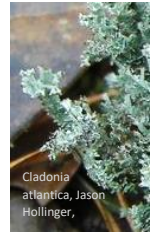
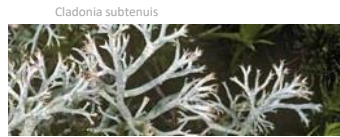


Cladonias

(often don't look like the pics)

1. Shrubby

- A hint of blue-green (very common): ↑ *C. subtenuis*
- Yellowish-green, with holes on tops (very common): *C. uncialis* ↑
- Entirely white (unusual): *Cladonia rangiferina*
- Hint of brown, squamules growing off branches (unusual): *C. atlantica*
- Yellowish green, Growing in flat tufts along the ground (unusual): *Cladonia dimorphoclada*
- Growing in the forest, thin stalks each branched a few times (unusual): *Cladonia furcata* →



2. Not shrubby

a. Stalks present

i. Cups present

1. Multiple tiers of cups

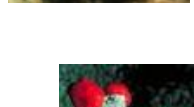
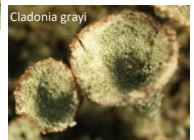
- Cups proliferating from center: *C. rapii* →
- Cups proliferating from margins: *C. mateocyatha* (no pic)



Cladonia rapii, Jason Hollinger, Mushroom Observer

2. One cup:

- Wide cup: *C. grayi* group (TLC required to tell *C. grayi* from *C. chryochlorophaea*, but *C. greyi* is the common one) →
- Cup about as wide as stalk: *C. rei* →



ii. No cups

1. Stalk with Red top

- Cortex on all of stalk, stalk w/ no soredia, granules, squamules
 - Large, scallop-shaped basal squamules with soredia, dumpy stalk
 - UV+: *Cladonia incrasata*
 - UV-: (no pic) *Cladonia abbreviata*

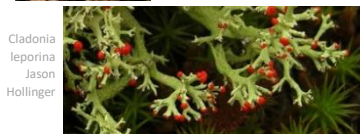
Cladonia incrasata
Malcolm Storey
Discoverlife.org



ii. Med-small basal squamules without soredia

- Stalks not branching: (very common): *C. cristatella* →
- Stalks branching (unusual): *C. leporina*
- Some part of stalk has no cortex, and may have soredia, granules, or squamules.
 - Stalk with squamules: *C. ravenelii* (unusual, no pic)
 - Stalk without squamules
 - Powdery soredia, interior of stalk
 - translucent brown: *C. didyma*
 - Coarse soredia, interior of stalk
 - opaque white: (very common) *C. macilenta*

Cladonia cristatella:
Louise Browman,
EPA



Cladonia leporina
Jason Hollinger

Cladonia didyma
Jason Hollinger

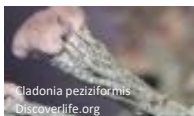


Cladonia macilenta:
James Lindsey
Wikimedia



2. Stalk with Brown top (sometimes no color on top)

- Cortex on all of stalk, stalk has no soredia, granules, or squamules
 - Sinuous stalk: *C. peziziformis* →
- Some part of stalk has no cortex, and may have soredia, granules, or squamules.
 - Fine soredia covering top half of stalk: Very common on rotting logs and bases of hardwoods: *C. ochroclora*
 - Squamules climbing up the stalk *C. parasitica*



Cladonia peziziformis
Discoverlife.org

Cladonia santensis and *Cladonia caespitica*, Jason Hollinger



b. No Stalks (chemical testing required to be certain: these features might work)

- Blue green, in cedar swamps: *C. santensis* →
- Grey-green: On old wood, squamules irregular. *C. caespitica* →
- Yellow-green: *C. strepsilis* →
- Squamules strap-shaped, white underside, growing in tufts: *C. apodocarpa* ↓



Cladonia strepsilis:
Wessex Lichen Group

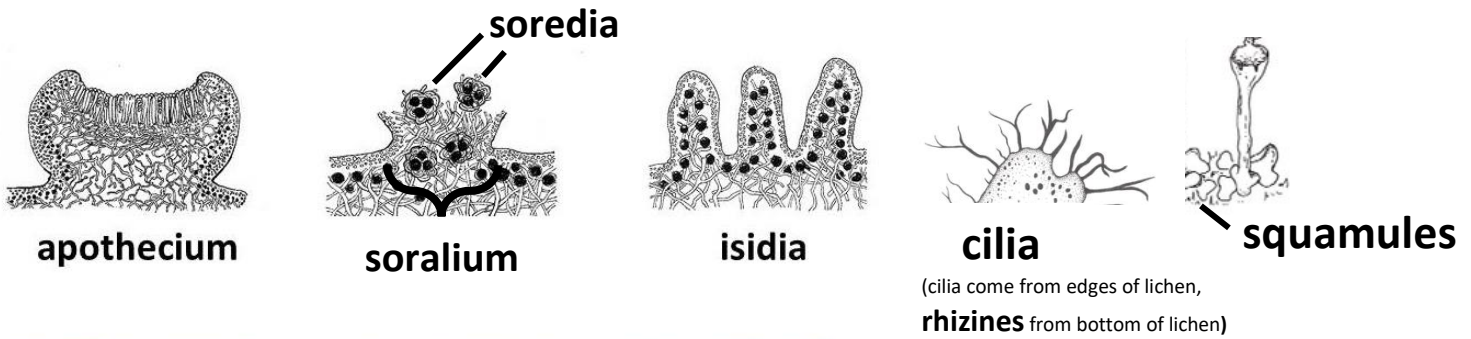
Cladonia apodocarpa
Jason Hollinger



Cladonia ochroclora
Steven Sharnoff,
CNALH



Cladonia parasitica
Jenny Seawright, IrishLichens



Reproduction structures from: <https://ohioplants.org/wp-content/uploads/2018/03/lichen-reproduction.jpg>. Cilia from: Spielmann, A. A., & Marcelli, M. P. (2009). *Parmotrema* s.l. (Parmeliaceae, lichenized Ascomycota) from Serra Geral slopes in central Rio Grande do Sul State, Brazil. *Hoehnea*, 36, 551-595. Squamules from: Piercey-Normore, M., Deduke, C., & Timsina, B. (2012). Effect of Environmental Change on Secondary Metabolite Production in Lichen-Forming Fungi. Chapters.

Parmotremas / Punctelias

Name	Upper surface	Cilia	Soredia/ isidia	Underside	Common?
<i>Parmotrema hypotropum</i> (or <i>hypoleucinum</i> near the coast)	Grey-blue	Abundant	Soredia and soralia (in margins)	Brown to dark brown with white blotches near margins	Both are common
<i>Parmotrema perforatum</i>	Grey-blue	Abundant	None	Brown to dark brown with white blotches near margins	More common on the coast
<i>Parmotrema reticulatum</i>	Grey-blue	Abundant	Soredia and soralia	Brown to dark brown through, with rhizines to tips	More common on the coast
<i>Parmotrema subsidiosum</i>	Grey-blue	Abundant	Isidia	Brown to dark brown through, with rhizines to tips	widespread
<i>Parmotrema submarginale</i>	Grey-blue	Abundant	None	Brown to dark brown with sparse rhizines that are absent on margins	widespread
<i>Parmotrema gardeneri</i>	Grey-blue, lobes flat to surface	Sparse	Soralia	Brown to dark brown with sparse rhizines that are absent on margins	Scattered populations
<i>Punctelia caesiana</i>	Grey-blue with white blotches	None	Soredia and soralia	Tan to brown with abundant forked rhizines	infrequent
<i>Punctelia missouriensis</i>	Grey-blue with white blotches	None	Simple isidia	Tan to brown with abundant forked rhizines	infrequent
<i>Punctelia rudecta</i>	Grey-blue with white blotches	None	Forked isidia with brown tips	Tan to brown with abundant forked rhizines	common