Calicium

After Tibell, 1975

On siliceous rock underhangs in very humid habitats; parasitic? on Lepraria spp. Thallus often well developed, thick, sorediose, yellowish or greenish, P-, K- (rhizocarpic and ?usnic acids). Apothecia ± sessile or short-stalked, 0.2-1 mm high, black, slightly pruinose on lower part of exciple; stalk I-. Spores 12-16 x 4-6 um. Canada. .....C. corynellum

Caloplaca

After various authors

Rev. 1/94

1. Spores 13-16 um long. 2
1. Spores mostly under 13 um long. 3

2. Spore septum 3-5 um. Typically on Aspicilia or Lecanora, Arctic. .....C. invadens
2. Spore septum very thin. On other lichens on rock, New Mexico. ..... C. dispersa

3. Amphithecium dark reddish, grayish to black, or disappearing; spores 8-13 x 5-7.5 um; isthmus 2-2.5 um. On wide variety of lichens, widespread. .....C. epithallina
3. Amphithecium orange-ochraceous, thick. Spores 11-14 x 5.5-8 um; septum 2.5-3.5 um thick. Parasitic on Aspicilia on rocks. ..... C. insularis

ADD:

Thallus parasitic on crustose lichens on calcareous rocks. Thallus yellow orange, conspicous; discs and margins orange. Rare, Ontario. ..... C. cf. inconnexa

Carbonea

On Candelariella and Lecidea. Ascospore apices rounded, 7-12(-13) x (4-)5-6(-7) um. Epithecium smoky blue to greenish blue or emerald green. Widespread, montane to alpine. Alberta, Wyoming, Utah, California. Arizona, BAja California. .....C. vitellinaria

Catillaria

On Lecania sp. on maritime rocks, Washington and British Columbia. ..... C.? sp.

Cecidonia

After Triebel & Rambold, 1988

LECANORALES. On crustose lichens on rock, forming cecidia (galls). Apothecia black, to 0.6 mm diam., umbonate, the excipulum well developed, carbonaceous to dark pigmented. Hymenium to 110 um high, hylaine, I+ blue, I(conc.)+ blue to intense red. Paraphyses not moniliform. Asci 8-spored; tholus Lecidea-type; spores hyaline, simple. Pycnospores bacilliform. On Lecidea or Porpidia spp, forming galls.

On Lecidea spp. Arctic-alpine. ..... C. umbonella Trieble & Rambold (1988)

Cercidospora

After Hafellner, 1987, and Keissler

Ascomata perithecioid, sunken in the thallus or ascocarps of the host, with "präformiertem" ostiole, without papilla, under the lens the exposed part appearing black. Excipulum at base pale bluish, brownish to hyaline, in the ostiole region intensely pigmented, blue-black, blue-violet, blue-green, or other colors, small celled, not distinctly paraplectenchymatous, composed of a kind of short-septate "textura intricata". Asci fissitunicate, cylindrical, I-; endoascus somewhat thickened apically and in the center of the thickening with a small invagination. Paraphysoids filiform, anastomosed. Spores 4-8, often with aborted spores present, hyaline, with 1 or several cross septa, the lower cell(s) often distinctly narrower; perispore very thin, disappearing.

1. Ascospores 1-celled, at most with some cells with more than one septum. On crustose to lobate or small umbilicate lichens. 2

1. Ascospores with more than one septum. On fruticose or large foliose lichens. These two species are not yet recorded for N. America, but their hosts are common here. 5

> **2. Ascospore cells very unequal in size, the lower cell extended and attenuated, (19-)22-25(-27) x 5-6(-7) um. On Teloschistaceae (e.g., Caloplaca spp. and Xanthoria elegans).** Spores 4-8 per ascus. Widespread. Greenland; ARizona. ..... C. epicarphinea (Nyl.) Grube & Hafellner (incl. C. caudata Kernst.)
>
> **2. Ascopore cells equal, or moderately unequal with lower cell somewhat narrowed. Not on Teloschistaceae.** 3

3. Ascospores mostly 8 per ascus, 13-18(-23) x 3.5-6(-8) um, the lower cell somewhat narrowed but not attenuated. Apothecia few, 1-4 per areole, immersed, then slightly projecting, with slightly "eingedrückter" ostiole, globose or ovoid, 100-250 um, appearing as bluish-black dots under dissecting scope. Asci ± cylindrical. Paraphyses filiform, 1 um thick. Hymenium I-. Spores hyaline, oblong or fusiform, 1-septate. On thallus and apothecia of Lecanora spp. of the L. poltropa group, subg. Placodium, and on Rhizoplaca. Wyoming, Arizona. .....C. epipolytropa (Mudd) Arnold

3. Ascospores mostly 4 per ascus, (16-)20-24 x 5-7 um, the lower cell not or only exceptionally narrowed. On Lecanora muralis group and Rhizoplaca spp. Perithecia immersed, globose, black. Asci 4-8-spored. Spores fusiform, hyaline. Alberta,

Oregon, Colorado, Nevada, California, Utah, Arizona, New Mexico; Mexico; British Columbia; Greenland. .....C. ulothii Körber

4. Spores 3-septate. Asci mostly 4-spored; spores 20-26 x 5-6 um. On Stereocaulon. British Columbia. ..... C. stereocaulorum (Arnold) Hafellner

4. Spores (3-)4-6-septate. Asci mostly 8-spored; spores 18-23 x 4.5-6 um. On Solorina crocea. ..... C. lichenicola (Zopf) Hafellner

Chaenothecopsis

After Tibell, 1975

1. Parasymbiont/parasite on Chaenotheca spp. 2
1. Parasitic on thallus and ascocarps of Arthonia (A. cf. platygraphella). Maine. ..... C. brevipes

2. Growing on Chaenotheca chrysocephala. ..... C. consocians
2. Growing on other species. 3

3. Capitulum (reddish parts) K+ green or blue-green. On Chaenotheca stemonea and C. trichialis (both with Stichococcus). .....C. viridireagens
3. Capitulum K+ red-purple, or K- to brownish. 4

4. All parts of apothecium N-, K-, or hypothecium greenish, K+ brownish. Apothecia 0.6-1 mm high, black. Spores 5.5-6.5 um, 1-septate; septum darker than outer walls. Growing on Chaenotheca trichialis which contains Stichococcus, on wood. Canada. .....C. epithallina
4. All parts of apothecia internally with diffuse, greenish yellow pigment, K+ red or purple (dissolving). Apothecia 0.4-0.8 mm tall, black or stalk rarely brown below; capitulum 0.15-0.38 mm wide; stalk 0.04-0.1 mm wide. Spores 5.4-7.8(-9.5) x 2.2-2.7 um, 1-septate, the septum colorless or pale brown and much thinner than outer wall, the surface smooth. On wood of pines (rarely birch), usually on thallus of Chaenotheca brunneola, which contains Dictochloropsis or Trebouxia, but sometimes associated with Stichococcus ("C. lignicola"). ..... C. pusiola

Chromatochlaymys

Ascospores (15-)20-27 um wide, muriform. ..... C. muscorum v. muscorum

Clypeococcum

After Hawksworth, 1983 and Triebel, et al., 1991

Ascomata immersed, occurring in groups and united by a dark colored clypeus. Ascospores (9-)10-12(-13) x (4-)5-6(-6.5) um. On thallus of Hypocenomyce scalaris, seriously damaging the host, the infected squamules becoming brown, bleached and finally killed. Minnesota. ..... C. hypocenmyceaee D. Hawksw.

Conida

On Caloplaca sp. Epithecium bluish black, I+, K-. California. Reported from N. America by Keissler, 1933..... C. coerulescens Zopf

Corticifraga

After Hawksworth; also see Hawksworth & Santesson, 1990

1. Apothecia immersed, with a distinct excipulum, circular, dispersed, not in neat circular groups, parasymbiotic, discs almost colorless to pale brown, sometimes confluent, 200-500 um diam.; ascospores 1-septate when mature, 12-16 x 4-6 um. On Peltigera. British Columbia. .....C. fuckelii (syn. Phragmonaevia fuckelii)

1. Ascomata arising in discrete necrotic circular infection sports, brown but soon becoming black; paraphyses brown capitate; ascospores (1-)3-septate, (19-)20-22.5(-24) x (4-)4.5-7(-8) um. On Peltigera. British Columbia. ..... C. peltigerae

Cyphelium

After Tibell

Parasitic or parasymbiotic on Pertusaria (e.g., P. amara or P. albescens; usually causing darkening of the thallus and partial suppression of production of soredia) on bark. Apothecia sessile, 0.3-0.6 mm wide, not pruinose; excipulum thick throughout and distinctly thickened at base. Hypothecium convex. Spores 11-15 x 6-8 um, slightly constricted at septum, with spirally streaked upper surface which becomes irregularly broken in old ones; fissures rather numerous and deep. On trunks of old oaks. .....C. sessile

Cystobasidium

(Heterobasidiomycetes)

On Usnea. British Columbia. ..... C. usneicola Diederich & Alstrup