

Bulbothrix Hale
(LECANORALES: PARMELIACEAE)

After Hale

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Thallus foliose; attached by rhizines; with well developed upper and lower cortices; upper cortex of palisade plectenchyma; upper surface gray; lower surface pale to black; rhizines simple to richly dichotomously branched; margins of lobes with bulbate cilia (short, strongly swollen at the base). Pored epicortex present; pseudocyphellae absent. Cell walls containing isolichenan.

Apothecia laminal, sessile, eperforate; margin thalloid, often with bulbate cilia or corona of sessile pycnidia; disk round, flat or concave; hypothecium pale, with algae; paraphyses unbranched, capitate; asci cylindrical-clavate, unitunicate, I+ blue; spores 8, simple, ovoid to ellipsoid (5-21 x 3-12 um) or bicornute-semilunate (9-20 x 2-4 um), thick walled

Pycnidia laminal, immersed, and/or apothecial and emergent; fulcrum enodbasidial, bayonet-like; pycnosporos bacilliform (cylindrical), rarely bifusiform (6 x 1 um). Cortex with atranorin. Medulla with orcinol depsides and depsidones, β -orcinol depsidones, anthraquinones. Photobiont Trebouxia. On trees, rarely rocks, tropical-subtropical.

1. Without isidia, soredia or pustules. Apothecia, if present, with ovoid or elliptical spores. Rhizines richly branched. Apothecia 1-3 mm diam. Lower surface black. Medulla C+ and KC+ rose or red, K-, P-. 2

1. Thallus isidiate, without soredia or pustules; isidia erect, cylindrical. Florida. 3

2. Lobes 1 mm wide or less; medulla C+, KC+ red (lecanoric acid). Apothecial margin lacking bulbate rhizines (ecoronate), covered by black dots (pycnidia). Thallus closely adnate, 2-5 cm broad; lobes sublinear, 0.5-1 mm wide; bulbate cilia dense, conspicuously inflated, apically branched; upper surface light mineral gray, plane, continuous; lower surface densely rhizinate; rhizines dichotomously branched. Apothecia common. dots (pycnidia); spores 3-5 x 5-7 um. On twigs. Common in exposed scrub forests on twigs and branches. Florida and adjacent areas of SE coastal plain. B. confoederata (Culb.) Hale

2. Lobes 1-2 mm wide; medulla C+, KC+ rose (gyrophoric acid). Apothecial margin with bulbate rhizines (coronate). Thallus closely adnate, 3-6 cm diam.; lobes sublinear-elongate, crowded, 0.5-2 mm diam.; bulbate cilia distinct; upper surface plane to rugulose, continuous to faintly maculate, cracked on older lobes; lower surface moderately rhizinate; rhizines moderately to densely branched. Apothecia adnate; spores 5 x 6-8 um. On trunks and branches of trees. Western Texas; Mexico. B. coronata

3. Medulla K+ yellow turning red, P+ orange (salazinic acid), C-. Lobes short, truncate to rounded. Thallus adnate, 5-10 cm diam.; lobes subirregular to sublinear, 1-4 mm wide; bulbate

cilia distinctly inflated; upper surface yellowish glaucous to olive buff, plane, continuous, faintly to distinctly maculate, densely isidiate, the isidia simple or branched, often globose, brown. Lower surface pale brown or darkening, moderately rhizinate; rhizines simple, pale brown or darkening. Apothecia adnate, 1-3 mm diam.; margin not coronate; spores 5-8 x 7-14 um. On bark (conifers or hardwoods) or rock, in pastures, woodlands and open areas. Florida. B. isidiza (Nyl.) Hale

3. Medulla K-, C+ rose or red, K-, P-. Lobes linear. Thallus closely adnate.
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4. With lecanoric acid, C+ red. Lower surface jet black. Thallus 3-8 cm broad; upper surface whitish gray; isidia short, sparse to quite dense; lower surface densely rhizinate. Apothecia not common. On branches and trunks of deciduous trees in open woods, Florida and adjacent SE coastal plain. B. laevigatula (Nyl.) Hale

4. With gyrophoric acid, C+ rose. Lower surface dark brown. Thallus 3-6 cm broad, fragile; lobes ca. 1 mm wide, becoming dissected marginally; upper surface whitish to greenish mineral gray (often turning buff in herbarium). Apothecia rare. On trunks and branches in open woods. Rather widespread in southeastern U.S., but inconspicuous. B. goebelii (Zenker) Hale.

Literature

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