

Trypethelium Sprengel
(TRYPETHELIACEAE)

After Harris (1975, 1990, 1995), and others

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Thallus crustose, uniform, epi- or endophloic, ecorticate or weakly corticate with periclinal hyphae. Perithecia immersed in groups in pseudostromata, which are grayish white, yellow, reddish, brown-black to black, (1-)2-many-carpous, not fused with a common ostiole; wall dark to black with an upright ostiole. Paraphyses branched and loosely and irregularly reticulate; asci cylindrical-clavate, bitunicate, I-, 8-spored; spores cylindrical to fusiform, transversely 3-17 septate, hyaline, large, elongate, walls unequally thickened resulting in lenticular, globose, oval, angular or cross-shaped, locules. Pycnidia immersed in stroma; fulcrum exobasidial; pycnospores cylindrical or constricted in the middle. Parietin, emodin, lichexanthone, norlichexanthone, secalononic acid. Photobiont Trentepohlia. On bark.

1. Thallus entirely or partly orange pigmented, K+ purple, or ascomatal warts orangish and K+ purple inside. 2

1. Thallus not orange pigmented, K-; ascomatal warts sometimes orangish or yellowish inside, but always K-. 4

2. Thallus yellowish to deep orange, K+ purple; ascomata mostly immersed, solitary and scattered to aggregated. Thallus very thin, smooth to slightly rough; ascomata mostly immersed, in irregular, yellowish orange stromata, solitary and scattered to aggregated, 0.08-0.15 mm across, the superficial portion convex, black; ascospores 4-celled, 21-28 x 8-9.5 um, oblong-ellipsoid, 3-septate. On trees, Florida. T. aeneum

2. Thallus usually yellowish or brownish, K-; ascomata aggregated in raised pseudostromata which are often constricted at base; contents K+ purple. 3

3. Ascospores 10-12(-14)-celled, 40-50 x 9-12 um, fusiform; powder in pseudostromata yellow to tan, often concolorous with the thallus (may become brownish or yellowish in age), cushion-shaped and often constricted at the base; pseudostromata and/or thallus often pruinose. Thallus very thin, rudimentary, smooth to rough, yellowish gray to brownish, sometimes immersed. Ascocarpos 0.05-0.2 mm diam., heaped together in strongly convex, somewhat irregular, brownish to brown stromata, or rarely solitary; ostiole minute, black. On trees, Florida, Louisiana; Mexico. T. eluteriae Sprengel

3. Ascospores 13-16-celled, 60-75(-85) x 11-12 um; powder in pseudostromata orange to brown; pseudostromata not pruinose. Florida. T. subeluteriae Mak. & Pat.

4. Ascomata black, naked, not immersed in thallus or pseudostromata, solitary or aggregated, black, with whitish indented area around ostiole, not pigmented within; hymenium inspersed; ascospores 4-celled, 20-26 x 6-8 um, oblong. Thallus very thin to thin, smooth to rough, greenish gray to yellowish; perithecia 0.08-0.3 mm across, the superficial portion depressed or whitish pruinose, the ostiole small, black. On trees, Florida, Alabama, Texas, Mississippi and S. Carolina. T. tropicum (Ach.) Müll. Arg.

4. Ascocarp immersed in thallus or pseudostromata. 5
5. Ascospores more than 4-celled. 6
5. Ascospores 4-celled, IKI-. 7
6. Ascospores 8-12-celled, 38-52 x 7-10 μ m, oblong-ellipsoid, IKI+ weak violet; pseudostromata not raised; thallus well developed or not, lacking any obvious layer of whitish crystals. Thallus very thin to thin, smooth, greenish yellow to brownish. Perithecia 0.05-0.15 mm diam., several to many immersed in slightly convex, round or irregular, scattered or clustered, greenish yellow or brownish pseudostromata, the ostiole minute, black. On trees, from New England to Florida and west to Louisiana and Ohio. In northern part of its range often with pycnidia only. T. virens Tuck. ex Michener
6. Ascospores 6-7-celled, 39-45 x 10-12 μ m; thallus well developed, with a layer of whitish crystals. [this taxon, left unnamed in Harris's earlier work, is probably "T. scorites Tuck.", which Harris, 1990 synonymized with T. virens]. T. sp. 1 (Harris, 1975)
7. Ascospores large, 35-43 x 12-15 μ m; ascomata solid or grouped, covered by usually yellowish or yellowish green thallus except at apex which is black with a pale ring; cortex-like layer of thallus extending beneath the ascocarp; hymenium not interspersed. Florida. N. American records of Pseudopyrenula pupula are misidentifications of this species. T. floridanum
7. Ascospores smaller, less than 30 μ m long. T. variolosum Ach. s. lato

T. variolosum s. lato

1. Ascomata trapethelioid, or solitary to aggregated in trypethelioid pseudostromata. 2
1. Ascomata astrothelioid. 4
2. Ascomata trypethelioid with much cartilaginous tissue in the pseudostromata. Not known from North America. T. lepieurii Mont.
2. Ascomata solitary to aggregated in trypethelioid pseudostromata. 3
3. Thallus UV- (without lichexanthone). Pseudostromata concolorous with thallus or slightly paler, or ascomata scattered and immersed. Ascospores 20-27 x (7-)8-10 μ m. Thallus usually greenish to brownish; cortex-like layer of thallus not extending beneath ascocarp; ascocarp wall often little carbonized. Florida. [This species was left unnamed, as "sp. 2", in Harris's earlier work]. Florida. T. nitidusculum (Nyl.) R. C. Harris
3. Thallus UV+ yellow (lichexanthone). Thallus usually appearing pruinose; ascocarp often incompletely divided into separate chambers (similar to Astrothelium), not pigmented; ascospores 4-celled, 20-25 x 7.5-10 μ m. Tennessee to Florida and Texas. T. ochroleucum (Eschw.) Nyl.
4. Thallus UV- (without lichexanthone). Spores 20-27 x 8-10 μ m. Florida. "Astrothelium" confusum Mull. Arg.
4. Thallus UV+ yellow (lichexanthone). Spores 20-25 x 7.5-10 μ m. Florida. T. variolosum Ach. s. str.

Excluded

Pseudostromata brownish, pale yellow to orangish within, but K-. Ascospores 18-28 x 6-9 um, 3-septate, oblong-ellipsoid. Pseudostromata irregular, not constricted at the base. Thallus very thin to thin, smooth, greenish gray to yellowish or ashy, bordered by a black hypothallus, sometimes disappearing. Perithecia 0.05-0.15 mm diam., heaped together in irregular, convex, blackish brown pseudostromata, the superficial portion black, the ostiole minute, black. On trees, New Jersey to Florida, Alabama, Texas, Oklahoma, Virginia, Kentucky; Mexico. T. mastoideum (Ach.) Ach. = Bathelium mastoideum Ach.; misidentifications for North America.

Literature

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