

Amandinea M. Choisy ex Scheidegger & Mayrh.
(LECANORALES: PYXINACEAE)

After Scheidegger, 1993 and Sheard & May, 1997

Rev. November 2, 1997

Thallus crustose, plane, rimose to areolate, bullate or squamulose. Medulla I-.

Apothecia innate to sessile with broad or constricted base; margins lecanorine, pseudothalline or lecideine. Epithecium comprised of darkly capitate cells immersed in diffuse brown, bluish green, olive gray or yellowish brown pigment. Hypothecium with similar pigmentation or almost colorless. Aical cushion of ascus conic (sometimes domed), truncated conic, arch0shaped, or more rarely cylindric, ellipsoid or bulbous; remainder of tholus I+, often stained more strongly adjacent to apical cushion; amyloid layer above apical cushion distinct or thin, occasionally lacking; ocular chamber conic or weakly developed. Spores brown, 1-septate, Buellia-type or Physconia-type, with or without median wall thickenings, ornamented or not, with microfugulate or rugulate ornamentation (SEM).

Pycnidia often present, immersed in thallus, unilocular; conidiophores branched with elongate conidiogenous cells bearing conidia apically (Type III, Vobis 1980); pycnospores filiform, curved, up to 18-28 μm long, $\pm 0.8 \mu\text{m}$ wide.

Usually no substances, rarely norstictic acid.

On rock (or bark or wood).

A segregate from Buellia, distinguished mainly by the pycnospore type; it is quite conceivable that many N. American species presently placed in Buellia could belong here. Personally I'm not thrilled about the genus being segregated.

1. Spores with wall ornamentation clearly visible at x 400; corticolous. Florida, coastal Georgia, and Louisiana. A. leucomela

1. Spore ornamentation not visible at x 400; corticolous, lignicolous or saxicolous; widely distributed. 2

2. Spore mean 15.0-16.0 x 7.5-8.0 μm ; walls ornamented (x 1250); saxicolous, ornithocoprophilous; coastal, boreal and arctic. A. coniops

2. Spore mean < 14.5 μm long; walls ornamented or not; substrate variable; distribution widespread. 3

3. Asci with > 8 spores; spore mean 9.5 x 4.5 μm ; walls unornamented (x 1250); corticolous; eastern N. America. A. polyspora

3. Asci with 8 spores; spore mean > 10 x 5 μm ; walls ornamented or not; corticolous, lignicolous, or saxicolous; widespread. 4

4. Apothecia with prominent proper exciple, not erumpent but sometimes with thalline cortex adhering to exciple; exciple sometimes biatorine, typically becoming excluded when disc is convex; mature spores ornamented or not (x 1250); corticolous, lignicolous, or saxicolous. A. punctata

4. Apothecia usually lacking a prominent proper exciple, typically erumpent; margin usually pseudothalline or lecanorine; mature spores ornamented; corticolous or lignicolous. 5

5. **Thallus light gray; apothecia typically with erumpent, pseudothalline margins, never with prominent lecanorine margins; epithecium and upper hypothecium often suffused with bluish green or olive pigment when collected, becoming brown in herbarium; spore mean < 6 um wide; mean length : breadth ratio 1.9-2.1; rarely constricted at septum. East coast, Prince Edward Island to Texas and Great Lakes region. A. milliaria**

5. **Thallus dark gray green; apothecia erumpent at first, typically with prominent lecanorine margins at some stage of development; epithecium dark brown or reddish brown; spore mean > 6 um wide; mean length: breadth ratio 1.7-1.8; typically constricted at maturity; temperate and southern boreal, from east coast to Rocky Mts. A. dakotensis**

A. coniops (Wahlenb. in Ach.) Choisy ex Scheidegger & Mayrhofer

Thallus ± brown areolate to bullate; medulla I-. Hypothallus black and prominent, visible between areoles or as a black edge around areoles. Apothecia biatorine to lecideine, 0.5-0.8 mm diam., broadly sessile; disc plane to convex; margin thick, persistent. Exciple aethalea-type. Hymenium without oil droplets, 58-80 um; epihymenium brown; hypothecium dark brown. Spores broadly oblong, constricted at septum, (10-)13-18 x 7-9.5(-11) um, Physconia-type; ornamentation rugulate. Pycnidia common and conspicuous; pycnosporos 15-30 um long, curved. Thallus K- or K+ yellow. Growing on rocks at the seashore, boreal-arctic (often associated with Lecanora straminea).

A. dakotensis (H. Magn.) P. May & Sheard

Thallus dark gray; spores broadly ellipsoid, averaging 11.0-11.5 x 6.1-6.4 um; hypothecium light brown, sometimes hyaline. Apothecia broadly attached but never erumpent, the thalline margin thin, persistent; without proper margin. Spores (9-)11-14 x (5-)7-8 um, Buellia-type (according to Harris) or Physcia-type (according to Brodo).

See Sheard & May for fuller description

A. leucomela (Imsh.) P. May & Sheard

[Syn.: Buellia langloisii Imshaug ined.]

Thallus thin, continuous, membranous, ochraceous. Hypothallus absent.

Apothecia round, adnate, 0.3-0.7 mm diam.; disk black, plane; margin concolorous, ± raised, persistent. Hypothecium red-brown, extending as a tail into the thallus. Exciple distinct from hypothecium, brown at margin but pale inside. Hymenium not inpersed, 90-120 um; paraphyses strongly fusco-capitate, somewhat enlarged at apices; asci narrowly clavate, 8-spored. Spores brown, 1-septate, ovoid-ellipsoid, not constricted, 14-20 x 8-11 um; walls thin and uniform, outer wall reticulate-ridged.

Thallus P-, K+ sordid yellow. On bark. Florida and Louisiana.

See Sheard & May for fuller description

A. milliaria (Tuck.) P. May & Sheard

Thallus typically light gray; spores elongate-ellipsoid, averaging 10.8-11.5 x 5.3-5.6 um; hypothecium dark brown. Apothecia erumpent, becoming sessile and broadly attached, the thalline margin thin, disappearing, the proper margin well developed; Spores (9-)11-12(-14) x

(6-)7-8 um, \pm Buellia-type. Thallus typically light gray, K+ yellow. Hypothecium medium or dark brown. Spores with \pm strongly but evenly thickened walls, and rounded lumina. Disc plane or convex, brown or blackish.

See Sheard & May for fuller description

A. polyspora (Willey) E. Lay & P. May

Thallus greenish, grayish brown or brownish, or lacking, P-, K+ yellowish or K-, C-, KC-, scant to continuous, becoming areolate (areoles flat) and subverrucose or verruculose. Apothecia adnate, to 0.5 mm, strongly convex. Exciple dark brown externally, hyaline internally; internal stipe red-brown. Hymenium not interspersed. Ascus apical cushion typically conic or truncated conic with an amyloid layer above which may rarely be lacking. Spores Buellia-type, 12-32 per ascus (at least when immature), 7.4(9.3-9.5-9.7)-11.7(-13) x 3.4(4.4-4.4-4.5)-5.4 um, apparently unornamented (x 1250) but microrugulate by SEM. Conidia arcuate, 14(19-22)-30 um long. On bark.

A. punctata (Hoffm.) Coppins & Scheidegger

Hypothallus lacking, or of scattered, black specks or visible only as a black fringe at margin. On rock, bark, or wood. Thallus ashy (to greenish or brownish?), very thin, rimose (or scurfy to verruculose or lacking?), P-, K+ yellowish (?) or K- (no substances). Apothecia broadly sessile or slightly constricted at base, to 0.6 mm, plane to convex, black, the margin thin, black, persistent (or disappearing?); exciple aethalea-type; epihymenium brown; hypothecium brown (to brown-black?). Hymenium 70 um, not interspersed. Spores oblong, constricted or not at the septum, Buellia-type, (7-?)12-15 x (4-?)6-8 um; ornamentation psilate. Pycnidia very rare and inconspicuous; pycnosporos filiform, curve, to 15 um long. Medulla I-. Widely distributed, temperate to arctic. [Description based on saxicolous material described by Scheidegger, 1993; question marks indicate information from other sources; Buellia nantiana and B. saxicola, with white thalli, may also key out here, and may or may not belong in Amandinea].

“Buellia” stigmataea Koerber (= ? Amandinea punctata) Description after Thomson 1997

Thallus ashy, greenish, brownish, or lacking, thin, scurfy; hypothallus brown-black or lacking.

Apothecia tiny, 0.3-0.4 mm broad, flat to slightly convex; margin black, becoming excluded in some specimens but usually prominent; exciple brown-black; hypothecium brown-black; epihymenium brown; hymenium brown above, hyaline below; paraphyses loosely attached, septate, branched, tips brown-capitate; spores 1-septate, brown, ellipsoid, small, 9-16 x 4-8 um. Thallus K-, C-, P-, I-. On rocks. Arctic, south to Newfoundland.

Key to Variations in Amandinea dakotensis

1. Hypothecium hyaline.2

1. Hypothecium pigmented (sometimes pale).4

2. Thallus greenish, K-.3

2. Thallus gray-white to partly brownish or ashy, K+ yellow. Thallus effuse, rather thin, rough, granulose. Apothecia frequent, almost contiguous, adnate, 0.3-0.5 mm diam.; margin hardly prominent, often rough or subgranular; disc brown-black, plane to convex. Hymenium 70-80 um. Hypothecium hyaline [or often dark yellowish brown according to

- the protologue]. Spores 11-13 x 6-7 μm , thin-walled, constricted at the thin septum. On trees, S. Dakota.dakotensis s. str.
- 3. Thallus lead-green.** Thallus orbicular, areolate; areoles undulate-angular, plane, matt. Apothecia numerous towards center, 0.3-0.5 mm diam.; disc brown-black, more reddish brown when young, plane; thalline margin slightly prominent. Spores 12-14 x 5-6 μm ., slightly constricted, with thin wall and septum. On bark, Iowa.subplumbea Magn.
- 3. Thallus green-brown.** Thallus effuse, thin, subfurfuraceous-verruculose. Apothecia prominent, dispersed, 0.2-0.3(-0.4) mm diam.; thalline margin at first distinct, thin, later \pm excluded; disc black, plane. Hymenium 50-60 μm . Spores 10-13 x 5.5-6.5 μm , constricted at center, with thin wall and septum. On bark, Iowa and New York.finkii Magn.
- 4. Thallus \pm thick. Apothecia immersed.** Apothecial margin thick (?--need to check).5
- 4. Thallus thin. Apothecia \pm sessile.**6
- 5. Apothecia small, the margin corticate.** (dakotensis s. str.)
- 5. Apothecia large, the margin ecorticate.** Thallus ashy white to ashy, thin, effuse, indistinctly rimose; hypothallus indistinct; K-, C-, P-. Apothecia frequent, often contiguous, sessile; disc black, plane to slightly convex, 0.4-0.5 mm diam.; thalline margin thin, whitish, hardly prominent, smooth. Hypothecium green-brown to brown. Hymenium 70 μm . Paraphyses tips capitate, 4-6 μm . Spores constricted, thin-walled, 10-12 x 6-7 μm . On fence post, Wisconsin.pyriniformis Magn.
- 6. Apothecial margin \pm thin. Spores 12-14 x 7-7.5(-8) μm , distinctly constricted at septum. Thallus thin,** effuse, ashy, sometimes interrupted, forming groups of subverruciform areoles, surrounded by bluish gray hypothallus. Apothecia 0.25-0.4(-0.5) mm diam., innate, K+ yellow; disc black, \pm plane; thalline margin not prominent. Hypothecium brownish. Paraphyses tips capitate, 3-3.5 μm . Hymenium 70 μm . Spores with thin wall and septum. On smooth bark, Pennsylvania.pennsylvanica Magn.
- 6. Apothecial margin thick. Spores 10-13 x 5.-6.5 μm , scarcely constricted. Thallus \pm thick,** ashy, not distinctly areolate or verrucose, K+ yellow. Apothecia frequent, innate, 0.3-0.5 mm diam., partly crowded; disc often sunk between the unevennesses of thallus, brown-black, plane to irregular; thalline margin prominent, crenulate to verrucose, finally almost disappearing. Hymenium 70 μm . Hypothecium pale to dark brown. Paraphyses tips capitate, 4-5 μm . Spores wall and septum thin. Pycnospores 5-7 μm long. On bark, New York.inaequalis Magn.

Literature

- Scheidegger, C. 1993. European saxicolous Buellia.
- Sheard, J. W. and P. F. May. 1997. A synopsis of the species of Amandinea (lichenized Ascomycetes, Physciaceae) as presently known in North America. The Bryologist 100: 159-169.