

Tephromela M. Choisy
(LECANORALES: BACIDIACEAE s. lato: TEPHROMELATACEAE)

After Hertel & Rambold, Purvis, Magnusson, and others

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Thallus crustose, warted or cracked-areolate, \pm pale colored, \pm glossy; medulla l-; prothallus occasionally visible between areoles, often forming a dark border to the thallus. Photobiont chlorococcoid.

Apothecia immersed, adpressed to sessile; disk black, cup-like to strongly convex. Thalline exciple present or absent. True exciple thin, \pm inconspicuous. Epihymenium or hymenium with purplish or greenish, N+ red pigments. Hypothecium \pm ochraceous below. Paraphyses simple or sparingly branched, each with a gelatinous coat, swelling strongly in water; apices not swollen, but often with a pigmented hood. Asci clavate, Bacidia-type, tholus amyloid, with minute ocular chamber and axial mass. Spores 8, simple, colorless, ellipsoid, without a distinct perispore, \pm thick-walled.

Pycnidia immersed; wall colorless except for green pigmentations around the ostiole; conidiogenous cells in chains, pleurogenous (endobasidial); conidia oblong-ellipsoid to shortly thread-like, \pm straight, simple, colorless. Various depsidones in the medulla and atranorin and/or usnic acid in the cortex. Mostly on rocks, sometimes on bark or wood.

Distinguished from Lecanora s. str. and Lecidea s. str. by the combination of a poorly developed true exciple, Bacidia-type asci, paraphysis structure, and conidogenous cells in chains.

Some people, including myself and even some Europeans, aren't crazy about the two subgroups in this genus being lumped together.

I.

Apothecia lecanorine (to aspicilioid), with algae in margin; discs black; hymenium red-brown to violet, K+ red-violet; epihymenium red-brown.

With alpha-collatolic acid and atranorin, \pm alectoronic acid.

1. Thallus chalky white. Apothecia 1-5 mm wide, sessile, becoming elevated and stipitate. Cortex P+ yellow (psoromic acid major), K+ yellow (atranorin minor, chloratranorin trace); medulla UV+ ice-white (alectoronic acid major, alpha-collatolic acid trace), physodic acid trace. Apothecia constricted at base; disc plane or concave, then slightly convex, black, epruinose; thalline margin thick, flexuous and crenulate, concolorous with thallus. Spores broadly ellipsoid to globose, 7-13 x 5-8 μ m. Pycnospores 10 x 1 μ m. Thallus thick, continuous, areolate; areoles angular, in center 0.5-1 mm wide, at margin to ca. 1.5 mm wide, sublobate; prothallus

black. On rock, coast of Baja California. (*T. nashii* Kalb)

1. Thallus gray-white or grayish green, not chalky. Apothecia to 1-2.5 mm wide, immersed or broadly sessile. Cortex P- (without psoromic acid), K+ yellow (atranorin), KC+ yellow, C-; medulla UV+ ice-white (alpha-collatolic acid, \pm alectoronic acid). On rock, less often bark or wood, widespread, often inland. Apothecia round or irregular; disc flat or concave; thalline exciple conspicuous, persistent, swollen, \pm entire to flexuose at maturity; hymenium 50-60 μ m tall, dark purplish brown or purple-violet, pale purple-violet in upper part, ochraceous (K+ yellow intensifying) in lower part; hypothecium dark. Paraphyses coherent, septate, not clavate. Spores 10-15 x 5-8 μ m, ovoid to ellipsoid. Conidia 12-21(-24) x 1 μ m, shortly thread-like. Thallus rather thick, warted-areolate, often secondarily cracked into larger "areoles", wide-spreading to 30 cm or more diam.; areoles 0.3-1.5 mm diam., mostly \pm contiguous and fused, irregular, often warted-wrinkled; prothallus blackish. Photobiont cells 8-17(-19) μ m diam. On siliceous and slightly calcareous, nutrient-rich rocks and walls, rarely timberwork and trees, widespread in inland areas. Boreal and temperate. [Note: probably several taxa are called by this name in N. America; the corticolous material especially needs further study]. *T. atra*

II.

Apothecia biatorine, without algae in margin; hymenium hyaline to green; epihymenium green-black.

(See Magnusson, Lecidea armeniaca group, for more info.)

1. Thallus K+ yellow, KC+ yellow, Pd- (P+ yellow according to Thomson), with usnic acid, atranorin and bourgeanic acid. Thallus rather thick, warted-areolate, wide-spreading, to ca. 10 cm diam.; areoles to 2 mm diam., mostly contiguous, rarely scattered, convex or flat, at times wrinkled, greenish, brownish or yellowish white; prothallus black, indistinct. Cortex 40-60 µm thick. Photobiont cells 7-14 µm diam. Apothecia 0.5-2(-3) mm diam., black, smooth to shining, immersed (between the areoles) or \pm adpressed; disc at first flat, later becoming irregularly convex; true exciple excluded, much reduced, visible in upper part only as a narrow green-black zone continuous with epithecium; epithecium blue-green to green-black; hymenium 60-80 µm tall, \pm colorless; hypothecium colorless above, pale yellowish brown below. Spores 8-14 x 5-8 µm. Conidia 5.5-9 x 1-2 µm. On siliceous, exposed rocks. Arctic-alpine, Greenland to Alaska, south in the Rocky Mountains to Colorado and in Arizona (San Francisco Peaks at ca. 4000 m).T. aglaea

1. Thallus without usnic acid or atranorin. 2

2. Thallus cortex P-, K \pm yellow or orange-red, KC+ red, C-; medulla P+ yellow or red, K-, KC \pm red, C-; with alecatorialic acid, \pm protocetraric acid (psoromic acid according to Thomson). Thallus thick or moderately thick, areolate, wide-spreading, to 10 cm diam.; areoles 0.4-2(-4) mm wide, \pm angular, contiguous or rarely scattered, convex or flat, grayish or yellowish green when fresh becoming red-brown or brownish yellow in herbarium, shiny (matt according to Thomson), often minutely wrinkled or becoming secondarily cracked; prothallus black, inconspicuous, sometimes visible between the areoles (thick and areolate according to Thomson). Photobiont cells 7-18 µm diam. Apothecia 0.8-2(-4.5) mm diam., immersed (between the areoles), becoming adnate above the thallus; disc black, becoming convex, matt or shining; true exciple \pm inapparent, 25-30 µm, blue-green; epithecium bluish green-black, in part brownish; hymenium 45-55 µm; hypothecium thin, poorly formed, colorless, but \pm pale ochraceous in lower part. Paraphyses conglutinate, 1.5-2 µm, tips thickened and blue-green; asci clavate. Ascospores 9-12 x 3.5-4(-5) µm, biseriate, ellipsoid or sometimes subglobose. Pycnidia rare; pycnosporos 6.5-10 x 1.5-1.8 µm. On exposed siliceous rocks, arctic-alpine, Alaska to Greenland, south in the Rocky Mountains to Colorado and New Mexico, and in Washington (to California?). T. armeniaca

2. Thallus K-, KC-, P+ yellow, with psoromic

acid. T. testaceoatra [need to find a fuller description of this--should be one under its synonym Lecidea arctogena, perhaps in Magnusson's treatment]

ADD:

[Lecidea aglaeida]

Literature

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