

Chiodecton Ach.
(ARTHONIALES: OPEGRAPHACEAE s. lato)

After Fink (1935), Harris (1990), and others

Rev. 5/94

Thallus tightly to loosely attached, cretaceous (chalky, often powdery), effuse, thin or thick, smooth to verrucose or granular to cracked-areolate, entire, grayish to greenish or brownish, with or without white pruina, heteromerous, 0.03-0.5 mm thick; prothallus usually distinct, byssoid, brown towards outside, whitish towards inside. Hyphae with few to numerous calcium oxalate crystals. Isidia and soredia absent. Photobiont Trentepohlia, cells minute, oblong-ellipsoid, in filaments.

Ascomata apothecia, \pm perithecioid or lirelliform; discs \pm closed, epruinose, flat to subconcave, matt, many immersed together in well developed stromata in thalline verrucae; verrucae concolorous with thallus or paler, round to irregular. True exciple absent or rudimentary and developed only laterally, brown. Thalline exciple absent. Hypothecium carbonaceous, well developed, black to brown-black, often confluent among the different ascomata. Stromata slightly to distinctly elevated, constricted at base or not, 0.3-1.9 mm diam., cushion-like; disc pale brown to red-brown or black; hypothecium hard and black at least in upper part. Paraphysoids numerous, slender, sparsely branched, the tips abruptly thicker from ca. 5 μ m down in the hymenium, 1-4 μ m diam., branched and anastomosed. Asci bitunicate, cylindrical-clavate. Spores 8, fragile, obovate or rarely slightly biclavate (fusiform to needle-shaped or wavy according to Purvis & James), curved to almost straight, when old hyaline to brownish, (2-)3- or rarely 4-8-septate, over 20 μ m long and 2 μ m wide. Asci clavate, Opegrapha-type.

Pycnidia immersed or slightly elevated, brown to black; pycnosporos filiform, 5-28(-31) μ m long. Thallus containing roccellic acid, with or without unknown SV-1, C-, K-, P-, UV+ (due to ?); atranorin and various depsidones according to Purvis & James. On bark (or rock?), (often?) coastal, mainly tropical.

Distinguished from Enterographa and Sclerophyton by the deep black, dense stroma-like hypothecium which often connects the ascocarps at the base.

According to Harris (1995), C. malmei is the only species of Chiodecton in North America.

1. Thallus deep red toward the margin, otherwise whitish; apothecia often absent. Eastern, south to Florida, where it is often abundant and conspicuous. (Crypolecia rubrotincta--syn. Herpothallon sanguineum)

1. Thallus not red toward the margin. 2

2. Spores 14-18 x 7-9 μ m, 4-5 septate. Thallus thin, yellowish white, becoming thicker, uneven to subrugulose, tartareous (chinky and rough according to Fink). Photobiont "chroolepoid", cells ellipsoid to oblong, in chains. Apothecia 0.8-1.5 mm across, usually clustered, seated on a separate stroma; stroma white-pruinose (brownish black according

to Fink), immersed or rarely moderately prominent; discs stellate to substellate or elongate, with obtuse ends (round to irregular according to Fink); flat, ochraceous (blackish or \pm white-pruinose according to Fink), when wet soft and turgescens; exciple thick and raised, soon flexuous, diaphanous (of the same color as thallus according to Fink); inside pale, I+ wine-red; hypothecium pale yellowish, epithecium pale yellowish, paraphyses thin, filiform, branched and anastomosing; asci oval-wedge-shaped, 53-62 x 20-22 μ m. Spores 8, oblong-ovate, epispore thin. Pycnidia punctiform, black, shiny, immersed except at tips; sterigmata branched at base, upper cells subinflated, long, subfasciculate; pycnosporos filiform, arcuate, 11-18 x 1.5-1.8 μ m. On trees, Santa Catalina Island, California. "Spores were uncertain in all the material seen" according to Fink. Presumably a misidentification.C. ochroleucum Zahlbr.

2. Spores more than 20 μ m long. 3

3. Spores muriform, many-celled, 50-60 x 17-24 μ m. Ascomata 0.06-0.1 mm across. [Note: this would go into Arthothelium rather than Arthonia, but Harris wants to lump the two genera].(Arthonia montagnei)

3. Spores transversely septate, 4-celled, under 45 μ m long.

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4. Spores 5 μ m or more wide. 5

4. Spores to 3(-3.5) μ m wide. 7

5. Thallus yellowish white, thin, smooth to rough and granulose-crumbling. Apothecia 0.4-1 mm across, scattered or clustered, adnate, round to irregular; disk flat, rarely black, but much more commonly whitish pruinose; exciple rarely flexuous, only moderately developed; hypothecium blackish brown, extending under each apothecium into a stroma of the same color. Spores 3-septate, 19-27 x 5-6.5 μ m, ellipsoid to ellipsoid-pointed. On trees, southern California. Presumably a misidentification.C. subochroleucum Fink

5. Thallus whitish or greenish gray, not yellowish. Spores 50-70 x 4-5(-6.5) μ m. Ascomata 0.4-1 mm across, asteriform in raised "stroma" which is constricted at base; disc light to dark brown, white pruinose; ascospores 4-celled, tapered, 6

6. Thallus C+ red (erythrin), Pd-. Thallus thin, smooth, whitish, becoming obscurely powdery and rarely disappearing, except between and around the apothecia, and over the depressed brownish black, irregular and often shortly lobed stromata. Apothecia 0.4-1 mm across, immersed several in a group, round to irregular or \pm elongated; hypothecium brownish black; spores fusiform, often curved, 3-septate, 32-42 x 4.5-6.5 μ m. On trees, Texas. Presumably a misidentification. (The report from Florida by Harris 1990 was based on a Synnesia species).C. perplexum Nyl.

6. Thallus C-, Pd+ red-orange (protocetraric acid). Ascomata asteriform, in raised "stroma" which is constricted at base; disk brown, white pruinose; ascospores 4-celled, 50-70 μ m. On trees, Florida. Synnesia sp. (Harris, 1990, under Chiodecton; Harris 1990, under Synnesia)

7. Stroma-like structures distinctly constricted at base; spores 23-35 x 2-3.5 μ m; conidia long (_____). Thallus thin, smooth to rough, sometimes chinky and minutely granulose,

greenish gray to whitish. Ascomata 0.04-0.1 mm across, round to irregular, several to many immersed in each whitish, irregular, wartlike stroma; disk concave to flat, black; hypothecium dark brown. Spores fusiform to almost acicular, 3-septate, On trees, Florida. See Thor for more info. Presumably a misidentification. (According to Harris, 1990, North American reports of this species may be based on Enterographa quassiaeicola).C. sphaerale Ach.

7. Stroma-like structures scarcely or not constricted at base; spores shorter, (20-)23-27(-30) x 2(-3) um; conidia shorter, 5-7 x 1 um. Thallus 3-10 cm diam., tightly attached, slightly verruculose to almost smooth, gray with a yellowish green tinge to almost green, not pruinose, 0.1-0.3 mm thick; prothallus distinct, whitish; medulla whitish, with few to many calcium oxalate crystals; hyphae with many to numerous crystals on the walls, 2-3 um diam. Asocarps perithecioid, solitary or rarely united, aggregated into slightly to distinctly elevated stroma-like structures with or without a slightly constricted base; stroma-like structures usually with more than 10 asocarps, 0.4-1.3 mm diam.; hypothecium extending down to the substrate, hard and black; excipulum 5-15 um thick; hymenium ca. 70-90 um high, without oil drops and granules; paraphysoids 1 um diam., sparsely branched, the tips 1-3 um diam.; asci 60-70 x 10-13 um. Spores obovoid, persistently hyaline, 3-septate, Pycnidia numerous, at thallus margin in connection zone between two thalli; conidia filiform, slightly curved or curved. Thallus C-, K-, P-, UV+; containing roccellic acid and unknown SV-1. Usually on bark (e.g., gum tree), Florida. This is the only species in Thor's treatment from North America; the other species in the key above were not treated, except for C. sphaerale. C. malmei Thor

ADD (CROSS-REF.):

Ascomata round, in rows, occasionally aggregated, but without carbonization. Thallus C-, Pd+ yellow (psoromic acid). Enterographa quassiaeicola

Thallus C+ rose (gyrophoric acid). Cryptothecia sp. to be published by Thor (Synonym: Chiodecton montagnei auct., non Tuck.)

Literature

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