

Mycocalicium Vainio in Reinke
(CALICIALES: MYCOCALICIACEAE)

After Poelt, Tibell, Fink, etc.

Rev. 5/94

Thallus inapparent or inconspicuous. Photobiont usually absent. Apothecia with upper part obovoid to lens-shaped, usually distinctly stalked; stalk consisting of parallel hyphae, dark brown to blue-green. Thalline exciple absent. True exciple \pm well developed, of dark brown, angular pseudoparenchymatous cells or of radiating hyphae. Paraphyses simple to sparsely branched; tips forming a layer over the hymenium. Asci cylindrical, formed singly from ascogenous hyphae with croziers, with strongly, uniformly thickened apex, with a single functional wall layer, persisting until maturity of ascospores. Spores allantoid, simple, uniseriate, not released, or a dry spore mass, dark brown. Conidiomata unknown. Vulpinic and pinastric acids in some species. Saprobiic, not lichenized, cool temperate to tropical.

[Note: some members of this genus are easily confused with Chaenothecopsis species, which differ in that the ascus apex is penetrated by a narrow canal].

1. On exudates (sap) of Sequoia and Sequoiadendron. Containing vulpinic and pinastric acids.M. sequoiae Bonar
1. On bark or wood.2
 2. On bark of Sabal palmetto, subtropical.Chaenothecopsis rappii (Nádv.) R. C. Harris
 2. On wood (or parasitic on lichens on wood).3
(M. reticulatum also keys out here)
3. With vulpinic and pinastric acids (yellow pigments); exciple thick, strongly constricted, often yellow-green pruinose. No algae in thallus. Iowa and Texas.M. calicioides (Nádv.) Tibell
3. Without vulpinic and pinastric acids. Exciple not as above.4
 4. Apothecia over 0.2 mm diam., over 0.6 mm high, black or brown-black; capitulum globose to turbinate. Spores over 6 x 3 um.5
 4. Apothecia mostly under 0.2 mm diam., or capitulum lenticular to club-shaped.7
5. Thallus granulate, green-gray. Stipes short, stout, brownish black. Capitulum 0.3-0.5 mm across, spherical to top-shaped. Exciple dark, incurved, radiate-striate; spores 7-12 x 3-5 um, ellipsoid to fusiform-ellipsoid. On old wood, S. Carolina.M. ravenellii (Tuck.) Fink
5. Thallus thin or absent.6
 6. Spores 6-8.5(-10) x 3-3.5(-4) um, oblong-ellipsoid, slightly fusiform and flattened. Thallus whitish. Apothecia brown-black, capitulum 0.2-0.4 mm diam., 0.7-0.9 mm high (to 0.4 mm high, often sunken in the thallus, according to Poelt). Thallus very thin, becoming scurfy, powdery, whitish; algae (if present) trentepohlioid. Capitulum subspherical to top-shaped, K-, the disk convex, brownish black; exciple darker;

hypothecium brown; spores blackish brown. On bark, especially oaks, New England, New York, Alabama, Texas, California.M. albonigrum (Nyl.) Fink.

6. Spores 6-9(-11) x 3-4.5 um, ellipsoid. Thallus greenish. Apothecia black, capitulum 0.25-0.7 mm diam., stalk 0.6-1.2 mm high.M. americanum R. Sant.

7. Spores 9-15 x 4-7 um, oblong-ellipsoid. Capitulum lenticular to top shaped, 0.15-0.25 mm across; disk convex, black; exciple white below to black above. Thallus poorly developed and evanescent. Stipes slender, dark brown, shading into white above. On old wood, New Jersey.M. fuscipes (Tuck.) Fink

7. Spores under 8 x 4 um.8

8. Apothecia 1.2-1.6 mm high, capitulum lenticular to club-shaped, black below. Spores 5.5-9 x 2.5-3.5(-4) um, oblong-ellipsoid or broadly ellipsoid-subfusiform-flattened, smooth or with minutely warted surface ornamentation. Capitulum 0.1-0.35 mm across; disk convex, blackish brown. Stipes rather short and slender (0.05-0.12 mm diam.), shiny or dull, black or brownish black, internally the tissue dark greenish brown. Thallus without algae, very thin, indicated by whitish patches, usually evanescent. On dry wood, widely distributed, temperate to boreal; Alaska.M. subtile (Pers.) Szat.

8. Apothecia 0.2-0.6 mm high, capitulum lenticular, pale to brownish below. Spores 4-8 x 2-3 um. Thallus thin granulose to corticate, with algae (Cystococcus). (Chaenothecopsis pusiola)

ADD:

M. reticulatum Nádv.

Cross references to species of Chaenothecopsis, Phaeocalicium, Microcalicium, and Sphinctrina.

M. albonigrum (Nyl.) Tibell

Spores 6-8.5(-10) x 3-3.5(-4) μ m, oblong-ellipsoid, slightly fusiform and flattened. Thallus whitish. Apothecia brown-black, capitulum 0.2-0.4 mm diam., 0.7-0.9 mm high (to 0.4 mm high, often sunken in the thallus, according to Poelt). Thallus very thin, becoming scurfy, powdery, whitish; algae (if present) trentepohlioid. Capitulum subspherical to top-shaped, K-, the disk convex, brownish black; exciple darker; hypothecium brown; spores blackish brown. On bark, especially oaks, New England, New York, Alabama, Texas, California. Saprobiic.

Apothecia 0.7-1.3 mm high, black. Capitulum obconical to lenticular, with convex upper surface. Stalk 0.07-0.12 mm diam., epruinose, shining black, consisting of dark brown, parallel hyphae, c. 3 μ m in diam. Excipulum usually well developed, 20-45 μ m thick, consisting of large, 7-12 μ m wide, almost isodiametric, thin-walled cells in 2-4 layers. Innermost hyphae of the excipulum not swollen, continuous with the hyphae of the upper part of the stalk. Hypothecium broadly obconical, dark brown, 140-170 μ m high. Hymenium 50-60 μ m high. All parts of the apothecia K-, N-. Asci 35-45 x 3-4 μ m, cylindrical, with uniseriately arranged spores. Apical part of semi-mature asci thickened and with a short and wide canal, and finally in mature asci uniformly thickened. Spores 6-8 x 3-3.5 μ m, dark brown, broadly ellipsoidal to ellipsoidal, non-septate, slightly fusiform, and flattened. Ornamentation of spore surface none or faint and irregular under light microscope.

Pycnidia not very frequent, but sometimes numerous, black, spherical to ovoid or pyriform, often with a distinctively extended apical part, 0.10-0.20 mm diam., with distinct apical pore. Conidiogenous cells cylindrical to irregular with a \pm swollen base, 7-8 x 1.5-2 μ m. Conidia 4-5 x 1.5-2 μ m.

No substances.

On dry, hard, weathered wood.

M. americanum (R. Sant.) Tibell

See Tibell, 1996 for fuller description

M. calicioides (Nadv.) Tibell

Apothecia 0.4-0.8 mm high, K-l; stipe brown-black to black, pale inside, 0.1-0.15 mm thick (towards base to 0.22 mm); capitulum broadly lenticular, below thinly pruinose. Discs narrow, black, epruinose, plane. Stalk pale inside, violet-black to purplish black outside, composed of parallel hyphae; outer layer of dark radially arranged hyphae, the inner layer composed of almost hyaline hyphae parallel with the hymenium. Hypothecium hemispherical, paraplectenchymatous, weakly yellowish, 0.02 mm thick. Hymenium 0.08 mm, ascic narrowly cylindrical. Paraphyses simple, numerous. Asci narrowly cylindrical. Excipulum margin strongly constricted, edge of margin often with faint yellow-green pruina; spores uniseriate, brown, ellipsoid, simple, without hyaline coat, 8-11.5 x 3-5 μ m, apices subacute, wall thin. Non-lichenized. On dry wood, Iowa and Texas.

M. fuscipes (Tuck.) Fink

M. rappii Nadv. = Chaenothecopsis rappii

Thallus without algae.

Apothecia 0.5-0.6 mm high; stalk black to brown-black, 0.07-0.1 mm wide, somewhat

pale inside; capitulum obconical to sublentiform, 0.15-0.3 mm wide; excipulum black, epruinose, brown inside, pseudoparenchymatous, c. 15 μ m thick; cells angular-roundish, or angular-ellipsoid, c. 10 μ m wide; hypothecium brown, triangular, composed of erect hyphae; hymenium c. 60 μ m; spores uniseriate, oblong-ellipsoid, brown, 6.5-10 x 3-4 μ m.

M. ravenelii (Tuck.) Fink

M. reticulatum Nadv.

Thallus without algae.

Apothecia 0.8-1.1 mm high; stalk brown-black to black, pale inside, epruinose, 0.09 mm thick; capitulum 0.3-0.4 mm wide, turbinate to sublenticular; excipulum black, epruinose, brown inside, reticulate-pseudoparenchymatous, c. 70 μ m thick, cells subelongate, 5-angled, 15-20 x 20 μ m; hypothecium brown to dark, lower part pseudoparenchymatous, of minute cells; apical part of erect hyphae; hymenium 50 μ m; spores uniseriate, simple, brown, ellipsoid, smooth, 5.5-7 x 3-4 μ m, apices subacute.

On wood, South Carolina.

M. sequoiae Bonar

See Tibell & Titov, 1995 for full description

M. subtile (Pers.) Szat.

Apothecia 1.2-1.6 mm high, **capitulum lenticular to club-shaped, black below.**
Spores 5.5-9 x 2.5-3.5(-4) μ m, oblong-ellipsoid or broadly ellipsoid-subfusiform-flattened, smooth or with minutely warted surface ornamentation. Capitulum 0.1-0.35 mm across; disk convex, blackish brown. Stipes rather short and slender (0.05-0.12 mm diam.), shiny or dull, black or brownish black, internally the tissue dark greenish brown. Thallus without algae, very thin, indicated by whitish patches, usually evanescent. On dry wood, widely distributed, temperate to boreal; Alaska.

See Tibell 1998 for fuller description

M. victoriae (Kn. in Wilson) Nadv.

Thallus without algae.

Apothecia 0.8-1 mm high; stalk brownish black, pale inside, 0.08 mm thick; capitulum lenticular, 0.3-0.5 mm wide; excipulum brown-black, naked, pseudoparenchymatous, 0.12-0.14 mm thick; disc black, naked, flat; hypothecium brownish; spores uniseriate, brown, ellipsoid, pointed at tips, simple, 7-10 x 3-4 μ m.

Literature

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