

Caloplaca Th. Fr.
(LECANORALES: TELOSCHISTACEAE)

After McCune (unpublished) and many others

Rev. Feb. 1994

Thallus crustose, continuous to areolate, verrucose, granular, powdery, or squamulose to lobate, closely adpressed or occasionally immersed or lacking, or sometimes dwarf fruticose and ascending to erect; heteromorous; surface yellow-orange to red-orange, buff to white, pale to dark gray, or rarely black; K+ red to violet or K-; attached by medullary or prothallial hyphae; ecorticate or with a well developed upper cortex; cortex often paraplectenchymatous, of vertical agglutinate hyphae; isidia or soredia present or absent.

Apothecia immersed to sessile; disk round, usually greenish yellow to orange, red, or rusty, but sometimes brown or black; margin present or absent, proper or thalloid, sometimes becoming excluded; hypothecium hyaline, pale, with or without algae below; hymenium usually colorless; paraphyses septate, unbranched to \pm branched near tips; tips often \pm thickened (clavate to capitate); epihymenium usually containing numerous yellowish brown to red-orange crystals of parietin or other anthraquinones, K+ red to violet; asci clavate, Teloschistes-type, unitunicate, I+ blue; tholus I+ blue; spores usually 8, ellipsoid, hyaline, usually polarilocular, with unequally thickened walls but the two loculi linked by a canal (isthmus), rarely plurilocular, or (C. nivalis) simple; septum thin to thick.

Pycnidia immersed, inconspicuous, Xanthoria-type; fulcrum endobasidial; pycnosporos small, simple, ellipsoid to bacilliform, straight. Species with \pm orange thalli are K \pm dark red-violet; apothecia with orange to brown-colored granules in the epithecium or other tissues are K+ dissolving violet-red under the microscope. Usually containing various anthraquinones (especially parietin); some species also with various other substances. Photobiont Trebouxia. On rock, bark, wood, soil, mosses, etc., usually on well-lit, \pm nutrient-rich or -enriched substrates. Arctic-alpine to temperate (or tropical?).

Characterized by the crustose or placodioid thallus, typically orange, K+ red apothecia, and colorless, polarilocular spores. Other closely related genera are Leproplaca (leprose, included in Caloplaca by some authors), Xanthoria (leafy) and Teloschistes (shrubby), all members of the Teloschistaceae.

Species with a K- thallus and brown or black disks (especially in the few cases where the disks are also K-) are not easily recognized as belonging to Caloplaca until the spores are seen. The spores of most species show an extreme range of variation within a single apothecium, depending on stage of development, and it is often necessary to examine more than the usual 5-

10 and make measurements or observations based on the most mature ones, which have the thickest septum (longest canal).

Various attempts to split this huge genus into segregate genera have so far been unsuccessful. The boundaries between Caloplaca and Xanthoria and Teloschistes are not fully clarified.

This huge, often horrible, genus is being monographed for N. America by Wetmore. Until then, I have to have something, so here's my best shot. Lots of luck.

- 1. On mosses, plant detritus, lichens, or soil.2**
- 1. On rock, bark, or wood.4**
 - 2. Parasitic on lichens on acid rock. Spores under 13 um long. SECTION 1-A**
 - 2. On mosses, plant detritus, or soil.SECTION 1-B**
- 3. On rock. 4**
- 3. On bark or wood.SECTION 4**
 - 4. Thallus lobate, squamulose, or subfruticose.SECTION 2**
 - 4. Thallus crustose, not lobate. SECTION 3**

In: Purvis, et al., Lichen Flora of Great Britain and Ireland. Rogers, 19 .
Genera of Australian Lichens. Galloway, D. 1985. Flora of New Zealand
Lichens.