F. Schumm & A. Aptroot

Images of the Lichen Genus Caloplaca

Volume 4

Caloplaca pyracea
|
Caloplaca xerica



Felix Schumm & André Aptroot

Images of the Lichen Genus

Caloplaca

Volume 4
Caloplaca pyracea
|
Caloplaca xerica

Felix Schumm, Mozartstr. 9, 73117 Wangen, Germany.
Email: fschumm@online.de

André Aptroot, Laboratório de Botânica / Liquenologia, Instituto de Biociências, Universidade Federal de Mato Grosso do Sul, Avenida Costa e Silva s/n, Bairro Universitário, CEP 79070-900, Campo Grande, Matto Grosso do Sul, Brazil.
Email: andreaptroot@gmail.com

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ISBN

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New species
Caloplaca austromaritima
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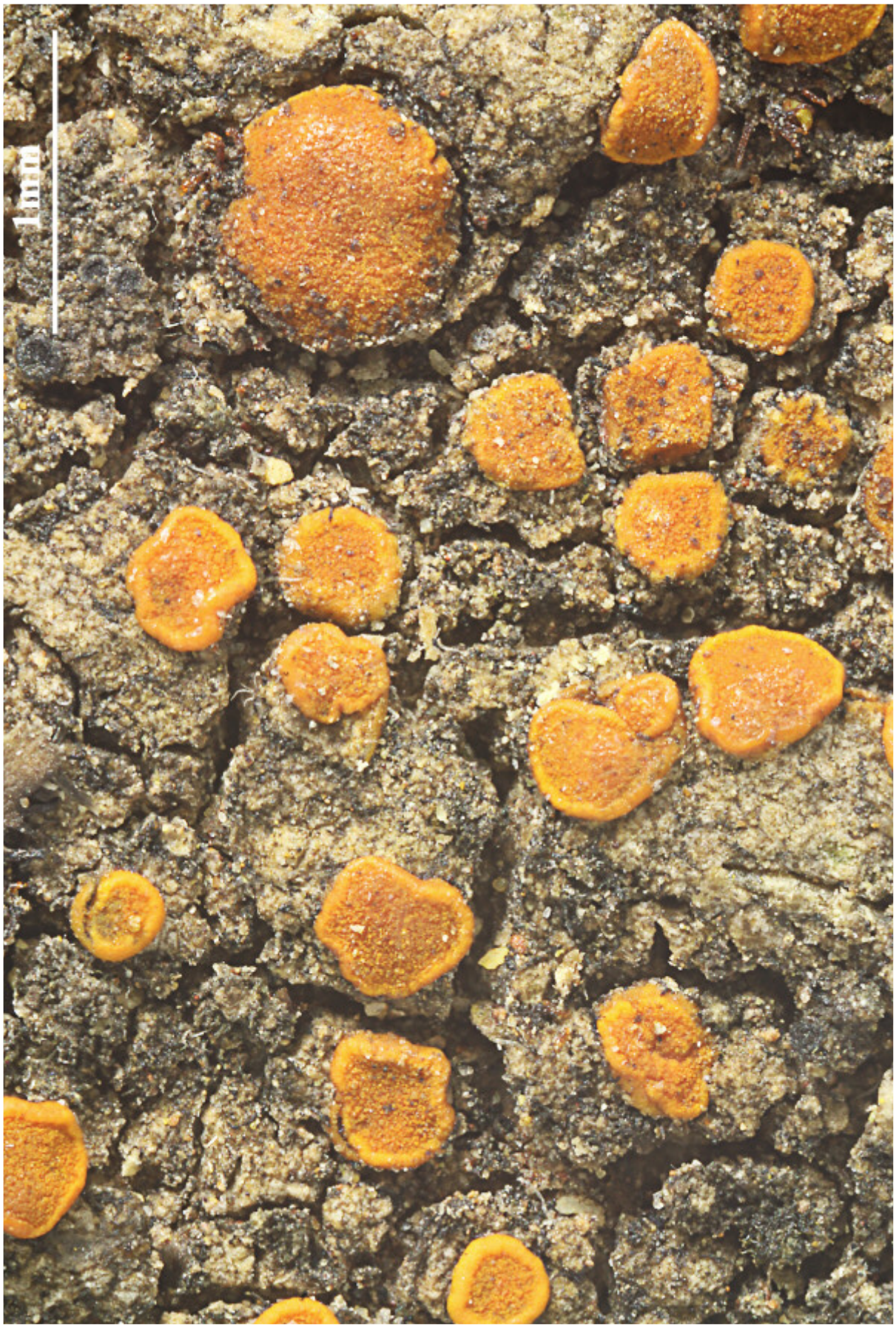
New combinations
Caloplaca brittonii
Caloplaca schwarzii

Caloplaca pyracea (Ach.) Zwackh
[= *Athallia pyracea* (Ach.) Arup, Frödén & Søchting]

On bark.

[5350], Spanien, Gran Canaria, Cruz de Tejeda, an *Castanea*; 28°00.308' N, 15°35.884' W, Höhe 1440 m. Leg. F. Schumm & U. Schwarz 31.12.199, det. A. Aptroot 2016.





Caloplaca pyracea

Caloplaca pyracea (Ach.) Zwackh
[= *Athallia pyracea* (Ach.) Arup, Frödén & Søchting]

On bark.

[6640], Spanien, Gran Canaria, schattiger, kalter, mit *Pinus canariensis* bestandener Nordhang an der Straße von Cazadores zum Cruz de Tejeda bei der Caldera de los Marteles; auf *Pinus canariensis*, 27°57.658’ N, 15°32.105’ W, Höhe 1570 m. Leg. F. Schumm & U. Schwarz 28.12.1999, det. A. Aptroot 2016.





Caloplaca pyracea

Caloplaca pyracea (Ach.) Zwackh
[= *Athallia pyracea* (Ach.) Arup, Frödén & Søchting]

On bark.

[6644], Spanien, Gran Canaria, schattiger, kalter, mit Pinus canariensis bestandener Nordhang an der Straße von Cazadores zum Cruz de Tejeda bei der Caldera de los Marteles, on bark of *Pinus canariensis,* 27°57.658' N, 15°32.105' W, Höhe 1570 m. Leg. F. Schumm & U. Schwarz, 28.12.1999, det. A. Aptroot 2016.





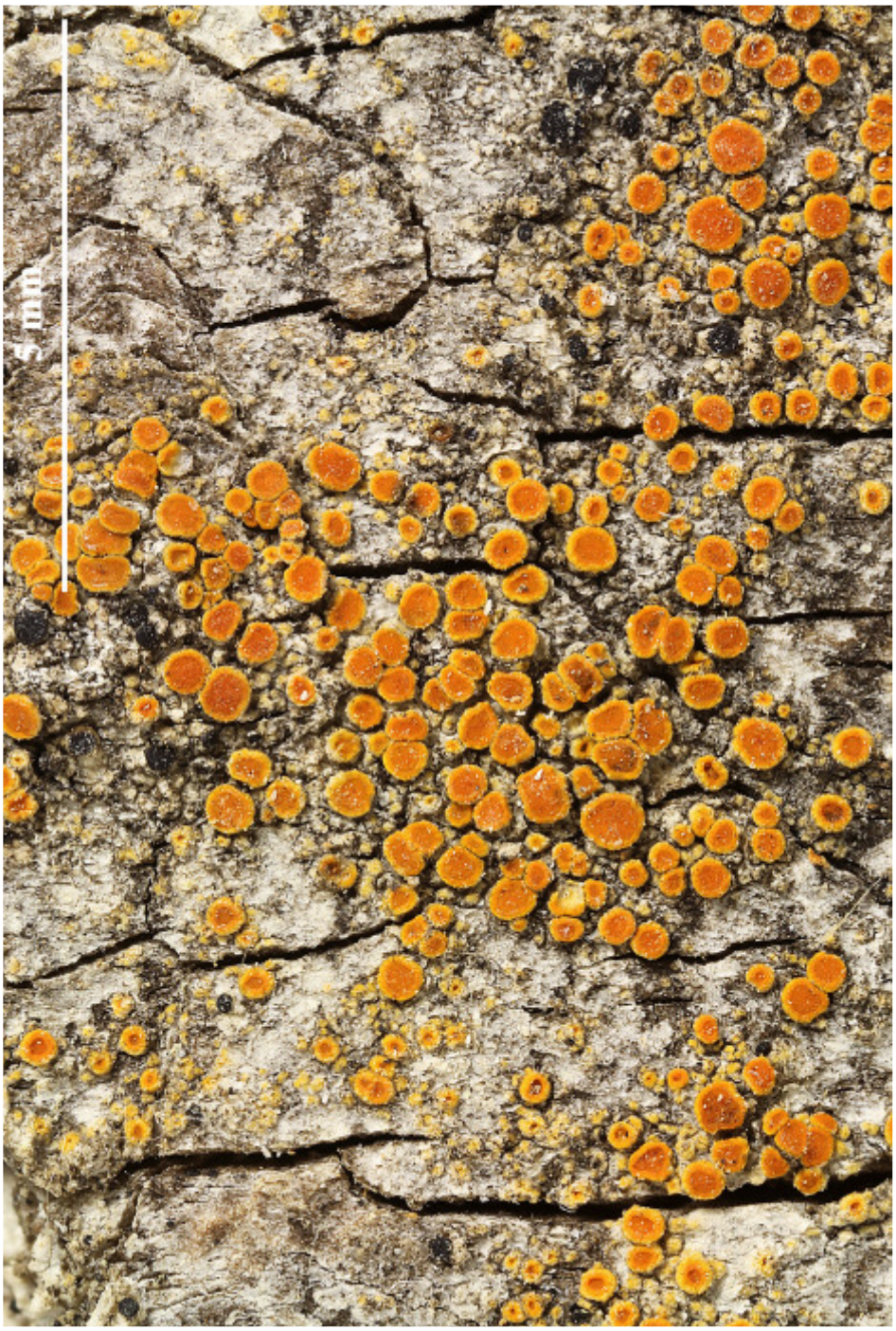


Caloplaca pyracea

Caloplaca pyracea (Ach.) Zwackh, Flora, Regensburg 45(31): 487 (1862)
[= *Athallia pyracea* (Ach.) Arup, Frödén & Søchting, Nordic Jl Bot. 31(1): 36 (2013)]

On bark.

[19401], U.S.A. North Dakota, McKenzie Co. Theodore Roosevelt National Park, North Unit, along little Missouri River near Squaw Creek campground, 24 km S of Watford City, in *Populus deltoides* (cottonwood) groves between campground and river, 595 m, 47°35'31" N, 103°20'25" S. Leg. Clifford M. Wetmore (No. 44871), 21. July 1982, det. C. Wetmore. TELOSCHISTACEAE EXSICCATI NO. 114 distributed by C. Wetmore.





Caloplaca pyracea

Caloplaca pyracea (Ach.) Zwackh, Flora, Regensburg 45(31): 487 (1862)
[= *Athallia pyracea* (Ach.) Arup, Frödén & Søchting, Nordic Jl Bot. 31(1): 36 (2013)]

On bark.

[19402], U.S.A. North Dakota, McKenzie Co. Theodore Roosevelt National Park, North Unit, along little Missouri River Bison Corral, 3.2 km SW of entrance station, 22 km SW of Watford City, on large old *Populus deltoides* (cottonwoods), 595 m, 47°34'50"N, 103°17'57" W, on large *Populus deltoides*. Leg. Clifford M. Wetmore (No. 80186), 14. June 1998, det. C. Wetmore. TELOSCHISTACEAE EXSICCATI NO. 115 distributed by C. Wetmore.





Caloplaca pyracea

Caloplaca pyracea (Ach.) Zwackh, Flora, Regensburg 45(31): 487 (1862)
[= *Athallia pyracea* (Ach.) Arup, Frödén & Søchting, Nordic Jl Bot. 31(1): 36 (2013)]

On bark.

[19405], USA, Wyoming, Western Co., Black Hills, along US 85 at Soldieer Creek, 32 km NNW of Newcastle, on north facing slope with ponderosa pine (*Pinus ponderosa*), 44°09'32" N, 104°09'28" W, 1800 m, on branches of *Pinus ponderosa*. Leg. Clifford M. Wetmore (No. 11292), 12. Aug. 1961, det. C. Wetmore. TELOSCHISTACEAE EXSICCATI NR. 116 DISTRIBUTED BY C. WETMORE.







Caloplaca pyracea

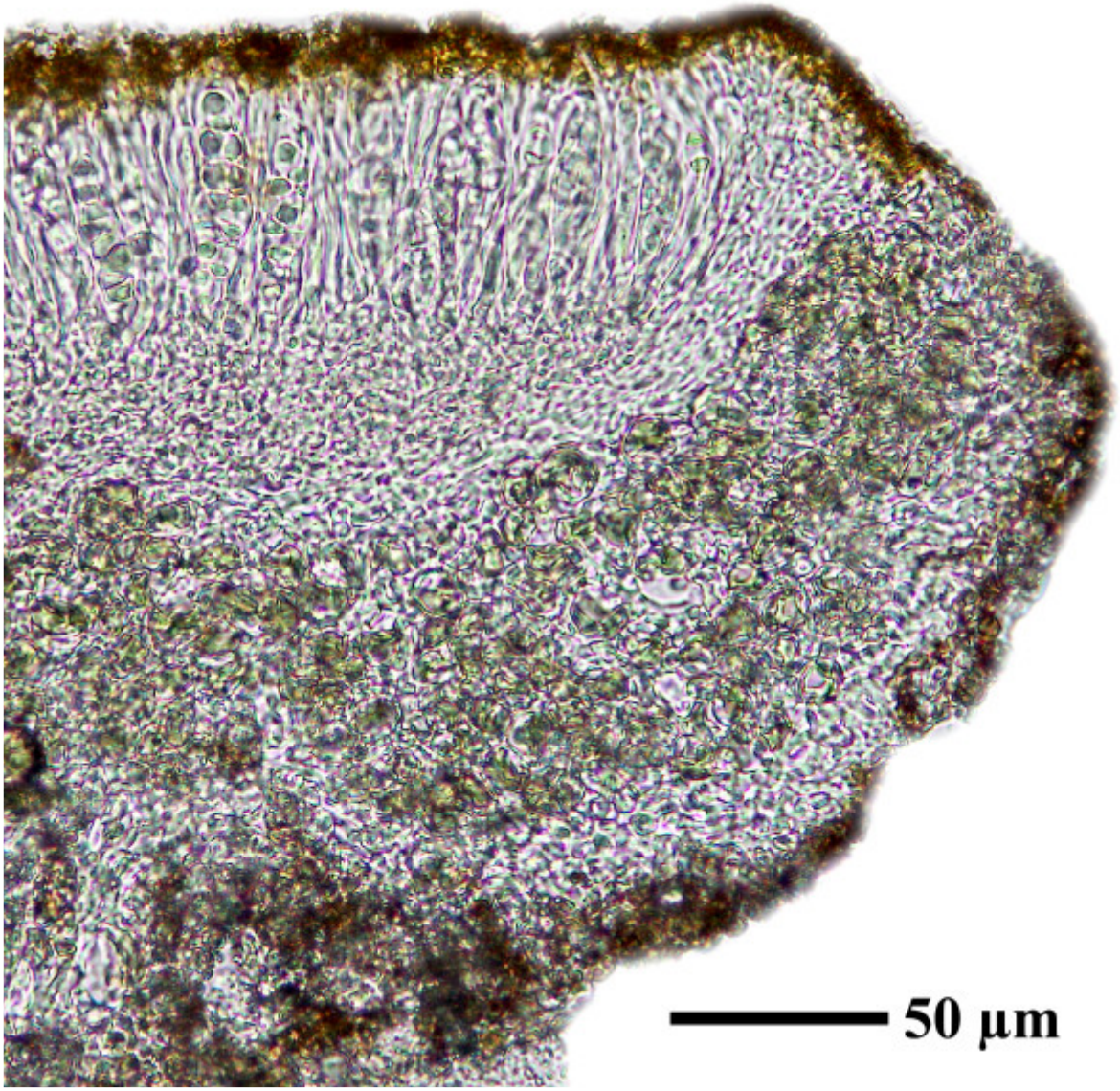
Caloplaca pyracea (Ach.) Zwackh, Flora, Regensburg 45(31): 487 (1862) [= *Athallia pyracea* (Ach.) Arup, Frödén & Søchting, Nordic Jl Bot. 31(1): 36 (2013)]

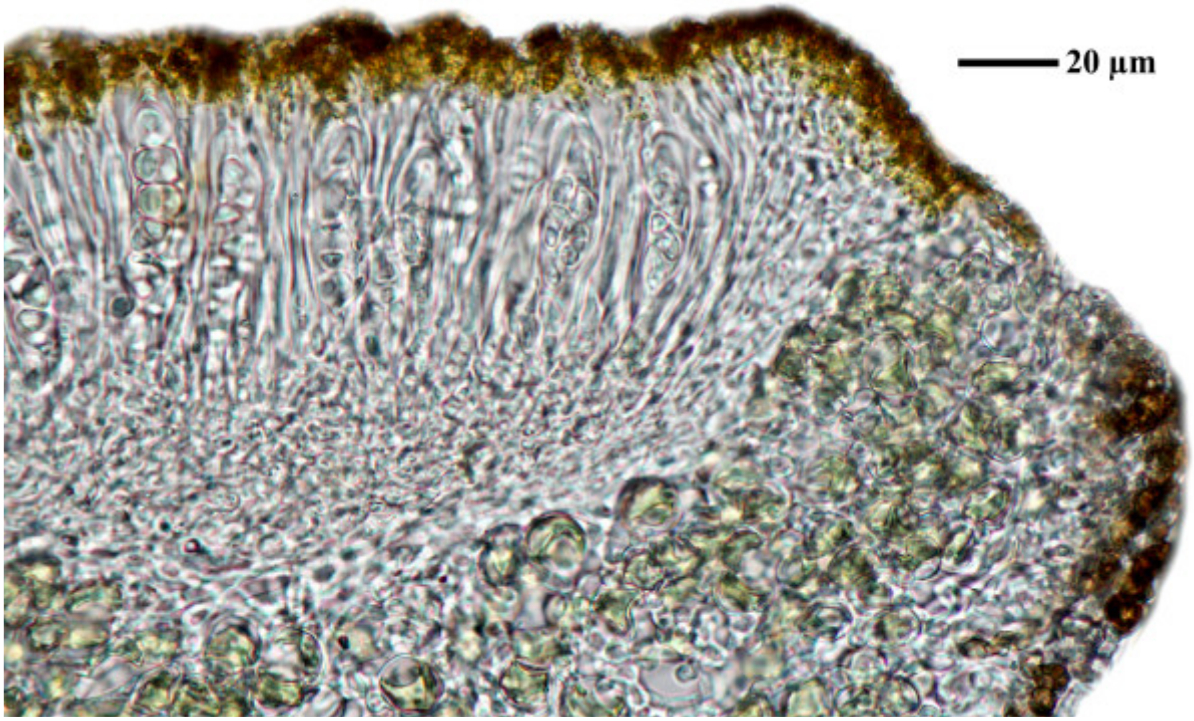
[LIAF_65], Afghanistan, Prov. Paktia, 3 km N Rabat, ca. 10 km S Chamkani, an der Straße nach Zambar, 69°47.5' E, 33°42.5' N, 1880 m. Auf *Cotoneaster* cf. *subuniflora* (Kitamura) Klotz. Leg. M. Steiner (Ste 82), 04.07.1970. LICHENOTHECA AFGHANICA NR. 65.



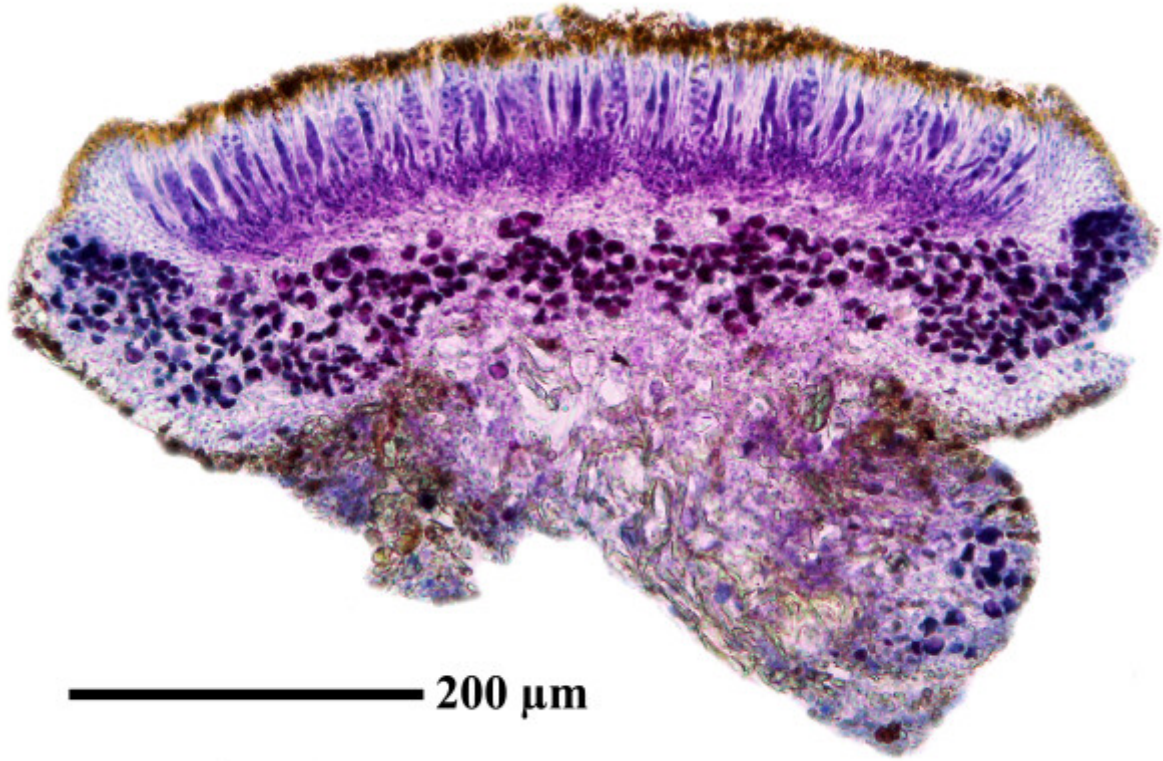


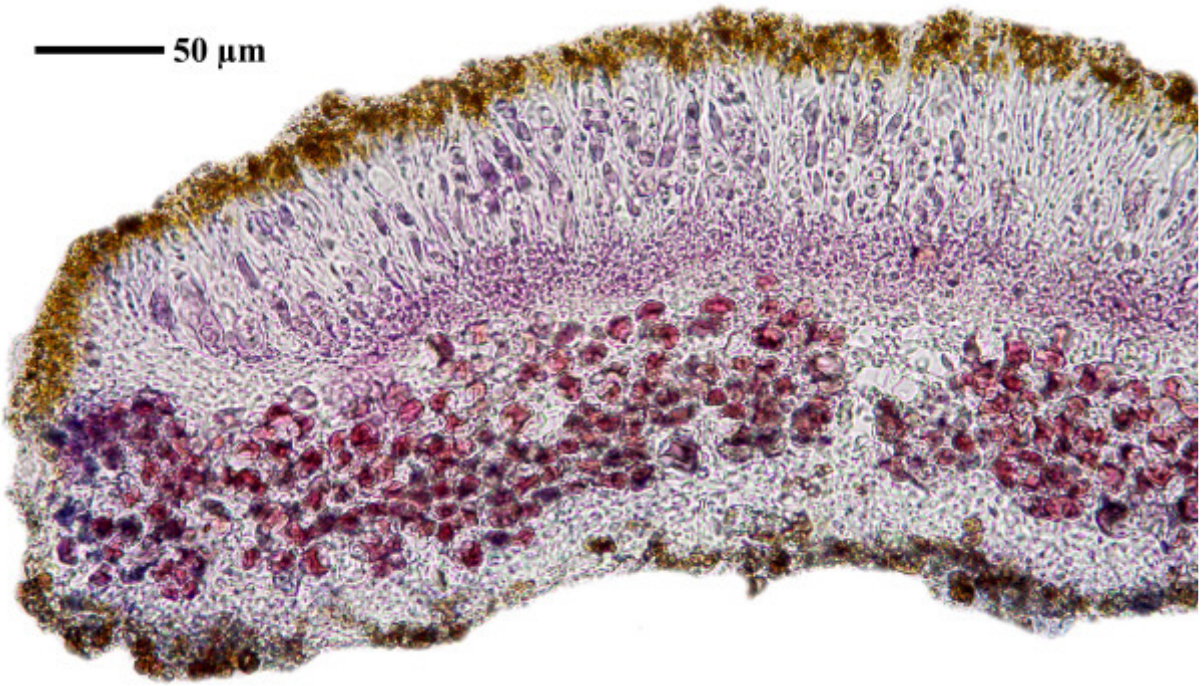
Caloplaca pyracea



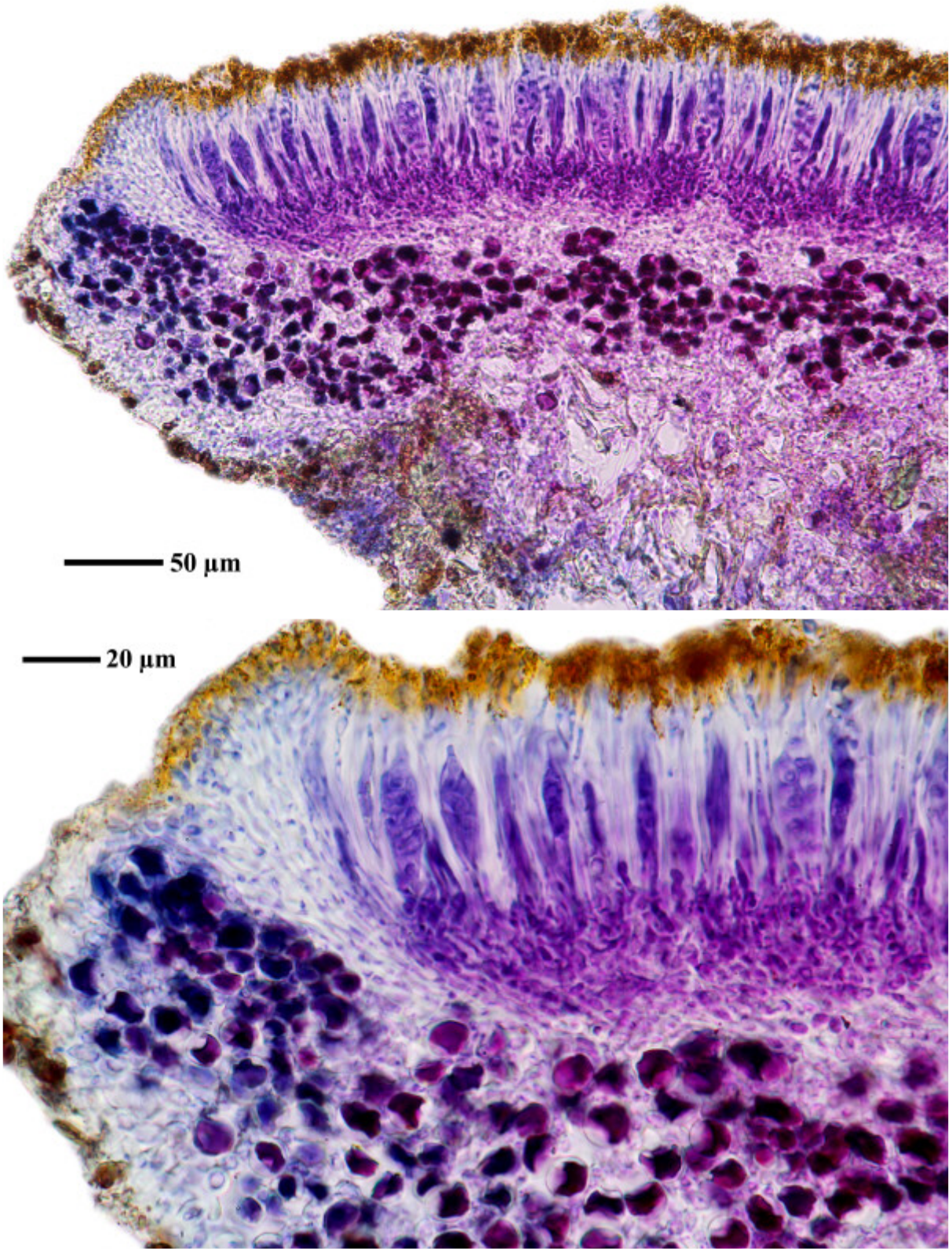


Caloplaca pyracea

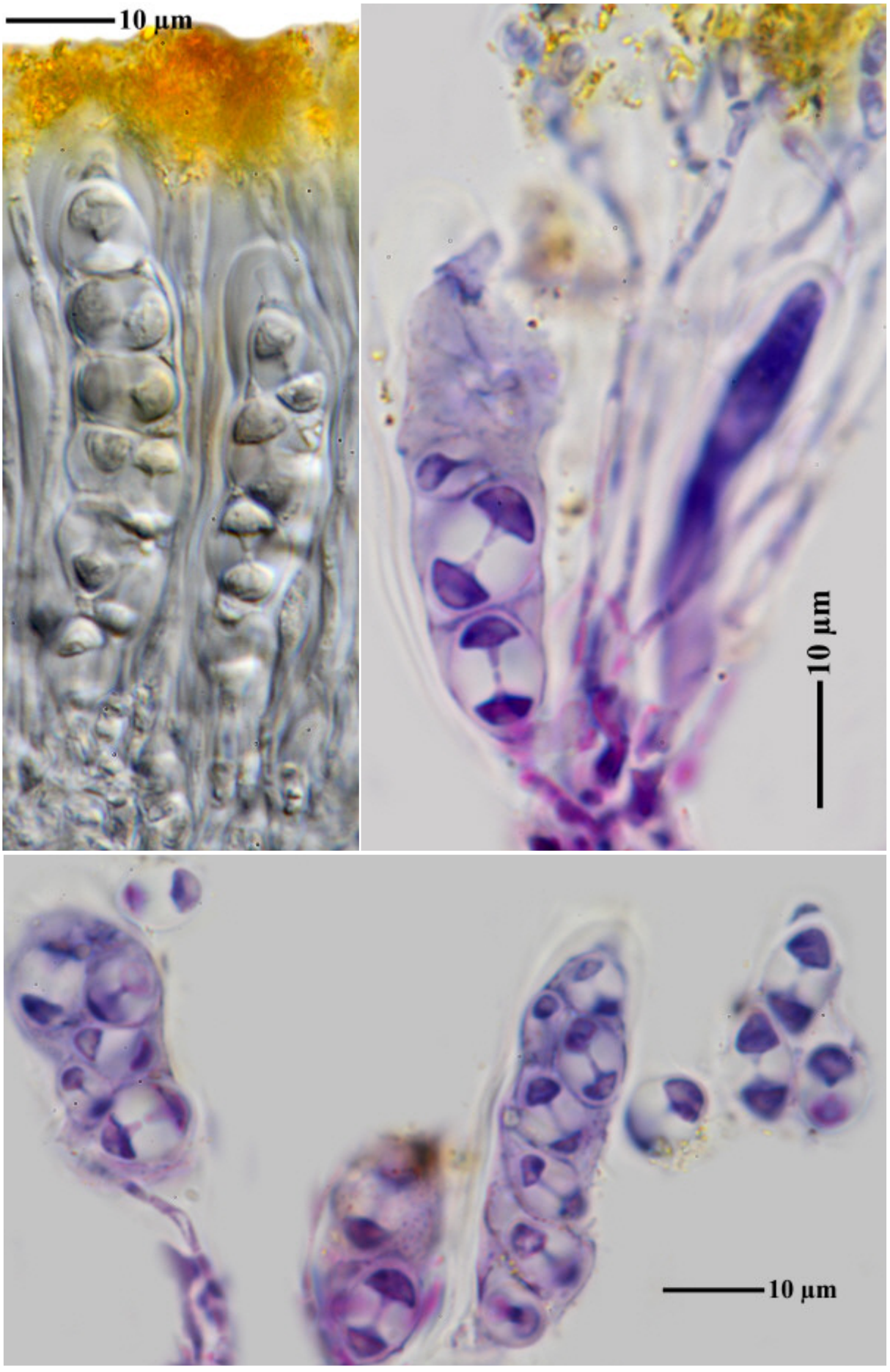




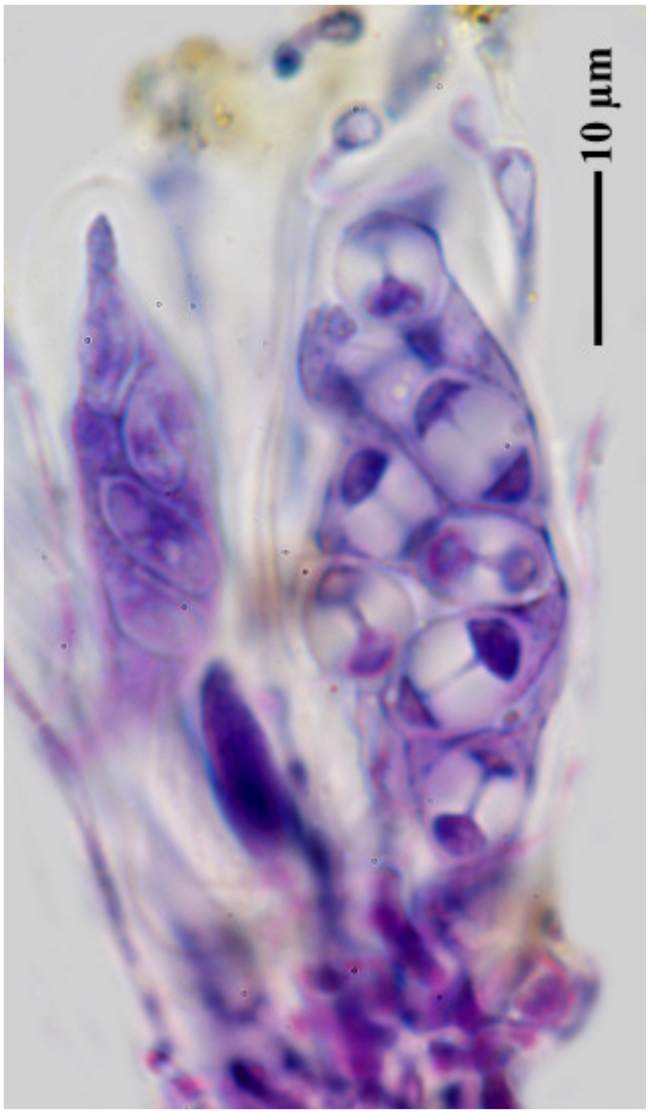
Caloplaca pyracea

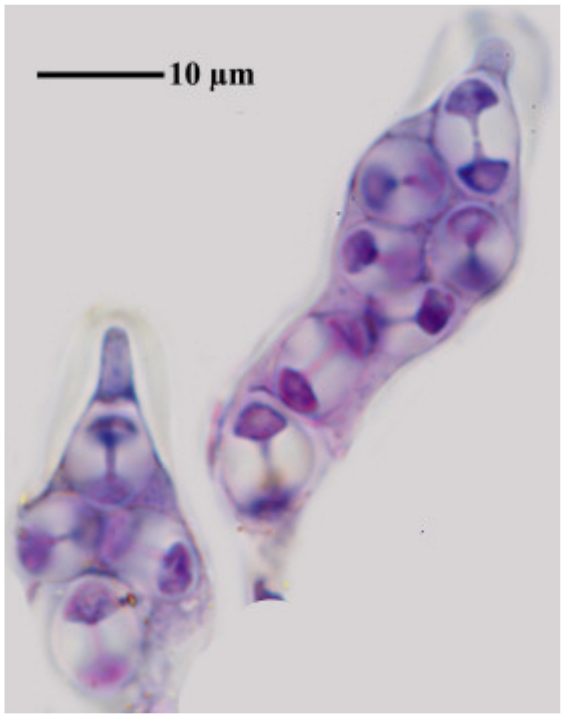


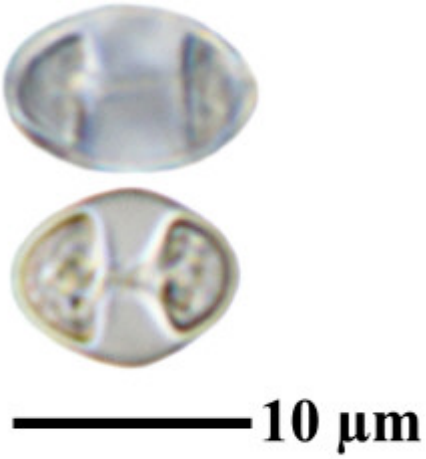
Caloplaca pyracea



Caloplaca pyracea







Caloplaca pyracea

Caloplaca quadrilocularis (Nyl.) Zahlbr.

Hymenium 100 µm, clear, colourless; epithecium yellow-brown; spores 4(-5) locular, c. 28 x 12 µm. (Sipman). Spores 21-27 x 9-14 µm, 4-locular (FS).

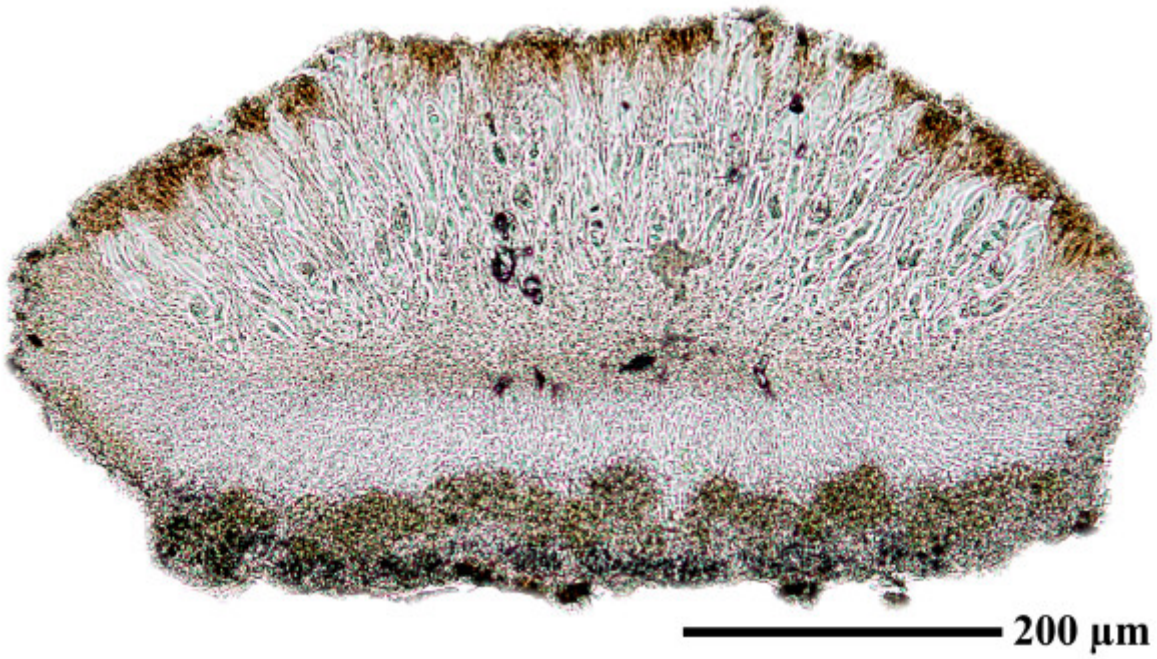
[B 60 0077512], Brazil, Rio de Janeiro, Parque Nacional da Serra dos Orgãos, trail from Abrigo 2 to Pedra do Frade, 22°30' S, 43°03' W, 1600-2000 m, leg. F. Mattick, F. (104-d), 2.10.1952. Det. H. Sipman.

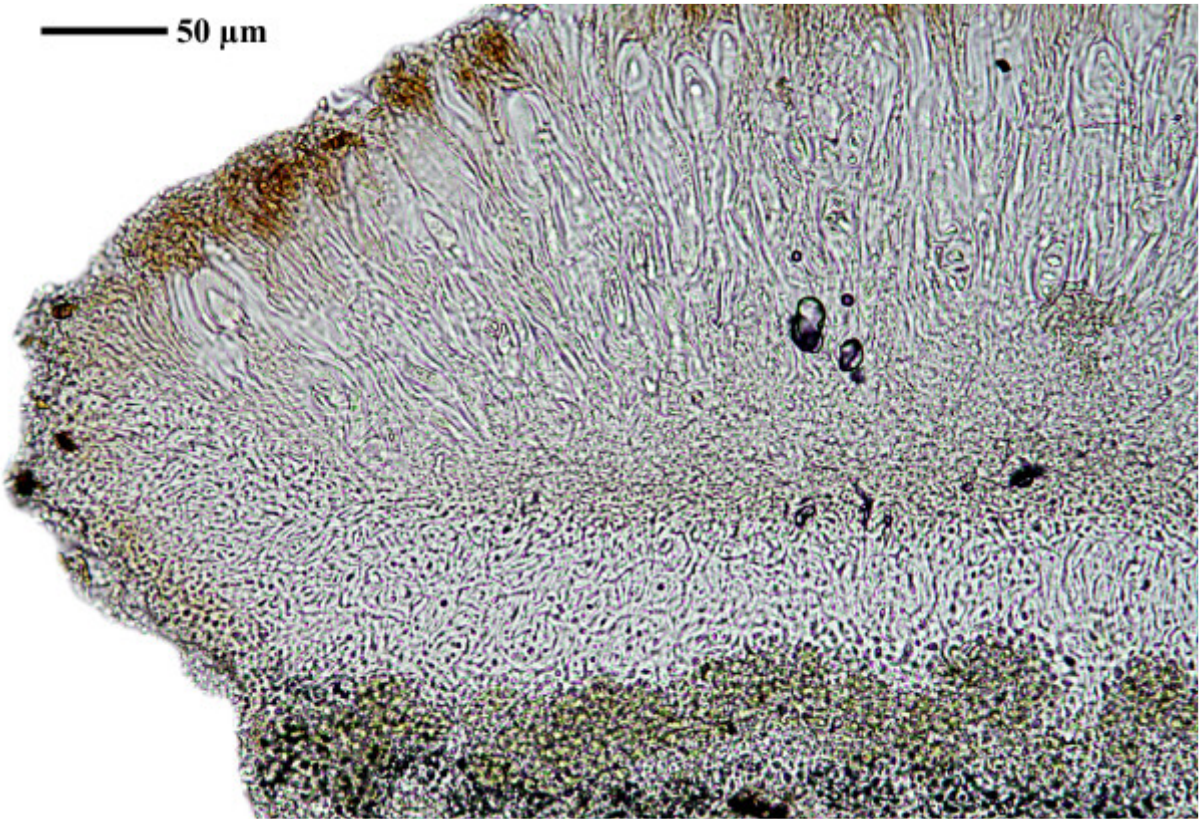






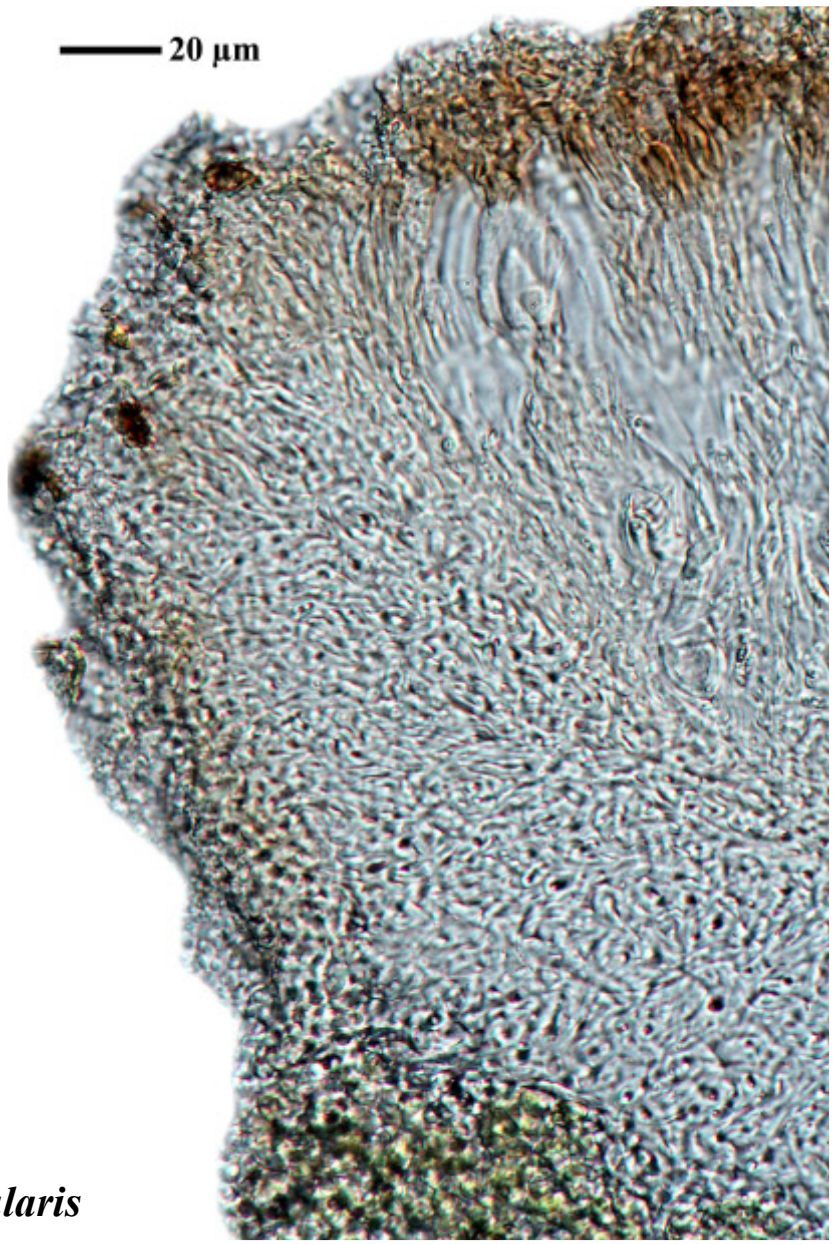
Caloplaca quadrilocularis



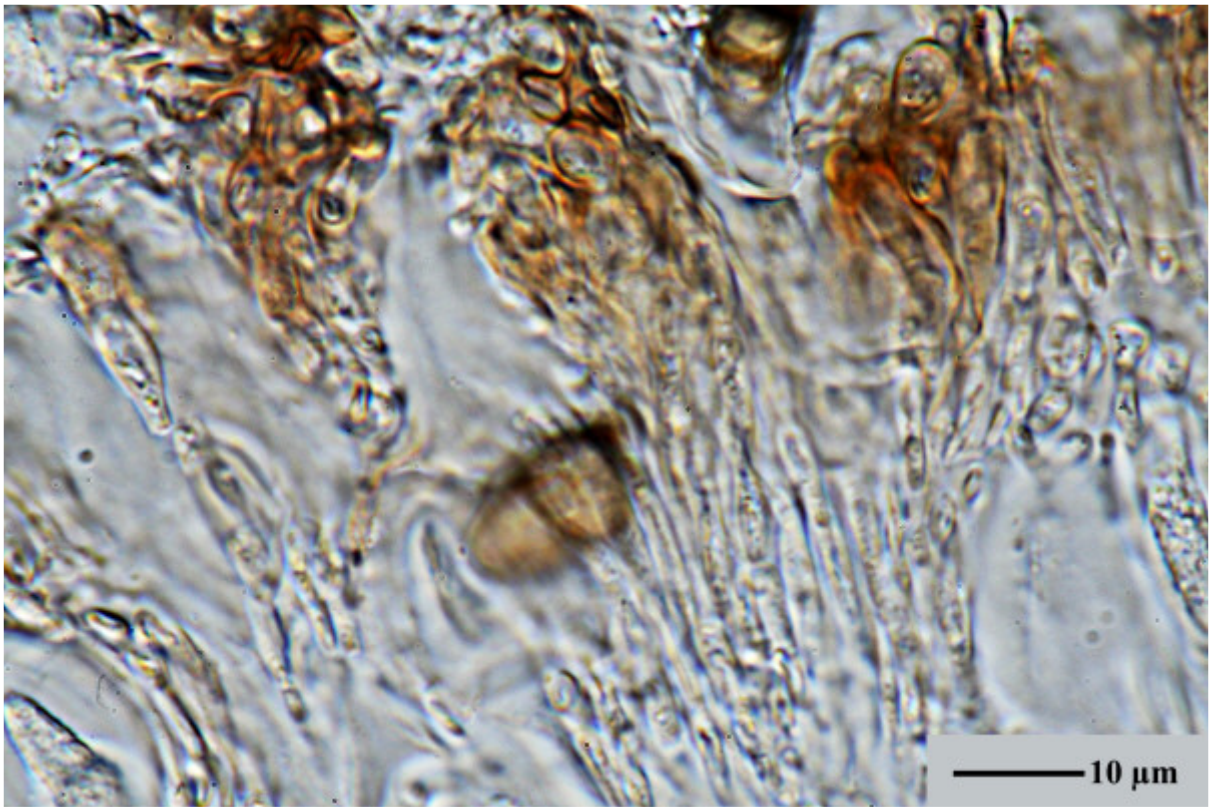


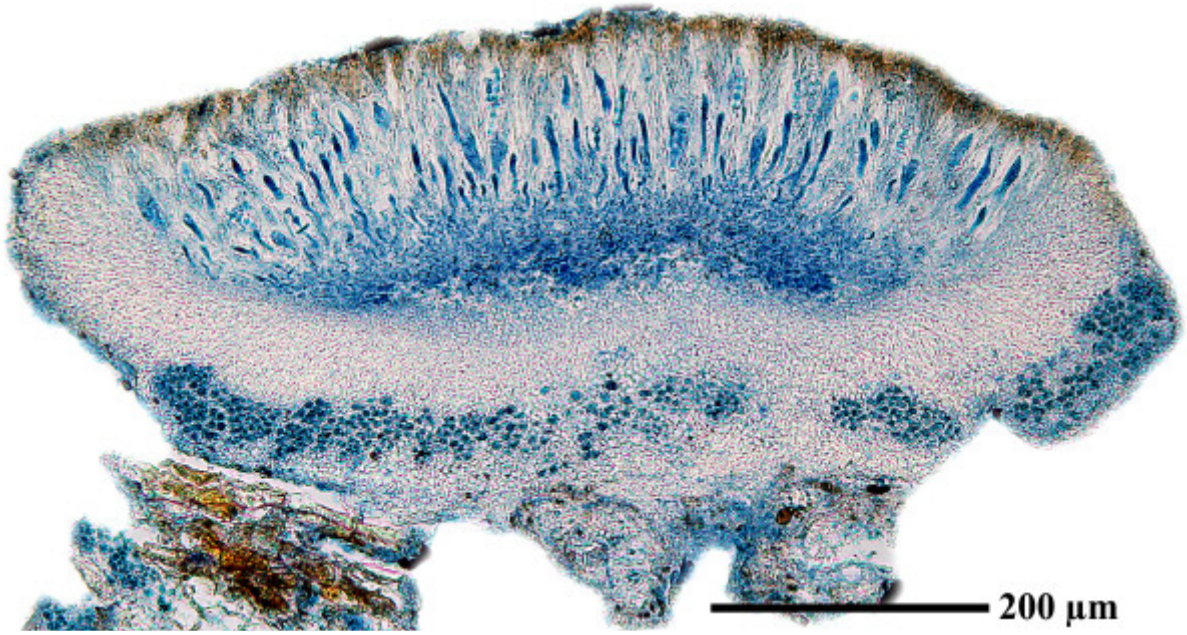
Caloplaca quadrilocularis



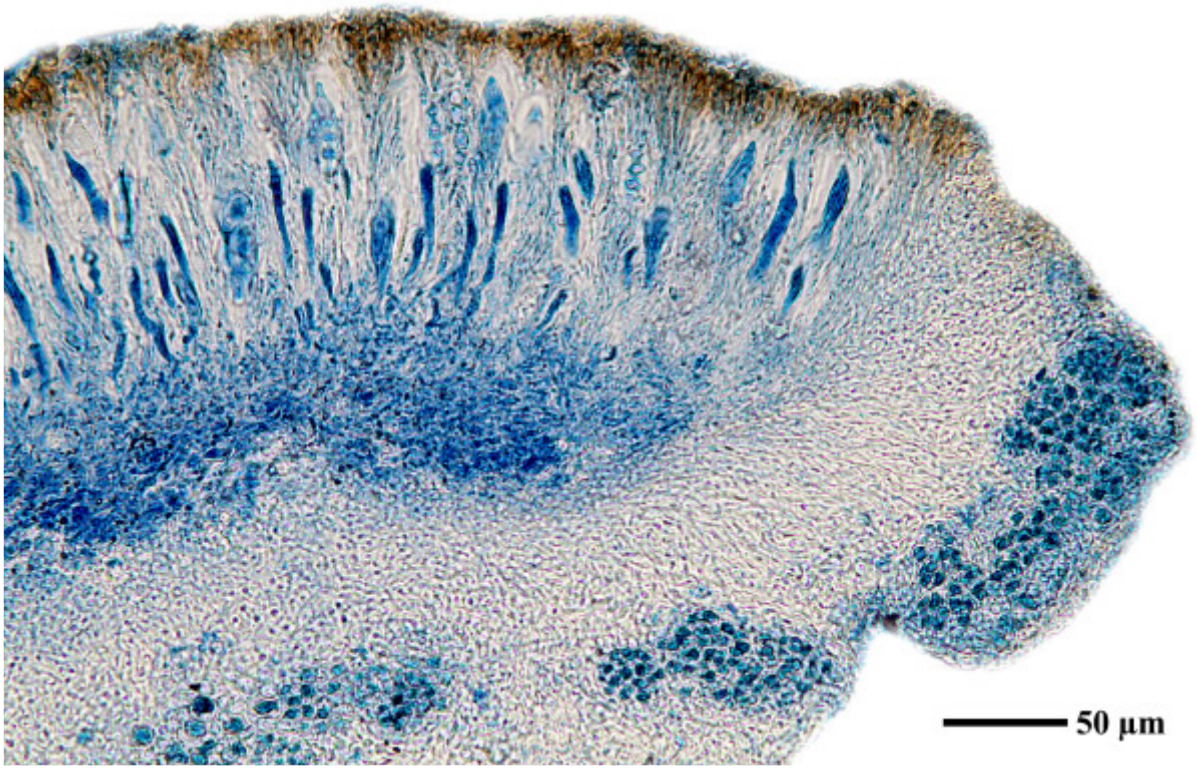


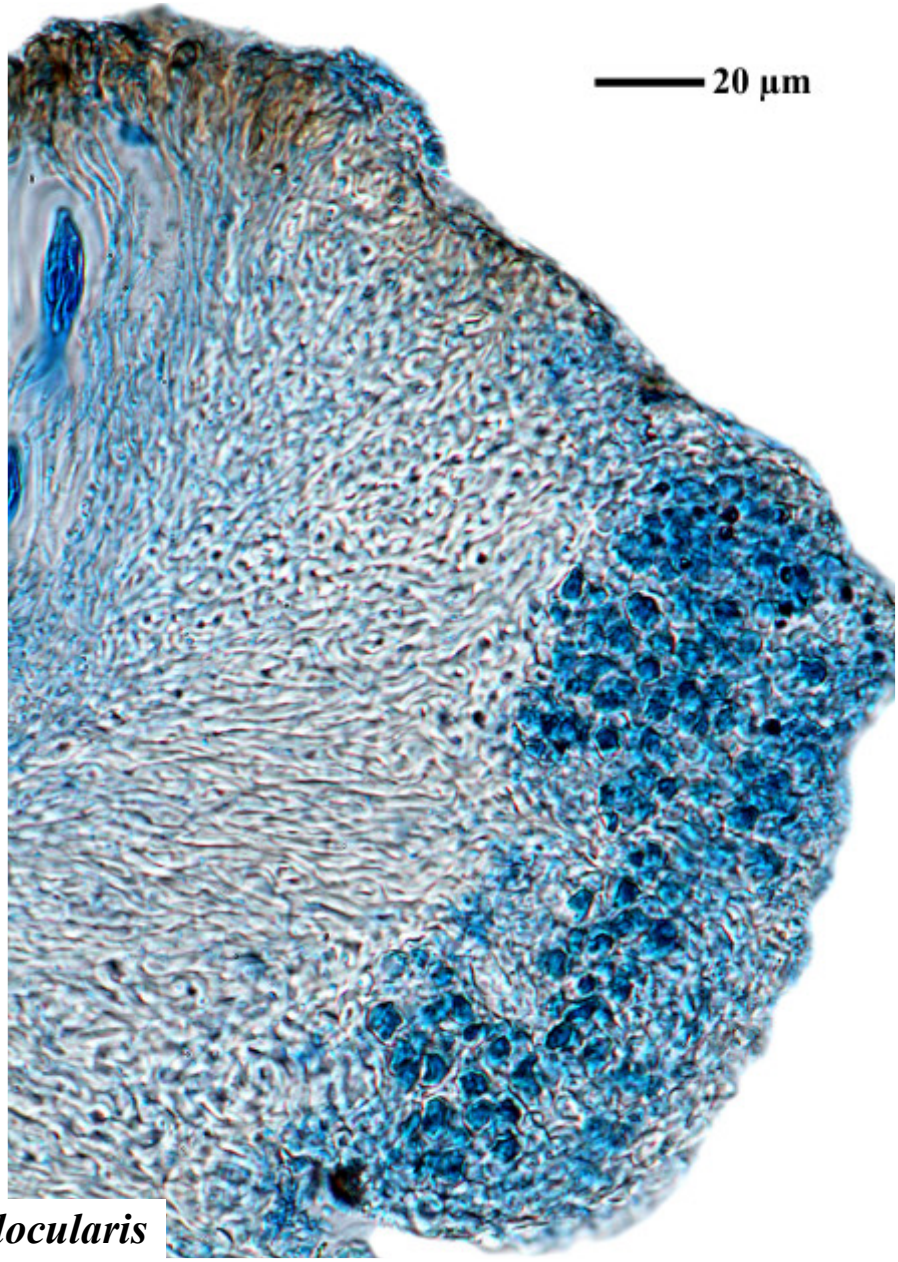
Caloplaca quadrilocularis



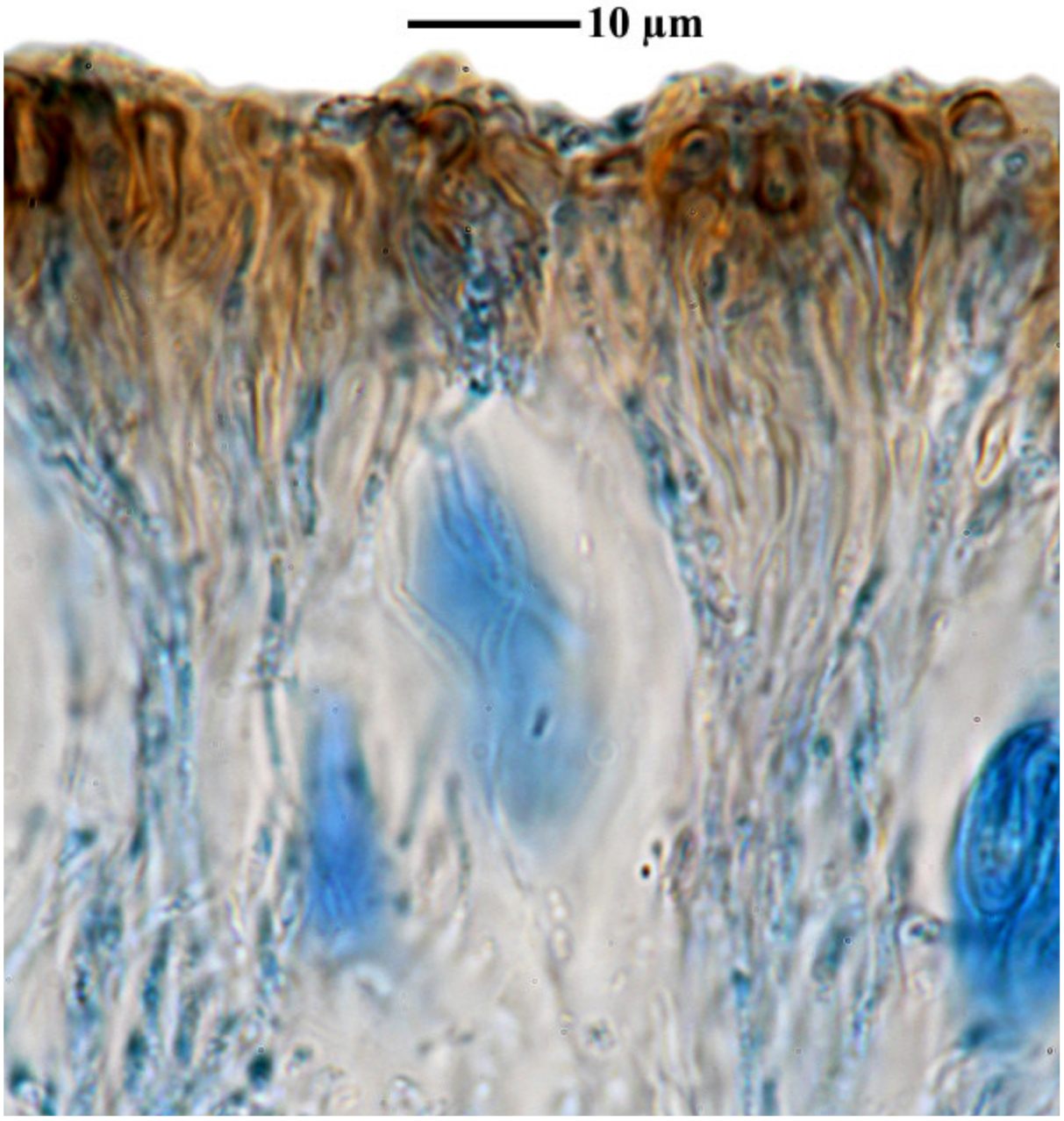


Caloplaca quadrilocularis





Caloplaca quadrilocularis



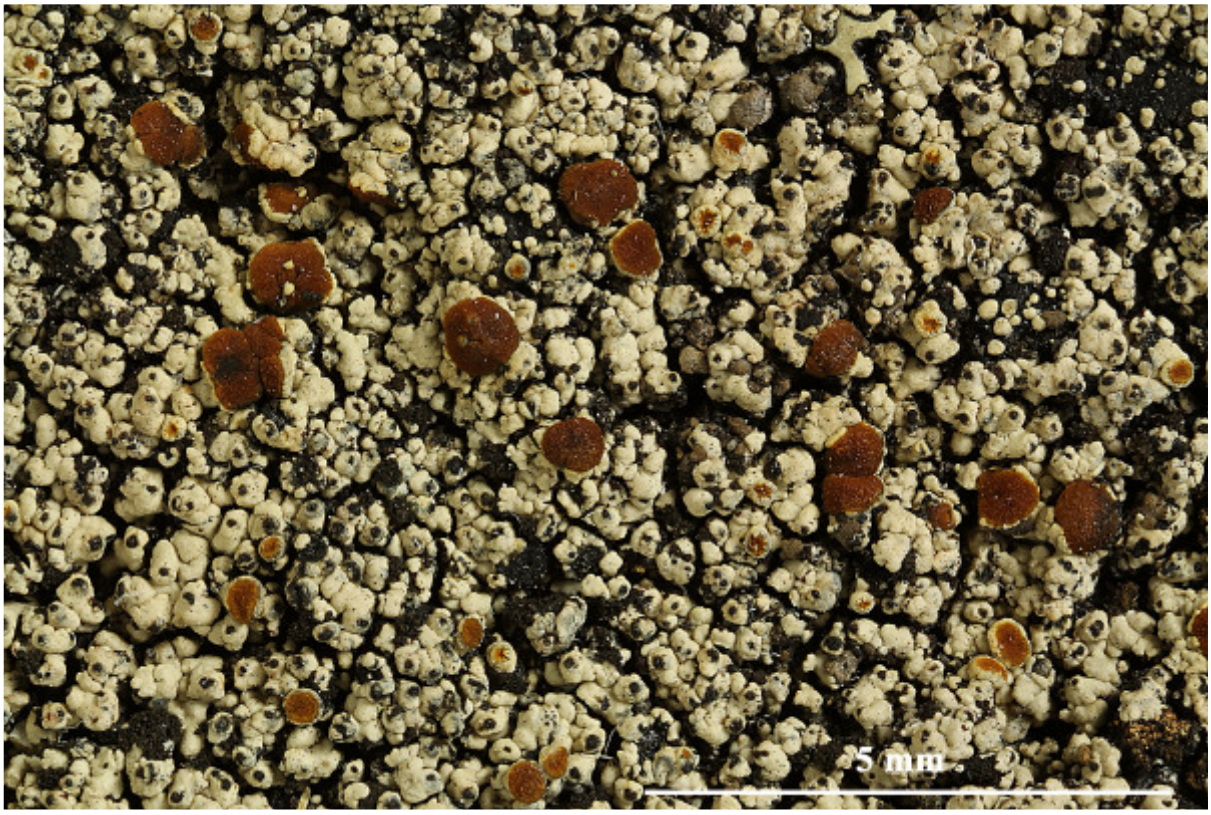


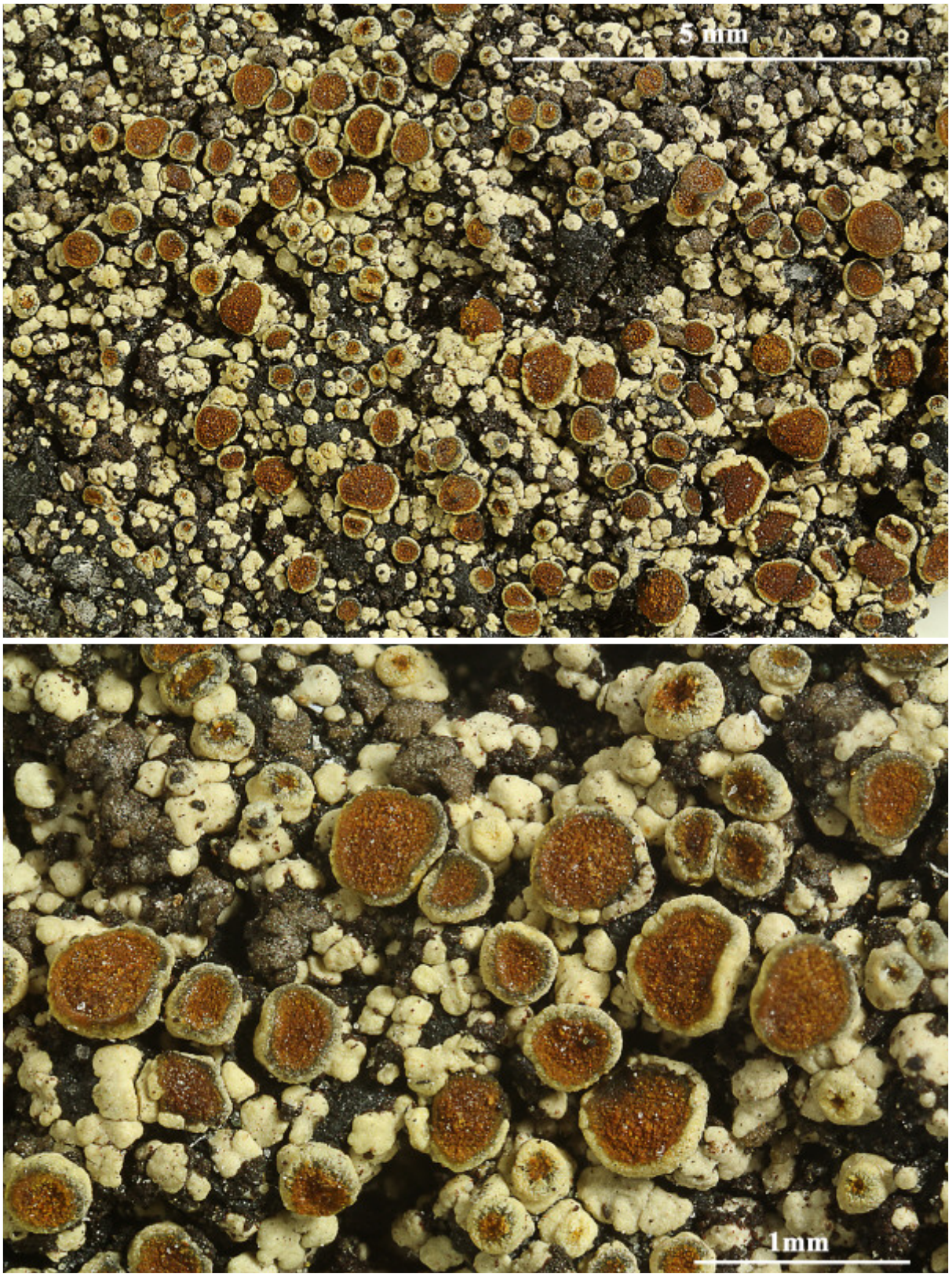
Caloplaca quadrilocularis

Caloplaca queenslandica Kalb, S.Y. Kondr., Elix & Kärnefelt

Thallus white, K-, with blackish conidiomata, on black hypothallus, areolate; areoles 0.1-0.8 mm, subconvex, with wavy edges, sublobulate. Apothecia 0.4-1 mm diam, sessile to somewhat constricted at the base, leconorine or zeorine; disc dull yellowish brown, brownish orange to rusty brown or blackish blue; thalline exciple greyish-white, entire to crenulate. Ascospores 1-2(-4)/ascus, bipolar, soon becoming brownish, 10-13(-15) x (6-)7-8(-10) µm in water and (8-)10-15(-18) x (6-)8-12(-14) µm in K, septum 2.5-3(4) µm in water (1-)2-4(-6) µm in K. Chemistry: caloploicin (major), *O*-methylvioxanthin (minor), 5-chloroemodin (minor), atranorin (minor), fulgidin (minor), isofulgidin (minor), vicanicin (minor), diploicin (trace), parietin (trace). Similar to *Caloplaca archeri.* Lit.: Kondratyuk et al., Australas. Lichenol. 66: 35 (2010).

[KK27764], Australia, Queensland, Mount Nebo Road, c. 30 km west of Brisbane, granite rock in subtropical *Eucalyptus* forest with *Eucalyptus crebra*, 400 m, 27°24’ S, 152°40’ E. Leg. K. &. A. Kalb & R. Rogers, 29.08.1995, det S. Kondratyuk 2009. Isotype.





Caloplaca queenslandica

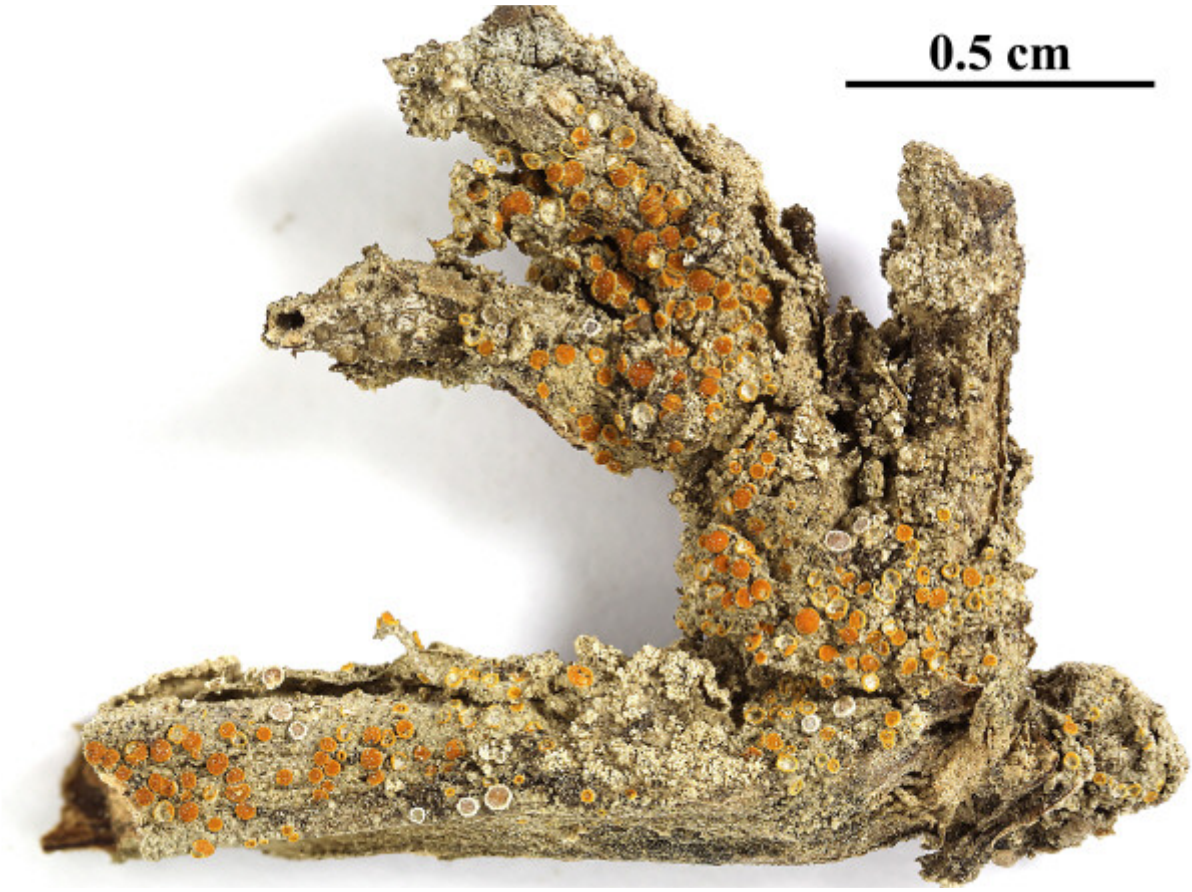


Caloplaca queenslandica

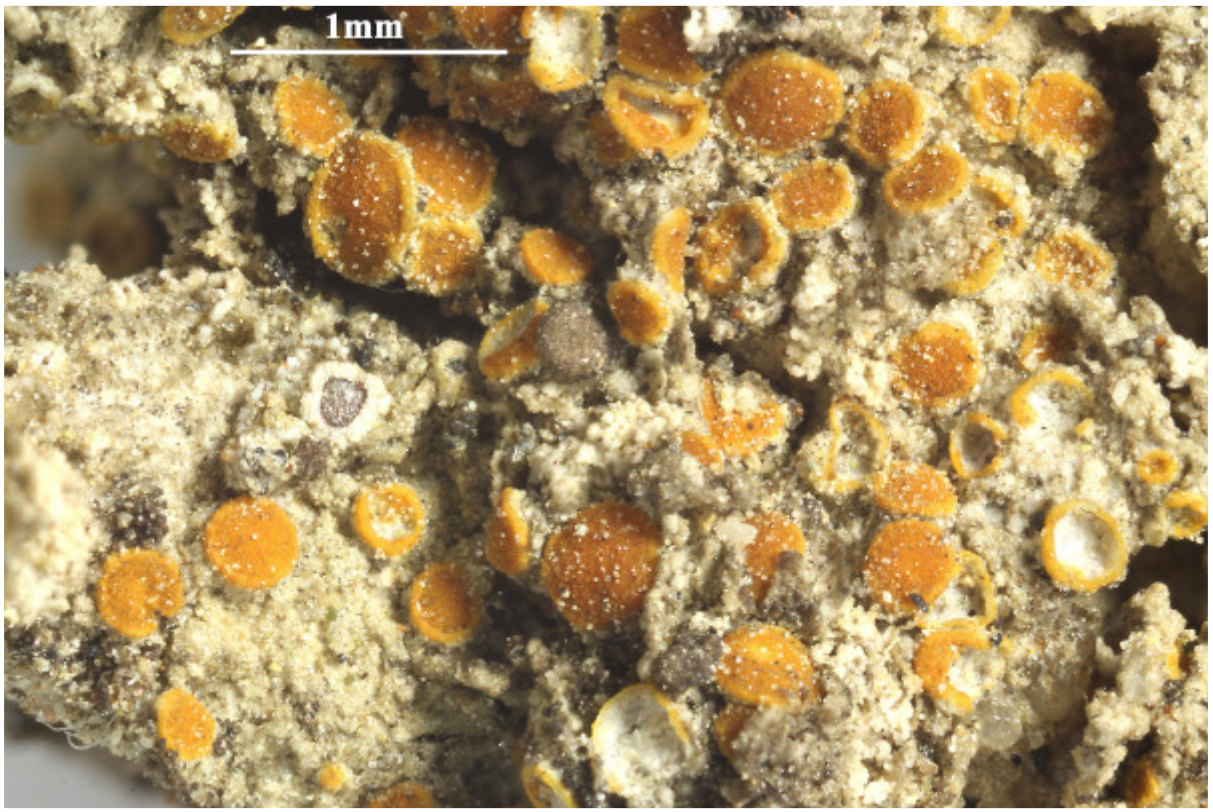
Caloplaca raesaenenii Bredkina, Nov. sist. Niz. Rast. 23: 170 (1986)
[= *Xanthocarpia raesaenenii* (Bredkina) S.Y. Kondr., in Kondratyuk, Lőkös, Upreti, Nayaka, Mishra, Ravera, Jeong, Jang, Park & Hur, Acta bot. hung. 59(1-2): 124 (2017)]
[= *Caloplaca thuringiaca* Søchting & Stordeur, Lichenologist 33(6): 467 (2001)]

Hymenium 60-70 µm, clear; paraphyses 2 µ, tips swollen 5 µm. Spores 8/ascus, 12-13 x 7-8 µm. (Sipm.). Spores 8.8-12.7 x 5-7.2 µm, septum 2.7-3.3 µm (FS).

[B 60 0142680], Germany, Brandenburg, Kr. Märkisches Oderland, Odertalrandhänge N von Lebus, Steilhang am südlichen Ausgang des Hakengrundes ins Odertal. Halbtrockenrasen und offene Mergelsteilwände, an Zweig am Boden. 52°26,2' N, 14°32,9' E, 20-50 m. Leg. H. Sipman (51202) & S. Rätzel, 1. May 2003, det.A. Aptroot 2019.



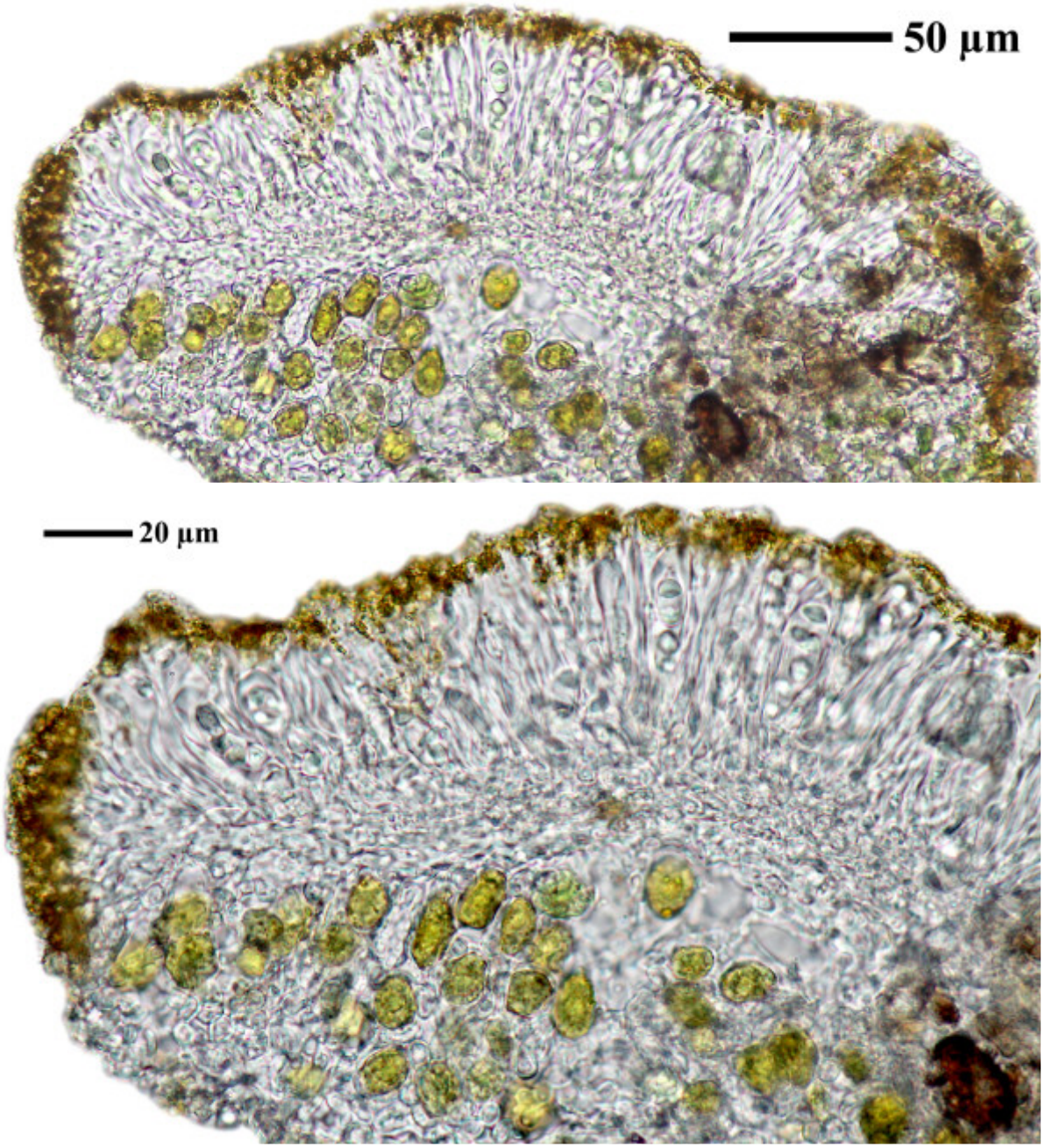




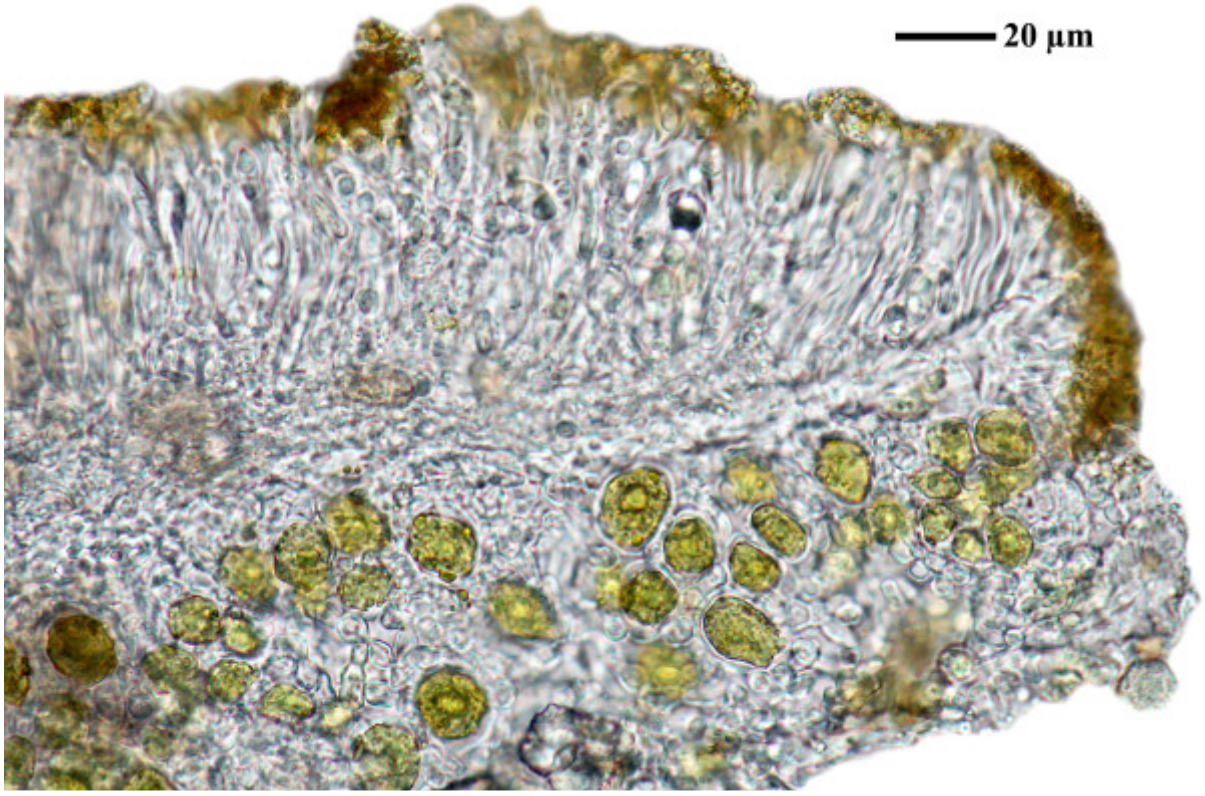
Caloplaca raesaenenii

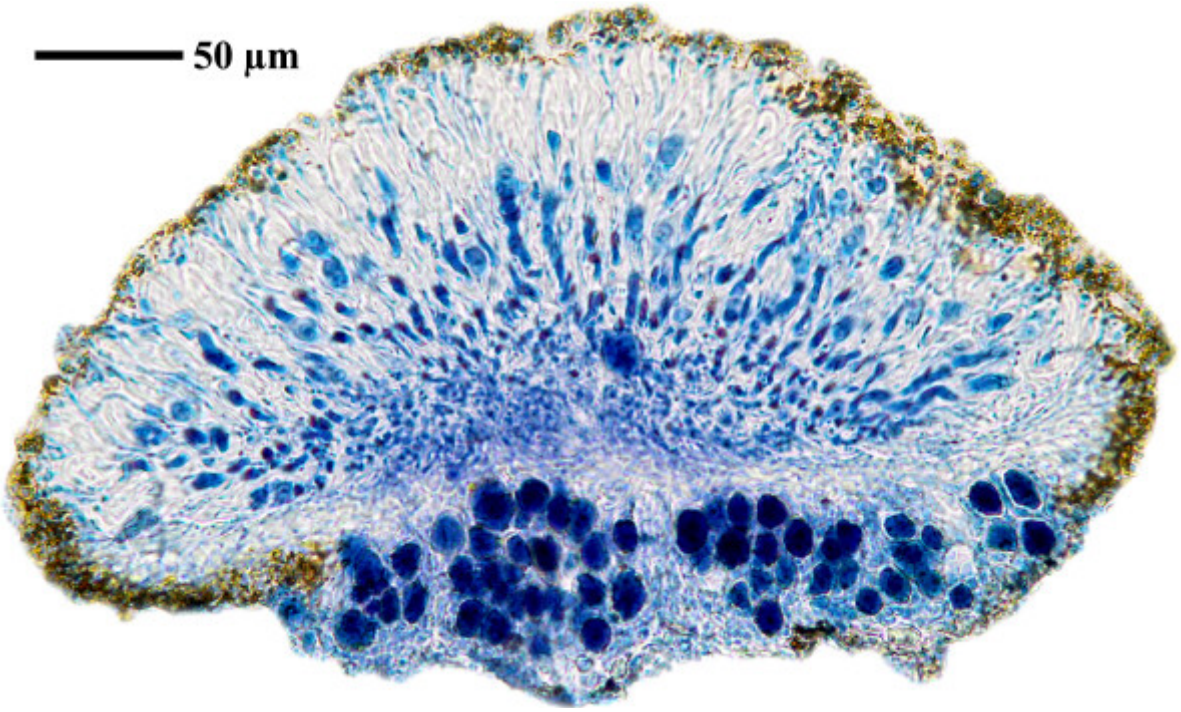


Caloplaca raesaenenii

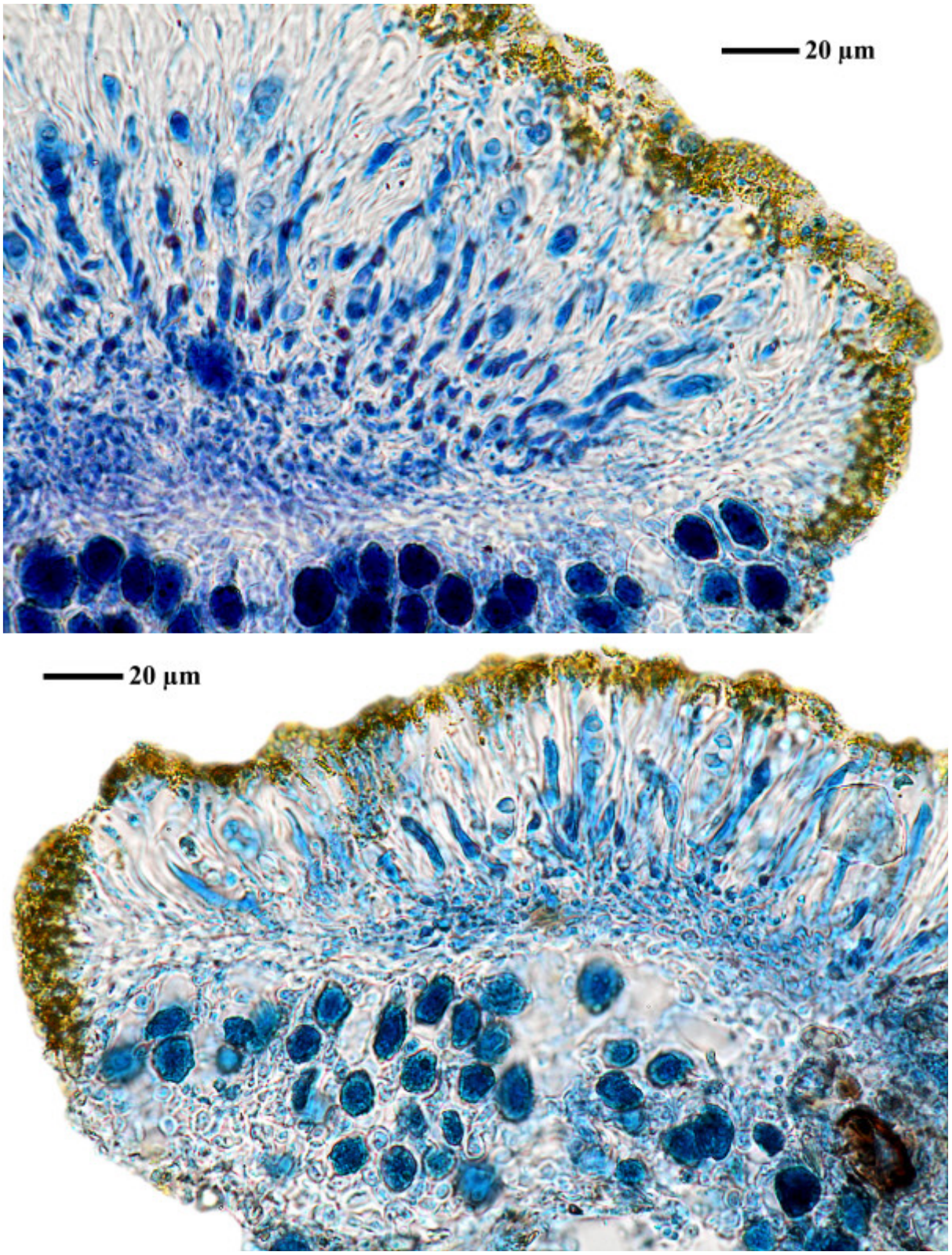


Caloplaca raesaenenii





Caloplaca raesaenenii



Caloplaca raesaenenii



Caloplaca raesaenenii

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

Spores 10.5-16.5 x 5.4-5.7 µm, septum 2.7-3.7 (FS)

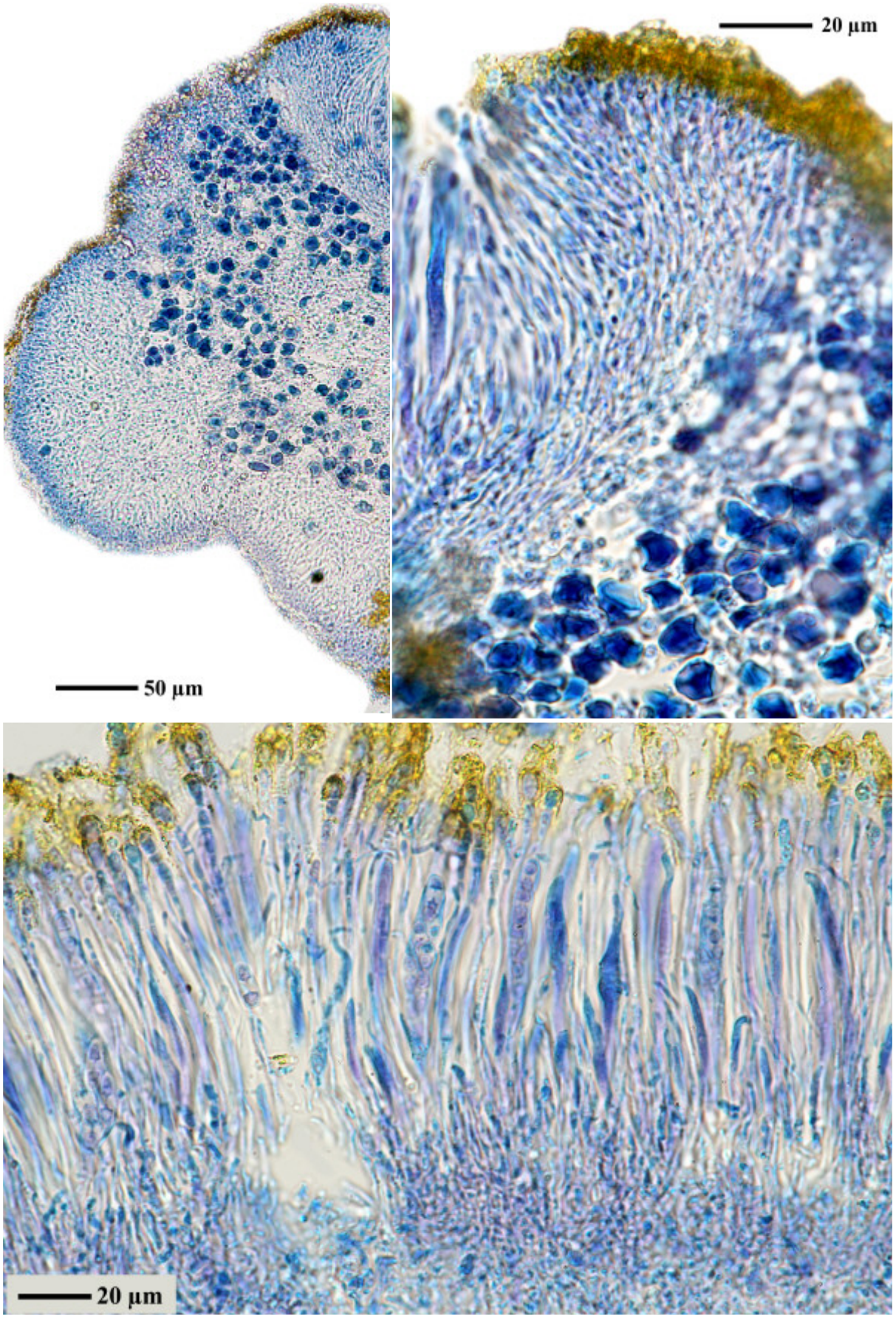
[BR5030038380657], South Shetland Islands, Deception Island, 1 km N ofSouth East Point, N-exposed rocky outcrop on southern edge of gully, 100 m from sea, ca. 50 m alt. (Site of *Colobanthus quitensis*.) On volcanic rock, 60°31'25" W, 62°58'57" S, EXPEDITION OF ARCTIC CENTRE, GRONINGEN, THE NETHERLANDS.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





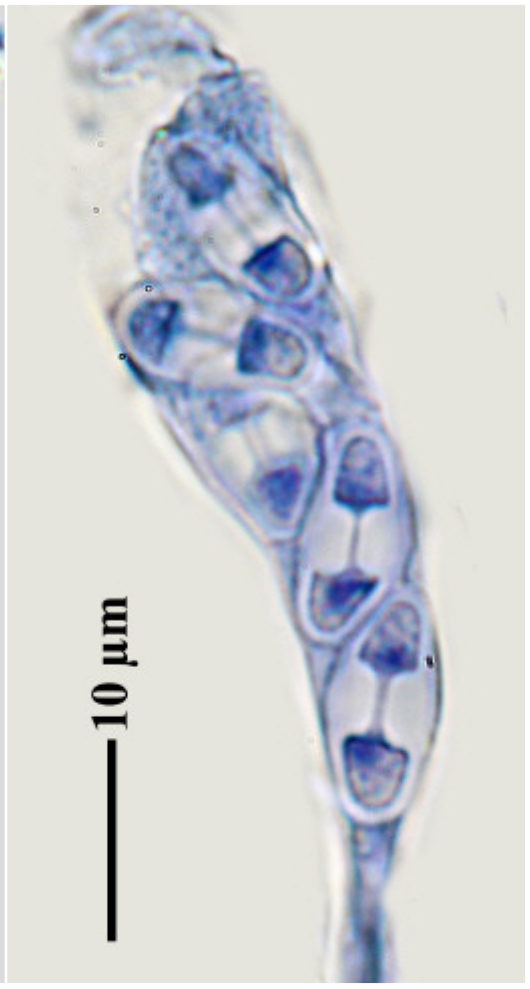


Caloplaca regalis



Caloplaca regalis







Caloplaca regalis

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

[BR5030038381661], South Shetland Islands, King George Island, Admirality Bay, near Arctowski Station, on volcanic rock, 62°09' S, 58°28' W. Leg. W.O. van der Knaap (18), Dec. 1990, det. A. Aptroot 1991. EXPEDITION OF ARCTIC CENTRE, GRONINGEN, THE NETHERLANDS.





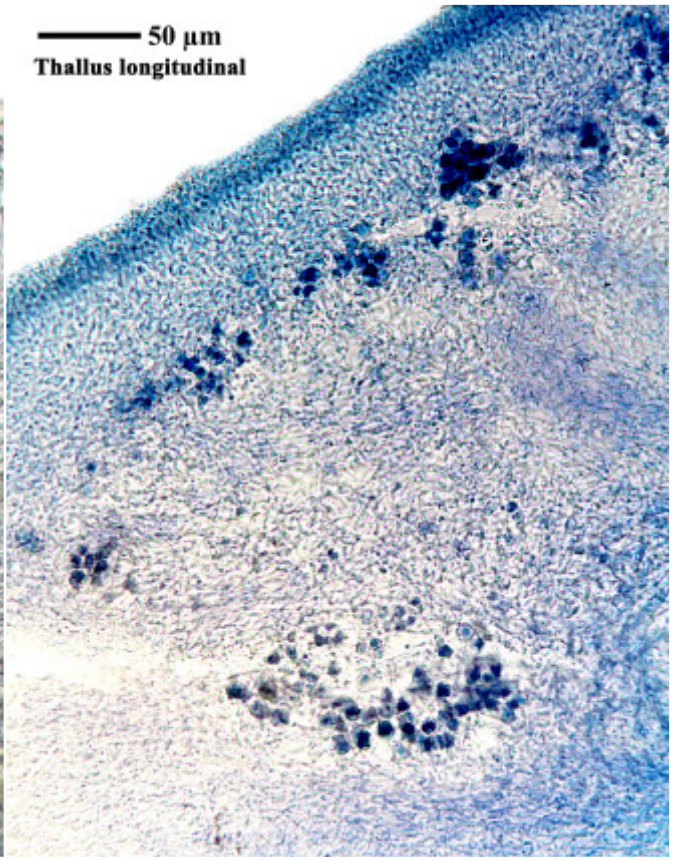
Caloplaca regalis

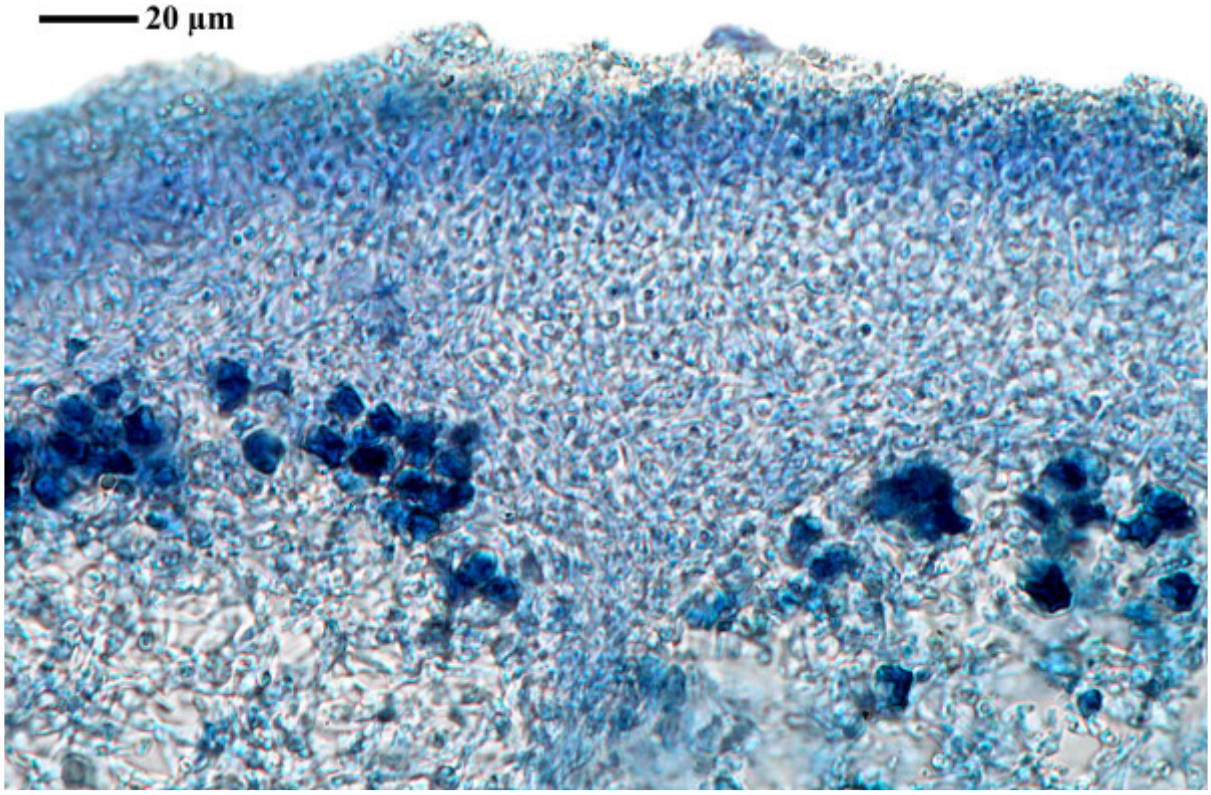




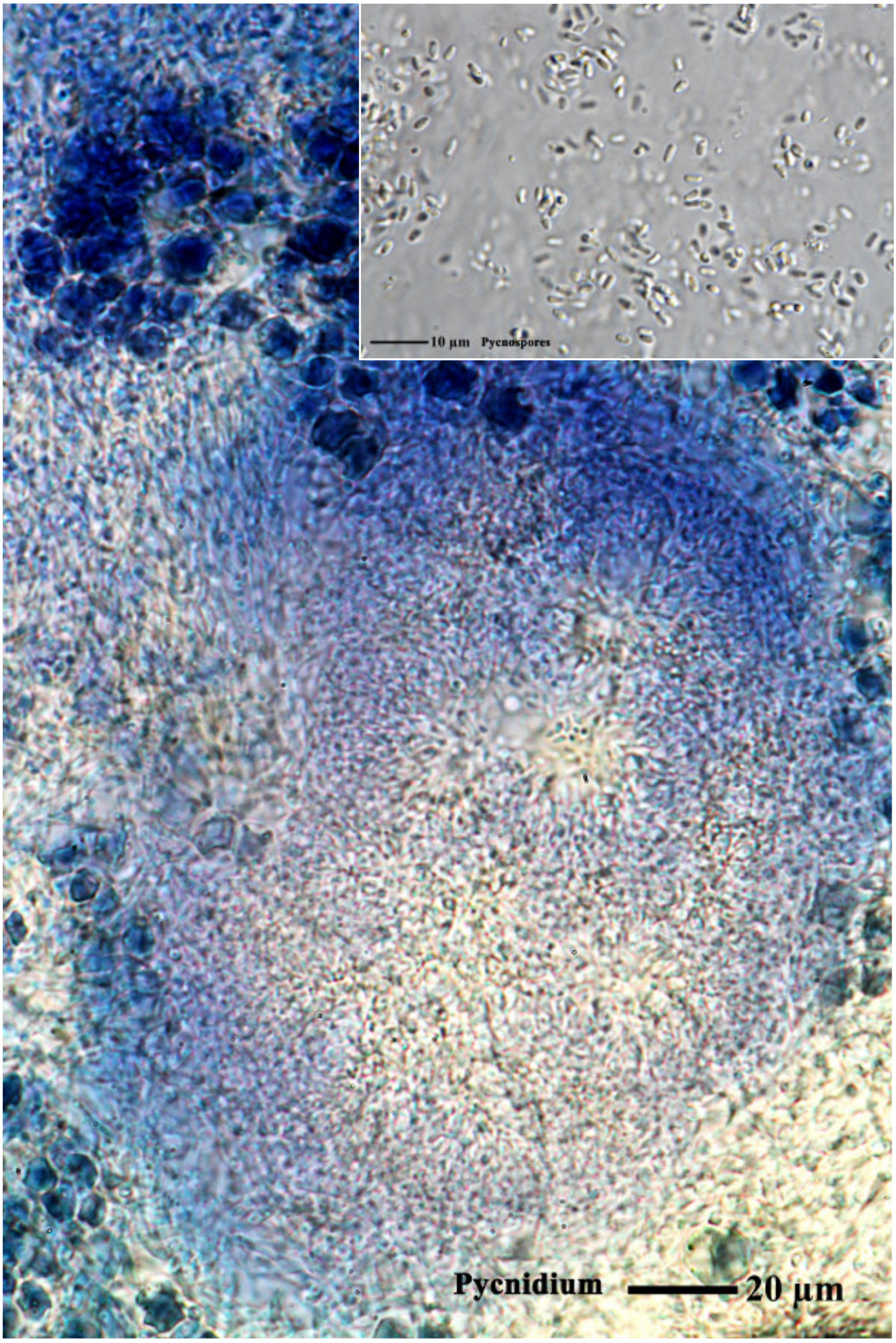
Caloplaca regalis







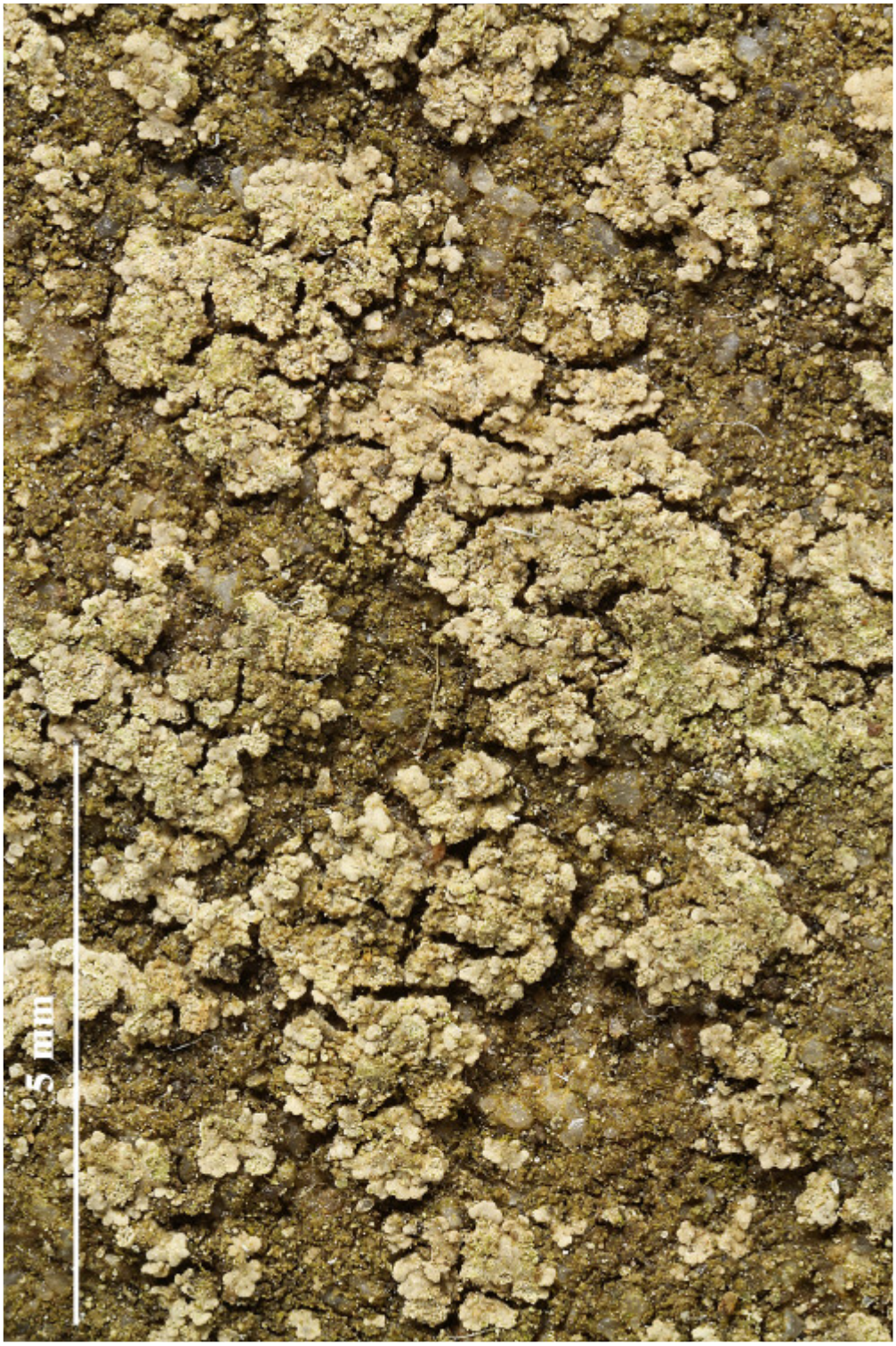
Caloplaca regalis



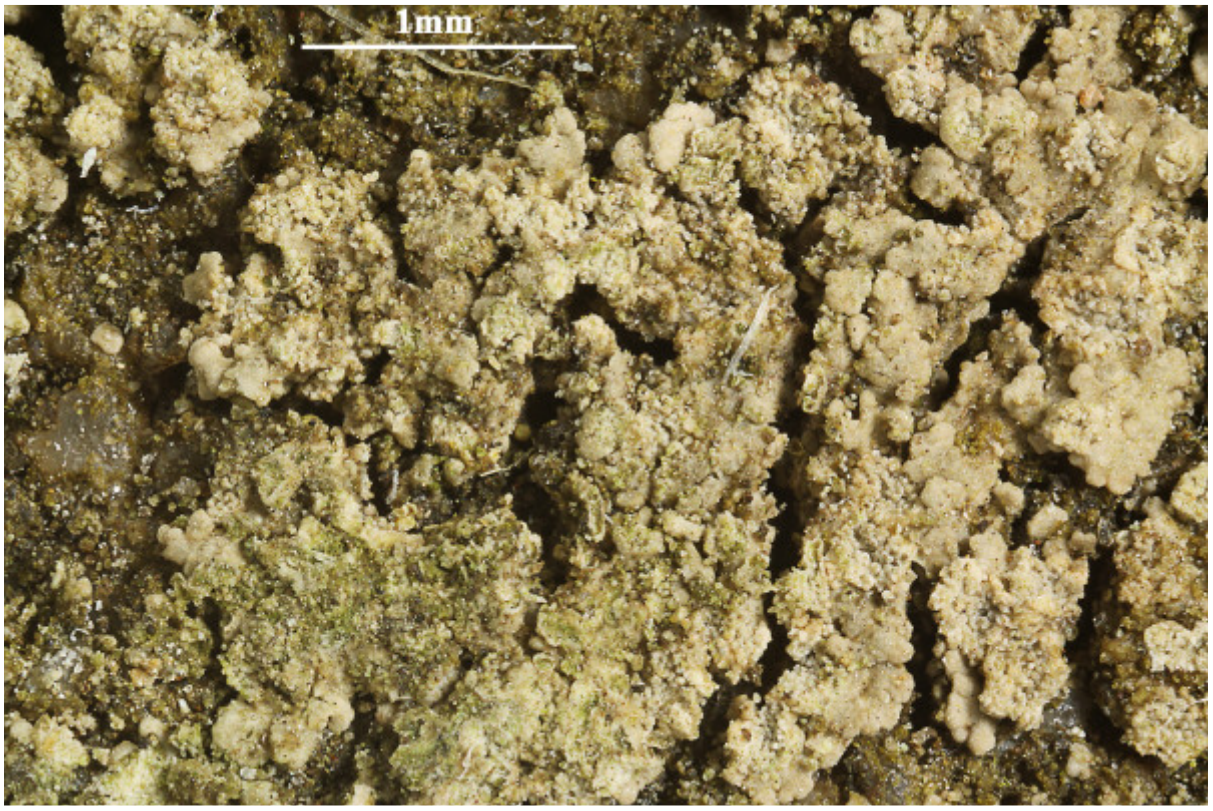
Caloplaca regalis

Caloplaca reptans Lendemer & B.P. Hodk. ISOTYPUS

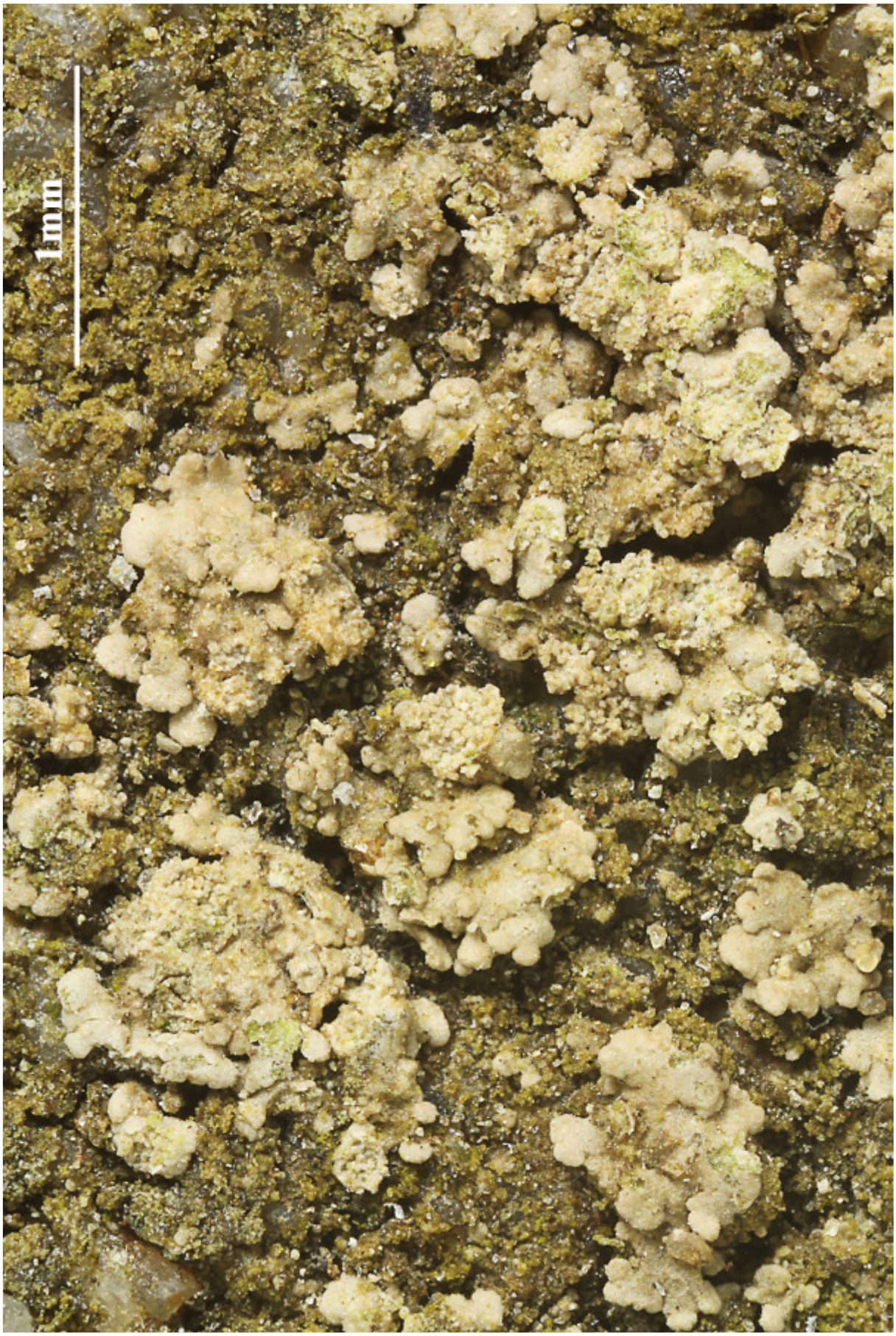
[B 60 0192832], U.S.A., Pennsylvania, Huntington Co., Rothrock State Forest, Colerain Picnic Area, 1 mi NE of village of Spruce Creek, 1.7 mi SW of village of Franklinville, Spruce Creek Twp., Hemlock (*Tsuga*) - birch (*Betula*) forest (hemlock dominant) surrounding extensive sandstone talus slope with cold air flow, on rock, 40°37’ 41” N, 78°06°38” W, ca. 700-800 ft. Leg. J.C. Lendemer (# 11745), B. Allen, W.R. Buck, & R.C. Harris, 21. April 2008, det. J.C. Lendemer. LENDEMER: LICHENS OF EASTERN NORTH AMERICA EXSICCATI NO 446.



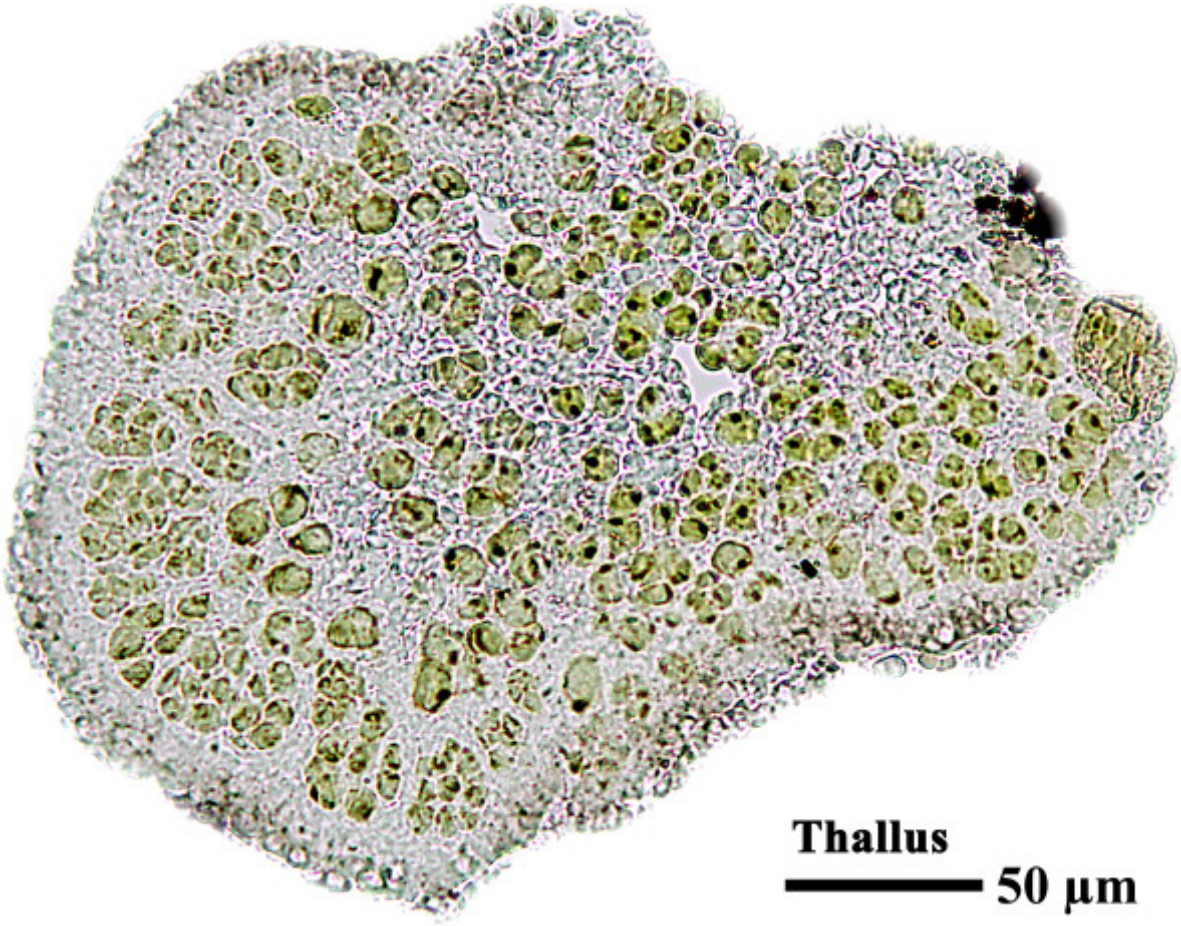


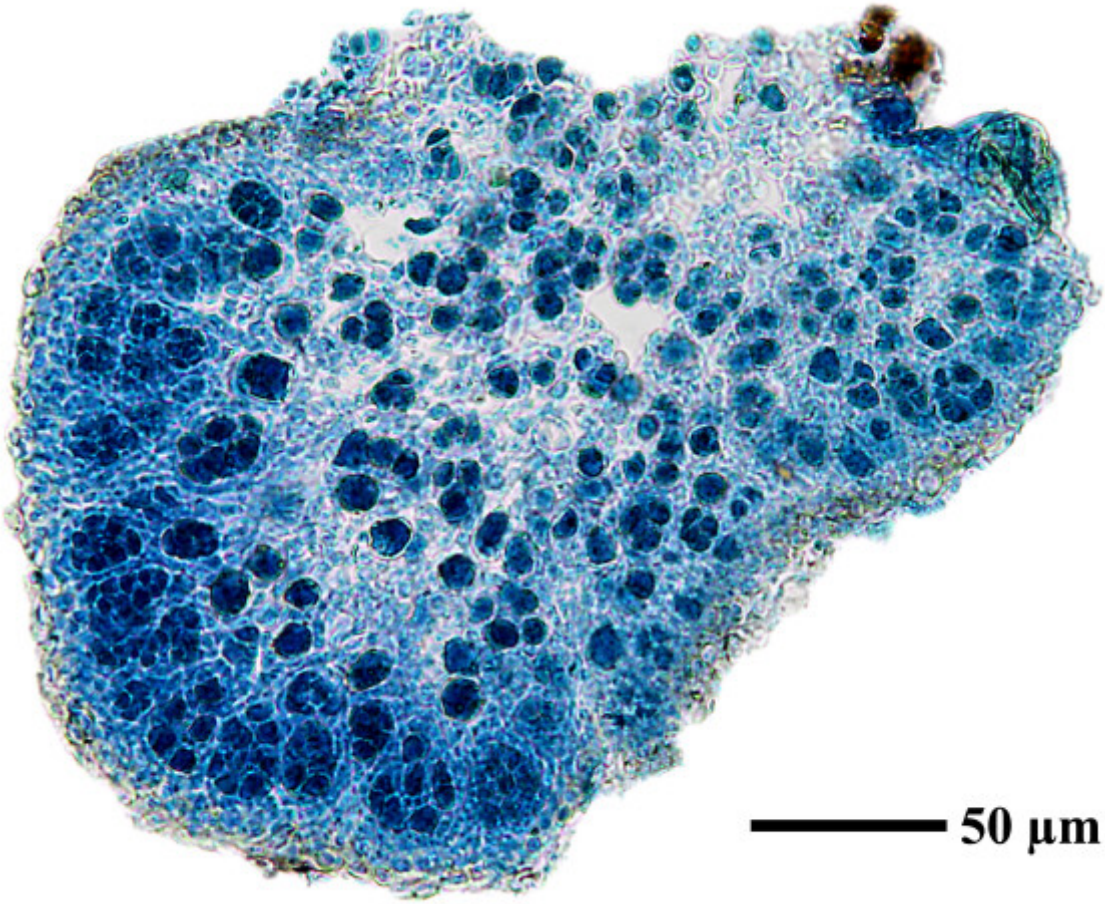


Caloplaca reptans

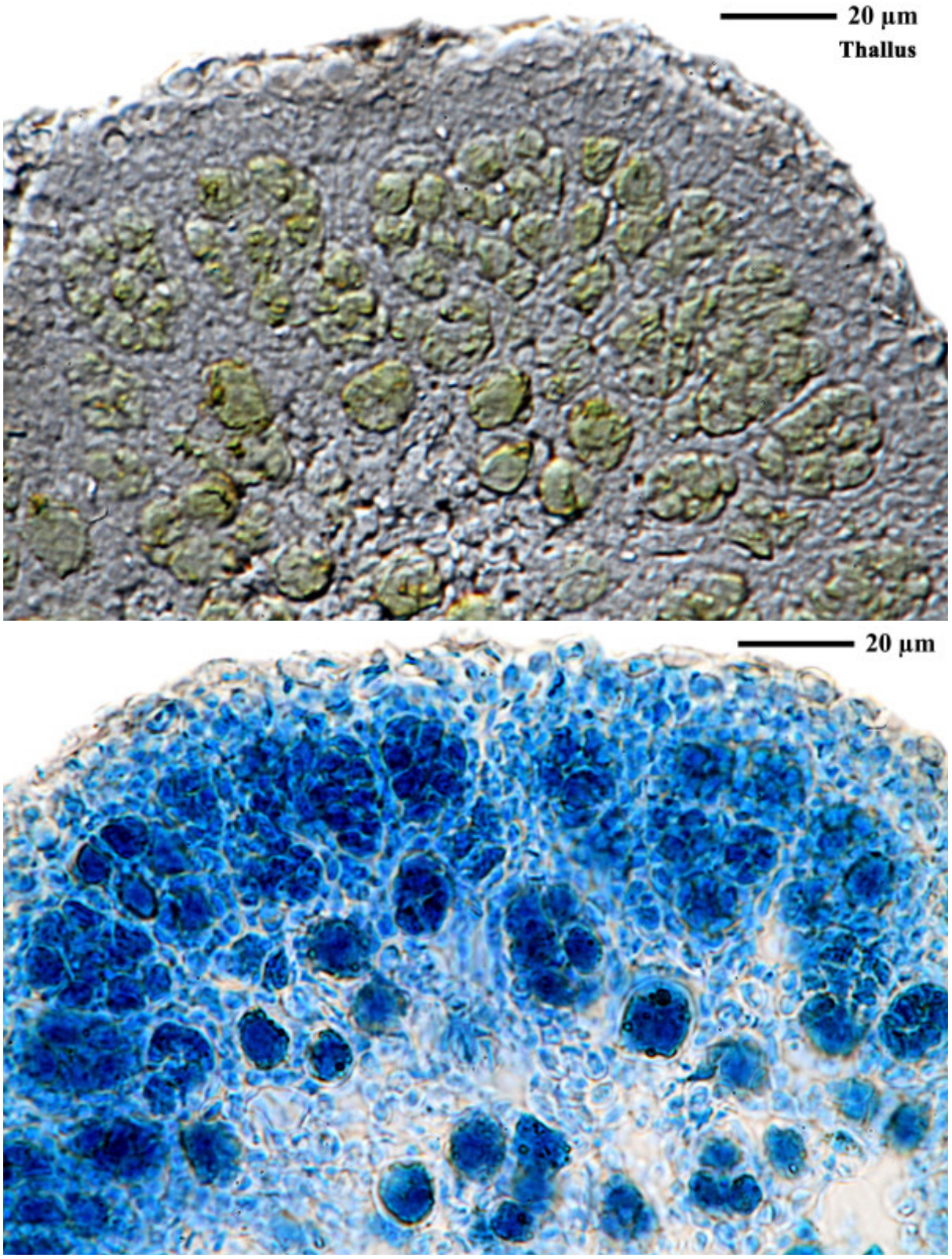


Caloplaca reptans





Caloplaca reptans



Caloplaca reptans

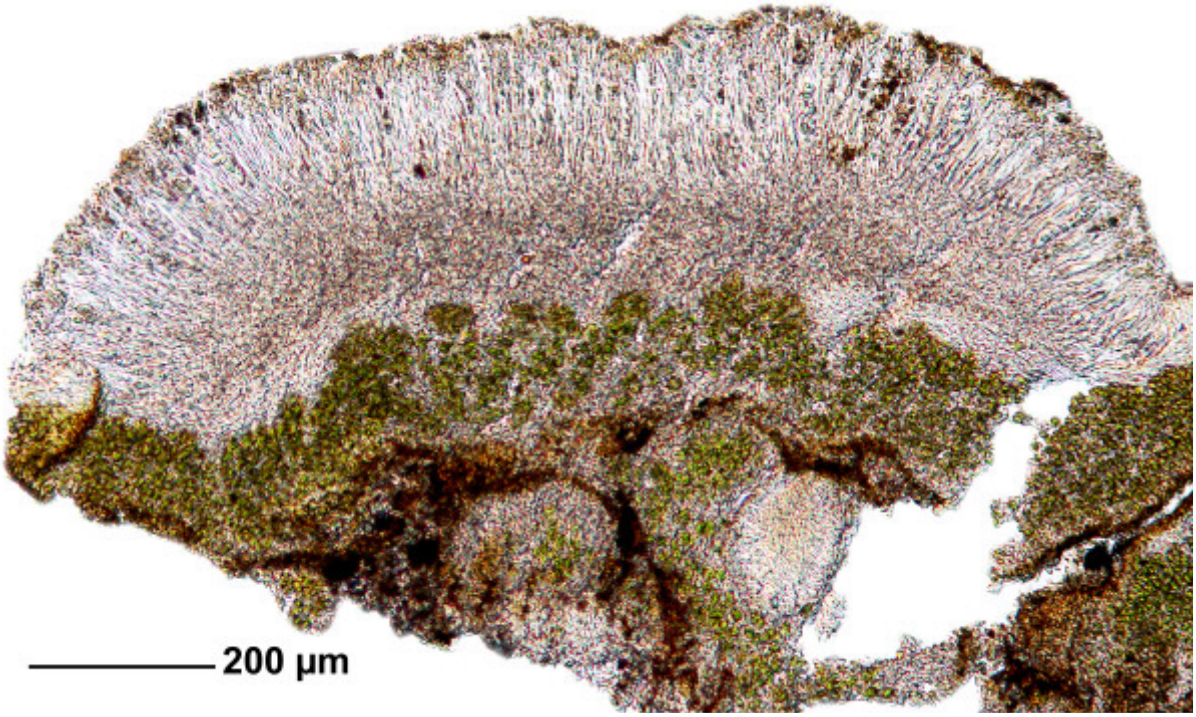
Caloplaca rexfilsonii S.Y. Kondr. & Kärnefelt
[= *Filsoniana rexfilsonii* (S.Y. Kondr. & Kärnefelt) S.Y. Kondr., Kärnefelt, Elix, A. Thell & J.S. Hur]

Thallus on rock, orange, areolate to squamulose but not lobate. Isidia and soredia absent. Apothecia sessile, 0.4-0.7 mm, margin 0.06 mm, disk reddish-orange and darker than the margin and thallus. Hypothallus absent. Paraphyses in upper part 2-3 µm wide. Ascospores 17.5-19 x 9-10 µm, septum 5-6,5 µm. Chemistry (p367/2): parietin, physcion, teloschistin.

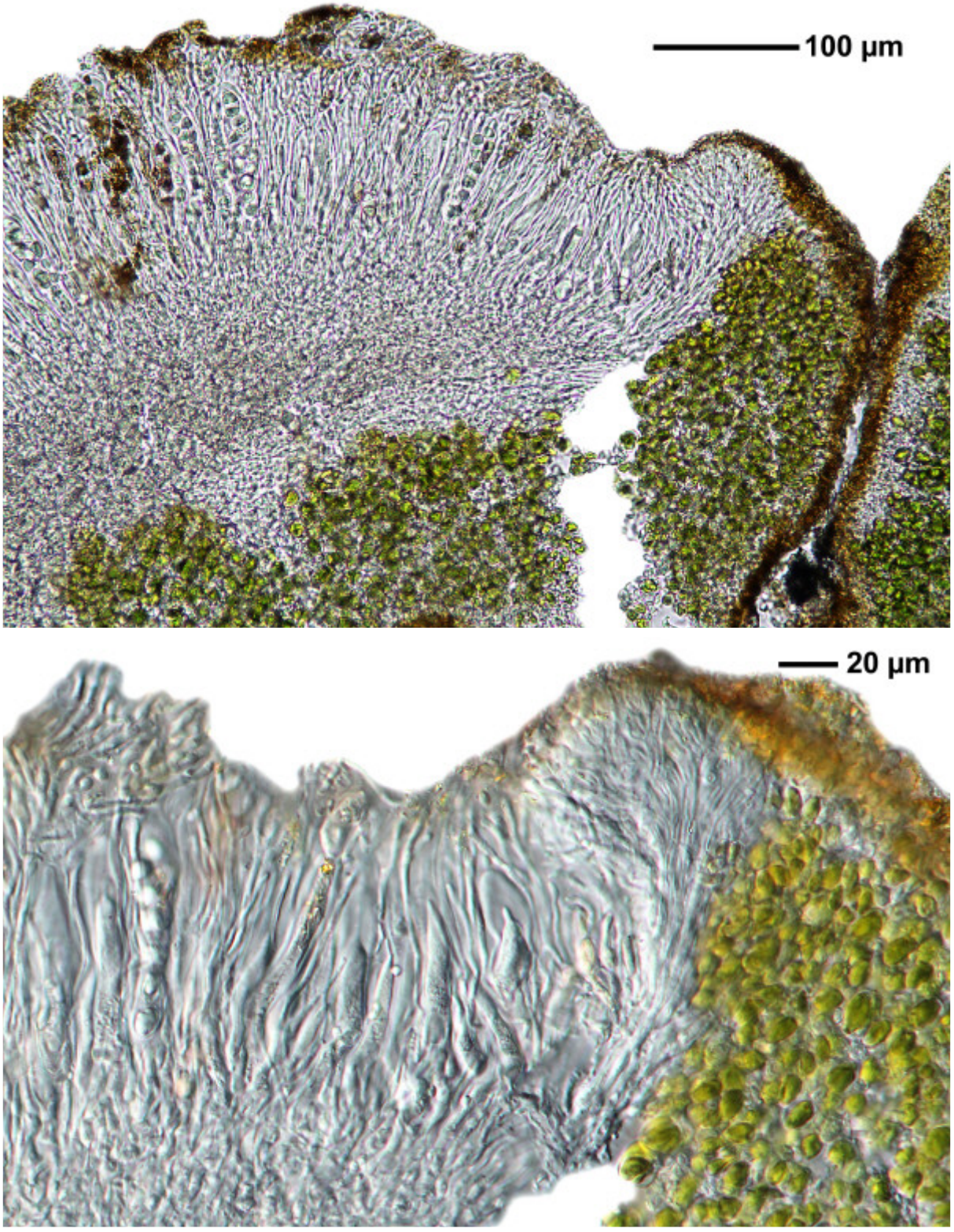
[16002], Australia, Australian Capital Territory, Canberra, Hackett, Mt. Majura Nature Park, Casuarina trail, 35.24560° S, 149.17621° E, 790 m. Leg. F. Schumm & E. Stocker-Wörgötter, 03.11.2009, det. F. Schumm, conf. S. Kondratyuk 03.2016.



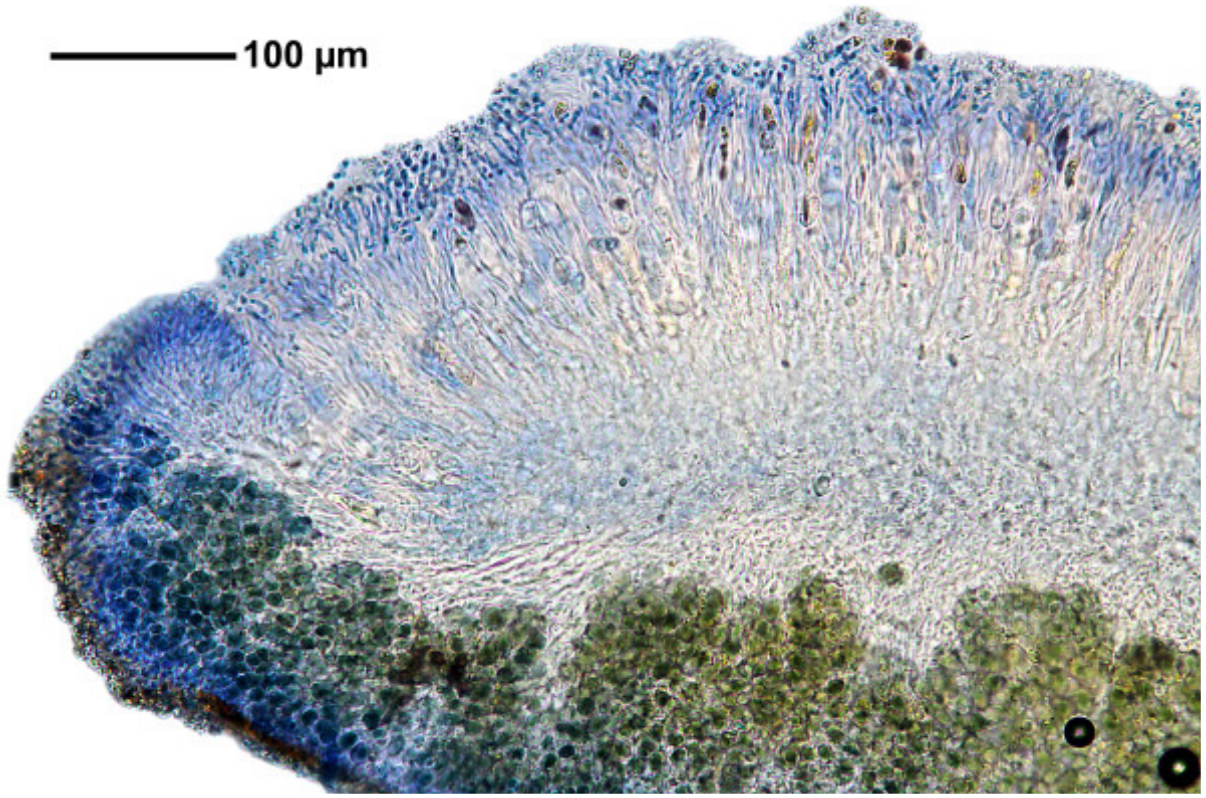


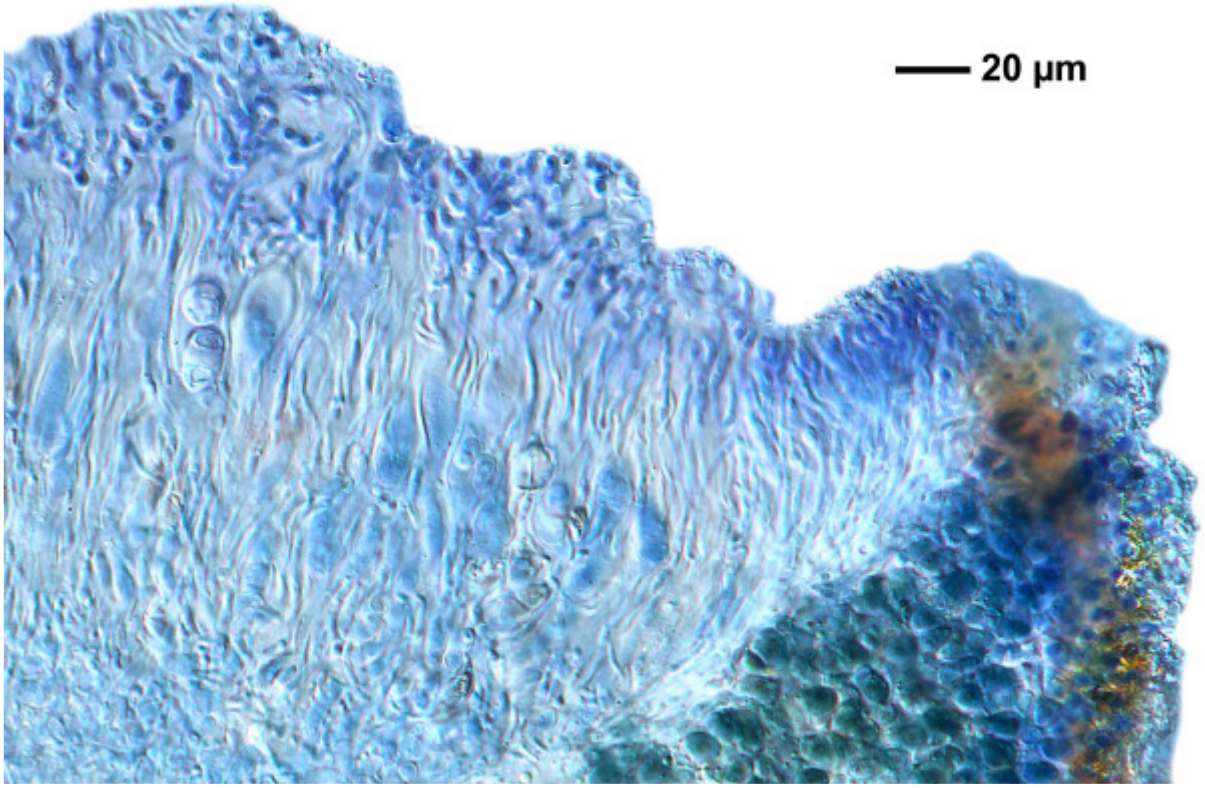


Caloplaca rexfilsonii



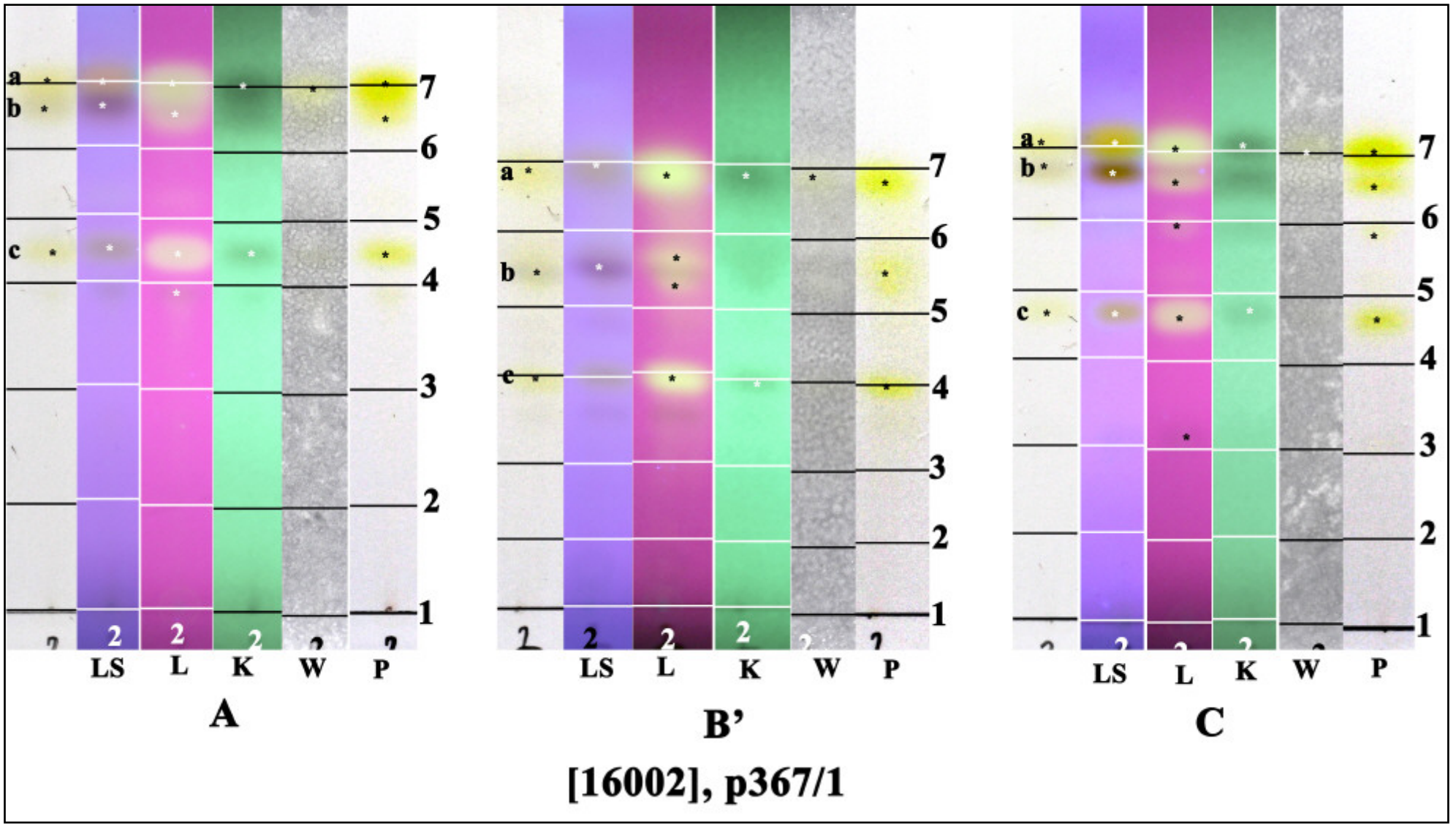
Caloplaca rexfilsonii







Caloplaca rexfilsonii

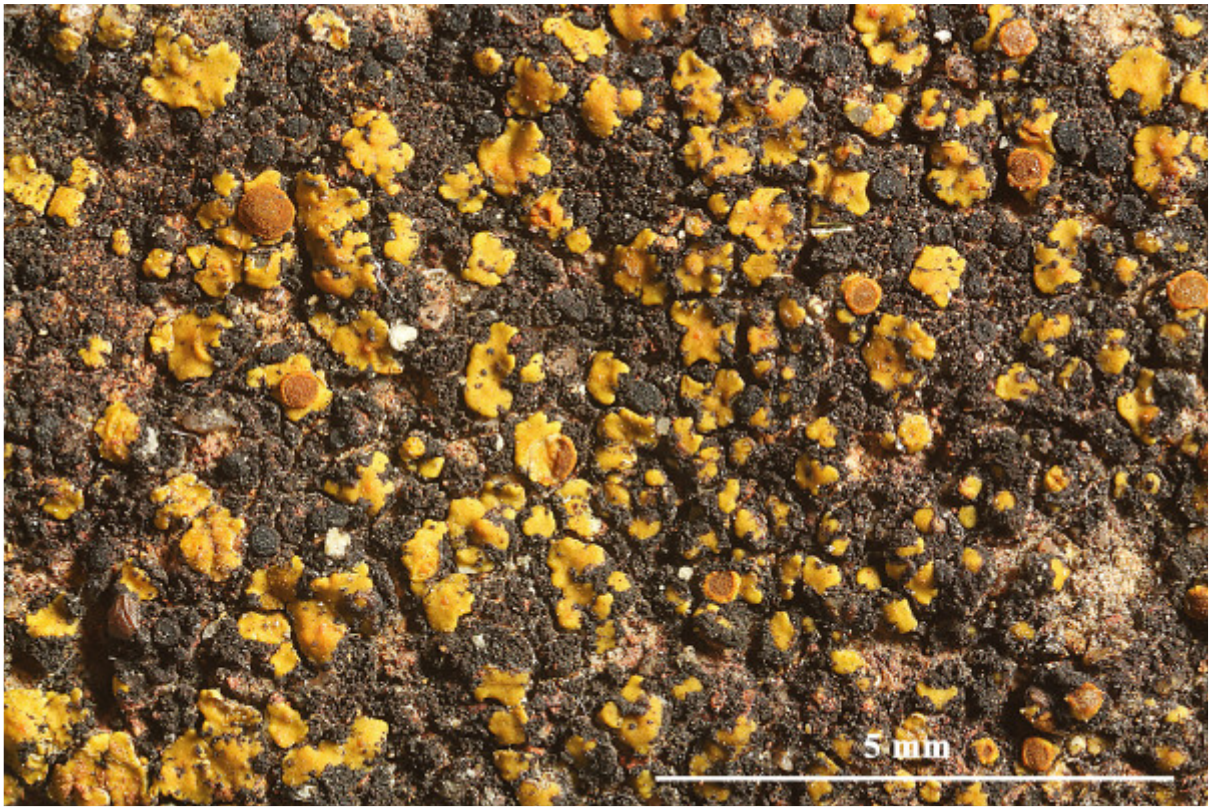


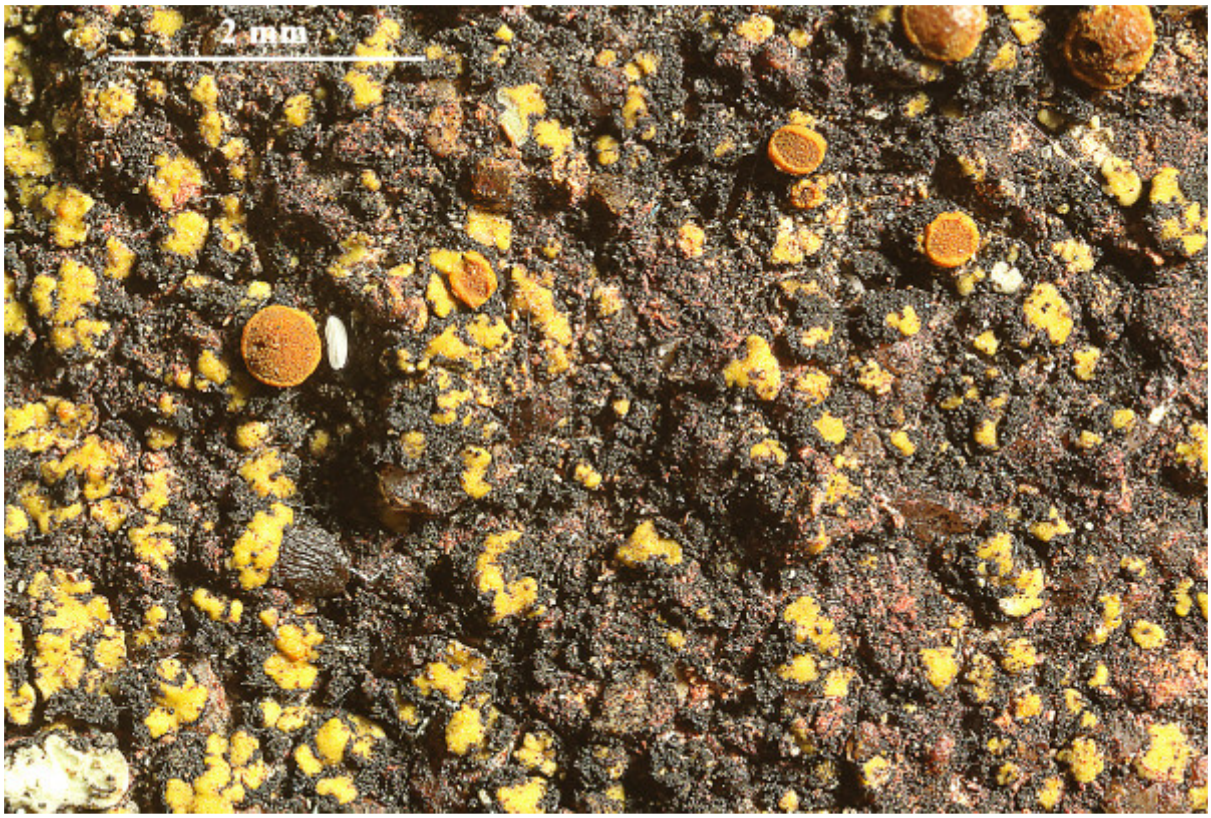
a: parietin, b: physcion, c: teloschistin

Caloplaca rexfilsonii S.Y. Kondr. & Kärnefelt
[= *Filsoniana rexfilsonii* (S.Y. Kondr. & Kärnefelt) S.Y. Kondr., Kärnefelt, Elix, A. Thell & J.S. Hur, in Kondratyuk et al. 2013]

Thallus saxixolous, yellow-orange, squamulose, squamules dispersed, 0.4-2 mm wide. Apothecia 0.3-0.7 mm diam, thalline margin concolorous with thallus, proper margin and disc dark orange. Ascospores 2-4-6/ascus well developed, (12-)16-20(22) x (6.5-)7-10 µm, septum (1-)2-5 µm. Chemistry: parietin (major), fallacinal (minor), parietinic acid (minor), teloschistin (minor), physcion bisanthrone (trace; thallus and apothecia K+ red, C-. Lit.: Kondratyuk, Kärnefelt, Elix & Thell, Bibliotheca Lichenol. 95: 371 (2007).

[KK18771], Australia, Queensland, c. 1 km south east of Wivenhoe dam, c. 8 km north-west of Fernvale, in a light *Eucalyptus* forest with sandstone rocks, 90 m, 27°25’ S, 152°38’ E. Leg. K. Kalb & R. Rogers, 14.08.1988, det. S. Kondratyuk, 2008.





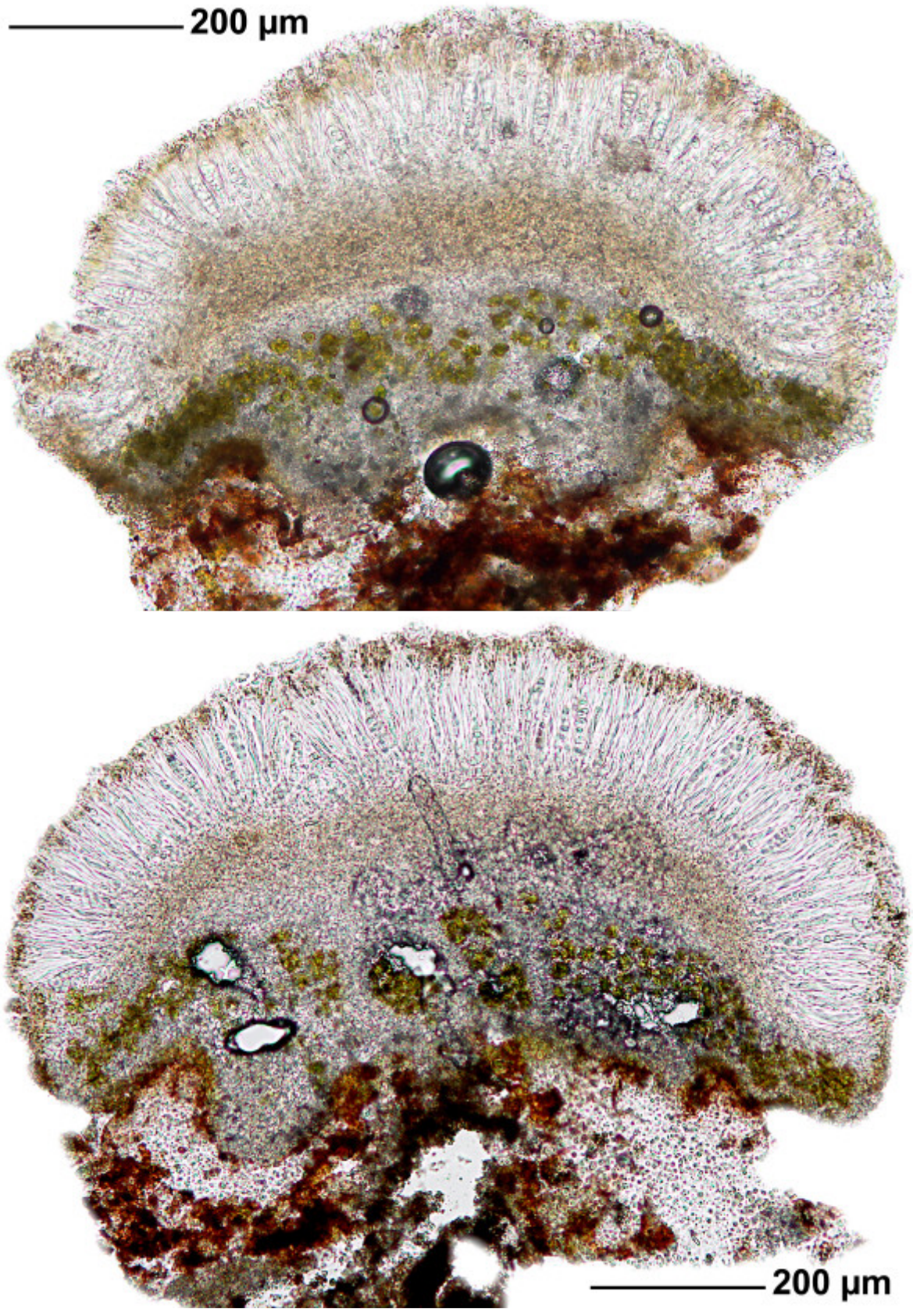


Caloplaca rexfilsonii

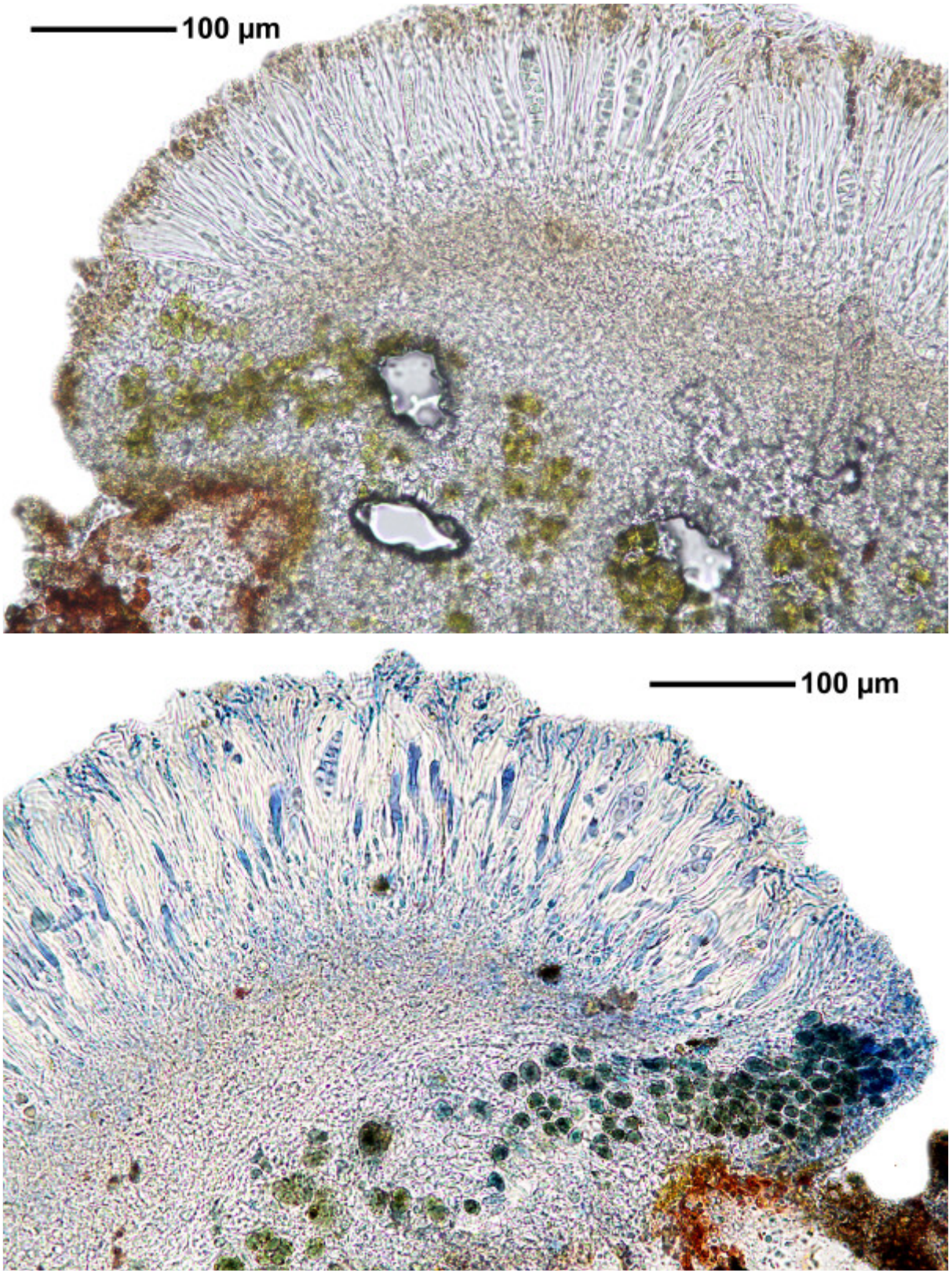




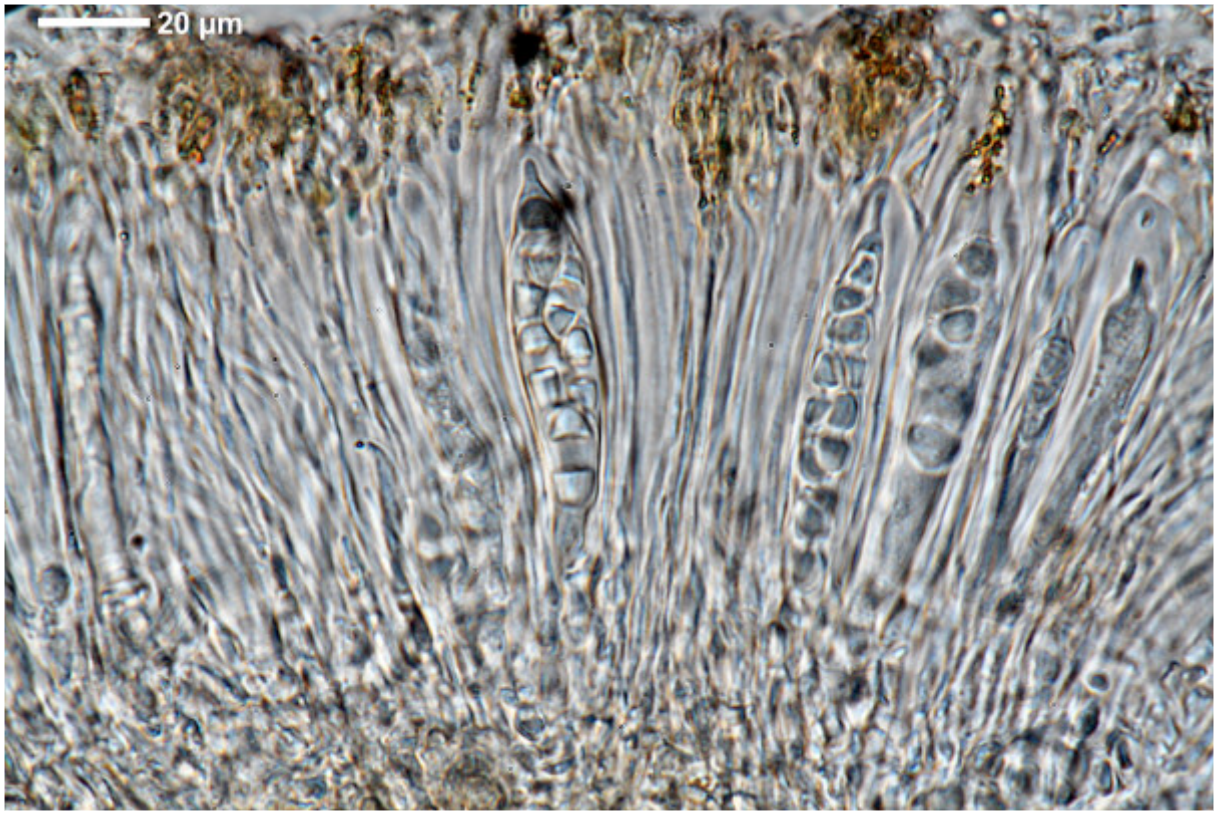
Caloplaca rexfilsonii

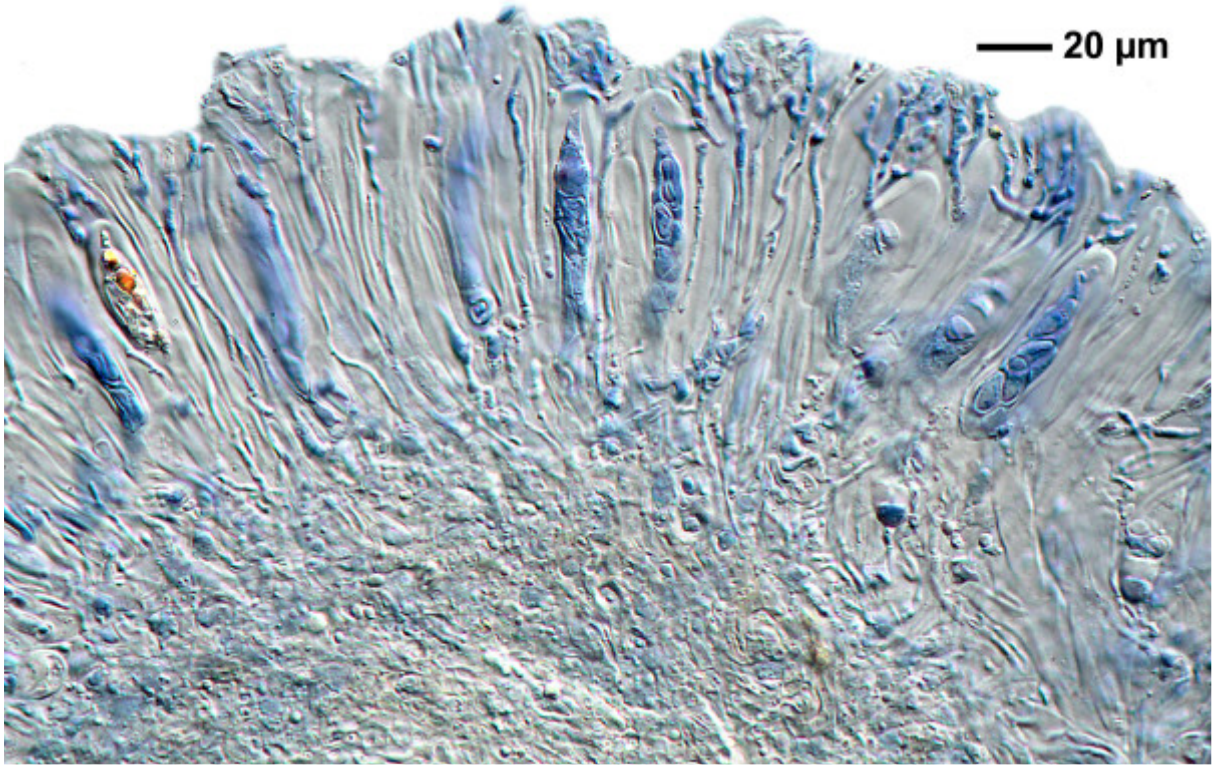


Caloplaca rexfilsonii

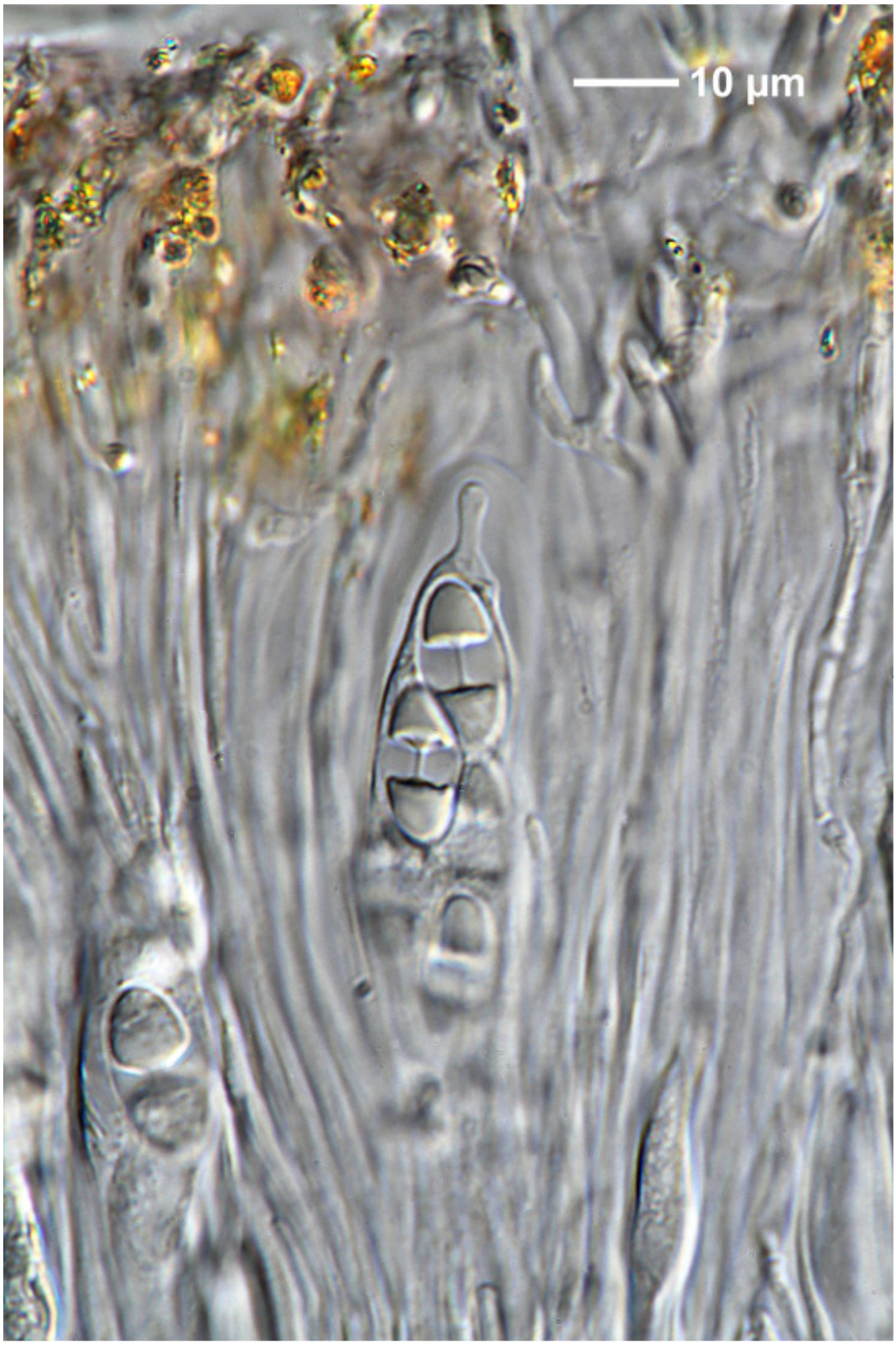


Caloplaca rexfilsonii



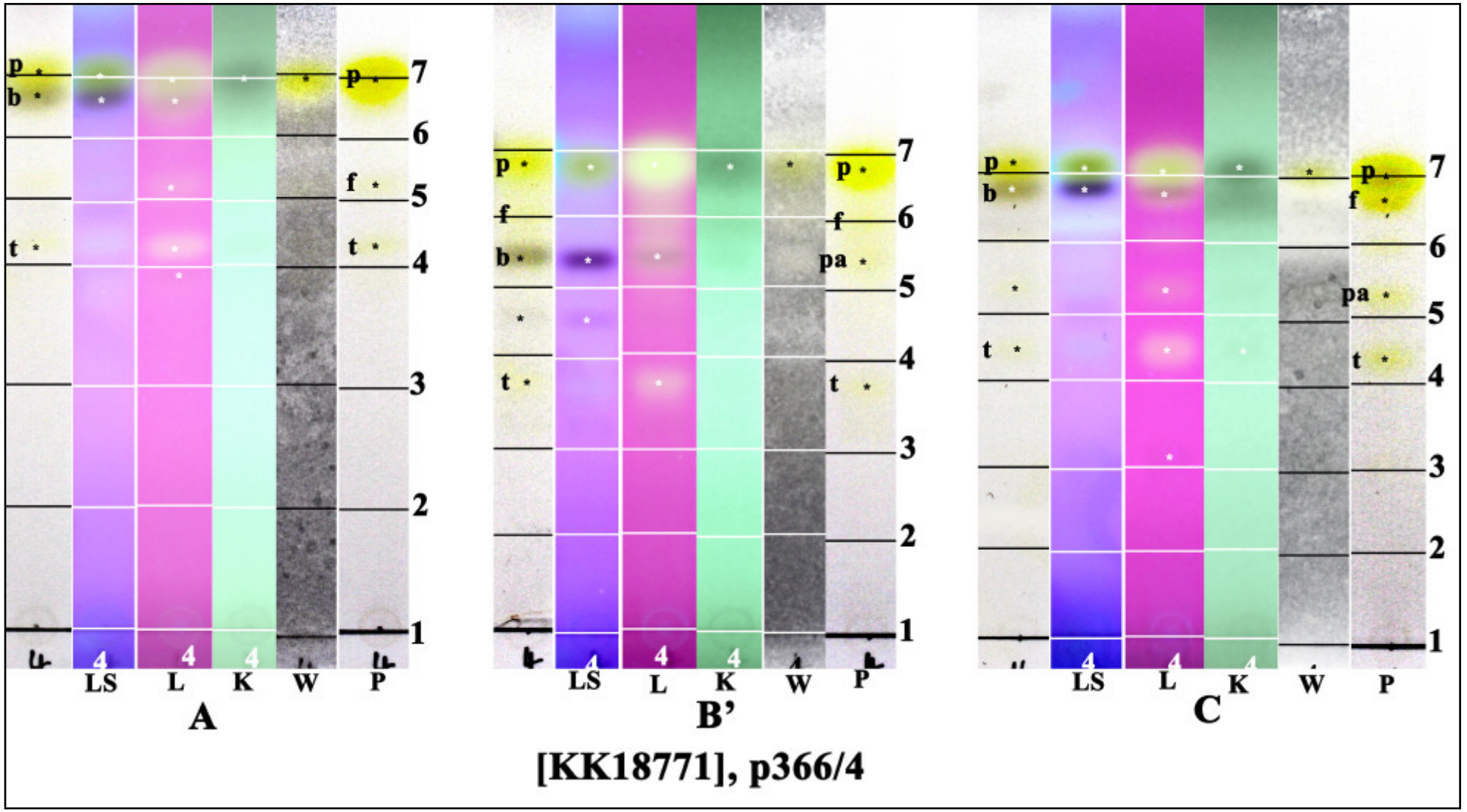


Caloplaca rexfilsonii





Caloplaca rexfilsonii



p: parietin, pa: parietinic acid, f: fallacinal, b: physcion bisanthrone, t: teloschistin; conf. J.A. Elix

Caloplaca rheinigera Elix & S.Y. Kondr.

Thallus corticolous, grey, continuous. Apothecia 0.3-0.8 mm diam., biatorine, sessile, disc dark rust-brown with orange pruine, with well developed concolorous proper exciple. Paraphyses richly branched toward the tips. Ascospores (13-)15-19 x (6-)7-9 µm, septum 3-7 µm, cell wall at the poles 1-2(-2.5) µm thick. Chemistry: chrysophanol (major), rhein (major), chrysophanal (minor); epithecium K+ reddish violet, remaining bluish violet, content of asci becoming purplish. Similar to *Caloplaca ferruginea* (Huds.) H.Magn. Lit.: Kondratyuk, Kärnefelt, Elix & Thell, Bibliotheca Lichenol. 95: 375 (2007).

[KK18983], Australia, Queensland, way to the Bunya Mountains, c. 12 km NNE of Mt. Mowbullan, 680 m, 26°50’ S, 151°38’ E. Leg. K. Kalb & R. Rogers, 14.08.1988, det. S.Y. Kondratyuk, 2008.

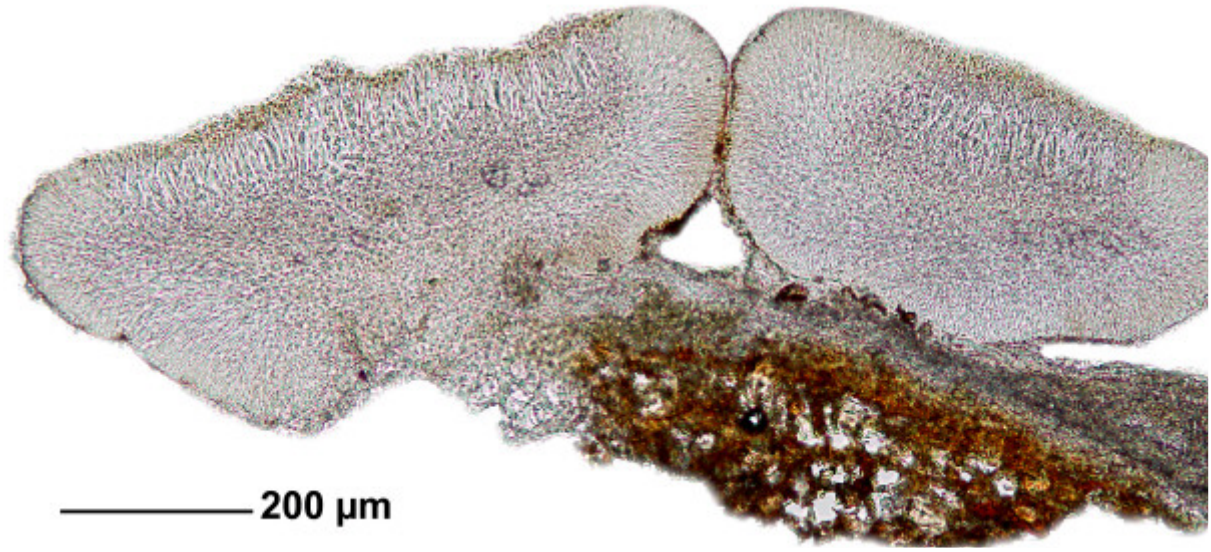






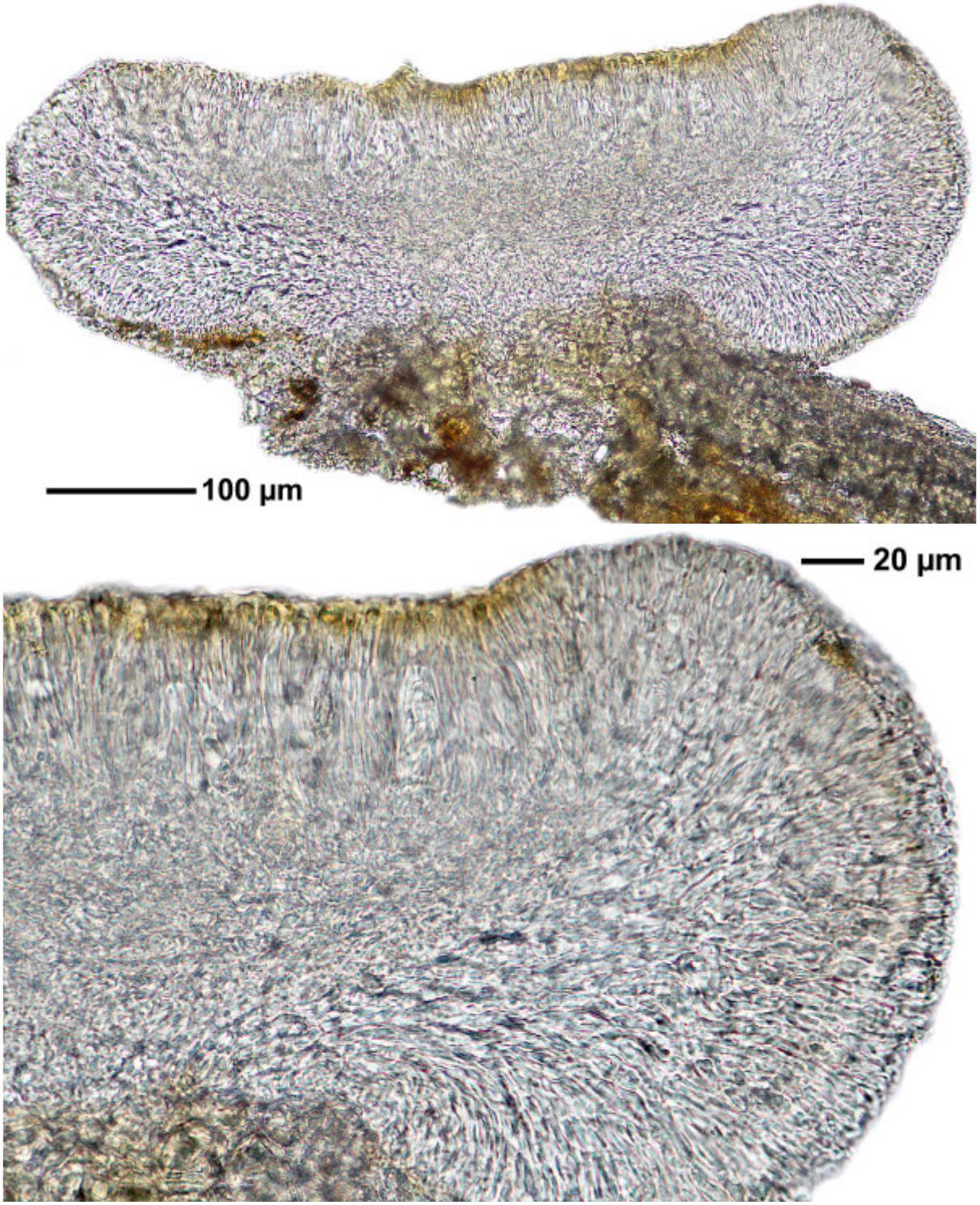
Caloplaca rheinigera



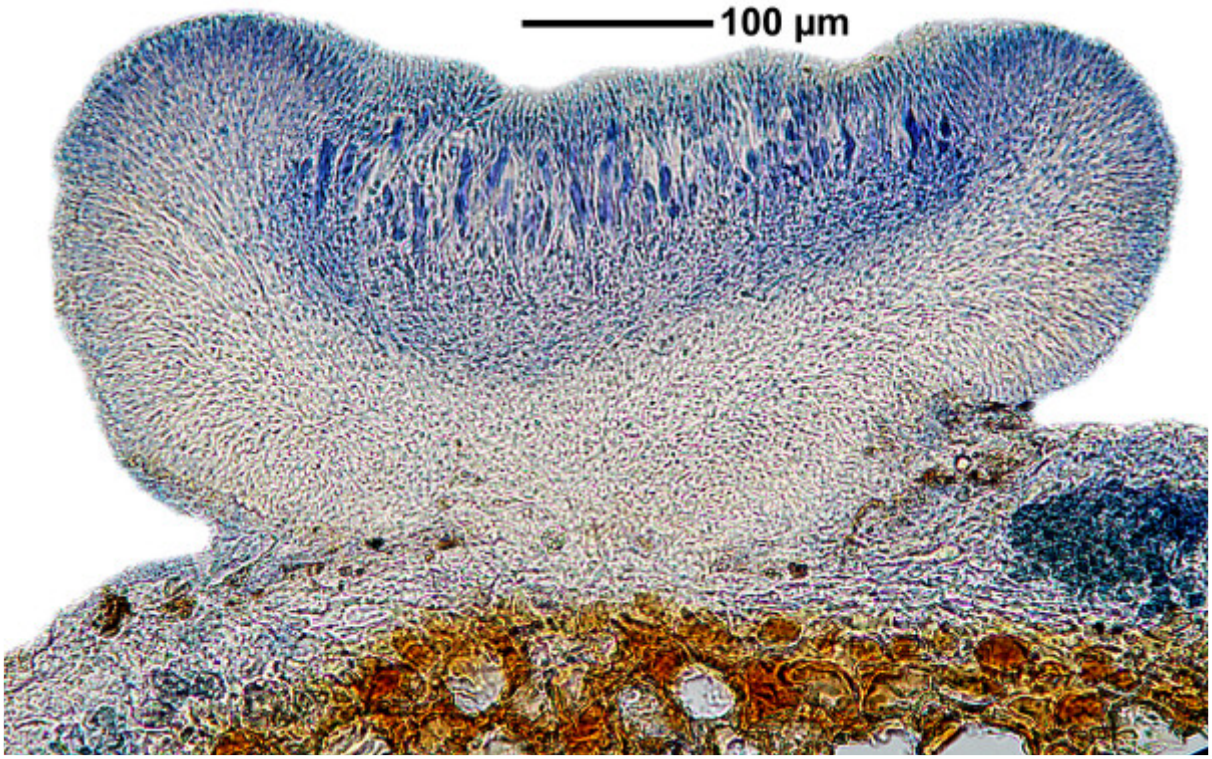


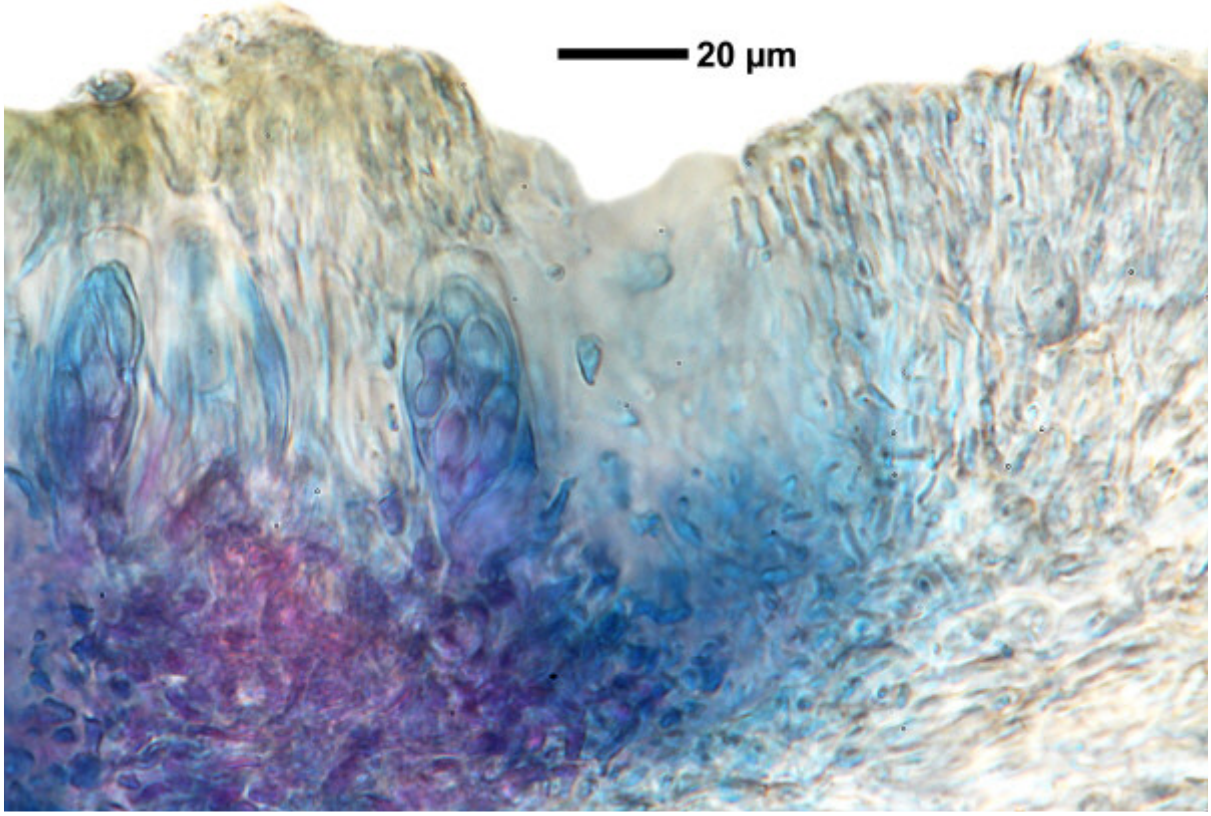


Caloplaca rheinigera

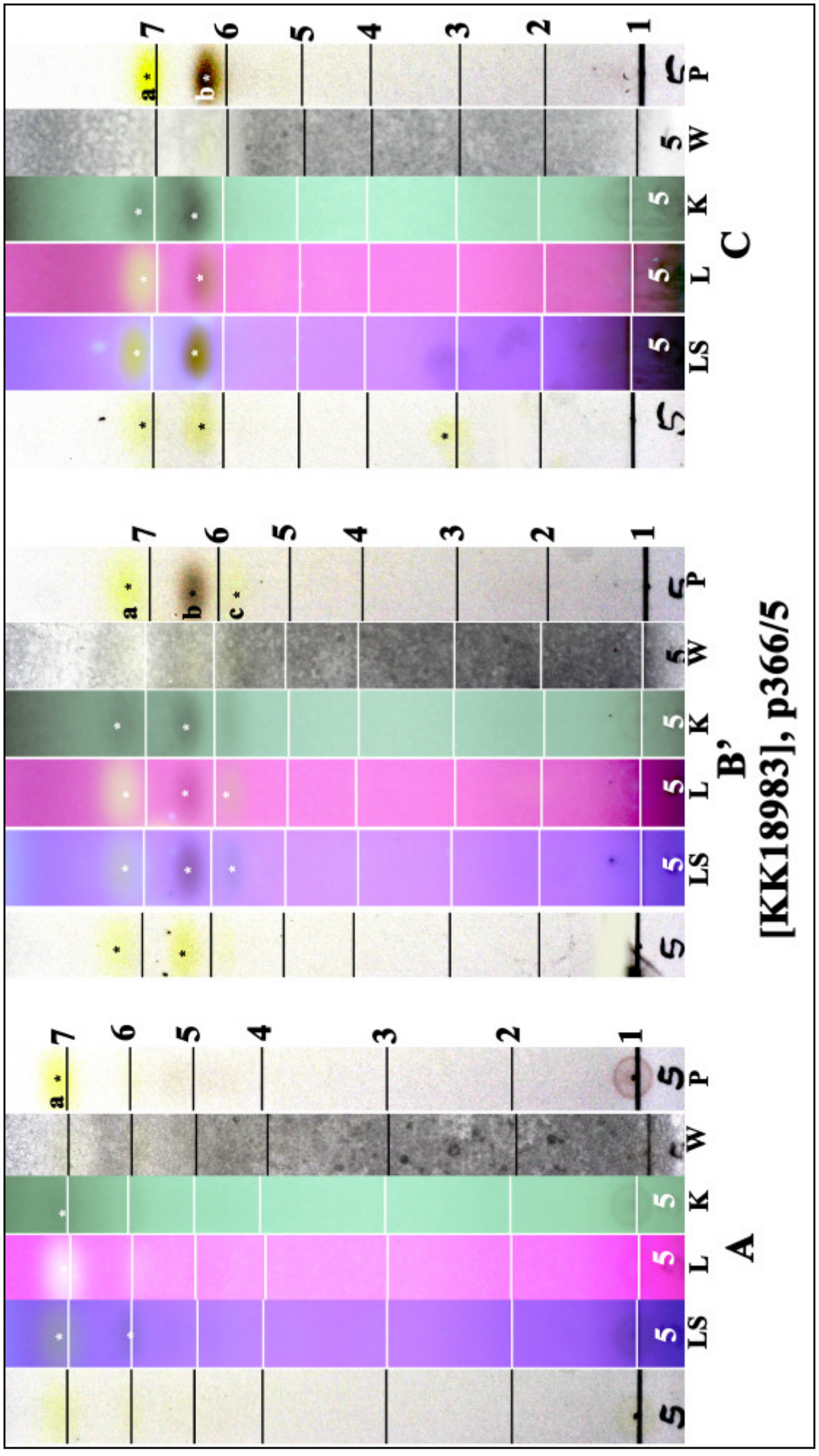


Caloplaca rheinigera





Caloplaca rheinigera

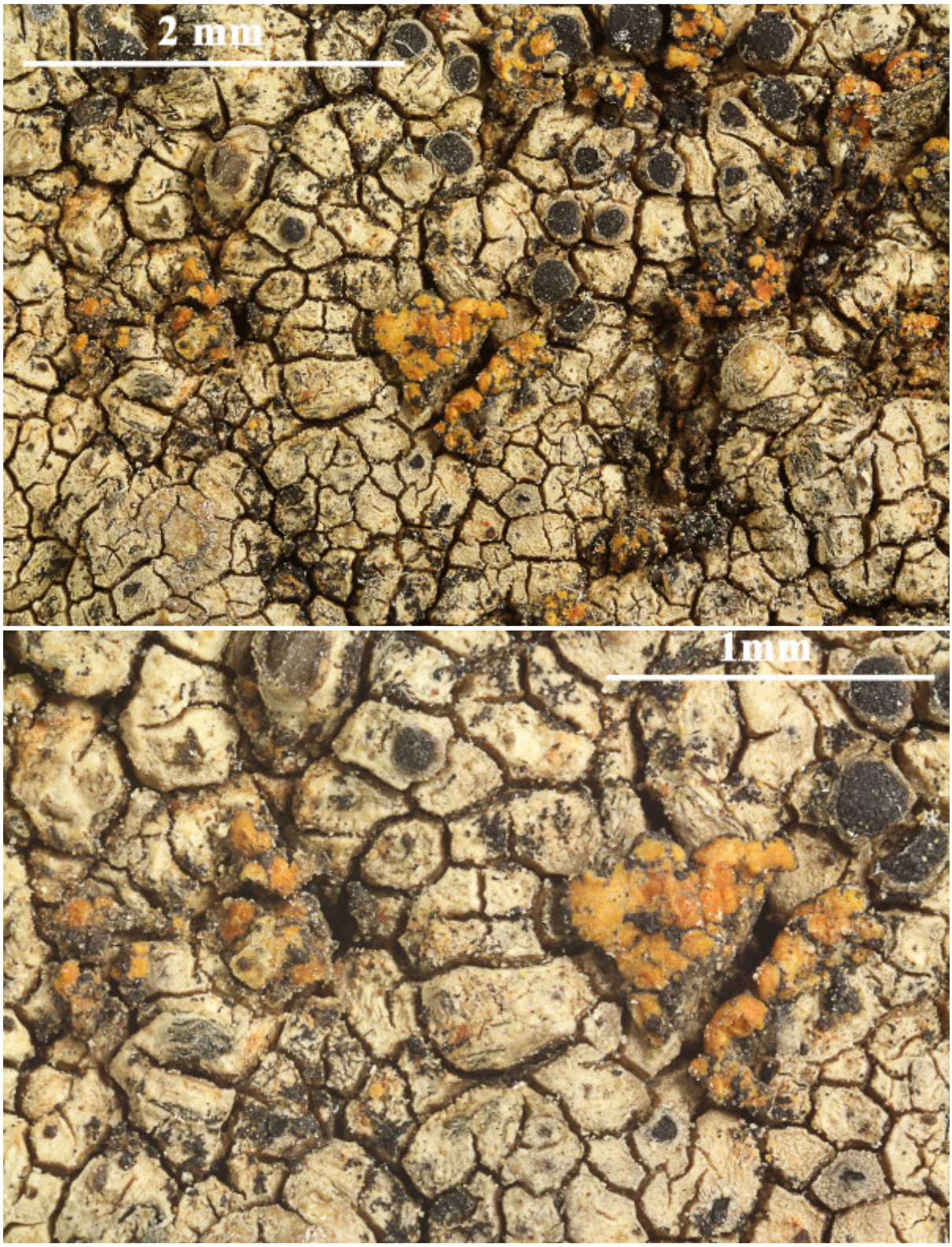


Caloplaca rheinigera

Caloplaca rinodinae-albae Poelt & Nimis, ISOTYPUS, in Nimis & Poelt, Stud. Geobot. 7(suppl. 1): 72 (1987)

[TSB_14722], Italia, Sardegna Prov. Di Cagliari, Isola dei Cavoli su massi granitici espos ti a nord. Parasitia di *Rinodina alba* Metzler ex Arnold. Leg. P.L. Nimis & J. Poelt, 18.07.1985.





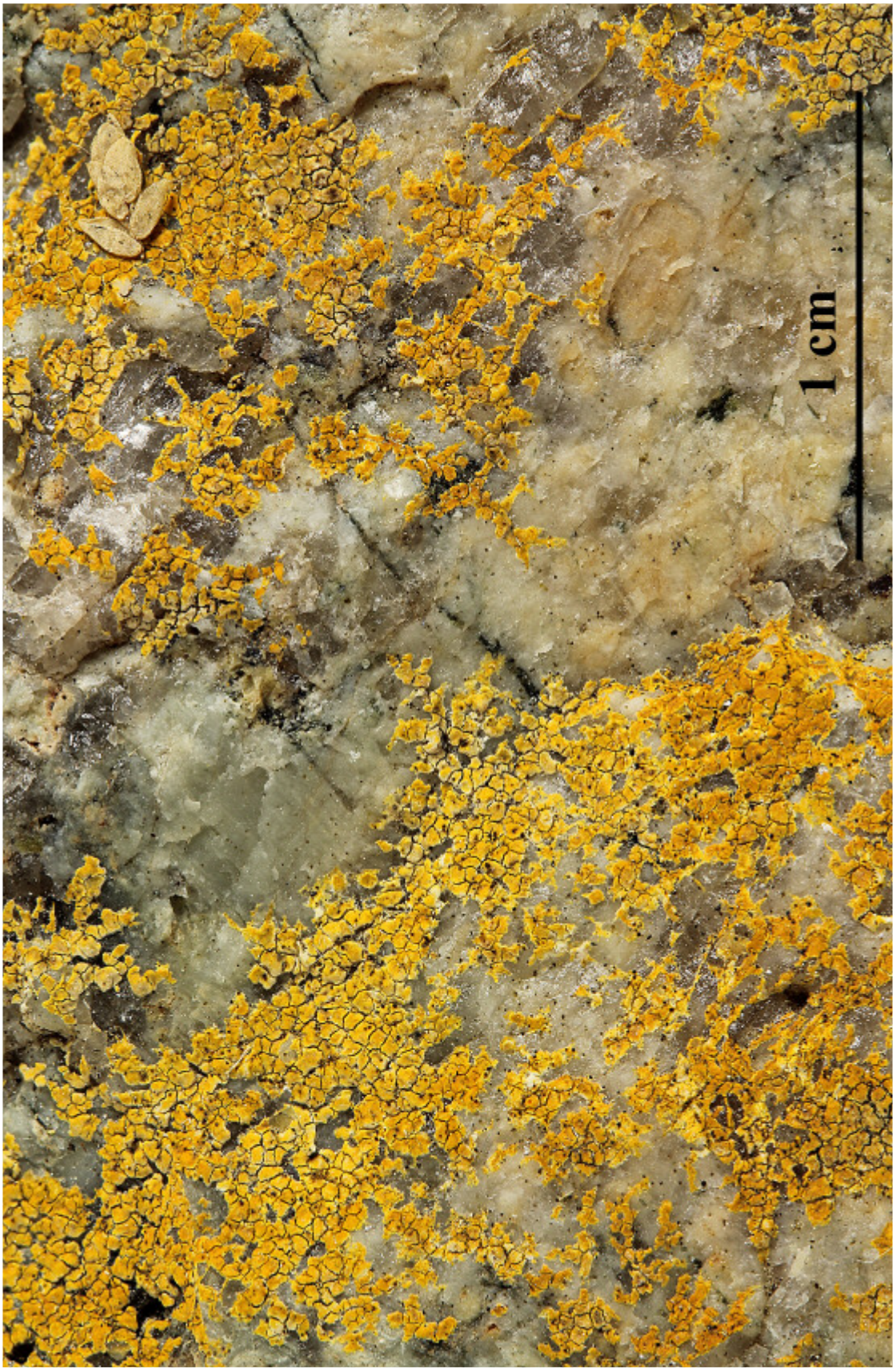
Caloplaca rinodinae-albae

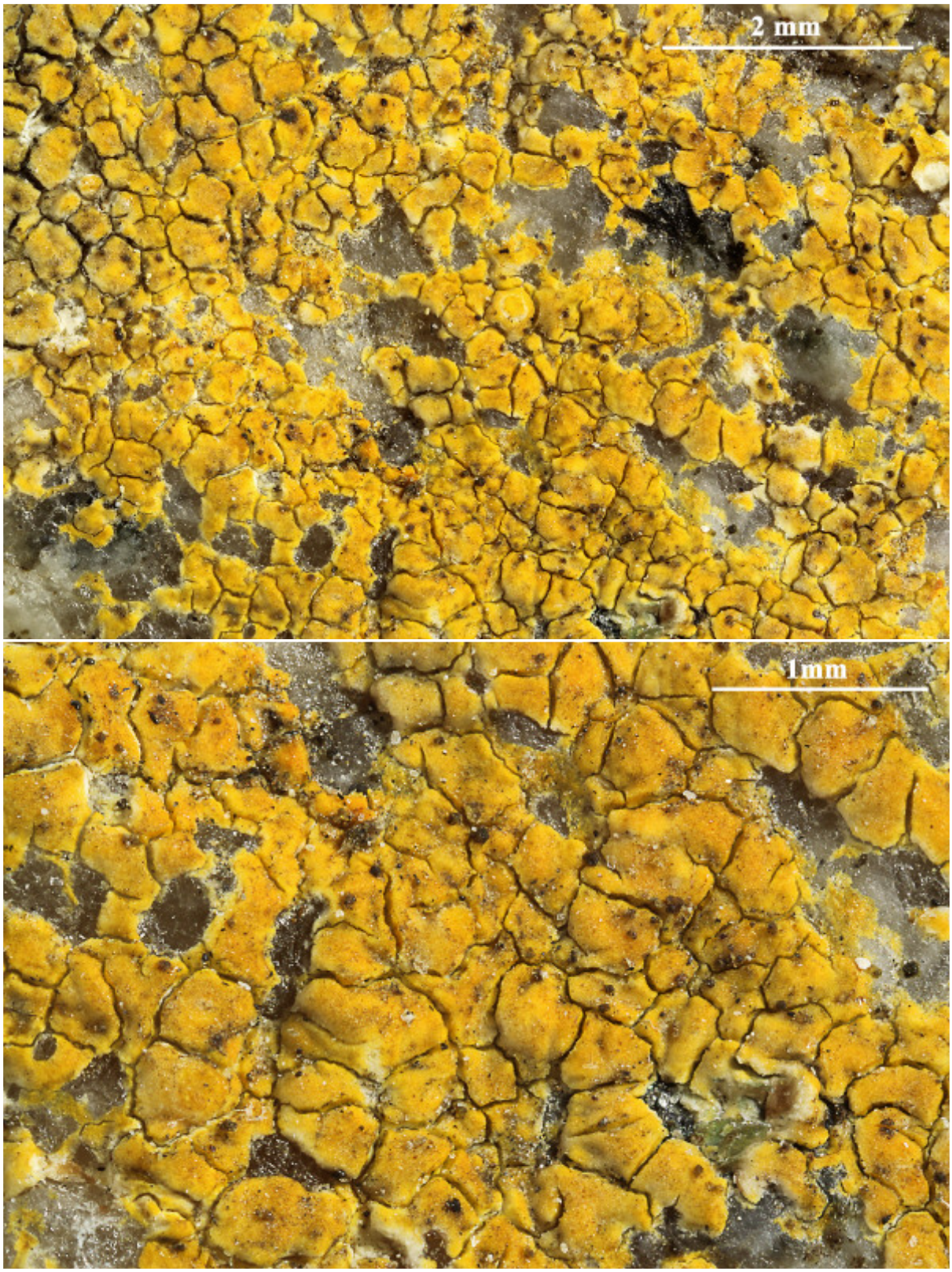


Caloplaca rinodinae-albae

Caloplaca rosei Hasse
[= *Polycauliona rosei* (Hasse) Arup, Frödén & Søchting]

[BR5030022899073], Canada, British Columbia, Vancouver, Lighthouse Park, on montane granite. 49°19’ N, 123°15’ W, 0-50 m. Leg. A. Aptroot (34431), 19.08.1994, det. A. Aptroot 1994.





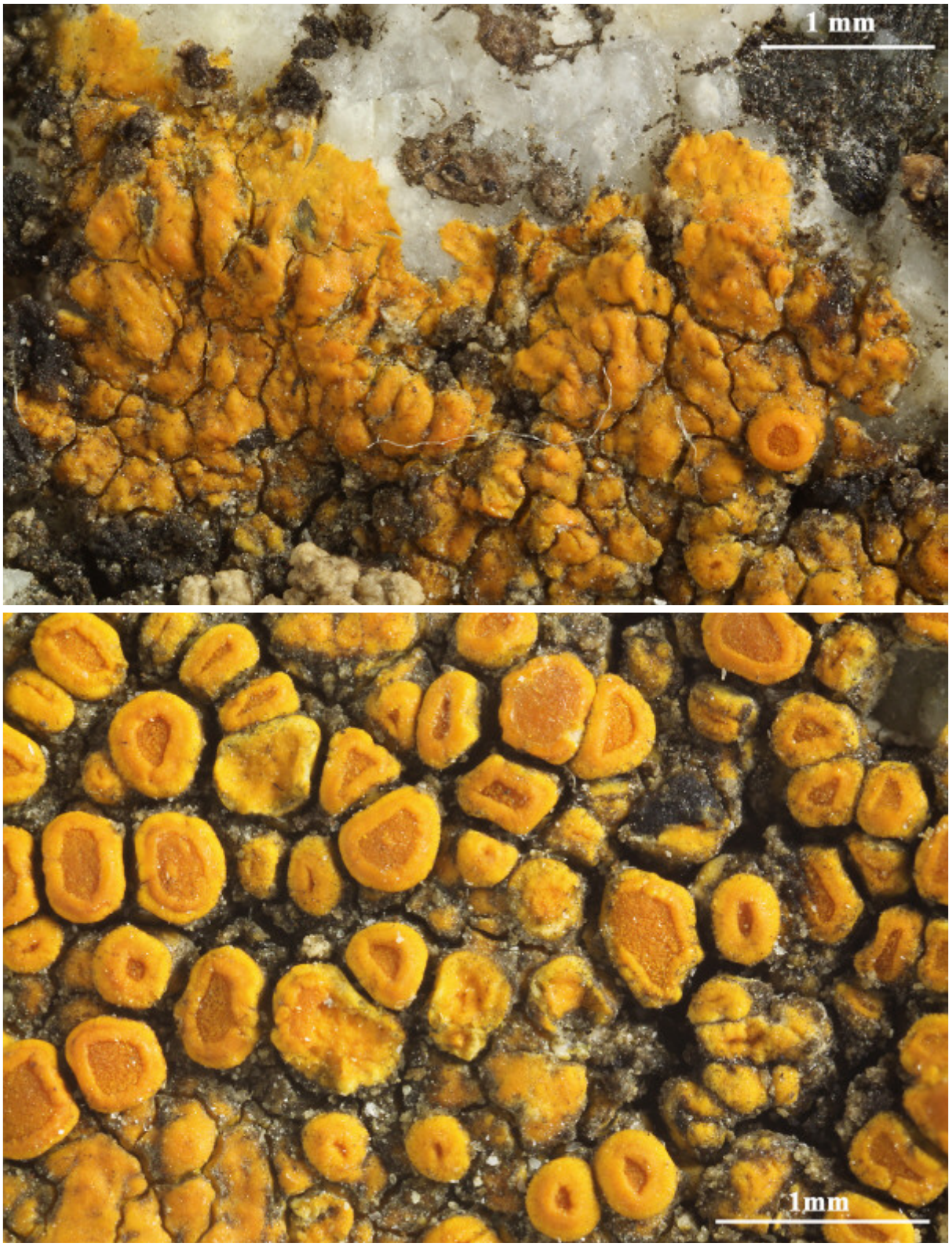
Caloplaca rosei

Caloplaca rosei Hasse
[= *Polycauliona rosei* (Hasse) Arup, Frödén & Søchting]

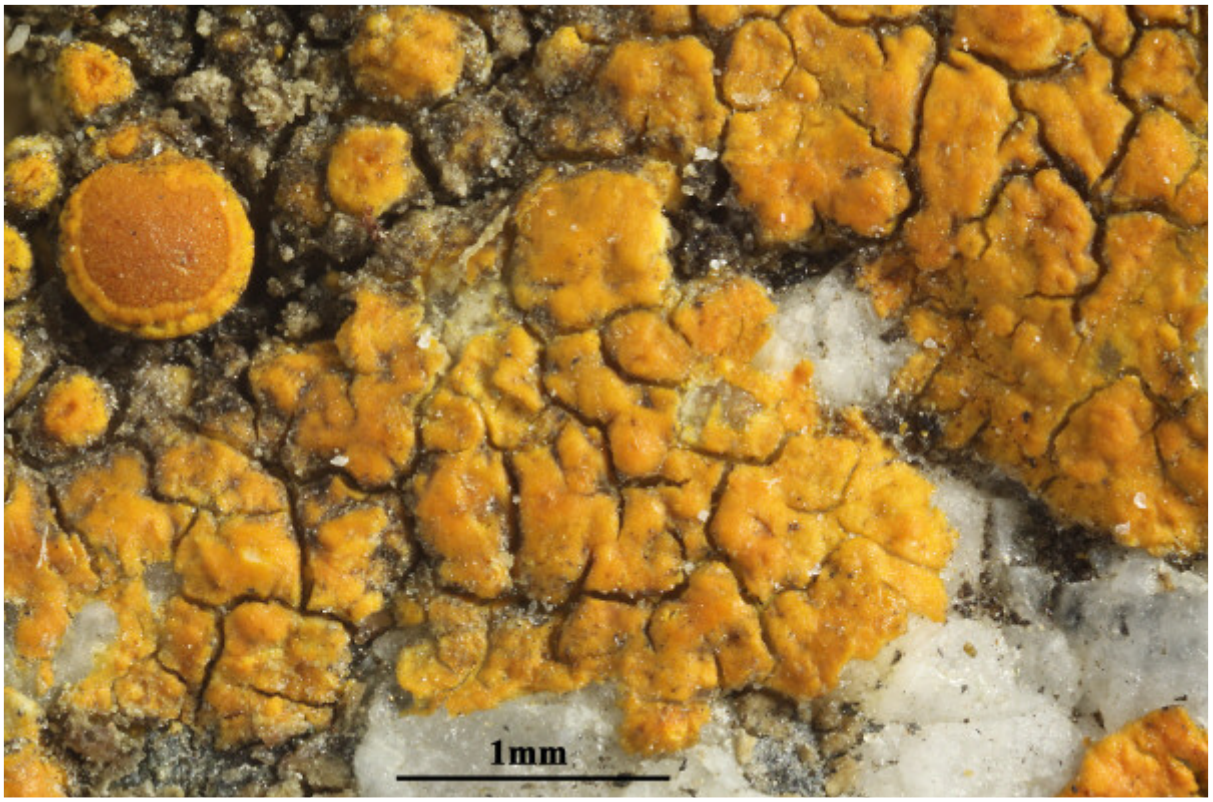
Spores 10-12 x 5-6 µm, septum 3.5-4 µm (FS)

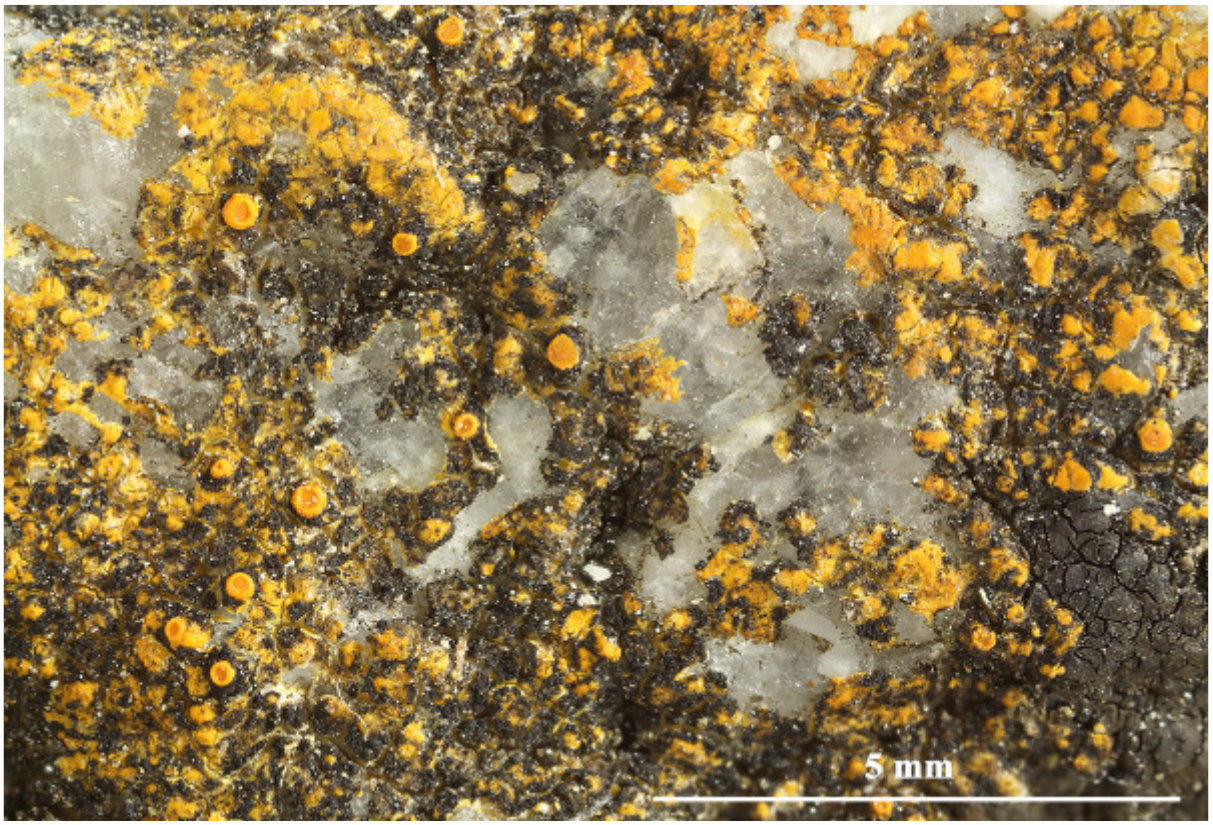
[BR5030022900083], Ca nada, British Columbia, Vancouver Island, Sidney, on maritime rock, 48°33’ N, 123°30’ W, 0-10 m. Leg. A. Aptroot (35194), 22-23. 08. 1994, det. A. Aptroot, 1994.





Caloplaca rosei

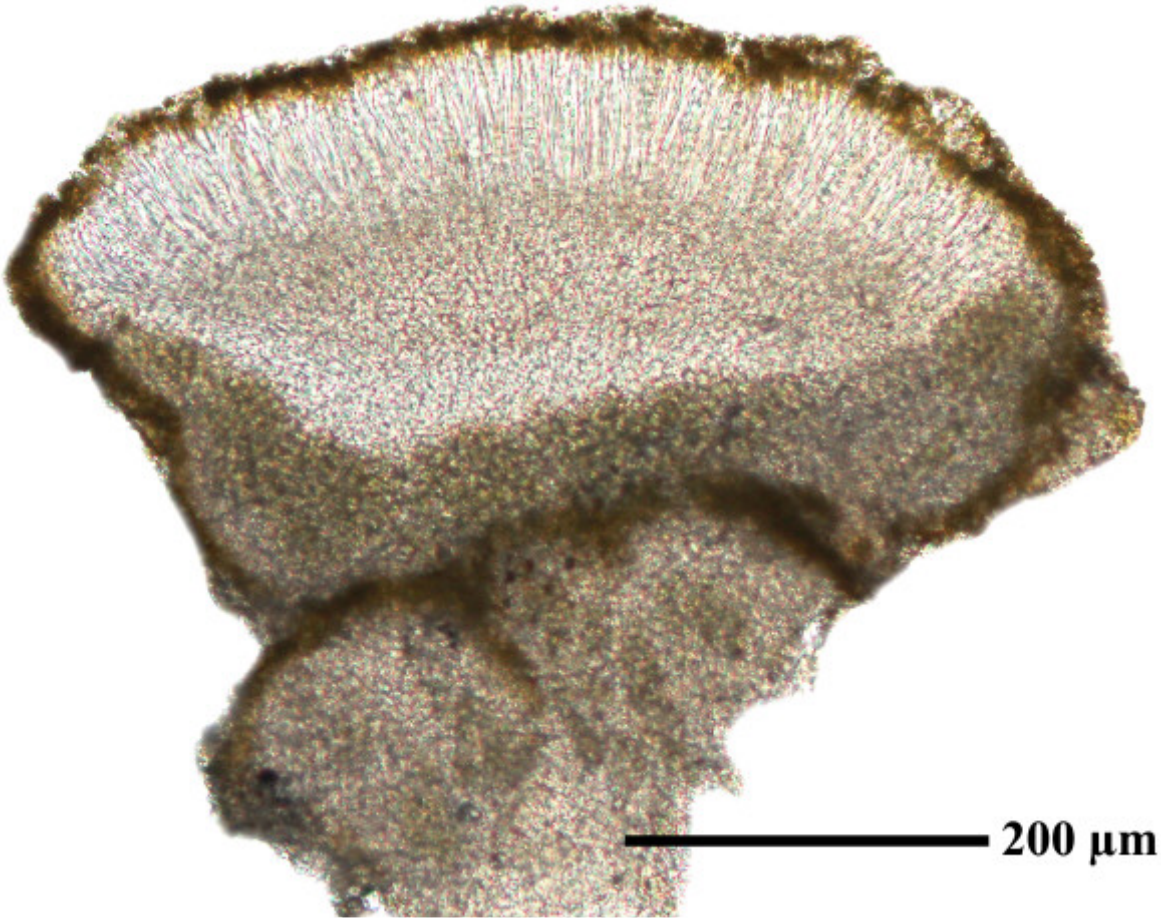


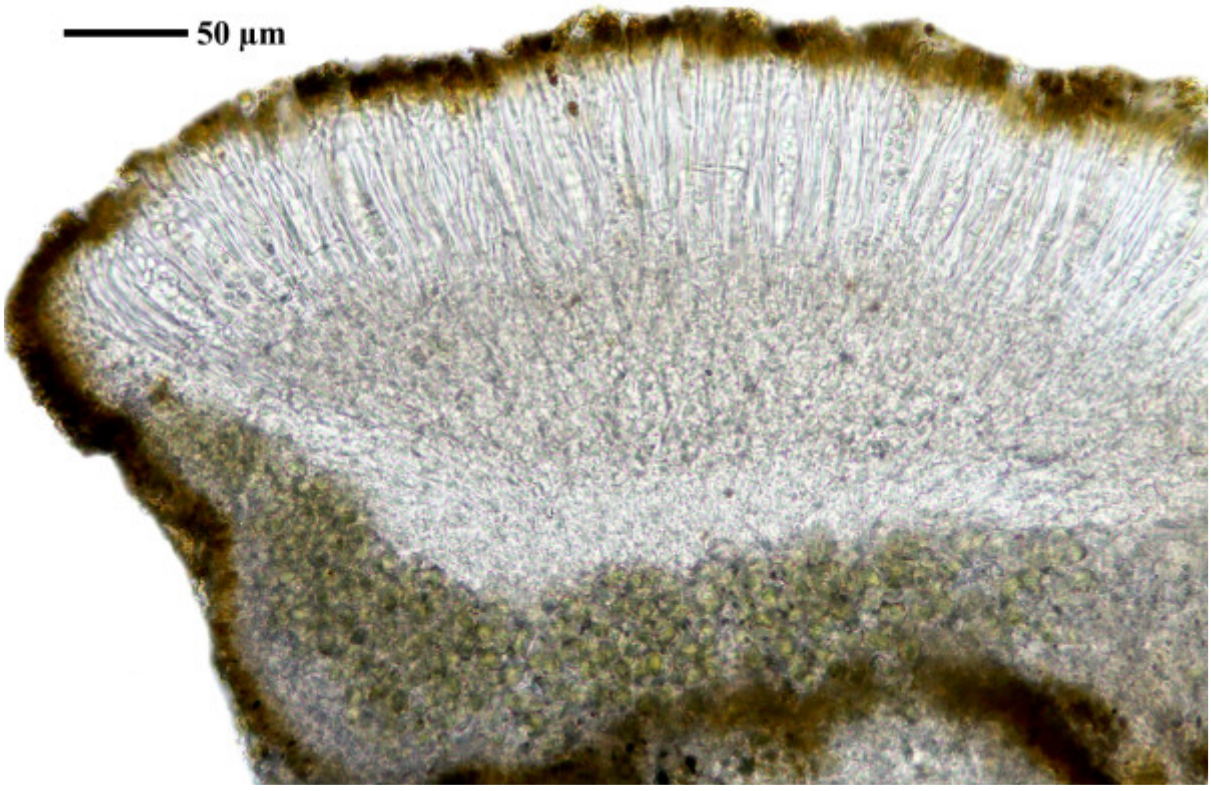


Caloplaca rosei

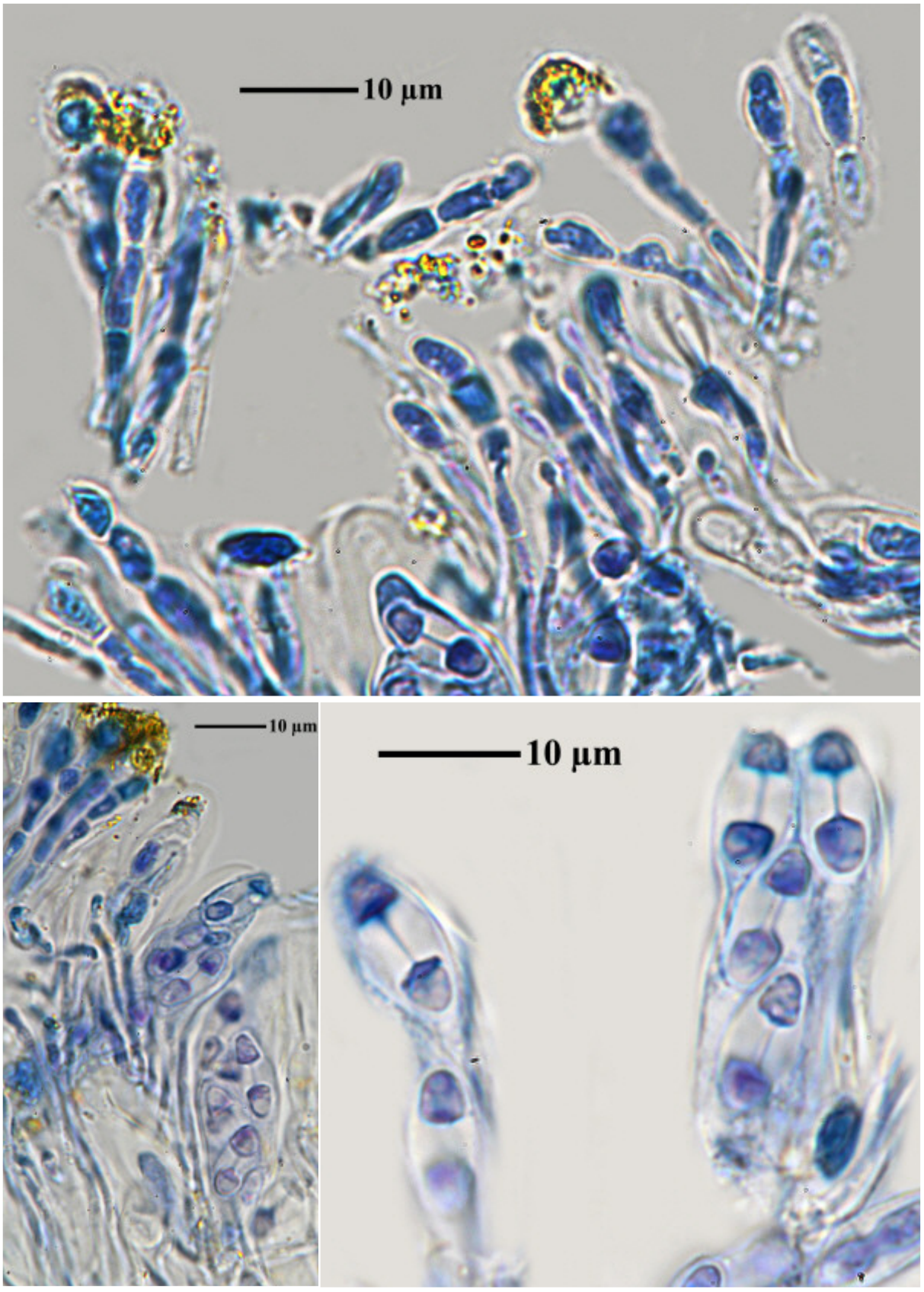


Caloplaca rosei





Caloplaca rosei



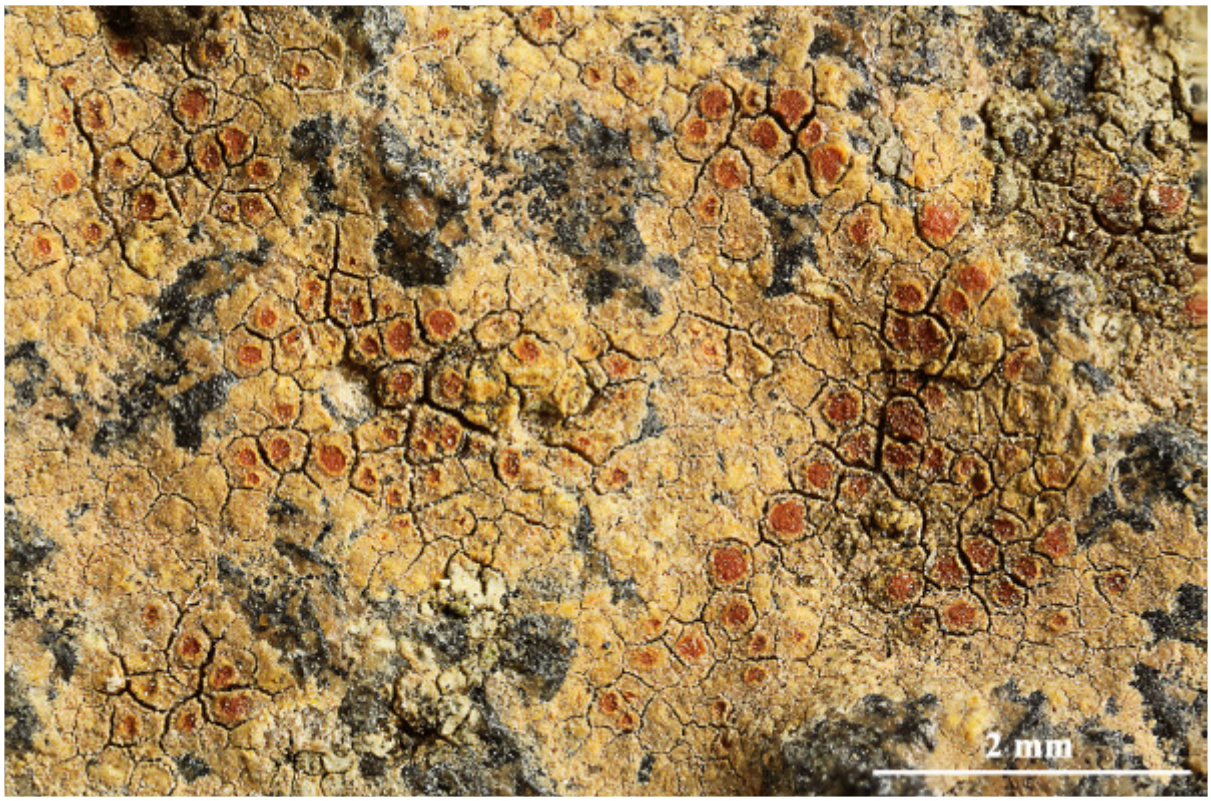
Caloplaca rosei

Caloplaca rubelliana (Ach.) Lojka

On non-calcareous rocks. Lit. Lojk, Math és Természett. Közl. 11: 47 (1872)

[19558], Italia, Sicilia,Alicudi (insolae Eolie), alt. 50 m, ad lapidem basalticum. Leg. D. Ottonello & D. Puntillo, 26.07.1994. VĚZDA: LICHENES RARIORES EXSICCATI NR. 164.







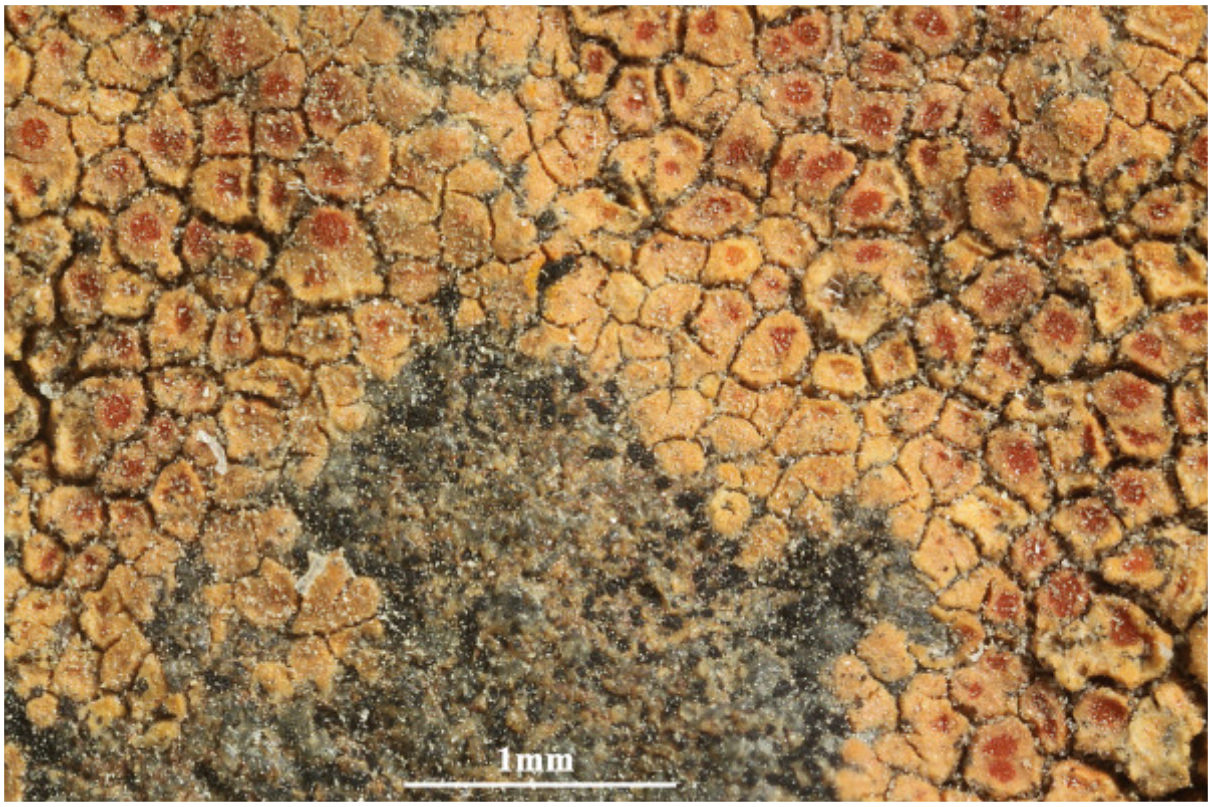
Caloplaca rubelliana

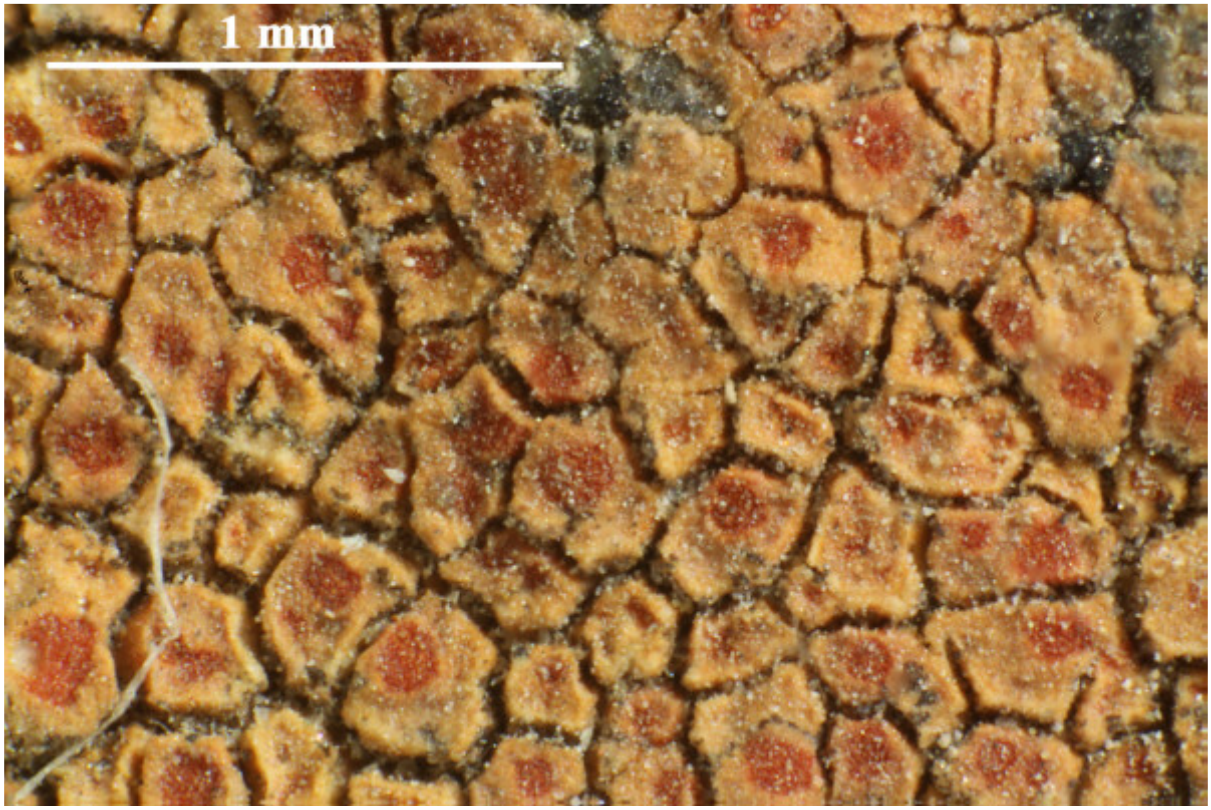
Caloplaca rubelliana (Ach.) Lojka

Spores 8.3-8.9 x 4.9-5.3 µm, septum 2.1-3.2 µm (FS). On non-calcareous rocks. Lit. Lojka H. in Math. és Természett. Közl. 11: 47 (1873)

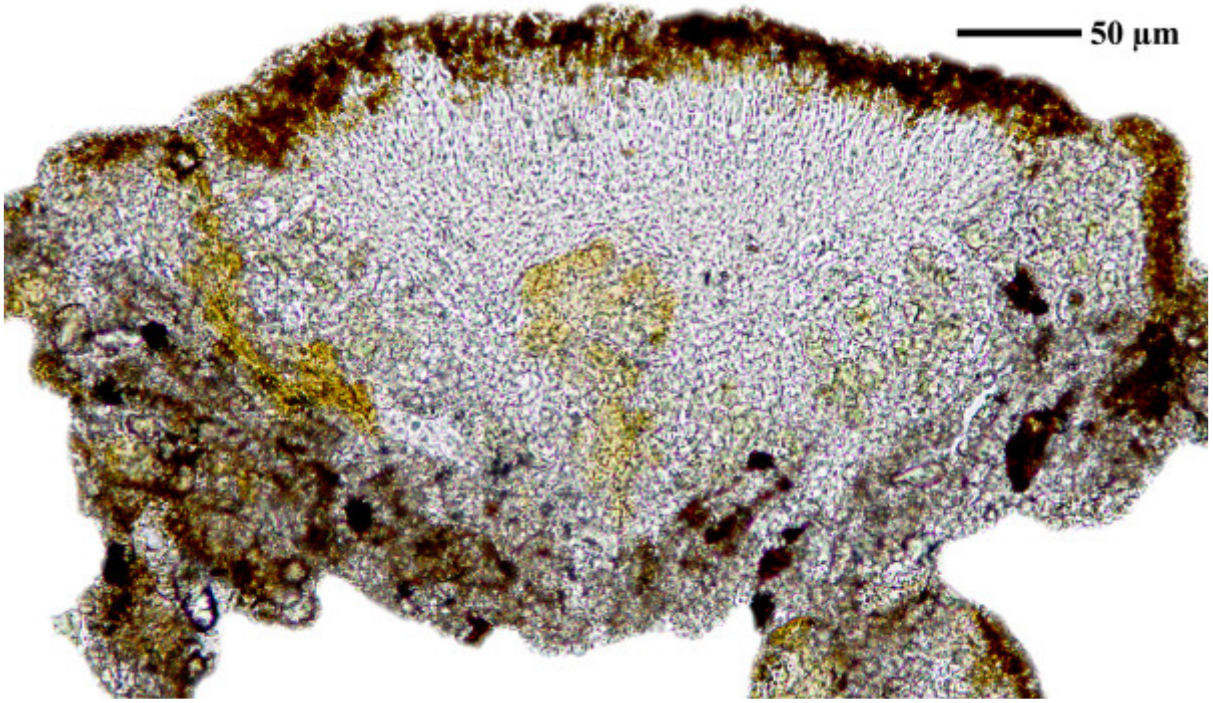
[19600], Hispania, Murcia, El Ribazo, prope Cehegín, ad saxa eruptica. Leg. J.M. Egea, 15.04.1978, det. X. Llimona. VĚZDA: LICHENES SELECTI EXSICCATI NR. 2241.

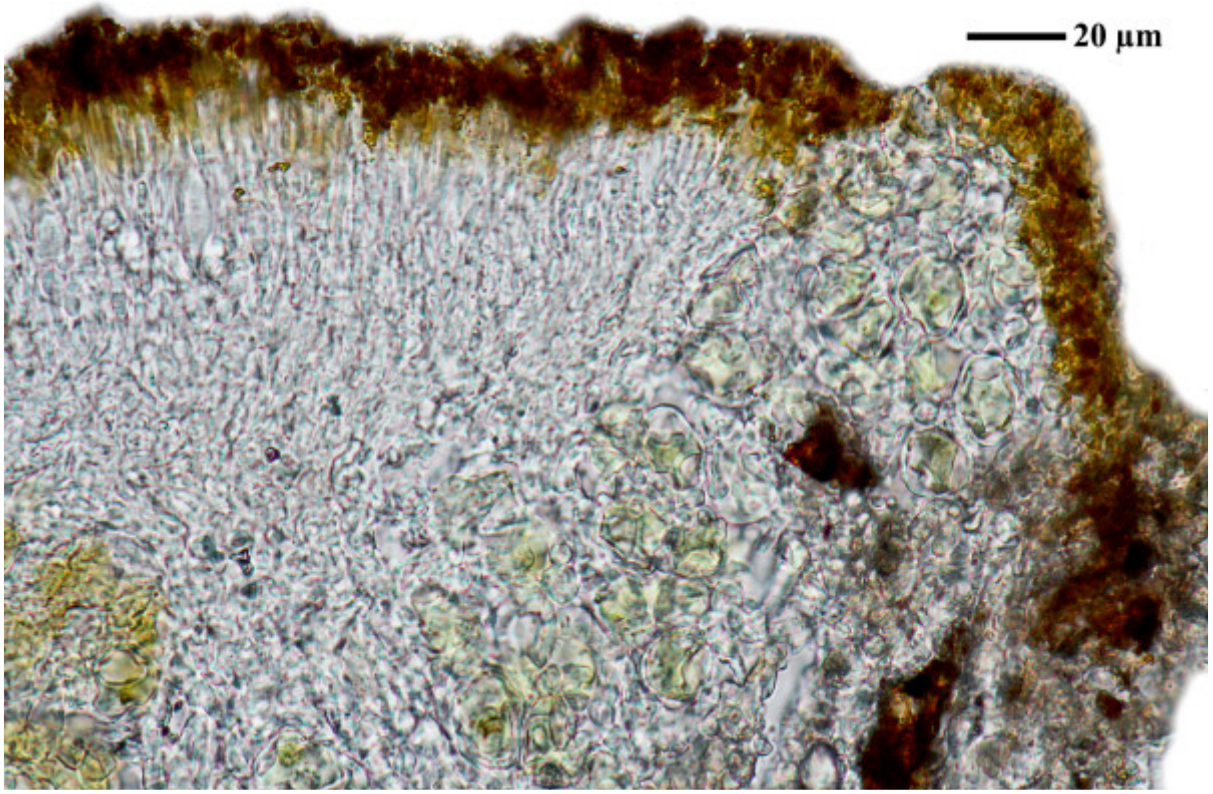




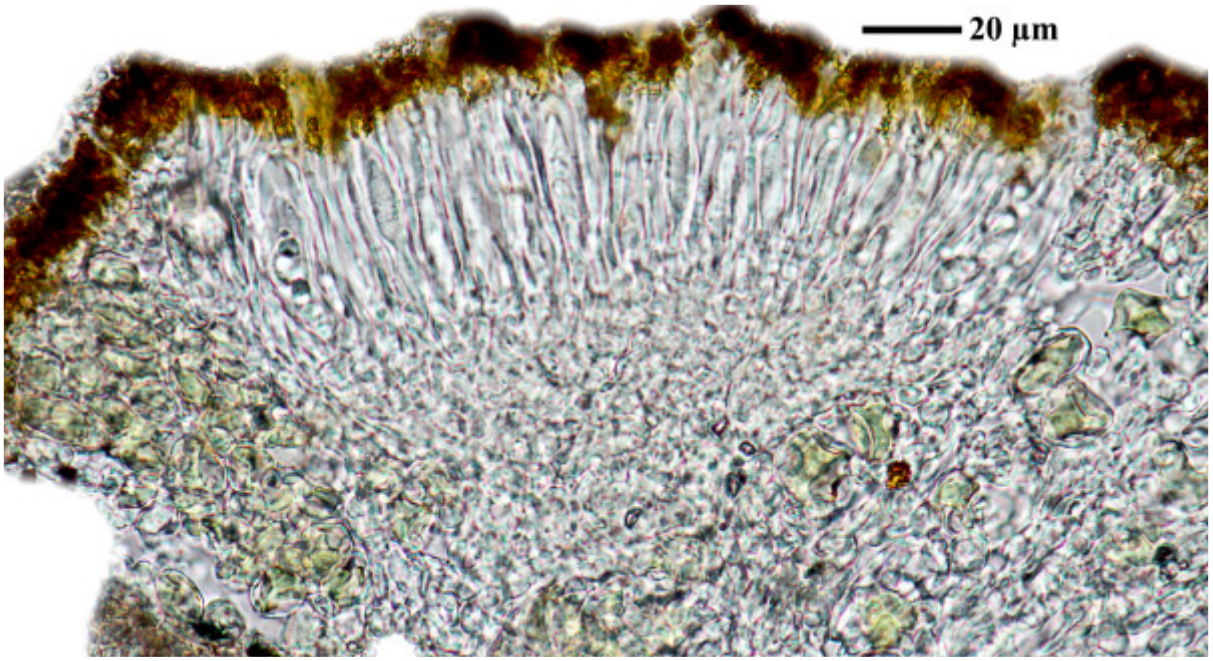


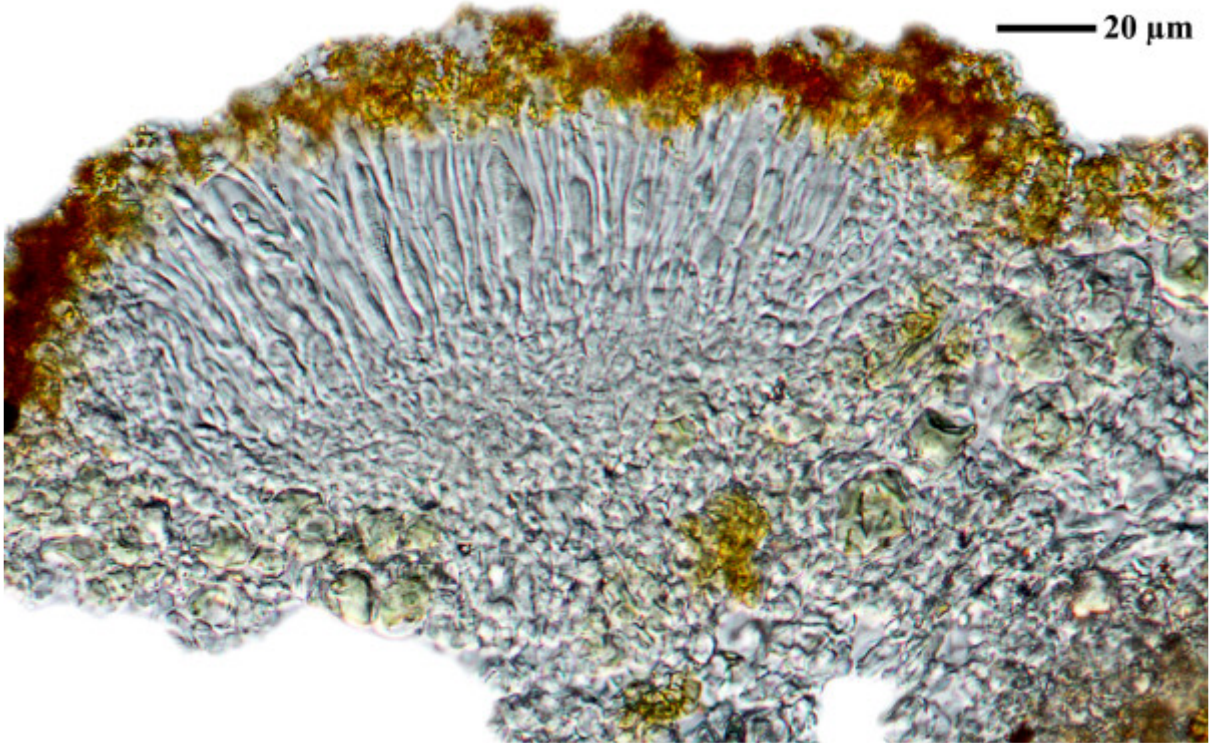
Caloplaca rubelliana



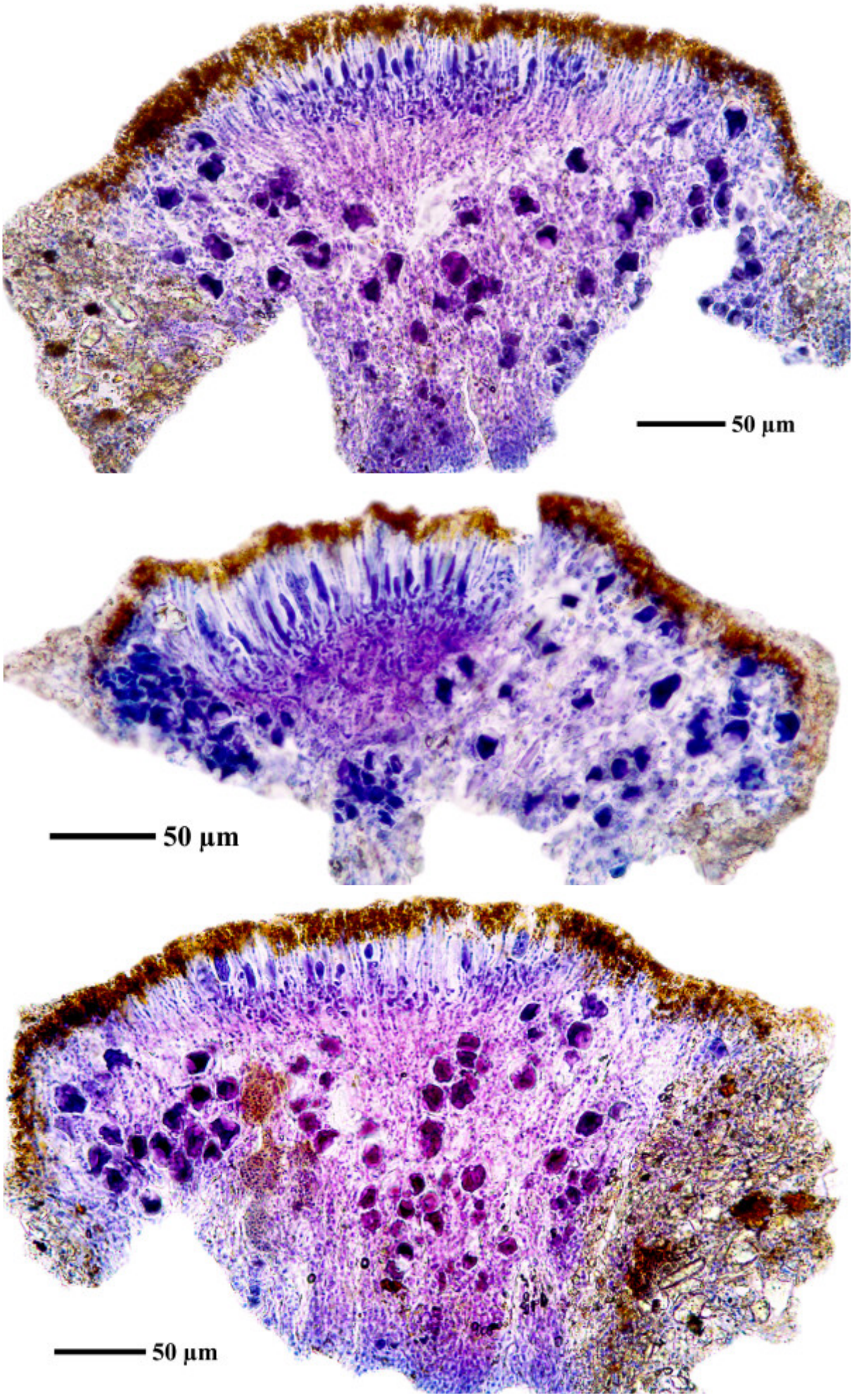


Caloplaca rubelliana

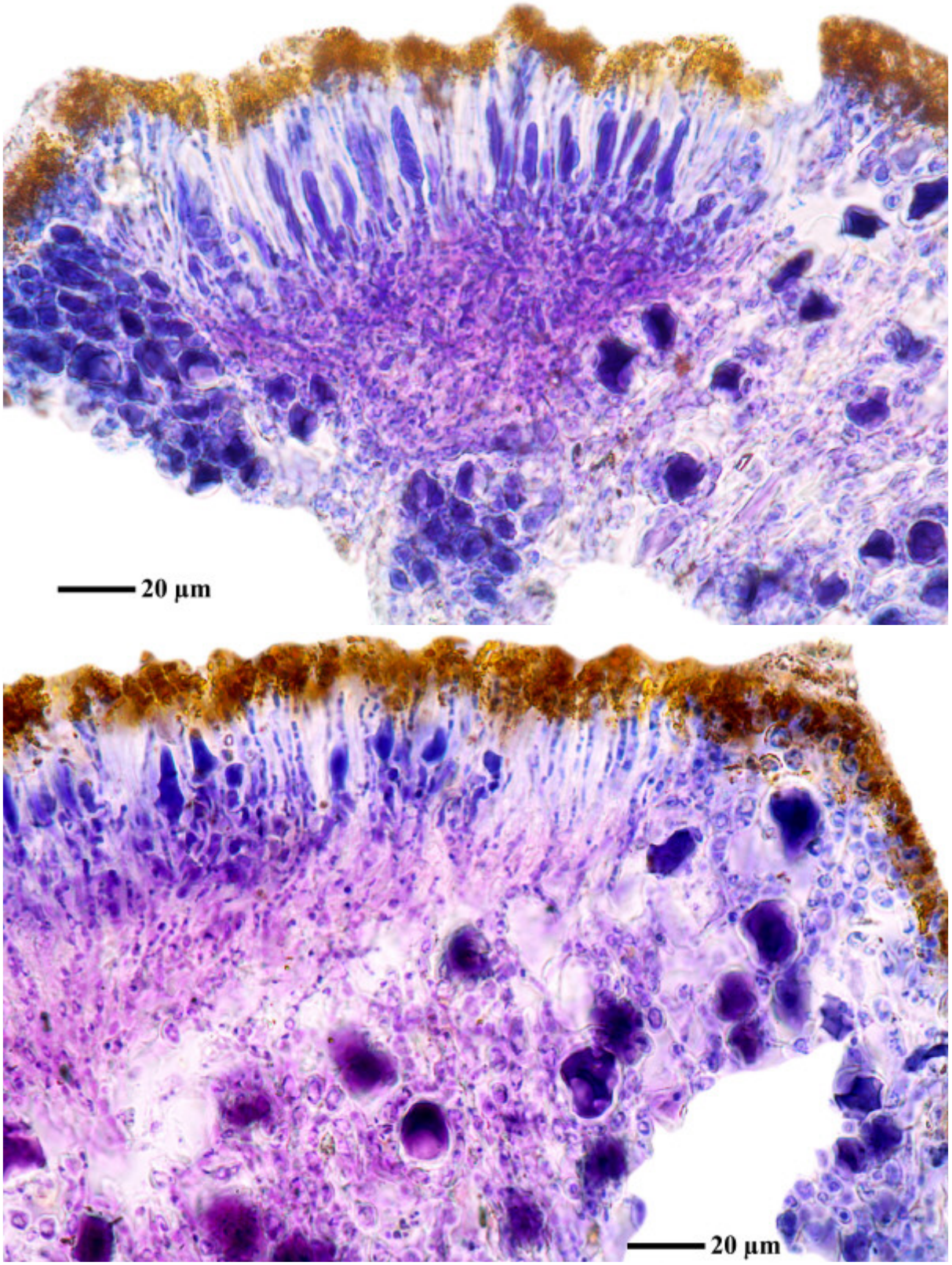




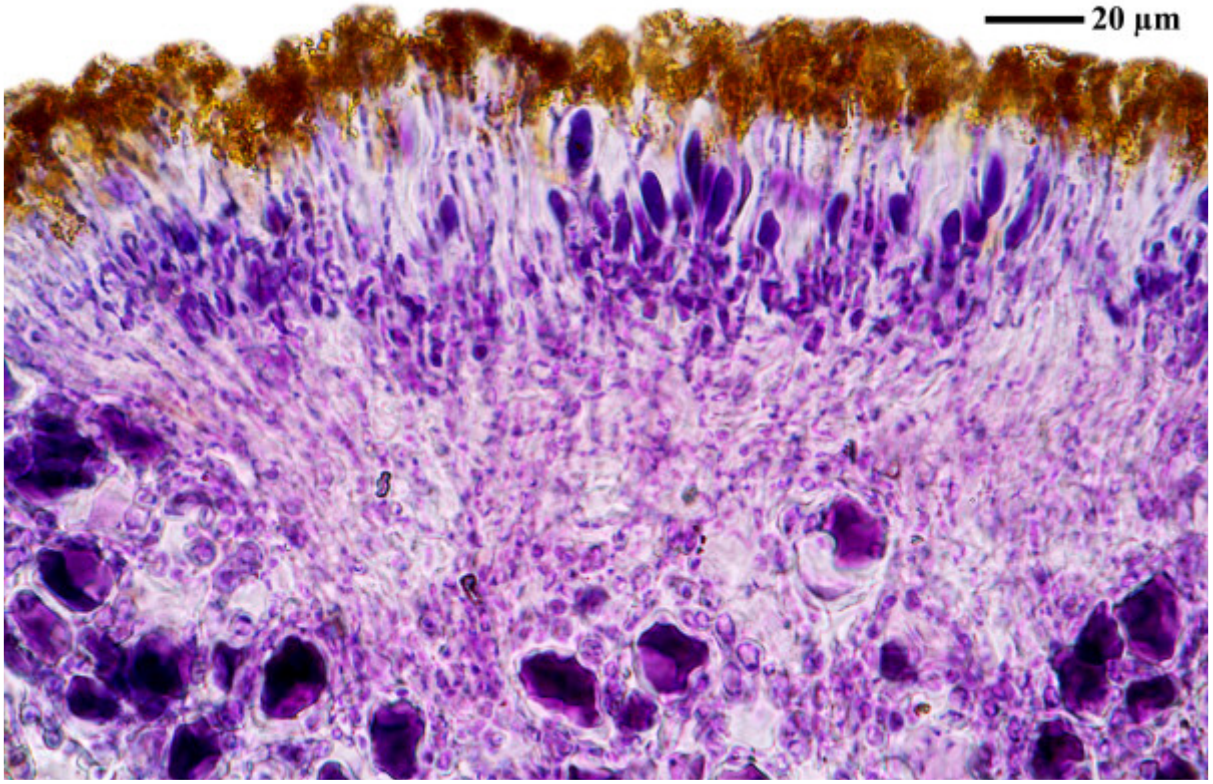
Caloplaca rubelliana

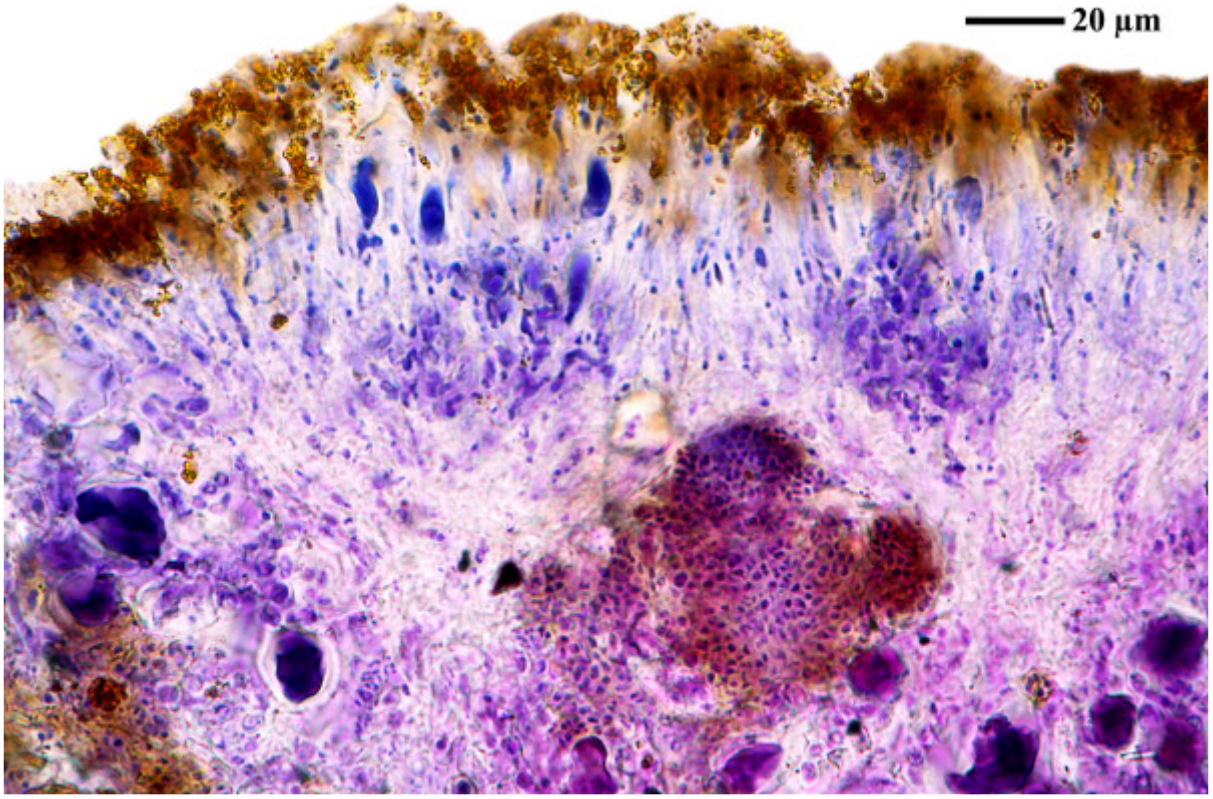


Caloplaca rubelliana

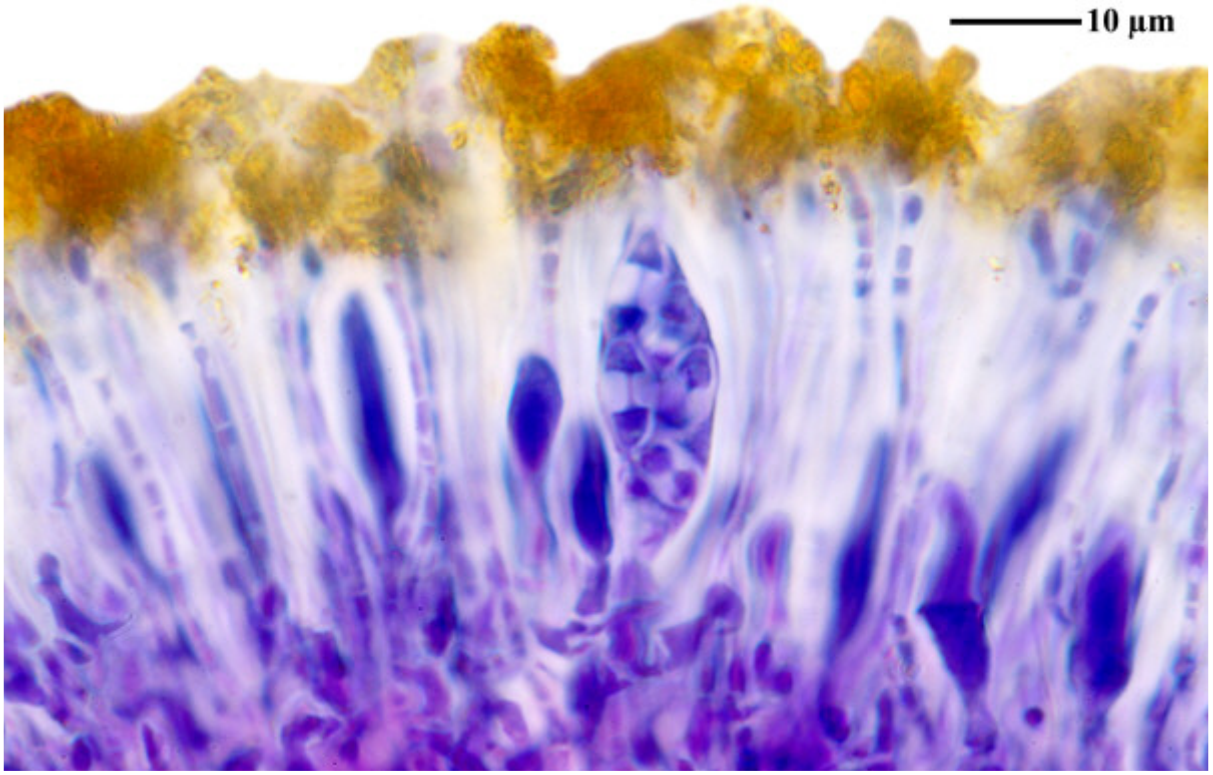


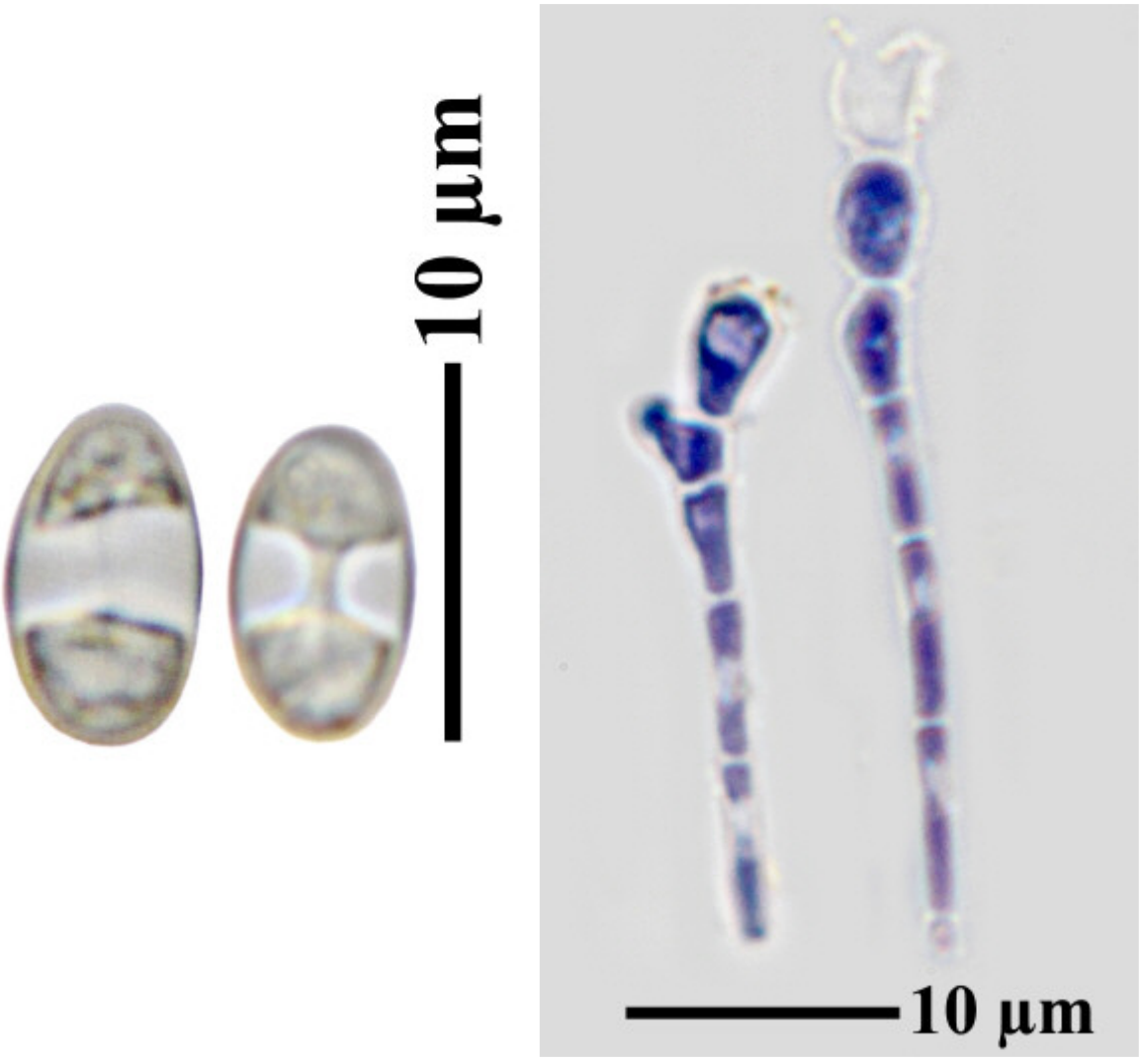
Caloplaca rubelliana





Caloplaca rubelliana





Caloplaca rubelliana

Caloplaca rubelliana (Ach.) Lojka

On lava rocks.

[ABL 65718], Ecuador, Galápagos Islands, Santiago Island, summit of Cerro Gavilan, N- and E-side of the crater (SAN 10), fern-sedge zone, N- and NE-exposed, steep basalt cliffs of crater rim with ferns (Pityrograma calomelanos var. calomelanos, Polypodium tridens, Dryopteris palmata, Adiantum concinnum, Blechnum polypodioides) growing in crevices on lava, 0°12’20’’ S, 90°47’03’’ W, 840 m. Leg and det. A. Aptroot, 23.03.2006.





Caloplaca rubelliana





Caloplaca rubelliana

Caloplaca rubina Zahlbr.

[B 60 0011977], Chile, Región Metropolitana de Santiago, surroundings of Santiago, Laurel forest of Manquehue. Leg. F. Mattick (359), 29.11.1960, det. Reinaldo C. Vargas 2010.





Caloplaca rubina



Caloplaca rubina

Caloplaca rugulosa (Nyl.) Zahlbr.

Spores hyaline, 8/ascus, simple (! all that I have seen), 9-11 x 4-5 µm (FS). Dies stimmt nicht überein mit Malme (1926) Ark. Bot. 20A(9): 15

[B 60 0011975], Chile, Región Metropolitana de Santiago, E of Santiago, Valle del Yeso, in main cordillera, 2500 m. Leg. F. Mattick (369b), 5.11.1960, det. Reinaldo C. Vargas 16.10.2009.



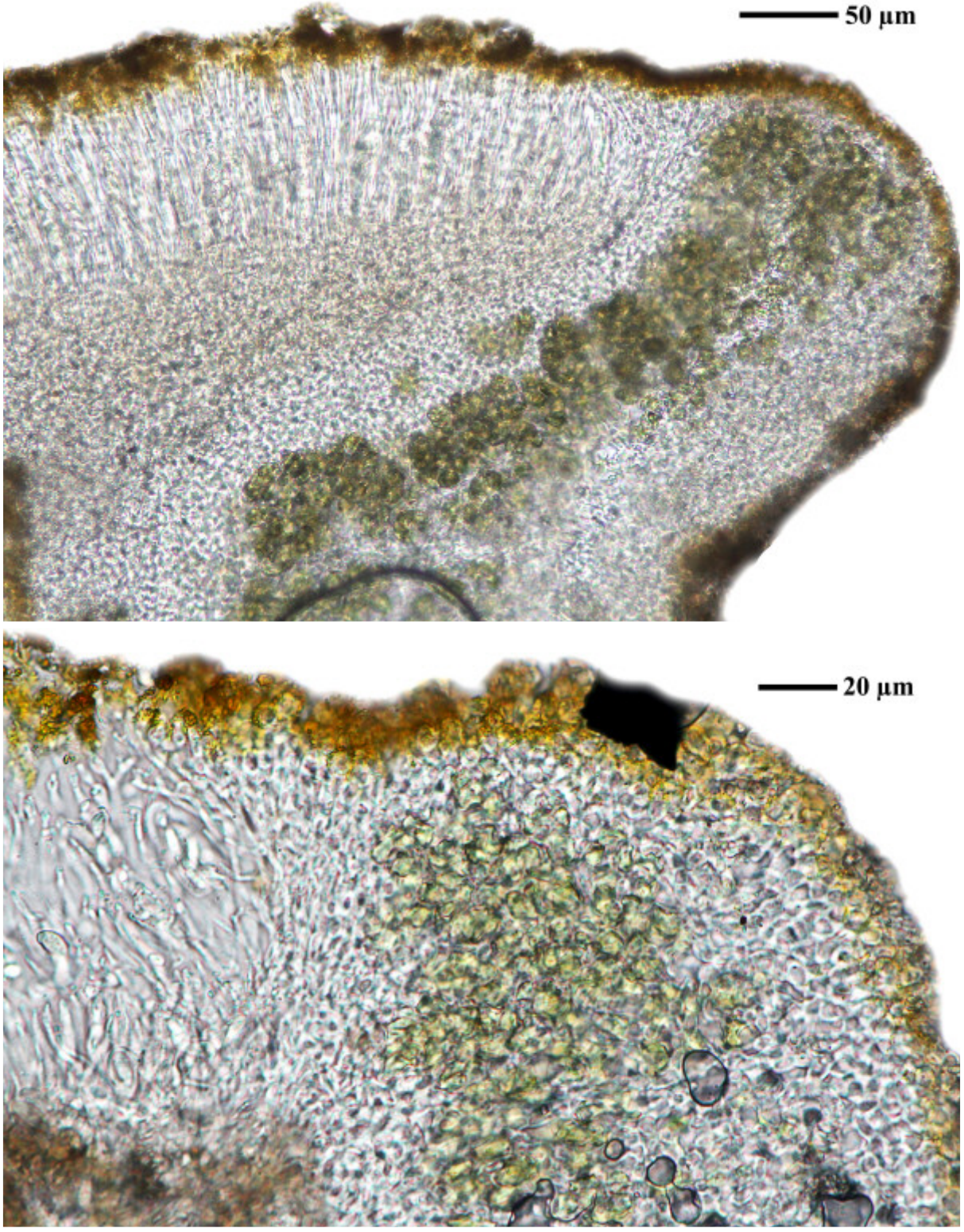




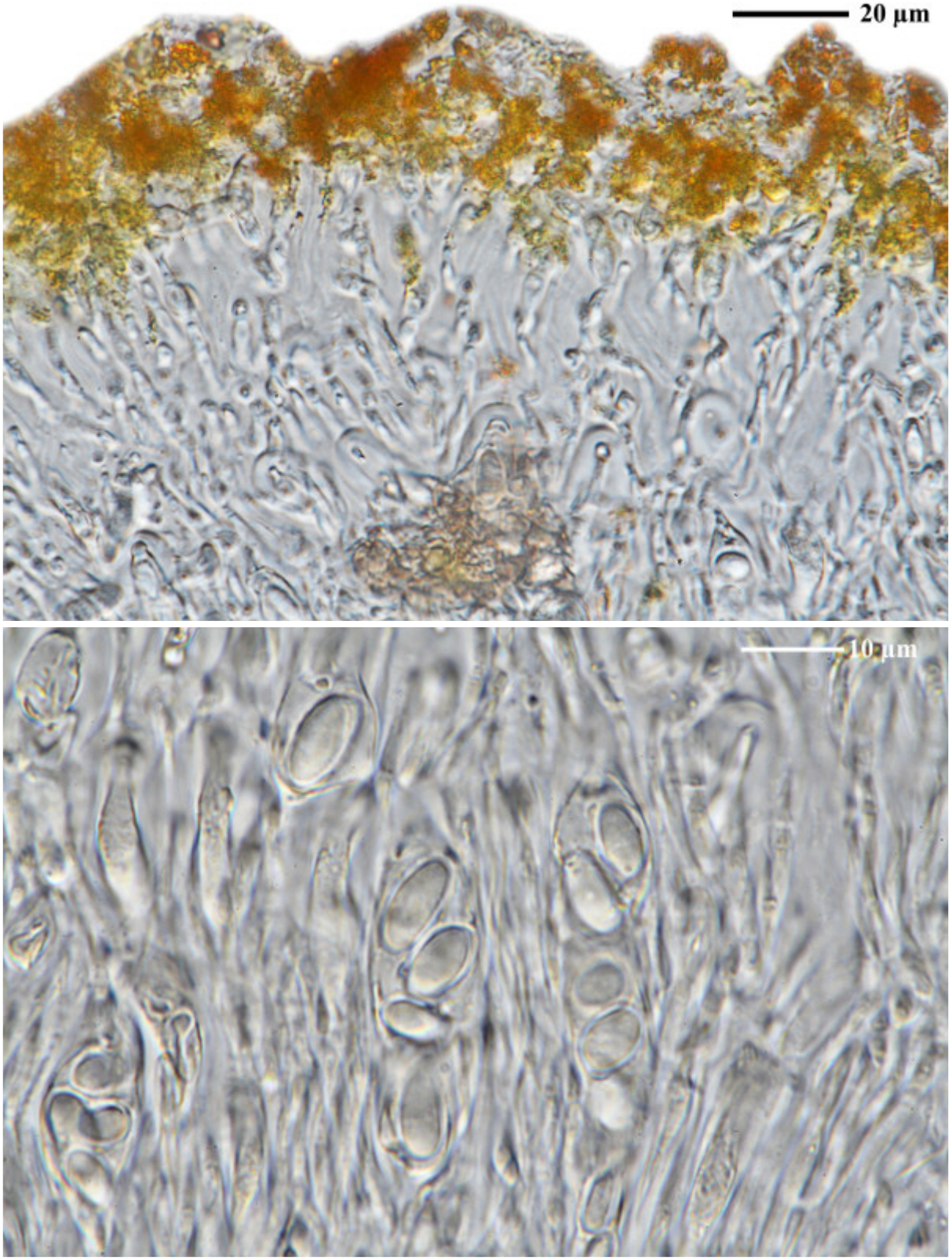
Caloplaca rugulosa



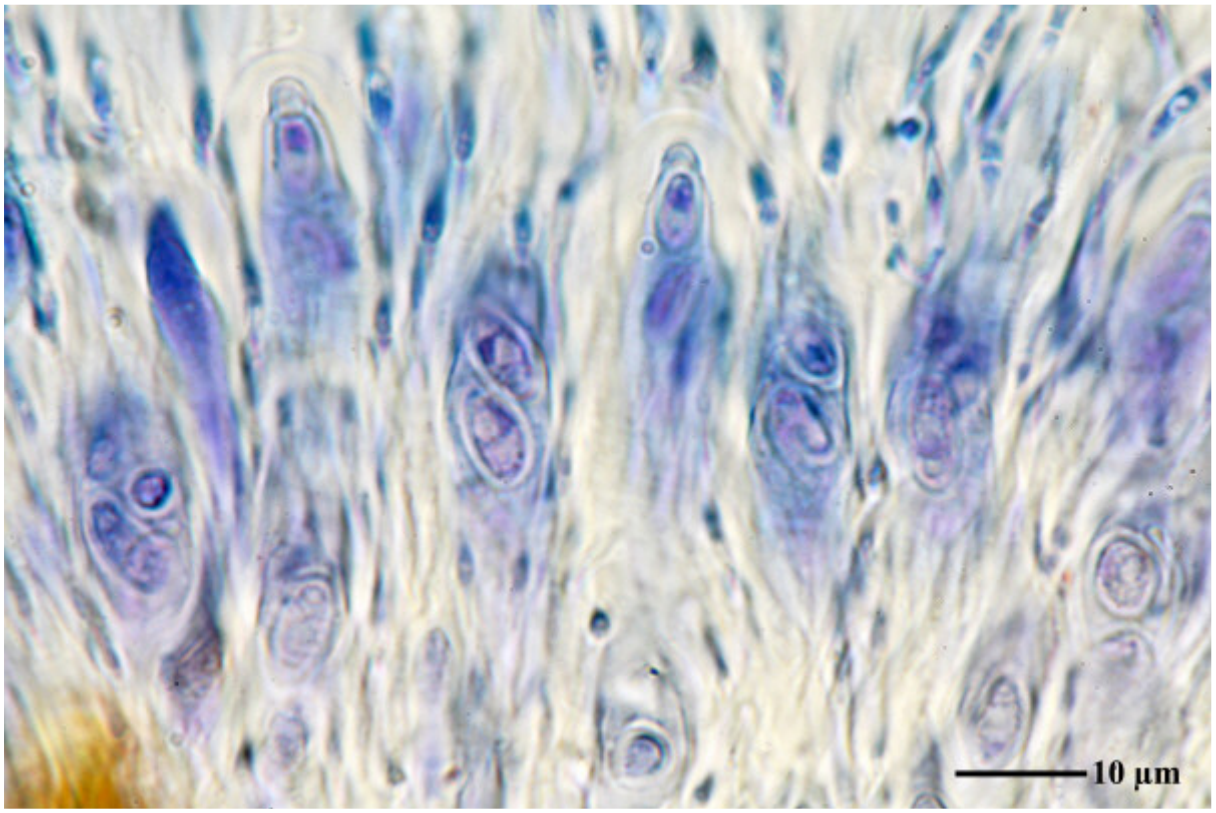
Caloplaca rugulosa

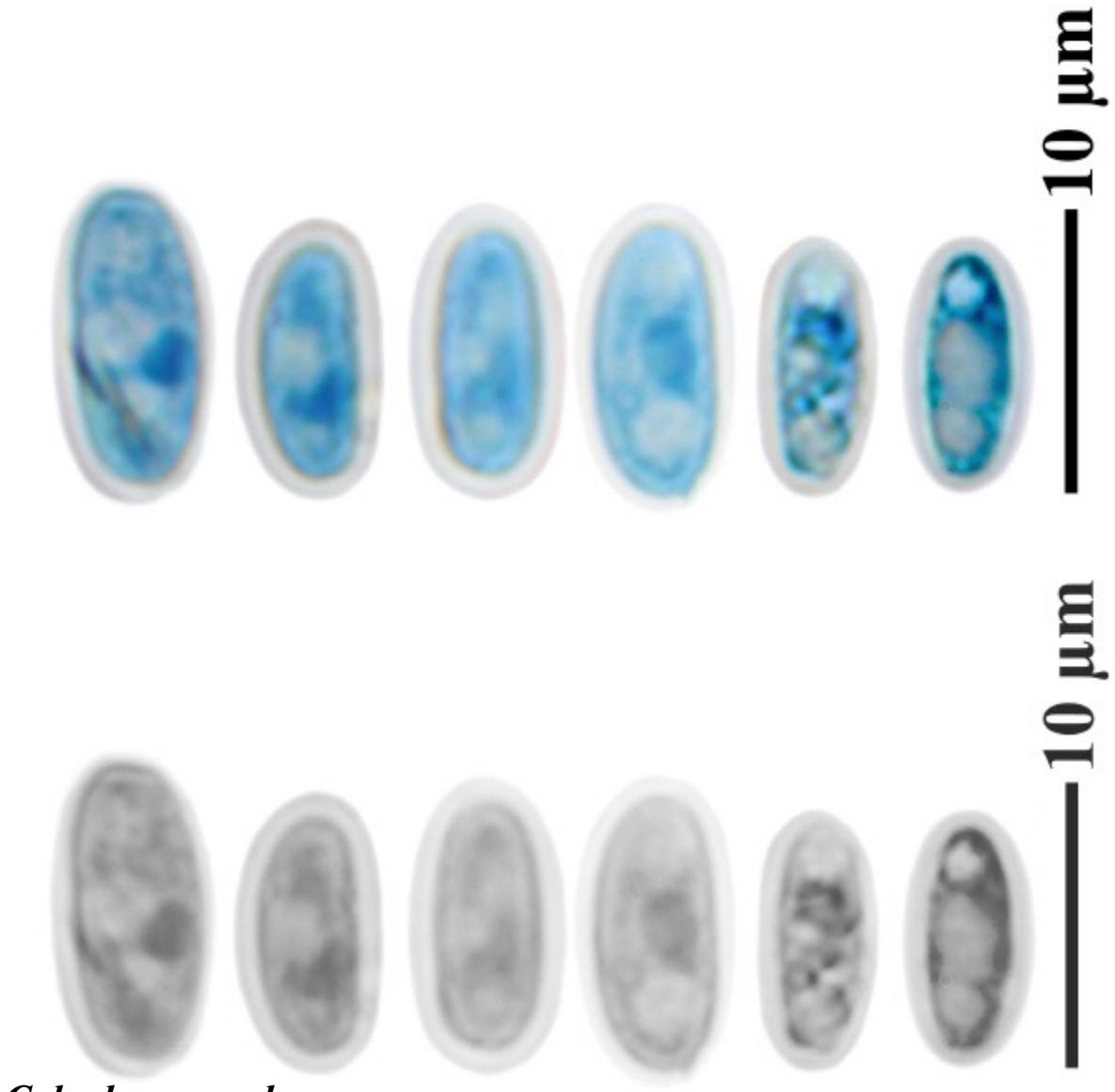


Caloplaca rugulosa

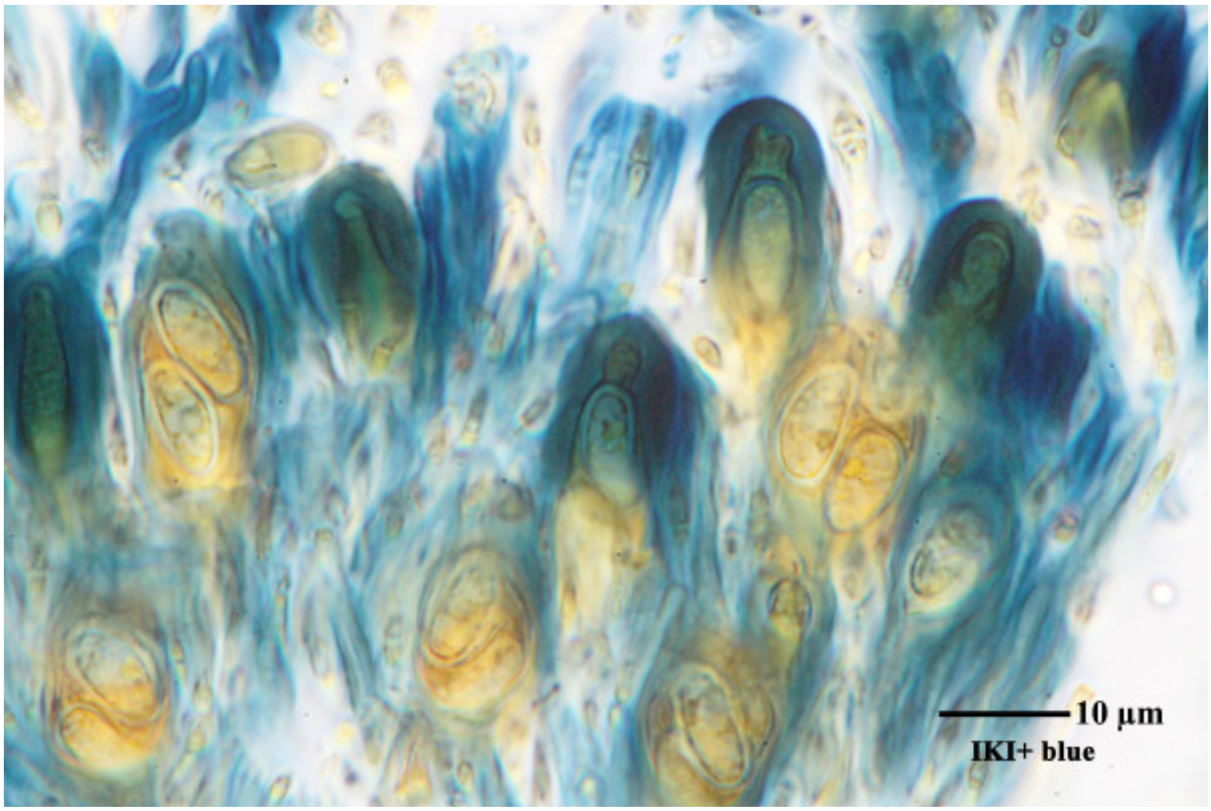


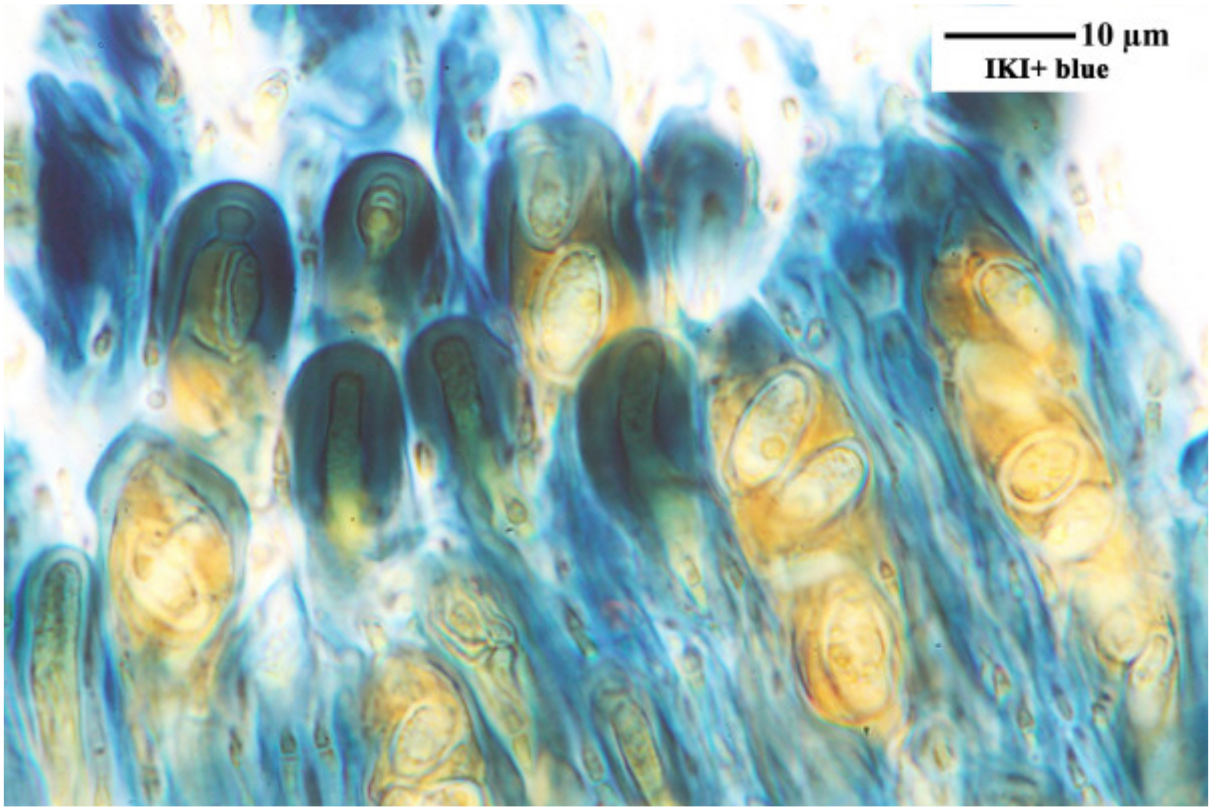
Caloplaca rugulosa





Caloplaca rugulosa





Caloplaca rugulosa

Caloplaca saxicola (Hoffm.) Nordin
[= *Calogaya pusilla* (A. Massal.) Arup, Frödén & Søchting]

On stone walls. Ascospores 12 x 6 µm

[2142], Tunesien, an Mauern und Mörtel in Cheninin, trocken. Leg. F. Schumm, 20.03.1973, det. F. Schumm 1973.



Caloplaca saxicola (Hoffm.) Nordin
[= *Calogaya pusilla* (A. Massal.) Arup, Frödén & Søchting]

On stone walls. Ascospores 12 x 6 µm

[2146], Tunesien, an Mauern und Mörtel in Cheninin, sehr trocken. Leg. F. Schumm 20.03.1973, F. det. Schumm 1973.







Caloplaca saxicola

Caloplaca saxicola (Hoffm.) Nordin
[= *Calogaya pusilla* (A. Massal.) Arup, Frödén & Søchting]

On rocks.

[6834], Spanien, Kanarische Inseln, Gran Canaria; an der Straße von San Nicolas nach Agaete im Barranco los Berreos an nord-exponierten Stellen, an Felsen, 28°02.100’ N, 15°45.464’ W, Höhe 570 m, leg. F. Schumm & U. Schwarz 02.01.2000, det. A. Aptroot 2016.





Caloplaca saxicola

Caloplaca saxicola (Hoffm.) Nordin
[= *Calogaya pusilla* (A. Massal.) Arup, Frödén & Søchting]
[= *Calogaya saxicola* (Hoffm.) Vondrák, in Vondrák, Frolov, Davydov, Urbanavichene, Chesnokov, Zhdanov, Muchnik, Konoreva, Himelbrant & Tchabanenko, Lichenologist 48(3): 178 (2016)]

[LIAF_12], Afghanistan, Prov. Samangan, etwa 15 km W des Passes Kotal-i-Mirza Atbili (Kotal-i-Rabotak), ca. 10 km E Ayvak, 68°08' E, 36°13' N, ca. 1170 m. Zenitflächen von Felsrücken eines flachbankigen Kalkes. Leg. M. Steiner, (Ste 44/2), 03.-06.06.1970. LICHENOTHECA AFGHANICA NR. 12 (ausgegeben als C. biatorina (A.Massal.) J.Steiner);det. A.Aptroot & P.L.Nimis





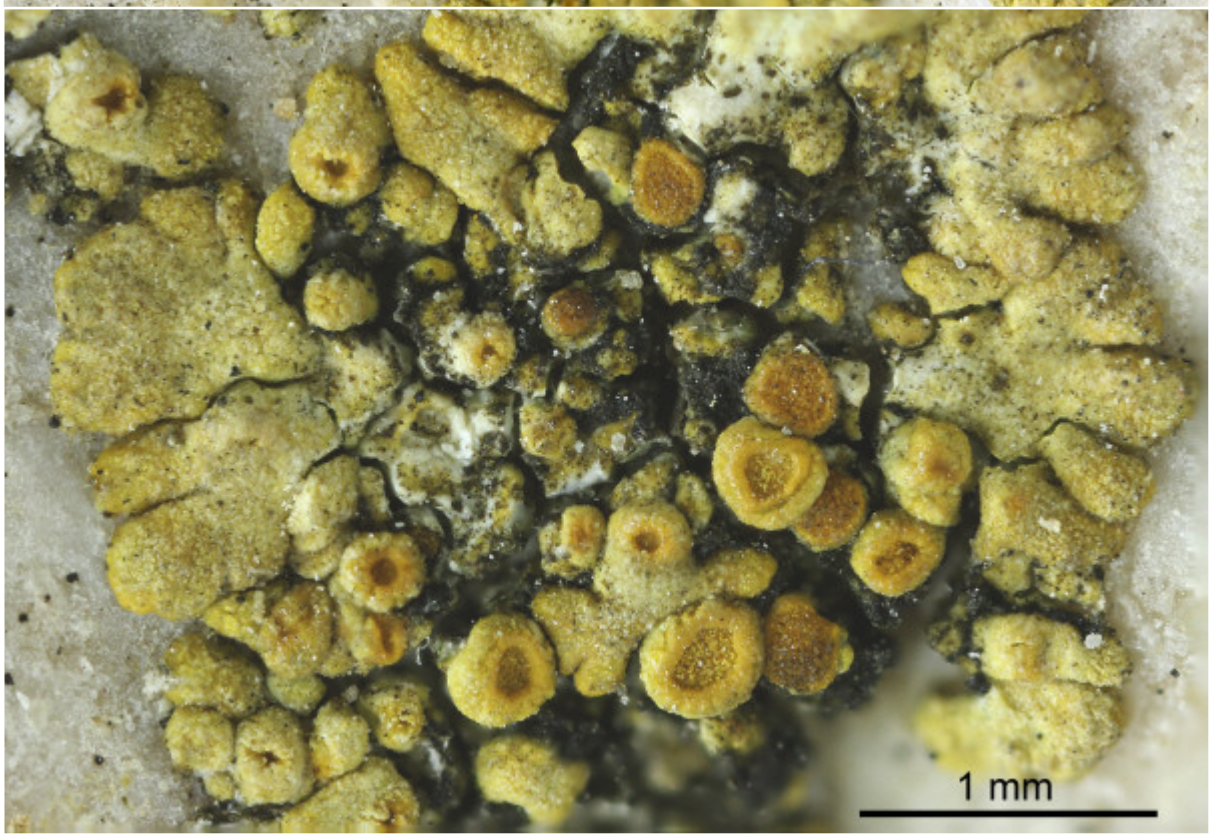
Caloplaca saxicola

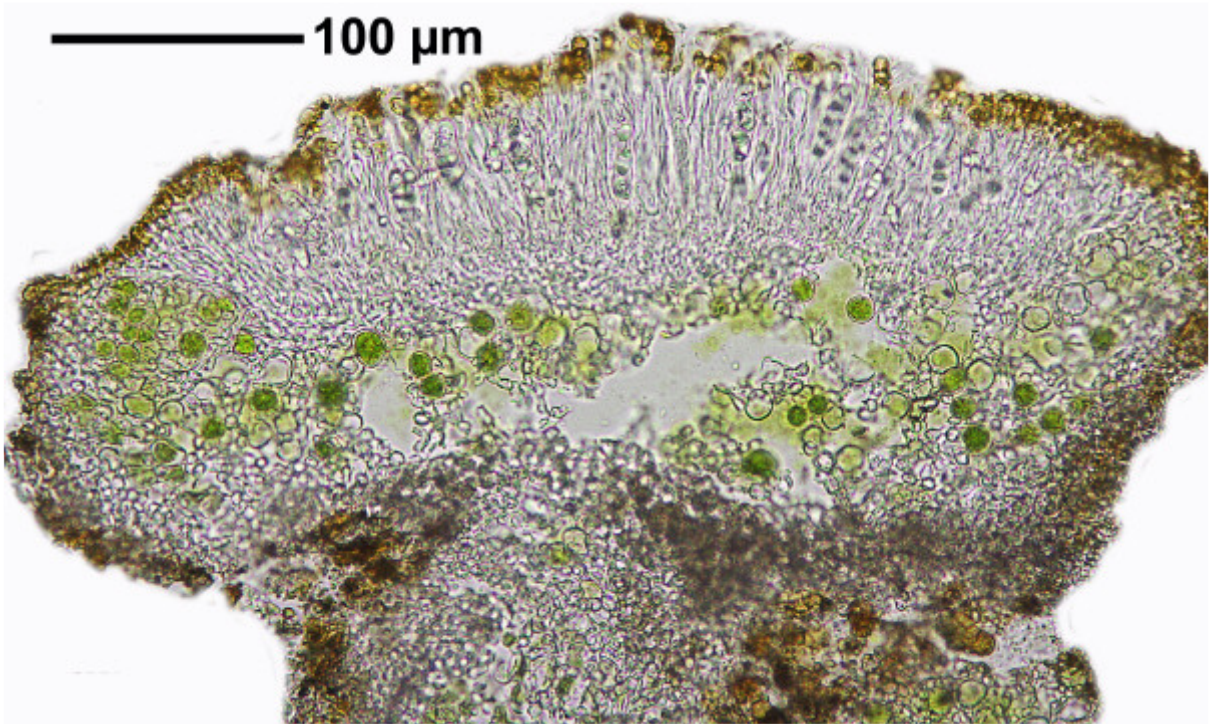
Caloplaca saxicola (Hoffm.) Nordin
[= *Calogaya pusilla* (A. Massal.) Arup, Frödén & Søchting]

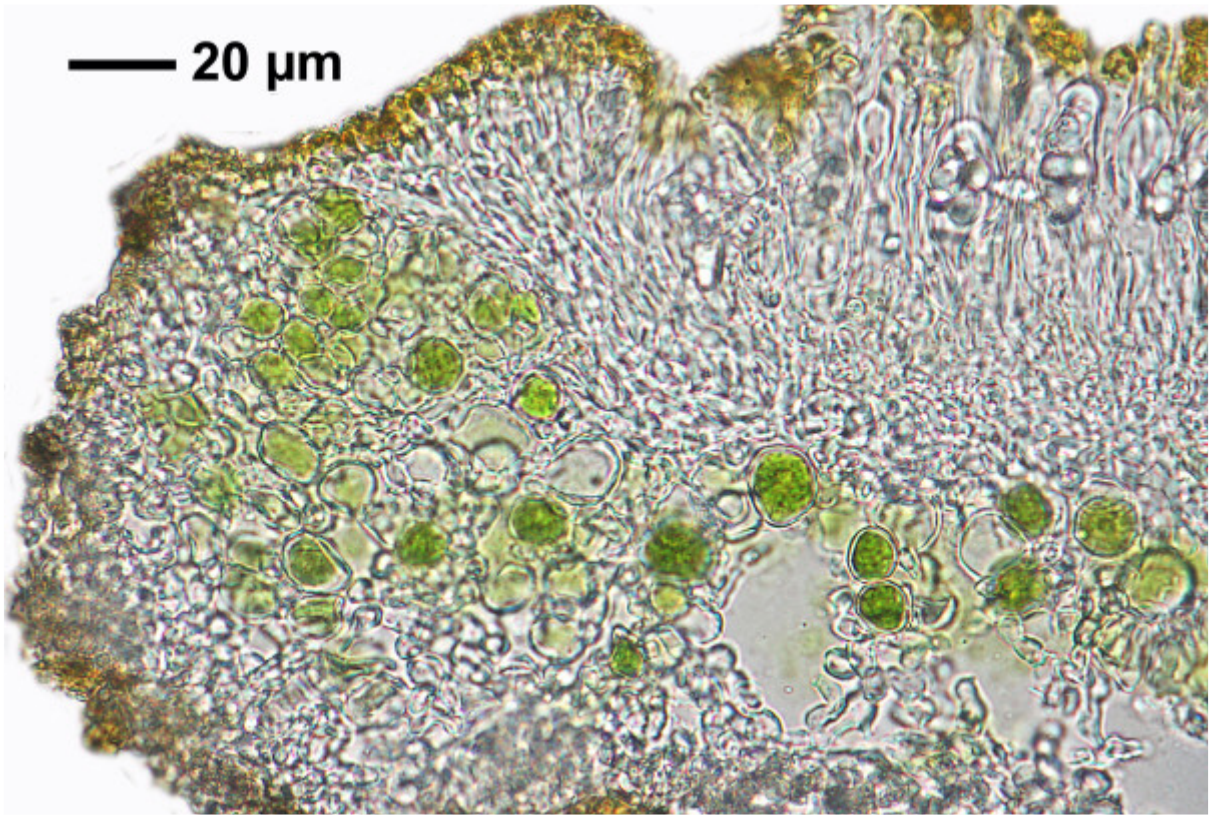
Thallus gelb bis orange, dicht angepreßt, Rosetten 1-3 cm breit, im Zentrum meist dicht bereift, am Rand gelappt. Randlappen 2 x 1,5 mm. Sporen hyalin, polar-2-zellig, 8/Ascus, 8.5-11 x 4-6 µm. Th. K+ rot

[16565], Germany, Baden-Württemberg, Schwäbische Alb, Kreis Göppingen. Messelstein bei Donzdorf, an Kalkfelsen, 48.69045° N, 9.83113° E, 750 m. Leg. et det. Schumm 25.07.2010.

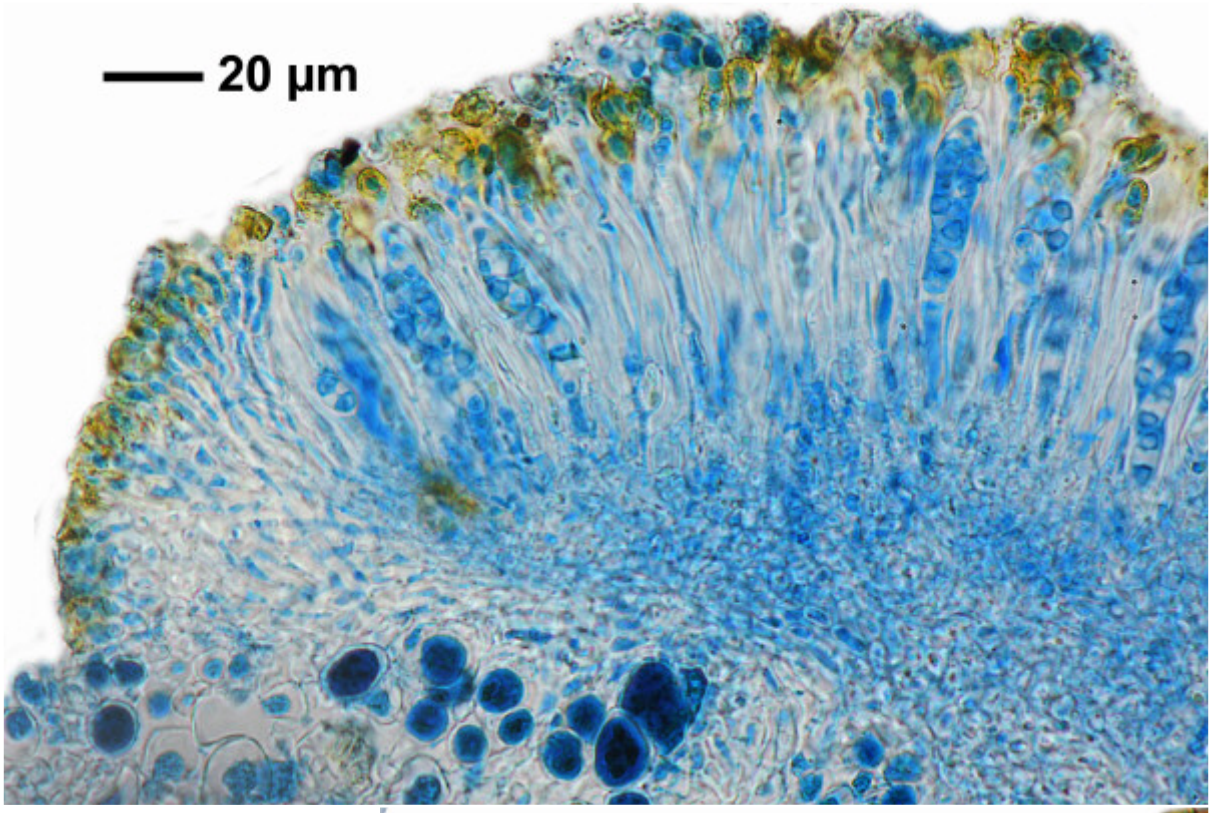


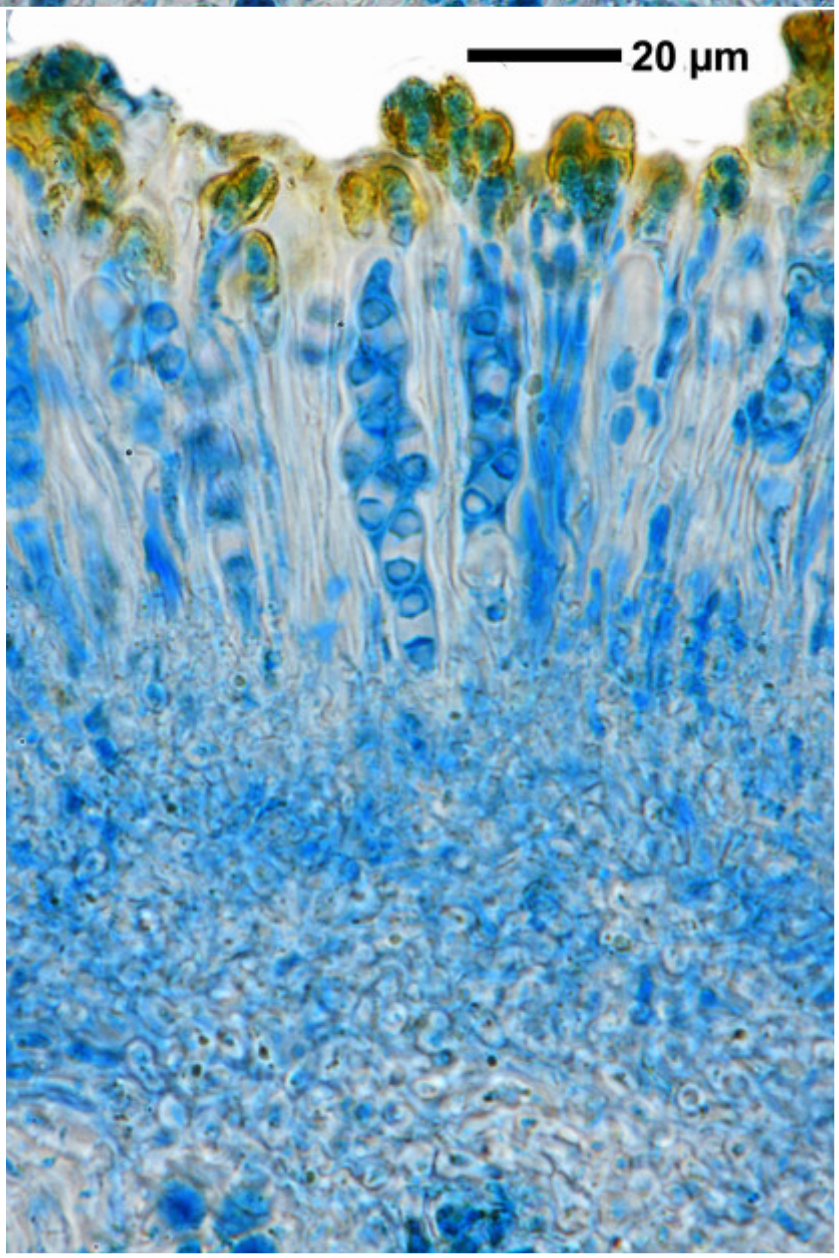




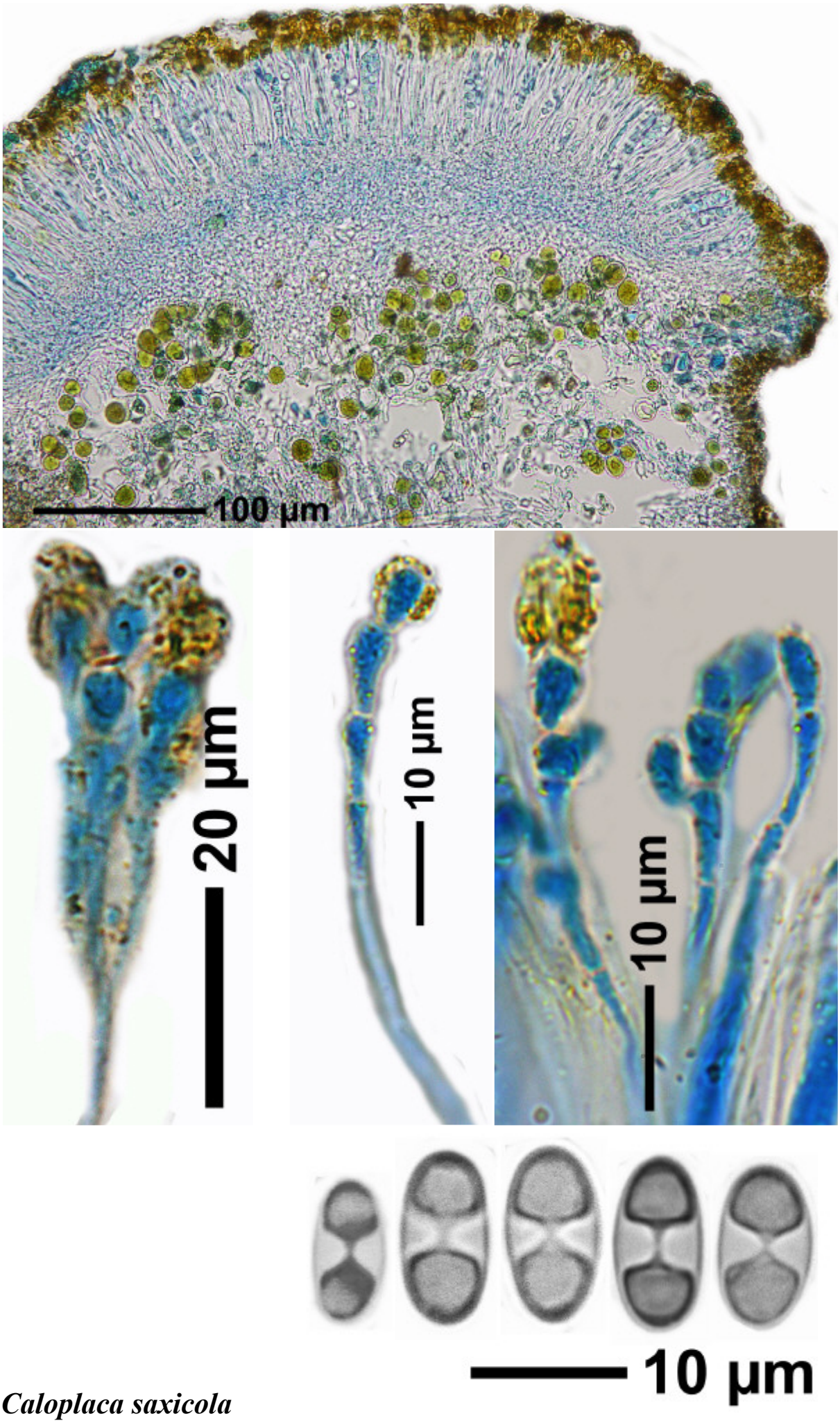


Caloplaca saxicola





Caloplaca saxicola



Caloplaca saxicola

Caloplaca saxicola (Hoffm.) Nordin
[= *Calogaya pusilla* (A. Massal.) Arup, Frödén & Søchting]
[= *Calogaya saxicola* (Hoffm.) Vondrák, in Vondrák, Frolov, Davydov, Urbanavichene, Chesnokov, Zhdanov, Muchnik, Konoreva, Himelbrant & Tchabanenko, Lichenologist 48(3): 178 (2016)]

[ABL 73816], Armenia, Ararat, Vedi, Urtsadzor, Khosrov Forest State Reserve, 39°59’07” N, 44°53’51” E, 1390 m, on limestone. Leg. A. Aptroot, 17.06.2015, det. A. Aptroot 2015.







Caloplaca saxicola

Caloplaca saxicola (Hoffm.) Nordin
[= *Calogaya pusilla* (A. Massal.) Arup, Frödén & Søchting]
[= *Calogaya saxicola* (Hoffm.) Vondrák, in Vondrák, Frolov, Davydov, Urbanavichene, Chesnokov, Zhdanov, Muchnik, Konoreva, Himelbrant & Tchabanenko, Lichenologist 48(3): 178 (2016)]

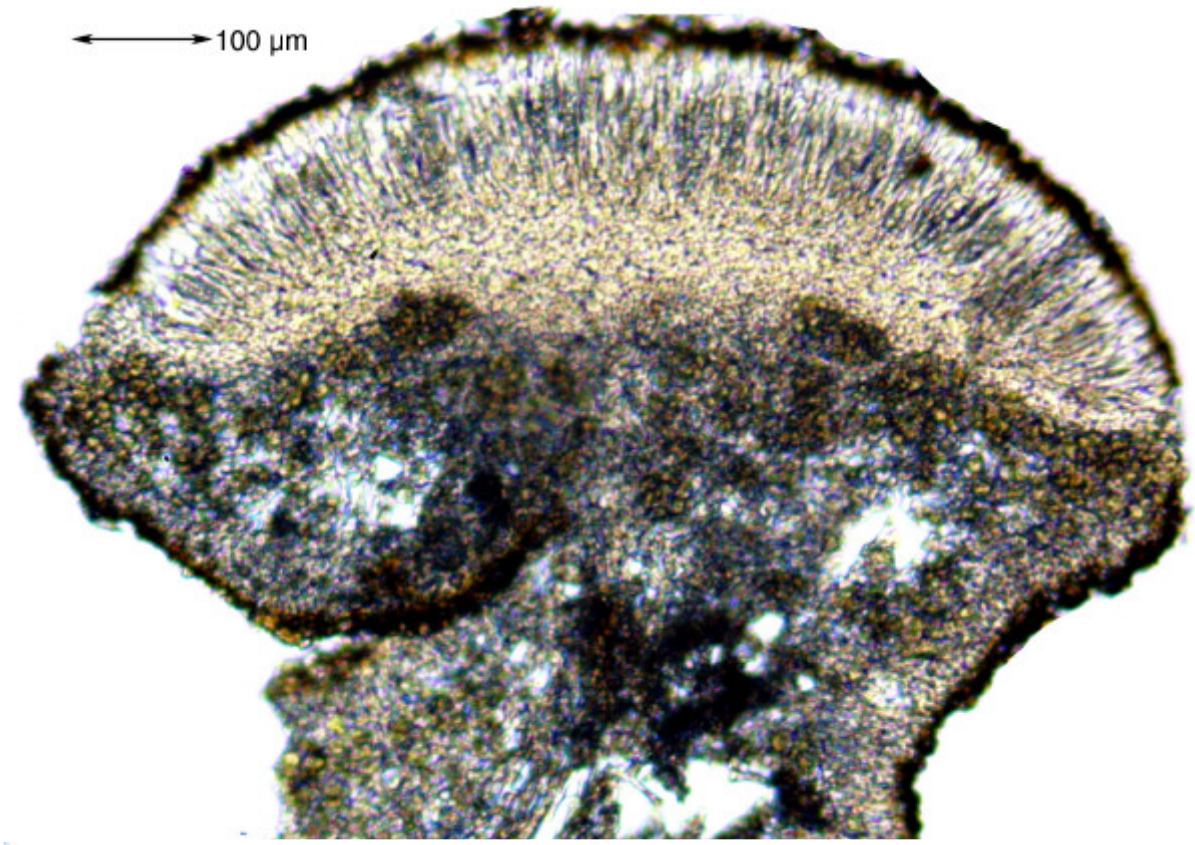
Thallus gelborange, 0,5-1 cm, unregelmäßig rosettig, am Rand mit verlängerten Lappen; Endlappen 0,5-0,8 mm lang und 0,4-0,5 mm breit, dichtschließend aber nicht zusammengewachsen, konvex. Oberseite matt bis rauh, gelblich bereift. Zentrum aus abgerundeten, konvexen, 0,7-0,8 mm großen Feldchen. Oberrinde 30-50 µm, paraplectenchymatisch, Zellen ca. 10 µ, antiklin angeordnet. Mark locker, intricat, Hyphen ca. 4,4 µm dick. Algenzellen 12-15 µm. Unterrinde fehlt. Isidien fehlen; Sorale fehlen. Apothecien bis ca. 1,9 mm, verengt aufsitzend. Thallusrand etwas höher als die Scheibe, 0,15 mm dick, thallusfarbig. Scheibe dunkler orange, schwach konvex. Epithecium ca. 8 µm, durch Parietinkristalle orange. Hymenium hyalin, ca. 110 µm. Hypothecium hyalin, ca. 50 µm. Algen auch unter dem Hypothecium. Asci ca. 63 x 13 µm. Paraphysenenden stark kopfig verdickt. Sporen ellipsoidisch, nicht bauchig aufgetrieben, 12-13,1 x 6,5-7,6 µm, Septen 1,2-2,2 µm. Chemie: Th K+ rot. Ökologie: saxicol.

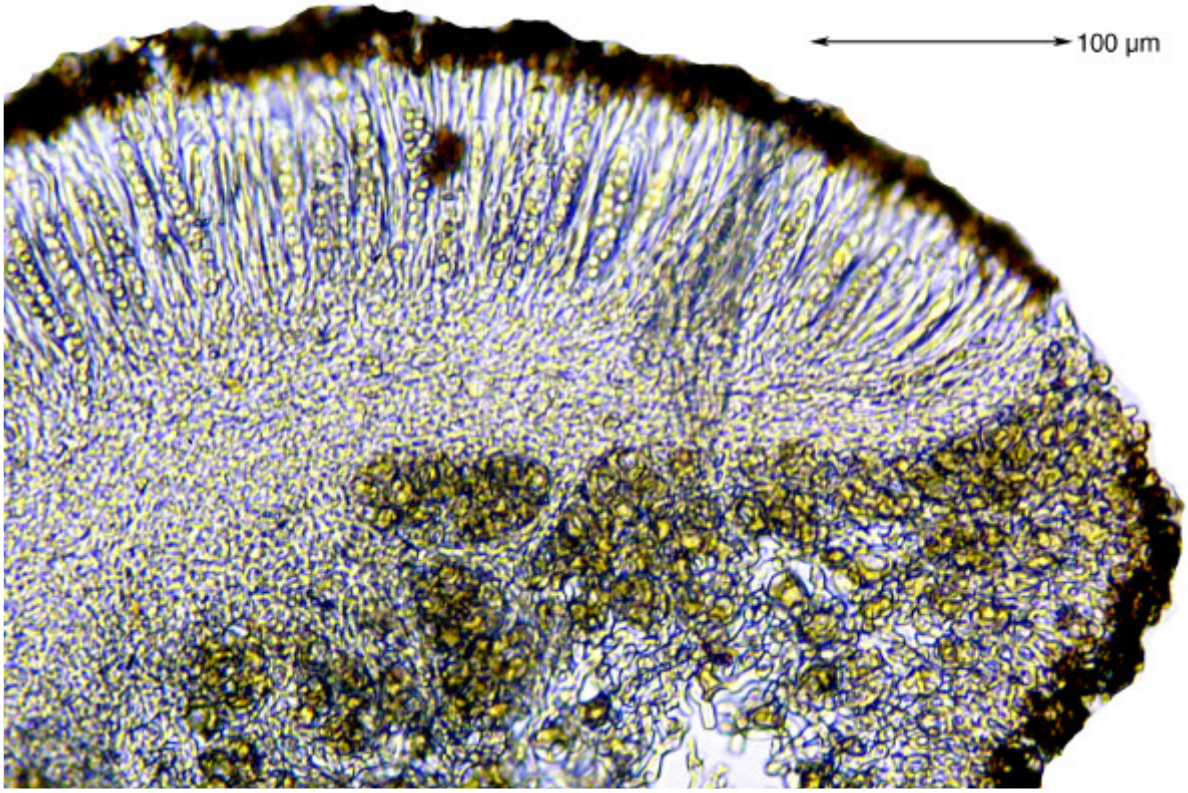
[VJ 8168] ex Herbarium Volker John, Turkey: „Burum“, leg. V Pietschmann 1914, det. Ö. Szatala 1953 als *Gasparrinia biatorina* A.Massal. var. *pusilloides* (Steiner); Dublette ex W. - Det. A. Aptroot 2019.



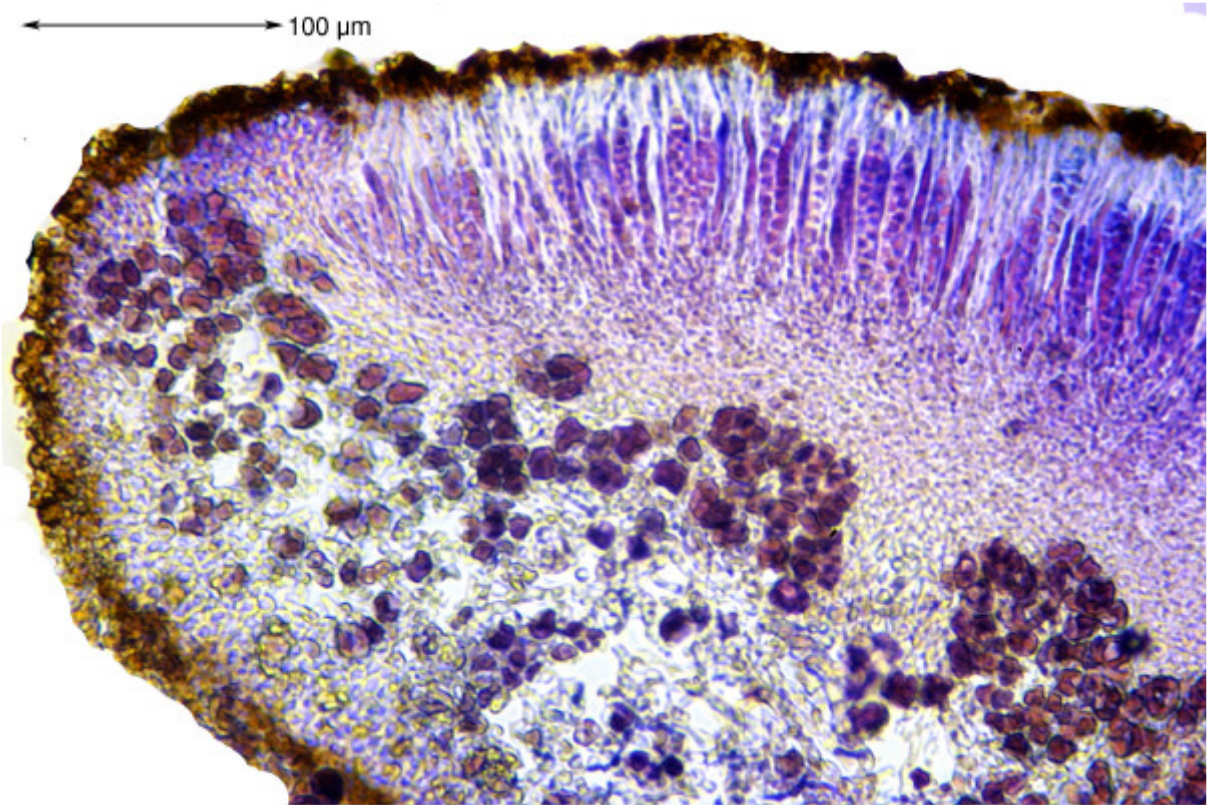


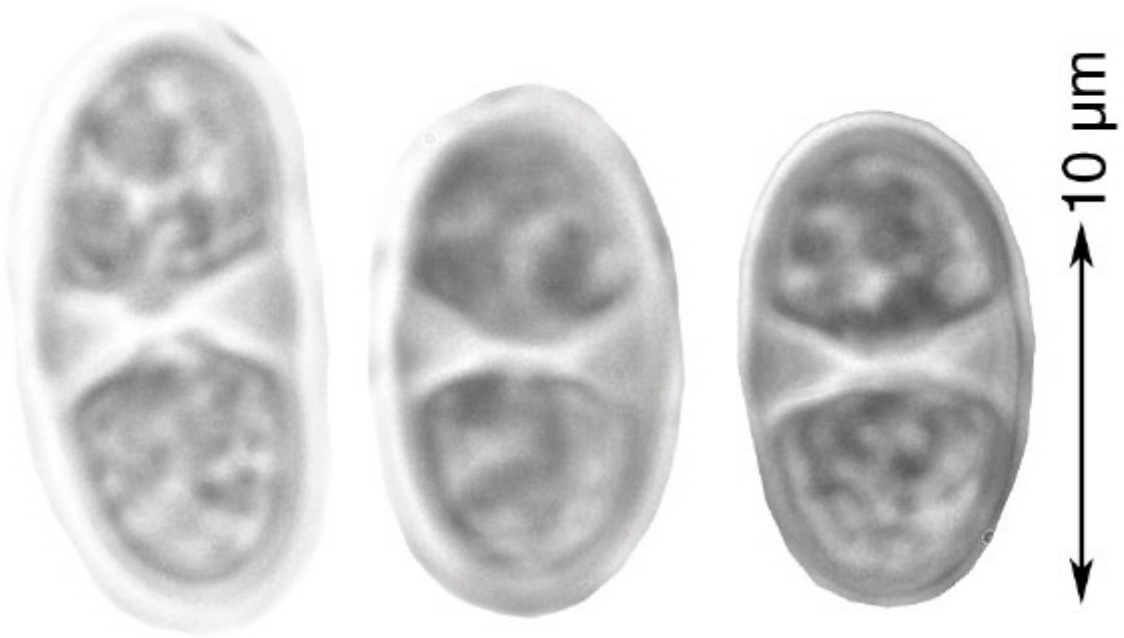
Caloplaca saxicola



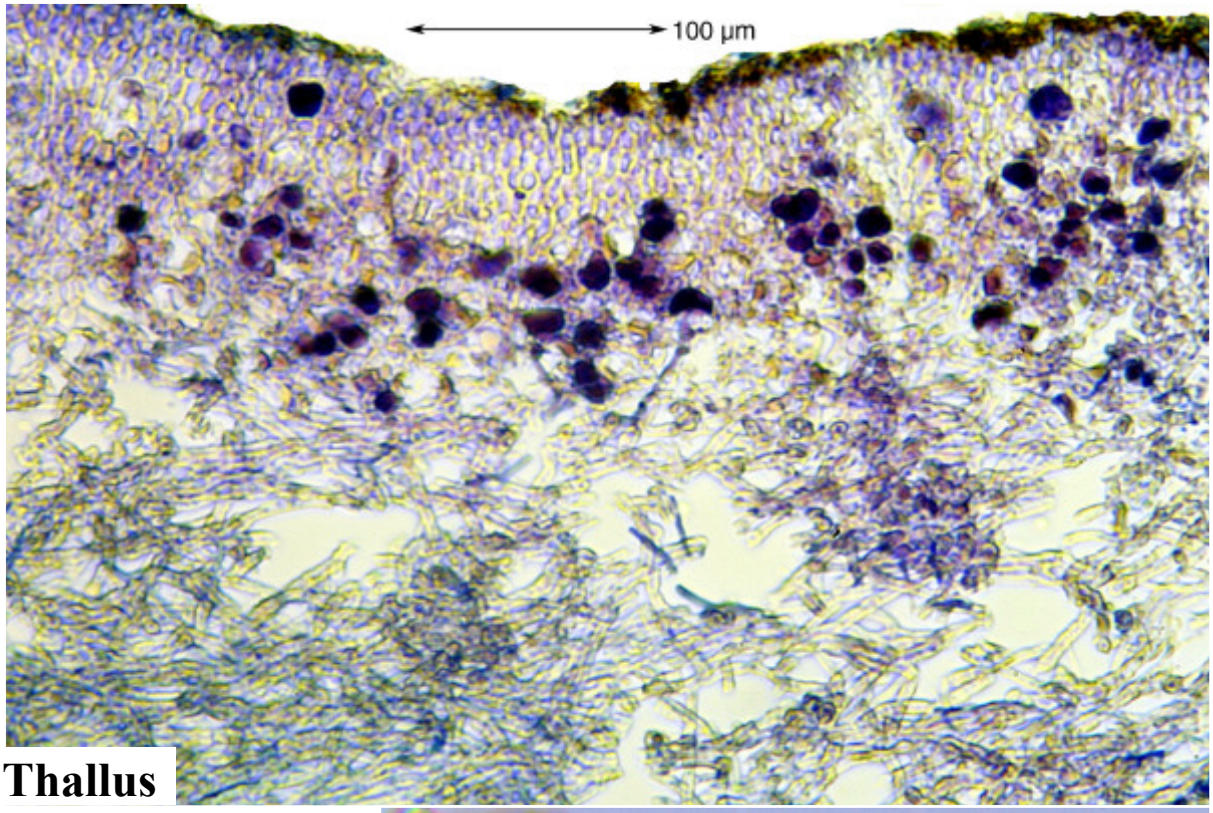


Caloplaca saxicola

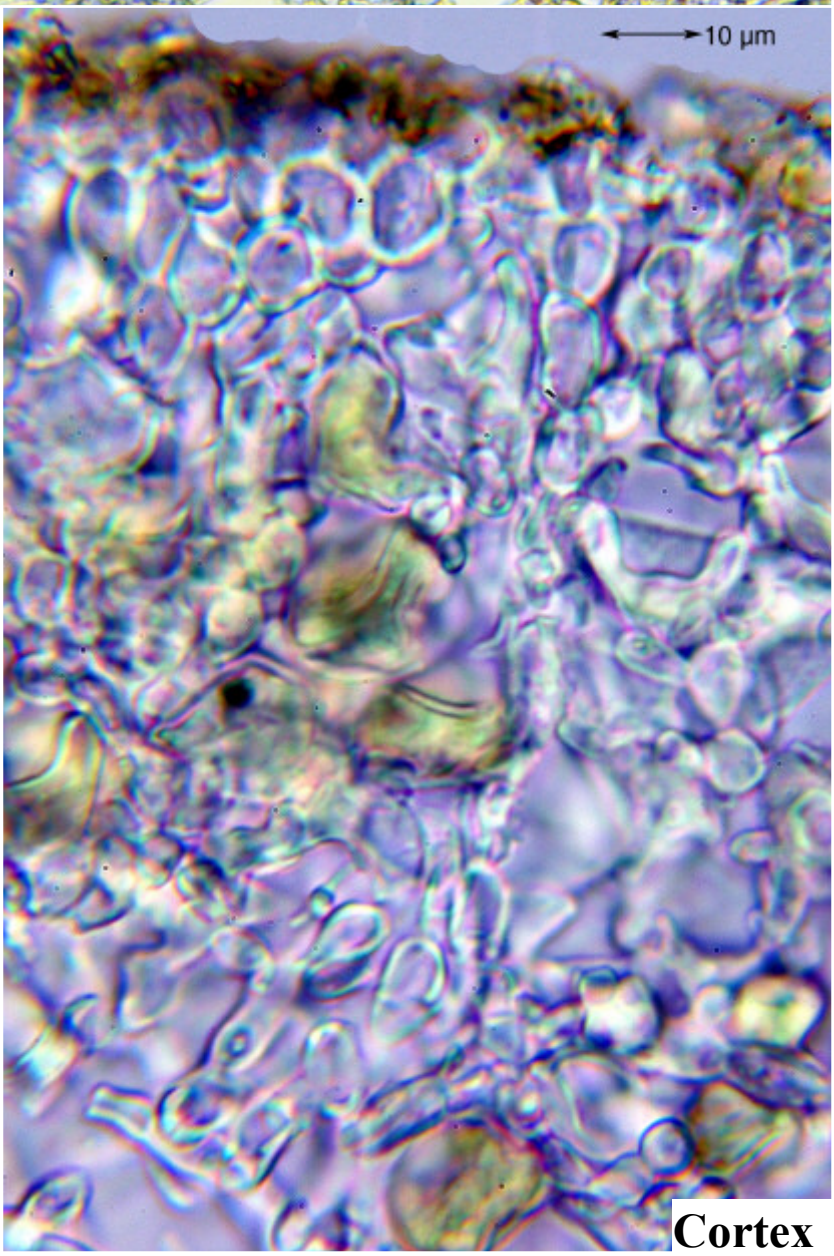




Caloplaca saxicola



Thallus



Caloplaca saxicola

Cortex

Caloplaca saxifragarum Poelt
[= *Athallia saxifragarum* (Poelt) Arup, Frödén & Søchting]

Spores 10-11 x 6.3 µm, septum 4.7-5.6 µm (FS)

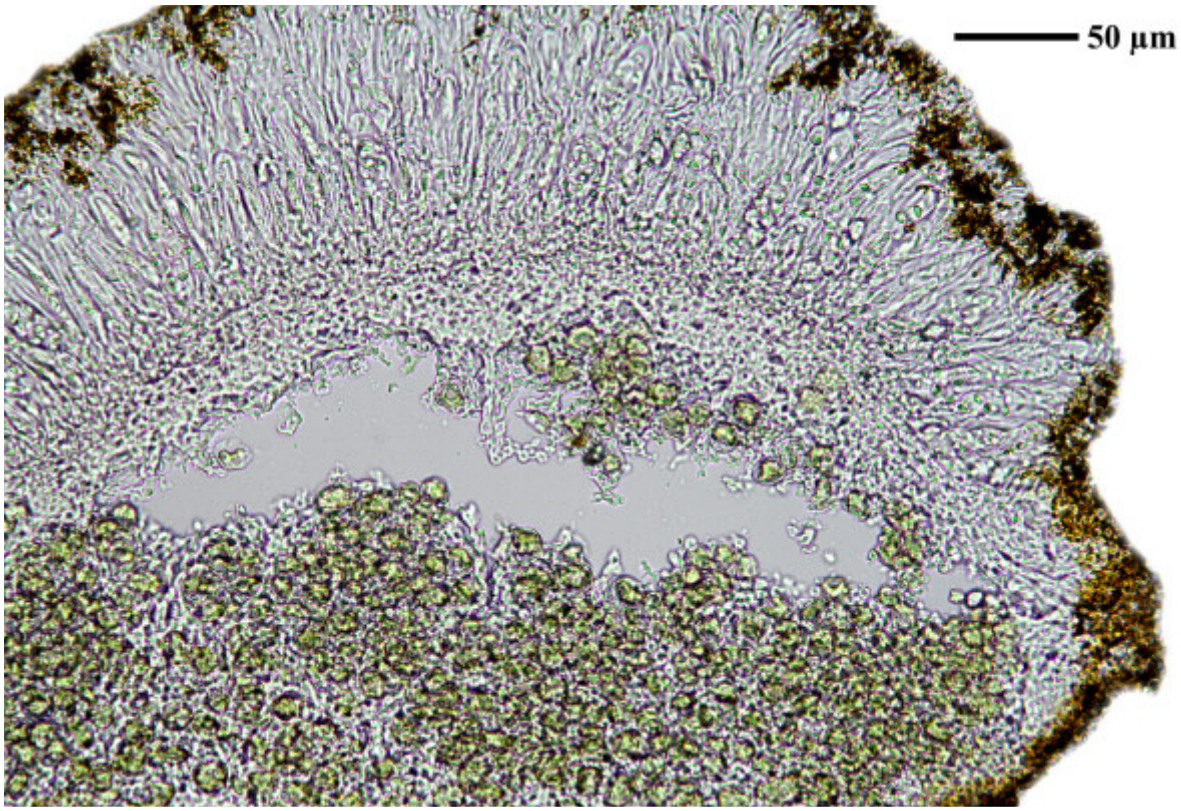
[BR5030015236076], Austria, Stiria, Hochschwab montium Alpium, Knappensteig, Polster, 1800 m. Ad plantas emortuos in rupibus. Leg. et det. A. Vězda, 19.09.1982.



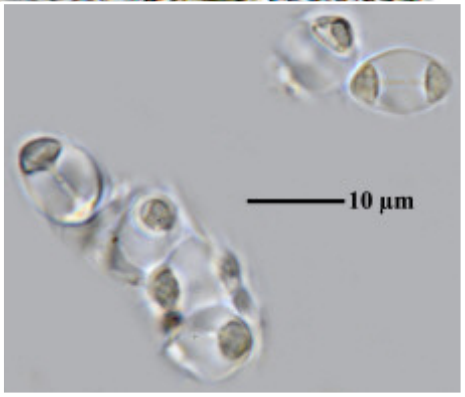




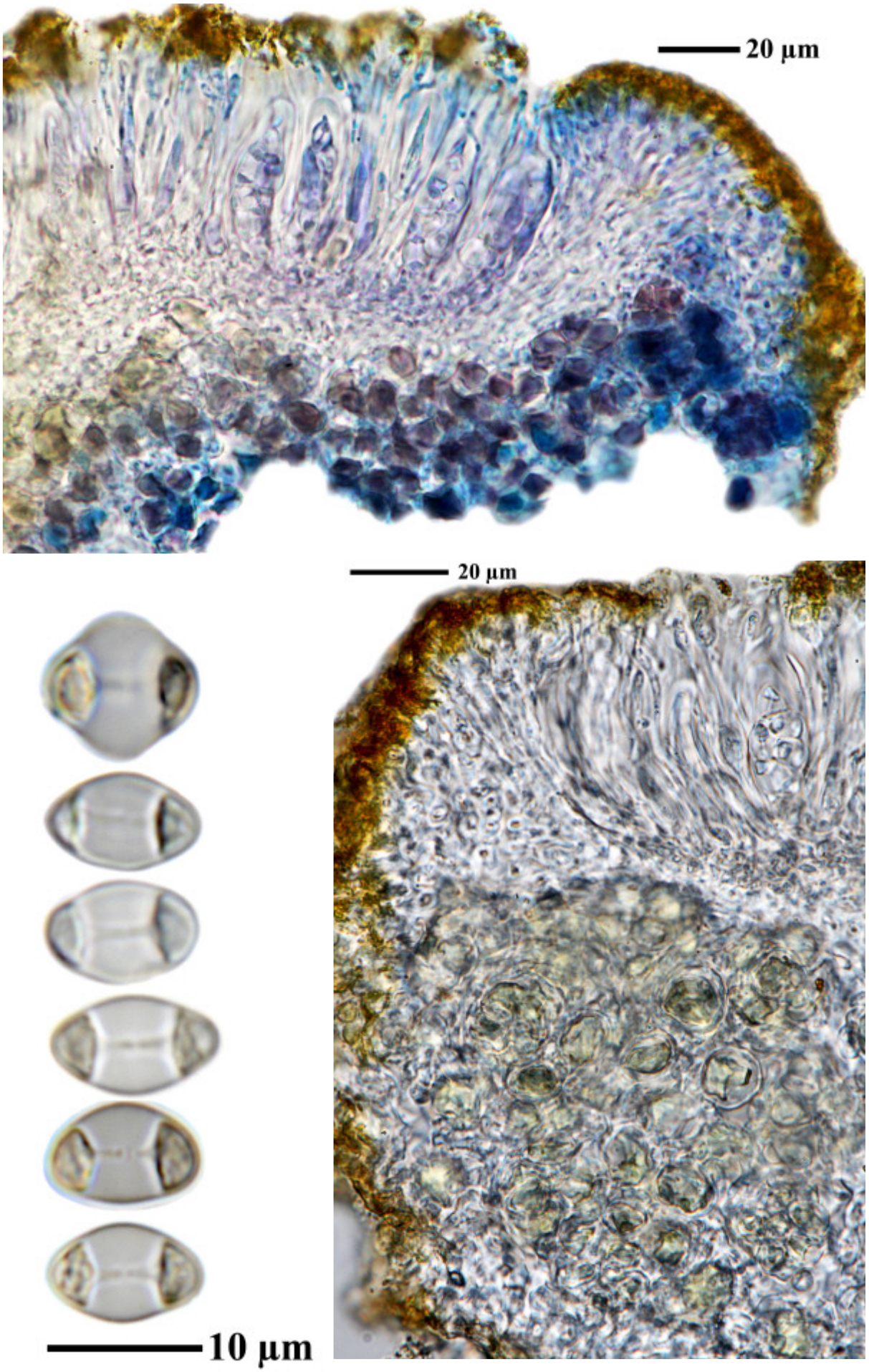
Caloplaca saxifragarum







Caloplaca saxifragarum

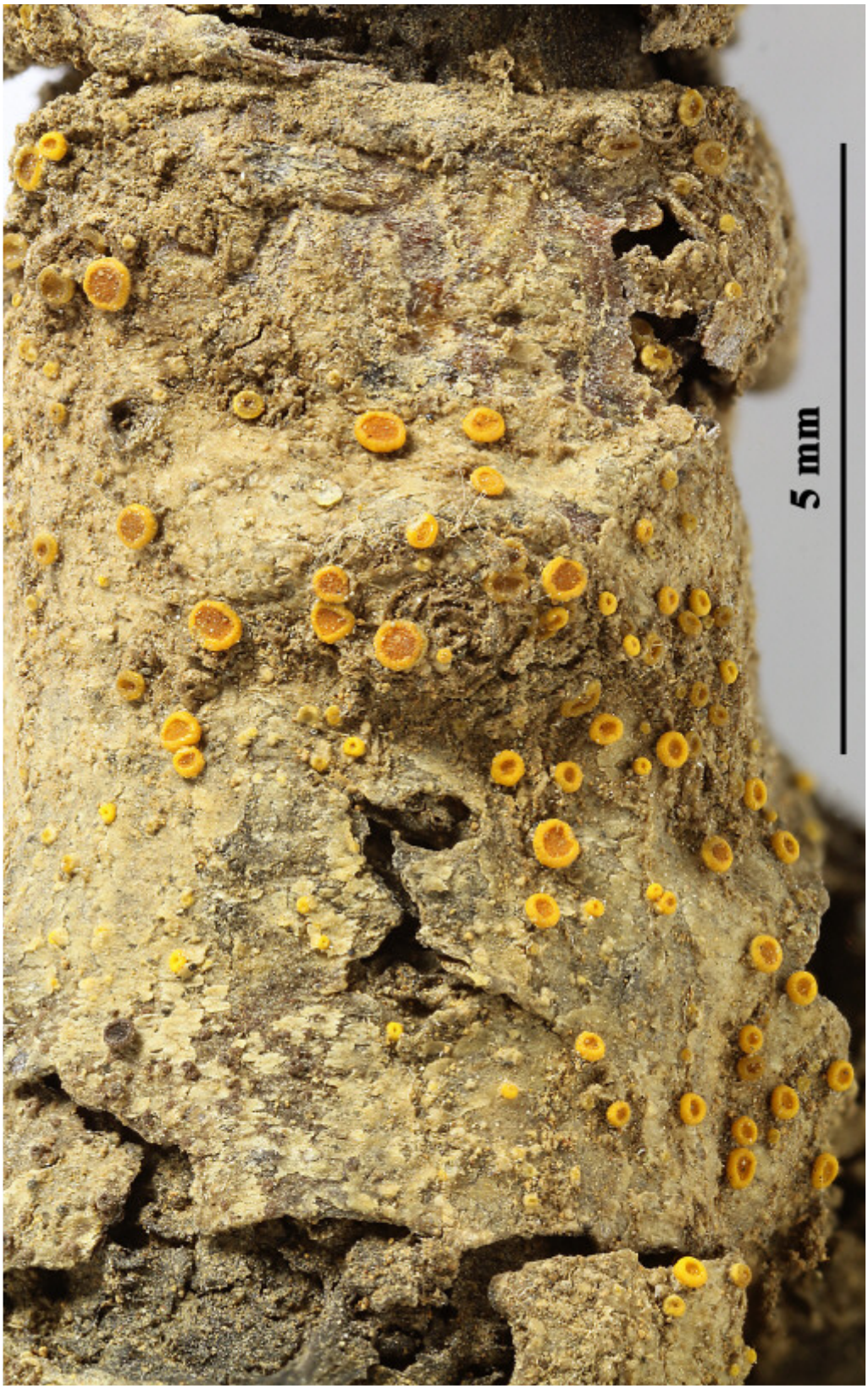


Caloplaca saxifragarum

Caloplaca saxifragarum Poelt
[= *Athallia saxifragarum* (Poelt) Arup, Frödén & Søchting]

Spores 8/ascus, 9-11 x 6-7 µm, septum 3-4 µm (AA)
Spores 14-15.2 x 9.3-10.7 µm, septum 5.6-5.9 (FS)

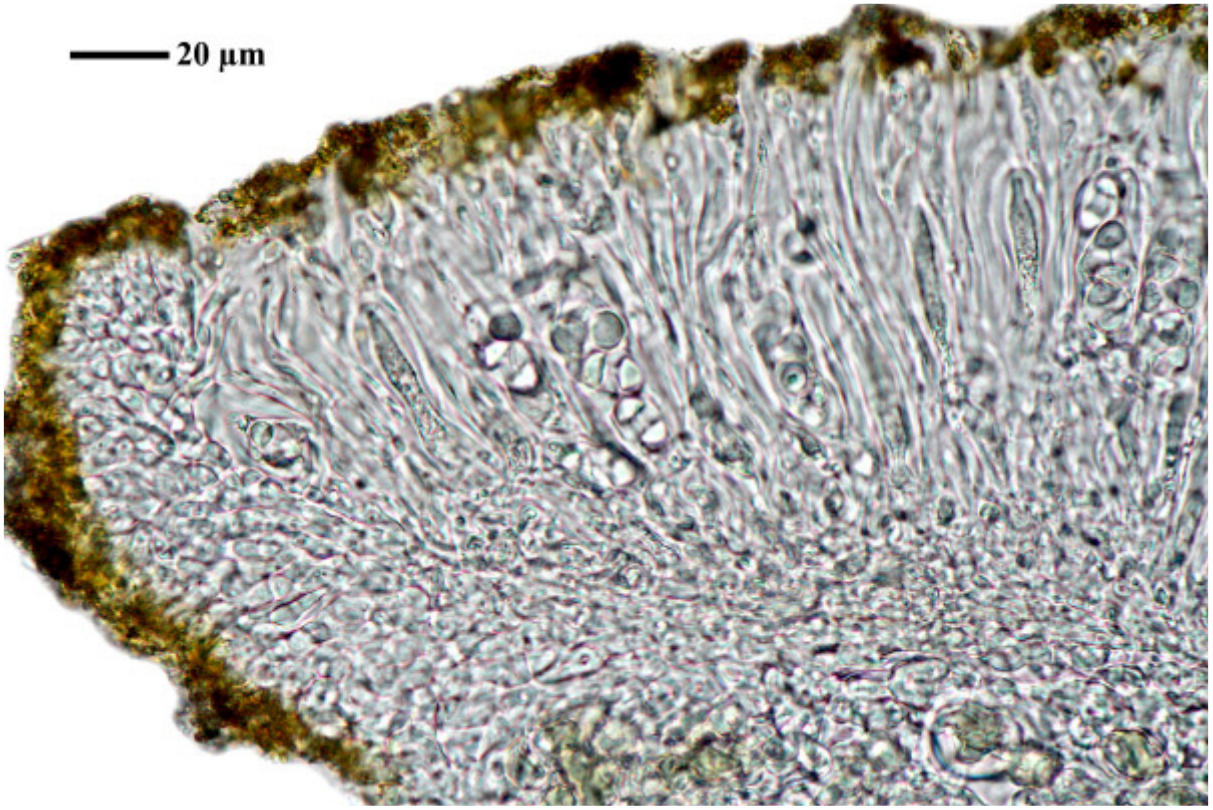
[BR5030036237564], Iceland,O-Island, Egilstadir, on Salix wood, 27.07.1980, det. A. Aptroot



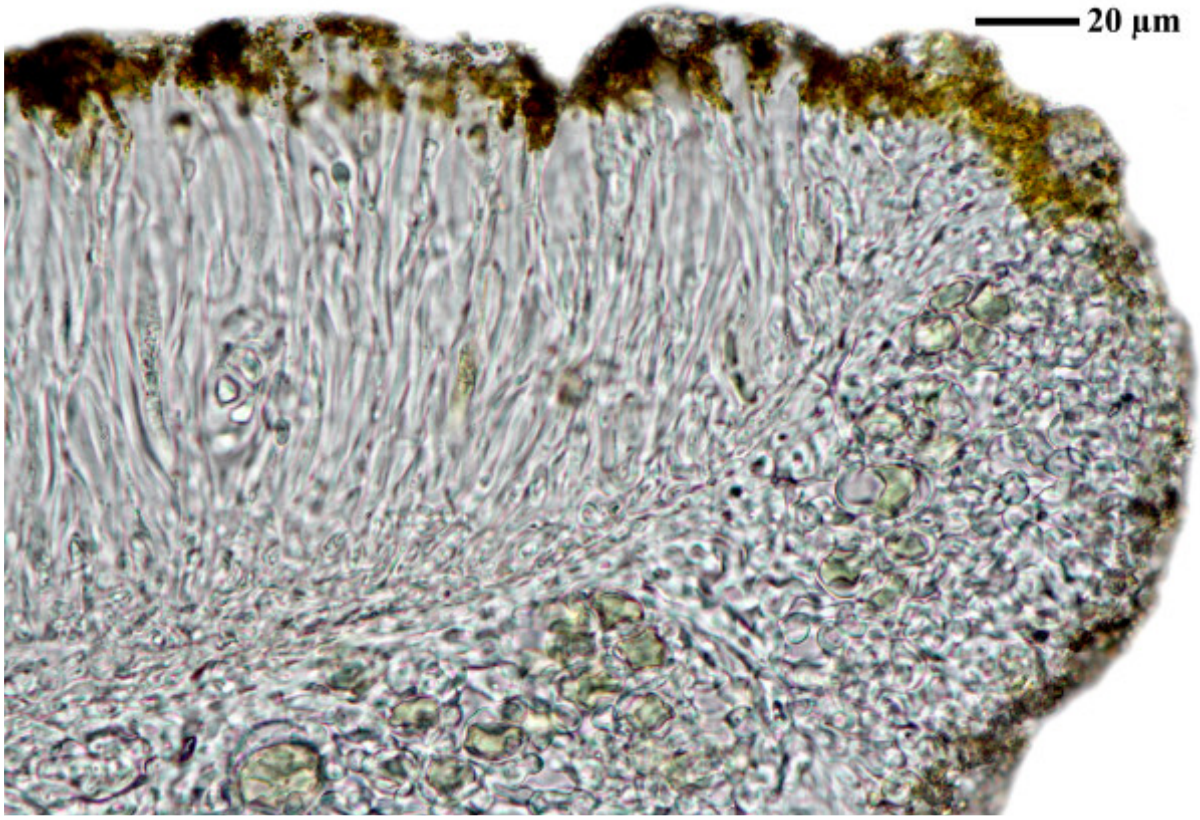


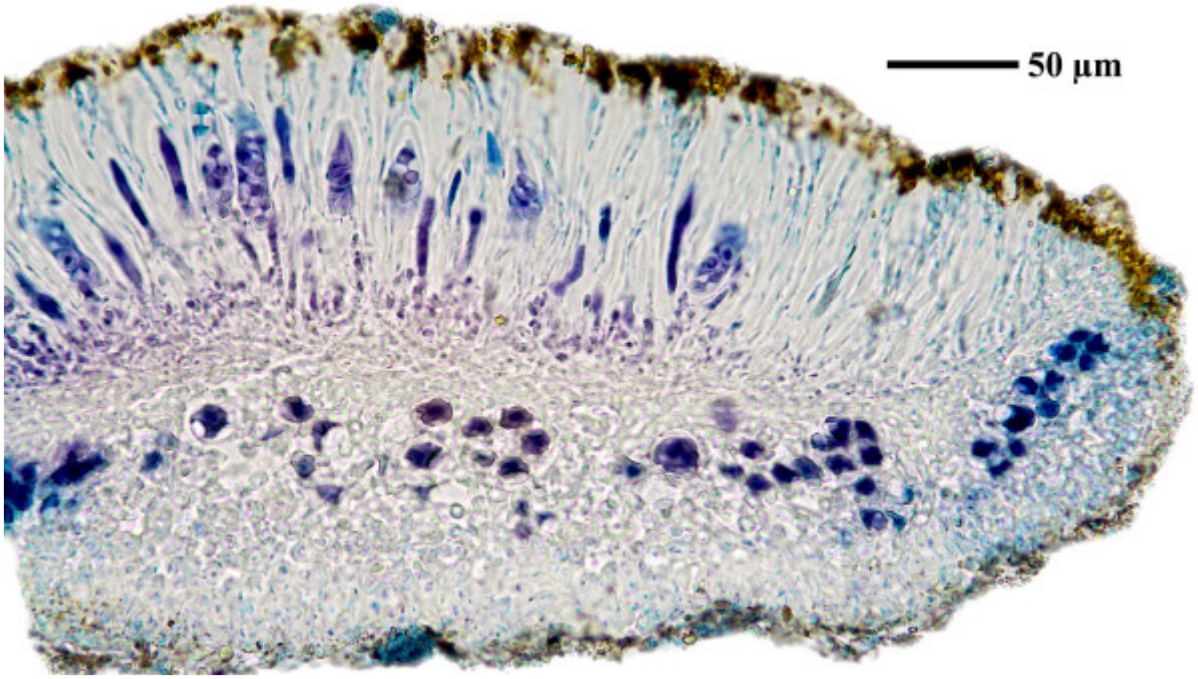
Caloplaca saxifragarum





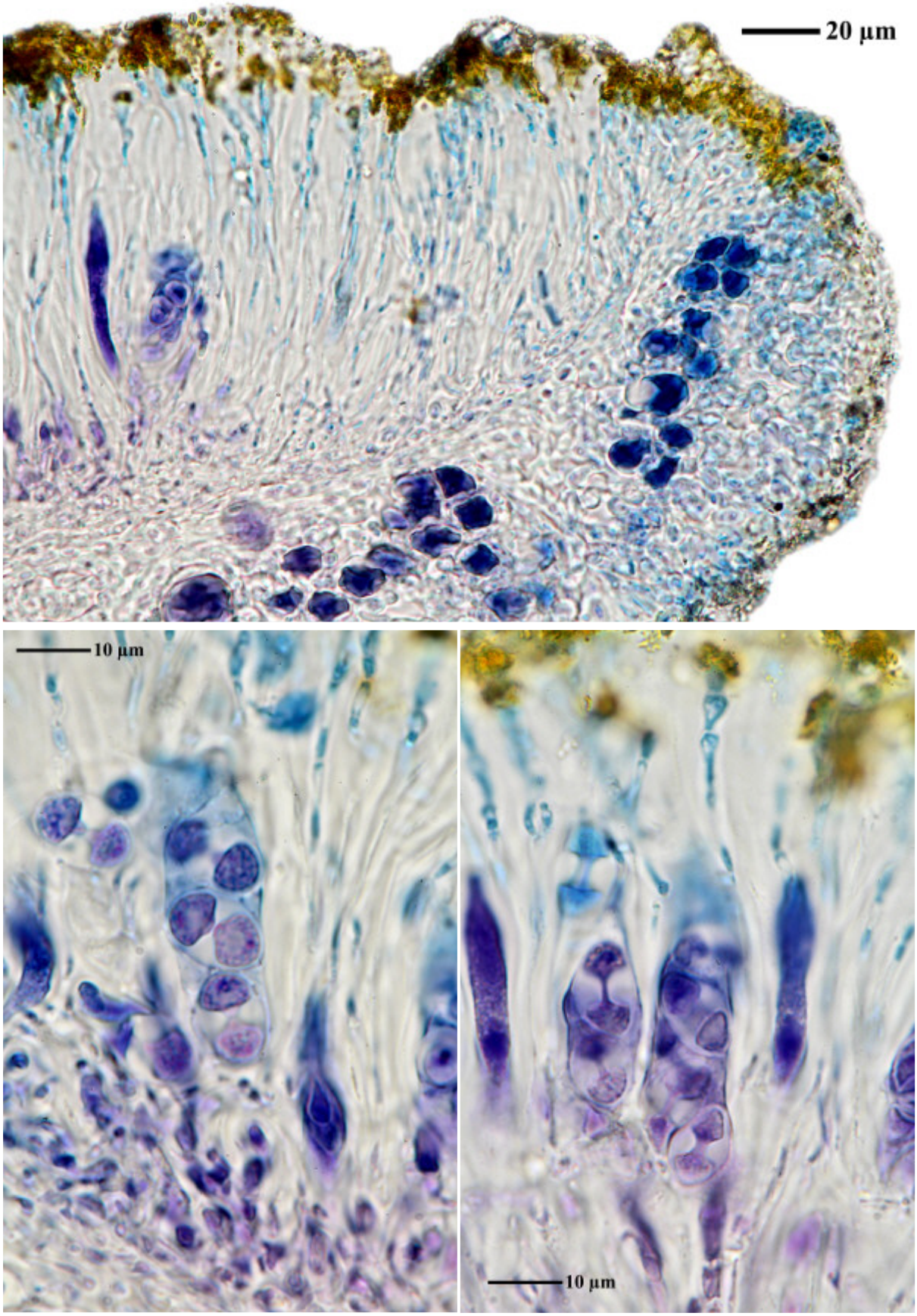
Caloplaca saxifragarum







Caloplaca saxifragarum



Caloplaca saxifragarum

Caloplaca scarlatina Zahlbr.
[= *Filsoniana scarlatina* (Zahlbr.) S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur, in Kondratyuk et al. 2013]

Thallus saxicolous, scattered brownish-orange areoles with whitish spots or cracks. Apothecia biatorine to lecanorine, 0.2-0.5 mm diam., reddish brown, deeply immersed at first, very soon covering the entire surface of areoles, 3-5 per areole, polygonal. Ascospores 8/ascus, (9-)12-15(-17) x (5.5)6-7(-8) µm in water, septum (1-)3-4.5(-5) µm thick in water. Chemistry: parietin (major), fallacinal (minor), parietinic acid (minor), teloschistin (minor), physcion bisanthrone (trace); Thallus and apothecia K+ red, C-.

Lit.: Zahlbruckner (1941): xxx (nova Zelandia, saxicola). - Denkschriften der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Klasse 54: 366.
Lit.: Kondratyuk, S., Kärnefelt, I., Elix, J.A. & Thell, A. (2007) Contributions to the Teloschistaceae of Australia. - Bibliotheca Lichenologica 96: 163.

[KK20344], Australia, New South Wales, c. 20 km west of Armidale, in a rocky pasture with granite and porphyritic rocks, at the Bundarry Road, 900 m, 30°31'S, 151°30' E. Leg. K. Kalb & J. Williams, 9.8.1988, det. S. Kondratyuk, 2008.

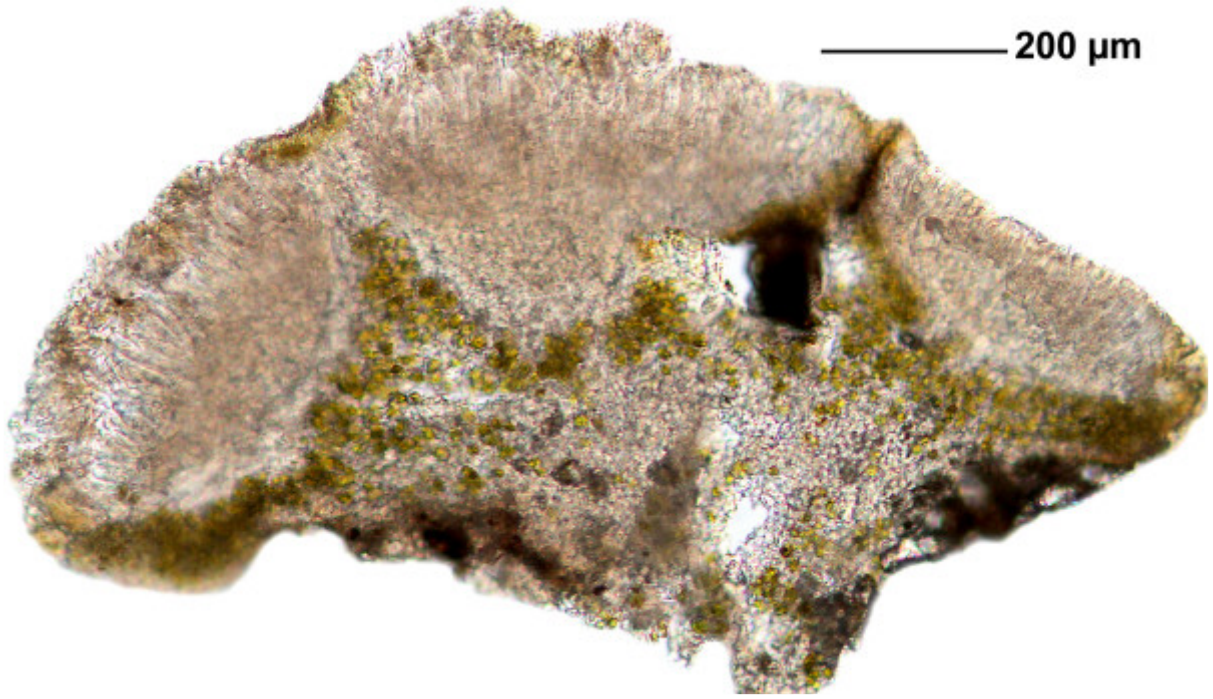




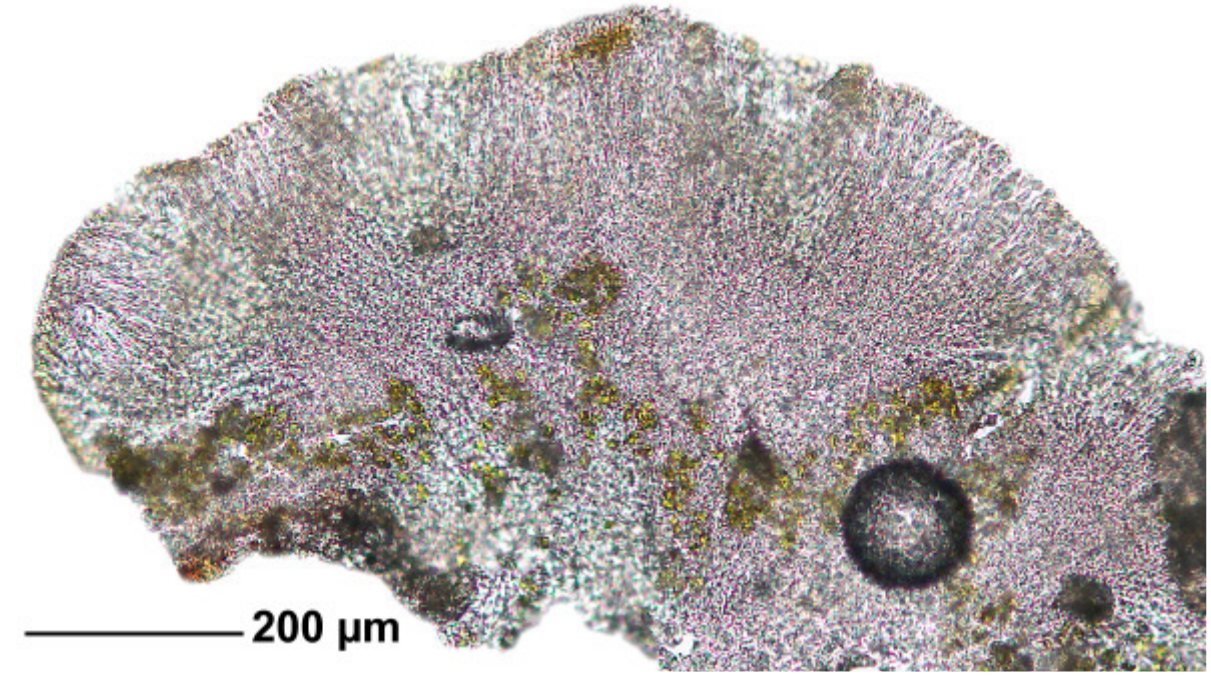


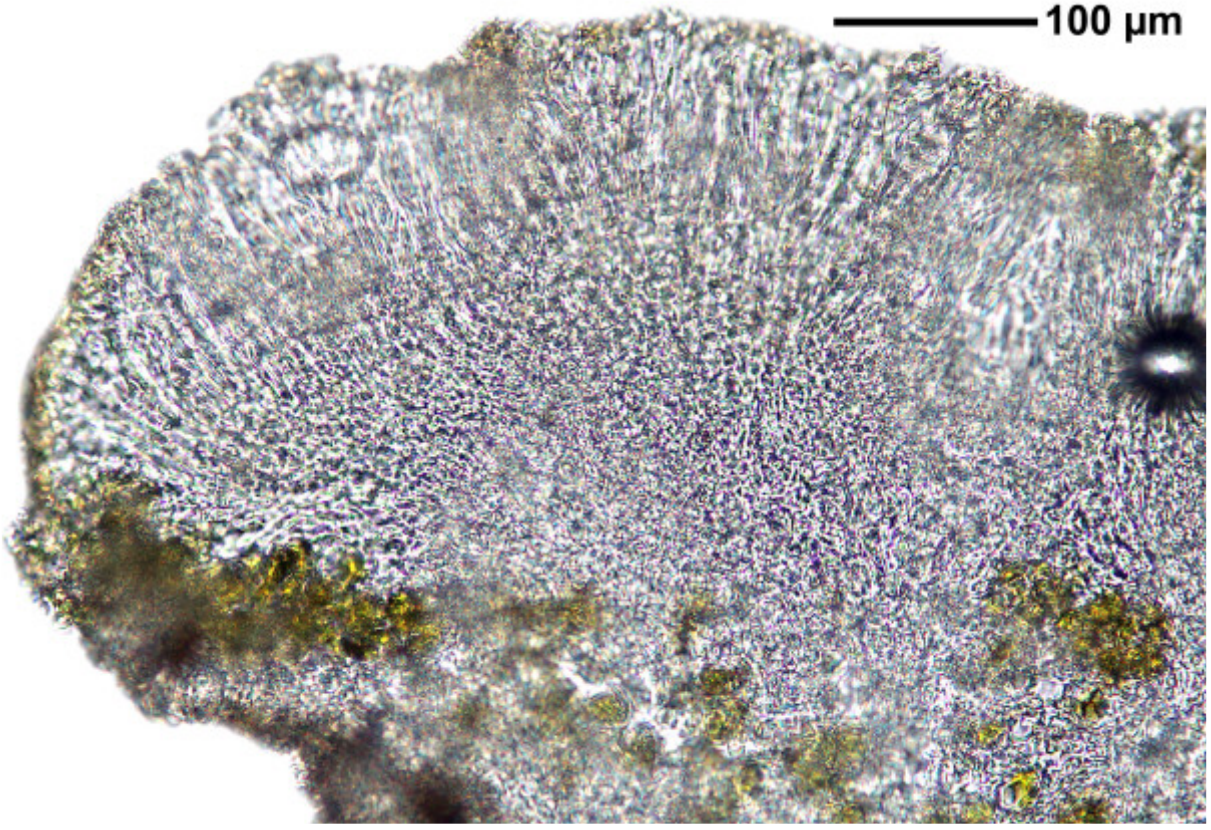
Caloplaca scarlatina



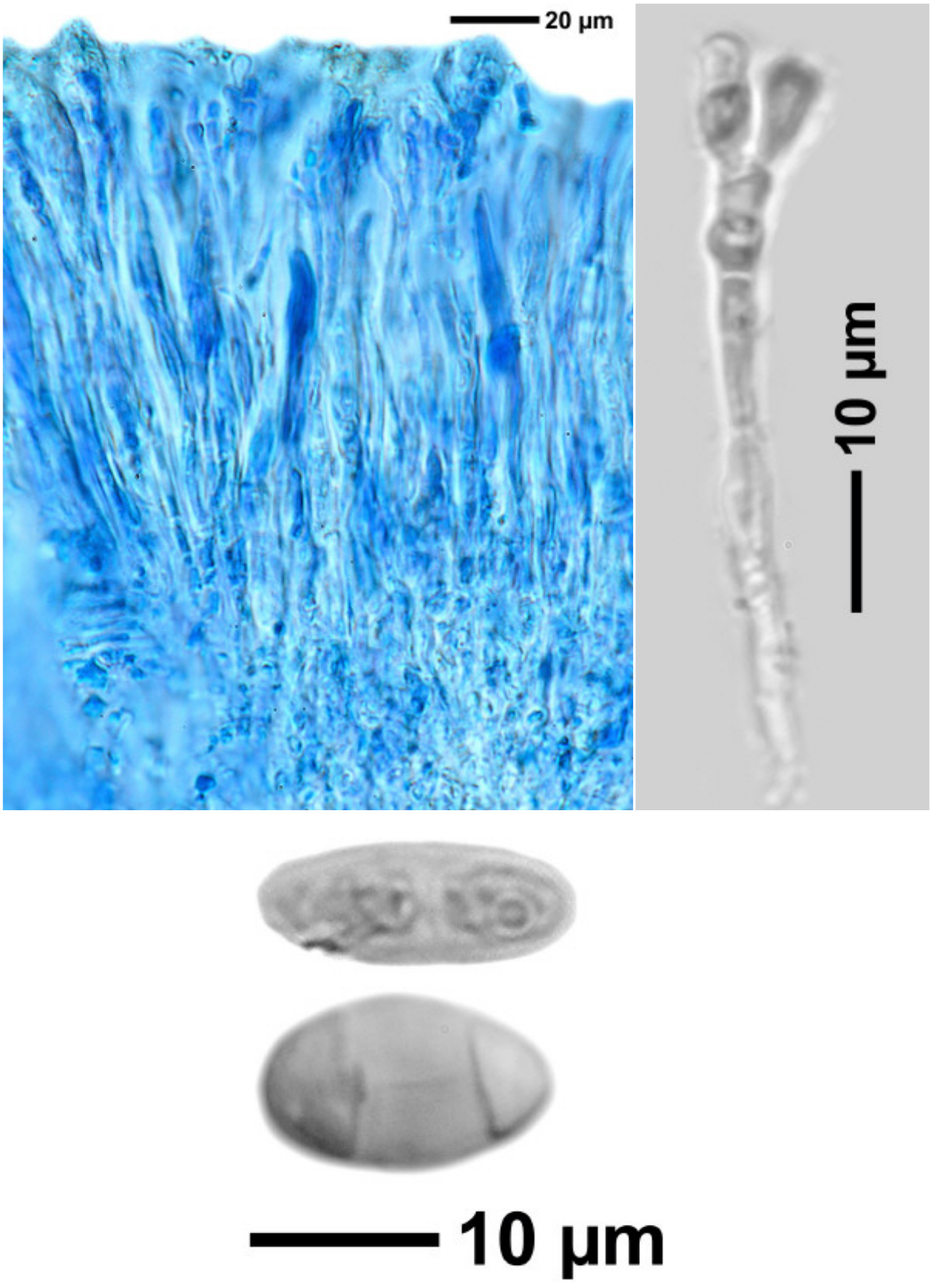


Caloplaca scarlatina

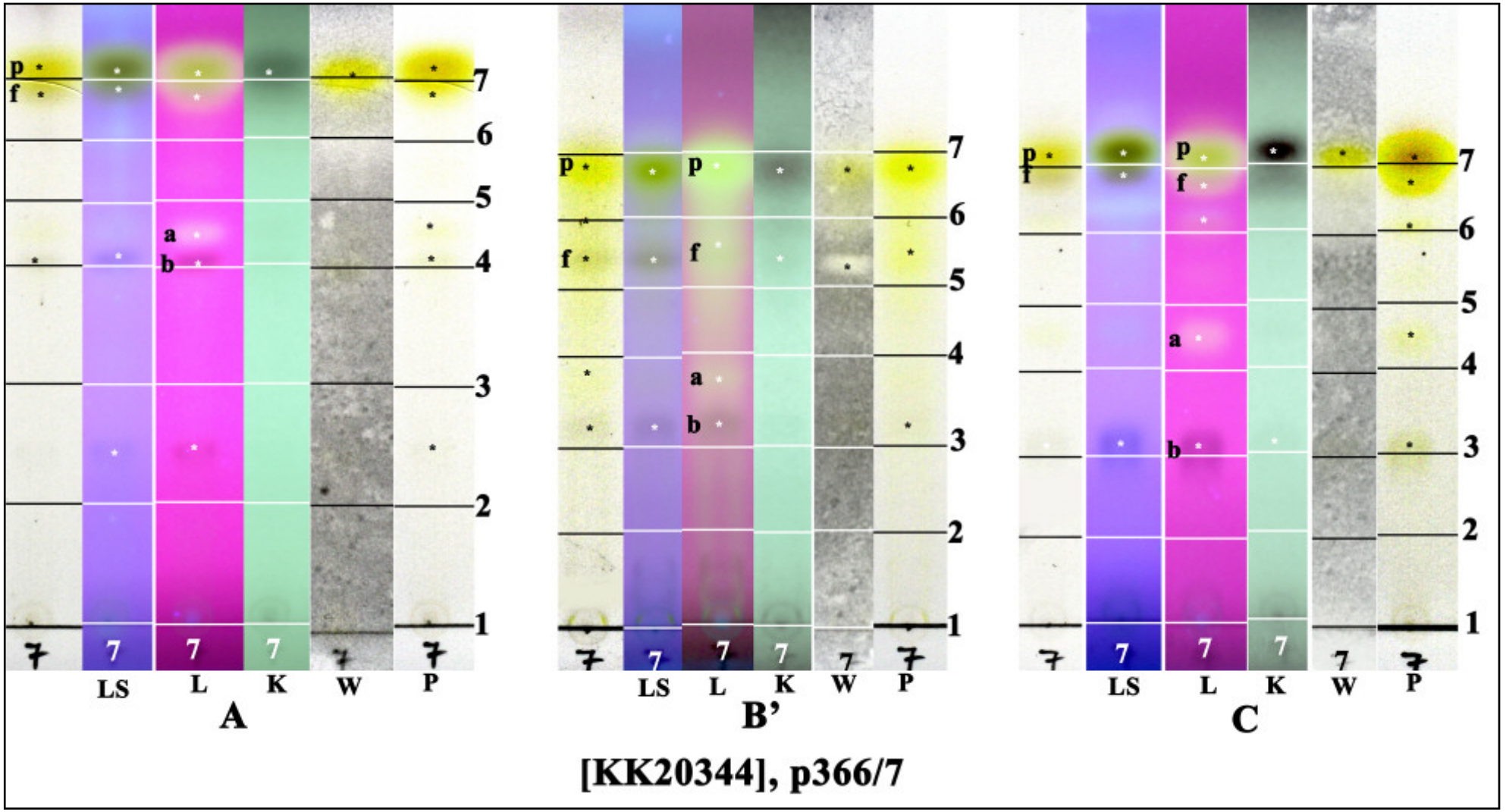




Caloplaca scarlatina



Caloplaca scarlatina



p: parietin, f: fallacinal, a: teloschistin, b: ?; conf. J.A. Elix

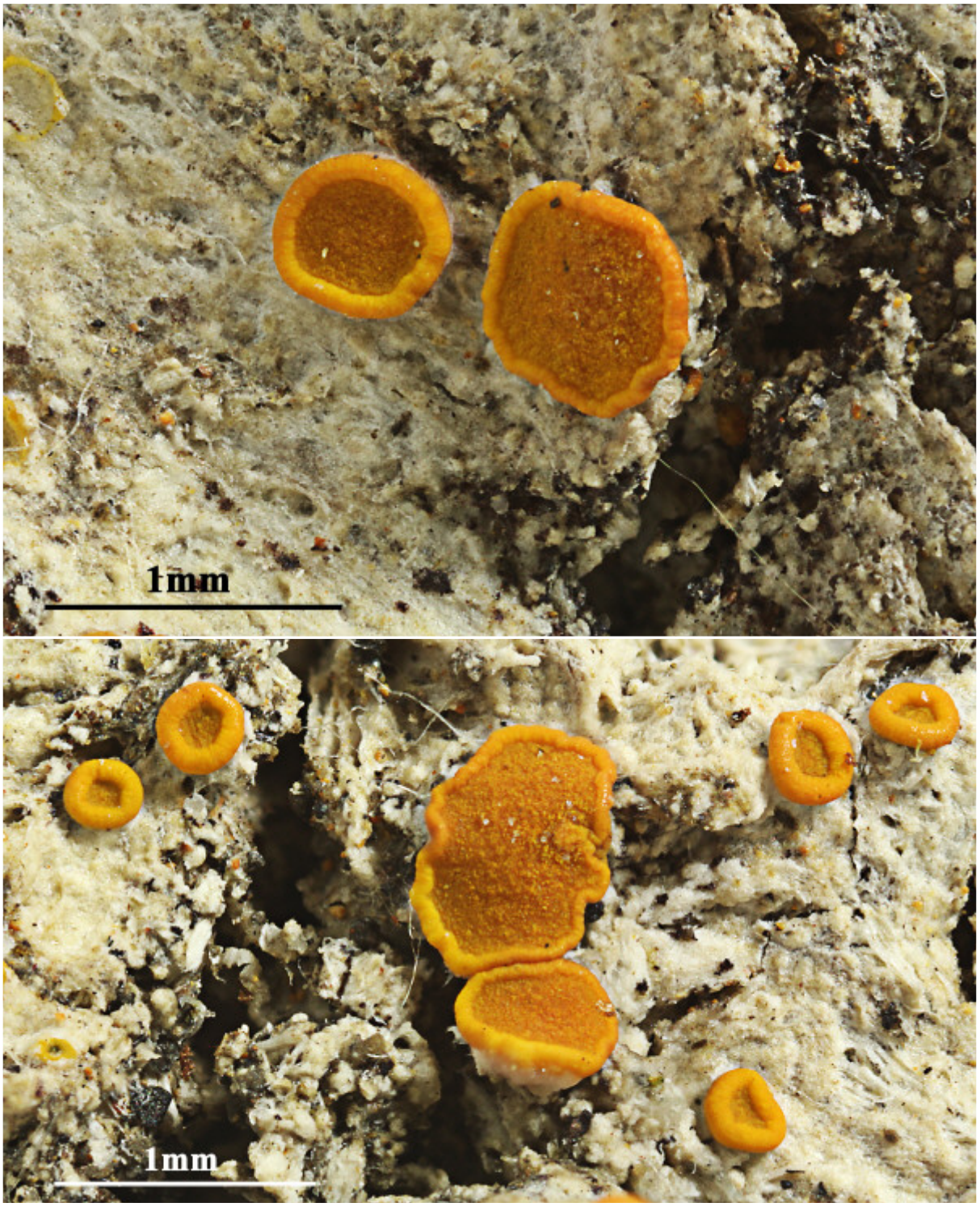
Caloplaca schwarzii (F. Schumm & S.Y. Kondr.) Aptroot & F. Schumm , comb. nov. , Mycobank No. MB 830432

Basionym: *Eilifdahlia schwarzii* F. Schumm & S.Y. Kondr., in Kondratyuk, Schumm, Kärnefelt, Thell & Hur, Graphis Scripta 29(1-2): 19 (2017)

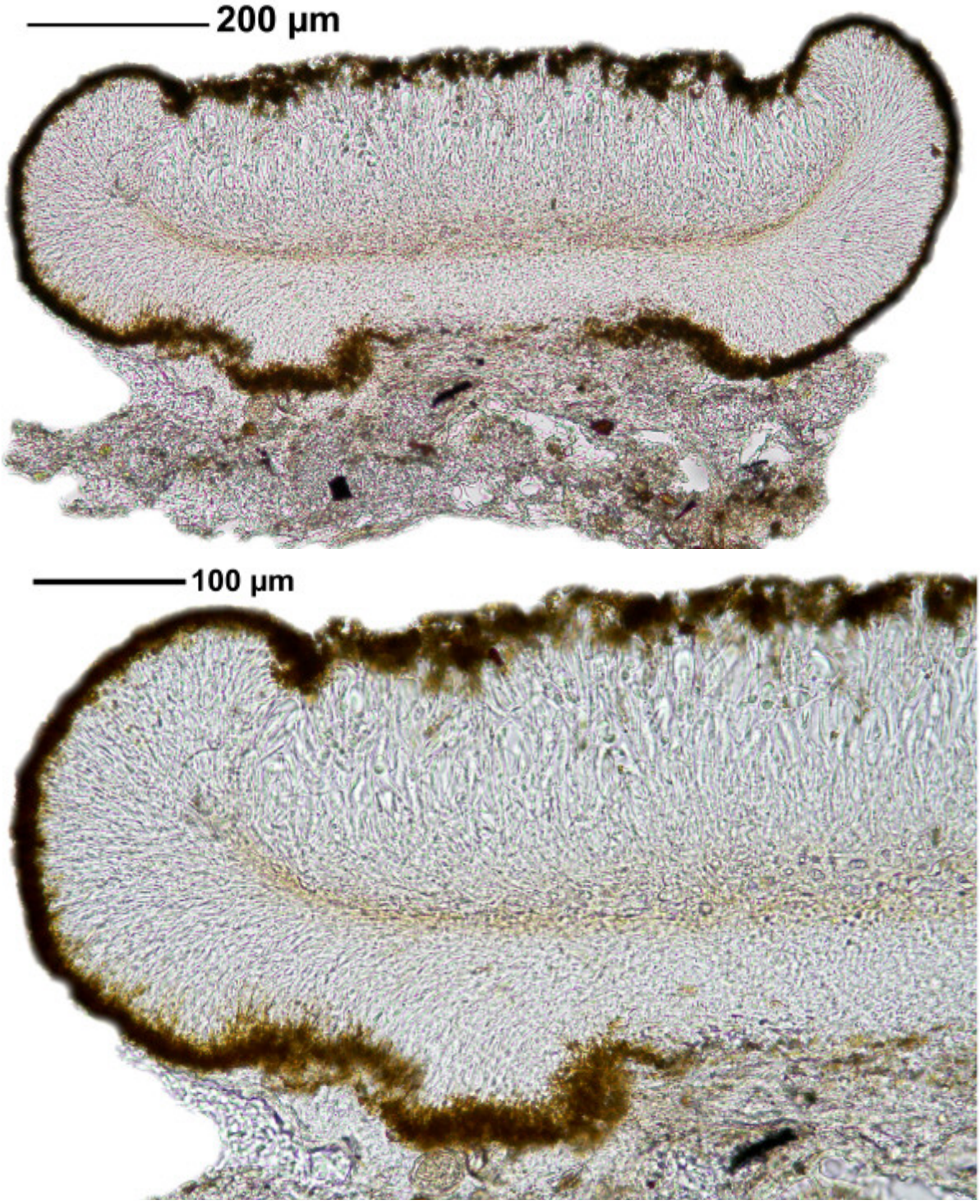
Thallus corticolous, white-grey, continuous poorly developed, thin, not lobate, UV+ grey to pink

[15912], Australia, Western Australia, Two Peoples Bay east of Albany, 34.96967° S, 118.17900° E, 6 m. F. Schumm & E. Stocker-Wörgötter, 27.10.2009, det. S. Kondratyuk 03.2016.

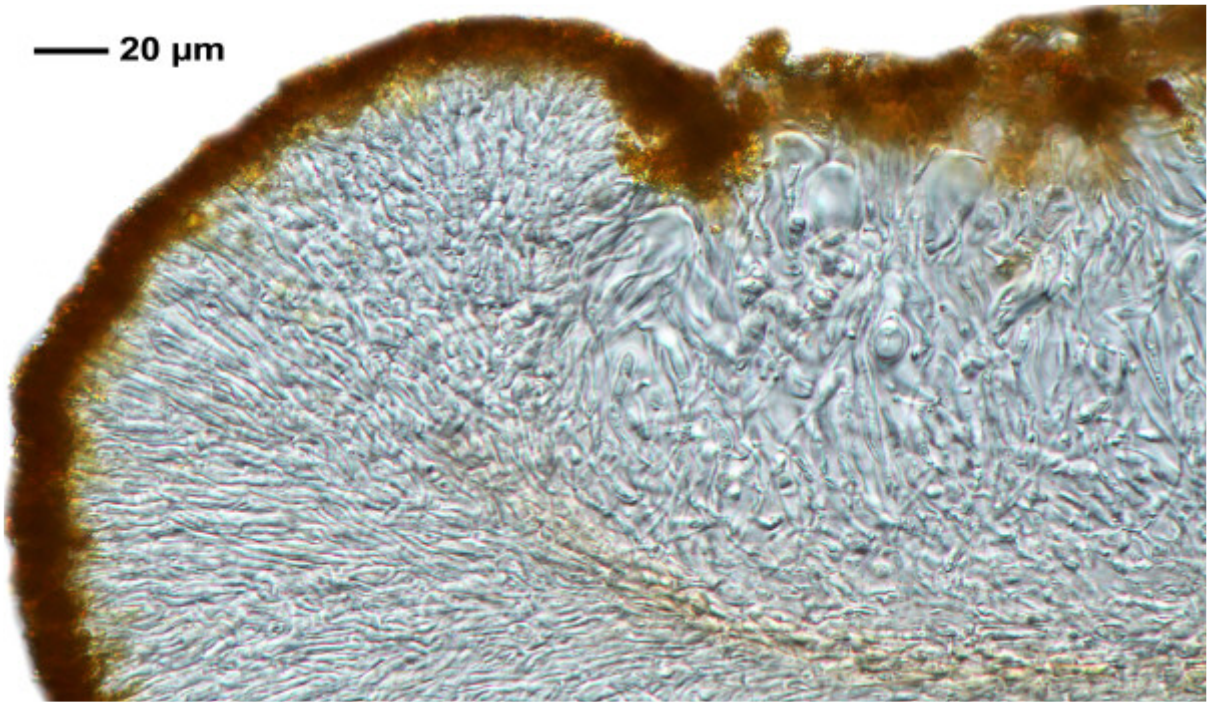


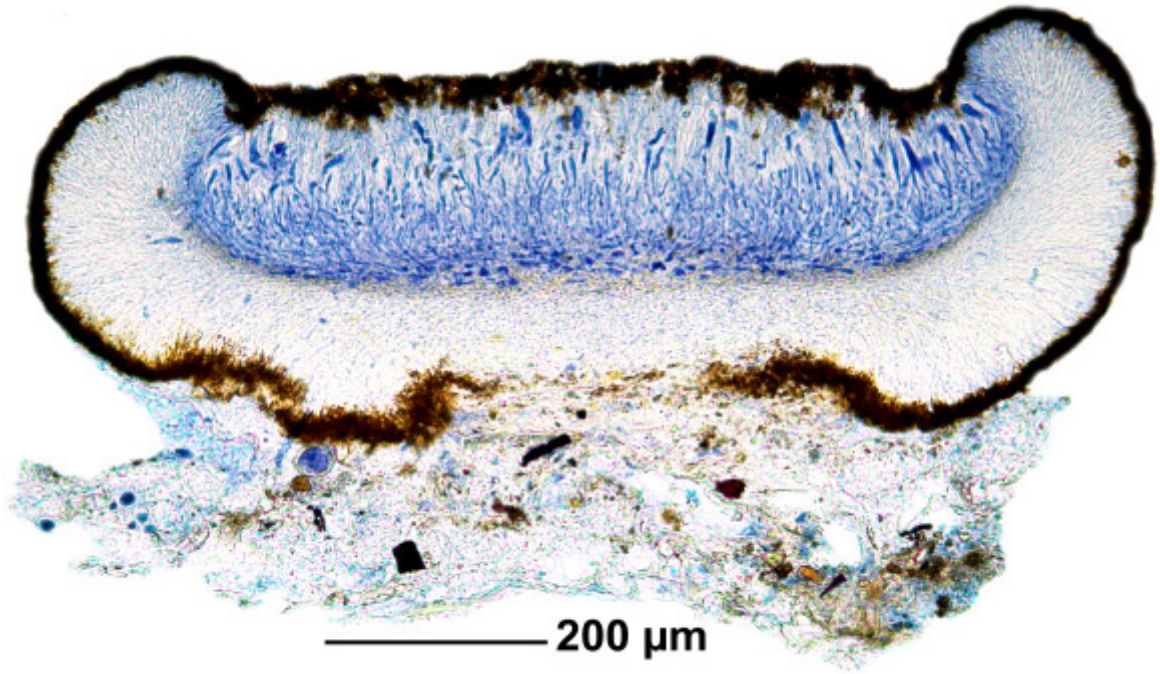


Caloplaca schwarzii

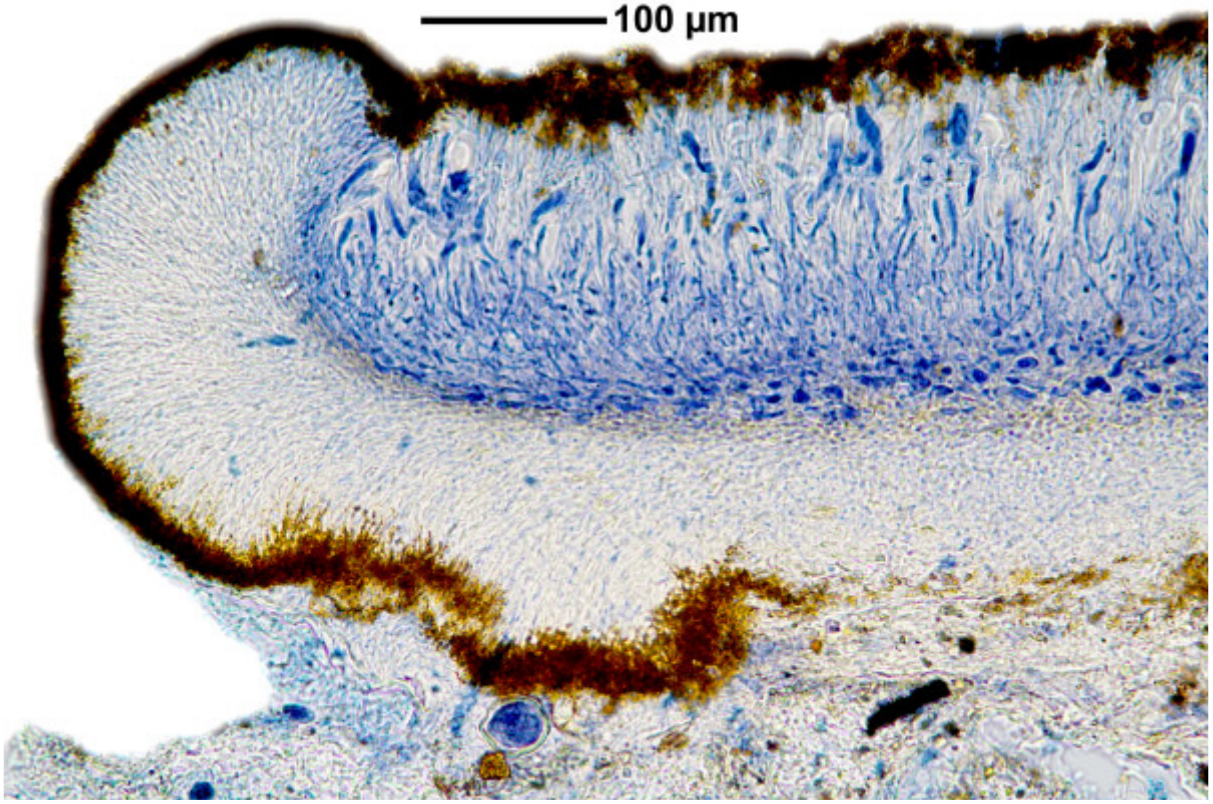


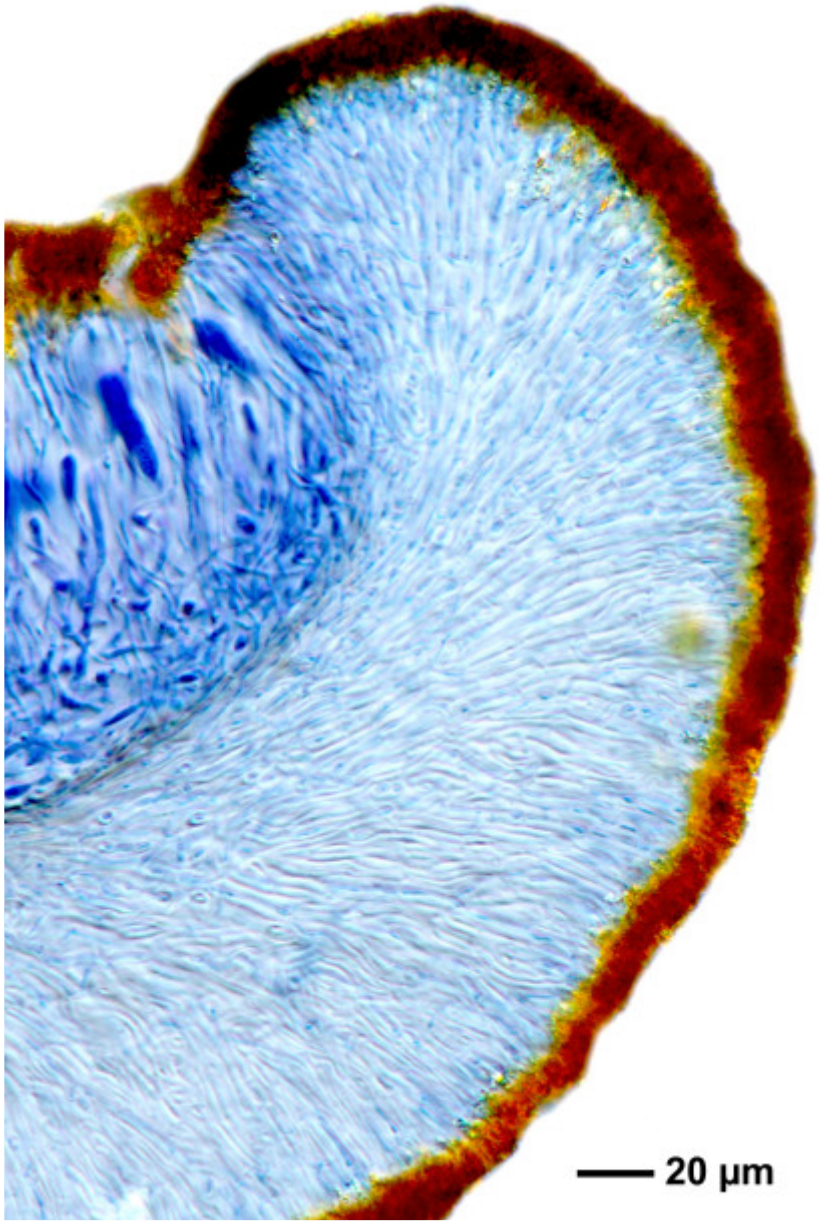
Caloplaca schwarzii





Caloplaca schwarzii

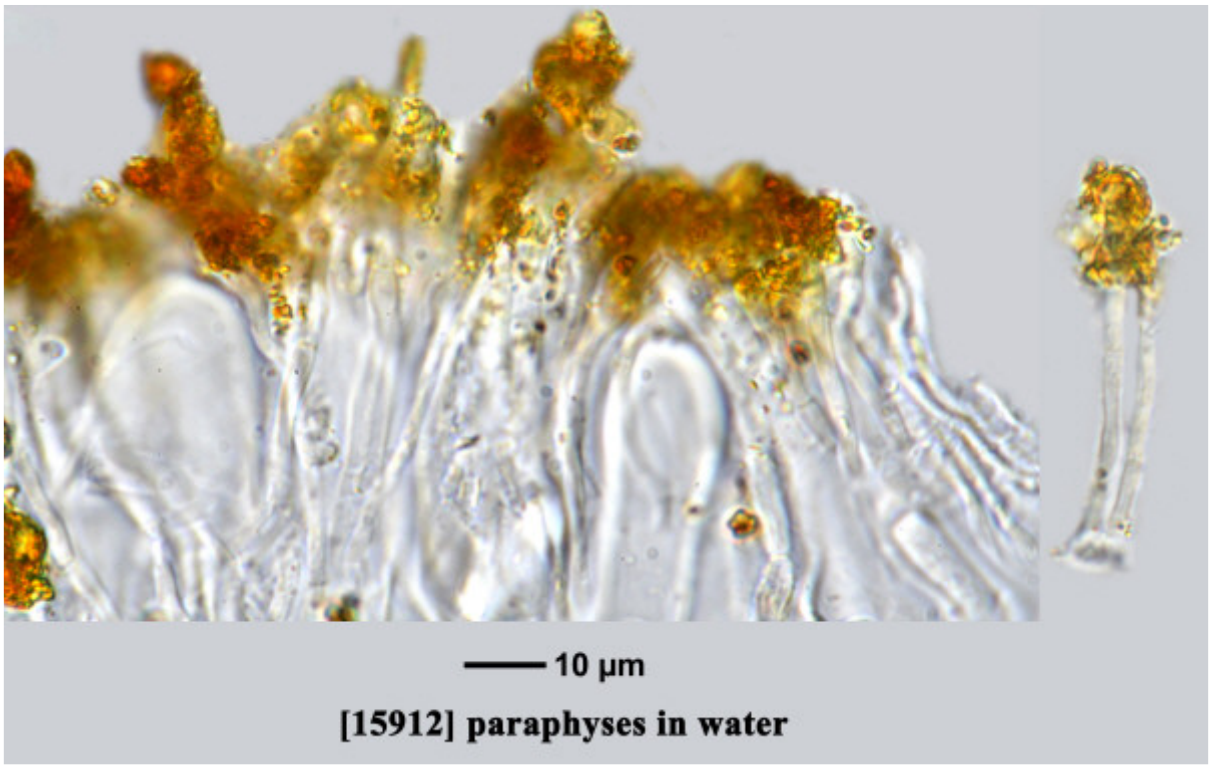




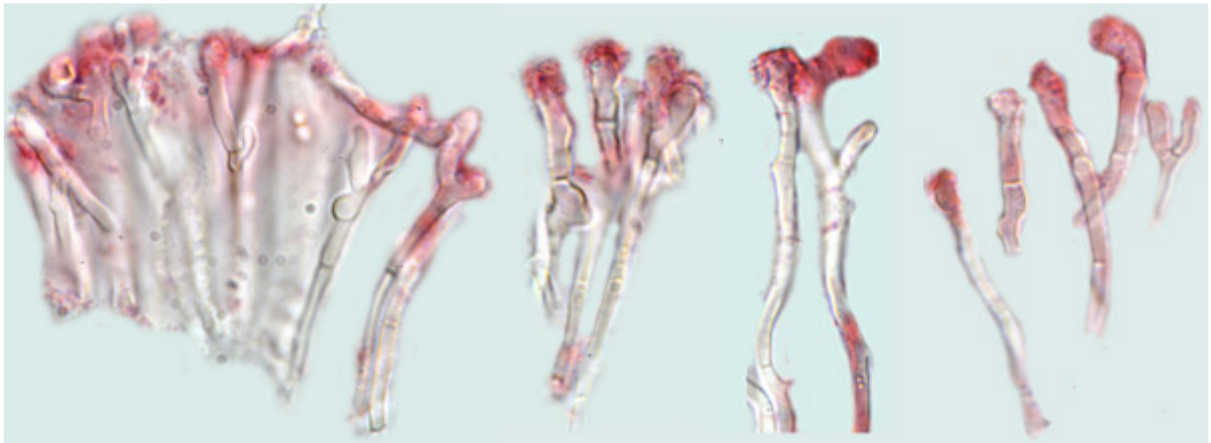
Caloplaca schwarzii



[15912] ascospores in water



[15912] paraphyses in water



[15912] paraphyses in KOH

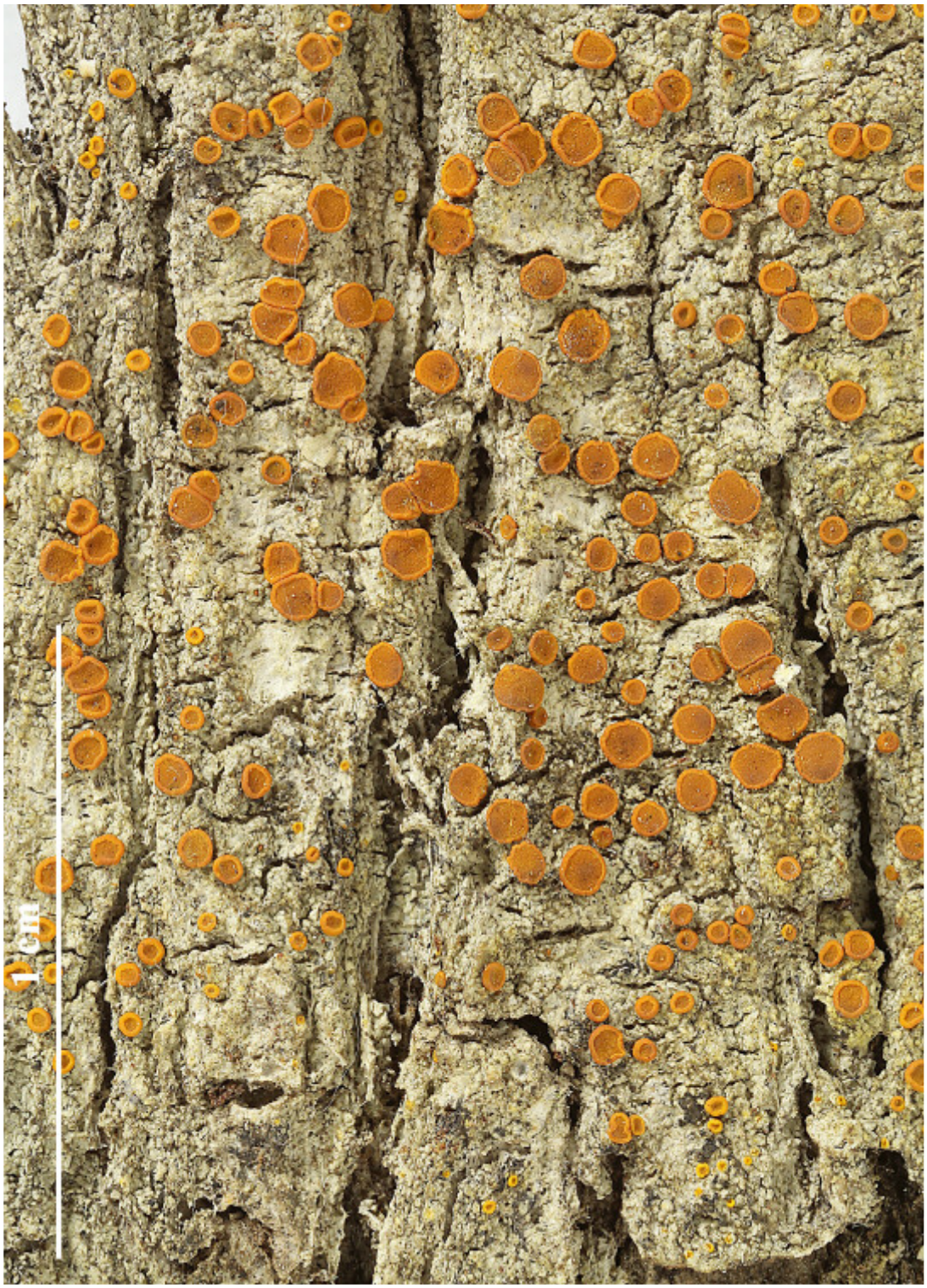
Caloplaca schwarzii

Caloplaca schwarzii (F. Schumm & S.Y. Kondr.) Aptroot & F. Schumm , comb. nov. , Mycobank No. MB 830432

Basionym: *Eilifdahlia schwarzii* F. Schumm & S.Y. Kondr., in Kondratyuk, Schumm, Kärnefelt, Thell & Hur, Graphis Scripta 29(1-2): 19 (2017)

Thallus corticolous, grey with some yellowish tingue.

[15937], Australia, Western Australia, Yalgorup National Park, Lake Clifton (Thrombolithen). 32,74528° S, 115,65580° E, 15 m. Leg. F. Schumm & E. Stocker-Wörgötter, 28.10.2009, det. S. Y. Kondratyuk 03.2016.







Caloplaca schwarzii



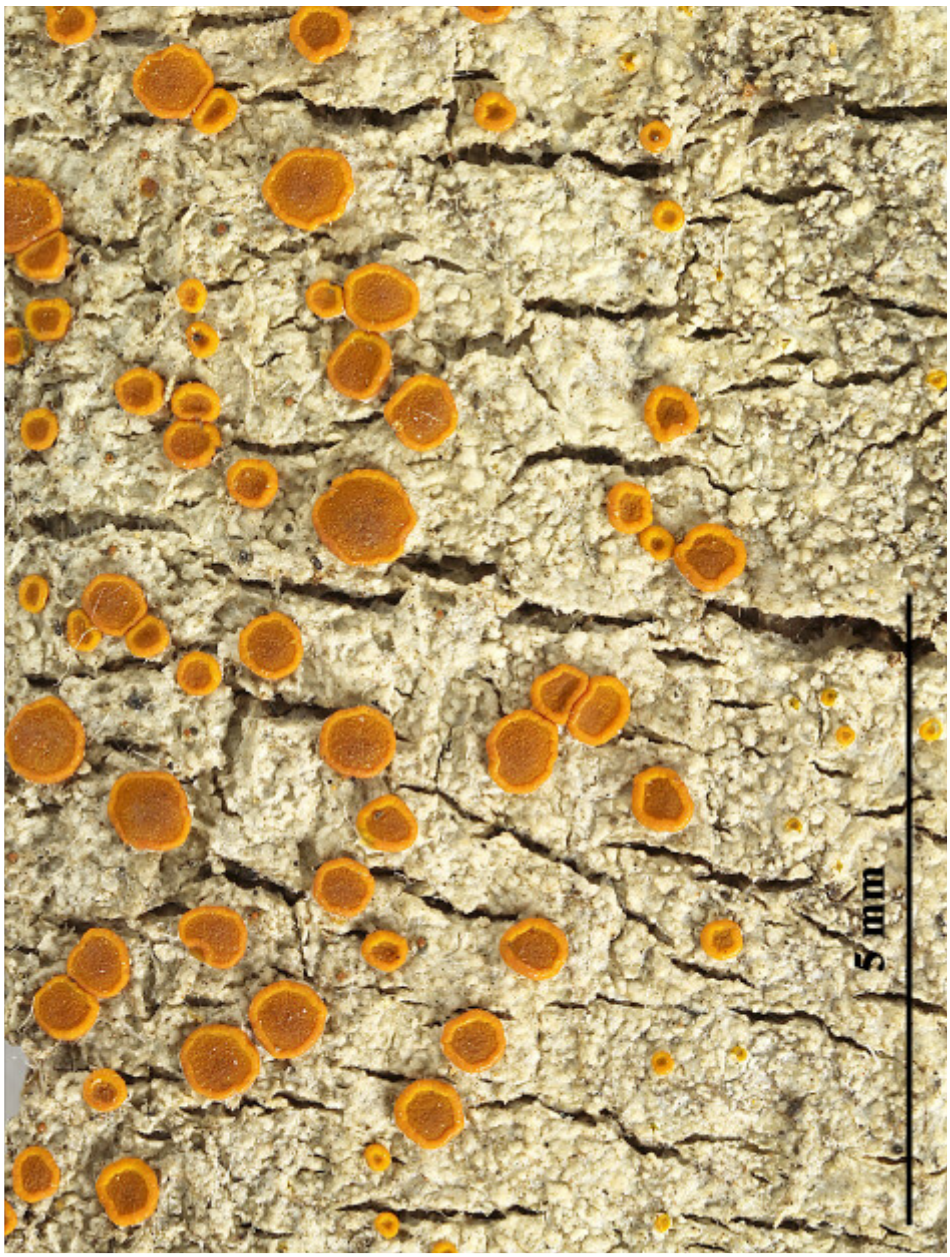
Caloplaca schwarzii

Caloplaca schwarzii (F. Schumm & S.Y. Kondr.) Aptroot & F. Schumm , comb. nov., Mycobank No. MB 830432

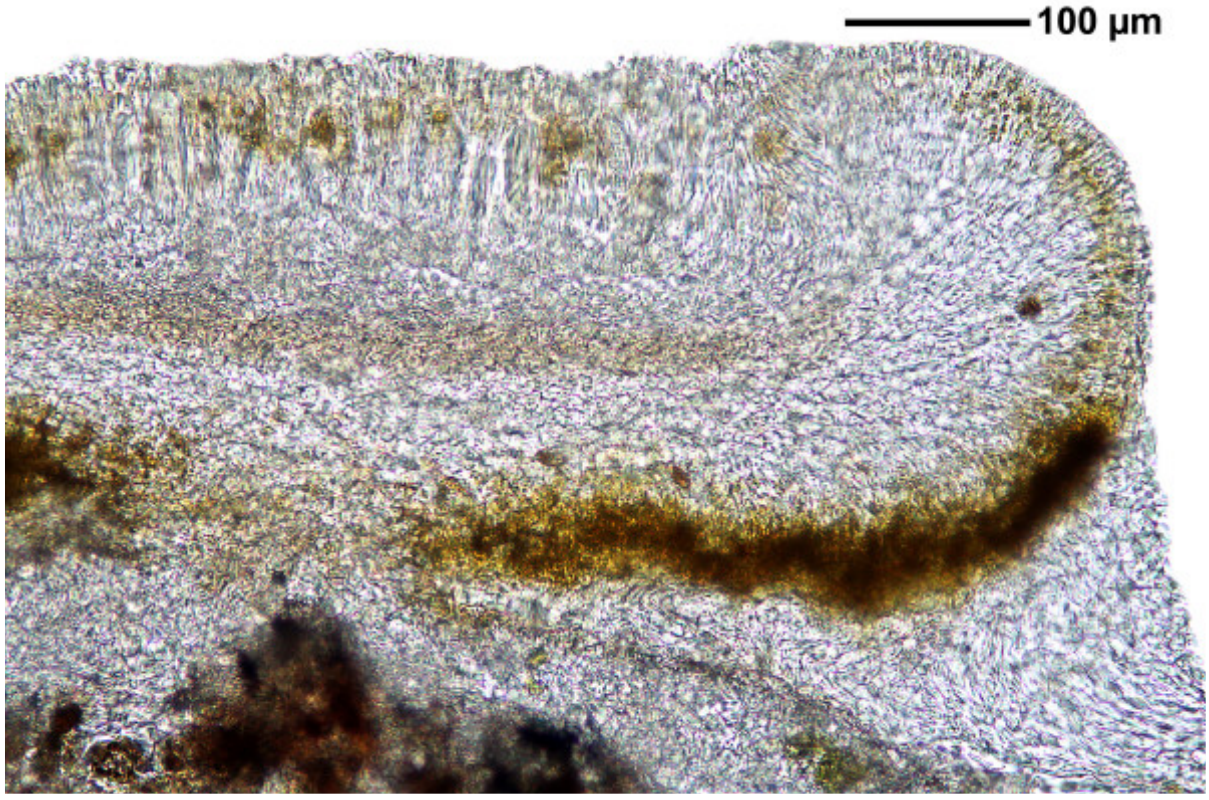
Basionym: *Eilifdahlia schwarzii* F. Schumm & S.Y. Kondr., in Kondratyuk, Schumm, Kärnefelt, Thell & Hur, Graphis Scripta 29(1-2): 19 (2017)

Thallus corticolous, white (UV+ intense yellow, lichexanthone), continuous granulose, isidia and soredia lacking. Apothecia sessile, orange, 0.4-0.7 mm diam., margin somewhat lighter, 0,8 mm. Apothecia biatorine, without algae; hymenium c. 50 µm high, paraphyses in upper parts c. 2 µm. Ascospores hyaline, 21-22 x 10 µm, septum 10-11 µm. Chemistry (p367/4): parietin, thallus UV+ yellow (lichexanthone), unknowns

[15951], Australia, Western Australia, Yalgorup National Park, Lake Clifton (Thrombolithen), 32.74528° S, 115.65580° E, 15 m. Leg. F. Schumm & E. Stocker-Wörgötter, 28.10.2009, det. S.Y. Kondratyuk.

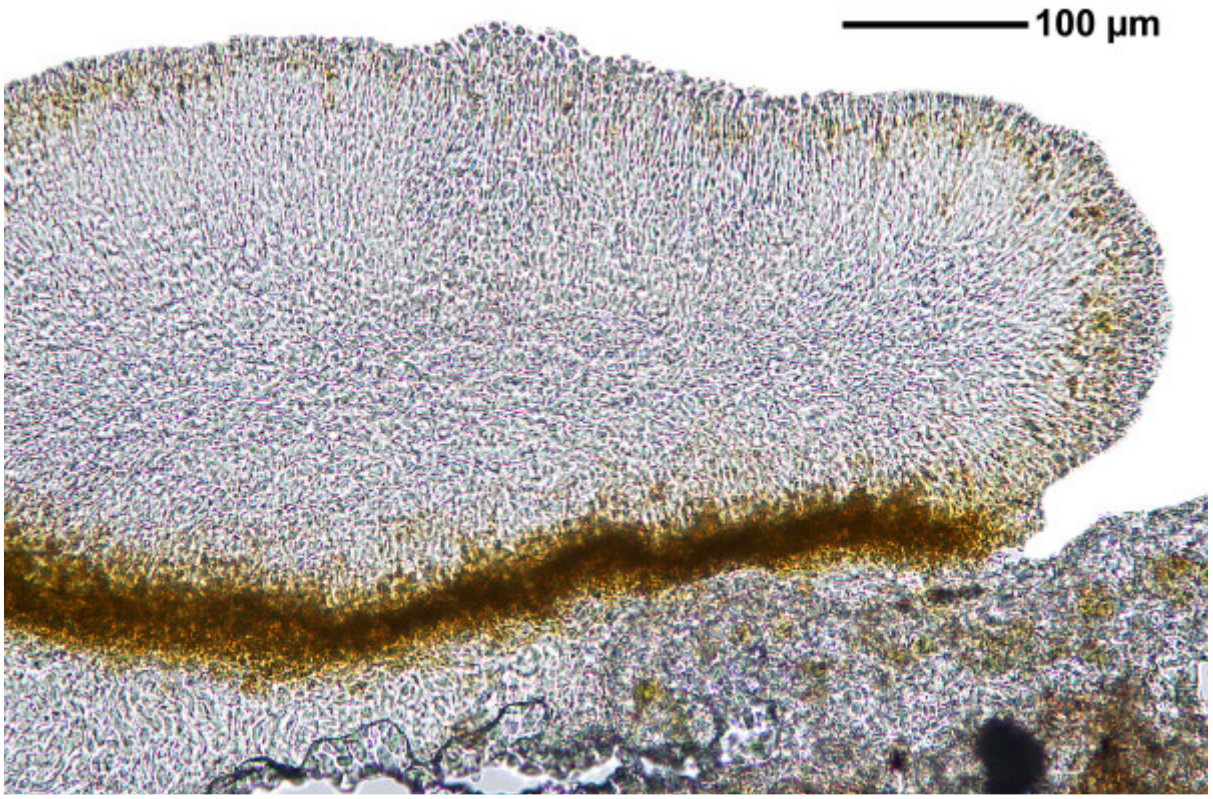


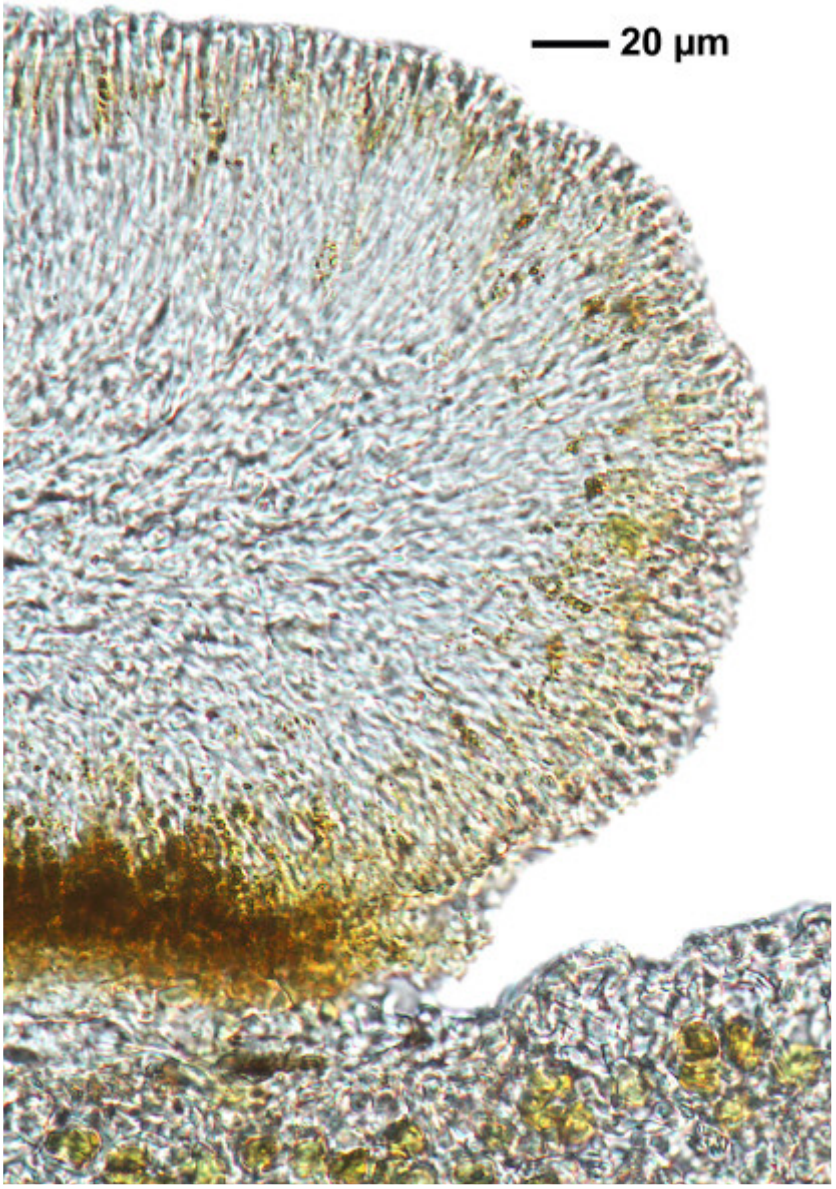




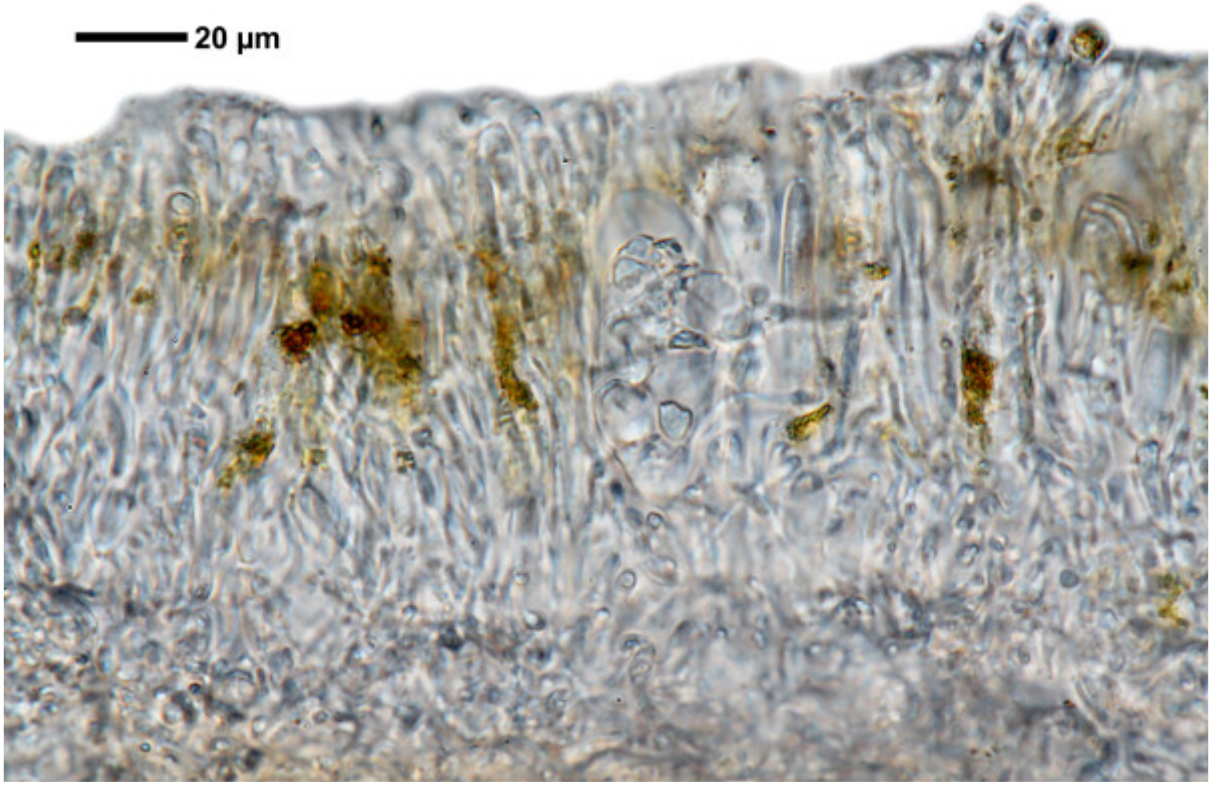


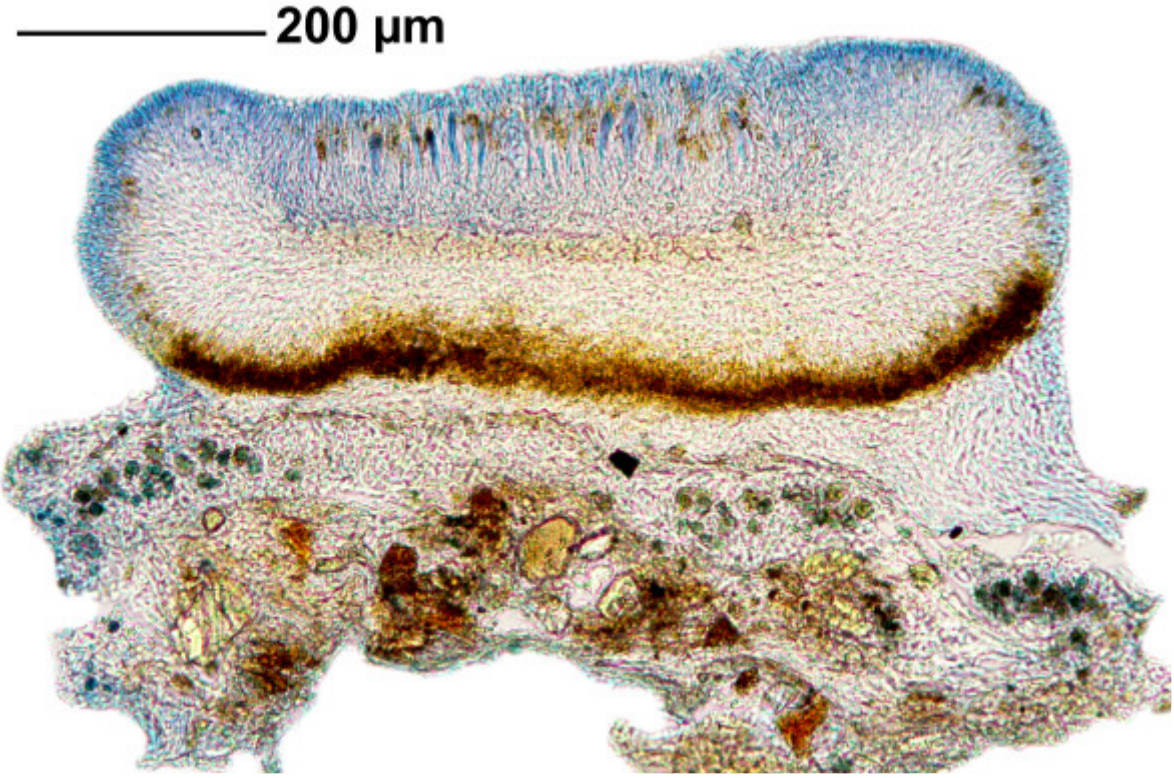
Caloplaca schwarzii



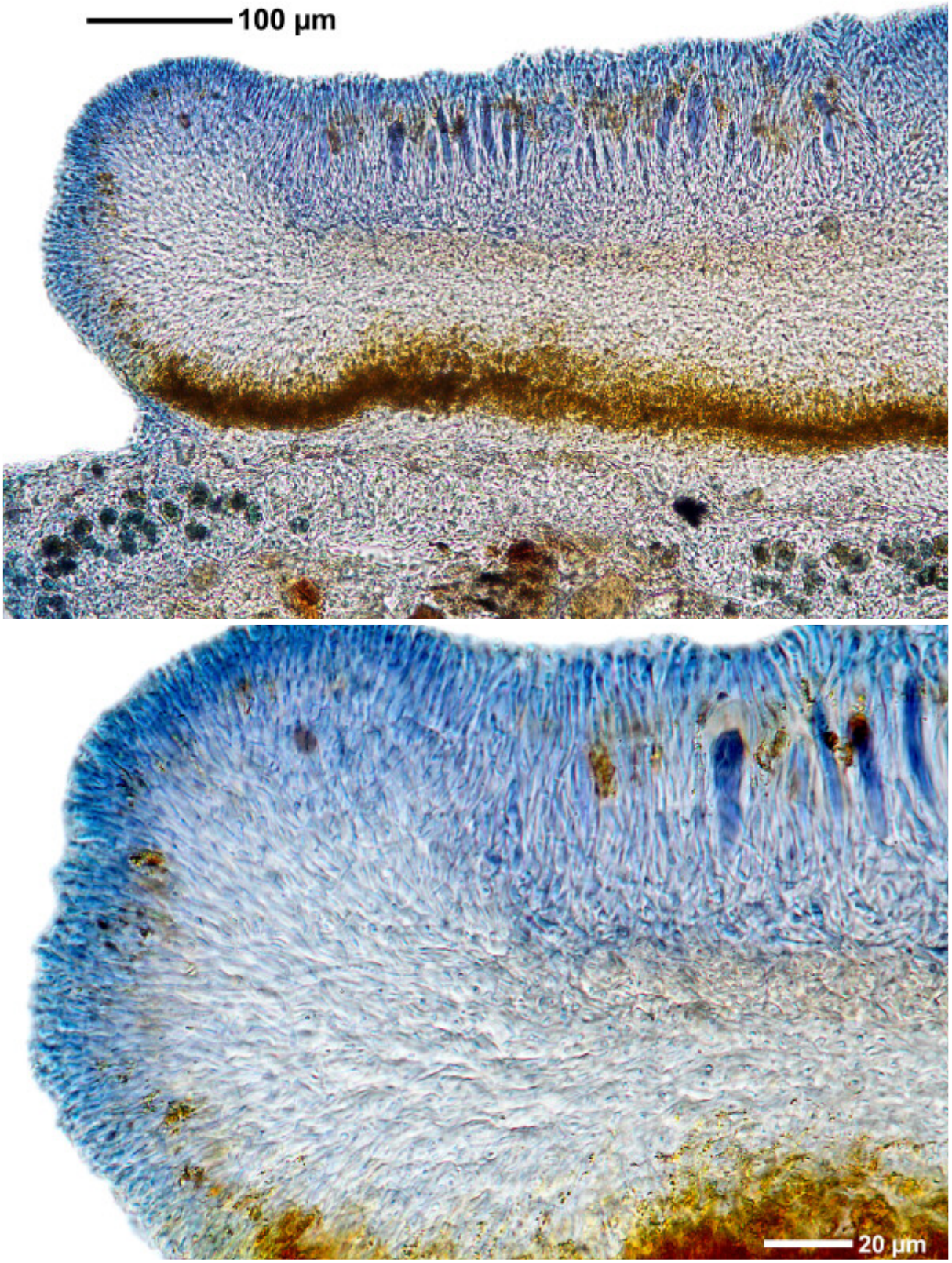


Caloplaca schwarzii

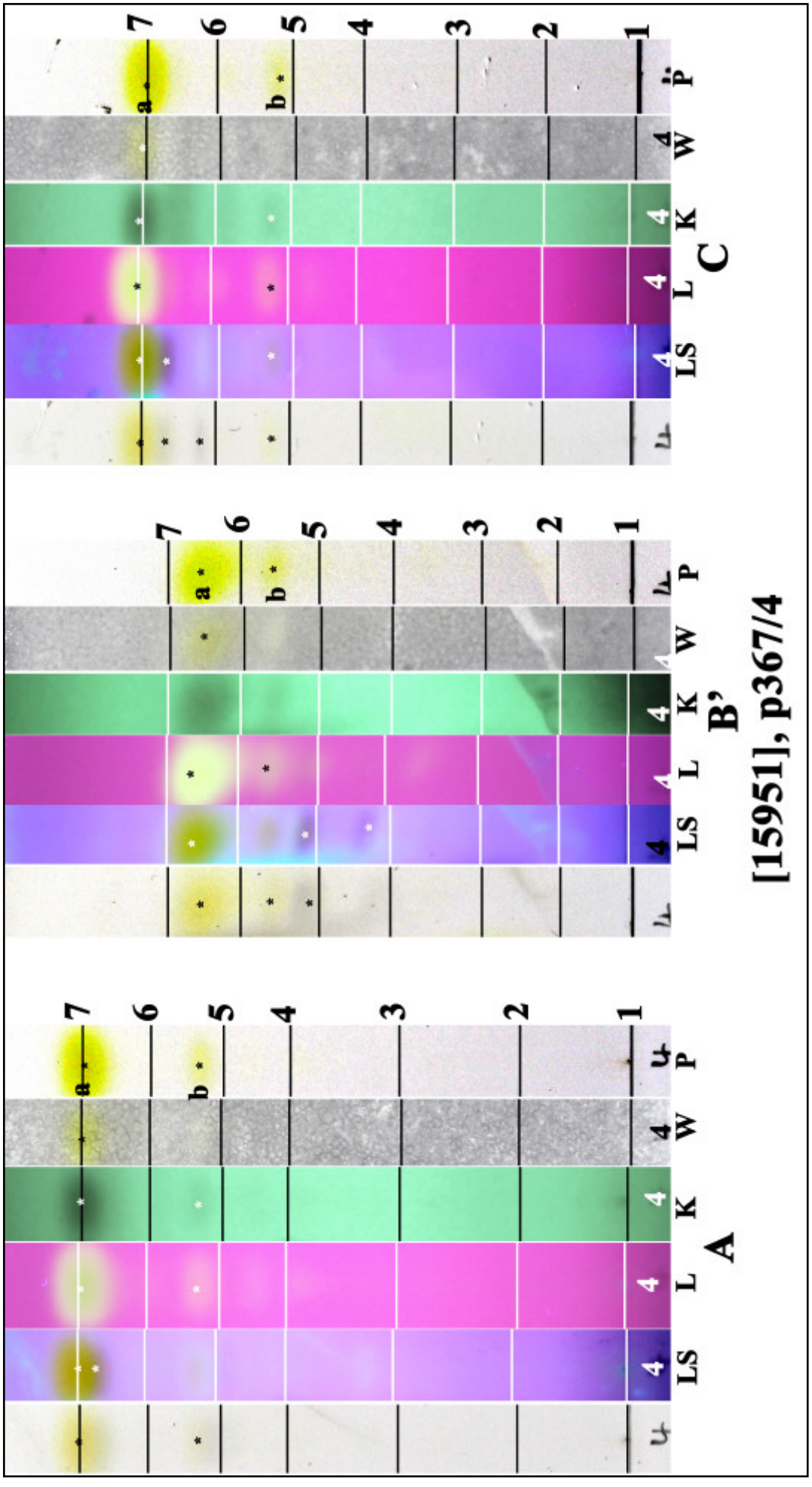




Caloplaca schwarzii



Caloplaca schwarzii



a: parietin, b: unknown

Caloplaca schwarzii

Caloplaca schwarzii (F. Schumm & S.Y. Kondr.) Aptroot & F. Schumm , comb. nov., Mycobank No. MB 830432

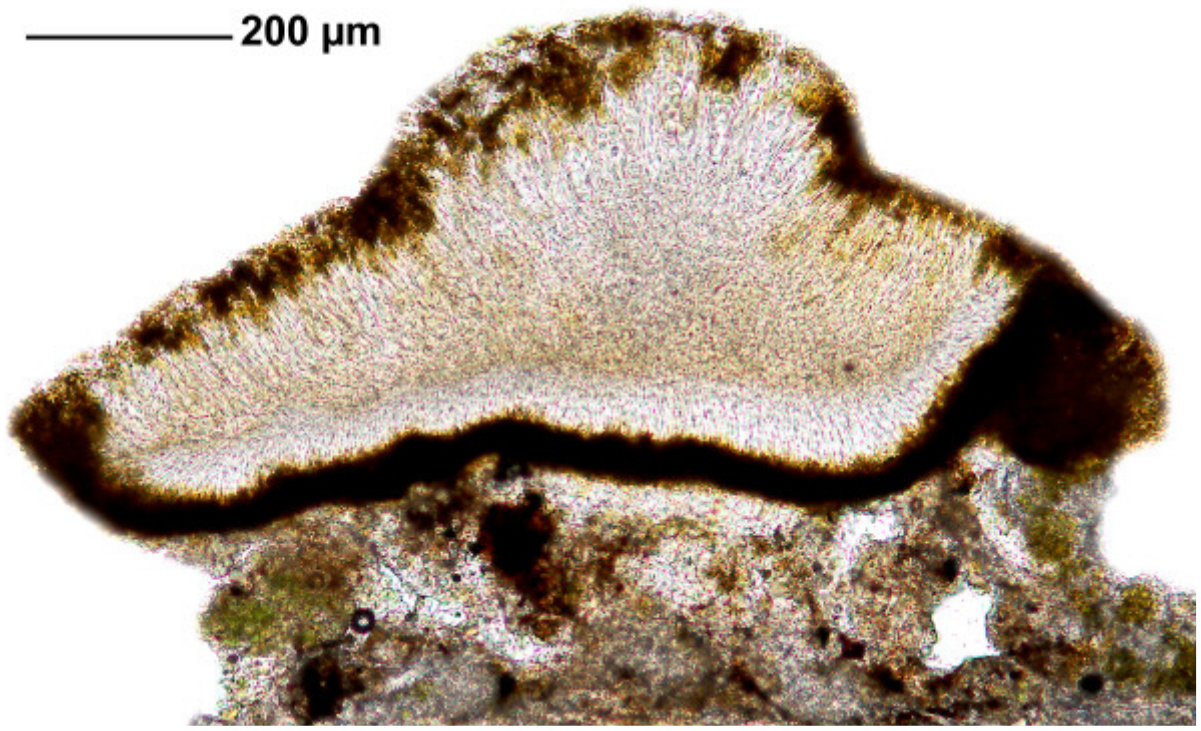
Basionym: *Eilifdahlia schwarzii* F. Schumm & S.Y. Kondr., in Kondratyuk, Schumm, Kärnefelt, Thell & Hur, Graphis Scripta 29(1-2): 19 (2017)

Thallus corticolous, grey, continuous, granulose-warty, UV+ yellow. Apothecia sessile, 0.7-1.1 mm diam, disc orange, margin 0.1 mm, orange somewhat lighter than the disc. Apothecia biatorine, without algae. Ascospores hyaline, 20.5-22 x 11-12 µm, septum 6-7 µm. Chemistry (p367/6): parietin, lichexanthone.

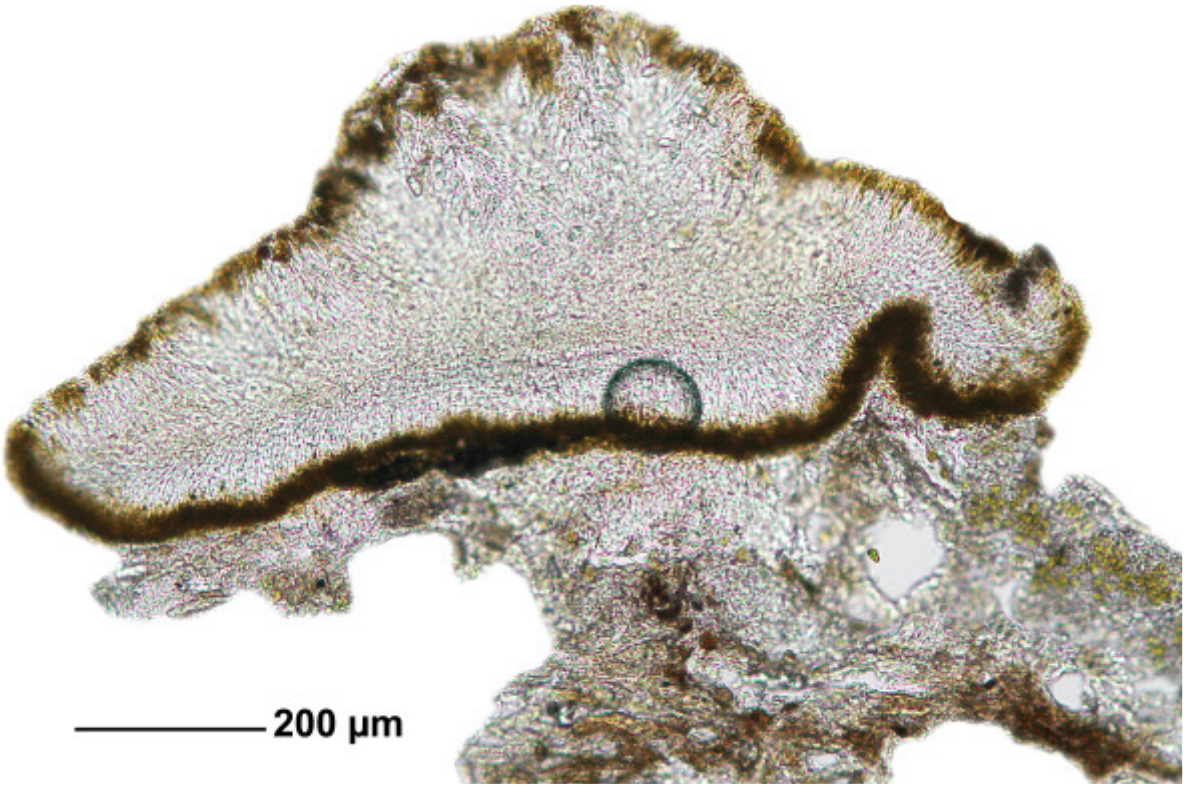
[15956], Australia, Western Australia, Yalgorup National Park, Lake Clifton (Thrombolithes), 32.74528° S, 115.65580° E, 15 m. Leg. F. Schumm & E. Stocker-Wörgötter, 28.10.2009, det. S.Y. Kondratyuk 03.2016.

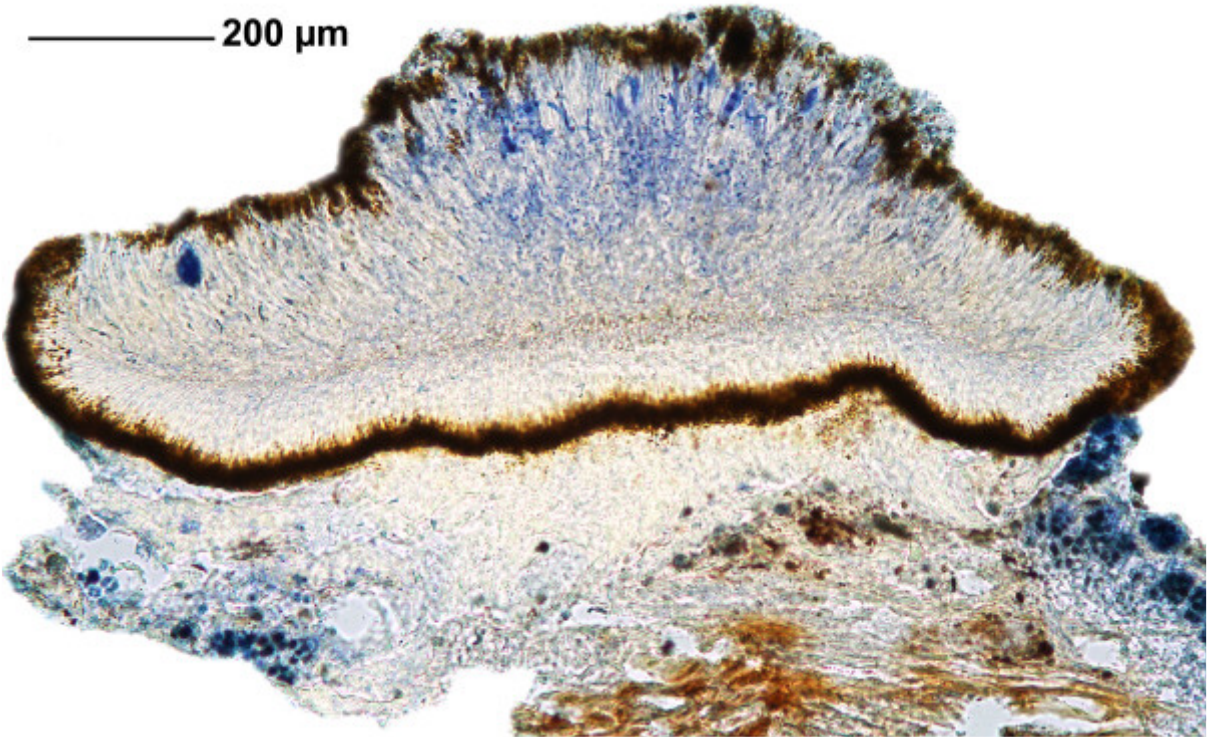






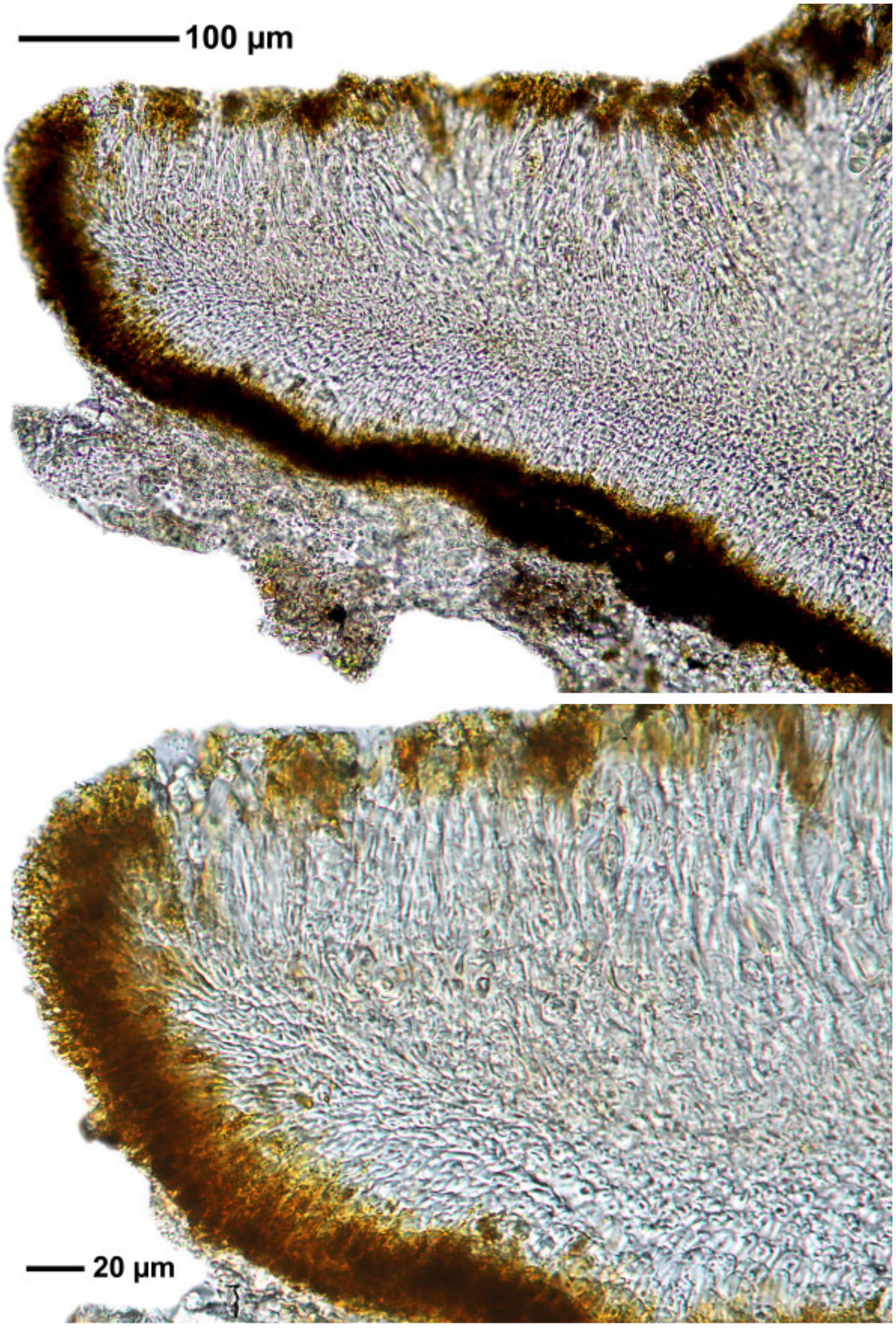
Caloplaca schwarzii



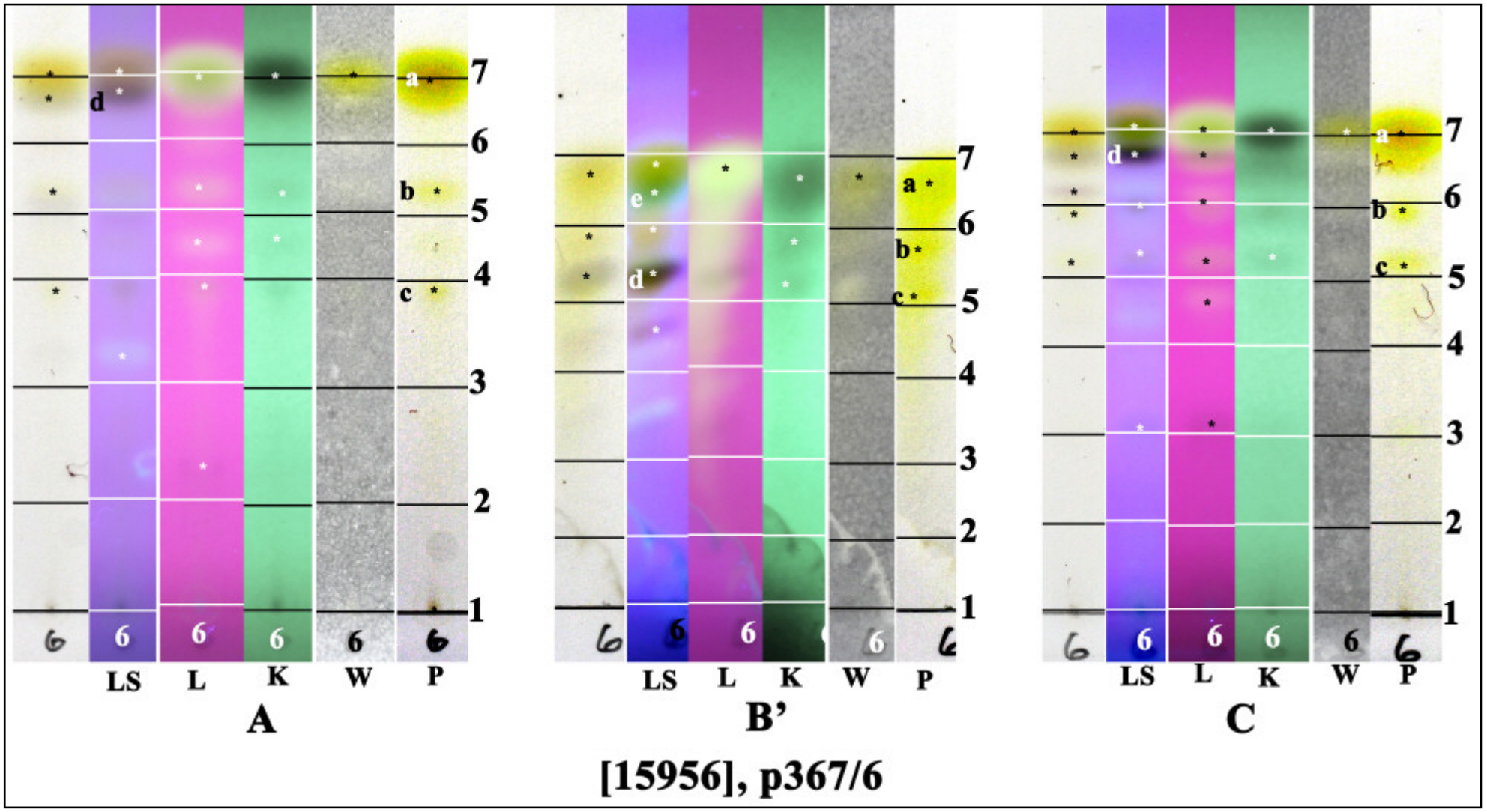




Caloplaca schwarzii



Caloplaca schwarzii



a: parietin, b:, c:, d:, e: lichexanthone

Caloplaca sconensis S.Y. Kondr., Kärnefelt & A. Thell

Thallus corticolous, continuous or slightly cracked, white to greyish white. Apothecia 0.2-0.6 µm diam., zeorine, with a white thalline margin seen from below; proper margin bright yellow; disc brown with a yellow tinge or yellow pruina. Ascospores bipolar when mature, hyaline, becoming greyish or blackish at the septum, 8-11(-12) x(4-)5.5-6.5(-8) µm, septum (2.5-)3-4(-6) µm. Chemistry: epithecium K+ purple to dirty violet. Lit.: Kondratyuk, Elix, Kärnefelt & Thell, Bibliotheca Lichenol. 106: 183 (2011).

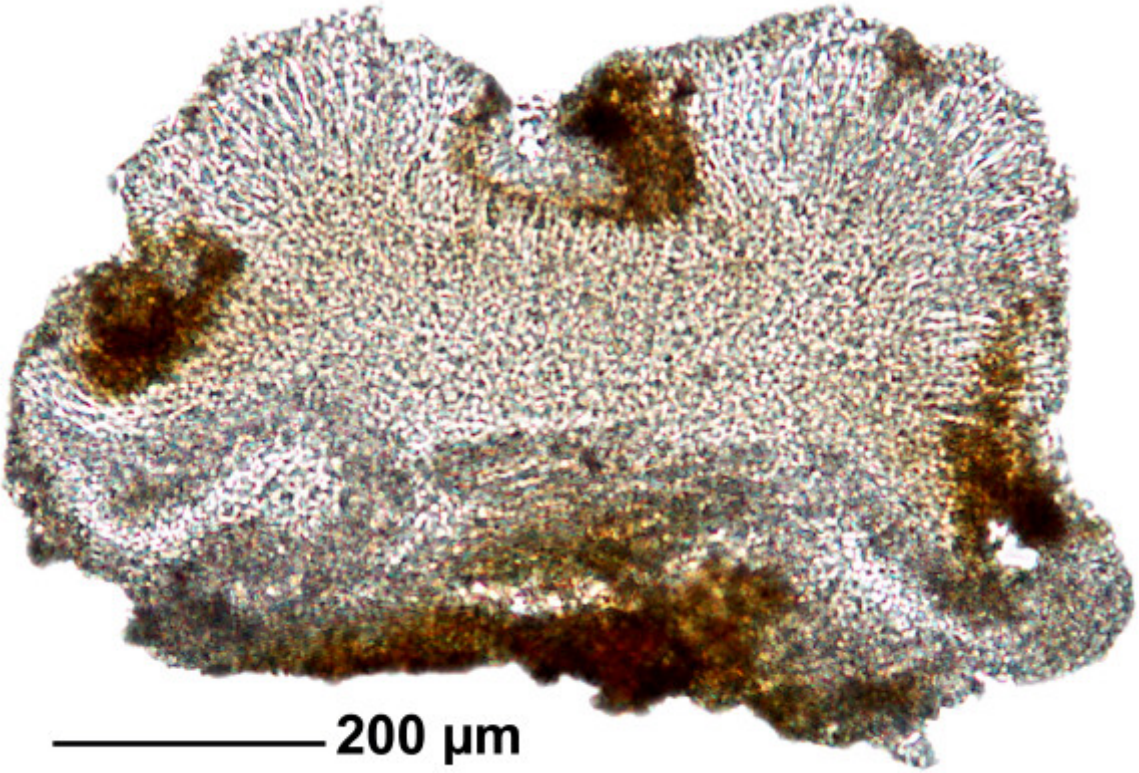
[KK21802], Australia, New South Wales,Barrington Tops National Park, north-east of Scone, in a subtropical rain forest, 500 m, 32°05’ S, 151°30’ E. Leg. K. & A. Kalb, 9.08.1988, det. S.Y. Kondratyuk 2009.

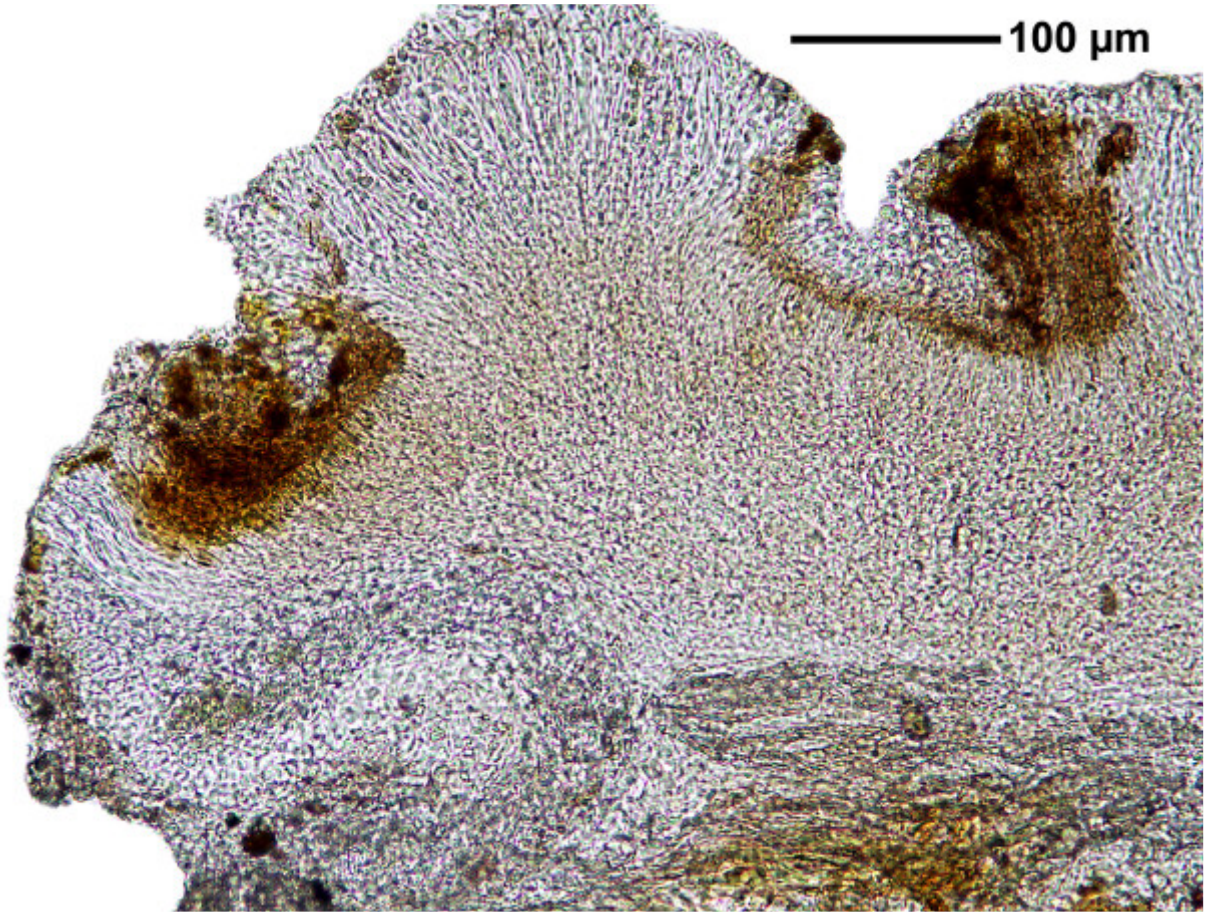




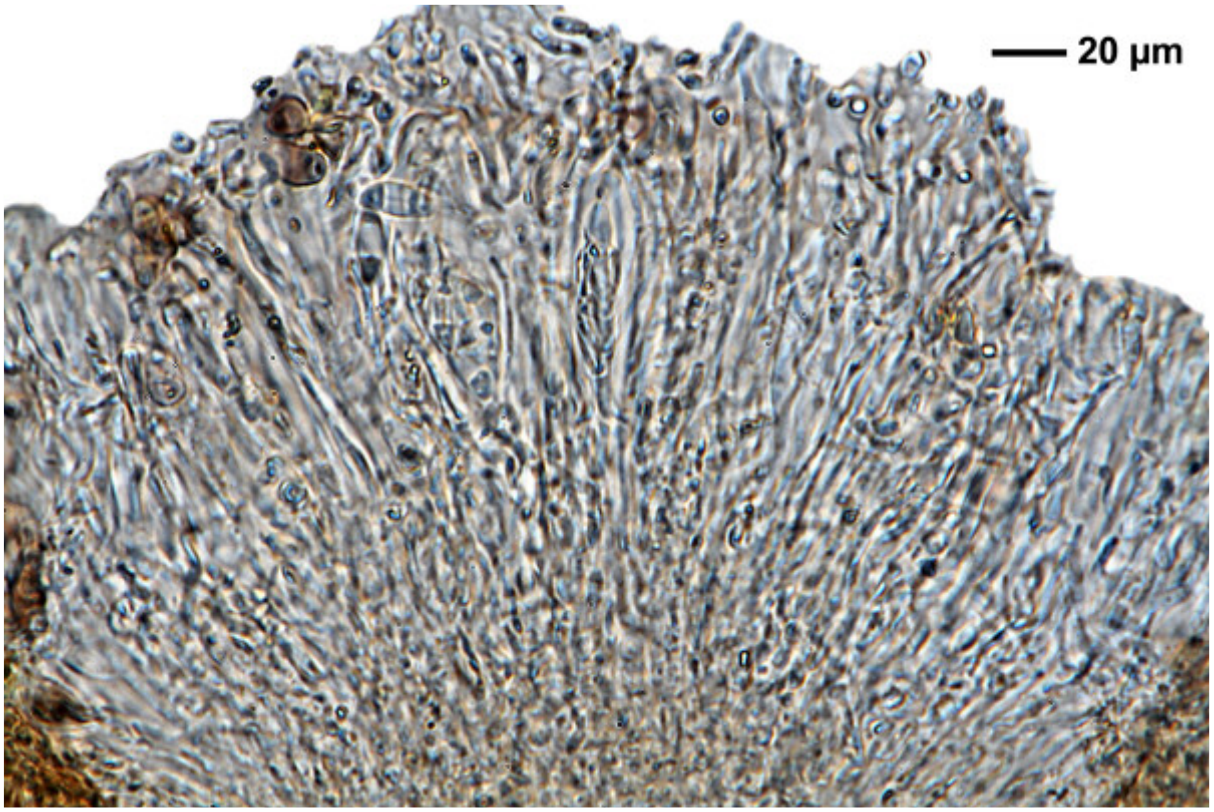


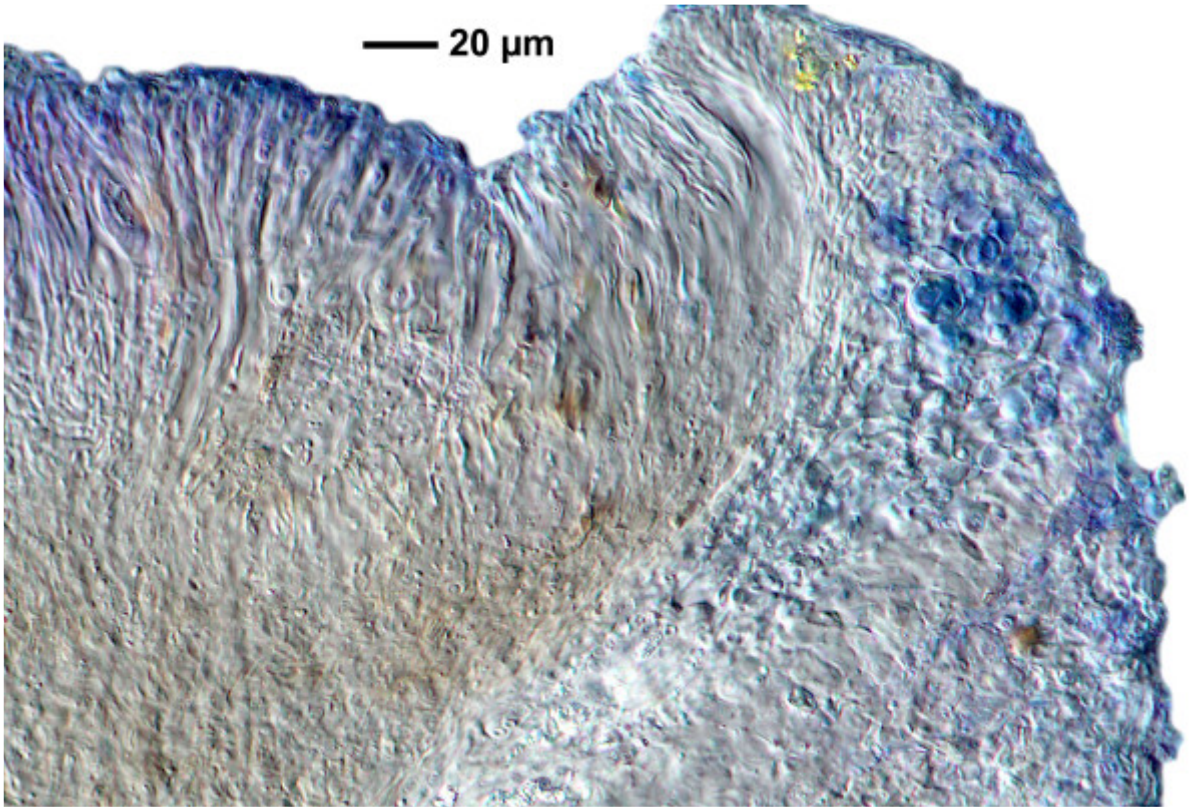
Caloplaca sconensis



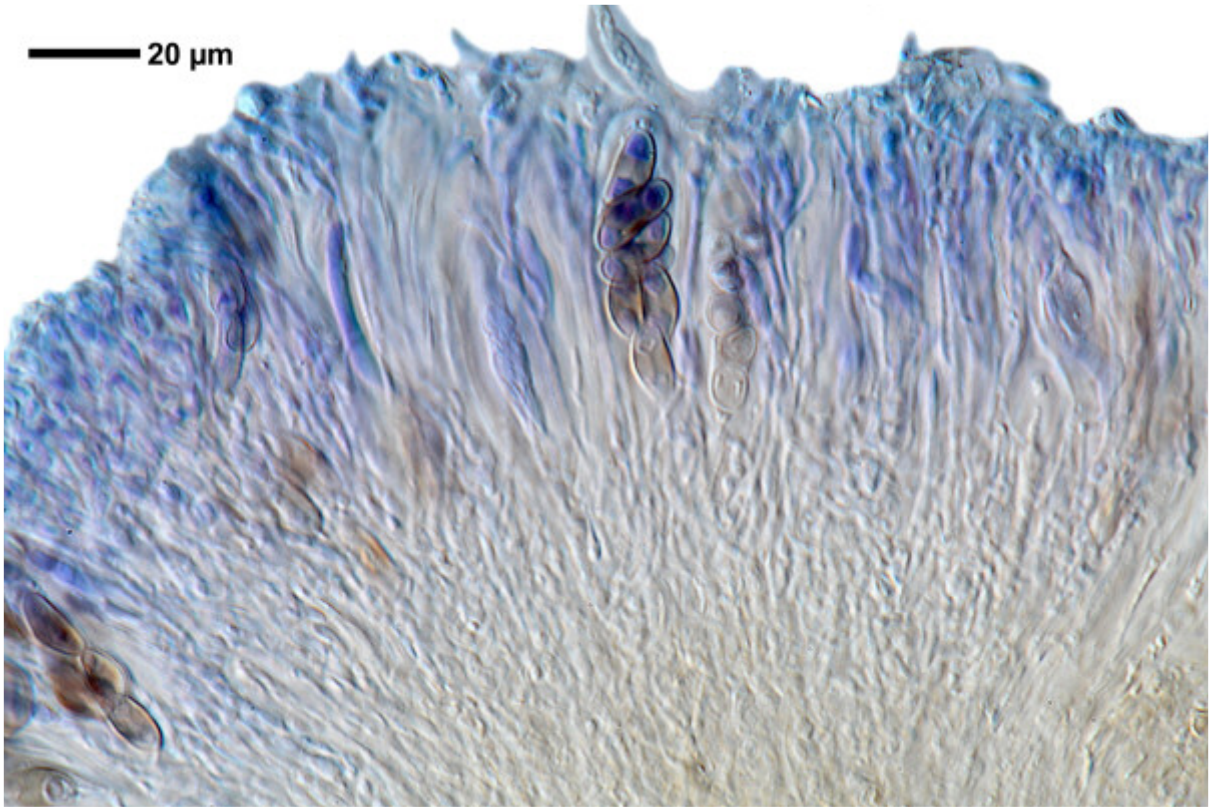


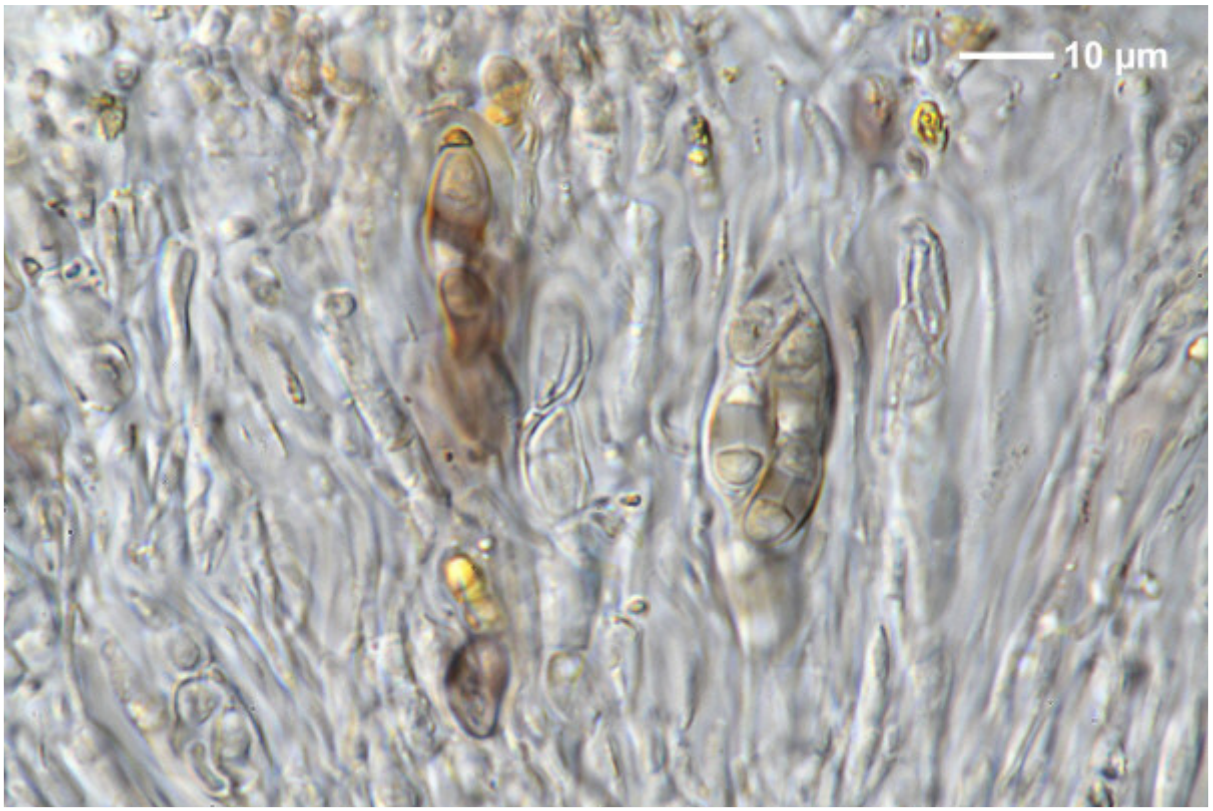
Caloplaca sconensis





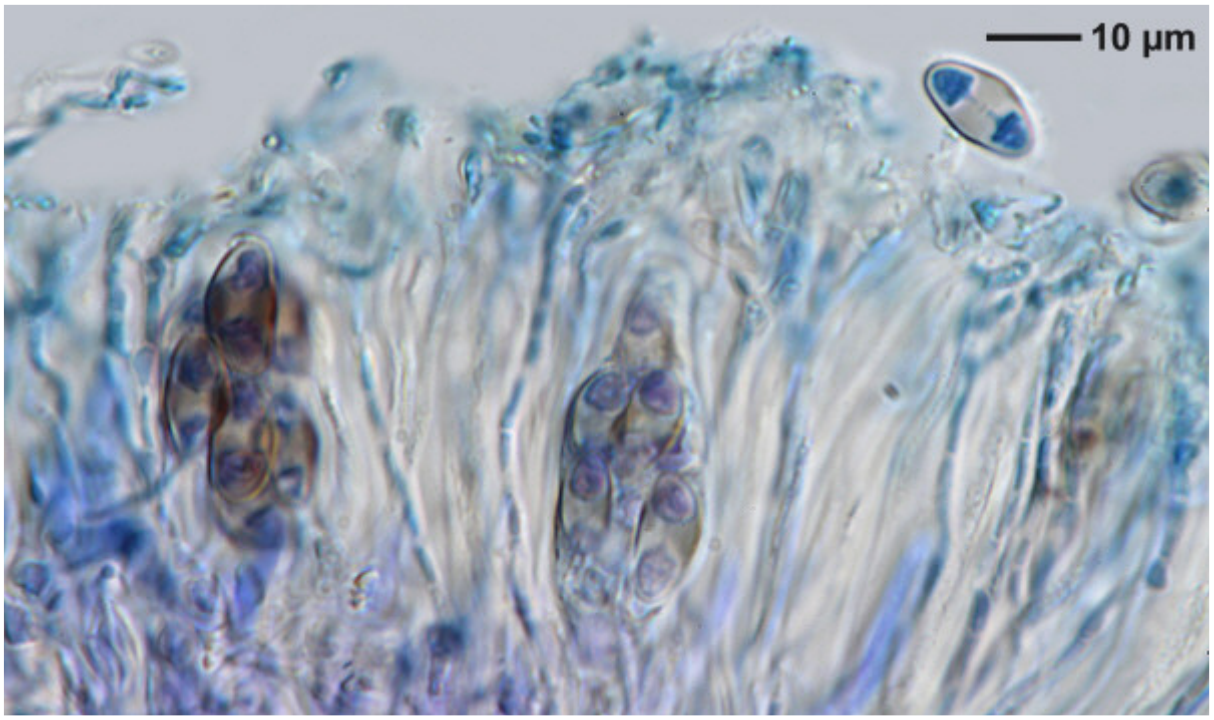
Caloplaca sconensis

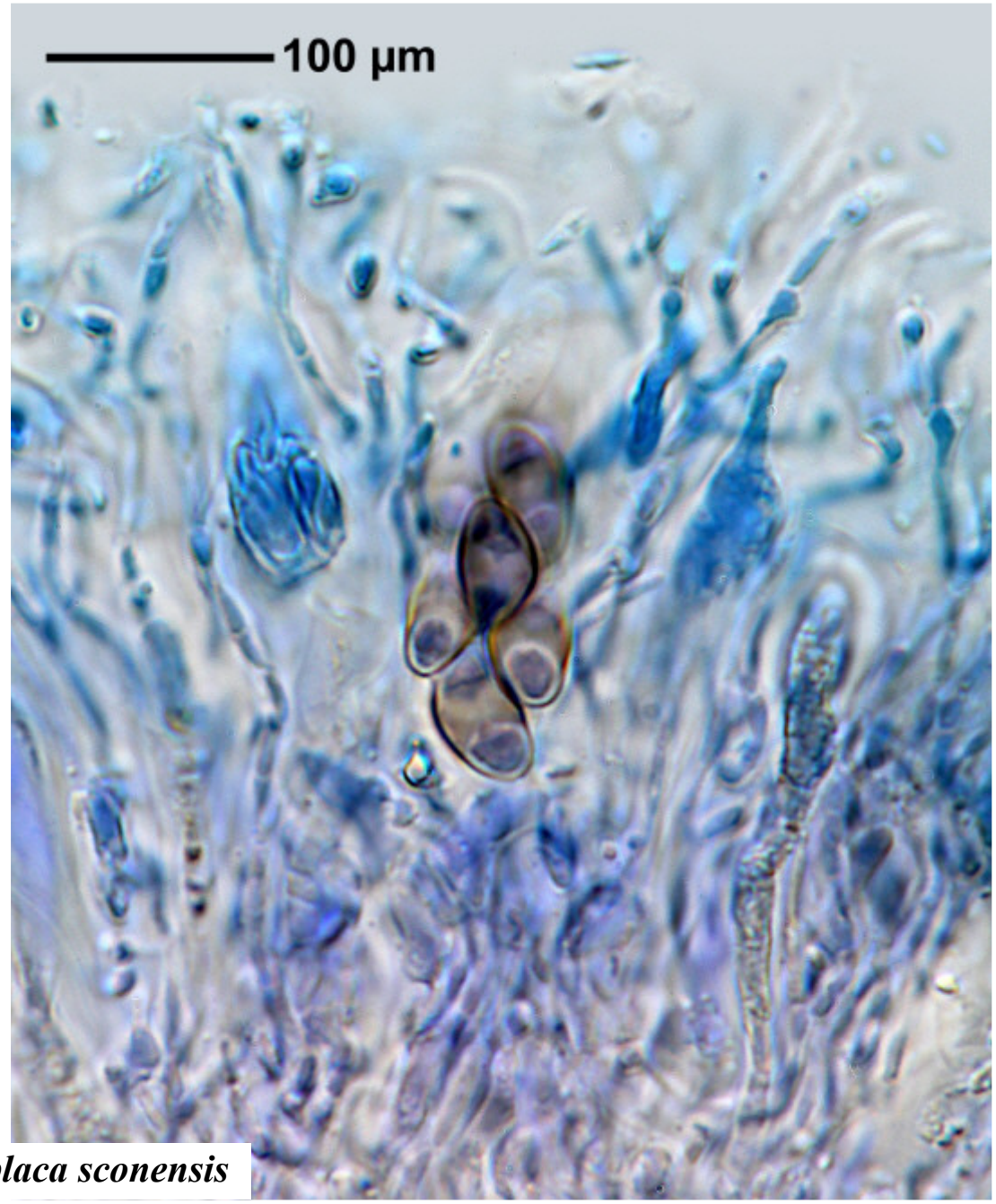




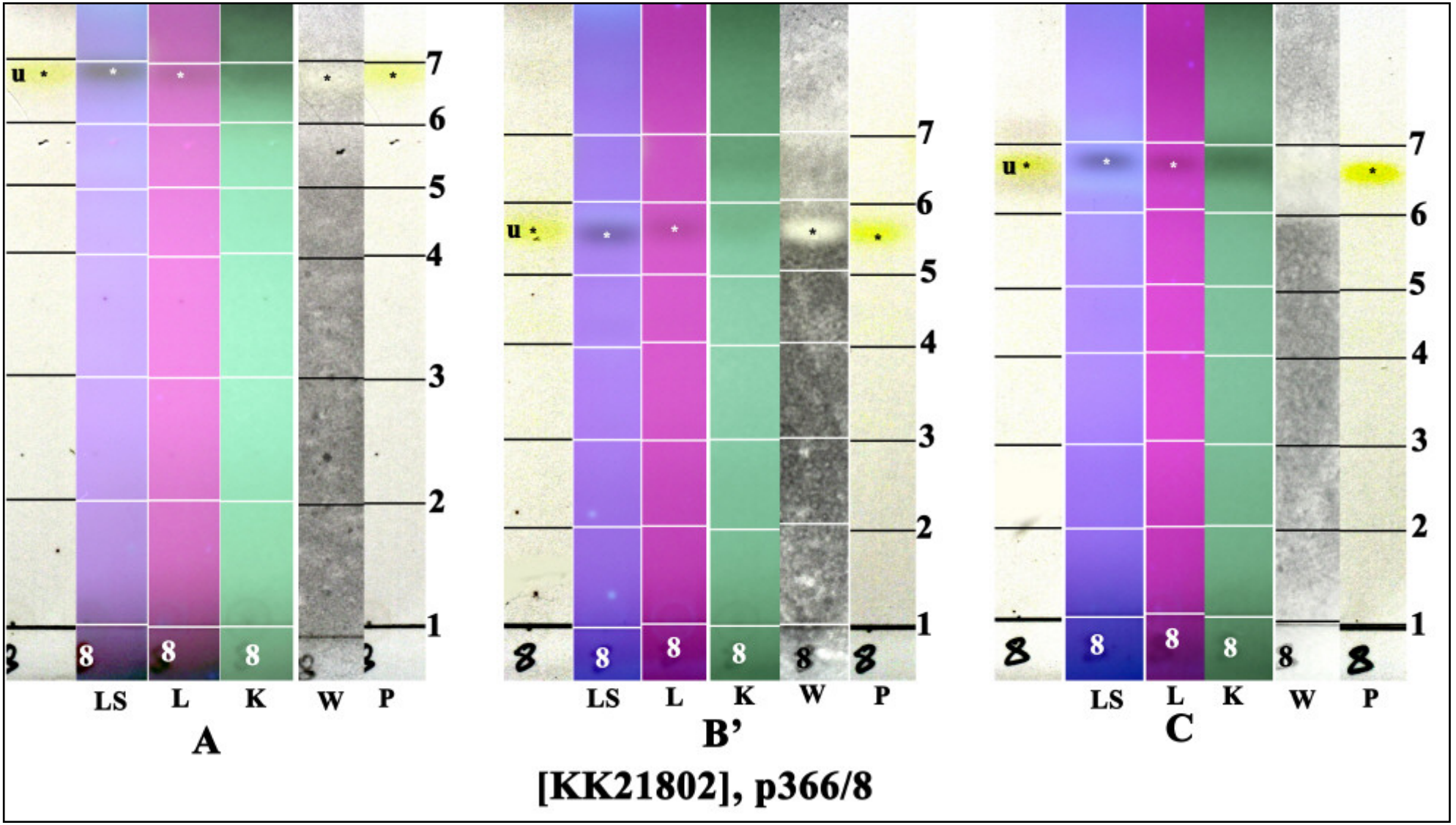


Caloplaca sconensis





Caloplaca sconensis



u: neochloroemodin

Caloplaca scopularis (Nyl.) Lettau
[= *Athallia scopularis* (Nyl.) Arup, Frödén & Søchting]

Spores 10.5-12 x 4.8-5.3 µm, septum 3.5 µm (FS). On non-calcareous rocks. Lit. Lettau in Hedwigia 52: 242 (1912)

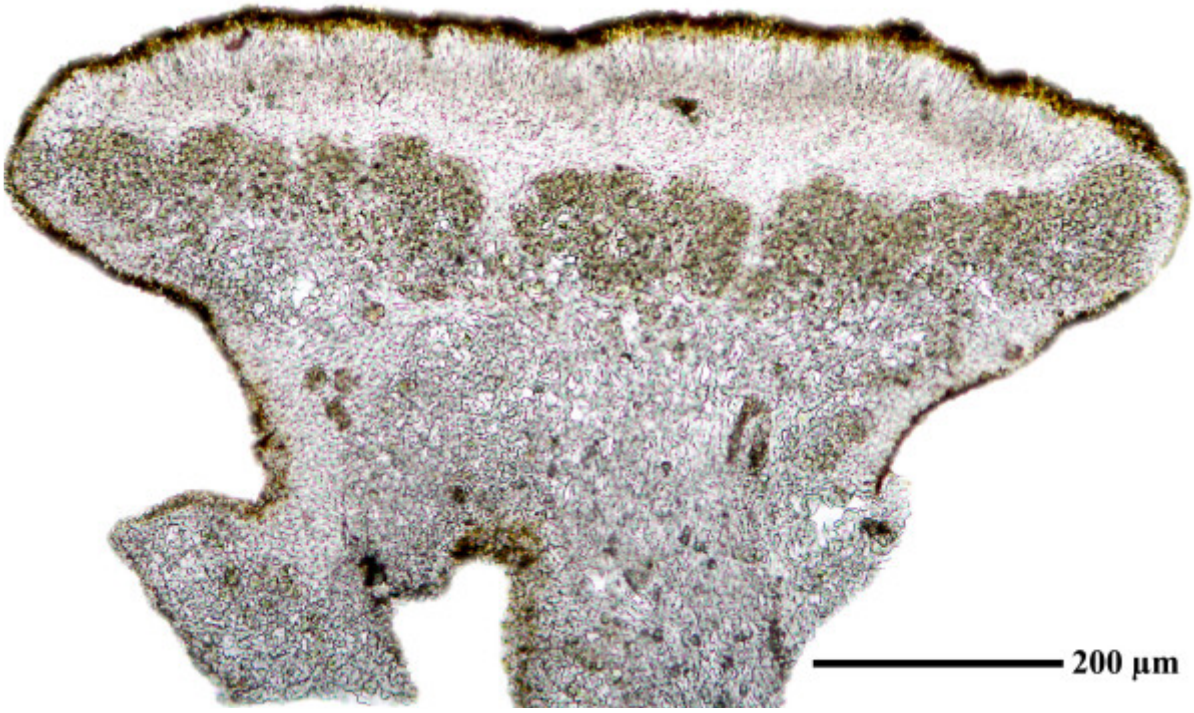
[19601], Bulgaria, Pontus, distr. Burgas, in littore inter pagos Mičurin et Varvara, alt. 3-5 m, ad saxa silicea maritima. Leg. A. Kiszely & A. Vězda, 18.08.1975. VěZDA: LICHENES SELECTI EXSICCATI NR. 1362.

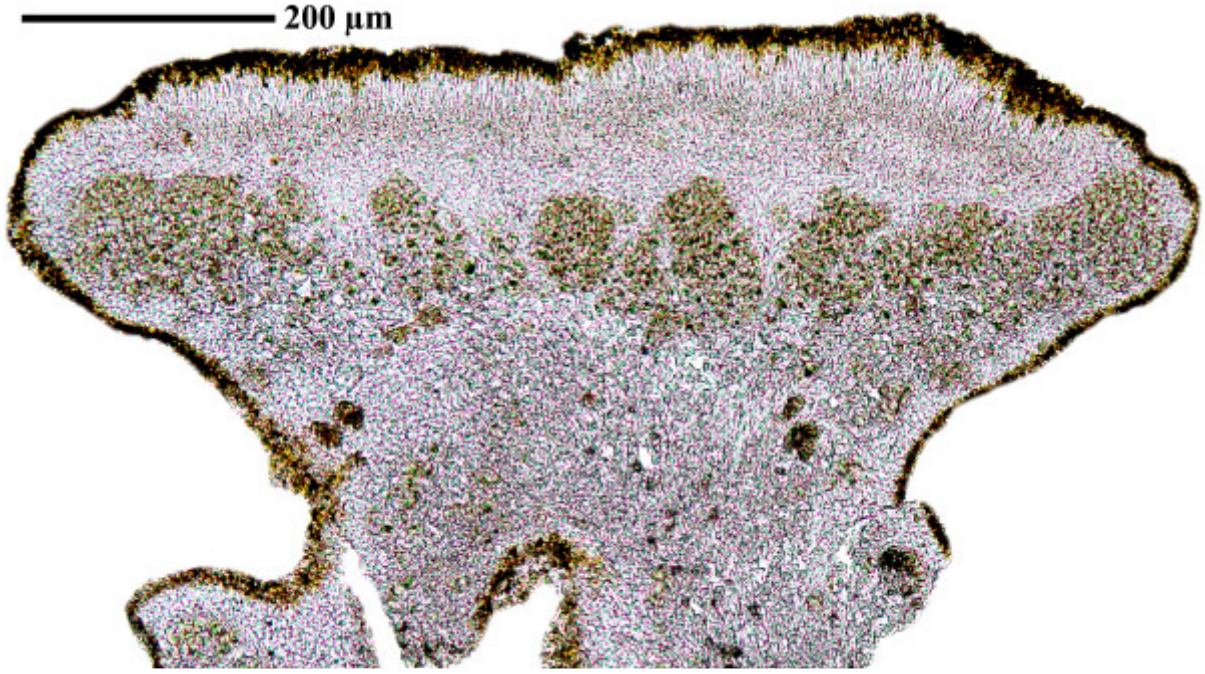






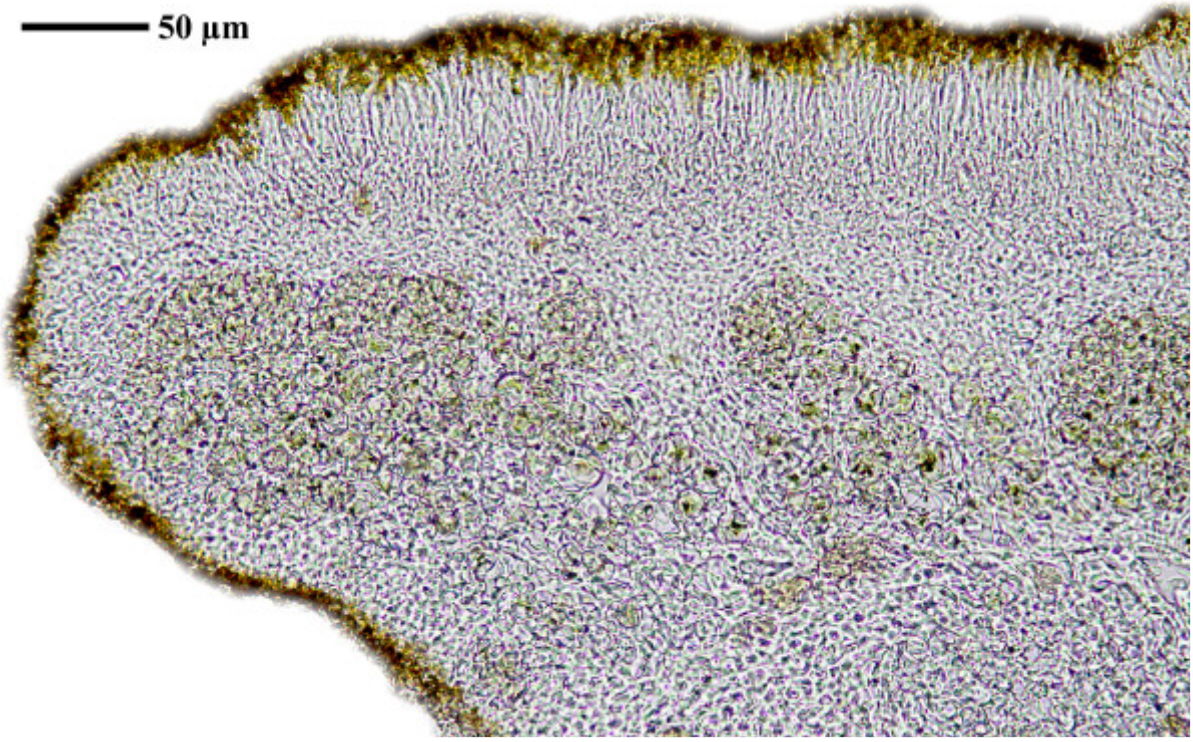
Caloplaca scopularis



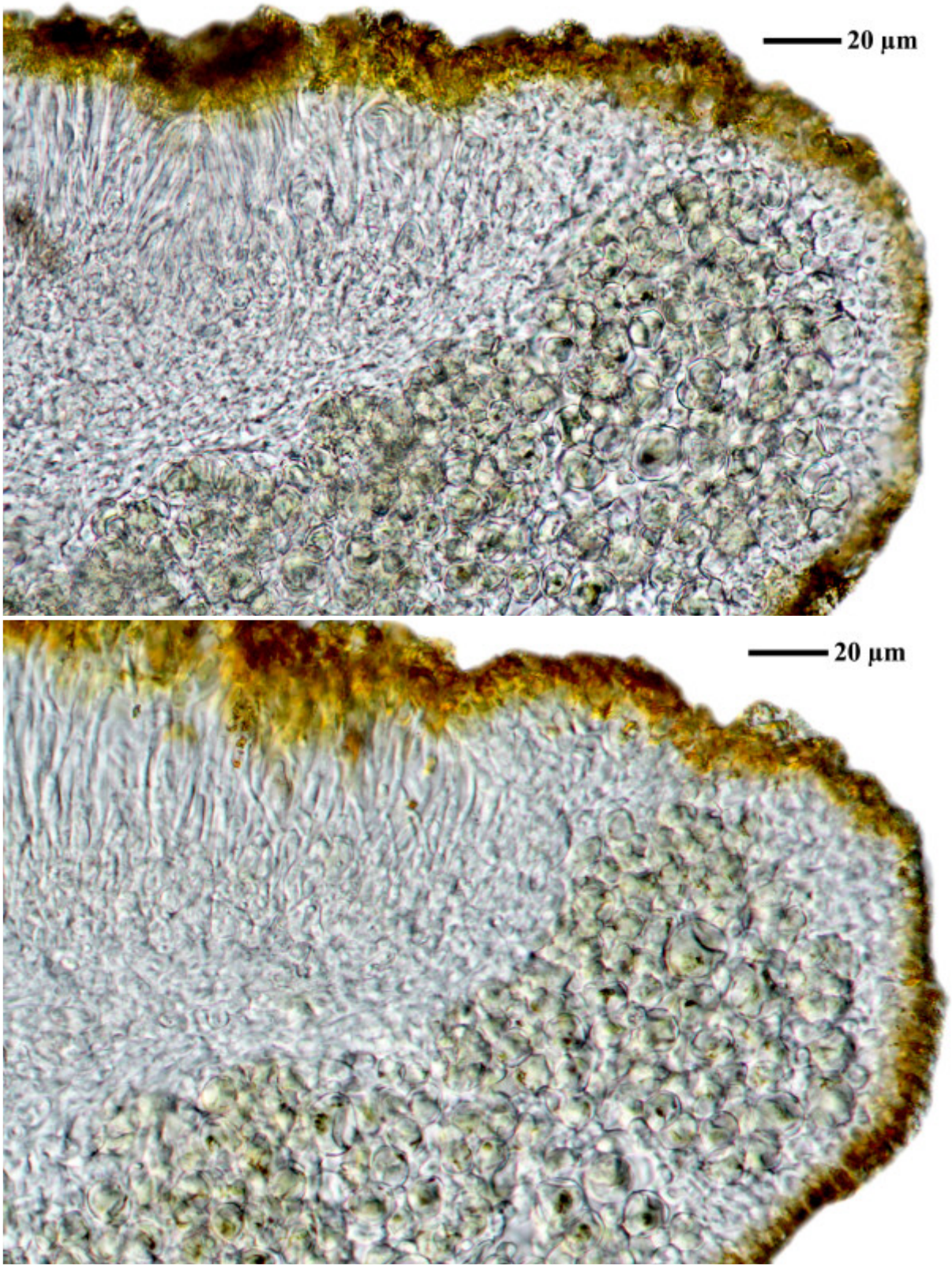


Caloplaca scopularis

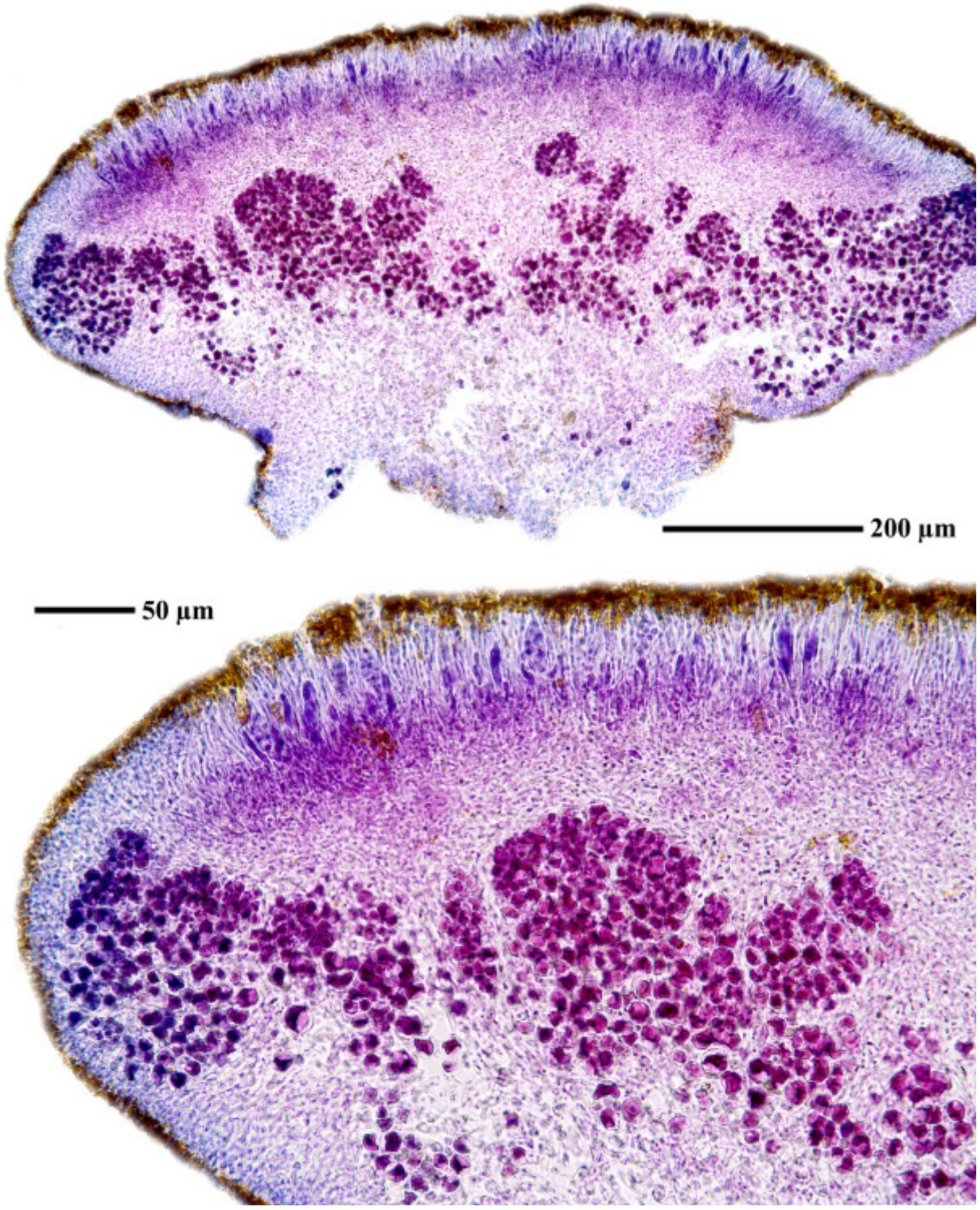




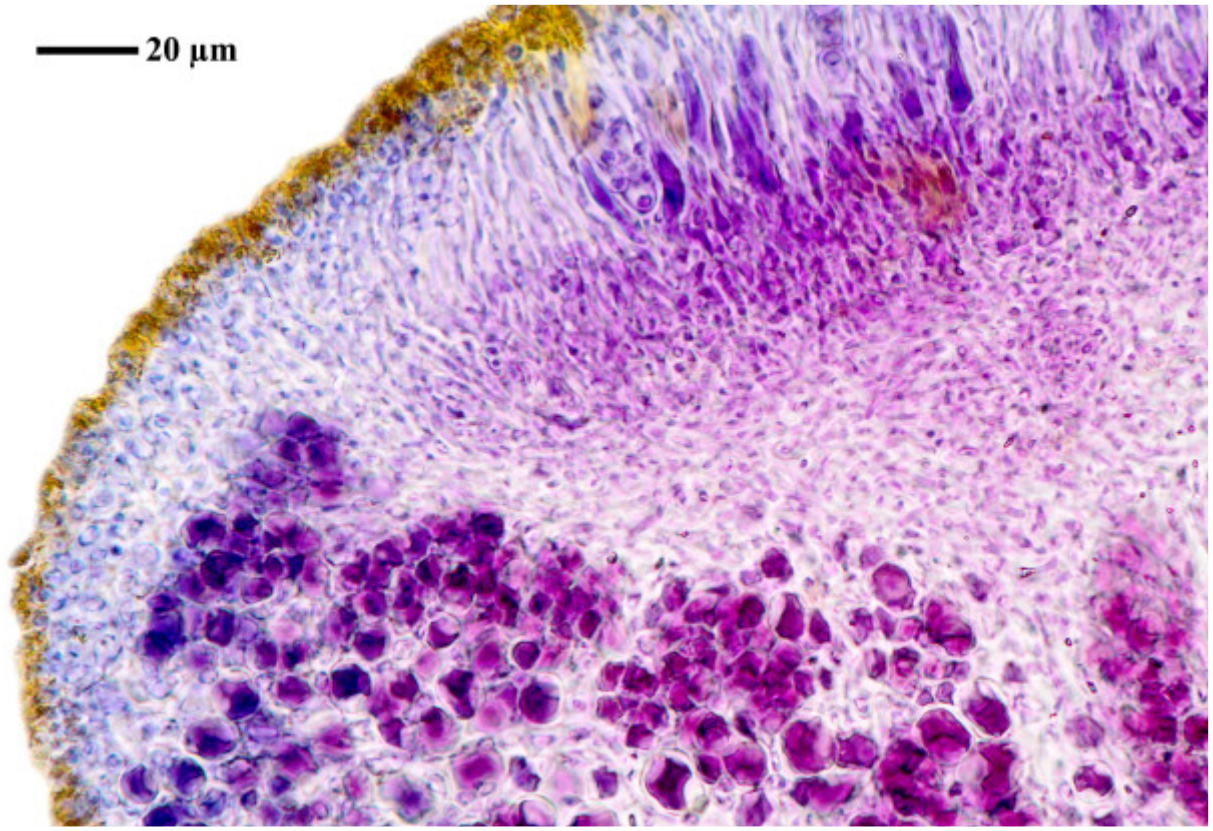
Caloplaca scopularis

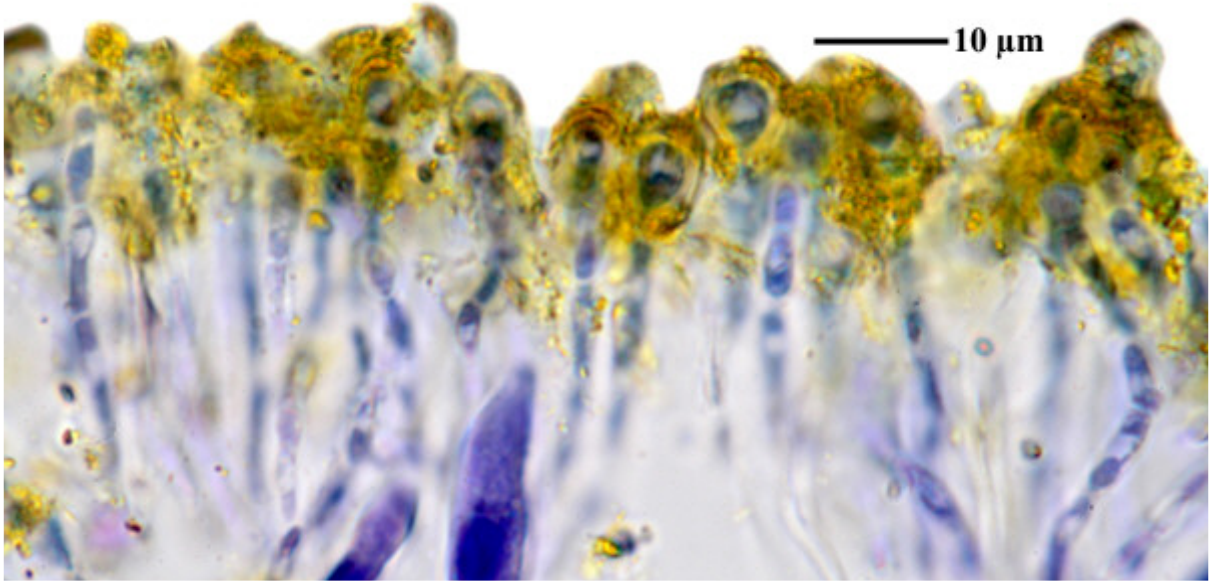


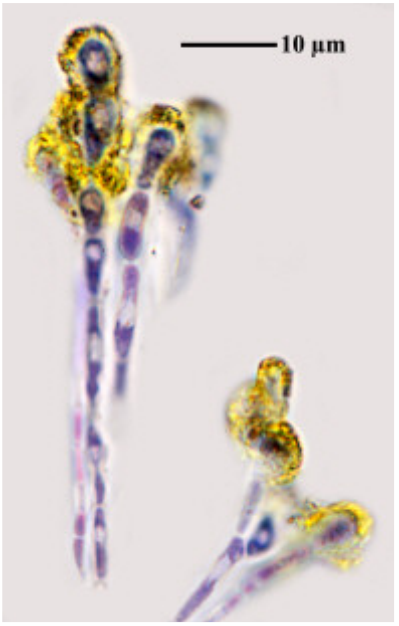
Caloplaca scopularis



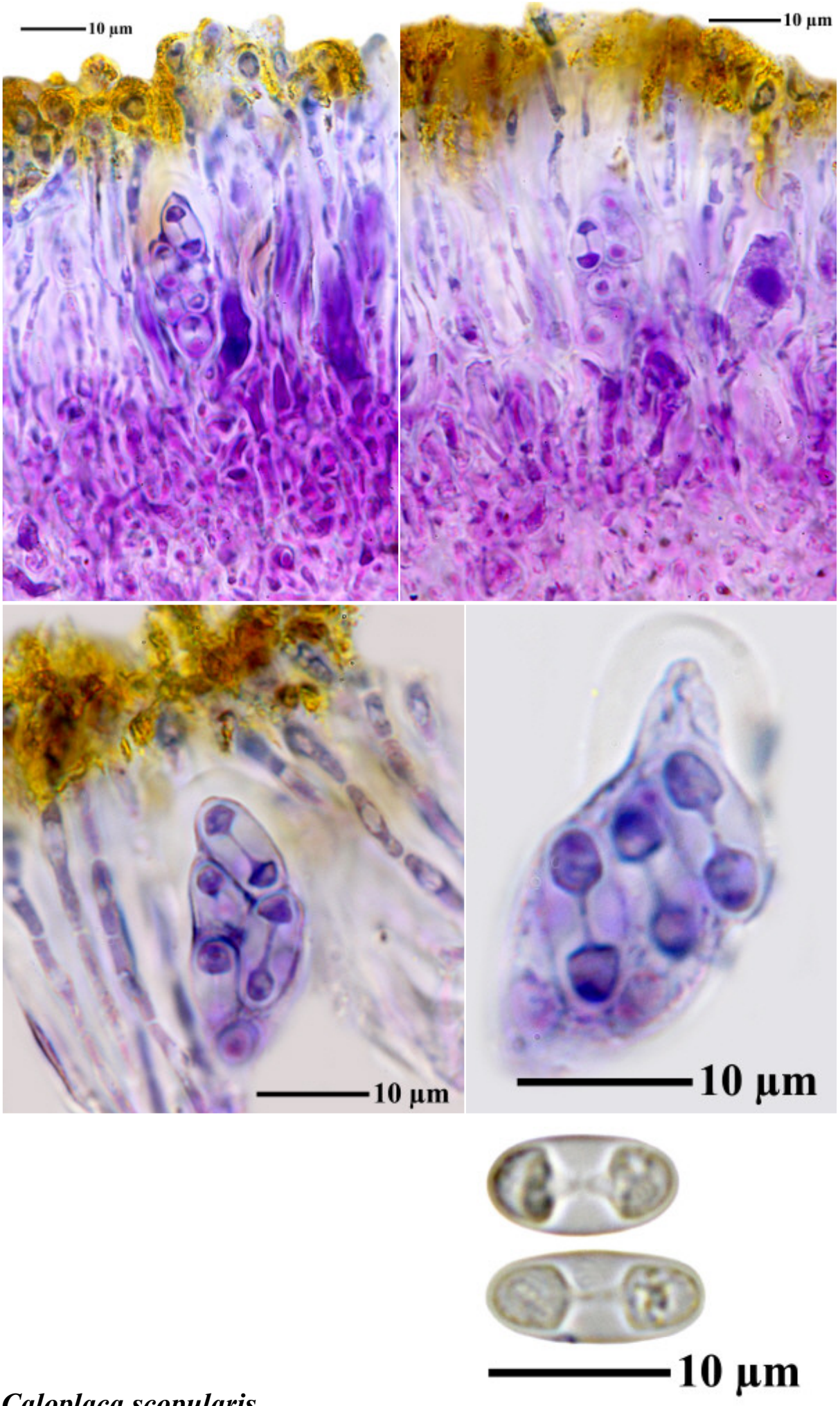
Caloplaca scopularis







Caloplaca scopularis



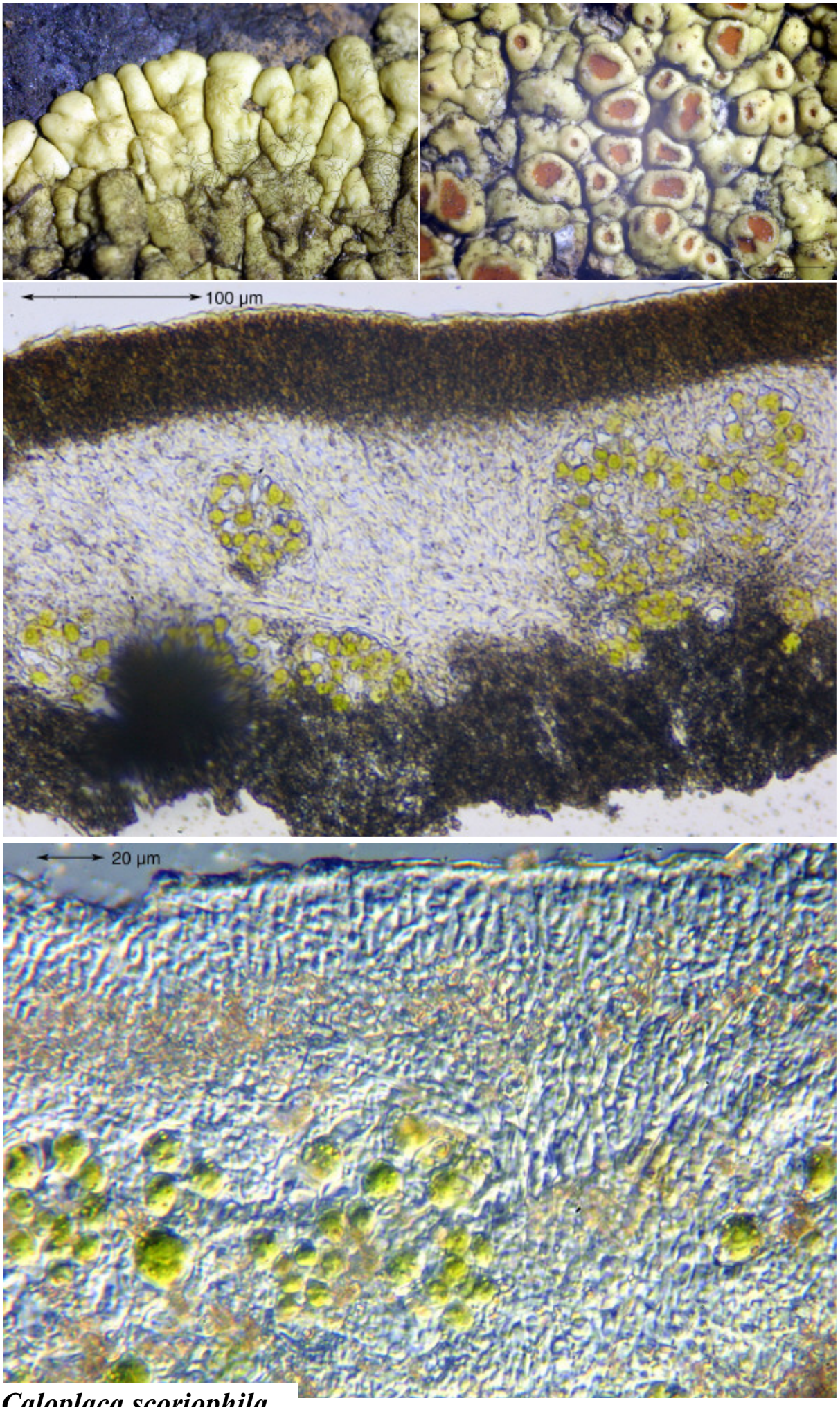
Caloplaca scopularis

Caloplaca scoriophila (A. Massal.) Zahlbr.
[= *Caloplaca carphinea* (Fr.) Jatta var. *scoriophila* (A. Massal.) J. Steiner]
[= *Usnochroma scoriophilum* (A. Massal.) Søchting, Arup & Frödén]

Lager dick (300-500 µm), meist grünlich gelb; Areolen mehr oder minder gewölbt, glatt bis leicht glänzend; Randlappen locker anliegend, häufig etwas vom Substrat abgehoben; Oberrinde 50-80 µm dick, skleroplectenchymatisch, zweigeteilt in eine gleichmäßig durchlaufende, stark körncheninspergierte obere Schicht und eine unregelmäßig in die Algenzone vorspringende, nicht inspergierte untere Schicht; Apothecien breit aufsitzend, oft sockelartig emporgehoben; Sporen hyalin, 8/Ascus, polar-2-zellig, 11-15 x 5-6 µm. Vorkommen: Spanien, Kanarische Inseln, Madeira, Kapverdische Inseln.

[5374], Spanien, Kanarische Inseln, Gran Canaria, Nordhänge am Stausee Embalse del Mulato, lückige Gebüschvegetation mit offenerdigen Stellen und vereinzelten Pinus-canariensis-Gruppen, 27°54.905' N, 15°41.596' W, 760 m. Leg. Schumm 31.12.1998.





Caloplaca scoriophila

Caloplaca scoriophila (A. Massal.) Zahlbr.
[= *Caloplaca carphinea* (Fr.) Jatta var. *scoriophila* (A. Massal.) J. Steiner]
[= *Usnochroma scoriophilum* (A. Massal.) Søchting, Arup & Frödén]

On rocks

[12861], Spanien, Kanaren, La Palma (S), Lavafeld an der Südküste bei Playa del Faro, 28°28.352' N, 17°51.813' W, ca. 30-40 m. Leg. et det. F. Schumm 13.01.2007.







Caloplaca scoriophila

Caloplaca scoriophila (A.Massal.) Zahlbr.
[= *Usnochroma scoriophilum* (A.Massal.) Søchting, Arup & Frödén]

On rocks

[12876], Spanien, Kanaren, La Palma (S), Lavafeld an der Südküste bei Playa del Faro, 28°28.352' N, 17°51.813' W, ca. 30-40 m. Leg. F. Schumm, 13.01.2007, det F. Schumm 2007



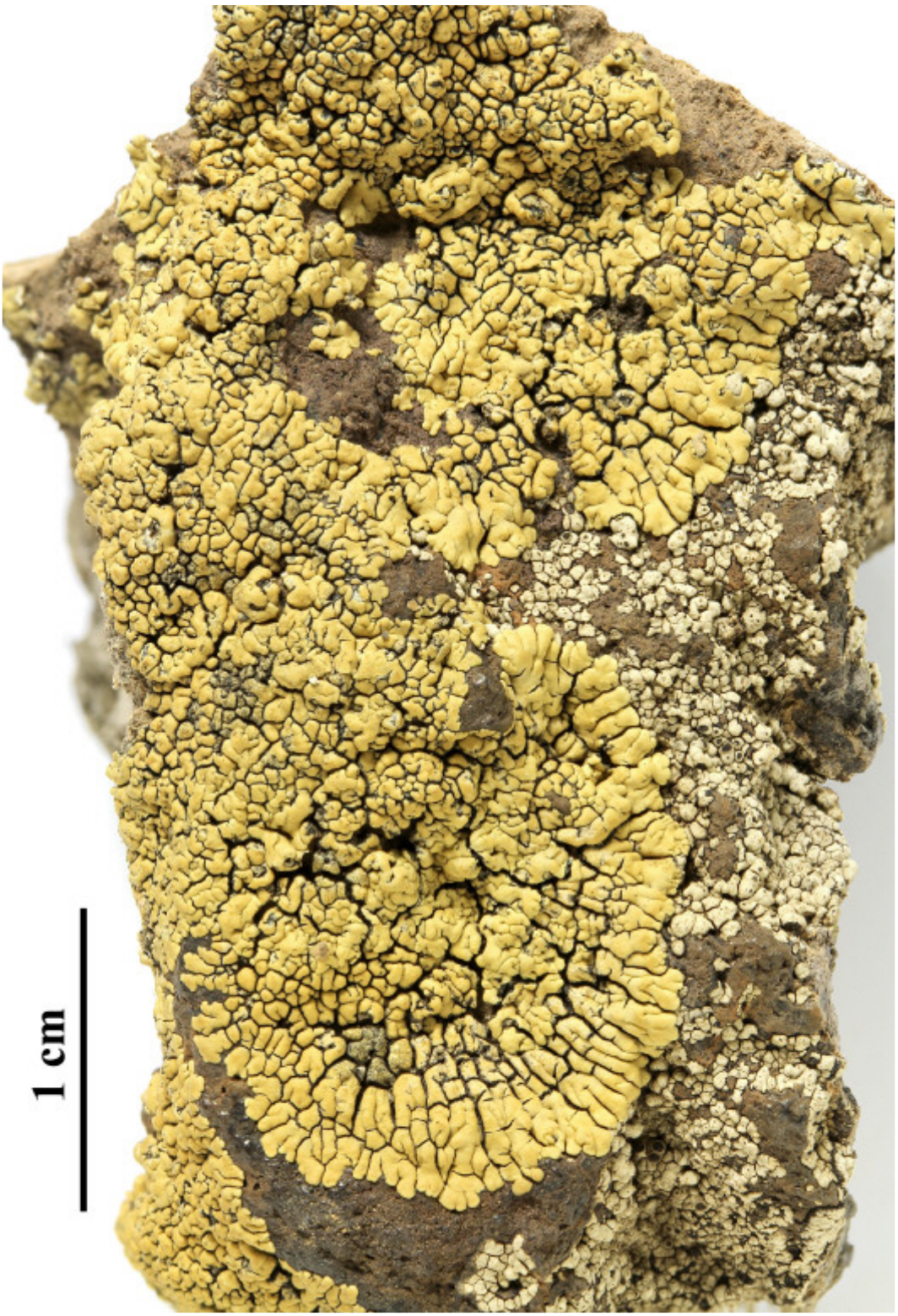


Caloplaca scoriophila [12876]

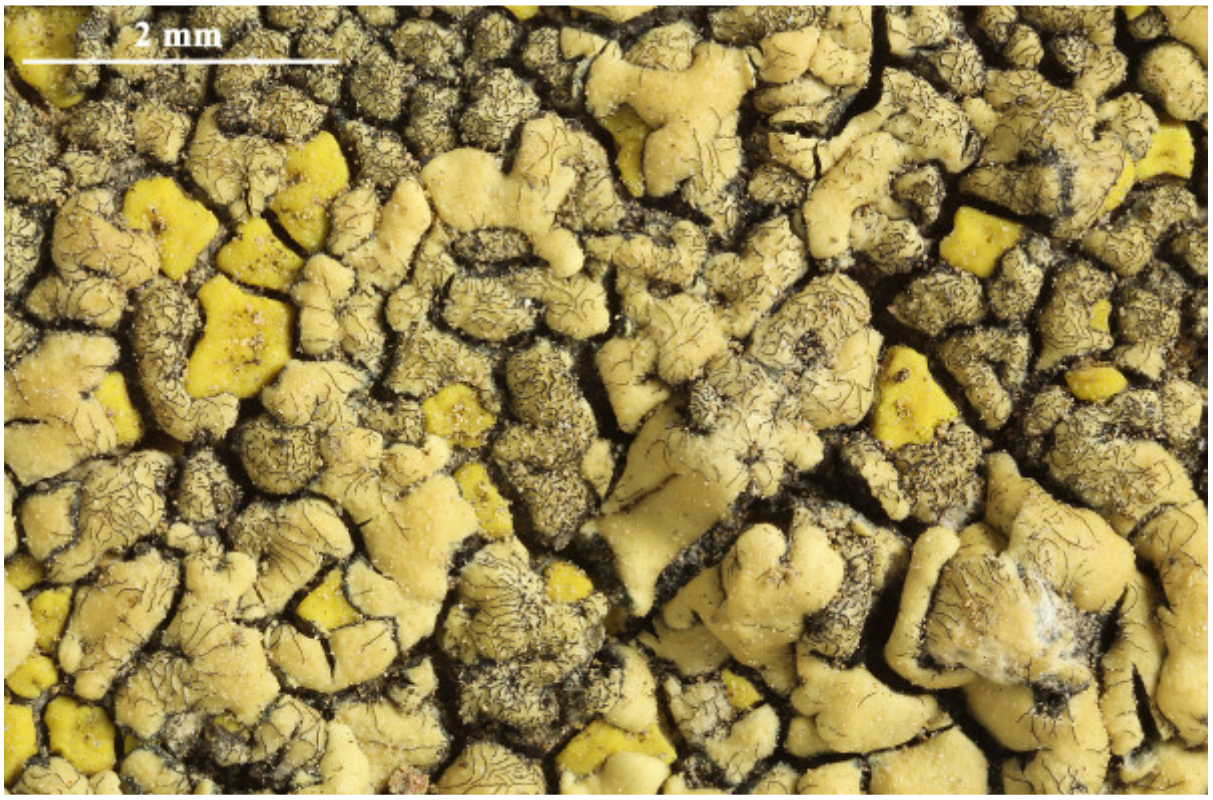
Caloplaca scoriophila (A. Massal.) Zahlbr.
[= *Caloplaca carphinea* (Fr.) Jatta var. *scoriophila* (A. Massal.) J. Steiner]
[= *Usnochroma scoriophilum* (A. Massal.) Søchting, Arup & Frödén]

On rocks

[12983], Spanien, Kanaren, La Palma (NE), Los Cancajos südlich von Santa Cruz, küstennahe Lavafelder beim Hotel Las Olas, 28°38.657' N, 17°45.544' W, ca. 30 m. Leg. et det. F. Schumm, 16.01.2007.





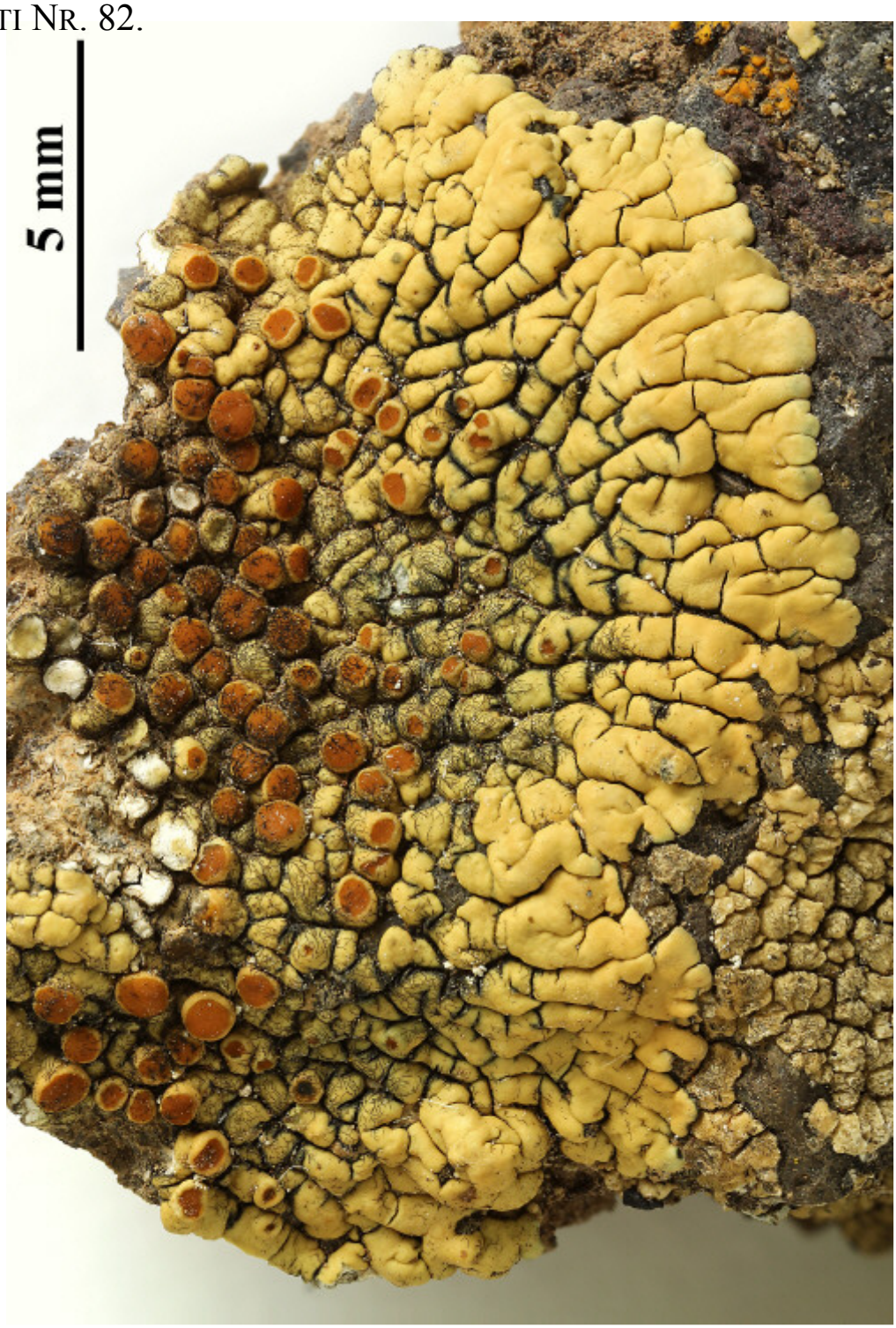


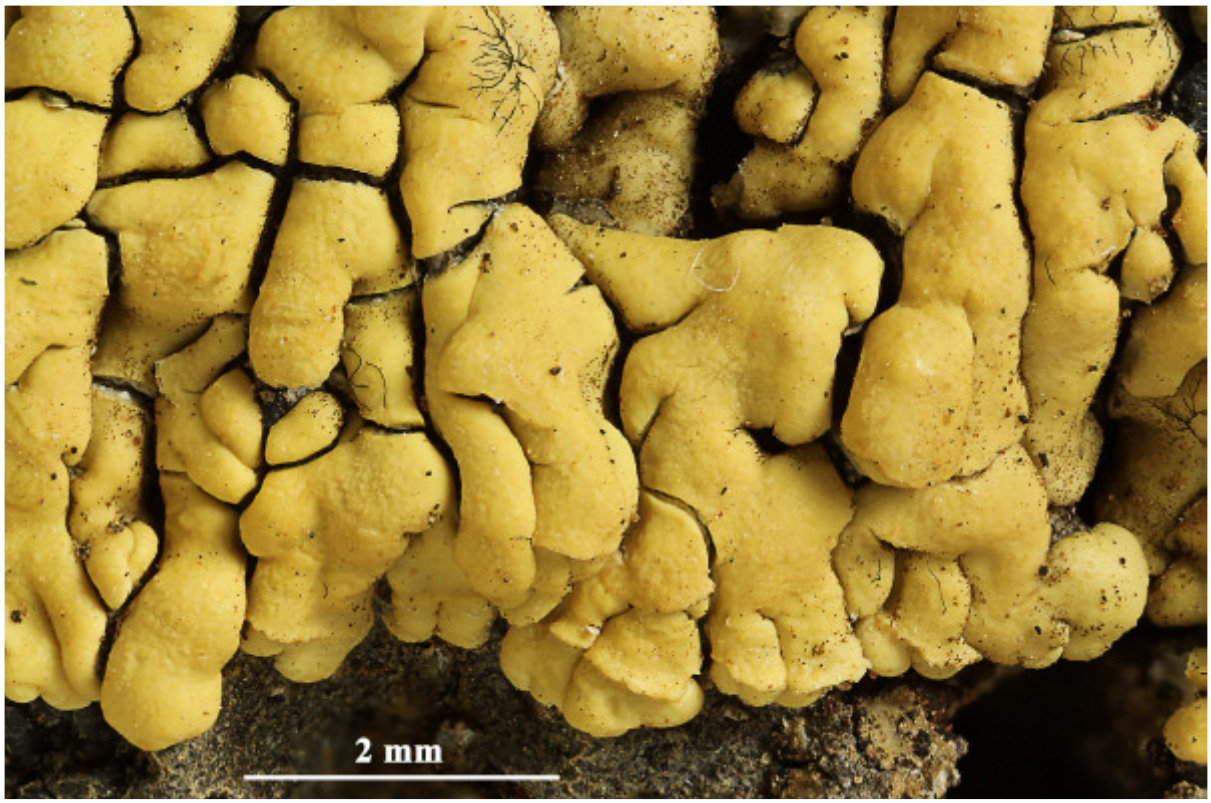
Caloplaca scoriophila

Caloplaca scoriophila (A. Massal.) Zahlbr.
[= *Caloplaca carphinea* (Fr.) Jatta var. *scoriophila* (A. Massal.) J. Steiner]
[= *Usnochroma scoriophilum* (A. Massal.) Søchting, Arup & Frödén]

On non-calcareous rocks. Lit. Zahlbruckner, Deutsch. Südpolarexp. 1901-1903, 8: 25 (1906)

[19559], Insulae Canarienses, Gran Canaria, distr. Magán, in declivibus occidentalibus montis "Guirre" supra urbem Mogán, 600 m, ad saxa basaltica. Leg. A. Vězda, 15.01.1993. VěZDA: LICHENES RARIORES EXSICCATI NR. 82.







Caloplaca scoriophila

Caloplaca scoriophila (A. Massal.) Zahlbr.
[= *Usnochroma scoriophilum* (A. Massal.) Søchting, Arup & Frödén]

Spores 10-11.5 x 5-5.7 µm, septum 4.2-5.7 µm (FS). On non-calcareous rocks. Lit. Zahlbruckner, Deutsch. Südpolarexped. 1901-1903, 8: 25 (1906).

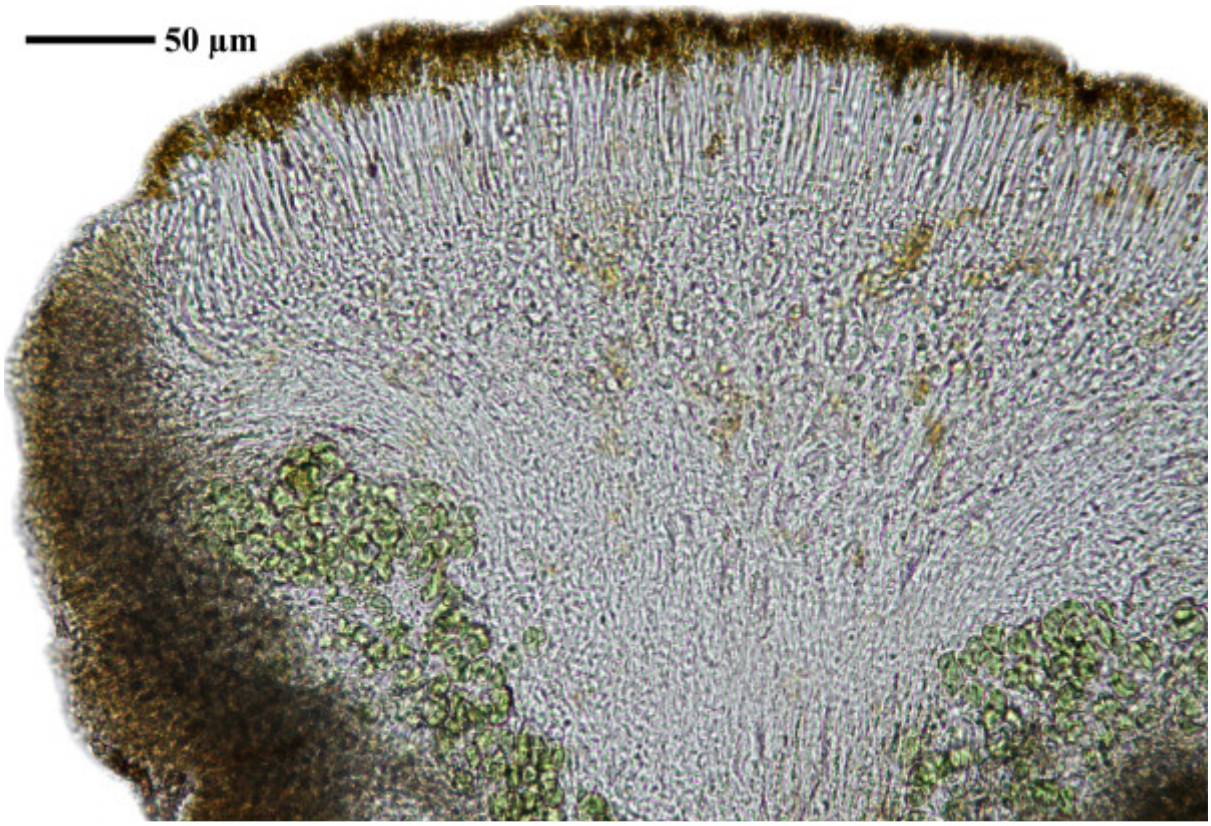
[19602], Hispania, Murcia, Cabo de Palos, insula Perdiguera, ad rupes andesiticas. Leg. J. M. Egea, 4.03.1984. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1994.

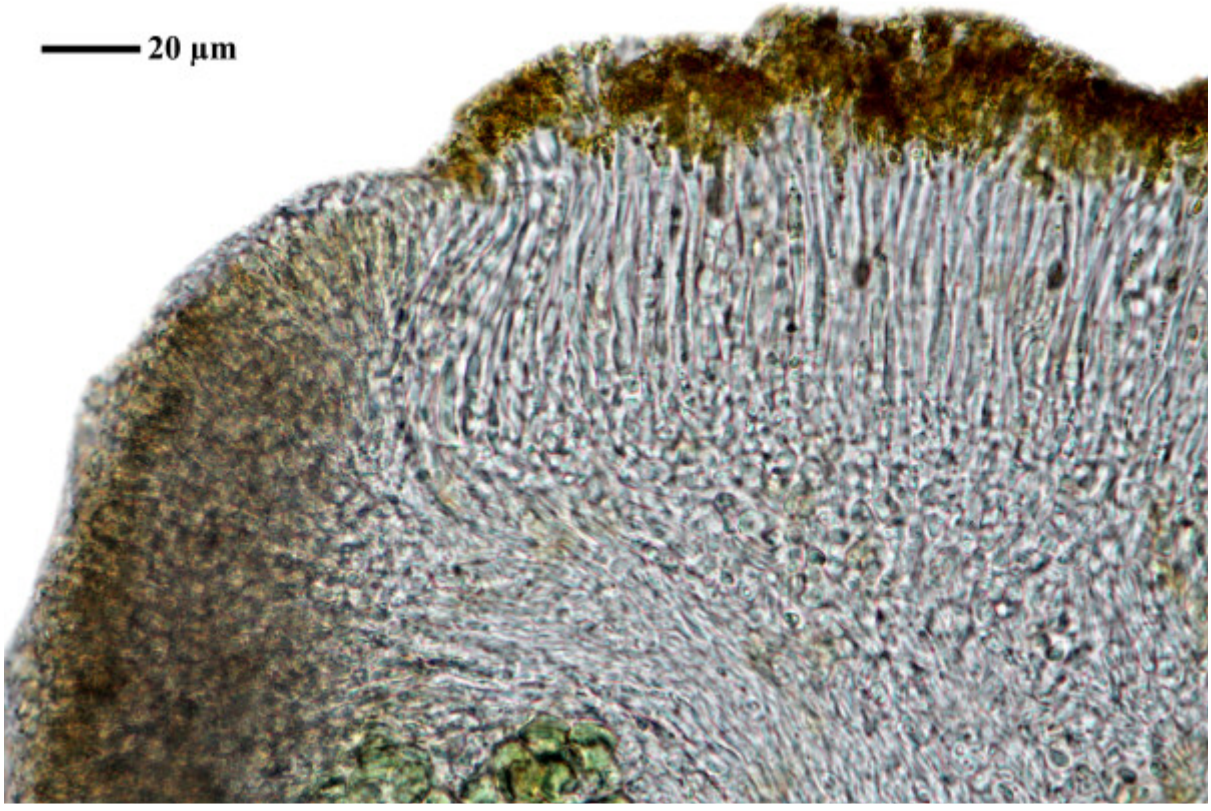




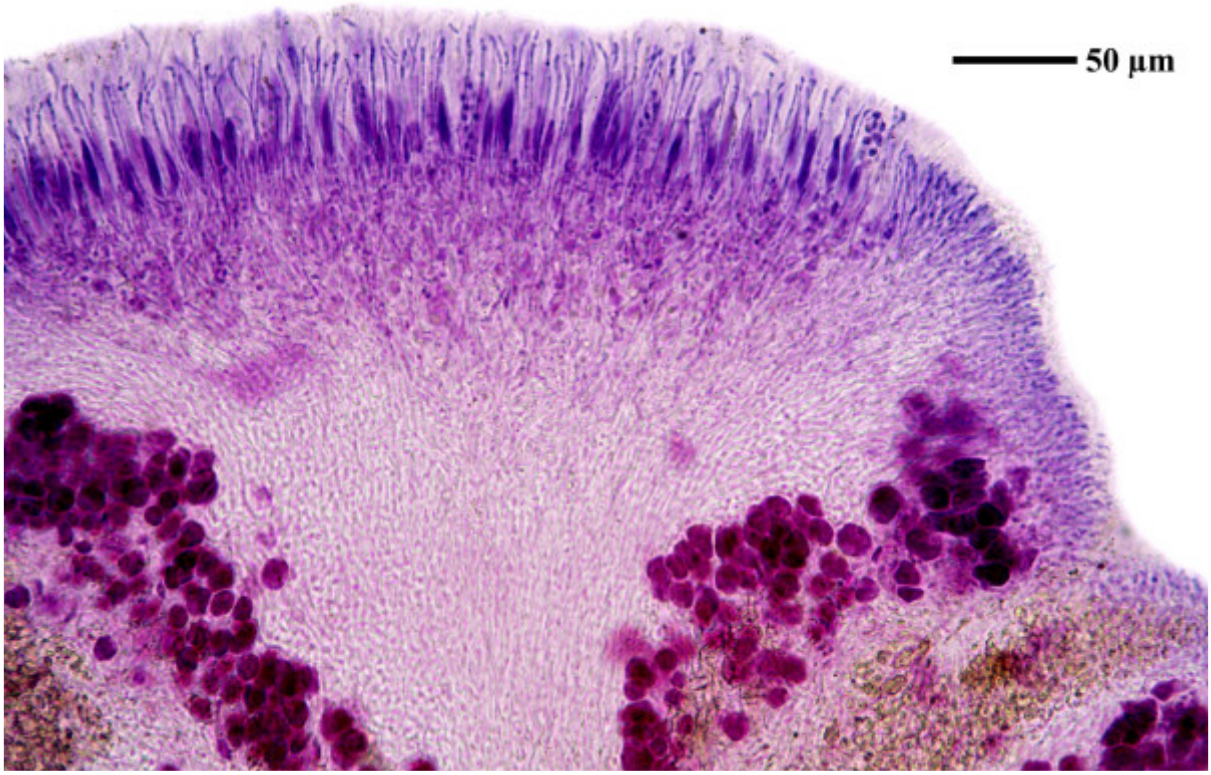


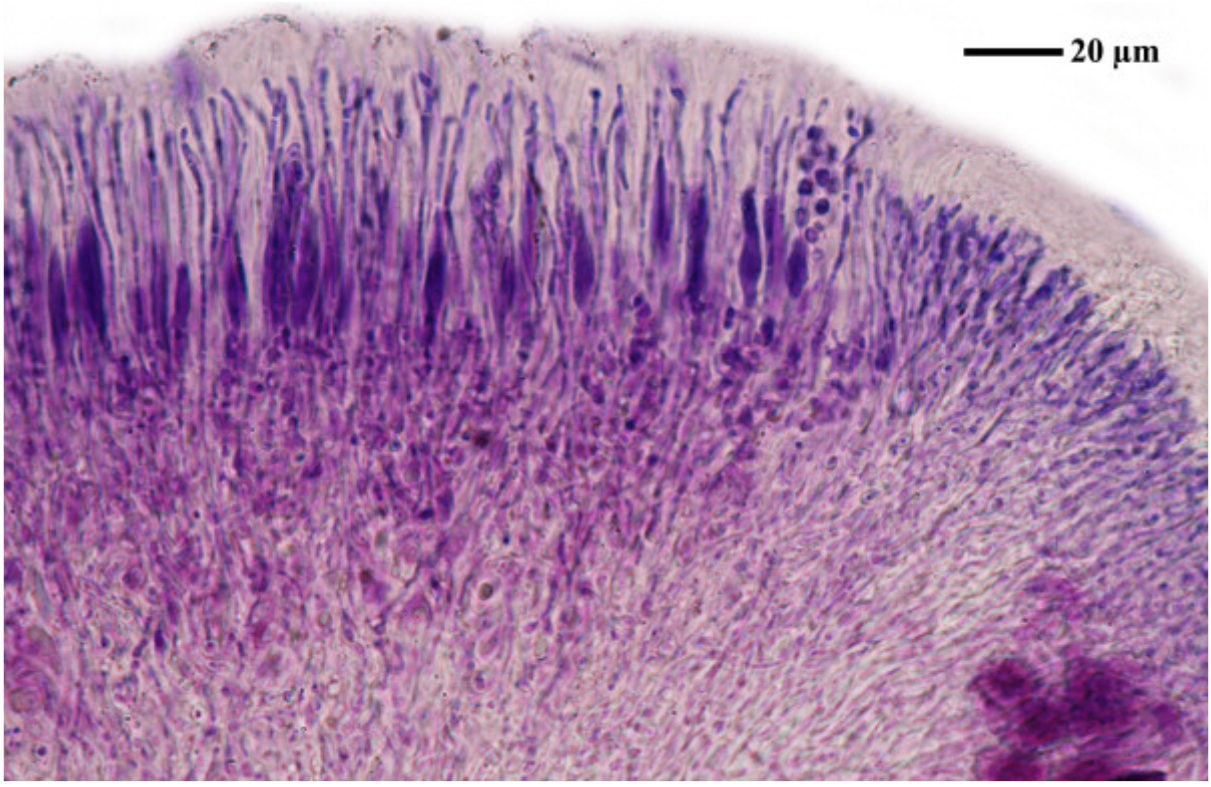
Caloplaca scoriophila



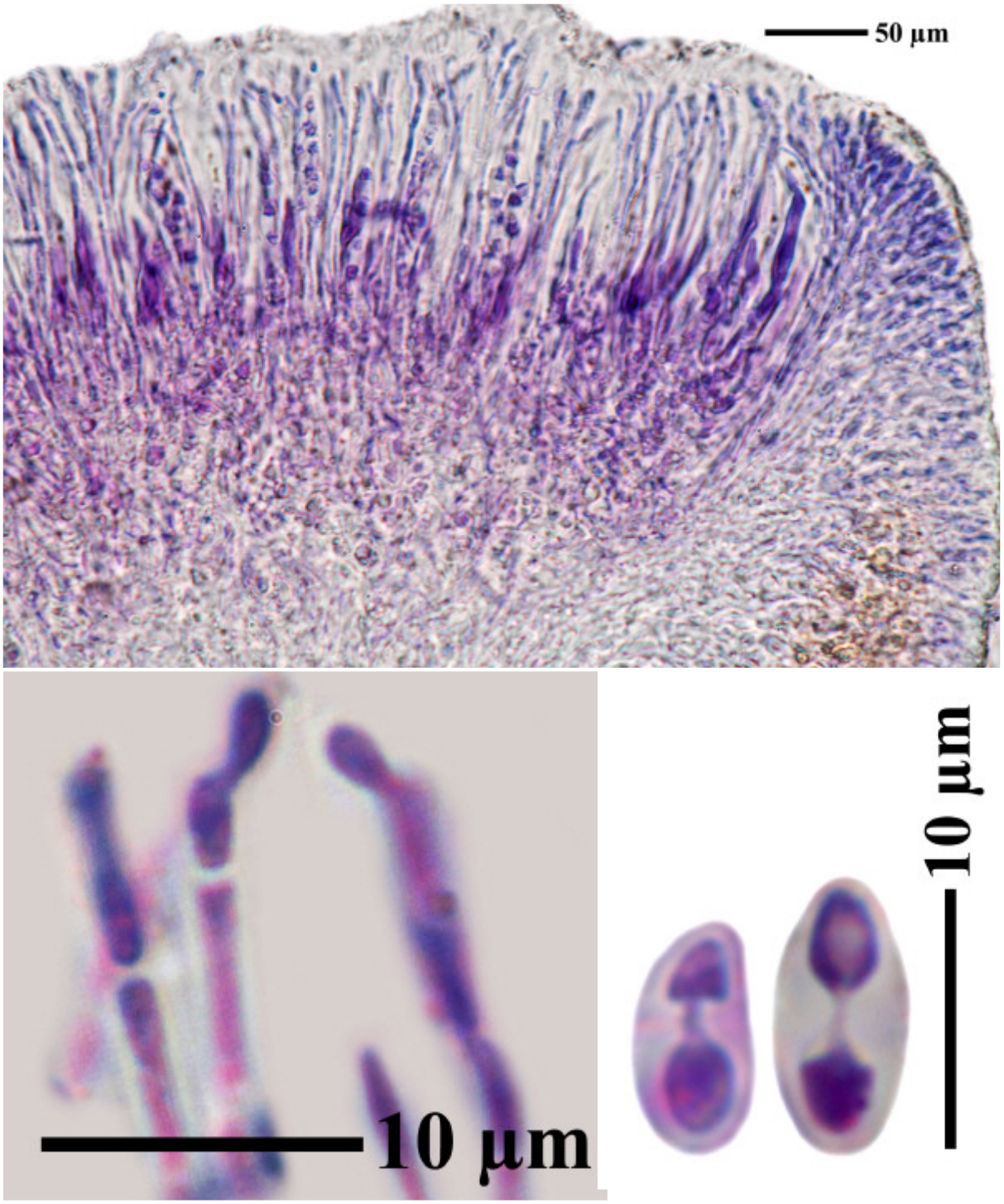


Caloplaca scoriophila

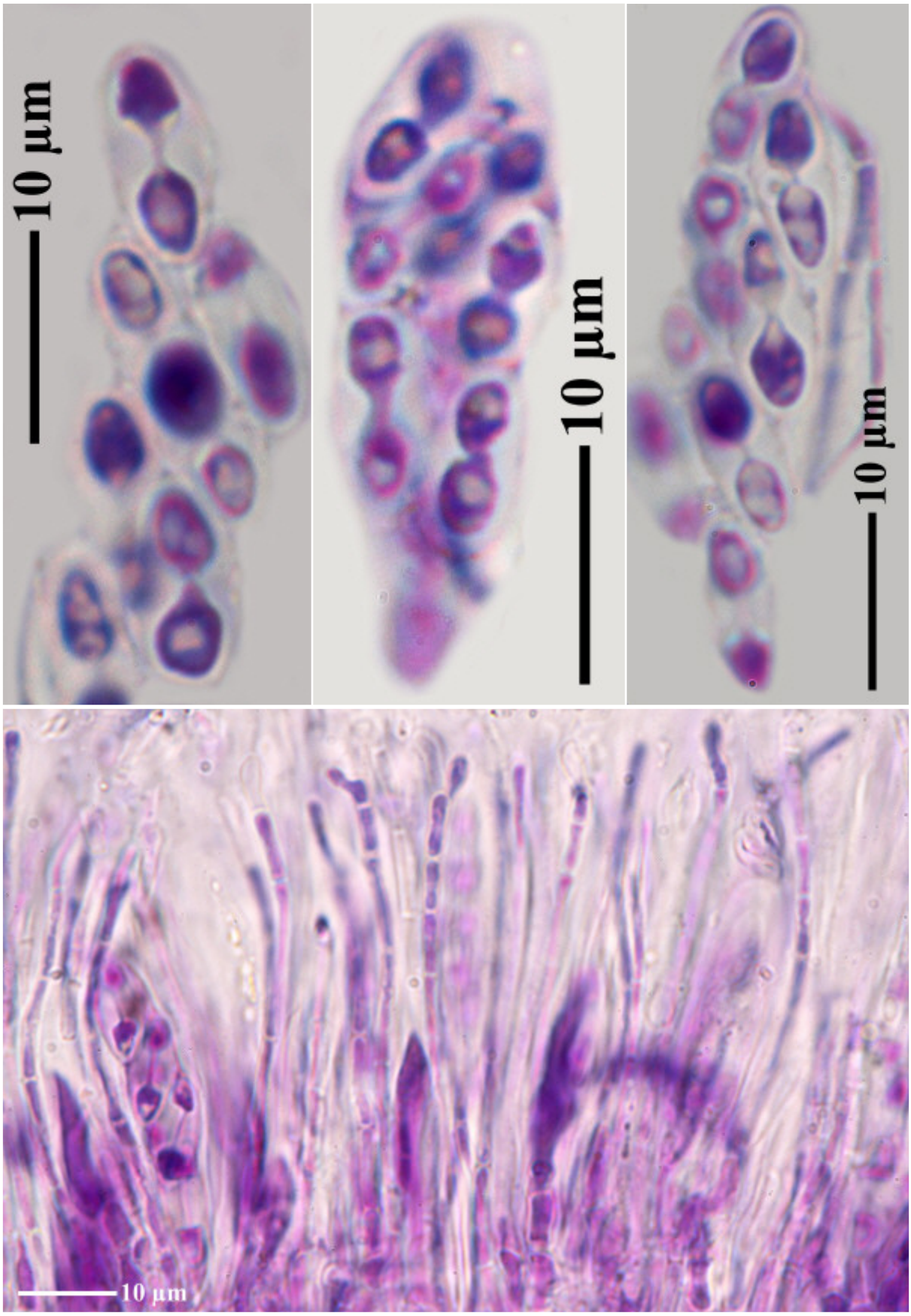




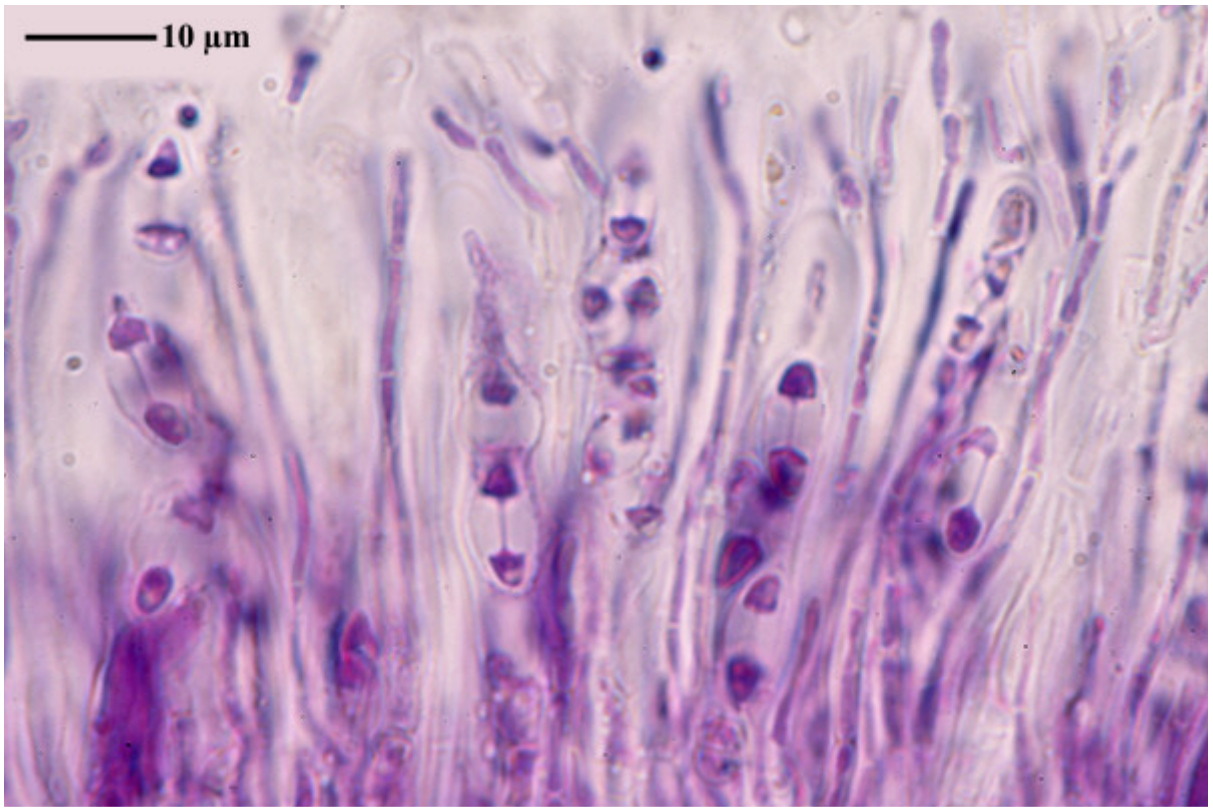
Caloplaca scoriophila

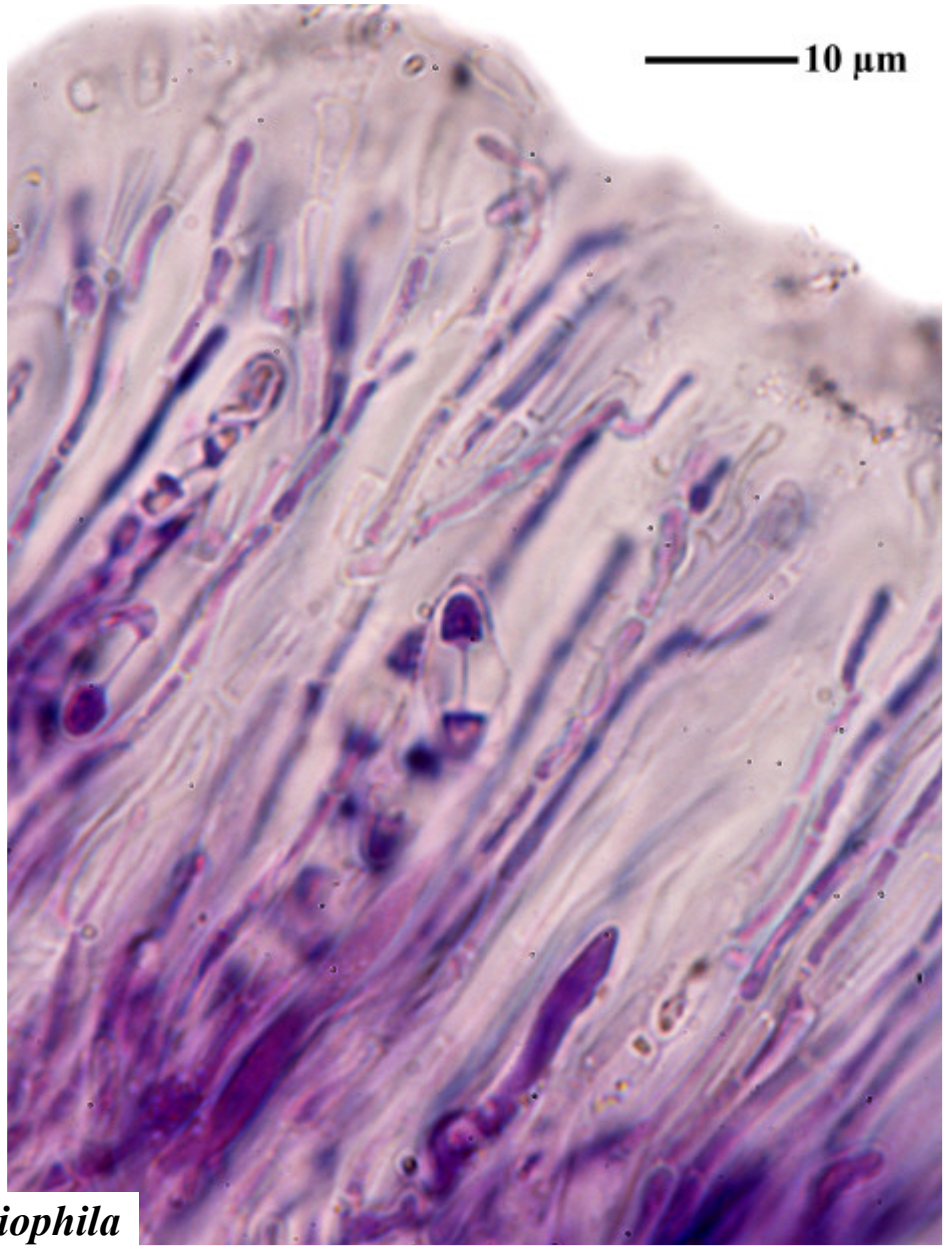


Caloplaca scoriophila



Caloplaca scoriophila





Caloplaca scoriophila

Caloplaca scythica Khodos. & Søchting

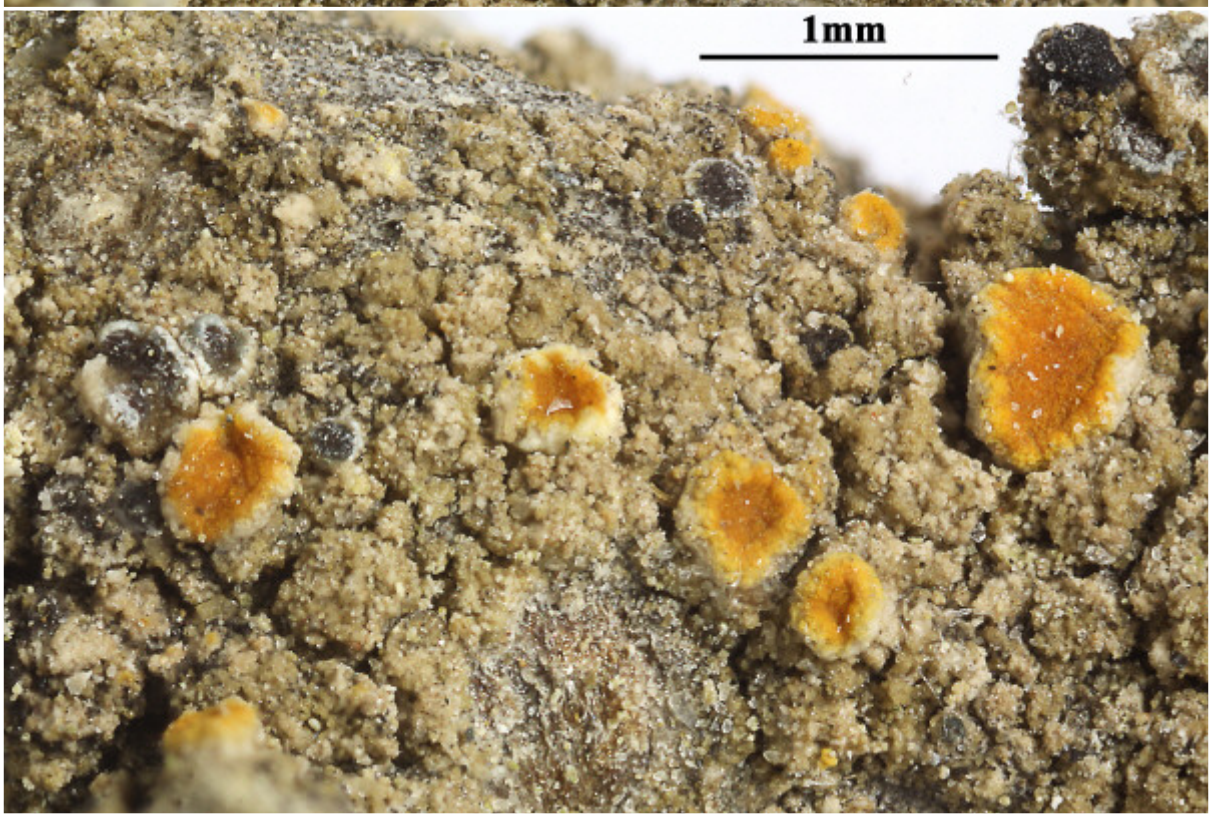
Spores 9.5-11.5 x 4.5-5 µm, septum 4-4.5 µm (FS).

Note: Based on ITS sequence data, *Caloplaca scythica* is conspecific with *Caloplaca phlogina*. However the name „*C. scythica*“ can be used for populations with whitish soralia which lack anthraquinone, occuring in salt marches along the northern Black Sea coast.

[B 60 0187253], Russia, Taman Peninsula, salt marsh SW of Primorskiy near Taman' Bay coast, on *Halocnemum strobilaceum*. 45°15’16.05” N, 36°53’40.46” E. Leg. et det. J. Vondrák, 20. May 2007. VONDRÁK: SELECTED EXSICCATES OF CALOPLACA NO 47.



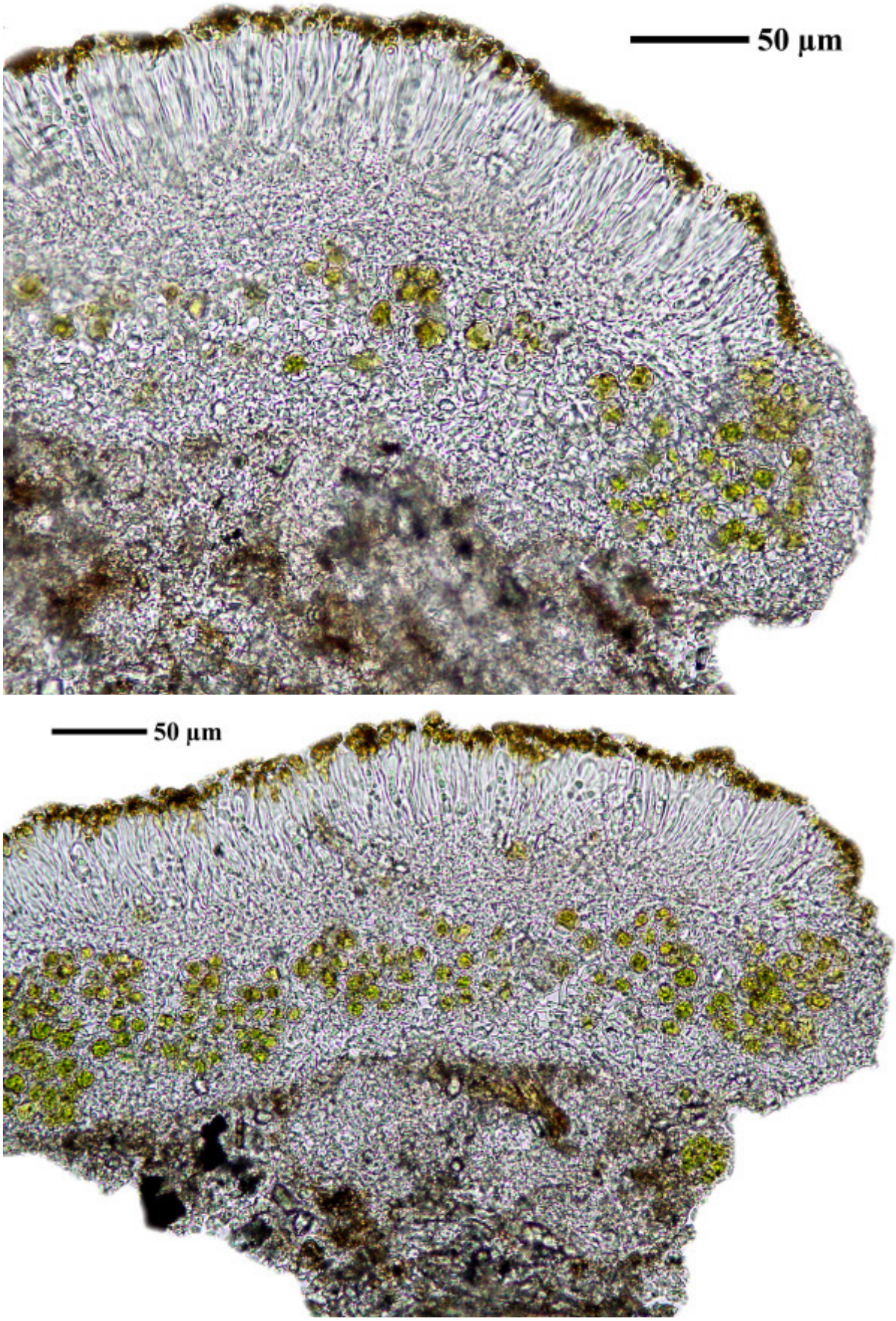




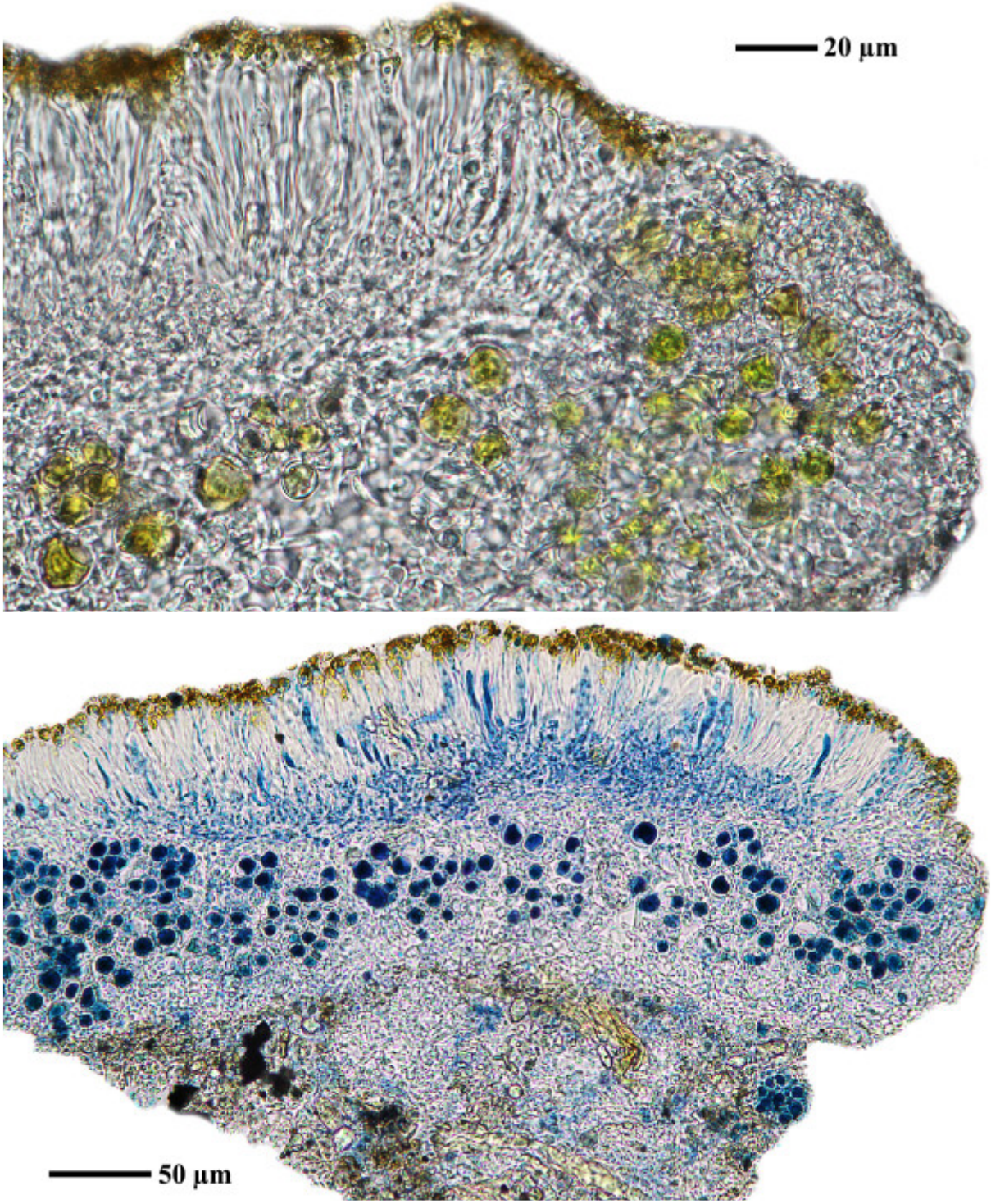
Caloplaca scythica



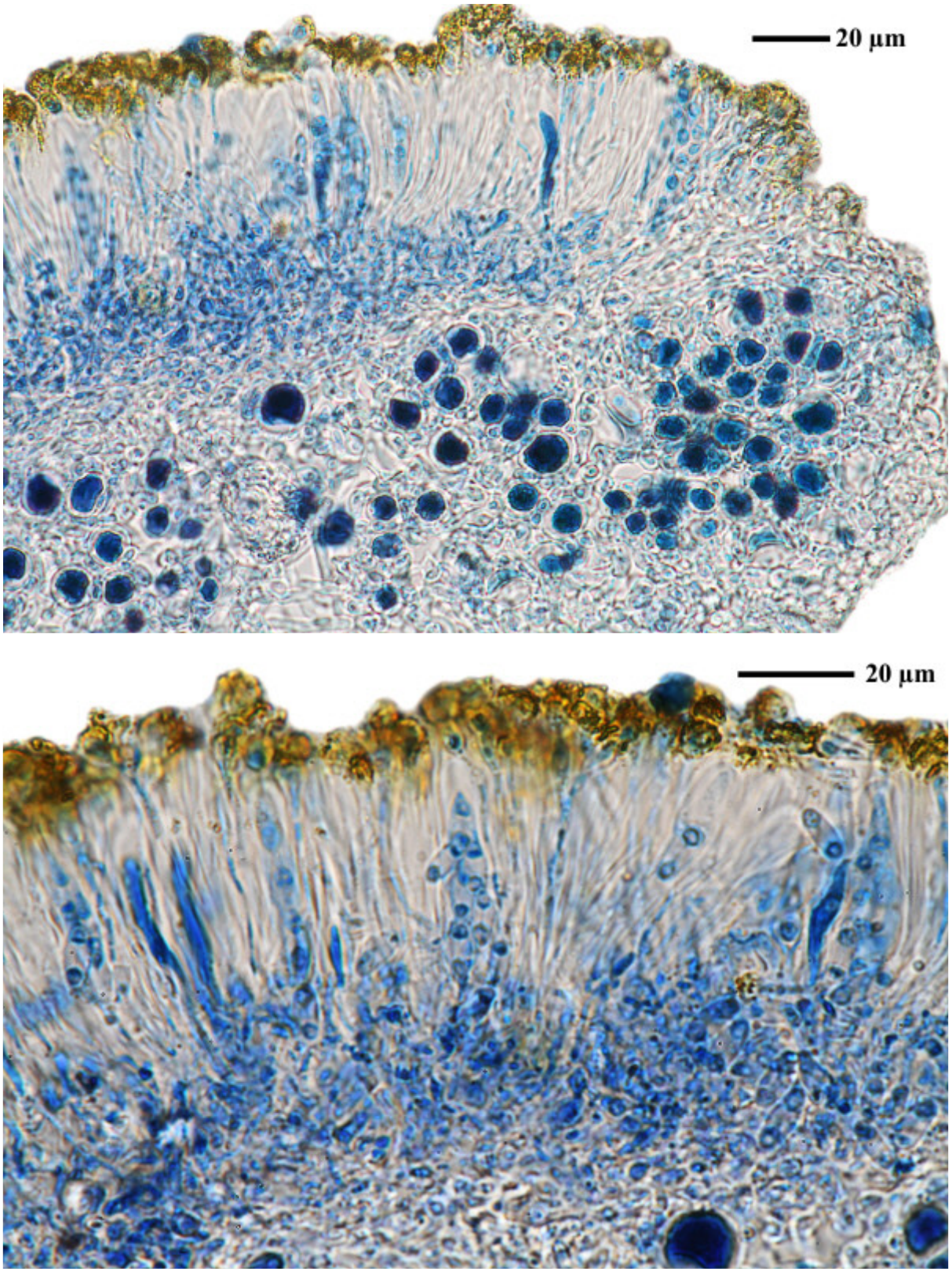
Caloplaca scythica



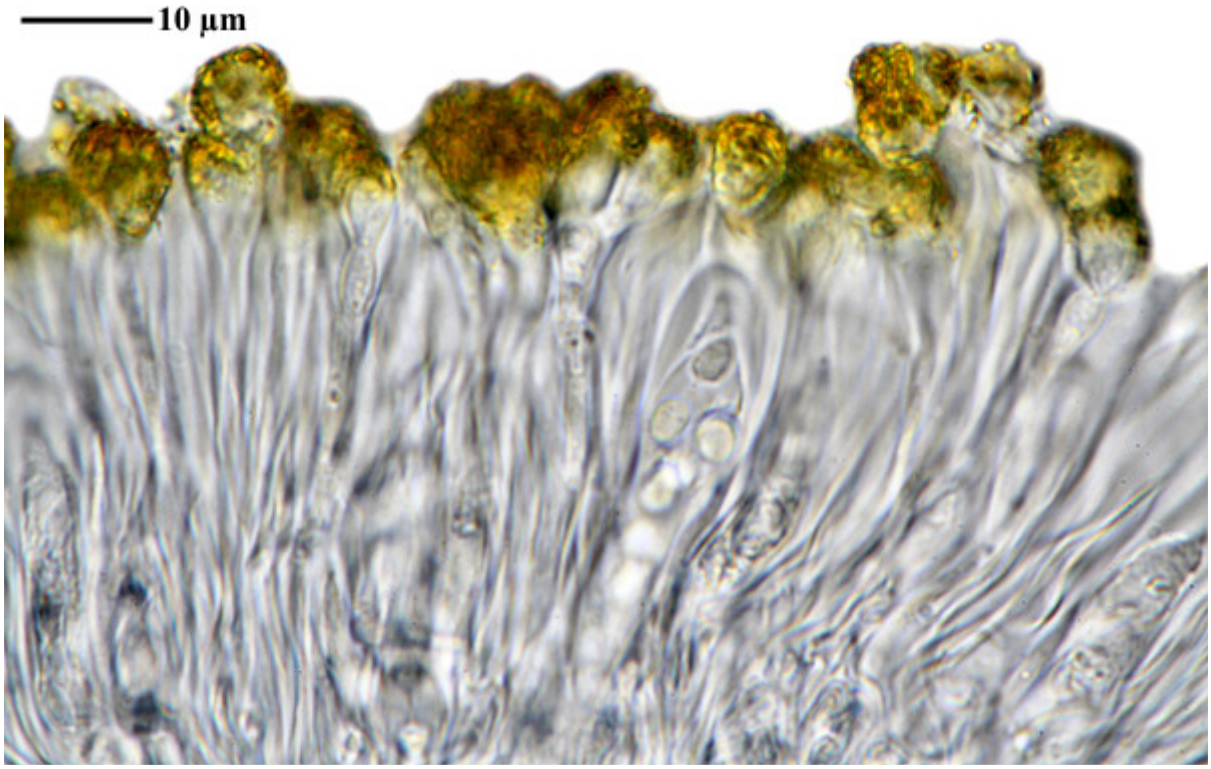
Caloplaca scythica

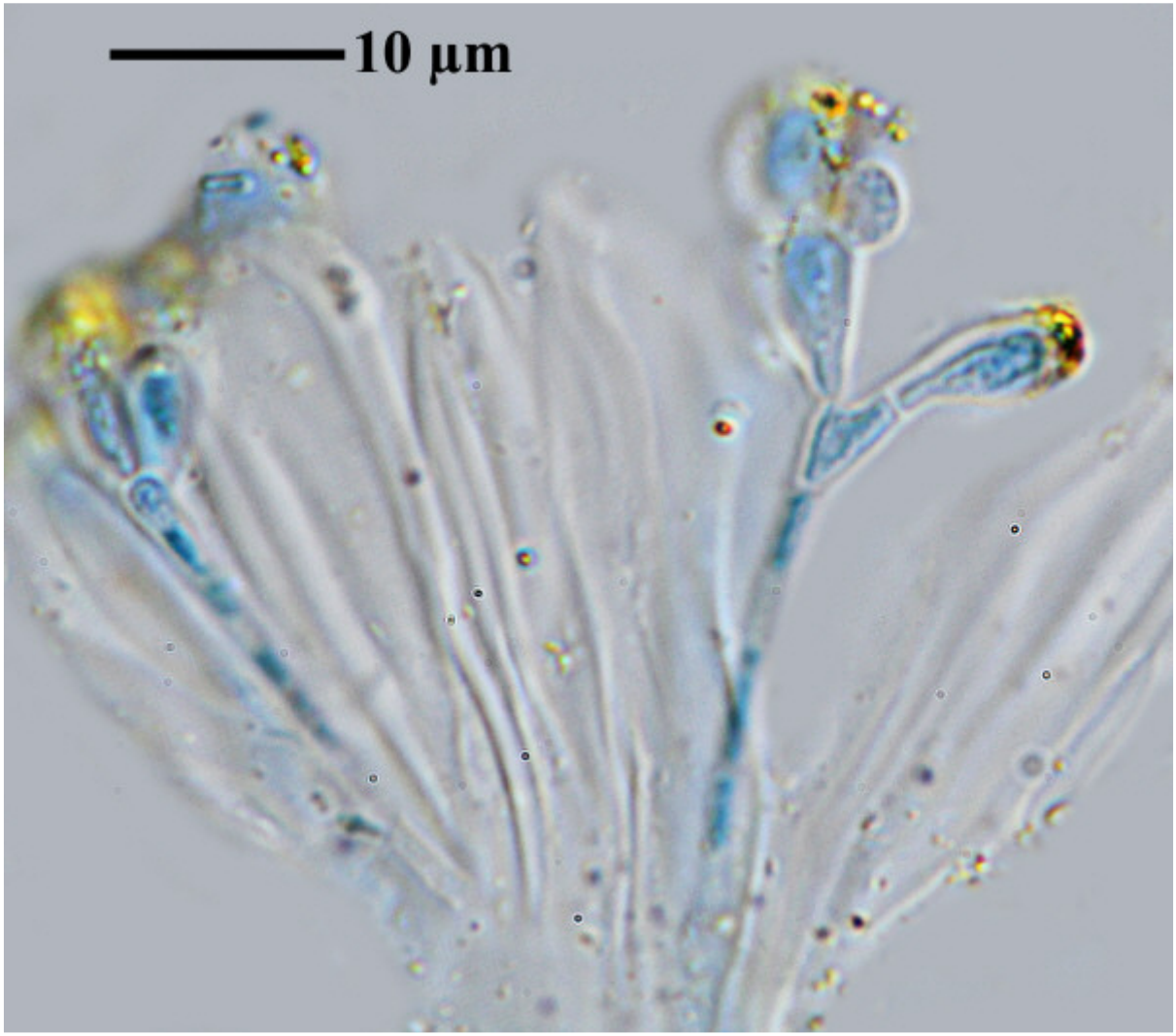


Caloplaca scythica

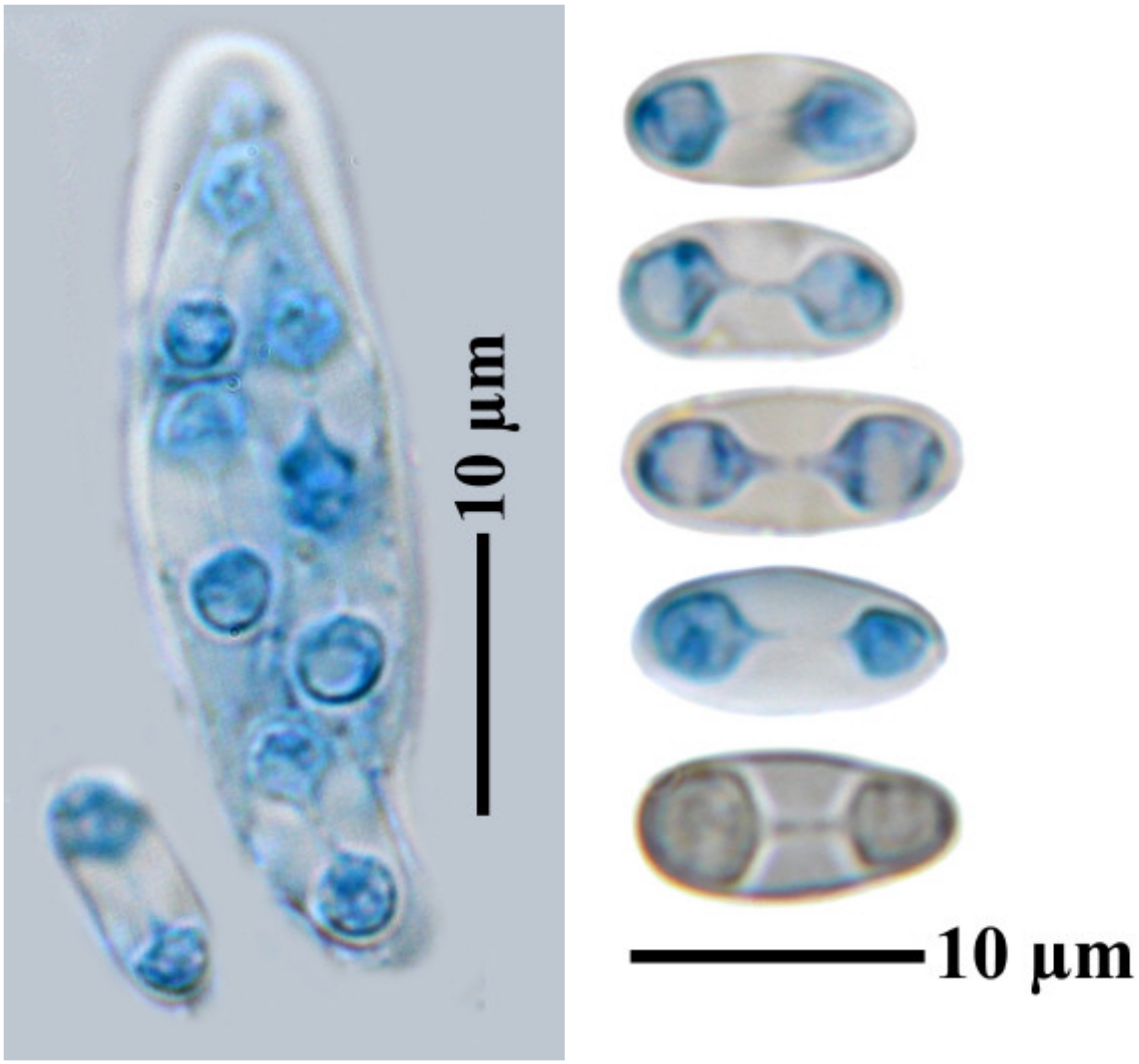


Caloplaca scythica





Caloplaca scythica



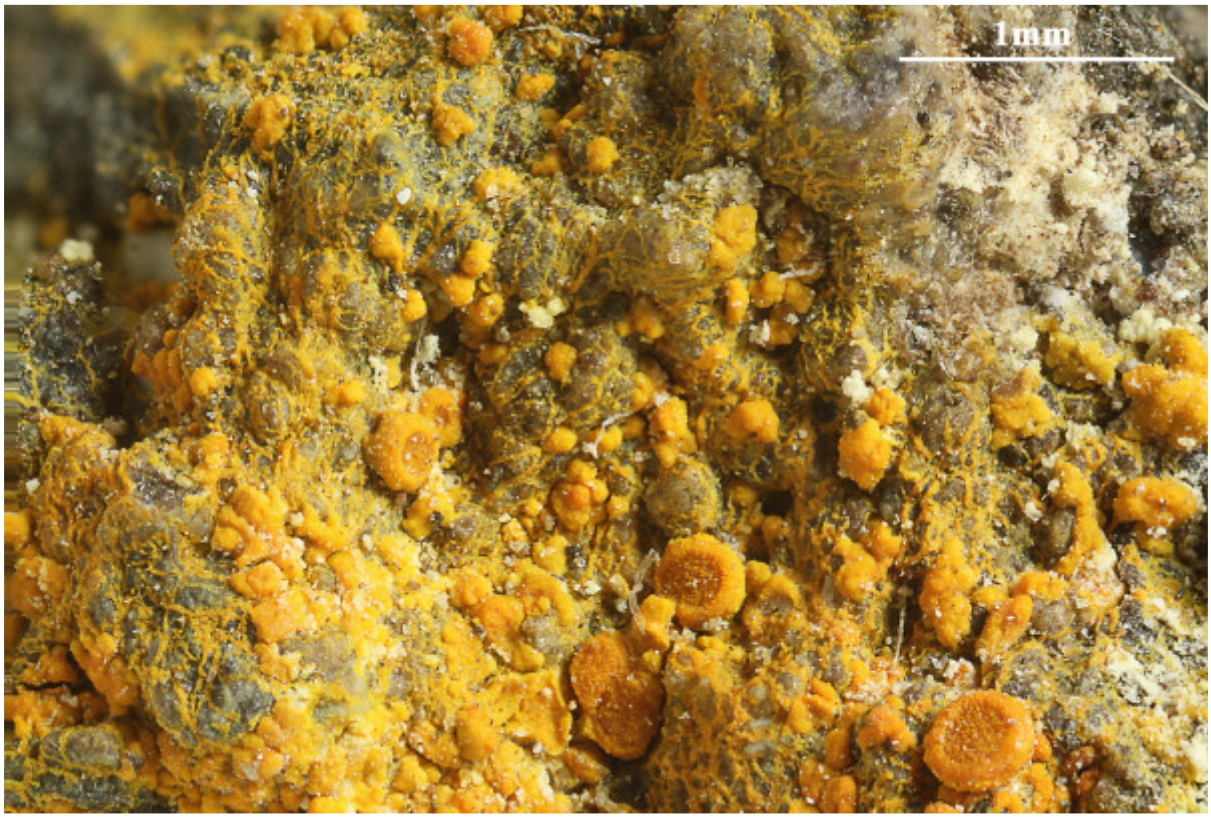
Caloplaca scythica

Caloplaca selkirkii Zahlbr.

Spores 10.3-12.8 x 5.2-6.8 µm, septum 3.4-4.8 µm (FS).

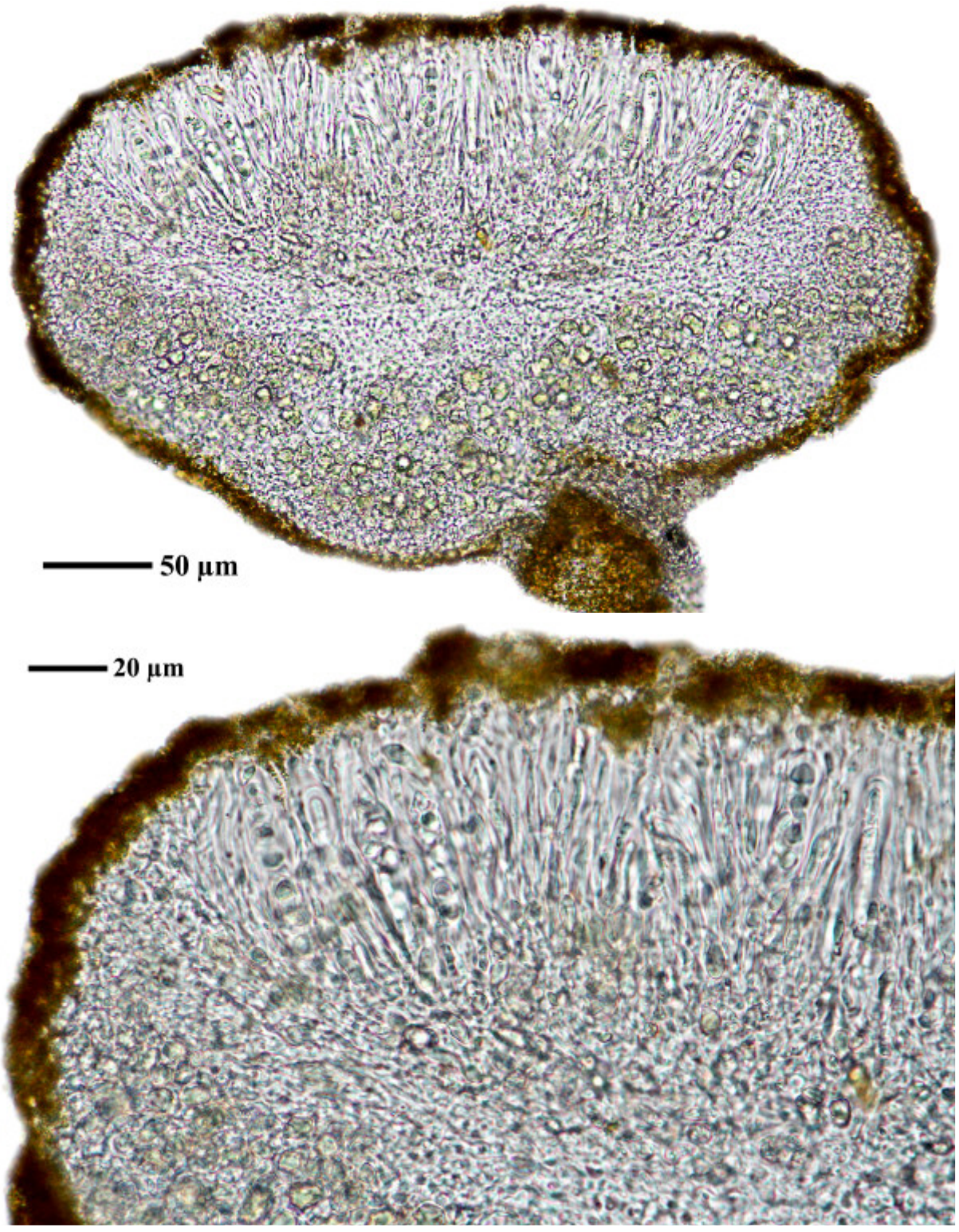
[B 60 0011083], Chile, Archipiélago Juan Fernández, Masatierra (Robinson Crusoe Island), trail to Damajuana, on sunny ridge. 33°38,6' S, 78°49,6' W, 400 m. Leg. G. Kunkel 30.01.1955 (nr 307-5.2), det. H. Imshaug, 1966, conf. Reinaldo Vargas, 2009.



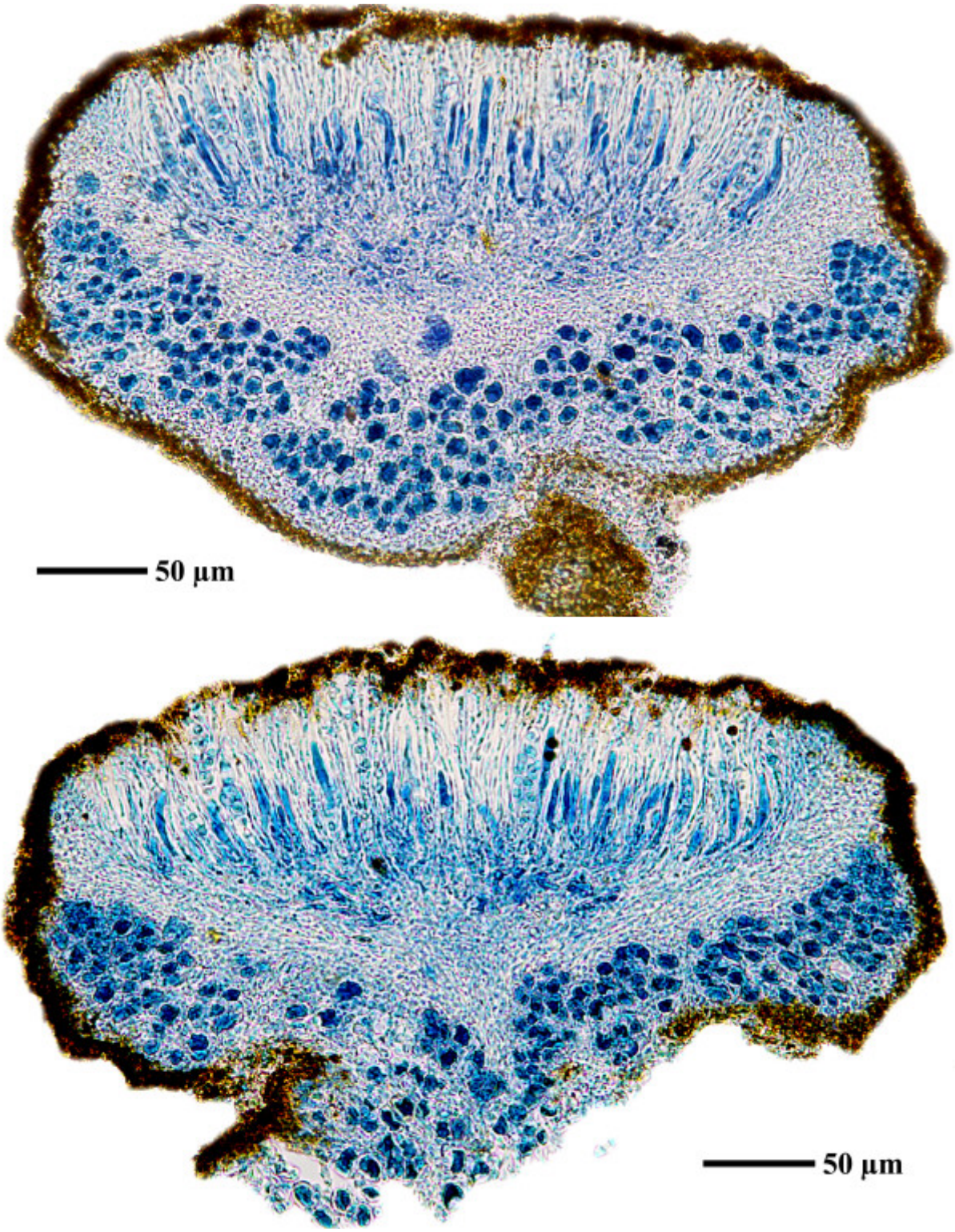




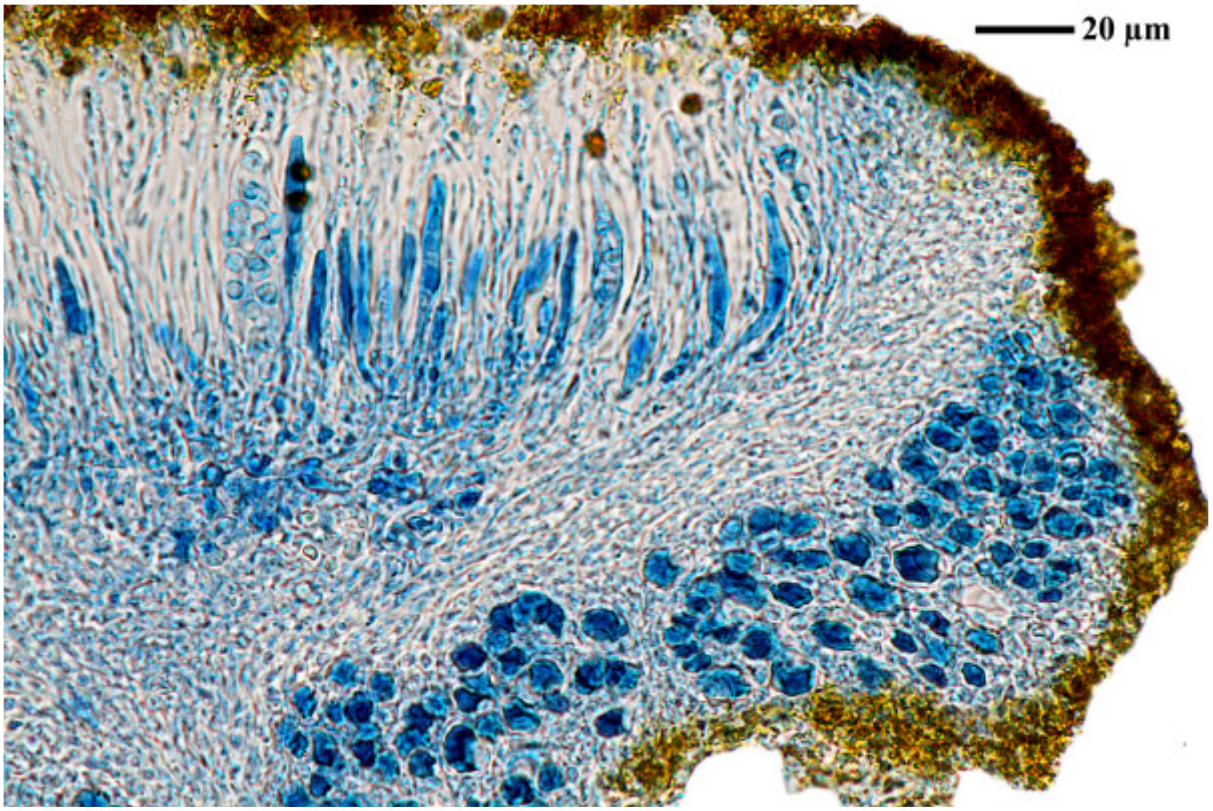
Caloplaca selkirkii

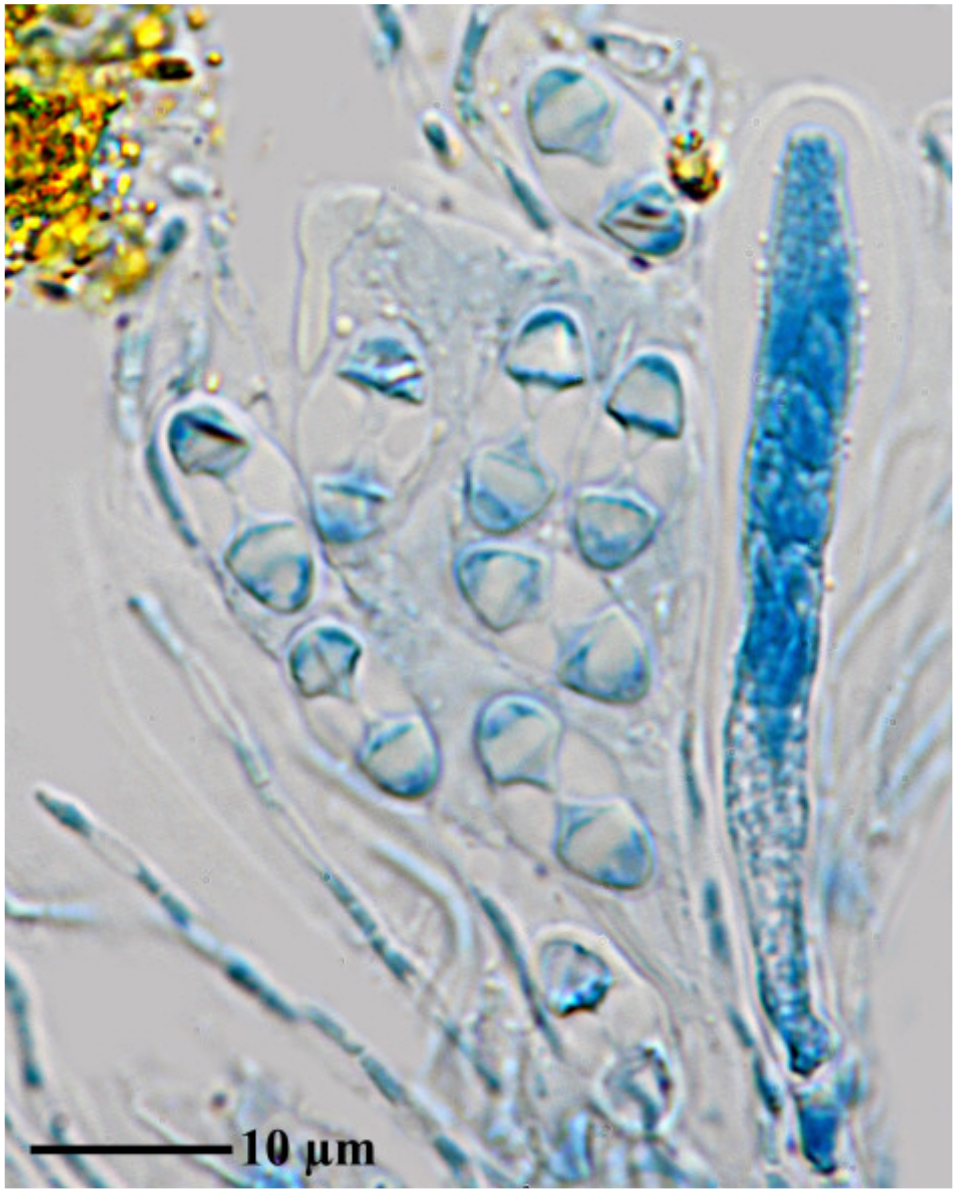


Caloplaca selkirkii

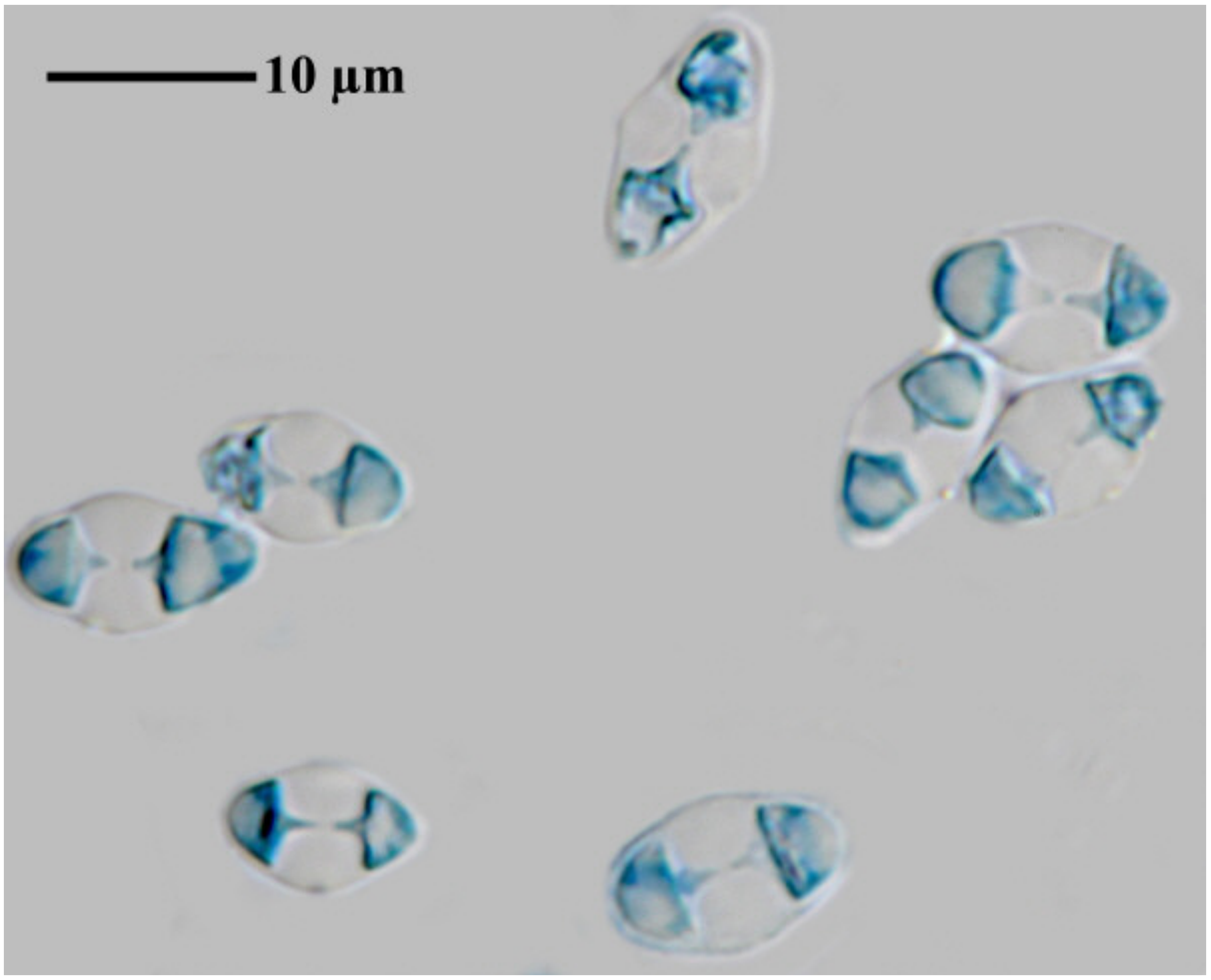


Caloplaca selkirkii

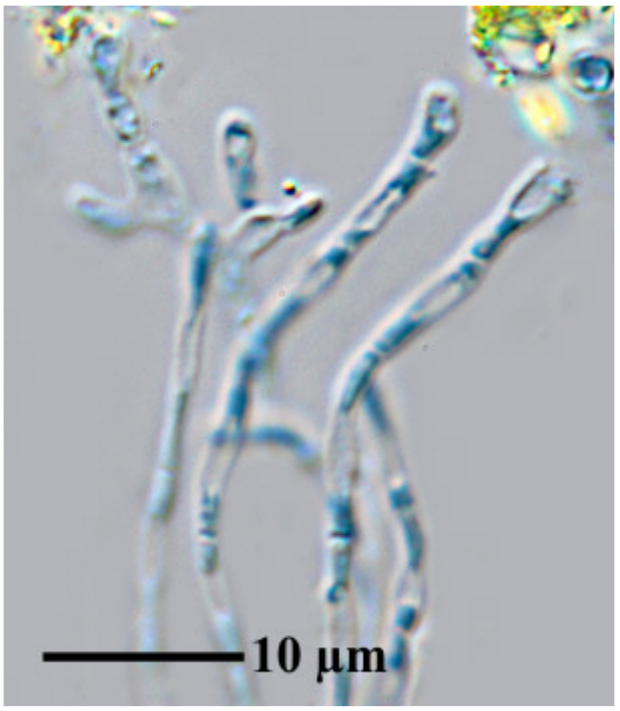




Caloplaca selkirkii







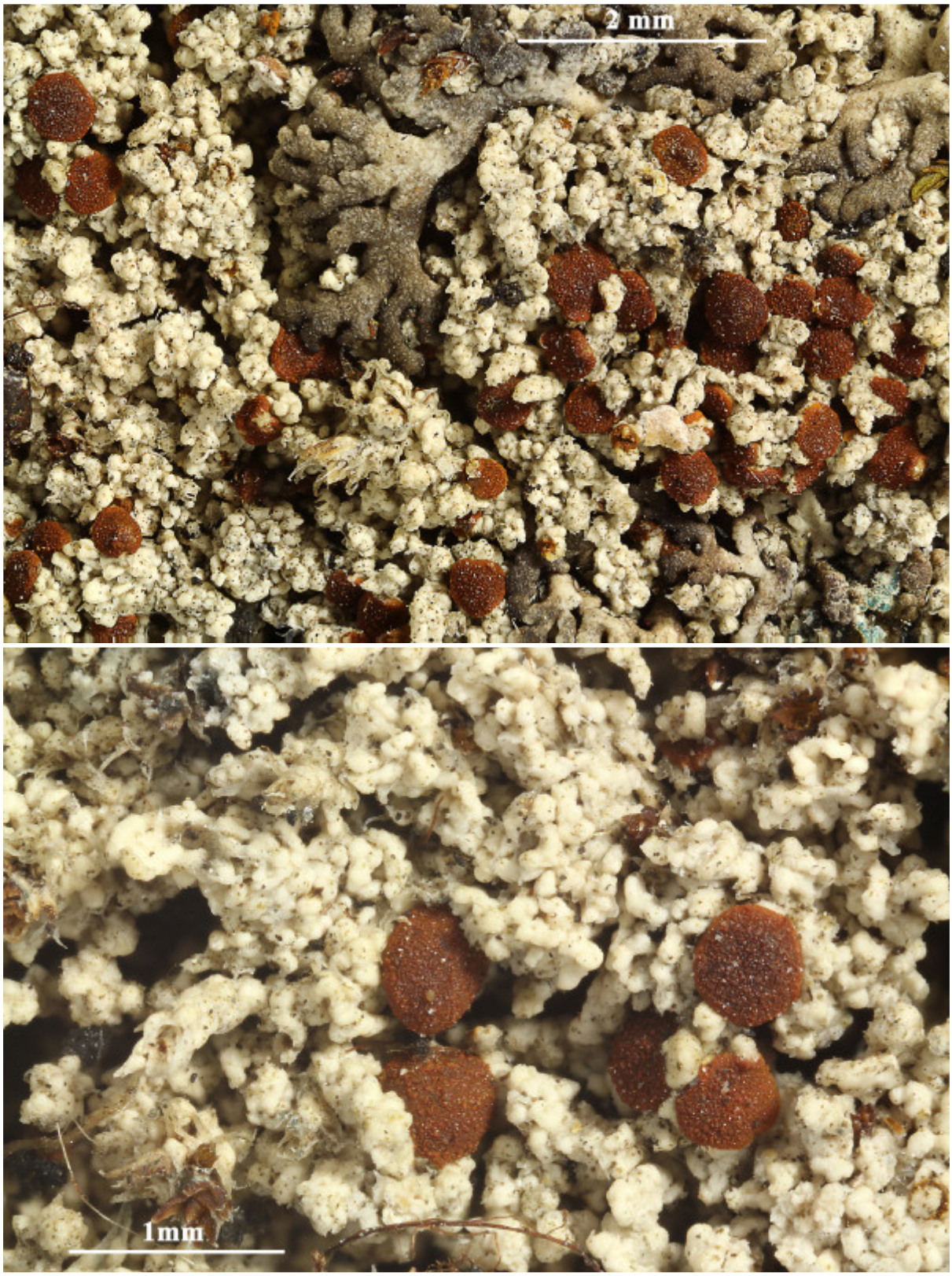
Caloplaca selkirkii

Caloplaca sinapisperma (DC.) Maheu & A.Gillet
[= *Bryoplaca sinapisperma* (DC.) Søchting, Frödén & Arup]

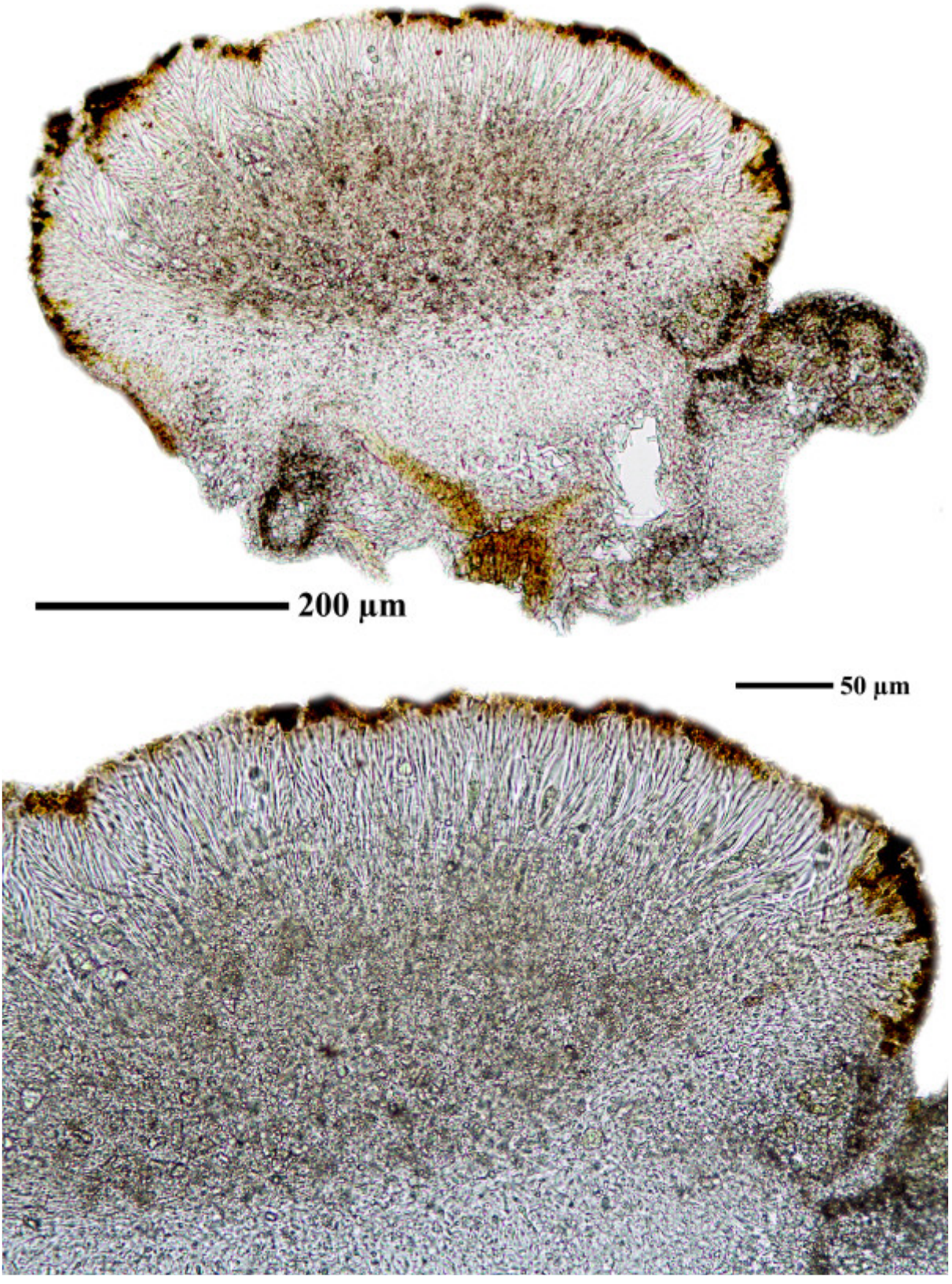
Hymenium 80µm.Spores 16-18 x 10-12 µm (Sipman). Spores 14-17.5 x 8.7-10.8 µm, septum 4.2-4.7 µm (FS).

[B 60 0054612], Sweden, Torne Lappmark, Comm. Kiruna, Jieprentjårro, above Jieprenjåkkstugan, on N shore of lake Torneträsk, opposite Abisko; alpine slope with calcareous schist boulders; terrestrial on and among dead plant remains, 68°27' N, 18°53' E, 800 m. Leg. H. Sipman, 25.08.1986 (Nr. 21344), det. H. Sipman, 1986.

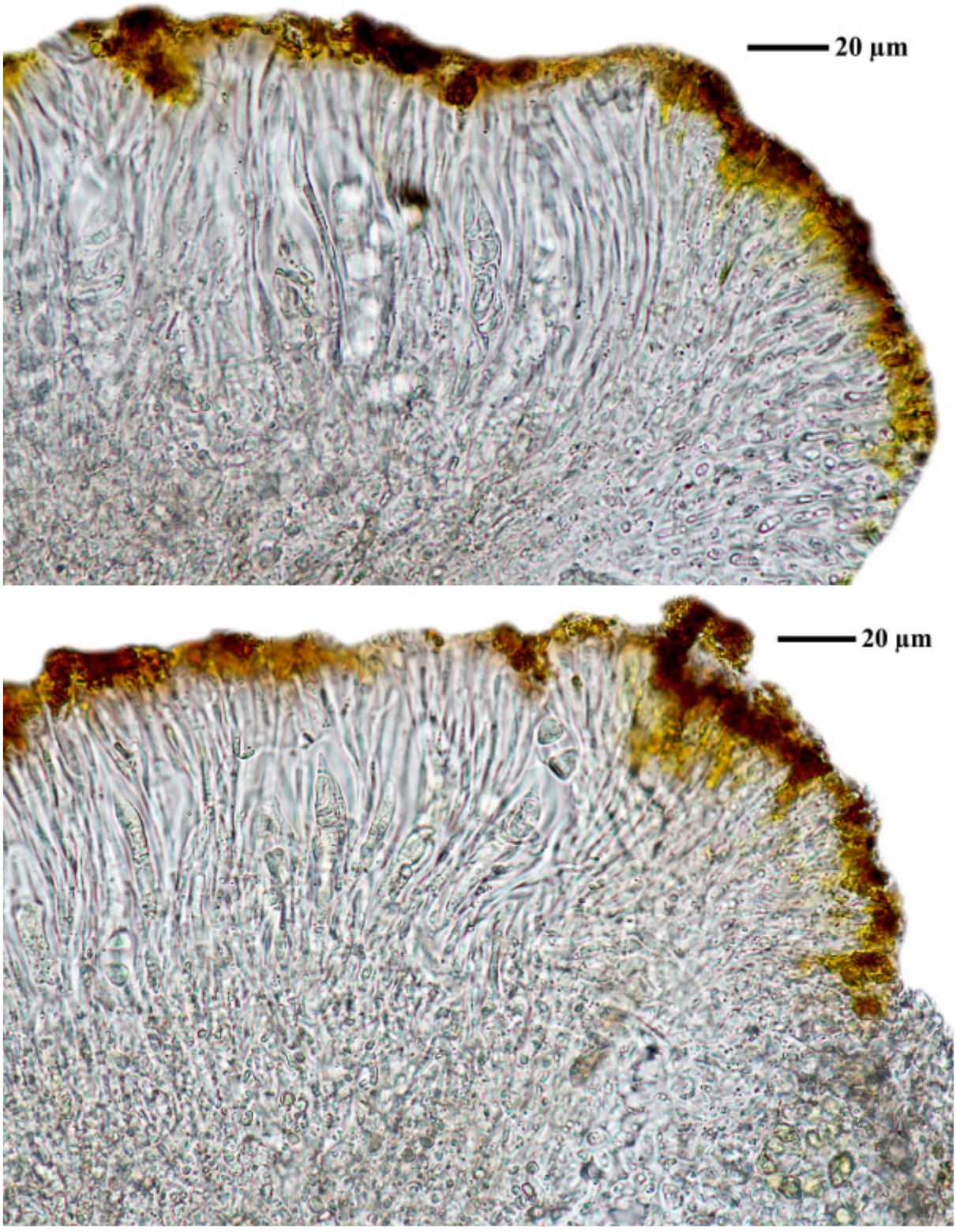




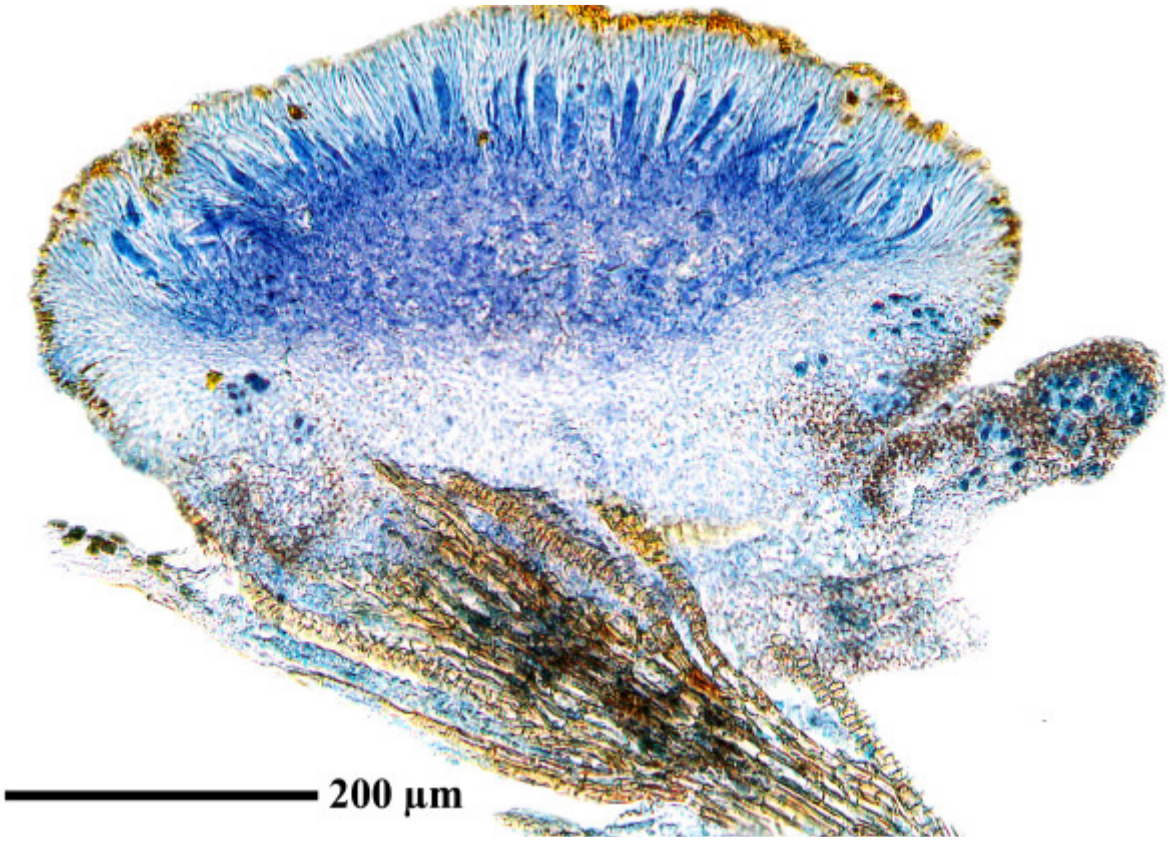
Caloplaca sinapisperma

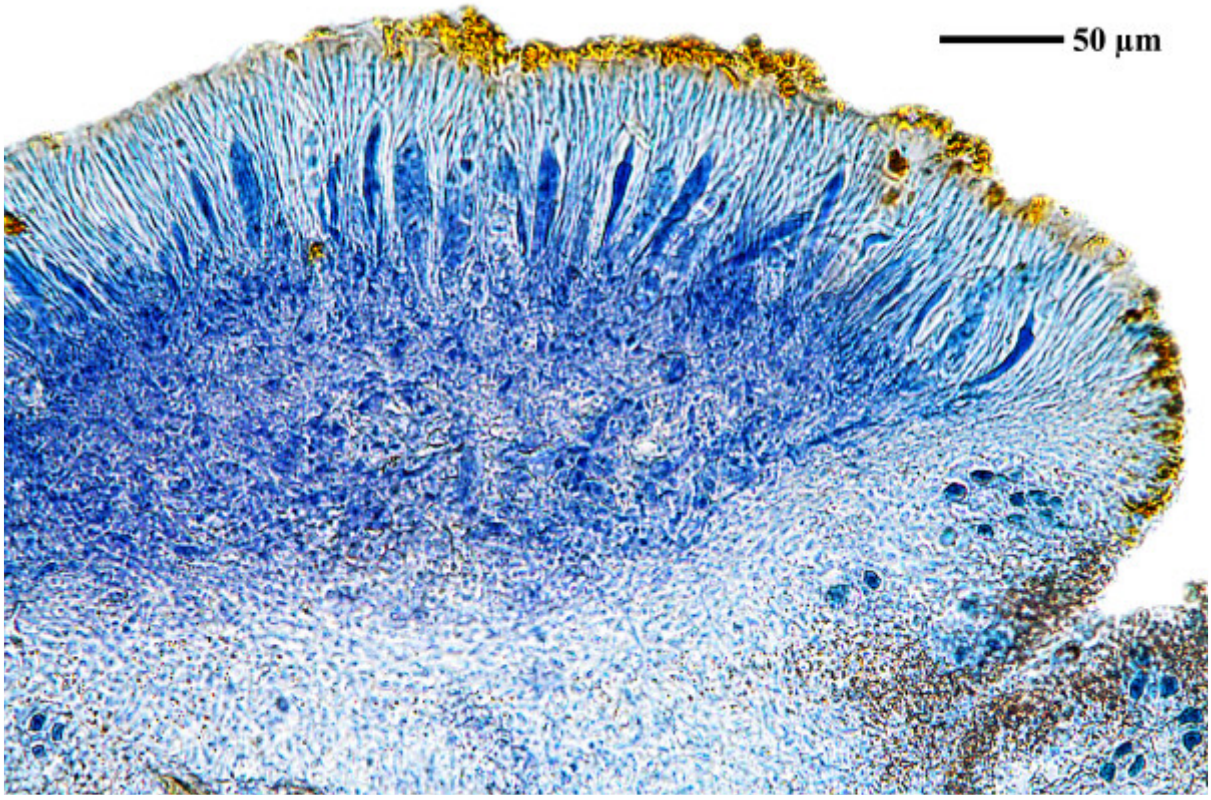


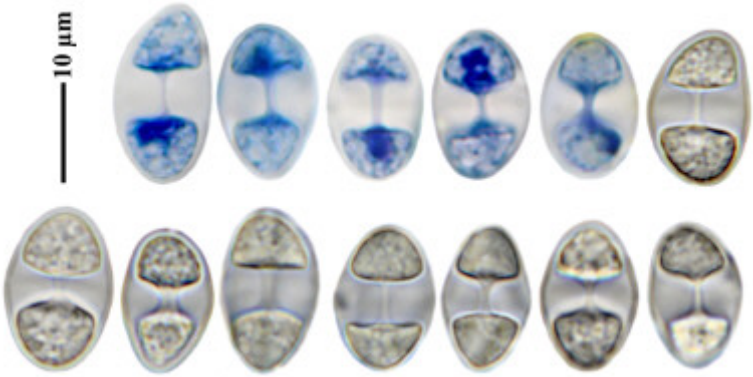
Caloplaca sinapisperma



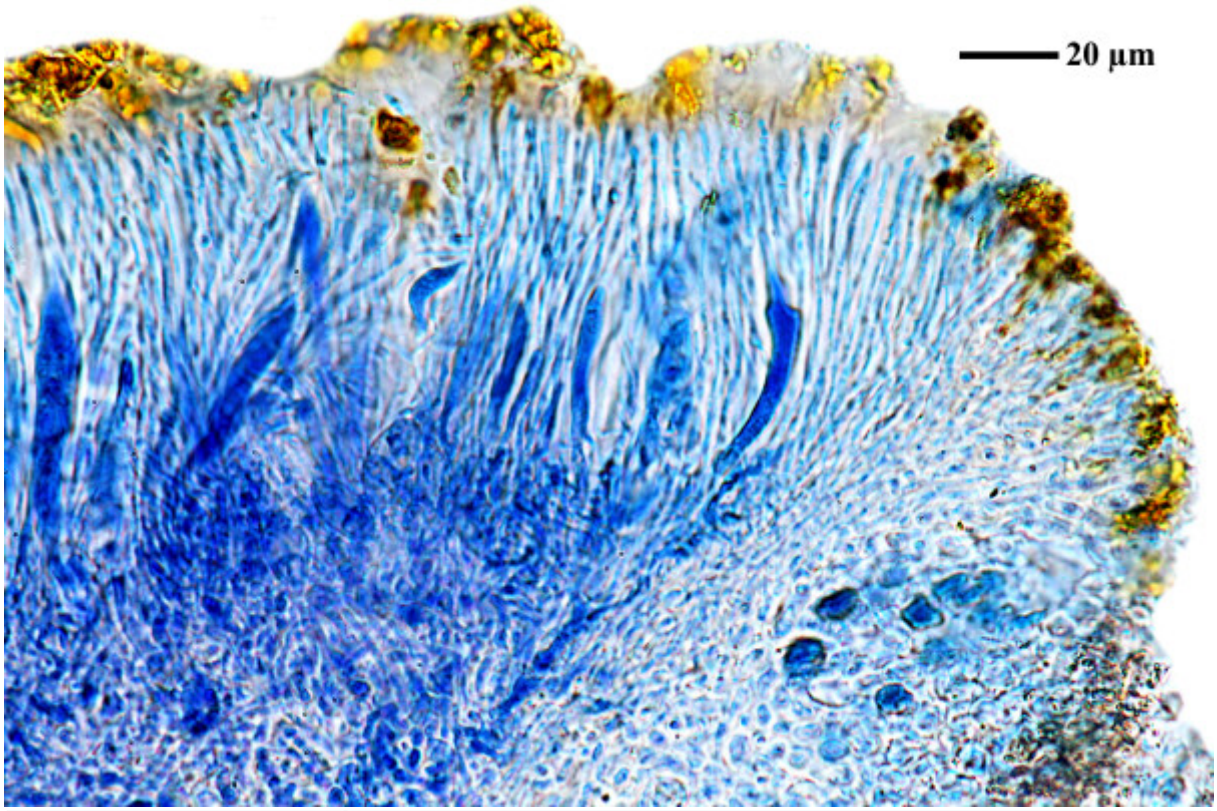
Caloplaca sinapisperma

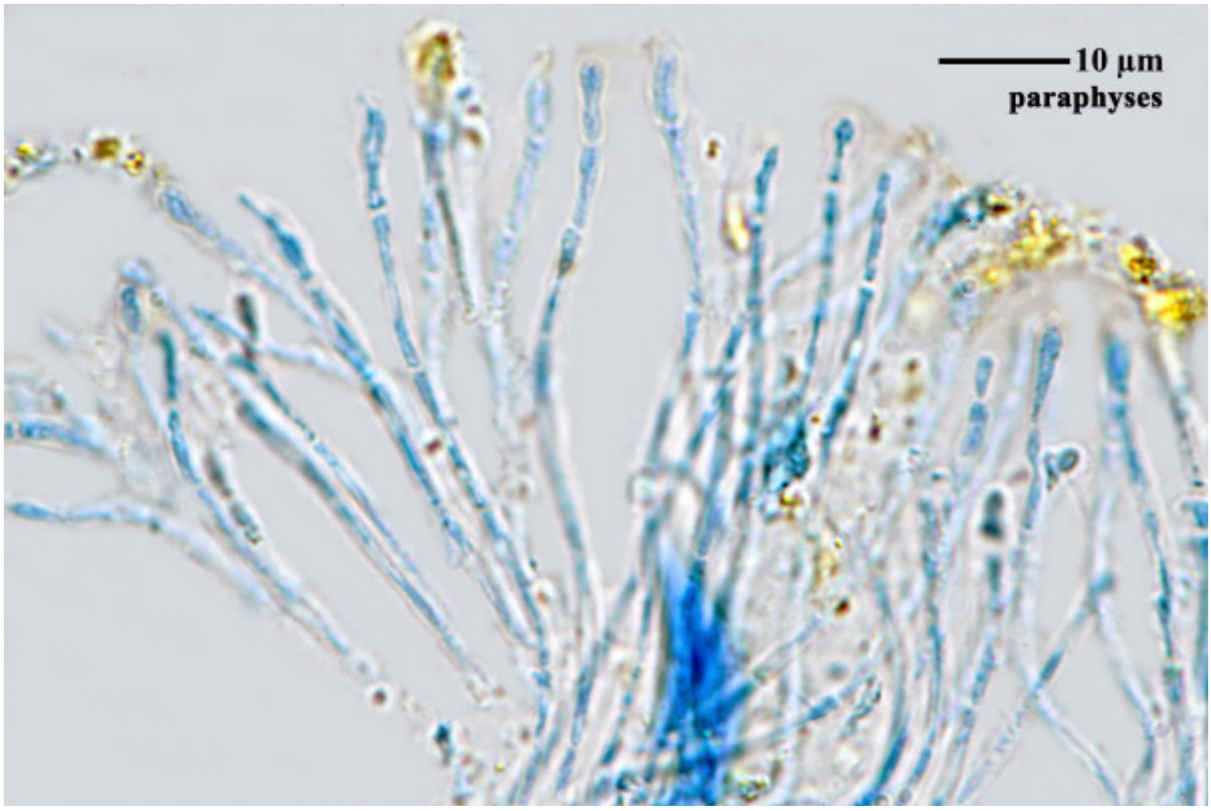






Caloplaca sinapisperma



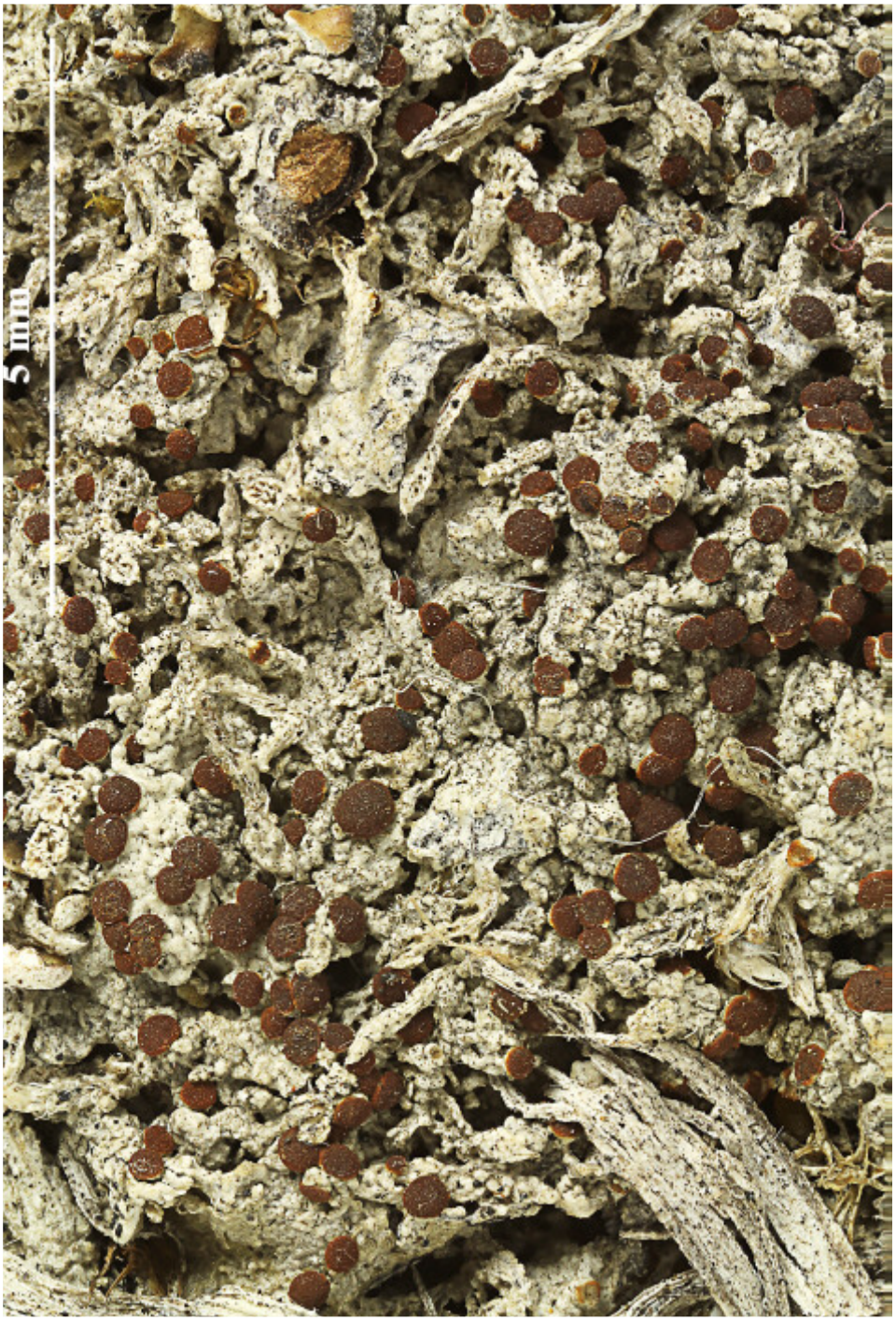


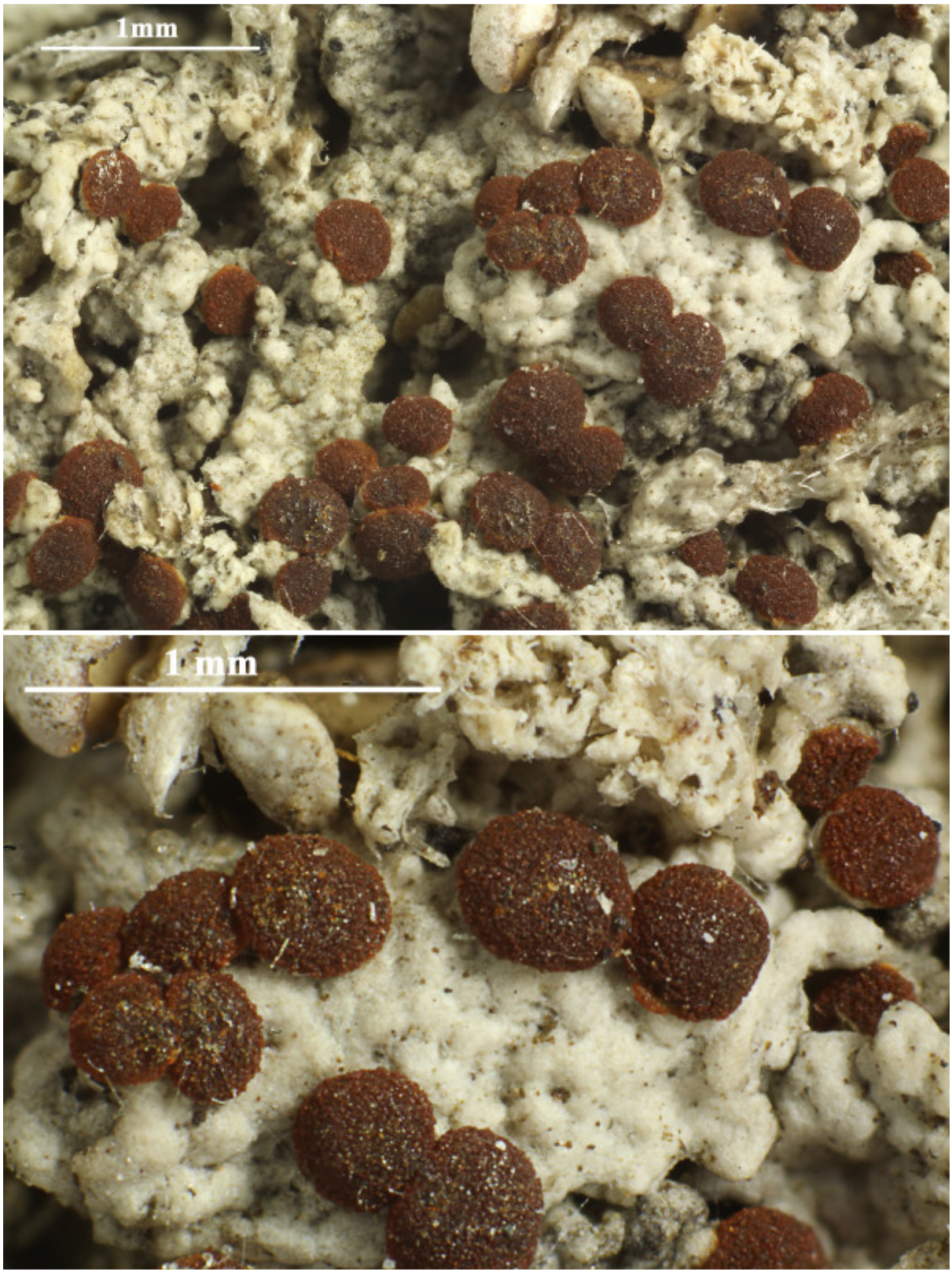
Caloplaca sinapisperma

Caloplaca sinapisperma (DC.) Maheu & A.Gillet, Bull. soc. Hist. nat. Autun 27: 83 (1914)
[= *Bryoplaca sinapisperma* (DC.) Søchting, Frödén & Arup, Nordic Jl Bot. 31(1): 68 (2013)]
[= *Caloplaca leucoraea* (Ach.) Branth]

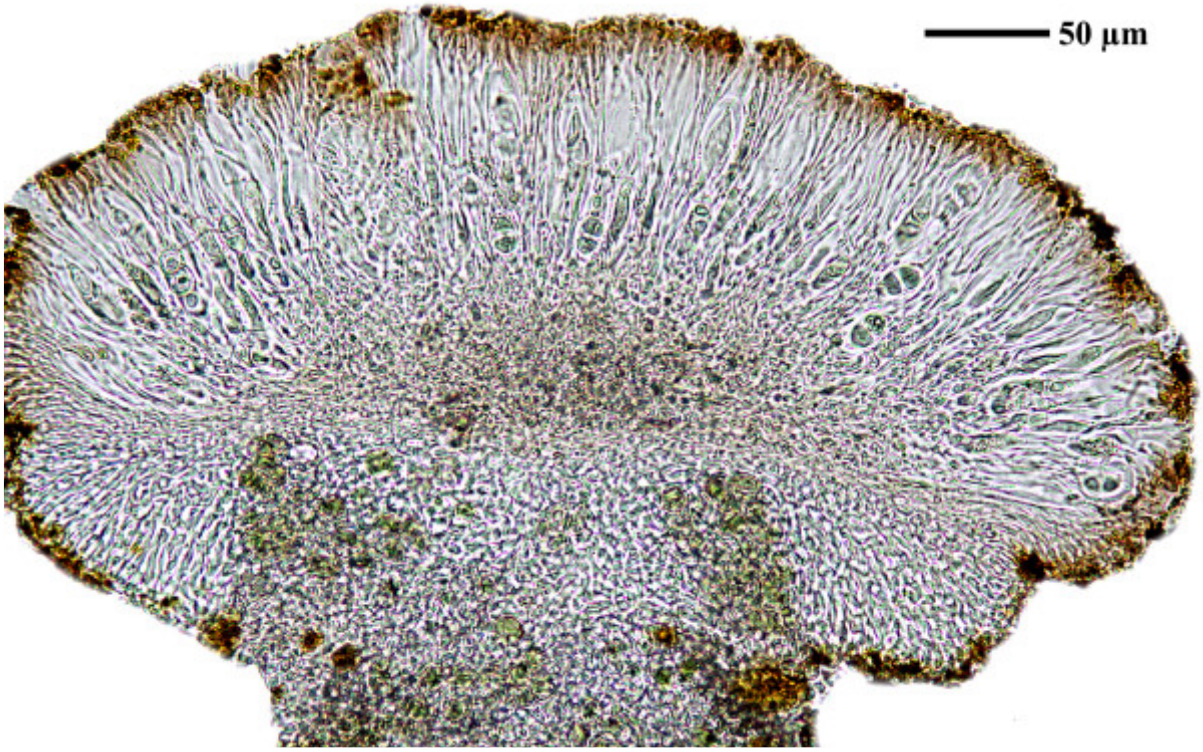
Spores 13-16 x 7.7-10.7 µm, septum 2.9-3.2 µm (FS). On bryophytes. Lit. Deichman Branth in Meddel. Grönland 3: 482 (1892)

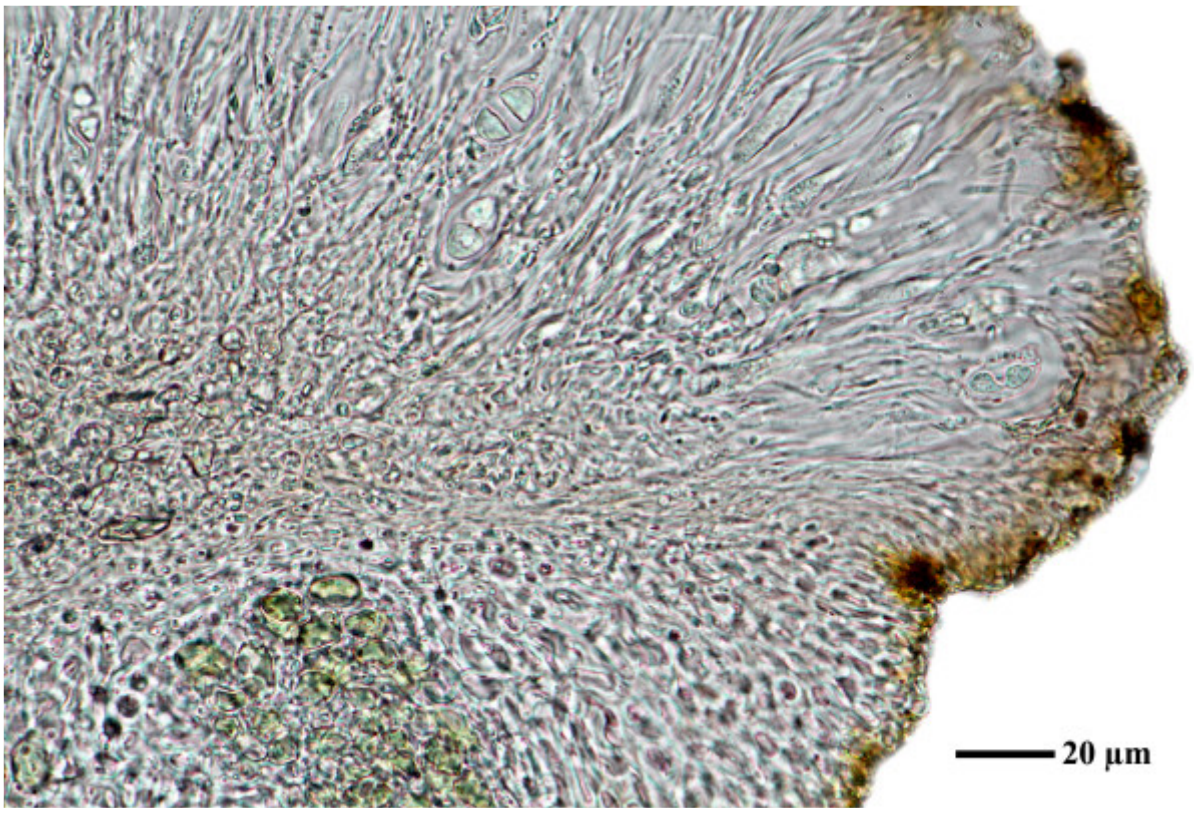
[19596], U.S.A., Michigan, Delta County, in peninsula dicta "Garden", ad meridiem a Charboneau Point, supra muscos in rupibus calcareis ad litorem. Leg. R.C. Harris (12000), 19.09.1976. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1971. Distributed as *Caloplaca leucoraea*.



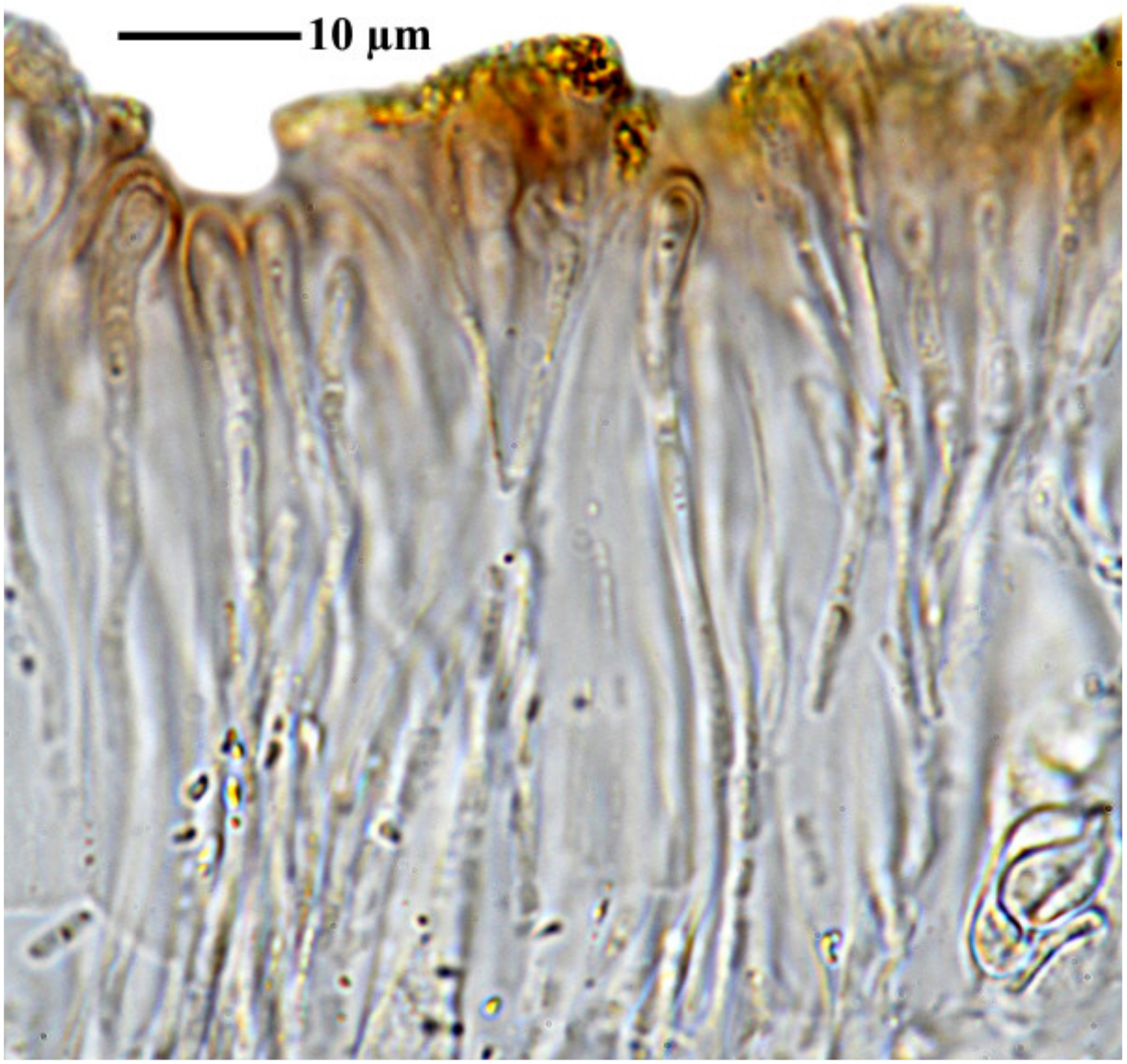


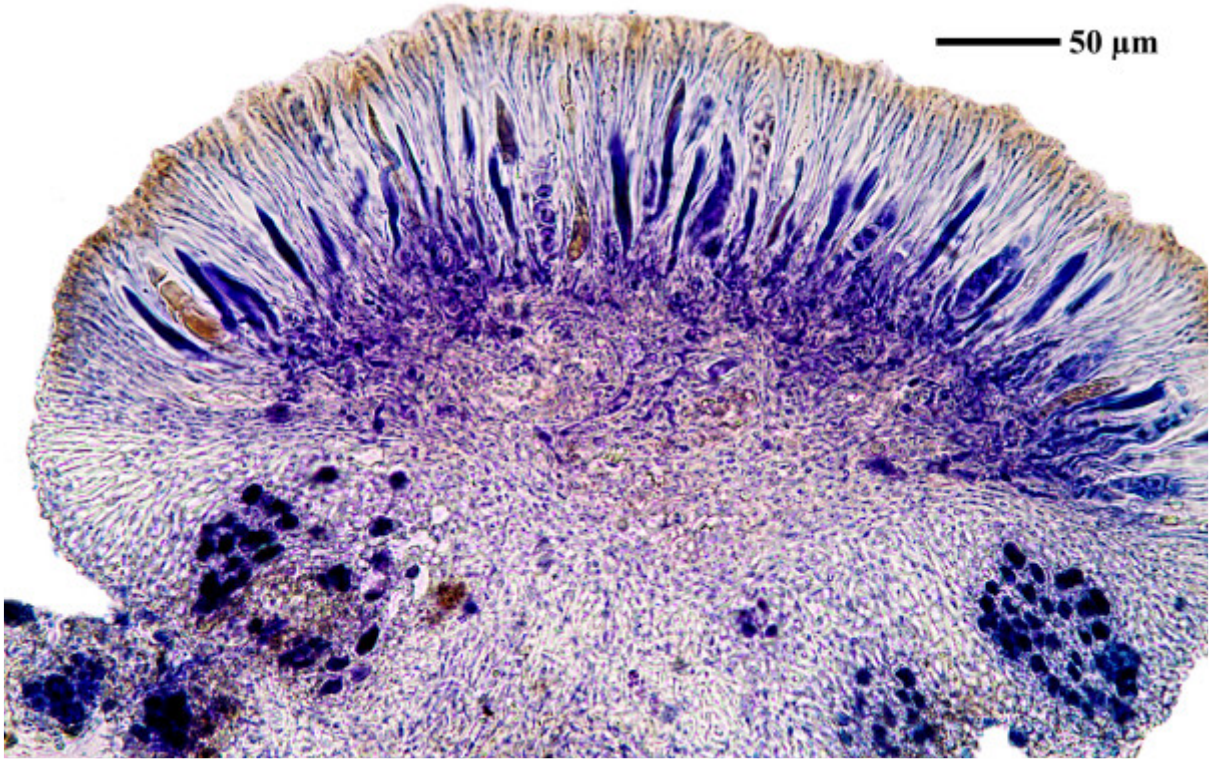
Caloplaca sinapisperma



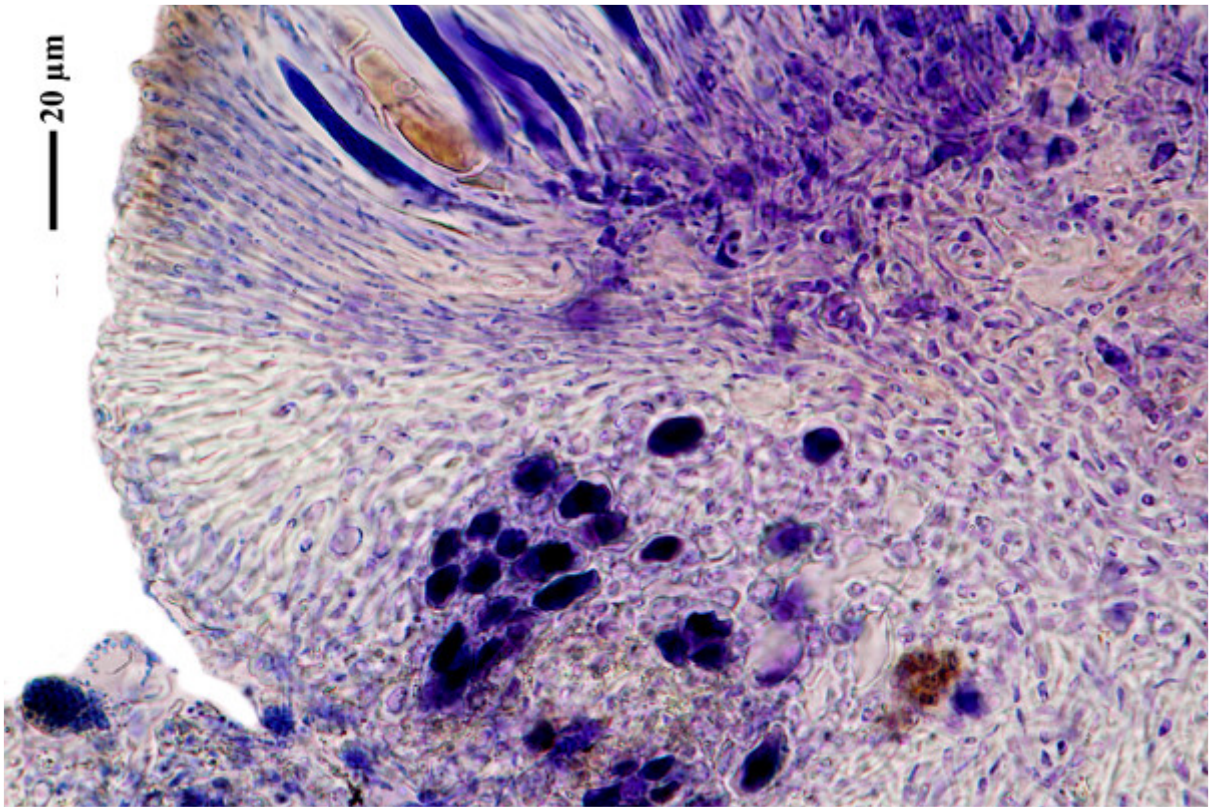


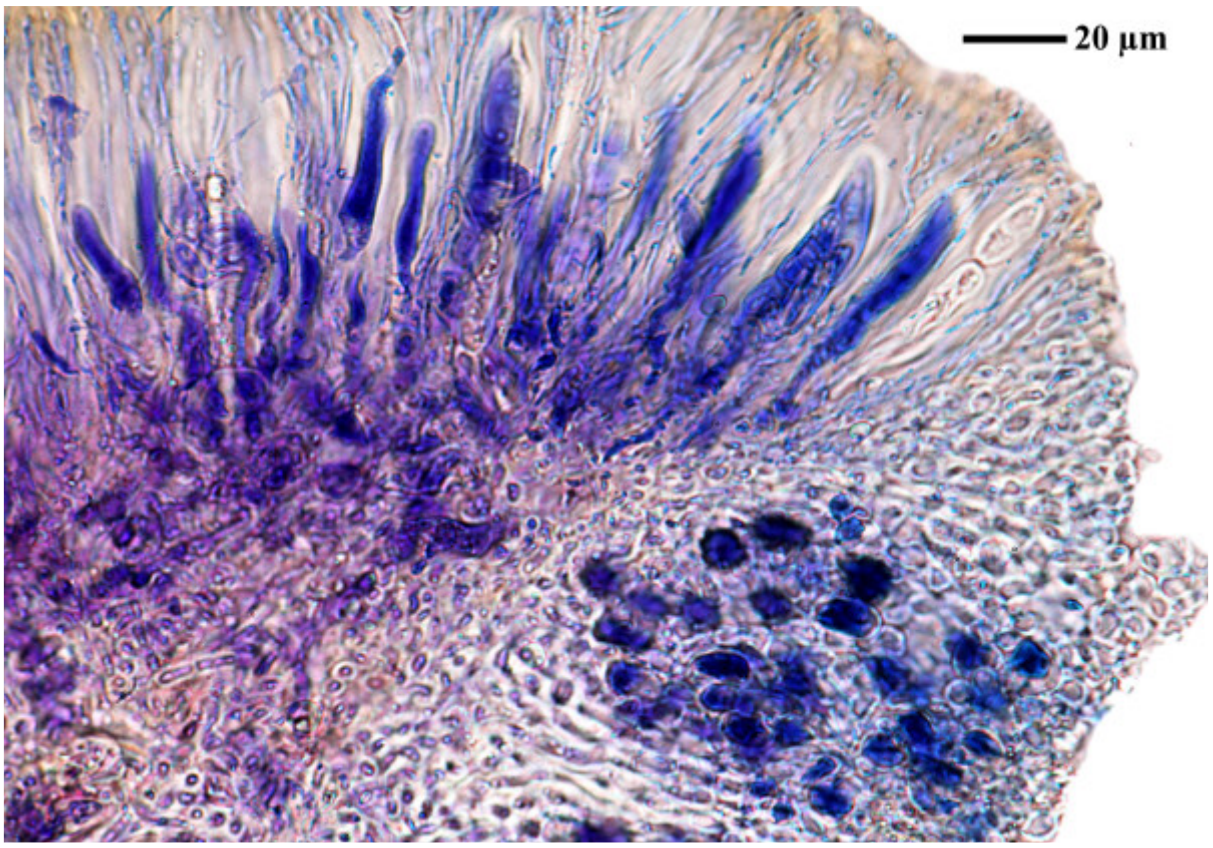
Caloplaca sinapisperma



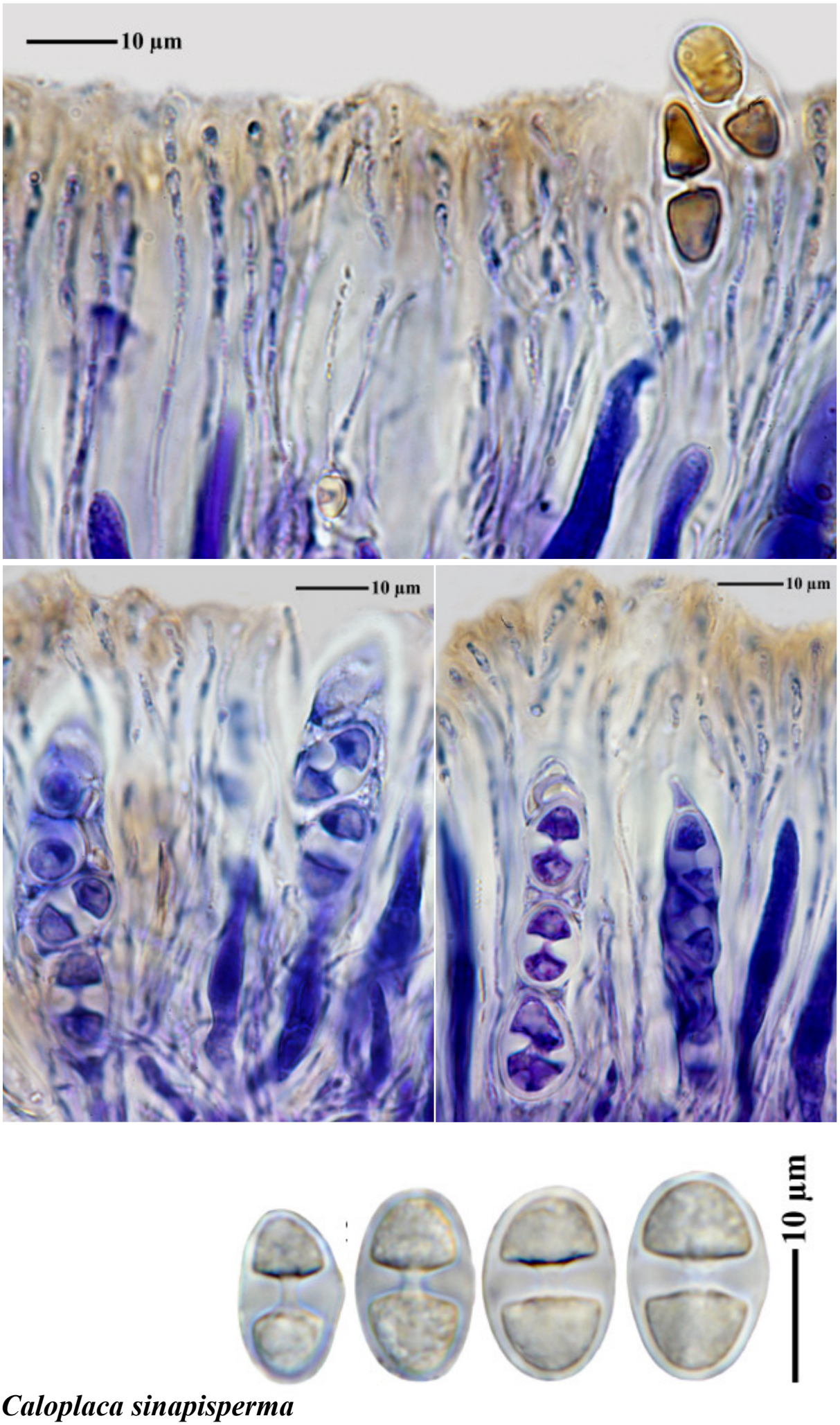


Caloplaca sinapisperma





Caloplaca sinapisperma



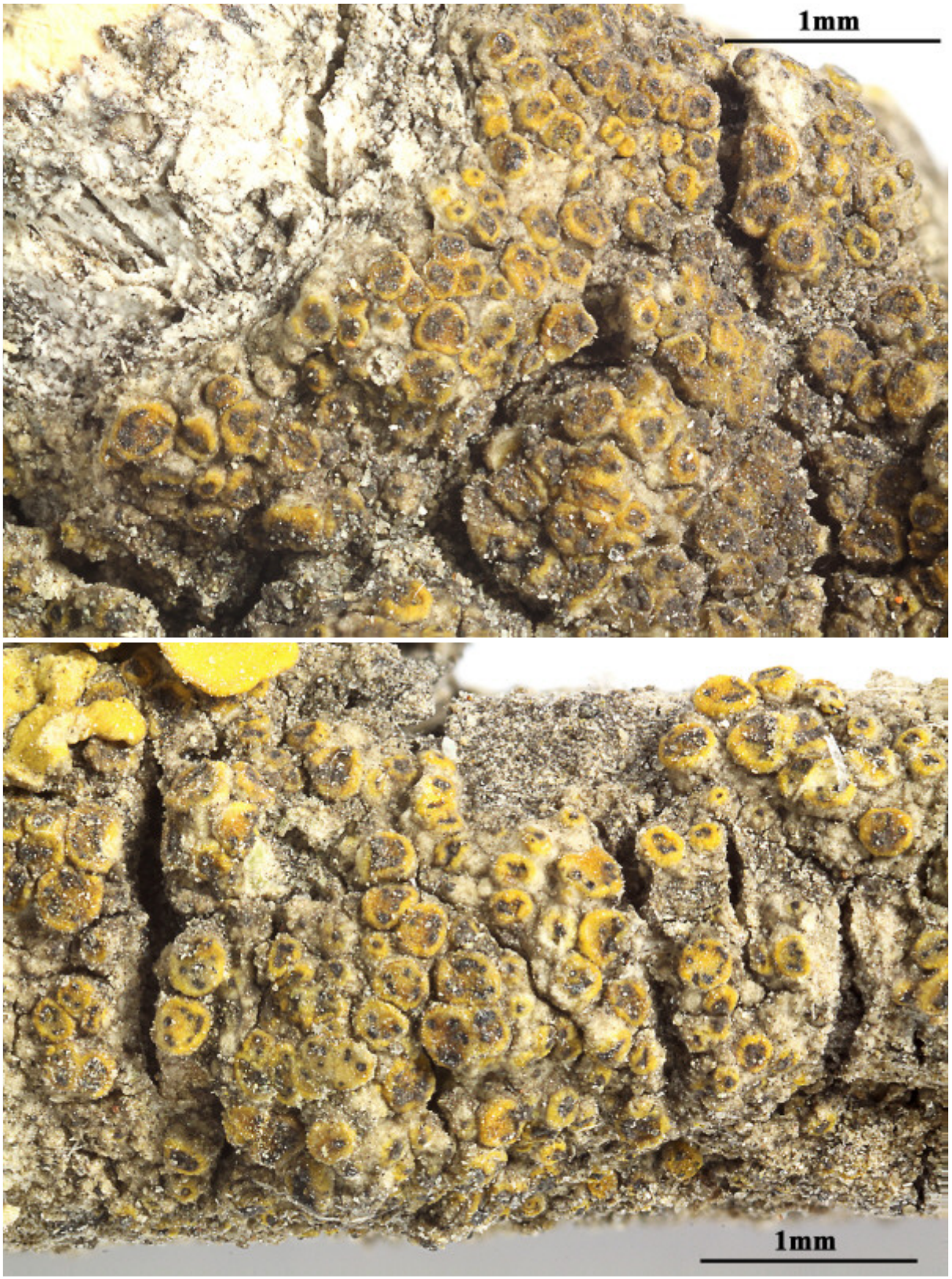
Caloplaca sinapisperma

Caloplaca skii Khodos., Vondrák & Šoun
[= *Athallia skii* (Khodos., Vondrák & Šoun) Arup, Frödén & Søchting]

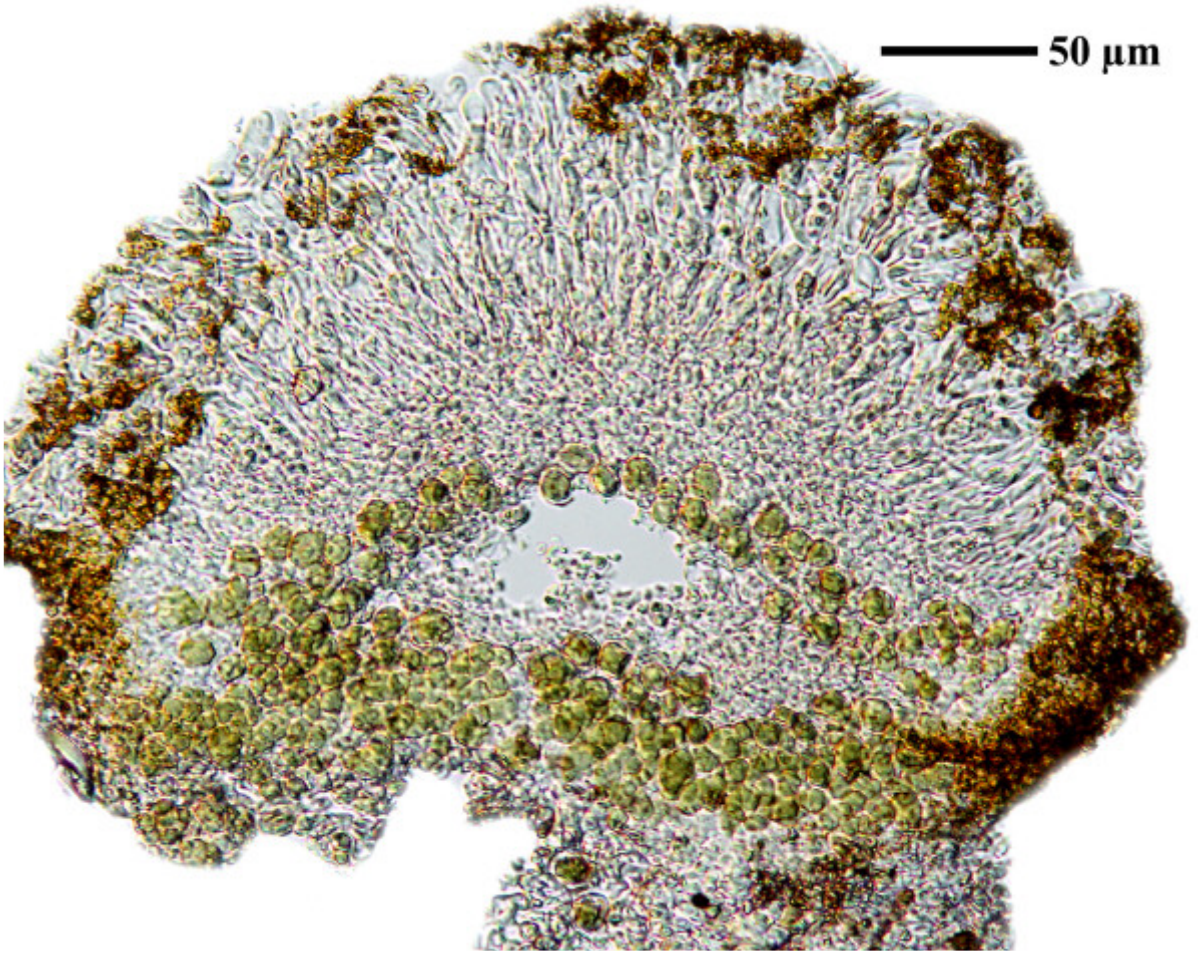
Spores, hyalim, 8/ascus,8-11.5 x 5.5-6.5 µm, deptum 3.5-5.4 µm

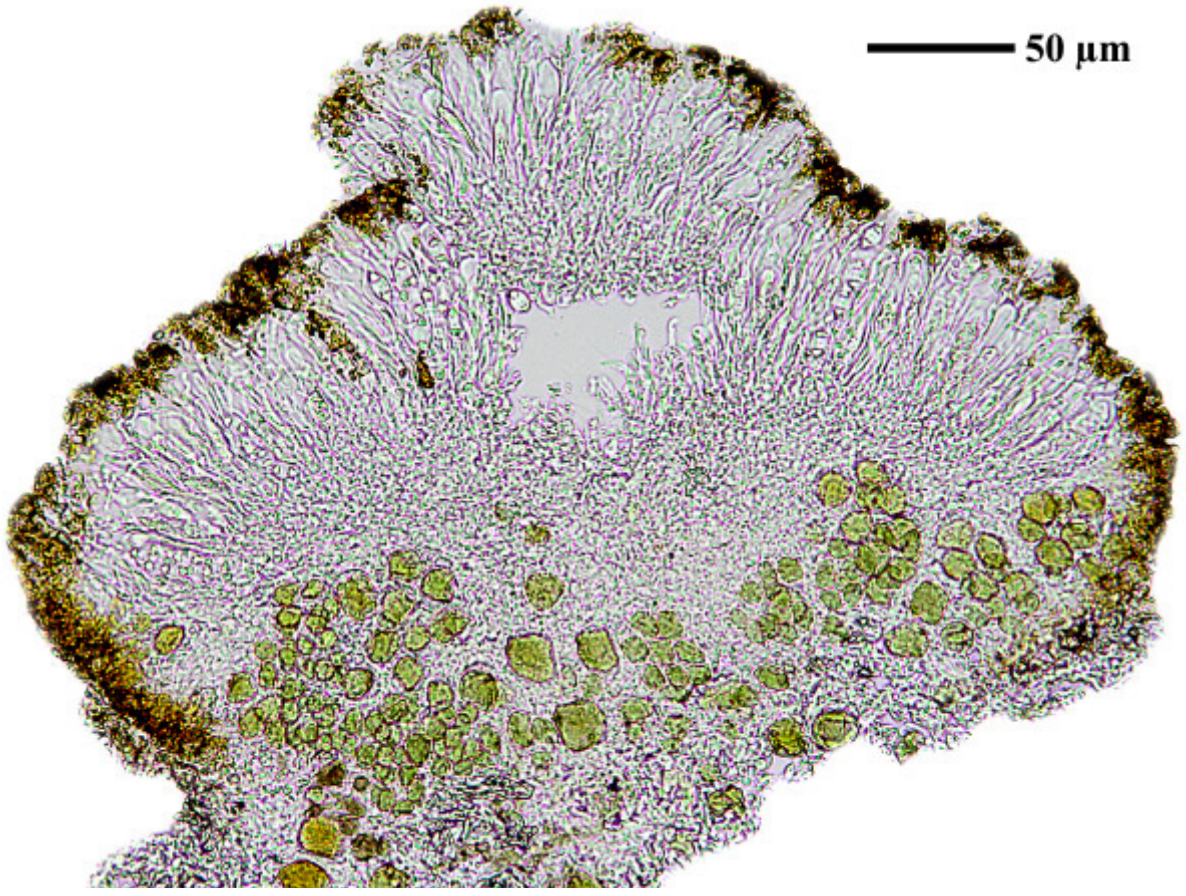
[B 60 0192174], Romania, Dobruja, Tulcea, Popina Island (Insula Popina) in Razim Lake (Lacul Razim), E coast, corticolous on low shrubs in steppe. 44°58.5' N, 28°58.9' E, 0-20 m. Leg. J. Vondrák & J.



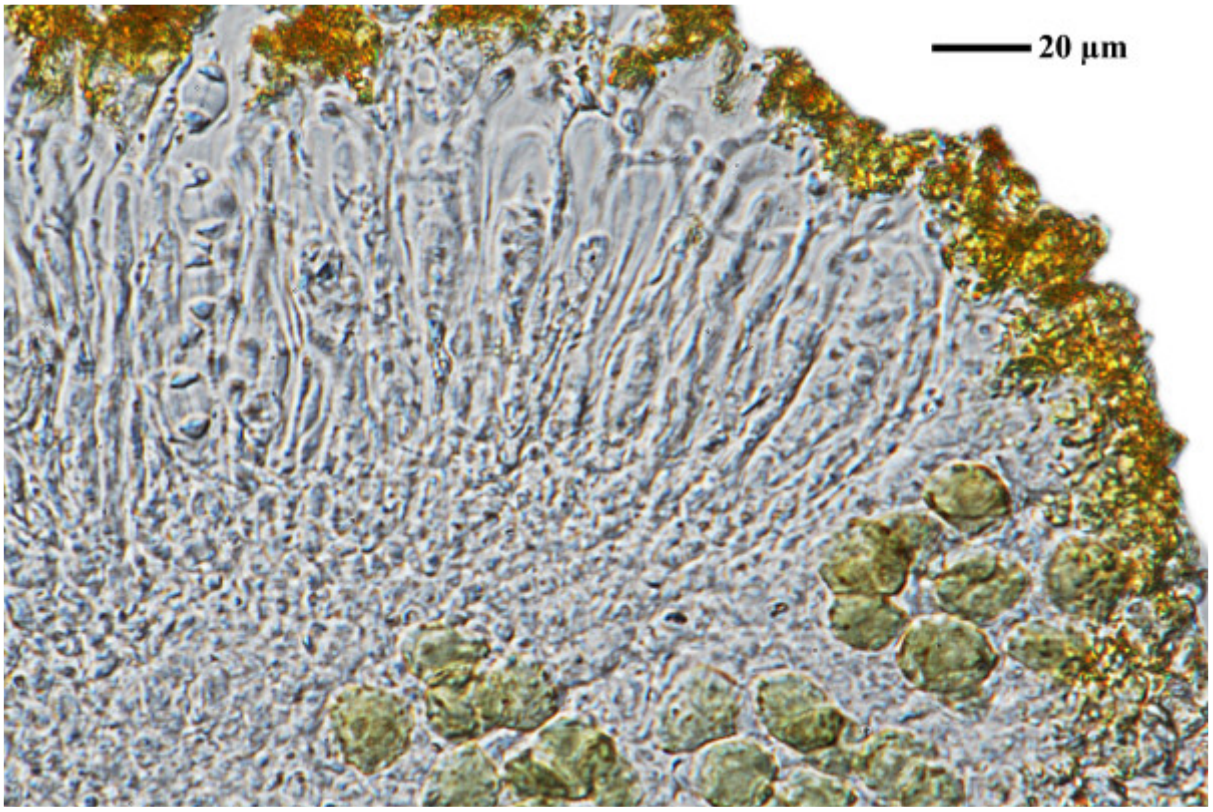


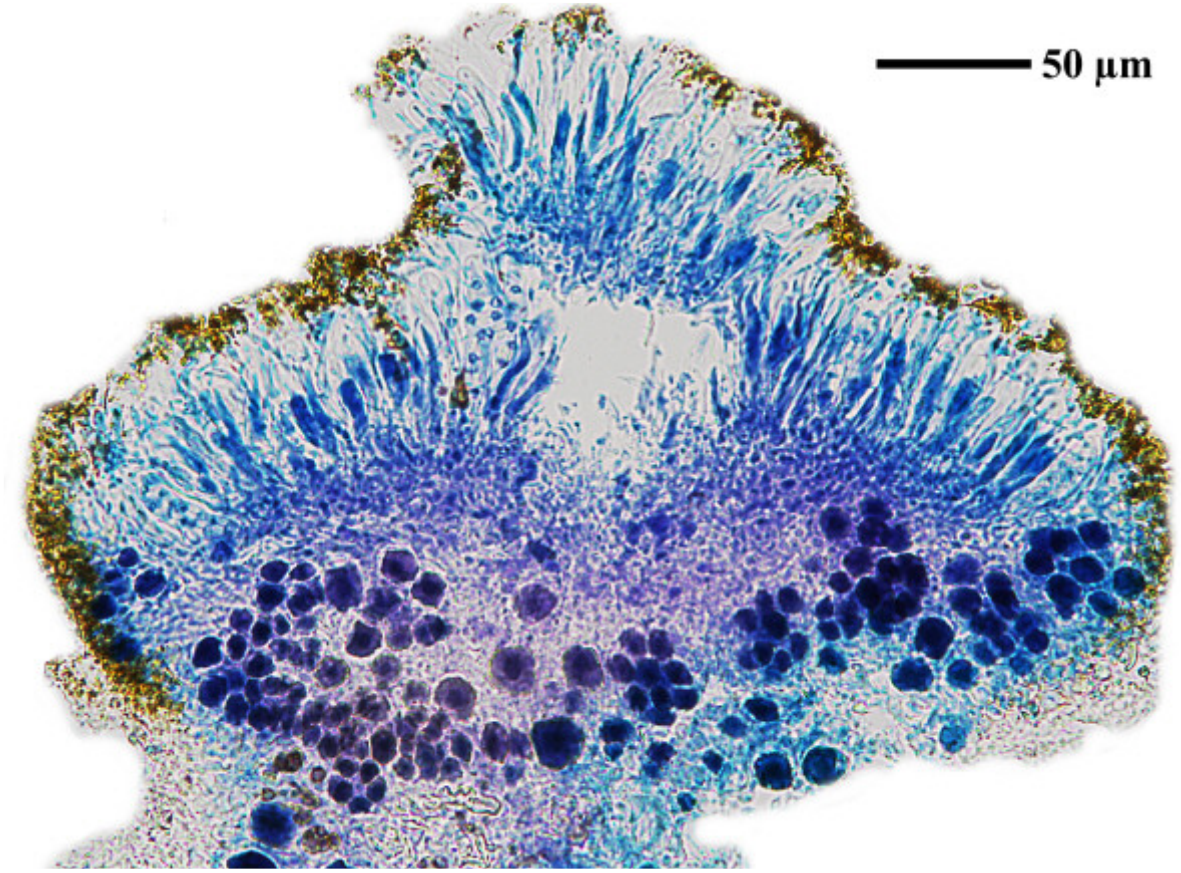
Caloplaca skii



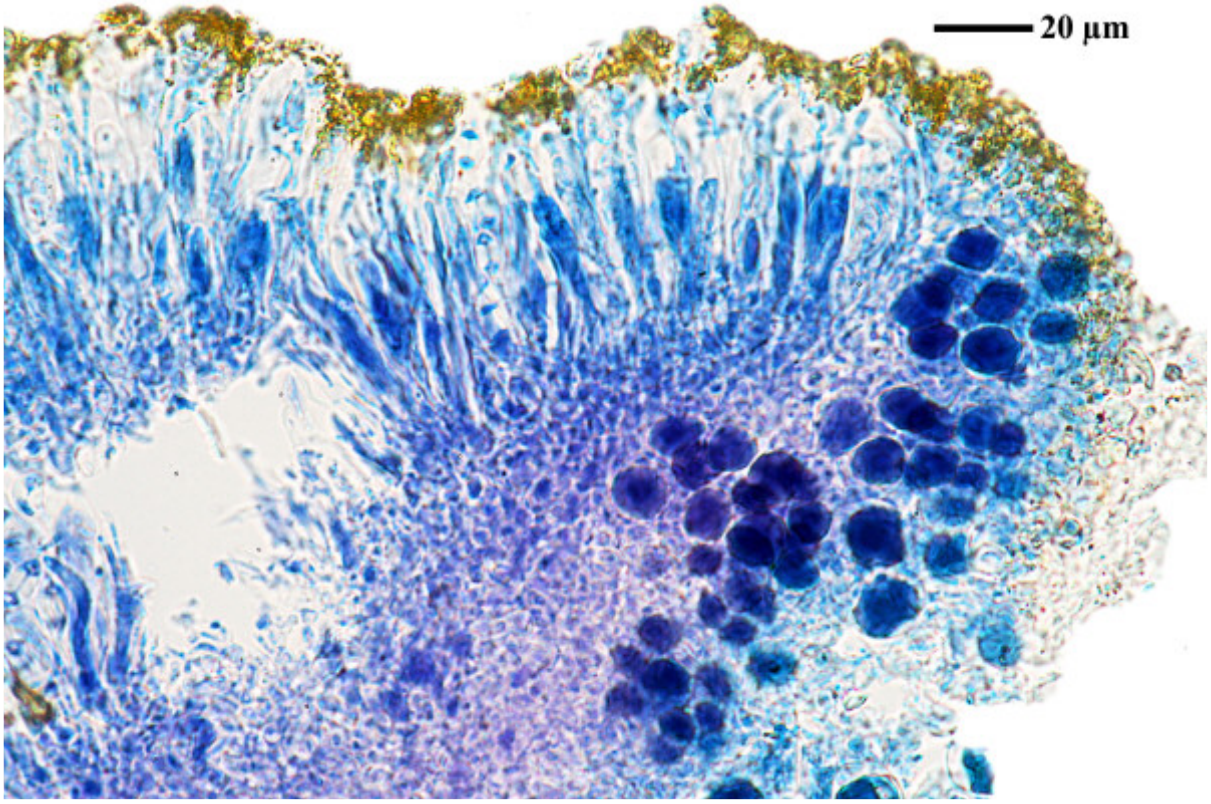


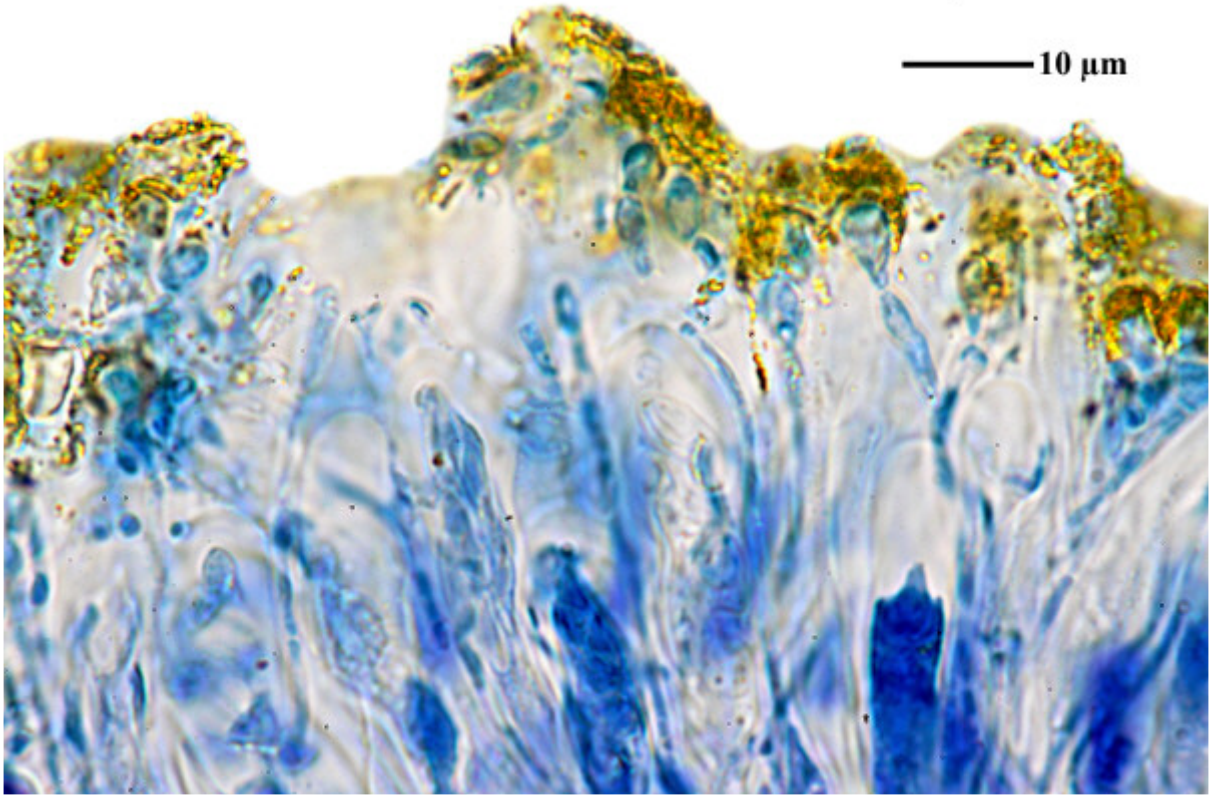
Caloplaca skii



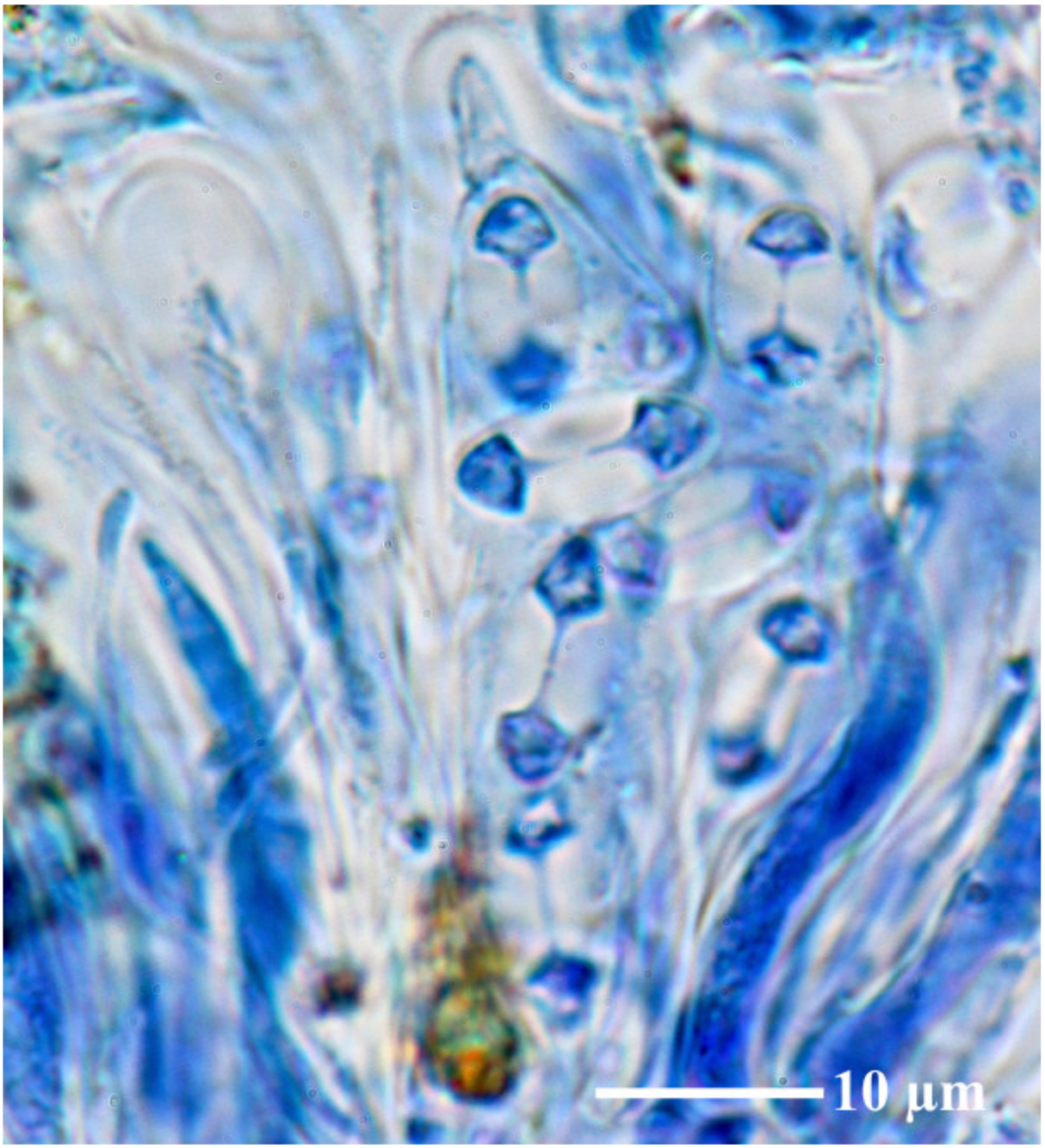


Caloplaca skii





Caloplaca skii





Caloplaca skii

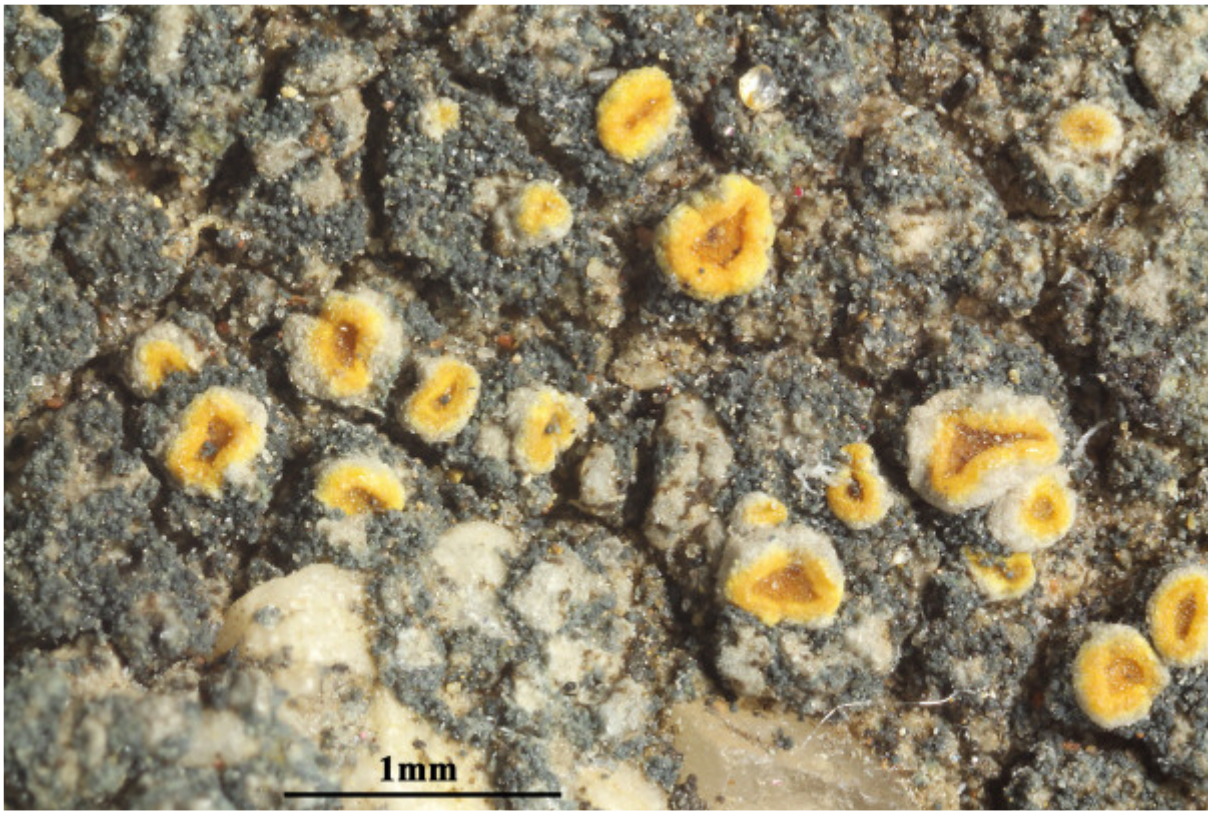
Caloplaca soralifera Vondrák & Hrouzek
ISOTYPUS

Spores 10.5-13.5 x 5.5-8.5 µm, septum 3-4.3 µm (FS).

[B 60 0187149], Czech Republic, Central Bohemia, Rakovník District, Křivoklát, near a small pond in the village Kalubice, saxicolous on horizontal faces of a concrete wall. 50°02'56.3" N, 13°49'30.4" E, 348 m. Leg. J. Vondrák, J., 28 December 2004, det. J. Vondrák. VONDRÁK, SELECTED EXSICCATES OF CALOPLACA NO 22. ISOTYPE.



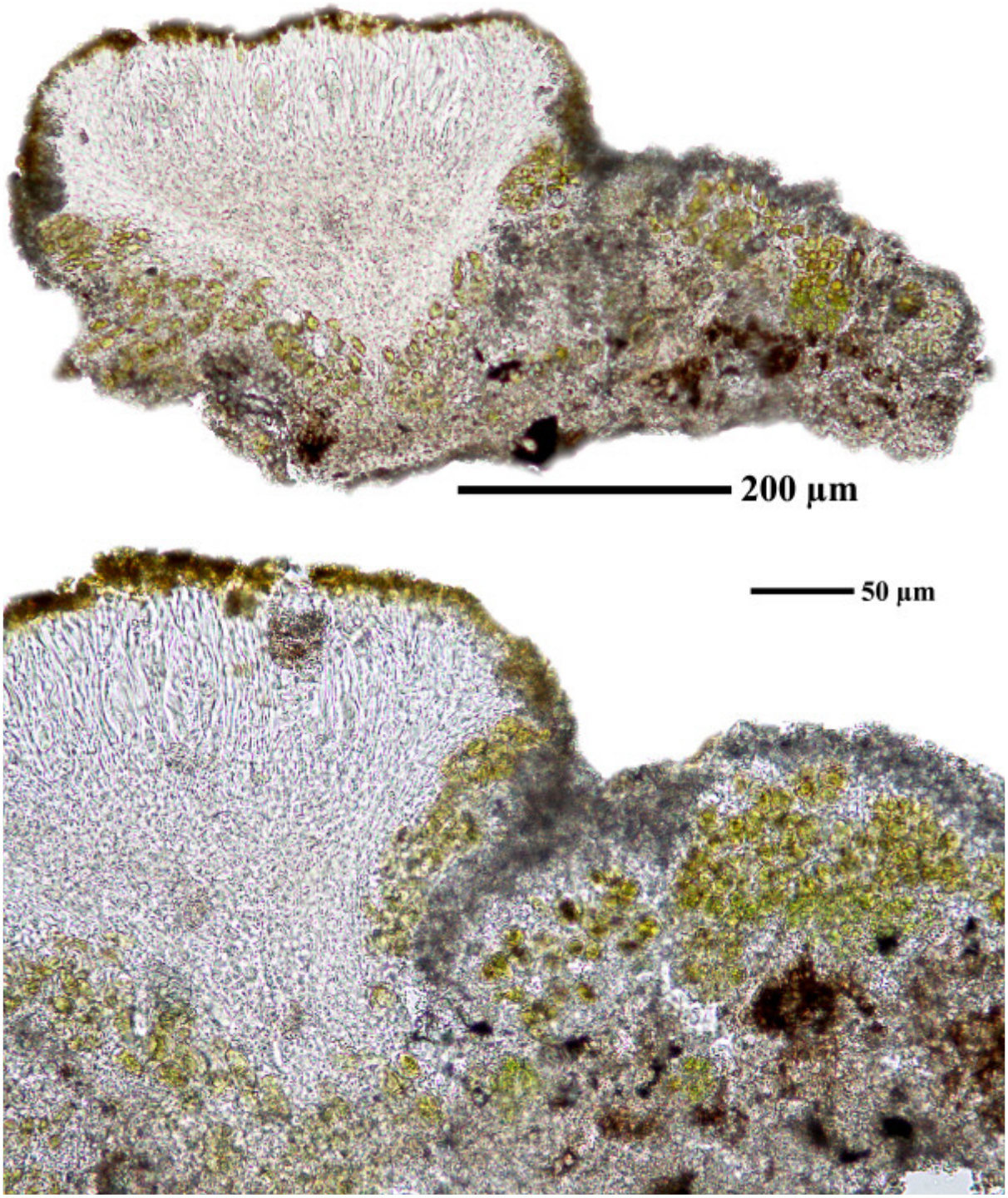




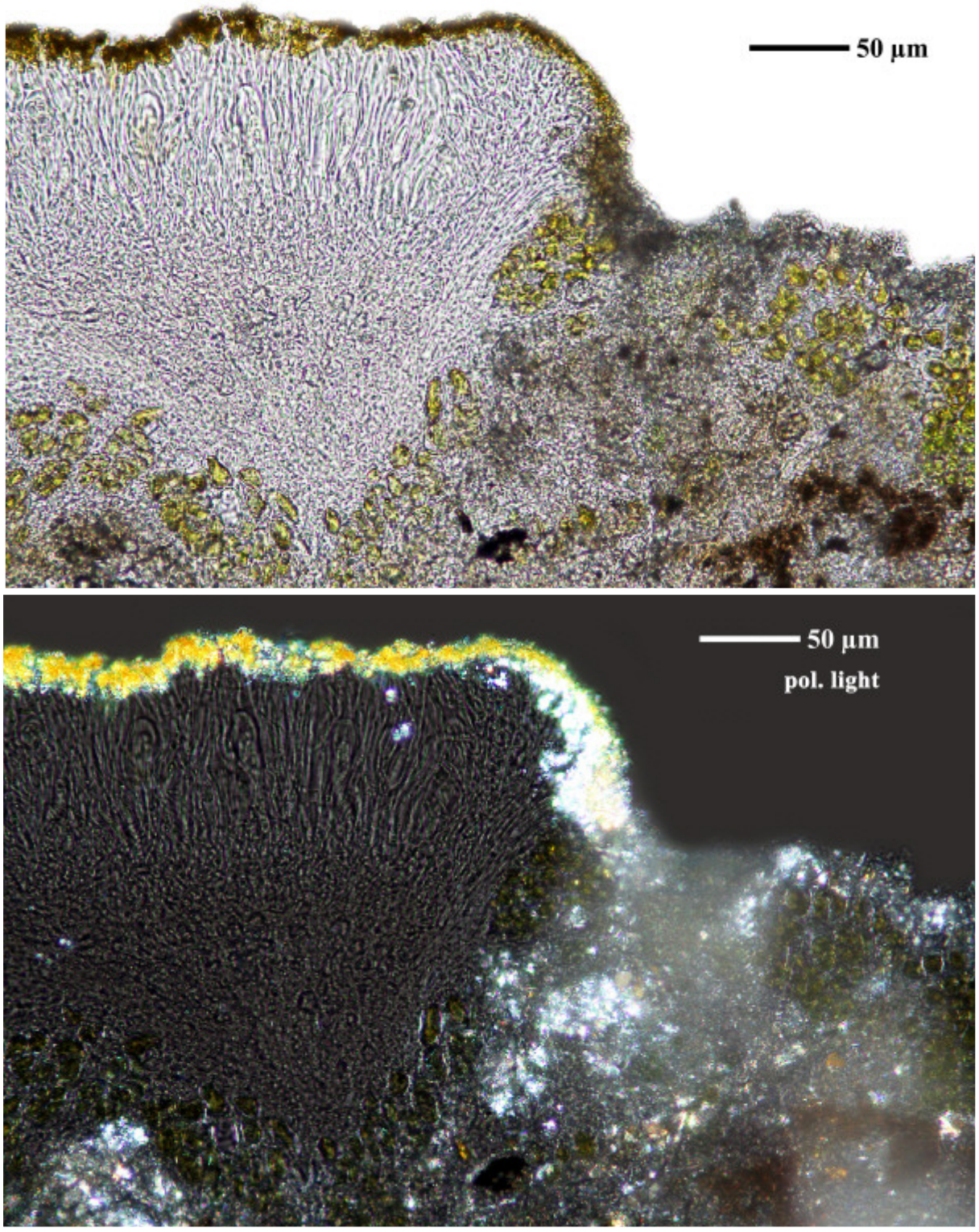
Caloplaca soralifera



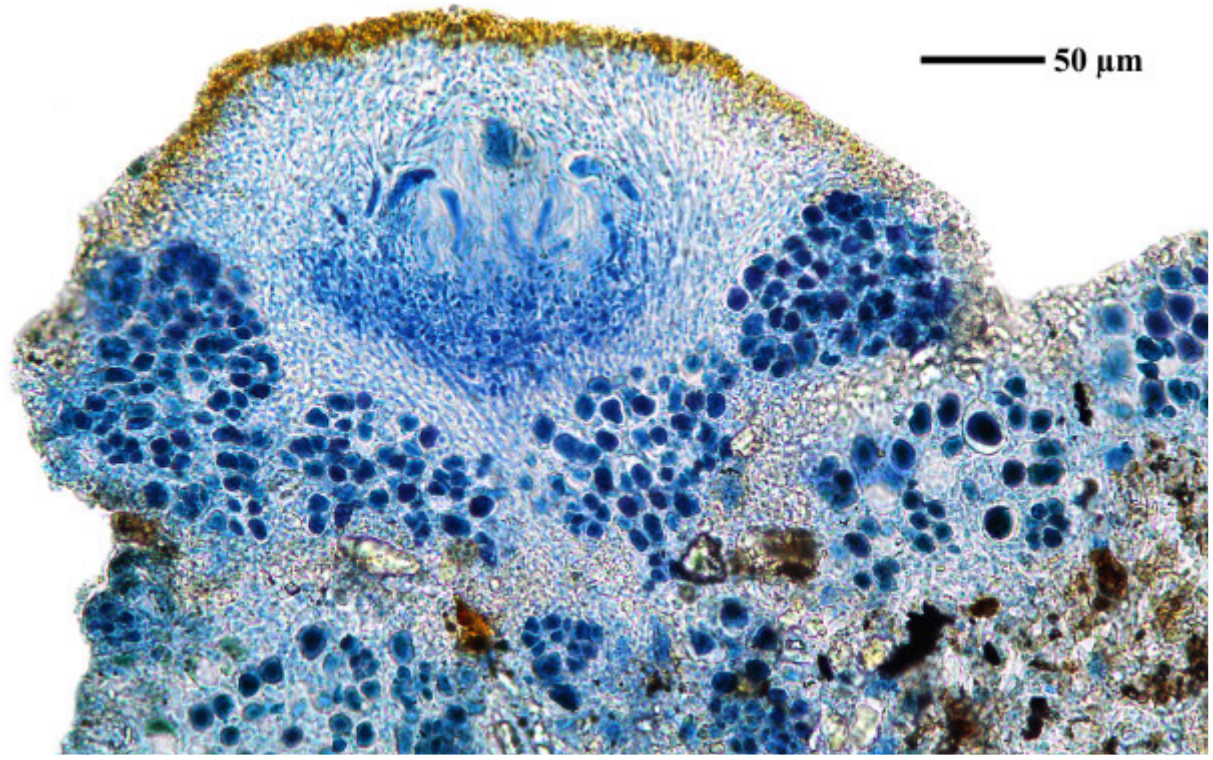
Caloplaca soralifera

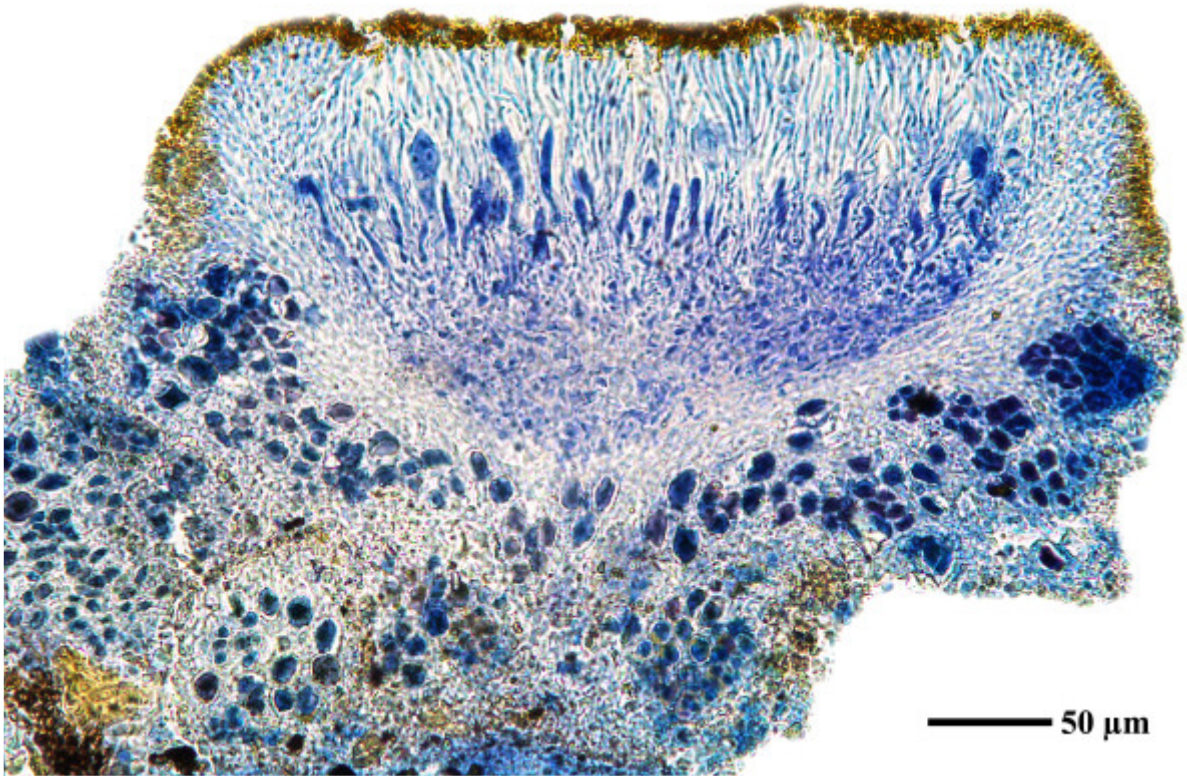


Caloplaca soralifera

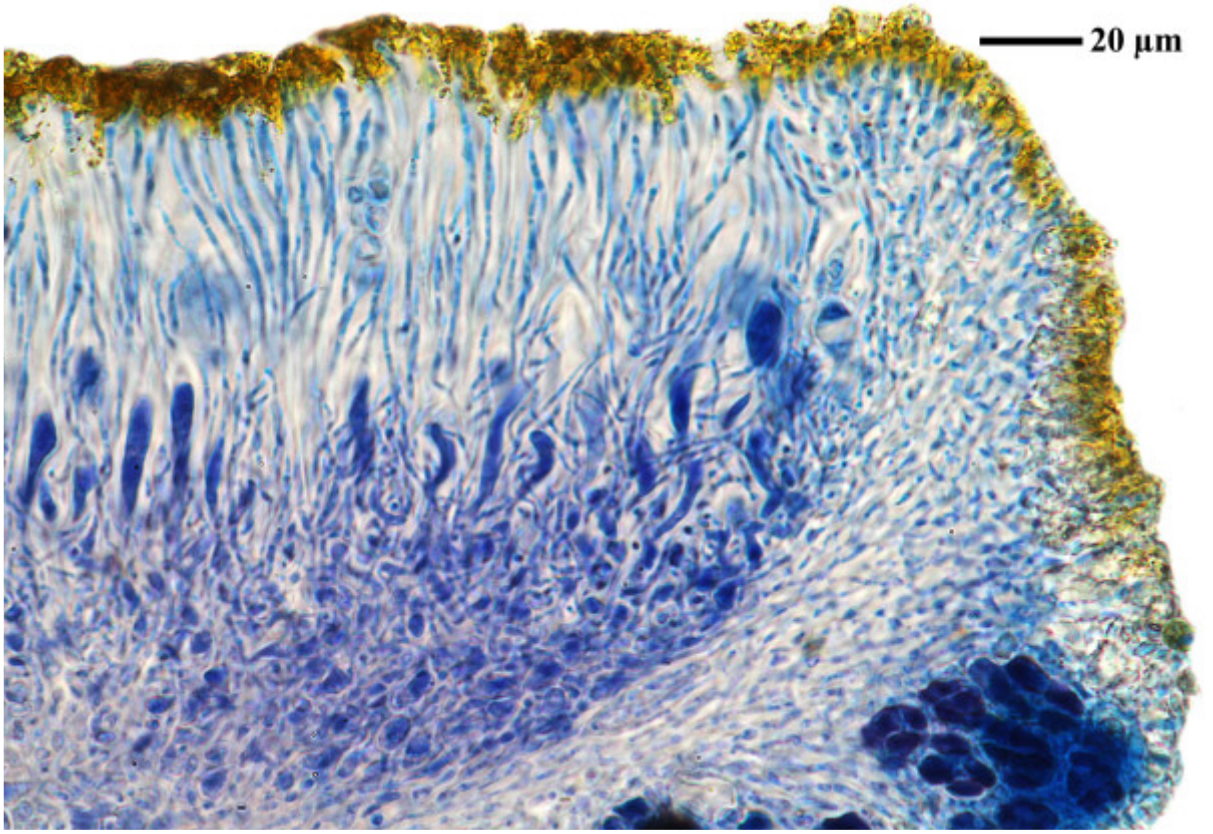


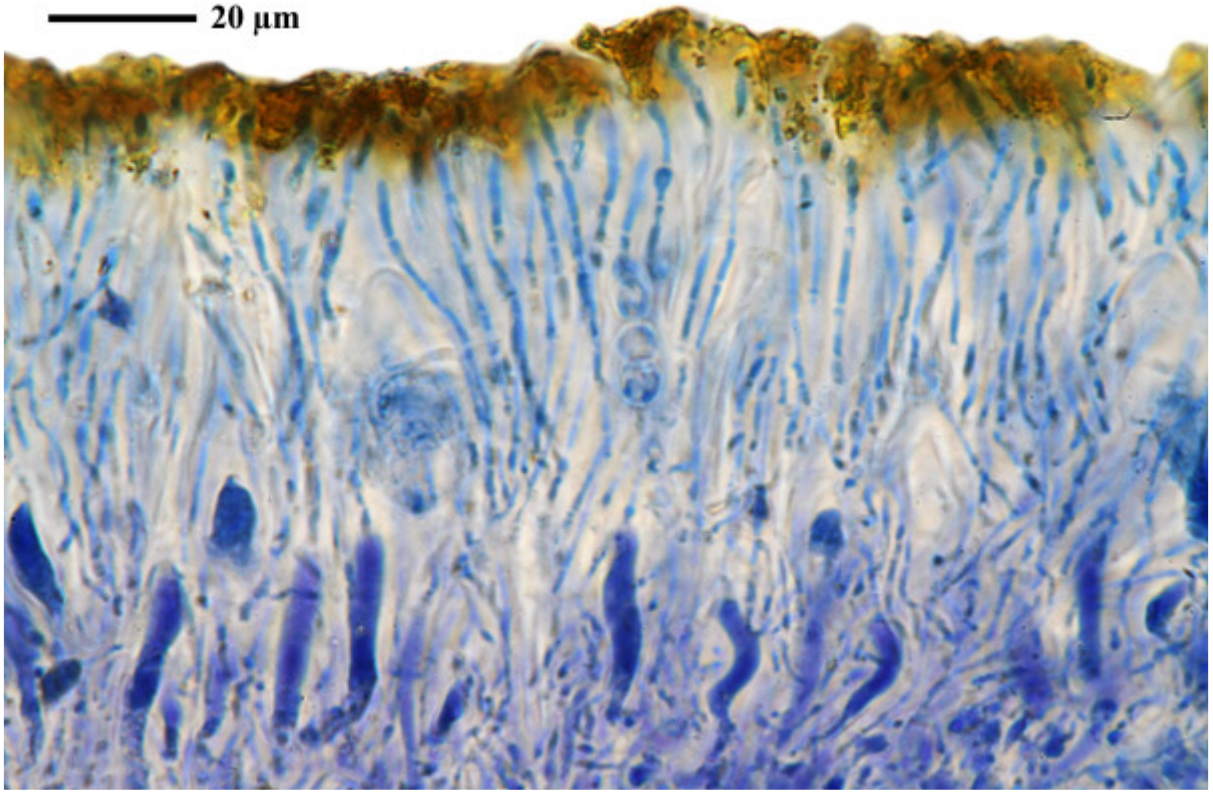
Caloplaca soralifera



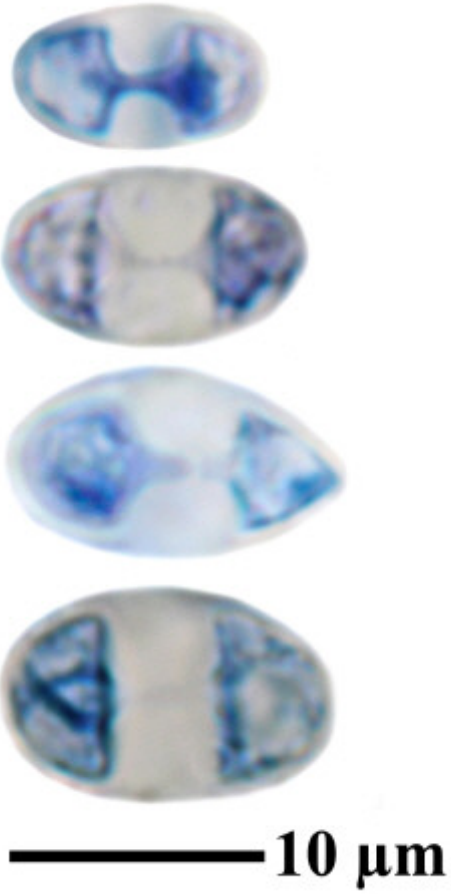


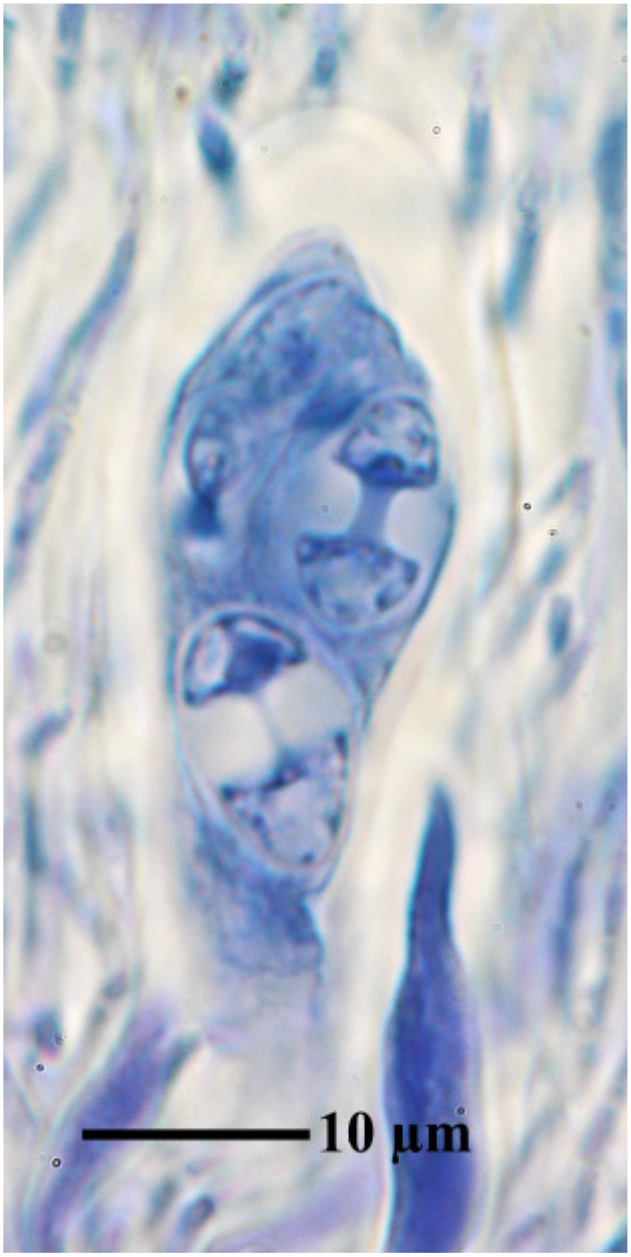
Caloplaca soralifera





Caloplaca soralifera





Caloplaca soralifera

Caloplaca sorediella Arup
[= *Haloplaca sorediella* (Arup) Arup, Frödén & Søchting]

On bark.

[ABL 74845], Portugal, Madeira Islands, Porto Santo, SW part, Espigão summit, c.250 m, 33°02’38’’ N, 16°23’01 W, on Cupressus. A. Aptroot 05.03.2016, det. A. Aptroot 2016.





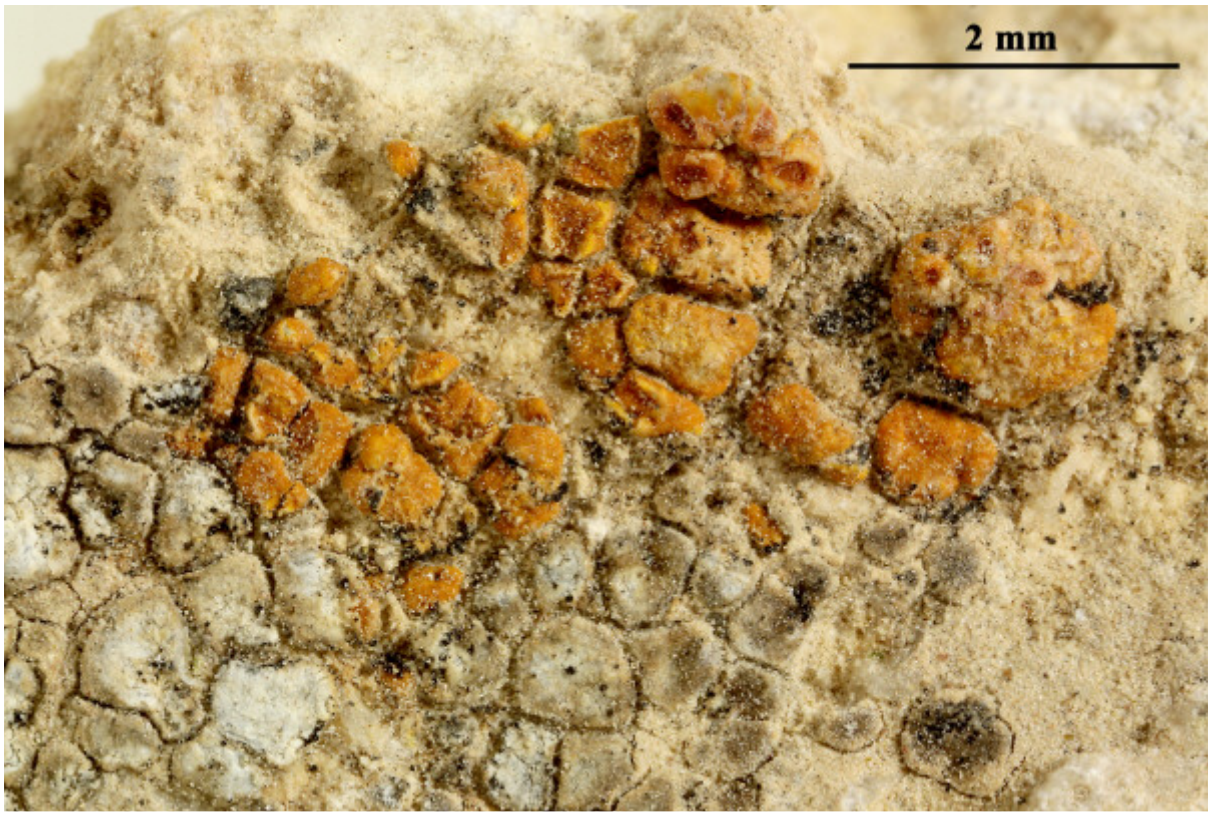


Caloplaca sorediella

Caloplaca sororicida M. Steiner & Poelt, in Poelt & Hinteregger, Biblthca Lichenol. 50: 201 (1993)
Auf *Caloplaca transcaspica* (Nyl.) Zahlbr.

[LIAF_62], Afghanistan, Prov. Samangan, 15 km W des Passes Kotal-i-Mirza Atbili (Kotal-i-Rabotak), 68°08’ E, 36°13’ N, 1170 m. An S-exponierten Steilflächen eines Felsrückens aus flachbankigem Kalk. Leg. M. Steiner (Ste 44/1a), 5-6.06.1970. LICHENOTHECA AFGHANICA NR. 62.







Caloplaca sororicida



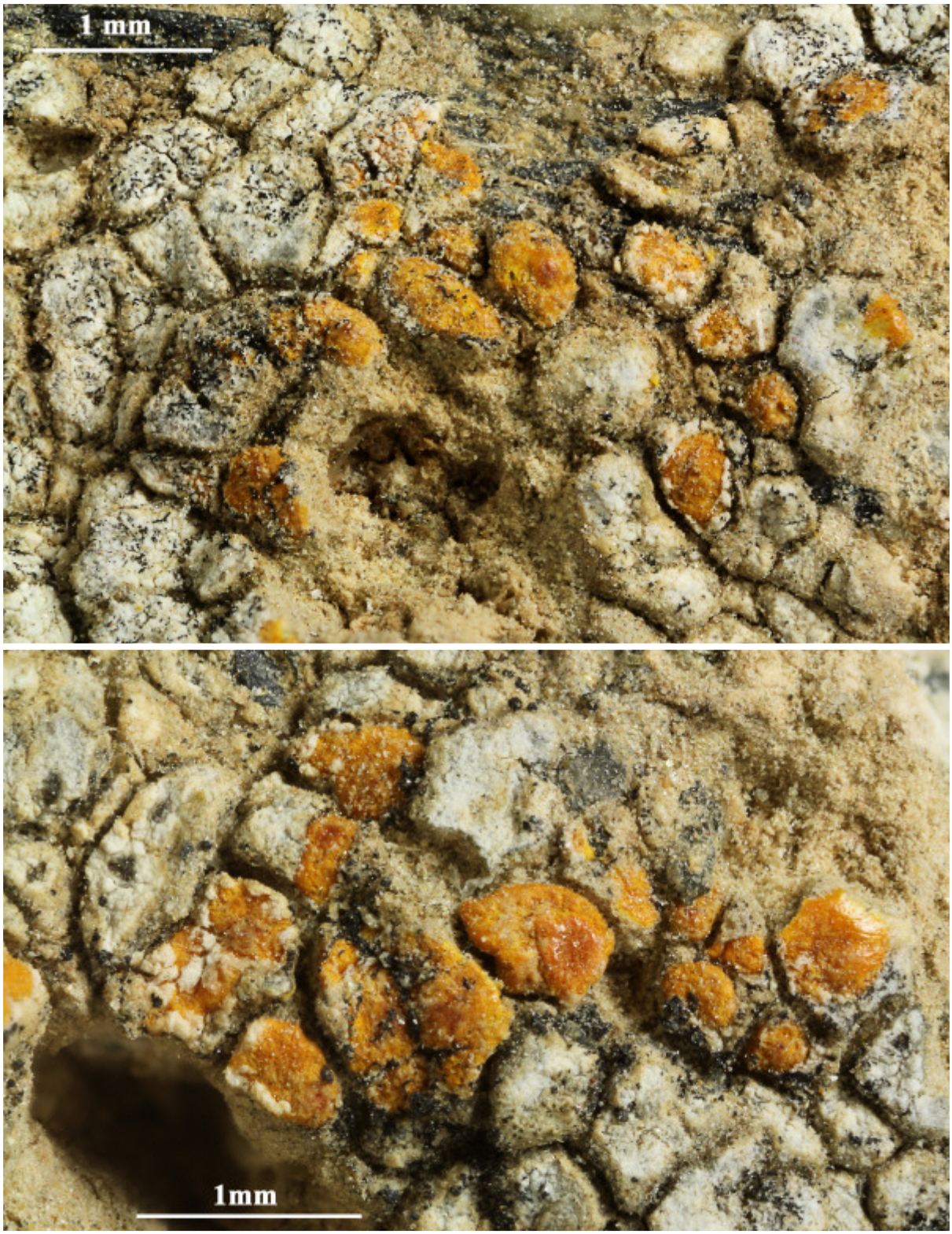


Caloplaca sororicida

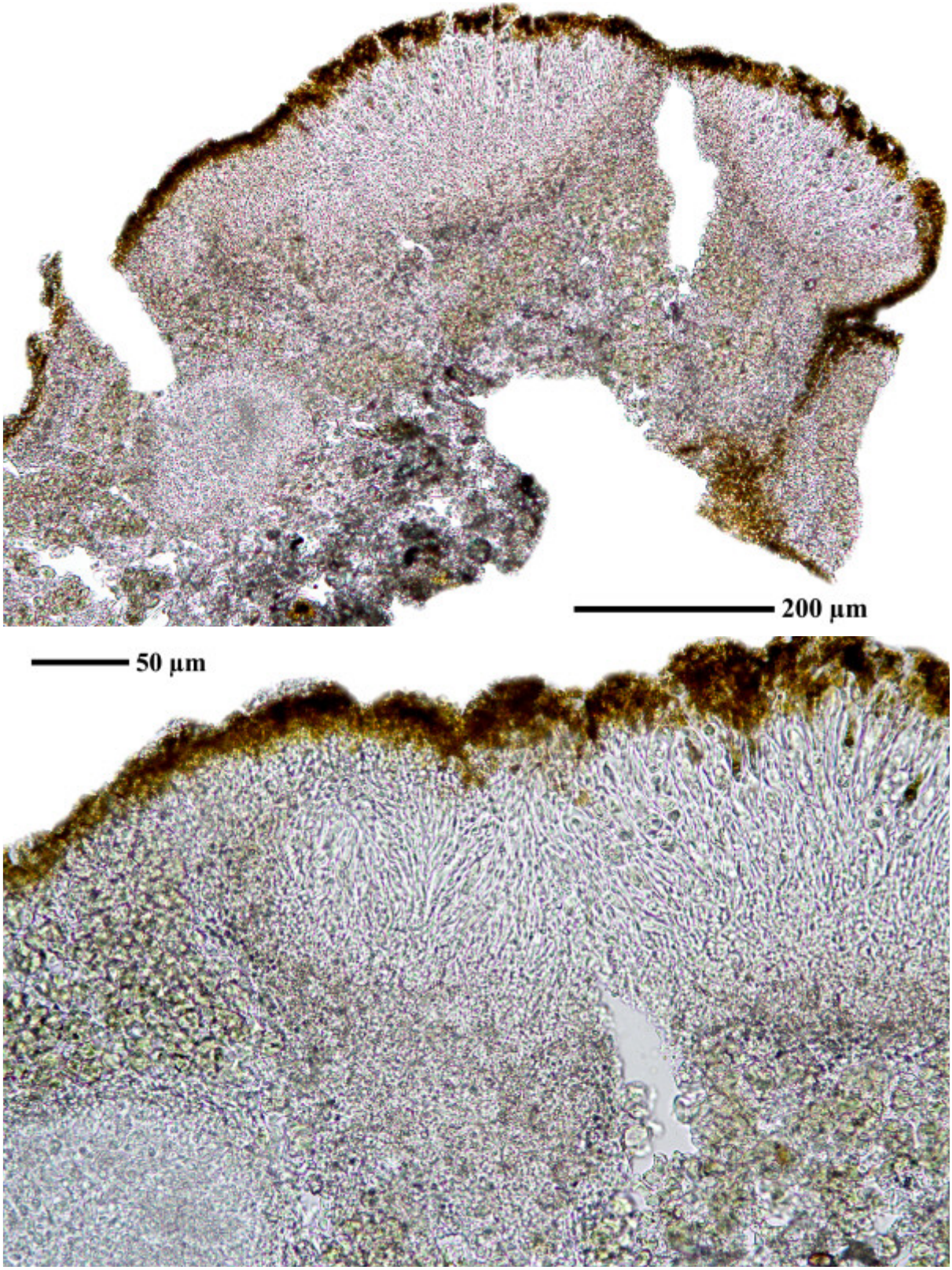
Caloplaca sororicida M. Steiner & Poelt, ISOTYPUS, in Poelt & Hinteregger, Biblthca Lichenol. 50: 201 (1993)
Auf *Caloplaca transcaspica* (Nyl.) Zahlbr.

[LIAF_63], Afghanistan, Prov. Kabul, Hügel ca. 3 km E des neuen Flughafens von Kabul, 69°17’ E, 34°35’ N, 1850 m. Felsköpfe von Kalkschiefer in einem S-exponierten Steppenhang. Leg. M. Steiner (Ste 3/1), 30.04.1970. LICHENOTHECA AFGHANICA NR. 63.

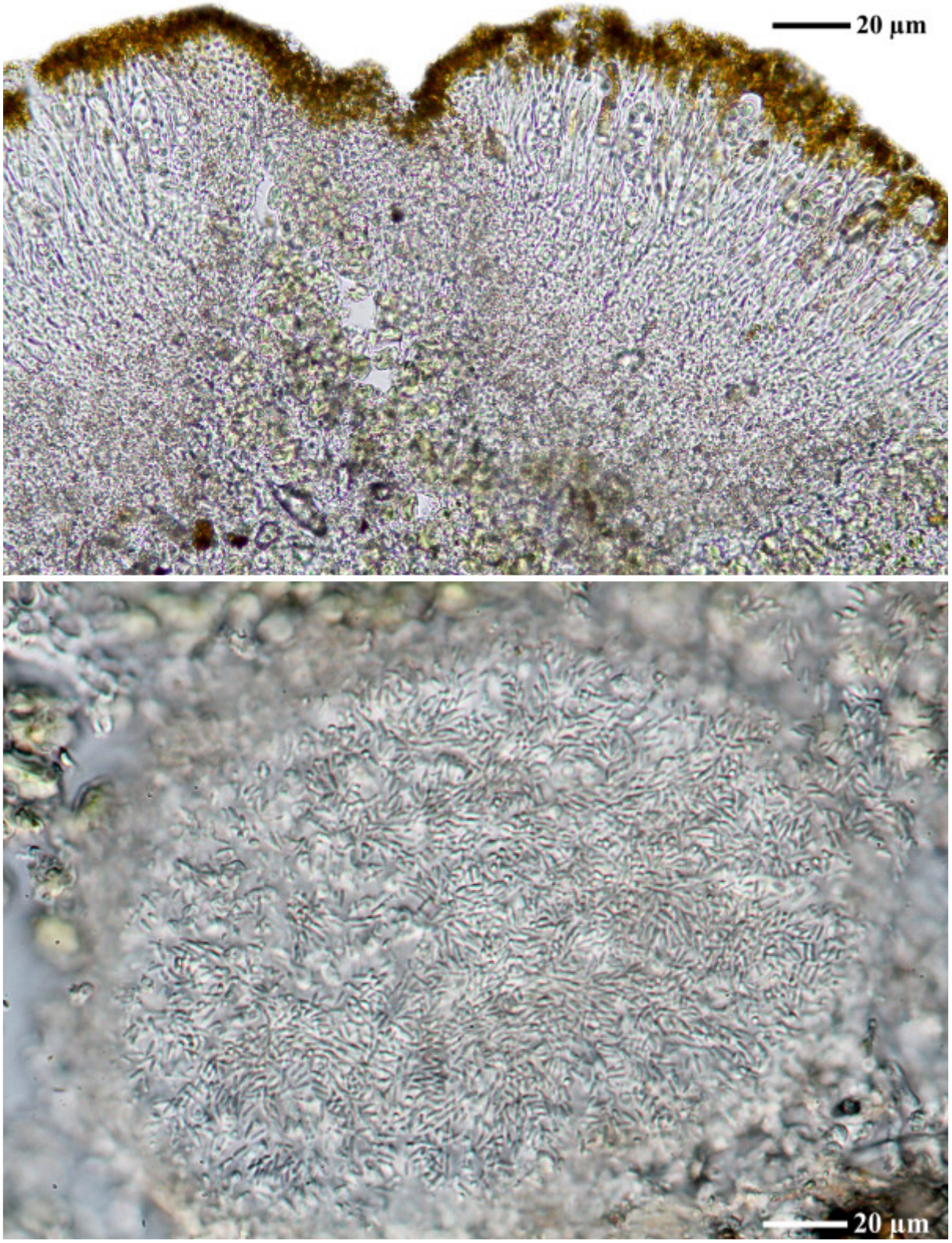




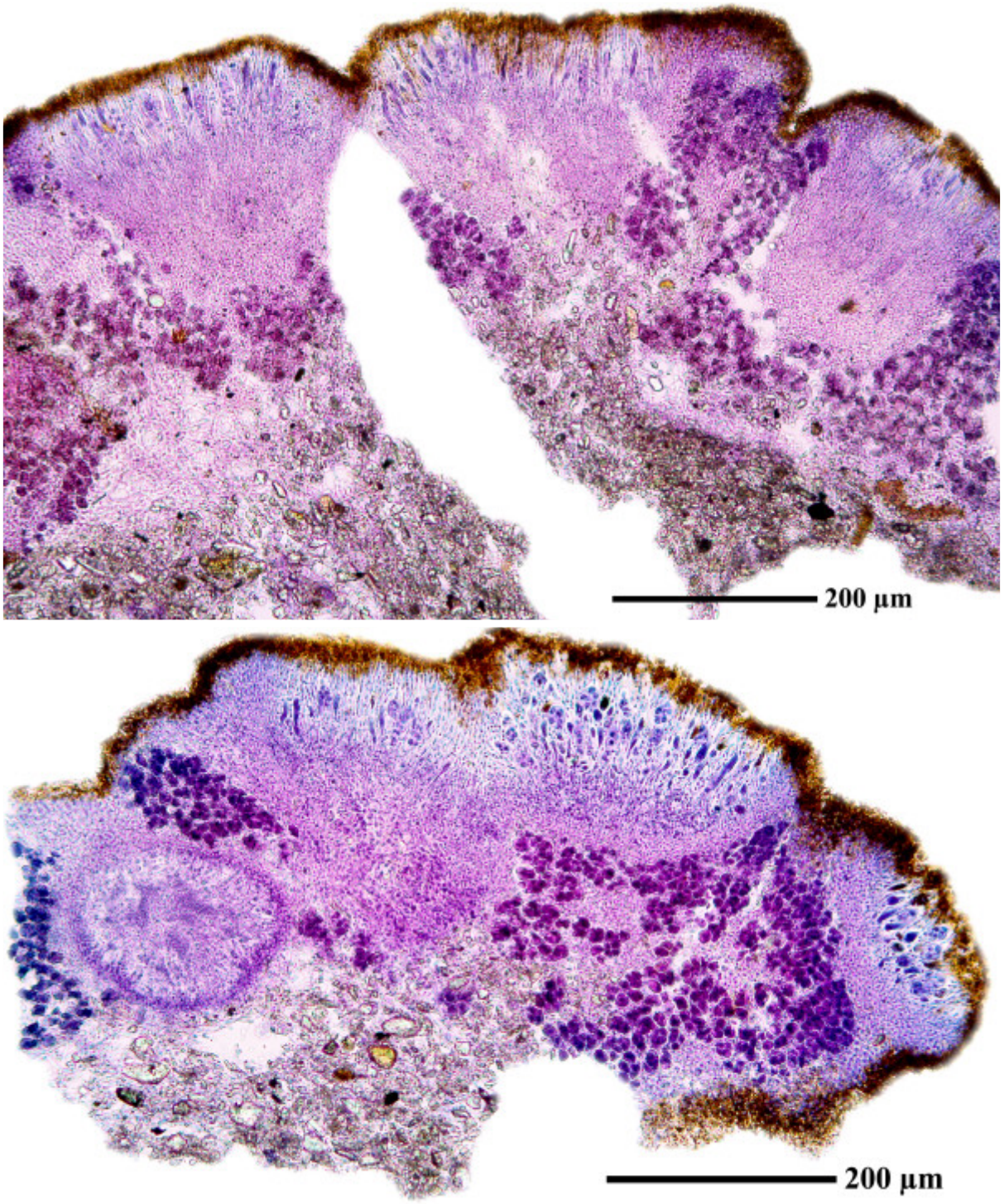
Caloplaca sororicida



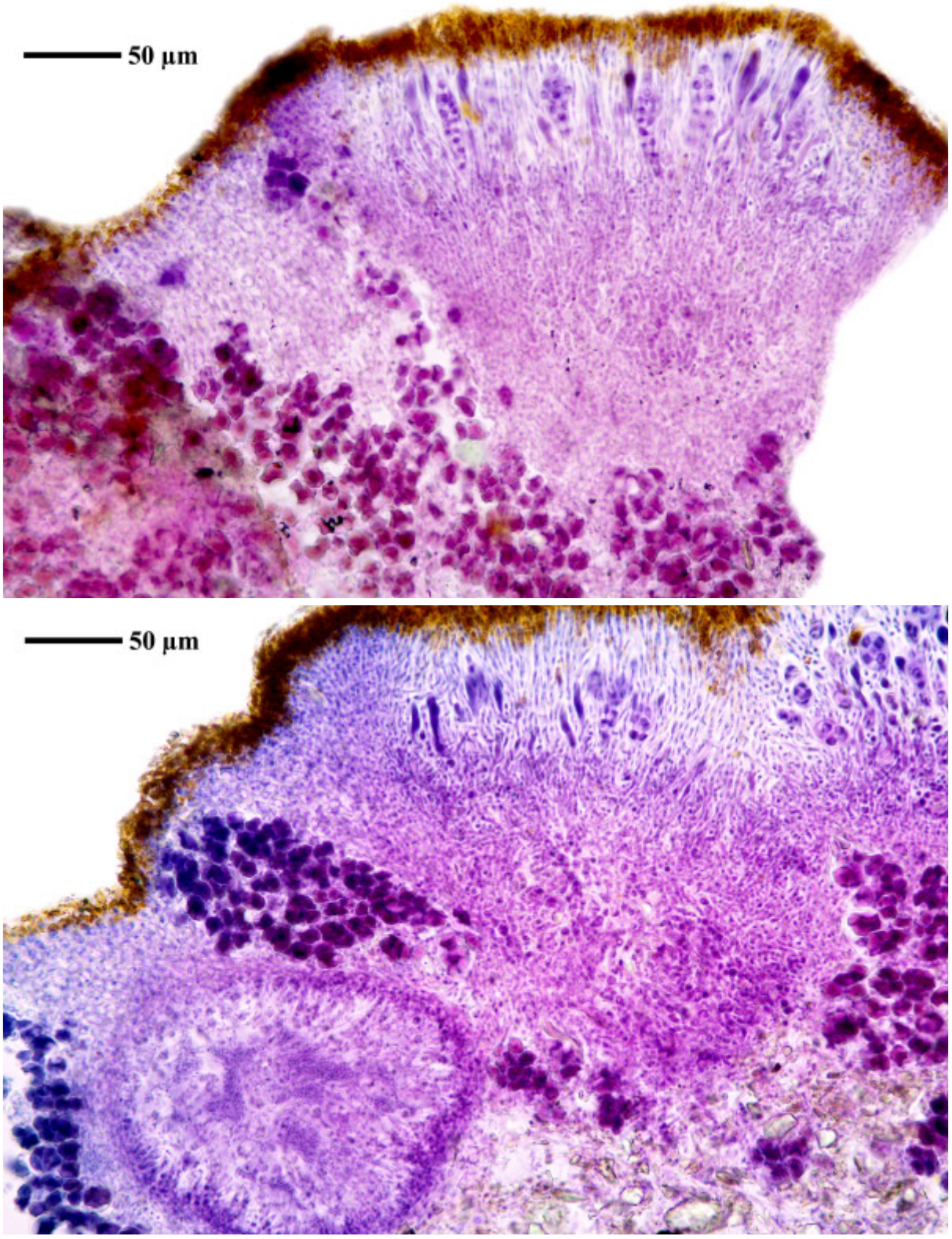
Caloplaca sororicida



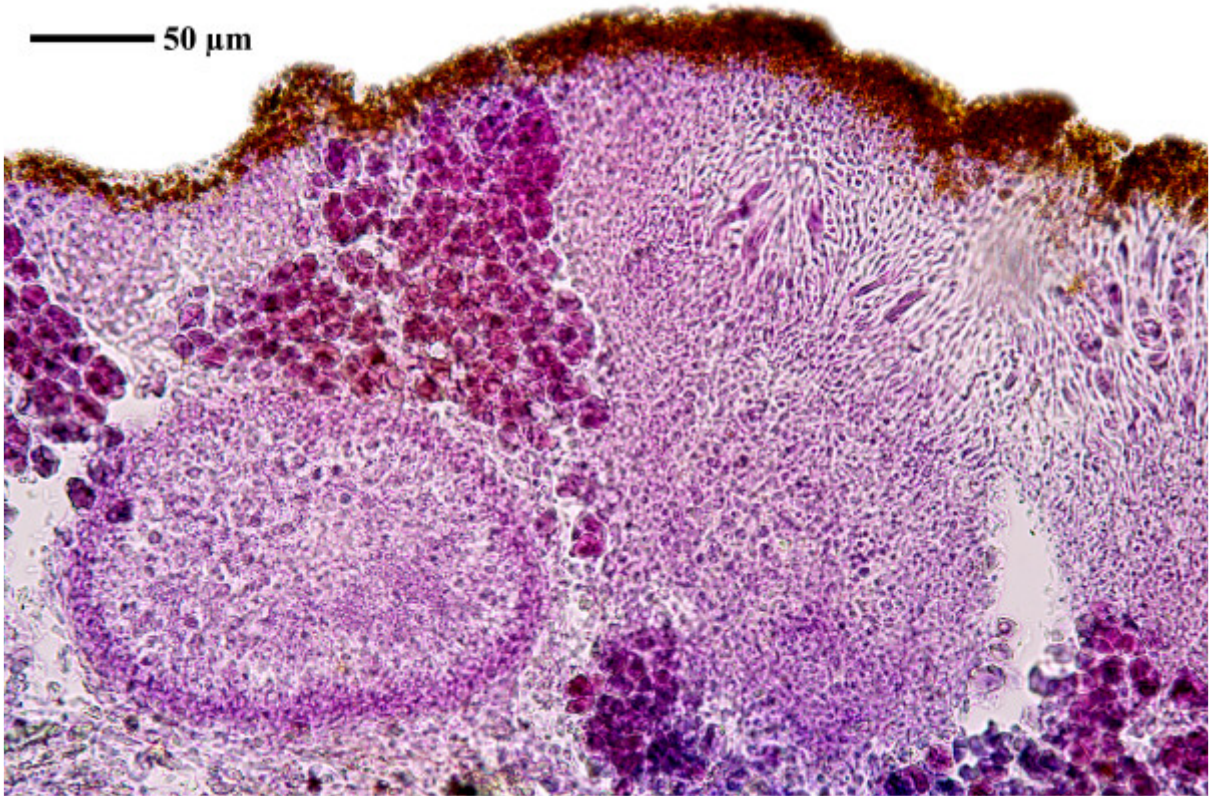
Caloplaca sororicida

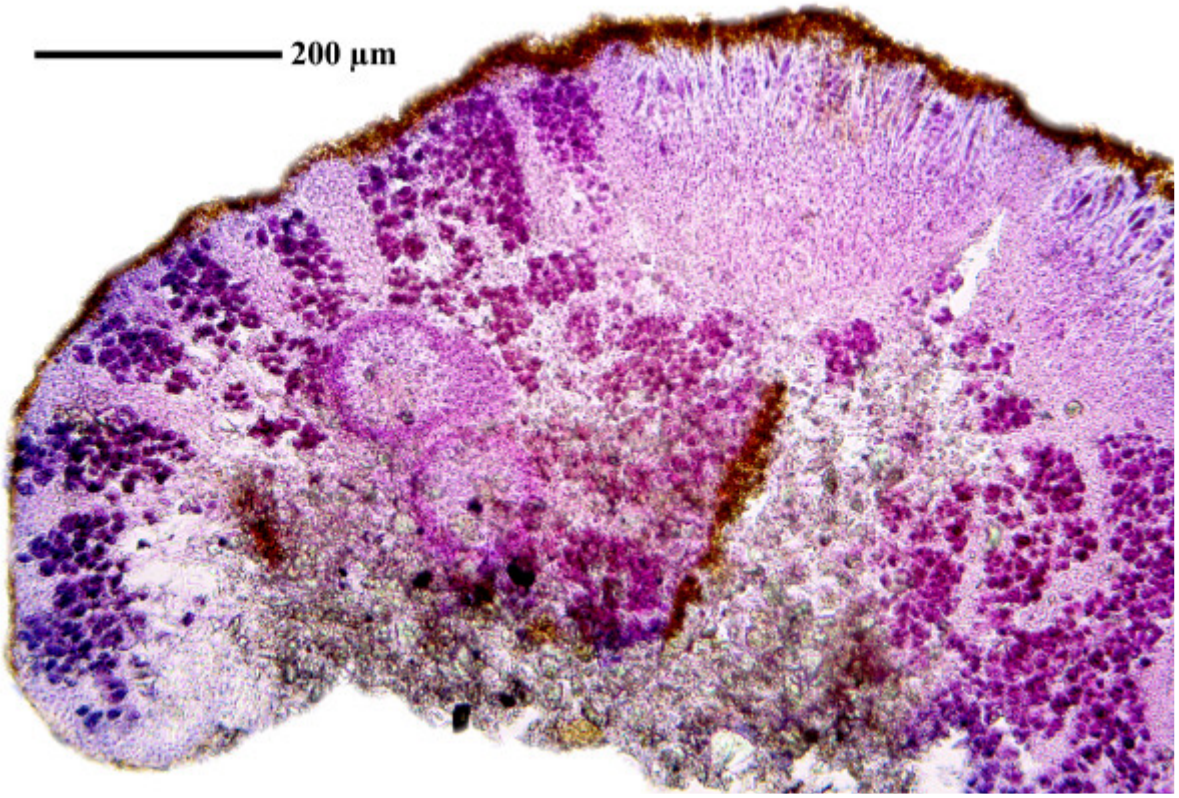


Caloplaca sororicida

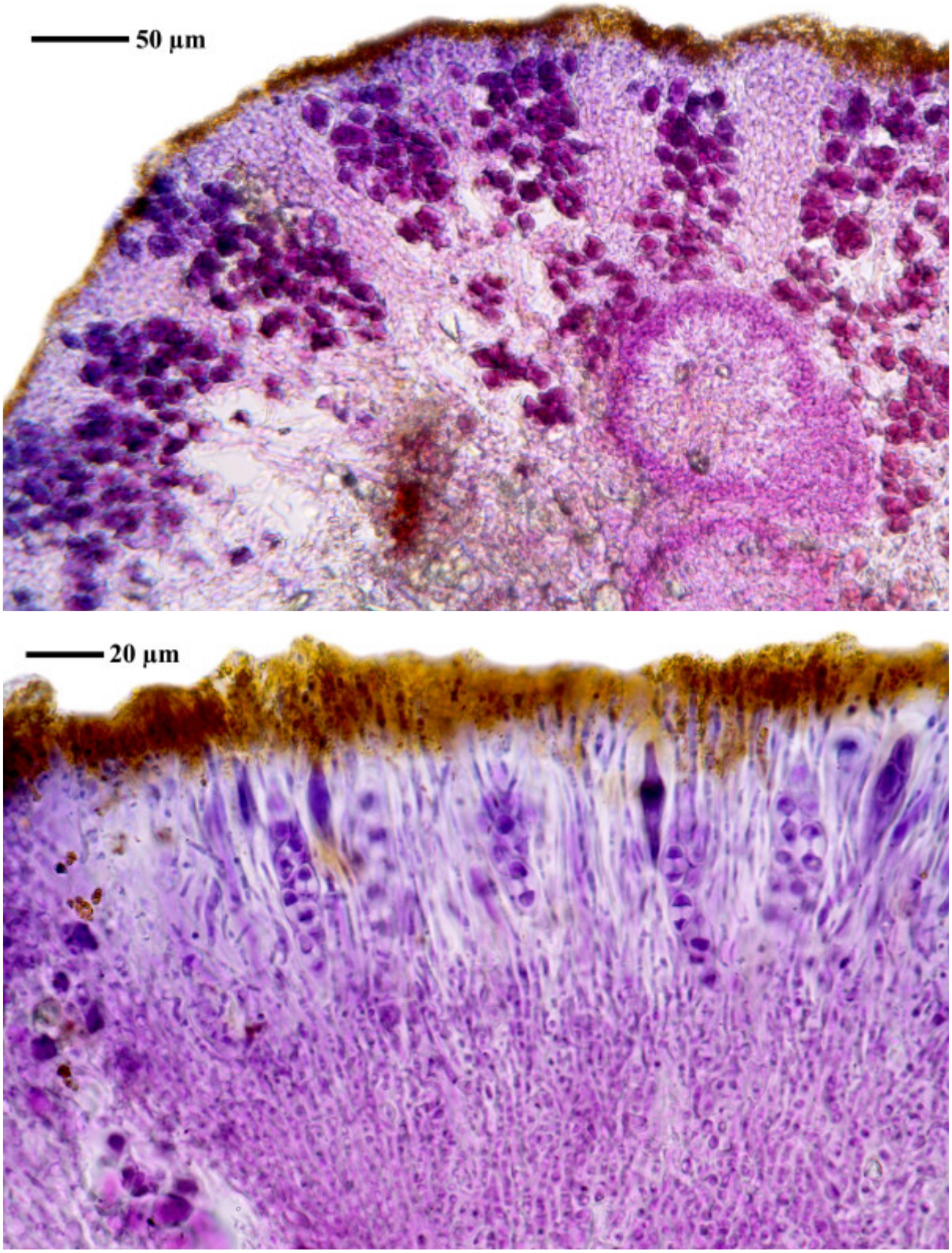


Caloplaca sororicida

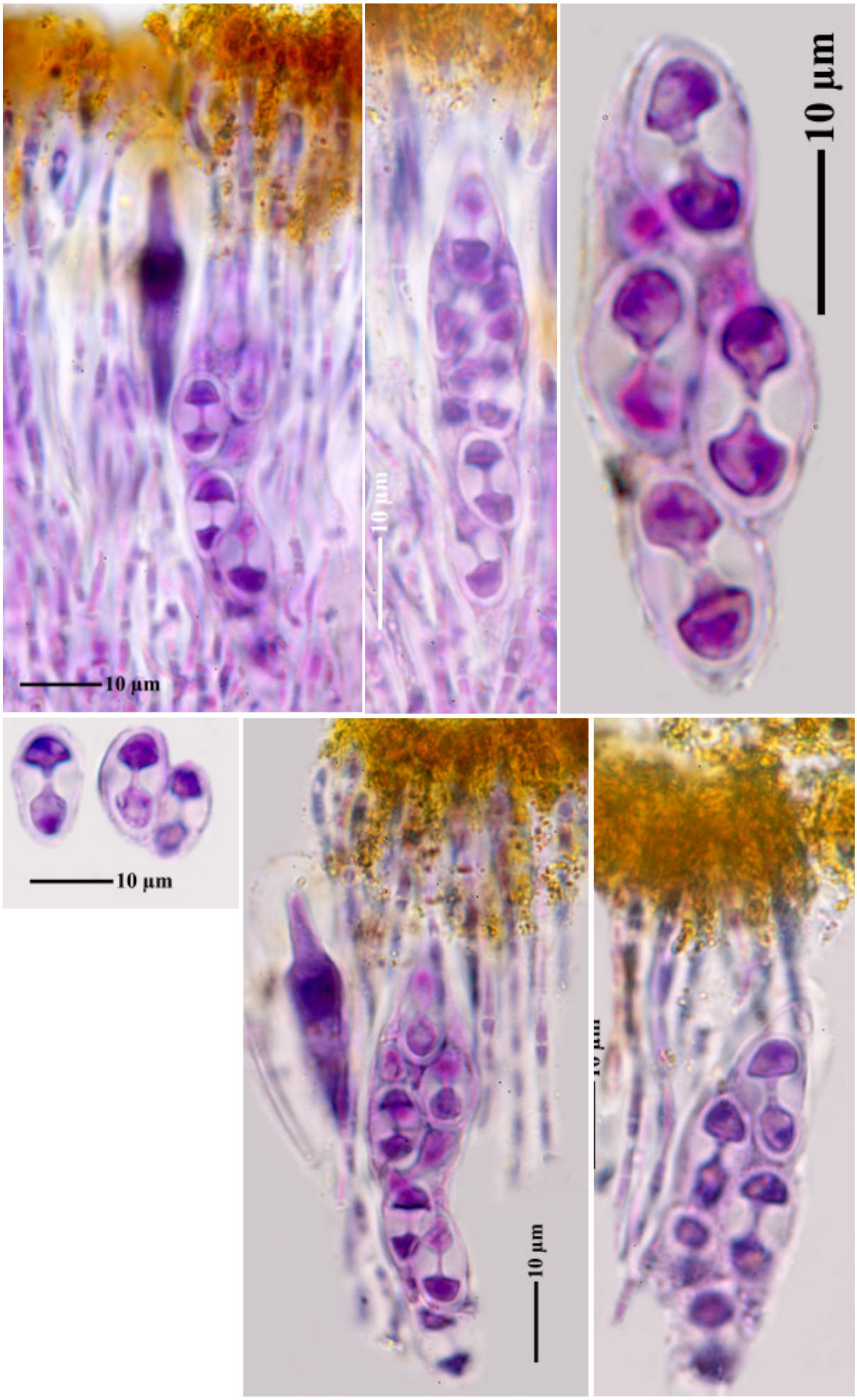




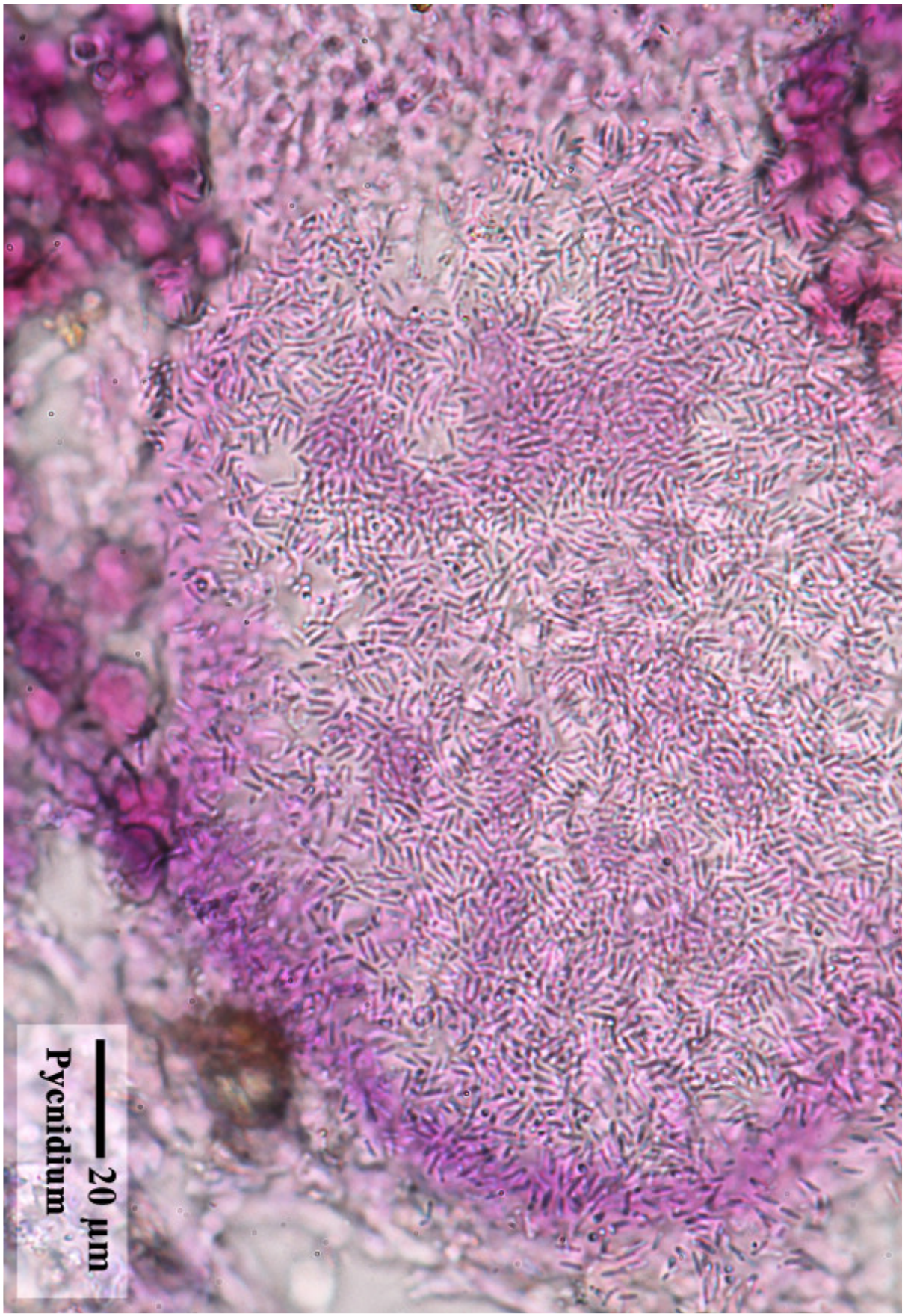
Caloplaca sororicida



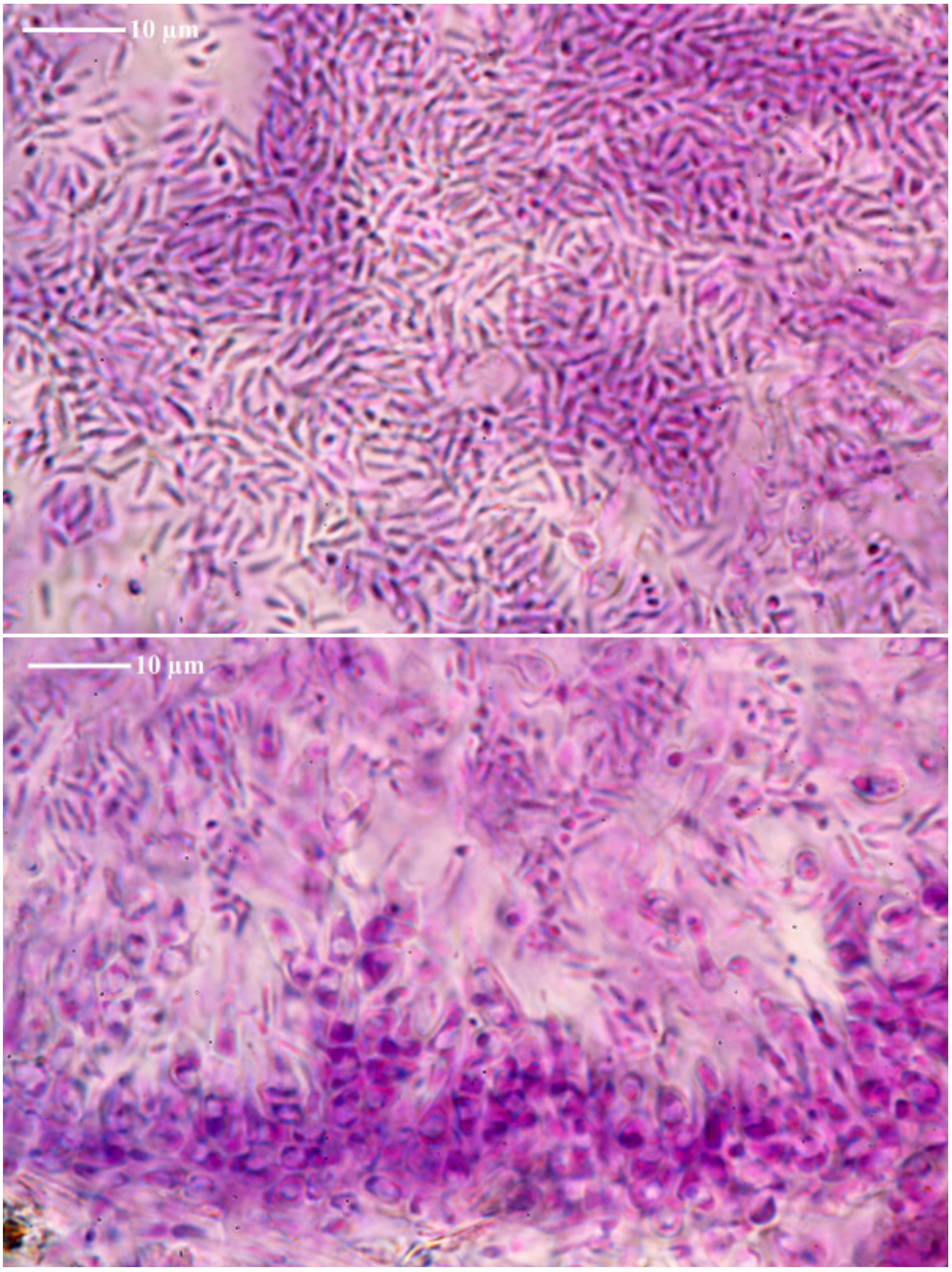
Caloplaca sororicida



Caloplaca sororicida



Caloplaca sororicida



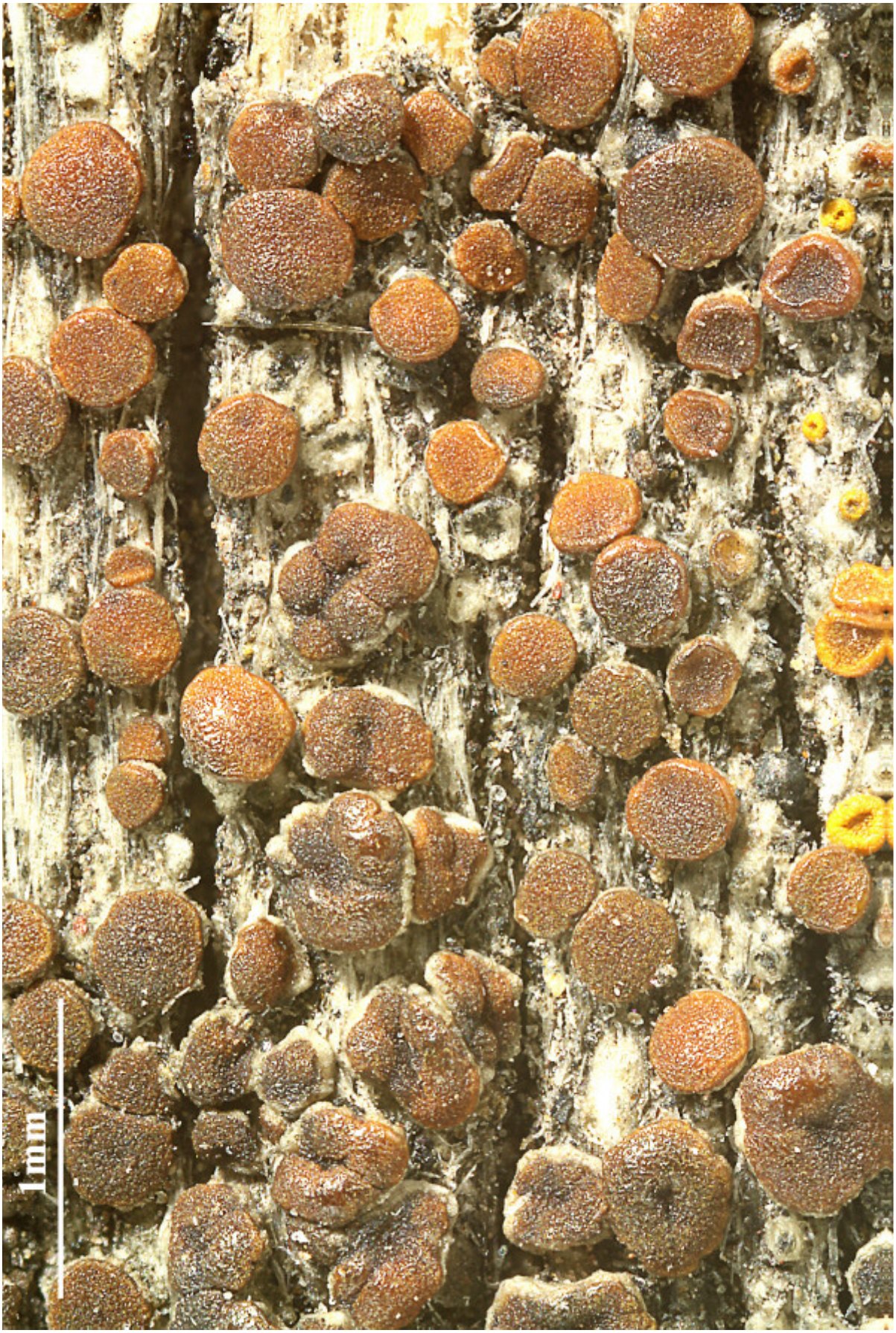
Caloplaca sororicida

Caloplaca spitsbergensis H. Magn.

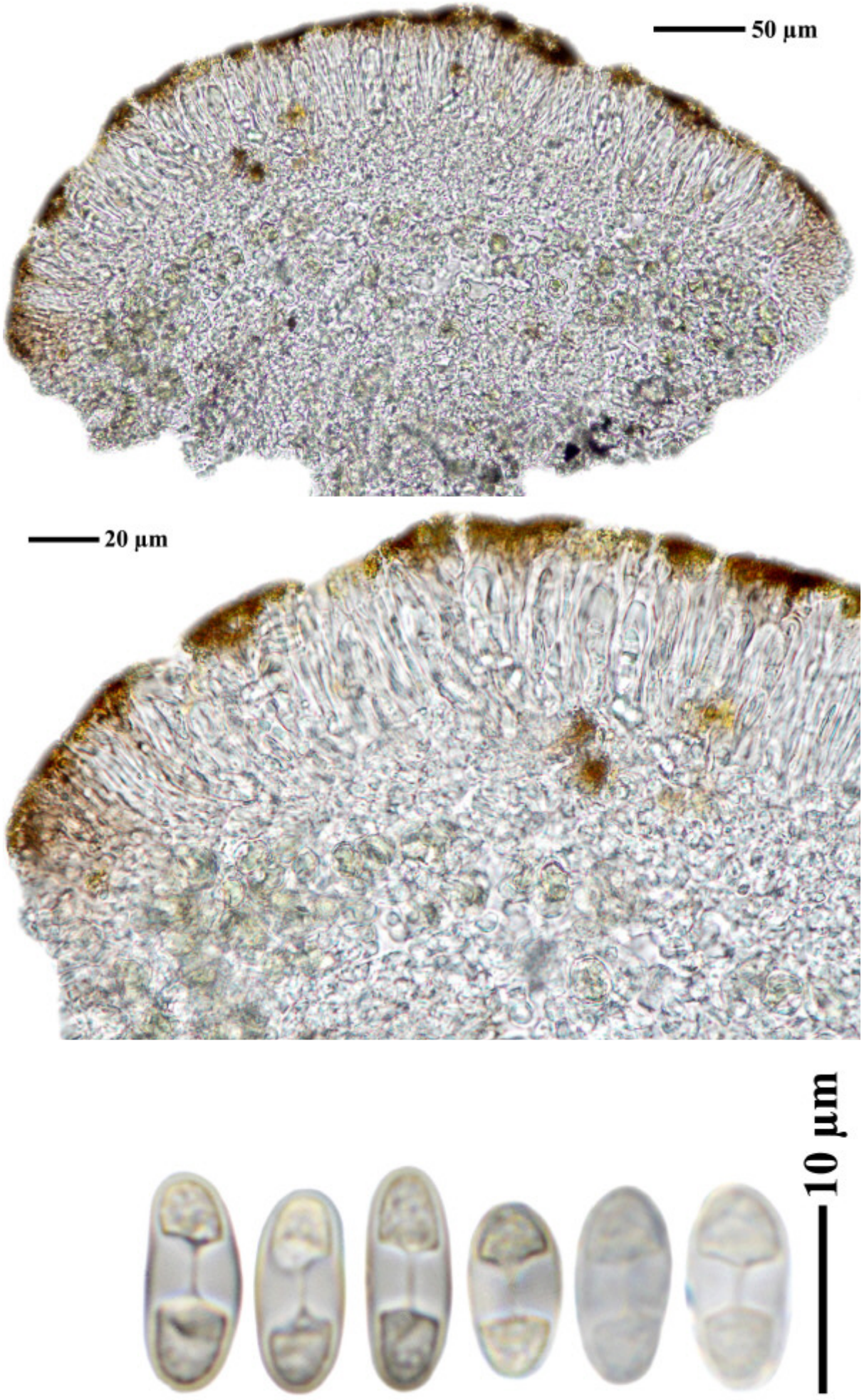
Spores 3.3-12 x 3.3-4.7 µm, septum 3.3-3.7 µm (FS).On wood. Lit Magnusson H. in Göteborgs Ku ngl. Vetenskaps. och Vitterhets-Samhälles Handl. F 6, ser. B, 3(1):39 (1944)

[19603], Svalbard, Isfjorden-Grönfjorden, Festningsodden, in litore, ad lignum casae vetustae. Leg. J. Liška, 4.08.1988, det. A. Vězda. VěZDA: LICHENES SELECTI EXSICCATI NR. 2295.

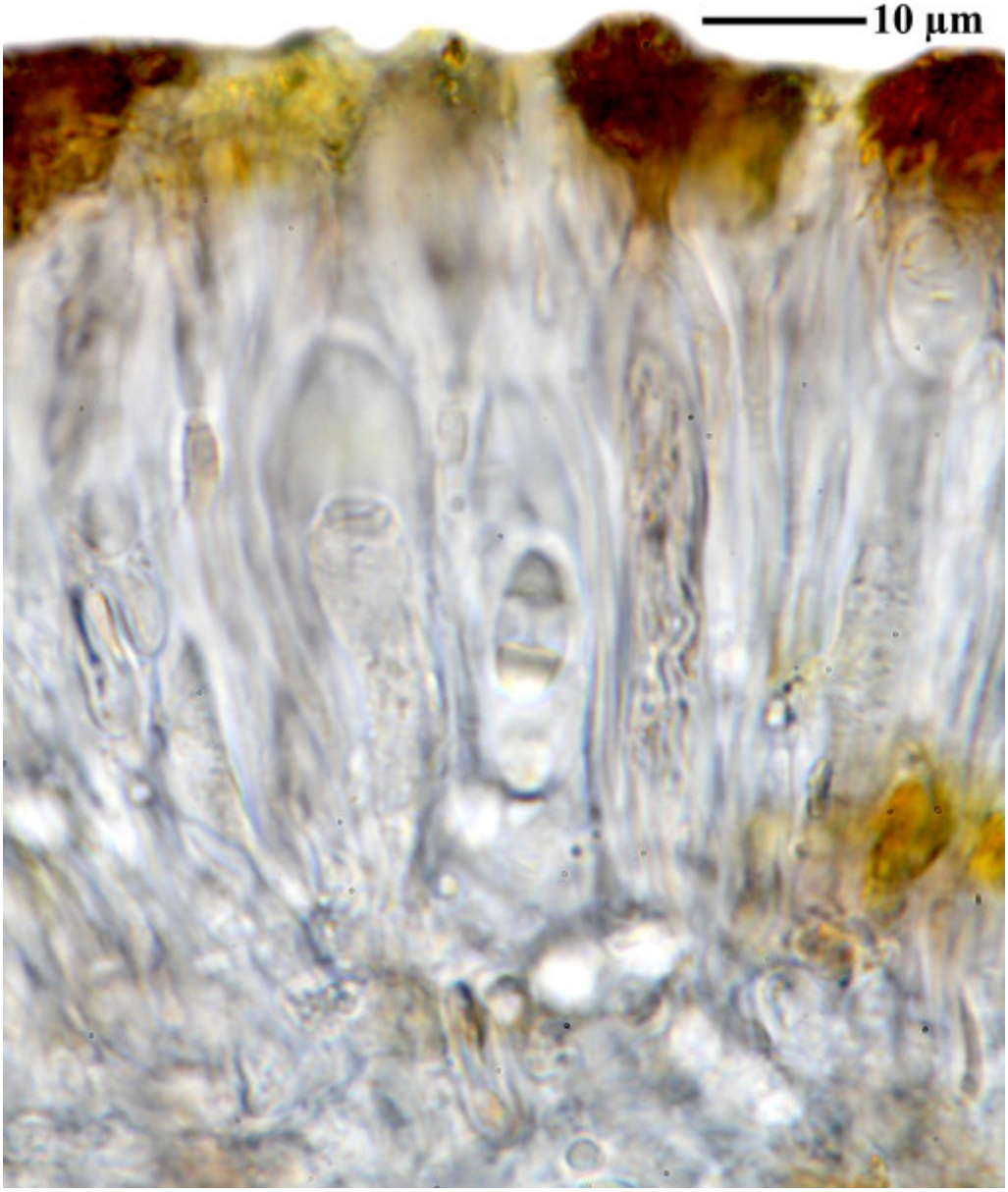


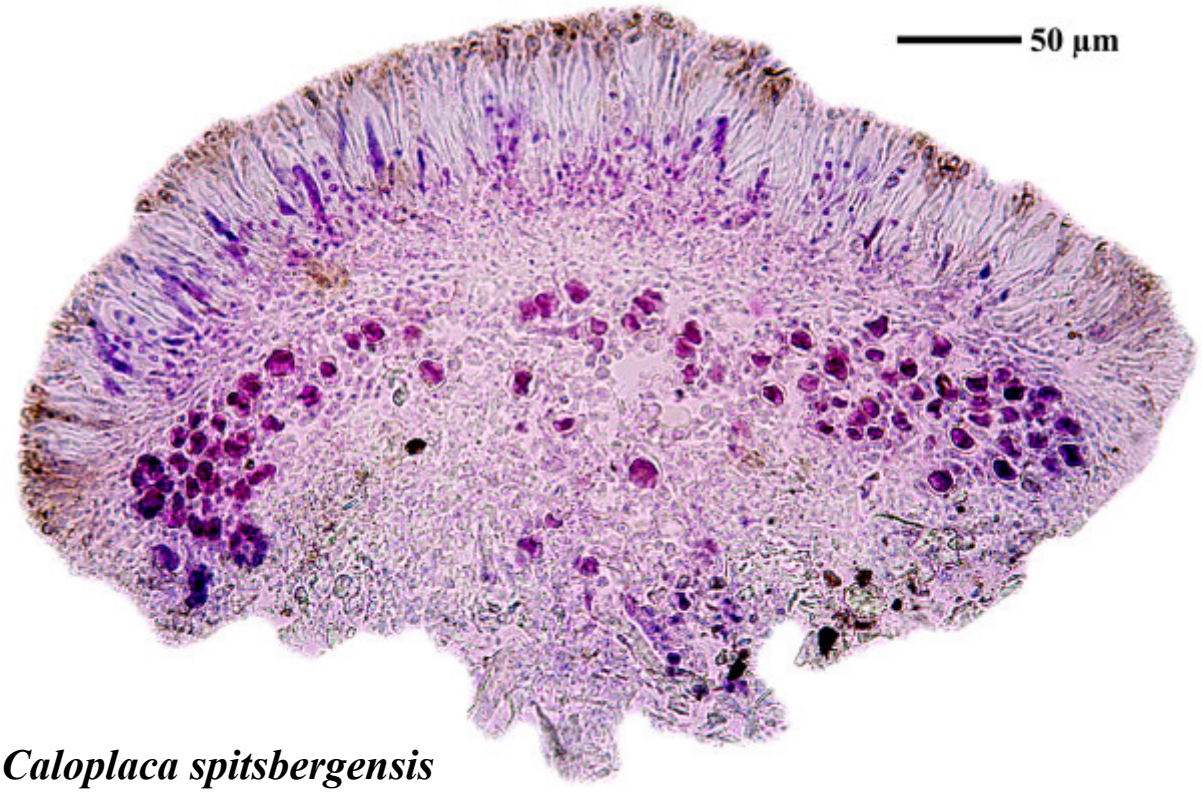


Caloplaca spitsbergensis

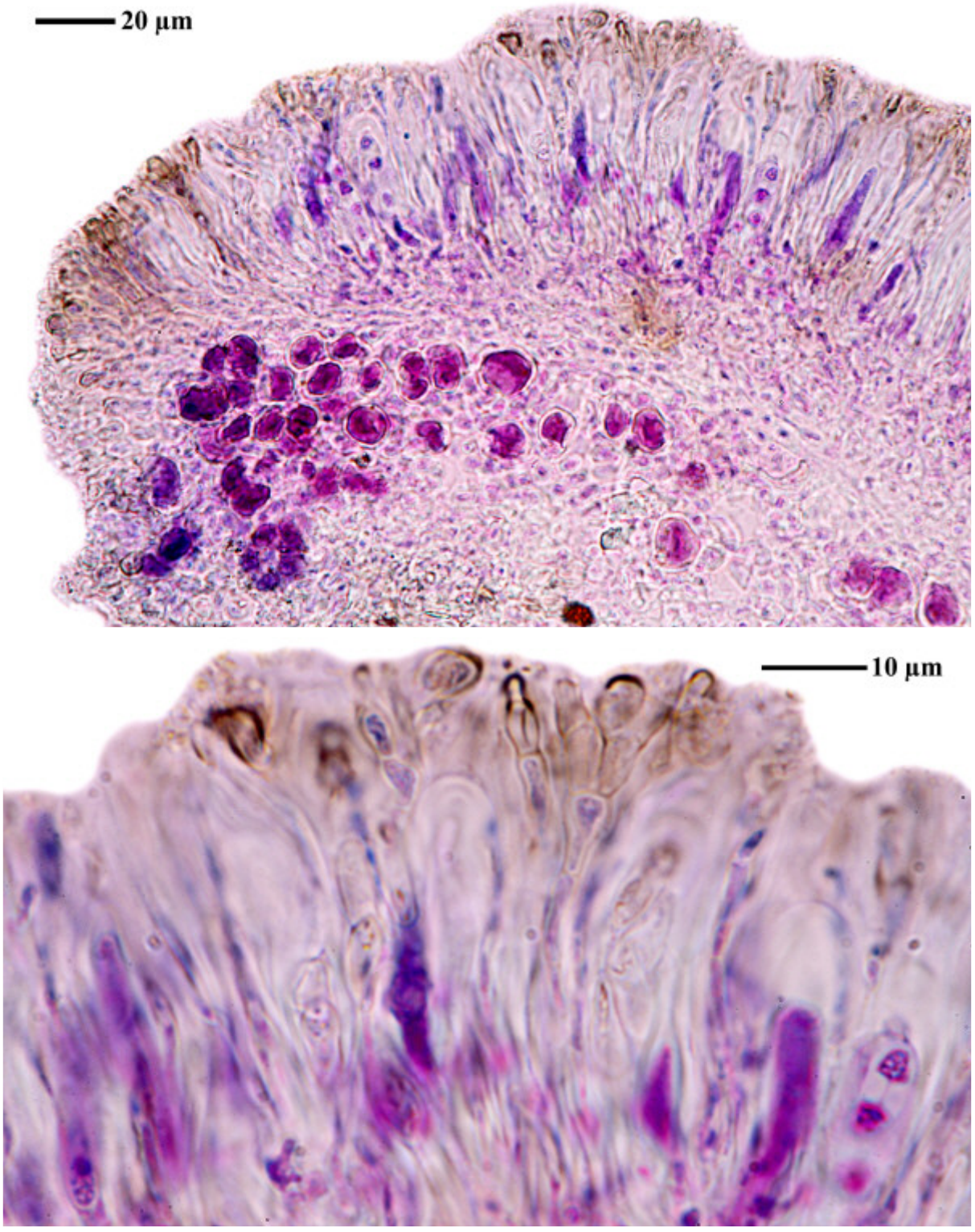


Caloplaca spitsbergensis

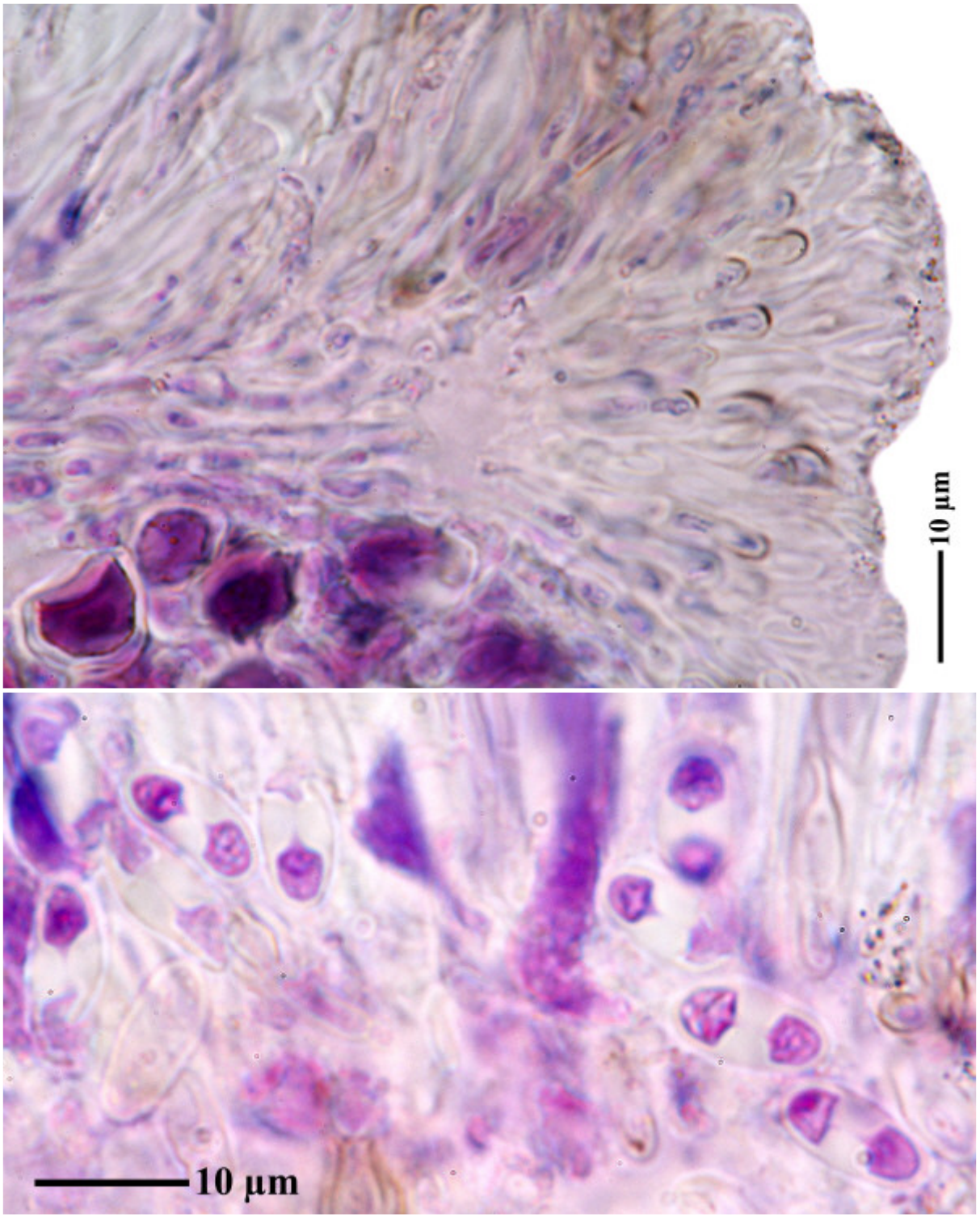




Caloplaca spitsbergensis



Caloplaca spitsbergensis



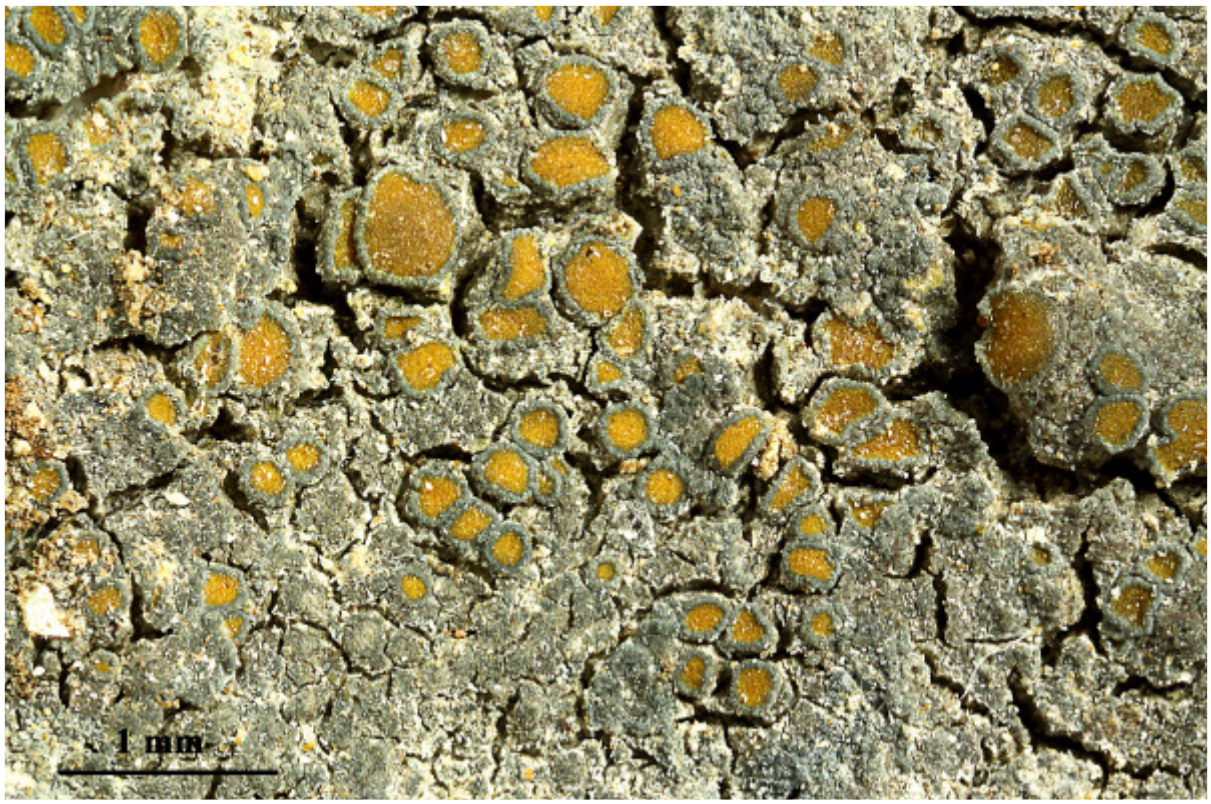
Caloplaca spitsbergensis

Caloplaca spodoplaca (Nyl.) Zahlbr.

on non-calcareous rock.

[ABL 72787], Korea, Gangwon-do, Dist. Pyeonchang-gun, Jinbu-myeoun, Dongsan-ri, Mt. Odae, Odaesan National Park, along the Odae stream, en route from temple Woljeong-sa to temple Sangwon-sa, c. 37°48’ N, c. 128°34’ E, c. 700 m, on siliceous rock. Leg. A. Aptroot, 16.10.2014, det. A. Aptroot 2014.





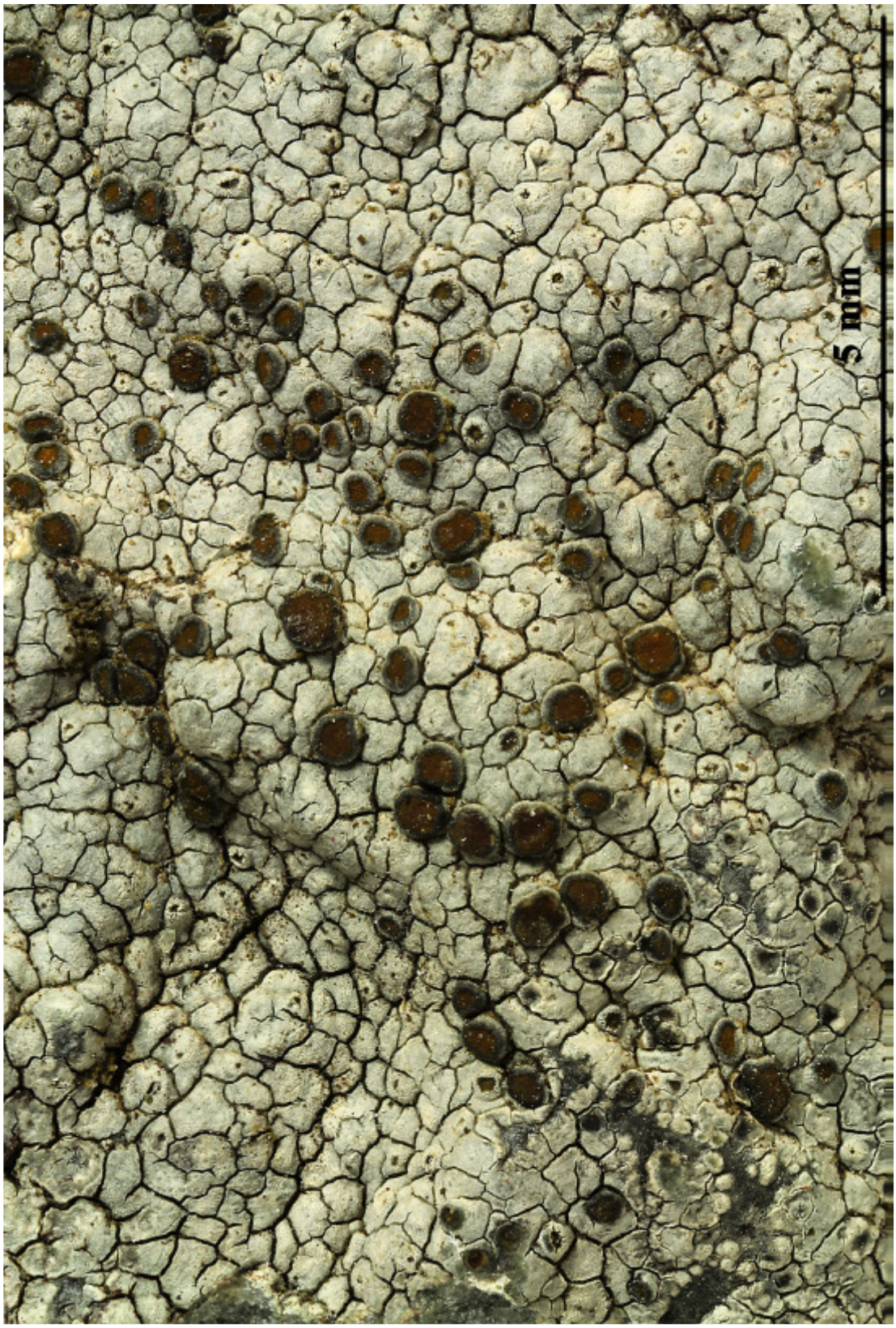


Caloplaca spodoplaca

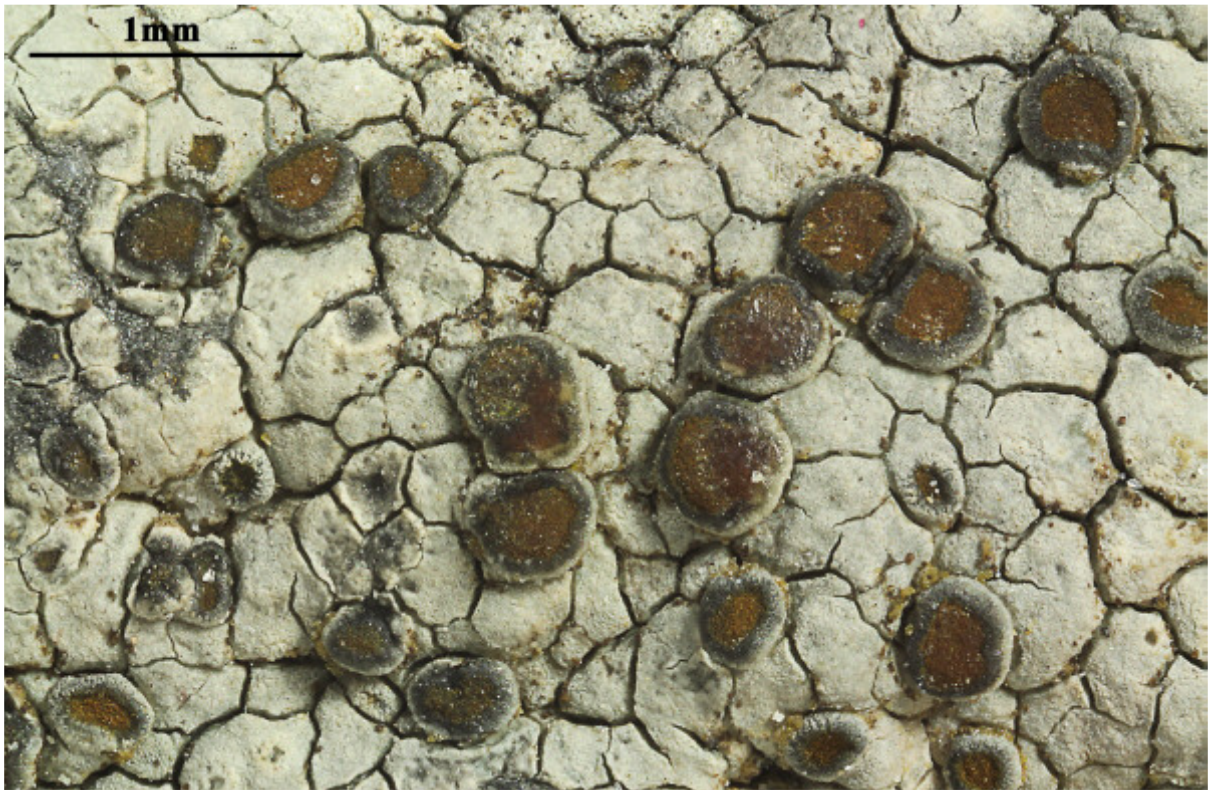
Caloplaca spodoplaca (Nyl.) Zahlbr.

On non-calcareous rock.

[ABL 72949], Korea, Gangwon-do, Samcheok city, Gundeok-myeoun, Hamaengbang-ri, Maengbang beach, araound Mt. Deokbong-san, c. 37°23’ N, c. 129°14’ E, c. 4-10 m, on coastal siliceous rock. Leg. A. Aptroot 18.10.2014, det. A. Aptroot 2014.







Caloplaca spodoplaca

Caloplaca spodoplaca (Nyl.) Zahlbr.

on non-calcareous rock.

[ABL 72979], Korea, Gangwon-do, Dist. Yangyang-gun, Hyeounbuk-myeoun. Hagwangjeong-ri, around Hajodae. c. 38°01’ N, c. 128°44’ E, c. 4-10 m, on cosatal siliceous rock. Leg. A. Aptroot, 19.10.2014, det. A. Aptroot 2014.



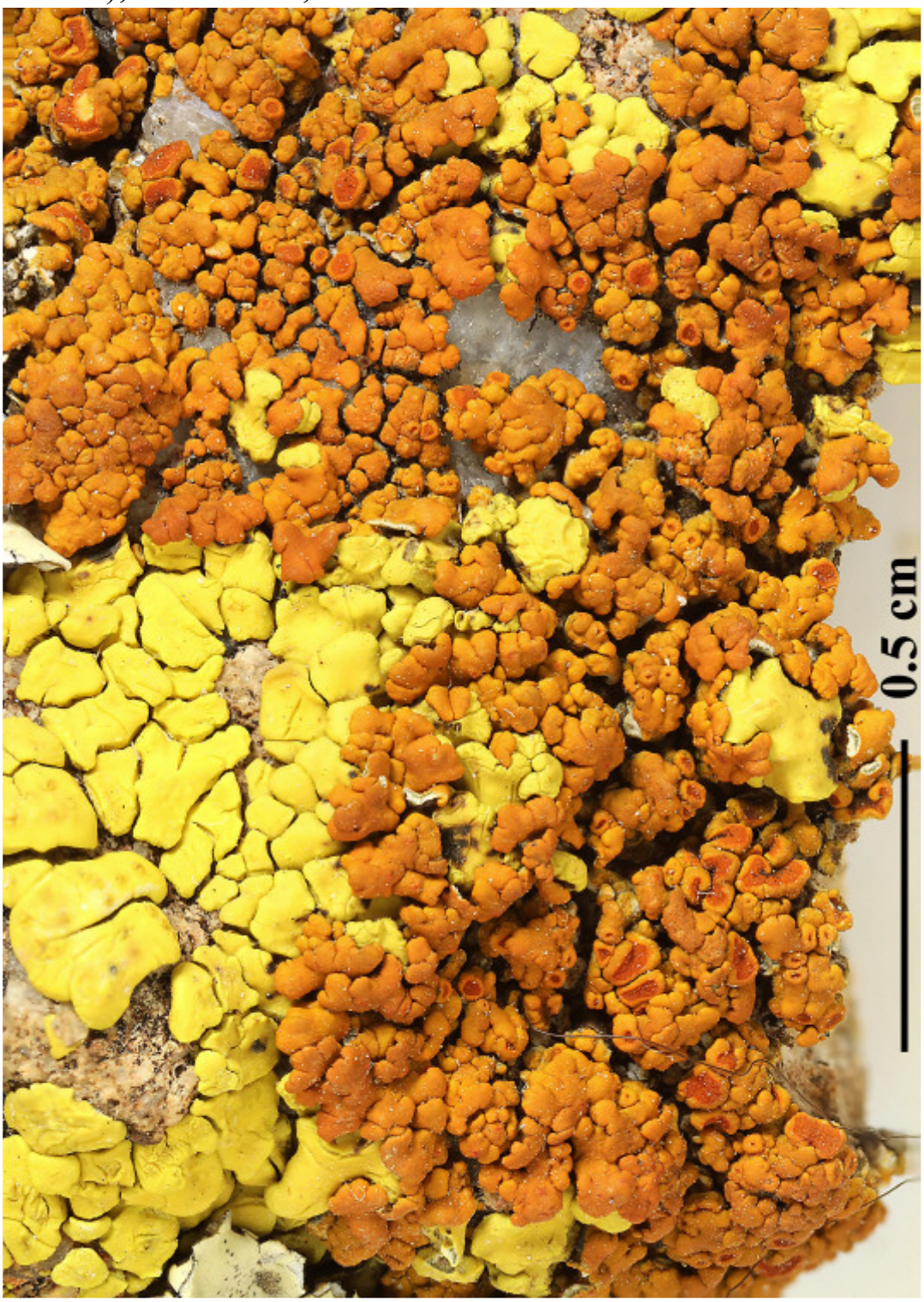


Caloplaca spodoplaca

Caloplaca squamosa (B. de Lesd.) Zahlbr.
[= *Squamulea squamosa* (B. de Lesd.) Arup, Søchting & Frödén]

Spores 9.5-12.5 x 5.5-7 µm, septum2.8-4.3 µm (FS).

[B 60 0069194], U.S.A., Arizona, Maricopa County, near Apache Junction, E of Phoenix, along the Apache Trail (Rte 88), c. 5 km W of Canyon Lake, rocky mountain valley with scattered desert scrub, upper Sonoran Desert (*Simmondsia chinensis, Cercidium*, etc.) with rhyolite tuff outcrops, on rock. 33°31' N, 111°27' W, 700 m. Leg. H. Sipman (No. 24582), 28.12.1988, det. C. Wetmore 01.2002.

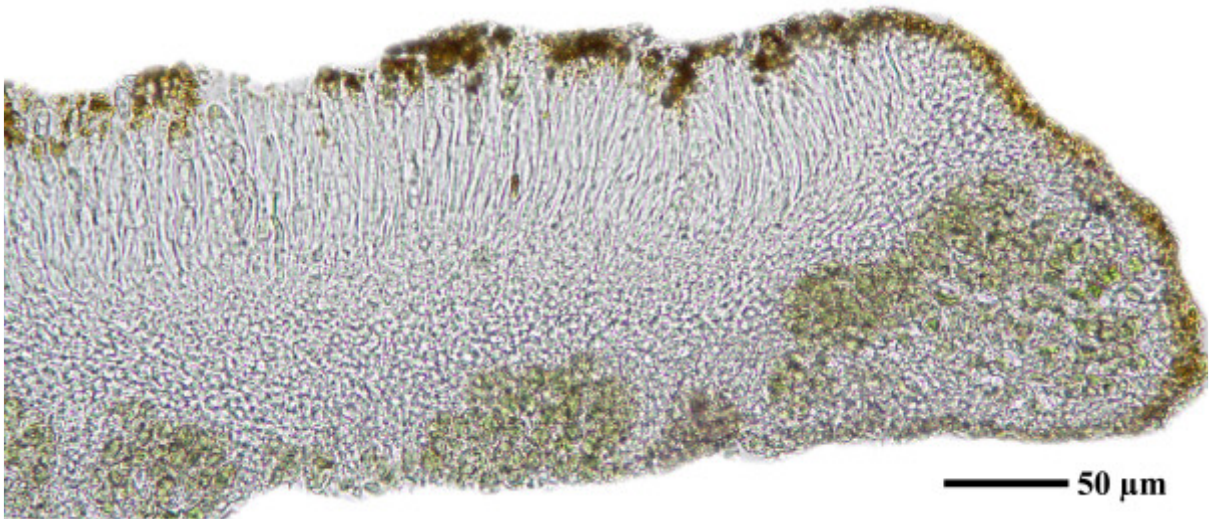


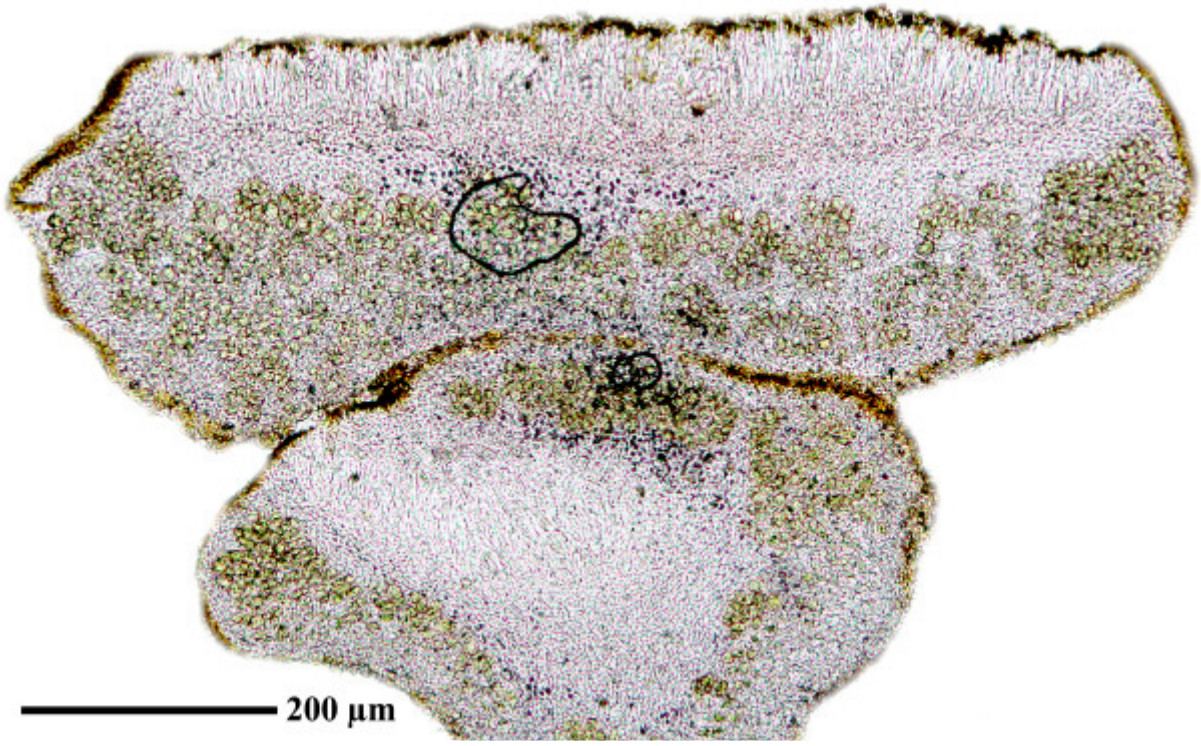


Caloplaca squamosa

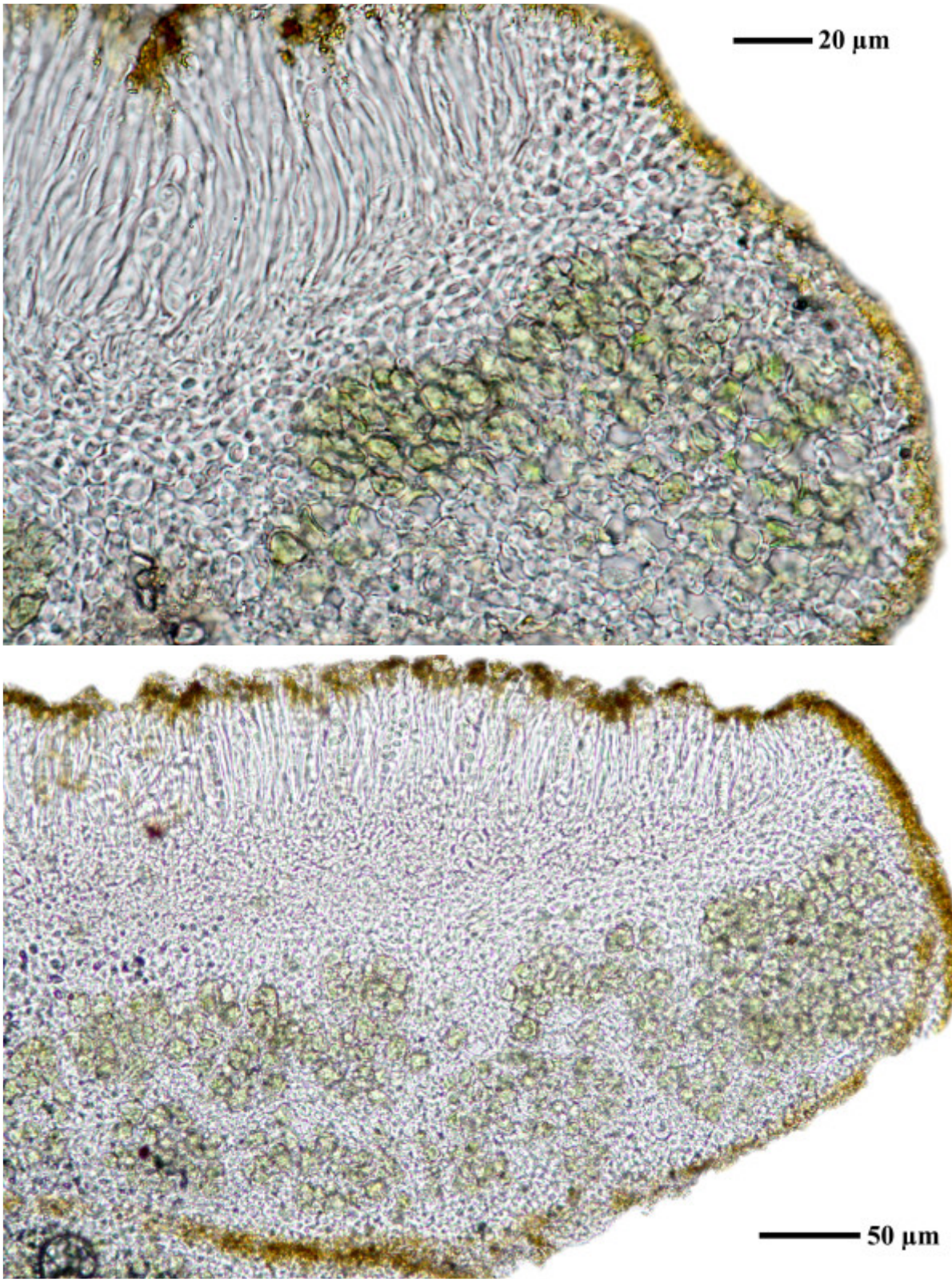


Caloplaca squamosa

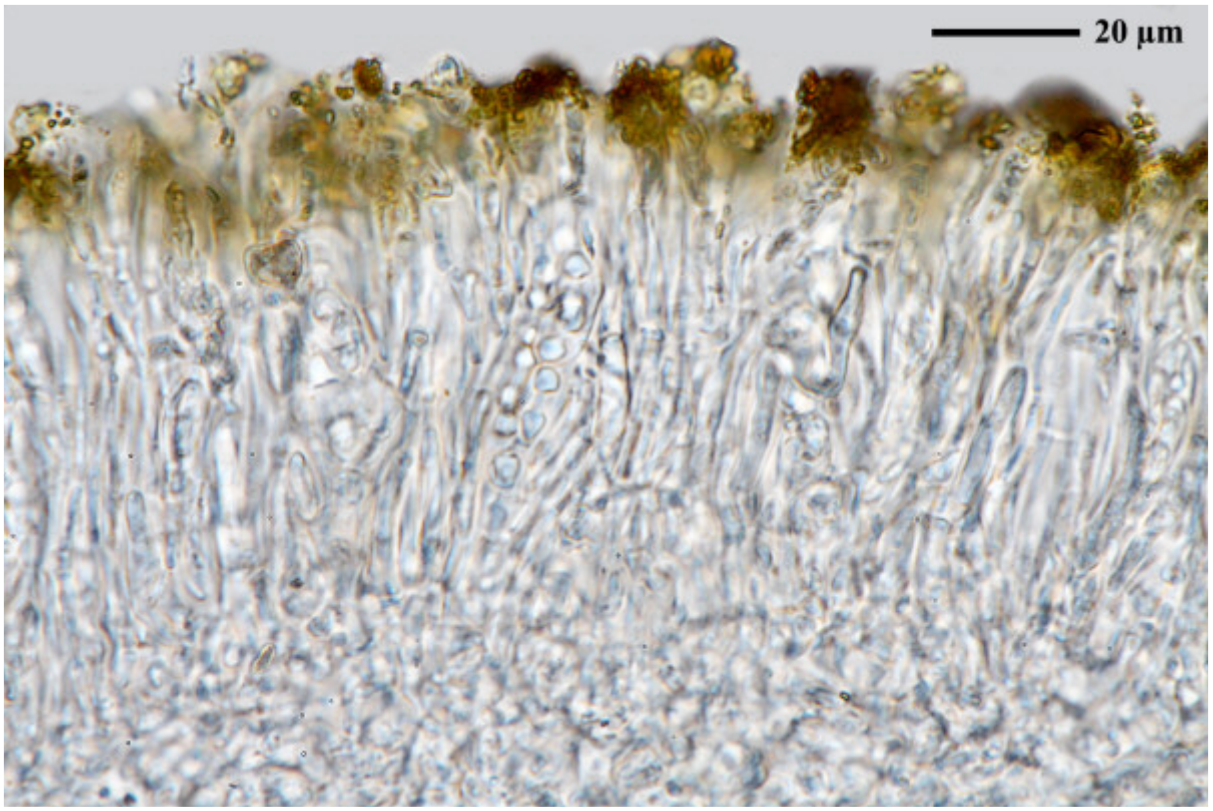


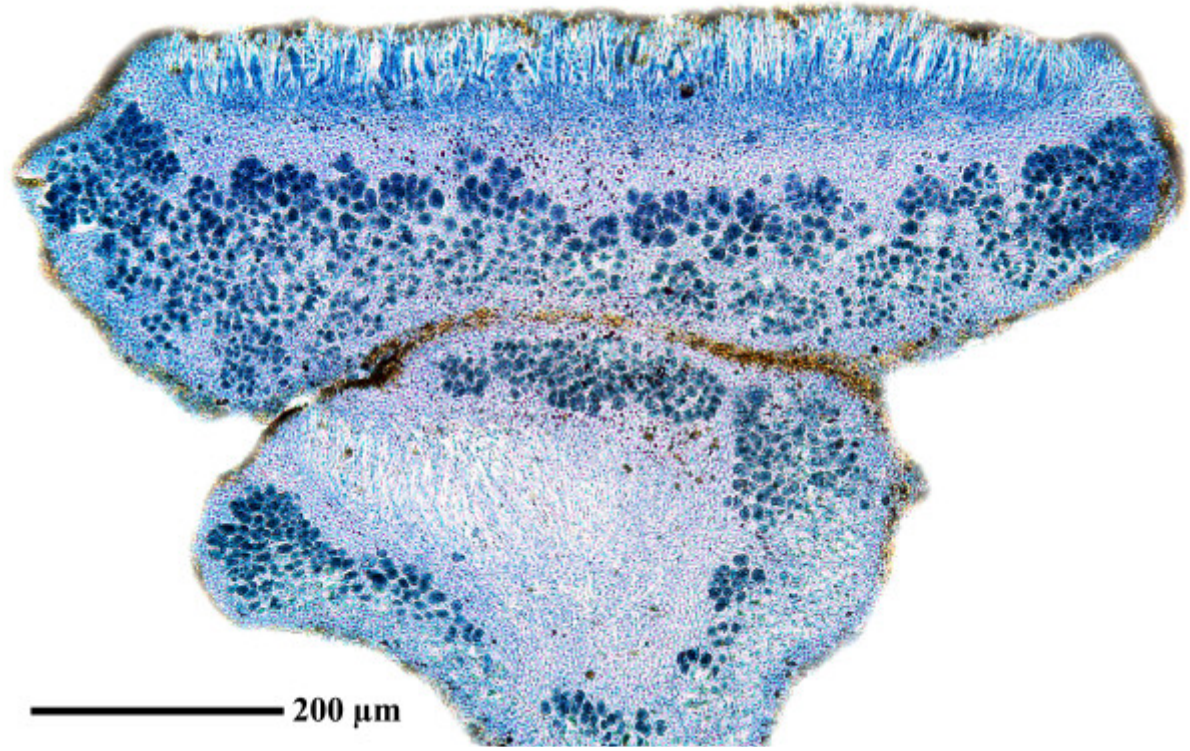


Caloplaca squamosa

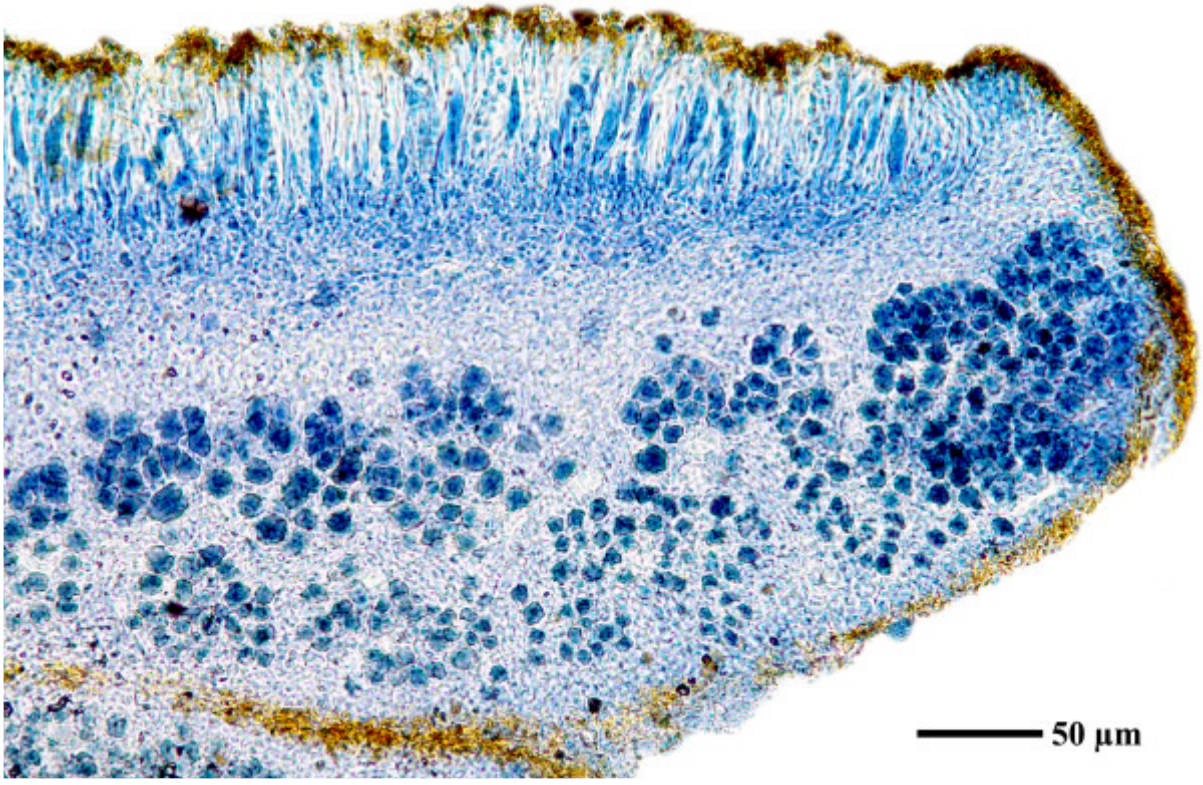


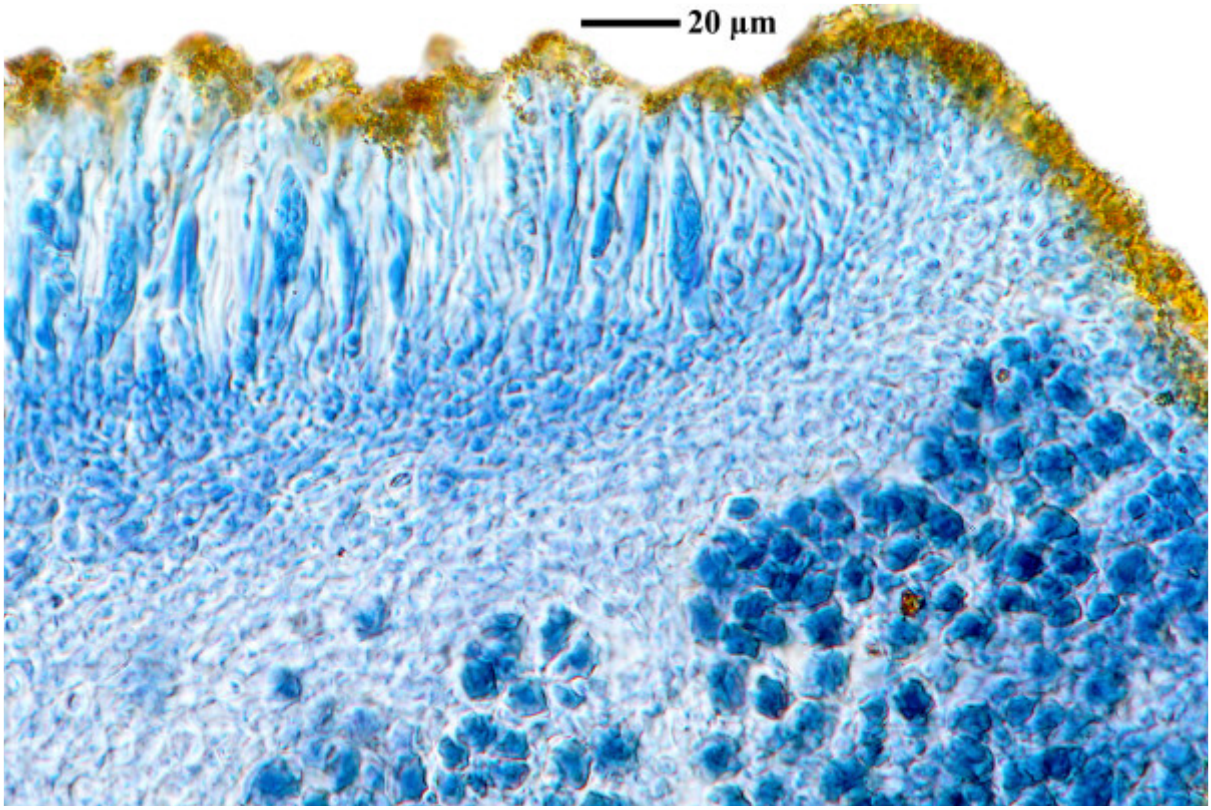
Caloplaca squamosa



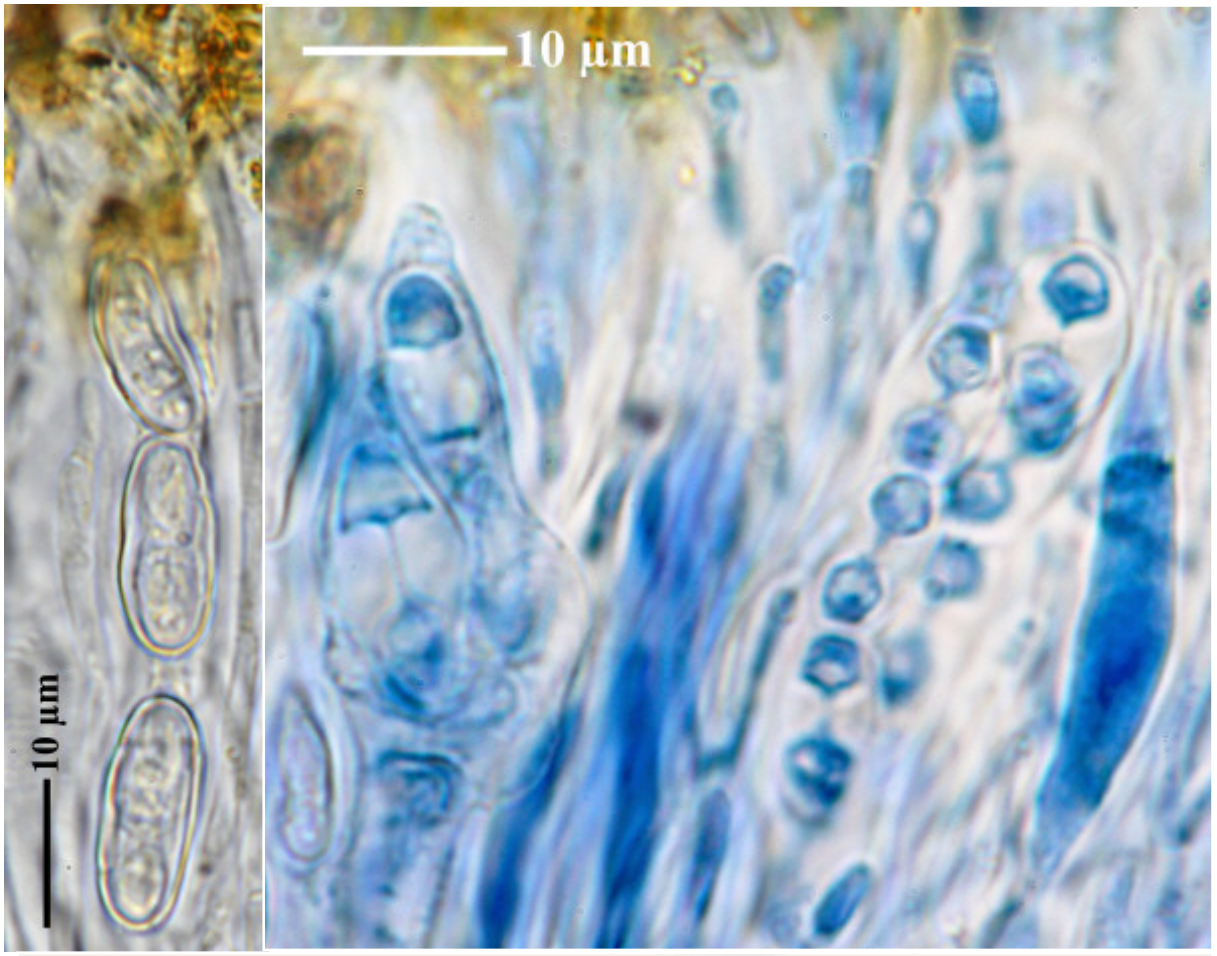


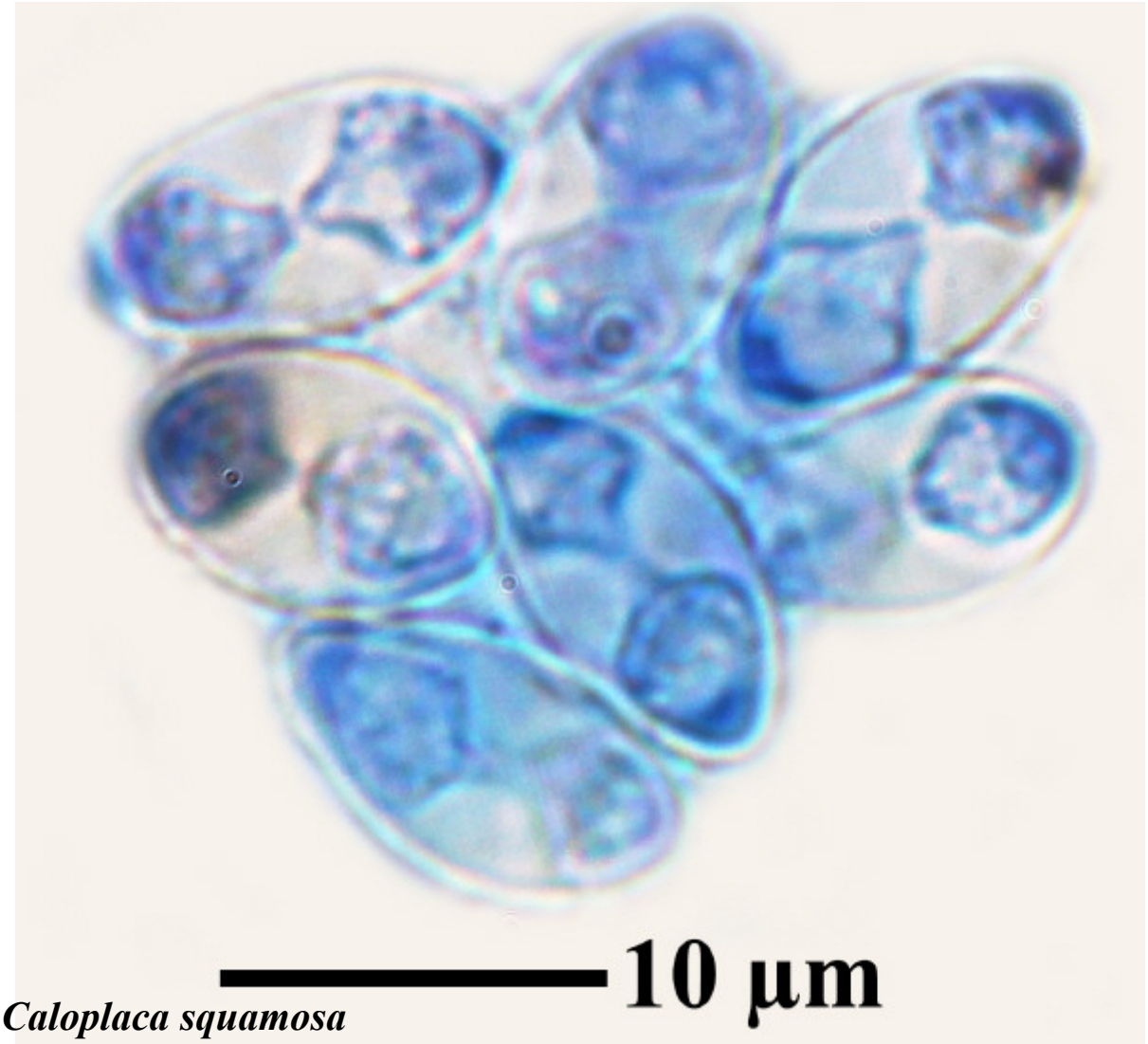
Caloplaca squamosa



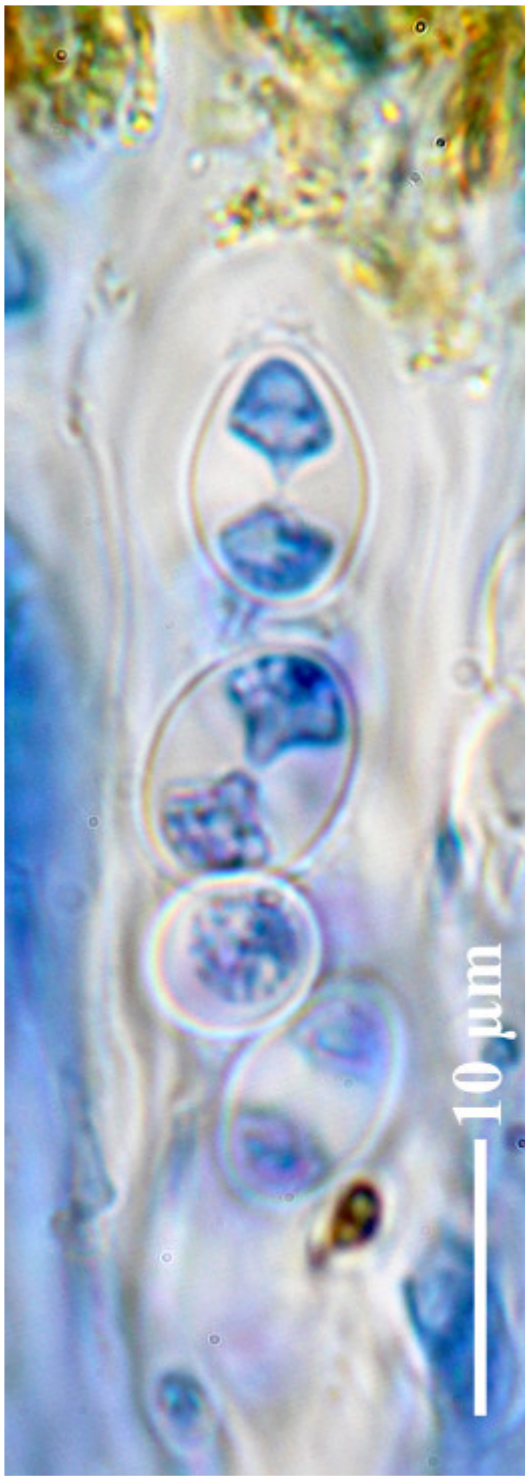


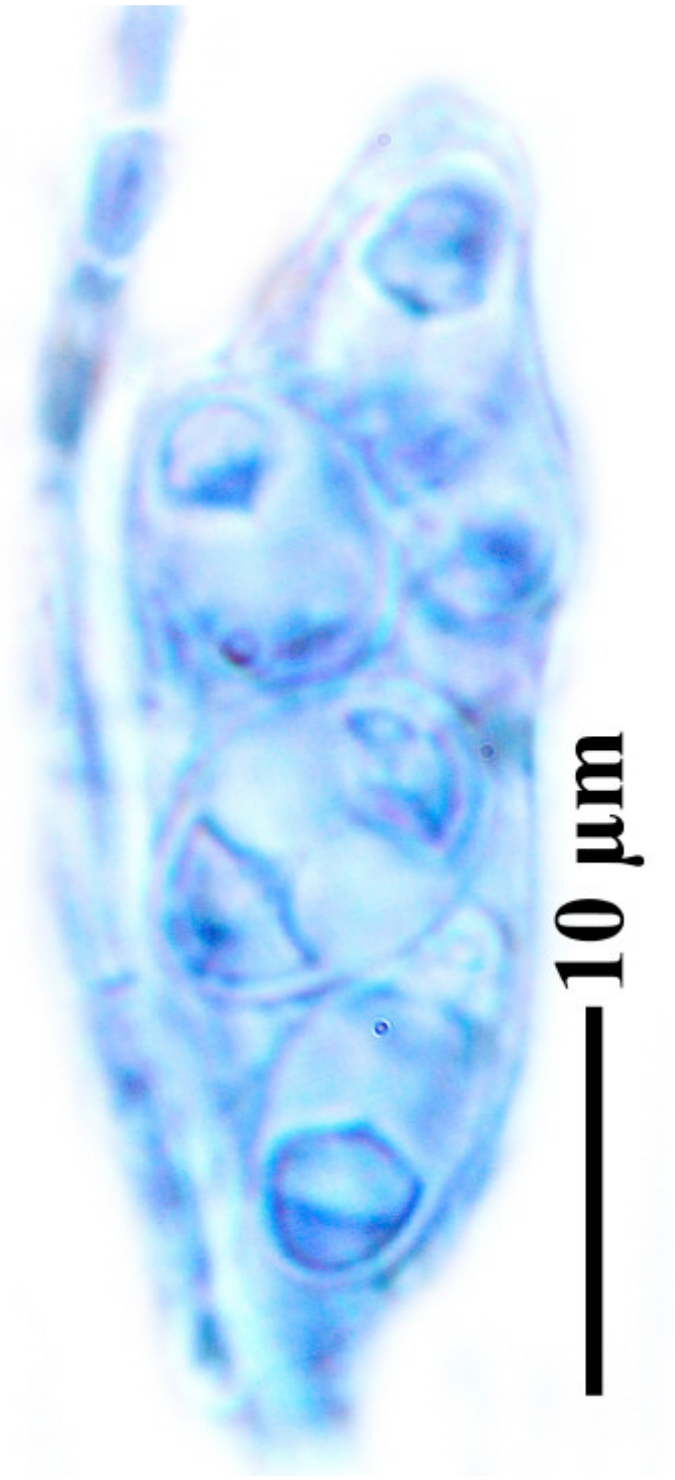
Caloplaca squamosa





Caloplaca squamosa







Caloplaca squamosa

Caloplaca stanfordensis H. Magn.

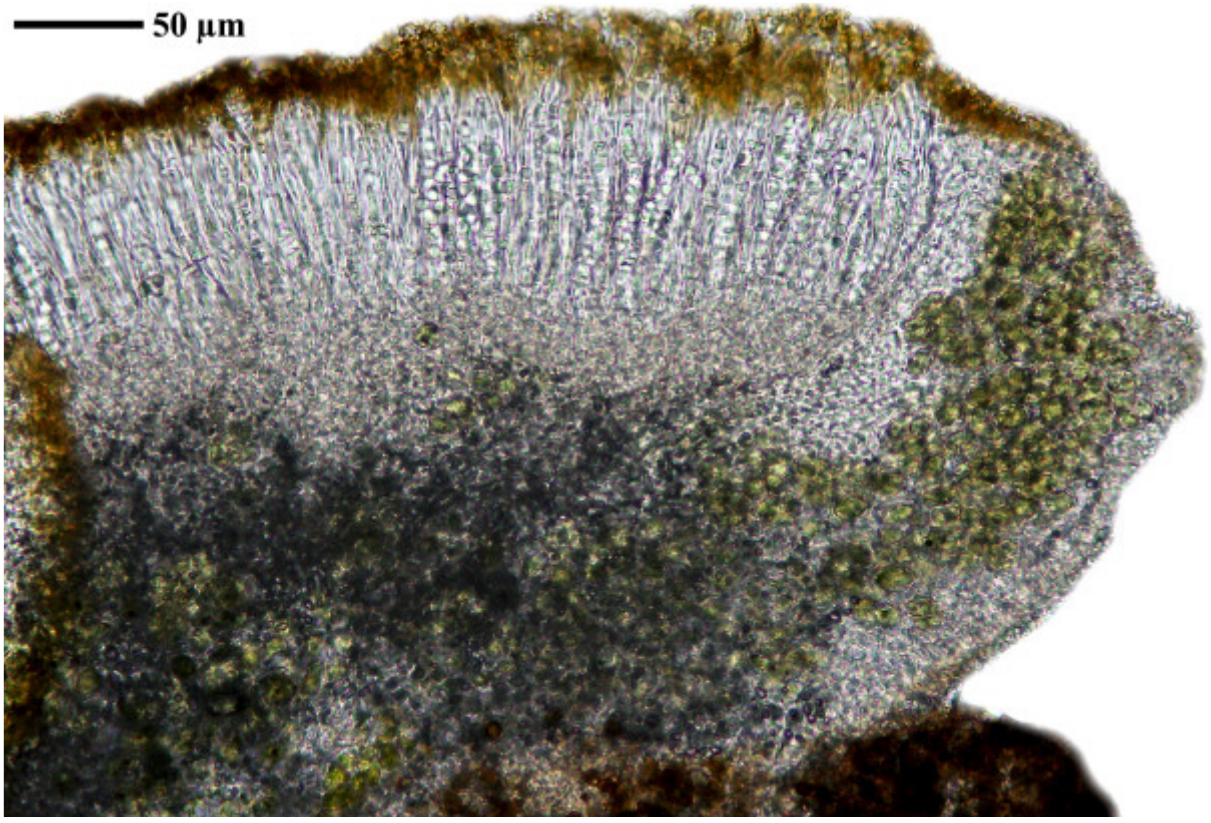
Spores 11.3-13.7 x 5.3-7.5 µm, septum 3.1-6 µm (FS).

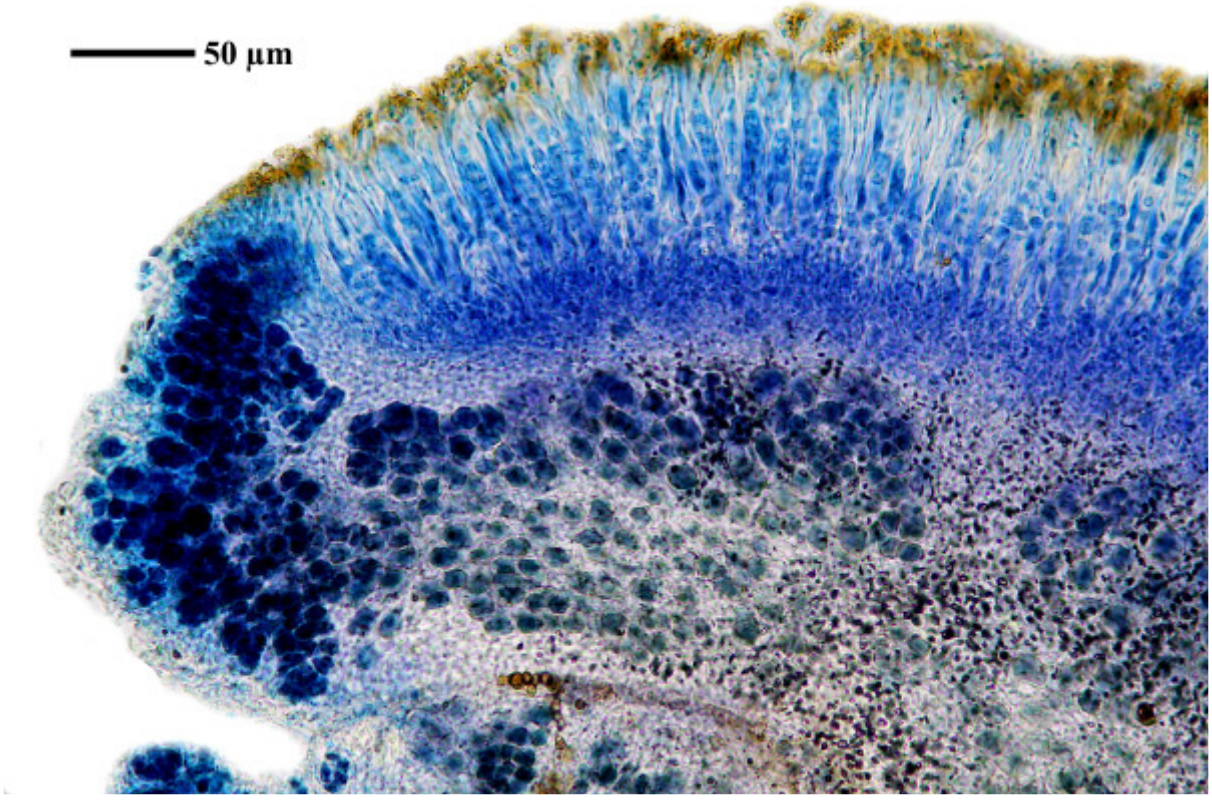
[B 60 0067470], U.S.A., California, Riverside County, Santa Rosa Plateau Preserve, south end of Santa Ana Mountains west of Murrieta, on *Quercus engelmannii* NW of the largest vernal pool on Mesa de Colorado, 33°31' N, 117°16' W, c. 600m. Leg. W. A. Weber, C. Bratt & J. Larson, 1.11.1986. WEBER: LICHENES EXSICCATI NO. 695.



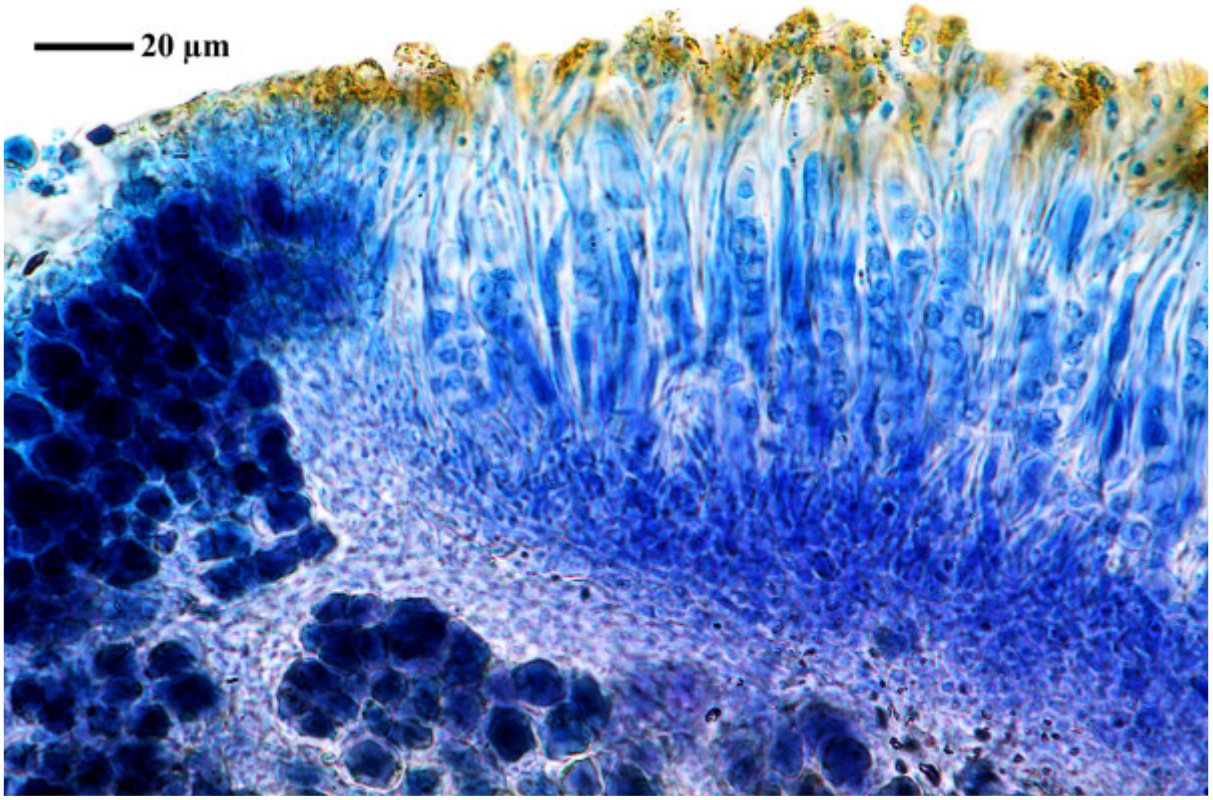


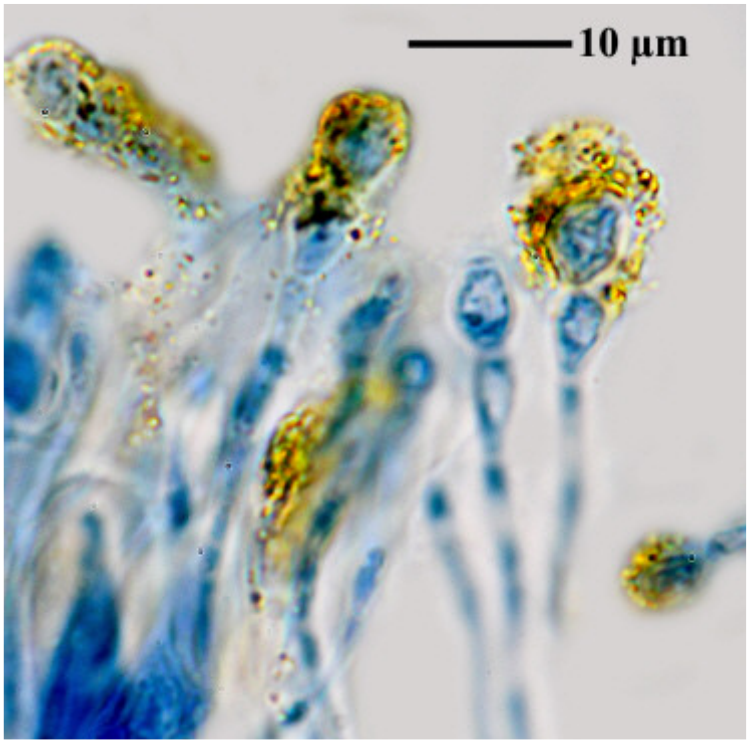
Caloplaca stanfordensis





Caloplaca stanfordensis







Caloplaca stanfordensis

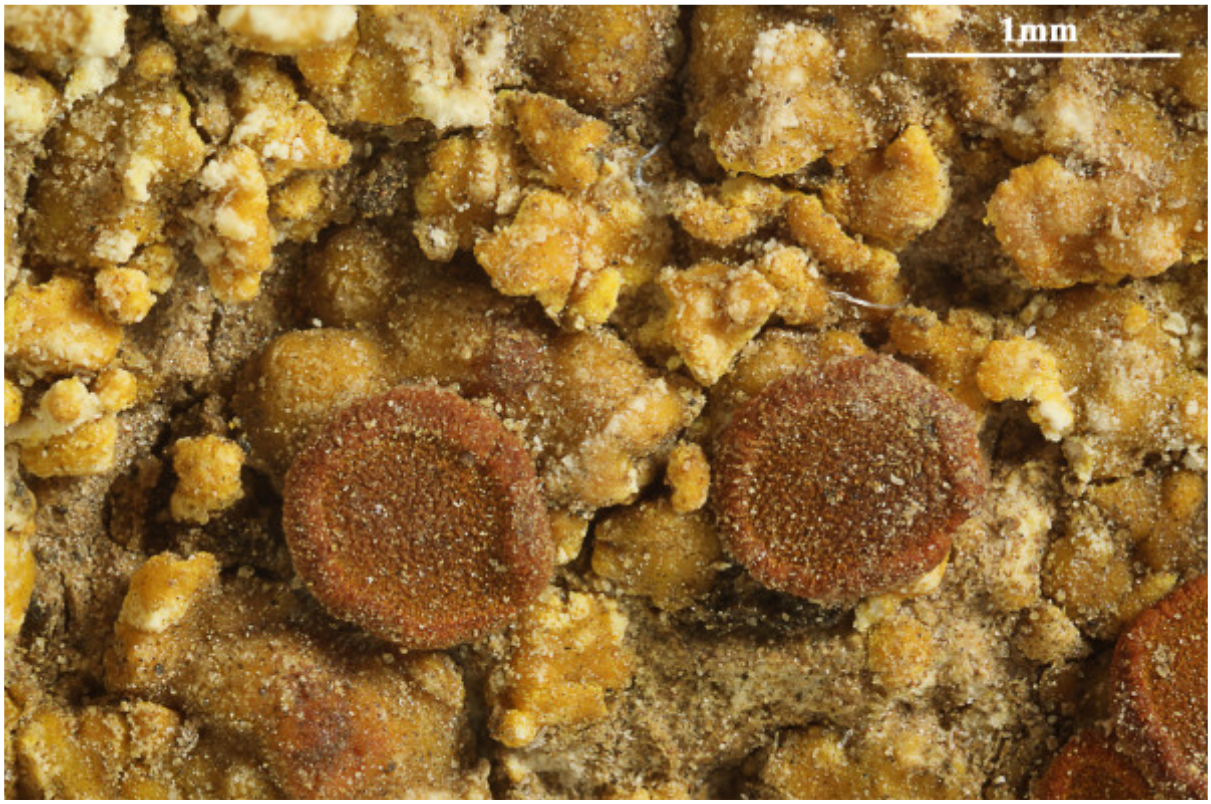
Caloplaca stantonii W.A.Weber ex Arup
[= *Gyalolechia stantonii* (W.A.Weber ex Arup) Søchting, Frödén & Arup]

On rocks. Lit. Bryologist 95(4): 454 (1992); Nordic J. Bot. 31(1): 71 (2013)

[19409], USA, California, Santa Barbara Co., San Miguel Island, China Point, on exposed cliff face, 34°03'10" N, 120°25'15" W, 30 m. Leg. T.H. Nash III (No. 41208), 16. March 1998, det. C. Wetmore. TELOSCHISTACEAE EXSICCATI NR. 117 DISTRIBUTED BY C. WETMORE.





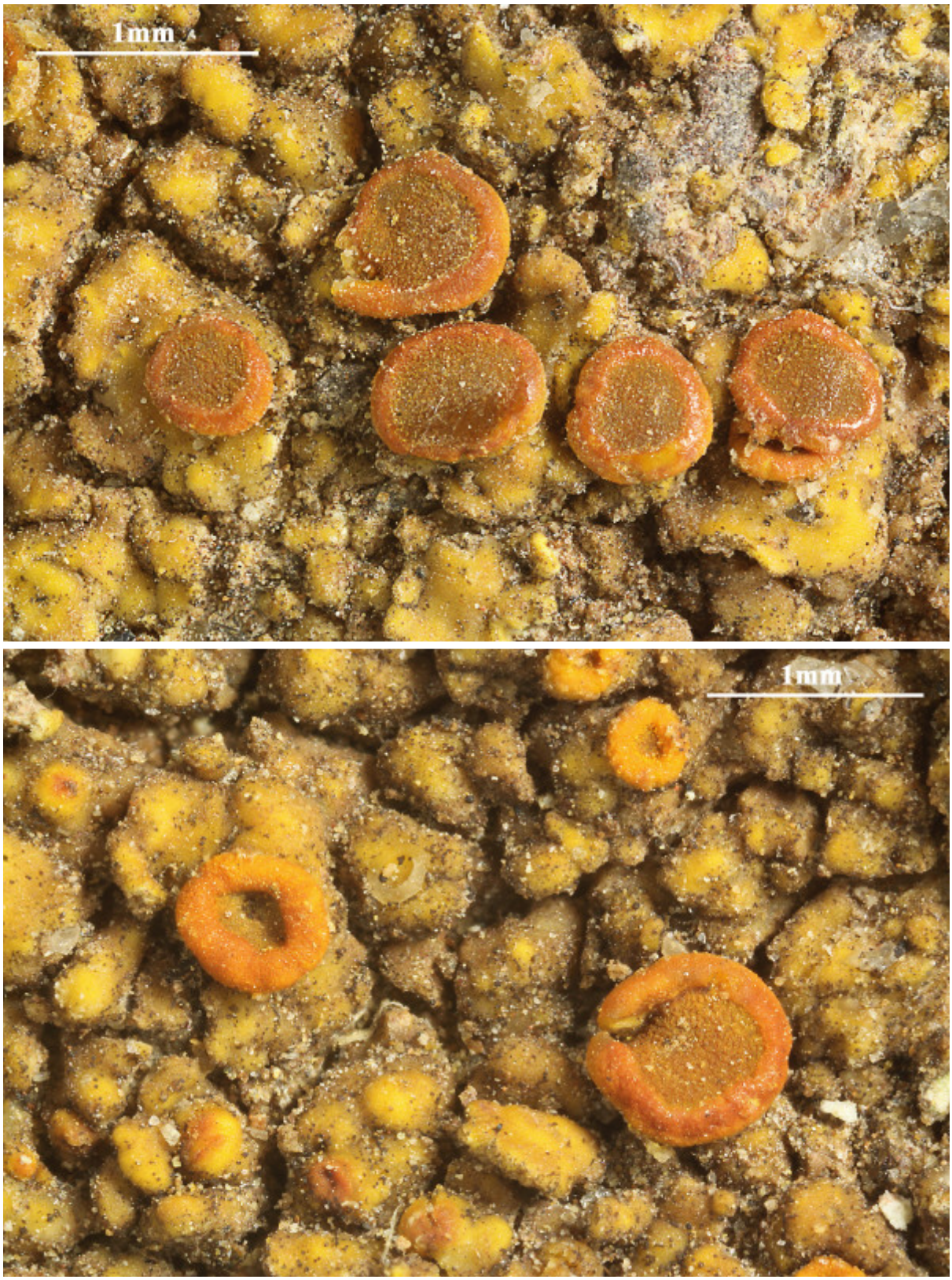


Caloplaca stantonii

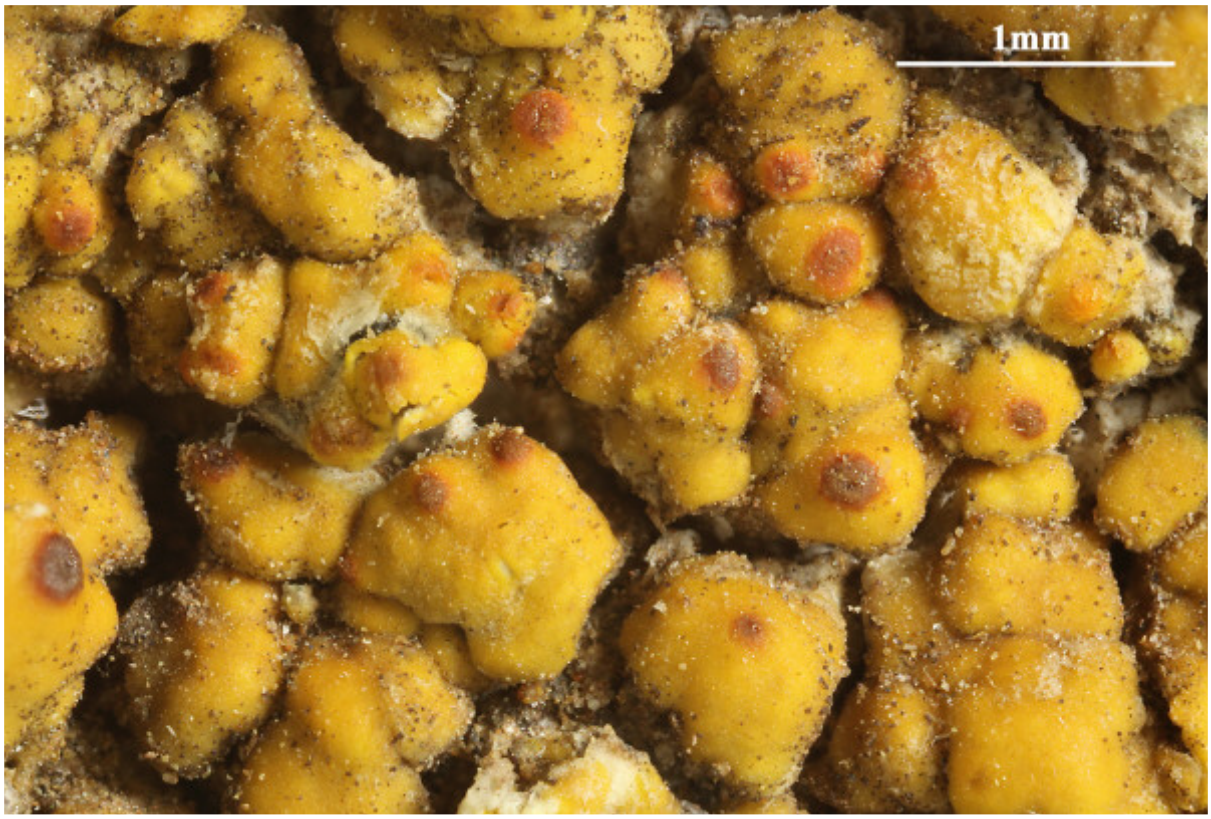
Caloplaca stantonii W.A.Weber ex Arup
[= *Gyalolechia stantonii* (W.A.Weber ex Arup) Søchting, Frödén & Arup]

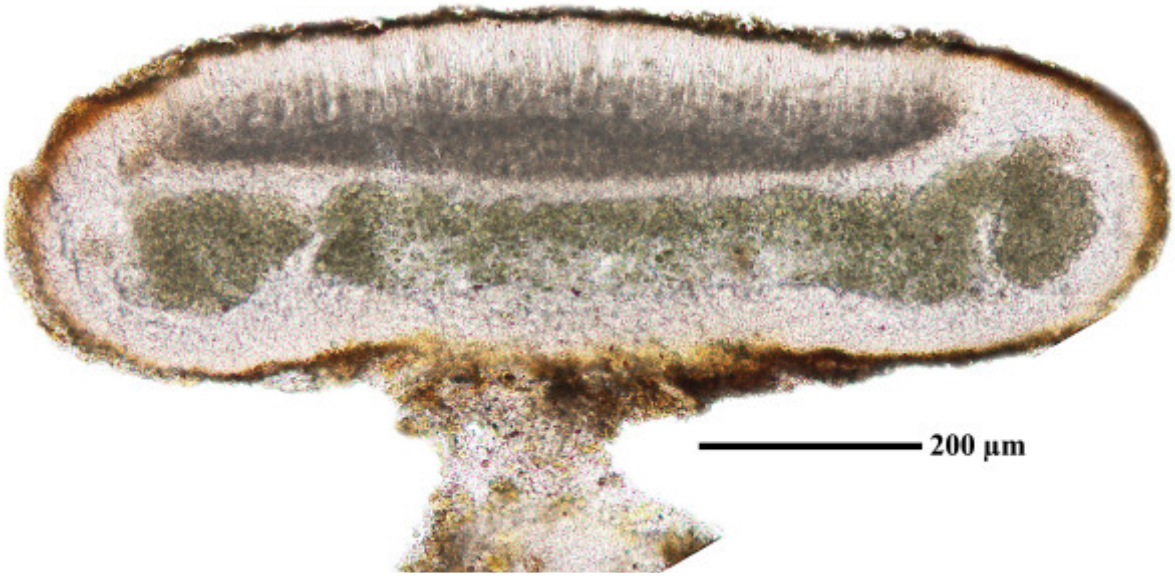
[BR5030028937311], USA, California, Santa Barbara County, Santa Cruz Island, Fraser Point,west end of the island, on west-facing outcrop in bottom, of deep barranca cutting into second major ancient wave terrace above the coastal bluffs; on often moist, seeping vertical faces of poorly consolidated, crumbling rock; thallus dull brownish yellow, apothecia dark ferrugineous. Leg. W.A. Weber, C. Bratt & T. Hogan, 25. March 1986. LICHENES EXSICCATI DISTRIBUTED BY THE UNIVERSITY OF COLORADO MUSEUM, BOULDER. NO. 672. TYPE COLLECTION.



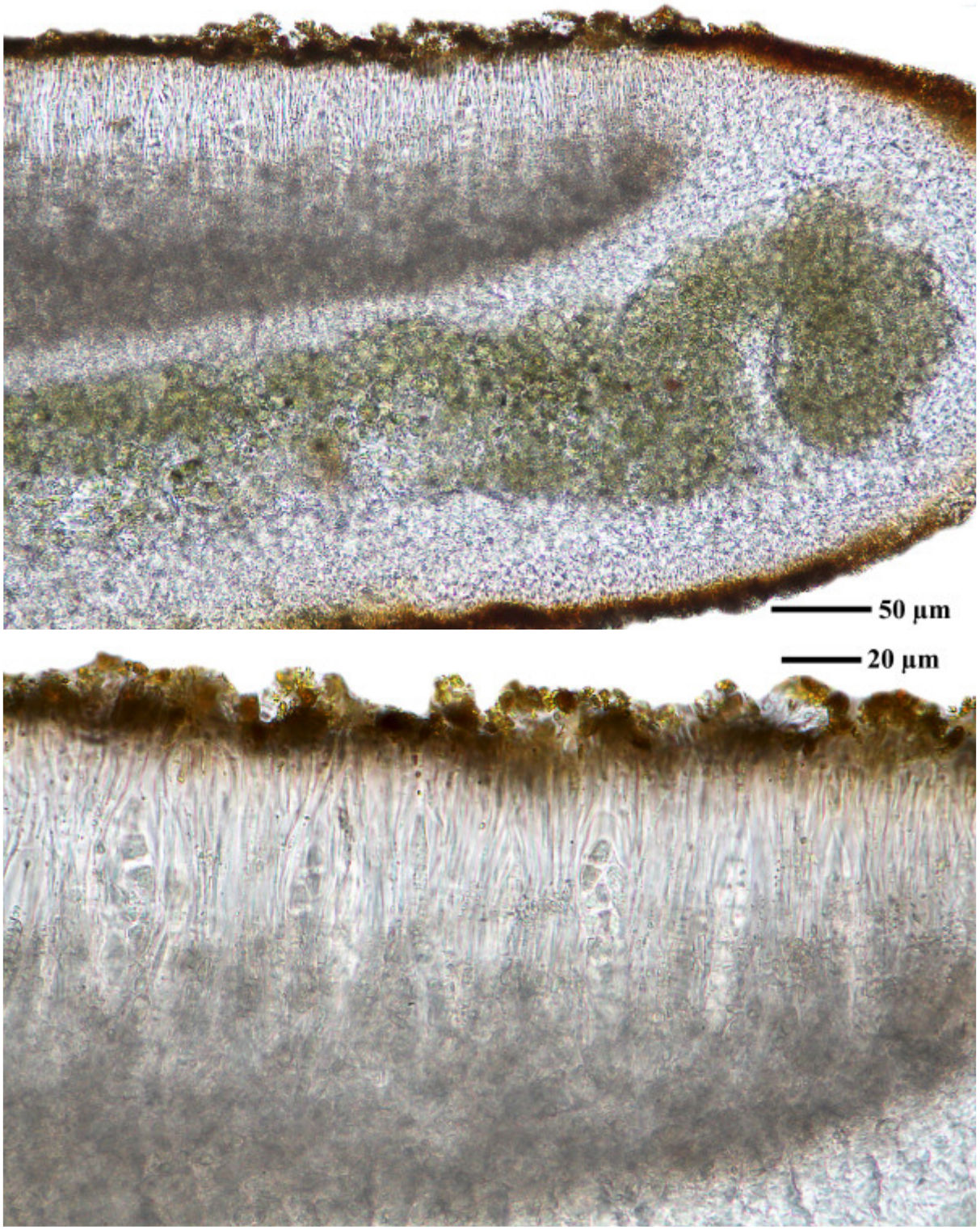


Caloplaca stantonii

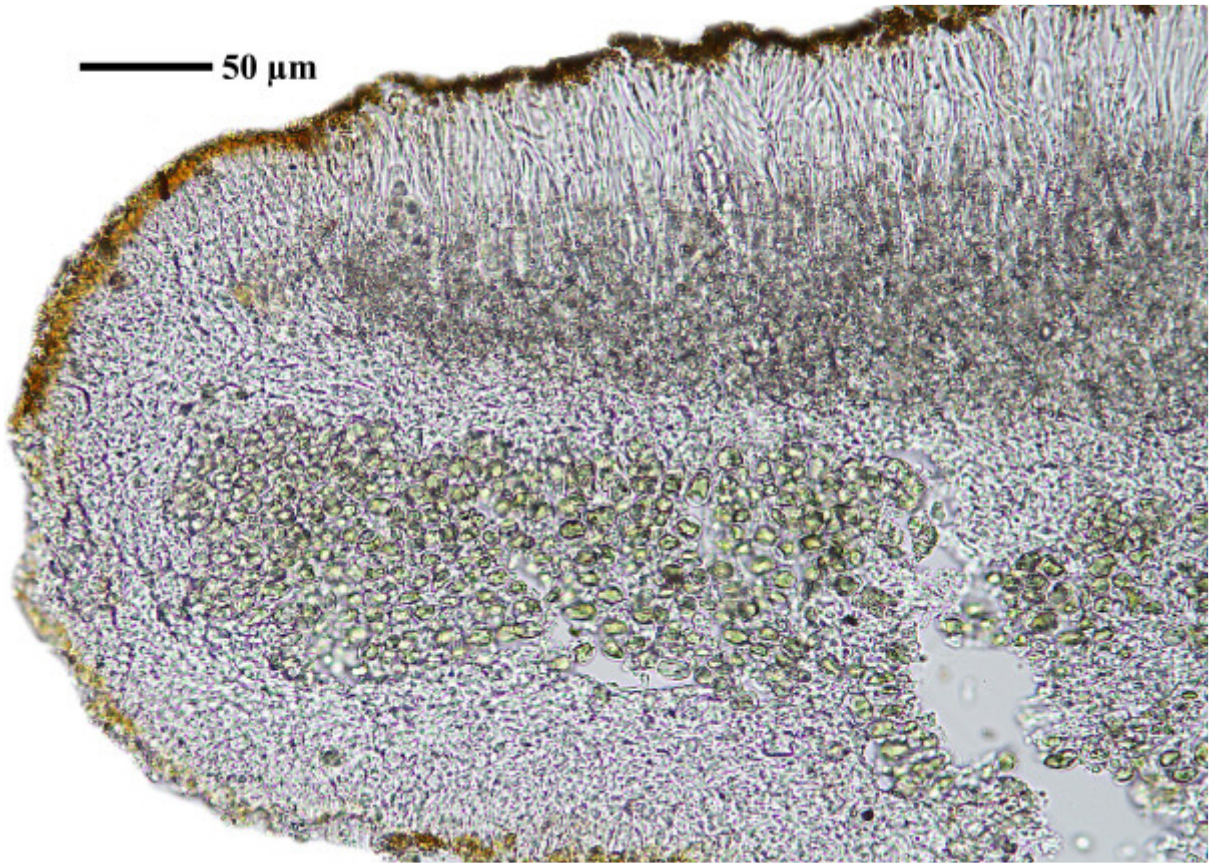


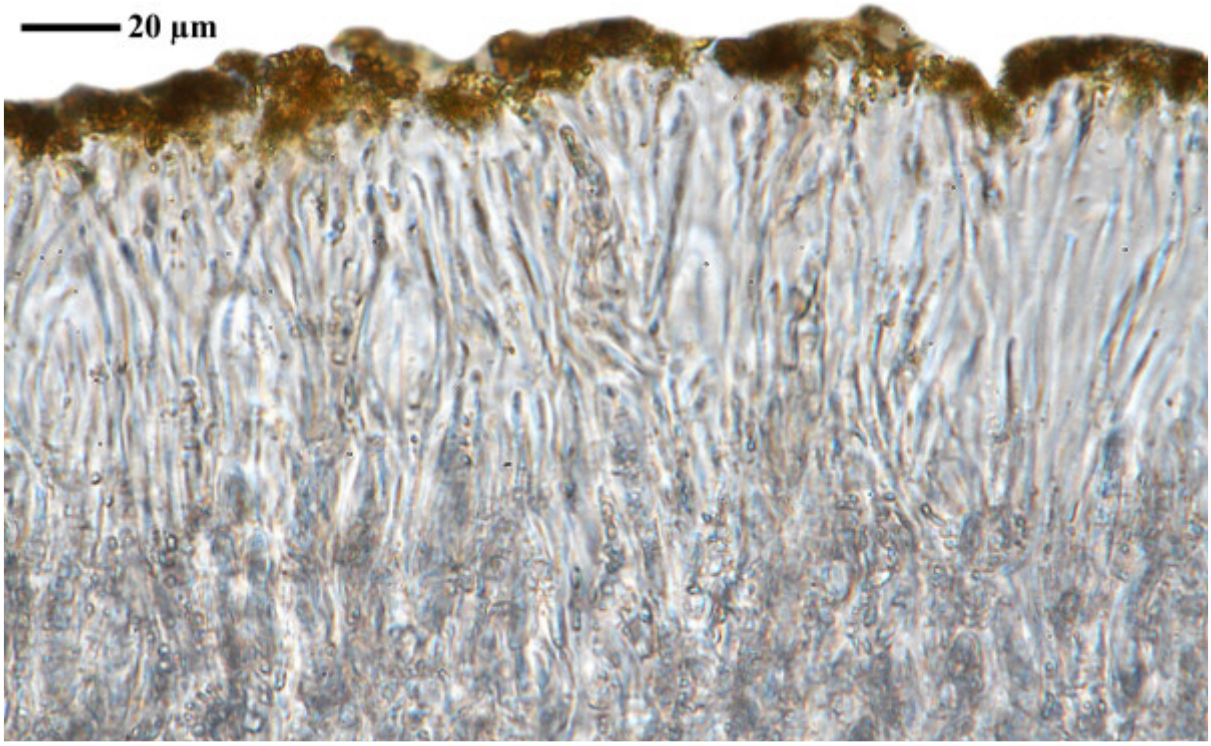


Caloplaca stantonii

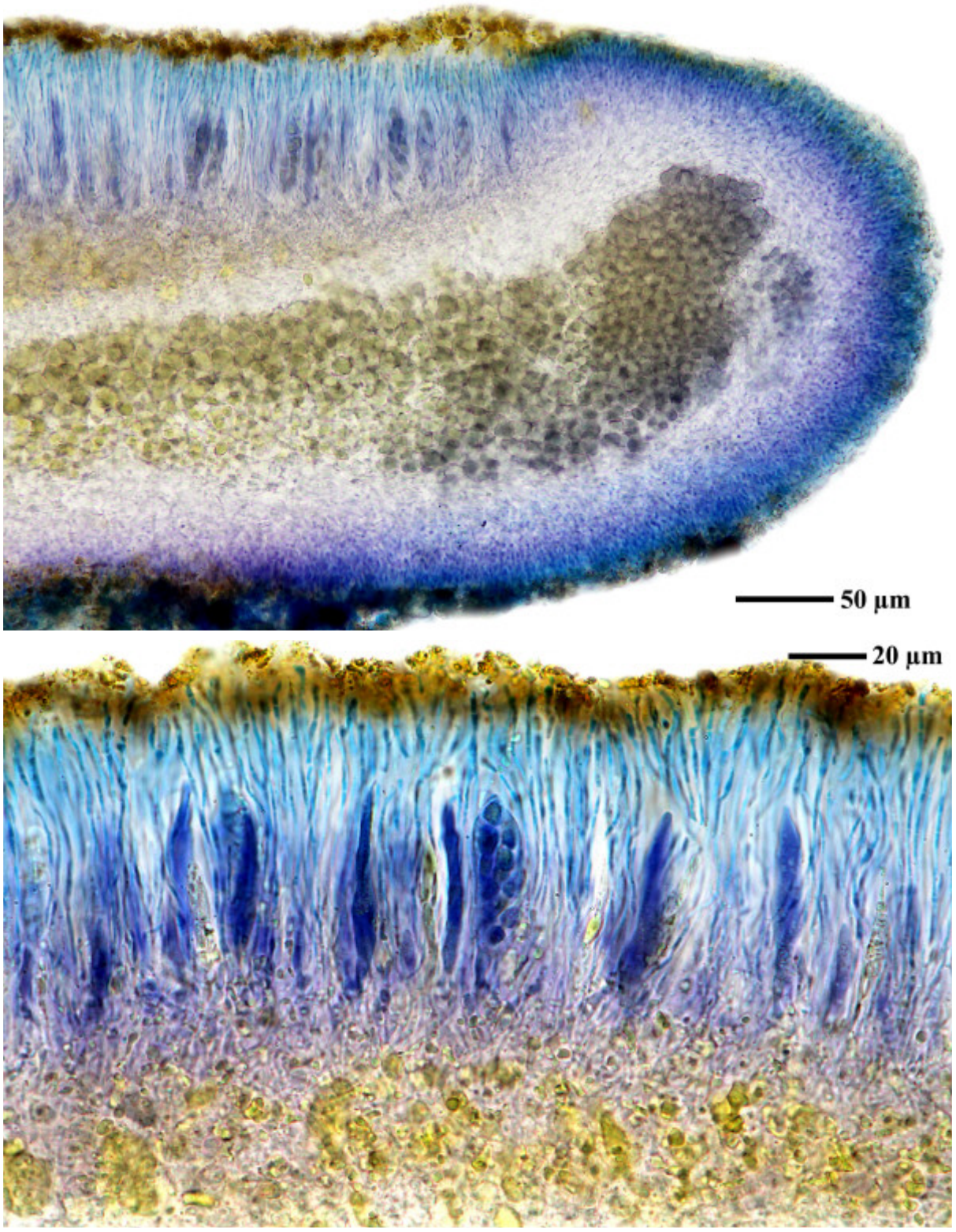


Caloplaca stantonii

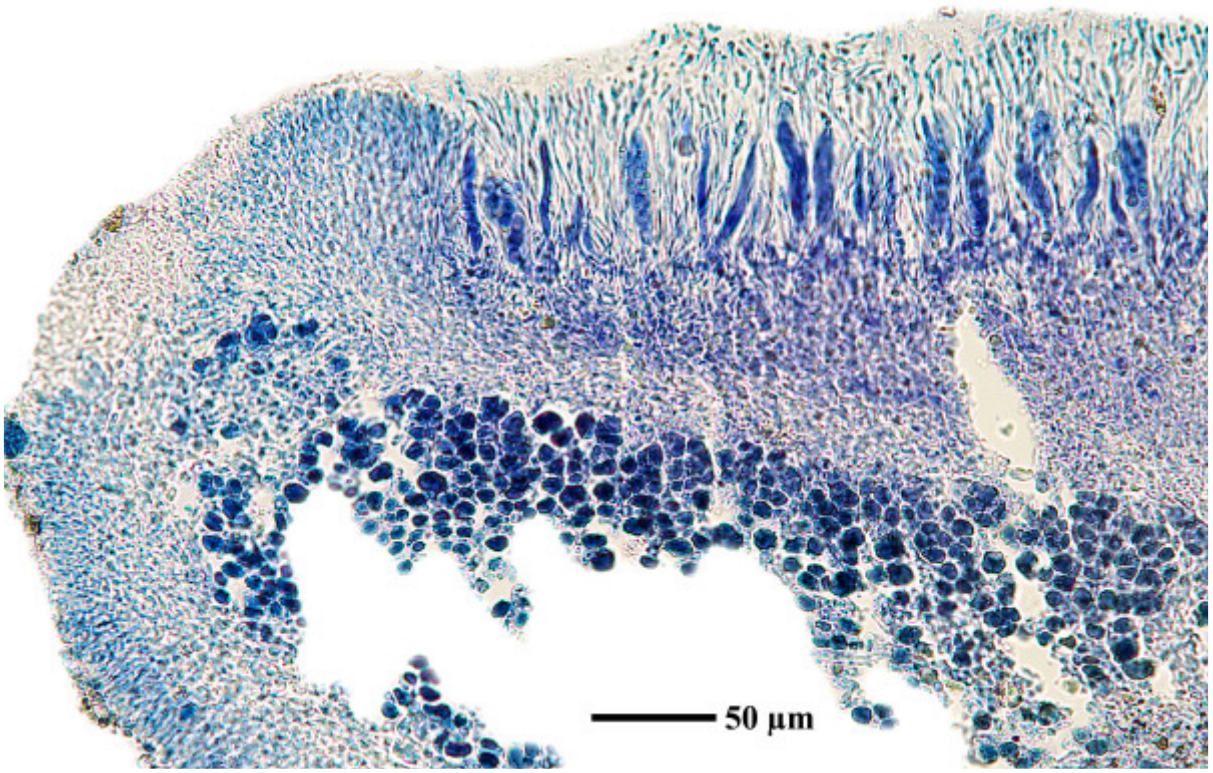


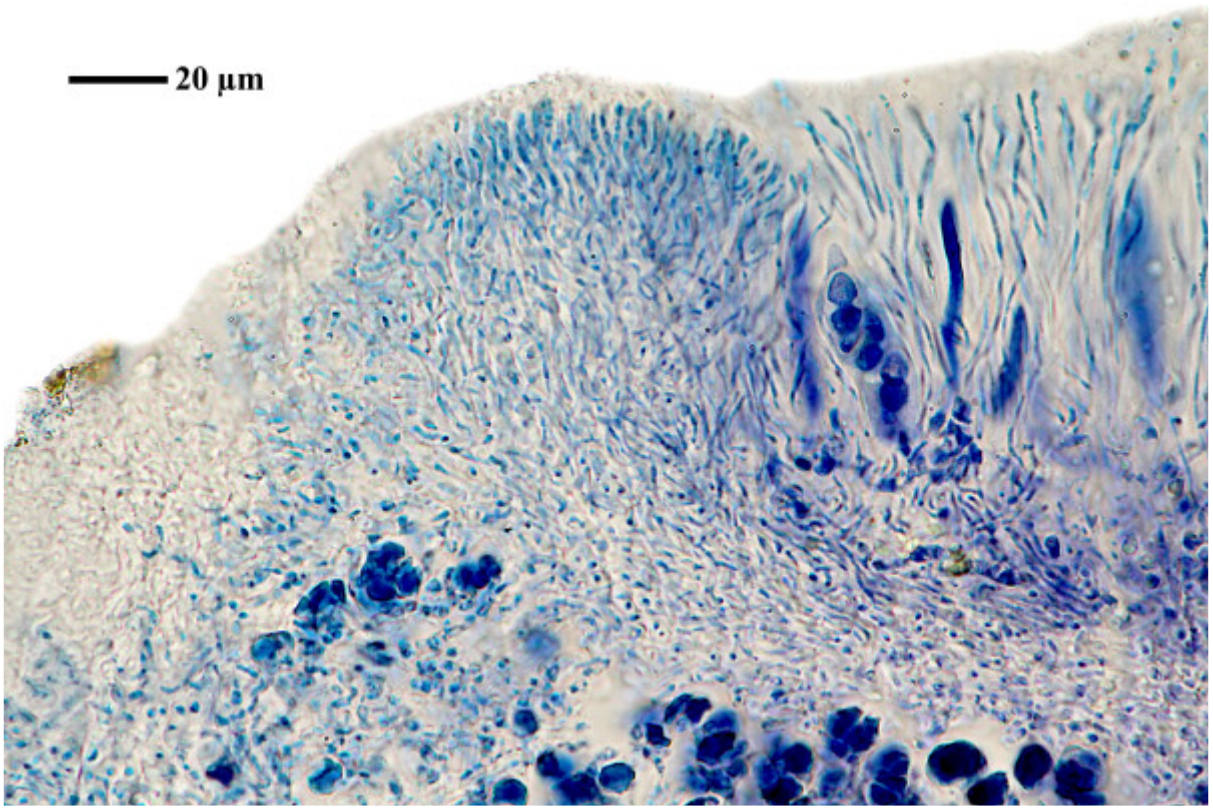


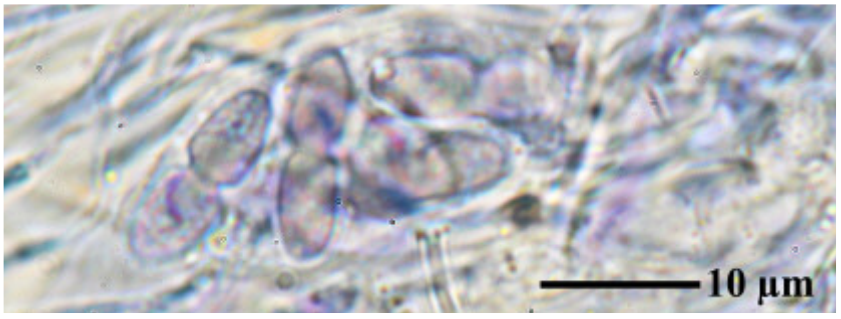
Caloplaca stantonii



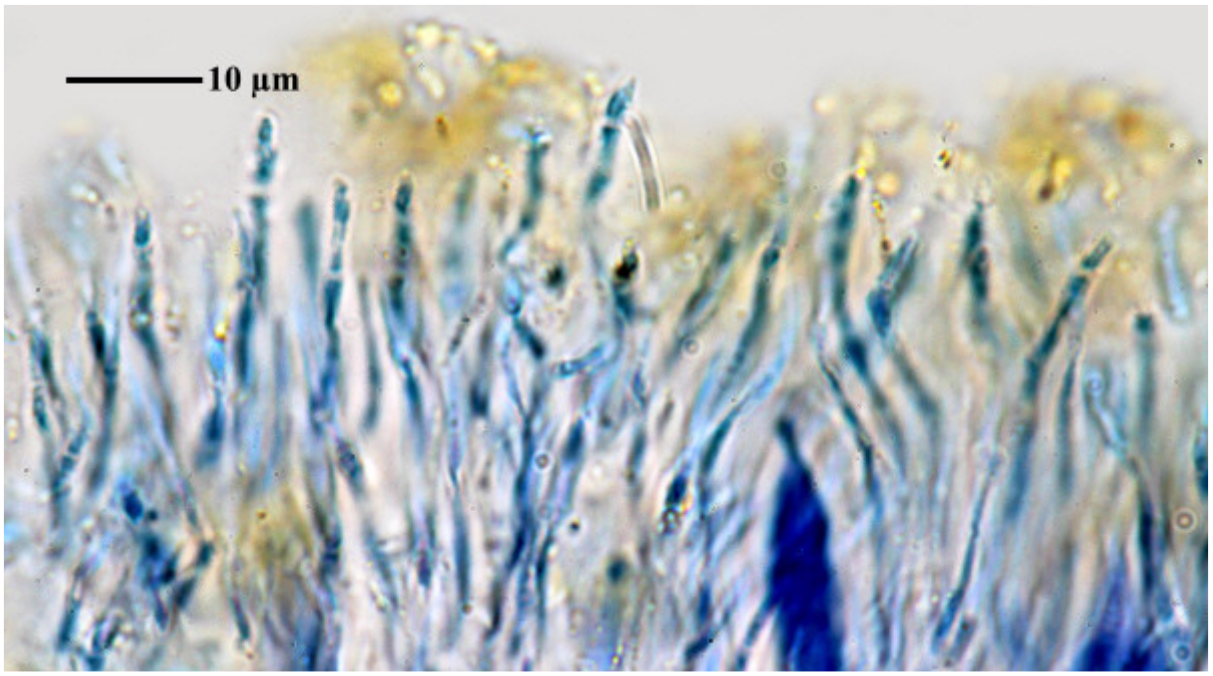
Caloplaca stantonii

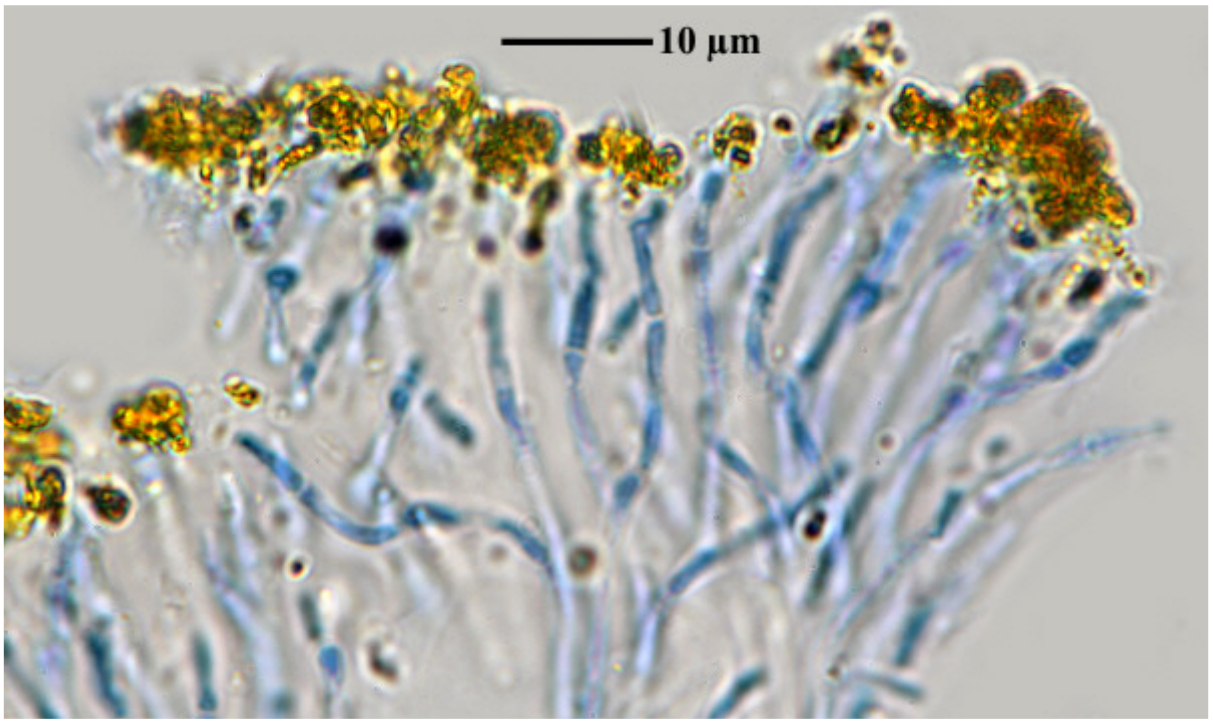


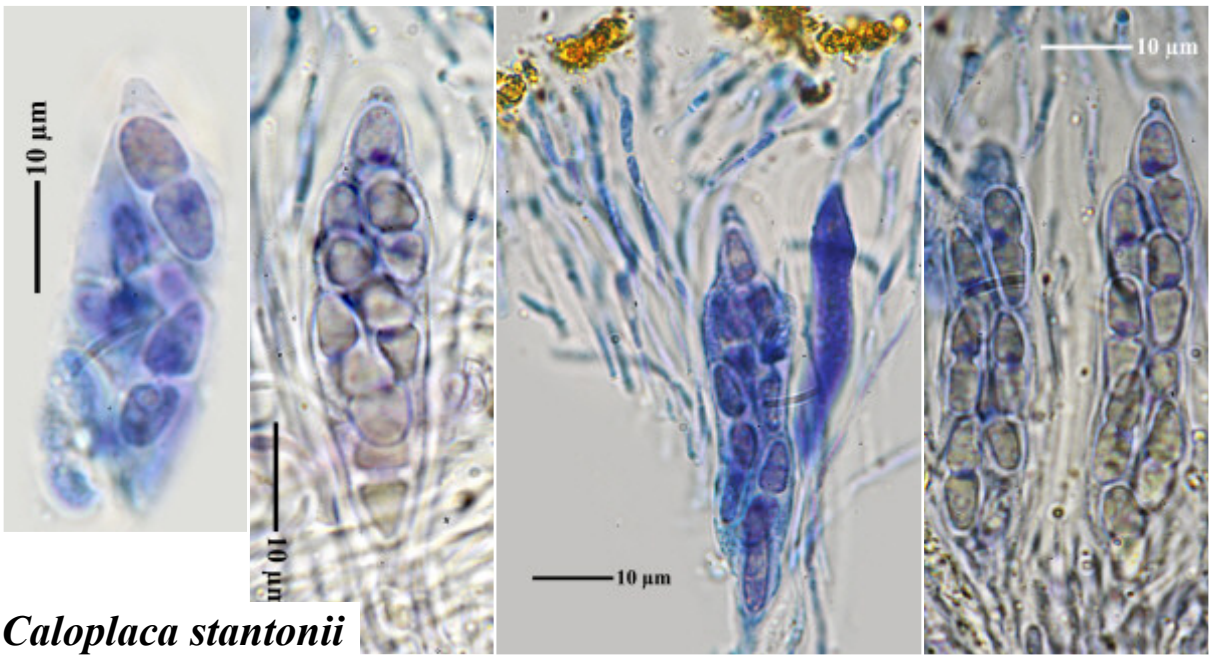




Caloplaca stantonii







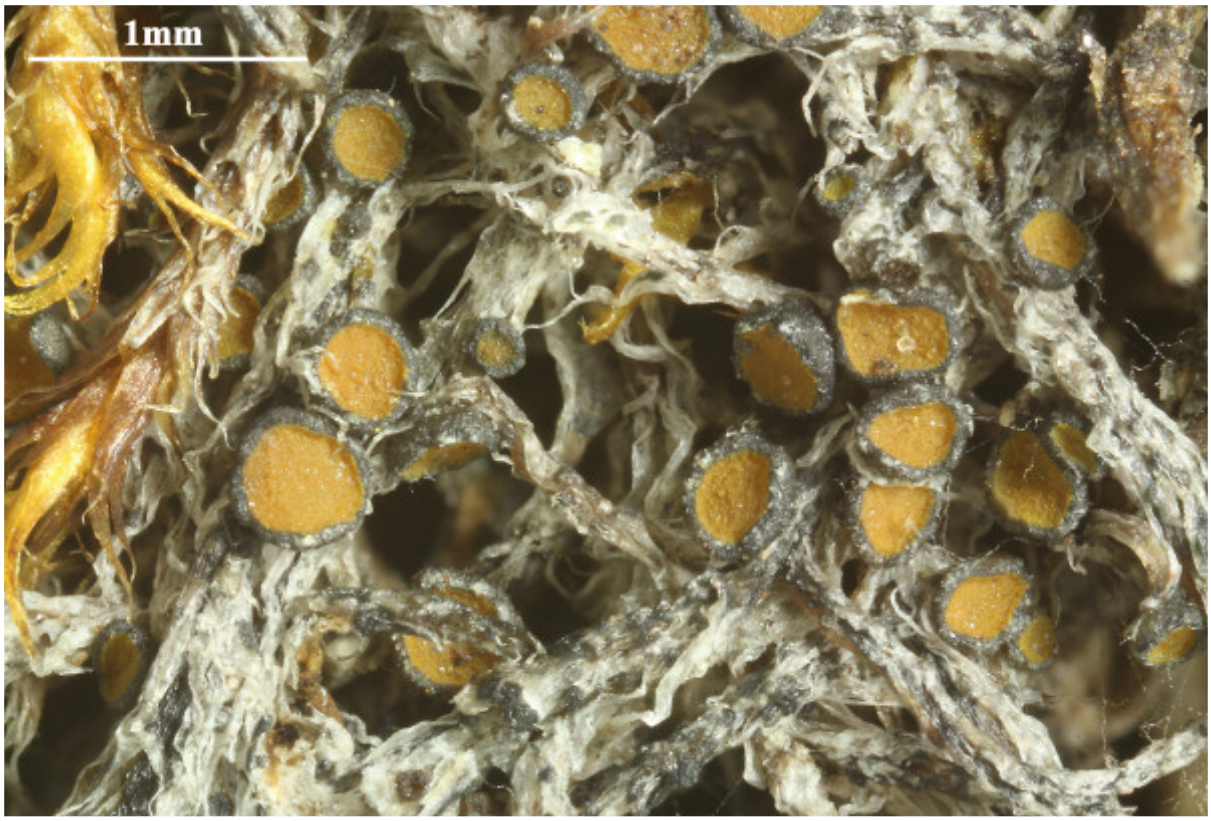
Caloplaca stantonii

Caloplaca stillicidiorum (Vahl) Lynge
[= *Caloplaca cerina* var**.** *chloroleuca* (Sm.) Th. Fr.]

Spores 10-15 x 5-7 µm, septum 3.3-6.6 µm (FS).

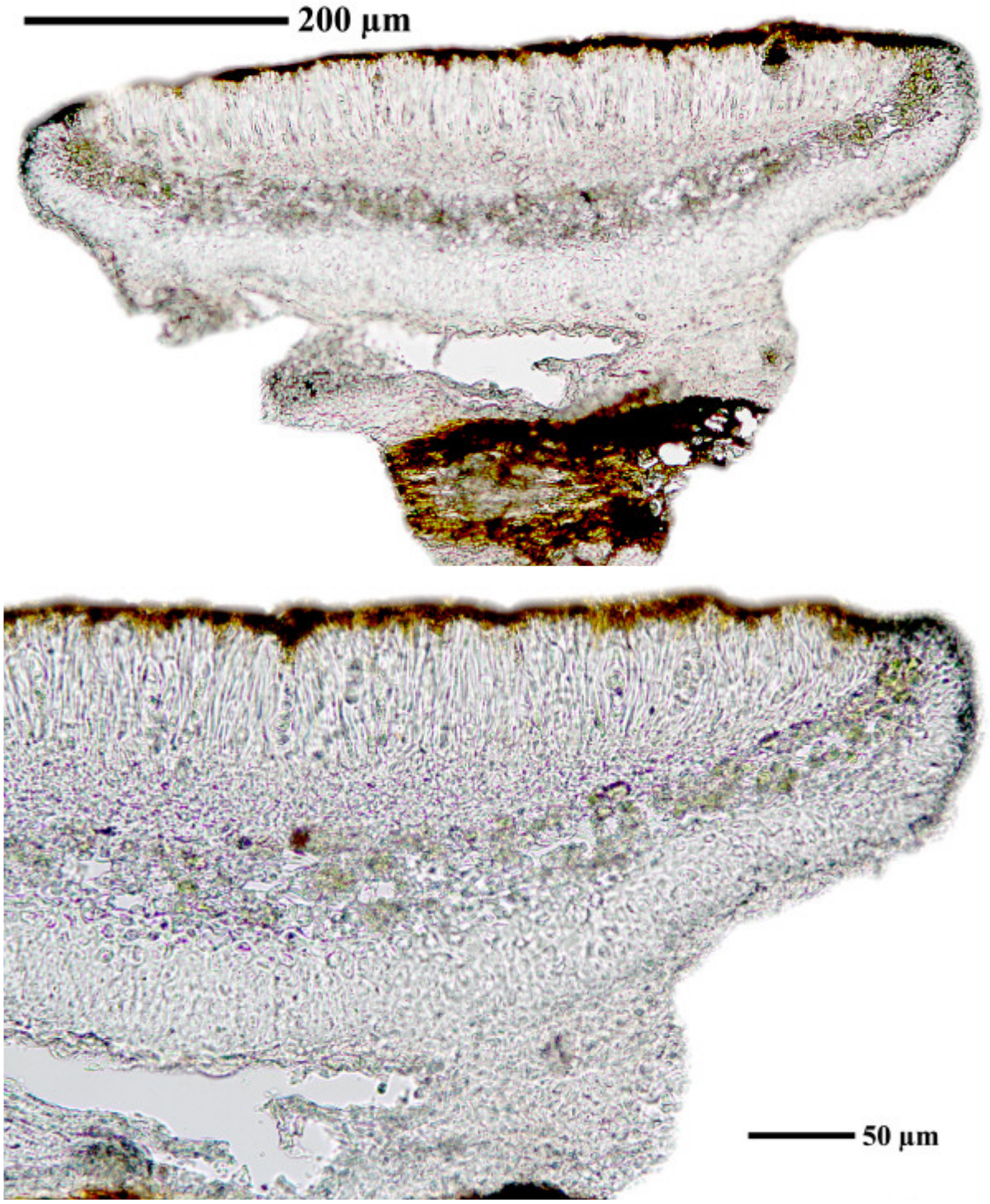
[B 60 0057213b], Norway, Svalbard, Spitsbergen, Bohemanflya, on mosses, 100-200 m. Leg. H.Kashiwadani (no. 23344), H. Deguchi & K. Kobayashi, 31.07.1985, det. F. Schumm. Together with ***Caloplaca tetraspora*** (Nyl.) H. Olivier in KASHIWADANI: LICHENES RARIORES ET CRITICI EXSICCATI NO. 654.



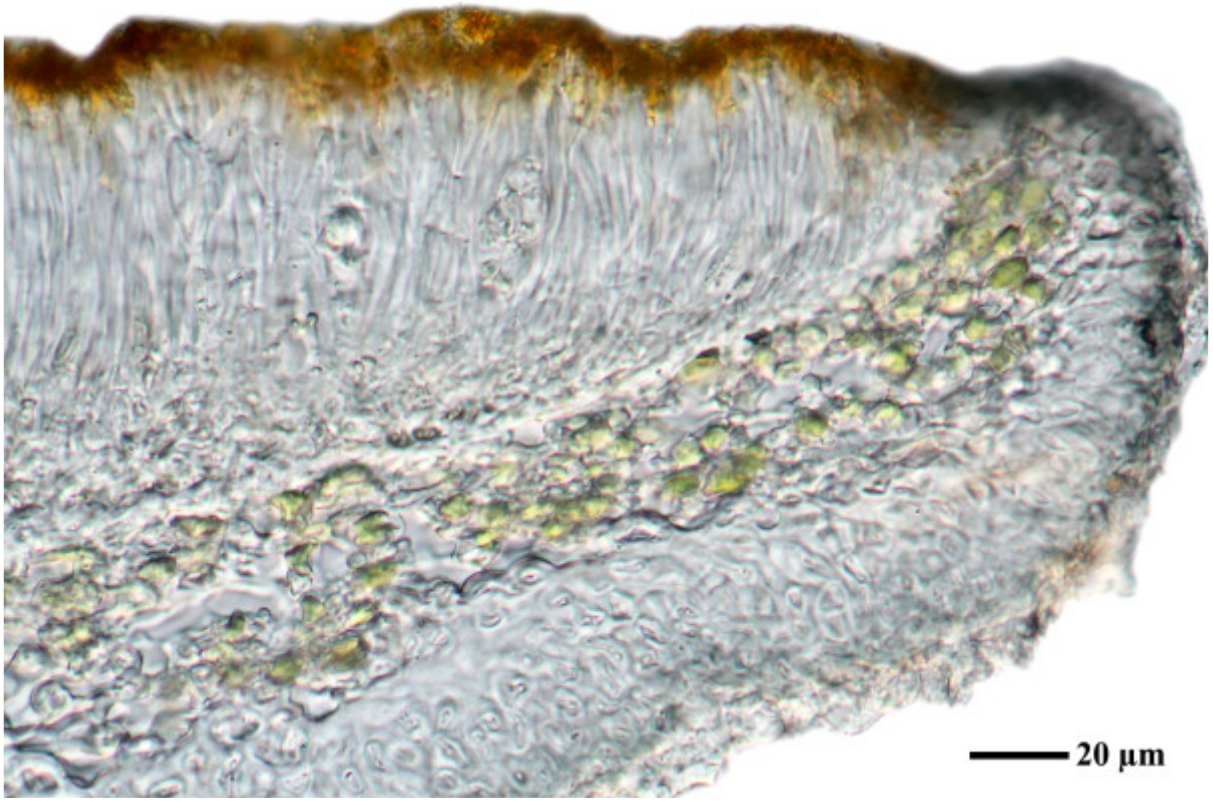


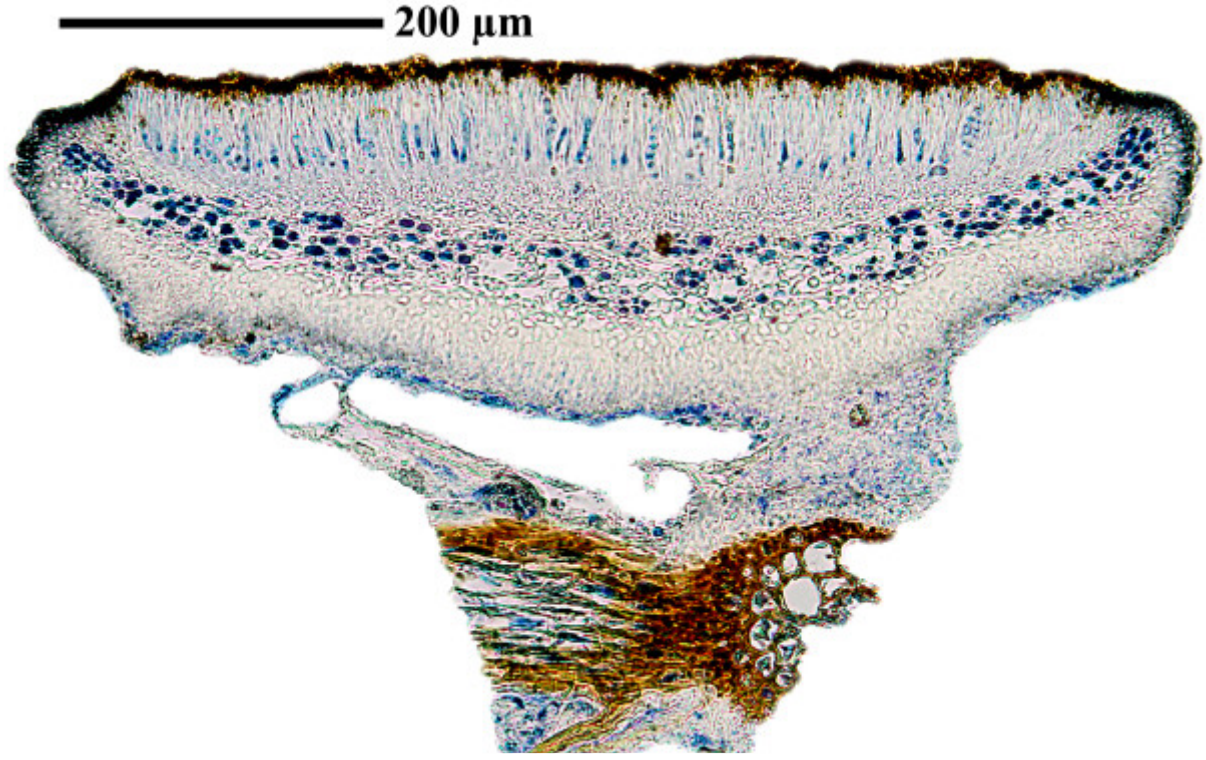


Caloplaca stillicidiorum

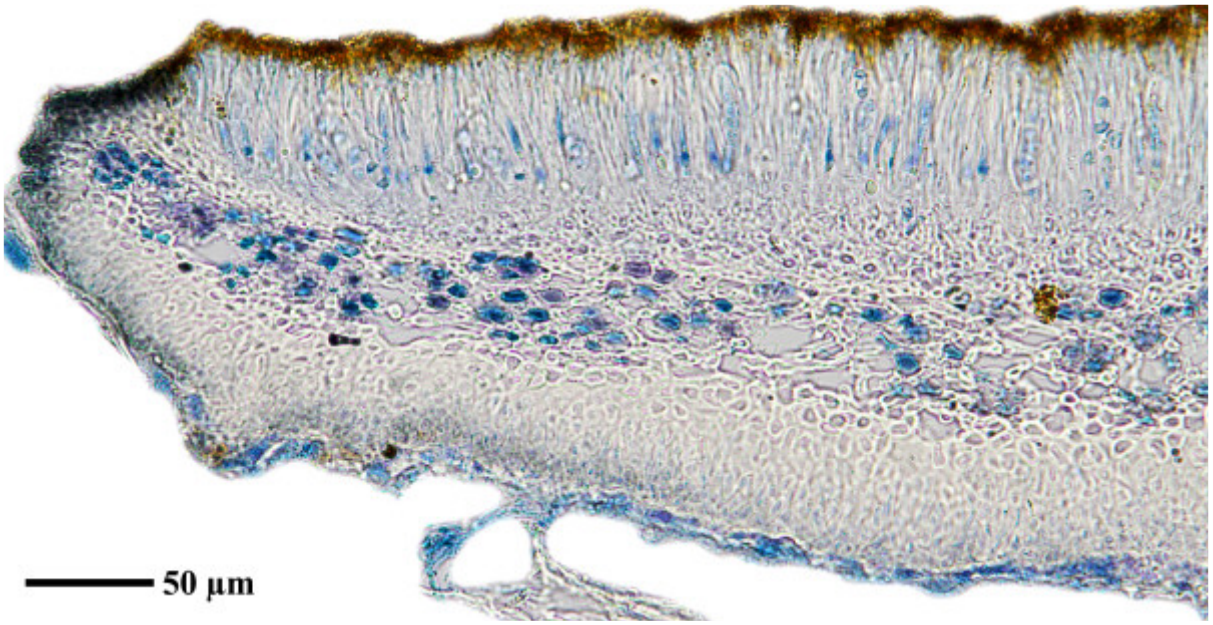


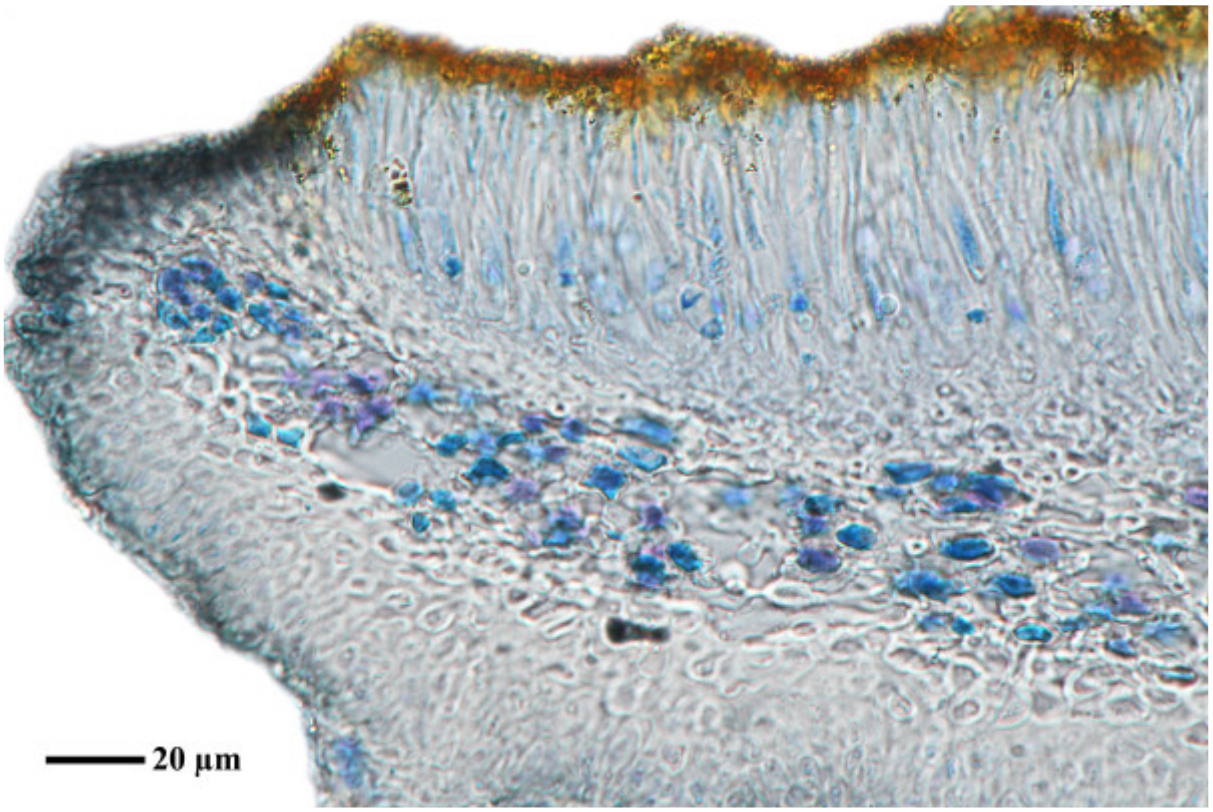
Caloplaca stillicidiorum





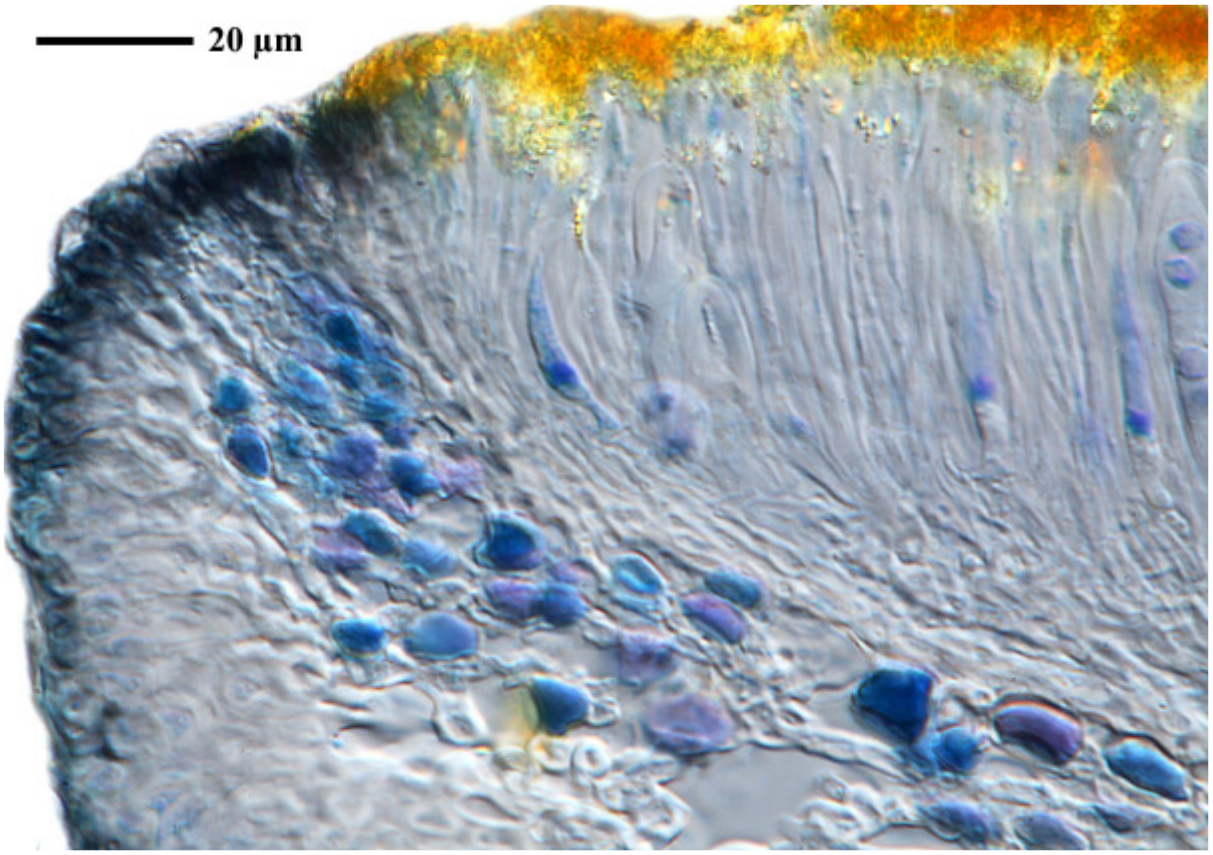
Caloplaca stillicidiorum

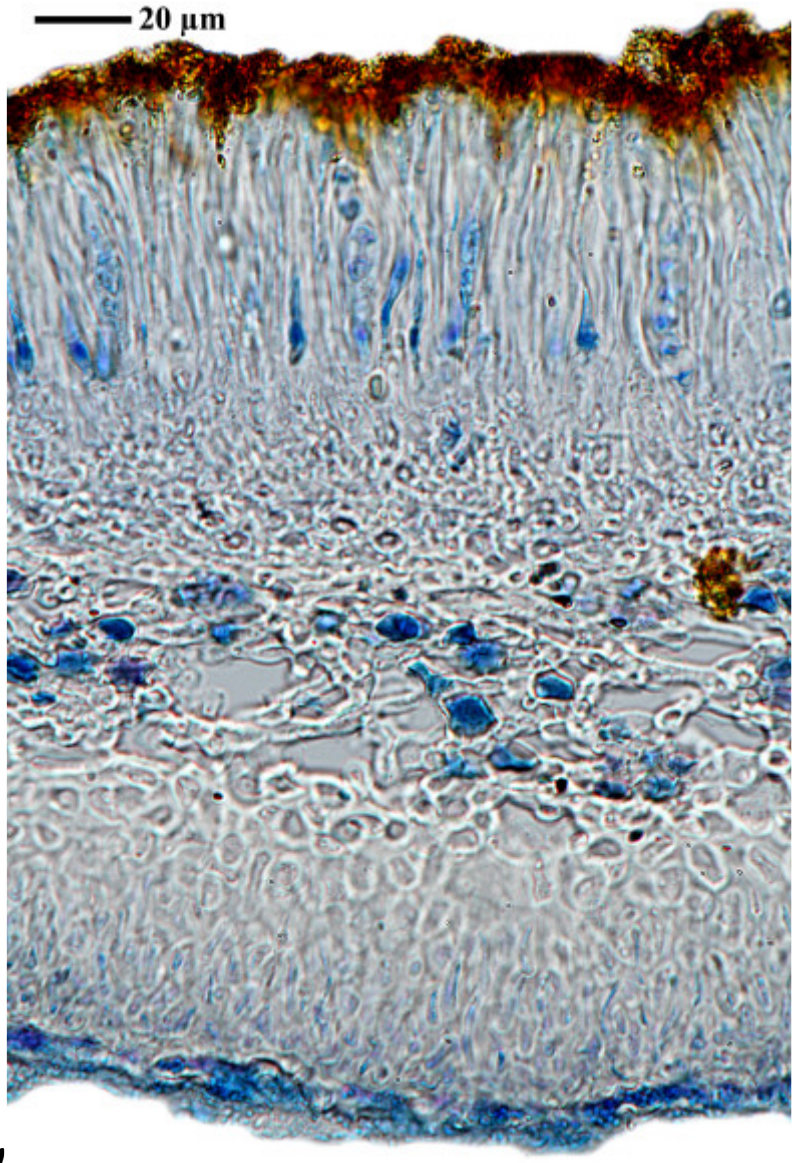






Caloplaca stillicidiorum





Caloplaca stillicidiorum

Caloplaca stipitata Wetmore
[= *Gyalolechia stipitata* (Wetmore) Søchting, Frödén & Arup]

On bark.

[17170], Mexico, Baja California Sur, 88,2 km on road to Bahia Tortugas, W from Rte.1. Peninsula Vizcaino, southern Vizcaino Region of the Sonoran Desert, on bark of shrubs. 27°38' N, 114°15'W. Leg. K. & A. Kalb & Th. Nash, 29.12.1990, det. C. Wetmore. KALB: LICHENES NEOTROPICI 495.





Caloplaca stipitata

Caloplaca stipitata Wetmore
[= *Gyalolechia stipitata* (Wetmore) Søchting, Frödén & Arup]

Spores 9-13 x 4-5 µm, septum 4.5-6 µm (FS)

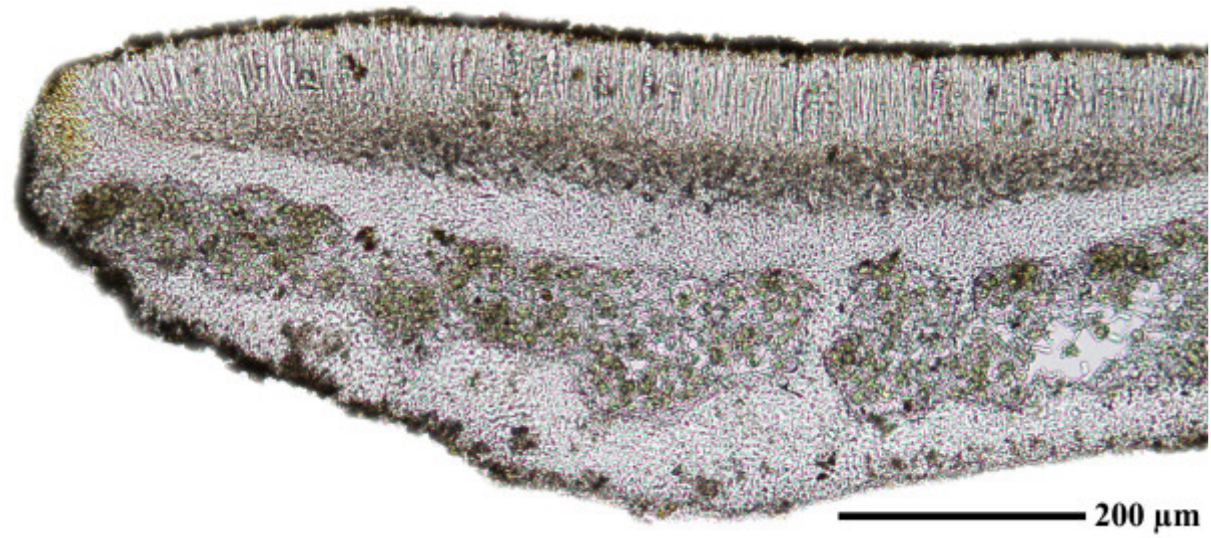
[B 60 0069212], Mexico, Baja California,Cabo San Quintin, Cerro Kenton between Bahía Falsa and Bahía de San Quintin, c. 1 m tall desert scrub on E-side of low volcano, coastal scrub community (*Aesculus californica, Ambroisia, Euphorbia misera, Jatropha, Lycium*, etc.) with basalt rocks, epiphyte on branchlets of shrubs; 30°28' N, 116°00' W, 20 m. Leg. H. Sipman (nr. 24805), 4.01.1989, det C. Wetmore 1999.



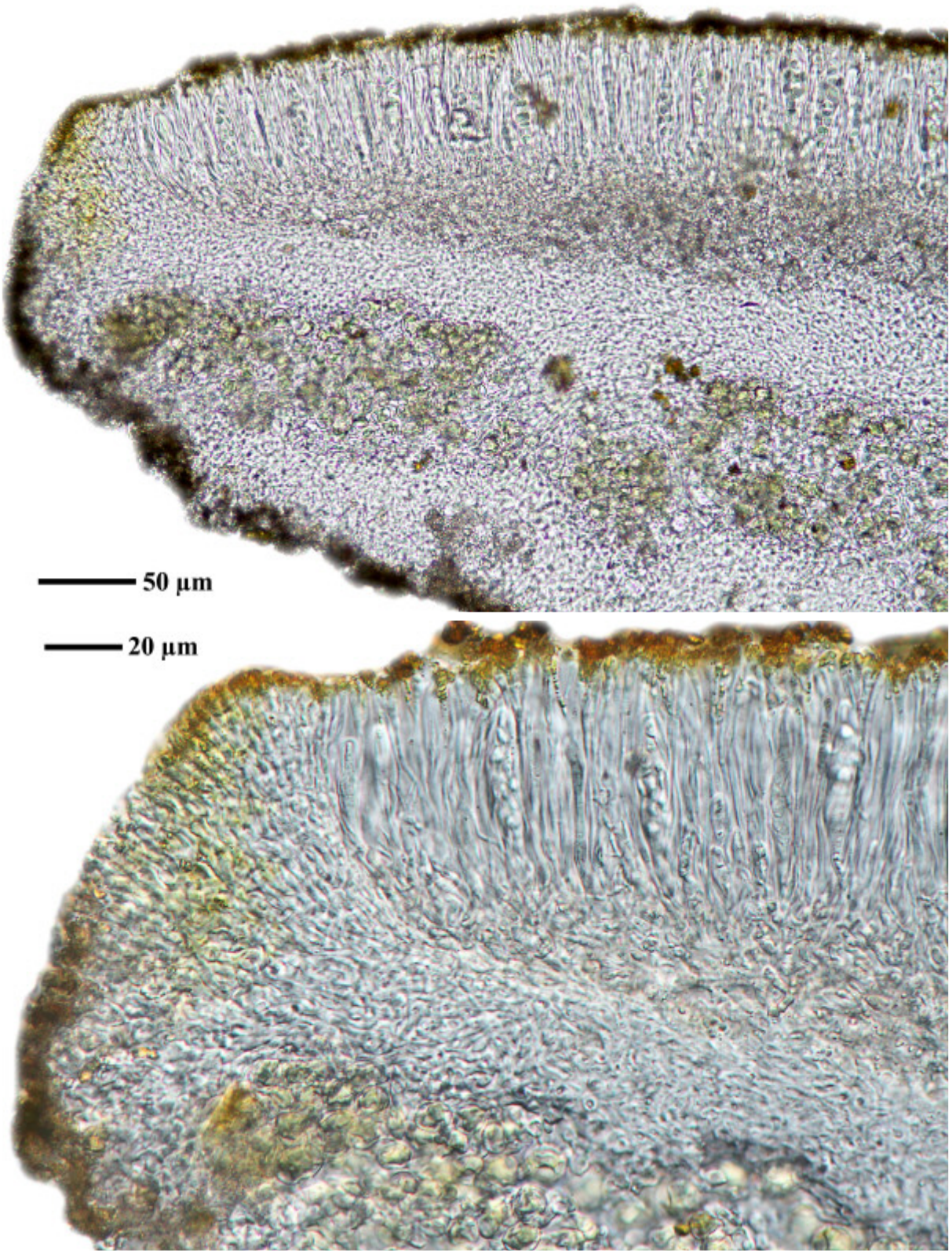




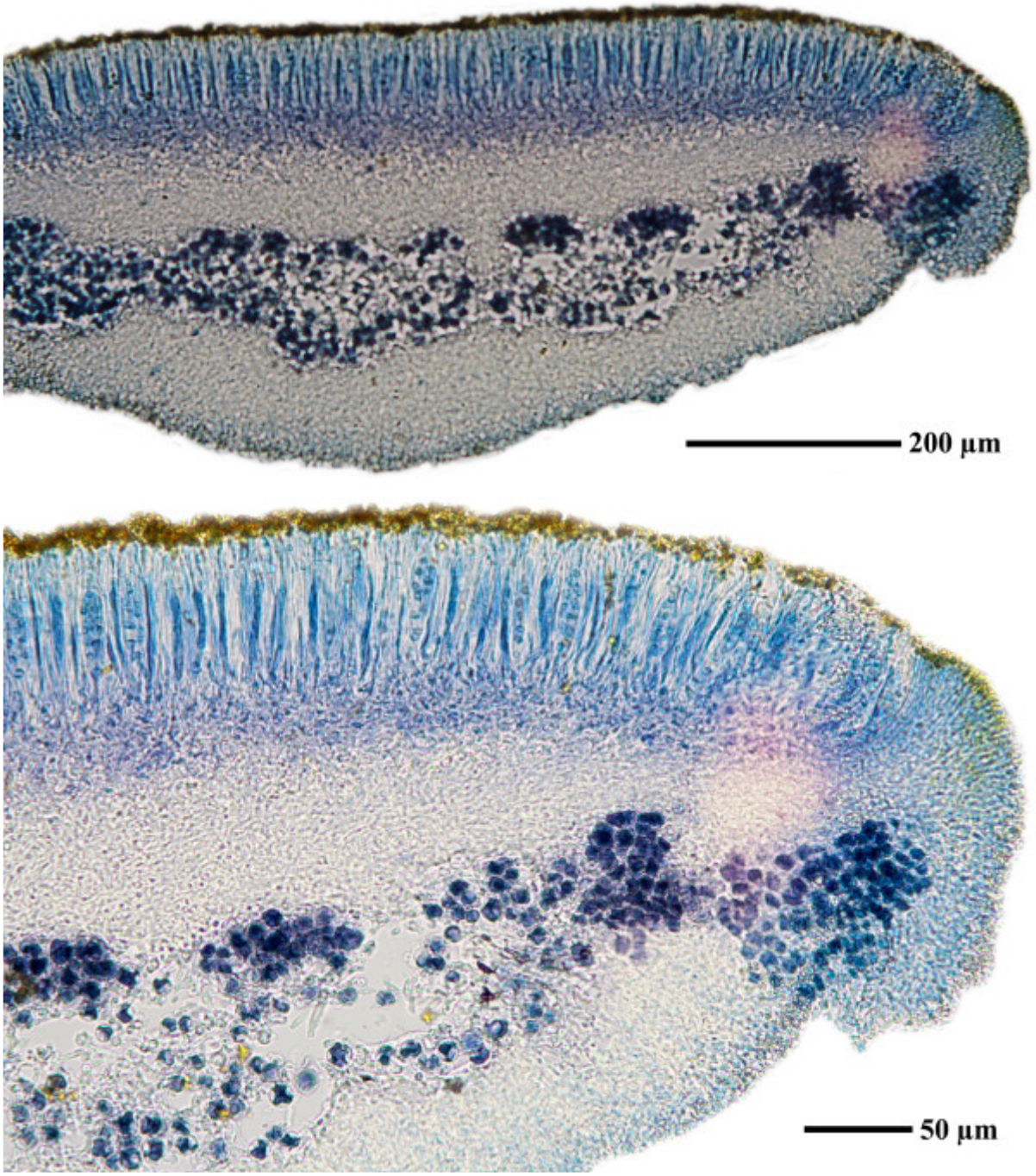




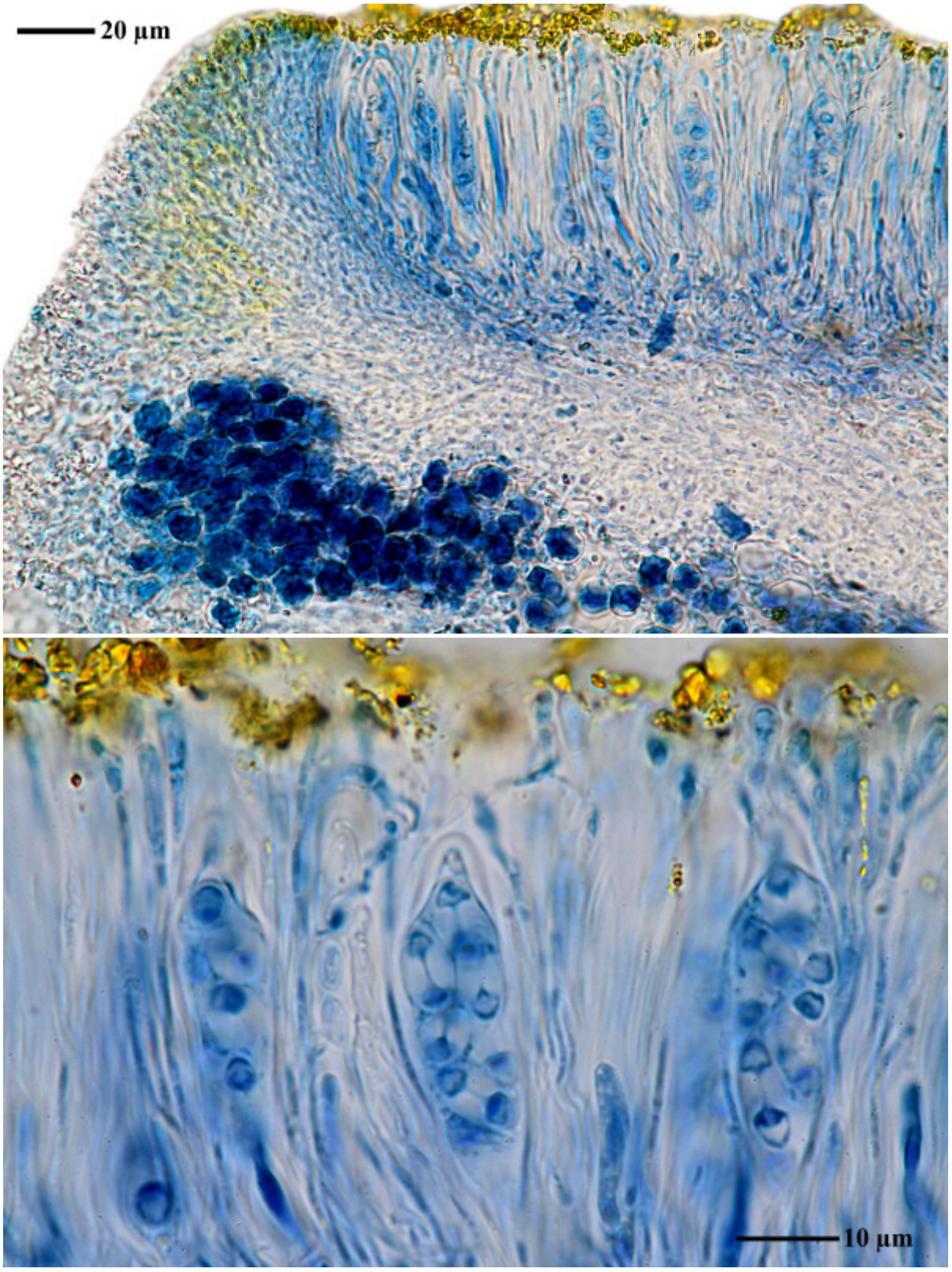
Caloplaca stipitata



Caloplaca stipitata

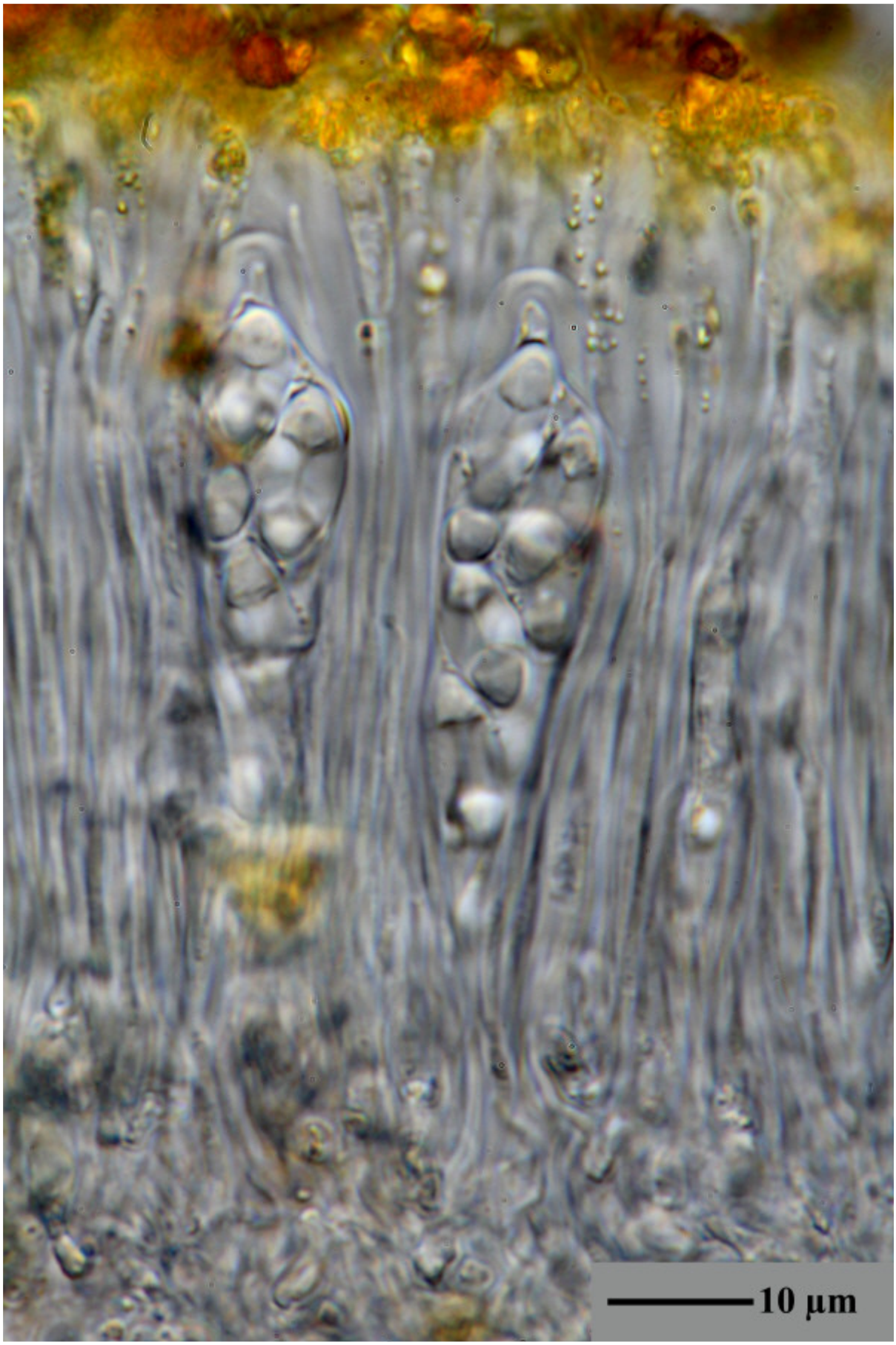


Caloplaca stipitata





Caloplaca stipitata



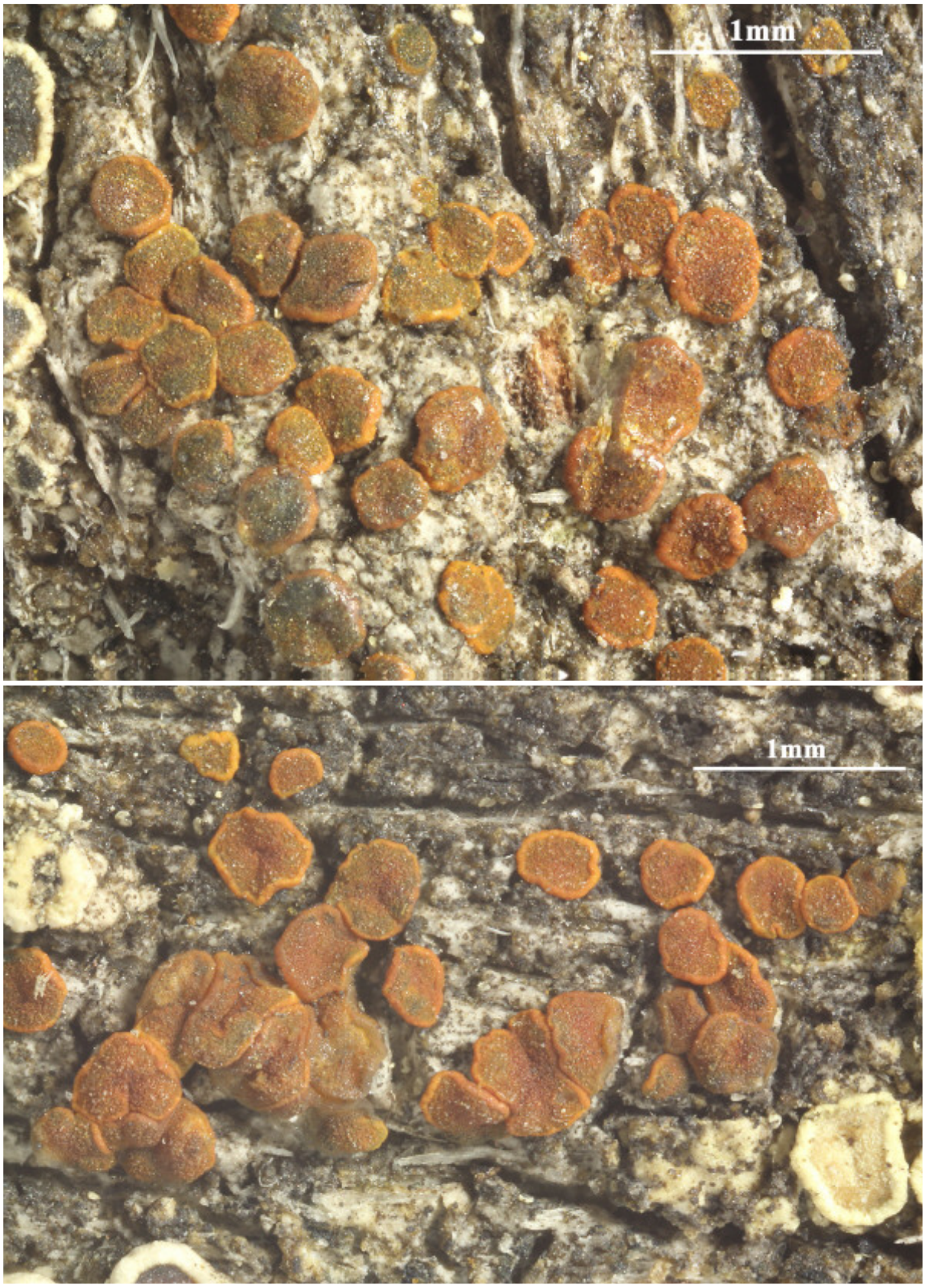
Caloplaca stipitata

Caloplaca subathallina H. Magn.

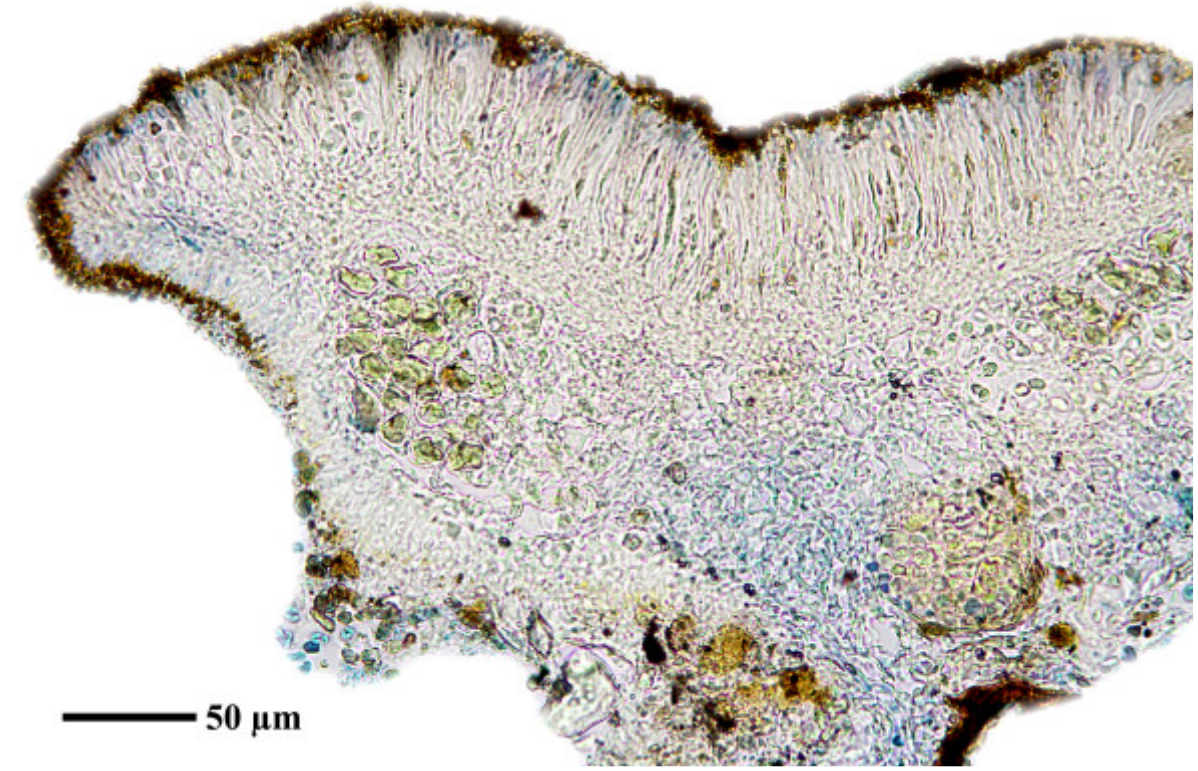
Spores10.5-11.5 x 5.5-7.5 µm, septum 5-5.2 µm (FS).

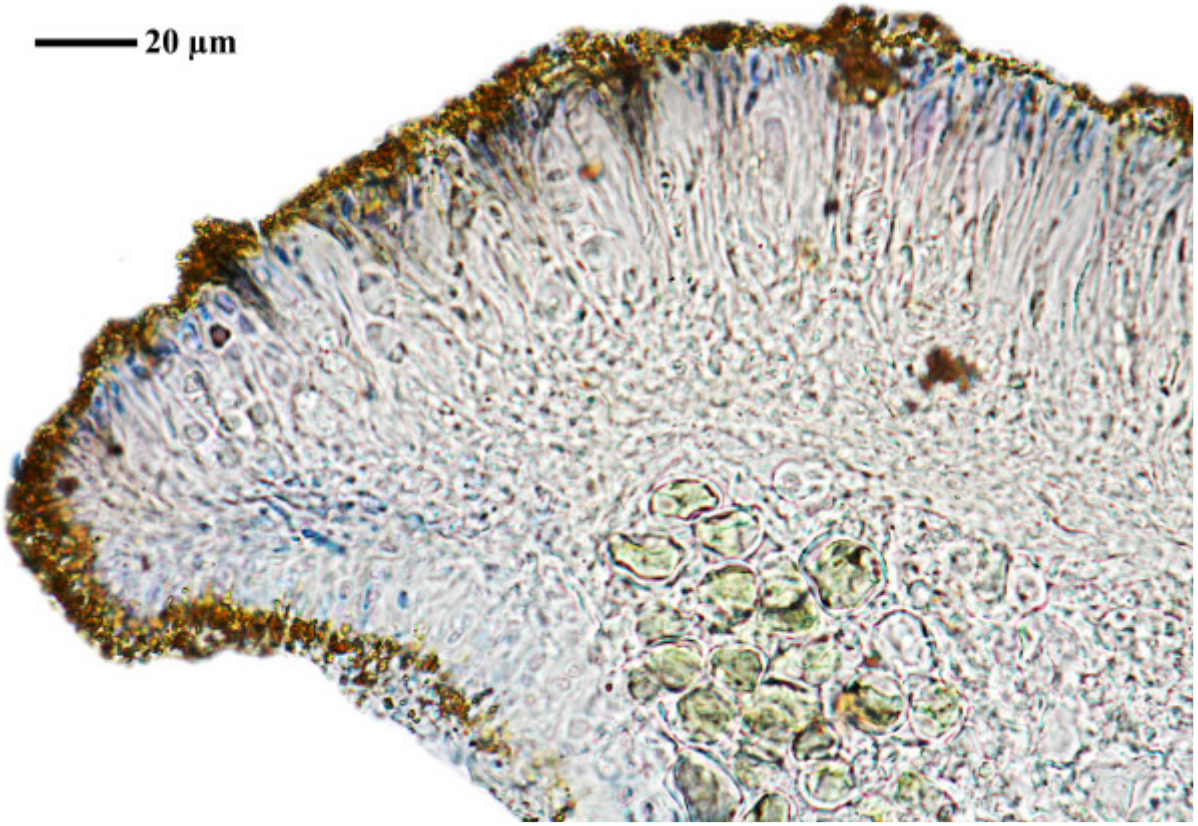
[BR5030036249680], Österreich, Osttirol, Kreis Linz, Hohe Tauern, Virgental, along road from Virgen to Obermauern, GF 8940. On wooden fence among fields, ca. 1250 m. Leg. H. Sipman (25481), 1. Sept. 1988, det. H. Sipman, 1989.



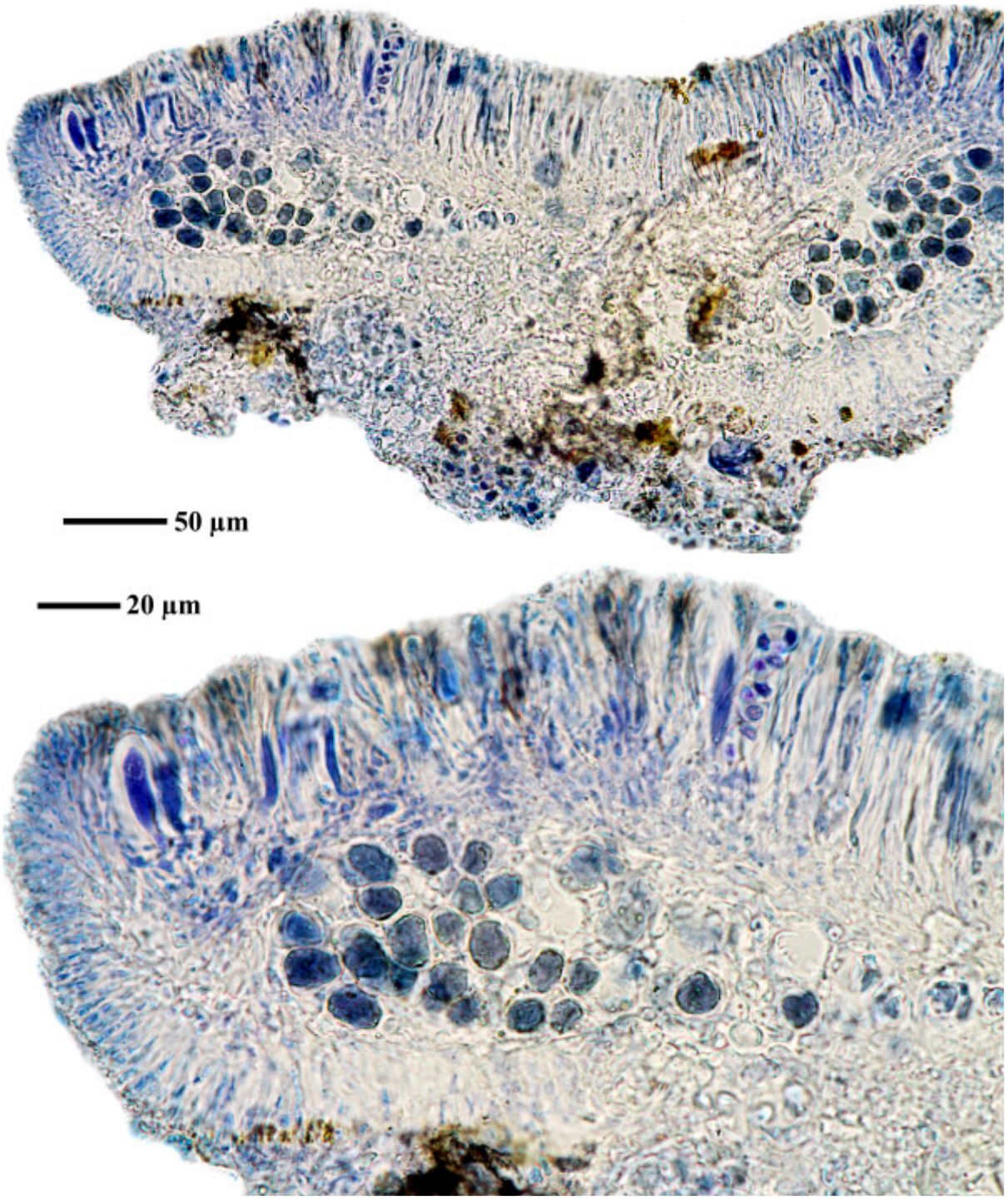


Caloplaca subathallina

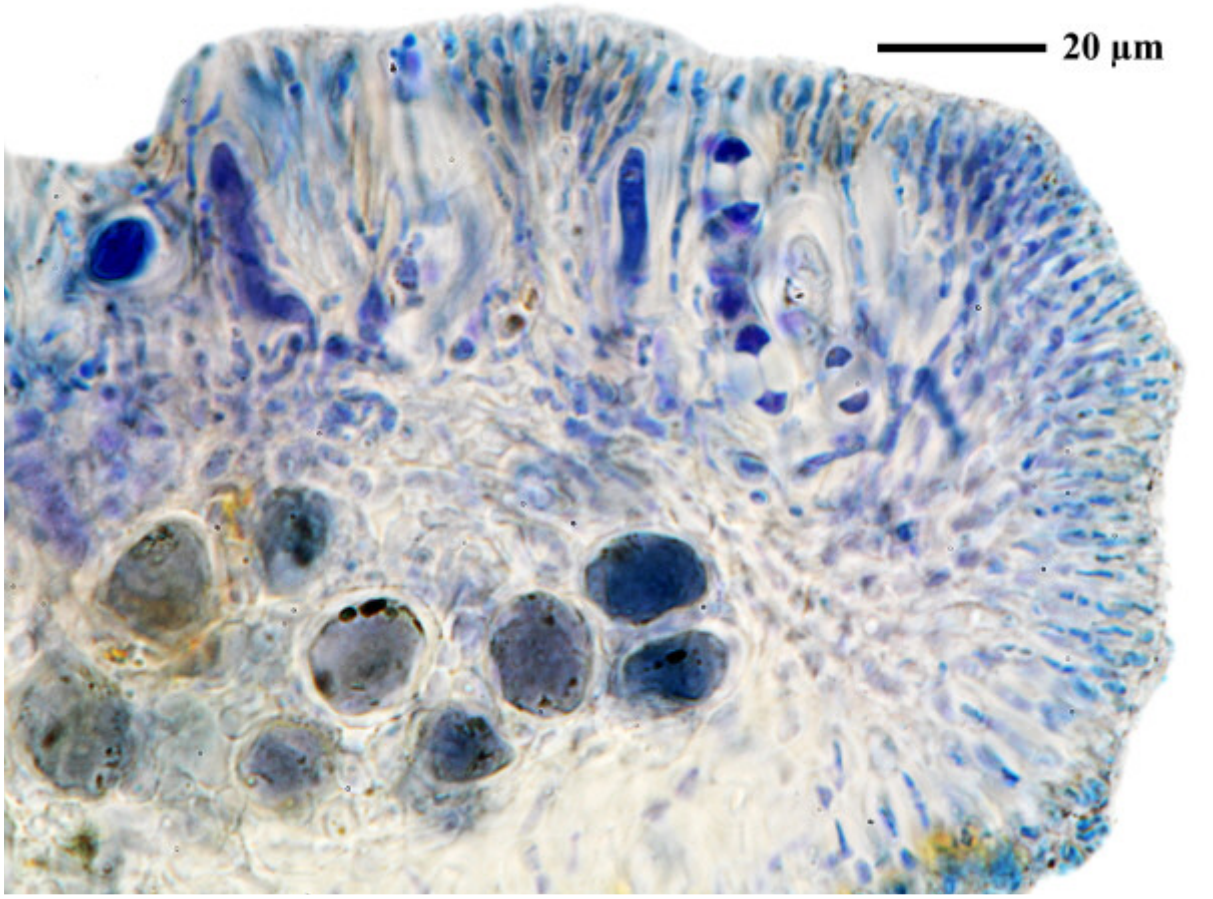


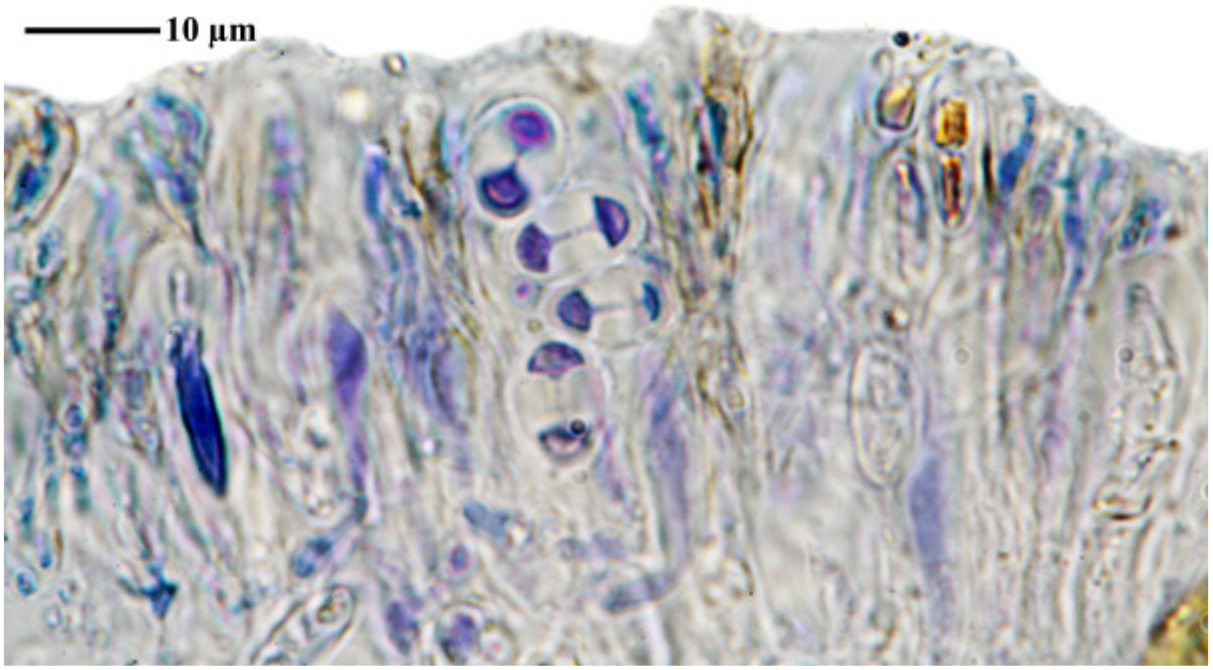


Caloplaca subathallina

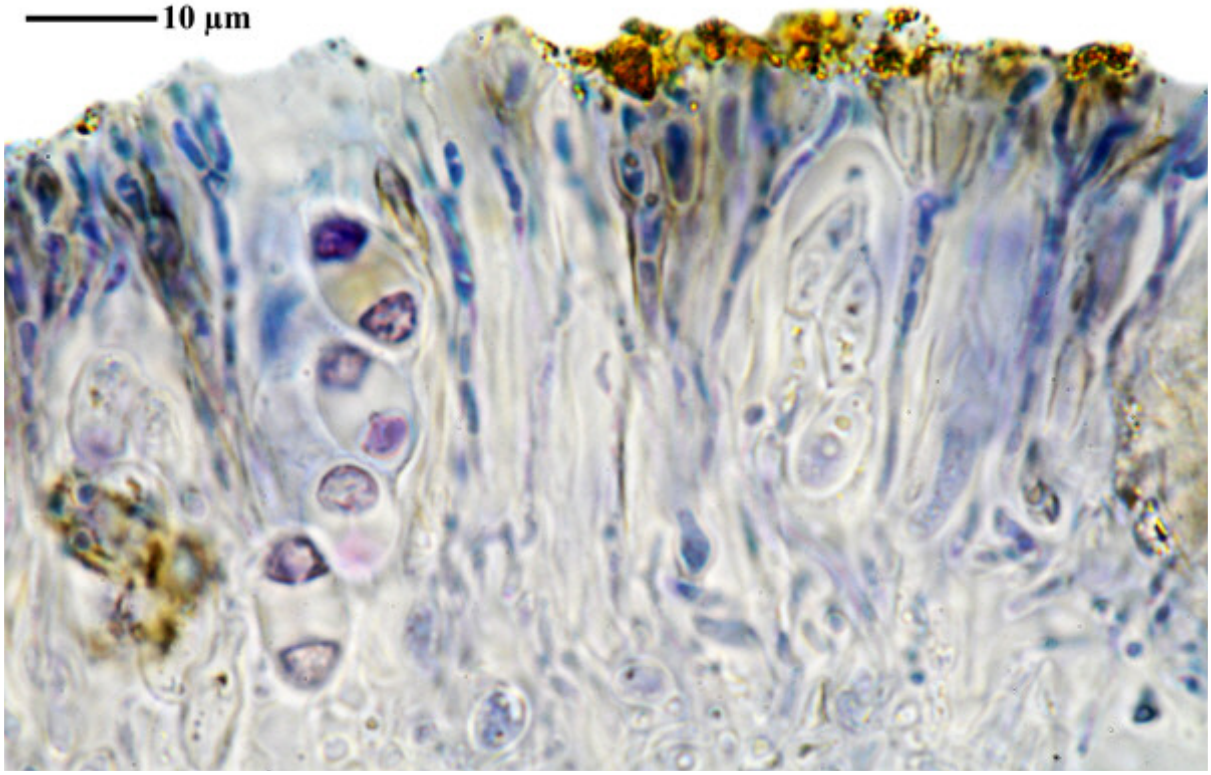


Caloplaca subathallina





Caloplaca subathallina



Caloplaca subathallina

Caloplaca subathallina H. Magn.

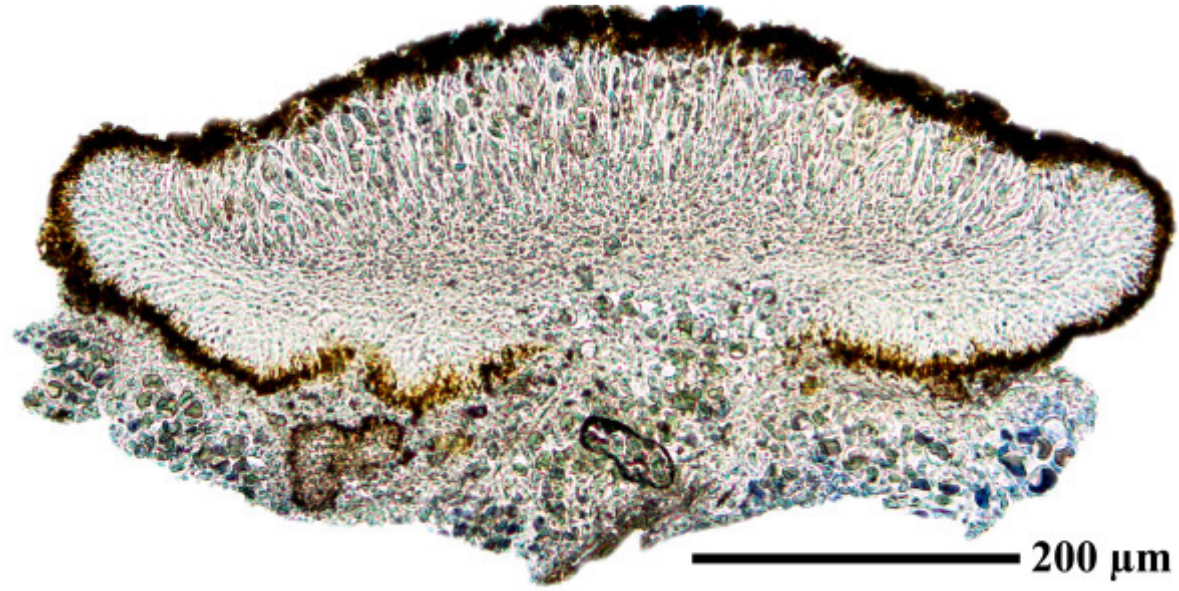
Spores 10.8-15 x 5.8-8.3 µm, septum 4.2-6.3 µm (FS).

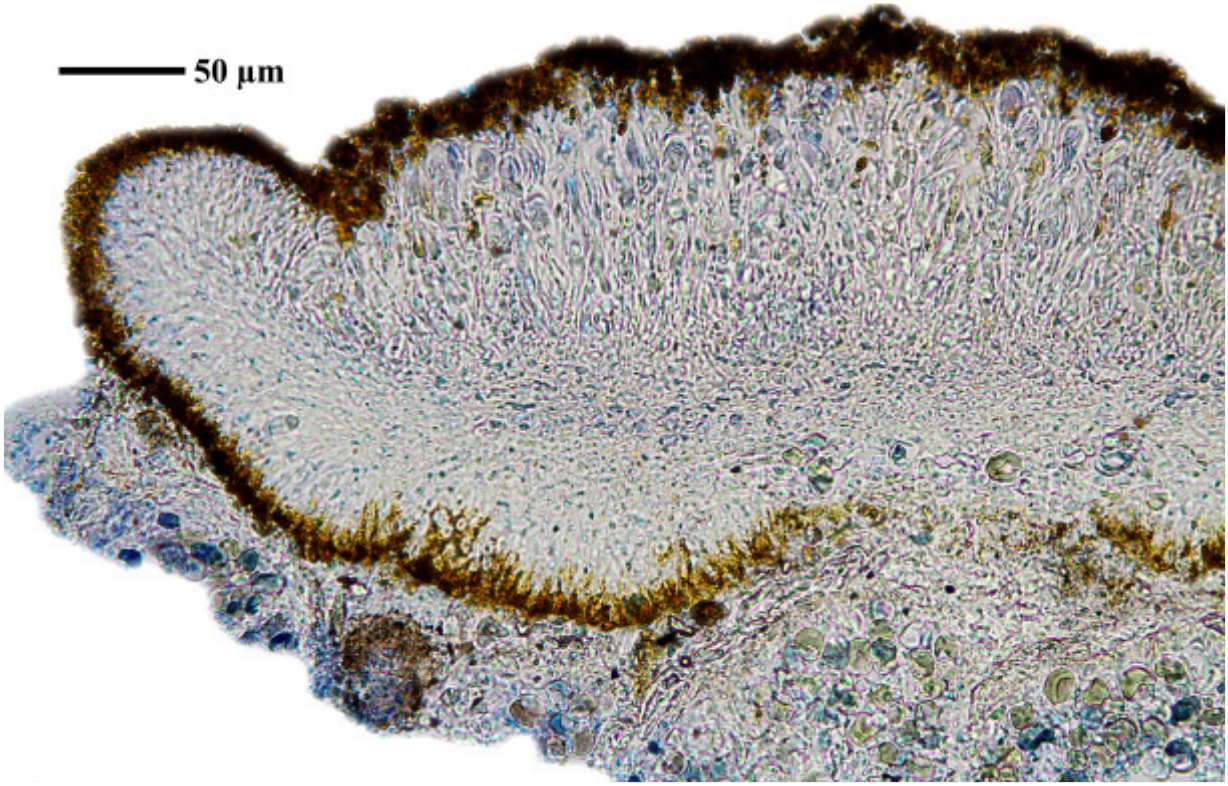
[BR5030040217590], France, Corse, Col de Vergio, sur tronc de Pinus laricio, 1375 m. Leg. Ed. Jaques (7003), 27. July 1969.



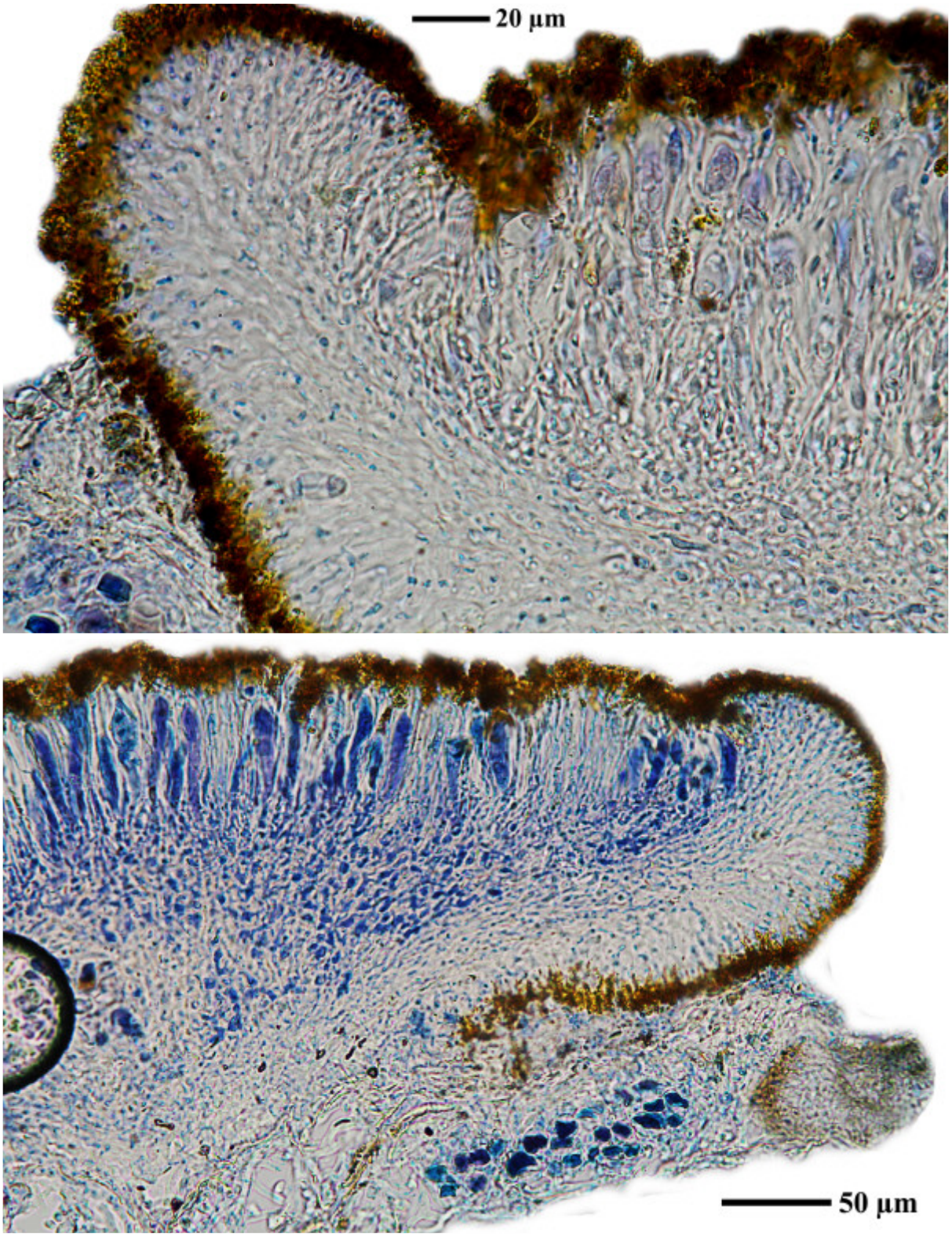


Caloplaca subathallina

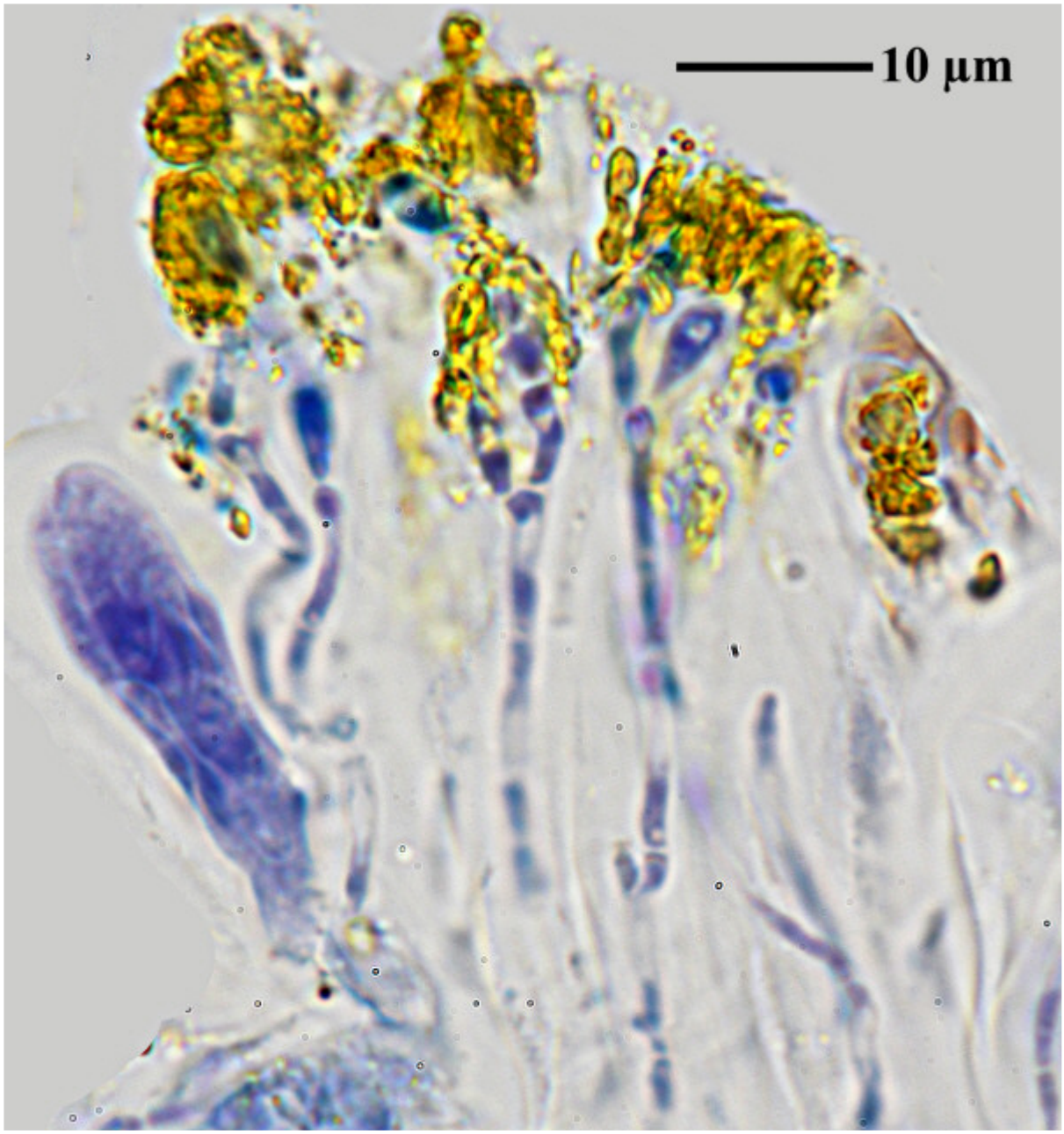


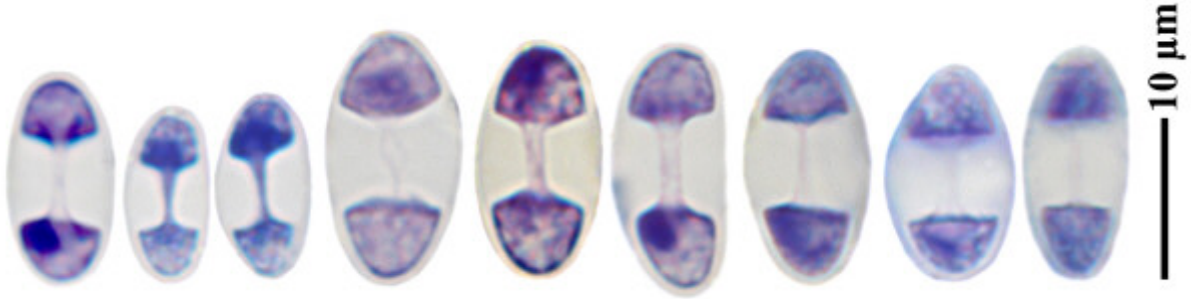


Caloplaca subathallina



Caloplaca subathallina





Caloplaca subathallina

Caloplaca subaurantiaca (Fée) Zahlbr.

On non-calcareous rocks. Chemistry: Parietin, anal. S. Huneck.

[18154], Brasilien, São Paulo, Ilha de São Sebastião, etwa 130 km östlich von São Paulo, Westhang des Morro das Tacas; in heller, trockener Steppenlandschaft, an Granit, 120 m. Leg. K. Kalb und G. Plöbst 21.04.1978. KALB: LICHENES NEOTROPICI 260.







Caloplaca subaurantiaca

Caloplaca subdecadens (Nyl.) Hafellner & Poelt

Sporen, hyalin, 3-locular, 8/ascus, 33-39 x 20-24 µm. On bark.

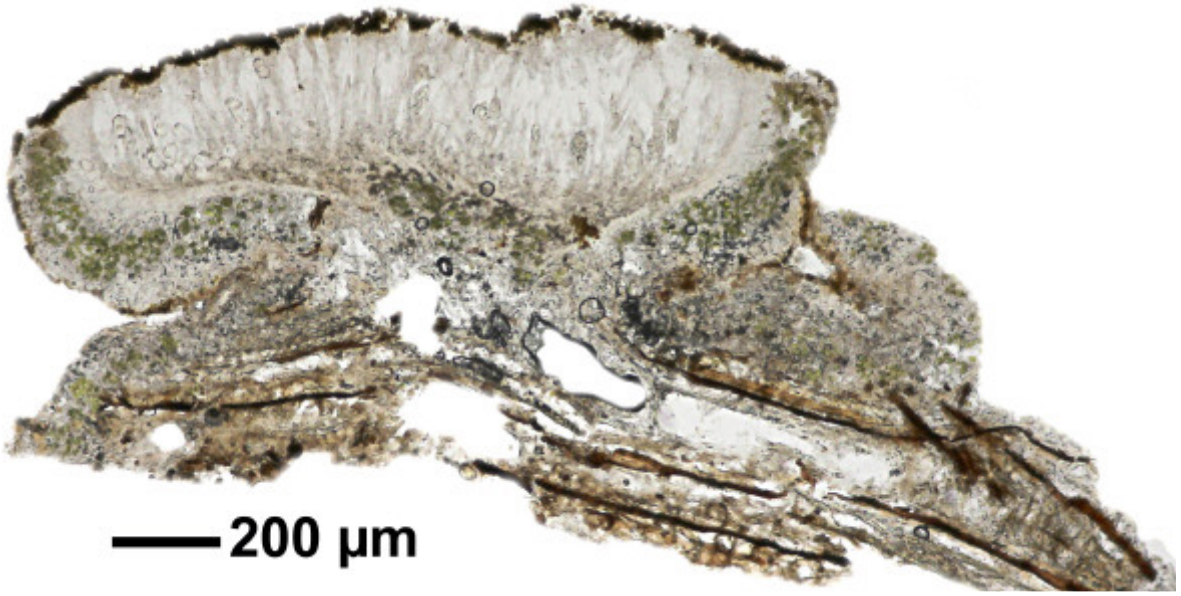
[19616], Sri Lanka, Southern Province, Rainforest Eco Lodge, Morningsite of Sinharaja mountain, 6°23' N, 80°35' E, 1015 m, lowland rain forest. Leg. G. Weerakoon & O. Arachchige (Mo12E), 24. 04.2015, det. A. Aptroot.

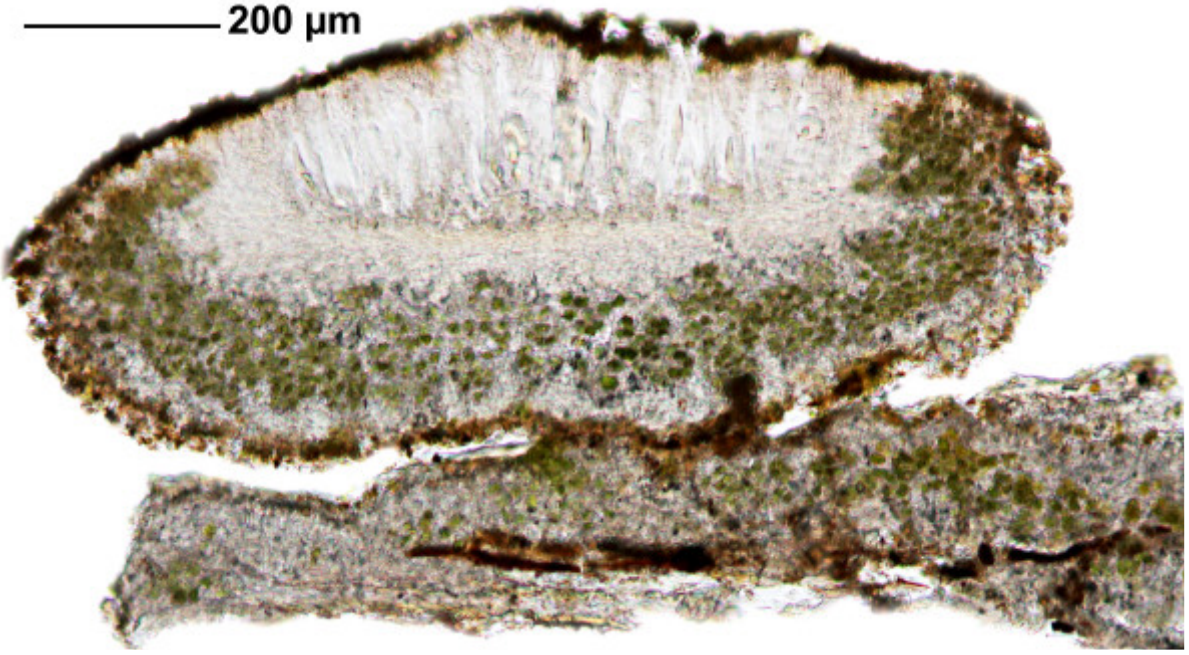






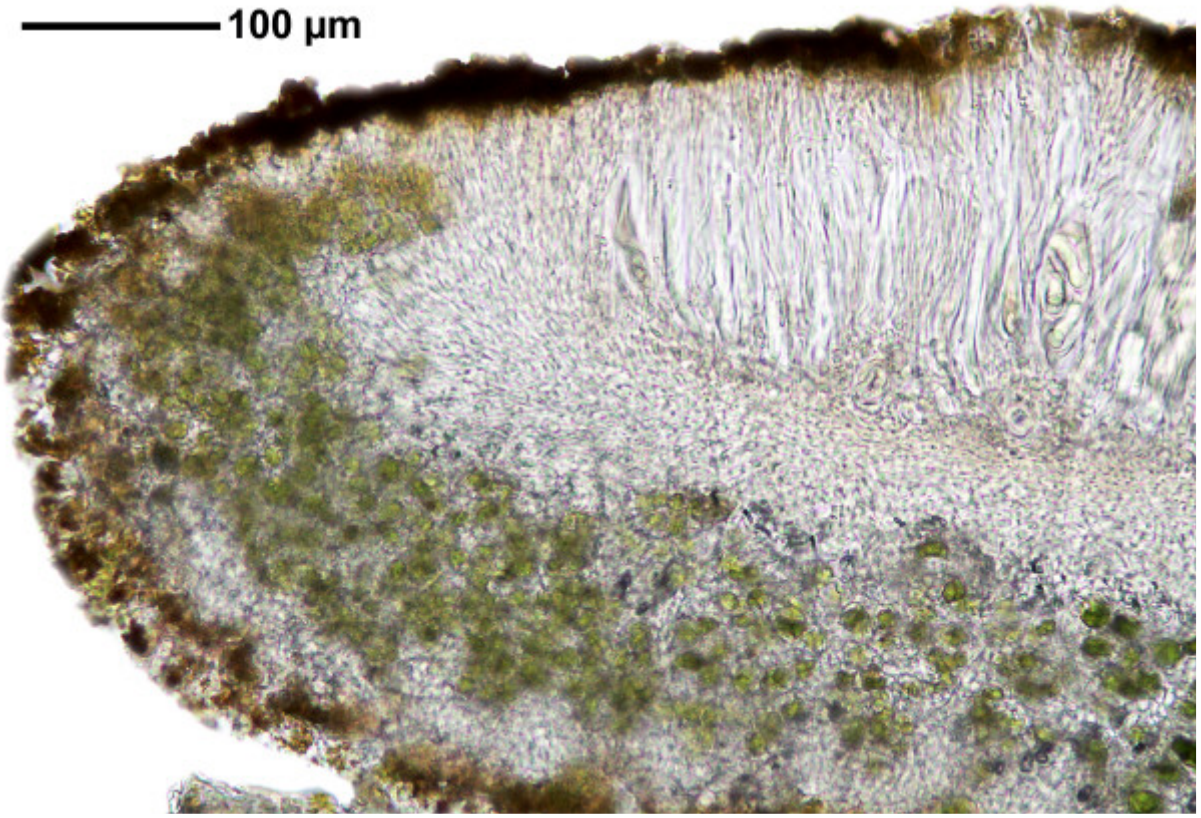
Caloplaca subdecadens

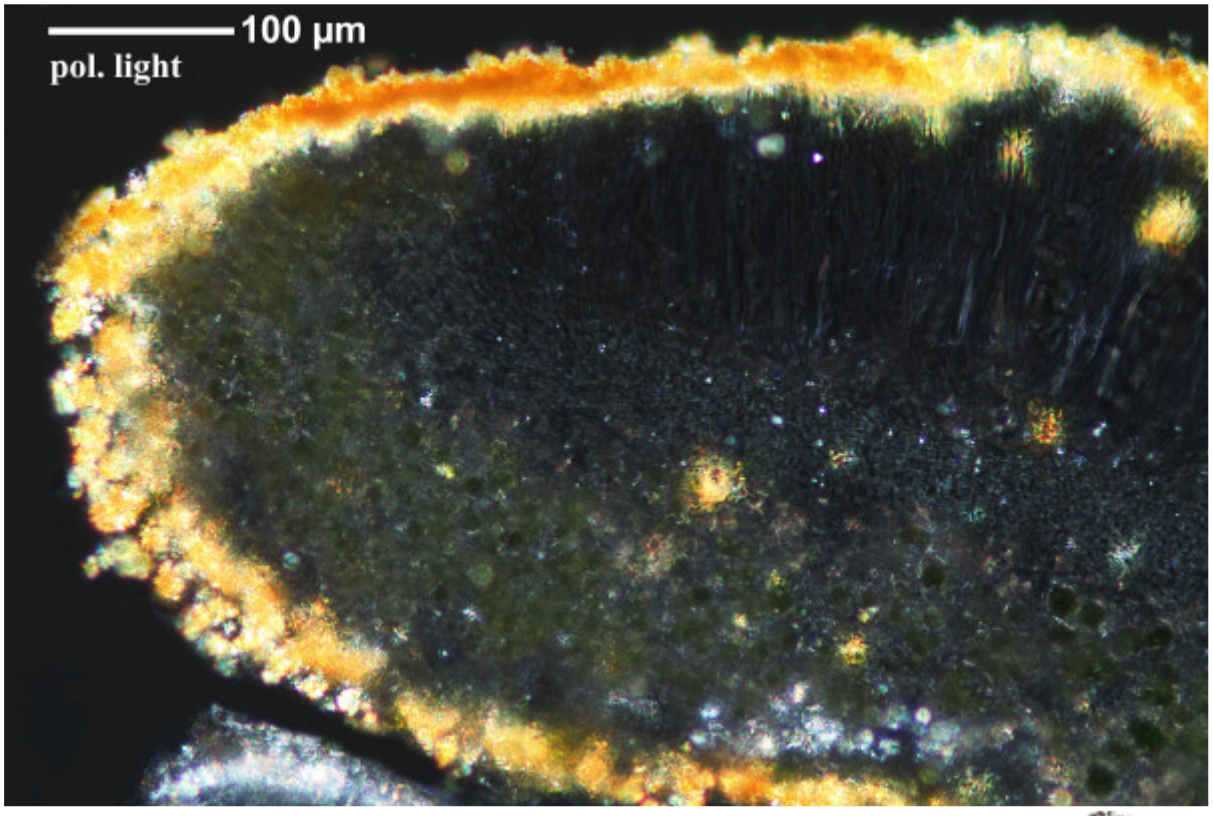


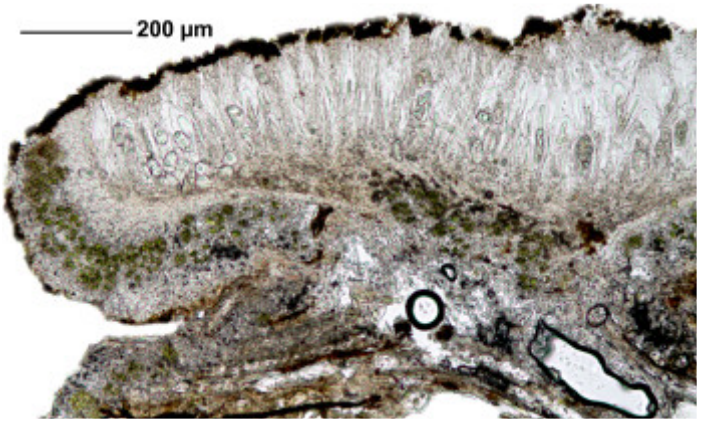




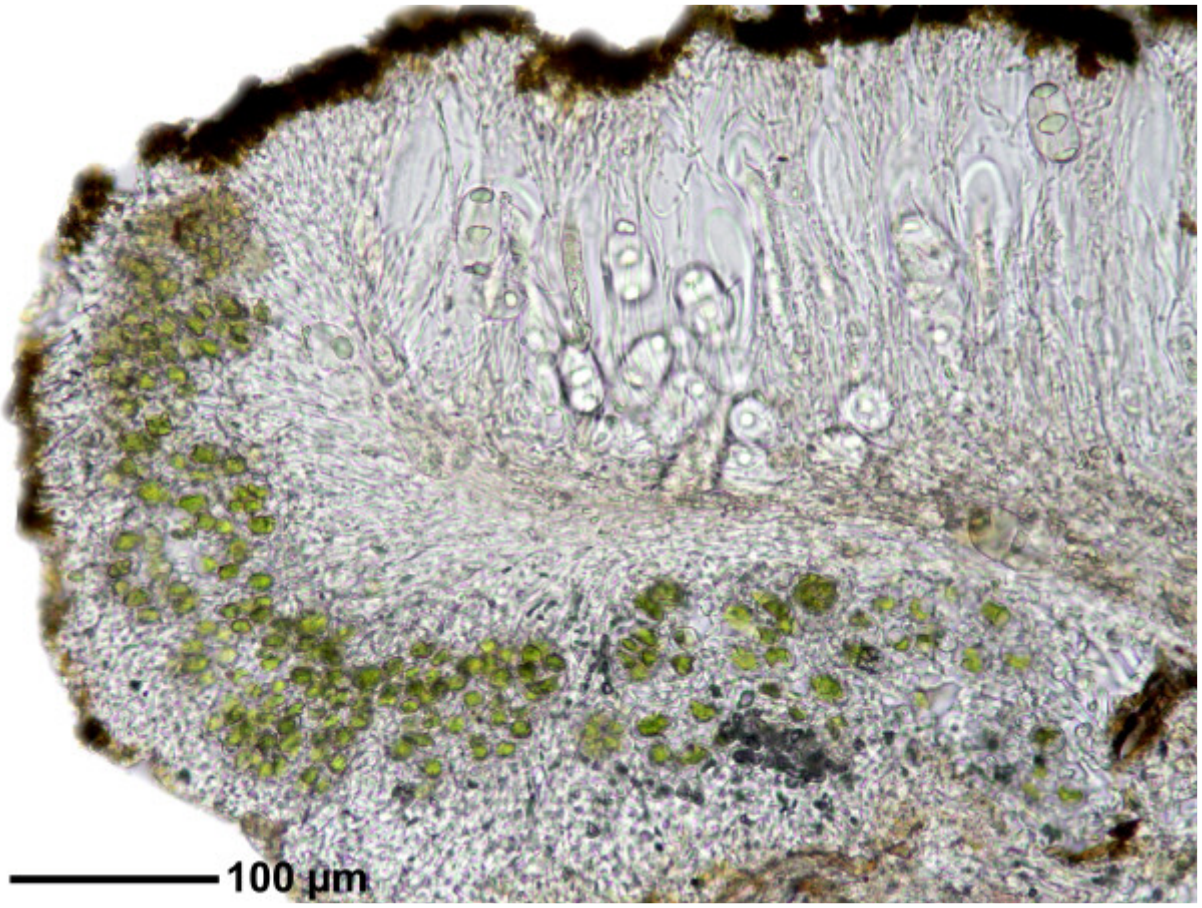
Caloplaca subdecadens

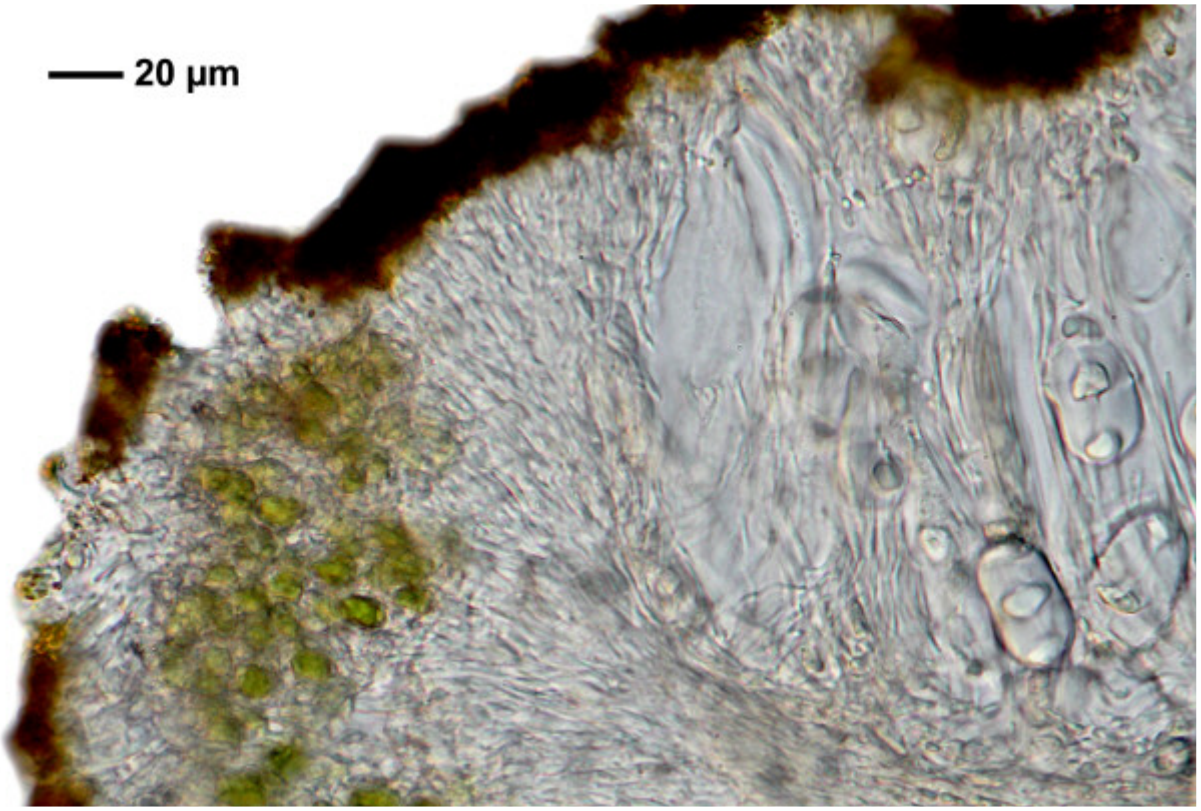




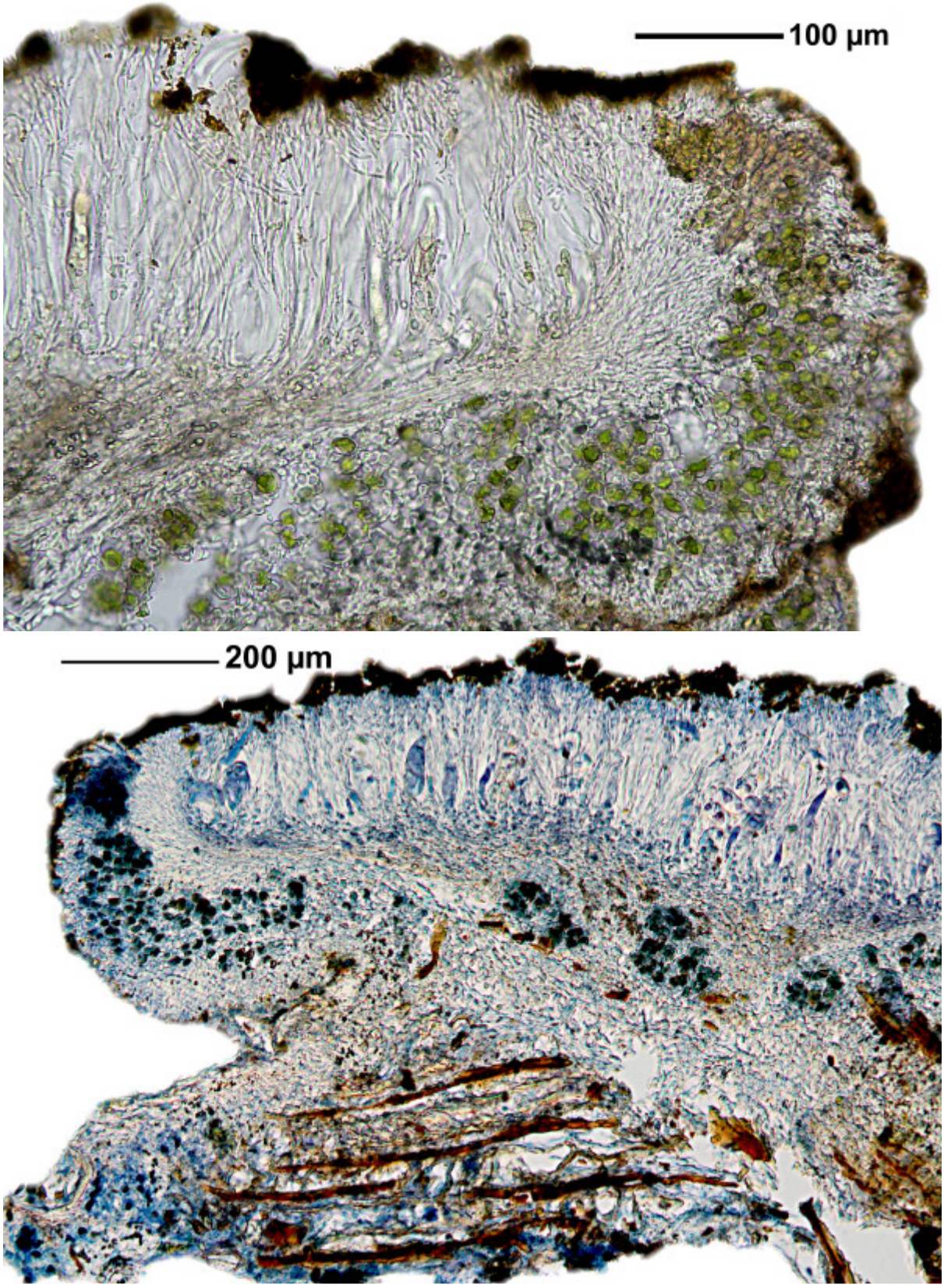


Caloplaca subdecadens

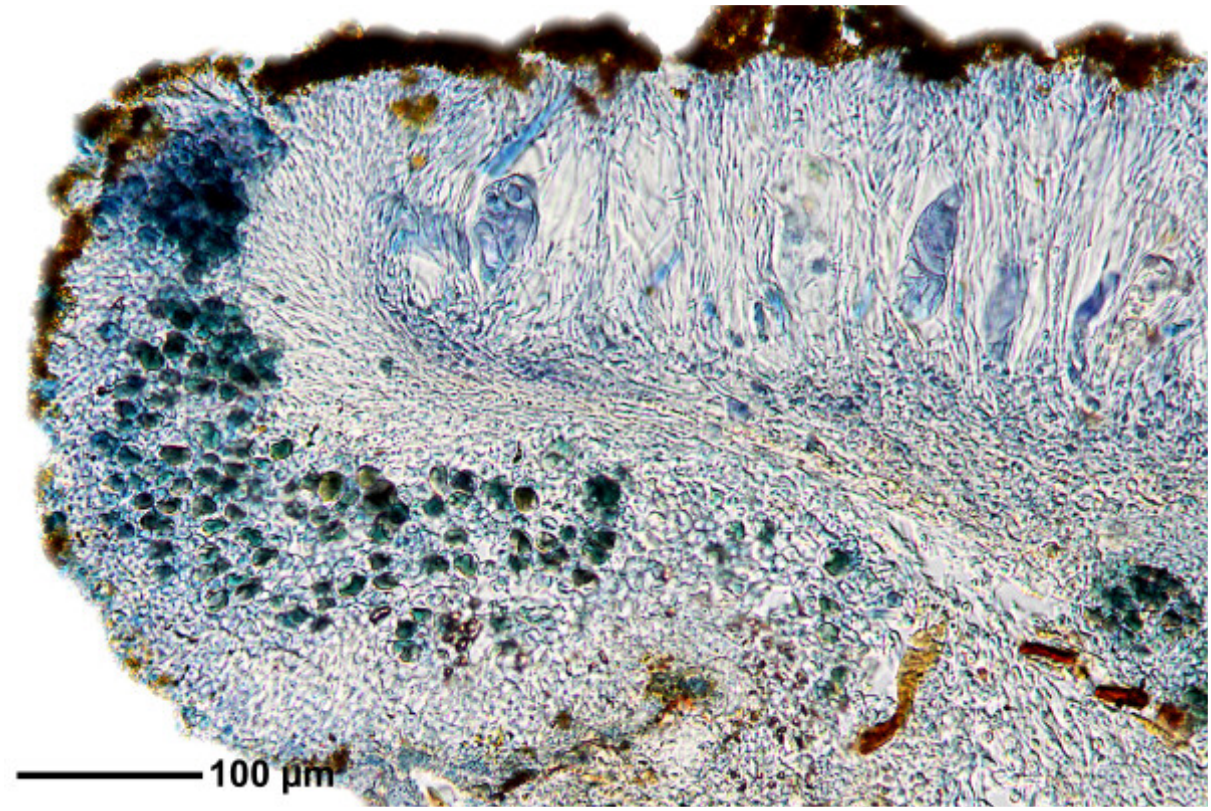


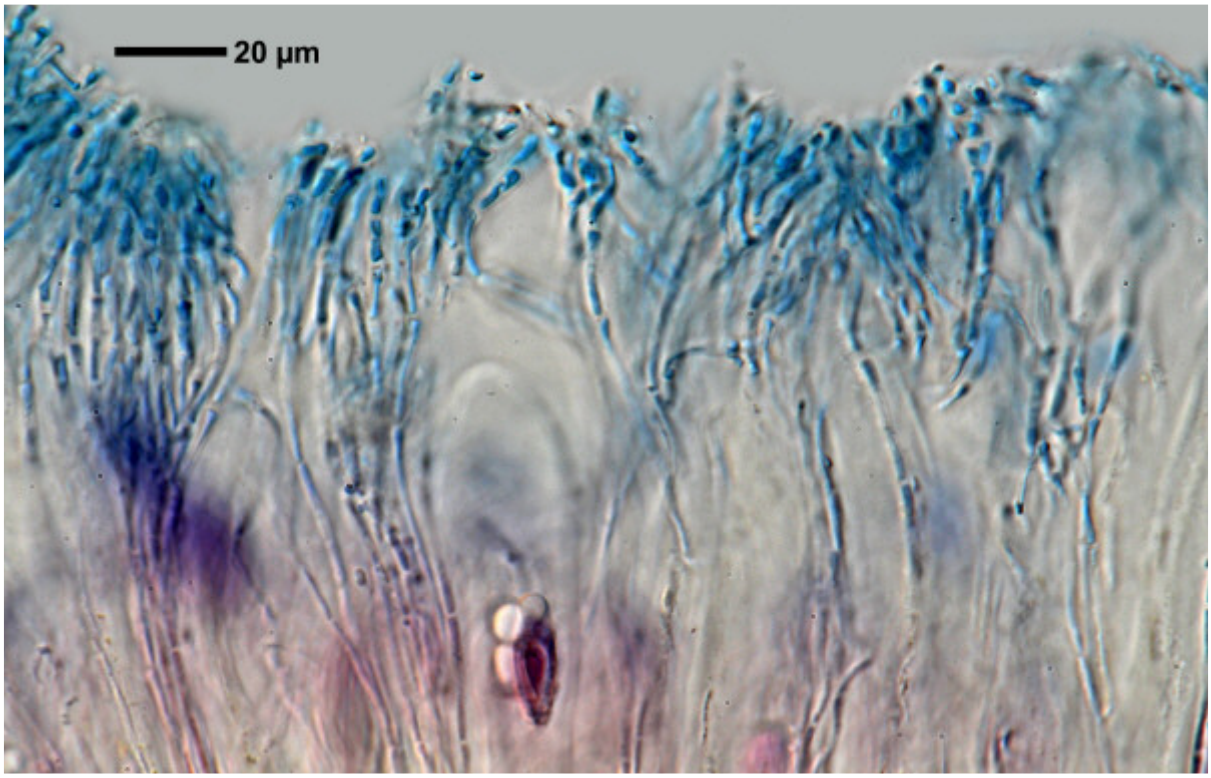


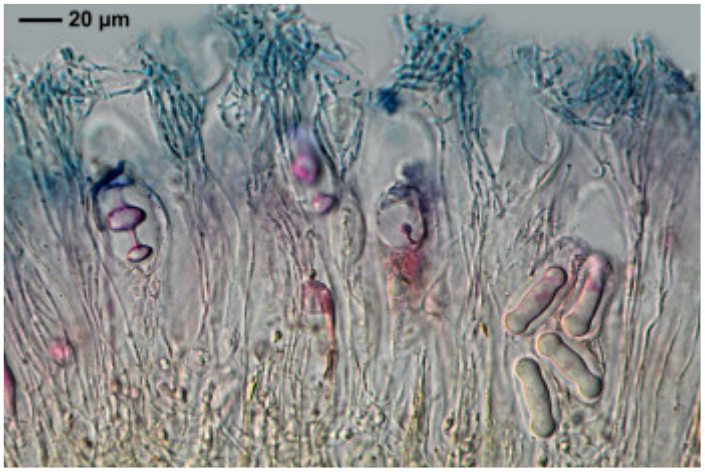
Caloplaca subdecadens



Caloplaca subdecadens





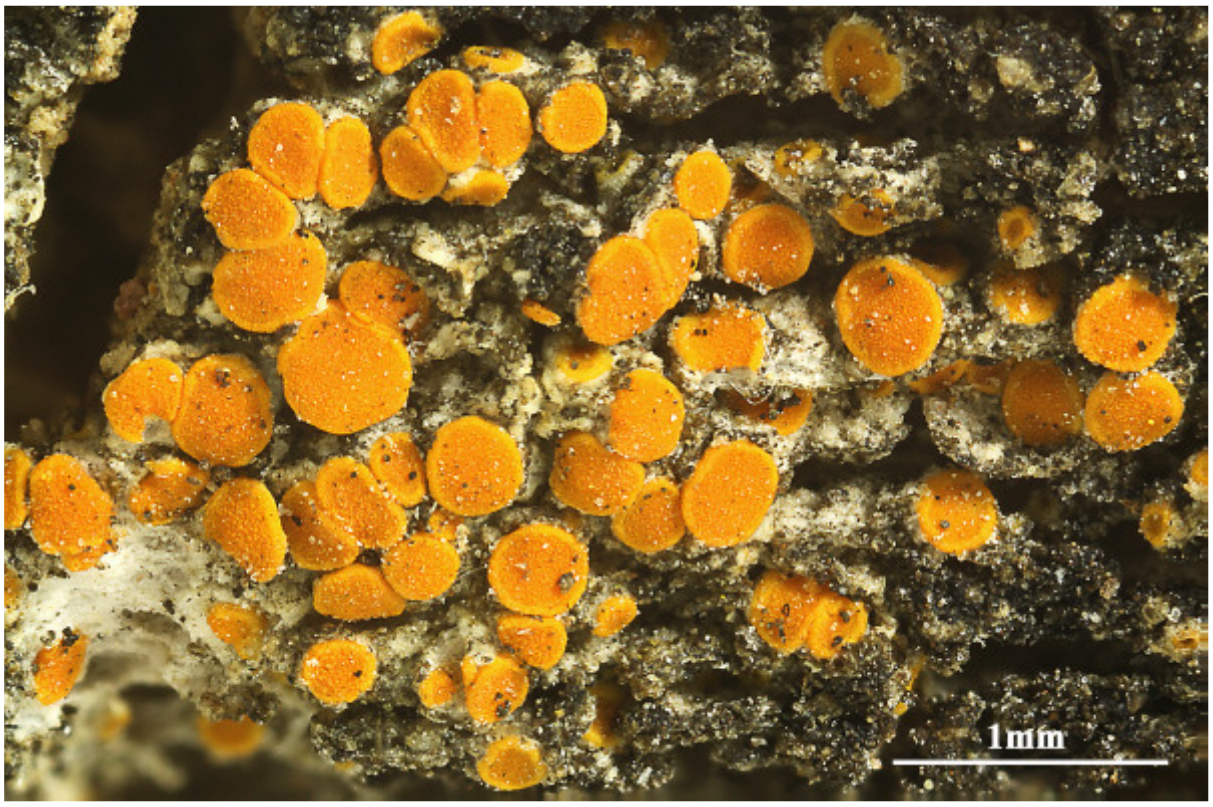


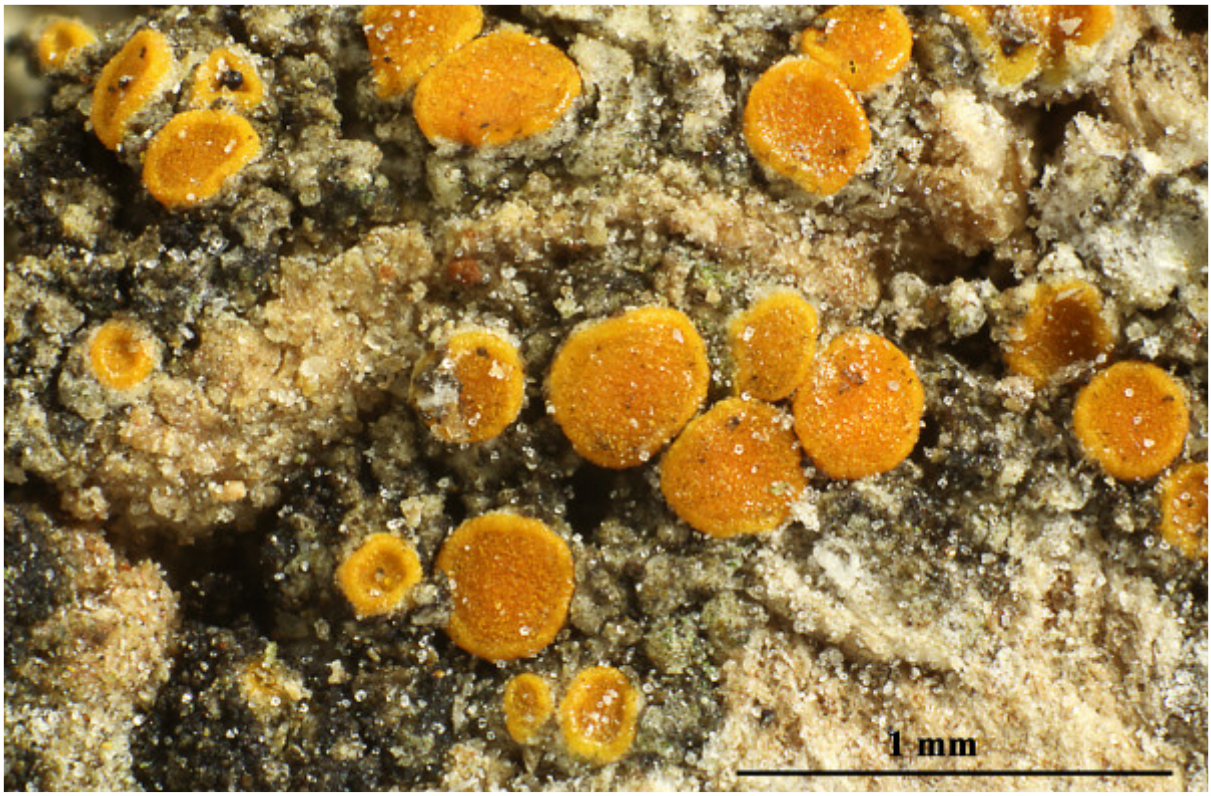
Caloplaca subdecadens

Caloplaca subluteoalba S.Y. Kondr. & Kärnefelt
[= *Cerothallia subluteoalba* (S.Y. Kondr. & Kärnefelt) Arup, Frödén & Søchting 2013]

Thallus corticolous, diffuse, endophloeodic or absent, visible as minute greyish spots. Apothecia 0.2-0.7(-1.2) mm diam., numerous, scattered to densely aggregated, biatorine, disc dull brownish-yellow or greyish-orange, thalline exciple not developed, true exciple yellow. Ascospores (4-)8/ascus, bipolar, hyaline, (7-)8-10(-11) x (3-)4-5.5 µm, septum (1.5)2-2.5(-3) µm. Chemistry: parietin (major); apothecium K+ brownish purple to crimson-purple. Differs from *Caloplaca luteoalba* by the absence of a thallus and the swollen tips of paraphyses (5-6 µm) with oil cells. Lit.: Kondratyuk, Kärnefelt, Elix & Thell, Bibliotheca Lichenol. 100: 269 (2009)

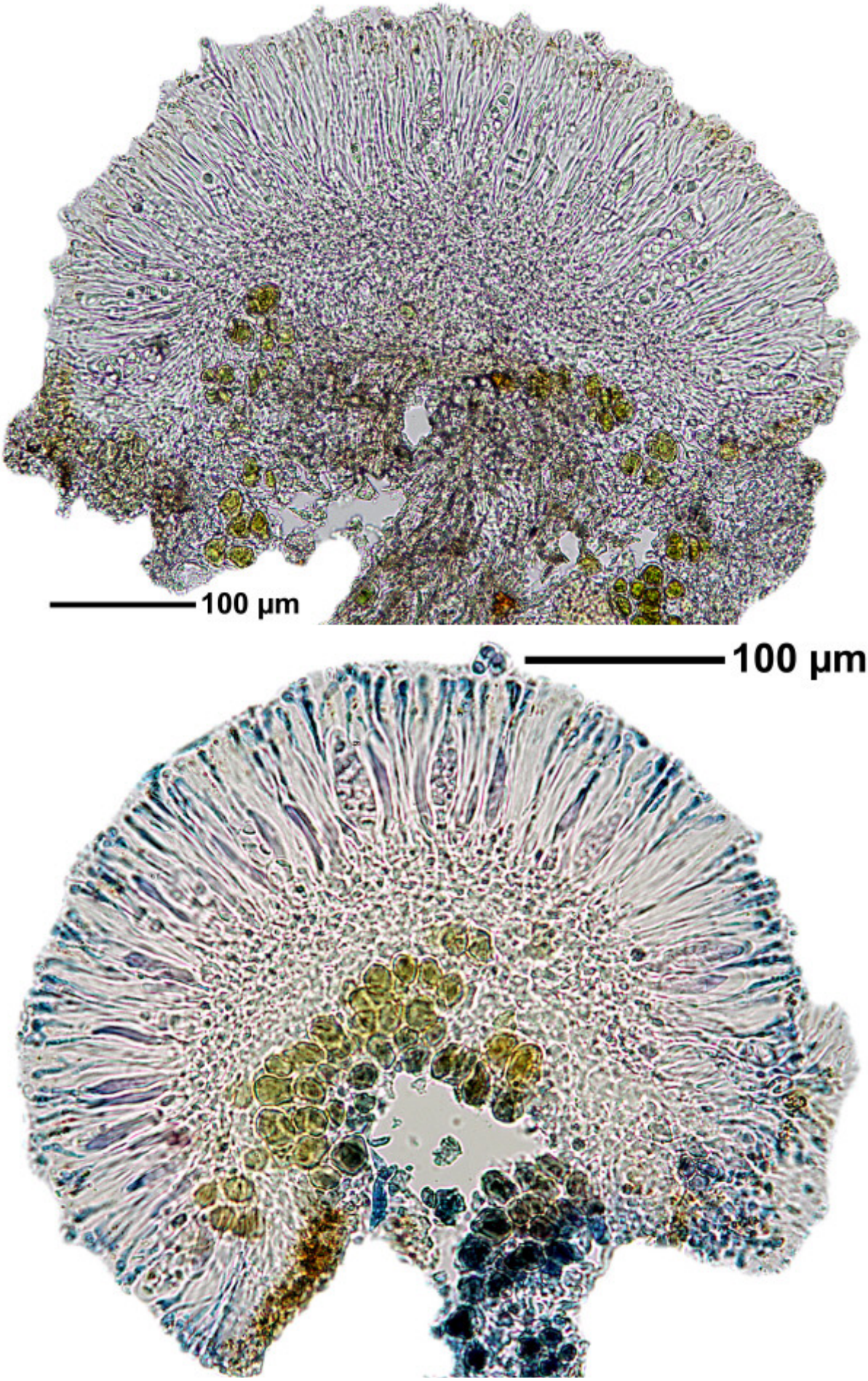
[KK20323], Australia, New South Wales, c. 20 km west of Armidale, in a rocky pasture with granite and porphyritic rocks, at the Bundarra Road, 900 m, 30°31’ S, 151°30’ E. Leg. K. Kalb & J. Williams, 9.8.1988, det. S. Kondratyuk.



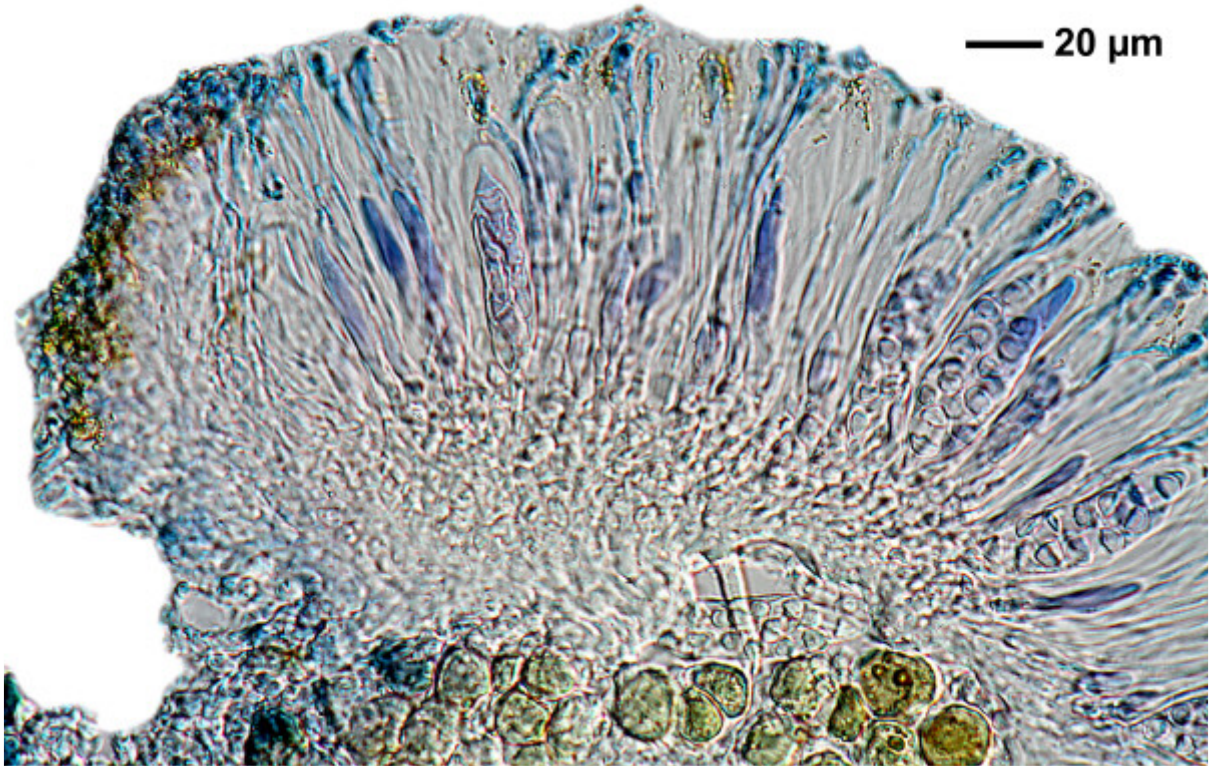


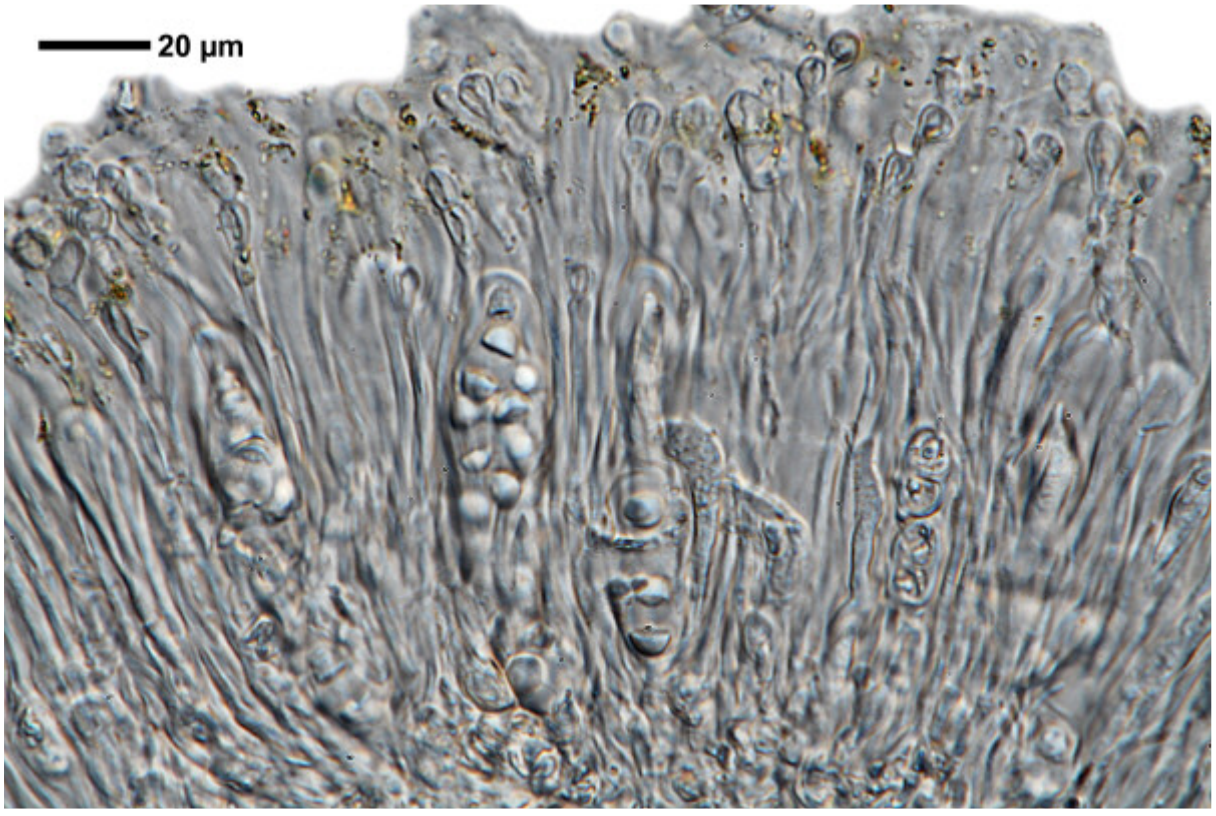


Caloplaca subluteoalba



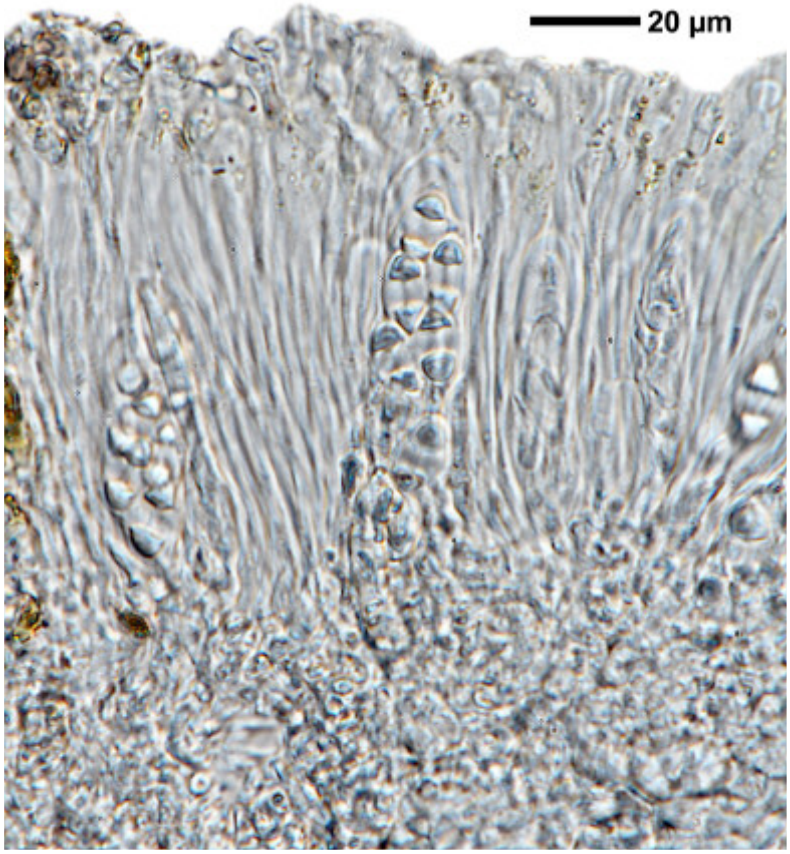
Caloplaca subluteoalba

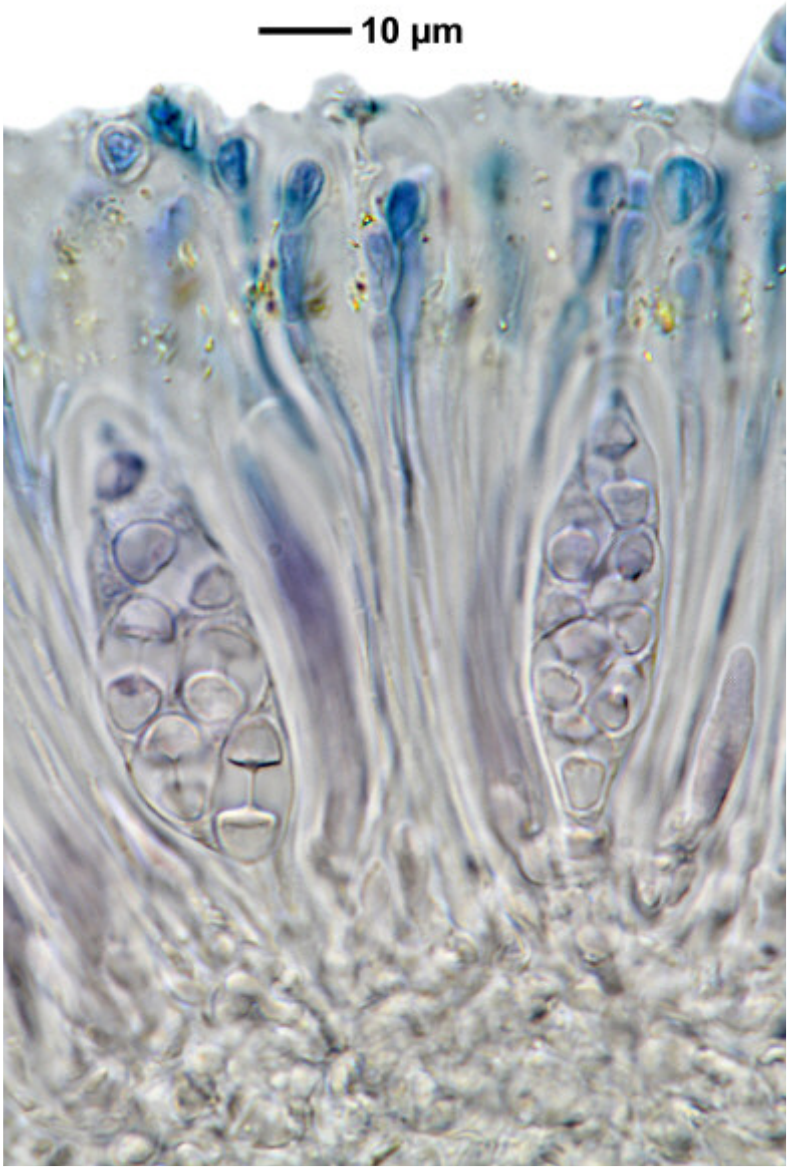




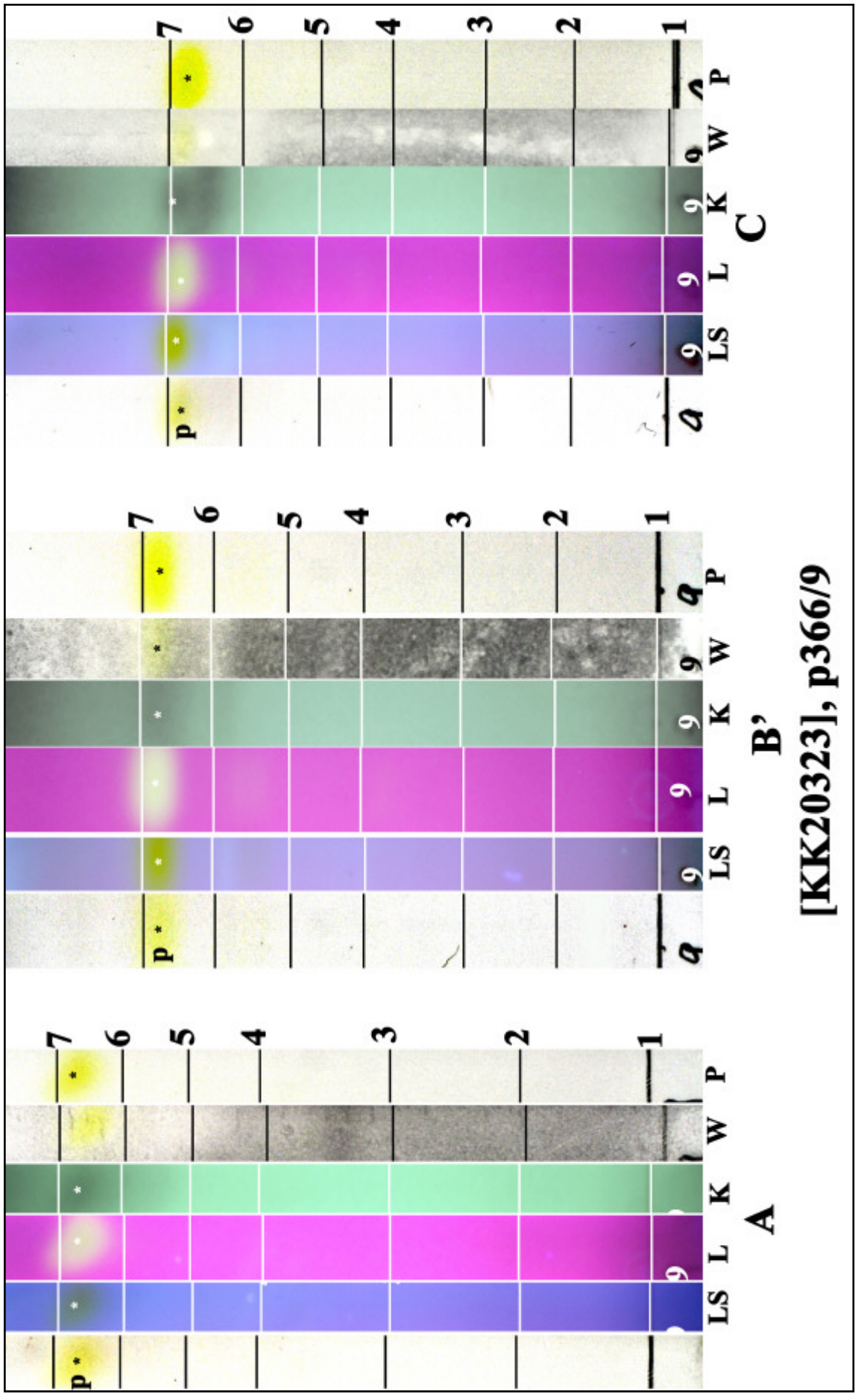


Caloplaca subluteoalba





Caloplaca subluteoalba

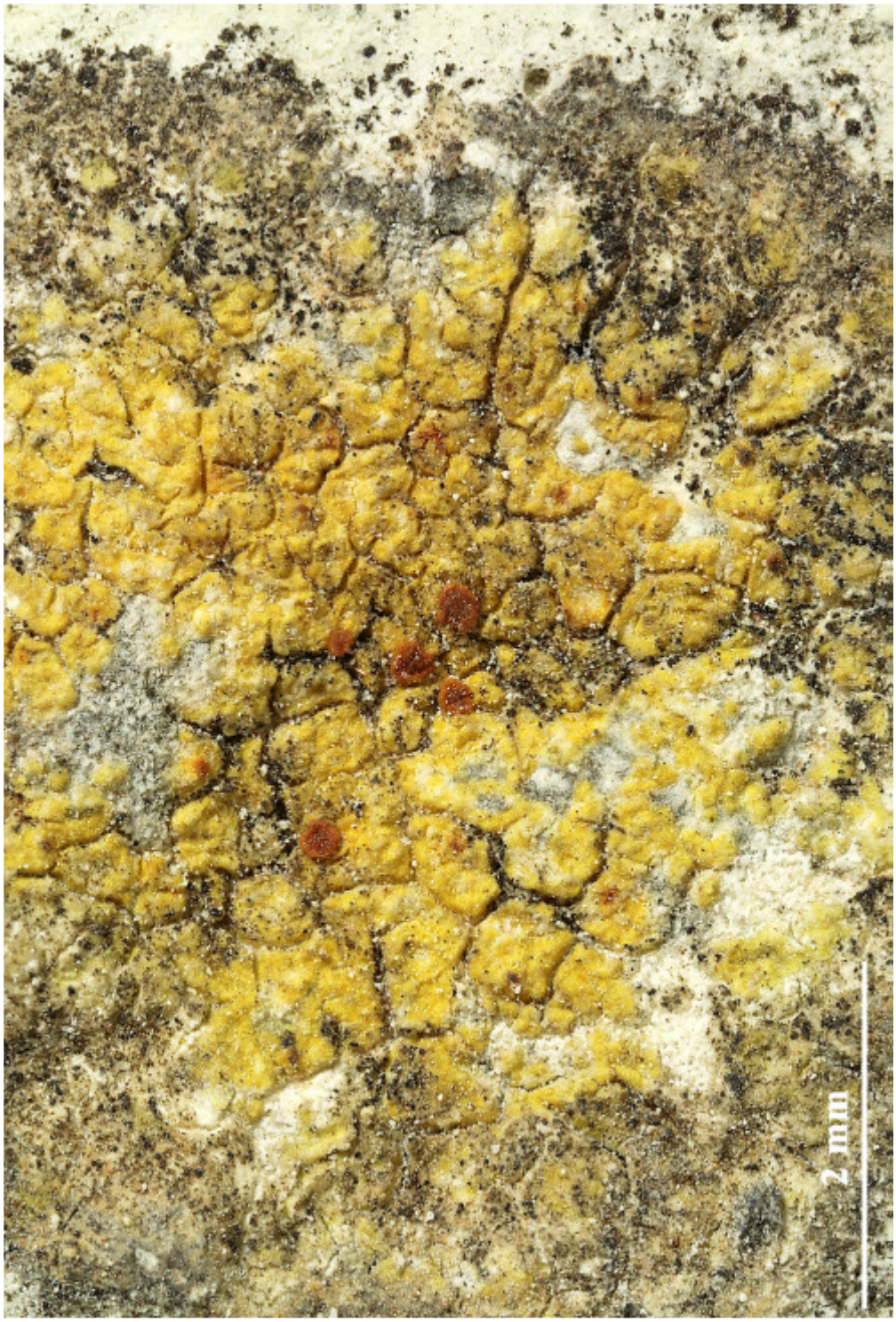


Caloplaca subluteoalba

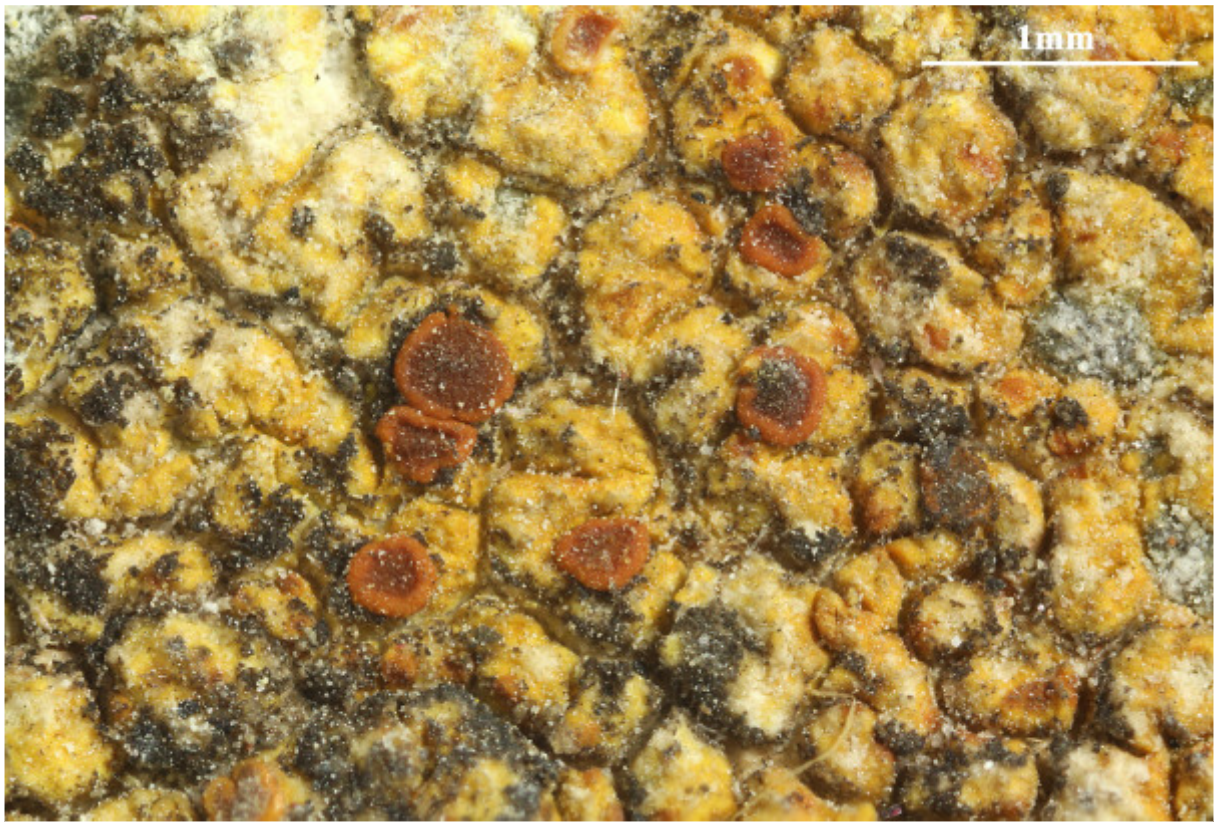
Caloplaca subochracea (Wedd.) Werner var. ***luteococcinea*** Clauzade & Cl.Roux
[= *Blastenia subochracea* (Wedd.) Arup, Søchting & Frödén]

Spores 9-12 x 3.9-4.9 µm, septum 0.9-4.7 µm (FS). On calcareous rocks. Lit. Clauzade et Roux in Bull. Soc. Linn. Provence 30:27-31 (1977)

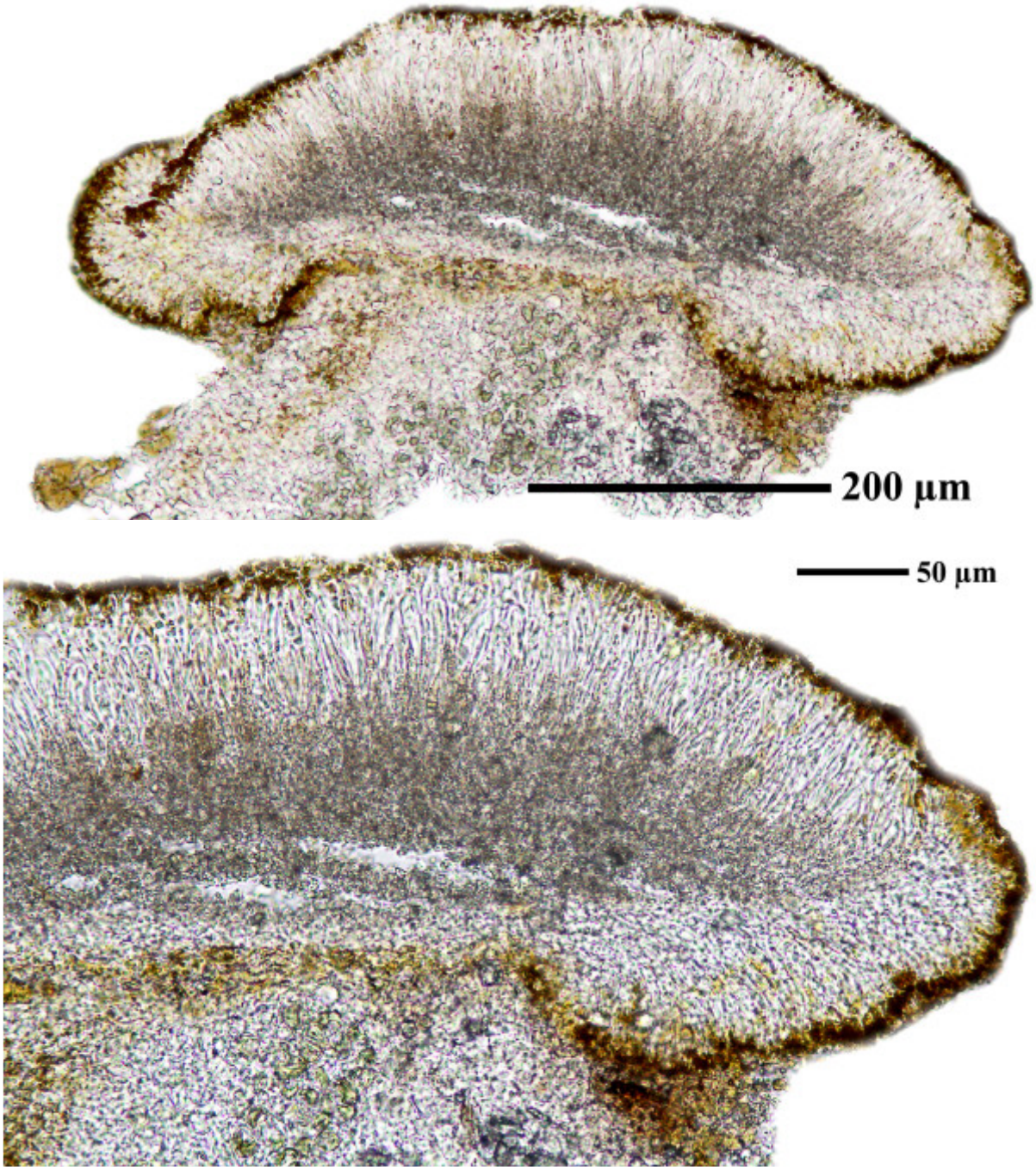
[19604], Hispania, Levant, Penon de Ifach, alt. 150 m, in vicinitate maris, ad saxa calcarea. Leg. Cl. Roux, 25.08.1977, det. G. Clauzade. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1710.



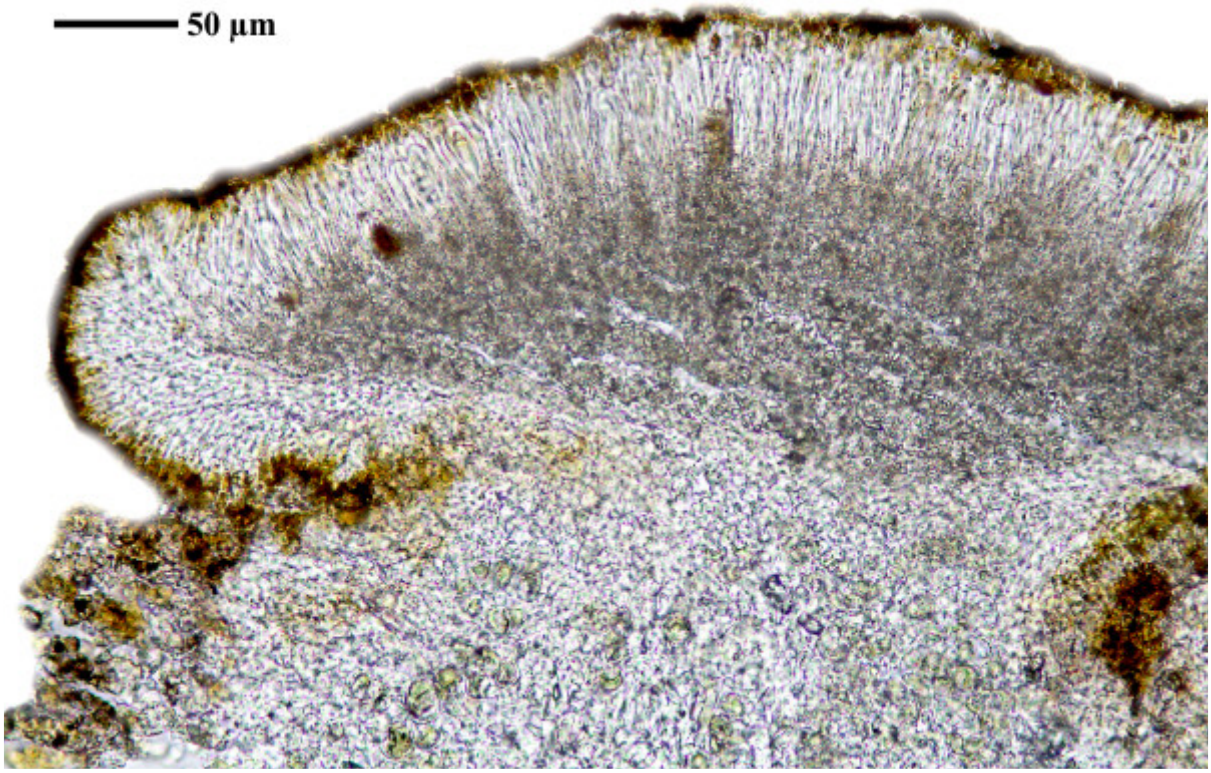


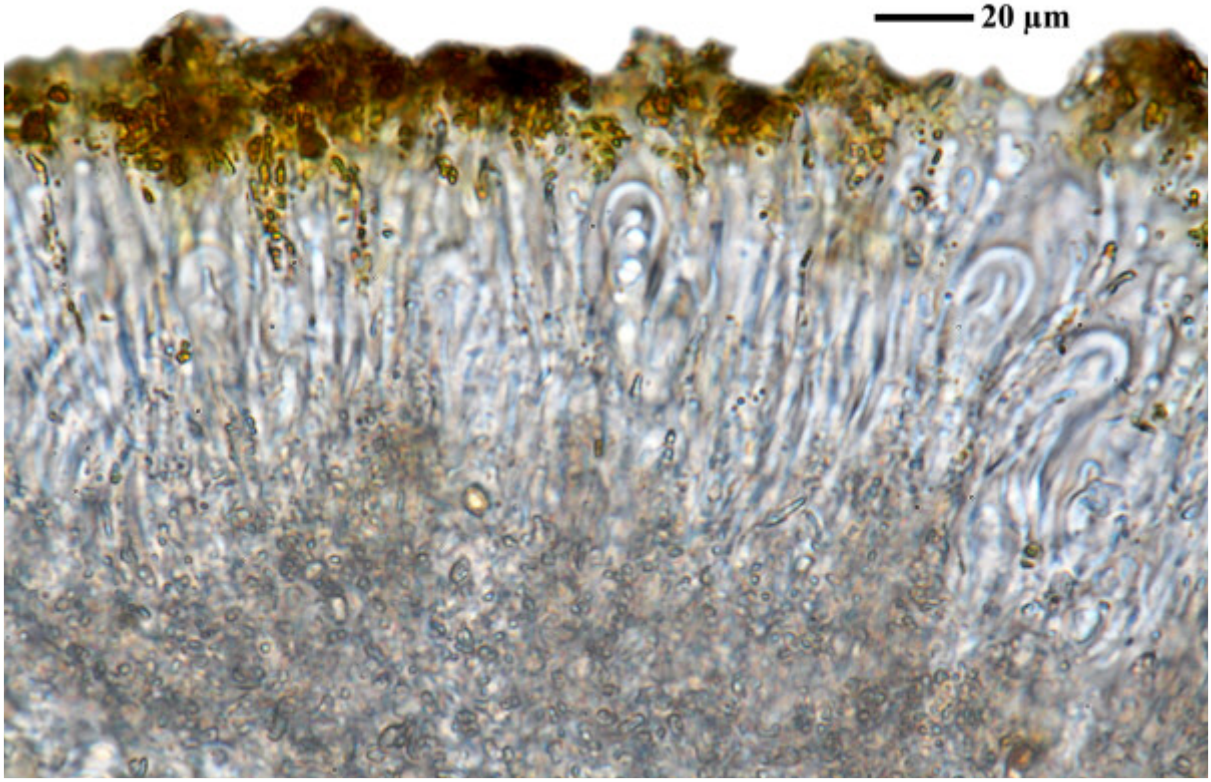


Caloplaca subochracea var. ***luteococcinea***

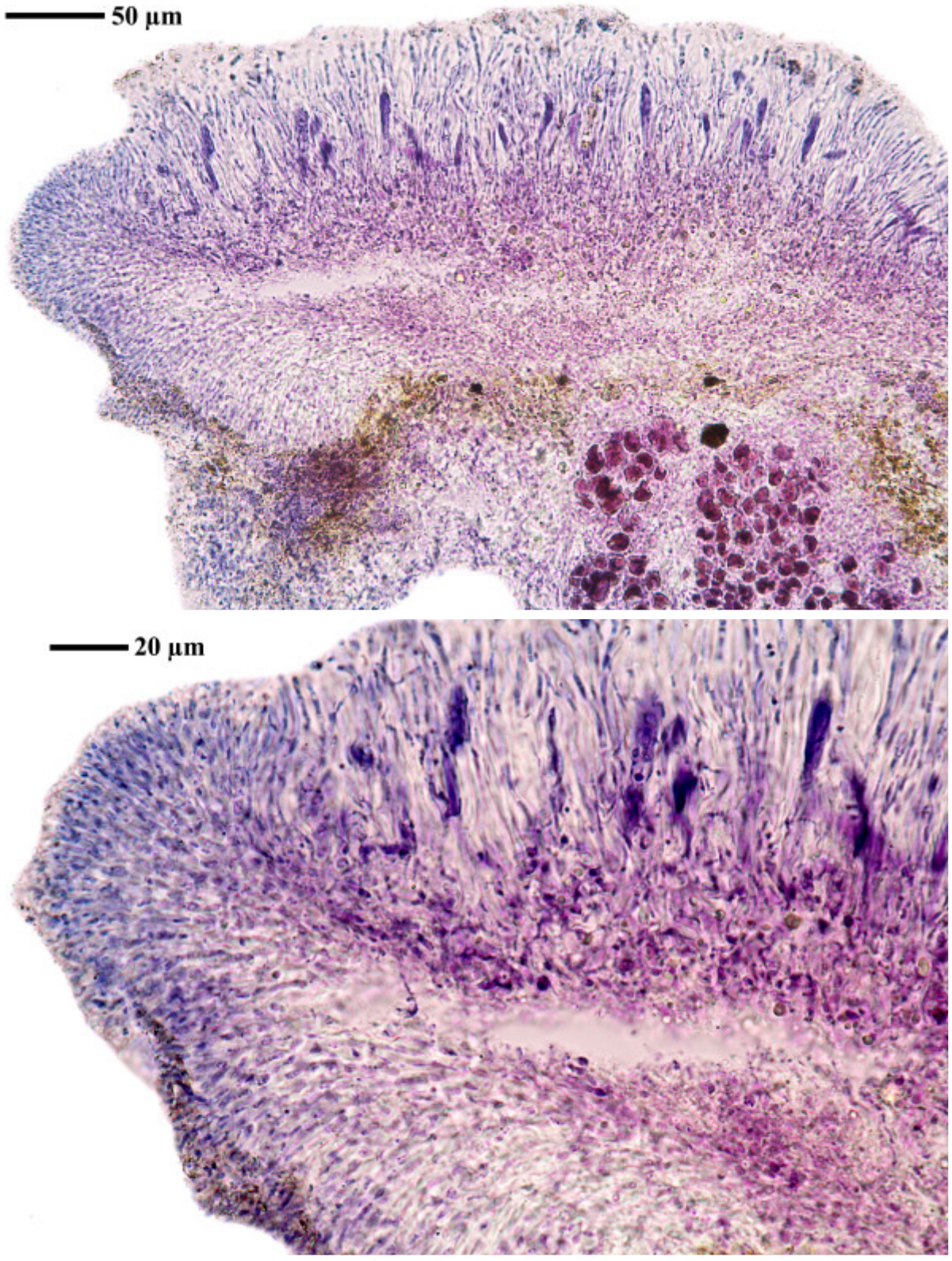


Caloplaca subochracea var. ***luteococcinea***

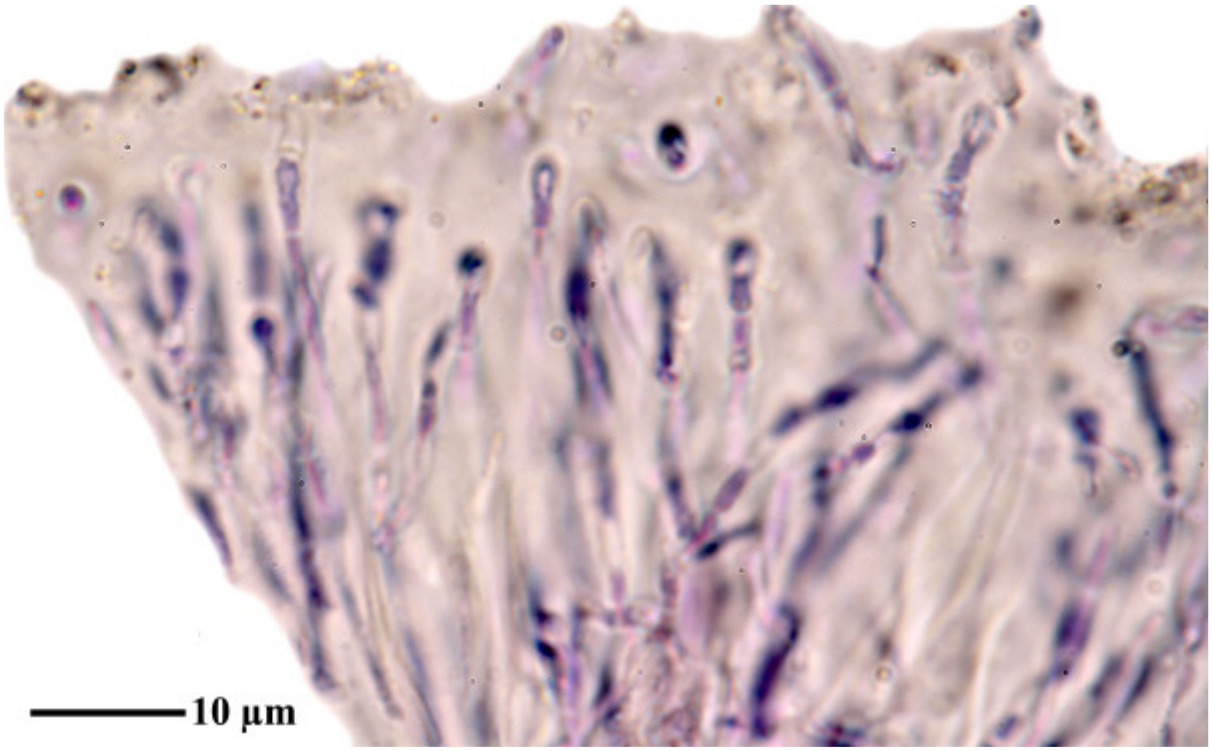


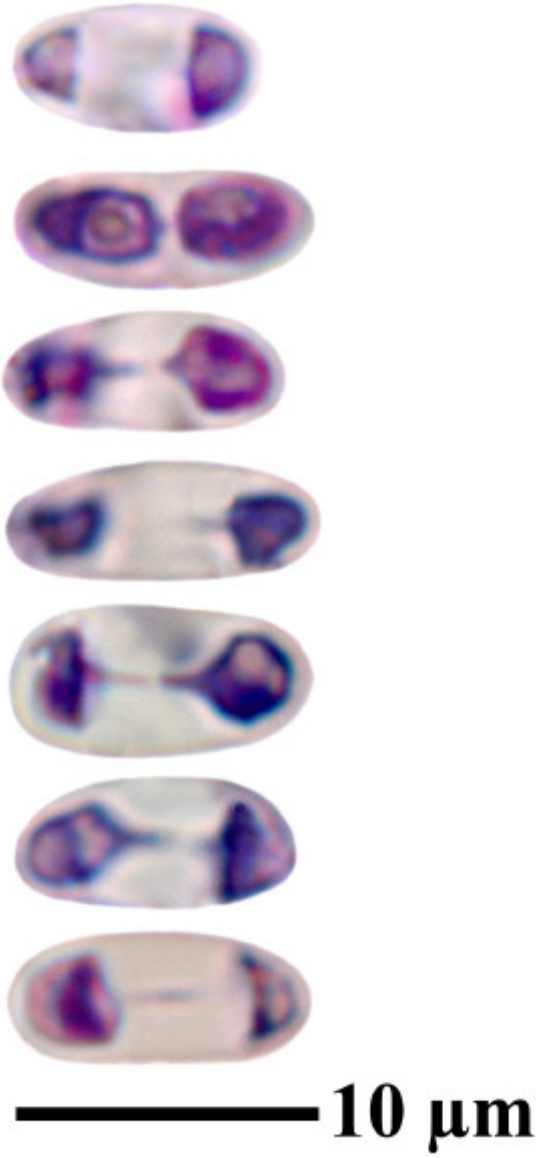


Caloplaca subochracea var. ***luteococcinea***



Caloplaca subochracea var. ***luteococcinea***





Caloplaca subochracea var. ***luteococcinea***

Caloplaca subochracea (Wedd.) Werner var. ***luteococcinea*** Clauzade & Cl.Roux
[Syn. *Blastenia subochracea* (Wedd.) Arup, Søchting & Frödén]

Spores 9.7-11.4 x 4.8-5.7 µm, septum 0.6-2.8 µm (FS). On calcareous rocks. Lit. Clauzade et Roux in Bull. Soc. Linn. Provence 30: 26 (1077)

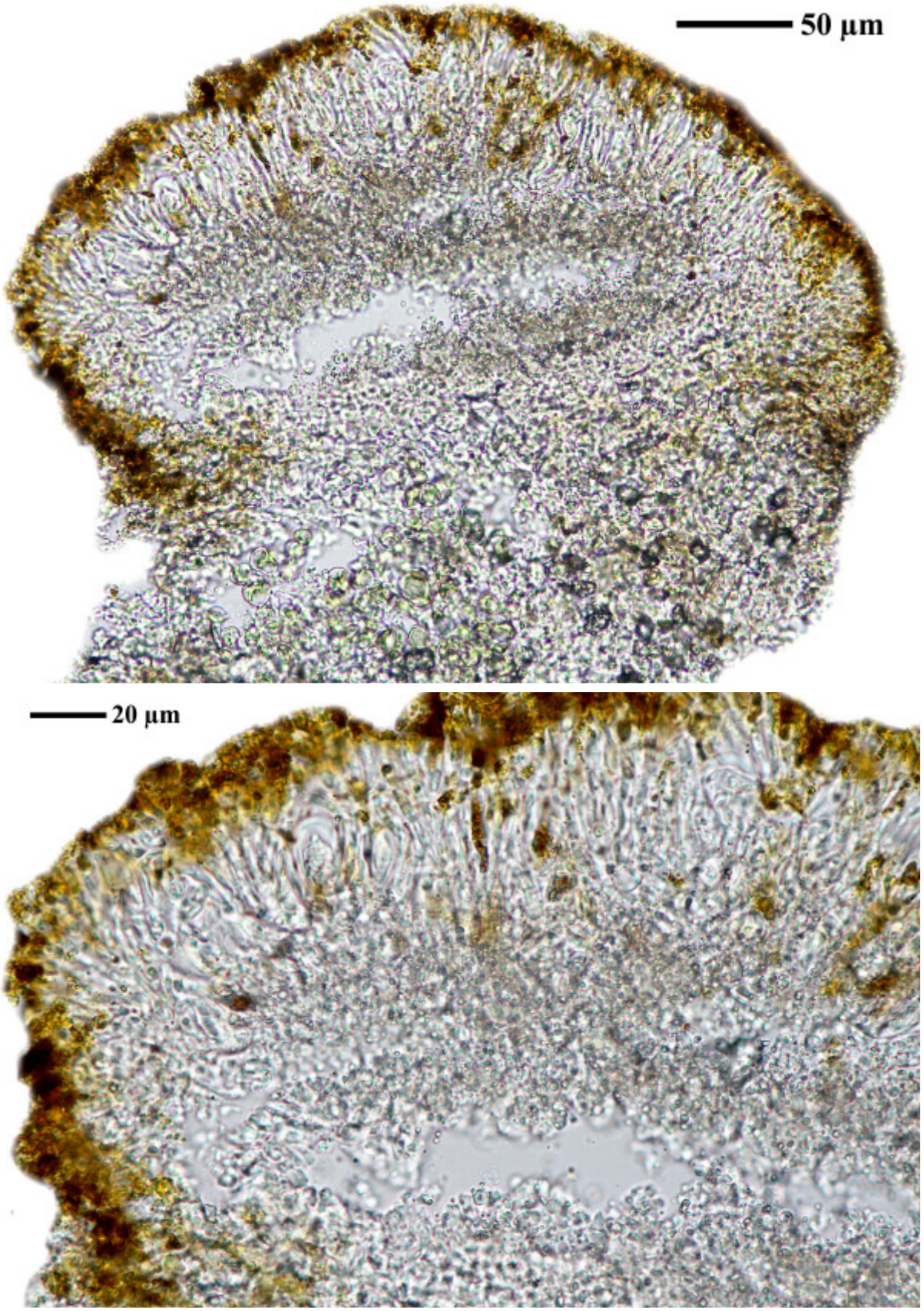
[19605], Hispania, Gerona, Rosasa, Cabo Morfeo, ad saxa calcarea. Leg. X. Llimona, 9.09.1976, det. M. Egea. VEZDA: LICHENES SELECTI EXSICCATI NR. 1972.



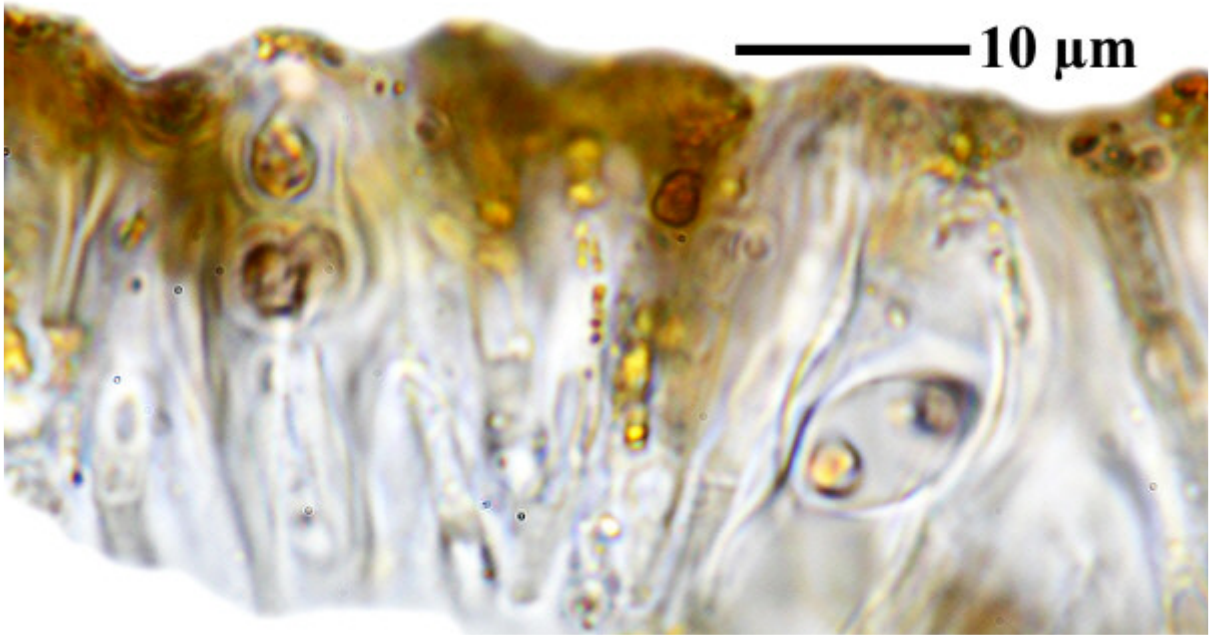


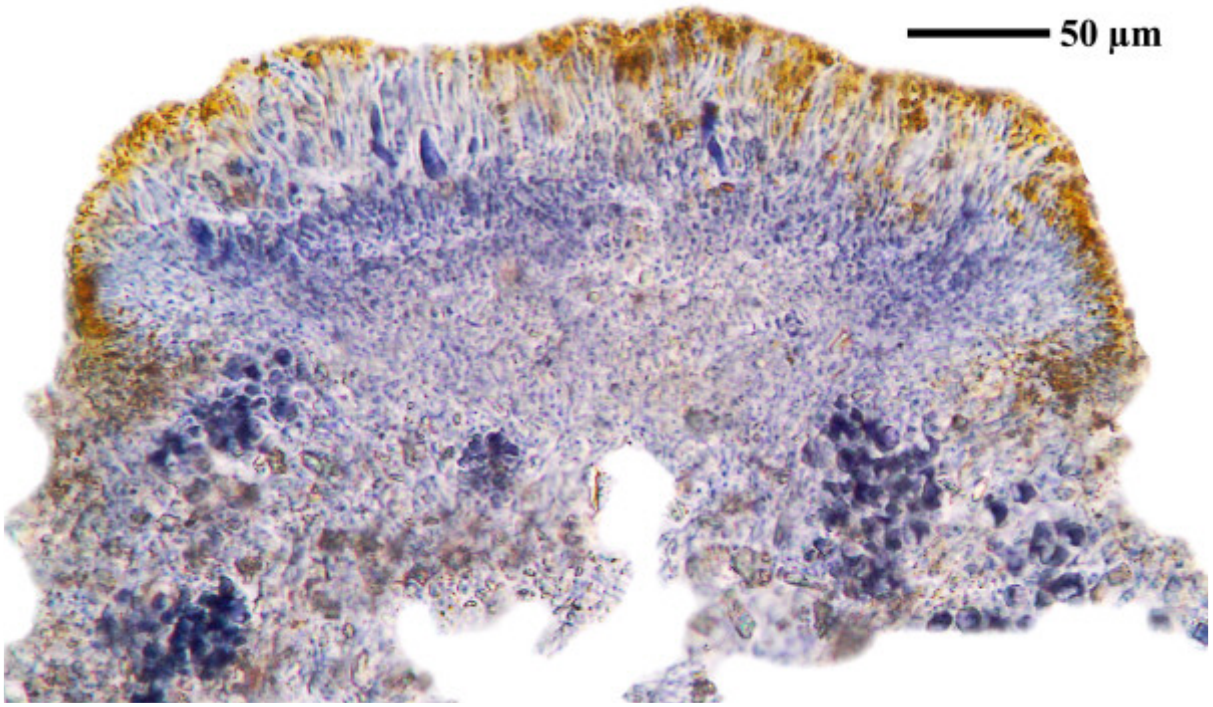


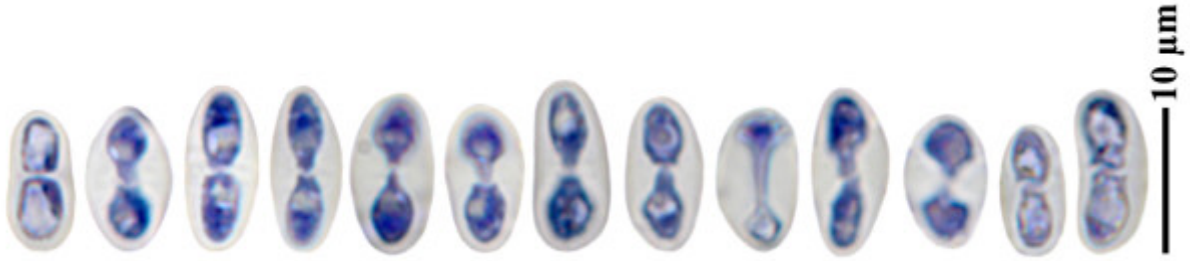
Caloplaca subochracea var. ***luteococcinea***



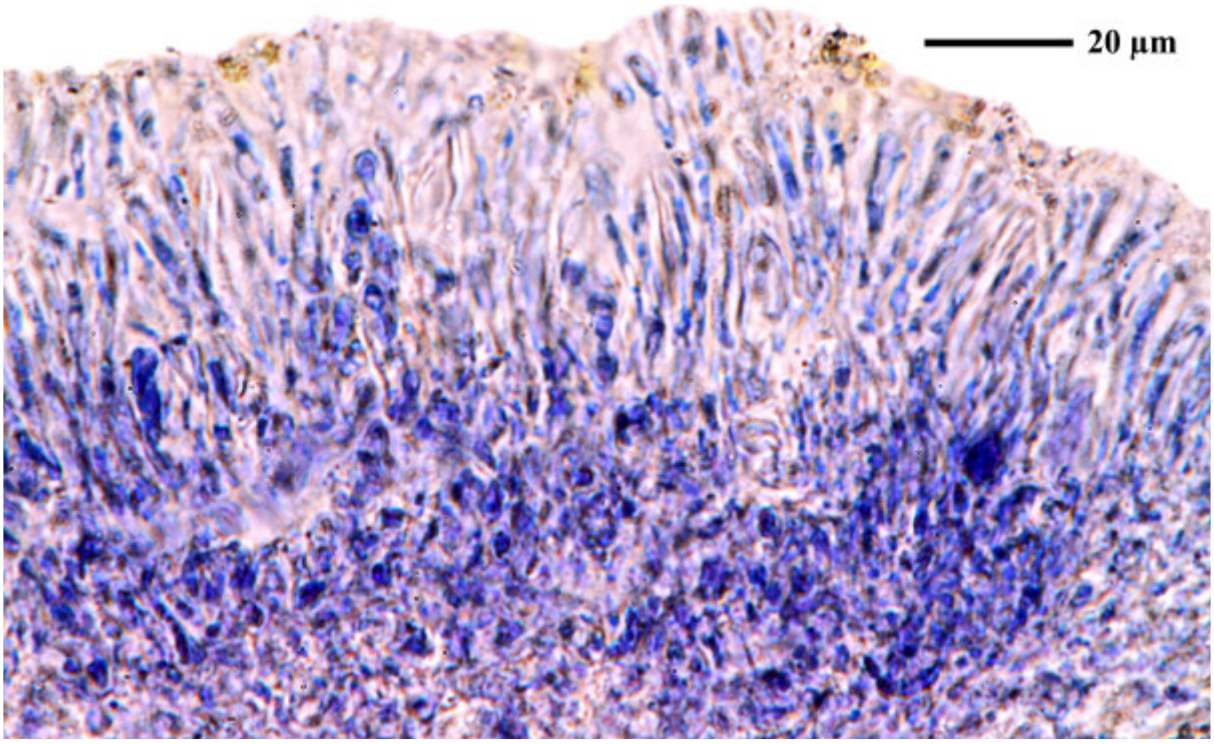
Caloplaca subochracea var. ***luteococcinea***

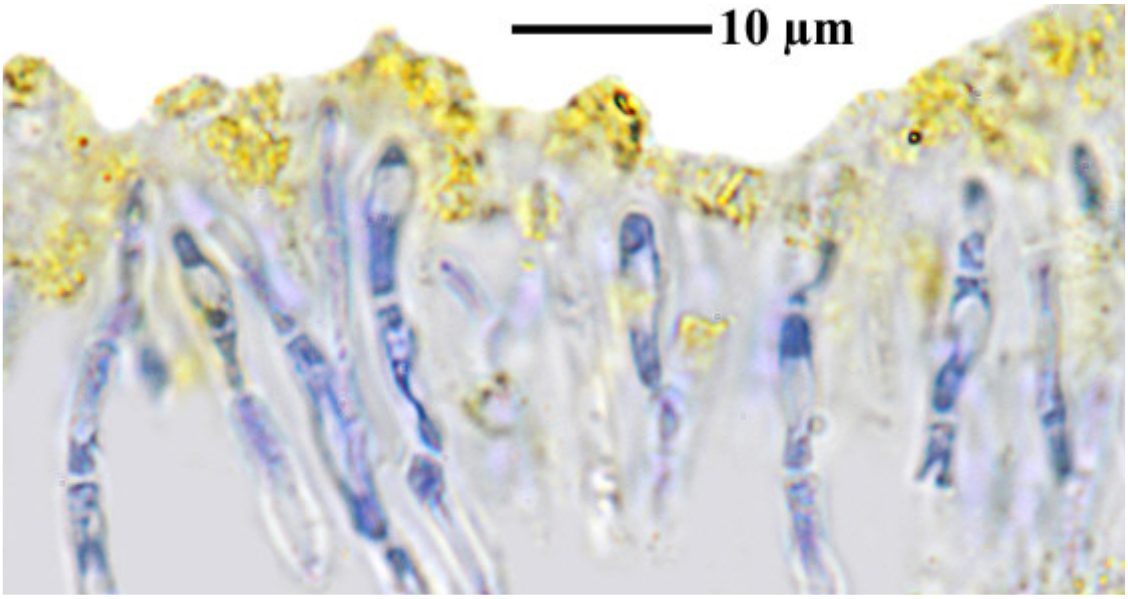






Caloplaca subochracea var. ***luteococcinea***



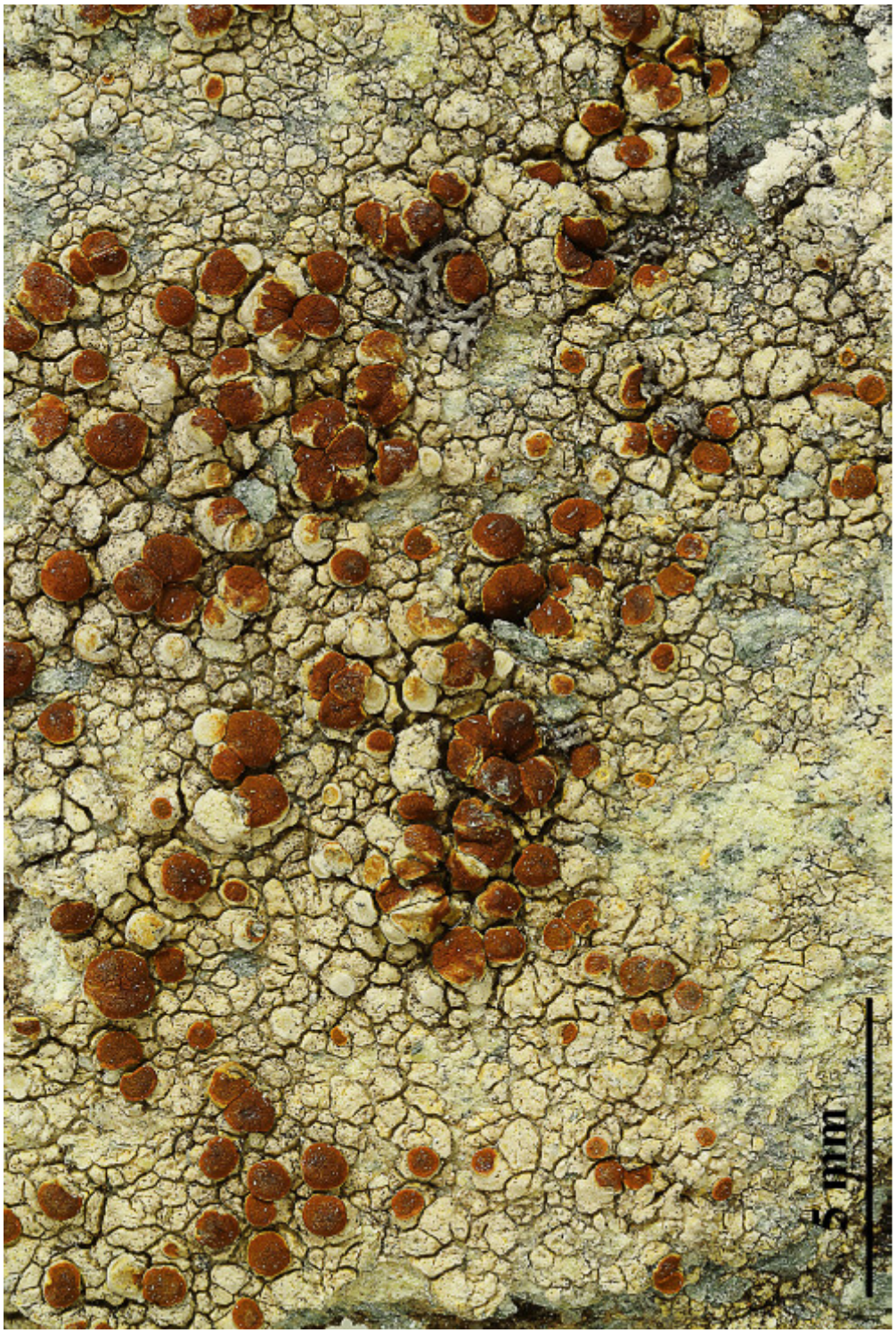


Caloplaca subochracea var. ***luteococcinea***

Caloplaca subochracea (Wedd.) Werner var. ***luteococcinea*** Clauzade & Cl. Roux, Bull. Soc. linn. Provence 30: 29 (1978)

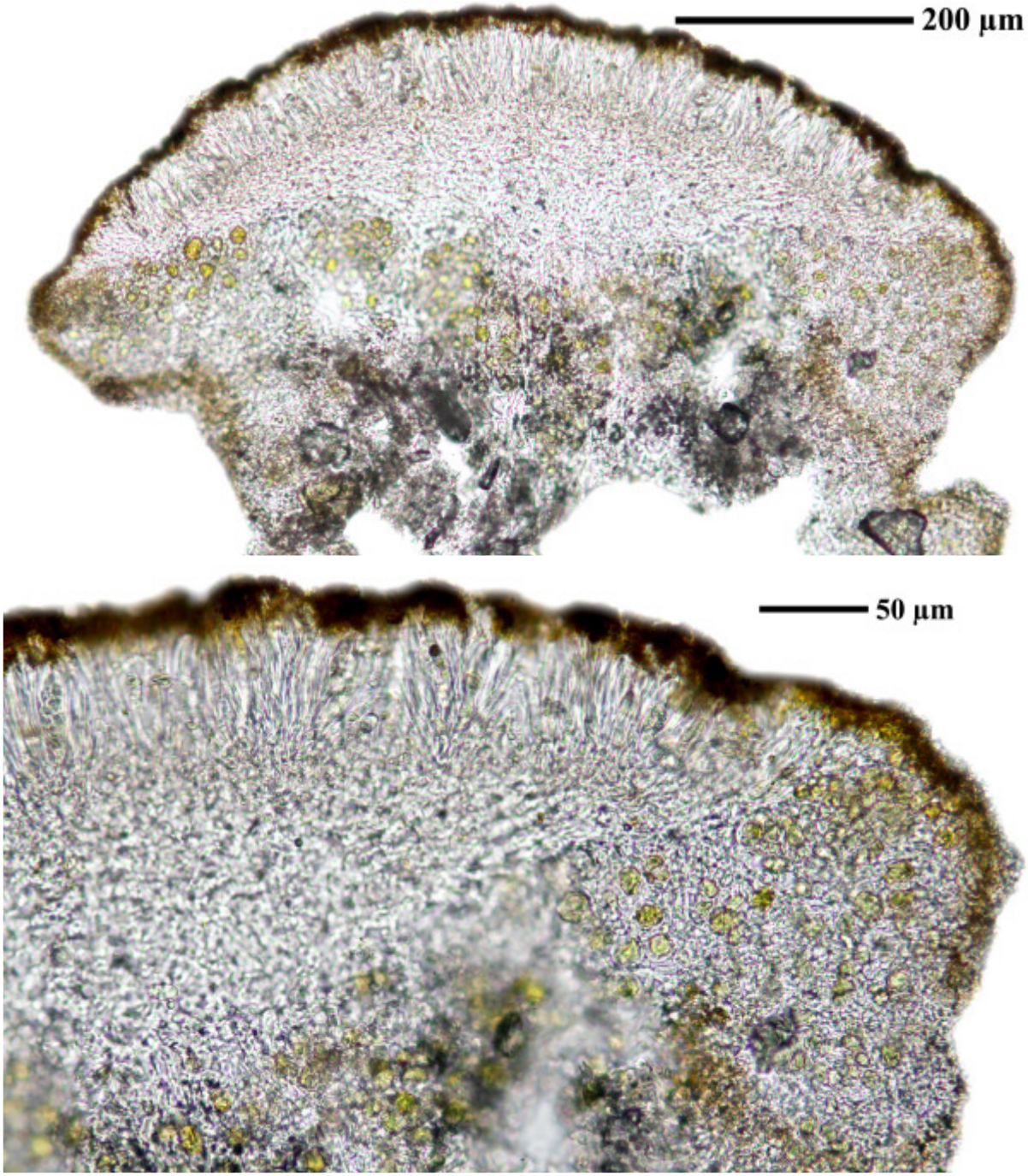
Spores 12.5-13(-16) x 7-7.5(-7.8) µm, septum 4.5-6(-6.5) µm (FS). On not-calcareous rocks.

[19580], Austria, Tirolia, alpes dicti "Hohe Tauern", Grube, secus viam inter Stein et casas alpinas "Sudetendeutsche Hütten" dictas, alt. 1800 m, ad saxa schistosa. Leg. J. Horáková & A. Vězda, 31.07.1988. VĚZDA: LICHENES SELECTI EXSICCATI NR. 2294. Distributed as *Caloplaca flavovirescens* (Wulfen) Dalla Torre & Sarnth

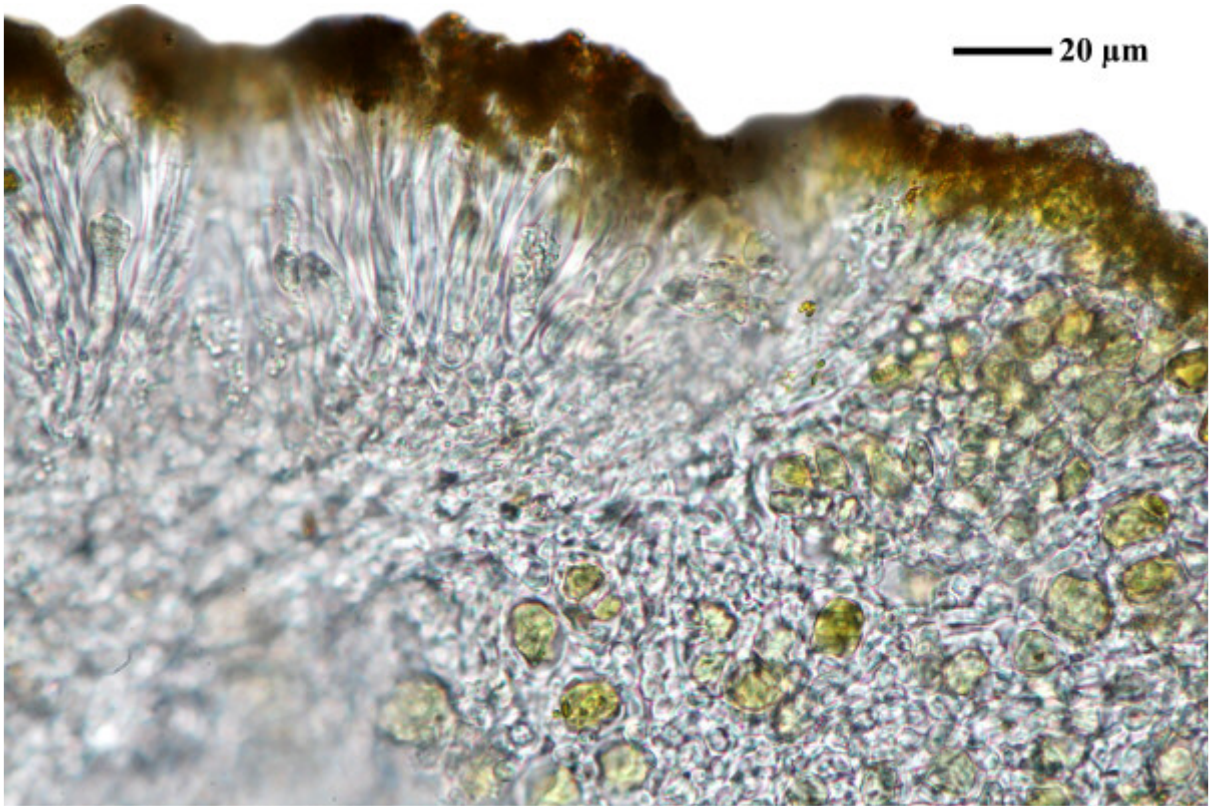


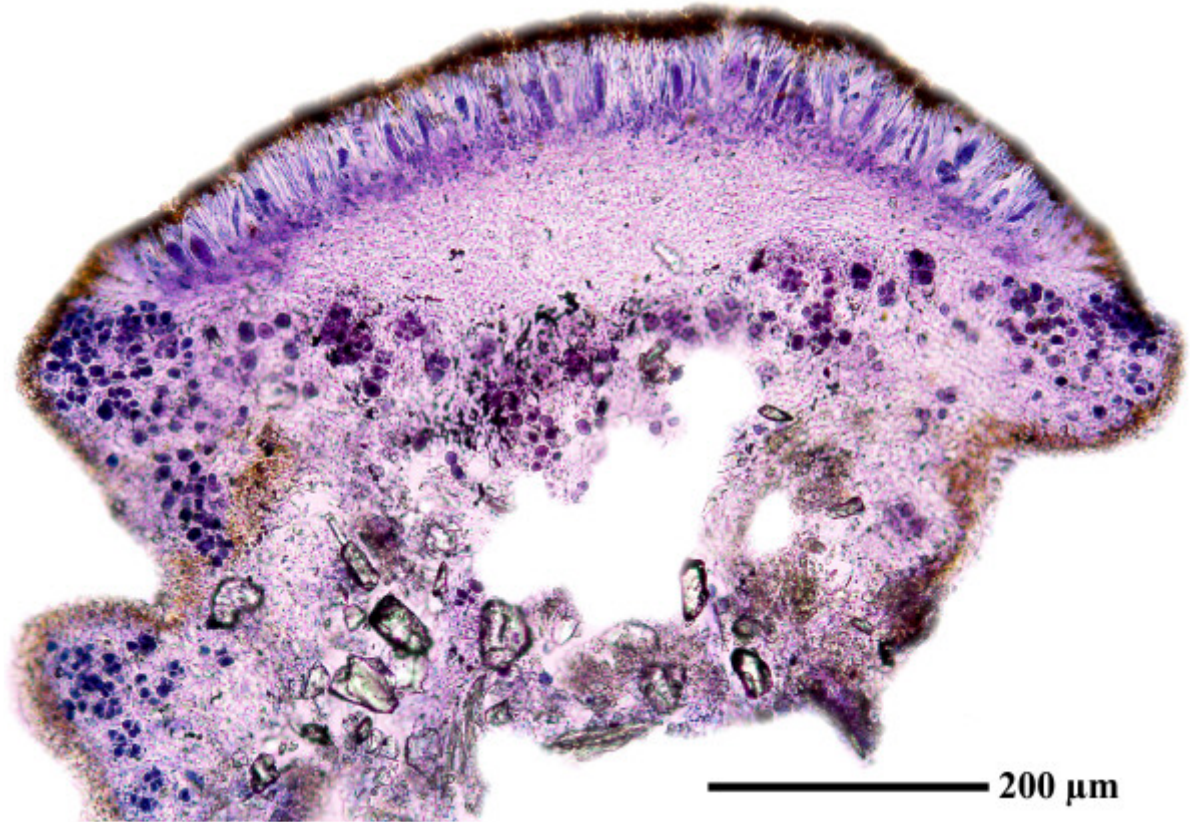


Caloplaca subochracea var. ***luteococcinea***

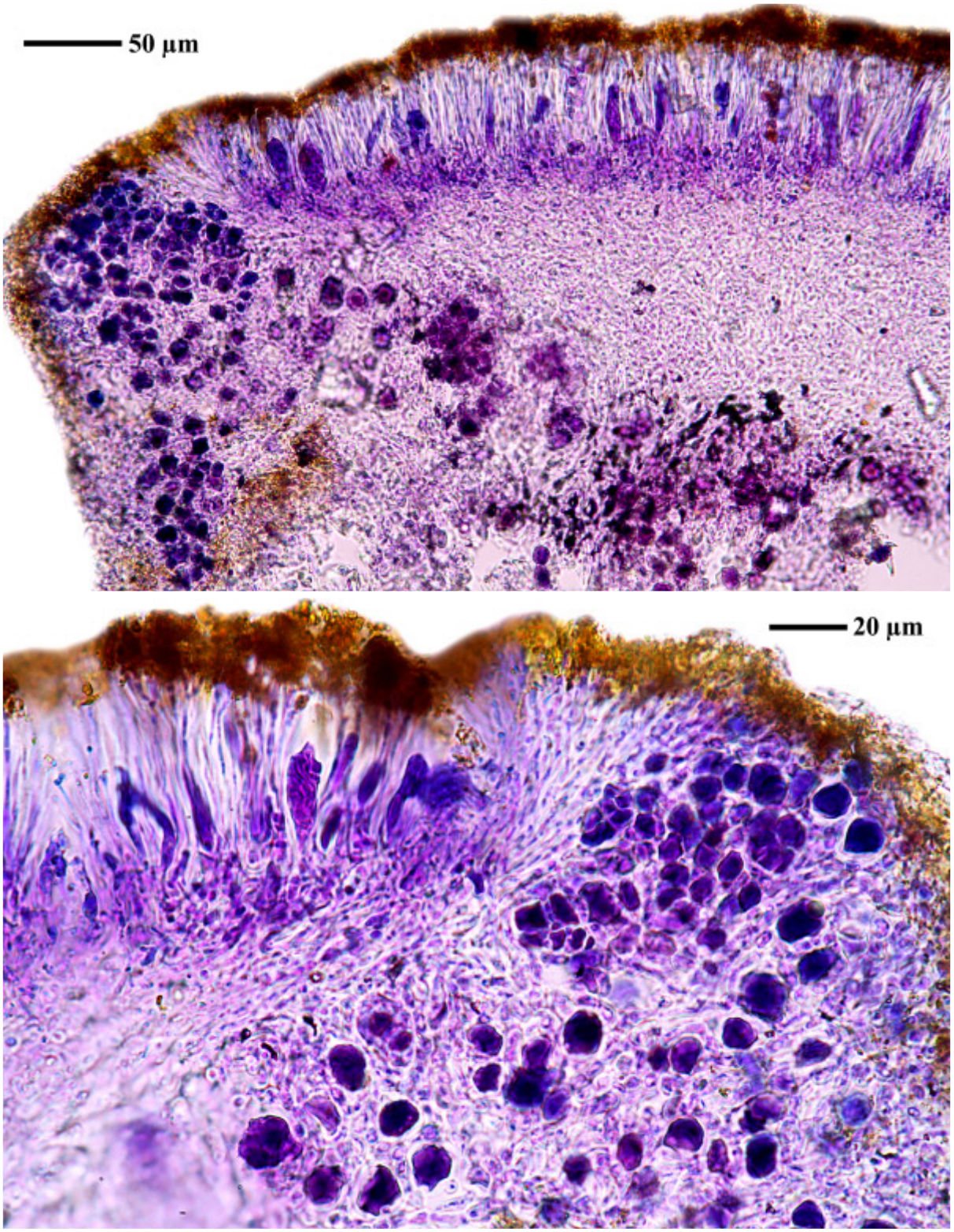


Caloplaca subochracea var. ***luteococcinea***

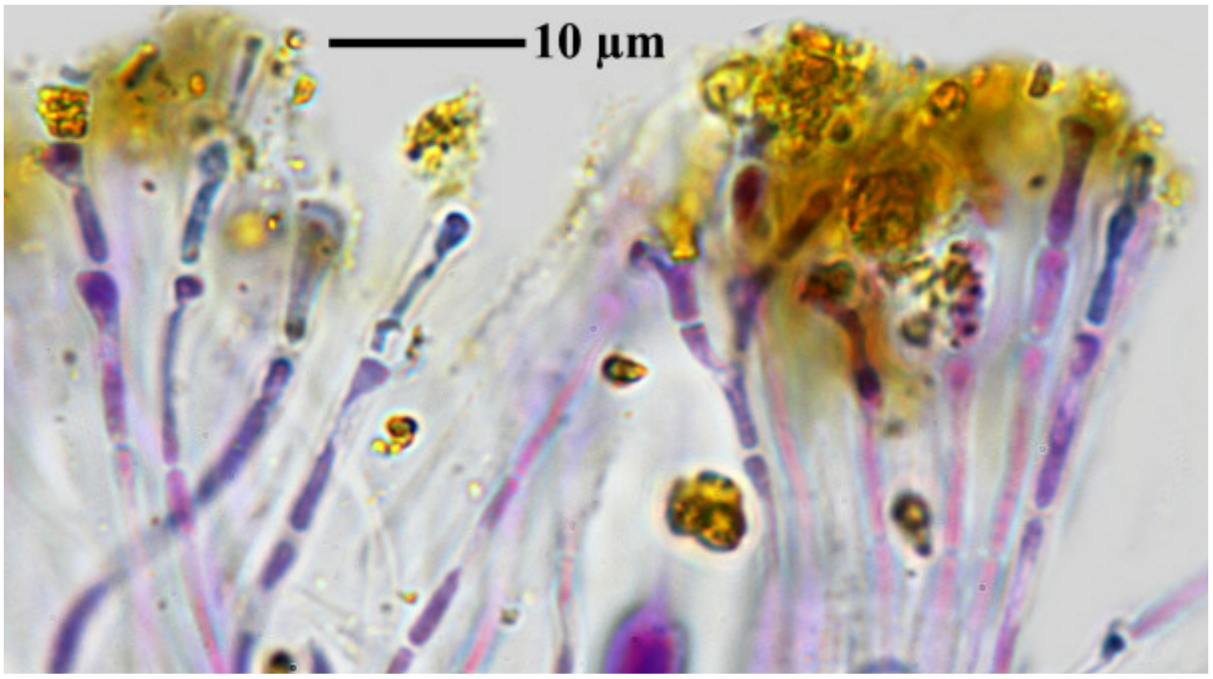


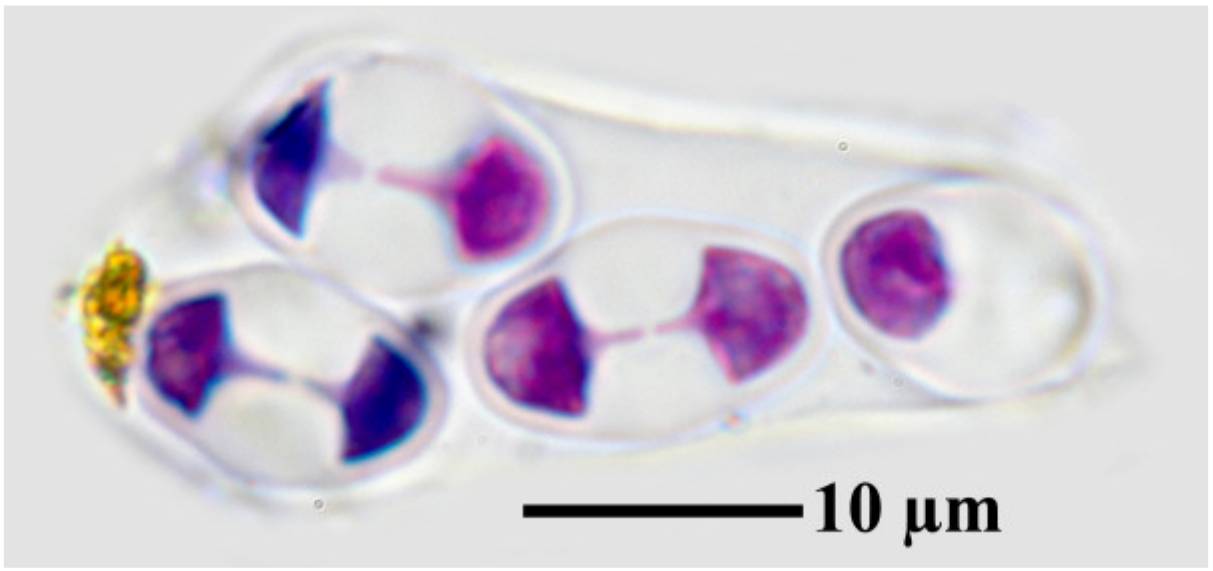


Caloplaca subochracea var. ***luteococcinea***



Caloplaca subochracea var. ***luteococcinea***







Caloplaca subochracea var. ***luteococcinea***

Caloplaca subpallida H. Magn., Bot. Notiser: 305 (1945)
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 74 (2013)]

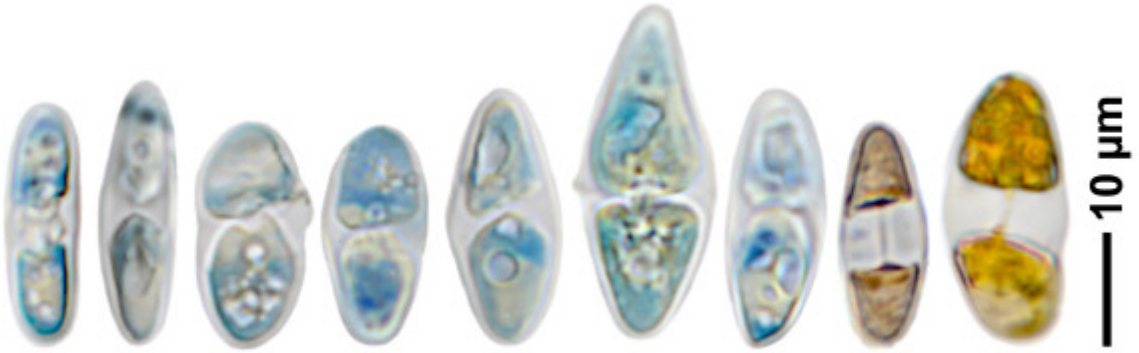
Spores polarilocular, 8/ascus, 21.5-30 x 10-12 µm, septum 1.2-3.8(-5.5). Paraphyses ca 1.5-1.7 µm thick, swollen at the tips up to 4.5 µm. On non-calcareous rocks.

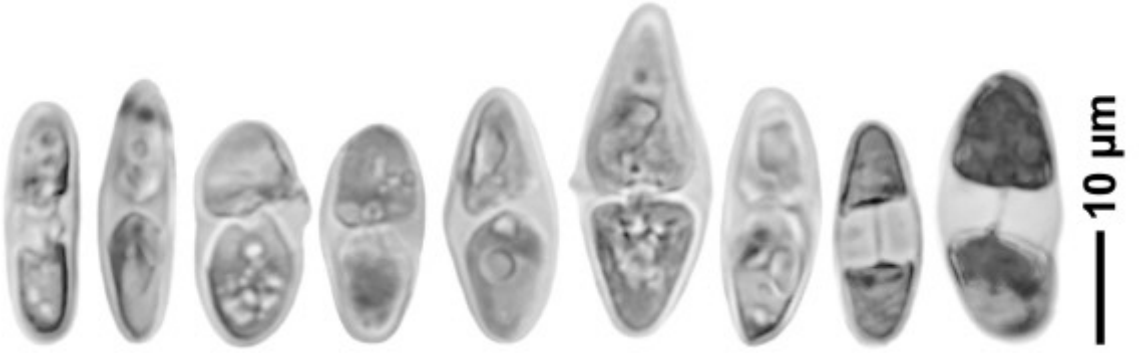
[12280], Griechenland, N-Samos, bei Manolates südlich von Agios Konstandinos, 37°47.185' N, 26°49.533' E, 341 m, halbschattige bis besonnte Terrassenmauern, auf Glimmerschiefer, zusammen mit *Aspicilia contorta, Lecania* etc. Leg. F. Schumm, 02.05.2006, det. A. Aptroot 2019.

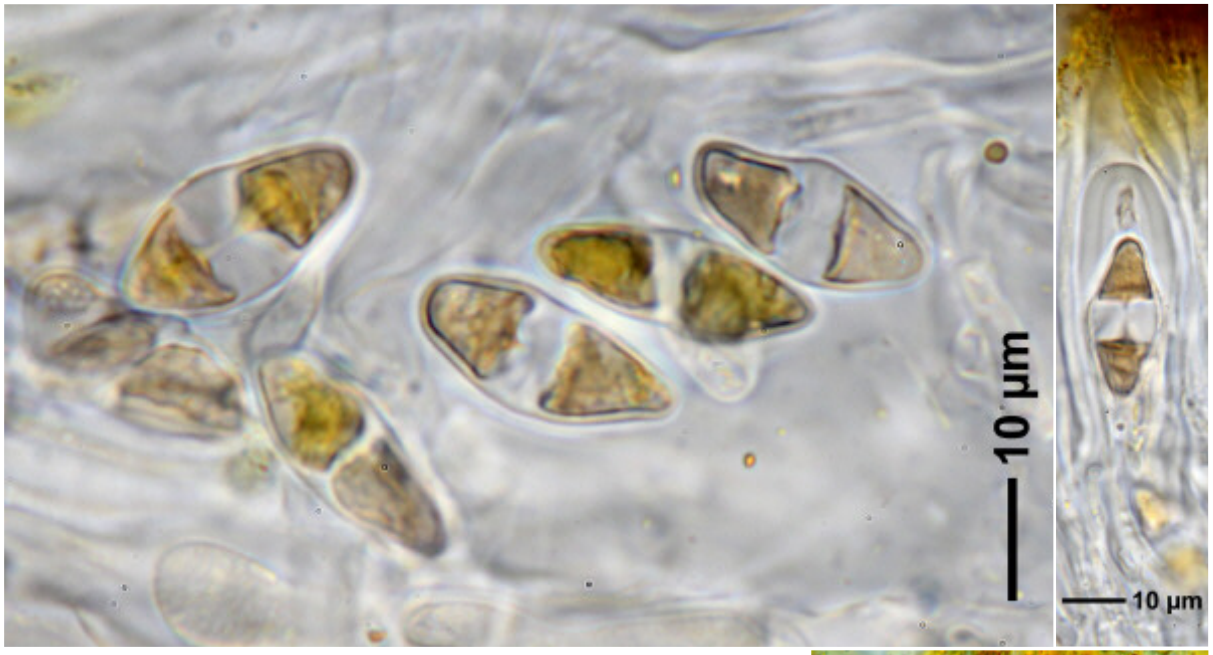


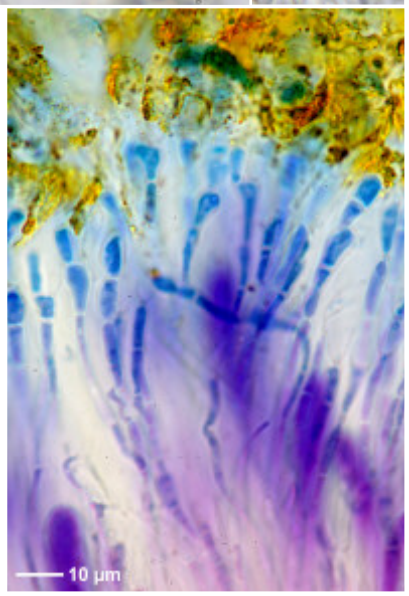


Caloplaca subpallida









Caloplaca subpallida

Caloplaca subpallida H. Magn.
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén]

On non-calcareous rocks.

[6605], Spanien, Gran Canaria, im Barranquillo de la Rocha zwischen Telde und Cazadores, nordexponierter felsreicher, lichtoffener, relativ trockener Hang mit *Kleinia*, *Euphorbia* und viel *Xanthoria*; 27°59.144' N, 15°26.958' W, Höhe 300 m, an Felsen. Leg. F. Schumm & U. Schwarz 28.12.1999, det. A. Aptroot 2016.





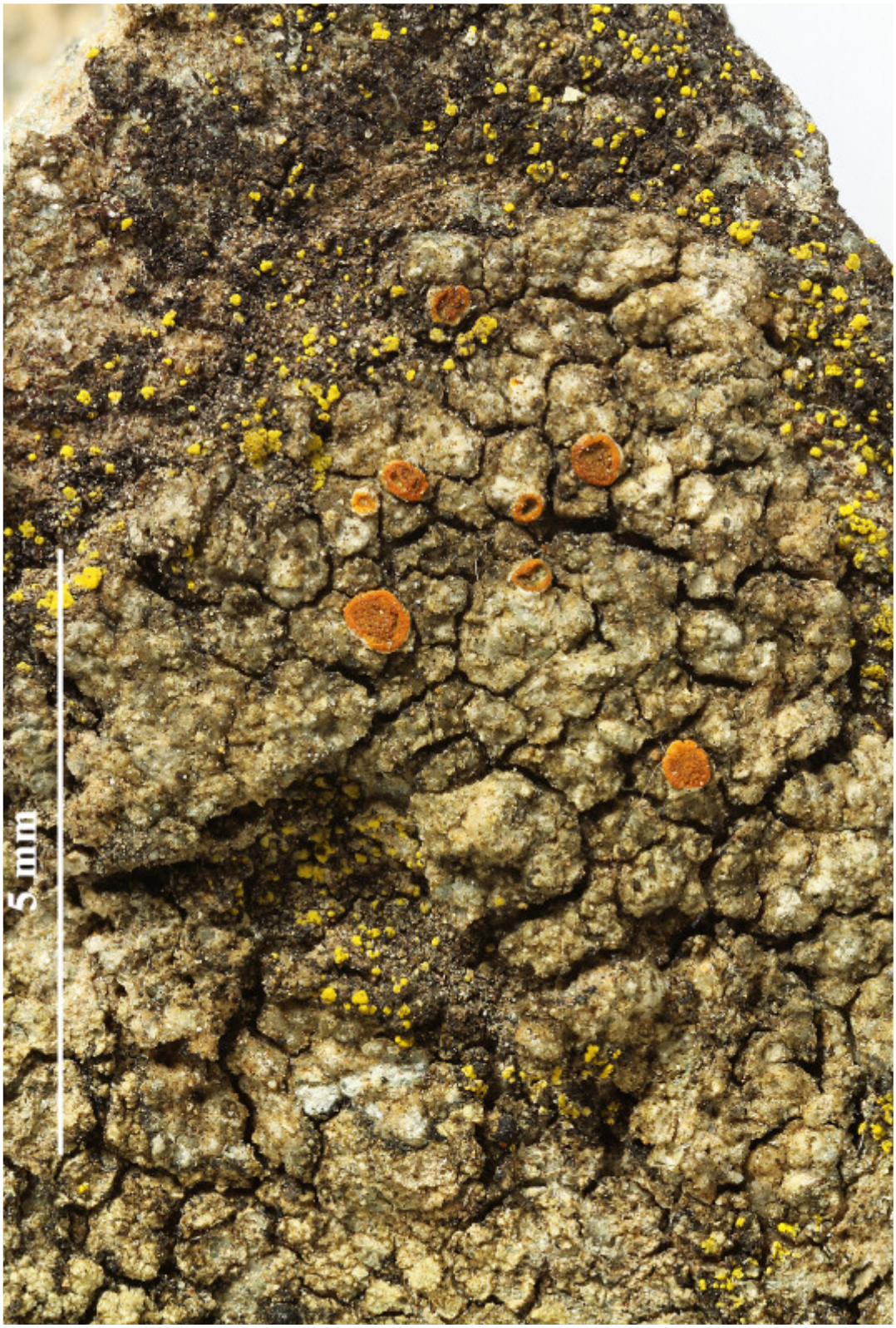


Caloplaca subpallida

Caloplaca subpallida H. Magn.
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén]

On non-calcareous rocks.

[10113], Spanien, Kanaren, Gran Canaria (NE-GC), An der Straße zwischen Tamaraceite und Teror in feucht getöntem Nordhang mit Kleinsträuchern. 28°04.938' N, 15°30.701' W, ca. 360 m. Leg. F. Schumm, 05.03.2003, det. A. Aptroot 2016.



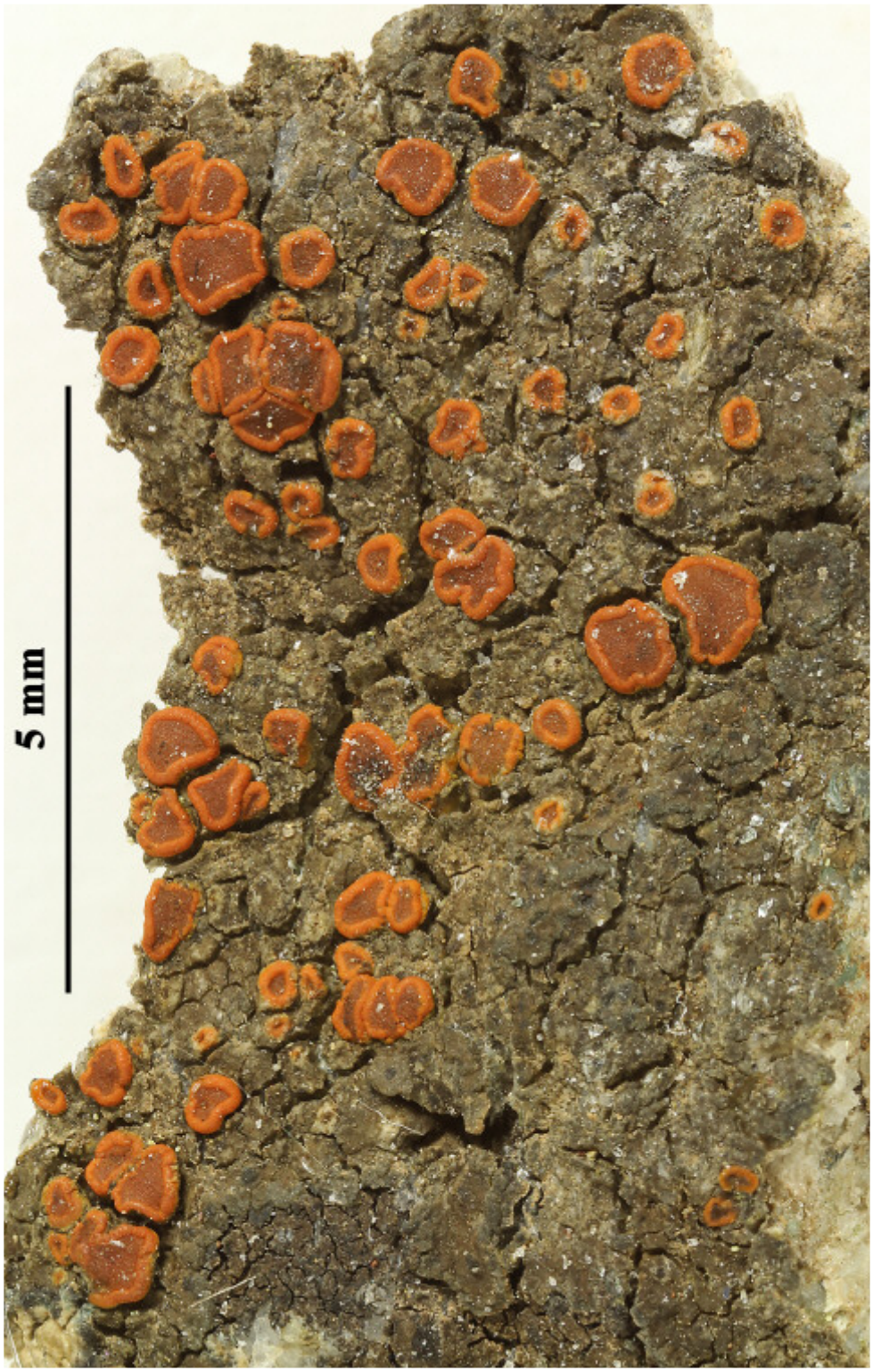


Caloplaca subpallida

Caloplaca subpallida H. Magn., Bot. Notiser: 305 (1945)
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 74 (2013)]

On non-calcareous rocks.

[12281], Griechenland, N-Samos, bei Manolates südlich von Agios Konstandinos, 37°47.185' N, 26°49.533' E, 341 m, halbschattige bis besonnte Terrassenmauern, auf Glimmerschiefer. Leg. F. Schumm, 02.05.2006, det. A. Aptroot 2016.





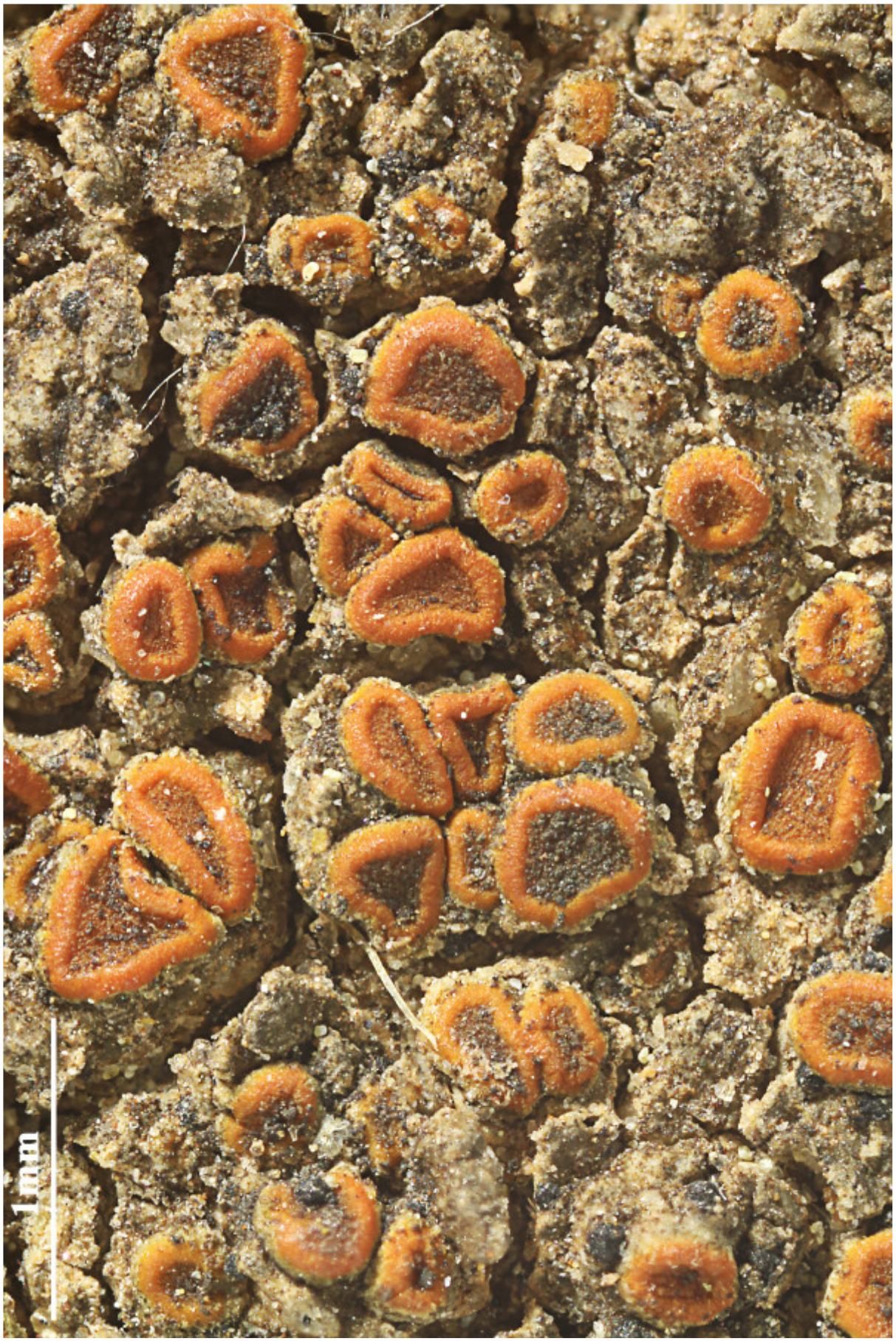
Caloplaca subpallida

Caloplaca subpallida H. Magn., Bot. Notiser: 305 (1945)
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 74 (2013)]

On non-calcareous rocks.

[12437], Griechenland, N-Samos, südlich von Agios Konstandinos, an der Straße nach Manolates, sonnige Terrassenmauern, Glimmerschiefer, 37°342' N, 26°49.527' E, 318 m. Leg. F. Schumm & R. Düll, 05.05.2006, det. A. Aptroot 2016.





Caloplaca subpallida

Caloplaca subpallida H. Magn., Bot. Notiser: 305 (1945)
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 74 (2013)]

On non-calcareous rocks.

[12440], Griechenland, N-Samos, südlich von Agios Konstandinos, an der Straße nach Manolates, sonnige Terrassenmauern, 37°342' N, 26°49.527' E, 318 m. Leg. F. Schumm, R. Düll & Maier, 05.05.2006, det. A. Aptroot 2016.





Caloplaca subpallida

Caloplaca subpallida H. Magn., Bot. Notiser: 305 (1945)
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 74 (2013)]

On non-calcareous rocks.

[19545], Griechenland, N-Samos, bei Manolates südlich von Agios Konstandinos, 37°47.185' N, 26°49.533' E, 341 m, halbschattige bis besonnte Terrassenmauern, auf Glimmerschiefer. Leg. F. Schumm, 02.05.2006, det. A. Aptroot 2016.





Caloplaca subpallida

Caloplaca subpallida H. Magn., Bot. Notiser: 305 (1945)
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 74 (2013)]

On non-calcareous rock.

[ABL 72825], Korea, Gangwon-do, Dist. Pyeonchang-gun, Jinbu-myeoun, Dongsan-ri, Mt. Odae, Odaesan National Park, along the Odae stream, en route from temple Woljeong-sa to temple Sangwon-sa, c. 37°48' N, c. 128°34' E, c. 700 m, on siliceous rock. Leg. A. Aptroot 16.10.2014, det. A. Aptroot 2014.







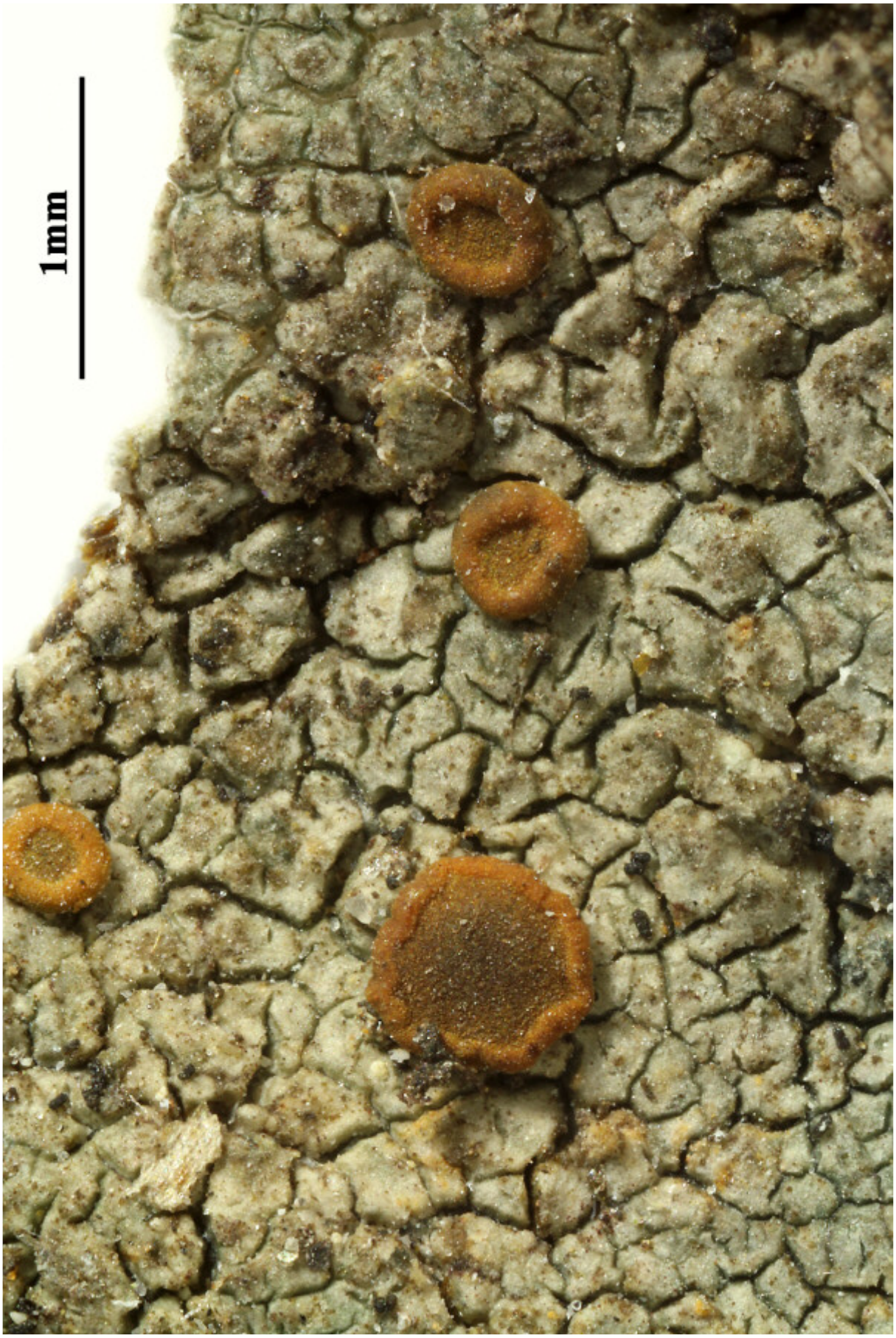
Caloplaca subpallida

Caloplaca subpallida H. Magn., Bot. Notiser: 305 (1945)
[= *Rufoplaca subpallida* (H. Magn.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 74 (2013)]

On non-calcareous rock.

[ABL 72829], Korea, Gangwon-do, Dist. Pyeonchang-gun, Jinbu-myeoun, Dongsan-ri, Mt. Odae, Odaesan National Park, along the Odae stream, en route from temple Woljeong-sa to temple Sangwon-sa, c. 37°48' N, c. 128°34' E, c. 700 m, on siliceous rock. Leg. A. Aptroot 16.10.2014, det. A. Aptroot 2014.





Caloplaca subpallida

Caloplaca subpyraceella (Nyl. ex Hasse) Zahlbr.

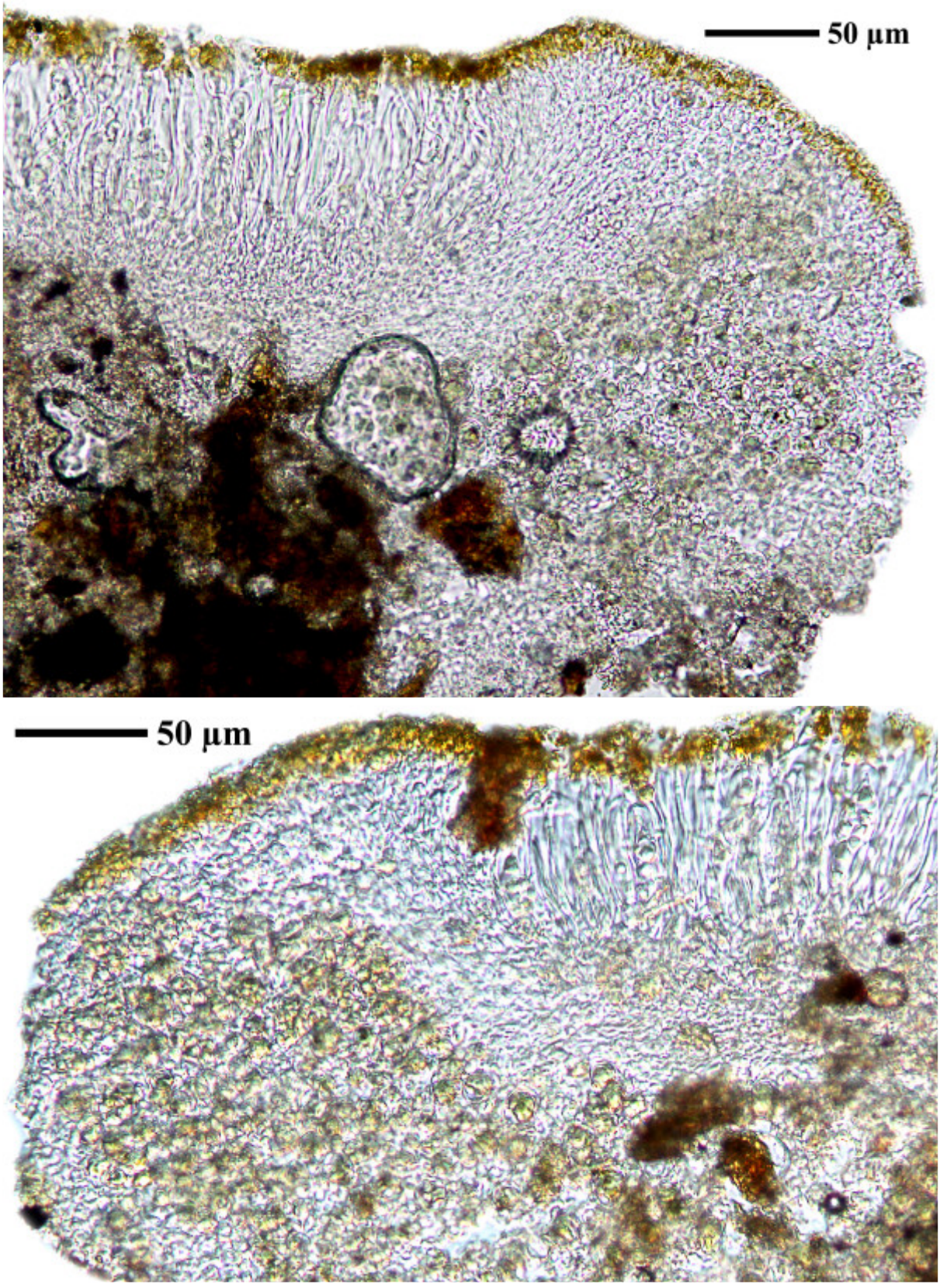
Spores 14.2-16.7 x 5-6.3 µm, septum 3.8-4.6 µm (FS).

[BR5030036252710], Mexico,Baja California, Punta Santa Tomas, coastal scrb community (*Agave shawii, Salvia, Simmondsia*, etc.), 0-100 m, pre-batholithic rocks, primaliry volcanic, secondarily sedimentary, 31°33'30'' N, 116°42' W. Leg. A. & M. Aptroot (24301), 2.1.1989, det. A. Aptroot 1989.

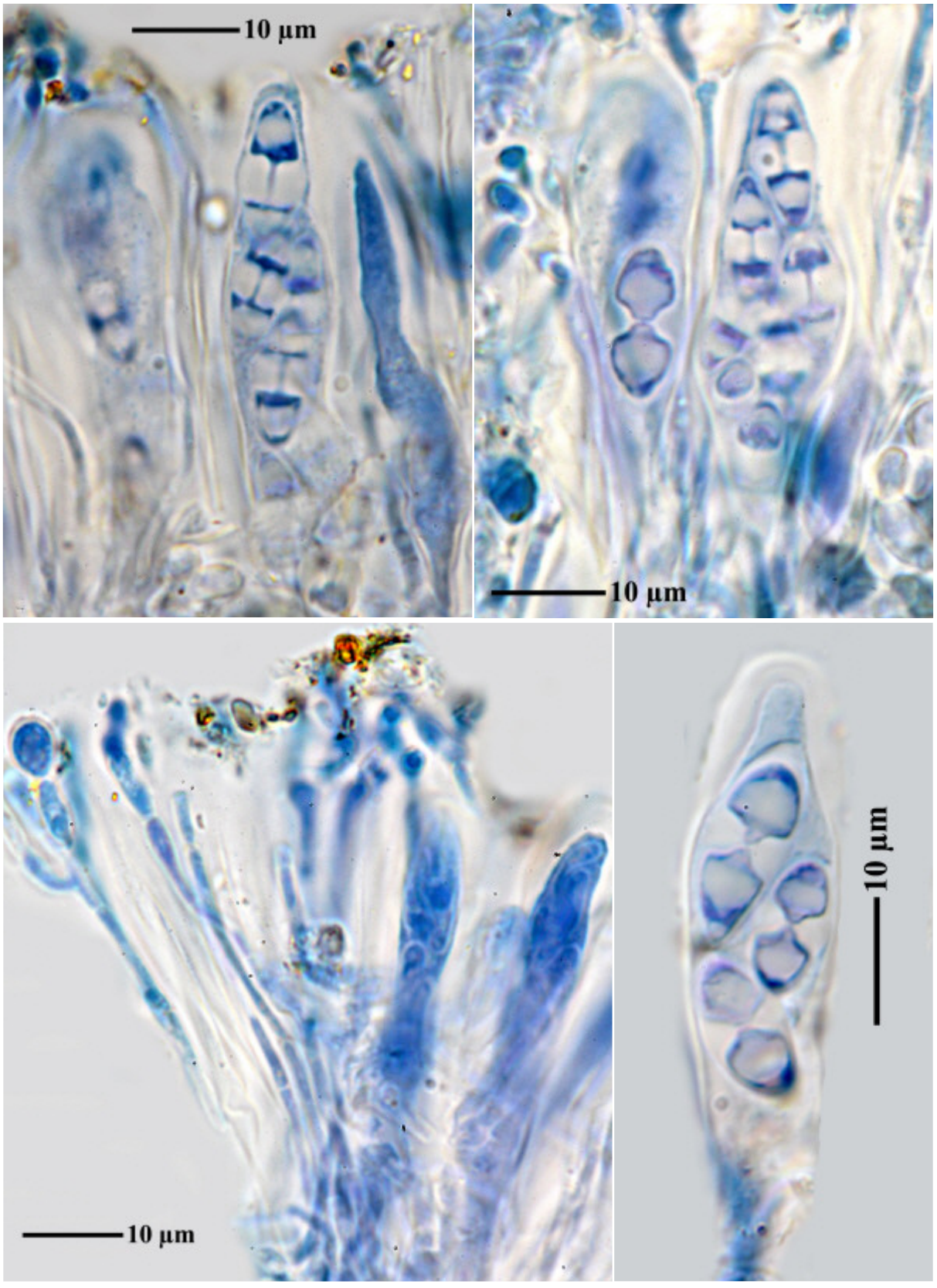




Caloplaca subpyraceella



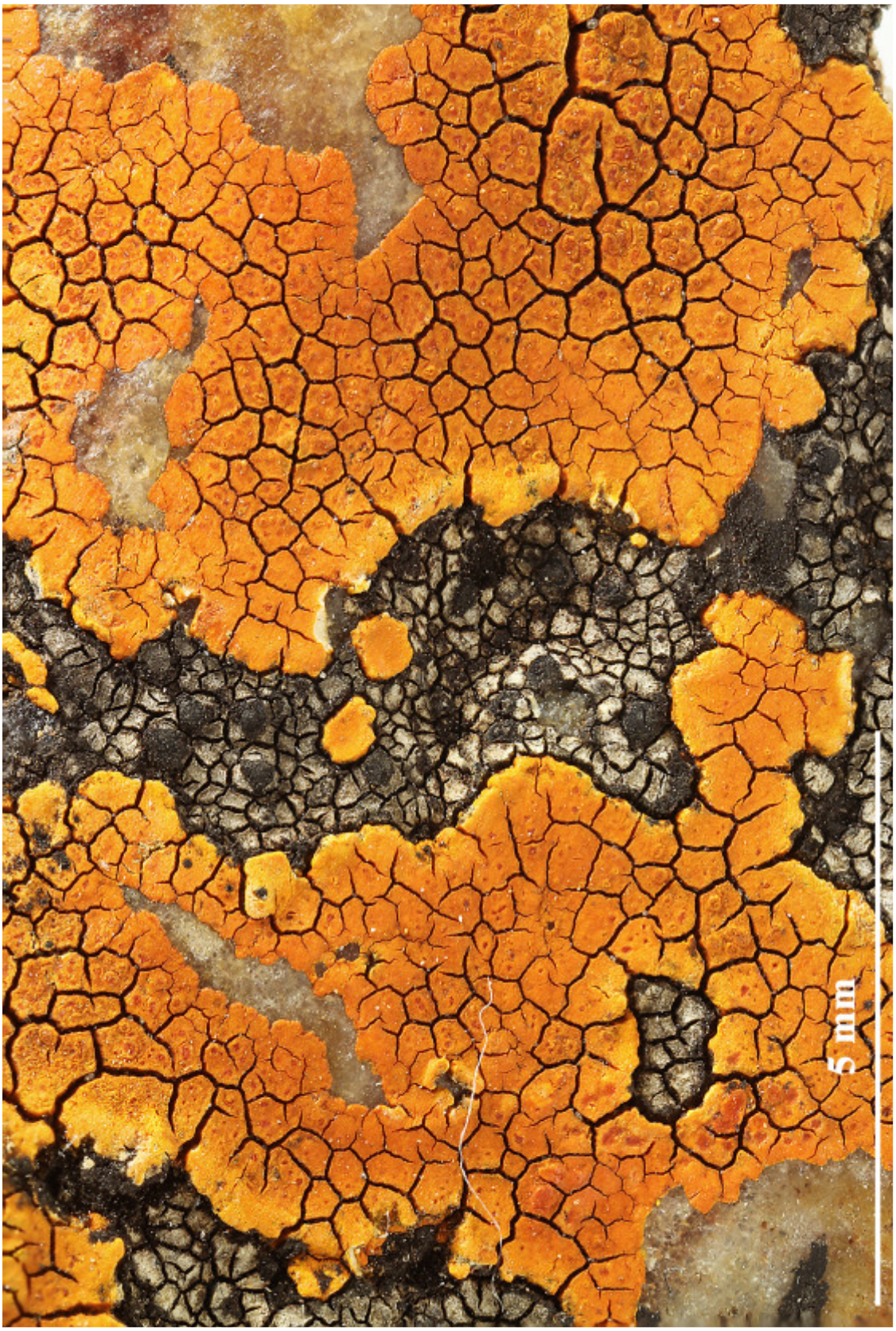
Caloplaca subpyraceella

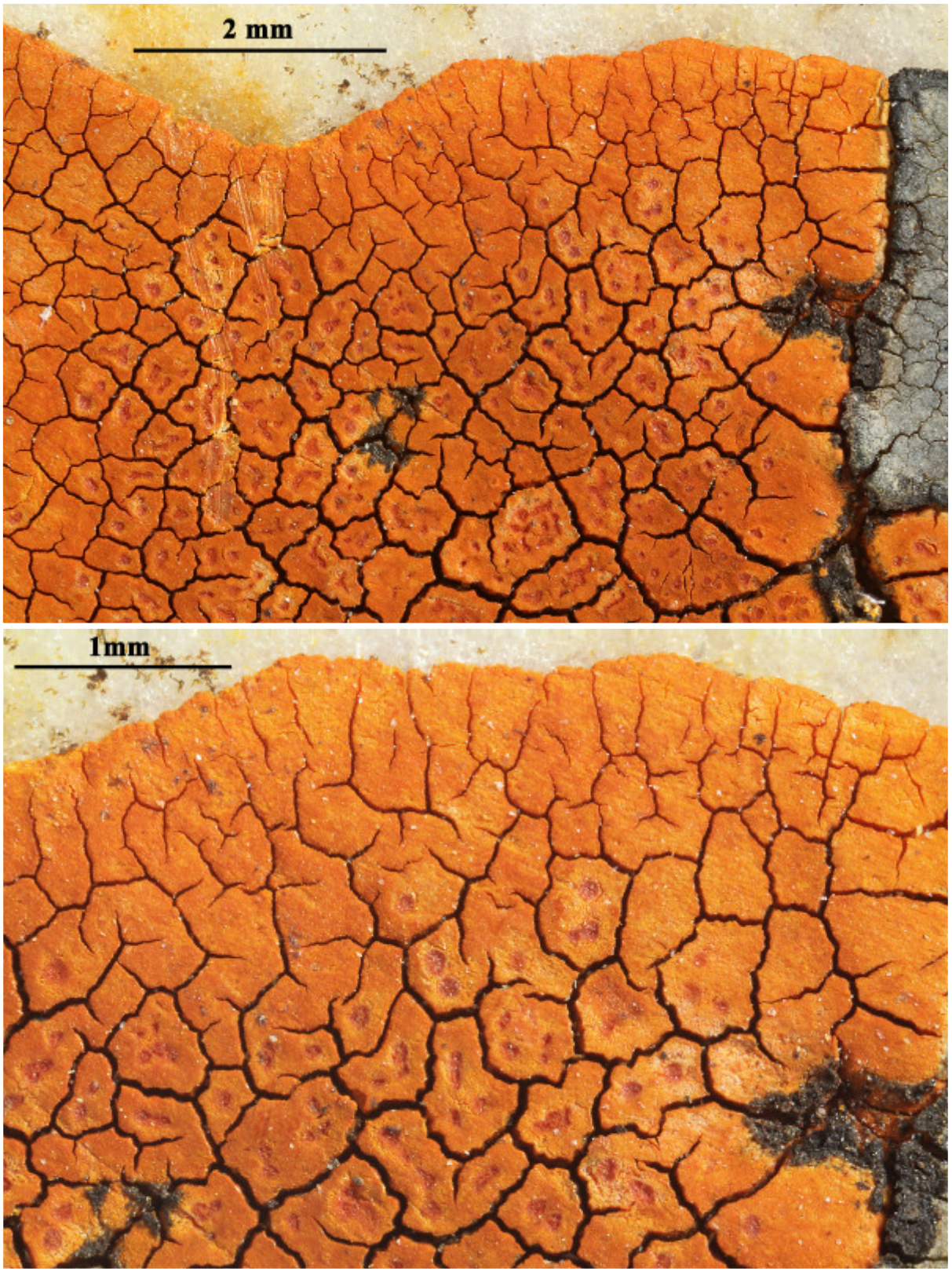


Caloplaca subpyraceella

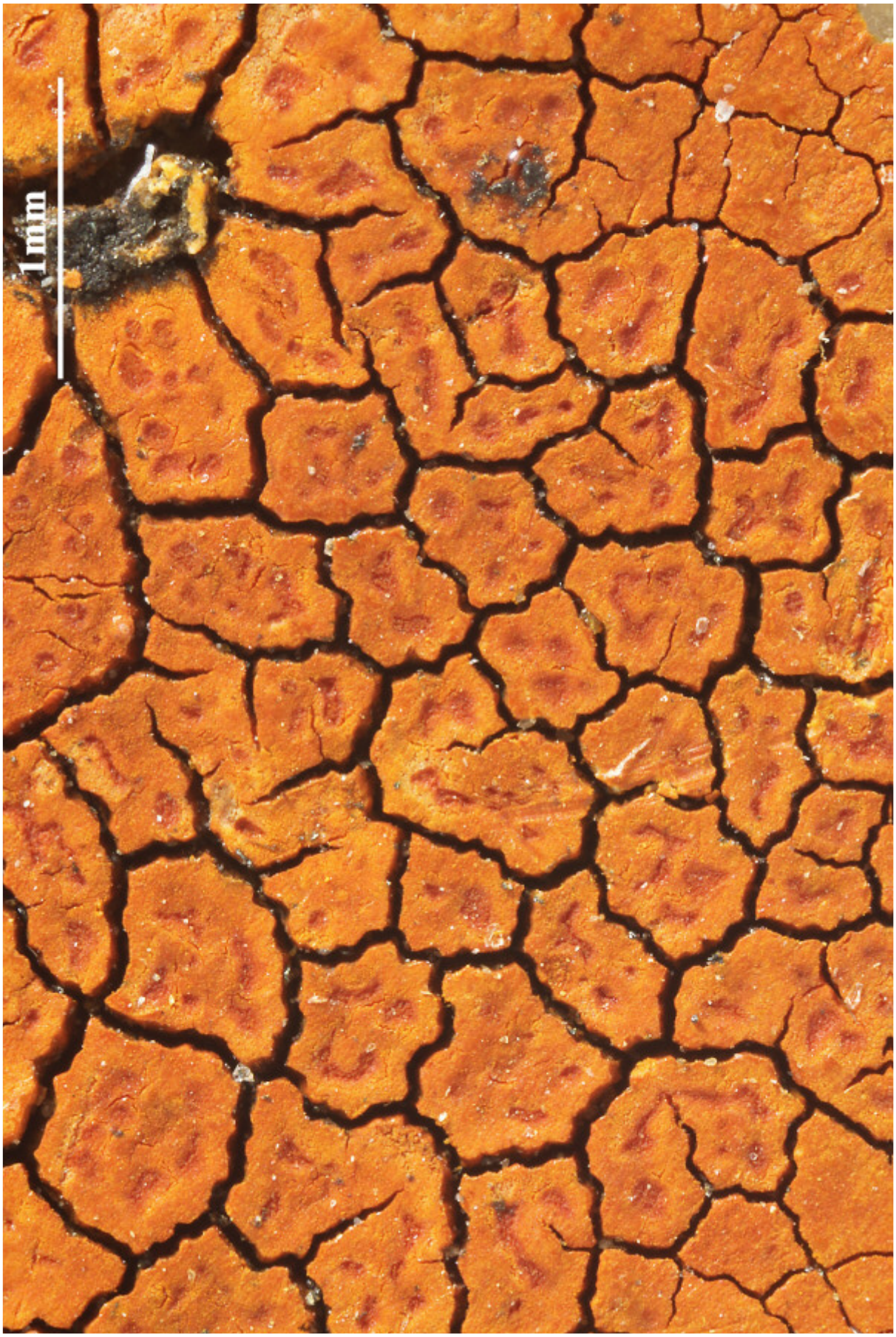
Caloplaca subrubelliana (Vainio) Aptroot

[BR-5030036253724], Brazil, Minas Gerais, Serra do Caraça, Parque Natural do Caraça near rapids Cachoeira da Canjerana near Tanque Grande, on sandstone, 20°06’ S, 43°29’ W, 1300 m. Leg. A. Aptroot (41608), 20.09.1997, det. A. Aptroot 1998. TOPOTYPUS.

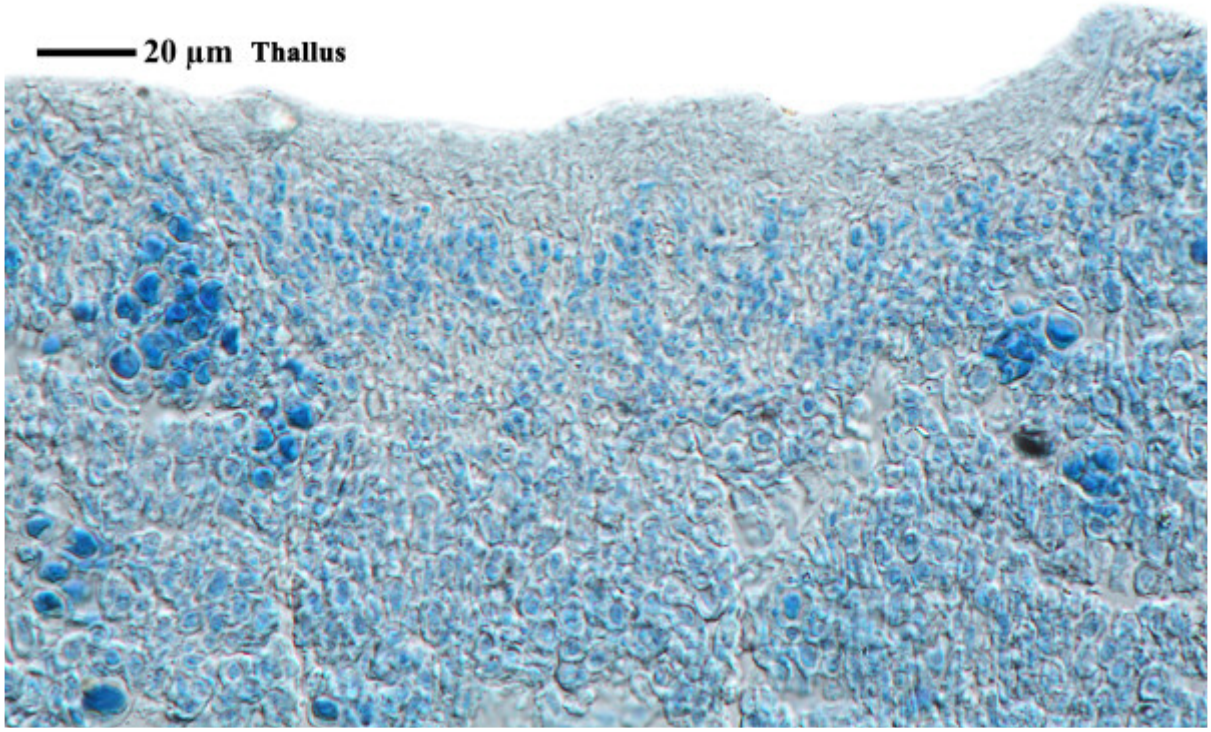


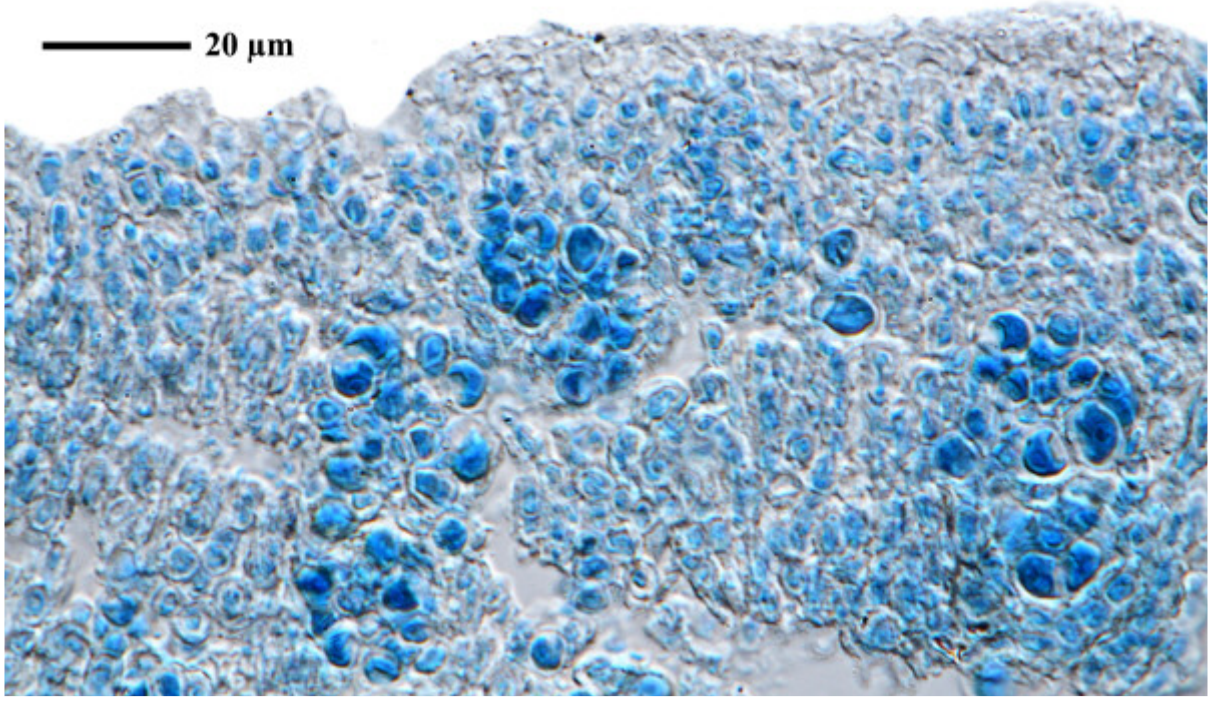


Caloplaca subrubelliana



Caloplaca subrubelliana



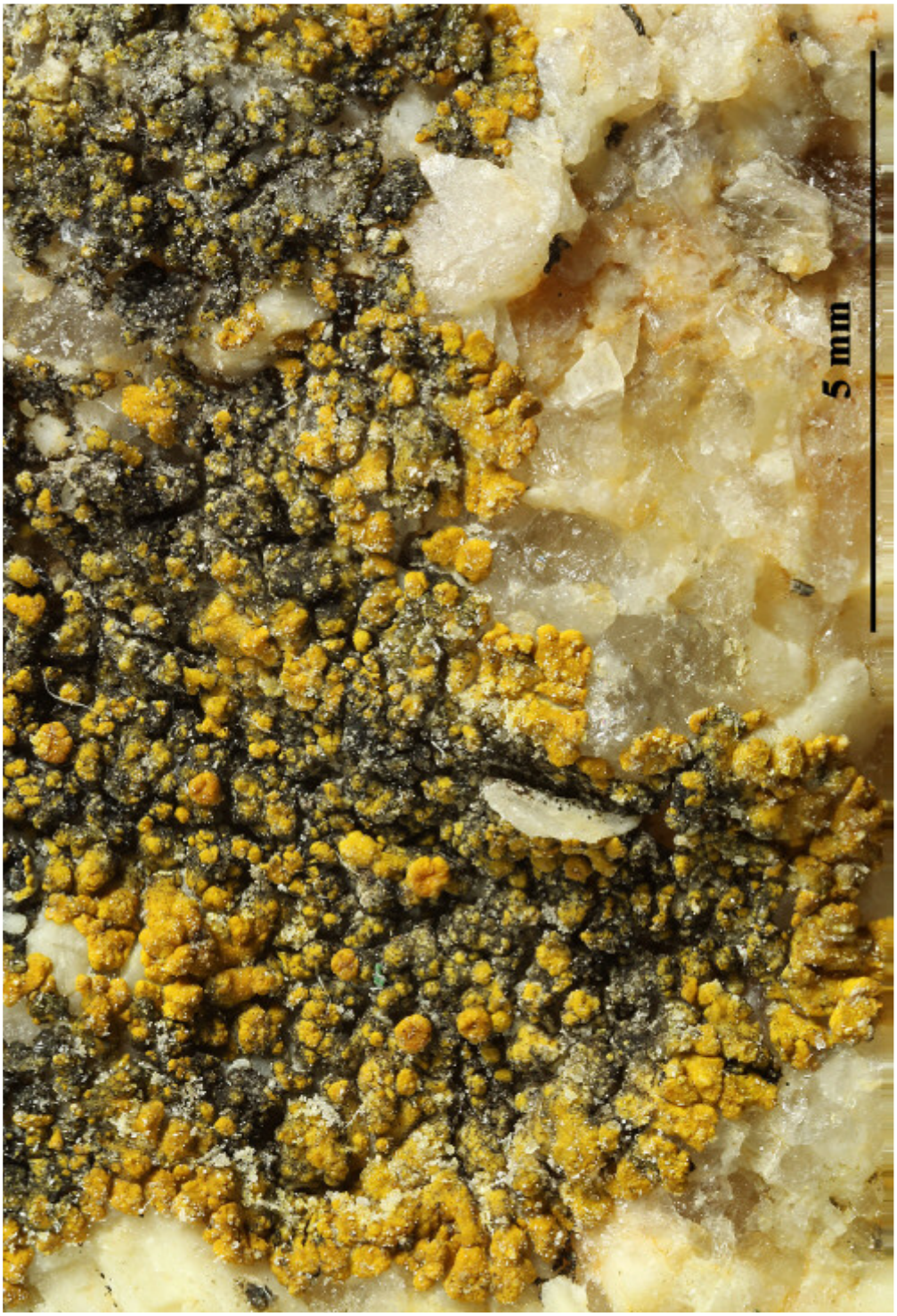


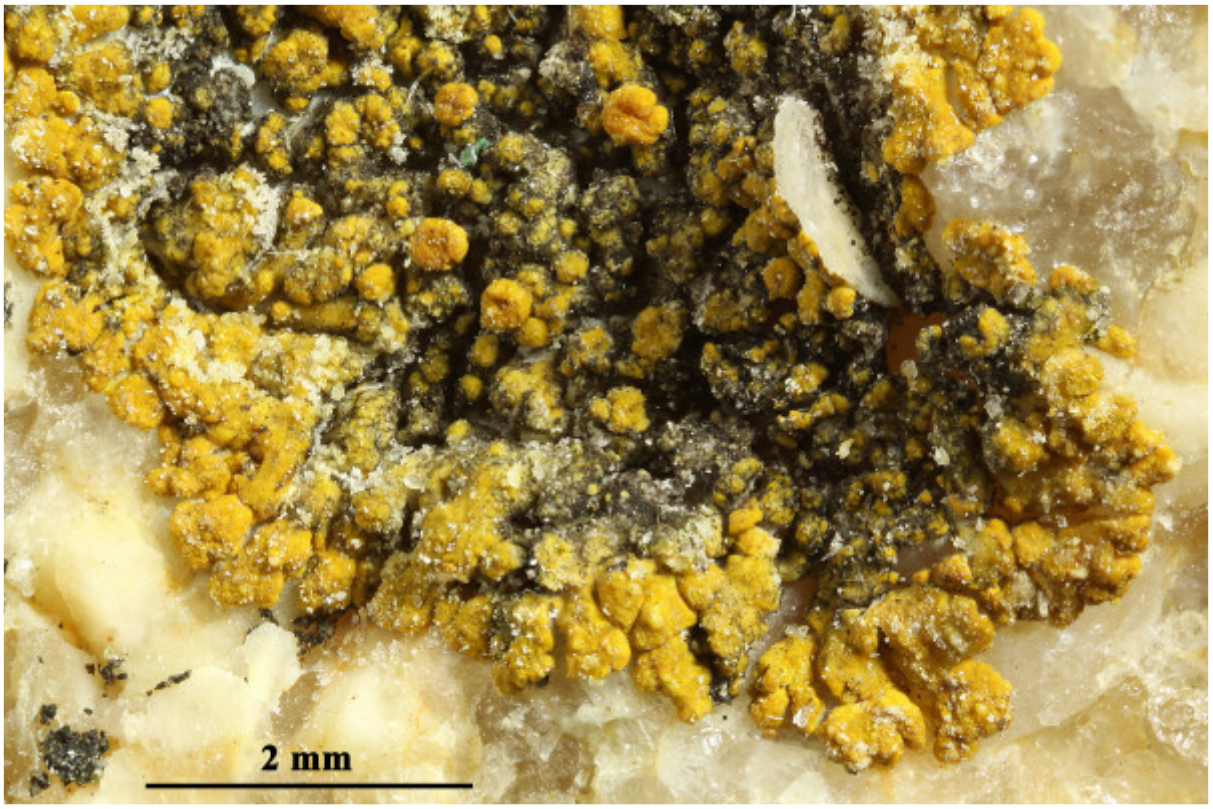
Caloplaca subrubelliana

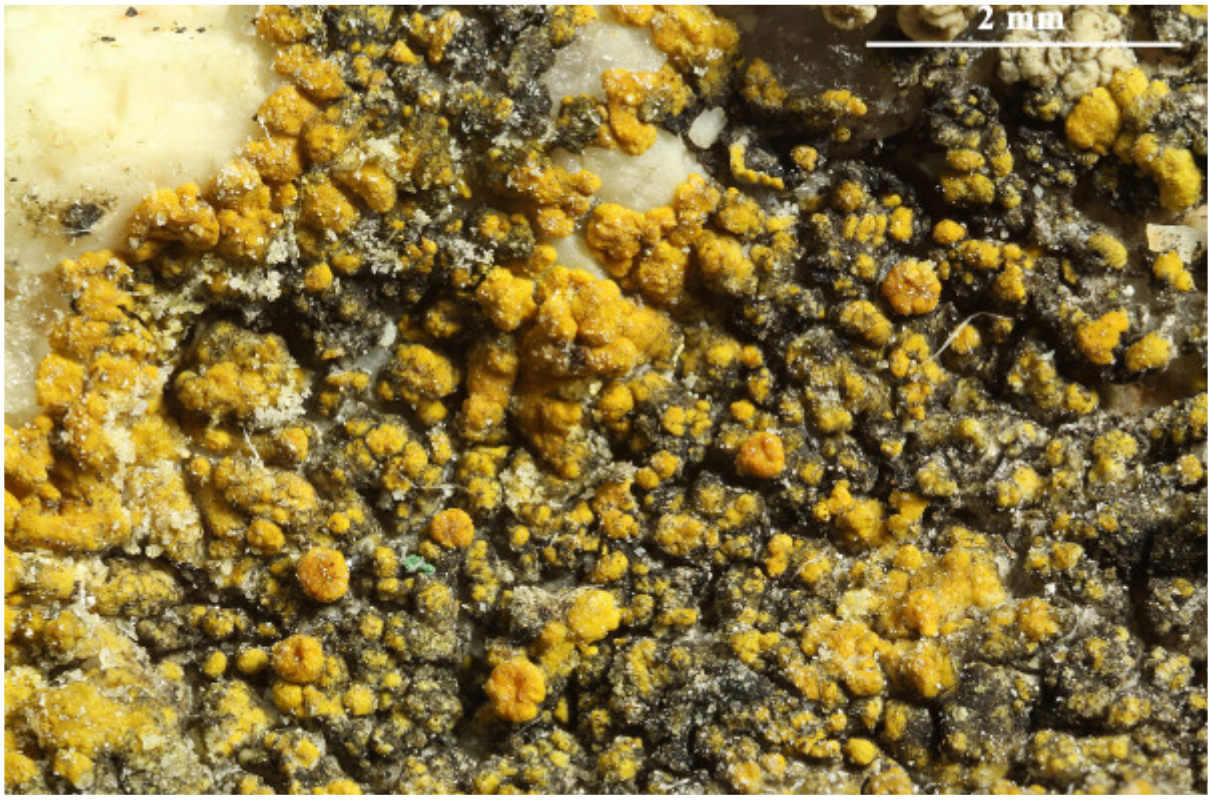
Caloplaca subscopularis (Arup & Frisch) S.Y. Kondr., in Kondratyuk, Lőkös, Tschabanenko, Moniri & Farkas, Acta bot. hung. 55(3-4): 325 (2013)
[= *Orientophila subscopularis* Arup & Frisch, Nordic Jl Bot. 31(1): 47 (2013)]

On non-calcareous rock.

[ABL 72957], Korea, Gangwon-do, Dist. Yangyang-gun, Hyeounbuk-myeoun, Hagwangjeong-ri, around Hajodae, c. 38°01' N, c. 128°44' E, c. 4-20 m, on coastal siliceous rock. Leg. A. Aptroot 19.10.2014, det. A. Aptroot 2019.

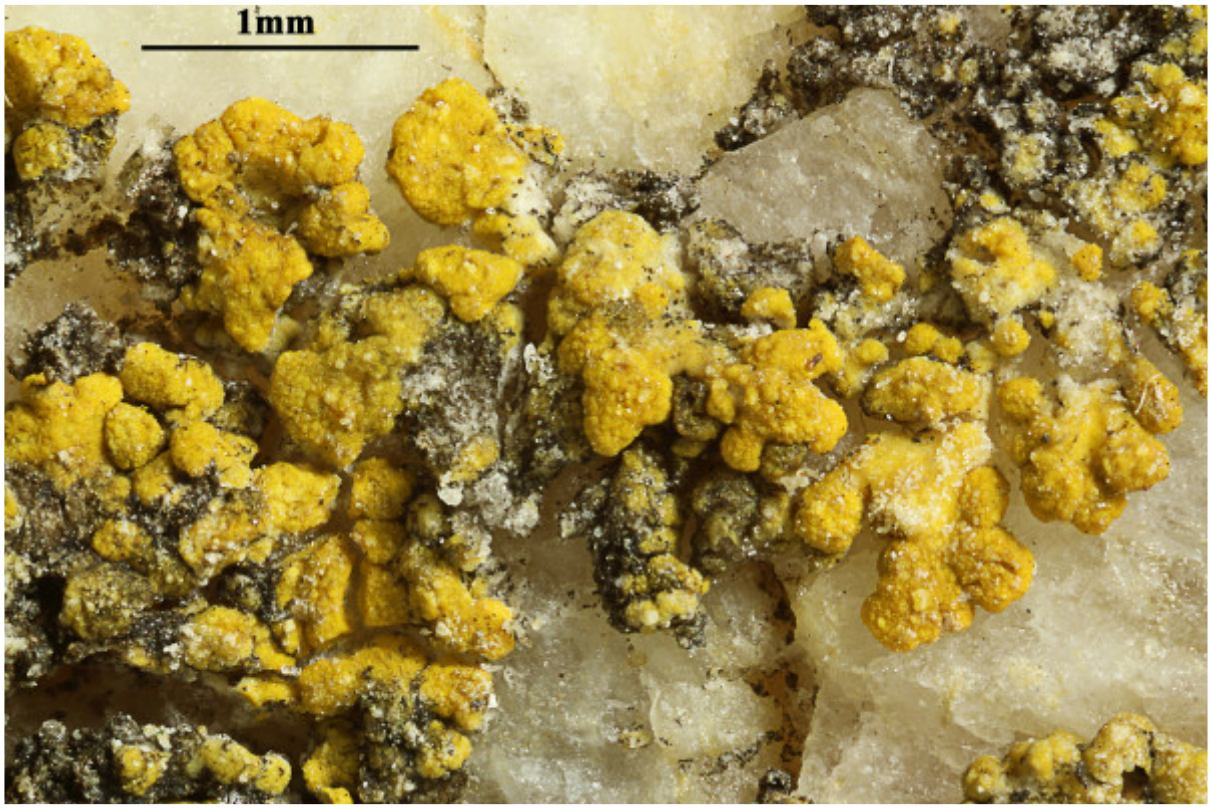






Caloplaca subscopularis





Caloplaca subscopularis

Caloplaca subsoluta (Nyl.) Zahlbr.
[= *Squamulea subsoluta* (Nyl.) Arup, Søchting & Frödén]

On lava rocks.

[6814], Spanien, Kanarische Inseln, Gran Canaria; an der Straße von San Nicolas nach Agaete im Barranco los Berreos an nord-exponierten Stellen; an Felsen, 28°02.100’ N, 15°45.464’ W, Höhe 570 m. Leg. F. Schumm & U. Schwarz 02.01.2000, det. A. Aptroot 2016.





Caloplaca subsoluta

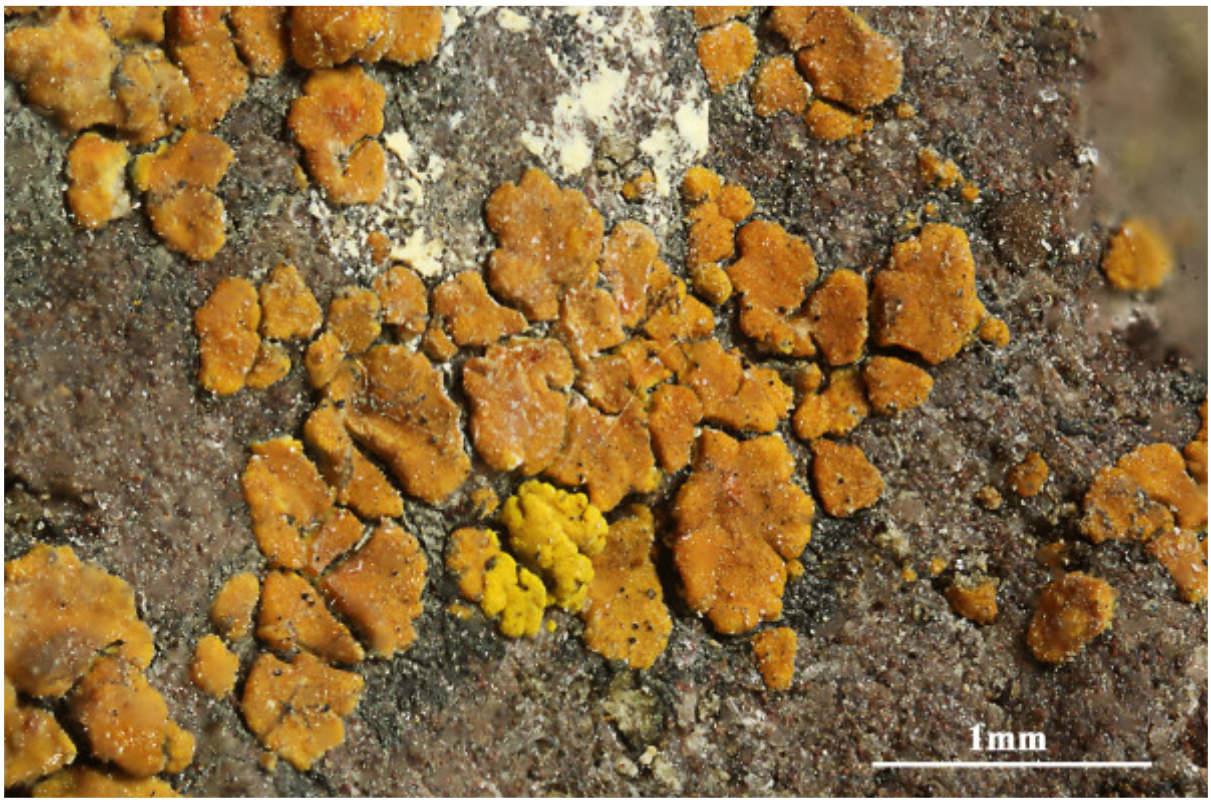
Caloplaca subsoluta (Nyl.) Zahlbr., Cat. Lich. Univers. 7: 185 (1931)
[= *Squamulea subsoluta* (Nyl.) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 56 (2013)]
[= *Caloplaca irrubescens* (Nyl.) Zahlbr., Zahlbruckner in Verh. Zool.-Bot. Ges. Wien 48: 356 (1898)]

Spores 9.7-11.3 x 5.6-6.3 µm, septum 3.1-3.8 µm (FS). On non-calcareous rocks.

[19594], Gallia, Var. Evenos, alt. 300 m, ad saxa basaltica locis apricis. Leg. Y. Rondon, 3.04.1972. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1171. Distributet as *Caloplaca irrubescens* (Nyl.) Zahlbr.



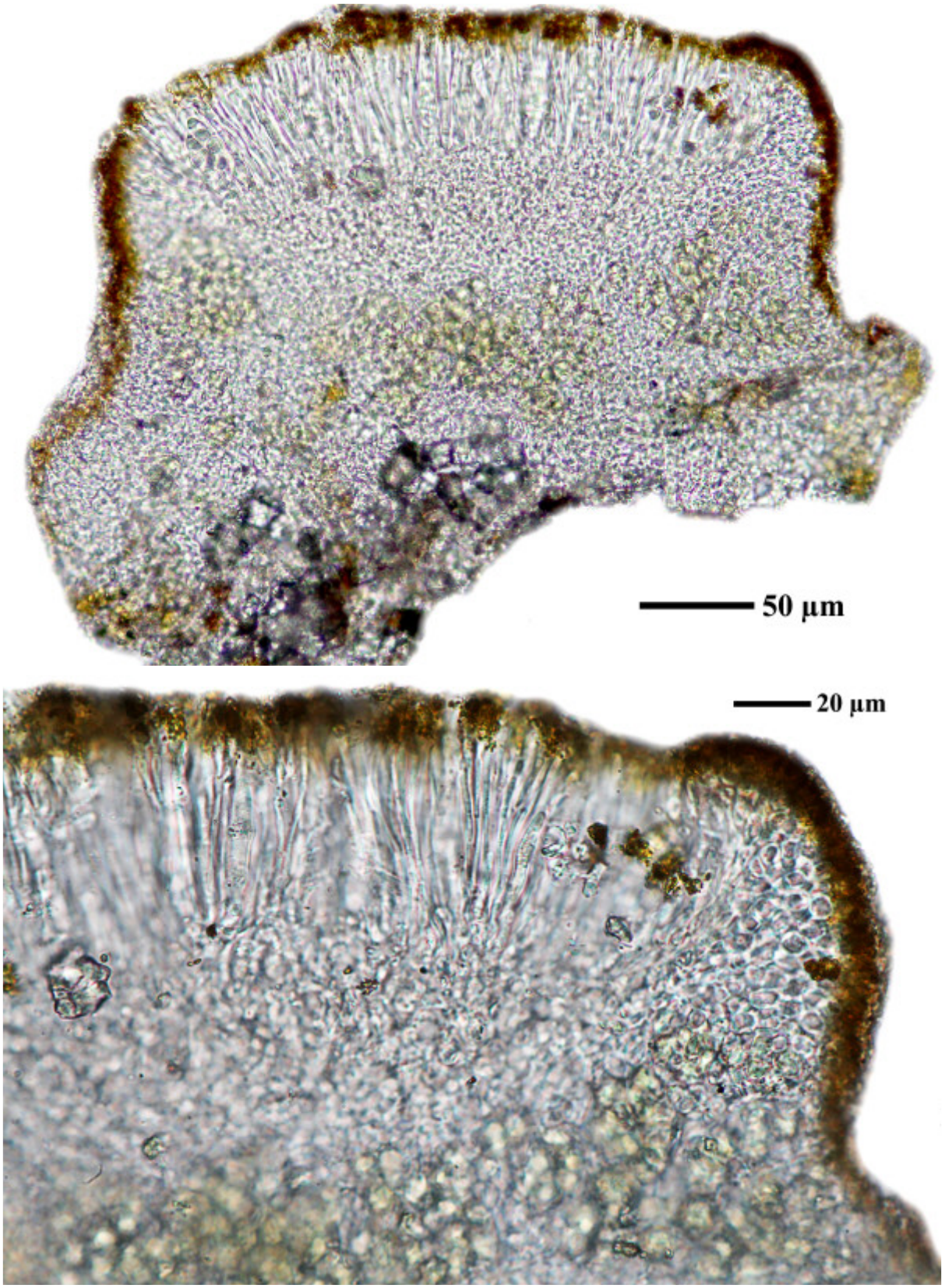




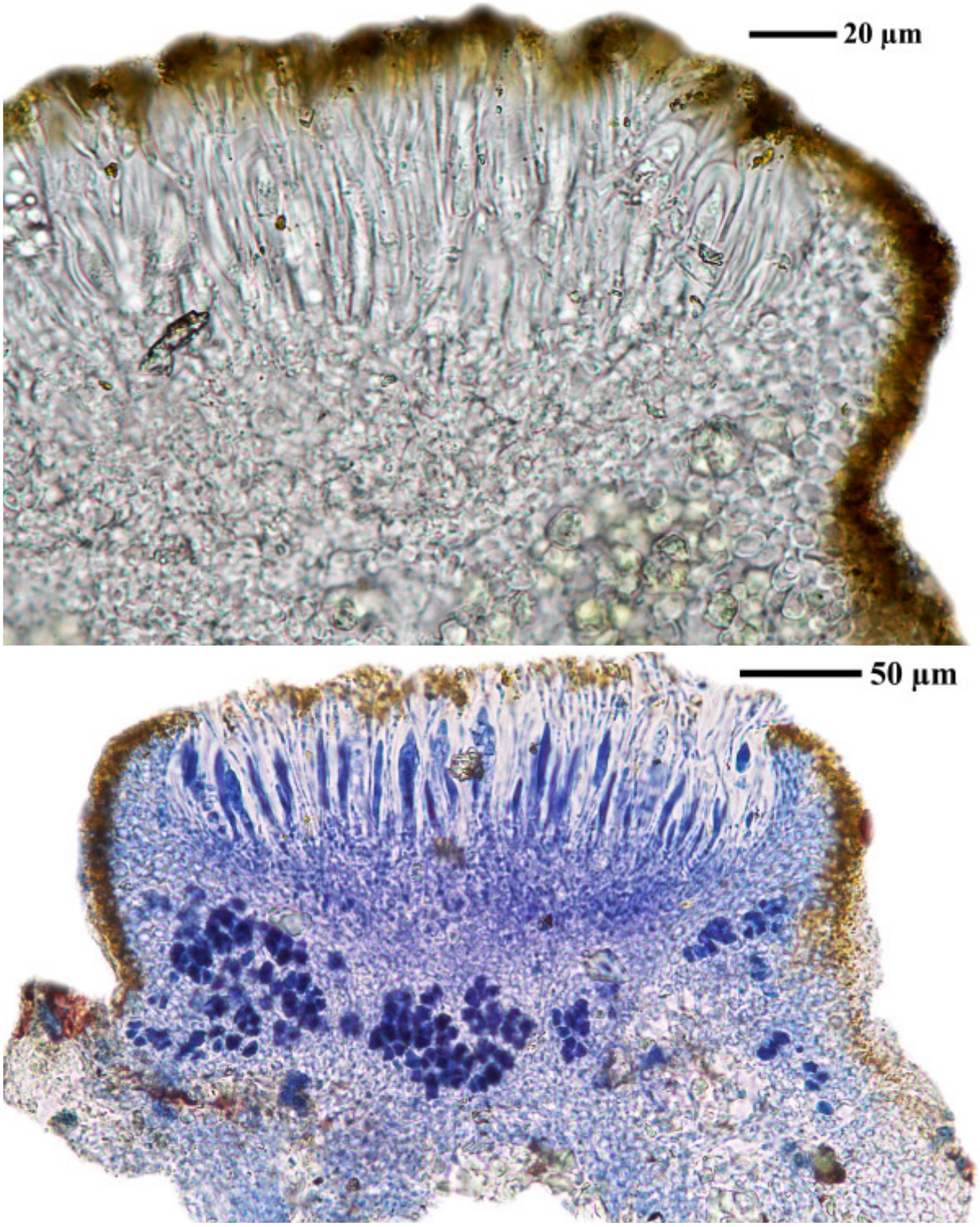
Caloplaca subsoluta



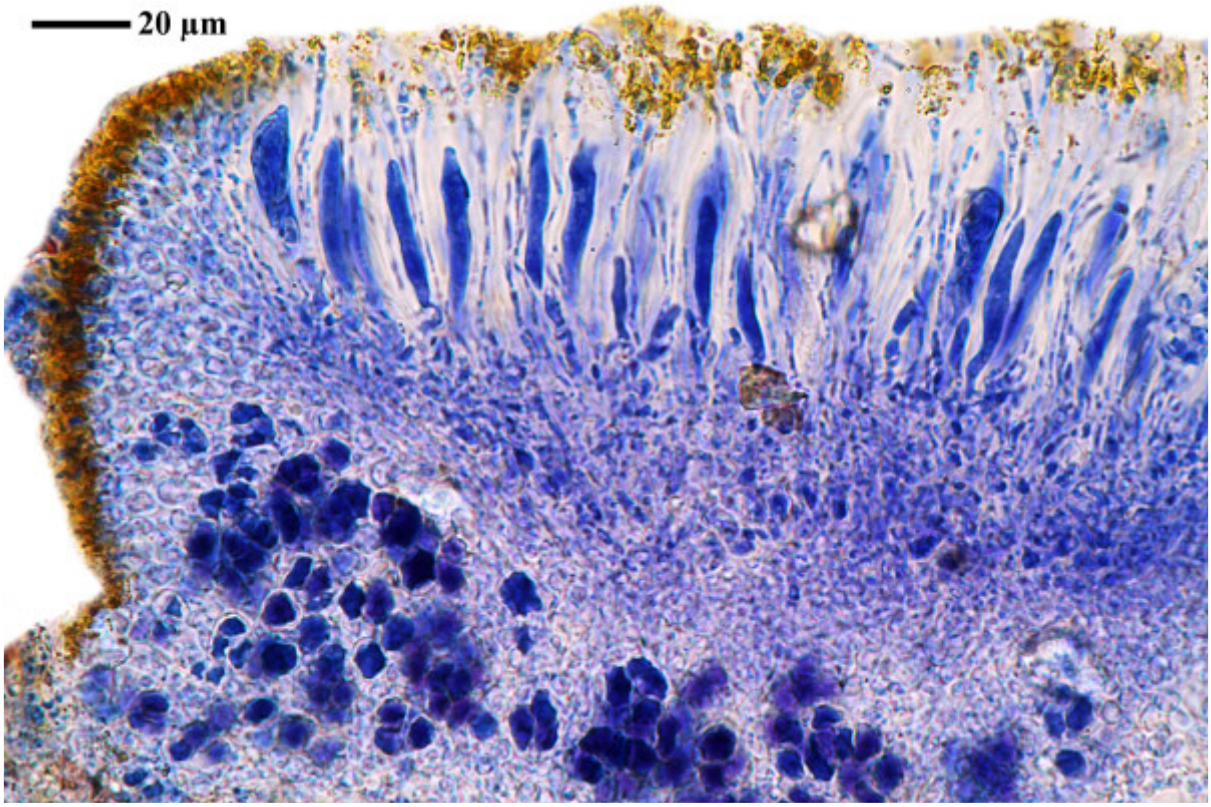
Caloplaca subsoluta

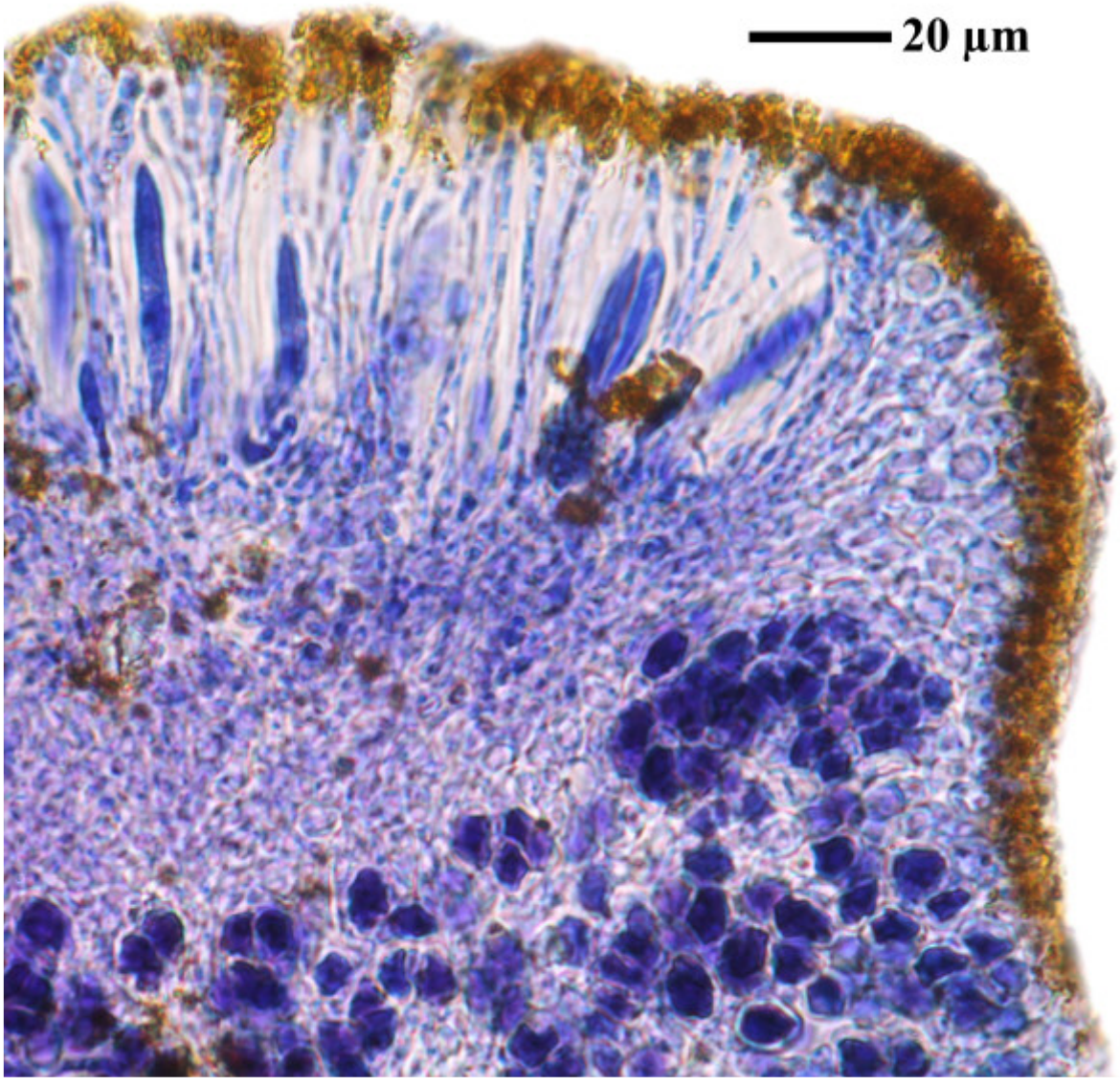


Caloplaca subsoluta

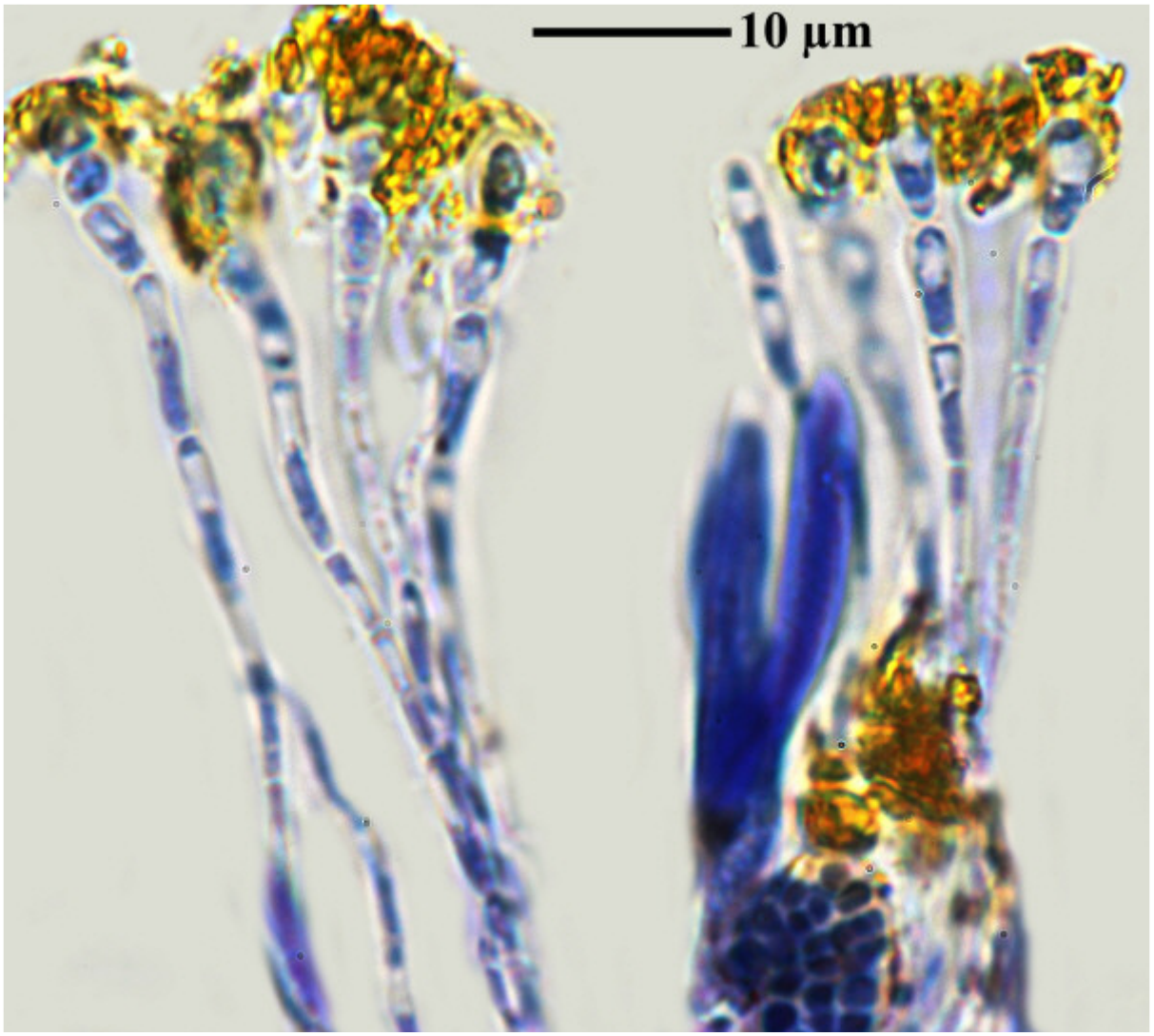


Caloplaca subsoluta

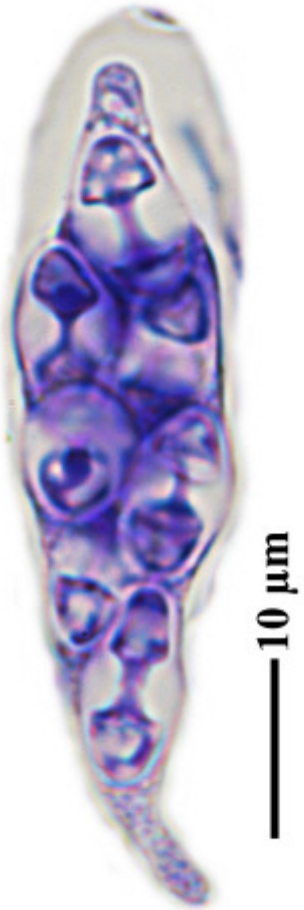




Caloplaca subsoluta







Caloplaca subsoluta

Caloplaca subsoluta (Nyl.) Zahlbr.
[= *Squamulea subsoluta* (Nyl.) Arup, Søchting & Frödén]

On lava rocks.

[12286], Griechenland, N-Samos, bei Manolates südlich von Agios Konstandinos, 37°47.185' N, 26°49.533' E, 341 m, halbschattige bis besonnte Terrassenmauern, auf Glimmerschiefer. Leg. Schumm, 02.05.2006, det. A. Aptroot 2016.





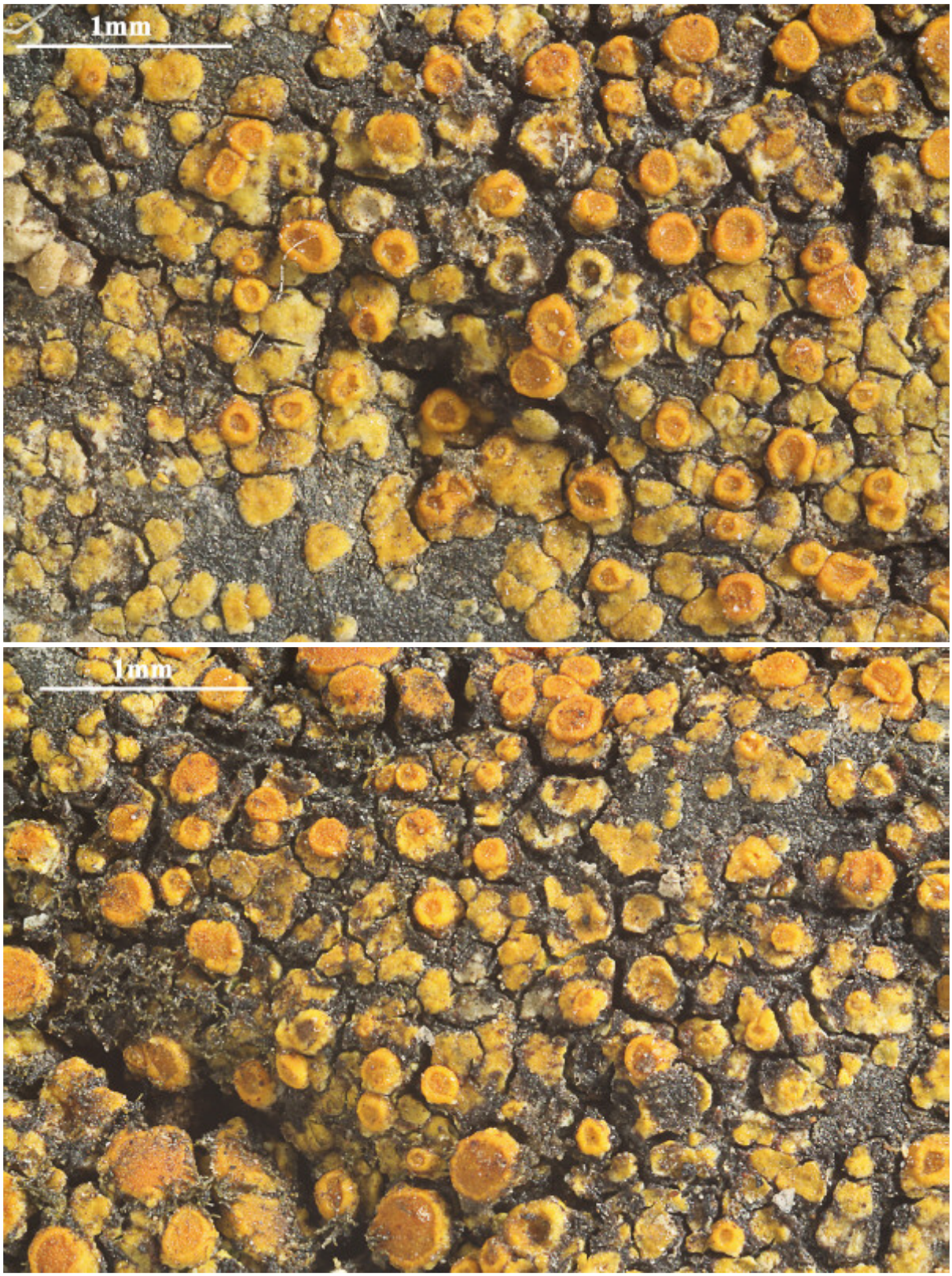
Caloplaca subsoluta

Caloplaca subsoluta (Nyl.) Zahlbr.
[= *Squamulea subsoluta* (Nyl.) Arup, Søchting & Frödén]

On lava rocks.

[13023], Spanien, Kanaren, La Palma (NE), südwestlich von Santa Cruz beim Mirador de la Cumbre am Straßenrand der Straße LP-2; 28°39.547' N, 17°48.796' W, ca. 920 m. Leg. F. Schumm, 18.01.2007, det. A. Aptroot 2016.





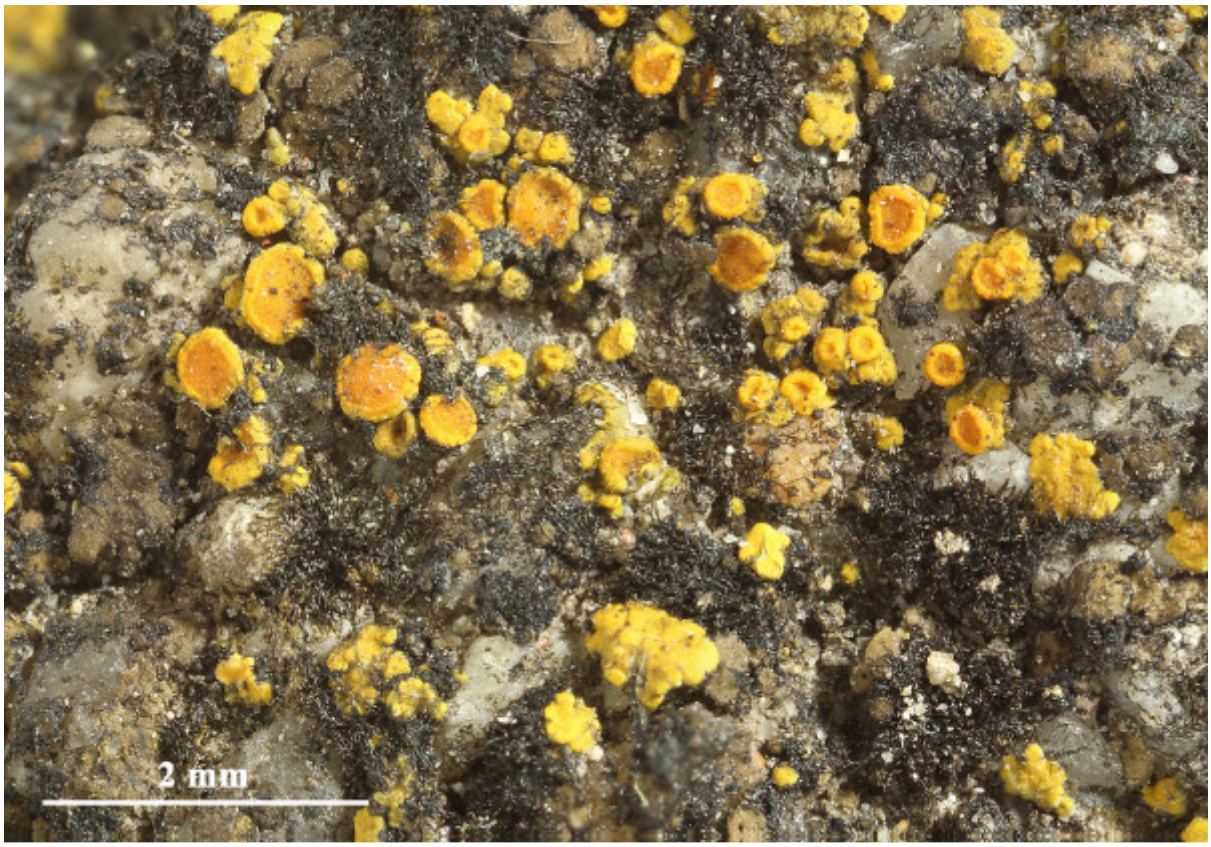
Caloplaca subsoluta

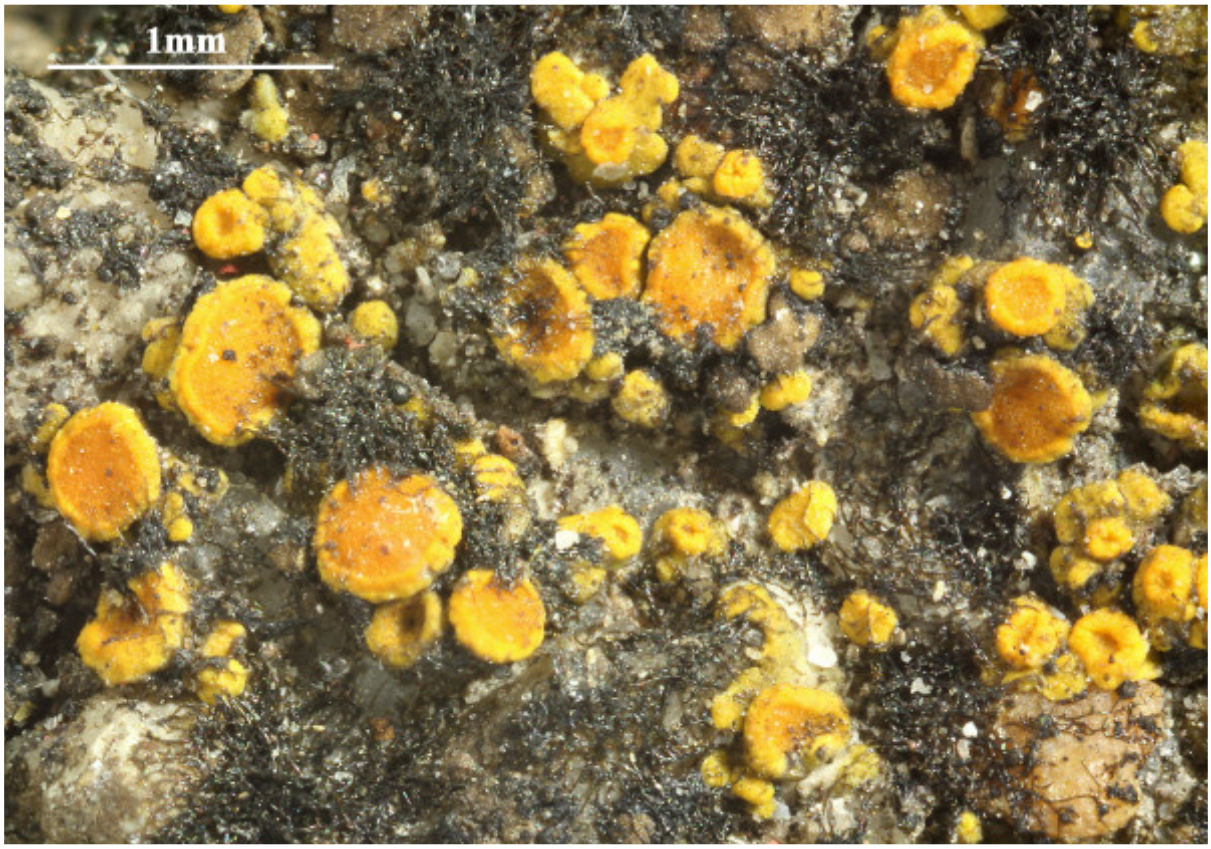
Caloplaca subsoluta (Nyl.) Zahlbr.
[= *Squamulea subsoluta* (Nyl.) Arup, Søchting & Frödén]

On stones.

[ABL 72662], Korea, Gangwon-do, Gangrung city, Yeongok-myeoun, Samsan-ri, Mt. Odae, Odaesan National Park, along Cheonghak stream, c. 37°49’ N, c. 128°42’ E, c. 240 m, on concrete. Leg. A. Aptroot 14.10.2014, det. A. Aptroot 2014.







Caloplaca subsoluta

Caloplaca subsoluta cfr**.** (Nyl.) Zahlbr.
[= *Squamulea subsoluta* cfr. (Nyl.) Arup, Søchting & Frödén]

On lava rocks.

[5272], Spanien, Gran Canaria, Barranco de Los Tilos südlich Moya; 28°04.766’ N, 15°35.935’ W, Höhe 620 m. Leg. F. Schumm & U. Schwarz 28.12.1998, det. A. Aptroot 2016





Caloplaca subsoluta cfr.

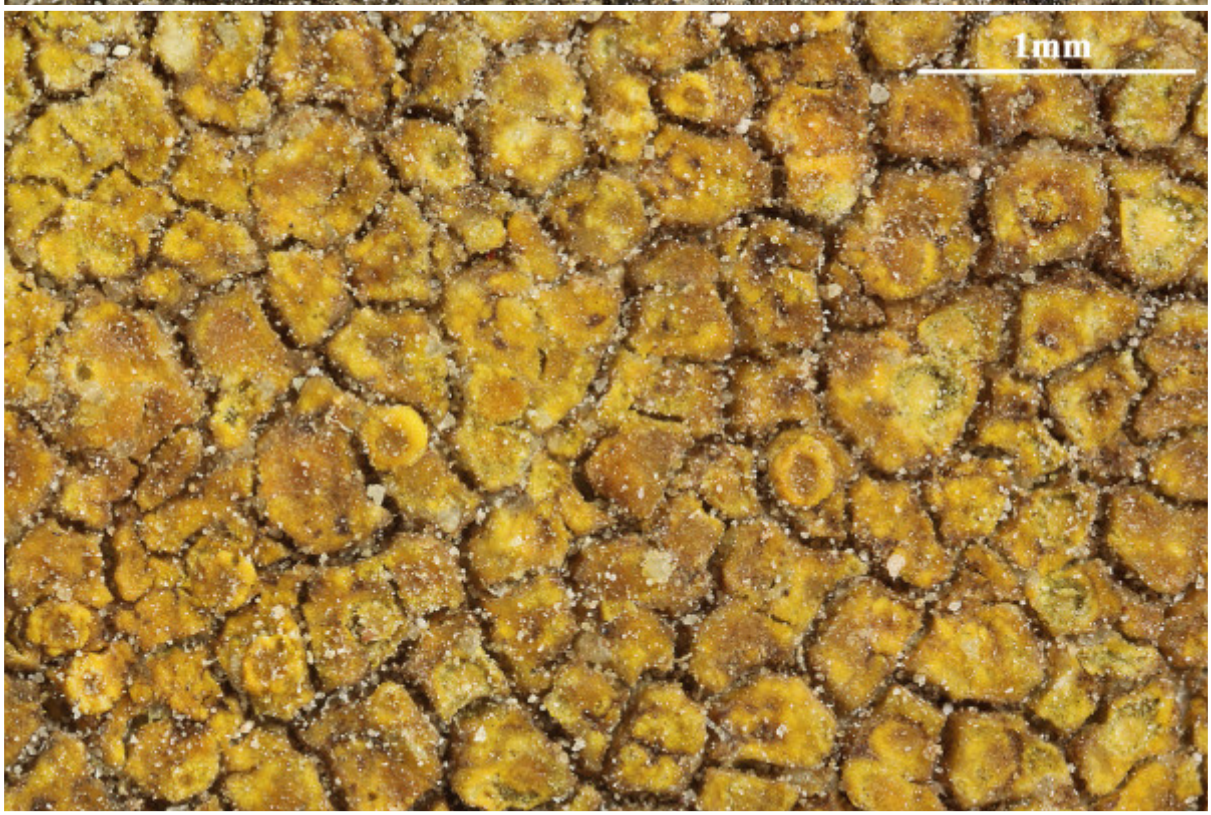
Caloplaca subsoluta cfr**.** (Nyl.) Zahlbr.
[= *Squamulea subsoluta* cfr. (Nyl.) Arup, Søchting & Frödén]

On rocks. Unclear

[16365], Mallorca (Nord): Orient, von Son Perot durch das Tal "Torrent de Cave Negra" in Richtung Santa Maria; 39.73306° N, 2.74282° E, 460 m, vorwiegend an Steinmauern. Leg. F. Schumm, J.-P. Frahm, 13.03.2010, det.A. Aptroot 2016.







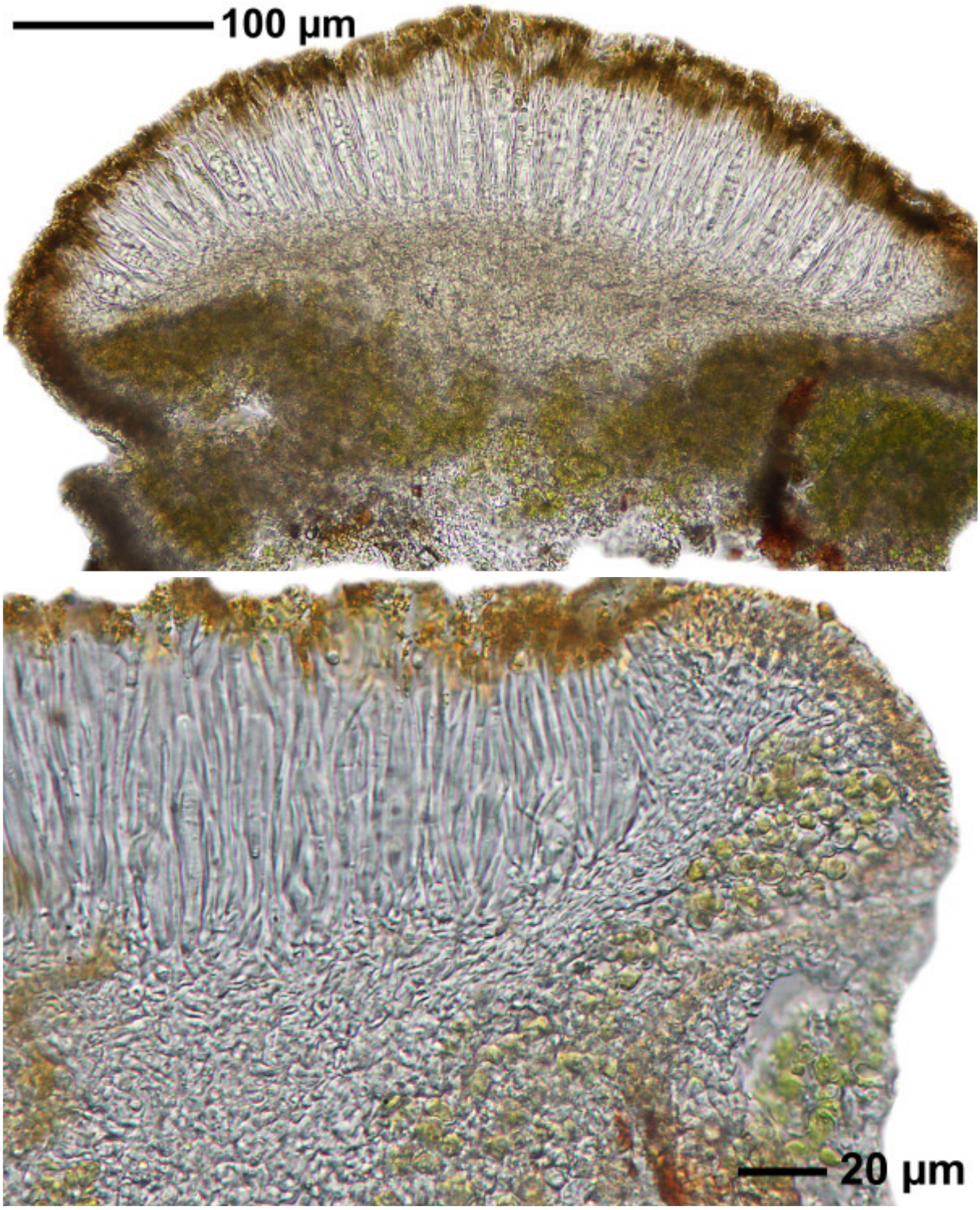
Caloplaca subsoluta cfr.

Caloplaca subsquamosa (Müll.Arg.) Zahlbr.

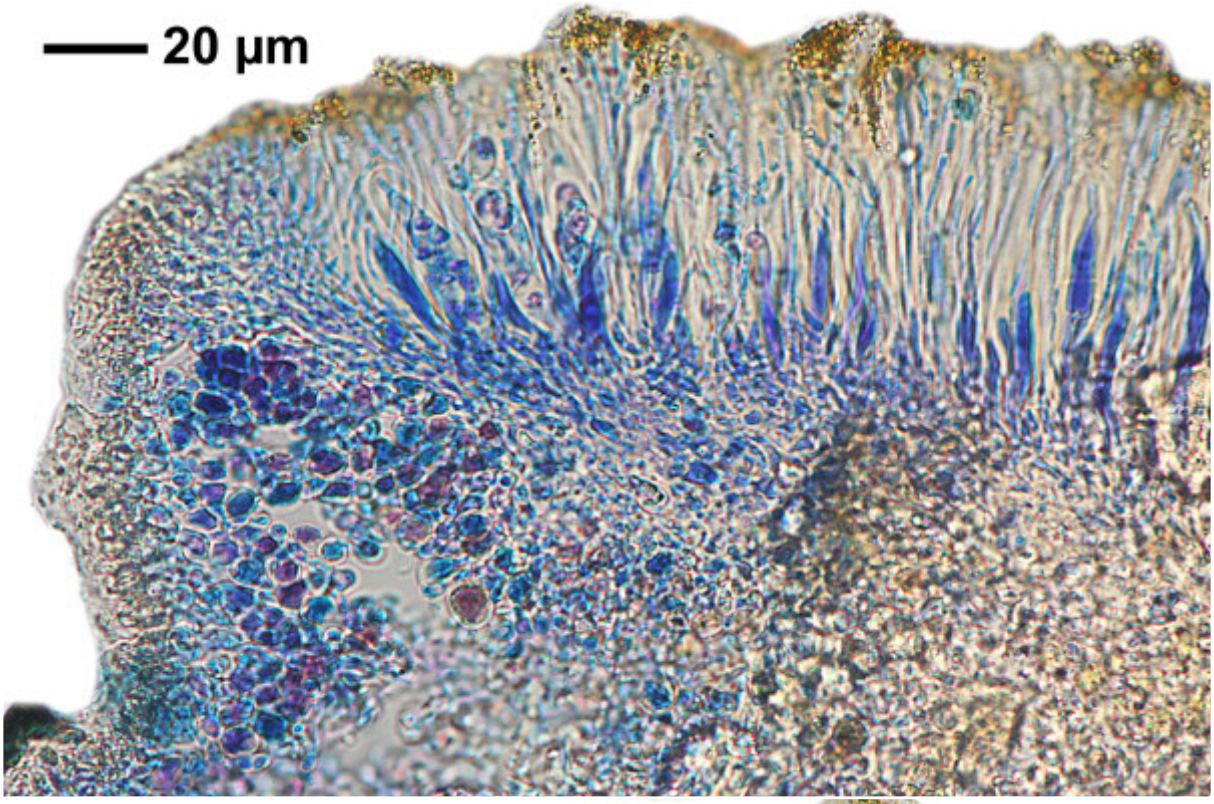
Thallus subsquamose, grey, with black, 0,2-0,3 mm wide pycnidia (ostiolum 0.09 mm). Conidia c. 3.5 x 0.5 µm. Apothecia 0.22-0.44 mm wide, orange, flat, margo proprius thin. Ascospores hyaline, 8/ascus, polarilocular, 12-13 x 6-7 µm, length/septum = 1.7-1.8.

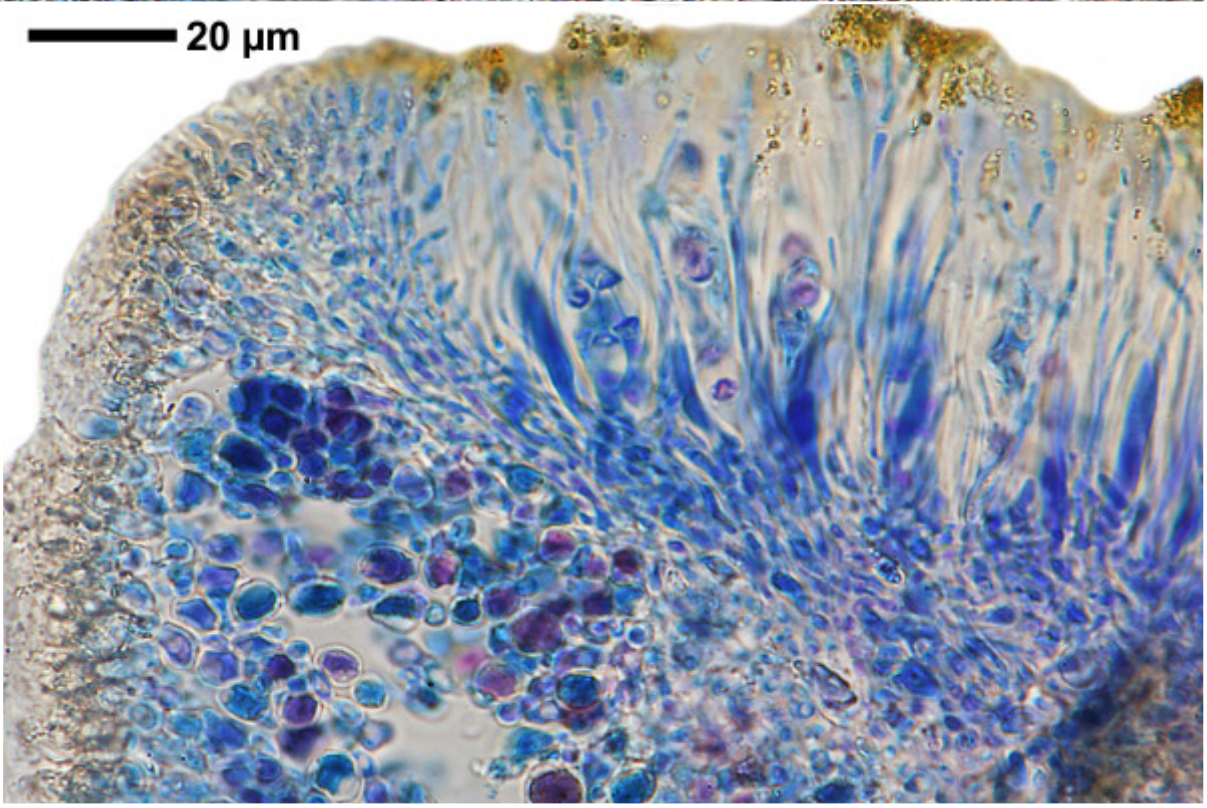
[4851], Kambodscha, Provinz Siem Reap, östlicher Mebon, 12 km NO Siem Reap, auf Mörtel (Die Unterlage reagiert aber mit HCl negativ!!), 13°17'17" n.B., 101°36'29" ö.L., ca. 100 m. Leg. Uwe Schwarz 16.02.1998 (als Nr. 3029), det. Aptroot 2009.



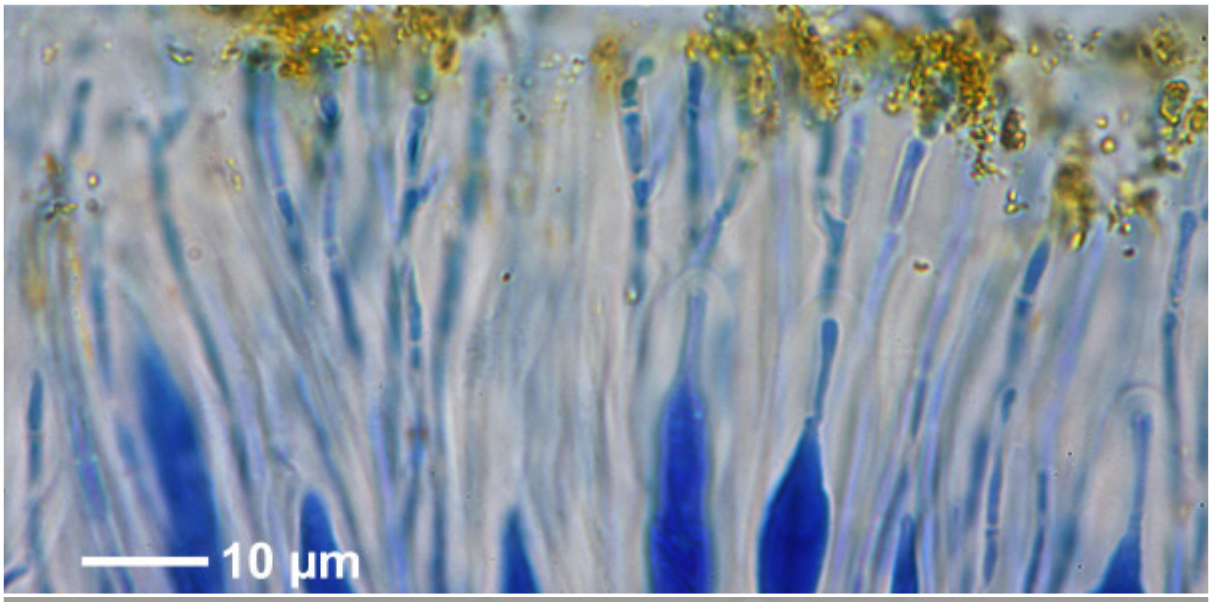


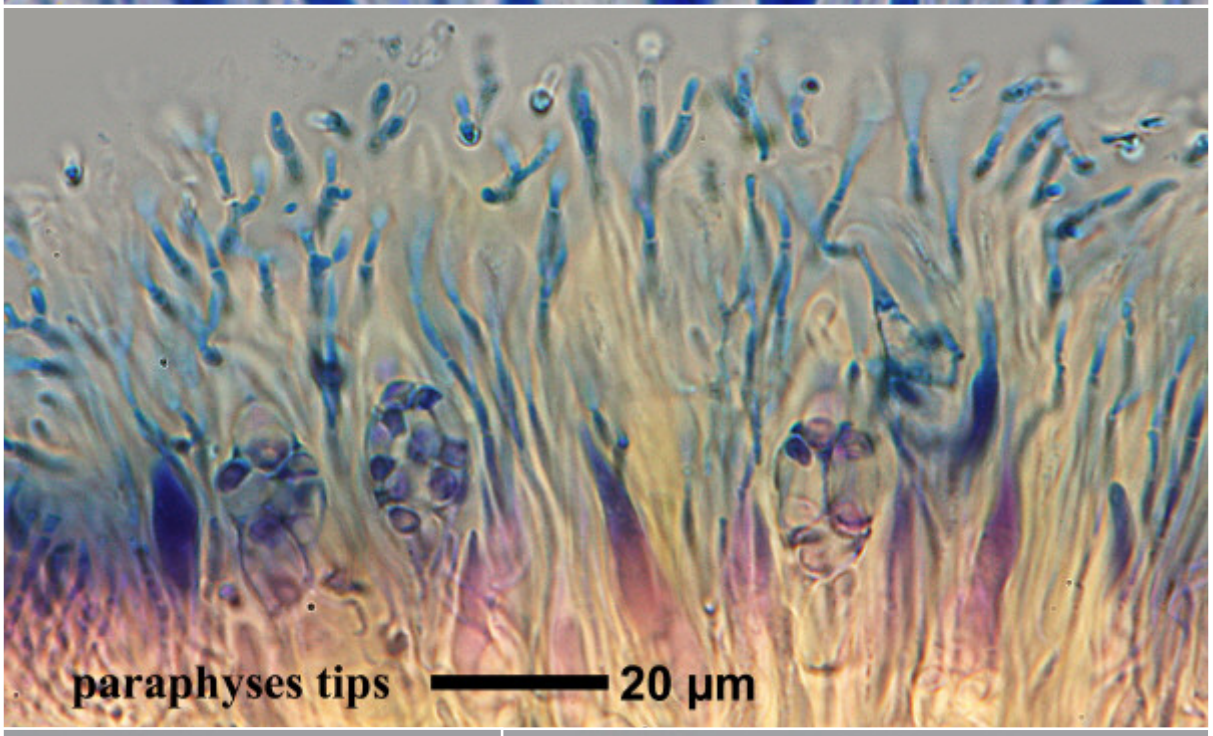
Caloplaca subsquamosa

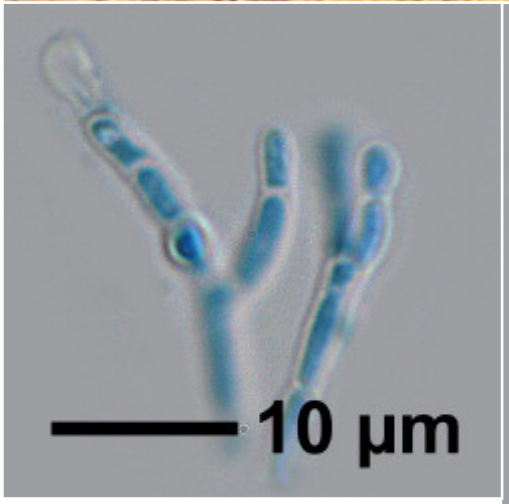


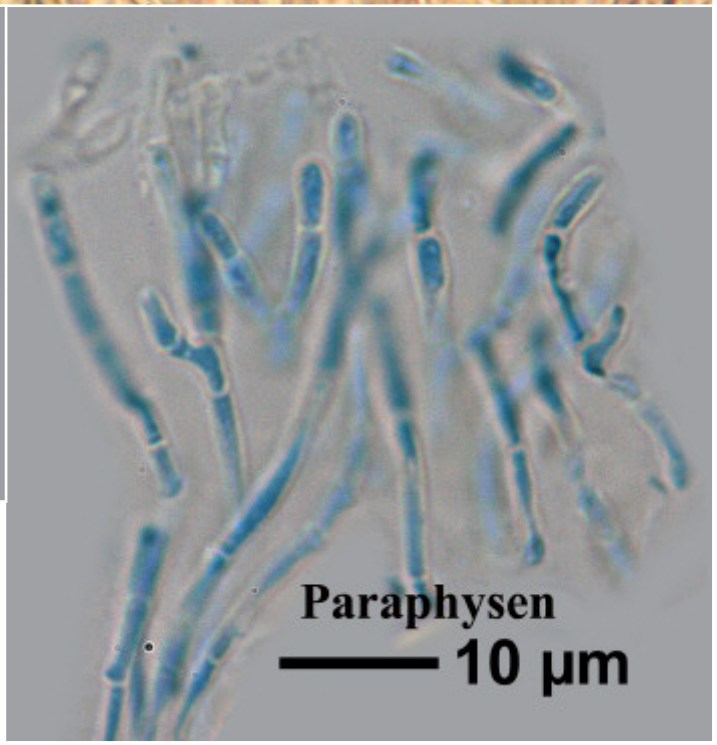


Caloplaca subsquamosa







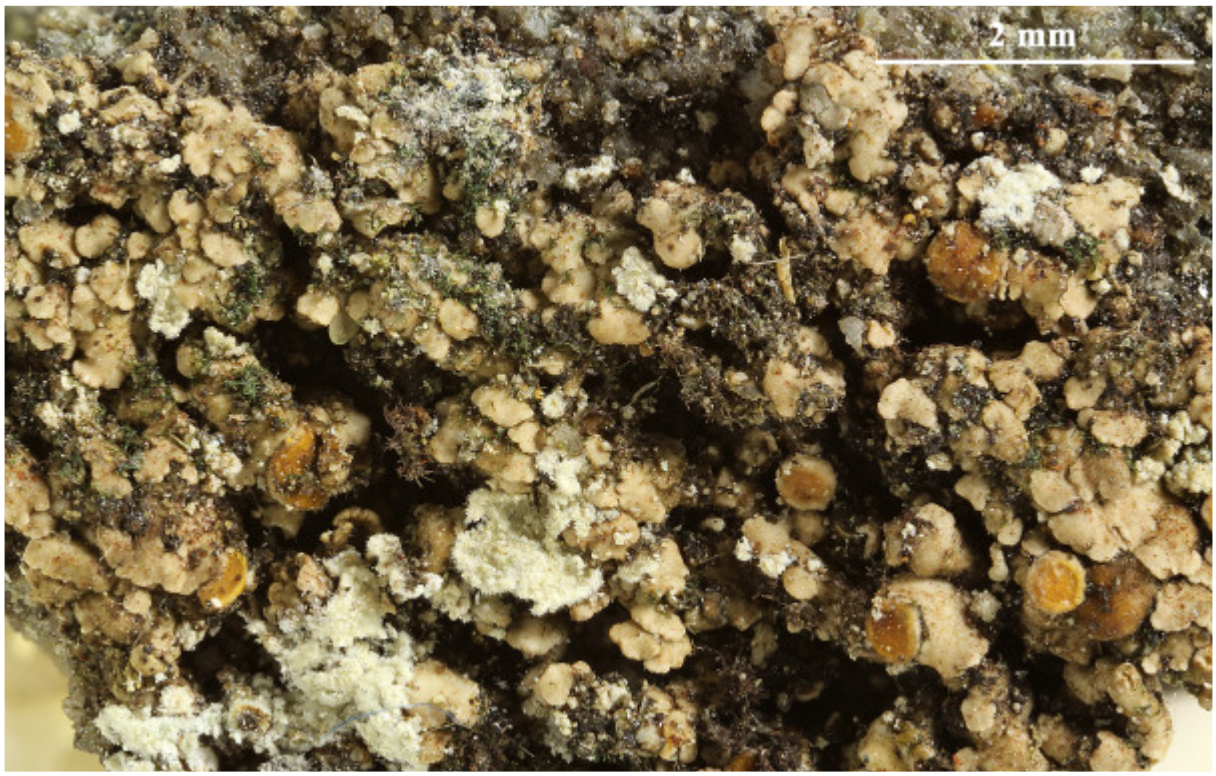


Caloplaca subsquamosa

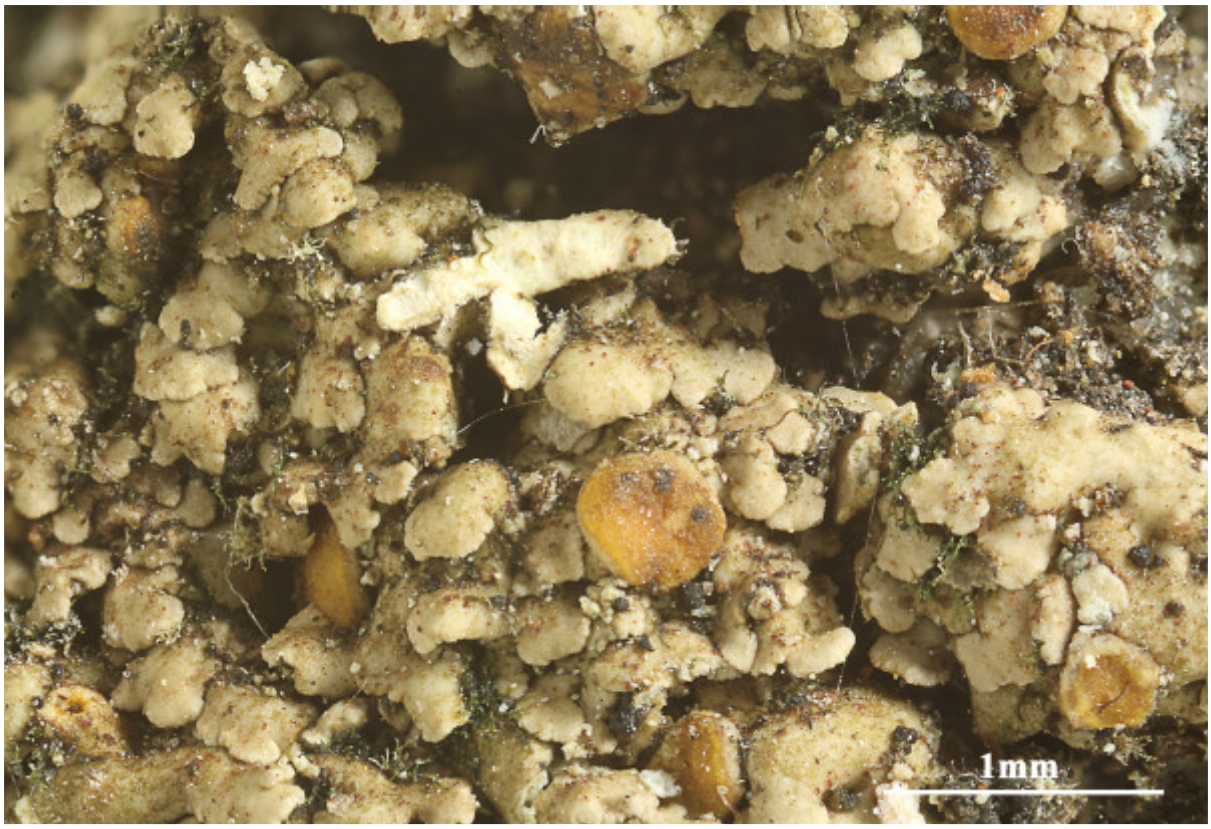
Caloplaca subsquamosa (Müll.Arg.) Zahlbr.

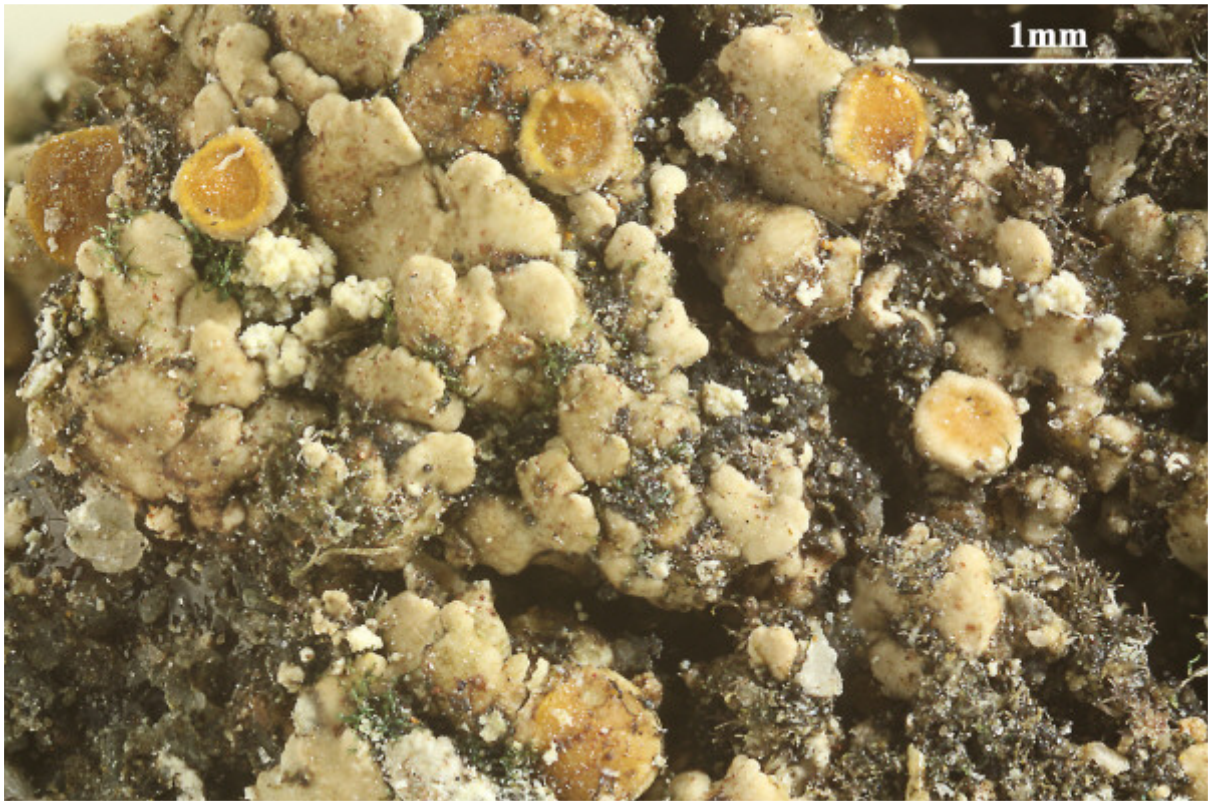
Spores 10-12 x 5.8-6.6 µm, septum 3.8-6.5 µm (FS).

[BR5030067705698], Cambodia, Prov. Siem Reap, Ta Nei temple, Angkor Wat complex, Siem Reap, 13°27’ N, 103°53’ E, 30 m, over mosses on rock, sandstone. Leg. H. Kashiwadani (47903), 30. July 2006, det. A. Aptroot.

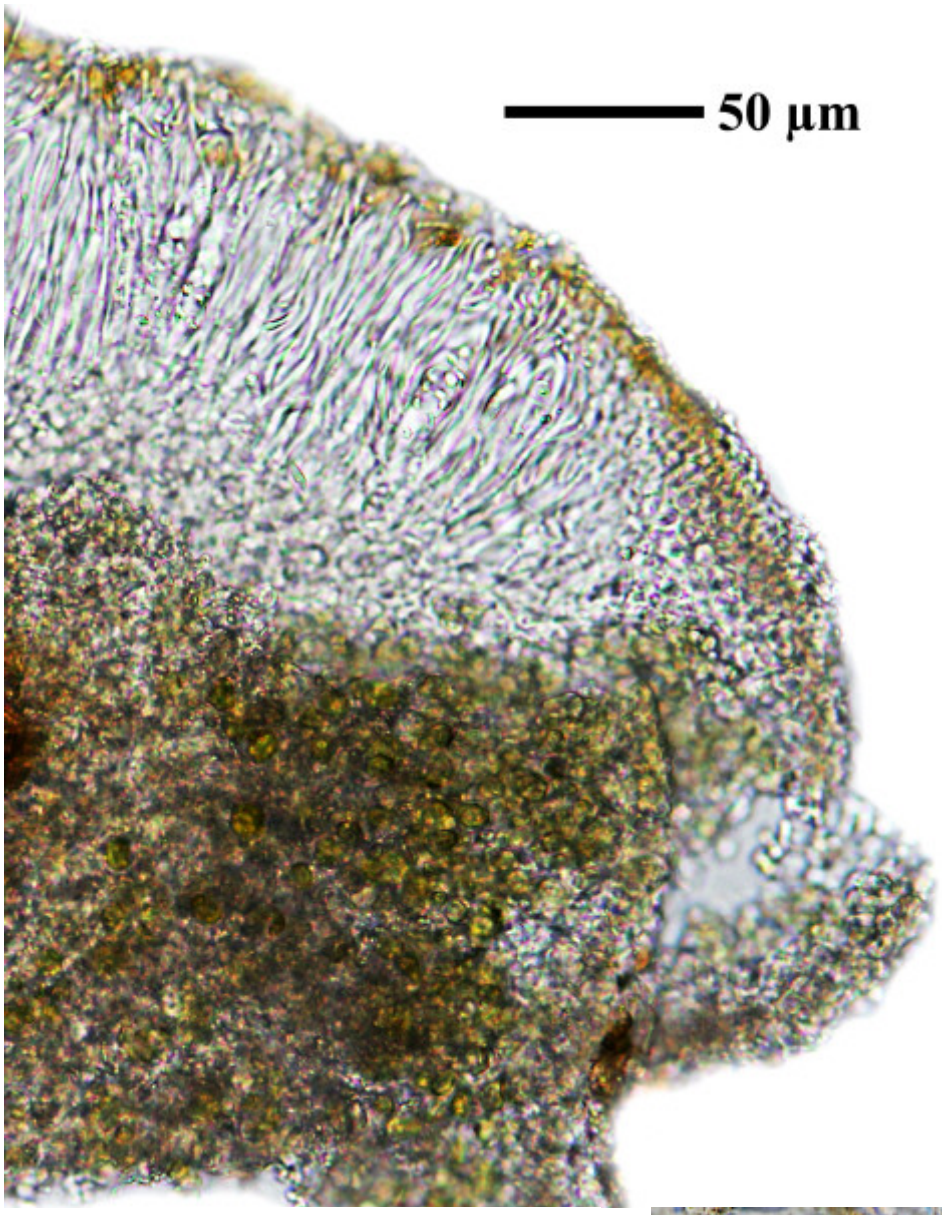




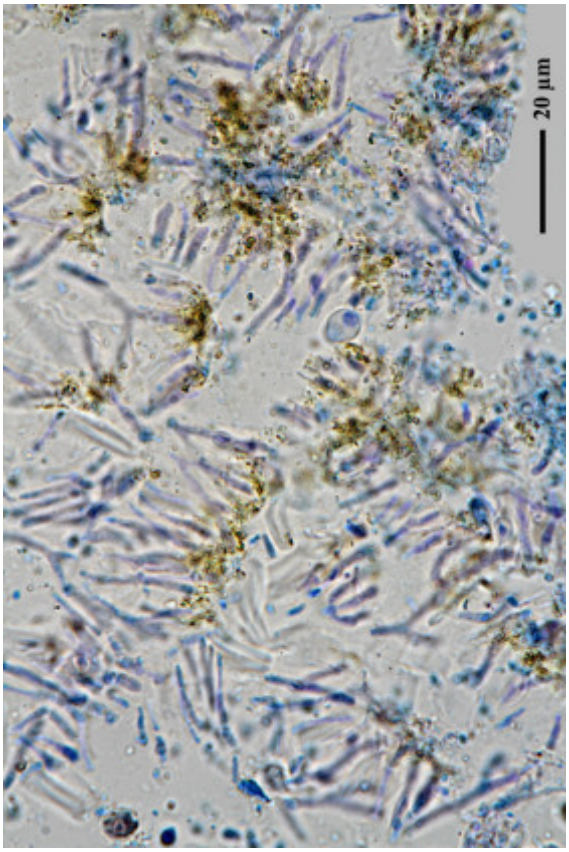




Caloplaca subsquamosa







Caloplaca subsquamosa

Caloplaca subunicolor (Nyl.) Zahlbr., Cat. Lich. Univers. 7: 185 (1931)

On rock.

[ABL M2013-288], NJM Gremmen - Marion Island Relief Expedition 2013. Prince Edward Islands, Marion Island, Trypot Beach, rock near the trypot in middle of beach, 46°53'05.2" S, 37°52'05.8" E, 16 m, growing on rock, in coastal rock. Leg. NJM Gremmen (M2013-288), 6.05.2014, det. A. Aptroot 2019.



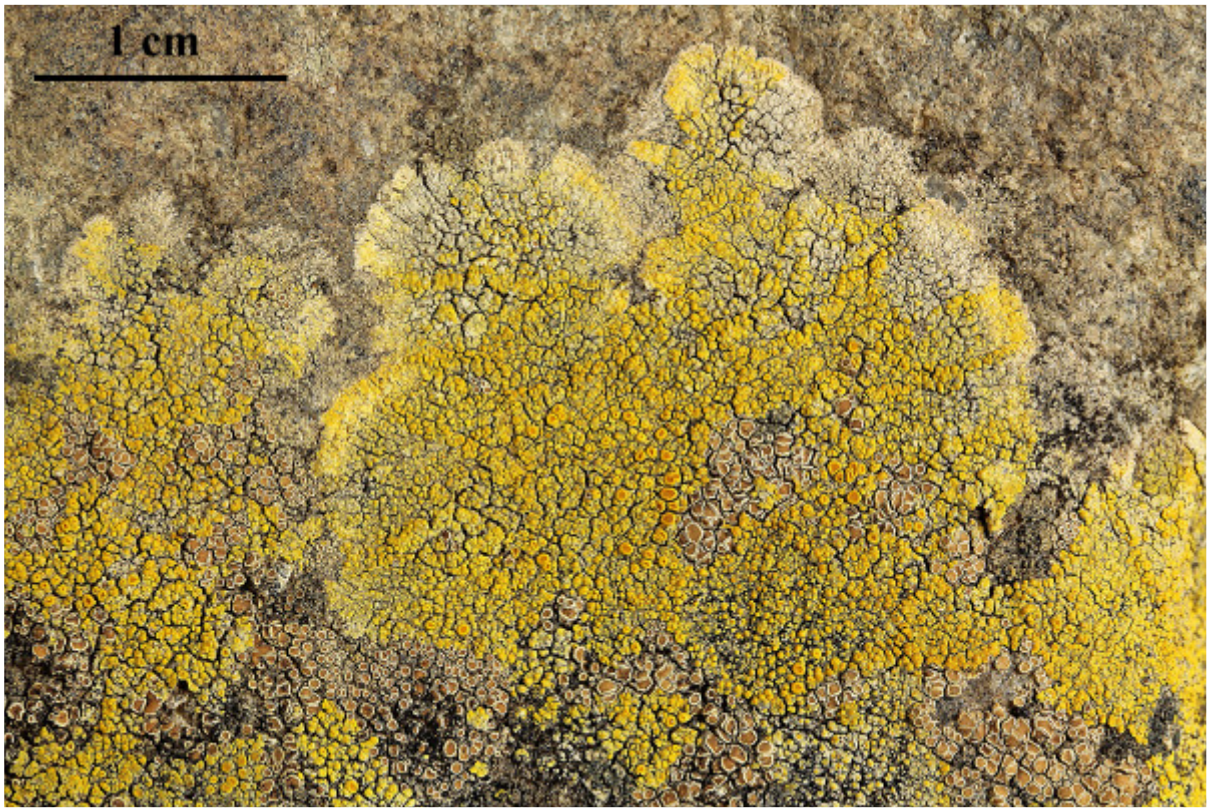




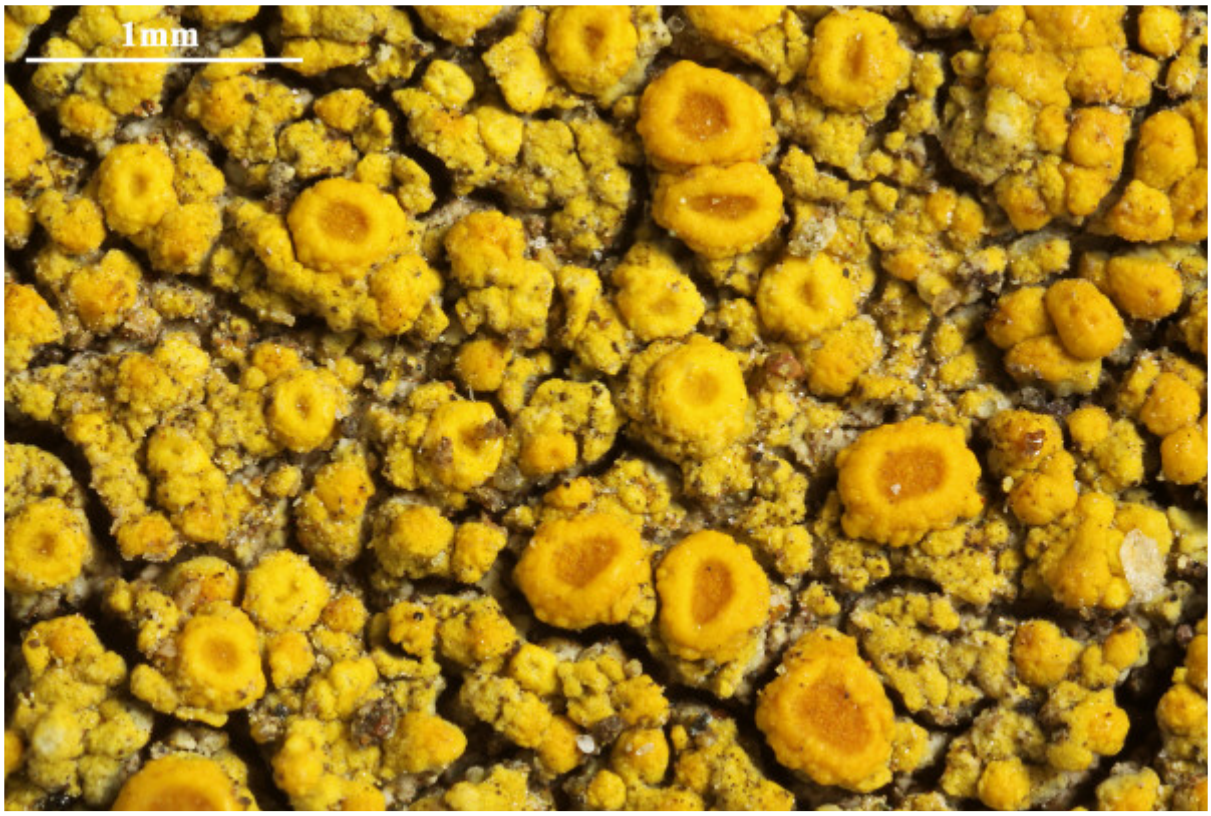
Caloplaca subunicolor

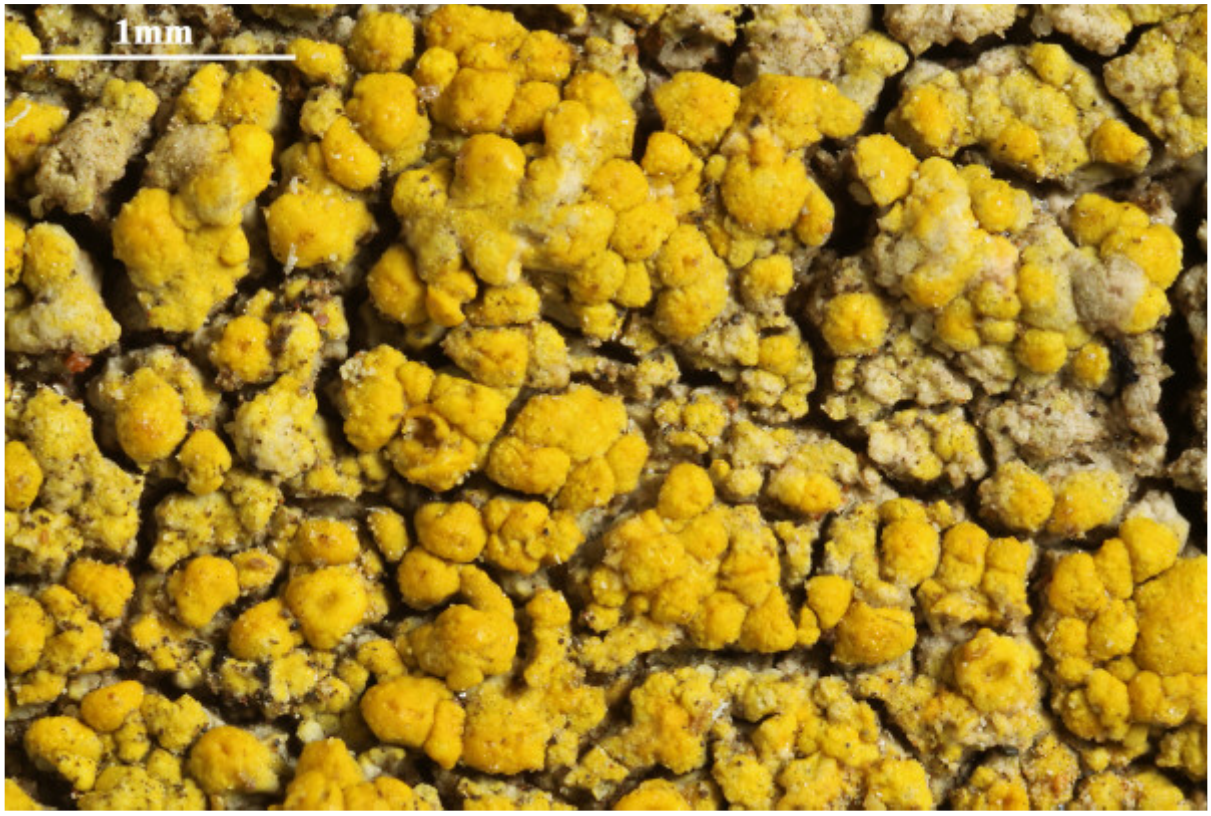
Caloplaca subunicolor (Nyl.) Zahlbr., Cat. Lich. Univers. 7: 185 (1931)

[BR5030011469232], French Southern Territories, Terres australes et antarctiques françaises, district Amsterdam et Saint-Paul, Île Saint-Paul, intèrieur du Cratère, rochers près de lagune, les rochers ne se trouvent jamais sous eau. Leg. Bart Van de Vijver (SP07L21), 23. Nov. 2007, det. A. Aptroot.









Caloplaca subunicolor





Caloplaca subunicolor

Caloplaca subunicolor (Nyl.) Zahlbr.
with *Rinodina cornutula* Zahlbr.

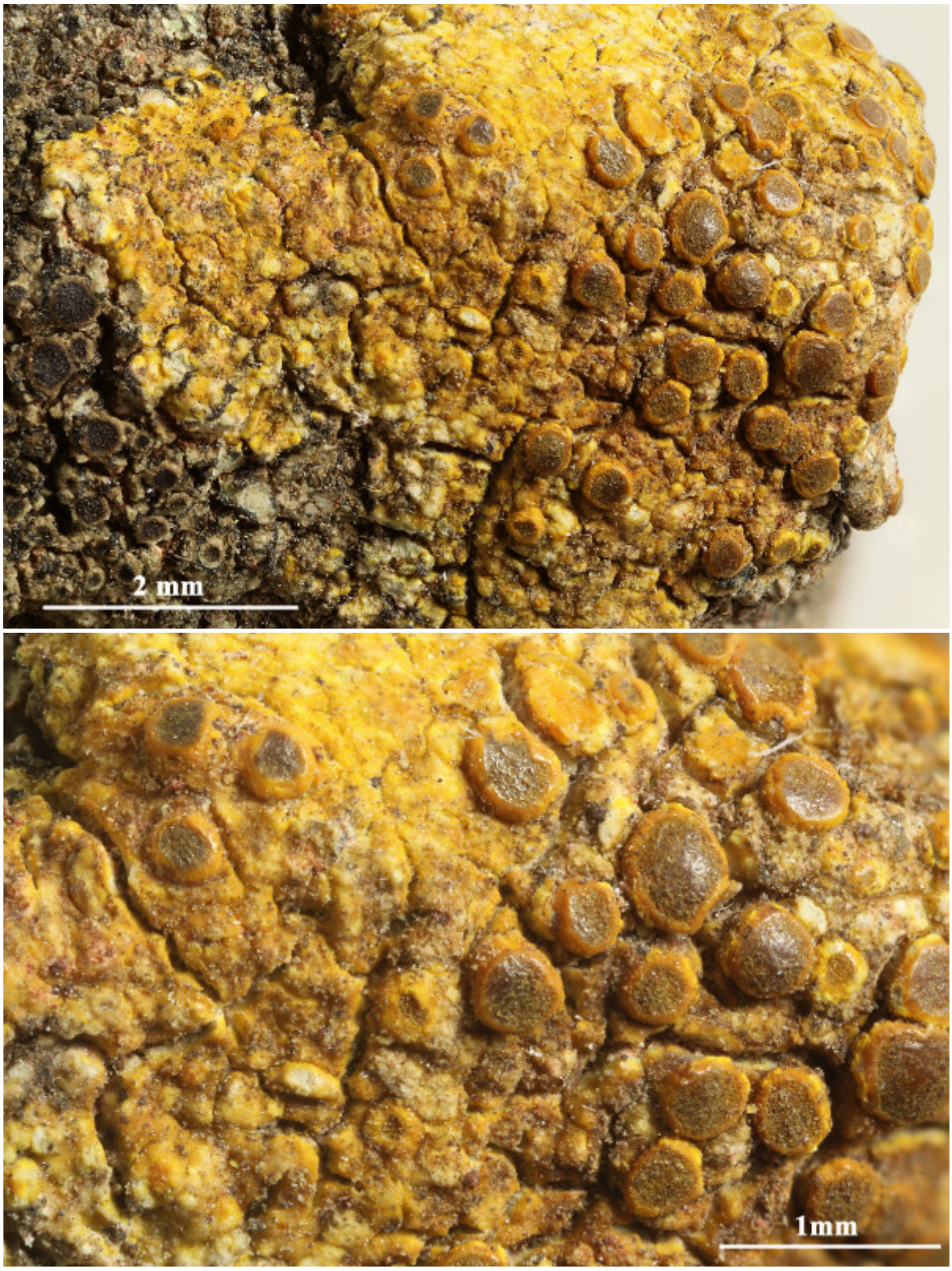
Spores 11 x 6 µm, septum 5 µm (AA); 11.5-13.5 x 5-7 µm, septum 4.5-5.5 µm (FS).

[BR5030012071434], French Southern Territories, Terres australes et antarctiques françaises, district Amsterdam et Saint-Paul, Île Amsterdam, d'Entrecasteaux, plateau D2, grande pièce dénudée artificielle de la végétation; environannte: *Spartina* et *Poa novarae*. Leg. Bart Van de Vijver (AMS07L133), 6. Dec. 2007, det. A. Aptroot, 2009.





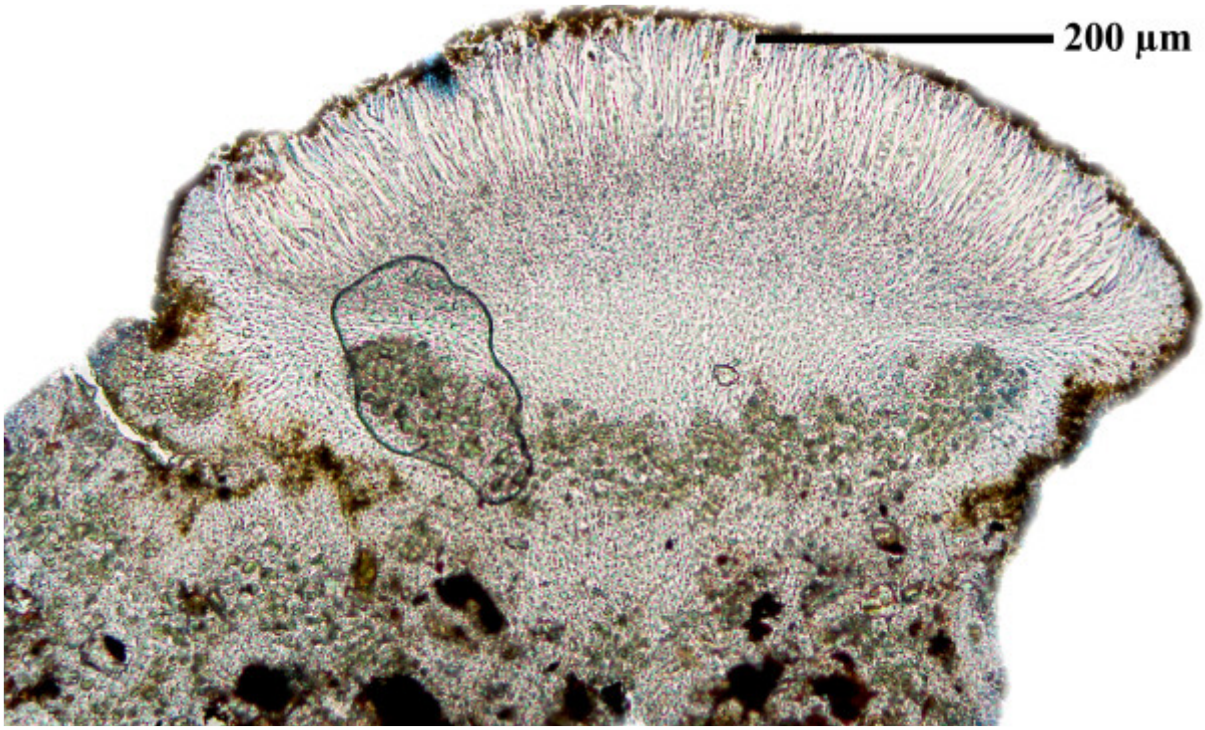
Caloplaca subunicolor

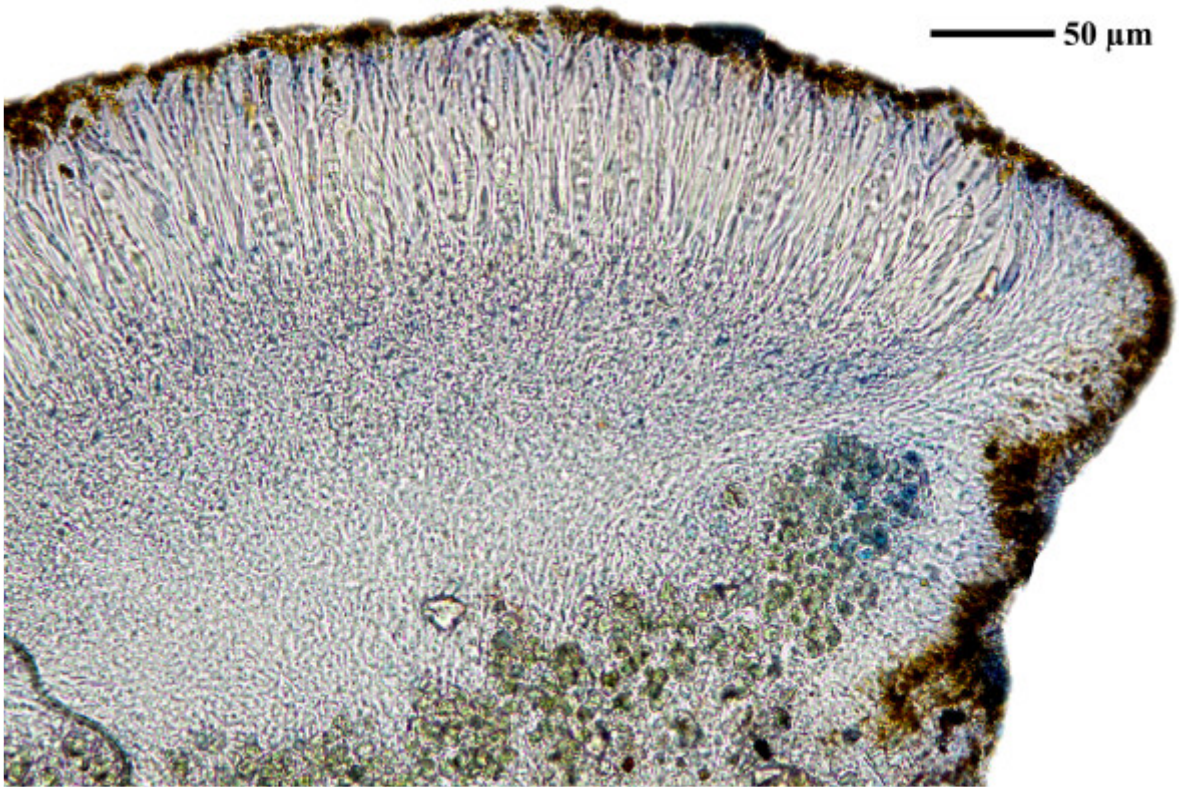


Caloplaca subunicolor

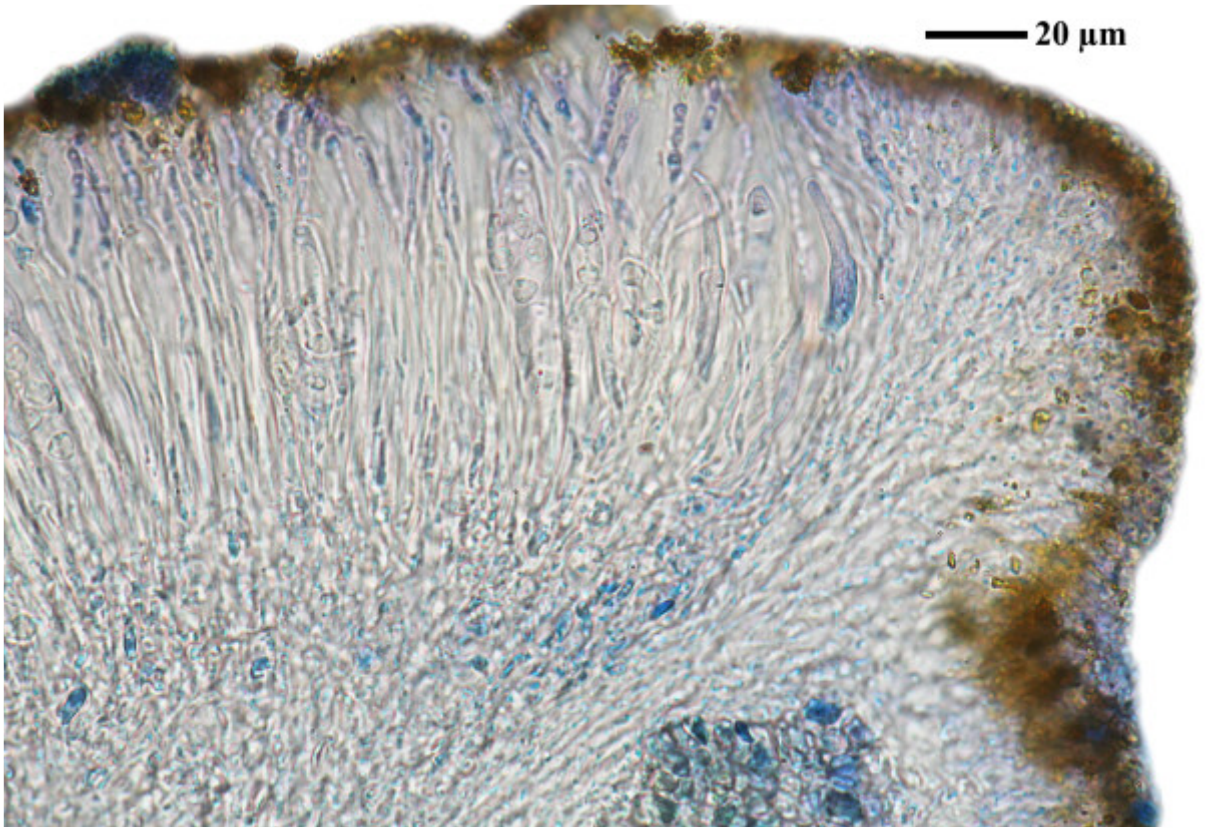


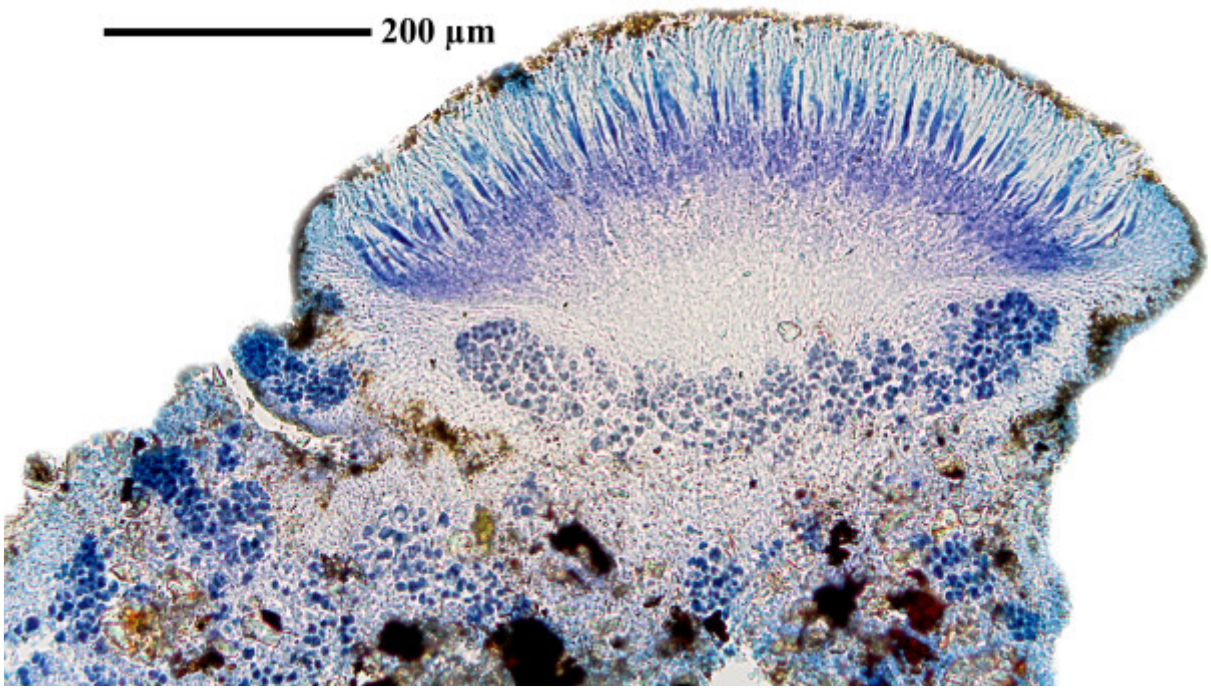
Caloplaca subunicolor



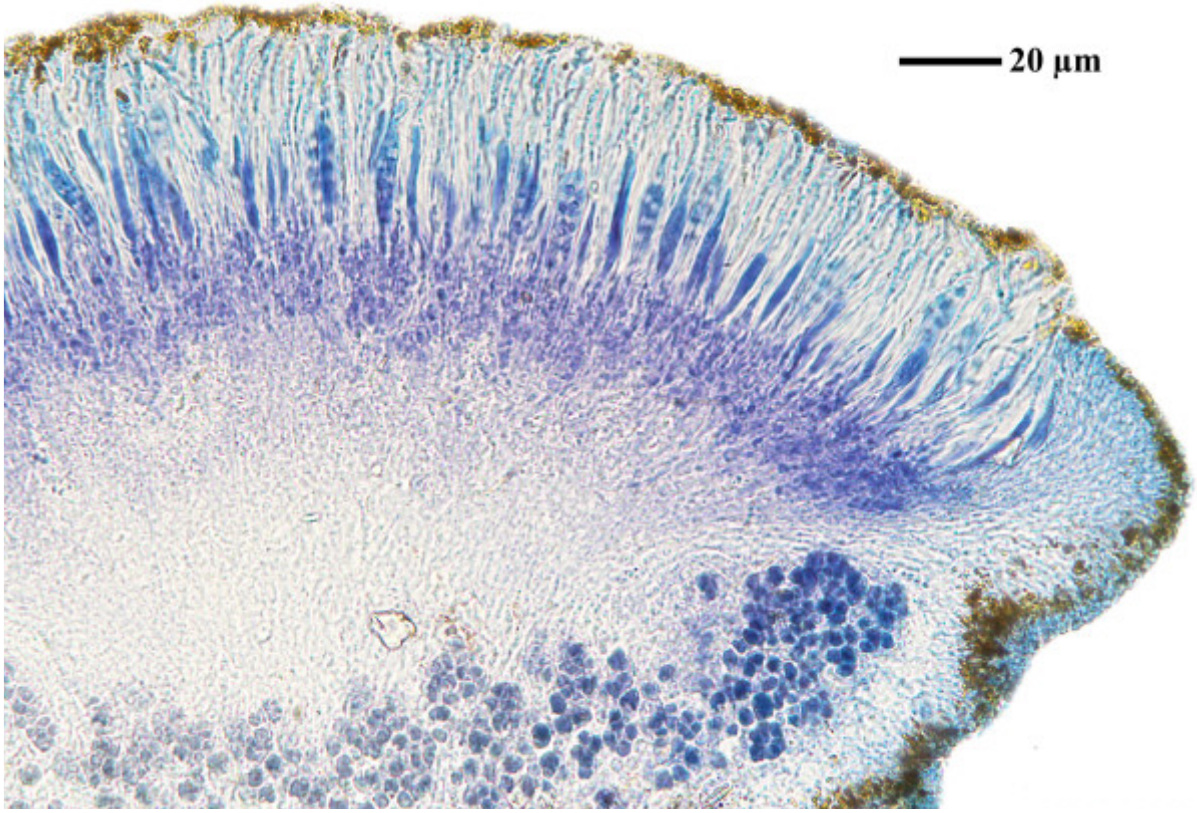


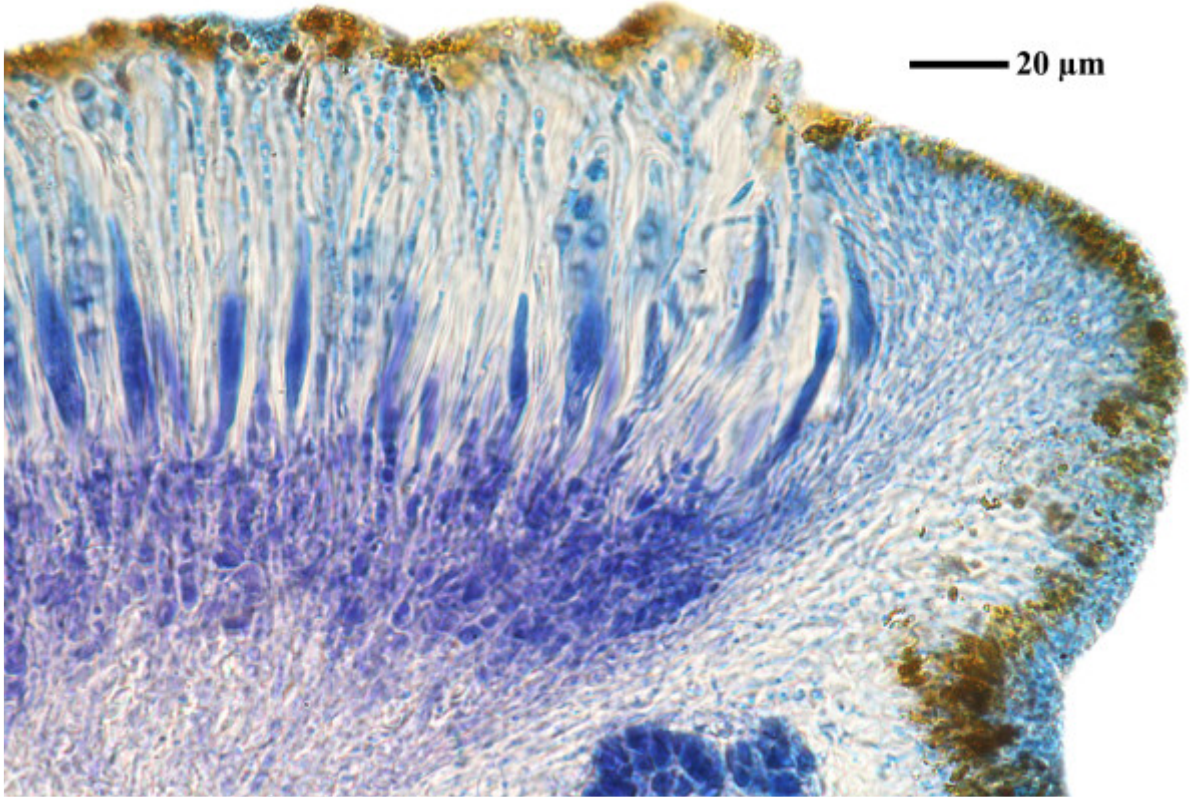
Caloplaca subunicolor



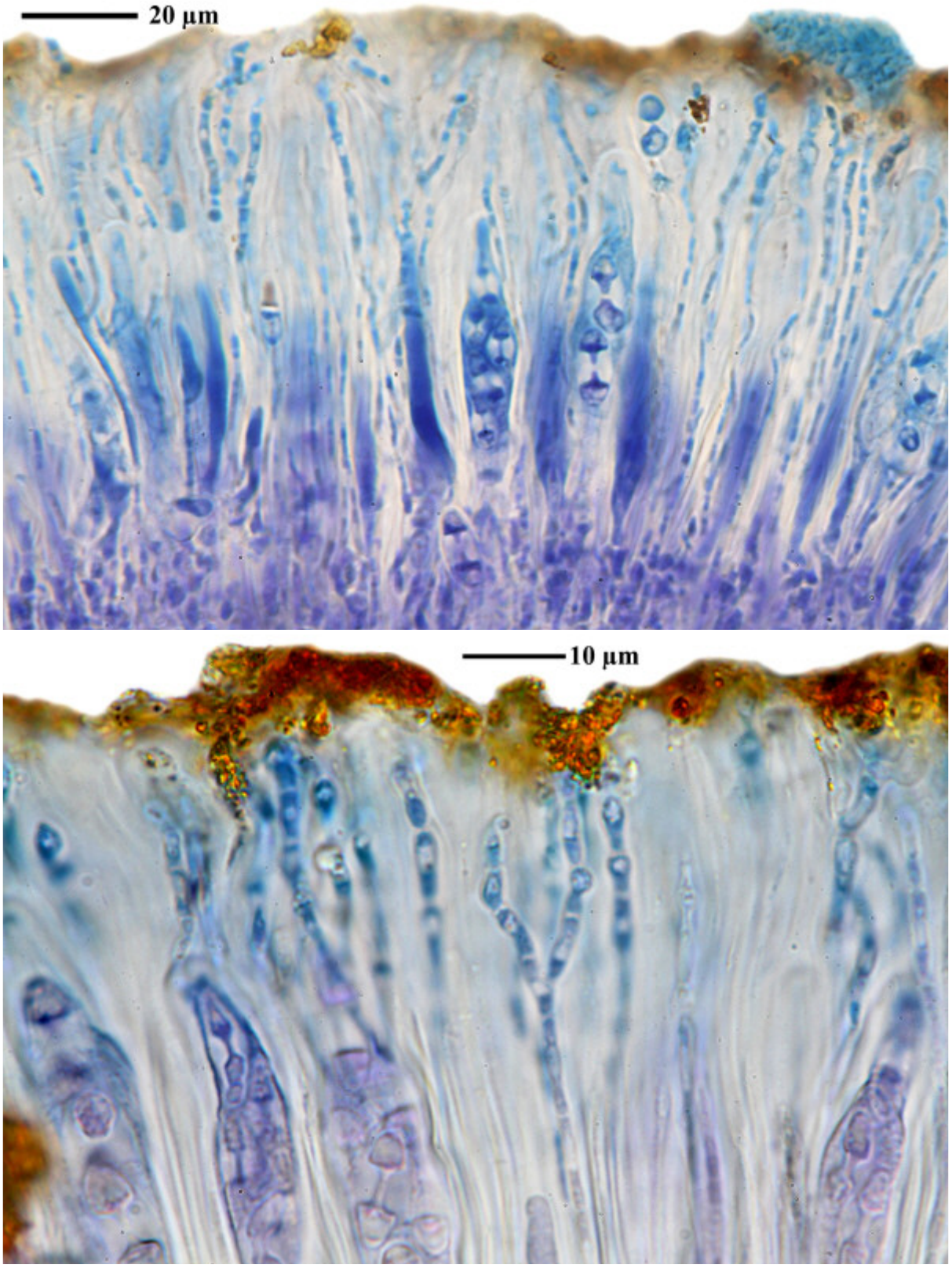


Caloplaca subunicolor

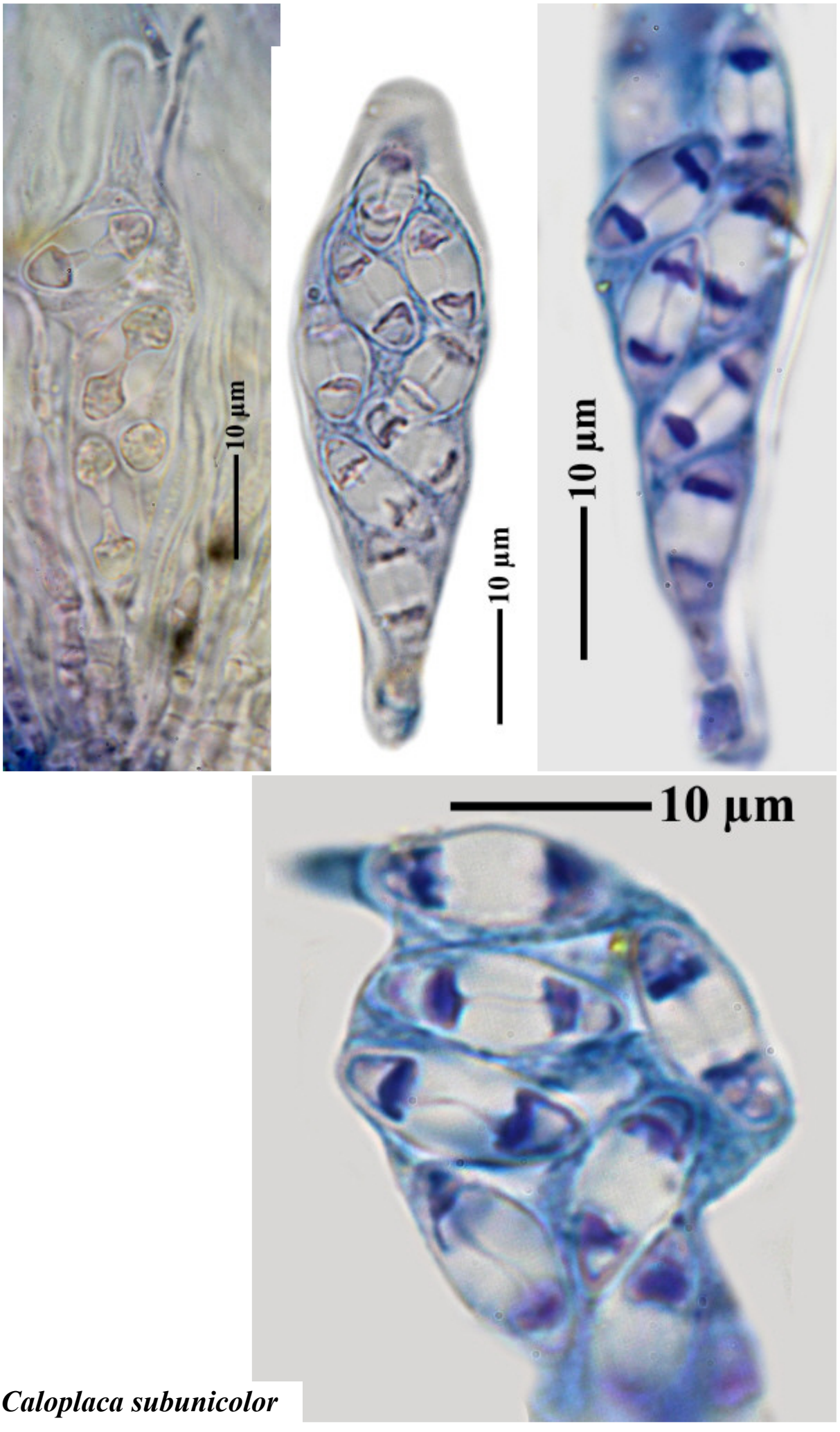




Caloplaca subunicolor



Caloplaca subunicolor



Caloplaca subunicolor

Caloplaca subunicolor (Nyl.) Zahlbr.
with *Rinodina cornutula* Zahlbr.

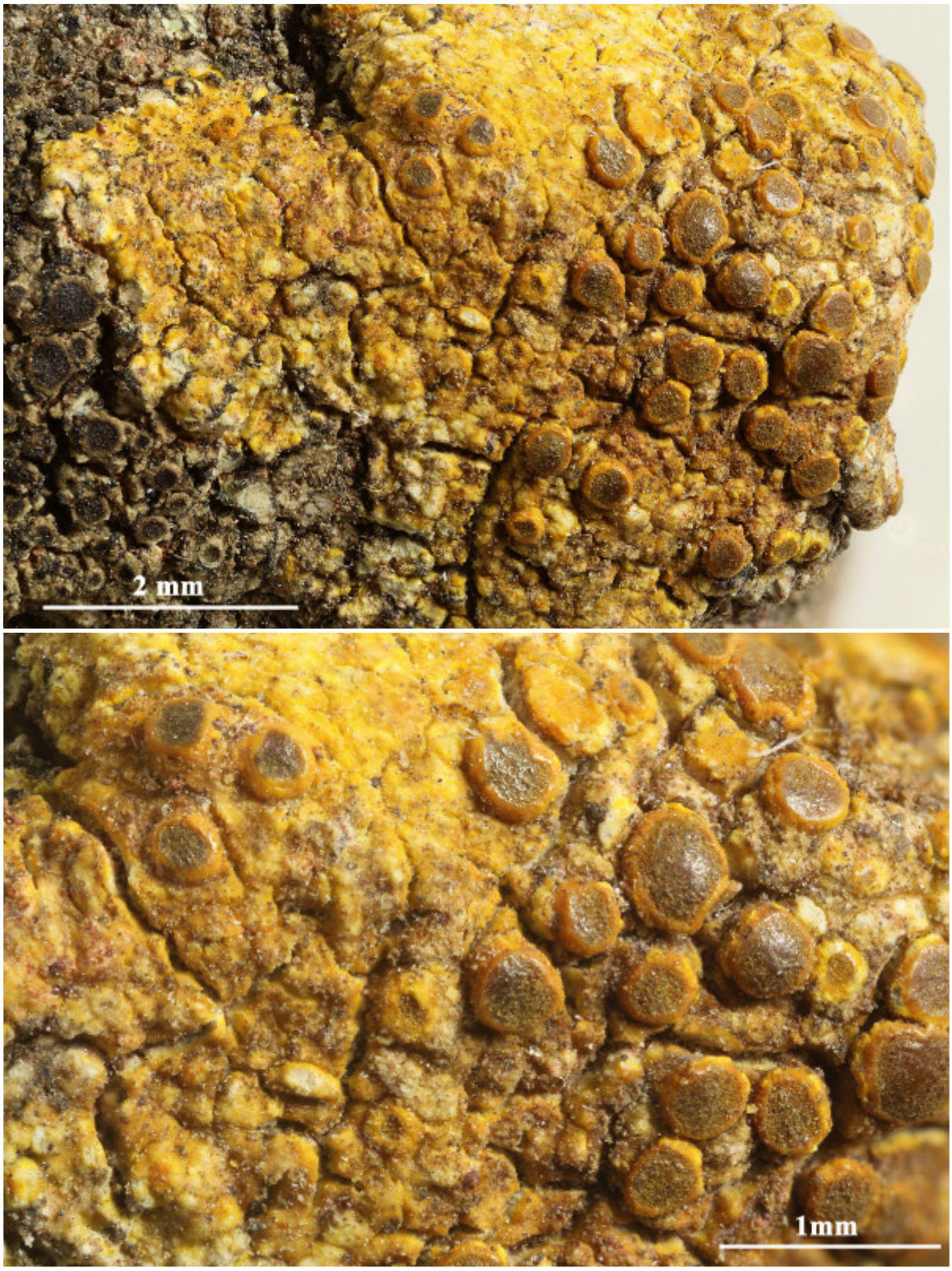
Spores 11 x 6 µm, septum 5 µm (AA); 11.5-13.5 x 5-7 µm, septum 4.5-5.5 µm (FS).

[BR5030012071434], French Southern Territories, Terres australes et antarctiques françaises, district Amsterdam et Saint-Paul, Île Amsterdam, d'Entrecasteaux, plateau D2, grande pièce dénudée artificielle de la végétation; environannte: *Spartina* et *Poa novarae*. Leg. Bart Van de Vijver (AMS07L133), 6. Dec. 2007, det. A. Aptroot, 2009.





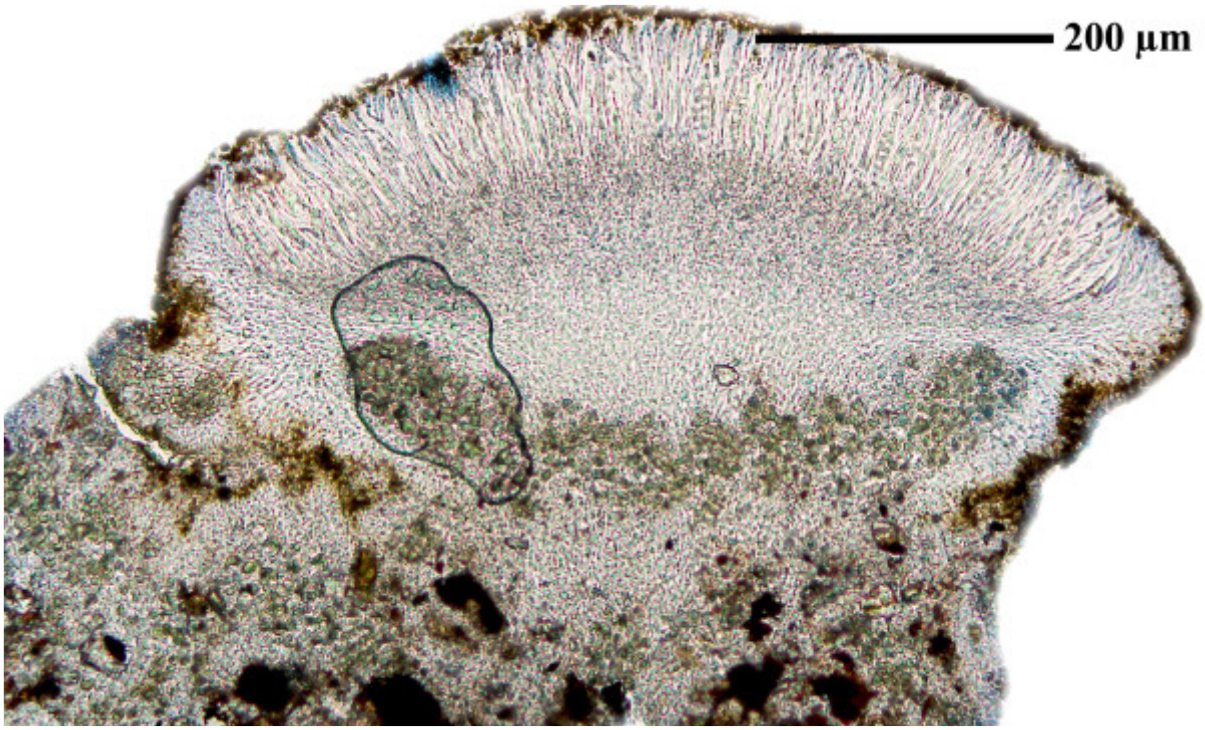
Caloplaca subunicolor

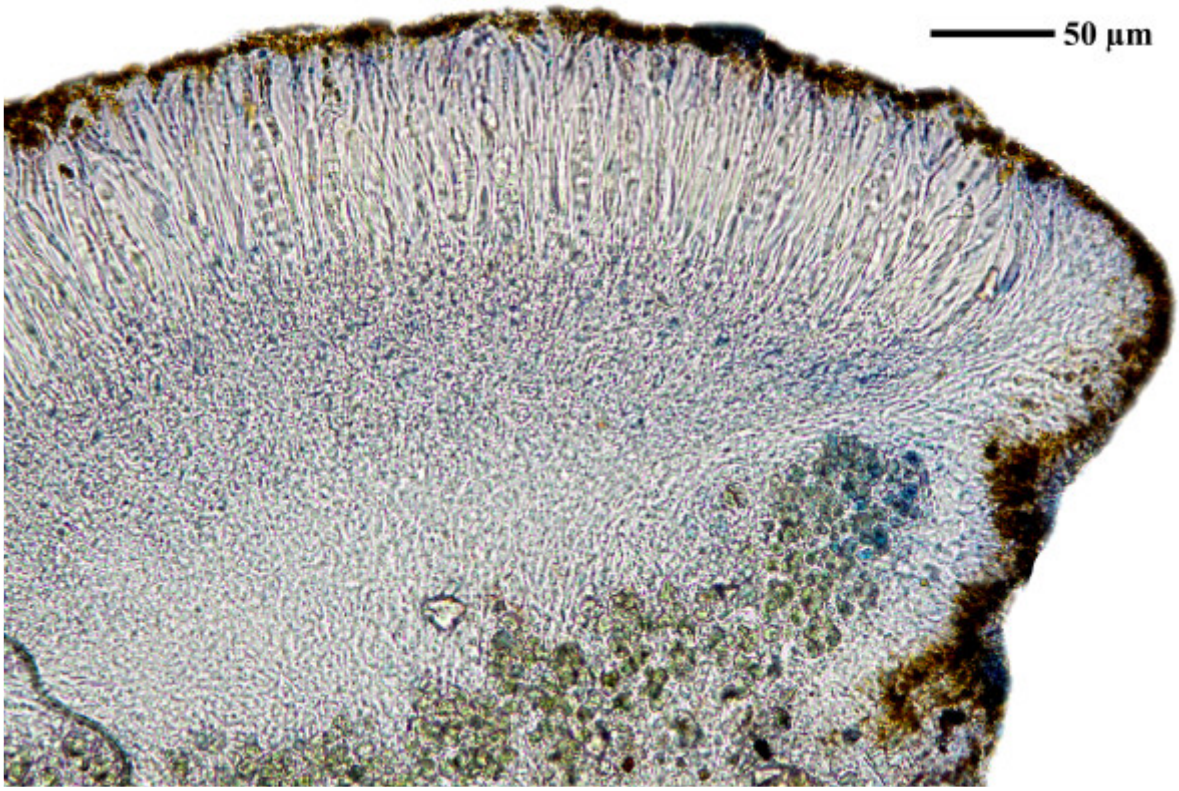


Caloplaca subunicolor

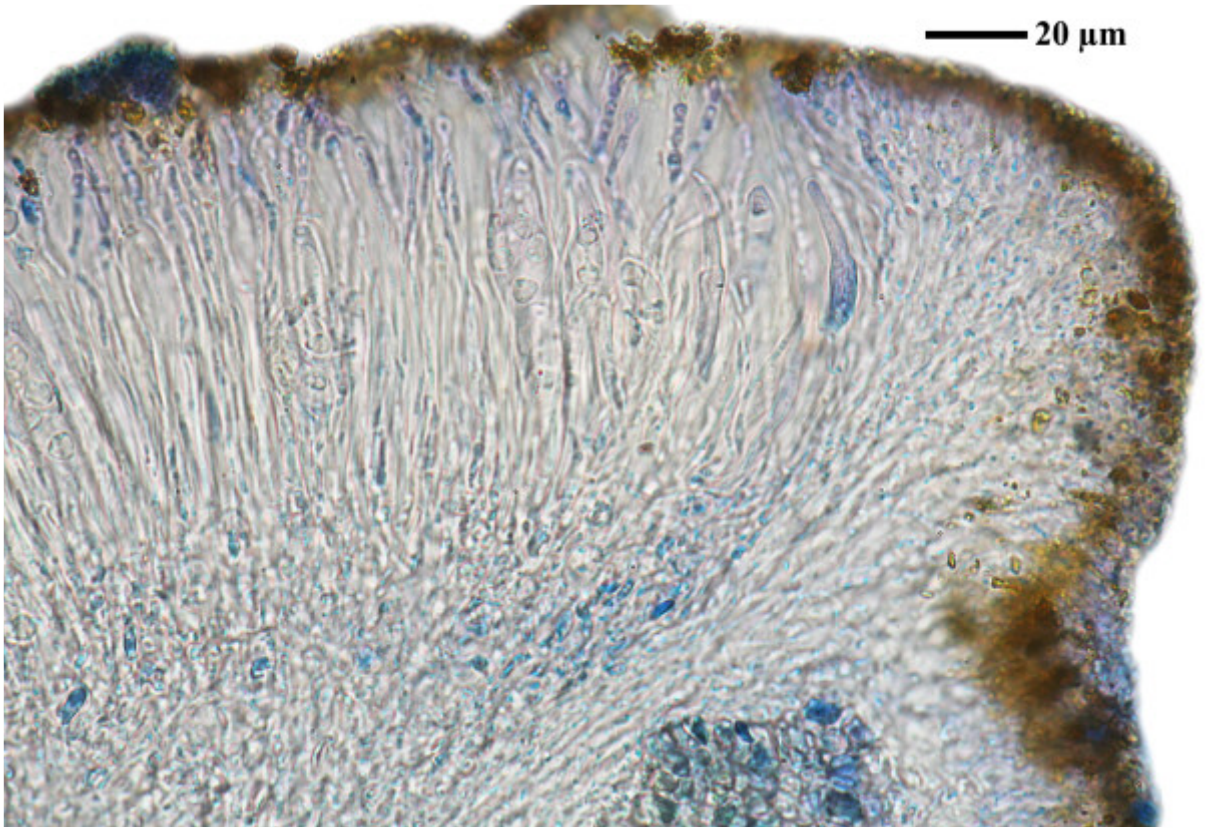


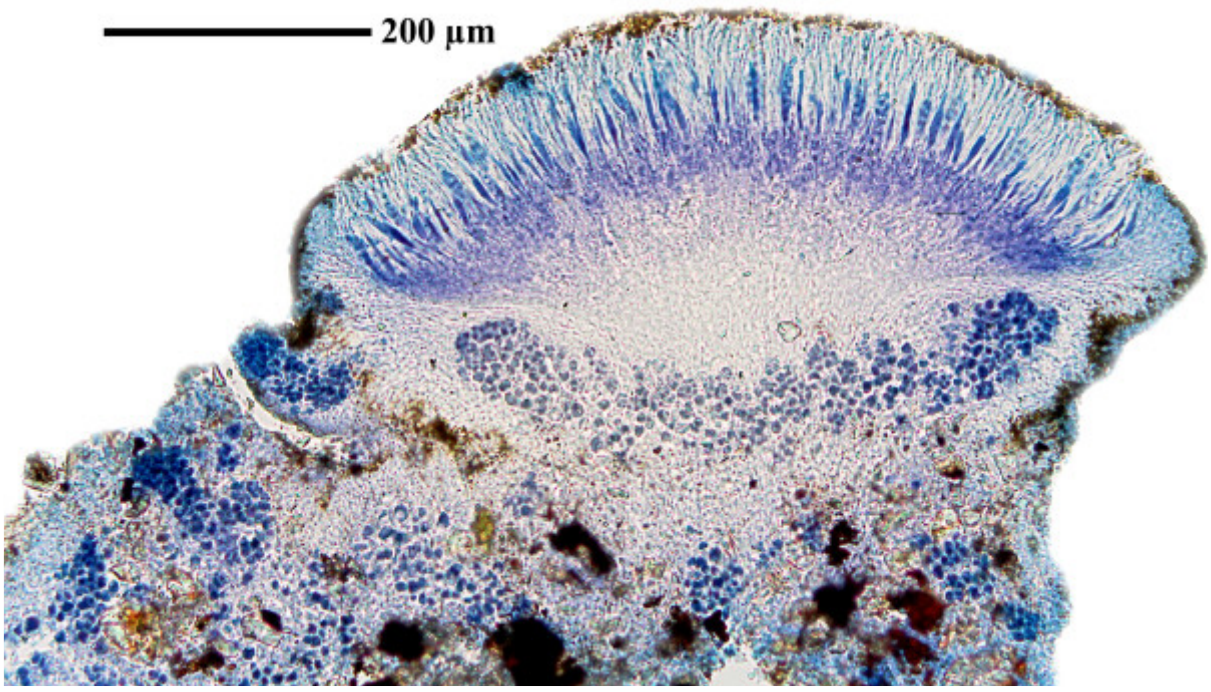
Caloplaca subunicolor



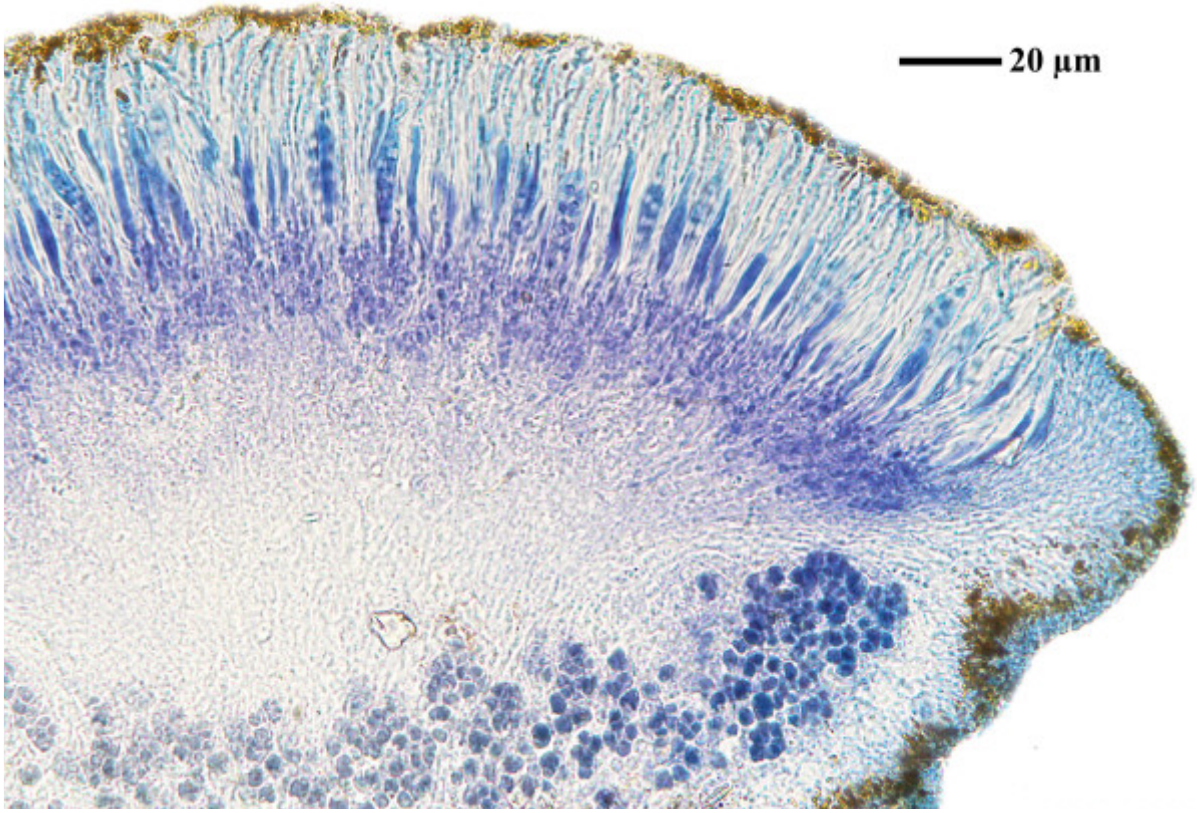


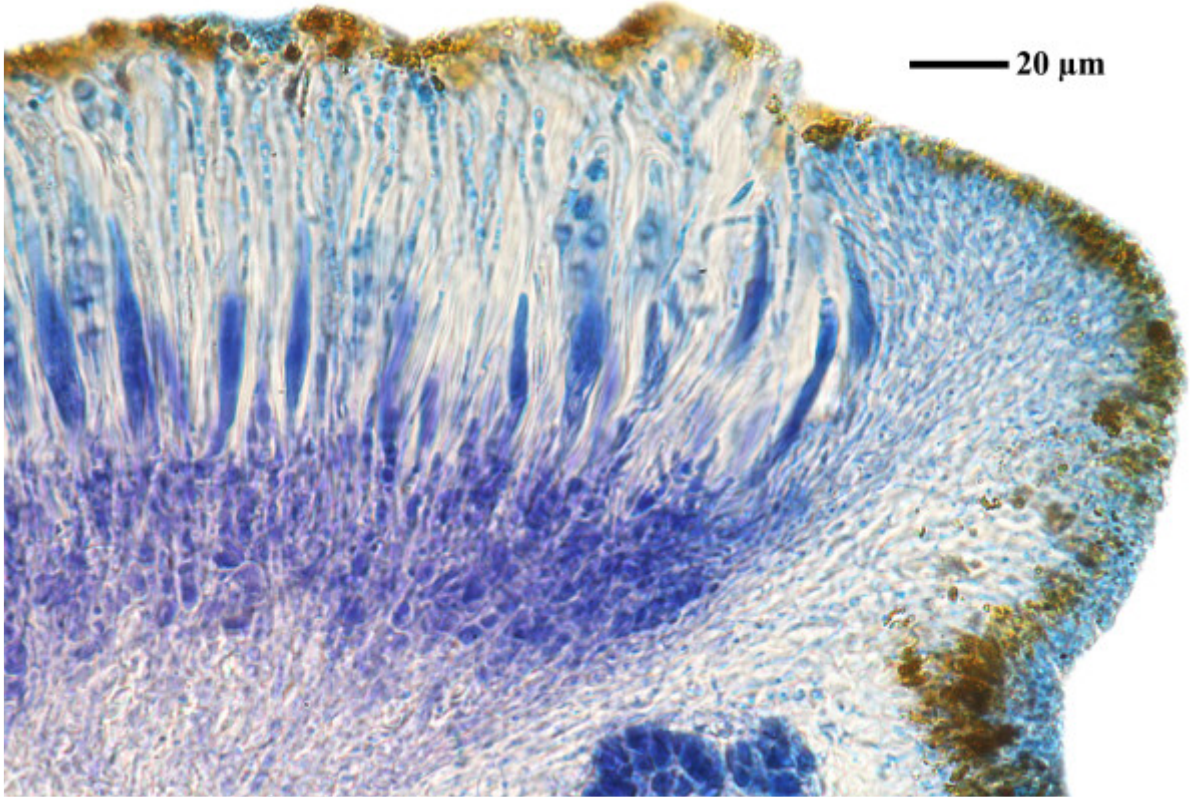
Caloplaca subunicolor



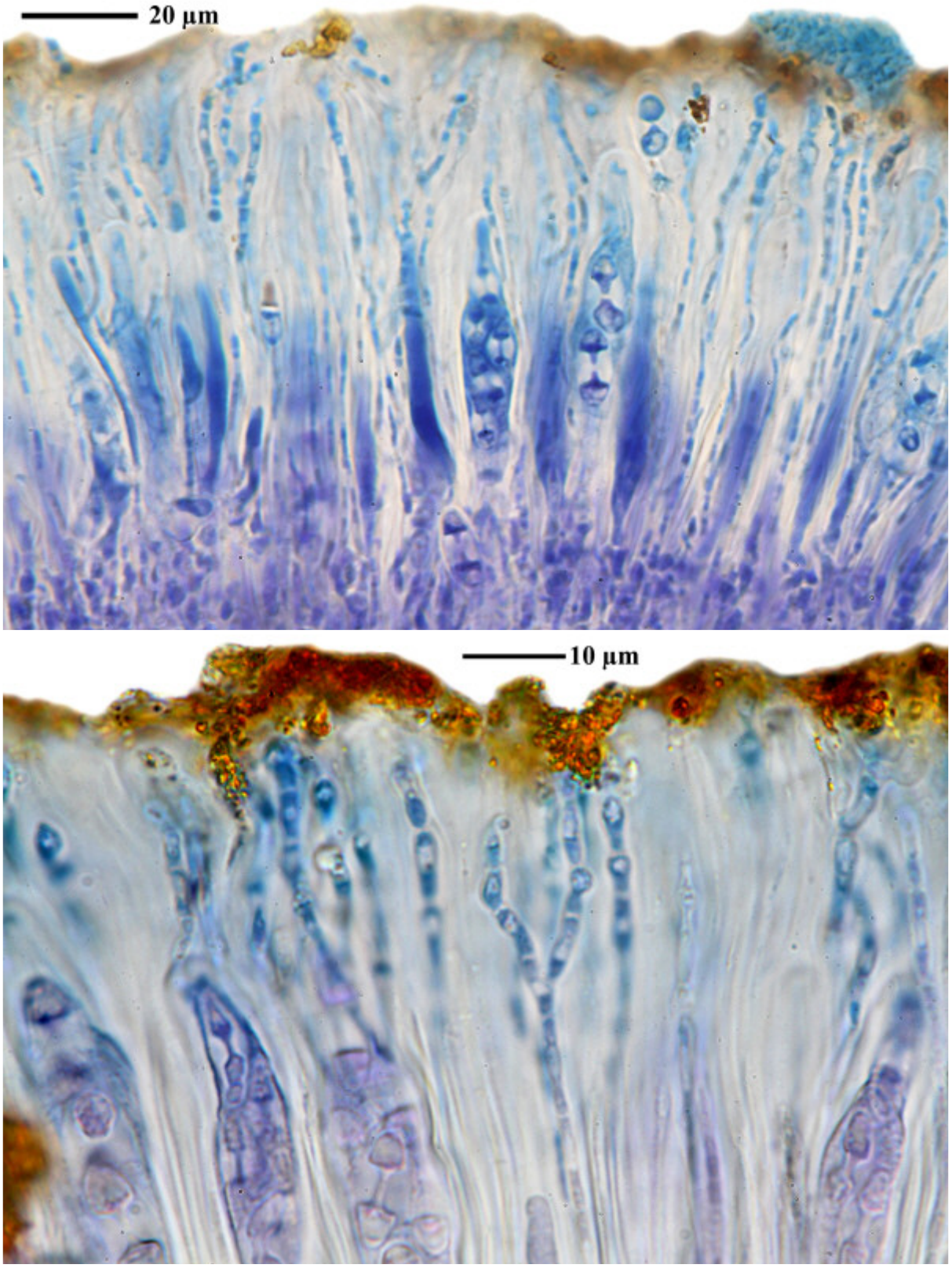


Caloplaca subunicolor

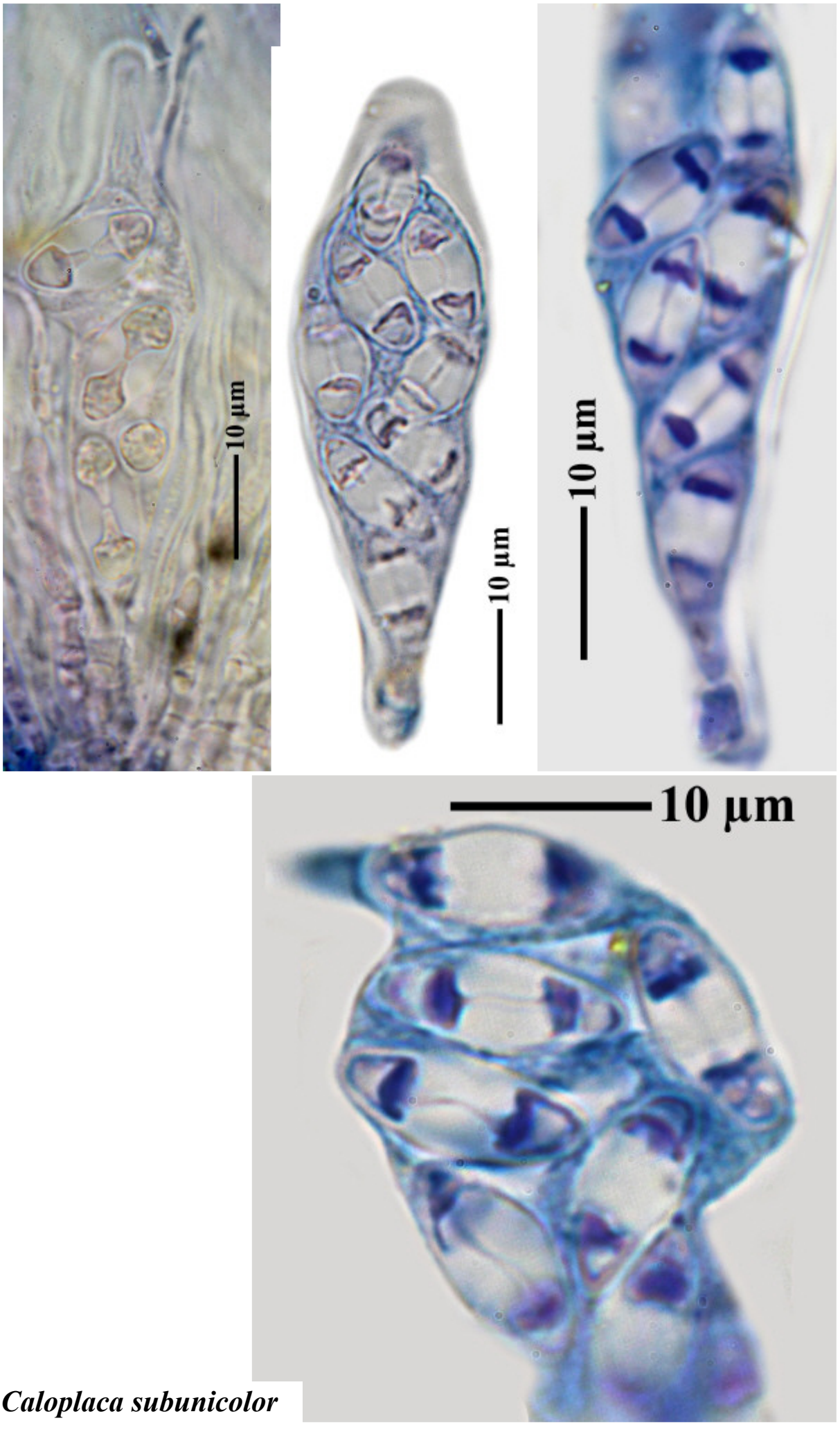




Caloplaca subunicolor



Caloplaca subunicolor



Caloplaca subunicolor

Caloplaca subvitellina (Müll.Arg.) Zahlbr.

[19626], Ecuador, Tunguraha, northern slope of Mt. Tunguraha, W of Banos, on granitic boulders, 1800-1900 m, 1°24' S, 78°27' W. Leg. K.& A. Kalb, 16.08.1987, det. A. Aptroot. K. KALB & A. APTROOT: LICHENES NEOTROPICI NR. 630.





Caloplaca subvitellina

Caloplaca subvitellina (Müll.Arg.) Zahlbr.

On non-calcareous rocks.

[ABL ISE27906], Brazil, Santa Catarina, São Francisco do Sul, S of Prainha, 26°14’06” S, 48°30’05” W, c. 10 m, on coastal granite. Leg. M.E.S. Cáceres & A. Aptroot, 8.10.2015, det. A. Aptroot 2015.





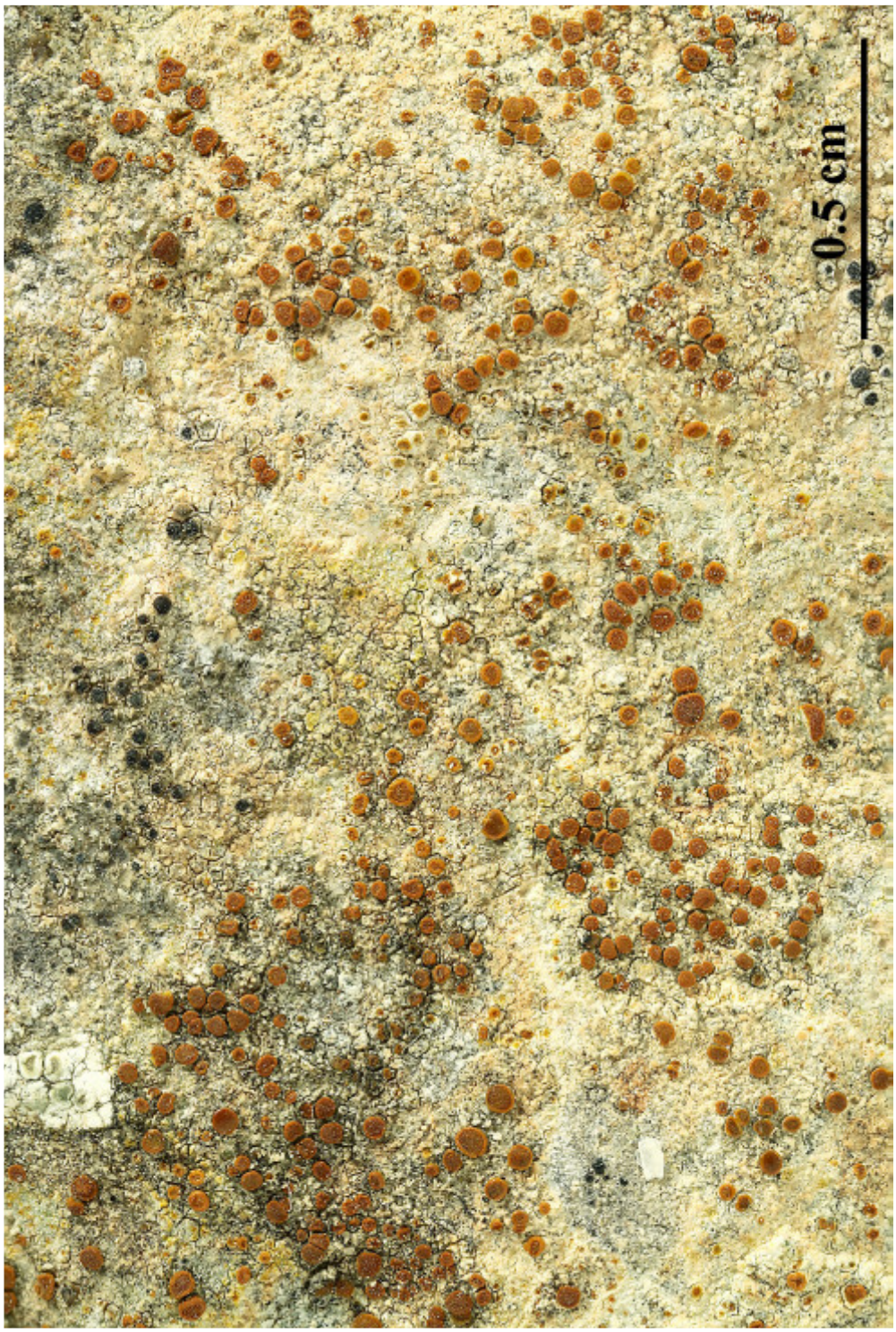


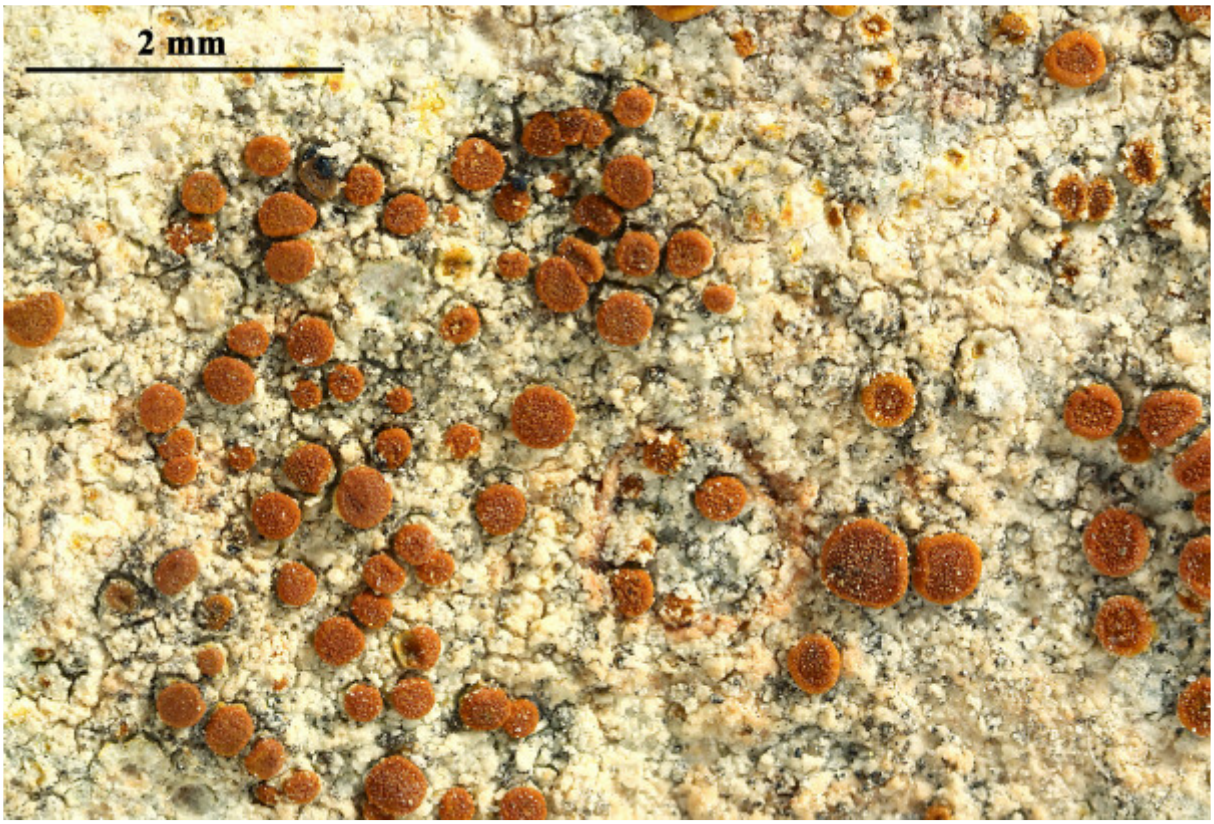
Caloplaca subvitellina

Caloplaca tavaresiana Nav.-Ros. & Cl. Roux
[= *Flavoplaca tavaresiana* (Nav.-Ros. & Cl. Roux) Arup, Frödén & Søchting]

Hymenium 65 µm. Spores 12 x 7 µm, septum 6 µm (Sipm.). Spores 10-13 x 4.5-6.5 µm, septum 3.8-4.3 µm (FS).

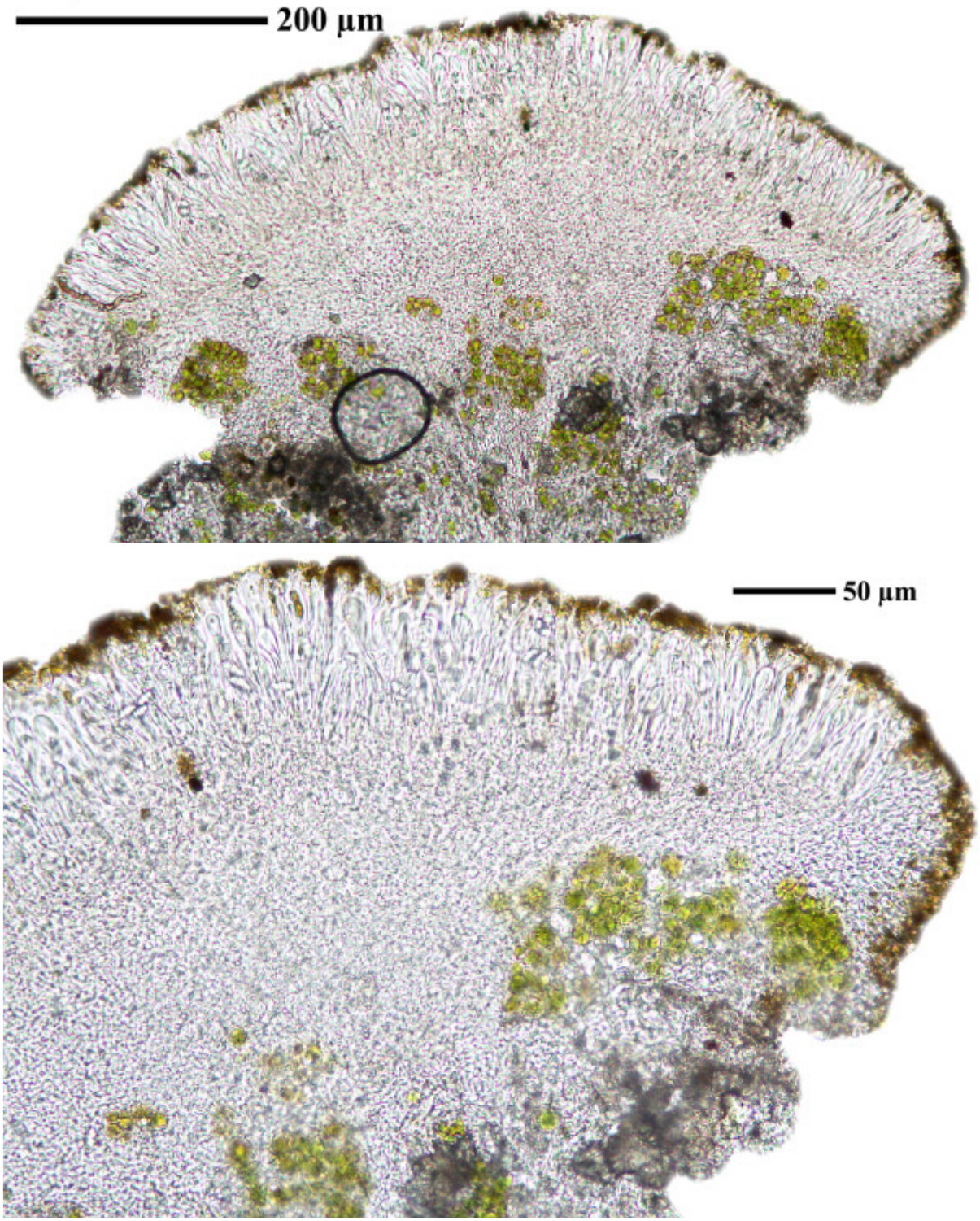
[B 60 0192699], Greece, East Aegean islands, Chios, S of Olimbi, Kato Fana bay, beginning of trail to south, N-facing limestone cliffs; accomp: *Lecania sylvestris*. 38°12.33' N, 25°55.67' E, 5 m. Leg. H. Sipman (60678) & Th. Raus, 14.09. 2013, det. H. Sipman.



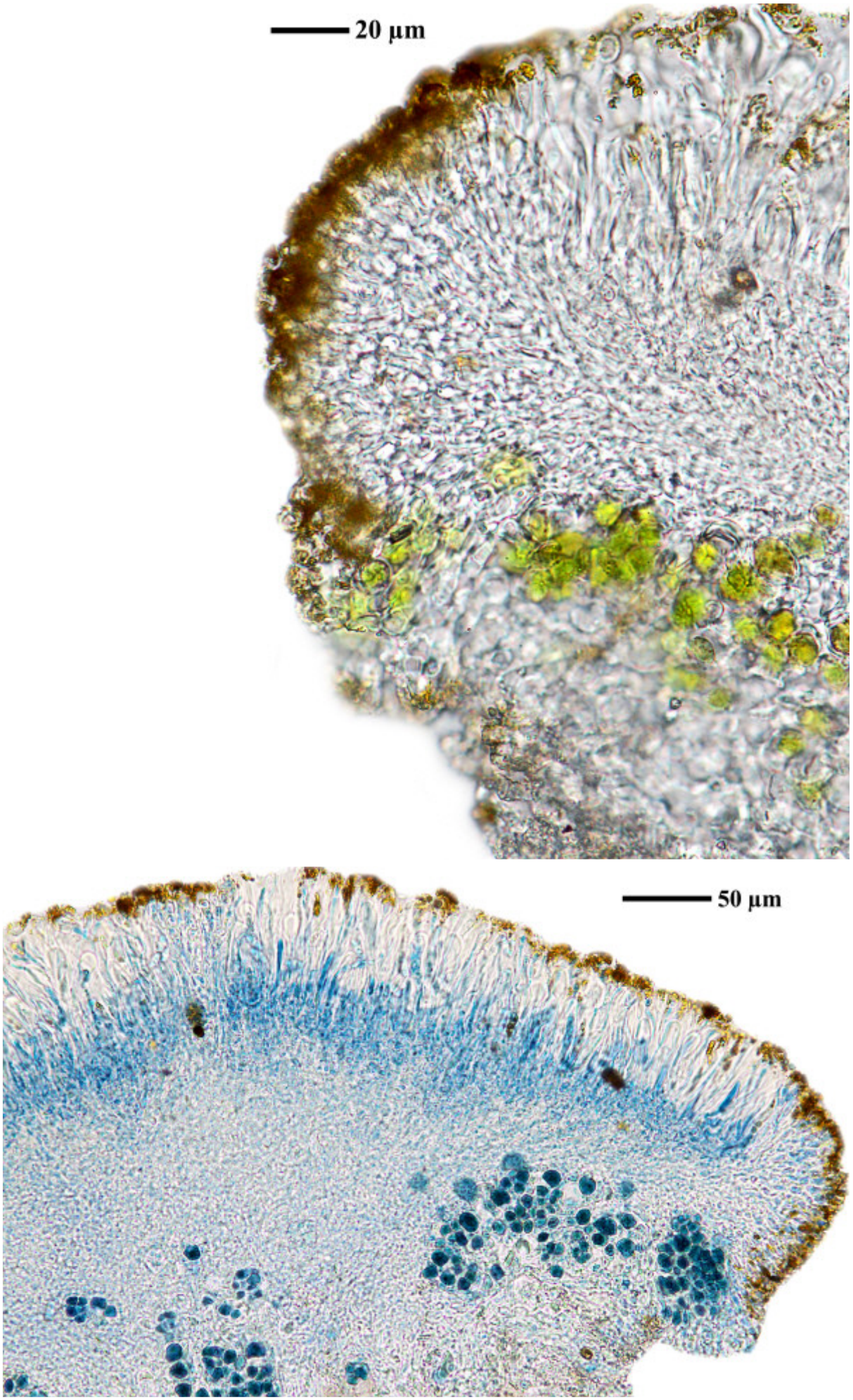




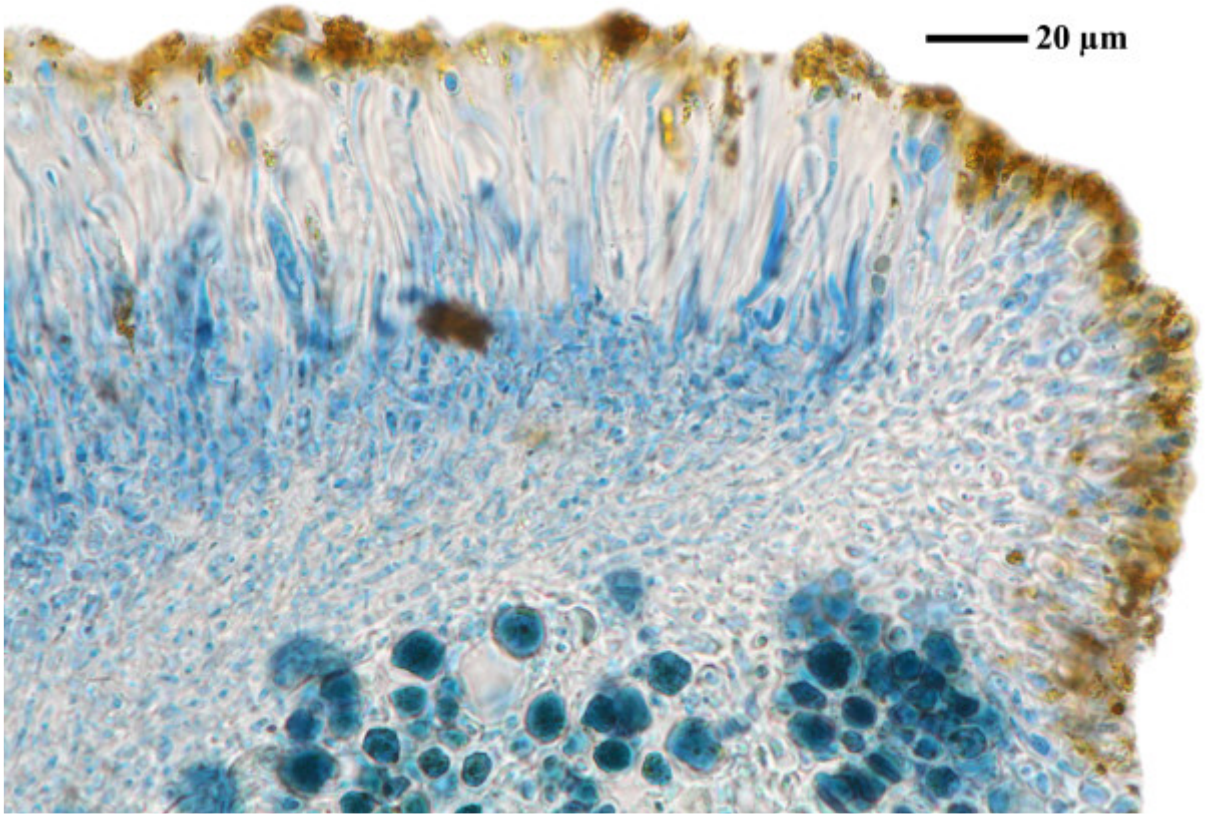
Caloplaca tavaresiana

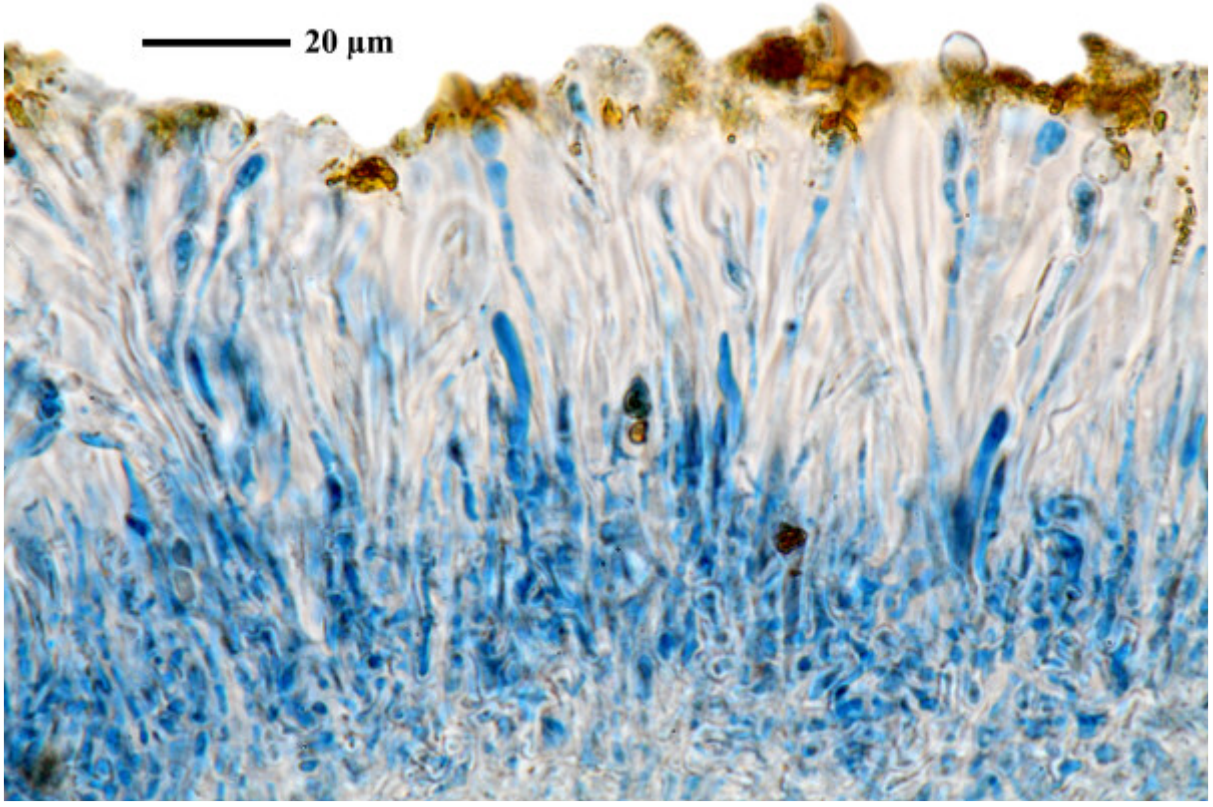


Caloplaca tavaresiana

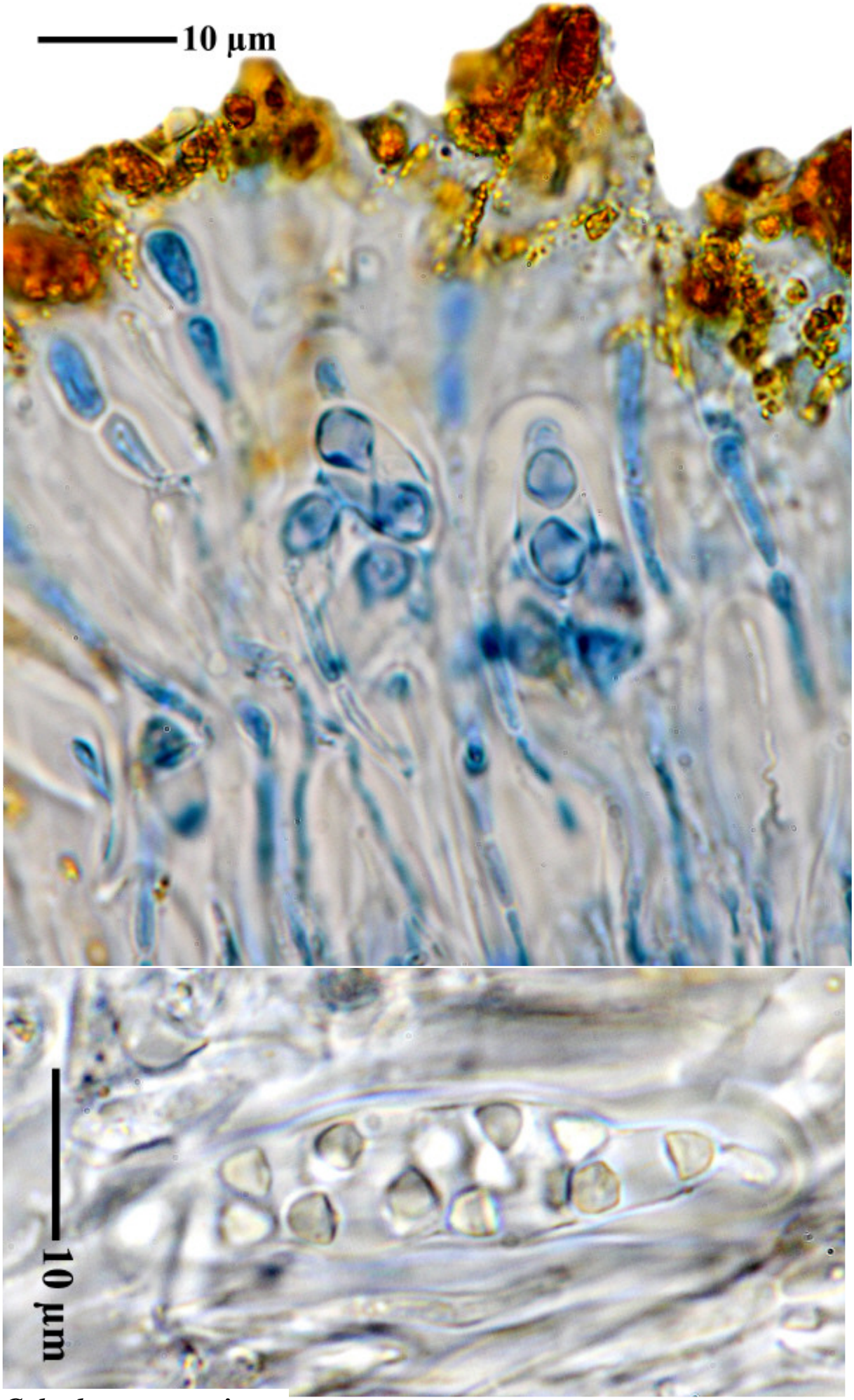


Caloplaca tavaresiana

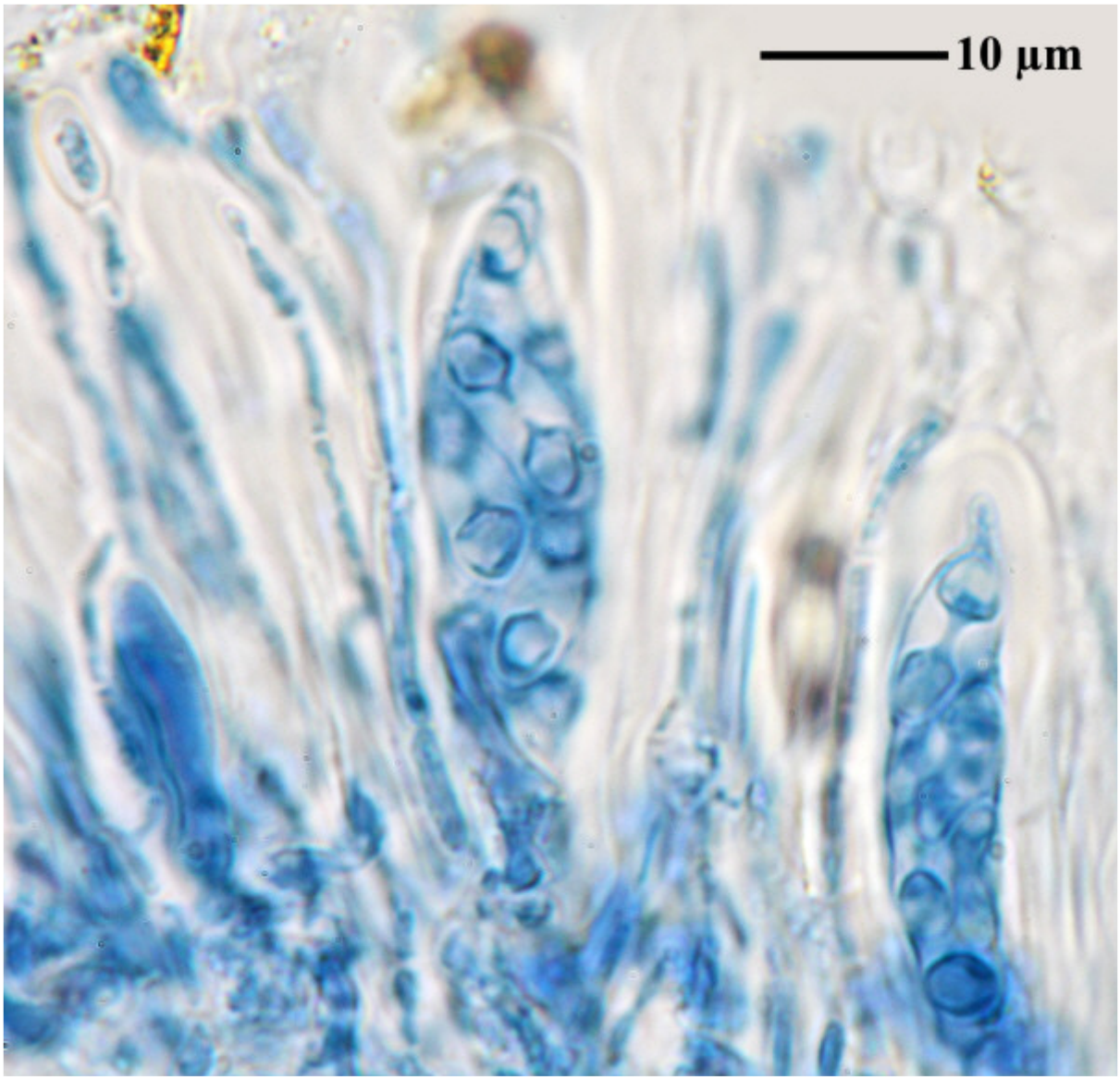


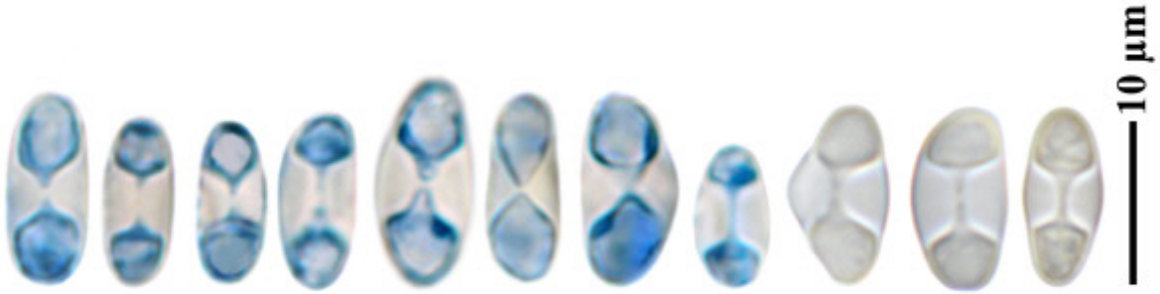


Caloplaca tavaresiana



Caloplaca tavaresiana



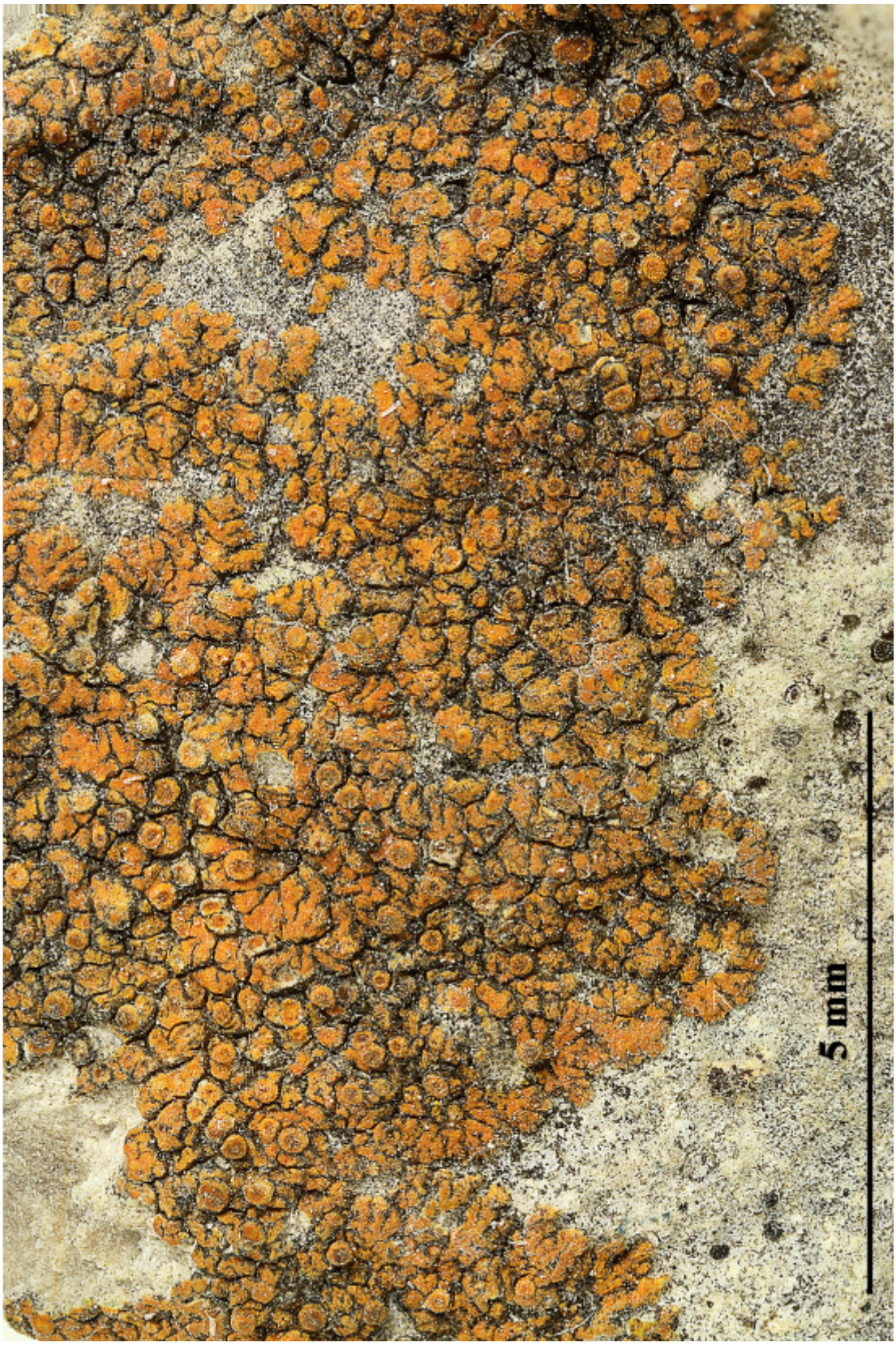


Caloplaca tavaresiana

Caloplaca tenuata (Nyl.) Zahlbr.

Spores 15-15.5 x 3.3-5.5 µm, septum 1.5-2.5 µm (FS). On calcareous rocks. Lit. Zahlbr. in Cat. Lich. 7:271 (1931)

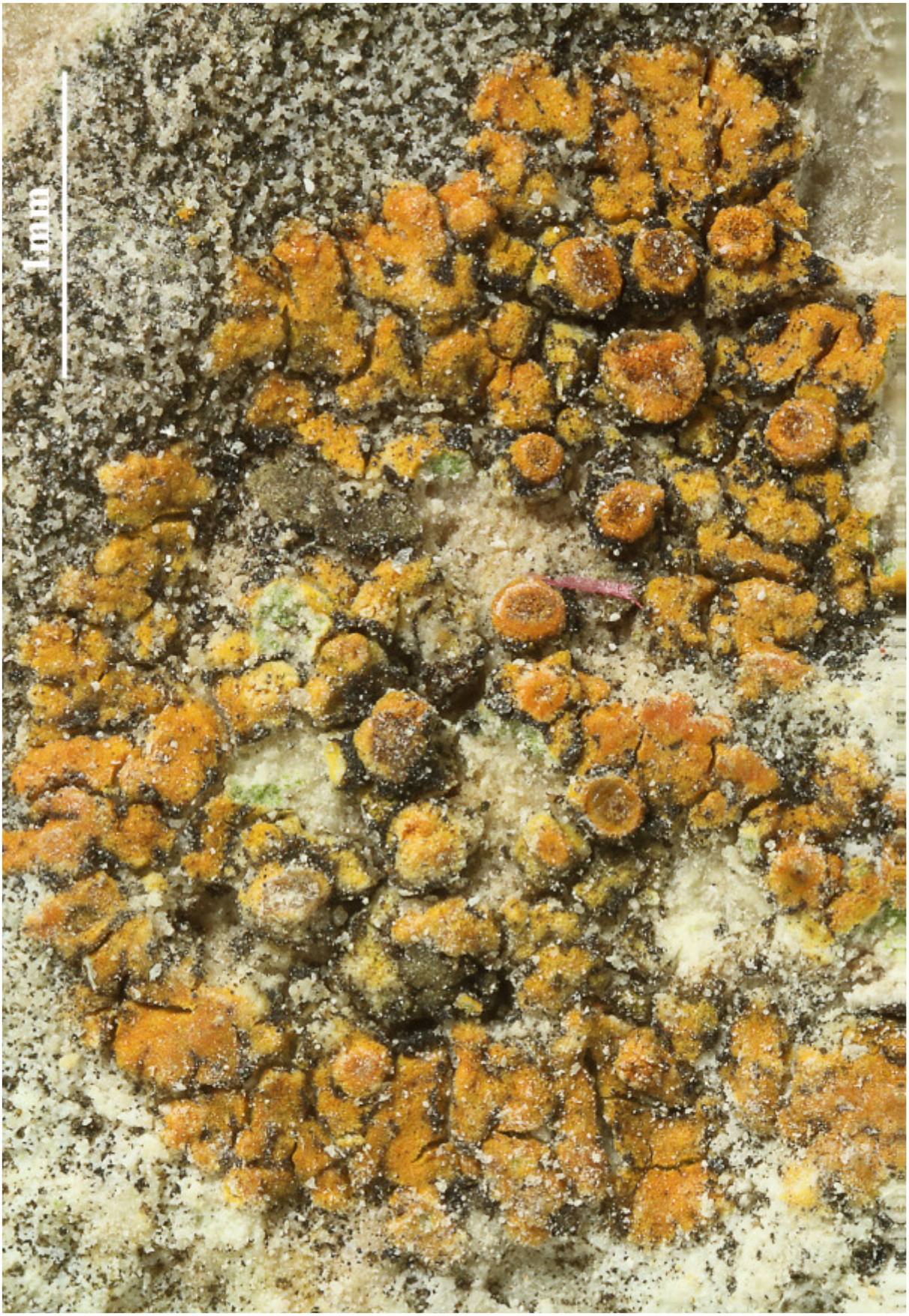
[19607], Gallia, Vauclise, Lafare, in praerupta La Salle dicta, alt. 400 m, ad parietem altum rupis calcareae. Leg. G. Clauzade et Cl. Roux, 8.01.1976. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1420.



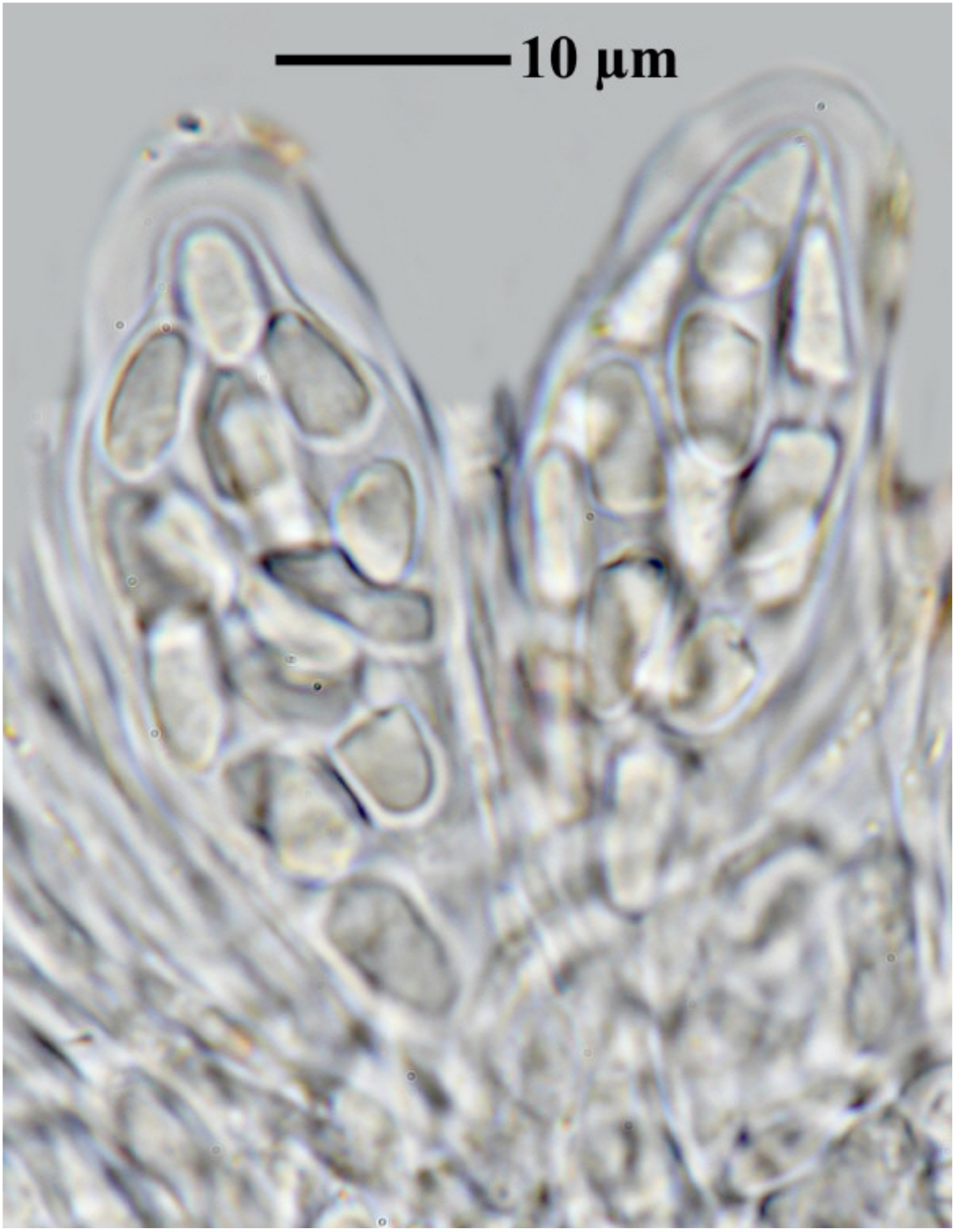


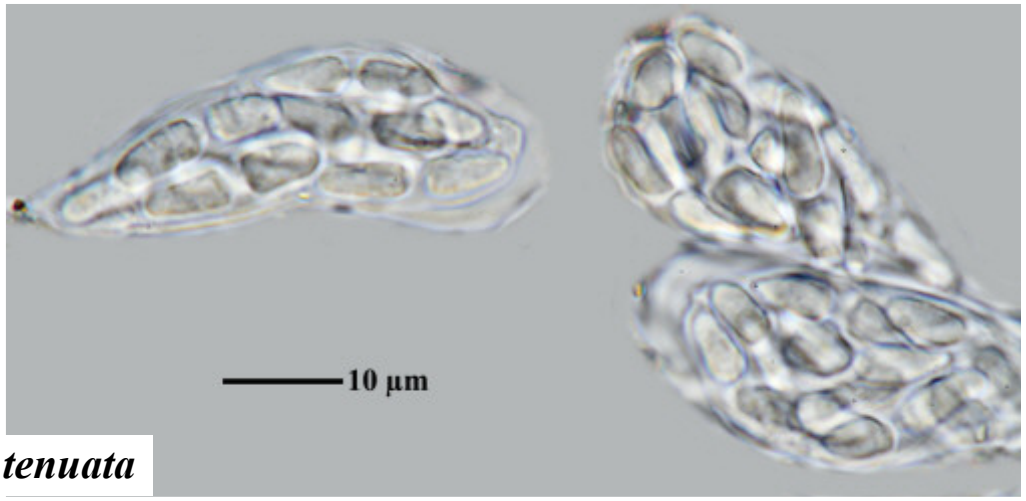


Caloplaca tenuata

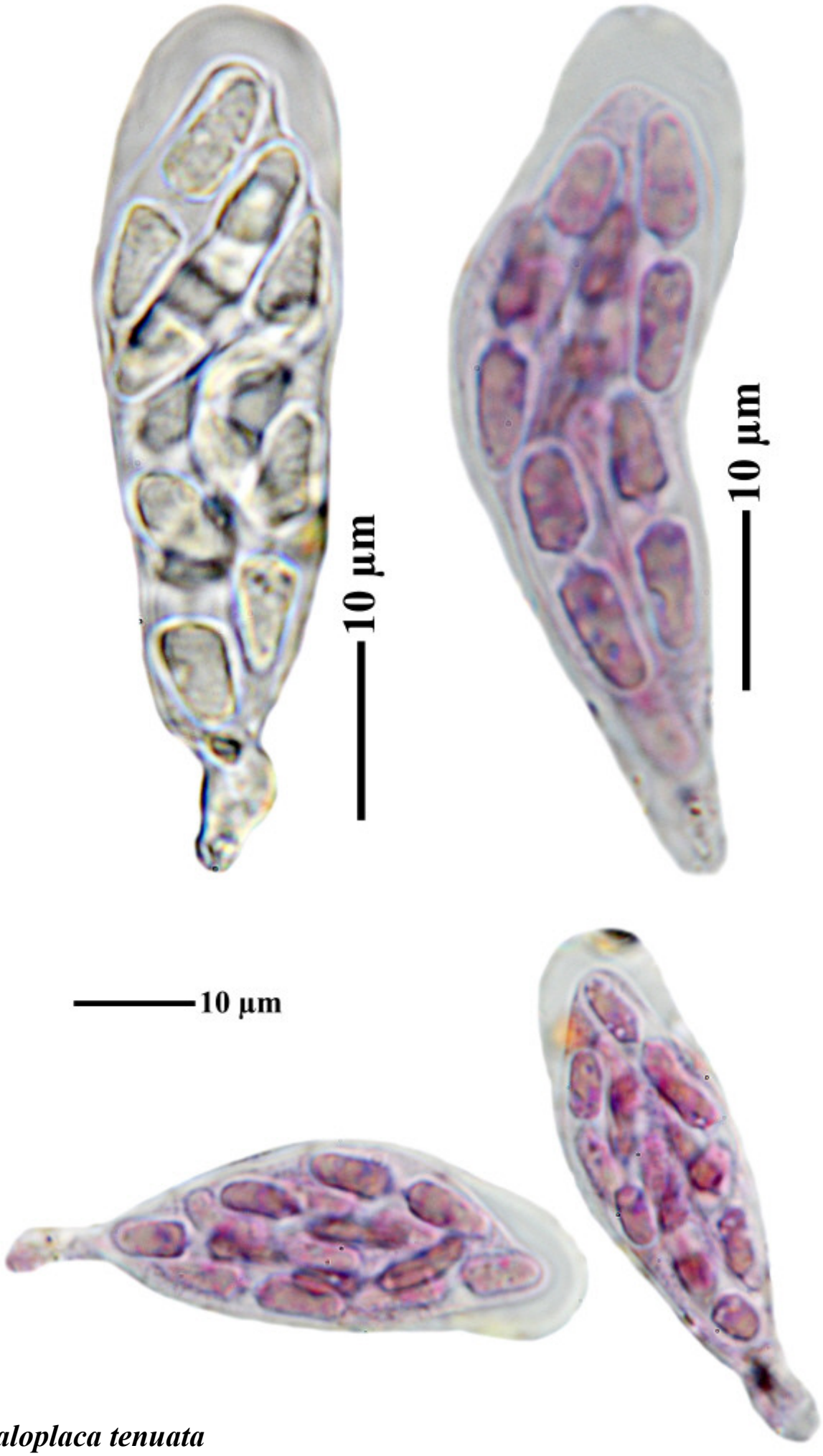


Caloplaca tenuata

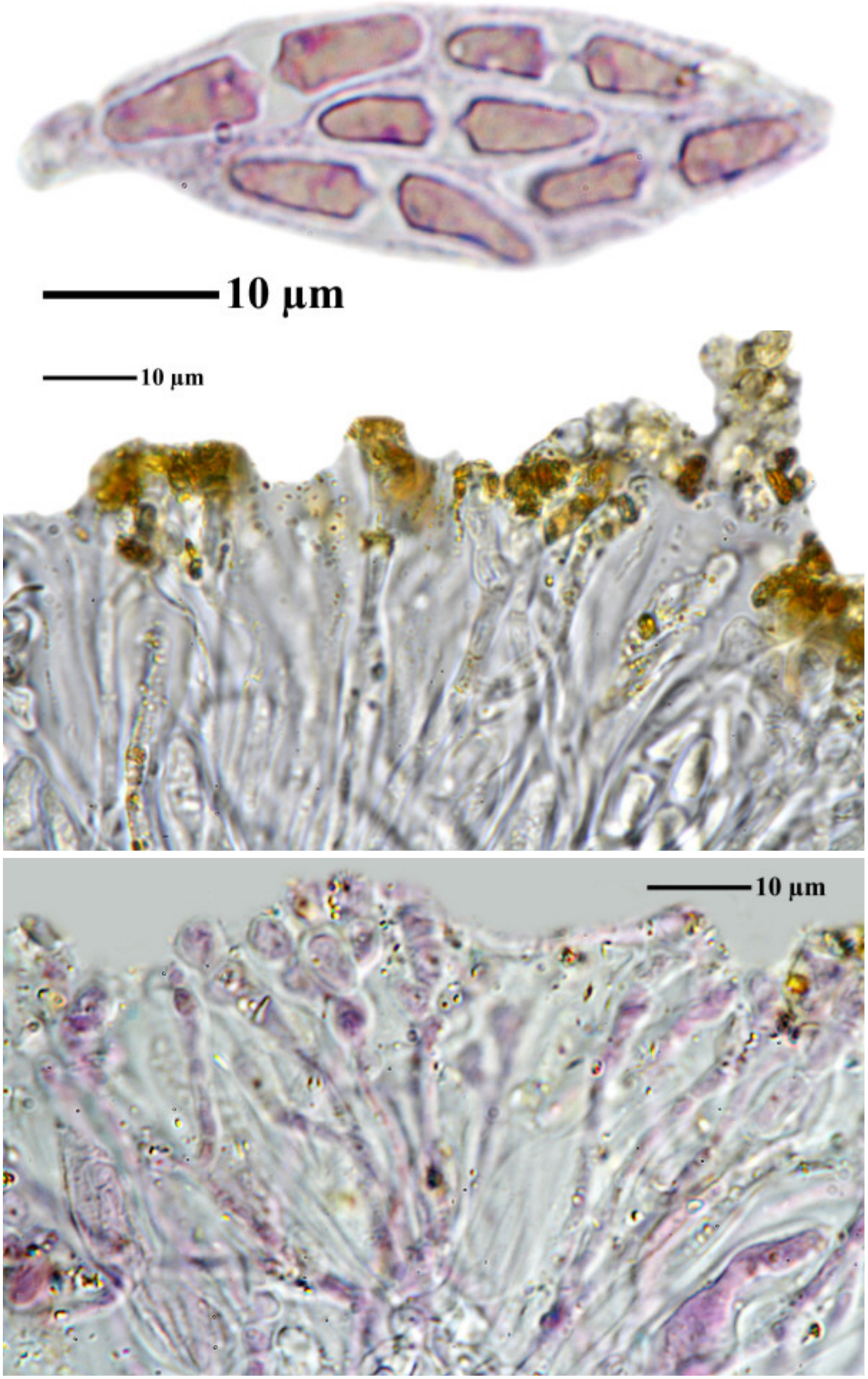




Caloplaca tenuata



Caloplaca tenuata



Caloplaca tenuata

Caloplaca testudinea V. Wirth & Kärnefelt
[= *Stellarangia testudinea* (V. Wirth & Kärnefelt) Frödén, Arup & Søchting]

[BR5030067697818], Namibia, 20 km E of Swakopmund, in desert near road branching C28-D1991 on pebble. Leg. C.M. van Herk, 28. August 2007, det. A. Aptroot 2007.







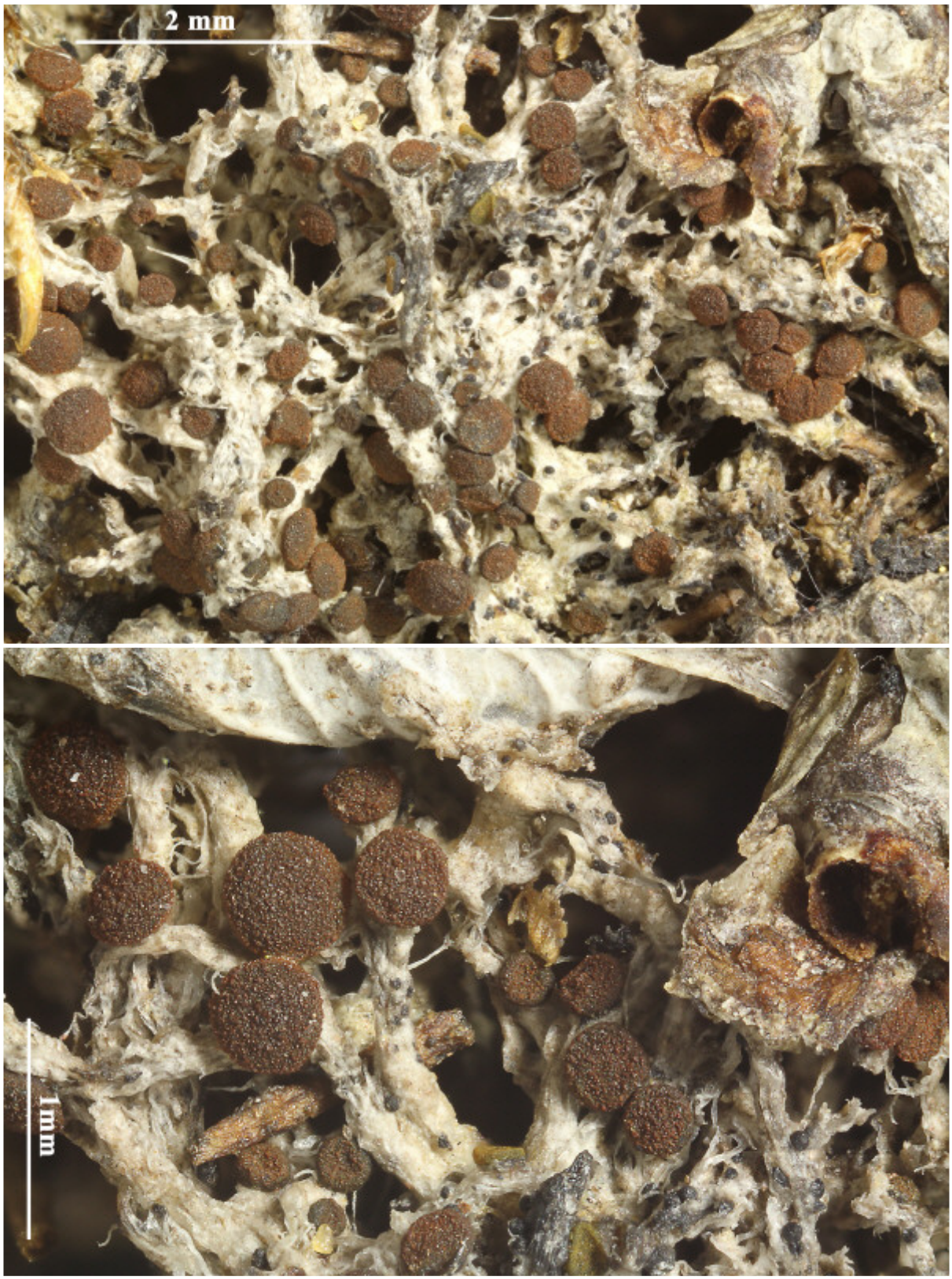
Caloplaca testudinea

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

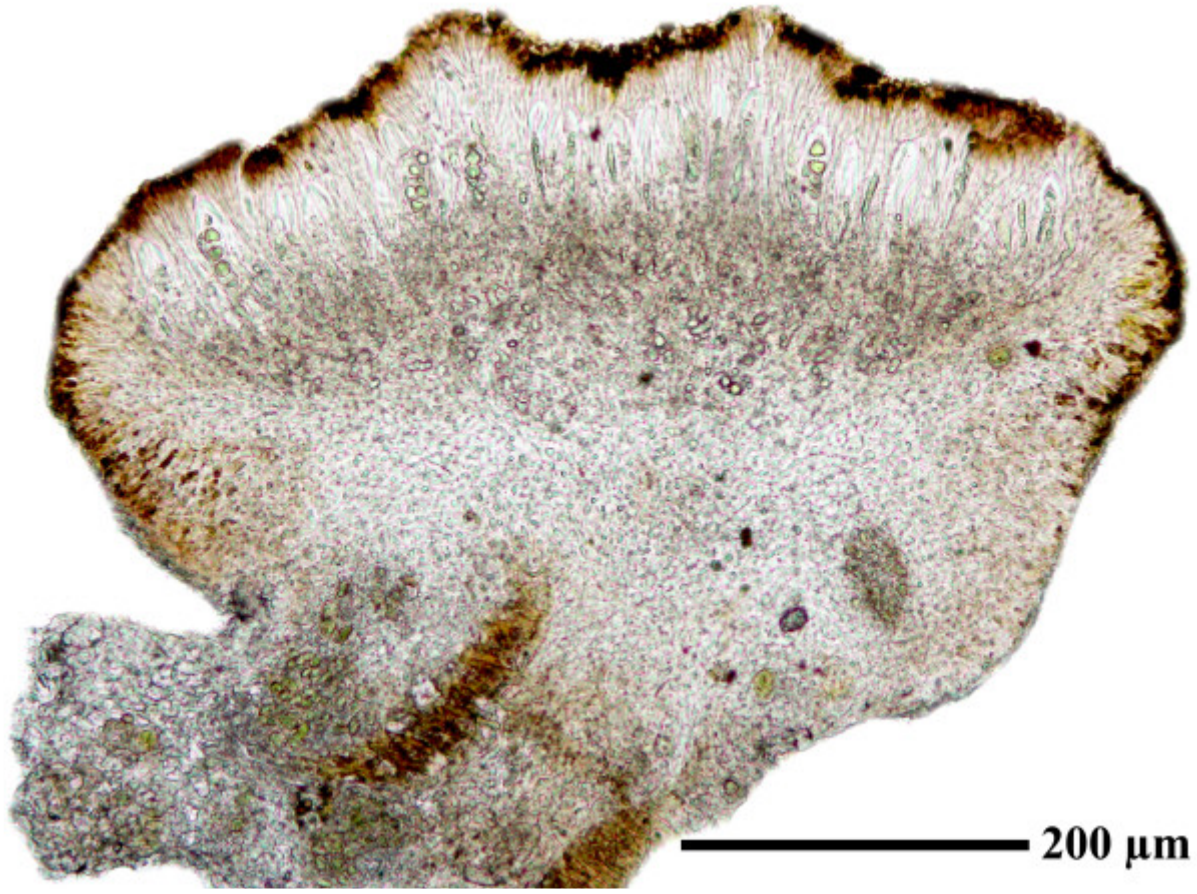
Spores 22-24 x 9.5-11.5 µm, septum 3.3-7.2 µm (FS).

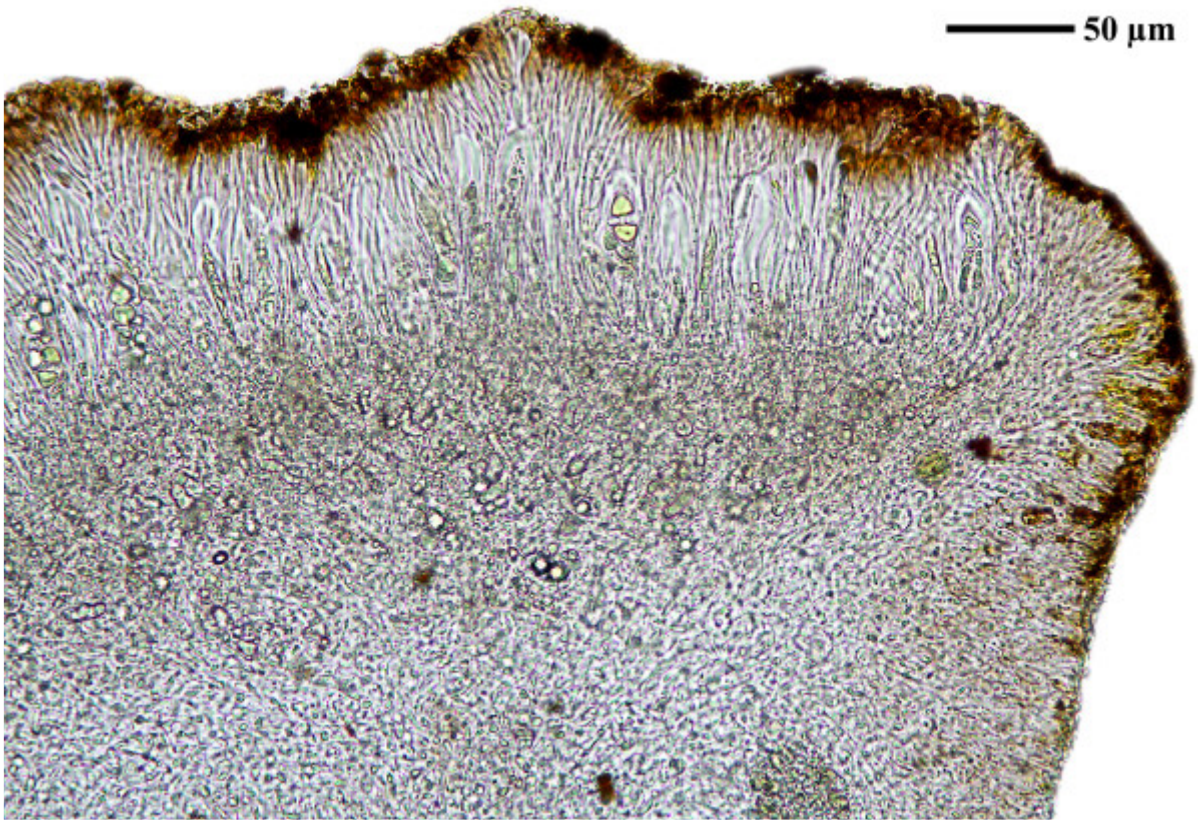
[B 60 0057213], Norway, Svalbard, Spitsbergen, Bohemanflya, on mosses, 100-200 m. Leg. H. Kashiwadani (no. 23344), H. Deguchi & K. Kobayashi, 31.07.1985, det. E.S. Hansen. S. KUROKAWA & H. KASHIWADANI: LICHENES RARIORES ET CRITICI EXSICCATI NO. 654.



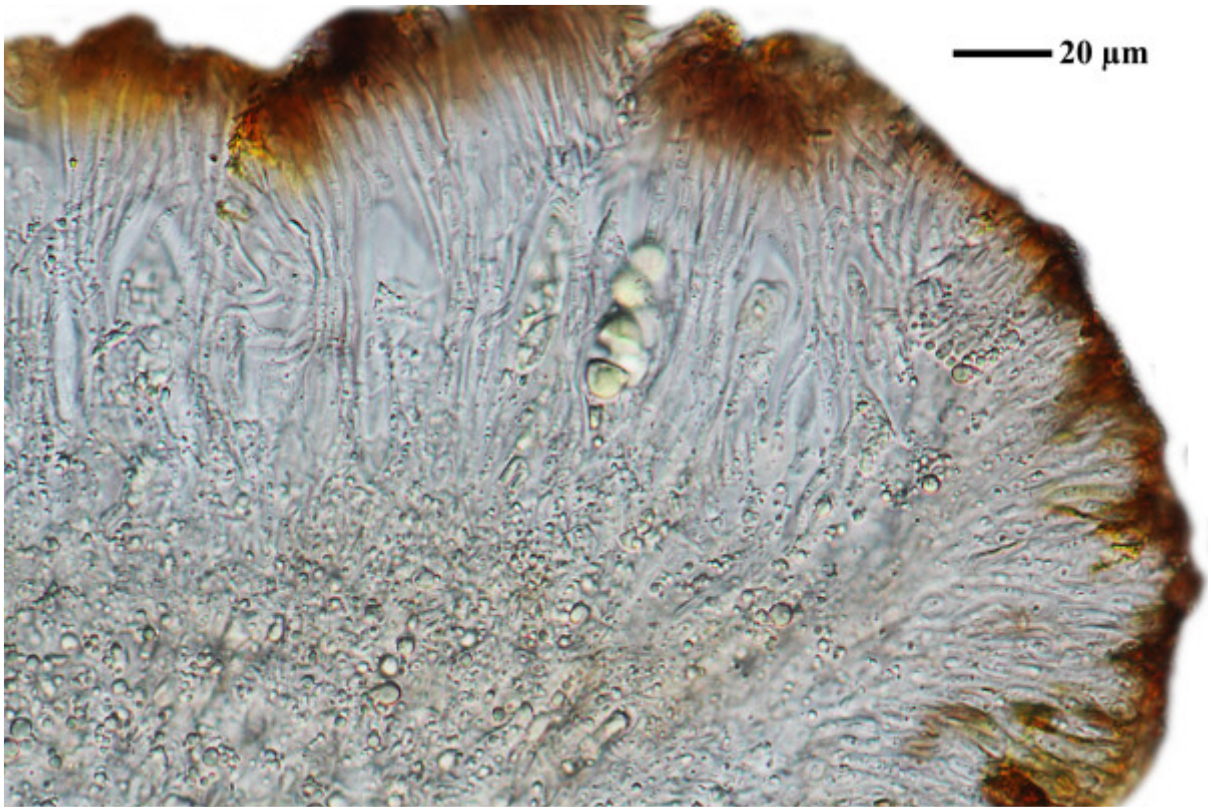


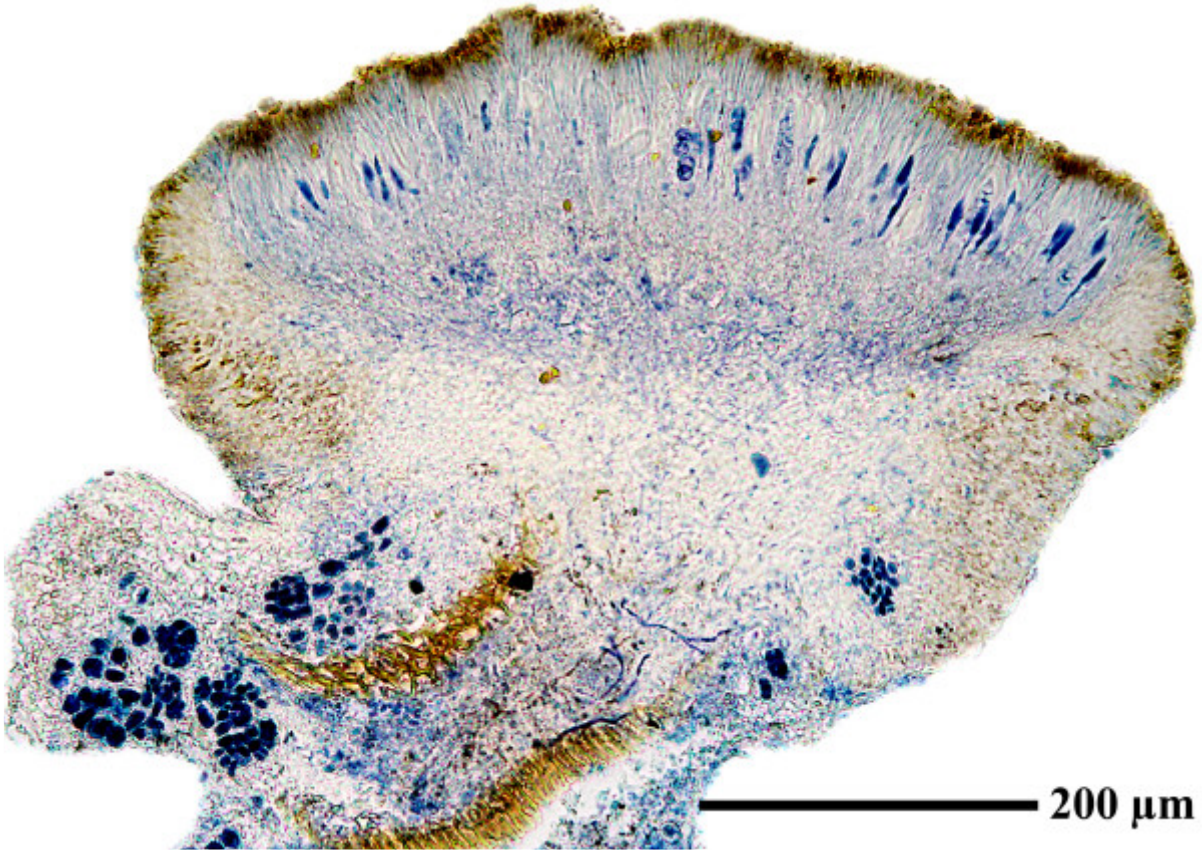
Caloplaca tetraspora



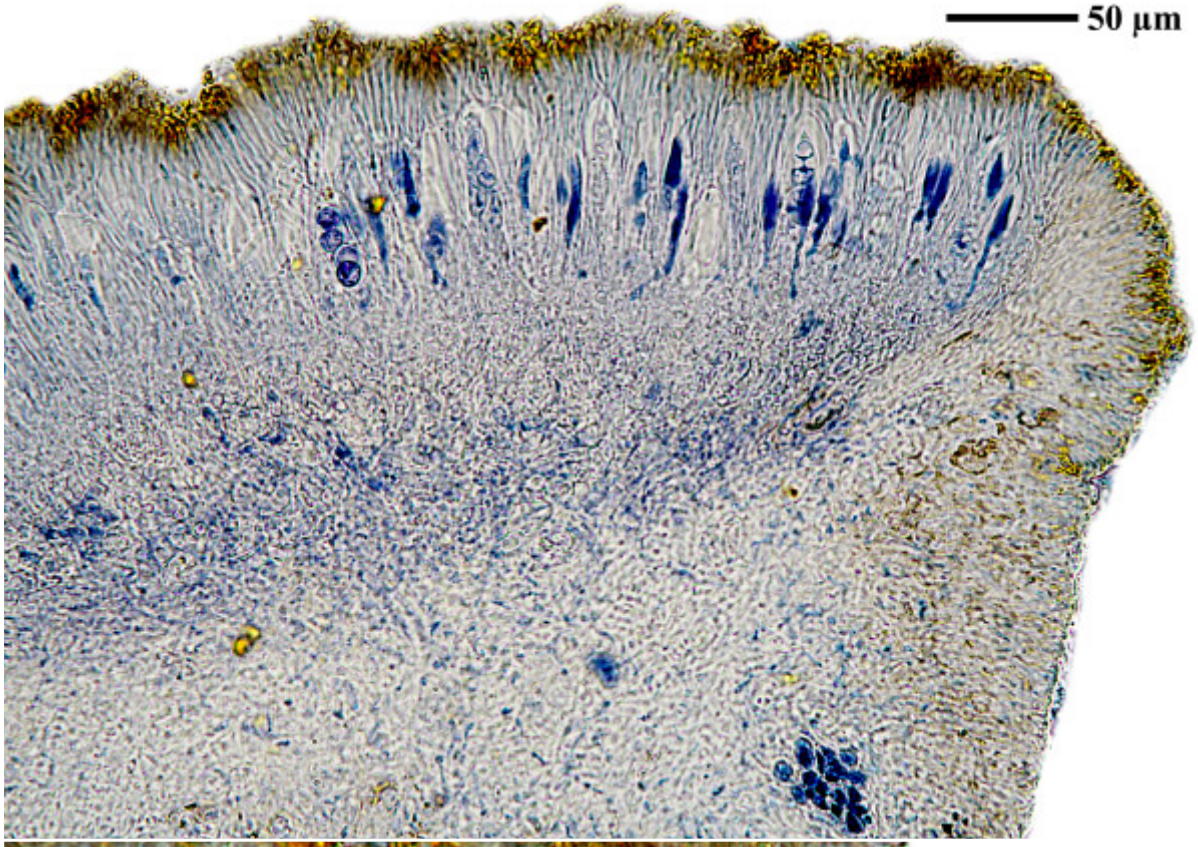


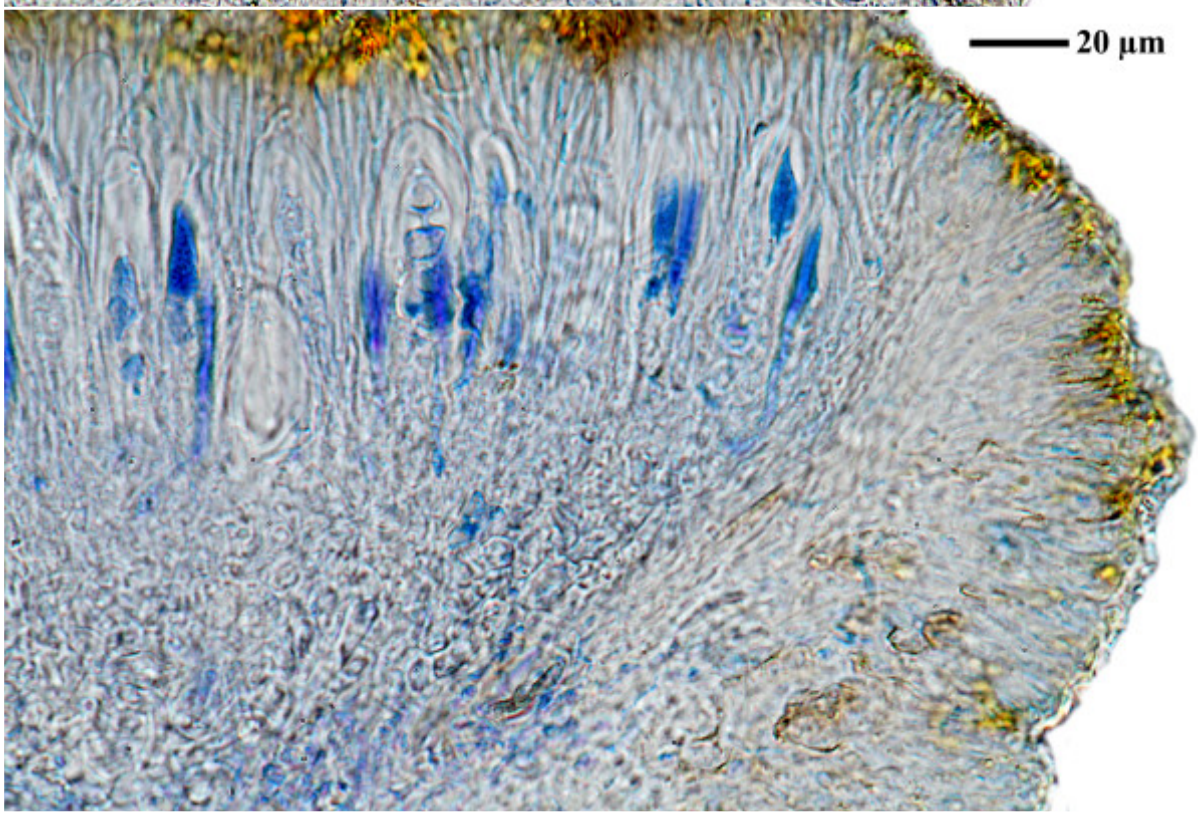
Caloplaca tetraspora

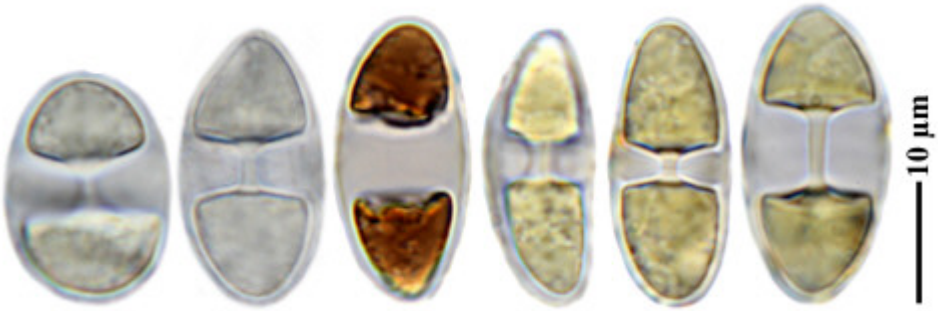




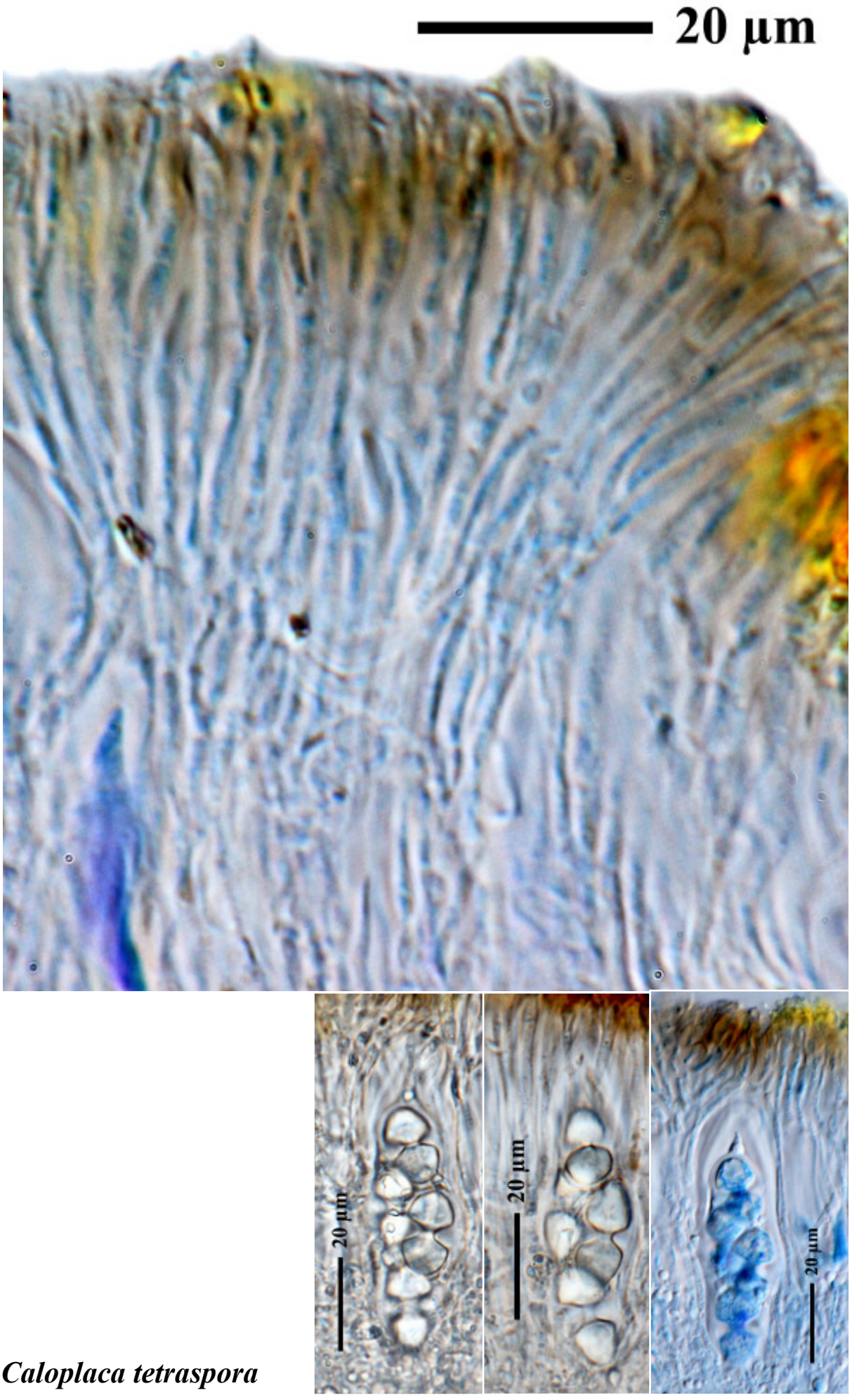
Caloplaca tetraspora







Caloplaca tetraspora



Caloplaca tetraspora

Caloplaca texana Wetmore & Kärnefelt
[= *Wetmoreana texana* (Wetmore & Kärnefelt) Arup, Søchting & Frödén]

On non-calcareous rocks.

[16771], USA, Mexico, Baja California Sur, E ridge crest of the Guadalupe Moutains along secondary road between Mision Guadalupe and San Juan de la Pila, 26°53'54" N, 112°26'7" W, 1200 m, woodland (Acacia, Fouquieria and shrubs), on volcanic rock. Leg. T.H. Nash III 3.01.1998 (Nr. 39840), det. C.M. Wetmore.



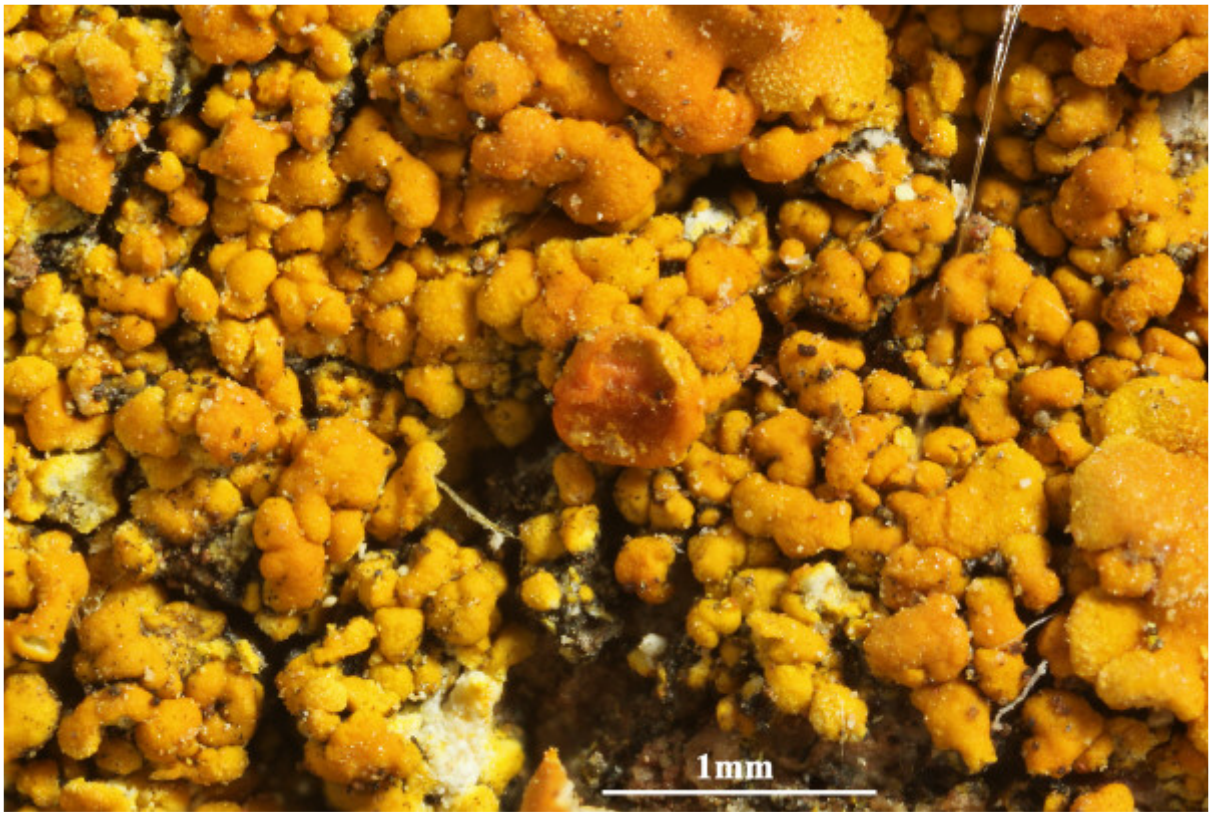


Caloplaca texana





Caloplaca texana





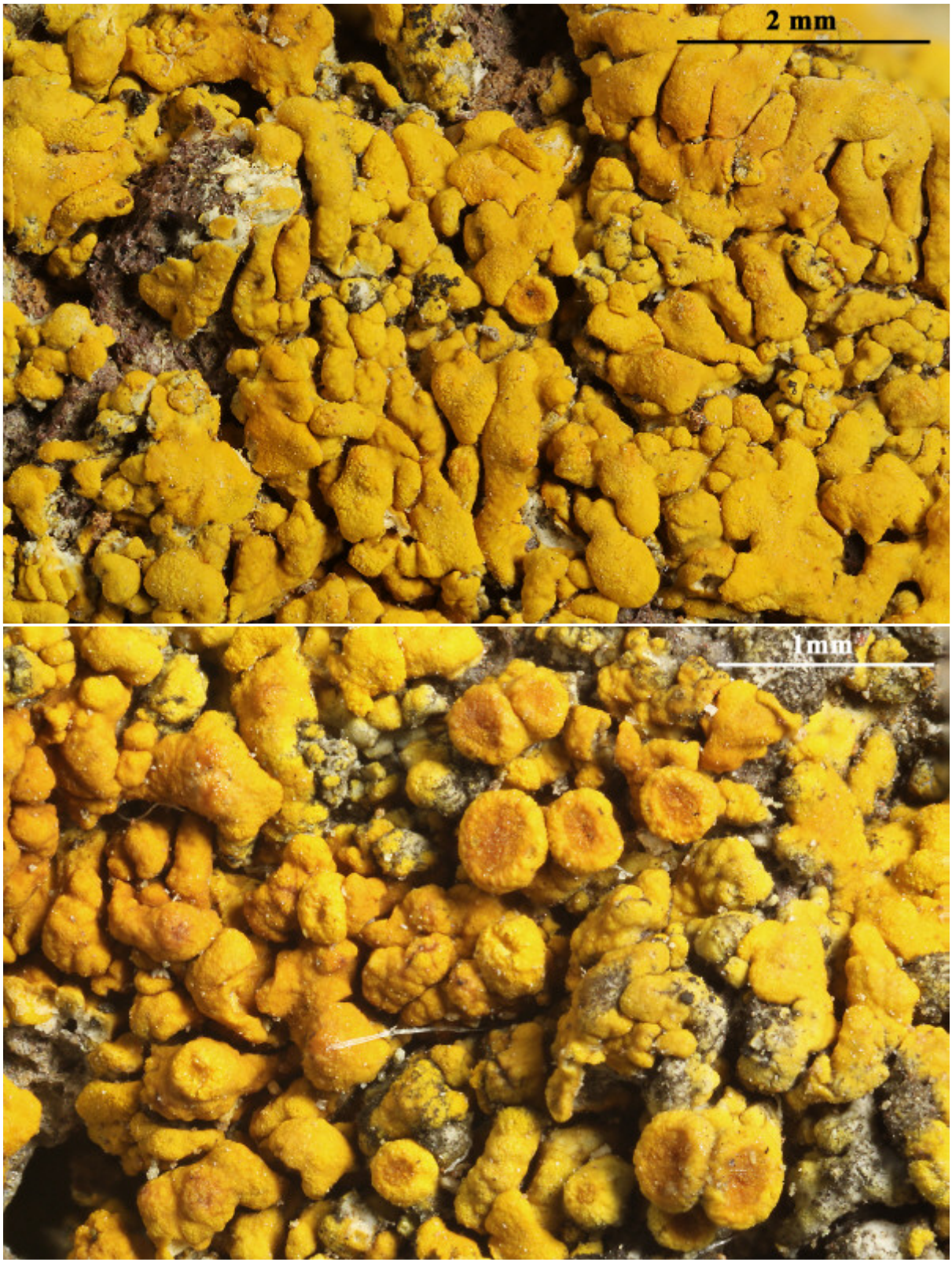
Caloplaca texana

Caloplaca texana Wetmore & Kärnefelt, Bryologist 10(2): 247 (1998)
[= *Wetmoreana texana* (Wetmore & Kärnefelt) Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 66 (2013)]

Spores hyaline, 8/ascus, polarilocular, 8-10.5 x 4.2-5.5 µm, septum 4.5 µm.

[BR5030036349717], Mexico, Baja California, Cerro Kenton between Bahia Falsa and Bahia San Quintin, coastal scrub community (*Aesculus californica, Ambroisia, Euphorbia misera, Jatropha, Lycium,* etc.), basalt area, 30°28' N, 115°00' W, 20-100 m. Leg. A. & M. Aptroot (24393), 4. Jan. 1989, det. A. Aptroot 1989.



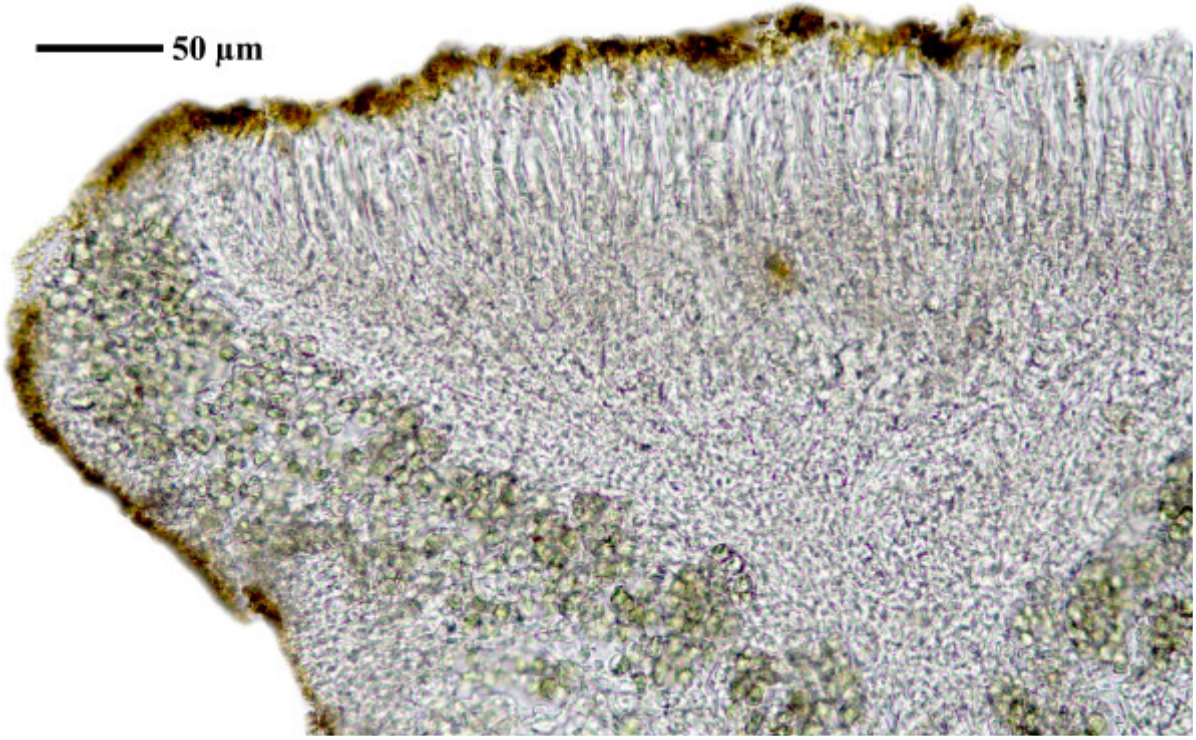


Caloplaca texana

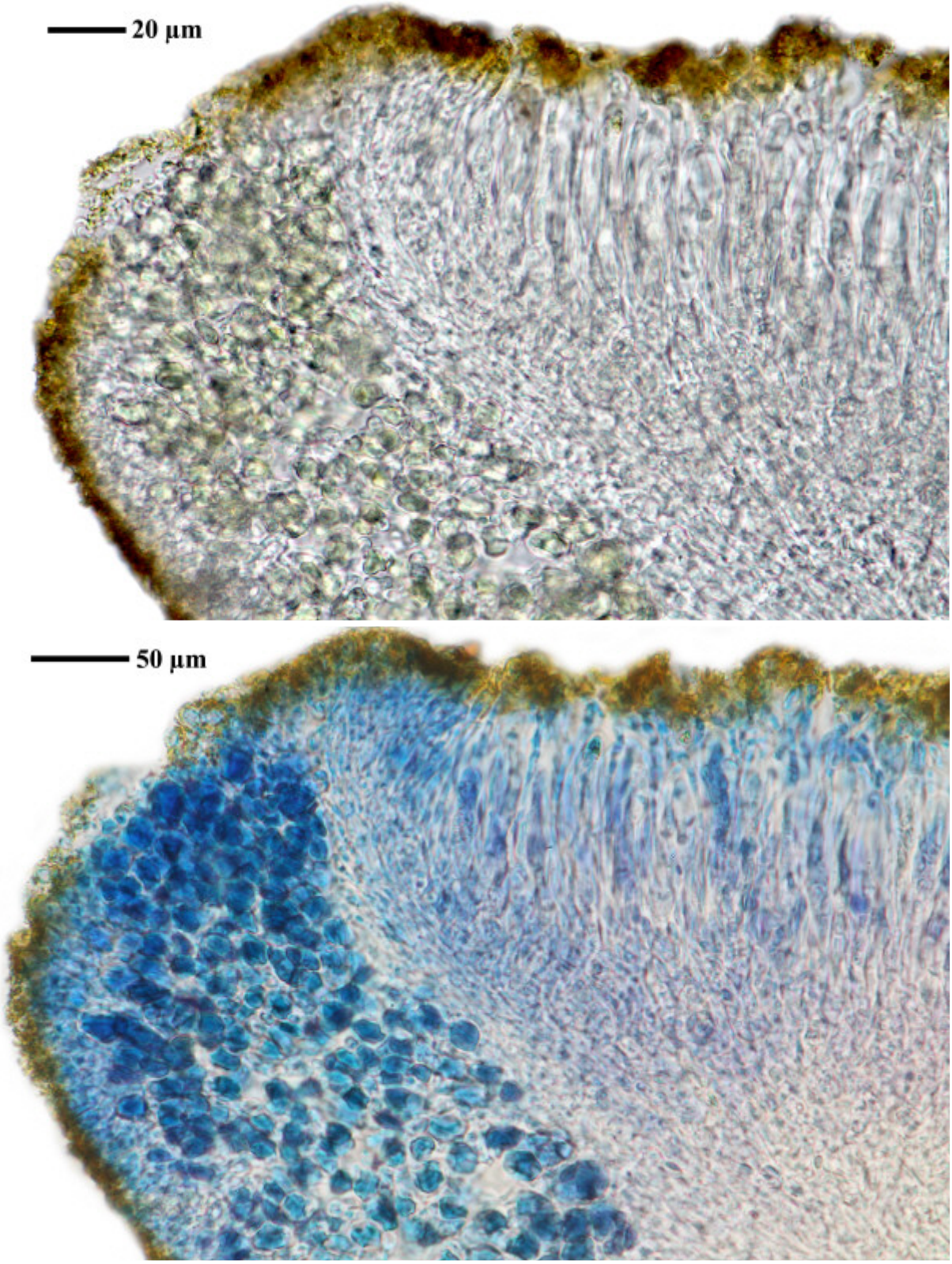


Caloplaca texana

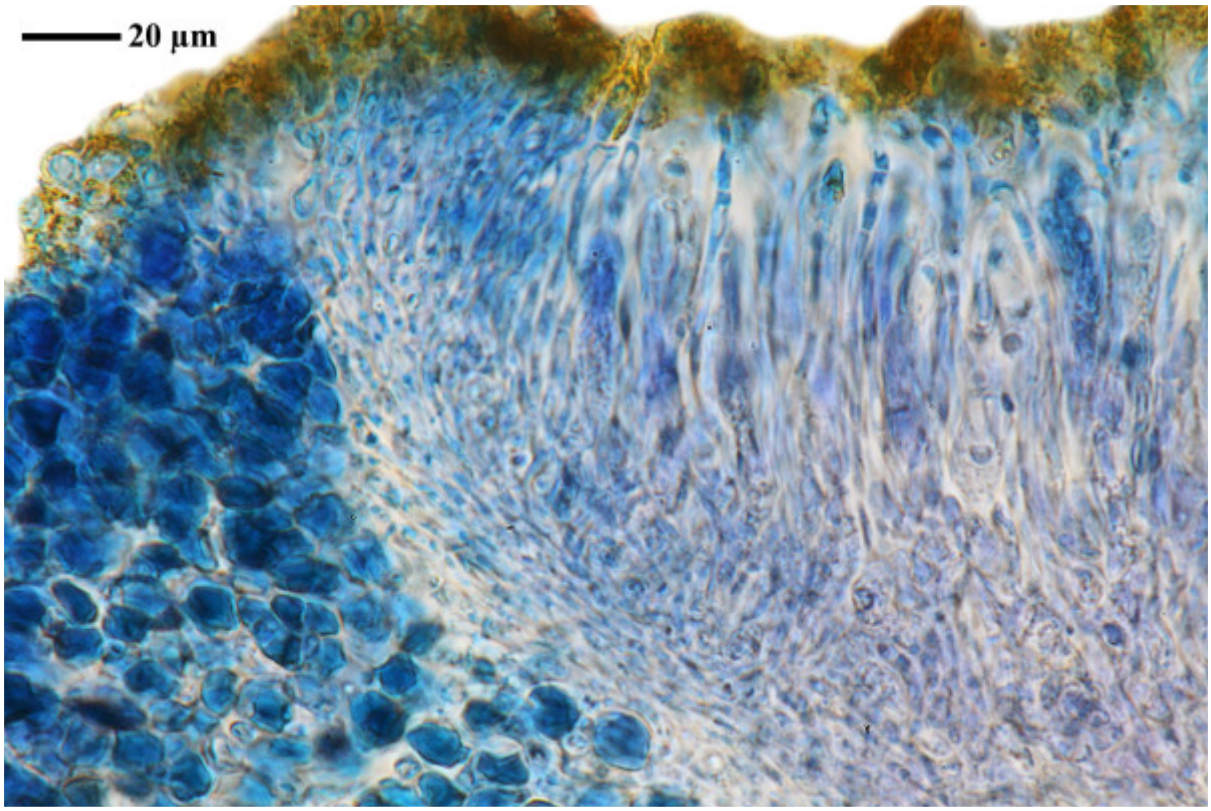


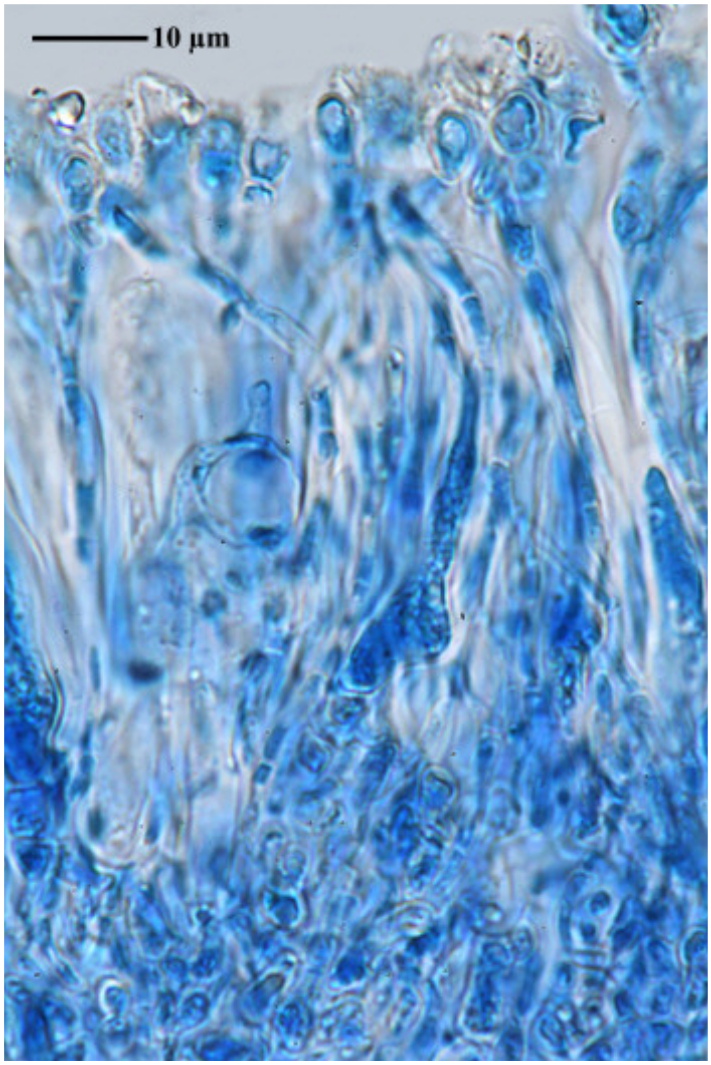


Caloplaca texana



Caloplaca texana







Caloplaca texana

Caloplaca thallincola (Wedd.) Du Rietz
[= *Variospora thallincola* (Wedd.) Arup, Frödén & Søchting]

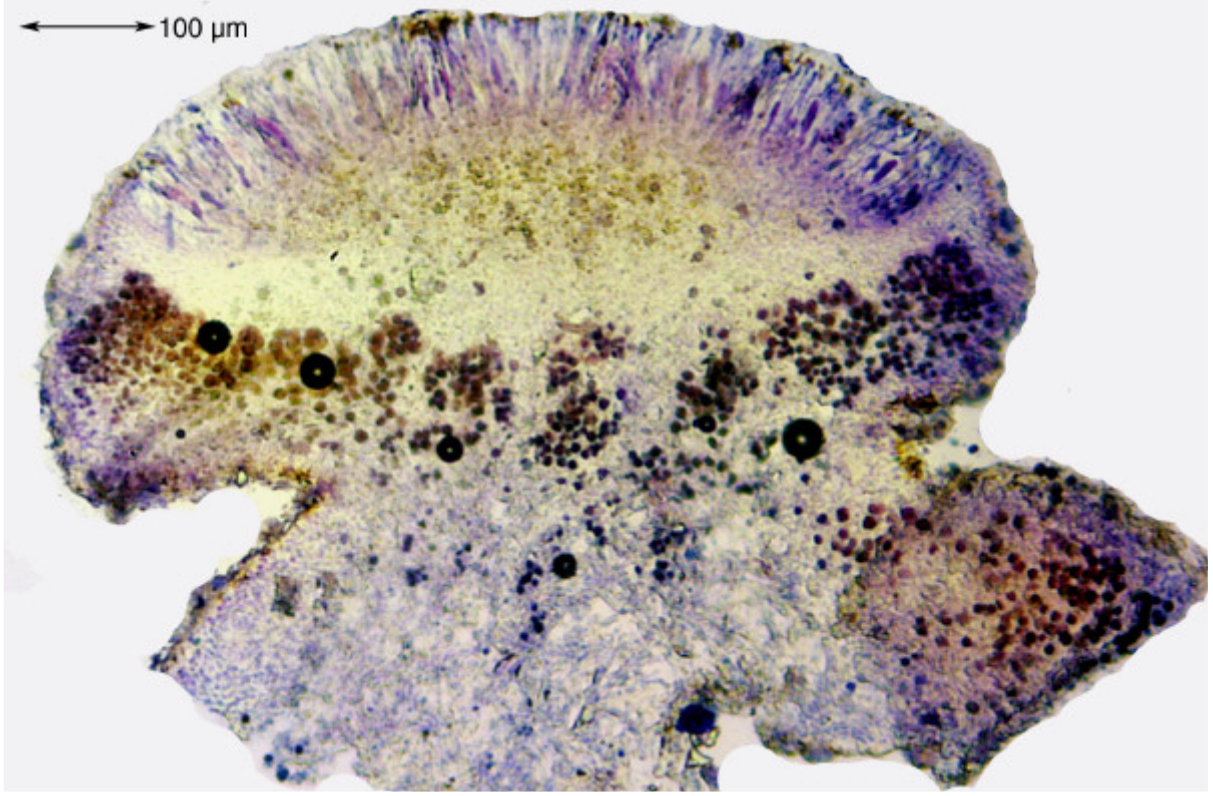
Thallus ohne Sorale, ohne Isidien, Randlappen 0,6-1,7 x 0,3-0,4 mm, konvex, im Zentrum Lappen verkürzt, areolenartig. Apoth. 0,4-0,7 mm, Hym. 90 µm, Paraphysen verzweigt, am Ende kaum verdickt. Sporen polar-2-zellig, 13 x 8,7 µm, Septum bauchig aufgetrieben

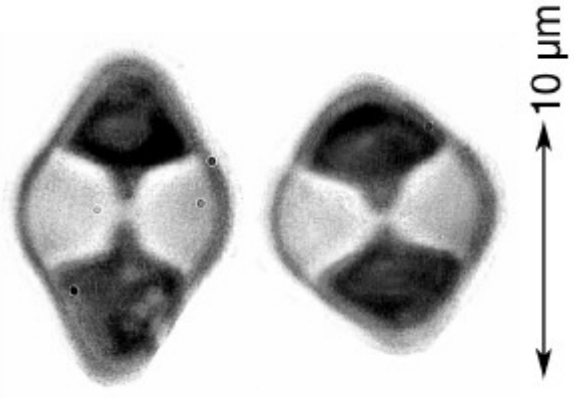
[11214], Portugal, Azoren, Sao Miguel, an schwarzen Lavafelsen bei der Küste von Mosteiros bei Beira - Mar de Baixo; 37°53.320' N, 25°49.426' W, 0 m. Leg. Schumm 06.06.2003, det. Schumm 2008, conf. Sipmann 2008.



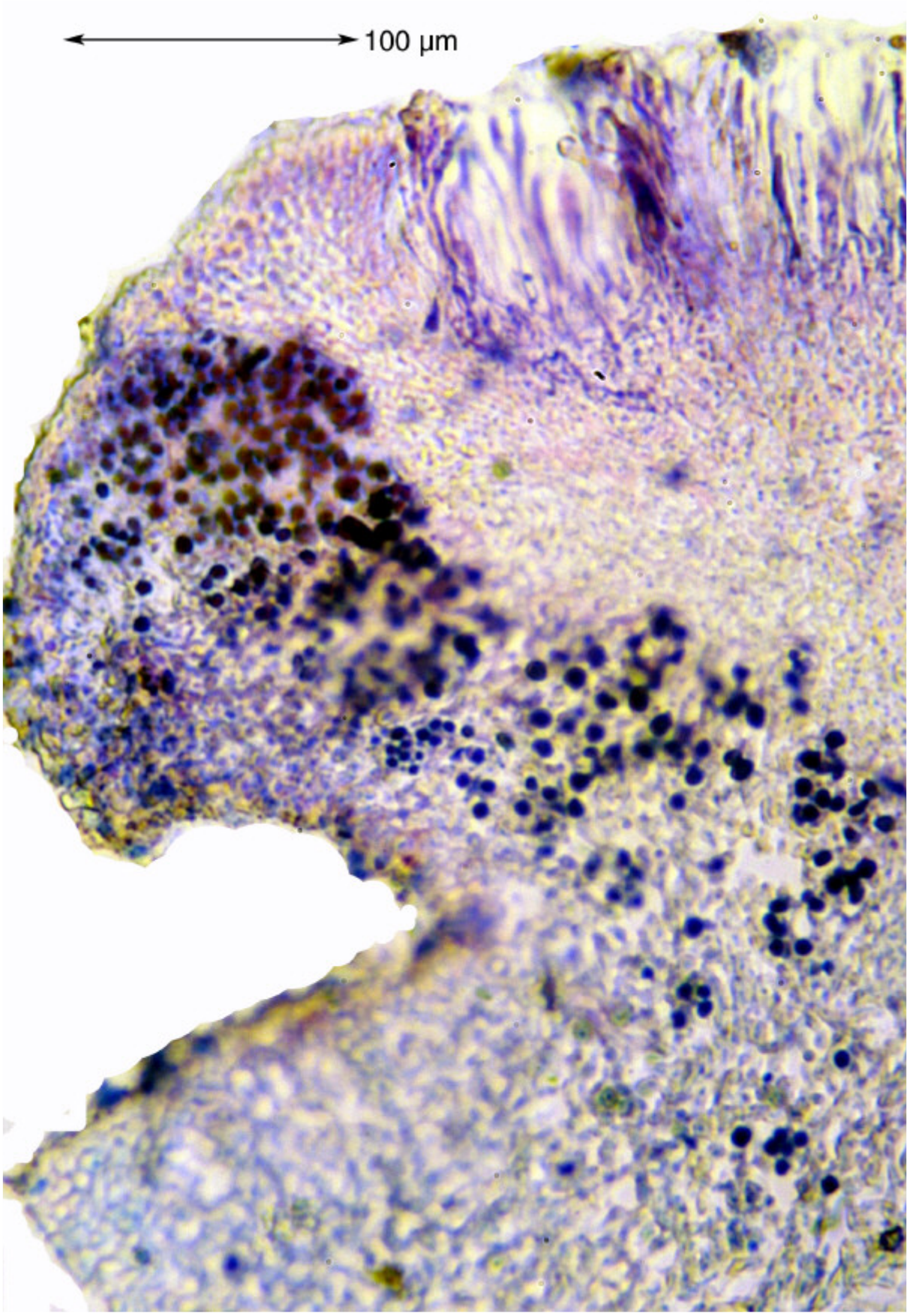




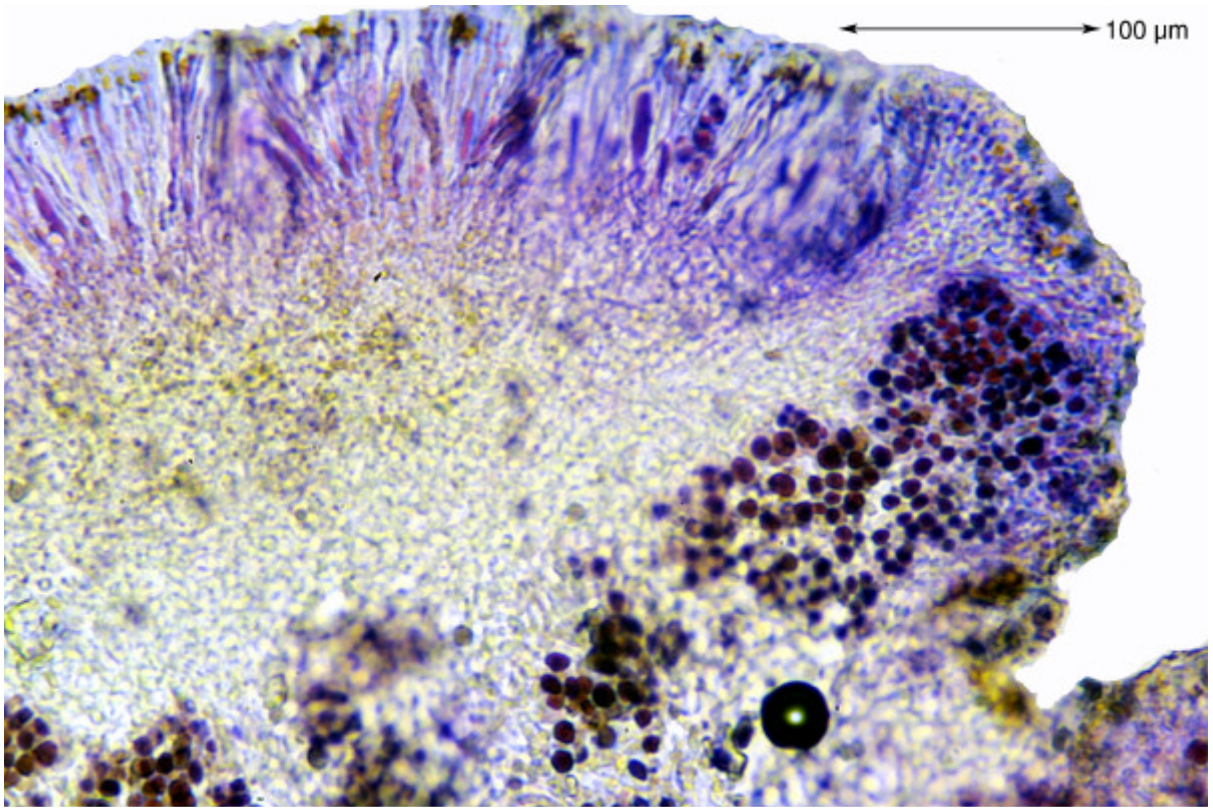


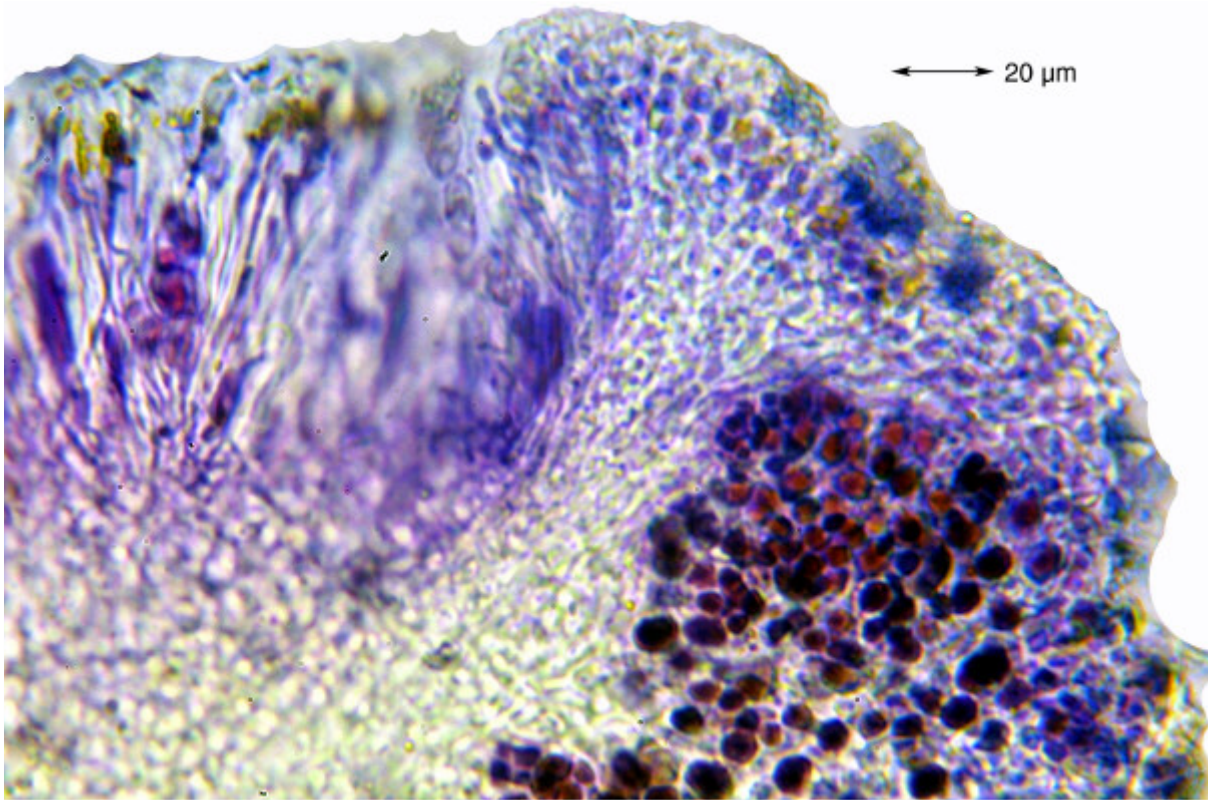


Caloplaca thallincola

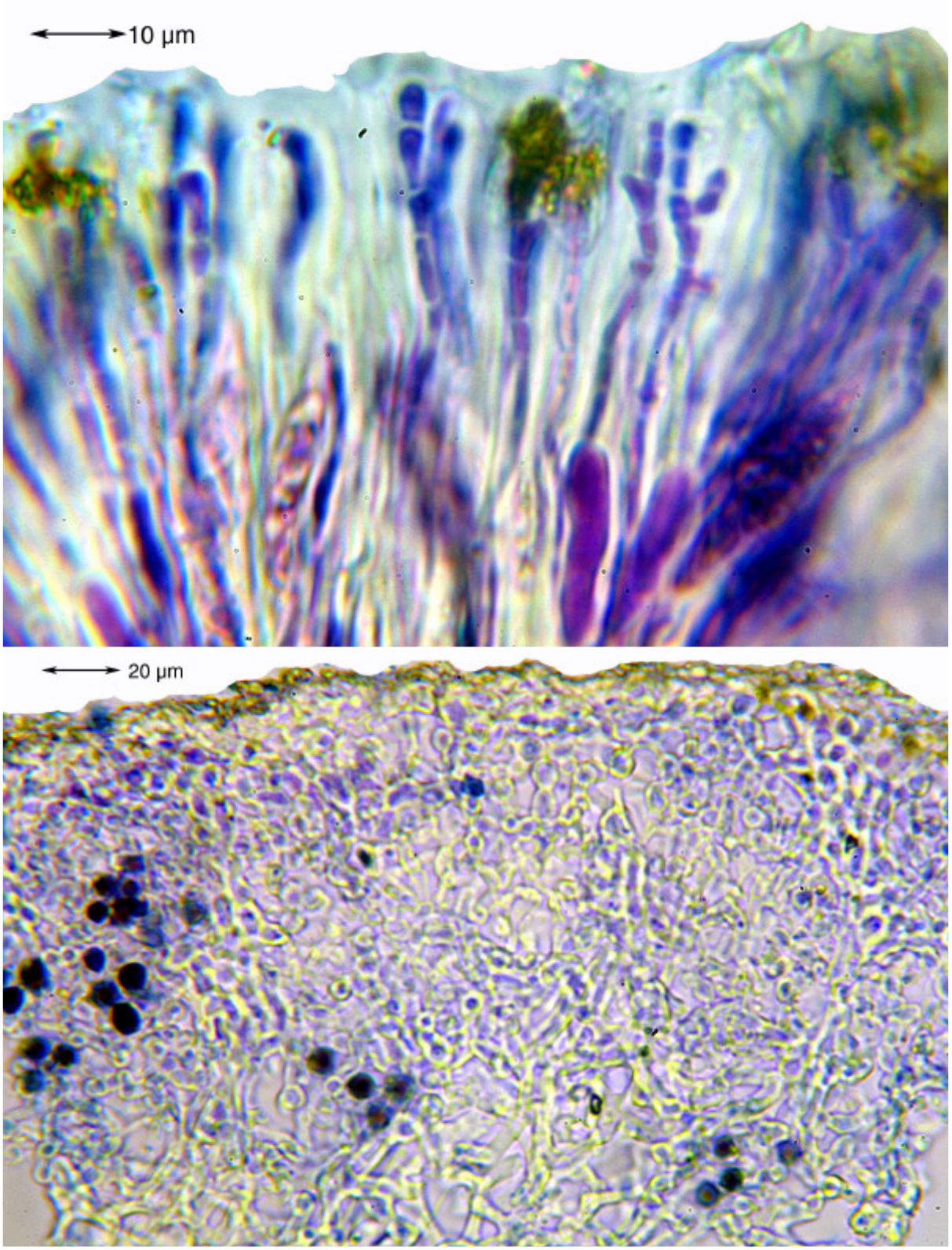


Caloplaca thallincola





Caloplaca thallincola



Caloplaca thallincola

Caloplaca thallincola (Wedd.) Du Rietz
[= *Variospora thallincola* (Wedd.) Arup, Frödén & Søchting]

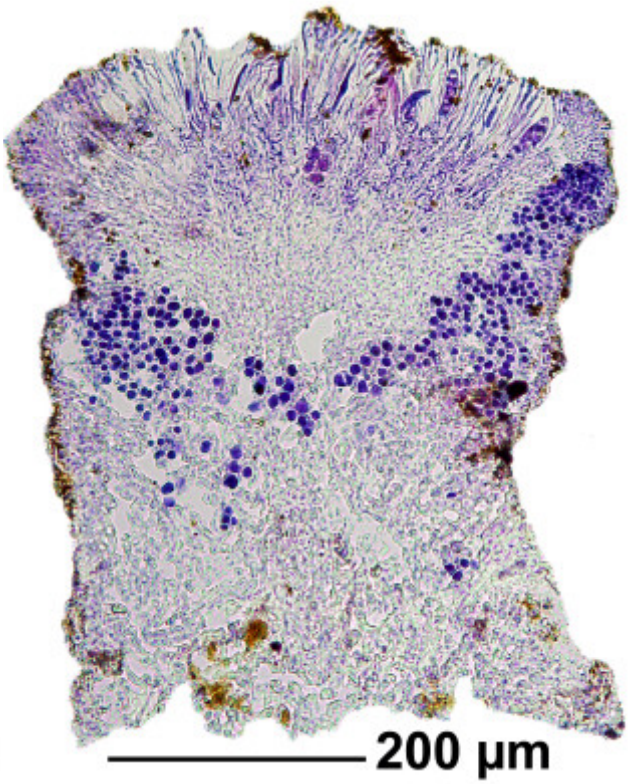
Thallus dunkelorange, unbereift, ohne Sorale, ohne Isidien. Randlappen 0.3-0.5 mm breit. Apothecien 0.3-0.7 mm breit, kurz gestielt bis aufsitzend, Rand mit breiter algenfreier Zone. Sporen hyalin, polar-2-zellig, 8/Ascus, 11.5-12.5 x 8-9 µm, Septum ca. 3.7 µm, am Septum geschwollen, Länge:Breite = 1,3-1,4.

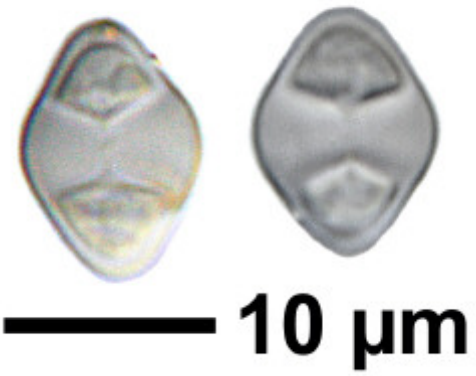
[14130], Portugal, Azoren, Terceira, beim Hotel Terceira Mar, 38°39.347' N, 27°13.924' W, ca. 8 m. Leg. Aptroot & Schumm 14.07.2008, det. Schumm 2013, conf. Aptroot.



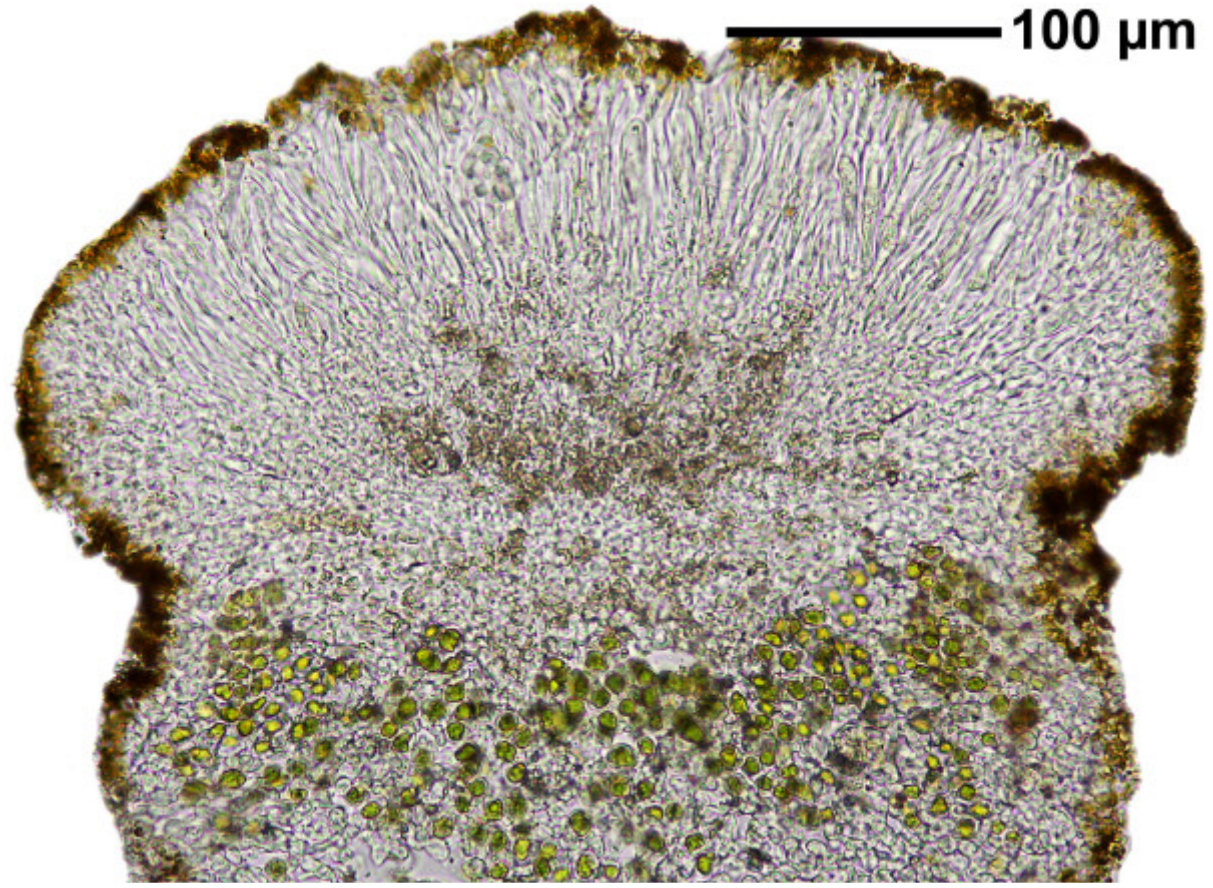


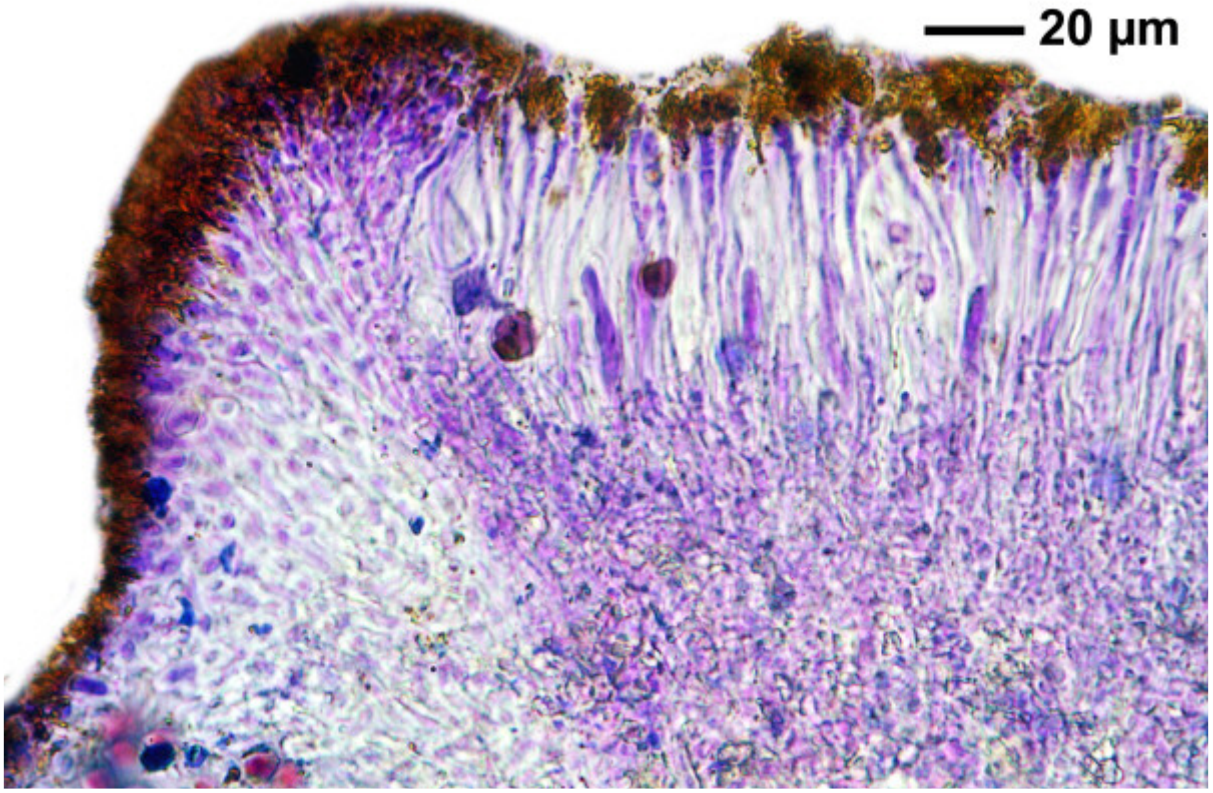




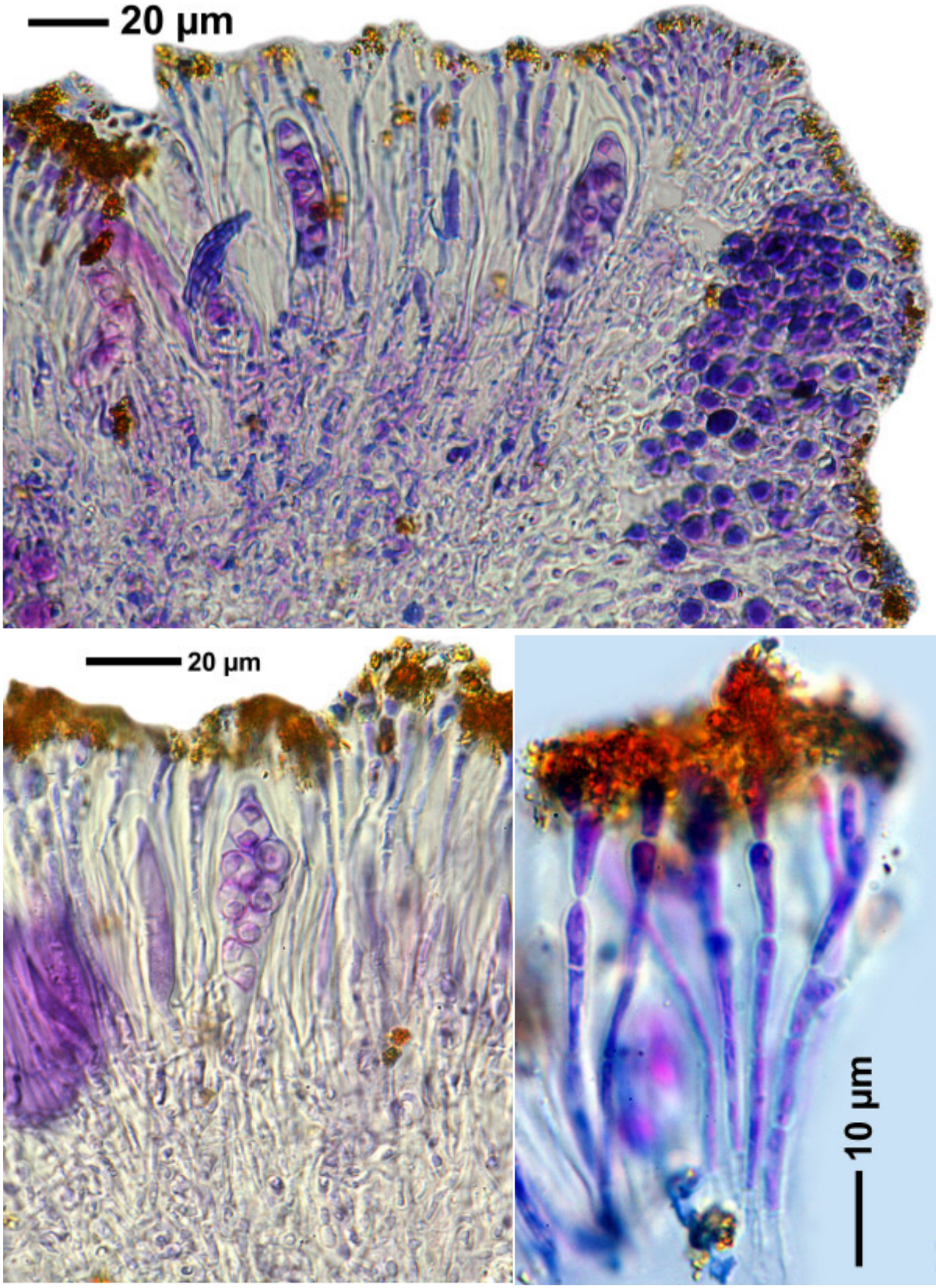


Caloplaca thallincola





Caloplaca thallincola



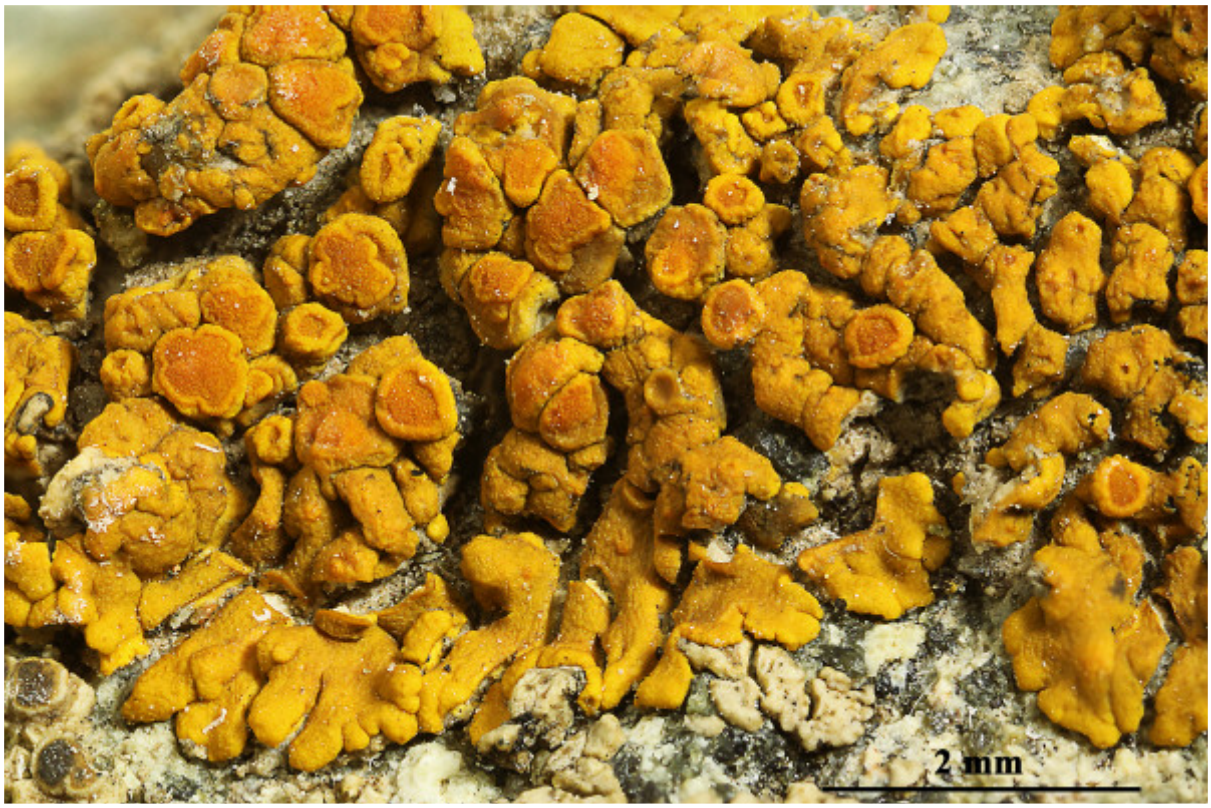
Caloplaca thallincola

Caloplaca thallincola (Wedd.) Du Rietz
[= *Variospora thallincola* (Wedd.) Arup, Frödén & Søchting]

Spores 12-14 x 7-8.2 µm, septum 4-4.2 µm, citrus-shaped (FS). On non-calcareous rocks. Lit. Du Rietz in Sc. Bot. Tidskr. (1921): 169.

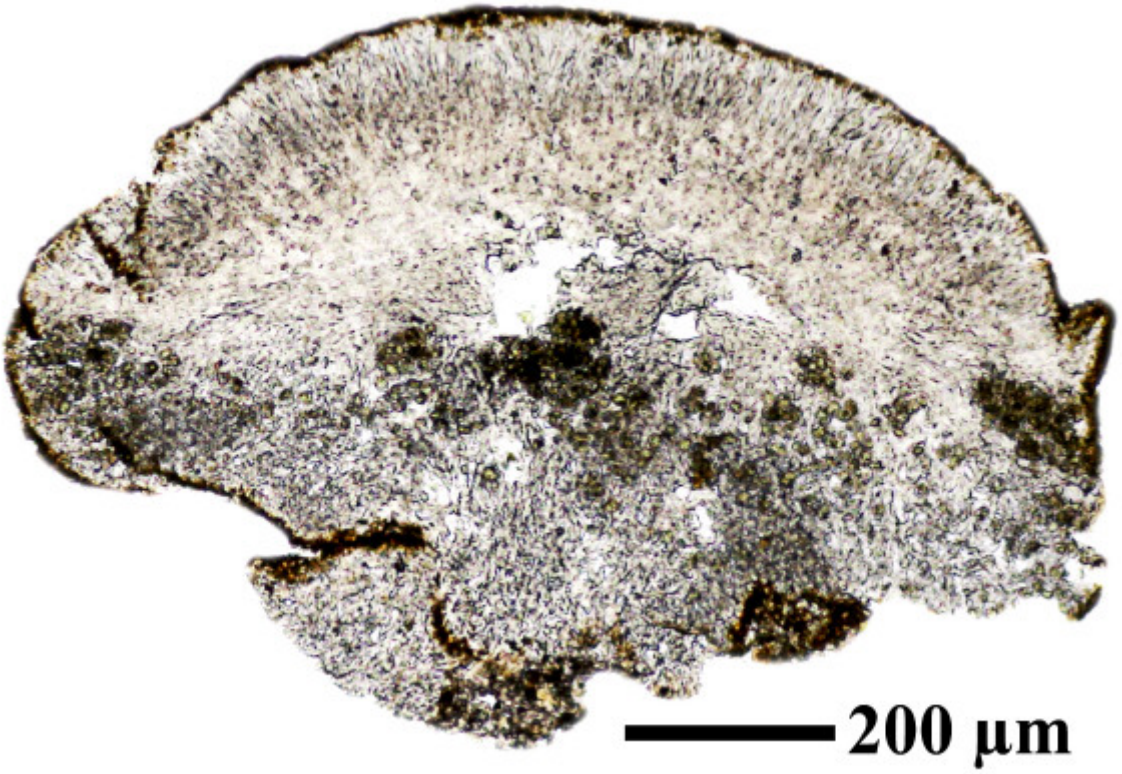
[19606], Bulgaria, Pontus distr. Burgas, in litore inter pagos Mičurin et Varvara, alt. 2-4 m, ad saxa silicea maritima. Leg. A. Kiszely & A. Vězda, 18.08.1975. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1363.

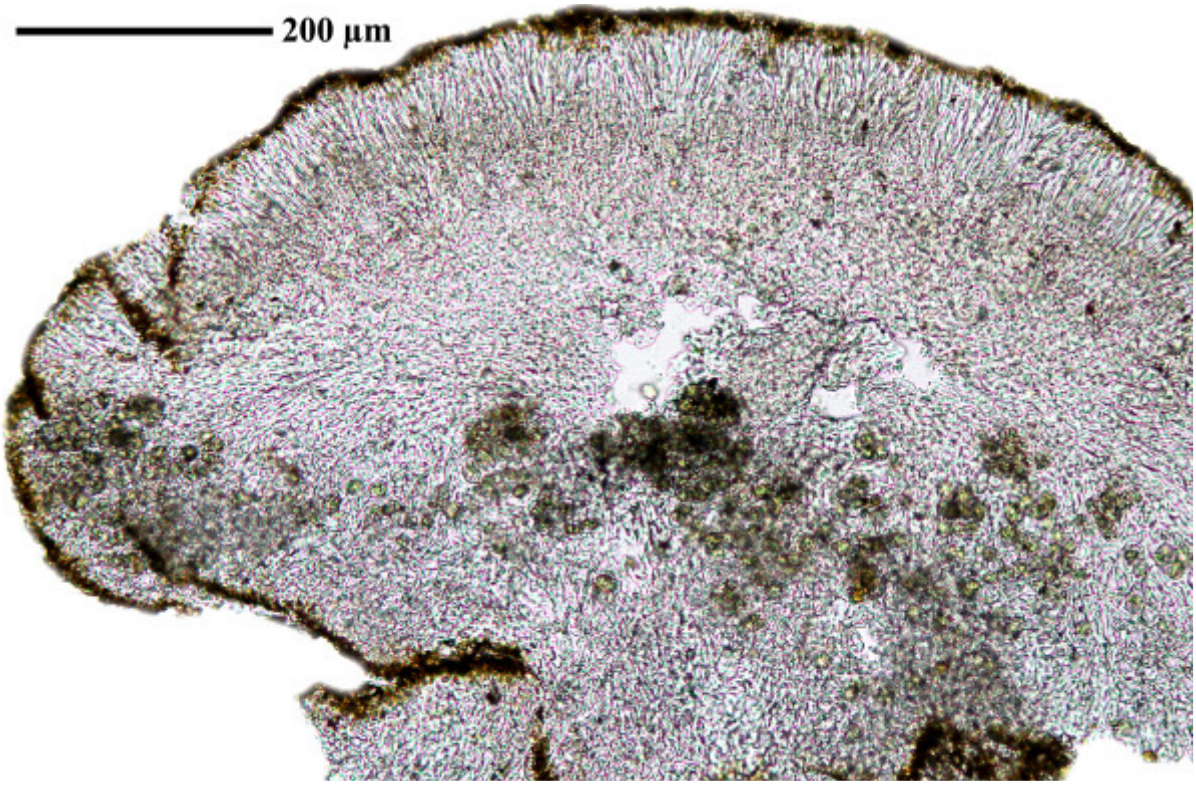






Caloplaca thallincola





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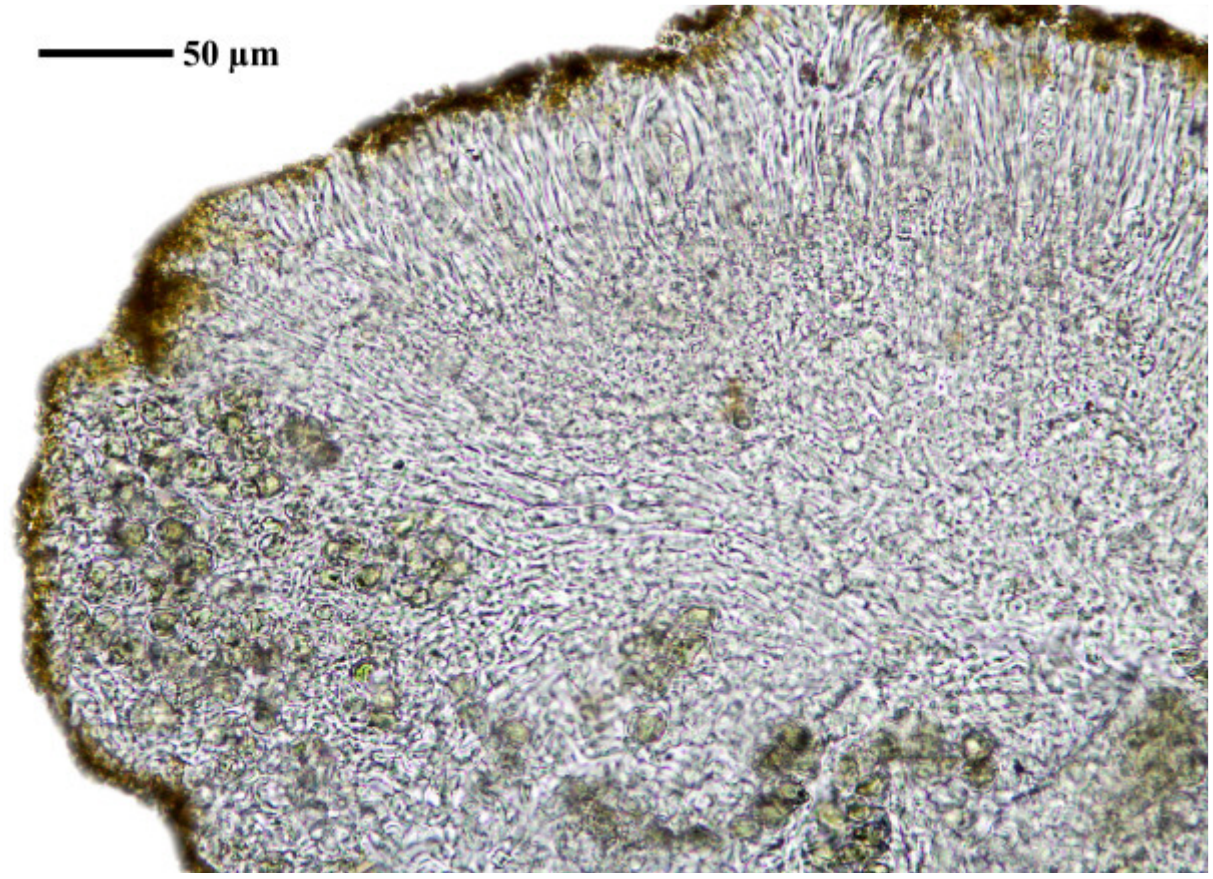

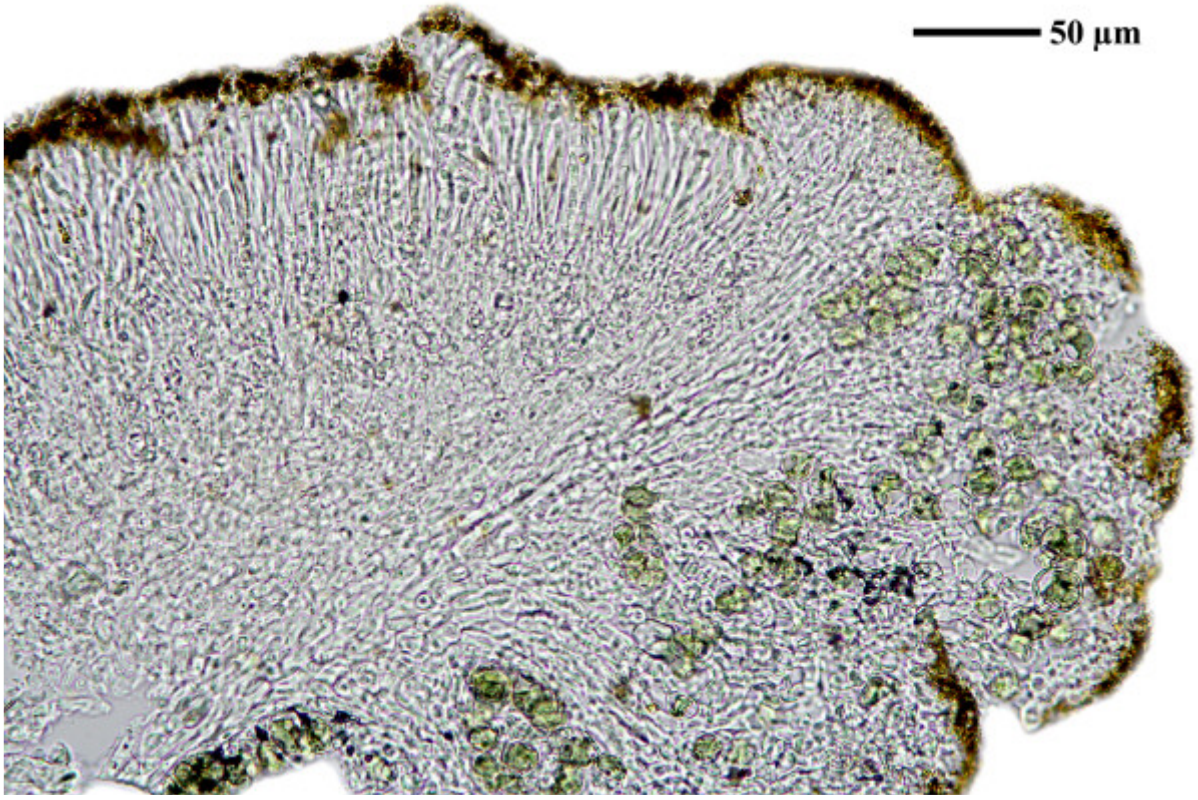

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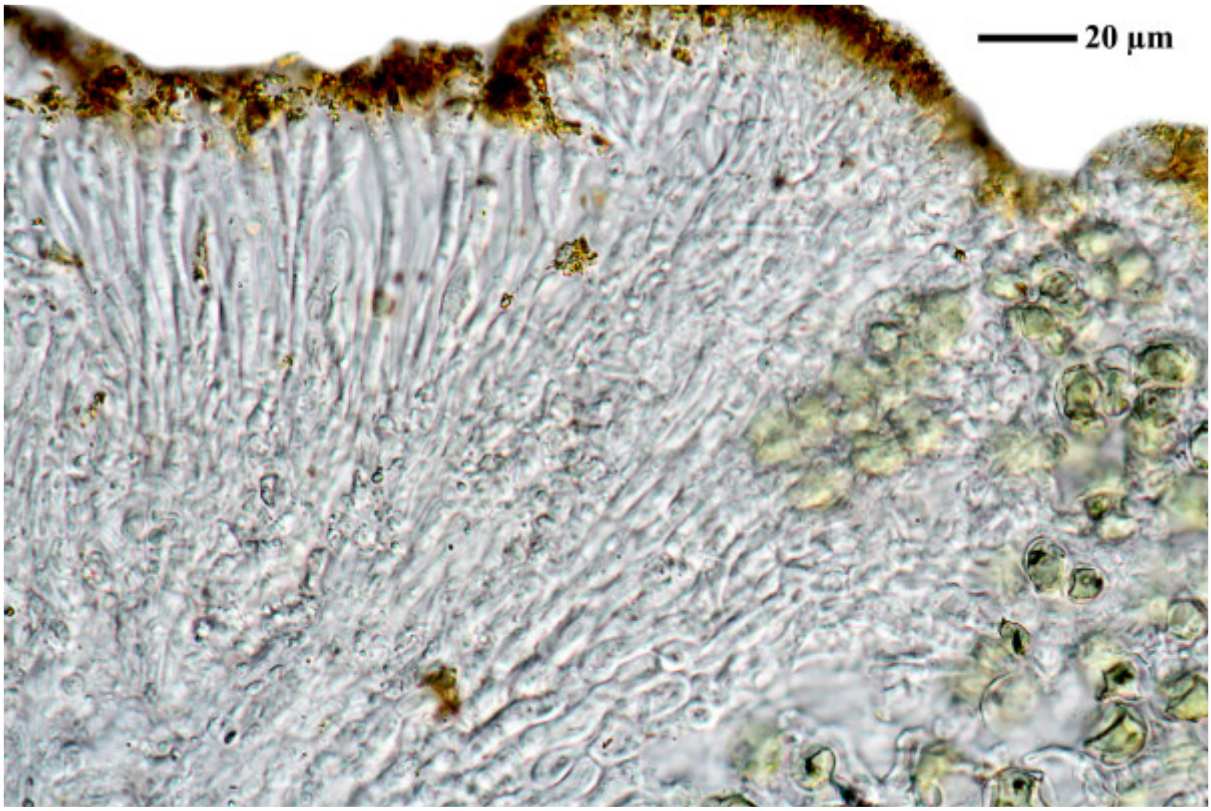
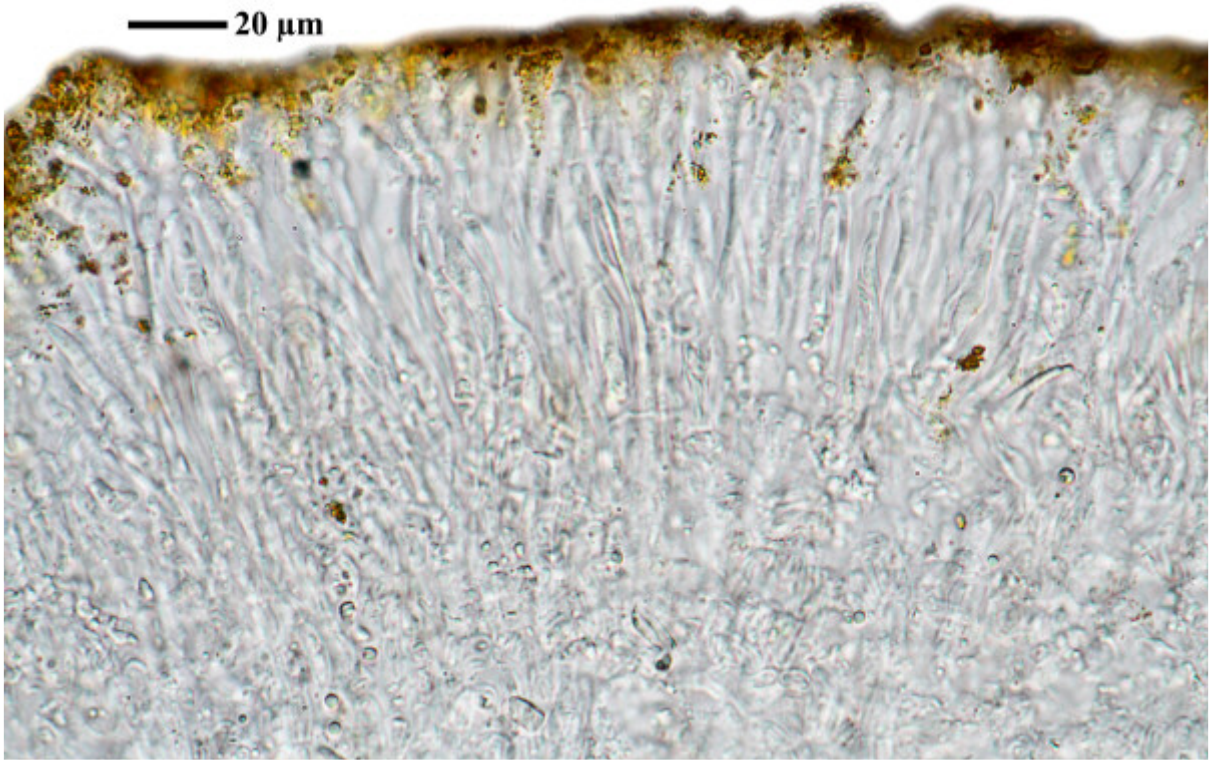
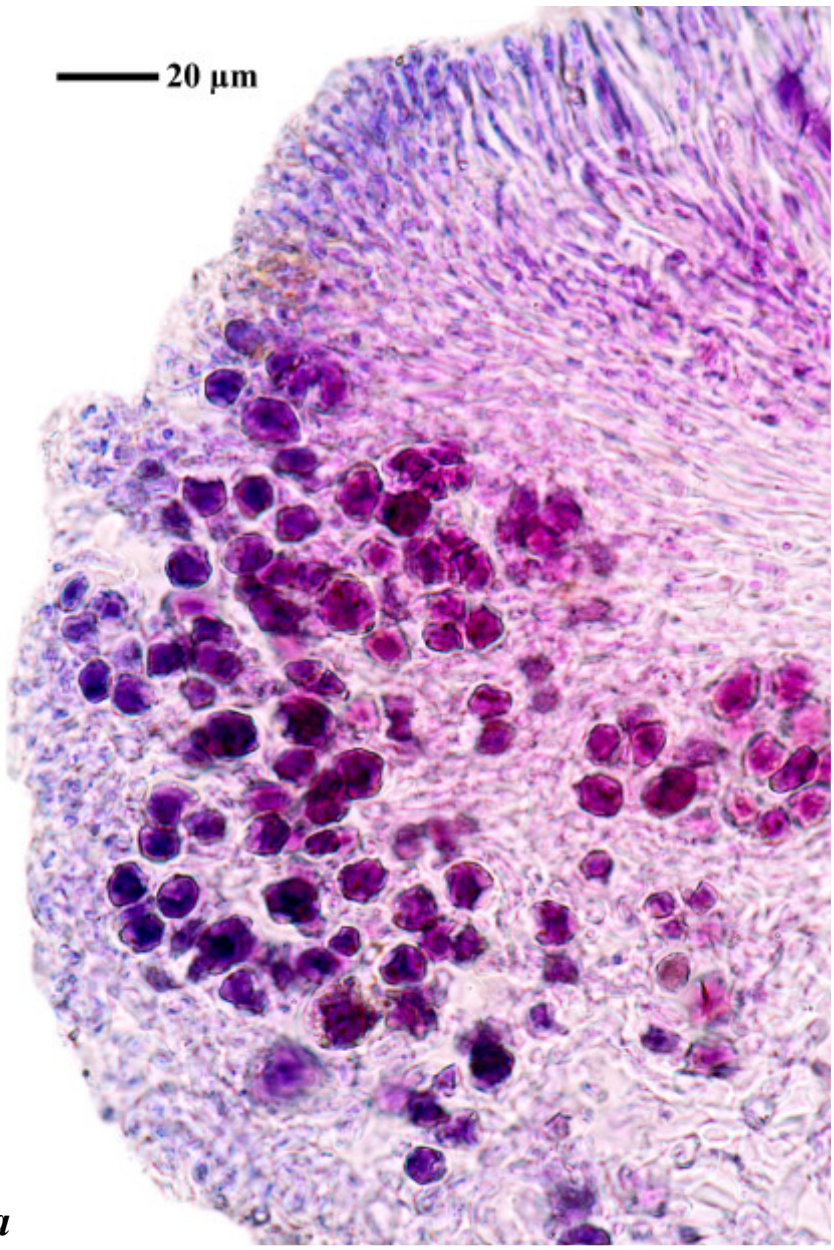




Caloplaca thallincola





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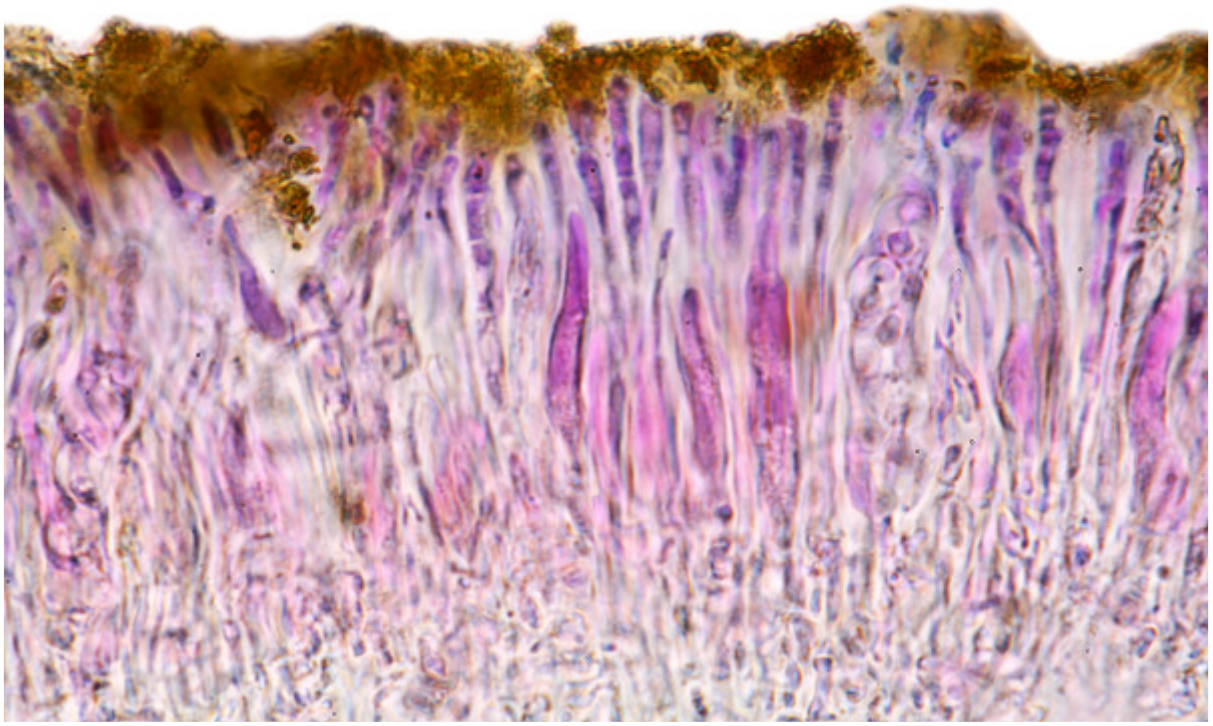
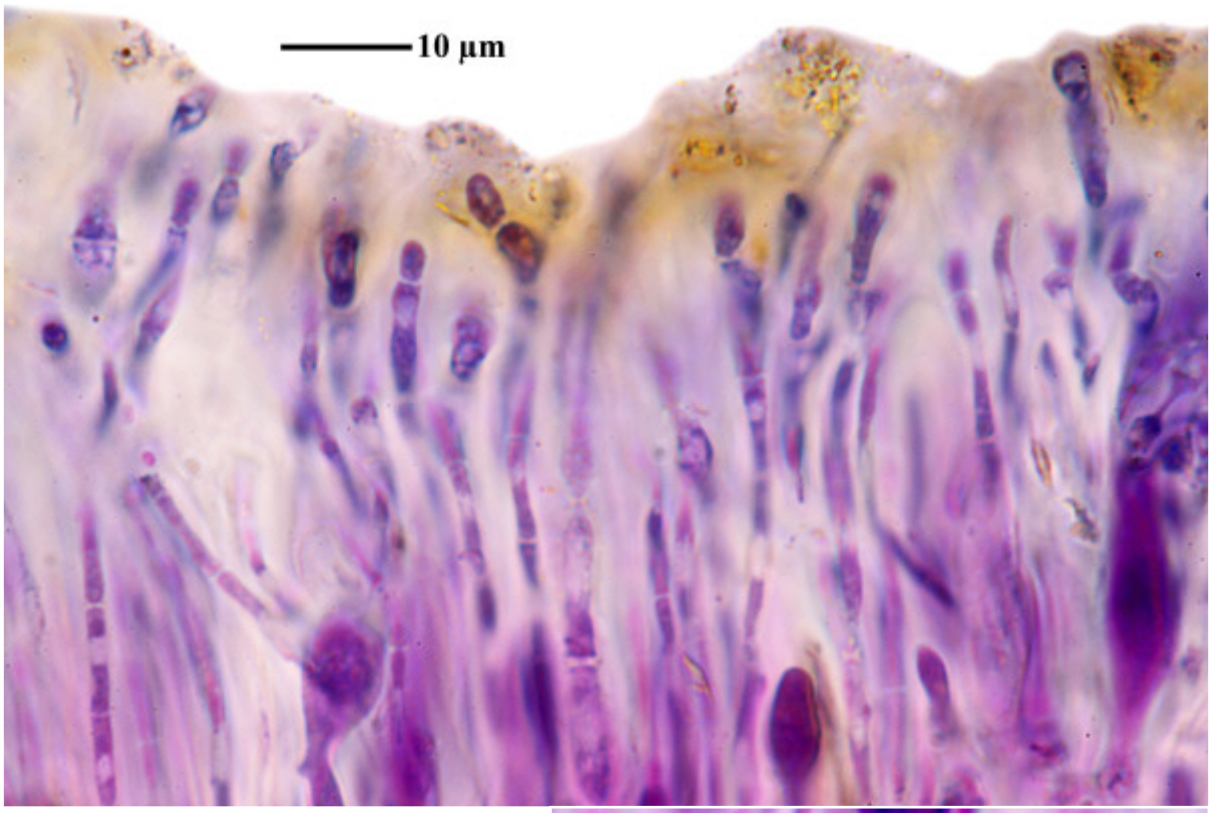
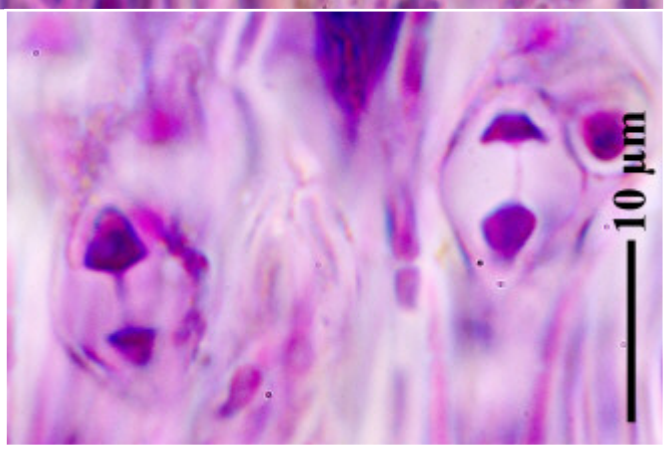
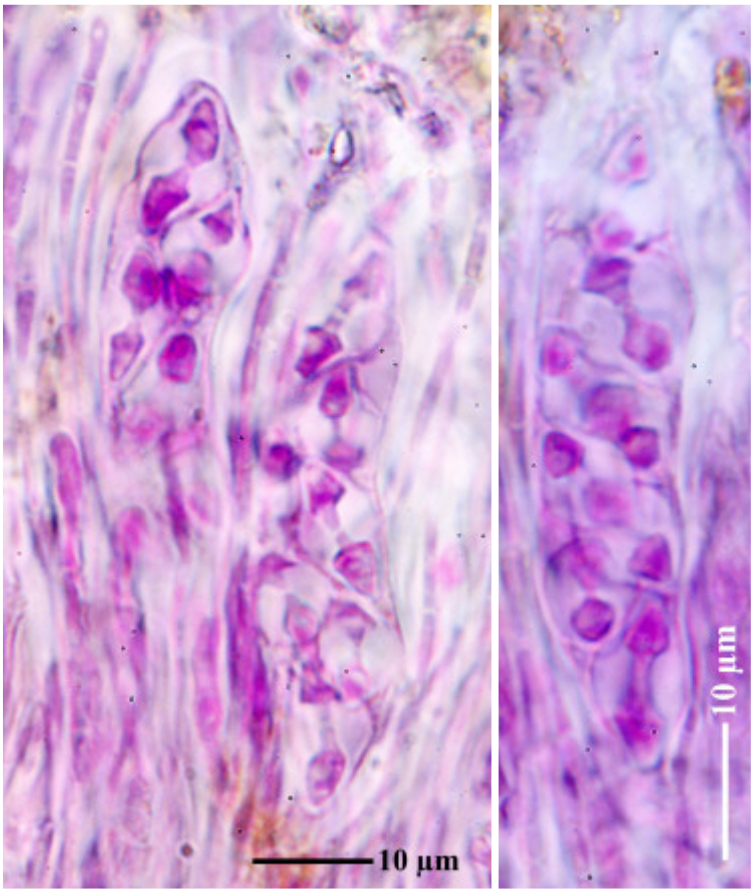
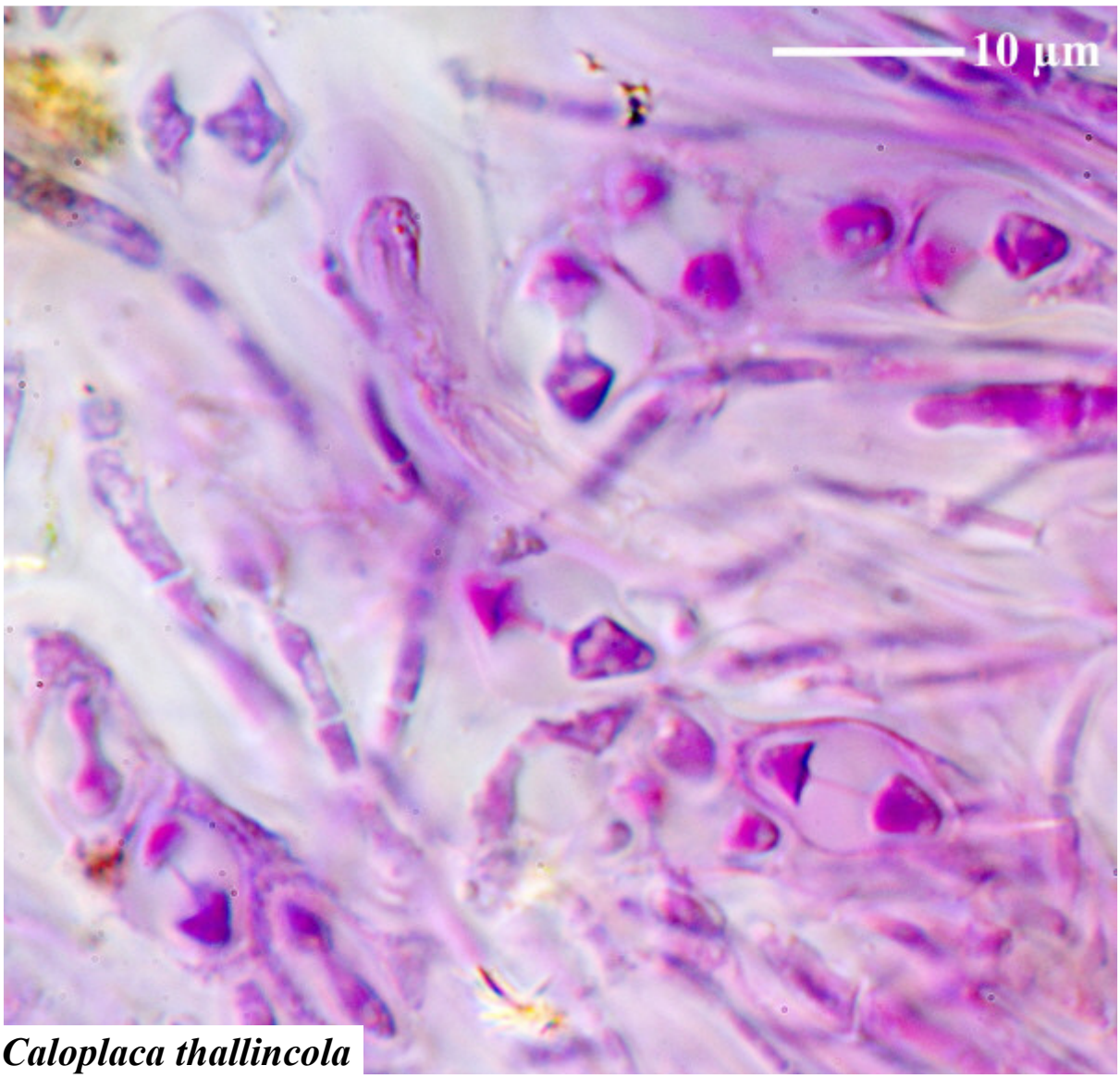






Caloplaca thallincola





Caloplaca thallincola

Caloplaca thamnoblasta Nimis & Poelt

On calcareous rocks. Description in the exsiccat.

[19560], Italia, Pelagiae insulae, insula Lampedusa, scopulum "Capo Grecale" dictum, alt. 30-50 m, ad saxa calcarea. Leg. P.L. Nimis, J. Poelt & A. Vězda, 14.04.1992 (Holotypus GZU). VĚZDA: LICHENES RARIORES EXSICCATI NR. 51, ISOTYPUS.







Caloplaca thamnoblasta



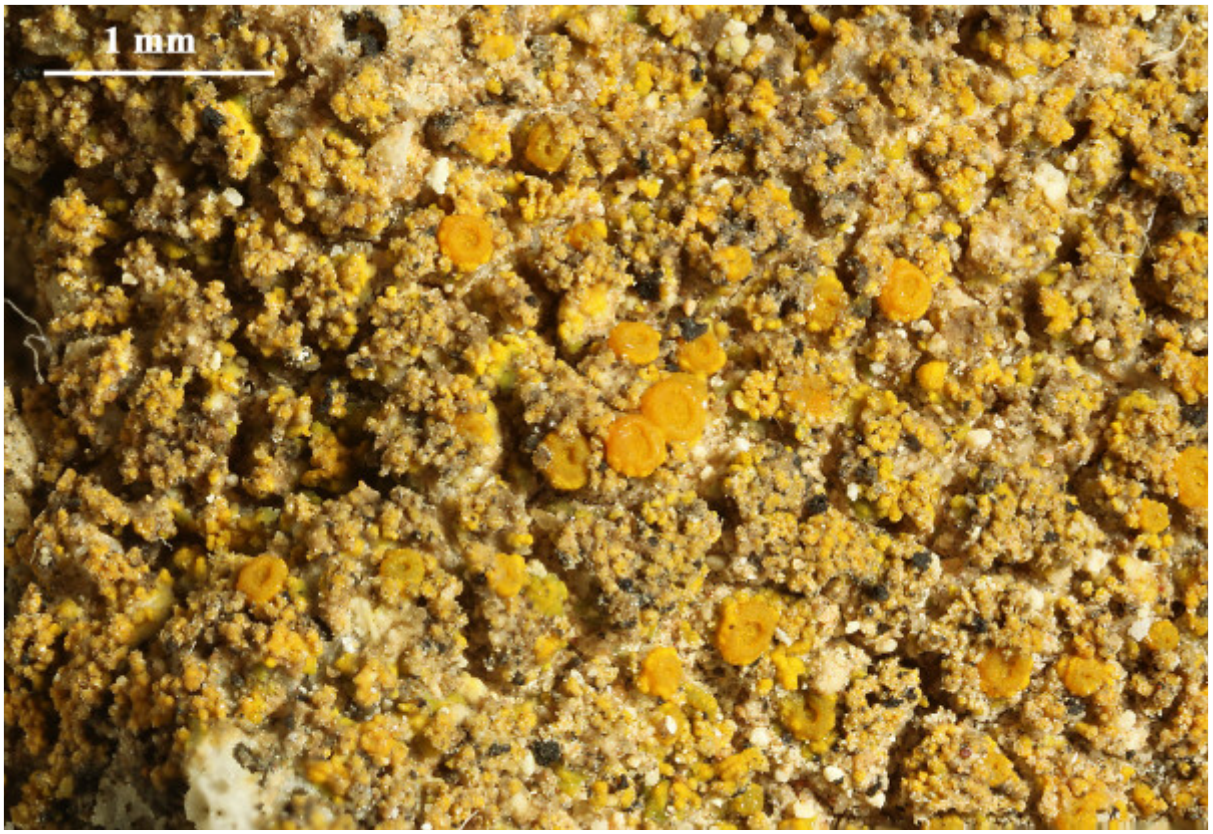
Caloplaca thamnoblasta

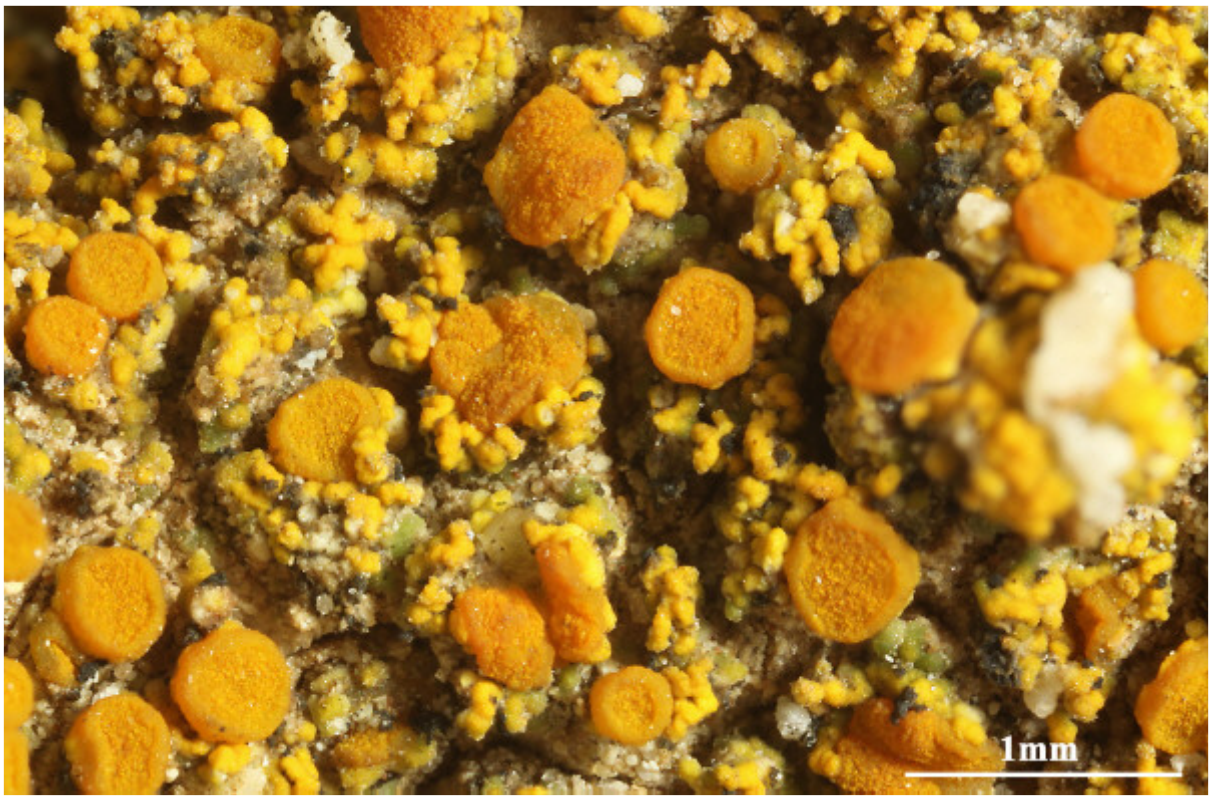
Caloplaca thamnoblasta Nimis & Poelt

On calcareous rocks. Description in the exsiccat.

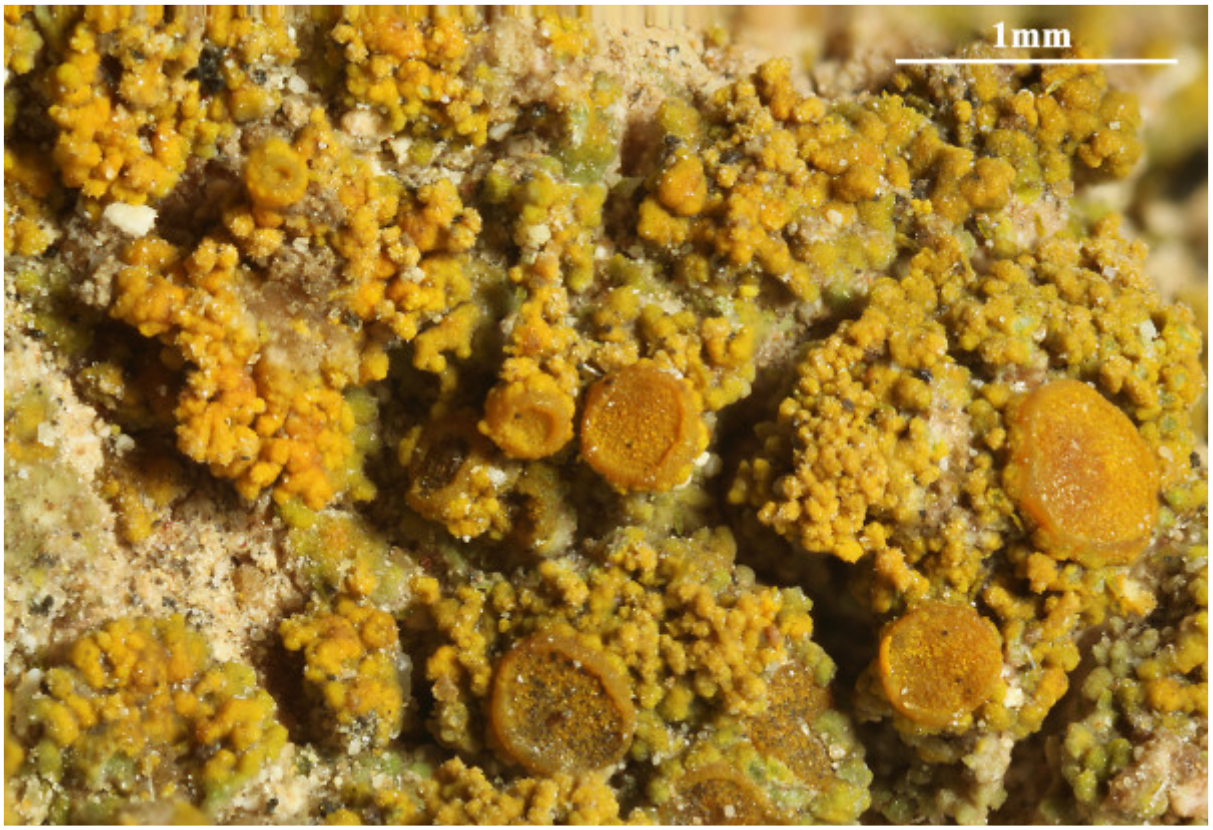
[BR5030011725857], Italia, Pelagiae insulae, insula Lampedusa, scopulum "Capo Grecale" dictum, alt. 30-50 m, ad saxa calcarea. Leg. P.L. Nimis, J. Poelt & A. Vězda, 14.04.1992 (Holotypus GZU). VěZDA: LICHENES RARIORES EXSICCATI NR. 51, ISOTYPUS.

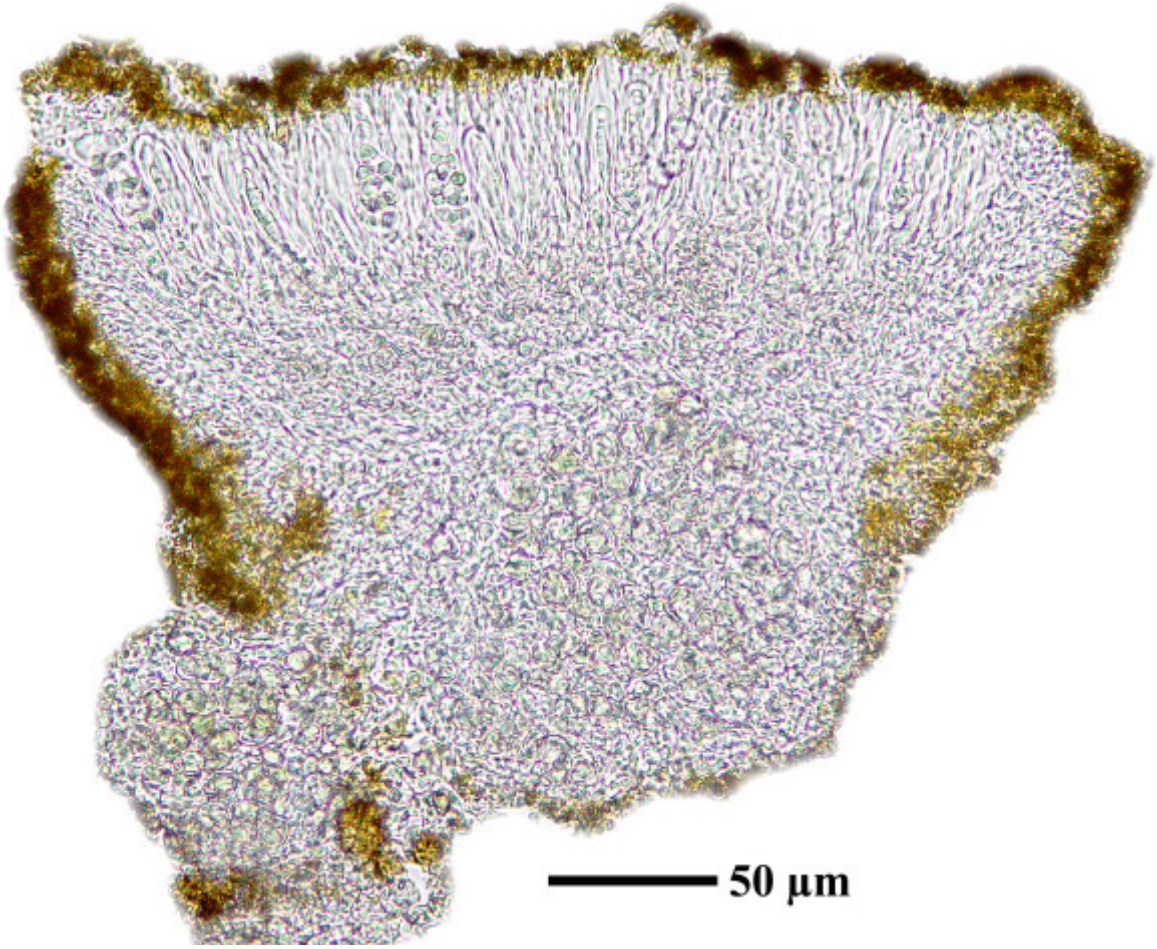




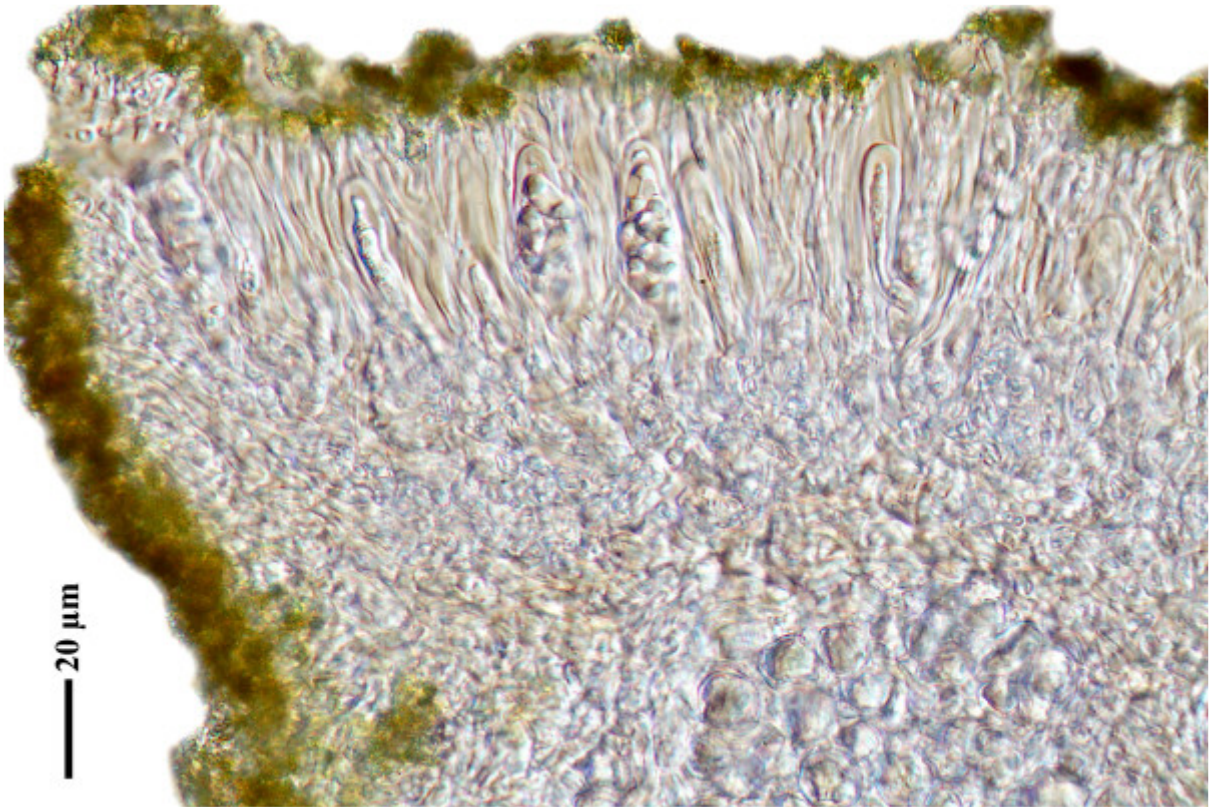


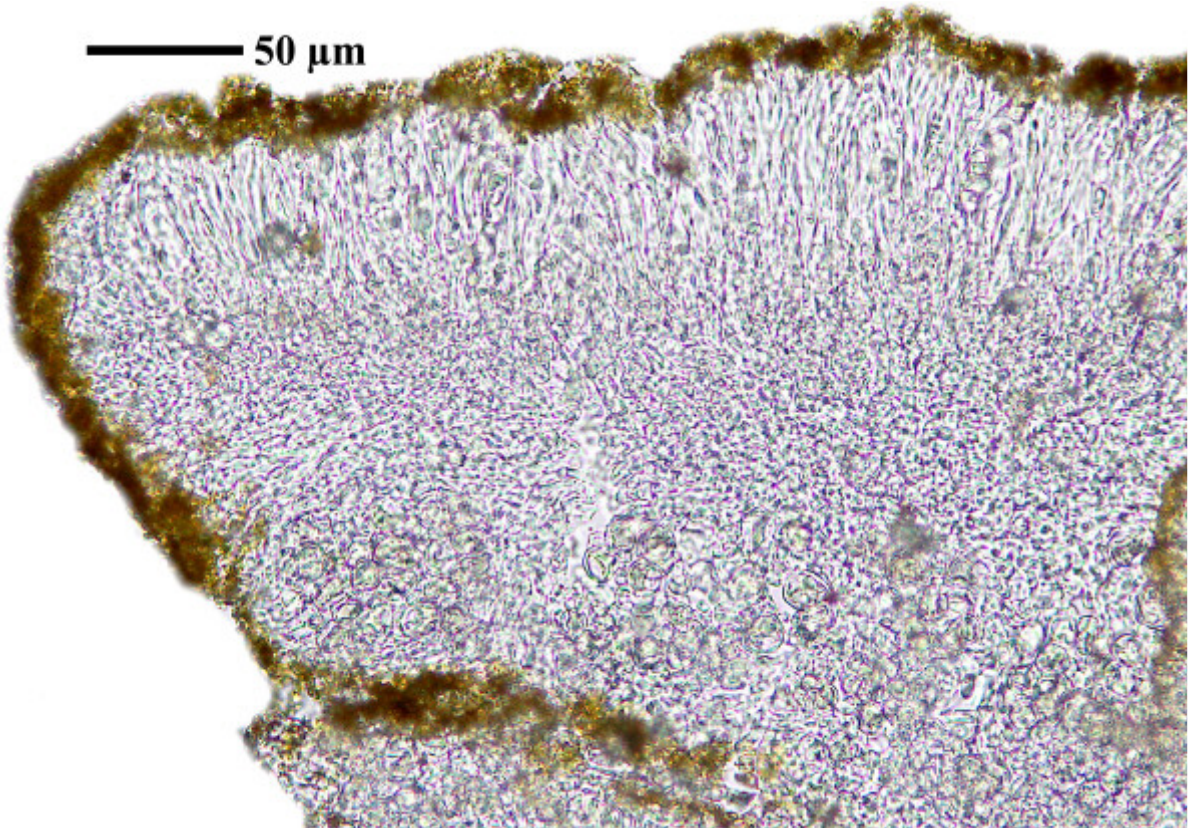
Caloplaca thamnoblasta





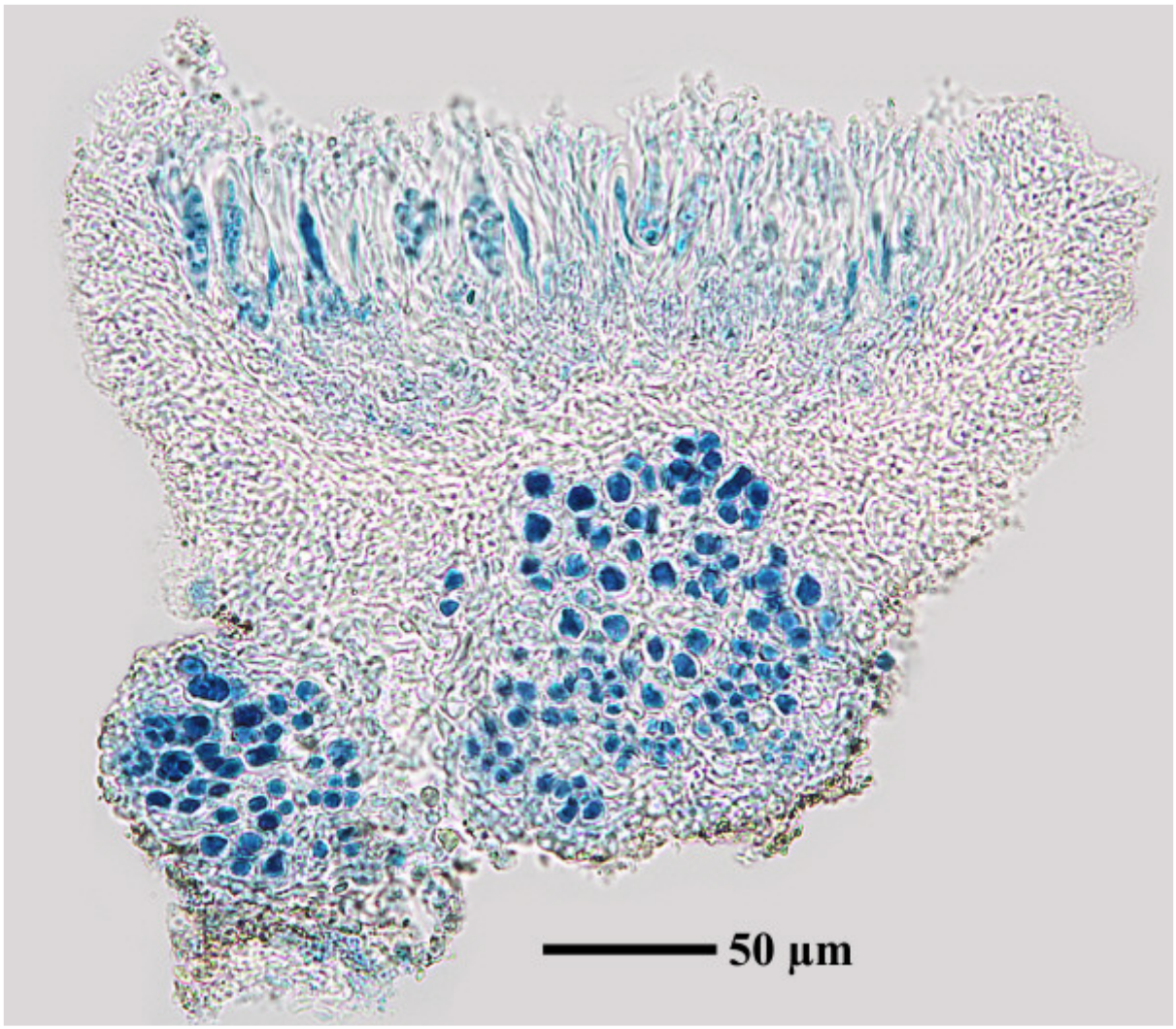
Caloplaca thamnoblasta

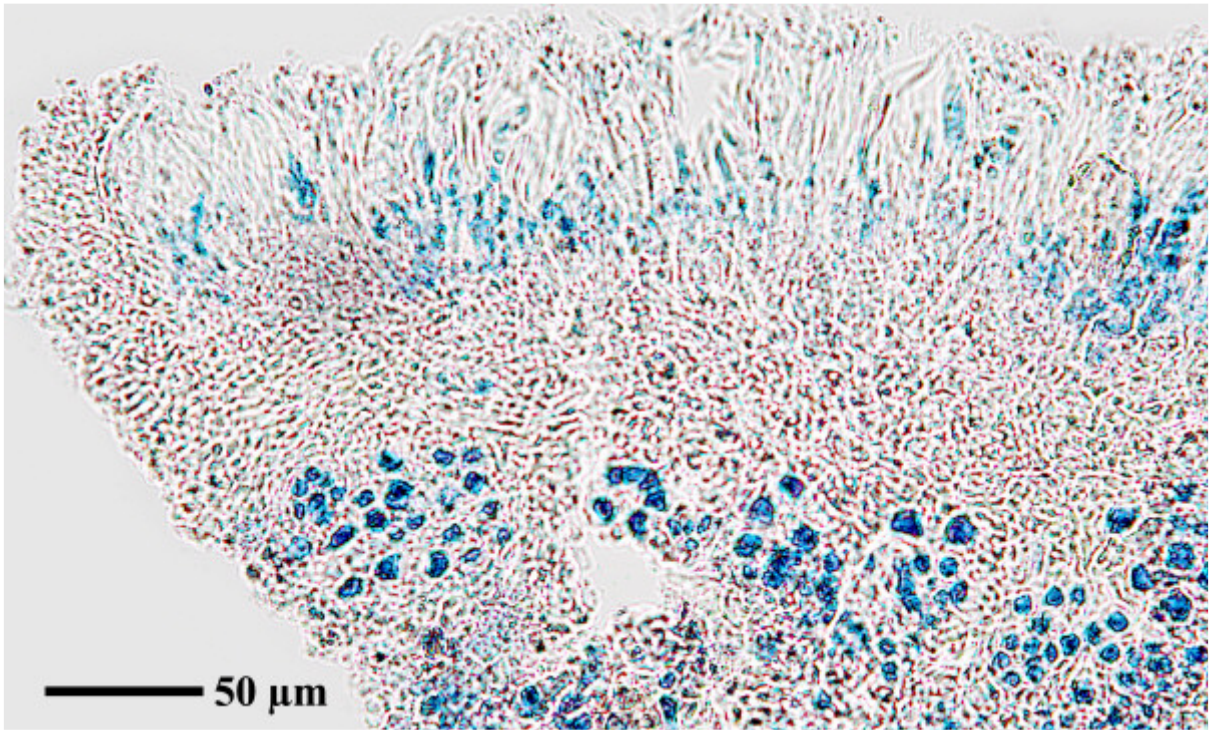




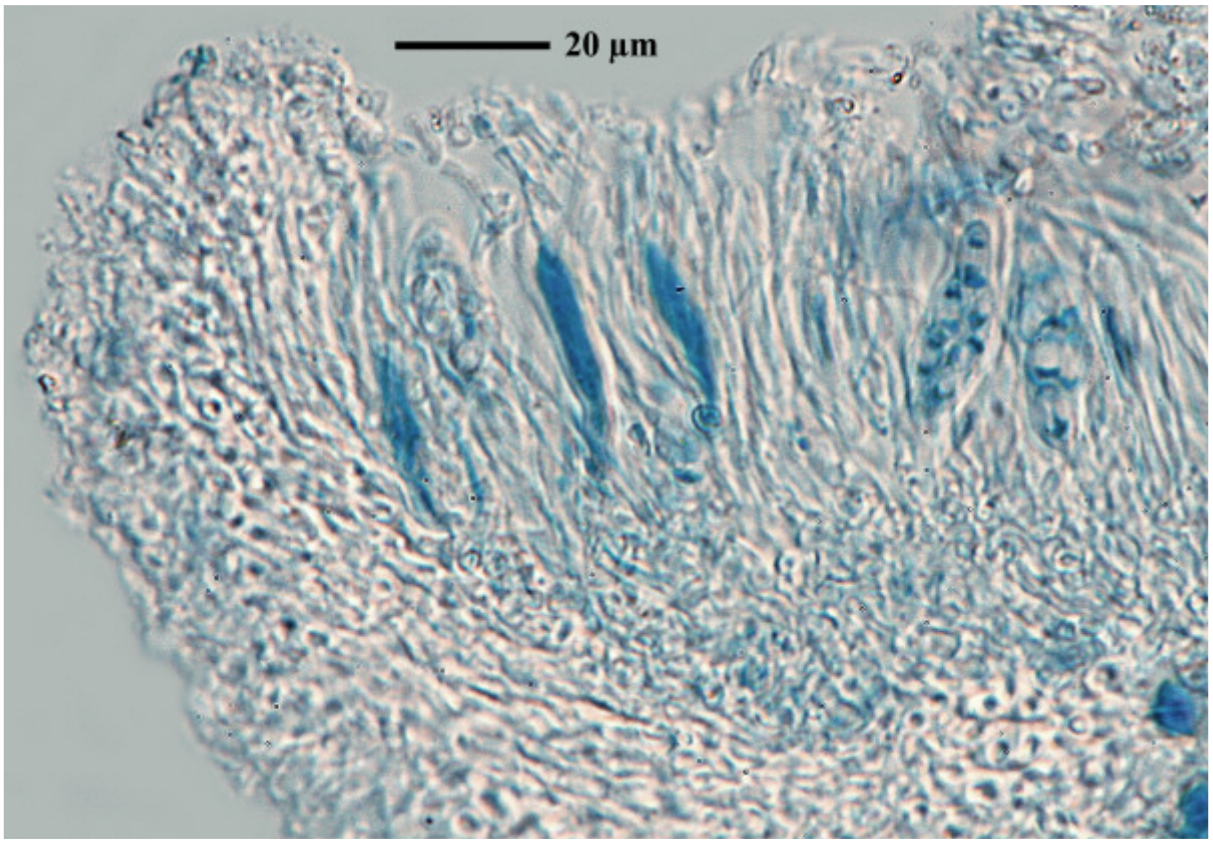


Caloplaca thamnoblasta





Caloplaca thamnoblasta



A. VĚZDA: LICHENES RARIORES EXSICCATI

51. **Caloplaca thamnoblasta** Nimis & Poelt sp. n.

ISOTYPUS

In parietibus perpendicularibus saxorum calcareorum maritimorum, septentrionem versus expositis crescens. - Thalli parvi, ca. 1 cm in diam., sed plerumque confluentes, prothallo ± distincto albido ad pallide ochraceo circumdati, primum squamulosi squamulis parvis irregularibus convexis vix distincte effiguratis luteiaurantiacis instructi. Squamula mox in parvula globosa, 0,01 - 0,05 mm in diam. metientia iterum iterumque prolificantia et thallum subfruticulosum effigientia. Apothecia dispersa, raro abundantia, sessilia ad inter granula innata, primum rotundata et margine distincto elevato integro cincta, dein irregularia margine subexcluso non vel distincte zeorino et disco plano. - Apothecia biatorina parathecio flabellato, vel lecanorina cortice irregulari instructa, et medulla algis impleta. Hypothecium paratheciumque hyphis conglutinatis constructum. Hymenium 60 - 80 µm altum. Paraphyses 1,5 - 2 µm crassae, apicibus vix incrassatis, 2 - 3 (-5) µm latis. Sporae octonae, anguste ad late ellipsoideae, ca. 11 - 14 x 5 - 7 µm, septo 3 - 4,5 µm crasso. Spermogonia immersa, ostiolis indistinctis, non intensius coloratia; spermatia ovoidea, ca. 2 - 3 x 1 - 1,5 µm.

ITALIA. Pelagiae insulae: insula Lampedusa, scopulum "Capo Grecale" dictum, alt. 30 - 50 m s. m. Ad saxa calcarea. - 14. IV. 1992 (Holotypus: GZU).

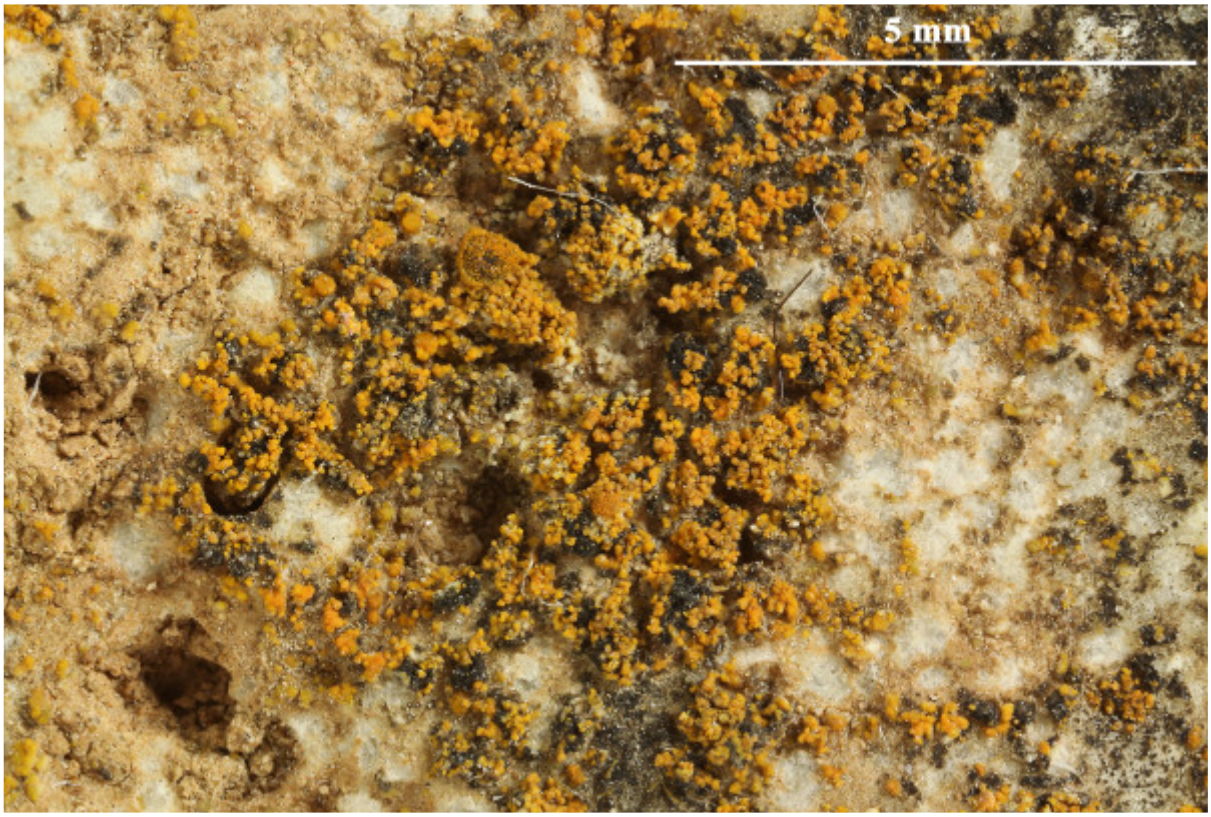
Leg. P. L. Nimis, J. Poelt & A. Vězda

Caloplaca thamnoblasta

Caloplaca thamnoblasta Nimis & Poelt, in Vězda, Lichenes Rariores Exsiccati, Fascicle 6 (nos 51-60) (Brno): 1 (1993)

In parietibus perpendicularibus saxorum calceourum maritimorum, septentrionem versus expositis crescens. Thalli parvi, ca. 1 cm in diam., sed plerumque confluentes,prothallo ± distincto albido ad pallide ochraceo circumdati, primum squamulosi squamulis parvis irregularibus convexis vix distincte effiguratis luteiaurantiacis instructi. Squamula mox in parvula globosa, 0,01-0,05 mm in diam. metientia iterum iterumque prolificantia et thallum subfruticulosum effigientia. Apothecia dispersa, raro abundantia, sessilia ad inter granula innata. primum rotundata et margina distincto elevato integrao cincta, dein irregularia margine subexcluso non vel distincte zeorino et disco plano. - Apothecia biatorina parathecio flabellato, vel lecanorina cortice irregulari instructa, et medula algis impleta. Hypothecium paratheciumque hyphis conglutinatis constructum. Hymenium 60-80 µm altum. Paraphyses 1,5-2 µm crassae, apicibus vix incrassatis, 2-3(-5) µm latis. Sporae octonae, anguste ad late ellipsoideae, ca. 11-14 x 5-7 µm, septo 3-4,5 µm crasso. Spermogonia immersa, ostiolis indistinctis, non intensis coloratia; spermatia ovoidea, ca. 2-3 x 1-1,5 µm

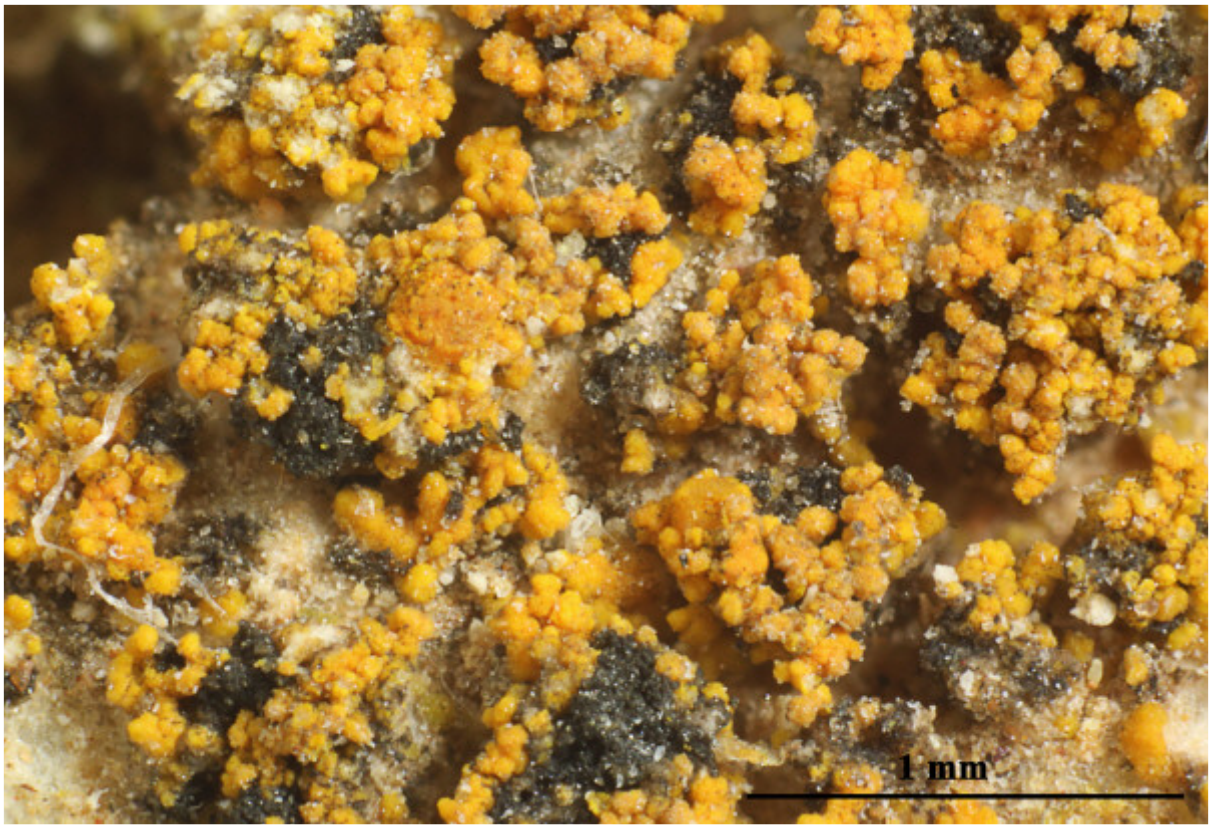
[TSB_18220], Italia, Pelagiae insulae, insula Lampedusa, scopulum “Capo Grecale” dictum, 30-50 m, ad saxa calcarea. Leg. P.L. Nimis, J. Poelt & A. Vězda 14.04.1992. Holotyus in GZU). VěZDA: LICHENES RARIORES EXSSICCATI NR. 31 – **ISOTYPUS**

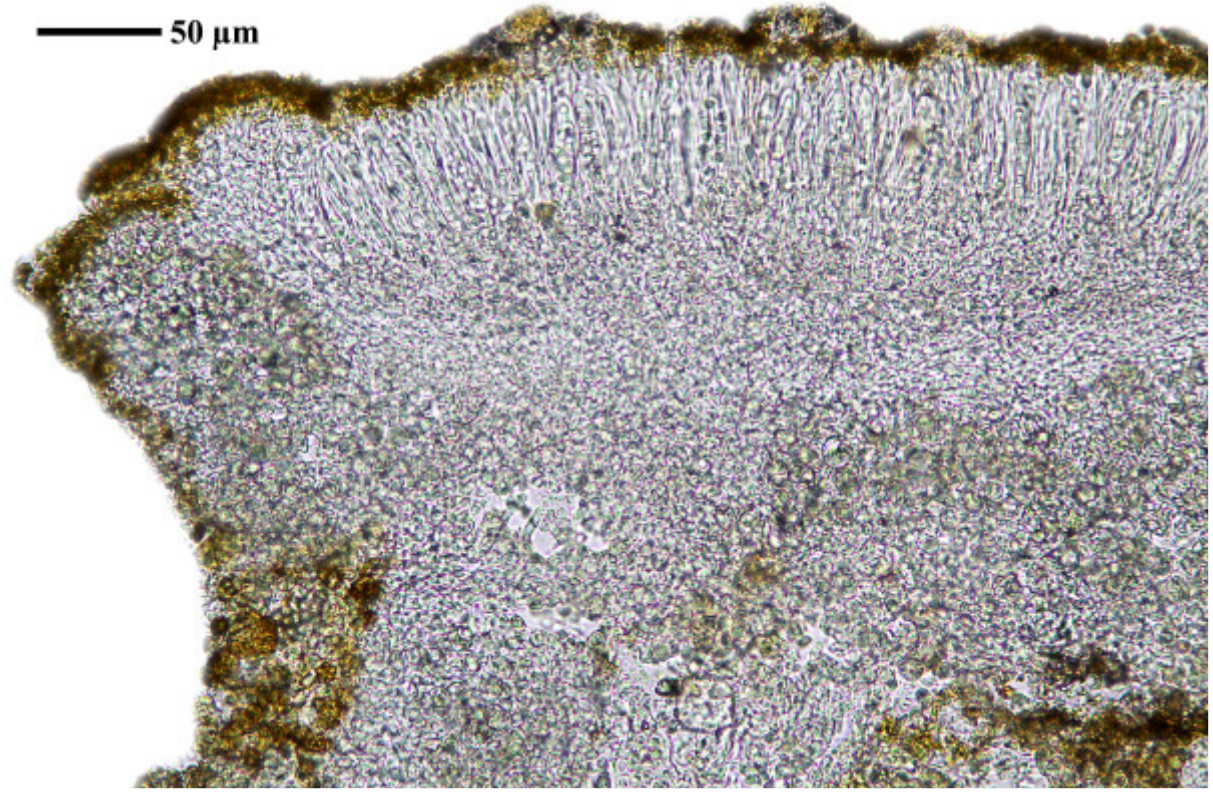




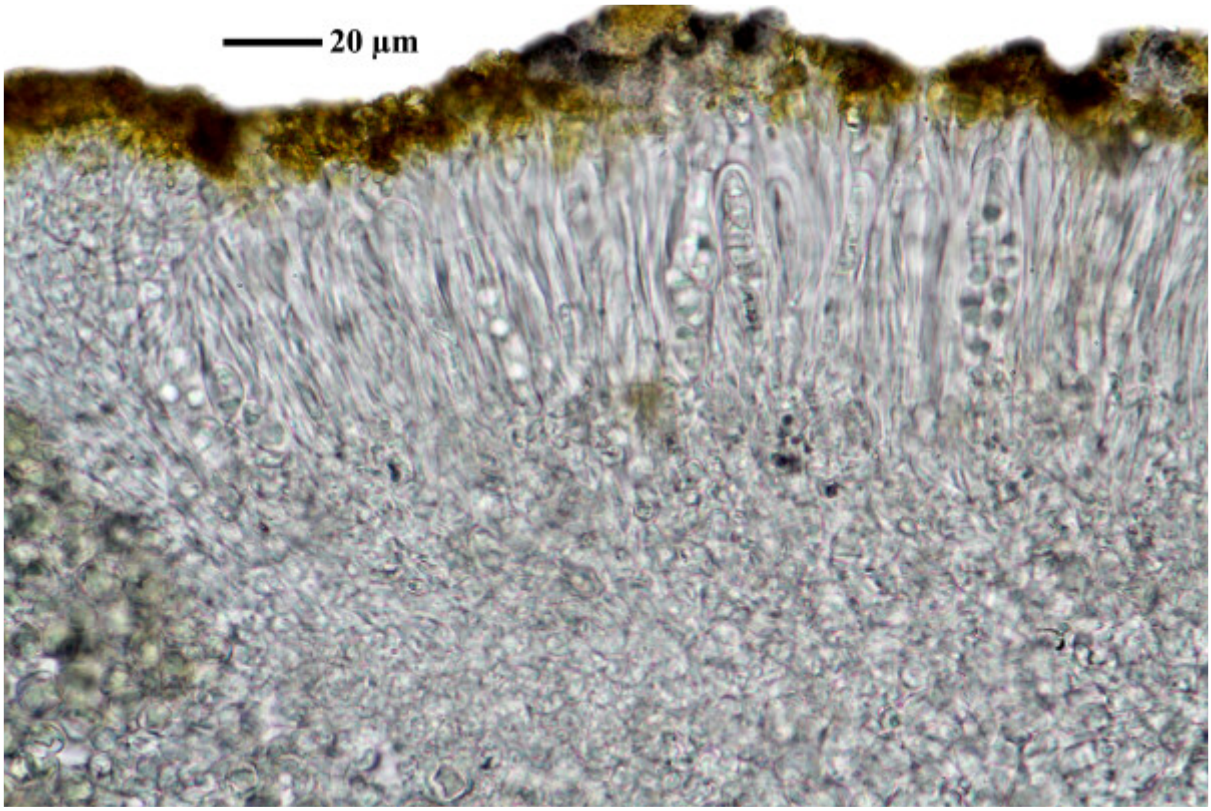


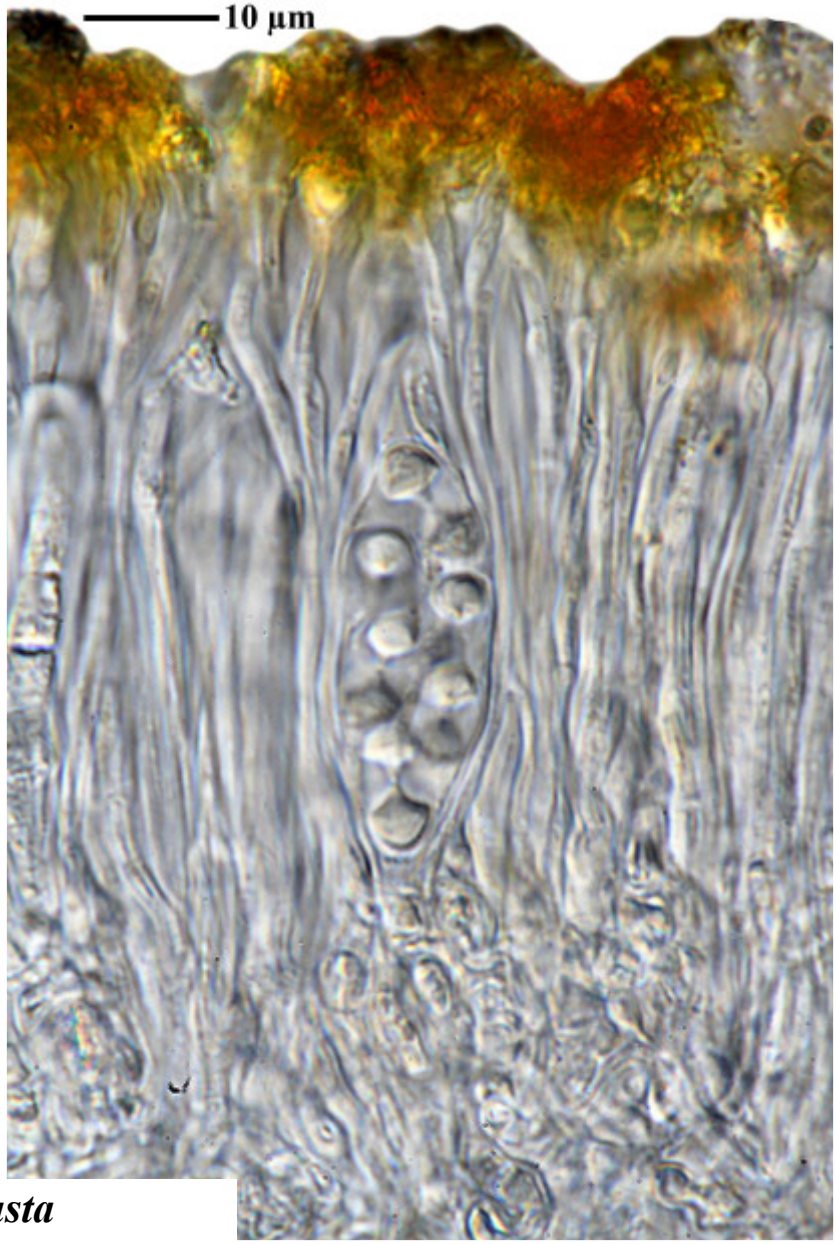
Caloplaca thamnoblasta



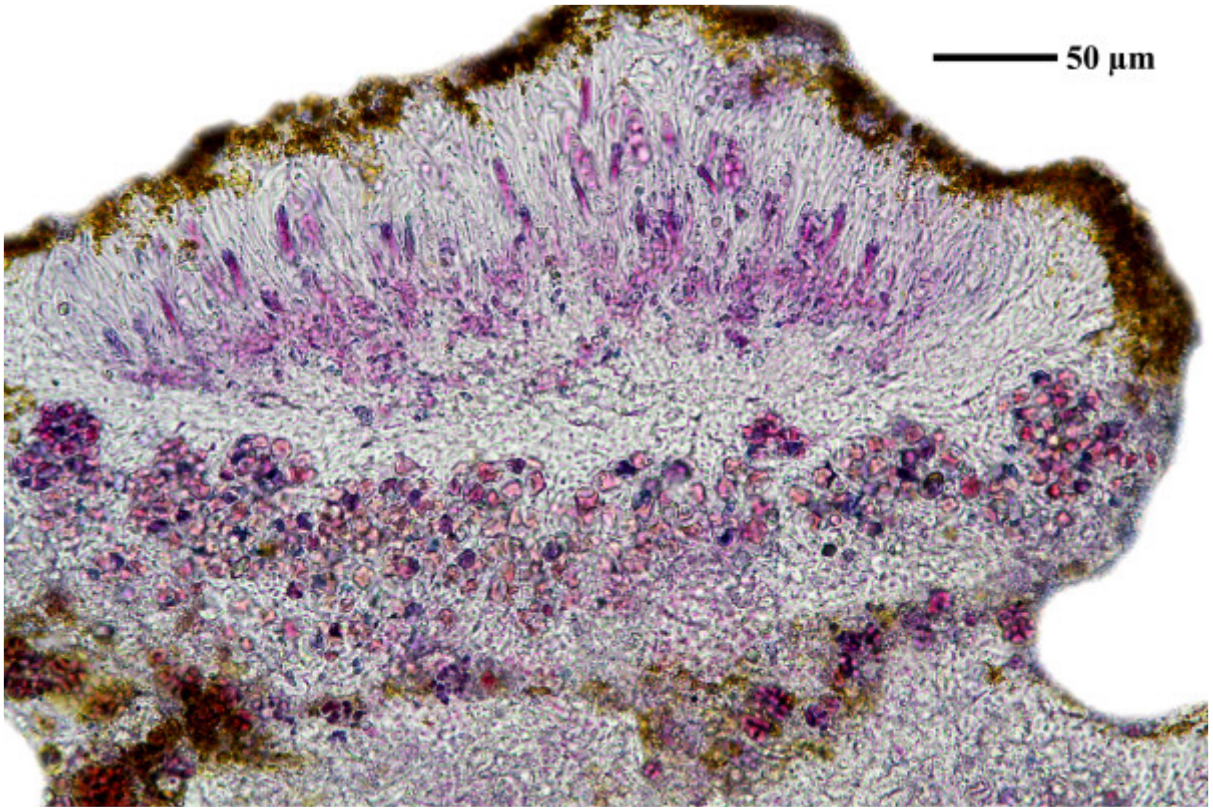


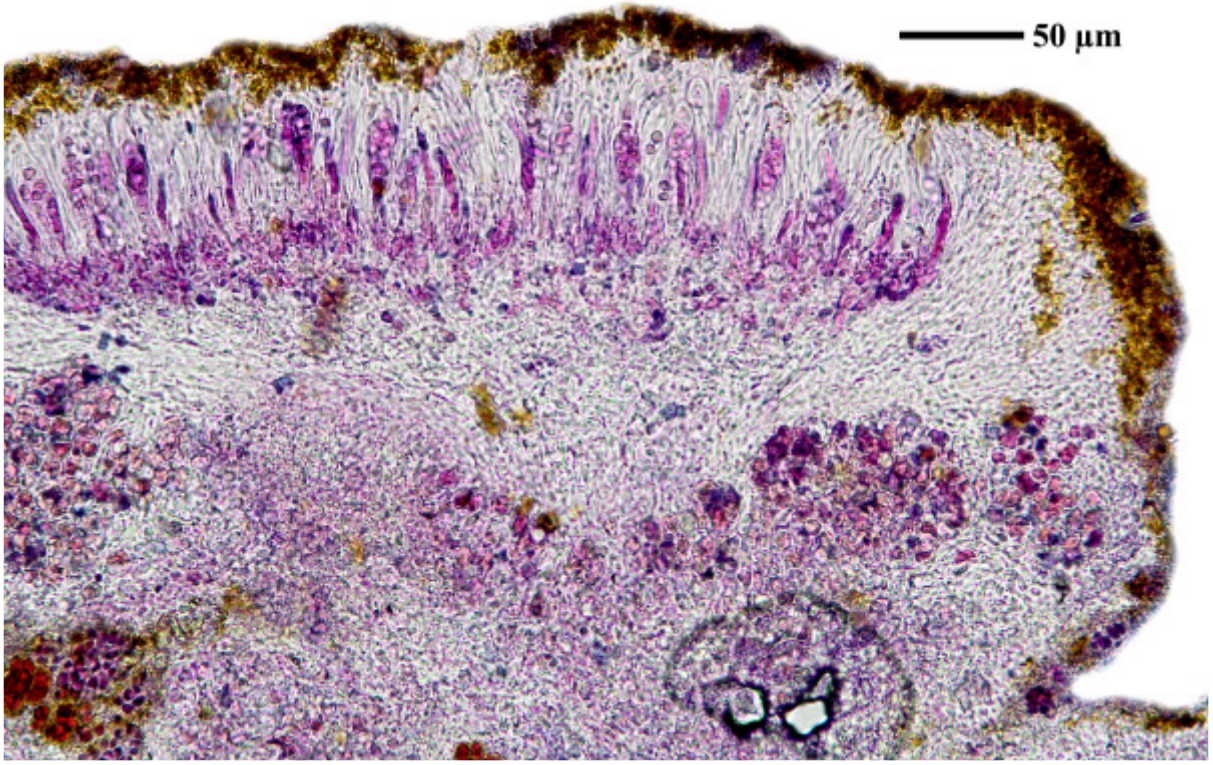
Caloplaca thamnoblasta



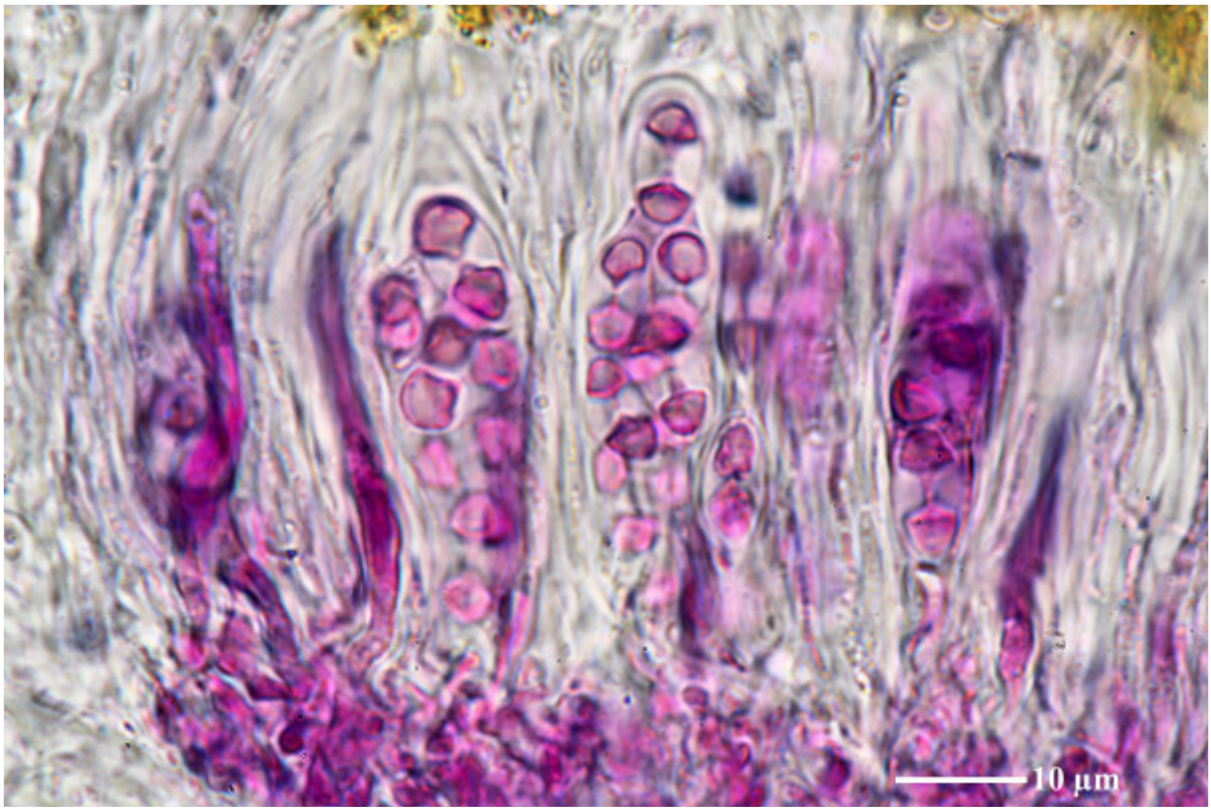


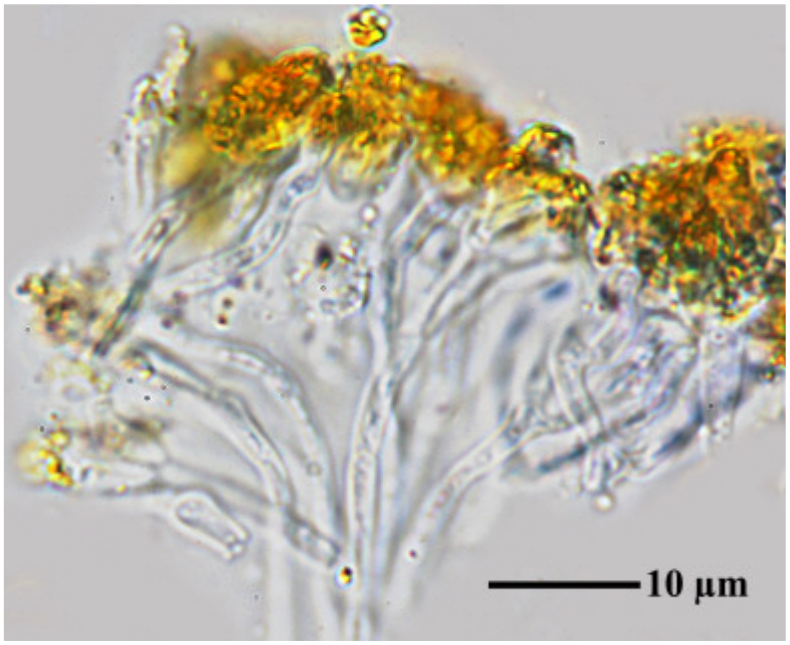
Caloplaca thamnoblasta





Caloplaca thamnoblasta







Caloplaca thamnoblasta

Caloplaca thamnodes Poelt
[= *Polycauliona thamnodes* (Poelt) Arup, Frödén & Søchting]

Spores 8.7-12.3 x 4.7-5 µm, septum 1.7-2.6 µm (FS).

[B 60 0069201], Mexico, Baja California, Cabo San Quintin, along Pacific Ocean front NW of Bahía Falsa, c. 1 m tall desert scrub at the seashore, on W-side of low volcano, coastal scrub community (*Euphorbia*, *Jatropha*, etc.) with basalt rocks, on rock in spray zone, 30°28' N, 116°02' W, 10 m. Leg. H. Sipman (No. 24837), 04.01.1989, det. H. Sipman 1989.



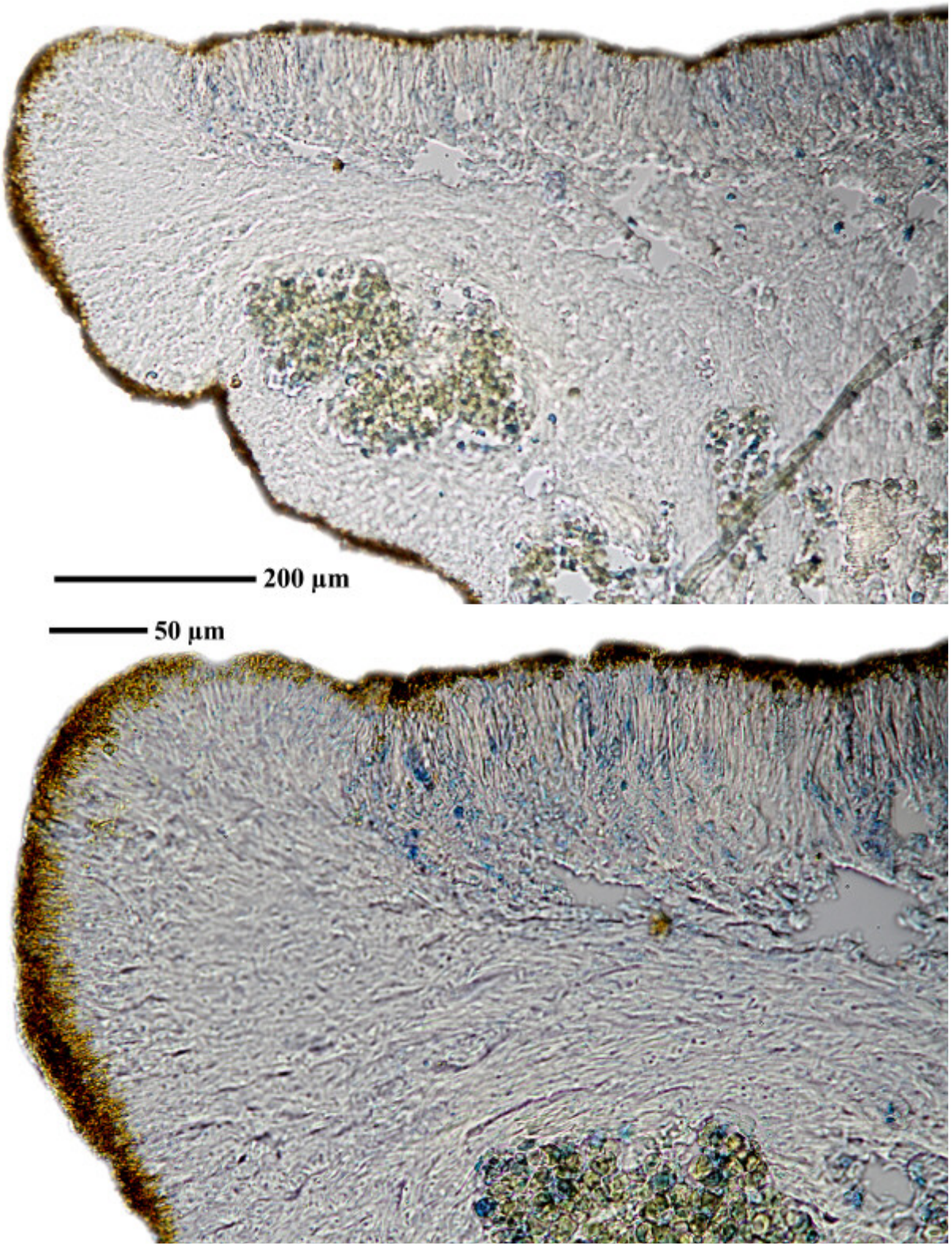




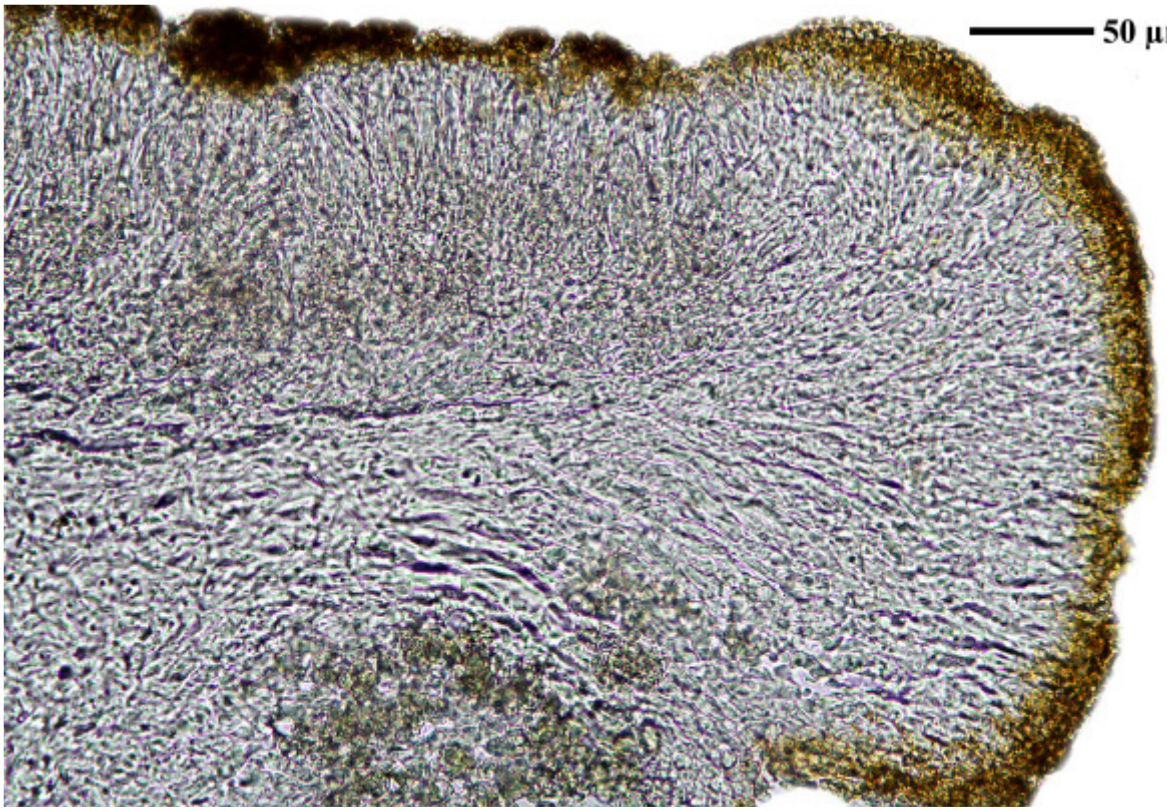
Caloplaca thamnodes

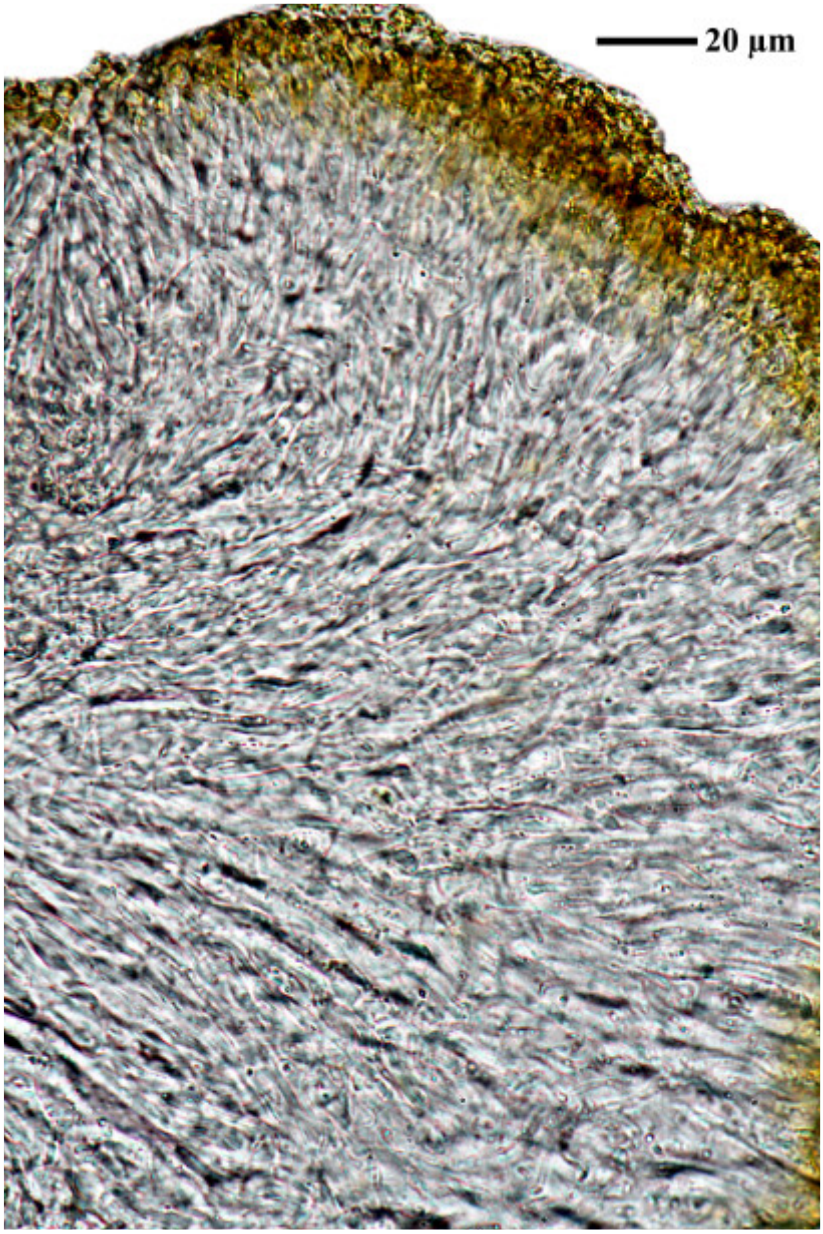


Caloplaca thamnodes

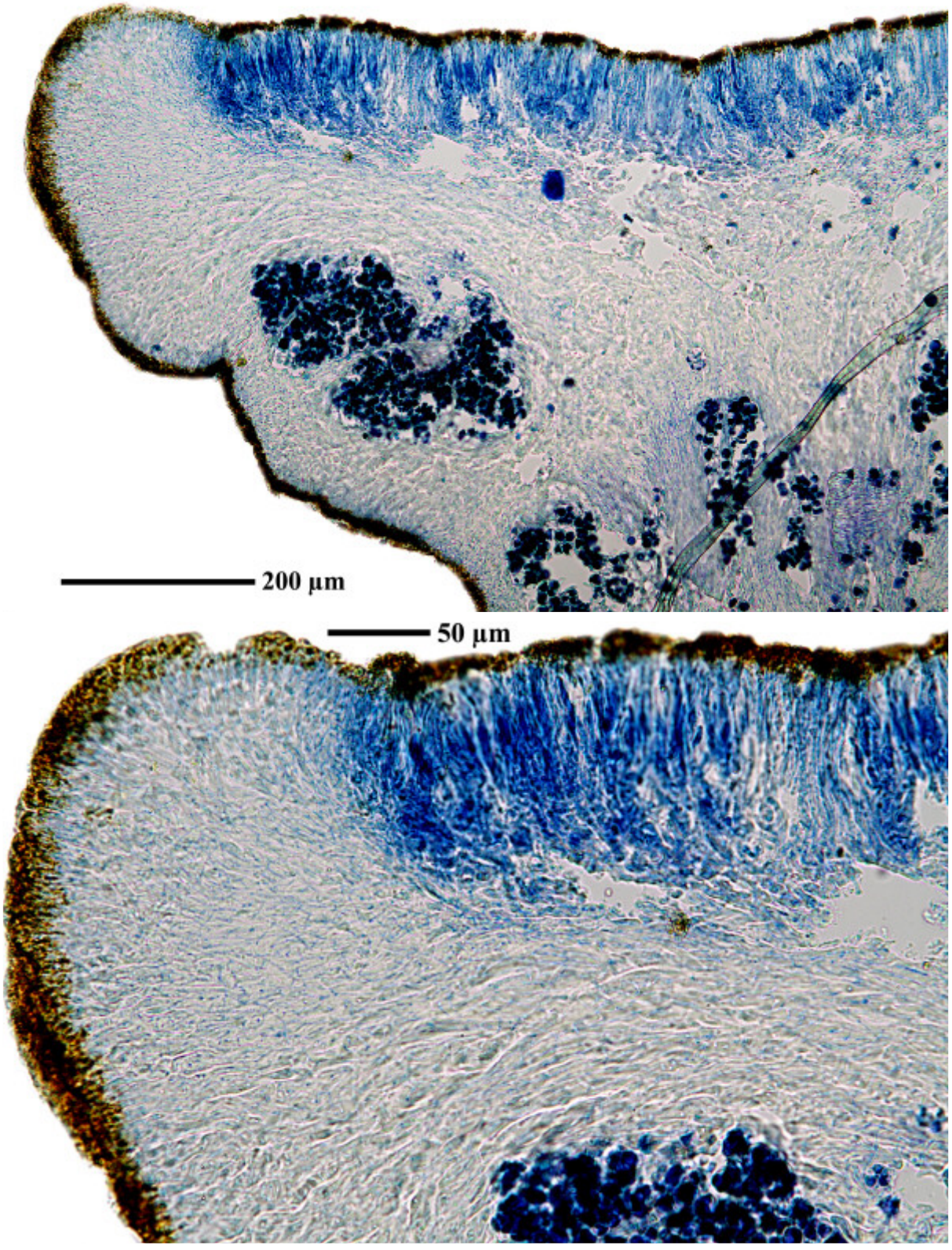


Caloplaca thamnodes

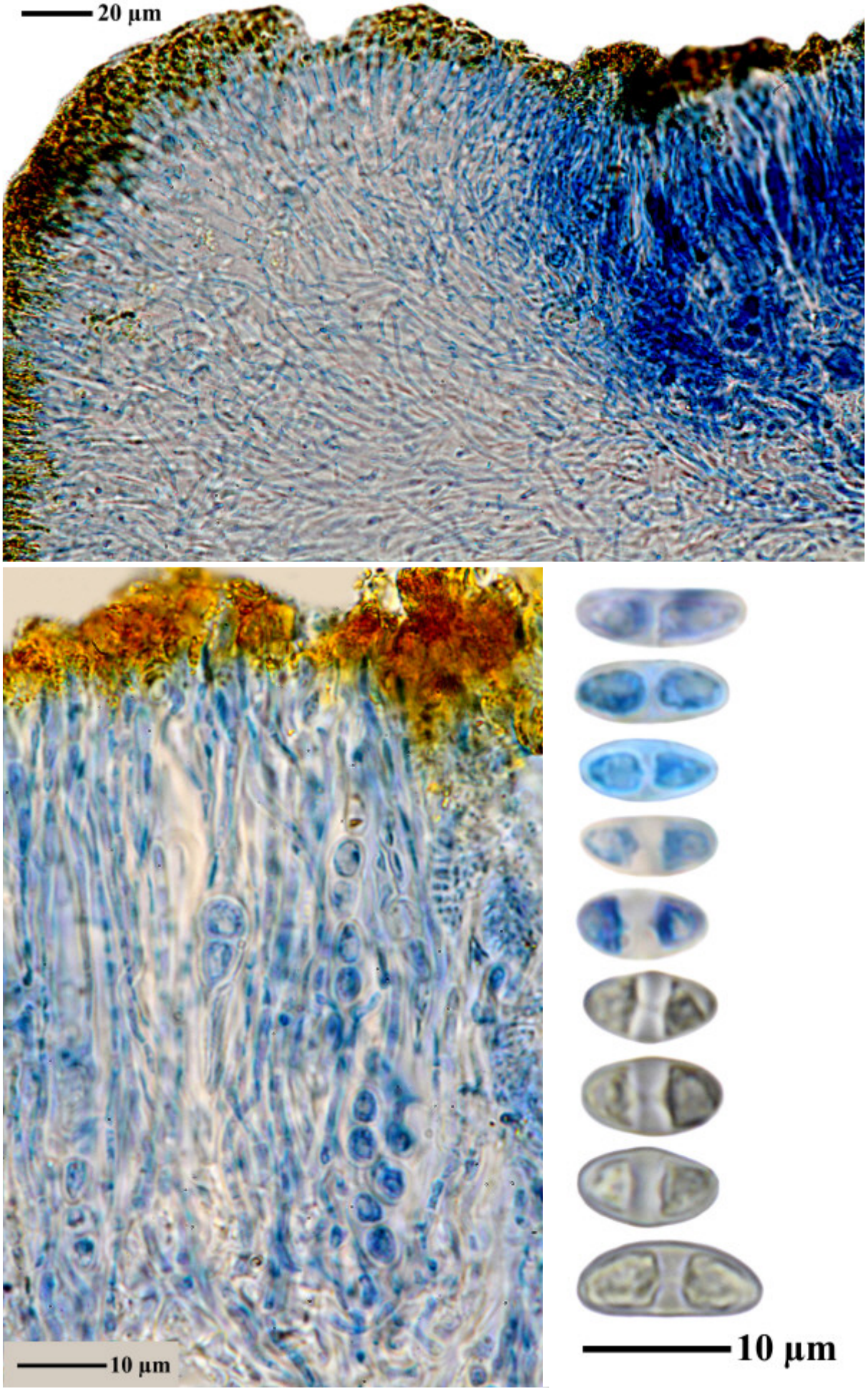




Caloplaca thamnodes



Caloplaca thamnodes



Caloplaca thamnodes

Caloplaca thracopontica Vondrák & Šoun

Spores 10-11.7 x 5.2-5.6 µm, septum 5.4-5.8 µm (FS).

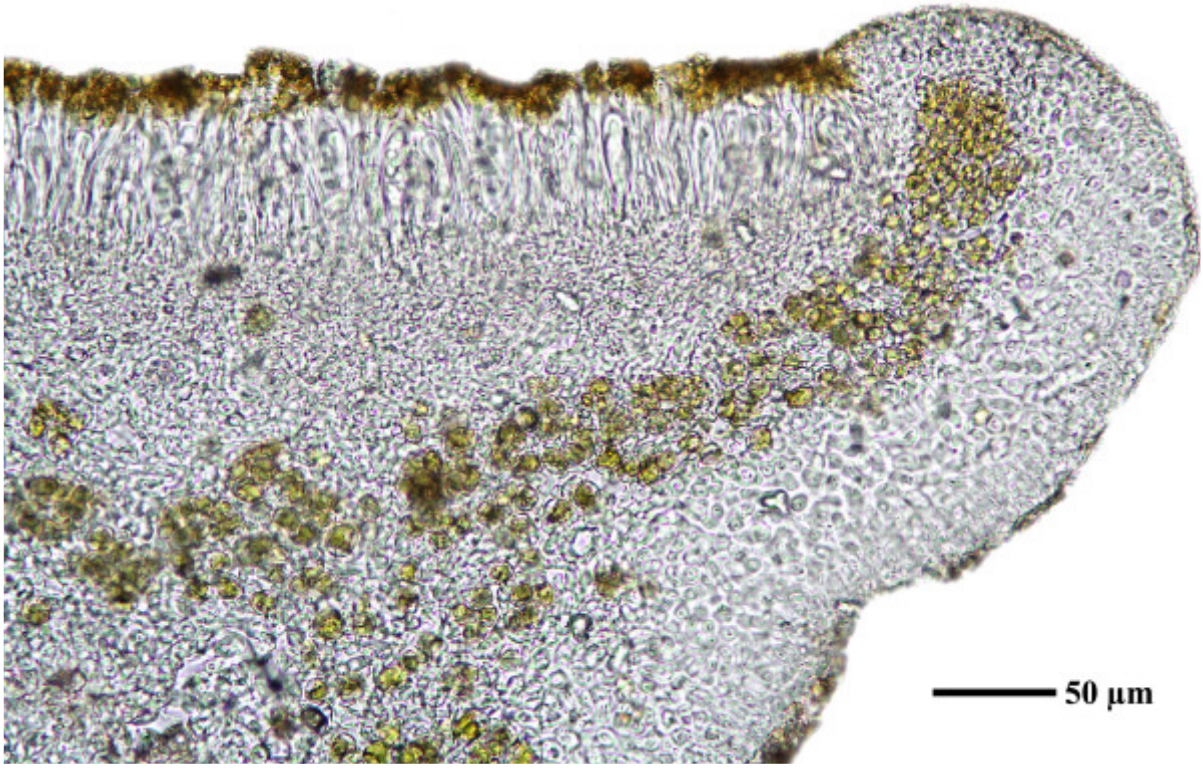
[B 60 0183743], Greece, nom. Kavala, Thasos island, Babouras Peninsula, near abandoned house in N-part, schist rock outcrops on clearings in pine forest, under overhanging rock, accomp. *Caloplaca crenularia, Diplotomma chlorophaeum*. 40°37.5' N, 24°46.6' E, 125 m. Leg. H. Sipman (58547) & T. Raus, 23. May 2010, det. H. Sipman, 2011.

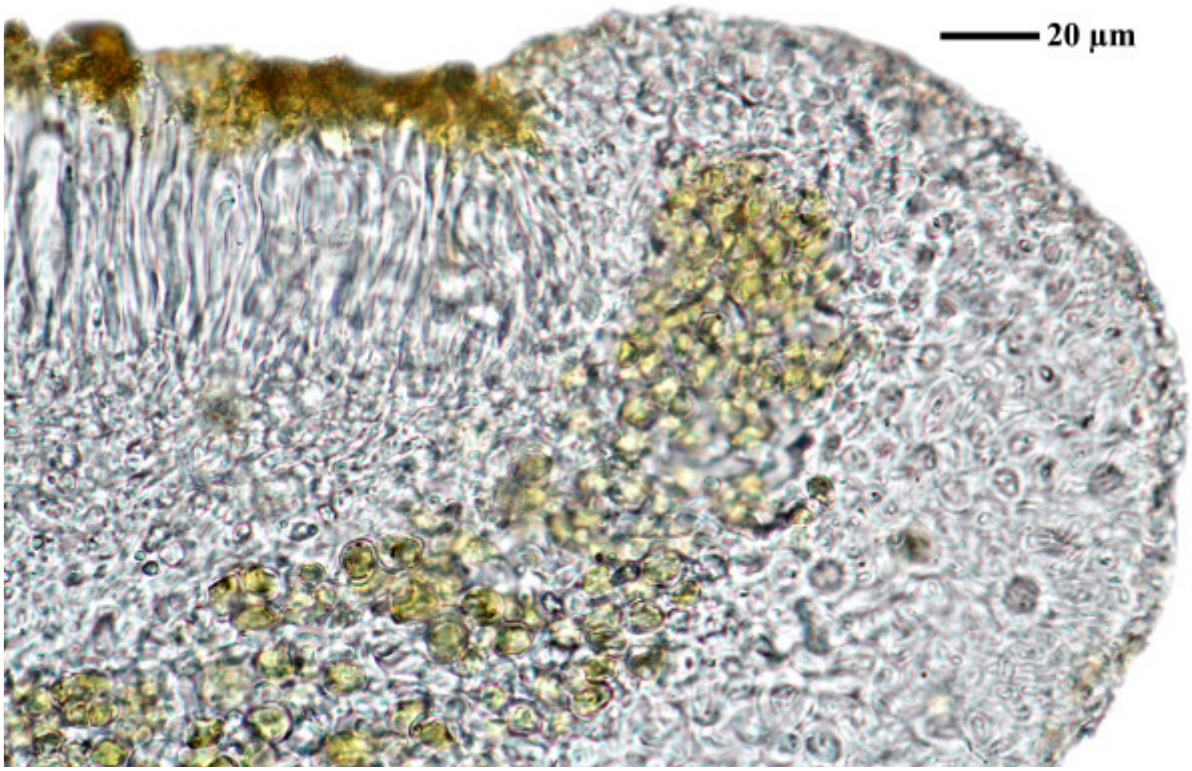




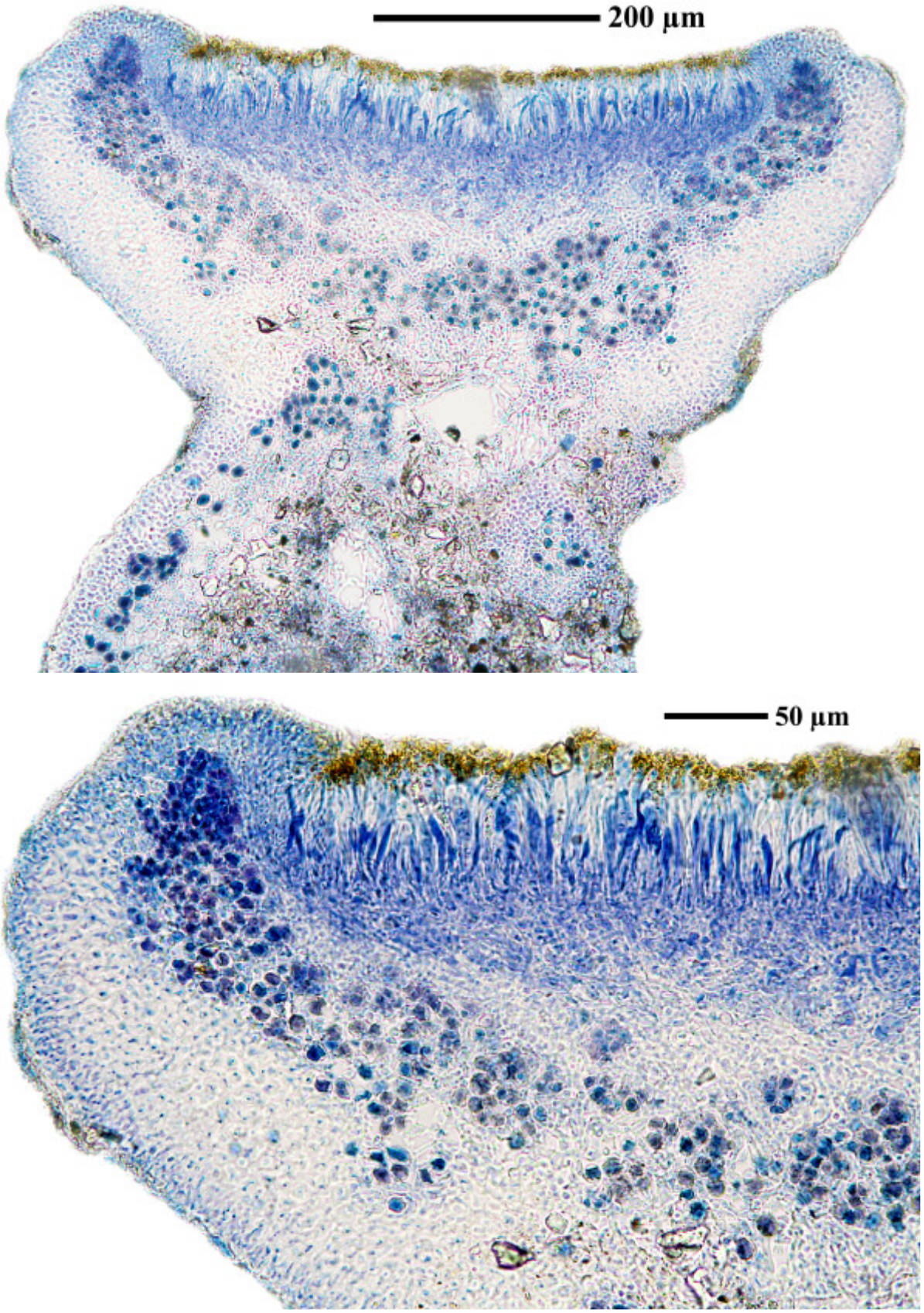


Caloplaca thracopontica

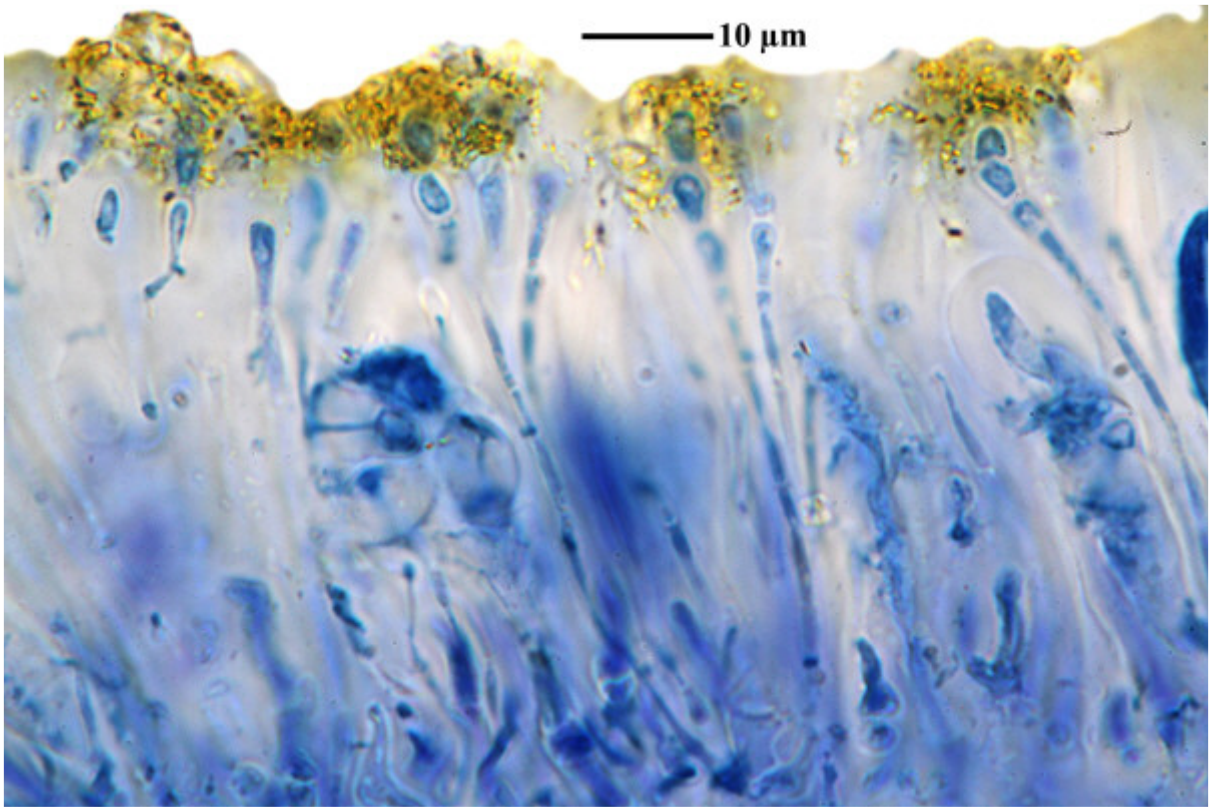


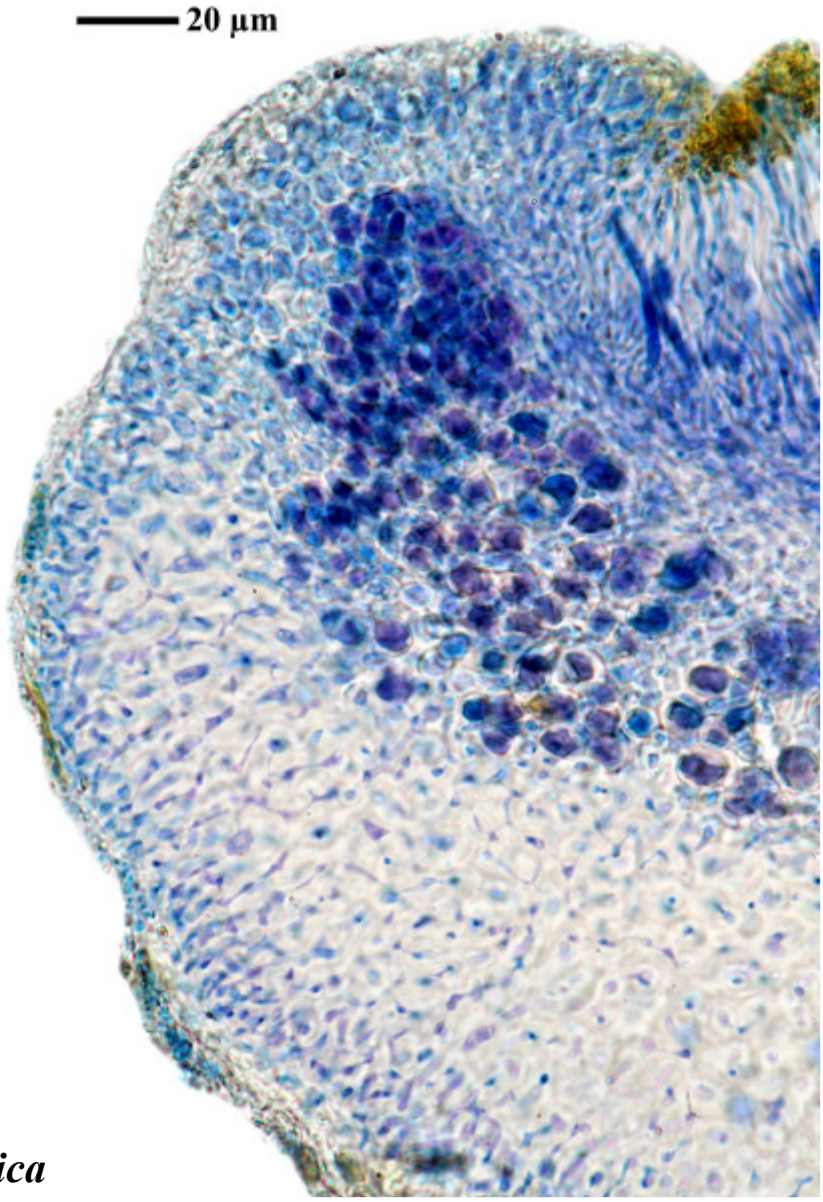


Caloplaca thracopontica



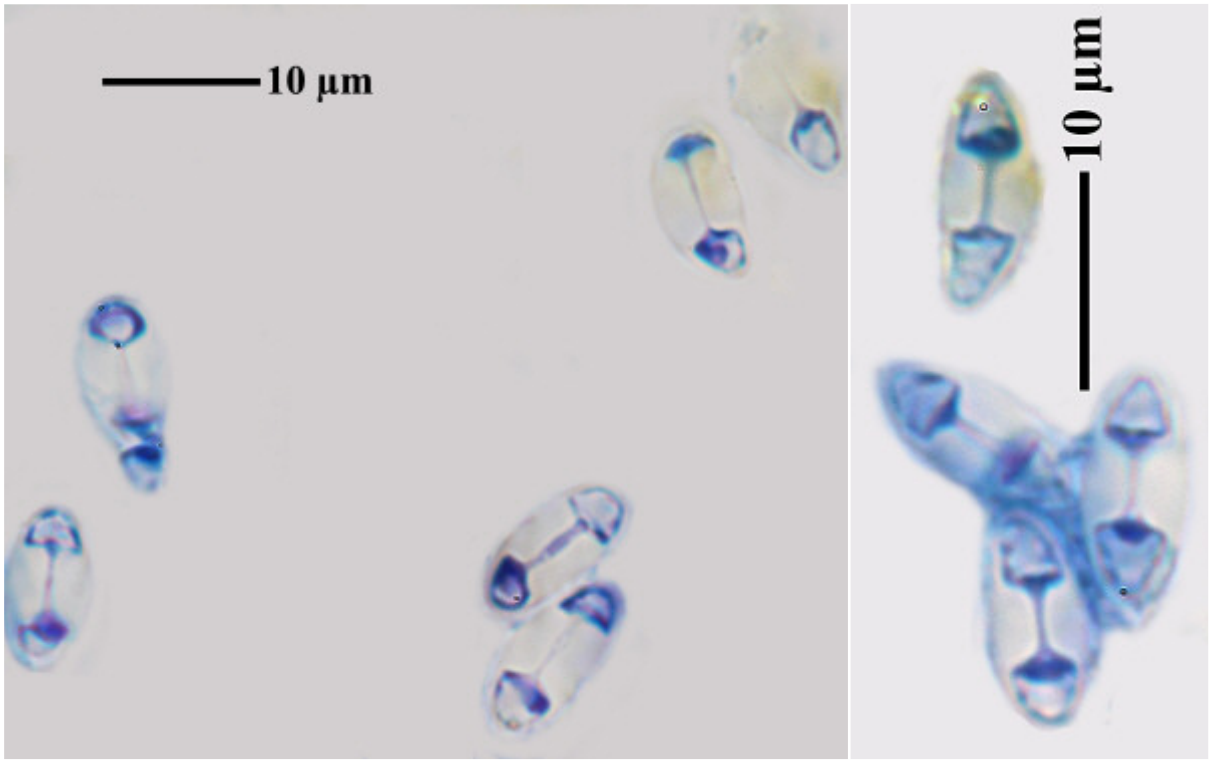
Caloplaca thracopontica





Caloplaca thracopontica





Caloplaca thracopontica

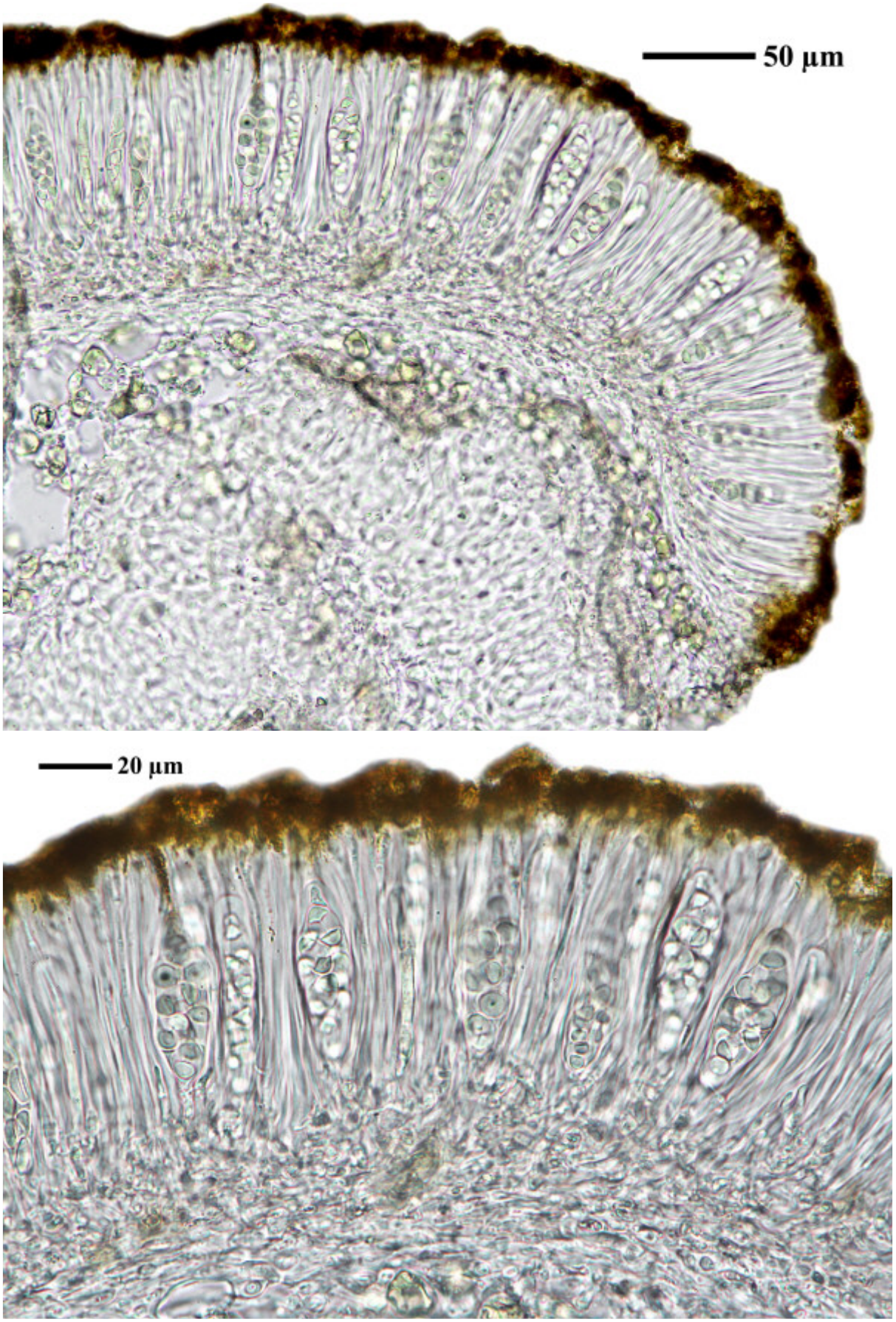
Caloplaca tiroliensis Zahlbr.
[= *Parvoplaca tiroliensis* (Zahlbr.) Arup, Søchting & Frödén]

Spores 11-13 x 7-8.3 µm, septum 4.9-5.2 µm (FS).

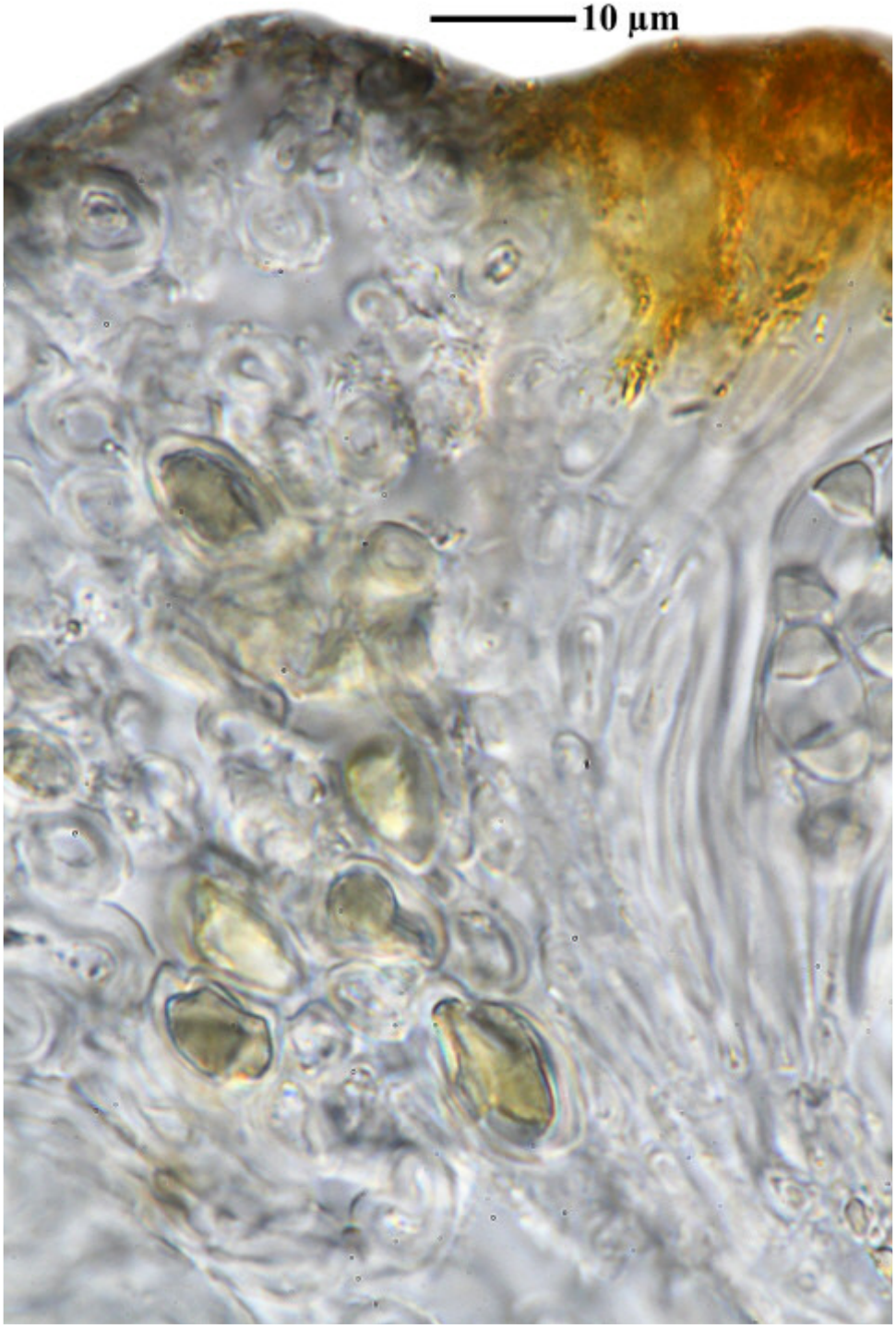
[BR5030036333556], S-Iceland, Skaftafell. Leg. A. Aptroot (4567), 19.07.1980, det. A. Aptroot.

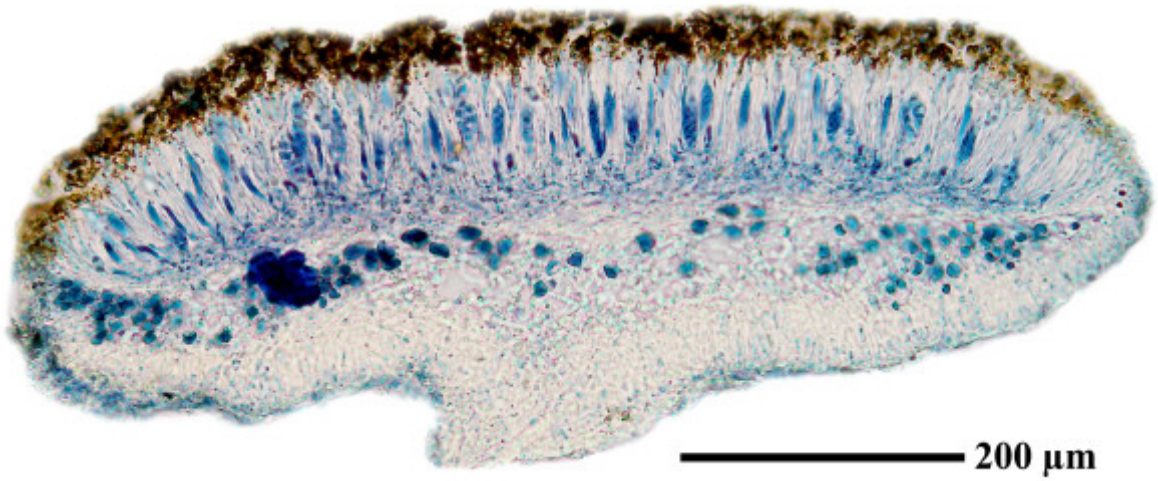




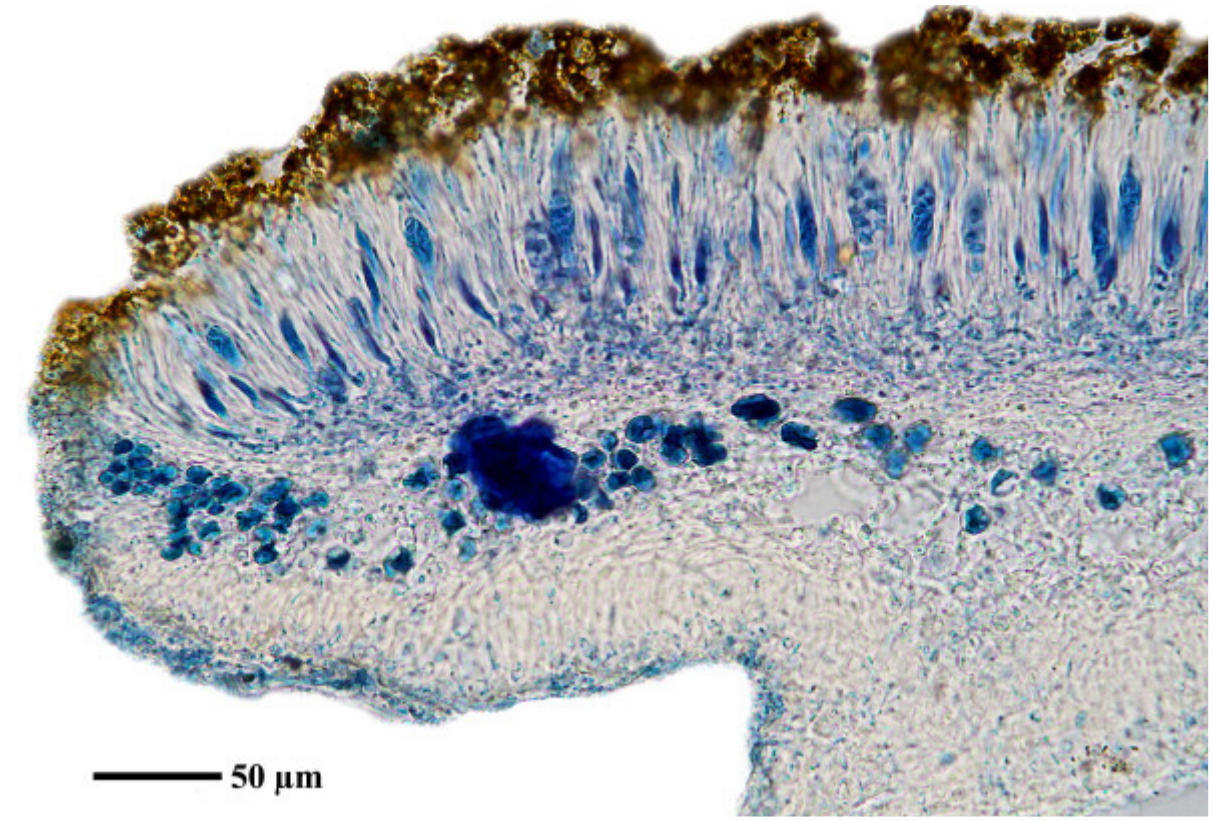


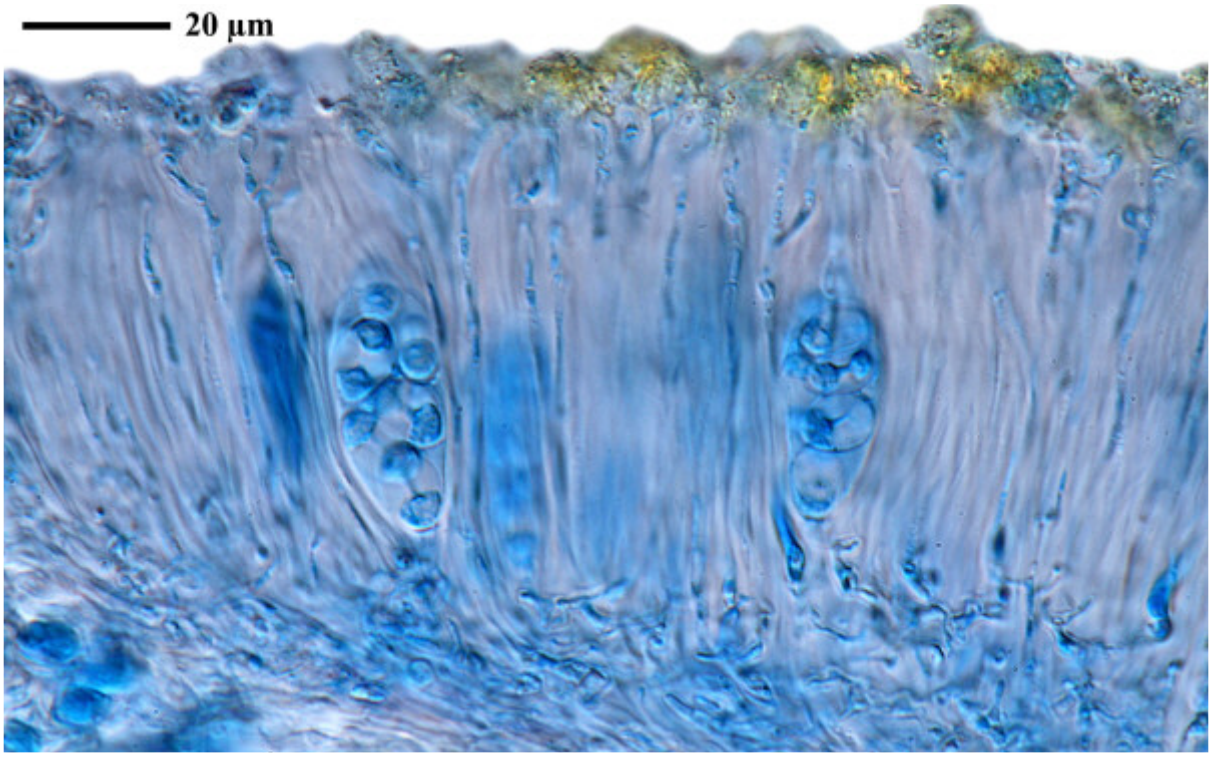
Caloplaca tiroliensis



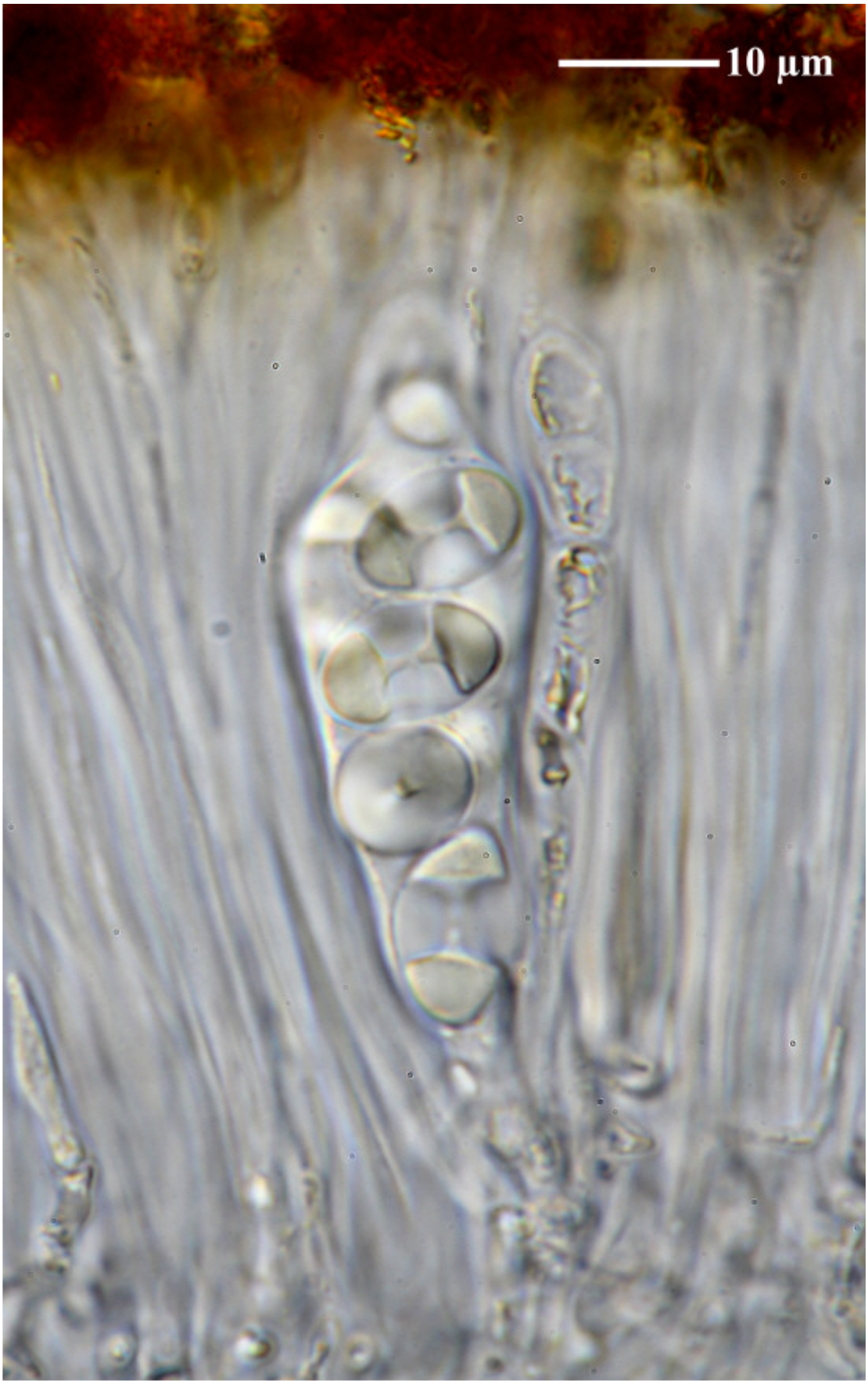


Caloplaca tiroliensis





Caloplaca tiroliensis





Caloplaca tiroliensis

Caloplaca tiroliensis Zahlbr.
[= *Parvoplaca tiroliensis* (Zahlbr.) Arup, Søchting & Frödén]

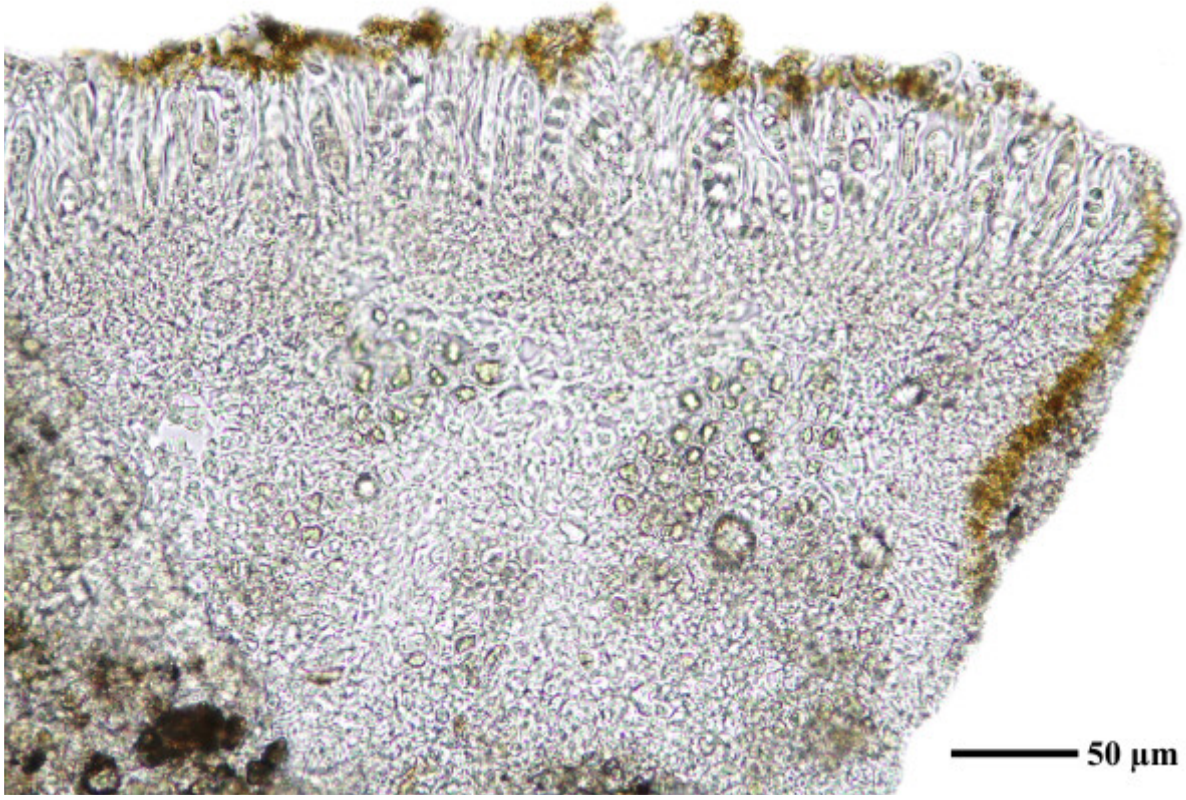
Spores 12-14 x 6-7 µm, septum 3-4 µm (AA). Spores 11-13 x 7.9-8 µm, septum 4-5.4 µm (FS)

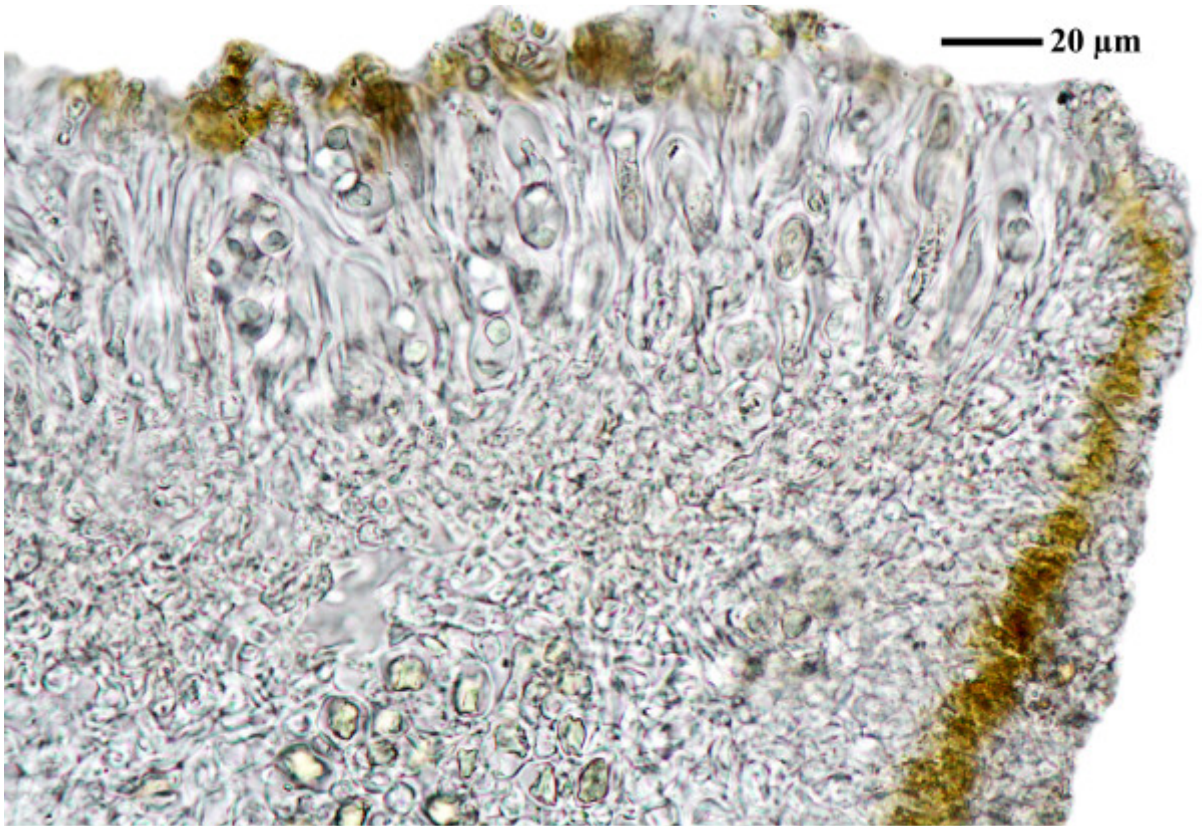
[BR5030036335574], Iceland, O-Island, Egilstadir. Leg. A. Aptroot (4557), 27.07.1980, det. A. Aptroot.





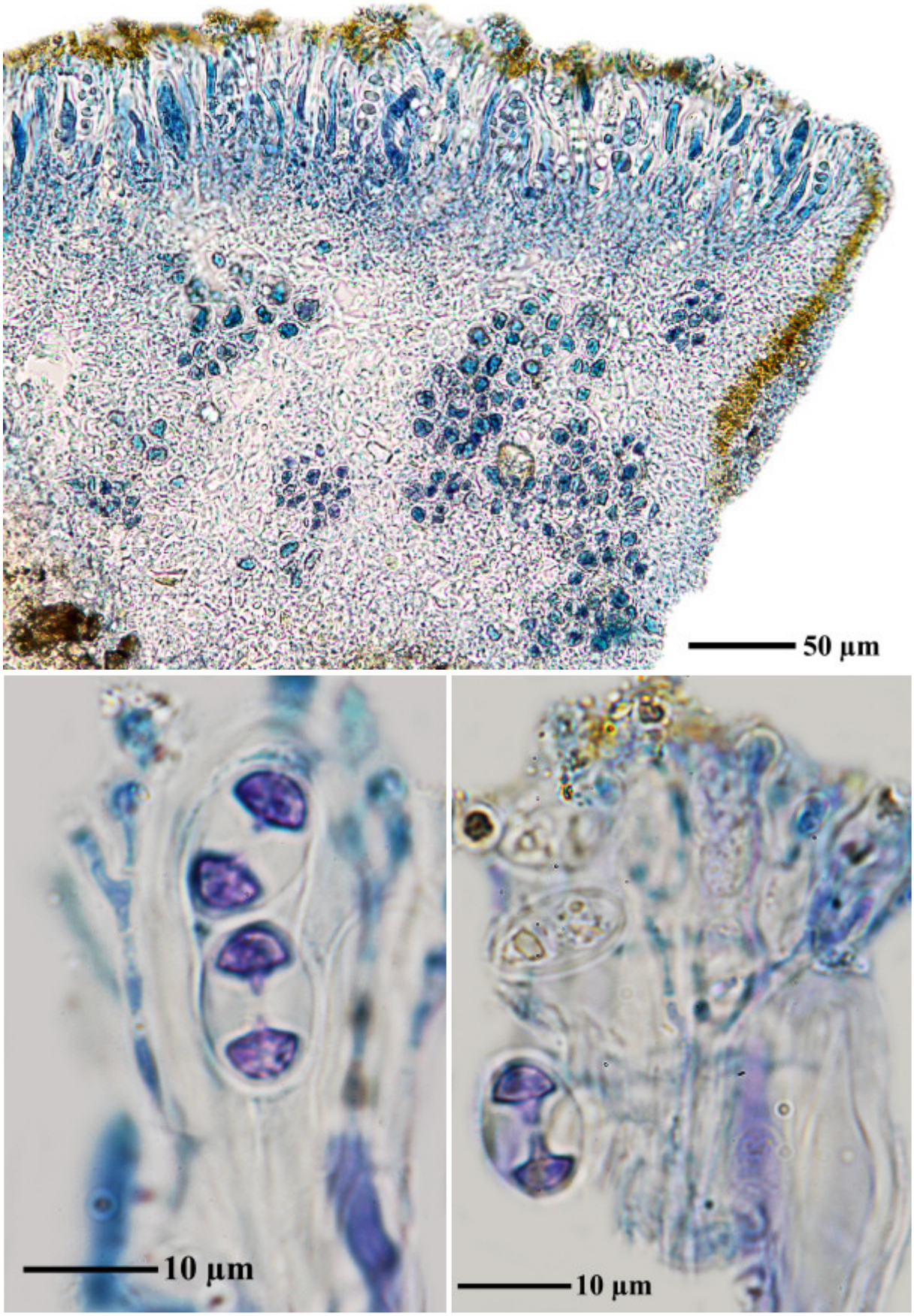
Caloplaca tiroliensis







Caloplaca tiroliensis



Caloplaca tiroliensis

Caloplaca tiroliensis Zahlbr.
[= *Parvoplaca tiroliensis* (Zahlbr.) Arup, Søchting & Frödén]

Spores 13-14 x 8-9 µm, septum 3.5-5 µm (FS)

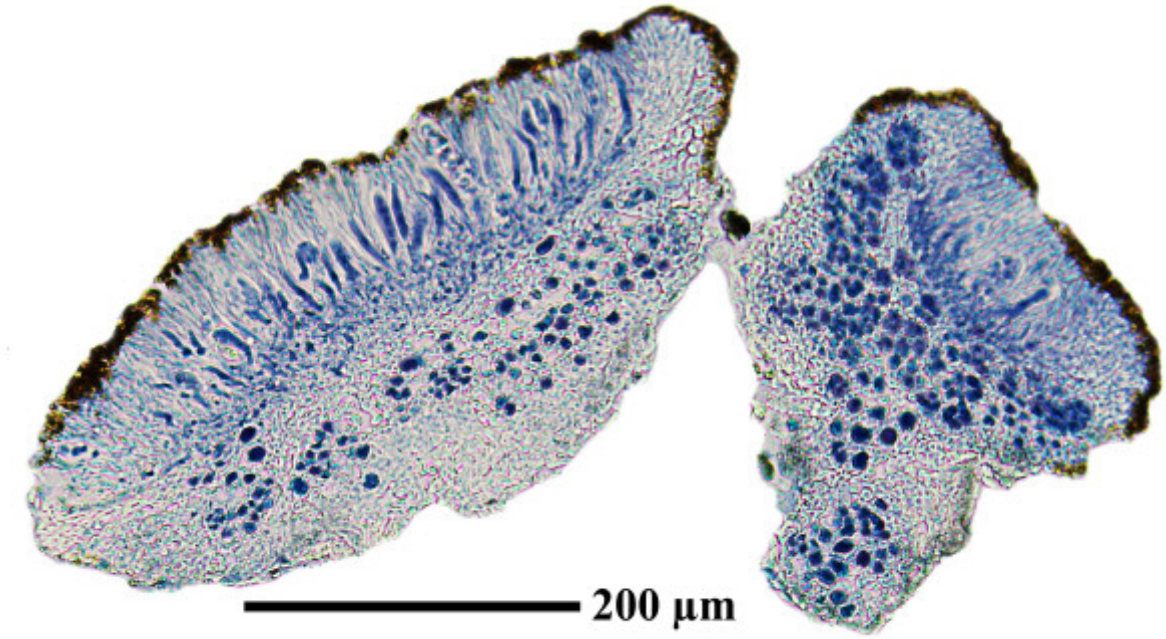
[BR5030036339619], United Kingdom, South Shetland Islands, Deception Island, Whalers Bay, NE side of Cathedral Crags 50 m W of Neptunes Window, on and between steep N-exposed volcanic rocks, ca. 59 m,60°33'05" W, 62°59'23" S. Leg. W.O. van der Knaap (97-04), 14.01.1991, det. A. Aptroot 1991. EXPEDITION OF ARCTIC CENTRE, GRONINGEN, THE NETHERLANDS.

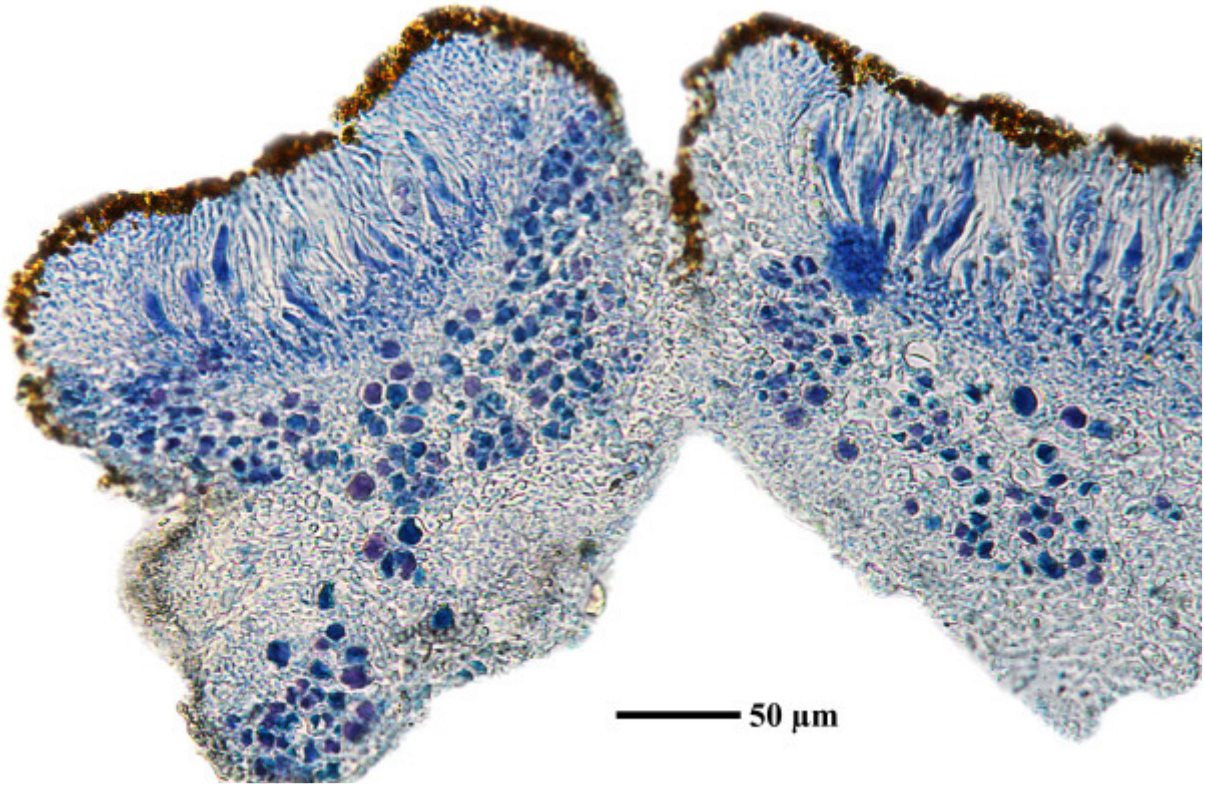




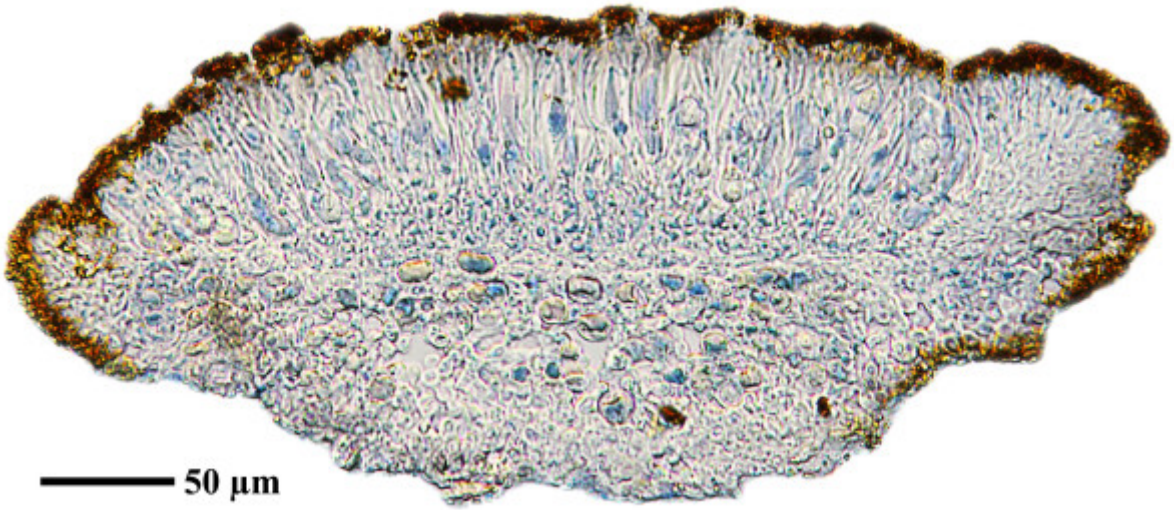


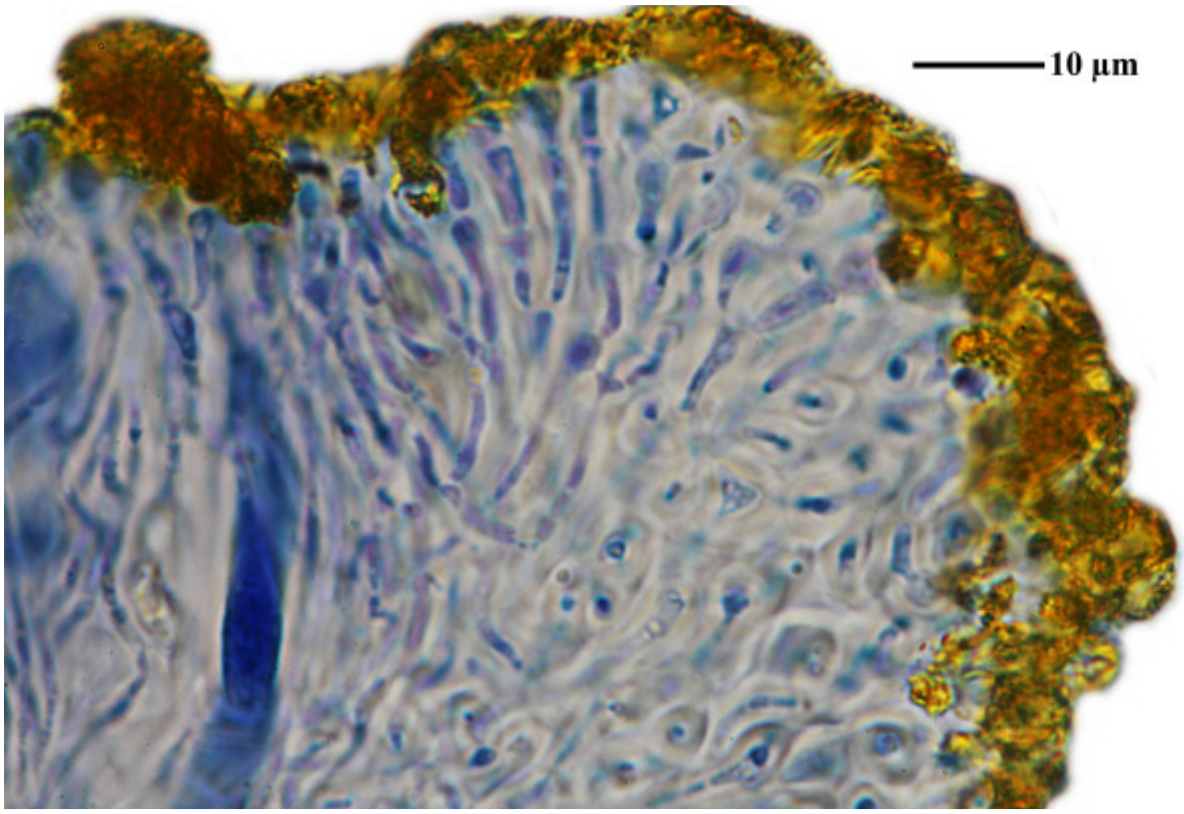
Caloplaca tiroliensis



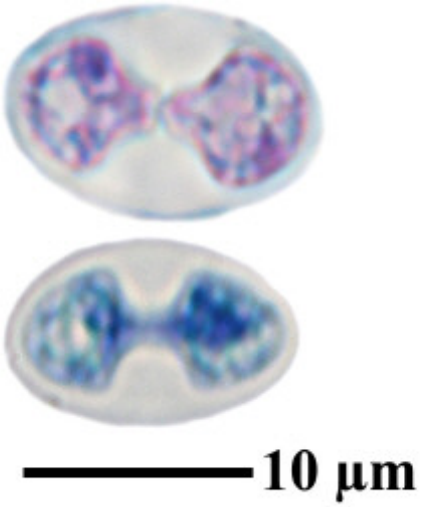


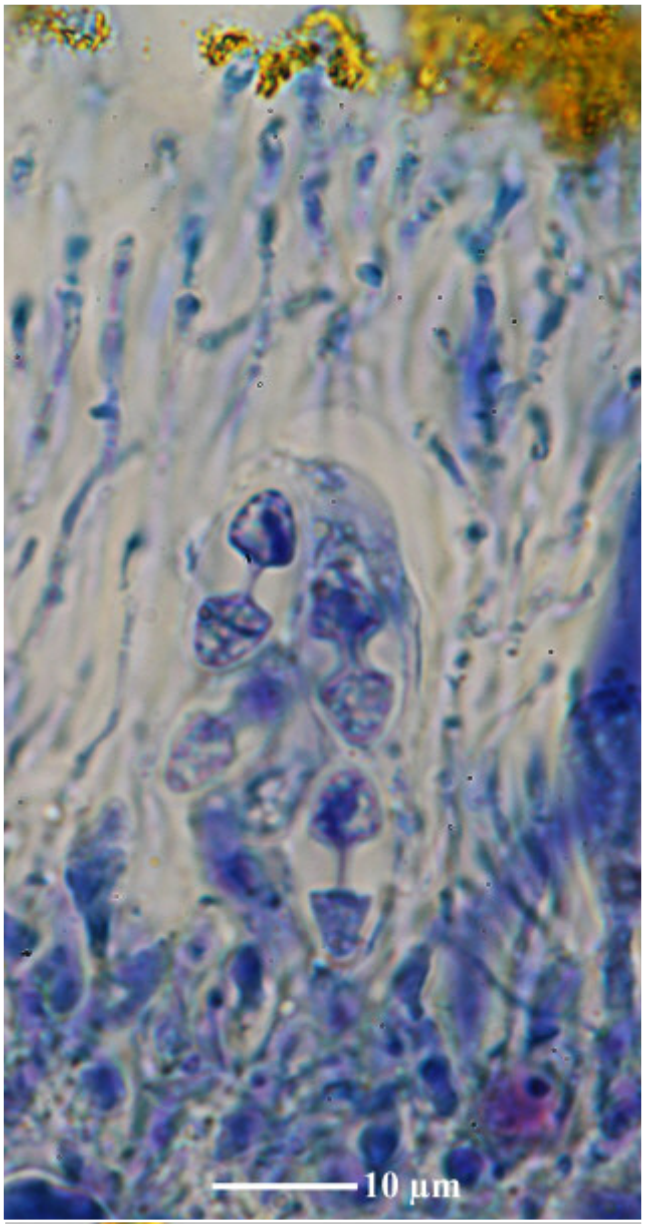
Caloplaca tiroliensis

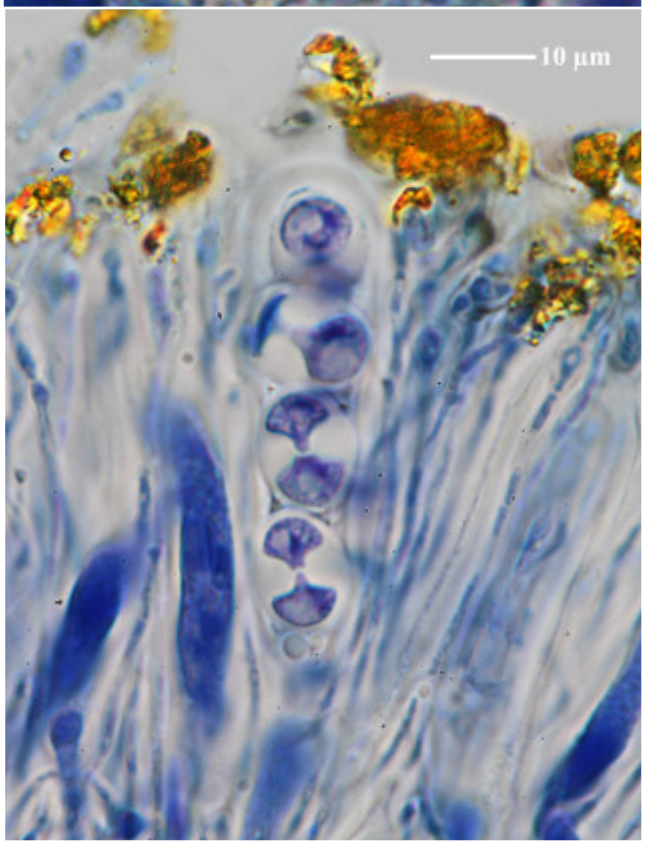




Caloplaca tiroliensis







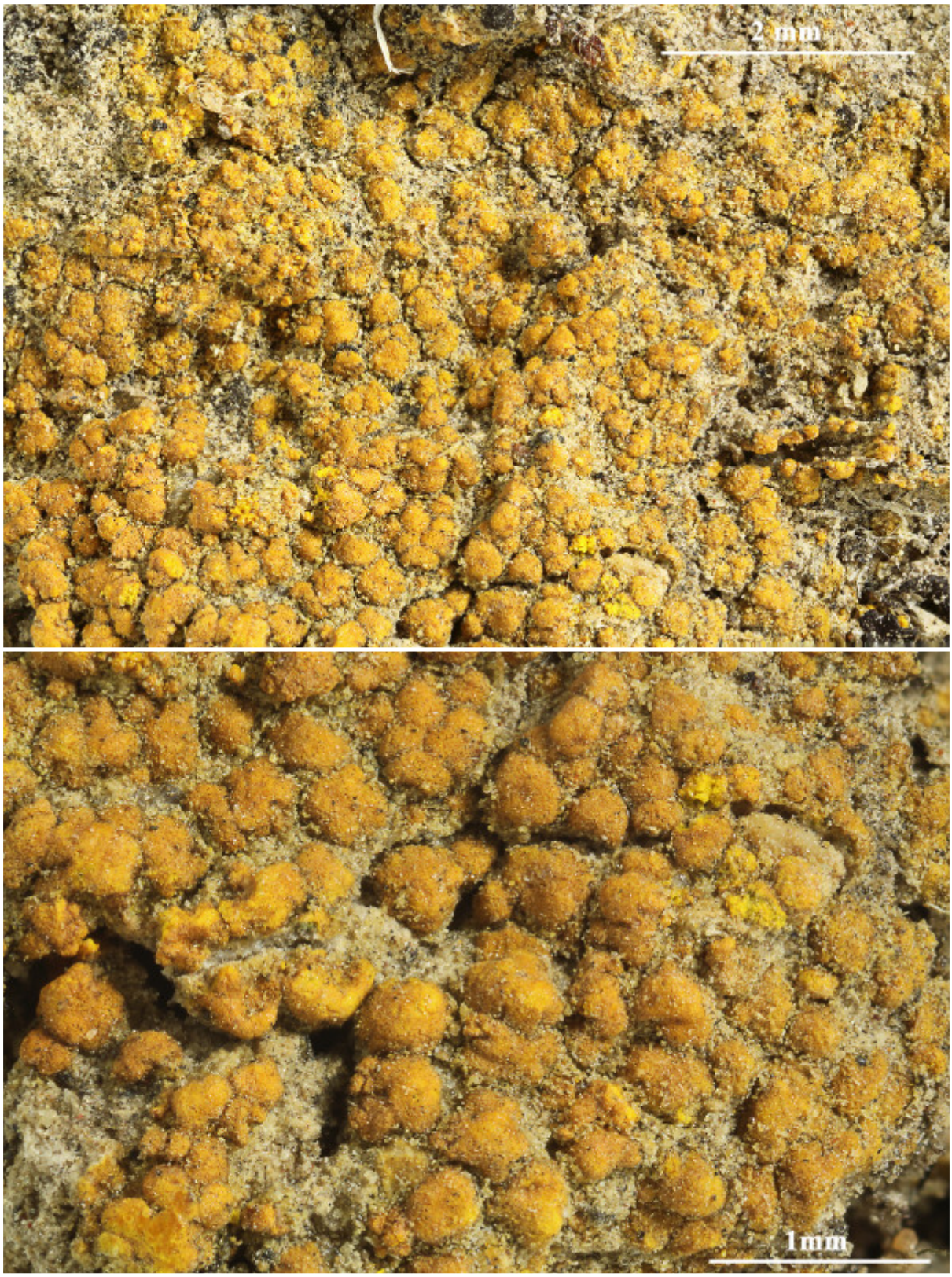
Caloplaca tiroliensis

Caloplaca tominii Savicz, Izv. glav. bot. Sada SSSR: 194 (1949)
[= *Xanthocarpia tominii* (Savicz) Frödén, Arup & Søchting, Nordic Jl Bot. 31(1): 57 (2013)]

On bare ground and rotten plants.

[19406], USA, Idaho, Wwyhee Co., along US 95 at McBridge Creek, 45 km SW of Nampa, along roadside in hills with sage and bare ground, 43°16'50" N, 116°59'33" W, 1250 m. Leg. Clifford M. Wetmore (No. 95127), 20 July 2006, det. C. Wetmore. TELOSCHISTACEAE EXSICCATI NR. 93 DISTRIBUTED BY C. WETMORE.





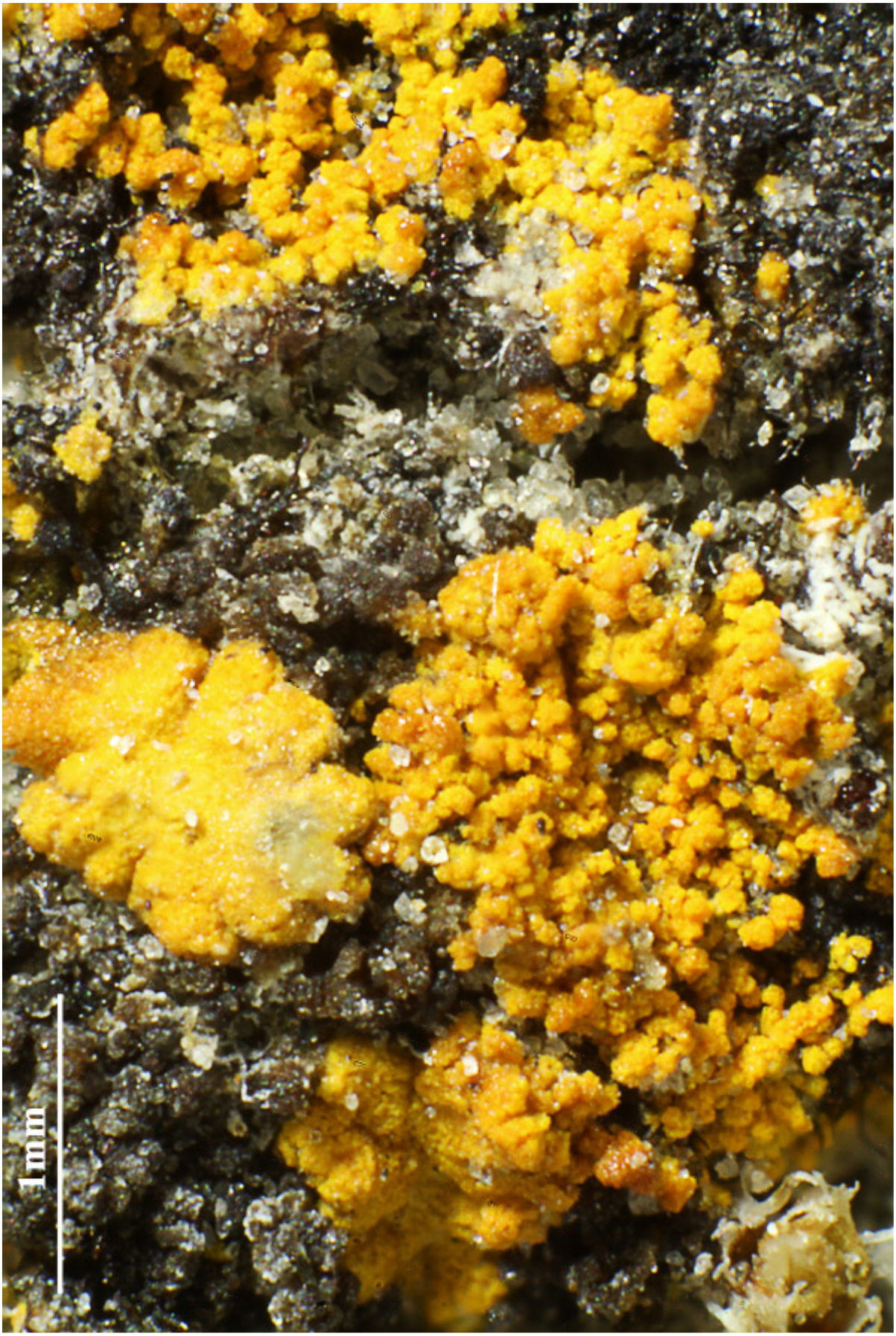
Caloplaca tominii

Caloplaca tominii Savicz, Izv. glav. bot. Sada SSSR: 194 (1949)
[= *Xanthocarpia tominii* (Savicz) Frödén, Arup & Søchting, Nordic Jl Bot. 31(1): 57 (2013)]

On earth. " The species has been recently found also in Southern British Columbia (leg. Nimis, 1982) and in North Dakota (Leg. Rosentreter, 1982), always in Sageburush grasslands on alcaline soils - P.L. Nimis"

[19608], Canada, Southern Yukon regio, Kluane National Park, in monte Sheep, alt 800 m, ad terram humosam loessaceam (*Artemisio-Agropyretum yujonensis* Hoefs et al.). Leg. P.L. Nimis, 08.07.1983. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1993.





Caloplaca tominii

Caloplaca tomnashii S.Y. Kondr., Elix & Kärnefelt

Thallus corticolous, grey to whitish-grey but occasionally indistinct. Apothecia 0.5-0.25(-0.7) mm diam., scattered, lecanorine, disc brownish-black to black; hymenium hyaline, subhymenium becoming yellowish to brown, paraphyses becoming brownish black towards the tips. Ascospores bipolar, 8/ascus, hyaline but soon becoming greyish brown, 12-16 x (5-)5-7(-8) µm, septum (5-)6-8 µm, in K 7-11 µm. Chemistry: caloploicin (major), vicanicin (minor), isofulgidin (minor), diploicin (trace); all coloured parts of the apothecium K-. Lit.: Kondratyuk, Elix, Kärnefelt & Thell, Bibliotheca Lichenol. 106: 184 (2011).

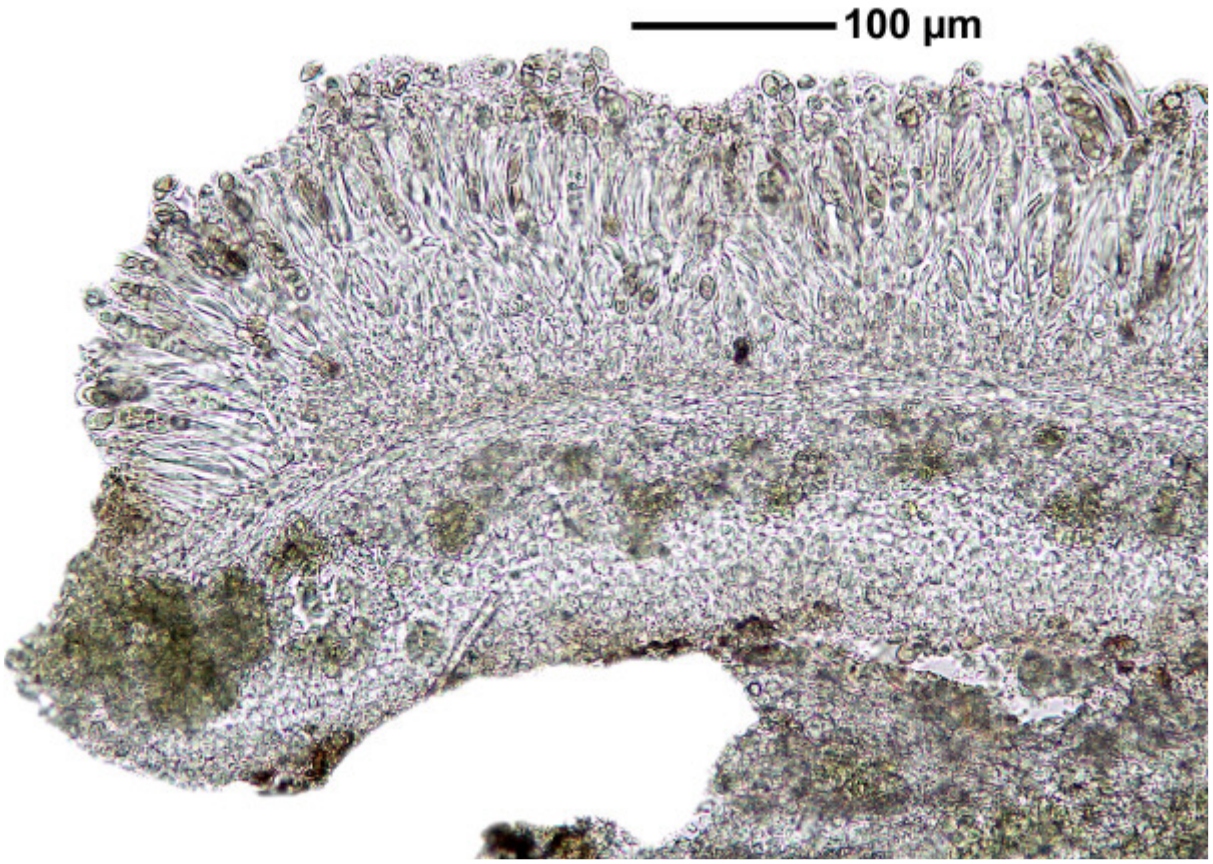
[KK18980], Australia, Queensland, way to the Bunya Mountains, c. 12 km NNE of Mt. Mowbullan, 680 m, 26°50’ S, 151°38’ E. Leg. K. Kalb & R. Rogers, 14.08.1988, det. S. Kondratyuk 2008.





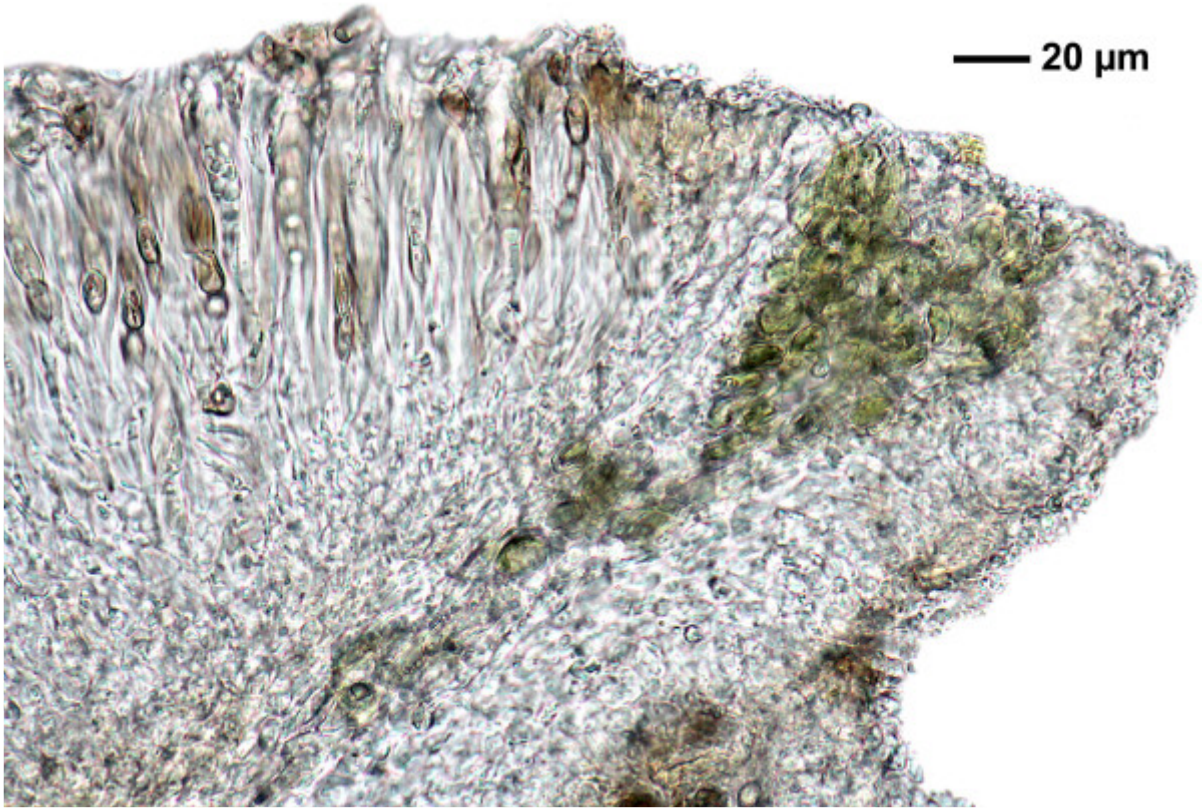
Caloplaca tomnashii



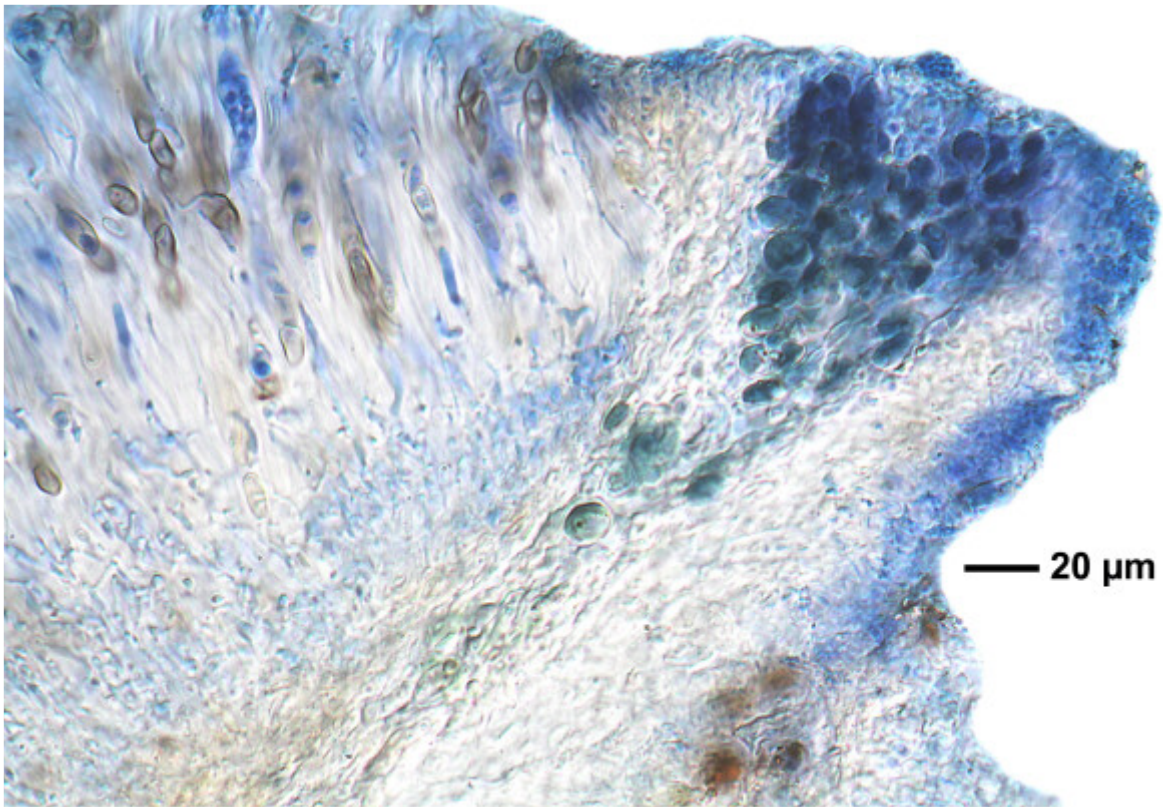


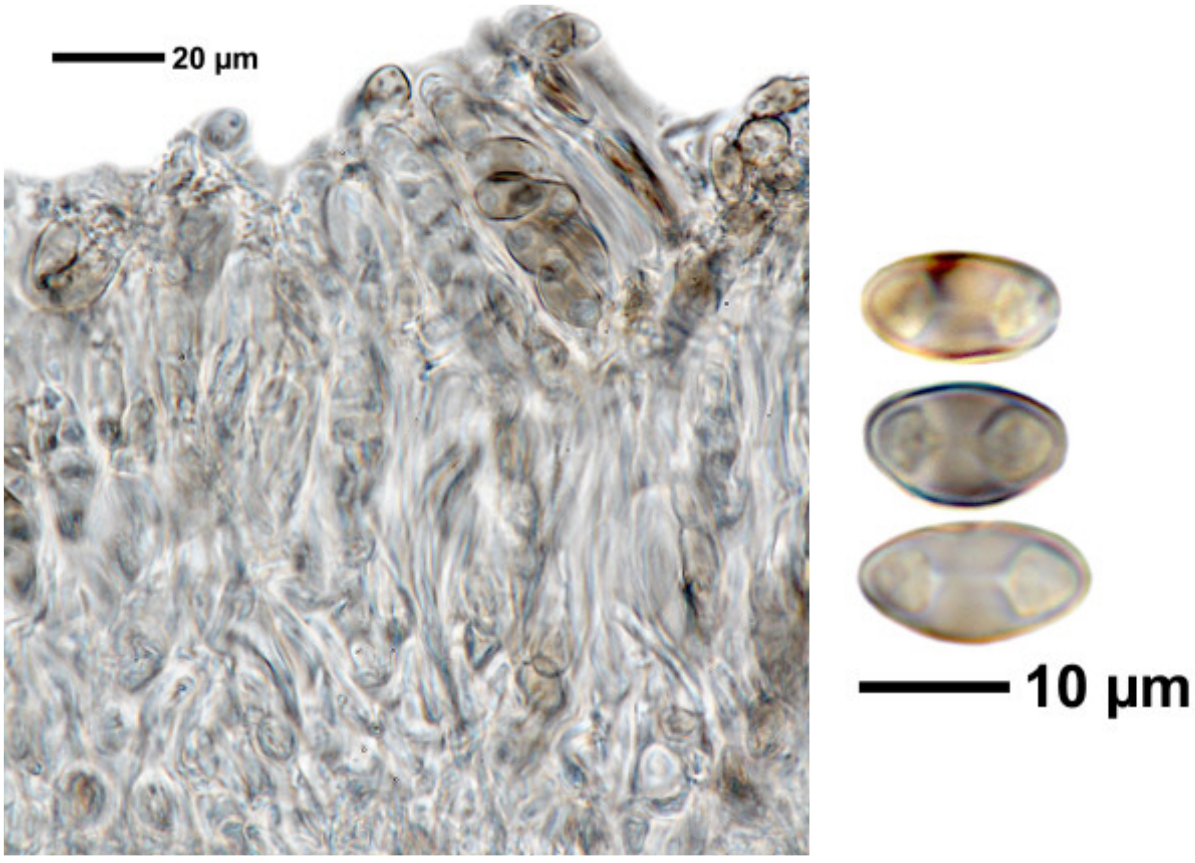
Caloplaca tomnashii



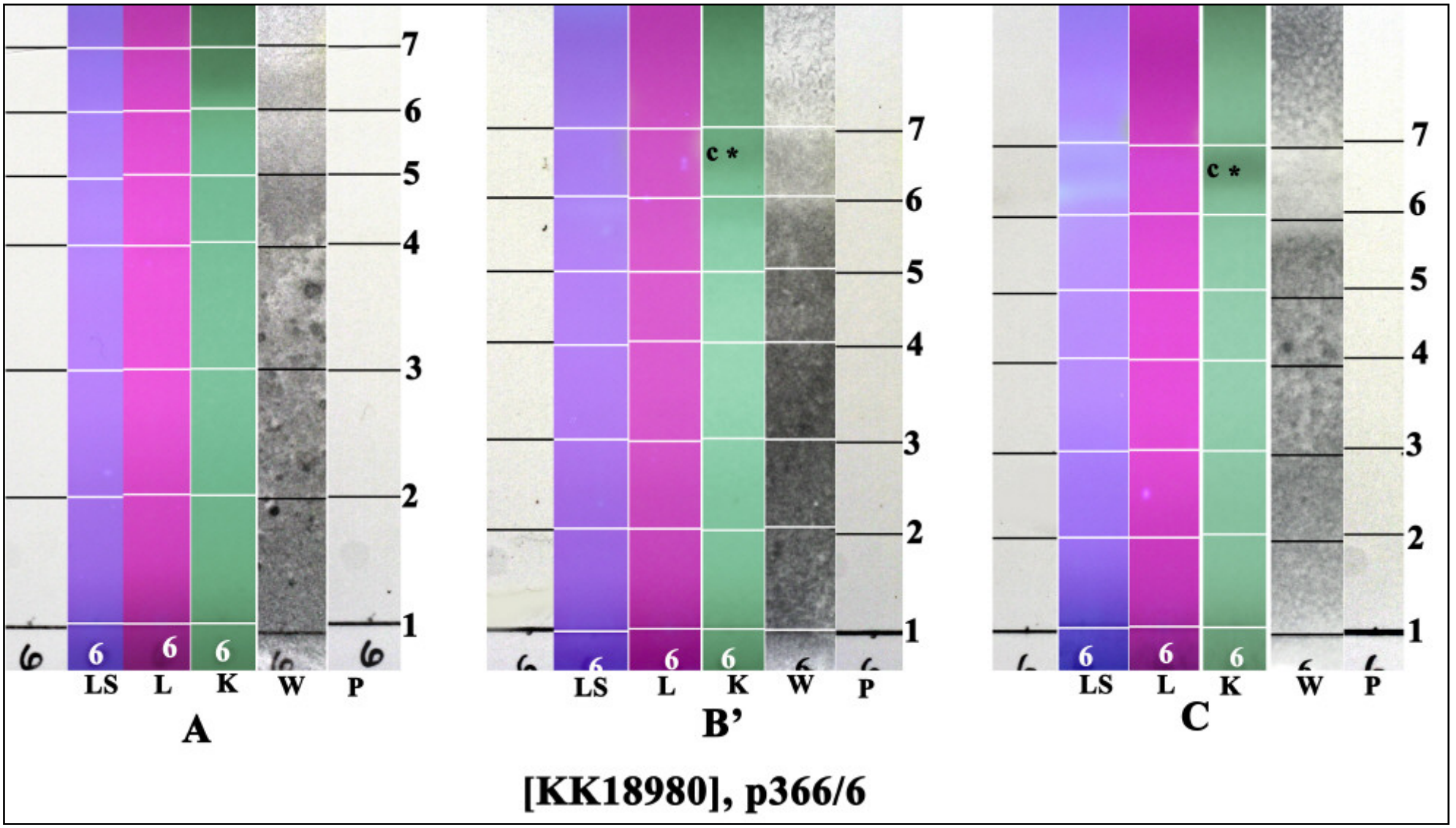


Caloplaca tomnashii





Caloplaca tomnashii



c: caloploicin + vicanicin; conf. J.A. Elix

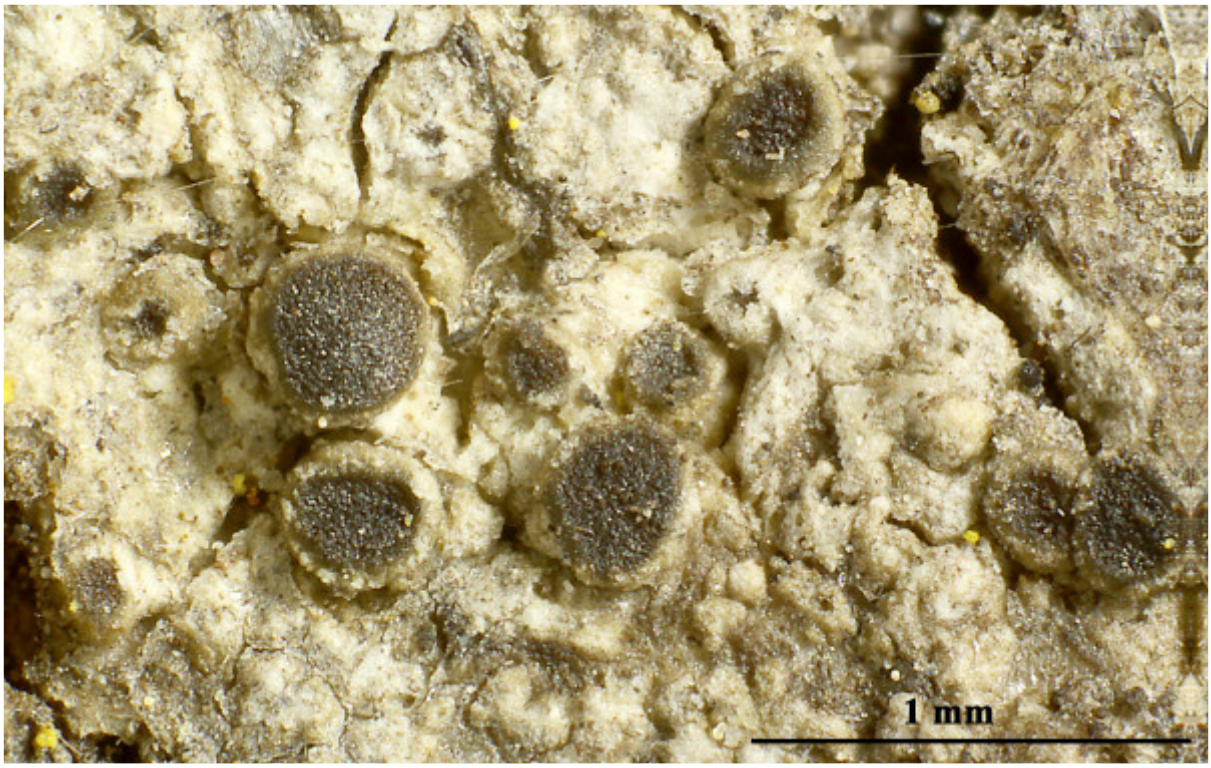
Caloplaca tomnashii S.Y. Kondr., Elix & Kärnefelt

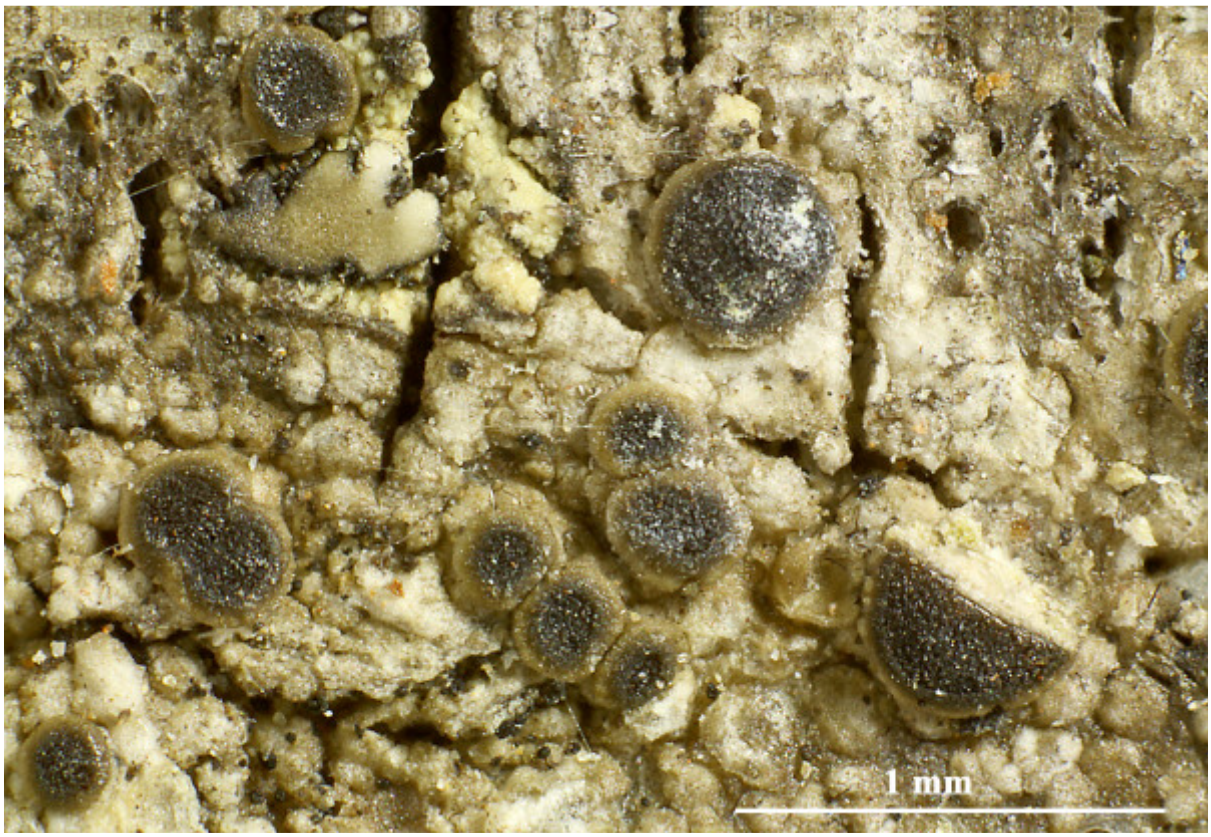
Thallus corticolous, grey to whitish-grey but occasionally indistinct. Apothecia 0.5-0.25(-0.7) mm diam., scattered, lecanorine, disc brownish-black to black; hymenium hyaline, subhymenium becoming yellowish to brown, paraphyses becoming brownish black towards the tips. Ascospores bipolar, 8/ascus, hyaline but soon becoming greyish brown, 12-16 x (5-)5-7(-8) µm, septum (5-)6-8 µm, in K 7-11 µm. Chemistry: caloploicin (major), vicanicin (minor), isofulgidin (minor), diploicin (trace); all coloured parts of the apothecium K-.

Lit.: Kondratyuk, Elix, Kärnefelt & Thell, Bibliotheca Lichenol. 106: 184 (2011).

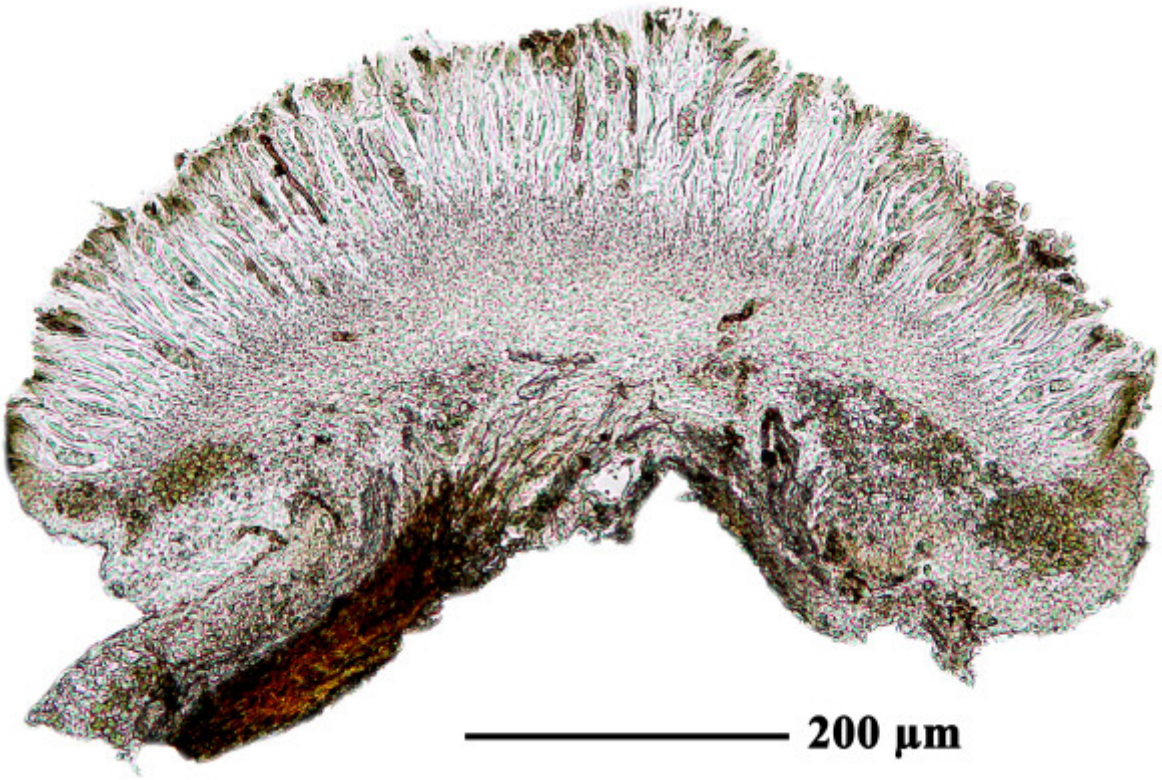
[KK20365], Australia, New South Wales, a few km north of Gloucester, at a solitary tree along the road, 50 m, 32°00’ S, 151°30’ E. Leg. K. & A. Kalb, 9.08.1988, det. S. Kondratyuk.

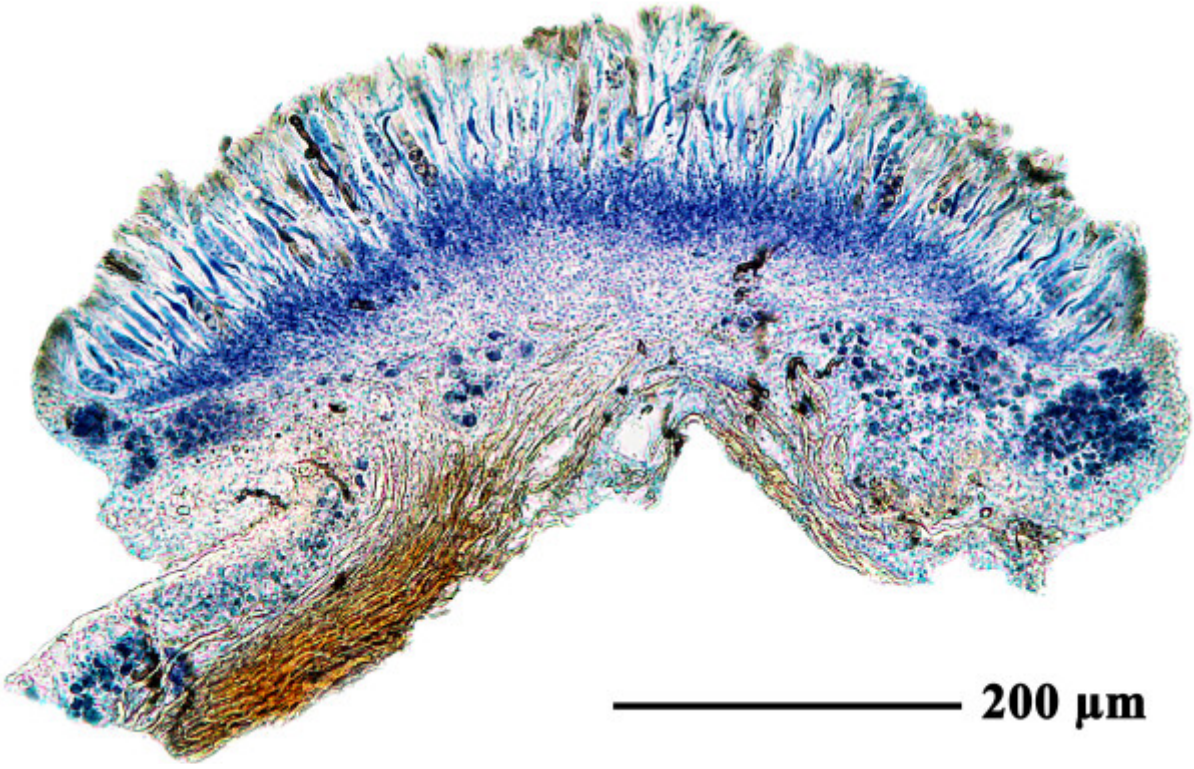






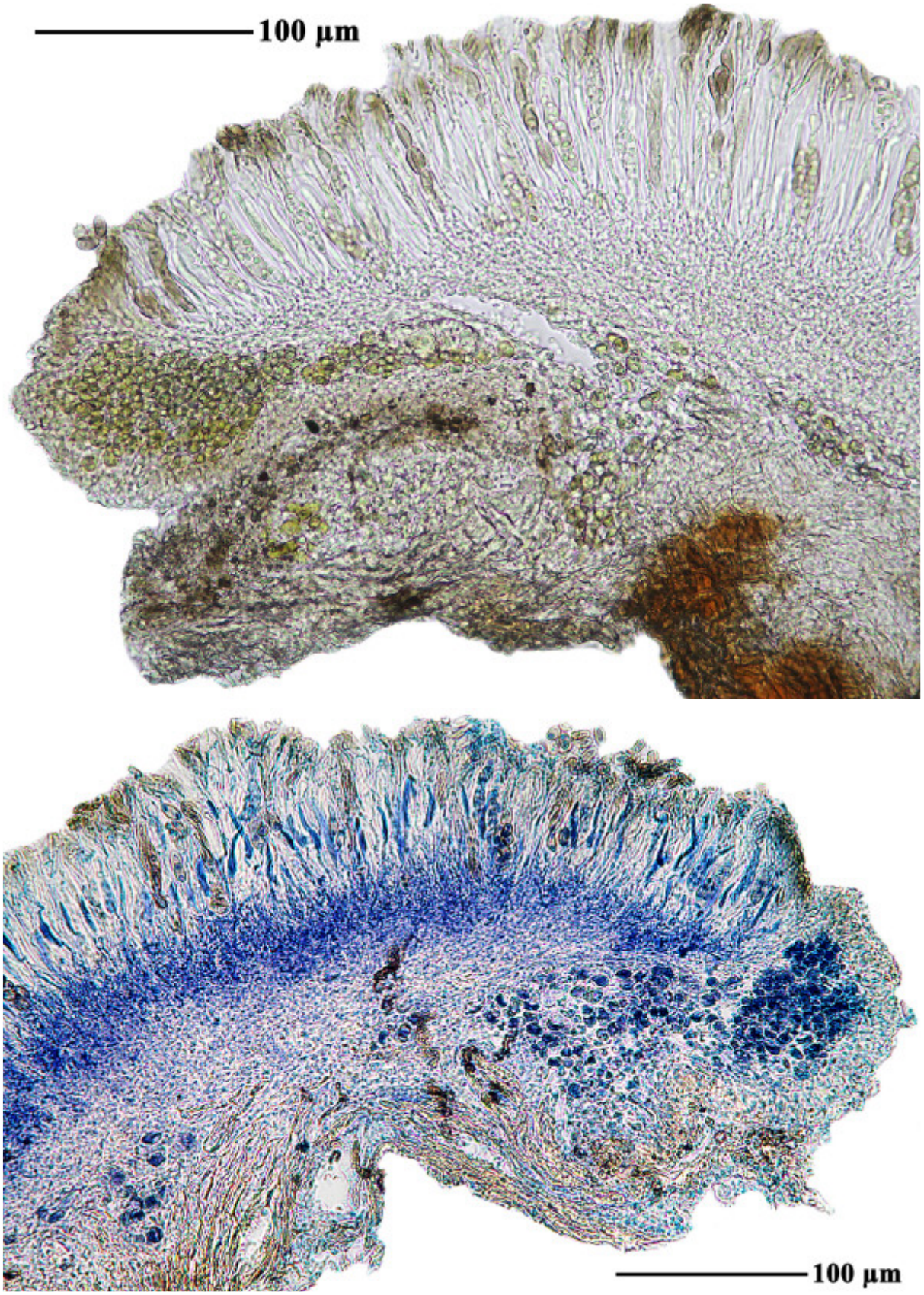
Caloplaca tomnashii







Caloplaca tomnashii



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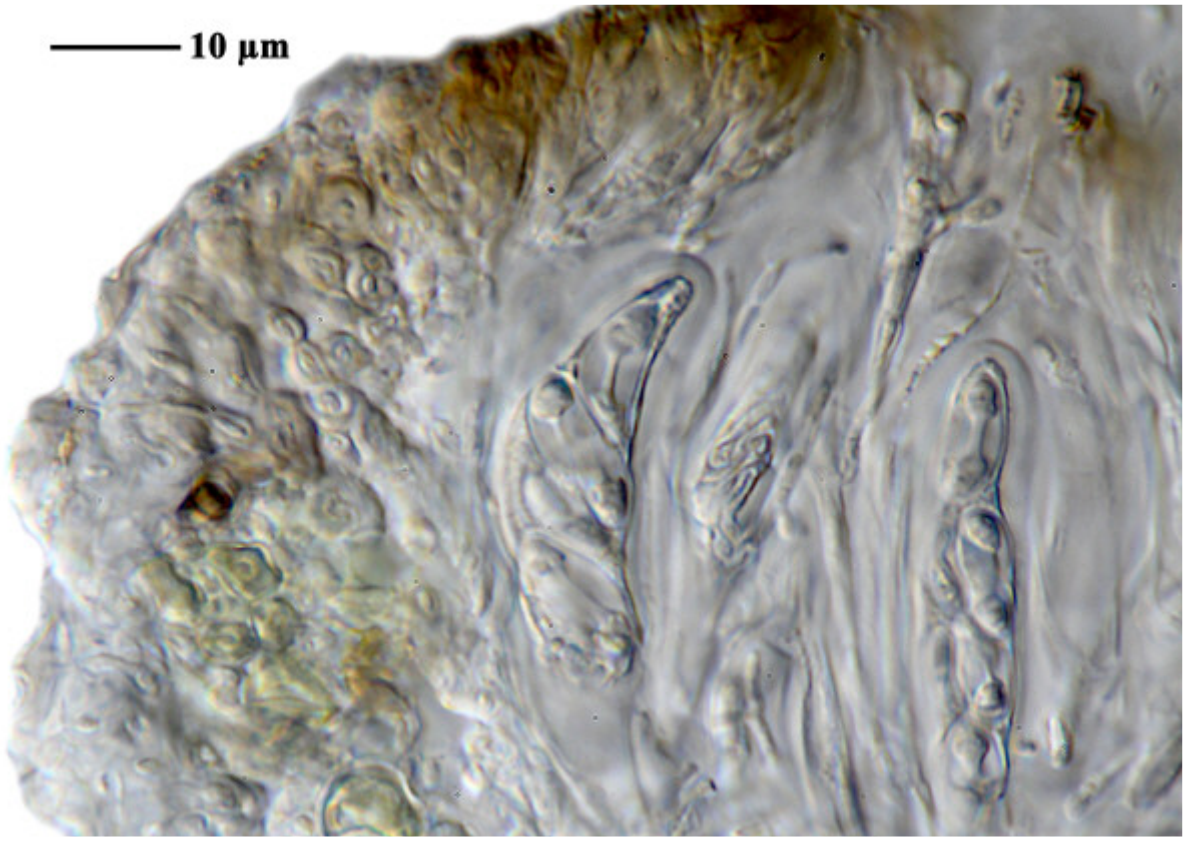

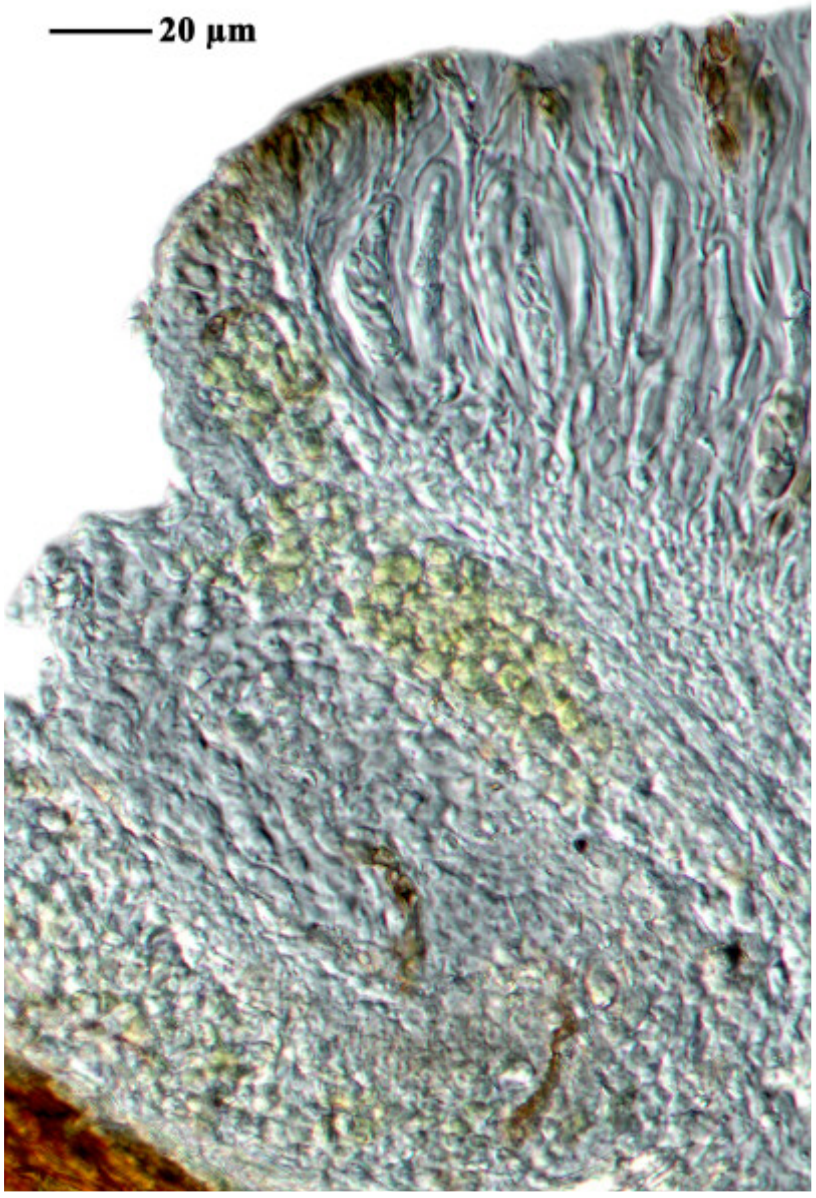

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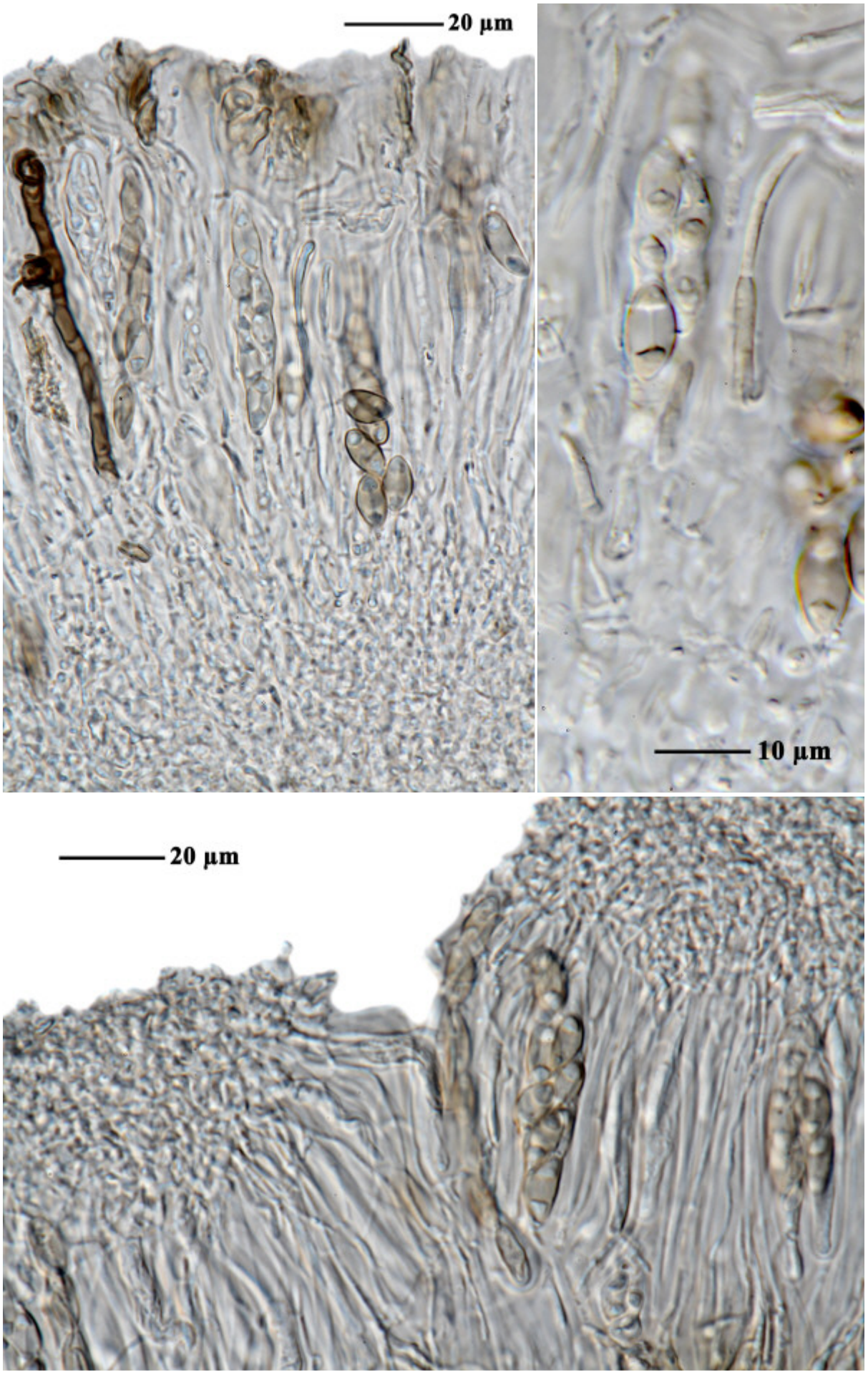

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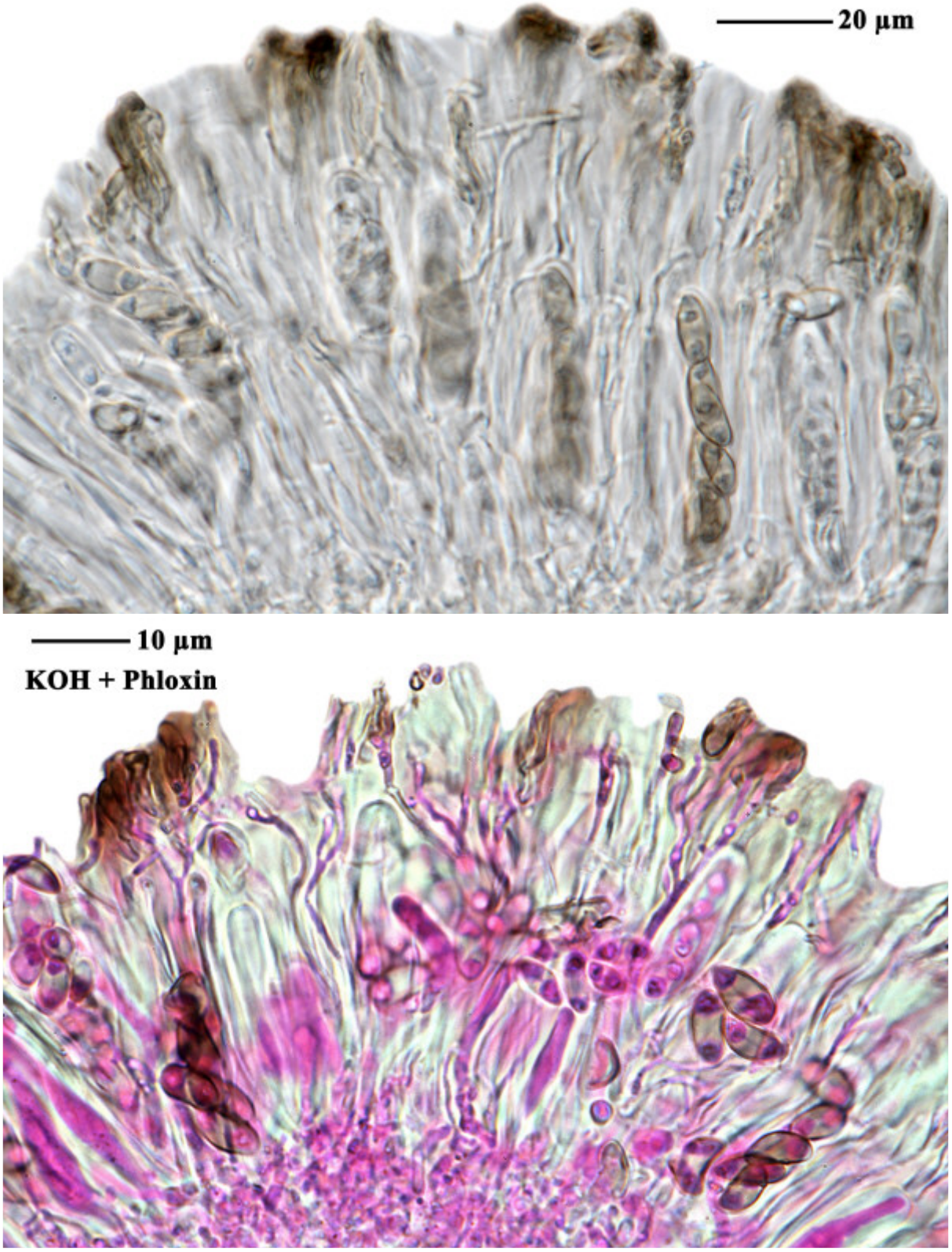

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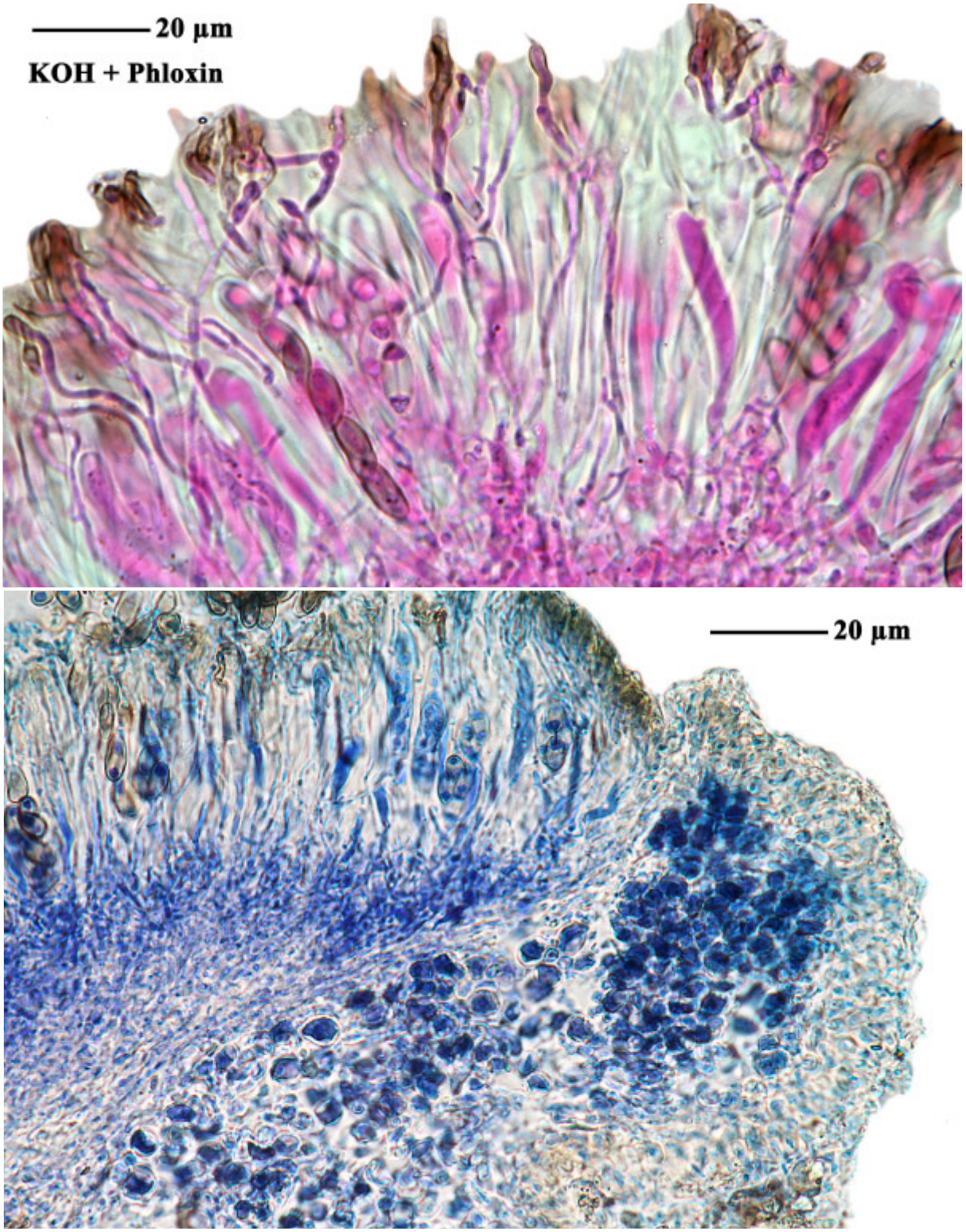
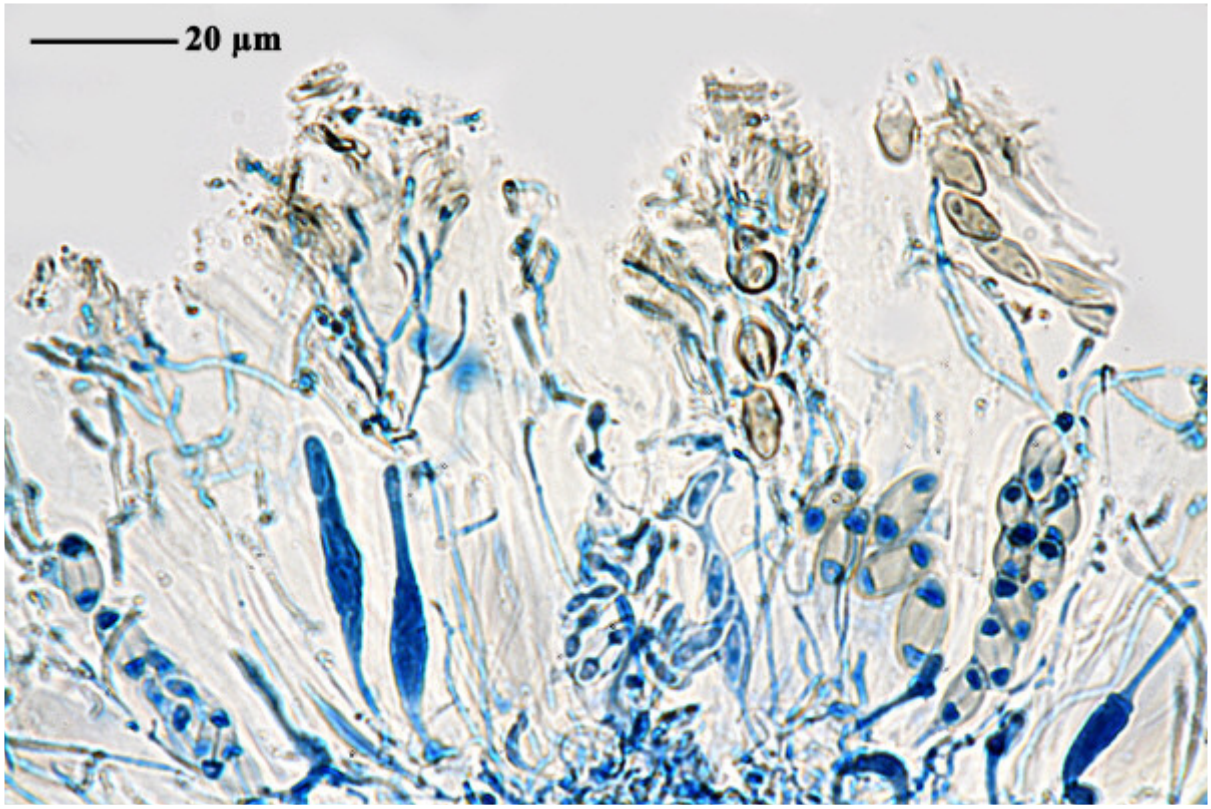
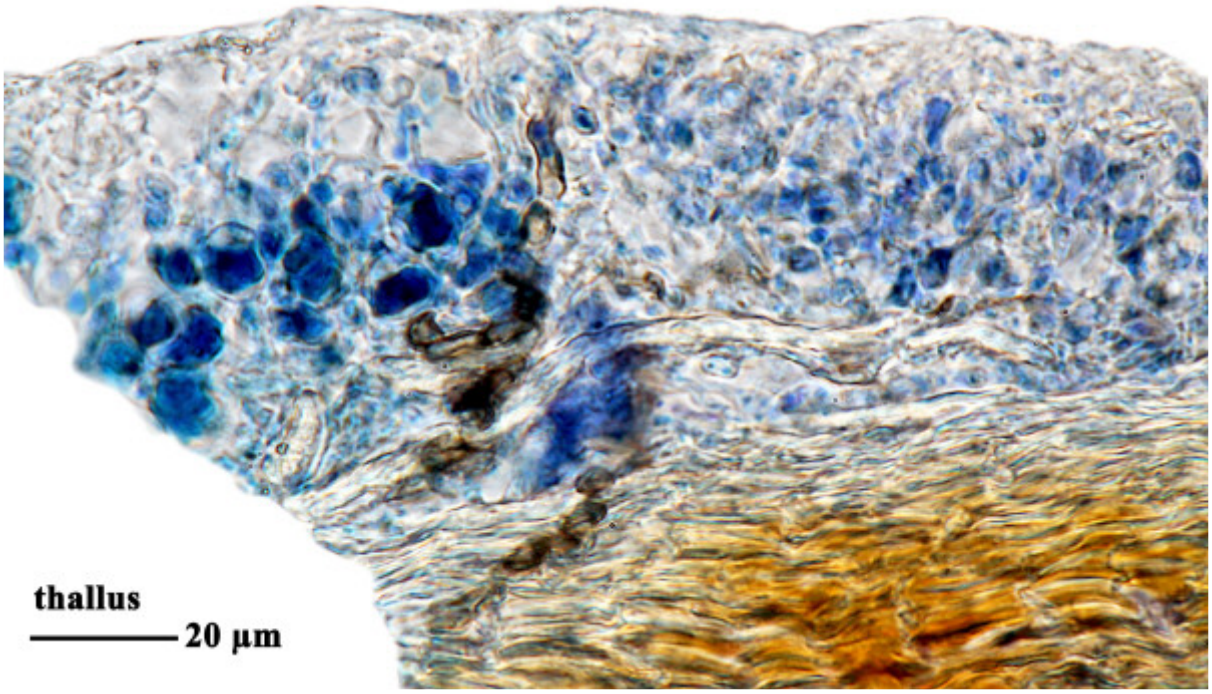
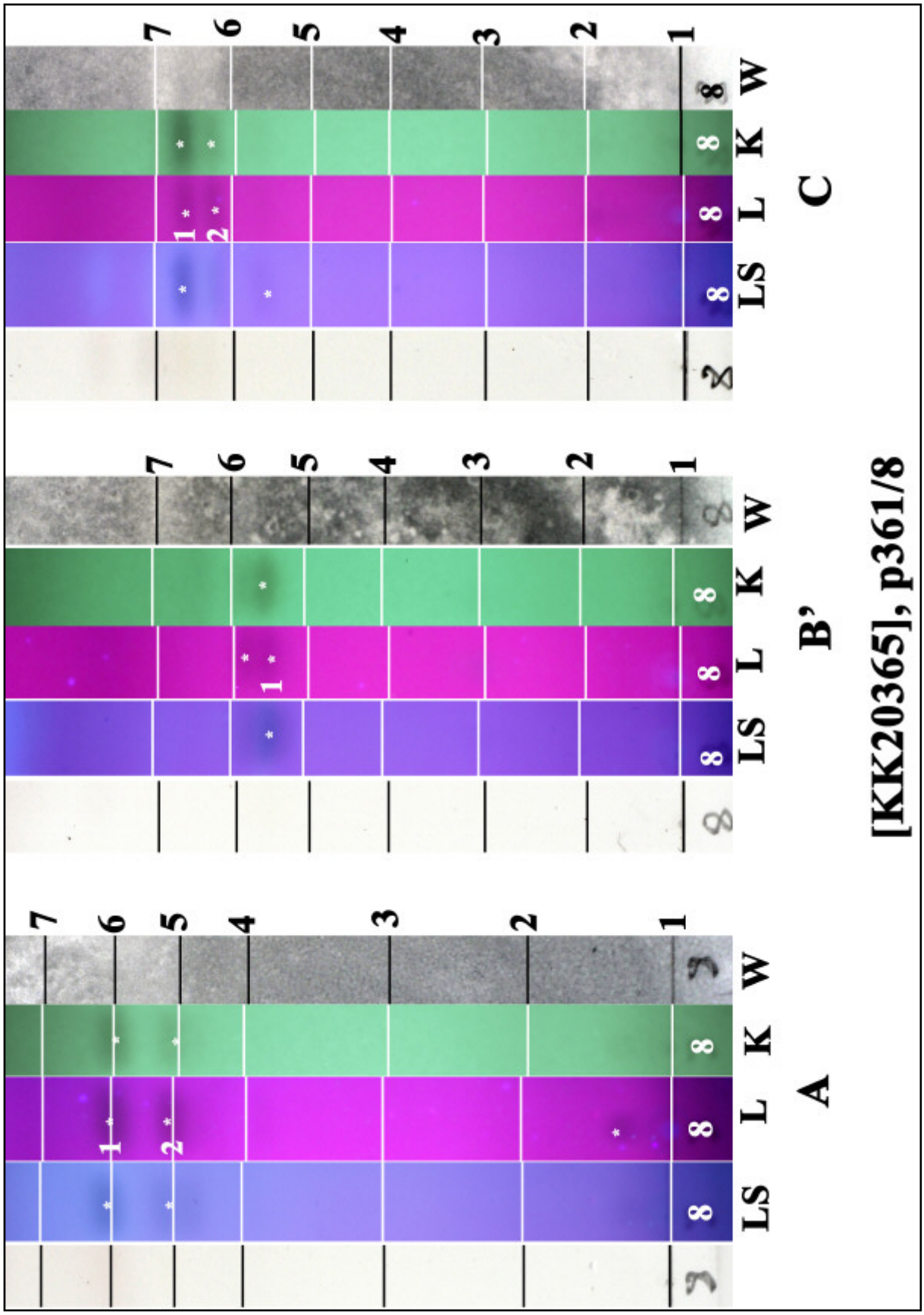


Caloplaca tomnashii





Caloplaca tomnashii



1: caloploicin + vicanicin, 2: isofulgidin; conf. J.A. Elix.

One small apothecium has been examined for this HPTLC and so the concentration of lichen substances may have been too low

Caloplaca tomnashii

Caloplaca trachyphylla (Tuck.) Zahlbr.

[= *Xanthomendoza trachyphylla* (Tuck.) Frödén, Arup & Søchting, Nordic Jl Bot. 31(1): 59 (2013)]

[= *Golubkovia trachyphylla* (Tuck.) S.Y.Kondr., Kärnefelt, Elix, A.Thell, J.Kim, M.H.Jeong, N.N.Yu, A.S.Kondr. & Hur, in Kondratyuk, Kärnefelt, Thell, Elix, Kim, Jeong, Yu & Hur, Acta bot. hung. 56(1-2): 164 (2014)]

On rocks.

[19408], USA, Wyoming, Sweatwater Co., near Table Rock north I-80, 70.5 km E of Rock Springs, knoll in prairie with sage and some rocks, 41°38'13" N, 108°21'08" W, 2101 m. Leg. Clifford M. Wetmore (No. 95170), 22. July 2006, dett. C. Wetmore TELOSCHISTACEAE EXSICCATI NR. 94 DISTRIBUTED BY C. WETMORE.





Caloplaca trachyphylla





Caloplaca trachyphylla

Caloplaca trachyphylla (Tuck.) Zahlbr.

[= *Xanthomendoza trachyphylla* (Tuck.) Frödén, Arup & Søchting, Nordic Jl Bot. 31(1): 59 (2013)]

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Spores, 16-19 x 6-7 µm (AA 2011); 13.5-15.5 x 5.5-5.6 µm, septum 2-3 µm (FS)

[BR5030028261348], Turkey,Prov. Van locality, on rock. Leg. A. Aslan, Sept. 2009, det. A. Aptroot, 2011.

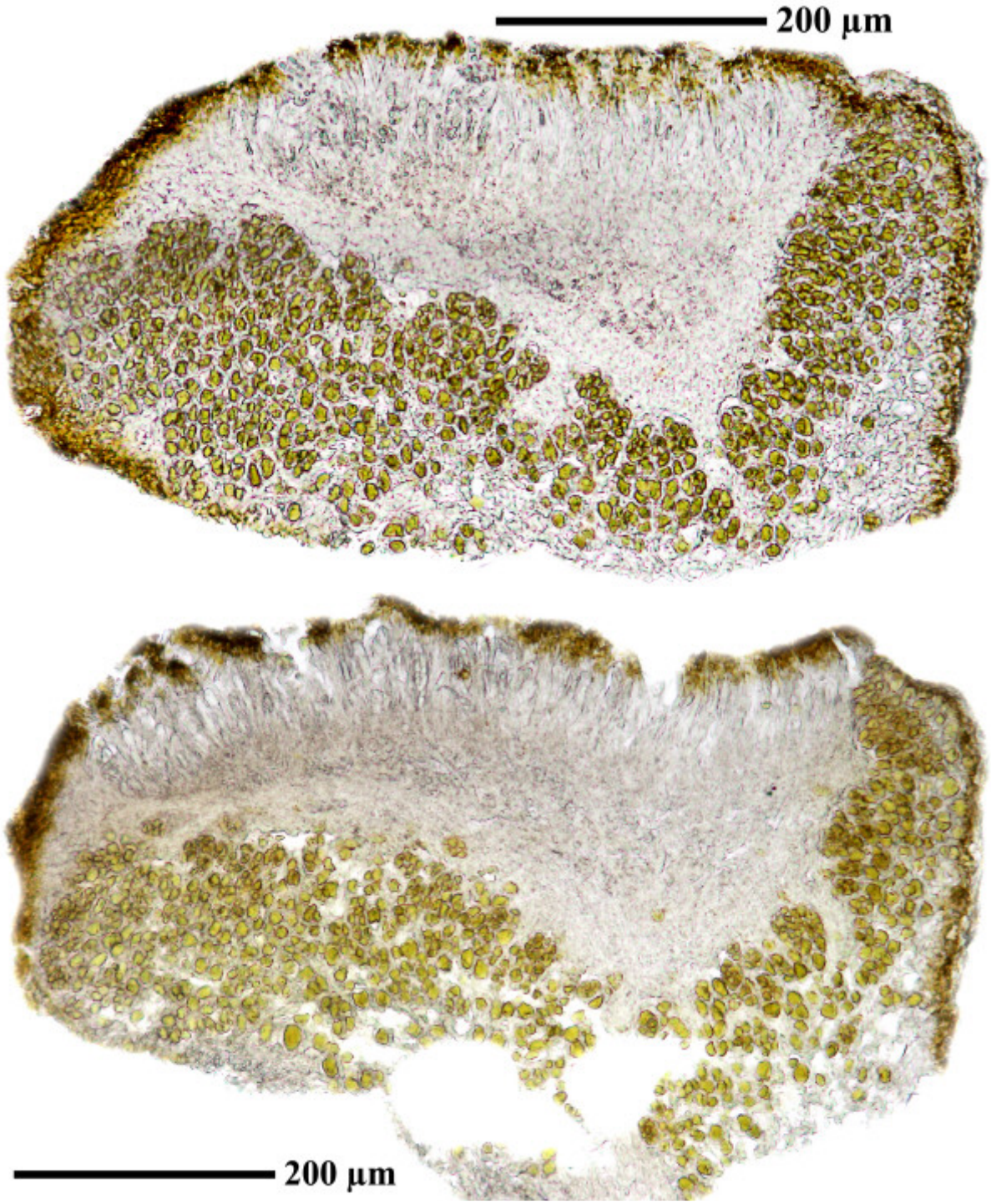




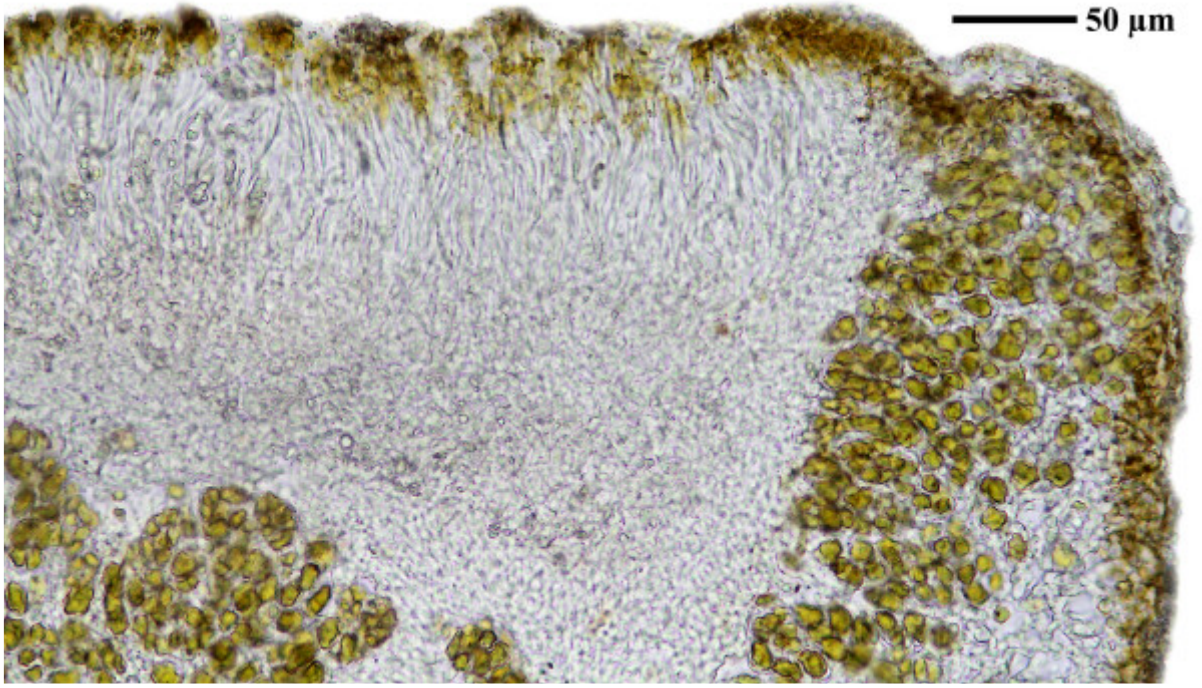
Caloplaca trachyphylla

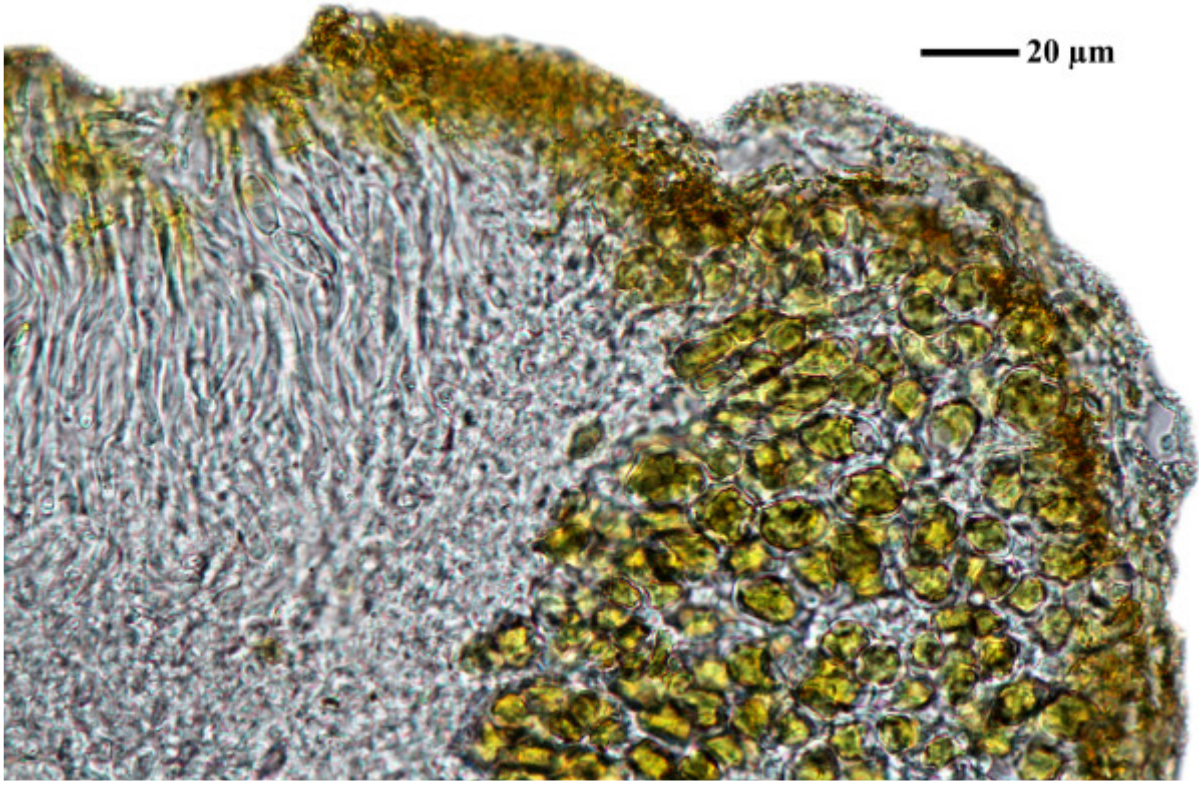


Caloplaca trachyphylla

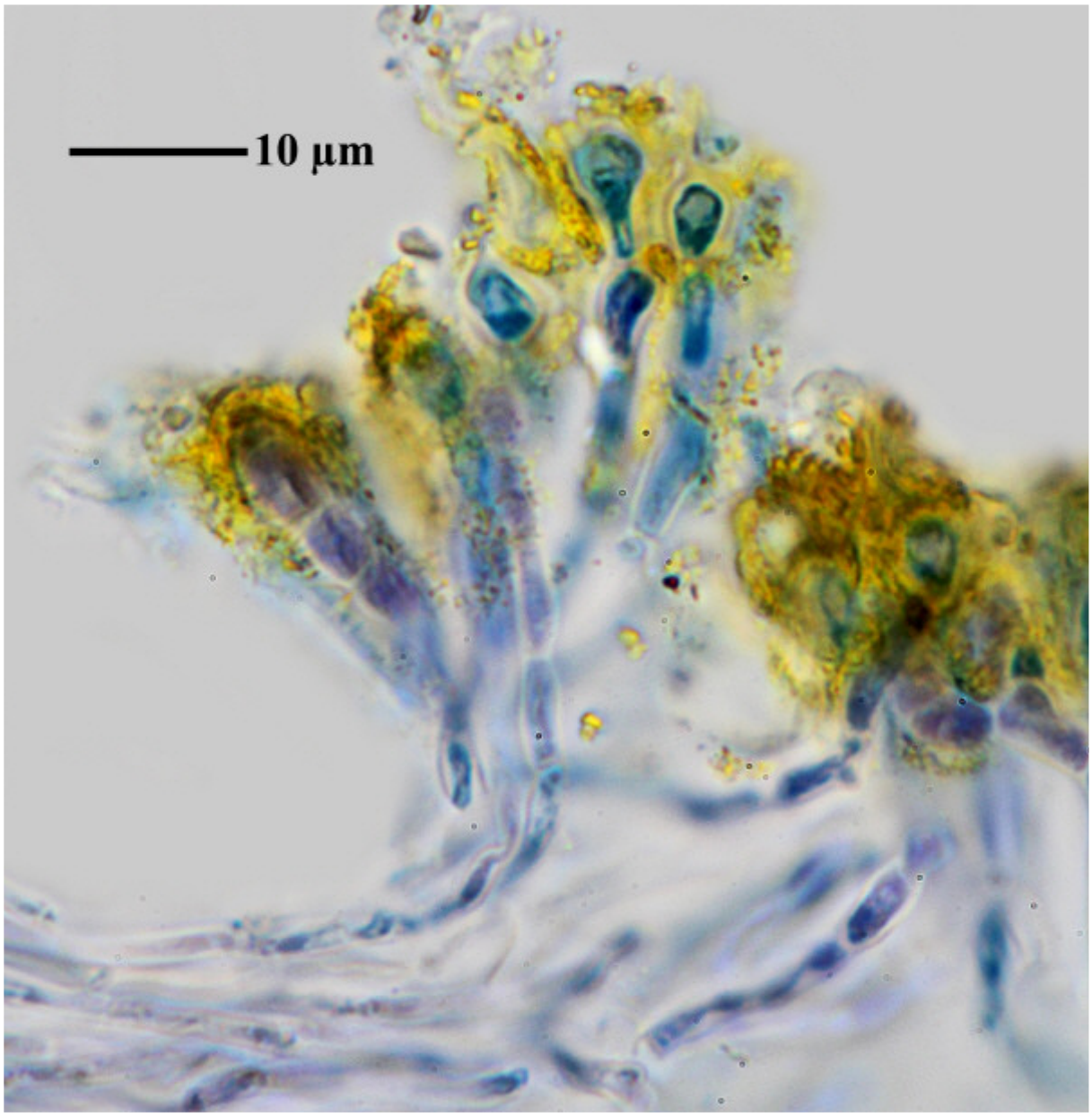


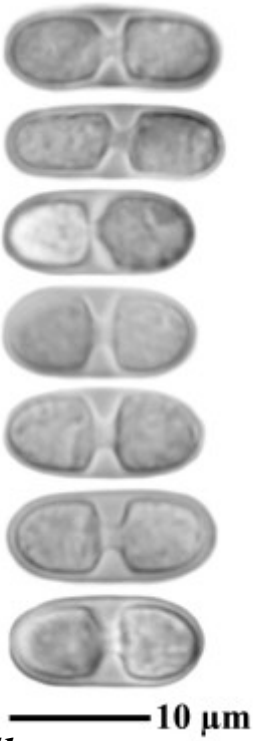
Caloplaca trachyphylla

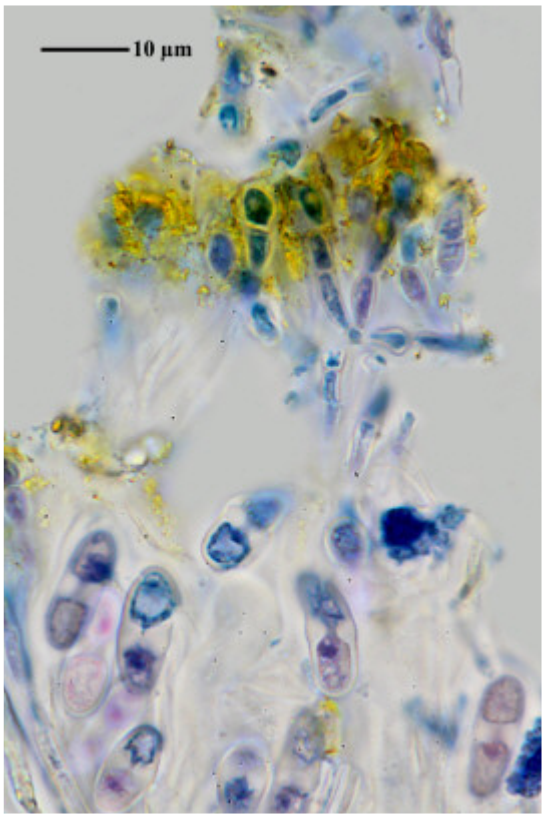




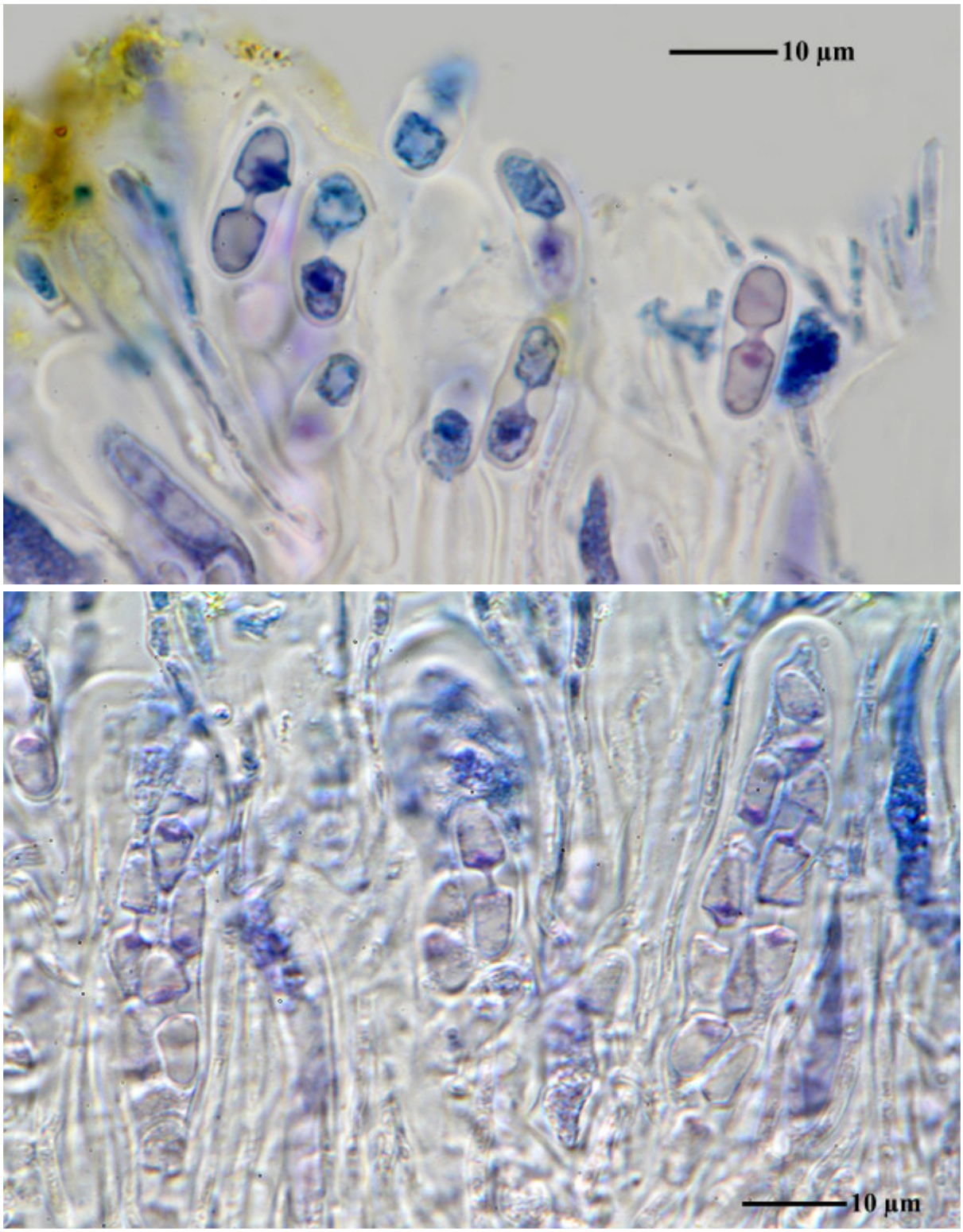
Caloplaca trachyphylla







Caloplaca trachyphylla



Caloplaca trachyphylla

Caloplaca trachyphylla (Tuck.) Zahlbr.
[= *Xanthomendoza trachyphylla* (Tuck.) Frödén, Arup & Søchting, Nordic Jl Bot. 31(1): 59 (2013)]
[= *Golubkovia trachyphylla* (Tuck.) S.Y.Kondr., Kärnefelt, Elix, A.Thell, J.Kim, M.H.Jeong, N.N.Yu, A.S.Kondr. & Hur, in Kondratyuk, Kärnefelt, Thell, Elix, Kim, Jeong, Yu & Hur, Acta bot. hung. 56(1-2): 164 (2014)]
[= *Caloplaca hedinii* H.Magn., Lichens Central Asia 1: 141 (1940)]
[= *Caloplaca elegans* var. *trachyphylla* (Tuck.) Fink, Lich. Fl. U.S.: 362 (1935)]

[LIAF_03], Afghanistan, Prov. Logar, Kotal-i-Terg, Felsköpfe ca. 20 m W der Paßhöhe, 69°08' E, 33°45' N, 2870 m. Vorwiegend auf Zenitflächen schwach serpentinisierter Peridotit-Felsen. Leg. M. Steiner (Ste 66/1), 02.07.1970. LICHENOTHECA AFGHANICA NR.03.



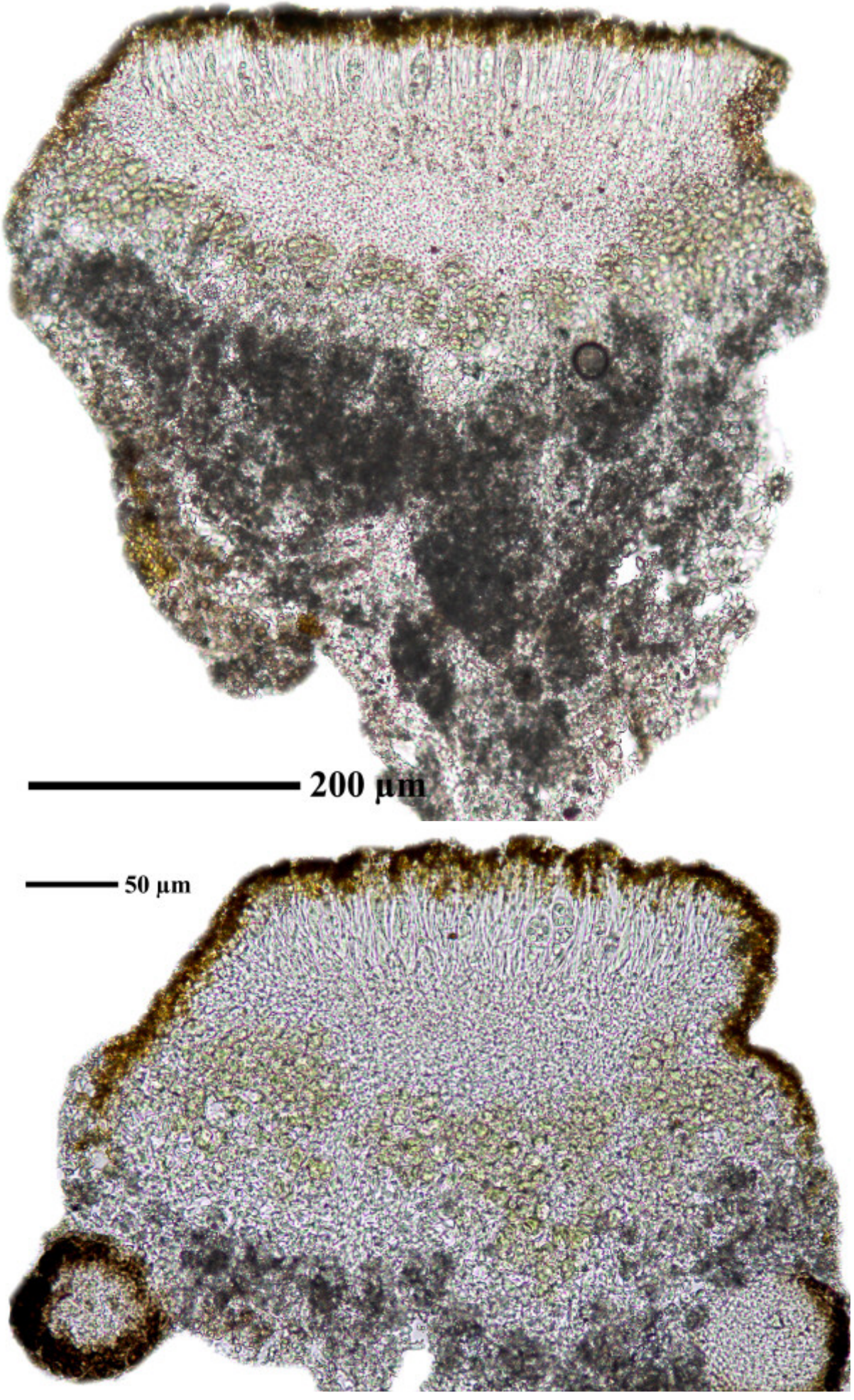




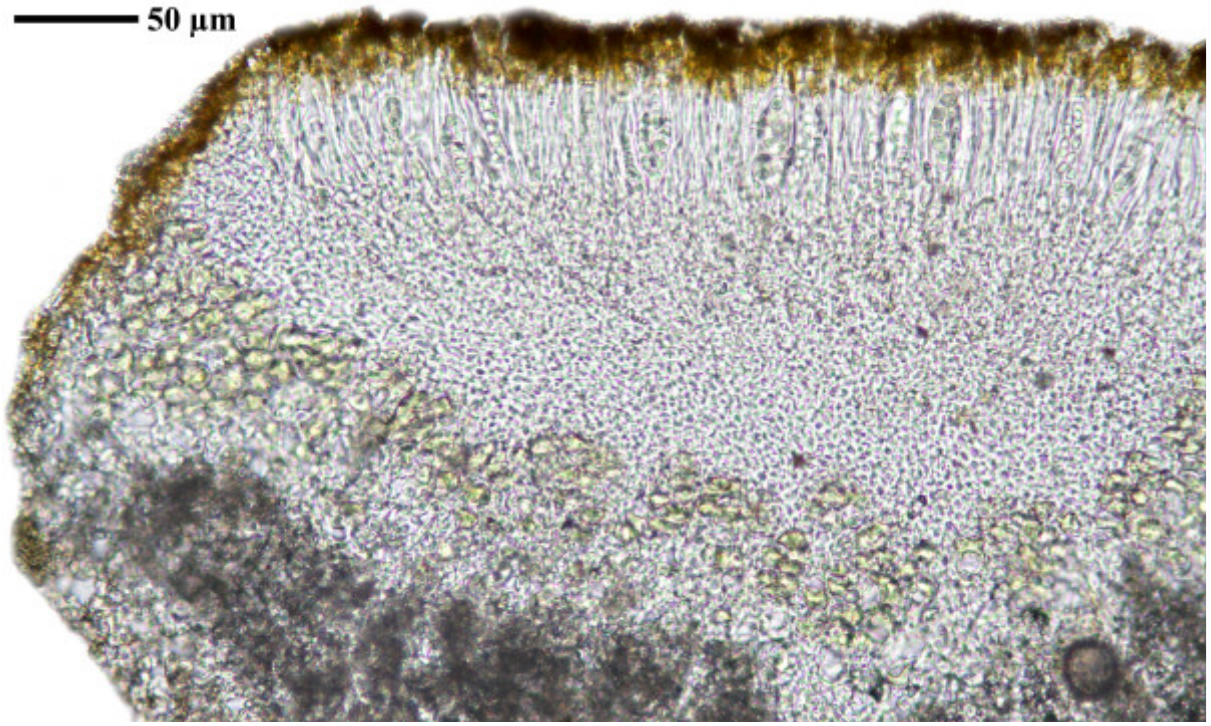
Caloplaca trachyphylla

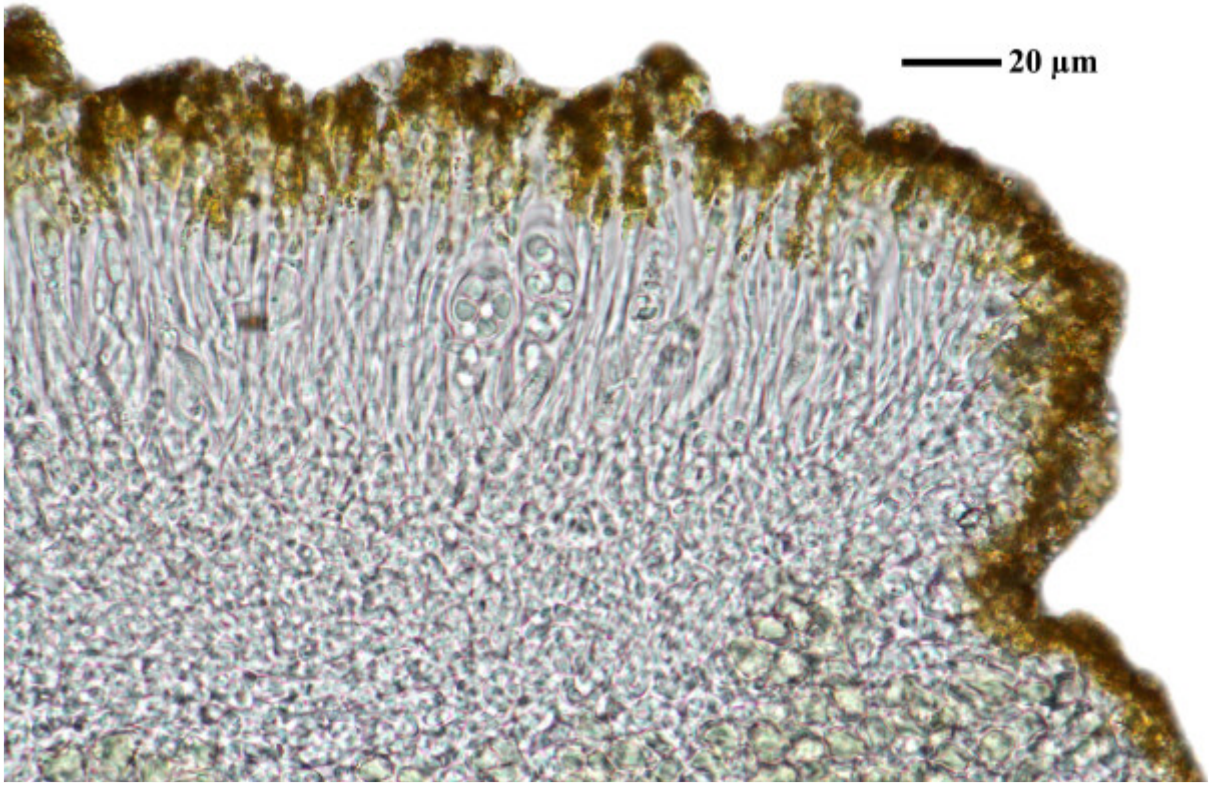


Caloplaca trachyphylla

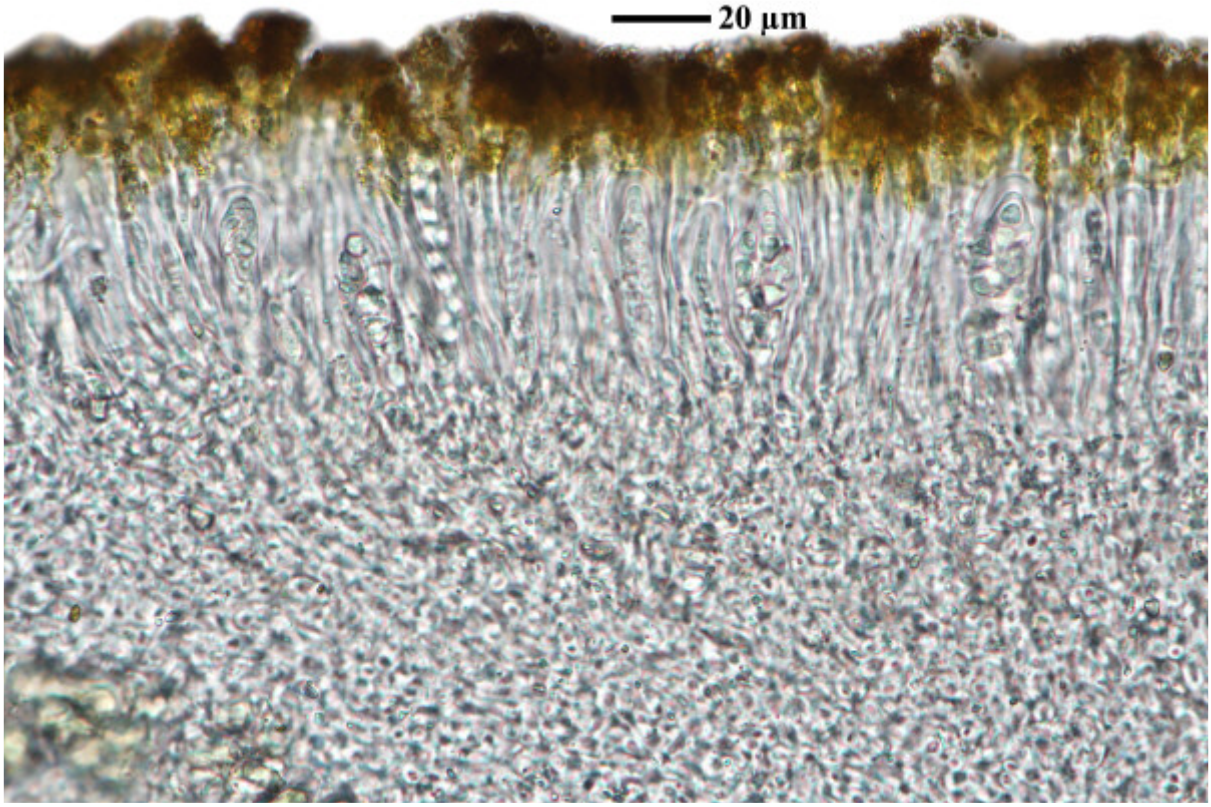


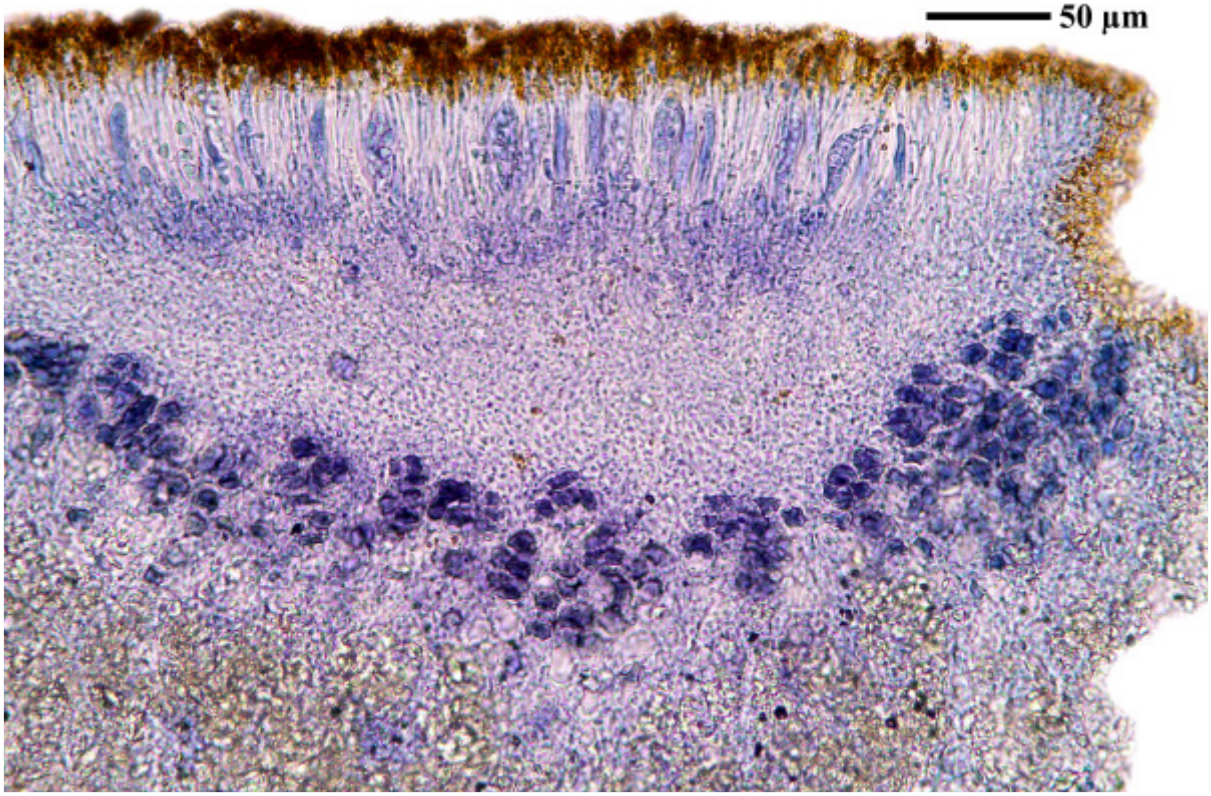
Caloplaca trachyphylla



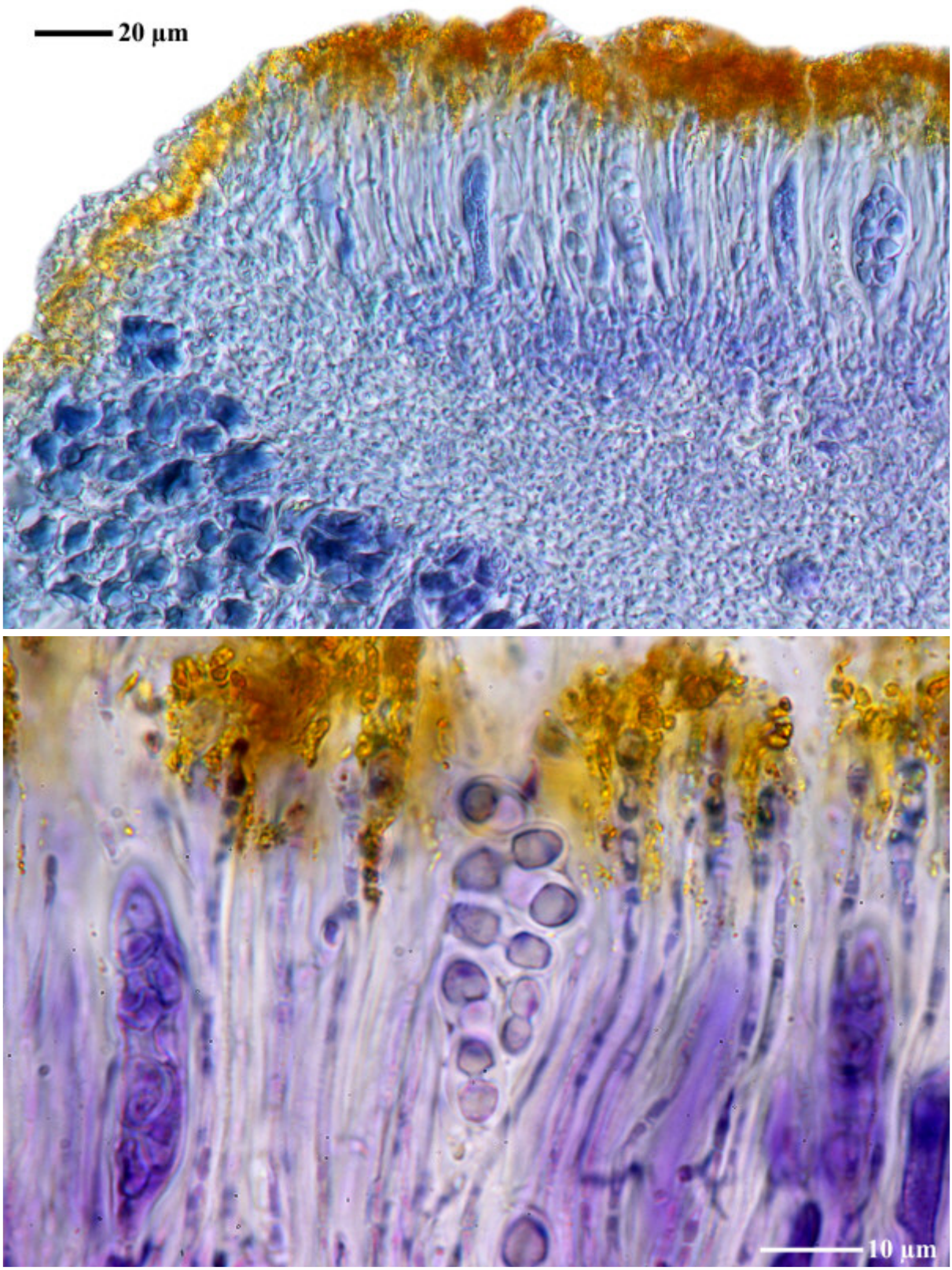


Caloplaca trachyphylla

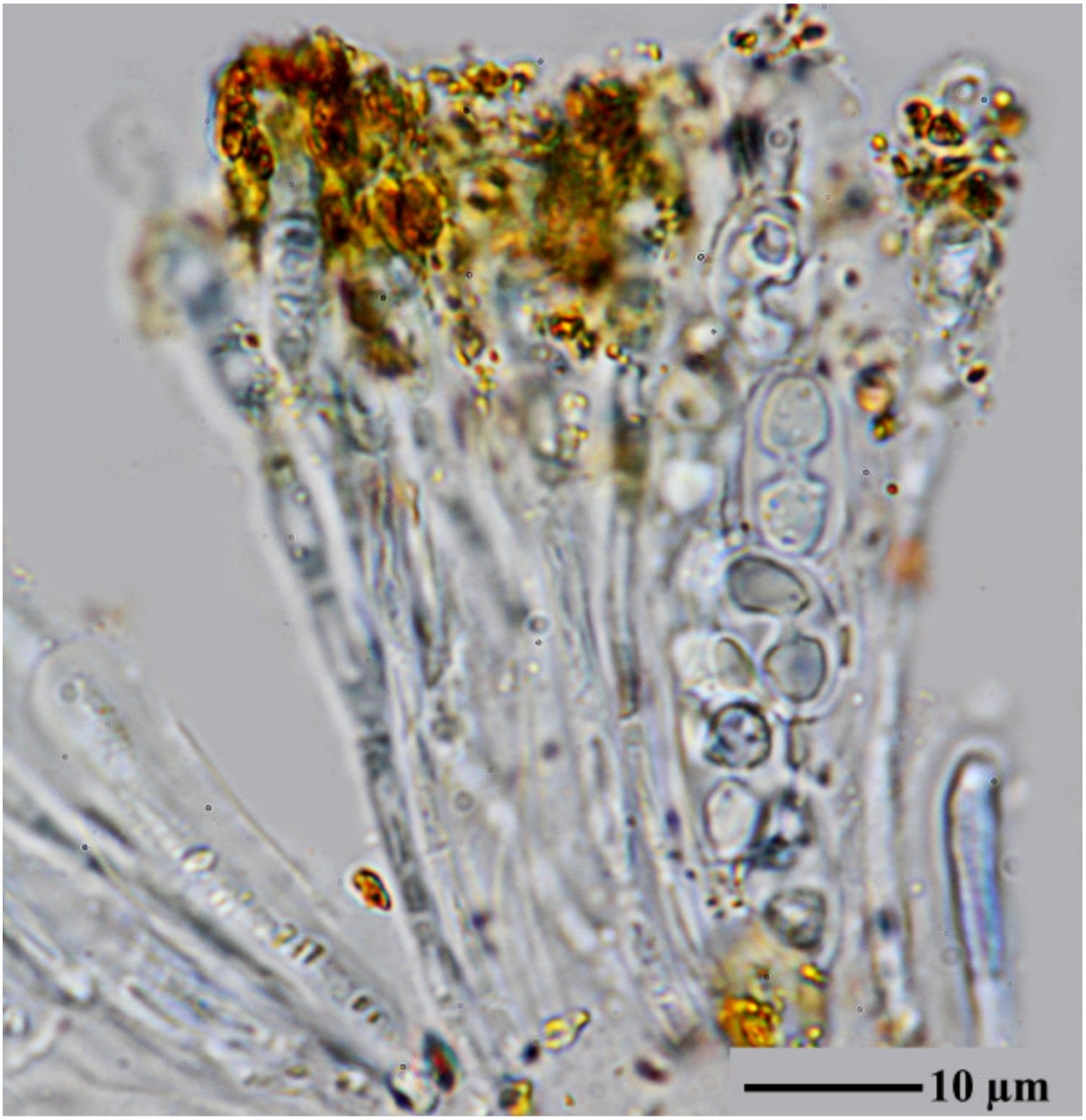


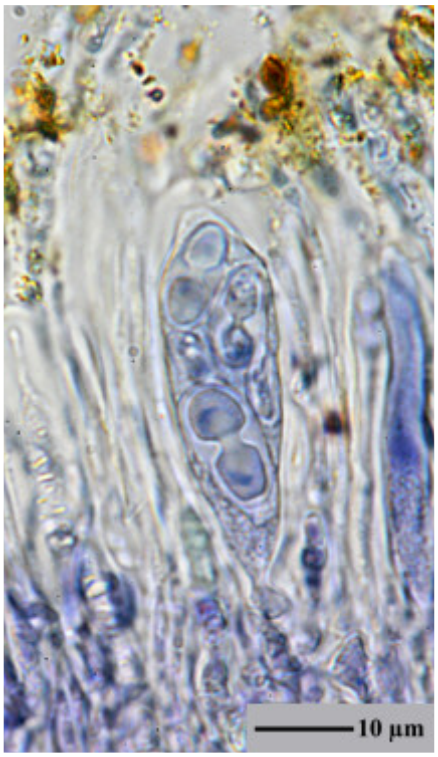


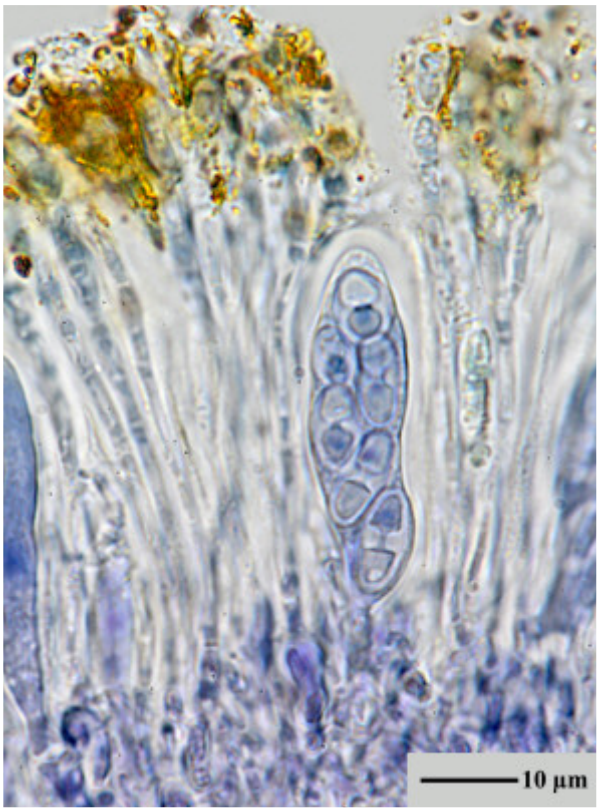
Caloplaca trachyphylla



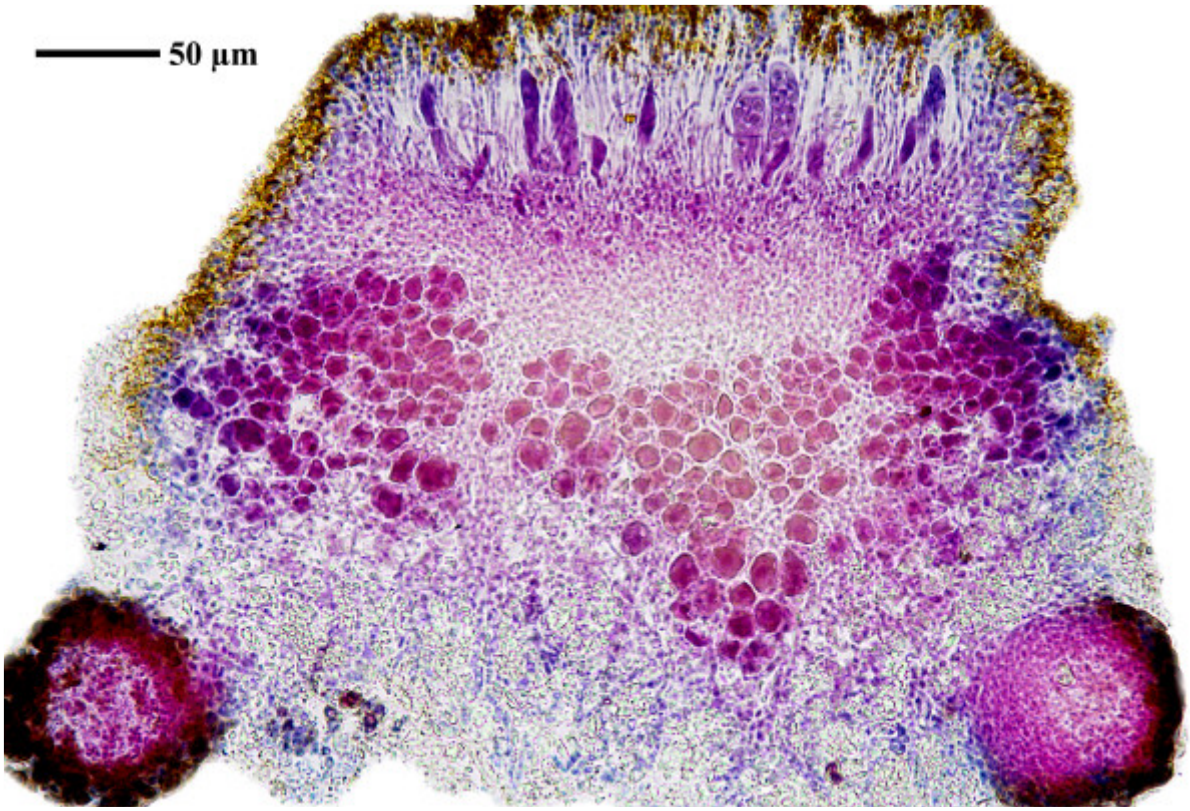
Caloplaca trachyphylla

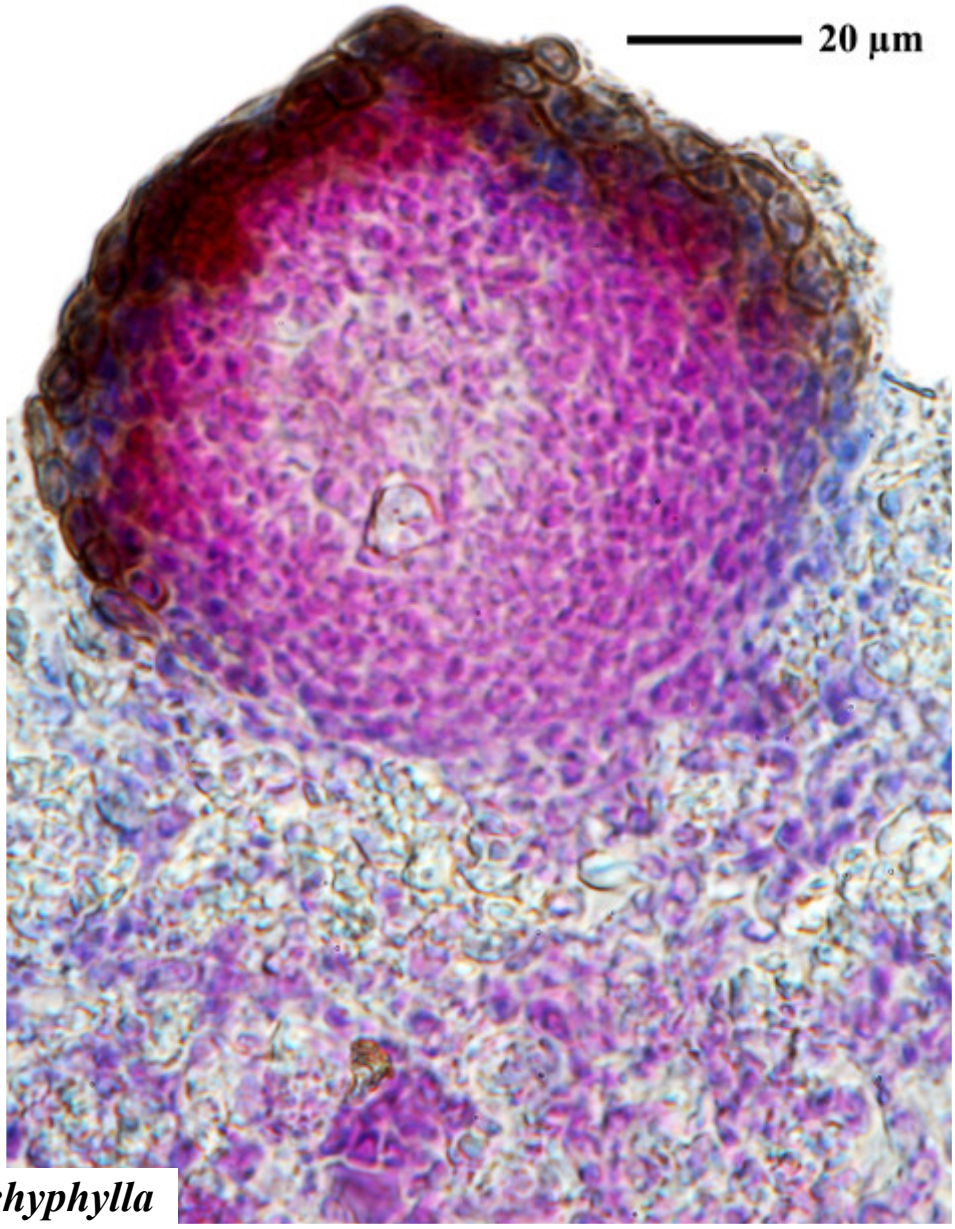






Caloplaca trachyphylla





Caloplaca trachyphylla

Caloplaca trachyphylla (Tuck.) Zahlbr.

[= *Xanthomendoza trachyphylla* (Tuck.) Frödén, Arup & Søchting, Nordic Jl Bot. 31(1): 59 (2013)]

[= *Golubkovia trachyphylla* (Tuck.) S.Y.Kondr., Kärnefelt, Elix, A.Thell, J.Kim, M.H.Jeong, N.N.Yu, A.S.Kondr. & Hur, in Kondratyuk, Kärnefelt, Thell, Elix, Kim, Jeong, Yu & Hur, Acta bot. hung. 56(1-2): 164 (2014)]

[= *Caloplaca hedinii* H.Magn., Lichens Central Asia 1: 141 (1940)]

[= *Caloplaca elegans* var. *trachyphylla* (Tuck.) Fink, Lich. Fl. U.S.: 362 (1935)]

[LIAF_04], Afghanistan, Prov. Bamyan, Koh-i-Baba, Paßhöhe des Kotal-i-Devali. 69°58’ E, 34°38’ N, 3000 m. Teilweise befallen von *Acarospora stapfiana* (Müll.Arg.) Hue. Leg. A. Dieterle (Pod 44/4 u. 45/1), 18.07.1970. Lichenotheca Afghanica Nr.04.



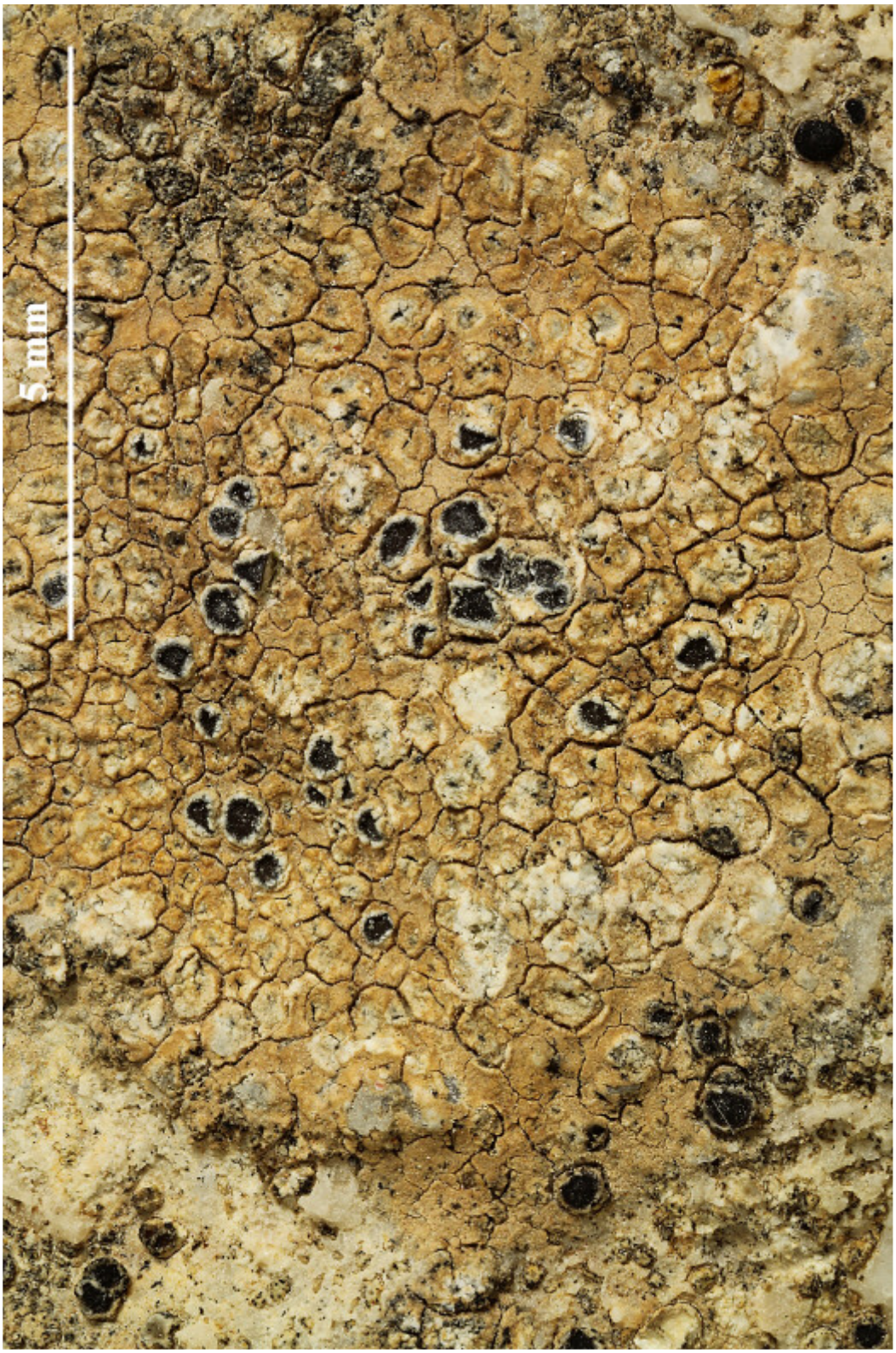


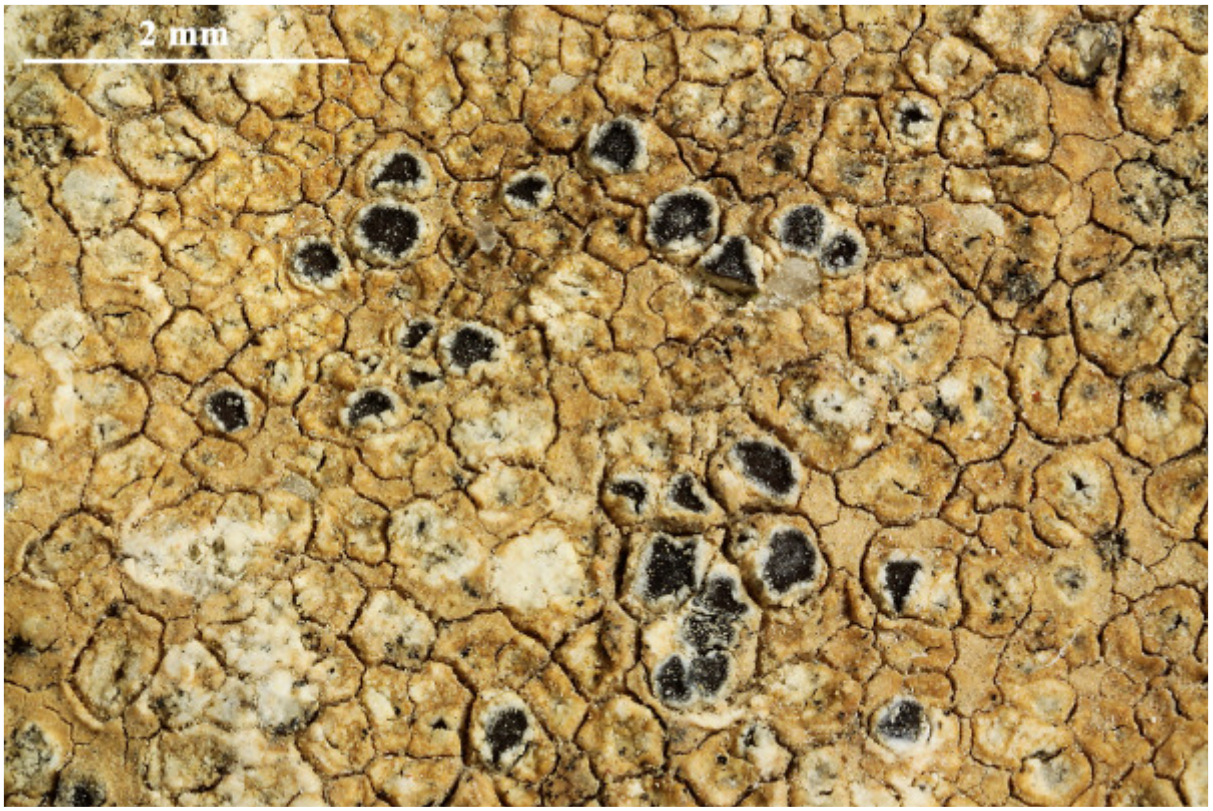
Caloplaca trachyphylla

Caloplaca transcaspica (Nyl.) Zahlbr.

Hymenium 90 µm, fine insperse below. Spores 8/ascus, grey, ca. 15 x 9 µm (Sipm.). Spores 10 x 5 µm, septum 2.4 µm (FS)

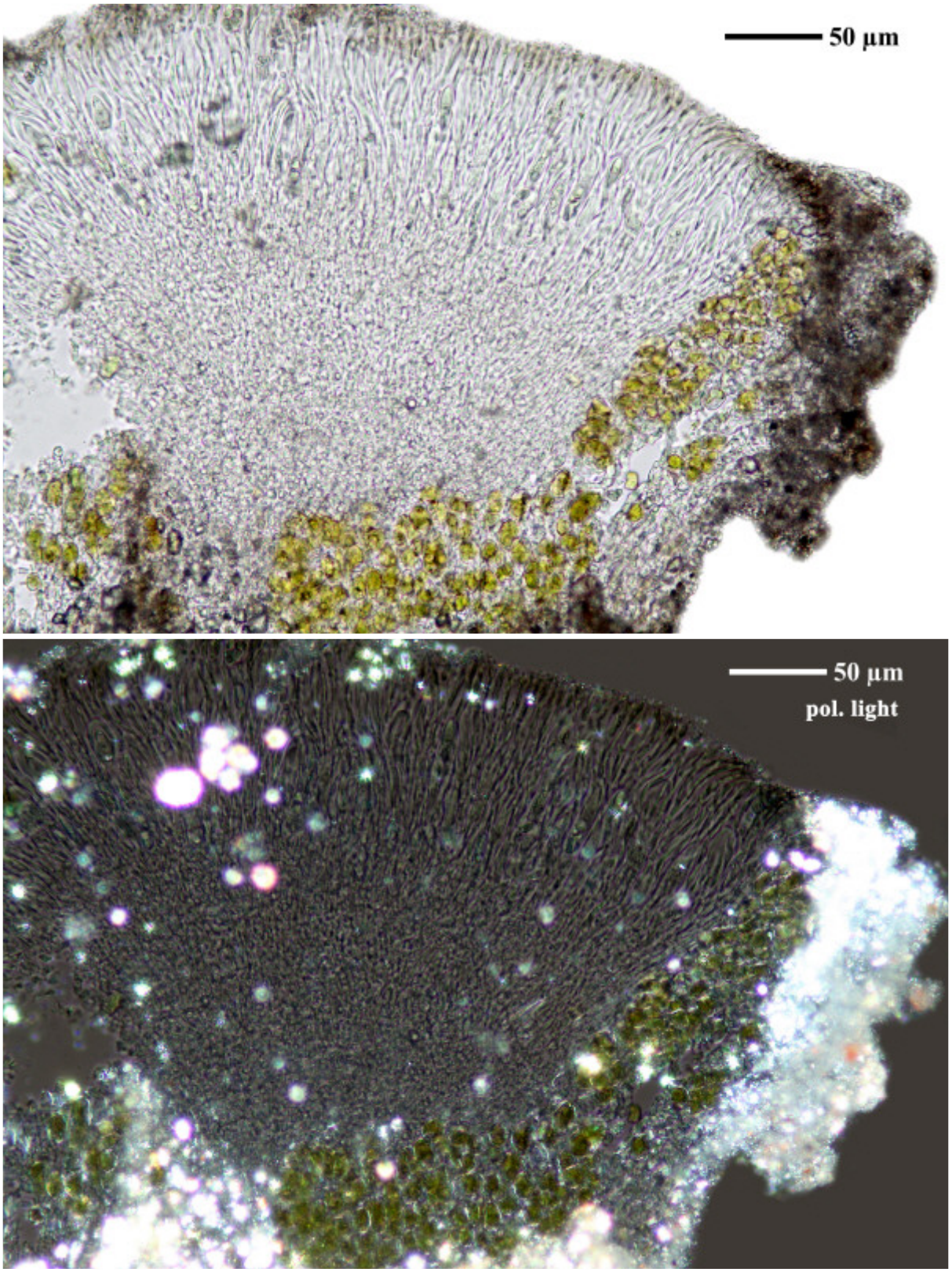
[B 60 0133566], Iran, Kuhgiluyeh o Boirahmad, ca. 30 km on the road from Yassuj to Semirom. 30°49,78' N, 51°21,33' E, 1850 m. Leg. A. A. Maassoumi (1848) & S. R. Safavi, 17. November 2002, det. H. Sipman, 2003. - Accomp. *Rinodinia bischoffii* (Hepp.) S. Massal.



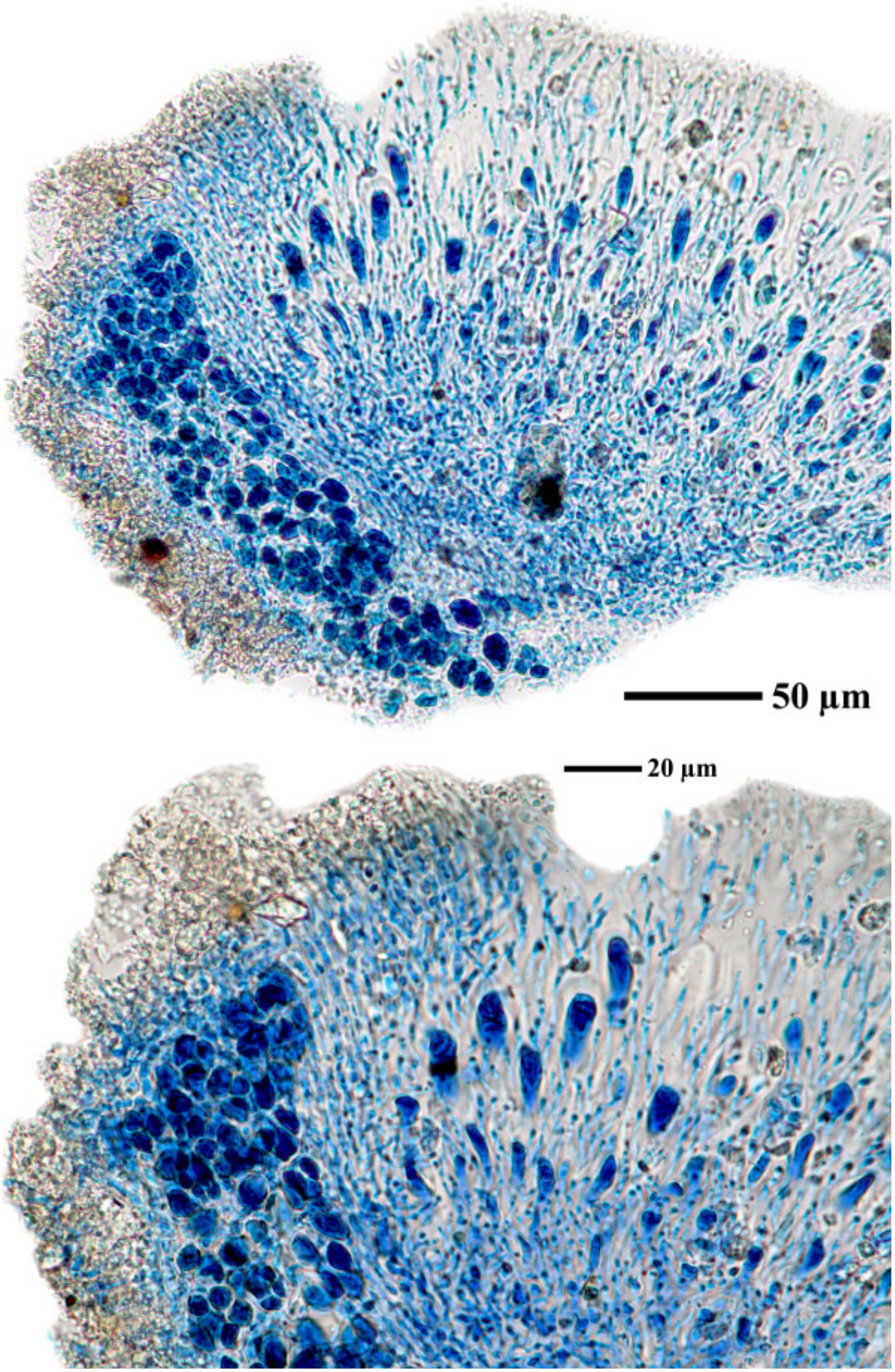




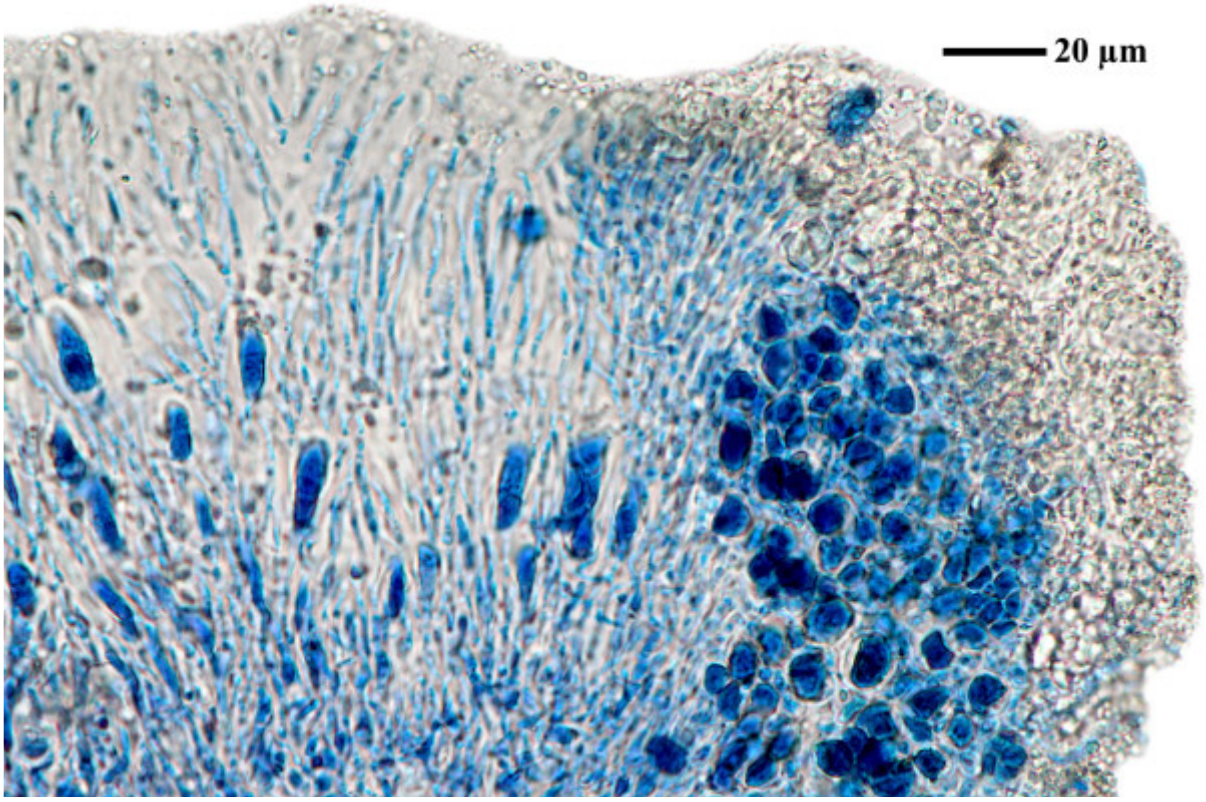
Caloplaca transcaspica

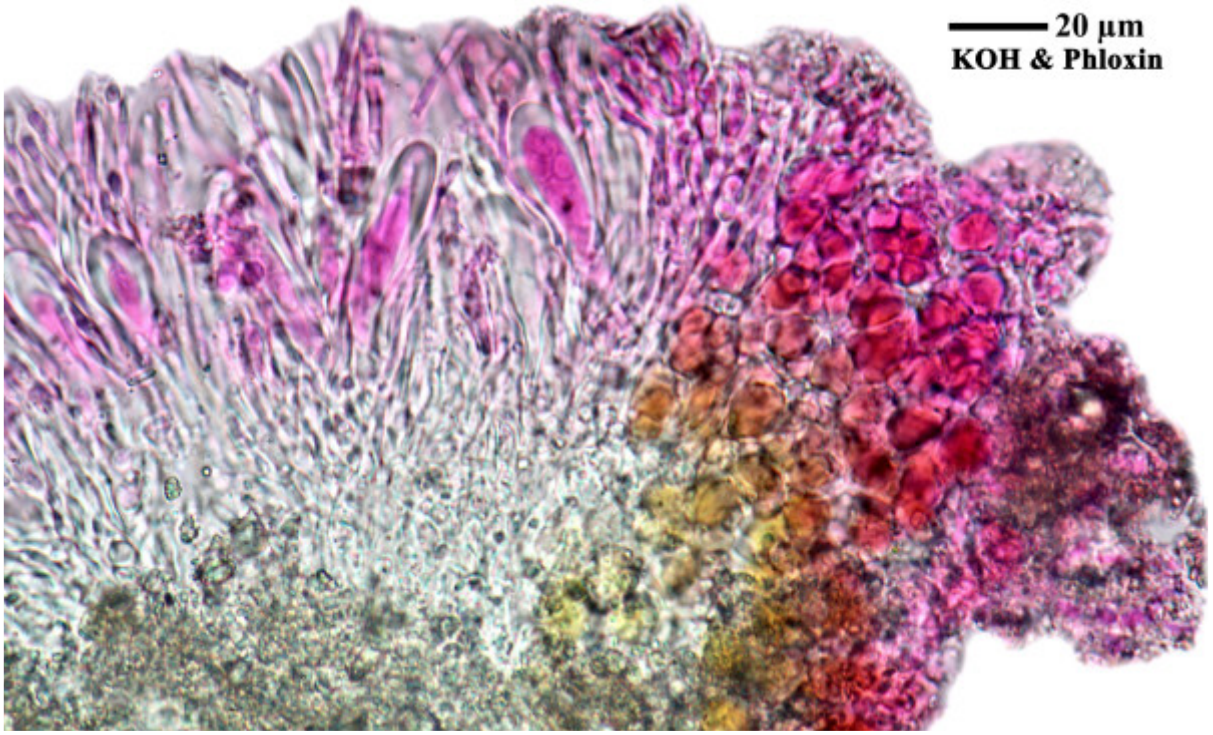


Caloplaca transcaspica

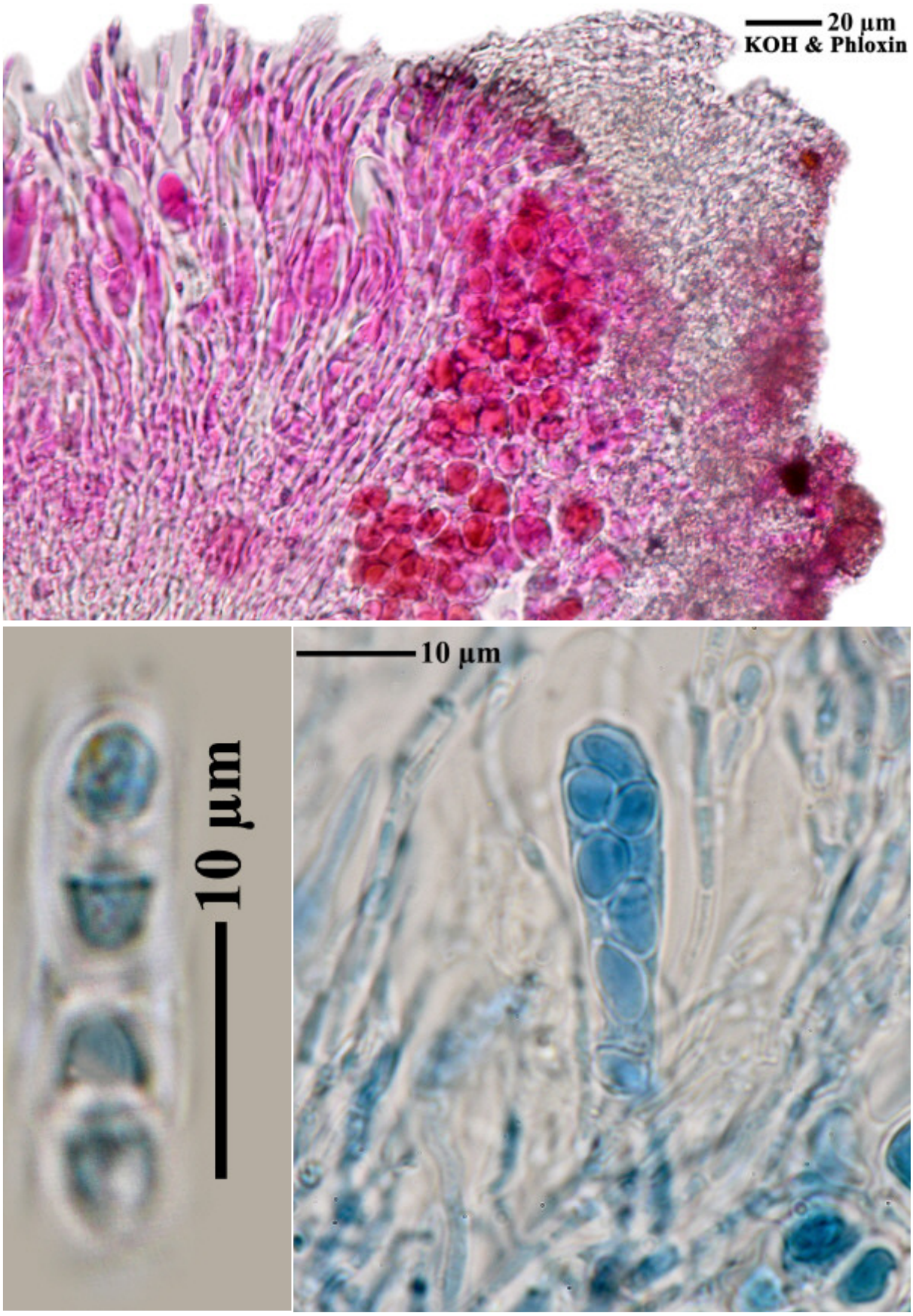


Caloplaca transcaspica





Caloplaca transcaspica



Caloplaca transcaspica

Caloplaca transcaspica (Nyl.) Zahlbr., Cat. Lich. Univers. 7: 189 (1931)
[? = *Caloplaca paulsenii* (Vain.) Zahlbr., Cat. Lich. Univers. 7: 162 (1931)]

[LIAF_40], Afghanistan, Prov. Samangan, 15 km W des Passes Kotal-i-Mirza Atbili (Kotal-i-Rabotak), ca.10 km östlich Aybak, 68°08' E, 36°13' N, 1170 m. An S-exponierten Steilflächen eines Felsrückens aus flachbankigem Kalk. Leg. M. Steiner (44/1b), 05.-06.06.1970. LICHENOTHECA AFGHANICA NR. 40.



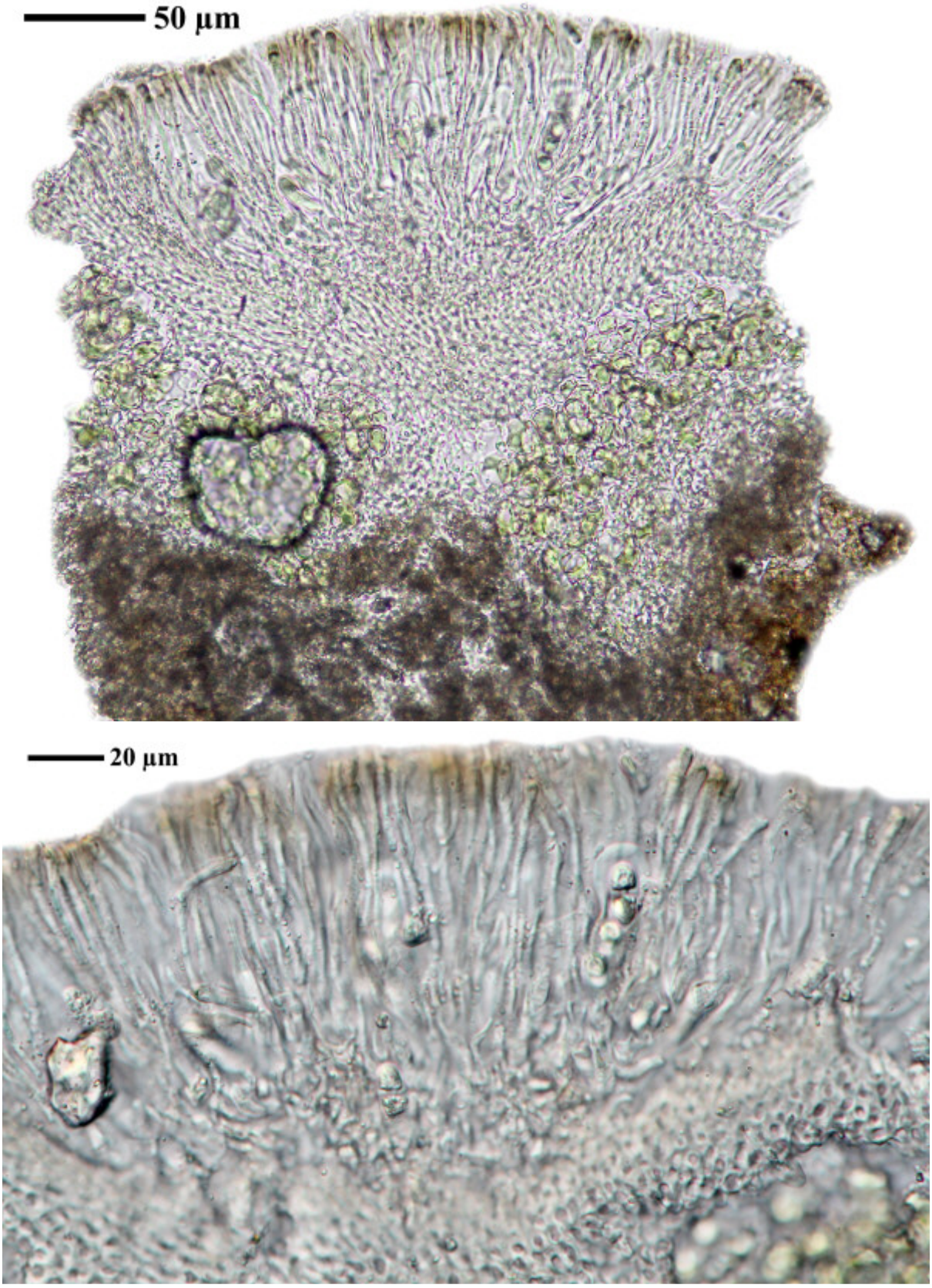




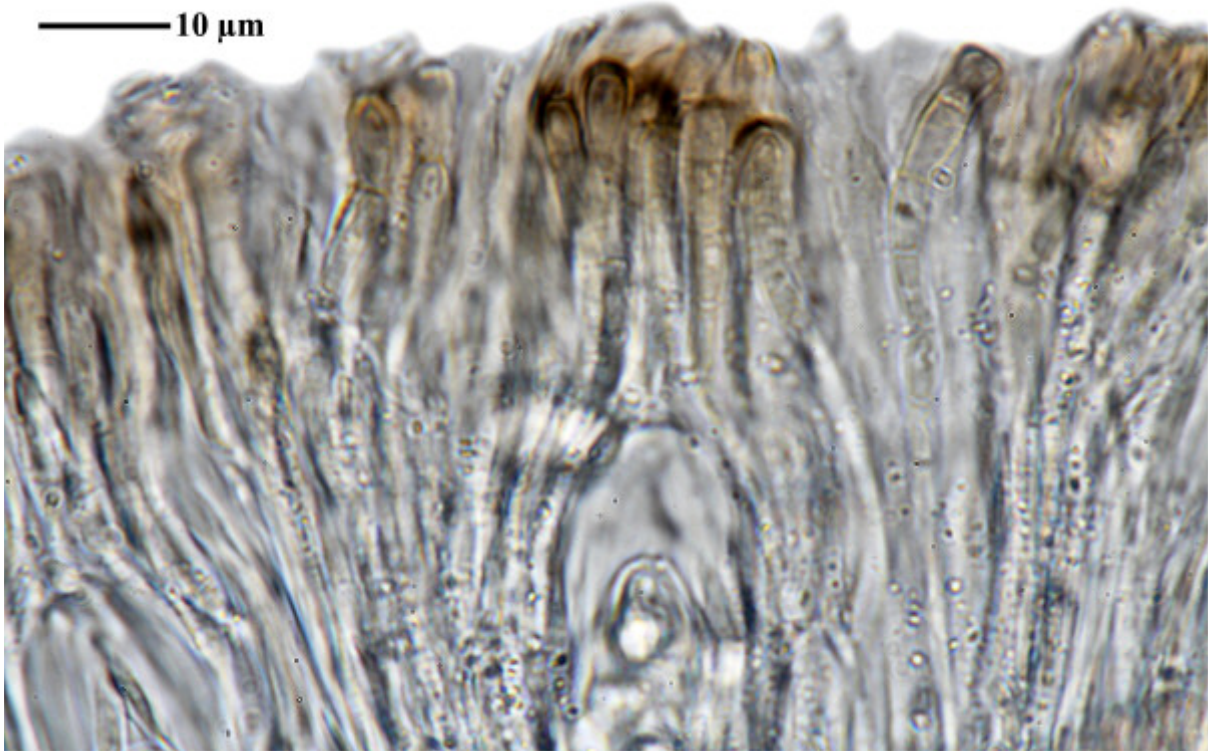
Caloplaca transcaspica

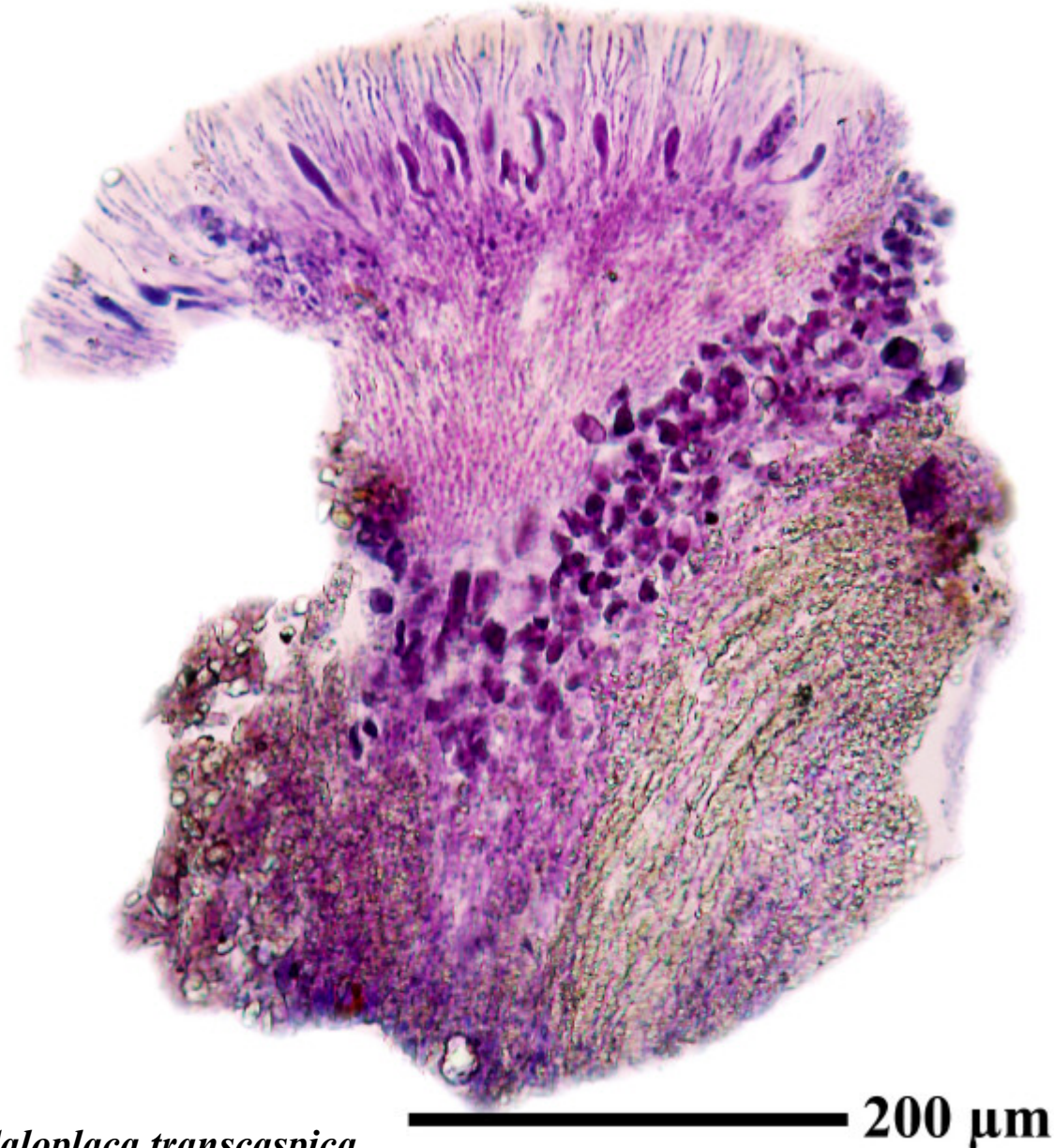


Caloplaca transcaspica

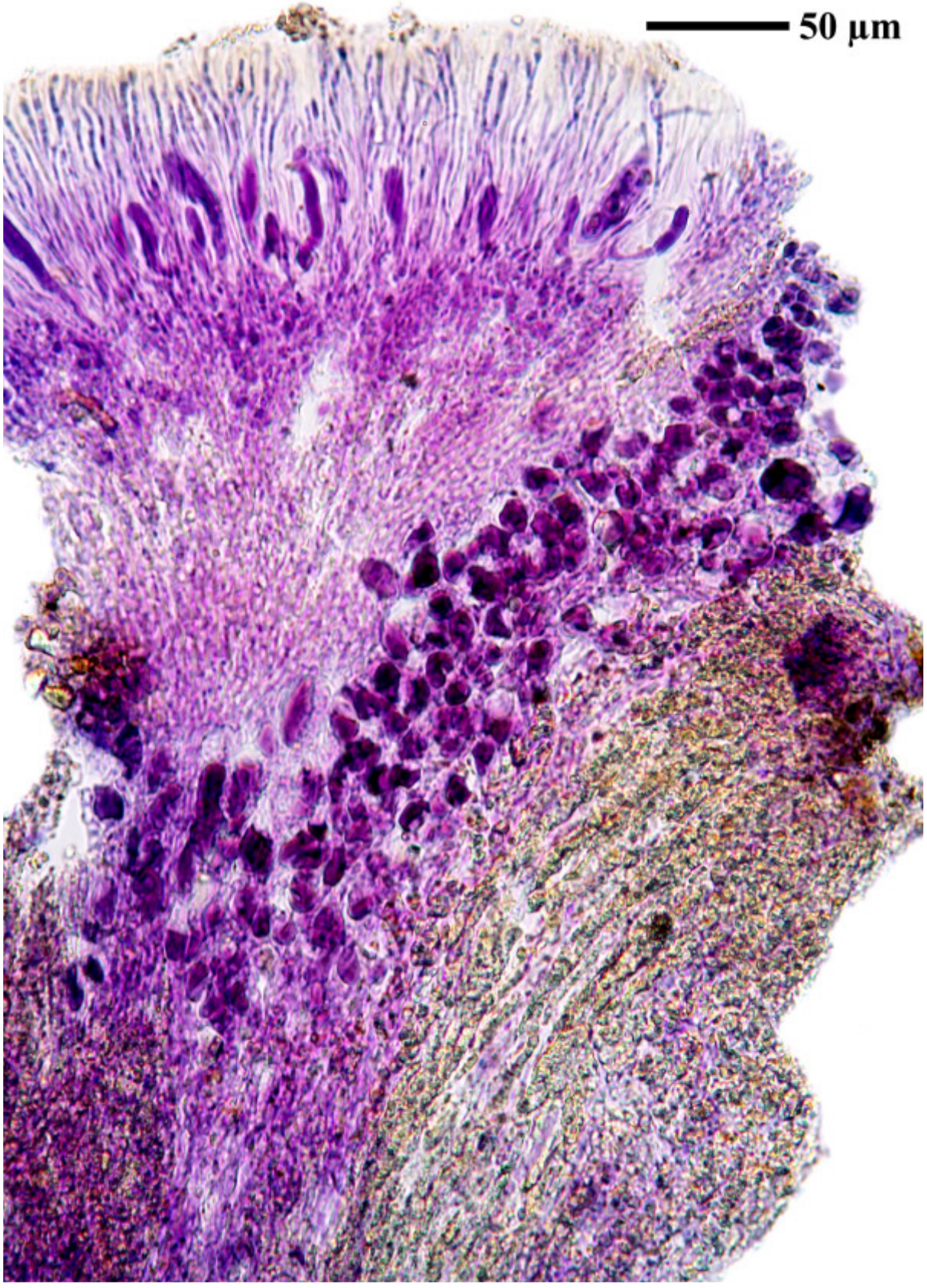


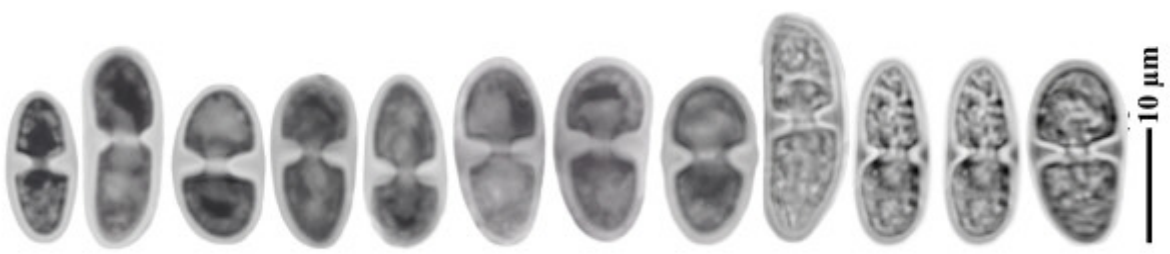
Caloplaca transcaspica



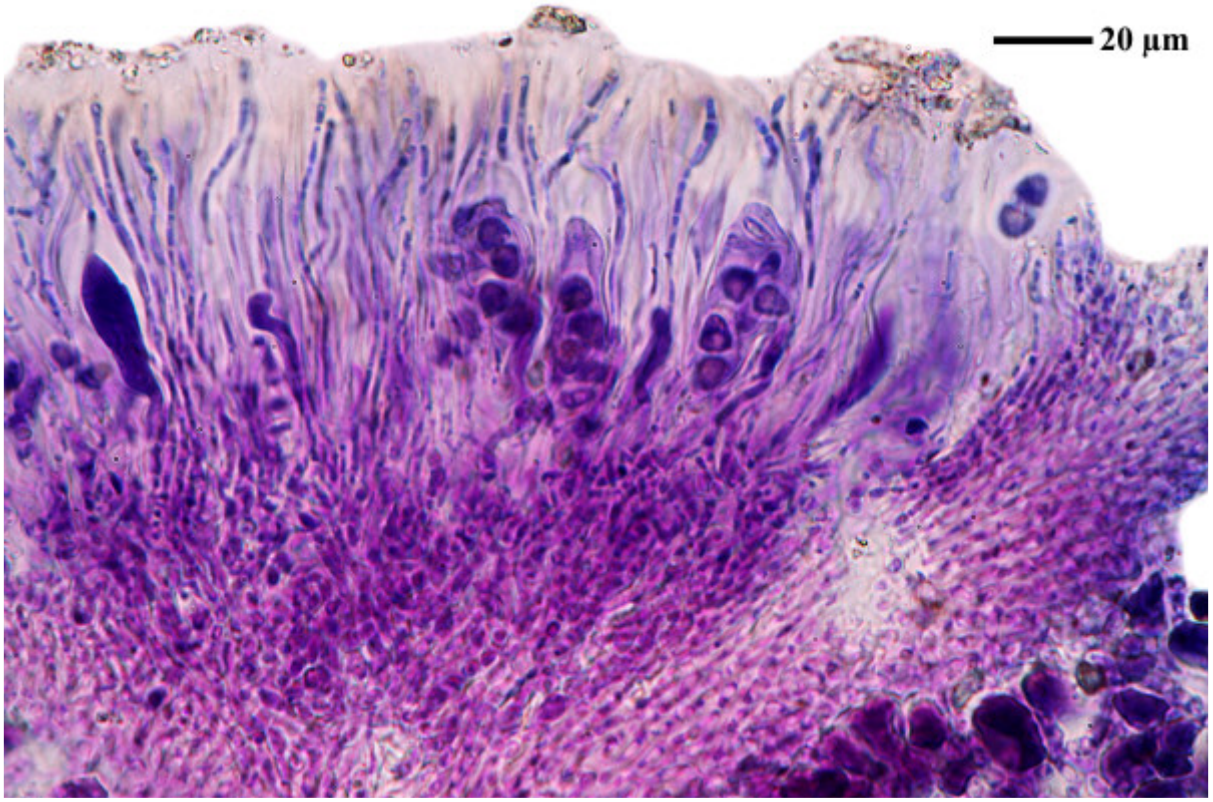


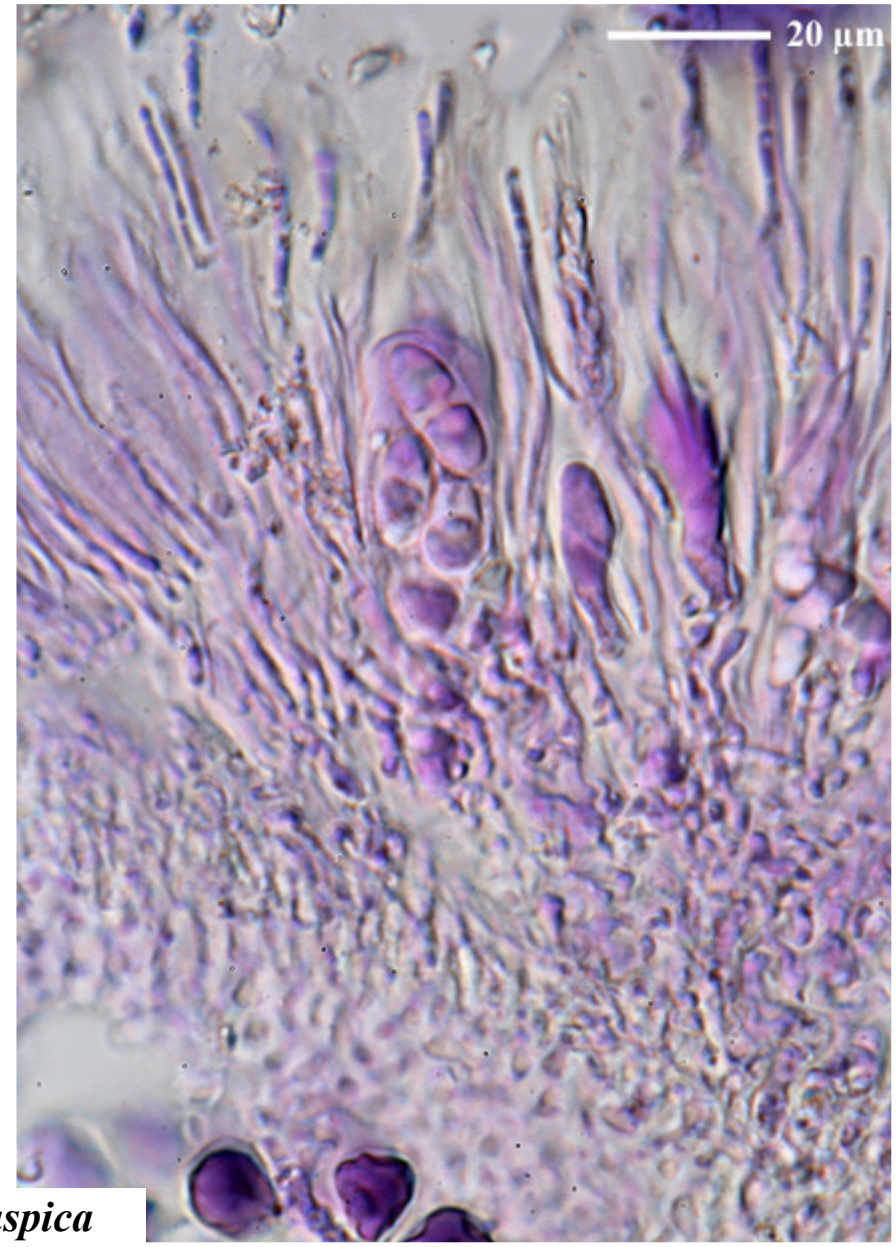
Caloplaca transcaspica





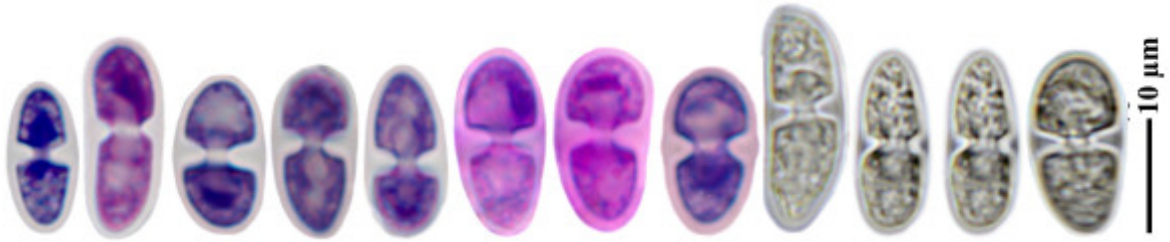
Caloplaca transcaspica





Caloplaca transcaspica





Caloplaca transcaspica

Caloplaca trilocularis Zahlbr.

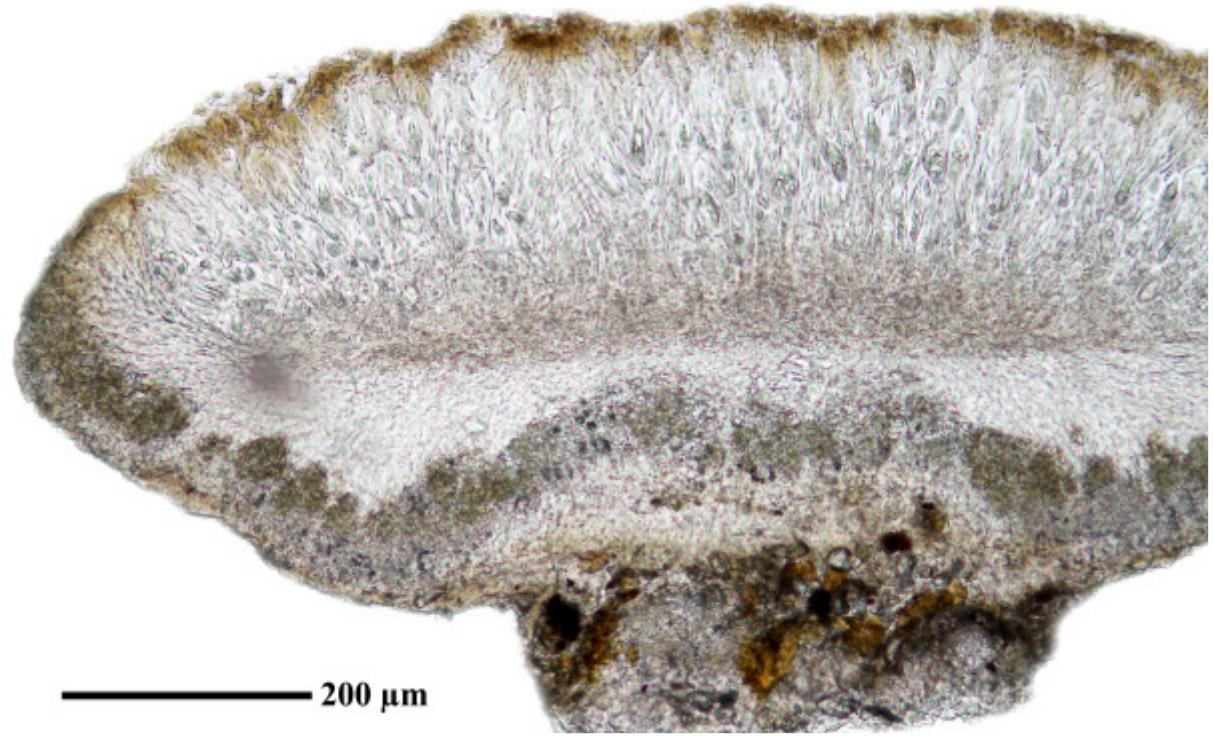
Spores trilocular, 20-24 x 10.5-12.6 µm, septum 10.5-14.7 µm (FS)

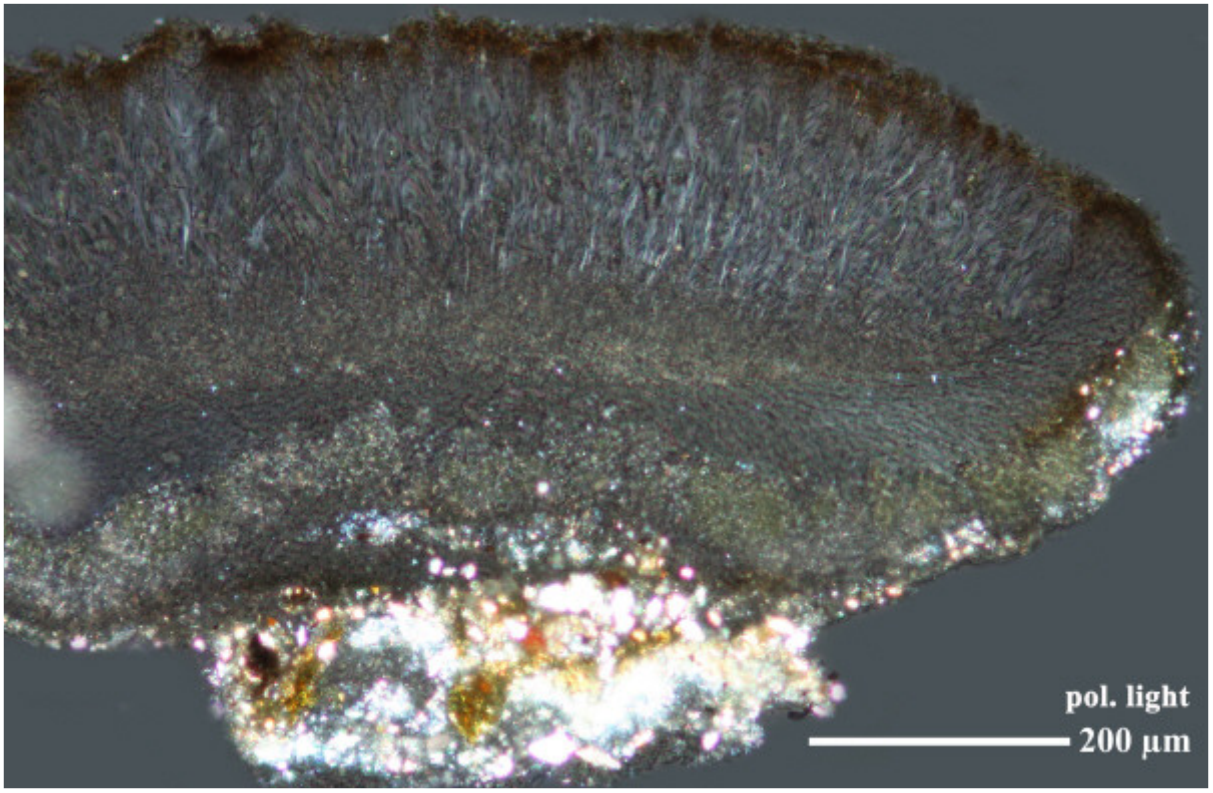
[BR5030067754719], China, Yunnan Prov., Yunlong Co. road to Mt. Zibenshan, mixed deciduous and sclerophyllous forest, on stone. 25°45'50'' N, 99°06'20'' E, 2599 m, UTM: 47RNJ1049. TOPOTYPE. Leg. A. Aptroot (56568), 24. October 2002, det. A. Aptroot, 2003.



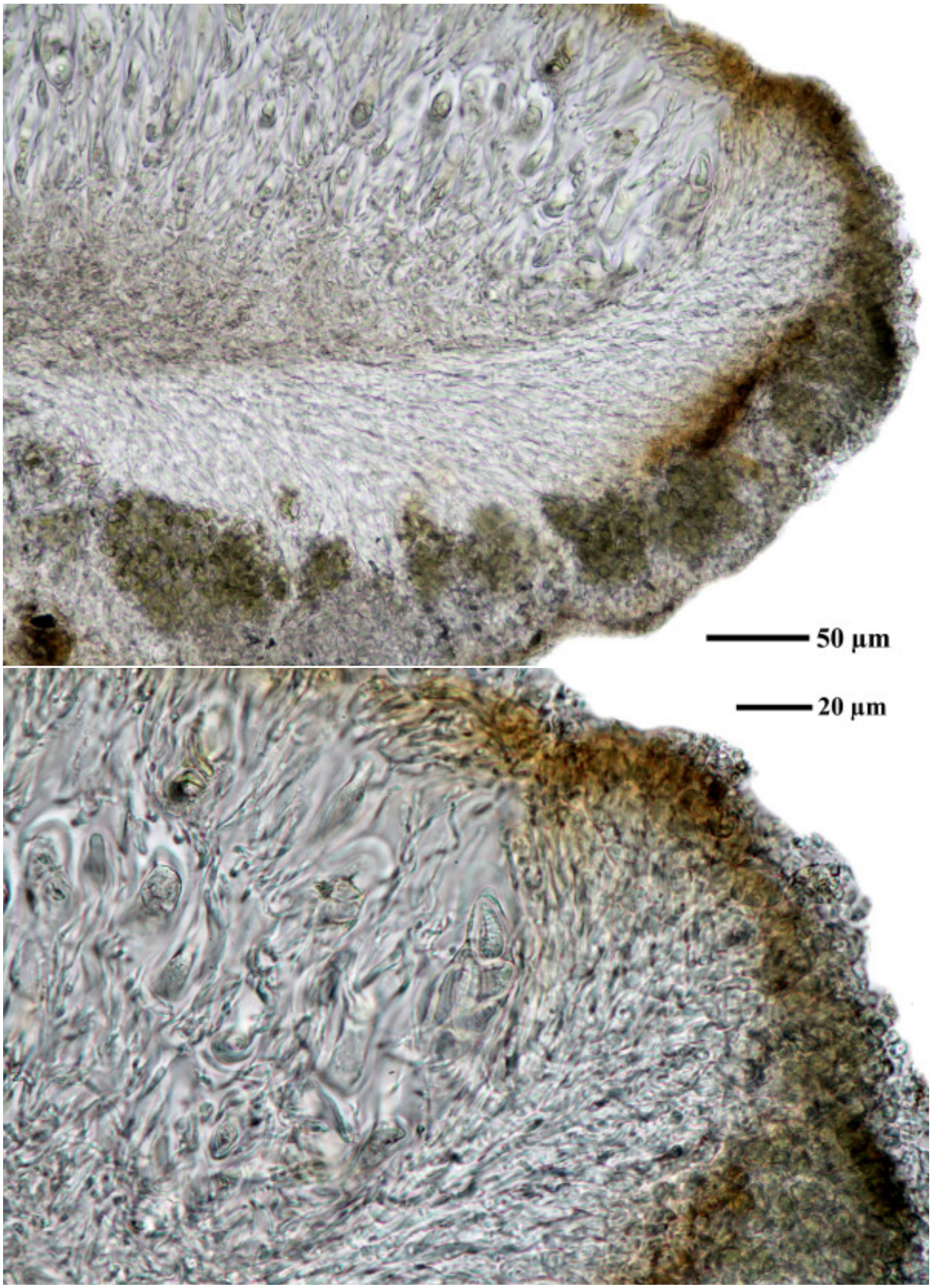


Caloplaca trilocularis

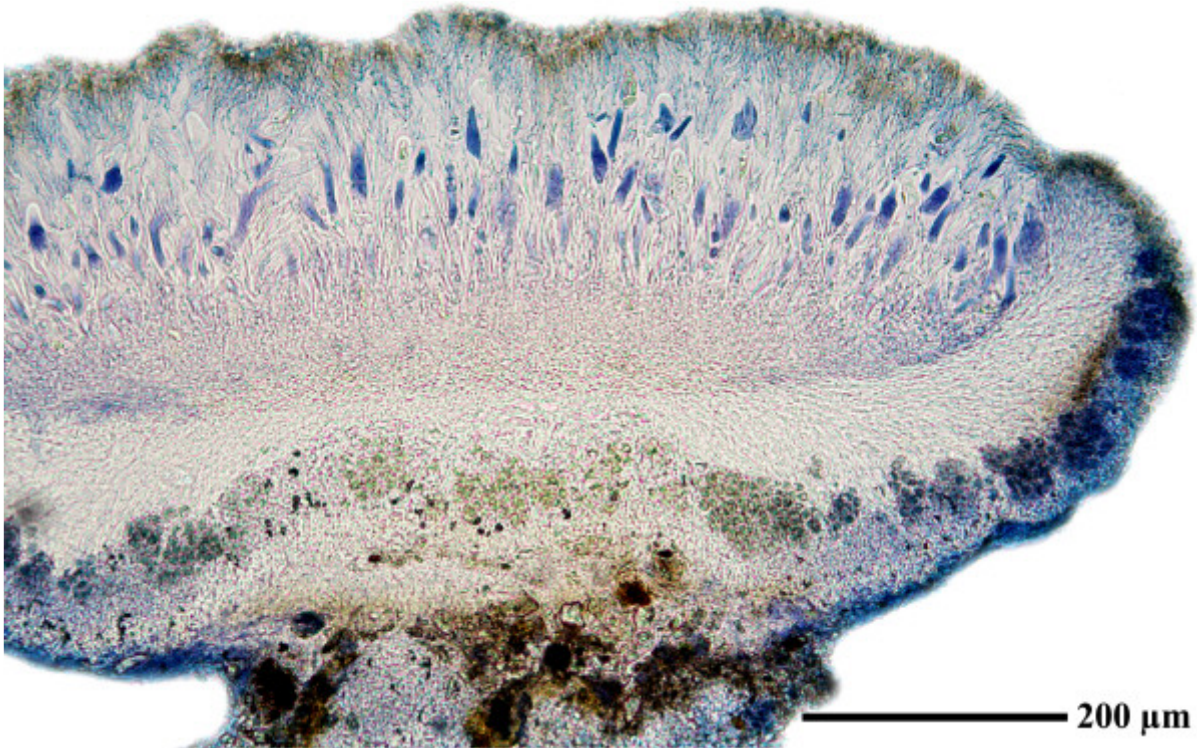


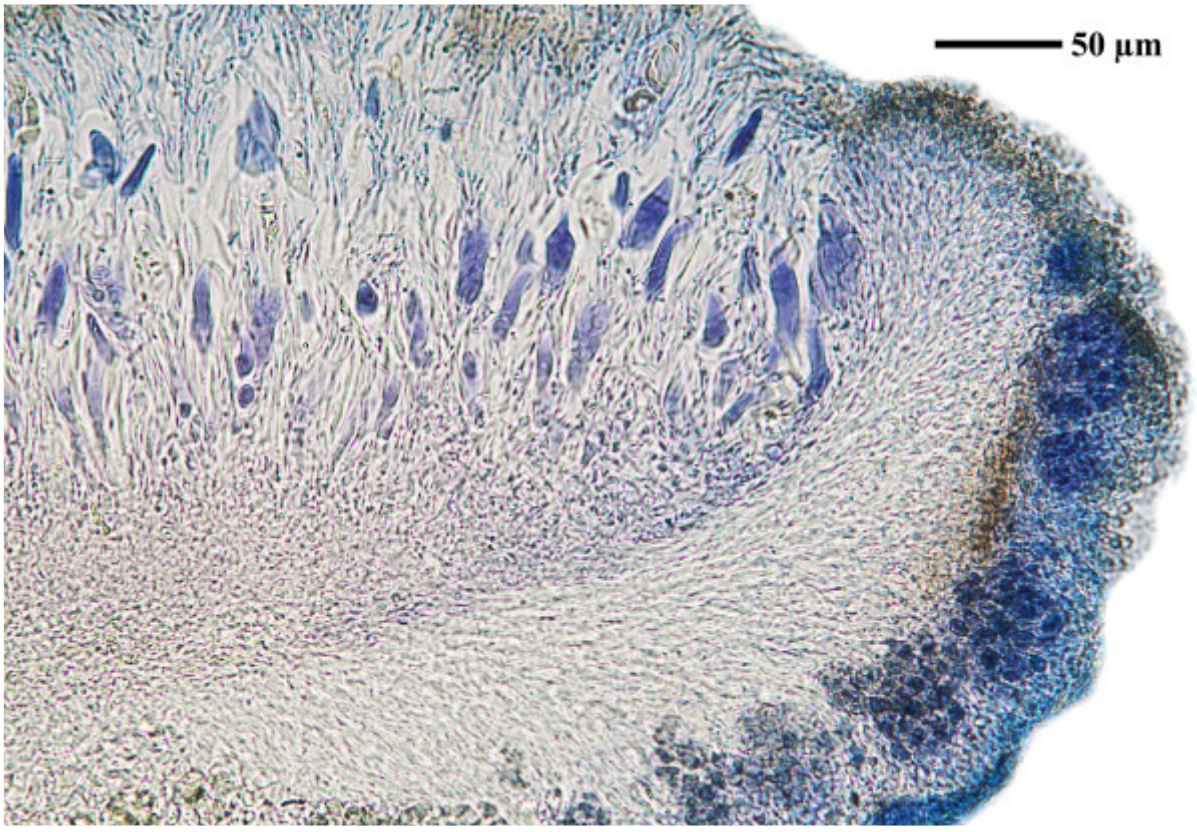


Caloplaca trilocularis

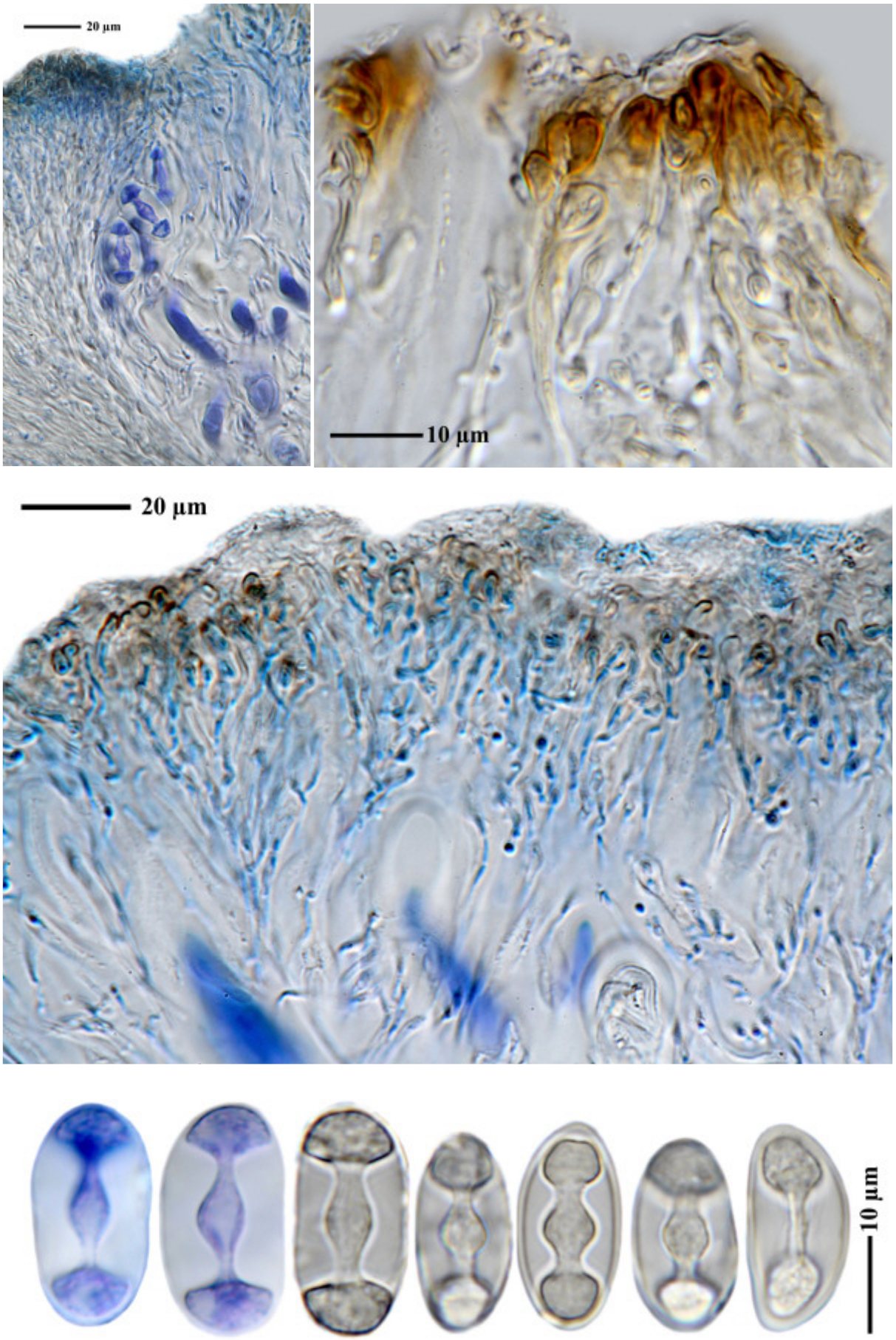


Caloplaca trilocularis





Caloplaca trilocularis



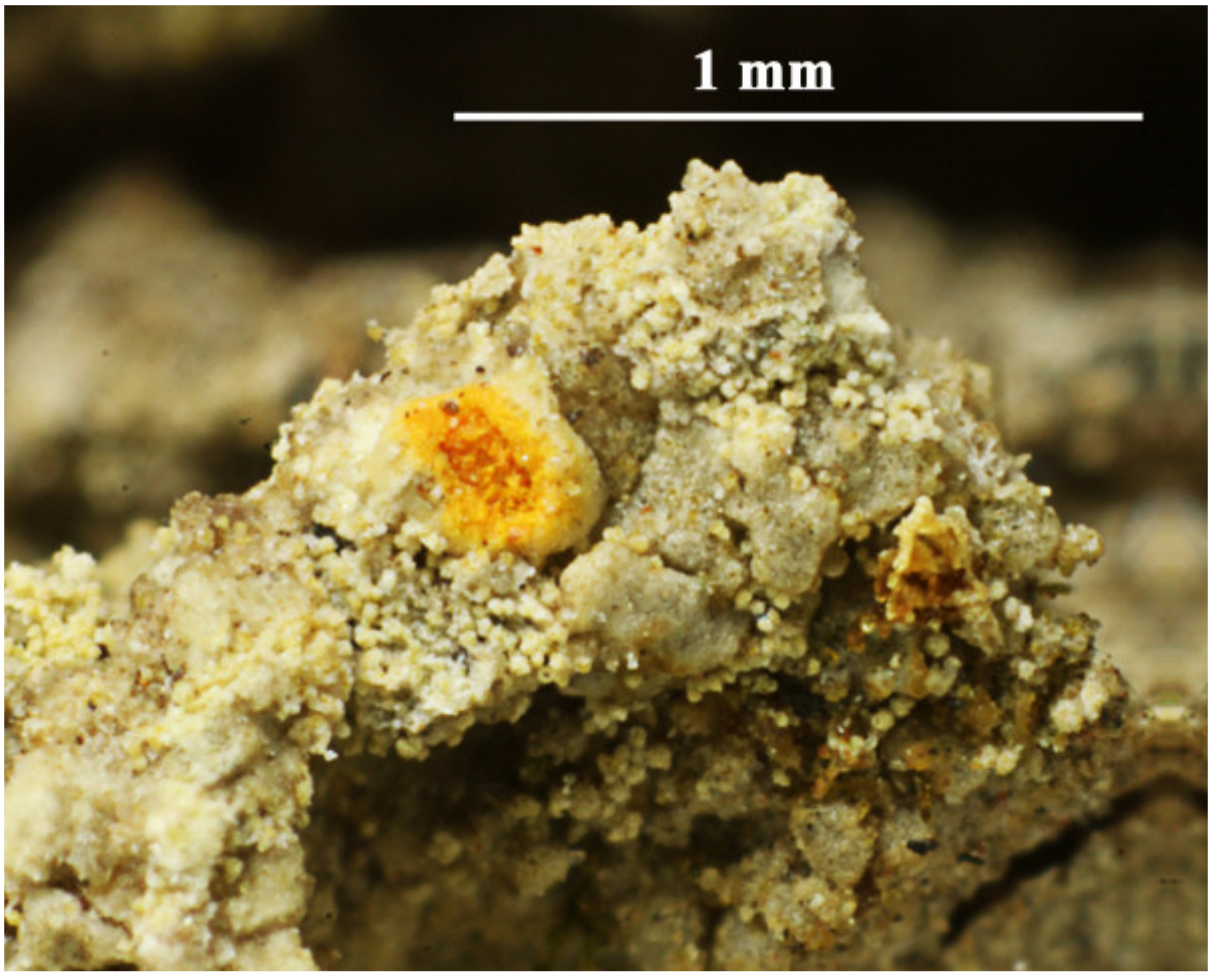
Caloplaca trilocularis

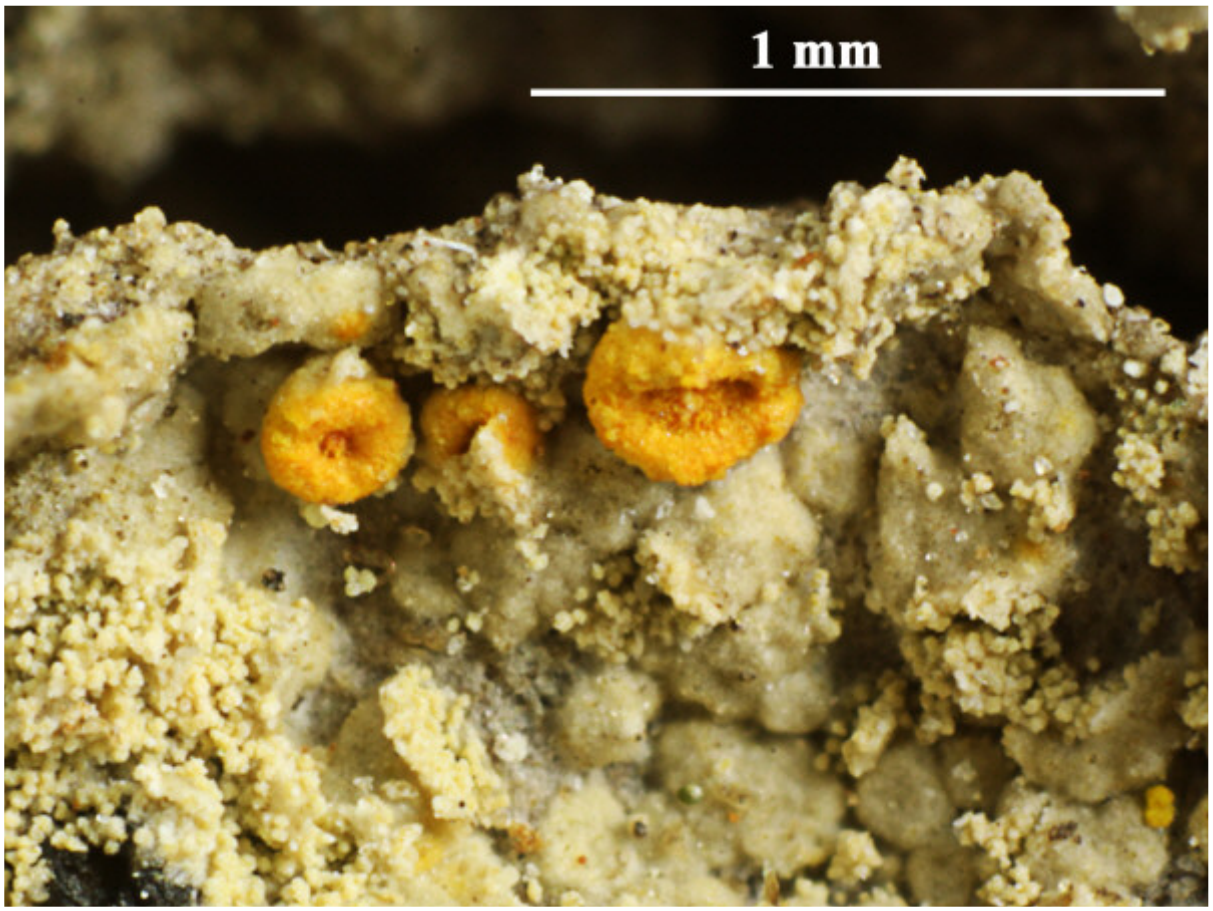
Caloplaca ulcerosa Coppins & P. James

On bark. Spores 11-14.5 x 5.5-6.5 µm, septum 3.6-7 µm. Lit. Lichenologist 11(2): 139 (1979)

[19407], USA, South Dakota, Grant Co., Blue Cloud Benedictine Abbey ca. 1.6 km E of Marvin, open pastureland with wooded gulches and abundant granite erratics, 45°15'05" N, 95°53'28" W, 467 m, on deciduous trees. Leg. M.K. Advaita (No. 4915), 18. May 2005, det. C. Wetmore. TELOSCHISTACEAE EXSICCATI NR. 95 DISTRIBUTED BY C. WETMORE.



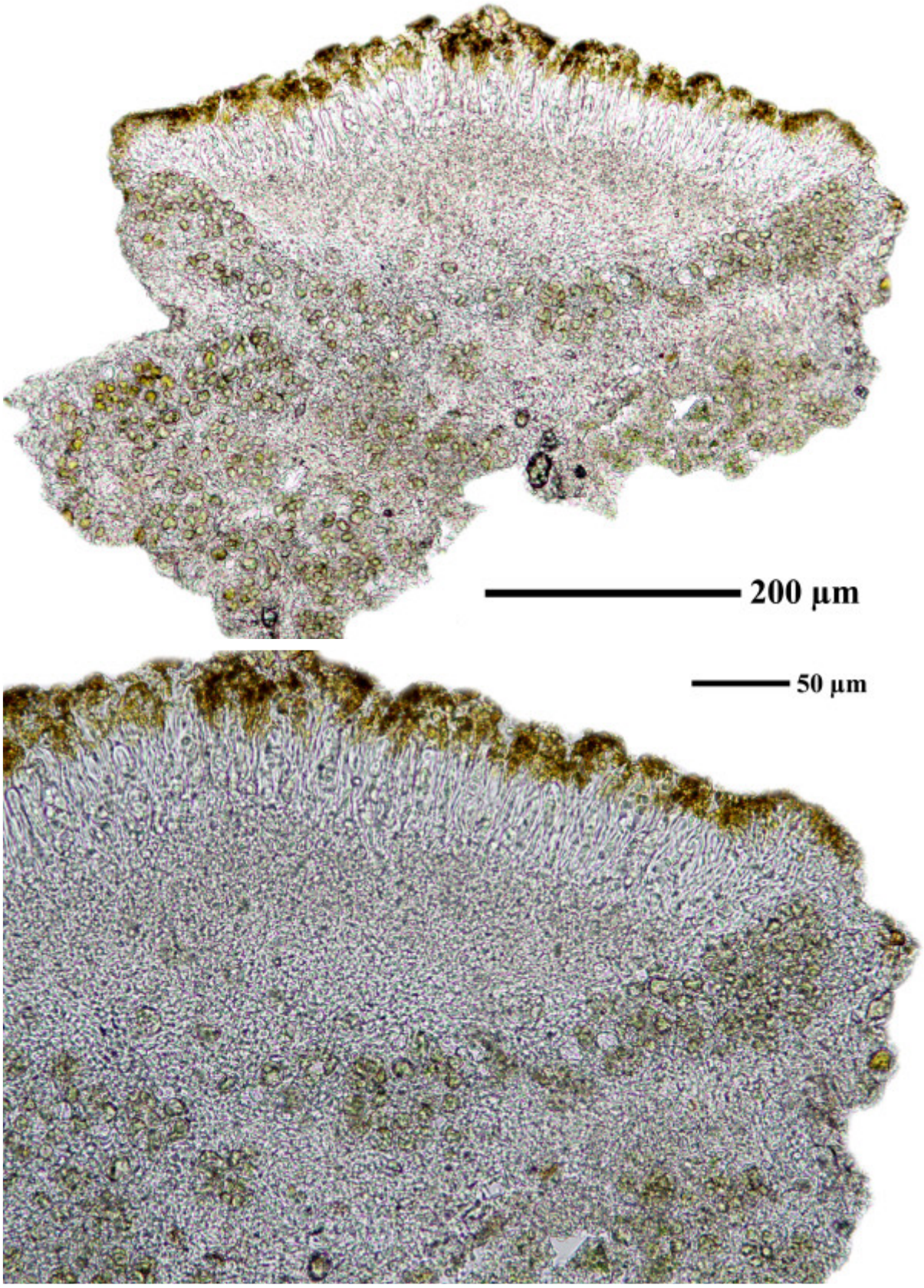




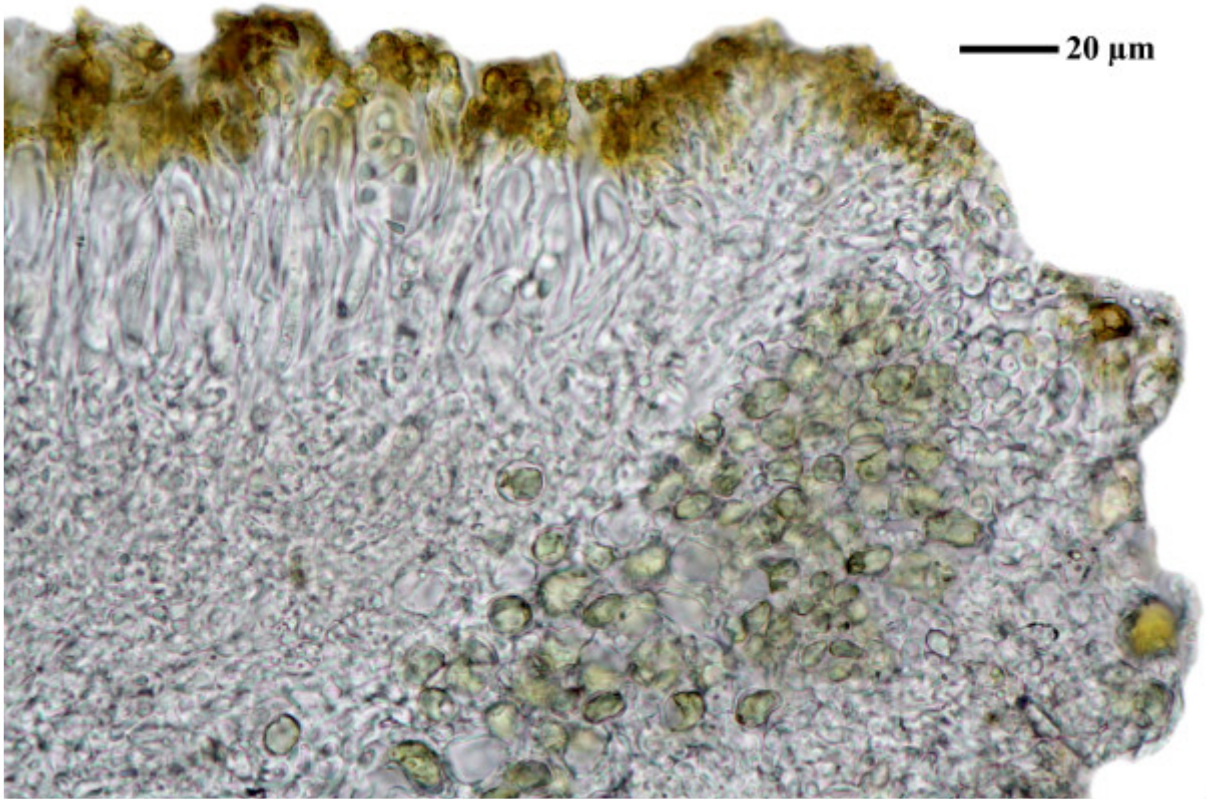
Caloplaca ulcerosa

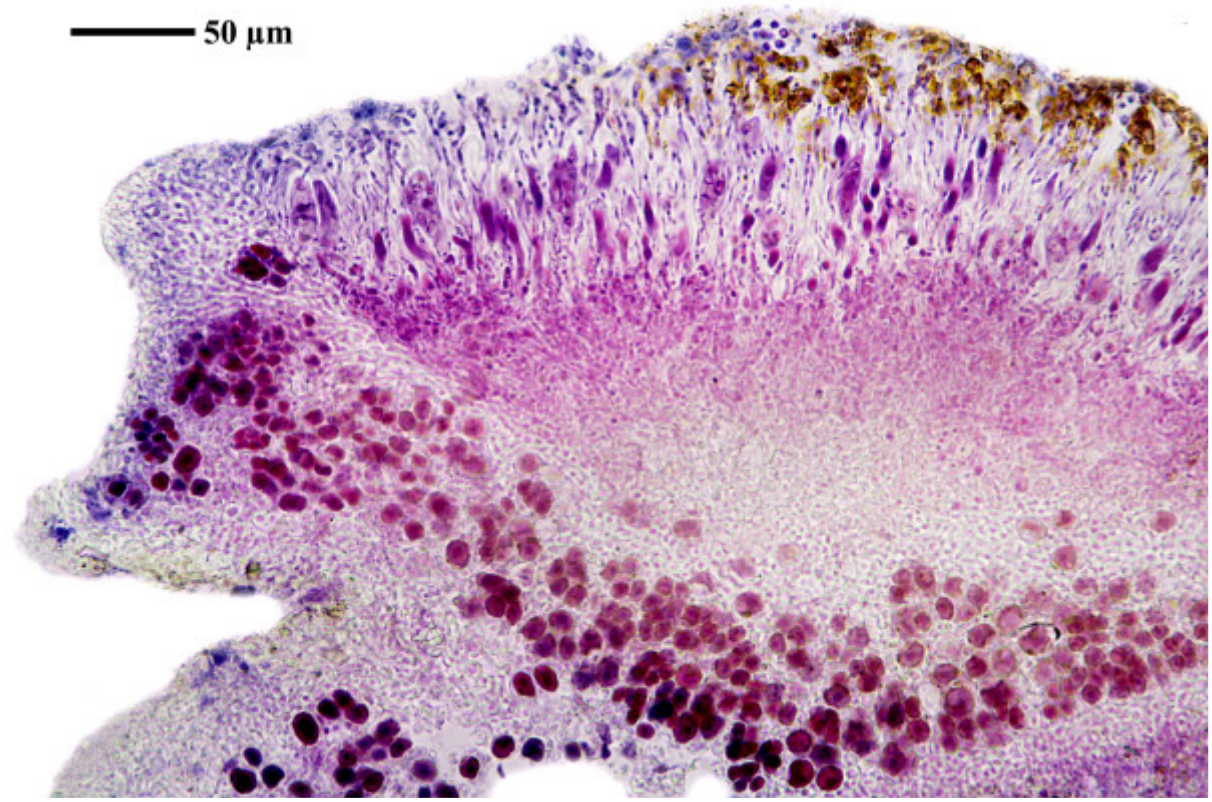


Caloplaca ulcerosa



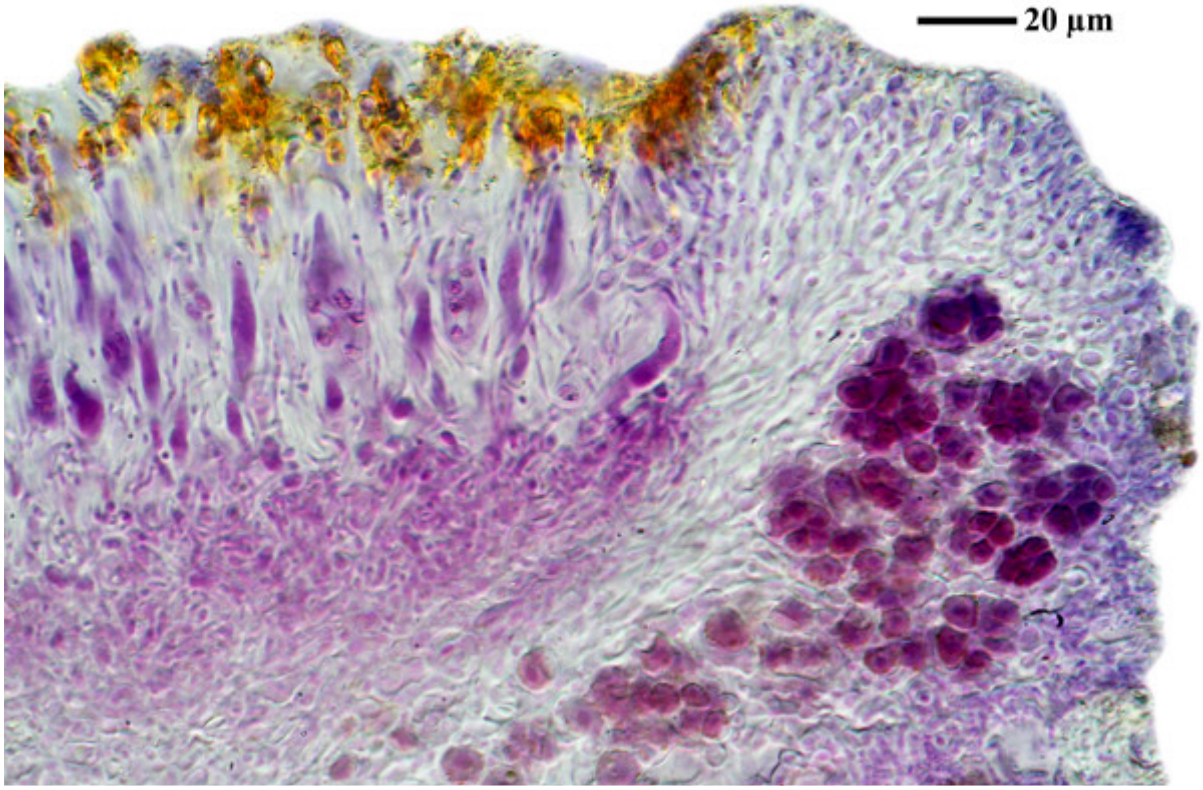
Caloplaca ulcerosa



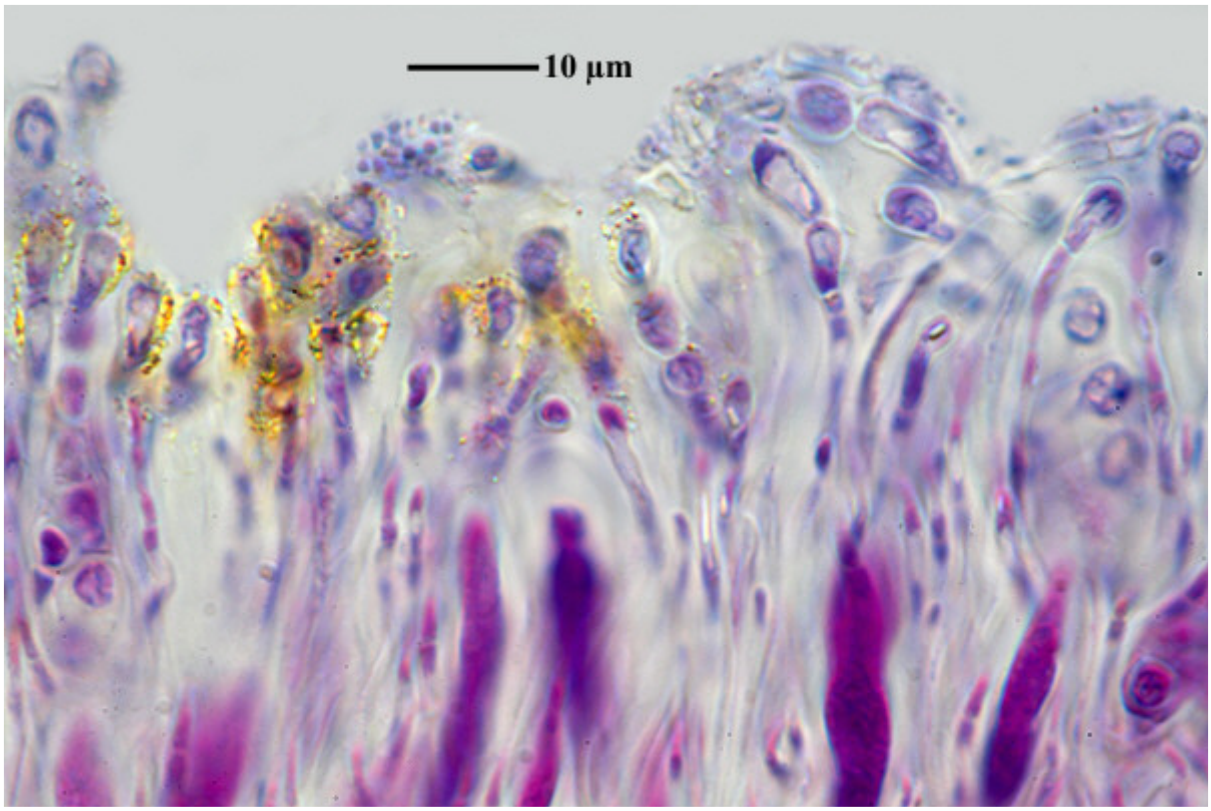


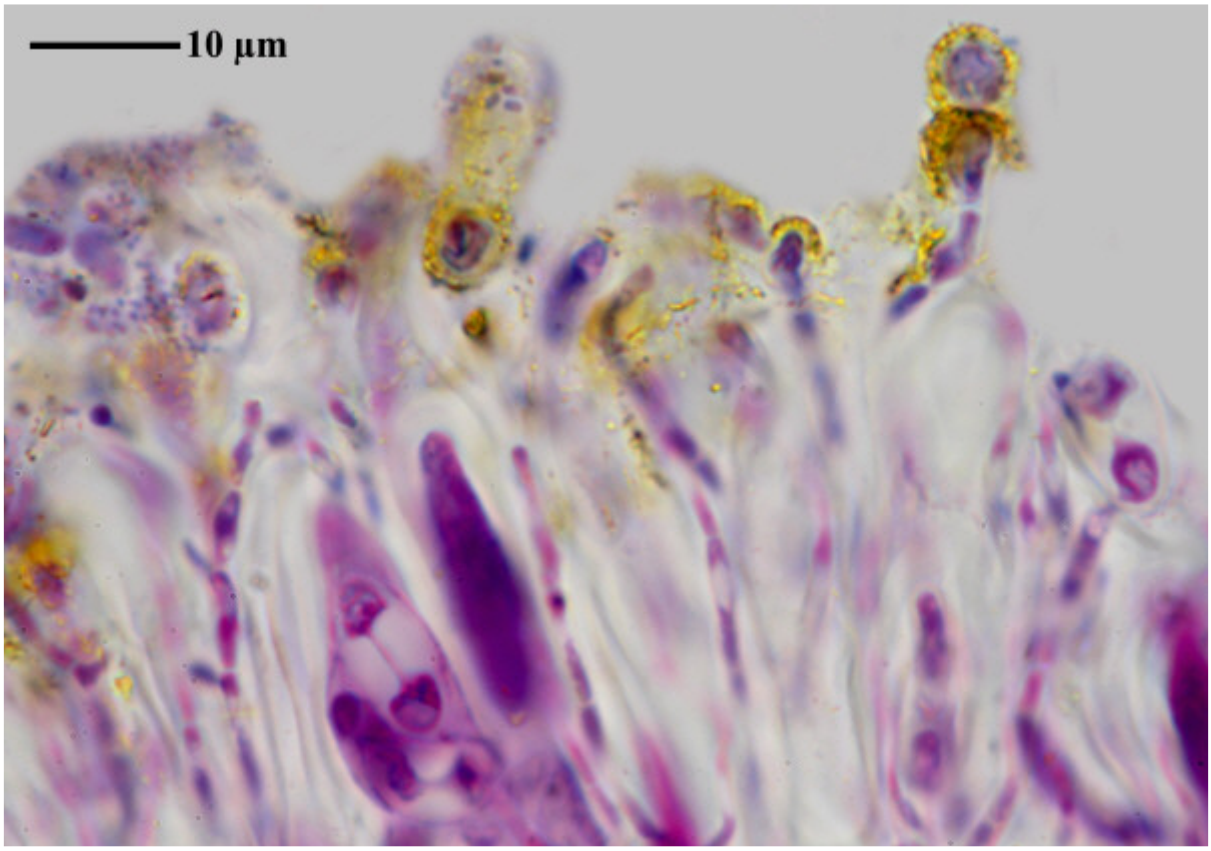
Caloplaca ulcerosa



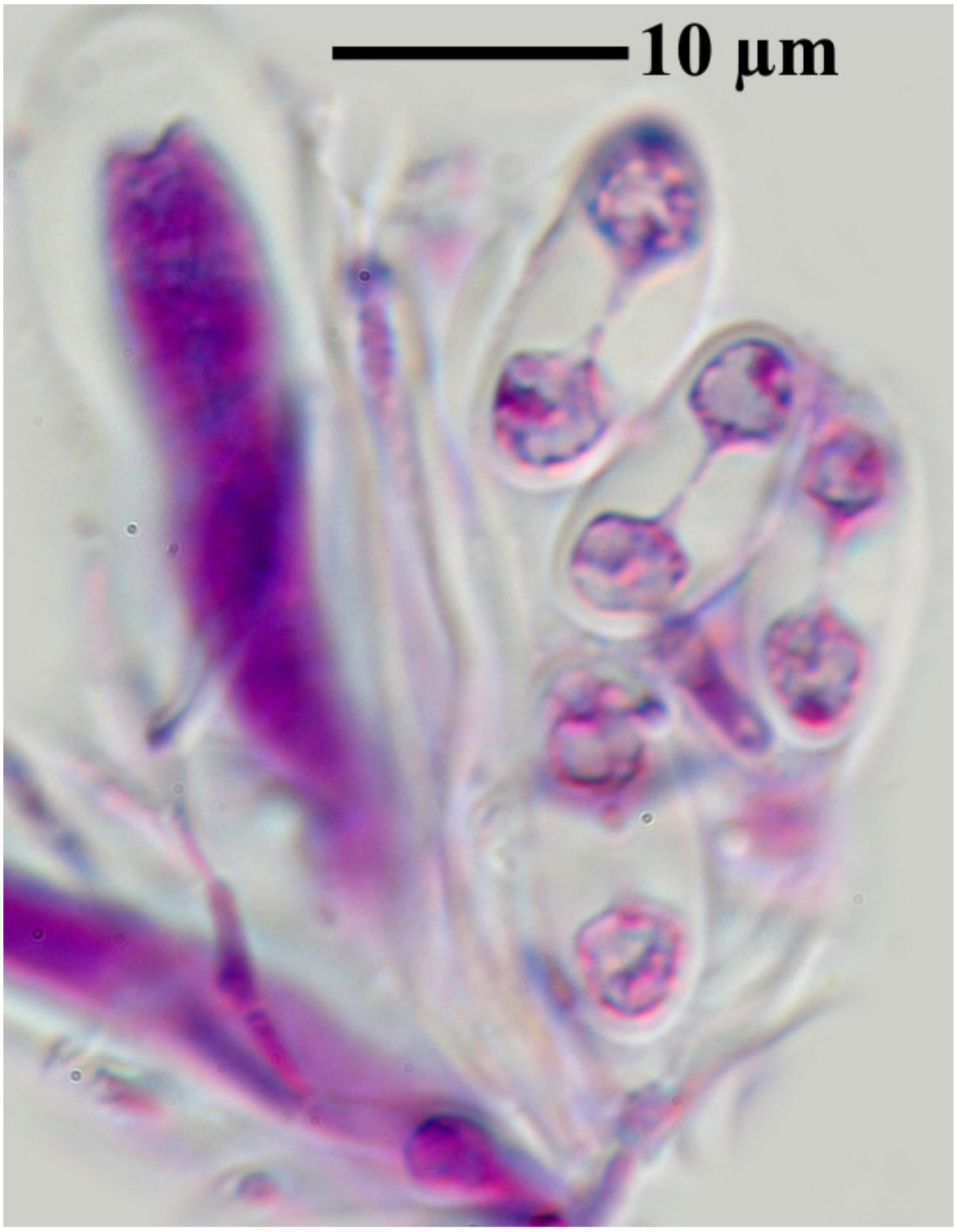


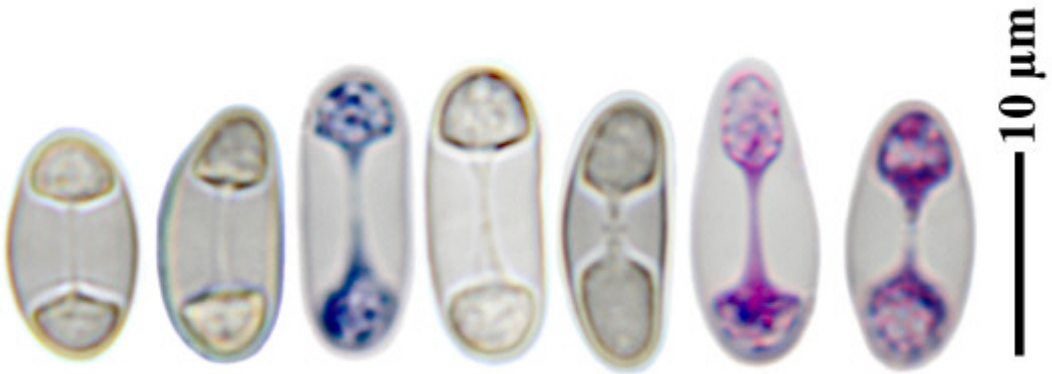
Caloplaca ulcerosa





Caloplaca ulcerosa





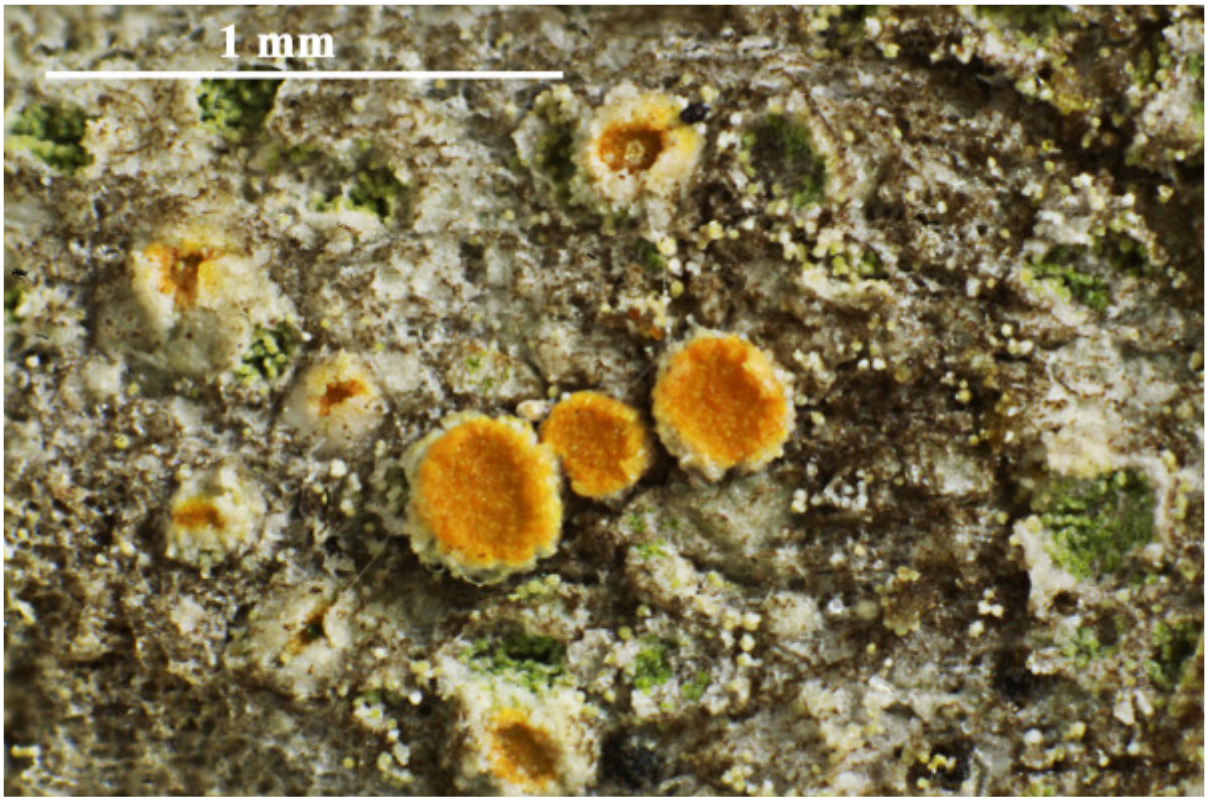
Caloplaca ulcerosa

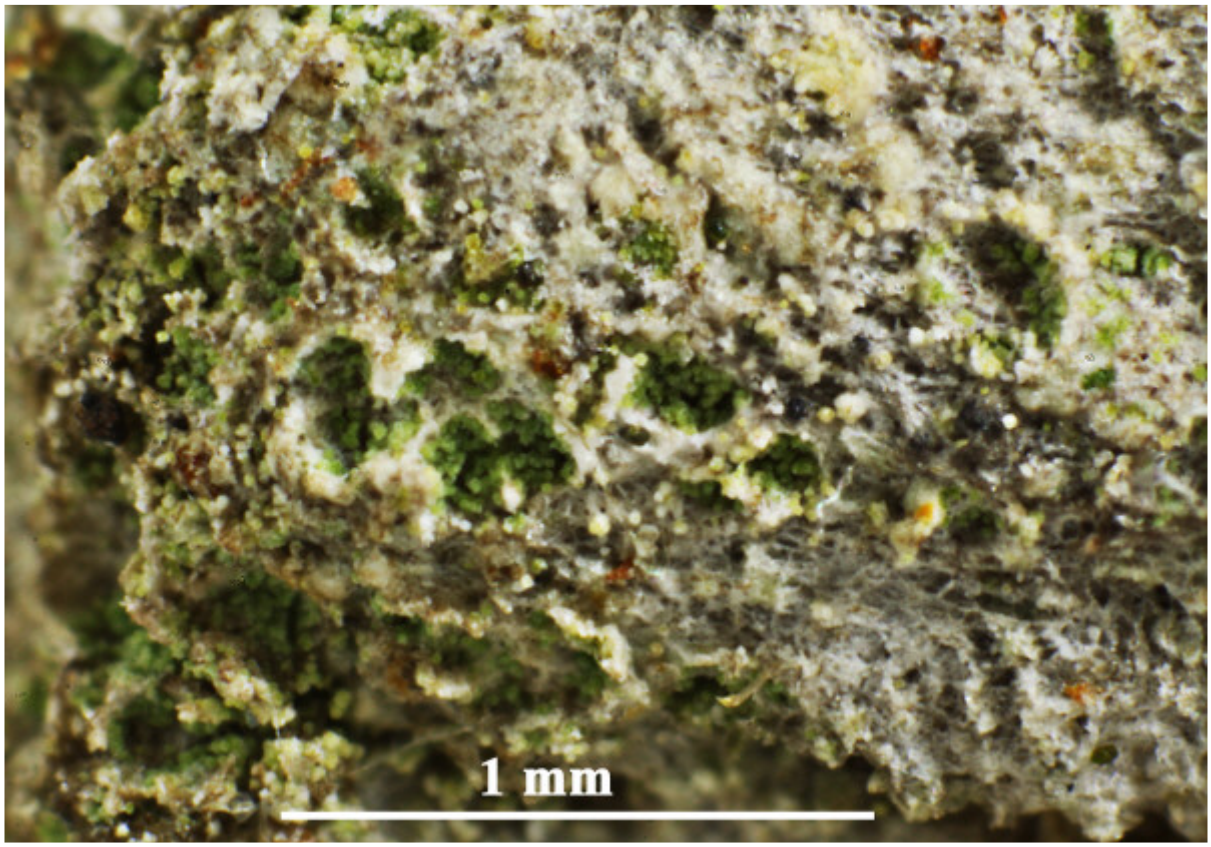
Caloplaca ulcerosa Coppins & P. James

On bark.

[ABL 74951], Schweden, Öland, Stenåsa camping and Alvar near Stenåsa, UTM 599-6263, onAlvar on Populus. Leg. A. Aptroot 11.06.2016, det. A. Aptroot 2016.







Caloplaca ulcerosa

Caloplaca ulmorum (Fink) Fink

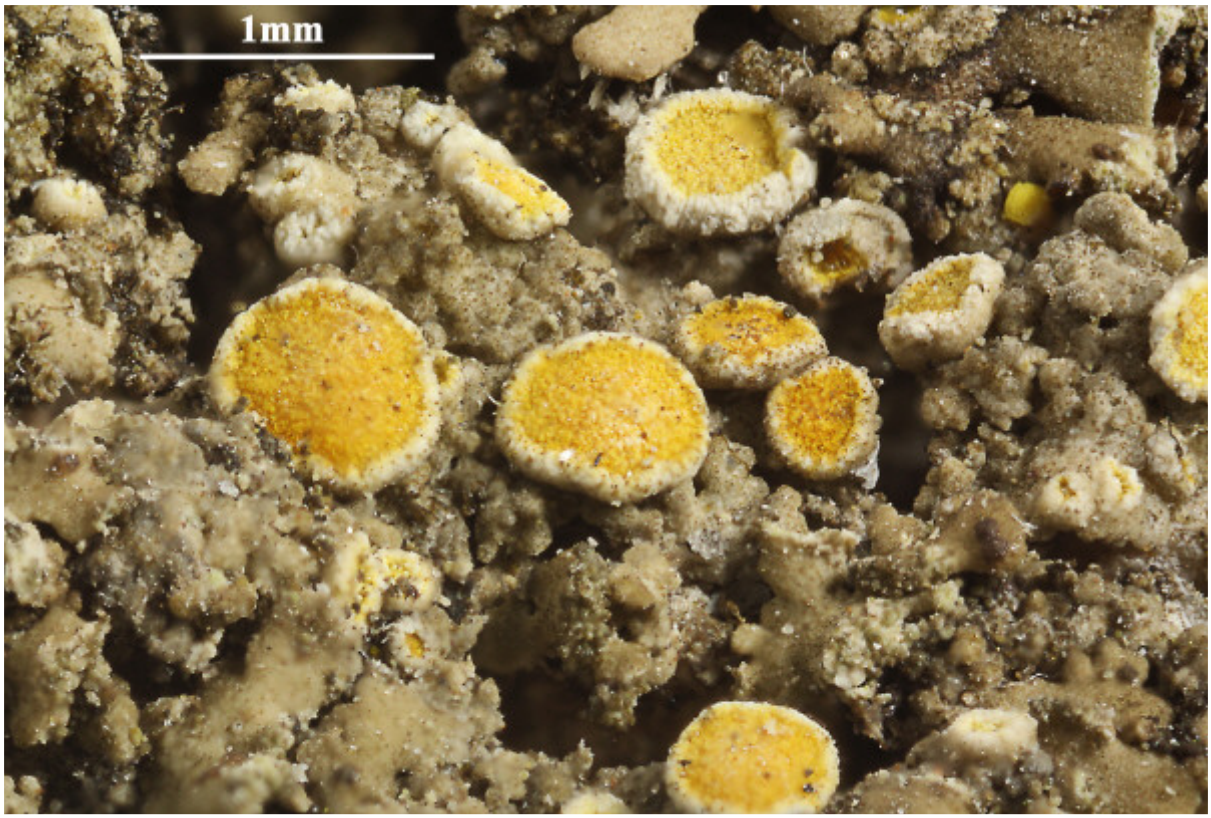
Spores 12-13.5 x 6-7.5 µm, septum 3.8-5 µm (FS)

[BR5030110072258V], USA, Nebraska, Blaine Co., ca.8 mi S of Halsey, Nebraska National Forest, Bessey Ranger District, Whitail Campground, on green ash, locally abundant. 41°47.86' N, 100°15.75' W, 2690 ft. Leg. M. K. Advaita (9594), 14. May 2010.



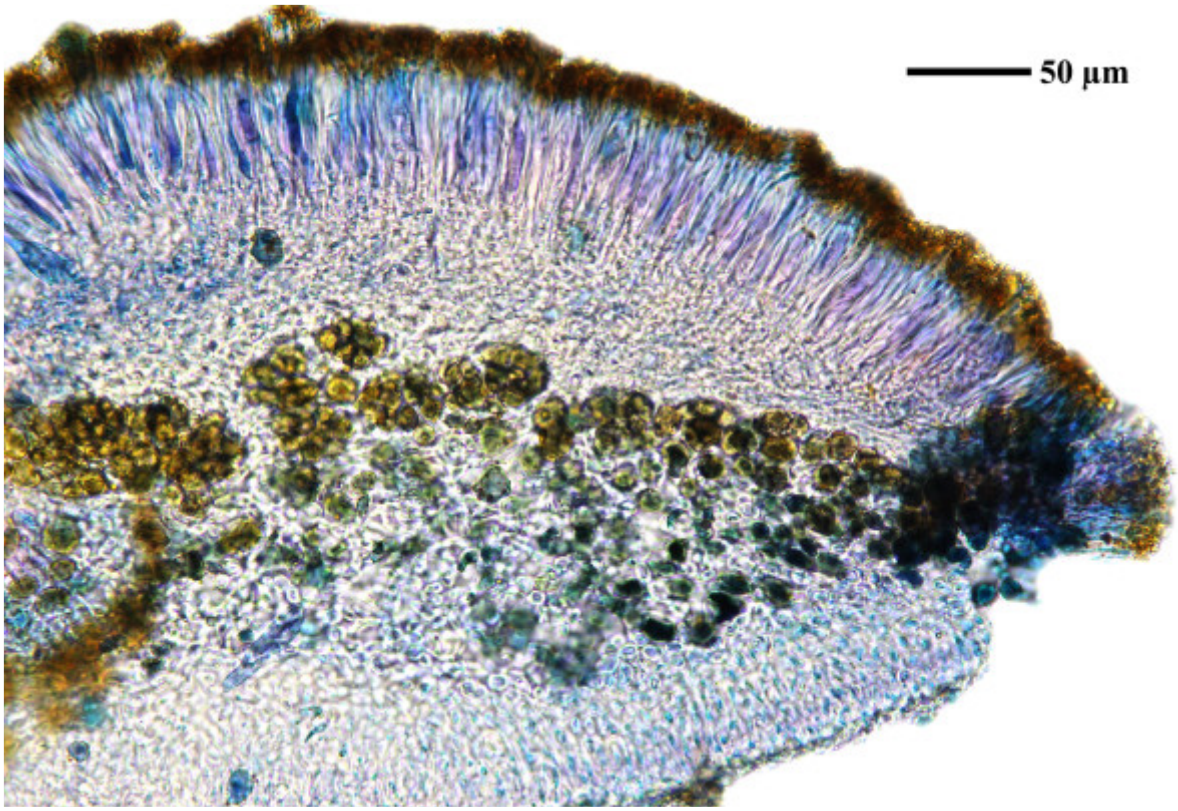


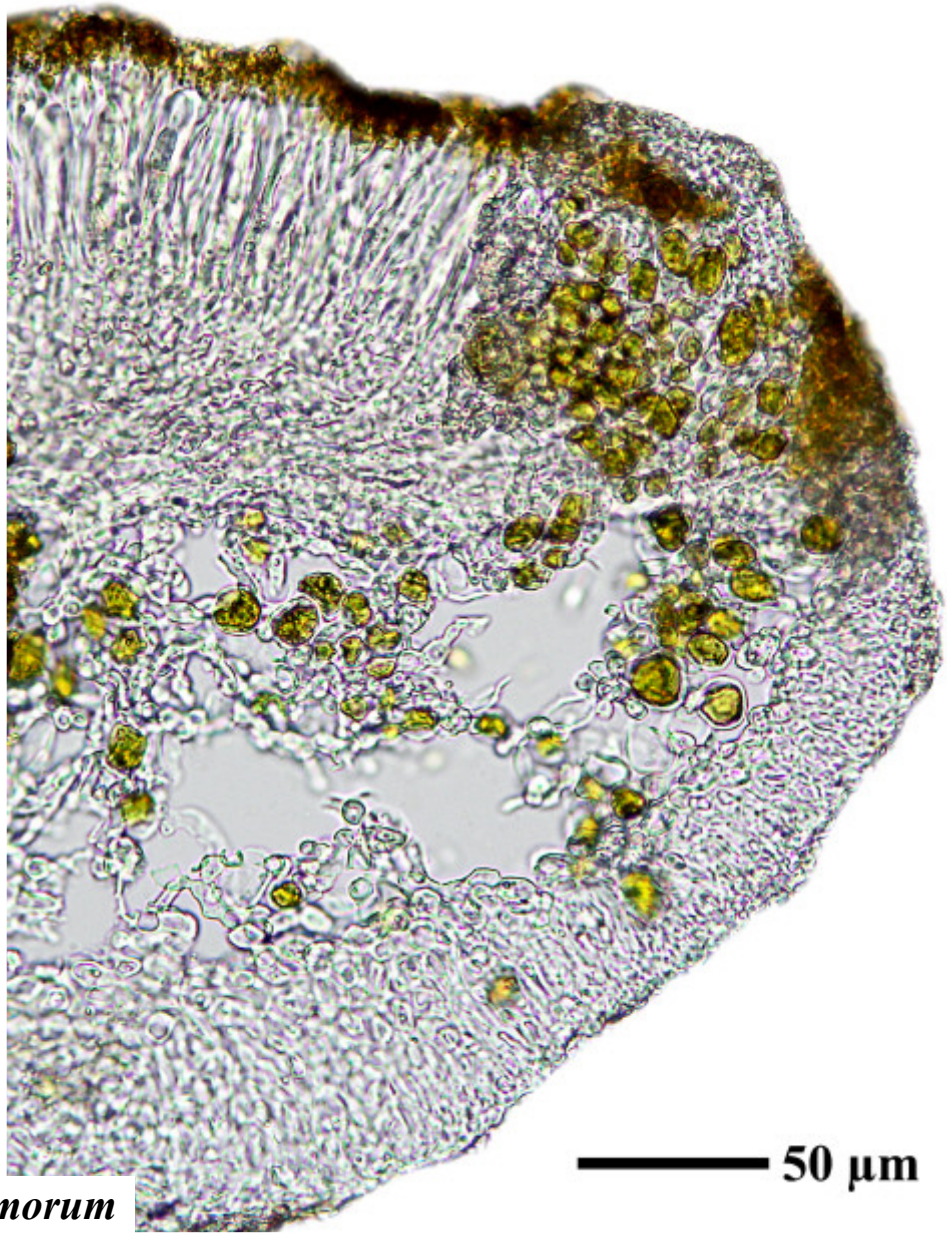
Caloplaca ulmorum



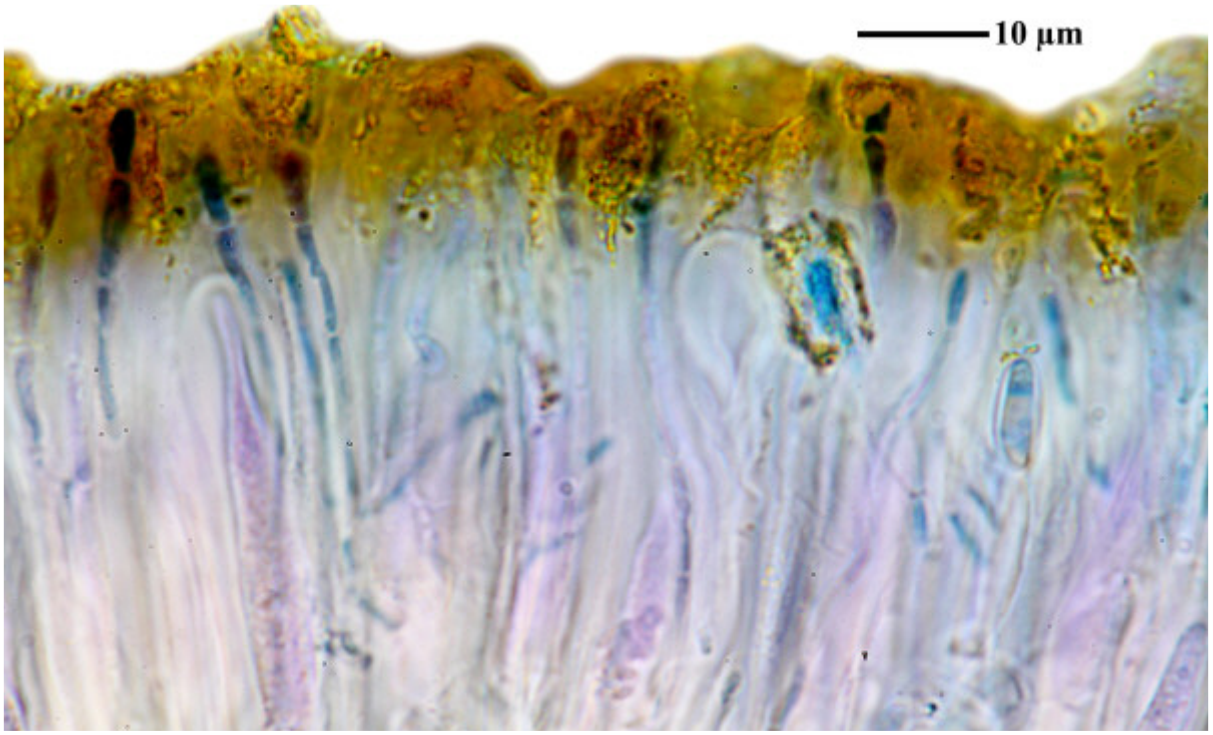


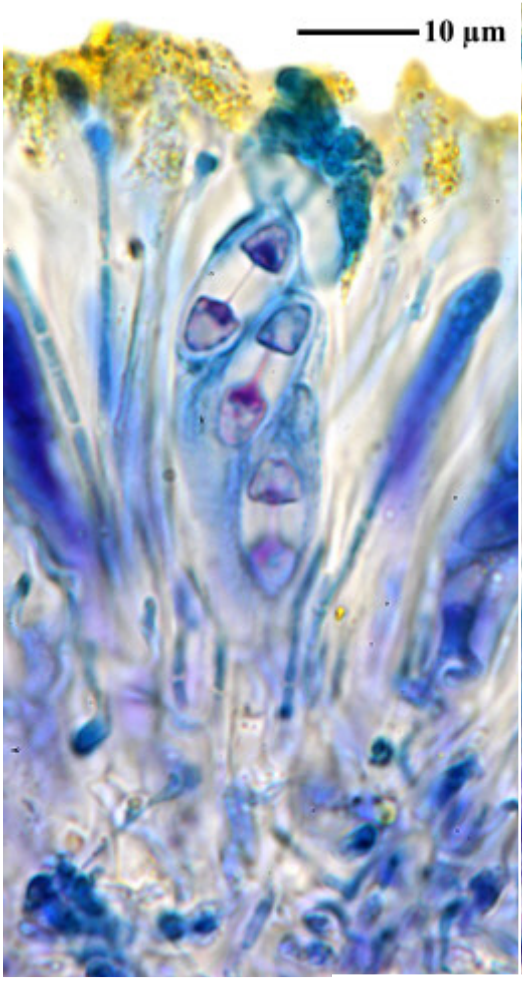
Caloplaca ulmorum

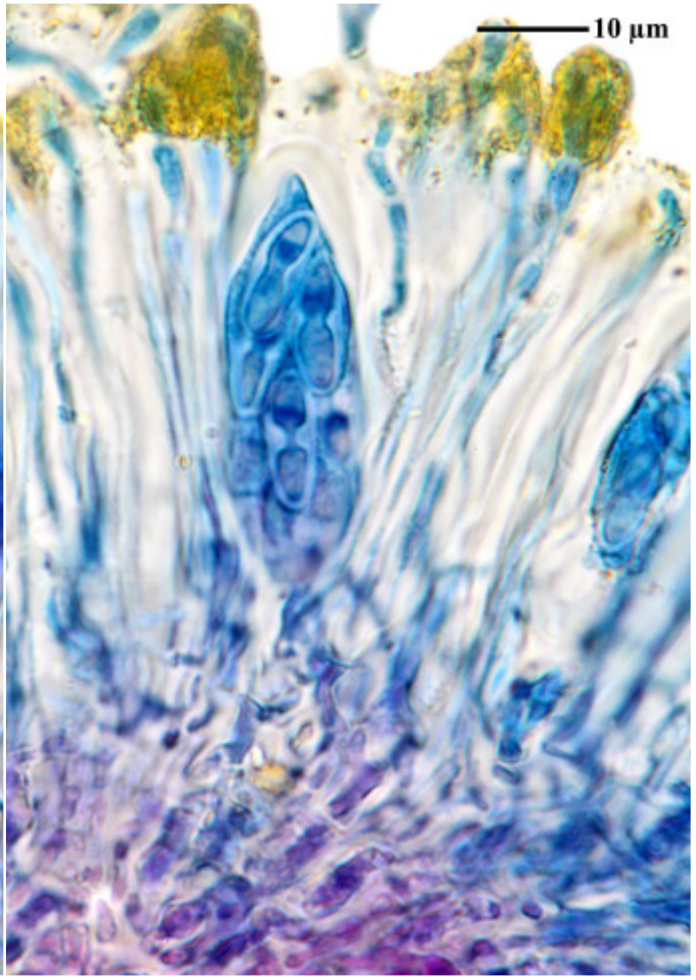


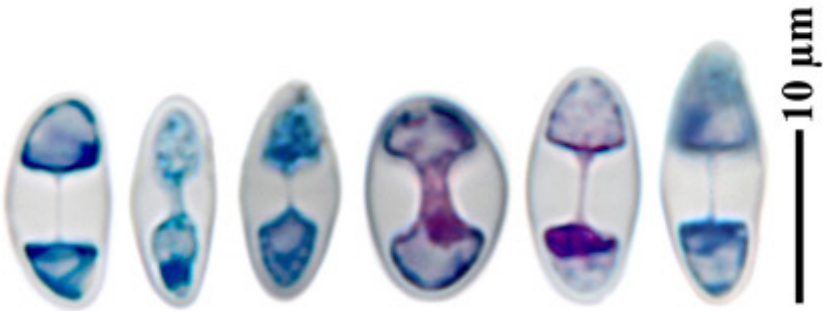


Caloplaca ulmorum









Caloplaca ulmorum

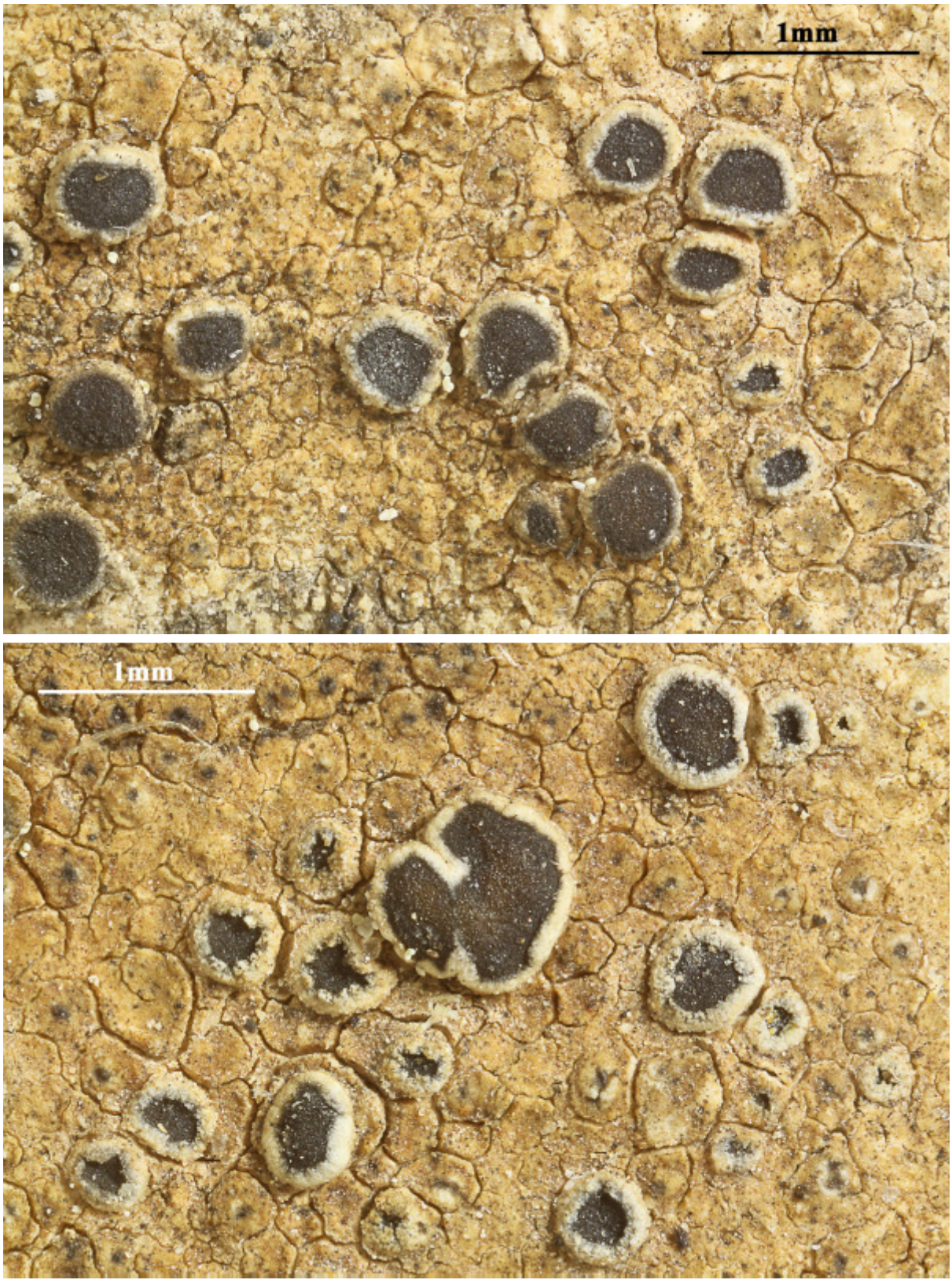
Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

On calcareous stones.
Hymenium 100 µm, hell, Hypothecium hell oder in der Mitte dunkler.
Sporen 8/Ascus, 16 x 7-8 µm, elliptisch.

[2163], Tunesien, 3 km südöstlich von Pont du Fahs, Beginn von *Pinus halepensis* Beständen. Leg. F. Schumm, 14.03.1973, det. F. Schumm 1973.





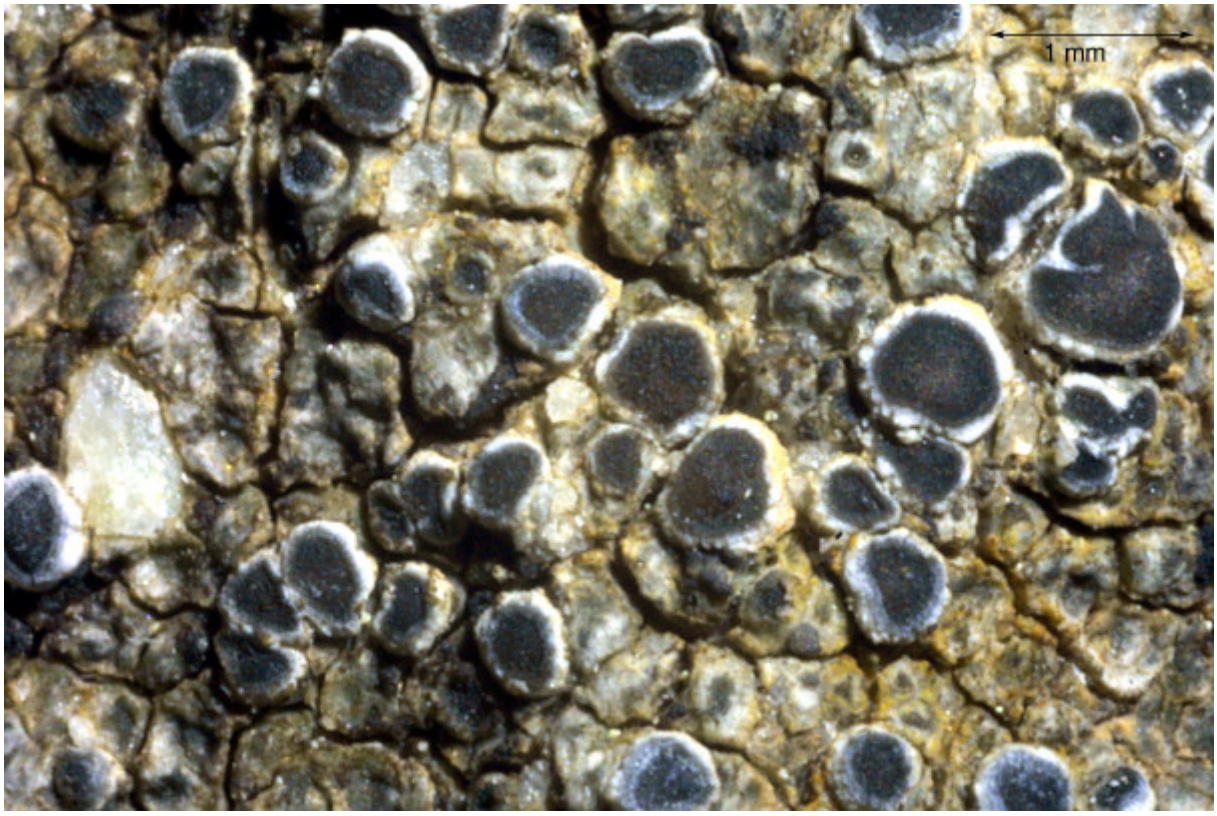


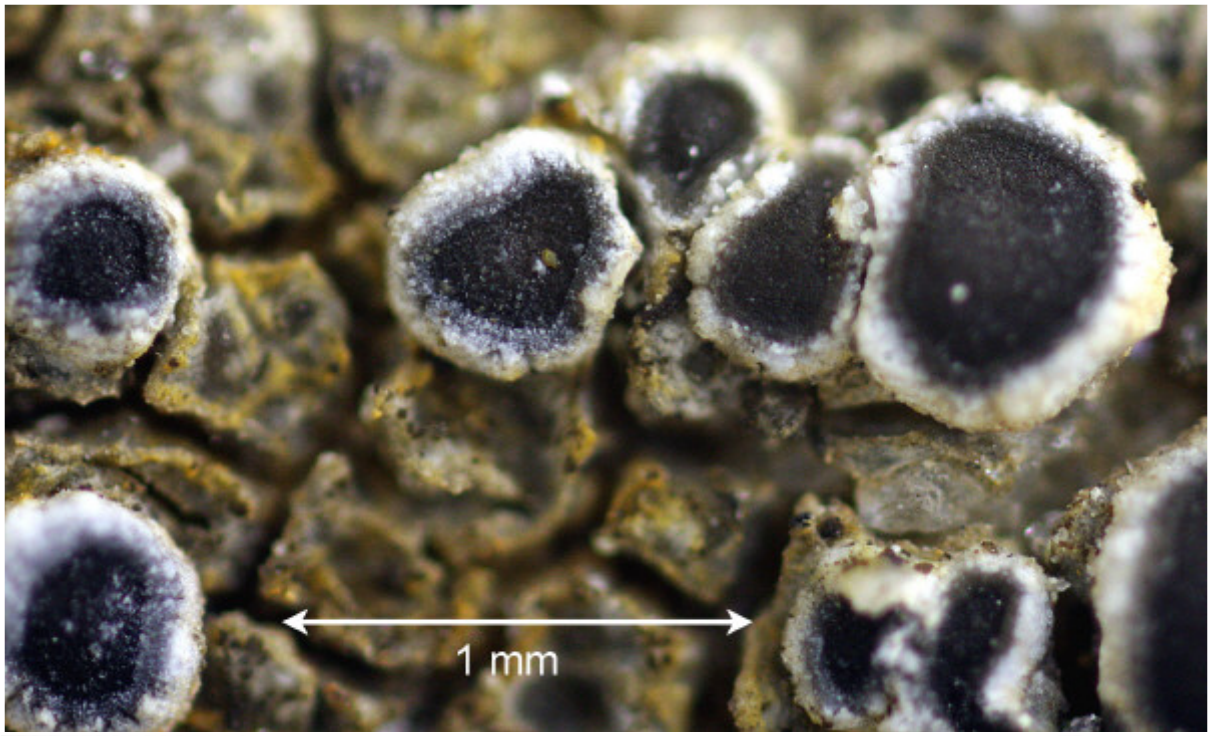
Caloplaca variabilis

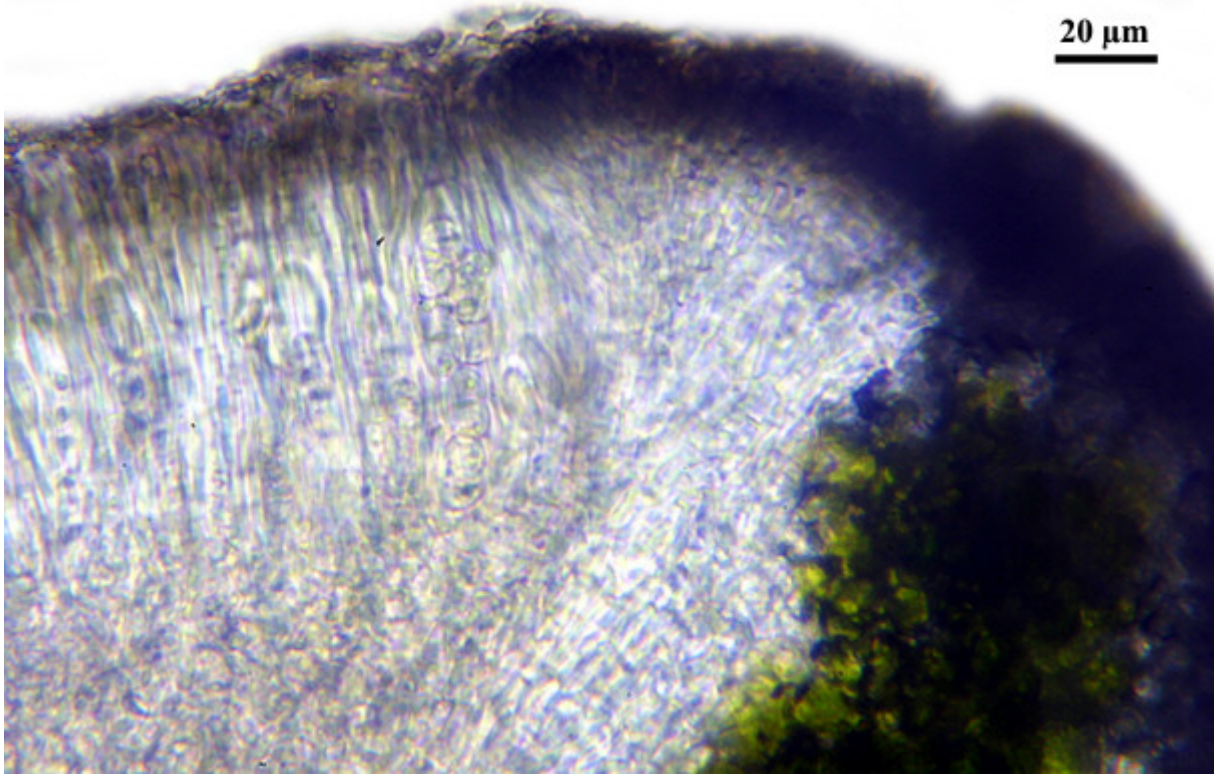
Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

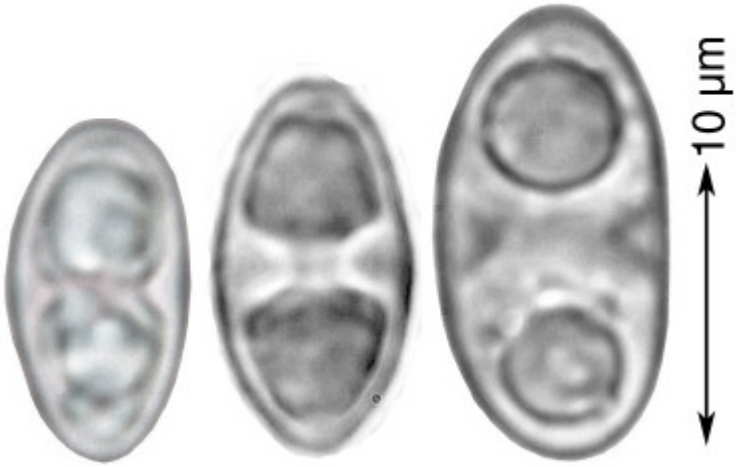
Thallus grau bis graubraun, ca. 0,5 mm dick, areoliert; Areolen flach bis leicht gekrümmt, oft geschädigt und abgefressen; Photobiont grün, ca. 10 µm. Isidien fehlen. Sorale fehlen. Apothecien 0,2-1,2 mm, jung eingesenkt, dann breit dem Th. aufsitzend; Scheiben flach bis schwach konvex, schwarz, oft stark weiß bereift und dann „bläulich“ erscheinend; Lagerrand hell, ca. 0,1 mm breit; Epithecium hellocker, 10-20 µm, K+ violett; Hymenium 70-120 µm, nicht oder ± inspers mit Kristallen; Hypothecium hell, 60-150 µm. Sporen polar-2-zellig, hyalin, oft schlecht entwickelt, (11)12-15-18(20) x (5)6-8-11(13) µm; Septum 2-6 µm. Chemie: Th.: K+ violett (bei geschädigten Proben auch K-); Epithecium K+ violett, N+ violett. Saxicol, auf Kalksteinen.

[12293], Griechenland, N-Samos, bei Manolates südlich von Agios Konstandinos, 37°47.185'N, 26°49.533'E, 341 m; halbschattige bis besonnte Terrassenmauern. Leg. Schumm 02.05.2006, det. Schumm 2006.









Caloplaca variabilis

Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

On rocks.
Thallus grau bis graubraun, ca. 0,5 mm dick, areoliert; Areolen flach bis leicht gekrümmt, oft geschädigt und abgefressen; Photobiont grün, ca. 10 µm. **Isidien** fehlen. **Sorale** fehlen. **Apothecien** 0,2-1,2 mm, jung eingesenkt, dann breit dem Th. aufsitzend; Scheiben flach bis schwach konvex, schwarz, oft stark weiß bereift und dann „bläulich“ erscheinend; Lagerrand hell, ca. 0,1 mm breit; Epithecium hellocker, 10-20 µm, K+ violett; Hymenium 70-120 µm, nicht oder ± inspers mit Kristallen; Hypothecium hell, 60-150 µm. **Sporen** polar-2-zellig, hyalin, oft schlecht entwickelt, (11)12-15-18(20) x (5)6-8-11(13) µm; Septum 2-6 µm. **Chemie**: Th.: K+ violett (bei geschädigten Proben auch K-); Epithecium K+ violett, N+ violett. Saxicol, auf Kalksteinen.

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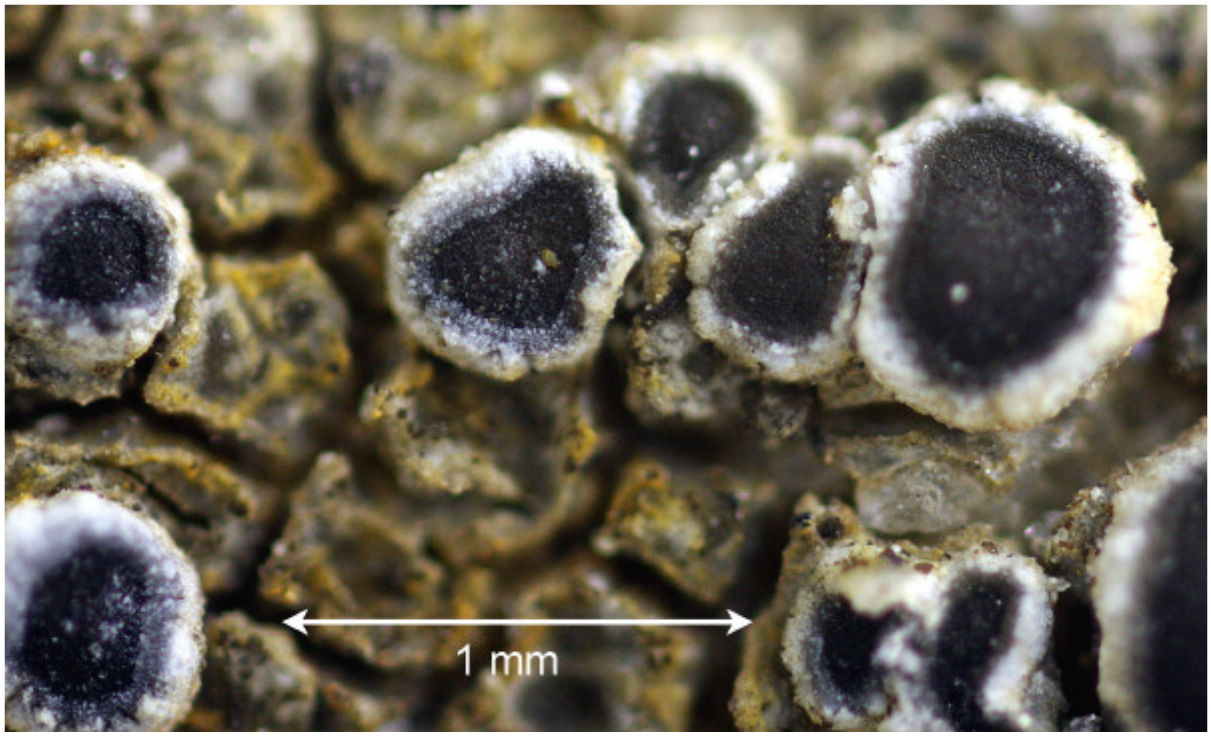
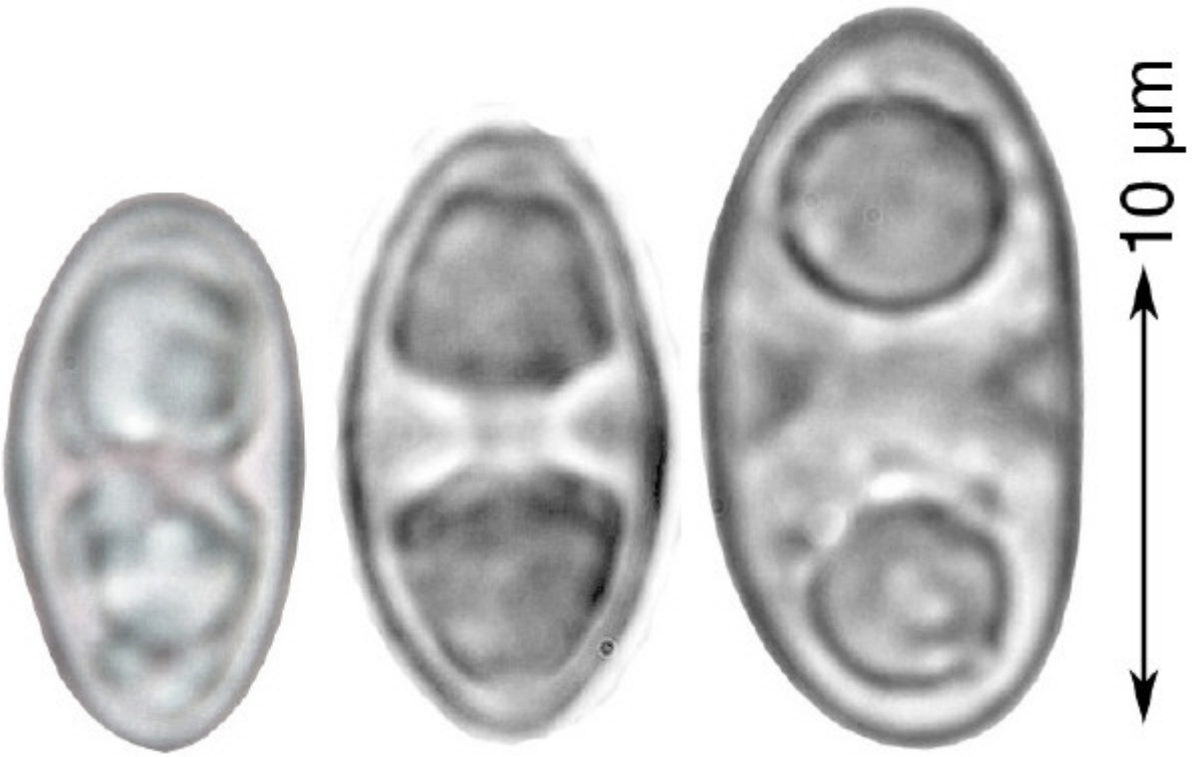




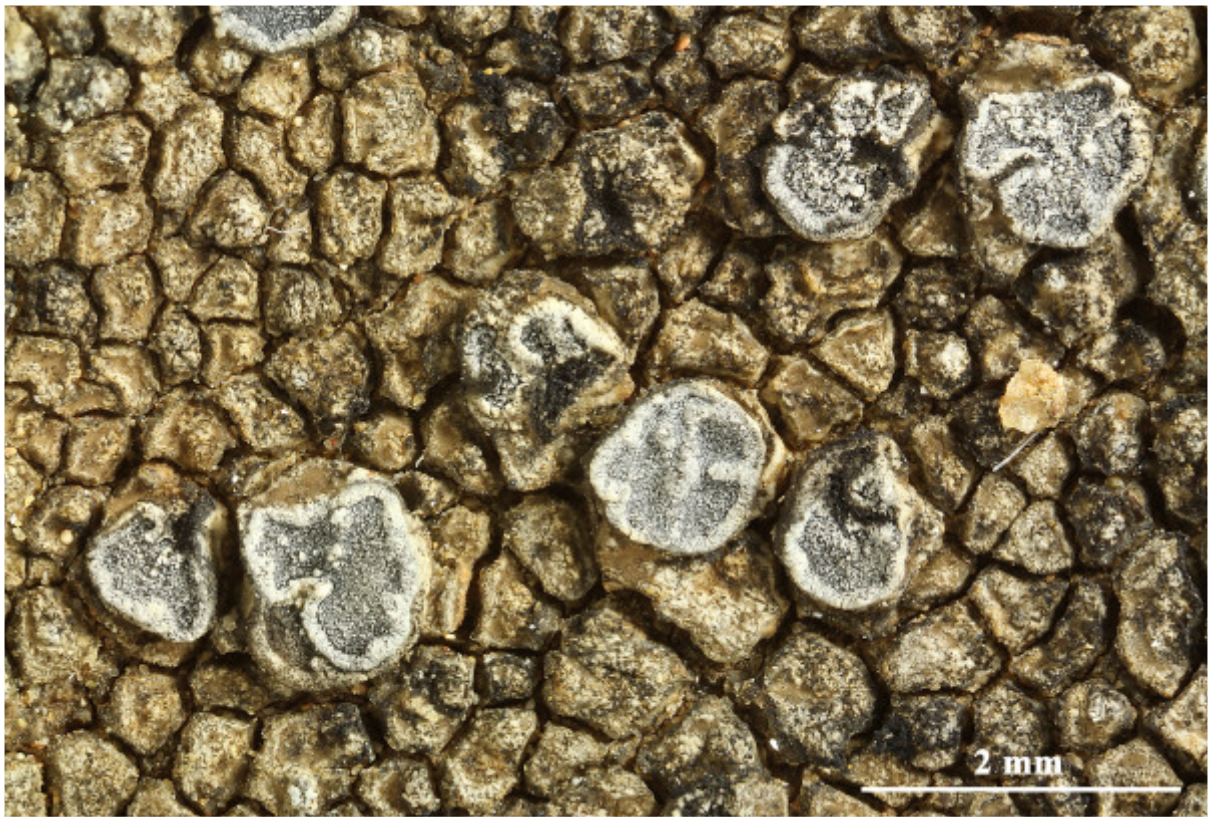
Caloplaca variabilis

Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

On rocks.

[13503], Griechenland, S-Kreta, Asteroussia Berge, an der Straße von Miamou nach Lentas, 11 km vor Lentas, 520 m, Felsen in Oleahain. Leg. F. Schumm & R. Düll, 23.10.2007, det. A. Aptroot 2016.





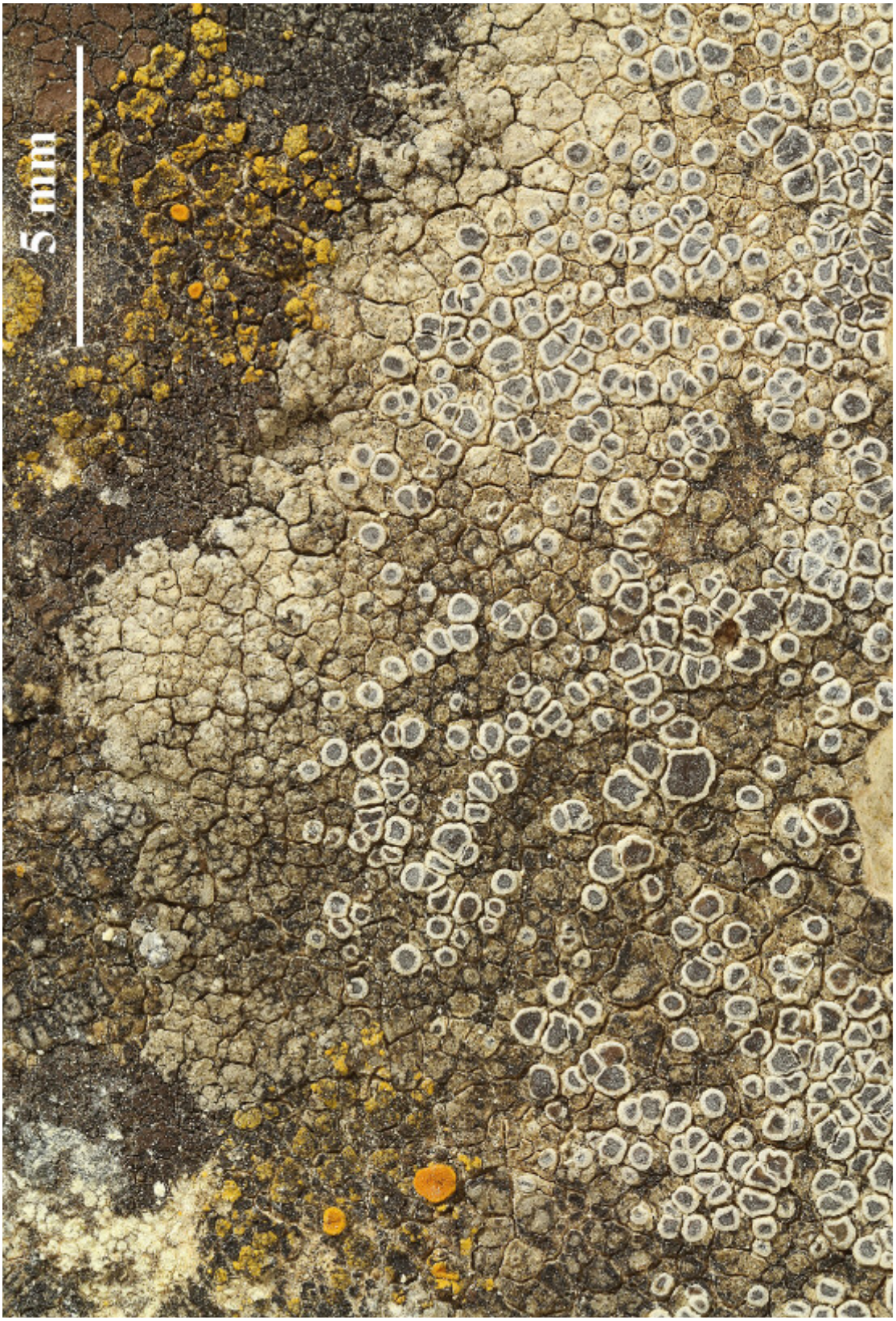


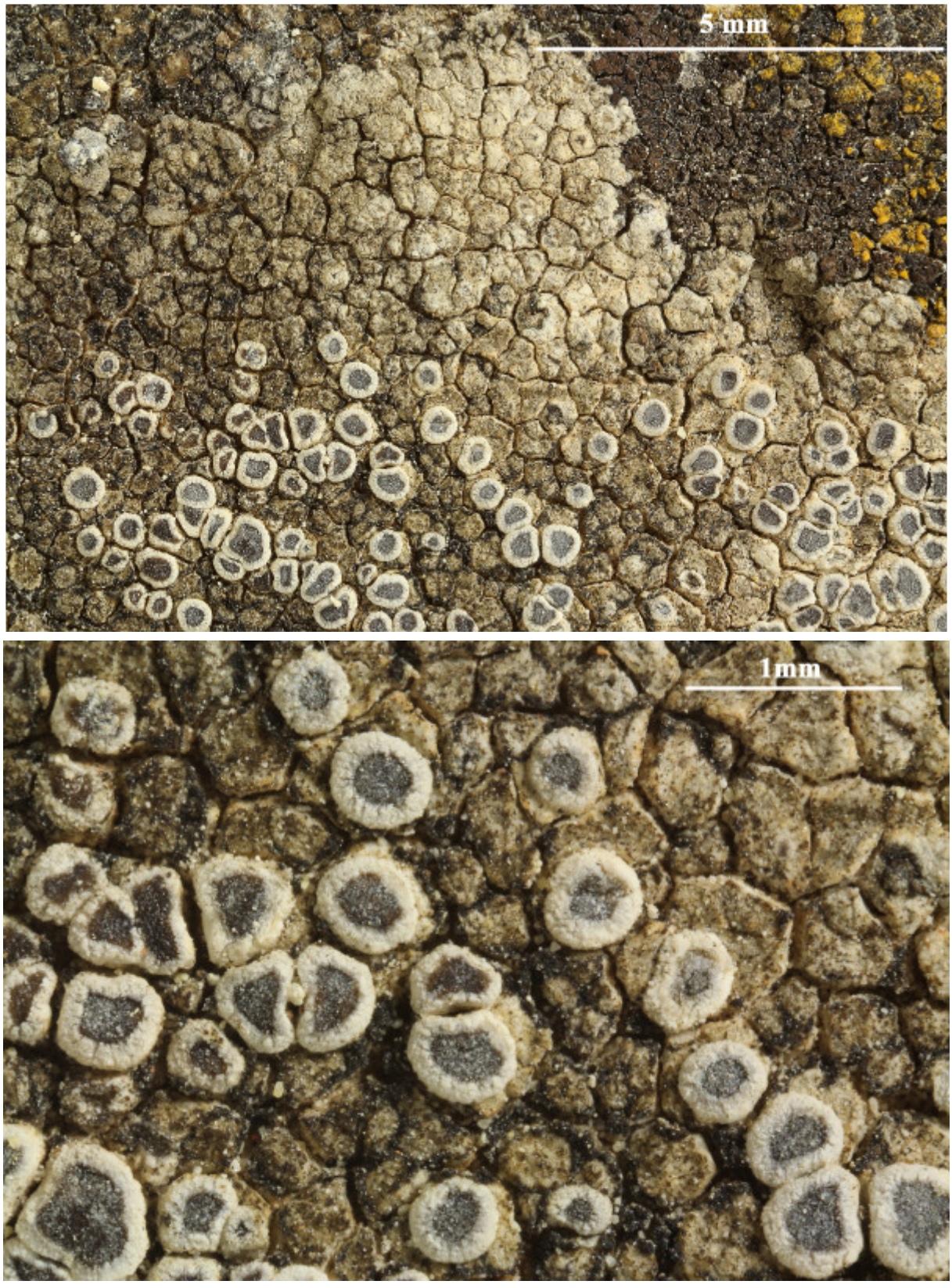
Caloplaca variabilis

Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

On calcareous rocks.

[13778], Malta, Wied Qirda südwestlich von Zebbug, 35°52.094'N, 14°30.27.297'E, 54 m. Leg. F. Schumm & J.P. Frahm, 15.03.2008, det. A. Aptroot 2016,



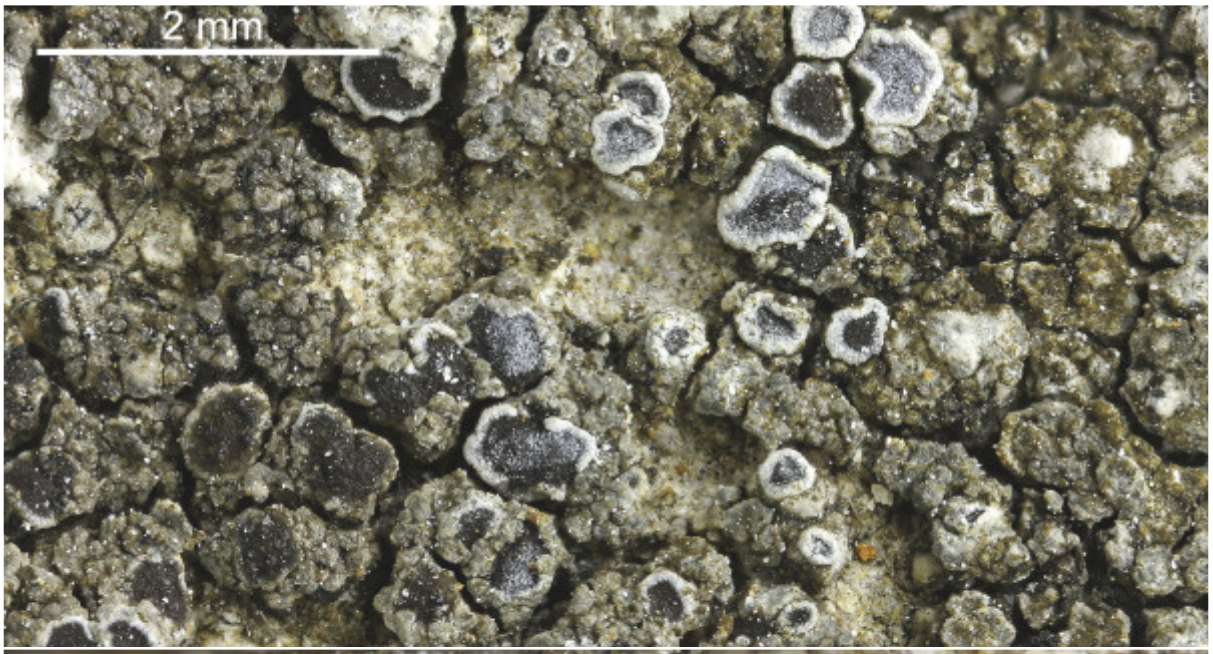


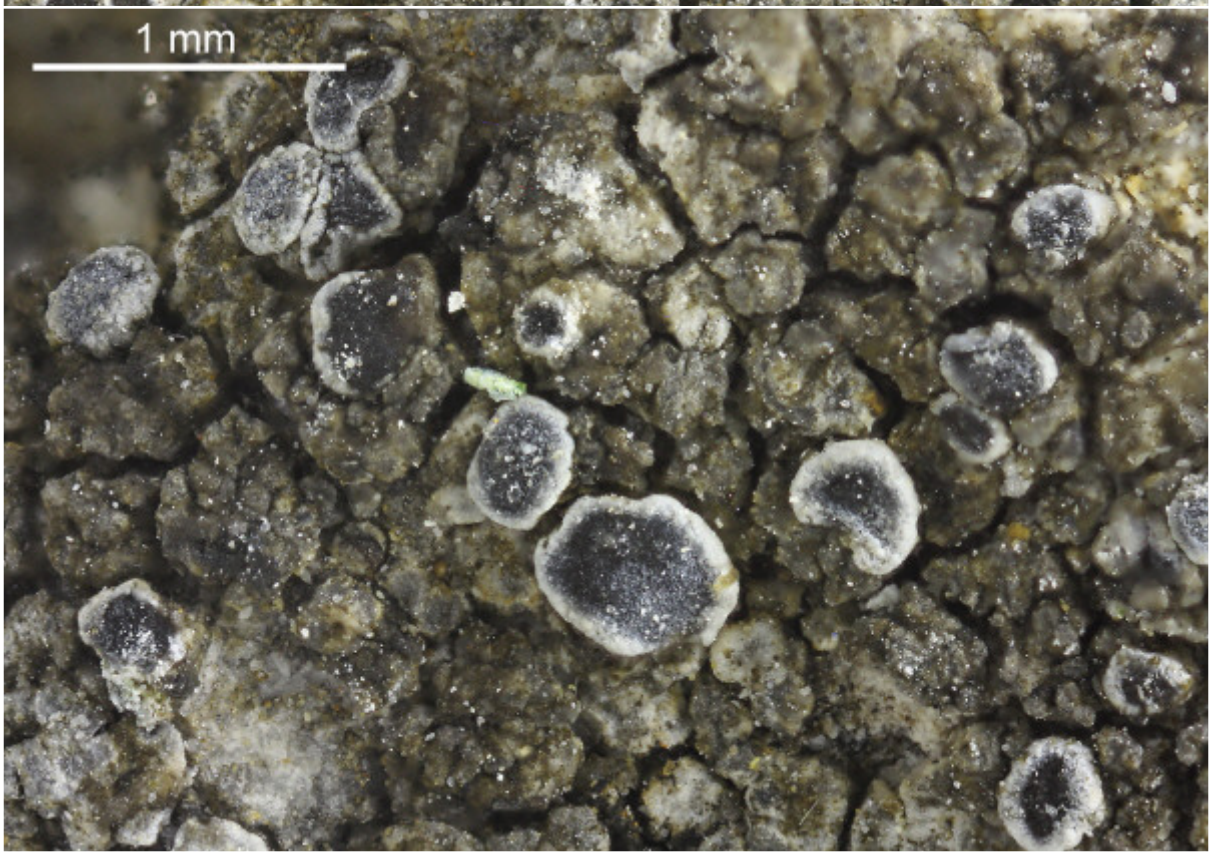
Caloplaca variabilis

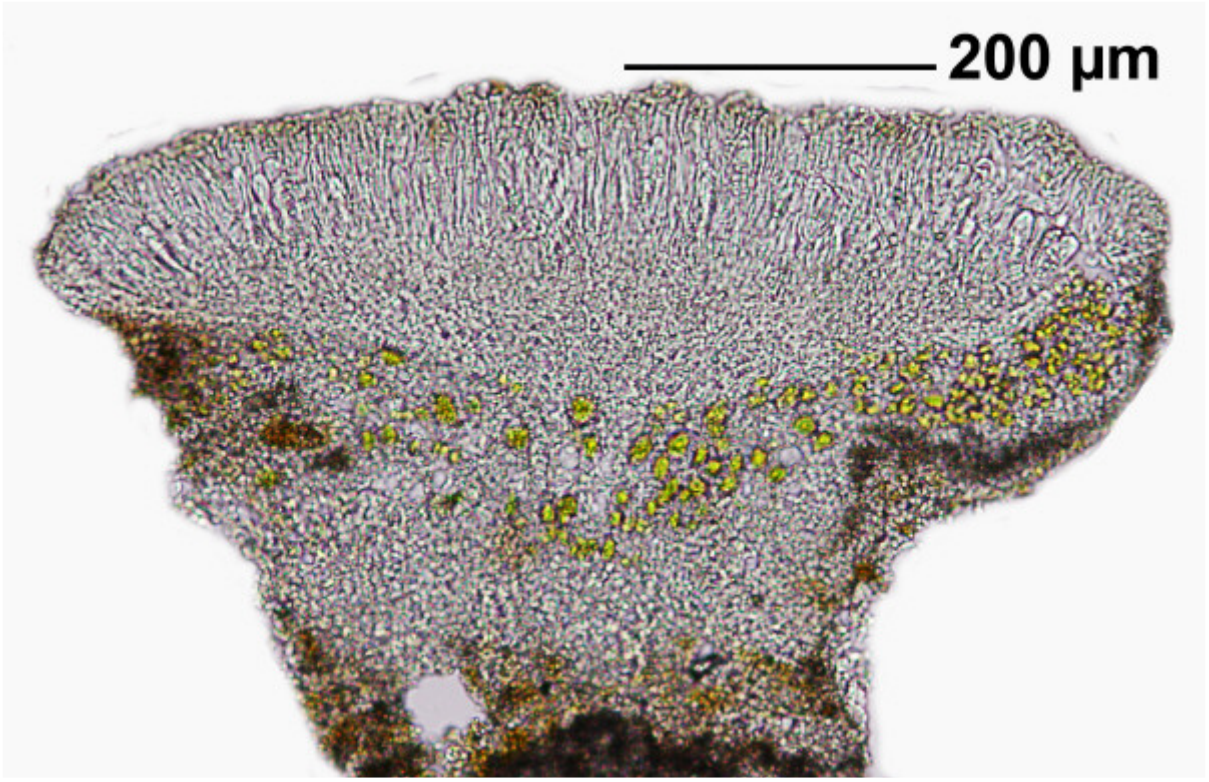
Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

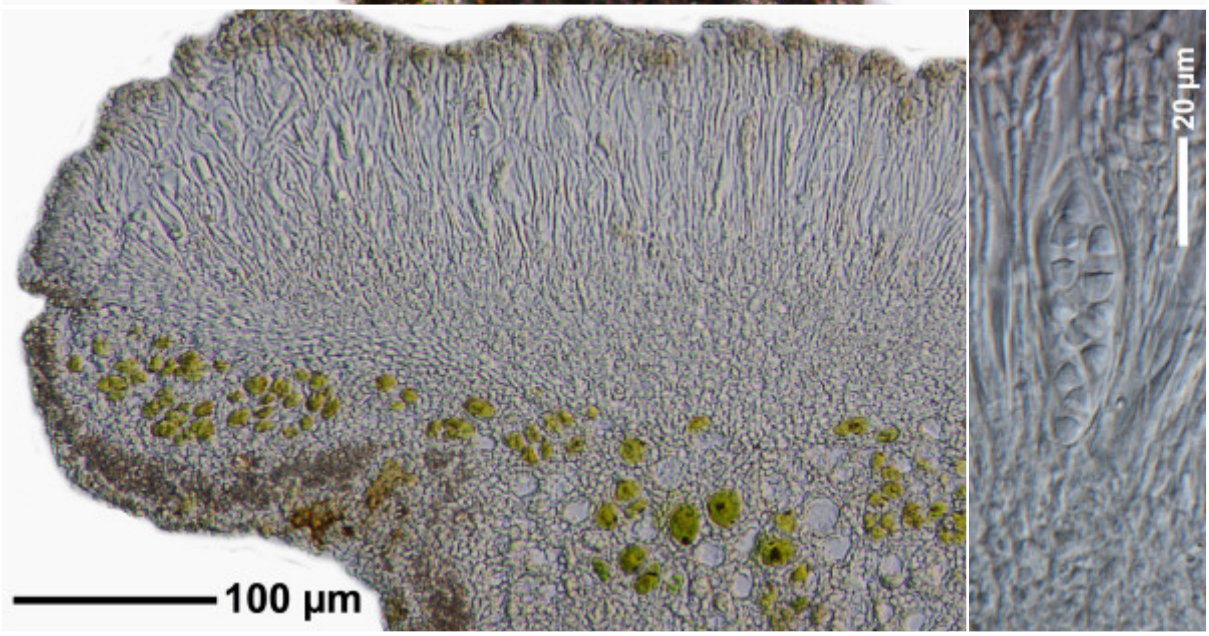
Thallus dunkelgrau bis schwärzlich, areoliert. Areolen warzig. Apothecien aufsitzend, Rand weiß, Scheibe schwarz, oft bereift. Sporen polar-2-zellig, hyalin, 8/Ascus, 12-20 x 6-10 µm, Septum bis ⅓ der Sporenlänge.

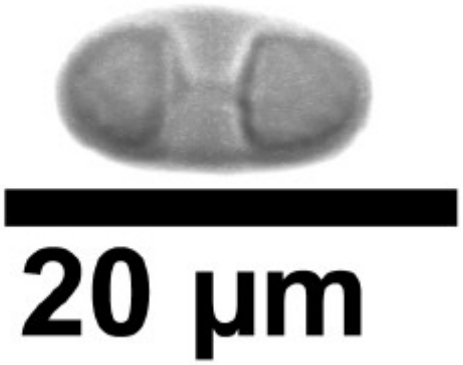
[16472], Germany, Baden-Württemberg, Kreis Esslingen, zwischen Owen und Burg Teck, im Xerobrometum am Westhang des Hohenbol, auf sonnigen Kalkblöcken, 48°35,708’ N, 9°27,724’ E, ca. 550 m. Leg. Schumm, 04.07.2004.

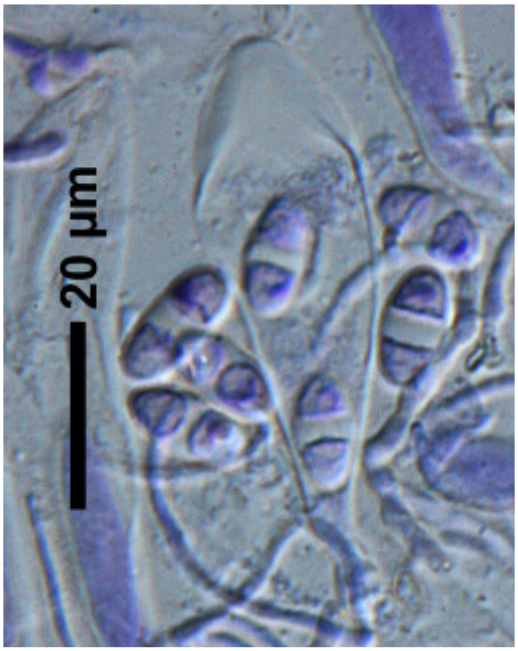












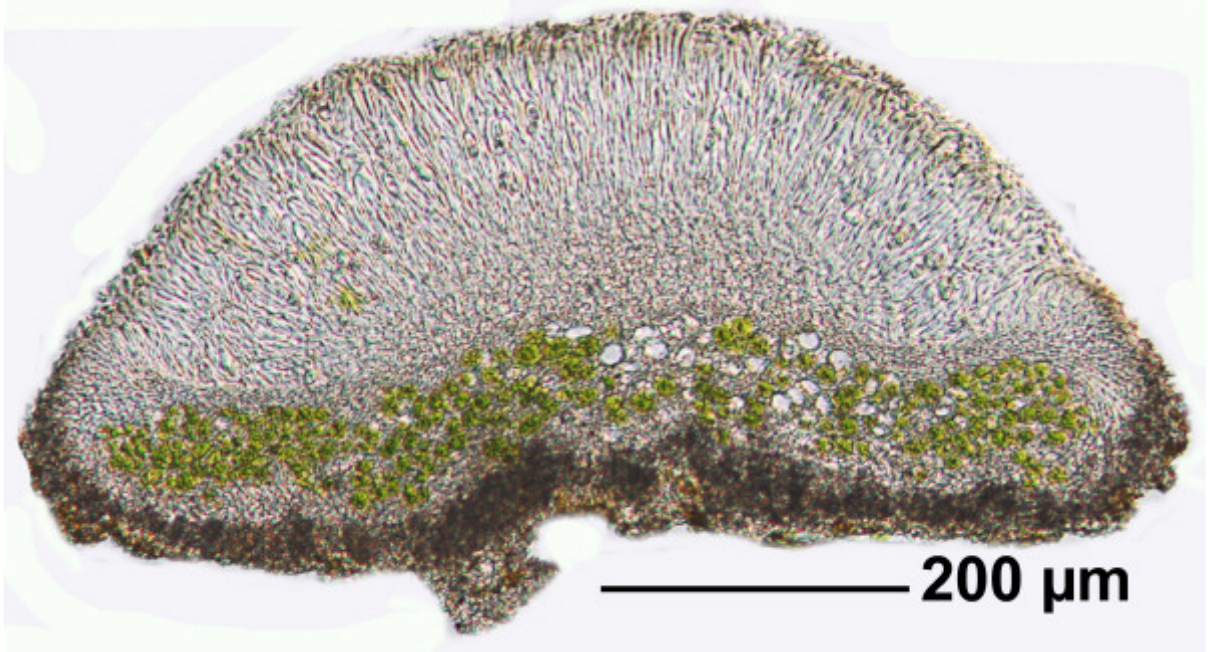
Caloplaca variabilis

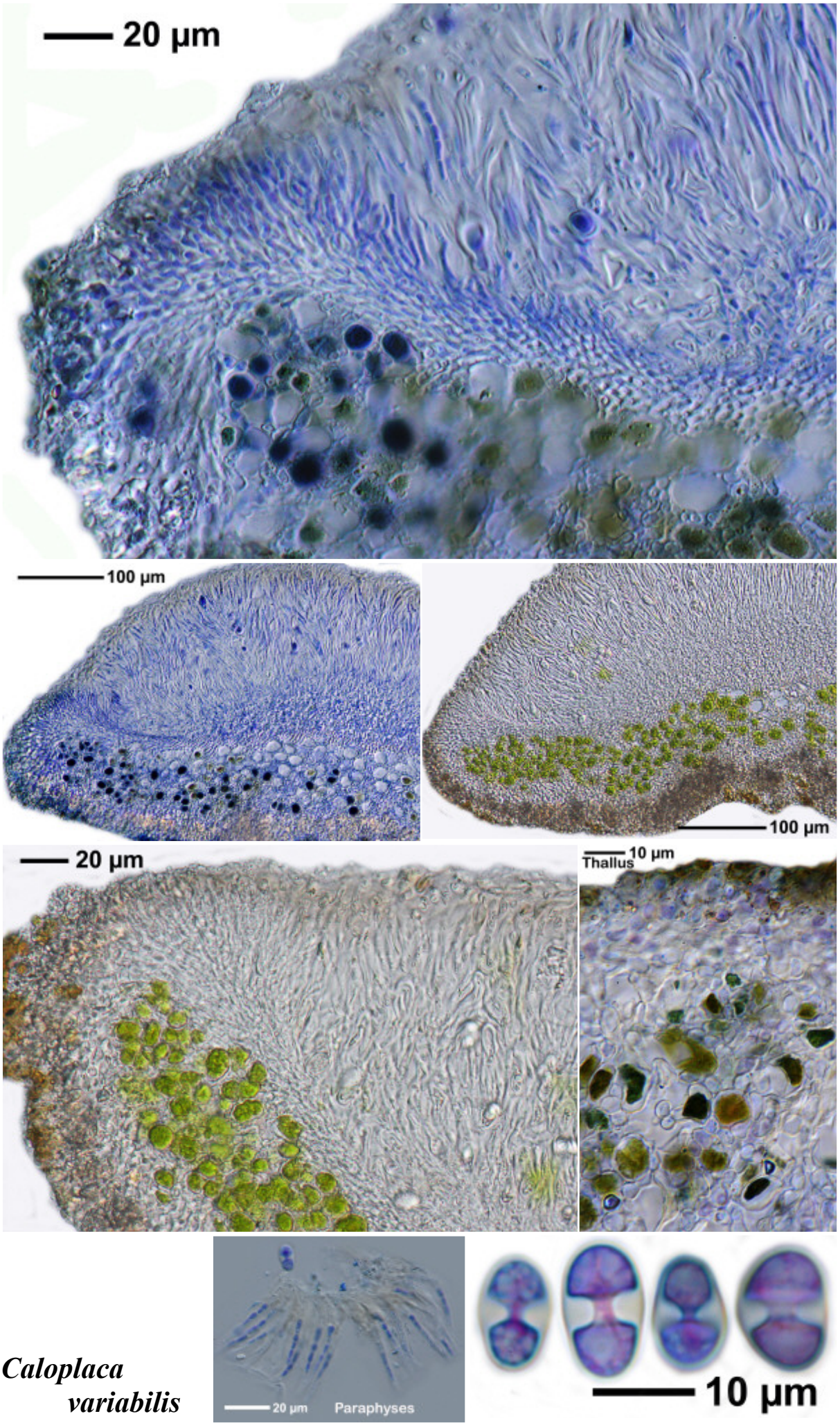
Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

Thallus braungrau bis schwärzlich, einförmig krustig bis areoliert. Apothecien aufsitzend, Scheibe schwarzbraun mit hellerem Rand. Sporen hyalin, 8/Ascus, polar-2-zellig, 12-20 x 6-10 µm.

[16513], Germany, Baden-Württemberg, Kreis Göppingen, Gosbach - Bad Ditzenbach, Tierstein, 48,57461° N, 9,68471° E, 737 m. auf Kalkfelsen am Albrand. Leg. Schumm 20.06.2010.







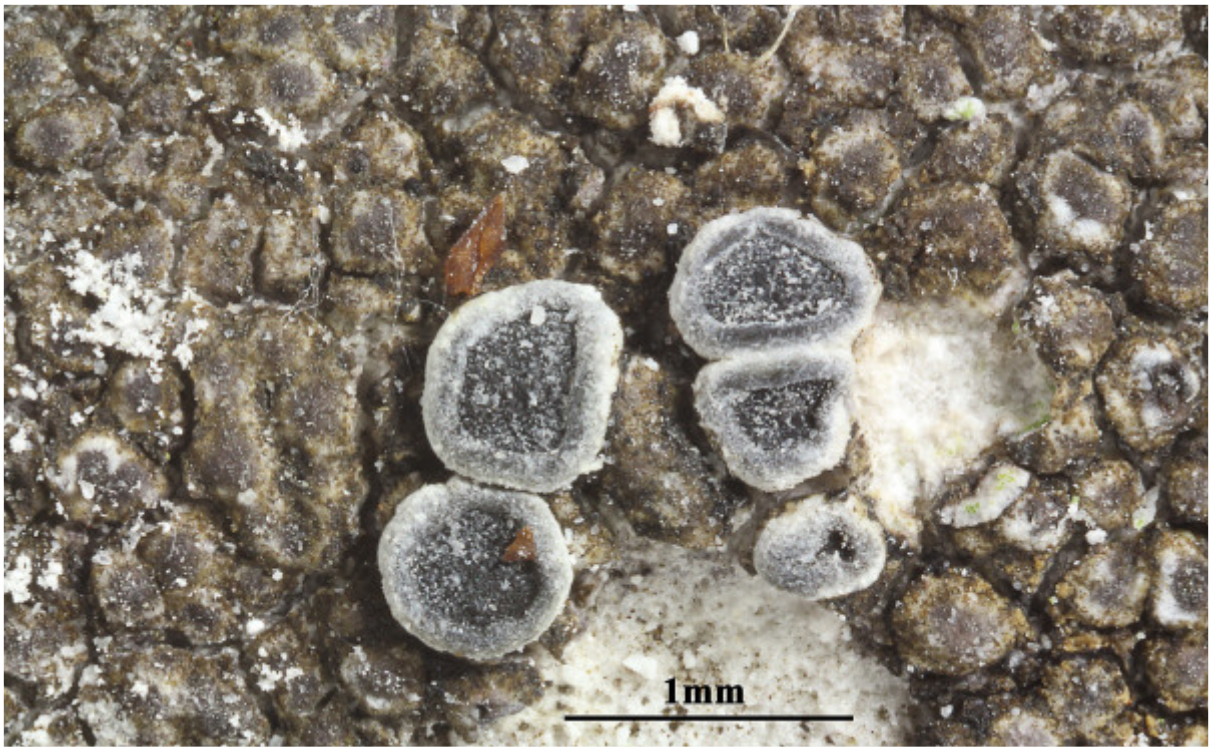
Caloplaca variabilis

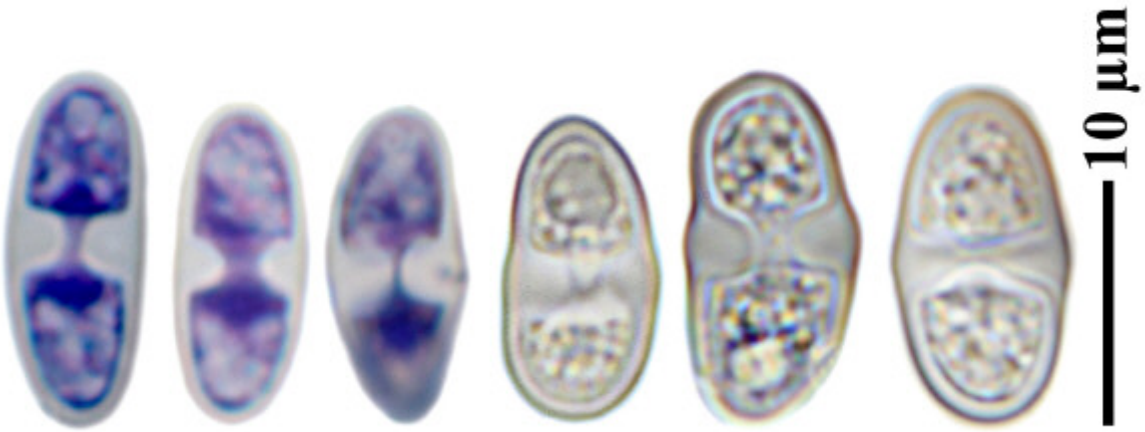
Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

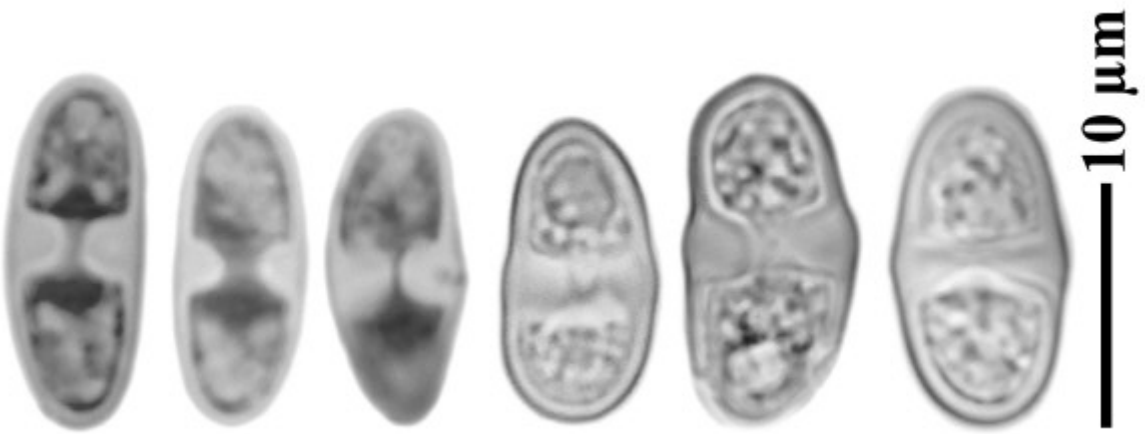
Spores 12.5-15.5 x 5.5-7 µm, septum c. 2.7 µm.

[19677], Germany, Baden-Württemberg, Schwäbische Alb, westlich von Ochsenwang, auf Kalkfelsen im Randecker Maar, 48.57156° N, 9.52611° E, 708 m. TK 7423. Leg. et det. F. Schumm, 18.08.2017, conf. A. Aptroot.

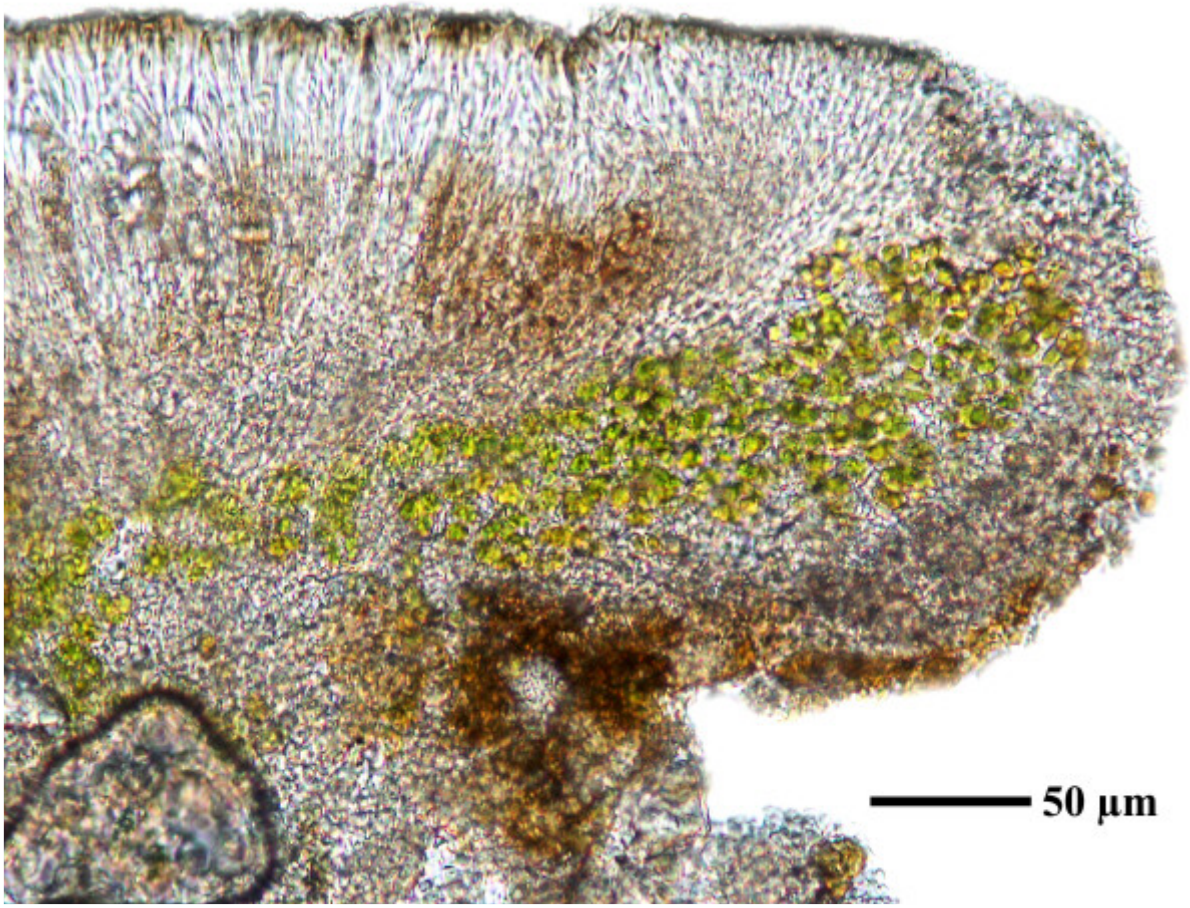


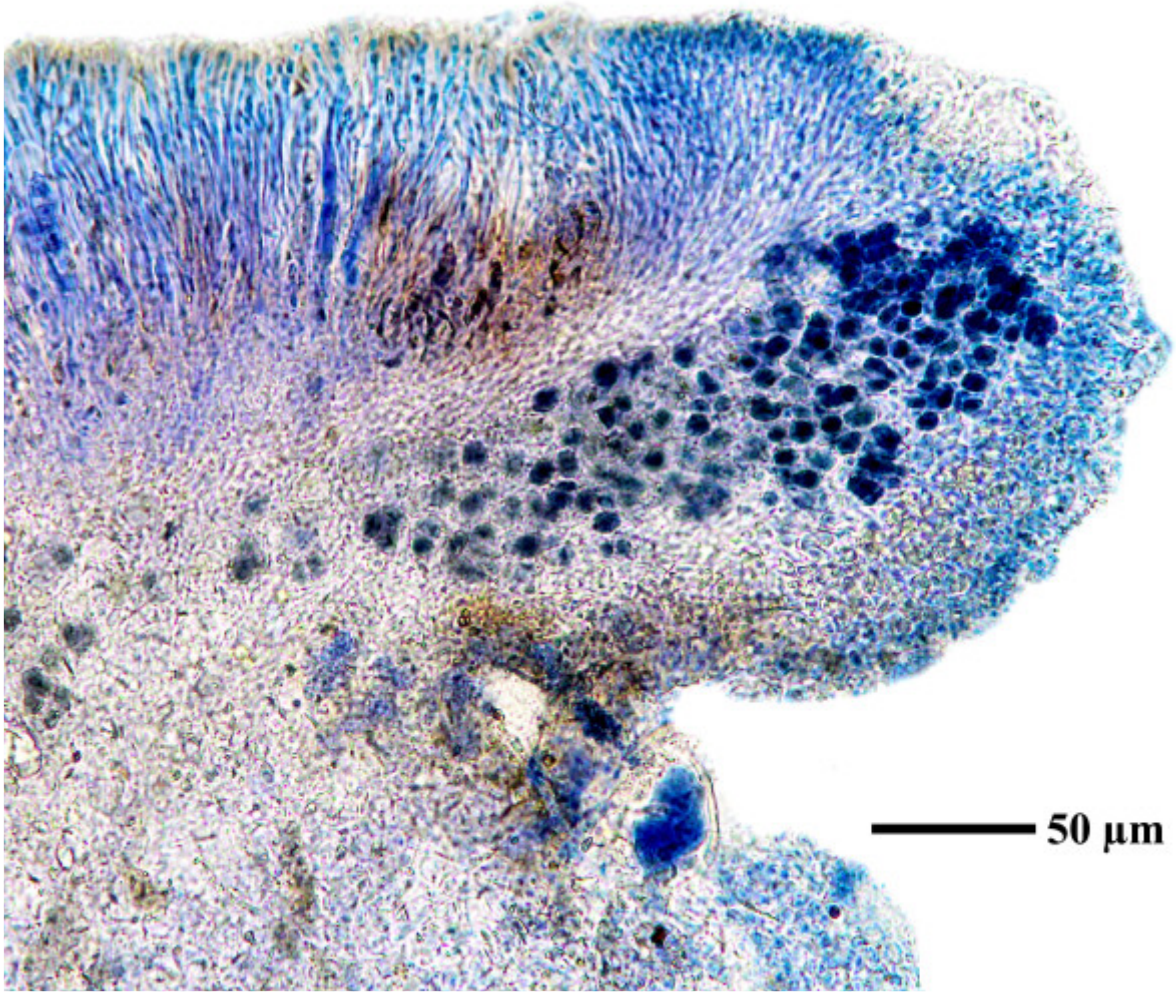




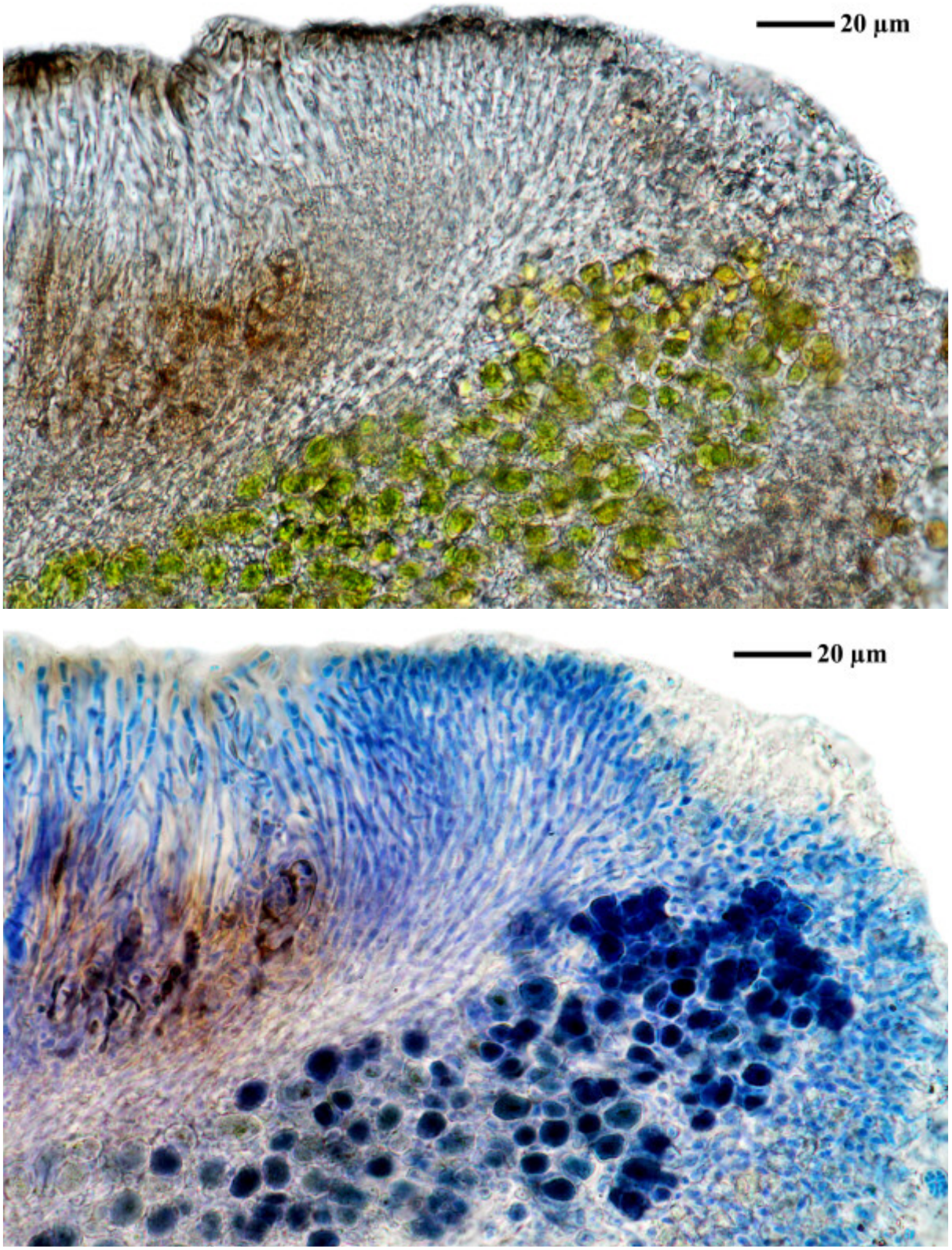


Caloplaca variabilis

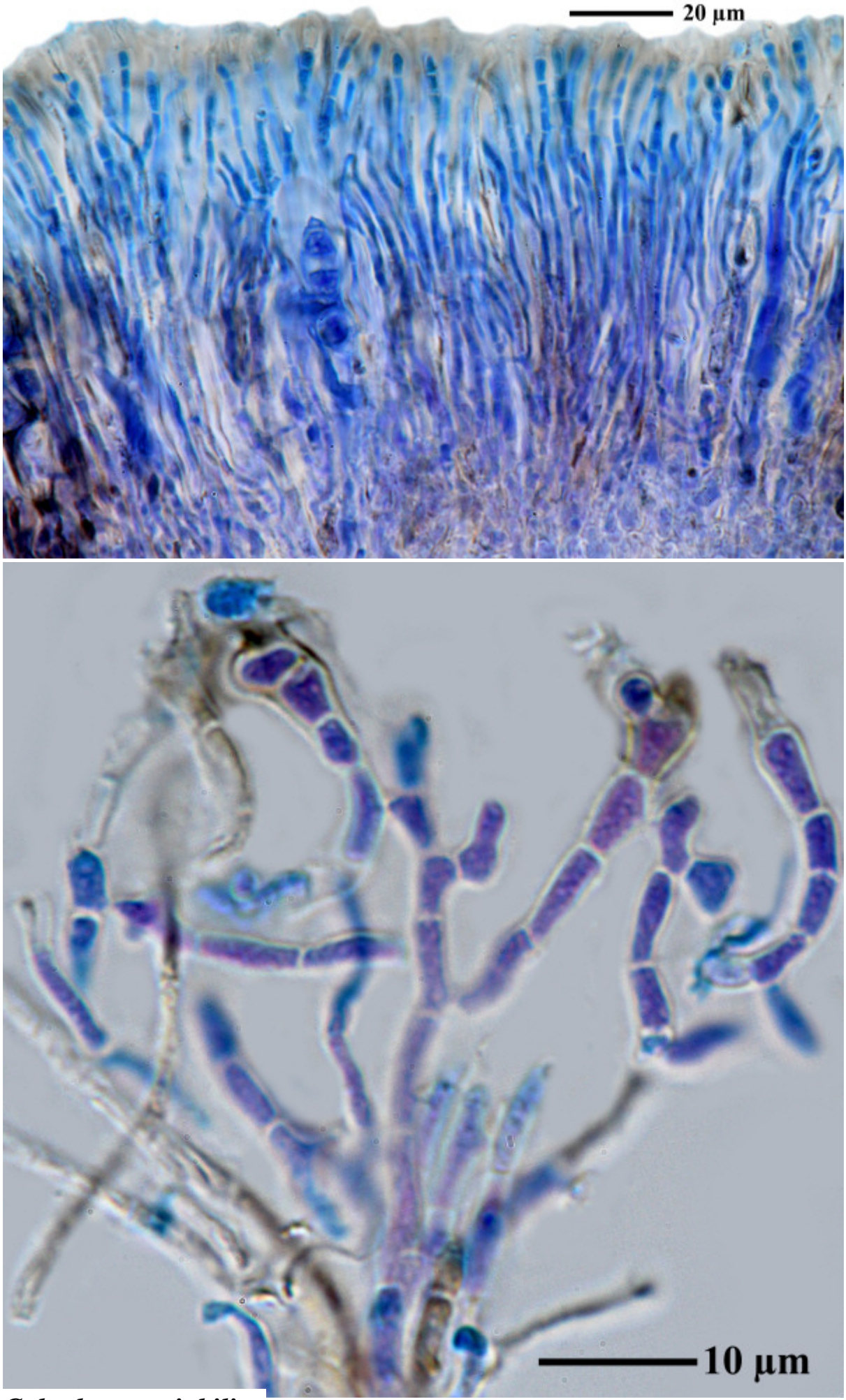




Caloplaca variabilis



Caloplaca variabilis



Caloplaca variabilis

Caloplaca variabilis (Pers.) Müll.Arg.
[= *Pyrenodesmia variabilis* (Pers.) A. Massal.]

als Beimengung in der Tüte von *Acarospora cervina* (Ach.) A.Massal.

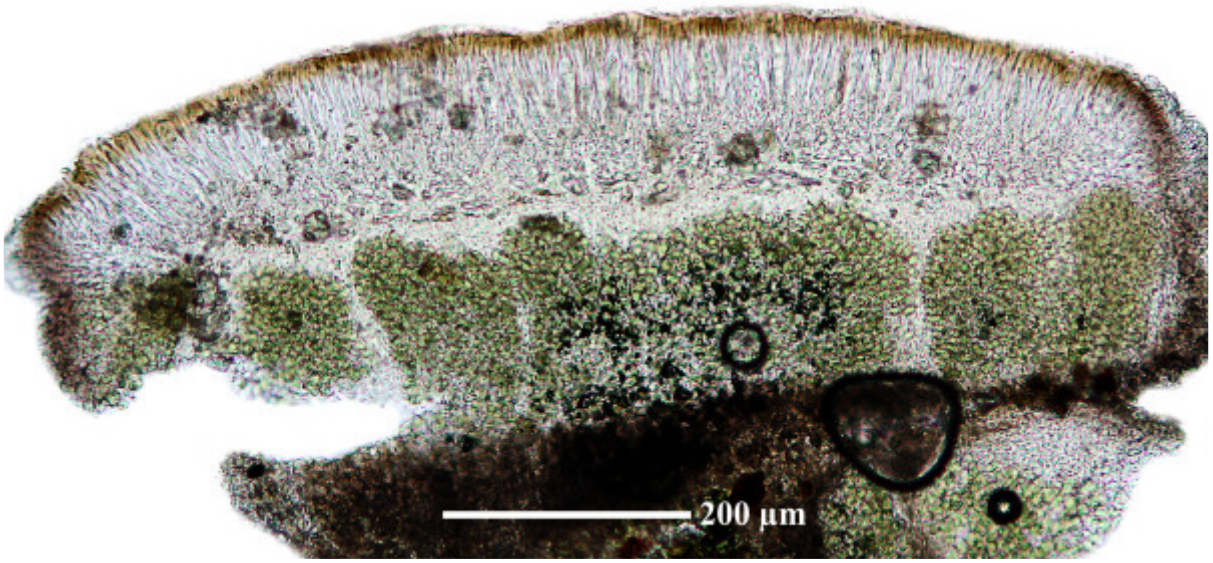
[GZU 5-83], Afghanistan, Prov. Samangan, ca. 15 km W des Passes Kotal-i-Mirza Atbili (Kotal-i-Rabotak), ca 10 km E Aybak. 68°08’ E, 36°13’ N, ca. 1170 m. Auf Zenitflächen flachbankiger Kalke. Leg. M. Steiner (Ste 44/3), 05.06.1970. Det F. Schumm 2018.

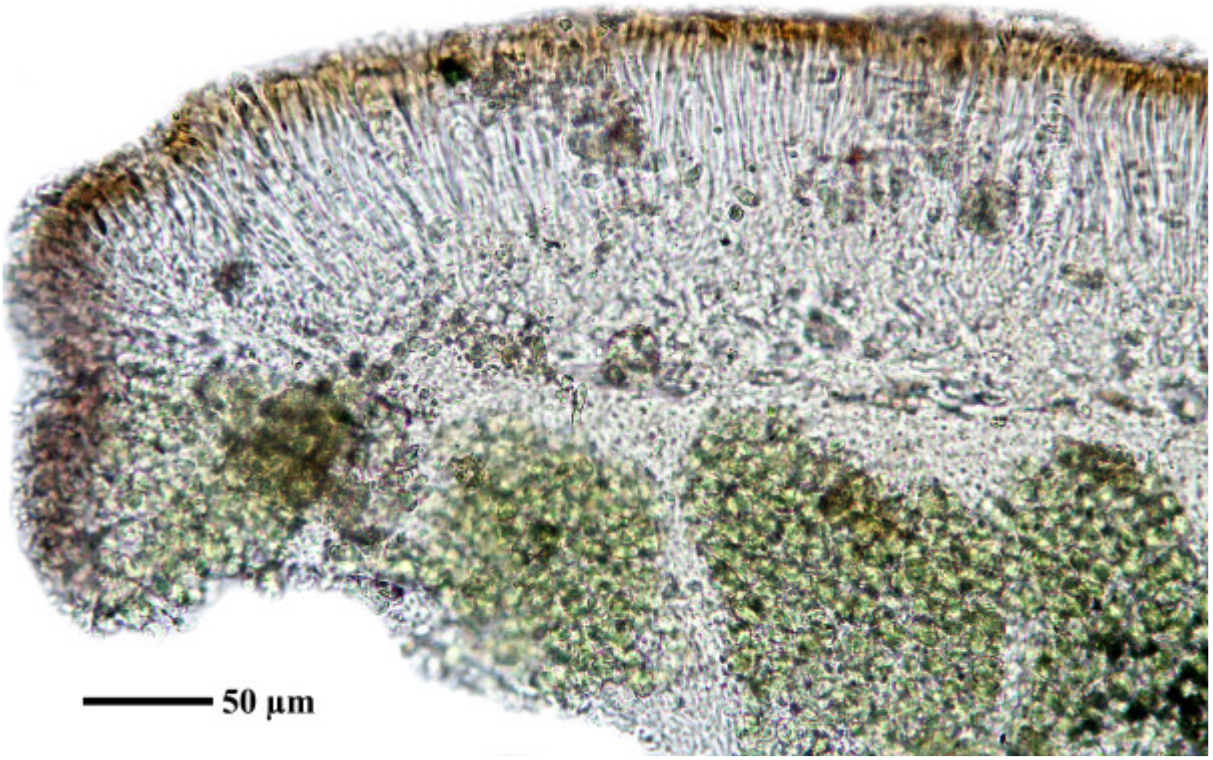


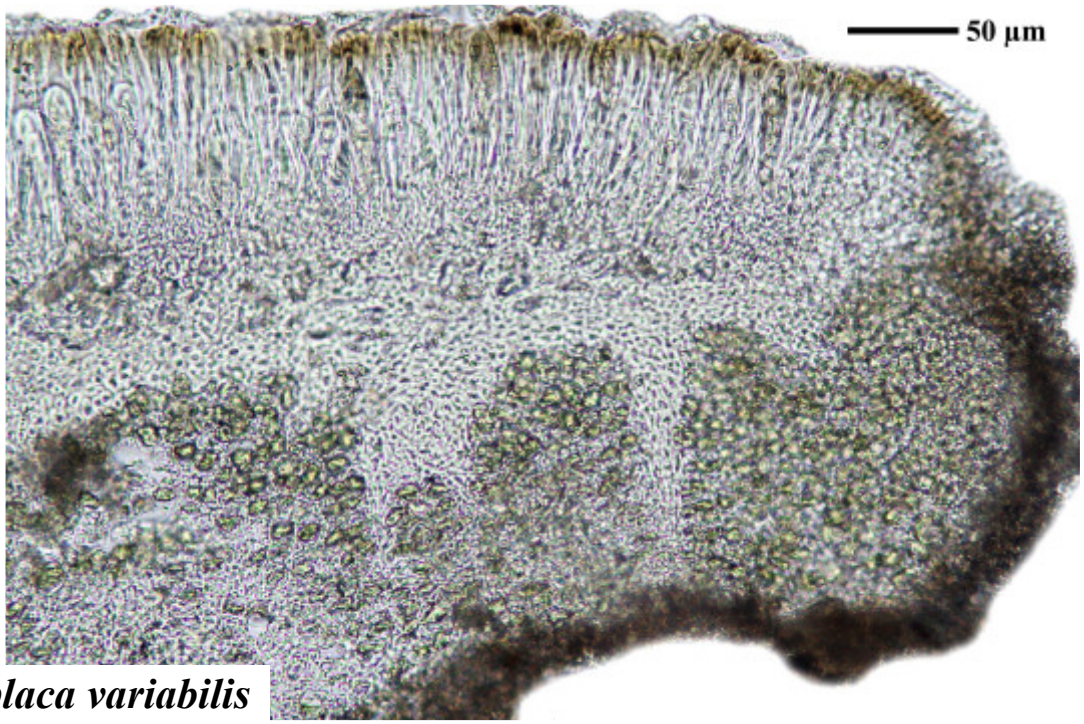




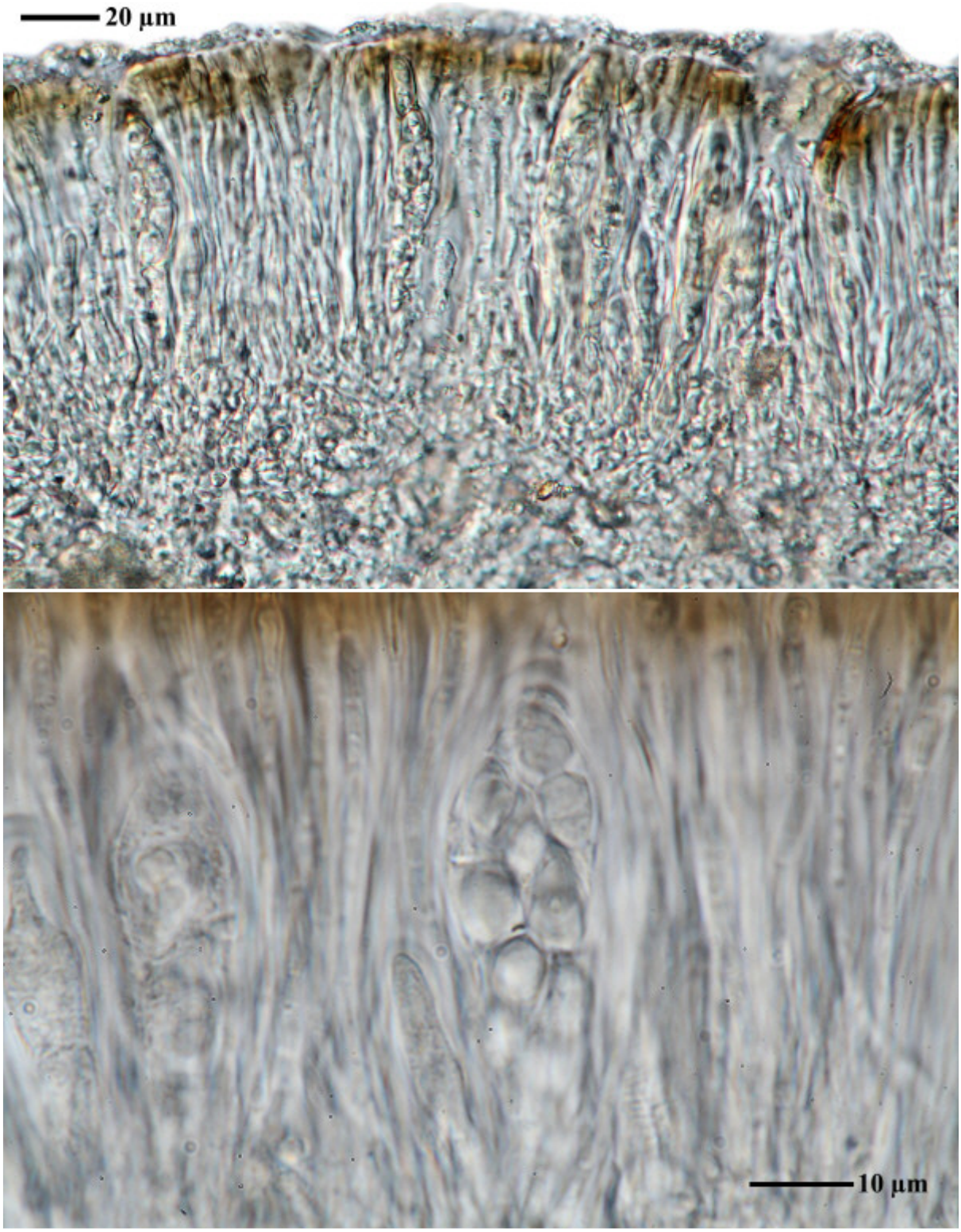
Caloplaca variabilis



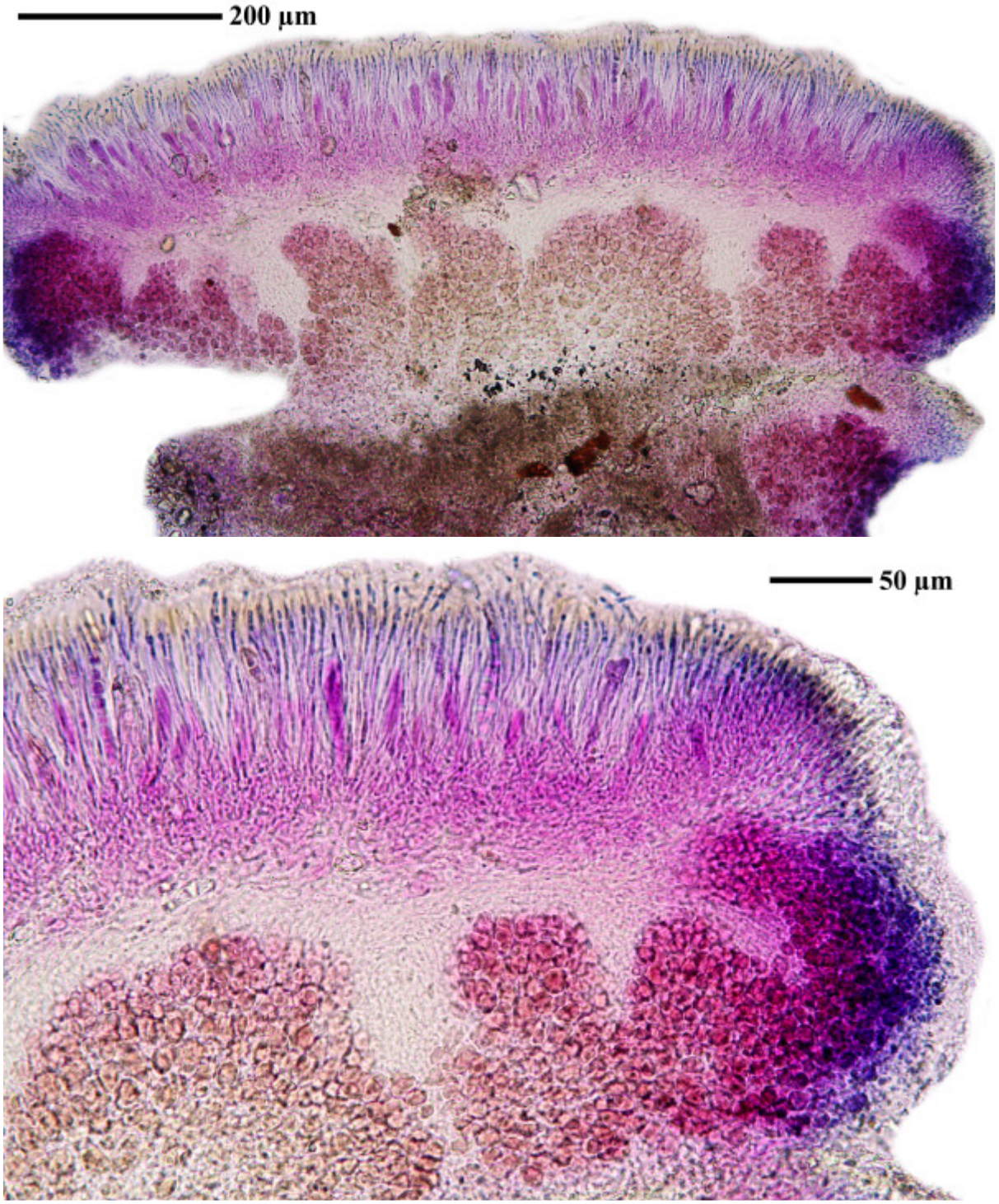




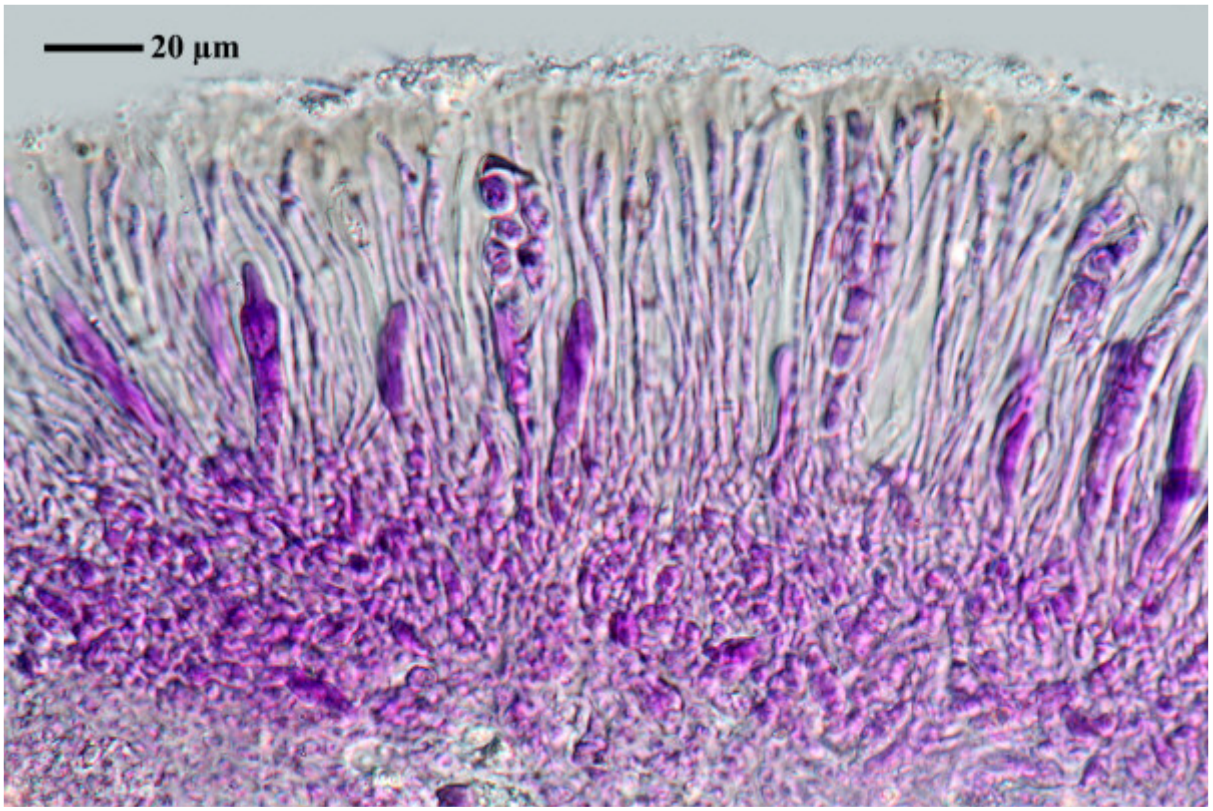
Caloplaca variabilis

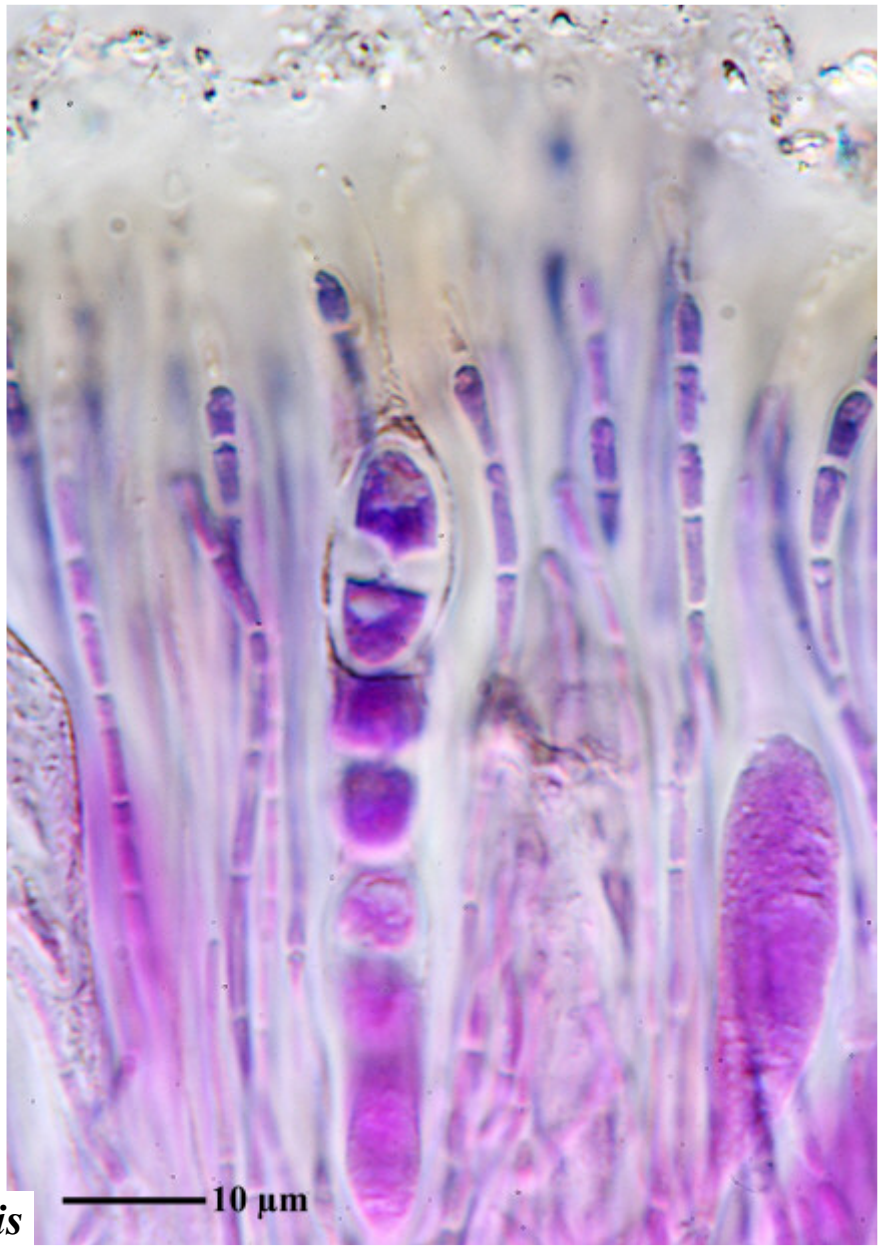


Caloplaca variabilis

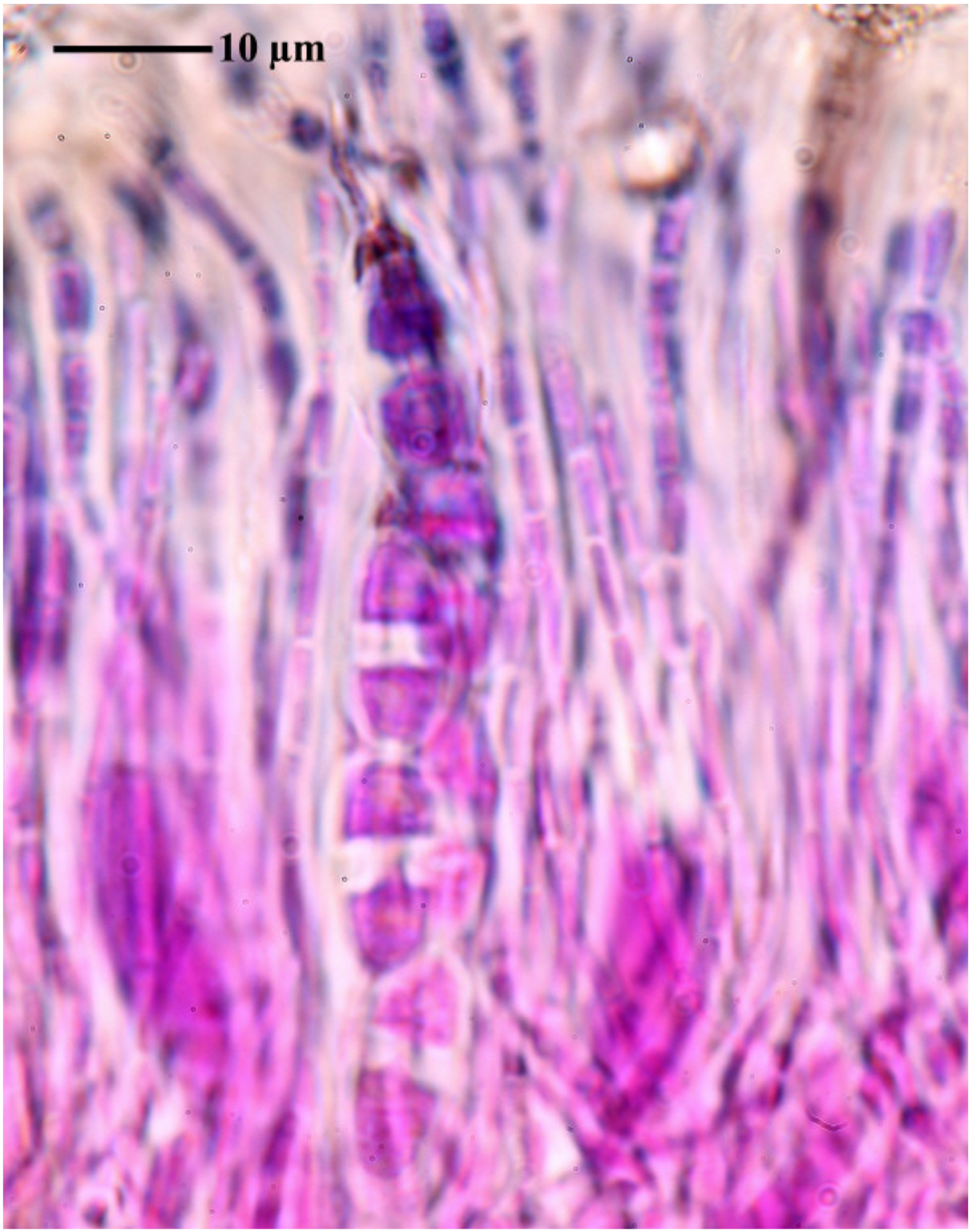


Caloplaca variabilis





Caloplaca variabilis



Caloplaca variabilis

Caloplaca veneris Cl. Roux & Nav.-Ros.

Hymenium c. 70 µm; spores polarilocular, 8/ascus, c. 16 x 7 µm, septum c. 1/3, unchanged in KOH. (Sipman). Spores 11.5-14.5 x 5.5-6.8 µm, septum 2.7-4.5 µm (FS).

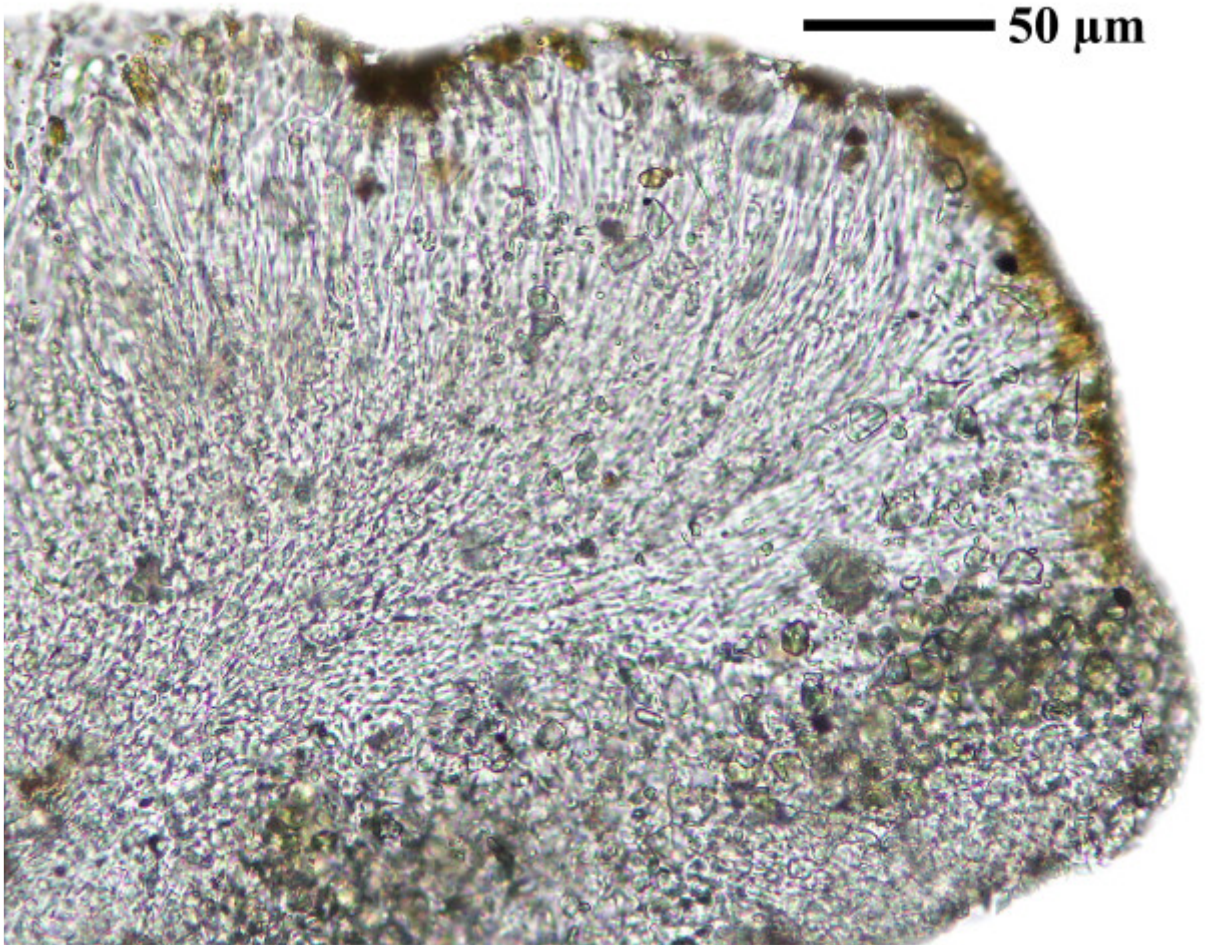
[B 60 0080895], Greece, South Aegean, Cyclades Archipelago, Santorini islands, Thira, Mt. Arkhangelos, between the chapel and the top; scarce dwarfscrub on slope with andesitic lava outcrops, 36°21,5' N, 25°23,5' E, 150 m. Leg. H. Sipman (nr. 29282-a) & Th. Raus, 26.05.1990, det H. Sipman 1999.



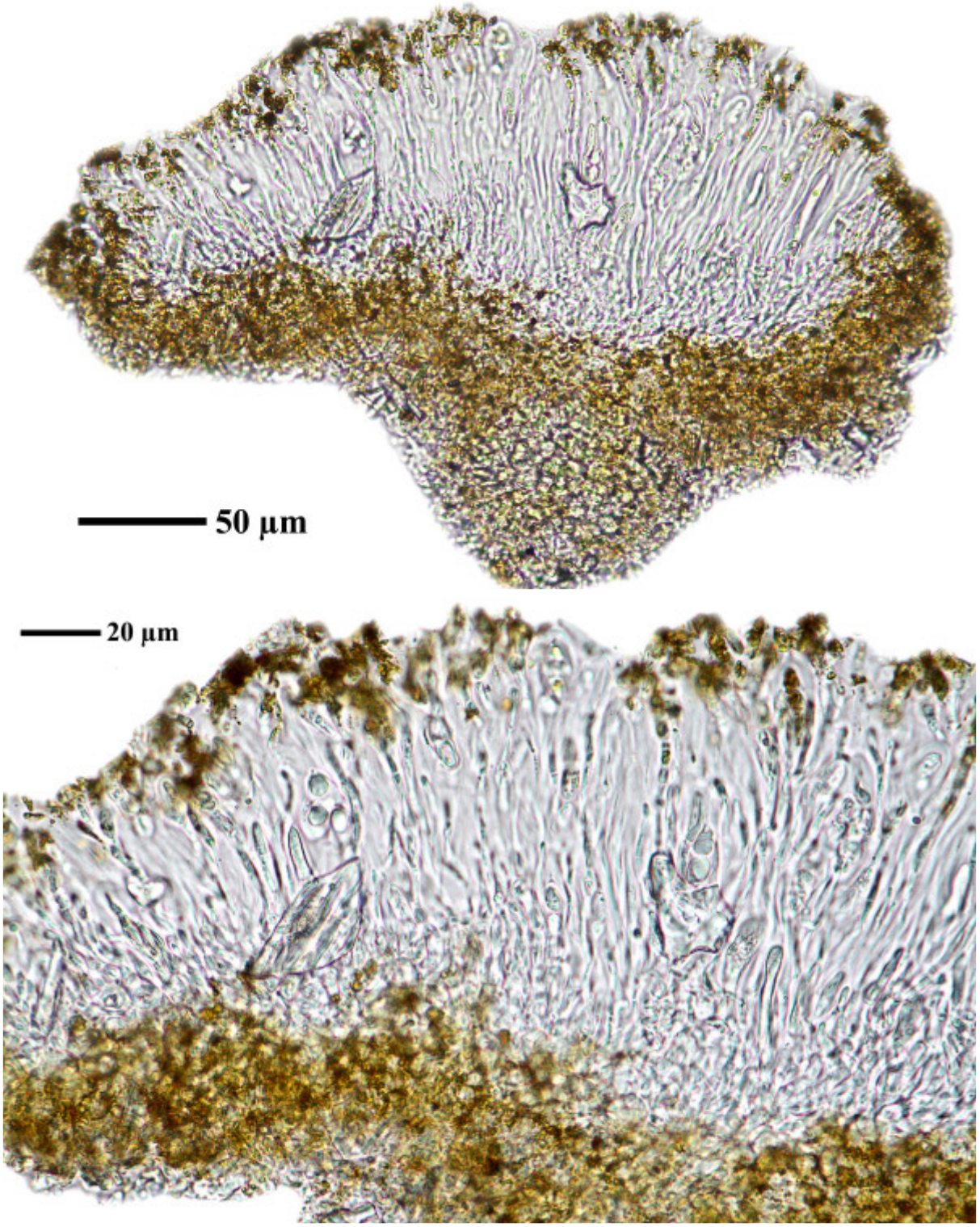


Caloplaca veneris

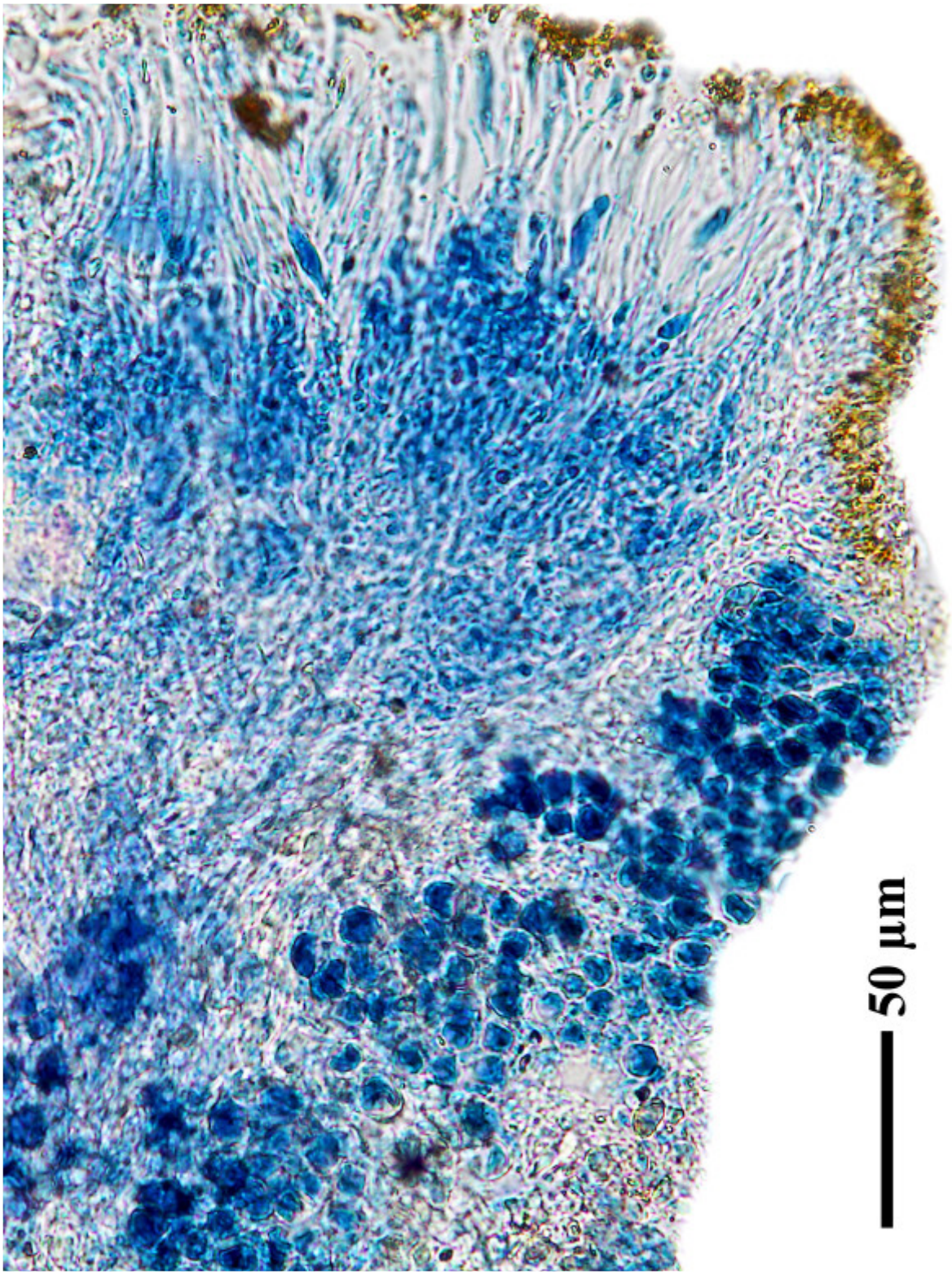




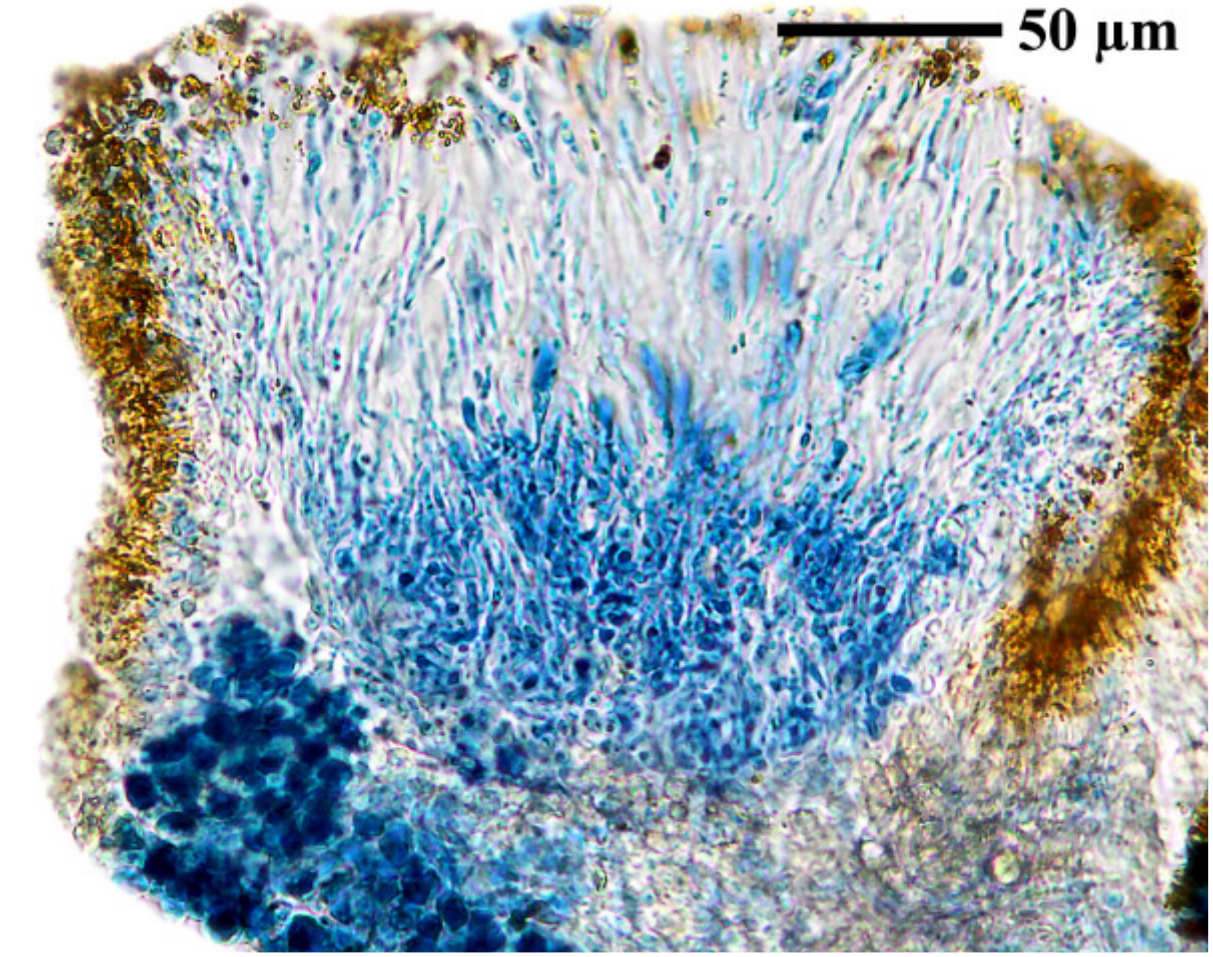
Caloplaca veneris

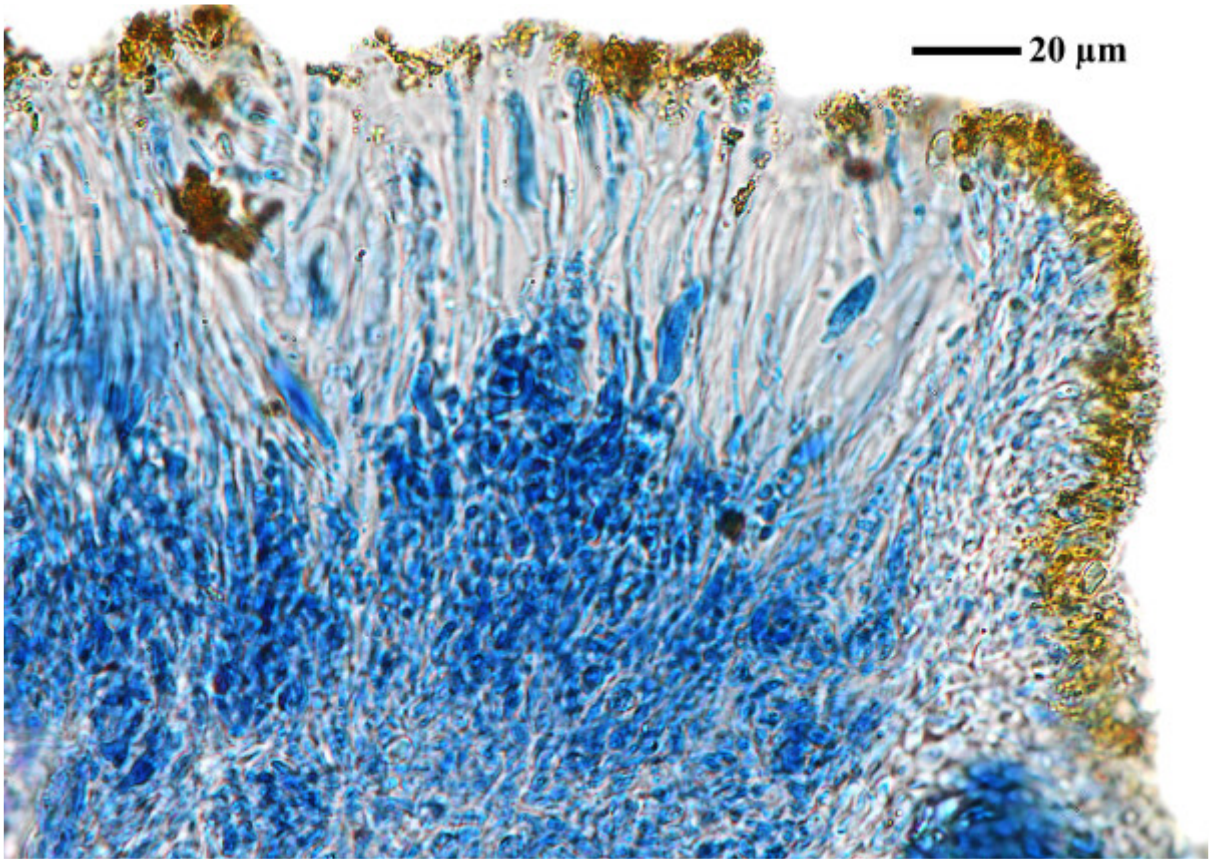


Caloplaca veneris

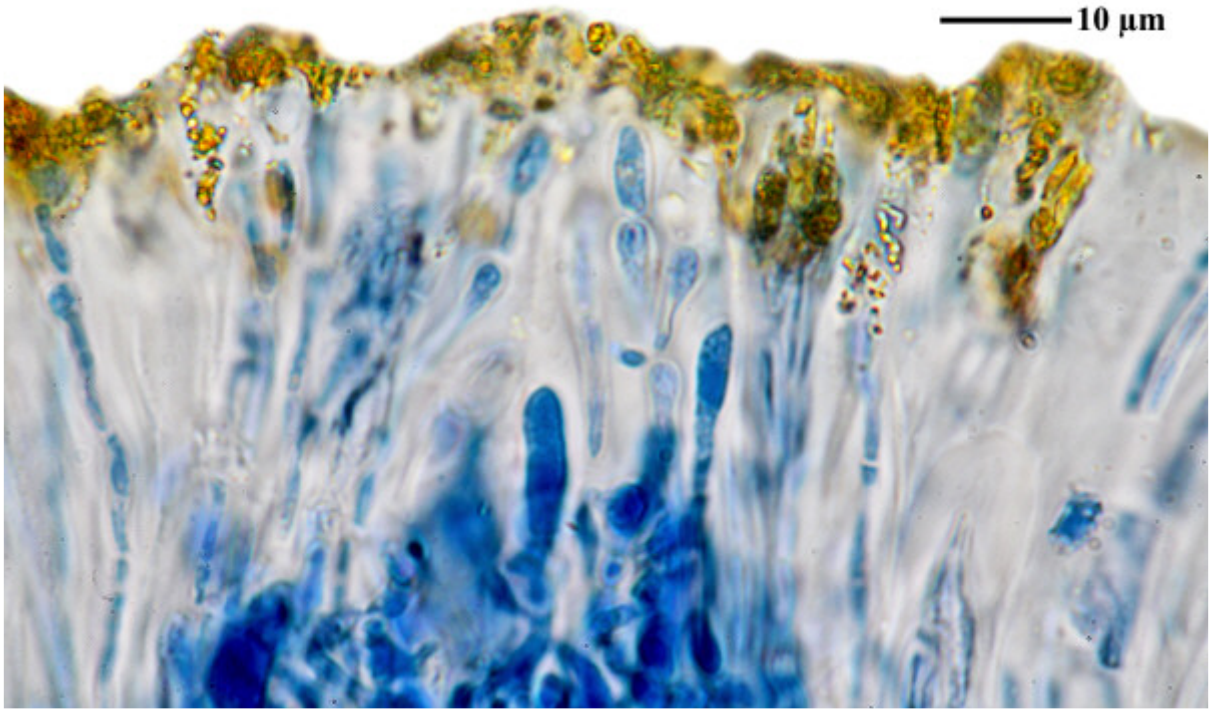


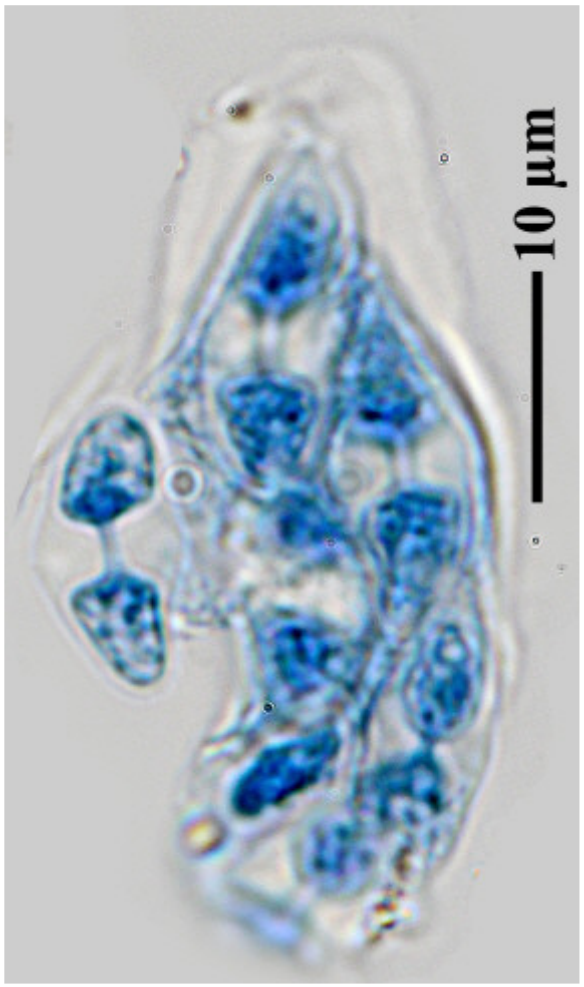
Caloplaca veneris

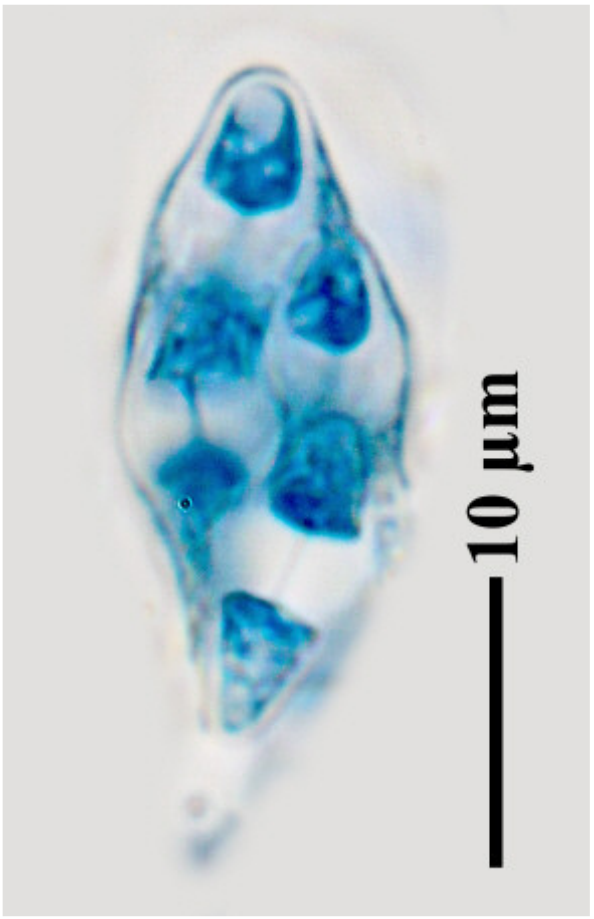




Caloplaca veneris









Caloplaca veneris

Caloplaca verruculifera (Vain.) Zahlbr.
[= *Polycauliona verruculifera* (Vain.) Arup, Frödén & Søchting]

Spores c. 12 x 4.5-5 µm, septum 2.7-3 µm.

[BR5030038472604], Canada, British Columbia, Vancouver Island, West Coast Trail, near Thresher's Cove, on maritime rock. 48°32' N, 124°26' W, 0-10 m. Leg. A. Aptroot (35051), 25. Aug. 1994, det. U. Arup, 1996.



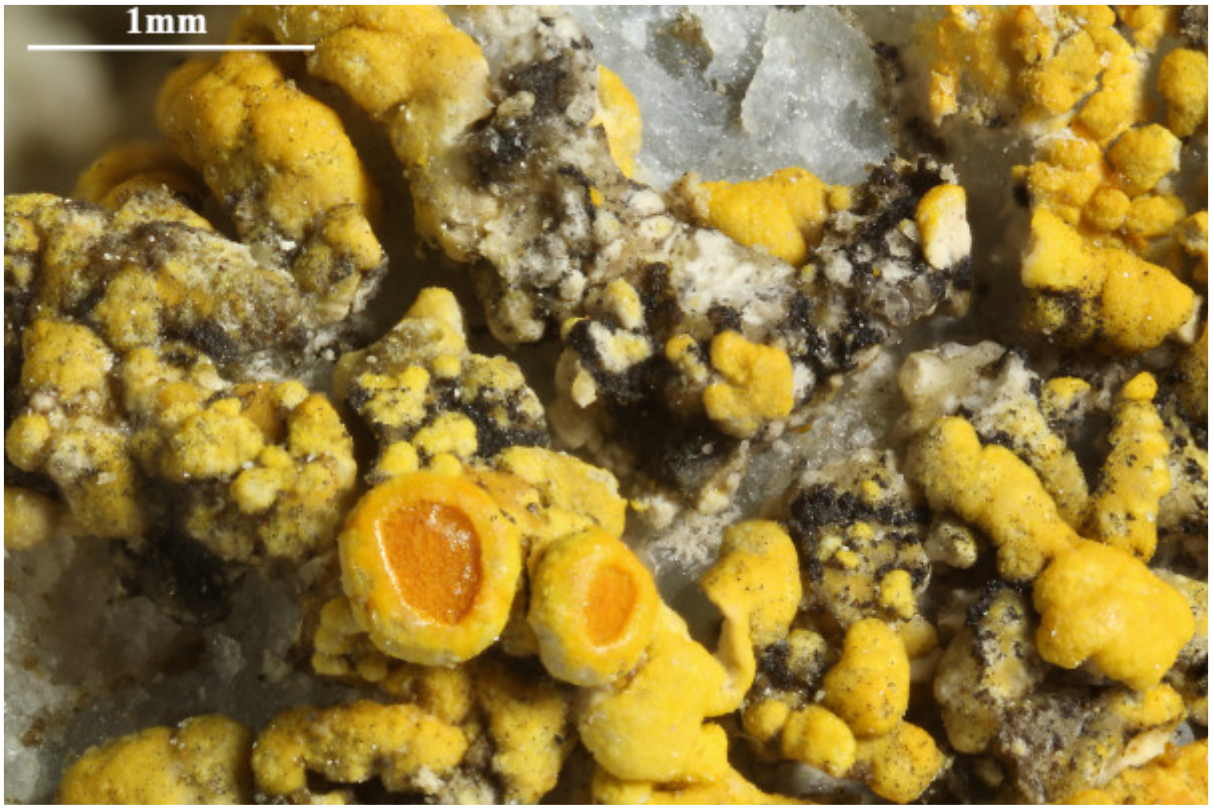


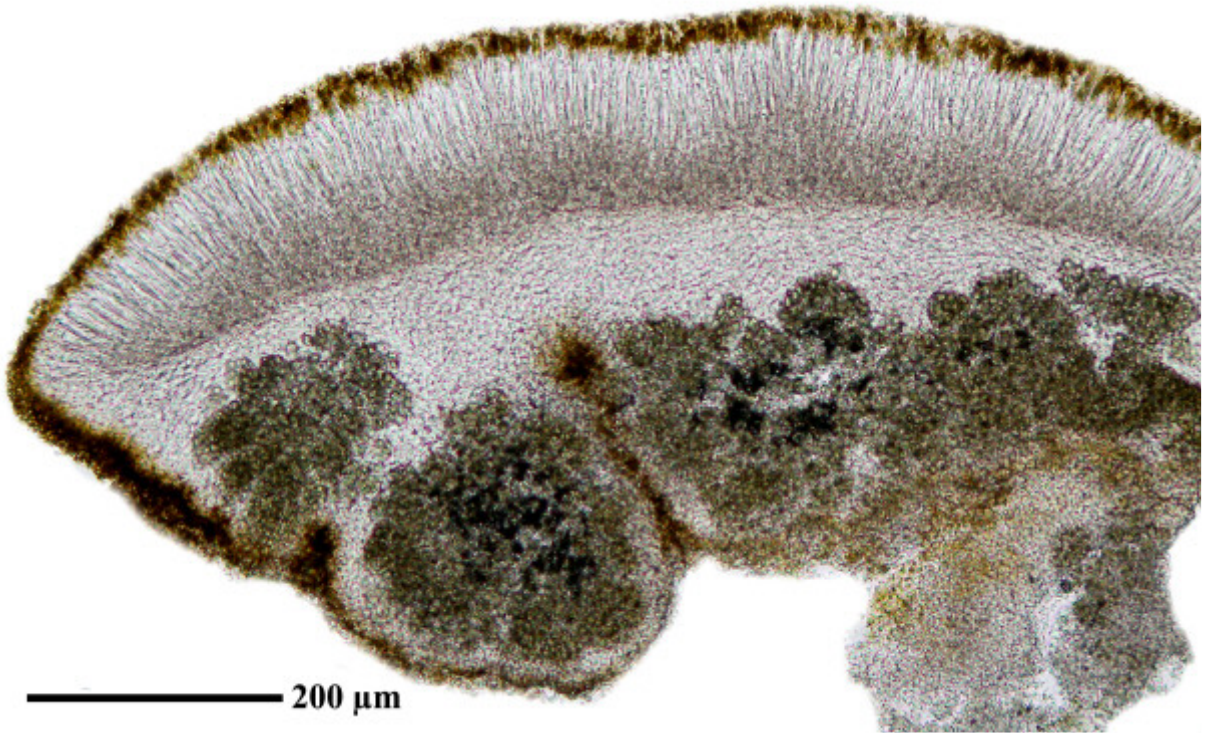
Caloplaca verruculifera



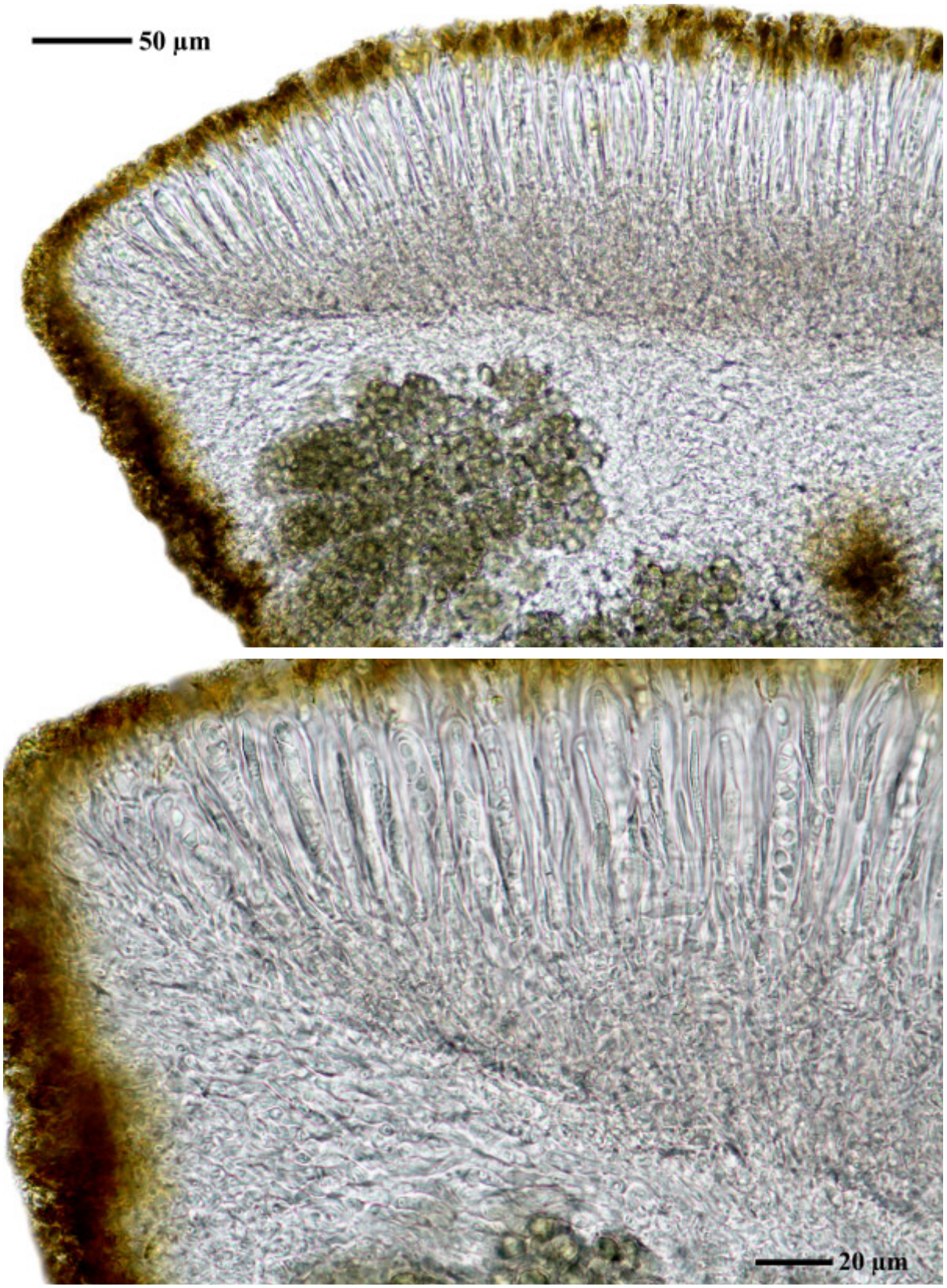


Caloplaca verruculifera

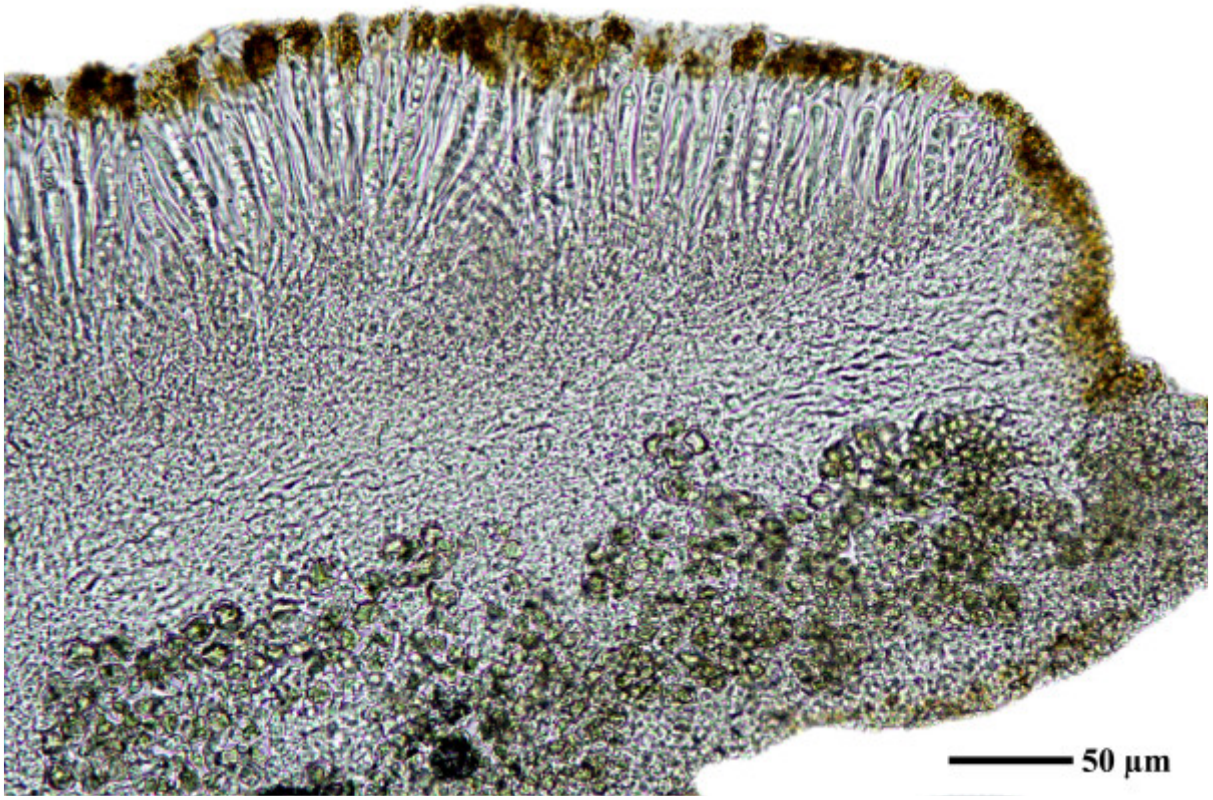


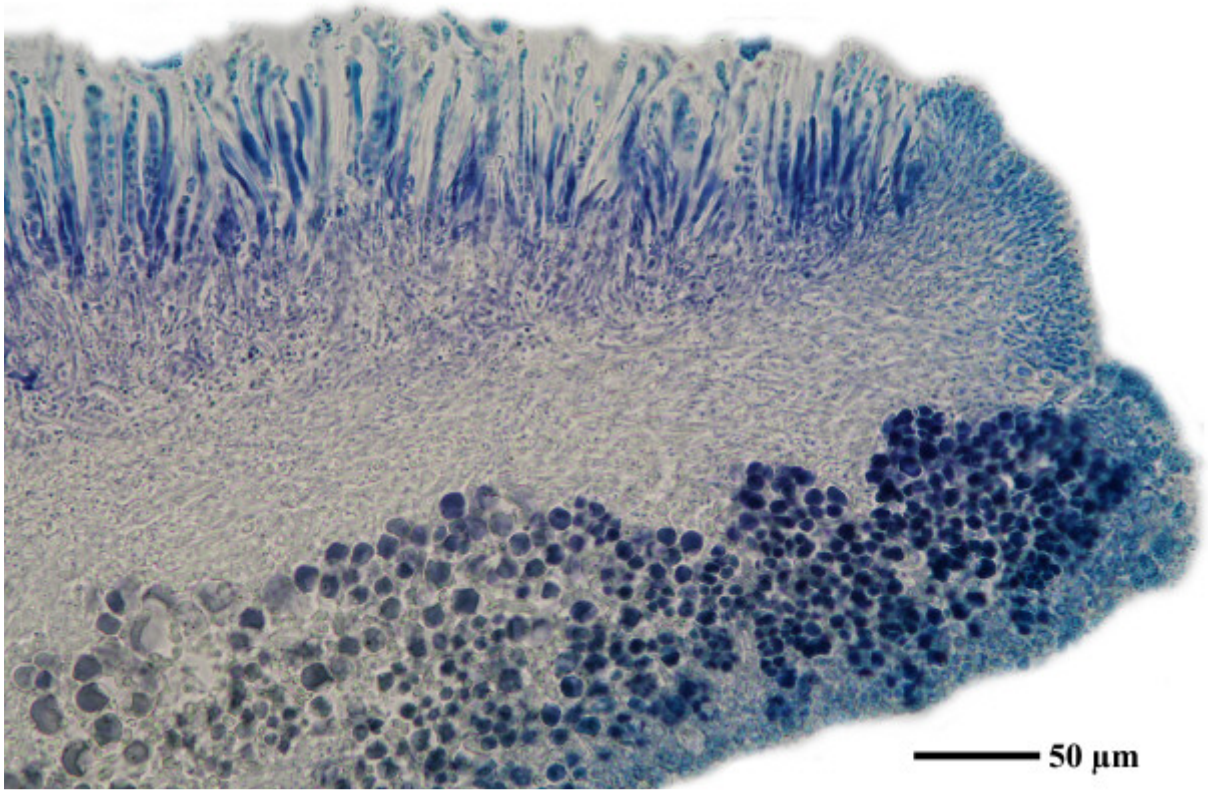


Caloplaca verruculifera

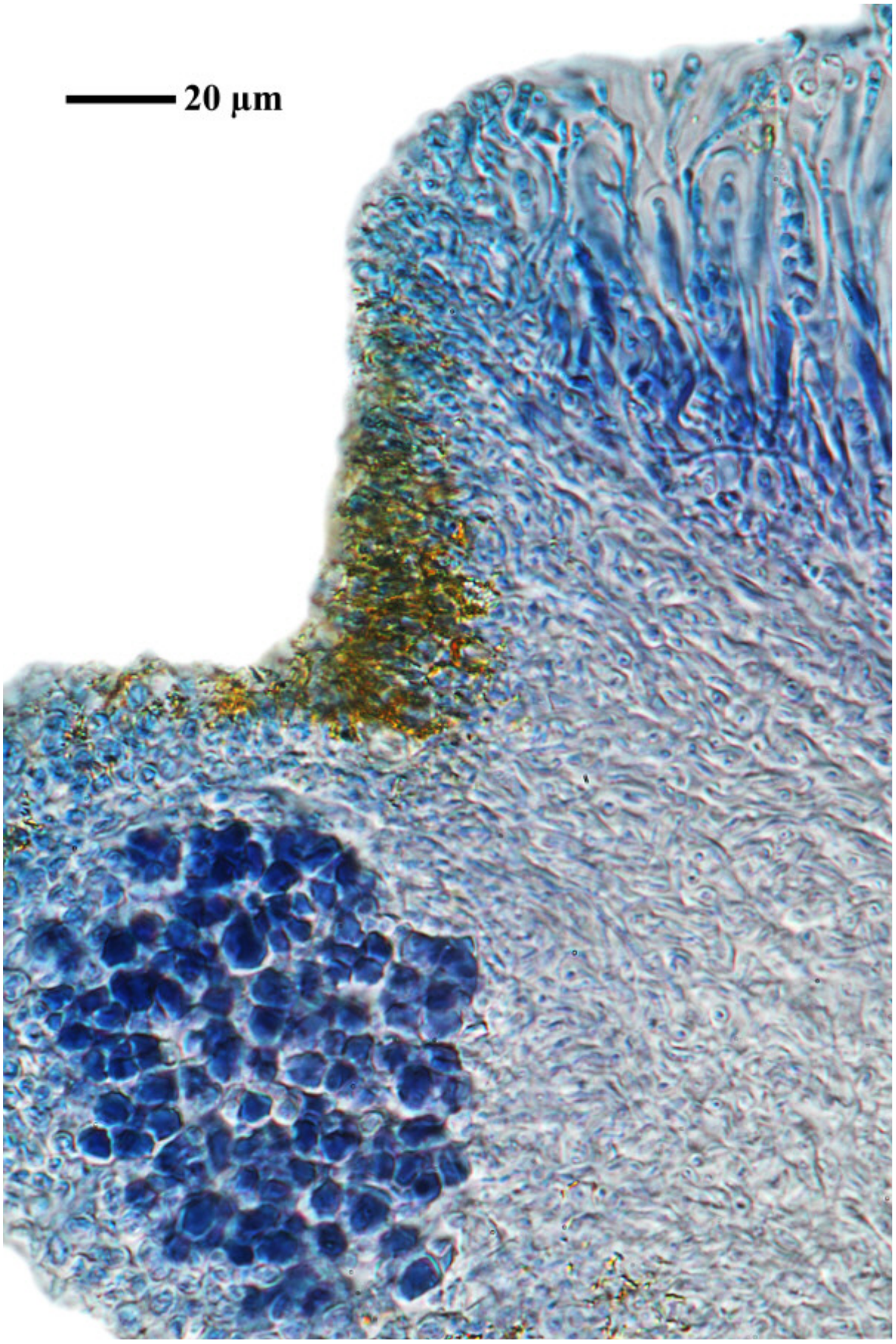


Caloplaca verruculifera

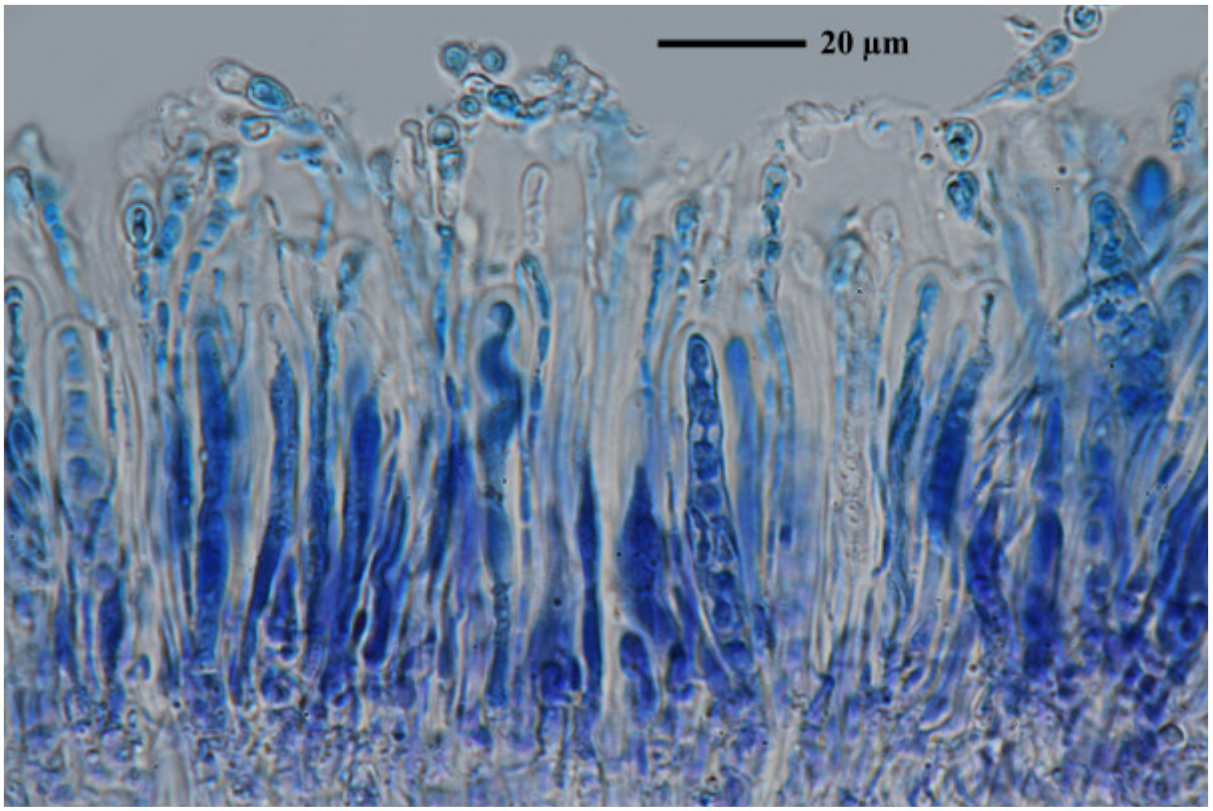


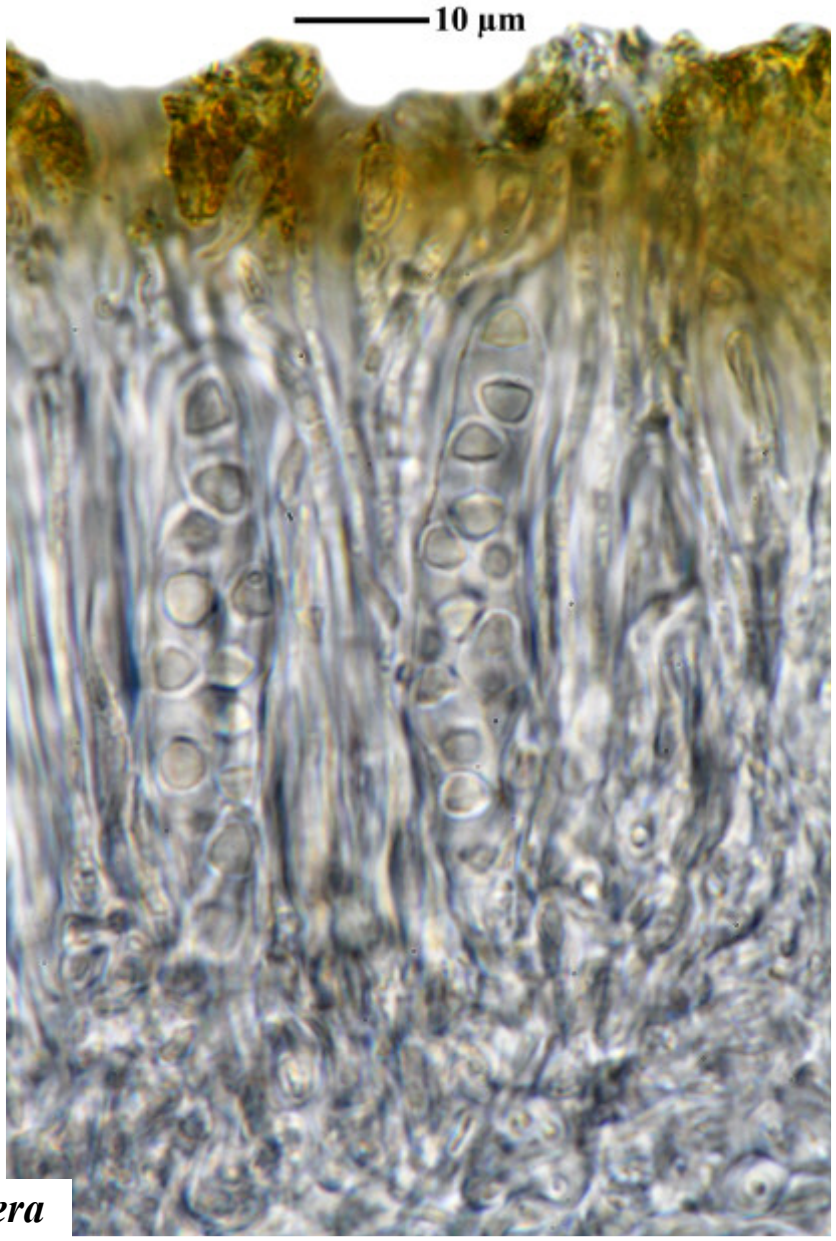


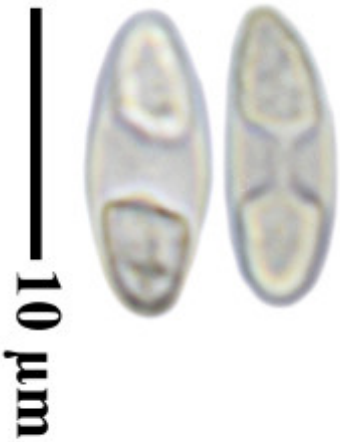
Caloplaca verruculifera



Caloplaca verruculifera







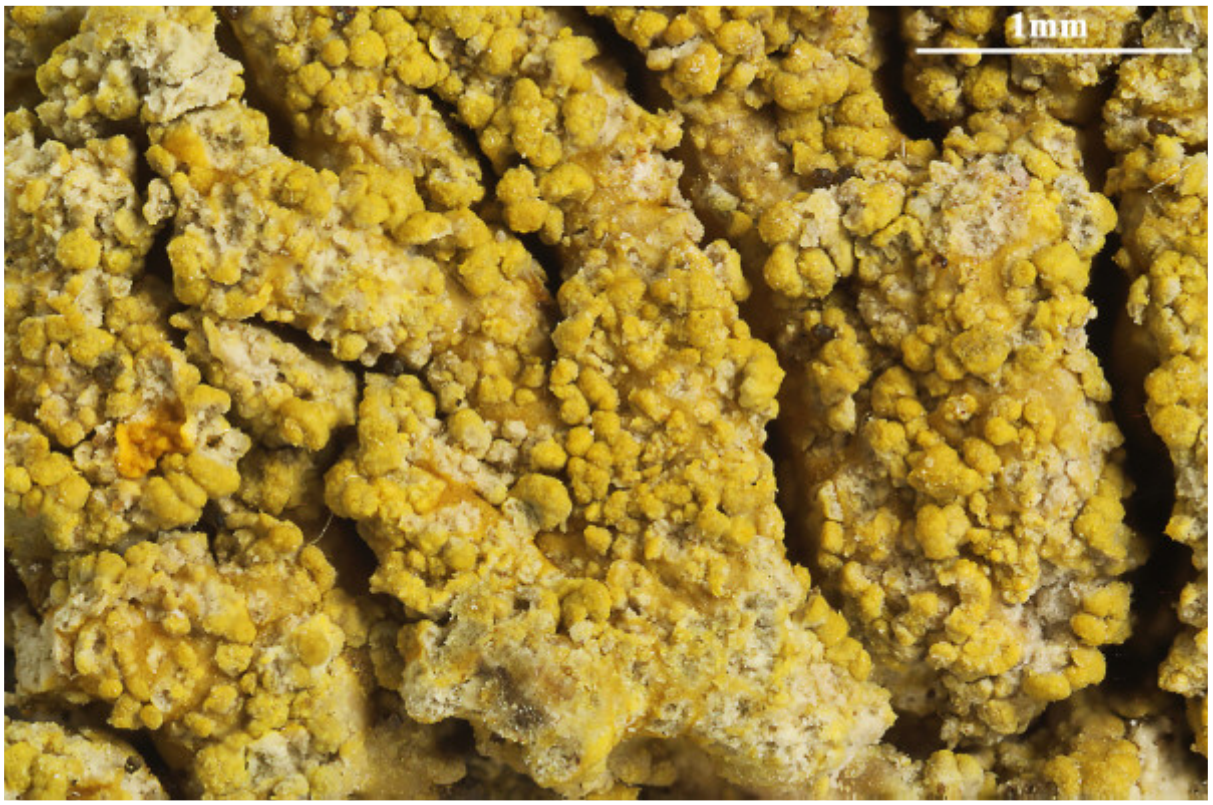
Caloplaca verruculifera

Caloplaca verruculifera (Vain.) Zahlbr.
[= *Polycauliona verruculifera* (Vain.) Arup, Frödén & Søchting]

[BR5030038473618],Great Britain, West Wales, Dyfed, Pembrokeshire, Skomer Island, SM 7208, on exposed volcanic siliceous rock. Leg. A. Aptroot (29397), 22. Aug. 2000, det. A. Aptroot 2000.







Caloplaca verruculifera

Caloplaca virescens (Sm.) Coppins

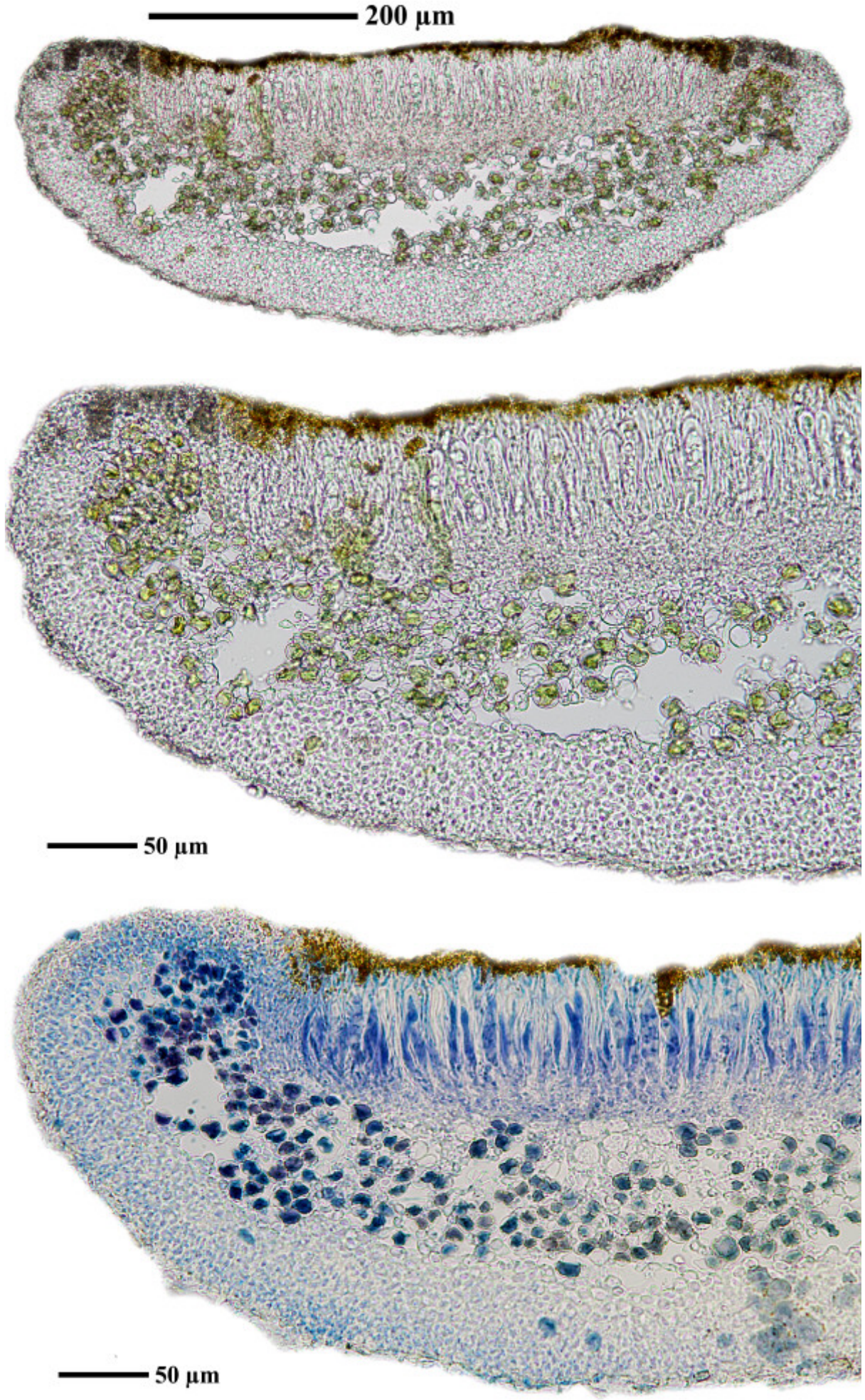
Spores 11.5-14.5 x 5.3-6.3 µm, septum 4.5-7.1 µm (FS). Note: *Caloplaca virescens* is dubiously distinguishable from *C. chlorina*. *Rinodina pityrea* is intermixed in the sample.

[B 60 0187156], Bulgaria, Khaskovo Province, Rhodope Mountains, Silen, valley of a small brook N of the village Rabovo, corticolous on bark of Populus nigra. 41°37' N, 25°40' E, 250 m. Leg. et det. J. Vondrák, J., 18. August 2004. VONDRÁK, J. SELECTED EXSICCATES OF CALOPLACA NO 11.

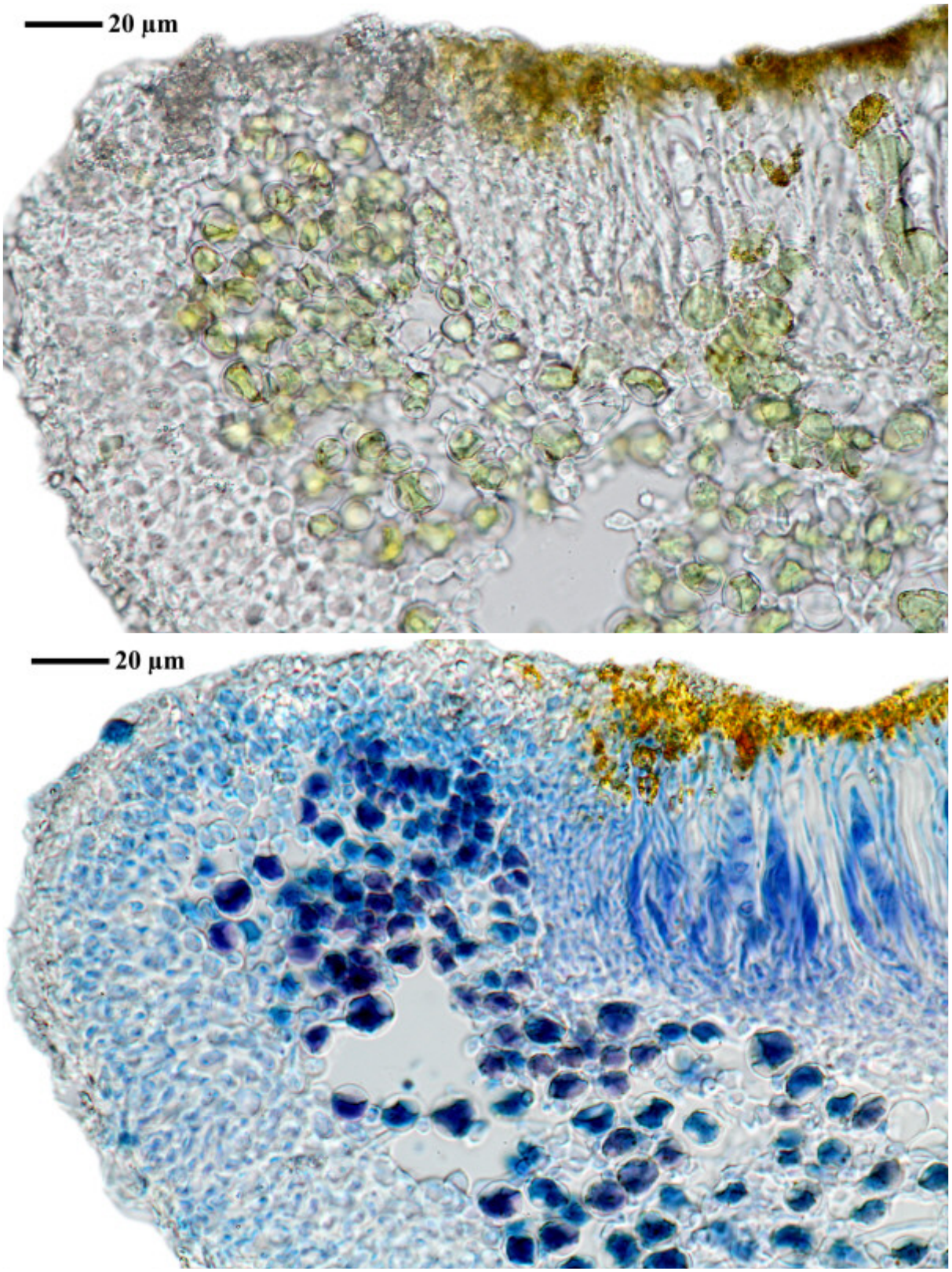




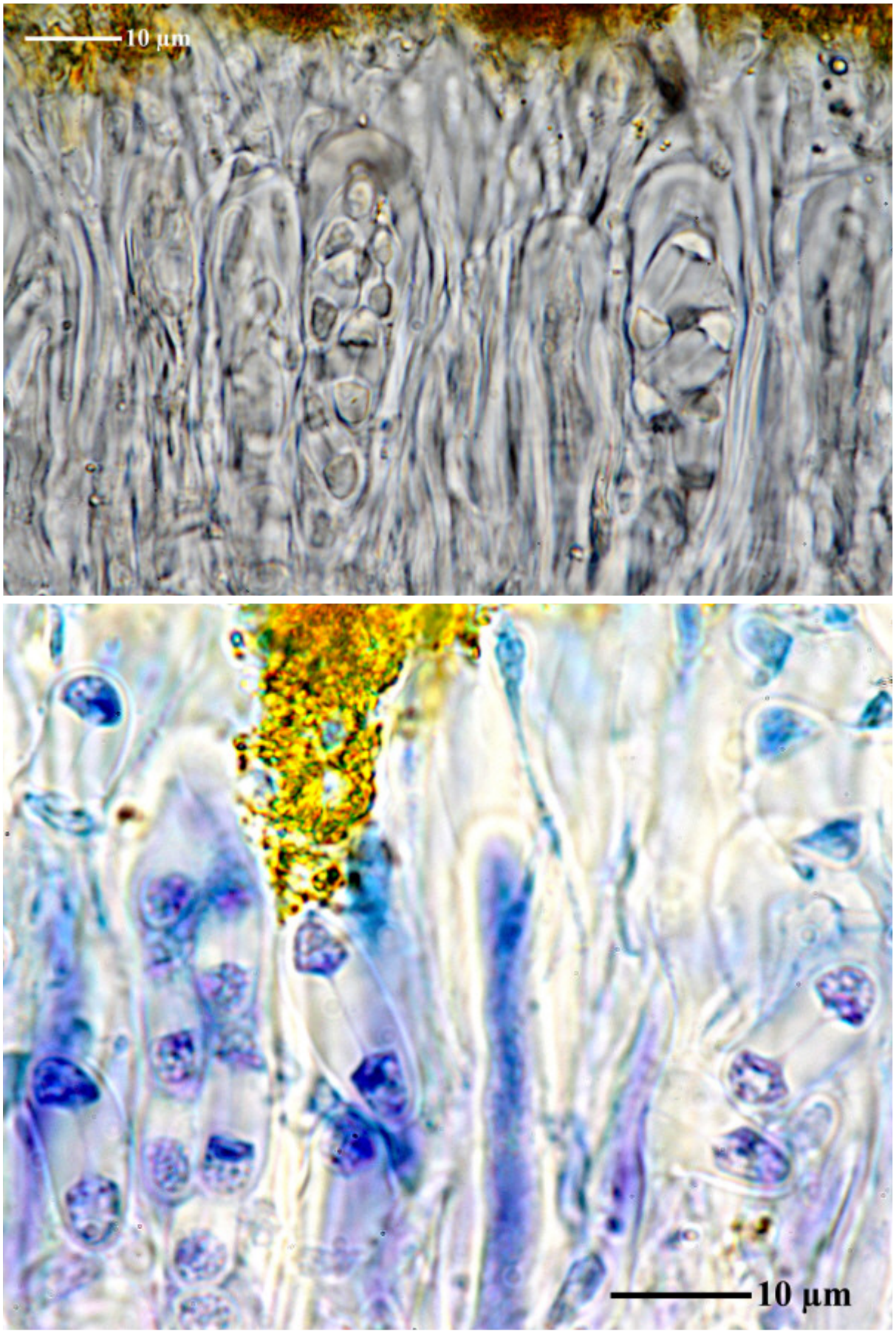
Caloplaca virescens



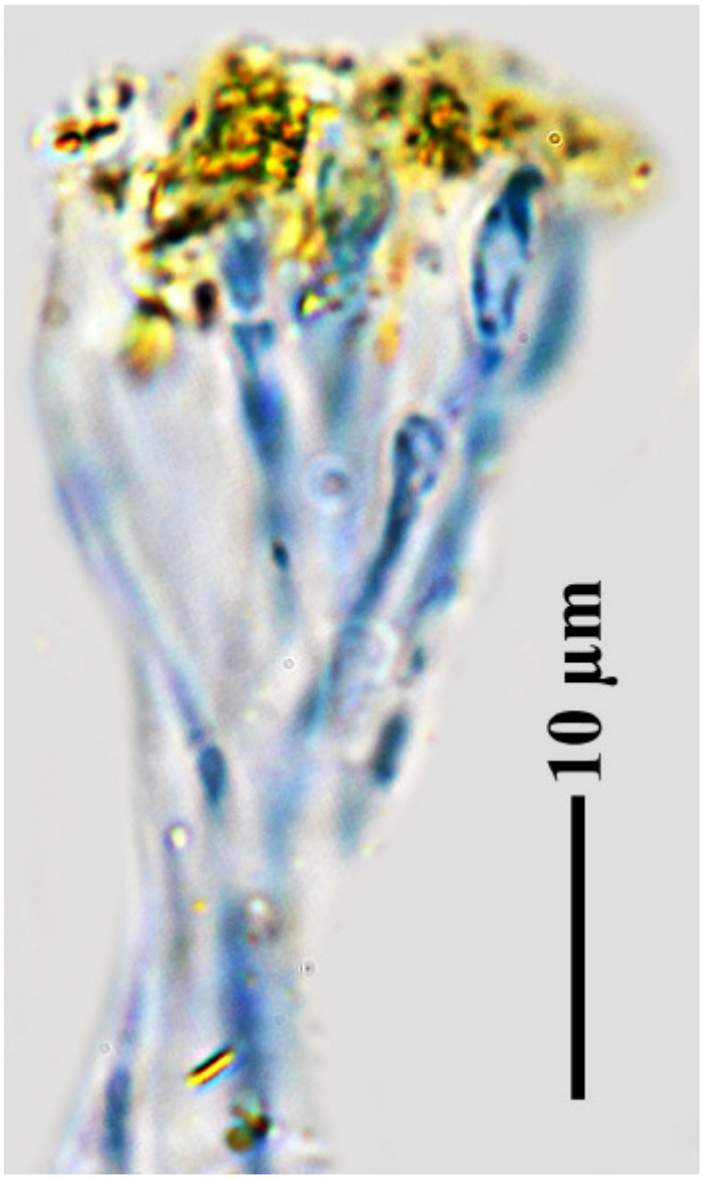
Caloplaca virescens

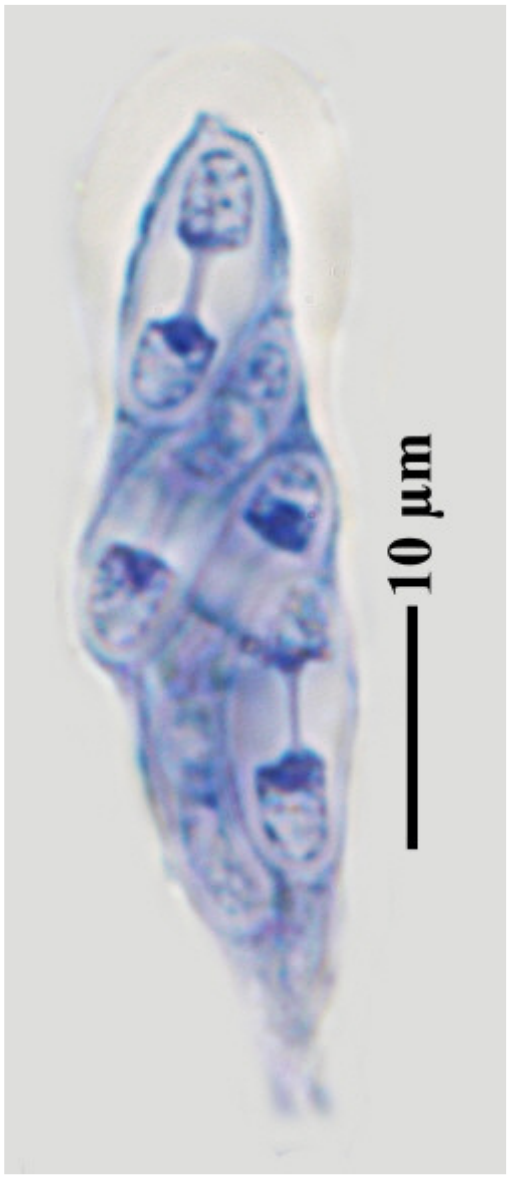


Caloplaca virescens



Caloplaca virescens







Caloplaca virescens

Caloplaca volkii V. Wirth & Vězda

On earth. V. Wirth et Vězda, in Stuttgarter Beitr. Naturk., Ser. A, Nr. 284, (1975).

[19609], Africa Austro-Occidentalis, Swakopmund, 10 km in septentrione a Swakopmund, ad terram gypsaceam in desertis. Leg. O. Volk, 27.08.1974. Vězda: Lichenes Selecti Exsiccati Nr. 1347.





Caloplaca volkii

Caloplaca volkii V. Wirth & Vězda

Spores c. 11.5-12.5 x 4-5 µm, septum 2-3.4 µm.

[BR5030067696781], Namibia, 20 km E of Swakopmund, in desert near road branching C28-D1991, on sand. Leg. C.M. van Herk. 28. August 2007, det. A. Aptroot, 2007.



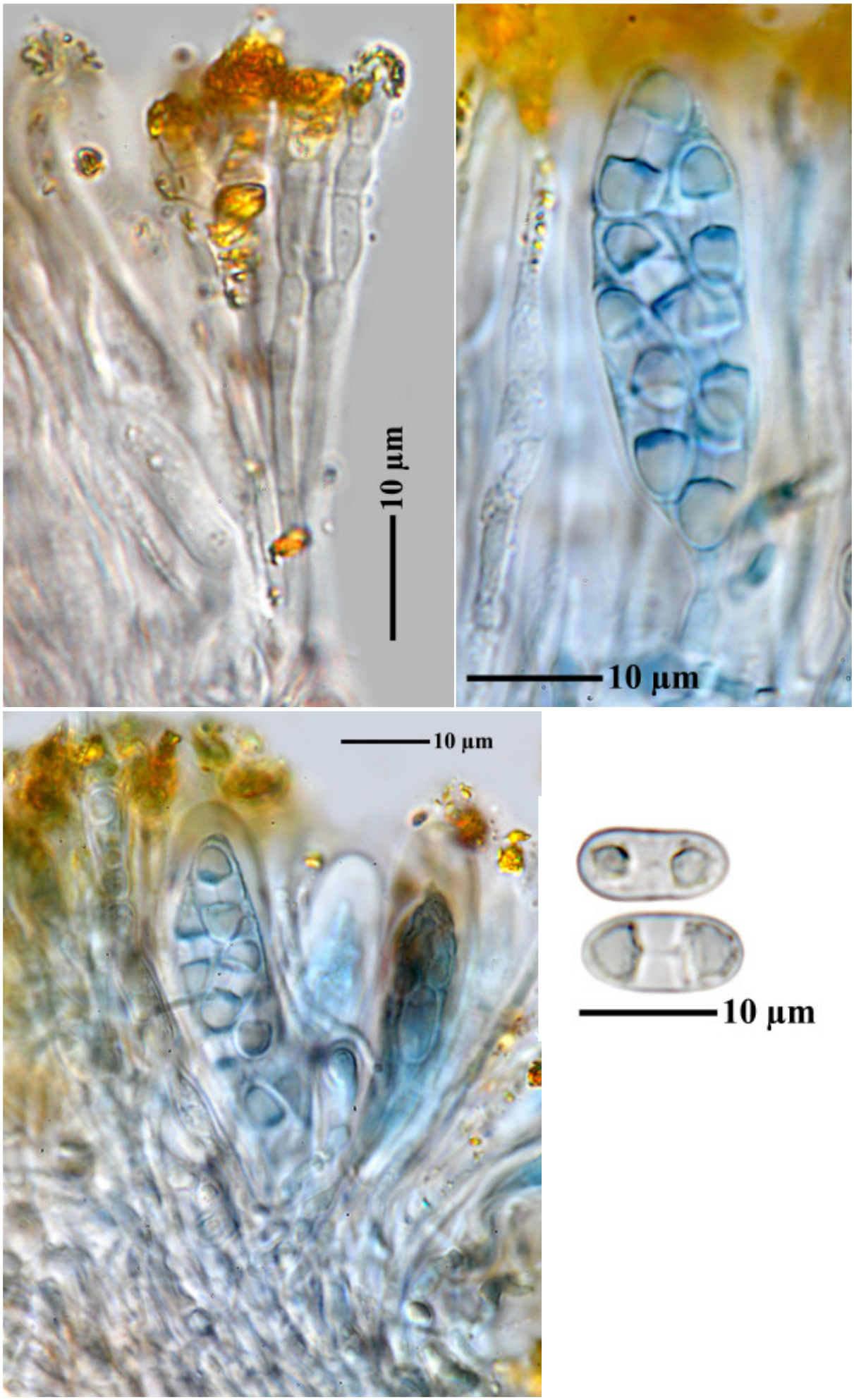




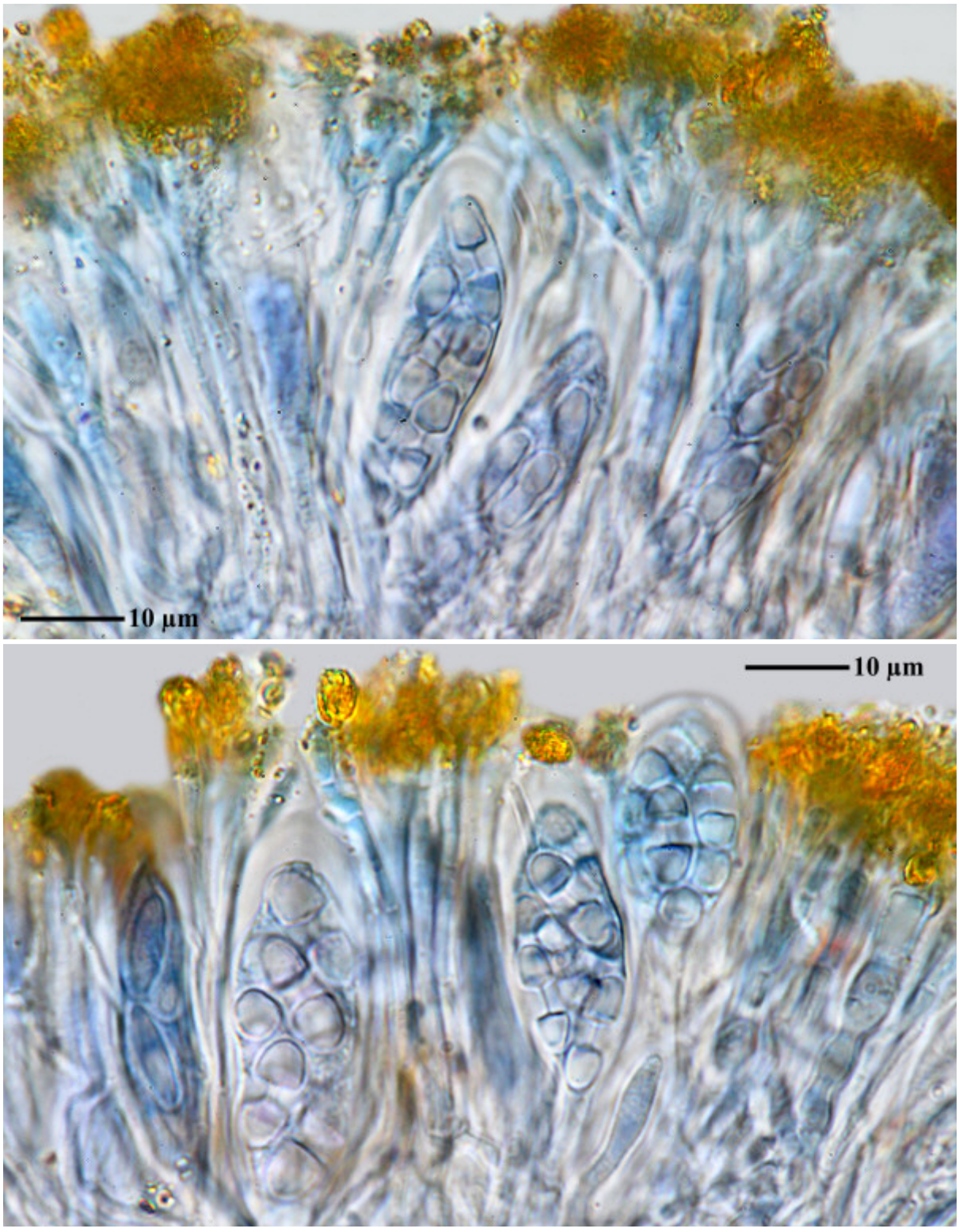
Caloplaca volkii



Caloplaca volkii



Caloplaca volkii

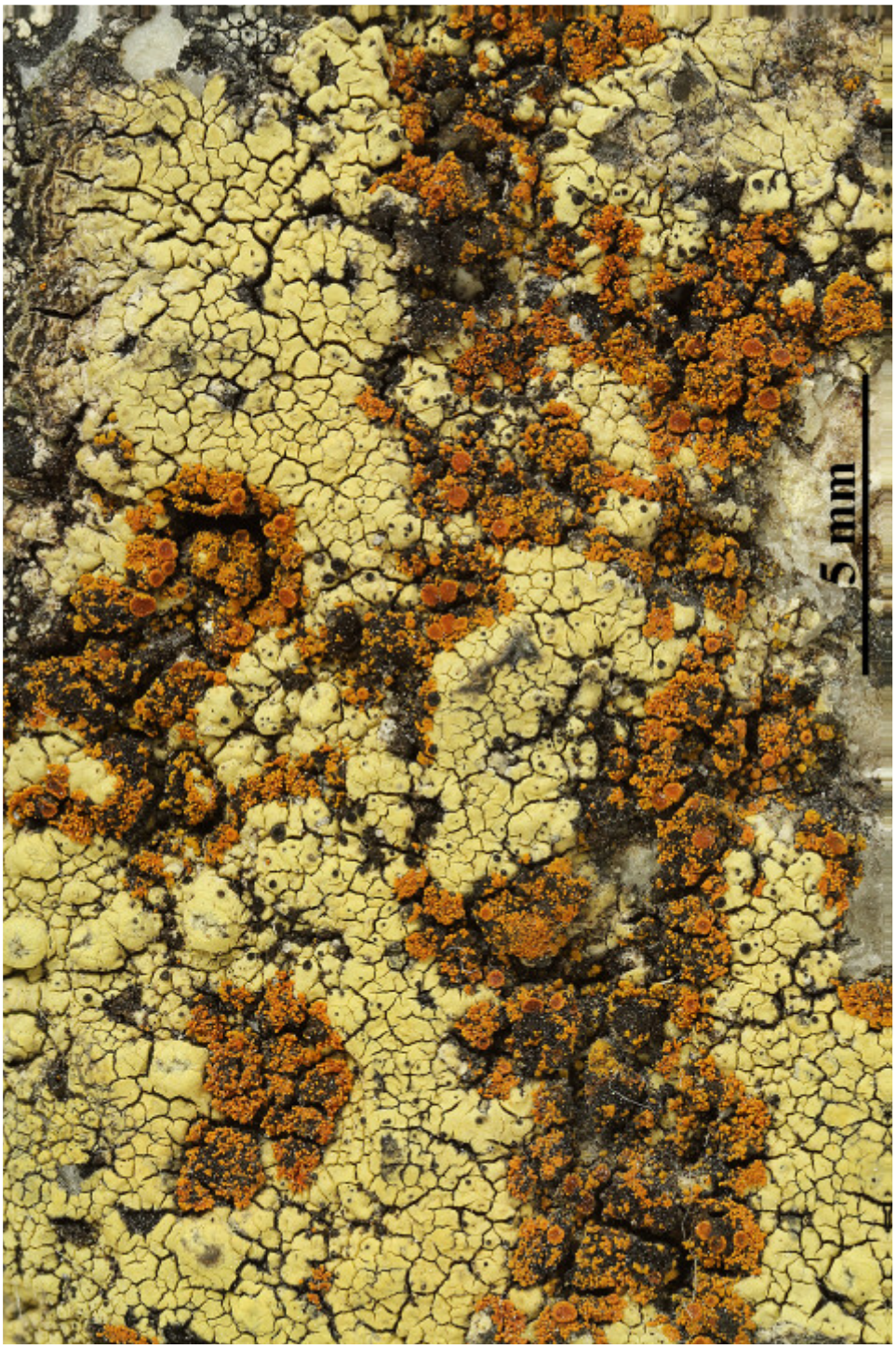


Caloplaca volkii

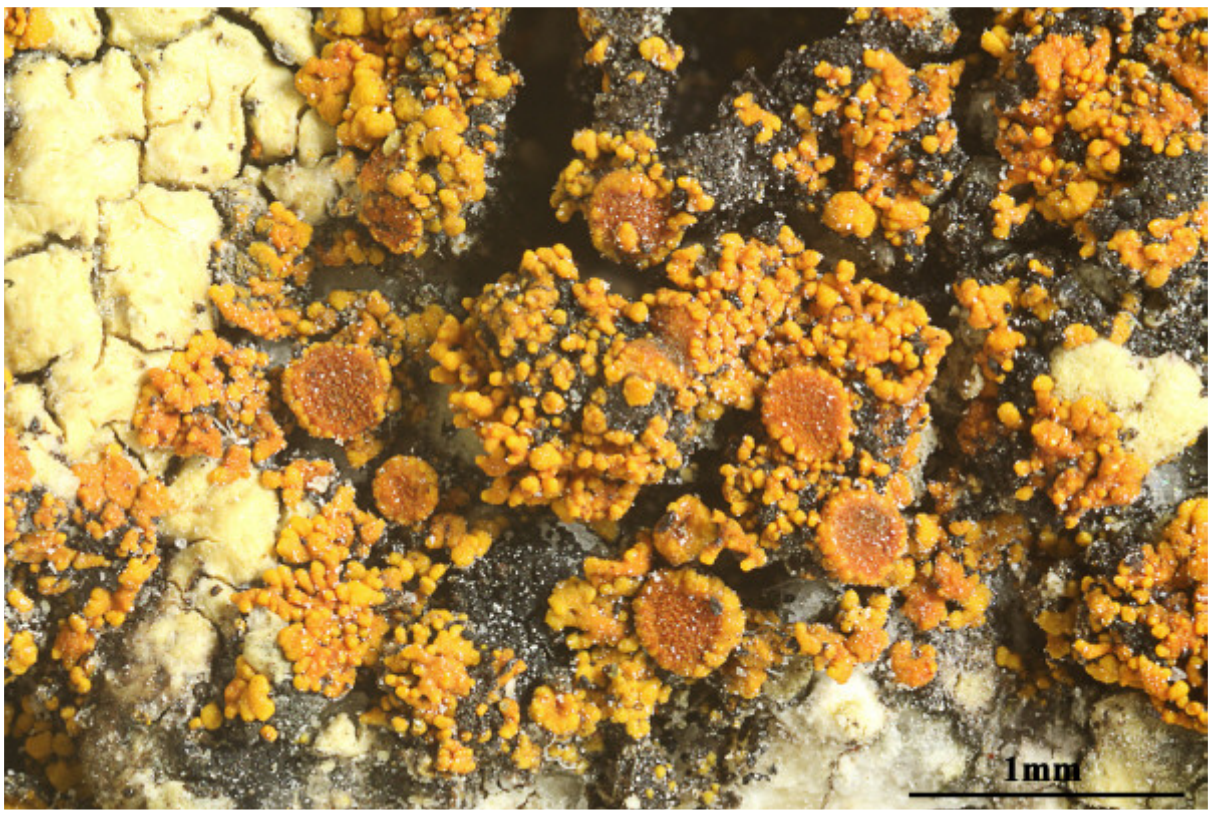
Caloplaca wetmorei Nimis, Poelt & Tretiach, Bryologist 97(2): 183 (1994) [= *Tassiloa wetmorei* (Nimis, Poelt & Tretiach) S.Y. Kondr., Kärnefelt, A. Thell, Elix, J. Kim, A.S. Kondr. & Hur, in Kondratyuk, Kärnefelt, Thell, Elix, Kim, Kondratyuk & Hur, Graphis Scripta 27(1-2): 24 (2015)]

On non-calcareous rocks parasitic in *Pertusaria* and *Buellia*. Lit. Nimis, Poelt & Tretiach. The Bryologist 97(2): 183 (1994)

[19561], Mexico, Baja California Sur, Sierra de la Laguna, 23°30' N, 110°00' W, alt. 1700 m, ad saxa granitica, in thallo Pertusariae sp. & Buelliae sp. vigens. Leg. P.L. Nimis & M. Tretiach, 16.02.1993. VĚZDA: LICHENES RARIORES EXSICCATI NR. 152.





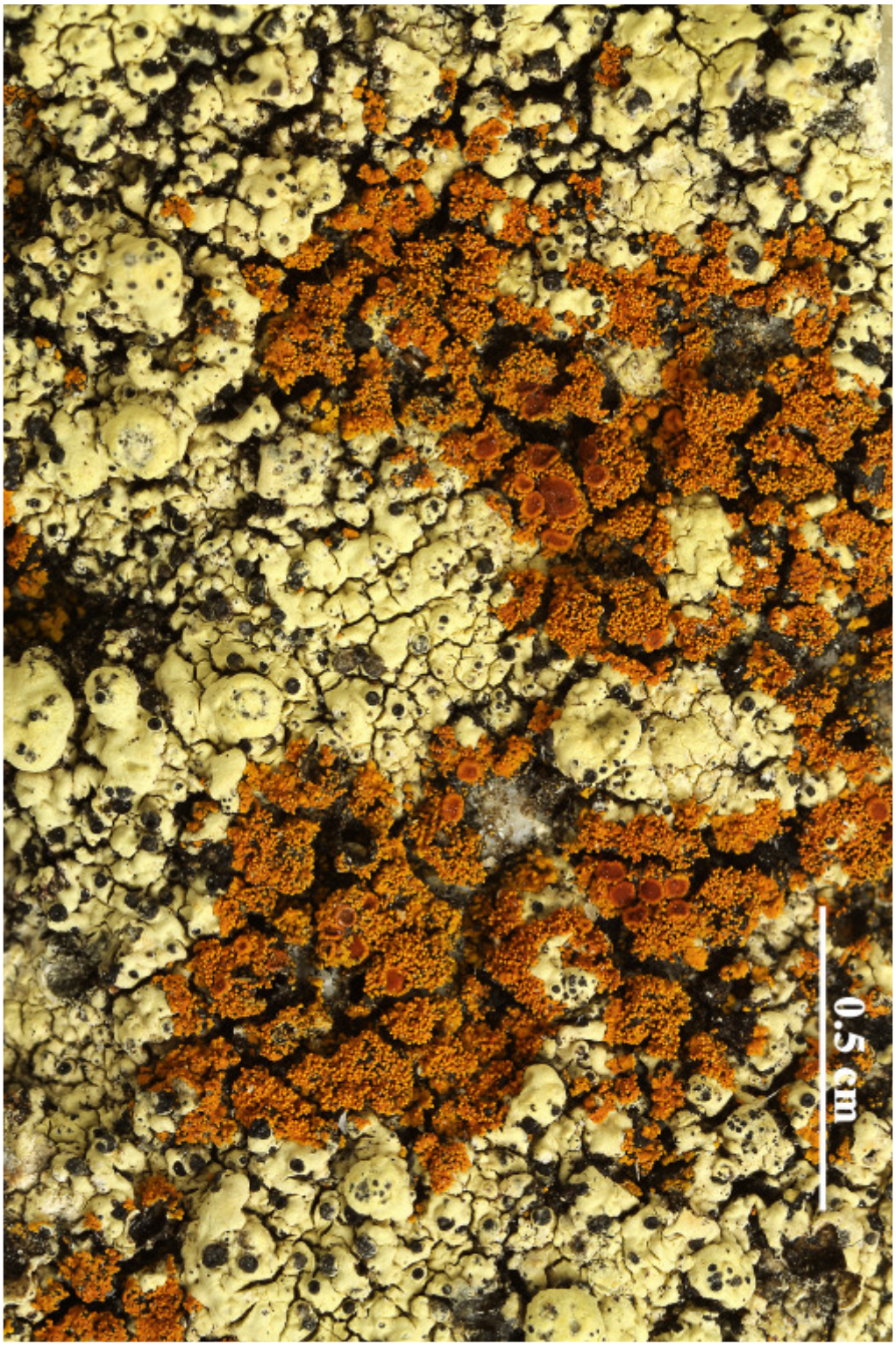


Caloplaca wetmorei

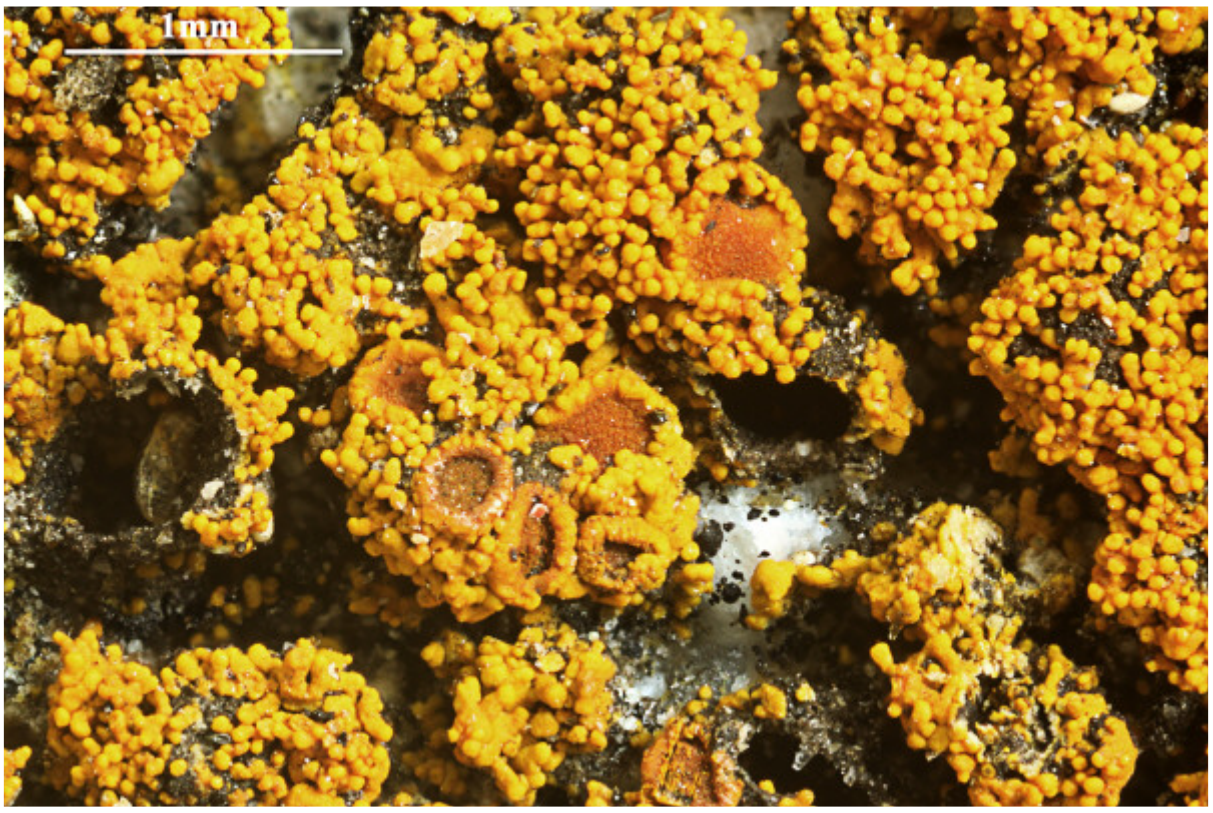
Caloplaca wetmorei Nimis, Poelt & Tretiach, Bryologist 97(2): 183 (1994), **HOLOTYPUS**

[= *Tassiloa wetmorei* (Nimis, Poelt & Tretiach) S.Y. Kondr., Kärnefelt, A. Thell, Elix, J. Kim, A.S. Kondr. & Hur, in Kondratyuk, Kärnefelt, Thell, Elix, Kim, Kondratyuk & Hur, Graphis Scripta 27(1-2): 24 (2015)]

[TSB 16664], Mexico, Baja California, Sierra de la Laguna, near a small creek, c. 1700 m, parasite on saxicolous *Pertusaria*- and *Buellia*-species on a granitic boulder, 29°30' N, 110° W. Leg. P.L. Nimis & M. Tretiach, 16.02.1993.







Caloplaca wetmorei

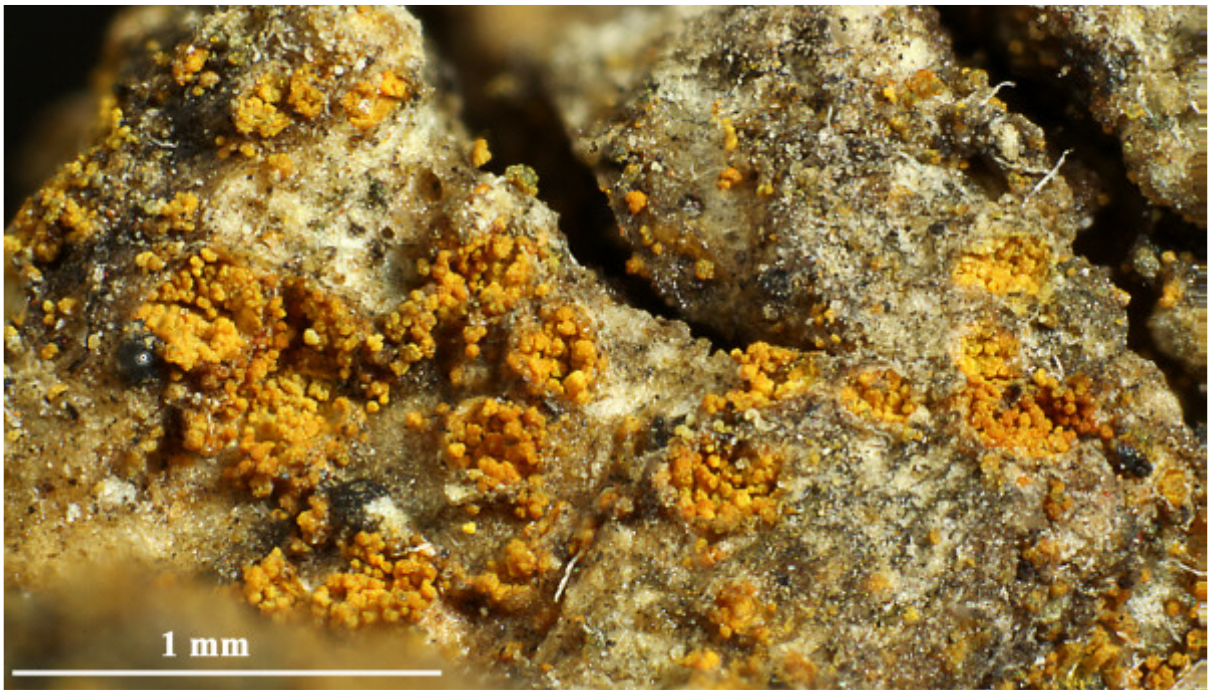


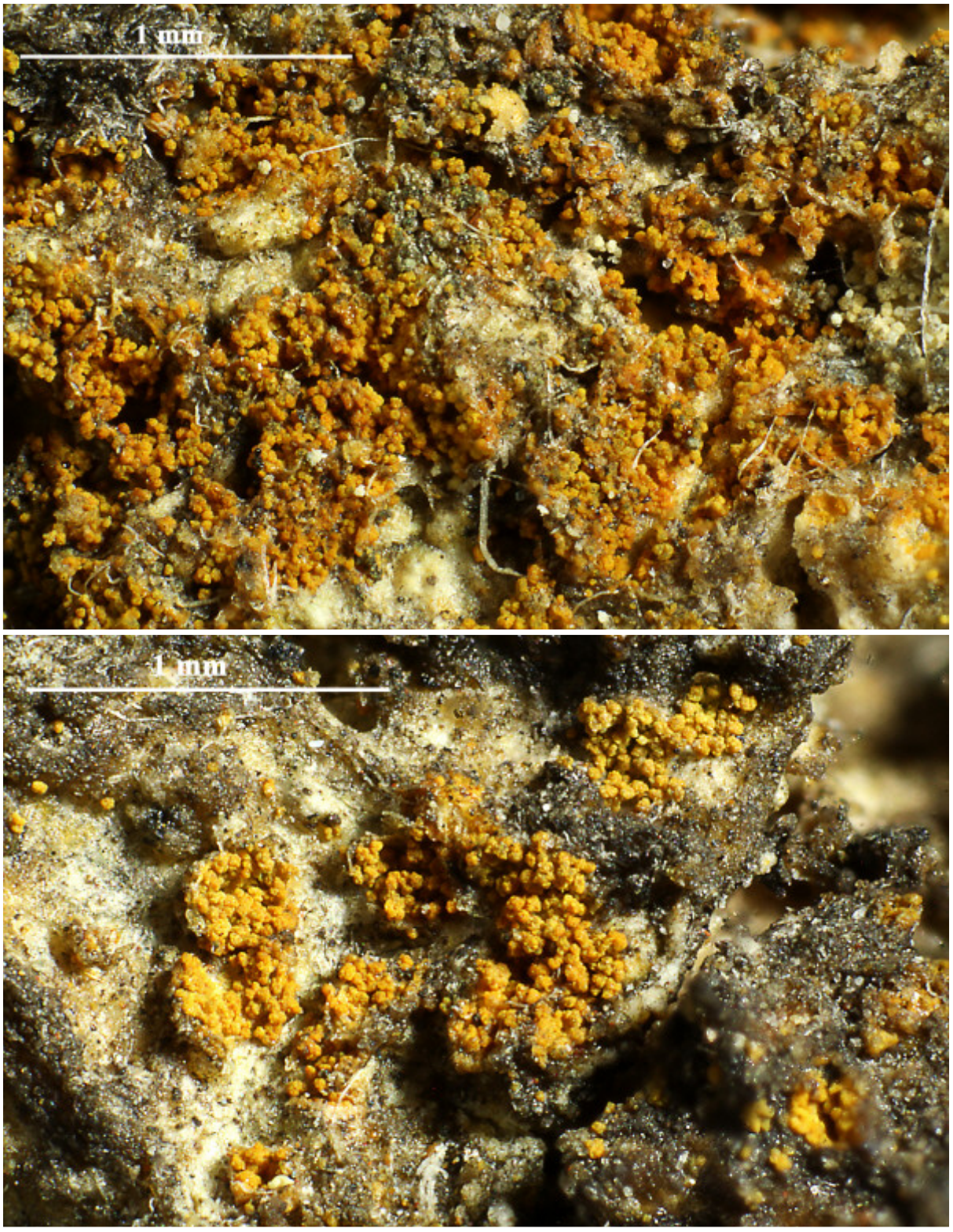
Caloplaca wetmorei

Caloplaca wilsonii S.Y. Kondr. & Kärnefelt

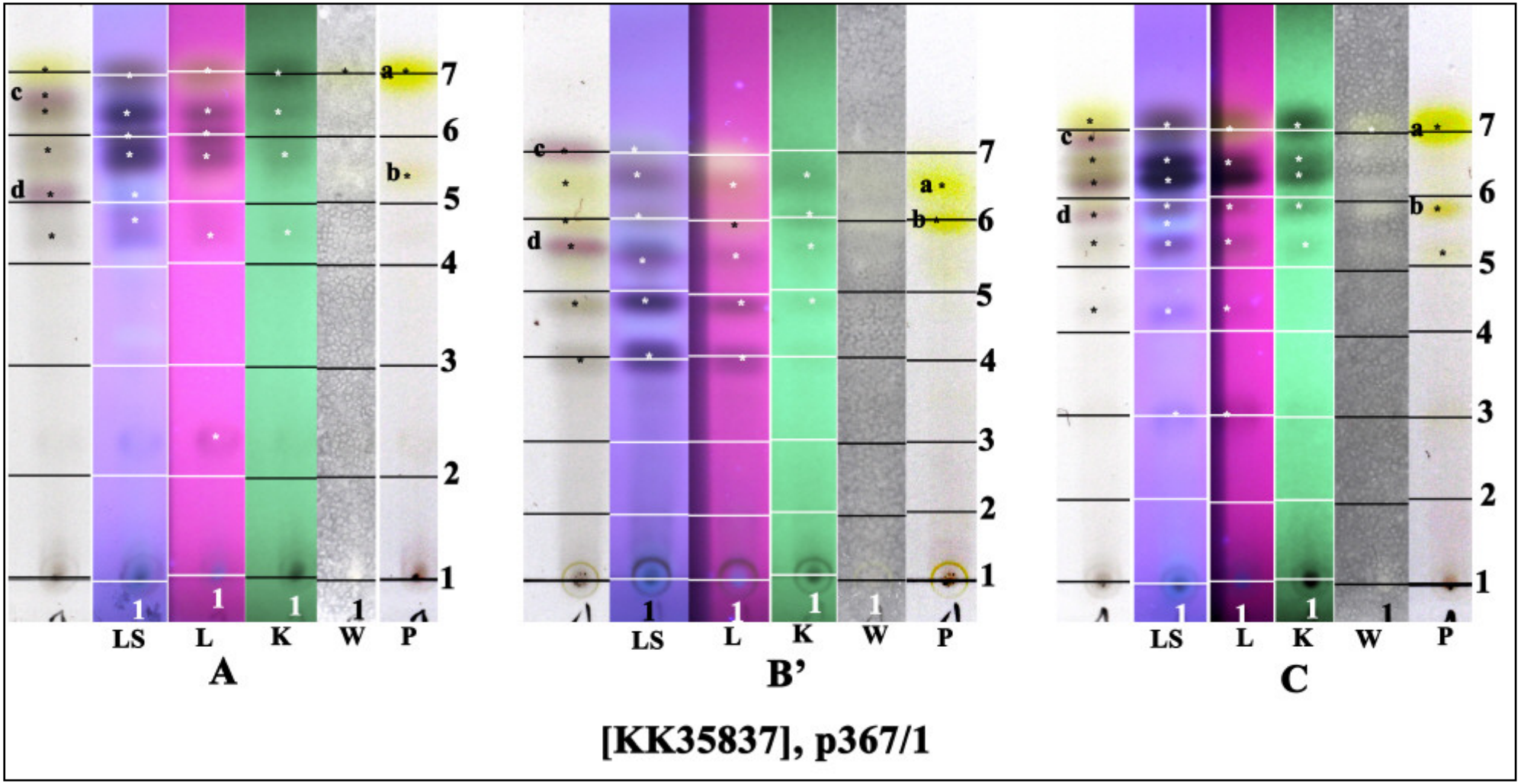
Thallus corticolous, very thin or almost endophloedal, indistinct or whitish to greyish, with scattered, crater-like soralia, 0.1-0.3 mm diam.; soredia bright orange to yellow-greenish, (12-)18-25(-35) µm diam. Apothecia 0.3-0.5(-0.7) mm, biatorine, disc orange brown to bluish black. Ascospores (2-)8/ascus, (7-)10-13(-15) x (5-)6-8(-9) µm, septum (2-)3-5 µm wide. Chemistry: fragilin (major) parietin (minor), 7-chloroemodin (minor), erythroglaucin (minor), emodin (minor), 8-*O*-methylfragilin (minor), flavo-obscurin A (minor), flavo-obscurin B1 (trace), flavo-obscurin B2 (trace), Apothecia K+ purple in bluish green portions K-. Lit.: Kondratyuk, Kärnefelt, Elix & Thell, Bibliotheca Lichenol. 100: 271 (2009)

[KK35837], Australia, Western Australia, Stirling Range, Bluff Knoll, on trees in an open forest dominated by *Eucalyptus marginata* and *Kunzea montana*, 950-1050 m, 34°30’ S, 118°15’ E. Leg K. Kalb, 14.08.1994. det. S. Kondratyuk 2008.





Caloplaca wilsonii



a: parietin + fragilin, b: 7-chloroemodin, c & d: look like terpenes; conf. J.A.Elix

Caloplaca wrightii (Willey) Fink
[= *Caloplaca hensseniana* Kalb, fide Wetmore 2004:289]

on bark.

[18155], Venezuela, Lara, Distr. Iribarreno, etwa 15 km E von Barquisimeto. 10°10' N, 69°30' W, 550 m. Epiphytisch in trockener Steppen-Vegetation, untermischt mit Cacteen. Leg. K. & A. Kalb, 20.08.1989. KALB: LICHENES NEOTROPICI 454. Distributed as Isotypus of *Caloplaca hensseniana* Kalb







Caloplaca wrightii

Caloplaca wrightii (Willey) Fink

On bark. Ascospores 12 x 8 µm

[ABL 63246], Ecuador, Galápagos Islands, Santa Cruz waste deposit along road to Baltra Bursera, relevee 5.1, 0°35'00" S, 90°21'17" W, 300 m. Leg. et det. A. Aptroot 28.05.2005.





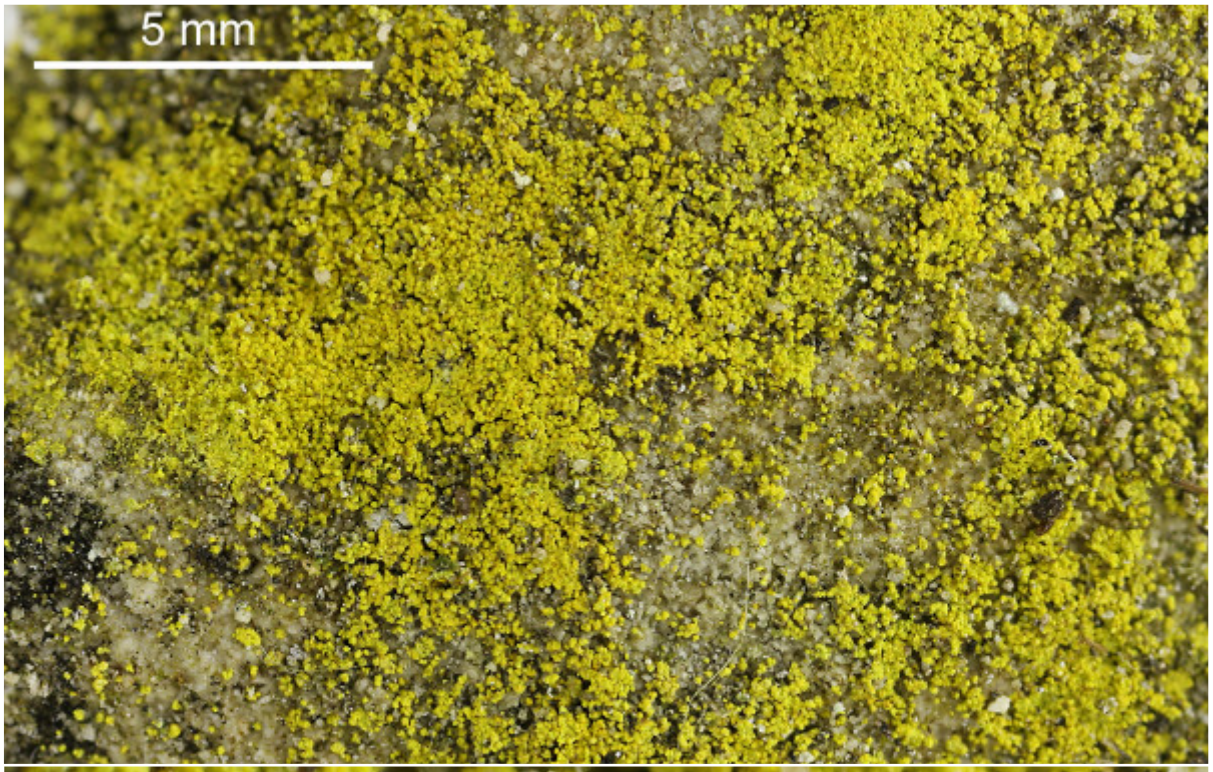


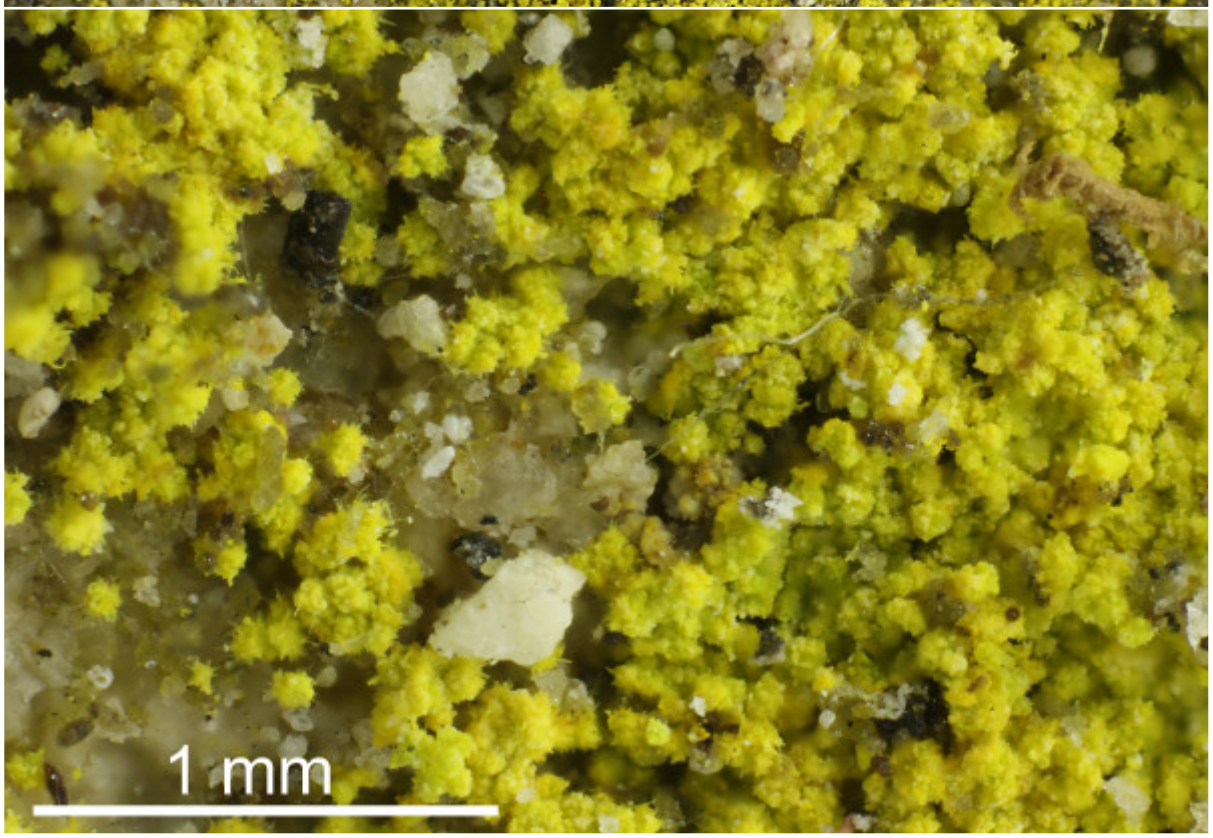
Caloplaca wrightii

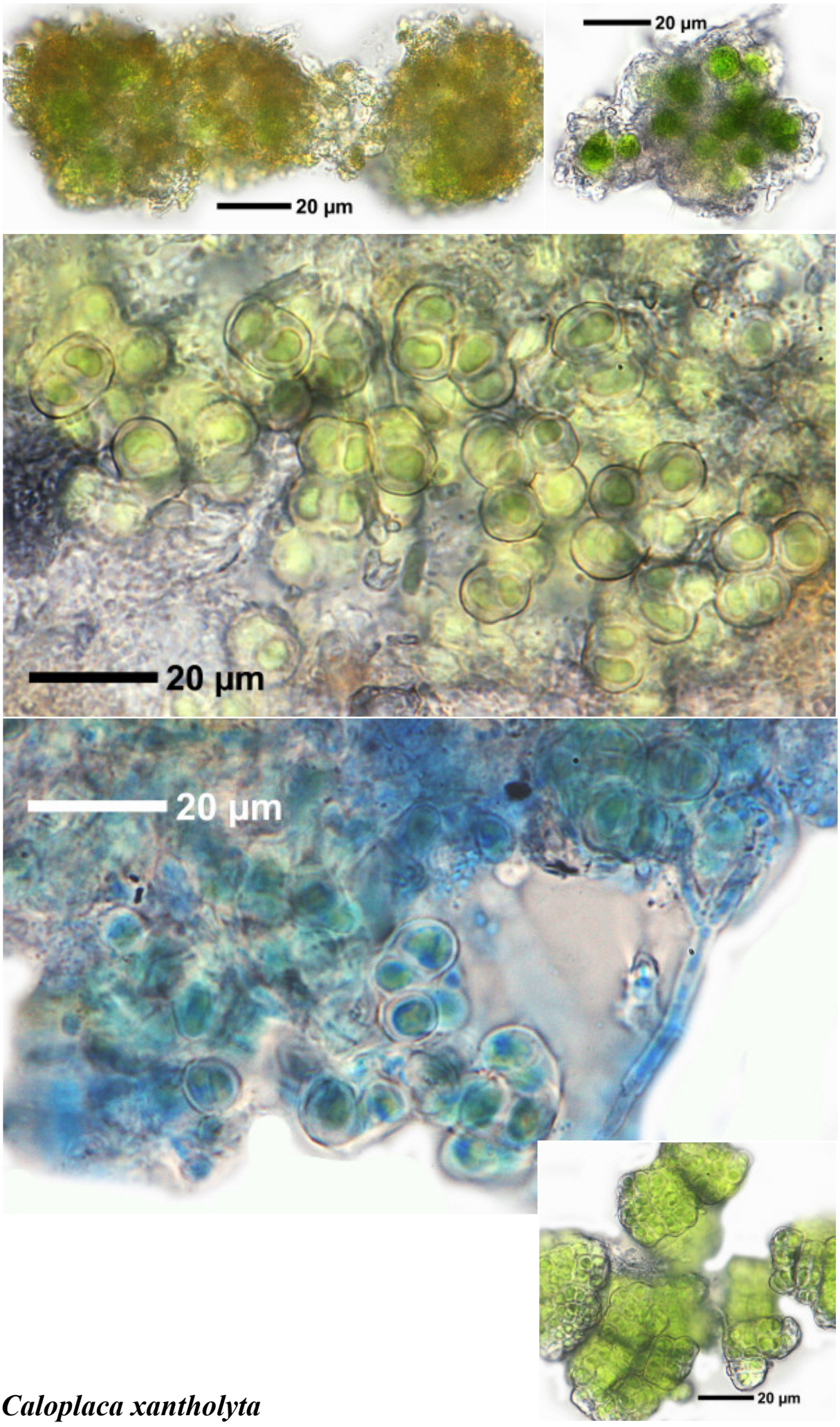
Caloplaca xantholyta (Nyl.) Jatta
[= *Leproplaca xantholyta* (Nyl.) Nyl.]

Thallus K+ rot, leprös aufgelöst, leuchtend gelb, unter den gelben wattigen Körnchen weißes Mark.

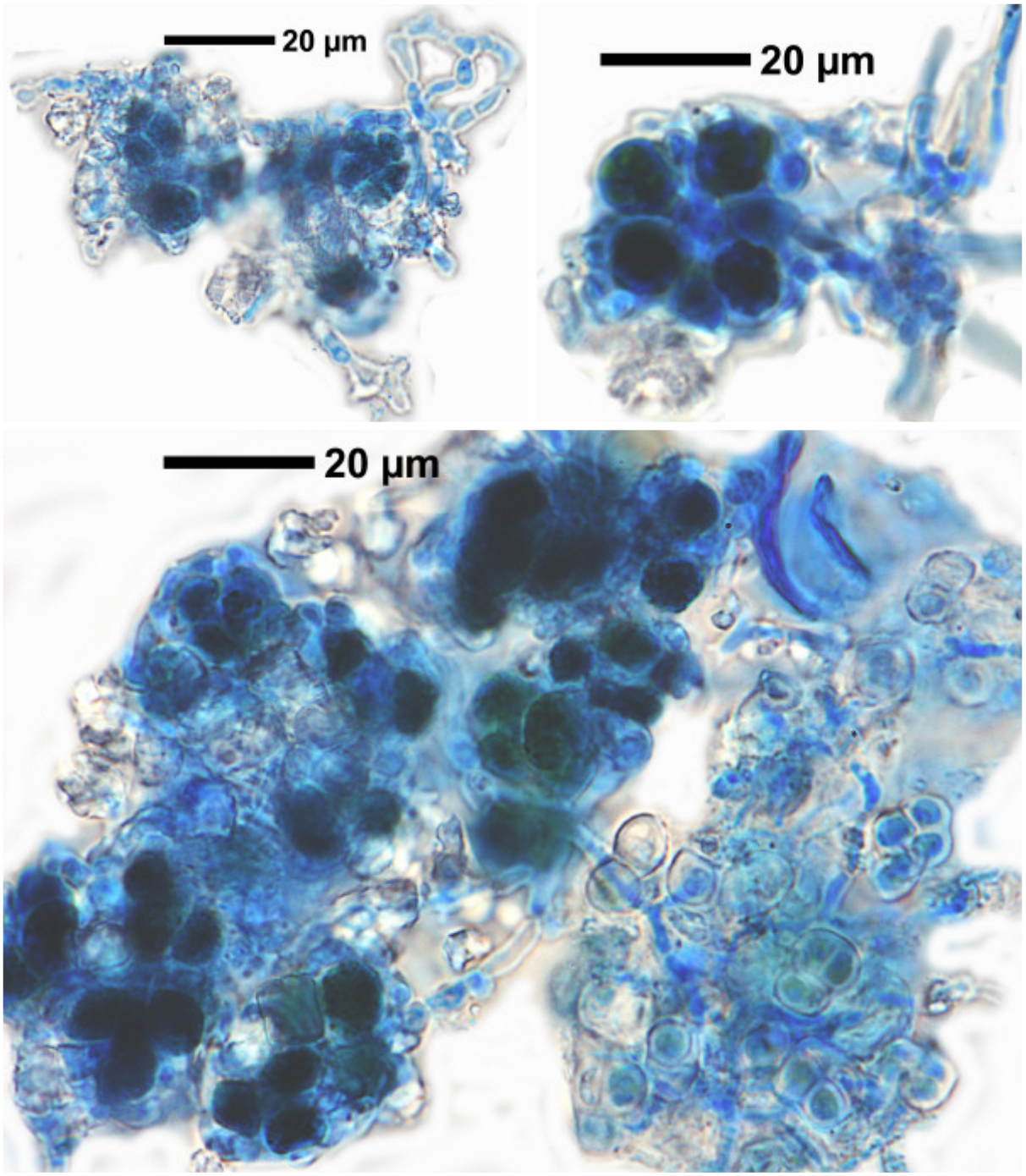
[16687], Germany, Baden-Württemberg, Schwäbische Alb, Kreis Heidenheim, Steinheim a. Albuch, Wental, schattige feuchte Kalkfelsen im Wald zwischen Wentalweible und Felsenmeer, 48,72221° N, 10,01497° E, 620 m. Leg. et det. Schumm 19.09.2010.

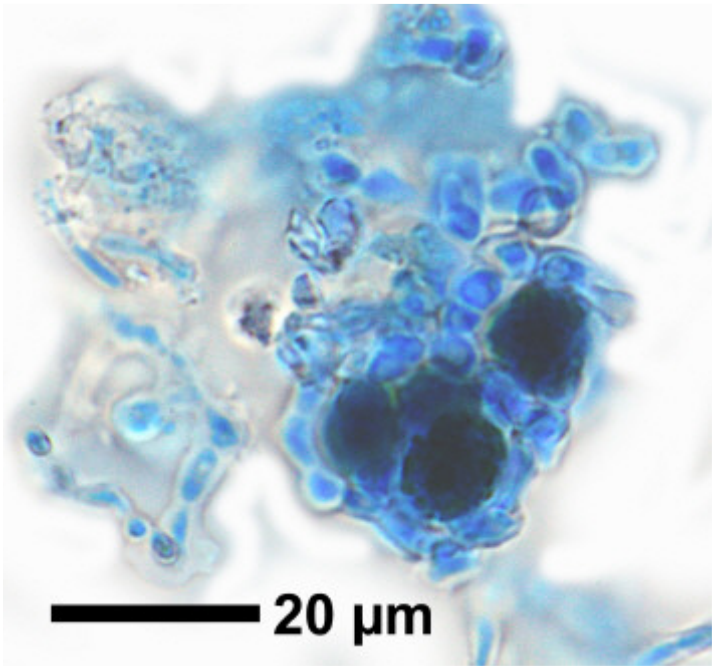






Caloplaca xantholyta



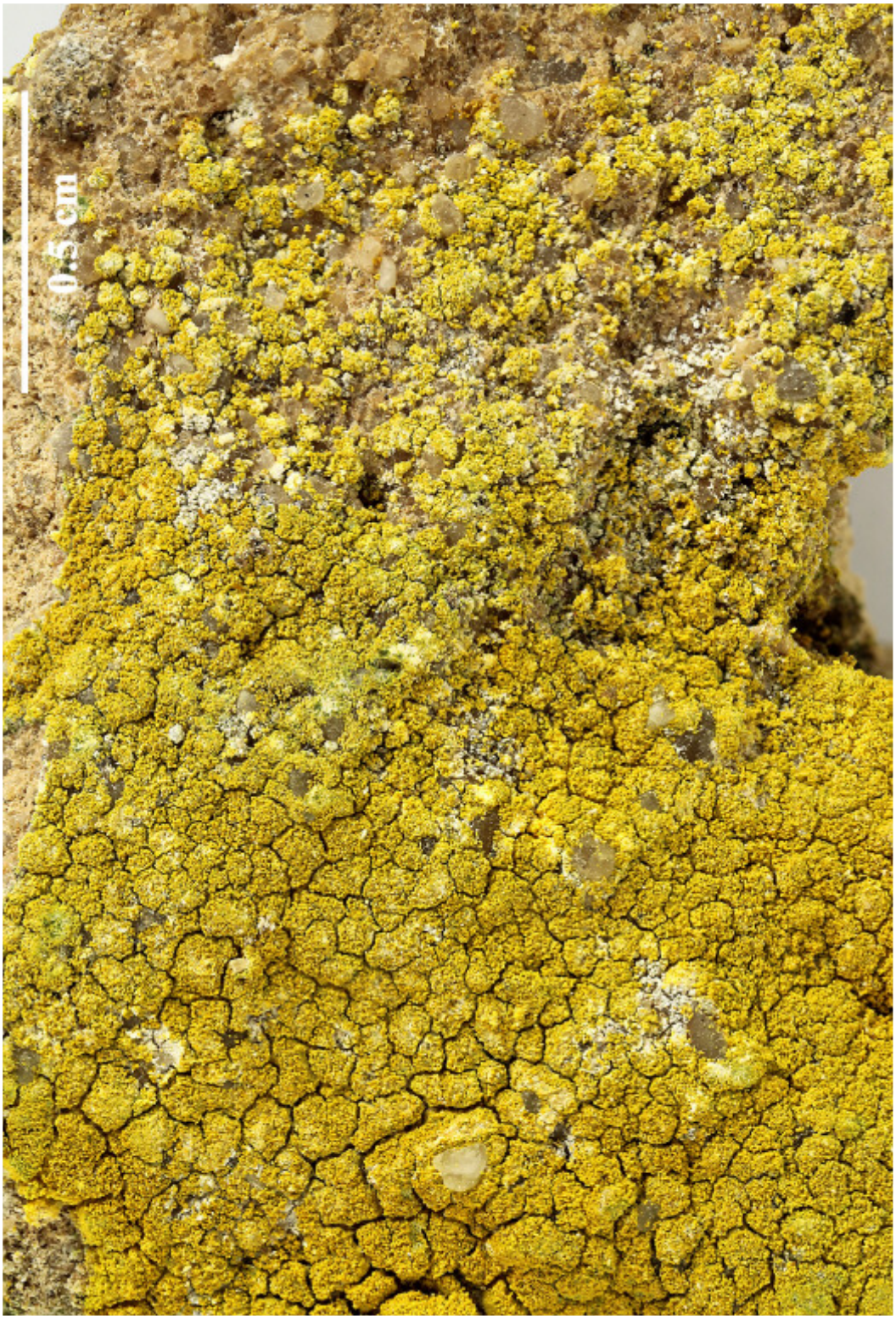


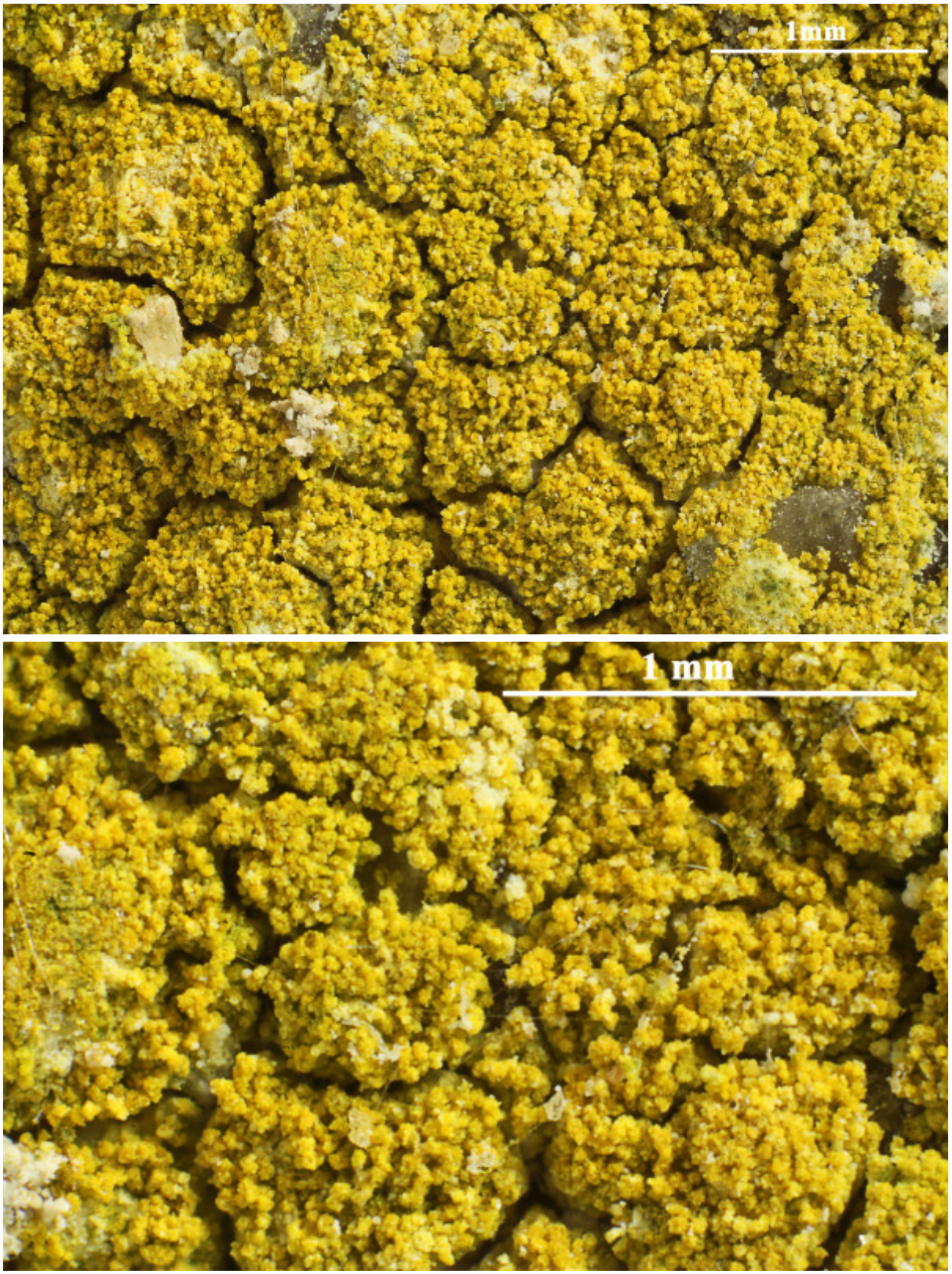
Caloplaca xantholyta

Caloplaca xantholyta (Nyl.) Jatta
[= *Leproplaca xantholyta* (Nyl.) Nyl.]

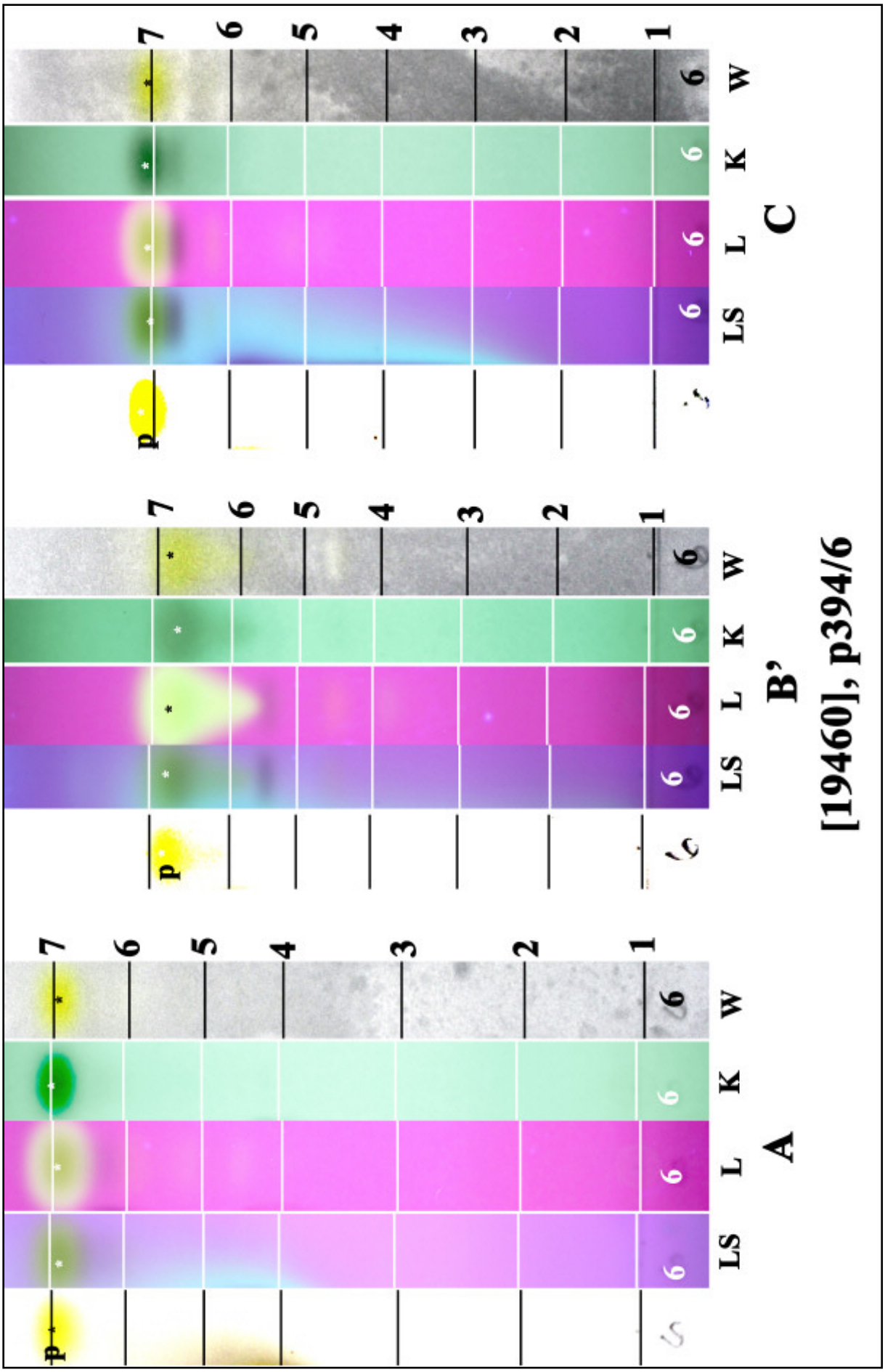
Thallus areoliert, oberseits völlig sorediös aufgelöst, Chemie (p394/6): parietin; Thallus K+ rot.

[19460], Germany, Hessen, Amöneburg bei Marburg, an der Umfassungsmauer, schattig, Basalt. 50.7896° N, 8.91995° E, 324 m. Leg. F. Schumm, 01.08.2016, F. Schumm.





Caloplaca xantholyta



p: parietin

Caloplaca xantholyta

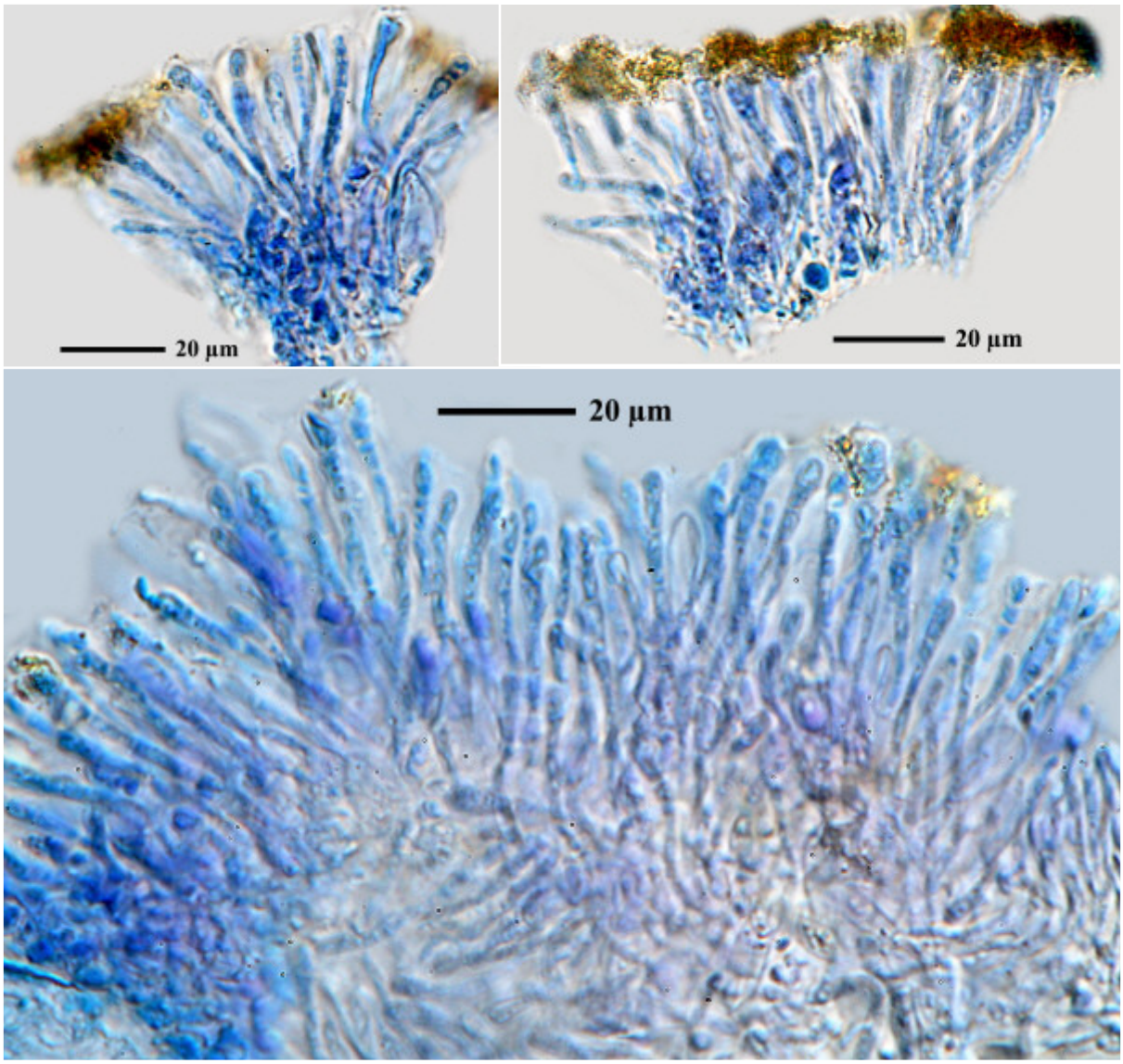
Caloplaca xerica Poelt & Vězda

[BR5030038478668], Turkey, prov. Van, 30 km N of Baçkale, siliceous rock, 2700 m. Leg. R. V. Hensen 07.1987, det. A. Aptroot (ABL 21273), 1987.





Caloplaca xerica



without spores

Caloplaca xerica

Caloplaca xerica Poelt & Vězda

Spores 10 x 6 µm (AA).

[BR5030067753682], China, Yunnan Prov., Jianchan Co., San Jiang Bin Liu area, near mountain hotel, trailhead to Mt. Laojuenshan, Abies delavayi- Rhododendron forest, 26°37’56’’ N, 99°43’30’’ E, 3900-400 m, on siliceous rock. Leg. A. Aptroot (56281), 18 October 2002, det. A. Aptroot 2003.





Caloplaca xerica

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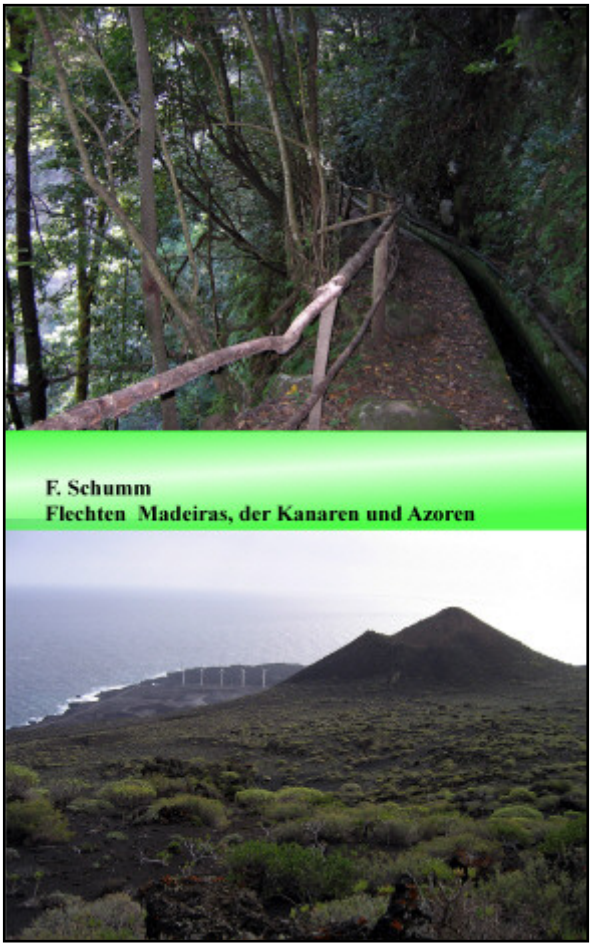

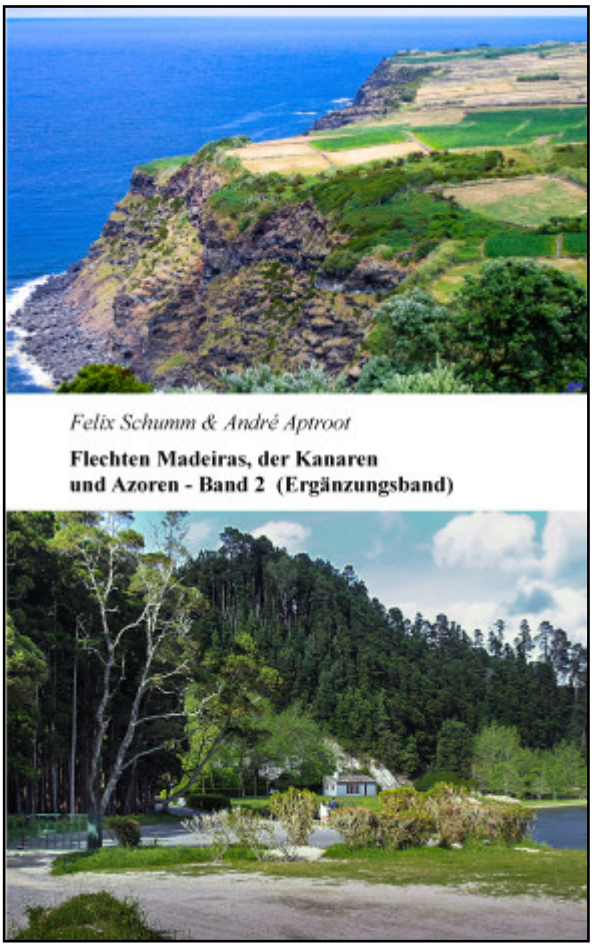



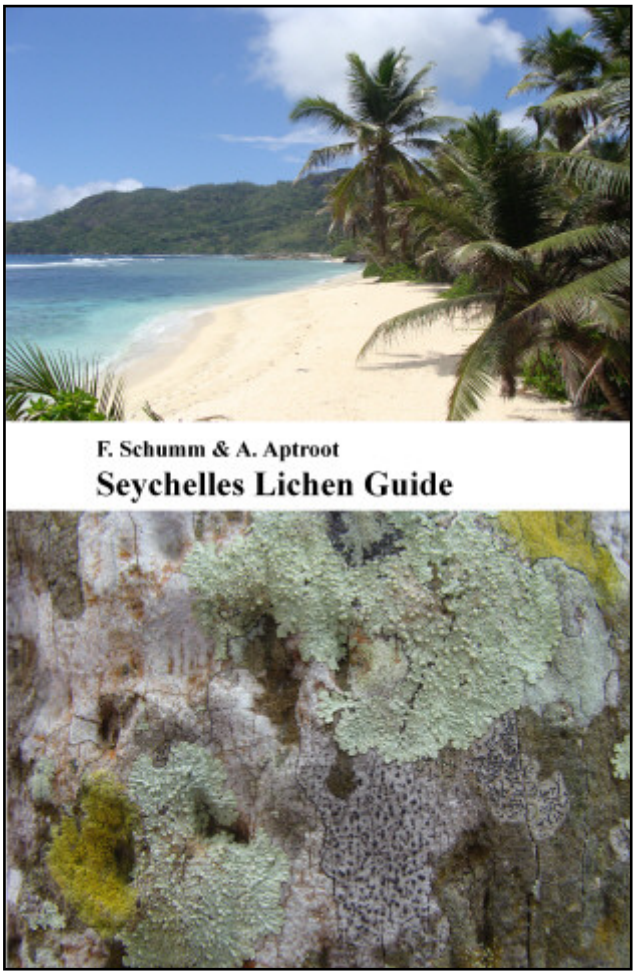



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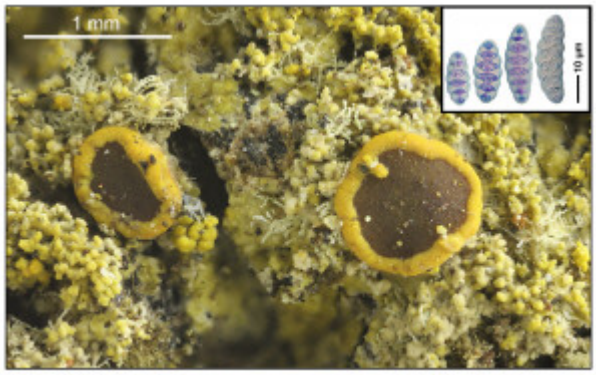



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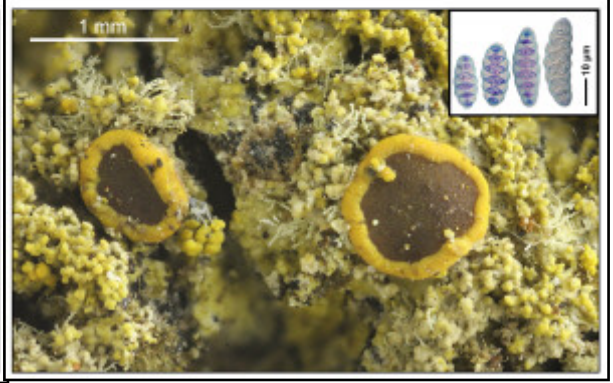

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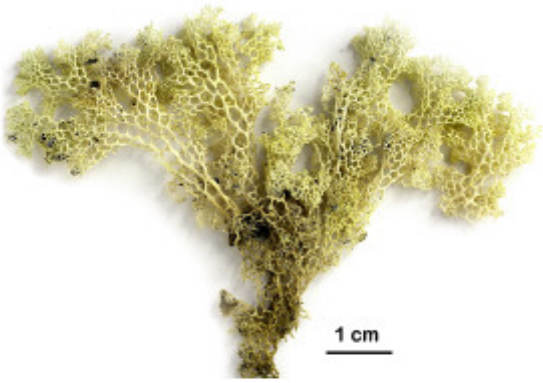

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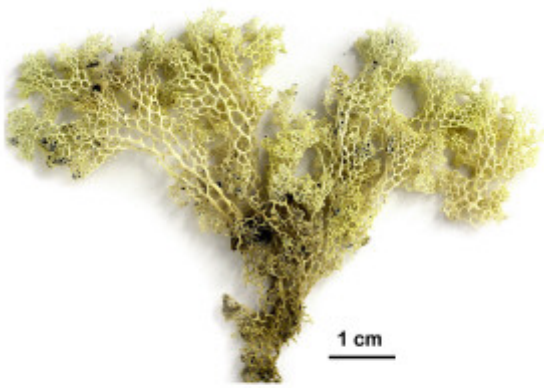

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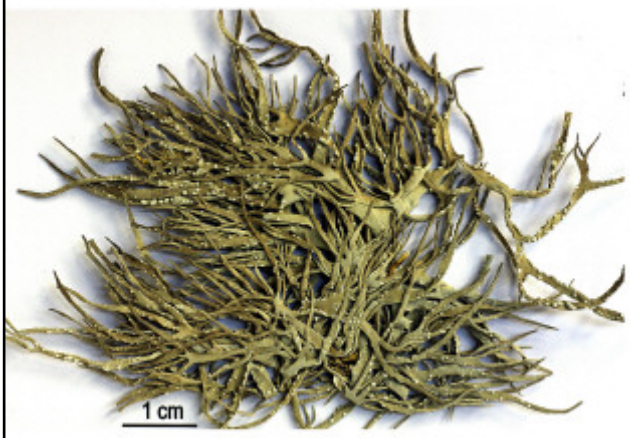
an anatomical-microscopical Atlas and Guide with a worldwide Key and further Notes on some crustose Roccellaceae or similar Lichens



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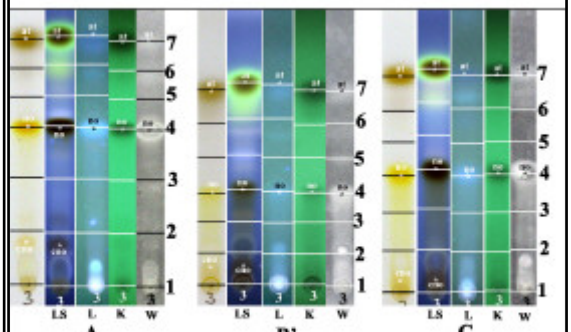
Atlas of Images of Thin Layer Chromatograms of Lichen Substances

Bilderatlas von Dünnschicht-chromatogrammen von Flechten-Inhaltsstoffen



Platismatia glauca [3030] und Cladonia symphycarpa [4698]

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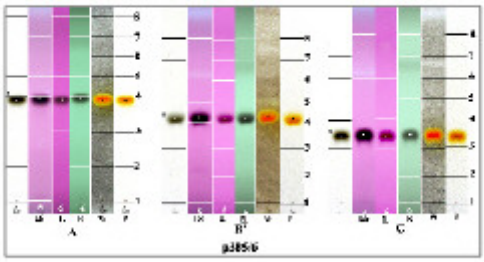
F. Schumm

Atlas of Images of Thin Layer Chromatograms of Lichen Substances. Supplement

Bilderatlas von Dünnschicht-chromatogrammen von Flechten-Inhaltsstoffen. Ergänzungsband



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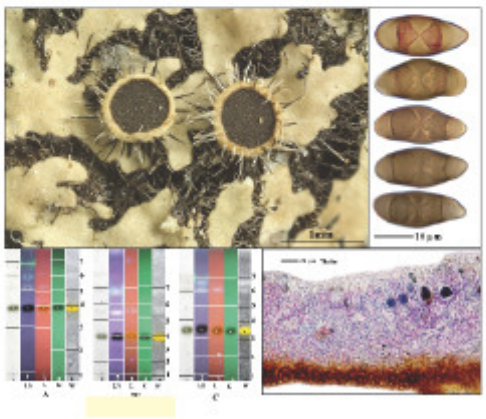
Virtuelles Herbarium der Flechtengattungen

Hyperphyscia, Phaeophyscia, Physcia* und *Physconia



The lichen genus *Caloplaca* is very diverse. Species are often colouring whole rock faces bright yellow or orange. This is the first book illustrating hundreds of species of this genus. From many species microscopic sections are illustrated, often for the first time. It includes all common species and many rarer ones. Of the most common species usually several specimens are illustrated to show the variation. This book is a resource for the identification of *Caloplaca* species.