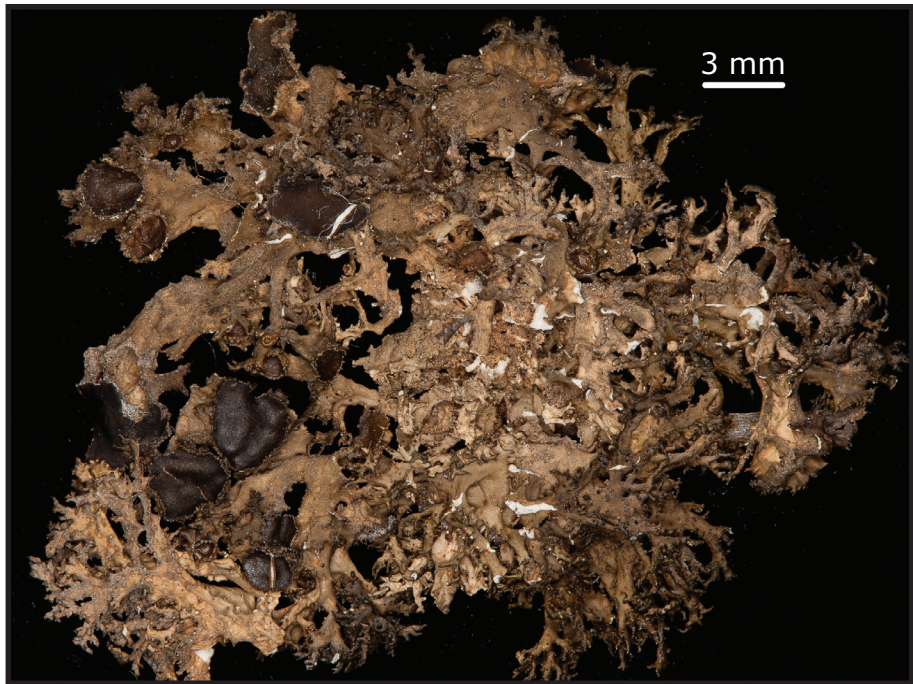
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99



**Common Name:** Black Thornbush Lichen  
**Scientific Name:** *Kaernefeltia merrillii* (Du Rietz) Thell & Goward  
**Form:** Fruticose  
**Substrate:** Twigs and bark  
**Size:** Thalli 1-2 cm (0.5-0.75 in.) diameter; branches 2- 5 mm (under 0.25 in.) in diameter  
**Comments:** This lichen is distinctive for being tiny, olive to brown or black in color, with narrow somewhat flattened branches. Apothecia are frequent and the same color. While locally rare, this lichen stands out on branches even when densely covered with *Ramalina* and other lichens.

101

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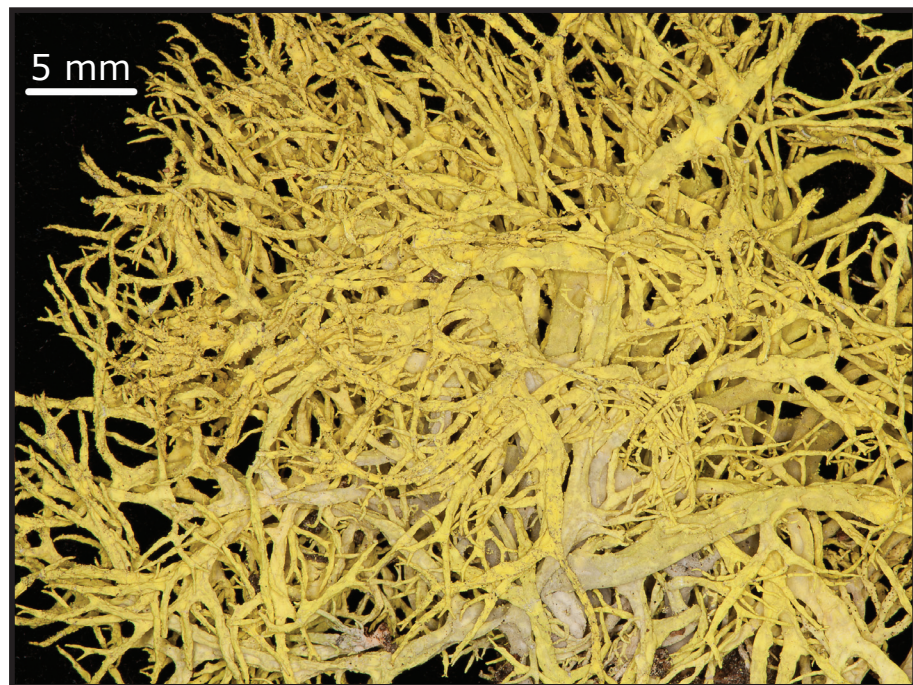
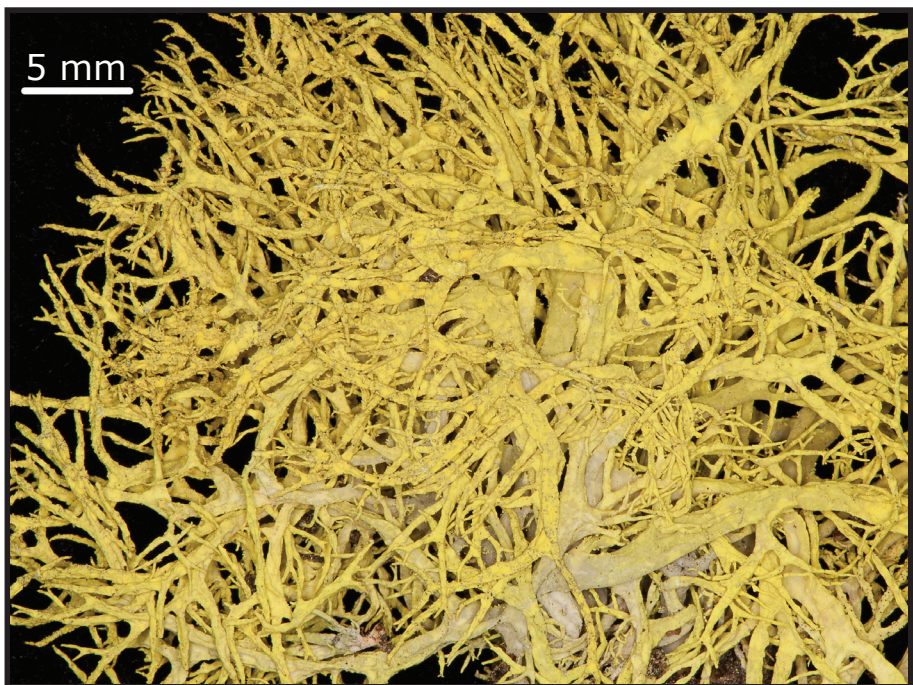
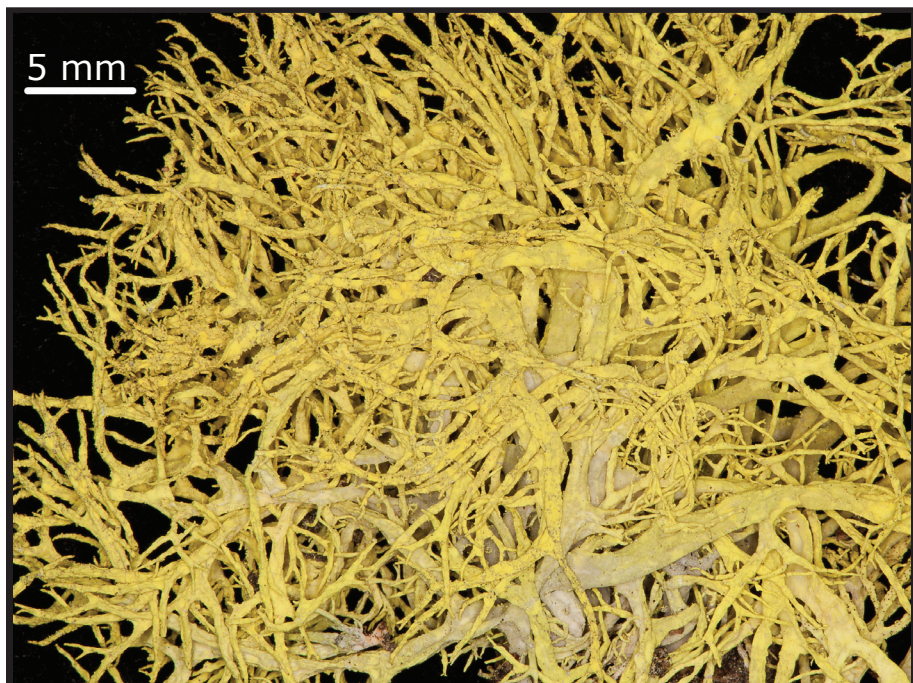
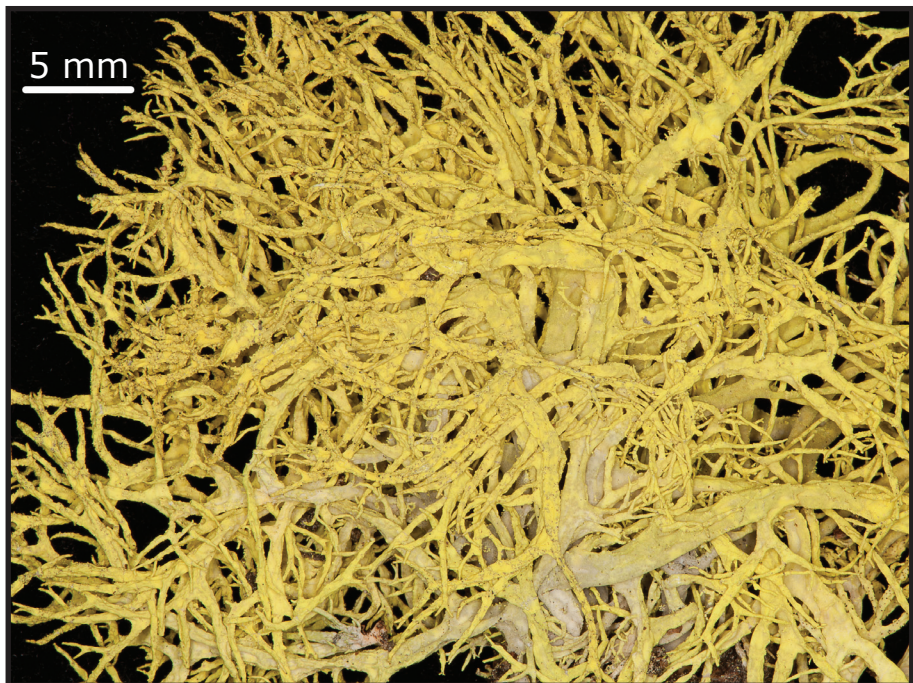
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101



**Common Name:** Wolf Lichen

**Scientific Name:** *Letharia vulpina* (L.) Hue

**Form:** Fruticose

**Substrate:** Bark of pine

**Size:** 2-8 cm (0.5-3 in.) wide

**Comments:** This brilliant yellow, highly-branched lichen is found only on conifer trees, and usually at higher elevations. It has been collected once at Sedgwick, but is common on Figueroa Mountain and nearby ranges at higher elevations. Another species, *L. columbiana*, is similar but has apothecia. It was used in Europe to poison foxes and wolves, and is also a source of a natural yellow dye.

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103





**Common Name:** Powdery Fog Lichen

**Scientific Name:** *Niebla cephalota* (Tuck.) Rundel & Bowler

**Form:** Fruticose

**Substrate:** Twigs and bark

**Size:** 1-4 cm wide and high (0.5-1.5 in.); branches are 1-2 mm (0.2 in.) in diameter

**Comments:** This lichen forms tufts of short gray stalks, round in cross section and little branched, with blue-gray to white globose soralia at the tips. The lichen is rare, and is usually intermixed with *Ramalina* on oak branches. Other species of *Niebla* are larger and stiffer, and are common on soil and rock on the Channel Islands and adjacent mainland coast.

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105



### **Introduction to the genus *Ramalina***

*Ramalina* is the most common and obvious lichen genus at Sedgwick, with at least seven species present. Most occur also in the Santa Barbara area, although they are not as abundant as at Sedgwick. All are shades of green, brittle when dry, with thalli between 1-15 cm (1-6 inches) long or wide, to several feet long in the lace lichen, *R. menziesii*. Five common species and one rare species are described herein.

**Common Name:** Frayed Ramalina Lichen

**Scientific Name:** *Ramalina canariensis* J. Steiner

**Form:** Fruticose

**Substrate:** Twigs and bark

**Size:** 1-3 cm (.25-1.0 in.) wide

**Comments:** This rare *Ramalina* has a ragged aspect because the surface layer splits away at the sides, and forms irregular holes exposing the inner tissue. It occurs intermixed with other *Ramalina* species.

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107



**Common Name:** Dotted Ramalina Lichen  
**Scientific Name:** *Ramalina farinacea* (L.) Ach.  
**Form:** Fruticose, short, shrubby  
**Substrate:** Twigs and bark  
**Size:** Branches of this lichen are 1-7 (up to 15) cm long (0.5-3+ in.) and 1-3 mm (0.25 in.) wide  
**Comments:** Branches may be forked or unforked, from a narrow attachment. This lichen reproduces vegetatively by production of numerous powdery (farinose) soredia in round to oval soralia along the margins and on the surfaces. Apothecia are rare, and form on the lamina surface. This species is common on small branches of oaks at Sedgwick.

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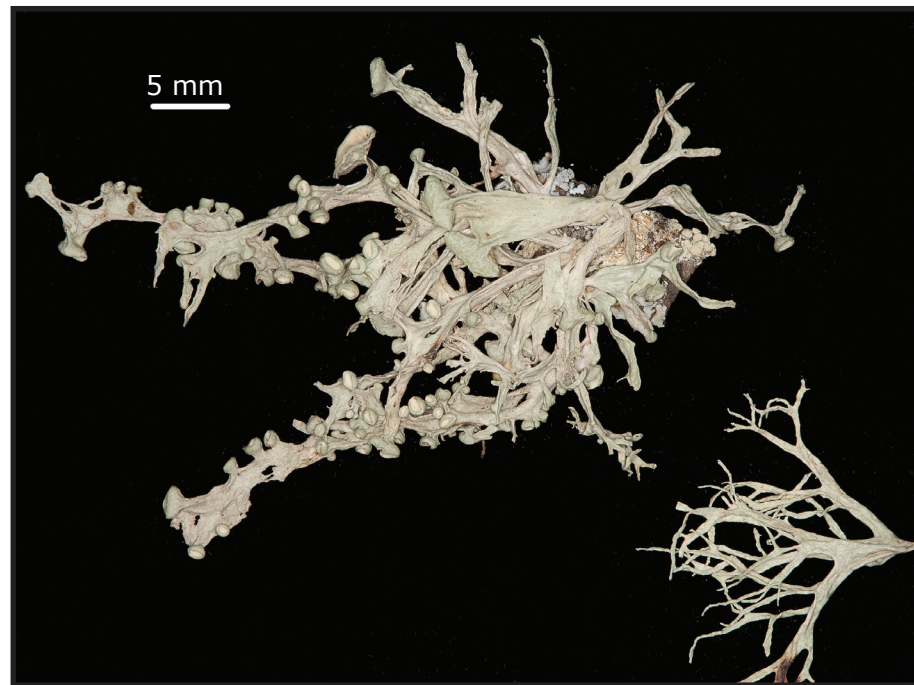
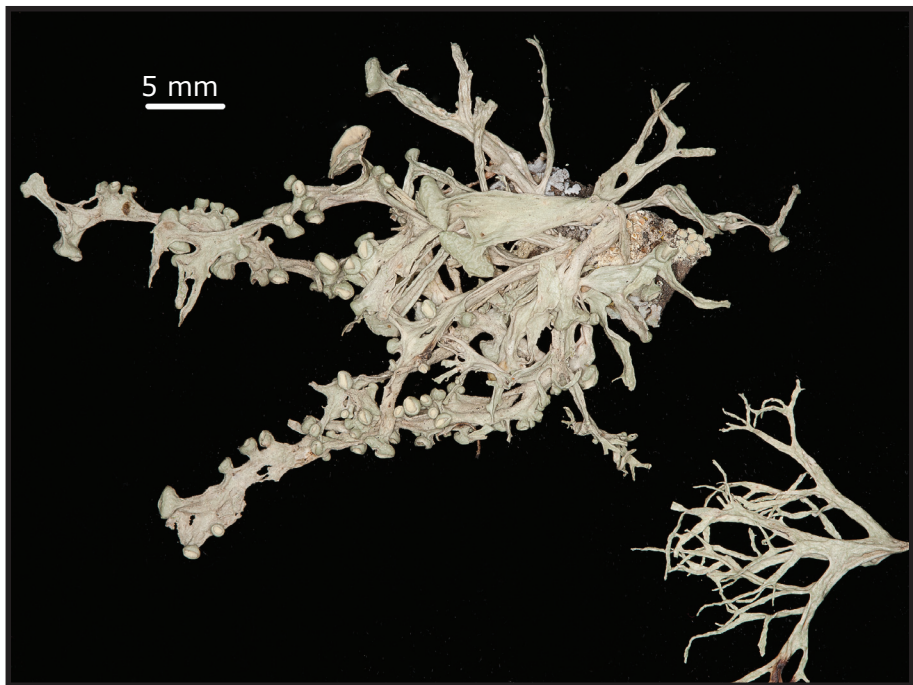
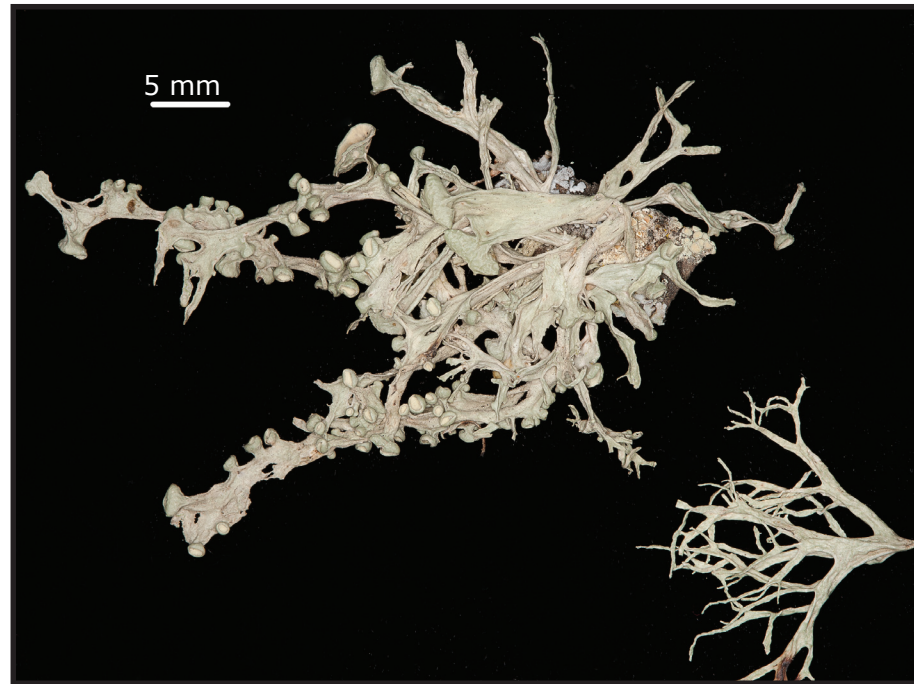
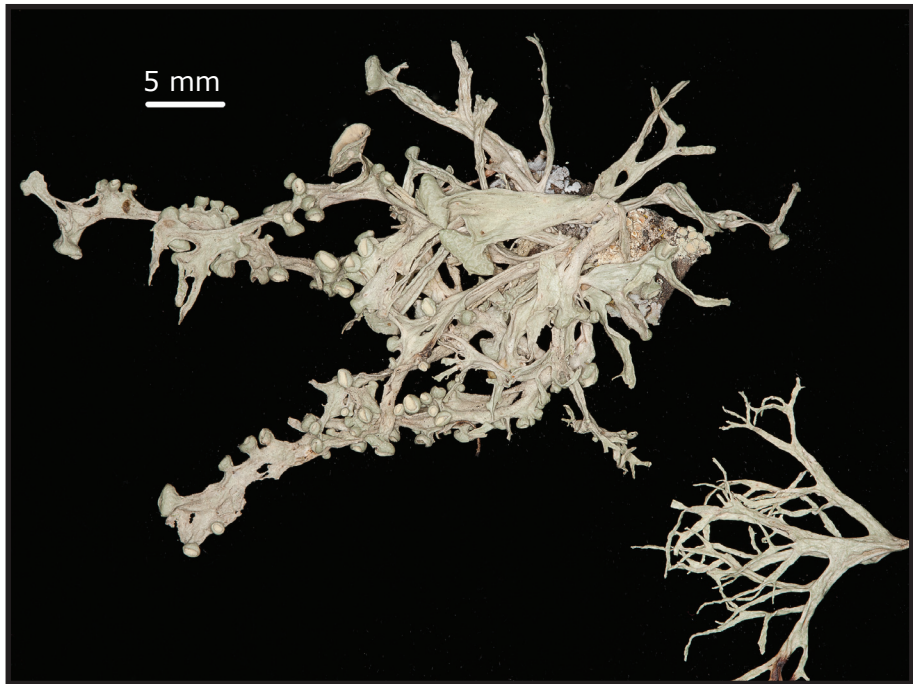
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109



**Common Name:** Western Strap Lichen

**Scientific Name:** *Ramalina leptocarpha* Tuck.

**Form:** Fruticose, shrubby

**Substrate:** Twigs and bark

**Size:** Up to about 7-10 cm (3-4 in.) in diameter; branches up to 0.5-2 mm wide (to 0.2 in.)

**Comments:** This lichen is pale green and shiny, with dichotomous (forking) or irregular branching from a narrow attachment. Apothecia are common and cup-shaped, and are the only means of propagation. This lichen is common near the coast in Southern California.

111

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**Common Name:** Lace Lichen; California Spanish Moss; Fishnet Lichen

**Scientific Name:** *Ramalina menziesii* Taylor

**Form:** Fruticose, pendulous

**Substrate:** Twigs and bark

**Size:** Between a few inches to several feet in length

**Comments:** This large fruticose lichen is common, hanging from oak branches in fog zones on the West Coast. It is common at Sedgwick, but has been extirpated in the Santa Barbara area due to urbanization. The dull green, strap-shaped, netlike branches and abundant irregular-shaped holes give it a lacy appearance. It has pale cup-shaped apothecia that produce airborne spores. Vegetative propagation occurs by fragmentation. Its name is derived from Archibald Menzies, explorer of the west coast of North America in the early 1800s, when *Ramalina menziesii* was first collected.

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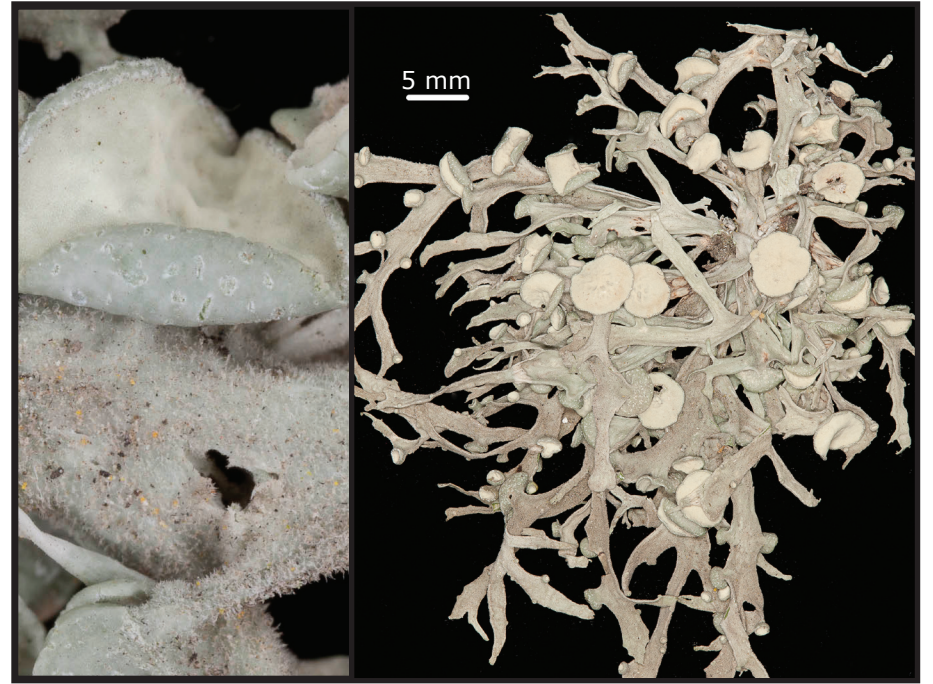
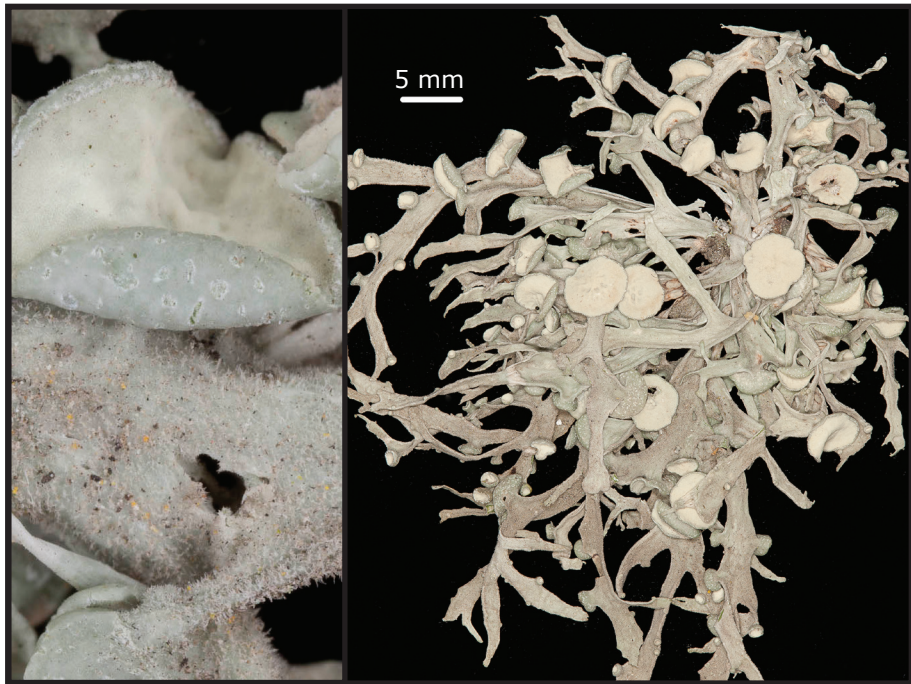
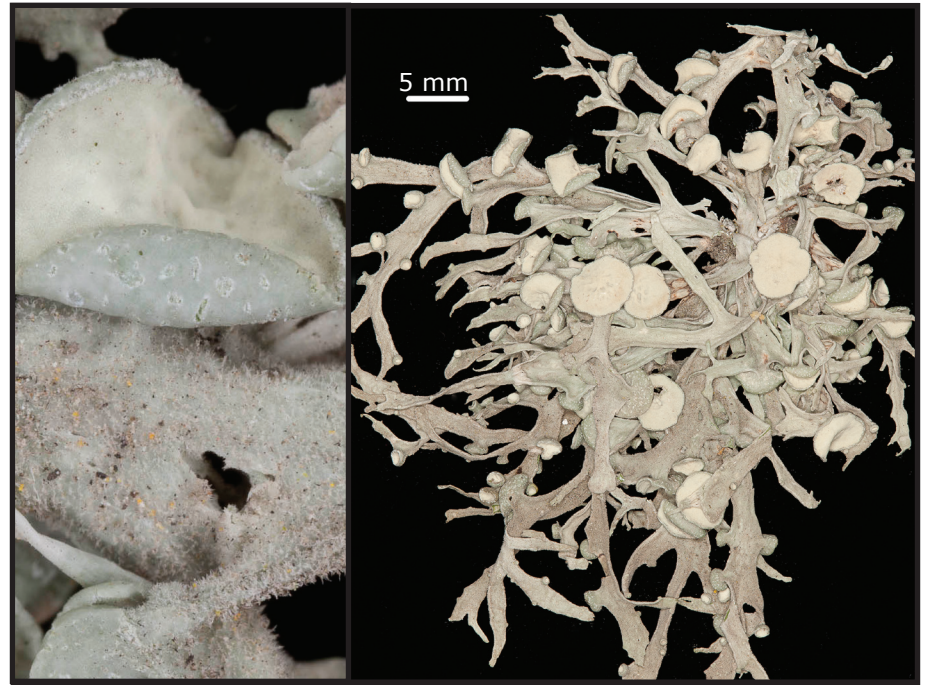
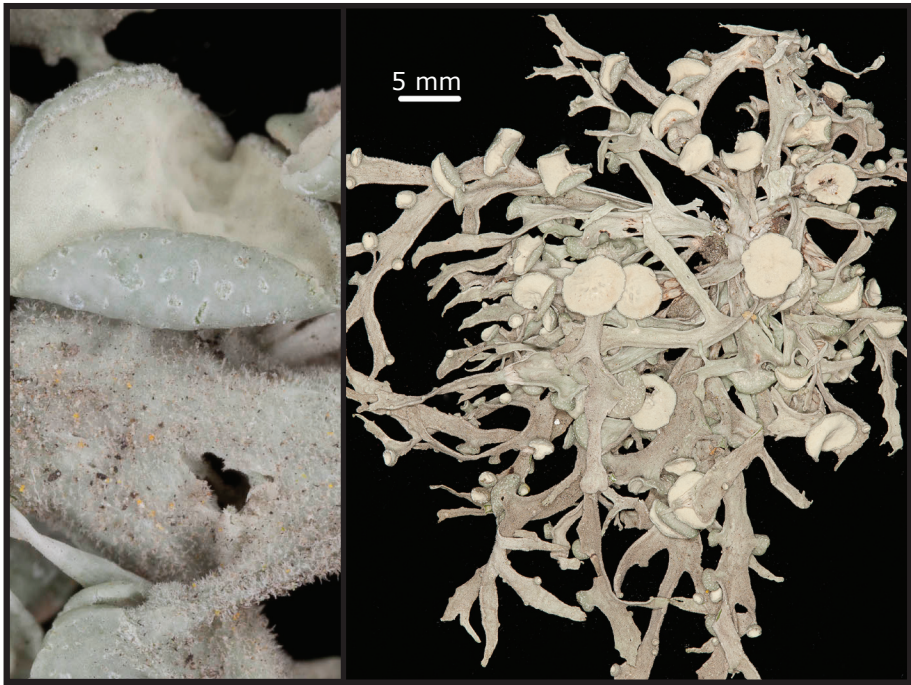
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**Common Name:** Hairy Ramalina Lichen  
**Scientific Name:** *Ramalina puberulenta* Riefner & Bowler  
**Form:** Fruticose, shrubby  
**Substrate:** Twigs and bark  
**Size:** Up to 7 cm (2.5 in.) long; branches up to 3 mm (0.25 in.) wide  
**Comments:** This lichen has forking or irregular branching from a narrow attachment. It has apothecia, but no soredia. Its unique feature, not found in any other *Ramalina*, is fine hairs over the entire surface. This is the most common short *Ramalina* on small branches of oaks at Sedgwick, and occurs from Santa Barbara County north to Marin County, being endemic in California.

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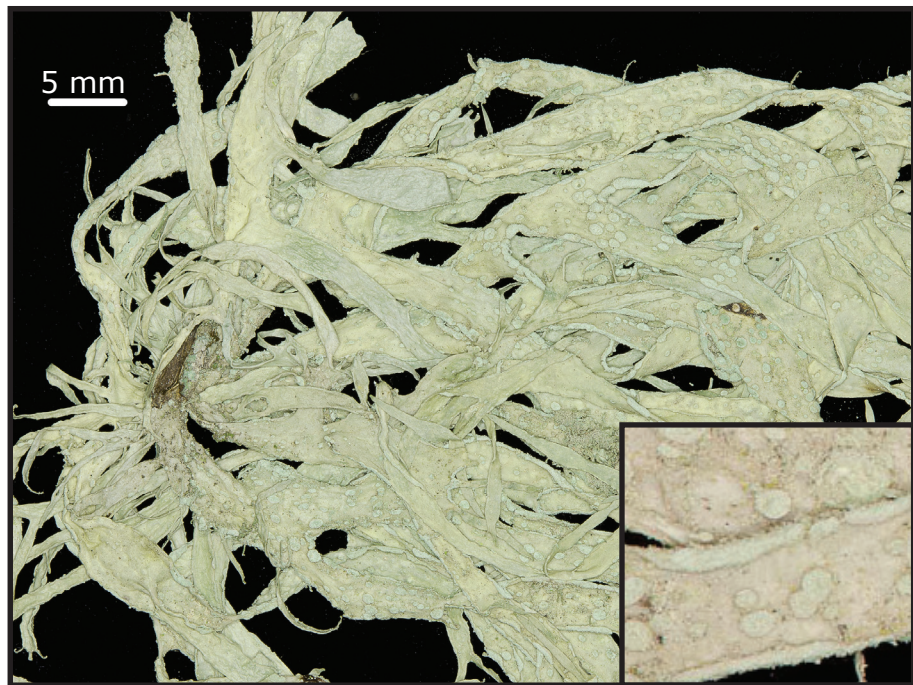
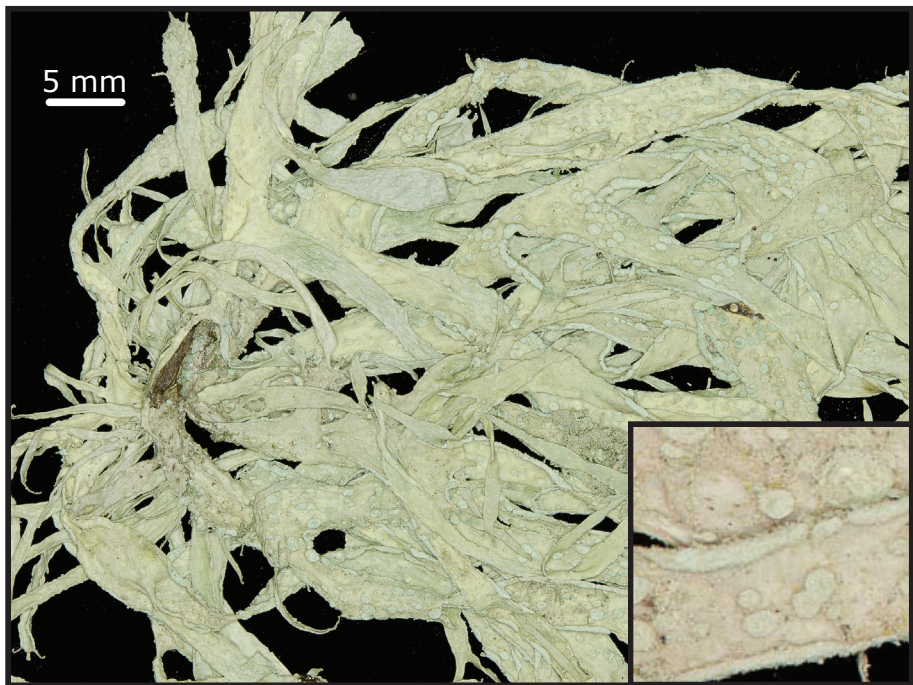
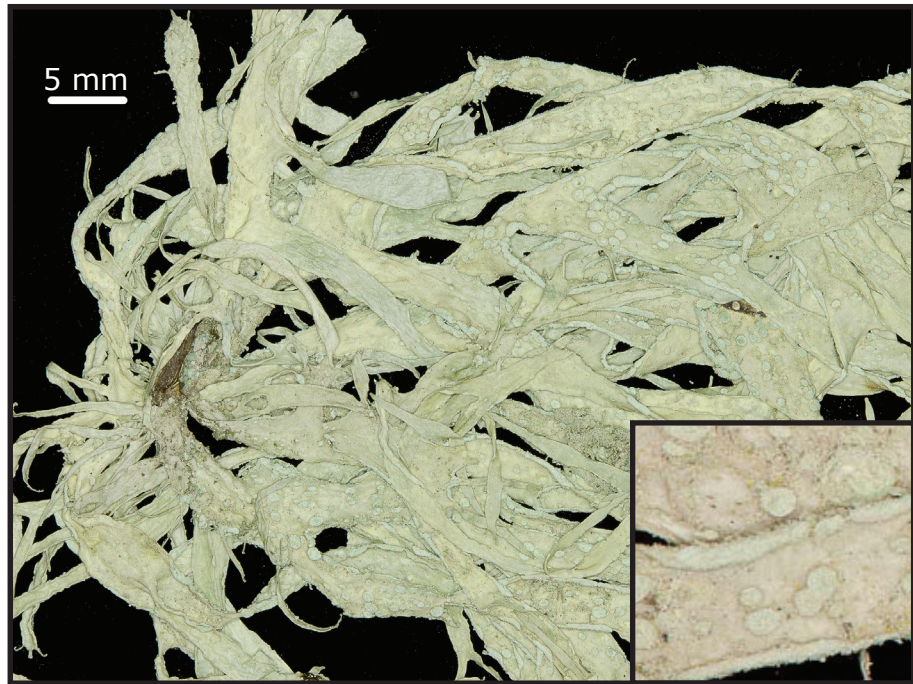
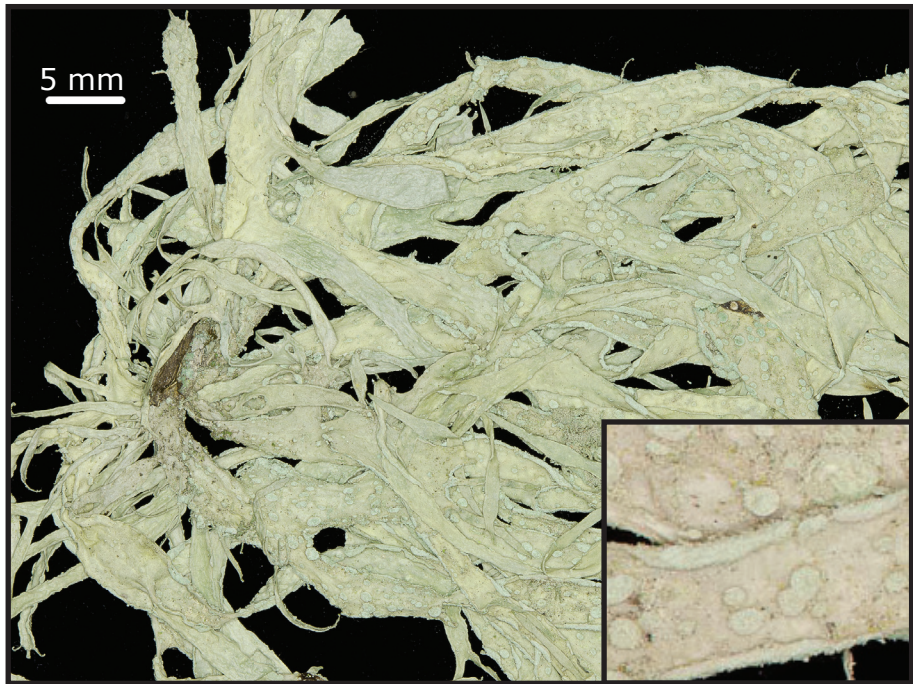
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115

**Common Name:** Hairy Ramalina Lichen  
**Scientific Name:** *Ramalina puberulenta* Riefner & Bowler  
**Form:** Fruticose, shrubby  
**Substrate:** Twigs and bark  
**Size:** Up to 7 cm (2.5 in.) long; branches up to 3 mm (0.25 in.) wide  
**Comments:** This lichen has forking or irregular branching from a narrow attachment. It has apothecia, but no soredia. Its unique feature, not found in any other *Ramalina*, is fine hairs over the entire surface. This is the most common short *Ramalina* on small branches of oaks at Sedgwick, and occurs from Santa Barbara County north to Marin County, being endemic in California.

115



**Common Name:** Slit-soresiate Ramalina Lichen  
**Scientific Name:** *Ramalina subleptocarpha* Rundel & Bowler

**Form:** Fruticose, shrubby

**Substrate:** Twigs and bark

**Size:** Up to 7-15 cm (3-6 in.) long; branches up to 3-8 mm (0.2-0.4 in.) wide

**Comments:** The branches are flat, pale green, or greenish yellow, infrequently forking from a narrow attachment. Soralia are abundant, either circular or elongate, on the blade surface or as elongate marginal cracks. No apothecia have been seen on this species. This lichen is similar to *R. farinacea* (p. 109) except for the elongate, continuous marginal soralia in *R. subleptocarpha*, compared to separate, round soralia in *R. farinacea*.

117

**Common Name:** Slit-soresiate Ramalina Lichen  
**Scientific Name:** *Ramalina subleptocarpha* Rundel & Bowler

**Form:** Fruticose, shrubby

**Substrate:** Twigs and bark

**Size:** Up to 7-15 cm (3-6 in.) long; branches up to 3-8 mm (0.2-0.4 in.) wide

**Comments:** The branches are flat, pale green, or greenish yellow, infrequently forking from a narrow attachment. Soralia are abundant, either circular or elongate, on the blade surface or as elongate marginal cracks. No apothecia have been seen on this species. This lichen is similar to *R. farinacea* (p. 109) except for the elongate, continuous marginal soralia in *R. subleptocarpha*, compared to separate, round soralia in *R. farinacea*.

117

**Common Name:** Slit-soresiate Ramalina Lichen  
**Scientific Name:** *Ramalina subleptocarpha* Rundel & Bowler

**Form:** Fruticose, shrubby

**Substrate:** Twigs and bark

**Size:** Up to 7-15 cm (3-6 in.) long; branches up to 3-8 mm (0.2-0.4 in.) wide

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117

**Common Name:** Slit-soresiate Ramalina Lichen  
**Scientific Name:** *Ramalina subleptocarpha* Rundel & Bowler

**Form:** Fruticose, shrubby

**Substrate:** Twigs and bark

**Size:** Up to 7-15 cm (3-6 in.) long; branches up to 3-8 mm (0.2-0.4 in.) wide

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117



**Common Name:** Golden-eye Lichen  
**Scientific Name:** *Teloschistes chrysophthalmus* (L.) Th.  
Fr.

**Form:** Fruticose

**Substrate:** Twigs and bark

**Size:** 1-2.5 cm (0.5-1.0 in.) high; lobes 0.5-2 mm (0.2 in.) wide; apothecia 0.5-1.0 cm (0.2-0.4 in.) wide

**Comments:** This tiny orange to gold lichen has finely divided branches and is attached at a single point. Cilia (fine hairs) 0.3-0.7 mm long are present on the branches, as well as striking red-orange apothecia with ciliate margins like the sun's rays. While small and not common, this species is so striking that it stands out, even among arrays of *Ramalina* or other lichens.

119

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**Scientific Name:** *Teloschistes chrysophthalmus* (L.) Th.  
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**Form:** Fruticose

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**Form:** Fruticose

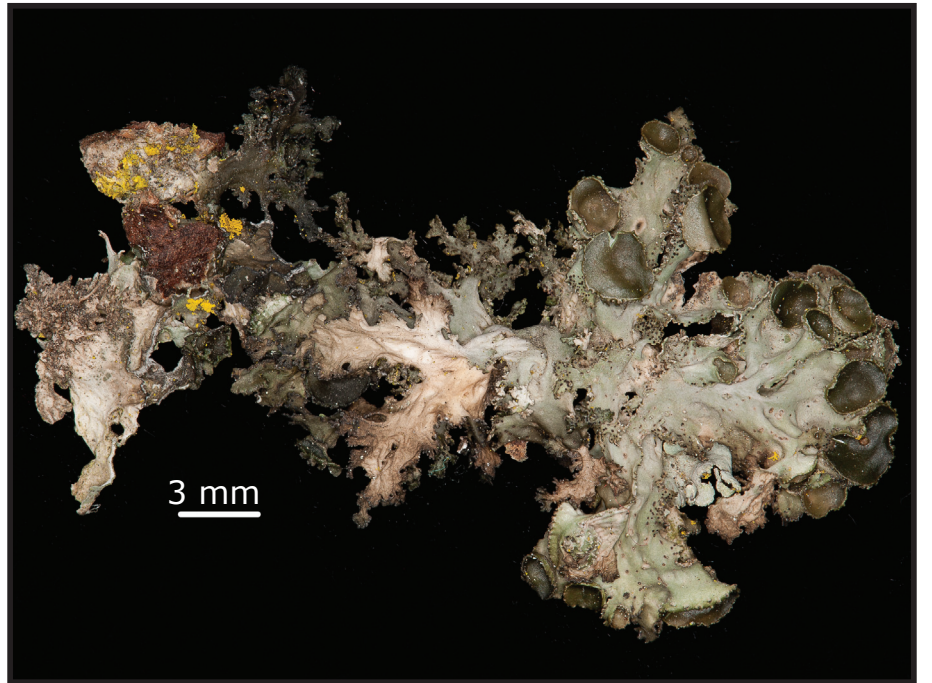
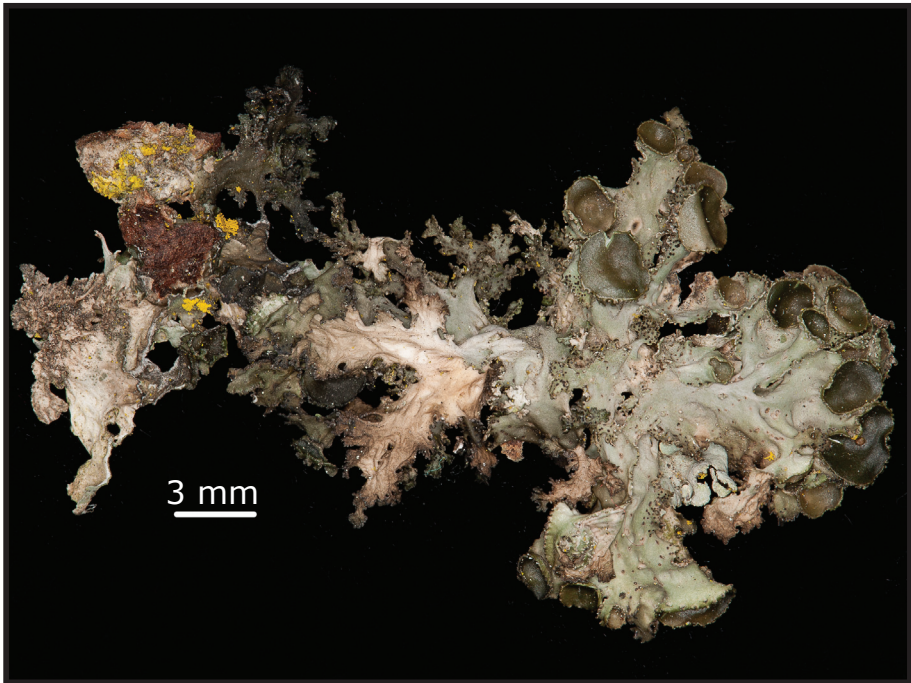
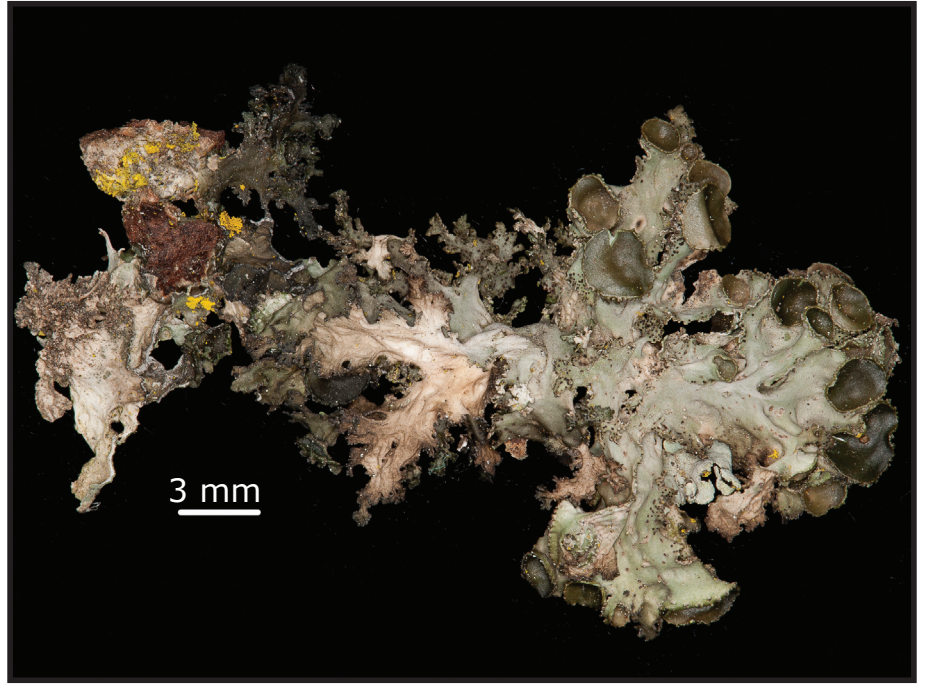
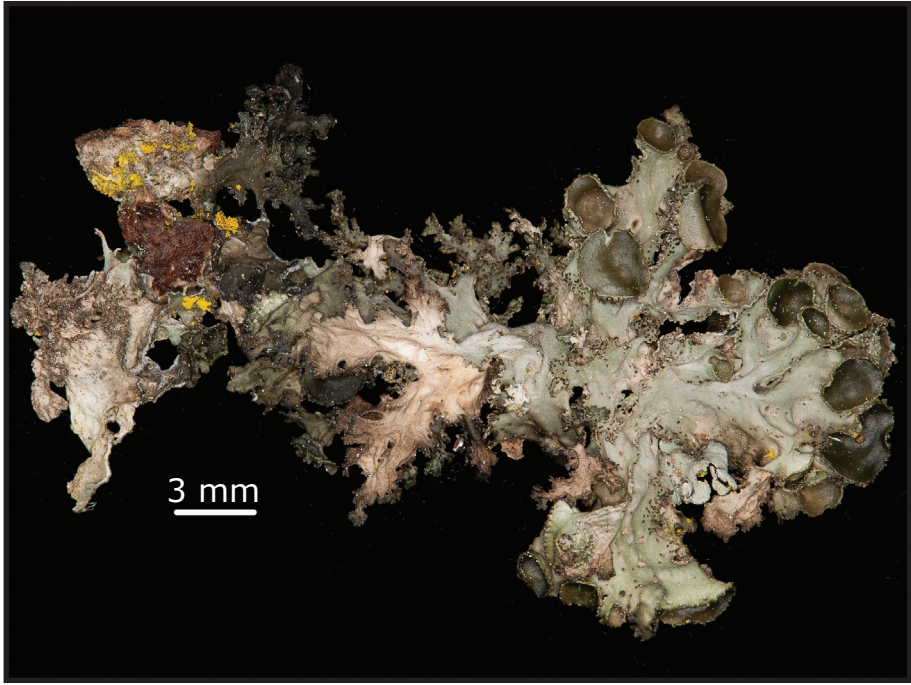
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**Common Name:** Brown Wrinkle Lichen

**Scientific Name:** *Tuckermannopsis orbata* (Nyl.) M. J. Lai

**Form:** Fruticose

**Substrate:** Twigs and bark

**Size:** Thalli 1-2 cm (0.25-0.75 in.) wide

**Comments:** This small brown lichen has a finely divided thallus with crisped or frilled margins bearing tiny lobules. Apothecia with brown disks are common along the margins. It is rare at Sedgwick Reserve. *T. orbata* and *T. chlorophylla* (similar form but greenish-brown with marginal soralia and no apothecia) are common in the mountains of Santa Barbara County, but absent in the Santa Barbara area.

121

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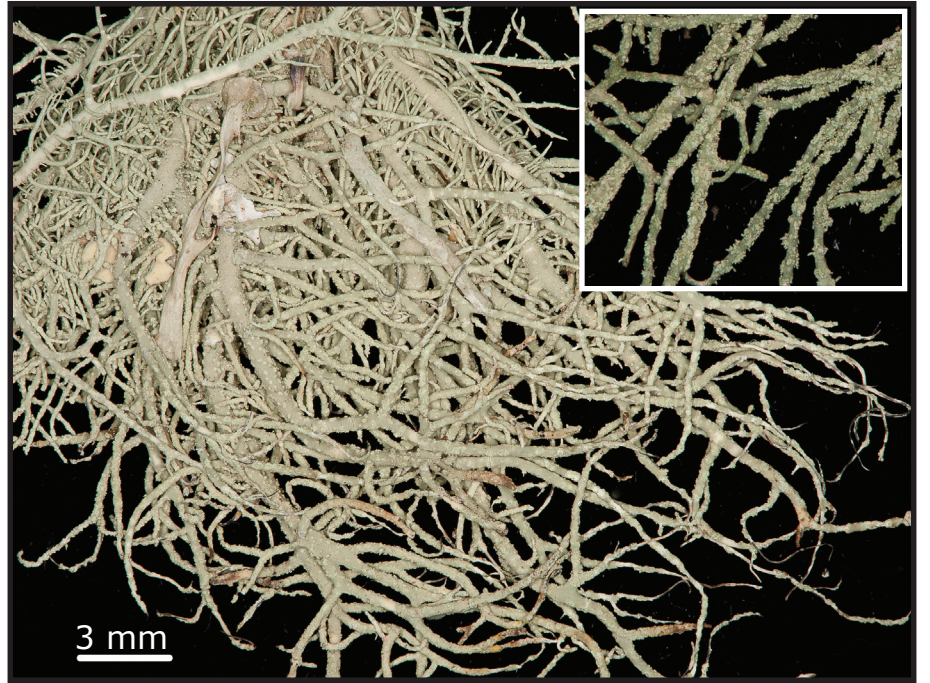
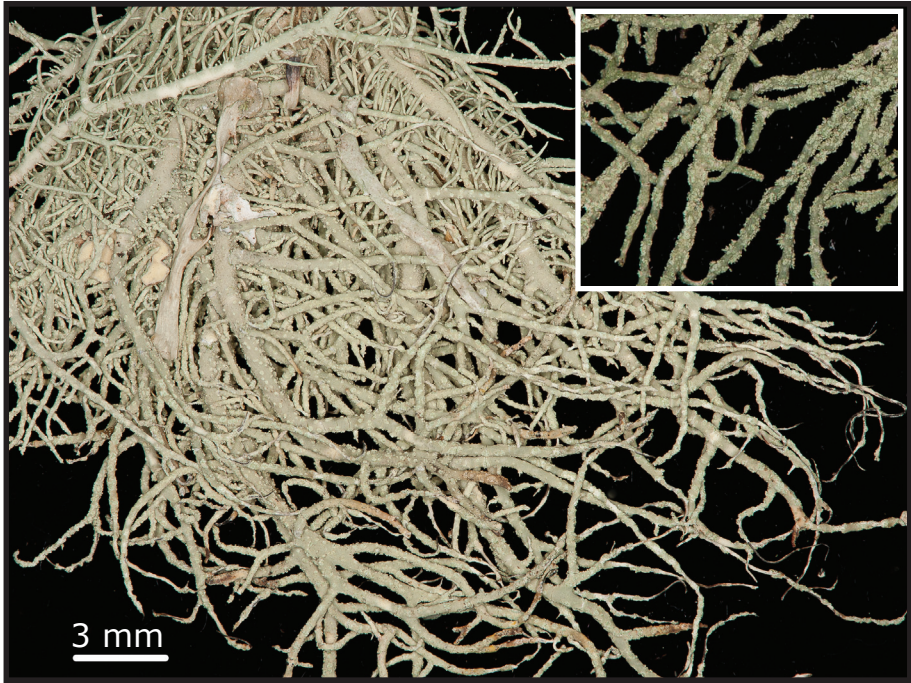
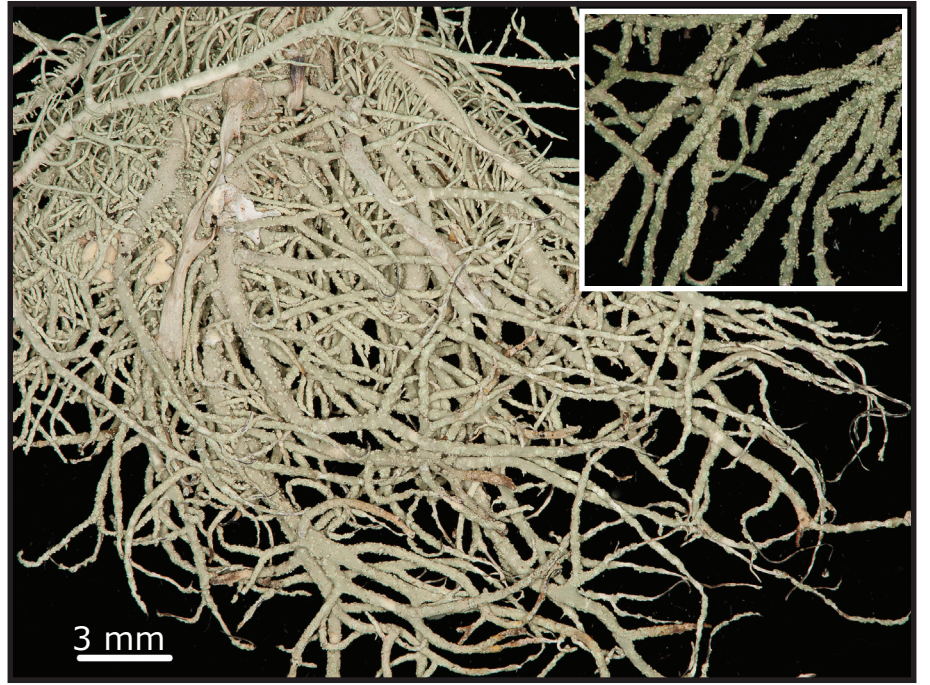
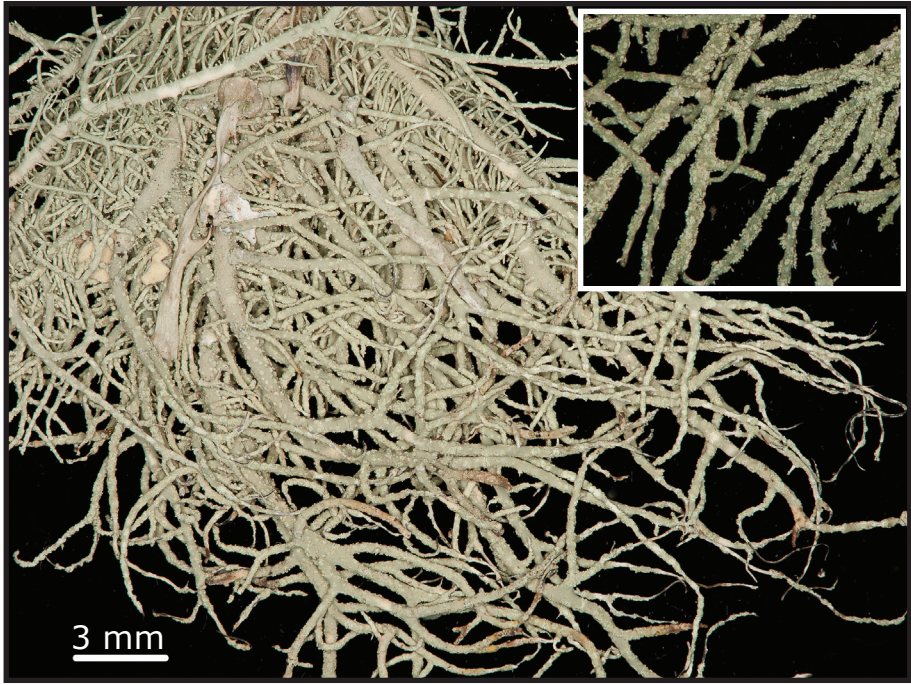
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### **Introduction to the genus *Usnea***

Nine species of *Usnea* have been found at Sedgwick and in Santa Barbara, and others are likely to be found. The species are remarkably similar, so only two common species will be described and illustrated. *Usnea* "stems" are slightly elastic when tugged, in contrast to similar narrow-branched *Ramalina* species, which break under similar treatment.

**Common Name:** Beard Lichen; Old Man's Beard Lichen

**Scientific Name:** *Usnea scabrata* Nyl.

**Form:** Fruticose

**Substrate:** Twigs and bark

**Size:** Thallus is up to 8 cm (3 in.) long

**Comments:** *Usnea scabrata* is the largest pendent (hanging) species occurring at Sedgwick, and is absent from the Santa Barbara area. It has pendent main axes to 8 cm long, branches from the base, with abundant isidia and soralia. Differences among species of *Usnea* are minute and highly variable, and make identification to species difficult.

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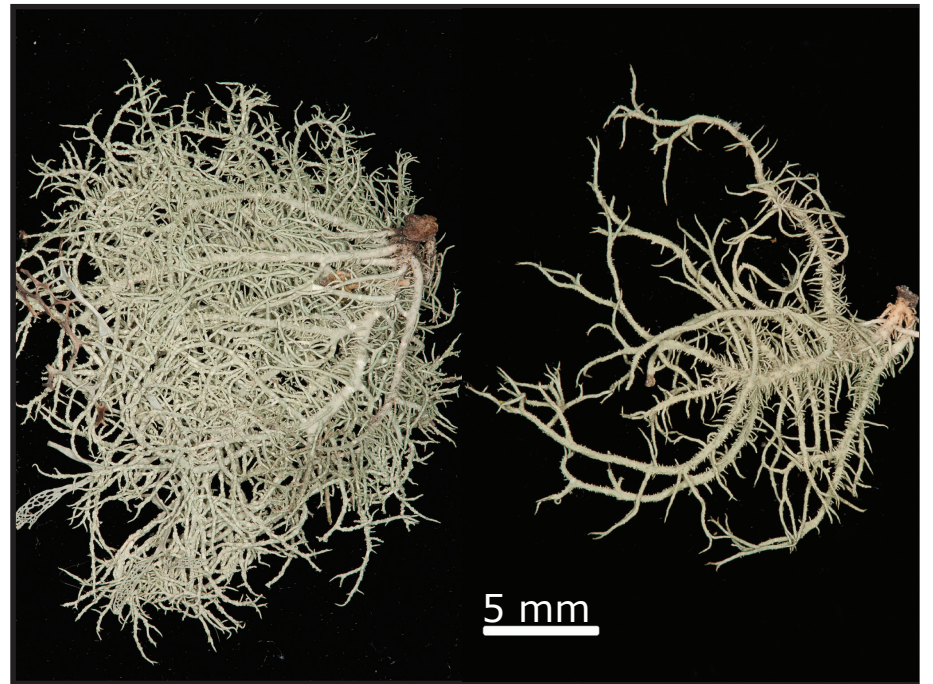
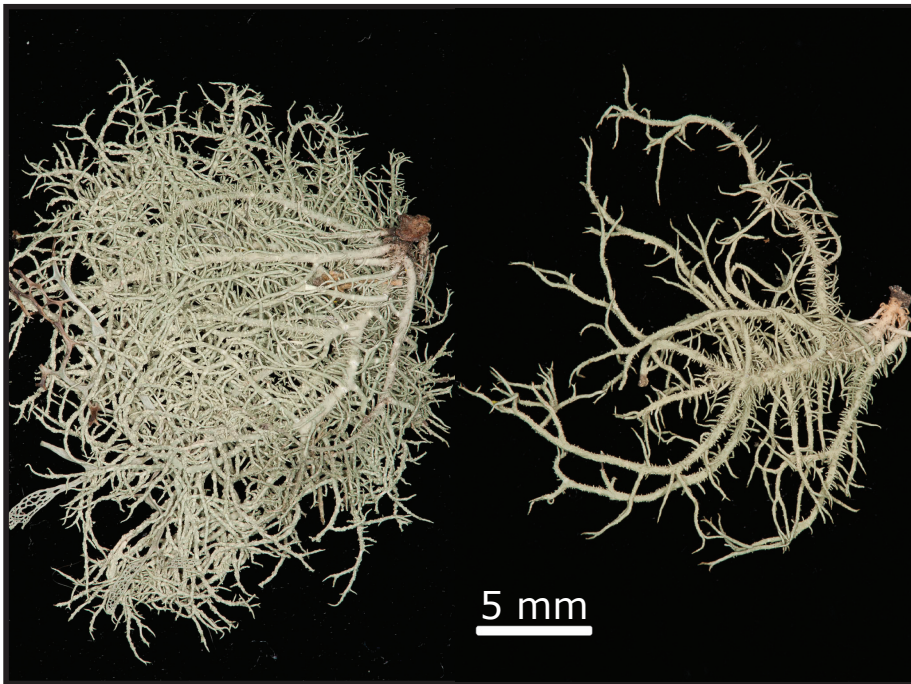
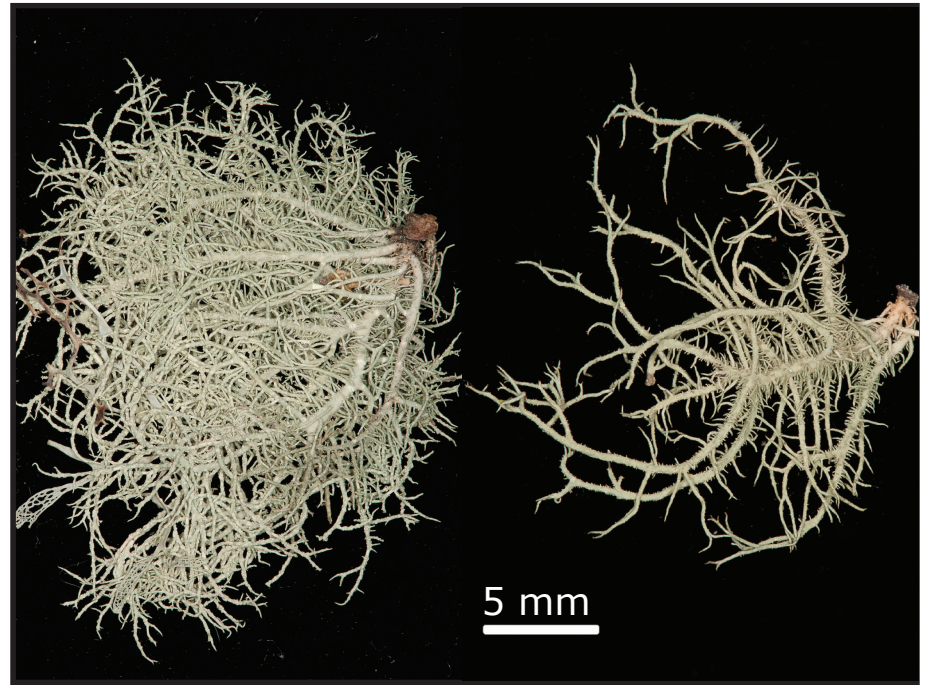
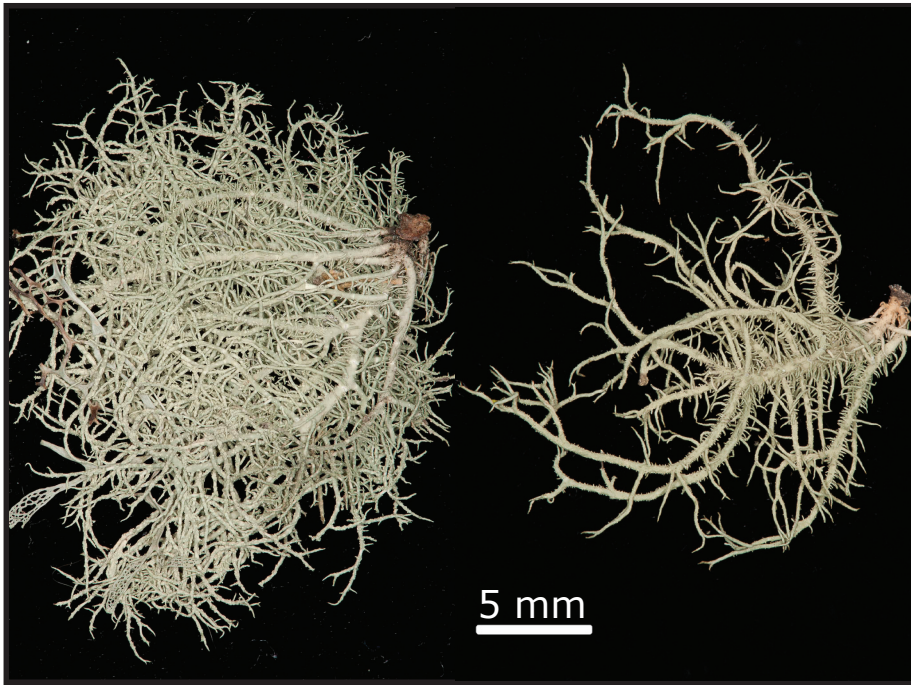
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**Common Name:** Beard Lichen; Old Man's Beard Lichen

**Scientific Name:** *Usnea subfloridana* Stirt.

**Form:** Fruticose

**Substrate:** Twigs, bark, and wood

**Size:** 5-7 cm (2-2.5 in.) long; branches 1-2 mm (0.2 in.) thick

**Comments:** This lichen is generally gray to dull green, with a tufted form. Its main "stem" has many side branches diverging at right angles. *Usneas* at Sedgwick have a peculiar distribution; oaks in Lisque Canyon valley have an abundance of at least three species, while oaks in Barn Canyon, the valley north of the ranch headquarters, have only an occasional small *Usnea* thallus intermixed with *Ramalina* species. Young plant (**right**), mature plant (**left**).

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125

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LICHENS OF SEDGWICK & SANTA BARBARA COUNTY

Scientific Name	Common Name	Page #
<i>Acarospora rosulata</i>	Cobblestone Lichen	
<i>Acarospora socialis</i>	Yellow Cobblestone Lichen	11
<i>Acarospora veronensis</i>	Brown Cobblestone Lichen	
<i>Arthonia pinastri</i>	Comma Lichen	
<i>Arthonia pruinata</i>	Pruinose Comma Lichen	
<i>Arthopyrenia lyrata</i>		
<i>Aspicilia calcarea</i>	Calcareous Sunken Disk Lichen	13
<i>Buellia badia</i>		
<i>Buellia disciformis</i>	Boreal Disk Lichen	
<i>Buellia dispersa</i>		
<i>Buellia punctata</i>	Common Disk Lichen	
<i>Buellia triseptata</i>	Black Button Lichen	15
<i>Buelliella physcicola</i>		
<i>Caloplaca arenaria</i>	Granite Disk Lichen	
<i>Caloplaca bolacina</i>	Waxy Disk Lichen	
<i>Caloplaca ferruginea</i>		

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LICHENS OF SEDGWICK & SANTA BARBARA COUNTY

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LICHENS OF SEDGWICK & SANTA BARBARA COUNTY

Scientific Name	Common Name	Page #
<i>Caloplaca holocarpa</i>	Firedot Lichen	
<i>Caloplaca ignea</i>	Flame Firedot Lichen	19
<i>Caloplaca impolita</i>		
<i>Caloplaca microphyllina</i>	Orange Powdery Firedot Lichen	21
<i>Caloplaca pellodella</i>	Olive Firedot Lichen	
<i>Caloplaca persimilis</i>	Yellow Firedot Lichen	23
<i>Caloplaca squamosa</i>		
<i>Caloplaca stanfordensis</i>	Firedot Lichen	17
<i>Candelaria pacifica</i>	Candleflame Lichen; Lemon Lichen	49
<i>Candelariella vitellina</i>	Yolk Lichen	25
<i>Chrysothrix xanthina</i>	Western Gold Dust Lichen	27
<i>Cladonia ochrochlora</i>	Smooth Powderhorn Lichen	97
<i>Collema crispum</i>	Fingered Jelly Lichen	
<i>Collema furfuraceum</i>	Blistered Jelly Lichen	51
<i>Collema nigrescens</i>	Blistered Jelly Lichen	53

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LICHENS OF SEDGWICK & SANTA BARBARA COUNTY

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<i>Caloplaca ignea</i>	Flame Firedot Lichen	19
<i>Caloplaca impolita</i>		
<i>Caloplaca microphyllina</i>	Orange Powdery Firedot Lichen	21
<i>Caloplaca pellodella</i>	Olive Firedot Lichen	
<i>Caloplaca persimilis</i>	Yellow Firedot Lichen	23
<i>Caloplaca squamosa</i>		
<i>Caloplaca stanfordensis</i>	Firedot Lichen	17
<i>Candelaria pacifica</i>	Candleflame Lichen; Lemon Lichen	49
<i>Candelariella vitellina</i>	Yolk Lichen	25
<i>Chrysothrix xanthina</i>	Western Gold Dust Lichen	27
<i>Cladonia ochrochlora</i>	Smooth Powderhorn Lichen	97
<i>Collema crispum</i>	Fingered Jelly Lichen	
<i>Collema furfuraceum</i>	Blistered Jelly Lichen	51
<i>Collema nigrescens</i>	Blistered Jelly Lichen	53

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<i>Cyphelium tigillare</i>	Soot Lichen	29
<i>Dimelaena oreina</i>	Greenish Moonglow Lichen	
<i>Dimelaena radiata</i>	Silver Moonglow Lichen	31
<i>Diploicia canescens</i>	Lobed Button Lichen	
<i>Endocarpon loscosii</i>	Stippled Lichen	
<i>Evernia prunastri</i>	Oakmoss Lichen	99
<i>Flavoparmelia caperata</i>	Common Greenshield Lichen	55
<i>Flavopunctelia flaventior</i>	Speckled Greenshield Lichen	57
<i>Flavopunctelia soledica</i>	Powder-edged Speckled Greenshield Lichen	
<i>Hyperphyscia adglutinata</i>	Grainy Shadow-crust Lichen	
<i>Kaernefeltia merrillii</i>	Flattened Thornbrush Lichen	101
<i>Lecania cyrtella</i>	Brown-disk Rim-Lichen	
<i>Lecanora circumborealis</i>	Black-eyed Rim-Lichen	33

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<i>Lecanora saligna</i>		
<i>Lecanora strobilina</i>	Mealy Rim-Lichen	<b>37</b>
<i>Lecidea atrobrunnea</i>	Brown Tile Lichen	<b>39</b>
<i>Lecidea tessellata</i>	Tile Lichen	
<i>Lecidella euphorea</i>	Disk Lichen	
<i>Lepraria lobificans</i>	Fluffy Dust Lichen	
<i>Leptogium tenuissimum</i>	Jellyskin Lichen	
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<i>Melanelia subaurifera</i>	Abraded Camouflage Lichen	59
<i>Melanelia subolivacea</i>	Brown-eyed Camouflage Lichen	
<i>Micarea denigrata</i>	Dot Lichen	
<i>Niebla cephalota</i>	Powdery Fog Lichen	105
<i>Ochrolechia pseudopallescens</i>	Saucer Lichen	
<i>Parmelina coleae</i>	Fringed Shield Lichen	
<i>Parmotrema austrosinense</i>	Bald Ruffle Lichen	61
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<i>Pertusaria velata</i>	Rimmed Wart Lichen	
<i>Phaeophyscia orbicularis</i>	Mealy Shadow Lichen	
<i>Phaeophyscia ciliata</i>	Smooth Shadow Lichen	
<i>Phaeophyscia hirsuta</i>	Hairy Shadow Lichen	65
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<i>Physcia cf. dimidiata</i>	Frosted Rosette Lichen	69
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<i>Physcia stellaris</i>	Star Rosette Lichen	71
<i>Physcia tenella</i>	Fringed Rosette Lichen	
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<i>Physconia perisidiosa</i>	Crescent Frost Lichen	<b>79</b>
<i>Pleopsidium flavum</i>	Gold Cobblestone Lichen	<b>43</b>
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<i>Rinodina californiensis</i>	Pepper-spore Lichen	
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<i>Rinodina santae-monicae</i>	Pepper-spore Lichen	
<i>Spilonema revertens</i>	Rock Hairball Lichen	
<i>Steinia geophana</i>		
<i>Syzygospora physciacearum</i>		
<i>Teloschistes chrysophthalmus</i>	Orange Bush Lichen	<b>119</b>
<i>Teloschistes flavicans</i>	Powdered Orange Bush Lichen	
<i>Tephromela atra</i>	Black-eyed Rim Lichen	
<i>Thelenella hassei</i>		
<i>Thelomma occidentale</i>	Black-eyed Lichen; Nipple Lichen	
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LICHENS OF SEDGWICK & SANTA BARBARA COUNTY

<b>Scientific Name</b>	<b>Common Name</b>	<b>Page #</b>
<i>Ramalina subleptocarpha</i>	Slit-rimmed Ramalina Lichen	<b>117</b>
<i>Ramboldia russula</i>	Scarlet Button Lichen	
<i>Rinodina californiensis</i>	Pepper-spore Lichen	
<i>Rinodina pyrina</i>	Pepper-spore Lichen	
<i>Rinodina santae-monicae</i>	Pepper-spore Lichen	
<i>Spilonema revertens</i>	Rock Hairball Lichen	
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Scientific Name	Common Name	Page #
<i>Toninia ruginosa</i> ssp. <i>ruginosa</i>	Blister Lichen	
<i>Tuckermannopsis orbata</i>	Brown Wrinkle Lichen	121
<i>Umbilicaria phaea</i>	Rock Tripe Lichen	83
<i>Usnea dasaea</i>		
<i>Usnea esperantiana</i>		
<i>Usnea flavocardia</i>	Red-dotted Beard Lichen	
<i>Usnea fulvoreaegens</i>		
<i>Usnea glabrata</i>	Lustrous Beard Lichen	
<i>Usnea hirta</i>	Bristly Beard Lichen; Shaggy Beard Lichen	
<i>Usnea lapponica</i>	Powdered Beard Lichen	
<i>Usnea mutabilis</i>	Red-cored Beard Lichen	
<i>Usnea scabrata</i>	Beard Lichen; Old Man's Beard Lichen	123
<i>Usnea subfloridana</i>	Beard Lichen; Old Man's Beard Lichen	125

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LICHENS OF SEDGWICK & SANTA BARBARA COUNTY

Scientific Name	Common Name	Page #
<i>Usnea substerilis</i>		
<i>Verrucaria dolosa</i>	Tar Lichen	45
<i>Verrucaria fusca</i>	Tar Lichen	
<i>Vulpicida canadensis</i>	Brown-eyed Sunshine Lichen	85
<i>Waynea californica</i>		
<i>Xanthomendoza fallax</i>	Hooded Sunburst Lichen	87
<i>Xanthomendoza fulva</i>	Sunburst Lichen	
<i>Xanthomendoza hasseana</i>	Poplar Sunburst Lichen	
<i>Xanthomendoza mendozae</i>		
<i>Xanthomendoza ulophyllodes</i>	Powdery Sunburst Lichen	
<i>Xanthoparmelia mexicana</i>	Salted Rock-Shield Lichen	89
<i>Xanthoria candelaria</i>	Upright Sunburst Lichen	91
<i>Xanthoria parietina</i>	Maritime Sunburst Lichen	
<i>Xanthoria polycarpa</i>	Pincushion Sunburst Lichen	93
<i>Xanthoria tenax</i>		

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## GLOSSARY

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<b>Apothecia</b>	Circular, cup-shaped structures that contain fungal spores; involved in sexual reproduction
<b>Areole</b>	<b>(areolate, adj.)</b> Small raised areas of a lichen crust (resembling tiles), usually grouped with fissures separating the adjacent areoles.
<b>Ascus</b>	<b>(asci, pl.)</b> A sac in which the spores of ascomycete fungi develop
<b>Ascocarp</b>	Mature fruiting body of an ascomycetous fungus
<b>Ascomycete</b>	A fungus whose spores develop within asci
<b>Cilia</b>	Fine hairs
<b>Conidia</b>	A spore produced asexually by various fungi at the tip of a specialized hypha
<b>Cortex</b>	The outer protective layers of a lichen thallus or apothecium, completely fungal in composition, often composed of hyphae with thick, gelatinized walls
<b>Crustose</b>	Growing flat and closely appressed against the substrate with no free edges
<b>Crenulate</b>	Finely-toothed
<b>Foliose</b>	Leaf-like, growing flat with upper and lower

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## GLOSSARY

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<b>Fruticose</b>	<i>(foliose, cont.)</i> sides and free edges
<b>Hyphae</b>	Upright, like a small branching tree
<b>Isidia</b>	Fungal threads <i>(isidiate, adj.)</i> Tiny globose to cylindrical shiny structures covered by cortex they can break off and act to propagate new thalli; involved in vegetative/ asexual reproduction
<b>Lamina</b>	Upper side of a thallus
<b>Leprose</b>	Comprised entirely of hyphae and soredia
<b>Lobule</b>	A small lobe
<b>Mazaedium</b>	<i>(mazaedia, pl.)</i> A sexually reproductive structure containing a mix of loose spores and fungal hyphae
<b>Placodioid</b>	Crustose at the center but lobed at the circumference
<b>Podetium</b>	<i>(podetia, pl.)</i> An organ or body resembling a stalk; especially the outgrowth of the thallus of certain lichens on which the ascocarp is borne
<b>Pruinose</b>	Covered with white powder
<b>Rhizines</b>	Hairlike growths that anchor the thallus to its substrate

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## GLOSSARY

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<b>Squamule</b>	A small scale-like thallus, free at the edges.
<b>Squarrose</b>	Branching at right angles
<b>Soredia</b>	<b>(sorediate, adj.)</b> Tiny granules containing the alga and fungus of a lichen, which serve for vegetative propagation
<b>Soralium</b>	<b>(soralia, pl.)</b> Clusters of soredia, either on the lamina or along the margins of the thallus
<b>Thallus</b>	<b>(thalli, pl.)</b> The "body" of the lichen

## REFERENCES

BRODO, I. M., S. D. SHARNOFF, and S. SHARNOFF. 2001. Lichens of North America. New Haven, Yale University Press.

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