Anthracothecium Hampe ex Massal.
(PYRENULALES: PYRENULACEAE)

After Harris, 1990, 1995

Rev. November 16, 1998

Thallus crustose, epiphloic (or sometimes endophloic?), uniform, not differentiated into layers, or often with a corticiform layer; hypothallus usually present, dark or brown-black.

Pseudothecia perithecioid, immersed in thalline tissue, later emergent, scattered, or grouped but (usually?) not aggregate in a stroma, with or without a thalline/corticiform layer up to ostiole; ostiole erect; true exciple black, carbonaceous, uniformly thick or slightly thikened near the ostiole or expanded laterally near the base. Centrum (perithecial chamber or nucleus) globose, subglobose, rounded or flattened at bottom; rarely with a columella. Hamathecial gel I+ blue (according to ?; I+ wine-red according to Awasthi). Paraphyses unbranched, free (according to Awasthi; anastomosing according to Galloway). Asci clavate, bitunicate; endoascus well developed; I-; apical apparatus annelasceous type; (4-)8-spored; ocular chamber present. Spores submuriform to multicelled-muriform, dark brown, subglobose or ellipsoid to oblong, large; end cells brown; endospore poorly developed, almost euseptate; lumina nearly cylindrical or cubical; ontogeny different from normal eusepta formation in that the first three septa appear early, when the spores are still colorless (and these septa are sometimes darker and more prominent); the other septa appear ± simultanously at a very late stage.

Pycnidia immersed; fulcrum exobasidial; pycnospores elongate-cylindrical to fusiform. Photobiont Trentepohlia? Crystals or anthraquinones (fallacinal, parietin) rarely present. On bark in (sub-)tropical areas, mainly coastal, often in rainforests.

Parts of the description above may need to be checked.

Placed in PYRENULACEAE by Harris, and has I+ blue hamathecial gel as in that family, but has anastomosing paraphyses, as in TRYPOTHELIACEAE. Lichenized.

1. **Ascospores large, over 50 um long.** 2
1. **Ascospores small, under 20 um long.** 4
    2. **Ascospores 2/ascus, 130-180(-225) x 38-50 um; ostiole lateral.** Florida. ..... A. nanum (Zahlbr.) R. C. Harris
    2. **Ascospores 8/ascus; ostiole apical.** 3

3. Ascospores muriform, 60-95 x 27-40 um. Thallus brownish to dark green, shiny (corticate), superficial, continuous, without crystals, without hypothallus. Lichenized with Trentepohlia. Ascocarps simple, black, without pseudostroma, conical, not distinctly flattened, erumpent from substratum, exposed, 1-2 mm diam., 0.5-1.1 mm high; wall completely carbonized, with distinct clypeus, to 500 um thick; ostiole whitish, obconical, apical, 200-500 um diam. Hamathecium colorless, not inspersed, gelatinized, I+ blue. Interthecial hyphae true paraphyses, only branched at tips, ca. 1 um thick. Spores 8, often distichous, brown, fusiform with rounded cells, muriformly septate, not constricted, 60-90 x 30-40 um, with many distosepta and 3 usepta, to 2 um thick; endospore to 1 um thick; post-mature spores brown, 3-septate (the additonal septa vanishing), often observed resting on the thallus around the ascocarps; wall smooth, without

granules, with gelatinous sheath, 2-3 um thick. Anamorph unknown. No substances. On trees in dense rain forests, tropical. Florida. ..... A. prasinum (Eschw.) R. C. Harris

3. Ascospores transversely septate to submuriform, 50-65 x 20-29 um. Florida. ..... A. varians R. C. Harris

4. Ascospores flattened, lozenge-shaped, with four rows of two cells each. 5

4. Ascospores globose to subglobose, cruciately divided into four cells, 12-13 um across or 12.5-15 x 10-13 um; thallus UV+ yellow (lichexanthone). Thallus epiphloedal, uniform, effuse, scarcely limited, sordid or greenish white, thin to moderately thick, rimose and rugulose. Photobiont chroolepoid. Perithecia dispersed, solitary, at first immersed in convex thalline warts, the tips ± exposed, then ca. 1/4 to 1/3 emergent, globose, 0.7-1.0 mm diam., the wall black, entire. Paraphyses ismple, thick. Asci cylindrical, 8-spored. Spores uniseriate, brown or brown-black. On bark. Florida. ..... A. subglobosum Riddle

5. Hymenium inspersed; ascospores 11-13 x 6-8 um; thallus UV-. Florida. ..... A. canellae-albae (Fée) Müll. Arg.

5. Hymenium not inspersed; ascospores 16-24 x 7-9 um; thallus UV+ yellow or UV-. Ascospores 5-7-septate transversely and partly 1-septate longitudinally,, obliquely uniseriate. Thallus thin, brownish yellow, smooth. Perithecia 0.1-0.4 mm diam., largely immersed in convex thalloid warts, the wall very thin, complete, the superficial portion convex with an inconspicuous ostiole, black; tinged brownish within; spores 8, ellipsoid, tinged brown. On trees, Florida, Massachusetts. ..... A. staurosporum (Tuck. ex Willey) R. C. Harris

ADD:

A. pauciloculare Herre = identity uncertain

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Literature

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