Placopsis (Nyl.) Lindsay
(LECANORALES: TRAPELIACEAE)

After Brodo, Lamb, Galloway, and Thomson

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Thallus crustose, orbicular to spreading, tightly attached, often with deeply incised, radiating marginal lobes; upper surface matt or shining, areolate-cracked or with irregularly anastomosing cracks or continuous, or warted or wrinkled-plicate, usually whitish or cream or pinkish or (in some non N. American species) orange-red, or pale green or olive-brownish or blackened; soredia and isidia present or absent; upper cortex paraplectenchymatous, often overlain by a colorless, necrotic zone; primary photobiont ± displaced by internal cephalodia; external cephalodia always present, ± conspicuous, sessile or immersed, discoid or subglobose, irregularly lobed or folded and wrinkled, pinkish, reddish or red-brown or grayish, apothecium-like.

Apothecia sessile or immersed, lecanorine; disk round, variously colored, ± plane, smooth or minutely scabrid, sometimes cracked, matt or shining or white-pruinose; thalloid margin concolorous with thallus; true exciple, when developed, thin, often visible in old apothecia, ± colorless, of elongated, thin-walled cells; hypothecium hyaline or pale yellowish, of intricately interwoven, unoriented hyphae; hymenium 80-230 um tall, colorless or pale yellowish, I+ blue; epihymenium yellowish brown with samll yellowish granules also present on tips of paraphyses; paraphyses slender (1.5-2 um), branched, discrete (± free), ± monilliform and slightly swollen near the tip; asci cylindrical to narrowly clavate, unitunicate, amyloid with a K/I+ pale blue tholus and narrow, internal darker blue cap; spores 8, mostly uniseriate, ellipsoid, elongate-ellipsoid or subfusiform, simple, hyaline, often somewhat pale pink with densely granular contents, thin walled. Pycnidia immersed, causing slight swellings of the thallus, opening by a minute, dark ostiole to 0.1 mm diam.; fulcrum exobasidial; pycnospores filiform (bacilliform according to Rogers), simple, colorless. Gyrophoric acid, ± lecanoric acid, sometimes other phenolics. Photobiont initially trebouxioid, cells 4-12 um diam., with Stigonema, Scytonema, or Nostoc in the cephalodia. On rock or disturbed soils, mainly siliceous, boreal-montane, mostly on exposed sites in ± moist regions.

1. Thallus effigurate, with well-developed lobes along the thallus margins; apothecia infrequent; cephalodia pinkish to brown, falt to tuberculate, lobate. 2

1. Thallus dispersed areolate, with abundant, often crowded apothecia, the apothecia and areoles lying on a black bed of Stigonema apppearing like a prothallus; ordinary flat to tuberculate cephalodia absent. ..... C. roseonigra

2. Isidia present (do not confuse with verruculose pycnidia), granular. Thallus thin, usually rough, minutely pitted with pockmarks left by isidia that have broken loose. Isidia terete, simple, 0.1 mm diam., subglobose, often crowded centrally; soredia absent. Hymenium 90-150(-180) um, pale yelloiwsh. Spores ellipsoid (L:W = ca. 1.7-2.0), 12-16.5 x 6-9 um. Cortex K+ yellowish, C+ rose; medulla K+ yellow (faint), C+ rose, P-. On rocks, rarely on sandy soil. ..... P. cribellans

2. Isidia absent; soredia present, in round to irregular often hemispherical soralia (rarely, soralia sparse or even absent); thallus thick, smooth. 3

3. With gyrophoric acid as the only major substance. Upper surface matt, or shiny only at lobe tips, without depressions; soralia often eroded, rarely black; cephalodia usually distinctly lobate. Thallus center distinctly rimose-areolate, ± smooth, not verrucose or rugose-verruculose; spores to 25 (rarely to 27) um long; thallus not rusty or chraceous. Cortex K-or K+ yellowish, C+ rose; medulla K-, C+ red, KC+ red, P+ red or P-. Thallus containing gyrophoric acid. Rather variable. On rocks (siliceous), occasionally on mosses or sandy soil, arctic to temperate, south to the White Mountains in the east and to California in the west; very common, at least in montane areas on the west side of the Cascades. Common along the west coast and scattered in the arctic regions. ..... P. gelida

3. With both gyrophoric acid and 5-O-methylhiascic acid as major substances. Upper surface shiny, often with small depressions; soralia at the level of the thallus, usually blackish, sometimes capitate and greenish; cephalodia usually not distinctly lobate. Europe. ..... P. lambii Hertel & V. Wirth (Note: "Lecanora gelida f. neglecta Degel." from Alaska keys out here as far as chemistry, and may or may not be synonymous with P. lambii)

P. cribellans

Isidia present (do not confuse with verruculose pycnidia), Isidia terete, simple, 0.1 mm diam., subglobose, often crowded centrally; soredia absent. hymenium 90-150(-180) um, pale yelloiwsh. Spores ellipsoid (L:W = ca. 1.7-2.0), 12-16.5 x 6-9 um. Thallus forming ± orbicular and often confluent patches, to 6 cm diam.; marginal lobes closely attached, flattened, simple or irregularly branched, usually richly divided and markedly crenulate, discrete, separated by narrow cracks, with rounded or subcrenulate ends; surface creamy or whitish to pale olive-brown, matt, erpuinose; centrally cracked or indistinctly areolate, pitted-punctate with minute pock-like depressions resulting from abrasion of isidia. Cephalodia sessile, scattered, flattenedd orbicular or depressed convex, 0.8-5.0 mm diam., radially folded and wrinkled or cracked, yellowish brown or pinkish, matt. Apothecia scattered, rotund, subpedicellate, 0.5-1.5 mm diam.; thalline margin prominent, entire or subcrenulate; proper margin thin, flesh colored; disc plane or subconvex, pale pink to dark red or brownish, matt, white pruinose; Pycnidia immersed, forming minute swellings with punctiform brownish ostioles; pycnospores filiform, slihgly curved, 21-29 x 0.5 mm. Cortex K+ yellowish, C+ rose; medulla K+ yellow (faint), C+ rose, P-. On rocks, rarely on sandy soil. .

P. gelida

[Note: this description may be based partly on "f. neglecta", which may be a separate species or a synonym of P. lambii. Info. in brackets is from or is consistent with the descripition of P. gelida s. str. by Moberg & Carlin, 1996].

THALLUS effigurate, lobate, determinate. Thallus [closely attached, forming orbicular rosettes to 5 cm diam. but usually smaller, sometimes becoming confluent into large, irregular patches to 8 cm diam.]; **marginal lobes** [well developed, radiating, usually overlapping, sometimes truncate, equal in length, giving the circumference a regular appearance], closely to ± loosely attached, contiguous, thin, plane, separated by cracks to 0.1 mm wide, to 2.5 mm long (or extending to center of thallus), 1.6[-2[mm broad, [broadest towards the tips]; apices uneven, rounded or crenulate, sometimes with a narrow, olive-brownish peripheral zone; **thallus center** [rimose, becoming areolate]; areoles irregularly angular, 0.6-2 mm across, ± swollen or plane; **surface** [mainly smooth, without depressions (except those of pycnidia)]; cream or ivory

colored or glaucous, often olive-brownish tinged, [grayish, rarely brownish, usually somewhat purplish (pinkish or bluish)], [matt, or shiny only at lobe tips], [at most indistinctly maculate],not pruinose; **cephalodia** [located centrally], single in small thalli, scattered in older thalli, discrete, [to 5 mm diam.],1-3(-8) mm diam., [orbicular], radiately folded and cracked, [lobate with radiating, dichotomously furcate lobes], [yellow brown (carneous) to dark reddish brown], matt. **Soredia** often present, scattered over the center and granulose; [soralia rounded or radially elongate, plane or often slightly to strongly eroded, delimited by an elevated cortical rim, or often irregularly confluent, occasionally elongate and covering most of the thallus center; soredia formed of aggregates of several united grains, white or greenish, sometimes weakly brownish to blackish, rarely black]; **upper cortex** [indistinctly delimited from the algal layer, paraplectenchymatous].

APOTHECIA [very rare], scattered, sessile, [lecanorine]; **thalline margin** thick; proper margin occasionally visible, thin, entire, pinkish-red or brown; **disc** round, flat, smooth or minutely roughened, matt, [reddish, pruinose], dark flesh colored, yellow brown or red brown, sometimes with whitish pruina. **Epithecium** sordid yellowish, granular inspersed; **hymenium** 105-183(-200) um, yellowish; **paraphyses** not thickened at tips or only slightly; **spores** 8/ascus, ± uniseriate, [ellipsoid], 1-celled, [(11-)12-15(-20) x (6.8-)8-11(-13)] um.

PYCNIDIA [rare, immersed in slight swellings, visible as small, brown depressions on thallus surface]; ostioles brown-black, 0.1 mm diam, walls brown; **pycnospores** [filiform, straight or curved, 15-27 x 0.5 mm].

CHEMISTRY: Cortex K- or K+ yellowish, C+ rose; medulla K-, C+ red, KC+ red, P+ red or P-. Thallus containing [gyrophoric acid (major), hiascic acid (minor)].

ECOLOGY AND DISTRIBUTION: [On rocks (siliceous, acidic), occasionally on mosses or sandy soil, in open, moist situations, often along brooks and small rivers], arctic to temperate, south to the White Mountains in the east and to California in the west; very common, at least in montane areas on the west side of the Cascades.

[Rather variable].

P. roseonigra Brodo

Thallus indistinct or clearly visible, thin or thick, edge indefinite, dispersed areolate, not lobate, very pale yellow-pink, or sometimes yellowish white; soredia and isidia absent; true prothallus absent, but a black, prothallus-like bd of cyanobacteria (Stigonema) is present around and under apothecia and thallus areoles, composed of poorly associated, non-lichenized colonies surrounded by masses of what a ppear to be bacteria; well differentiated cephalodia absent. Photobiont resembling Chlorella, with small, irregular cells, 5-8 um diam.

Apothecia lecanorine, 0.6-1 mm diam., abundant and sometimes comprising almost the entire thallus; occurring singly, or more commonly crowded and deformed by mutual pressure, immersed; disc level with thallus, or sessile, slighlty concave or flat when mature, light yellowish pink to reddish brown, rarely medium orange, epruinose or lighlty pruinose, smooth; margin prominent or even with disc, smooth, verruculose or verrucose, uniform, epruinose, even to flexuous, thallus colored. Hymenium 140-200 um, hyaline, hemiamyloid; epihymenium shades of yellow or brown, not granular but refractive in polarized light, K-, C+ pink; hypothecium colorless, distinct from exciple, 38-70 um thick; proper exciple distinct, consisiting of a paraplectenchyme at the base, grading into longitudinally arranged tissue laterally, expanding into a more fibrous parathecium at the upper edge; amphithecium without crystals; cortex usually distinct, cellular, not gelatinous or opaque with crystals, 25-38 um thick, ±

uniform; algae sometimes filling amphithiecial medulla, continuous below excipulum proprium; paraphyses highly branched and anastomosing, slender (1.1-1.4 um), not expanded or pigmented, coherent in water, free in K; asci narrowly cylindrical, tips uniformly K/I+ pale blue (Trapelia-type); spores hyaline, non-septate, often with a halo; wall evenly thickened, 23.5-30.5 x (9-)10-14 um, 8 per ascus, biseriate, or sometimes uniseriate.

Pycnidia rare, pale, buried in areoles; conidia elongate, straight, 5.9-7.3 x 0.6-0.8 um.

Thallus cortex P-, K-, C+ red, KC+ red; medulla P-, K-, C- or C+ red, KC- or KC+ red; surface UV(LW)-. Apothecial discs C+ pink or red, UV-. Gyrophoric, sometimes trace of lecanoric. No lichenan.

On siliceous rocks on exposed rock faces, ridges and terraced bogs usually 180-800 m but sometimes in aerohaline zone. Queen Charlotte Islands and coastal SE Alaska.

Literature

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