

Meet the Lichens 5: More Local Favorites

Welcome to Meet the Lichens Episode 5! Today we're going to cover four charismatic lichens. You won't find these at just any Bay Area park, but they can be locally abundant, and three of them are colorful, memorable, and can be easy to spot even where they are less abundant. And they include two of the few lichens with known toxicity, so it's good to know about those.

Okay, first let's do our little review quiz.

What genus is this nifty lichen with a dark, smooth upper surface?

How about this green lichen with those distinctive ridges?

Finally, can you identify three different lichen genera on this branch? Two you should be able to identify for sure, one might be more of a guess based on what you can see.

Okay, answers.

This first one is a *Peltigera*--you can't see the lower surface, so it's hard to be certain from the photo, but that smooth, peltlike, dark upper surface should point you in that direction here. Next up, we have *Lobaria*, looking lunglike. You can also see that fuzzy mottled lower surface that our key makes reference to in this specimen.

Finally, in the last photo, we have some *Usnea* in the middle, and some *Parmotrema* on the right--see the blue-green and cilia on the margins if you look close. And then, in the center and on the left, *Flavopunctelia* probably--you can make out some white marks that may be pseudocyphellae, or possibly *Flavoparmelia*. You can really see the difference here between the yellow-green shade in the Flavo, and in the *Usnea*, which is similar in color, versus the *Parmotrema*, which does not have the usnic acid that gives that tint.

Okay, moving on to today's first lichen. The least colorful of today's lichens but charming in its own way, we have *Parmelina coleae*. *Parmelina* is pale whitish grey, usually with lots of brown apothecia, and these cute little lobes that sometimes remind me of puzzle pieces. The lobes are usually 2-3 mm wide, which puts them into the middle between the narrow lobed genera like *Physcia* and most of the really broad-lobed lichens. They are medium sized, usually 2-10 cm in diameter.

They also have a pretty smooth surface apart from the apothecia, because they do not have soredia or isidia, or pseudocyphellae. They do often have pycnidia.

All together, these features make *Parmelina* distinctive--it is the only lichen in the region of this general type that reliably has apothecia but does not have any of these other features.

Parmelina has a black lower surface, with usually unbranched rhizines.

It is common on bark, especially of oaks, especially in oak woodlands and riparian areas.

Lookalikes--*Parmelina* may be confused with *Physcias* with brown apothecia, but the lobes are wider in *Parmelina* and the lower surface is dark, while it's paler in *Physcia*. Some *Xanthoparmelia* species may look similar but they are often found on rocks while *Parmelina* is not, have different lobes, and have yellow-green tint of usnic acid.

Okay, next up! This is *Teloschistes*. You met this genus in quiz 3. It is a bright orange fruticose lichen, and though the species vary quite a bit in form, there is no other bright orange fruticose genus in California. *Teloschistes* is shrubby, small to medium in size, found mostly on twigs.

One species, *T. chrysophthalmus* has shorter, flattened branches, with dark orange apothecia with cilia around the edge.

The other species has narrower, more rounded branches, with similar dark orange apothecia without cilia, or with yellowish soralia.

Teloschistes is fairly uncommon, but there are some local hotspots--you can find quite a bit on shrubs at Sibley Volcanic Regional Preserve. And because of it's bright color, if you're on the lookout you'll see it sooner or later, and it will be a treat.

Teloschistes is distinctive as the only orange fruticose lichen, but you might confuse it with some *Xanthoria* specimens, or perhaps *Usnea rubicunda*, the reddish *Usnea* species. But *Xanthoria* is foliose, and the *Usnea* is more reddish, less bright, and has the central elastic cord.

Okay, our next two are bright colored as well, and you've also seen them in the quizzes and in lecture. First up is *Letharia*, also known as wolf lichen.

Letharia is a distinctive, bright yellow to chartreuse fruticose lichen, medium to large at 3-15 cm long. The branches can be angular or more rounded.

One species, *L. columbiana*, is fertile, with brown apothecia, while the other has coarse soredia or isidia.

Letharia grows mostly on conifers in the Sierra Nevada, where it can be extremely common, but it is also found on wood and bark in the Coast Range.

Letharia gets its bright color from vulpinic acid, which is the best known lichen toxin. There aren't many poisonous lichens, but Letharia and our next lichen, Vulpicida, are two of the few. They were used historically to poison predators like wolves and foxes, though they were also used medicinally in some places. In any case, I would not recommend eating Letharia and I would keep any specimens away from your pets.

Letharia is also a great dye lichen--it makes a brilliant yellow, just by boiling it in water.

Letharia doesn't have many lookalikes, but our next lichen, Vulpicida, is just about the same color. When it is very small, perhaps colonizing a new environment, it could resemble something like Candelaria from a distance, but its fruticose form will be distinctive. From a distance, it might also resemble brightly colored moss, but again, close up you should be able to tell that it is stiffer, drier, and without leaves, and quite unlike a moss.

Finally, we come to Vulpicida.

Vulpicida has several things in common with Letharia--similar color, brown apothecia, vulpinic acid, grows on conifers--but they are distinct because Vulpicida is a foliose lichen. Vulpicida is a bit more yellow, less green, and a bit more muted than Letharia in color, but still quite bright. It is a foliose lichen, though it is more upright and leafier than many of the foliose lichens we've seen thus far--more like a head of lettuce, or a couple of leaves. Vulpicida does have a distinct upper and lower surface, with one slightly paler than the other, but they are similar in color.

The apothecia appear sort of woven into the edge, not on stalks or flat on the surface like other foliose lichens we've seen. The apothecia give the most common species around here its common name--brown-eyed sunshine.

Like Letharia, the vulpinic acid makes it toxic, which may be obvious from its name--Vulpicida. Fox killer.

Lookalikes. Vulpicida may look like Letharia from a distance because of the color, or maybe Candelaria when it is very small. The other culprits are other foliose lichens with a similar growth form and apothecia--lichens once in a genus once called Cetraria but now called Tuckermannopsis--these are often dark brownish black or olive green, but can sometimes be a brighter green color. Still, Vulpicida is lighter, and yellower, and you are unlikely to mistake one for the other.

Okay, that's all for today! In review:

Parmelina--cute, grey with medium width lobes, brown apothecia, no soredia or isidia.

Teloschistes--bright orange fruticose

Letharia--bright chartreuse fruticose,

And Vulpicida, yellow foliose.

Don't eat the last two.

Look out for those bright colors! Happy lichenizing.