Chrysothrix Mont.
(CHRYSOTHRICHACEAE)

After Laundon, 1981, 1992

Rev. 5/94

Thallus a tangled weft of hyphae enclosing sorediumlike clusters of algae, forming a crust or small cushions, generally crustoseleprose or byssaceous, rarely immersed, thin to thick, noncorticate, bright yellow to vivid yellowgreen or somewhat orangish yellow, K, unstratified and colored throughout, composed entirely of a mass of pulverulent, convex to spherical granules or anastomosing filaments, effuse to delimited, not effigurate or lobed; attached to substrate by hyphae.

Apothecia rare, to 2.0 mm diam., scattered or clustered, immersed or sessile; disk round, concave to spherical, smooth, green to yellowgreen to light orange or brownish, often yellowpruinose; margin proper, thin, ecorticate, or absent; hypothecium hyaline; paraphyses 11.5 mm thick, colorless, septate, richly anastomosing above algae, disappearing; asci 8 spored; spores transversely (12)3septate, hyaline, narrowly obovoid to narrowly ellipsoid, straight or curved, 914 x 2.55 um; second cell often the largest of the four.

Pycnidia absent. Pulvinic acid derivatives (calycin, vulpinic, leprapinic, leprepinic acid methyl ether, pinastric. Photobiont chlorococcoid, cells spherical, to 22 um diam., both singly and in groups. On bark, wood, or shaded acid rocks, cosmopolitan in all parts of the world except the larger deserts.

Characterized by the bright yellow, unstratified thallus, apothecia which are either immarginate or with poorly developed ecorticate margins, and 3septate, narrowly obovoid to narrowly ellipsoid spores. Leproplaca differs in being K+ red (anthraquinones) and having a white medulla.

1. Thallus vivid primary yellow, thick; granules 0.10.2 mm diam. Calycin and vulpinic acid. Thallus forming scattered granules or a continuous, nonareolate to strongly cracked crust. Thallus P, K or + faintly orange, KC or KC+ red. Apothecia unknown. On acid rocks in very shaded, dry habitats beneath overhangs and in crevices, very rarely on trunks of conifers and on manmade substrata. (if thallus more finely powdery, somewhat duller greenish yellow, with rhizocarpic acid, see Psilolecia lucida). ..... C. chlorina

1. Thallus yellow, often with either a slightly orange or a

greenish tinge, ar rarely greenish yellow; thin; granules 0.010.1(0.2) mm diam. Thallus diffuse (rarely delimited), forming scattered granules in places but chiefly converging to produce a ± continuous nonareolate (rarely fortuitously areolate) crust; prothallus not apparent. Apothecia rare, to 0.5 mm diam., scattered to ± clustered, superficial, orbicular, rarley angulardistorted; disc plane to subconvex, light orange often yellowpruinose; margins poorly developed to 0.01 mm thick, entire,concolorous with thallus, often becoming excluded. Paraphyses 11.5 um thick, septate, rather few, branched, richly anastomosing above, not swollen apically. Asci clavate, 2533 x 1013 um, twowalled, the innter extending to form a nipple (arrestedbitunicate?). Spores narrowly obovoid to narrowly ellipsoid, straight or curved, mostly 3septate, (9)1314 x 3 um. Thallus P or P+ orange, K and KC or + orange, darkening to redblack, C, containing calycin, or pinastric acid (C. citrina R. C. Harris ined."), rarely both. Often on bark, on the dry, shaded sides of trees (usually roughbarked), more rarely on shaded acid rocks and walls. Very common (at least in the north and west), often completely covering tree trunks. (if granules smooth, appearing corticate, see Candelariella xanthostigma; if soredia variable in size, see Candelariella efflorescens; if tiny lobes present, see Candelaria concolor var. effusa). C. candelaris s. lato. 2

2. With pinastric acid. ..... C. citrina R. Harris ined.
2. With calycin. 3

3. With unknown pulvinic acid derivative. ..... C. sp. Harris ined.
3. Without unknown. ..... C. candelaris s. str.

Note: a species of Chrysothrix with yellow thallus forming small (under 5 mm across), discrete, low convex mounds, and apothecia occasionally present, occurs on bark and rock on the Channel Islands of California and may need further study.

Literature

Galloway, D. 1985. Flora of New Zealand Lichens.

Harris, R. C. 1977. Lichens of the Straits Counties, Michigan. Processed publication.

Laundon, J. 1981. The species of Chrysothrix. Lichenologist

13: 101121.

Laundon, J. 1992. Chrysothrix. In: Purvis, et al., Lichen Flora of Great Britain and Ireland.

Rogers, 19 . Genera of Australian Lichens.