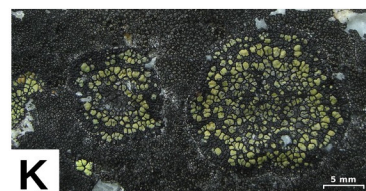
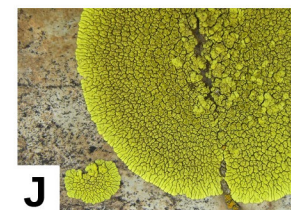
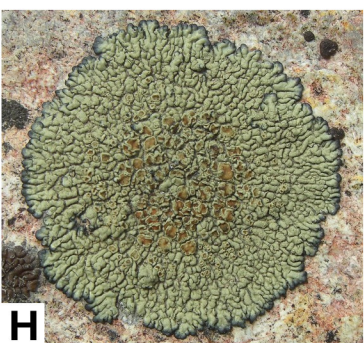
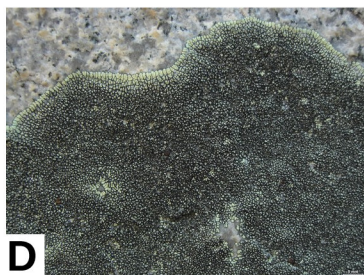
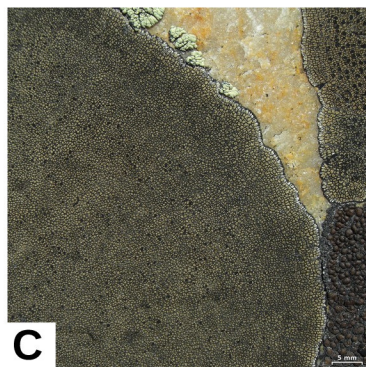


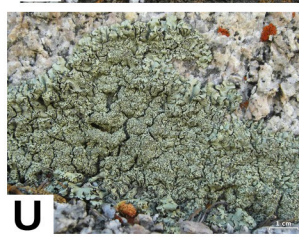
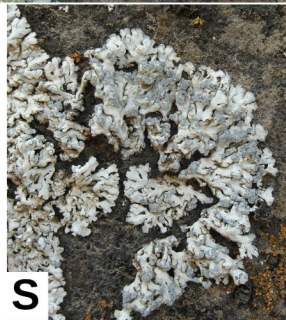
Field Guide to Common Alpine Lichens of the High Sierras (California, USA)

Part 1: Lichens on Rocks (Siliceous) : Morphogroups

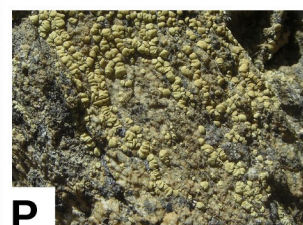
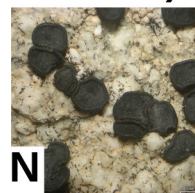
Crusts



Macros

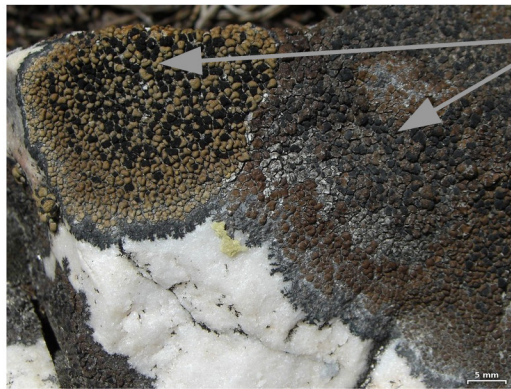


Just Apothecia (more or less)



Notes: ratings are preliminary and limited to the High Sierra region from Yosemite southward, on granitic summits and passes; asterix (*) denotes non-lichenized lichenicolous fungi; C=Common, F=Frequent, I=Infrequent, R=Rare.

A. *Lecidea atrobrunnea* group - Brown crust, black lecidine apothecia. +/- indistinguishable w/o chemistry.



Lecidea syncarpa – Typically paler brown areoles. C
Lecidea atrobrunnea – Typically darker brown areoles. C
Lecidea perlatolica – I
Lecidea protobacina – I
Rhizocarpon bolanderi – Areoles and apothecia are almost half the size. I

**Sphaerellothecium abditum*



B. *Acarospora* spp. - Brown crust, red to brown to black sunken apothecia.

1. *Acarospora thamnina* – Squamulose and grows in cracks, look for large black stipe below areole. C

2. *Acarospora americana* – Scattered areoles. I

3. *Acarospora elevata* Slightly shinier and darker than *A. americana* R

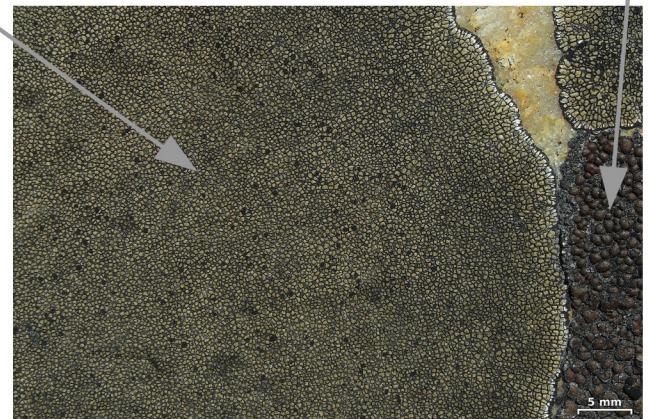
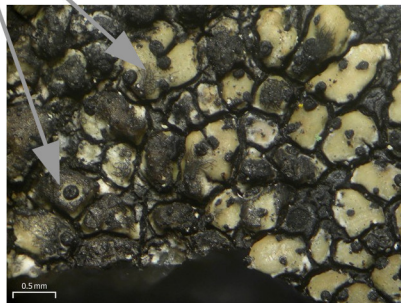
4. *Acarospora rosulata* Forms rosettes. R



C. *Sporastatia testudinea* –Tan to brown crust, immersed apothecia, small areoles. C

**Sphaerellothecium contextum* (also on *Rhizoplaca*, *Calvitimela*)

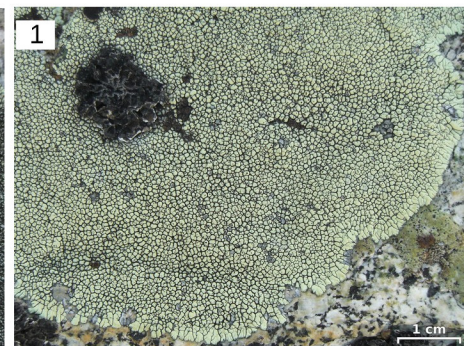
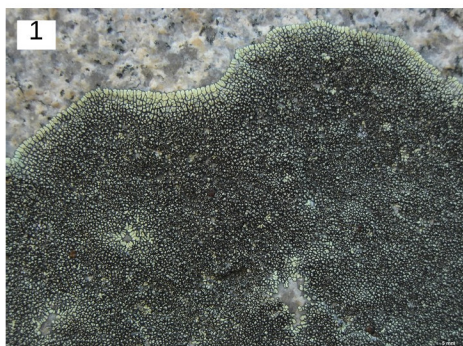
**Polycoccum sporastatiae*



D. *Dimelaena* spp. – Small areoles, lecanorine apothecia, lobate margins.

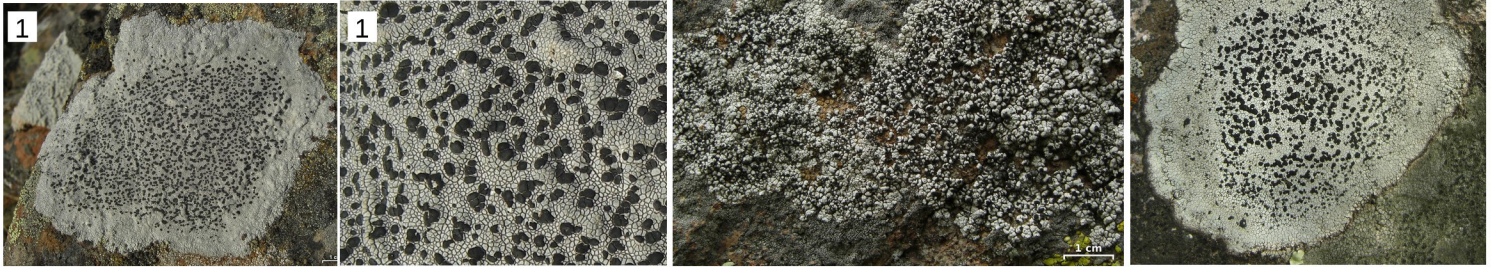
1. *Dimelaena oreina* – Minty green pale to dark thallus. F

2. *Dimelaena thysanota* – Dark brown thallus. R



E. *Lecidea tessellata* group – White crust, cracked appearance, black immersed lecideine apothecia.

1. *Lecidea tessellata* – F
2. *Lecidea lapicida* – (not shown). R
3. *Buellia dispersa* – areoles more bullate. I
4. *Buellia spuria* – R

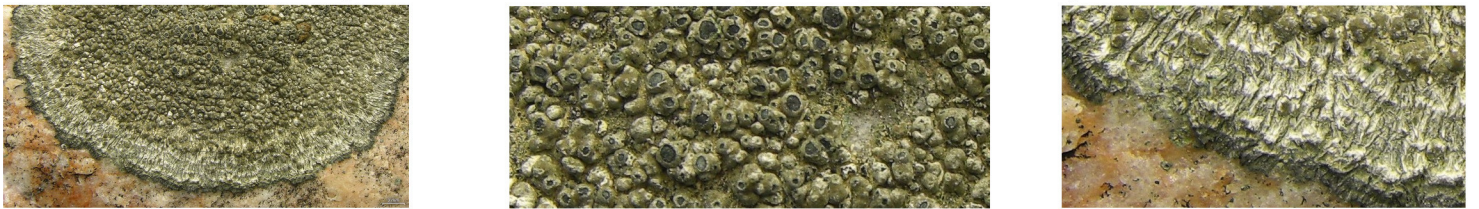


F. *Lecanora argentea* group – White crust, black lecanorine apothecia.

1. *Lecanora cenisia* – Discs brown to black. F
2. *Lecanora* sp. nov? – Areoles bullate, in very sheltered locations. F
3. *Lecanora argentea* – Thallus quite thick. I

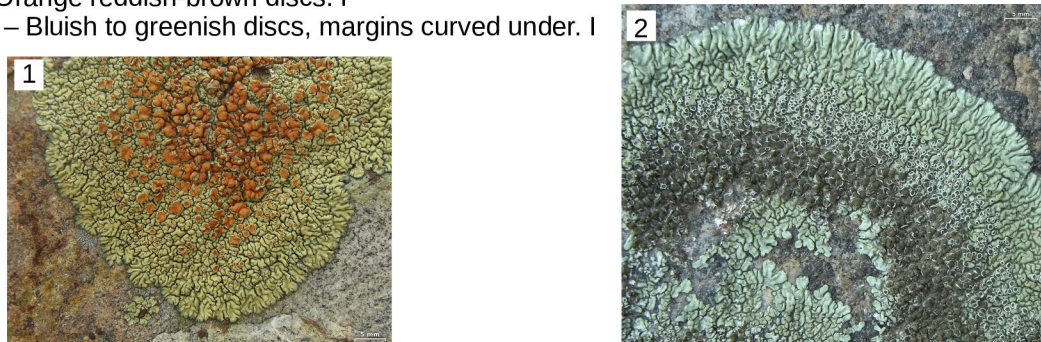


G. *Aspicilia nashii* – Olive green crust, black to bluish black apothecia, pale finbriate margin. C



H. *Lecanora muralis* group – Minty green crust with obvious lobate margins and lecanorine discs various colors.

1. *Lecanora sierrae* – Orange reddish-brown discs. F
2. *Lecanora garovaglii* – Bluish to greenish discs, margins curved under. I



I. *Rhizocarpon disporum* etc – Gray crust, cracked appearance, black immersed lecideine apothecia.

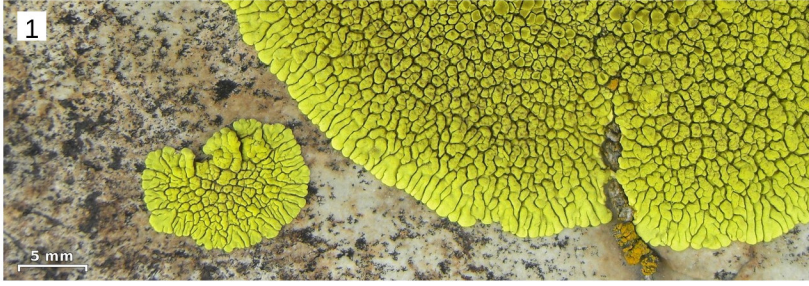
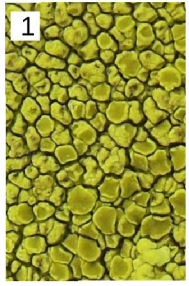
1. *Rhizocarpon disporum* – I
2. *Rhizocarpon grande* – +/- identical to *R. disporum* apart from spores. R (not shown)



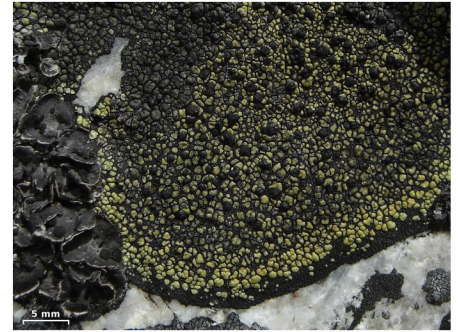
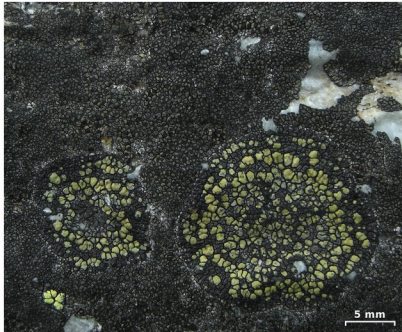
J. *Pleopsidium* spp. Bright neon yellow-green crust, yellow apothecia.

1. *Pleopsidium flavum* – Continuous crust, lobate margins, immersed apothecia. C

2. *Pleopsidium chlorophanum* – Scattered bullate areoles. R



K. *Calvitimela armeniaca* Dull yellow-olive crust. Parasitic on *Sporastatia testudinea*. F



L. *Rhizocarpon geographicum* group Bright yellow crust, black lecideine apothecia, black hypothallus.

1. *Rhizocarpon pusillum* – parasitic on *Sporastatia* spp, thalli < 1cm, rosette forming. F

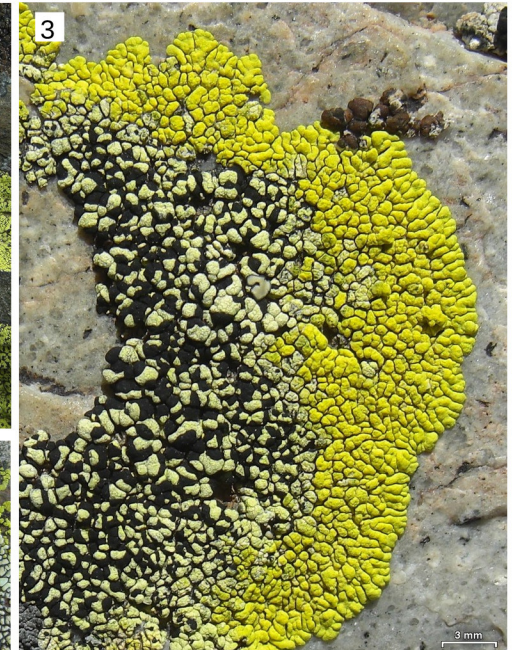
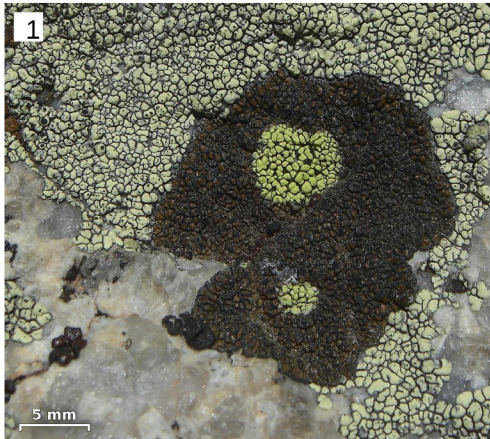
2. *Rhizocarpon geographicum* – thalli large, areoles scattered at margin. F

3. *Rhizocarpon effiguratum* – parasitic on *Pleopsidium flavum*, +/- rosette forming. I

4. *Rhizocarpon superficiale* – sublobate margins, rosette forming. I

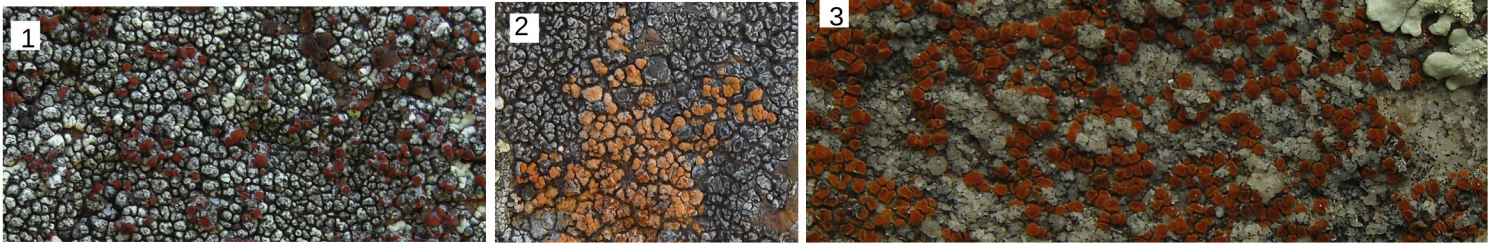
5. *Rhizocarpon dimelinae* – parasitic on *Dimelaena oreina*, areoles range from yellowish to grayish.

6. *Rhizocarpon intermediellum* – (not shown). R



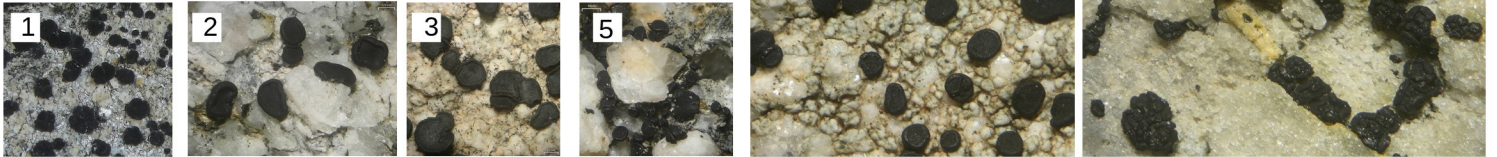
M. *Caloplaca* spp. Red or orange crust.

1. *Caloplaca epithallina* – parasitic, red apothecia, thallus typically not present. F
2. *Caloplaca adnexa* – parasitic, orange areoles, apothecia not common. I
3. *Caloplaca arenaria* – red apothecia, no thallus. R



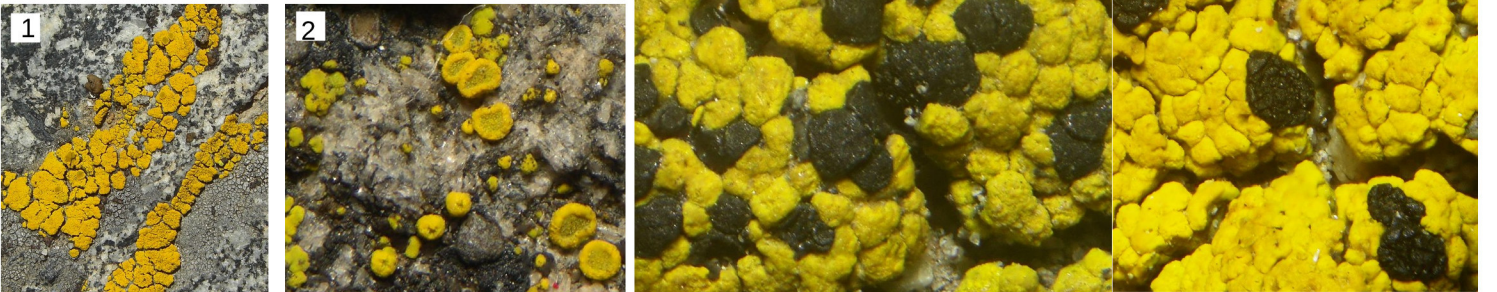
N. *Lecidea* spp. endolithic black apothecia (most +/- similar size), thallus not usually visible.

1. *Lecidea auriculata* – F
2. *Lecidea promiscens* – I
3. *Lecidea laboriosa* – R
4. *Lecidea plana* – (not shown). R
5. *Carbonea vorticosa* – tiny apothecia, umbonate apothecia. I
6. *Lecidella patavina* – thin white thallus sometimes present (not shown). I
7. *Lecidella stigmata* – superficially similar to *L. patavina*. R
8. *Polysporina simplex* – smaller apothecia, gyrose apothecia.



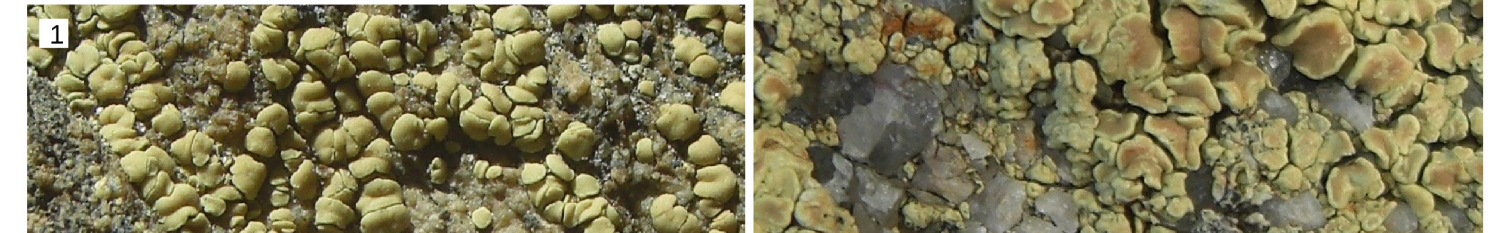
O. *Candelariella* spp. Yellow crust.

1. *Candelariella rosulans* – thick yellow thallus. F
2. *Candelariella vitellina* – no thallus. F
3. **Carbonea vitellinaria* – +/- smooth discs.
4. **Polysporina subfuscescens* +/- rough discs.



P. *Lecanora polytropa* group

1. *Lecanora stenotropa* – no thallus. F
2. *Lecanora polytropa* – minimal thallus usually present. R



Q. *Rhizoplaca* spp. Foliose, umbilicate, with lecanorine apothecia

1. *Rhizoplaca melanophthalma* – green with green to bluish black discs. C
2. *Rhizoplaca chrysoleuca* – whitish with orangish discs. I



R. *Pseudephebe pubescens* Black fruticose, thin branches. C



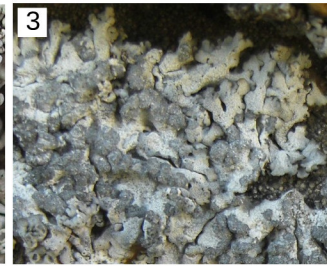
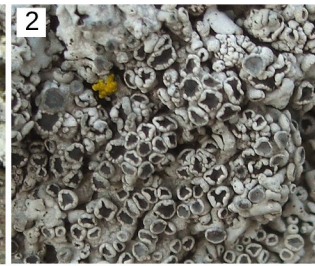
S. *physcioids* White to brown foliose, [ours] narrow small lobes (lobe length <1cm, lobe width <0.5cm), +/- rosette forming.

1. *Physcia dubia* – soredia labriform, maculate-like white surface. F

2. *Physcia biziana* – black apothecia, white surface. R

3. *Physcia caesia* – soralia laminal, soredia bluish, maculate-like white surface. R

4. *Phaeophyscia sciastra* – scattered soredia, pale to tan to dark brown surface. R



T. *Umbilicaria* spp. Grayish umbilicate, black apothecia. (similar to *Dermatocarpon* spp.: brownish umbilicate, , ritheciate)

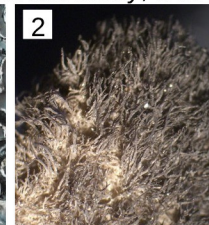
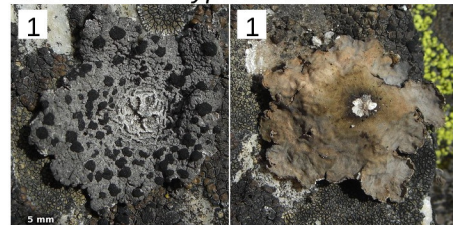
1. *Umbilicaria polaris* – underside pale to tan smooth, sometimes sparse rhizinae; pruinose ridged upper surface, C

2. *Umbilicaria virginis* – underside pale, pinkish rhizines, upper brown or pruinose gray, sometimes with ridges. I

3. *Umbilicaria vellea* – underside black sooty knobs and pale tipped forked rhizines (never pinkish), upper smooth pale. R

4. *Umbilicaria decussata* – underside smooth and sooty. I (4 & 5 not shown)

5. *Umbilicaria hyperborea* – underside smooth gray to brownish, not pale nor sooty; wormy brown ridges on upper surface, R



U. *Xanthoparmelia* spp. Green foliose, rosette forming.

1. *Xanthoparmelia coloradoensis* – strongly lobulate. I

2. *Xanthoparmelia stenophylla* – maculate, less lobulate. R

3. **Lichenostigma cosmopolites*

(2 & 3 not shown)



V. *Montanelia tominii* Brown foliose, rosette forming. I



W. *Xanthoria sorediata* Orange foliose, +/- rosette forming,

1. *Xanthoria sorediata* – soredia laminal, very pustulate. I

2. *Xanthoria elegans* – abundant apothecia, lower cortex on lobe tips. I

3. *Xanthoria candelaria* – irregular soredia, erect lobes, non-rosette. R

(3 not shown)

