

Dictyonema C. Agardh. in Kunth.
(BASIDIOMYCOTINA: THELOPHORALES)

After Parmasto (1977), and others

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Thallus initially of tangled hyphae which form a crust. Photobiont layered in the basidiocarps, bluegreen (Scytonema or sometimes Chroococcus), the filaments surrounded by a coating of longitudinally arranged hyphae. No substances.

Basidiomata (sometimes absent) matt-like to foliose, often forming semi-circular brackets, which are sessile, standing out from the substrate, or resupinate (partly attached, partly lifted up and bent backwards), single or united in rosettes, soft or paper-like, small or to 25 cm diam.; upper surface blue- to gray-green, gray to dark or olive green, smooth to frequently rough to combed hairy becoming shaggy, with concentric markings, also radially zoned (villose to fibrillose due to irregularly to radially arranged filaments of the photobiont), sometimes unevenly thickened; lower surface smooth and even, to warty or granular, with soon or eventually produced reticulate dehiscent or concentrically banded "hymenophore" (hymenium), white, cream or buff, smooth to \pm tomentose, continuous or broken up; composed of thin hyaline articulate hyphae which are irregularly branched or at times dichotomous. Hymenium confined to lower surface, bearing an irregular layer with thick increments of basidia and basidioles, without gills or pores; basidia in bundles, clavate or subcylindrical, bearing 4 slender, sometimes curved sterigmata bearing the basidiospores; spores simple, hyaline or yellowish brown, ellipsoid to elongate, thin-walled, smooth, I-, 6-10 x 2.8-5 μ m, thin-walled. Hyphal system monomitotic, the generative hyphae thin- to thick-walled, with or without clasps (without clamp connections according to Purvis & Coppins).

On trees, mossy rocks and on the ground. Mostly tropical or subtropical, but some species occurring in boreal-temperate areas.

1. Basidiocarp (thallus) flabellate, semicircular, reniform or ligulate (sometimes resupinate, but without reflexed margin). Hymenium in distinct pileus (basidiocarp), kidney-shaped to circular in outline. Hyphae without clasps. 2

1. Lichen crustose, resembling a cover of appressed or erect branched fibrils. Hymenium, when present, in \pm irregular patches spread over the substratum, rarely circular. Hyphae without clasps. 3

2. Basidiocarp densely sulcate-zonate, without radial fibrils; margin narrowly but strongly involute. Photobiont Chroococcus. Basidiocarp 10-100 or more mm across, thin and membranaceous, often \pm overlapping, horizontal or ascending, the margin usually inward-rolled, smooth, concentrically striate, often obscurely wrinkled, grayish white above; pale yellowish, flesh-colored to pale brick-red below; spores 10-15 x 6-12 μ m. On mossy soil, old wood, and trees. Florida. D. glabratum (syn. D. pavonium, Cora pavonia)

2. Basidiocarp radially fibrillose, non-zonate; margin fibrillose, never involute. Photobiont Scytonema. D. sericeum

3. Algal trichomata biseriate. Spores subcylindrical-cuneate, subnavicular, (7-)8-9.5 x 3-4(?-4.5) um. British Columbia. D. moorei
3. Algal trichomata uniseriate. Spores naviculate-obovoid or elliptic-obovoid, with lateral apiculus, 6.5-7.5(-8) x 3.5-4.5 um. Florida and Mexico. D. sericeum

Descriptions of species

(not including most details of anatomy--see Parmasto, 1977)

D. glabratum (syn. D. pavonium, Cora pavonia)

Hymenium in distinct pileus (basidiocarp), sessile, solitary or imbricate and united in rosettes up to 20 cm and over in diam.; pilei flabelliform, kidney-shaped to subcircular in outline, dimidiate, rarely almost substipitate, frequently laterally concrescent, lobate, 1-6(8) x 1-6(-8) cm, thin, 0.18-1.2(-1.4) mm thick, membranaceous or almost paper-like, brittle when dry, horizontal or ascending; upper surface distinctly and densely, but lowly sulcate, under a lens slightly villose, in live state glossy blue-green or greenish blue, in herbarium becoming pale grayish green, grayish yellowish, gray-blue-green or whitish gray, sometimes bluish gray, in central part usually darker; margin usually lobate, acute, smooth, concentrically striate, often obscurely wrinkled, ochraceo-cream-colored, greenish or ink-green, rarely concolorous with the rest of the upper surface, when dry narrowly but strongly involute; lower surface densely concentrically zonate, under a lens granulose, gray or greenish, (to pale yellowish, flesh-colored to pale brick-red); hymenophor resembling scattered cupules at first 0.2-0.4 mm, then up to 1 mm in diam. and 0.3-0.6(-1) mm in height, apothecium like, the cupules later uniting to form interrupted concentric ridges 1-2 mm distant from each other, or rarely concrescent to form spots up to 2 cm diam., finally polygonally or almost reticulately cracked. Exceptionally hymenium continuous, even, covering nearly the entire lower surface of the basidiocarp. Hymenium initially deep cream color, then pale ochraceous or isabellous. In old specimens the hymenial spots fall away beginning from the margin and thus the lower surface becomes sterile again.

Context of the basidiocarp stratose. Hyphal system monomitic. Photobiont "Chroococcus" (a species of the Rivulariaceae). Spores elliptic-lacrymoid, slightly naviculate, with lateral apiculous, with a homogenous content without guttulae, (6.5-)7.5-8.5 x (3.8)4-4.5(-5) um (according to Parmasto; Fink's measurements of 10-15 x 6-12 um were based on extraneous spores). On mossy soil, old wood, and trees. Florida; Mexico.

D. moorei (Nyl.) Henssen

Basidiocarp resupinate, crustaceous, irregularly round, 0.5-6 cm or more in diam., incrusting the substrate, up to 0.6(-1) mm thick, rough when touched, under a lens villous or low pilose with intermixed hairs, from olivaceous gray to dull green or dark dull green. Hymenium develops in form of scattered, irregularly round cream or ochraceous patches 0.5-3 mm diam. and up to 0.1 mm thick, which sometimes unite. Photobiont Scytonema. Spores subcylindrical-cuneate, subnavicular, (7-)8-9.5 x 3-4(?-4.5) um.

Thallus with ± flattened branches 20-50 um wide, to 0.2 mm long, forming small, olive-brown to light green cushions to 3 mm across, with radiate branches. Photobiont Scytonema, with cells 8.0-9.5 um diam., with the filaments forming the core of the branch, surrounded by a hyaline fungal element consisting of angular but almost isodiametric cells ca. 7.0-8.0 um diam. Rhizines abundant, non-septate and threadlike. Strongly resembling a species of Polychidium.

On rocks, Queen Charlotte Islands, British Columbia (See Henssen, 1963); on trees according to Parmasto. D. moorei (Nyl.) Henssen

D. sericeum (description based on f. sericeum)

Basidiocarps sessile, imbricate and united in rosettes or spreading \pm irregularly and unevenly, to 25 cm and over in diam.; pilei semicircular or reniform, 0.5-6(-9) x 1-8(-11) cm, rather thick, (0.5-3(-4) mm), soft, membranous-spongy, when dry brittle and very light. Upper surface indistinctly zonate or azonate, ochraceous buff, dull green, dark green, grayish green, pale malachite green, malachite green or up to dark bluish green, sometimes ochraceous green, fibrillose or spongiose, uneven; fibrils appressed or ascendent, 0.5-3(-5) mm long, 0.1-0.3 mm diam., penicillate, tips of fibrils often without greenish tint (concolorous with margin of the surface); margin rounded, loosely radially fibrillose, (1-)2-7(-10) mm wide, dark cream, ochraceous cream or pale ochraceous. Lower surface sparsely radially reticulate; hymenophore develops at the tips of fibrils in the form of scattered cupules 0.3-1 mm diam., which soon unite to form scattered spots up to 1 cm in diam., or more frequently to form a more or less continuous slightly waxy hymenium. Hymenium at first whitish, then dark cream color, in cold specimens becoming buff, irregularly or polygonally split into small patches falling afterwards away. Fruiting bodies developing at the tips of fibrils, at first scattered cupules 0.3-1 mm diam., coalescing to form scattered spots to 1 cm diam., or more frequently forming a \pm continuous whitish or creamish hymenium containing basidia and basidiospores. Photobiont Scytonema. Spores naviculate-obovoid or elliptic-obovoid, with lateral apiculus, with a homogeneous content without guttulae, 6.5-7.5(-8) x 3.5-4.5 μ m. On mosses, on soil and on trees. Florida, Mexico.

1. Trichomata less abundant; free hyphae usually abundant; often

fertile. D. sericeum f. sericeum

1. Trichomata more abundant; only a few free hyphae present; often

sterile.2

2. Fibrils densely arranged, resect, radially inclined or rarely appressed brush-like, repeatedly branched (penicillate), usually with a paler tip. Basidiocarp grows on soil or other horizontal substrate, or more frequently incrusting mosses, forming a cover up to 25 cm or more in diam., densely arranged, erect, radially inclined or rarely appressed brush-like, repeatedly branched (penicillate) fibrils. Fibrils 2-5(-10) mm long, 0.15-0.5 mm diam., rather brittle, olivaceous dull green, dull green or dark bluish green, in the apical part ochraceous or ochraceous cream color. Basidiocarp sometimes occurring only as interwoven or hydroid penicillate threads on mosses. Thallus forming a thin, rough and irregularly tufted, bright greenish layer over the substratum; hymenium in small, irregular, furrowed patches; spores light brown, spheroidal or somewhat oblong, 8-10 x 6-7 μ m. On trees in Florida according to Fink). D. sericeum f. thelophora

2. Fibrils interwoven, usually without a paler tip. Basidiocarp similar to a thin crust of interwoven fibrils, to 0.3 mm thick, dark green to dull green, rarely dark bluish green, sometimes with a slight olivaceous tint. Usually sterile, rarely with scattered irregular small patches of cream-colored hymenium up to 2 mm diam. On mosses, Alabama, Florida. D. sericeum f. membranaceum

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