

Coccocarpia Pers. in Gaud.
(COCCOCARPIACEAE)

After Arvidsson, 1982

Rev. 5/94

Thallus squamulose to foliose, heteromerous, dorsiventral, often much lobed, \pm orbicular in outline, rarely more than 10 cm diam.; lobes adjacent or imbricate, broadly cuneate to flabellate, the margins slightly thickened and curled downwards; attached by a rhizoidal tomentum; upper surface glabrous, smooth and shiny or minutely wrinkled or scabrid, usually \pm lead gray but sometimes brownish gray, bluish to almost black, often distinctly ridged, the ridges being arranged in curved concentric lines parallel with the lobe apices and reflecting the attachment of rhizines on the lower surface. Upper cortex of paraplectenchymatous cells in interwoven hyphae, the cells arranged in \pm parallel lines radiating along the lobes from center to periphery, a diagnostic character visible on the surface in larger specimens as faint striae ($\times 10$ lens); algal layer immediately below the upper cortex; medulla grading into lower cortex. Lower surface corticate, often densely covered with long, silky rhizines; rhizines pale, white or gray to dark bluish black or black.

Apothecia adnate to sessile, biatorine, \pm hemispherical, rounded to irregular; proper margin absent or barely visible; devoid of algae; hypothecium pale or dark; paraphyses unbranched; asci unitunicate, clavate; tholus I+ blue; 8spored; spores simple, globose to fusiform, thin walled, hyaline.

Pycnidia frequent to sparse in fertile specimens, immersed in \pm wartlike thalline structures, dark redbrown to black; fulcrum endobasidial, much septate; pycnosporos bacilliform. No substances. Photobiont Scytonema. On trees and rocks, mainly in humid, tropicalsubtropical areas.

1. Lobes usually less than 1 mm wide. Spores globose, 35 μ m diam. Lobes \pm densely and \pm dichotomously branched, divided into secondary, tertiary lobes, etc., usually discrete but with rather small interspaces, sometimes adjacent, often incised and lobulate, especially near apices; apices truncate or rounded. Upper surface \pm smooth, epruinose, usually matt, without concentric ridges; radiating lines of upper cortex visible at high magnification only. Lower surface rather sparsely rhizinate; rhizines distinct, white, pale brown or

aeruginoseblack, usually projecting beyond lobe margins. No substances. 2

1. Lobes usually more than 1 mm wide. Spores fusiform, ellipsoid or oblong. Thallus \pm orbicular, sometimes \pm irregular. Upper surface usually leaden gray, but may vary from whitish gray, bluish green, brownish, purplish to almost black when dry, darker when wet, usually glossy, sometimes matt or rarely minutely scabrid, epruinose, smooth or sometimes minutely wrinkled, without transverse, concentric ridges; radiating lines in the upper cortex usually visible. Lower surface pale creamish, brownish, or almost black; rhizines scattered or more often arranged in transversed, concentric lines, sparse and distinct to numerous, \pm entangled, sometimes forming a dense hypothallus, white, creamcolored, brown, aerugineous or almost black (then often with white tips), often projecting beyond lobe margins. Lobes (0.5)17(14) mm wide, \pm imbricate or adjacent, rarely somewhat discrete, usually broadly flabellate or cuneate, but varying from narrowly cuneate, rarely almost linear, sometimes elongate, to almost round; usually incised, lobulate and weakly branched; secondary lobes often present, more rarely also tertiary lobes; apices round with deflexed margins; lobes usually slightly convex or \pm plane, more rarely concave. Apothecia adnate or sometimes slightly raised by white (rarely aerugineous) hairs, which project from the base but are usually hidden below the disc; disc \pm plane to strongly convex, rarely almost hemispherical, pale reddish yellow, brownish red to black; proper margin rarely visible (in young fruits) as a very thin, pale line. Spores (6)714(16) x (2)35 μ m. No substances. 3

2. Thallus without isidia (but often with lobules). Apothecia usually present. Thallus \pm orbicular, closely adnate, to 2.5 cm diam.; lobes \pm linear to narrowly flabellate or cuneate, (0.09)0.10.5(0.7) mm wide, sometimes imbricate, \pm plane or slightly convex, older parts often with accessory lobules which are horizontal and may cover central parts of thallus. Upper surface bluish green or rarely almost black when dry, bluish green when wet. Lower surface white to light brown, sometimes black. Apothecia scattered, orbicular or more often somewhat irregular, to 2.0 mm diam., sessile, usually conspicuously raised over the surface of the lobes by white hairs, which project horizontally from the base and are usually visible; disc plane or convex, often slightly concave in young fruits, pale yellowish brown or reddish brown to black. Pycnidia often present. Mainly on tree trunks and twigs (sometimes intermingled with mosses or other lichens); also on leaves of

vascular plants, and rarely on mossy soil banks or siliceous rocks. Southeastern (South Carolina and Florida); also tropical and southern hemisphere. C. stellata

2. Thallus with terete and flattened isidia. Apothecia usually absent. Thallus \pm closely adnate, to 3.0 cm diam; lobes \pm linear, or often cuneate to narrowly flabellate, (0.09)0.20.5(0.8) mm wide, rarely imbricate, \pm plane or slightly concave (especially toward apices), often incised or finely lobulate, especially at apices. Central parts of thallus \pm covered with terete (then often coralloidbranched) or flattened isidia; isidia marginal or laminal, concolorous with thallus. Upper surface gray or bluish green (rarely brownish or yellowish gray) when dry, dark bluish green when moist. Lower surface pale creamish, sometimes bluish green. Mainly on naked bark of twigs and small trunks; also on leaves of vascular plants. Primarily tropical and southern hemisphere. C. domingensis

3. Thallus isidiate; isidia terete, often \pm coralloidbranched. Apothecia rare. Thallus loosely attached to \pm closely adnate, to 12 cm diam. Apothecia scattered, rarely crowded, \pm irregular, 13(4.5) mm diam. Mainly on bark of deciduous and coniferous trees; sometimes also on mossy rock or soil, rarely also on leaves of vascular plants. From SE coast of Canada to Arizona and Mexico (most frequent in southeast U.S.), very common. C. palmicola

3. Thallus not isidiate (but round accessory lobules often present in older parts of thallus). Apothecia often present. Thallus usually \pm loosely attached, to 15 cm diam. Apothecia scattered to crowded, sometimes fusing to form irregular aggregates, \pm irregular, 14(9) mm diam., On bark of deciduous and coniferous trees, or on humus among mosses, or on mossy rocks, or rarely leaves of vascular plants. Mostly subtropical to temperate (from Pennsylvania to Florida, west to Arizona and south to Mexico, especially common in the gulf coastal states), but with disjuncts in Alaska!. C. erythroxyli (if spores 46 μ m long and growing on leaves = C. epiphylla)

Literature

Arvidsson, L. 1982. A monograph of the lichen genus Coccocarpia. Opera Botanica 67.: 196.

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

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