

ADD:

C. adnexa

C. borealis

C. gloriae

Sonora. C. baueri (Muell. Arg.) Zahlbr.

Chihuahua, Sonora. C. cinnabarina (Ach.) Zahlbr.

C. caesiorufa [auct. = C. scotoplaca]

C. pyracea

Edrudia constipans

Xanthoria lobulata (Caloplaca?)

Parasitic on Hyperphyscia sp. Ontario. C. sp. (Brodo)

Terricolous

On moss. C. grimmiae

On moss or plant debris. Apothecia black. Spores 12-17 x 7-8 um; isthmus 5-6 um. C. friesii Magn. [not in Egan, but treated by Rudolph]

Thallus arachnoid, dark gray with bluish tinge, scarcely to indistinctly granular, 1-2 cm across. Apothecia frequent, 0.2-0.4 mm diam., sessile, constricted at base; disc dark rusty red to blackening, plane; margin thin, prominent, black (contrasting with paler disc), persistent; without algae; exciple with upper part in section green-blue. Hypothecium 25-35 um; hymenium 70-80 um; paraphyses contiguous, 1.7 um wide, slightly thickened above. Asci ca. 50 x 15-17 um; spores 8, ellipsoid, 17-19 x 7.5-8.5 um; septum 2-2.5 um (mixed with narrower spores, probably young, 6-7 um wide, with 4-5 um septum and indistinct isthmus). On dying moss among rocks. Arctic. C. tornensis

Thallus very reduced or indistinct. Apothecia 0.3-0.7 mm diam., plane or slightly concave, very bright orange; margin rather thick, paler than disc. Spores 11-13 x 3-8 um. On dead stems of saxifrages, arctic-alpine. C. pyracea group. C. saxifragarum

Corticolous; Black-fruited

Thallus thin, continuous, rough, becoming chinky, greenish gray to ashy, limited and often intersected \pm by black hypothallus. Apothecia 0.15-0.45 mm across, adnate; disc flat, brownish black; exciple thick, entire, darkening to color of disc. Spores ellipsoid, 10-16 x 5-7.5 μ m. On trees, Florida to Texas. C. floridana

Thallus thin, smooth to chinky and wrinkled or verrucose, ashy to brownish gray. Apothecia 0.2-1 mm diam., sessile; disc flat to convex, reddish brown to dark chestnut-brown, white=pruinose; margin concolorous with thallus or slightly darker, entire. Spores ellipsoid, 10-14 x 5-8 μ m. On trees and wood, throughout eastern U.S. west to Illinois, and in Oregon and Texas. C. camptidia

Corticolous; With Gray Amphithecium

Thallus thin, ashy gray to yellowish, granulose to warty, often scattered, becoming inconspicuous or disappearing. Apothecia 0.2-0.6 mm diam., becoming sessile; disc slightly concave to convex, orange to brownish orange; proper margin thin to moderately thick, yellow to light orange; thalline margin thin, finally disappearing. Spores oblong-ellipsoid, 12-17 x 5-7 μ m. On trees, Massachusetts, Illinois, N.Dakota, Washington, California. C. cerina f. gilva

Corticolous; Rusty-brown-fruited

Apothecia numerous to crowded, rounded or angular from mutual pressure, 0.7-0.8(-1.5) mm diam.; disc slightly convex, epruinose, matt, rusty to rusty brown; proper margin thick then thin, shiny, yellow-rusty, entire then crenate; hypothecium hyaline, not plectenchymatous; hymenium 75-80 µm; epihymenium granulose; paraphyses coherent, septate, slender, not or slightly thickened at tips; epihymenium K+ rosy; asci narrow, 10-12 µm wide, thick-walled at top; spores straight to slightly curved, narrowly oblong, (11-)14-16 x (4-)4.5-5.5(-6) µm; isthmus 2.5-3 µm; walls thin at tips. Thallus thin and ashy or obsolete. On drift wood, sometimes parasitic on a lecideoid lichen. Arctic. [ferruginea group; see Magnusson for more info.] C. discoidalis

Thallus almost invisible. Apothecia sometimes dense, 0.2-0.4 mm, when young dark rusty with thin concolorous margin, soon brown and slightly convex with excluded margin, or mainly rusty; 0.2 mm thick; exciple indistinct; hypothecium 25-35 µm; hymenium 65-70 µm; epithecium granular; paraphyses contiguous, upper part gradually widened to 3-3.5 µm at tips, sometimes furcate or much branched; asci 40-50 x 12-14 µm; spores 8, easily escaping, 12-14 x 6-7 µm; septum 5 µm; apical wall double. On old wood or twigs, Arctic (Alaska to Greenland). C. ferrugineofusca

Thallus effuse, widespread, very thin, ± membranaceous, smooth, continuous or in places interrupted or ± evanescent, in thicker parts pale yellow, K+ purple; thinner part shitish; matt; without soredia or isidia; hypothallus indistinct. Apothecia numerous, usually scattered, 0.5-0.8(-1) mm diam., rusty red, round or sometimes slightly irregular; margin persistent, thin or moderately thick, entire or occasionally subflexuose, concolorous with disk or slightly paler, with few or no algae; disc plane or finally slightly convex, matt, smooth, epruinose; hypothecium colorless, 90-110 µm; hymenium 75-85 µm, inspersed at least below with oil drops; epihymenium granular; paraphyses discrete, 1.5-2.5 µm thick, simple or occasionally branched, not articulated, only slightly swollen (to 3 µm) at tips; asci clavate, 55-70 x 13 µm, thick-walled at top; spores 4-8, subbiserial, ellipsoid to broadly ellipsoid, 15-18 x 8-9(-10) µm; septum 5-8 µm thick; apical wall very thin. On bark of Fraxinus, Nova Scotia. C. fraxinea

Thallus olive-gray, K-, thin, shiny; hypothallus thin, black; forming patches ca. 1 cm wide. Apothecia red-brown, K+ intense red, numerous, dispersed, 0.2-0.3 mm wide, concave then plane; thalline margin thin, entire; epithecium granular; hypothecium hyaline; paraphyses free, slender, simple or occasionally furcate towards tips, articulate towards tops; asci clavate, ca. 37 µm long; spores 8, ellipsoid, polarilocular, 14-17 x 7-9 µm. On bark, Louisiana. C. neonii

Thallus distinct, pale to white, effuse, thin, minutely granular. Apothecia sessile, ± frequent, minute; disc rusty red, plane to slightly convex; margin thin, concolorous, faintly prominent, lacking algae; hypothecium pale brownish orange, 20-25 µm thick; hymenium 50-55 µm, pale brownish orange; paraphyses conglutinate, scarcely thickened at tips; spores not developed. On oak, N. Carolina. C. ferruginea group. C. quercicola

Thallus thin, smooth to granulose-areolate, greenish gray to ashy white. Apothecia 0.2-0.8 mm diam., sessile; disc flat to convex, reddish brown and blackening, sometimes greenish pruinose; exciple sometimes raised, orange, entire to crenulate; spores ellipsoid, 10-16 x 8-11 μ m. On trees, Florida to Texas. Blastenia diphasia

Thallus scarcely visible, patchy, dark gray, granular. Apothecia often congested or confluent, 0.5(-0.7) mm diam., rusty red then dark reddish brown, plane; margin thin, subconcolorous; disc soon slightly convex and margin depressed, with a few algae. Hypothecium sordid gray, 25-35(-50) μ m; hymenium 75-85(-100) μ m; paraphyses dense, 1.5-1.7 μ m wide, scarcely thickened above; asci narrow; spores 8, oblong, 13-15(-17) x 5.5-6 μ m; septum 3.5-4 μ m thick. On wood, Arctic. C. spitzbergensis (included under C. amniospila by Sochting, 1989)

Thallus K-, glaucous-ashy, matt, areolate; areoles 0.2-0.3 mm wide, thin, variously angular, plane, contiguous, forming irregular crust; hypothecium indistinct. Apothecia red-brown, sessile, numerous, at first concave then plane, with margin thin, entire, concolorous with disc, then convex and immarginate; hypothecium hyaline; paraphyses free, articulate, rather thick, simple or furcate towards tips, slightly inflated at tips; asci clavate, ca. 70 μ m long; spores 9, ellipsoid, 1-septate to polarilocular, 18-20(-23) x 7-11(-13) μ m. On bark. New Mexico. Blastenia rubrofusca

Apothecia \pm dark, coppery orange to orange-brown; paraphyses branched above; end cells slightly enlarged, 3-5 μ m. spores 13-15 x 7.5-9 μ m. Margin of apo. yellow or orange, contrasting with thallus. Thallus gray or absent, non-sorediate. On conifers, Michigan. C. sp. 5 (Harris)

Corticolous, Orange-fruited

Apothecia light orange. Thallus ashy gray to brownish ashy or darker, K-. On bark. C. atrosanguinea v. armeniaca Rud. ined.

Thallus crustose, wide-spreading, gray-white, thin, continuous, uneven, ecorticate, developing a characteristic waxy pruinose "tomentum" of crystals in the herbarium; prothallus pale or absent. Apothecia 0.3-0.5(-0.8) mm diam., numerous, crowded, often \pm contiguous, rounded, immersed then \pm superficial; thalline margin undeveloped, or sometimes thinly enveloping sides of young apothecia; true margin orange, \pm excluded; disc bright orange, deeply concave then flat to \pm convex. Paraphyses lax; apical cells often swollen, to 5 μ m. Spores 8-12 x 3-6 μ m, ellipsoid; septum ca. 1 μ m thick, ca. 1/8 length of spore. Pycnidia orange-red, \pm emergent; conidia 3-4 x 1 μ m, straight. Thallus K-. On bark (usually Ulmus, rarely Acer), especially in wound tracks of injured, old trunks in parklands. C. luteoalba

Thallus to several cm across (when on wood, elongated in direction of the wood fibers, few mm broad, epixylic, staining the wood light gray); sometimes with scattered, orange-yellow, to 0.2 mm across squamules, which can become rather effigurate. Apothecia zeorine, numerous, dispersed or very crowded, sometimes forming raised conglomerates, 0.5(-0.9) mm diam.; disc flat to slightly convex, orange; margin prominent, rather thick (60 µm), persistent; proper margin slightly paler than disc; thalline margin somewhat paler than proper margin, irregular and in epixylic specimens confluent with the squamules. Spores 12-13 x 5.5-8.5 µm; septum 3.5-5 µm thick. On strongly eutrophicated substrates (rock or wood), not far from the sea. C. alcarum

Corticolous; Sorediate, Yellow

Thallus completely leprose-granulose, citrine yellow to yellow-orange, similar to that of Candelariella xanthostigma but K+ violet. Apothecia unknown. On trunks of Betula, Abies and Thuja, New Brunswick. C. xanthostigmoidea

Saxicolous; Parasitic

Thallus black, visible only under apothecia. Apothecia red-orange, K+ red, 0.3-0.4(-0.5) mm wide, mostly dispersed, concave then plane; margin concolorous, thin, entire; epithecium granulose; hypothecium hyaline; paraphyses free, septate, narrow, simple or furcate towards tips; asci clavate-inflated, thick-walled at top; spores 8, 13-16 x 7-9 μ m, polarilocular; septum very thin. Similar to C. festiva. On other lichens on rock, New Mexico. C. dispersa

Thallus parasitic on crustose lichens on calcareous rocks. Thallus yellow orange, conspicuous; discs and margins orange. Rare, Ontario. C. cf. inconnexa

Thallus indistinct. Apothecia sessile to \pm stipitate; margin thick, orange-ochraceous; disc plane, darker; paraphyses not capitate; spores 11-14 x 5.5-8 μ m; septum 2.5-3.5 μ m thick. Parasitic on Aspicilia on rocks. C. insularis

Saxicolous; Sorediate

Thallus of contiguous or \pm scattered areoles, to 0.3 mm wide, often elongate-irregular and somewhat sparingly branched, very closely adpressed, flat to \pm convex, orange to brownish orange; prothallus sometimes present, pale, occasionally fimbriate. Soralia few and scattered to numerous and \pm continuous, \pm punctate or irregular in shape; soredia small-granular. Apothecia rare, to 0.5 mm diam., becoming convex. Spores ca. 14 x 6 μ m; septum ca. 1/3 length of spore. On \pm basic to acidic, \pm deeply shaded rocks, chiefly on cliffs. C. obliterans

Saxicolous; With Gray Thallus

Thallus gray to dark olive or black, K-, thickish, smooth, papillose, usually with black hypothallus. Apothecia usually immersed, brownish orange or darker. Spores with isthmus 3-4.5 μ m wide. C. sideritis v. elaecodes Rud. ined.

Saxicolous; With Gray Amphithecium

Apothecial margin gray; disc yellow-orange to light orange; paraphyses somewhat branched above, \pm moniliform; end cells ca. 4 μ m; spores polarilocular, 10-12 x 5-6 μ m; isthmus ca. 3 μ m. Thallus effigurate, pale gray, rather shiny, non-sorediate, K-. On non-calcareous rocks, Michigan. Caloplaca sp. 1 (Harris)

Thallus tan at margin, becoming dark gray in center; soredia dark gray. Apothecia with dark yellow disk and gray margin; paraphyses not branched above, end cells somewhat enlarged, ca. 4 μ m across. Spores 13-14 x 6-7 μ m; isthmus 3-4 μ m. On non-calcareous rock, Michigan. Caloplaca sp. 4 (Harris)

Thallus thin, \pm widespread, lead-gray, distinctly areolate; areoles usually flat. Apothecia 1-4 per areole, round to angular and crowded. On rocks, Vermont. C. cerina v. areolata

Saxicolous; Rusty-fruited

Thallus not granular or areolate, bluish black to sub-black. Apothecia 0.7-1.0 mm diam., biatorine; disc dark rust colored. Hymenium 80 μ m high. spores 13-15 x 8-9 μ m; septum 5-7 μ m. On rock. C. subnigricans

Apothecia 0.2-0.4 mm diam; thalline margin concolorous with disc, thin, persistent; disc dark ferruginous or ferruginous-brown. Spores 10-12(-17) x 7-9 μ m; septum 4.5 μ m thick. Thallus minutely areolate, grayish black; areoles smooth, plane, not glebulose-bullate. . On rock. C. scotoplaca (synonym: C. caesiorufa auct., non __)

Saxicolous; Orange-fruited

Thallus orange. Apothecia orange. On rock. C. brattiae

Thallus ochre yellowish, yolk yellow when wet, K+ purple-red, composed of small granules or reduced to scattered 0.2-0.5 mm wide spots, \pm white-pruinose. Apothecia numerous, to over 0.3 mm wide; disc red-orange, finally somewhat convex; proper margin concolorous, almost entire, finally becoming excluded; paraphyses \pm simple, at the tips septate and swollen; spores as in C. tegularis. On rock, New Mexico. C. discerenda

Thallus intense red-orange, K+ red, sometimes spottily white pruinose, matt, areolate, forming irregular patches 1-2 cm wide; areoles plane, contiguous, ca. 0.5 mm wide, angular; margin effigurate; lobes plane, minute, variously angular. Apothecia often covering thallus center, red-orange, adnate on areoles, 0.3-0.4 mm diam., becoming angular from crowding; margin thin, entire, concolor, persistent; disc plane or rarely becoming convex. Epithecium granular; hypothecium hyaline; paraphyses free, simple or branched, septate; tips inflated; asci clavate, 8-spored; spores polarilocular, 10-13 x 5-6 μ m. On limestone. New Mexico. C. intermedia

Thallus red-orange, K+ red, composed of granules or minute squamules, dispersed; hypothallus indistinct. Apothecia numerous, usually dispersed, adnate, often constricted at base, to 0.4 mm wide, red-orange, K+ red; at first urceolate, with thalline margin concolorous with thallus, entire, thick becoming thin, persistent, then plane; disc epruinose; epithecium orange-granular; hymenium ca. 90 μ m high; hypothecium ca. 100 μ m, with algal layer below; paraphyses thin, septate, ca. 3.5 μ m diam., branching above the asci; tips capitate, encrusted; asci clavate, 45.2-55.2 x 13-17.4 μ m, 8-spored; spores biserially arranged, polarilocular, (13.9-)16-18(-19.1) x (5.2-)6-7(-8) μ m; isthmus thin, ca. 3 μ m or less wide. On rocks. New Mexico. Related to C. novomexicana and C. sipeana. C. urceolata

Thallus crustose, yellow, thin, smooth, K+ red. Apothecia sessile, 0.1-0.3 mm diam., K+ red; disc ochraceous orange; margin persistent, lighter yellowish, without algae; hypothecium hyaline, to 100 μ m in center; hymenium ca. 70 μ m; paraphyses ca. 1.5 μ m thick, coherent, branched above asci, capitate; asci 48.7-55.7 x 13.9-19.1 μ m, clavate; spores 8, biserial, 13.1-13.9 x 6.1-7.0 μ m, polarilocular; isthms ca. 3 μ m; locules rounded; walls thick. On calcareous rocks. Maine. Blastenia sulphurea Rud. ined.

Thallus immersed. Apothecia 0.1-0.3 mm across, orange. Spores under 14 μ m long and 5-7 μ m wide. On rock. C. lactea var. americana B. de Lesd.

Thallus buff, K+ reddish, very thin, closely appressed to substrate, smooth, continuous to rimose-areolate; hypothallus grayish. Apothecia yellow or orange. Hypothecium without oil drops. Spores usually less than 6 μ m wide. On rock. C. rimosa Rud. ined.

Thallus deep olive-buff, K+ reddish. Apothecia yellow or orange, frequently over 0.6 mm across. Hypothecium over 70 μ m high. Spore isthmus 3 μ m or more wide. On rock. C. shushanii Rud. ined.

Thallus buff colored, K+ reddish; hypothallus absent. Apothecia under 0.7 mm across, yellow or orange. Hypothecium over 70 µm, with oil drops. Spores more than 14 µm long; isthmus usually 2-3 µm across. On rock. C. weberiana Rud. ined.

Apothecial margin yellow at least when young; disc orange; paraphyses not much branched above; end cells enlarged, 4-5 µm. Spores 10-14 x 5-6 µm; isthmus 3-4 µm. Thallus dark and thin, K-, or absent, non-sorediate. On non-calcareous rocks, Michigan. Caloplaca sp. 2 (Harris)

Apothecia dark orange with ± concolorous margin. Paraphyses ± branched above; end cells not much enlarged, 2-3 µm; spores 12-14 x 5-6 µm; isthmus ca. 3 µm. Thallus dark and thin, K-, or absent. On non-calcareous rocks, Michigan. Caloplaca sp. 3 (Harris)

Thallus yellow or in part yellowish white, effuse, or evanescent; areoles uneven or rough, ± plane with raised margins, 0.2-0.35 mm wide, angular, in most parts indistinct. Apothecia 0.3-0.5 mm diam., dense to contiguous, often irregular in shape; outside of margin diffuse; 0.2 mm thick. Hypothecium distinctly cellular. Hymenium 65 µm high; epihymenium granular, K+; paraphyses distinct, 1.5 µm thick; constricted septate; tips 3-3.5 µm. Spores 8 per ascus, 12-14 x 6-7 µm, ± oblong; septum 3.5-4.5 µm; apical wall apparently simple. On siliceous rock, S. Carolina. Similar to C. pyracea but apothecia denser, more intensely colored, hypothecium cellular, and spore septum narrow. C. carolinae

Thallus thin, round to irregular, dirty brownish green to brownish yellow, chinky-areolate, passing toward the margins into short, paler, white-powdery, crenate lobes. Apothecia 0.4-0.8 mm across, adnate; disc flat, brownish yellow to reddish brown; margin thin, colored much like thallus, crenulate. Spores ovoid-ellipsoid, 9-13 x 4-6.5 µm. On rocks, Texas and Colorado. C. eugyra

Thallus to several cm across (when on wood, elongated in direction of the wood fibers, few mm broad, epixylic, staining the wood light gray); sometimes with scattered, orange-yellow, to 0.2 mm across squamules, which can become rather effigurate. Apothecia zeorine, numerous, dispersed or very crowded, sometimes forming raised conglomerates, 0.5(-0.9) mm diam.; disc flat to slightly convex, orange; margin prominent, rather thick (60 µm), persistent; proper margin slightly paler than disc; thalline margin somewhat paler than proper margin, irregular and in epixylic specimens confluent with the squamules. Spores 12-13 x 5.5-8.5 µm; septum 3.5-5 µm thick. On strongly eutrophicated substrates (rock or wood), not far from the sea. C. alcarum

Thallus well developed, dirty whitish to pinkish buff, white pruinose, yellowish brown when rubbed, K+ pink to red, squamulose to areolate in center, the areoles sometimes (usually?) passing into crenate lobules at the margin; lobes appressed but not very parallel to each other. Apothecia 0.2-0.6(-0.8) mm diam., immersed to adnate or sessile, round; disc flat, smooth, cinnamon brown or "Mars orange"; proper exciple concolorous with thallus, thick, entire to wavy; thalline margin whitish. Epihymenium orange granular. Paraphyses tips slightly capitate,

mostly simple. Spores oblong-ellipsoid, 10-13(-15) x 5-6(-7) μm ; septum to 3 μm wide. On calcareous rocks, Kansas and Missouri. C. galactophylla

Thallus crustose, in small patches, orange, of small scattered to \pm contiguous areoles to 0.5 mm diam., flat, \pm angular or irregularly rounded, on a blackish prothallus, often associated with cyanobacteria. Apothecia to 0.2-0.3(-0.5) mm diam., numerous, scattered, \pm rounded, orange; true margin becoming excluded with age; disc concolorous or brownish orange, flat to \pm convex. Paraphyses simple, broadening towards tips, apical cells 2-3 μm diam. Spores 10-13 x 6-7 μm , broadly ellipsoid; septum 3-5 μm , ca. 1/3-1/2 length of spores. On siliceous rock. C. irrubescens

Thallus thin to moderately thick, composed of minute, flat to convex, dirty gray and darkening granules, scattered or crowded into a continuous, areolate crust. Apothecia 0.1-0.4 mm diam., adnate to sessile, often crowded and irregular; disc slightly concave to flat or somewhat convex, orange to brown or dusky; thalline margin rather thin, orange to darker, becoming flexuous; spores ellipsoid to oblong-ellipsoid, 13-16 x 5.5-8 μm . On exposed rocks, Ohio. C. oxfordensis

Thallus squamulose, lemon yellow to orange, the squamules becoming crenately lobed and \pm scattered. Apothecia 0.2-0.6 mm diam., adnate to sessile; disk flat to convex, orange to rusty brown; margin yellow to orange, entire, sometimes raised. Spores ellipsoid, 10-13 x 5-8 μm . On basalt, Arizona. C. spaldingii sensu Fink = Xanthoria lobulata according to Rudolph

Thallus composed of minute to small, convex, greenish yellow to orange, granulose squamules, running together into a \pm continuous crust. Apothecia 0.3-0.6 mm across, sessile; disc flat to slightly convex, orange; proper exciple thin, lighter or more rarely colored like disk; spores oblong-ellipsoid, becoming 1-septate, the cells polar, 12-16 x 6-7.5 μm . On rocks, New Mexico. Blastenia novomexicana

Thallus crustose, brownish orange to yellowish white, occasionally in part whitish, fairly smooth to minutely roughened, continuous, sometimes pruinose, usually finely rimose-areolate; prothallus gray=black, mosaic forming or absent. Apothecia to 0.8 mm diam., scattered or grouped, \pm rounded, \pm immersed at first, sometimes becoming \pm sessile, later sub-convex; thalline margin conspicuous, often becoming \pm excluded when old; disc yellowish to light brownish orange, often concolorous with exciple. Paraphyses \pm straight, sparsely branched; most tips broadened, the apical cell 2-8 μm wide. Spores 9-13 x 5-9 μm , broadly ellipsoid; septum 3-5 μm thick, 1/4-1/2 length of spore. On hard, smooth limestones in sunny situations, especially on walls. Alabama and Tennessee. C. dalmatica (synonyms: C. velana, C. schaereri)

Saxicolous; Black-fruited

Thallus graphite colored, forming small patches of loosely aggregated, graniforme [?] verrucae, the surface delicately rimose, K-, C-; hypothallus black, indistinct. Apothecia sessile; disk blackish, flat; thalline margin suburgid; hypothecium with algal layer below; epithecium subcontinuous, blue-gray; hymenium 64-68 μ m high, hyaline; paraphyses moderately thick, thickened and septate above; tips capitate, with globular faintly colored apical cell; asci oblong, 8-spored; spores simple to polarilocular, 12-19 x 6-9 μ m, oblong-ellipsoid, slightly constricted in middle; septum thin, often distinct. On sandstone. Arizona; southern California. C. verrucosa

Thallus areolate; areoles convex, contiguous to dispersed, ca. 1 mm wide, to ca. 0.5 mm thick, gray, matt, not isidiate or sorediate, thinly white-mottled [probably pruinose], K-, P-, C-; hypothallus indistinct. Apothecia black, epruinose, numerous, to ca. 0.9 mm wide, persistently plane, 1-several per areole, at first immersed, then adnate; thalline margin thick, entire to subentire; disc K+ dark violet, sometimes becoming subconvex; epithecium violet, K+ intensified; hymenium and hypothecium hyaline; paraphyses free, septate; apices clavate; asci ca. 75 μ m long, clavate, slightly thickened at tip, 8-spored; spores oblong, 18-26 x 7-9 μ m, polarilocular; septum very thin; not constricted at base. On volcanic rock, New Mexico. Pyrenodesmia albovariegata

Thallus K-, black, thin, granulose-effuse; hypothallus indistinct. Apothecia K- (but epithecium K+ violet), black, adnate, numerous, dispersed, 0.3-0.6 mm diam., persistently plane; margin dark gray or then becoming paler, entire to almost, prominent; epithecium olive; hypothecium hyaline; paraphyses scarcely coherent, rather thick, articulate; tips inflated; asci clavate; spores 8, simple to thinly 1-septate, not constricted at middle, 16-24 x 6-9(-10) μ m. On rock, New Mexico. Pyrenodesmia montana

Thallus blackish, evanescent. Apothecia sunken to emergent, round, black, K+ purple, 0.4-0.8 mm diam., convex; margin concolorous, disappearing with age, without algae. Exciple ca. 35 μ m wide in upper part; epithecium blackish encrusted; hymenium ca. 120 μ m; hypothecium yellowish-hyaline, ca. 60 μ m; paraphyses ca. 1.7 μ m wide, septate, branching above asci, coherent; tips encrusted and slightly capitate; asci clavate, 45.2-59.2 x 13.1-13.9 μ m, 8-spored; spores biserially arranged, ellipsoid, polarilocular, 10.4-11.3 x 4.8-6.1 μ m; lumina subconic; walls thick; isthmus narrow, usually less than 1 μ m wide. On calcareous rock, Alabama. Blastenia calcarea Rud. ined.

Apothecia disk black, K+ lavender in section; thalline margin mostly lacking; proper margin blackish; hymenium with oil drops; paraphyses simple; end cells slightly enlarged, ca. 4 μ m. Spores 14-20 x 7-8 μ m. Thallus gray, blackish, or absent, continuous, not sorediate. On non-calcareous rocks, Michigan. Caloplaca sp. 6 (Harris).

Thallus rather thin, poorly developed, granulose to rimulose, dirty brownish to greenish gray or brownish. Apothecia to 0.6 mm diam., adnate, black, epruinose, at first plane with thin margin, then \pm convex and immarginate; hypothecium hyaline; paraphyses lax, slender; epithecium violet to bluish-brownish, K+ green or blue-violet; asci inflated-clavate to clavate; spores 8 per ascus, ellipsoid to broadly ellipsoid, 9-13 x 6-8 μ m; septum very thin. Pycnidia rare; spermatia very short cylindrical, straight to slightly curved. On irrigated rock. C. atrocyaneus

Thallus crustose, thin, areolate, the areoles 0.2-0.3 mm across, smooth, olive-black, K-. Apothecia 0.1-0.2 mm across, sessile, black, K+ slightly red; margin black; epihymenium blackish-granular; paraphyses branched above, tips scarcely enlarged. Spores 10.4-11.3 x 3.8-4.9 μ m; septum ca. 2.5 μ m wide. On basalt, Arizona. C. spaldingii

Thallus epilithic, 0.5-1(-2.5) mm high; center rimose-areolate, with numerous small and few coarse cracks; margin often thinner, mostly with almost lobe-shaped areoles; surface chalk white to drity whitish, sometimes (on heavy-metal containing substrates) ochraceous. Prothallus not evident. Cortex (in section) K+ lilac. Apothecia (0.1-)0.2-1.4 mm diam., to 0.3 mm thick, solitary or mostly in groups, becoming angular and irregular from crowding, mostly sessile, sometimes immersed when young or appearing immersed when crowded; discs mostly flat, finally somewhat convex, matt, black, rarely somewhat white pruinose, often brown when wet; proper margin black, not or weakly visible; thalline margin mostly very thin, 0.05-0.1(-0.15) mm wide, normally smooth, sometimes appearing crenate when damaged. Hymenium 120-150 μ m, hyaline; epihymenium ca. 15 μ m thick, pale grayish or brownish, K+ lilac, with colorless crystals; hypothecium 120-150(-250) μ m thick; paraphyses 1.5-2.5(-3) μ m thick, mostly strongly coherent, mostly simple; apical cells 1.5-5.5(-6) μ m; spores (13-)14-18.5-22 x 6.5-9.5-12(-15) μ m, broadly ellipsoid; septum very narrow, (0.5-)1-3(-3.5) μ m. Pycnidia black, immersed, (0.05-)0.1-0.15 mm diam.; pycnospores 3-3.5 x 1.5-2 μ m, simple, oblong, often pointed at tips. Mostly on calcareous rocks. C. paulsenii

Thallus very thin, of dispersed verruculae, ashy gray or obsolete. Apothecia to 0.7 mm wide, crowded, at first concave, then \pm plane with black, thinly pruinose disc and rather thick, prominent, persistent, gray margin. Hypothecium colorless. Paraphyses easily free, branched, at apices constrictedly septate and capitate, pale grayish violet, K+ intensely and distinctly violet (not reddish). Asci inflated-clavate. Spores ellipsoid or ovoid, 10-13 x 5-7 μ m, polarilocular. On bone or sometimes mosses. Ellesmere Island. C. celata

Thallus scarcely visible. Apothecia numerous, small, rusty-red; spores with thin septum. On calcareous pebbles. Channel Islands of S. California. Not yet reported from N. America. C. marmorata (Bagl.) Jatta

C. adnexa

Discs dark red, flat; margins or the usually only little developed, thallus squamules gray-brown to brownish. Spores ca. 9.5-12 x 6-6.5 μ m. [Description from Poelt, 1969, under C. congregiens; listed as a synonym of that species "quoad apothecia"]. C. grimmiae =? C. congregiens

C. modesta

Apothecia dark reddish brown to blackish brown (\pm rusty), 0.1-0.4 mm wide, 0.2 mm thick, flat to concave with thin, protruding margin. Exterior of the exciple K+ greenish brown. Algae only in base of apothecium. Paraphyses tips scarcely widened. Spores ca. 15-17 x 8-8.5 μ m; septum 4-6 μ m thick. Envelope or cortex of apothecia I-. Thallus thin, indefinite to lacking. On bark or wood. C. phaeocarpella

Thallus and prothallus whitish; soralia absent. Apothecia to ca. 0.7 mm wide, flat, with a definite, thin, \pm concolorous margin, red-orange. Spores 8, ca. 10.5-13 x 3.5-8 μ m, \pm ellipsoid with completely developed, \pm thick septum. Paraphyses tips under 6 μ m wide. Especially on dead rock-cushion plants (Saxifraga spp.), alpine. Material from drier, warmer, lower habitats, with brownish-orange apothecia may be a distinct species. C. saxifragarum

C. subnitida

C. squamosa

C. invadens = C. castellana