

Bellemerea Hafellner & Roux

(LECANORALES: LECANORACEAE according to Hafellner, but Purvis's interpretation of the ascus would seem to put it in PORPIDIACEAE)

After Ozenda & Clauzade, 1970, and others

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Thallus crustose, cracked to wartedareolate; areoles dispersed to contiguous; prothallus black. Photobiont chlorococcoid, many cells ellipsoid, at times algal layer continuous below hypothecium. Medulla I+ blue. Apothecia ± immersed, at times occupying virtually the entire surface of areole; disk concave to flat; thalline exciple thin, not raised, scarcely distinguishable from the thallus (cryptolecanorine); true exciple very thin, or absent. Paraphyses ± branched and anastomosed; apices slightly swollen, often with a thin, dark brown cap. Epihymenium brown or greenbrown, N or N+ purple. Hypothecium colorless. Asci clavate, Porpidiatype. Spores 8, simple, occasionally spuriously 1septate, ± ellipsoid, colorless, with a distinct I+ blue perispore. Pycnidia immersed; conidiogenous cells in short chains; conidia acrogenous or pleurogenous, shortbacilliform, simple, colorless. Norstictic acid in some species. On montane rocks.

Separated from Aspicilia and Lecanora by the ascus type, and also the I+ blue medulla (however, there are several [mostly?] nonNorth American species that have been placed in Aspicilia or Lecanora that have an I+ blue medulla but have not been transferred to Bellemerea and may or may not belong there. Bellemerea differs from Amygdalaria and aspicilioid species of Porpidia by the colorless (or absent) exciple, colorless hypothecium and ascospores with an I+ blue perispore (the latter feature also separates it from Aspicilia and Lecanora).

1. Thallus soresiate, K+ rusty crystals (norstictic acid).

Thallus crustose, uniform, limited by a thin black prothallus or not, in small patches 13 cm diam. Upper surface graywhite, pruinose, areolatecracked; areoles 0.20.4 mm diam., soresiate centrally; soralia rounded, 0.150.18 mm diam., granularcreaterfiorm, concolorous with thallus, often densely covering it. Apothecia not seen. On rocks, alpine. Washington state (and elsewhere). B subsorediza (Lyngby in Dahl, et al.) R. Sant.

1. Thallus not soresiate. 2

2. Discs and epihymenium + dark redbrown, N (if discs blackish, then redbrown when wet). 3

2. Discs and epihymenium + greenish or bluish black, not reddish; N+ purple; discs blackish, not reddish when wet. Spores 1220 x 811 um, without halo, asci I. No algae under hypothecium. [If epihymenium N+ green, see other Aspicilia spp.]. (Aspicilia myrinii)

3. Thallus K+ rusty crystals, P+ yelloworange (norstictic acid). Spores (7)915(23) x (3)713 um (sometimes poorly developed and smaller), ellipsoid or ovoidellipsoid. Thallus whitish to bluegray, or dull grayfawn or olivegray, ± orbicular or spreading irregularly among other lichens, 25 cm diam., conspicuously areolatecracked; areoles convex, angular or rounded, 0.20.6 mm diam., ± dispersed and subsquamuloseffigurate at margins, separated by deeply gaping cracks; prothallus black, visible between areoles and at margins. Apothecia (0.2)0.81.5(1.8) mm diam., 14 per areole, round to irregular or ± angular, innate at first becoming plane and ± sessile in older fruits; discs dull brown to dull redbrown or blackish when dry, bright redbrown when wet; matt or somewhat roughened, often pruinose; thalline margin thin, concolorous with thallus, ± elevated. Hypothecium hyaline; epithecium brown; paraphyses simple, not moniliform. Algal layer discontinuous beneath hypothecium. Thallus C, P+ orange. On siliceous rocks, arcticalpine, California to Washington; Rocky Mountains. Very common and abundant, at least in the Pacific NW. Quite variable (Lecanora applegatei Herre, and a taxon with irregularly elongated and branched apothecia also keys out here, as does a strange form with narrow, irregularly stellate apothecia). B. alpina (Sommerf.) Clauz. & Roux

3. Thallus K, P. (B. subcandida group). 4

4. Spores often over 16 um long and 9 um wide. Thallus + reddish. B. sanguinea (Krempelh.) Haffelner & Roux

4. Spores ± under 16 um x 9 um. 5

5. Thallus grey. Discs brownblack when dry, redbrown when wet. Algal layer continuing beneath hypothecium. Spores (7)1218(24) x (4)79(10) um, ellipsoid. Thallus thin, smooth to warty and chinky to areolate, the areoles sometimes scattered, pale to darker grayish on an often indistinct black hypothallus. Apothecia 0.40.8(1.0) mm diam. but often immature and punctiform, immersed to adnate; disc concave to flat, dark reddish to reddish brown or blackish; thalline margin concolorous with thallus. On siliceous rocks, montaine to alpine. Very common, but often

inconspicuous. Utah; Oregon; Washington; elsewhere. B. cinereorufescens (Ach.) Clauz. & Roux

5. Thallus rusty red. Epihymenium somewhat blackish (?). Perhaps just a variant of B. cinereorufescens. B. diamarta (Ach.) Haffelener

ADD:

"Lecanora applegatei Herre":

Thallus crustose, strongly adherent, extensive, forming irregular patches of smooth, scattered or aggregated and contiguous flat areoles on a well developed, thin black hypothallus; areoles 0.11.0(1.6) mm across; surface ashy or ashy yellow, or white to yellowish white. Soredia and isidia absent. Fertile areoles often become thick elevated warts. Apothecia numerous, dispersed, to 1 mm across, at first innate, soon adnate, plane to finally + convex, 1(2) per areole; disk red, rusty red or brownish red, sometimes blackish red. Hymenium I+ blue. Spores 8, hyaline, subglobose to broadly ellipsoid or ellipsoid, 711 x 36.5 um, or 913 x 68 um. Thallus K+ yellow then red. On volcanic rock, Crater Lake, Oregon.

Literature

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