F. Schumm (2026):

Images of Lichens
from Japan 01

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With this volume I document a collection of images mainly out of the Exsiccats of Kashiwadani, Kurokawa and Ohmura from Japan. I omitted the search for description from the literature because most of them could be found in the earlier Vols. of Vezda

For the descriptions of europaean species I recomend the excellent descriptions that are provided in Prof. Nimis ITALIC 8 under the URL:
https://italic.units.it/

and the Australian Lichenslist under the Url:
https://www.anbg.gov.au/abrs/lichenlist/lichenchecklist_e_o.html

F. Schumm, 2026

Acarospora smaragdula (Wahlenb. ex Ach.) A. Massal., Ric. auton. lich. crost. (Verona): 29 (1852)

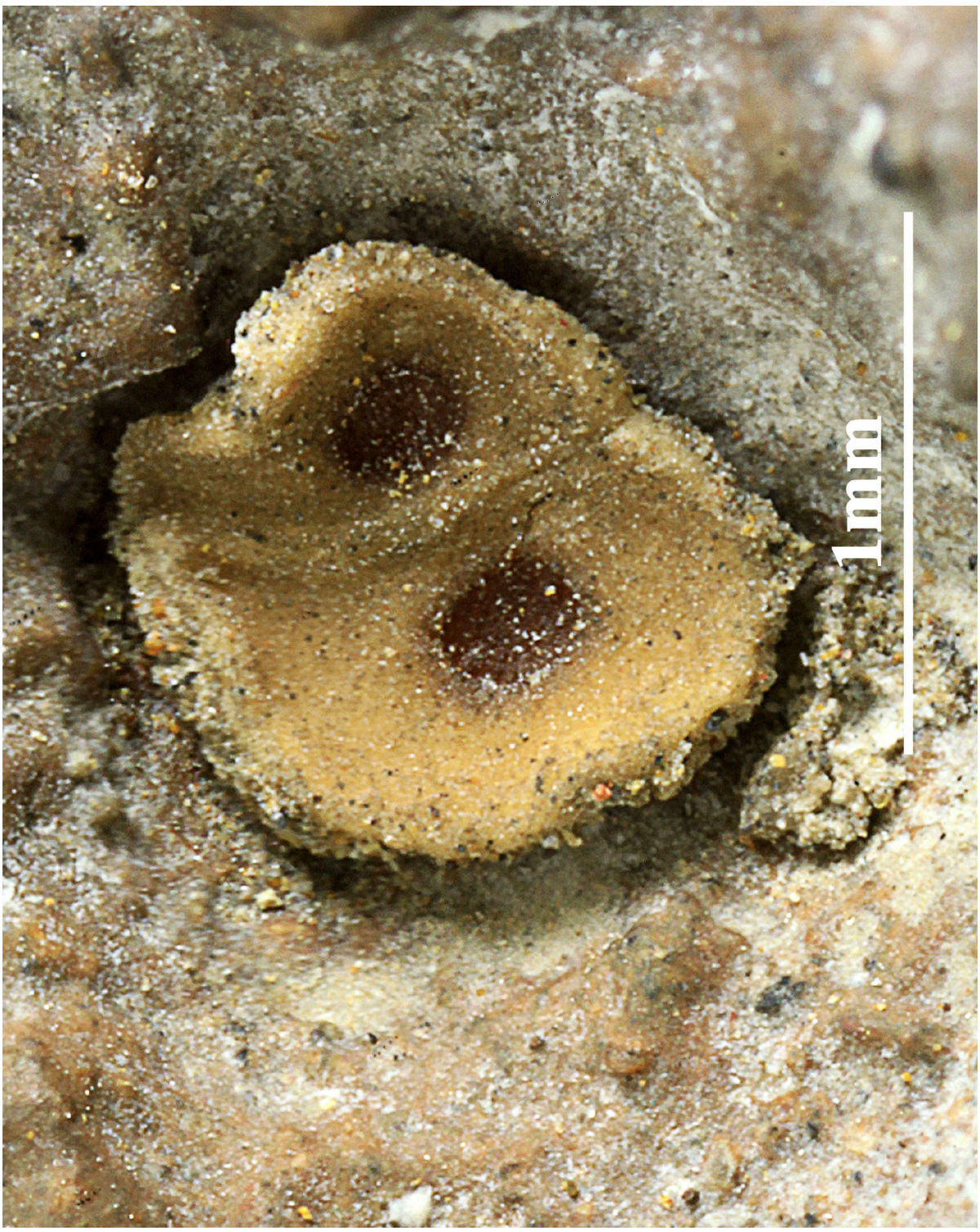
= *Myriospora smaragdula* (Wahlenb. ex Ach.) Nägeli ex Uloth, Flora, Regensburg 44: 618 (1861)

[OH626], Japan,Kyushu. Prov. Higo (Kumamoto Pref.): on the foot of Mt. Nakadake in Aso Mts, Aso-cho-gun. On rock: 1300 m. Leg. M. Inoue (no. 25571), 23.3.1996, det. M. Inoue. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 626.

Thallus crustose, episubstratic, yellowish, yellowish brown or pale brown (yellow-green on copper-rich rocks), epruinose, areolate, the areoles dispersed or in small groups, more or less flat, rounded to irregular, the fertile ones (0.4-)0.6-2(-3) mm wide. Epicortex 5-20 µm thick; cortex 30-50 µm thick, paraplectenchymatous, the uppermost cells opaque-yellowish, with a dense layer of crystals (norstictic acid), the lower part intergrading into a prosoplectenchyma that merges with the medulla; algal layer appearing continuous on a thick section, but actually interrupted by thick anticlinal bundles of medullary hyphae; lower cortex absent. Apothecia (1-)3-6(-8) per areole, immersed, 0.1-0.2(-0.4) mm across, with a usually sunken, at first punctiform, later somewhat expanded, dark brown to brown-black, usually rough, epruinose disc and a thin thalline margin. Proper exciple colourless, to 35 µm thick laterally, to 50 µm thick in upper part; epithecium reddish brown; hymenium colourless, (60-)120-250(-280) µm high, hemiamyloid, I+ reddish brown; paraphyses 1-1.5 µm thick at mid-level, the apical cells to 3.5 µm wide; hypothecium colourless to greyish, I+ blue. Asci 100-200-spored, clavate, the apical dome K/I-, up to 150 × 31 µm. Ascospores 1-celled, hyaline, narrowly ellipsoid to bacilliform, 2.5-5 x 1-1.5 µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow then rapidly blood-red (red crystals in microscope slides), KC-, C-, P- or P+ faintly yellow, UV-. Chemistry: norstictic acid.



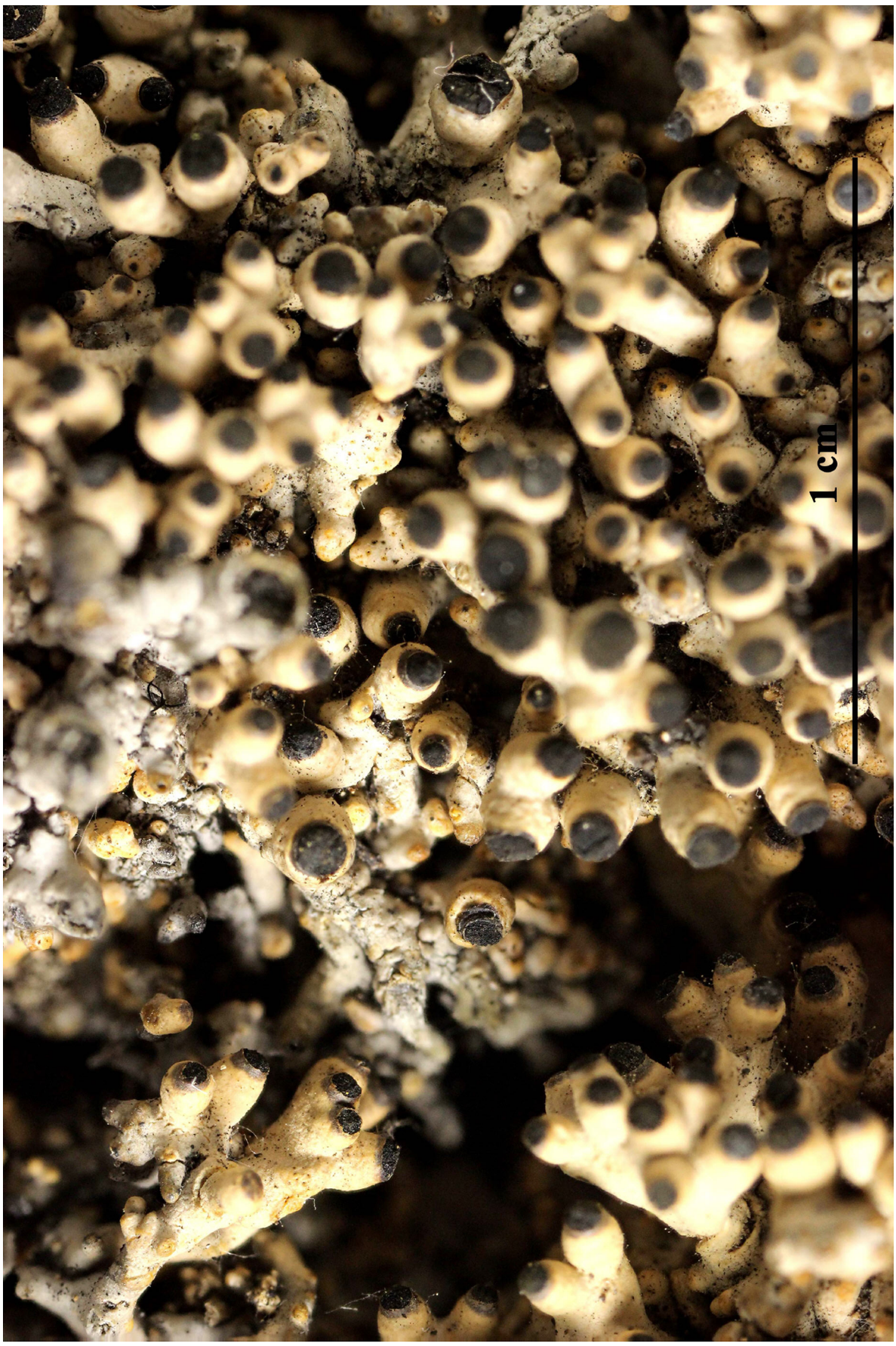
Acarospora smaragdula



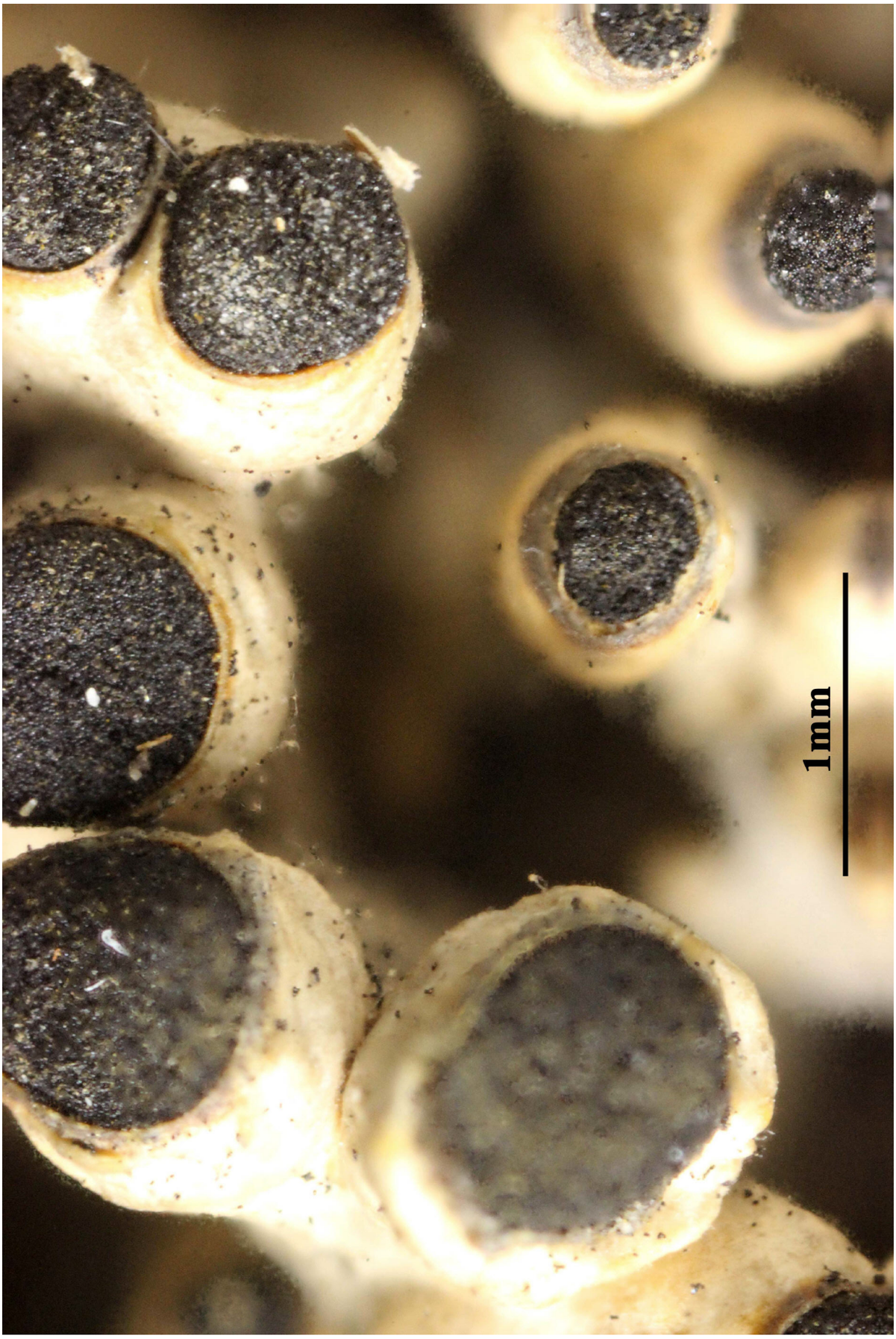
Acarospora smaragdula

Acroscyphus sphaerophoroides Lév., Annls Sci. Nat., Bot., sér. 3 5: 262 (1846)

[KU101], Japan, Hokkaido. Prov.Ishikari: Mt. Tomuraushi, Daisetsu Mts. On exposed rocks; 2000 m, Leg. M. Togashi,18.7.1969, det. Y. Asahina. EX SYO KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 101.



Acroscyphus sphaerophoroides



Acroscyphus sphaerophoroides

Acroscyphus sphaerophoroides Lév., Annls Sci. Nat., Bot., sér. 3 5: 262 (1846)

[KU451], Japan, Hokkaido. Prov.Ishikari: Mt. Chubetsu, Daisetsu Mts. On rocks, 1750 m. Leg. H. Kasiwadani (no. 16298), 5.08.1980, det. H. Kashiwadani. EX SYO KUROKAWA AND KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 451.



Acroscyphus sphaerophoroides



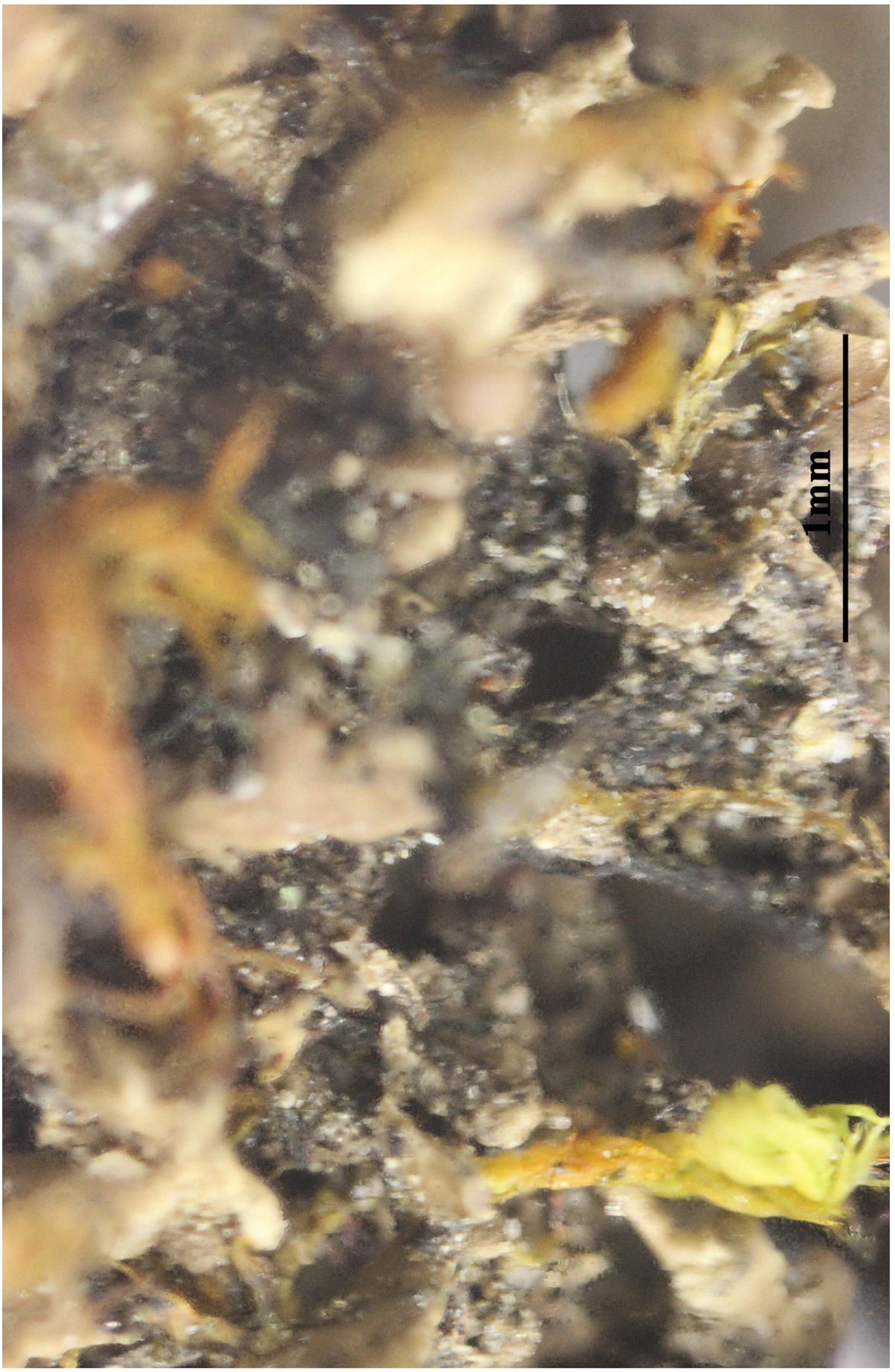
Acroscyphus sphaerophoroides

Agonimia koreana Kashiw. & K.H. Moon, in Kashiwadani, Lichenes Minus Cogniti Exsiccati, Fascicle 15(nos 351-375): no. 351 [1] (2008)

[KA351], Korea. Prov. Gangwon: Backdam valley; Yongdae-ri, Injugun (38°10'31" N, 128°22'15" E). Over mosses on rock along strea, 380 m, Isotype. Leg. K. H. Moon (no. 100 40), 22.10.2006. Leg. K.H. Moon (no. 10040), det. H. Kashiwadani and K. H. Moon. Ex H. Kashiwadani Lichenes Minus Cigniti Exsiccati Nr. 351.



Agonimia koreana

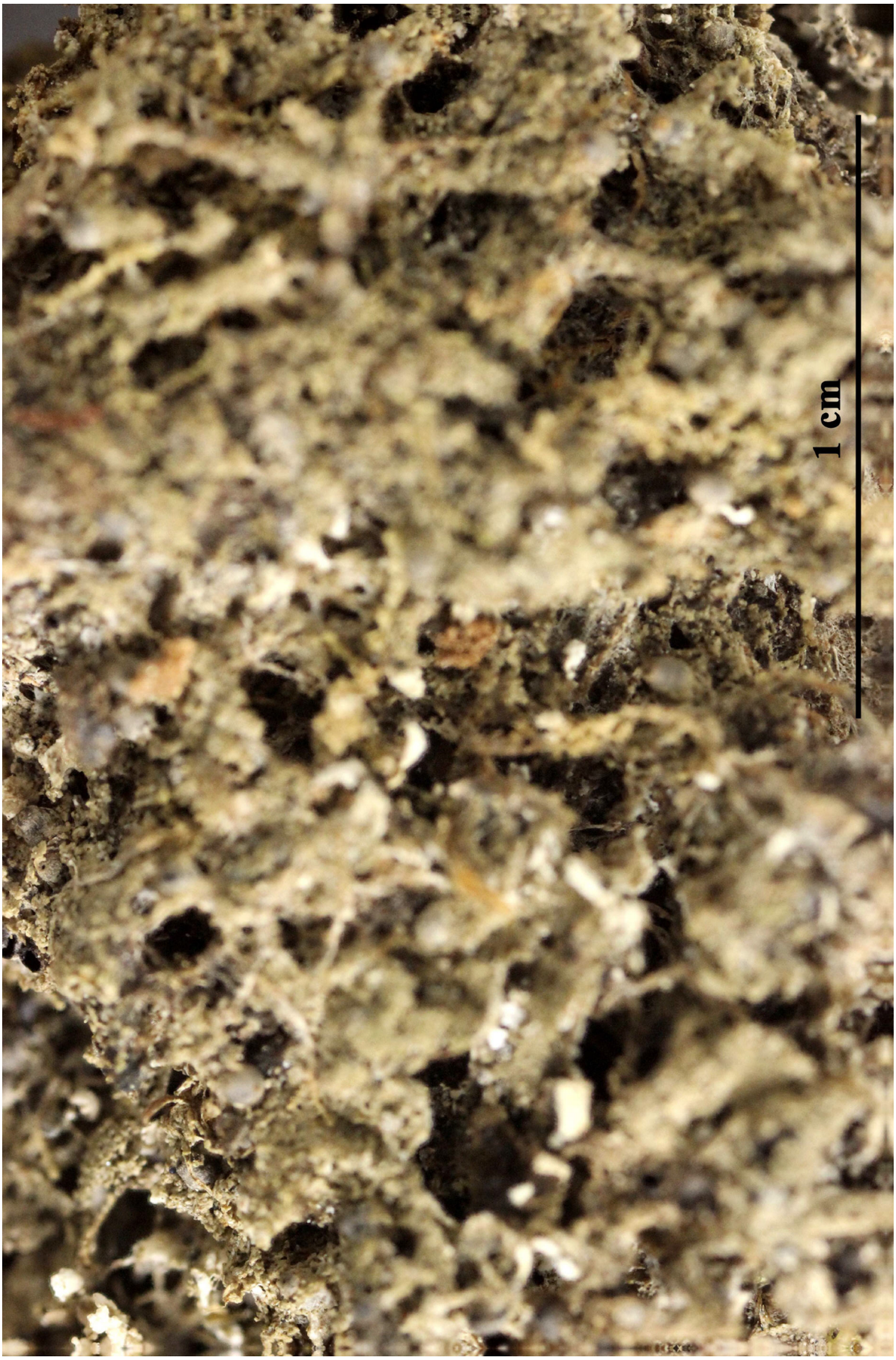


Agonimia koreana

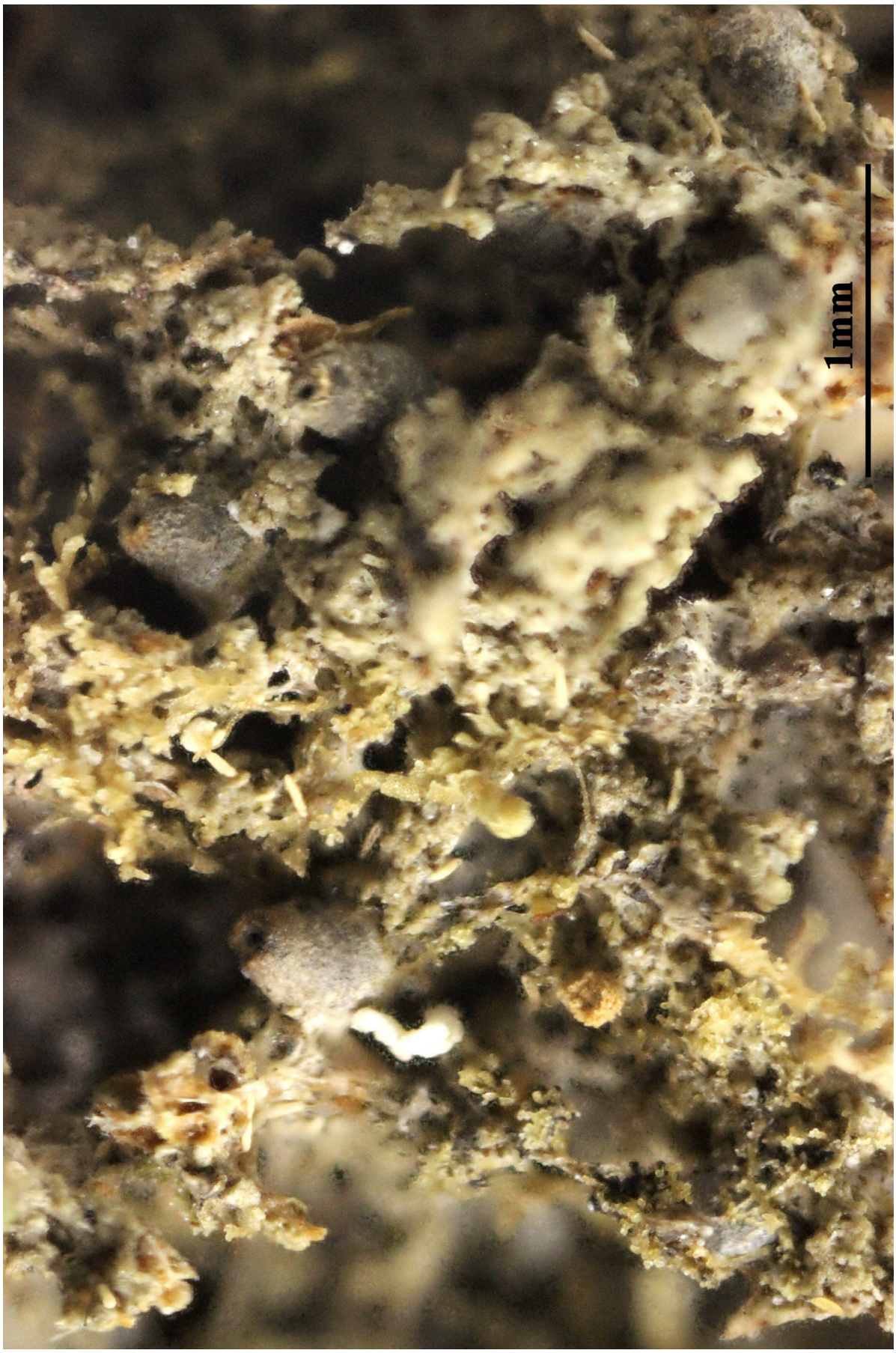
Agonimia pacifica (H. Harada) Diederich, in Aptroot, Diederich, Sérusiaux & Sipman, Biblioth. Lichenol. 64: 12 (1997)
= *Agonimiella pacifica* H. Harada 1993

[OH 376], Japan, Kyushu Prov. Hyuga (Pref. Miyazuki): en route from Ebino Highlands to Mt. Koshiki-dake, Ebino-city. On moss and on bark of *Kalopanax pictus*; 1200 m. Leg. Y. Ohmura (no. 4784) & S. Kurogi, 15.12.2001, det. Y. Omuhra. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 376.

Thallus fein schuppig-blätterig, zerschlitzt. Sporen muriform, 1/Ascus, hyalin, groß. Periphysen verzweigt. Thallus UV-; TLC: nil.



Agonimia pacifica



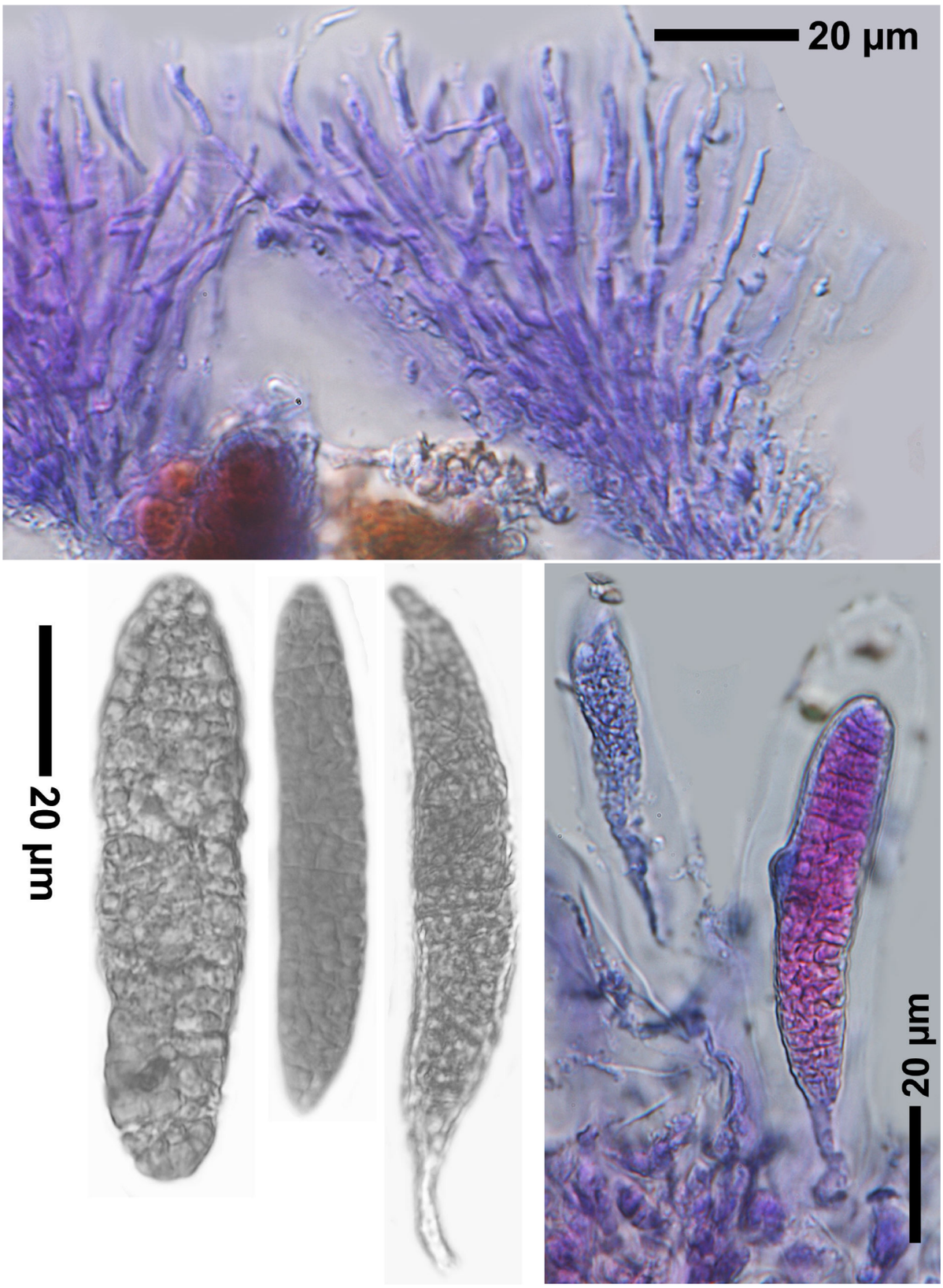
Agonimia pacifica

Agonimia pacifica (H.Harada) Diederich

Thallus fein schuppig-blätterig, zerschlitzt. Sporen muriform, 1/Ascus, hyalin, groß. Periphysen verzweigt. Thallus UV-; TLC: nil.

[16043], La Reunion, Takamaka, feuchte waldige Felshänge bei der Elektrostation; 21,09105° S, 55,61998° E, 800 m, auf Rinde. Leg. F. Schumm & J.-P. Frahm, 10.09.2009, det. F. Schumm, 2010. EX HERBA-



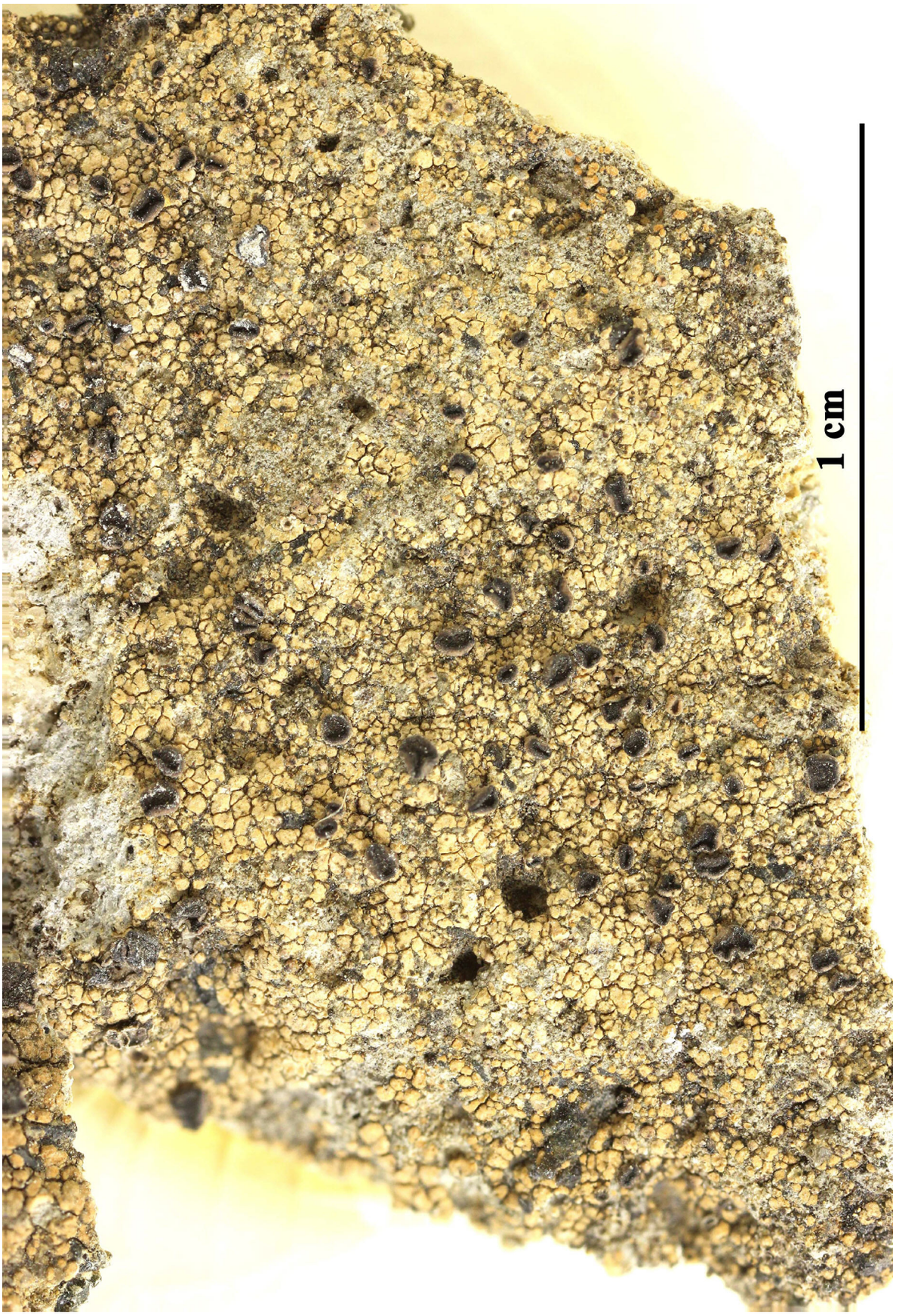


Agonimia pacifica

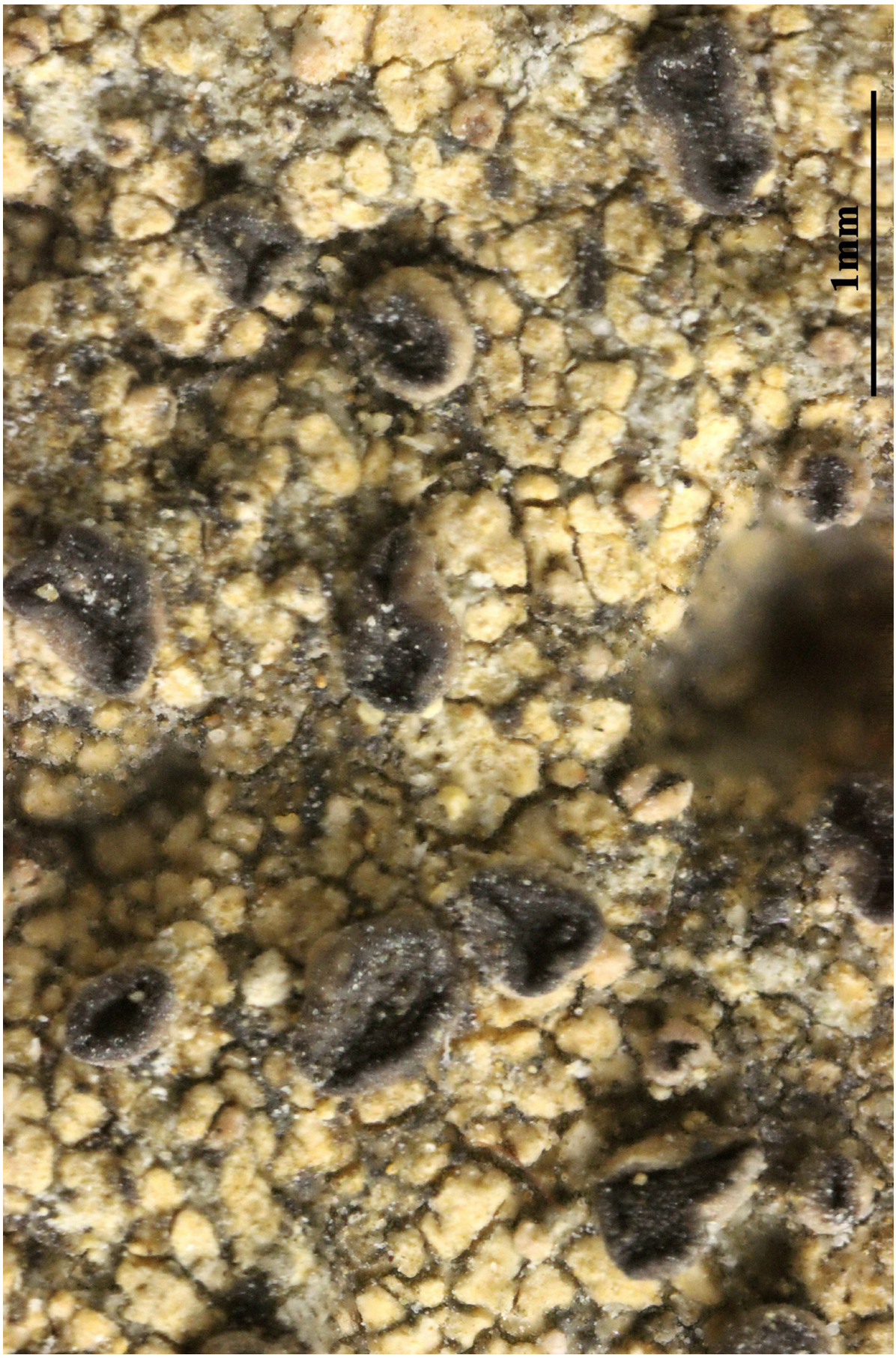
Ainoa mooreana (Carroll) Lumbsch & I. Schmitt, Mycol. Res. 105(3): 273 (2001)
= *Lecidea mooreana* Carroll 1859

[OH576], Japan, Honshu. Prov. Rikuchu (Pref. Iwate): Mt. Inukura, 4 km W of Mt. Iwate, Shizukuishi-machi, Iwate-gun. On rock, 1400 m. Leg. M. Inoue (no. 31869), 3.09.2006, det. M. Inoue. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCAT NR. 576.

Thallus crustose, episubstratic, granular-verrucose, pale grey-brown, yellow-grey or ochraceous, sometimes partially rusty-red on iron-rich substrata, consisting of 0.1-1.4 mm wide, flat to convex, contiguous areoles. Cortex covered by an epinecral layer; medulla white, I-. Apothecia lecideine, sessile and constricted at base, 0.4-1.5(-2) mm across, with a concave to flat, dull brown to black-brown disc and a very prominent, thick, flexuose, usually paler proper margin. Proper exciple 40-80 µm wide, cupulate, dark brown, of long-celled and thick-walled hyphae, C+ pink; epithecium colourless to brownish; hymenium colourless, 80-120 µm high, C+ pink; paraphyses sparingly branched, 0.8-1.2 µm thick, easily separated; hypothecium pale brown in upper part, darker brown in lowermost part. Asci 8-spored, cylindrical-clavate, thin-walled, the apical dome K/I- or K/I+ pale blue, Trapelia-type. Ascospores 1-celled, hyaline, narrowly ellipsoid, 15-25(-32) x 6-11(-14) µm. Pycnidia 0.5-0.8 mm across, immersed in thalline warts, C+ pink. Conidia narrowly bacilliform, 5-6 x c. 0.7 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P- (but the primordia of apothecia and the parts surrounding the pycnidia reacting C+ red); apothecial sections and pycnidia C+ pink. Chemistry: gyrophoric acid in apothecia and pycnidia. - Note: a circumboreal-montane early coloniser of weathered siliceous rocks, also known from the Southern Hemisphere, mostly found on pebbles, or on large boulders near the soil surface in rather disturbed habitats (e.g. on track sides, in clearings of light forests, etc.), with optimum near treeline.



Ainoa mooreana



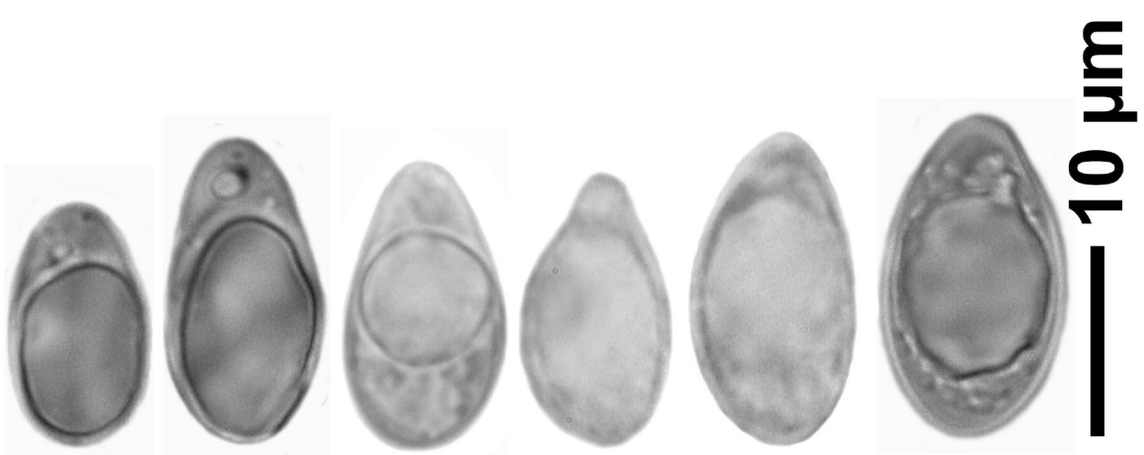
Ainoa mooreana

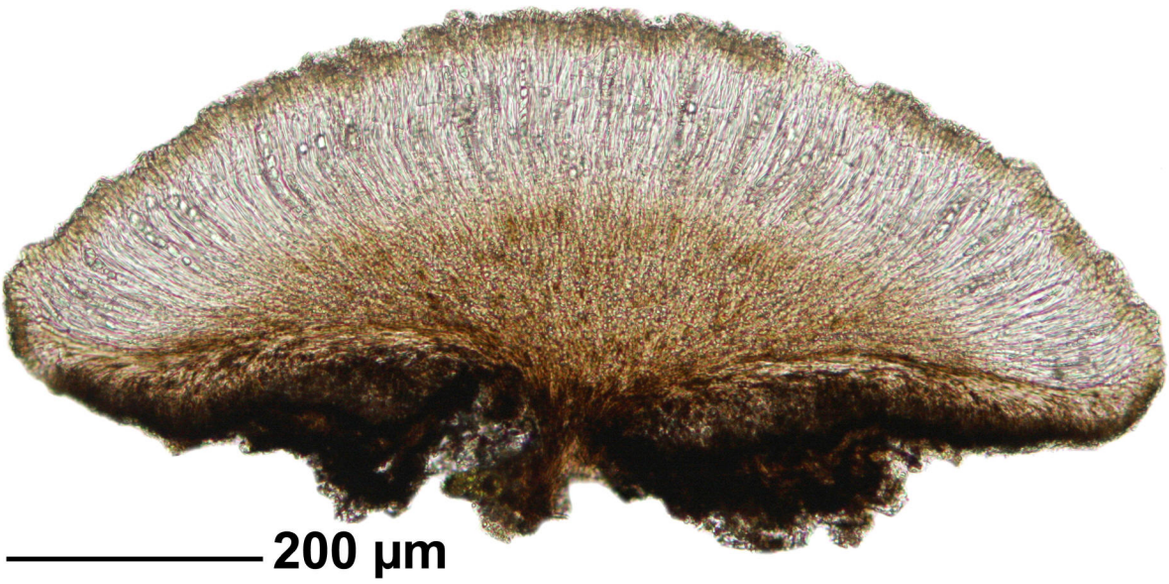
Ainoa mooreana (Carroll) Lumbsch & I.Schmitt
[= ***Trapelia mooreana*** (Carroll) P.James]

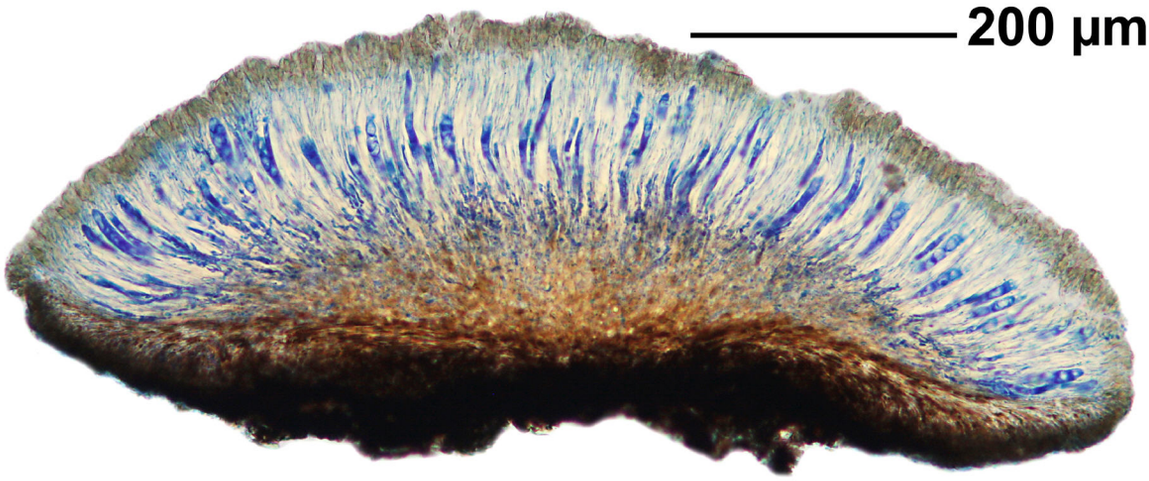
[14144], Portugal, Azoren, Terceira, im Gebiet Terra Brava südlich Algualvar, 38°44.738' N, 27°11.880' W, ca. 650 m, an Gestein. Leg. A. Aptroot & F. Schumm, 15.07.2008.

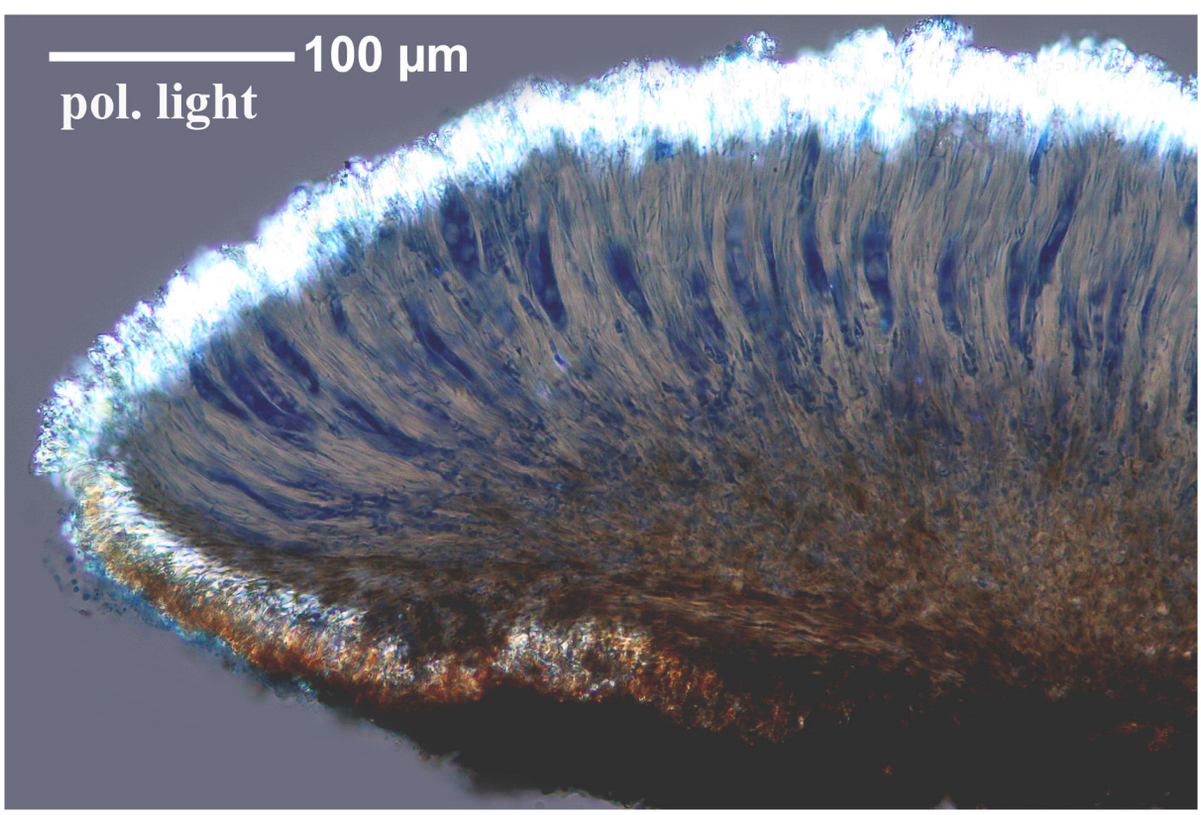
Thallus gelblich grau, dünnkrustig, feinwarzig. Apothecien schwärzlich, 0.4-1.5 mm breit, aufsitzend, mit etwas vorstehendem Eigenrand. Paraphysen verzweigt, mit Anastomosen. Epithecium 20-25 µm, graugelblich, in UV aufleuchtend, C+ rot. Hypothecium und äußeres Excipulum dunkelbraun, aus pachydermatischen, langzelligen Hyphen. Sporen hyalin, 1-zellig, 8/Ascus, 13-17 x 7-10 µm. Chemie: Thallus C- oder in Apotheciennähe auch C+ rötlich, aber Apothecien im Schnitt C+ rot (im Epithecium lokalisierte Gyrophorsäure).



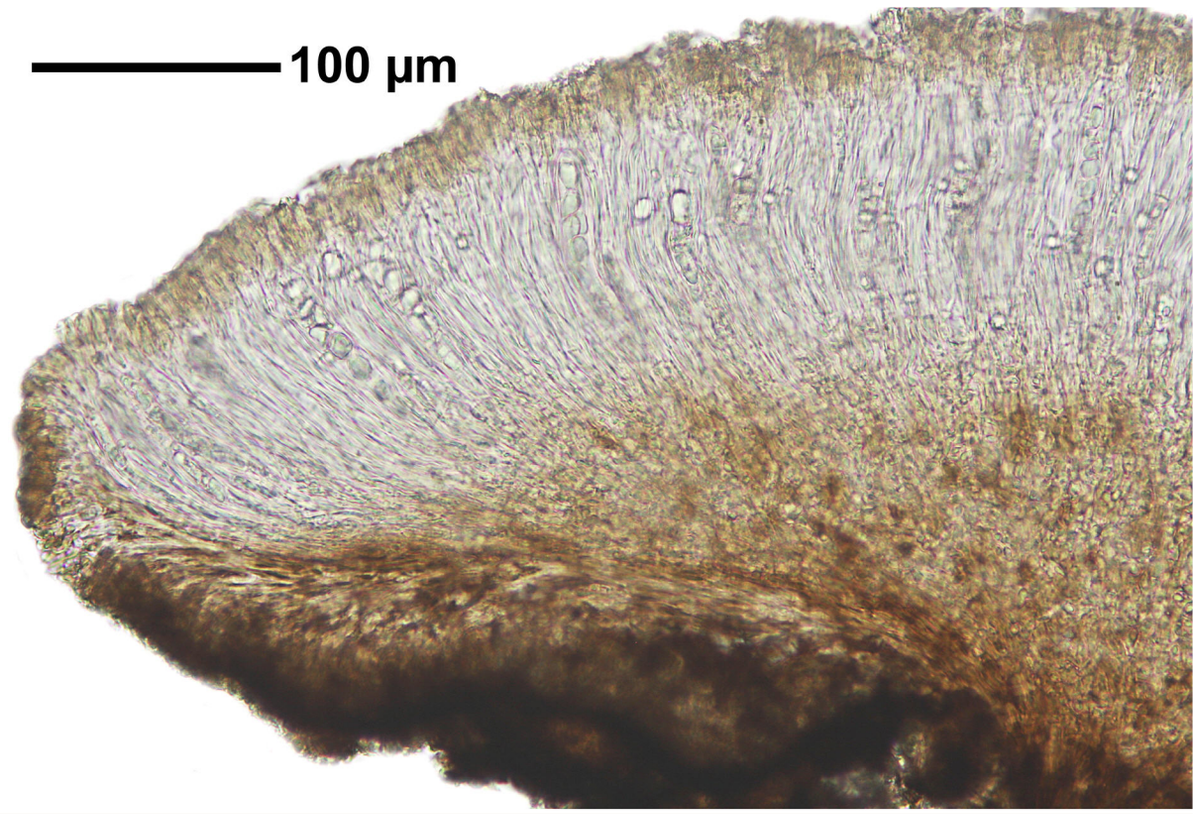


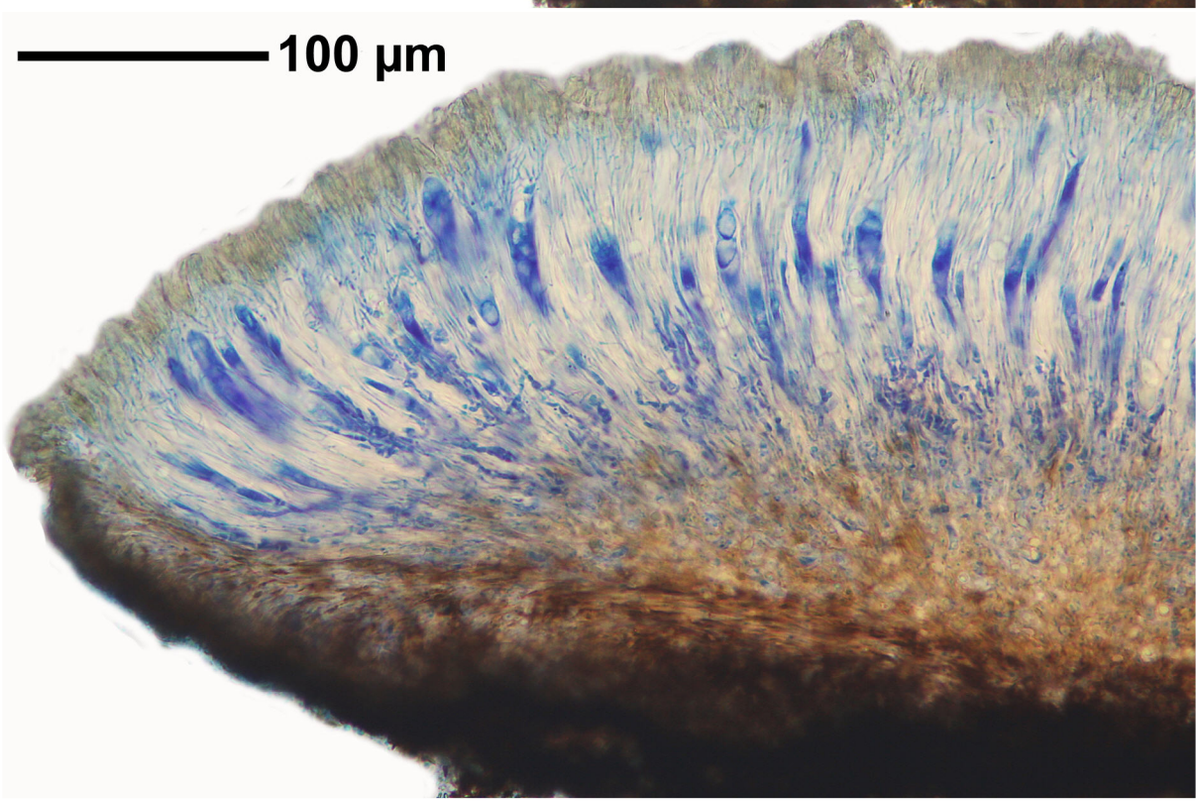




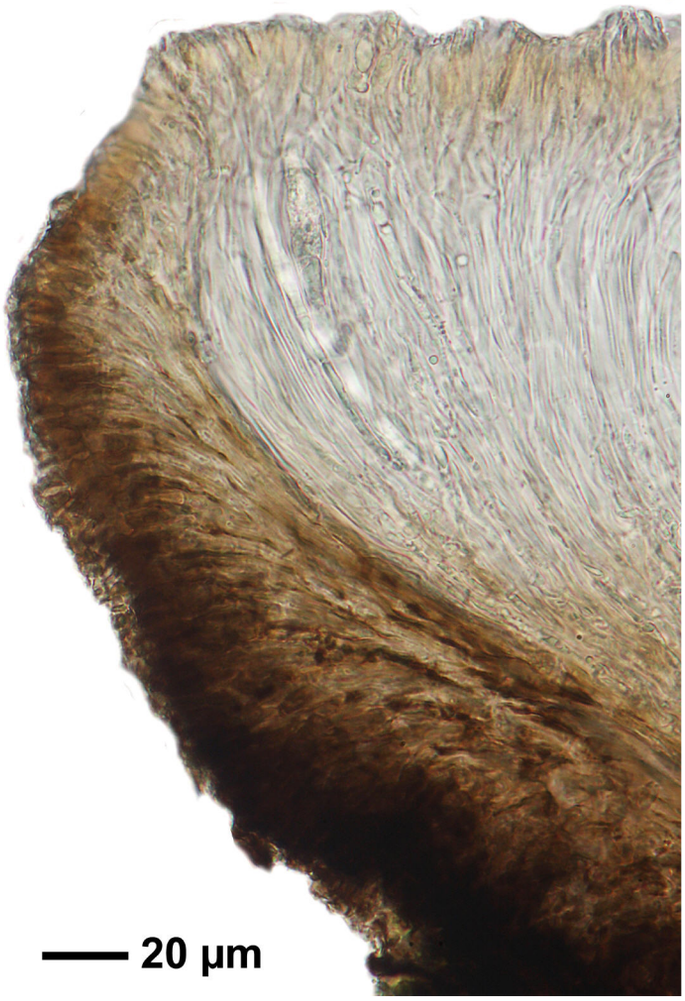


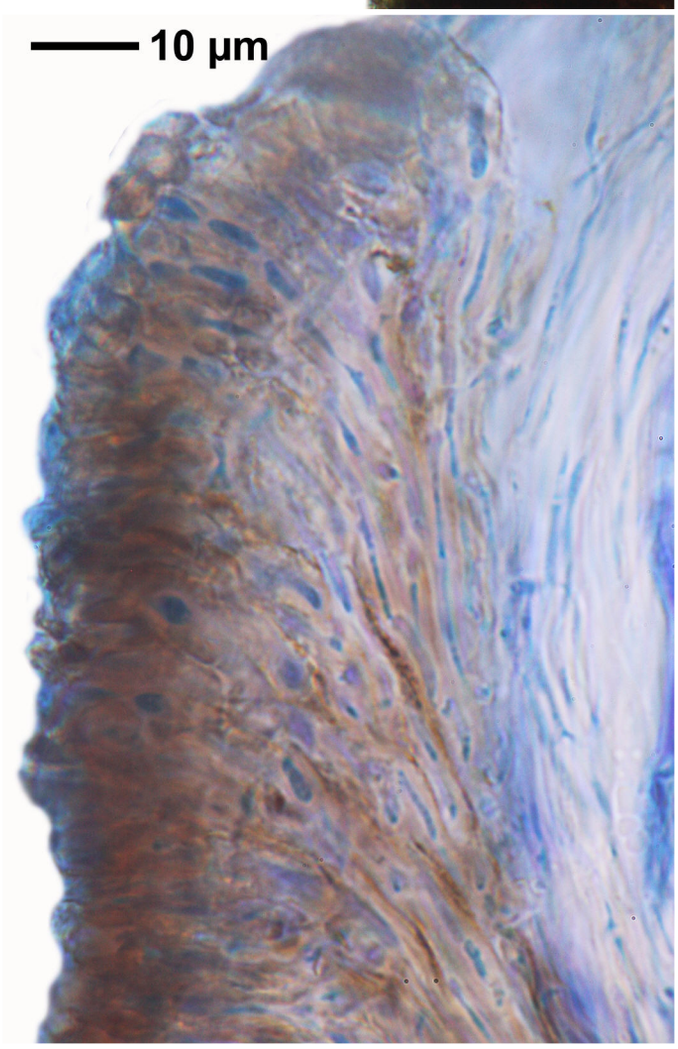
Ainoa mooreana



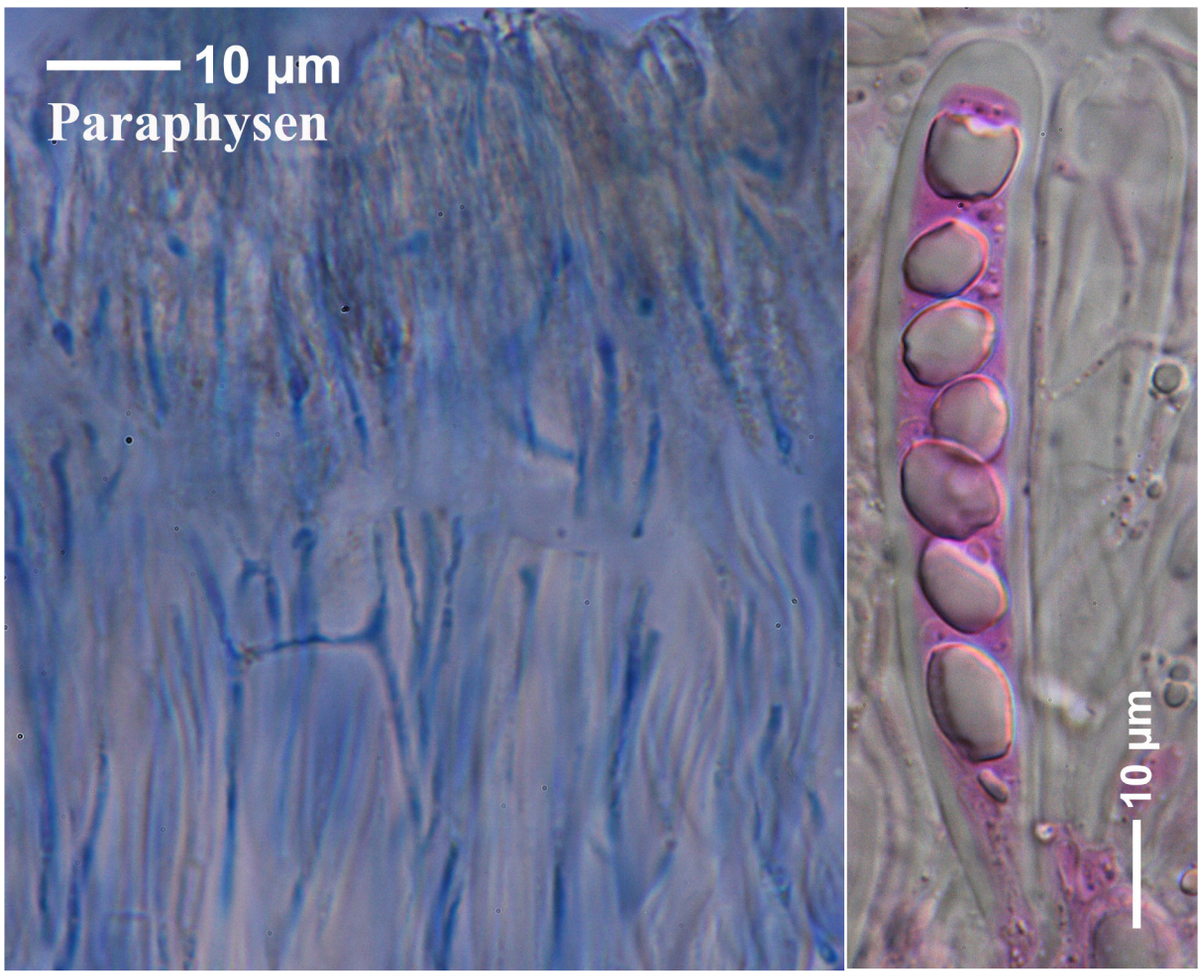


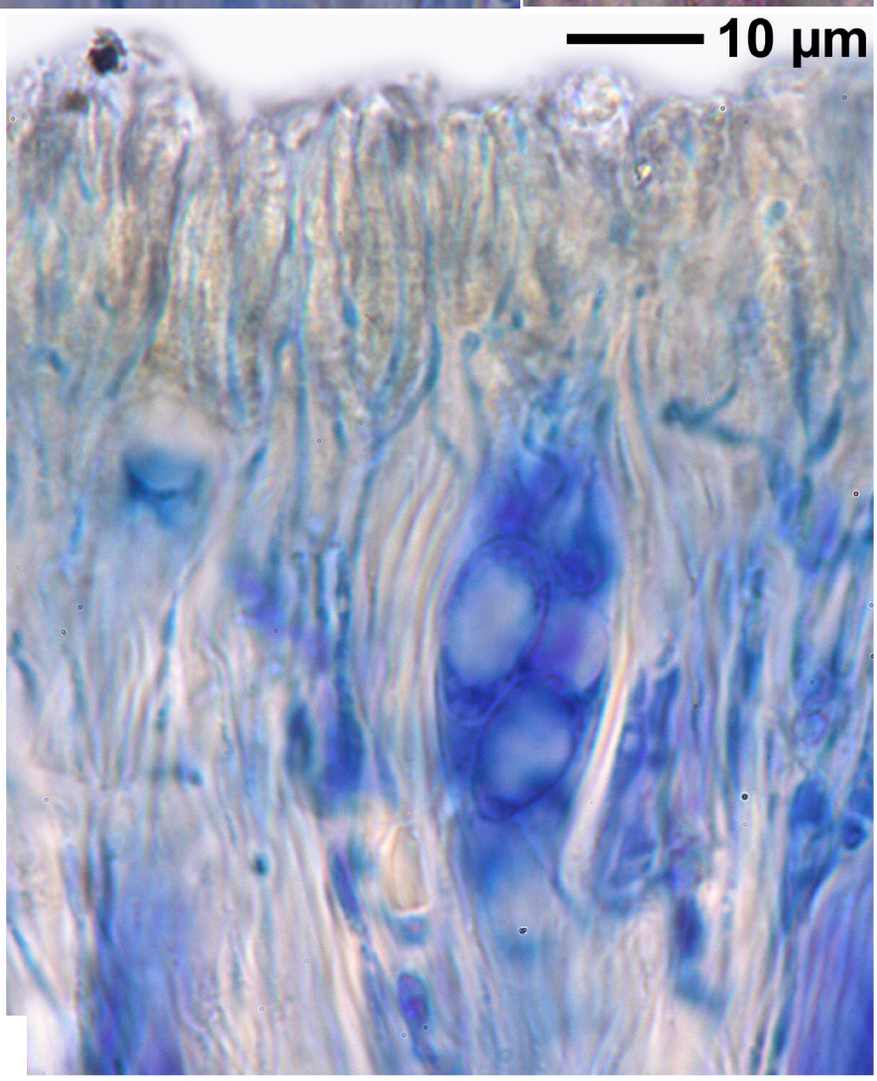
Ainoa mooreana



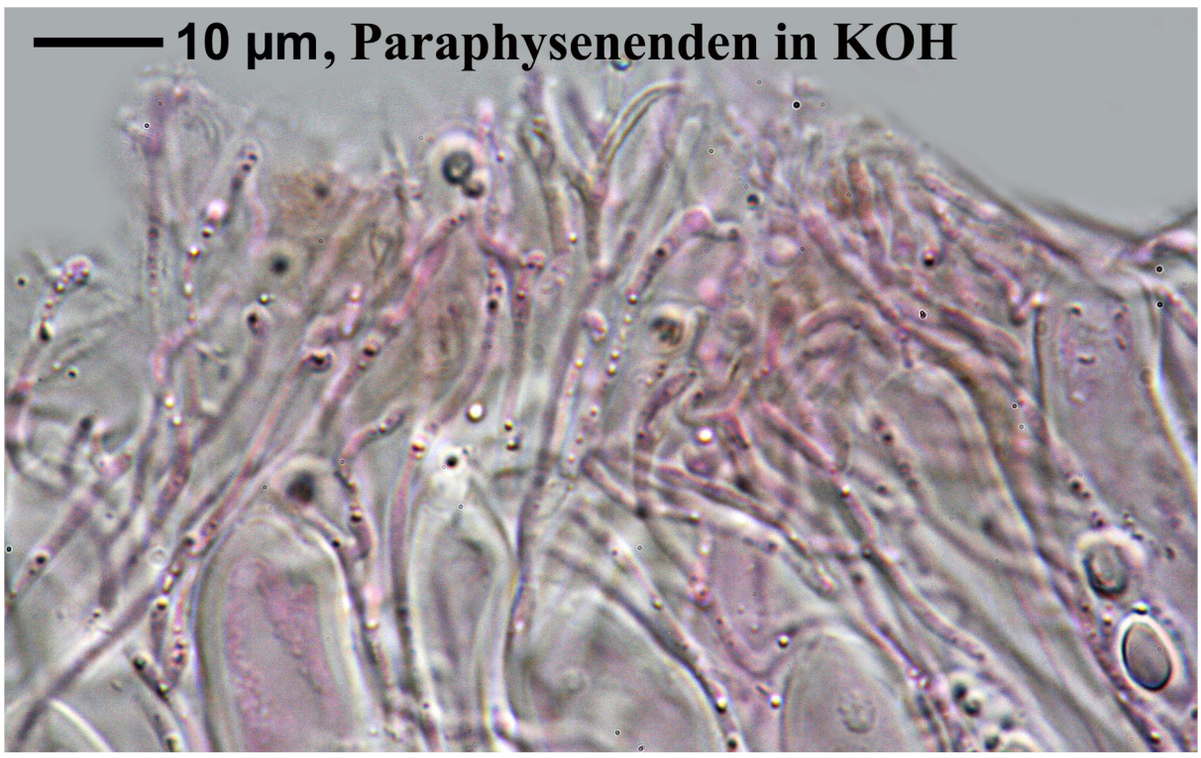


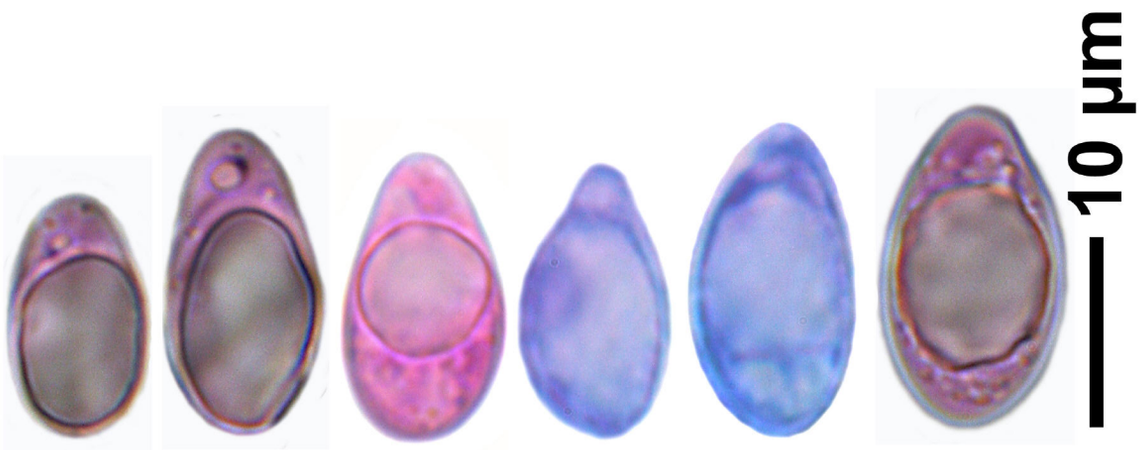
Ainoa mooreana





Ainoa mooreana

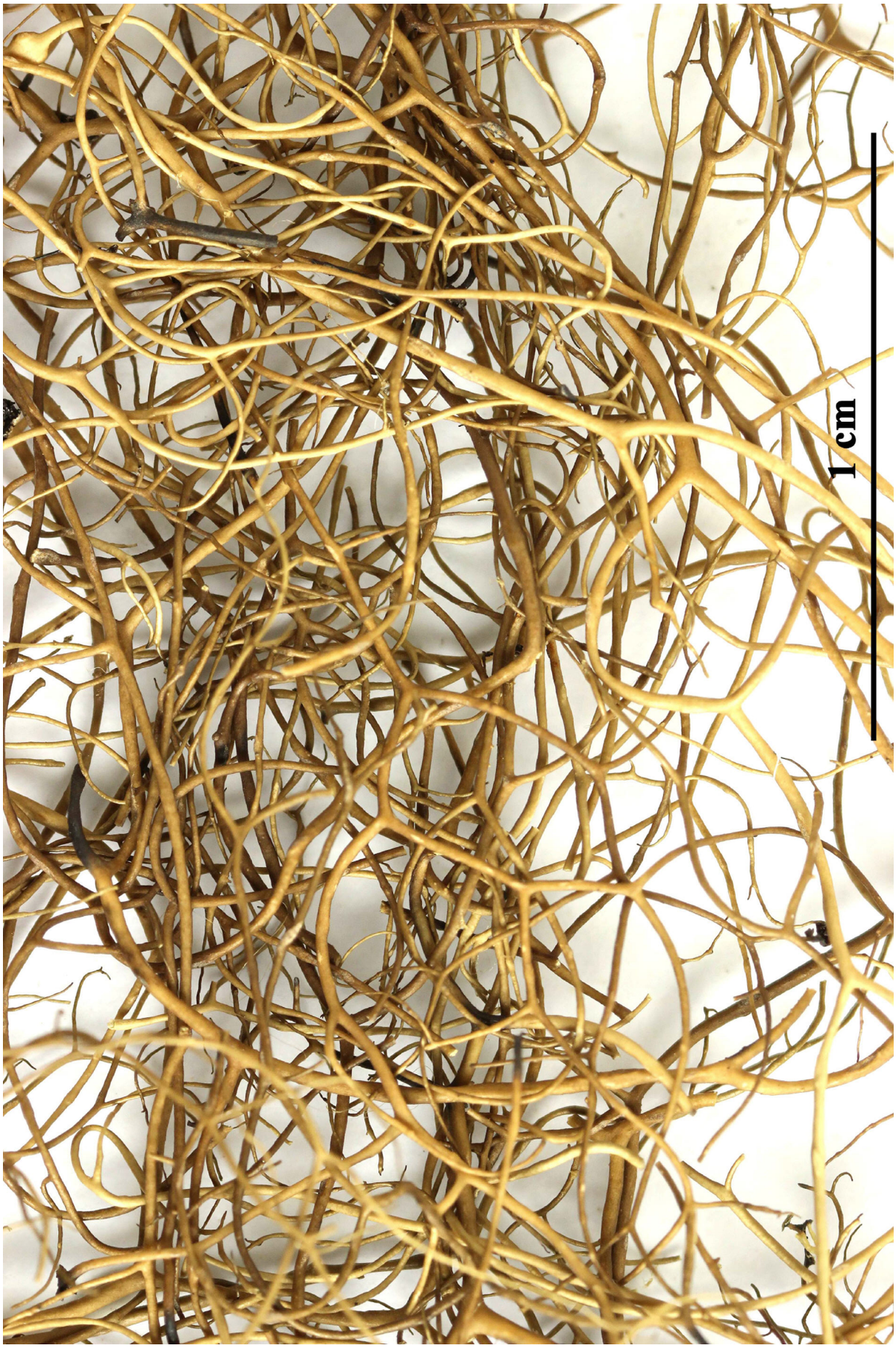




Ainoa mooreana

Alectoria americana Motyka, Fragm. flor. geobot. (Kraków) 6(no. 3): 449 (1960)

[KU501], Japan. Hokkaido. Prov. Tokachi: Mt. Higashi-nupu-kaushi, Kami-Shihoro-cho, Kato-gun. On bark of *Abies veitchii*, 1020 m. Leg. H. Kashiwadani (no. 15333), 26.6.1979, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 501.



Alectoria americana



Alectoria americana

Alectoria americana Motyka, Fragm. flor. geobot. (Kraków) 6(no. 3): 449 (1960)

[KU401], Japan. Honshu. Prov. Shinano: Jumonji Pass, Minami-Saku-gun. On bark of *Tsuga diversifolia*, 2000 m. Leg. H. Shibuichi (no. 5838), 11.7.1979. det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 401.



Alectoria americana



Alectoria americana

Alectoria lactinea Nyl., Lich. Japon.: 23 (1890)

[KU651], Japan, Honshu, Prov. Kai: En route between Komitake Shrine and Shoji-guchi 4-gome, Mt. Fuji. On bark of Abies veitchii; 2100 m. Leg. H. Kashiwadani (no. 16687), 17.10.1980, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI N.651.



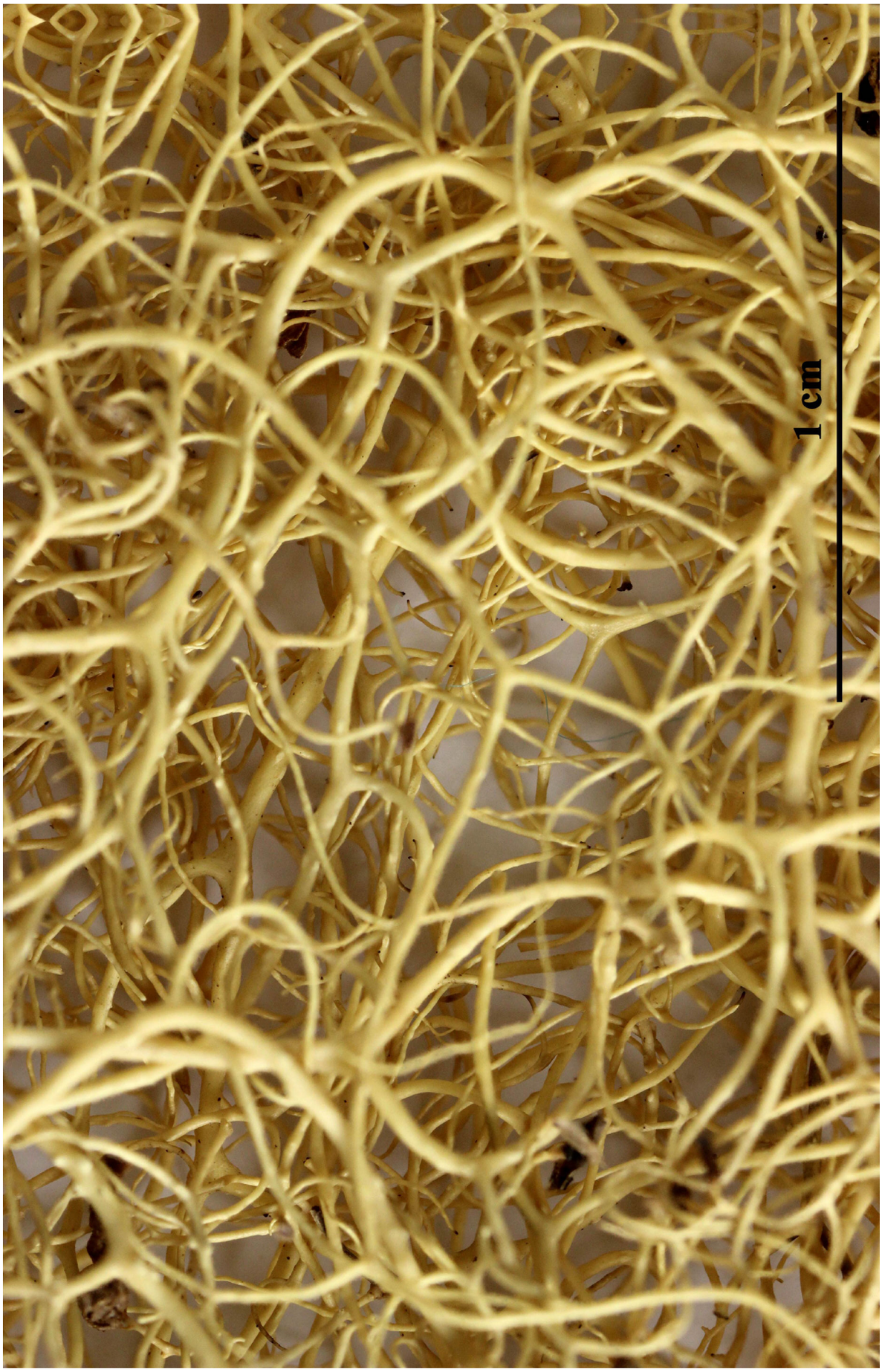
Alectoria lactinea



Alectoria lactinea

Alectoria lata (Taylor) Linds., Trans. Bot. Soc. Edinb. 22(1): 135 (1859) [1861]
= *Cornicularia laeta* Taylor 1847

[KU201], Japan, Honshu. Prov. Kai: 5-gome, Mt. Fuji. On trees; 2400 m. Leg. S. Kurokawa (no. 64022), 25.04.1964, det. S. Kurokawa. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccazi Nr. 201.



Alectoria lata



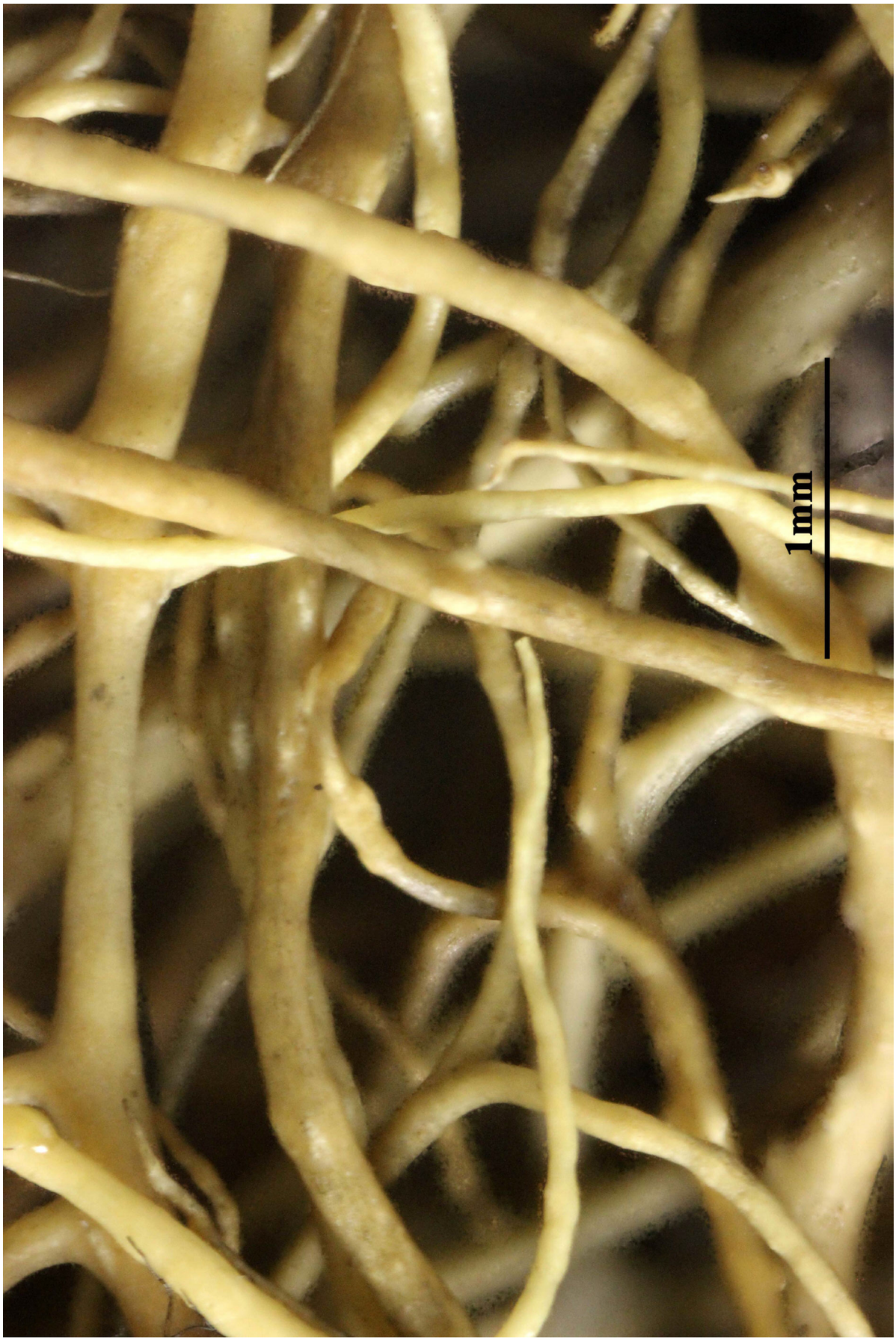
Alectoria lata

Alectoria lata (Taylor) Linds., Trans. Bot. Soc. Edinb. 22(1): 135 (1859) [1861]
= *Cornicularia laeta* Taylor 1847

[KU102], Japan,Hokkaido, Prov. Ishikari: Mt. FDurano, On Picea glehnii; 1050 m. Leg. S. Kurokawa (no. 65462), 22.08.1964, det. S. Kurokawa. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccazi Nr. 102.



Alectoria lata



Alectoria lata

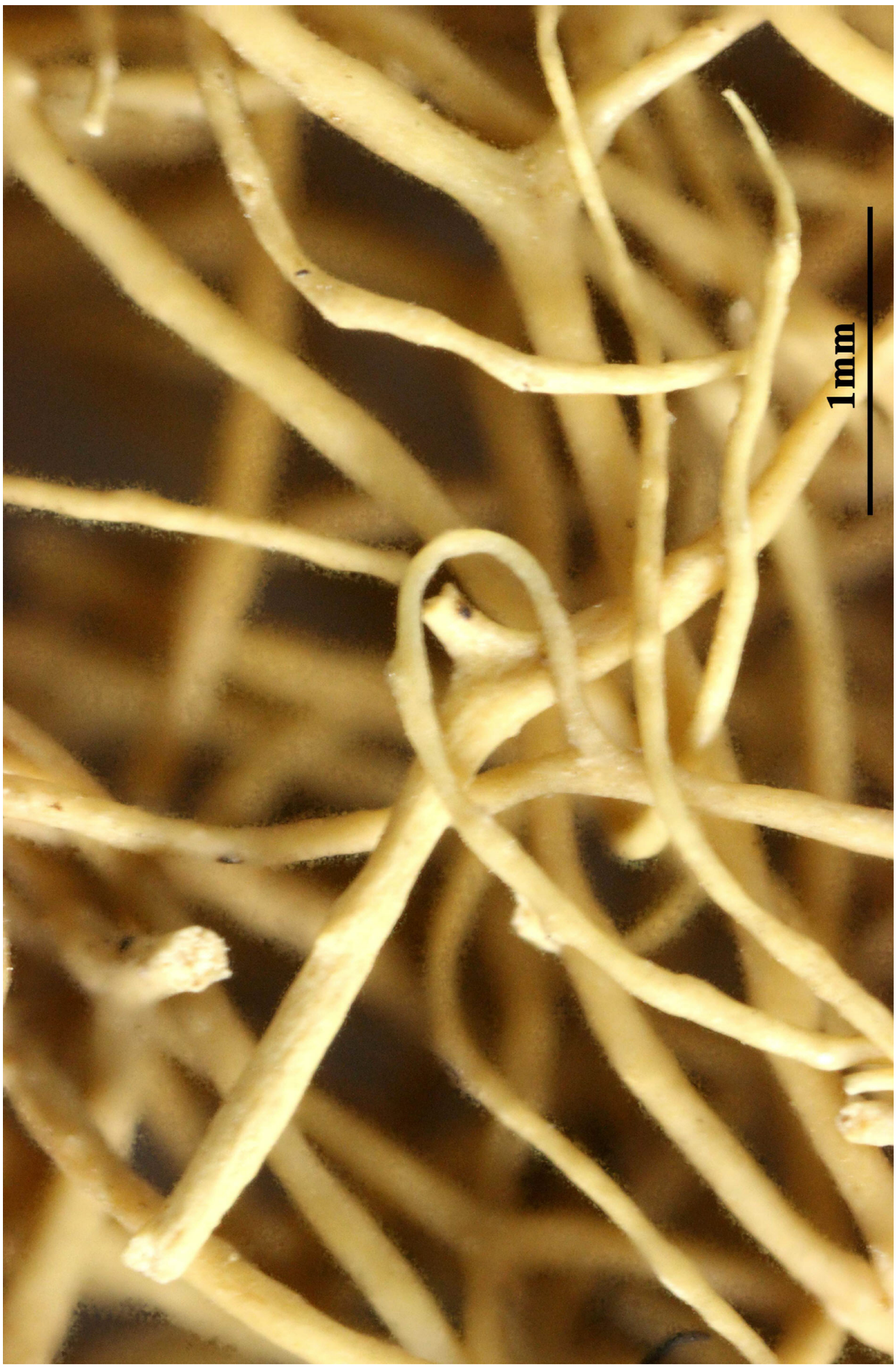
Alectoria lata (Taylor) Linds., Trans. Bot. Soc. Edinb. 22(1): 135 (1859) [1861]
= *Cornicularia laeta* Taylor 1847

[OH502], Japan, Honshu, Pov. Kai (Pref. Yamanashi): en route from Fuji-Yoshida-guchi to 5-gome. Mt. Fuji. On tree; 2300 m. Leg. K. Togashi, 26.09.1954, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 502.

- Chemistry: Usnic acid, Alectoronic acid; TLC by Y. Ohmura, 2015.



Alectoria lata



Alectoria lata

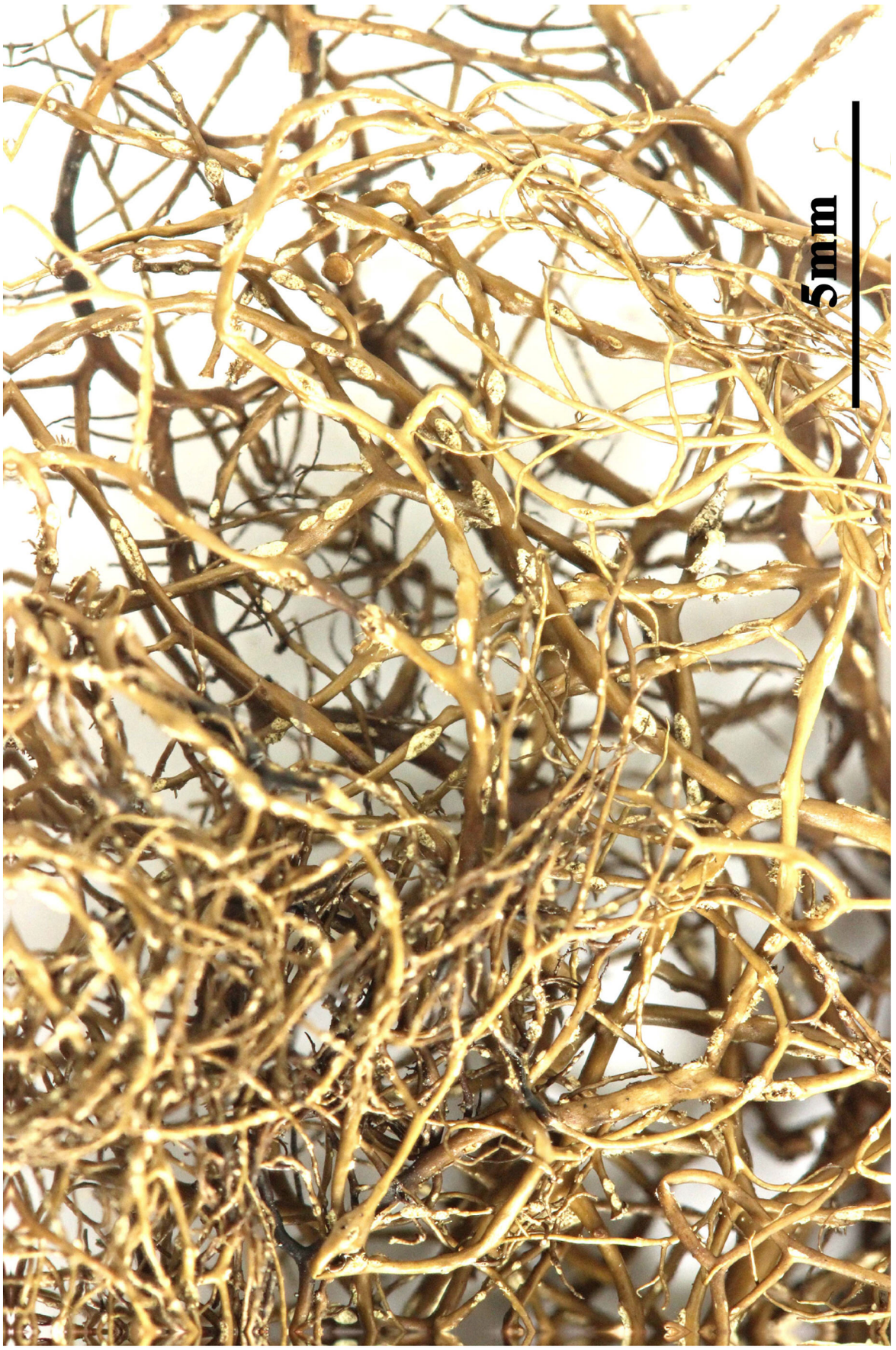
Alectoria nidulifera Norrl. ex Nyl., Flora, Regensburg 58(1): 8 (1875)
= *Bryoria furcellata* (Fr.) Brodo & D. Hawksw., Op. bot. 42: 103 (1977)

[KU253], Japan. Honshu. Prov. Shinano: En route from Umino-kuchi to Mt. Yokodake, Yatsugatake Mts., 160-1760 m. Leg. H. kashiwadani (no. 13358), 5.7.1976, det. H. Kashiwadani. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 253.

Thallus fruticose, filamentous, forming tufts, attached by a basal holdfast, to 8(-10) cm long, pale to dark brown, shiny, usually without a main branch, isotomic-dichotomously branching, the branches terete, 0.3-0.5 mm thick, often with lateral spinules. Soralia common, fissural, oval to fusiform, even with thallus or mostly somewhat raised, narrower than the branches on which they arise, white, with numerous isidioid spinules. Pseudocyphellae absent; medulla white, compact. Apothecia extremely rare (never observed in Italian material), zeorine, with a pale brown disc, to 2 mm across. Asci 8-spored, Lecanora-type. Ascospores 1-celled, hyaline, subglobose to broadly ellipsoid, 6-7 x 3-4 µm. Photobiont chlorococcoid. Spot tests: cortex, medulla and soralia K- or K+ yellowish slowly turning brown, C-, KC-, P+ red. Chemistry: fumarprotocetraric acid. - Note: a mainly boreal-montane, circumpolar lichen found on isolated conifers near treeline, sometimes on lignum.



Alectoria nidulifera



Alectoria nidulifera

Alectoria nidulifera Norrl. ex Nyl., Flora, Regensburg 58(1): 8 (1875)
= *Bryoria furcellata* (Fr.) Brodo & D. Hawksw., Op. bot. 42: 103 (1977)

[KU452], Japan. Honshu. Prov. Shinano: Oku-Tatesshina, Suwa-gun. On trunk of *Larix leptolepis*, 1800 m. Leg. S. Kurokawa (no 80001), 2.10.1980, det. S. Kurokawa. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 452.

Thallus fruticose, filamentous, forming tufts, attached by a basal holdfast, to 8(-10) cm long, pale to dark brown, shiny, usually without a main branch, isotomic-dichotomously branching, the branches terete, 0.3-0.5 mm thick, often with lateral spinules. Soralia common, fissural, oval to fusiform, even with thallus or mostly somewhat raised, narrower than the branches on which they arise, white, with numerous isidioid spinules. Pseudocyphellae absent; medulla white, compact. Apothecia extremely rare (never observed in Italian material), zeorine, with a pale brown disc, to 2 mm across. Asci 8-spored, Lecanora-type. Ascospores 1-celled, hyaline, subglobose to broadly ellipsoid, 6-7 x 3-4 µm. Photobiont chlorococcoid. Spot tests: cortex, medulla and soralia K- or K+ yellowish slowly turning brown, C-, KC-, P+ red. Chemistry: fumarprotocetraric acid. - Note: a mainly boreal-montane, circumpolar lichen found on isolated conifers near treeline, sometimes on lignum.



Alectoria nidulifera



Alectoria nidulifera

Alectoria nigricans (Ach.) Nyl., Lich. Scand. (Helsinki): 71 (1861)
= *Cornicularia ochroleuca* var. *nigricans* Ach. 1810

[KU652], Svalbard, Spitsbergen. SE of Mt. Syltoppen, Bohemanflya. On sandy soil, 200-500 m. Leg. H. Kashiwadani (no. 23492), 2.08.1985, det. H. Kashiwadani. Ex C. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 652.

Thallus fruticose, filamentous, ascending to decumbent, rigid, usually bicolor, pinkish grey to pale grey brown at the base, dark grey-brown to black at apices, dull, forming large, loosely attached entangled mats, the branches 0.5-1(-1.5) mm thick, anisotomic-dichotomously divided, to 8(-10) cm long, subterete, becoming flattened at the base. Pseudocyphellae abundant, slightly raised, fusiform to linear, to 1.2 mm long. Cortex of periclinally arranged hyphae; medulla white, rather compact. Apothecia extremely rare (never found in Italian material), zeorine, to 2 mm across, with a brown disc. Epithecium brown; hymenium and hypothecium colourless. Asci 2(-4)-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores, 1-celled, broadly ellipsoid, at first hyaline, later reddish brown, 20-40 x 12-25 µm. Photobiont chlorococcoid. Spot tests: medulla K+ faintly yellow to reddish, C+ red, KC+ red, P+ yellowish. Chemistry: alectorialic acid and usually barbatolic acid. - Note: an arctic-alpine, circumpolar species found on bare ground or on siliceous rocks in wind-exposed ridges, mostly in moss-lichen heaths above treeline.



Alectoria nigricans

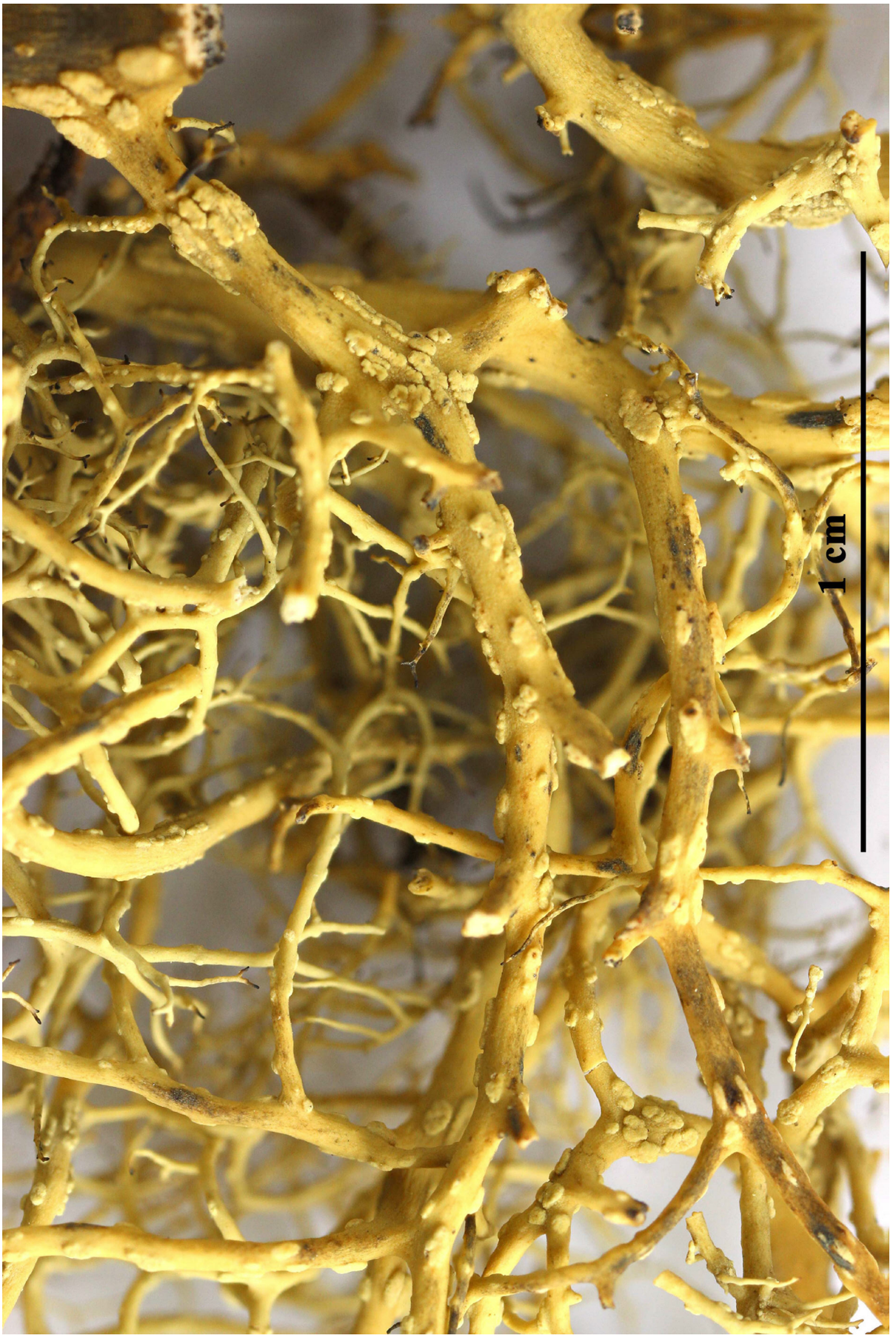


Alectoria nigricans

Alectoria ochroleuca (Schrank) Nyl., Bot. Notiser(5-6): 85 (1854)
= *Lichen islandicus* var. *ochroleucus* Schrank 1792

[KU453], Japan, Hokkaido, Prov. Ishikari: Mt. Chubetsu, Daisetsu Mts.. On rocks; 1800 m. Leg. H. Kashiwadani (no. 16425) and Y. Endo, 5.08.1980, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 453.

Thallus fruticose, more or less filamentous and shrubby, greenish grey to yellowish green, the apices concolorous or blackened, matt. Branches to 13 cm long (0.5-)1-2(-3) mm thick, stiff, elongate, prostrate to ascending, sparingly anisotomic-dichotomously divided, the apices sometimes drooping. Pseudocyphellae numerous, linear, raised, longitudinally oriented, to c. 1 mm long. Cortex of periclinally arranged hyphae; medulla white, compact. Apothecia extremely rare (not seen in Italian material), lateral, lecanorine, 3-6 mm across, with a reddish brown disc. Epithecium brown; hymenium and hypothecium colourless. Asci 2-4-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, broadly ellipsoid, pigmented when old, 26-42 x 12-28 µm. Pycnidia dark, semi-immersed, mainly apical. Conidia bacilliform, 7-8 x c. 0.8 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC+ pale yellow, P-, UV-; medulla K-, C-, KC-, P-, UV-. Chemistry: cortex with usnic acid, medulla with diffractaic acid. - Note: an arctic-alpine, circumpolar species found on windy ridges in moss-lichens heaths, more frequent on siliceous substrata, but sometimes also occurring in areas with dolomite, with optimum above treeline.



Alectoria ochroleuca

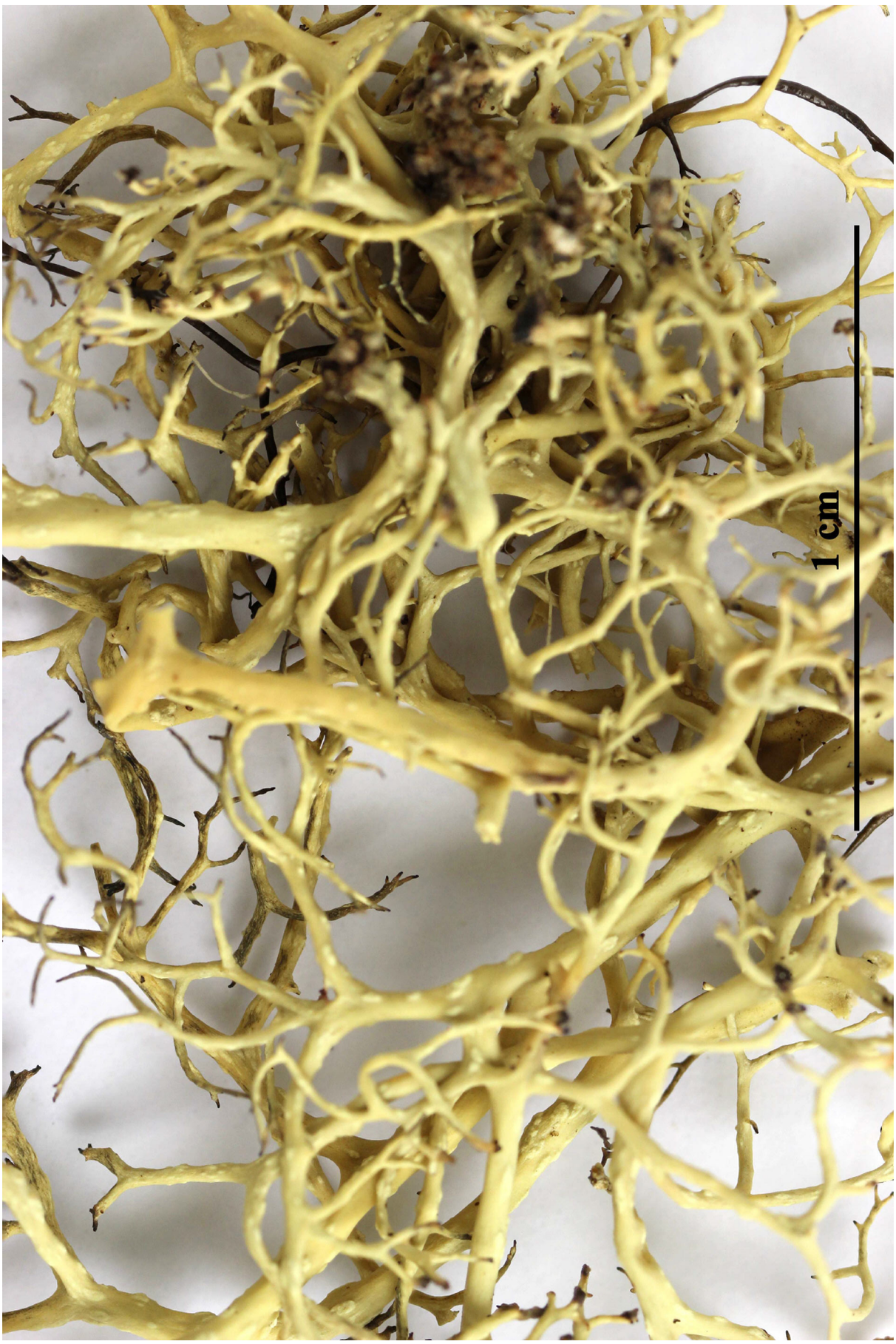


Alectoria ochroleuca

Alectoria ochroleuca (Schrank) Nyl., Bot. Notiser(5-6): 85 (1854)
= *Lichen islandicus* var. *ochroleucus* Schrank 1792

[KU601], Japan, Honshu. Prov. Shinano: Lake side of Hakuba-Ohike,Shirouma Mts., Kita-Azum-gun. On rocks, 2400 m. Leg. H. Shibuichi (no. 7185) & K. Yoshida, 7.98.1982, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 601.

Thallus fruticose, more or less filamentous and shrubby, greenish grey to yellowish green, the apices concolorous or blackened, matt. Branches to 13 cm long (0.5-)1-2(-3) mm thick, stiff, elongate, prostrate to ascending, sparingly anisotomic-dichotomously divided, the apices sometimes drooping. Pseudocyphellae numerous, linear, raised, longitudinally oriented, to c. 1 mm long. Cortex of periclinally arranged hyphae; medulla white, compact. Apothecia extremely rare (not seen in Italian material), lateral, lecanorine, 3-6 mm across, with a reddish brown disc. Epithecium brown; hymenium and hypothecium colourless. Asci 2-4-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, broadly ellipsoid, pigmented when old, 26-42 x 12-28 µm. Pycnidia dark, semi-immersed, mainly apical. Conidia bacilliform, 7-8 x c. 0.8 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC+ pale yellow, P-, UV-; medulla K-, C-, KC-, P-, UV-. Chemistry: cortex with usnic acid, medulla with diffractaic acid. - Note: an arctic-alpine, circumpolar species found on windy ridges in moss-lichens heaths, more frequent on siliceous substrata, but sometimes also occurring in areas with dolomite, with optimum above treeline.



Alectoria ochroleuca


1mm
Alectoria ochroleuca

Alectoria ochroleuca (Schrank) Nyl., Bot. Notiser(5-6): 85 (1854)
= *Lichen islandicus* var. *ochroleucus* Schrank 1792

KU551], Chile, Magellanes: Morro Chico, 130 km north of Punta Arenas. On dry rocky cliffs in open place, 230 m. Leg. H. Kashiwadani (no. 19007), 14.12.1981, det. H. Kashiwadani. . Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 551.

Thallus fruticose, more or less filamentous and shrubby, greenish grey to yellowish green, the apices concolorous or blackened, matt. Branches to 13 cm long (0.5-)1-2(-3) mm thick, stiff, elongate, prostrate to ascending, sparingly anisotomic-dichotomously divided, the apices sometimes drooping. Pseudocyphellae numerous, linear, raised, longitudinally oriented, to c. 1 mm long. Cortex of periclinally arranged hyphae; medulla white, compact. Apothecia extremely rare (not seen in Italian material), lateral, lecanorine, 3-6 mm across, with a reddish brown disc. Epithecium brown; hymenium and hypothecium colourless. Asci 2-4-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, broadly ellipsoid, pigmented when old, 26-42 x 12-28 µm. Pycnidia dark, semi-immersed, mainly apical. Conidia bacilliform, 7-8 x c. 0.8 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC+ pale yellow, P-, UV-; medulla K-, C-, KC-, P-, UV-. Chemistry: cortex with usnic acid, medulla with diffractaic acid. - Note: an arctic-alpine, circumpolar species found on windy ridges in moss-lichens heaths, more frequent on siliceous substrata, but sometimes also occurring in areas with dolomite, with optimum above treeline.



Alectoria ochroleuca



Alectoria ochroleuca

Alectoria oregana Tuck., in Nylander, Lich. Japon.: 104 (1890)
= *Nodobryoria oregana* (Tuck.) Common & Brodo, Bryologist 98(2): 198 (1995)

[KU202], Canada. British Columbia: Paint Brush Trail, Manning Park. On trees, 2100 m. Leg. S. Kurokawa (no. 8694), 4.9.1974, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI NR. 202.



Alectoria oregana



Alectoria oregana

Alectoria pseudofuscescens Gyeln., Annls Mus. natn. Hung., Pars bot. 28: 283 (1934)

= *Bryoria pseudofuscescens* (Gyeln.) Brodo & D. Hawksw., Op. bot. 42: 127 (1977)

[KU301], Canada. British Columbia: Paint Brush Trail, Manning Park. On twigs of trees, 2100 m. Leg. S. Kurokawa (no. 8695), 4.9.1974, det. H. Kashiwadani. Ex S. Kurokawa and H- Kashiwadani Lichenes Rariores Et Critici Exsiccati N. 301.



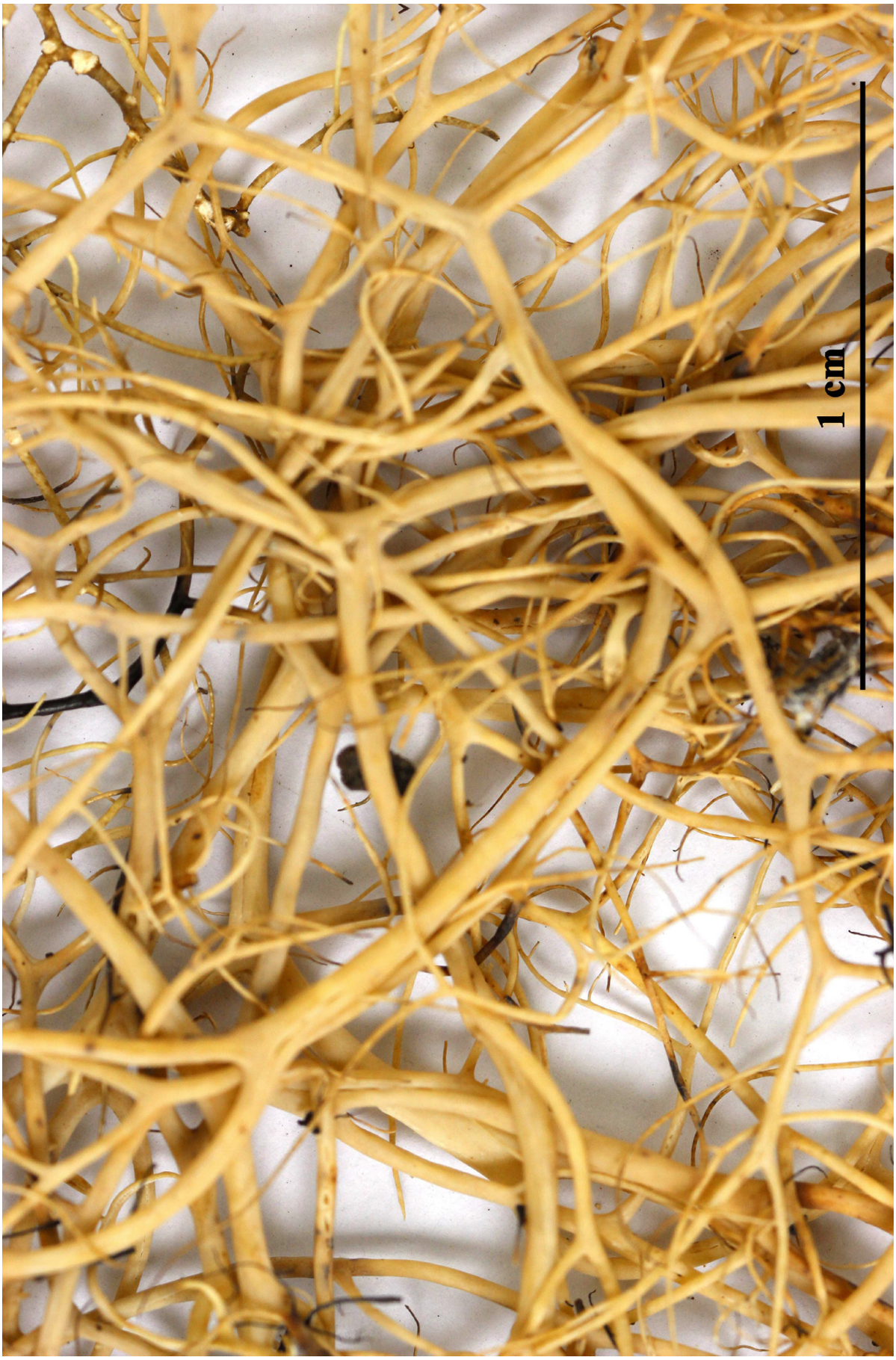
Alectoria pseudofuscescens



Alectoria pseudofuscescens

Alectoria sulcata (Lév.) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 98 (1858) [1857]
= *Cornicularia sulcata* Lév. 1844
= *Sulcaria sulcata* (Lév.) Bystrek ex Brodo & D. Hawksw., Op. bot. 42: 156 (1977)

[KU653], Formosa. Hwalien C.: Mt. Hohuan-shan-sqan,Hsiulin-gun. On truncs of *Abies* sp., 3100 m. Leg. H.Shibuchi (no.7964), K. Yoshida & M. Mineta, 31.06.1985, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 653.



Alectoria sulcata

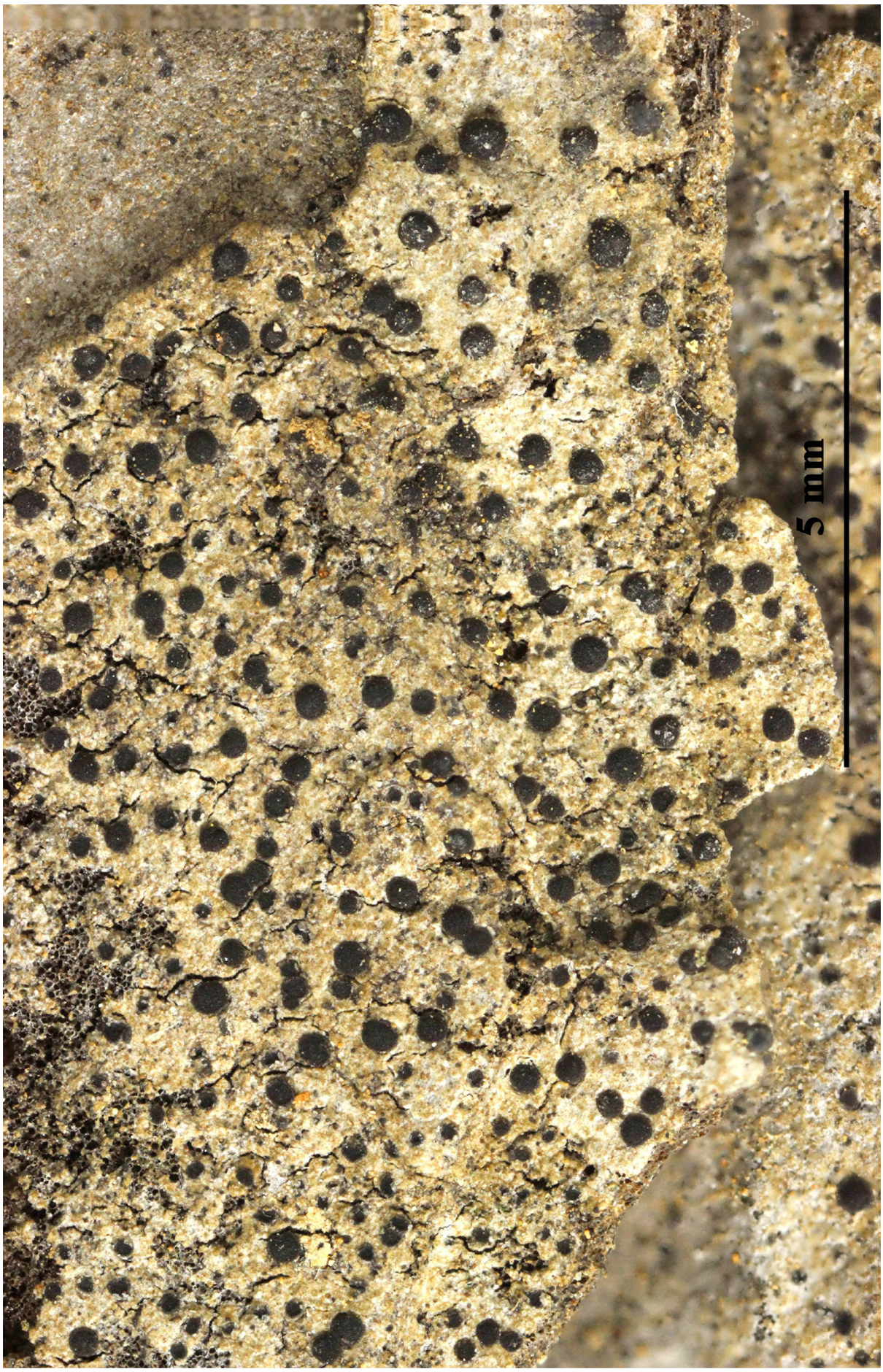


Alectoria sulcata

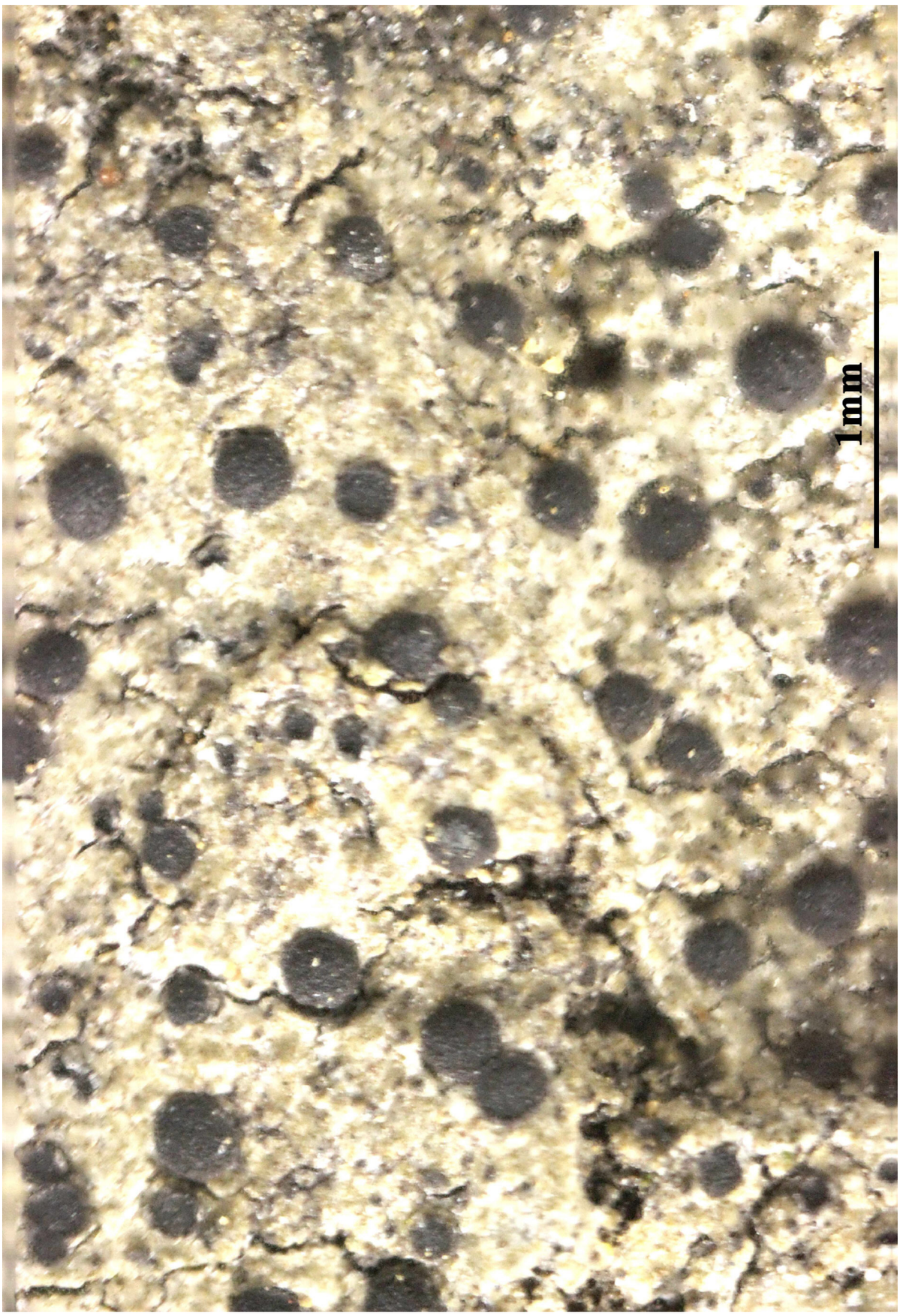
Amandinea punctata (Hoffm.) Coppins & Scheid., in Scheidegger, Lichenologist 25(4): 343 (1993)
= *Verrucaria punctata* Hoffm. 1796
= *Buellia punctata* (Hoffm.) A. Massal.

[OH676], Japan,Honshu. Musashi Prov. (Tokyo Metropolis): Minatogaoka Futo Park, Yashio Shinagawa-ku (35°35'48" N, 139°45'46" E). On trunk of *Pinus densiflora*, 7 m. Leg. M. Sugimoto (no. 941), 1.06.2021, det. M. Sugimoto. Ex X. Ohmura Lichenes Minus Cogniti Exsiccati N. 676.

Thallus crustose, episubstratic, smooth, granulose or slightly verruculose, usually up to 0.5 mm thick, whitish to grey-green, dull, epruinose, sometimes delimited by a dark prothallus. Medulla white, I-. Apothecia lecideine (0.2-)0.3-0.4(-0.6) mm across, soon sessile, with an initially flat, but soon convex disc and a thin, soon excluded margin. Proper exciple narrow, poorly differentiated, the outer hyphae parallel, moderately swollen and usually strongly brown-pigmented; epithecium brown, N-; hymenium colourless, not inspersed with oil droplets; paraphyses simple to moderately branched, apically swollen, with a brown pigment cap; hypothecium pale to dark brown. Asci 8-spored, clavate, Bacidia-type. Ascospores 1-septate, brown, ellipsoid with obtuse ends, usually slightly curved, not constricted at septum, (8.5-)12-15(-16) x (5-)6-8 µm, Buellia-type, with a smooth to microrugulate wall and ontogeny of type A. Pycnidia urceolate to globose, unilocular. Conidia short-filiform, curved, 12-15(-20) x 0.5-1 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a very poorly understood taxon; in its present circumscription, an almost cosmopolitan lichen found on a wide variety of substrata, including bark, lignum, siliceous rocks, roofing tiles and brick.



Amandinea punctata

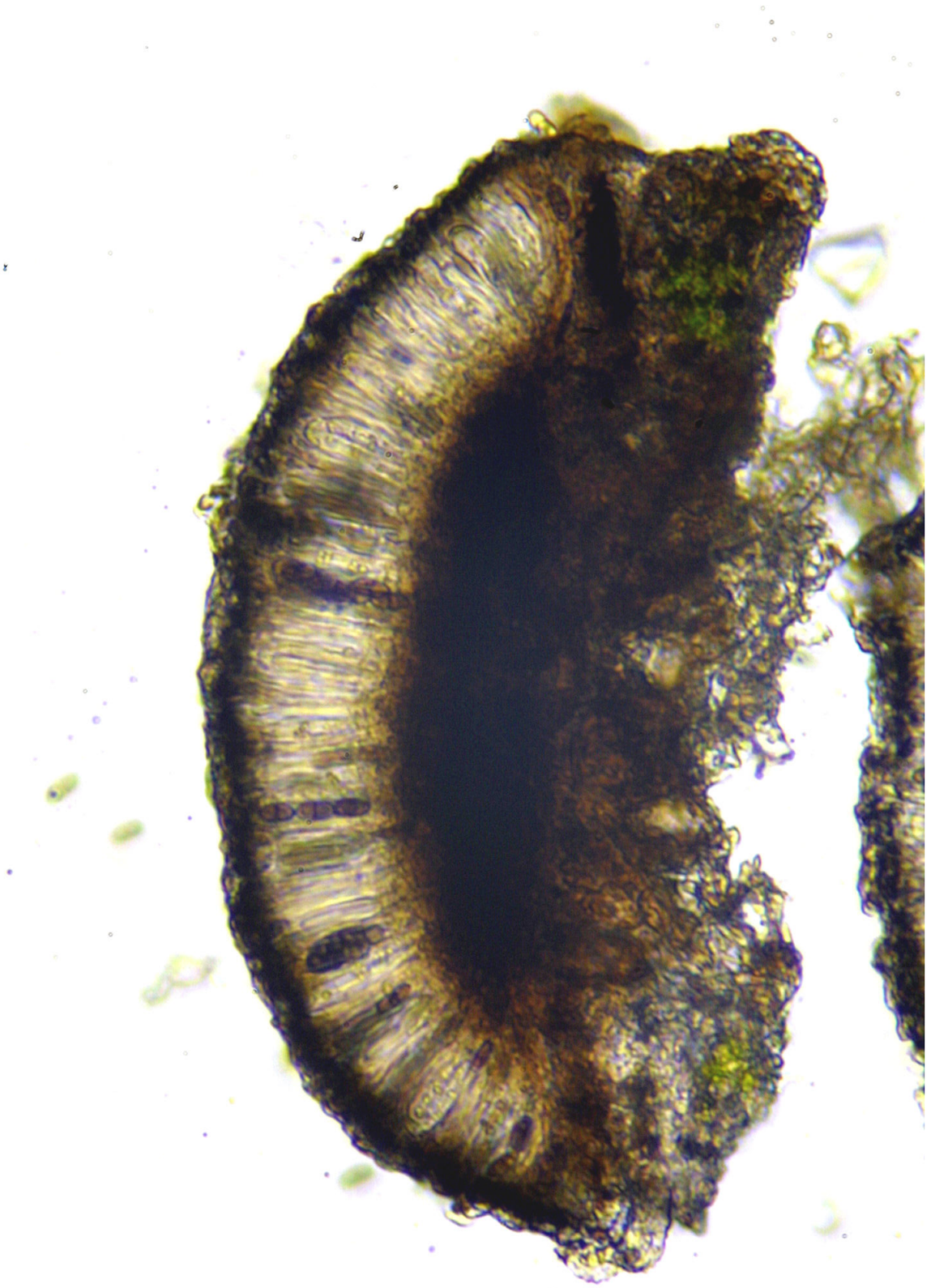


Amandinea punctata

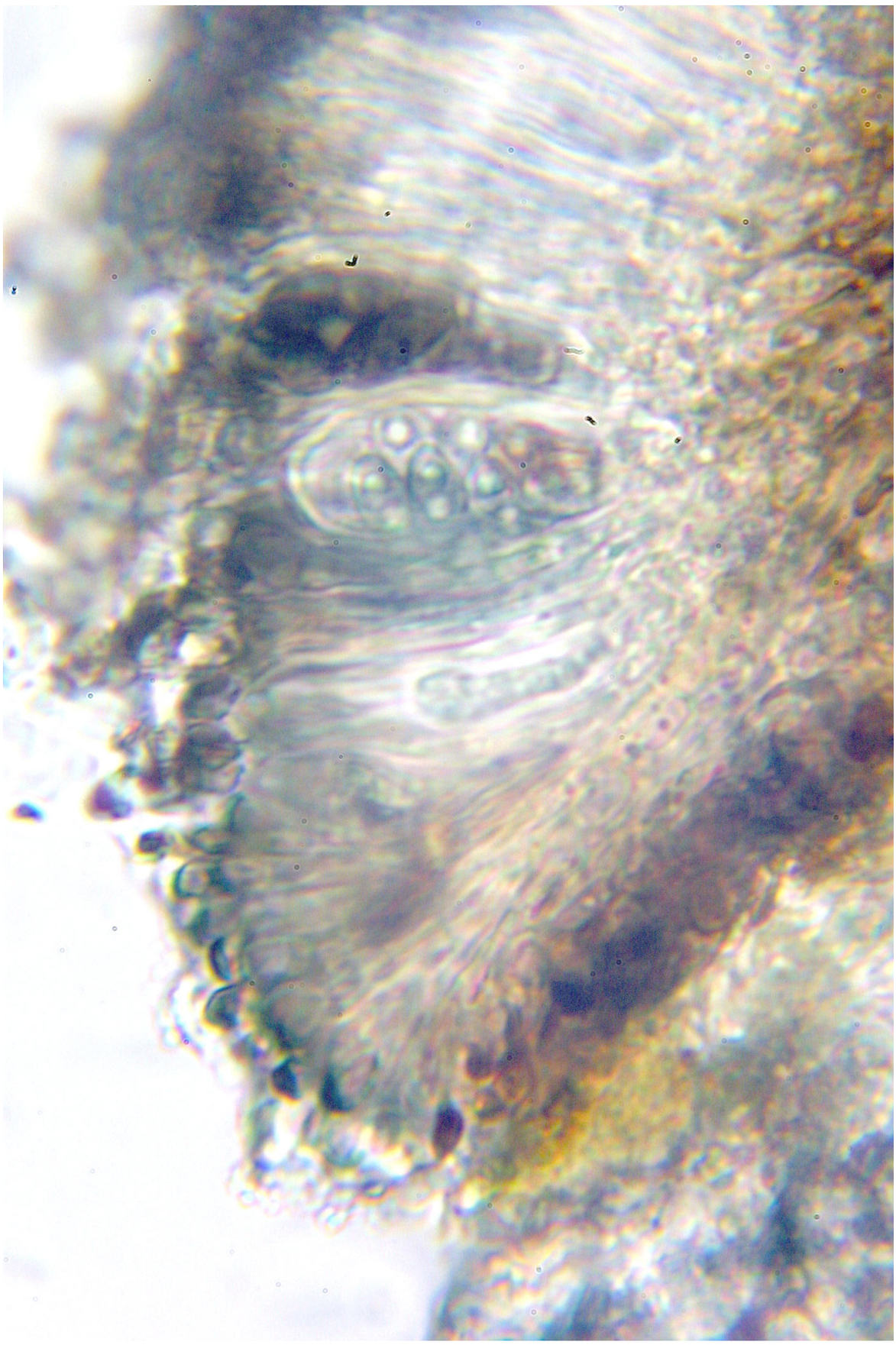
Amandinea punctata (Hoffm.) Coppins & Scheid., in Scheidegger, Lichenologist 25(4): 343 (1993)
= *Verrucaria punctata* Hoffm. 1796
= *Buellia punctata* (Hoffm.) A. Massal.

[11593], GERMANY, Baden-Württemberg, Kreis Göppingen, 1 km nördlich Wißgolding, Rand des Stuifens am Hinterbergweg, 48°44.721' N, 9°49.644' W, 644 m, Waldrand, lichtoffen, auf abgefallenen Laubbaumästen. Leg. F. Schumm, 20.03.2004, det F. Schumm 20.03.2004. EX HERBARIO F. SCHUMM NR. 11593.
- Sporen zu 8, 2-zellig, braun, 13,1 x 5,5 µm; Hypothecium braunschwarz; Paraphysen mit schwarzer Pigmentkappe.

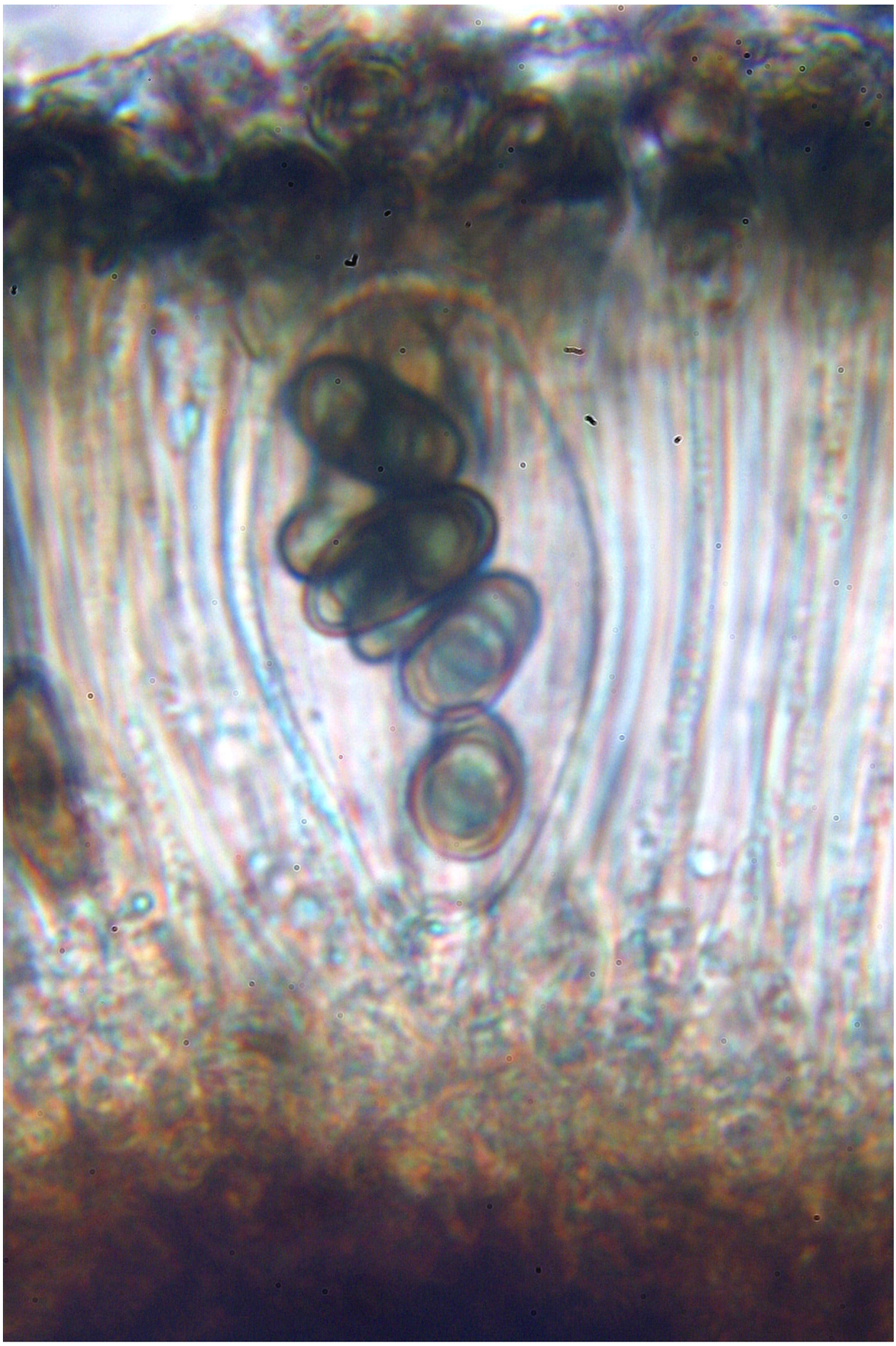
Thallus crustose, episubstratic, smooth, granulose or slightly verruculose, usually up to 0.5 mm thick, whitish to grey-green, dull, epruinose, sometimes delimited by a dark prothallus. Medulla white, I-. Apothecia lecideine (0.2-)0.3-0.4(-0.6) mm across, soon sessile, with an initially flat, but soon convex disc and a thin, soon excluded margin. Proper exciple narrow, poorly differentiated, the outer hyphae parallel, moderately swollen and usually strongly brown-pigmented; epithecium brown, N-; hymenium colourless, not inspersed with oil droplets; paraphyses simple to moderately branched, apically swollen, with a brown pigment cap; hypothecium pale to dark brown. Asci 8-spored, clavate, Bacidia-type. Ascospores 1-septate, brown, ellipsoid with obtuse ends, usually slightly curved, not constricted at septum, (8.5-)12-15(-16) x (5-)6-8 µm, Buellia-type, with a smooth to microrugulate wall and ontogeny of type A. Pycnidia urceolate to globose, unilocular. Conidia short-filiform, curved, 12-15(-20) x 0.5-1 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a very poorly understood taxon; in its present circumscription, an almost cosmopolitan lichen found on a wide variety of substrata, including bark, lignum, siliceous rocks, roofing tiles and brick.



Amandinea punctata



Amandinea punctata



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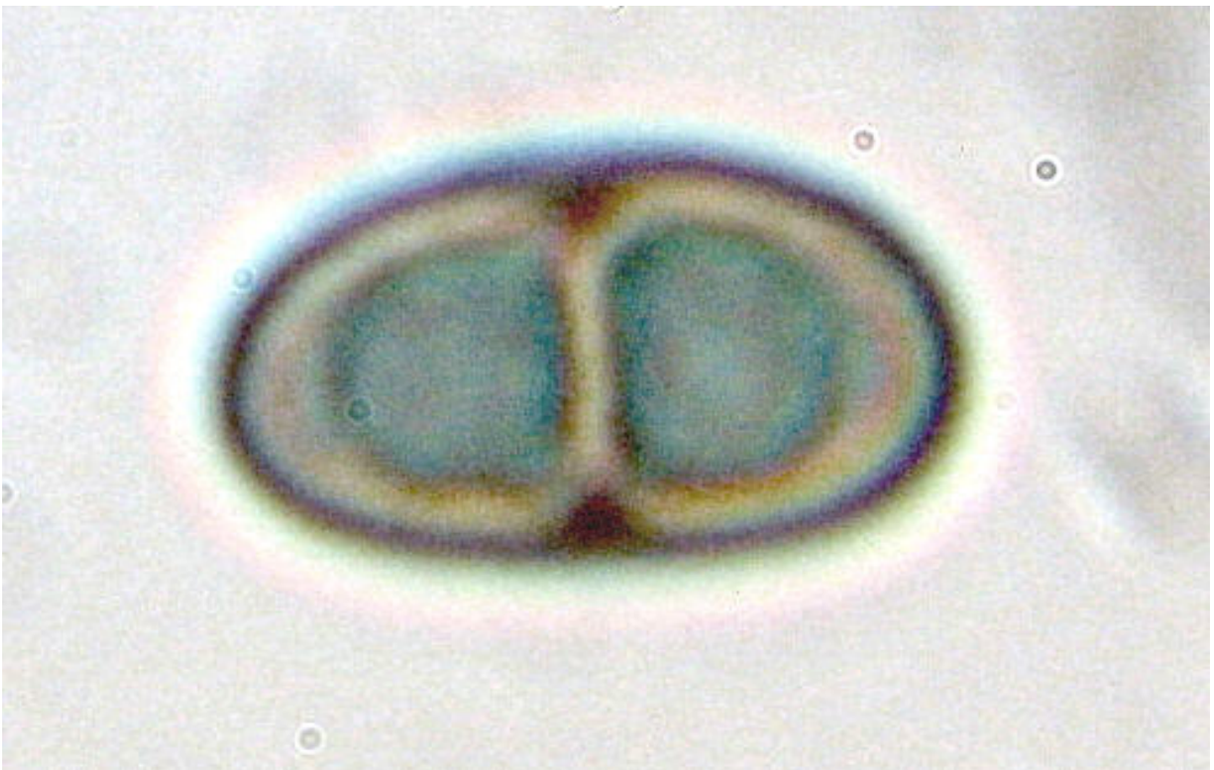
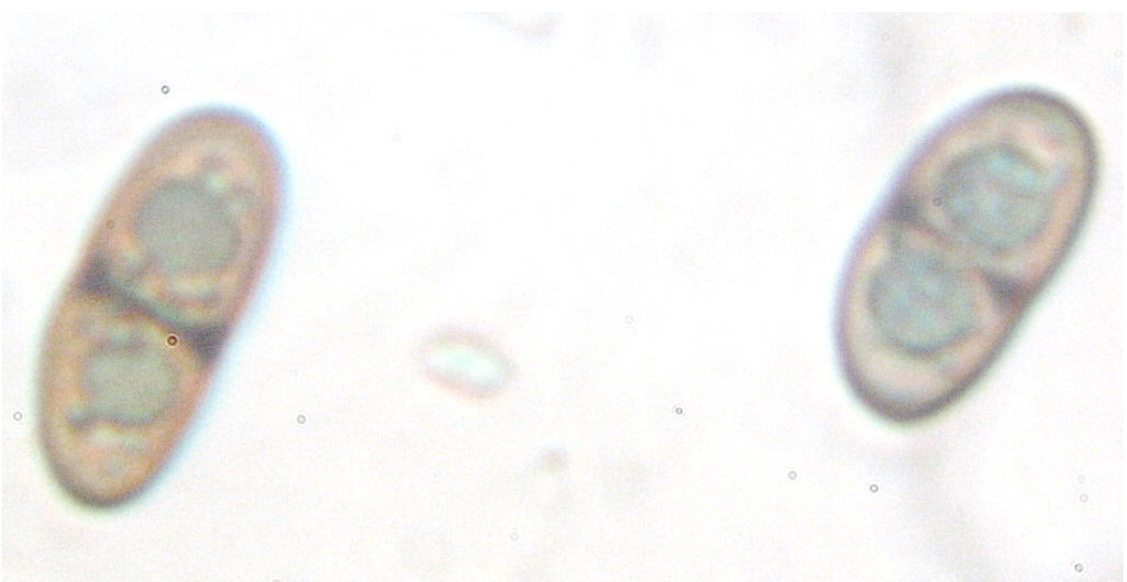


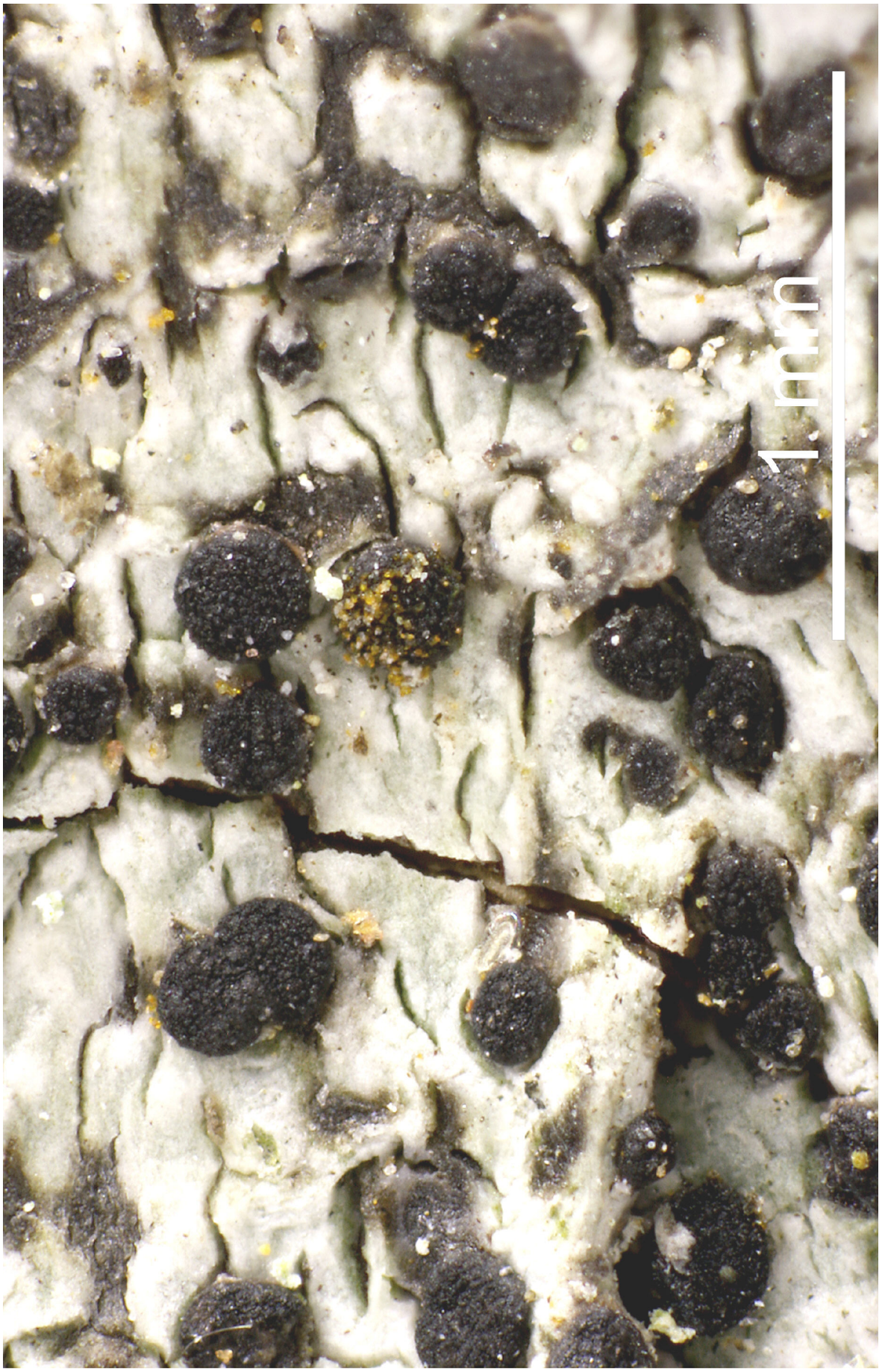


Amandinea punctata

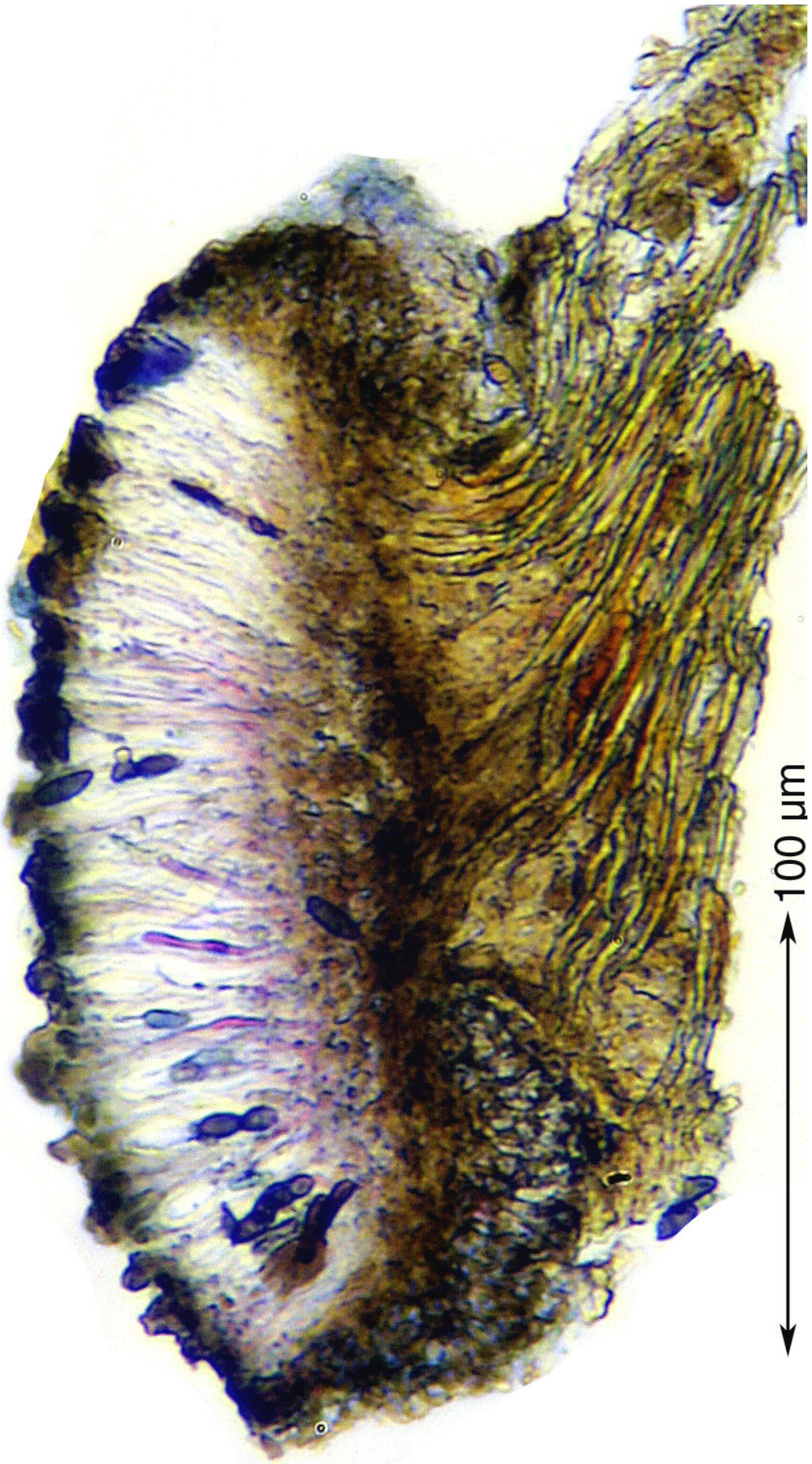
Amandinea punctata (Hoffm.) Coppins & Scheid., in Scheidegger, Lichenologist 25(4): 343 (1993)
= *Verrucaria punctata* Hoffm. 1796
= *Buellia punctata* (Hoffm.) A. Massal.

[14176], Portugal, Azoren, Terceira, Lagoa da Falca, 38°43.097' N, 27°17.222' W, ca. 520 m. Leg. A. Aptroot & F. Schumm, 16.07.2008, det. F. Schumm, 11.08.2008 - Sporen braun 1-septiert, 12 x 7-8 µm; Excip. schwarz paraplectenchymatisch. EX HERBARIO F. SCHUMM NR. 14176.

Thallus crustose, episubstratic, smooth, granulose or slightly verruculose, usually up to 0.5 mm thick, whitish to grey-green, dull, epruinose, sometimes delimited by a dark prothallus. Medulla white, I-. Apothecia lecideine (0.2-)0.3-0.4(-0.6) mm across, soon sessile, with an initially flat, but soon convex disc and a thin, soon excluded margin. Proper exciple narrow, poorly differentiated, the outer hyphae parallel, moderately swollen and usually strongly brown-pigmented; epithecium brown, N-; hymenium colourless, not inspersed with oil droplets; paraphyses simple to moderately branched, apically swollen, with a brown pigment cap; hypothecium pale to dark brown. Asci 8-spored, clavate, Bacidia-type. Ascospores 1-septate, brown, ellipsoid with obtuse ends, usually slightly curved, not constricted at septum, (8.5-)12-15(-16) x (5-)6-8 µm, Buellia-type, with a smooth to microrugulate wall and ontogeny of type A. Pycnidia urceolate to globose, unilocular. Conidia short-filiform, curved, 12-15(-20) x 0.5-1 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a very poorly understood taxon; in its present circumscription, an almost cosmopolitan lichen found on a wide variety of substrata, including bark, lignum, siliceous rocks, roofing tiles and brick.



Amandinea punctata



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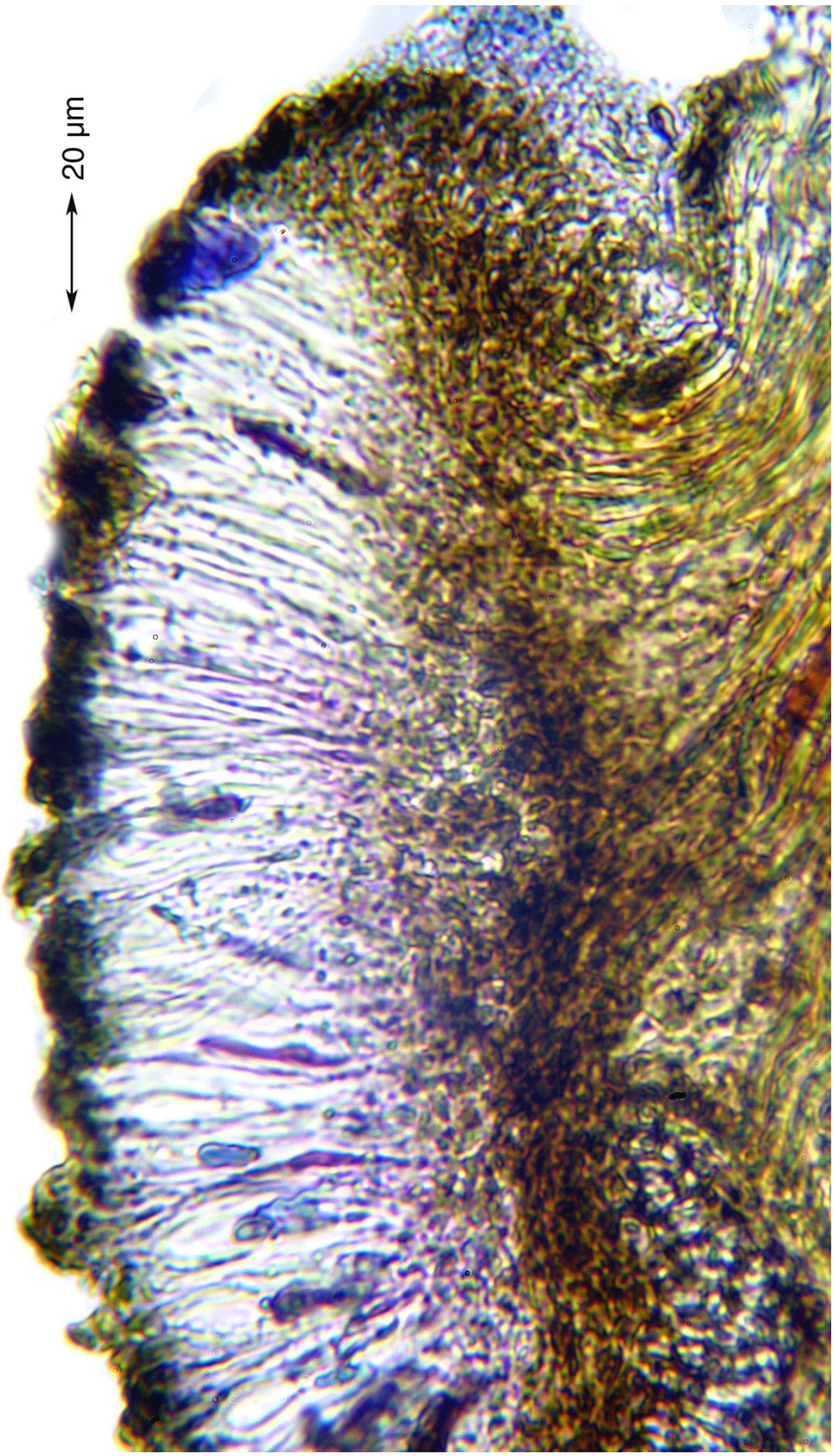

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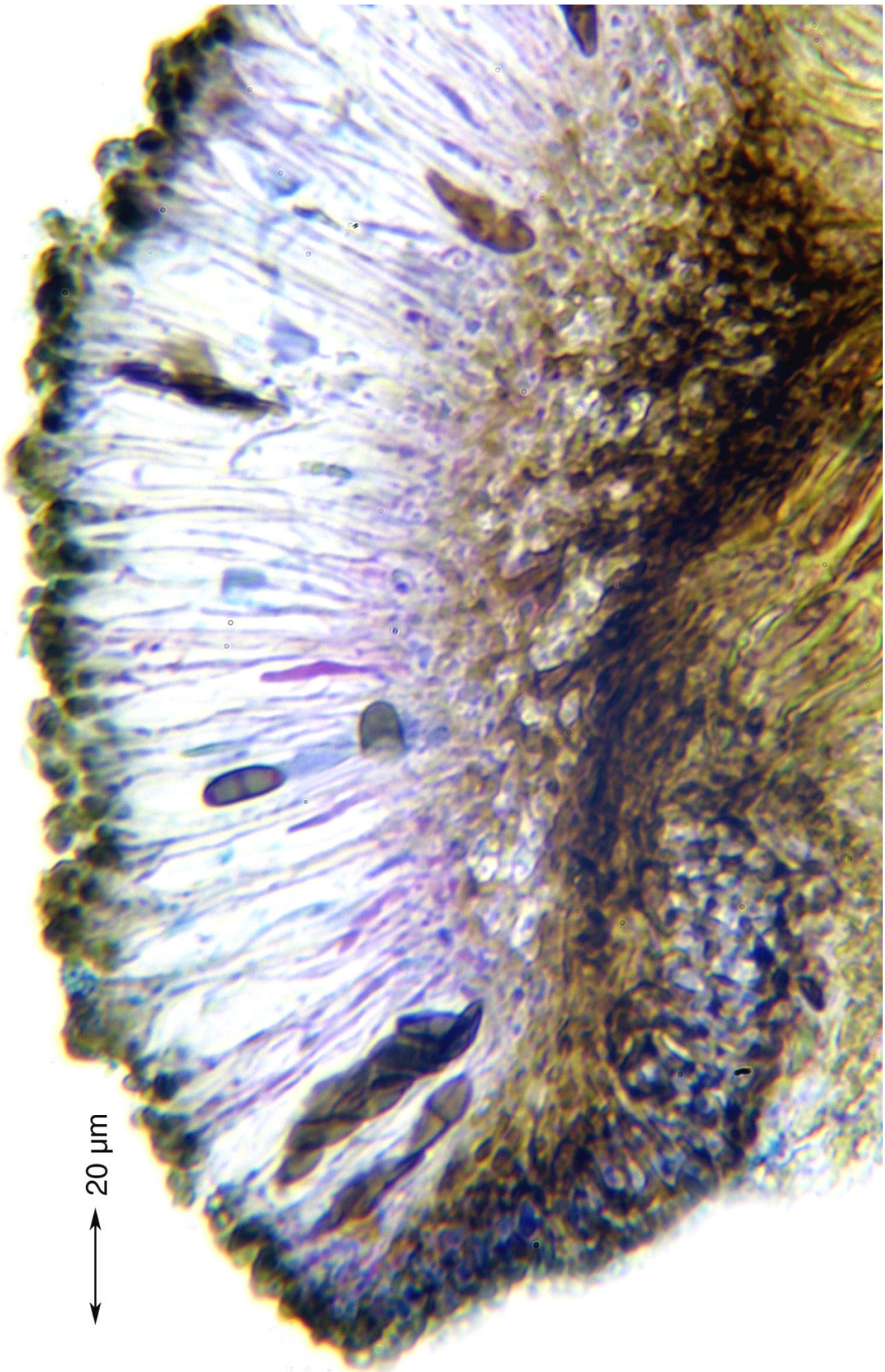

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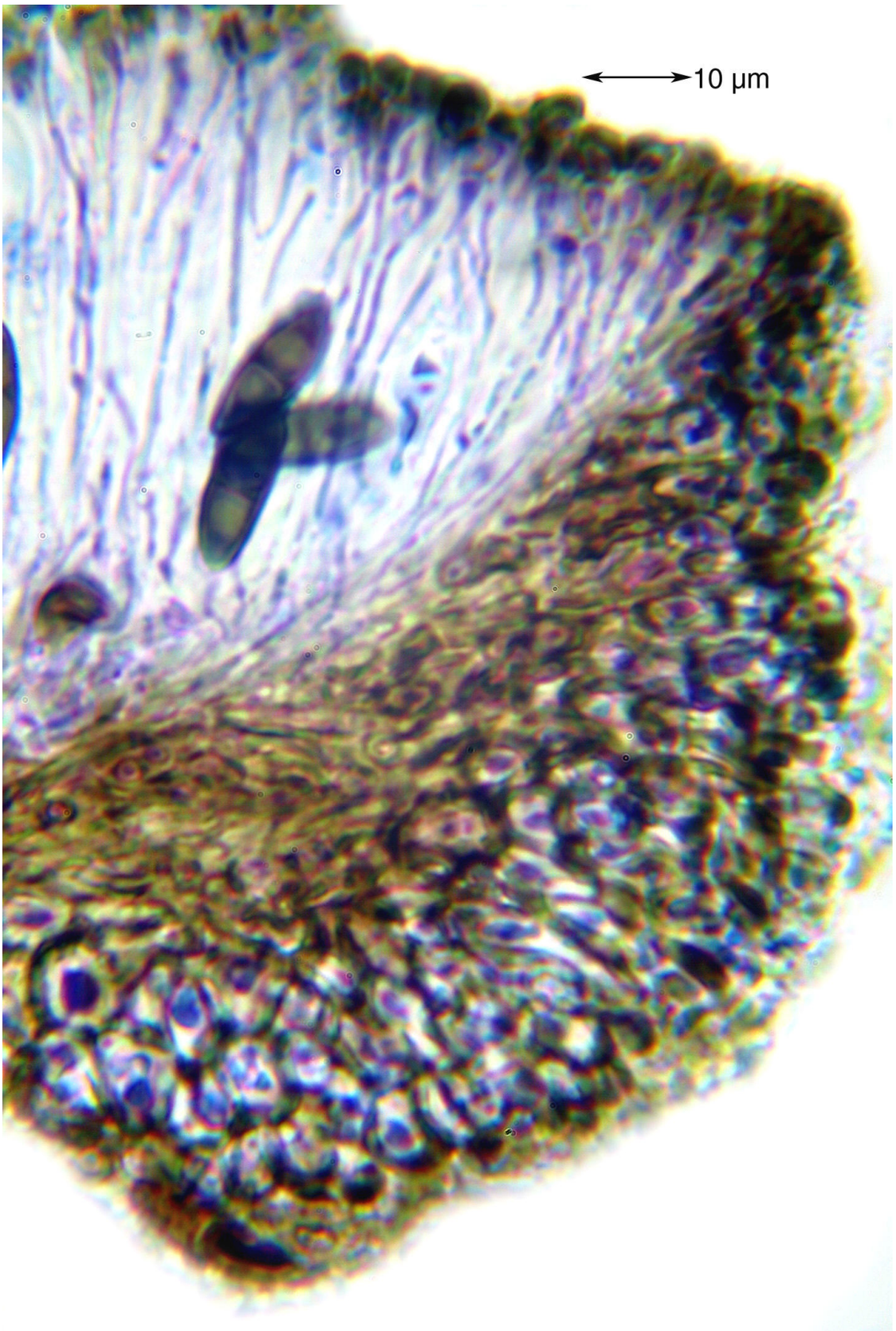

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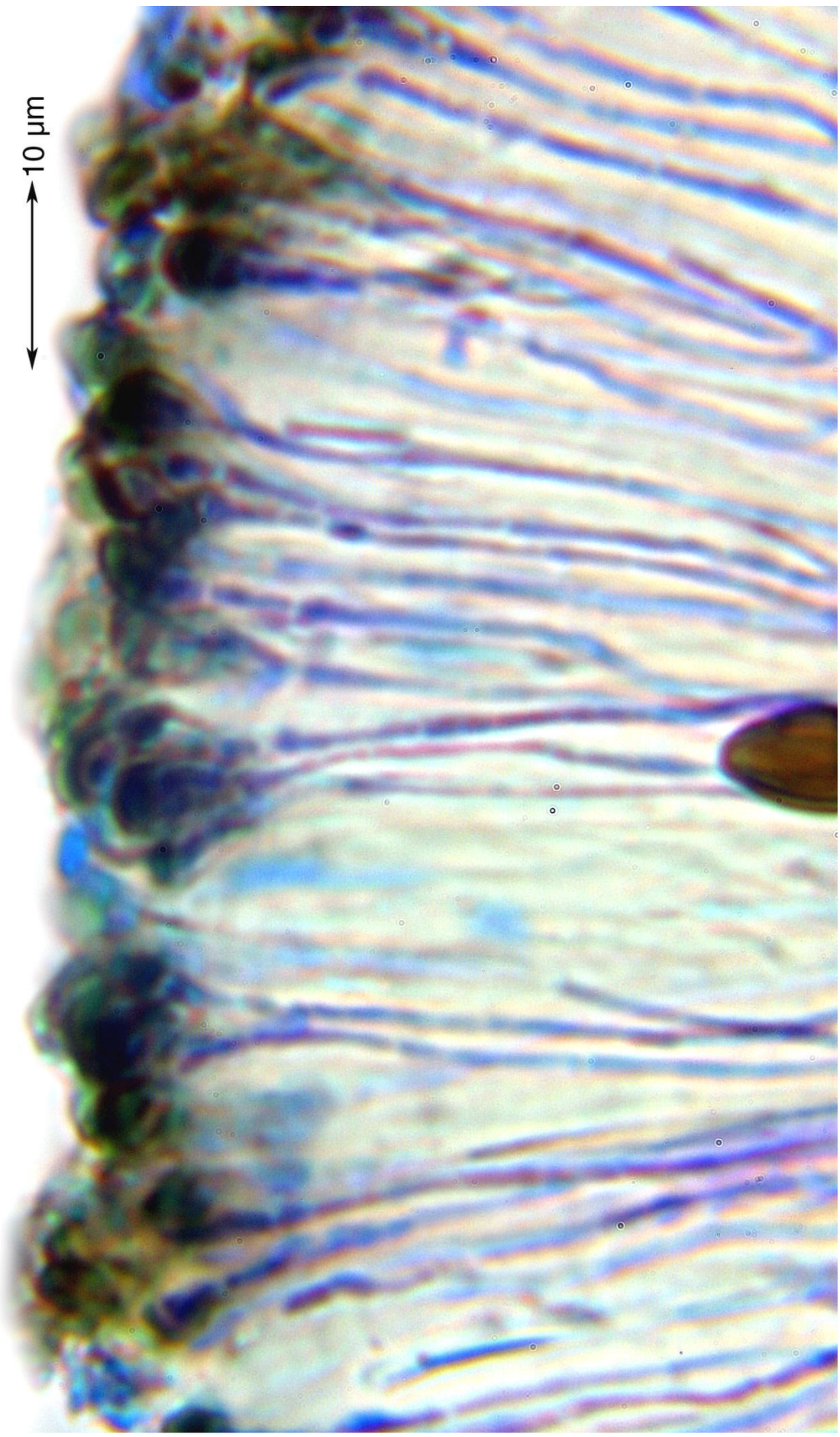
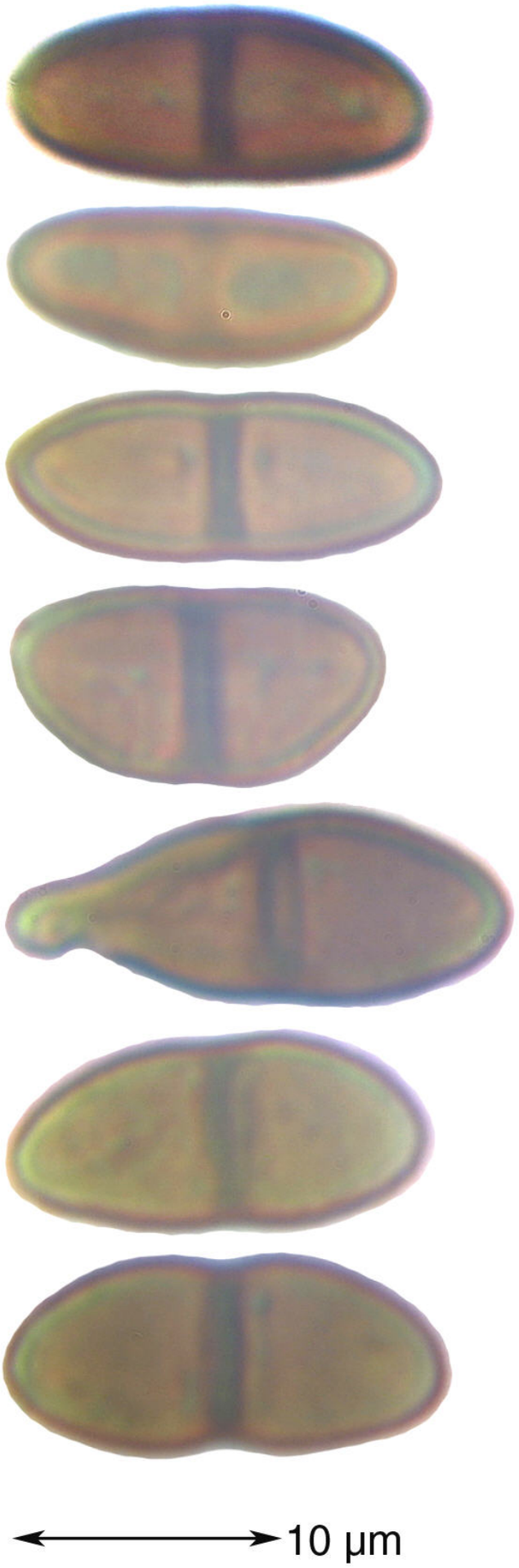


Amandinea punctata



Amandinea punctata

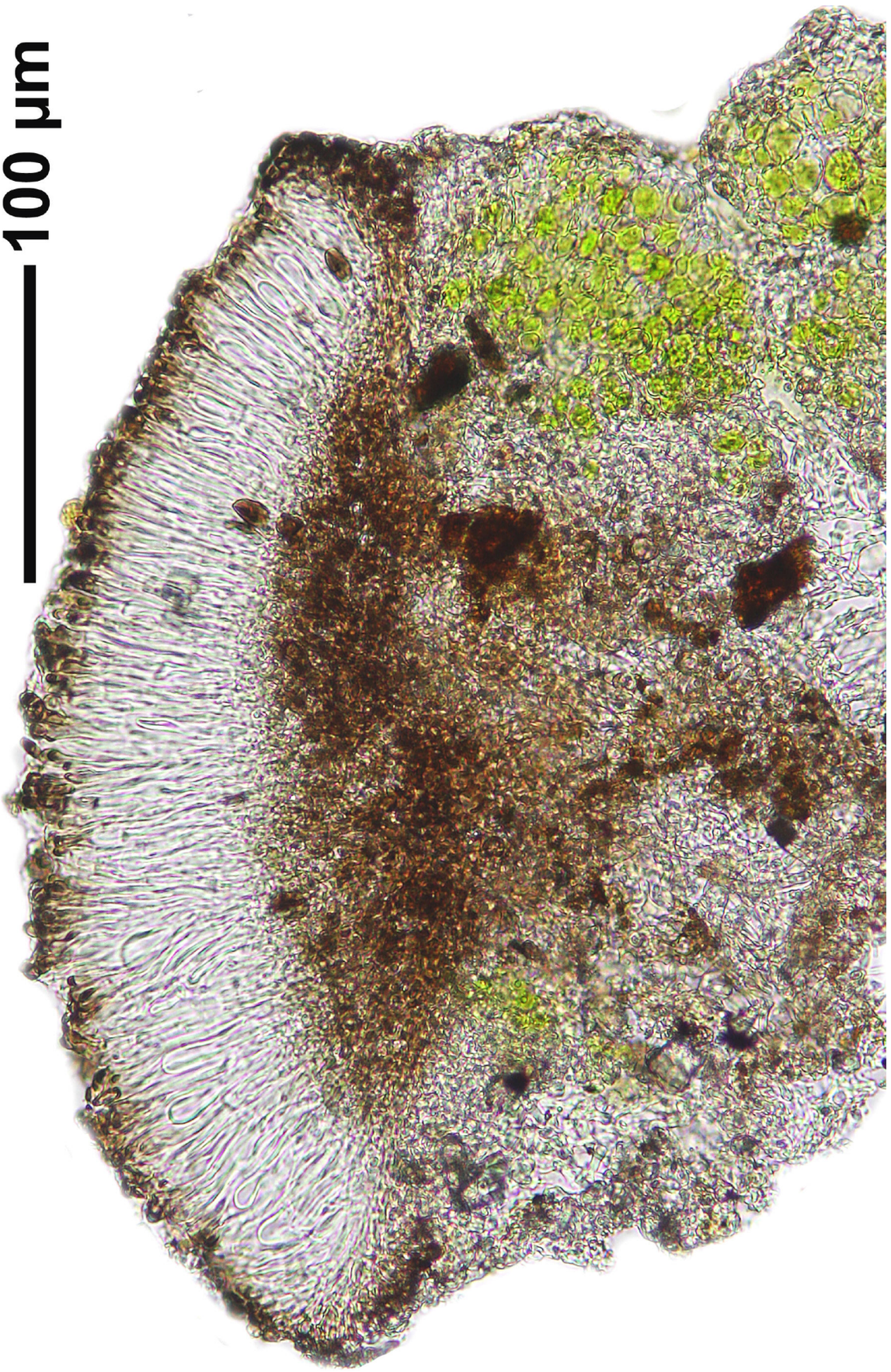
Amandinea punctata (Hoffm.) Coppins & Scheid., in Scheidegger, Lichenologist 25(4): 343 (1993)
= *Verrucaria punctata* Hoffm. 1796
= *Buellia punctata* (Hoffm.) A. Massal.

[16541], Germany, Baden-Württemberg, Schwarzwald-Baar-Kreis, an der Straße von Hornberg nach Schramberg, Abbiegung zum Käppelehof. 48,22853° N, 8,31805° E, 670 m. An Granit, TK 7716. Leg. F. Schumm. 07.07.2010, det. F.Schumm, 2010. - Sporen braun, 2-zellig, 8/Ascus, 12-13 x 6-7 µm. Mark K-, J-. EX HERBARIO F. SCHUMM NR. 16541.

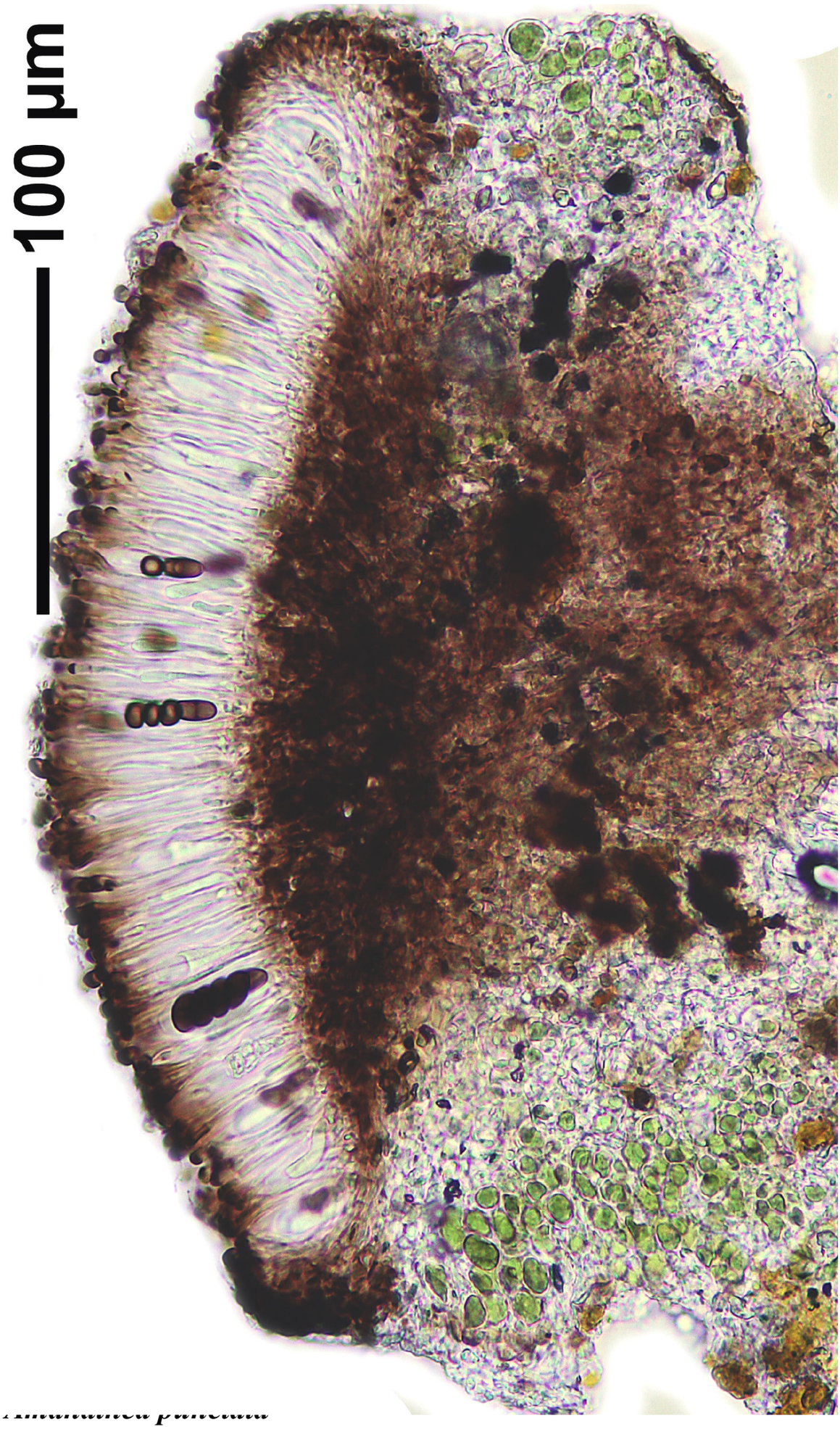
Thallus crustose, episubstratic, smooth, granulose or slightly verruculose, usually up to 0.5 mm thick, whitish to grey-green, dull, epruinose, sometimes delimited by a dark prothallus. Medulla white, I-. Apothecia lecideine (0.2-)0.3-0.4(-0.6) mm across, soon sessile, with an initially flat, but soon convex disc and a thin, soon excluded margin. Proper exciple narrow, poorly differentiated, the outer hyphae parallel, moderately swollen and usually strongly brown-pigmented; epithecium brown, N-; hymenium colourless, not inspersed with oil droplets; paraphyses simple to moderately branched, apically swollen, with a brown pigment cap; hypothecium pale to dark brown. Asci 8-spored, clavate, Bacidia-type. Ascospores 1-septate, brown, ellipsoid with obtuse ends, usually slightly curved, not constricted at septum, (8.5-)12-15(-16) x (5-)6-8 µm, Buellia-type, with a smooth to microrugulate wall and ontogeny of type A. Pycnidia urceolate to globose, unilocular. Conidia short-filiform, curved, 12-15(-20) x 0.5-1 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a very poorly understood taxon; in its present circumscription, an almost cosmopolitan lichen found on a wide variety of substrata, including bark, lignum, siliceous rocks, roofing tiles and brick.



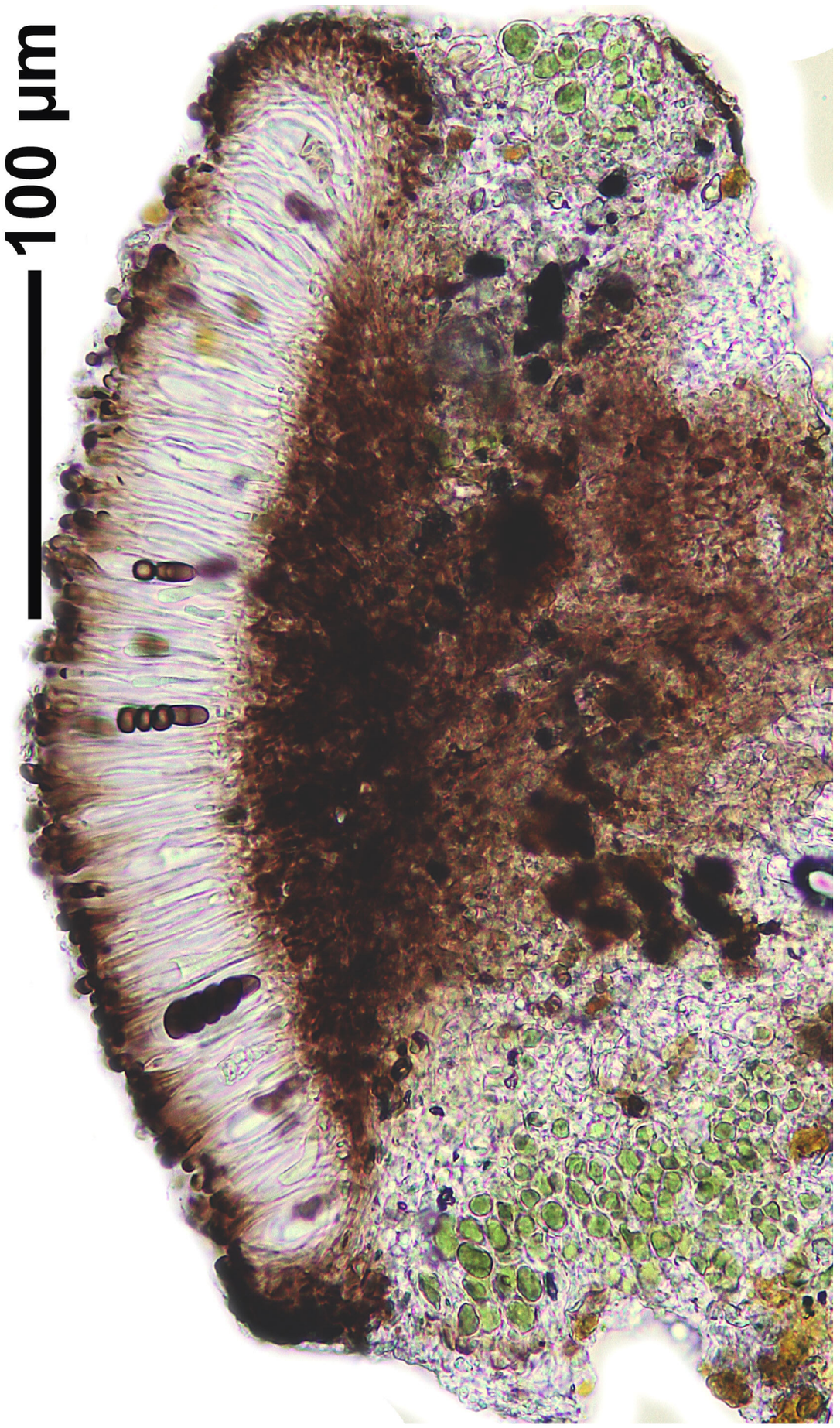
Amandinea punctata



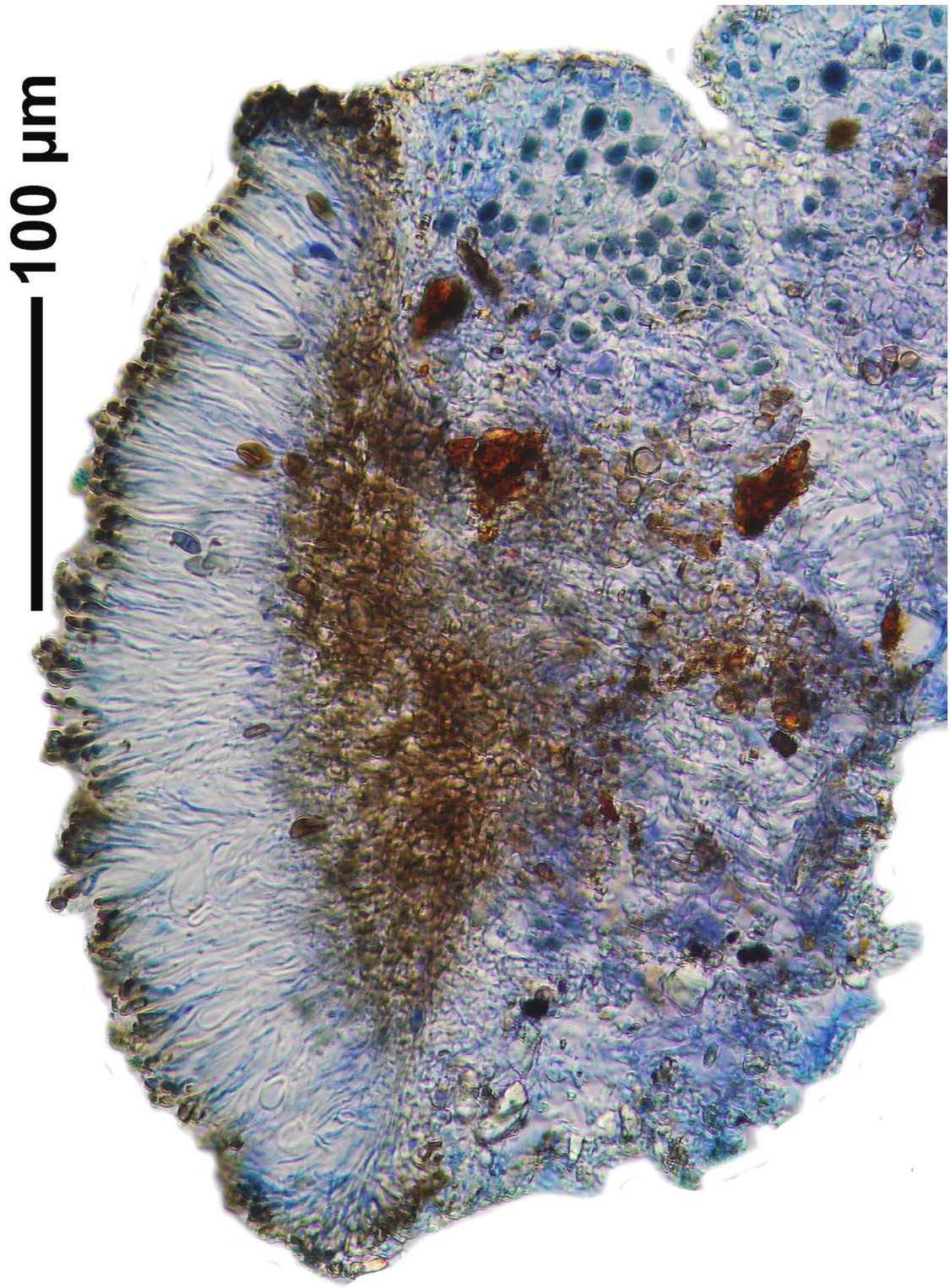
Amandinea punctata



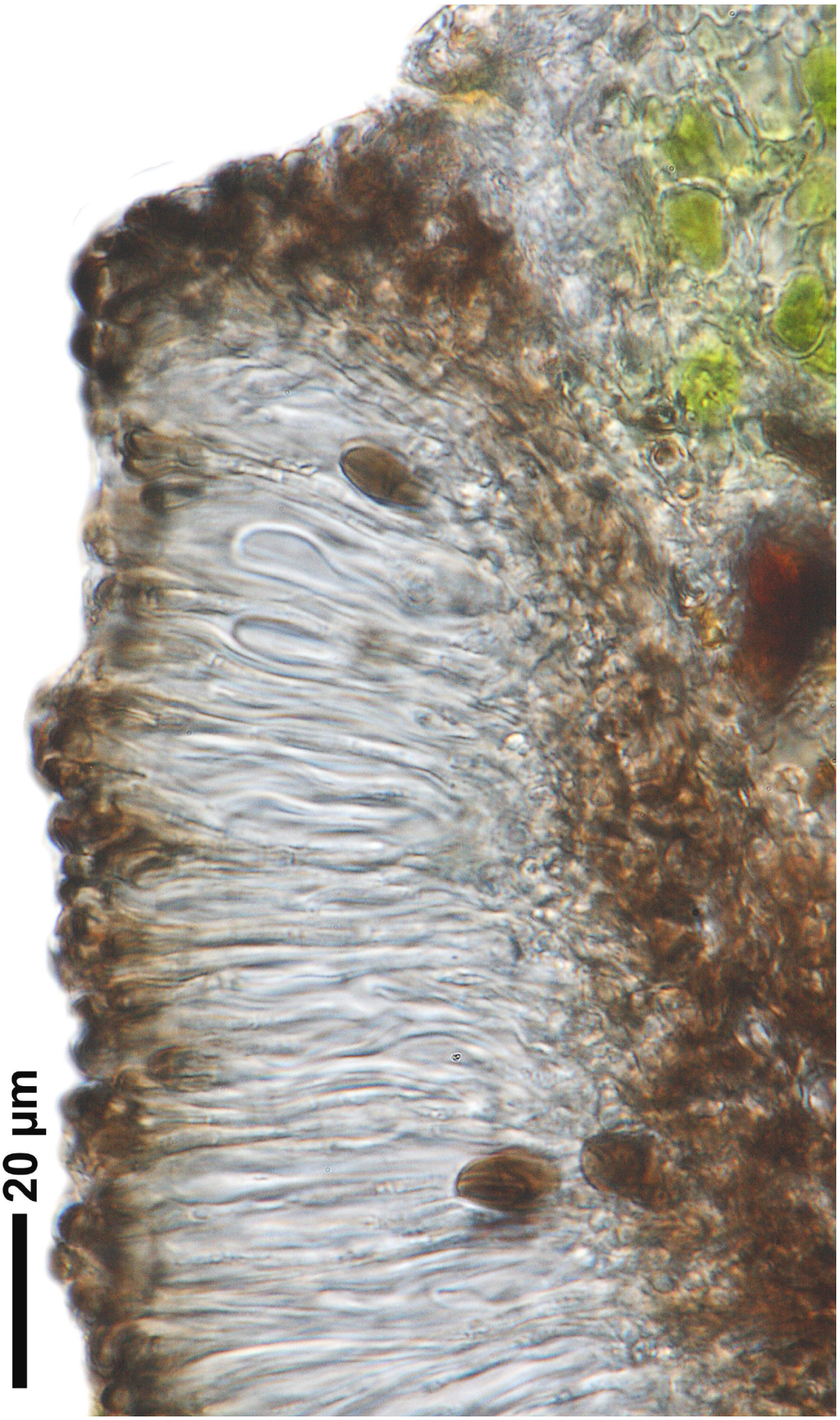
Amanatinea pinnelata



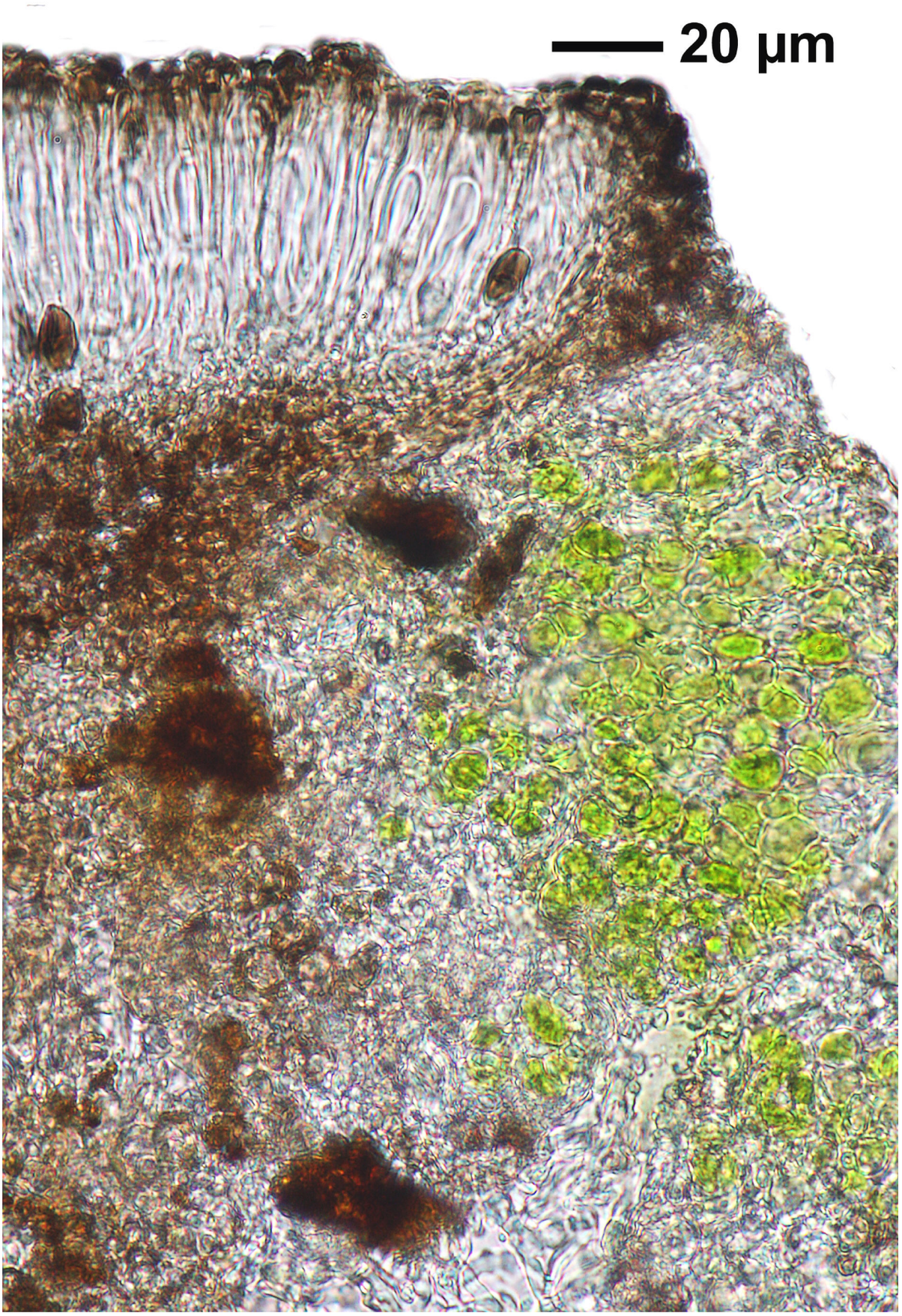
Amandinea punctata



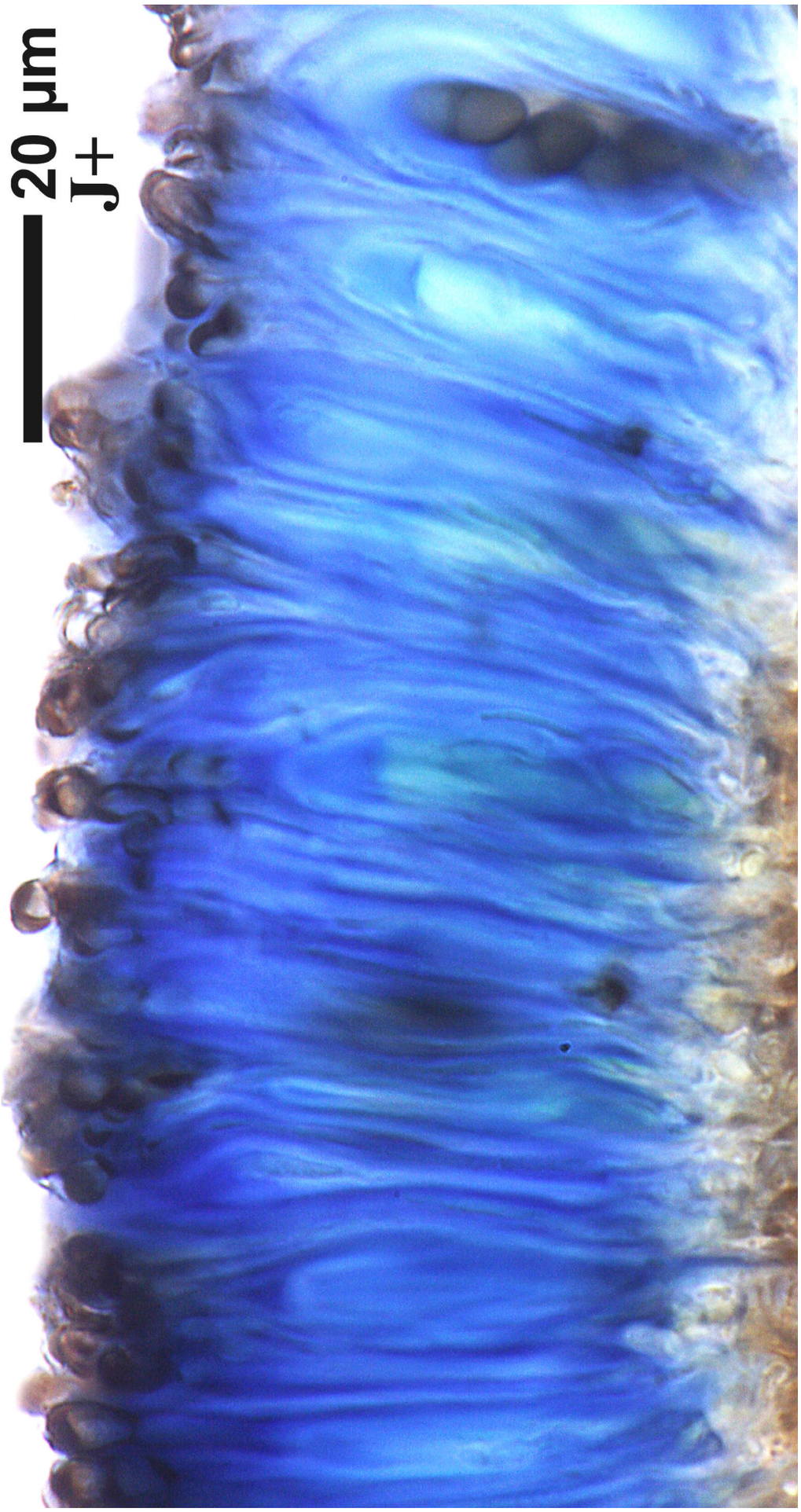
Amandinea punctata



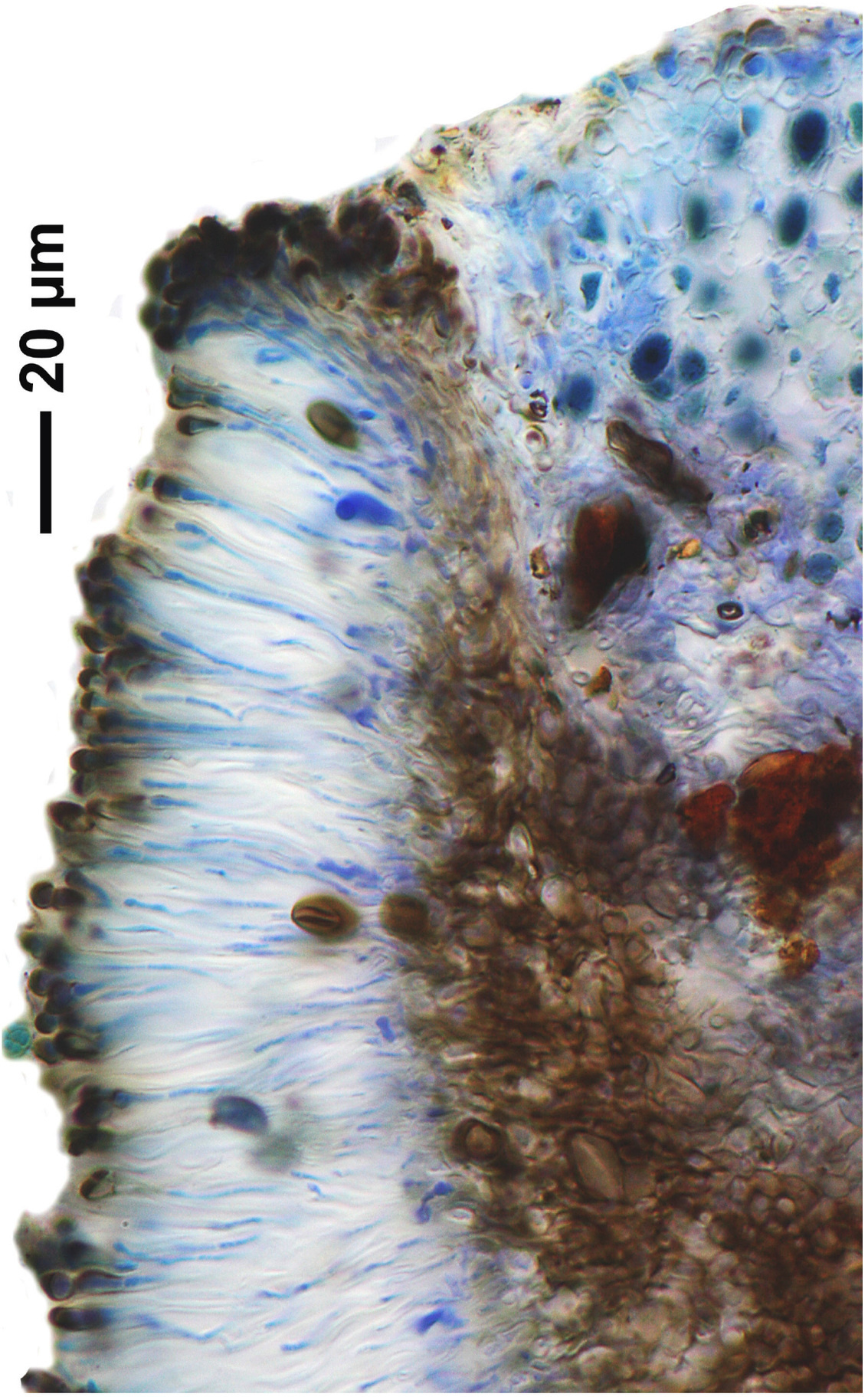
Amandinea punctata



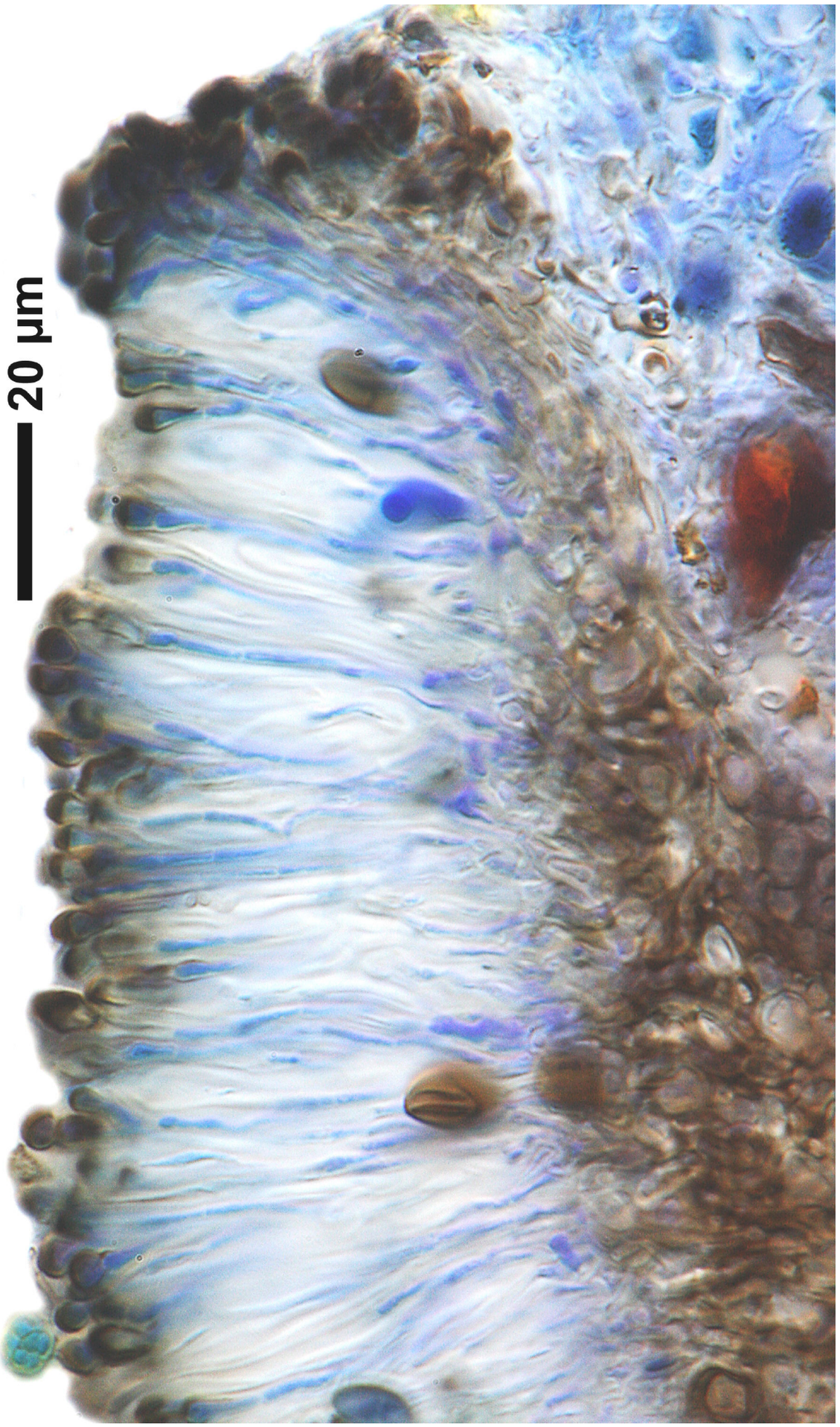
Amandinea punctata



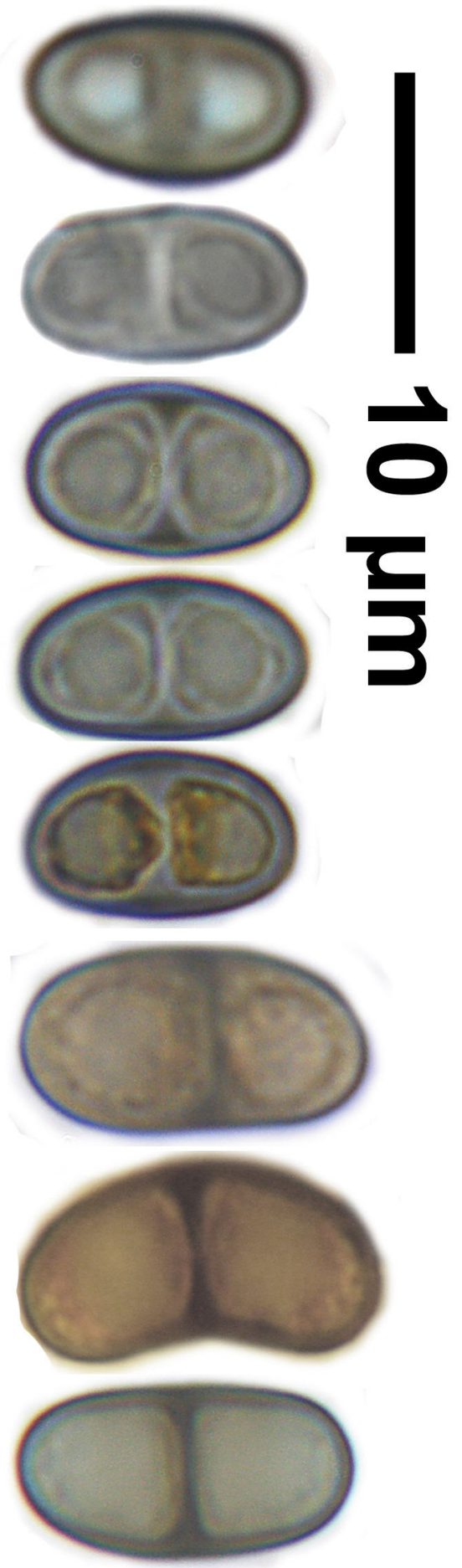
Amandinea punctata



Amandinea punctata



Amandinea punctata

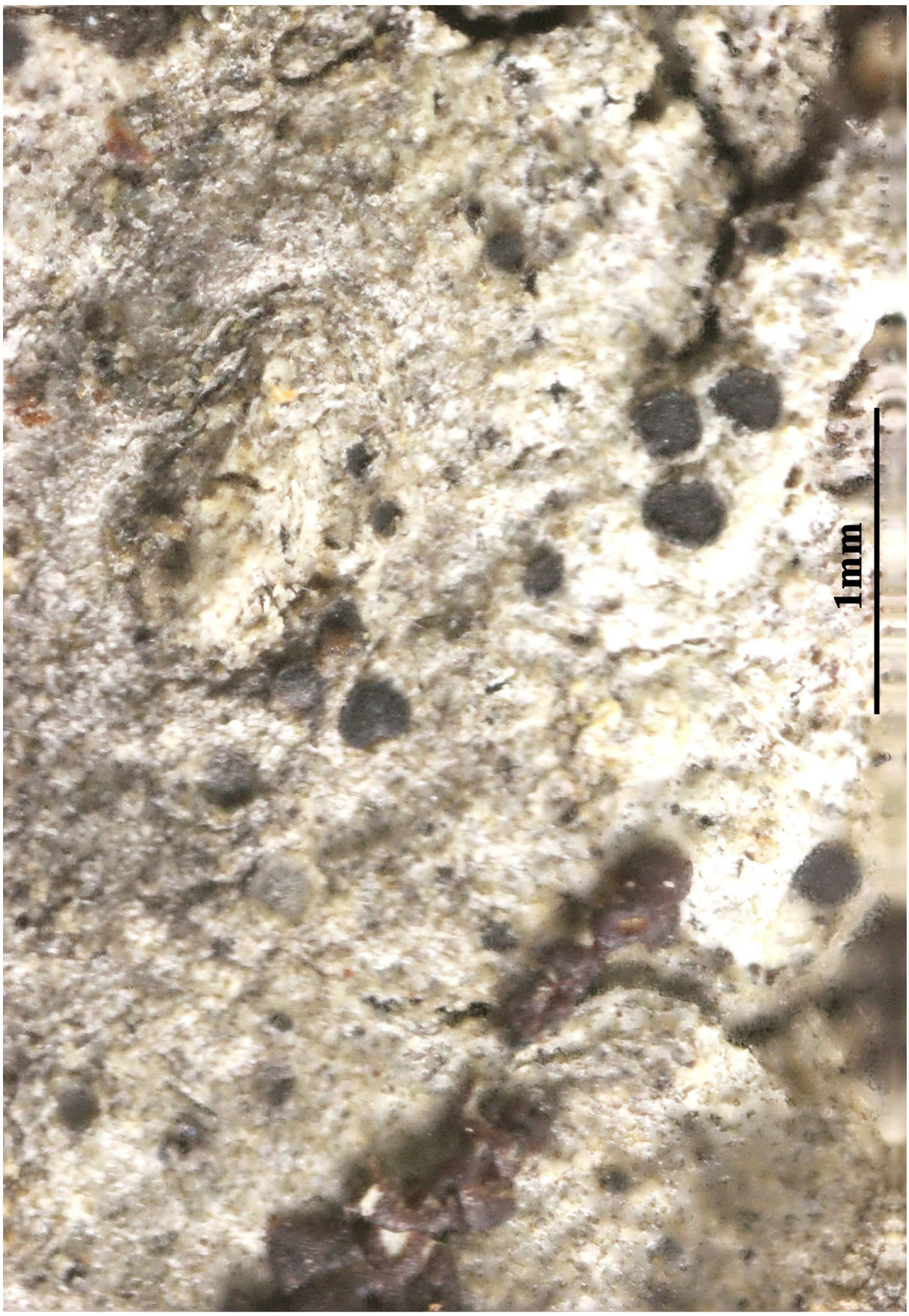


Amandinea punctata

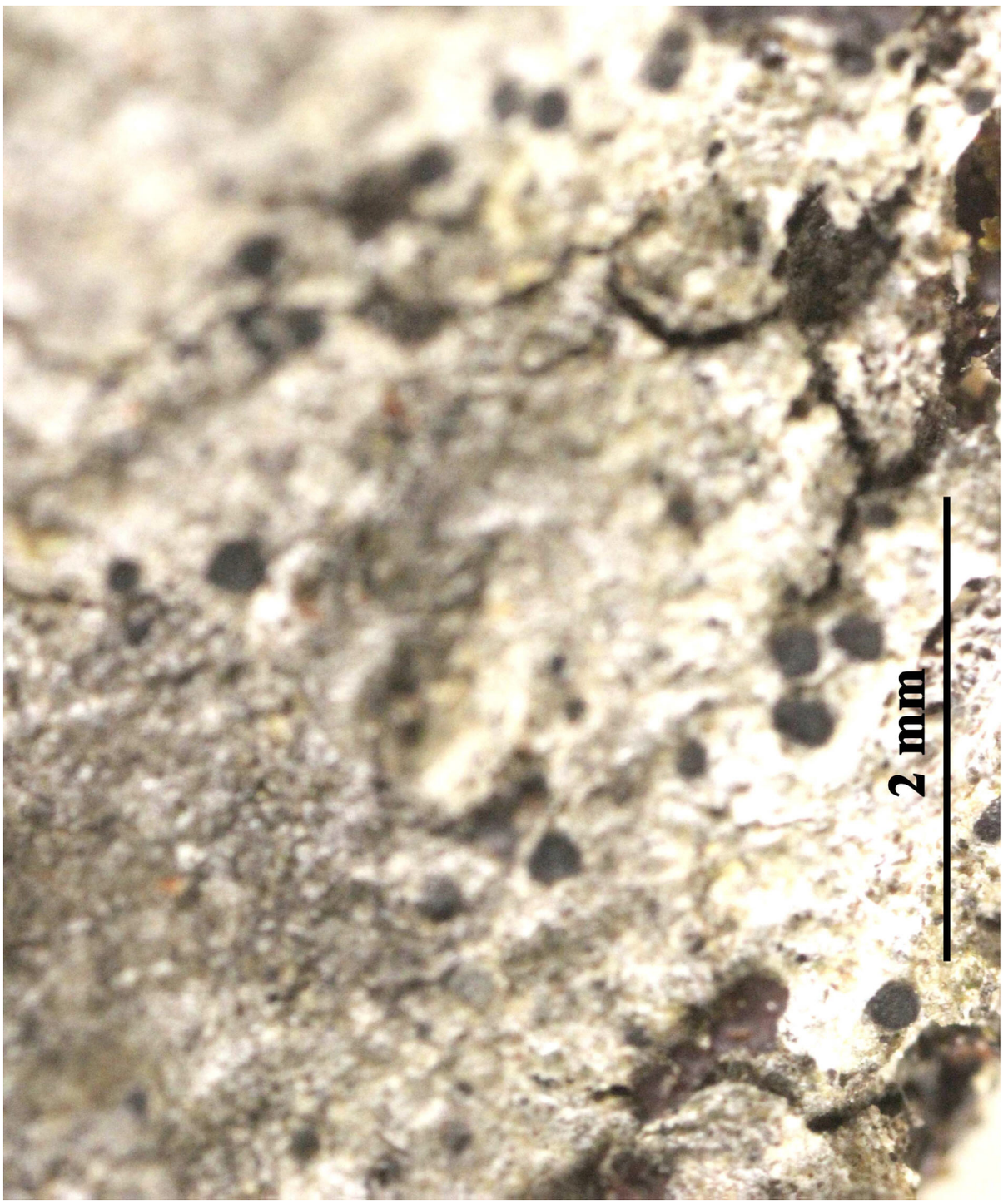
Amandinea punctata (Hoffm.) Coppins & Scheid., in Scheidegger, Lichenologist 25(4): 343 (1993)
= *Verrucaria punctata* Hoffm. 1796
= *Buellia punctata* (Hoffm.) A. Massal.

[OH627], Russia. Primorsky Territory: Kuchelinovo (43°24'30" N, 132°31'43" E). On trunk of coniferous tree, 150 m. Leg. Y. Ohmura (no. 10928B), 24.09.2013, det. A. Ohmura. Ex Y. Ohmura .Ex Y. Ohmura Lichenes Minus Cogniti Exsiccati Nr-627.

Thallus crustose, episubstratic, smooth, granulose or slightly verruculose, usually up to 0.5 mm thick, whitish to grey-green, dull, epruinose, sometimes delimited by a dark prothallus. Medulla white, I-. Apothecia lecideine (0.2-)0.3-0.4(-0.6) mm across, soon sessile, with an initially flat, but soon convex disc and a thin, soon excluded margin. Proper exciple narrow, poorly differentiated, the outer hyphae parallel, moderately swollen and usually strongly brown-pigmented; epithecium brown, N-; hymenium colourless, not inspersed with oil droplets; paraphyses simple to moderately branched, apically swollen, with a brown pigment cap; hypothecium pale to dark brown. Asci 8-spored, clavate, Bacidia-type. Ascospores 1-septate, brown, ellipsoid with obtuse ends, usually slightly curved, not constricted at septum, (8.5-)12-15(-16) x (5-)6-8 µm, Buellia-type, with a smooth to microrugulate wall and ontogeny of type A. Pycnidia urceolate to globose, unilocular. Conidia short-filiform, curved, 12-15(-20) x 0.5-1 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a very poorly understood taxon; in its present circumscription, an almost cosmopolitan lichen found on a wide variety of substrata, including bark, lignum, siliceous rocks, roofing tiles and brick.



Amandinea punctata

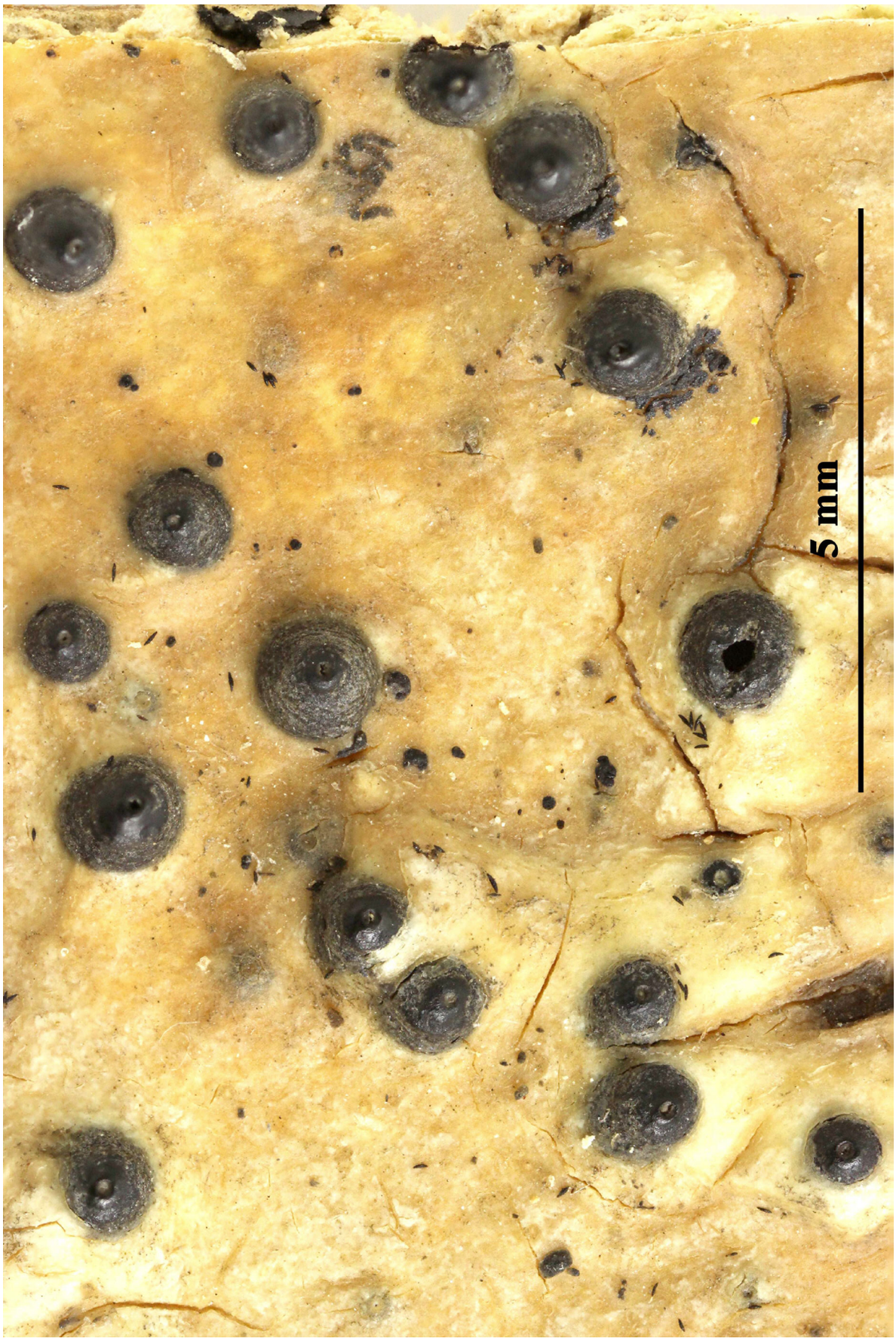


Amandinea punctata

Anthracothecium japonicum Kashiw. & Kurok., J. Jap. Bot. 56(10): 308 (1981)

= *Pyrenula neojaponica* H. Harada, in Harada, Okamoto & Yoshimura, Lichenology 2(2): 131 (2004)

[KU502], Japan, Hokkaido. Prov. Ishikari: Noborikawa Yubari-city. On bark of *Acer sp*., 350 m. Leg. H. Shibuichi (no. 6067) & K. Yoshida, 4.08.1980, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI N. 502



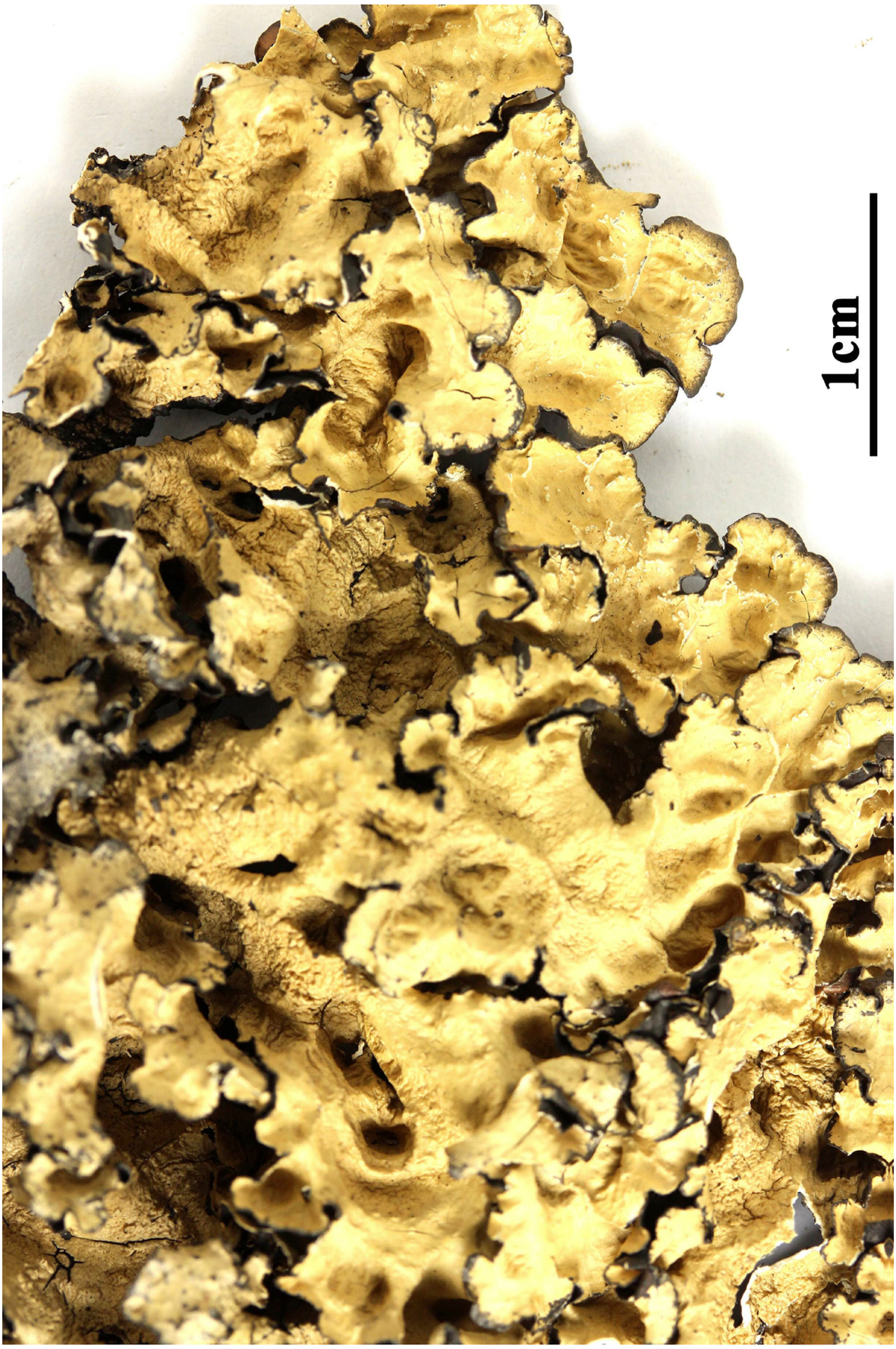
Anthracothecium japonicum



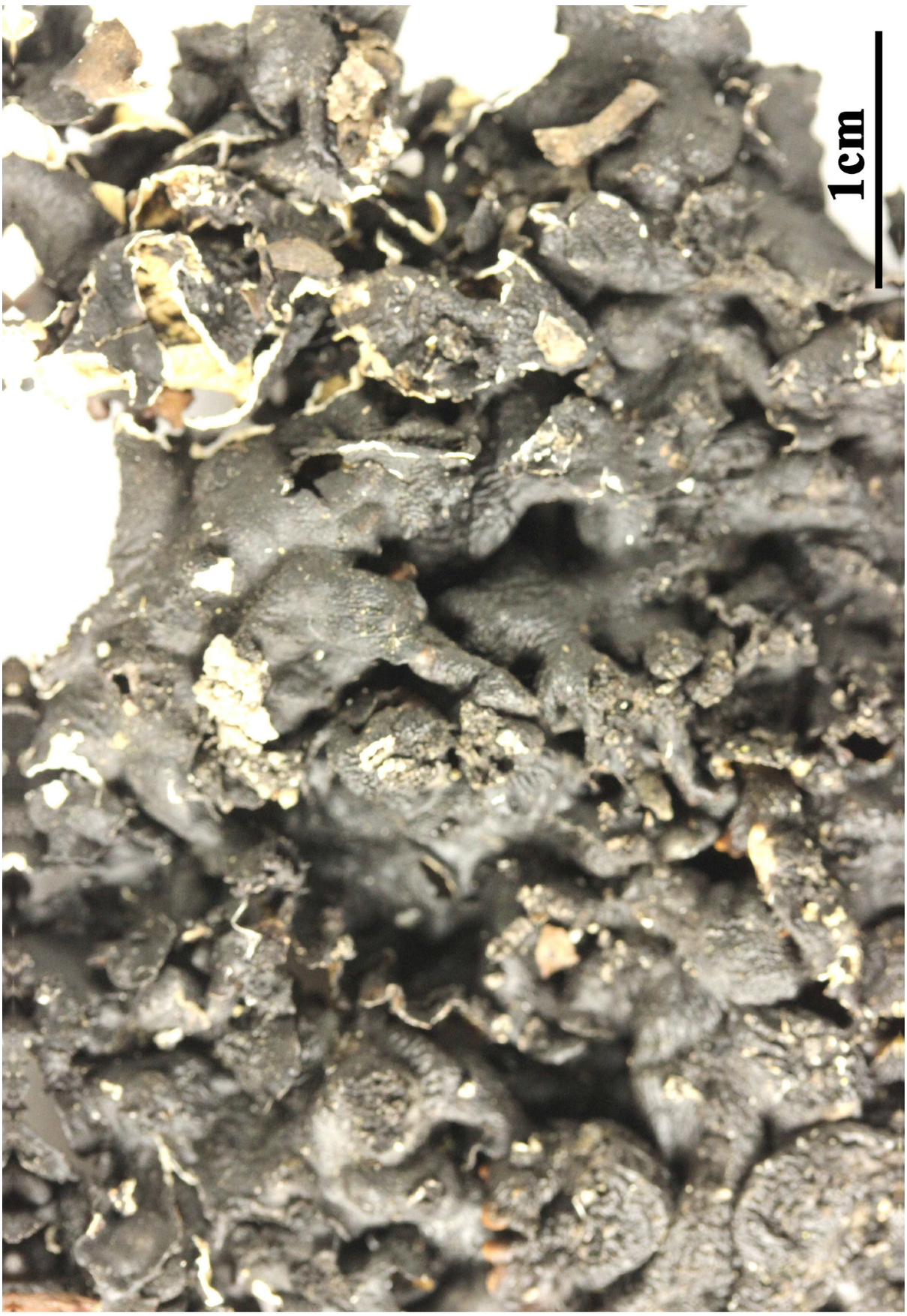
Anthracothecium japonicum

Asahinea chrysantha (Tuck.) W.L. Culb. & C.F. Culb., Brittonia 17: 183 (1965)
= *Cetraria chrysantha* Tuck. 1858

[KU106], Japan, Honshu. Prov. Shinano: Mt. Kimpu, Minami-Saku-gun. On granite, 2550 m. Leg. H. Shibuichi (no.4327), 24.07.1970, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 106.



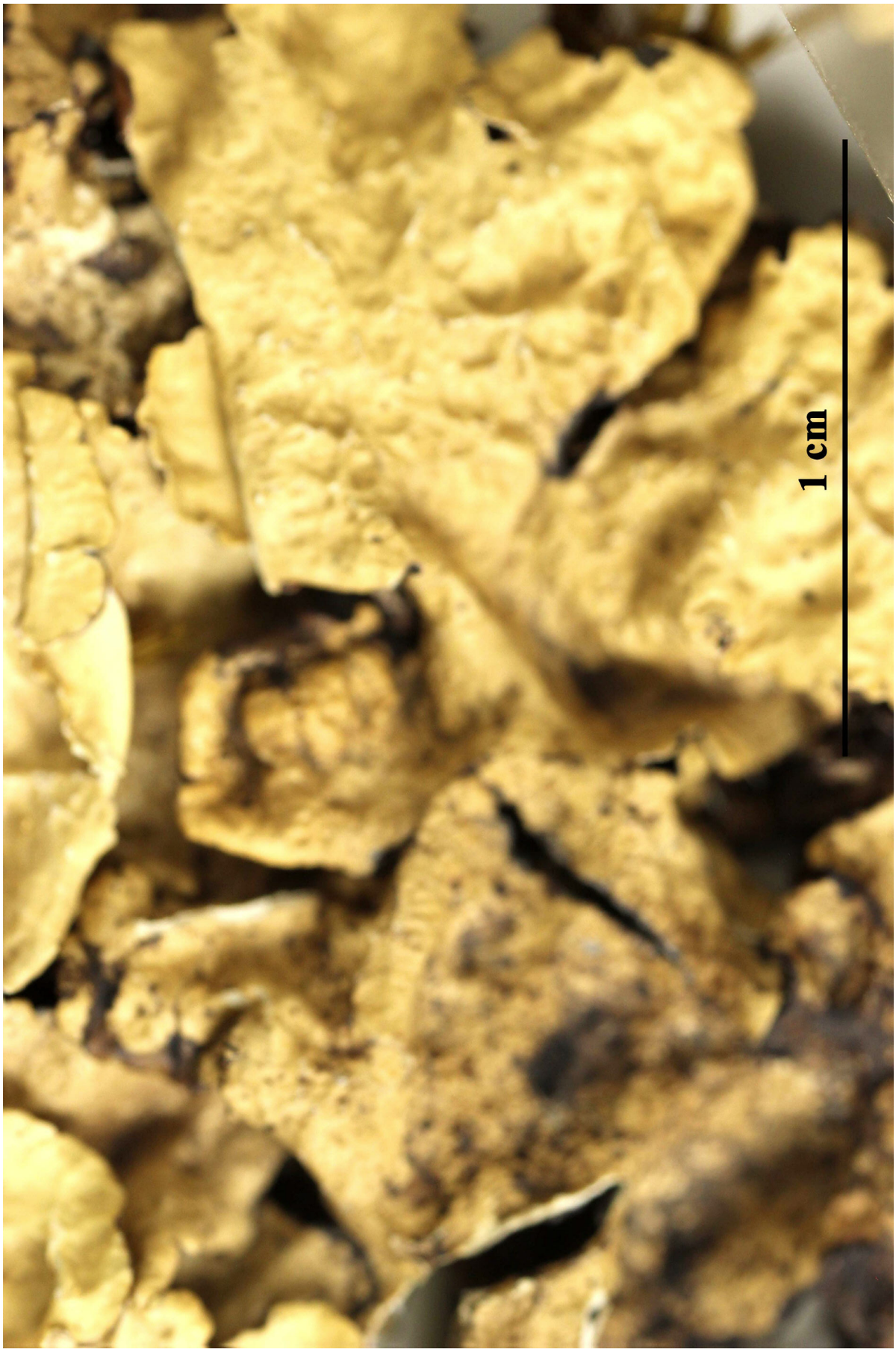
Asahinea chrysantha



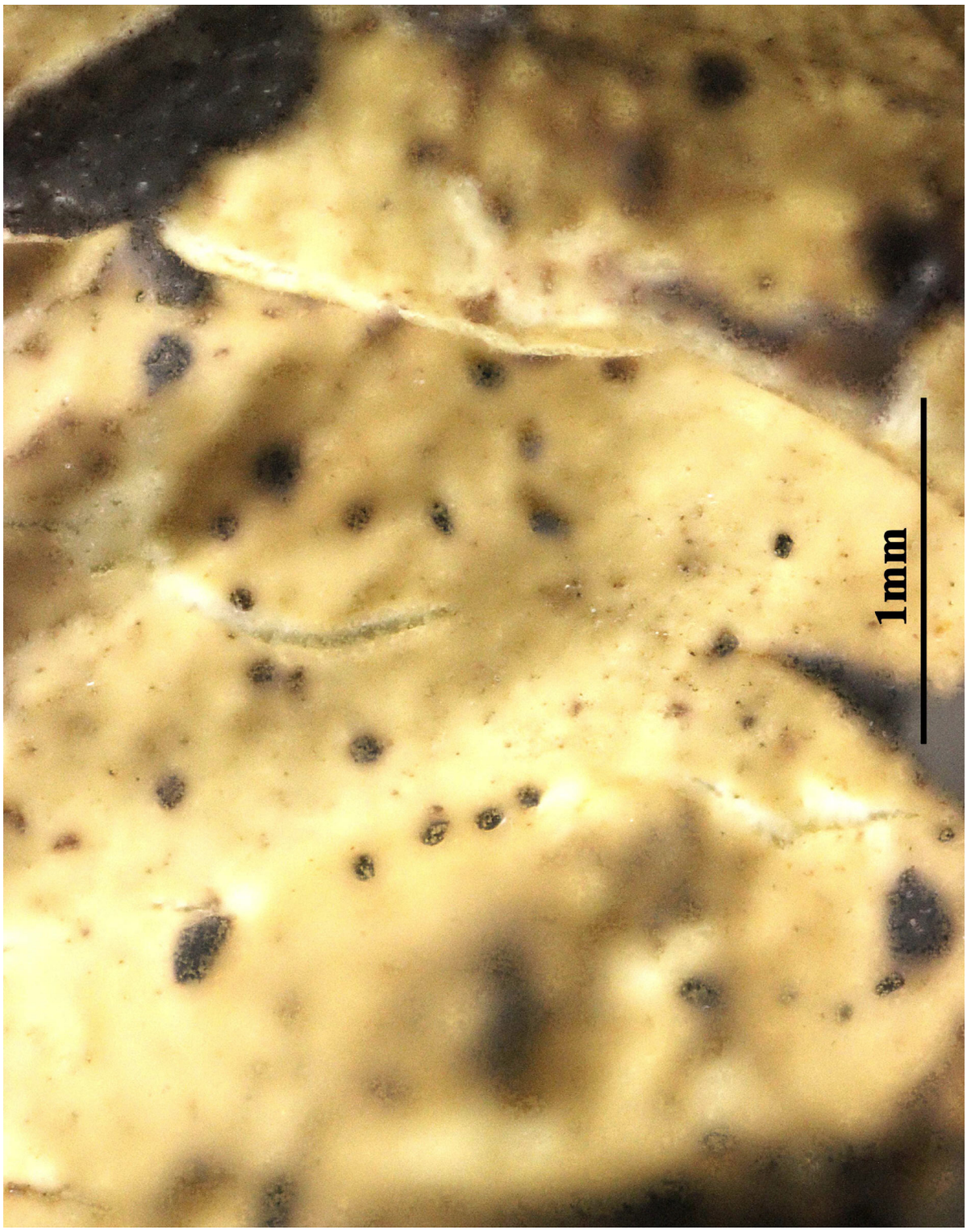
Asahinea chrysantha

Asahinea chrysantha (Tuck.) W.L. Culb. & C.F. Culb., Brittonia 17: 183 (1965)
= *Cetraria chrysantha* Tuck. 1858

[KU403], Japan. Hokkaido. Prov. Tokachi: Lake-side of Nishi-Konuma, Shikaoi-mura, Kato-gun. On rocks, 900 m. Leg. H. Kashiwadani (no. 15131), 26.6.1979, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 403.



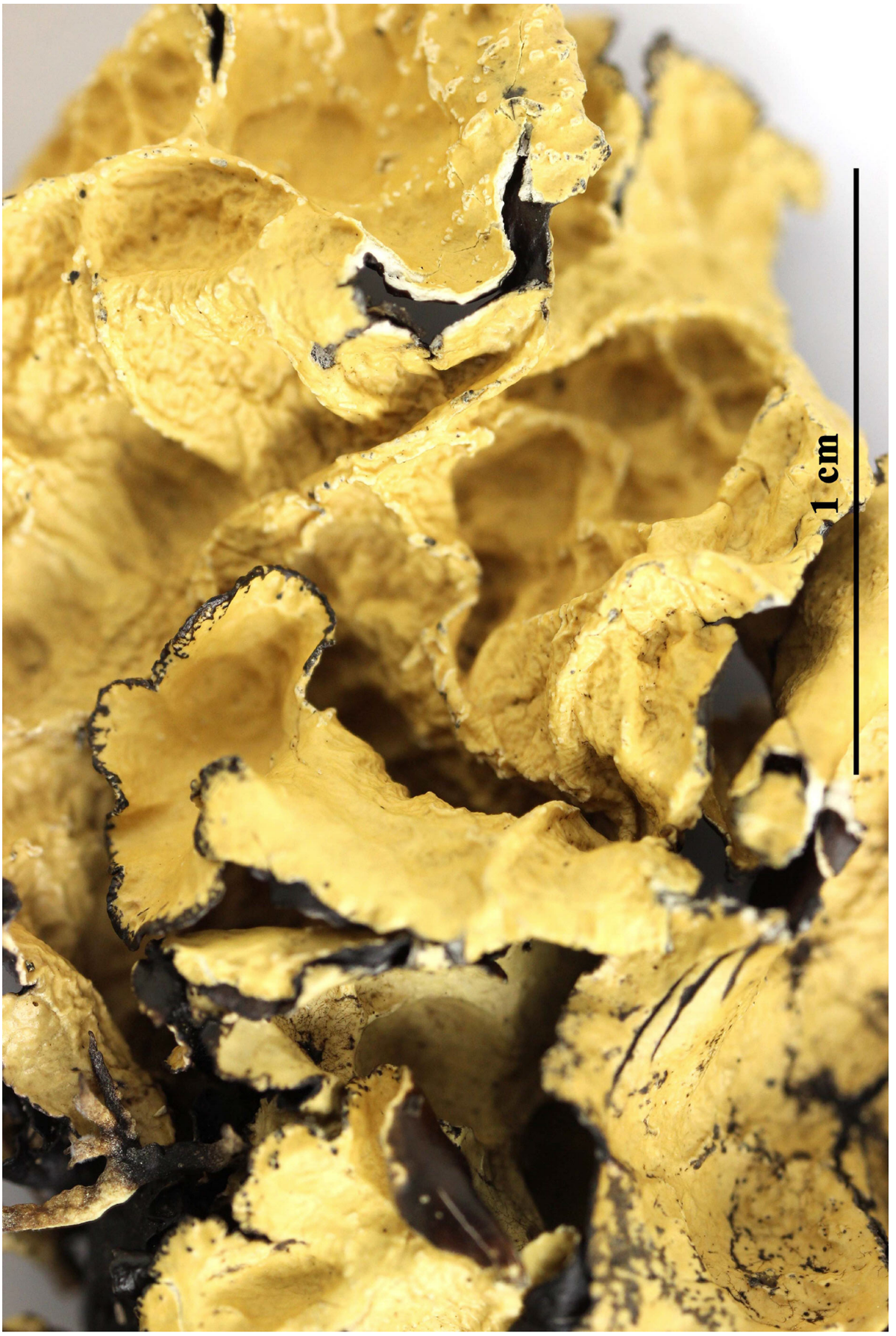
Asahinea chrysantha



Asahinea chrysantha

Asahinea chrysantha (Tuck.) W.L. Culb. & C.F. Culb., Brittonia 17: 183 (1965)
= *Cetraria chrysantha* Tuck. 1858

[KU602], Japan. Honshu. Prov. Echigo: Mt. Korenge, Shirouma Mts., Itoigawa-city. On rocks, 2760 m. Leg. H. Shibuichi (no. 7172), 6.8.1982, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 602.



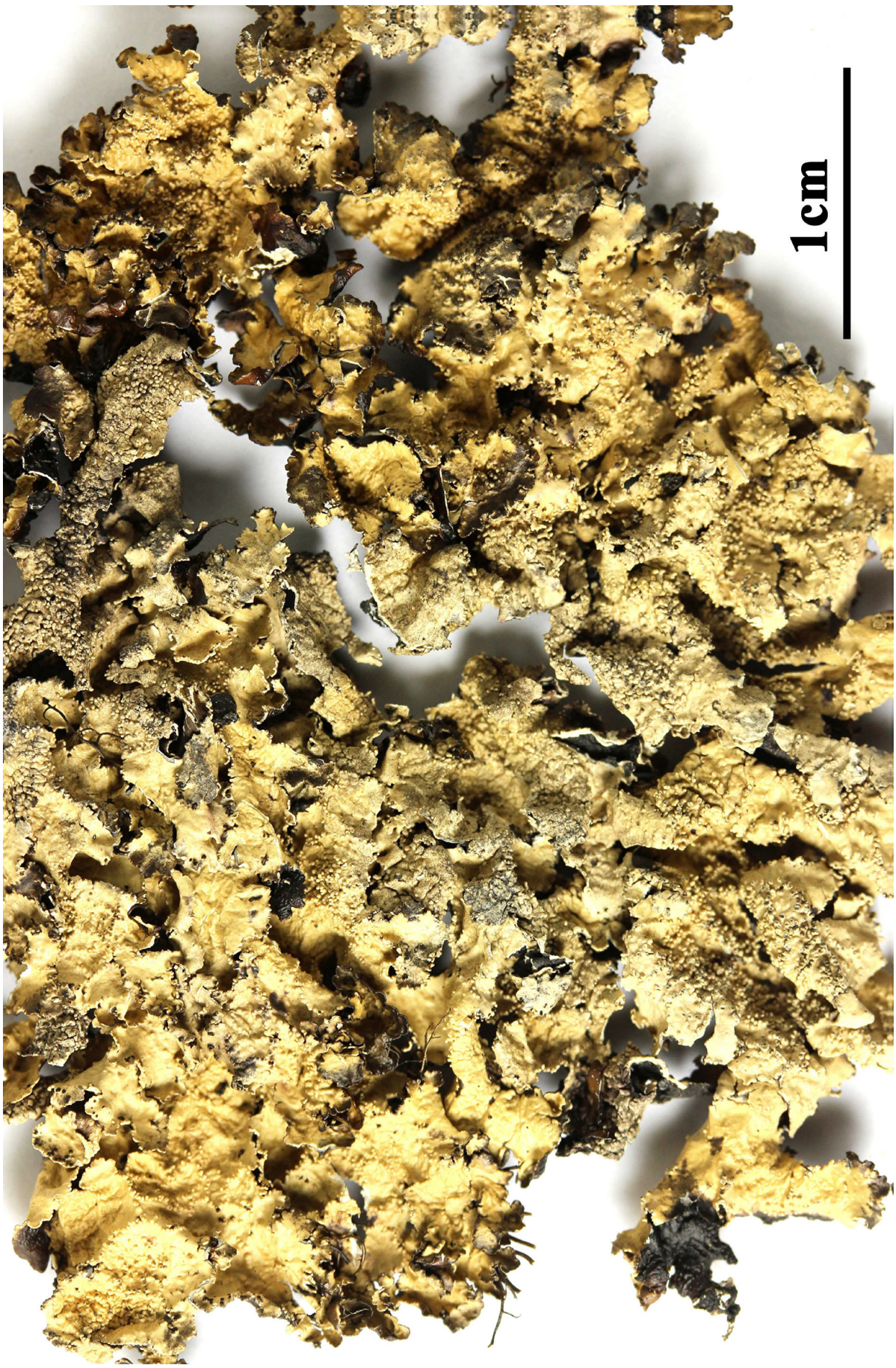
Asahinea chrysantha



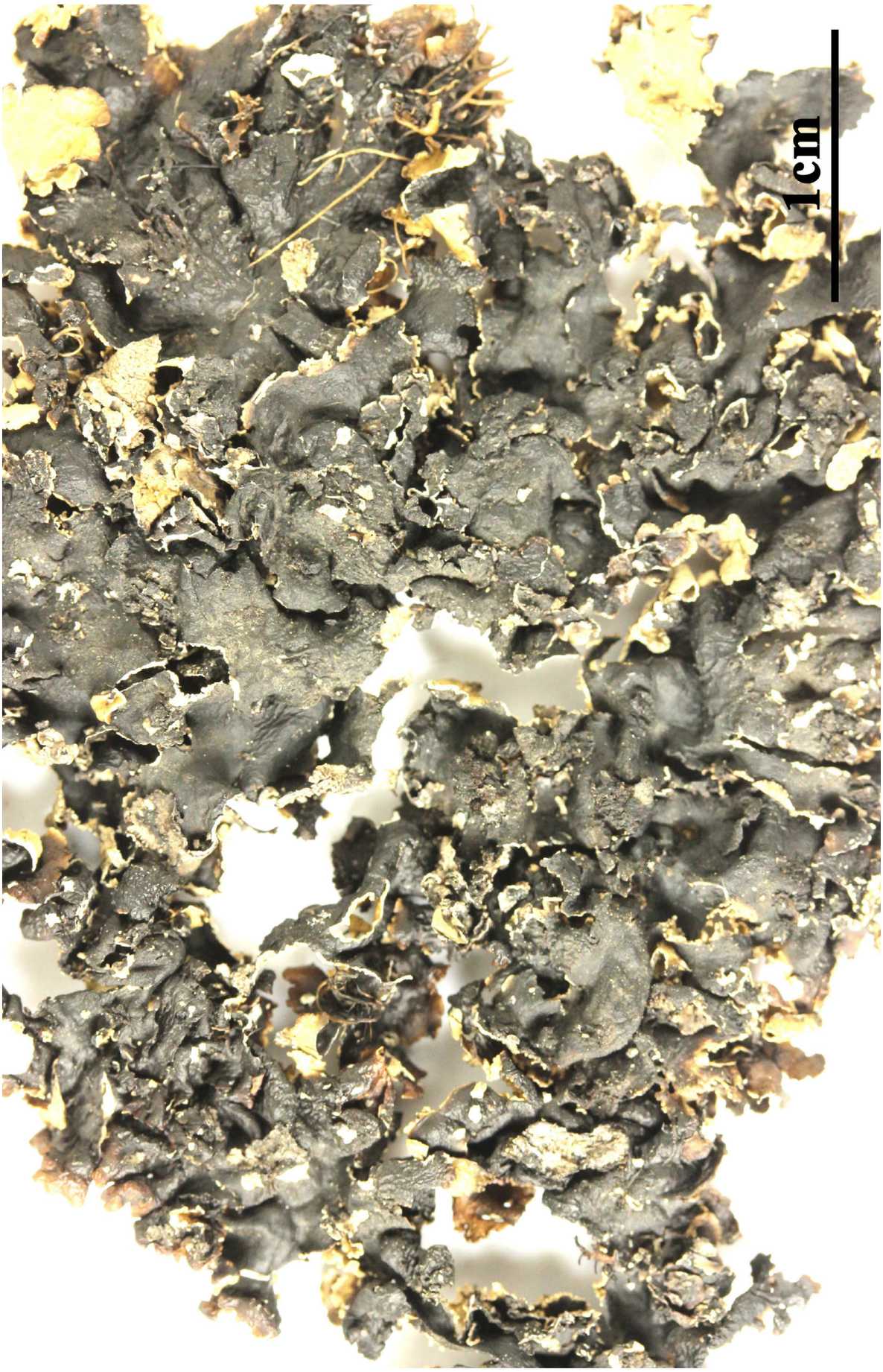
Asahinea chrysantha

Asahinea kurodakensis (Asahina) W.L. Culb. & C.F. Culb., Brittonia 17: 187 (1965)
= *Cetraria kurodakensis* Asahina 1953

[KU203], Japan. Honshu. Prov. Shinano: Mt. Higashizawa-dake, Oh-machi. On rock (granite), 2480 m. Leg. H. Shibuichi (no. 4921), 16.08.1973, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR.203.



Asahinea kurodakensis



Asahinea kurodakensis

Asahinea kurodakensis (Asahina) W.L. Culb. & C.F. Culb., Brittonia 17: 187 (1965)
= *Cetraria kurodakensis* Asahina 1953

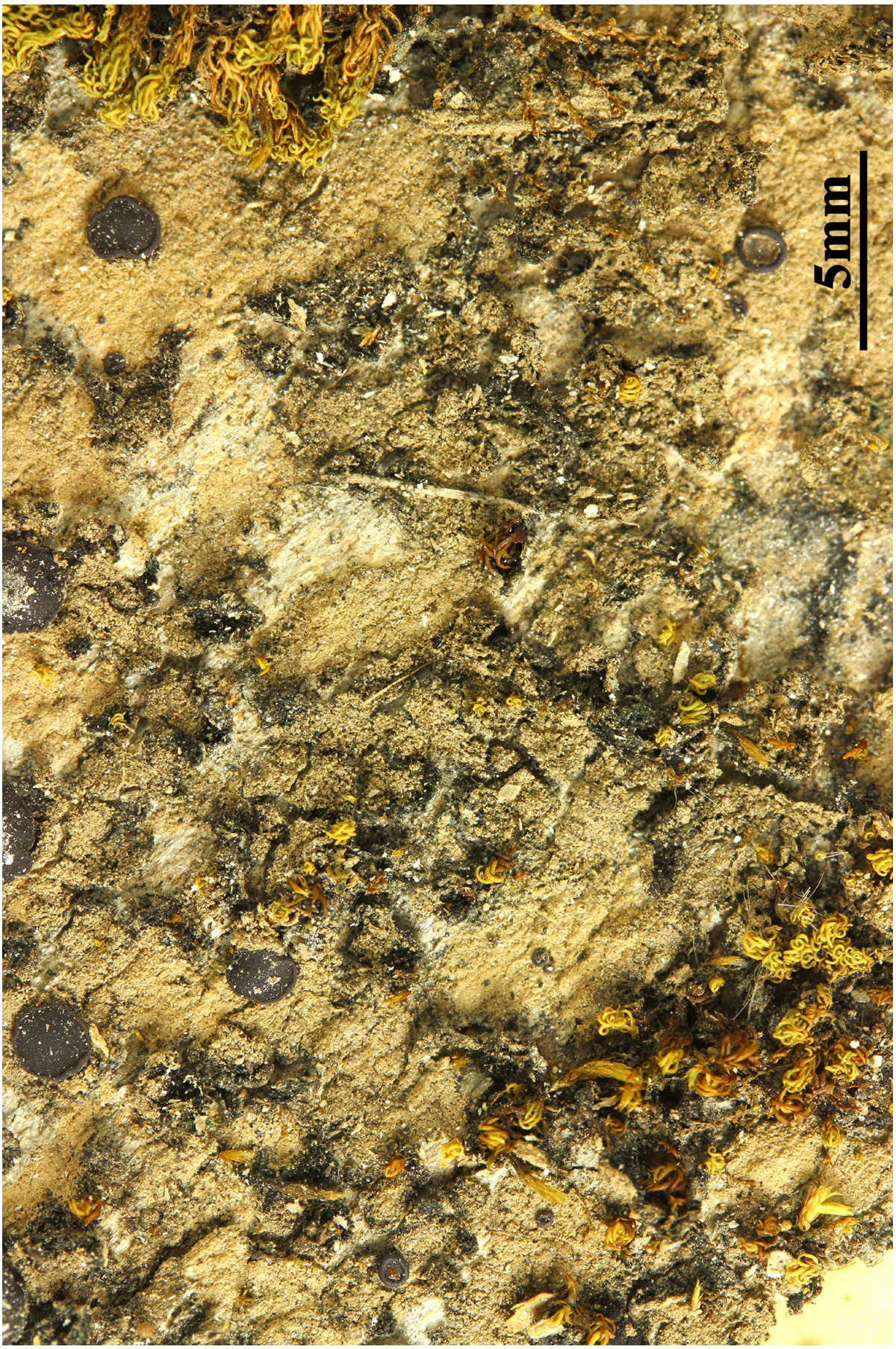
[KU455], Japan. Hokkaido. Prov. Ishikari: Taganegahara Daisetsu Mts. On rocks, 1750 m. Leg. H. Kshiwadani (no.16279) and Y. Endo, 05.08.1980. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores et Critici Exsiccati Nr. 455.



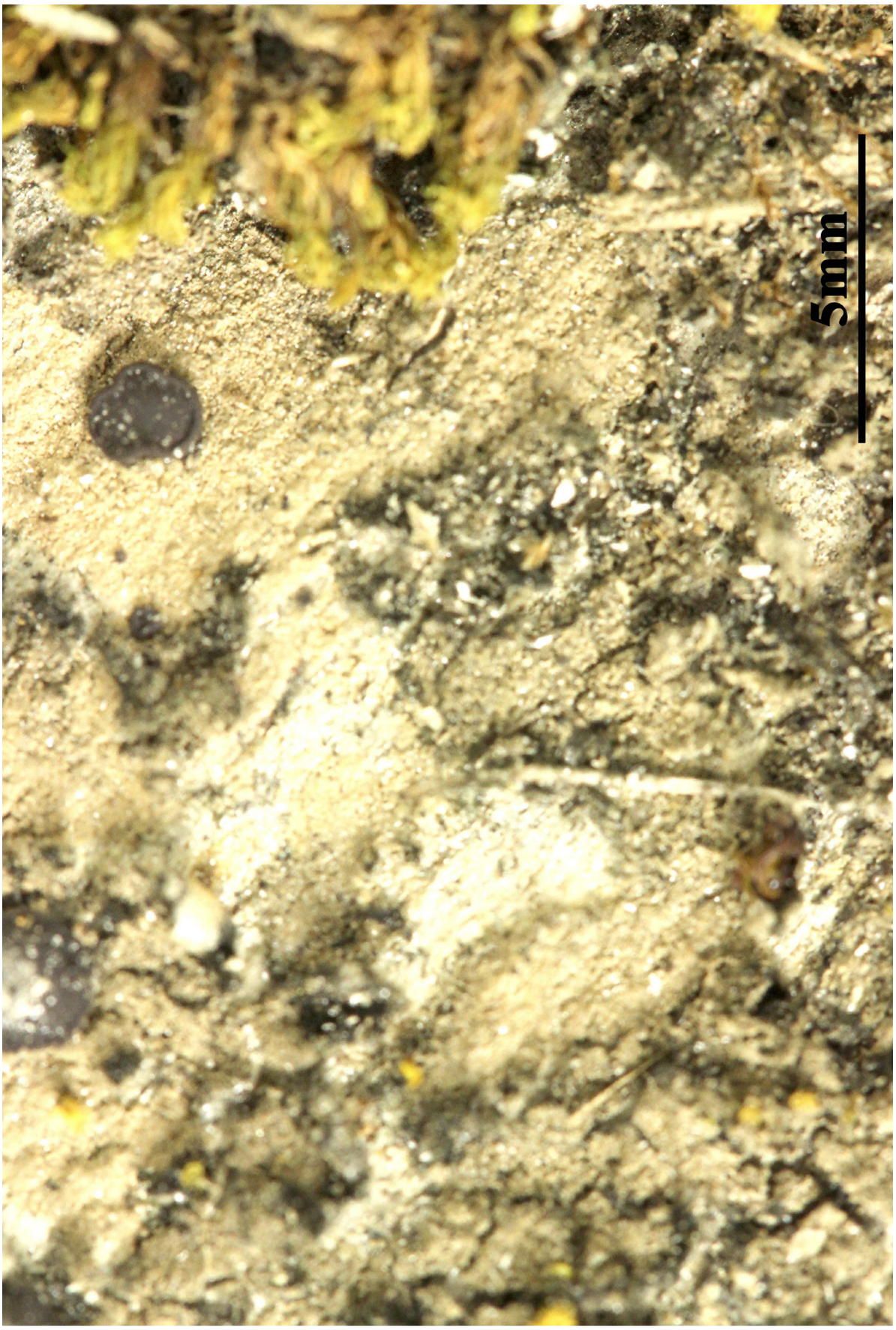
Asahinea kurodakensis

Bacidia hakonensis (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 114 (1926) [1927]
= *Patellaria hakonensis* Müll. Arg. 1892

[OH526],Taiwan. Hualien Co: Taroko Gorge, Shioulin Hshiang (24°10' N, 121°30' E). On rock, 720 m. Leg. H. Kashiwadani (no. 46975), 11.03.2004, det. H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 526.



Bacidia hakonensis

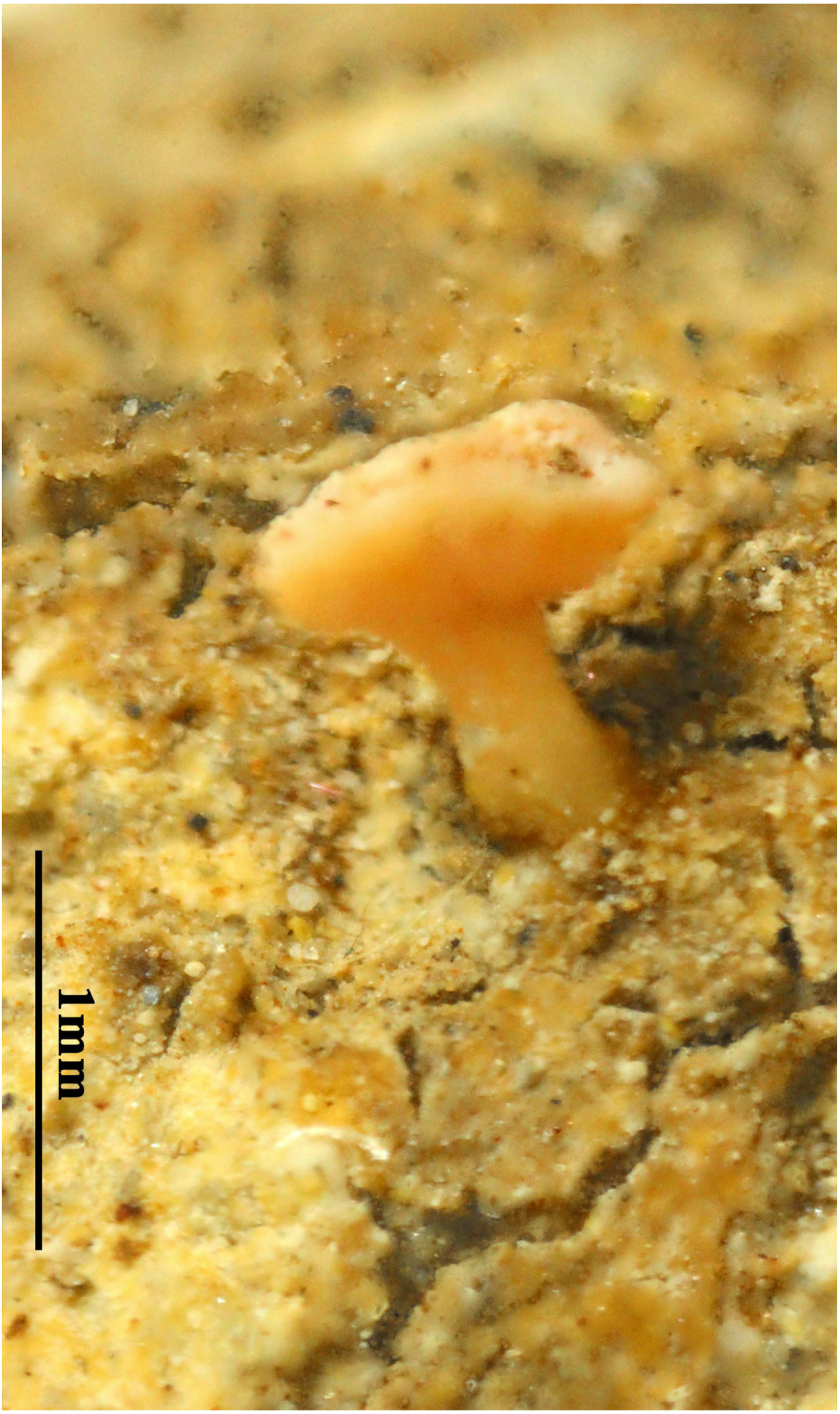


Bacidia hakonensis

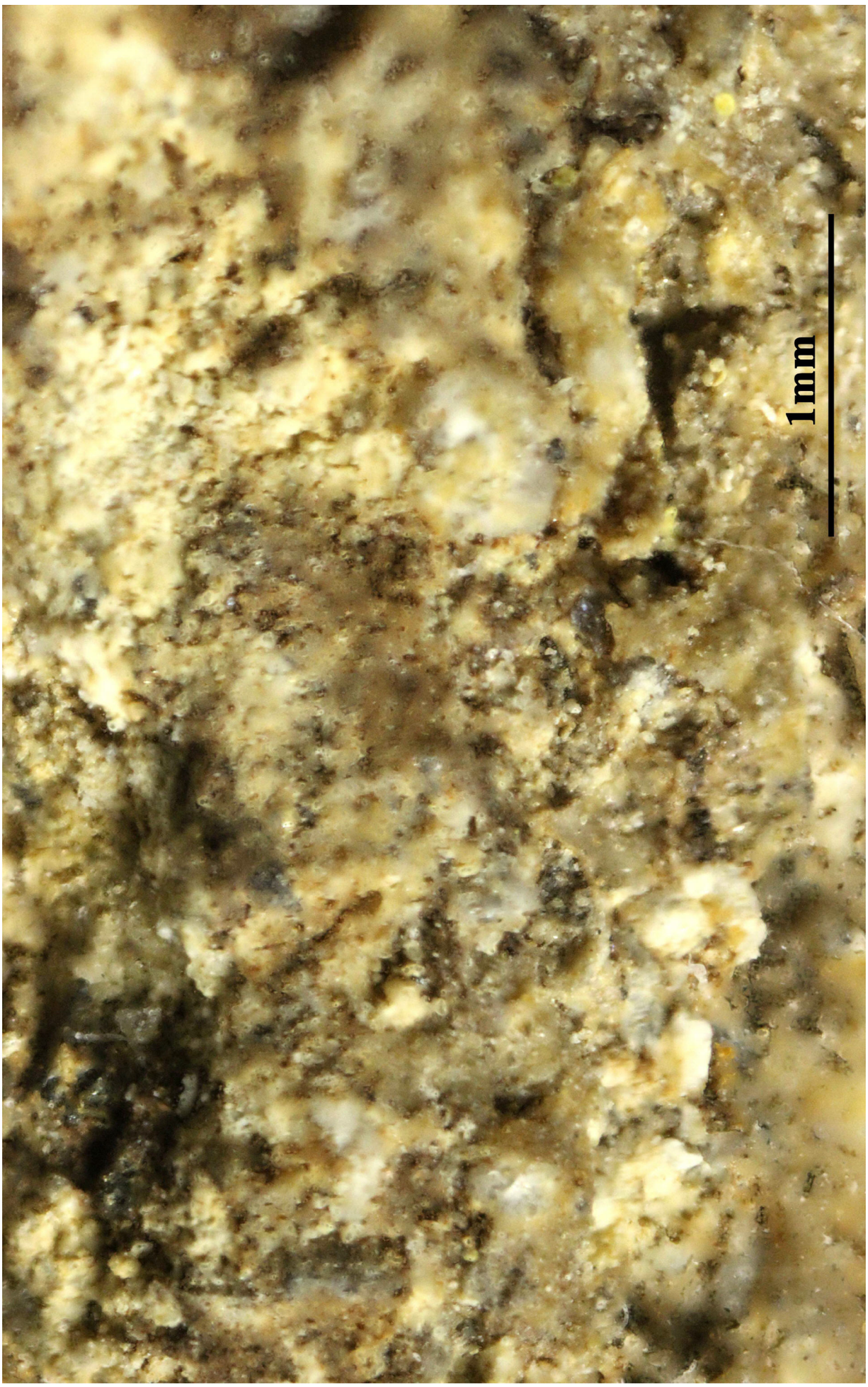
Baeomyces absolutus Tuck., Amer. J. Sci. Arts 28: 201 (1859)
= *Dibaeis absoluta* (Tuck.) Kalb & Gierl, in Gierl & Kalb, Herzogia 9(3-4): 613 (1993)

[KU456], Japan. Honshu. Prov. Shinano: En route from Todai to Kita-zawa Pass, Kami-Ina-gun. On rocks, 1700 m. Leg. S. Kurokawa (no. 79079), 27.7.1979, det, S. Kurokawa. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 356.

Primary thallus crustose to minutely squamulose, thin and smooth to verrucolose and scurfy, pruinose or not, continuous to areolate, dirty white to buff to green to pale yellow-green or yellowish buff with age. Apothecia solitary to clustered, sessile when young, becoming very shortly stipitate; stipe 0.3–0.5 mm tall, ±corticate, granular to ±smooth, ±pruinose, patchily lichenised basally, cream to buff to pale flesh-pink; disc flesh- to rose-pink or white with pruina, concave to plane to weakly convex or undulate as it proliferates with age; margin very pale pink to almost buff to white, thick, smooth and inrolled initially, becoming contorted and cracked to undulate and crenulate with age, usually paler than disc and visible as a distinct border on upper surface; underside of apothecia ridged and furrowed with age. Ascospores ellipsoidal to narrowly ovoid, simple or rarely 1-septate, (11–) 12–15 (–15.5) × (4–) 4.5–6.5 (–8) µm (Australian specimens). Pycnidia not seen. CHEMISTRY: Primary thallus K– or K+ pale yellow, UV+ white; apothecia (disc and stipe) K+ yellow, P+ yellow-orange; containing baeomycesic acid (major), squamatic acid (±trace), consquamatic acid (±trace, rare), barbatic acid (minor/trace, in apothecia) and ursolic acid (±trace). - Occurs in coastal ranges of eastern Australia grows on rock or soil, rarely over bryophytes, often near waterfalls. Widespread but rare in tropical to cool-temperate rainforest. Also known from North, Central and South America, Japan, Philippines, Sabah, New Guinea and the South Island, New Zealand.



Baeomyces absolutus



Baeomyces absolutus

Baeomyces aggregatus Asahina, J. Jap. Bot. 19(11): 301 (1943)

[OH551], Japan. Honshu. Prov. Ugo. (Pref. Akita): Taiheizan, Nibetsu, Akita-city. On bark of *Cryptomeria japonica* in natural forest of *Fagus crenata*, 300 m. Leg. M. Inoue (no. 26131), 20.5.1999, det. H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 551.



Baeomyces aggregatus



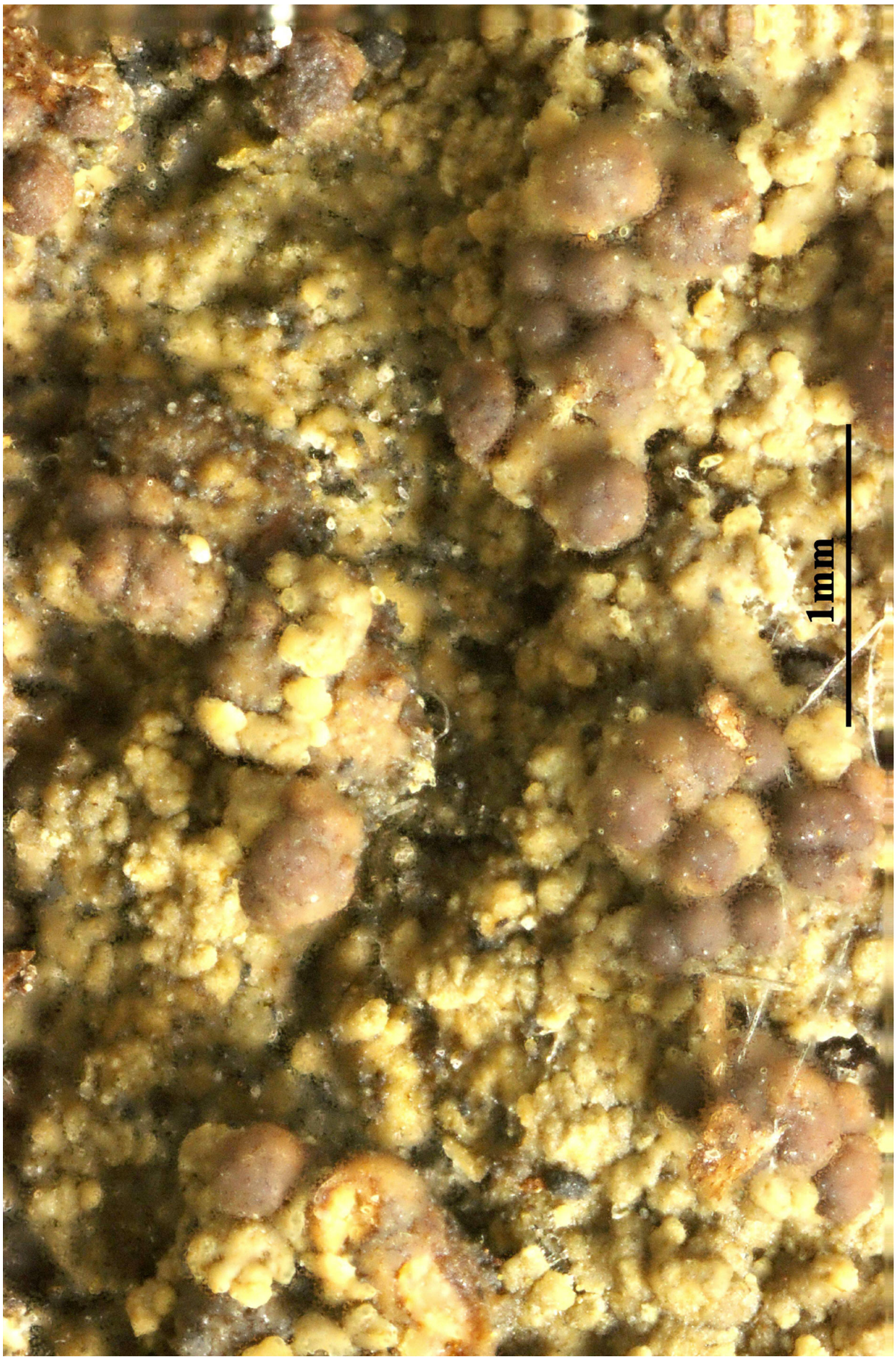
Baeomyces aggregatus

Baeomyces aggregatus Asahina, J. Jap. Bot. 19(11): 301 (1943)

[KU351], Japan. Honshu. Prov. Musashi: Mt. Ryogami. On bark of *Cryptomeria japonica*,1550 m. Leg. H. Kashiwadani (no. 14598), H. Shibuichi, and K. Yoshida, 10.7.1978, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 351.



Baeomyces aggregatus



Baeomyces aggregatus

Baeomyces aggregatus Asahina, J. Jap. Bot. 19(11): 301 (1943)

[KU107], Japan. Honshu. Prov. Yamato: Ozasano-Shuku, Mt.Oomine. On trunk of *Chamaeocyparis obtusa*. Leg. Y. Tanaka, 22.7.1961, det. Y. Asahina. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccati Nr. 107.



Baeomyces aggregatus



Baeomyces aggregatus

Baeomyces brevis Zahlbr., Feddes Repert. Spec. Nov. Regni veg. 33: 45 (1933)

[KU108], Formosa. Prov.Chiayi: Mt. Chien-san, Mt. Morrison: On-rocks, 3100-3300 m. Leg. S. Kurokawa (no. 224), 1.1.1964, det. S. Kurokawa. EX A. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 108.



Baeomyces brevis



Baeomyces brevis

Baeomyces fungoides (Sw.) Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 320 (1803)
= *Lichen fungoides* Sw. 1788
= *Dibaeis arcuata* (Stirt.) Kalb & Gierl, in Gierl & Kalb, Herzogia 9(3-4): 617 (1993)

[KU503,9, Japan. Honshu. Prov. Shimotsuke: Goshilki-numa. Onsoil, 20200 m. Leg. K. Yoshida (no. 5076), 3.8.1981, det. H. Kashiwadani. Ex. S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 503.
- rev. C. Gierl 1992 as *Dibaeis baeomyces* (L.) Hertel & Oberwinkler.

Primary thallus crustose, white to pale grey, thick, areolate, usually with soft, rounded, white to pinkish grey, more or less glossy, wart-like, rarely sorediate schizidia which are up to 1 mm wide in sterile thalli, 0.1-0.3 mm wide in fertile thalli. Cortex of thallus c. 50 µm thick, of thin-walled, vertically oriented hyphae; medulla very loose, paraplectenchymatous in parts; cortex of schizidia consisting of interwoven hyphae parallel to the surface; inner part of stalks with strands of thin-walled 2.5-3 µm thick hyphae, those under the hymenium up to 5 µm thick. Apothecia frequent, globose also when young, often hollow inside, pink, 1-4 mm wide, emarginate or with a narrow margin when young, brought on erect, subfruticose, smooth, ecorticate, white stipes (podetia) which are 2-5(-6) mm tall and to 3 mm wide. Proper exciple poorly developed, of radially arranged hyphae; epithecium with colourless crystals dissolving in K (present also in the hymenium); hymenium colourless, 100-120(-140) µm high, K/I+ blue (reaction ephemeral!); paraphyses simple, not anastomosing, 2-2.5 thick at mid-level, the apical cells only slightly wider; hypothecium colourless or yellowish in upper part. Asci 8-spored, thin walled, cylindrical, the walls and tip K/I+ blue, with a distinct ocular chamber in the tholus, Icmadophila-type. Ascospores 1-celled (some apparently 2-celled for the presence of a pseudo-septum), hyaline, fusiform, (10-)12-26 x 2-3 µm. Pycnidia 0.1-0.2 mm across, immersed in warts, mostly laminal, with a colourless wall (brownish near the ostiole), the conidiogenous cells catenate, barrel-shaped. Conidia pleurogenous, short-bacilliform, 3.5-5 x c. 1 µm. Photobiont chlorococcoid (Coccomyxa). Spot tests: thallus K+ yellow-orange, C-, KC+ orange, P+ yellow to orange, UV+ orange; medulla P+ yellow to orange, UV+ orange. Chemistry: baeomycesic acid, and variable amounts of squamatic and barbatic acids,

and atranorin. - Note: on humid, disturbed clay soil, often in *Calluna-heaths*, more rarely on weathered siliceous rocks, most frequent in upland areas. For further details see Gierl & Kalb (1993).



Baeomyces fungoides



Baeomyces fungoides

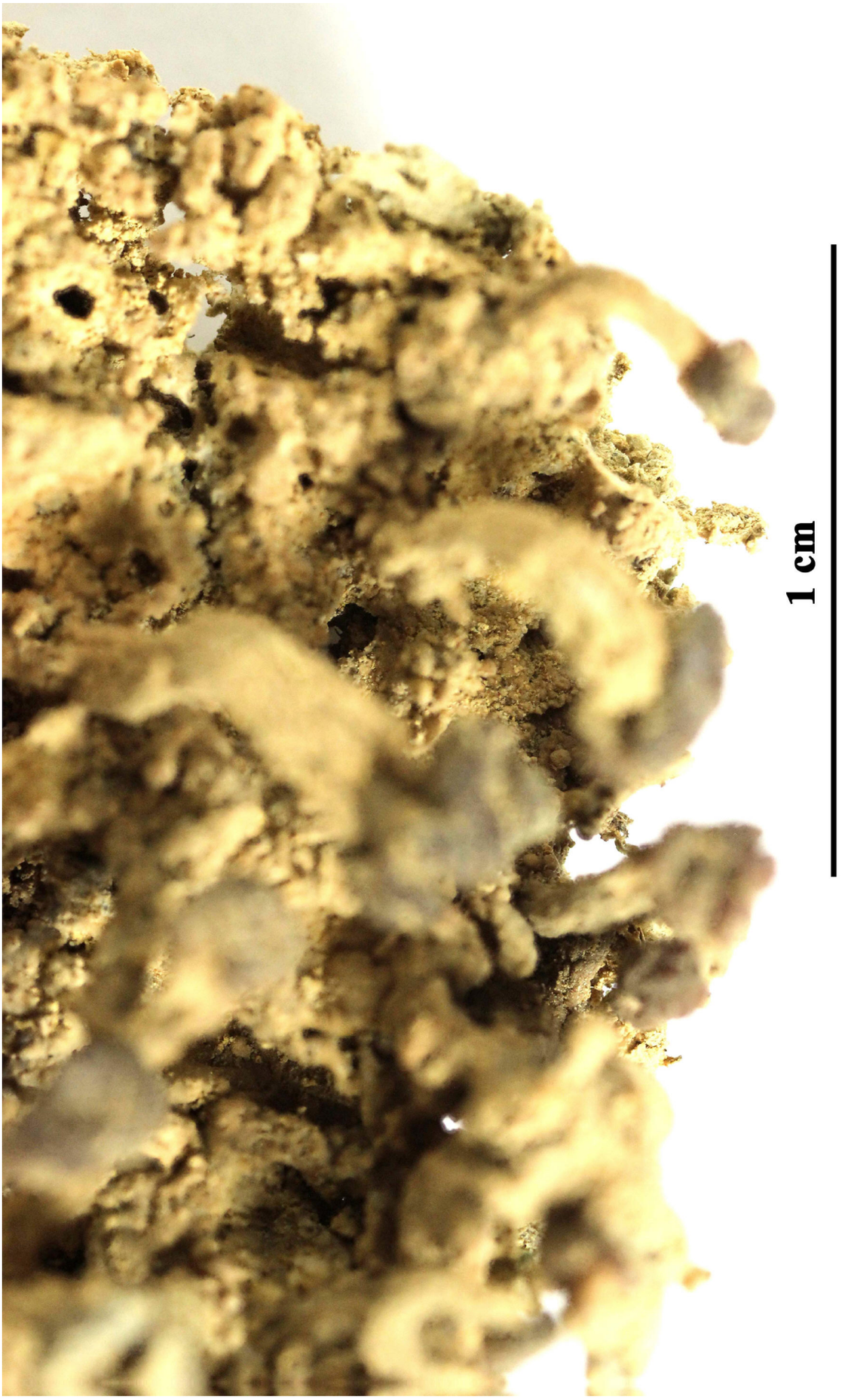
Baeomyces placophyllus Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 323 (1803)

[OH376], Taiwan. Taitung Co.: en route from Tentzu to Kwansan Yako, Haituan-gun, On rock, 2850 m. Leg. H. Kashiwadani (no 1991), 1.3.1991, det H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 476.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apothecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.



Baeomyces placophyllus



Baeomyces placophyllus

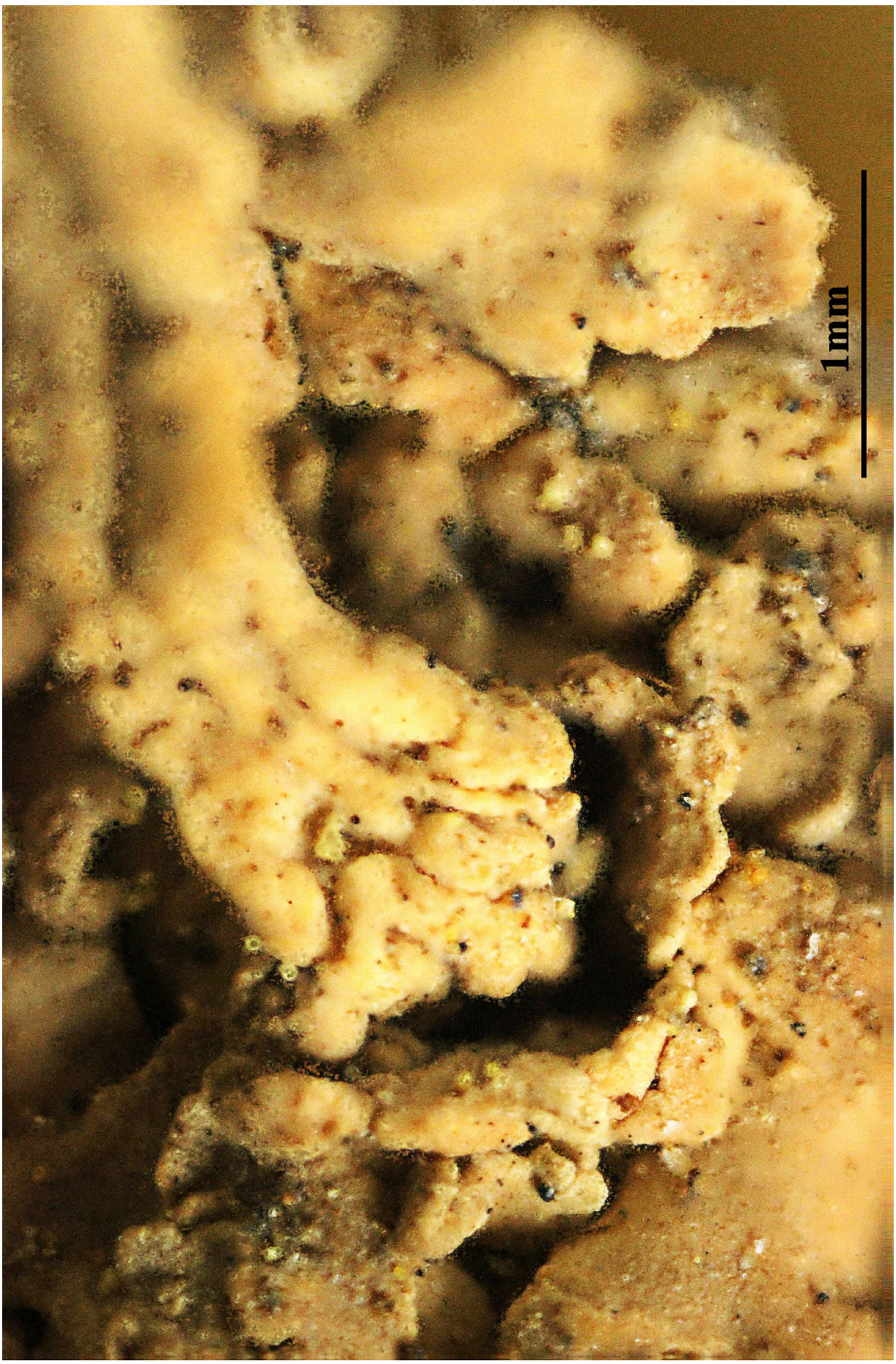
Baeomyces placophyllus Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 323 (1803)

[OH577], Japan.Honshu. Prov.Shinano (Pref. Nagano): near Maru-ike Pond, Shiga-kogen (36°43' N, 138°28' E). On rock, 150 m.Leg. M. Togashi & M. Nuno, 13.10.1965, det. Y. Asahina. Ex Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 577.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apothecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.



Baeomyces placophyllus



Baeomyces placophyllus

Baeomyces placophyllus Ach., Methodus, Sectio post. (Stockholmiæ): 323 (1803)
= *Biatora placophylla* (Ach.) Fr., Lich. eur. reform. (Lund): 257 (1831)
= *Lecidea placophylla (Ach.) Link*, Grundr. Krauterk. 3: 200 (1833)
= *Lichen placophyllus* (Ach.) Lam., Encycl. Méth., Bot. Suppl. (Paris) 3(1): 367 (1813)
= *Ludovicia placophylla* (Ach.) Trevis., Revta Period. Lav. Regia Accad. Sci., Padova 5: 71 (1857)
= *Patellaria placophylla* (Ach.) Spreng., Syst. veg., Edn 16 4(1): 269 (1827)
= *Sphyridium placophyllum* (Ach.) Th. Fr., Nova Acta R. Soc. Scient. upsal., Ser. 3 3: 277 (1861) [1860]
= *Tubercularia placophylla* (Ach.) Kuntze, Revis. gen. pl. (Leipzig) 2: 877 (1891)

[16639], Germany, Rheinland-Pfalz, Naturpark Pfälzer Wald, ca. 2 km südlich von Hofstätten, am Weg zum Annweiler Forsthaus, 49.260193° N, 7.891891° E, 291 m. Leg. et det. F. Schumm, 03.09.2010 (BLAM Exkursion). EX HERBARIO F. SCHUMM NR.16639.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apo-

thecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.

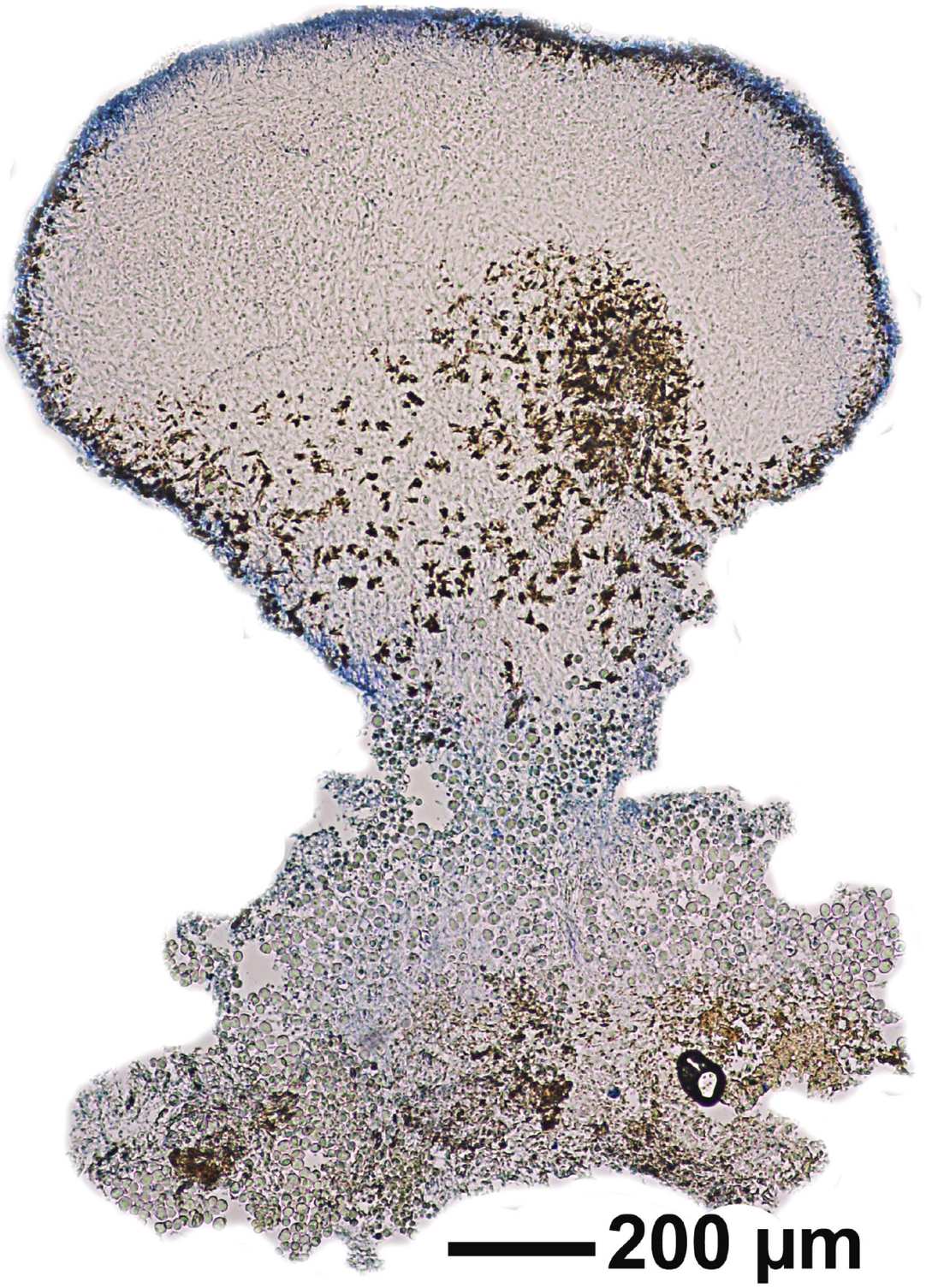
Baeomyces placophyllus



Baeomyces placophyllus



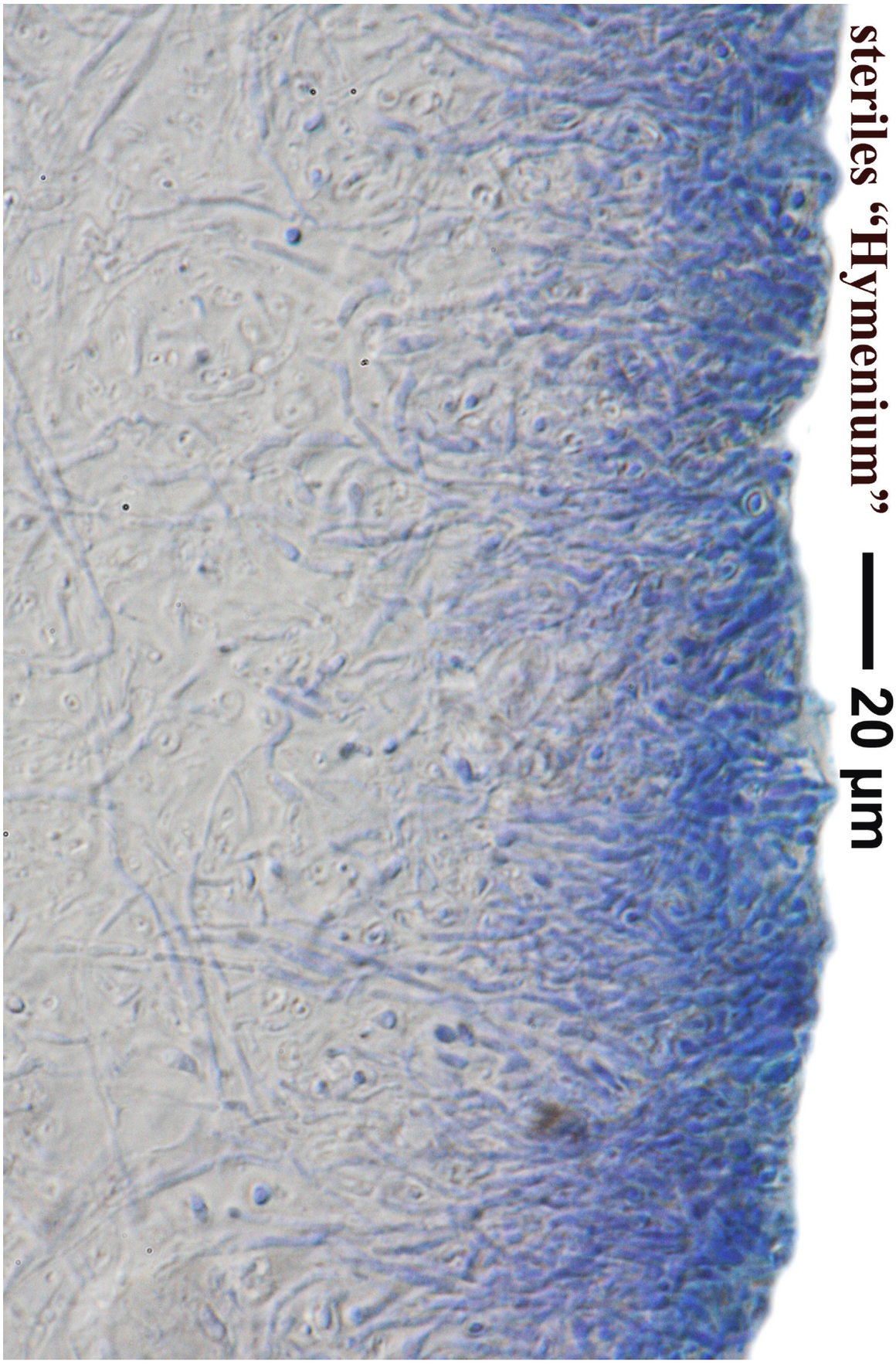
Baeomyces placophyllus



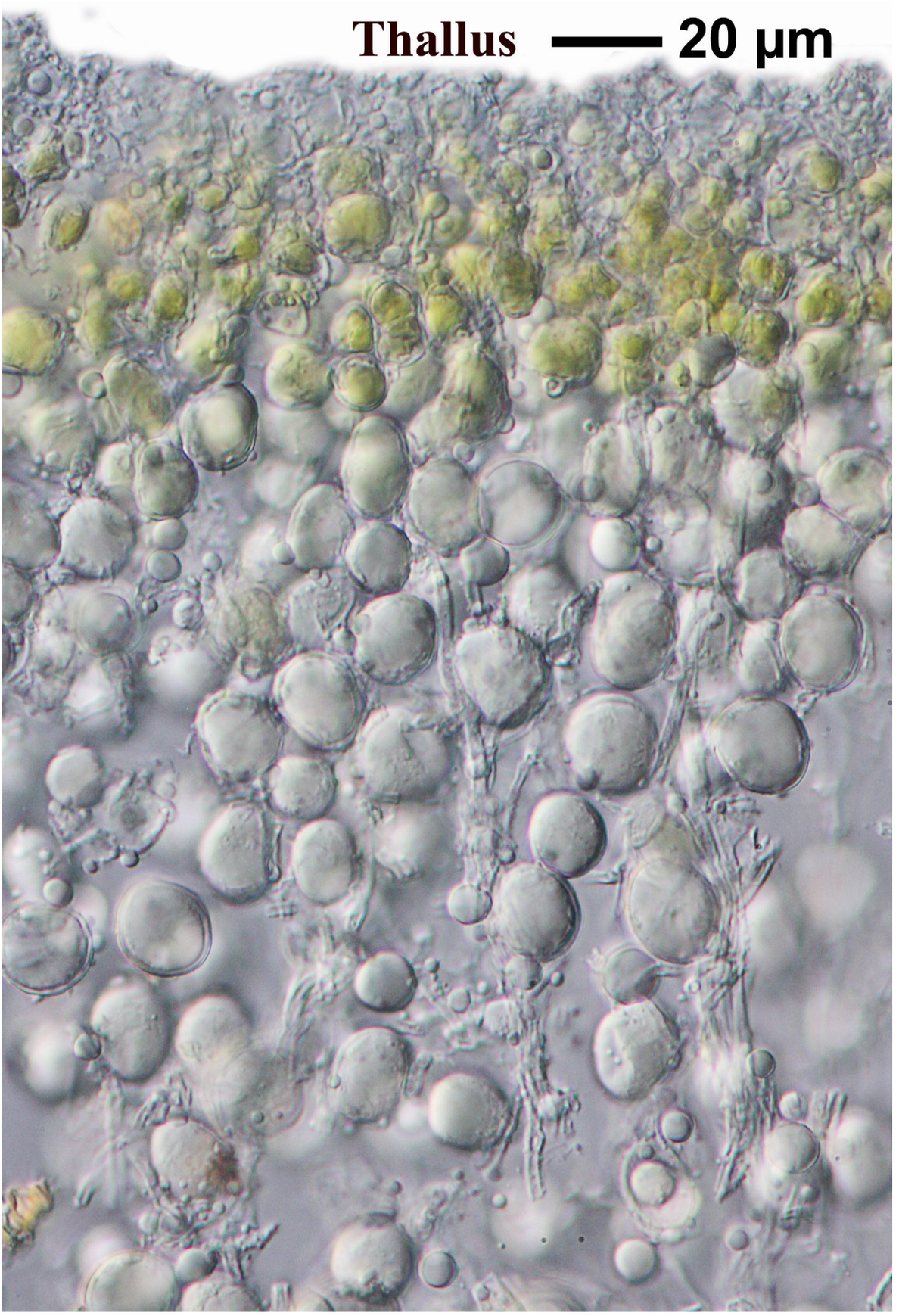
Baeomyces placophyllus



Baeomyces placophyllus



Baeomyces placophyllus

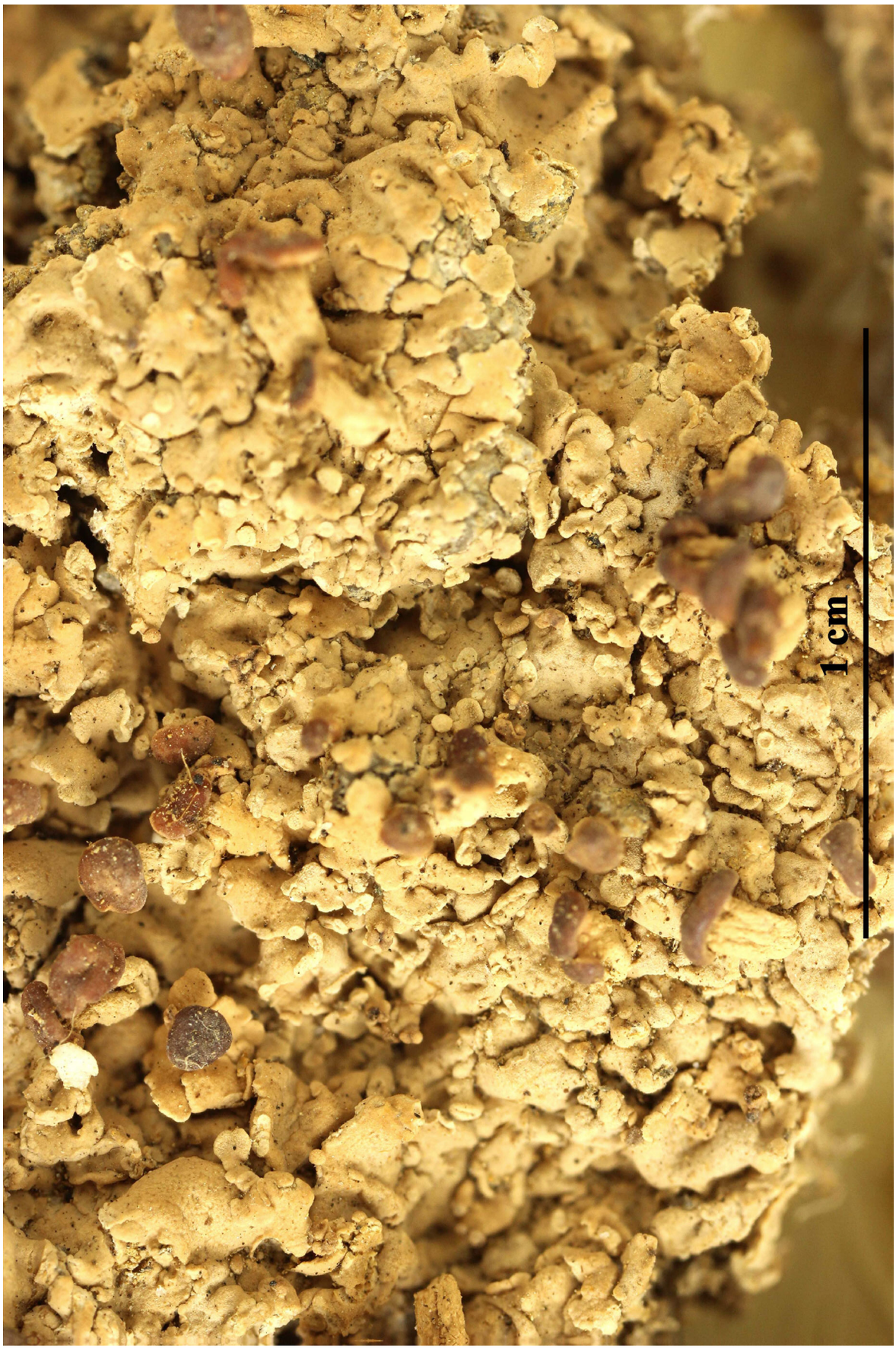


Baeomyces placophyllus

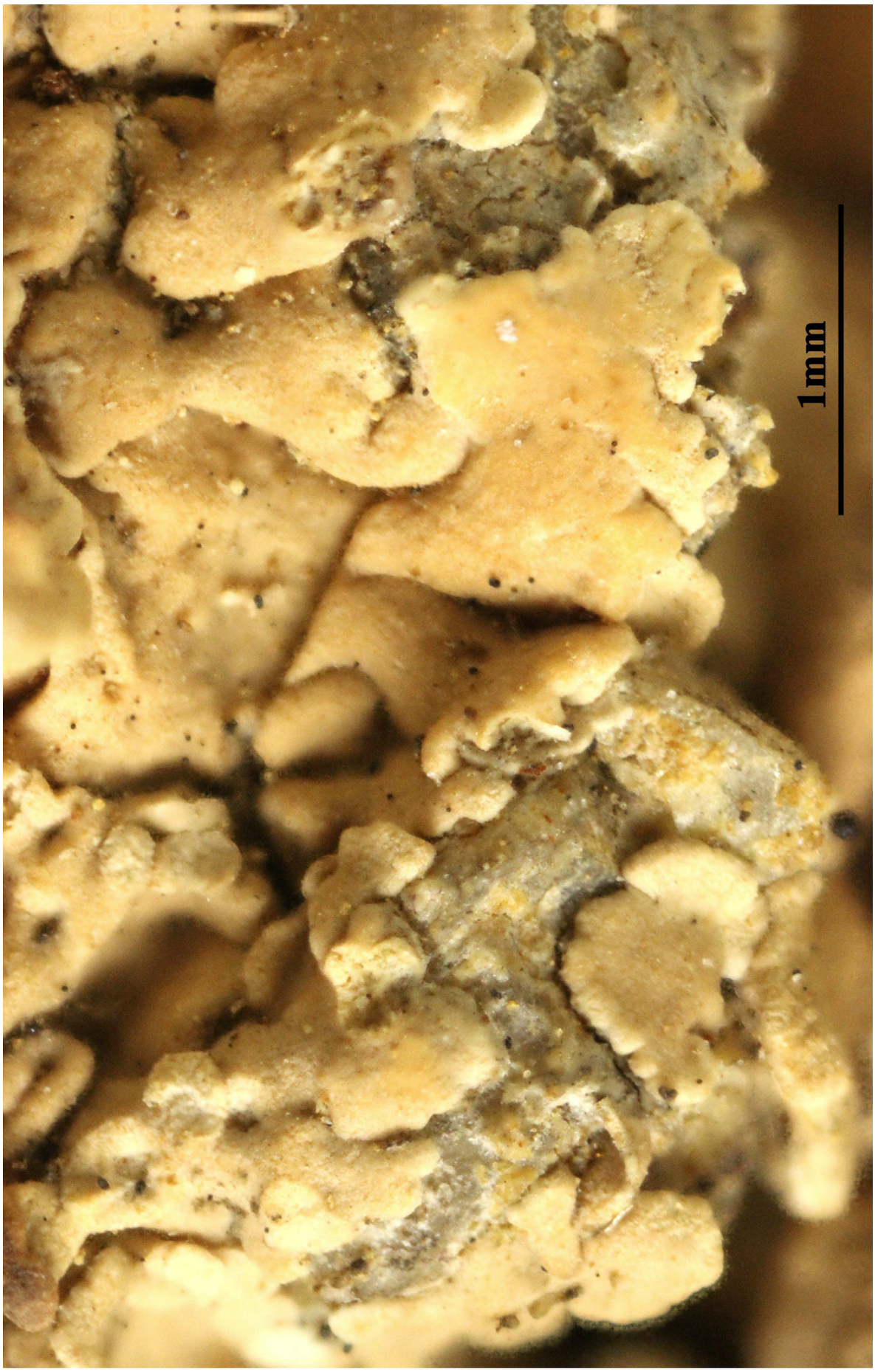
Baeomyces placophyllus Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 323 (1803)

[OH651], Japan. Honshu, Shinano Prov. (Nagano Pref.) Azusagawa, Matsumoto-city. On rock. Leg. M. Nuno,12.8.1964, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 651.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apothecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.



Baeomyces placophyllus

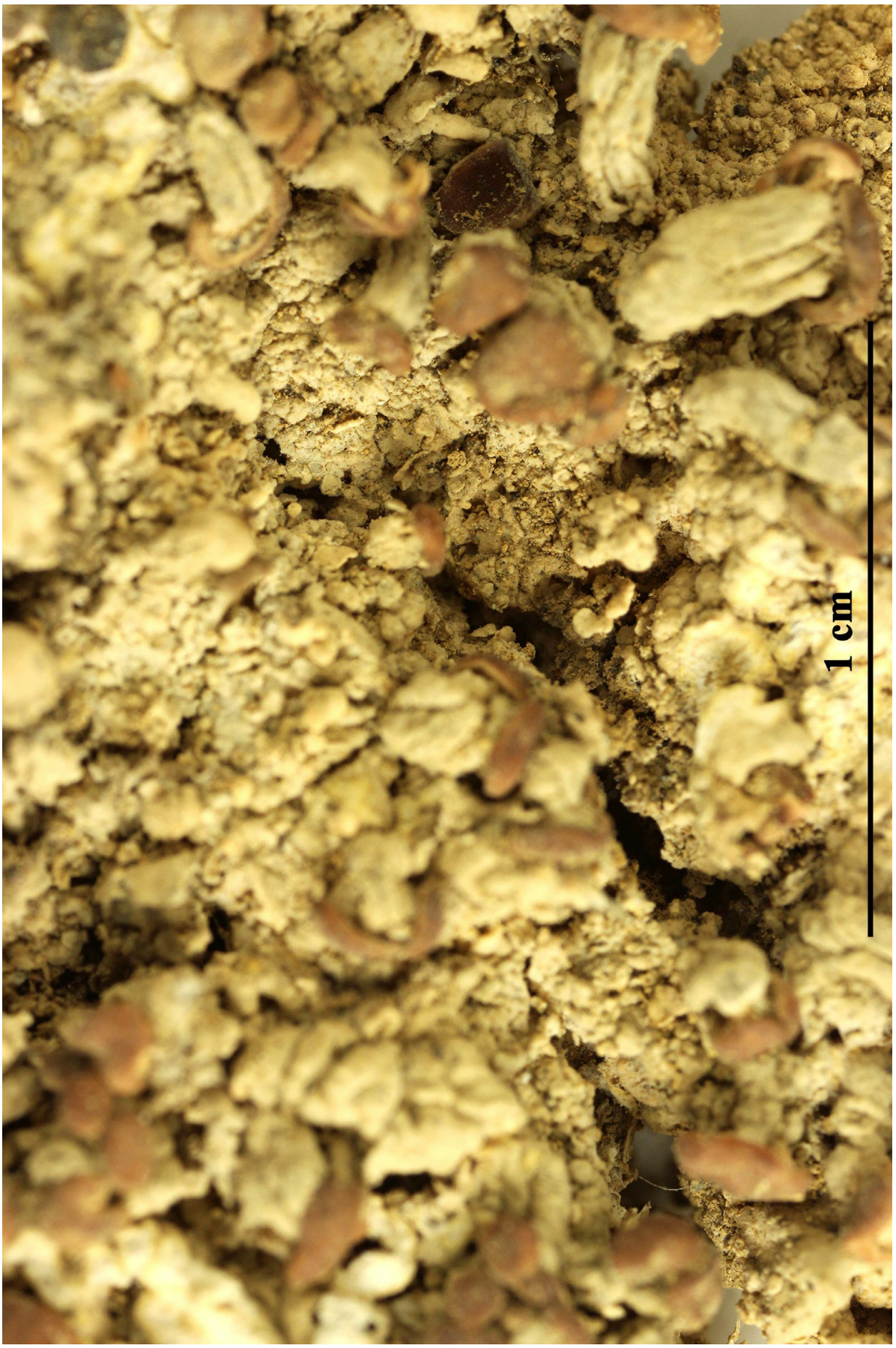


Baeomyces placophyllus

Baeomyces placophyllus Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 323 (1803)

[KU303],Japan. Honshu. Prov. Musashi: Nakatsugawa Gorge, Chinchibu-gun. On rocks, 800 m. Leg. M. Togashi, 29.10.1973, det. H. Kashiwadani. EX S. KURAKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 303.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apothecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.



Baeomyces placophyllus

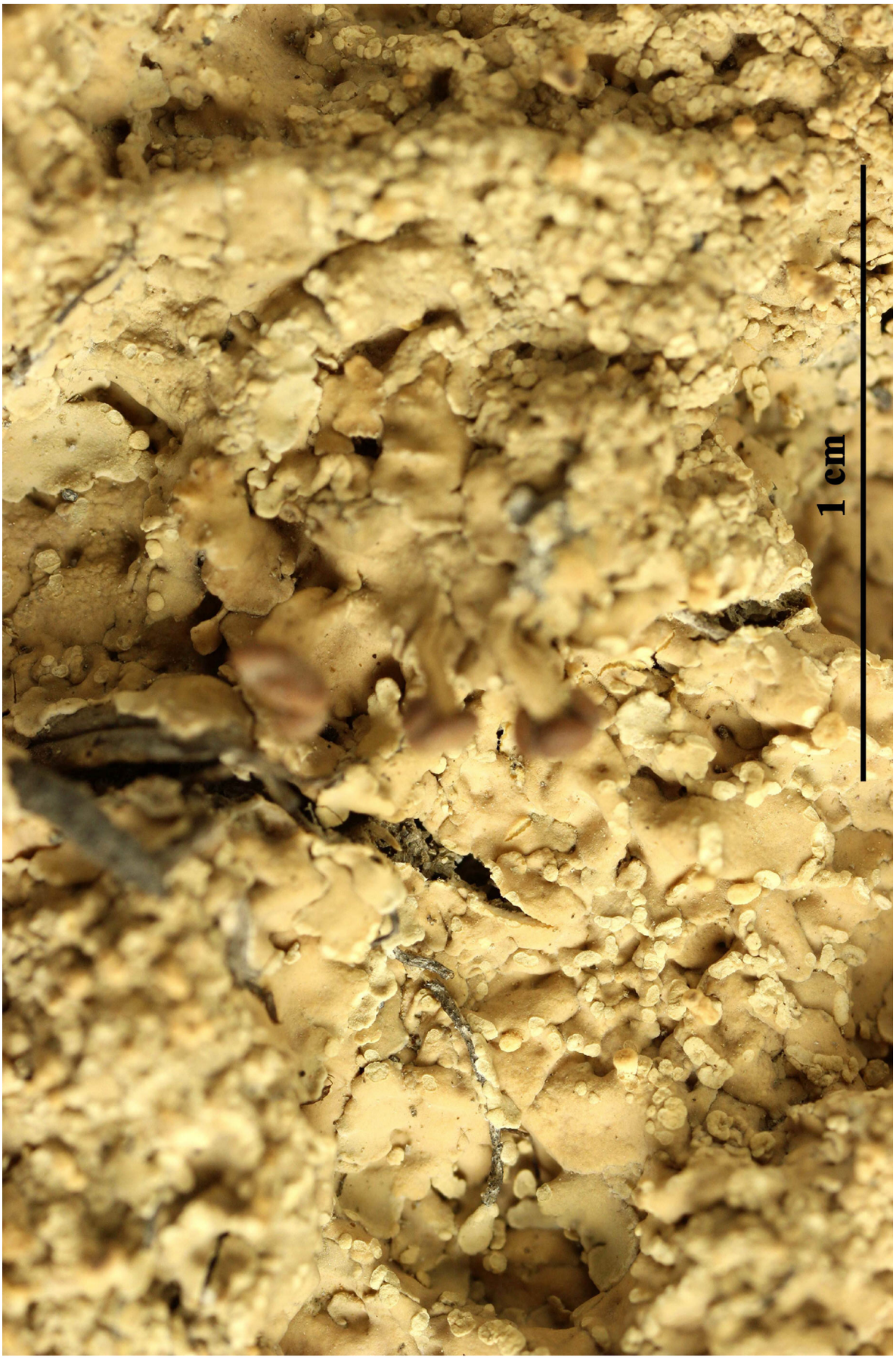


Baeomyces placophyllus

Baeomyces placophyllus Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 323 (1803)

[KU109],Japan. Honshu. Prov. Shmotsuke: Hangetsu Pass, Nikko. On soil, 1400m. Öeg. S. Krokawa (no. 69091), 12.10.1969, det. S. Krurokaea. EX S. KURAKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 109.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apothecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.



Baeomyces placophyllus



Baeomyces placophyllus

Baeomyces placophyllus Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 323 (1803)

[KU603],Japan. Kyushu. Prov. Ohsumi: Hananoego, Yakushima Island. On soil, 1650 m. Leg. H. Shibuichi (no. 7648), 36.7.1984, det. H. Kashiwadani. EX S. KURAKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 603.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apothecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.



Baeomyces placophyllus

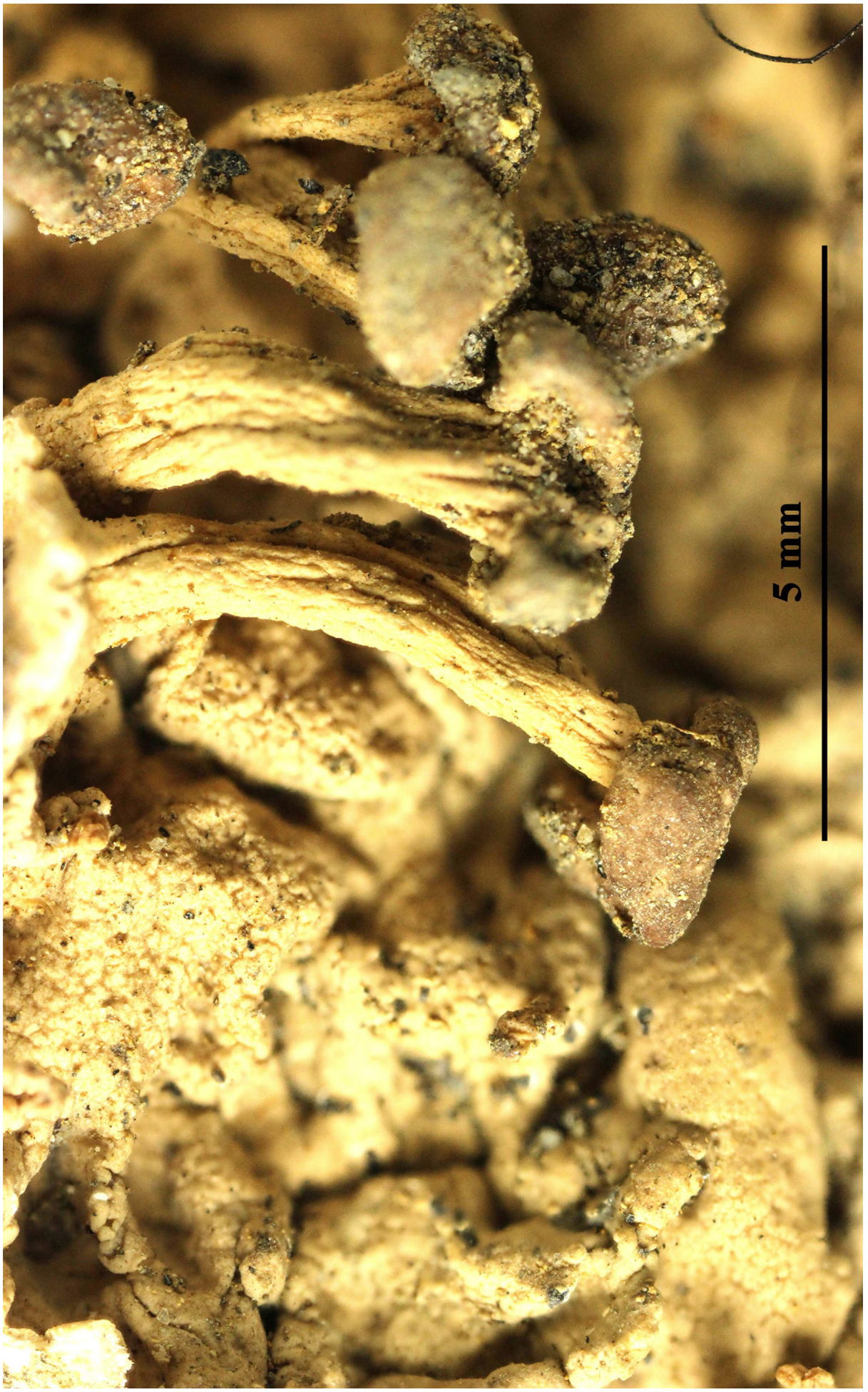


Baeomyces placophyllus

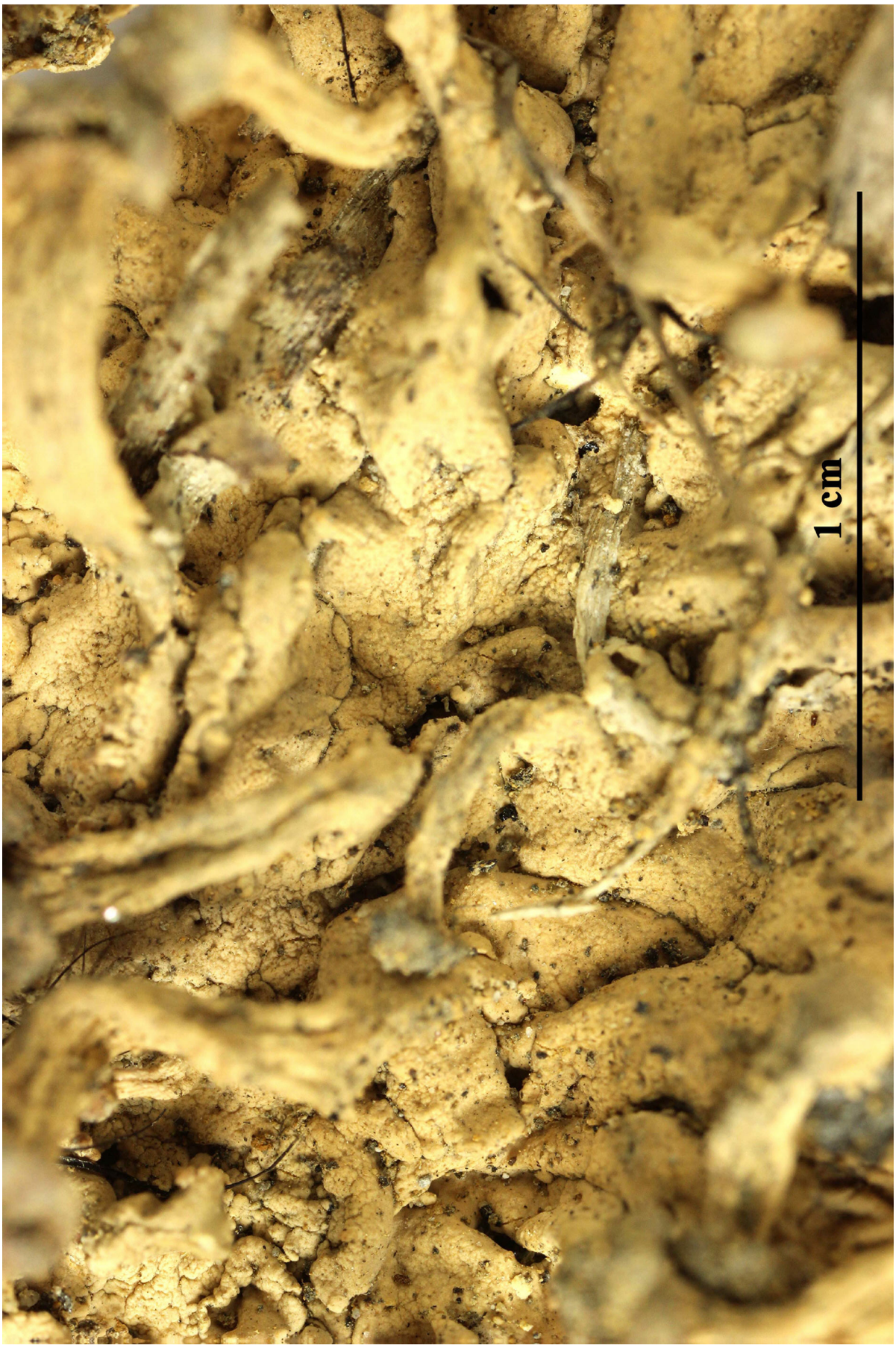
Baeomyces placophyllus Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 323 (1803)

[KU504], Formosa. Prov. Chiayi: Mt. Tsu-Tson-San, Mt. Ali. On rocks, 2200-2600 m. Leg. S. Kurokawa (no. 474), 4.1.1964, det. S. Kurokawa. Ex S. Kurakawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 504.

Primary thallus crustose-placodioid, well-delimited, glaucous grey-green to brownish, turning bright green when wet, thick, forming up to 12 cm wide rosettes, the central parts subsquamulose, often covered in peltate, light-coloured, fragile, up to 0.6 mm wide schizidia leaving shallow scars when they fall off, the margins with radiating, up to 6 mm broad, flattened, contiguous, lobes which are often raised at tips. Apothecia frequent, biatorine, emarginate, with an ochraceous to reddish brown, flat, oftem narginally reflexed disc, up to 4(-5) mm across, terminal on furrowed, subfruticose, solid, up to 6 mm tall and to 2 mm thick stipes which are corticate and sometimes microsquamulose in lower part. Epithecium yellowish brown, C+ red; hymenium colourless, 70-120(-150) µm high, K/I-; paraphyses 2-2.5 µm thick at mid-level, slender, simple or sparingly branched towards the tips, not anastomosing, the apical cell c. 3 µm wide; hypothecium pale. Asci 8-spored, cylindrical, thin-walled, the apex truncated, with a single functional wall layer, with a poorly differentiated, non-amyloid tholus. Ascospores 1(-2)-celled, hyaline, fusiform, 8-14(-16) x (2-)3-4(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC+ orange, P+ orange, UV+ pale yellow; mature apothecia C+ red. Chemistry: thallus with the stictic acid complex, incl. traces of norstictic acid and an unidentified substance; gyrophoric and lecanoric acids in mature apothecia. - Note: an arctic-alpine to boreal-montane, probably circumpolar lichen.



Baeomyces placophyllus



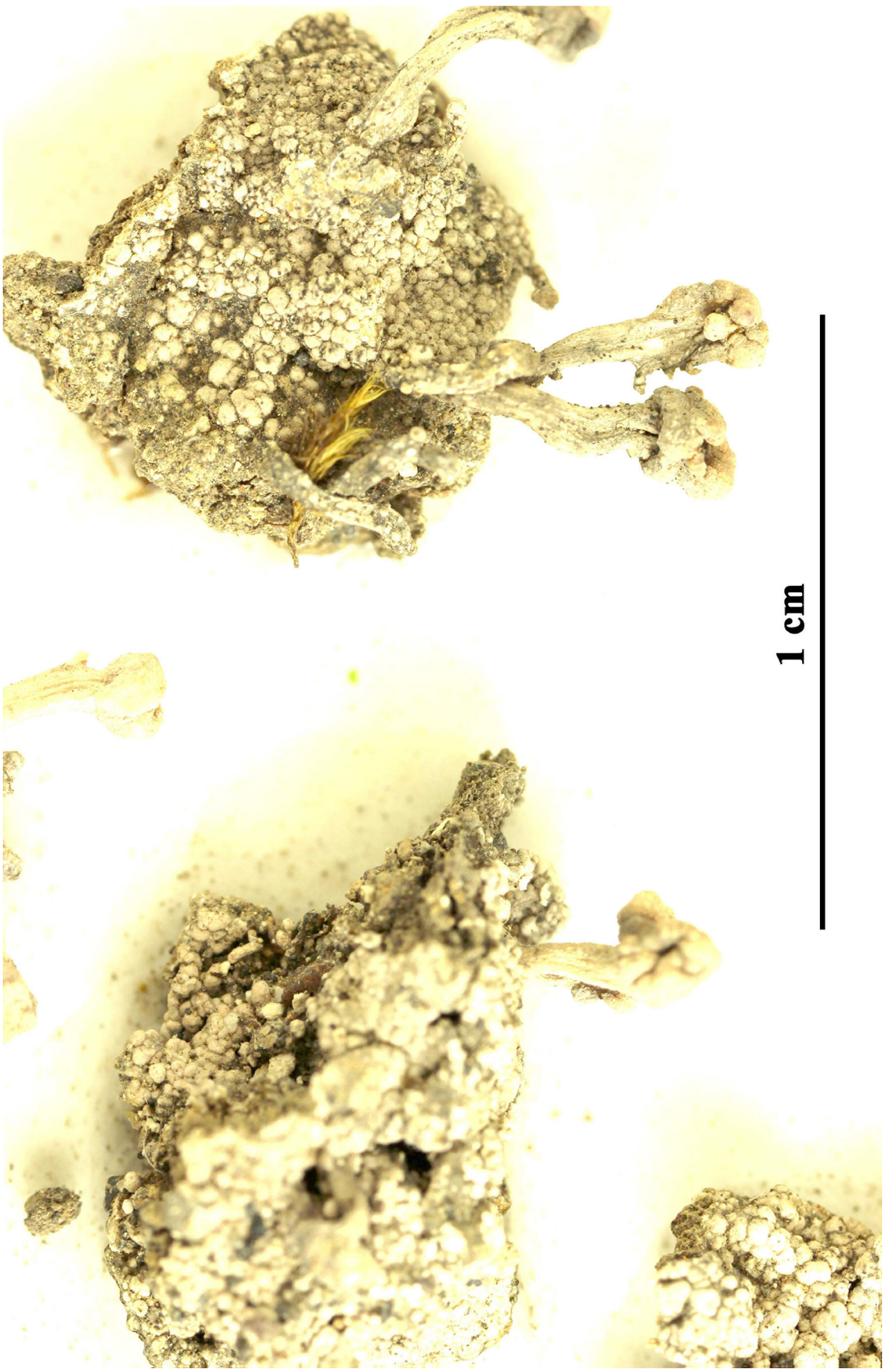
Baeomyces placophyllus

Baeomyces roseus Pers., Ann. Bot. (Usteri) 7: 19 (1794)
= *Lichen baeomyces* L. f. 1781
= *Dibaeis baeomyces* (L. f.) Rambold & Hertel, Biblioth. Lichenol. 53: 231 (1993)

[KU254], Japan. Hokkaido. Prov. Ishikari: Along trail between Boga-ku-dai and Shirogane Hot Spring. Mt. Tokachi. On soil, 670-1200m. Leg. S. Kurokawa (no. 72099), 2.9.1972, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR.254.

Primary thallus crustose, white to pale grey, thick, areolate, usually with soft, rounded, white to pinkish grey, more or less glossy, wart-like, rarely sorediate schizidia which are up to 1 mm wide in sterile thalli, 0.1-0.3 mm wide in fertile thalli. Cortex of thallus c. 50 µm thick, of thin-walled, vertically oriented hyphae; medulla very loose, paraplectenchymatous in parts; cortex of schizidia consisting of interwoven hyphae parallel to the surface; inner part of stalks with strands of thin-walled 2.5-3 µm thick hyphae, those under the hymenium up to 5 µm thick. Apothecia frequent, globose also when young, often hollow inside, pink, 1-4 mm wide, emarginate or with a narrow margin when young, brought on erect, subfruticose, smooth, ecorticate, white stipes (podetia) which are 2-5(-6) mm tall and to 3 mm wide. Proper exciple poorly developed, of radially arranged hyphae; epithecium with colourless crystals dissolving in K (present also in the hymenium); hymenium colourless, 100-120(-140) µm high, K/I+ blue (reaction ephemeral!); paraphyses simple, not anastomosing, 2-2.5 thick at mid-level, the apical cells only slightly wider; hypothecium colourless or yellowish in upper part. Asci 8-spored, thin walled, cylindrical, the walls and tip K/I+ blue, with a distinct ocular chamber in the tholus, Icmadophila-type. Ascospores 1-celled (some apparently 2-celled for the presence of a pseudo-septum), hyaline, fusiform, (10-)12-26 x 2-3 µm. Pycnidia 0.1-0.2 mm across, immersed in warts, mostly laminal, with a colourless wall (brownish near the ostiole), the conidiogenous cells catenate, barrel-shaped. Conidia pleurogenous, short-bacilliform, 3.5-5 x c. 1 µm. Photobiont chlorococcoid (Coccomyxa). Spot tests: thallus K+ yellow-orange, C-, KC+ orange, P+ yellow to orange, UV+ orange; medulla P+ yellow to orange, UV+ orange. Chemistry: baeomycesic acid, and variable amounts of squamatic and barbatic acids, and atranorin. - Note: on humid, disturbed clay soil, often in Calluna-

heaths, more rarely on weathered siliceous rocks, most frequent in upland areas. For further details see Gierl & Kalb (1993).



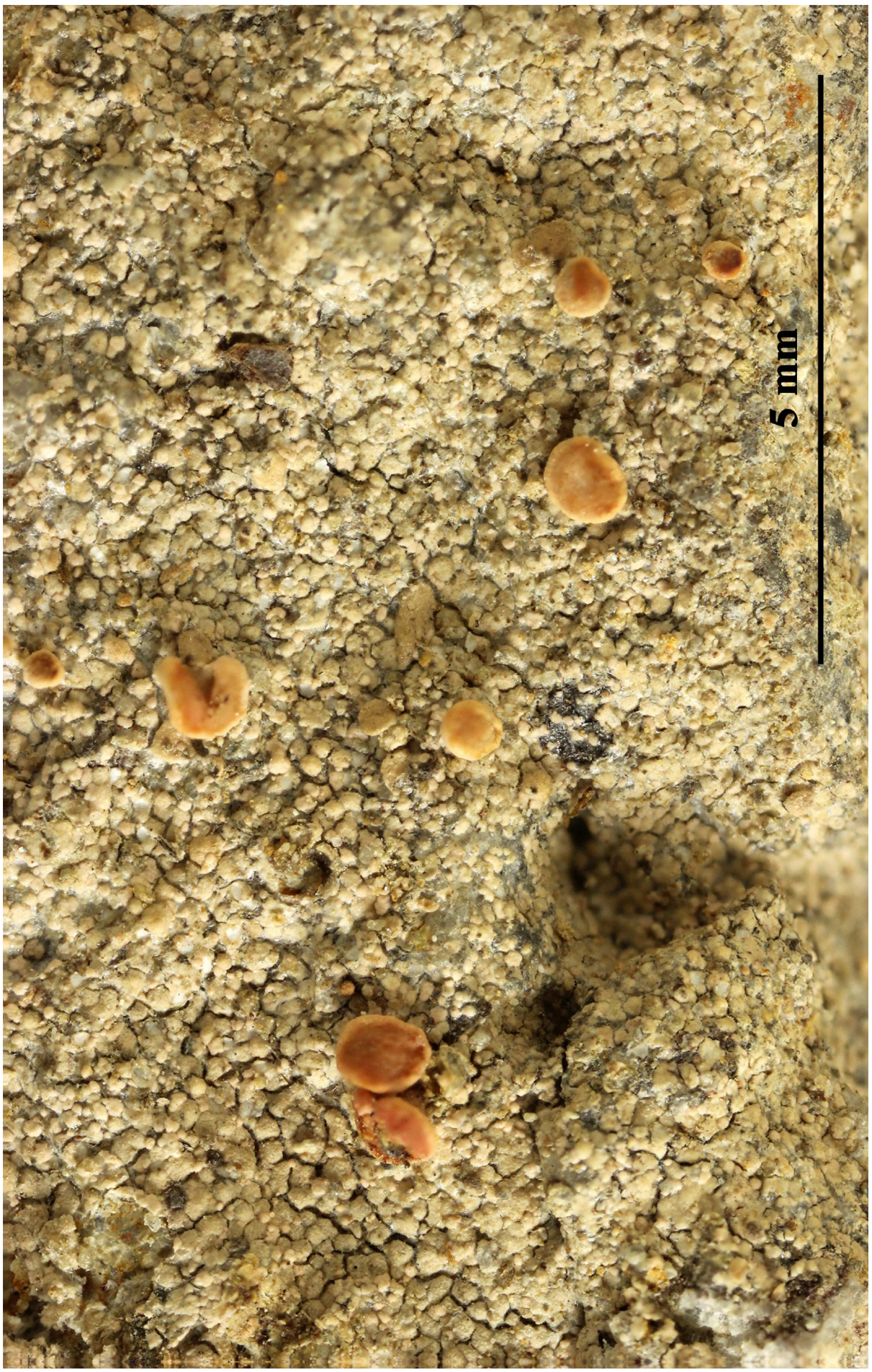
Baeomyces roseus



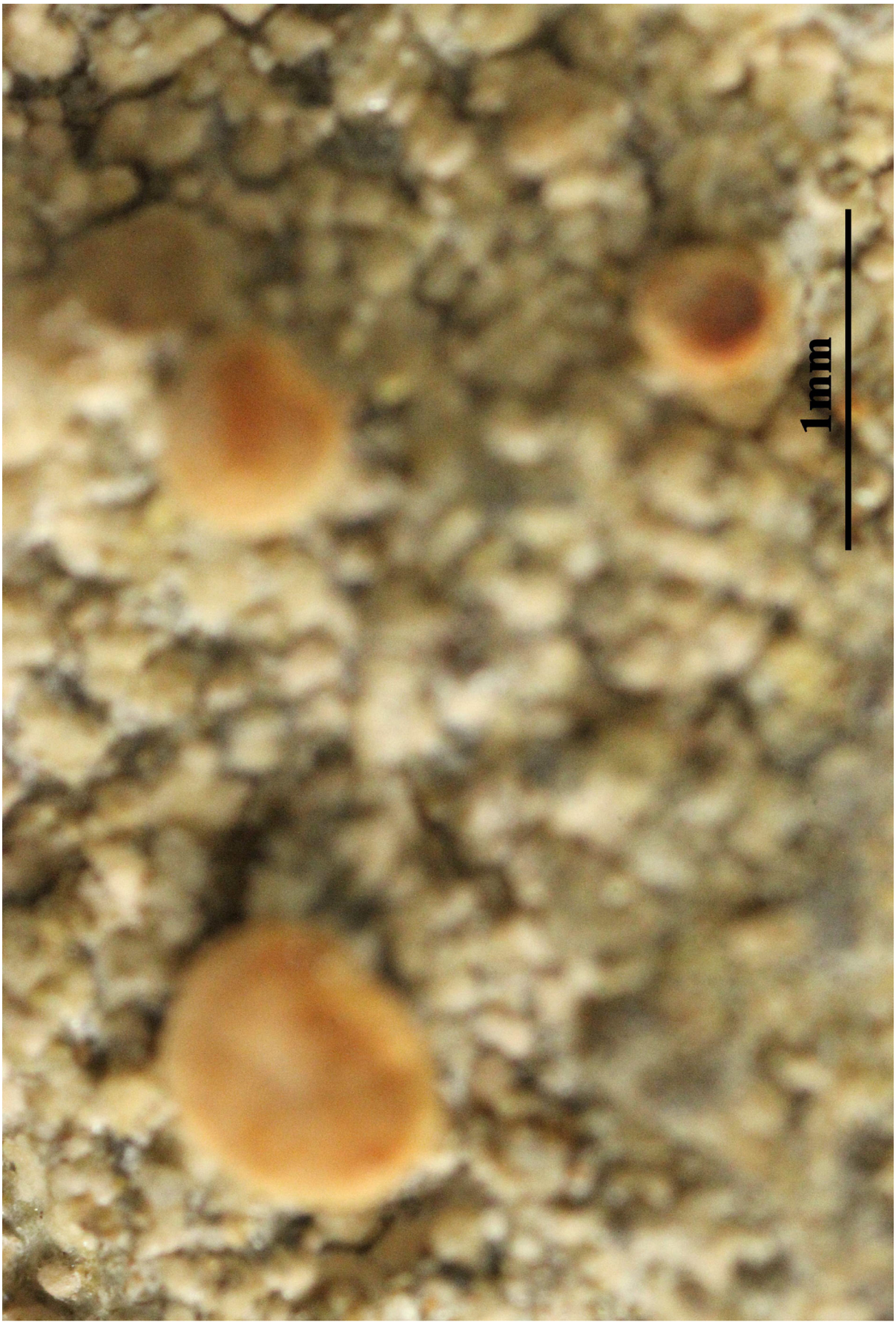
Baeomyces roseus

Baeomyces sanguineus Asahina, J. Jap. Bot. 19(11): 304 (1943)

[OH431], Japan. Kyushu. Prov. Hyuga (Pref. Miyazaki): Minamikata, Saito-city. On rocks, 500 m. Leg. K. H. Moon (no.7383), 23.2.2004, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 451.



Baeomyces sanguineus



Baeomyces sanguineus

Bombyliospora japonica Zahlbr., Bot. Mag., Tokyo 41: 359 (1927)

[KU352], Japan. Hokkaido. Prov. Shiribeshi: Mt. Katsuma, Okushiri Island. On bark of *Fagus crenata*, 340 m. Leg. H. Kashiwadani (no.14711), 7.9.1978, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 352.



Bombyliospora japonica



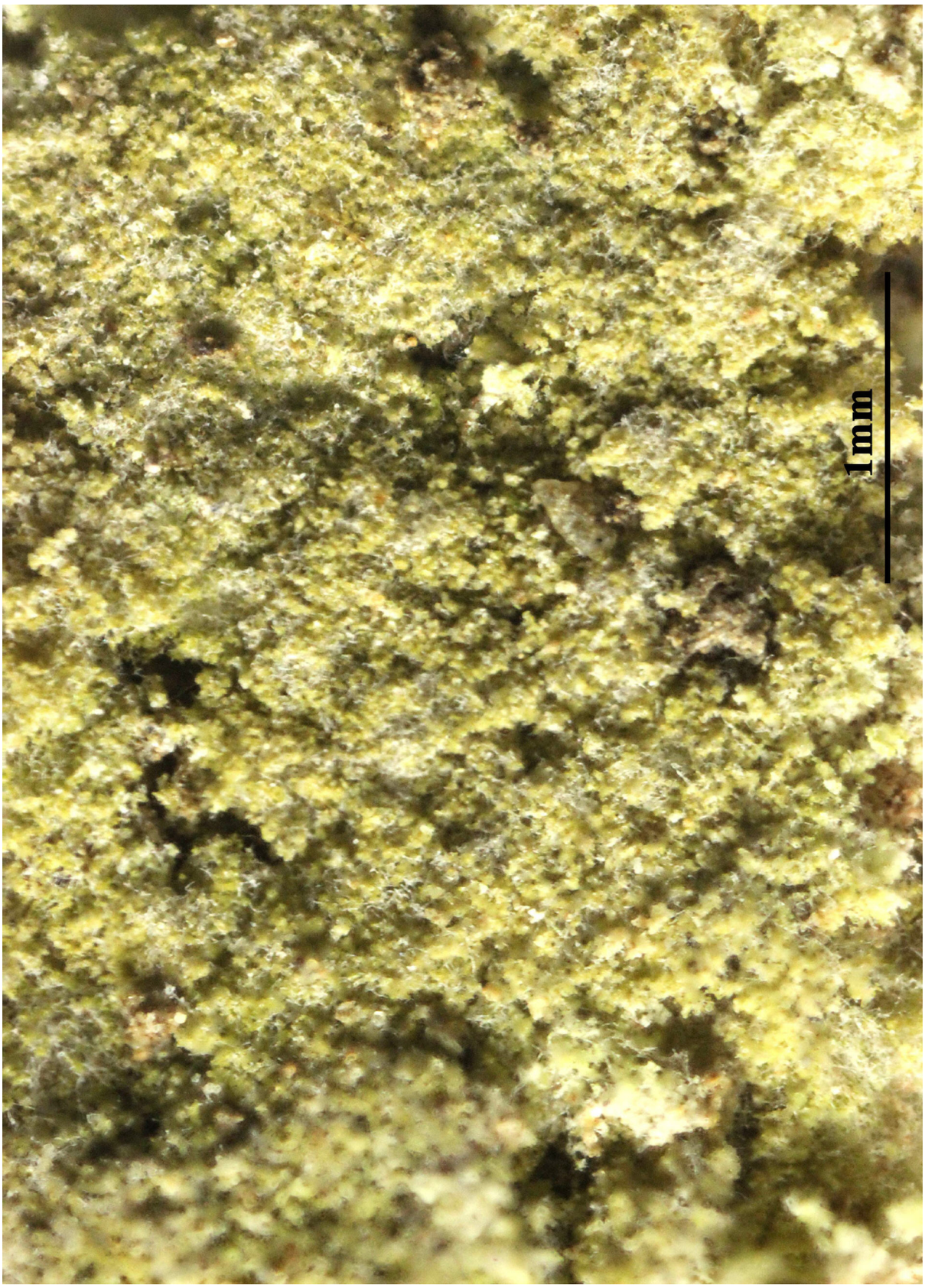
Bombyliospora japonica

Botryolepraria lesdainii (Hue) Canals, Hern.-Mar., Gómez-Bolea & Llimona, Lichenologist 29(4): 340 (1997)
= *Crocynia lesdainii* Hue 1924

[OH601], Japan. Honshu. Prov. Hitachi (Pref. Ibaraki): Mt. Atago. Kasama-city (36°17'33" N, 140°15'27" E). On concrete, 209 m. Leg. Sugimoto(no. 626), 23.1.2019, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 601.



Botryolepraria lesdainii



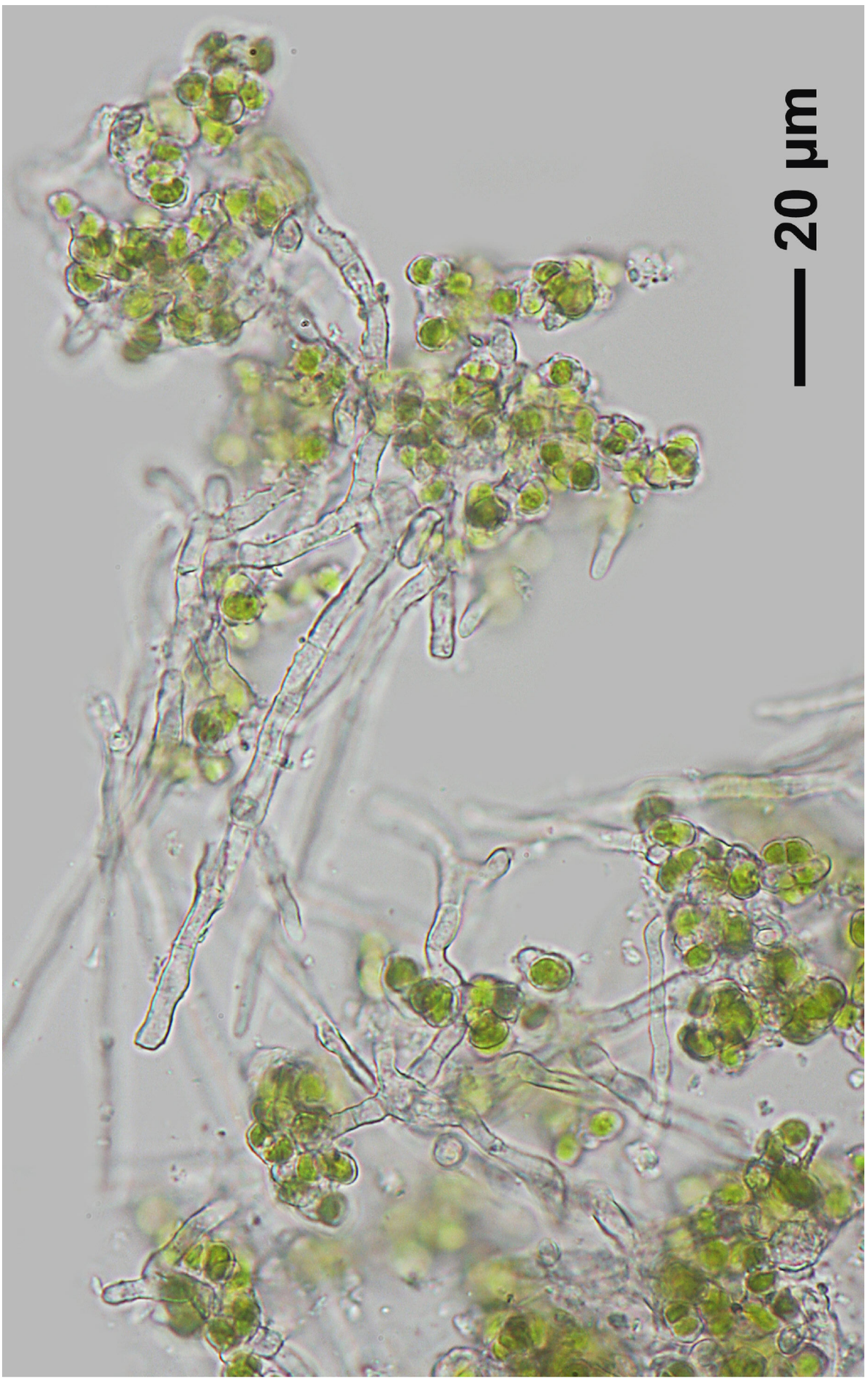
Botryolepraria lesdainii

Botryolepraria lesdainii (Hue) Canals, Hern.-Mar., Gómez-Bolea & Llimona, Lichenologist 29(4): 340 (1997)
= *Crocynia lesdainii* Hue 1924
= *Lepraria lesdainii* (Hue) R.C.Harris

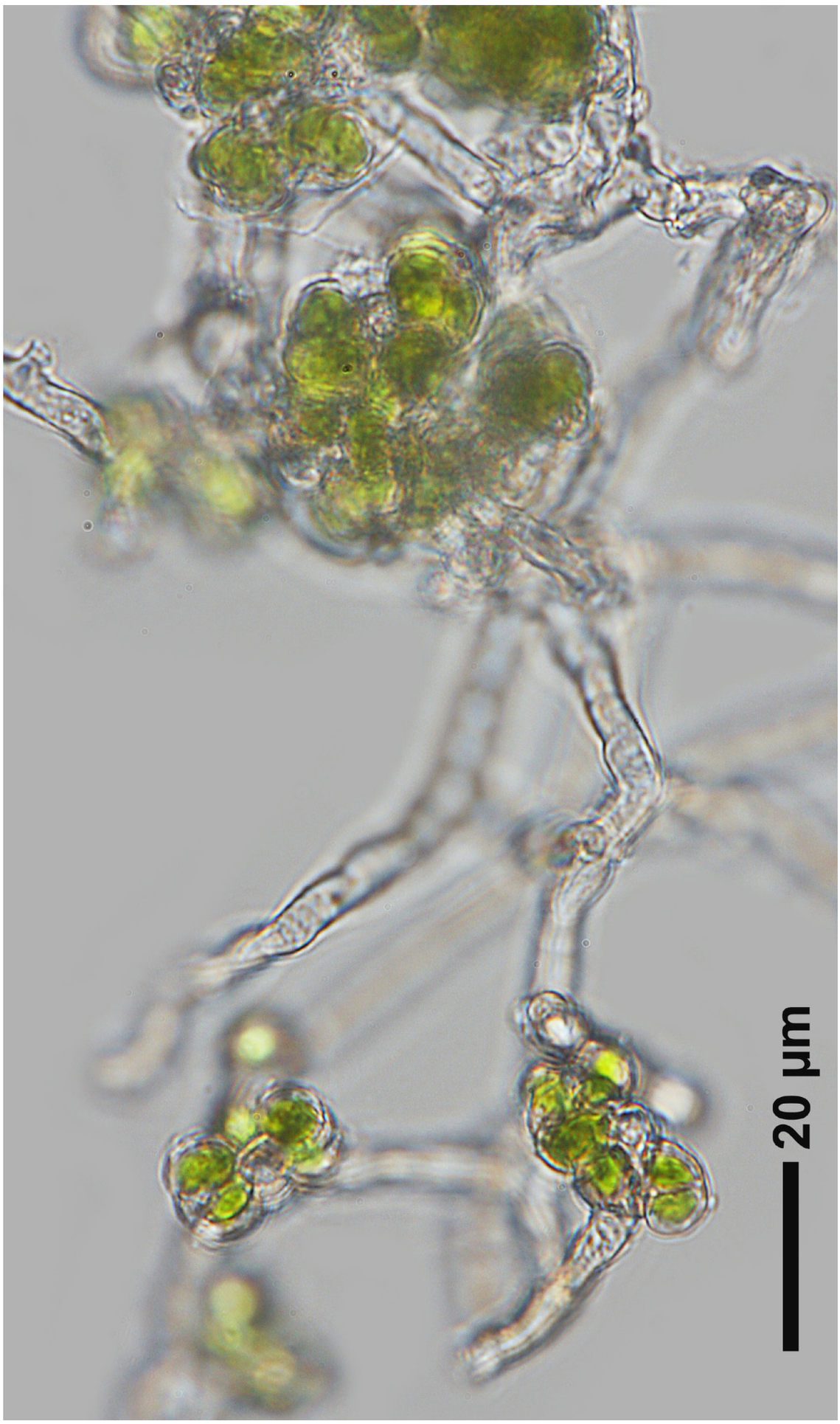
[14092], Portugal, Azoren, Terceira, bei Sao Bartholomeu 38°40.482' N, 27°17.586' W, 125 m. Leg. A. Aptroot & F. Schumm 13.07.2008, det. A. Aptroot. EX HERBARIO F. SCHUMM NR. 14092.
- Lit. Bryologist 90:163, Lichenologist 29:340.



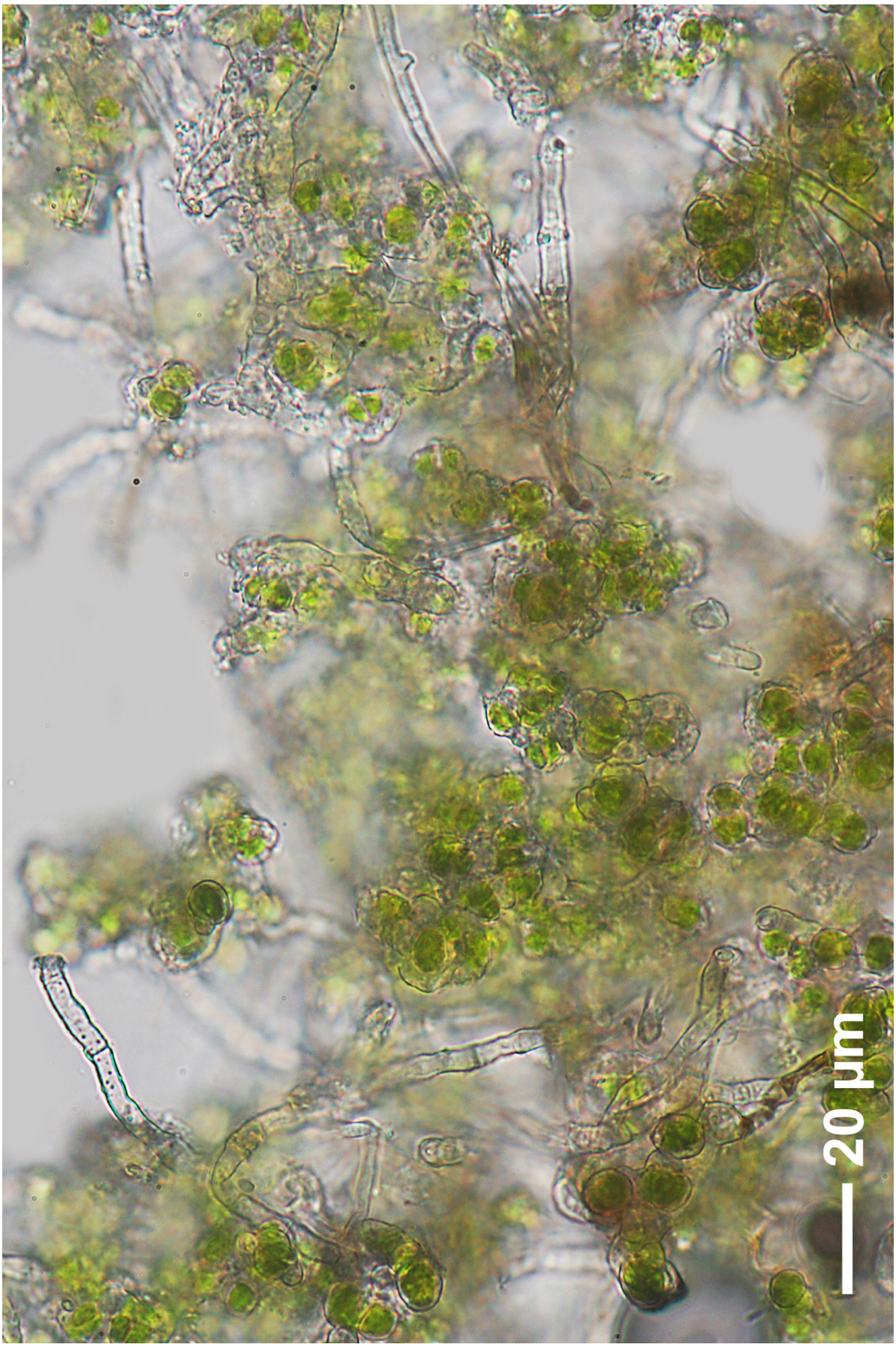
Botryolepraria lesdainii



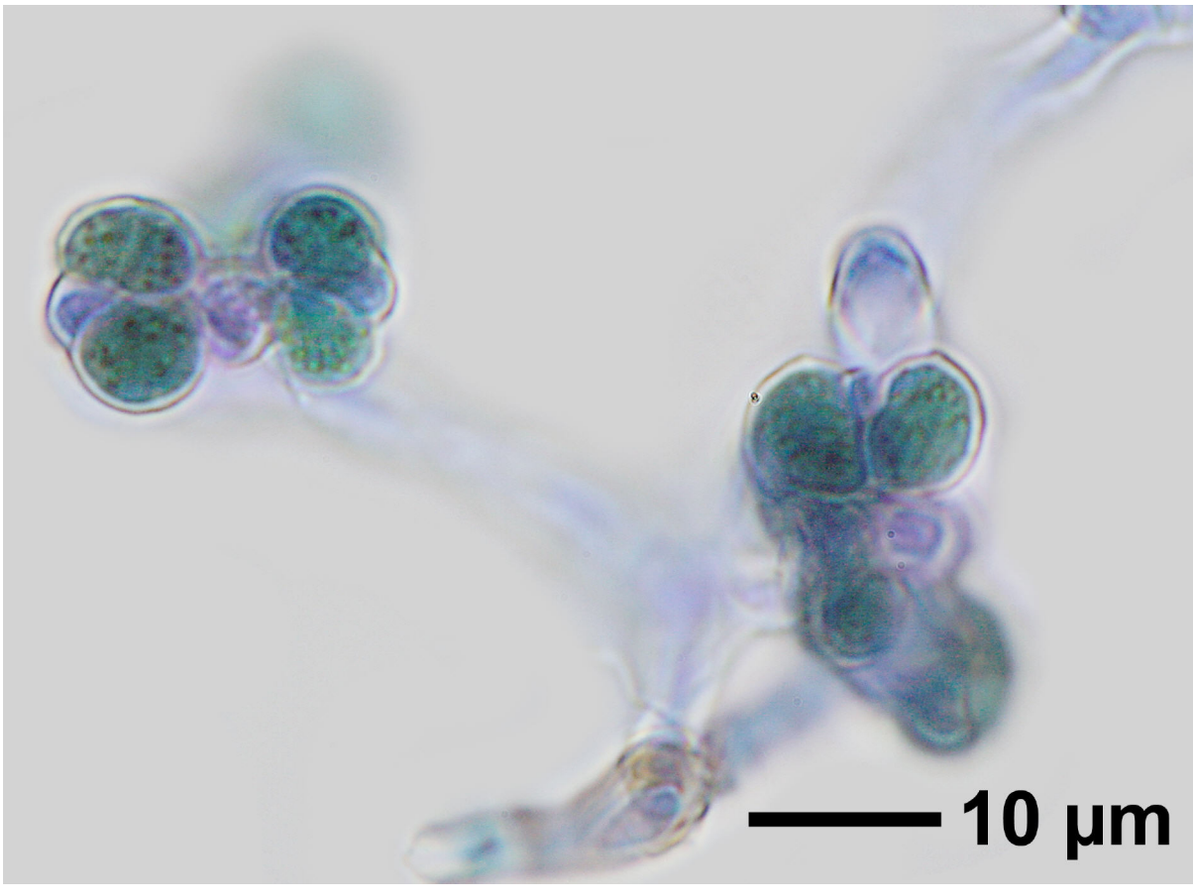
Botryolepraria lesdainii

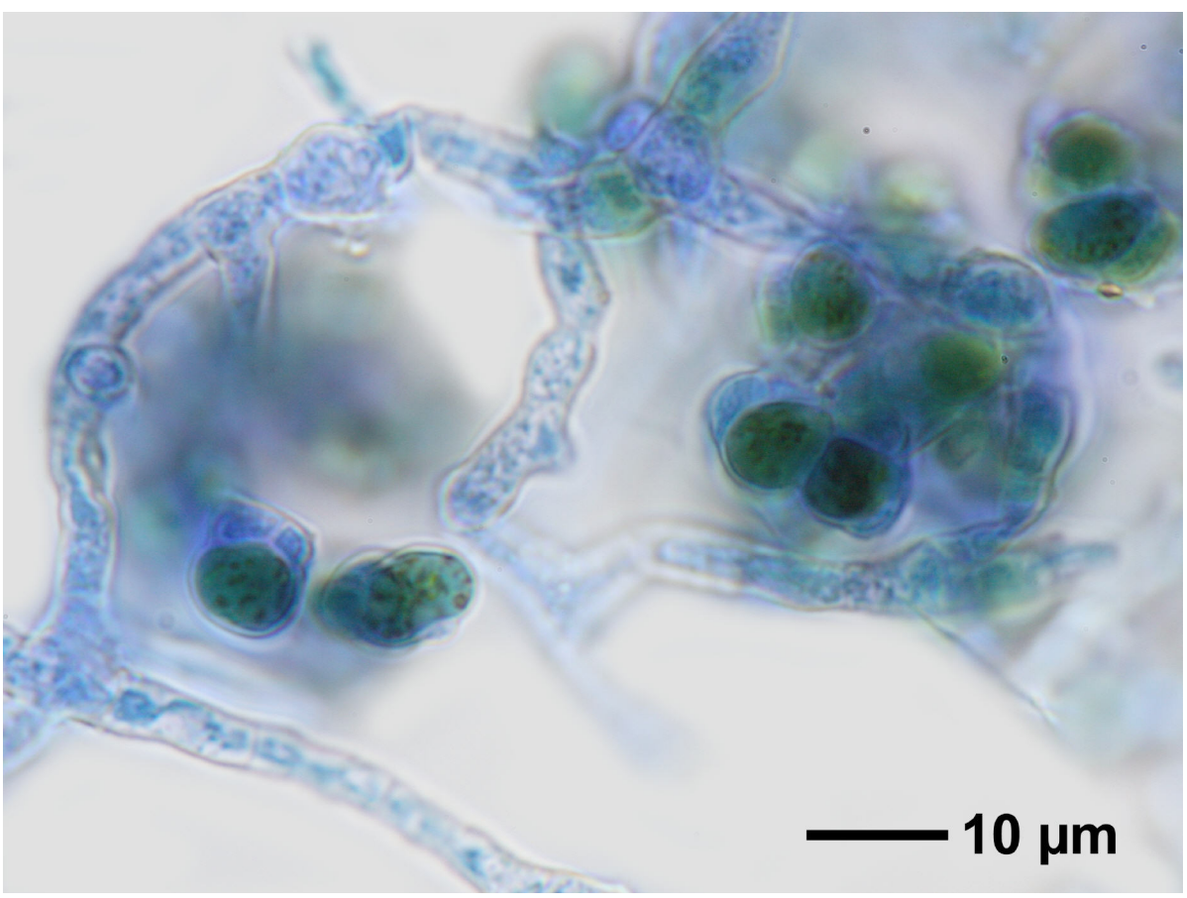


Botryolepraria lesdainii

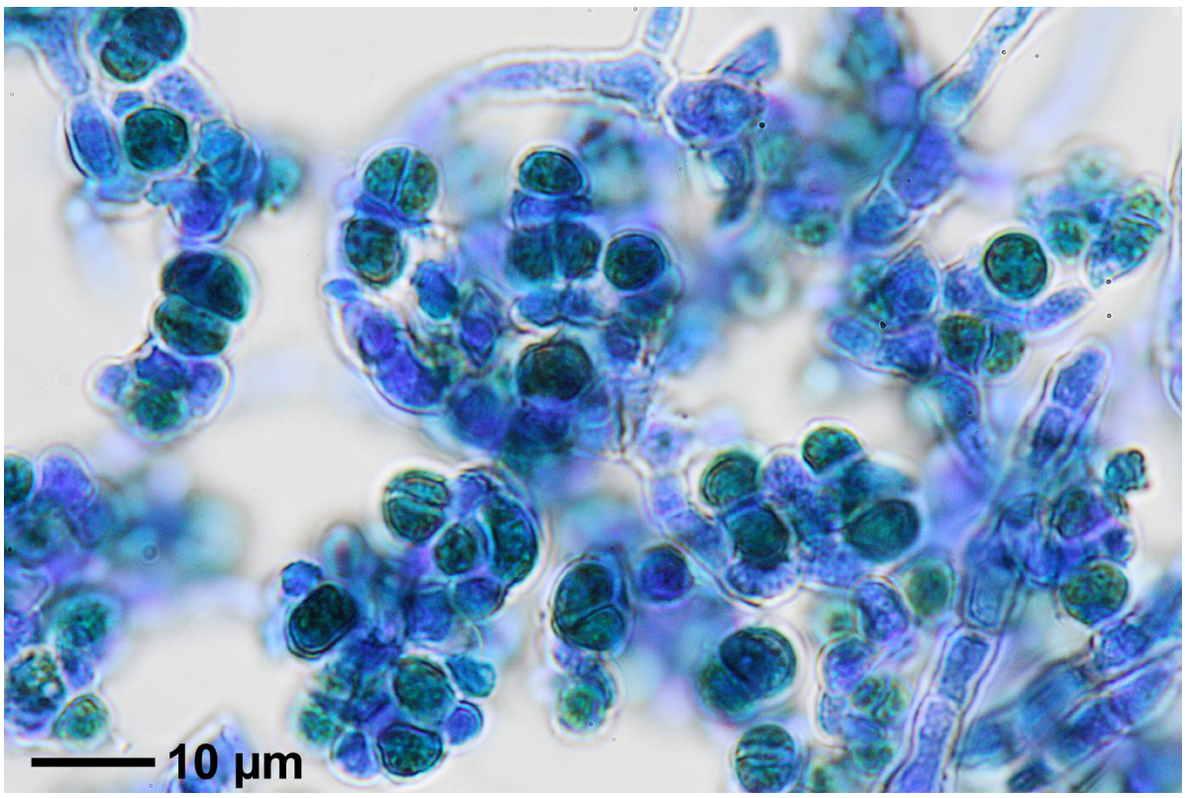


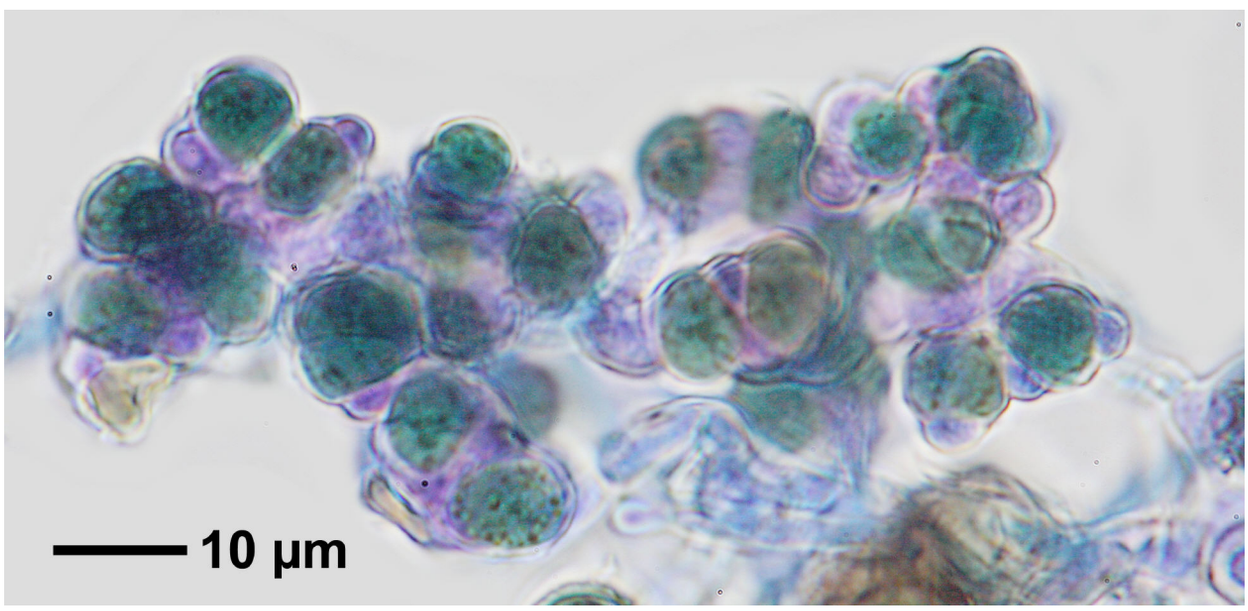
Botryolepraria lesdainii



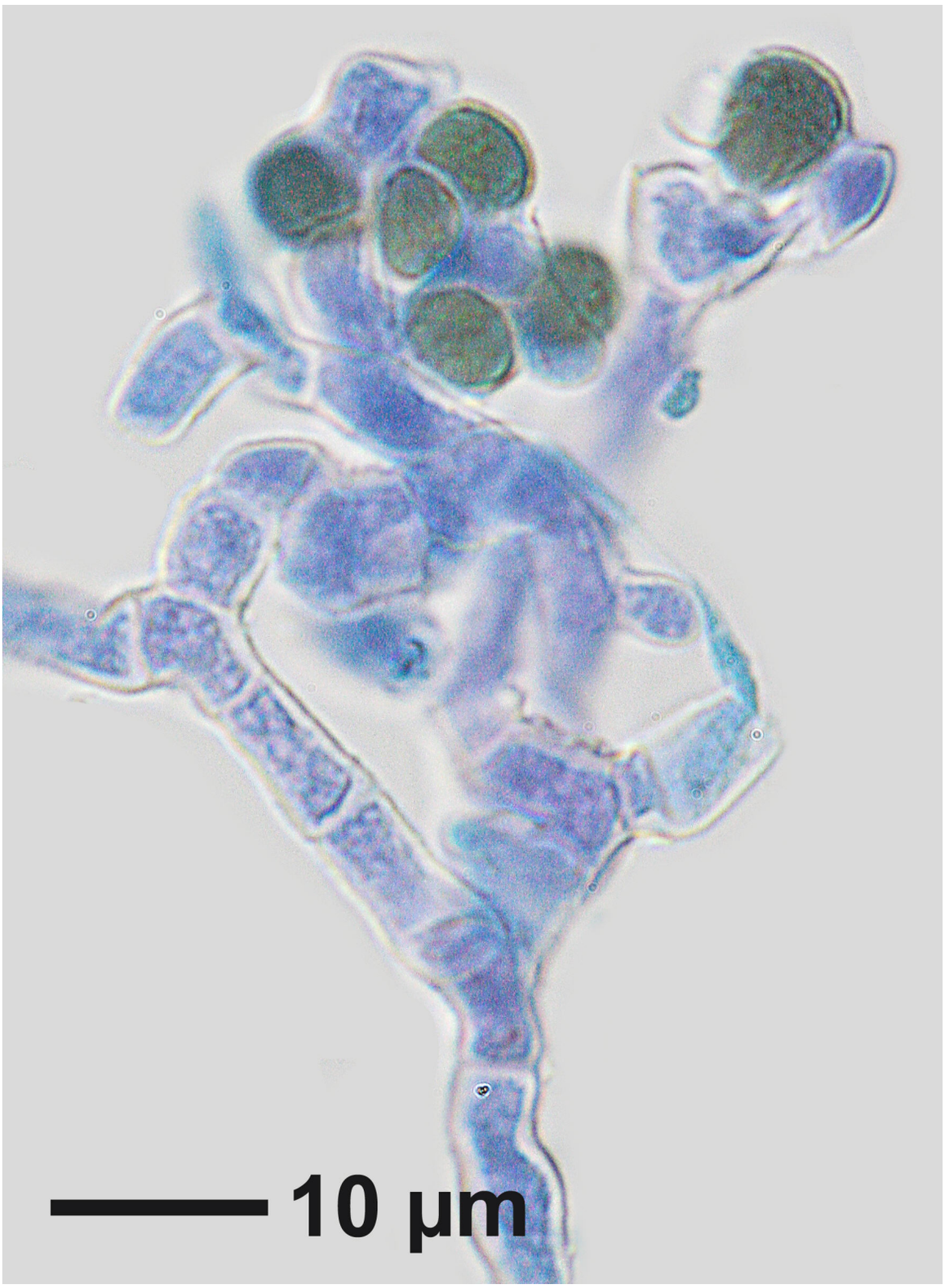


Botryolepraria lesdainii

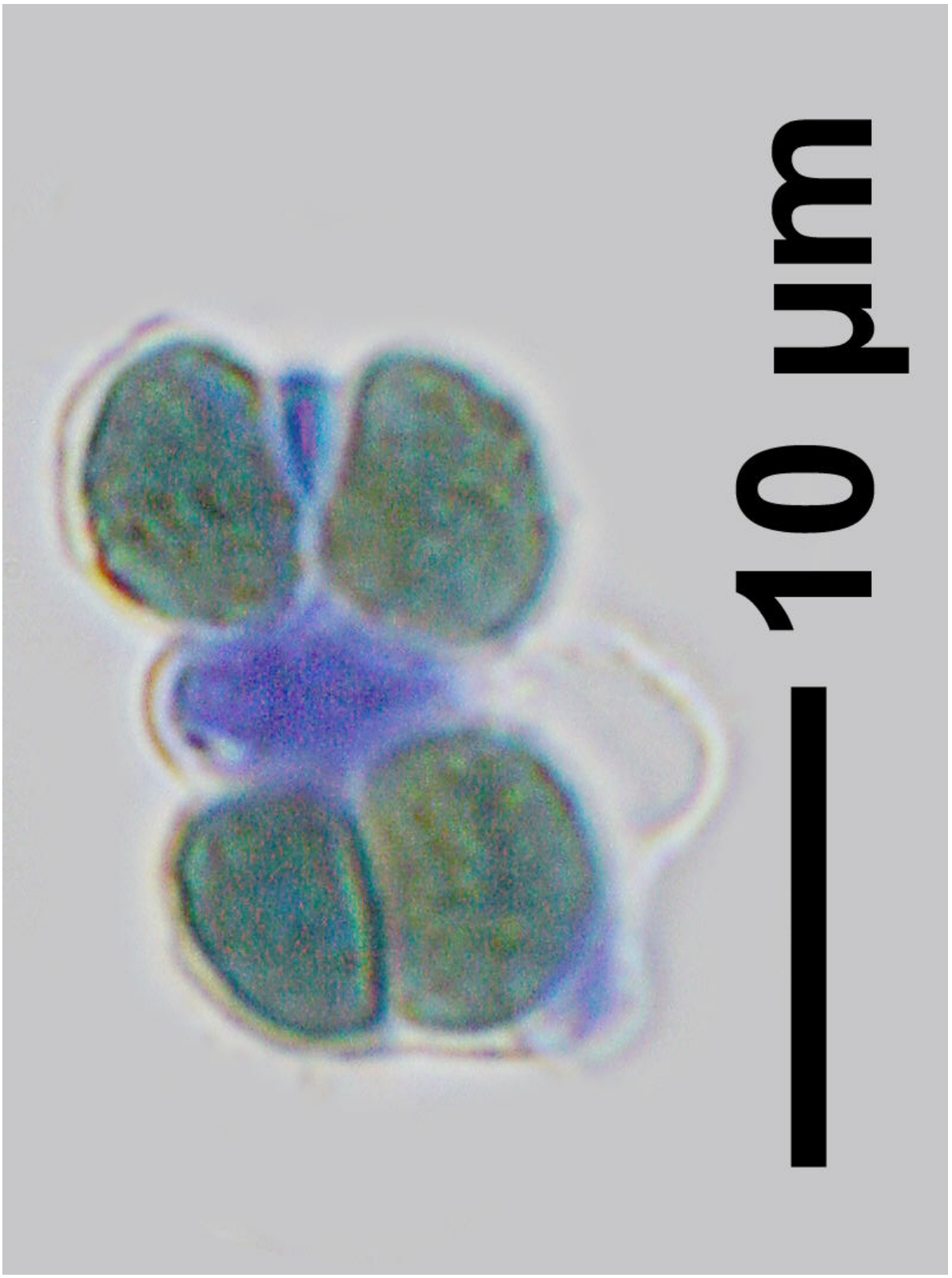




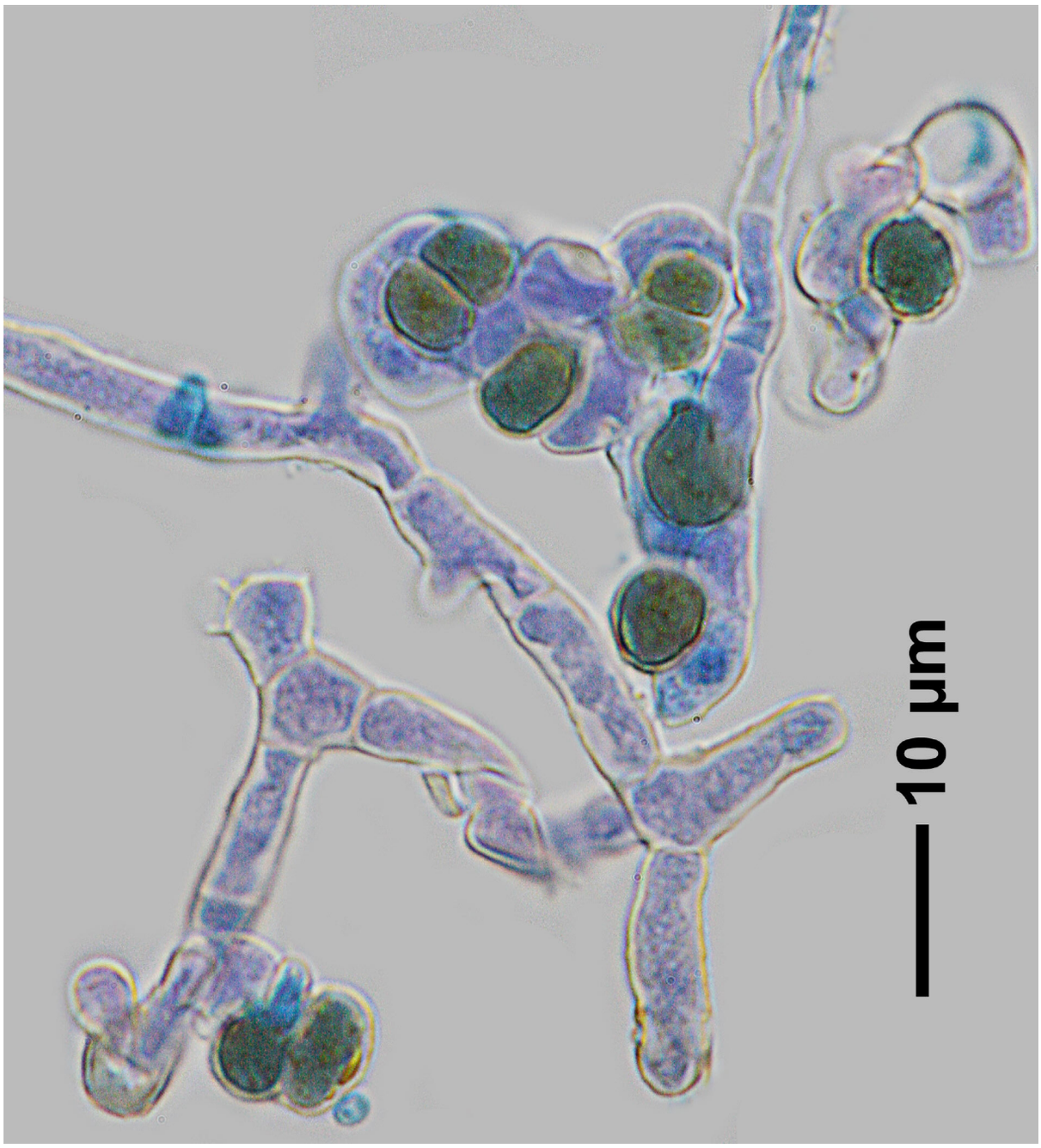
Botryolepraria lesdainii



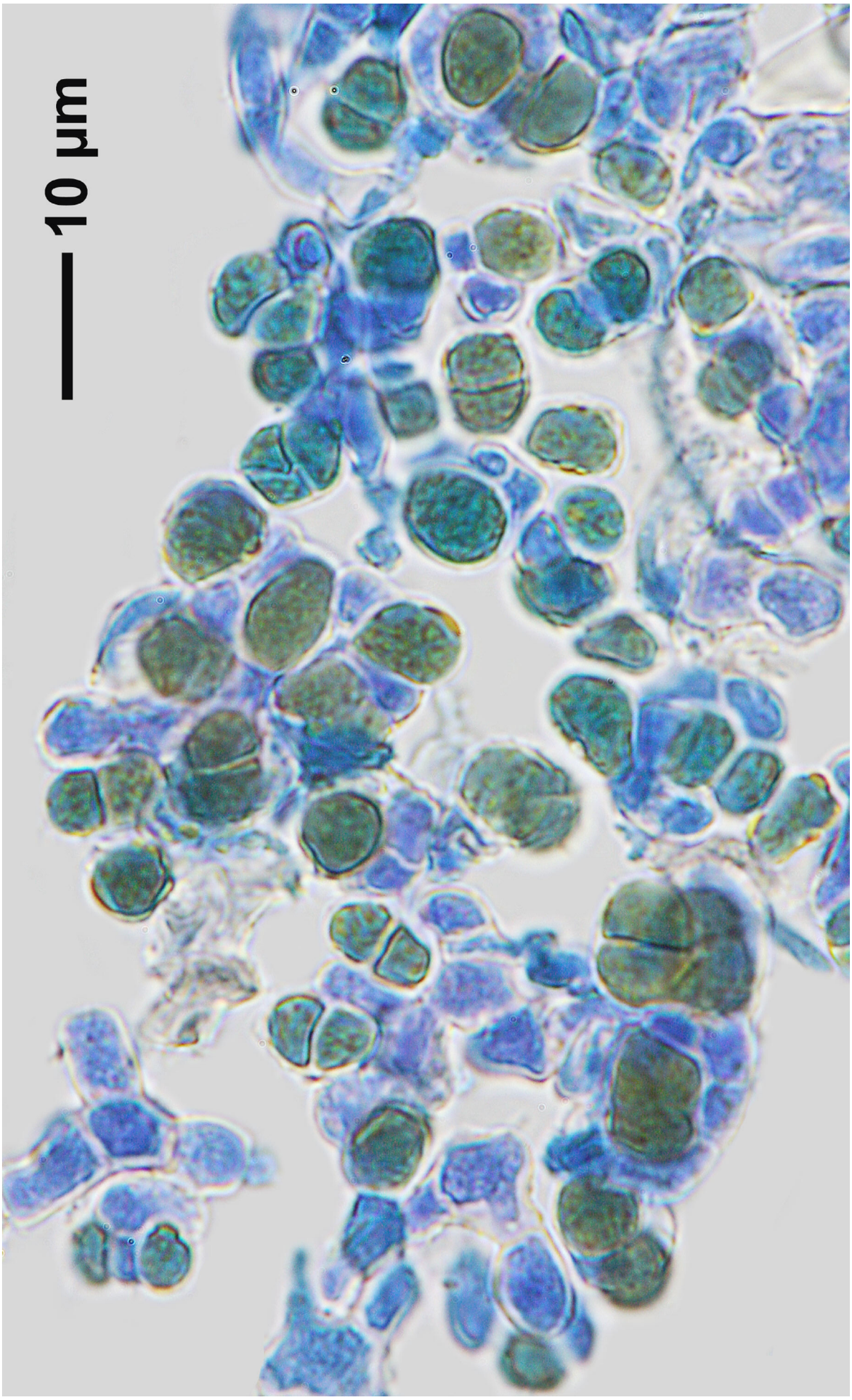
Botryolepraria lesdainii



Botryolepraria lesdainii



Botryolepraria lesdainii



Botryolepraria lesdainii

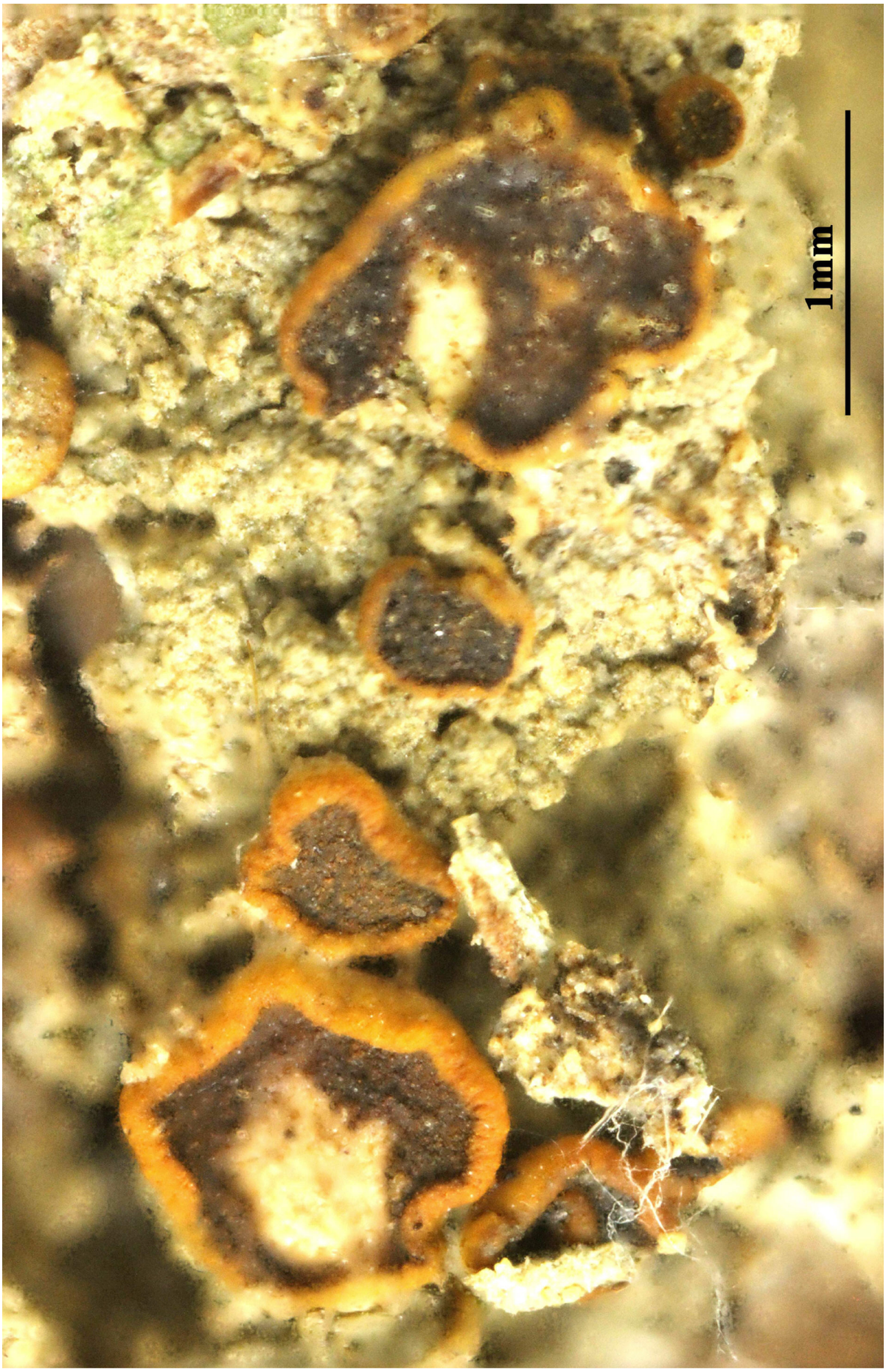
Brigantiaea ferruginea (Müll. Arg.) Kashiw. & Kurok. [as 'ferrugineum'], in Kashiwadani, Mem. Natn Sci. Mus, Tokyo 18: 96 (1985)
= *Lopadium ferrugineum* Müll. Arg. 1891

[OH602], Russia. Primorsky Kray: Chandolaz, 23 km W of Novitskoye (43°03'02" N, 133°01'04" E). On bark of broad-leaf deciduous tree, 220 m. Leg. Y. Ohmura (no. 10789), 20.9.2013, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 602.

Thallus crustose, spreading, whitish grey to greenish grey, mostly encrusting corticolous bryophytes but also directly on bark, vegetative diaspores unknown. Apothecia numerous, sessile, basally constricted, c.. 1 mm in diam.; disc more or less flat, covered by a rough rusty-red pruina; margin entire, thin, somewhat prominent, smooth, slightly paler than the disc. Exciple biatorine, outer layer cartilagineous and this layer externally covered by anthraquinone crystals; medullary inner layer distinct only in the lower part of the exciple. Hymenium hyaline, clear, up to 120 µm high. Hypothecium hyaline to pale straw-coloured. Asci single-spored, 80-105 x 25—45 µm. Paraphyses c. 1.5 µm thick; tips only slightly thickened and encrusted by red-brown crystals. Ascospores hyaline, muriform, ellipsoid, (60-) 70-100x20-45 µm; spore-borne microconidia not observed. Pycnidia not observed. Chemistry: Thallus K+ yellow, C-, P-. Apothecia K+ purple-red. Apothecial sections externally K+ purple. TLC: thalline substances: atranorin, zeorin); apothecial substances: unidentified anthraquinones. - DISTRIBUTION AND HABITAT. *B. ferruginea* is a species of temperate eastern Asia. Localities are known from SE Siberia, Japan, and the Kuril Islands. The species is further recorded from Sakhalin, the southern Japanese islands Shikoku and Kyushu as well as from Formosa (Kurokawa & Kashiwadani 1977: 127-128). Among the phorophytes on which the encrusted bryophytes grow are *Acer amoenum*, *Fagus crenata, Taxus cuspidata* and *Tilia amuriensis*. Kurokawa & Kashiwadani (1977: 127) mentioned *Betula* and *Quercus* as further host genera of broad-leaved deciduous trees.



Brigantiaea ferruginea



Brigantiaea ferruginea

Bryoria capillaris (Ach.) Brodo & D. Hawksw., Op. bot. 42: 115 (1977)
= *Parmelia jubata* β *capillaris* Ach. 1803

[OH652], Russia. Altaisky krai. Smolensky District. Cherginsky Range: at 15 km SE of Belokuriha City, headwaters of Chernovaya River, *Abies sibirica* forest with a number of deadwood (51°54'10" N, 84°48'14" E). On bark of *Abies* sp., 700 m. Leg. Y. Ohmura (no 13447), 11.7.2016, det. E. A. Davydov. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 652.

Thallus fruticose, filamentous, attached by a basal holdfast, long-pendent, soft, to 30 cm long, whitish grey to brownish grey, very rarely dark brown in sun-exposed morphs, usually without a main branch, irregularly branching with acute angles, the branches terete to flattened at axils, to 0.5 mm thick. Soralia absent to usually abundant, small, tuberculate, with farinose soredia. Pseudocyphellae sparse, fusiform, usually inconspicuous; medulla white, compact. Apothecia extremely rare (never observed in Italian material), zeorine, with a brown disc, to 1-2 mm across. Asci 8-spored, Lecanora-type. Ascospores 1-celled, hyaline, subglobose to ellipsoid, 5-9 x 4-6 μm. Photobiont chlorococcoid. Spot tests: cortex and medulla K+ yellow, C+ red or C-, KC+ red, P+ yellow; soralia P+ red; apothecia P+ yellow. Chemistry: barbatolic acid, sometimes alectorialic acid and atranorin in cortex; fumarprotocetraric acid in soralia; psoromic acid in apothecia. - Note: a temperate to boreal-montane, circumpolar lichen, with optimum in montane humid *Fagus-Abies* forests, mostly on twigs, but also on boles of isolated trees in areas with frequent fog.



Bryoria capillaris



Bryoria capillaris

Bryoria furcellata (Fr.) Brodo & D. Hawksw., Op. bot. 42: 103 (1977)
= *Cetraria furcellata* Fr. 1825

[OH477], Japan. Honshu. Prov. Shinano (Pref. Nagano): Azusayama, Kawakamimura, Minamisaku-gun (35°57' N, 138°42' E). On bark of *Laris kaempferi*. Leg. Y. Ohmura (no. 9685), K. Yoshida & A. Frisch, 28.5.2013, det. Y. Ohmura. EX Y. OHNMURA LICHENES MINUS COGNITI EXSICCATI NR. 477.

Thallus fruticose, filamentous, forming tufts, attached by a basal holdfast, to 8(-10) cm long, pale to dark brown, shiny, usually without a main branch, isotomic-dichotomously branching, the branches terete, 0.3-0.5 mm thick, often with lateral spinules. Soralia common, fissural, oval to fusiform, even with thallus or mostly somewhat raised, narrower than the branches on which they arise, white, with numerous isidioid spinules. Pseudocyphellae absent; medulla white, compact. Apothecia extremely rare (never observed in Italian material), zeorine, with a pale brown disc, to 2 mm across. Asci 8-spored, Lecanora-type. Ascospores 1-celled, hyaline, subglobose to broadly ellipsoid, 6-7 x 3-4 µm. Photobiont chlorococcoid. Spot tests: cortex, medulla and soralia K- or K+ yellowish slowly turning brown, C-, KC-, P+ red. Chemistry: fumarprotocetraric acid. - Note: a mainly boreal-montane, circumpolar lichen found on isolated conifers near treeline, sometimes on lignum.



Bryoria furcellata



Bryoria furcellata

Bryoria furcellata (Fr.) Brodo & D. Hawksw., Op. bot. 42: 103 (1977)
= *Cetraria furcellata* Fr. 1825

[KA277], Japan. Honshu. Prov. Shinano (Pref. Nagano): Around Mikuni Pass, Minamisaku-gun. On bark of *Laris kaempferi*, 1750 m. Leg. H. Kashiwadani (no. 47382), 9.12.1996, det. K. Yoshida. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NR. 277.

Thallus fruticose, filamentous, forming tufts, attached by a basal holdfast, to 8(-10) cm long, pale to dark brown, shiny, usually without a main branch, isotomic-dichotomously branching, the branches terete, 0.3-0.5 mm thick, often with lateral spinules. Soralia common, fissural, oval to fusiform, even with thallus or mostly somewhat raised, narrower than the branches on which they arise, white, with numerous isidioid spinules. Pseudocyphellae absent; medulla white, compact. Apothecia extremely rare (never observed in Italian material), zeorine, with a pale brown disc, to 2 mm across. Asci 8-spored, Lecanora-type. Ascospores 1-celled, hyaline, subglobose to broadly ellipsoid, 6-7 x 3-4 µm. Photobiont chlorococcoid. Spot tests: cortex, medulla and soralia K- or K+ yellowish slowly turning brown, C-, KC-, P+ red. Chemistry: fumarprotocetraric acid. - Note: a mainly boreal-montane, circumpolar lichen found on isolated conifers near treeline, sometimes on lignum.



Bryoria furcellata



Bryoria furcellata

Bryoria trichodes (Michx.) Brodo & D. Hawksw., Op. bot. 42: 78 (1977)
= *Setaria trichodes* Michx. 1803

[OH504], Japan. Honshu. Prov. Kai (Pref. Yamanashi): en route from Fuji-Yoshida-guchi to 5-gome. Mt. Fuji. On tree, 2300 m. Leg. K. Togashi, 26.10.1953., det. Y. Ohmura. -Chemistry Fomarprotocetraric acid, by TLC, anal. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 504.

Thallus pendent, subpendent, or prostrate, usually 7— 15(—20) cm long; branching anisotomic dichotomous (to isotomic dichotomous in subsp. americana),, frequent from the base, angles between the dichotomies mainly acute (to obtuse and rounded in subsp. americana), occasionally with short perpendicular lateral spinulose branches; branches terete, uneven (to even in subsp. americana), 0.2-0.3 mm diam. at the base, main branches 0.1—0.2(—0.45) mm diam. translucent to pale cervine brown or dark brown, often with blackened stems and fragmentation regions, consistently shiny. True lateral spinules absent. Soralia rare, modified fissurai, in which the filaments are strongly split, opening flat and recurving the branch, exposing an irregular mass of white farinose soredia. Pseudocyphellae abundant in subsp. trichodes, where they are white, oval and raised; sparser in subsp. americana where they are fusiform to elongate-fusiform, brownish, depressed and 0.5-1 mm long. Apothecia occasional, sometimes abundant, lateral; excipulum thallinum concolorous with the thallus, thin, becoming excluded; disc becoming convex, reddish brown, 0.5-l(-2) mm diam. Spores 8 per ascus, ellipsoid, hyaline, simple, 5.5-6(-7) x 4-5 µm. Pycnidia unknown. Outer cortex K-, C- , KC - , PD-; inner cortex and sometimes medulla K.- , C-, KC-, PD+ red at least in parts (very rarely PD- in subsp. americanci). Contains fumarprotocetraric acid and usually chloroatranorin (the latter absent in subsp. americanci). Ecology. Mainly on coniferous trees, especially spruce and fir, usually in open, wet habitats such as bogs, swamps, lake and river edges; sometimes in spruce-fir or beech-maple forests.



Bryoria trichodes



Bryoria trichodes

Bunodophoron formosanum (Zahlbr.) Wedin, Pl. Syst. Evol. 187(1-4): 233 (1993)
= *Sphaerophorus melanocarpus* subsp. *formosanus* Zahlbr. 1933

[OH401], Japan. Honshu. Prov. Mikawa (Pref. Aichi): Chiiwa Gorge, Horai-cho. Minami-shitara-gun. On bark of *Cryptomeria japonica*, 200 m. Leg. H. Kashiwadani (no. 46179), 18.10.2003, det. H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI NR. 401.

Thallus forming extensive colonies or small patches of numerous crowded thalli. Fertile branches subterete to flattened, particularly at the base, slender, sparingly branched, 2–3.8 cm long, 1.5–3 mm wide. Upper surface pale grey to almost white, smooth, but usually with ±abundant short terete isidioid branchlets. Apothecia sparse to abundant, terminal, 1.2–3 (–3.5) mm wide; supporting branches slender, narrowly compressed to subterete, usually slightly bent upwards, but often not well delimited. Mazaedia subapically exposed, conspicuous, strongly sooty, becoming exposed very early. Ascospores 5.5–7.5 (–9) µm diam., brownish grey to dark grey. Conidia bacilliform, 3.5–6.5 × 1.5–2 µm. CHEMISTRY: Medulla K+ pale yellow, P+ orange (reactions often faint); containing sphaerophorin, stictic acid, constictic acid, cryptostictic acid and norstictic acid. - Epiphytic in temperate and subtropical rainforest at higher altitudes in Australia in Lord Howe Is., widespread in tropical and subtropical high-altitude rainforest throughout the world.



Bunodophoron formosanum

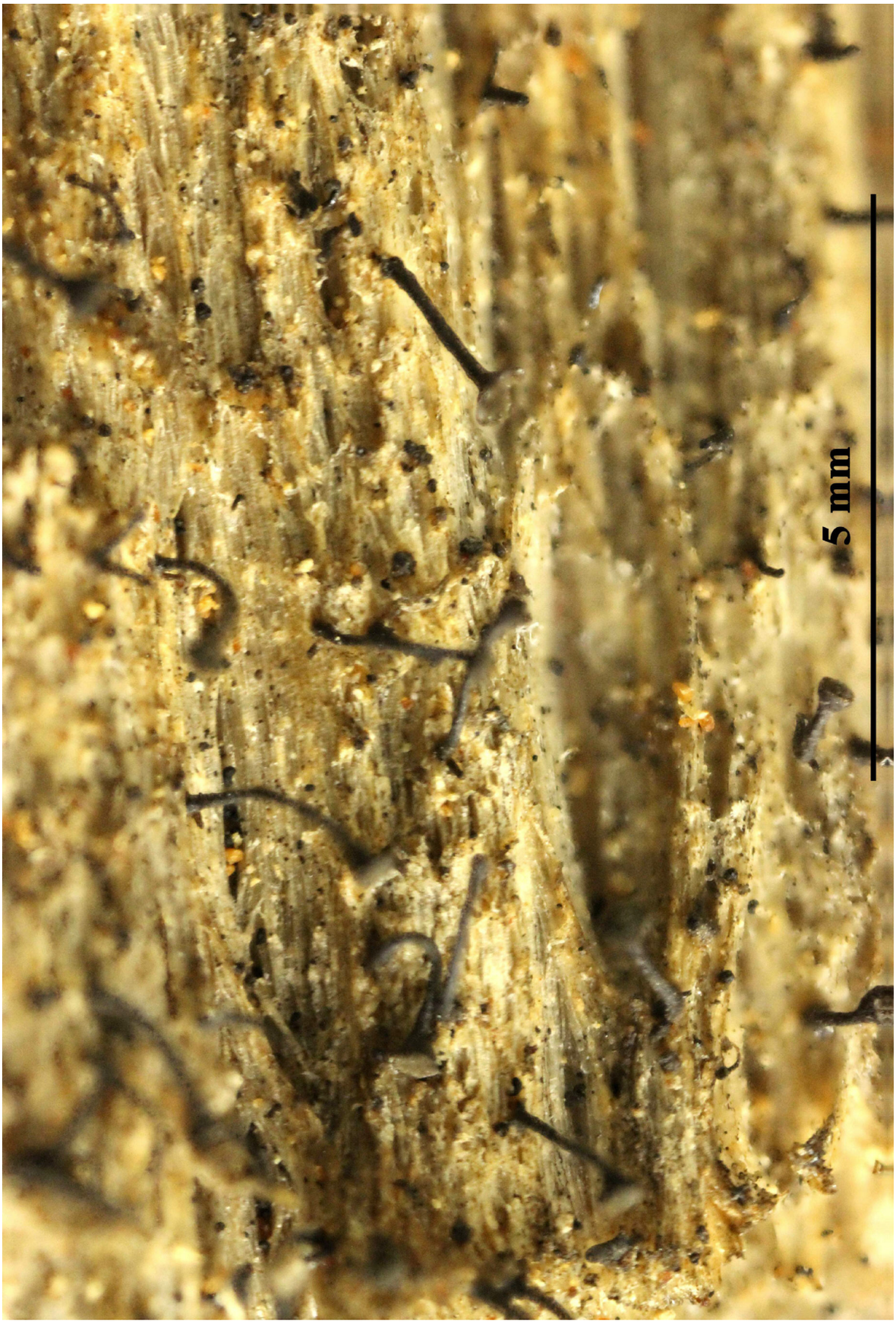


Bunodophoron formosanum

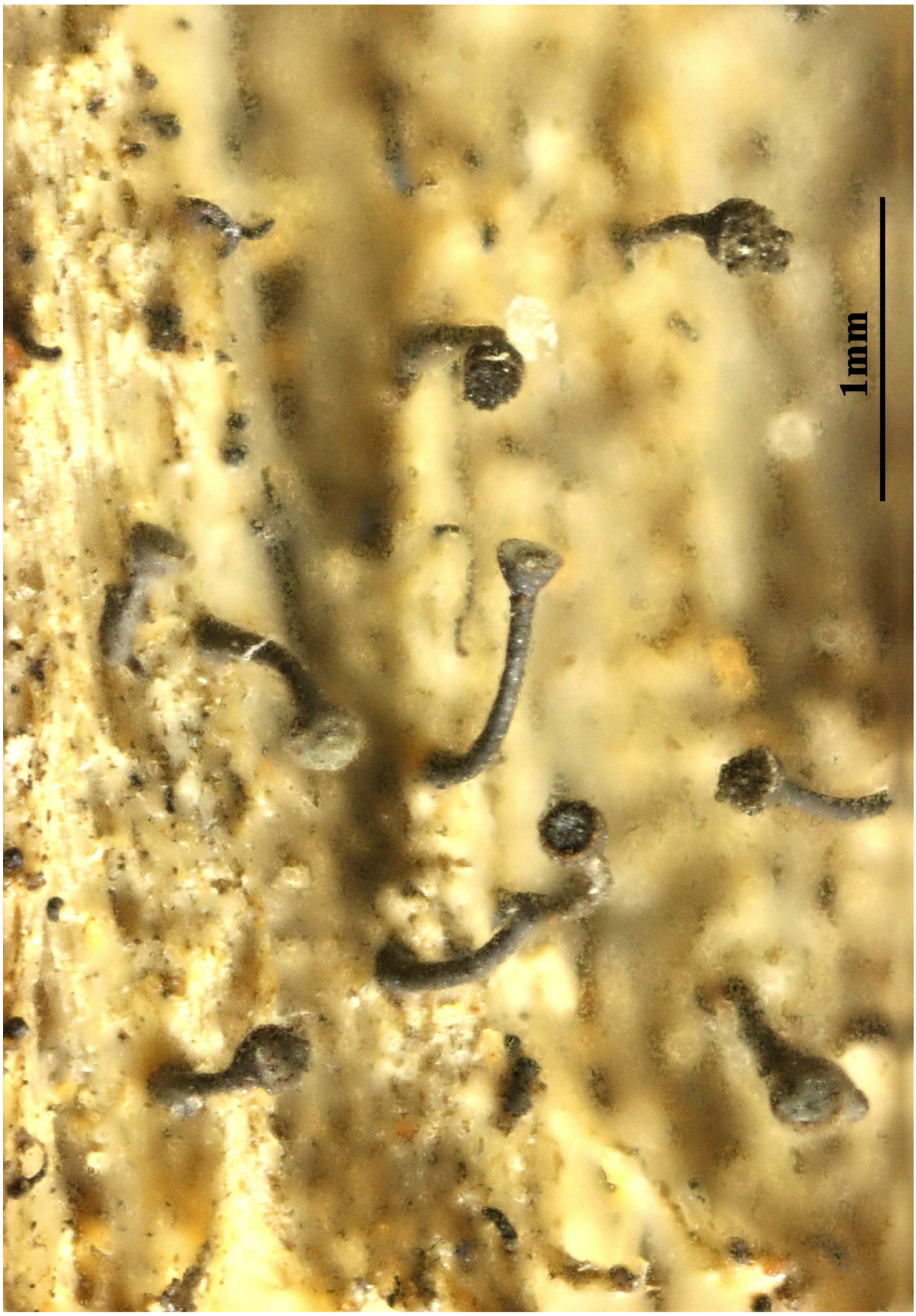
Calicium glaucellum Ach., Methodus qua omnes detectos Lichenes Secundum Organa Carpomorpha ad Genera, Species et Varietates Redigere atque Observationibus Illustrare Tentavit Erik Acharius: 97 (1803)

[KA326], Japan. Honshu. Prov. Shinano (Pref. Nagano): Mt. Takamishi, Yatsugatake. Mts. On weathered bark (*Abies* veitchii), 2100 m. Leg. S. Kurokawa (no. 58316), 4.8.1958, det. L. Tibell. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI N.326.

Thallus crustose, thin, endosubstratic and poorly evident or rarely thinly episubstratic and granular-verrucose, dark grey-green. Apothecia stalked, pin-like, black with a thin whitish pruina which is most abundant at the edge and on the lower side of capitulum, or more rarely epruinose. Stalk shiny black, sometimes white-pruinose in the uppermost part, 0.5-0.9 mm high, 0.1-0.2 mm thick, of strongly sclerotized, dark brown to dark aeruginose, irregularly interwoven hyphae, the outer layer covered with a thin, transparent gelatinous sheath. Capitulum lenticular to obovoid, 0.2-0.35 mm across, with a well-developed, cup-shaped exciple formed by dark brown to aeruginose, elongated to almost isodiametric, anticlinally arranged, sclerotized hyphae which are paler close to the surface; mazaedium well developed, black; hypothecium dark, with a flat or slightly convex upper surface. Asci cylindrical, formed singly, dissolving early, with uniseriate ascospores. Ascospores 1-septate, dark brown, ellipsoid, 9-13 x 5-7 µm, with a thick, ornamented wall; young spores with mainly longitudinally arranged ridges, mature spores with irregular cracks and short ridge fragments. Photobiont chlorococcoid. Spot tests: thallus K- or K+ dull yellow, C-, KC-, P-; ascomata I- in all parts. Chemistry: thallus with sekikaic acid (major) and related compounds. - Note: a temperate to boreal-montane, holarctic species found on lignum and on acid bark, especially on decorticated stumps of conifers, but also on broad-leaved trees, e.g. on *Castanea*.



Calicium glaucellum



Calicium glaucellum

Calicium hyperelloides Nyl., Syn. meth. lich. (Parisiis) 1(2): 153 (1860)
= *Chaenothecopsis hyperelloides* (Nyl.) Clauzade & Cl. Roux, Likenoj de Okcidenta Europo: 223 (1985)

[OH653], Japan, Honshu. Shinano Prov. (Nagano Pref.): Mt. Kai-Komagatake, Kami-Ina-gun. On weathered wood, 2600m. Leg. S. Kurokawa (no. 79082), 30.07.1979, det. Y. Ohmura. EX Y. OHMURA: LICHENES MINUS COGNITI EXSICCATI NO 653.

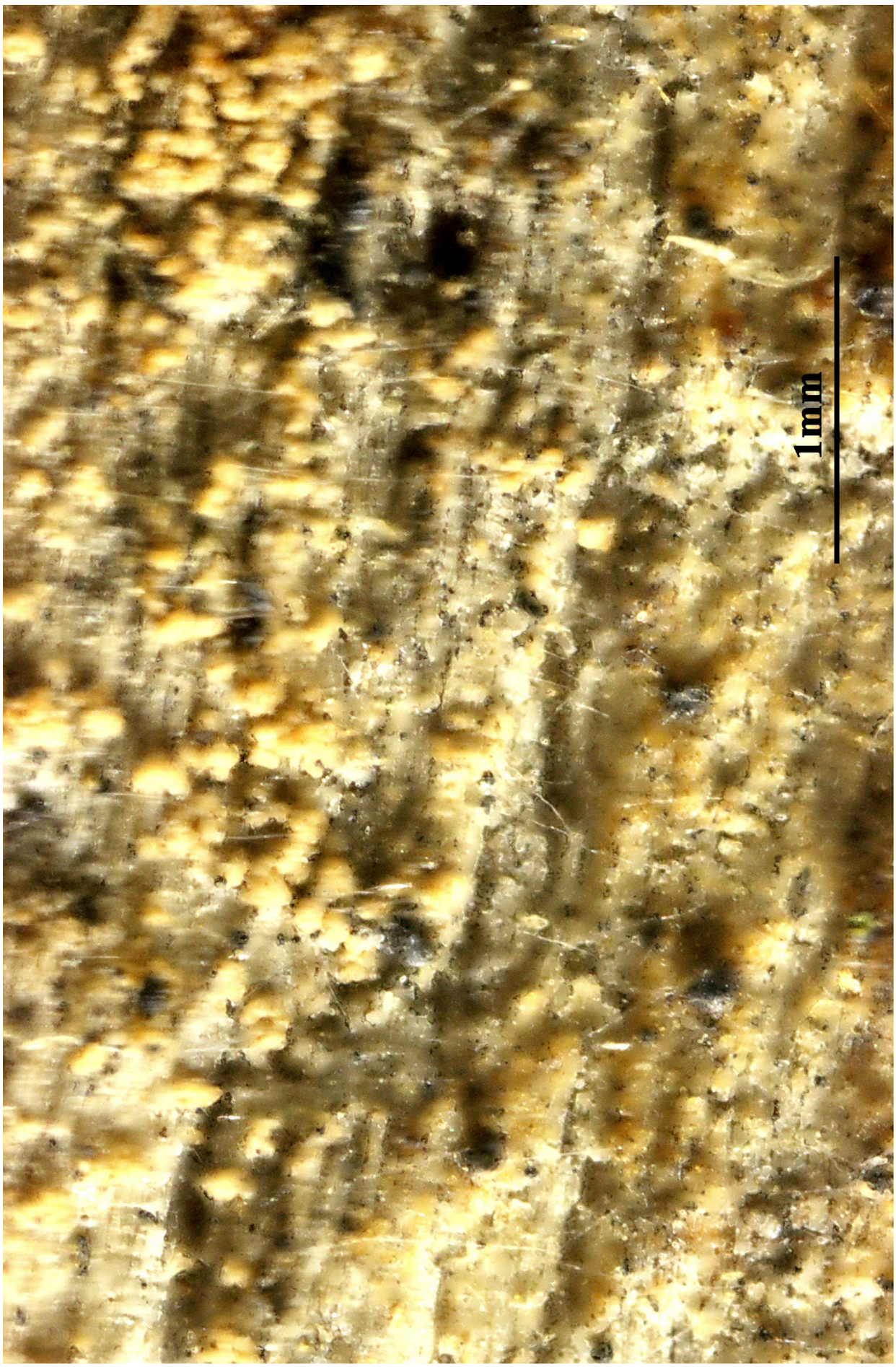
Thallus crustose, continuous, thin, granular, pale to yellowish. Photobiont trebouxioid alga. Ascomata stalked capitulate maezedia, 0.48-0.65 mm tall, epruinose or sometimes with a white pruina of minute crystals on the lower side of the capitulum, maezedium convex, black; exciple brown-black, 0.17-0.27 mm diam.; hypothecium dark brown; stalk shiny black. Asci cylindrical, 41-45 x 5-6 µm with a long stalk; 8-spored, in one row (uniseriate). Ascospores brown, ellipsoid, 2-celled, 10-12 x 5-6 µm; surface minutely uneven. Chemistry. Thallus UV+ dark orange, K+ dull yellow, C+ orange, KC+ orange-red, Pd–. Some specimens contain arthothelin, thiophanic acid, and thuringione, others arthothelin and thiophanic acid only. Smaller amounts of unidentified xanthones occur. Several specimens contain only traces of unidentified compounds or have no detectable amounts of secondary substances. - Corticolous on hardwood bark in maritime and mixed hardwood forests. Cosmopolitan, most common in the subtropics.



Calicium hyperelloides



Calicium hyperelloides



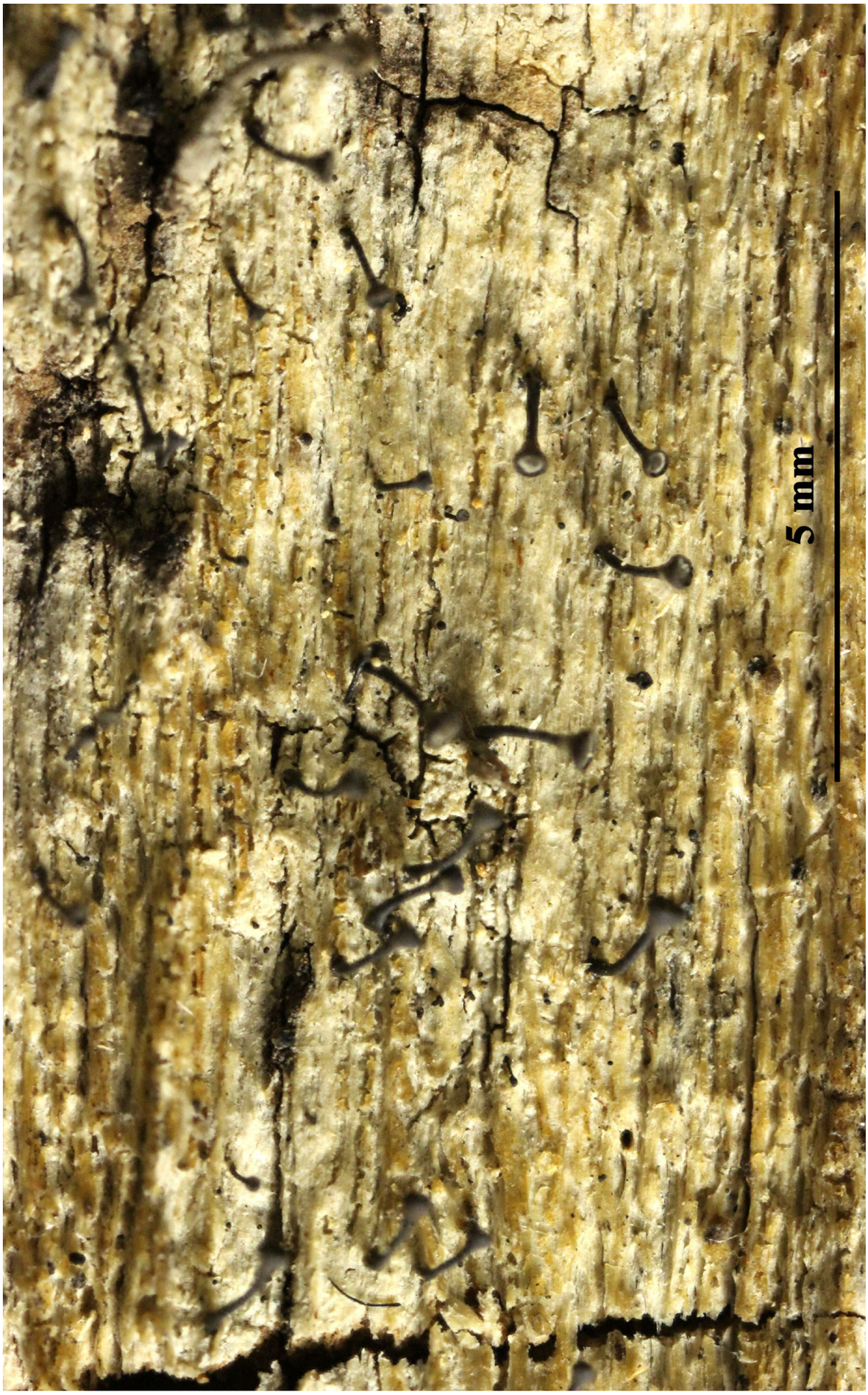
Calicium hyperelloides



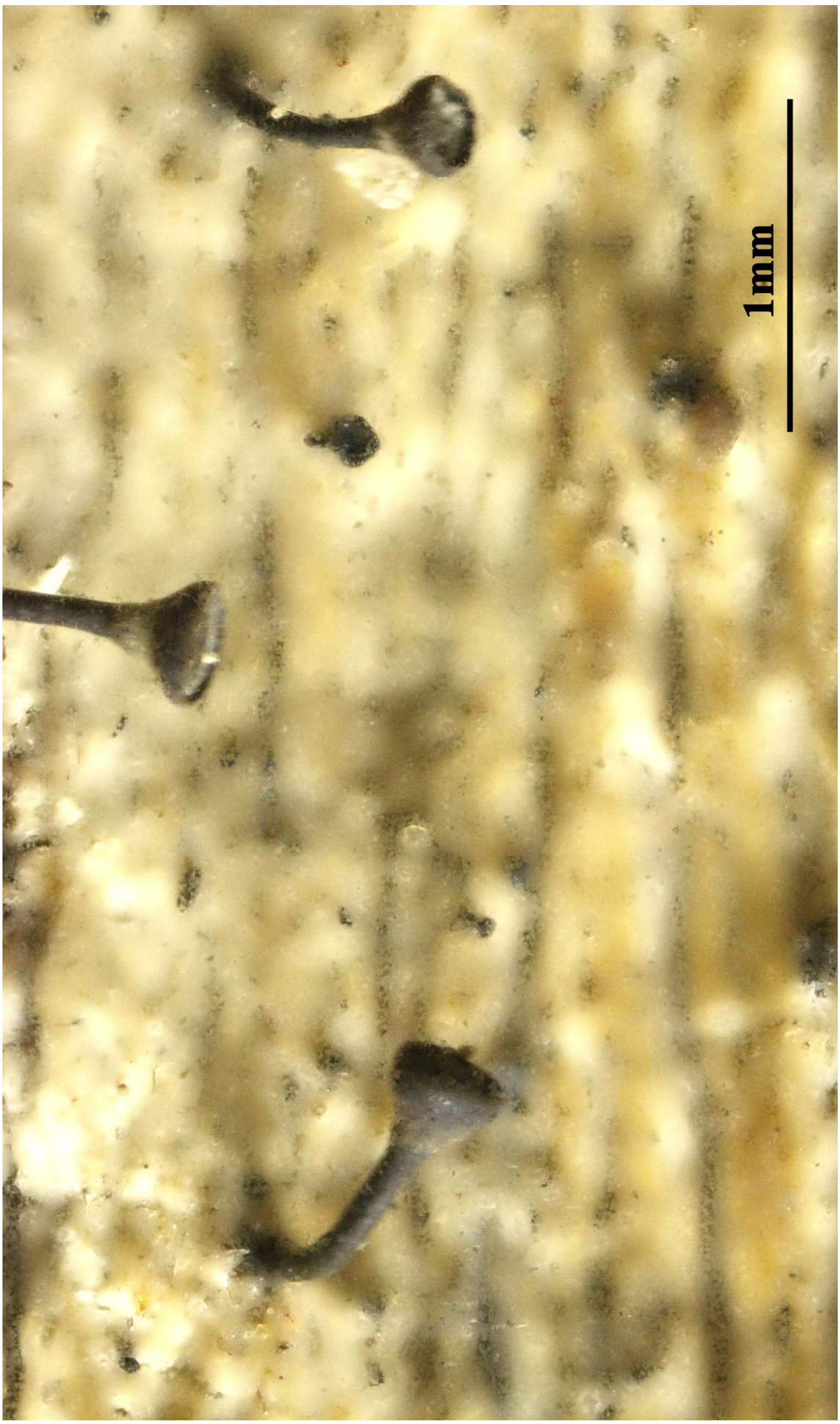
Calicium hyperelloides

Calicium salicinum Pers., Ann. Bot. (Usteri) 7: 20 (1794)

[KA327], Japan. Honshu. Prov. Echigo (Pref. Niigata). On trail from Akayu Hot Spring to Motohashi, Mt. Naeba. Leg. S. Kurokawa (no. 57277), 18.8.1967, det. L. Tibell. EX H. KASHIWADANI LICHENES MINUS COGNITI NR. 327.



Calicium salicinum

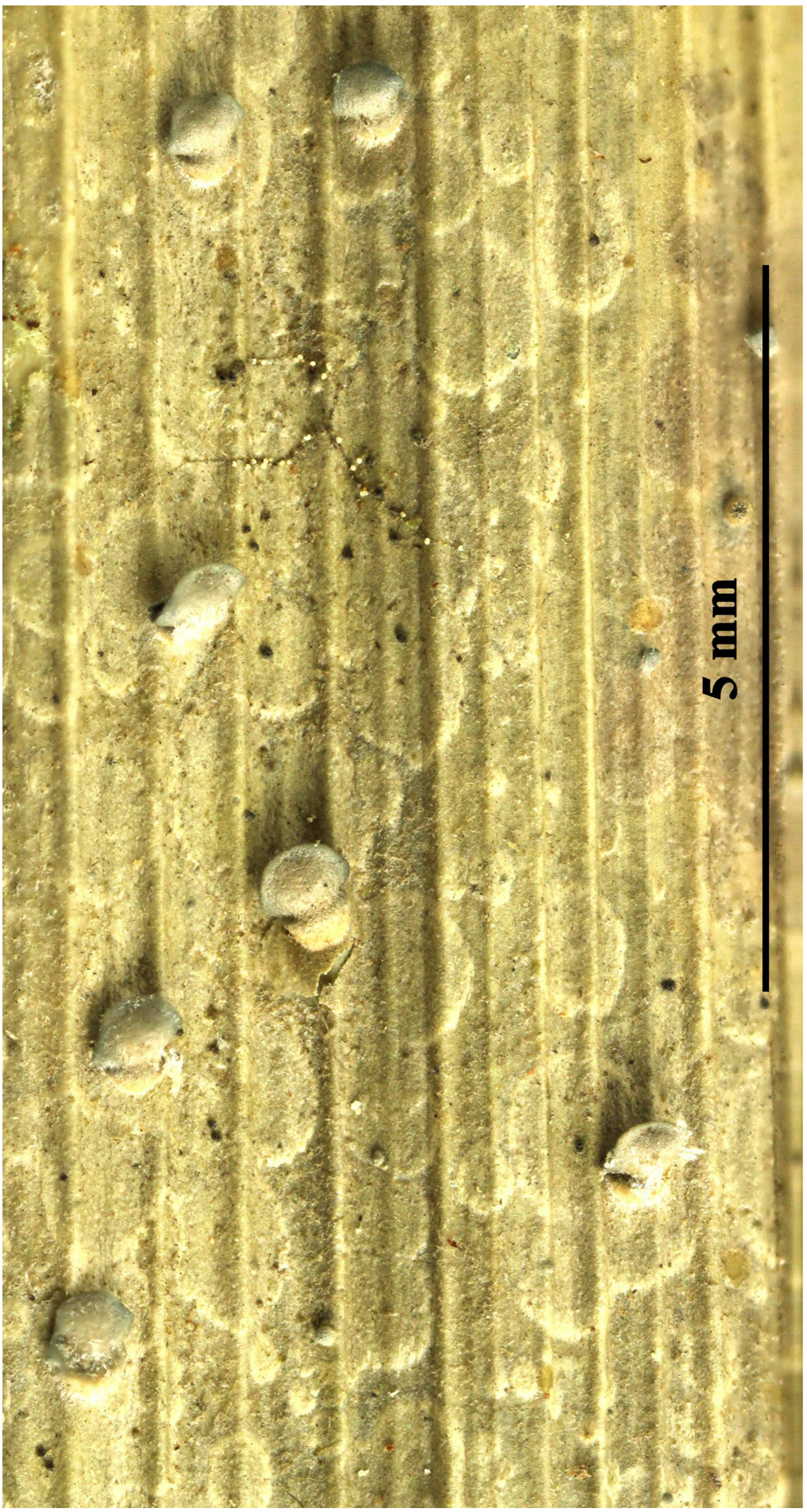


Calicium salicinum

Calopadia puiggarii (Müll. Arg.) Vězda, Folia geobot. phytotax. 21(2): 215 (1986)
= *Heterothecium puiggarii* Müll. Arg. 1881

[OH427], Japan. Yaeyama Islands: Ishigaki Island, 4-10 km NNE of Ishigaki-city, along the trail on the S slope of Mt. Omoto, Ishigaki-city. On leaf, 200-500 m. Leg. H. Kashiwadani (no. 38768), 8.2.1995, det. A. Frish. EXY. OHMURA LICHENES MINUT COGNITI EXSICCATI NR. 427.

Thallus dispersed into rounded patches, 10–30 mm across and 10–20 µm thick, ecorticate, smooth, pale grey. Apothecia rounded, 0.3–0.5 mm diam. and 180–250 µm high; disc plane to slightly convex, (light to) dark greyish brown; margin thin, pale grey. Excipulum 20–40 µm broad. Hypothecium 10–30 µm high, dark aeruginous brown. Apothecial base aeruginous. Epithecium thin, 5–10 µm high, dark brown. Hymenium 70–110 µm high, colorless. Asci 70–90 x 24–30 µm. Ascospores single, ellipsoid, muriform, 55–85 x 16–28 µm, 3–4 times as long as broad, colorless. Campylidia sessile, 0.4–0.6 mm broad; lobe well-developed, hood-shaped, grey; socle not apparent. Conidia filiform with clavate apex, 3–7-septate, 30–45 x 1–1.5 µm. Chemistry: no substances detected by TLC and HPLC. Distribution and Ecology. Pantropical. The most common species of the genus, usually found on leaves in open situations.



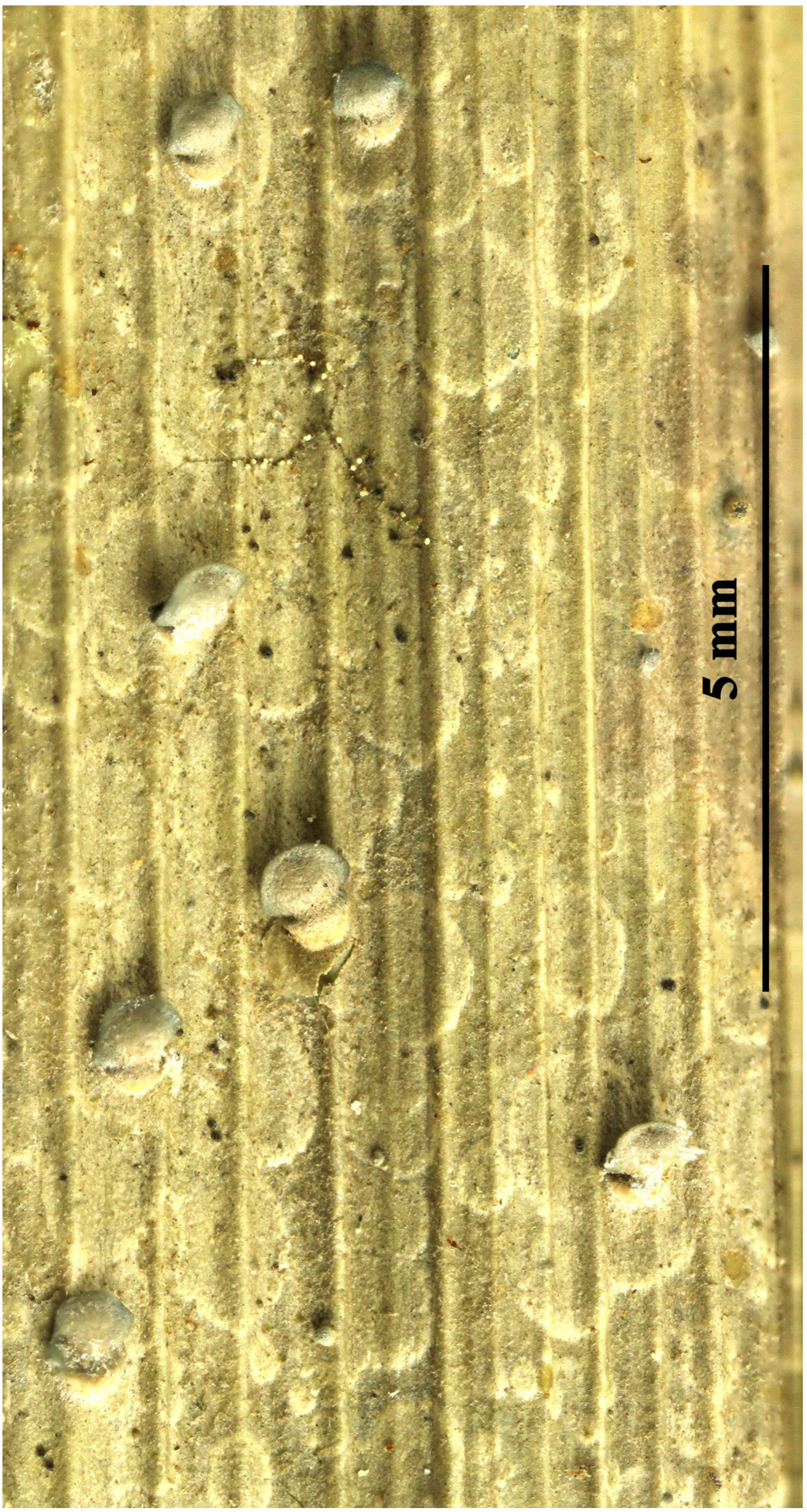
Calopadia puiggarii



Calopadia puiggarii

Calopadia puiggarii (Müll. Arg.) Vězda, Folia geobot. phytotax. 21(2): 215 (1986)
= *Heterothecium puiggarii* Müll. Arg. 1881

[OH426], Japan. Yaeyama Islands: Iriomote Island, along the trail by Urauchi River, 0.5 km NW of Maryudo Waterfall, Taketomi-cho, Yaeyama-gun. On leaf of *Arenga engleri*, 80 m. Leg. Y. Ohmura (no. 7961) & G. Tanaka, 9.3.2011, det Y. Ohmura & A. Frisch. EX Y. OHMURA LICHENES MINUS COGNITI NR.426



Calopadia puiggarii



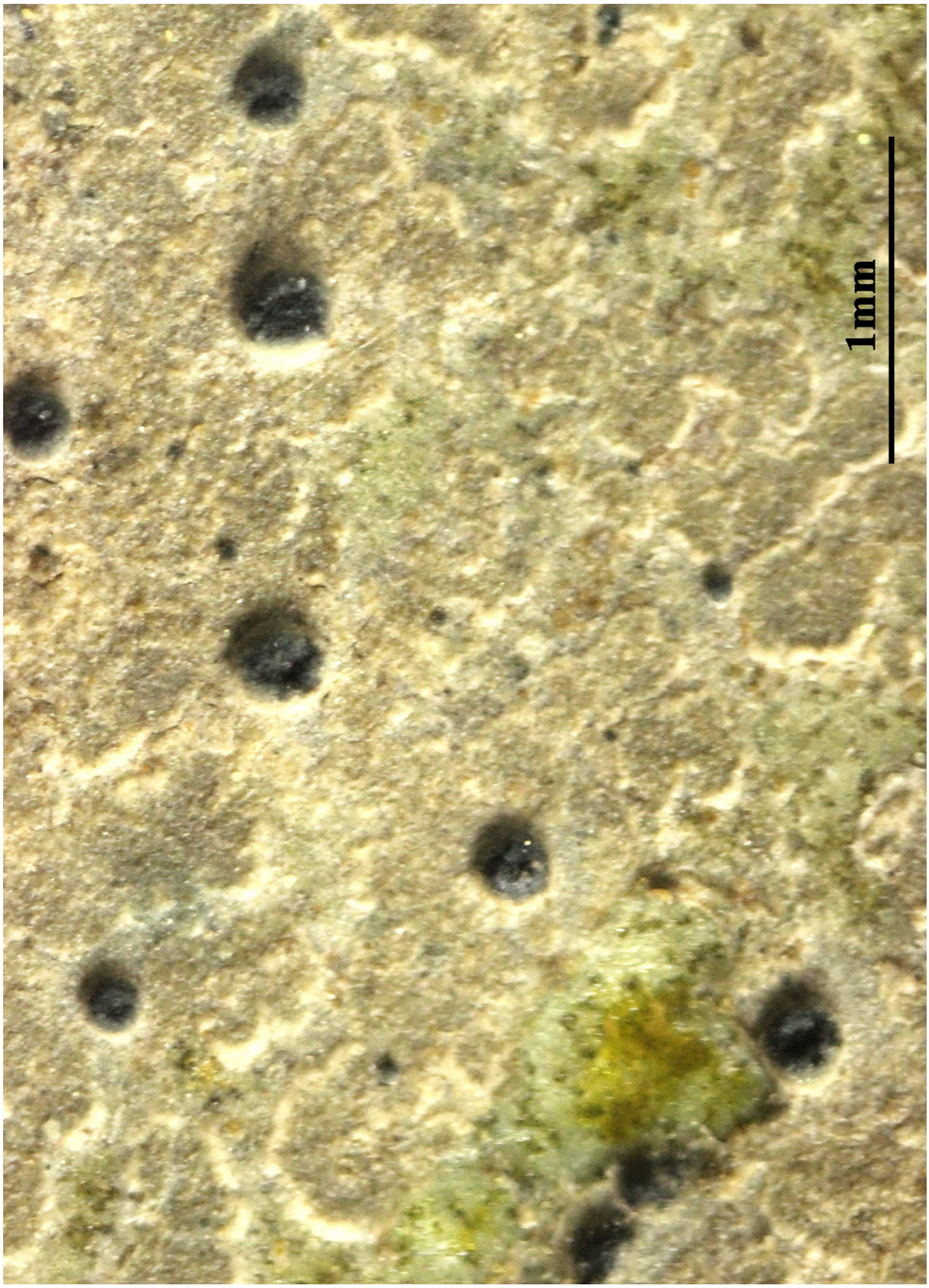
Calopadia puiggarii

Calopadia subcoerulescens (Zahlbr.) Vězda, Lichenes Selecti Exsiccati, Fascicle 88 (nos 2176-2200) (Průhonice): 3 (no. 2185) (1988)
= *Lopadium subcoerulescens* Zahlbr. 1928

[OH452], Japan. Honshu. Prov. Hoki (Pref. Tottori): Fudo Waterfall, Tawaradani, Aoya-cho, Tottori-city. On leave of *Camellia* sp., 60-80 m. Leg. Y. Ohmura (no. 9551), 11.3.2013, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI NR. 452.



Calopadia subcoerulescens



Calopadia subcoerulescens

Caloplaca cinnabarina (Ach.) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 228 (1908)

= *Lecanora cinnabarina* Ach. 1810

= *Neobrownliella cinnabarina* (Ach.) S.Y. Kondr., Upreti & A. Thell, in Mishra, Upreti, Sanjeeva Nayaka, Thell, Kärnefelt, Hur, Sinha & Kondratyuk, Acta Bot. Hung. 62(3-4): 362 (2020)

[OH603], Japan- Honshu. Prov. Bizem (Pref. Okayama): Kakui Island, Hinase, Hinase-cho, Bizen-city (34°43'18" N, 134°17'12" E). On coastal rock, 1 m. Leg. M. Sugimoto (no. 627), 17.10.2018, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR.603.



Caloplaca cinnabarina

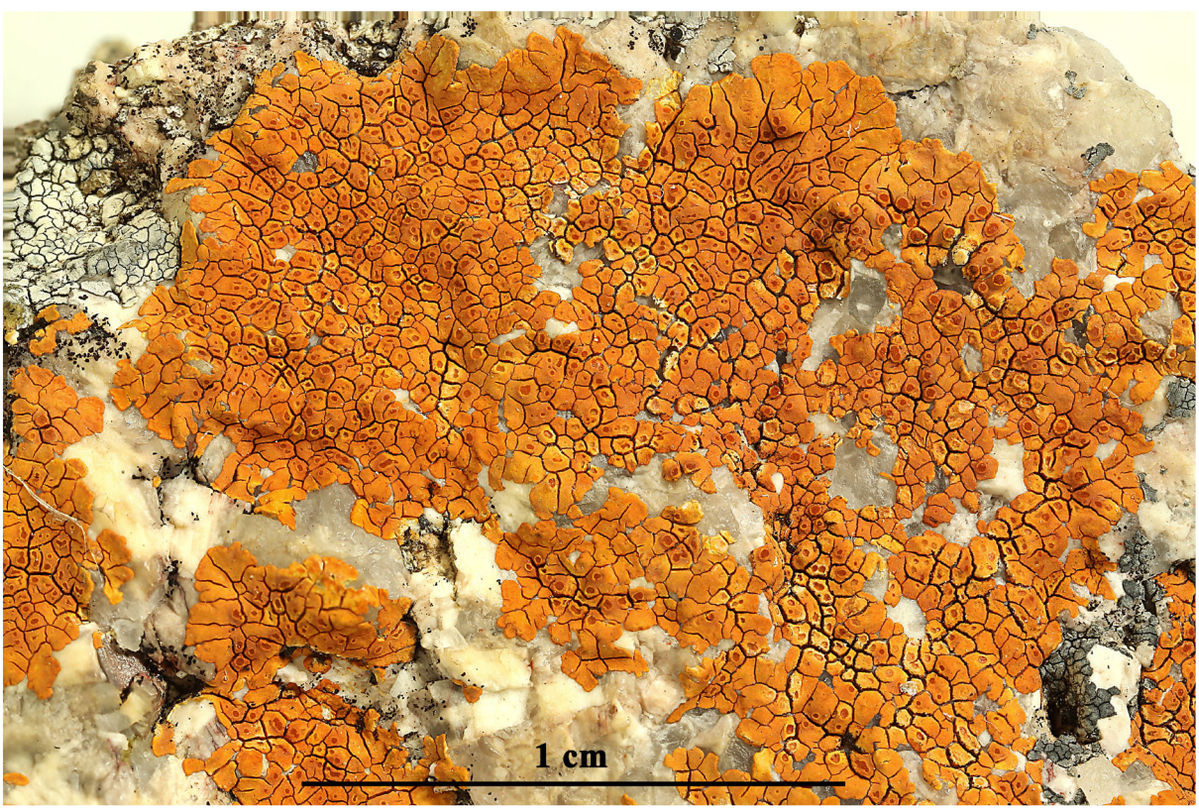


Caloplaca cinnabarina

Caloplaca cinnabarina (Ach.) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 228 (1908)
[= *Brownliella cinnabarina* (Ach.) S.Y. Kondr., Kärnefelt, A. Thell, Elix, J. Kim, A.S. Kondr. & Hur, in Kondratyuk et al., Acta bot. hung. 55(3-4): 271 (2013)]

[KK19232], Australia, Queensland, c. 20 km south of Townsville, growing on granitic rocks in a light *Eucalyptus* forest, 150 m, 21°20' S, 149°13' E. Leg. K. & A. Kalb, 21.08.1988, det. S.Y. Kondratyuk. Ex Herbario F. Schumm Nr. KK19232.

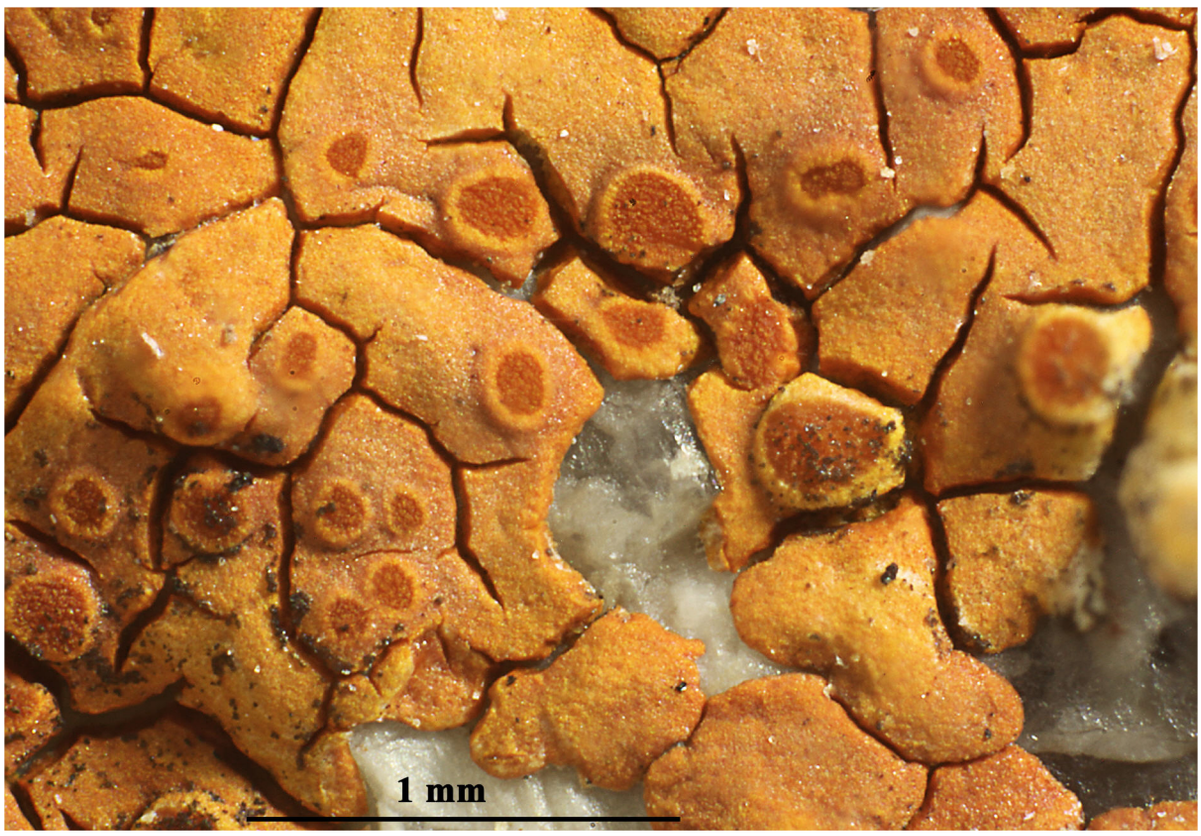
Thallus orange, at the margins not or only short appressed lobate, areolate, isidia and soralia absent. Apothecia first immersed (similar to *Acarospora*) then broadly sessile, disc darker orange than the thallus. Ascospores bipolar, hyaline, 8/ascus, 8-11 x 4 µm, septum 3 µm. Chemistry: parietin, fallacinal, emodin, teloschistin, parietinic acid.
Lit.: Wetmore, C.M. (2007): Caloplaca - in: Lichen Flora of the Greater Sonoran Desert Region, Vol. 3: 191.





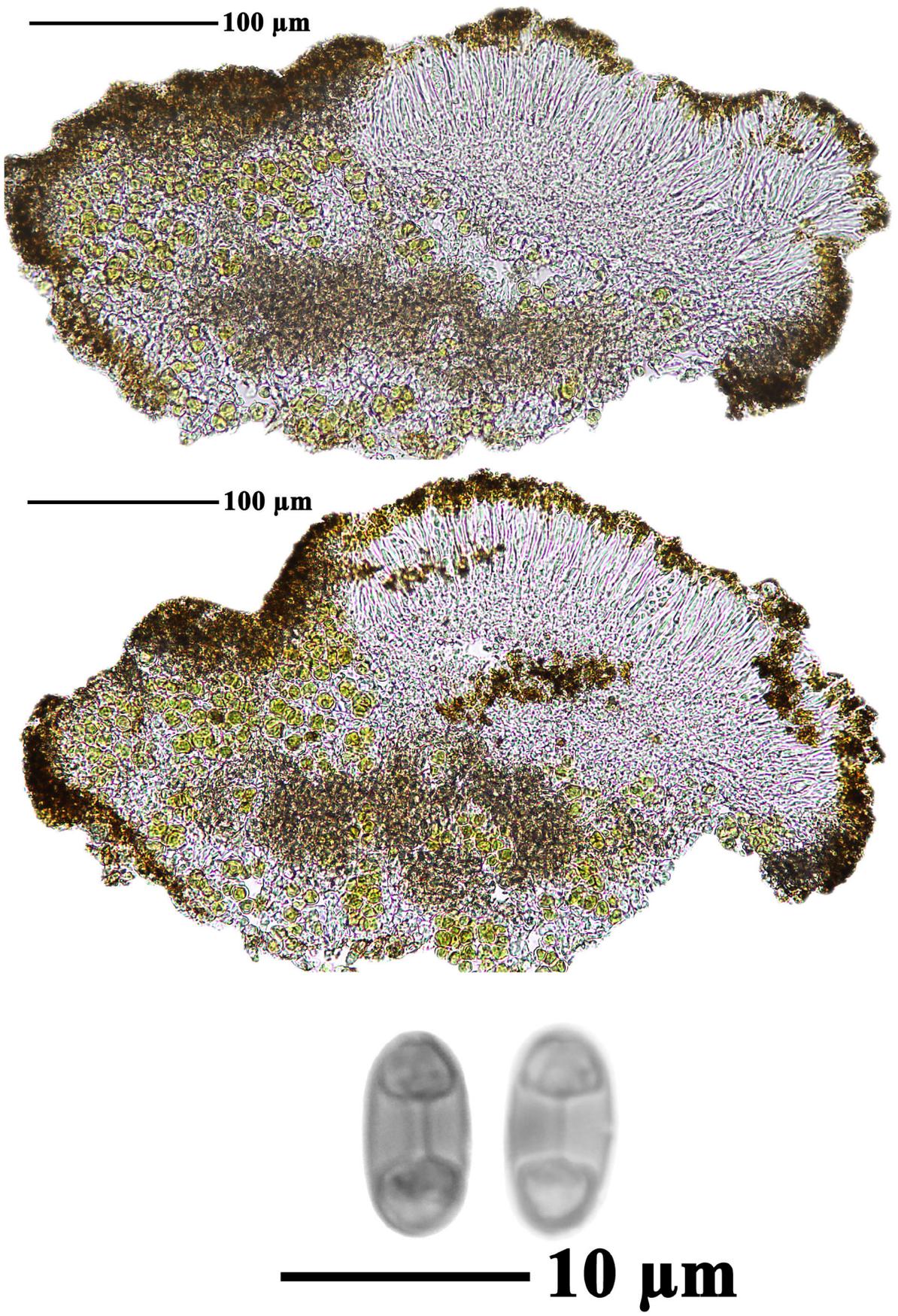


Caloplaca cinnabarina

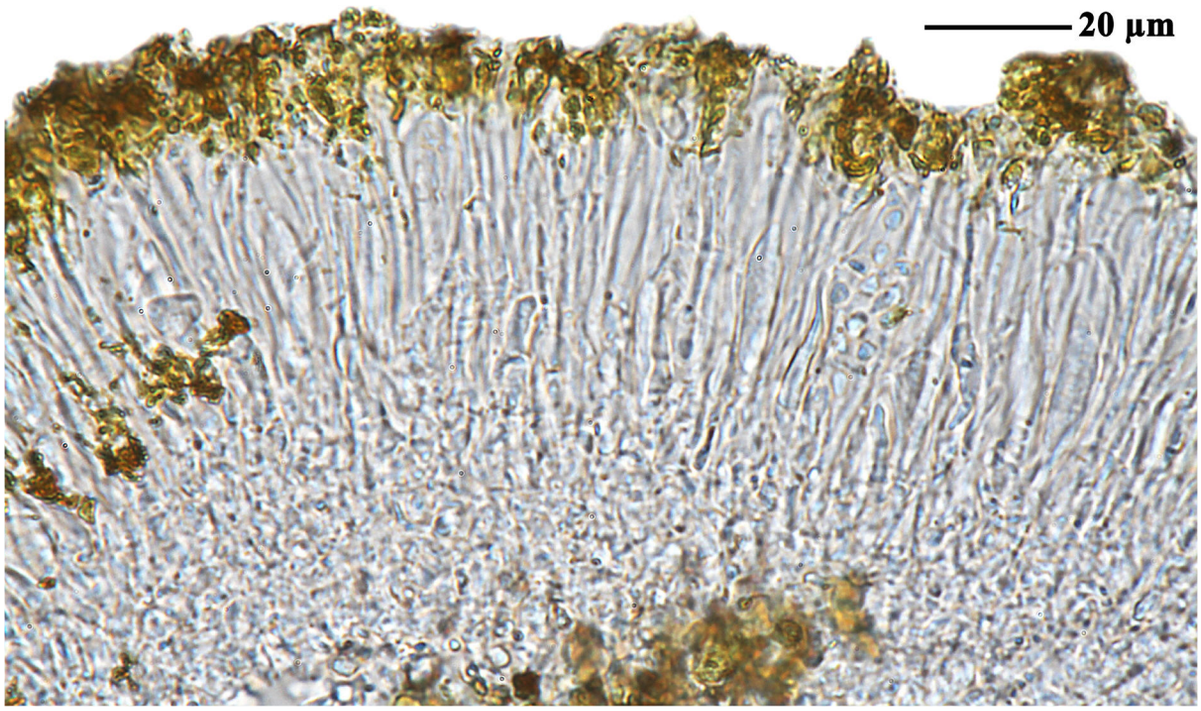


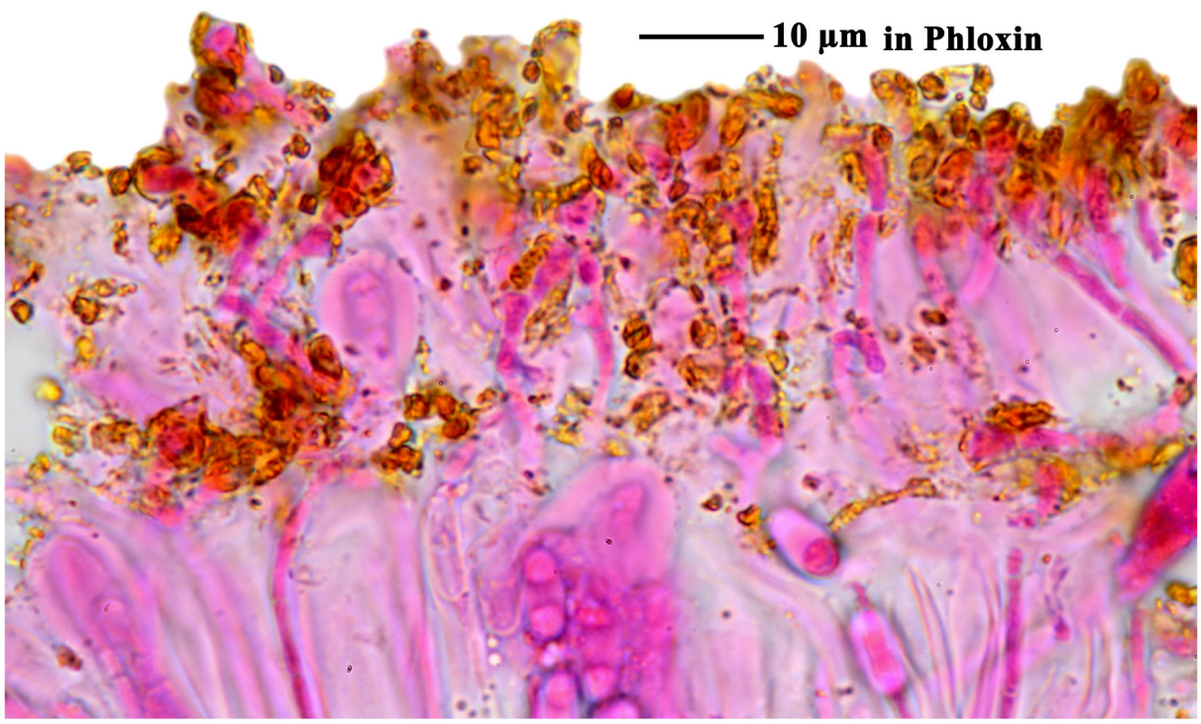


Caloplaca cinnabarina

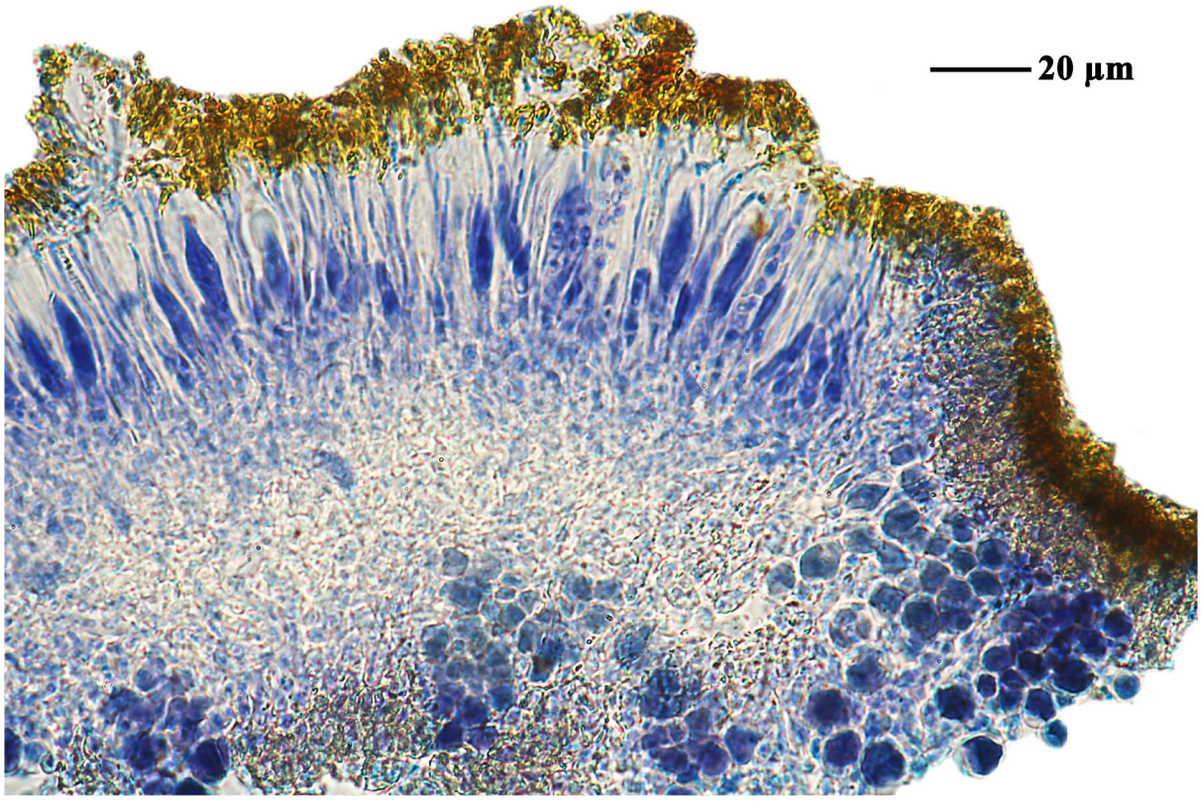


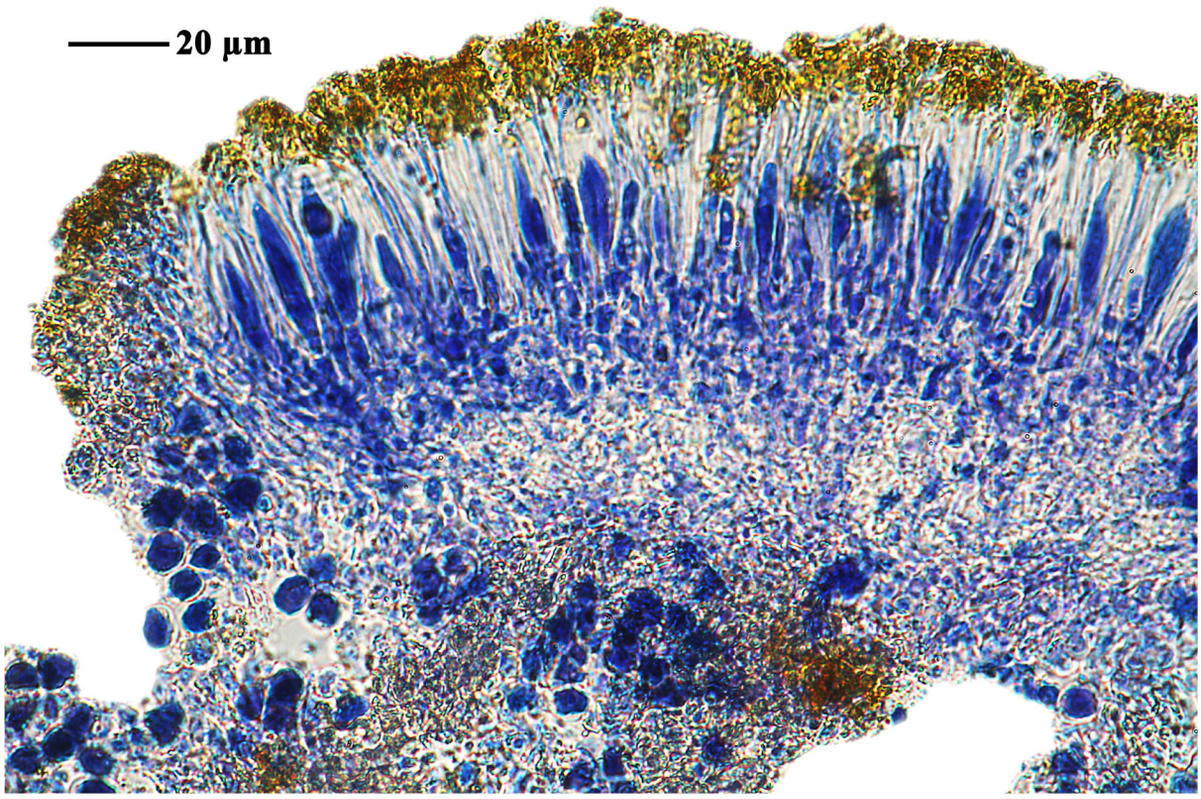
Caloplaca cinnabarina



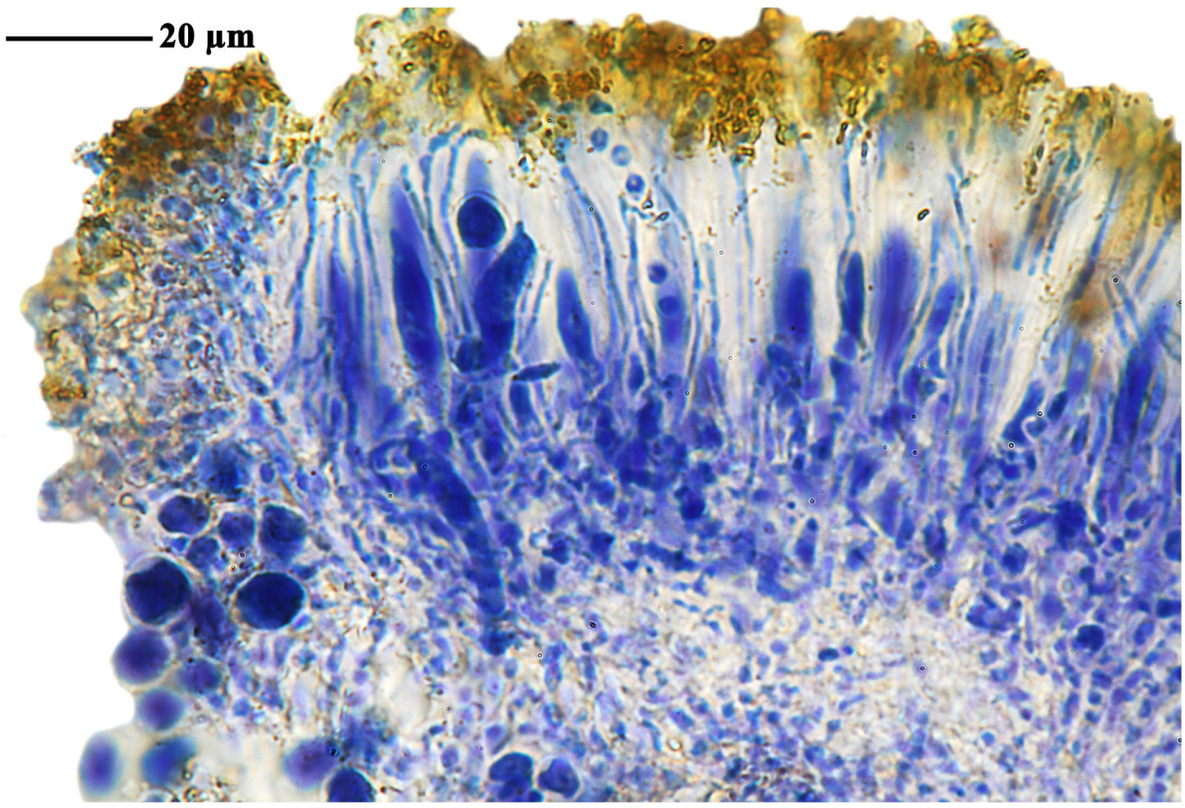


Caloplaca cinnabarina





Caloplaca cinnabarina



Caloplaca cinnabarina

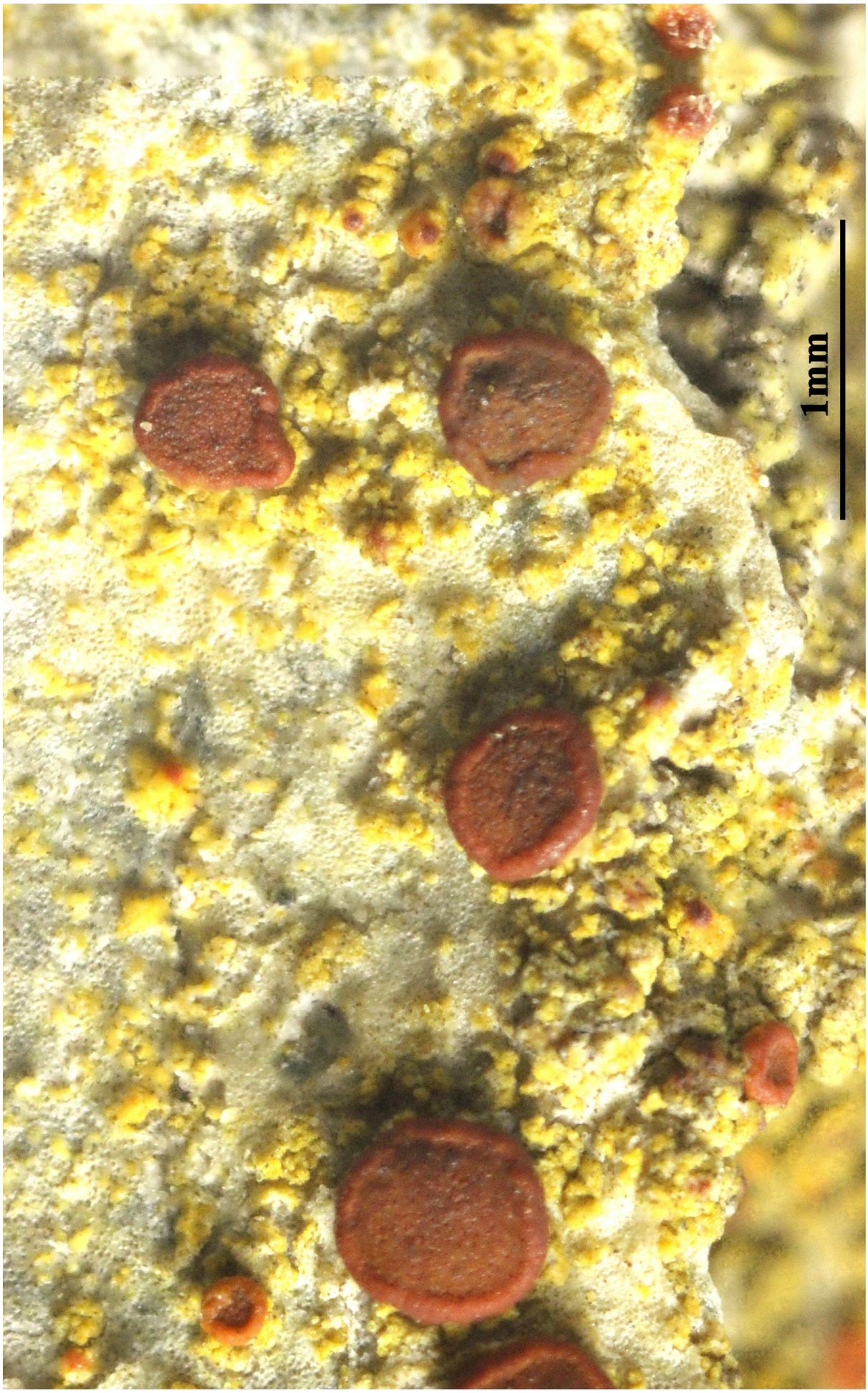
Caloplaca flavorubescens (Huds.) J.R.Laundon
[= *Gyalolechia flavorubescens* (Huds.) Søchting, Frödén & Arup]

[OH478], Japan. Honshu. Prov Shinano (Prf. Nagano): Mikuni Pass. Minami-saku-gun (35°58' N, 138°43' E). On bark of *Quercus crispula*. 1760 m. Leg. Y. Ohmura (no. 8687), 26.5.2013, det. A. Frisch. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 478.

Thallus crustose, more or less continuous, sometimes coarsely papillate, yellow-green to yellow-orange in sun-forms, rarely almost grey in shade-forms. Apothecia common, constricted at base, 0.5-1.5 mm across, with an orange, usually flat disc, an orange proper margin, and a yellow, finally often excluded thalline margin. Epithecium brownish orange, K+ purple-red, C+ purple; hymenium colourless, 50-110 µm high; paraphyses slightly moniliform, c. 1.5 µm thick at base, the apical cells up to 4 µm wide; hypothecium colourless, sometimes inspersed with oil droplets. Asci 8-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polariloocular, hyaline, ellipsoid (10-)11-15(-18) x (5-)6-9(-11) µm, the equatorial thickening (“septum”) 3-8 µm, to half of spore length. Pycnidia common, darker orange than thallus, immersed. Conidia hyaline, bacilliform to slightly pyriform, c. 2 x 0.7 µm. Photobiont chlorococcoid. Spot tests: thallus K+ purple-red, C-, KC-, P-; apothecia K+ purple-red, C+ purple (the latter reaction not always evident). Chemistry: fragilin dominant, with smaller amounts of emodin and parietin; apothecial disc with predominant parietin, and variable amounts of chlorinated anthraquinones. - Note: a mainly temperate lichen, most common on old, more or less isolated deciduous trees, especially oaks; a member of a difficult and variable group.



Caloplaca flavorubescens



Caloplaca flavorubescens

Caloplaca flavorubescens (Huds.) J.R.Laundon
[= *Gyalolechia flavorubescens* (Huds.) Søchting, Frödén & Arup]

[14796], Zypern, NW Pano Platres und SW Trodos, bei den Kalidonia Falls; 34°53.762' N, 32°52.105' E, 1190 m. Leg. F. Schumm & J.-P. Frahm, 18.02.2009, det. A. Aptroot 2016. - On bark. Spores polarilocular, hyaline, 8/ascus, 14-16 x 8.5-9.5 µm, septum 5.7-6.2 µm. EX HERBARIO F. SCHUMM NR.14796

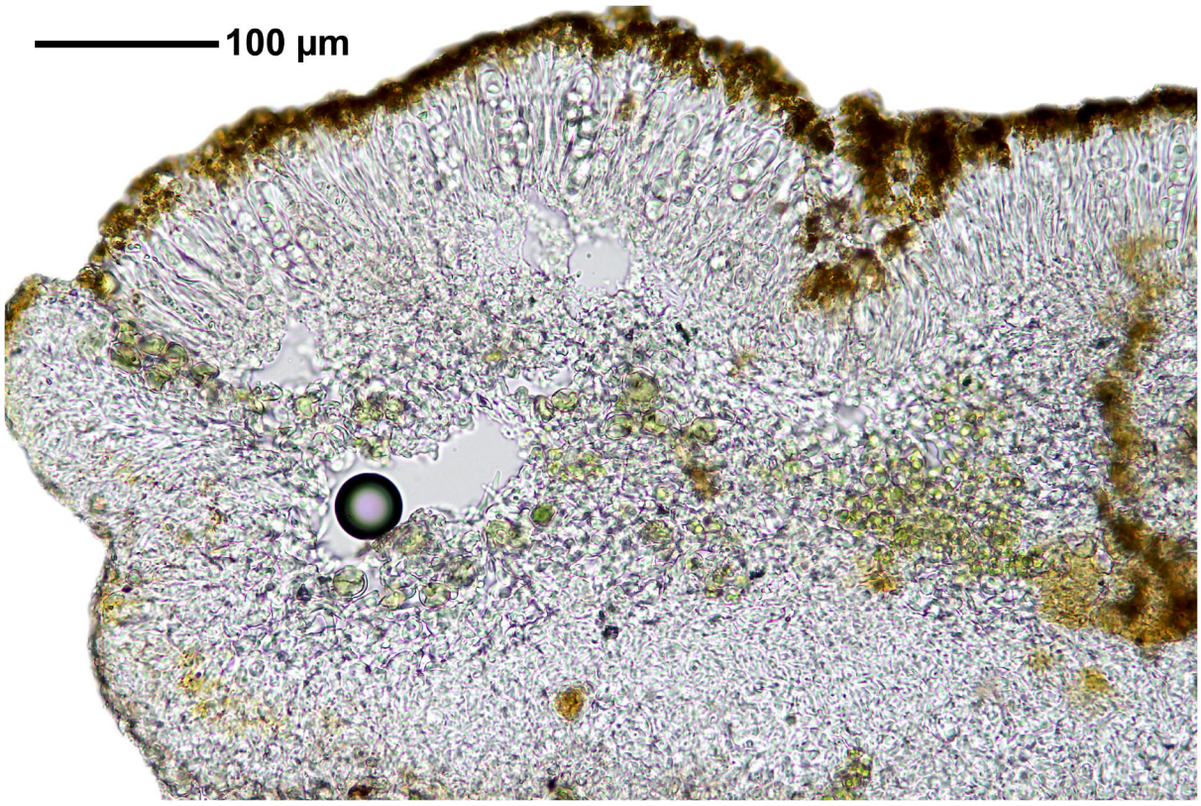
Thallus crustose, more or less continuous, sometimes coarsely papillate, yellow-green to yellow-orange in sun-forms, rarely almost grey in shade-forms. Apothecia common, constricted at base, 0.5-1.5 mm across, with an orange, usually flat disc, an orange proper margin, and a yellow, finally often excluded thalline margin. Epithecium brownish orange, K+ purple-red, C+ purple; hymenium colourless, 50-110 µm high; paraphyses slightly moniliform, c. 1.5 µm thick at base, the apical cells up to 4 µm wide; hypothecium colourless, sometimes inspersed with oil droplets. Asci 8-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid (10-)11-15(-18) x (5-)6-9(-11) µm, the equatorial thickening ("septum") 3-8 µm, to half of spore length. Pycnidia common, darker orange than thallus, immersed. Conidia hyaline, bacilliform to slightly pyriform, c. 2 x 0.7 µm. Photobiont chlorococcoid. Spot tests: thallus K+ purple-red, C-, KC-, P-; apothecia K+ purple-red, C+ purple (the latter reaction not always evident). Chemistry: fragilin dominant, with smaller amounts of emodin and parietin; apothecial disc with predominant parietin, and variable amounts of chlorinated anthraquinones. - Note: a mainly temperate lichen, most common on old, more or less isolated deciduous trees, especially oaks; a member of a difficult and variable group.

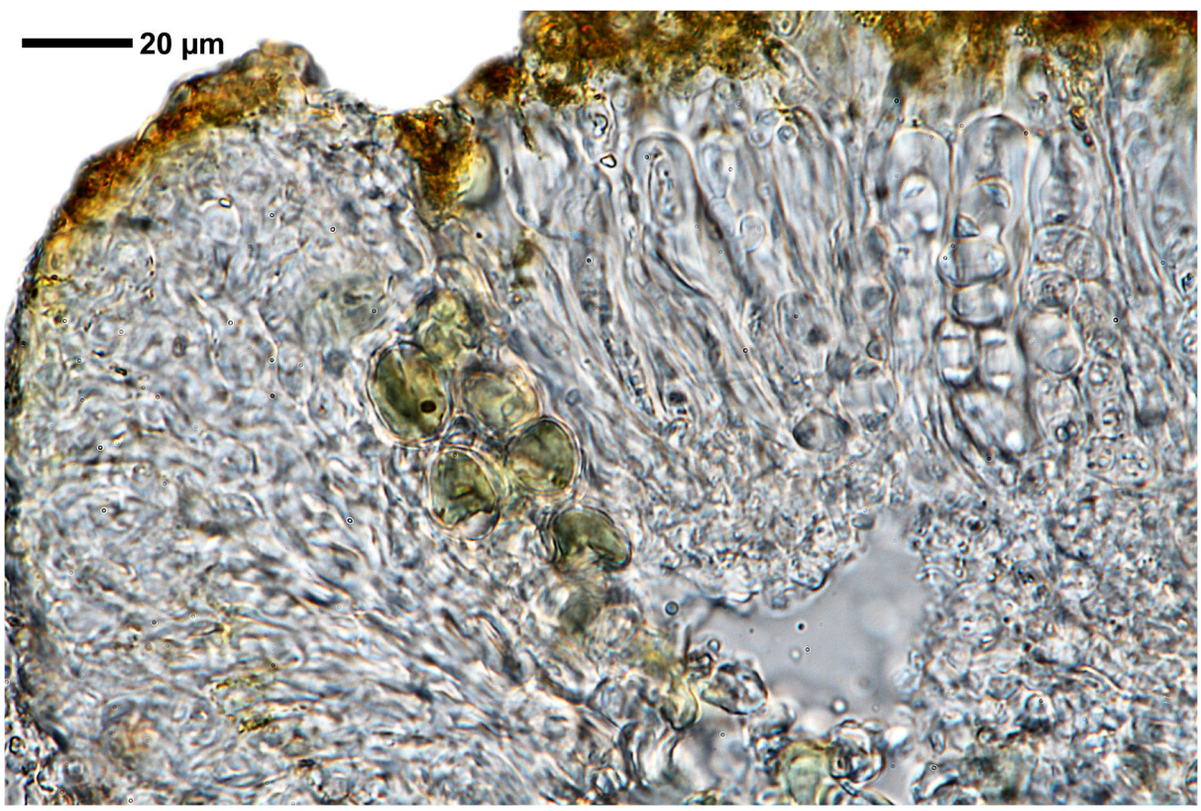


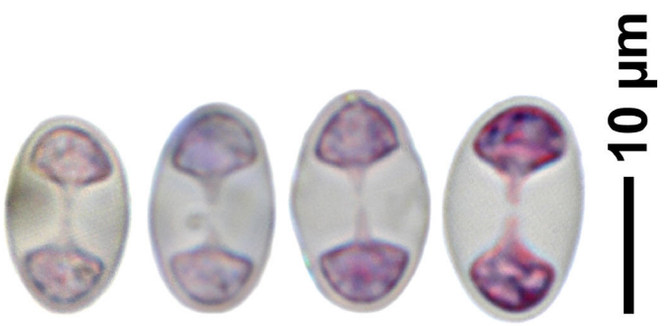
Caloplaca flavorubescens



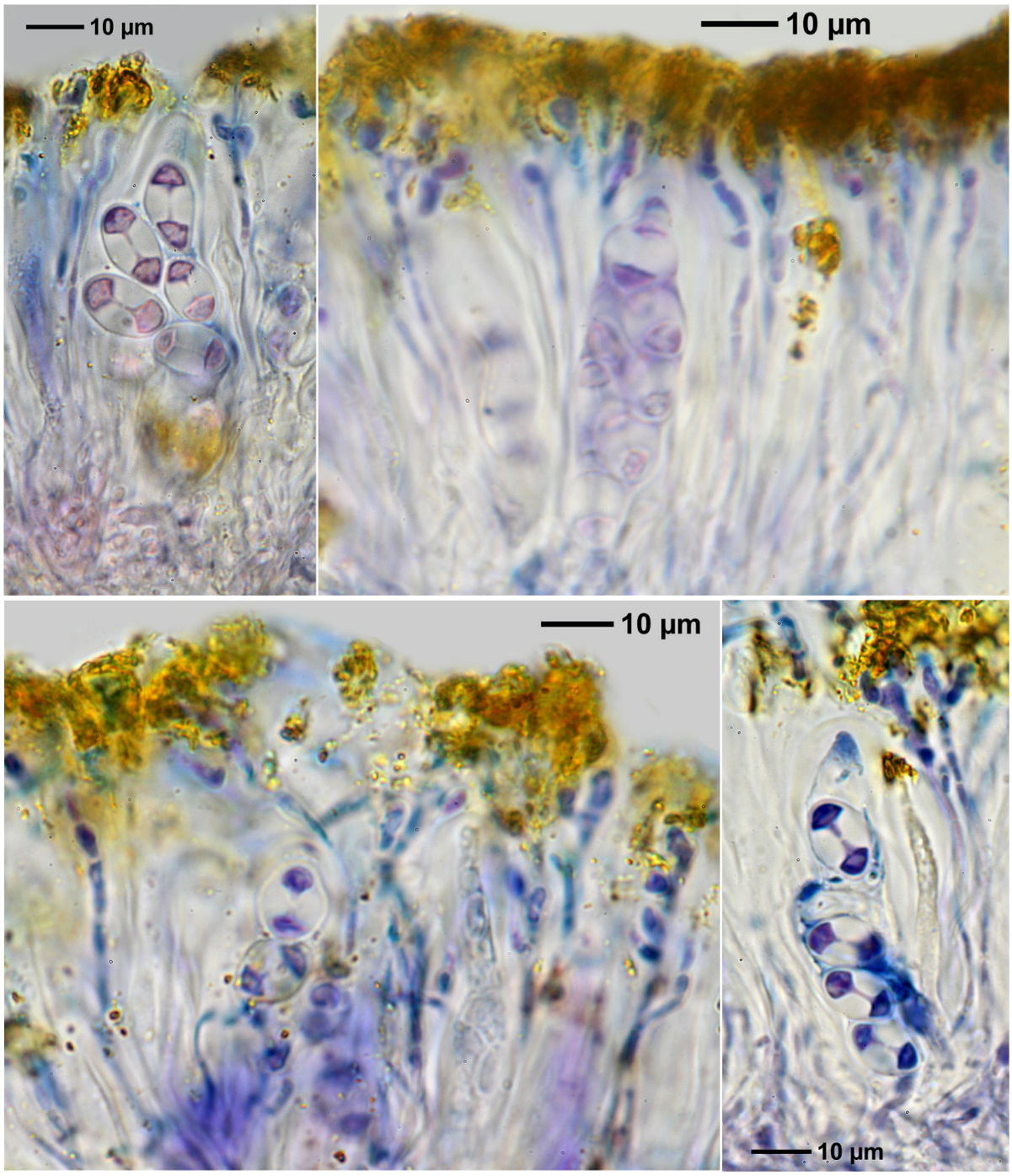
Caloplaca flavorubescens

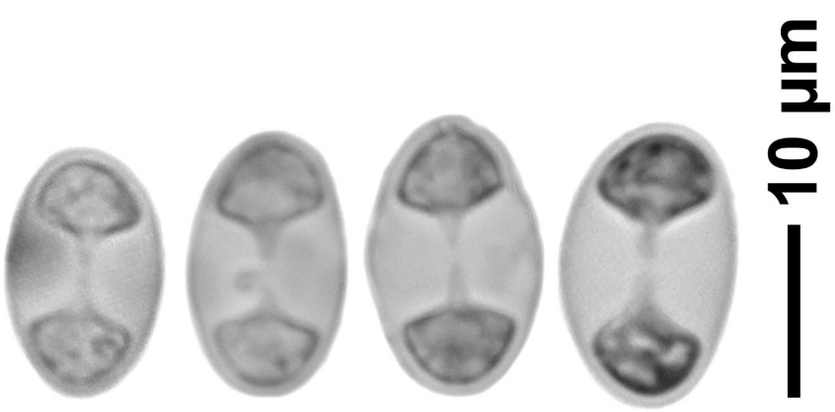






Caloplaca flavorubescens

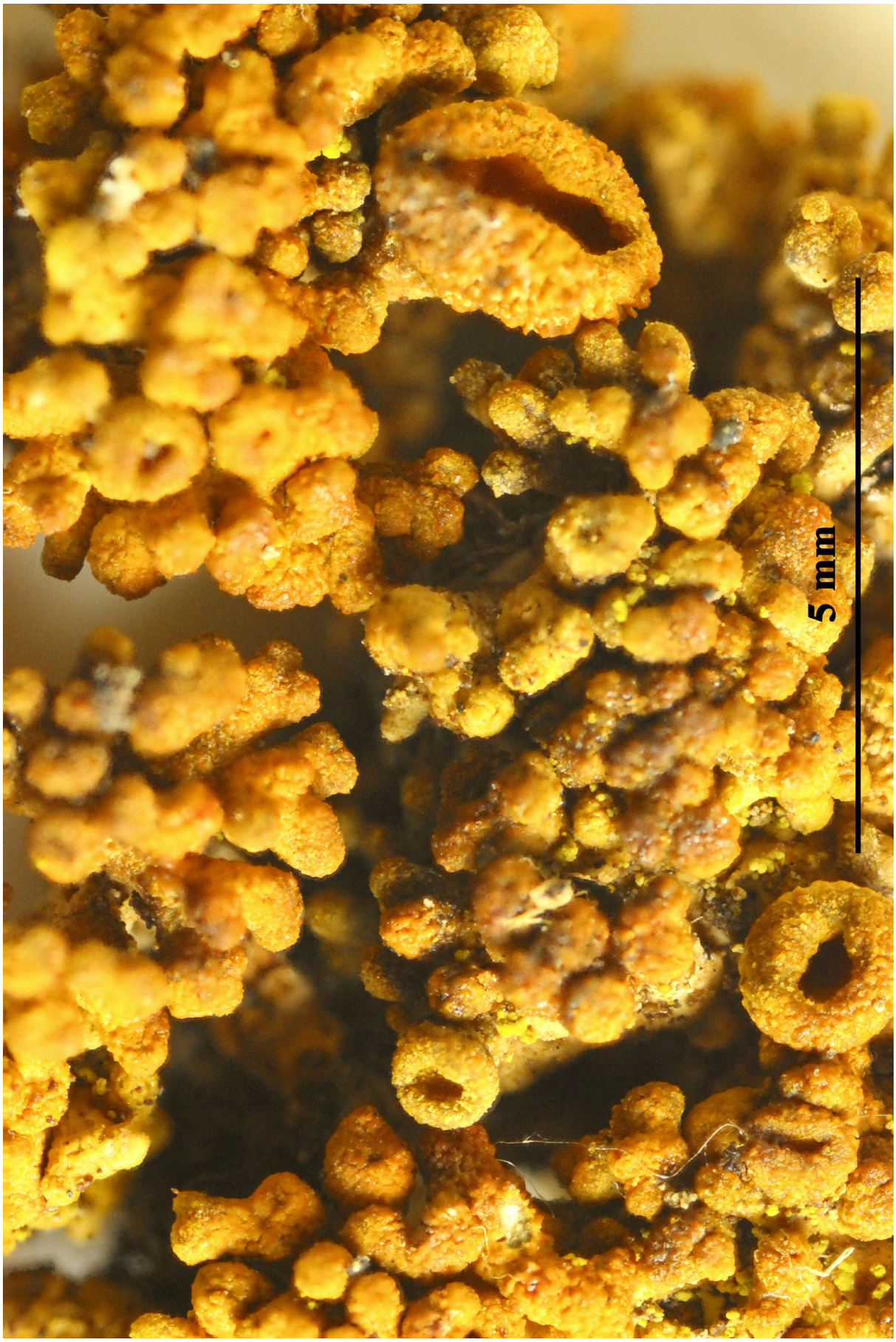




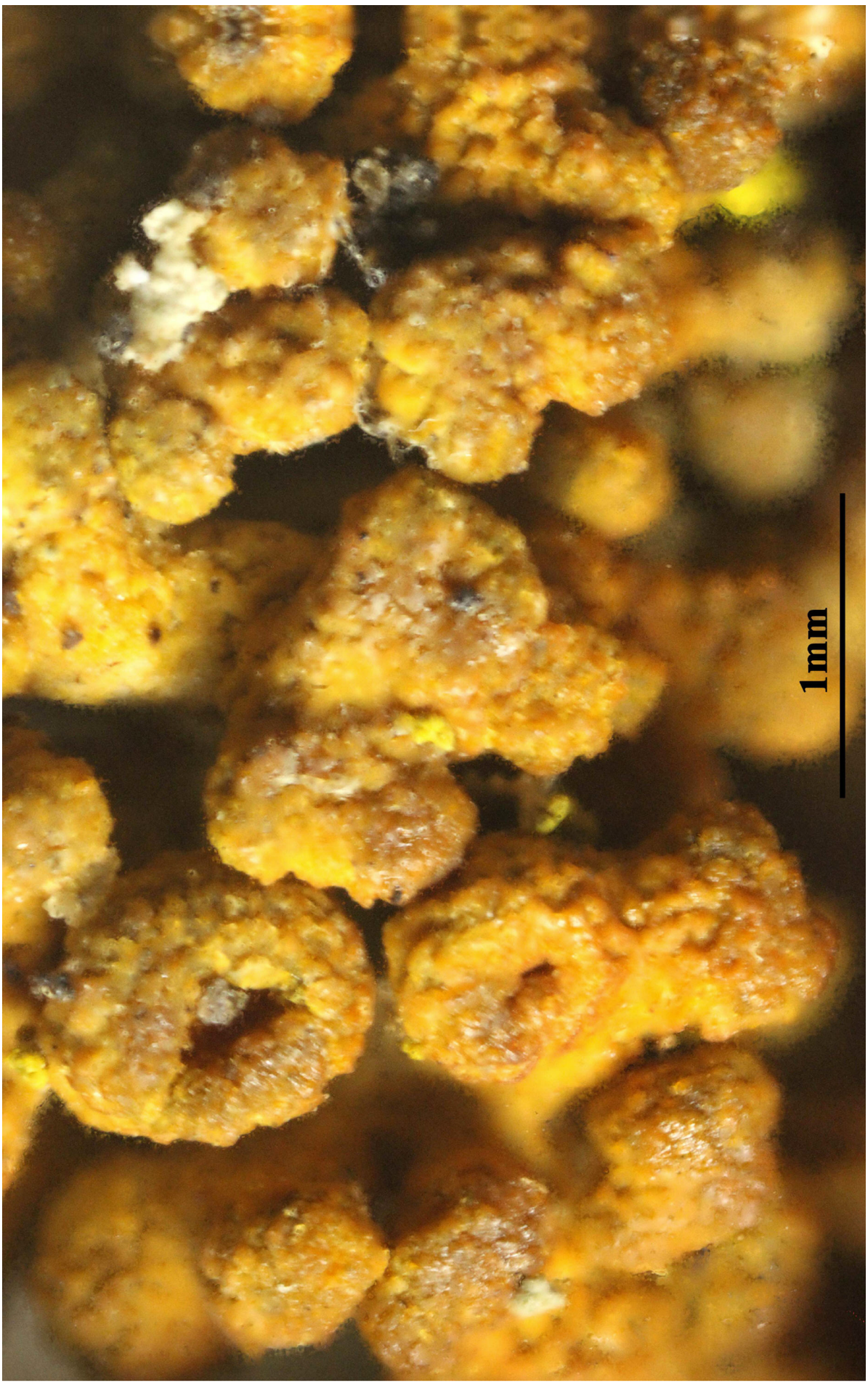
Caloplaca flavorubescens

Caloplaca regalis (Vain.) Zahlbr., Cat. Lich. Univers. 7: 274 (1931)
= *Placodium regale* Vain. 1903
= *Gondwania regalis* (Vain.) Søchting, Frödén & Arup, in Arup, Søchting & Frödén, Nordic J. Bot. 31(1): 47 (2013)

[KU552], Chile. Magellanes: Morro Chico, 139 km north of Punta Arenas. On dry rocky cliff in open place, 230 m. Leg. H. Kashiwadani (no. 18984), 14.12.1981, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 552.



Caloplaca regalis



Caloplaca regalis

Caloplaca regalis (Vain.) Zahlbr.
[= *Gondwania regalis* (Vain.) Søchting, Frödén & Arup]

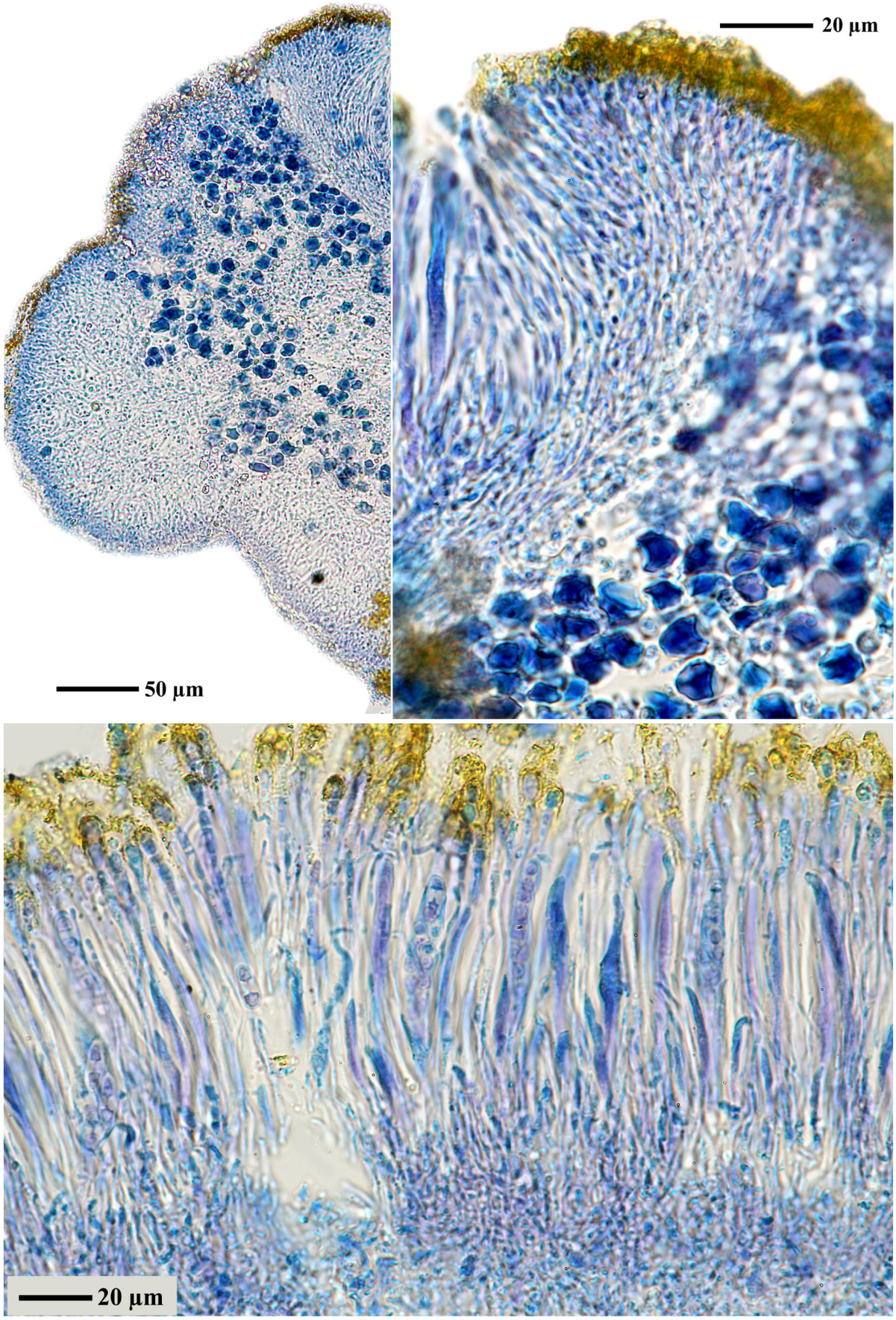
[BR5030038380657], South Shetland Islands, Deception Island, 1 km N ofSouth East Point, N-exposed rocky outcrop on southern edge of gully, 100 m from sea, ca. 50 m alt. (Site of *Colobanthus quitensis*.) On volcanic rock, 60°31'25" W, 62°58'57" S, EXPEDITION OF ARCTIC CENTRE, GRONINGEN, THE NETHERLANDS. Leg. W. O van der Knaap (98-02), 27.12.1990, det. A. Aptroot, 1991. - Spores 10.5-16.5 x 5.4-5.7 µm, septum 2.7-3.7



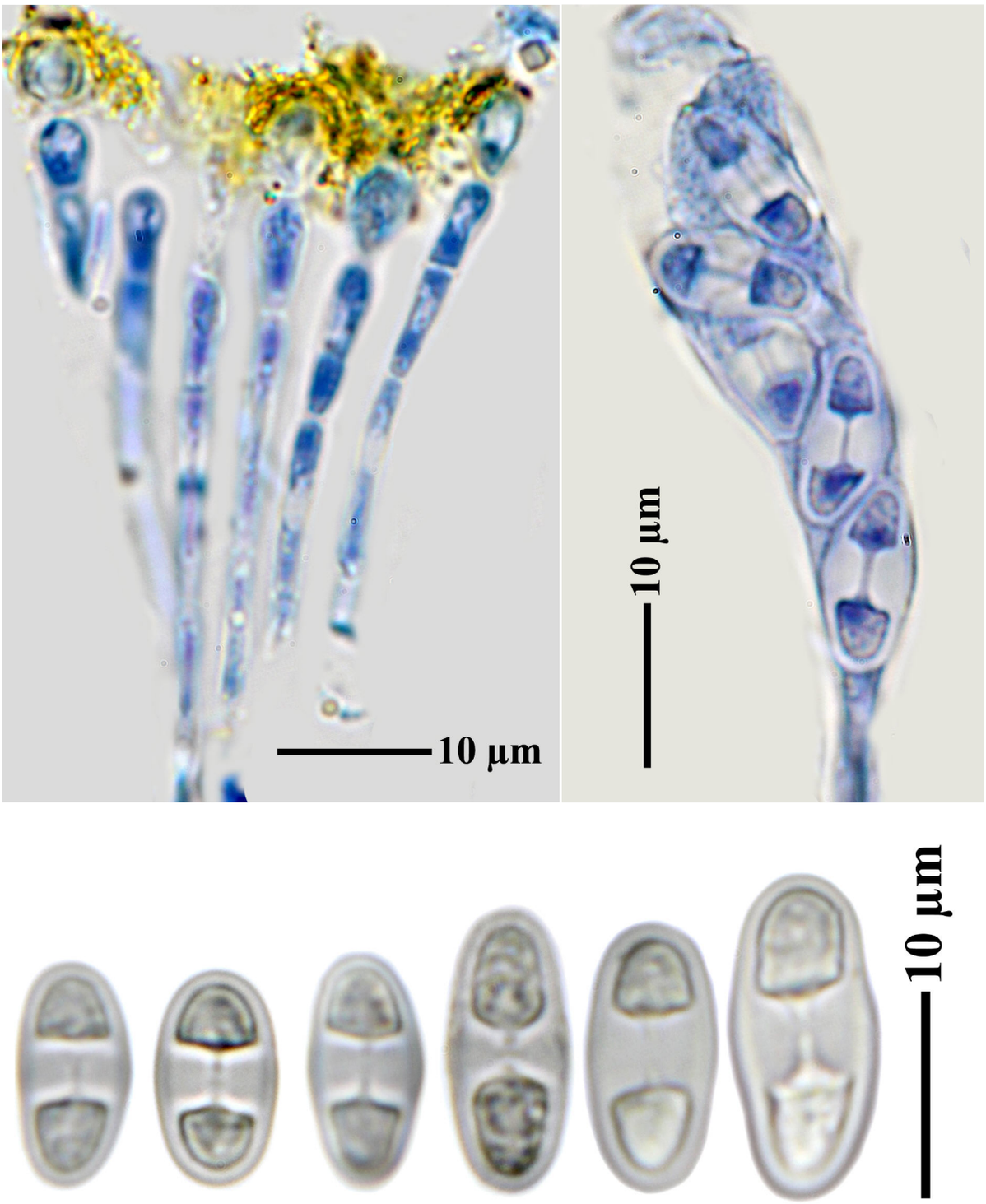




Caloplaca regalis



Caloplaca regalis

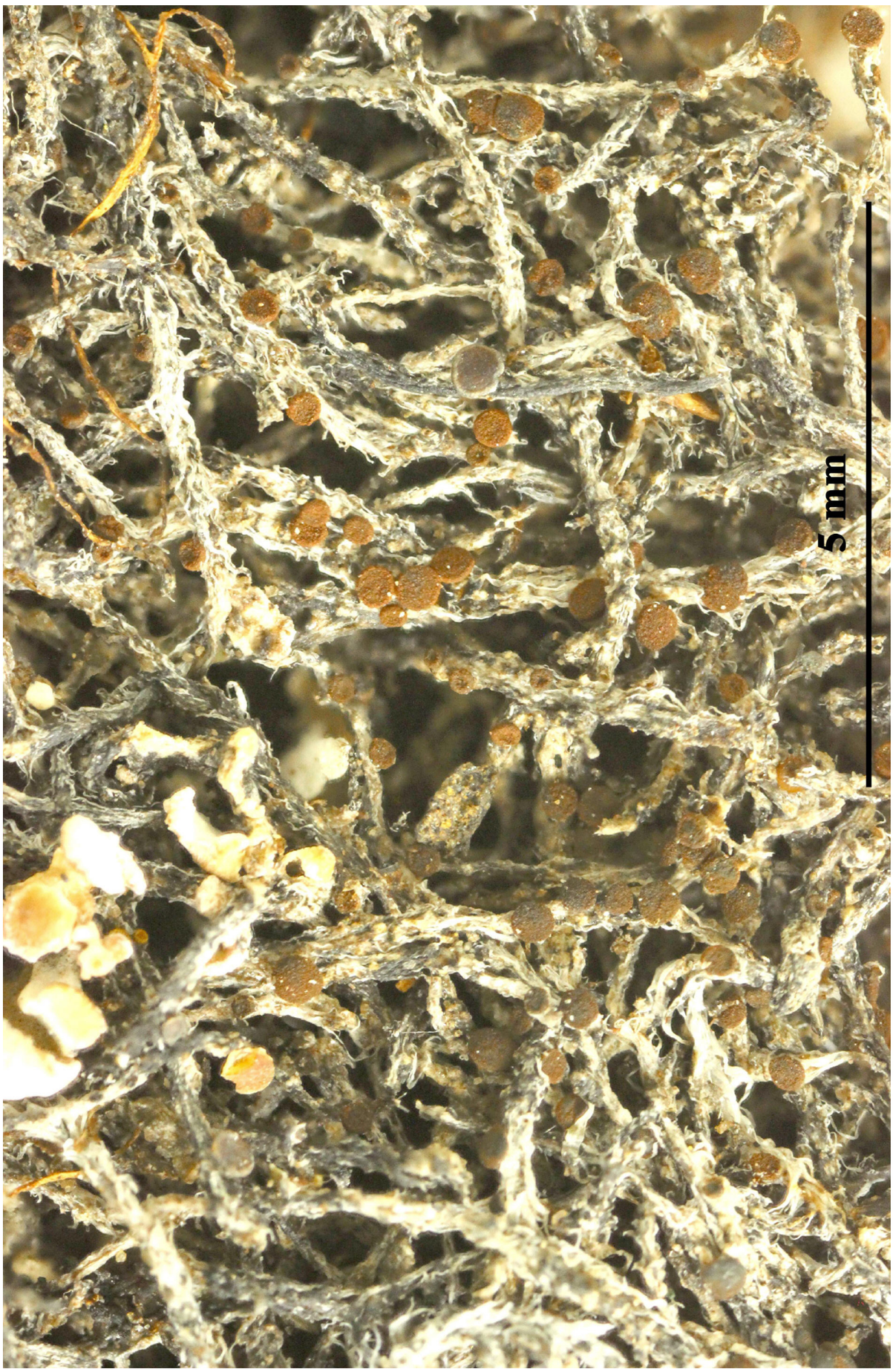


Caloplaca regalis

Caloplaca tetraspora (Nyl.) H. Olivier, Mém. Soc. natn. Sci. nat. Cherbourg 37: 140 (1909)
= *Lecanora tetraspora* Nyl. 1863
= *Bryoplaca tetraspora* (Nyl.) Søchting, Frödén & Arup, in Arup, Søchting & Frödén, Nordic J. Bot. 31(1): 68 (2013)

[KU634], Svalbard. Spitzbergen. Bohemanflya. On mosses, 100-200 m. Leg. H. Kashiwadani (no. 23344), 31.7.1985, det. E. S. Hansen. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 654.

Thallus crustose, grey, thin, continuous to areolate-granulose, mostly poorly evident. Apothecia frequent, biatorine, rounded, sessile, slightly constricted at base, 0.5-1(-1.5) mm across, with a rusty red, at first flat, then rapidly strongly convex, rough-granulose disc, and a thin, smooth, concolorous, finally excluded proper margin. Epithecium orange, K+ purple-red, C+ purple; hymenium colourless, 60-120 µm high; paraphyses simple or sparingly branched, the apical cells slightly swollen; hypotheciuim colourless. Asci (2-)4-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, (21-)24-30(-34) x (12-)14-16(-20)µm, the equatorial thickening ("septum") 3-5 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-; apothecia K+ purple-red, C+ purple (in section). Chemistry: thallus without lichen substances; apothecia with chlorinated and unchlorinated anthraquinones (citreorosein, emodinal, emodinic acid, emodin). - Note: a boreal-montane to arctic-alpine, circum- and bipolar species found on bryophytes and plant debris in areas with base-rich or somehow calciferous siliceous substrata, most frequent above treeline.



Caloplaca tetraspora



Caloplaca tetraspora

Caloplaca tetraspora (Nyl.) H. Olivier
[= *Bryoplaca tetraspora* (Nyl.) Søchting, Frödén & Arup]

Spores 22-24 x 9.5-11.5 µm, septum 3.3-7.2 µm (FS).

[B 60 0057213], Norway, Svalbard, Spitsbergen, Bohemanflya, on mosses, 100-200 m. Leg. H. Kashiwadani (no. 23344), H. Deguchi & K. Kobayashi, 31.07.1985, det. E.S. Hansen. EX S. KUROKAWA & H. KASHIWADANI: LICHENES RARIORES ET CRITICI EXSICCATI NO. 654.

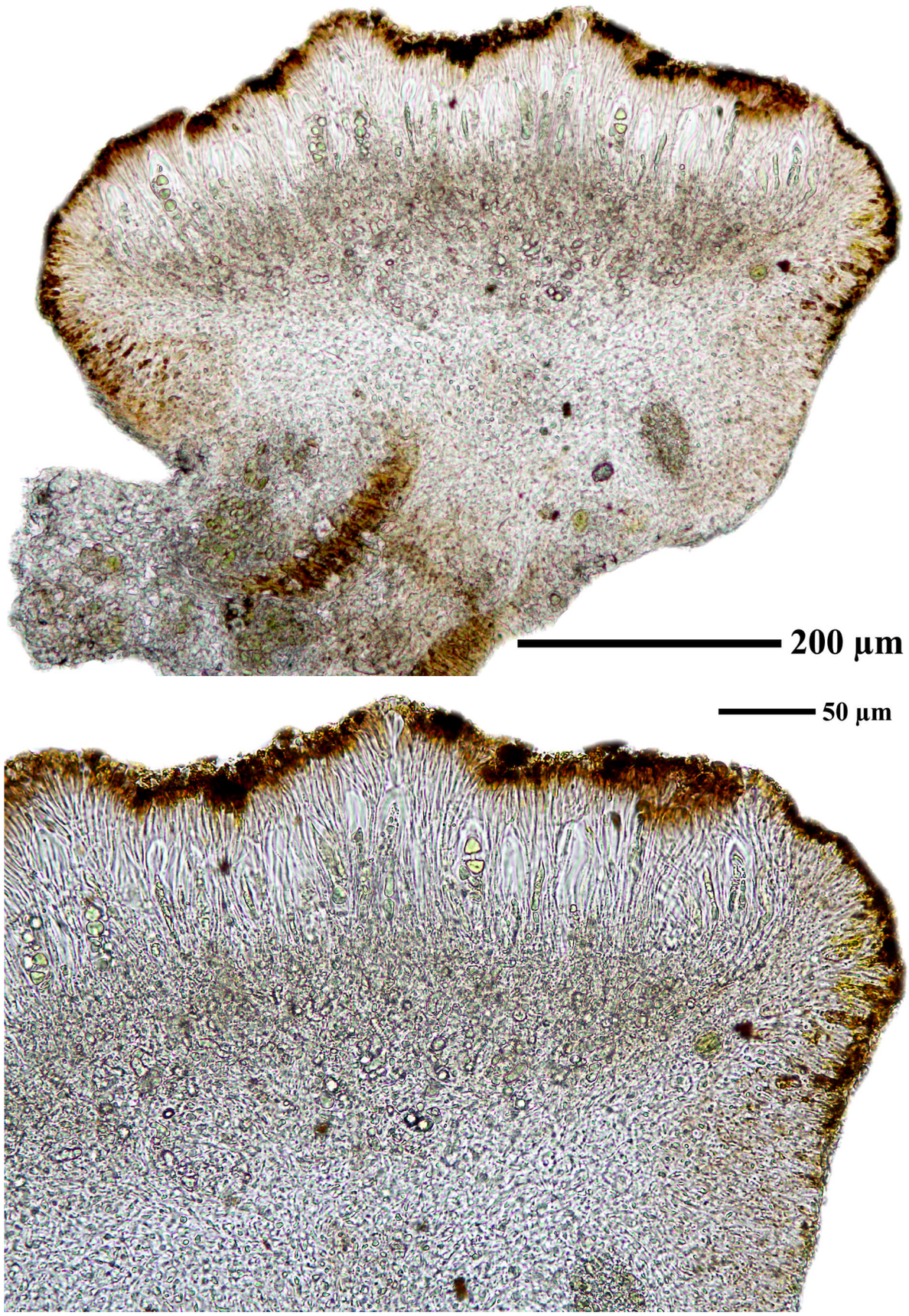




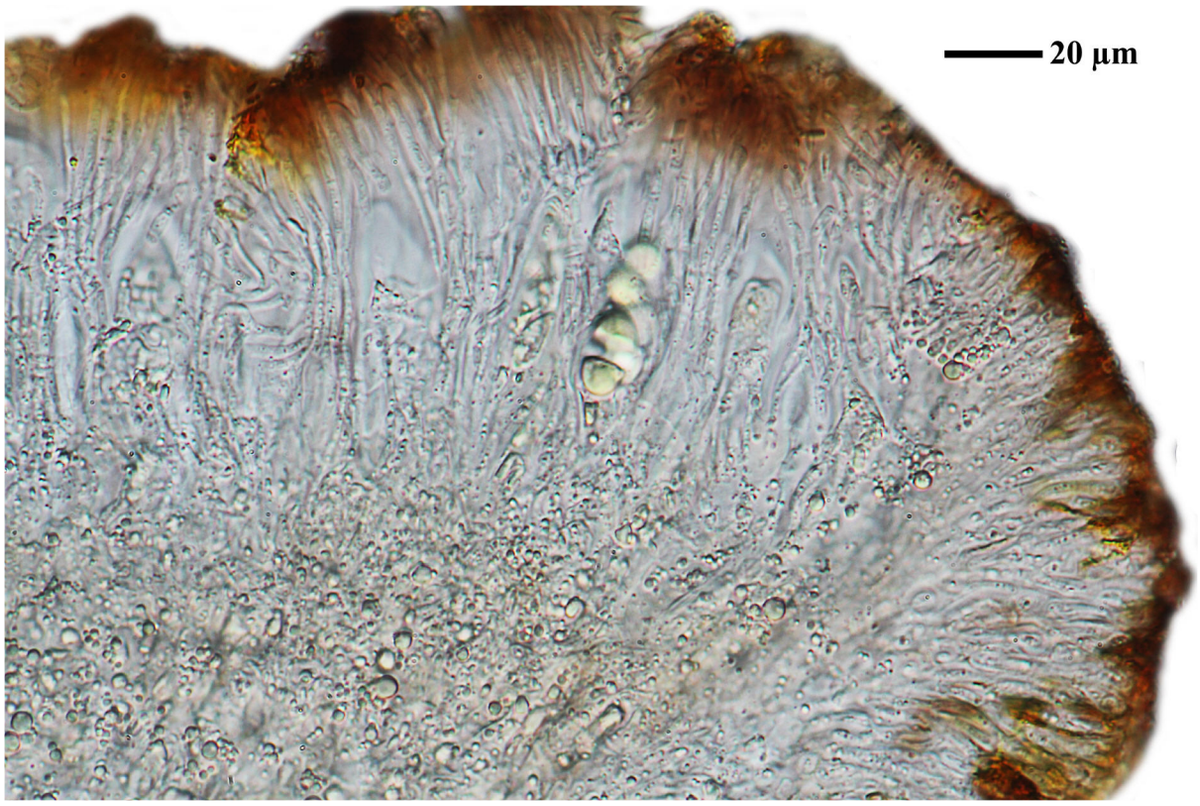
Caloplaca tetraspora

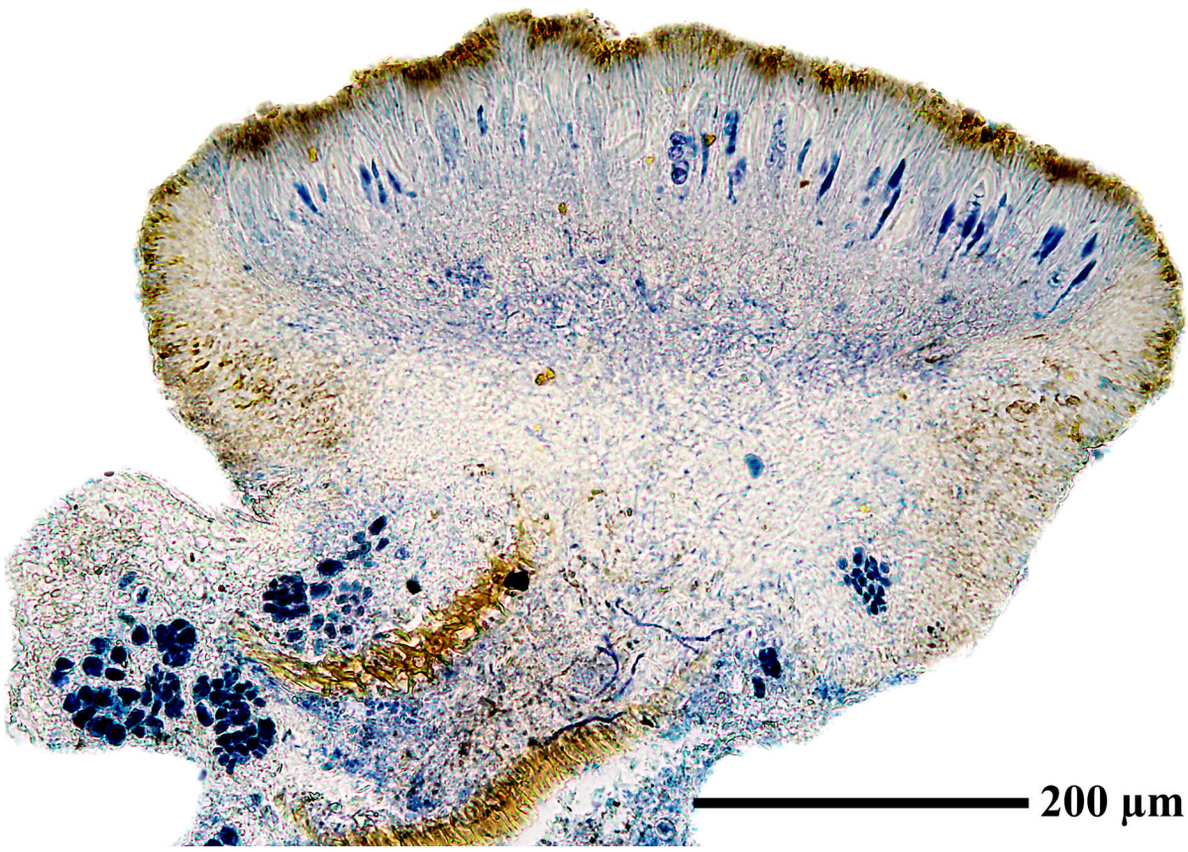


Caloplaca tetraspora

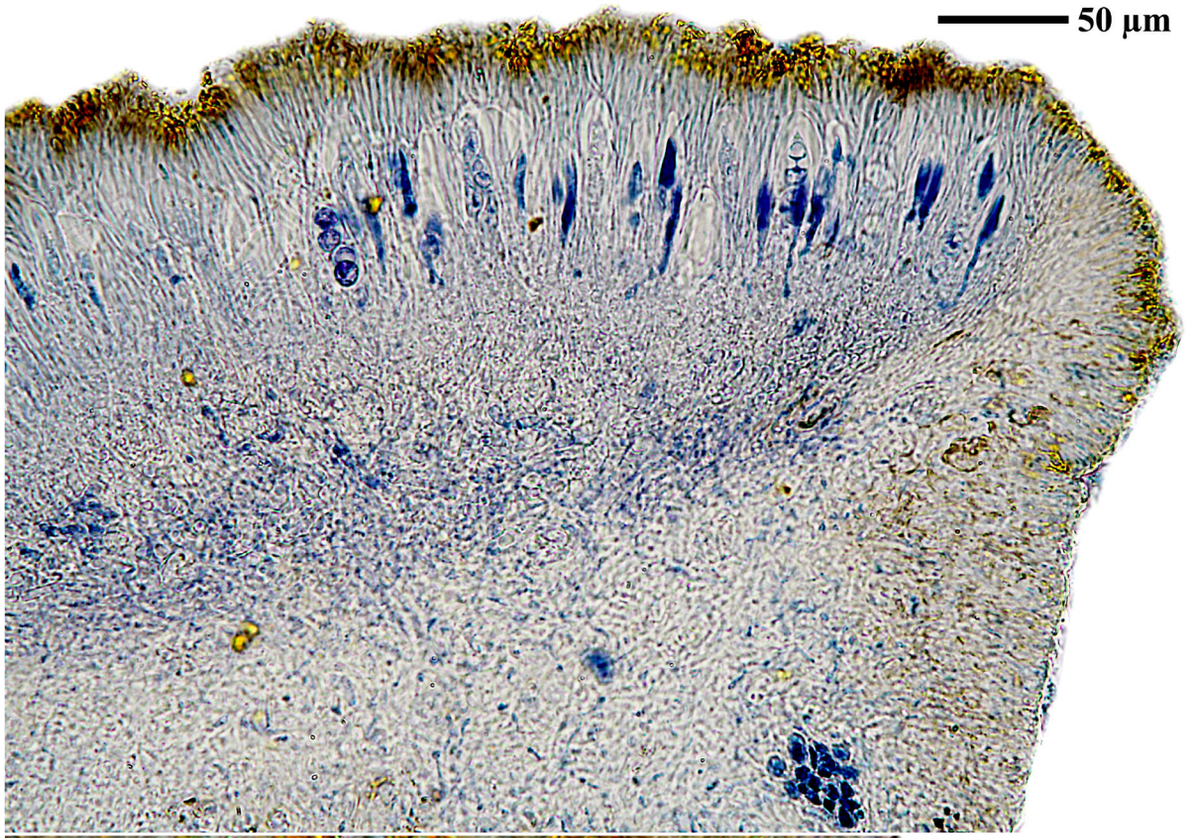


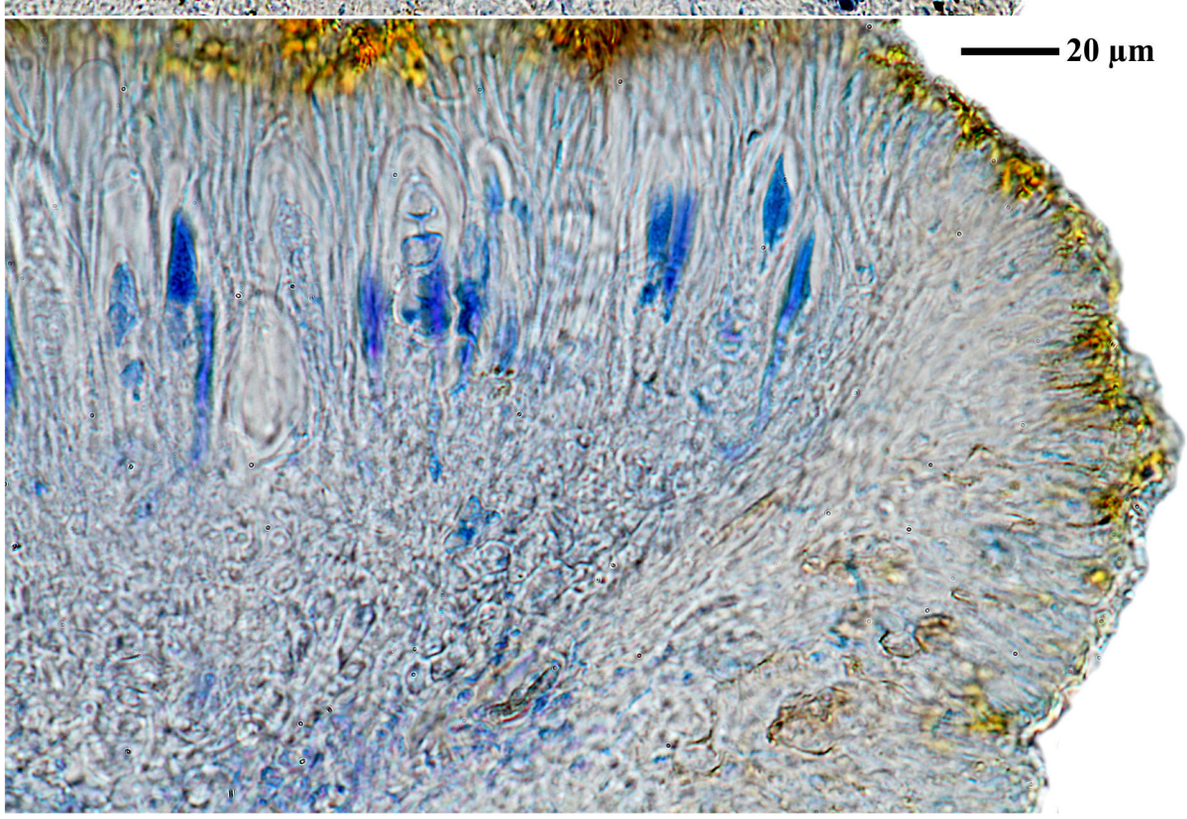
Caloplaca tetraspora

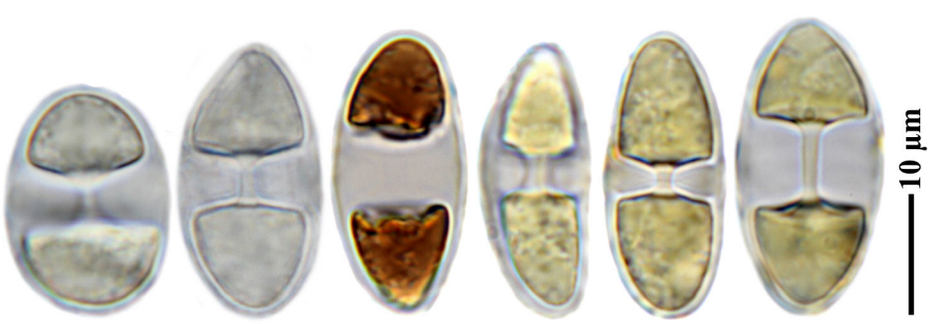




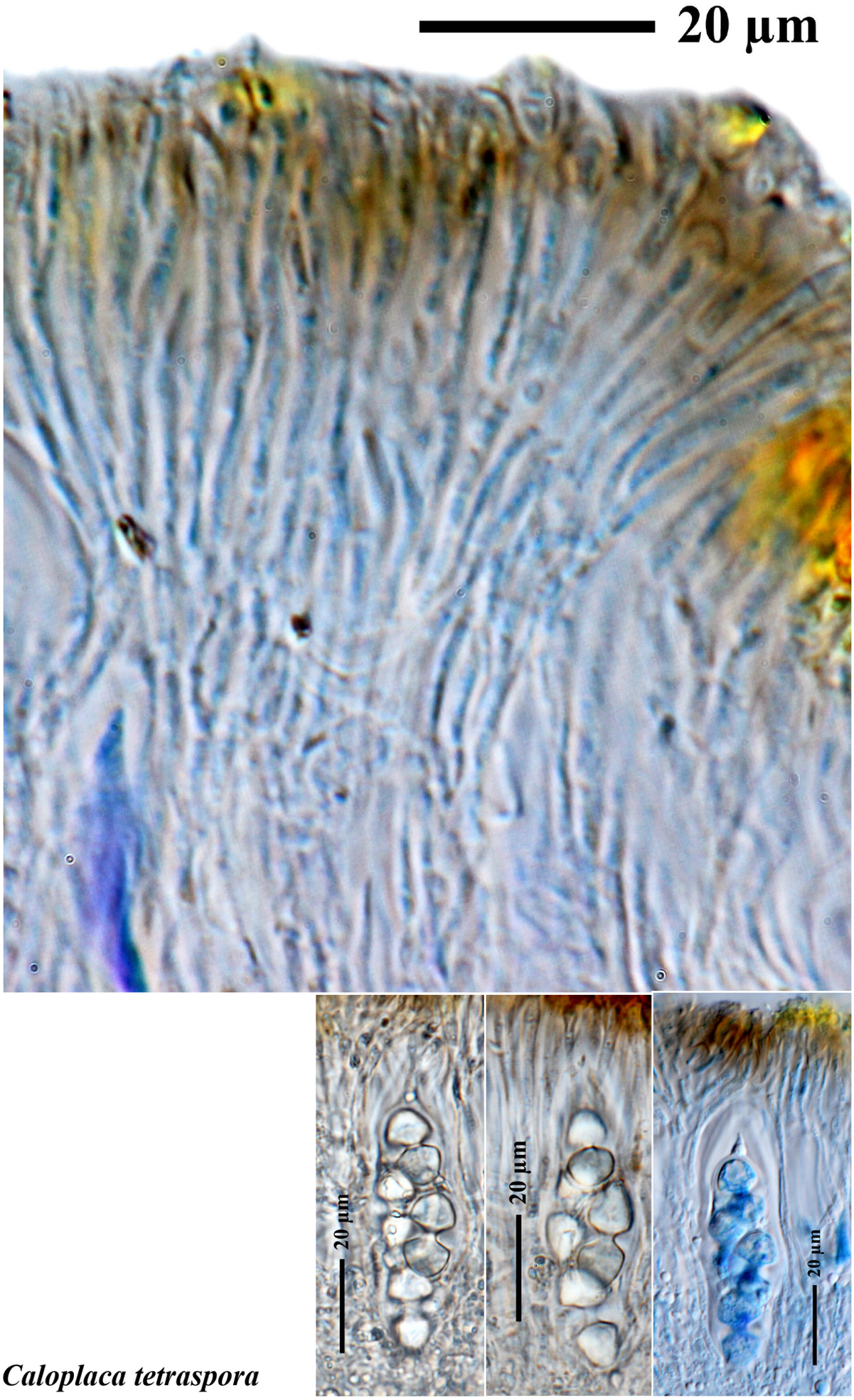
Caloplaca tetraspora







Caloplaca tetraspora



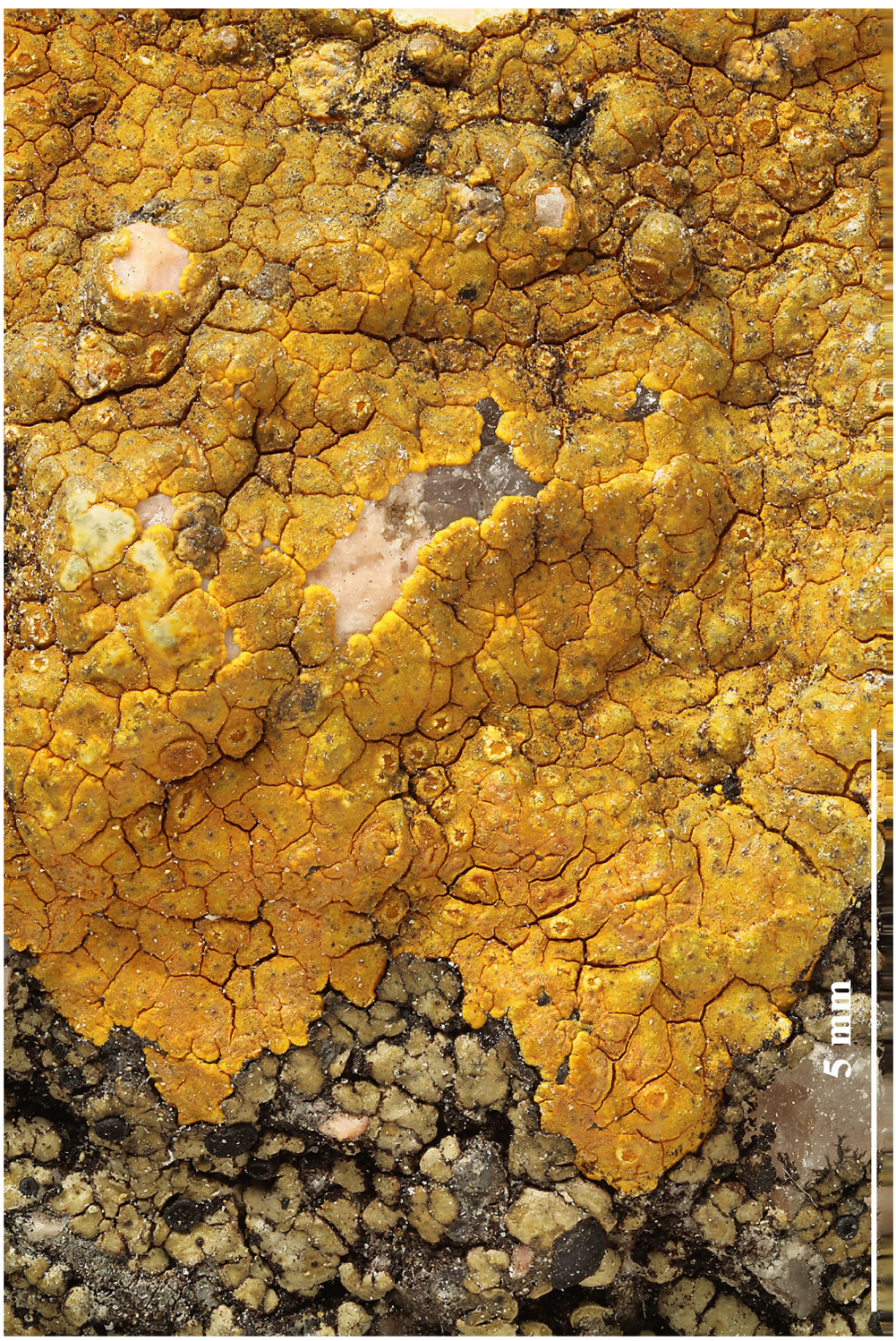
Caloplaca tetraspora

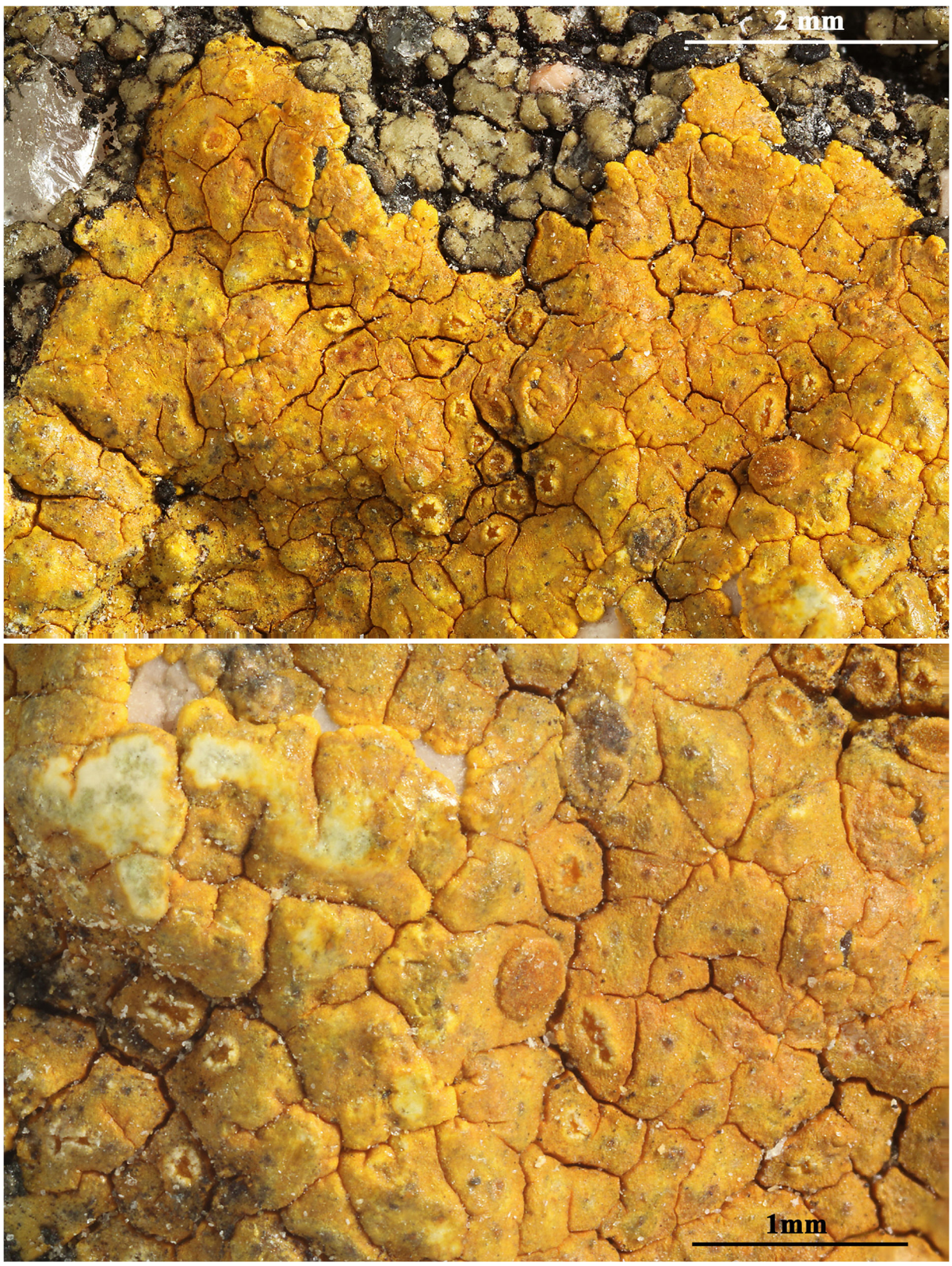
Caloplaca cinnabarina (Ach.) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 228 (1908)

[= *Brownliella cinnabarina* (Ach.) S.Y. Kondr., Kärnefelt, A. Thell, Elix, J. Kim, A.S. Kondr. & Hur, in Kondratyuk et al., Acta bot. hung. 55(3-4): 271 (2013)]

[BR5030067311462], Hong Kong Island, Shek O Beach, in coastal area on exposed granite, 1-50 m. Leg. A. Aptroot (43/45) June 1998, det. A. Aptroot 2019.

Spores 8-9 x 3.5-4.5 µm, septum c. 1.7-3.6 µm.

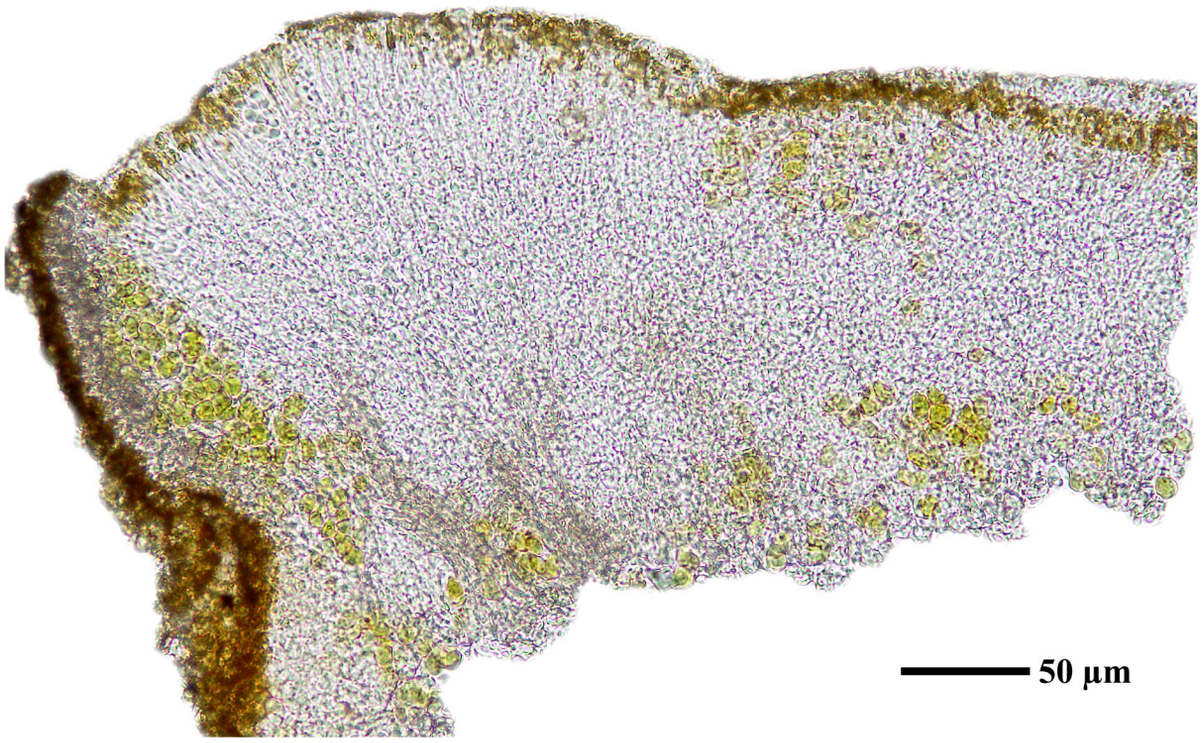


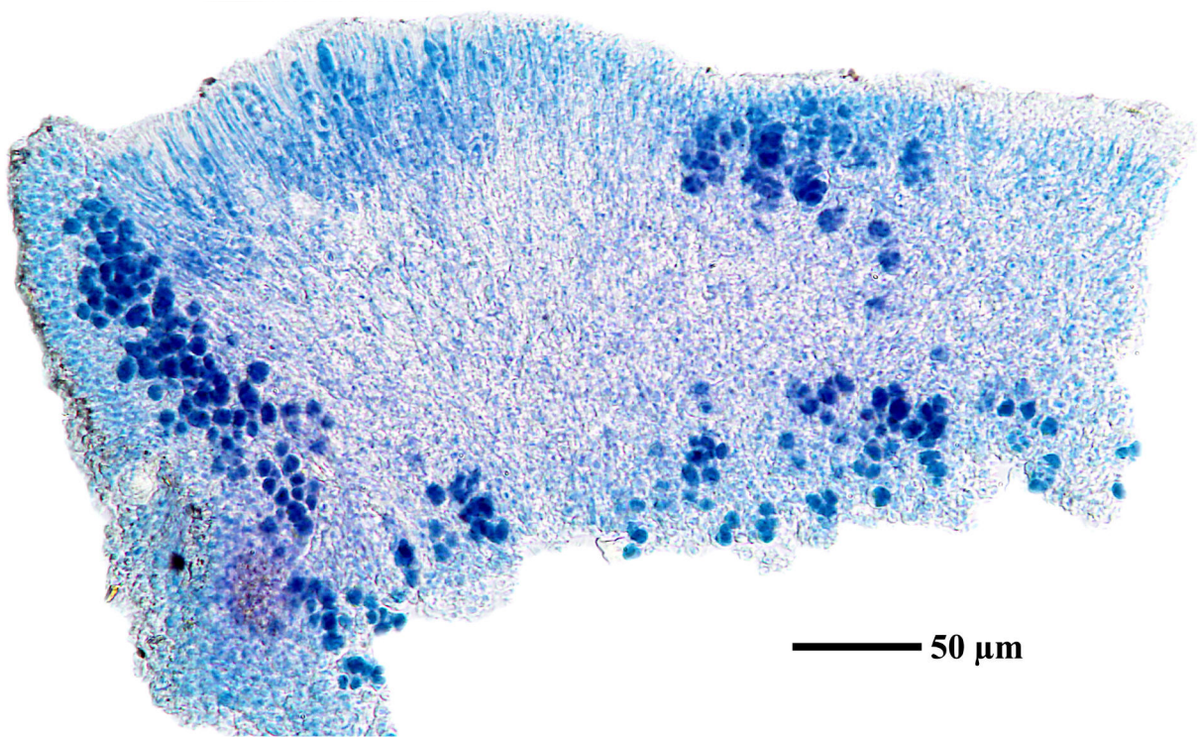


Caloplaca cinnabarina

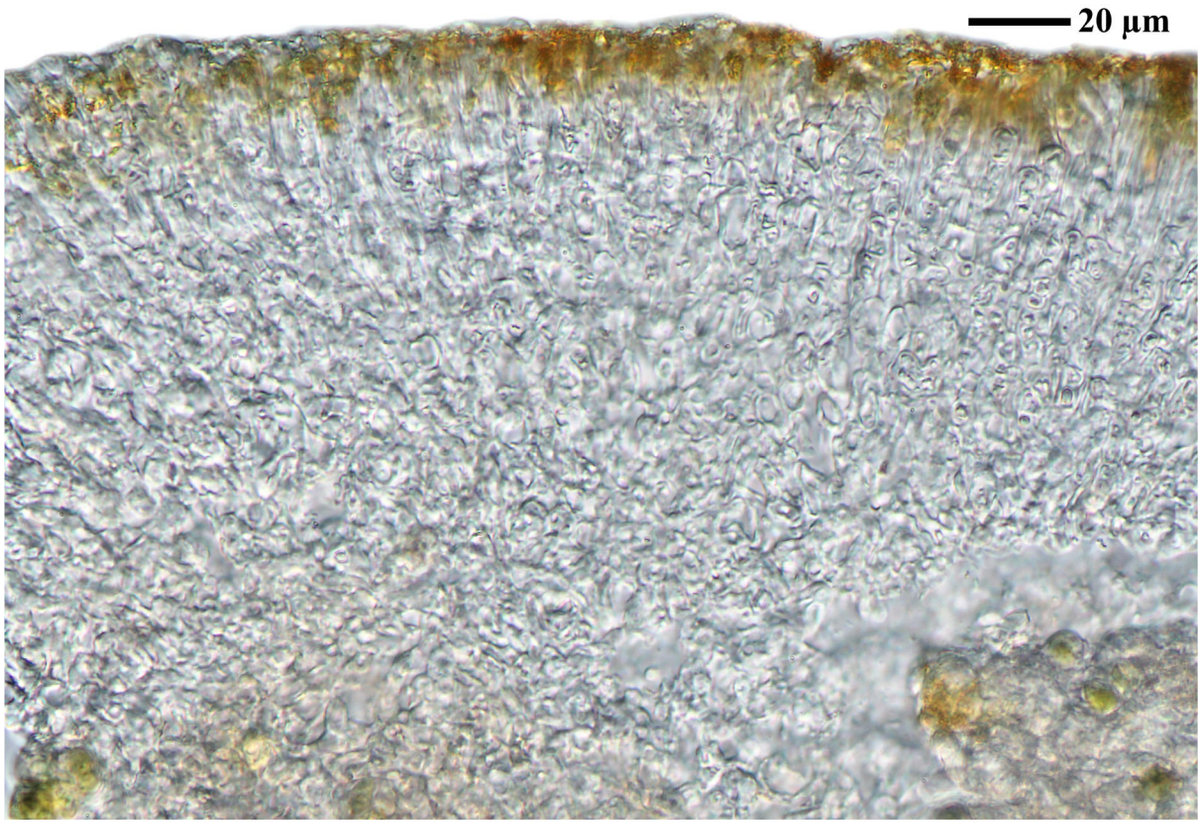


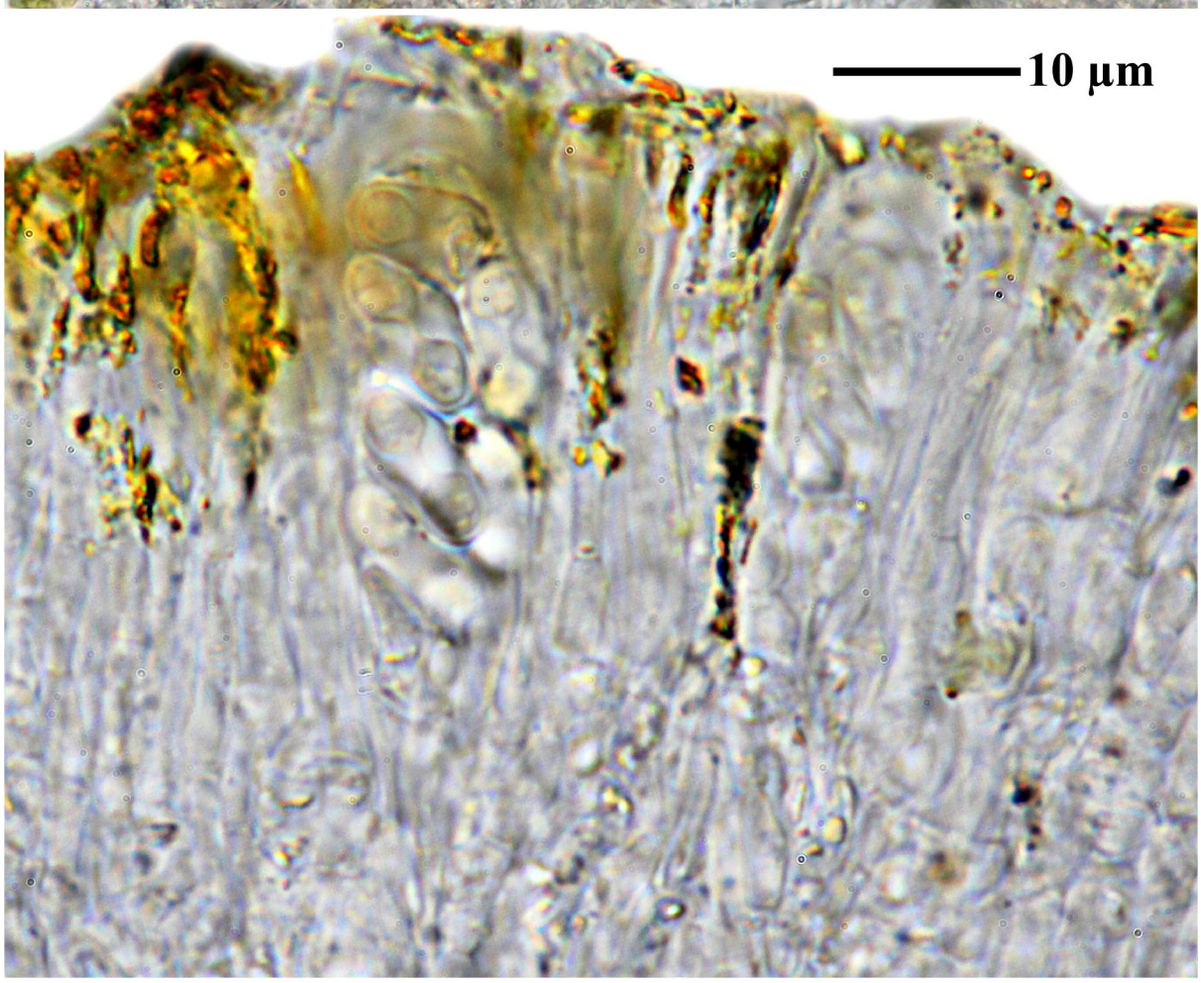
Caloplaca cinnabarina



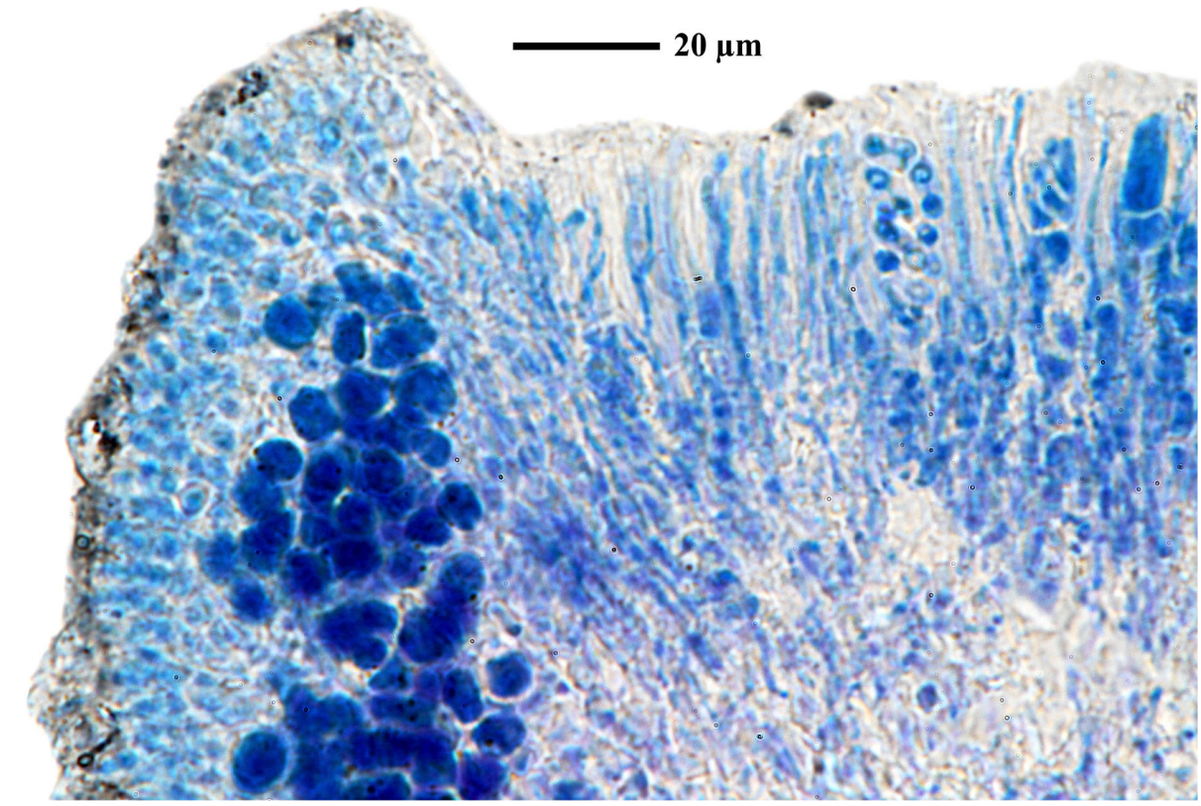


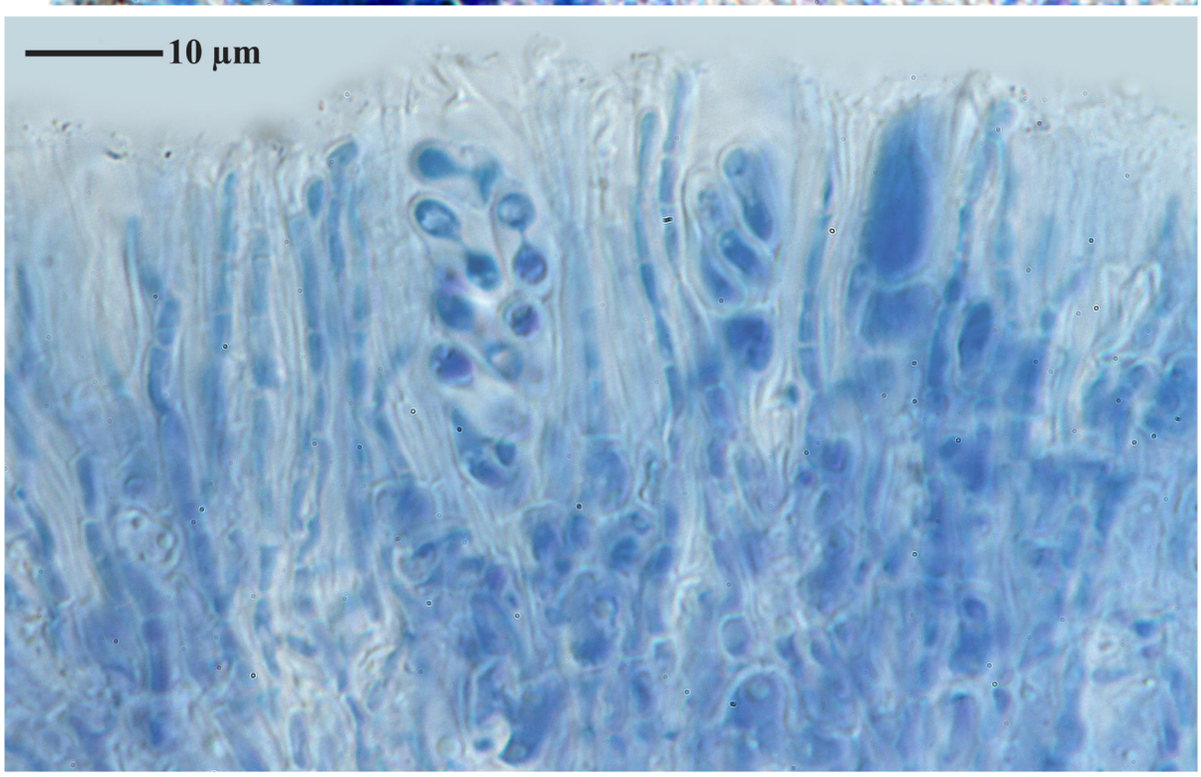
Caloplaca cinnabarina



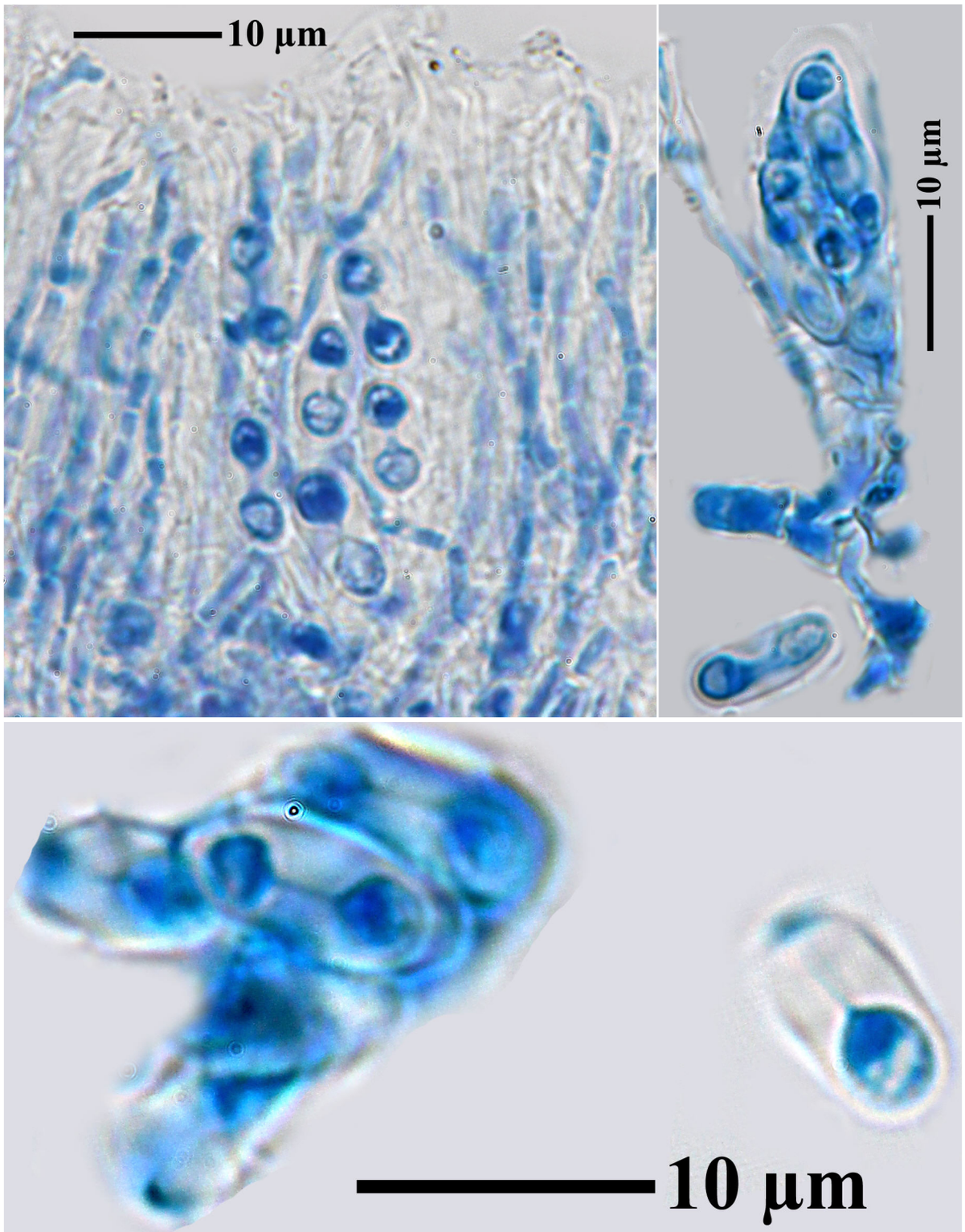


Caloplaca cinnabarina





Caloplaca cinnabarina



Caloplaca cinnabarina

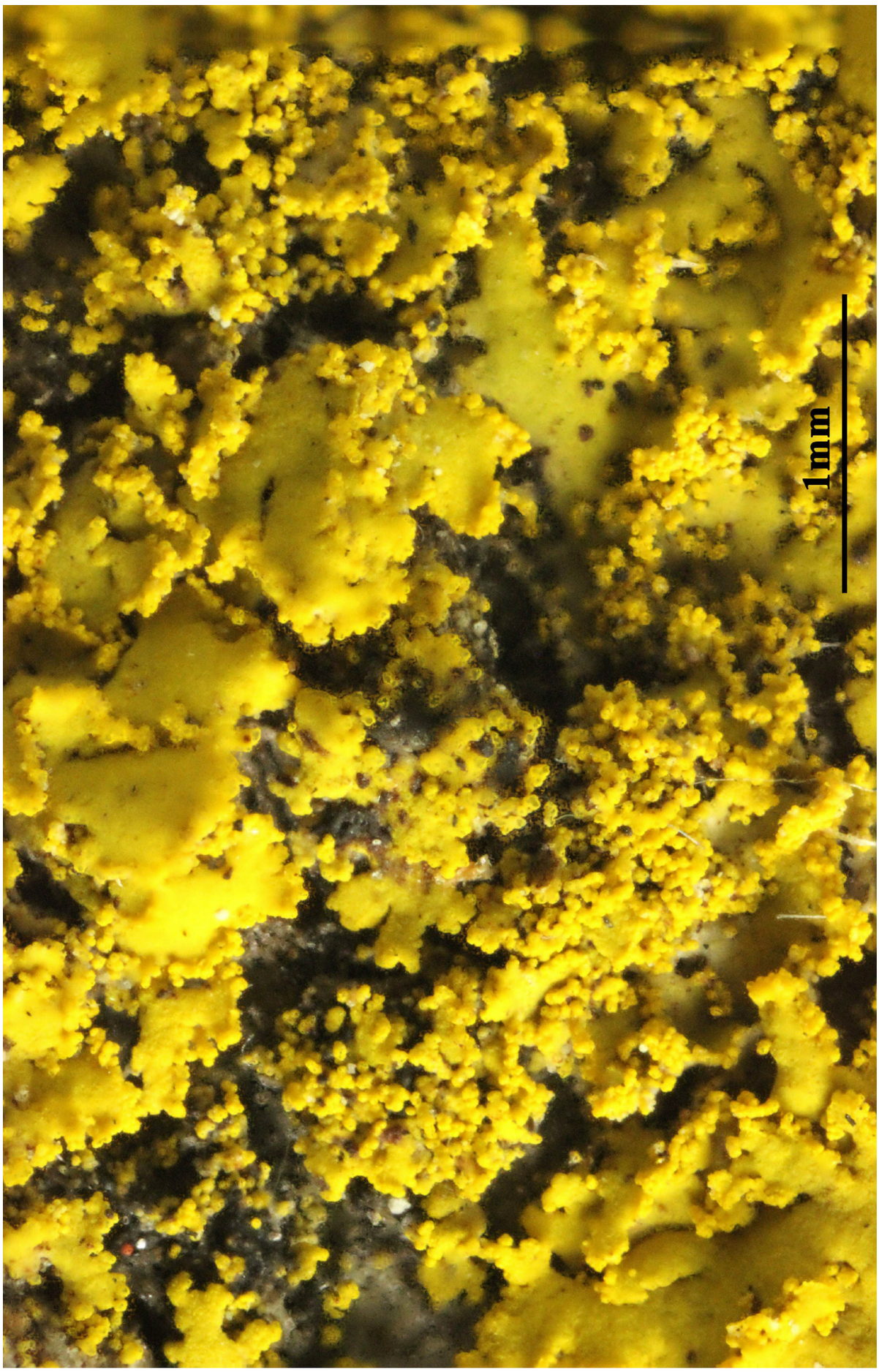
Candelaria concolor (Dicks.) Arnold, Flora, Regensburg 62: 364 (1879)
= *Lichen concolor* Dicks. 1793

[OH377], Japan. Honshu. Prov. Hitachi (Pref. Ibaraki): Azuma, Tsukuba-city. On bark of *Zelkova serrata*, 20 m. Leg. Y. Ohmura (no. 6875), 29.1.2010, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUA COGNITI EXSICCATI NR. 377.

Thallus minutely foliose, heteromerous, dorsiventral, bright lemon yellow to yellow-green in shade, forming up to 1 cm wide rosettes which often coalesce into extensive colonies. Lobes narrow, 0.1-0.4(-0.7) mm wide, adnate or ascending, often densely imbricate, with granular blastidia which are most abundant on the more or less fan-shaped lobe-ends. Lower surface white to pinkish, somewhat shiny; with simple, white rhizines. Upper and lower cortex c. 10-30 µm thick, paraplectenchymatous; medulla white, very thin. Apothecia rare, sessile, to c. 1 mm across, with a yellow, flat to finally convex disc and a smooth but often sorediate or lobulate thalline margin. Epithecium yellow-brown, granular; hymenium colourless, 55-95 µm high, I+ blue; paraphyses simple, cylindrical to submoniliform, with up to 5 µm wide tips; hypothecium colourless, c. 50 µm thick. Asci >30-spored, clavate, with an apical dome which is I+ blue only in the internal, lower part, interrupted in the centre by an I+ paler blue strip, Candelaria-type. Ascospores 1-celled or thinly 1-septate, uni- or biguttulate, hyaline, 6-14 x 4-6 µm. Pycnidia appearing as raised yellow warts on the thallus surface, the wall colourless. Conidia ellipsoid, 2-3 x 1-1.5 µm. Photobiont chlorococcoid. Spot tests: K- or K+ faintly pink, C-, KC-, P-, UV- or UV+ dull orange; apothecial disc sometimes K+ faintly pink. Chemistry: calycin (major) and pulvinic dilactone (minor). - Note: a mild-temperate, probably holarctic species found on nutrient-rich or -enriched bark, more rarely on calciferous substrata, mostly on isolated trees in agricultural areas, on wayside trees.



Candelaria concolor



Candelaria concolor

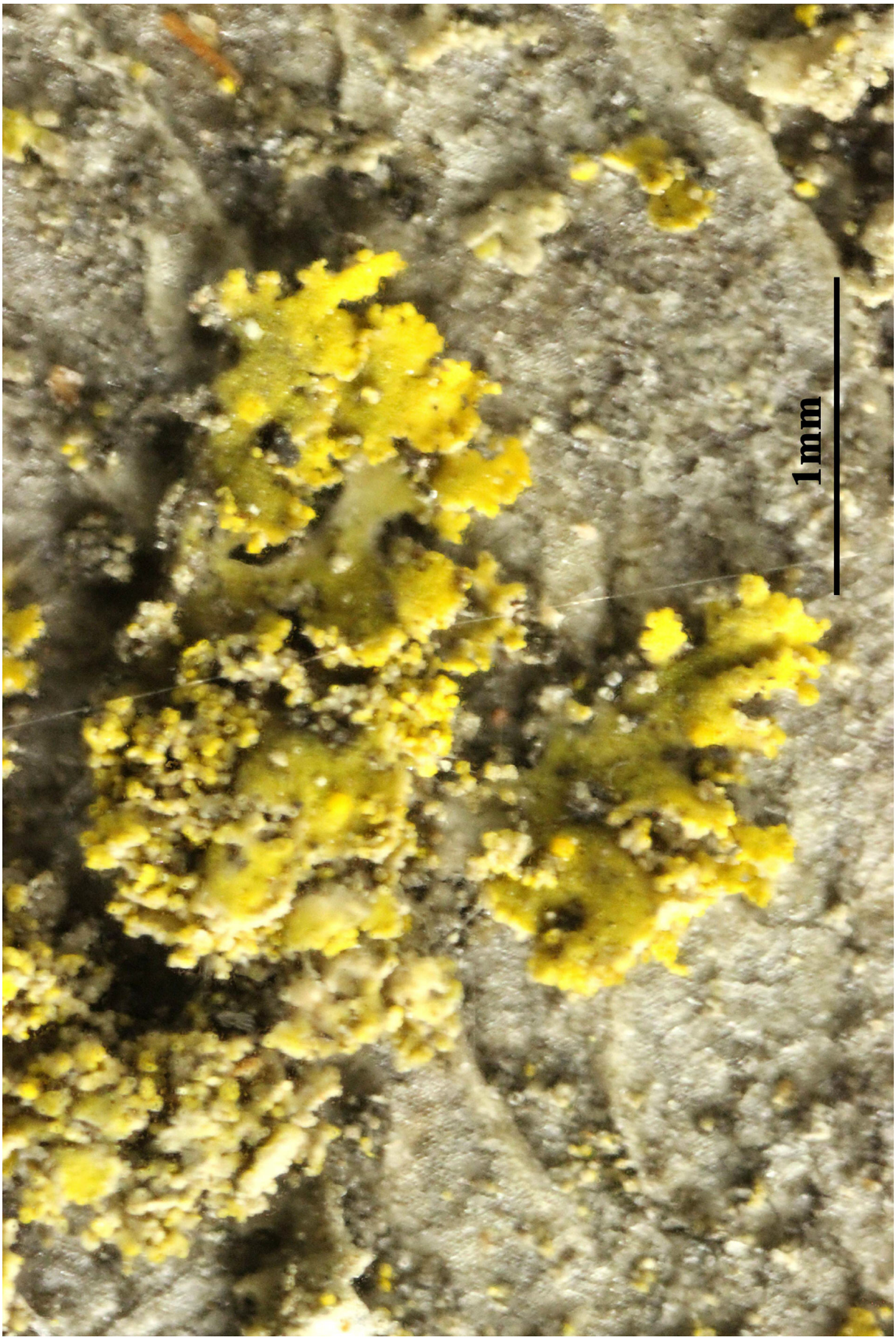
Candelaria concolor (Dicks.) Arnold, Flora, Regensburg 62: 364 (1879)
= *Lichen concolor* Dicks. 1793

[KU655], Japan. Honshu. Prov. Shinano: Hiraide, Shiojiri-city. On bark of *Juglans mandshuraica* var *sieboldii*, 750 m. Leg. H. Kashiwadani (no. 23657), 28.10.1986., det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 655.

Thallus minutely foliose, heteromerous, dorsiventral, bright lemon yellow to yellow-green in shade, forming up to 1 cm wide rosettes which often coalesce into extensive colonies. Lobes narrow, 0.1-0.4(-0.7) mm wide, adnate or ascending, often densely imbricate, with granular blastidia which are most abundant on the more or less fan-shaped lobe-ends. Lower surface white to pinkish, somewhat shiny; with simple, white rhizines. Upper and lower cortex c. 10-30 µm thick, paraplectenchymatous; medulla white, very thin. Apothecia rare, sessile, to c. 1 mm across, with a yellow, flat to finally convex disc and a smooth but often sorediate or lobulate thalline margin. Epithecium yellow-brown, granular; hymenium colourless, 55-95 µm high, I+ blue; paraphyses simple, cylindrical to submoniliform, with up to 5 µm wide tips; hypothecium colourless, c. 50 µm thick. Asci >30-spored, clavate, with an apical dome which is I+ blue only in the internal, lower part, interrupted in the centre by an I+ paler blue strip, Candelaria-type. Ascospores 1-celled or thinly 1-septate, uni- or biguttulate, hyaline, 6-14 x 4-6 µm. Pycnidia appearing as raised yellow warts on the thallus surface, the wall colourless. Conidia ellipsoid, 2-3 x 1-1.5 µm. Photobiont chlorococcoid. Spot tests: K- or K+ faintly pink, C-, KC-, P-, UV- or UV+ dull orange; apothecial disc sometimes K+ faintly pink. Chemistry: calycin (major) and pulvinic dilactone (minor). - Note: a mild-temperate, probably holarctic species found on nutrient-rich or -enriched bark, more rarely on calciferous substrata, mostly on isolated trees in agricultural areas, on wayside trees.



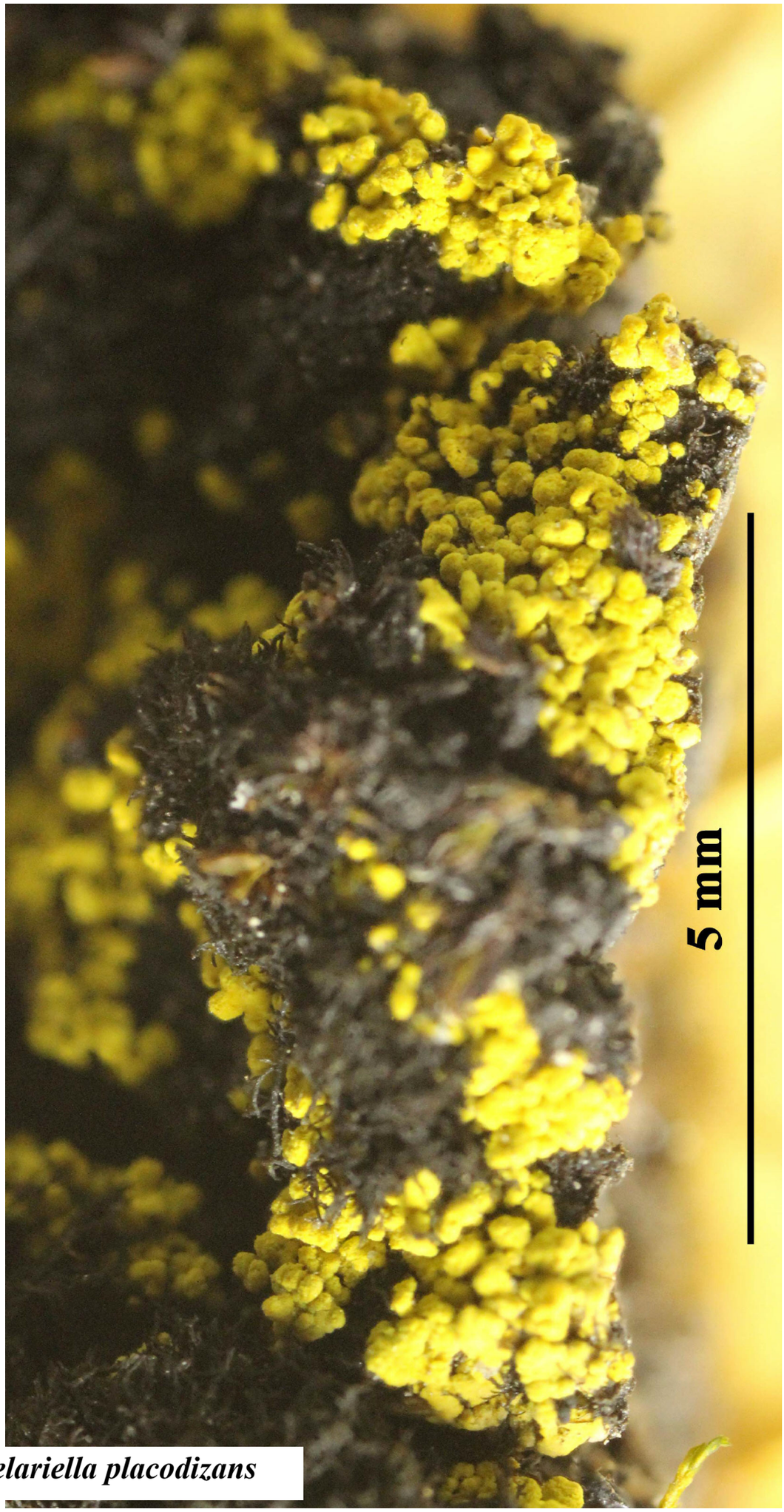
Candelaria concolor



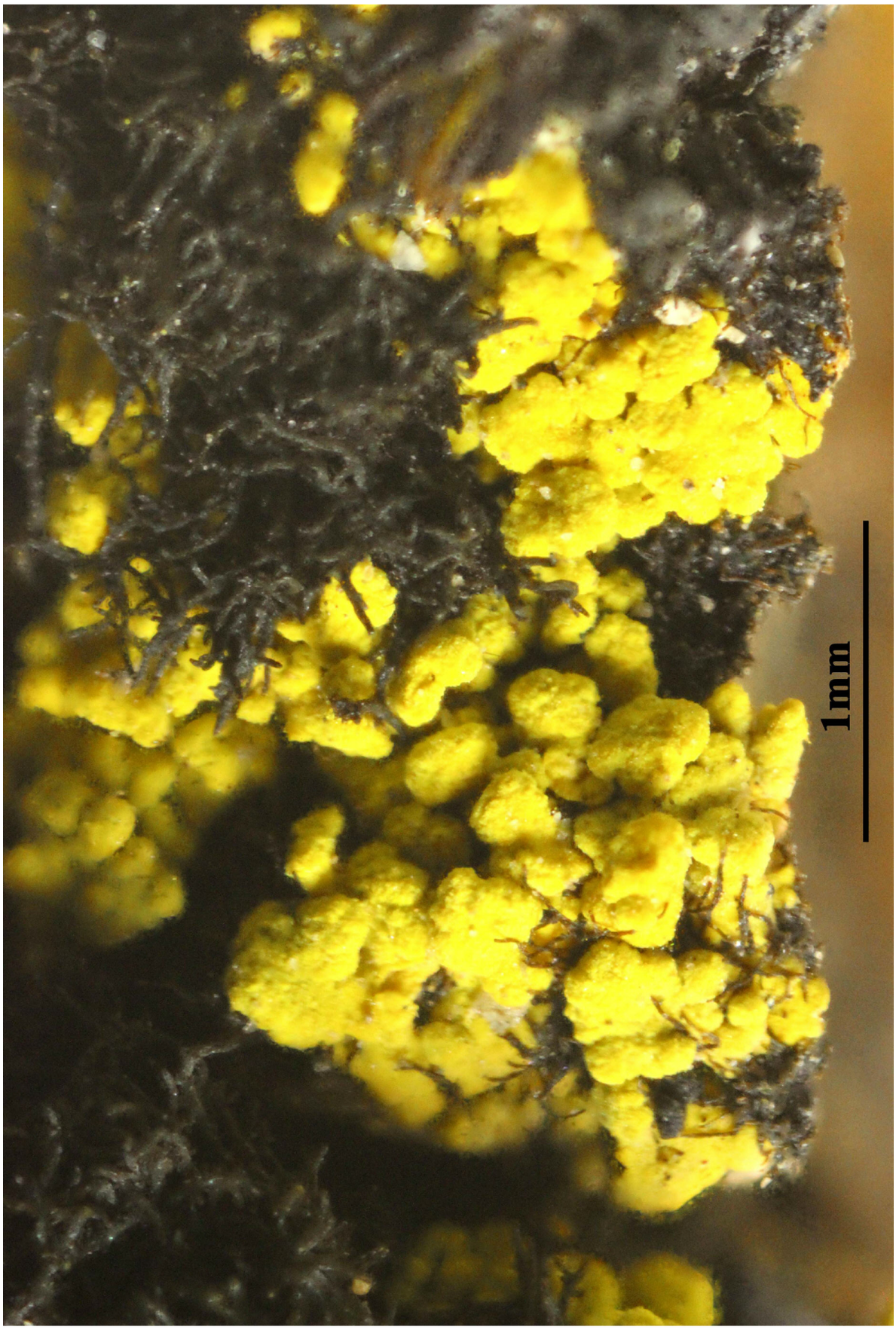
Candelaria concolor

Candelariella placodizans (Nyl.) H. Magn., in Lynge, Lich. Coll. Danish 5th Thule-Expedit. Arct. Canada 2(3): 23 (1935)
= *Lecanora vitellina* f. *placodizans* Nyl. 1861

[OH527], Taiwan. Taichung Co: around main peak of Mt.Nanhu, en route from Shiyuan Yakoo to Mt. Nanhu (24°21'43" N, 121°26'38" E). On mosses, 3577 m. Leg. Y. Ohmura (no. 7598), det. Y. Yakovchenko. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 527.



Candelariella placodizans



Candelariella placodizans

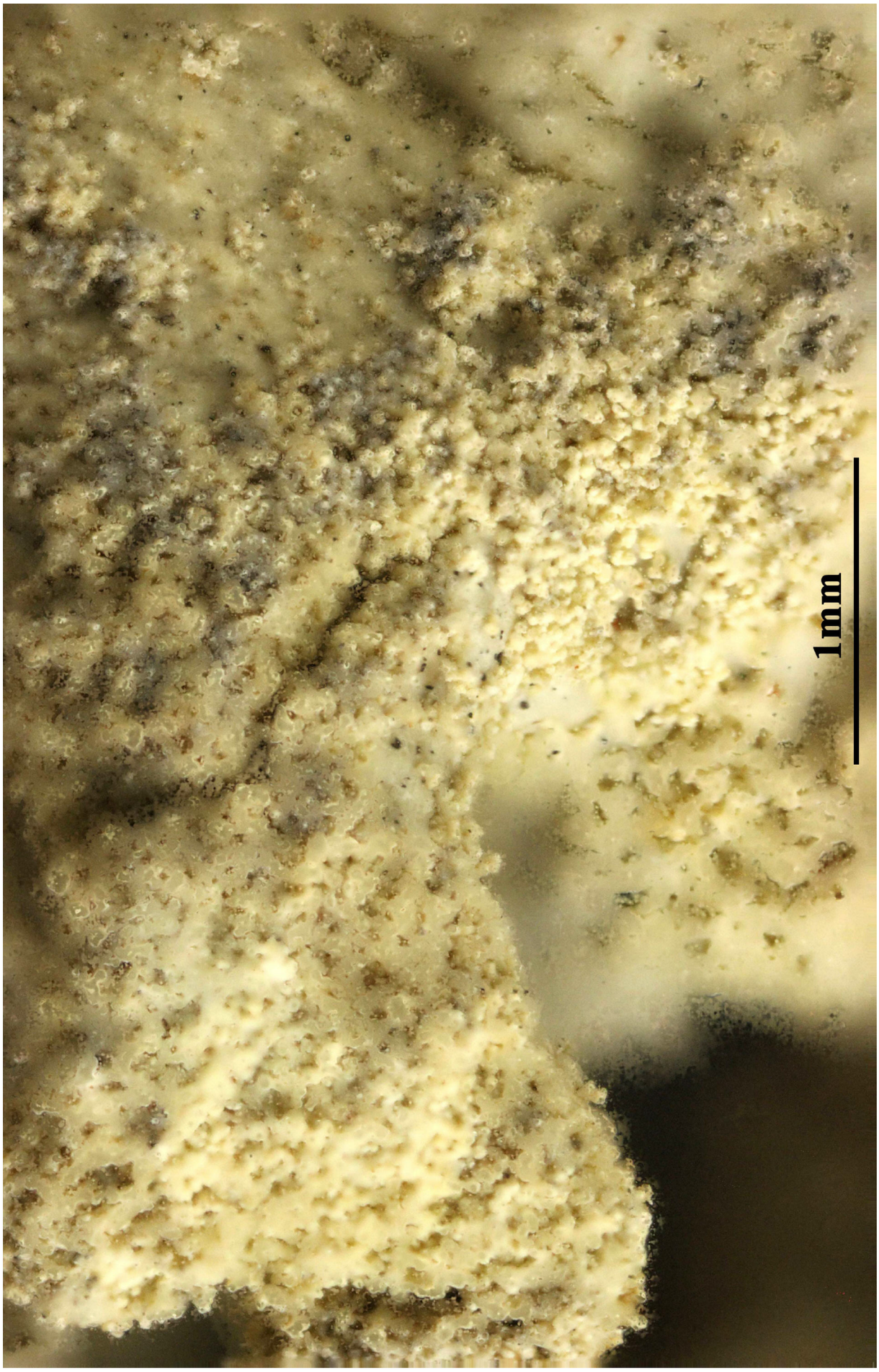
Canoparmelia aptata (Kremp.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 278 (1986)
= *Parmelia aptata* Kremp. 1869

[OH528], Japan. Honshu. Prov. Aki (Pref. Hiroshima): Kagamiyama, Higashi-hiroshima-city (N34°24'17" N, 132°43'00" E). On trunc of *Zelkova serrata*, 240 m. Leg. Y. Ohmura (no. 11088), 21.3.2016, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 528.

Thallus adnate, to 6–12 cm wide. Lobes often imbricate, sublinear to subirregular, crenate or deeply incised, 2–5 mm wide; apices rotund. Upper surface pale grey to ashy white or grey-green, smooth to rugulose, maculate, usually markedly cracked, without isidia; soralia laminal, punctiform to capitate, developing from pustules; soredia coarse, granular, whitish or grey-white. Medulla mainly white, pale orange below soralia. Lower surface black, with brown marginal zone; rhizines sparse to moderately dense, simple, black. Apothecia rare, 2–5 mm wide; disc concave, red-brown to dark brown; thalline exciple sorediate. Ascospores 8–11 × 5–7 µm. Pycnidia rare. Conidia weakly bifusiform, 6–8 × 1 µm. CHEMISTRY: cortex K+ yellow; medulla K-, C-, KC+ rose, P-; containing atranorin, chloroatranorin, glomelliferic acid (major), perlatolic acid, stenosporic acid and unidentified pigment. - Scattered in coastal and hinterland woodland or forests of Qld; also occurs in Africa, India, Japan and Indonesia. Grows on bark and rock.



Canoparmelia aptata



Canoparmelia aptata

Cetraria ericetorum Opiz, Seznam Rostlin Kveteny Ceské: 175 (1852)

[KU505], Japan. Honshu. Prov. Shimotsuke: Mt. Shirane. On soil, 2570 m. Leg. H. Shibuichi (no. 6506), 4.8.1982, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 505.

Thallus fruticose, dark brown, somehow glossy, the basal portions reddish, loosely attached, often forming dense tufts. Lobes 0.5-2(-3)mm wide, to 8-9 cm tall (usually less), smooth, erect, strongly channelled, curved, more or less tubular, with numerous marginal spinules bearing pycnidia, and maculiform to elongate pseudocyphellae restricted to the margins of the lower surface, which is of the same colour as the upper surface, or slightly paler. Cortex 2-layered, with an external layer of brownish, thick-walled, paraplectenchymatous cells, and an inner layer of periclinally arranged hyphae; medulla white. Apothecia extremely rare (never found in Italian material), lecanorine, mostly subterminal, with a dark brown disc and an often crenulate thalline margin. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, narrowly clavate, with a small axial body and a distinct, K/I+ blue ring-structure in the rather large tholus, approaching the Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, 5-9 x 2-4 µm. Pycnidia dark, immersed in the spinules. Conidia simple, elongate, slightly swollen in the middle, 6-7.5 x 1 µm. Photobiont chlorococcoid. Spot-tests: medulla K-, C-, KC-, P-, UV-. Chemistry: lichesterinic and protolichesterinic acid. - Note: an arctic-alpine, circumpolar species, with optimum on wind-exposed ridges on siliceous substrata near or above treeline.



Cetraria ericetorum



Cetraria ericetorum

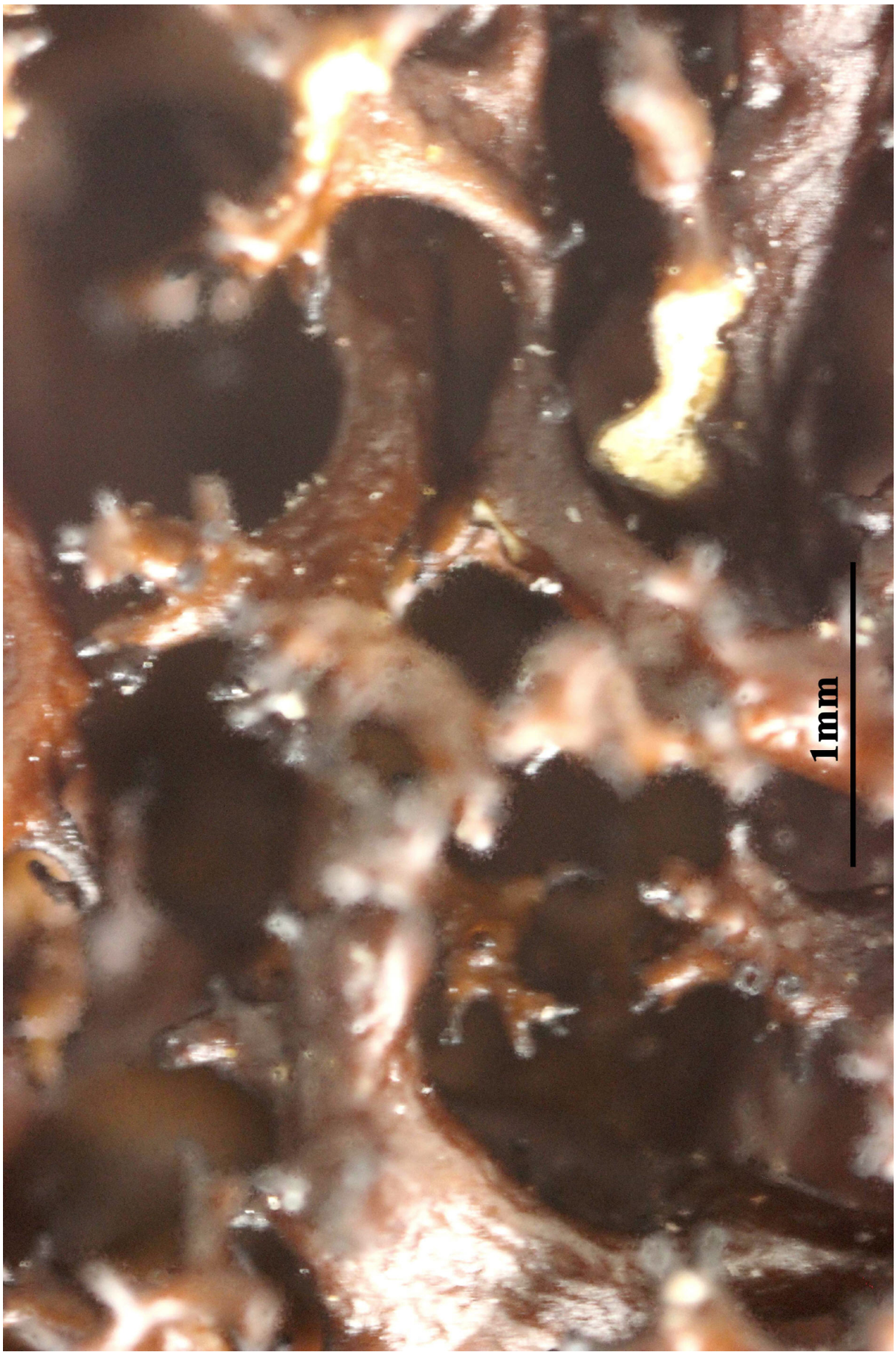
Coelocaulon aculeatum (Schreb.) Link, Grundr. Krauterk. 3: 165 (1833)
= *Lichen aculeatus* Schreb. 1771
= *Cetraria aculeata* (Schreb.) Fr., Nov. Sched. Critic. Lich. (Lundae): 32 (1826)

[KU670}, Svalbard. Spitsbergen. Bohemanflya. On calcareous rocks with mosses, 100-200 m. Leg. H. Kashiwadani (no. 23517), 3.8.1985, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 670.

Thallus fruticose, loosely attached, coarsely dichotomously branched, forming irregular, shrubby tufts, matt to glossy, brown or almost black, the basal parts often reddish, very stiff and brittle. Branches terete, or the largest ones more or less flattened, spinulose, not dorsiventral, 0.5-2(-3) mm thick, up to 6(-8) cm tall (usually less), with an uneven surface and scanty, maculiform, concave, elongate, white pseudocyphellae usually occurring in pits on the main branches. Cortex three-layered, with a denser, brown outer layer with accumulation of dead cells, an intermediate layer with hyphae more or less sparsely distributed in a gelatinous matrix, and a colourless inner layer with more conglutinated cells; medulla white, lax and web-like to hollow in basal parts. Apothecia rare (not seen in Italian material), lecanorine, sessile, mostly subterminal, with a brown disc. Epithecium brown; hymenium colourless, 35-50 µm high, I+ blue; paraphyses coherent, the apical cells slightly swollen; hypothecium colourless, underlain by a dense algal layer. Asci (6-)8-spored, narrowly clavate, with a small axial body and a distinct, K/I+ blue ring-structure in the rather large tholus, approaching the Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, 5.5-6.5 x 2.5-3.5 µm. Pycnidia dark, immersed in short marginal projections. Conidia simple, slightly swollen in the middle, c. 5 x 1 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: lichesterinic and protolichesterinic acids. - Note: on siliceous, often sandy mineral soil in clearings of Calluna-heaths in wind-exposed situations.



Coelocaulon aculeatum



Coelocaulon aculeatum

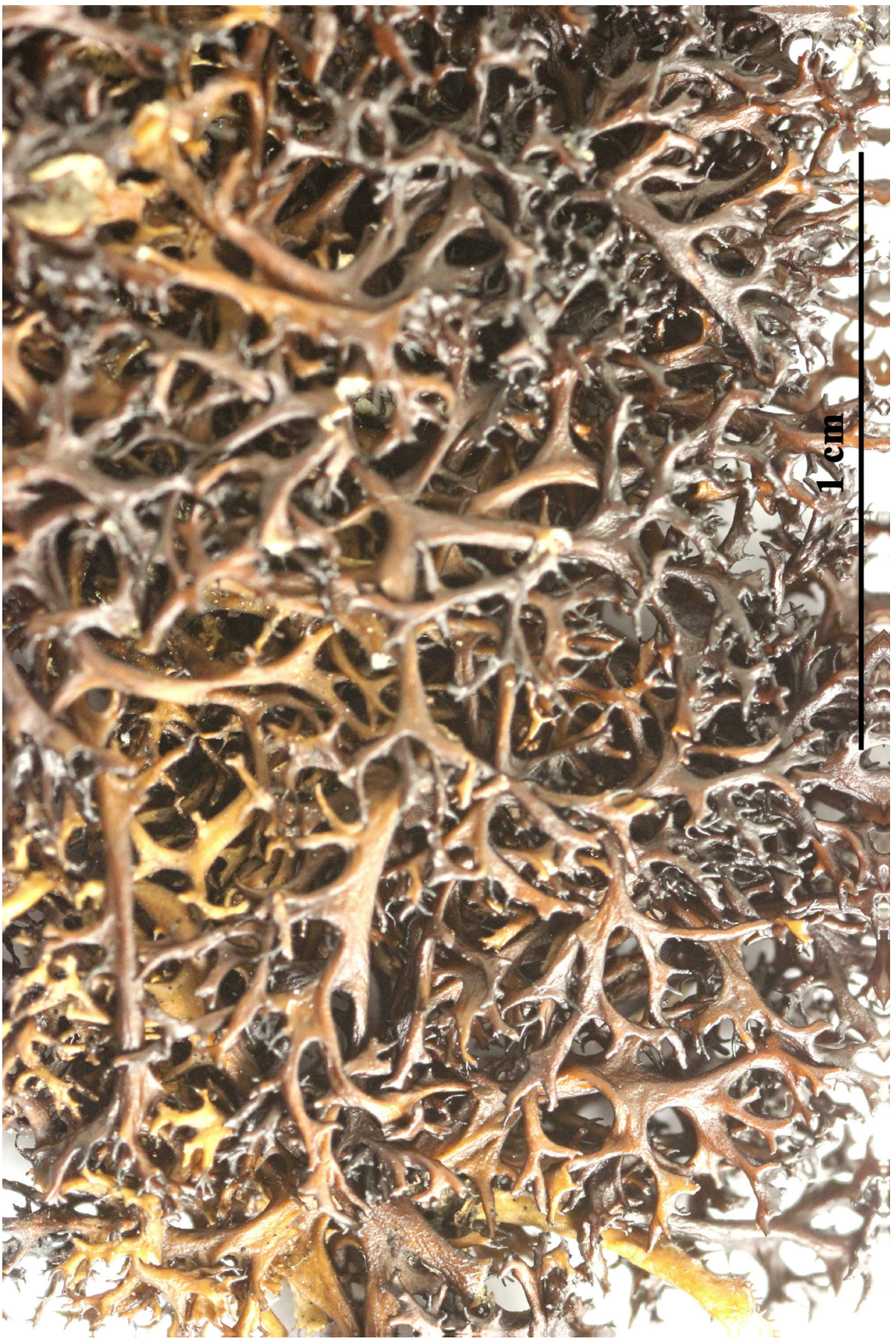
Coelocaulon aculeatum (Schreb.) Link, Grundr. Krauterk. 3: 165 (1833)
= *Lichen aculeatus* Schreb. 1771
= *Cetraria aculeata* (Schreb.) Fr., Nov. Sched. Critic. Lich. (Lundae): 32 (1826)

[KU670}, Svalbard. Spitsbergen. Bohemanflya. On calcareous rocks with mosses, 100-200 m. Leg. H. Kashiwadani (no. 23517), 3.8.1985, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr. 670.

Thallus fruticose, loosely attached, coarsely dichotomously branched, forming irregular, shrubby tufts, matt to glossy, brown or almost black, the basal parts often reddish, very stiff and brittle. Branches terete, or the largest ones more or less flattened, spinulose, not dorsiventral, 0.5-2(-3) mm thick, up to 6(-8) cm tall (usually less), with an uneven surface and scanty, maculiform, concave, elongate, white pseudocyphellae usually occurring in pits on the main branches. Cortex three-layered, with a denser, brown outer layer with accumulation of dead cells, an intermediate layer with hyphae more or less sparsely distributed in a gelatinous matrix, and a colourless inner layer with more conglutinated cells; medulla white, lax and web-like to hollow in basal parts. Apothecia rare (not seen in Italian material), lecanorine, sessile, mostly subterminal, with a brown disc. Epithecium brown; hymenium colourless, 35-50 µm high, I+ blue; paraphyses coherent, the apical cells slightly swollen; hypothecium colourless, underlain by a dense algal layer. Asci (6-)8-spored, narrowly clavate, with a small axial body and a distinct, K/I+ blue ring-structure in the rather large tholus, approaching the Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, 5.5-6.5 x 2.5-3.5 µm. Pycnidia dark, immersed in short marginal projections. Conidia simple, slightly swollen in the middle, c. 5 x 1 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: lichesterinic and protolichesterinic acids. - Note: on siliceous, often sandy mineral soil in clearings of Calluna-heaths in wind-exposed situations.



Coelocaulon aculeatum



Coelocaulon aculeatum

Lopadium purpuratum Zahlbr., Bot. Mag., Tokyo 41: 334 (1927)

[KU318], Japan. Honshu. Prov. Kai: Aokigahara-marubi, Mt. Fuji. On bark of *Fagus crenata*, 1100 m. Leg. H. Kashiwadani (no. 14013) and S. Kurokawa, 12.4.1977, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWASANI LICHENES RARIORES ET CRITICI EXSICCATI NR.318.



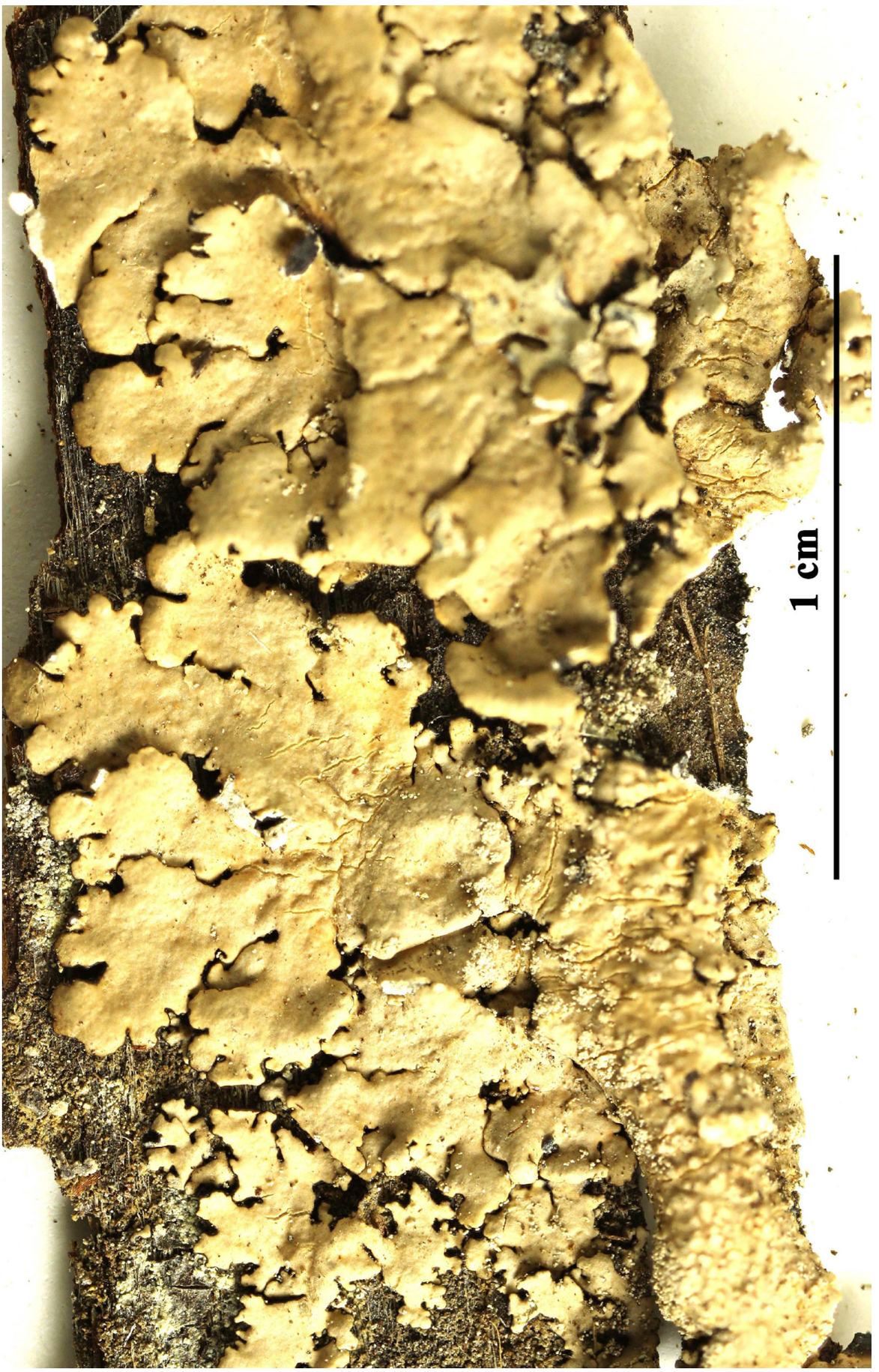
Lopadium purpuratum



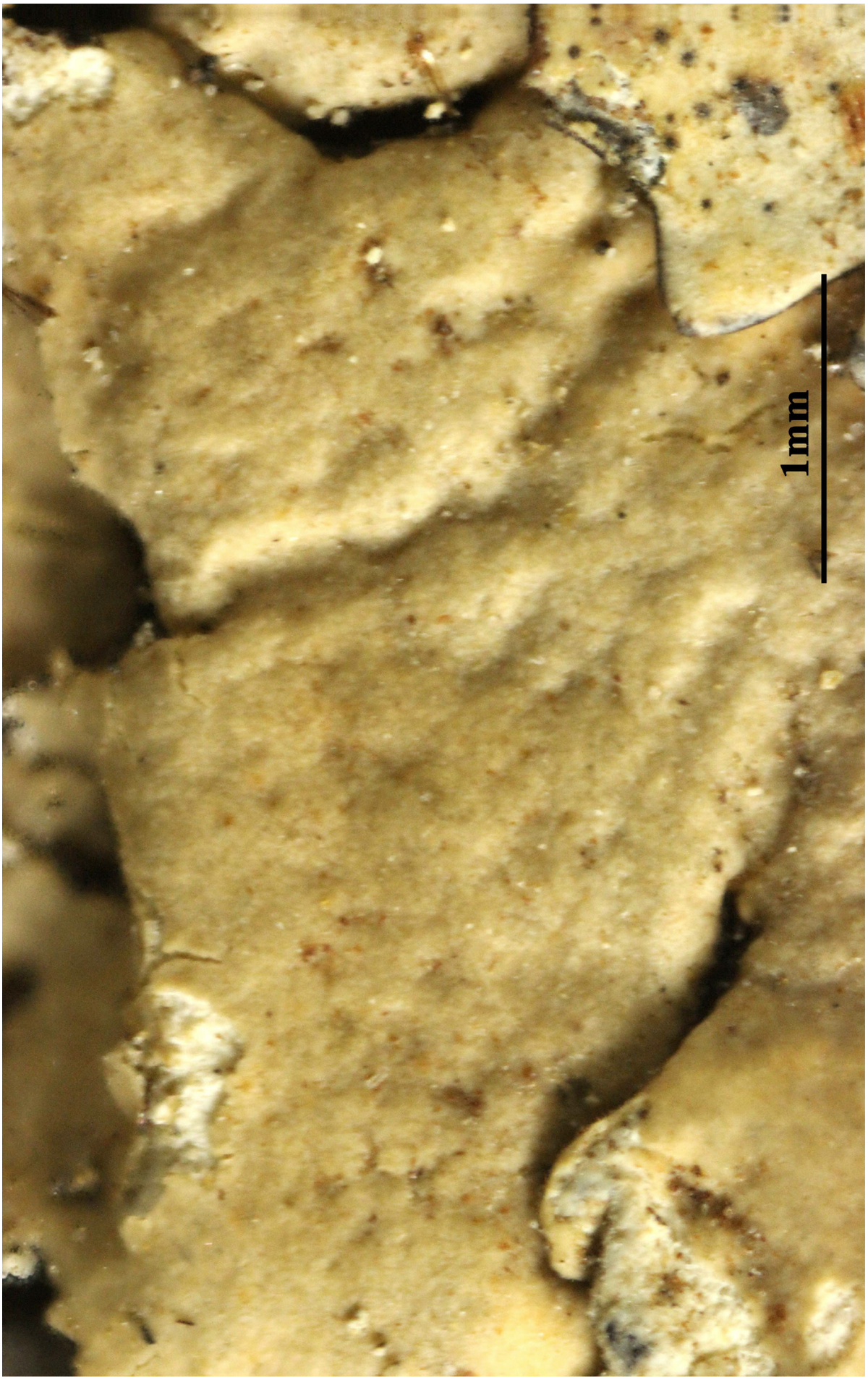
Lopadium purpuratum

Parmelia aptata Kremp., in Nylander, Flora, Regensburg 52: 291 (1869)
= *Canoparmelia aptata* (Kremp.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 278 (1986)

[KU321], Japan. Kyushu. Prov.Bungo: South of City. On bark of *Cryptomeria japonica*, 50 m. Leg. S. Kurokawa (no. 74002), 5.3.1974, det. S. Kurokawa. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 321.



Parmelia aptata


1mm

A

Acarospora smaragdula (Wahlenb. ex Ach.) A. Massal..... 2
Acroscyphus sphaerophoroides Lév..... 5, 8
Agonimia koreana Kashiw. & K.H. Moon..... 11
Agonimia pacifica (H. Harada) Diederich..... 14
Agonimia pacifica (H.Harada) Diederich..... 17
Agonimiella pacifica H. Harada..... 14
Ainoa mooreana (Carroll) Lumbsch & I. Schmitt..... 19
Ainoa mooreana (Carroll) Lumbsch & I.Schmitt..... 22
Alectoria americana Motyka..... 28, 31
Alectoria lactinea Nyl..... 34
Alectoria lata (Taylor) Linds..... 37, 40, 43
Alectoria nidulifera Norrl. ex Nyl..... 46, 49
Alectoria nigricans (Ach.) Nyl..... 52
Alectoria ochroleuca (Schrank) Nyl..... 55, 58, 61
Alectoria oregana Tuck..... 64
Alectoria pseudofuscescens Gyeln..... 67
Alectoria sulcata (Lév.) Nyl..... 70
Amandinea punctata (Hoffm.) Coppins & Scheid.. 73, 76, 81, 89, 101
Anthracothecium japonicum Kashiw. & Kurok..... 104
Asahinea chrysantha (Tuck.) W.L. Culb. & C.F. Culb..... 107, 110, 113
Asahinea kurodakensis (Asahina) W.L. Culb. & C.F. Culb..... 116, 119

B

Bacidia hakonensis (Müll. Arg.) Zahlbr..... 121
Baeomyces absolutus Tuck..... 124
Baeomyces aggregatus Asahina..... 127, 130, 133
Baeomyces brevis Zahlbr..... 136
Baeomyces fungoides (Sw.) Ach..... 139
Baeomyces placophyllus Ach.. 142, 145, 148, 156, 159, 162, 165, 168
Baeomyces roseus Pers..... 171
Baeomyces sanguineus Asahina..... 174
Biatora placophylla (Ach.) Fr..... 148
Bombyliospora japonica Zahlbr..... 177
Botryolepraria lesdainii (Hue) Canals, Hern.-Mar., Gómez-Bolea & Llimona..... 180, 183
Brigantiaea ferruginea (Müll. Arg.) Kashiw. & Kurok..... 194
Brownliella cinnabarina (Ach.) S.Y. Kondr., Kärnefelt, A. Thell, Elix, J. Kim, A.S. Kondr. & Hur..... 235, 267
Bryoplaca tetraspora (Nyl.) Søchting, Frödén & Arup..... 257, 260
Bryoria capillaris (Ach.) Brodo & D. Hawksw..... 197

Bryoria furcellata (Fr.) Brodo & D. Hawksw..... 46, 49, 200, 203
Bryoria pseudofuscescens (Gyeln.) Brodo & D. Hawksw..... 67
Bryoria trichodes (Michx.) Brodo & D. Hawksw..... 206
Buellia punctata (Hoffm.) A. Massal..... 73, 76, 81, 89, 101
Bunodophoron formosanum (Zahlbr.) Wedin..... 209
C
Calicium glaucellum Ach..... 212
Calicium hyperelloides Nyl..... 215
Calicium salicinum Pers..... 220
Calopadia puiggarii (Müll. Arg.) Vězda..... 223, 226
Calopadia subcoerulescens (Zahlbr.) Vězda..... 229
Caloplaca cinnabarina (Ach.) Zahlbr..... 232, 235, 267
Caloplaca flavorubescens (Huds.) J.R.Laundon..... 242, 245
Caloplaca regalis (Vain.) Zahlbr..... 250, 253
Caloplaca tetraspora (Nyl.) H. Olivier..... 257, 260
Candelaria concolor (Dicks.) Arnold..... 274, 277
Candelariella placodizans (Nyl.) H. Magn..... 280
Canoparmelia aptata (Kremp.) Elix & Hale..... 283, 298
Cetraria aculeata (Schreb.) Fr..... 289, 292
Cetraria chrysantha Tuck..... 107, 110, 113
Cetraria ericetorum Opiz..... 286
Cetraria furcellata Fr..... 200, 203
Cetraria kurodakensis Asahina..... 116, 119
Chaenothecopsis hyperelloides (Nyl.) Clauzade & Cl. Roux..... 215
Coelocaulon aculeatum (Schreb.) Link..... 289, 292
Cornicularia laeta Taylor..... 37, 40, 43
Cornicularia ochroleuca var. nigricans Ach..... 52
Cornicularia sulcata Lév..... 70
Crocynia lesdainii Hue..... 180, 183
D
Dibaeis absoluta (Tuck.) Kalb & Gierl..... 124
Dibaeis arcuata (Stirt.) Kalb & Gierl..... 139
Dibaeis baeomyces (L. f.) Rambold & Hertel..... 171
Dibaeis baeomyces (L.) Hertel & Oberwinkler..... 139
G
Gondwania regalis (Vain.) Søchting, Frödén & Arup..... 250, 253
Gyalolechia flavorubescens (Huds.) Søchting, Frödén & Arup 242, 245
H
Heterothecium puiggarii Müll. Arg..... 223, 226
L

Lecanora cinnabarina Ach..... 232
Lecanora tetraspora Nyl..... 257
Lecanora vitellina f. placodizans Nyl..... 280
Lecidea mooreana Carroll..... 19
Lecidea placophylla (Ach.) Link..... 148
Lepraria lesdainii (Hue) R.C.Harris..... 183
Lichen aculeatus Schreb..... 289, 292
Lichen baeomyces L. f..... 171
Lichen concolor Dicks..... 274, 277
Lichen fungoides Sw..... 139
Lichen islandicus var. ochroleucus Schrank..... 55, 58, 61
Lichen placophyllus (Ach.) Lam..... 148
Lopadium ferrugineum Müll. Arg..... 194
Lopadium purpuratum Zahlbr..... 295
Lopadium subcoerulescens Zahlbr..... 229
Ludovicia placophylla (Ach.) Trevis..... 148
M
Myriospora smaragdula (Wahlenb. ex Ach.) Nägeli ex Uloth..... 2
N
Neobrownliella cinnabarina (Ach.) S.Y. Kondr., Upreti & A. Thell 232
Nodobryoria oregana (Tuck.) Common & Brodo..... 64
P
Parmelia aptata Kremp..... 283, 298
Parmelia jubata β capillaris Ach..... 197
Patellaria hakonensis Müll. Arg..... 121
Patellaria placophylla (Ach.) Spreng..... 148
Placodium regale Vain..... 250
Pyrenula neojaponica H. Harada..... 104
S
Setaria trichodes Michx..... 206
Sphaerophorus melanocarpus subsp. formosanus Zahlbr..... 209
Sphyridium placophyllum (Ach.) Th. Fr..... 148
Sulcaria sulcata (Lév.) Bystrek ex Brodo & D. Hawksw..... 70
T
Trapelia mooreana (Carroll) P.James..... 22
Tubercularia placophylla (Ach.) Kuntze..... 148
V
Verrucaria punctata Hoffm..... 73, 76, 81, 89, 101