

CHRYSOTRICACEAE

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Chrysotricaceae Zahlbr., in H.G.A.Engler & K.A.E.Prantl, *Nat. Pflanzenfam.*, 1, 1: 107 (1905).

Type: *Chrysothrix* Mont.

Thallus crustose, leprose, byssoid, epiphloeodal, in rounded patches, or irregularly spreading, or immersed, indeterminate or determinate, unstratified and completely leprose or stratified, floccose or compact, forming rosettes or spreading irregularly, ecorticate. Surface bright yellow to vivid yellowish green, composed of soredia and/or anastomosing hyphae; soredia (often as weakly consolidated granules) usually present; marginal lobules and isidia absent. Soredia rounded, fine (to 50 μm wide) or coarse (more than 50 μm wide), loose or compact, forming a layer directly on the substratum or, in stratified thalli, loosely embedded in the surface. Medulla present or absent. Prothallus usually absent, rarely pale grey-white to black. Photobiont a unicellular green alga; cells dispersed or aggregated in clusters or chains, 4–22 μm wide. Ascromata apothecia, rare, with an ecorticate margin or immarginate, immersed, sessile or subpedicellate, simple, round, 0.1–2.0 mm wide; disc green, yellow, pale orange or brownish, concave, plane, convex or subglobose; thalline exciple poorly developed and ecorticate, or absent; proper exciple poorly developed, composed of anastomosing hyphae. Epihymenium well-defined, composed of the upper parts of the paraphyses. Hymenium colourless to pale yellow-brown, 35–75 μm thick, weakly amyloid. Hypothecium colourless to yellow-brown, sometimes poorly developed, 60–100 μm thick. Paraphyses 0.7–1.5 μm thick, septate, richly anastomosing above; apical cells not or only slightly swollen. Asci broadly clavate, *Arthonia*-type, 8-spored, with a well-developed very weakly amyloid tholus and, when immature, a beak-like ocular chamber. Ascospores usually 3-septate, rarely 1–2-septate, fusiform, narrowly obovate to narrowly ellipsoidal, straight or slightly curved, colourless, 9–15 \times 2.5–5.0 μm . Conidiomata unknown.

Recent investigations suggest this family is monotypic (Grube, 1998).

M.Grube, Classification and phylogeny in the Arthoniales (lichenized Ascomycetes), *Bryologist* 101: 377–391 (1998).

CHRYSOTHRIX

Chrysothrix Mont., *Ann. Sci. Nat., Bot.*, sér. 3, 18: 313 (1852), from the Greek *chryso* (gold) and *trichos* (hair), in reference to the appearance of the thallus.

Type: *C. noli-tangere* (Mont.) Mont. [= *C. pavonii* (Fr.) J.R.Laundon]

Description as for the family.

Chrysothrix is a cosmopolitan genus of c. 11 species, seven of which are known from Australia. These lichens occur on rock, wood and bark in alpine, temperate and tropical regions.

E.A.Vainio, *Catalogue of the African Plants collected by Dr. Friedrich Welwitsch in 1853–1861* 2(2): 396–463 (1901); J.R.Laundon, The species of *Chrysothrix*, *Lichenologist* 13: 101–121 (1981); G.Thor, Two new species of *Chrysothrix* from South America, *Bryologist* 91: 360–363 (1988); O.W.Purvis, *Chrysothrix* Mont. (1852), in O.W.Purvis, B.J.Coppins, D.L.Hawksworth, P.W.James & D.M.Moore (eds), *The Lichen Flora of Great Britain and Ireland 187–188* (1992); K.Kalb, New or otherwise interesting lichens I, *Biblioth. Lichenol.* 78: 141–167 (2001); T.Tønsgaard, *Chrysothrix*, *Lichen Fl. Greater Sonoran Desert Region* 2: 62–63

(2004); J.A.Elix & G.Kantvilas, The genus *Chrysothrix* in Australia, *Lichenologist* 39: 361–369 (2007).

1	Thallus immersed in bark; apothecia ±spherical, immarginate, subpedicellate; disc yellow-pruinose	4. C. palaeophila
1:	Thallus superficial; leprose; apothecia usually absent	2
2	Thallus C+ orange; xantholepinone A present (1:)	5. C. sulphurella
2:	Thallus C–; calycin, pinastric or leprapinic acid present	3
3	Calycin present; acetone extract forming an orange-red spot on silica gel plate (2:)	4
3:	Calycin absent; acetone extract forming a yellow spot on silica gel plate.....	6
4	Granules coarse, 75–200 µm wide; calycin only present (3)	1. C. candelaris
4:	Granules finer, 20–80 µm wide; calycin and leprapinic or diffractaic acid present	5
5	Thallus weakly to distinctly stratified; granules compact, very fine, 20–65 µm wide; calycin and diffractaic acid present (4:).....	2. C. granulosa
5:	Thallus not stratified; granules loose, somewhat larger, 20–80 µm wide; calycin and leprapinic acid present	3. C. occidentalis
6	Thallus weakly to distinctly stratified, fluffy, forming loosely adnate convex cushions; granules coarse, 60–160 µm wide; leprapinic acid present (3:).....	6. C. tchupalensis
6:	Thallus not stratified, adnate; granules finer, 20–80 µm wide; pinastric acid and vulpinic acid present	7. C. xanthina