

Dendrographa Darbish.
(ARTHONIALES: ROCCELLACEAE)

After Sundin & Tehler, 1996, Tehler, 1990, and others

Rev. 4/96

Thallus fruticose, erect, repeatedly dichotomously branched, with branch tips ecorticate, sometimes anastomosing, often with lateral ecorticate branchlets breaking through cortex; heteromerous; calcium oxalate absent or present. Cortex indistinct, composed of longitudinal, periclinal, cohering hyphae, the medullary region "tow-like" (whatever that means). Hypomedullary plectenchyma sometimes present. Soredia and isidia not seen.

Ascoms numerous to absent, multiascal locules, pluricarpocentral (hymenial strands present but sparse and thin), discothecia (apothecioid), solitary, erumpent, lateral, circular in outline, sessile with constricted base; disc exposed, convex or rarely flat, white with a smooth pruinose layer; thalline margin whitish and formed by the breaking up cortex; cortex margin not reformed in upper actual margin but may be present on underside of ascoma, algae excluded (at least in upper part); proper exciple a thin parathecium but not well developed. Hypothecium distinct, dark-brown (carbonaceous). Hamathecium paraphysoid; paraphysoids parallel, separable, sparsely branched, hyaline, 1 µm diam., septate but cells inconspicuous. Epithecium brownish, gel brown, granular; hyphae intertwined, richly branched, with clavate, 2-3 µm diam., verrucose, brownish tips; calcium oxalate absent. Asci clavate, 70-80 x 15-18 µm, sometimes shrivelled and brown with collapsed brown spores inside. Spores 8, fusiform, with one end tapering more than other, curved, smooth, 3-septate, hyaline.

Pycnidia solitary, lateral, immersed or rarely elevated, 0.1 mm diam.; microconidia filiform, semicircular to almost straight; macroconidia not seen.

Photobiont Trentepohlia; cells coccal, 10-20 µm.

Cortex P+ red-orange (protocetraric acid, often with fumarprotocetraric acid, sometimes also with succinprotocetraric and/or various unknowns), C-, K-, I- or I+ violet-blue, K/I+ blue; medulla C-, K-, P (not investigated), I-, K/I-; hypothecium K+ olive-black, I-, K/I-; hymenium K-, I-, K/I-; epithecium K-, I-, K/I+ light blue; pycnidial wall I-, K+ olive-black, K/I+ partly blue.

Epiphloeodal or epilithic (or on soil?), coastal.

1. Medulla byssoid; terminal branches and lateral ecorticate branchlets more or less complanate; microconidia ca. 11-15 µm long. 2

1. Medulla coalescent; terminal branches and lateral ecorticate branchlets more or less terete; microconidia ca. 10-12 µm long. 3

2. Lateral ecorticate branchlets missing; internode length ca.

4-20 mm; ascomata rarely absent. D. leucophaea f. leucophaea

2. Lateral ecorticate branchlets present; internode length to 5 mm; ascomata absent. D. leucophaea f. minor

3. Ascomata present; main branches often more or less complanate. D. alectorioides f. alectorioides

3. Ascomata usually absent; main branches terete. D. alectorioides f. parva

D. leucophaea (Tuck.) Darbish. f. leucophaea

Thallus 6-9(-20) cm long, pendulous or decumbent, only occasionally branched. Branches coarse (0.5-2 mm thick), mostly distinctly flattened or compressed. Thallus fruticose, epiphloeodal or epilithic, 6-9(-20) cm long, erect, repeatedly branched (according to Tehler; pendulous or decumbent and only occasionally branched according to ?); main branches complanate, narrowing and often becoming more terete towards tips, terminal branches terete; surface with a thin white pruina, brown to creamy grayish or whitish gray, smooth to somewhat rugose; soralia present. Branches coarse (0.5-2 mm thick); holdfast only as an attachment; prothallus absent; calcium oxalate absent. Thallus rarely perforated with holes below. Thallus stiff and rather brittle. Cortex of periclinal hyphae, 25-35 μ m thick; hyphae verrucose, brown; surface gel clear, also as epicortex with uppermost 2-3 μ m layer granular, hyaline. Medulla white, byssoid; thallus gel absent; thalline hyphae smooth but often with crystals attached, thick-walled (w μ m and lumen 1 μ m), hyaline, nearly 4 μ m diam.; hypomedullary plectenchyma present. Soralia and isidia absent.

Ascomata numerous or sparse, multiascular locules, pluricarpocentral (hymenial strands present but sparse and thin), discothecia, solitary, erumpent, lateral, circular, sessile with constricted base, 0.3-1.5(-2.5) mm diam.; disc exposed, convex or rarely flat, white from smooth pruinose layer, or rarely blackish. Thalline margin thin, whitish as is medulla formed by breaking up of cortex, cortex margin not reformed in the upper actual margin but may be present on underside of the ascoma, algae excluded (at least in the upper part); proper exciple a thin parathecium but not well developed. Hypothecium distinct, dark brown (carbonaceous), not extending down into medulla. Hymenium 90 μ m; paraphysoids parallel, separable, sparsely branched, hyaline, 1 μ m diam., septate but cells inconspicuous. Epihymenium brownish, 25-30 μ m; gel brown, granular; hyphae intertwined, richly branched, with tips clavate, 2-3 μ m diam., verrucose, brownish; calcium oxalate absent. Asci clavate, 80 x 15 μ m, sometimes shrivelled and brown with collapsed brown spores inside. Spores fusiform with one end tapering more than the other, curved, smooth, 3-septate, not constricted at flat septa, hyaline, (19-)20-25(-28) x (5-)6-7 μ m.

Pycnidia solitary, lateral, immersed, rarely elevated, black, 0.1 mm diam.; microconidia filiform, curved in a semicircle, (9-)10-13(-14) x less than 1 μ m; macroconidia not seen. Photobiont Trentepohlia, cells coccal, 10-20

um, in an algal layer. Cortex and medulla C-, K-, I-; apothecial and pycnidial tissues K-, I-; epihymenium and asci K/I+ blue; pycnidial wall partly blue. Protocetraric acid (P+ red-orange). On bark of shrubs, less often on rock, on headlands exposed to fog in coastal scrub from sea level to 100 ft elev., central California (now rare there, perhaps extinct), southern California to Baja California.

D. leucophaea f. minor (Darbish.) Sundin & Tehler

Thallus 3-6 cm long, erect to decumbent, richly dichotomously branched. Branches slender (under 1 mm thick), \pm terete, not compressed except somewhat towards base, more finely divided; surface whitish, without dark or brownish tinges. Branches becoming much entangled, sometimes blackish below; soralia sparingly present or absent.

Ascomata (usually absent) 0.6-2.5 mm across; disc concave to slightly convex, whitish pruinose to blackish; exciple thickish. On rock or soil, and on bark of Monterey Cypress, central and southern California to Baja California. Forms growing in very shaded habitats on ceilings of hollowed out areas of rock appear rather amorphous and almost crustlike, and easily disintegrate into powder.

D. alectorioides Sundin & Tehler f. alectorioides

Thallus main branches terete to complanate; terminal branches terete, almost always with terete lateral ecorticate branchlets; branches smooth with thin white pruina, brown or grayish brown to pale gray, up to 1 mm thick and up to 2 mm broad; holdfast only as an attachment; prothallus not seen; most often containing calcium oxalate. Cortex 50-70 μ m thick; hyphae smooth, brown or hyaline, 5-7 μ m thick with a cell lumen of ca. 1 μ m, gel clear, hyaline, also as epicortex with uppermost 2-3 μ m layer granular. Medulla white to brown (hypomedullary plectenchyma), coalescent, of mainly periclinally arranged hyphae; thallus gel hyaline; hyphae smooth but often with crystals attached, hyaline, thick-walled (wall 1-2 μ m, lumen < 1 μ m).

Ascomata 0.8-3.0 mm diam., rounded or irregularly lobed. Hypothecium ca. 400 μ m, often extending down into medulla (hypomedullary plectenchyma). Hymenium 100-120 μ m. Epithecium 50-60 μ m. Asci 70-80 x 15-18 μ m. Spores (18-)21-25(-28) x (5-)6-8(-9) μ m.

Pycnidia solitary, lateral, immersed, often in small portuberances of the thallus, black, ca. 0.3 mm diam.; microconidia (8-)11-15(-18) x 1 μ m.

Coast of south-central California, on trees and rocks, preferably on vertical, northern sides.

D. alectorioides f. parva Sundin & Tehler

Similar to typical form but without ascomata. South-central coast of California.

Literature

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