

Physconia Poelt
(LECANORALES: PYXINACEAE)

After Poelt, and others

Rev. 5/94

Thallus foliose, lobate, sometimes ± orbicular in outline, but often irregular and confluent with others, ± loosely adpressed. Lobes short to elongate, mostly under 3 mm wide, without cilia on margins; upper surface dull gray to dark brown, matt or slightly glossy, usually pruinose at least at tips; lower side whitish to brownblack. Soredia present in some species. Upper cortex pseudoparenchymatous (lumina 37 um dim.) or scleroplectenchymatous (lumina under 2.5 um wide). Lower cortex prosoplectenchymatous (lumina under 2.5 um wide), black and distinct, or whitish and indistinct, sometimes absent at lobe tips. Photobiont trebouxiioid.

Apothecia laminal, without rhizines on lower surface; disk brown but usually white pruinose. Thalline exciple persistent, often incurved, sometimes with lobules or soredia. Epihymenium brown. Hymenium and hypothecium colorless. Paraphyses simple, or branched above; apices clavate, light brown with a thin, dark brown cap. Asci cylindricalclavate, Lecanoratype. Spores 8, brown, finely warted, 1septate, thickwalled, with a strong, thickened broad septum, not thickened at apices.

Pycnidia immersed in lobe surface or in small warts; walls colorless except for brownish ostiolar region; conidiogenous cells arising in branched chains, shortcylindric, enteroblastic, acrogenous or pleurogenous; conidia bacilliform, simple, colorless, 47 x 12 um. Atranorin absent. No substances, or sometimes phenolic acids, pigments, or unknowns. On bark, rock or soil, usually over mosses.

Distinguished from Physcia s.lato (including Phaeophyscia and Physciella) primarily by the absence of apical thickening in the ascospores and their thick and broad septum.

1. Sorediate or isidiate. Medulla C or C+ red.

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1. Not sorediate or isidiate, but often lobulate. Medulla

C.
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2. Underside whitish, or pale brown in central parts, with whitish to pale brownish or gray, simple to bifurcate rhizines.

Upper cortex definitely paraplectenchymatous. Thallus irregular and confluent with others, sometimes orbicular to 8 cm diam., \pm closely attached; lobes 0.62 mm wide, \pm radiating and partly overlapping, gray to graybrown, usually pruinose at least at tips; nonpruinose parts matt; fragile isidialike lobules or granular soredia present along lobe margins or on surface in center of thallus, sometimes forming a dense, granular crust. Medulla white, K. Apothecia uncommon, to 3 mm diam.; marginssorediate. Spores 2734 x 1417 μ m. Pycnidia immersed; conidia 47 x 12 μ m. Medulla K, C, KC, P, containing four unidentified compounds. On bark or rock. Much (possibly all?) of the N. American material previously identified as this species is P. grisea. A strange form with a leadblue upper surface and squarrose rhizines, occurring rarely on steep, shaded mossy rocks at high elevations, in Arizona, seems to key out as P. grisea s. str. but may be a distinct taxon.P. grisea

2. Underside whitish or black with brown margins; with usually soon blackened, \pm glossy rhizines which are reduced to a perpendicularly unravelled felt near the base (squarrosely branched). Upper side \pm brown, often \pm strongly pruinose.3

3. Underside pale, whitish and ecorticate at tips, disintegrating into filaments, becoming blackish and corticate towards center, with black rhizines. Upper cortex very irregularly strongly prospsectenchymatous (scleroplectenchymatous). Thallus usually irregular in outline, \pm loosely attached; lobes 0.50.75(1.2) mm wide, usually short, with numerous imbricated upright central lobules, which bear definite labriiform soralia on the upturned ends; soralia often confluent and densely isidiate in centre of thallus; marginal lobes usually not sorediate. Upper surface dark brown, often pruinose (especially at tips), usually with a mauve or purplish tinge; nonpruinose parts \pm glossy. Medulla white, K. Apothecia very rare. Great Lakes area; California. P. perisidiosa

3. Underside soon pigmented or blackened (except in P. grisea), not disintegrating into filaments. 4

4. Medulla C+ rose or red, KC+ red (gyrophoric acid); soralia often K+ yellow and KC+ orange. Underside dark; rhizines dense. Thallus to 5 cm diam.; upper surface graybrown to brown, pruinose towards lobe ends or over much of the surface; lobes flat, 12(2.5) mm broad, loosely appressed to somewhat ascending. Soralia primarily marginal or terminal on short side lobes, linear and \pm elongate or becoming in part labriiform due to

reflexed upper cortex, with \pm punctiform laminal soralia developing in some older thallus parts, these sometimes coalescing to cover the thallus center. Lower surface black inward, pale to almost white toward the lobe ends, with conspicuous black rhizines. Apothecia rare, 13 mm diam.; spores 2532 x 1215 μ m. On bark or occasionally rock, fairly frequent in N. Dakota and Minnesota. P. kurokawae

4. Medulla and soralia C, KC, K (no substances). Underside soon yellowish to brownish or blackened, smooth, corticate to the tips. Thallus without upright lobules. Upper side usually striate; provided on the often undulate margins with \pm extensive, nonlabriform soralia. Lobes elongated, usually 2 mm or more wide, not ascending. On bark or rock, or over mosses. Very common. 5

5. Medulla and soralia white, K. Upper side usually strongly striate; soralia elongated. Upper cortex scleroplectenchymatous. Upper side shiny where epruinose. Thallus adnate, 47 cm broad; lobes 12 mm wide, marginally sorediate. Lower surface black, densely rhizinate. Apothecia rare. No substances. Eastern (Great Lakes area to New England, southward except coastal plain), usually on bark (especially on elms and poplars), in open woods and along dusty roads; and western (Pacific NW east to western Montana, south to S. California), where it more frequently occurs on mossy rocks as well as on trees (e.g., oaks). P. deterosa (Nyl.) Poelt

5. Medulla and soralia yellowish to strong yellow, K+ strong yellow (or sometimes faint). Upper side less often striate; margins mostly strongly undulate. Upper cortex paraplectenchymatous. Upper side matt. Thallus irregular, seldom orbicular, to 5 cm diam., often confluent, \pm closely attached. Lobes overlapping or distinctly separated, to 3 mm broad, seldom ascending at apices. Upper surface graybrown to brown, usually pruinose. Soralia marginal, very seldom labriform, sometimes eroding and invading the lamina. Lower surface brownish, sometimes black except for brown, corticate lobe tips. Rhizines numerous, black, often forming a felty layer. Apothecia rare, usually with sorediate margins. Spores (25)2837 x 1621 μ m. Pycnidia rare, \pm immersed. Conidia 46 x 1 μ m. Containing unknown pigment. On roadside trees. Rare in the East (e.g., Great Lakes area); moderately frequent in the west (California to Pacific NW) but less so than P. deterosa. Often difficult to distinguish unless the yellowish color is seen in fairly bright light; regarded by some authors as being dubiously distinct as a species. P. enteroxantha

6. Lower cortex whitish; rhizines simple to bifurcate. (see P. grisea, above)

6. Lower cortex black, with a usually wide pale area at the margins, glossy, dense and smooth; rhizines soon perpendicularly unravelled (squamrose). Upper side without cortical hairs.

Usually not on rock. 7

7. On soil or moss. Upper cortex largecelled

paraplectenchymatous; upper side epruinose or diffuse finewarty pruinose, light brownish gray to brown, extremely variable, taking on a white cast if heavily pruinose; lobes to 4 mm wide, \pm ascending; medulla white and K, or yellowish and K+ yellow (the latter form analogous to P. enteroxantha, and therefore should be recognized as a distinct taxon if the former is). Thallus adnate, 410 cm broad; upper surface with slightly raised margins and sparse lobules with age; lower surface beown to black, sparsely to densely rhizinate. No substances. Apothecia uncommon, sunken in the tops of the lobes, the margins lobulate; paraphyses capitate; spores up to over 2 times as long as wide. Common over mosses on soil and over rocks (especially limestone, but also siliceous rocks), in open areas. Northeastern (southcentral Canada to New England) and western (SW Canada south to California, Arizona and New Mexico; apparently lacking in Great Basin but that is probably due to undercollection in that area). P. muscigena (Ach.) Poelt

7. On bark. Upper cortex prosoplectenchymatous

(scleroplectenchymatous); upper side epruinose to coarsely warty pruinose; lobes to 2 mm wide, sometimes strongly divided into plump turflike lobuli in center of thallus; medulla white, K. Thallus closely but \pm loosely attached and richly fruiting. Paraphyses not capitate. Spores under twice as long as wide, (25)2738 x 1320 um. Thallus to 10(15) cm diam., usually orbicular, \pm loosely attached; lobes 0.62 mm wide, usually radiating, \pm separate to overlapping. Upper surface graybrown to dark brown. Underside whitish at lobe tips but blackish towards center, with black rhizines often forming a dense mat. Apothecia numerous, to 5 mm diam.; margin often with secondary lobules; discs often pruinose. Pycnidia frequent; pycnosporos 57 um long. On oaks and other trees, in open areas, western U.S. (except Great Basin, which has few trees), very common at least in California. [All collections from the east previously identified as this species are apparently Anaptychia palmatula, which has a white or tan lower surface]. The species as presently circumscribed is extremely variable, and a number of

infraspecific taxa of uncertain status have been described;
according to Bratt, and Esslinger (both pers. comm.), material in
California may partly belong to other
taxa. P. distorta

Literature

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Flora of Great Britain and Ireland.

Galloway, D. 1985. Flora of New Zealand Lichens.

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etc. (see bibliography with key to segregates of Physcia)