

Ciferriolichen

After Harris, and others

Rev. 5/94; Very Preliminary

Paraphyses slender and regular, threadlike, not conspicuously septate, with relatively long cells.

A segregate from Arthopyrenia (see notes under that genus), distinguished by the paraphyses type (see Aptroot); I don't have any more info. handy [the other characters may have to be dug out of Aptroot's cladistic matrix, which is a pain], and this key is very tentative; the only two species I am completely sure belong in the genus are given in **bold**. Harris implies that the "Arthopyrenia bifera group" is a separate from true Arthopyrenia, but that group is not defined the same as Ciferriolichen. For the present all of these species are also included in my keys under Arthopyrenia.

1. Spores 4celled. Thallus whitish, grayish or little different from the surrounding

bark.2

1. Spores 2celled, rarely 4celled in old age.3

2. Ascocarp immersed, the tip surrounded by a broad, thin shield often confluent with other shields; ostiole often surrounded by a whitish ring; spores 1722 x 68 um; microconidia linear, 69 x 1 um. Ascocarps solitary or in groups of 210; hymenium pyriform to hemispherical, 0.10.2 mm diam.; wall poorly developed, lacking below; apical shield broad, thin, 0.20.3 mm wide; ostiole often depressed. Paraphyses slender, regular and threadlike. Asci mostly narrowly ovate, rarely almost cylindrical, 60105 x 1626 um. Spores irregularly arranged to biseriate, narrowly ovate to narrowly elliptical, 4celled; perispore well developed. On bark. Florida. C.? confluens

2. Ascocarp without a broad, thin shield, not confluent; ostiole without a whitish ring. Asci narrowly ovate to cylindrical (rarely narrowly obovate), 6090 x 1720 um; spores 1723 x 67.5 um (excluding the often rather thick perispore). Ascocarps superficial, hemispherical to flattened, (0.2)0.40.5 mm diam.; wall lacking below. Paraphyses slender, regular and threadlike. Spores biseriate to irregularly arranged, narrowly ovate, 4celled. Microconidia linear, 1013 x 1 um. Report from N. America not yet confirmed. Apparently closely related to A. lapponina.(C.?. cerasi)

3. Spore wall constricted in the middle of one or both cells or mesospore thickened as if additional septa were forming, becoming 4celled in old age. 4

3. Spore wall not constricted in the middle of the cells;mesospore not thickened. Thallus poorly developed, endophloeodal. Paraphyses persistent, occasionally somewhat gelatinized or embedded in much gelatin but not disappearing. [Species with gelatinized paraphyses may also belong in the genus, but I need more info.] 8

4. Spore wall ornamented; mesospore often forming a ring cutting off a subchamber. Spores 48 per ascus. North Carolina to Florida and Texas.5

4. Spore wall not ornamented; no subchamber partially cut off. West Virginia and Tennessee to Newfoundland, or western.6

5. Spore wall with a flattopped, ringlike ridge within each cell which in old age forms a complete septum; spores 2737 x 1012 um (excluding perispore). Ascocarps immersed; hymenium flattened hemispherical, (0.2)0.30.4 mm diam.; tip of ascocarp shuurounded by a broad, thin hyphal ring; wall thin, lacking below. Paraphyses slender, regular and threadlike. Asci narrowly obovate, (80)105125 x 2530 um. Spores 48/ascus, irregularly arranged, narrowly elliptical to narrowly ovate, 2celled; wall strongly granular ornamented; perispore thick, to 2 um. Microconidia linear, 68 x 1 um. On bark. Florida. C.? annulata ["A. BIFERA GROUP"]

5. Spore wall usually not thickend, merely weakly constricted near the middle of each cell; spores very rarely 4celled in old age, 1830 x 6.59.5(12) um (excluding perispore). Ascocarps semiimmersed, less commonly immersed or superficial, hemispherical, 0.30.5 mm diam.; wall usually lacking below. Paraphyses slender, regular and threadlike. Asci narrowly elliptical to elliptical, usually with a distinct ocular chamber; 75120(130) x 2030 um. Spores irregularly arranged to biseriate, narrowly elliptical or narrowly ovate, 2celled; spore wall granular ornamented; perispore well developed. Microconidia linear, 69 x 1 um. On bark. Alabama, Florida, Louisiana, North Carolina, Texas; Mexico.C.?. lyrata ["A. BIFERA GROUP"]

6. Spores 1215(18) x 45 um; constrictions rather weak.

Ascocarps superficial, hemispherical to flattened, 0.30.5 mm diam.; wall lacking below. Paraphyses threadlike, regular, to 2 um wide. Asci narrowly elliptical, 4860 x 1113 um. Spores biseriate to subbiserial, narrowly elliptical, 2celled, one or both cells constricted near the middle; perispore thin. Microconidia rodlike, 68 x 1.5 um. On smooth bark, possibly always Hamamelis. Tennessee, Massachusetts; most frequent in West Virginia. C.? degelii
6. Spores larger, (13)1526 x 4.59 um; wall rather strongly constricted. 7

7. Spores with both ends rounded, upper cell usually somewhat broader and longer, 1822 x 78(9) um; asci mostly elliptical or obovate (rarely narrowly so), 6080 x 1722 um.

Ascocarps superficial to semiimmersed, hemispherical to flattened, 0.20.3(0.4) mm diam., wall lacking below. Paraphyses slender, regular and threadlike. Spores irregularly arranged, narrowly ovate to narrowly elliptical, 2celled, rarely becoming 4celled; perispore usually well developed. Microconidia linear, 1012 x 1 um. On smooth bark. Newfoundland, California, Oregon, Vermont. C>? cinereopruinosa

7. Spores with one or both ends pointed, cells approximately equal, (13)1520 x 4.56.5(7.5) um; asci mostly narrowly elliptical, narrowly ovate or narrowly obovate, 75110 x 1218 um.

Ascocarps superficial to slightly immersed, hemispherical, 0.30.4(0.5) mm diam.; wall thinner or lacking below. Paraphyses slender, regular and threadlike. Spores uniseriate to biserial, narrowly elliptical to narrowly ovate with one or both ends pointed, 2celled, rarely 4celled in old age, cells approximately equal in size, cells constricted near the middle or rarely two constrictions per cell; perispore well developed. Microconidia linear, 1012(15) x 1 um. On smooth bark. California, British Columbia, Oregon, Washington. C.? plumbaria

8. Spores ovate, length/width ratio 1.5:12:1, cells markedly unequal, 1315 x 78(10) um. Ascocarps immersed; hymenium subglobose, 0.20.3 mm diam.; wall extended outward above forming an elongate shield, ca. 0.30.5 x 0.71.0 mm, thinner or lacking below. Paraphyses slender, regular and threadlike. Asci narrowly elliptical to cylindrical, 75110 x 1416 um. Spores uniseriate to subbiserial, ovate, 2celled, with the lower cell narrower and shorter; perispore not obvious. Microconidia linear, 810 x 1 um. On bark of "Andromeda" (probably = Lyonia). Florida. C.? oblongens

8. Spores narrowly ovate or narrowly elliptical, length/width ratio 2.5:1 or greater. 9

9. Asci cylindrical, narrowly elliptical or narrowly obovate.
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9. Asci narrowly ovate, broadest below the middle. 14
10. Spores mostly less than 23 μm long and 7.5 μm wide.11
10. Spores mostly more than 20 μm long and 7 μm wide. 13
11. Spores 1217 x 45.5 μm . Ascocarps hemispherical to subglobose, superficial to semiimmersed, 0.250.5 mm diam.; wall thinner or lacking below. Paraphyses slender, regular and threadlike. Asci slender, narrowly elliptical to cylindrical; ocular chamber usually distinct, (50)6090 x (9)1214 μm . Spores subbiseriate, narrowly ovate, 2celled; perispore thin. On bark. Florida, Louisiana.C.? minor
11. Spores 1523 x 57.5 μm12
12. Spores 1522 x 5.57.5 μm ; ascocarp wall not extended into a broad shield. Ascocarps superficial, hemispherical to flattened, 0.30.6 mm diam.; wall lacking below. Paraphyses slender, regular and threadlike. Asci narrowly elliptical, 7590(110) x 1523 μm . Spores biseriate to subbiseriate, narrowly ovate, 2celled; perispore well developed. Microconidia linear, 710 x 1 μm . On smooth bark. Massachusetts, New Hampshire.C. lapponina
12. Spores 1723 x 57 μm ; ascocarp wall usually extended outward forming a broad shield to 1 mm diam. Ascocarps semiimmersed to superficial, flattened to hemispherical; hymenium mostly pyriform to subglobose, ca. 0.2 mm diam.; wall lacking below. Paraphyses slender, regular and threadlike. Asci narrowly elliptical, 55100 x 1217(20) μm . Spores subbiseriate to biseriate, narrowly ovate, 2celled, rarely 4celled; perispore thin. Microconidia filiform, usually curved, 2027 x 1 μm . On bark. Florida and the West Indies.C.? planorbis
13. Ascocarp immersed, tip surrounded by a broad, thin hyphal ring; spores 2028(32) x 68(9.5) μm ; on Taxodium. Hymenium pyriform, 0.20.3 mm diam.; ascocarp wall poorly developed, lacking below. Paraphyses slender and regular; asci cylindrical, 100130 x 1420 μm . Spores subbiseriate, often almost uniseriate, narrowly ovate to narrowly elliptical. Microconidia linear, 78 x 1 μm . Florida, Texas.C.? taxodii
13. Ascocarp superficial, hemispherical to flattened, no hyphal ring present; spores 2030 x 79.5(11) μm ; on a wide variety of smooth, thin barks. Ascocarps 0.40.6 mm diam.; wall lacking

below. Paraphyses slender, regular and threadlike. Asci mostly narrowly obovate, rarely almost cylindrical; ocular chamber mostly not evident; (85)100125 x 1722 um. Spores biseriate, subbiserial or almost uniseriate, occasionally only 4/ascus, narrowly ovate, 2celled, the lower cell occasionally slightly constricted in the middle; perispore well developed. Microconidia rodlike, 45 x 1 um. Florida, Alabama, Kentucky, Louisiana, South Carolina, Tennessee, Texas, New Jersey. C. cinchonae

14. Spores larger, (21)2540 um in length, 68 um in width, not obviously becoming 4celled, brownish and ornamented. Ascocarps flattened, superficial, 0.40.6 mm in diameter or length, sometimes less in width; spores 2532 x 68 um. Ascocarps orbicular to elliptical in outline. Paraphyses slender but rather irregular and somewhat gelatinized. Asci narrowly ovate, 85100 x 2427 um. Microconidia rodlike, ca. 5 x 1 um. On smooth bark. Maine.C.? megalospora

14. Spores smaller, 25 um or less in length.15

15. Spores larger, 1925 x 5.57.5 um; ascocarps hemispherical or flattened, 0.30.5 mm in diameter, superficial; wall lackingbelow. Paraphyses quite slender, but rather irregular and tending to gelatinize. Asci ovate to narrowly ovate, 6090 x 1625(30) um. Spores irregularly arranged, narrowly ovate, rarely narrowly elliptical, 2celled; perispore often rather thick. Microconidia rodlike, 45 x 1 um. On smooth bark, most often on young Fraxinus. Maine, Vermont, Minnesota.C.? fraxini

15. Spores smaller, 1522 x 45.5 um. Asci slender, 5570 x 1216 um. Ascocarps immersed, subglobose, ca. 0.2 mm diam.; paraphyses somewhat gelatinized; asci narrowly ovate, the ascus wall strongly thickened in the tip. Spores irregularly arranged, narrowly ovate, 2celled, the lower cell often somewhat longer and narrower; perispore not obvious; 1622 x 45 um. Microconidia rodlike, 45 x 1 um. On bark. Florida and Alabama. C.? atractospora

Literature

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