

KEY TO SQUAMULOSE LICHEN GENERA WITH GREEN PHOTOBIONTS

Rev. 2/94

I. Thallus \pm distinctly yellow or orange

1. Thallus K+ purple 2
1. Thallus K-. 3
 2. Thallus orange, spores if present polarilocular, occurring on many different substrates Caloplaca
 2. Thallus yellow, spores if present simple, terricolous in desert areas Fulgensia
3. Thallus yolk yellow, bright yellow or yellow-green.
3. Thallus pale yellow-green. 4
 4. Thallus yolk yellow. Candelariella
 4. Thallus bright yellow or yellow-green. 5
5. Spores many/ascus, simple. Apothecia \pm immersed. Acarospora
5. Spores 8/ascus, septate. Apothecia sessile. Arthrorhaphis
 6. Medulla chalky. Squamarina
 6. Medulla not chalky.
7. Areoles substipitate. Rhizoplaca
7. Areoles not substipitate. Lecanora (L. muralis)

**B-1. Photobiont a green alga.
Thallus not yellow, orange, or red.
Fertile.**

1. Thallus of pale green-gray, \pm rounded squamules, becoming indented; fruiting body a yellow-white basidiomycete gilled mushroom. Omphalodina (*O. hudsoniana*)

1. Thallus and fruiting body various; fruiting body never a basidiomycete mushroom (if mushroom-like, as in Baeomyces, then an ascomycete, not gilled, and very short and small). 2

1. Squamules raised on one edge. 2

1. Squamules flat and in continuous contact with the substrate (note: in some *Psoras*, the entire margin may be raised) 7

2. Cortex often C+ red or orange, on bark or burnt (but not decaying) wood Hypocenomyce

2. Cortex C-, on soil, mosses or decaying wood. Thallus distinctly dorsiventral, green to gray above and white below, round with crenulate to lobate margin (common on soil, mosses on soil and decaying wood) Cladonia

3. Spores simple, nonseptate 4

3. Spores transversely septate Toninia

4. On wood, frequently burned Hypocenomyce

4. On soil or rocks Psora

5. Perithecia present 6

5. Apothecia present

6. Spores simple or 1-septate, colorless; no hymenial algae present

6. Spores muriform. 6a

6a. Spores brown; hymenial algae present. Endocarpon

6a. Spores hyaline?; hymenial algae absent. Squamules minute, 0.05-0.3(-0.5) mm wide. Spores muriform. Asci 8-spored. Agonimia

7. Spores 1-septate. Placidiopsis

7. Spores simple. Catapyrenium

8. Apothecia lecanorine 9

8. Apothecia lecideine

9. Thallus umbilicate (but may not always be obviously

- so) 10
9. Thallus not umbilicate, apothecial rim conspicuously warty
Psoroma (P. hypnorum)
10. Lower side with distinct veins Peltigera (P. venosa)
10. Lower side without distinct veins
11. On bark or wood (frequently burnt). Hypocenomyce
11. Terricolous or saxicolous 12
12. Spores narrow and transversely septate 13
12. Spores simple, ellipsoid and non-septate Psora
13. Squamules surrounded by free-living cyanobacteria
 Psorula rufonigra (Tuck.) G. Schneider
13. Squamules free of cyanobacteria 14
14. Spores 1-septate, 4-5.5 u wide; alpine Psorinia (P. conglomerata)
14. Spores 2 or more septate, less than 4 u wide; desert to high elevations. Toninia

ADDITIONAL GENERA

Thallus umbilicate (but may not always be obviously so), white Rhizoplaca (R. glaucophana)

Apothecia on short, pale stalks. Squamules minute, forming a \pm continuous crust. Baeomyces

Apothecia lecanorine. Spores 1(-3)-septate. Lecania

Spores many per ascus. Acarospora

Baeomyces

Spores muriform, pale brown. Lopadium

Squamules sometimes peltate, with a conspicuously darker central area. Spores (1-)3-5-septate. Stereocaulon

Squamules very small, to 0.5 mm across, granular, shiny, brown. Apothecia dark brown. Spores simple. Protoparmelia

Apothecia dark red-brown. On acid soil, montane to alpine. Lecidoma demissum--see Lecideoid segregates

Phyllopsora--

Solenopsora--on soil or rock, in mediterranean climate in the Southwest; thallus whitish, grayish or brownish; lecanorine or biatorine apothecia, hyaline, usually 1-septate spores; ascus tip entirely amyloid.

Squamarina s. lato--see Placodioid Lecanoras

Trapeliopsis--see Lecideoid segregates

Xanthopsorella texana--see Lecideoid segregates

**B-2. Photobiont a green alga.
Thallus not yellow, orange, or red.
Sterile.**

- 1. Squamules raised on one edge 2
- 1. Squamules flat and in continuous contact with the substrate (note: in some Psoras, the entire margin may be raised) 6
- 3. Cortex often C+ red or orange, on bark or burnt (but not decaying) wood. Squamules mostly over 0.5 mm across. Hypocenomyce
- 3. Cortex C-, on soil, mosses or decaying wood 14
 - 4. Thallus very tiny (ca. 1 mm across), scattered, blue-gray, round with upturned and rim-like thickened margins that may become sorediate (usually on mosses or other lichens). Normandina (N. pulchella)
 - 4. Thallus often larger, often grouped or mat-forming, distinctly dorsiventral, green to gray above and white below, round with crenulate to lobate margin (common on soil, mosses on soil and decaying wood) Cladonia
- 5. On bark or wood, frequently burned. Squamules mostly over 0.5 mm across, bullate or flattened, matt or shiny. Hypocenomyce
- 5. On soil or rocks Psora
 - Catapyrenium
 - Endocarpon
- On bark or wood (frequently burnt) Hypocenomyce
- Terricolous or saxicolous

ADDITIONAL GENERA

Lecidoma demissum--see Lecideoid segregates

Phyllopsora--

Solenopsora--on soil or rock, in mediterranean climate in the Southwest; thallus whitish, grayish or brownish; lecanorine or biatorine apothecia, hyaline, usually 1-septate spores; ascus tip entirely amyloid.

Squamarina s. lato--see Placodioid Lecanoras

Trapeliopsis--see Lecideoid segregates

Xanthopsorella texana--see Lecideoid segregates

Leproloma