

Parmeliopsis Nyl.

(LECANORALES: PARMELIACEAE)

After Hale (1979), and others

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Thallus foliose, small, rosetteforming, closely adpressed; lobes narrow, linear, \pm radiating, discrete or contiguous and overlapping; upper surface grayish (atranorin) or yellowgreen (usnic acid). Pored epicortex present; pseudocyphellae absent; upper cortex palisade plectenchymatous (cortices pseudoparenchymatous according to ?). Upper surface sorediate with laminal soralia. Photobiont chlorococcoid. Medulla of densely interwoven hyphae. Lower surface brownblack with dark, simple rhizines. Cell walls containing isolichenan.

Apothecia laminal, sessile or somewhat elevated, eperforate. Thalline exciple present, concolorous with thallus; disk red to dark brown. Paraphyses simple. Spores 8, simple, hyaline, kidneyshaped to curved, $6 \times 4 \mu\text{m}$ ($712 \times 34 \mu\text{m}$ according to ?).

Pycnidia black, laminal, immersed; conidiophores Psorat type; conidia sickles shaped, $1416 \times 1 \mu\text{m}$. Cortex with atranorin or usnic acid; medulla with the orcinol depside divaricatic acid (UV+ white). On bark or wood, alpine, borealtemperate. Type species: P. ambigua.

This genus is distinguished from most other genera of Parmeliaceae by the conidiophore type. Imshaugia, with analogous conidial development, is distinguished by emergent pycnidia, bifusiform conidia, and small ellipsoid spores.

This genus is most likely to be confused either with its segregate Imshaugia (see below) or (in the case P. hyperopta) with Physcia spp. (the distinctions are subtle, but since P. hyperopta is identical to P. ambigua except for color and chemistry, and the latter species is easily recognized and often occurs with the former, this is usually not a problem).

1. Upper side mineralgray to whitish gray or bluegray, K+ yellowish (atranorin). Lobes about 1 mm wide, \pm irregularly branched. Underside black, brown towards margins. Sorediate; soralia laminal, scattered to contiguous, white to bluegraywhite, \pm convex. Medulla P, K, KC, C, UV+ white (divaricatic acid). (If thallus isidiate or diffusely sorediate, underside pale, and P+, containing thamnolic acid, see Imshaugia aleurites; if not

isidiate or sorediate, see Imshaugia placorodia). On coniferous and sometimes acidbarked broadleaved trees (Betula), old stumps, burned logs, old wood, and sometimes on acid rocks, Borealarctic, southeast to New Hampshire and Wisconsin, southwest to Colorado and Oregon. P. hyperopta

1. Upper side greenish yellow, K, KC+ yellow (usnic acid, in addition to atranorin). 2

2. Upper surface pustulate, diffusely sorediate. Apothecia somewhat larger than those of P. ambigua; disc waxcolored; margin powdery sorediate. On conifers, Massachusetts, New Jersey, Virginia, S. Carolina, Louisiana. P. subambigua Gyelnik

2. Upper surface smooth; soredia in ± discrete soralia. 3

3. Underside dark (black, brown toward margins). Soralia laminal, eroded, flat or occasionally ± convex and forming mounds, rarely concave; lobes contiguous, to partly overlapping centrally, ± discrete at margins, or scattered, flat to ± concave. Thallus 13(4) cm diam., closely adpressed, often forming neat rosettes with contiguous lobes, or of ± scattered, unoriented lobes, often contiguous with adjacent thalli. Lobes 0.51 mm wide, sometimes much reduced, ± elongate, often radiating; margins sparingly indented. Upper surface bright to dull pale yellowgreen, not grayish, matt. Soralia paler or concolorous with thallus, sometimes ± contiguous to form a continuous sorediate crust in older parts of thallus. Apothecia rare, to 2 mm diam.; discs redbrown. Spores 711 x 2.53 um. Conidia 1218(22) x 0.51 um. Cortex K+ faintly yellow, KC+ yellow, containing usnic acid and atranorin; medulla P, K, KC, C, UV+ white, containing divaricatic acid. On twigs and wood of conifers, sometimes on birch, willow, and other broadleaved trees, occasionally on rocks (e.g., sandstones) and mosses over rocks, Borealarctic, southeast to S. Carolina, southwest to Colorado and New Mexico. P. ambigua

3. Underside pale. Soralia capitate, at ends of upturned lobes; almost all lobes with soralia; lobes divergent, often quite terete; often yellowgray. Great Lakes area. P. capitata Harris ined.

Literature

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