F. Schumm (2026):

Images of Lichens
Vezda Lichenes Selecti Exsiccati part 31

ARCHIVE FOR LICHENOLOGY Vol. 104
ISSN 1868-4173

With this volume, I continue the documentation of Vezda's works on exiccata, now with Lichenes Selecti as part 31. I have chosen the genus names that Vezda used, even though others are now more common. However, I also include the currently used names in the synonym list and the index. In addition, I have again made every effort to add species descriptions to the detailed information on the labels from the literature.

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

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

F. Schumm, 2026

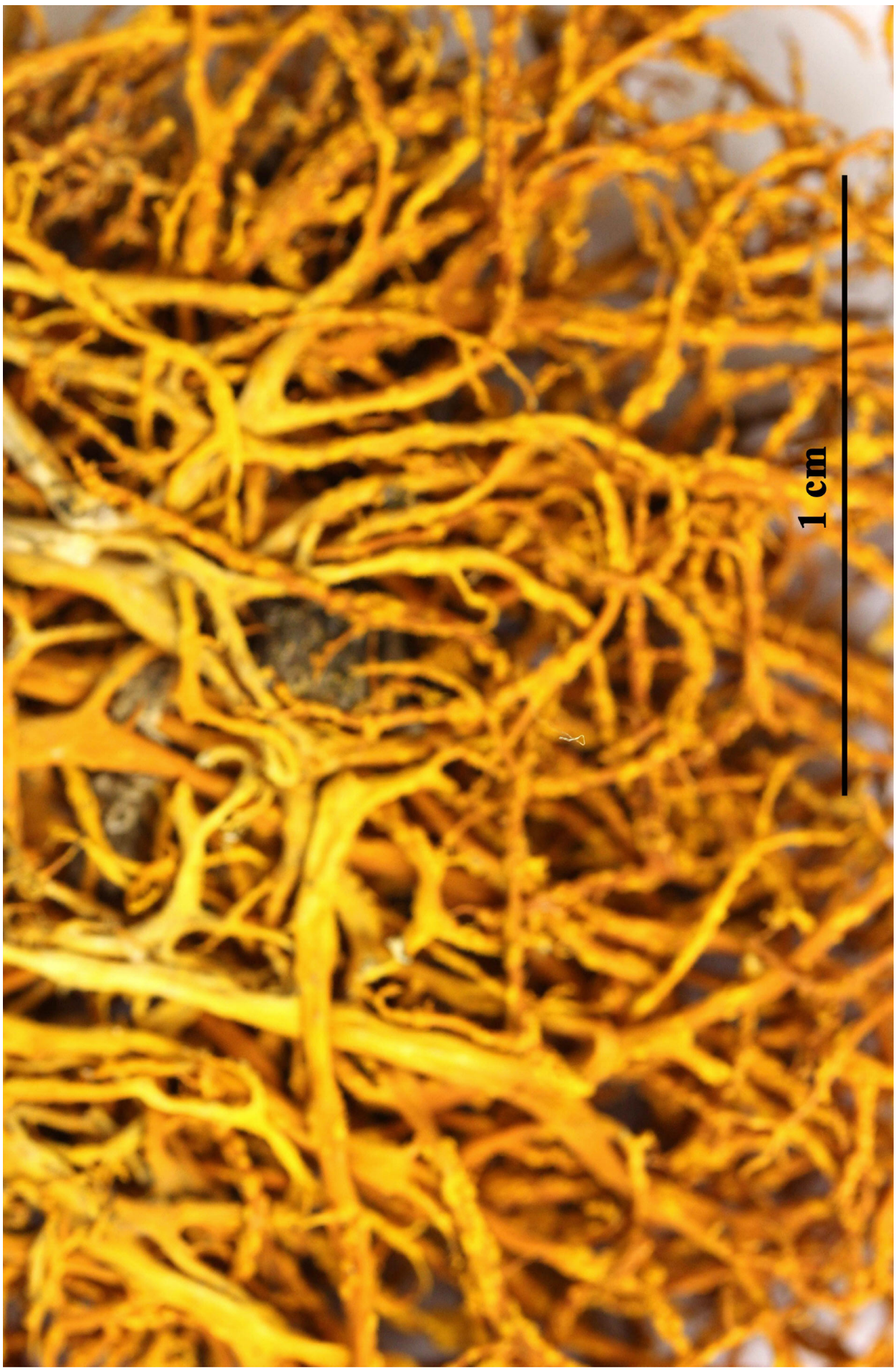
Teloschistes flavicans (Sw.) Norman, Conat. Praem. Gen. Lich.: 17 (1852)
= *Lichen flavicans* Sw. 1788

[VZ789], Costa Rica, Prov. Carthago: Ad viam inter oppidum Carthago et montem ignivomum Irazú dictum, 1820 m, Arboricola. Leg. I. M. Lamb et U. V. Metzger, 25.4.1969. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 789.

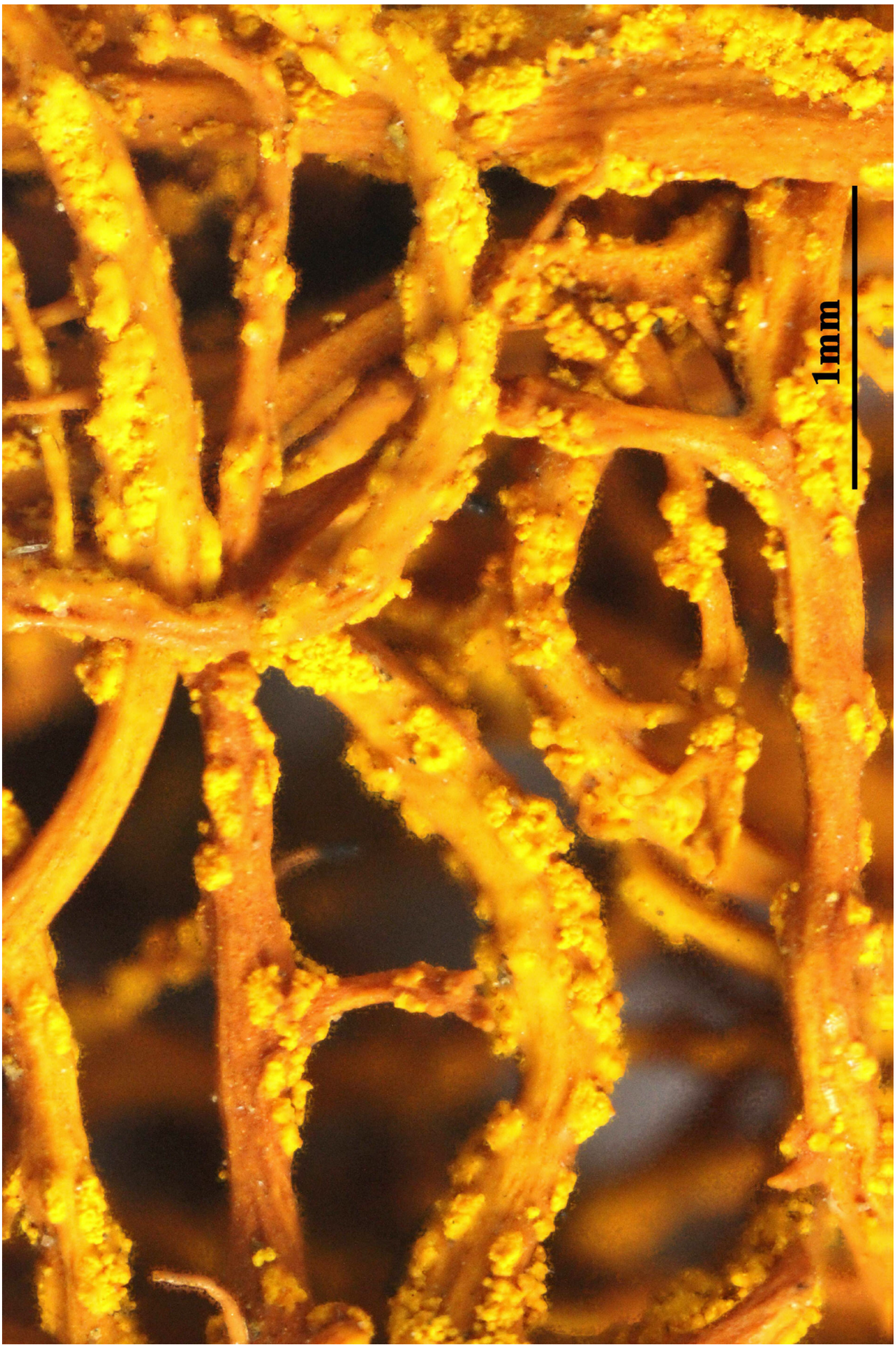
Thallus fruticose, attached by a basal holdfast, almost filamentous, up to 12 cm long, tufted to pendent, more or less dichotomously and richly branched. Branches corticate, rigid, entangled, up to 2 mm wide, narrowing to 0.05-0.2 mm at tips, terete to angular or somewhat flattened (especially the main ones) yellow-orange to reddish orange, with farinose to granular, yellow soredia arranged in orbicular to elongated, at least at the beginning raised soralia; fibrils and hairs absent or scarce. Cortex of longitudinally arranged hyphae; medulla interrupted by cortical strands. Apothecia extremely rare, lecanorine, 1-4 mm across, with an orange disc and a thin, usually smooth, rarely sparingly ciliate thalline margin. Epithecium orange, K+ purple-red; hymenium and hypothecium colourless. Asci 8-spored, Teloschistes-type. Ascospores 2-celled polarilocular, hyaline, oblong to narrowly ellipsoid, (10-)12-18(-20) x 6-11 µm. Pycnidia immersed to slightly projecting, orange. Conidia simple, hyaline, bifusiform, 2.7-3.7 x 1-1.5 µm. Photobiont chlorococcoid. Spot tests: thallus and soredia K+ purple-red, C-, KC-, P-. Chemistry: parietin and caloploicin (major), teloschistin, fallacinal, parietinic acid, vicanicin and isofulgidin (minor), occasionally also emodin. - Note: a tropical to Mediterranean-Atlantic lichen found on branches, bryophytes and siliceous rocks in a few warm-humid stands of Tyrrhenian Italy, mostly near the coast in areas with frequent fog.



Teloschistes flavicans



Teloschistes flavicans

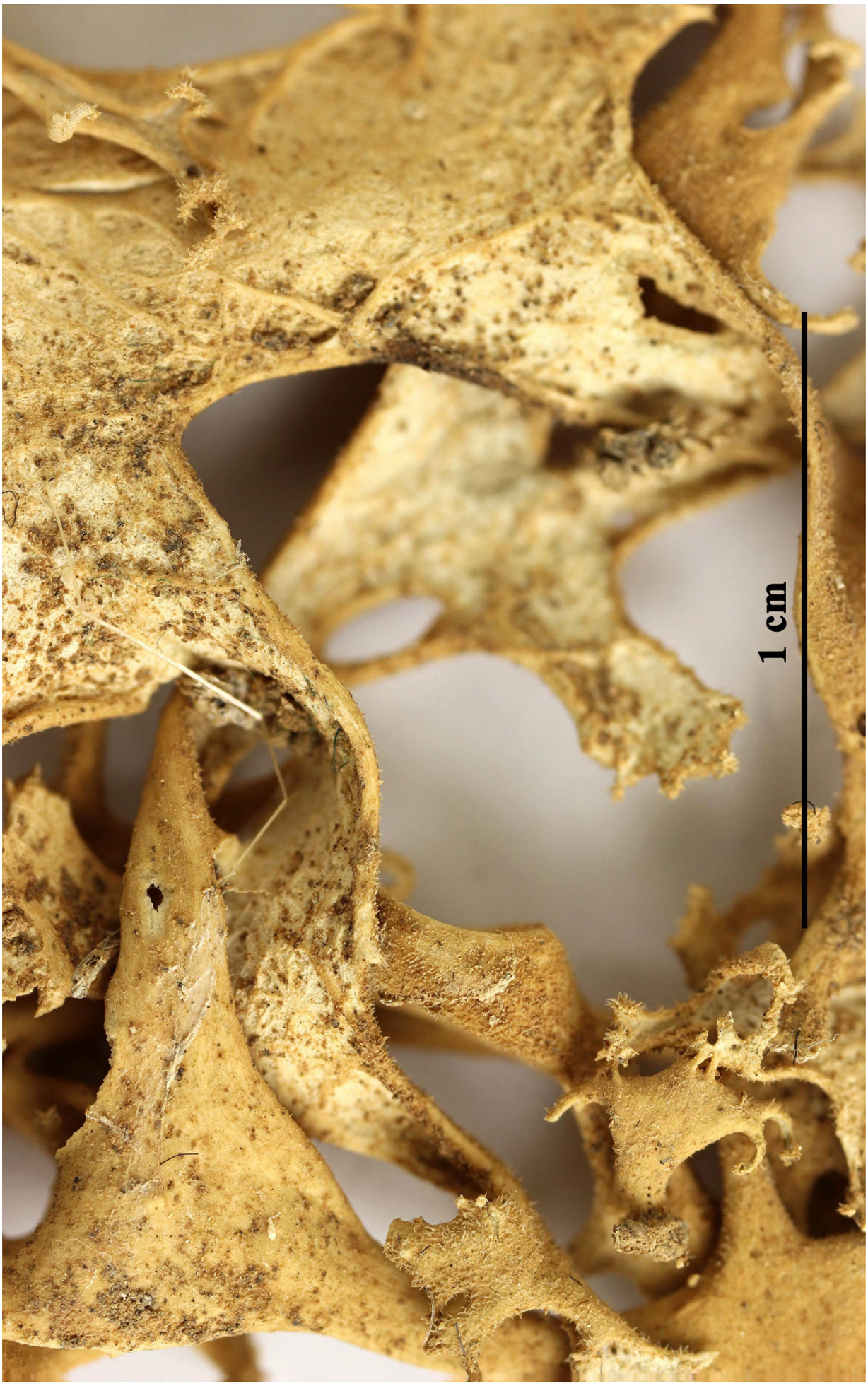


Teloschistes flavicans

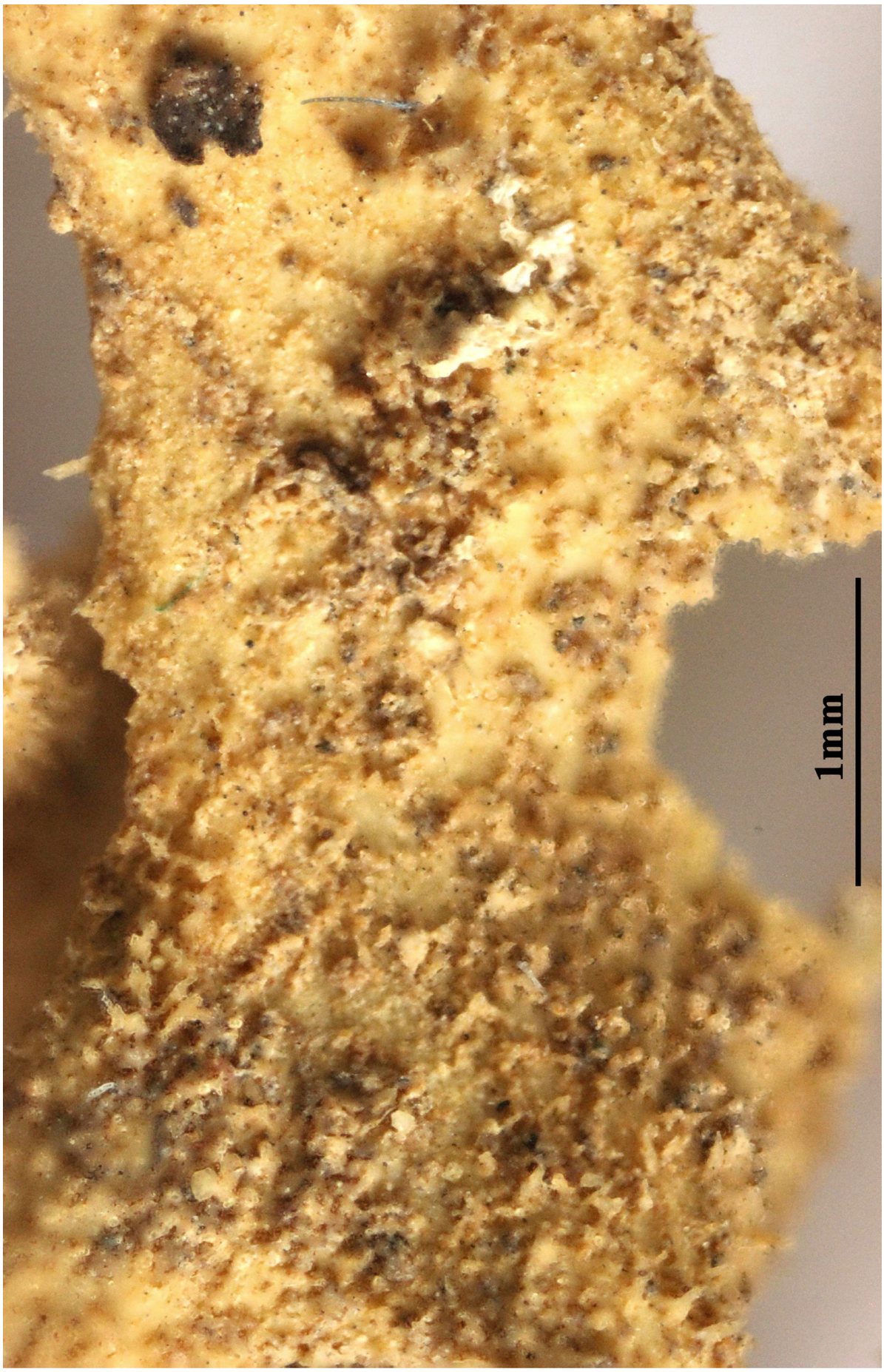
Teloschistes lacunosus (Rupr.) Savicz, Acta Inst. Bot. Acad. Sci. USSR Plant. Crypt., Ser. II 2: 313 (1935)
= *Ramalina lacunosa* Rupr. 1845
= *Seirophora lacunosa* (Rupr.) Frödén, in Frödén & Lassen, Lichenologist 36(5): 297 (2004)

[VZ1121], Hispania. Distr. Teruel. Alvaniz, in ripa lacus Salada Grande dicti, 350 m. Supra terram argillaceam salinam, ad basim *Suaedae brevifoliae*. Leg. X. Llimona et C. Cesas, 16.10. 1972. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1121.

Thallus is fruticose, forming cushions with characteristic smooth irregularly divided, rigid, greyish laciniae, 2-5 cm high and 2-15 mm broad and about 2-(4-5) cm long. Laciniae upper surface quite smooth, slightly tomentose covered with thick multiseriated hairs, showing scattered elongated holes which cross over to the lower surface. Lower surface can be wrinkled and canaliculated particularly on older laciniae. Sometimes fertile with deep concave orange apothecia up to 6 mm across with a greyish tomentose, persistent thalline margin. a species of saxicolous (rock-dwelling).



Teloschistes lacunosus



Teloschistes lacunosus

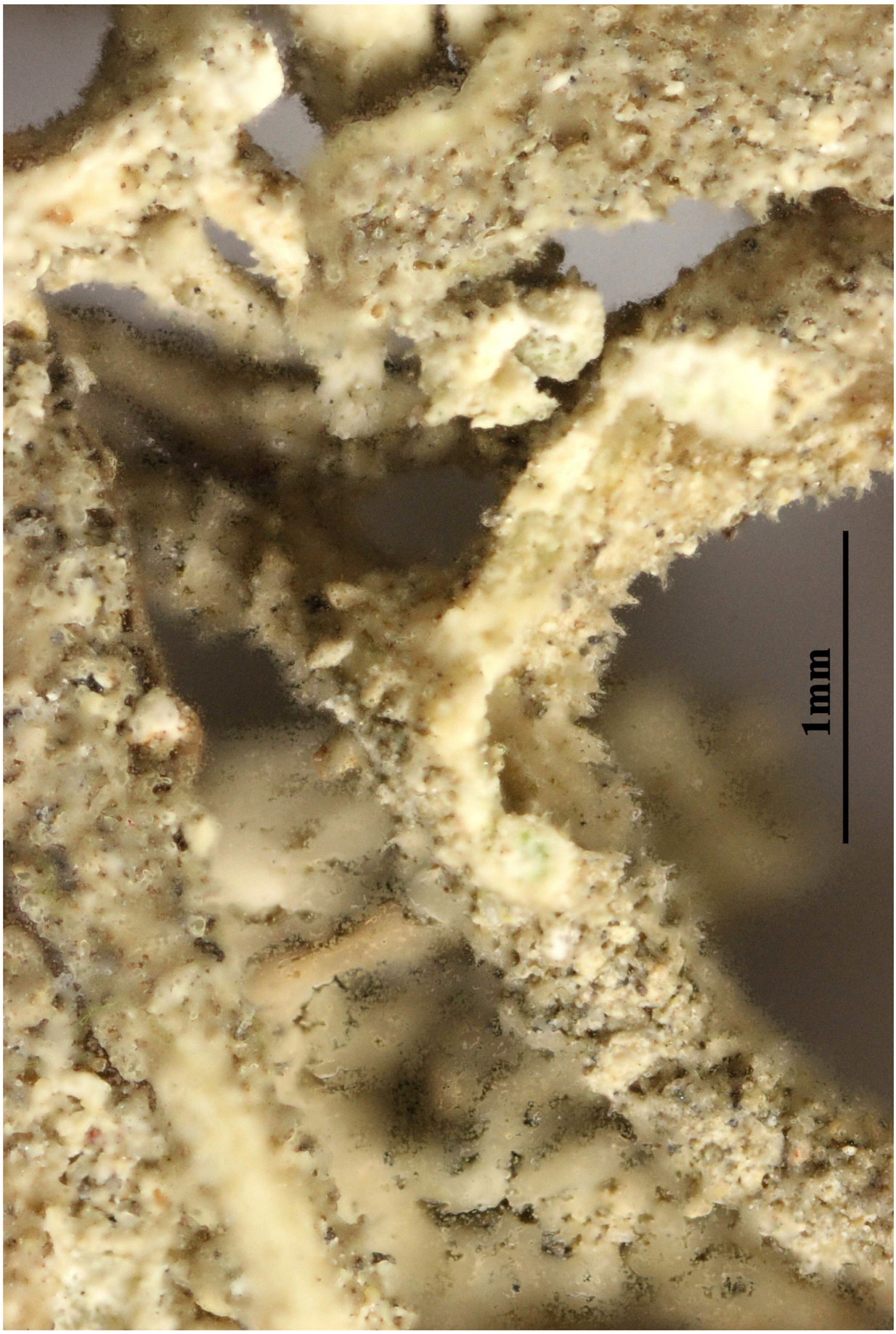
Teloschistes lacunosus (Rupr.) Savicz, Acta Inst. Bot. Acad. Sci. USSR Plant. Crypt., Ser. II 2: 313 (1935)
= *Ramalina lacunosa* Rupr. 1845
= *Seirophora lacunosa* (Rupr.) Frödén, in Frödén & Lassen, Lichenologist 36(5): 297 (2004)

[VZ1909], Hispania. Distr. Zaragoza: El Ciervo, Retuerda de Pina, 200 m. Ad terram gypsaceam- Leg- J. Egea. M. C. Porcel et A. Vězda, 25.5.1983. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1909.

Thallus is fruticose, forming cushions with characteristic smooth irregularly divided, rigid, greyish laciniae, 2-5 cm high and 2-15 mm broad and about 2-(4-5) cm long. Laciniae upper surface quite smooth, slightly tomentose covered with thick multiseriated hairs, showing scattered elongated holes which cross over to the lower surface. Lower surface can be wrinkled and canaliculated particularly on older laciniae. Sometimes fertile with deep concave orange apothecia up to 6 mm across with a greyish tomentose, persistent thalline margin. a species of saxicolous (rock-dwelling).



Teloschistes lacunosus



Teloschistes lacunosus

Teloschistes villosus (Ach.) Norman, Conat. Praem. Gen. Lich.: 17 (1852)
= *Parmelia villosa* Ach. 1803
= *Seirophora villosa* (Ach.) Frödén, in Frödén & Lassen, Lichenologist 36(5): 297 (2004)

[VZ2319], Regnum Maroccanum. Marruecos. Agadir: Cabo Rhir. In ramulis *Arganiae espinosae*. legf. J. M. Egea, 8.4.1987. Ex A. VěZDA LICHENES SELECTI EXSICCATI NR. 2391.

Thallus fruticose, attached by a basal holdfast, consisting of strap-shaped, flattened, dichotomously branched lobes forming dense, up to 15 cm wide and tall tufts. Lobes (2-)5-8(-10) mm wide in lower part, narrower in apical parts, finely tomentose, brownish, with a more or less canaliculate, often reticulately ridged lower surface. Cortex strongly conglutinated after treatment with K, 3-7 µm thick, of thick-walled cells. Apothecia common and usually abundant, lecanorine, slightly stipitate, with an orange, 2-7(-10) mm wide disc and a grey or brownish, thick thalline margin covered in short, fine white hairs. Epithecium orange-brown, K+ purple-red; hymenium and hypothecium colourless. Asci 8-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, 10-15 x 5-7 µm, the equatorial thickening ("septum") (1.5-)2-3(-4) µm. Pycnidia common, orange, c. 0.1-0.2 mm diam. Conidia bacilliform to narrowly ellipsoid, 3-4 x 1.5-1.7 µm. Photobiont: chlorococcoid. Spot test: thallus K-, C-, KC-, P-; disc of apothecia and pycnidia K+ purple-red. Chemistry: apothecia and pycnidia with parietin (major), fallacinal, teloschistin, and parietinic acid (all minor), and emodin (minor). - Note: on twigs of shrubs and small trees subject to spells of dry situations and frequent humid maritime winds; presently restricted to a few natural sites of Tyrrhenian Italy, on almost undisturbed sand dunes.



Teloschistes villosus



Teloschistes villosus

Thamnolia vermicularis (Sw.) Schaer., Enum. critic. lich. europ. (Bern): 243 (1850)
= *Lichen vermicularis* Sw. 1781

[VZ2424], Venezuela. Mérida: Prope Pico el Aguilo, in vegetatione montana "páramo" dicta, 4025 m. Ad terram. Leg. R. Ornduff,18.8.1989. - Annot.: Thamnolic acid, decarboxythamnolic acid (taint trace), and a trace of unidentified Terpene by TLC, anal. A. Johnson and C. F. Culberson. - Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2424.

Thallus fruticose, pure white, becoming pinkish in the herbarium and staining the herbarium paper, erect or decumbent, often forming tufts. Thallus units 1-2(-3) mm thick (rarely to 8 mm), worm-like, usually to 5 (rarely to 10) cm tall, more or less cylindrical, with pointed apices, smooth, non squamulose, simple or rarely sparingly branched in upper part. Cortex of longitudinally arranged hyphae; medulla thin, soon becoming hollow. Apothecia not known. Pycnidia poorly evident, immersed, initially covered by cortical tissue, flask-shaped to broadly globose, the wall colourless throughout, uni- or rarely bilocular, densely filled with long, parallel conidiophores comprising erect chains of intercalary conidiogenous cells with bayonet-like processes near the upper cell septum. Conidia bacilliform, slightly tapering at one end, 3-5 x 1-2 µm. Photobiont chlorococcoid. Spot tests: K+ bright yellow, C-, KC-, P+ orange, UV . Chemistry: thamnolic acid. - Note: an arctic-alpine, circum- and bipolar lichen found on wind-exposed Alpine tundras, both on calcareous and siliceous substrata, widespread throughout the Alps.



Thamnolia vermicularis



Thamnolia vermicularis

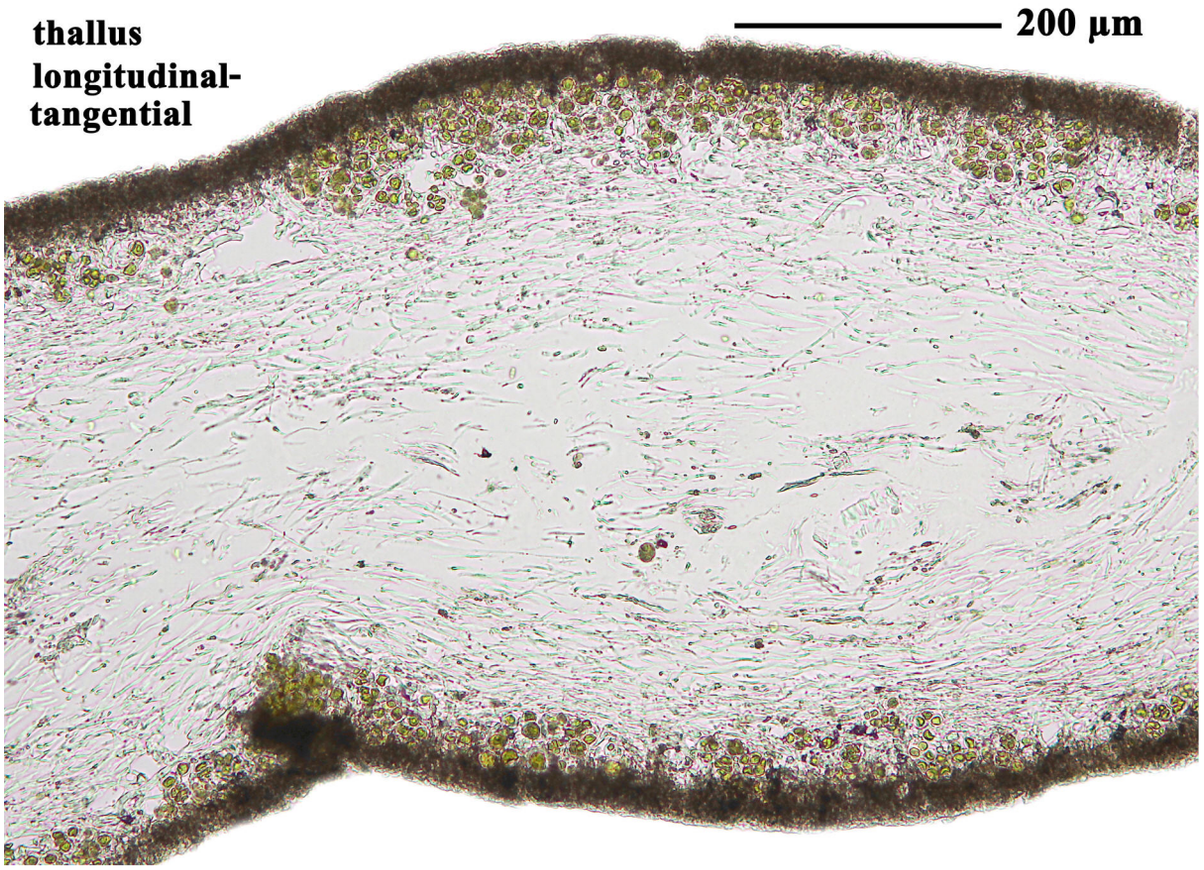
Thamnolia vermicularis (Sw.) Schaer.

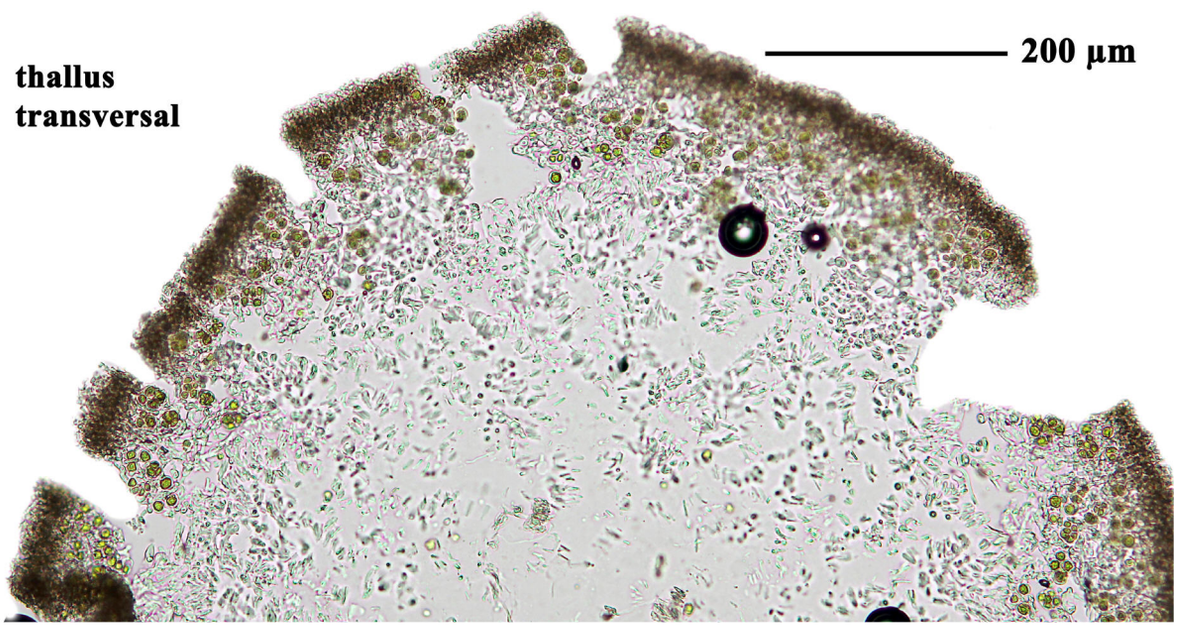
[19283], Australia, Victoria, Basalt Hill, Alpine National Park, Bogong High Plains, 20 km south-east of Mt. Beauty, 36°53' S, 147°18' E, 1650 m, growing on soil and debris in exposed alpine grasslands with basalt outcrops and southerly aspect. Leg. J.A. Elix (40391) & H. Streimann 17.02.1994. Chemistry: thamnolic acid, decarboxythamnolic acid, by TLC, anal. J.A. Elix & S.A. Ex Elix LICHENES AUSTRALASICI EXSICCATI NO. 298.

Thallus white, cylindrical hollow, apices pointed, simple or sparingly branched, decumbent or erect. Soredia and isidia absent. Chemistry: K+ yellow, P+ yellow, C-, KC-,UV±; thamnolic acid.

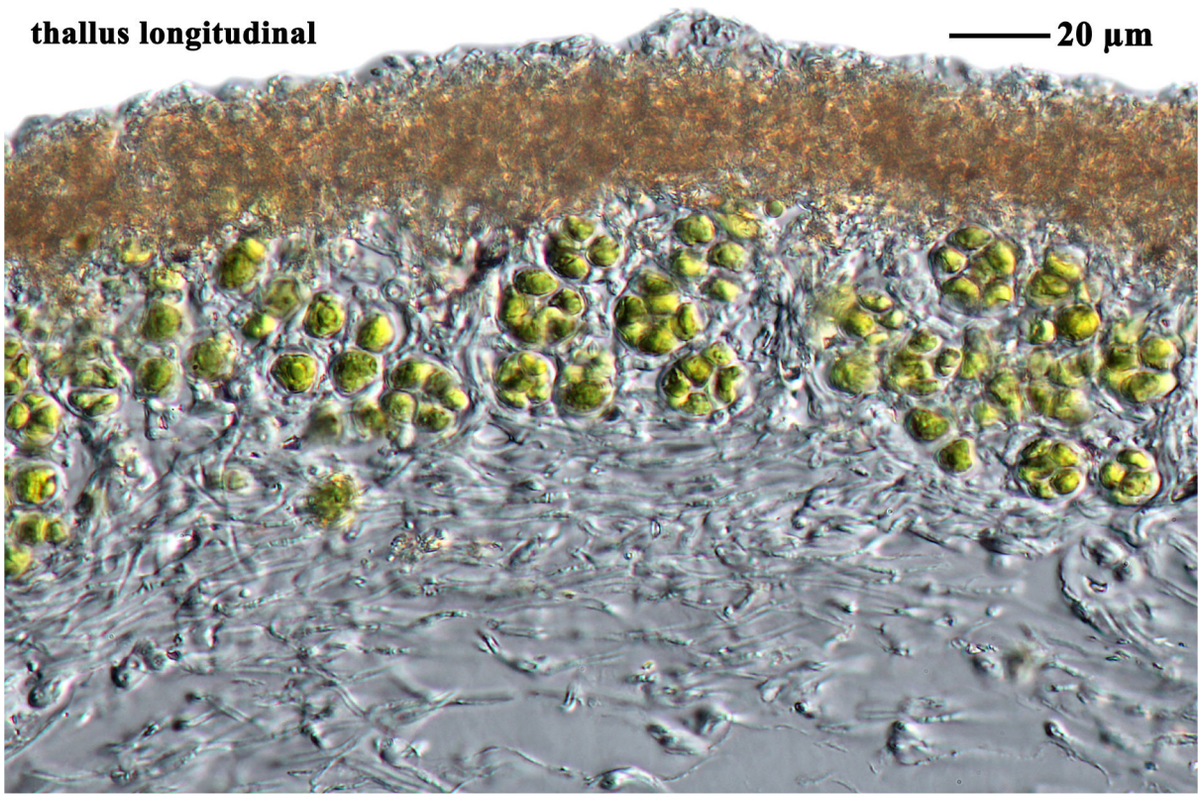


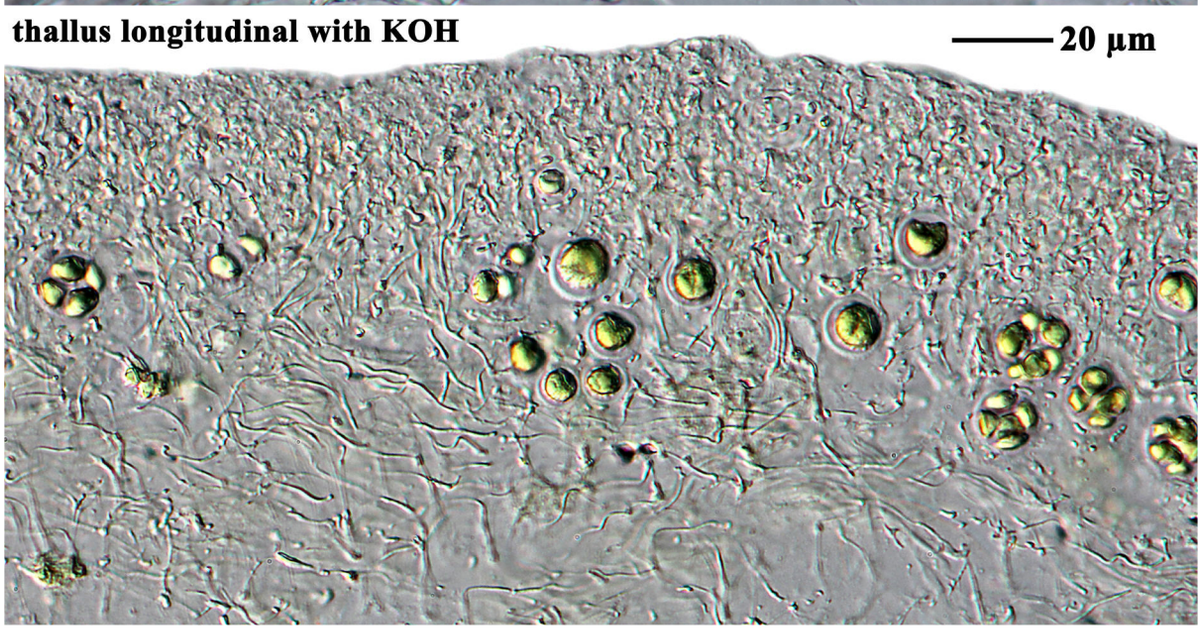


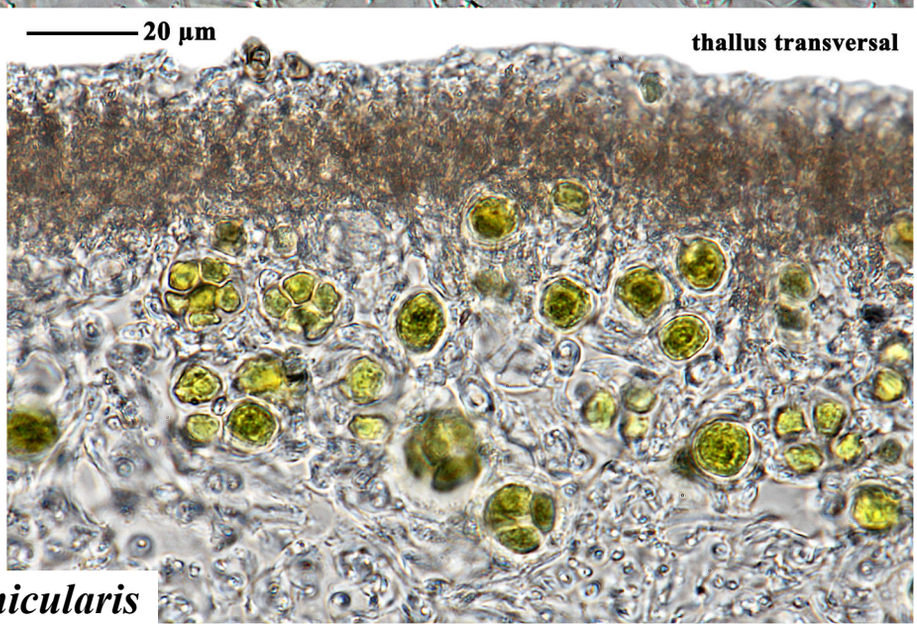




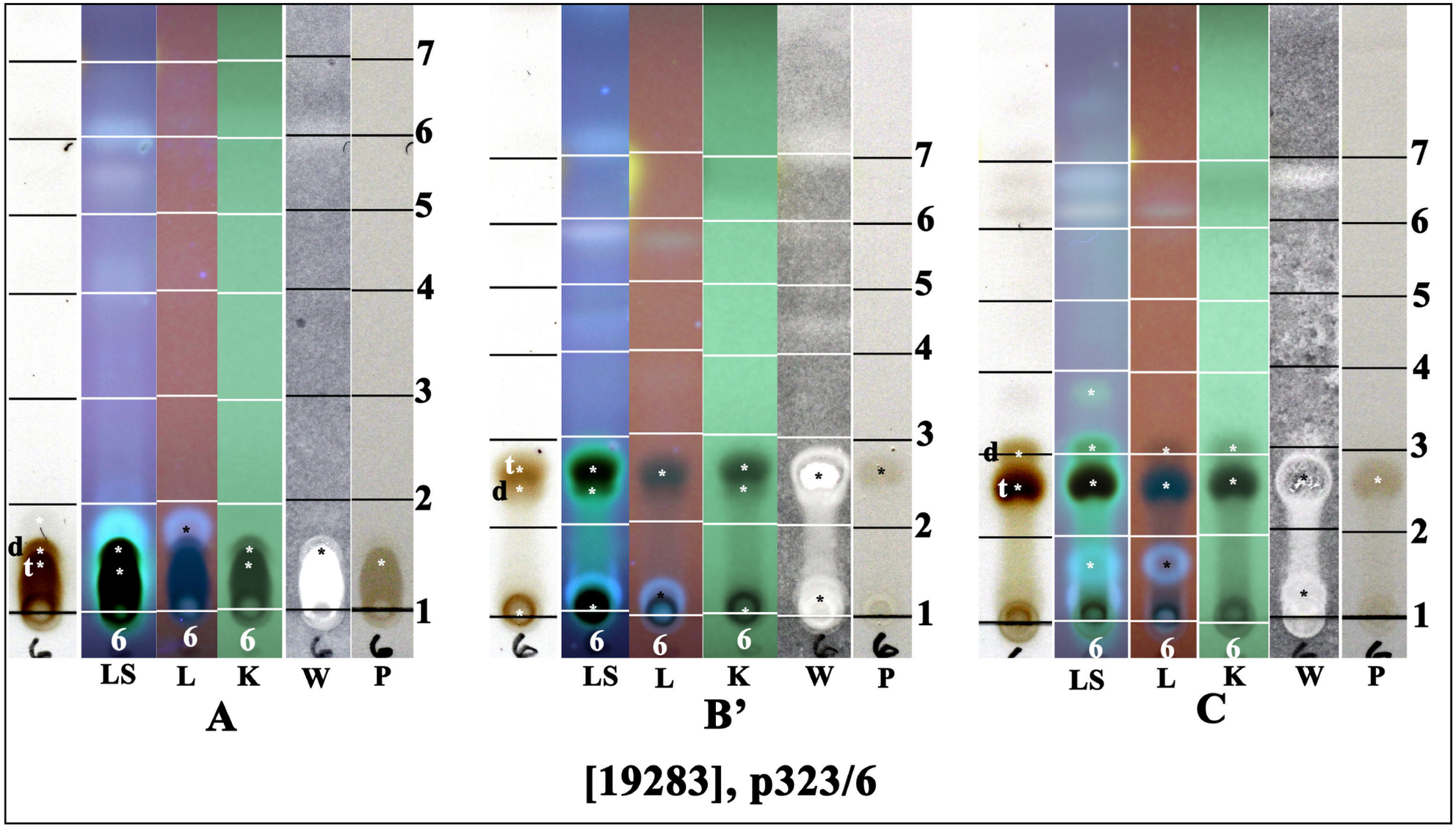
Thamnolia vermicularis







Thamnolia vermicularis



t: thamnolic acid, d: decarboxythamnolic acid

Thamnolia vermicularis (Sw.) Schaerer

[20650], Österreich, Lungau, S-Seite des Großecks oberhalb Mauterndorf in Richtung Speiereckhütte, 47.12846° N, 13.64913° E bis 47.13086° N, 13.64336° E, 1968-2074 m, über Silikatfelsen. Leg. F. Schumm & U. Schwarz, 31.8.2019, det F. Schumm.

Thallus fruticose, pure white, becoming pinkish in the herbarium and staining the herbarium paper, erect or decumbent, often forming tufts. Thallus units 1-2(-3) mm thick (rarely to 8 mm), worm-like, usually to 5 (rarely to 10) cm tall, more or less cylindrical, with pointed apices, smooth, non squamulose, simple or rarely sparingly branched in upper part. Cortex of longitudinally arranged hyphae; medulla thin, soon becoming hollow. Apothecia not known. Pycnidia poorly evident, immersed, initially covered by cortical tissue, flask-shaped to broadly globose, the wall colourless throughout, uni- or rarely bilocular, densely filled with long, parallel conidiophores comprising erect chains of intercalary conidiogenous cells with bayonet-like processes near the upper cell septum. Conidia bacilliform, slightly tapering at one end, 3-5 x 1-2 µm. Photobiont chlorococcoid. Spot tests: K+ bright yellow, C-, KC-, P+ orange, UV . Chemistry: thamnolic acid. - Note: an arctic-alpine, circum- and bipolar lichen found on wind-exposed Alpine tundras, both on calcareous and siliceous substrata, widespread throughout the Alps.



Thamnolia vermicularis



Thamnolia vermicularis

Thelocarpon laureri (Flot.) Nyl., Bot. Notiser(5-6): 88 (1854)
= *Sphaeropsis laureri* Flot. 1847

[VZ1640], Bohemoslovacia. Moravia. Tišnov, inter vicos Křižovice et Skorotice,500 m. Ad lignum saepe in prato. Leg. A. Vězda. 18.9.1977. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1640.

Thallus crustose, lichenized, mostly reduced to small, 0.15-0.4 mm wide and up to 0.25 mm tall, bright greenish yellow-pruinose, scattered, hemispherical to flattened fruiting warts. Ascocarps frequent, perithecioid, immersed in the warts, with a concave, not exposed disc (the warts opening through a small apical pore), the ostiole sometimes darker. Exciple colourless, with an algal sheath reaching the apex, the outermost part devoid of algae and forming a 8-15 µm thick pseudocortex of vertically oriented hyphae; hymenial gel I+ red (I+ blue at low concentrations of iodine); paraphyses distinctly branched and anastomosing, not apically thickened, as long as the asci; subhymenium amyloid. Asci 50-100-spored, flask-shaped, tapering to apex, thin-walled, persistent, the wall I+ pale blue, I+ yellow-red at the base, the apex slightly thickened and with a darker I+ blue ring-structure within. Ascospores 1-celled, hyaline, subglobose to broadly ellipsoid, thin-walled, (1.5-)2-4(-5) x 1.2-2 µm, often biguttulate. Pycnidia rare, immersed in small warts, with a colourless wall. Conidia oblong-obtuse. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-. Chemistry: yellow pruina with pulvinic acid derivatives. - Note: an ephemeral early coloniser of different substrata, including roofing tiles, rotten wood, and soil; perhaps more widespread, but very much overlooked.



Thelocarpon laureri



Thelocarpon laureri

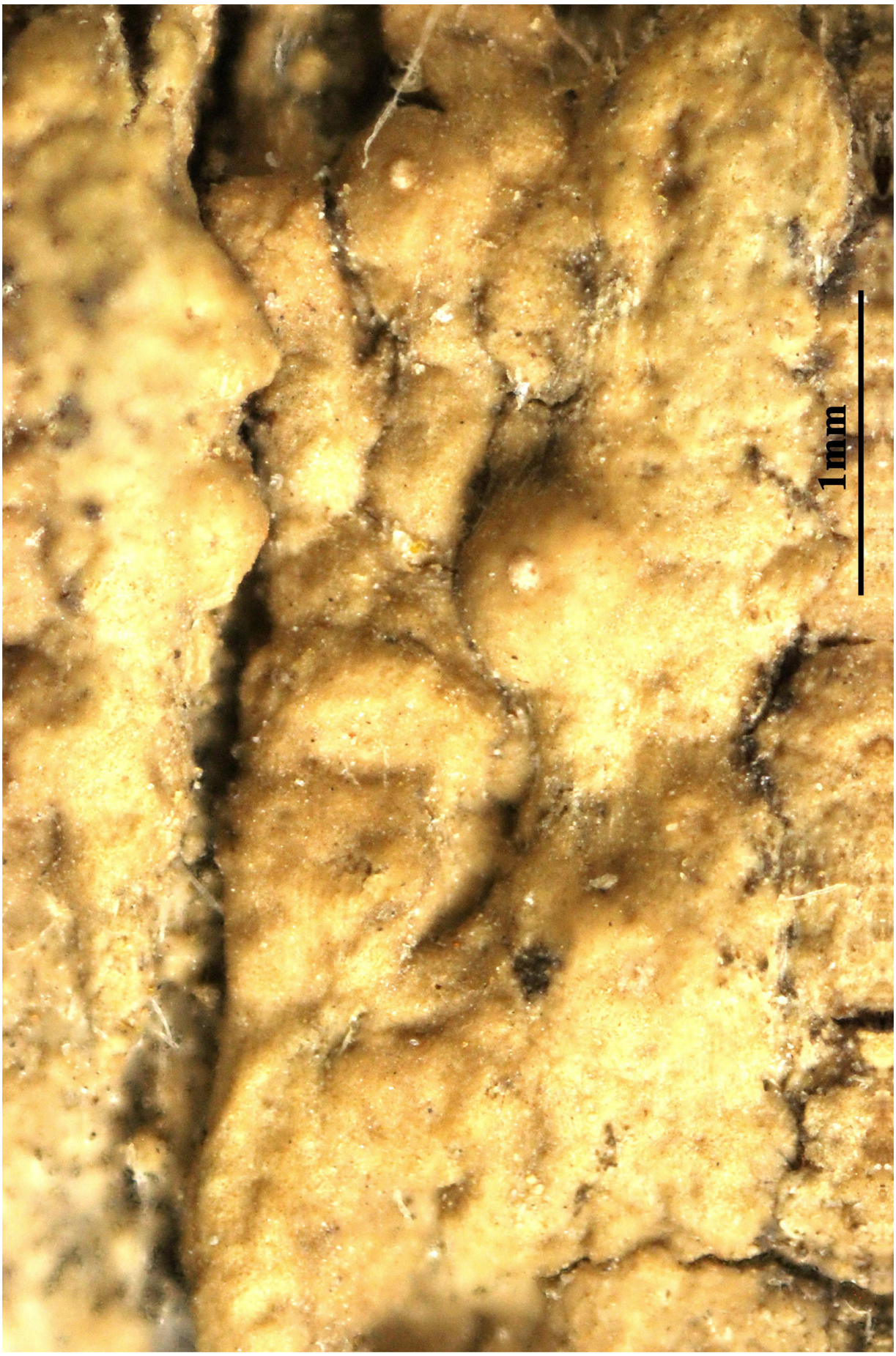
Thelopsis isiaca Stizenb., Ber. Tät. St Gall. naturw. Ges.: 262 (1895) [1893-94]

[VZ2372], Italia. Sardinia. Distr. Cagliari: In litore inter Cabo Ferrato et Torre Salinas loco dicto La Stagno Feraxi, 3 m. Ad corticem *Juniperi phaenicea*. Leg. P. L. Nimis, C. Roux, M. Tretiach et A. Vězda. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2372.

Thallus crustose, thinly episubstratic, rarely endosubstratic, continuous to faintly rimose, yellowish grey to pinkish grey, appearing verrucose due to the numerous fertile warts, sometimes delimited by a whitish prothallus. Cortex colourless, 20-30 µm thick, the hyphae with gelatinized walls, overlain by an epinecral layer. Perithecia subglobose, 0.3-0.6 mm across, immersed in 0.6-1 mm wide, raised thalline warts, the ostiolar region visible as a slightly darker dot. Exciple colourless or yellowish, especially around the ostiole, of compressed cells; hymenium colourless or yellowish, I+ blue-green turning reddish (mainly due to ascus walls); periphyses septate, well developed in the periostiolar region, 10-25 x c. 1 µm; paraphyses simple, slender, flexuose, c. 1.5 µm thick, the apical cells not swollen. Asci 100-150-spored, cylindrical, tapering towards the apex, the wall thin, 1+ light blue, without a tholus. Ascospores at first 1-celled, then 1-septate, hyaline, ellipsoid, (10-)12-18 x (4-)5-9 µm, thin-walled, surrounded by a thin gelatinous perispore. Pycnidia immersed. Conidia ellipsoid to ovoid, 3-5 x 1-1.5 µm, or thread-like, 18-20 x c. 1 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a Mediterranean-Macaronesian species also known from western North America, found on base-rich rocks, soil, mosses, tree bark, in situations protected from rain; mostly Tyrrhenian, locally abundant in coastal situations, such as in some islands of Southern Italy.



Thelopsis isiaca



Thelopsis isiaca

Thelopsis rubella Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 3: 194 (1855)
= *Sagedia rubella* (Nyl.) Jatta, Syll. Lich. Ital. (Trano): 553 (1900)
= *Thelopsidomyces rubellae* Cif. & Tomas., Atti Ist. bot. Univ. Lab. crittog. Pavia, sér. 5 10(1): 60 (1953)
= *Verrucaria rubella* (Nyl.) Leight., Lich.-Fl. Great Brit.: 442 (1871)

[VZ1082], Gallia. Pyrenaei montes occidentales. Saint-Jean-leVieuse. 150 m. Ad corticem *Quercus penduculatae*. Leg. J. Vivant, 20.4.1972. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1082.

Thallus crustose, episubstratic but very thin, forming irregular, poorly delimited, 1(-2) cm wide patches, continuous to slightly cracked, pale grey to pale brown, sometimes with a greenish tinge. Perithecia 0.3-0.6 mm across, pale pink brown to red-brown, tending to become darker with age, of a lighter colour around the ostiole, half-immersed in thallus, often surrounded at base by a thalline rim. Exciple hyphal, of intertwined hyphae with thick gelatinized walls, colourless within, brown in outer part, the innermost layer of thin-walled hyphae; peri-physes simple or sparingly branched, 4-5-celled; hymenial gel non-amyloid. Asci 100-150-spored, cylindrical, tapering towards the apex, the wall thin, 1+ light blue, without a tholus. Ascospores (1-)3-septate, with rounded ends, hyaline, ellipsoid, 12-18 x 4-8 µm, with a very thin, often inapparent perispore. Photobiont trentepohlioid. Spot tests: thal-lus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a mild-temperate species found on old deciduous trees (e.g. *Fagus*, *Quercus*), especially near the base of the boles, in areas with high rainfall, mainly Tyrrhenian in Italy.



Thelopsis rubella



Thelopsis rubella

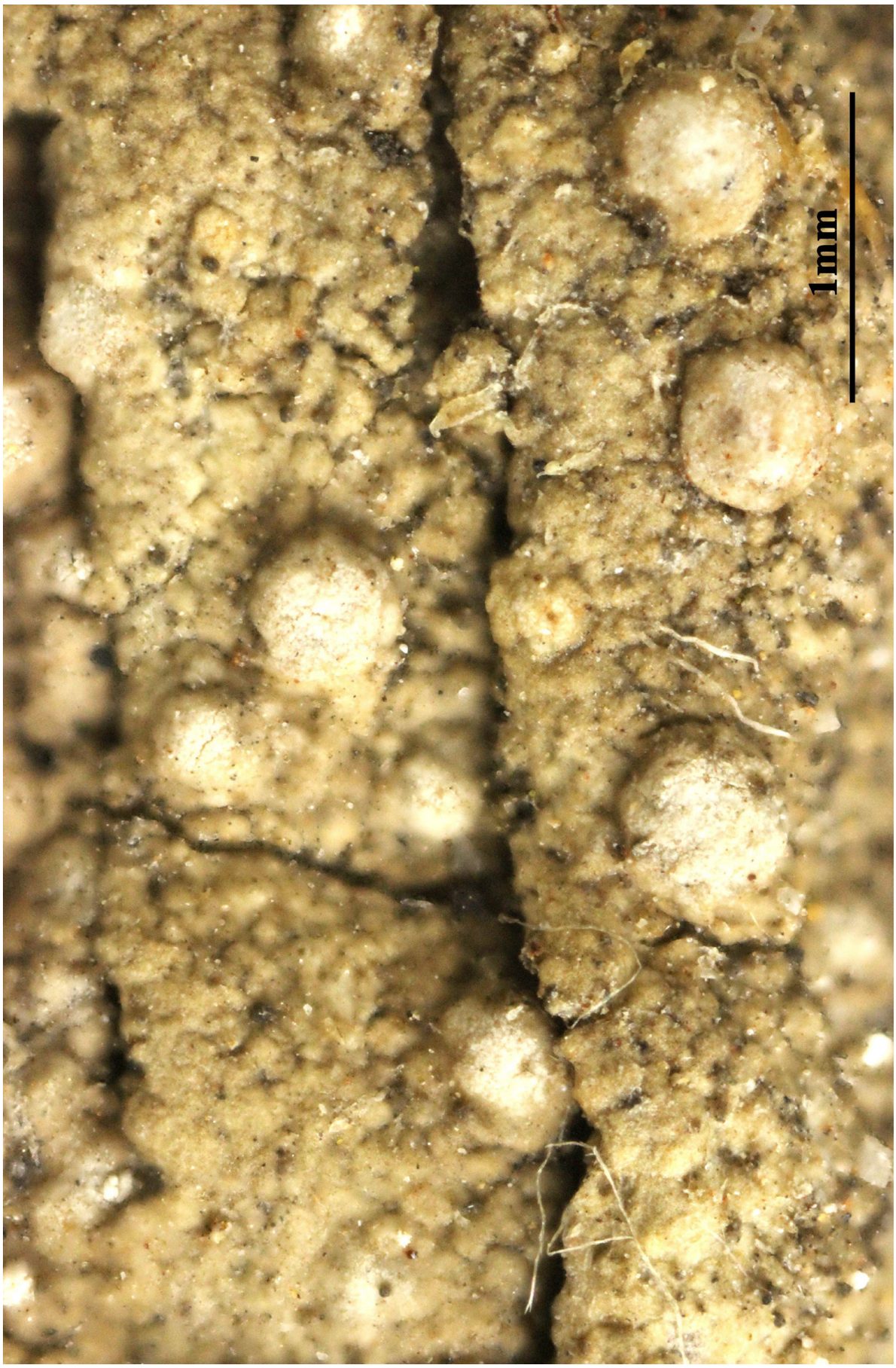
Thelopsis isiaca Stizenb., Ber. Tät. St Gall. naturw. Ges.: 262 (1895) [1893-94]

[VZ2425], Gallia, Corsica: Roccapina, 2 m. Ad corticem *Juniperi phoeniceae* in litore. Leg. D. Puntillo, 28.7.1989. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2425.

Thallus crustose, thinly episubstratic, rarely endosubstratic, continuous to faintly rimose, yellowish grey to pinkish grey, appearing verrucose due to the numerous fertile warts, sometimes delimited by a whitish prothallus. Cortex colourless, 20-30 µm thick, the hyphae with gelatinized walls, overlain by an epinecral layer. Perithecia subglobose, 0.3-0.6 mm across, immersed in 0.6-1 mm wide, raised thalline warts, the ostiolar region visible as a slightly darker dot. Exciple colourless or yellowish, especially around the ostiole, of compressed cells; hymenium colourless or yellowish, I+ blue-green turning reddish (mainly due to ascus walls); periphyses septate, well developed in the periostiolar region, 10-25 x c. 1 µm; paraphyses simple, slender, flexuose, c. 1.5 µm thick, the apical cells not swollen. Asci 100-150-spored, cylindrical, tapering towards the apex, the wall thin, 1+ light blue, without a tholus. Ascospores at first 1-celled, then 1-septate, hyaline, ellipsoid, (10-)12-18 x (4-)5-9 µm, thin-walled, surrounded by a thin gelatinous perispore. Pycnidia immersed. Conidia ellipsoid to ovoid, 3-5 x 1-1.5 µm, or thread-like, 18-20 x c. 1 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a Mediterranean-Macaronesian species also known from western North America, found on base-rich rocks, soil, mosses, tree bark, in situations protected from rain; mostly Tyrrhenian, locally abundant in coastal situations, such as in some islands of Southern Italy.



Thelopsis isiaca

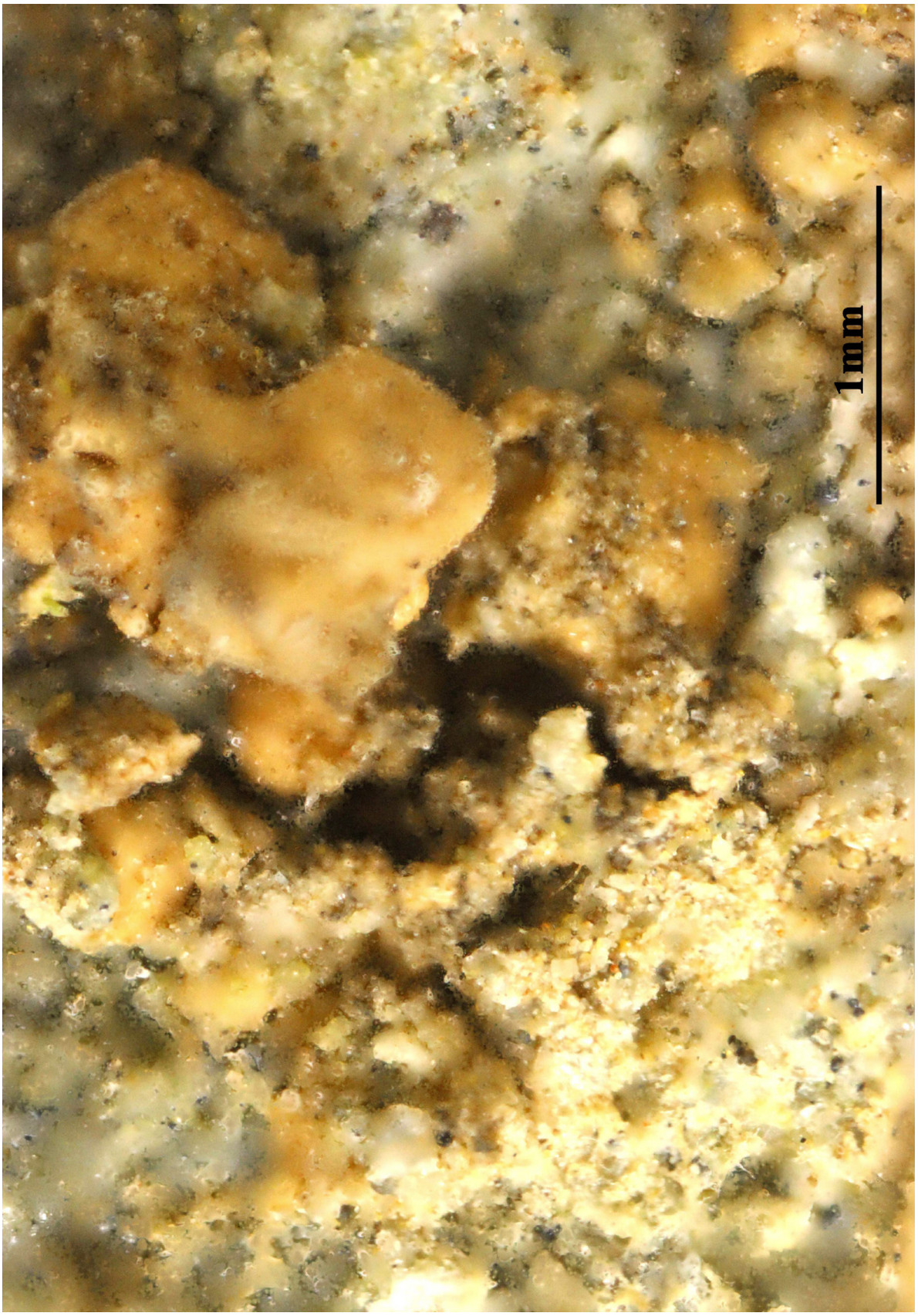


Thelopsis isiaca

Thelopsis isiaca Stizenb., Ber. Tät. St Gall. naturw. Ges.: 262 (1895) [1893-94]

[VZ1504], Bulgaria. Pontus, distr. Burgas: in litore inter pagos Varvara et Mičurin, 10 m. In pariete alto scopuli maritimi andsitici. Peg. I. Pisút et A. Vězda, 22.8.1977. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1504.

Thallus crustose, thinly episubstratic, rarely endosubstratic, continuous to faintly rimose, yellowish grey to pinkish grey, appearing verrucose due to the numerous fertile warts, sometimes delimited by a whitish prothallus. Cortex colourless, 20-30 µm thick, the hyphae with gelatinized walls, overlain by an epinecral layer. Perithecia subglobose, 0.3-0.6 mm across, immersed in 0.6-1 mm wide, raised thalline warts, the ostiolar region visible as a slightly darker dot. Exciple colourless or yellowish, especially around the ostiole, of compressed cells; hymenium colourless or yellowish, I+ blue-green turning reddish (mainly due to ascus walls); periphyses septate, well developed in the periostiolar region, 10-25 x c. 1 µm; paraphyses simple, slender, flexuose, c. 1.5 µm thick, the apical cells not swollen. Asci 100-150-spored, cylindrical, tapering towards the apex, the wall thin, 1+ light blue, without a tholus. Ascospores at first 1-celled, then 1-septate, hyaline, ellipsoid, (10-)12-18 x (4-)5-9 µm, thin-walled, surrounded by a thin gelatinous perispore. Pycnidia immersed. Conidia ellipsoid to ovoid, 3-5 x 1-1.5 µm, or thread-like, 18-20 x c. 1 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a Mediterranean-Macaronesian species also known from western North America, found on base-rich rocks, soil, mosses, tree bark, in situations protected from rain; mostly Tyrrhenian, locally abundant in coastal situations, such as in some islands of Southern Italy.



Thelopsis isiaca



Thelopsis isiaca

Thelotrema indicum Hale, Mycotaxon 3(1): 177 (1975)

[VZ1389], India. Tamil Nadu. Montes Nigiri, in monte Dodapetta, 2600 m. Ad corticem *Cupressi* sp. Leg. et det. M. E. Hale (no. 40185, 8.11.1973. - ISOTYPUS - Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1389.

Apothecia 0.4 - 0.6 mm diam., verruciform, partially radially divided, pore 0.2 - 0.3 mm diam., Asci 1-2-spored, spores 80-120 x 25-36 µm, I+ blue, multicelled-muriform; from Nilgiri Hills, Tamil Nadu.



Thelotrema indicum Hale,

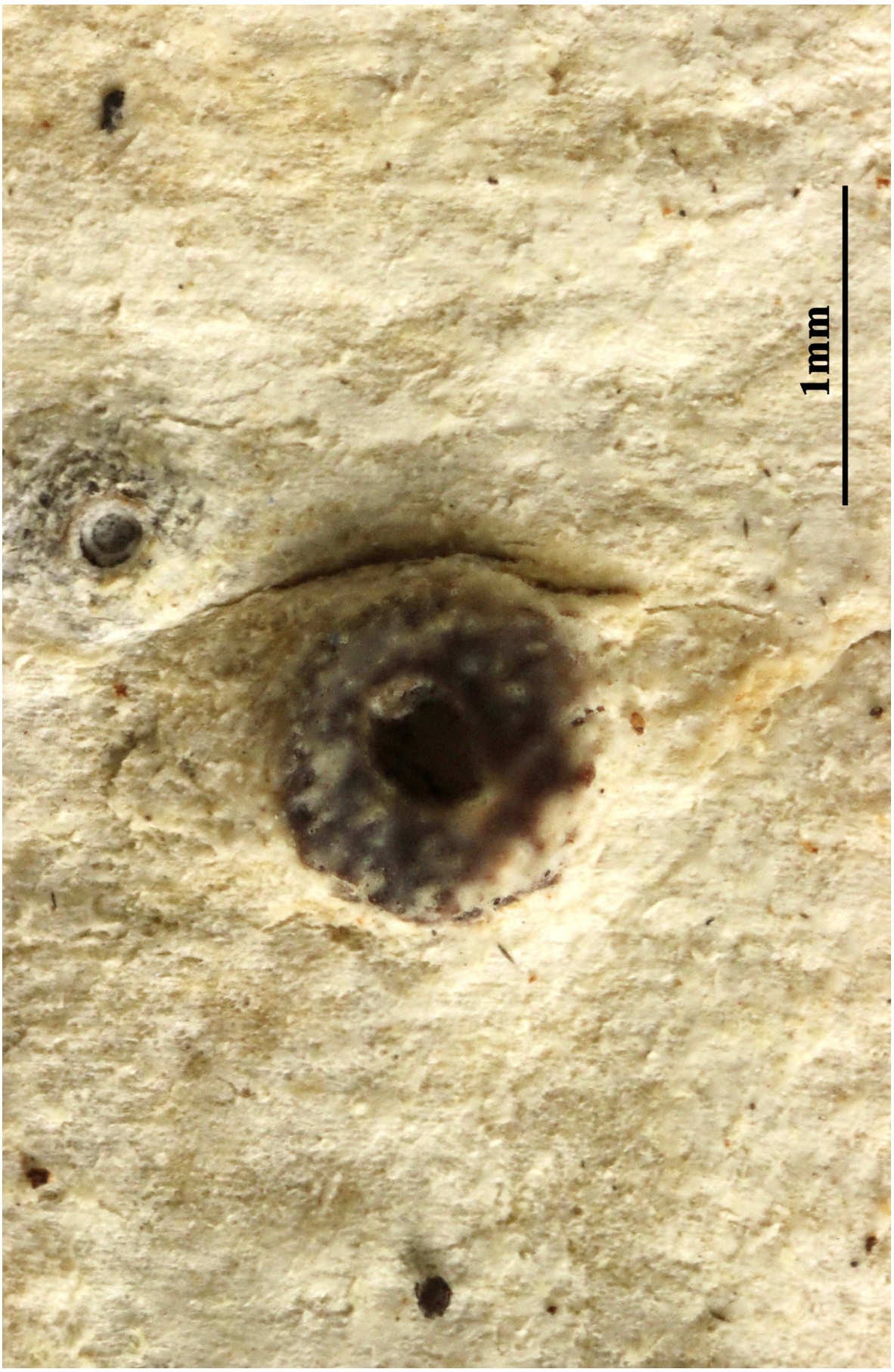


Thelotrema indicum Hale,

Thelotrema lepadodes Tuck., Proc. Amer. Acad. Arts & Sci. 5: 405 (1862) [1860]
= *Leptotrema lepadodes* (Tuck.) Zahlbr., Annls mycol. 10(4): 372 (1912)

[VZ1802], Brasila. Sao Paulo: Praia de Peruibe prope Itanhaém. Ad corticem Rhizophorae in litore. Leg. K. Kalb, 23.8.1978. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1803.

Asci 4-8-spored, spores 80-115 x 14-17 µm, muriform, with 25-30 transverse and 2-4 vertical septa, apothecia crowded, emergent, constricted at base, 0.6 - 1.5 mm diam., pore gaping, up to 0.7 mm diam.



Thelotrema lepadodes



Thelotrema lepadodes

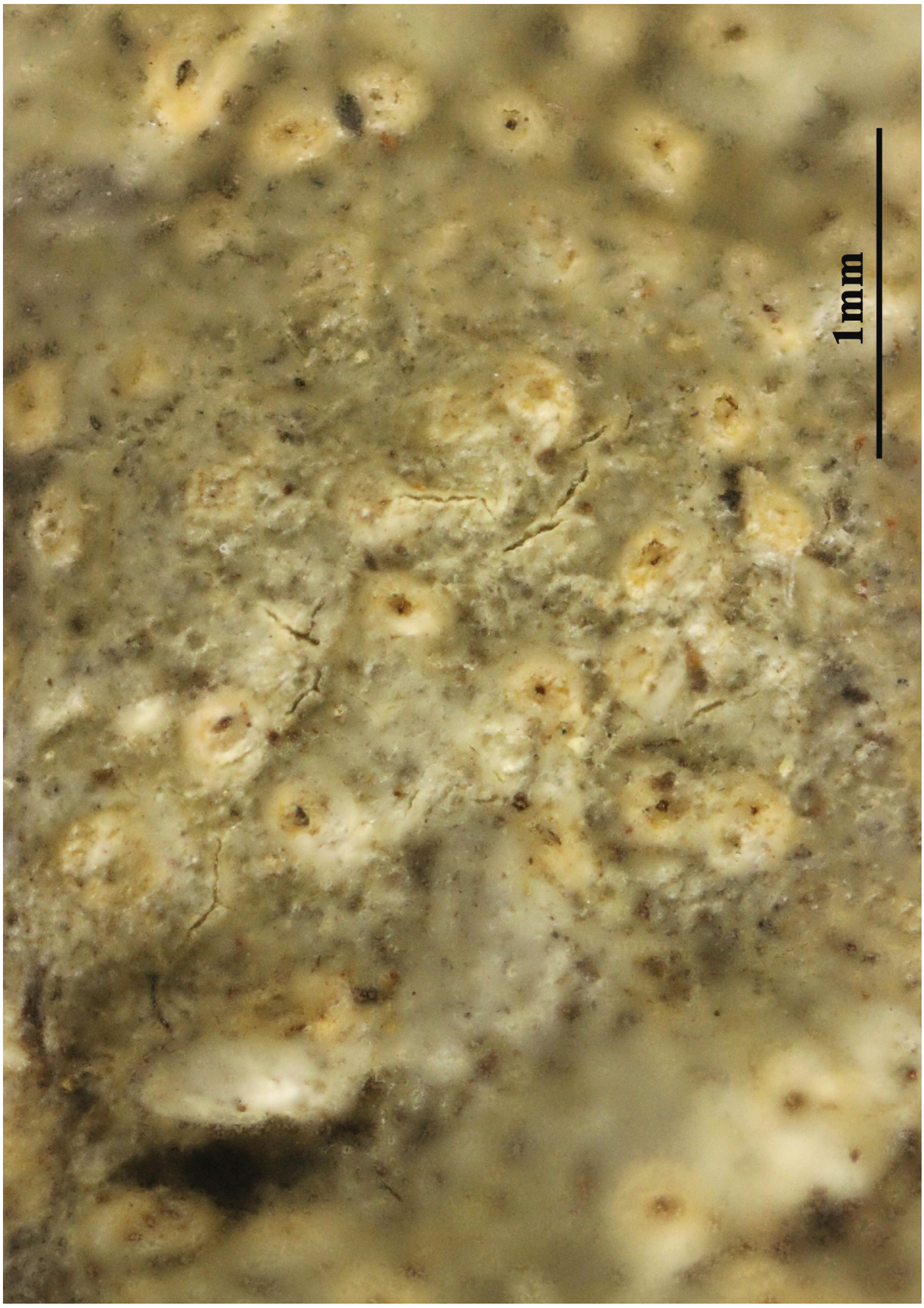
Thelotrema platysporum Harm., Bull. Séanc. Soc. Sci. Nancy, Sér. 3 13: 41 (1912)
= *Fibrillithecis platyspora* (Harm.) Frisch, Biblioth. Lichenol. 92: 137 (2006)

[VZ2052], Sri Lanka. Distr. Kalatura; Ambalam-Pole, Morapitiya, 300 m. Ad corticem arboris. Leg. W. E. Hale, 11.11.1978. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2052.

Apothecia 0.3 - 0.7 mm diam., solitary or grouped, pore 0.03 - 0.05 (-0.15) mm diam., thalline rim crumbling, black, exciple fused, spores 14-30 x 7-12 µm, I+ blue, muriform with 3-4-transverse and 0-1 vertical septa; from Sri Lanka.



Thelotrema platysporum



Thelotrema platysporum

Thelotrema praestans Müll. Arg., J. Linn. Soc., Bot. 30: 453 (1895)
= *Ocellularia praestans* (Müll. Arg.) Hale, Mycotaxon 11(1): 137 (1980)

[VZ1827], Brasilia. São Paulo: Ilha Comprida, in silva litoris arenosi (Restinga). Ad corticem arboris. Leg. et det. K. Kalb, 1.11.1980. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1627.

Thallus light greenish to whitish gray, smooth and continuous, epiphloeodal, forming colonies 5-10 cm broad; apothecia semi-emergent to strongly emergent, up to 2 mm in diameter, heavily carbonized with a thick columella; pore 0.15-0.3 mm in diameter, opening through a deep tube into the ascocarp; hymenium about 2OO µm high; spores 1-2/ascus, muriform with many transverse and longitudinal locules, 30-45x 100-275 µm, I+ blue. Chemistry: "Praestans" unknown.HABITAT.-CanOpy branches, less commonly bole, liana, or base in rain forest (250-800 m).



Thelotrema praestans

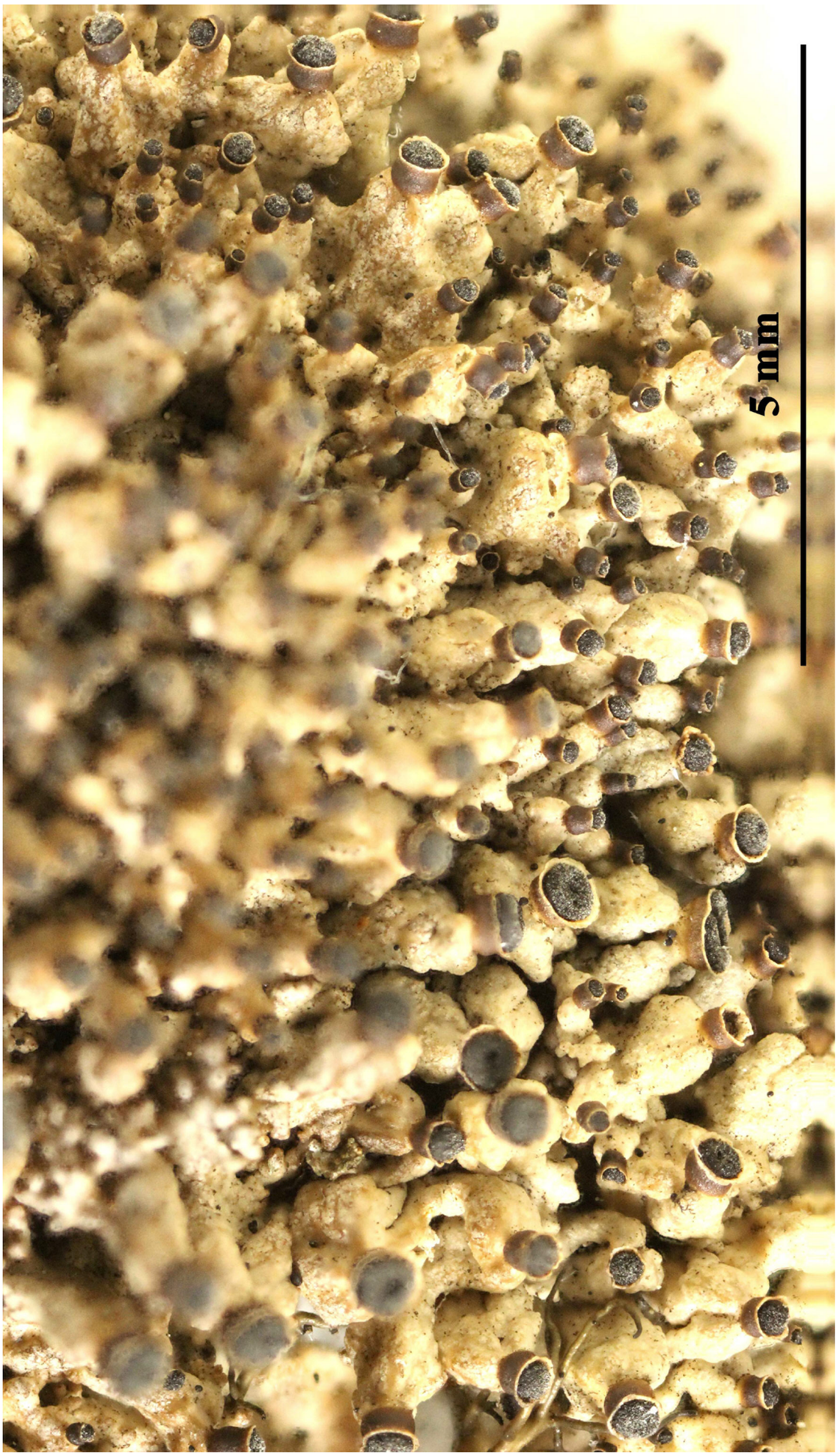


Thelotrema praestans

Tholurna dissimilis (Norman) Norman, Flora, Regensburg 44: 409 (1861)
= *Podocratera dissimilis* Norman 1861

[VZ2186], Norvegia. Buskerud, Gol, inter collem Auenhaugen et lacum Flataskartjern, 1000 m. In ramulis *Piceae abietis*. Leg. T. Tønsberg (9934), 4.1987. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2186.

Tholurna dissimilis, a rare corticolous dwarf fruticose lichen known from Scandinavia since the early 19 th century and from western North America since the early 1960s, is confirmed as occurring in eastern Labrador, Canada. The taxon was discovered during a lichen survey of the Makkovik region of coastal Labrador during a botany survey initiated by the Newfoundland and Labrador Wildlife Division in the summer of 2010. The discovery of this rare, unusual lichen ends decades of speculation regarding its occurrence in eastern North America.



Tholurna dissimilis



Tholurna dissimilis

Thyrea pulvinata (Schaer.) A. Massal., Flora, Regensburg 39: 211 (1856)
= *Parmelia stygia* var. *pulvinata* Schaer. 1842

[VZ1157], Gallia. Hérault. Mireval, Creux de Miege, 50 m. Ad saxa calcarea. Leg. G. Clauzade et Cl. Roux, 7.7.1972. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1157.

Thallus squamulose-umbilicate, small-foliose to subfruticose, gelatinous when wet, black, usually smooth, sometimes becoming uneven, the squamules 10-15(-20) mm wide, forming rosettes or cushions, at first flat and lobulate, soon becoming divided into erect, adpressed or ascending, 2-4 mm wide and 0.4-0.8 mm thick lobes with a narrow base, rounded tips and down-turned margins; lower surface attached by a central holdfast. Thallus 0.6-0.8 mm thick, the outer part formed by short-celled, 1.5-2.5 µm thick, mainly anticlinally oriented hyphae enclosing the photobiont cells, the medullary part of loosely arranged, 1-1.5 µm thick hyphae with cylindrical cells, lacking photobionts. Apothecia thallinocarps, hemiangiocarpous, the ascogonia arising freely beneath the thallus surface, sunken in thallus and difficult to recognize unless when wet, marginal to submarginal, filling the entire lobe tip, 2-4(-6) mm across, round to irregularly shaped, with a slightly flat to convex, dotted or fissured disc and a 50-100 µm thick thalline margin. Proper exciple indistinct or very thin; epithecium brownish, 20-30 µm high; hymenium 80-100 µm high, finally incompletely separated into partial hymenia by intrusions of wedge-shaped, sterile thalline tissue, covered by a continuous layer of sterile tissue separated only by the pore-like discs of the partial hymenia, K/I+ blue turning wine-red; paraphyses short-celled, 2-3 µm thick, not or only slightly capitate; subhymenium compact, 30-40 µm high, K/I+ blue. Asci 16-32-spored, subcylindrical to obclavate, prototunicate, with a thin, one-layered, non-amyloid wall, an amyloid external apical cap, and passive spore discharge via apical rupturing, Lichina-type. Ascospores 1-celled, hyaline, broadly ellipsoid, 5-9 x 3-5 µm. Pycnidia globose to broadly pyriform, immersed, unilocular, up to 0.2 mm wide. Conidia ellipsoid, 2-3 x 1-1.5 µm. Photobiont cyanobacterial, chroococcoid, with a few cells measuring 5-9 x 3-5 µm, penetrated by haustoria and surrounded by a brownish gelatinous sheath. Spot tests: all negative. Chemistry: without lichen substances. - Note: on steeply inclined to vertical seepage tracks of more or less calcareous or basic siliceous rocks, most common in the Mediterranean belt.



Thyrea pulvinata



Thyrea pulvinata

Thysanothecium hyalinum (Taylor) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 94 (1858) [1857]
= *Baeomyces hyalinus* Taylor 1847
= *Thysanothecium scutellatum* (Fr.) D.J. Galloway, in Galloway & Bartlett, Nova Hedwigia 36(2-4): 390 (1983) [1982]

[VZ1836], Tasmania. Huonville, in monte Snug, ad catarata Snug Falls dicta, 43°05' austr., 147°12' orient., 180 m. Ad truncum decorticatum Eucalypti sp. in silva. Leg. et det. L. Tibell (no. 11272), 8.3.1981. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1836.

Primary squamules attached to substratum, forming a spreading, diffract or areolate crust, minute, whitish or pale green to green-yellow, white below; cortex distinctly grooved-striate, yellow-green to brownish; spaces between cartilaginous strands exposing corticate granules. Pseudopodetia terete, uniformly corticate, becoming fissured at maturity, grooved, ±canaliculate or partly hollow, 1–2 mm wide at base expanding to 2–6 mm wide at apex, 0.1–10 mm tall. Apothecia terminal, often also subterminal and lateral, simple becoming compound and aggregate, rarely proliferating from exciple; disc surface smooth, pale yellow to pinkish brown. Ascospores ellipsoidal, straight or curved, 5–8 × 2–3 μm. Pycnidia 1–2.5 mm tall; ostiole apical, 0.05–0.08 mm wide. CHEMISTRY: usnic, divaricatic, nordivaricatic (trace) and stenosporic (trace) acids. Occurs in Australia, , Tasmania, and is also found in Papua New Guinea, New Caledonia, Indonesia, Vietnam and Japan. Grows on bark and wood.



Thysanothecium hyalinum



Thysanothecium hyalinum

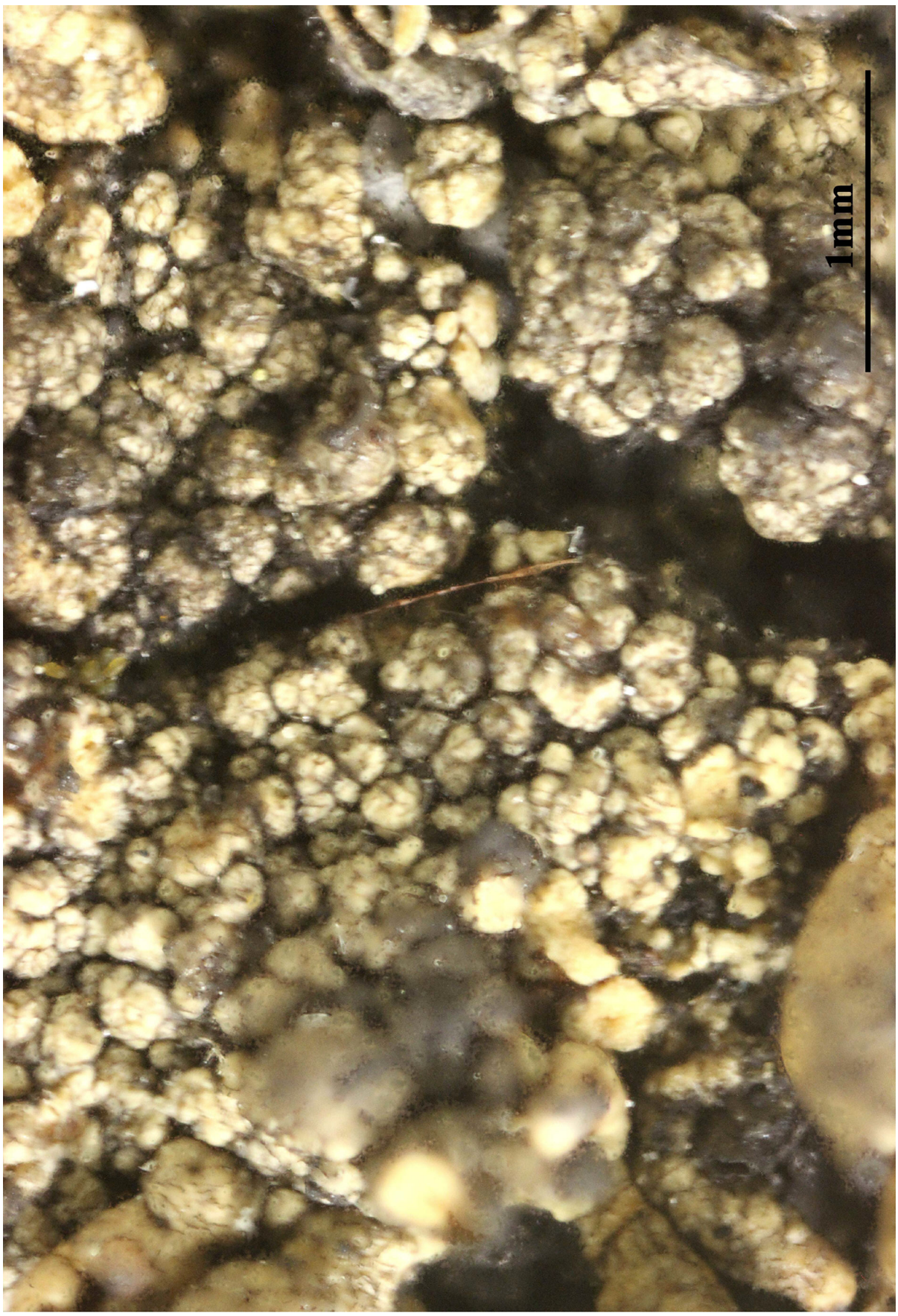
Toninia cumulata (Sommerf.) Th. Fr., Lich. Scand. (Upsaliae)(2): 341 (1874)
= *Lecidea cumulata* Sommerf. 1826
= *Stereocaulon cumulatum* (Sommerf.) Timdal, Lichenologist 34(1): 7 (2002)

[VZ1395], Seecia. Värmland: Horvfjållet, 540 m. Ad terram in rupibus locis venti expositis. Leg. S. E. Sundell (no. 10594), 16.8.1975. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1395.

Although not indicated by Sommerfelt in any of the two protologues , *L. conglomerata* and *L. cumulata* were apparently based on the same material. This material (in O) was first labelled " *Lecidea conglomerata*" in Sommerfelt's handwriting, but the letters have later been modified and overwritten, probably also by Sommerfelt, into "*Lecidea cumulata*". It appears that Sommerfelt first named the species by the former name and later changed it, possibly when discovering that the name had already been used by Acharius (1810: 201) for another species. The work introducing *L. cumulata* was published prior to that introducing *L. conglomerata,* however. *Lecidea conglomerala* Sommerf. is hence both a homonym of *L. conglomerata Ach*. and a nomenclaturally superfluous name of *L. cumulata*. The species differs from Toninia mainly in having more closely conglutinated paraphyses and asci lacking an ocular chamber. The species contains atranorin and lobaric acid. As pointed out by Coppins & James (1984), *Lecidea botryosa* (Ft.) Th. Fr. is anatomically rather similar, and the two species may belong in the same genus. The latter species, however, has a crustose thallus, simple spores, and contains perlatolic acid.



Toninia cumulata



Toninia cumulata

Toninia diffracta (A. Massal.) Zahlbr., Öst. bot. Z. 51: 284 (1901)
= *Thalloidima vesiculare* var. *diffractum* A. Massal. 1852

[VZ1822], Italia. Liguria. Prov. Savona. Roccaro prope Laigueglia, 70 m. Ad terram sub Oleis- Leg. M. Steiner, 10.6.1973. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1822.

Thallus squamulose, pale grey, but densely covered in a white, granular, smooth or shallowly fissured pruina, more rarely partly epruinose, the squamules more or less orbicular, up to 3(-4) mm wide, initially scattered, later sometimes contiguous but not forming distinct rosettes, weakly to strongly convex; lower surface pale grey to brownish. Upper cortex 30-70 µm thick, lacking an epinecral layer, encrusted with crystals of calcium oxalates; medulla white, usually without crystals; lower cortex thinner than upper cortex, without crystals. Apothecia frequent, lecideine, round, sessile, strongly constricted at base, up to 1.5 mm across, with a black, more or less pruinose, flat to weakly convex, smooth disc and a distinct, smooth, persistent proper margin. Proper exciple brown to dark reddish brown throughout, sometimes with a darker grey rim, in which case it reacts K+ and N+ violet; epithecium grey, K+ and N+ violet; hymenium colourless, 40-70 µm high; paraphyses simple or sparingly branched and anastomosing in upper part, thin-walled, the apical cell distinctly swollen, with a gelatinous pigment cap; hypothecium brown in upper part, paler brown below. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus with a I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores 1-septate, hyaline, fusiform, 14-22(-26) x 3-5 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances or with unidentified terpenoids; apothecia with the Sedifolia-grey pigment. - Note: a mainly southern, eurasiatic species found in small fissures of steeply inclined faces of calcareous rocks, often on cyanobacteria or cyanobacterial lichens when young, sometimes on soil, with optimum at low altitudes, but exceptionally reaching the Alpine belt.



Toninia diffracta



Toninia diffracta

Toninia diffracta (A. Massal.) Zahlbr., Öst. bot. Z. 51: 284 (1901)
= *Thalloidima vesiculare* var. *diffractum* A. Massal. 1852

[12284], Griechenland, N-Samos, bei Manolates südlich von Agios Konstandinos, 37°47.185 'N, 26°49.533' E, 341 m; halbschattige bis besonnte Terrassenmauern; Glimmerschiefer. Leg. F. Schumm 02.05.2006, det. F. Schumm 05.2006. Notes: Sporen 2-zellig (teils Pseudospten); 18,5 x 3,3; 18,5 x 3,3; 21,8 x 4,4 µm; Epithecium 8,5 µm, schwärzlich mit K+ rotbraun bis violett; Hymenium 68 µm, hell; Hypothecium 60 µm, dunkel braunrot; Amphithecium mächtig, strahlig, braunrot.

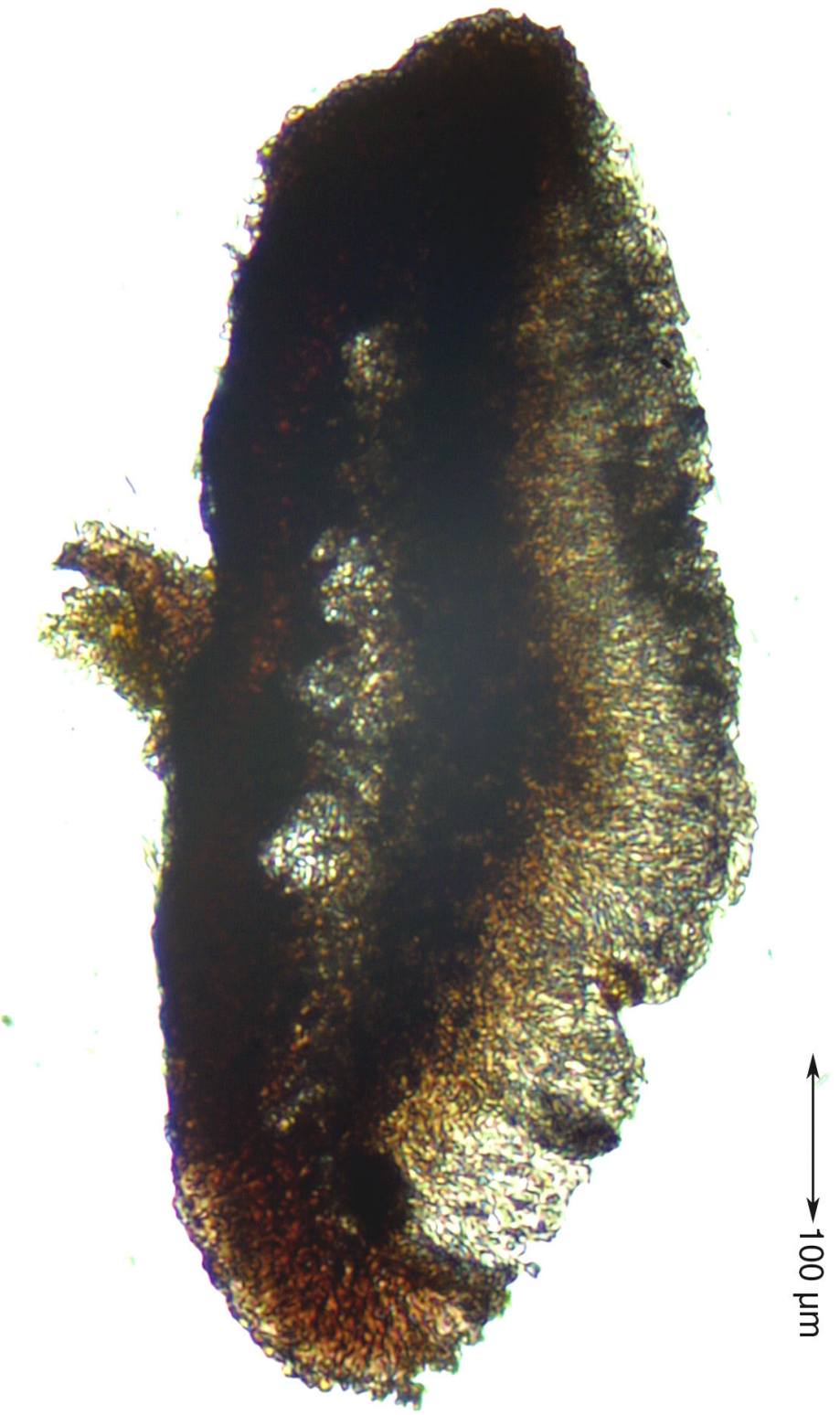
Thallus squamulose, pale grey, but densely covered in a white, granular, smooth or shallowly fissured pruina, more rarely partly epruinose, the squamules more or less orbicular, up to 3(-4) mm wide, initially scattered, later sometimes contiguous but not forming distinct rosettes, weakly to strongly convex; lower surface pale grey to brownish. Upper cortex 30-70 µm thick, lacking an epinecral layer, encrusted with crystals of calcium oxalates; medulla white, usually without crystals; lower cortex thinner than upper cortex, without crystals. Apothecia frequent, lecideine, round, sessile, strongly constricted at base, up to 1.5 mm across, with a black, more or less pruinose, flat to weakly convex, smooth disc and a distinct, smooth, persistent proper margin. Proper exciple brown to dark reddish brown throughout, sometimes with a darker grey rim, in which case it reacts K+ and N+ violet; epithecium grey, K+ and N+ violet; hymenium colourless, 40-70 µm high; paraphyses simple or sparingly branched and anastomosing in upper part, thin-walled, the apical cell distinctly swollen, with a gelatinous pigment cap; hypothecium brown in upper part, paler brown below. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus with a I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores 1-septate, hyaline, fusiform, 14-22(-26) x 3-5 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances or with unidentified terpenoids; apothecia with the Sedifolia-grey pigment. - Note: a mainly southern, eurasiatic species found in small fissures of steeply inclined faces of calcareous rocks, often on cyanobacteria or cyanobacterial lichens when young, sometimes on soil, with optimum at low altitudes, but exceptionally reaching the Alpine belt.



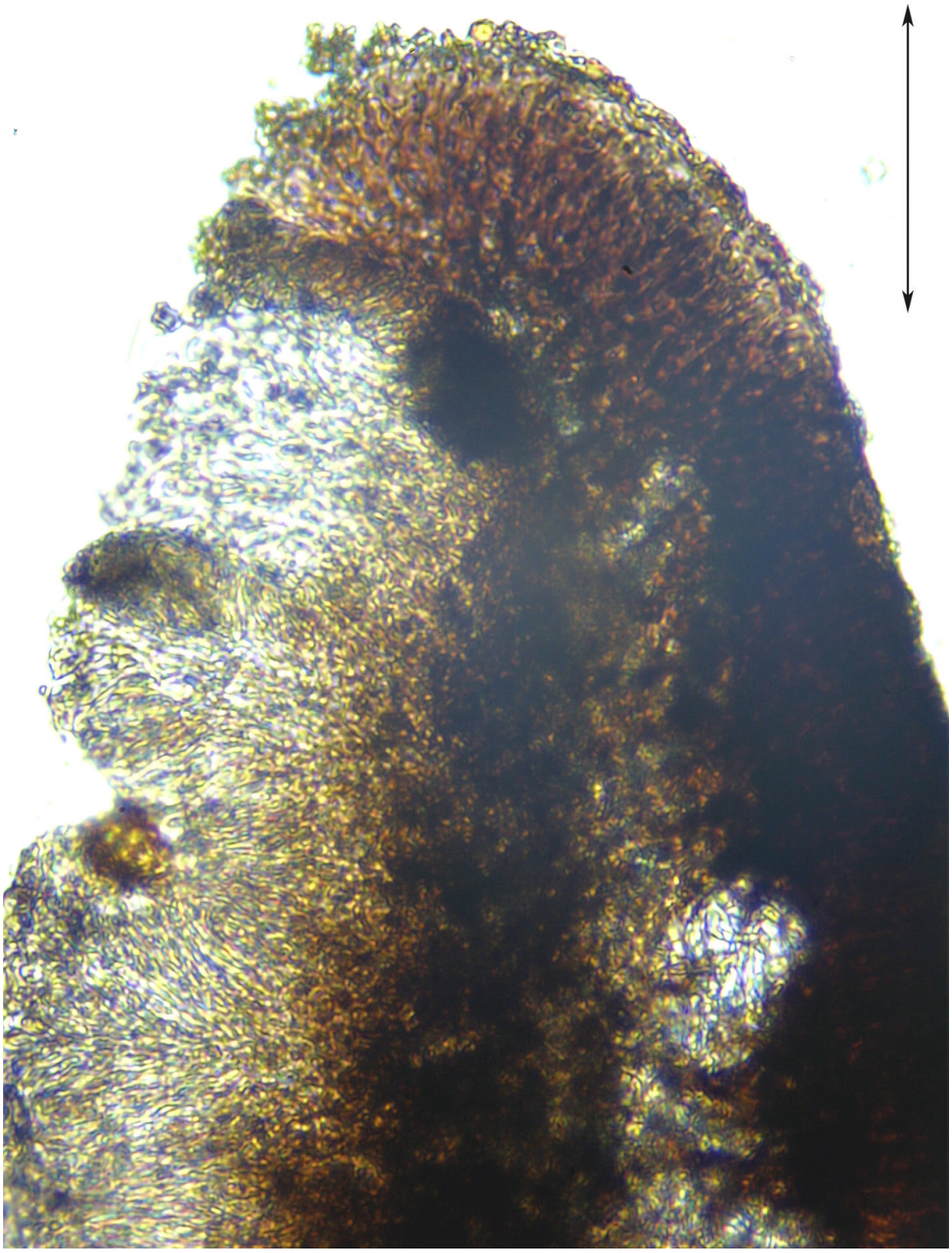
Toninia diffracta



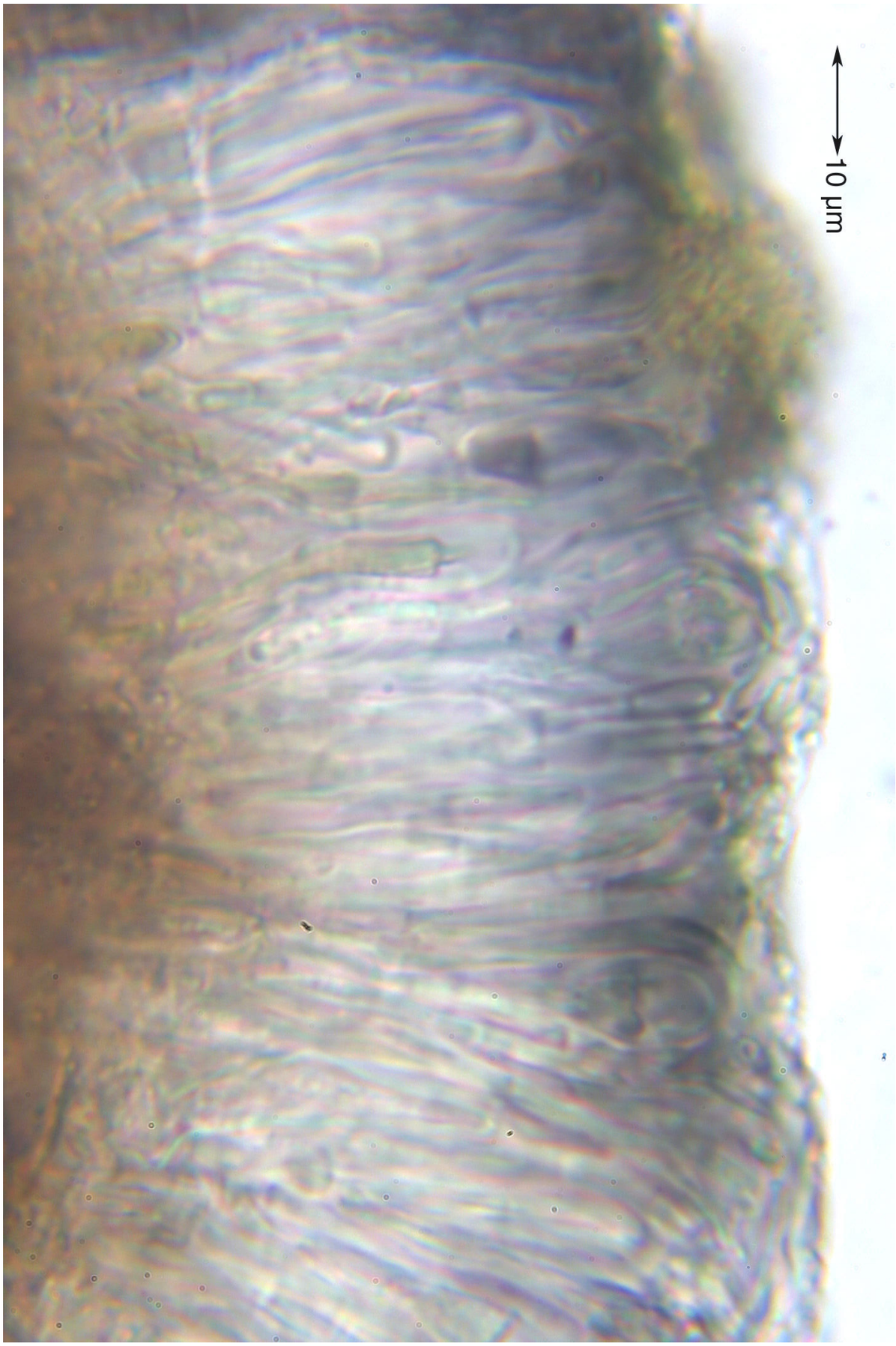
Toninia diffracta



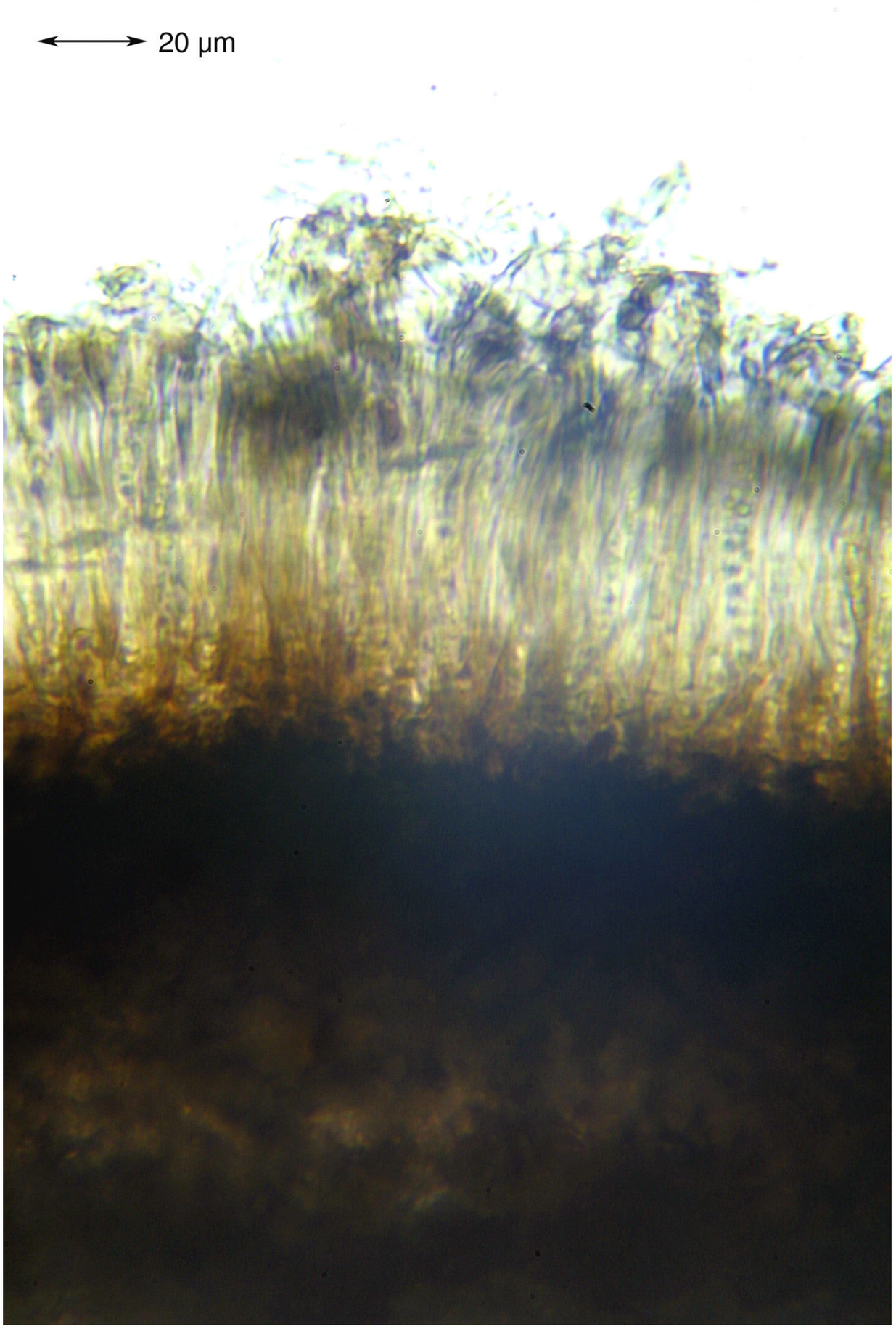
Toninia diffracta



Toninia diffracta



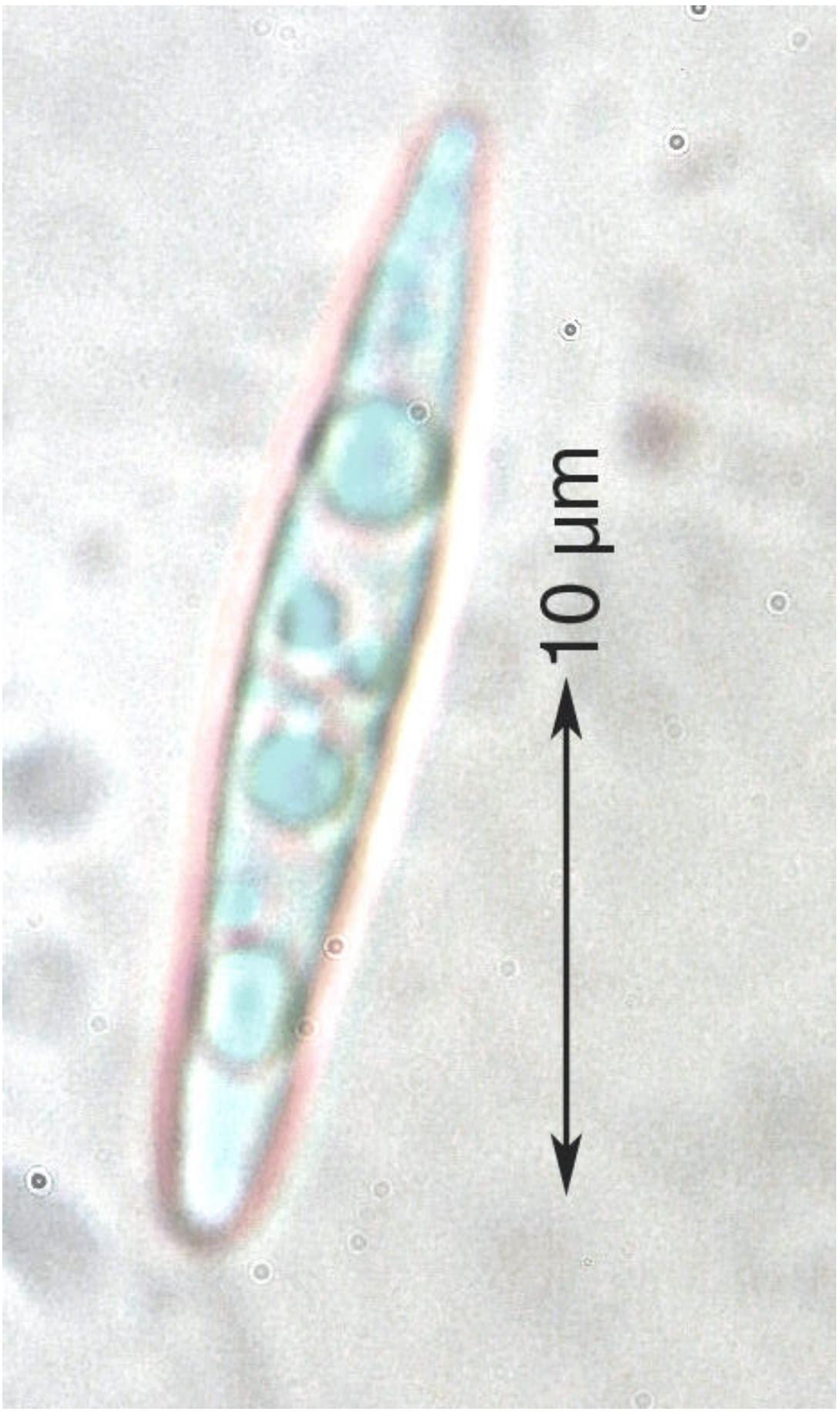
Toninia diffracta



Toninia diffracta



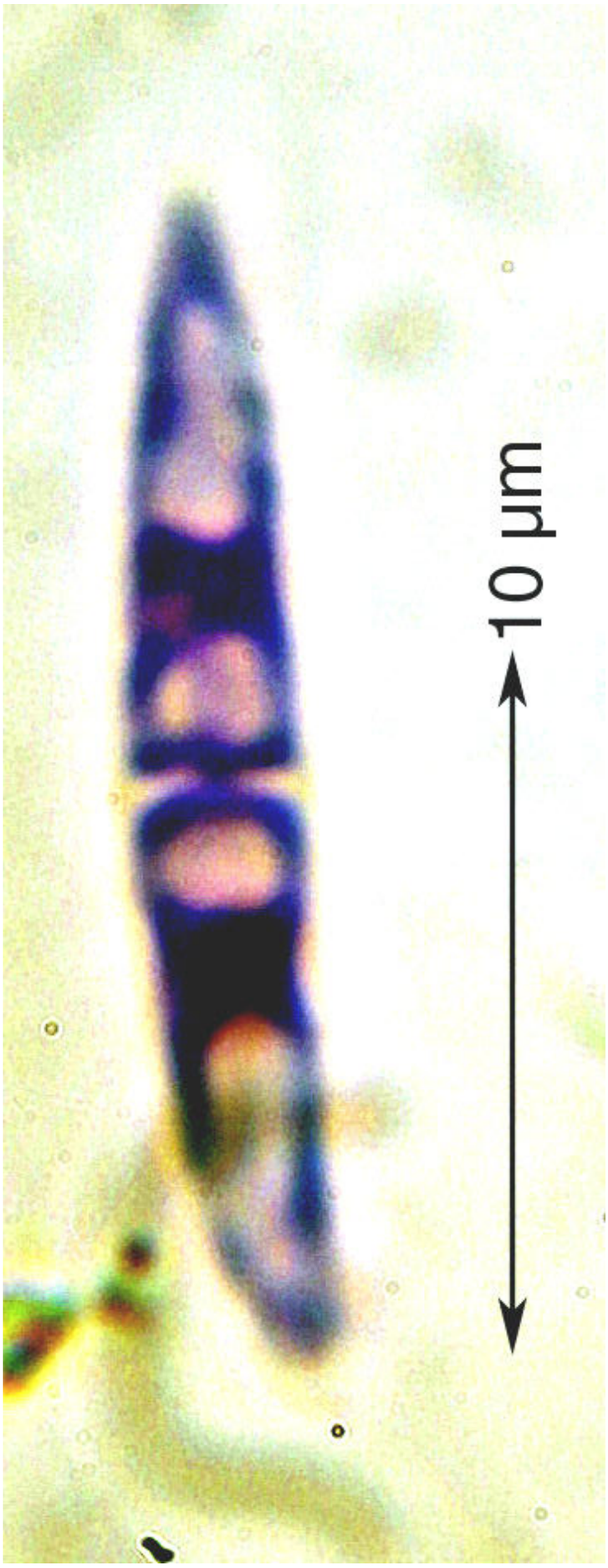
Toninia diffracta



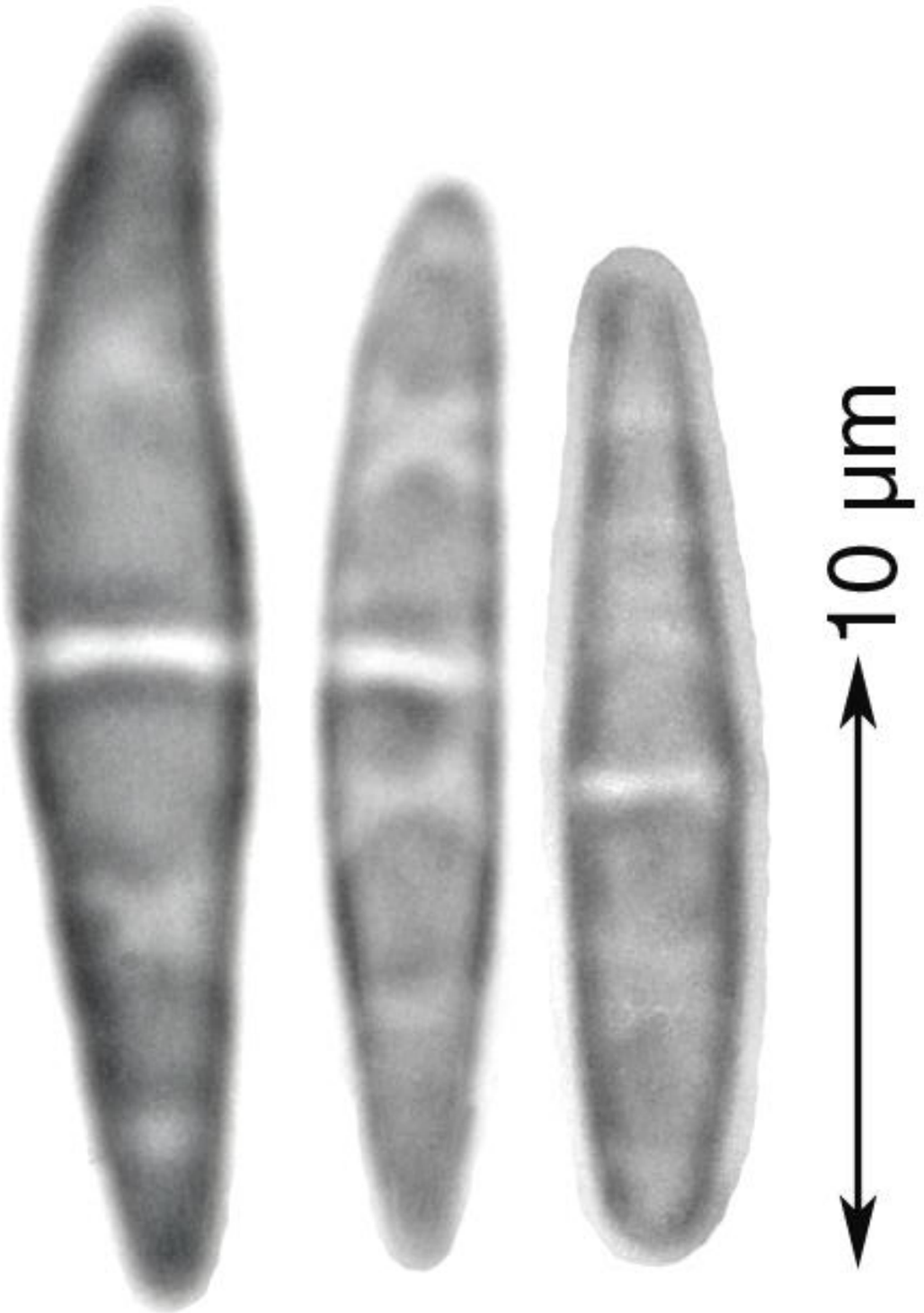
Toninia diffracta



Toninia diffracta



Toninia diffracta



Toninia diffracta

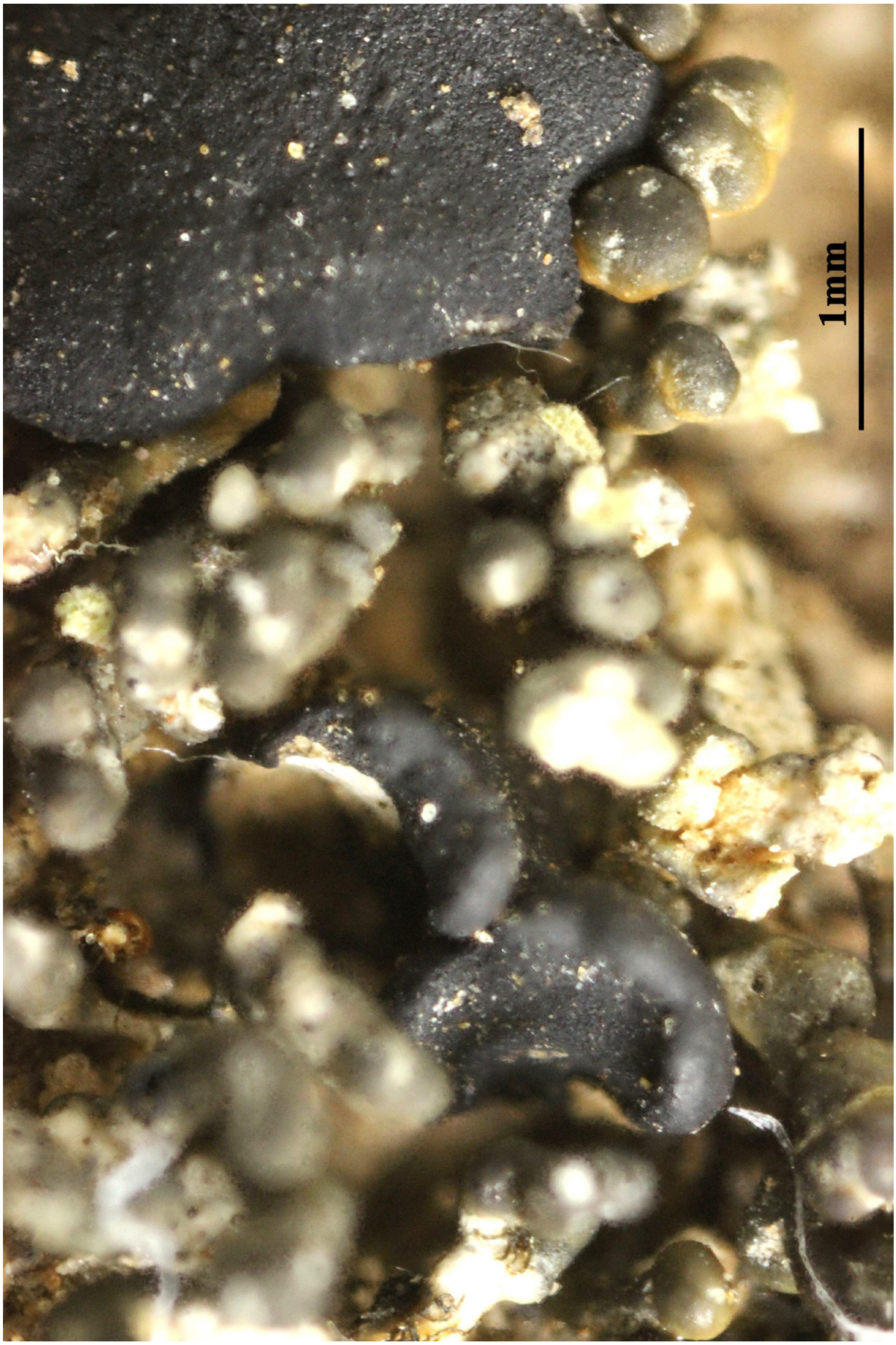
Toninia lurida (Bagl. ex Arnold) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 161 (1911)
= *Thalloidima luridum* Bagl. ex Arnold 1876
= *Thalloidima physaroides* (Opiz) Opiz, Lotos 7: 251 (1857)

[VZ2399], Italia. Sardinia. Prov. Cagliari: Insula S. Antióco, scopulum "Capo Siddi" dictum, 10 m. Ad terram invicinitate maris. Leg. P. L. Nimis, C. Roux, M. Tretiach et A. Vězda, 6.9.1989. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2399.

Thallus squamulose to subfruticose, the squamules 1-2(-3) mm broad, to several mm long, scattered to usually contiguous and forming cushions, convex and bullate when young, then often becoming erect, elongate and columnar, simple or branched above, dark grey to dark greyish green, weakly pruinose to epruinose, with numerous, punctiform to slightly elongated, white pseudocyphellae. Upper cortex 15-50 µm thick, including an up 20 µm thick epinecral layer (often thin or absent); algal layer continuous; medulla white, lacking crystals. Apothecia very rare, lecideine, rounded, sessile, strongly constricted at base, up to 6(-8) mm across, with a black, faintly pruinose to usually epruinose, flat to convex, smooth disc and a distinct, smooth, concolorous proper margin. Proper exciple dark grey in outer part, pale grey to colourless within, the pigmented parts K+ and N+ violet; epithecium grey, K+ and N+ violet; hymenium colourless, 60-70 µm high; paraphyses coherent, simple or sparingly branched and anastomosing in upper part, thin-walled, the apical cell distinctly swollen, with a gelatinous pigment cap; hypothecium colourless to pale brown. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus with a I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores 1-septate, hyaline, fusiform, 11-19 x 3.5-5 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances or with traces of fatty acids; apothecia with the Sedifolia-grey pigment. - Note: a mainly temperate species, most common on soil developing from calciferous sandstone, often amongst mosses and associated to cyanobacterial lichens when young, rare in limestone areas.



Toninia lurida



Toninia lurida

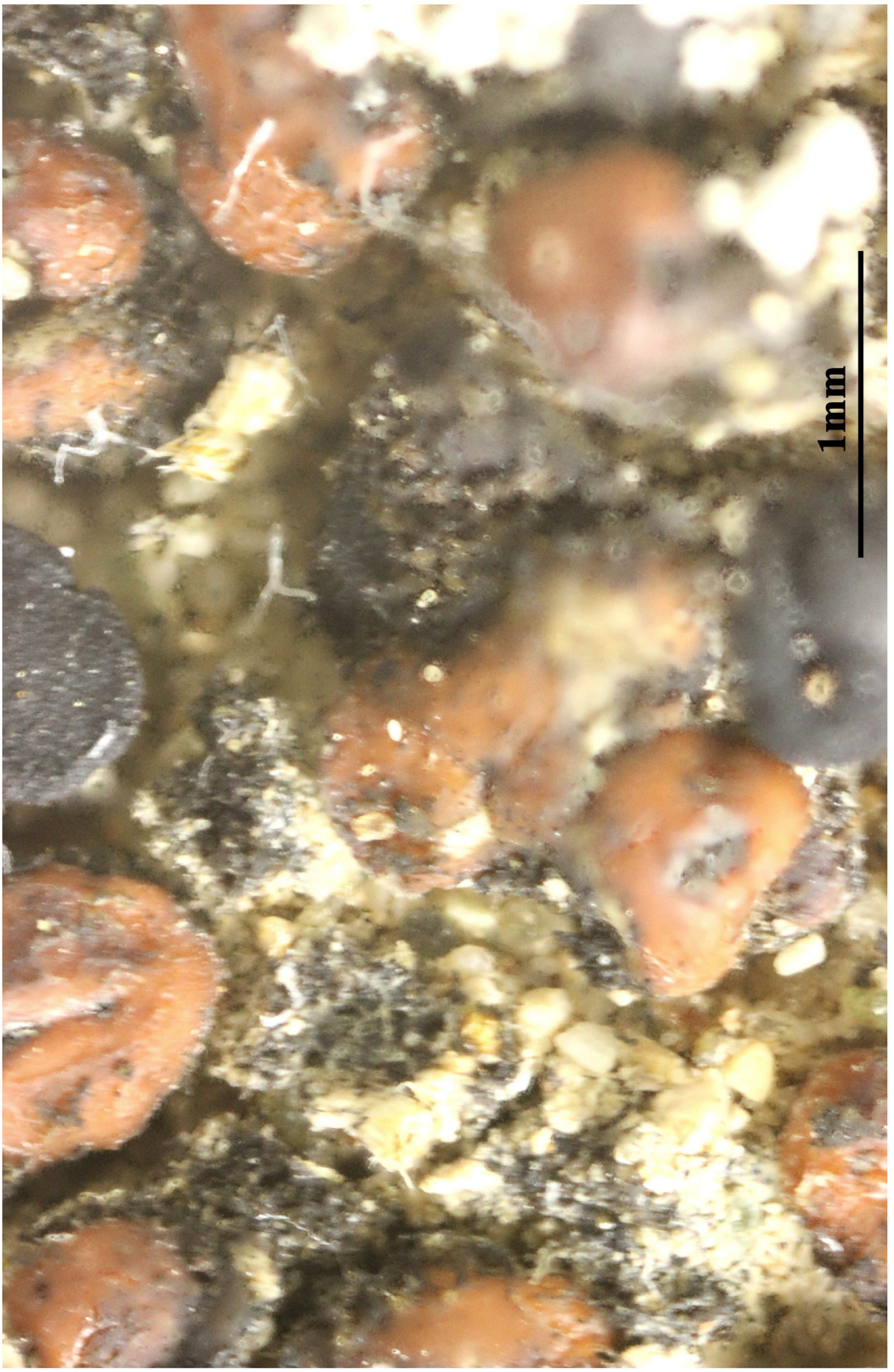
Toninia tristis (Th. Fr.) Th. Fr., Lich. Scand. (Upsaliae)(2): 341 (1874)
= *Psora tabacina* var. *tristis* Th. Fr. 1865

[VZ2262], Cyprus. Larnaca, invicinitate pagi Oroklini, 5 m. Ad terram in saxis conglomeratis calcareis. Leg. A. Vězda, 25.6.1987, det. L. Timdal. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2262.

Thallus squamulose, chestnut brown to dark brown, epruinose, the squamules bullate, sometimes flattened or with a central depression, scattered to contiguous, up to 2(-3) mm wide, with punctiform impressions developing into pores; lower surface pale. Upper cortex 40-160 µm thick, including an up to 100 µm thick epinecral layer, without crystals; algal layer continuous; medulla white, without crystals. Apothecia lecideine, rounded, sessile, strongly constricted at base, up to 2 mm across, with a black, flat, smooth disc, and a distinct, smooth, concolorous proper margin. Proper exciple medium to dark brown (sometimes with a green tinge) in outer part, usually paler brown within, K-, N- or N+ violet (green pigment), lacking crystals; epithecium brown, sometimes with a faint greenish tinge, K-, faintly N+ violet; hymenium colourless, 60-70 µm high; paraphyses not coherent, anastomosing, distinctly thickened above; hypothecium brownish, without orange and yellow pigments. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus with a I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores mainly 1-septate, hyaline, ellipsoid to fusiform, 13.5-20.5 x 3.5-5 µm. Pycnidia dark, immersed. Conidia thread-like. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus with terpenoids. - Note: in fine crevices of calciferous rocks, with optimum near and above treeline.



Toninia tristis

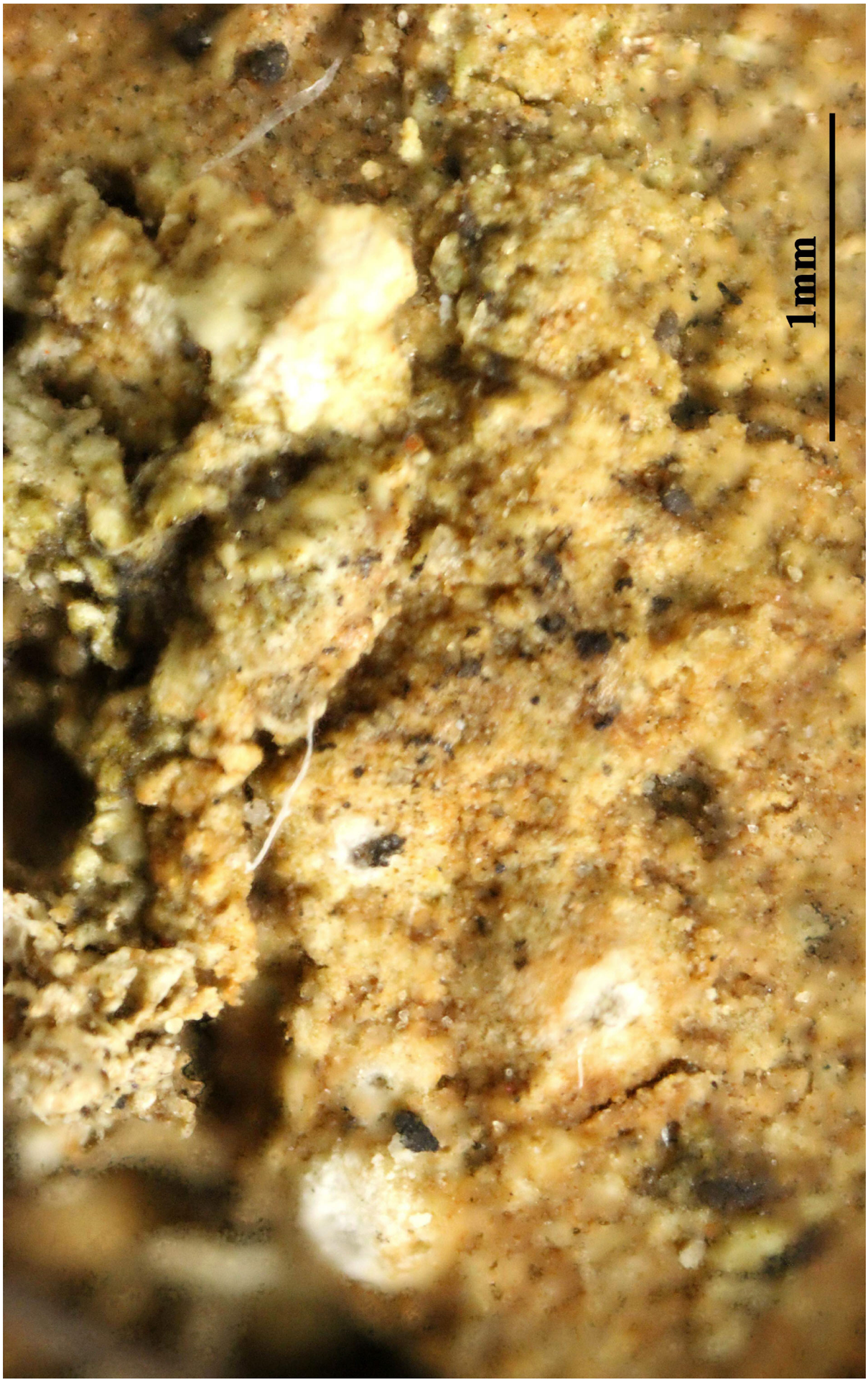


Toninia tristis

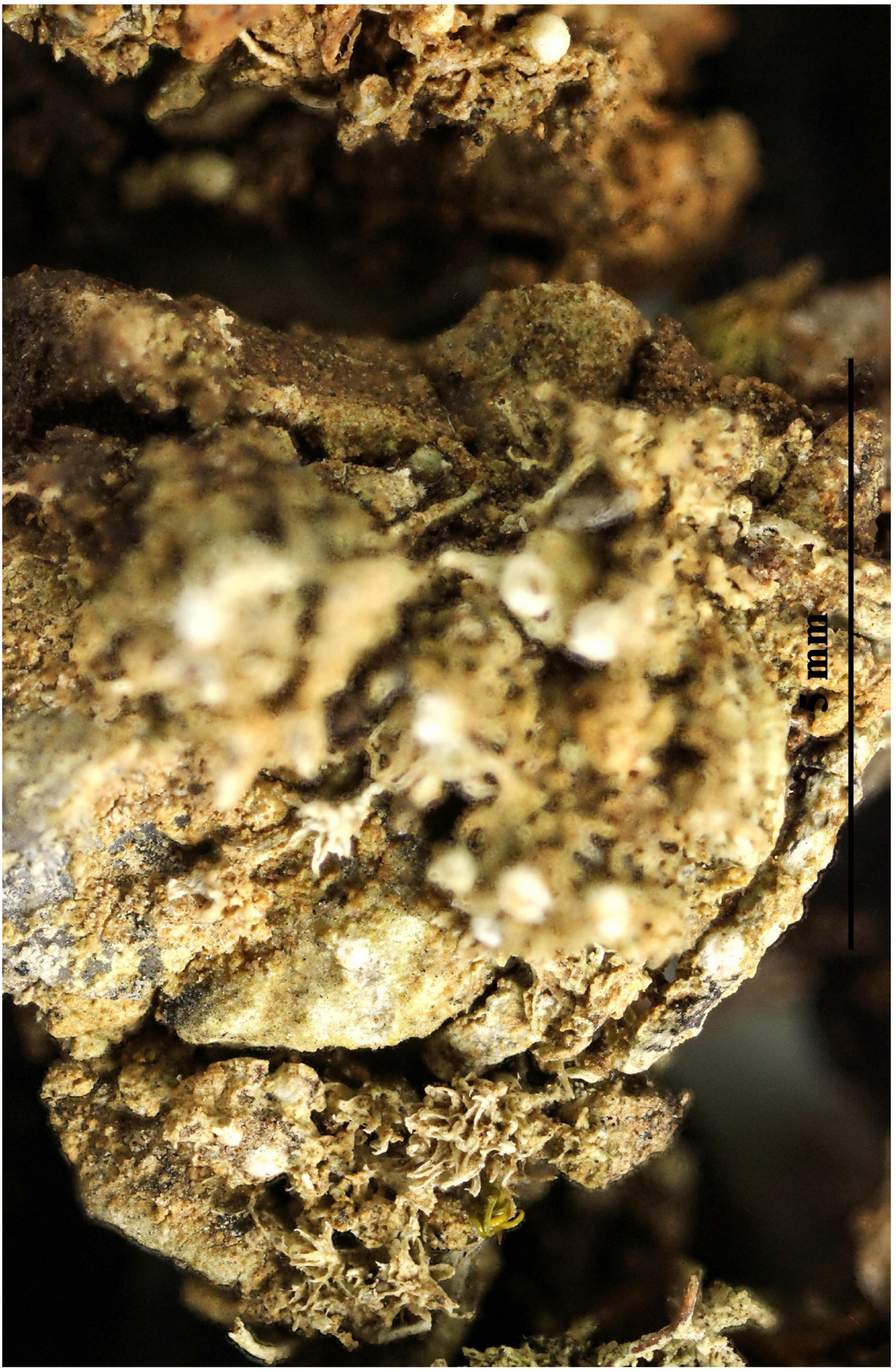
Topelia rosea (Servít) P.M. Jørg. & Vězda, Beih. Nova Hedwigia 79: 507 (1984)
= *Microglaena rosea* Servít 1952

[VZ2476], Italia. Sicilia. insulae Ègadi: insula Marettimo, loco Semaforo dicto, 400 m. Ad terram, supra muscos emortuos, raro ad saxa calcarea. Leg. P. L. Nimis, J. Poelt, D. Puntillo et A. Vězda. 29.3.1991. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2476.

Thallus crustose, thinly episubstratic, continuous, granulose-farinose, white to pale pinkish grey, the colour rapidly fading in the herbarium, sometimes poorly visible, without a distinct prothallus. Perithecia globose, 0.4-0.5(-0.7) mm across, immersed in pale pink to pinkish white thalline warts, not flattened but with a punctiform, depressed, pale brown ostiolar region. Exciple colourless, of short-celled hyphae, with c. 1 µm thick, stiff periphyses around the ostiole; hymenium colourless, I+ blue-green, rapidly turning reddish-brown; paraphyses simple, flexuose, not anastomosing, not apically thickened, free, 200-250 x 1.5-2 µm. Asci 8-spored, unitunicate, narrowly cylindrical, tapering apically, without apical thickening or apparatus, with uniseriately arranged spores. Ascospores muriform, hyaline, broadly ellipsoid, (20-)22-25(-28) x 12-14(-16) µm, with a thin, often inapparent perispore. Photobiont trentepohlioid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. Note: a mainly Mediterranean-Atlantic lichen found on calcareous rocks, over soil and moribund bryophytes in shaded-humid situations.



Topelia rosea



Topelia rosea

Tornabea atlantica (Ach.) Østh., in Østhagen & Sunding, Taxon 29(5-6): 688 (1980)
= *Parmelia atlantica* Ach. 1803
= *Tornabea scutellifera* (With.) J.R. Laundon, Lichenologist 16(3): 226 (1984)

[9379], Spanien, Kanaren, La Gomera: Bei Arure an der Straße nach Las Hayas. Trockener Abhang mit Felsblöcken und Euphorbia. 28°07.895 N, 17°18.983 W, 870 m. Leg. F. Schumm 14.02.2002, det. F. Schumm 2007. - An alter Euphorbia.

Thallus fruticose, shrubby to subpendent, up to 5 cm long (usually less), grey-brown to greenish brown, sparingly to richly branched, the branches to 1.2 mm thick, becoming progressively thinner towards the apices, subterete to flattened (especially in basal parts), densely and finely hairy to totally glabrous, sometimes diffusely blastidiate (especially in sterile specimens) and/or with spiniform papillae. Cortex 60-200 µm thick, of conglutinated, thick-walled, mostly longitudinally oriented hyphae, sometimes with an amorphous layer which gives rise to short lateral hyphae reaching the surface (hairs); medulla lax to almost absent, of loosely interwoven hyphae, often with strands of conglutinated, longitudinally oriented hyphae below the cortex. Apothecia lecanorine, most frequent in non-blastidiate specimens, to 1.5(-2) mm across, mostly lateral, with a brown-black to black, sometimes pruinose disc and a smooth thalline margin. Epithecium brownish; hymenium colourless, 50-70 µm high; paraphyses simple or sparingly branched, the apical cells with a brown pigment; hypothecium thin, brownish. Asci 8-spored, clavate, very thin-walled, with a K/I+ blue, tall tholus penetrated by a faintly amyloid apical cushion, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1(-2)-septate, brown, ellipsoid, 20-26(-35) x 10-15(-18) µm, the septum c. 6.5 µm thick, intermediate between the Orcularia and Physconia-types, the wall ornamented. Pycnidia rather common, immersed, with a dark brown ostiolum. Conidia hyaline, fusiform to bacilliform, 3.5-4.5(-5) x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on a wide variety of substrata, most frequent on branches of littoral shrubs but also on rocks, and, but only in a few very warm-humid areas, even on mortar.



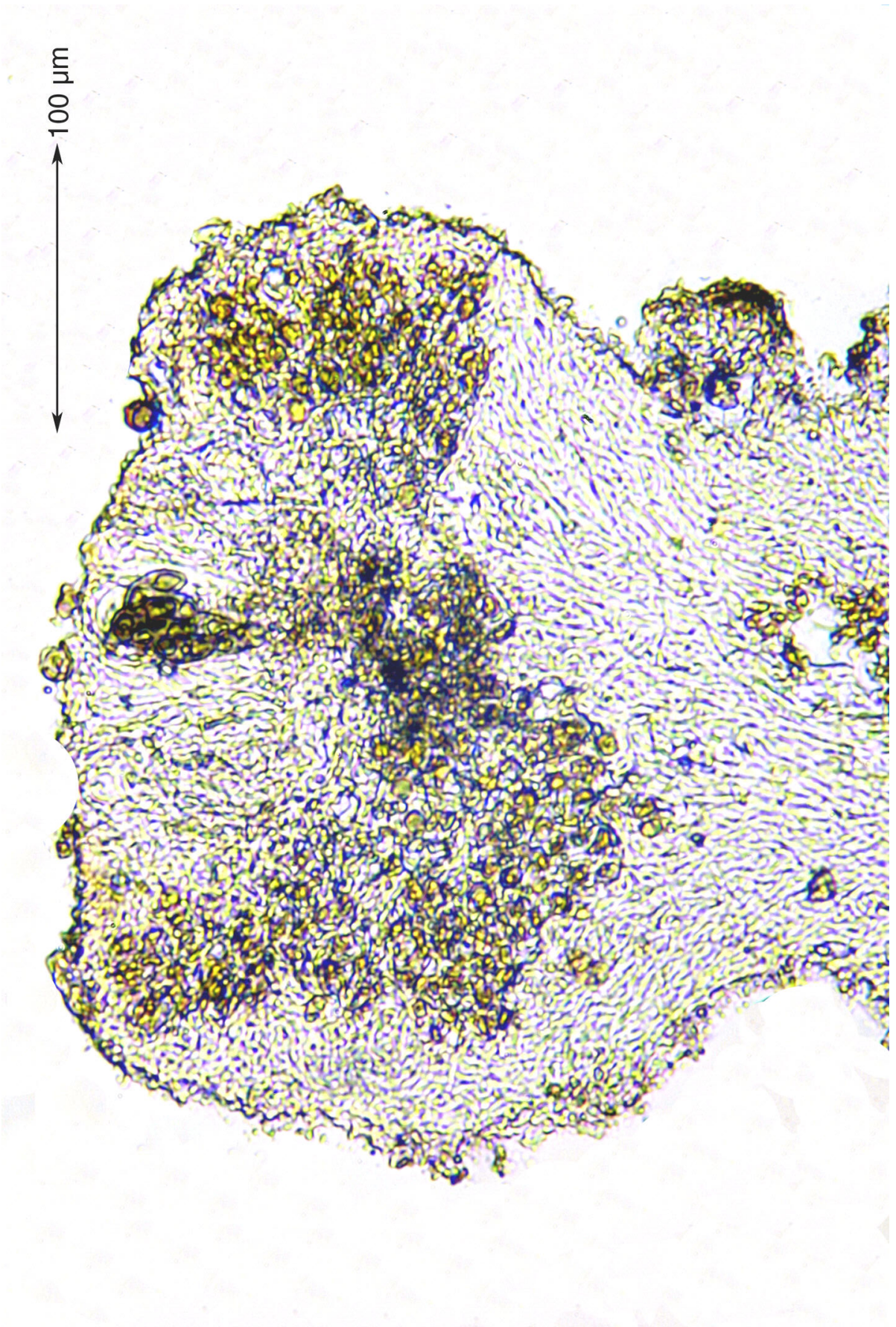
Tornabea atlantica



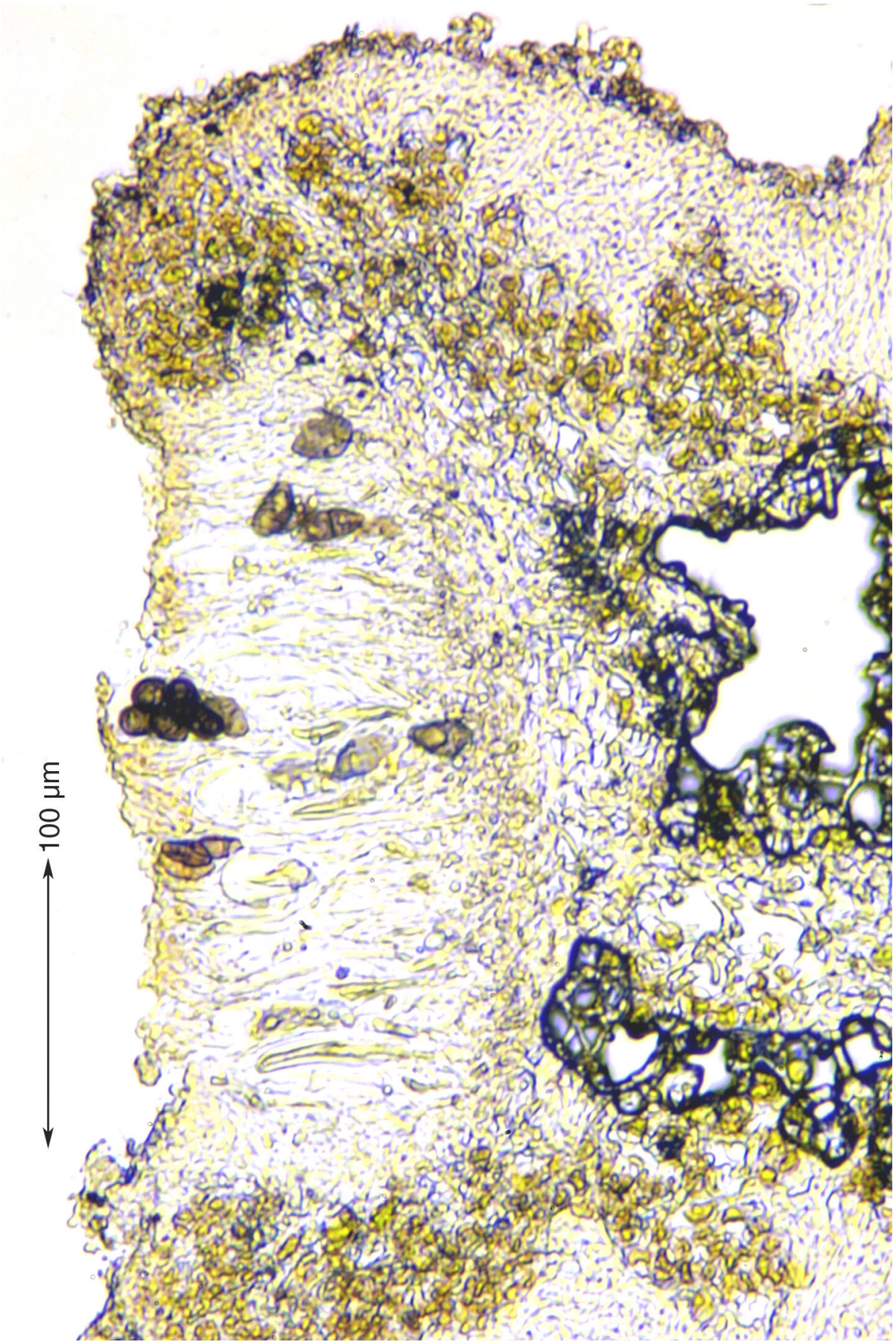
Tornabea atlantica



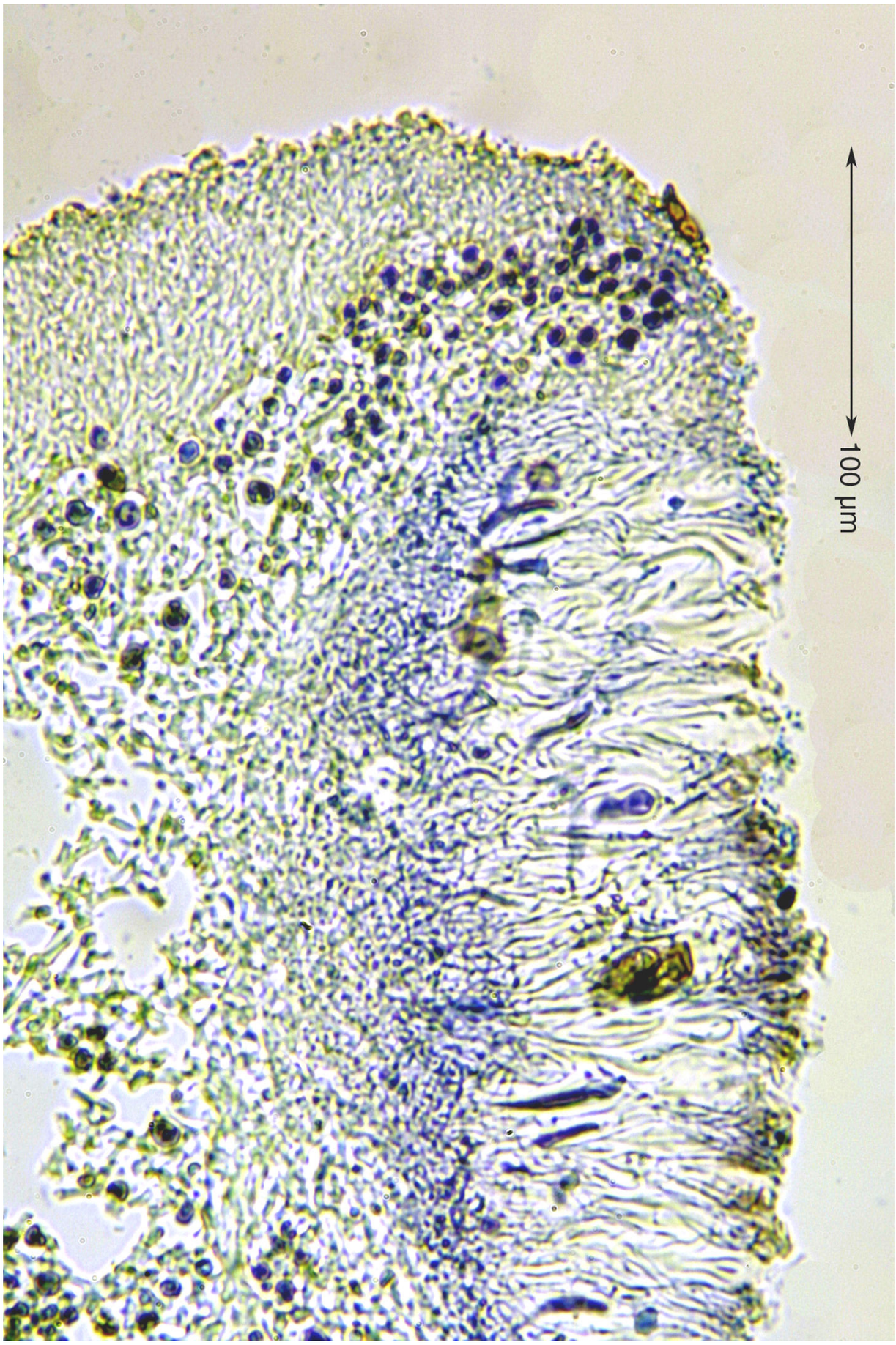
Tornabea atlantica



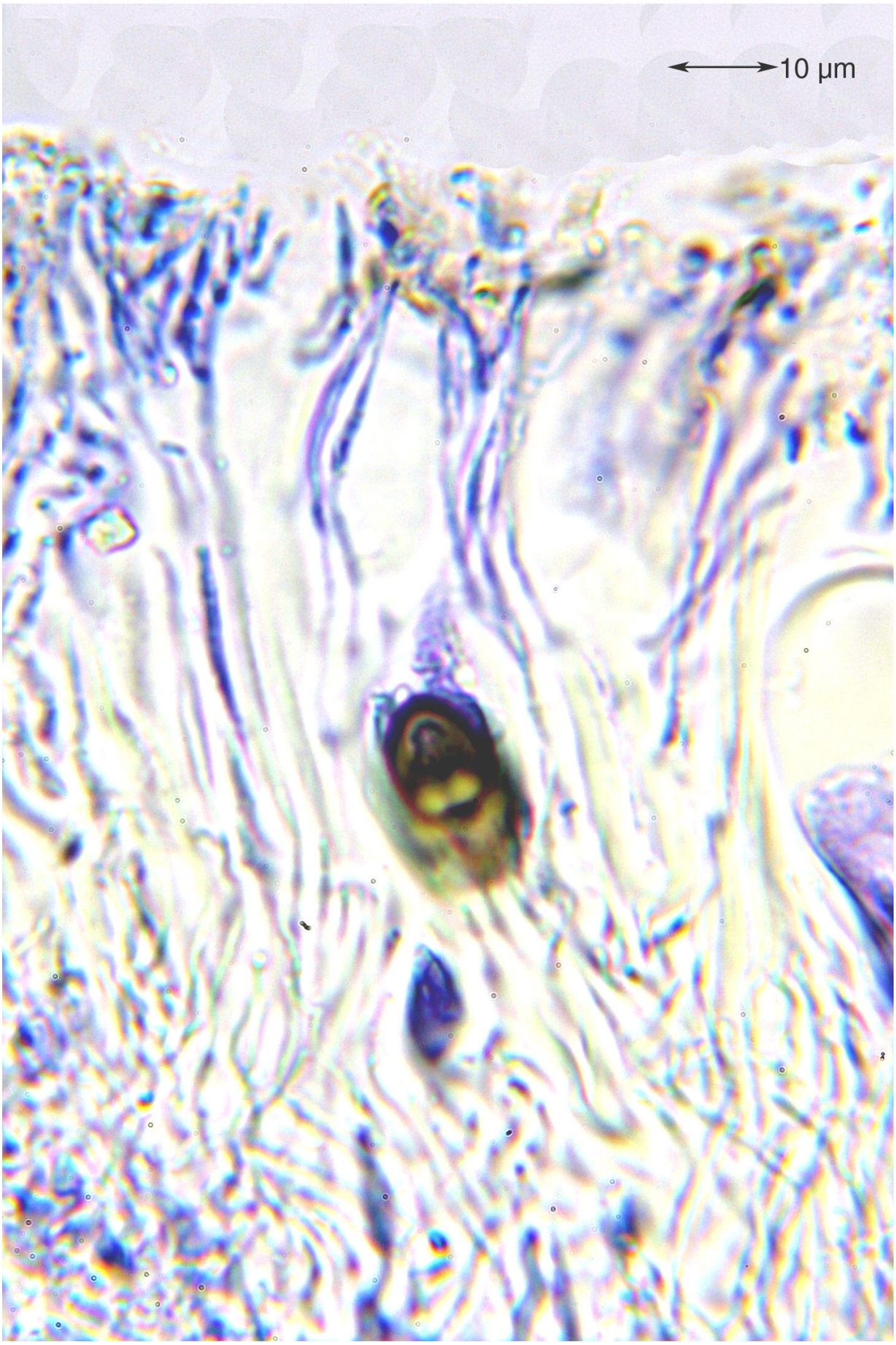
Tornabea atlantica



Tornabea atlantica

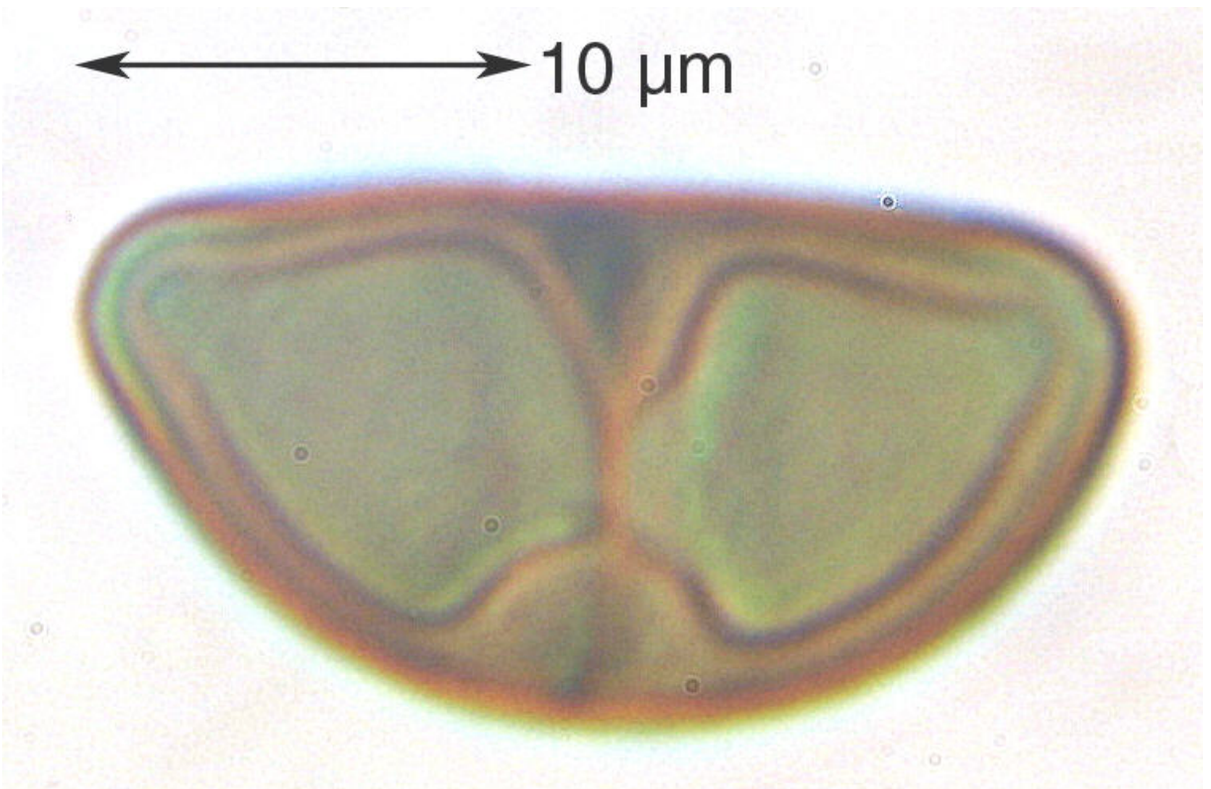


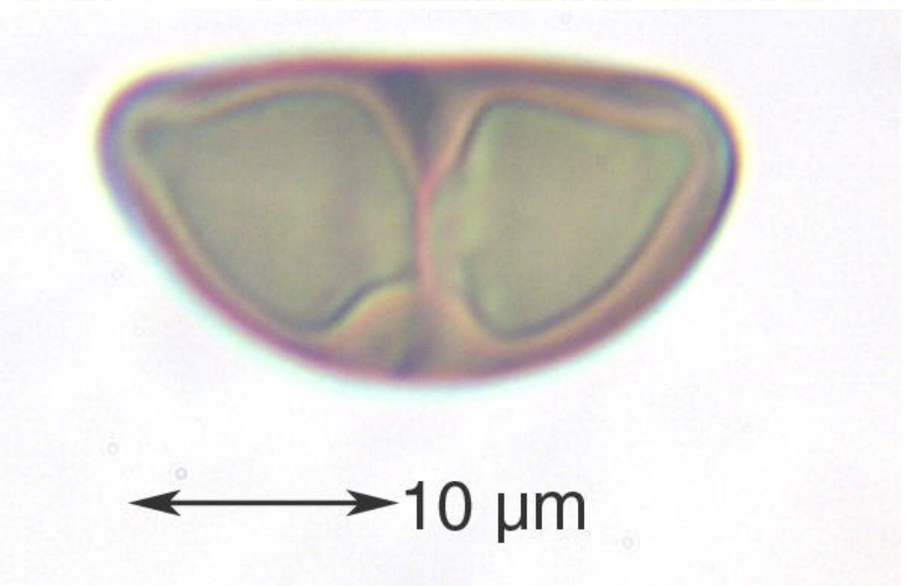
Tornabea atlantica



Tornabea atlantica







Tornabea atlantica

Tornabea scutellifera (With.) J.R. Laundon, Lichenologist 16(3): 226 (1984)
= *Lichen scutelliferus* With. 1776

[VZ2169], Italia. Latium, prov. Roma: Tenuta Presidentiale di Castelporziano, 5-7 m. In litore, in ramos *Juniperi macrocarpae*. Leg. P. L. Nimis, 3.8.1986. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2169.

Thallus fruticose, shrubby to subpendent, up to 5 cm long (usually less), grey-brown to greenish brown, sparingly to richly branched, the branches to 1.2 mm thick, becoming progressively thinner towards the apices, subterete to flattened (especially in basal parts), densely and finely hairy to totally glabrous, sometimes diffusely blastidiate (especially in sterile specimens) and/or with spiniform papillae. Cortex 60-200 µm thick, of conglutinated, thick-walled, mostly longitudinally oriented hyphae, sometimes with an amorphous layer which gives rise to short lateral hyphae reaching the surface (hairs); medulla lax to almost absent, of loosely interwoven hyphae, often with strands of conglutinated, longitudinally oriented hyphae below the cortex. Apothecia lecanorine, most frequent in non-blastidiate specimens, to 1.5(-2) mm across, mostly lateral, with a brown-black to black, sometimes pruinose disc and a smooth thalline margin. Epithecium brownish; hymenium colourless, 50-70 µm high; paraphyses simple or sparingly branched, the apical cells with a brown pigment; hypothecium thin, brownish. Asci 8-spored, clavate, very thin-walled, with a K/I+ blue, tall tholus penetrated by a faintly amyloid apical cushion, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1(-2)-septate, brown, ellipsoid, 20-26(-35) x 10-15(-18) µm, the septum c. 6.5 µm thick, intermediate between the Orcularia and Physconia-types, the wall ornamented. Pycnidia rather common, immersed, with a dark brown ostiolum. Conidia hyaline, fusiform to bacilliform, 3.5-4.5(-5) x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on a wide variety of substrata, most frequent on branches of littoral shrubs but also on rocks, and, but only in a few very warm-humid areas, even on mortar.



Tornabea scutellifera



Tornabea scutellifera

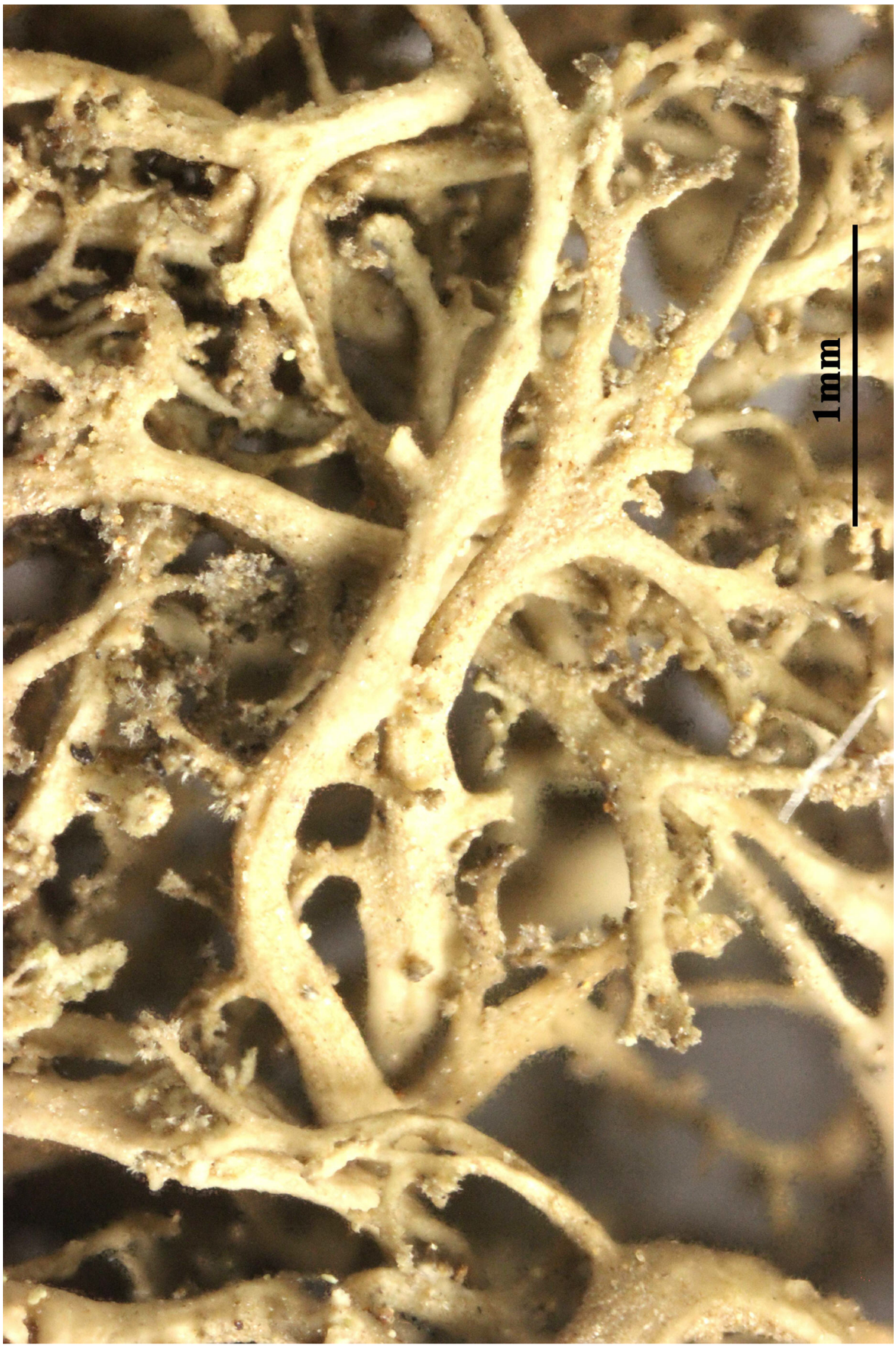
Tornabea scutellifera (With.) J.R. Laundon, Lichenologist 16(3): 226 (1984)
= *Lichen scutelliferus* With. 1776

[VZ2487], Italia. Sicilia, insulae Égadi: insula Marettimo, regio montis Falcone, 400 m. Ad ramos emortuos fruticum. Leg. F. Ceni & A. Vězda, 27.3.1991. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2487.

Thallus fruticose, shrubby to subpendent, up to 5 cm long (usually less), grey-brown to greenish brown, sparingly to richly branched, the branches to 1.2 mm thick, becoming progressively thinner towards the apices, subterete to flattened (especially in basal parts), densely and finely hairy to totally glabrous, sometimes diffusely blastidiate (especially in sterile specimens) and/or with spiniform papillae. Cortex 60-200 µm thick, of conglutinated, thick-walled, mostly longitudinally oriented hyphae, sometimes with an amorphous layer which gives rise to short lateral hyphae reaching the surface (hairs); medulla lax to almost absent, of loosely interwoven hyphae, often with strands of conglutinated, longitudinally oriented hyphae below the cortex. Apothecia lecanorine, most frequent in non-blastidiate specimens, to 1.5(-2) mm across, mostly lateral, with a brown-black to black, sometimes pruinose disc and a smooth thalline margin. Epithecium brownish; hymenium colourless, 50-70 µm high; paraphyses simple or sparingly branched, the apical cells with a brown pigment; hypothecium thin, brownish. Asci 8-spored, clavate, very thin-walled, with a K/I+ blue, tall tholus penetrated by a faintly amyloid apical cushion, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1(-2)-septate, brown, ellipsoid, 20-26(-35) x 10-15(-18) µm, the septum c. 6.5 µm thick, intermediate between the Orcularia and Physconia-types, the wall ornamented. Pycnidia rather common, immersed, with a dark brown ostiolum. Conidia hyaline, fusiform to bacilliform, 3.5-4.5(-5) x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on a wide variety of substrata, most frequent on branches of littoral shrubs but also on rocks, and, but only in a few very warm-humid areas, even on mortar.



Tornabea scutellifera



Tornabea scutellifera

Tornabea scutellifera (With.) J.R. Laundon, Lichenologist 16(3): 226 (1984)
= *Lichen scutelliferus* With. 1776

[20868}. Italy, Lazio, prov. Roma, 26 km SSW of the centre of Rom, 9.4 km W of the centre of Pomezia, Tenuta di Caccia di Castel Porziano, 41°49'43" N, 12°23'17" E, 5 m, macchia vegetation, close to the beach, on twiga of unnamed shrubs in a low macchia stand. Leg.H. Mayrhofer (no 21842) & J. Poelt, 8.5.1986det.H. Mayrhofer. Ex Lichenotheca Graecensis No. 499.

Thallus fruticose, shrubby to subpendent, up to 5 cm long (usually less), grey-brown to greenish brown, sparingly to richly branched, the branches to 1.2 mm thick, becoming progressively thinner towards the apices, subterete to flattened (especially in basal parts), densely and finely hairy to totally glabrous, sometimes diffusely blastidiate (especially in sterile specimens) and/or with spiniform papillae. Cortex 60-200 µm thick, of conglutinated, thick-walled, mostly longitudinally oriented hyphae, sometimes with an amorphous layer which gives rise to short lateral hyphae reaching the surface (hairs); medulla lax to almost absent, of loosely interwoven hyphae, often with strands of conglutinated, longitudinally oriented hyphae below the cortex. Apothecia lecanorine, most frequent in non-blastidiate specimens, to 1.5(-2) mm across, mostly lateral, with a brown-black to black, sometimes pruinose disc and a smooth thalline margin. Epithecium brownish; hymenium colourless, 50-70 µm high; paraphyses simple or sparingly branched, the apical cells with a brown pigment; hypothecium thin, brownish. Asci 8-spored, clavate, very thin-walled, with a K/I+ blue, tall tholus penetrated by a faintly amyloid apical cushion, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1(-2)-septate, brown, ellipsoid, 20-26(-35) x 10-15(-18) µm, the septum c. 6.5 µm thick, intermediate between the Orcularia and Physconia-types, the wall ornamented. Pycnidia rather common, immersed, with a dark brown ostiolum. Conidia hyaline, fusiform to bacilliform, 3.5-4.5(-5) x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on a wide variety of substrata, most frequent on branches of littoral shrubs but also on rocks, and, but only in a few very warm-humid areas, even on mortar.



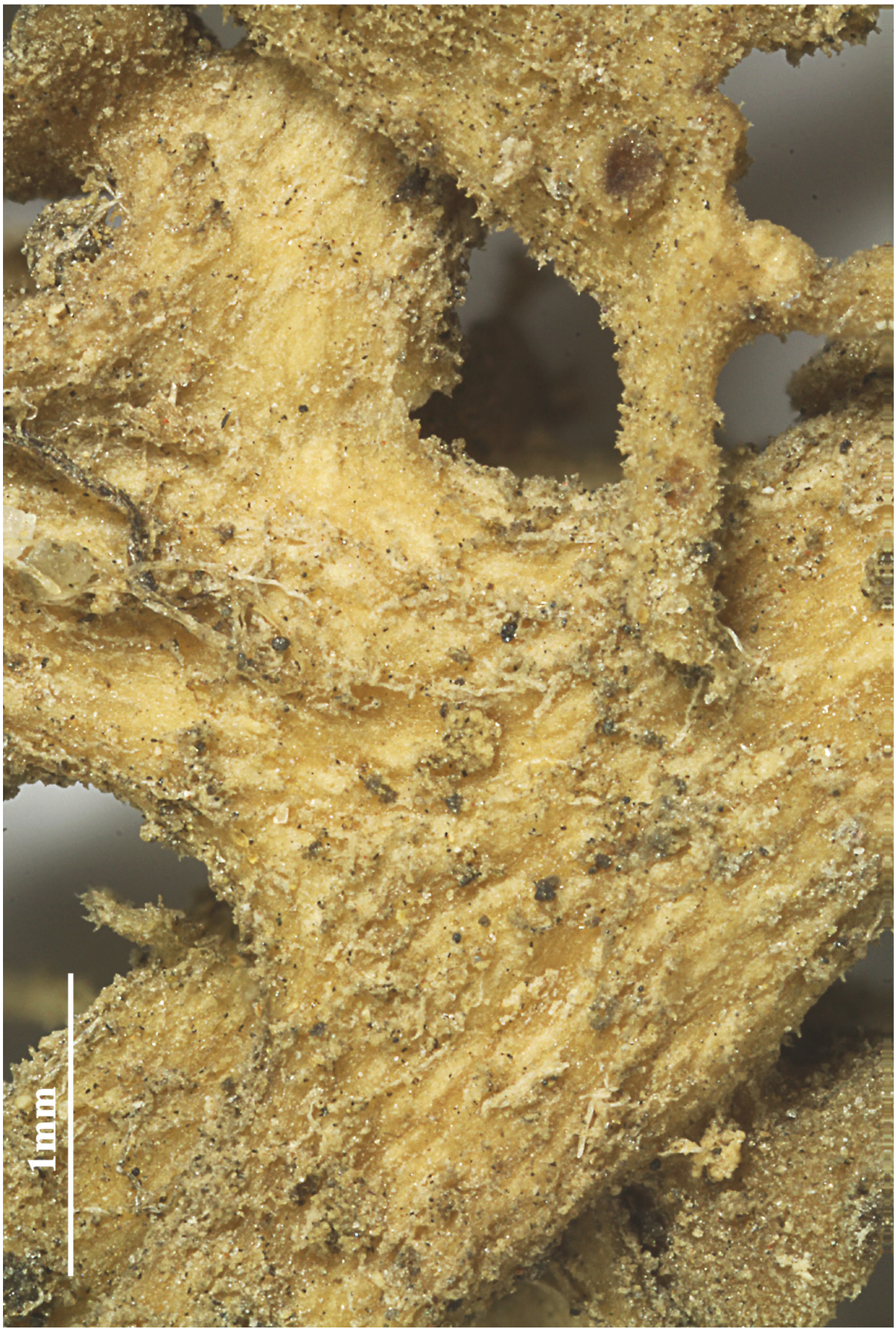
Tornabea scutellifera



Tornabea scutellifera



Tornabea scutellifera



Tornabea scutellifera

Trapelia coarctata (Turner) M. Choisy, in Werner, Bull. Soc. Sci. Nat. phys. Maroc 12: 160 (1932)
= *Lichen coarctatus* Turner 1799

[VZ2236], Bohemoslovacia. Moravia, distr. Brno, inter pagos Soběšice et Mokrá Hora, 250 m. Ad terram nudam in fossis viae silvaticae. Leg. A. Vězda, 9.1.1988. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2236.

Thallus crustose, episubstratic, pale greenish grey, up to 160 µm thick, continuous to rimose, rarely areolate, sometimes with a thin whitish prothallus, the margin with small, gently convex, poorly delimited areole-like units which sometimes appear separate on the prothallus, but mostly coalesce from the start. Apothecia frequent, round at least when young, sessile, up 0.3-0.6(-0.8) mm across, with a dark reddish-brown to finally black, flat to slightly convex, rough disc and a concolorous, finally often excluded proper margin surrounded by a thin, whitish pseudothalline margin in young apothecia; immature apothecia frequent, appearing as white dots on the thallus. Proper exciple of colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium almost colourless to pale yellowish brown; hymenium colourless, 90-140 µm high; paraphyses coherent, thin, densely branched and anastomosing, not thickened at apex; hypothecium colourless to yellowish. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 14.21 x 7-10 µm, without a perispore. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, KC+ red, P-, UV+ bluish white. Chemistry: thallus with gyrophoric acid (major), 5-O-methylhiascic acid (trace). - Note: a holarctic early coloniser of siliceous pebbles near the soil surface, sometimes also found on bare clayey soil, with a wide altitudinal and latitudinal range; it is most frequent in upland areas.



Trapelia coarctata

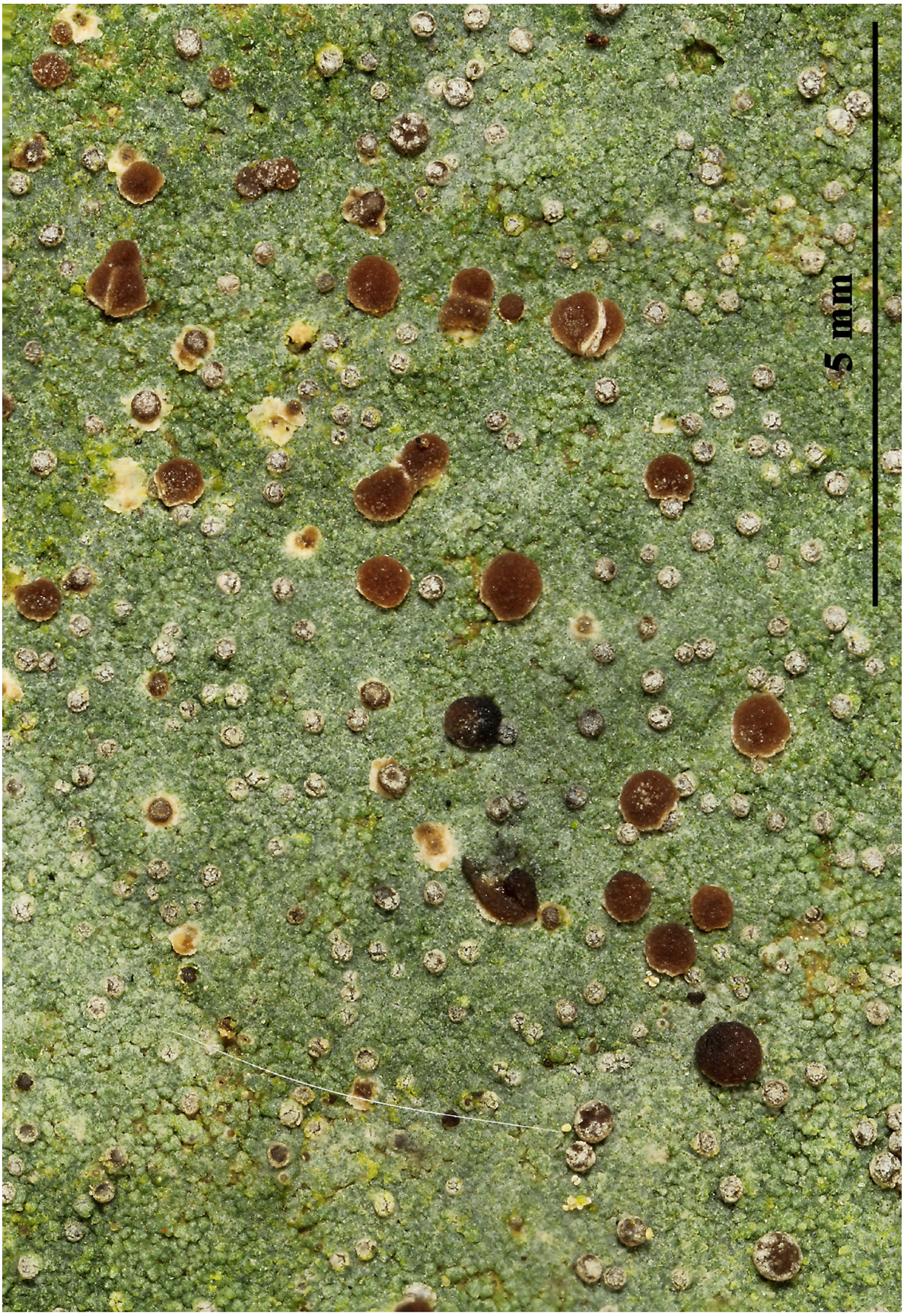


Trapelia coarctata

Trapelia coarctata (Turner) M. Choisy, in Werner, Bull. Soc. Sci. Nat. phys. Maroc 12: 160 (1932)
= *Lichen coarctatus* Turner 1799

[20287], Germany, Baden-Württemberg, Kreis Göppingen, Wangen, auf am Boden liegenden Sandsteinen im Fichtenwald. 48,73047° N, 9,60053° E, 300m. Leg. F. Schumm, 14.02.2019, det. F. Schumm.

Thallus crustose, episubstratic, pale greenish grey, up to 160 µm thick, continuous to rimose, rarely areolate, sometimes with a thin whitish prothallus, the margin with small, gently convex, poorly delimited areole-like units which sometimes appear separate on the prothallus, but mostly coalesce from the start. Apothecia frequent, round at least when young, sessile, up 0.3-0.6(-0.8) mm across, with a dark reddish-brown to finally black, flat to slightly convex, rough disc and a concolorous, finally often excluded proper margin surrounded by a thin, whitish pseudothalline margin in young apothecia; immature apothecia frequent, appearing as white dots on the thallus. Proper exciple of colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium almost colourless to pale yellowish brown; hymenium colourless, 90-140 µm high; paraphyses coherent, thin, densely branched and anastomosing, not thickened at apex; hypothecium colourless to yellowish. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 14.21 x 7-10 µm, without a perispore. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, KC+ red, P-, UV+ bluish white. Chemistry: thallus with gyrophoric acid (major), 5-O-methylhiascic acid (trace). - Note: a holarctic early coloniser of siliceous pebbles near the soil surface, sometimes also found on bare clayey soil, with a wide altitudinal and latitudinal range; it is most frequent in upland areas.



Trapelia coarctata



Trapelia coarctata



Trapelia coarctata

Trapelia coarctata (Turner) M. Choisy, in Werner, Bull. Soc. Sci. Nat. phys. Maroc 12: 160 (1932)
= *Lichen coarctatus* Turner 1799

[11244], Portugal, Azoren, Sao Miguel: SO von Ribeira Grande oberhalb von Lombadas, auf offenem Boden, licht-, nebel- und windoffen. 37°47.173' N, 25°27.894' W, 680 m. Leg. F. Schumm. 07.06.2003. det. F.Schumm 12.2003. - Sporen hyalin, zu 8, 17,4 x 8,7-9,8 µm; Asci schmal, dünnwandig, J- und K+J-; Hymenium J-; Algen eher grün sicher nicht Nostoc oder Trentepohlia.

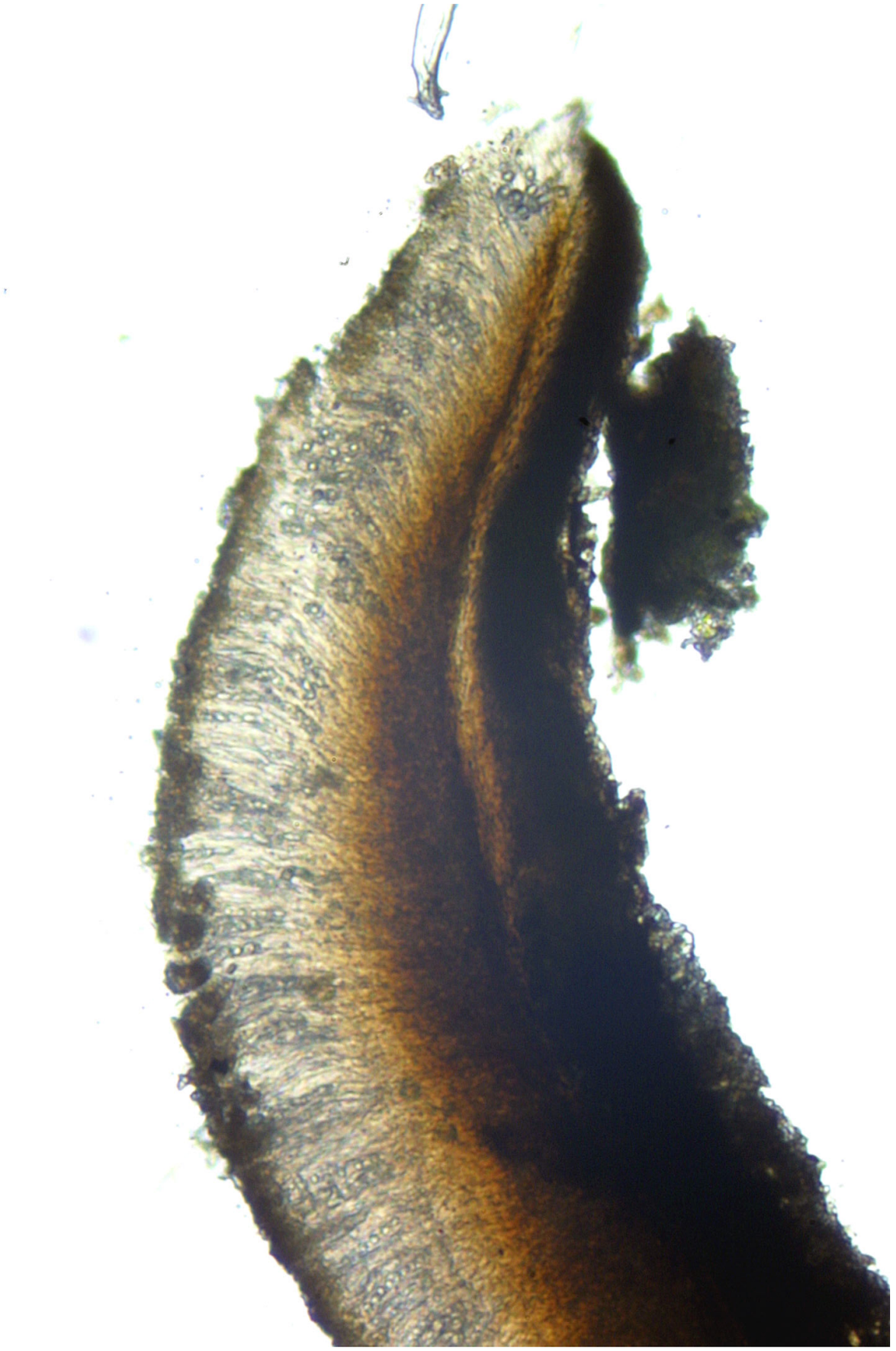
Thallus crustose, episubstratic, pale greenish grey, up to 160 µm thick, continuous to rimose, rarely areolate, sometimes with a thin whitish prothallus, the margin with small, gently convex, poorly delimited areole-like units which sometimes appear separate on the prothallus, but mostly coalesce from the start. Apothecia frequent, round at least when young, sessile, up 0.3-0.6(-0.8) mm across, with a dark reddish-brown to finally black, flat to slightly convex, rough disc and a concolorous, finally often excluded proper margin surrounded by a thin, whitish pseudothalline margin in young apothecia; immature apothecia frequent, appearing as white dots on the thallus. Proper exciple of colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium almost colourless to pale yellowish brown; hymenium colourless, 90-140 µm high; paraphyses coherent, thin, densely branched and anastomosing, not thickened at apex; hypothecium colourless to yellowish. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 14.21 x 7-10 µm, without a perispore. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, KC+ red, P-, UV+ bluish white. Chemistry: thallus with gyrophoric acid (major), 5-O-methylhiascic acid (trace). - Note: a holarctic early coloniser of siliceous pebbles near the soil surface, sometimes also found on bare clayey soil, with a wide altitudinal and latitudinal range; it is most frequent in upland areas.



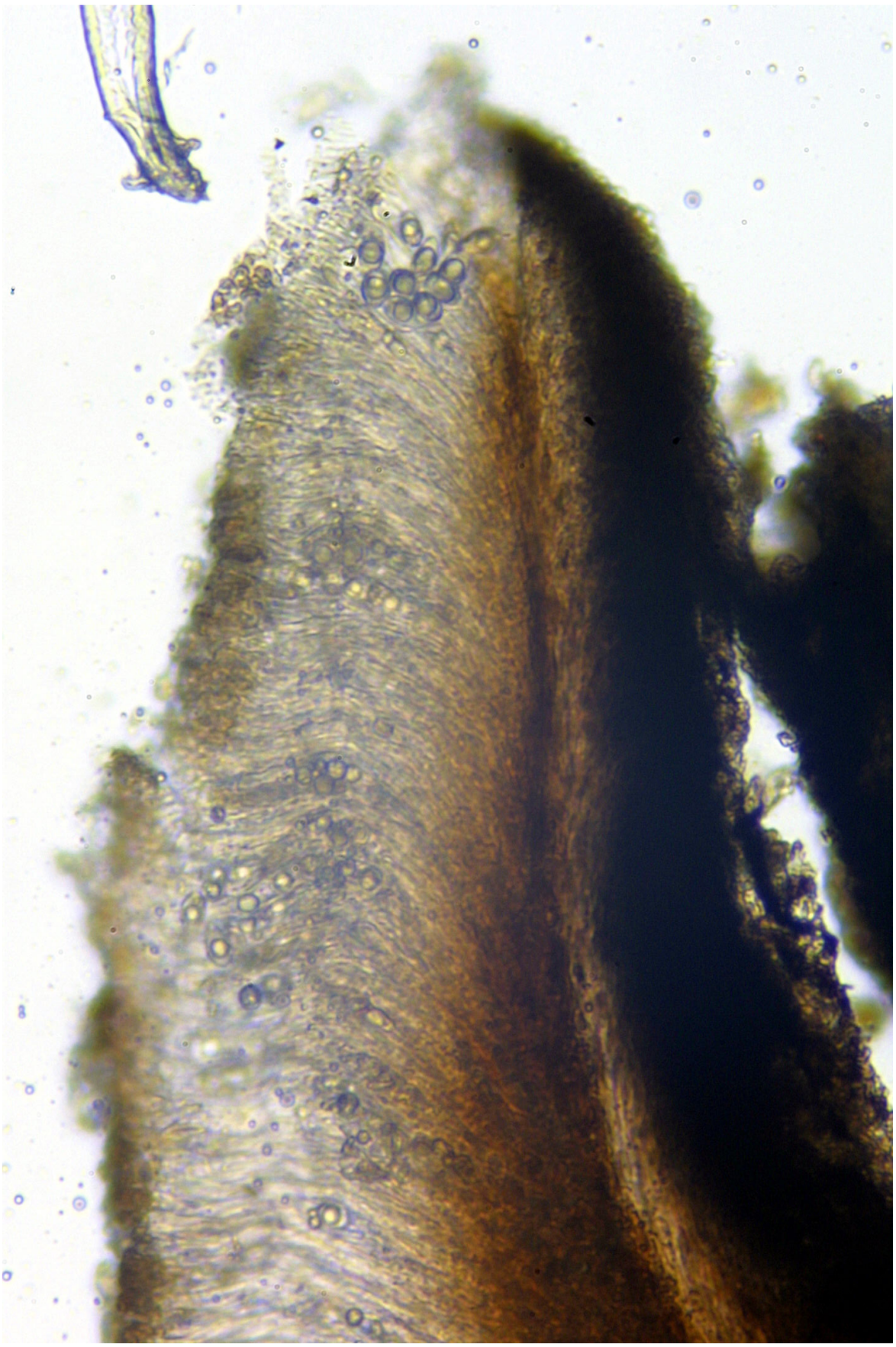
Trapelia coarctata



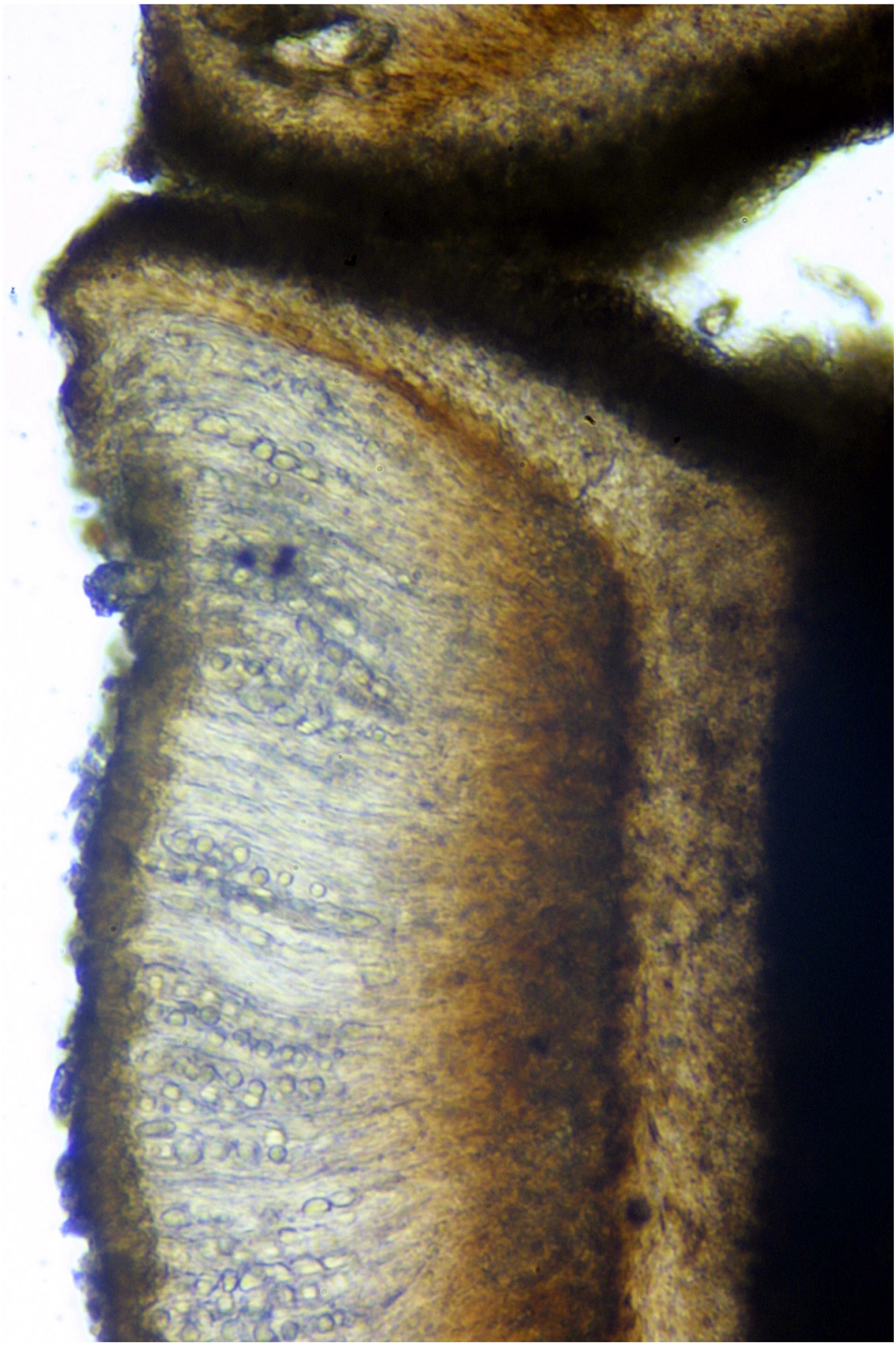
Trapelia coarctata



Trapelia coarctata



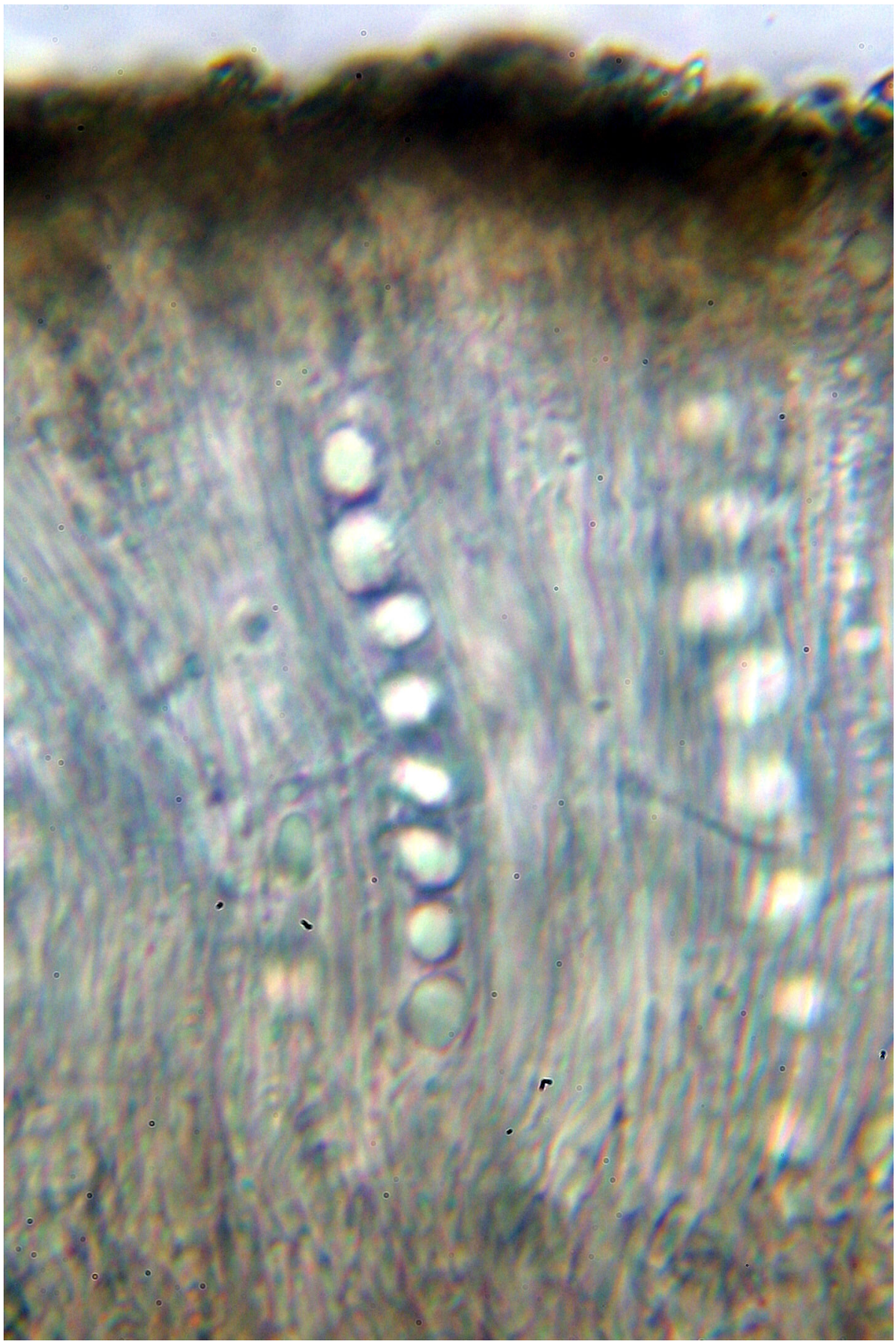
Trapelia coarctata



Trapelia coarctata



Trapelia coarctata



Trapelia coarctata

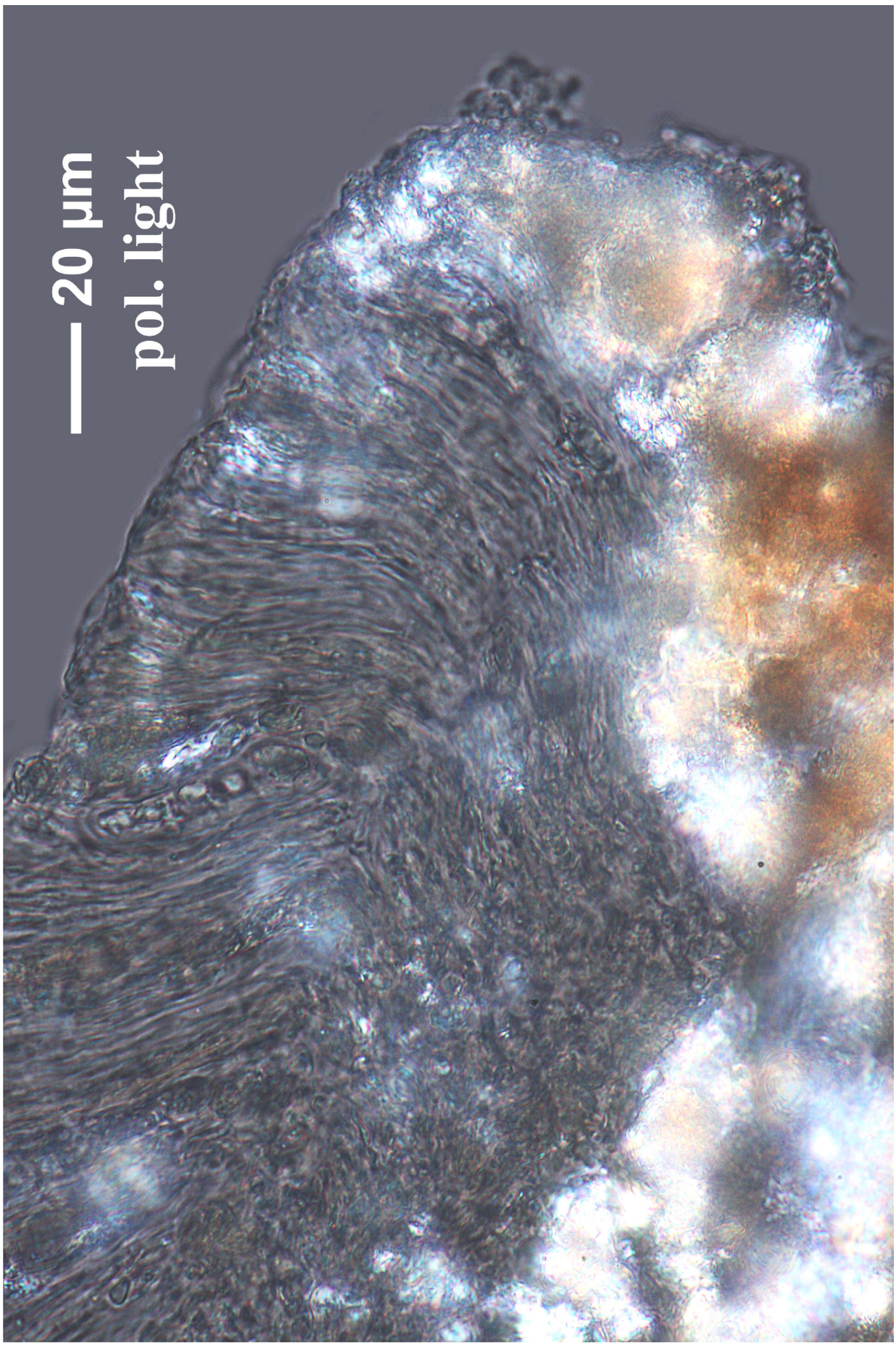
Trapelia coarctata (Turner) M. Choisy, in Werner, Bull. Soc. Sci. Nat. phys. Maroc 12: 160 (1932)
= *Lichen coarctatus* Turner 1799

[11287]. PORTUGAL, MADEIRA: Zwischen Rabaçal und Boca da Encumeada am Ostrand von Paúl da Serra nahe Bica da Cana, licht-, windoffen, tundrenartig, Felsbrocken am Boden, 32°44.225' N, 17°03.653' W, 1530 m. Leg. F. Schumm 26.12.2003, det. F. Schumm 2011, test et conf. Aptroot 2011. - Thallus C+ rot. Sporen 1-zellig, hyalin, 8/Ascus, 12-18.5 x 6-8.5 µm.

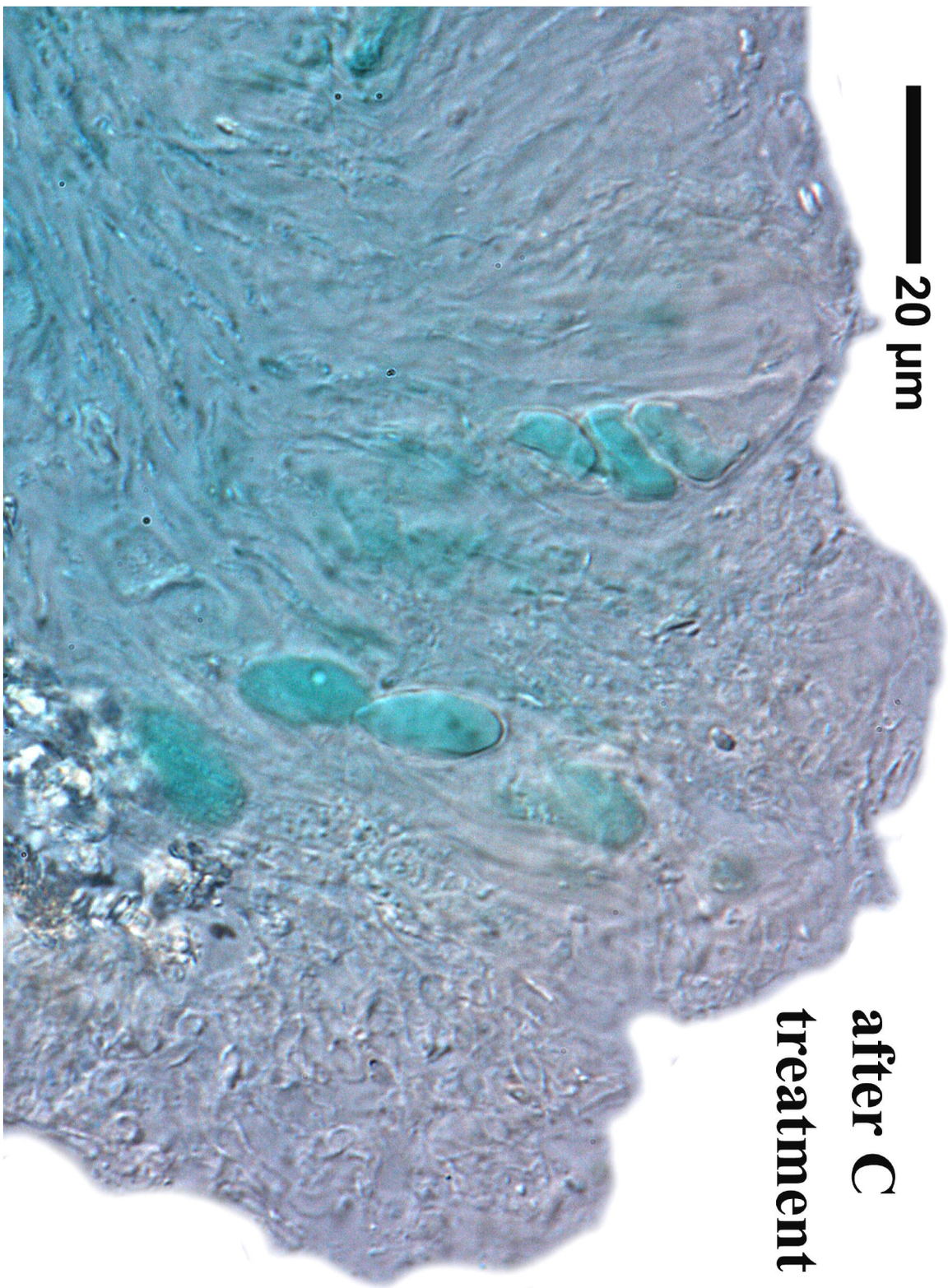
Thallus crustose, episubstratic, pale greenish grey, up to 160 µm thick, continuous to rimose, rarely areolate, sometimes with a thin whitish prothallus, the margin with small, gently convex, poorly delimited areole-like units which sometimes appear separate on the prothallus, but mostly coalesce from the start. Apothecia frequent, round at least when young, sessile, up 0.3-0.6(-0.8) mm across, with a dark reddish-brown to finally black, flat to slightly convex, rough disc and a concolorous, finally often excluded proper margin surrounded by a thin, whitish pseudothalline margin in young apothecia; immature apothecia frequent, appearing as white dots on the thallus. Proper exciple of colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium almost colourless to pale yellowish brown; hymenium colourless, 90-140 µm high; paraphyses coherent, thin, densely branched and anastomosing, not thickened at apex; hypothecium colourless to yellowish. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 14.21 x 7-10 µm, without a perispore. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, KC+ red, P-, UV+ bluish white. Chemistry: thallus with gyrophoric acid (major), 5-O-methylhiascic acid (trace). - Note: a holarctic early coloniser of siliceous pebbles near the soil surface, sometimes also found on bare clayey soil, with a wide altitudinal and latitudinal range; it is most frequent in upland areas.



Trapelia coarctata



Trapelia coarctata

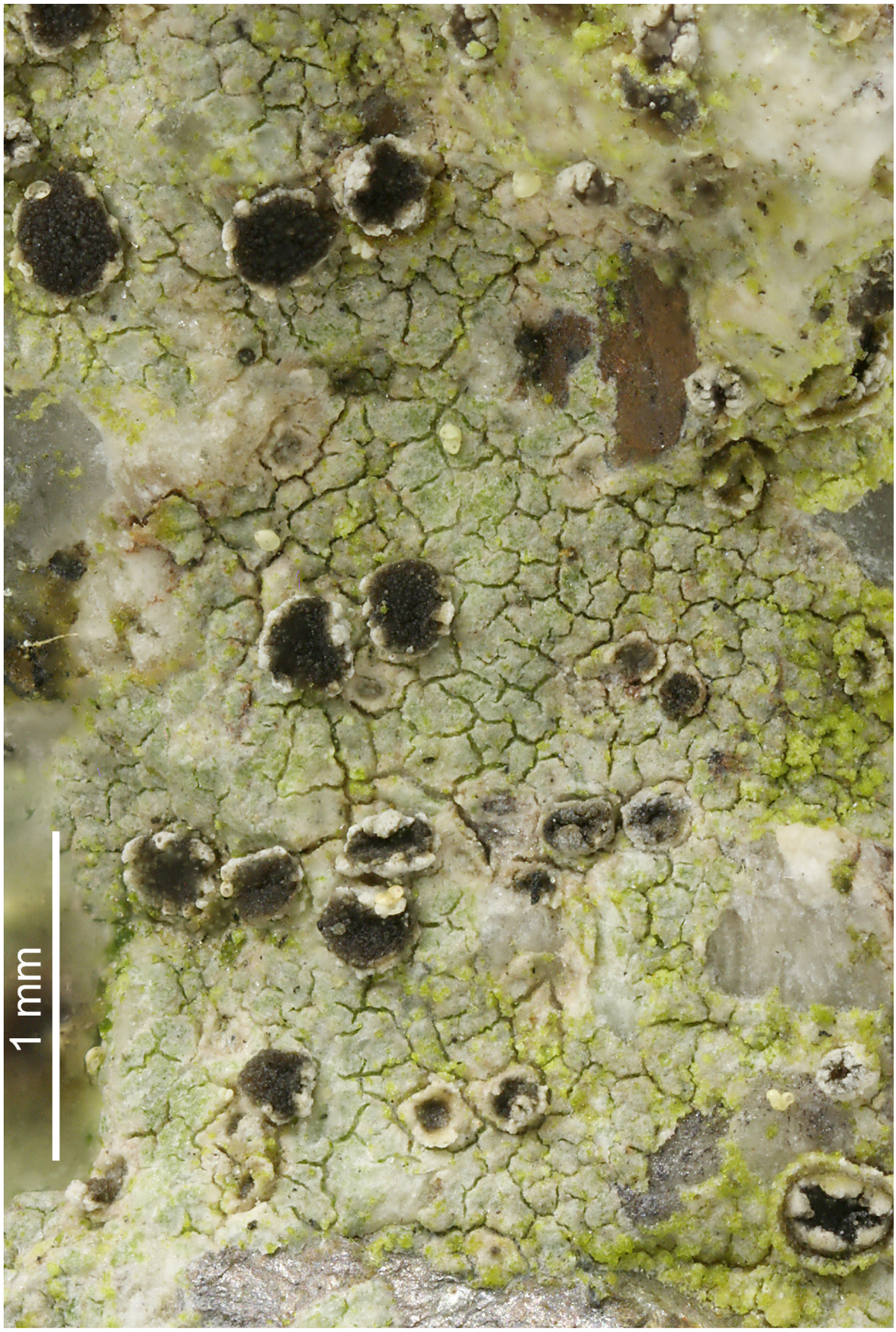


Trapelia coarctata

Trapelia coarctata (Turner) M. Choisy, in Werner, Bull. Soc. Sci. Nat. phys. Maroc 12: 160 (1932)
= *Lichen coarctatus* Turner 1799

[17278], Germany, Baden-Württemberg, Schwarzwald-Baar-Kreis, zwischen Villingen und Stockburg, ca. 3 km NW von Villingen, 48.071988° N, 8.419199° E, 740 m. An Granit. Leg. F. F.Schumm 03.06.2011, det. F.Schumm 2011, test. Aptroot 2011. - Thallus C+ rot.

Thallus crustose, episubstratic, pale greenish grey, up to 160 µm thick, continuous to rimose, rarely areolate, sometimes with a thin whitish prothallus, the margin with small, gently convex, poorly delimited areole-like units which sometimes appear separate on the prothallus, but mostly coalesce from the start. Apothecia frequent, round at least when young, sessile, up 0.3-0.6(-0.8) mm across, with a dark reddish-brown to finally black, flat to slightly convex, rough disc and a concolorous, finally often excluded proper margin surrounded by a thin, whitish pseudothalline margin in young apothecia; immature apothecia frequent, appearing as white dots on the thallus. Proper exciple of colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium almost colourless to pale yellowish brown; hymenium colourless, 90-140 µm high; paraphyses coherent, thin, densely branched and anastomosing, not thickened at apex; hypothecium colourless to yellowish. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 14.21 x 7-10 µm, without a perispore. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, KC+ red, P-, UV+ bluish white. Chemistry: thallus with gyrophoric acid (major), 5-O-methylhiascic acid (trace). - Note: a holarctic early coloniser of siliceous pebbles near the soil surface, sometimes also found on bare clayey soil, with a wide altitudinal and latitudinal range; it is most frequent in upland areas.



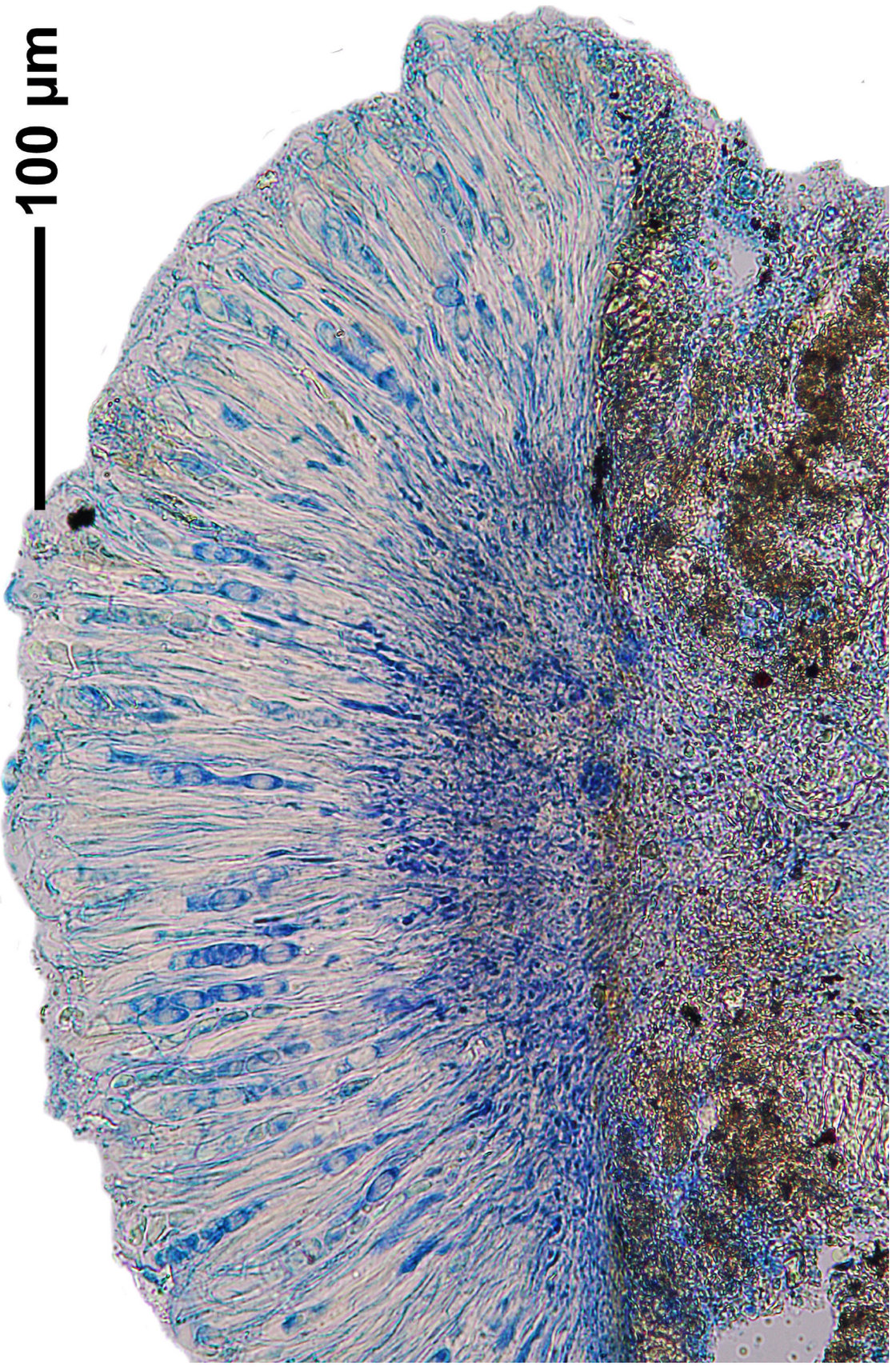
Trapelia coarctata



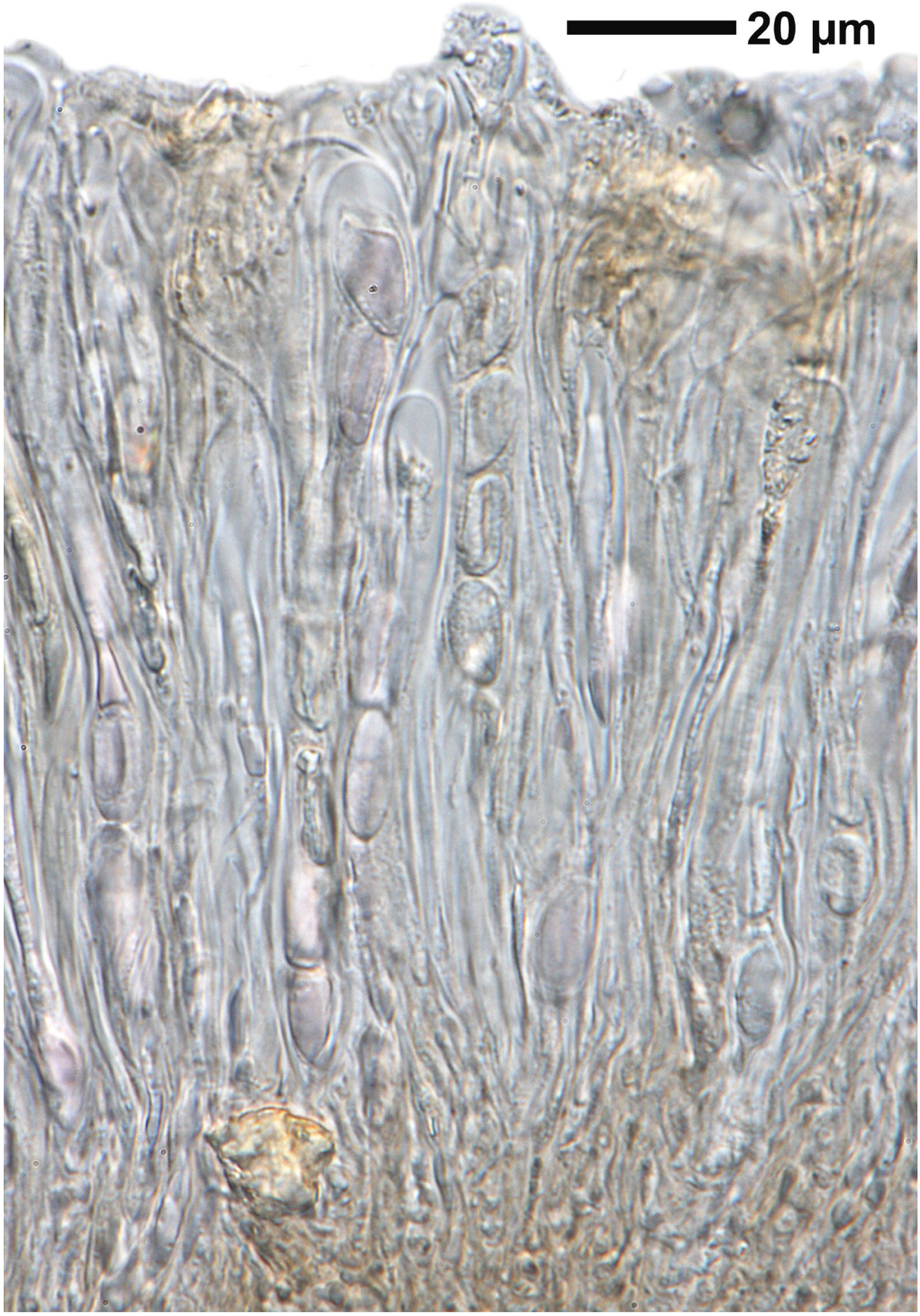
Trapelia coarctata



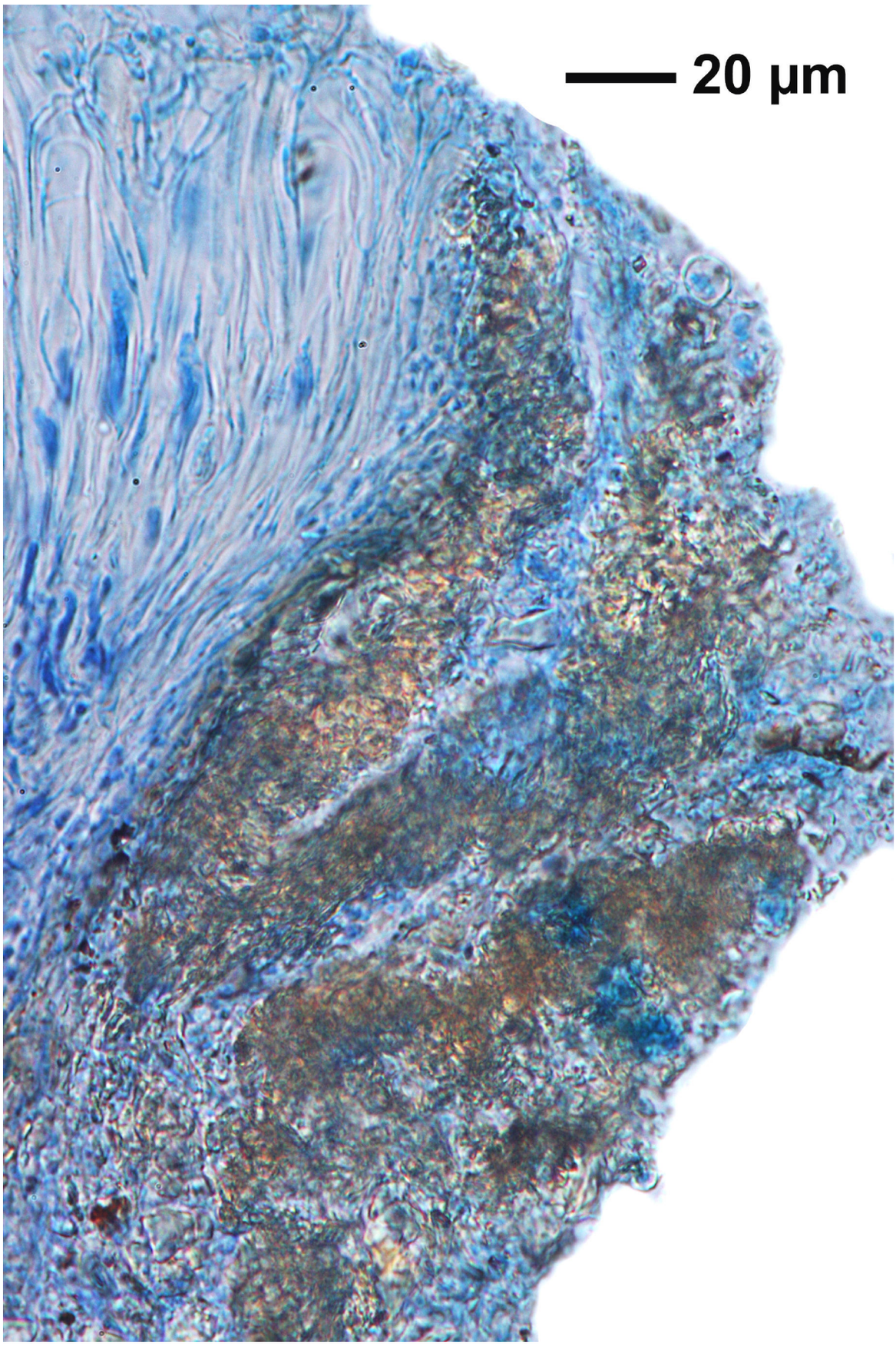
Trapelia coarctata



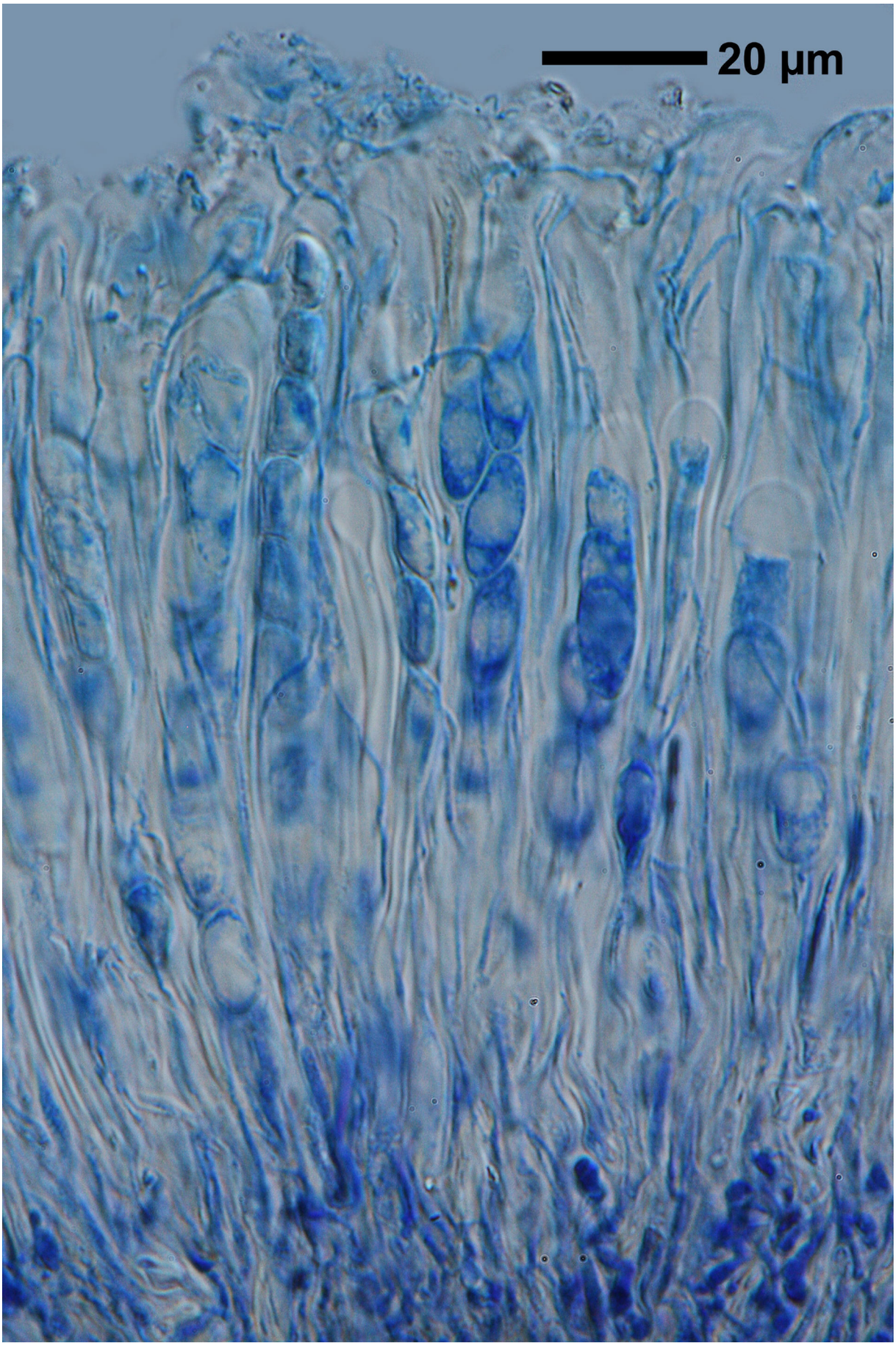
Trapelia coarctata



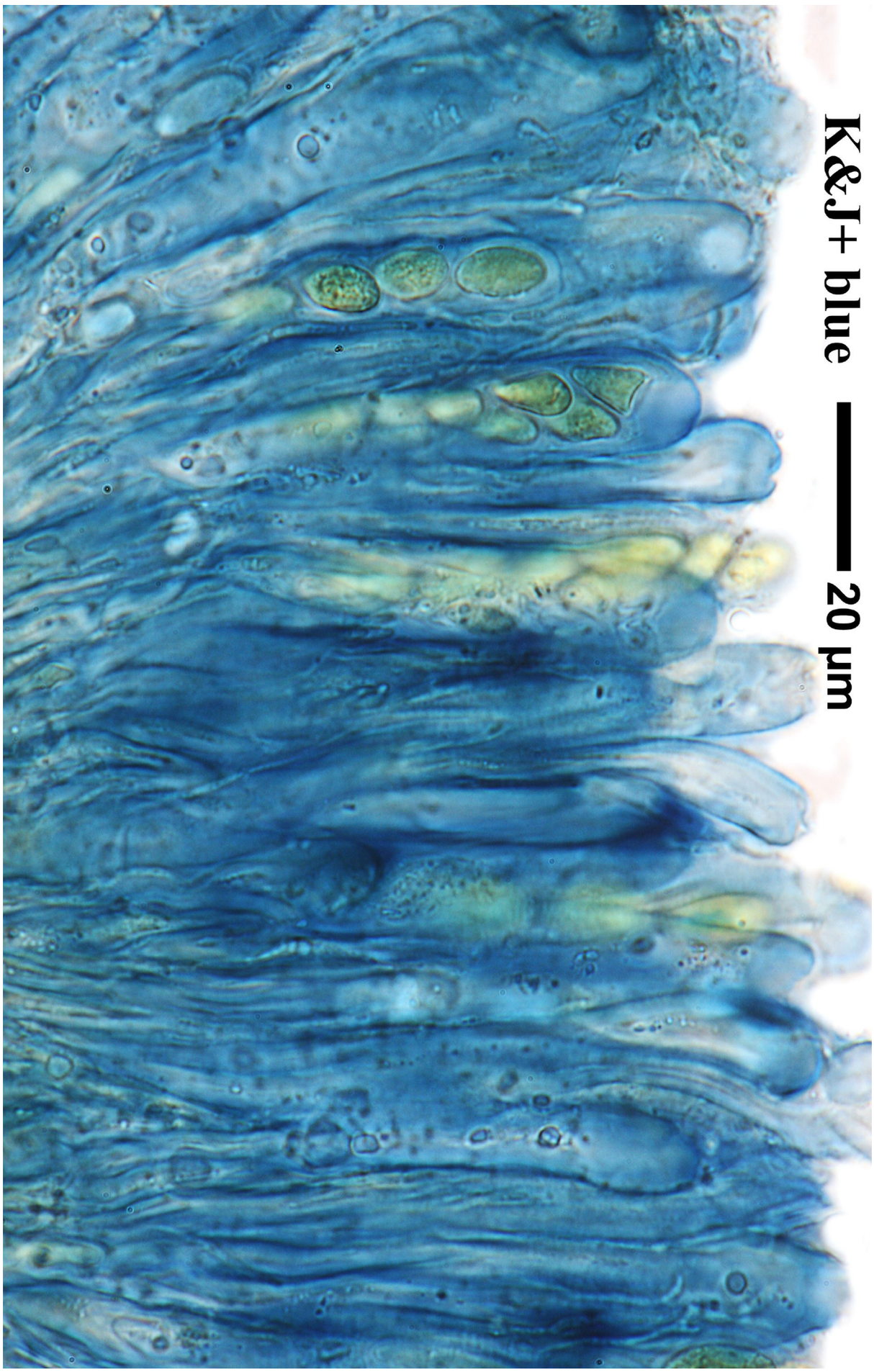
Trapelia coarctata



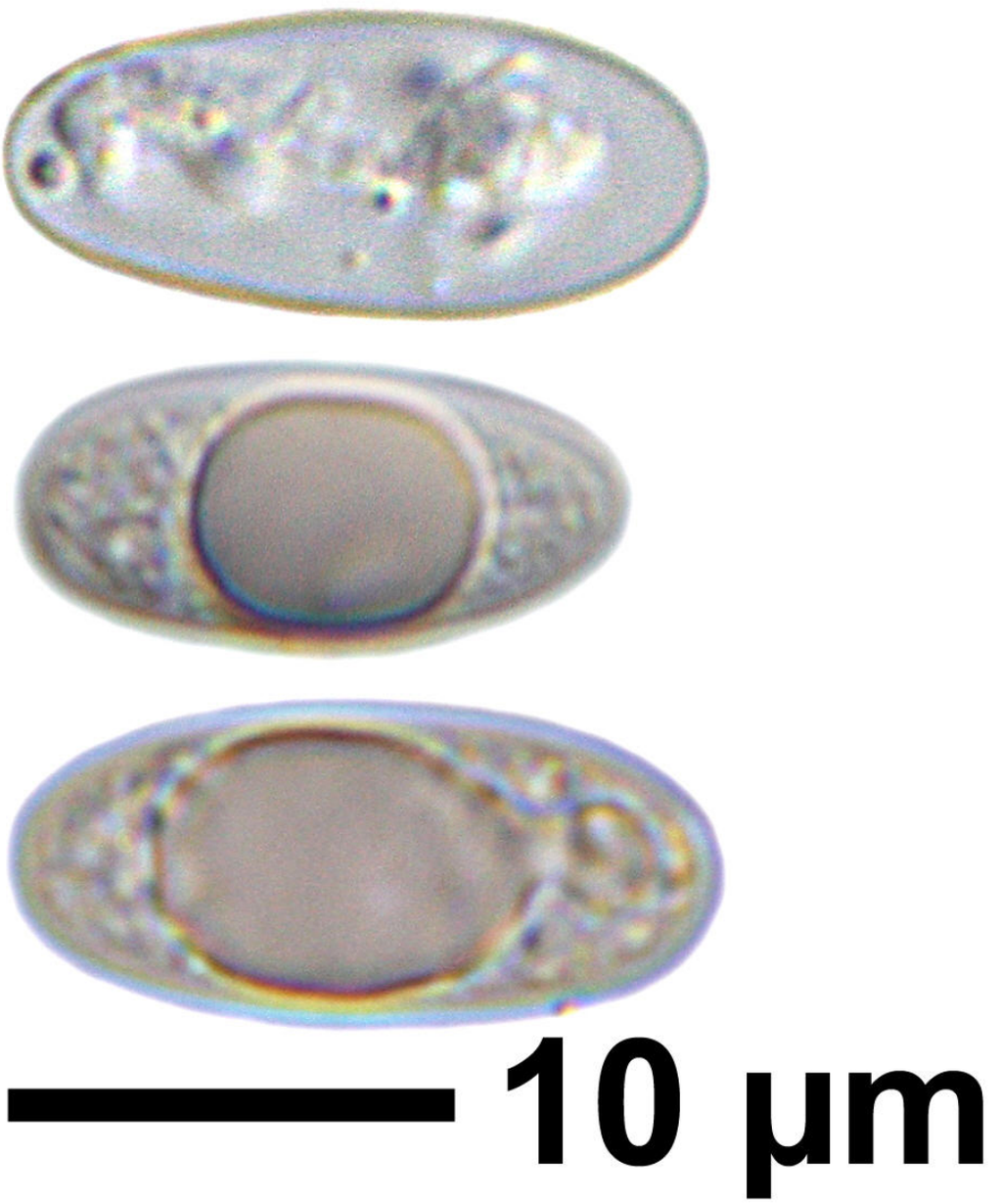
Trapelia coarctata



Trapelia coarctata



Trapelia coarctata



Trapelia coarctata

Trapelia placodioides Coppins & P. James, Lichenologist 16(3): 257 (1984)
= *Kleopowiella placodioides* (Coppins & P. James) S.Y. Kondr., in Kondratyuk, Lőkös, Kondratiuk, Kärnefelt, Thell, Farkas & Hur, Acta Bot. Hung. 64(1-2): 131 (2022)

[VZ2423], Austria. Styria, regio Steirisches Randgebirge: Gleialpe, hospitium Krautwasch, 1 km ad occidentem versus, 1180 m. Ad saxa in margine viae silvaticae. Leg. J. Poelt et A. Vězda, 12.11.1989. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2423.

Thallus crustose, episubstratic, 50-400 µm thick, rimose-areolate in central parts, sometimes almost placodioid at margins, whitish to pale pinkish grey, matt, slightly pruinose, sometimes delimited by a whitish prothallus. Soralia frequent, usually arising at the margins of areoles, flat, pale green to pale greenish brown, irregular in shape, remaining small and not obscuring the thallus, with farinose, 20-30 µm wide soredia. Cortex 1-3 µm thick, poorly differentiated, of rounded cells; medulla white. Apothecia very rare, lecideine, 0.2-0.5 mm across, round, with a flat, brown-red to blackish brown disc and a thin, soon excluded proper margin, usually surrounded by a collar of disrupted thallus (pseudothalline margin) at least when young. Proper exciple of colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium brown; hymenium colourless; paraphyses coherent, strongly branched and anastomosing in upper part, not thickened at apex; hypothecium colourless to very pale brown. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 14-24 x 8-12 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, P-, UV+ white. Chemistry: gyrophoric acid. - Note: on base-rich or slightly calciferous siliceous substrata, sometimes also on walls, in humid sited, with optimum below the montane belt; probably more widespread, but never common.



Trapelia placodioides

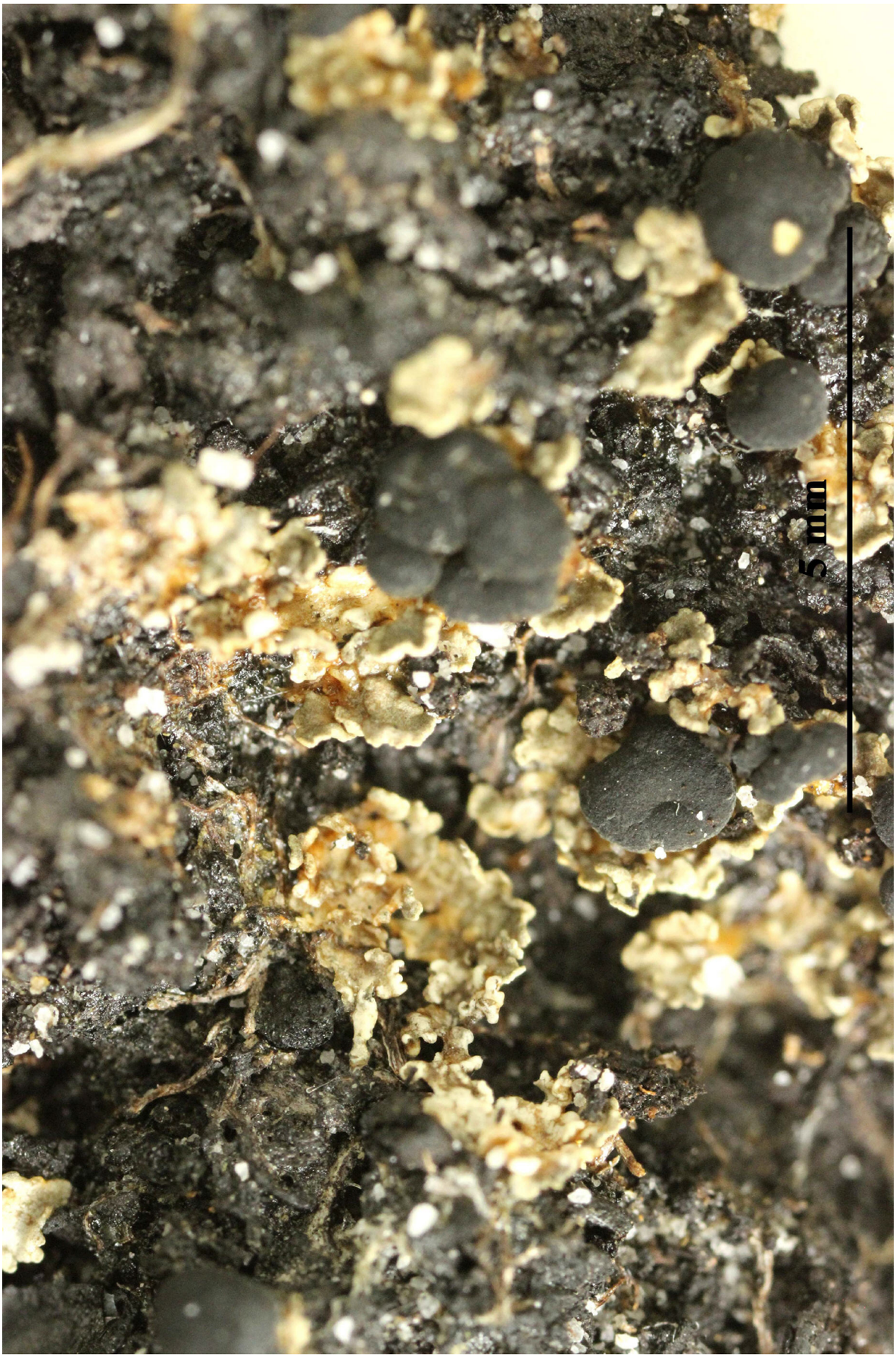


Trapelia placodioides

Trapeliopsis colensoi (C. Bab.) Gotth. Schneid., Biblioth. Lichenol. 13: 146 (1980) [1979]
= *Biatora colensoi* C. Bab. 1855

[VZ2116], Australia, Tasmania: Jane River Track, prope Loddon River, 520 m. Supra plantas emortuas ed ad terram humosam. Leg. G. Kantvilas (33/88), 1.2.1986. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2116.

Thallus squamulose to small-foliose, squamules 1.5-2 mm diam., convex, orbicular to spreading, imbricate, ascending lobate, in patches to 8 cm diam., corticolous, lignicolous or terricolous. Upper surface glaucous-green to pale or whitish, smooth, matt, pruinose, occasionally sorediate, soralia marginal, labriform, soredia pale greenish, farinose. Lower cortex orange-brown or yellowish. Apothecia glaucous-brown to purplish-black, confluent, convex, immarginate. Ascospores ellipsoid, 11-14 × 5-7 µm. Chemistry: Cortex C+ pinkish-red. Gyrophoric acid and 4 unidentified pigments.



Trapeliopsis colensoi



Trapeliopsis colensoi

Trapeliopsis wallrothii (Flörke ex Spreng.) Hertel & Gotth. Schneid., in Schneider, Biblioth. Lichenol. 13: 153 (1980) [1979]
= *Lecidea wallrothii* Flörke ex Spreng. 1821

[VZ1903], Hispania. Prov. Barcelona, montes Montseny, Col Fornic, 1100 m. Ad terram macram. Leg. N. Hladun, J. Poelt et A. Vězda, 28.5.1983. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1903.

Thallus squamulose to subcrustose-placodioid, whitish to pale grey, rather thick, the squamules rounded to angular, flattened to convex, contiguous, areolate-subcrustose in central parts, elongated at the periphery to form a subrosulate thallus, the marginal lobes 0.5-1 mm wide, to c. 3 mm long. Isidia laminal, simple, coarsely granular to spathulate, clustered in concave, rounded patches which are evident also when the isidia have fallen off. Apothecia lecideine, sessile, up to 1.5(-2) mm across, often confluent and then up to 3.5 mm wide, with a pink-brown to brown-black (paler when wet), sometimes faintly pruinose, flat to strongly convex, sometimes tuberculate disc and a thin, often paler, finally often excluded proper margin. Proper exciple of densely entangled, colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium golden brown; hymenium colourless; paraphyses coherent, slender, branched and anastomosing, not thickened at apex; hypothecium pale yellowish brown. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 8-14 x 4-5 µm, thick-walled. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, KC+ red, P-, UV+ whitish. Chemistry: gyrophoric acid. - Note: on base-rich, non- or weakly calciferous soil, sometimes overgrowing mosses, mostly in open situations, with optimum below the montane belt.



Trapeliopsis wallrothii

Trapeliopsis wallrothii (Flörke ex Spreng.) Hertel & Gotth. Schneid., in Schneider, Biblioth. Lichenol. 13: 153 (1980) [1979]
= *Lecidea wallrothii* Flörke ex Spreng. 1821

[8484], PORTUGAL, MADEIRA: Paúl da Serra, östlich Rabacal bei Urze, windgefegte Hochfläche, 32°45.284 N, 17°06.474 W, 1402 m . Leg. F. Schumm 12.04.2001. det A. Aptroot 2011. - Thallus C+, mit 0.7-1.2 mm breiten, isidienartigen, knolligen Auswüchsen, meist einzeln, berindet, innen nicht hohl. Hypothecium farblos. Paraphysen stark netzig verzweigt. Asci mit J+ hellblauen strukturlosem Tholus. Sp. 8.5-10 x 3.5-4.6 µm.

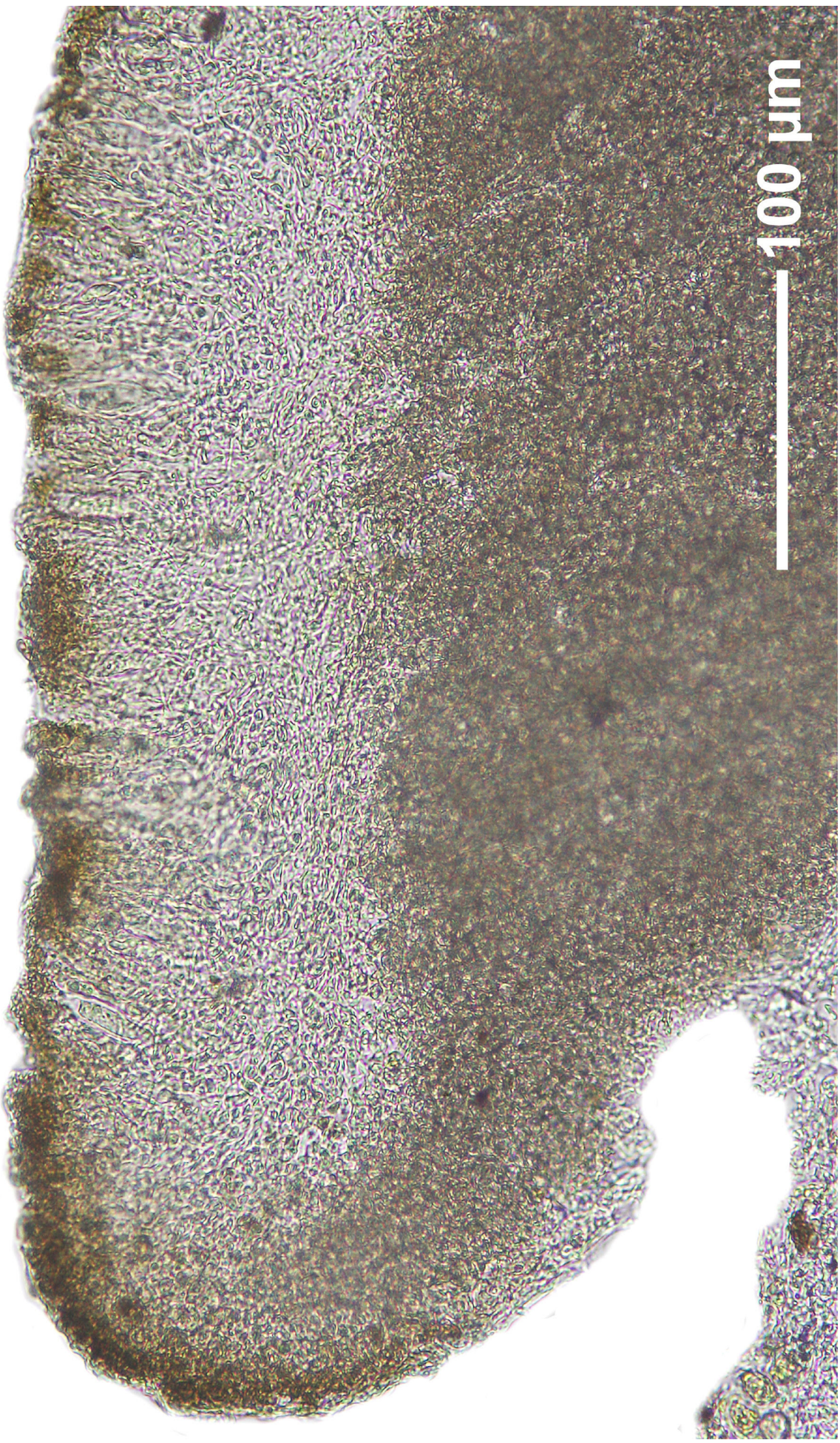
Thallus squamulose to subcrustose-placodioid, whitish to pale grey, rather thick, the squamules rounded to angular, flattened to convex, contiguous, areolate-subcrustose in central parts, elongated at the periphery to form a subrosulate thallus, the marginal lobes 0.5-1 mm wide, to c. 3 mm long. Isidia laminal, simple, coarsely granular to spathulate, clustered in concave, rounded patches which are evident also when the isidia have fallen off. Apothecia lecideine, sessile, up to 1.5(-2) mm across, often confluent and then up to 3.5 mm wide, with a pink-brown to brown-black (paler when wet), sometimes faintly pruinose, flat to strongly convex, sometimes tuberculate disc and a thin, often paler, finally often excluded proper margin. Proper exciple of densely entangled, colourless hyphae embedded in a colourless to weakly pigmented gel; epithecium golden brown; hymenium colourless; paraphyses coherent, slender, branched and anastomosing, not thickened at apex; hypothecium pale yellowish brown. Asci 8-spored, cylindrical-clavate, unitunicate, thin-walled, the apical dome K/I-, or weakly K/I+ blue, Trapelia-type. Ascospores 1-celled, hyaline, ellipsoid, 8-14 x 4-5 µm, thick-walled. Photobiont chlorococcoid. Spot tests: thallus K-, C+ red, KC+ red, P-, UV+ whitish. Chemistry: gyrophoric acid. - Note: on base-rich, non- or weakly calciferous soil, sometimes overgrowing mosses, mostly in open situations, with optimum below the montane belt.



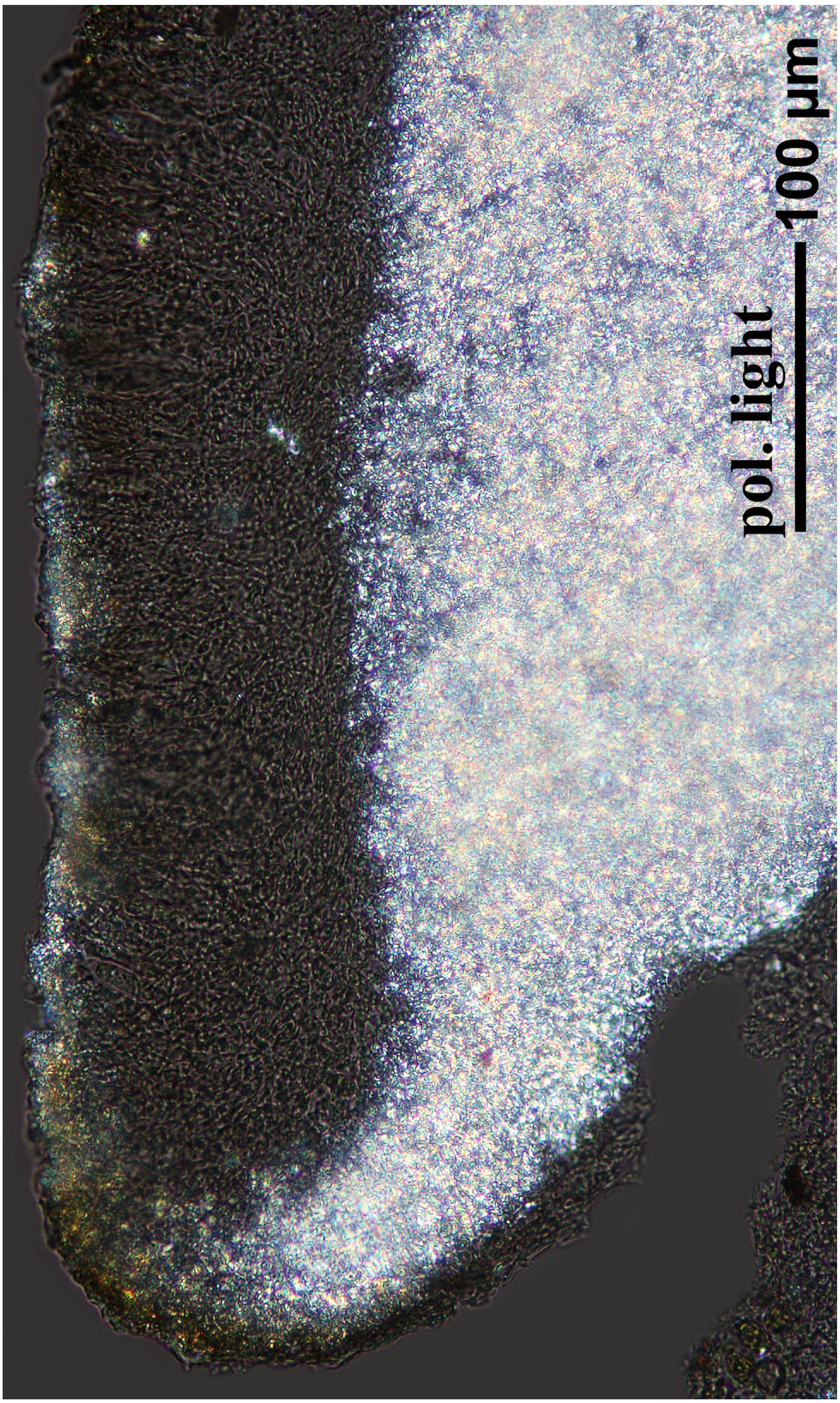
Trapeliopsis wallrothii



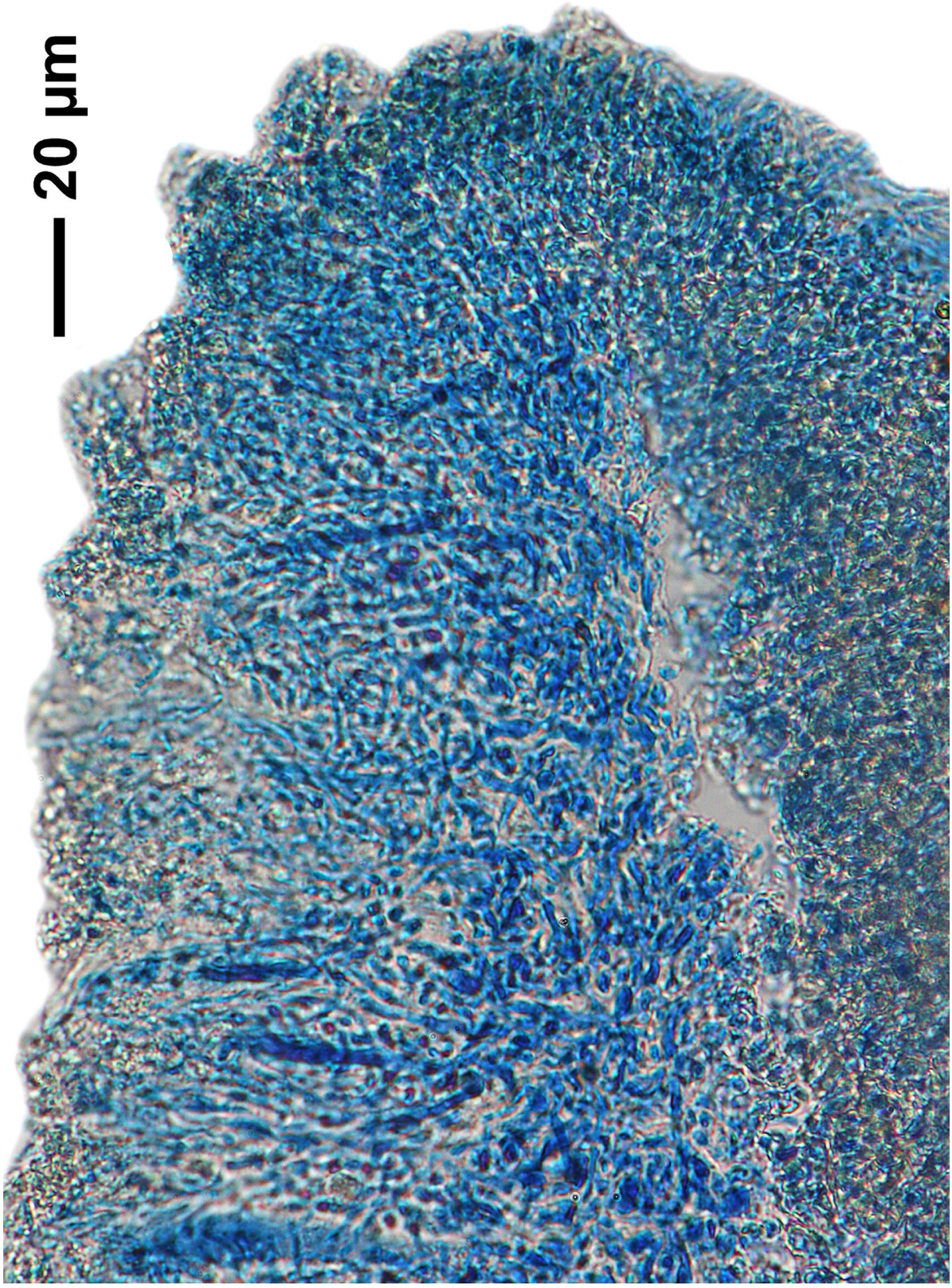
Trapeliopsis wallrothii



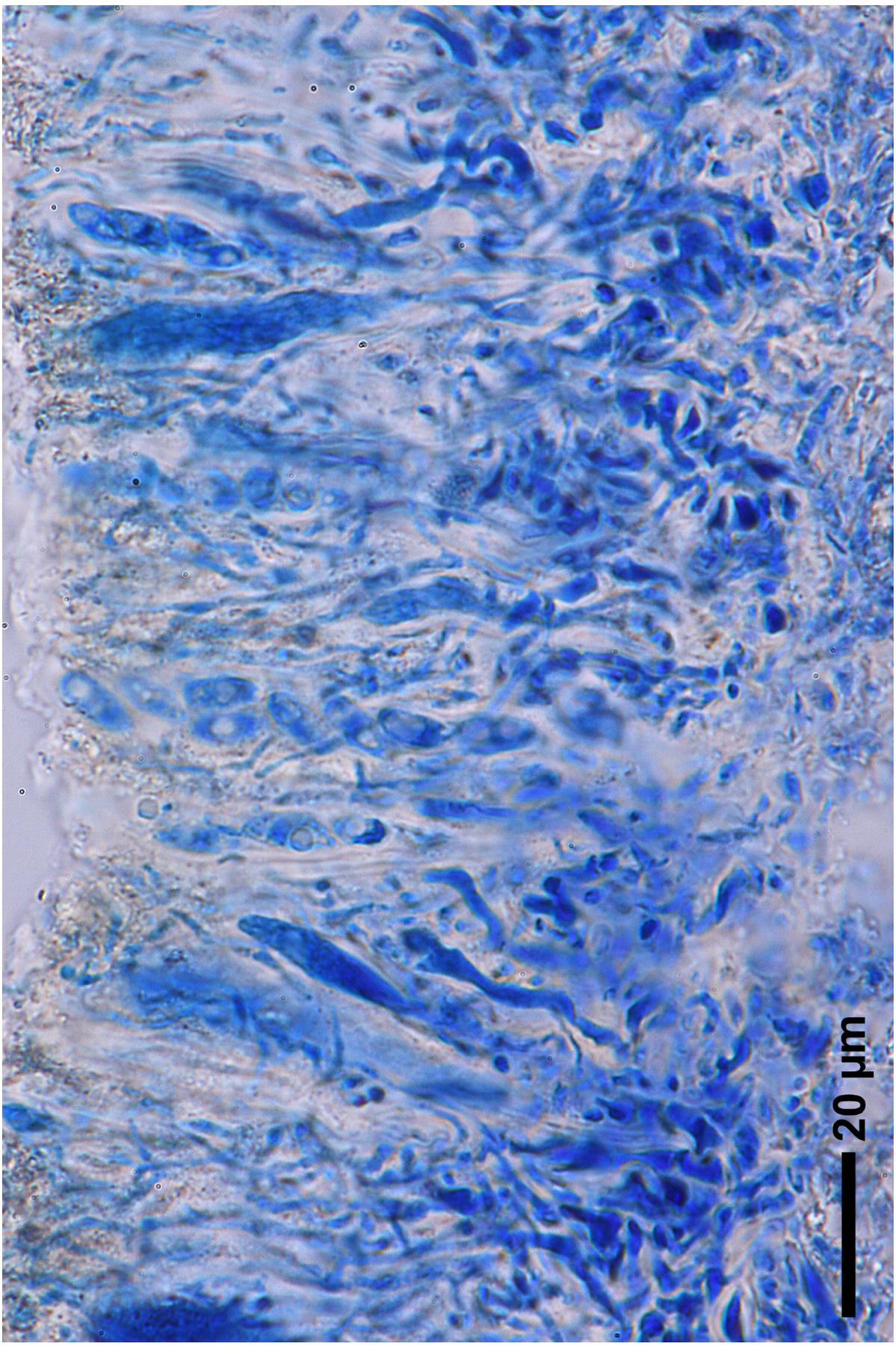
Trapeliopsis wallrothii



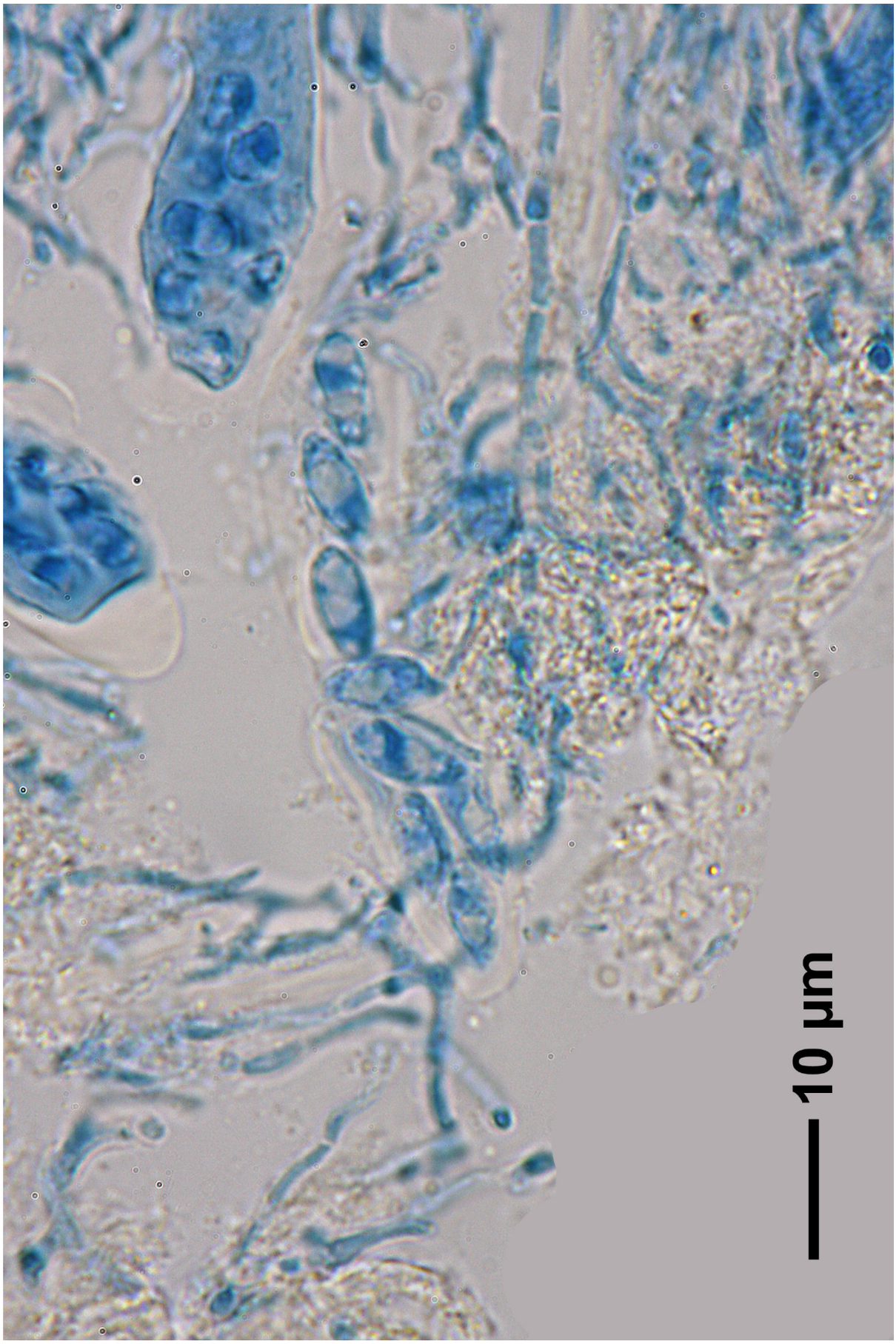
Trapeliopsis wallrothii



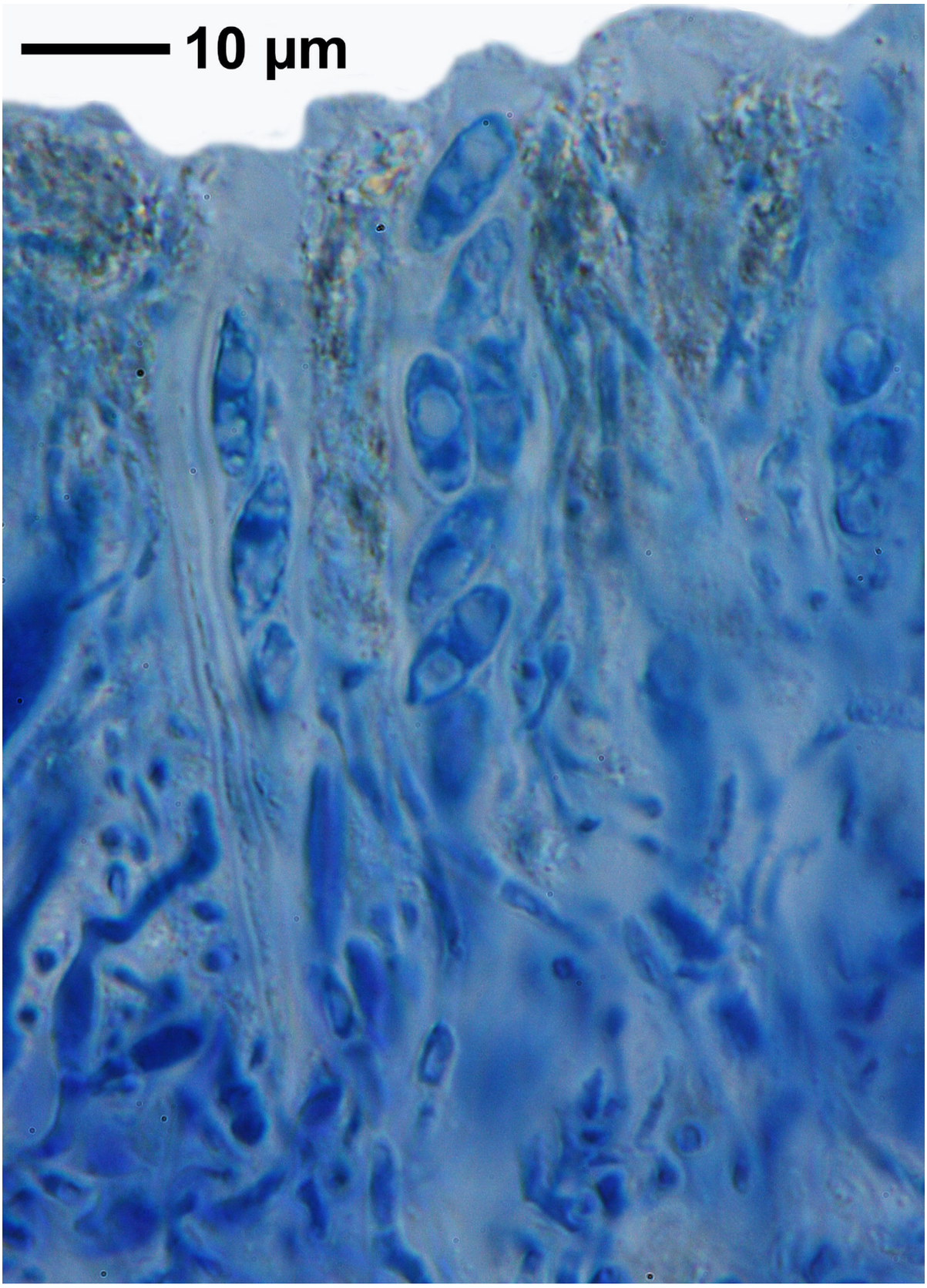
Trapeliopsis wallrothii



Trapeliopsis wallrothii



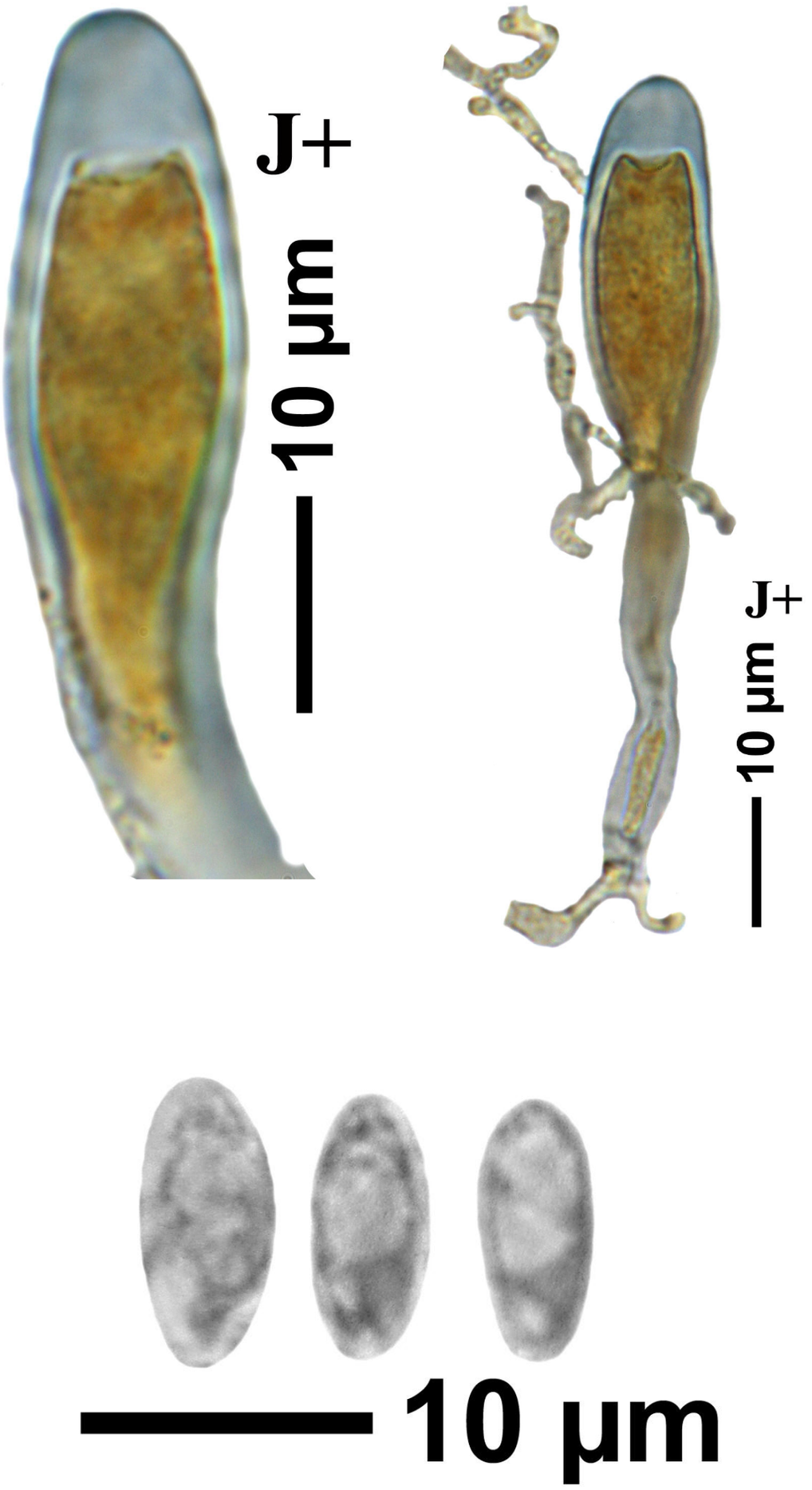
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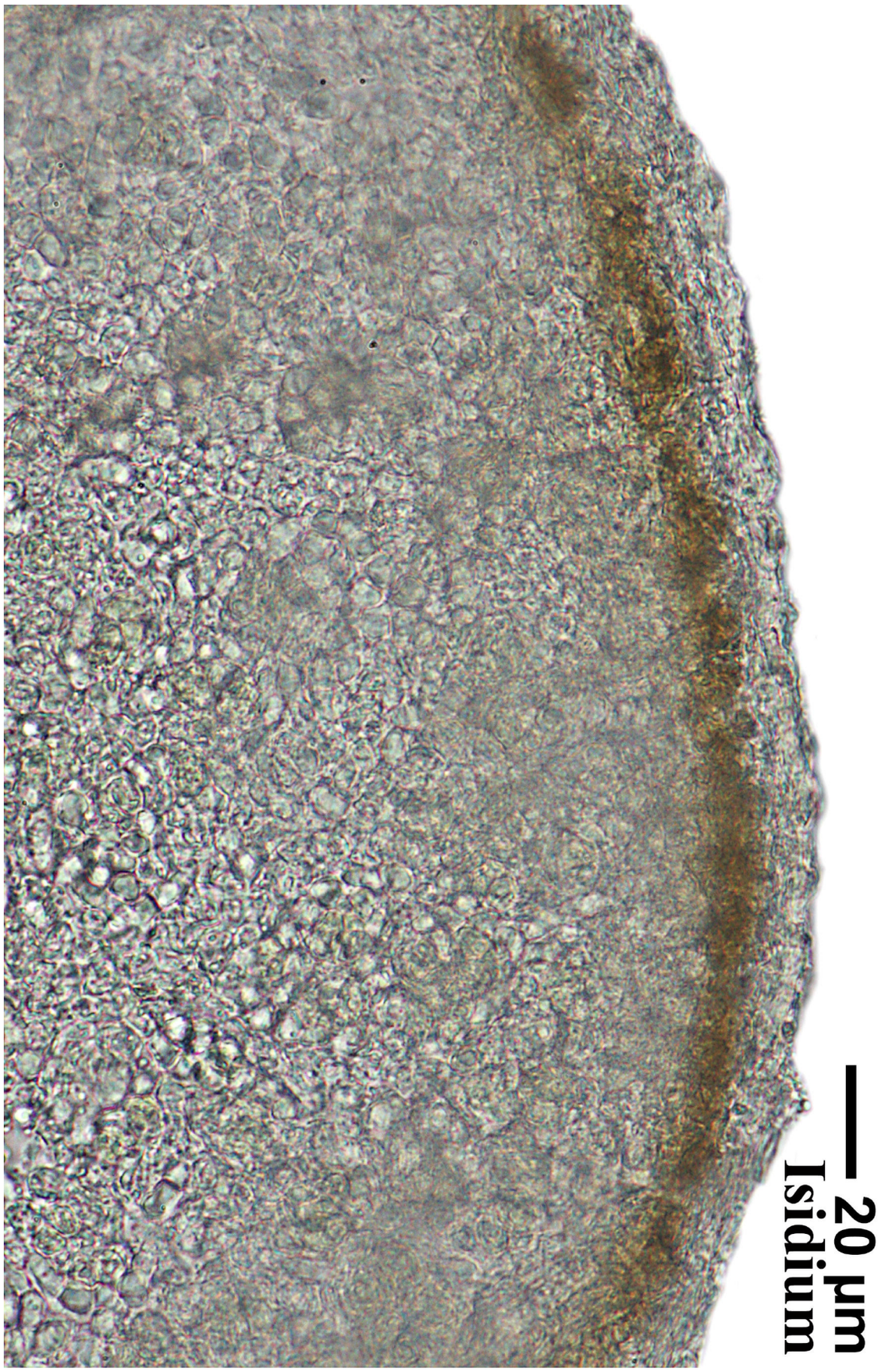
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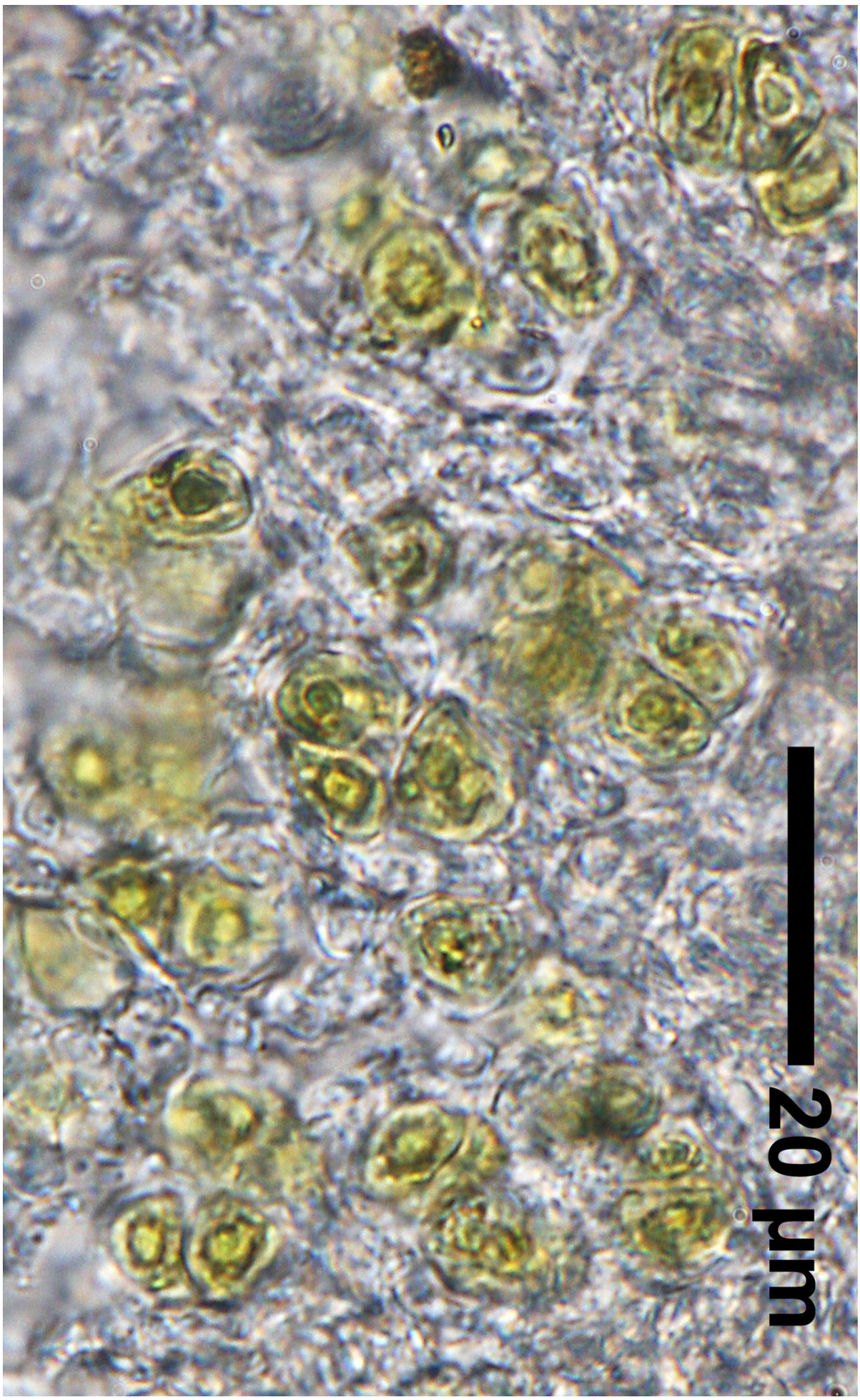
Trapeliopsis wallrothii



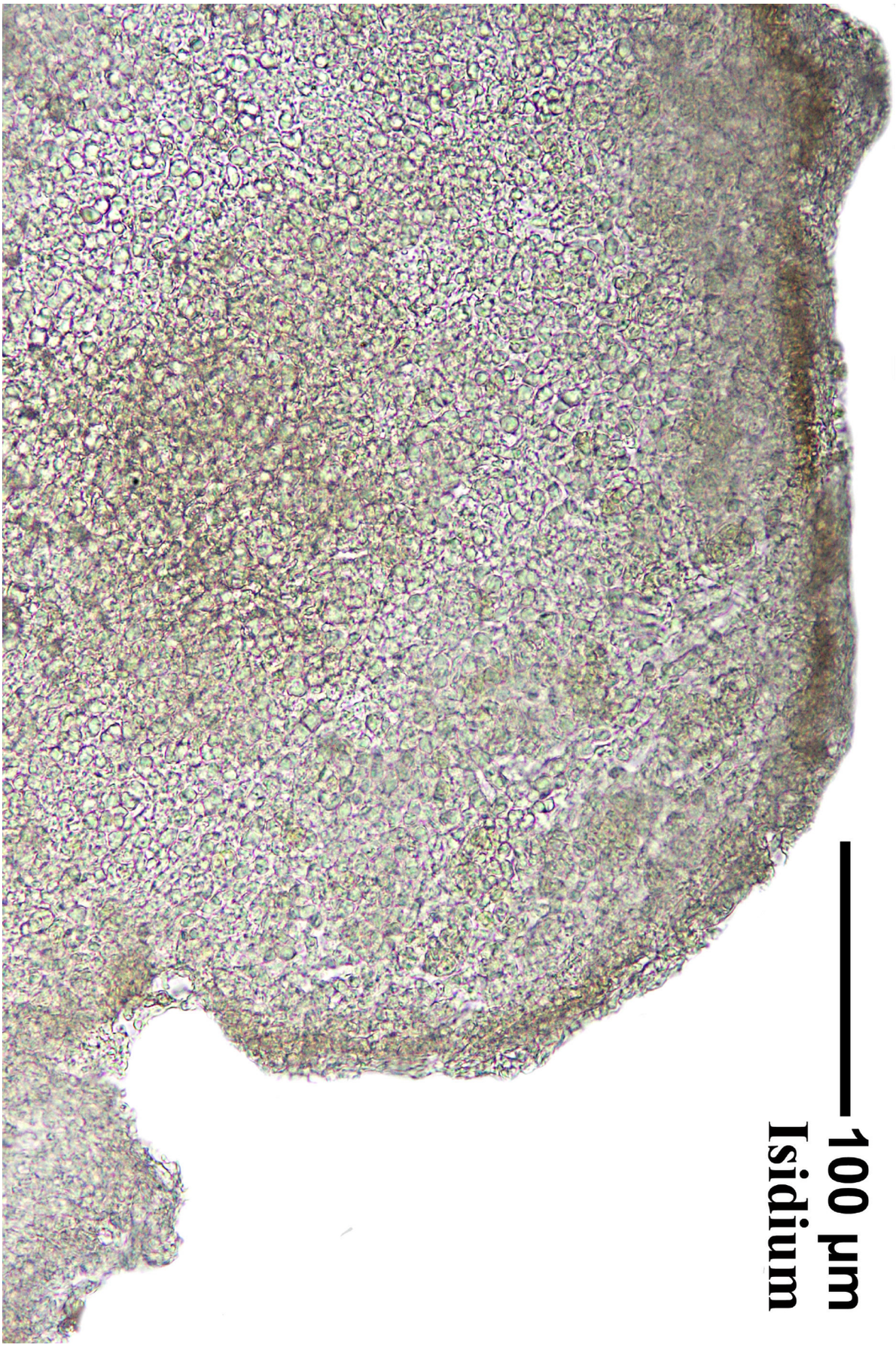
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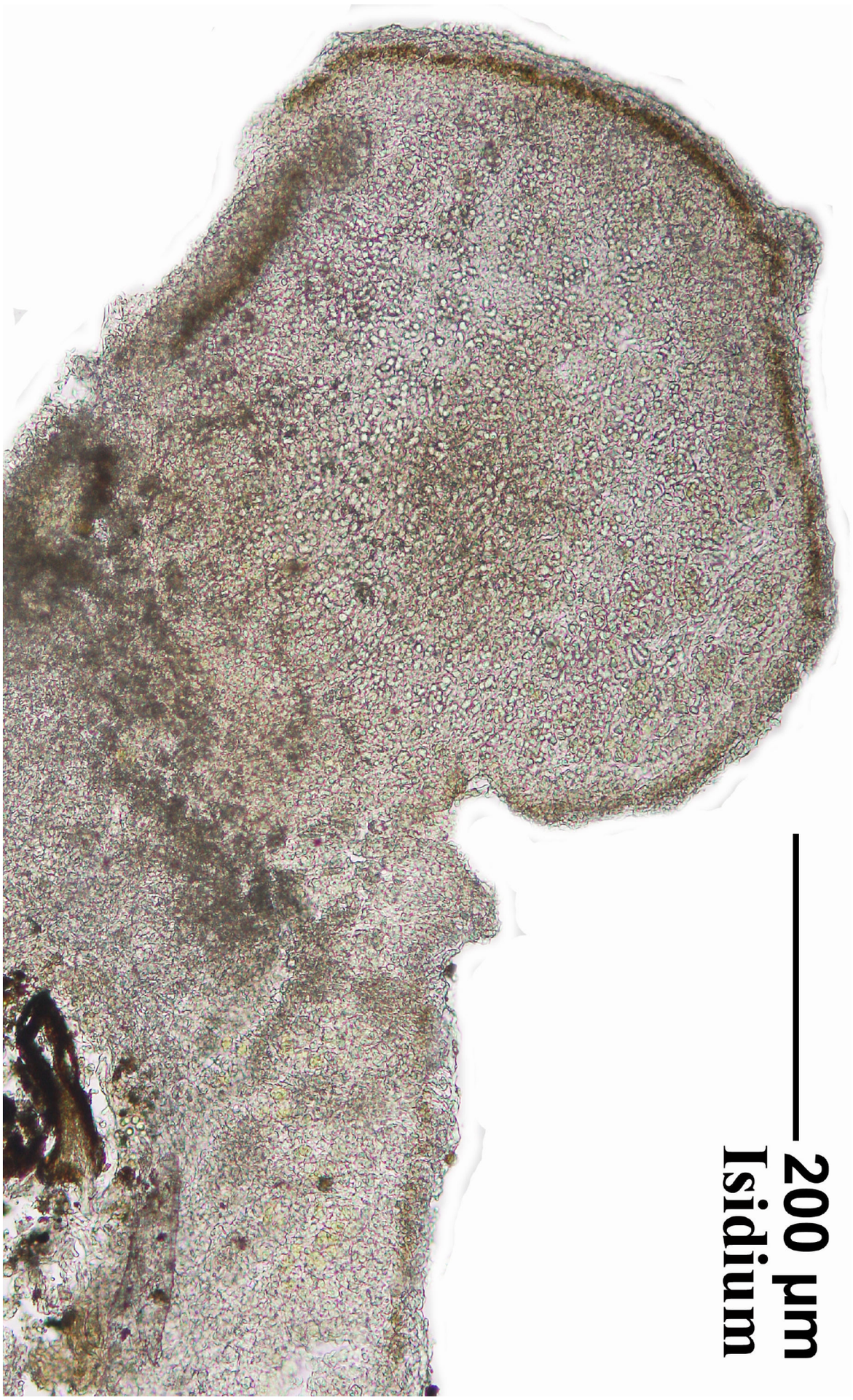
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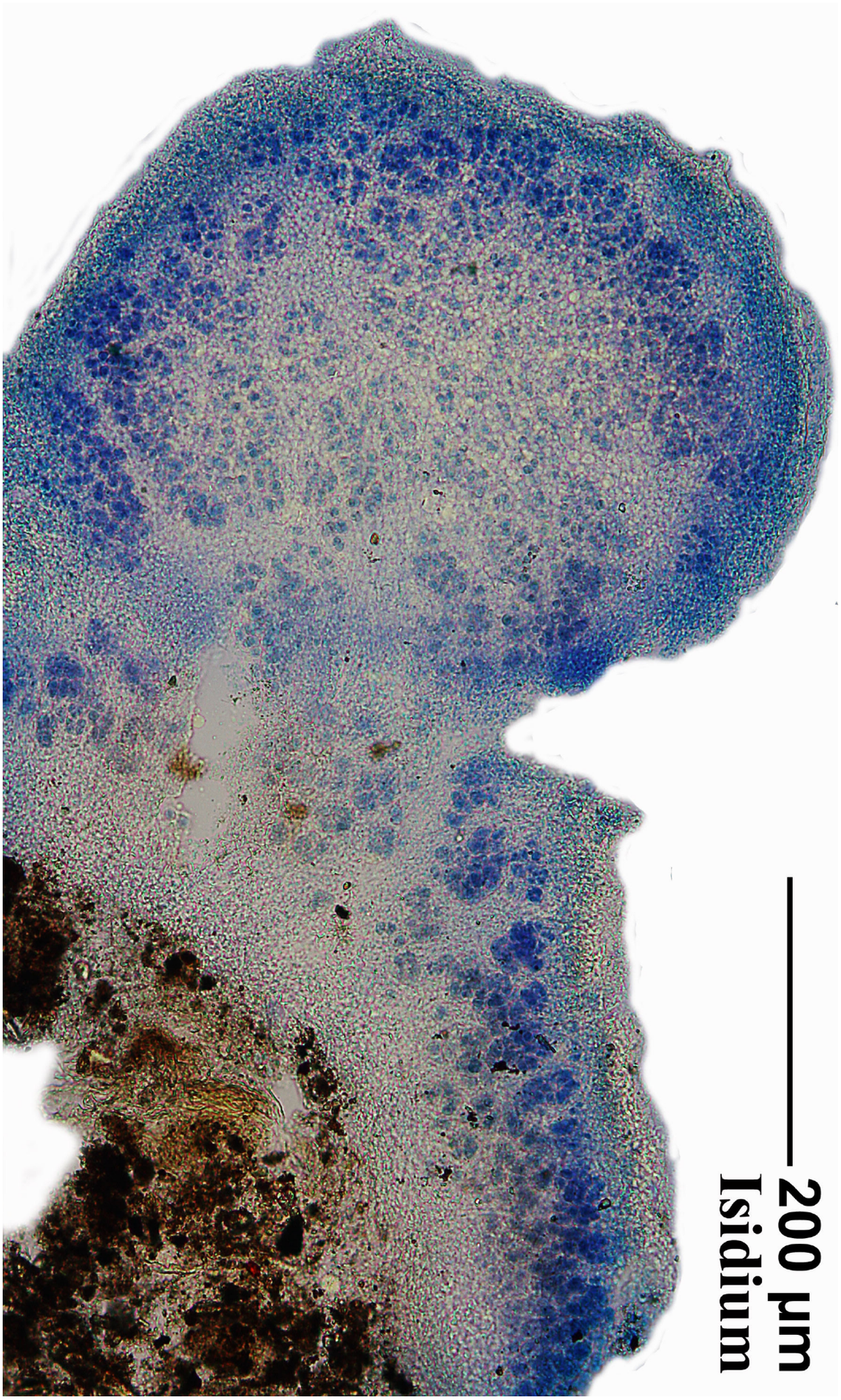
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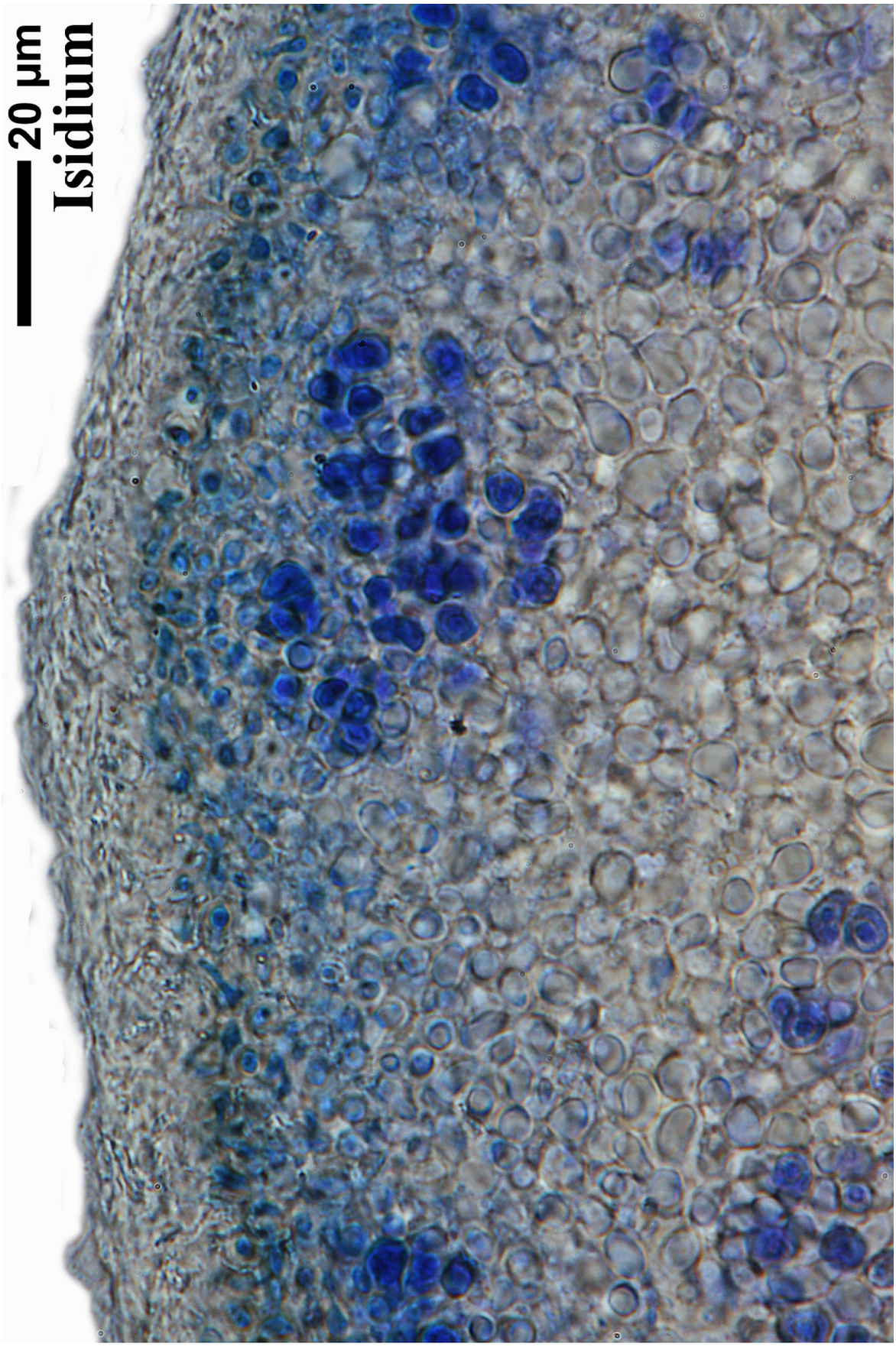
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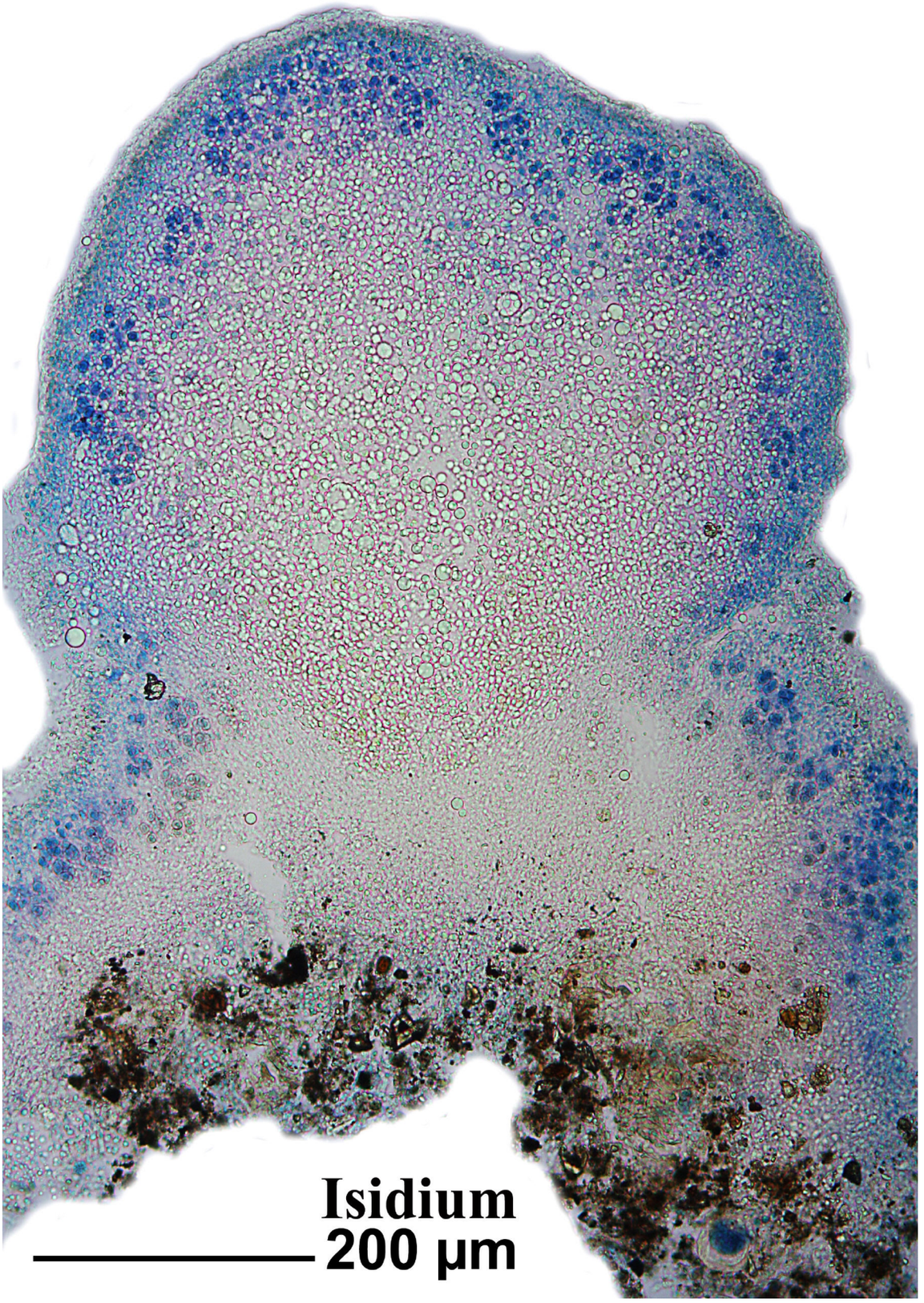
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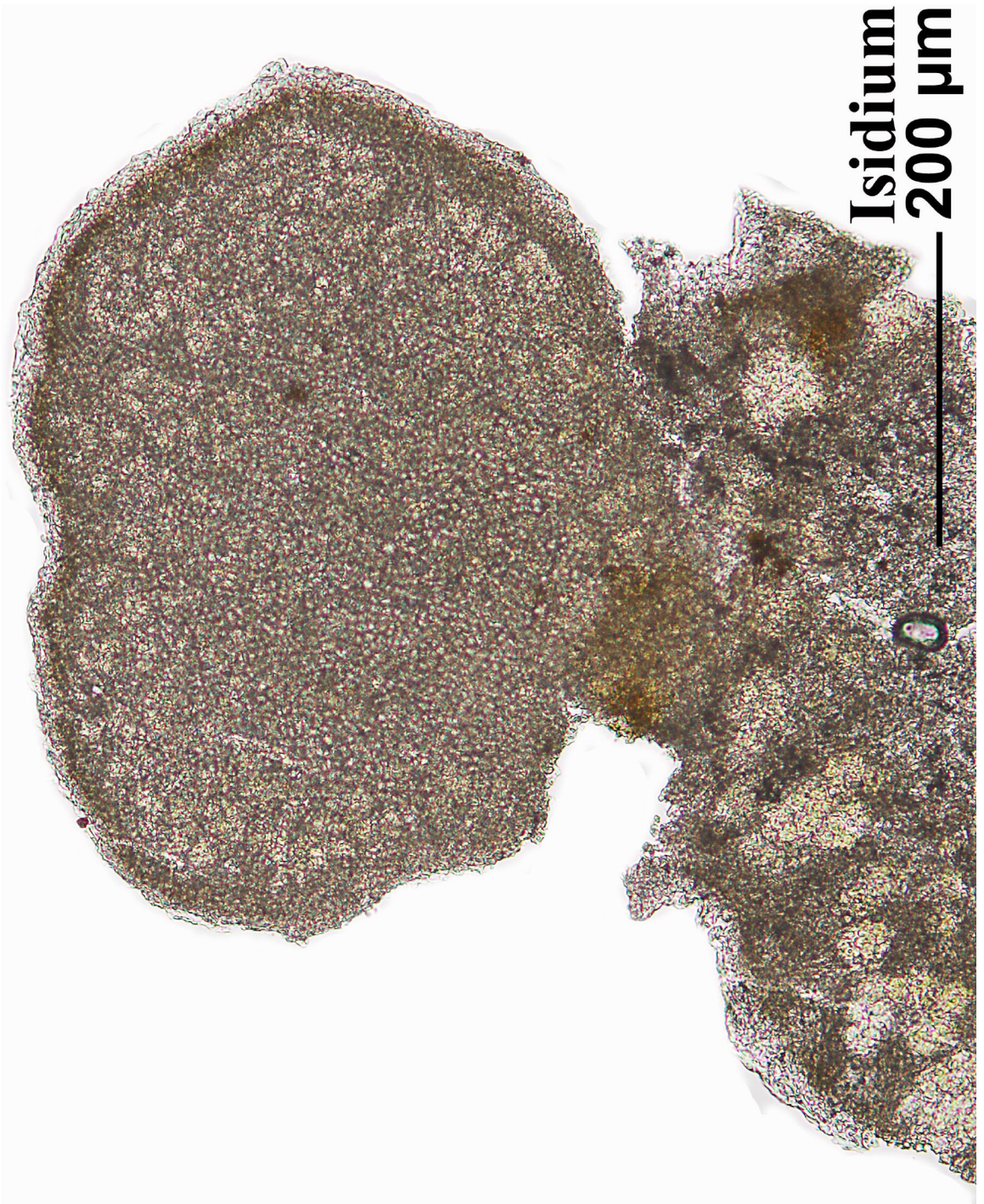
Trapeliopsis wallrothii



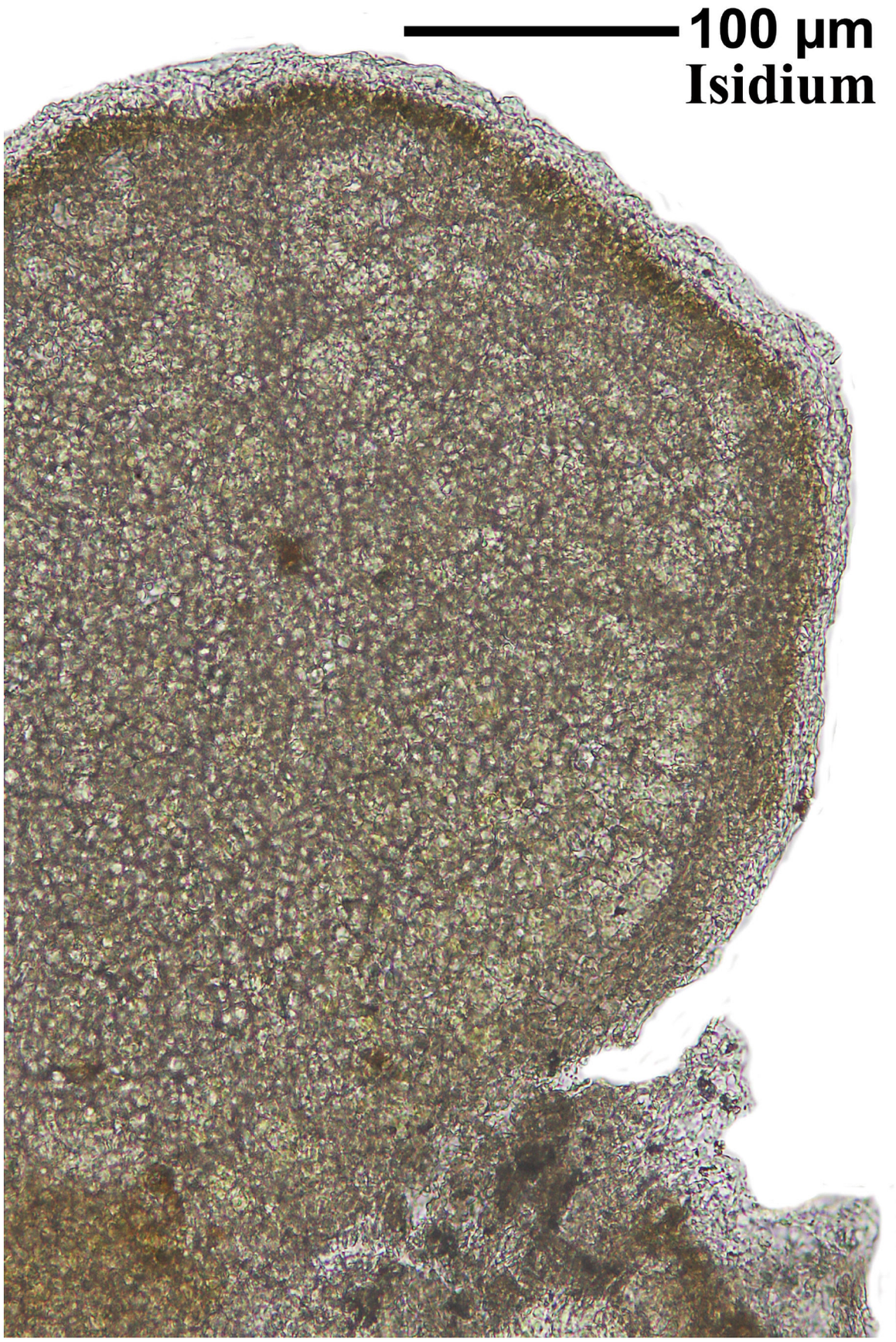
Trapeliopsis wallrothii



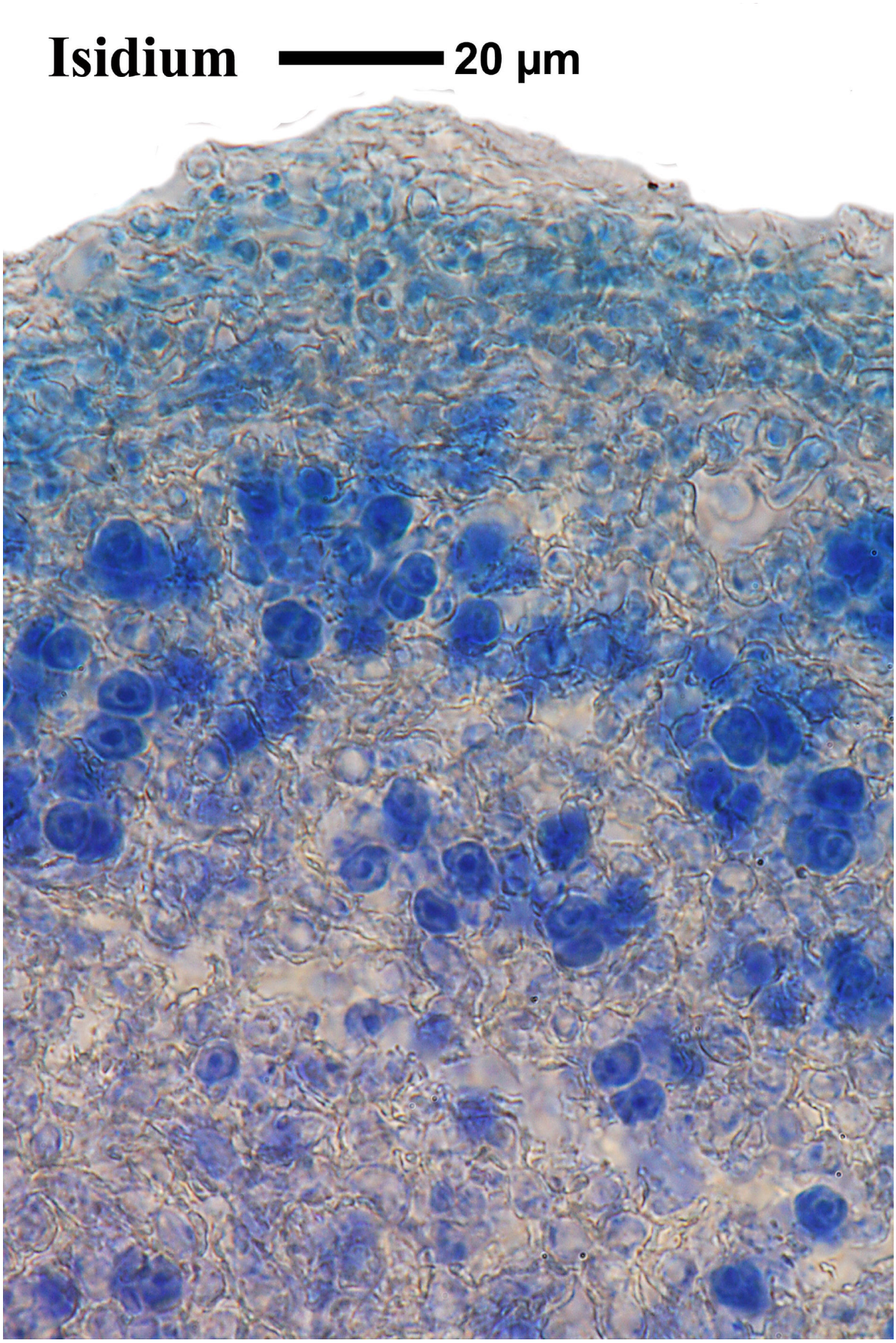
Trapeliopsis wallrothii



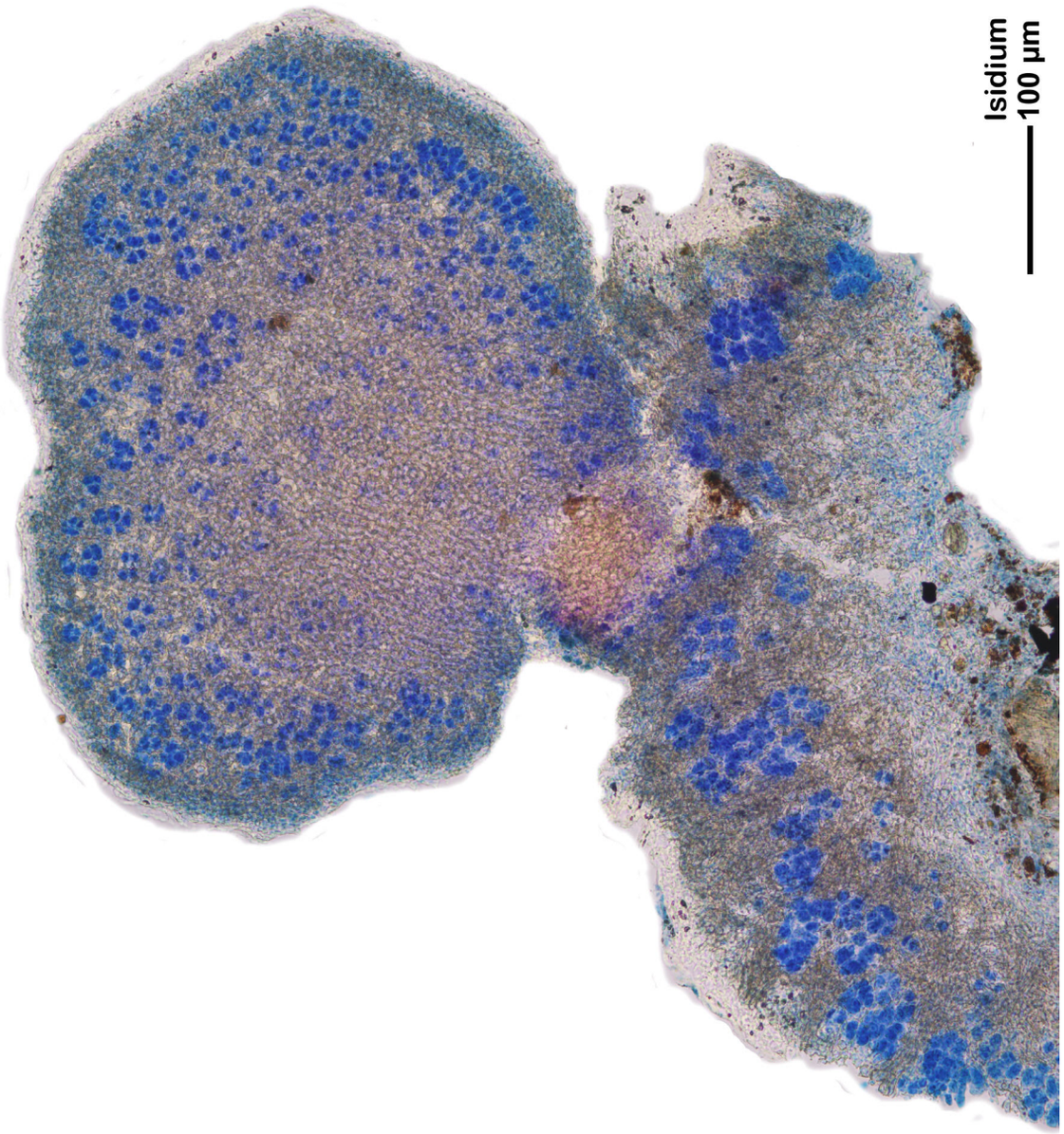
Trapeliopsis wallrothii



Trapeliopsis wallrothii



Trapeliopsis wallrothii



Trapeliopsis wallrothii

Tremolecia atrata (Ach.) Hertel, Ergebn. Forsch. Unternehmens Nepal Himal. 6(3): 351 (1977)
= *Gyalecta atrata* Ach. 1808

[VZ1536], Suecia. Härjedalen: Tännäs Paroecia Guvvålen prope Mittåkläppen, 900 m. Ad rupes prope metalla cupri vetusta. Leg. R. Santesson (no. 7393), 26.6.1877. EX A. VĚZDA LICHENES SELECTI EXSICCATE NR. 1536.

Thallus crustose, episubstratic, continuous or more commonly of contiguous, flat, irregular, 0.1-0.5 mm wide, dark orange-red to rusty red, rarely ochraceous areoles, often delimited by a black prothalline line. Cortex 10-25 µm thick; medulla I-. Apothecia lecideine, round to angular in outline, 0.2-0.7 mm across, partly immersed to sessile, black, with a concave to flat, epruinose, sometimes umbonate disc and a persistent, slightly raised, sometimes wavy proper margin. Proper exciple dark brown to black, 30-80(-90) µm wide laterally, more or less friable, of radially arranged hyphae, K+ purple, extending below the hymenium; epithecium pale grey to dark grey-green, 10-15 µm high; hymenium colourless or greenish, 65-90 µm high, I+ reddish orange; paraphyses coherent, sparingly branched and anastomosing, 1.5-2 µm thick at mid-level, the apical cells not or only slightly swollen, up to 2.5-3 µm wide; subhymenium colourless to pale brown, 10-40 µm high; hypothecium (in continuation with the exciple) dark brown, 60-70 µm high, K+ purple. Asci 8-spored, clavate, with a thin amyloid outer gelatinous coat, the tholus well-developed, K/I+ weakly blue, without ocular chamber and internal beak. Ascospores 1-celled, hyaline, ellipsoid, (9-)10-17 x 6-10 µm. Pycnidia black, immersed. Conidia bacilliform, 3-6 x 1-1.5 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: an unidentified rust-coloured pigment in the cortex. - Note: a species widespread in cool to cold areas of both Hemispheres, found on hard magmatic and metamorphic rocks, often rich in iron, mostly on small boulders in upland areas; widespread and locally common in the Alps.



Tremolecia atrata



Tremolecia atrata

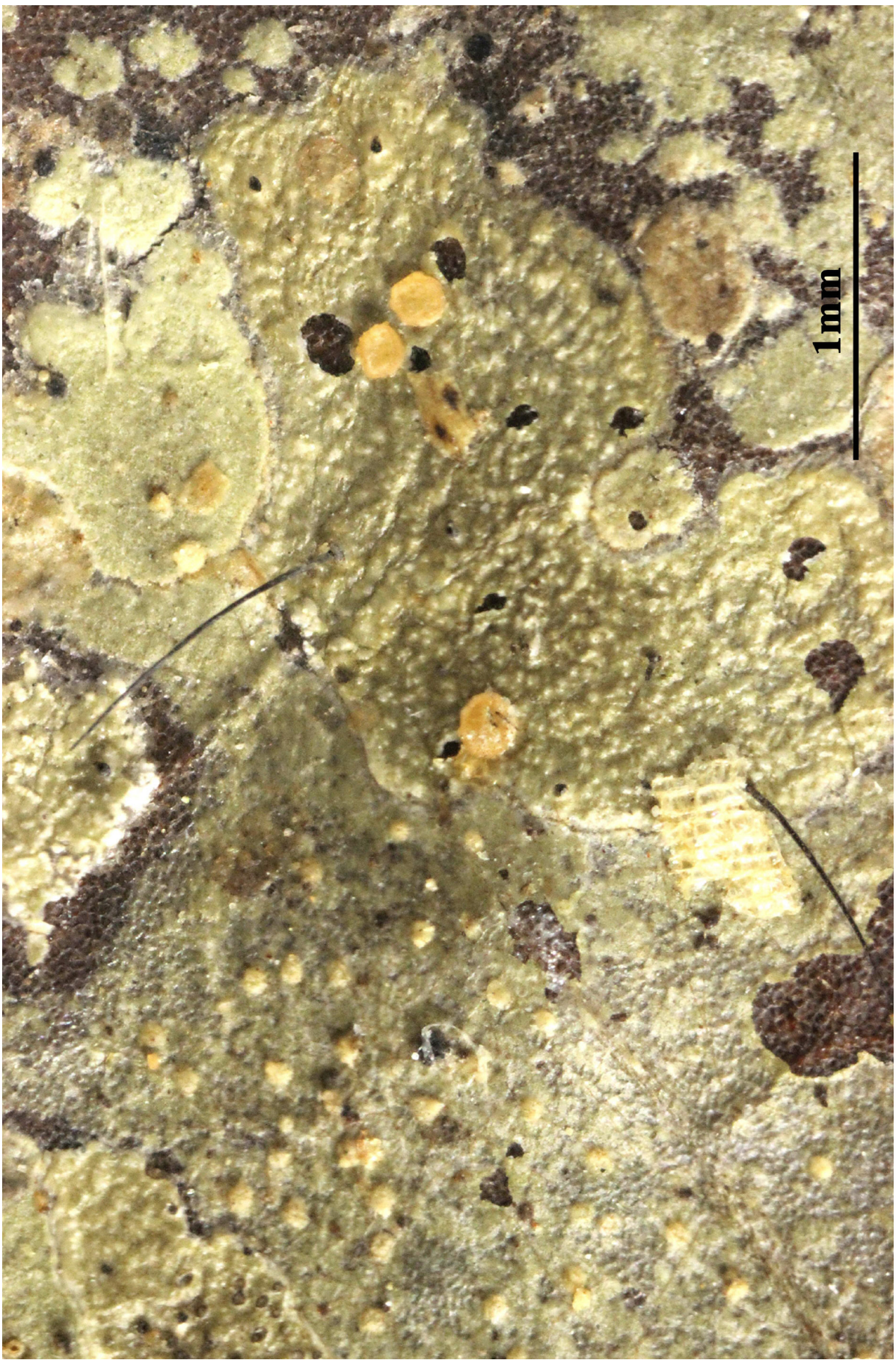
Tricharia carnea (Müll. Arg.) R. Sant., Symb. bot. upsal. 12(no. 1): 385 (1952)
= *Lopadium carneum* Müll. Arg. 1881

[VZ2480], Insulae Antillarum, Guadeloupe. Insula parva St. Louis,in litore in faucibus calcareis, 50 m. Ad folia arborum. Leg. J. Vivant, 8.7.1990. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 2480.

Thallus continuous, 5–15mm across and 15–20 µm thick, with cartilaginous, corticiform layer, finely verrucose due to incrustation with calcium oxalate crystals, with numerous, sterile setae, pale greenish grey; verrucae 0.05–0.1mm diam., white; setae 1–2.5 mm long, black. Apothecia sessile, biatorine, rounded, 0.3–0.6 mm diam. and 200–300 µm high; disc concave, pale flesh-colored to yellowish brown and with white pruina; margin distinct, slightly prominent, smooth, yellowish brown. Excipulum paraplectenchymatous, 30–50 µm broad, colorless to pale yellow. Hypothecium 10–25 µm high, colorless to pale yellow. Epithecium 10–20 µm high, grey to yellow granulose. Hymenium 100–150 µm high, colorless. Asci clavate to ellipsoid, 70–130 x 20–40 µm. Ascospores single, oblongellipsoid, muriform, with slight constrictions at septa, 60–120 x 18–35 µm, 3–3.5 times as long as broad; postmature ascospores sometimes disintegrating into secondary conidia within asci. Hyphophores frequent, setiform with blunt to acute apex, 0.3–0.5mm high, black. Diahyphae inserted apically, branched throughout, filiform, terminal segments slightly fusiform and often septate, 10–16 x 2–3 µm. Chemistry: no substances detected by TLC. Distribution and Ecology. Neotropics and eastern Paleotropics. A relatively common species of the light-gap.



Tricharia carnea

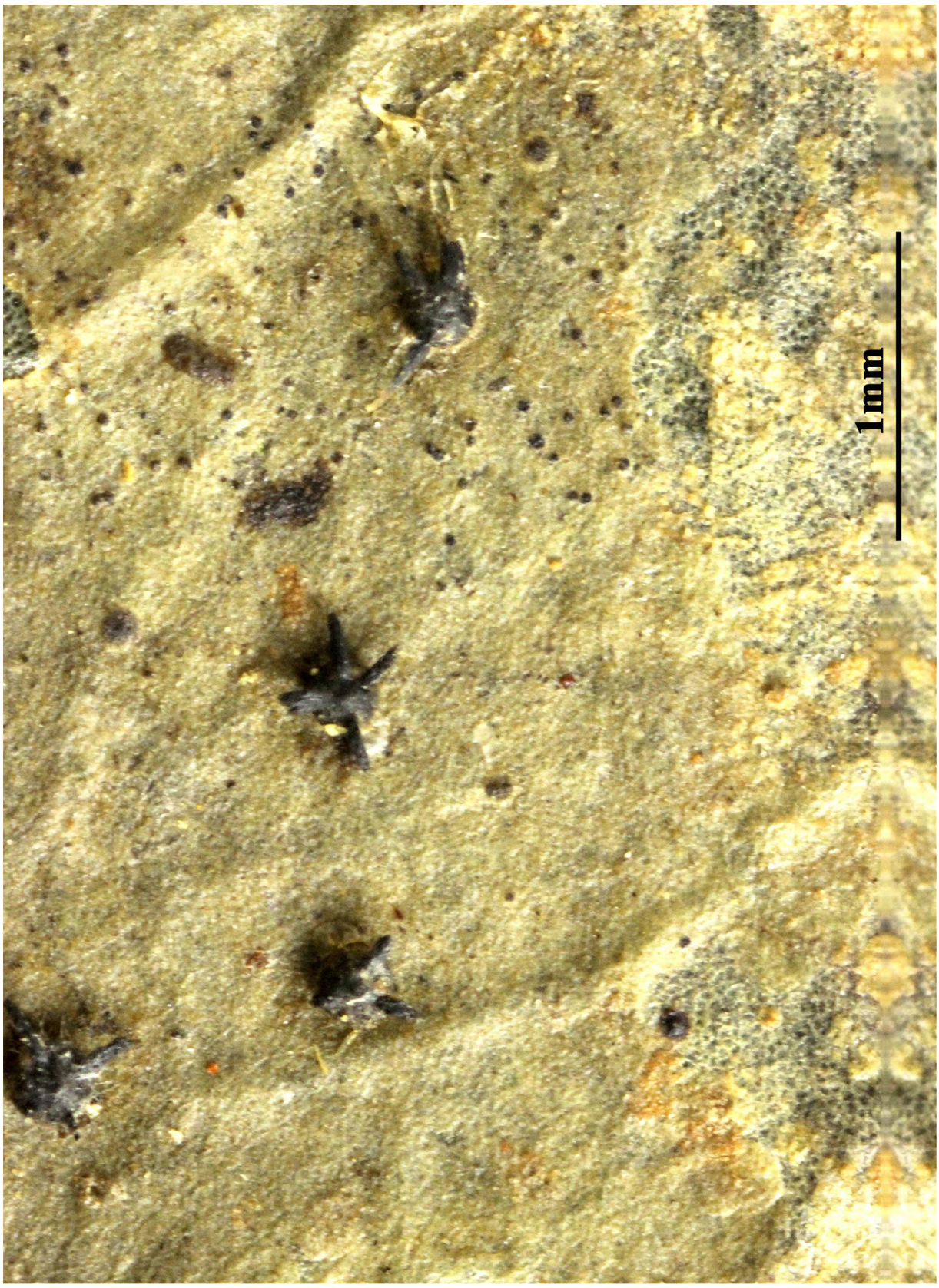


Tricharia carnea

Trichothelium alboatrum* var. *javanicum F. Schill., Hedwigia 67(6): 279 (1927)

[VZ2176], Australia. Queensland. Montes Bunya Mts. dicti, ad septentriones et orientem a J. S. Fisher Lookout, 1050 m. Foliicola in pluviisilva subtropicali. Leg. J. Hafellner et R. Rogers. 3.9.1986, det. A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2176.

Thallus up to c. 12 mm diam., ± dispersed (with round algiferous patches) or in central part continuous, smooth, green, greenish grey to pale grey, matt or slightly nitidous, 10-15 µm thick. No visible hypothallus. Perithecia sessile, 0.1-0.18(-0.2) mm diam., black, usually constricted at the base, the apical setae black with white tips or totally white, rarely totally black, usually not confluent, sometimes distinctly scattered on the globose per., sometimes ± absent, their hyphae c. 2 thick. The outer per. wall uncoloured or dark, 10-115 µm thick, producing the per. hairs, often ± paraplectenchymatous and in its main part containing algal cells; inner wall dark brown or almost black, prosoplectenchymatous, c. 10 thick. Per. chamber c. 100-150 µm diam. Paraphyses simple, c. 1 thick. Asci 75-85 x 8-10 µm. Spores 8, for a long time only 3-septate but later 7-septate, bacillar to fusiform, 20-38 x 2-4.5 µm. Symbiotic alga: a *Phycopeltis* sp., cells rectangular or oblong, 10-14 x 4-6 µm, or anregularly rounded, ¢c. 5-12 µm across, forming ± continuous, radiate plates, or a dense net. According to their diagnoses, var. alboatrum and var. javanicum should have 3-septate spores. As a matter of fact the spores of this species are for a very long time 3-septate, and these spores seem to be ± mature. However, in all specimens, the type specimen included, 7-septate spores were also found, though sometimes only after much search. On most perithecia of the type of *Phylloporina asplenii*, the characteristic setae are found, but they are so few in number that it is not surprising that they were overlooked. On the type of *Tr. bussei* there is only one perithecium! The external appearance of this perithecium, together with the statement about the spores, etc., given by SCHILLING, reveals that the species belongs to Tr. alboatrum. Distribution: A widely distributed species, which has, however, not been found in tropical America.



Trichothelium alboatrum* var. *javanicum



Trichothelium alboatrum* var. *javanicum

Trichothelium alboatrum Vain., Ann. Acad. Sci. Fenn., Ser. A 15(no. 6): 321 (1921)

[VZ1451], Zaire (Africa centralis). Prov. Haut-Zaire, 8.5 km ad septentrionem versus ab urbe Kisangani, prope vicum Mosibasiba, 450 m. Foliicola in silva paludosa. Leg. Lisowski (40581), 26.3.1975, det. A. Vězda. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1451.

Thallus continuous but often with irregular margins, smooth, pale greenish grey, up to 10 mm across. Photobiont cells angular-rounded, irregularly arranged. Perithecia subglobose to globose, 0.1–0.15 mm diam., black; setae 4–8, forming horizontal crown, bristle-shaped, usually rather soft and decurved, 0.2–0.3 mm long and 20–50 µm broad at base, entirely white. Involucrellum brownish black, K–. Excipulum black or laterally pale, K–. Asci obclavate, 75–85 x 8–10 µm. Ascospores oblong to narrowly fusiform, 7-septate, without constrictions at septa, colorless, 25–32 x 3.5–4.5 µm, 7–8 times as long as broad. Pycnidia not observed. Chemistry: not tested; Pseudosagedia violet in perithecial wall.



Trichothelium alboatrum



Trichothelium alboatrum

Umbilicaria caroliniana Tuck., Proc. Amer. Acad. Arts & Sci. 12: 167 (1877)
= *Lasallia caroliniana* (Tuck.) Davydov, Peršoh & Rambold, Mycol. Progr. 9(2): 264 (2010)
= *Gyrophora caroliniana* (Tuck.) Schol., Nytt Mag. Natur. 75: 28 (1936)
= *Gyrophoropsis caroliniana* (Tuck.) Elenkin & Savicz, Trudy Bot. Muz. Imp. Akad. Nauk 8: 34 (1910)

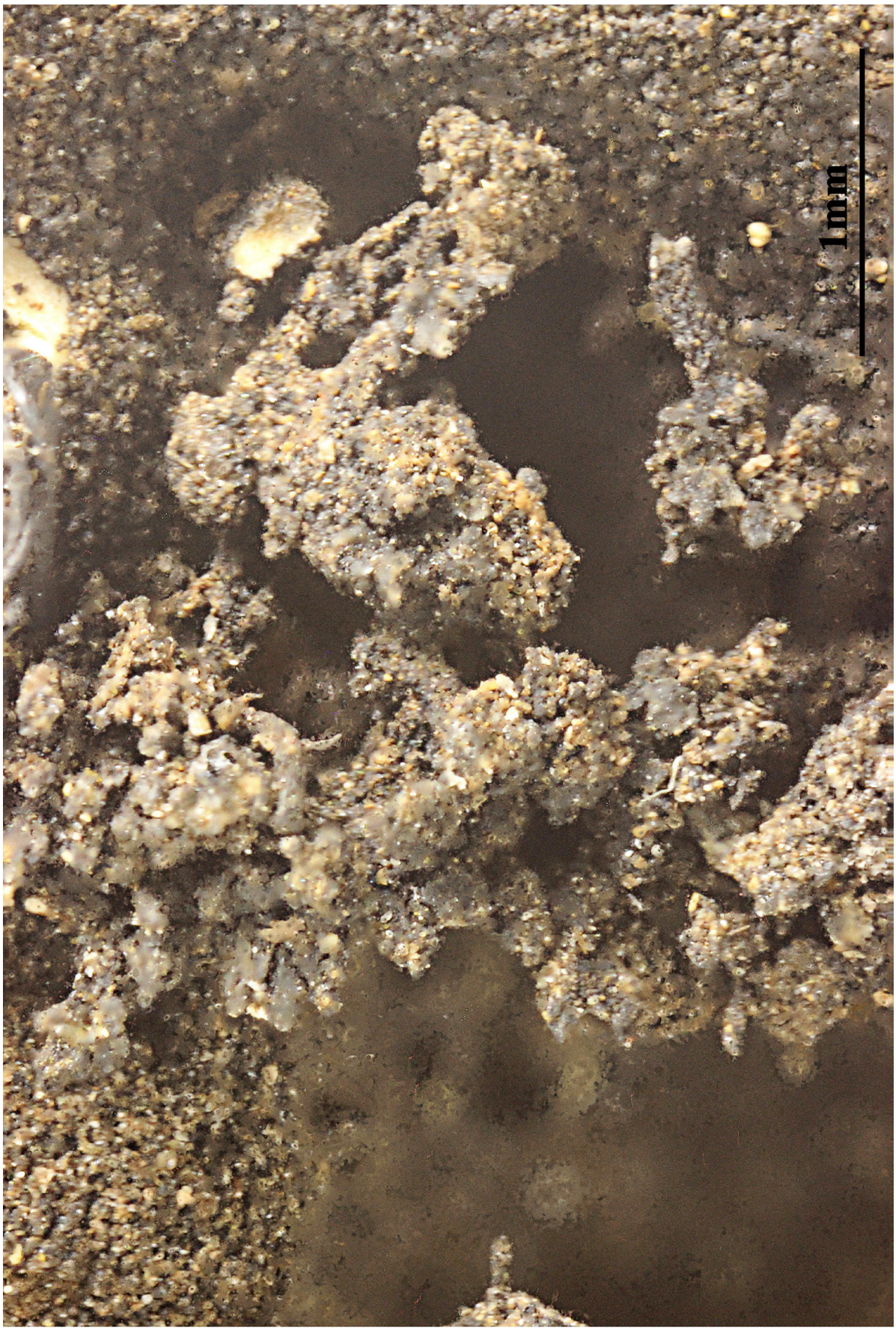
[VZ 1071], U.S.A. Carolina Septentrionalis. Mitchell County, in monte Roan, 2100 m. In silva *Abietis fraseri*, ad saxa. Leg. W. L. Culberson (no. 15651) et Th. L. Esslinger. EX VěZDA: LICHENES SELECTI EXSICCATI NR. 1071.

Thallus 2.5-6 cm. in diam. mono- or polyphyllous, membranous to fragile, thin, with overlapping lobes crowded over umbo about 1 cm. high, outline irregular, surface strongly undulating, margins mostly curled, upper surface with many broad, soft folds becoming crowded over umbo, margins rounded to crenate, frequently cleft, upper cortex smooth, dull to shining, Dresden brown to mummy brown with a strong olive cast, below black to rufous black, under surface irregularly lacunose or dimpled, umbilicus weak, indefinite to diffuse, under cortex uniformly granulose to verrucose, with scattered, sparse, black, shreddy rhizinae. Thallus 250-350 µm thick, upper cortex 16.5-33 µm thick, scleroplechtenchymatous, with an upper brown zone, algal layer continuous but thin, protococcoid, 50-66 µm thick, with a dense granular zone obscuring the algal layer extending up to 150 µm , medulla loose, about 165 µm thick, with cavities about 144-224 µm in diameter, dark lined, lower cortex paraplechtenchymatous with hyphae becoming parallel, with a lower black zone about 33 µm thick, hyphae 3.3-6.6 µm leptodermate. Apothecia up to 5 cm. in diameter, black, infrequent, scattered over thallus, sessile to subpedicellate, depressed, in thallus hollows, immature orbicular, poorly gyrate, with thick exciple, becoming convex, angular to laterally compressed, exciple moderate, gyri few, irregular, parathecium, 98-112 µm thick, dark, hypothecium about 140 µm thick, thecium about 85 µm hick, paraphyses branched, septate, 2.4 µm in diameter, apicis becoming in flated about 4.8 µm, asci with thick hyaline walls, 50-80 x l3.2-16.5 µm ascospores sparse, 30-50 x 19.8-26.4 µm , brown, muriform (finely divided), 6-8 in an ascus. The thallus was described by Tuckerman (1877) as being "papulose" by comparison with *U. pensylvanica* and *U. pustulata* var. *papulosa*. There is some similarity but the pus tules are not always clear in *U. caroliniana*, being irregular and appearing as impressions with no definite

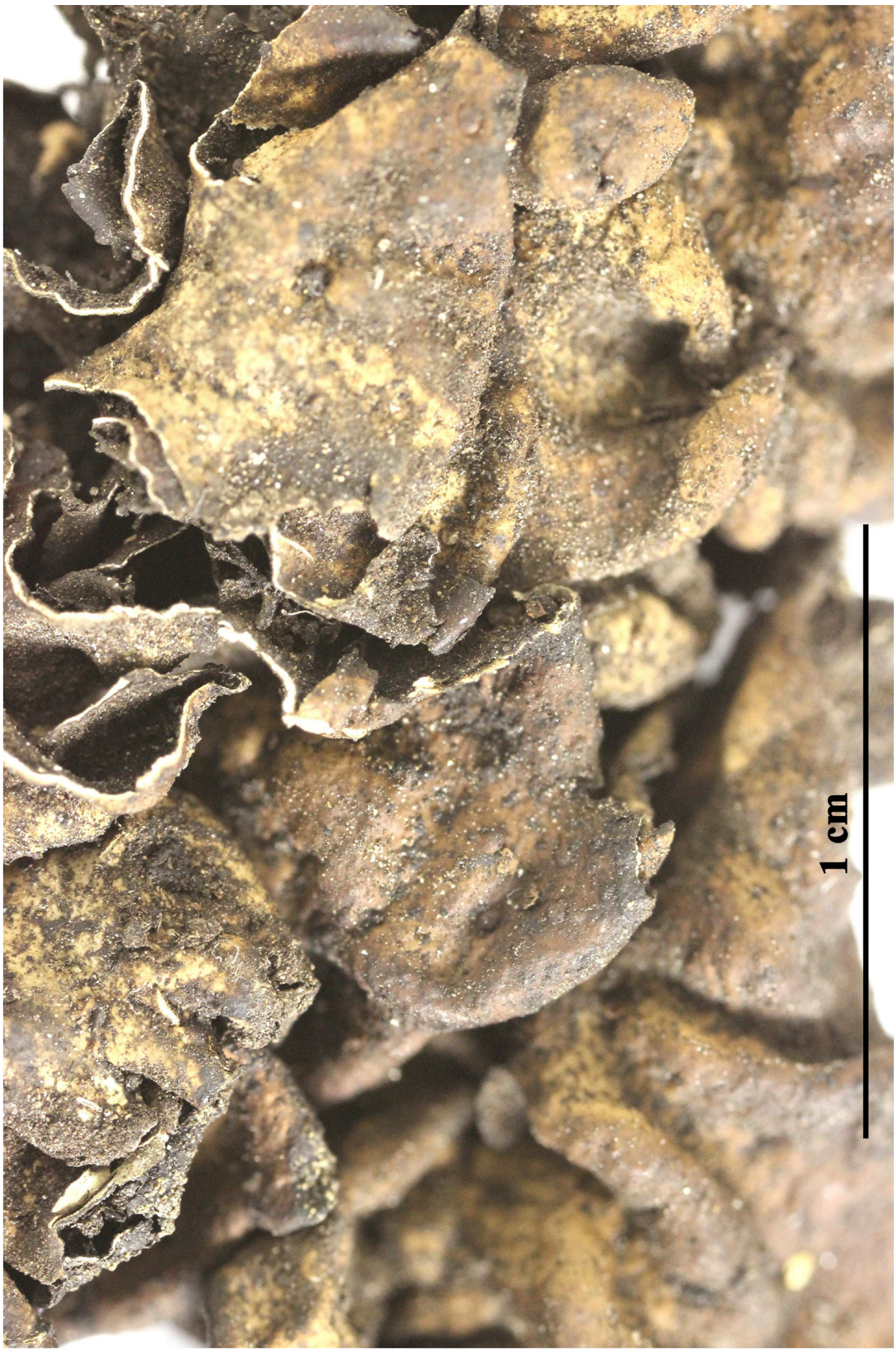
pattern, as in the Lasallia. This was also apparent to Elenkin and Savicz (1911) when proposing *Gyrophoropsis* for which *U. caroIiniana* Tuck. is given as the type of *Gyrophoropsis*.



Umbilicaria caroliniana



Umbilicaria caroliniana



Umbilicaria caroliniana

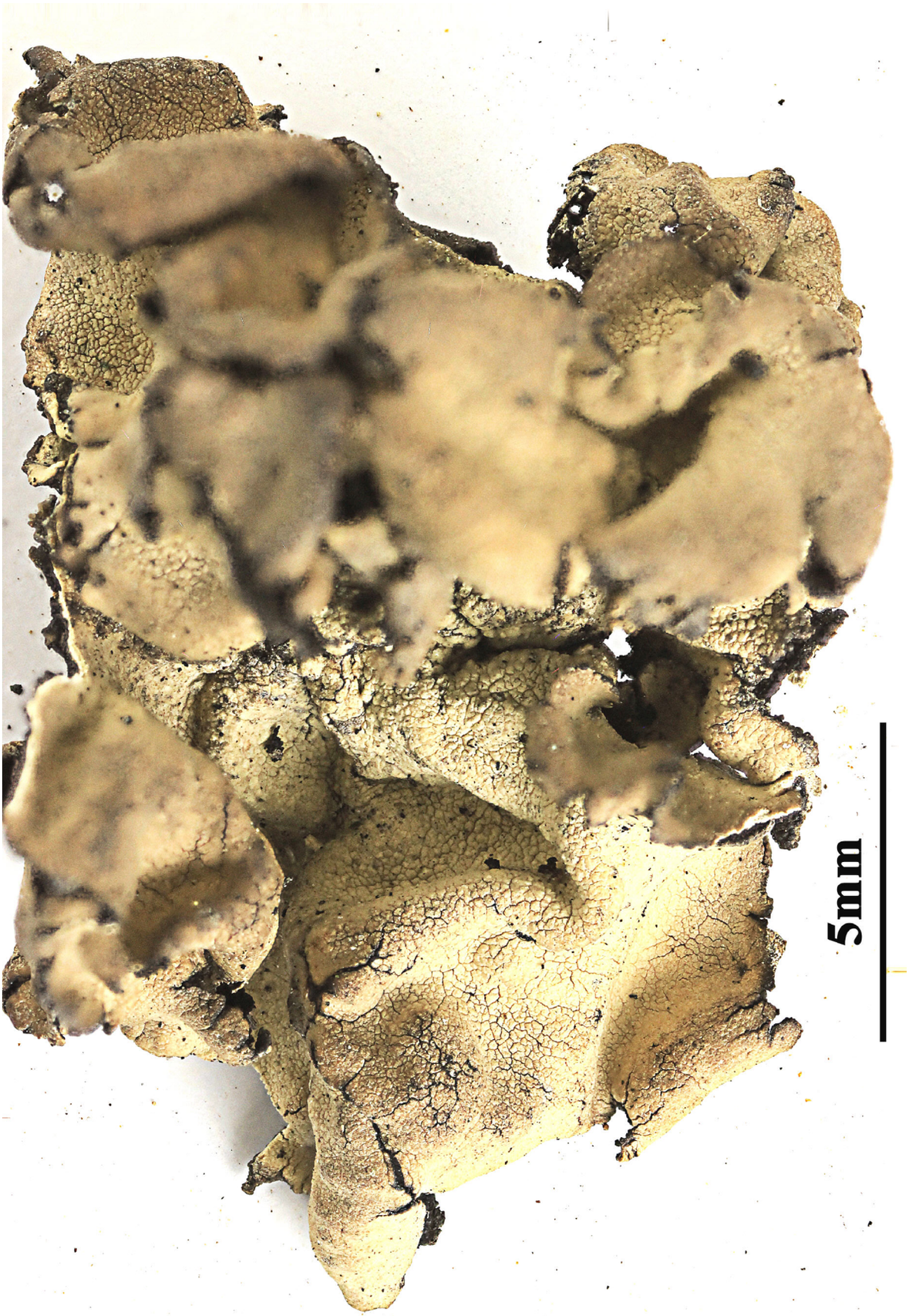


Umbilicaria caroliniana

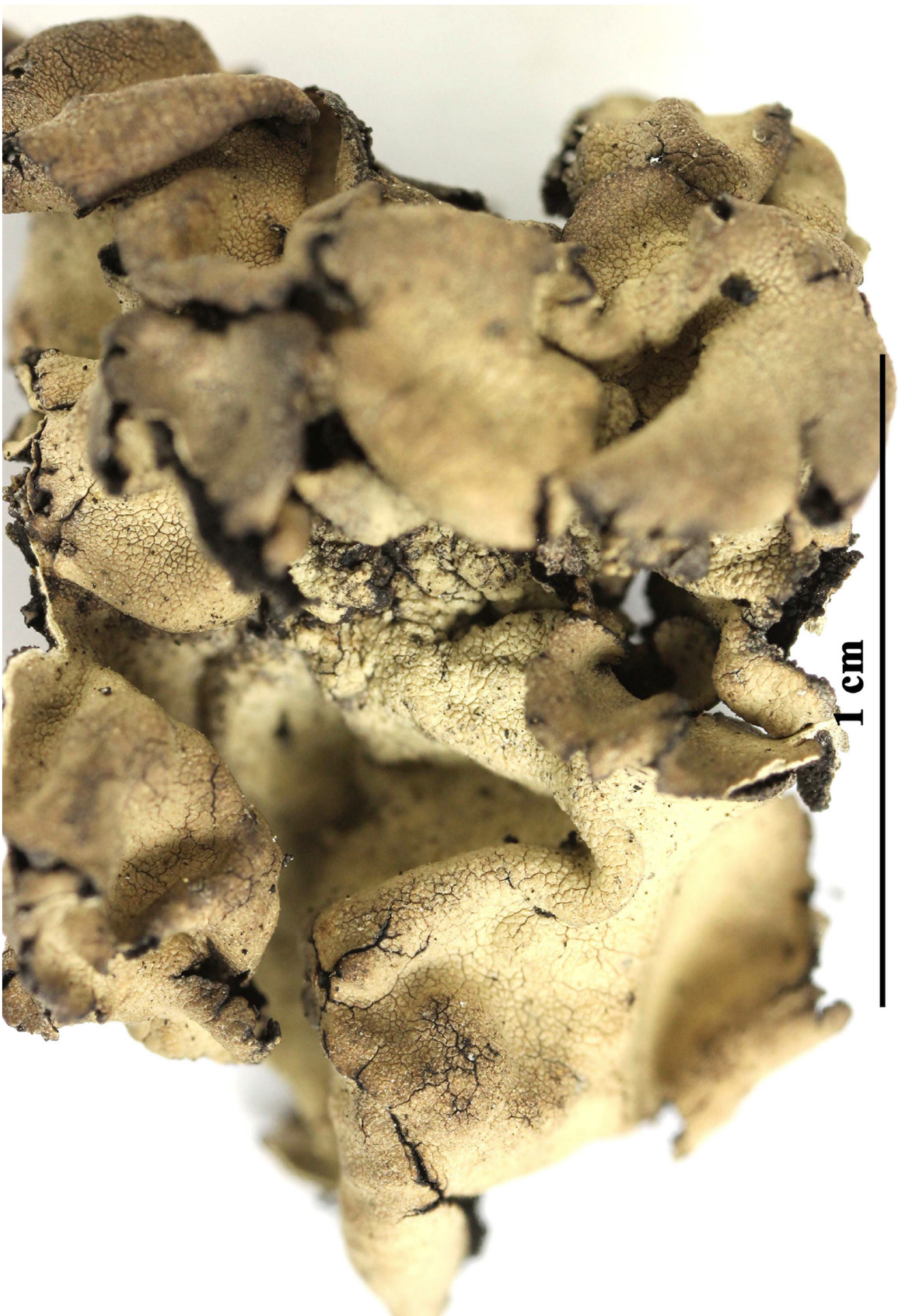
Umbilicaria cinereorufescens (Schaer.) Frey, Hedwigia 71: 109 (1931)
= *Umbilicaria vellea* f. *cinereorufescens* Schaer. 1850

[VZ2438], Austria.Carinthia montes Hohe Tauern: Ankogelgruppe, Mallnitz, in valle Tauerntal, secus viam inter Jamnigalm und Hagener Hütte, 2100-2000 m. Ad saxa schistosa. Leg. R. Türk, J. Hafellner, 28.07.1989, conf. J. Poelt. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR. 2438.

Thallus foliose-umbilicate, heteromerous, dorsiventral, mono-or polyphyllous, 3-4(-7) cm wide, 0.1-0.3 mm thick, coriaceous, rather irregular in shape, attached by a central holdfast. Lobes often deeply incised, the central ones shorter, with wavy, lacerated and perforated, often down-turned margins. Upper surface pale to medium grey/brown, usually thinly pruinose, smooth, sometimes undulating and irregularly cracked around center; lower surface jet black, trabeculate around the umbilicus, covered with numerous papillae and short, peg-like or irregular-coralloid, black rhizinomorphs bearing clusters of thalloconidia. Thalloconidia usually restricted to rhizinomorphs, rarely present on the lower surface, 6-20(-40)-celled, subspherical to elongate, dark brown to black, with a roughened surface, c. 20 x 27 µm. Upper cortex paraplectenchymatous 20-30 µm; medulla white; lower cortex 40-100 µm thick. Apothecia very rare, adnate, black, gyrodisc. Epithecium brown; hymenium colourless; paraphyses simple or sparingly branched, septate, the apical cells more or less swollen; hypothecium thick, dark. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores at first simple and hyaline, then muriform and brown, 8-15 x 4-9 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-. Chemistry: small amounts of gyrophoric, lecanoric and crustinic acids, especially in the medulla. - Note: a holarctic species also known from the mountains of Africa, found on wind-exposed, vertical or slightly rain-sheltered surfaces of hard siliceous rocks in humid upland areas (frequent fog and high rainfall), but in apparently dry situations, reaching the nival belt in the Alps.



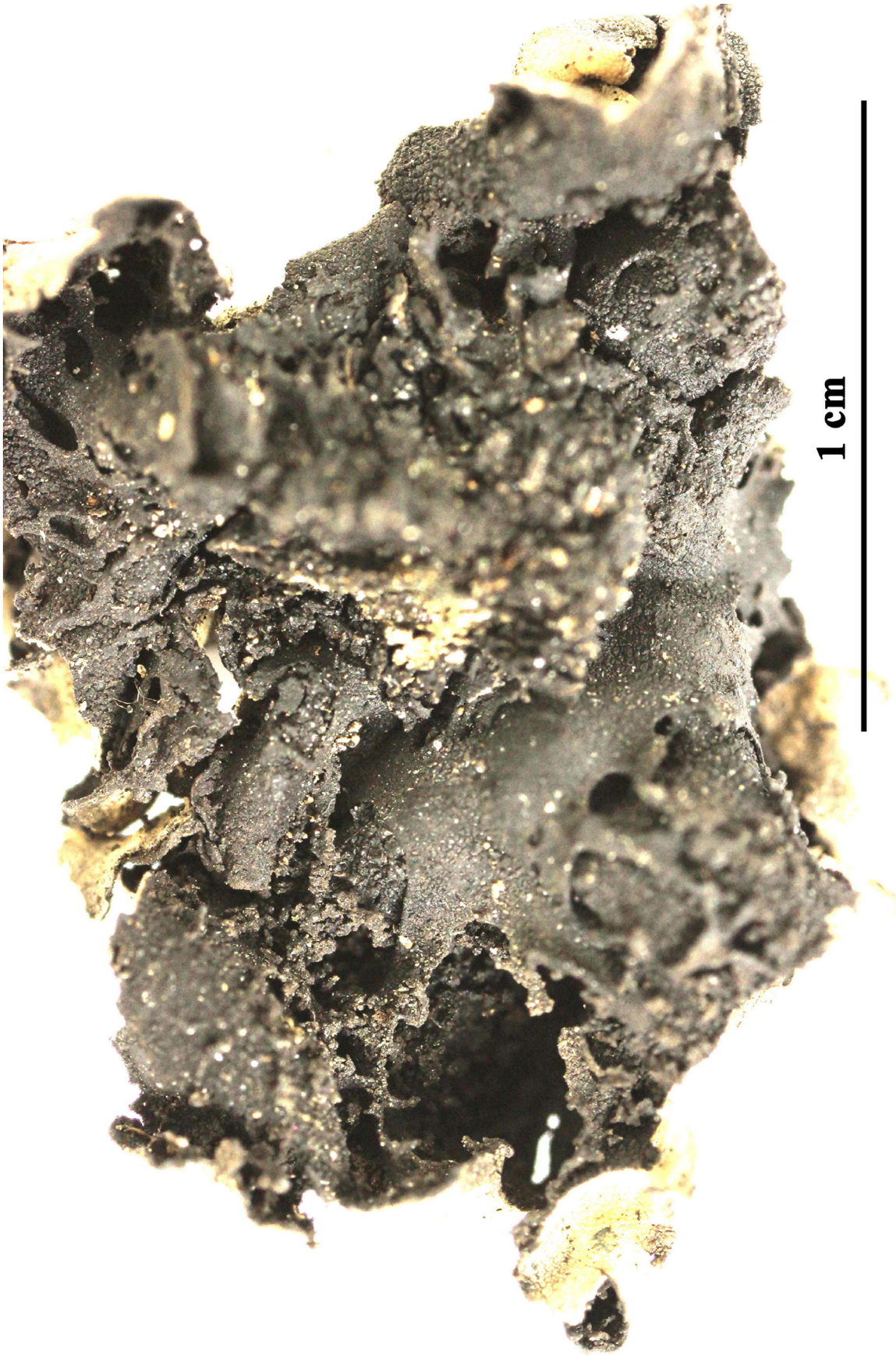
Umbilicaria cinereorufescens



Umbilicaria cinereorufescens



Umbilicaria cinereorufescens



Umbilicaria cinereorufescens

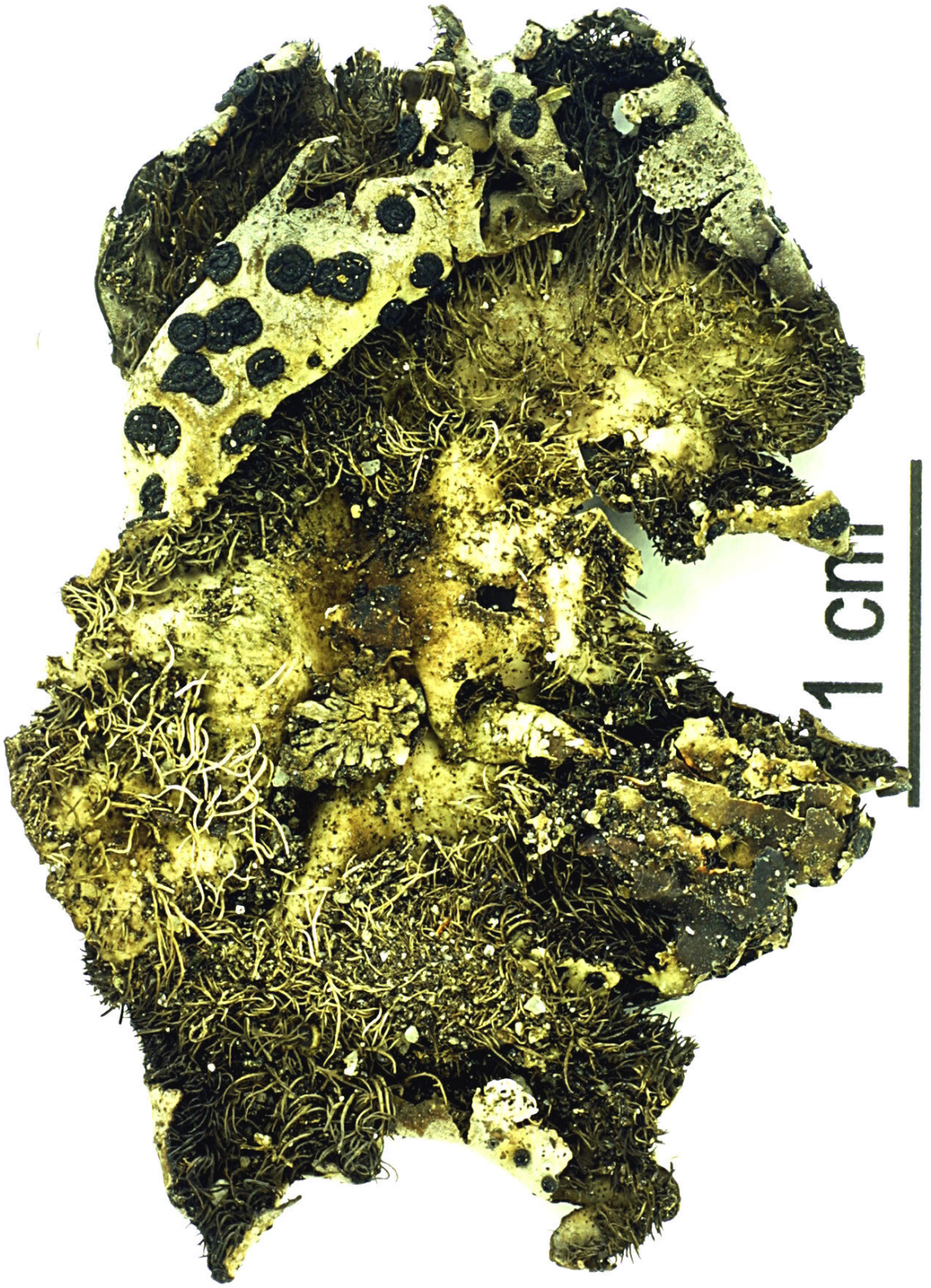
Umbilicaria crustulosa (Ach.) Lamy, Bull. Soc. Bot. France 25(5): 386 (1880) [1878]
= *Gyrophora crustulosa* Ach. 1810

[4262], Schweiz, Flüela Paß südöstlich von Davos, beim O'spiz, auf Granit, ca. 2410 m. Leg. A. Schäfer-Verwimp & F. Schumm, 27.08.1995, det. F. Schumm.

Thallus 2-8 cm, weißlichgrau bis ockerbräunlich, meist ± einblättrig, mit einem Nabel angeheftet; Lappen rundlich, wulstig verbogen; Oberseite glatt, matt, später unregelmäßig rissig areoliert; Unterseite weißlichrosa bis grau, mit gleichfarbigen bis dunkleren Rhizinen; Nabel bei älteren Exemplaren in radiale Balken auslaufend. Unterseite ohne Brutkörper. Apothecien zahlreich, etwas eingesenkt, 1-3 mm breit, jung mit zentralem Nabel, später rissig geteilt, meist ziemlich flach bleibend. Sporen braun, muriform, zu 8 im Ascus, 17-25 x10-18 µm. Isidien fehlen; Sorale fehlen. Chemie: Gyrophorsäure. Mark K-, C+ rot, KC+ rot, P-. Saxicol, Schräg- und Vertikalflächen kalkfreier Silikatgesteine. Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, sometimes deeply dissected and appearing polyphyllous, orbicular in outline, 3-5(-10) cm wide, rarely wider. 0.2-0.3(-0.5) mm thick. Upper surface pale to dark grey, sometimes with a brown tinge, darker towards the margins, dull, even or slightly radially wrinkled and distinctly areolate around the umbilicus, scabrous and rimose at margin, which are often down-turned and sometimes deeply incised. Lower surface pale grey-white tinged pink, smooth to slightly areolate towards the margins, with numerous cylindrical, simple or branched, concolorous to brown-black rhizinomorphs, which usually lack around the umbilicus; thalloconidia absent. Upper cortex c. 30 µm thick; medulla white; lower cortex c. 40 µm thick. Apothecia common, omphalodisc, sessile to depressed, black, to 5 mm across, with a central sterile button, occasionally appearing subgyrose. Epithecium brown; hymenium colurless, interrupted by bundles of dark-pigmented hyphae; ; paraphyses simple or sparingly branched, septate, the apical cells more or less swollen; hypothecium brown. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores at first simple and hyaline, then muriform and brown (12-)18-24 x 11-21 µm. Pycnidia numerous in the marginal zone of upper surface, immersed, bottle-shaped, with a dark brown wall and a black ostiole. Conidia bacilliform, c. 3-4 x 0.8-1 µm. Photobiont chlorococcoid. Spot tests:



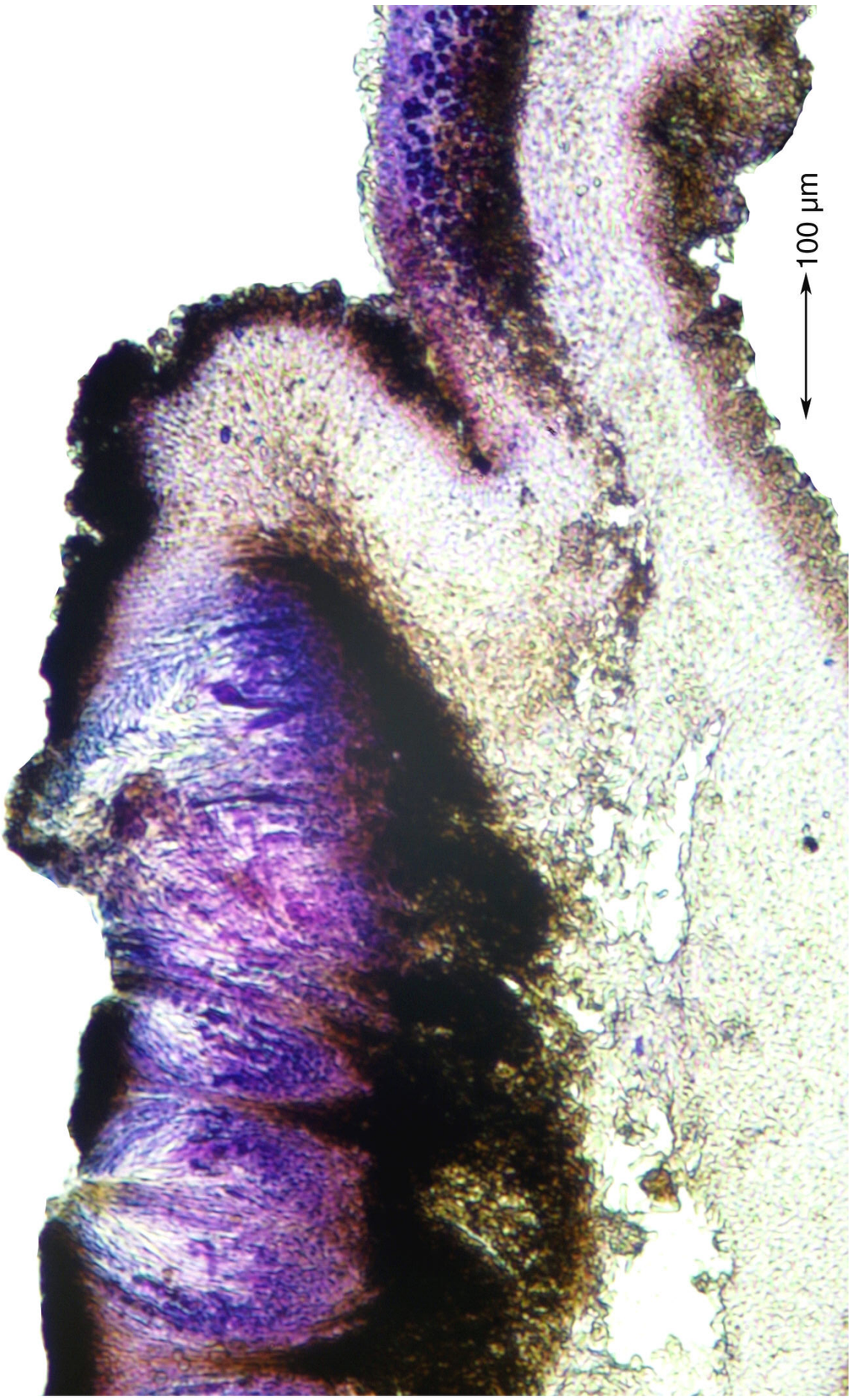
Umbilicaria crustulosa



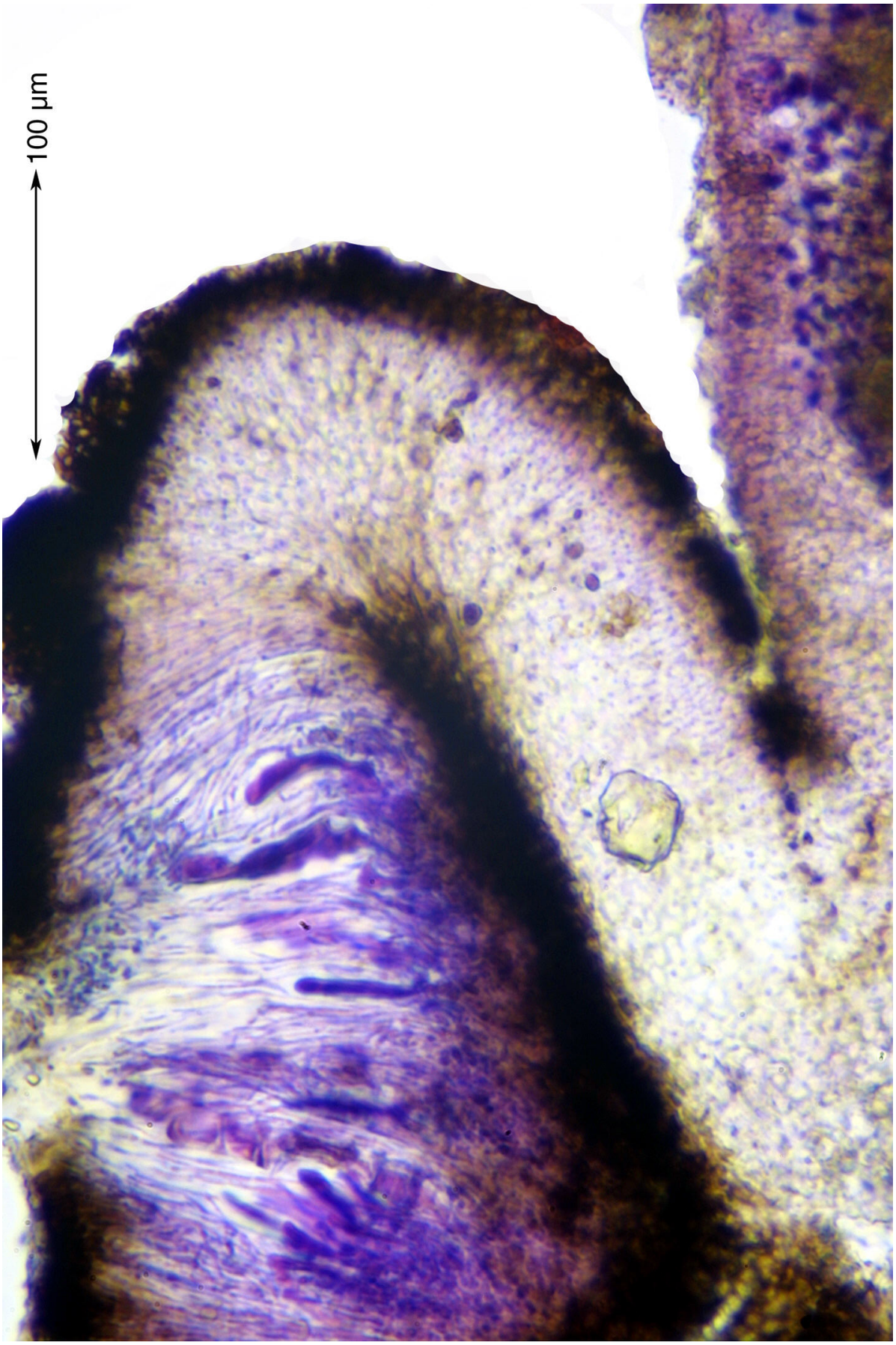
Umbilicaria crustulosa



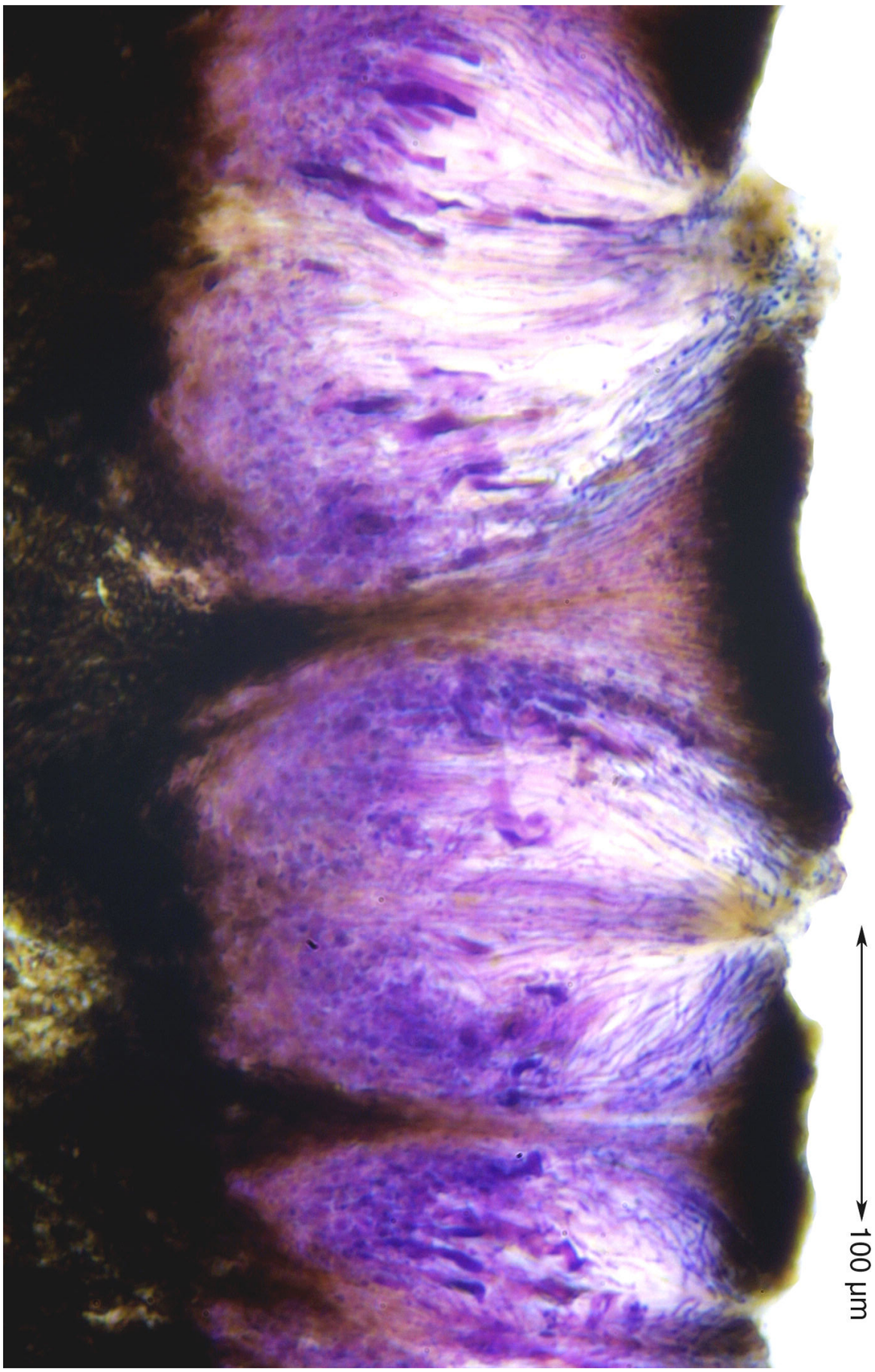
Umbilicaria crustulosa



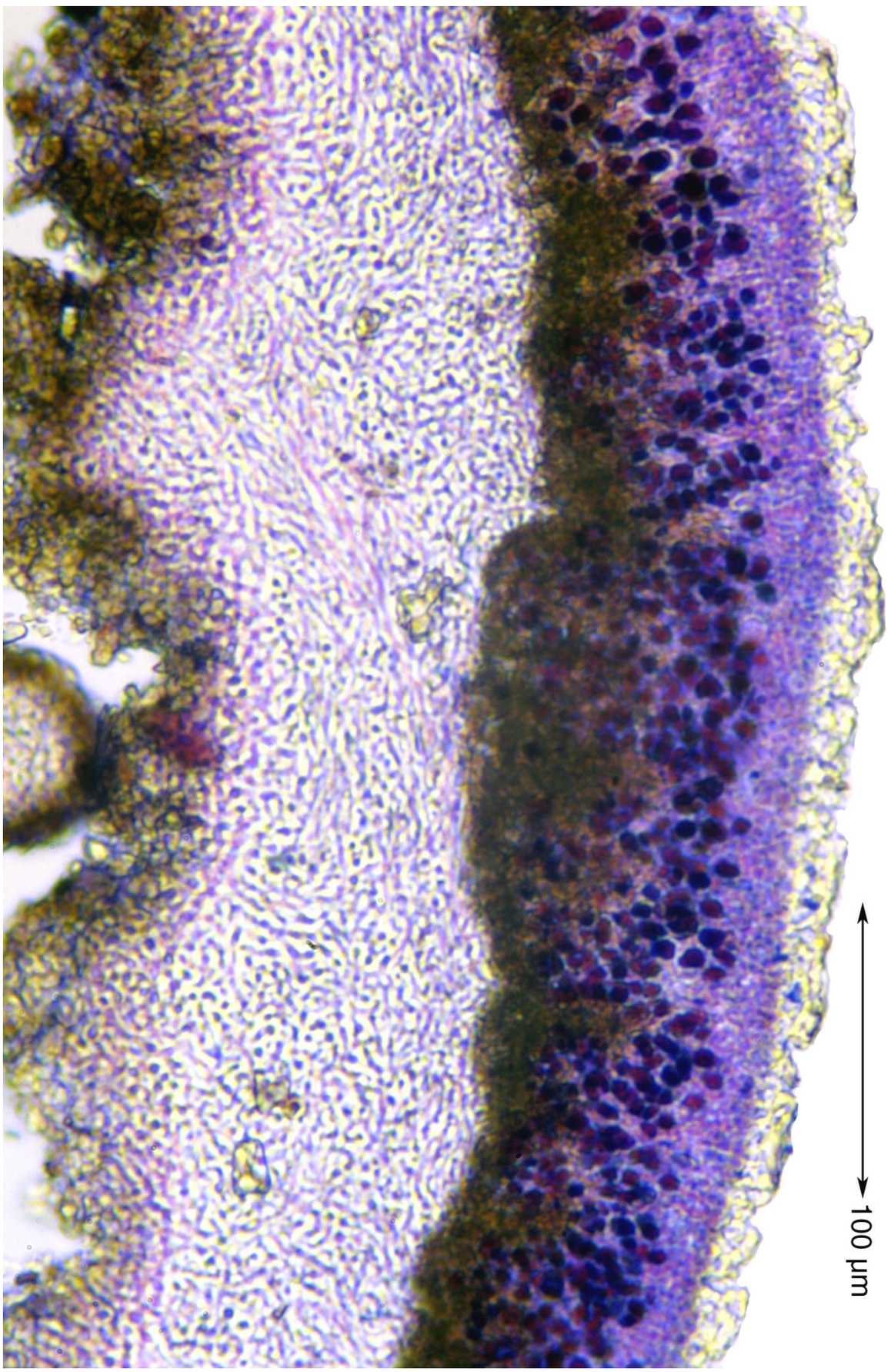
Umbilicaria crustulosa



Umbilicaria crustulosa



Umbilicaria crustulosa



Umbilicaria crustulosa

Umbilicaria crustulosa* var. *cebennensis Frey, Ber. schweiz. bot. Ges. 45: 213, tab. XII, fig. 7 (1936)

[VZ1386], Gallia. Hérault, Rosis, Gorges d'Héric, 500 m. Ad saxa gneissacea in *Querceto ilicis* cum *Erica arborea*. Leg. G. Clauzade et Cl. Roux, 10.10.1975 - Topotypus. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1386.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, sometimes deeply dissected and appearing polyphyllous, orbicular in outline, 3-5(-10) cm wide, rarely wider. 0.2-0.3(-0.5) mm thick. Upper surface pale to dark grey, sometimes with a brown tinge, darker towards the margins, dull, even or slightly radially wrinkled and distinctly areolate around the umbilicus, scabrous and rimose at margin, which are often down-turned and sometimes deeply incised. Lower surface pale grey-white tinged pink, smooth to slightly areolate towards the margins, with numerous cylindrical, simple or branched, concolorous to brown-black rhizinomorphs, which usually lack around the umbilicus; thalloconidia absent. Upper cortex c. 30 µm thick; medulla white; lower cortex c. 40 µm thick. Apothecia common, omphalodisc, sessile to depressed, black, to 5 mm across, with a central sterile button, occasionally appearing subgyrose. Epithecium brown; hymenium colurless, interrupted by bundles of dark-pigmented hyphae; ; paraphyses simple or sparingly branched, septate, the apical cells more or less swollen; hypothecium brown. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores at first simple and hyaline, then muriform and brown (12-)18-24 x 11-21 µm. Pycnidia numerous in the marginal zone of upper surface, immersed, bottle-shaped, with a dark brown wall and a black ostiole. Conidia bacilliform, c. 3-4 x 0.8-1 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric acid, and small amounts of lecanoric and hiascic acids. - Note: a widespread, cool-temperate to arctic-alpine, circumpolar lichen found on exposed, often steeply inclined surfaces of siliceous rocks with some water seepage in upland areas, reaching the nival belt in the Alps.



Umbilicaria crustulosa* var. *cebennensis



Umbilicaria crustulosa* var. *cebennensis



Umbilicaria crustulosa* var. *cebennensis



Umbilicaria crustulosa* var. *cebennensis

Umbilicaria cylindrica (L.) Delise, in Duby, Bot. Gall., Edn 2 (Paris) 2: 595 (1830)
= *Gyromium cylindricum* (L.) Wahlenb., Fl. lapp.: 483 (1812)
= *Gyrophora crinita* (Hoffm.) Chevall., Fl. gén. env. Paris (Paris) 1: 644 (1826)
= *Gyrophora crinita* var. *fimbriata* (Ach.) Chevall., Fl. gén. env. Paris (Paris) 1: 644 (1826)
= *Gyrophora cylindrica* (L.) Ach., Methodus, Sectio prior (Stockholmiæ): 107 (1803)
= *Gyrophora cylindrica* f. *delisei* (Nyl.) Th. Fr., Lich. Scand. (Upsaliae)(1): 157 (1871)
= *Gyrophora cylindrica* f. *denticulata* (Ach.) Mudd, Man. Brit. Lich.: 119 (1861)
= *Gyrophora cylindrica* f. *denudata* (Turner & Borrer) Cromb., Grevillea 15(no. 75): 79 (1887)
= *Gyrophora cylindrica* f. *fimbriata* (Ach.) Cromb., Monogr. Lich. Brit.(1): 328 (1894)
= *Gyrophora cylindrica* f. *tornata* (Ach.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 28: 271 (1878)
= *Gyrophora cylindrica* subsp. *tornata* (Ach.) Lamy, Bull. Soc. bot. Fr. 30(6): 364 (1884) [1883]
= *Gyrophora cylindrica* var. *delisei* (Nyl.) Th. Fr., in Sydow, Flecht. Deutschl.: 64 (1887)
= *Gyrophora cylindrica* var. *denticulata* Ach., Methodus, Sectio prior (Stockholmiæ): 107 (1803)
= *Gyrophora cylindrica* var. *denudata* (Turner & Borrer) Mudd, Man. Brit. Lich.: 119 (1861)
= *Gyrophora cylindrica* var. *exasperata* Mudd, Man. Brit. Lich.: 119 (1861)
= *Gyrophora cylindrica* var. *fimbriata* Ach., Methodus, Sectio prior (Stockholmiæ): 104 (1803)
= *Gyrophora cylindrica* var. *laciniata* (Retz. ex Vain.) Zahlbr., Cat. Lich. Univers. 4: 699 (1927)
= *Gyrophora cylindrica* var. *tornata* (Ach.) Th. Fr., Lich. Scand. (Upsaliae)(1): 157 (1871)
= *Gyrophora delisei* (Nyl.) Kremp., Flora, Regensburg 61: 492 (1878)
= *Gyrophora denticulata* (Ach.) Flörke, in Schrader, Mag. Gesell. naturf. Freunde, Berlin 4: 65 (1810)
= *Gyrophora polymorpha* a *cylindrica* (L.) Rabenh., Deutschl. Krypt.-Fl. (Leipzig) 2(1): 46 (1845)
= *Gyrophora polymorpha* f. *crinita* (Hoffm.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 7 (1817)
= *Gyrophora polymorpha* f. *denticulata* (Ach.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 7 (1818)

= *Gyrophora proboscidea* var. *cylindrica* (L.) W. Mann, Lich. Bohem. Observ. Dispos.: 67 (1825)
= *Gyrophora proboscidea* var. *denticulata* (Ach.) Turner & Borrer, Spec. lichonogr. brit. (Yarmouth): 219 (1839)
= *Gyrophora proboscidea* var. *denudata* Turner & Borrer, Spec. lichonogr. brit. (Yarmouth): 219 (1839)
= *Gyrophora proboscidea* var. *exasperata* Turner & Borrer, Spec. lichonogr. brit. (Yarmouth): 219 (1839)
= *Gyrophora proboscidea* var. *tornata* (Ach.) Ach., Syn. meth. lich. (Lund): 65 (1814)
= *Gyrophora tornata* Ach., K. Vetensk-Acad. Nya Handl. 29: 274 (1808)
= *Lecidea cylindrica* (L.) L. Colla, Mém. R. Accad. Sci. Torino, Ser. 2 12: 17 (1852)
= *Lecidea polymorpha var. cylindrica* (L.) Spreng., Syst. veg., Edn 16 4(1): 263 (1827)
= *Lichen corneus* var. *laciniatus* Retz., Fl. scand. prodr.: 230 (1779)
= *Lichen crinitus* Lightf., Flora Scotica (London) 2: 860 (1777)
= *Lichen cylindricus* L., Sp. pl. 2: 1144 (1753)
= *Lichen leiocarpus* * *fimbriata* (Ach.) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 424 (1813)
= *Lichen leiocarpus* * *tornata* (Ach.) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 424 (1813)
= *Lichen proboscideus* Huds., Fl. Angl., Edn 2: 551 (1778)
= *Umbilicaria crinita* Hoffm., Descr. Adumb. Plant. Lich. 2(4): 67 (1794)
= *Umbilicaria cylindrica* f. *denticulata* (Ach.) Leight., Lich.-Fl. Great Brit.: 162 (1871)
= *Umbilicaria cylindrica* f. *denudata* (Turner & Borrer) Leight., Lich.-Fl. Great Brit.: 162 (1871)
= *Umbilicaria cylindrica* f. *fimbriata* (Ach.) Zahlbr., Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 104: 328 (1941)
= *Umbilicaria cylindrica* f. *laciniata* (Retz. ex Vain.) Frey, Rabenh. Krypt.-Fl., Edn 2 (Leipzig) 9(4.1): 330 (1933)
= *Umbilicaria cylindrica* subsp. *tornata* (Ach.) Nyl., Flora, Regensburg 55(35): 549 (1872)
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= *Umbilicaria cylindrica* var. *fimbriata* (Ach.) Nyl., Lich. Scand. (Helsinki): 117 (1861)

= *Umbilicaria cylindrica* var. *laciniata* Retz. ex Vain., Hedwigia 37(Beibl.): (85) (1898)
= *Umbilicaria cylindrica* *var. tornata* (Ach.) Nyl., Lich. Scand. (Helsinki): 117 (1861)
= *Umbilicaria delisei* (Nyl.) Dèspr., in Nylander, Lich. Scand. (Helsinki): 117 (1861)
= *Umbilicaria polymorpha* f. *denticulata* (Ach.) Schaer., Enum. critic. lich. europ. (Bern): 26 (1850)
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= *Umbilicaria varia* f. *denudata* (Turner & Borrer) Leight., Ann. Mag. nat. Hist., Ser. 2 18: 293 (1856)

[VZ1458], Tanzania (Africa orientalis). Kilimanjaro, prope casam alpinam Barranco dictam, 3900 m. Ad parietes rupium. Leg. T. Pócs (6934), 03.07.1976, det A. Vězda. EX A. VĚZDA: LICHENES SELECTI EXSICCATI N. 1458.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, 3-5(-7) cm wide, 0.2-0.4 mm thick, the lobe margins with conspicuous but rather sparse, flat, branched, up to 2 mm long black cilia. Upper surface pale to dark grey, sometimes tinged brown, dull, slightly wrinkled or almost even, sometimes with a few folds and ridges around the umbilicus, giving way to a reticulate pattern. Lower surface grey-white, tan or pink, sometimes pink-brown towards the umbilicus and grey-pruinose in the marginal zone, even, smooth, the area around the umbilicus naked, the rest with numerous thin, long, cylindrical, pale, simple rhizinomorphs; thalloconidia absent. Upper cortex 10-20 µm

Umbilicaria cylindrica

thick; medulla white, 3-layered, the upper and lower layers loose, with an arachnoid plectenchyma, the layer inbetween with a compact plectenchyma; lower cortex 10-20 µm thick, scleroplectenchymatous. Apothecia numerous, black, gyrodisc, markedly stipitate, to 2-5 mm across, convex with few deep gyri. Epithecium dark brown, up to 20 µm high; hymenium colourless, c. 70 µm high; paraphyses usually simple, up to 2.5 µm thick, the apical cells hardly swollen; hypothecium dark. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled, hyaline, ellipsoid, 7-15 x 3-9 µm. Pycnidia numerous, immersed, bottle-shaped, with a brown wall, and a dark brown ostiole. Conidia c. 3-4 x 0.8 µm. Photobiont chlorococcoid. Spot tests: medulla K- or K+ yellow turning red, C-, KC- or KC+ faintly red, P- or P+ orange. Chemistry: medulla with variable amounts of norstictic acid and sometimes with very low amounts of gyrophoric and lecanoric acids. - Note: an ecologically wide-ranging, cool-temperate to arctic-alpine, circumpolar lichen found on wind-exposed boulders with a short snow-covering period, often on or near the top, with

Umbilicaria cylindrica



Umbilicaria cylindrica



Umbilicaria cylindrica

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= *Gyrophora crinita* var. *fimbriata* (Ach.) Chevall., Fl. gén. env. Paris (Paris) 1: 644 (1826)
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= *Gyrophora cylindrica* subsp. *tornata* (Ach.) Lamy, Bull. Soc. bot. Fr. 30(6): 364 (1884) [1883]
= *Gyrophora cylindrica* var. *delisei* (Nyl.) Th. Fr., in Sydow, Flecht. Deutschl.: 64 (1887)
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= *Gyrophora cylindrica* var. *fimbriata* Ach., Methodus, Sectio prior (Stockholmiæ): 104 (1803)
= *Gyrophora cylindrica* var. *laciniata* (Retz. ex Vain.) Zahlbr., Cat. Lich. Univers. 4: 699 (1927)
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= *Gyrophora polymorpha* f. *crinita* (Hoffm.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 7 (1817)
= *Gyrophora polymorpha* f. *denticulata* (Ach.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 7 (1818)

= *Gyrophora proboscidea* var. *cylindrica* (L.) W. Mann, Lich. Bohem. Observ. Dispos.: 67 (1825)
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= *Gyrophora proboscidea* var. *tornata* (Ach.) Ach., Syn. meth. lich. (Lund): 65 (1814)
= *Gyrophora tornata* Ach., K. Vetensk-Acad. Nya Handl. 29: 274 (1808)
= *Lecidea cylindrica* (L.) L. Colla, Mém. R. Accad. Sci. Torino, Ser. 2 12: 17 (1852)
= *Lecidea polymorpha var. cylindrica* (L.) Spreng., Syst. veg., Edn 16 4(1): 263 (1827)
= *Lichen corneus* var. *laciniatus* Retz., Fl. scand. prodr.: 230 (1779)
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= *Umbilicaria crinita* Hoffm., Descr. Adumb. Plant. Lich. 2(4): 67 (1794)
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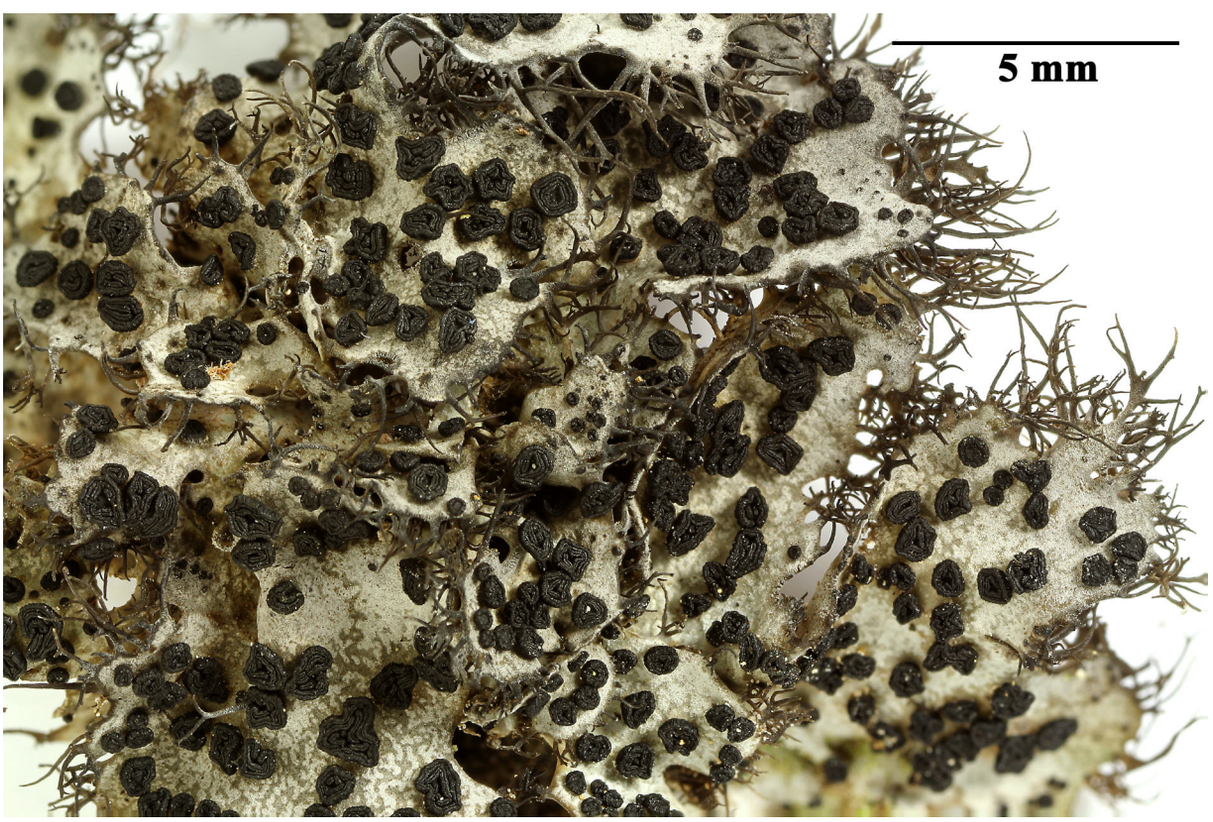
Umbilicaria cylindrica

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[20640], Österreich, Lungau, Karneralm, 47°29’89” N, 13°47’22.02” E, 1900 m, auf Silikatblock. Leg. F. Schumm & U. Schwarz, 2.9.2019. - Thallus am Rand mit Cilien (gelegentlich auch fast fehlend), ohne Soredien; Unterseite rhizinenarm, oft etwas rosa getönt, glatt. Apothecien stark gerillt.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, 3-5(-7) cm wide, 0.2-0.4 mm thick, the lobe margins with conspicuous but rather sparse, flat, branched, up to 2 mm long black cilia. Upper surface pale to dark grey, sometimes tinged brown, dull, slightly wrinkled or almost even, sometimes with a few folds and ridges around the umbilicus, giving way to a reticulate pattern. Lower surface grey-white, tan or pink, sometimes pink-brown towards the umbilicus and grey-pruinose in the marginal zone, even, smooth, the area around the umbilicus naked, the rest with numerous thin, long, cylindrical, pale, simple rhizinomorphs; thalloconidia absent. Upper cortex 10-20 µm thick; medulla white, 3-layered, the upper and lower layers loose, with an arachnoid plectenchyma, the layer inbetween with a compact plect-

enchyma; lower cortex 10-20 µm thick, scleroplectenchymatous. Apothecia numerous, black, gyrodisc, markedly stipitate, to 2-5 mm across, convex with few deep gyri. Epithecium dark brown, up to 20 µm high; hymenium colourless, c. 70 µm high; paraphyses usually simple, up to 2.5 µm thick, the apical cells hardly swollen; hypothecium dark. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled, hyaline, ellipsoid, 7-15 x 3-9 µm. Pycnidia numerous, immersed, bottle-shaped, with a brown wall, and a dark brown ostiole. Conidia c. 3-4 x 0.8 µm. Photobiont chlorococcoid. Spot tests: medulla K- or K+ yellow turning red, C-, KC- or KC+ faintly red, P- or P+ orange. Chemistry: medulla with variable amounts of norstictic acid and sometimes with very low amounts of gyrophoric and lecanoric acids. - Note: an ecologically wide-ranging, cool-temperate to arctic-alpine, circumpolar lichen found on wind-exposed boulders with a short snow-covering period, often on or near the top, with optimum above treeline, reaching the nival belt in the Alps; common only in the Alps.



Umbilicaria cylindrica



Umbilicaria cylindrica



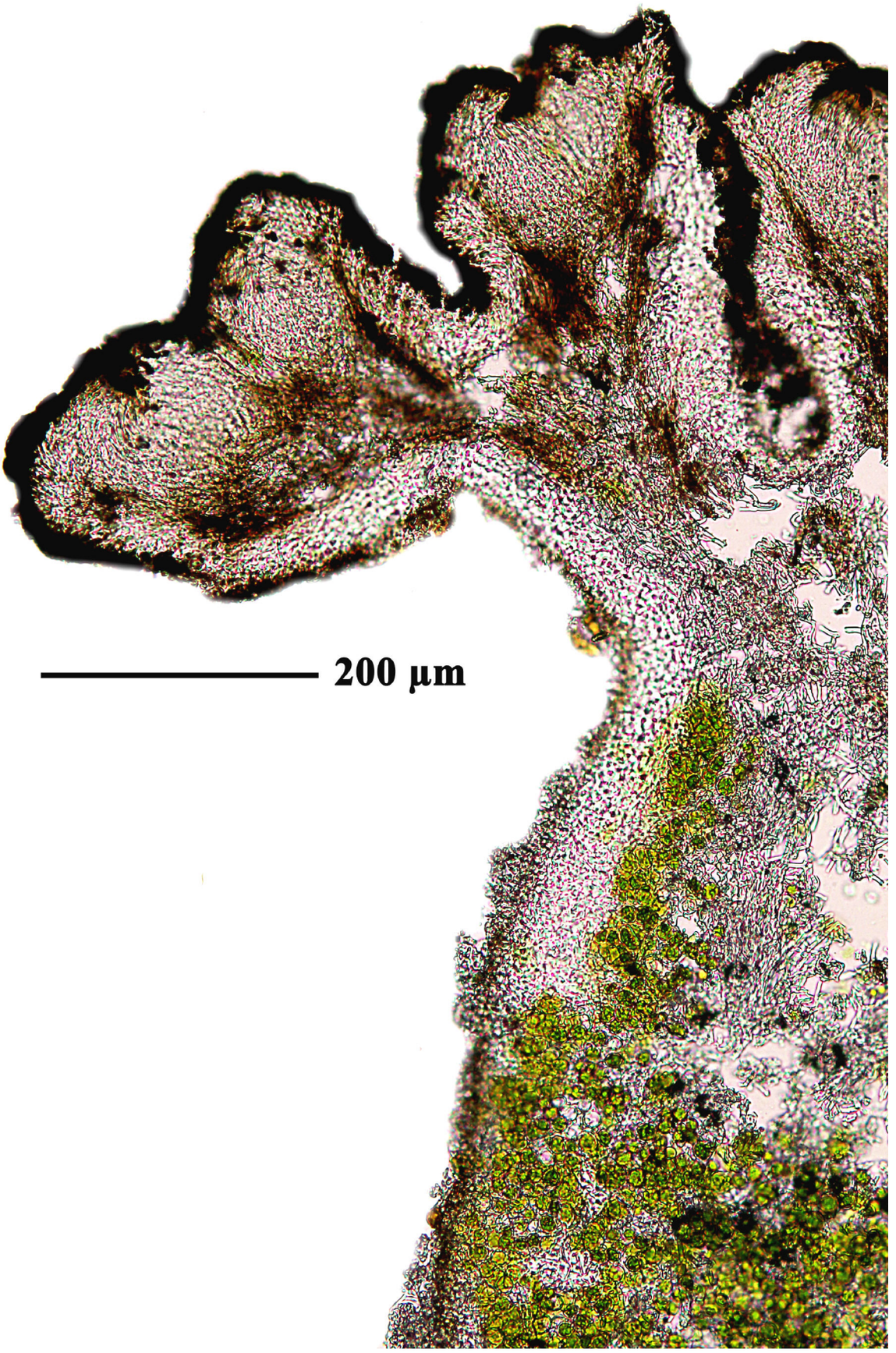
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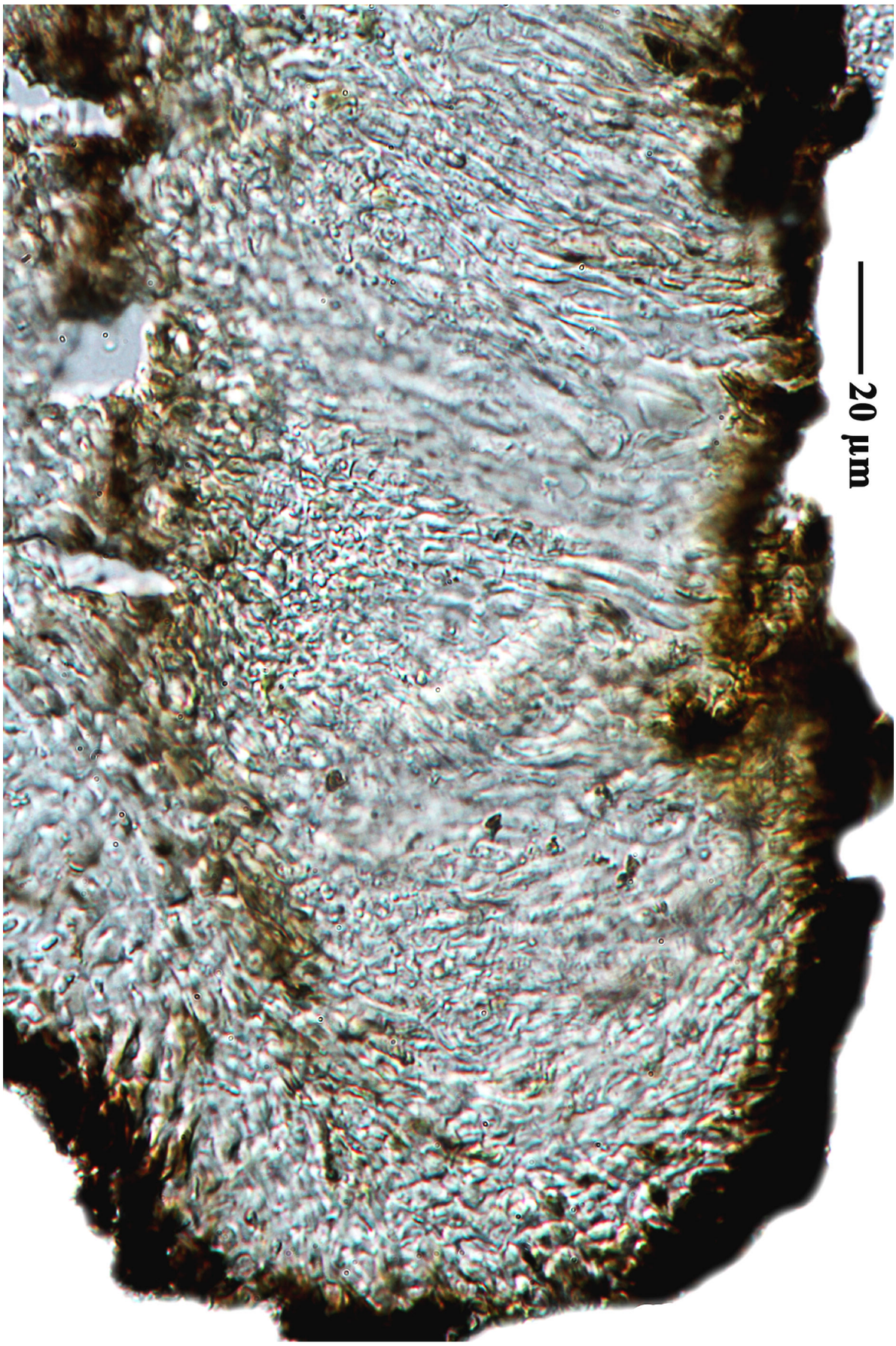
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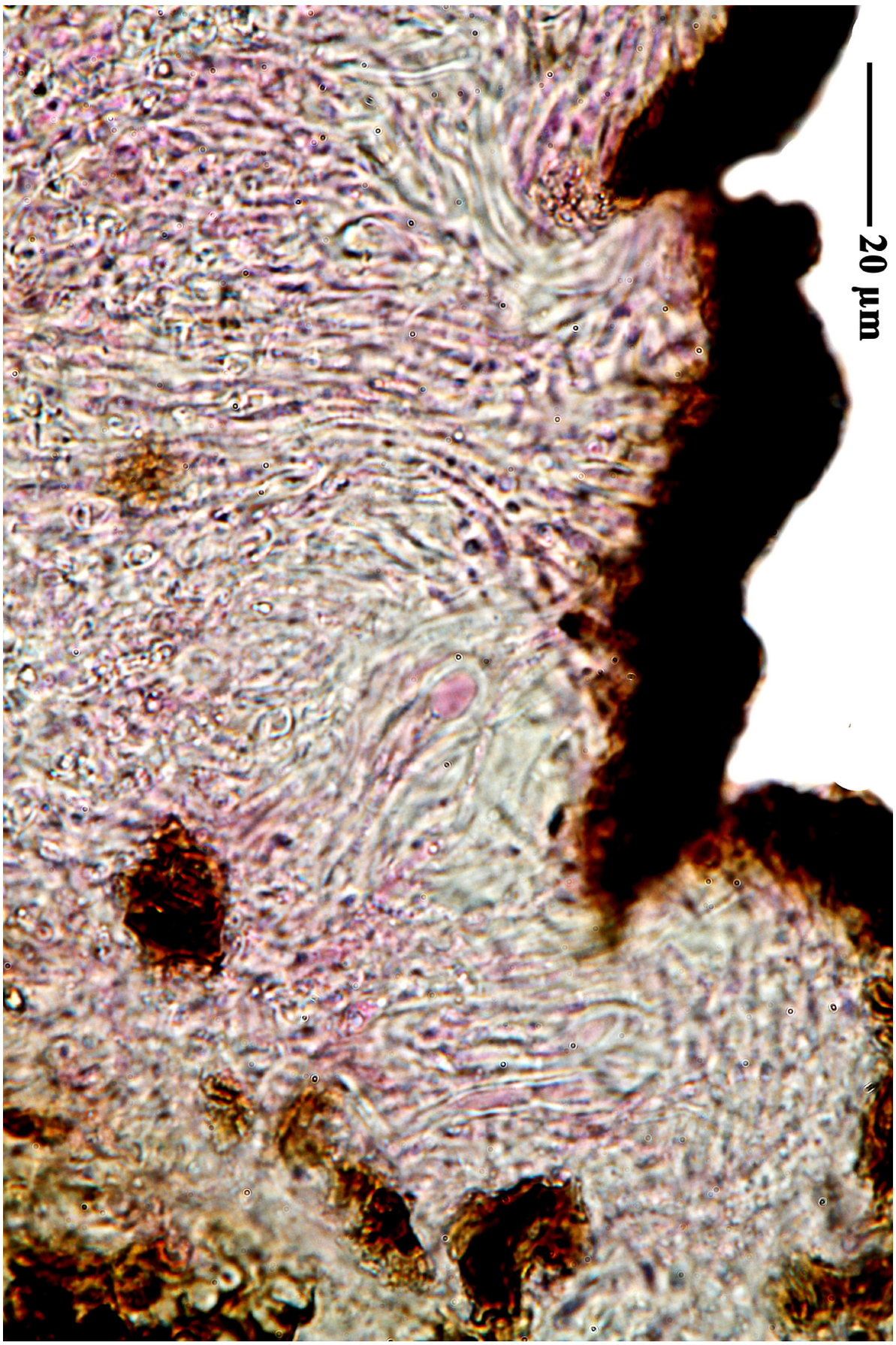
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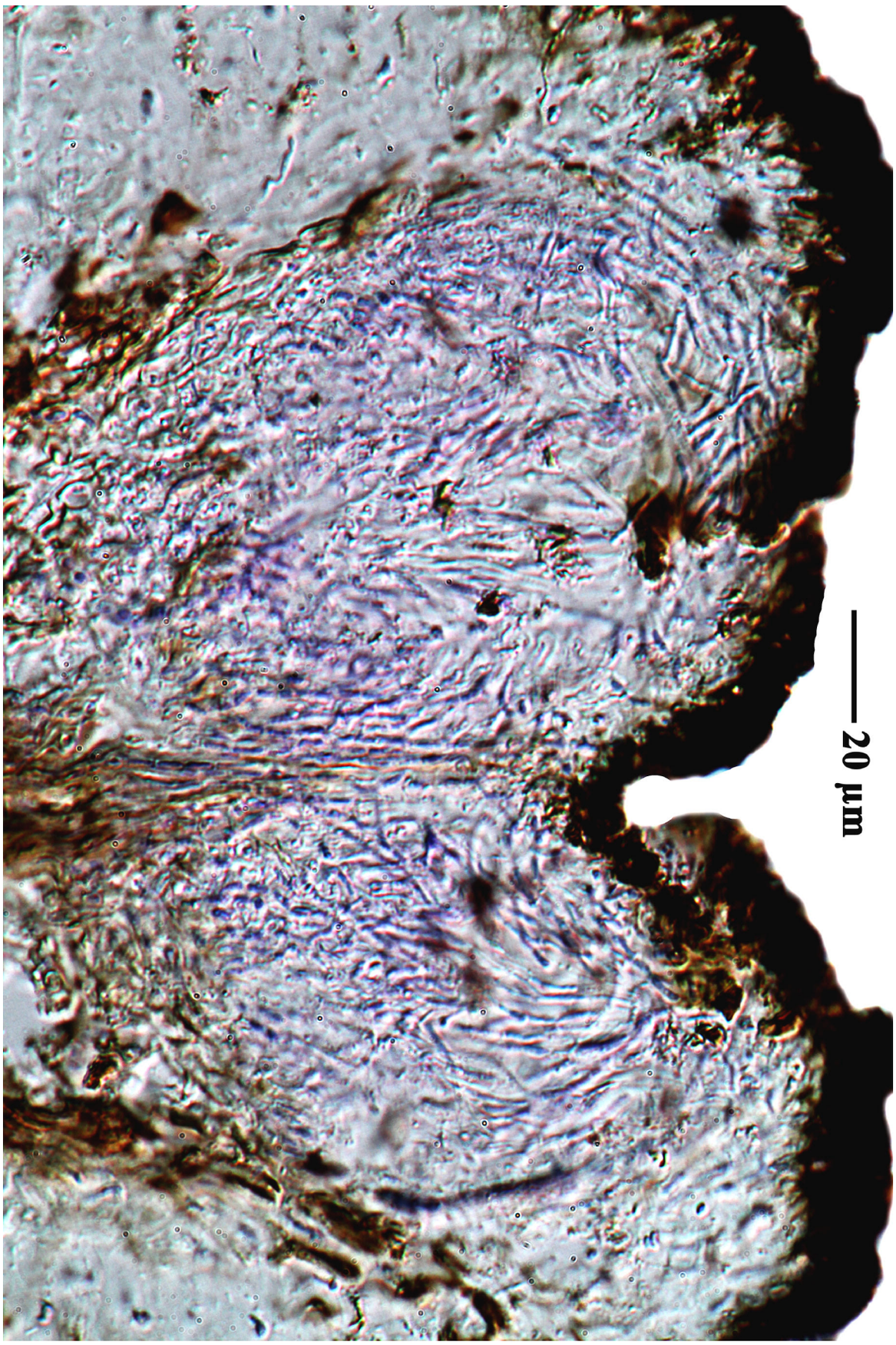
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[1531], Österreich, Großglockner Hochalpenstraße, auf Silikatgestein, ca. 1800 m. Leg. F. Schumm, 05.08.1969, det. F. Schumm 1969 . - Thallus nicht isidiös, unterseite mit Rhizinen. Apothecien rillig (nicht genabelt!).

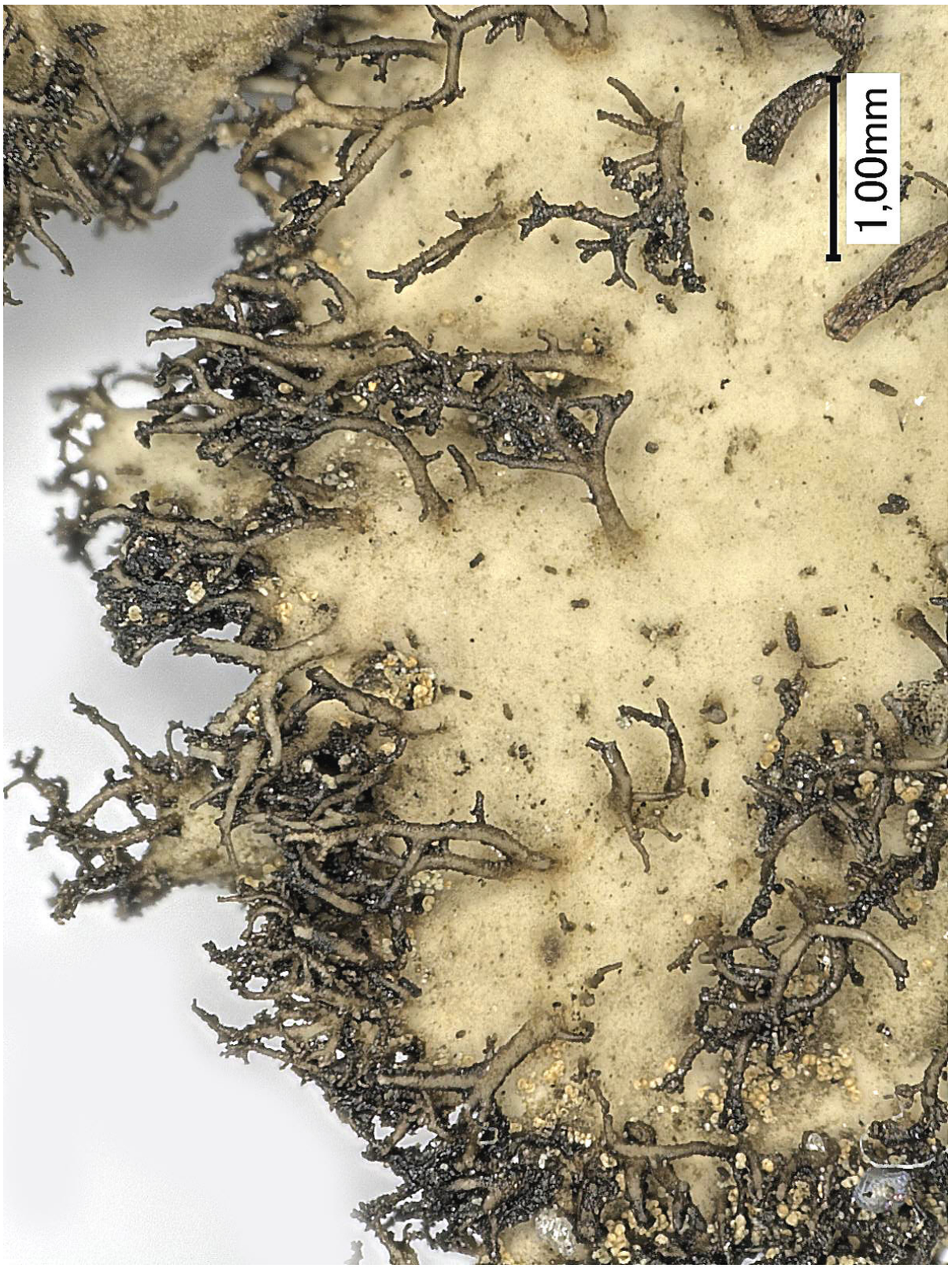
Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, 3-5(-7) cm wide, 0.2-0.4 mm thick, the lobe margins with conspicuous but rather sparse, flat, branched, up to 2 mm long black cilia. Upper surface pale to dark grey, sometimes tinged brown, dull, slightly wrinkled or almost even, sometimes with a few folds and ridges around the umbilicus, giving way to a reticulate pattern. Lower surface grey-white, tan or pink, sometimes pink-brown towards the umbilicus and grey-pruinose in the marginal zone, even, smooth, the area around the umbilicus naked, the rest with numerous thin, long, cylindrical, pale, simple rhizinomorphs; thalloconidia absent. Upper cortex 10-20 µm thick; medulla white, 3-layered, the upper and lower layers loose, with an arachnoid plectenchyma, the layer inbetween with a compact plectenchyma; lower cortex 10-20 µm thick, scleroplectenchymatous. Apo-

thecia numerous, black, gyrodisc, markedly stipitate, to 2-5 mm across, convex with few deep gyri. Epithecium dark brown, up to 20 µm high; hymenium colourless, c. 70 µm high; paraphyses usually simple, up to 2.5 µm thick, the apical cells hardly swollen; hypothecium dark. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled, hyaline, ellipsoid, 7-15 x 3-9 µm. Pycnidia numerous, immersed, bottle-shaped, with a brown wall, and a dark brown ostiole. Conidia c. 3-4 x 0.8 µm. Photobiont chlorococcoid. Spot tests: medulla K- or K+ yellow turning red, C-, KC- or KC+ faintly red, P- or P+ orange. Chemistry: medulla with variable amounts of norstictic acid and sometimes with very low amounts of gyrophoric and lecanoric acids. - Note: an ecologically wide-ranging, cool-temperate to arctic-alpine, circumpolar lichen found on wind-exposed boulders with a short snow-covering period, often on or near the top, with optimum above treeline, reaching the nival belt in the Alps; common only in the Alps.

Umbilicaria cylindrica



Umbilicaria cylindrica



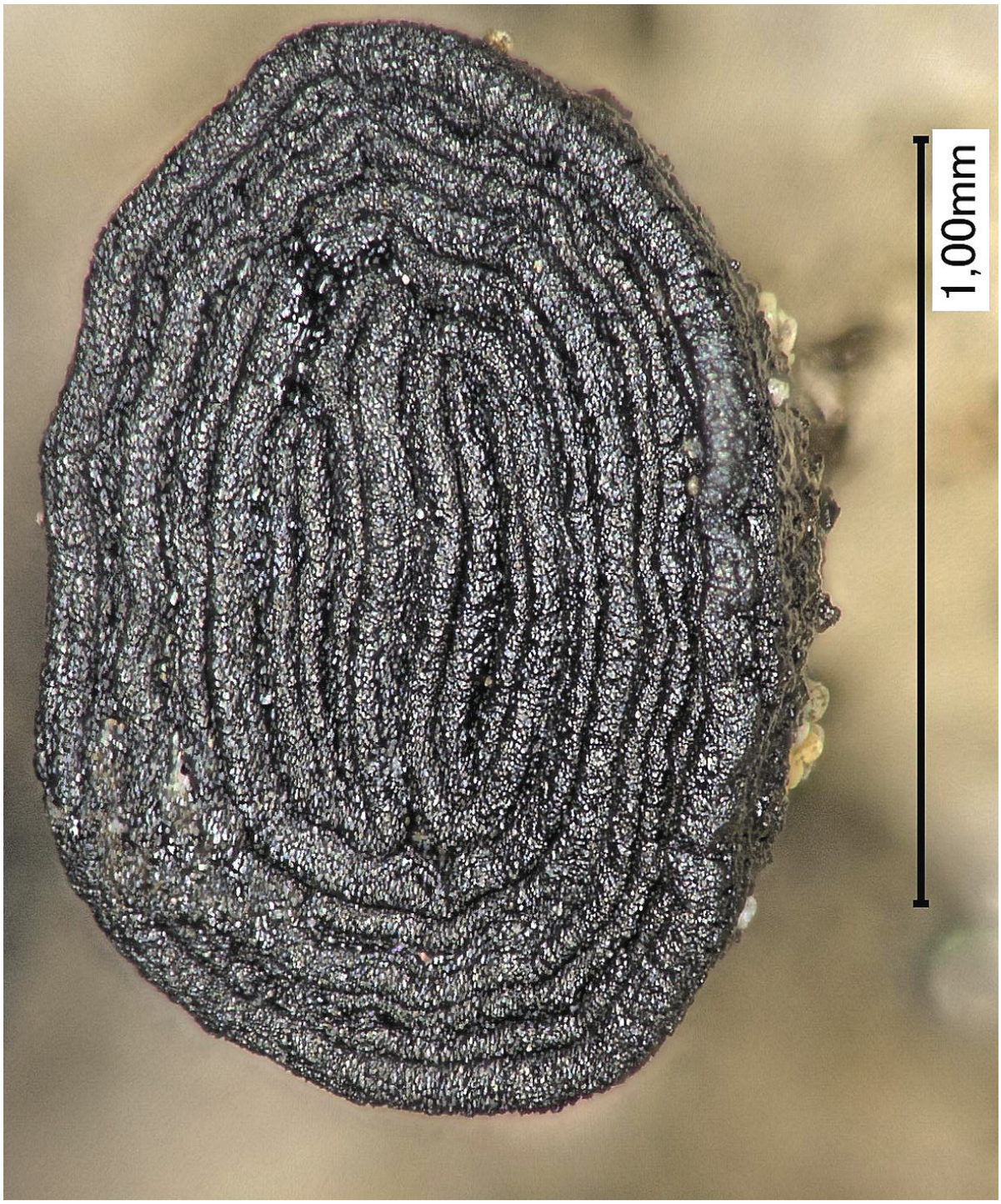
Umbilicaria cylindrica



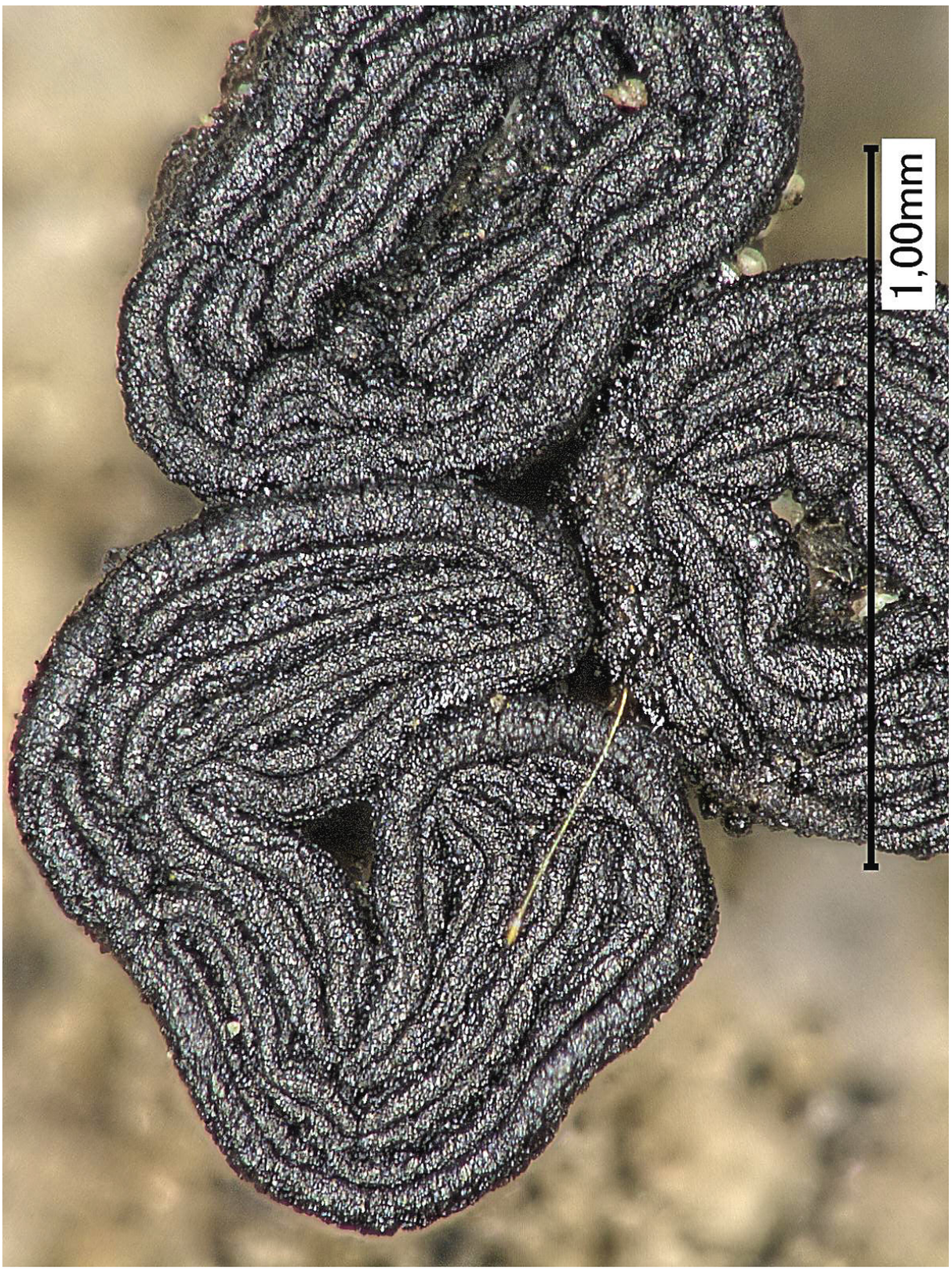
Umbilicaria cylindrica



Umbilicaria cylindrica



Umbilicaria cylindrica



Umbilicaria cylindrica

Umbilicaria decussata (Vill.) Zahlbr., Cat. Lich. Univers. 8: 490 (1932)
= *Agyrophora decussata* (Vill.) Gyeln., Annls mycol. 30(1/2): 44 (1932)
= *Gyrophora decussata* (Vill.) Zahlbr., Cat. Lich. Univers. 4: 678 (1927)
= *Lichen decussatus* Vill., Hist. pl. Dauphiné 3(2): 964 (1789)
= *Omphalodiscus decussatus* (Vill.) Schol., Nytt Mag. Natur. 75: 23 (1936)

[VZ1414], U.R.S.S. Armenia, Caucasus Minor, iugum montium Sevanskij chrebet dictu, distr. Krasnoselsk: supra lacum Sevan prope Aregunoi, 2150 m. Ad saxa silicea vulcanica. Leg. E. Jelínková et A. Vězda. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1414.

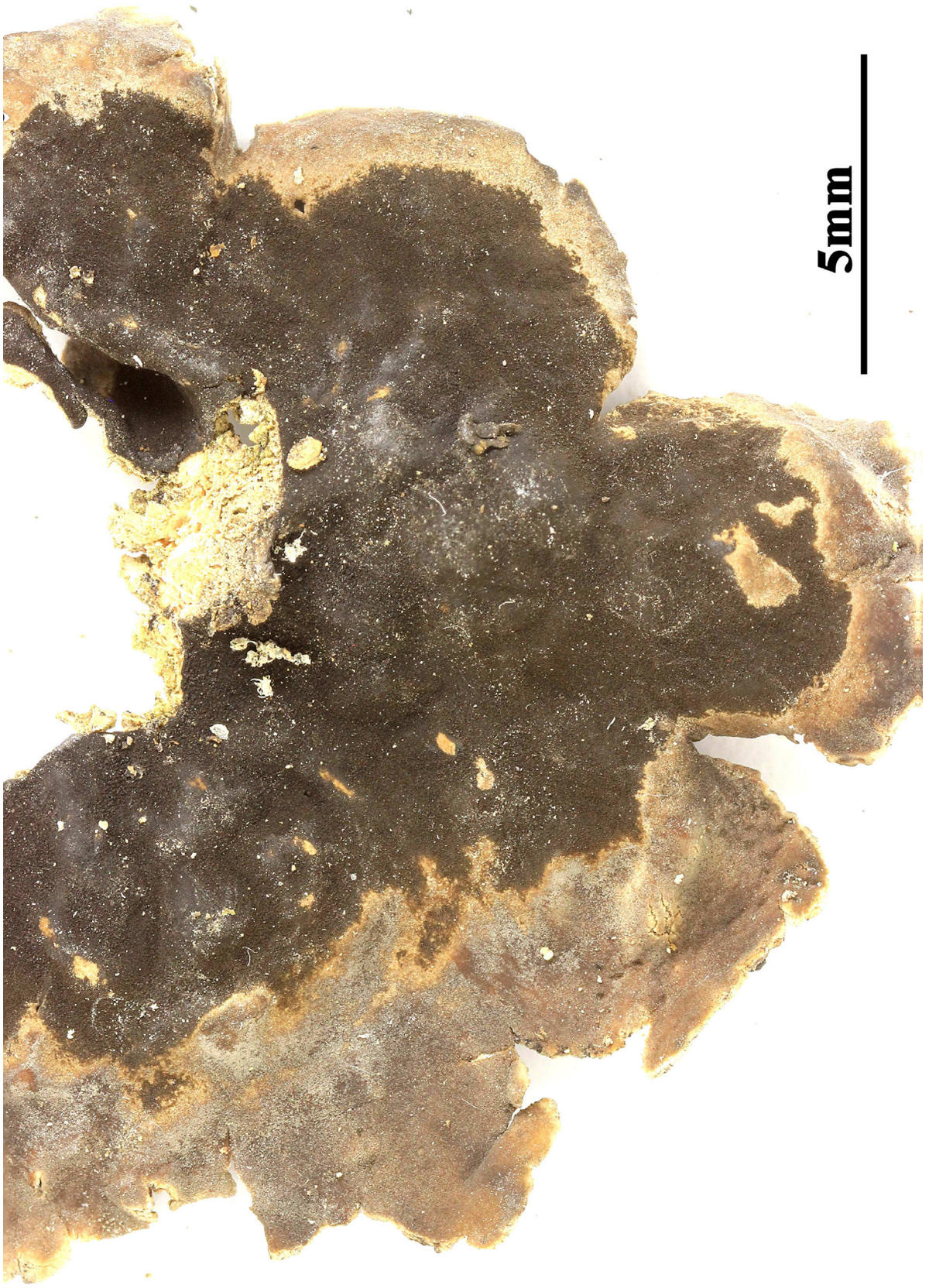
Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, rigid, 2-4(-5) cm wide, 0.3-0.5 mm thick at the level of the ridges, thinner elsewhere, attached by a very thick, short and compact central holdfast. Upper surface ash-grey, scabrous, with a white, reticulately ridged pattern, the central part raised, the marginal parts adpressed or undulating, strongly wavy, often down-turned. Lower surface black or dark brown in places, paler at margins, even or shallowly pitted, sometimes radiately folded around umbilicus, erhizinate. Thalloconidia covering the whole lower surface, 1-celled, spherical to oval, dark brown to black, 7.3-8.5 µm in diam. Upper cortex dark brown, palisade-plectenchymatous, 25-30 µm thick; medulla white, very loose under the ridges; lower cortex scleroplectenchymatous, x 20-35 µm thick. Apothecia very rare, black, stipitate, omphalodisc. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled hyaline, ellipsoid, 6-14 x 4-8 µm. Photobiont chlorococcoid. Spot tests: K-, C+ red or rarely C-, KC+ red or rarely KC-, - Note: an arctic-alpine to boreal-montane, circumpolar lichen found on steeply inclined to slightly rain-sheltered surfaces of wind-exposed siliceous rocks.



Umbilicaria decussata



Umbilicaria decussata



Umbilicaria decussata

Umbilicaria decussata (Vill.) Zahlbr., Cat. Lich. Univers. 8: 490 (1932)
= *Agyrophora decussata* (Vill.) Gyeln., Annls mycol. 30(1/2): 44 (1932)
= *Gyrophora decussata* (Vill.) Zahlbr., Cat. Lich. Univers. 4: 678 (1927)
= *Lichen decussatus* Vill., Hist. pl. Dauphiné 3(2): 964 (1789)
= *Omphalodiscus decussatus* (Vill.) Schol., Nytt Mag. Natur. 75: 23 (1936)

[VZ1460], Turcia asiatica. Prov. Bursa: Ulidag, 20 km in austro-orient. a Bursa, 2000 m. Ad parietes rupium graniticarum. Leg. K. Kalb et G. Plöbst, 31.08.1976. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1460.

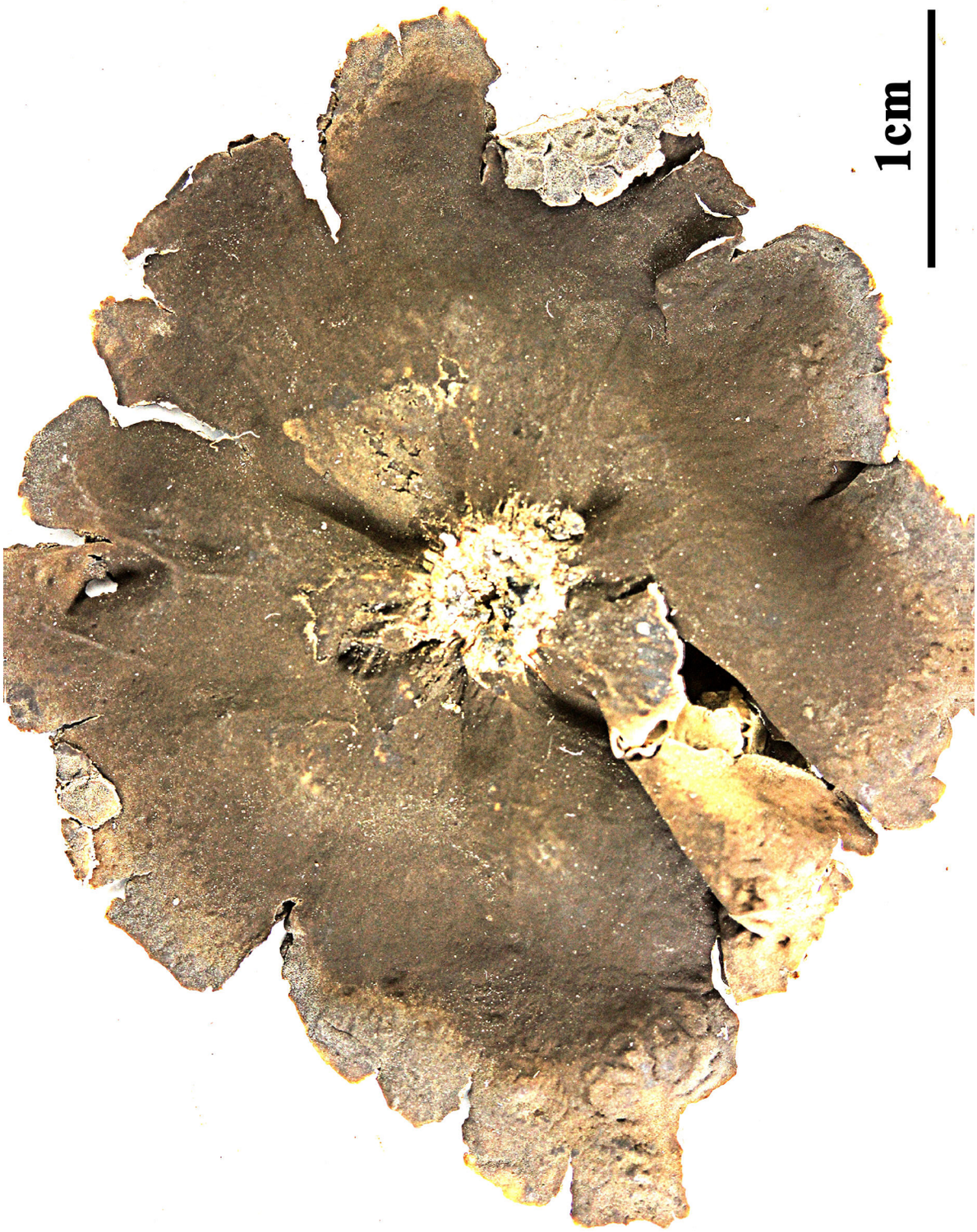
Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, rigid, 2-4(-5) cm wide, 0.3-0.5 mm thick at the level of the ridges, thinner elsewhere, attached by a very thick, short and compact central holdfast. Upper surface ash-grey, scabrous, with a white, reticulately ridged pattern, the central part raised, the marginal parts adpressed or undulating, strongly wavy, often down-turned. Lower surface black or dark brown in places, paler at margins, even or shallowly pitted, sometimes radiately folded around umbilicus, erhizinate. Thalloconidia covering the whole lower surface, 1-celled, spherical to oval, dark brown to black, 7.3-8.5 µm in diam. Upper cortex dark brown, palisade-plectenchymatous, 25-30 µm thick; medulla white, very loose under the ridges; lower cortex scleroplectenchymatous, x 20-35 µm thick. Apothecia very rare, black, stipitate, omphalodisc. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled hyaline, ellipsoid, 6-14 x 4-8 µm. Photobiont chlorococcoid. Spot tests: K-, C+ red or rarely C-, KC+ red or rarely KC-. - Note: an arctic-alpine to boreal-montane, circumpolar lichen found on steeply inclined to slightly rain-sheltered surfaces of wind-exposed siliceous rocks, reaching the nival belt in the Alps.



Umbilicaria decussata



Umbilicaria decussata



Umbilicaria decussata

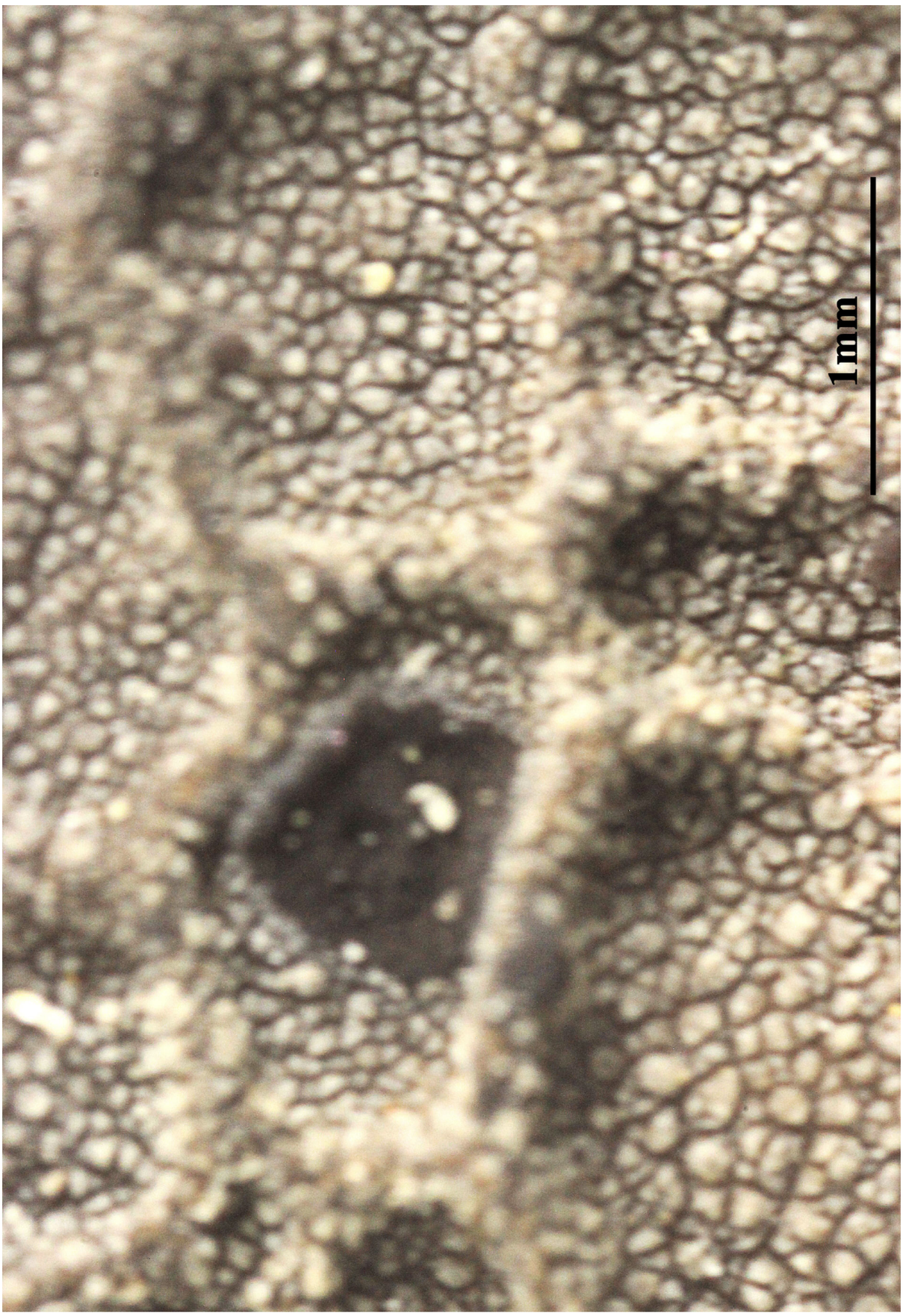
Umbilicaria decussata (Vill.) Zahlbr., Cat. Lich. Univers. 8: 490 (1932)
= *Agyrophora decussata* (Vill.) Gyeln., Annls mycol. 30(1/2): 44 (1932)
= *Gyrophora decussata* (Vill.) Zahlbr., Cat. Lich. Univers. 4: 678 (1927)
= *Lichen decussatus* Vill., Hist. pl. Dauphiné 3(2): 964 (1789)
= *Omphalodiscus decussatus* (Vill.) Schol., Nytt Mag. Natur. 75: 23 (1936)

[VZ1436], Norwegia. Röros, in monte Storvarts gruve, 900 m. Ad muros domus vetustae. Leg. R. Santesson (no. 25117], 14.08.1974. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1436.

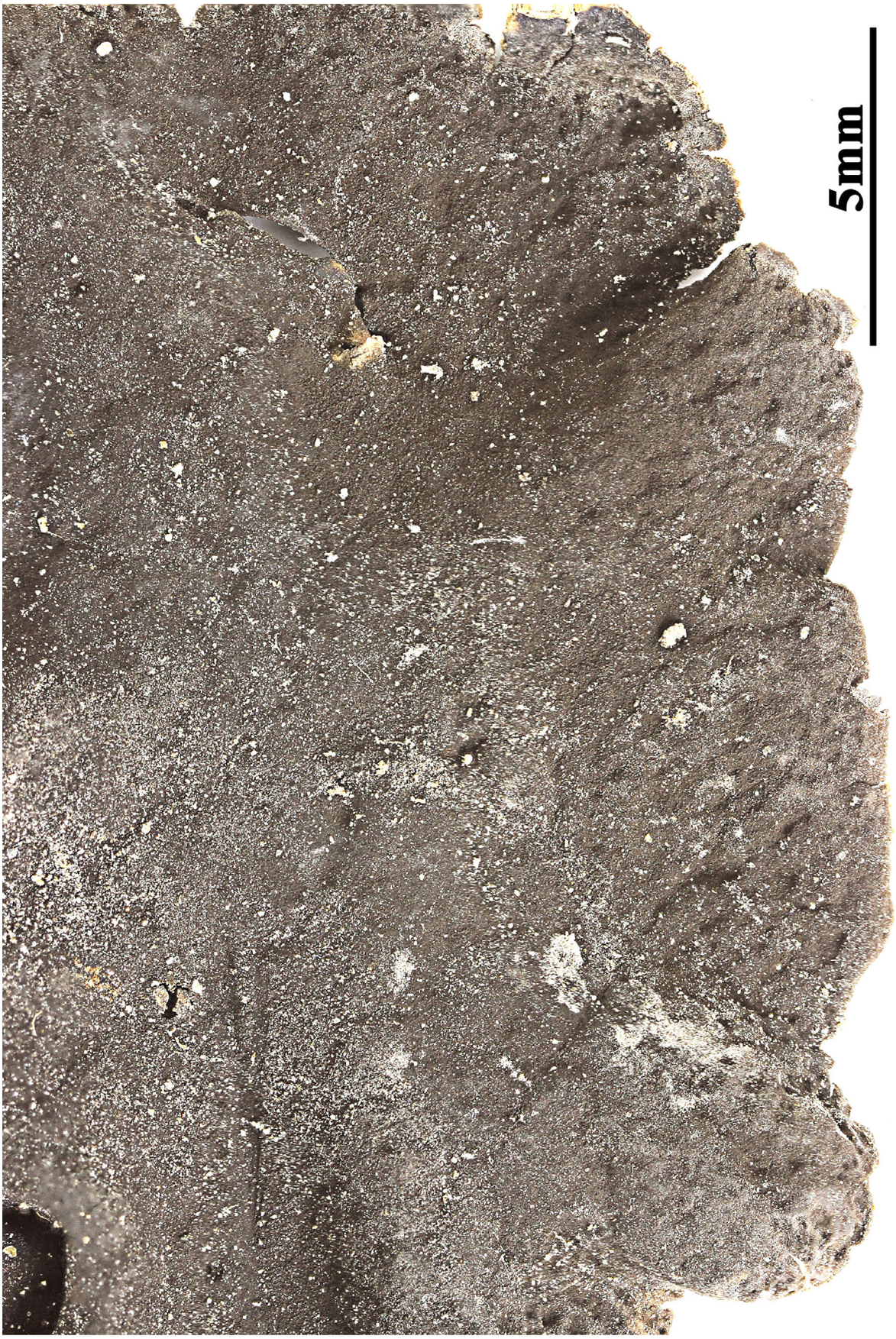
Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, rigid, 2-4(-5) cm wide, 0.3-0.5 mm thick at the level of the ridges, thinner elsewhere, attached by a very thick, short and compact central holdfast. Upper surface ash-grey, scabrous, with a white, reticulately ridged pattern, the central part raised, the marginal parts adpressed or undulating, strongly wavy, often down-turned. Lower surface black or dark brown in places, paler at margins, even or shallowly pitted, sometimes radiately folded around umbilicus, erhizinate. Thalloconidia covering the whole lower surface, 1-celled, spherical to oval, dark brown to black, 7.3-8.5 µm in diam. Upper cortex dark brown, palisade-plectenchymatous, 25-30 µm thick; medulla white, very loose under the ridges; lower cortex scleroplectenchymatous, x 20-35 µm thick. Apothecia very rare, black, stipitate, omphalodisc. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled hyaline, ellipsoid, 6-14 x 4-8 µm. Photobiont chlorococcoid. Spot tests: K-, C+ red or rarely C-, KC+ red or rarely KC-, - Note: an arctic-alpine to boreal-montane, circumpolar lichen found on steeply inclined to slightly rain-sheltered surfaces of wind-exposed siliceous rocks.



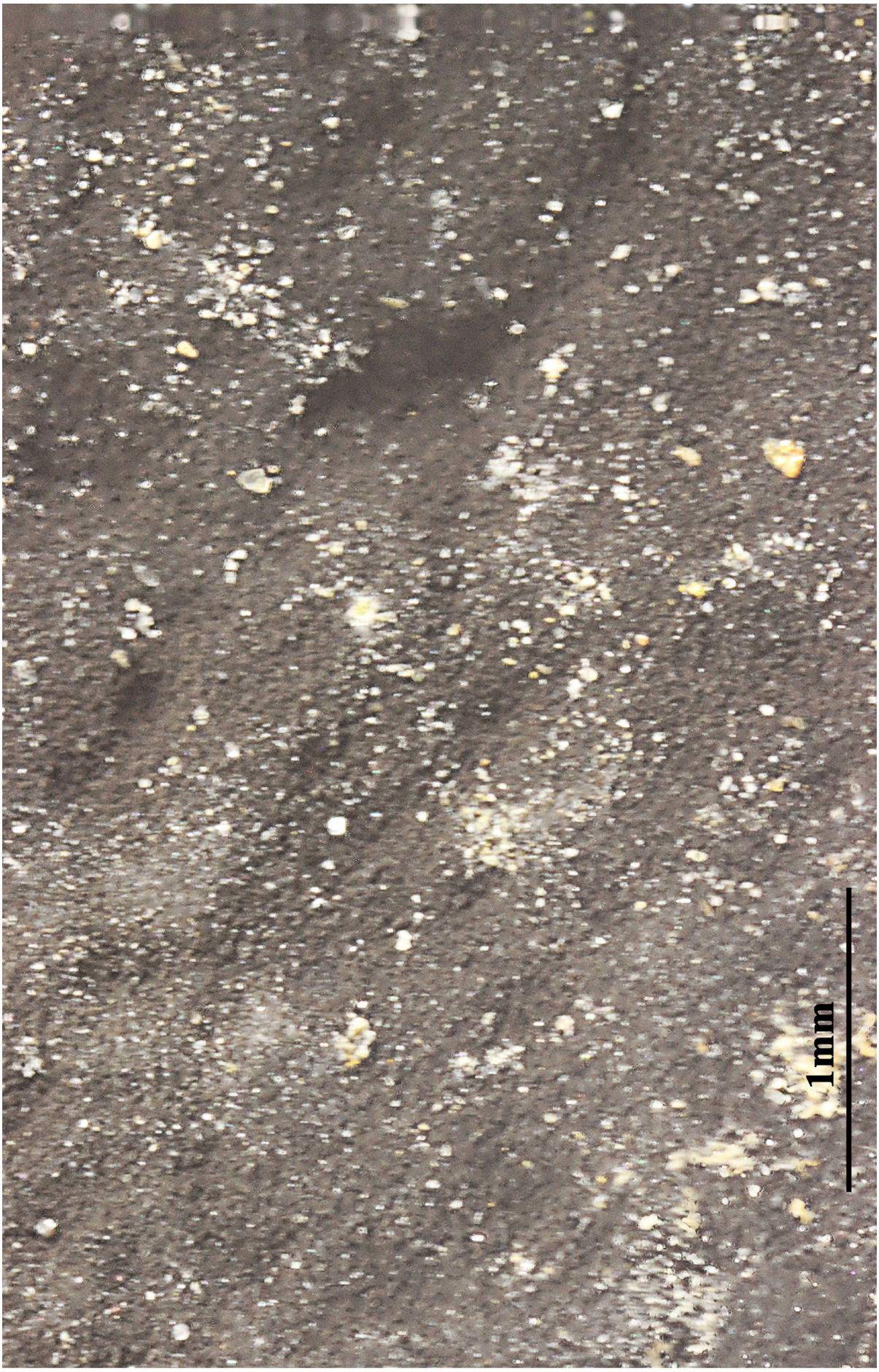
Umbilicaria decussata



Umbilicaria decussata



Umbilicaria decussata

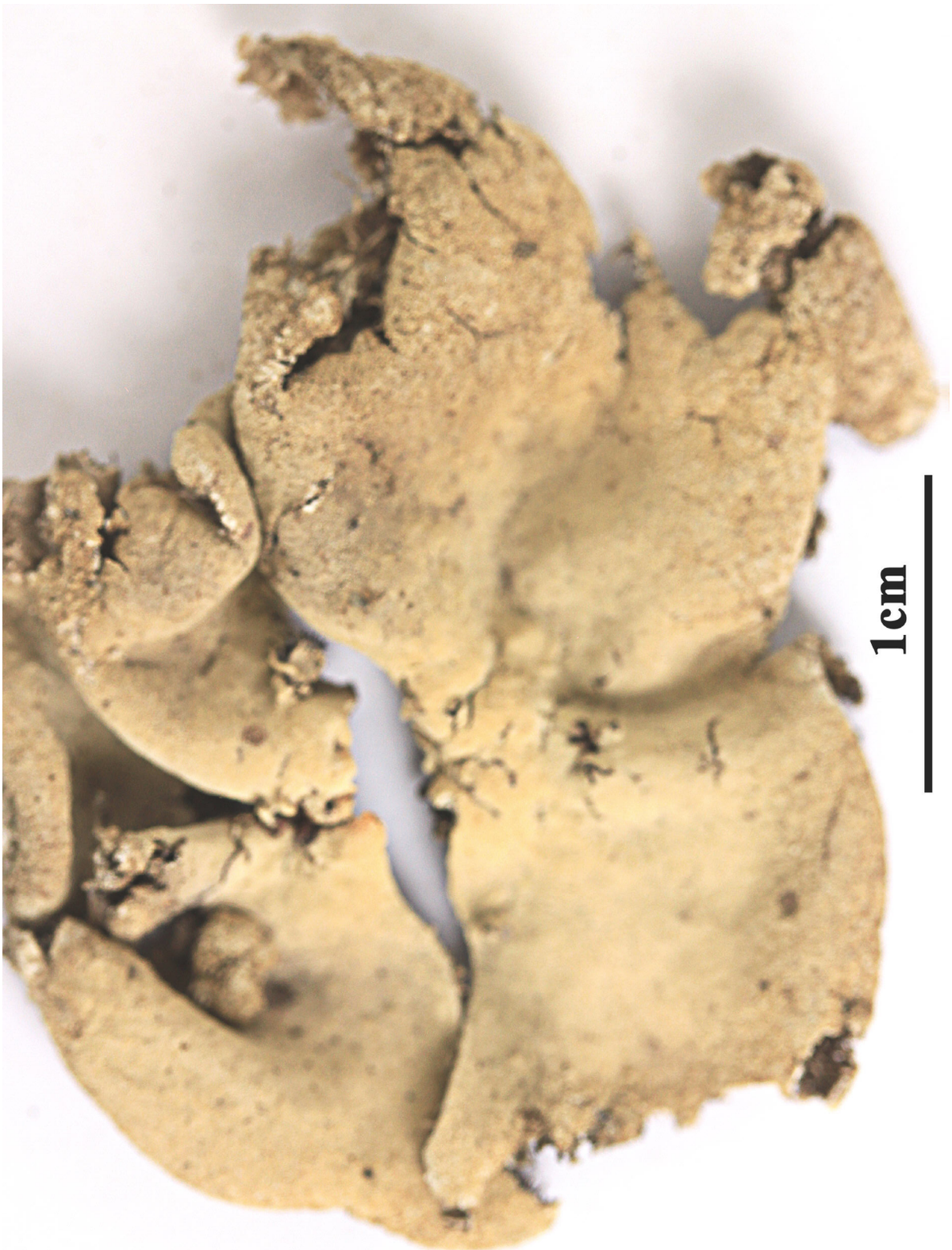


Umbilicaria decussata

Umbilicaria freyi Codogno, Poelt & Puntillo, Pl. Syst. Evol. 165(1-2): 63 (1989)
= *Umbilicaria grisea f. subpapyria* Frey
= *Umbilicaria hirsuta var. pyrenaica* Frey

[VZ2400], Italia. Sardinia. Prov. Nuoro: montes Gennargentu, in monte Bruncu Spina, 1800 m. In rupibus schistosis. Leg. P. L. Nimis, C. Roux, M. Tretiach et. A. Vězda. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 2400.

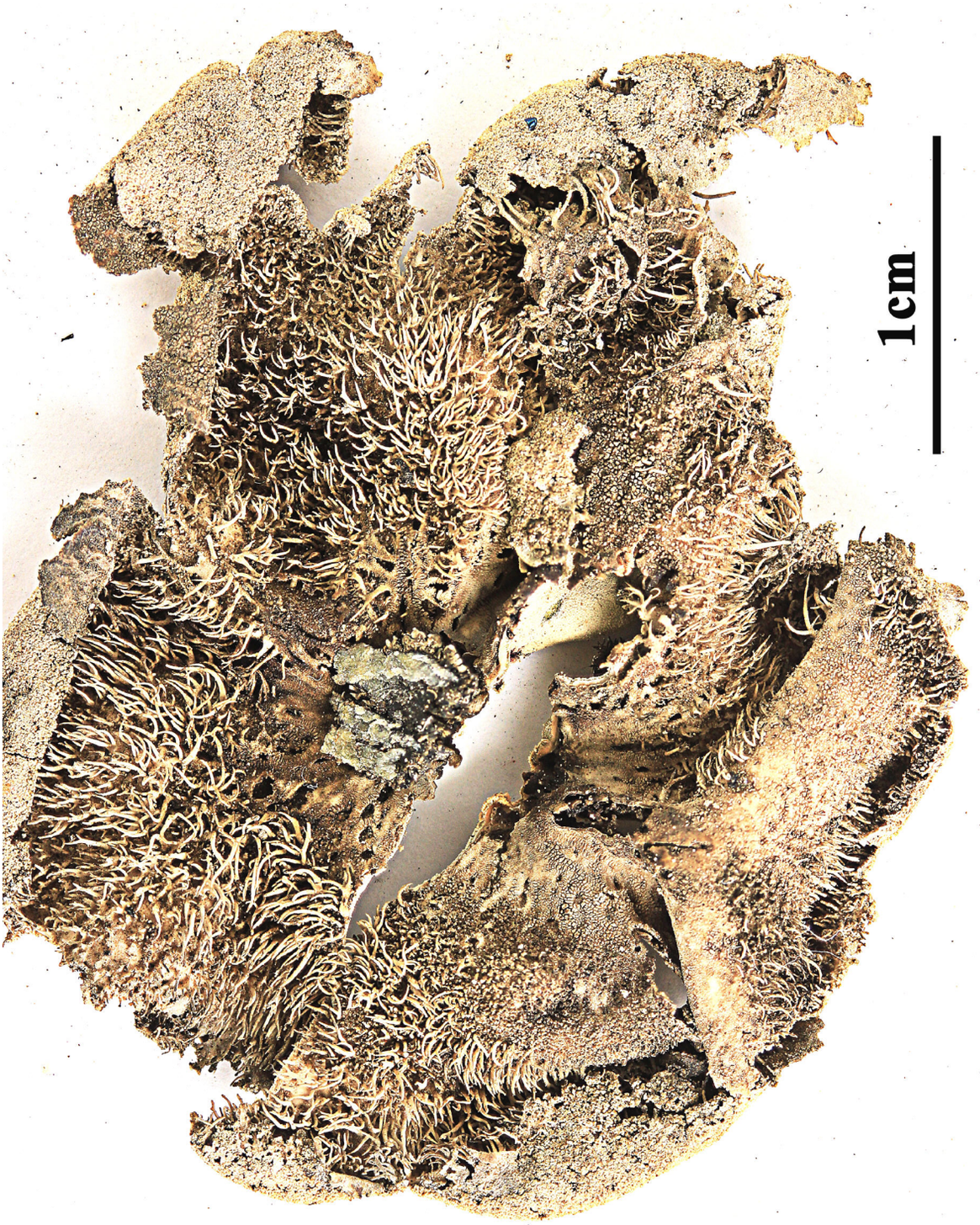
Thallus foliose, umbilicate, heteromerous, dorsiventral, attached by a central holdfast, rather thick and rigid, up to 10(-15) cm in diam. Upper surface ochraceous grey to pale grey-brown, dull, finely rimose, the marginal parts and sometimes also the central parts with numerous, up to 1(-2) mm wide, darker brown schizidia which tend to fall off leaving scars exposing the medulla; lower surface ochraceous white to pale pinkish brown, usually distinctly areolate, with or without pale rhizinomorphs, without trabeculae near the central holdfast. Apothecia very rare and incompletely developed, black, gyrodisc. Asci 8-spored, elongate-clavate, thick-walled, the apical dome K/I+ blue, Umbilicaria-type. Ascospores 1-celled, hyaline, ellipsoid, 8-11 x 6-8 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K_, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric acid. - Note: on steeply inclined to rain-sheltered surfaces of siliceous rocks, ecologically intermediate between *U. grisea* and *U. deusta*, ranging from the Alps to the mountains of Calabria.



Umbilicaria freyi



Umbilicaria freyi



Umbilicaria freyi



Umbilicaria freyi

Umbilicaria grisea Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 111 (1796) [1795]
= *Umbilicaria murina* (Ach.) DC

[VZ1288], Romania. Dobrogea. Distr. Tulcea, supra pagum Camena, 150 m. Ad saxa silicea. Leg. A. Vězda, 15.07.1973. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1288.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, adpressed to the substrate, 1-6(-8) cm diam., c. 0.2 mm thick, even or slightly raised only over the umbilicus, attached by a single, short central holdfast, the margins moderately incised and folded, sometimes lacerate, slightly down-turned. Upper surface dark grey brown, distinctly rimose, weakly areolate in central parts, white-pruinose and sorediate toward margins. Lower surface dark brown to black, distinctly areolate around the umbilicus, without trabeculae; rhizinomorphs absent or, rarely, single to weakly branched, concolorous with lower cortex; thalloconidia absent. Upper cortex 10-18 µm thick; medulla white, loose in upper part, well differentiated from the scleroplectenchymatous, brown lower cortex. Apothecia rare, black, gyrodisc, 0.5-1.5 mm across. Epithecium brown; hymenium colourless to brownish, often divided into compartments by columns of sterile tissue; paraphyses simple or sparingly branched, the apical cells more or less swollen; hypothecium thick, dark. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled hyaline, ellipsoid, 13-17 x -7.5-9(-10) µm. Photobiont chlorococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric acid and small amounts of lecanoric and umbilicaric acids. Note: on steeply inclined to rain-sheltered surfaces of siliceous rocks only slightly wetted after rain.



Umbilicaria grisea



Umbilicaria grisea



Umbilicaria grisea



Umbilicaria grisea

Umbilicaria haumaniana Frey, Ber. schweiz. bot. Ges. 45: 218, 223 (1936) = *Umbilicaria umbilicarioides* (B. Stein) Krog & Swinscow, Nord. J. Bot. 6: 83 (1986).

[VZ1437], Tanzania.Kilimanjaro: prope casam Barranco dictam, 3900 m. Ad parietes rupium. Leg. T. Pócs (no. 6934), 03.07.1976. Det. A. Vězda. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1437.

Thallus mono- to polyphyllous, 3-10(20) cm diam., entire to deeply divided. Upper side smooth to rugose, medium to dark brown or dark grey, usually wholly or partly covered with a thin to thick white necrallayer, naked areas often distinctly maculate. Medulla white. Under side black in the centre, black or brown peripherally, or, more rarely, pinkish grey to buff, scabrous, sometimes with irregular ridges, rhizinomorphs absent around the umbilicus, more or less abundant distally (or rarely absent), moderately to densely branched, terete to complanate, up to 2 mm long, forming a dense fringe around the lobe margins, often growing through to the upper side through thallus cracks and perforations or growing out from the upper cortex. Thallospores formed to a varying extent on rhizinomorph branchlets. On the under side of the thallus, more rarely on the upper side, the typical rhizinomorphs may be interspersed with simple or sparingly branched rhizinomorphs bearing thallyles. Isidia and soredia absent. Apothecia common, substipitate, occasionally coronate, disc gyrose, spores 8 per ascus, simple, 12-18 x 6-10 µm. CHEMISTRY: No lichen substances. Saxicolous in the ericaceous and alpine zones, common and wide spread at 3400 to 4600 m. alt. .South Africa, Zaire, Patagonia, the antarctic region.



Umbilicaria haumaniana



Umbilicaria haumaniana



Umbilicaria haumaniana

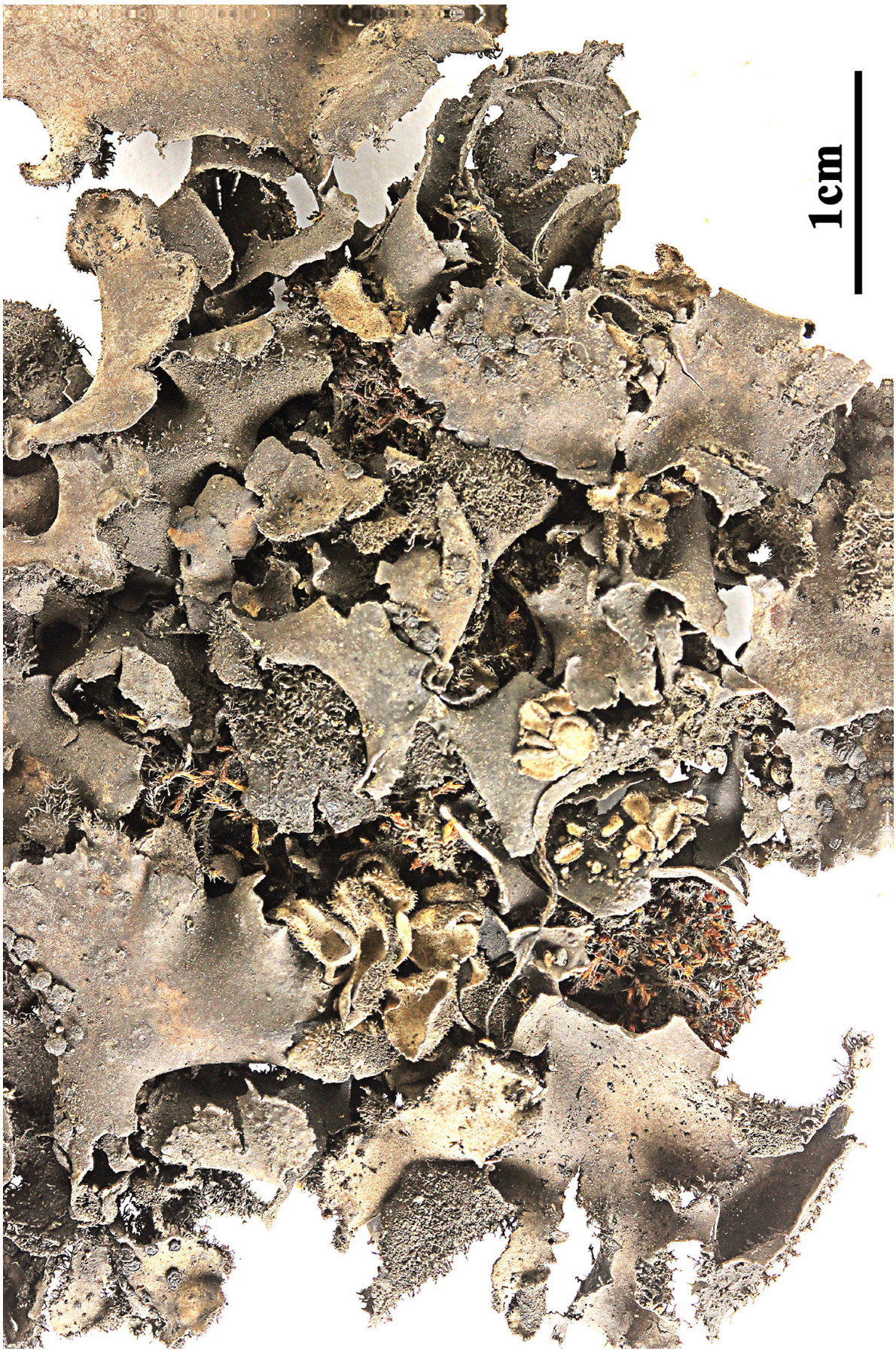


Umbilicaria haumaniana

Umbilicaria haumaniana Frey, Ber. schweiz. bot. Ges. 45: 218, 223 (1936) = *Umbilicaria umbilicarioides* (B. Stein) Krog & Swinscow, Nord. J. Bot. 6: 83 (1986).

[VZ1372], Zaire (Africa centralis). Prov. Kivu: ad latera septentrionalia montis ignivomi Karisimbi, 4450 m. Ad lapides parvos vulcanicos in regione subnivali. Leg. L. Lambinon (no. 72/353), 26.1.1972. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1372.

Thallus mono- to polyphyllous, 3-10(20) cm diam., entire to deeply divided. Upper side smooth to rugose, medium to dark brown or dark grey, usually wholly or partly covered with a thin to thick white necrallayer, naked areas often distinctly maculate. Medulla white. Under side black in the centre, black or brown peripherally, or, more rarely, pinkish grey to buff, scabrous, sometimes with irregular ridges, rhizinomorphs absent around the umbilicus, more or less abundant distally (or rarely absent), moderately to densely branched, terete to complanate, up to 2 mm long, forming a dense fringe around the lobe margins, often growing through to the upper side through thallus cracks and perforations or growing out from the upper cortex. Thallospores formed to a varying extent on rhizinomorph branchlets. On the under side of the thallus, more rarely on the upper side, the typical rhizinomorphs may be interspersed with simple or sparingly branched rhizinomorphs bearing thallyles. Isidia and soredia absent. Apothecia common, substipitate, occasionally coronate, disc gyrose, spores 8 per ascus, simple, 12-18 x 6-10 µm. CHEMISTRY: No lichen substances. Saxicolous in the ericaceous and alpine zones, common and wide spread at 3400 to 4600 m. alt. .South Africa, Zaire, Patagonia, the antarctic region.



Umbilicaria haumaniana



Umbilicaria haumaniana



Umbilicaria haumaniana

Umbilicaria havaasii Llano, Monograph of the Lichen Family Umbilicariaceae in the Western Hemisphere: 136 (1950)

[V Z1599], Norvegia. Hordalandia, par. Ullvik, austro-occid. versus a Finse, 1320 m. Ad saxa granitica. Leg. H. Hertel (15720), 5.9.1974. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1599.

Thallus 8-13 cm. in diameter, mono- or rarely polyphyllous, orbicular, thin to fragile, umbo scarcely elevated, rimulose, obscurely rugose wrinkled, granulose, peripherally thallus becoming smooth or weakly vermiform wrinkled, margins irregular, with round or slit perforations to fenestrate, incised to lacerate forming truncate torn lobes, surface dull, dark neutral gray, dark mouse gray, chaetura drab, or black, strongly pruinose white over umbo, occasionally extending to periphery, below unevenly folded or creased, rarely flat, umbilicus small, compact, slightly extruding, lower cortex verrucose granulose centrally, becoming more or less smooth or furfuraceous, color vinaceous buff to avellaneous more or less black streaked, rest of thallus sooty black, bare or weakly sooty- fibril lose on the margins, or with occasional scattered furcate or ramose fibrils (like rhizinae) erect from dorsal thallus. Thallus 120-225 µm thick, necral zone evanescent, about 13.2 µm thick, hyaline, upper cortex 13.2-26.4 µm thick, maximum of 49.5 µm scleroplechtenchymatous, top zone tea brown, algal layer discontinuous, protococcoid, 26.4-36.3 µm thick, medulla not clearly differentiated from lower cortex, compact, hyphae 6.6 µm in diameter, mesodermate, and parallel to interwoven, about 35-60 µm thick, lower cortex paraplechtenchymatous to scleroplechymatous, about 46.2 µm thick, lower zone tea brown with adhering black granules imbedded in a hyaline stratum (about 43 µm thick). Apothecia rare, 0.9-2 mm. in diameter, scattered, free, sessile to subpedicell at 6, pedicel about half of disk diameter, at first plane then strongly gyrose, at first with weak gyri then becoming clustered like a "bouquet", parathecium with a black outer zone, rest of brown isodiametric cells, about 100 µm thick, hypothecium irregular, brown, about 140 µm thick, thecium about 60-80 µm thick, paraphyses simple, septate, hyaline, about 1.7 - 2 µm in diameter, becoming inflated, brown 7.2-9.6 µm apically, asci 51-68 x 20.4 -28.9 µm with a thin hyaline wall about 1.7 µm thick, spores hyaline, simple, spherical to ellipsoid, 10.2-20.4 x 6.3-8.5 µm broad, with acid fuchsin staining granular or with a dark median band. The first and only other record of the spores of this species were published

by Scholander (1932) from Greenland specimens. He made the following observation: "Apothecia sparse, dispersed, about 1 mm. in diameter, subelevate with constricted base, disk convex, gyrate, black, spores 12-15 x 6-7 µm, paraphyses brown or black tipped, 5-6 µm wide.

Umbilicaria havaasii



Umbilicaria havaasii



Umbilicaria havaasii



Umbilicaria havaasii



Umbilicaria havaasii

Umbilicaria havaasii

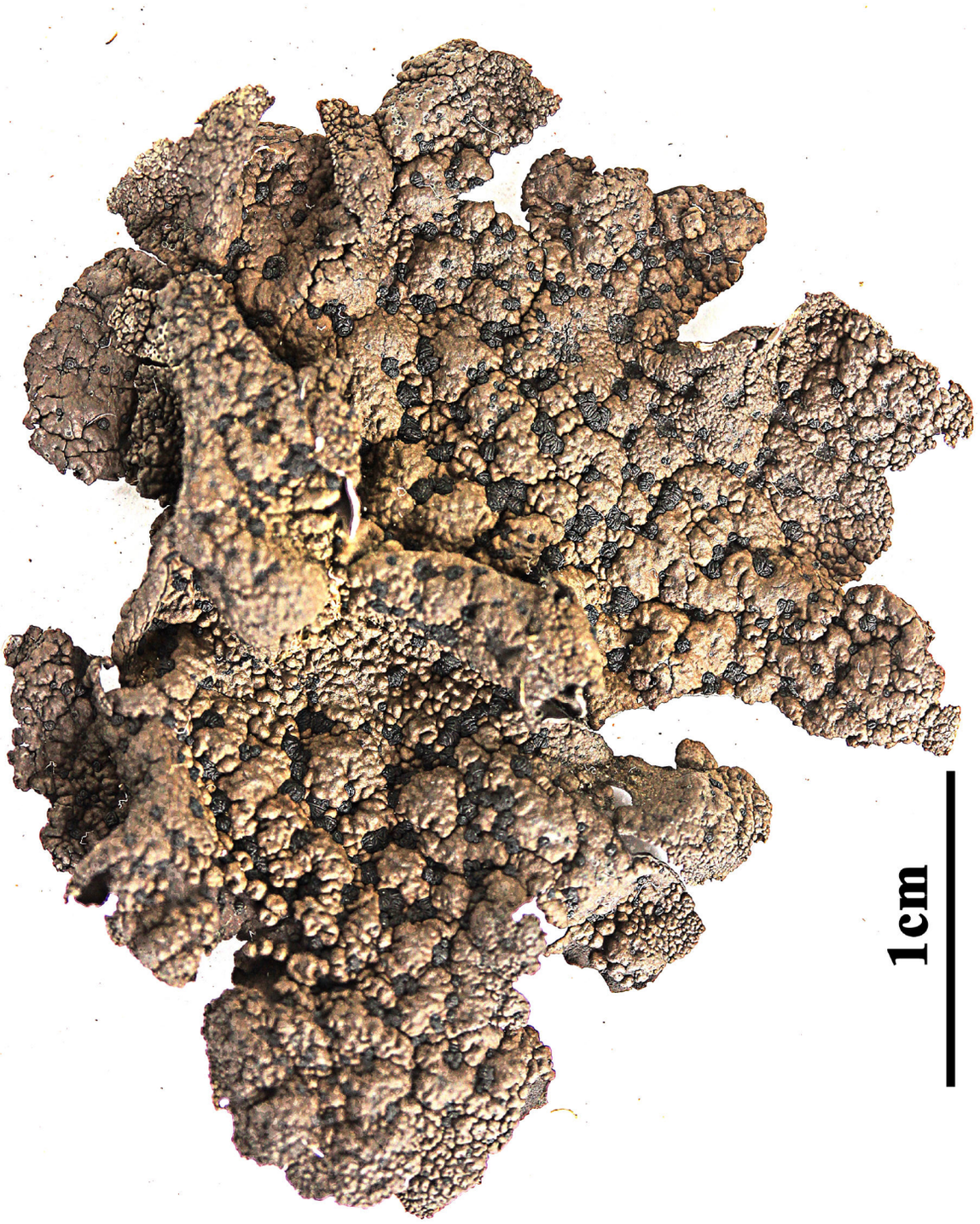
Umbilicaria hyperborea (Ach.) Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 110 (1796) [1795]
= *Gyromium hyperboreum* (Ach.) Wahlenb., Fl. lapp.: 482 (1812)
= *Gyrophora aenea* var. *hyperborea* (Ach.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 7 (1818)
= *Gyrophora hyperborea* (Ach.) Ach., Methodus, Sectio prior (Stockholmiæ): 104 (1803)
= *Lecidea polymorpha* var. *hyperborea* (Ach.) Spreng., Syst. veg., Edn 16 4(1): 263 (1827)
= *Lichen hyperboreus* Ach., K. Vetensk-Acad. Nya Handl. 15(2): 89 (1794)
= *Lichen leiocarpus* * *hyperborea* (Ach.) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 424 (1813)
= *Umbilicaria aenea* var. *hyperborea* (Ach.) Schaer., Lich. helv. spicil. 2: 91 (1826)
= *Umbilicaria polyphylla* var. *hyperborea* (Ach.) Schaer., Enum. critic. lich. europ. (Bern): 29 (1850)
= *Umbilicaria varia* var. *hyperborea* (Ach.) Leight., Ann. Mag. nat. Hist., Ser. 2 18: 282 (1856)

[VZ2341], Bohemoslovacia. Bohemia merid., distr. Prachatice, Stachy, in monte Popelná, 1000 m. Ad lapides schistosos in clivo petroso. Leg. J. Horáková et A. Vězda. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR. 2341.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, attached by a central holdfast, rigid and fragile, irregular in outline, (2-)4–6(-10) cm wide, deeply dissected, the edges down-turned, lacerated and often with oval perforations. Upper surface uniformly dark brown, sometimes paler towards the centre, covered with narrow, irregular, vermiform ridges often extending to margins and not forming a network. Lower surface uniformly dark brown, darker and almost black around umbilicus, paler towards the margins, smooth or occasionally dimpled, erhizinate or with very few rhizinomorphs, without thalloconidia. Upper cortex dark brown, 6-15 µm thick; medulla white, very loose under the ridges; lower cortex scleroplectenchymatous, 15–25 µm thick. Apothecia common, gyrodisc, black, sessile, mainly located between ridges over the whole upper surface except around the umbilicus, 1-1.5(-2) mm across. Epithecium brown; hymenium colourless; paraphyses simple or sparingly branched, the apical cells more or less swollen; hypothecium dark. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-

celled hyaline, ellipsoid, (7-)13-16(-20) x (3-)5-8 µm. Photobiont chlorococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric and umbilicaric acids, plus small amounts of lecanoric acid. - Note: an arctic-alpine, probably circumpolar lichen found on siliceous boulders wetted by rain, usually near the ground, with optimum near treeline.

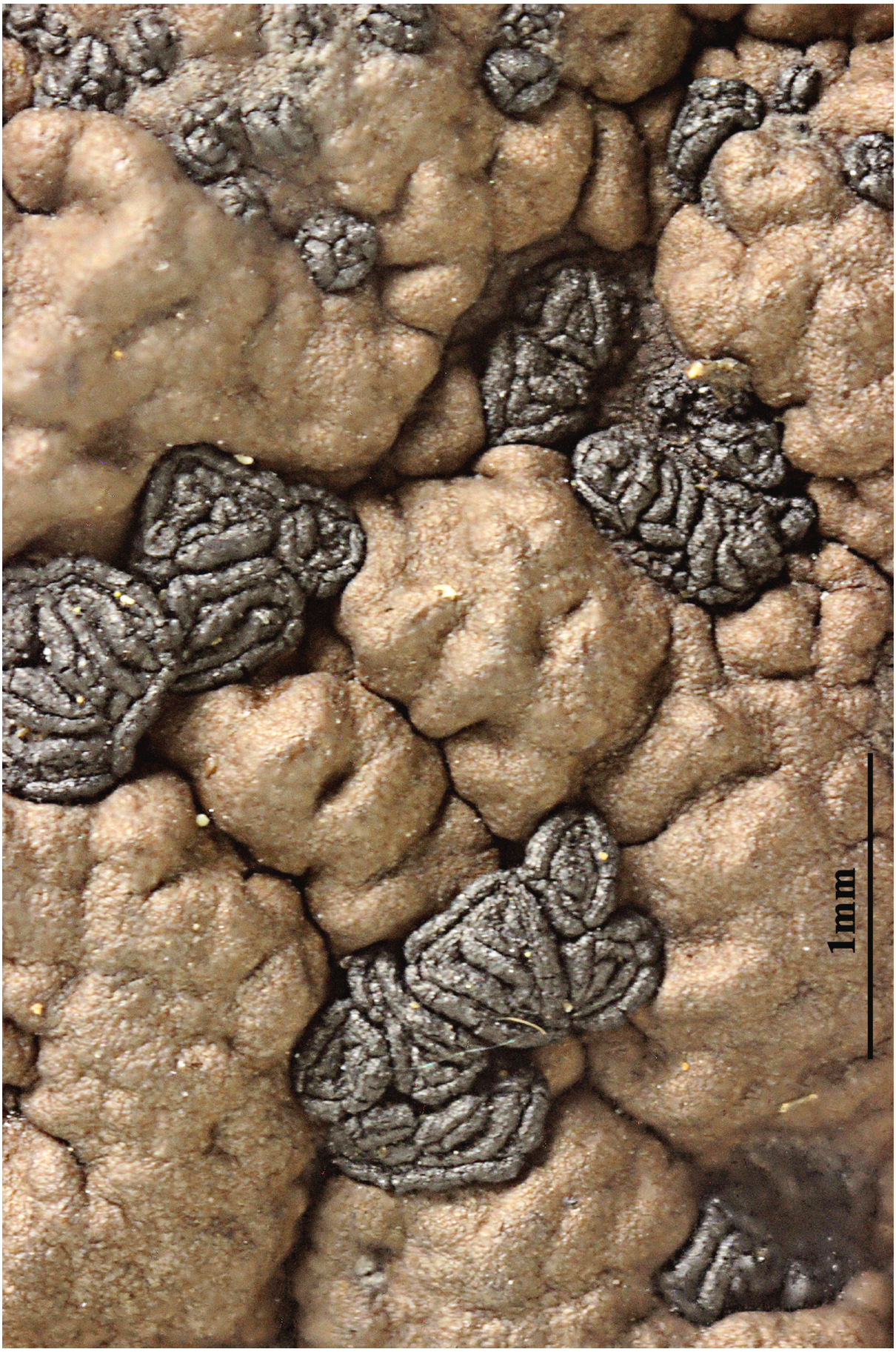
Umbilicaria hyperborea



Umbilicaria hyperborea



Umbilicaria hyperborea



Umbilicaria hyperborea



Umbilicaria hyperborea

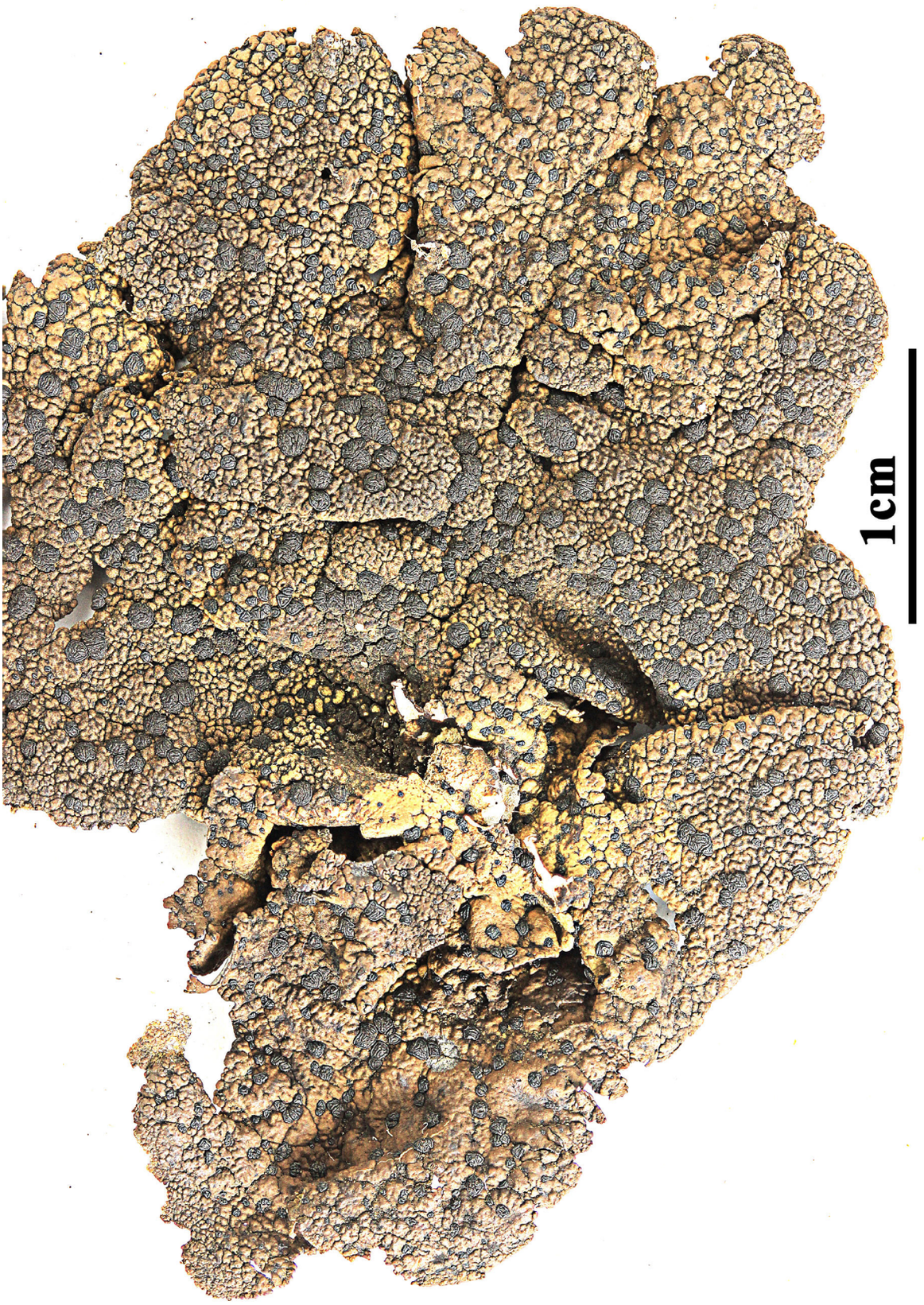
Umbilicaria hyperborea (Ach.) Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 110 (1796) [1795]
= *Gyromium hyperboreum* (Ach.) Wahlenb., Fl. lapp.: 482 (1812)
= *Gyrophora aenea* var. *hyperborea* (Ach.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 7 (1818)
= *Gyrophora hyperborea* (Ach.) Ach., Methodus, Sectio prior (Stockholmiæ): 104 (1803)
= *Lecidea polymorpha* var. *hyperborea* (Ach.) Spreng., Syst. veg., Edn 16 4(1): 263 (1827)
= *Lichen hyperboreus* Ach., K. Vetensk-Acad. Nya Handl. 15(2): 89 (1794)
= *Lichen leiocarpus* * *hyperborea* (Ach.) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 424 (1813)
= *Umbilicaria aenea* var. *hyperborea* (Ach.) Schaer., Lich. helv. spicil. 2: 91 (1826)
= *Umbilicaria polyphylla* var. *hyperborea* (Ach.) Schaer., Enum. critic. lich. europ. (Bern): 29 (1850)
= *Umbilicaria varia* var. *hyperborea* (Ach.) Leight., Ann. Mag. nat. Hist., Ser. 2 18: 282 (1856)

[VZ2082], Styria, Turracher Höhe, in colle supra lacum Turrachsee dictum, 1800 m. Ad saxa schistosa. Leg. A. Vězda, 12.09.1985. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 2082.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, attached by a central holdfast, rigid and fragile, irregular in outline, (2-)4–6(-10) cm wide, deeply dissected, the edges down-turned, lacerated and often with oval perforations. Upper surface uniformly dark brown, sometimes paler towards the centre, covered with narrow, irregular, vermiform ridges often extending to margins and not forming a network. Lower surface uniformly dark brown, darker and almost black around umbilicus, paler towards the margins, smooth or occasionally dimpled, erhizinate or with very few rhizinomorphs, without thalloconidia. Upper cortex dark brown, 6-15 µm thick; medulla white, very loose under the ridges; lower cortex scleroplectenchymatous, 15–25 µm thick. Apothecia common, gyrodisc, black, sessile, mainly located between ridges over the whole upper surface except around the umbilicus, 1-1.5(-2) mm across. Epithecium brown; hymenium colourless; paraphyses simple or sparingly branched, the apical cells more or less swollen; hypothecium dark. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled hyaline, ellipsoid, (7-)13-16(-20) x (3-)5-8 µm. Photobiont chlo-

rococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric and umbilicaric acids, plus small amounts of lecanoric acid.
Note: an arctic-alpine, probably circumpolar lichen found on siliceous boulders wetted by rain, usually near the ground, with optimum near treeline.

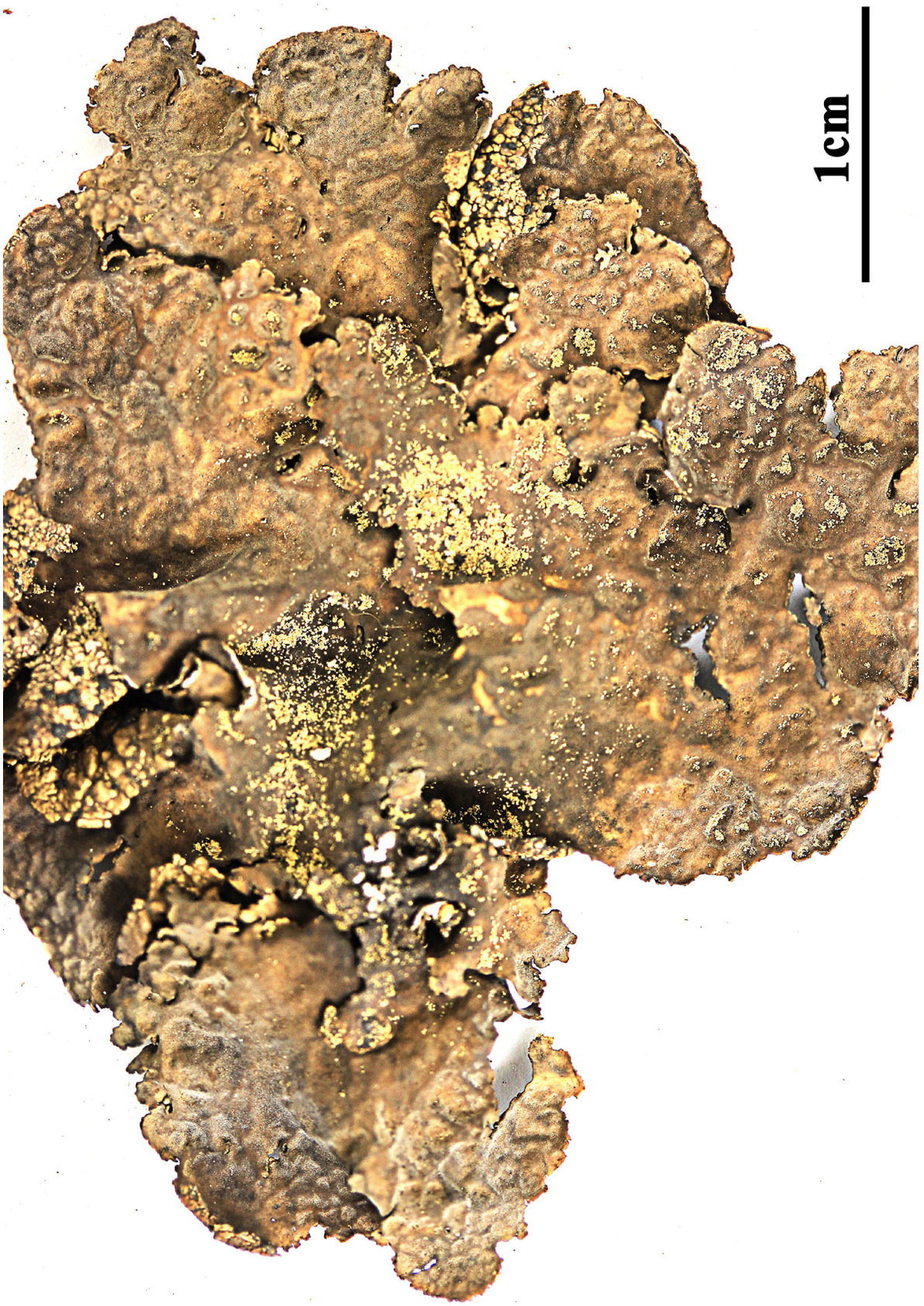
Umbilicaria hyperborea



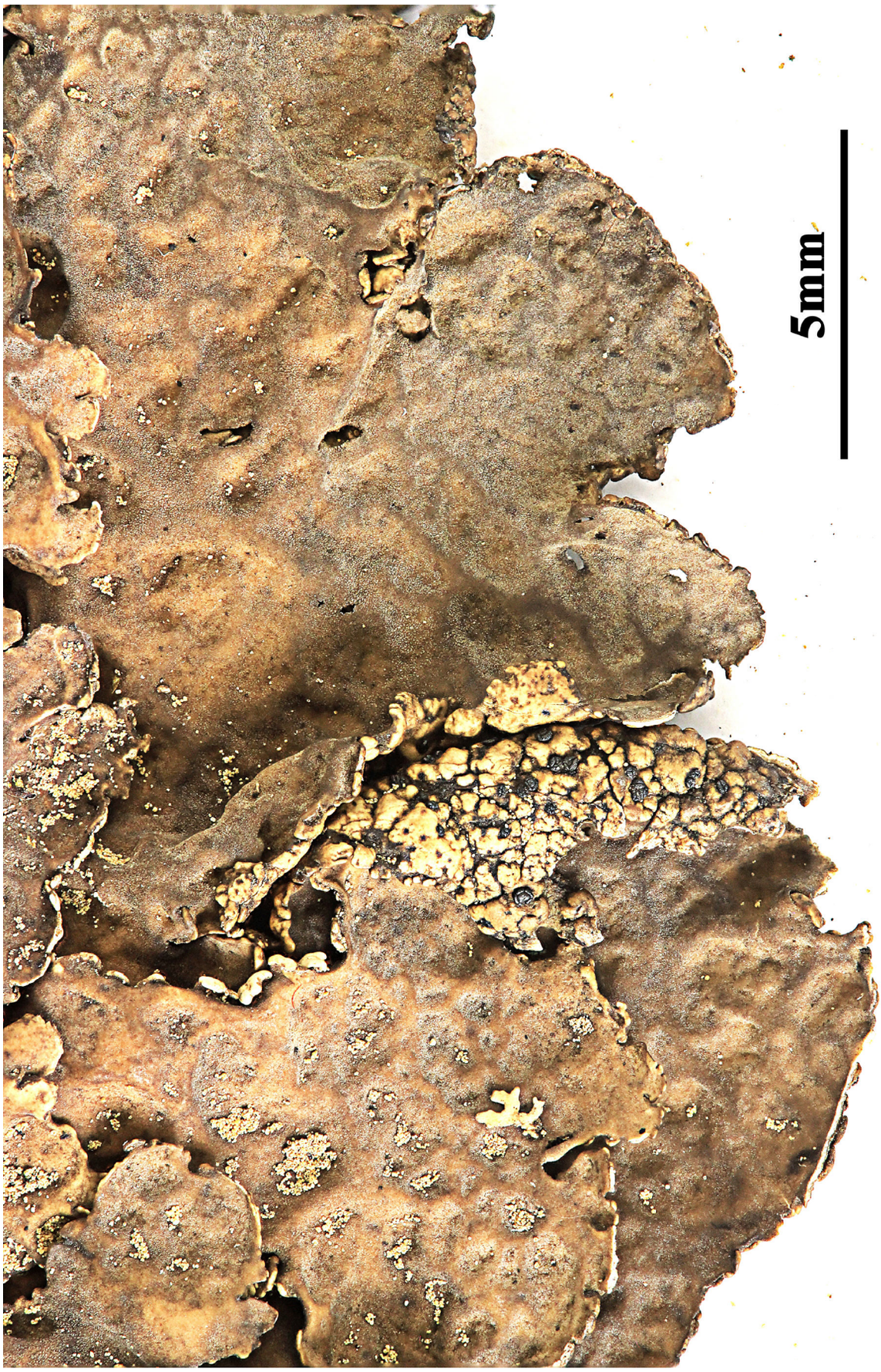
Umbilicaria hyperborea



Umbilicaria hyperborea



Umbilicaria hyperborea



Umbilicaria hyperborea

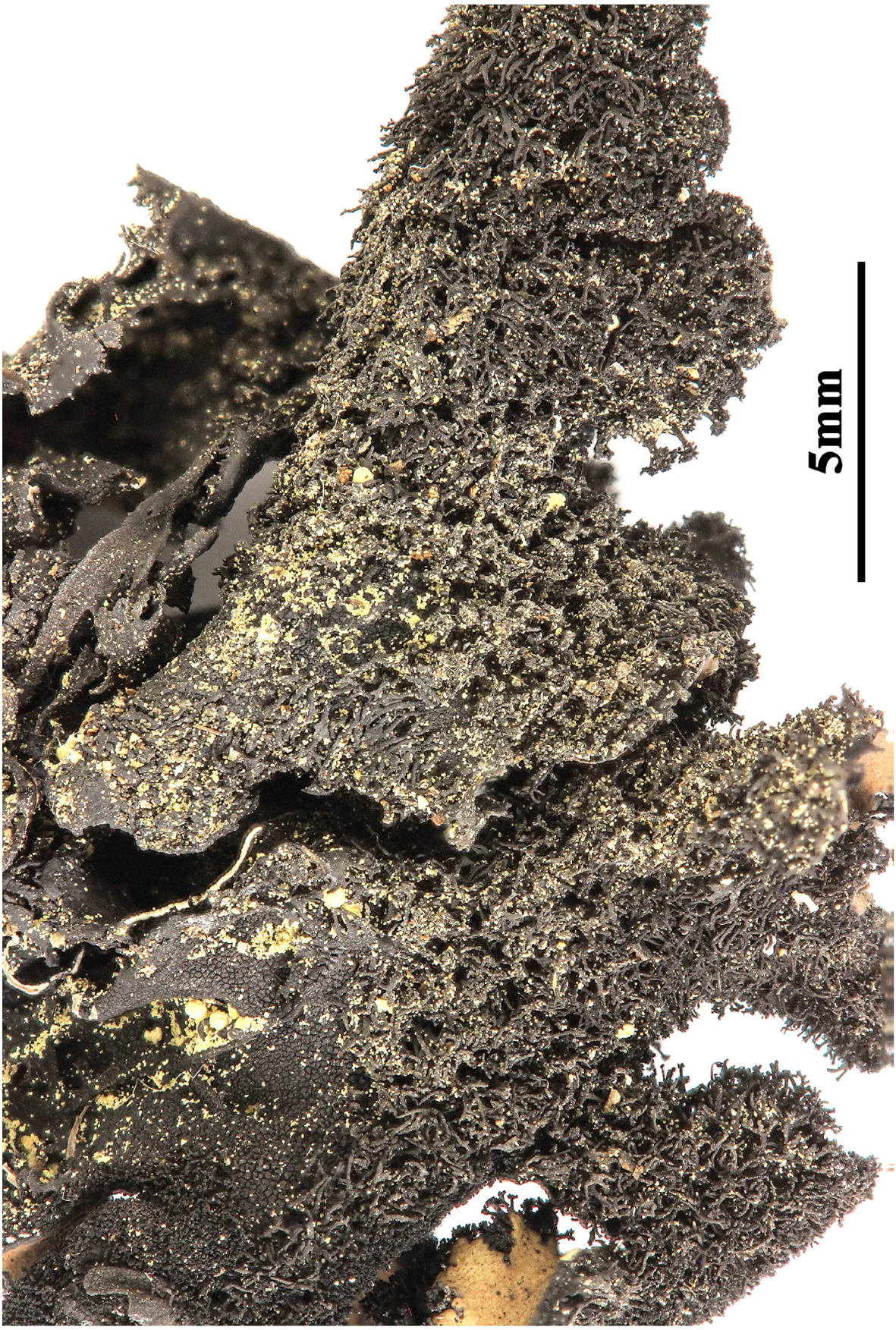
Umbilicaria polyrhiza (L.) Stenh., in Fries, Sched. Crit. Lich. Suec., Fasc. 5-6: 3 (1825)
= *Lichen polyrrhiza* L. 1753

[VZ2313], Italia. Calabria, Sila Grande: Timpone Grillo, 1450 m. Ad saxa granitica. Leg. D. Puntillo, 11.1988. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR. 2313.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous or more rarely polyphyllous, with undulating margins, attached by a central holdfast, 2-5(-10) cm wide, to c. 0.3 mm thick. Upper surface coppery brown, smooth and glossy, with abundant, erect, marginal rhizinomorphs; lower surface black, warted, distinctly areolate and sometimes trabeculate near the central holdfast, with dense black, simple or often branched rhizinomorphs; thalloconidia dark brown, formed on the tips of marginal rhizinomorphs, rarely on the lower cortex, multiseptate (100-400-celled), more or less isodiametrical or irregular in shape, c 19-21 µm wide. Upper cortex 3-6 µm thick; medulla white, 60-70 µm thick; lower cortex 20-50 µm thick. Apothecia very rare, black, actinodisc, 2-3 mm across, sessile, with a convex disc and a thick, carbonaceous, finally excluded proper margin. Epithecium brown-black; hymenium colourless; paraphyses simple or sparingly branched, 2-2.5 µm thick, the terminal cells hardly swollen; hypothecium brown or blackish. Asci 8-spored, elongate-clavate, thick-walled, the apical dome K/I+ blue, Umbilicaria-type. Ascospores 1-celled, hyaline, ellipsoid to ovoid, 8-9 x 3.5-6 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ and KC+ red, P-. Chemistry: medulla with gyrophoric and umbilicaric acids. - Note: on steeply inclined surfaces of siliceous rocks wetted by rain in humid-rainy areas, with optimum near and above treeline.



Umbilicaria polyrhiza

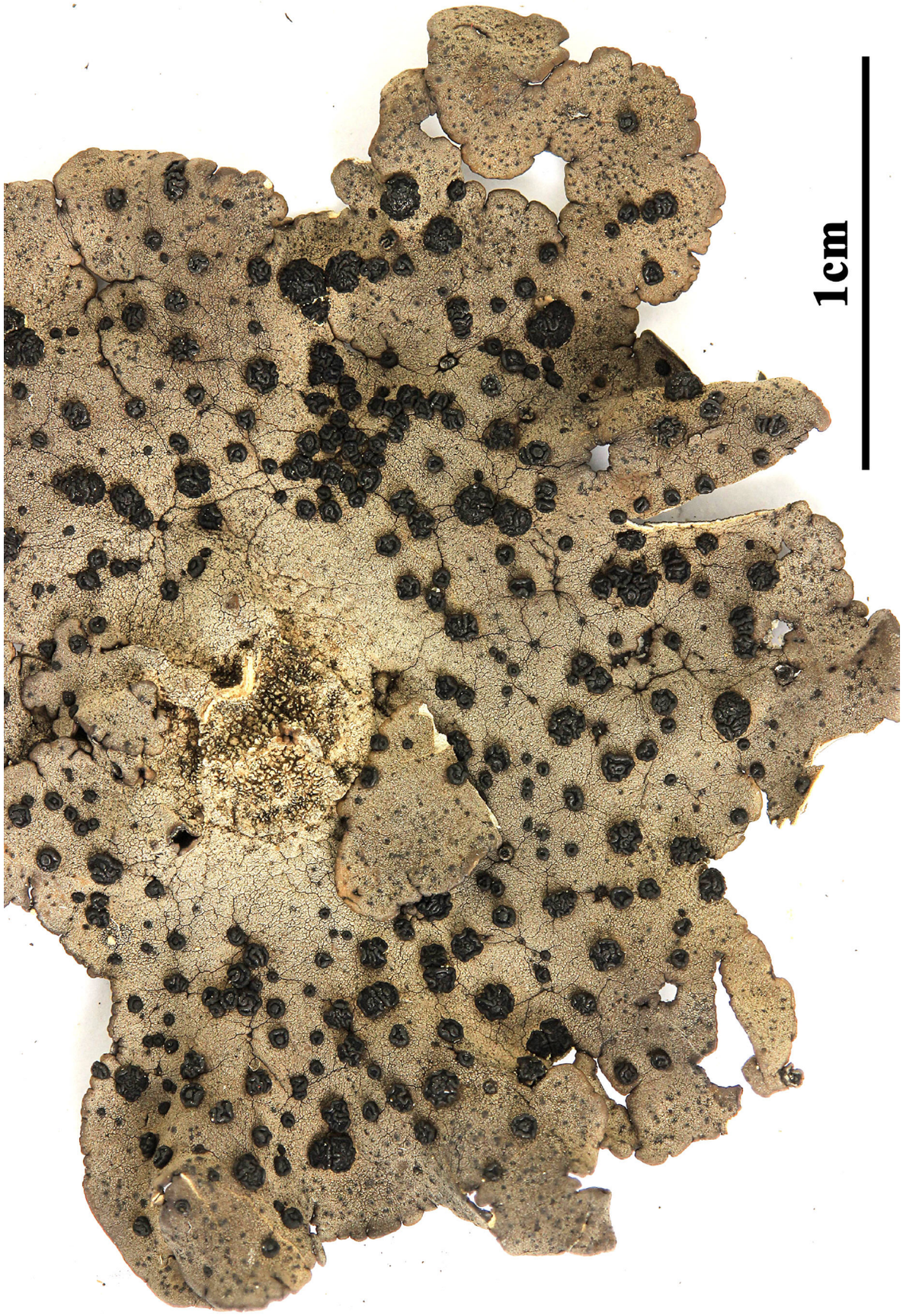


Umbilicaria polyrhiza

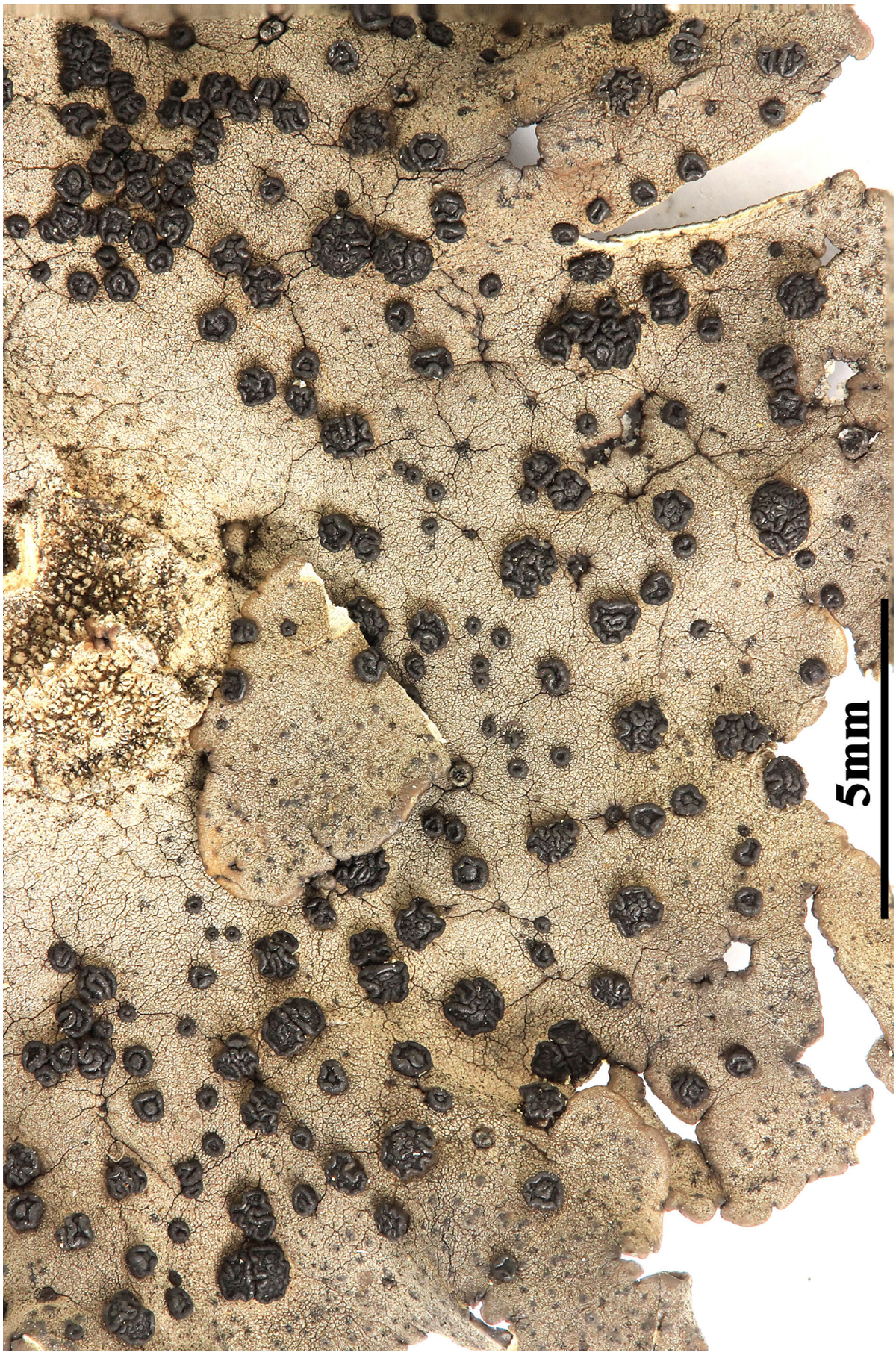
Umbilicaria ruebeliana (Du Rietz & Frey) Frey, Hedwigia 71: 112 (1931)
= *Gyrophora ruebeliana* Du Rietz & Frey, in Frey 1929

[VZ1330], Jugoslavia. Macedonia. Bitola, montes Baba, regio montis Pelister, supra rivum Magarevo prope hospitium, 1430 m. Ad saxa granitica. Leg. A. Vězda. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1330.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous or more rarely polyphyllous, rigid, more or less orbicular, 1-4(-6) cm in diam., attached by a more or less central holdfast. Upper surface dark brown to black, somewhat paler in central part, distinctly areolate, the areoles 0.5-1.5 mm wide. Lower surface dark brown to black, areolate-verrucose, erhizinate or with very few, sparse rhizinomorphs. Upper and lower cortex prosoplectenchymatous, brown in the outer layer; medulla white. Apothecia common, numerous, black, omphalodisc, 0.2-1 mm across. Epithecium black-brown; hymenium colourless; paraphyses simple or sparingly branched, with enlarged apical cells; hypothecium brown in lower part. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled and hyaline, sometimes turning brown and submuriform when overmature, ellipsoid, 11-13.5 x 6-8.5 µm. Photobiont chlorococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric and umbilicaric acids (major), plus variable amounts of lecanoric acid. - Note: on steeply inclined to rain-sheltered, often south- or west-facing surfaces of siliceous rocks above treeline, reaching the nival belt.



Umbilicaria ruebeliana



Umbilicaria ruebeliana



Umbilicaria ruebeliana

Umbilicaria spodochroa Hoffm. [as 'spadochroa'], Deutschl. Fl., Zweiter Theil (Erlangen): 113 (1796) [1795]
= *Gyromium velleum* var. *spadochroum* (Hoffm.) Wahlenb., Fl. Suec. 2: 857 (1826)
= *Gyrophora depressa* var. *spodochroa* (Hoffm.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 6 (1817)
= *Gyrophora hirsuta* var. *spodochroa* (Hoffm.) Flörke, Mag. Gesell. naturf. Freunde, Berlin 4: 67 (1810)
= *Gyrophora spodochroa* (Hoffm.) Ach. [as 'spadochroa'], Methodus, Sectio prior (Stockholmiæ): 108 (1803)
= *Gyrophora vellea* var. *spodochroa* (Hoffm.) Ach., Syn. meth. lich. (Lund): 68 (1814)
= *Gyrophoropsis spodochroa* (Hoffm.) Räsänen [as 'spadochroa'], Sched. Lich. Fenn. Exs. IV-VII: 1 (1936)
= *Lichen leiocarpus* * *spodochroa* (Hoffm.) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 425 (1813)
= *Lichen spadochrous* (Hoffm.) Ach., Lich. suec. prodr. (Linköping): 149 (1799) [1798]
= *Omphalodiscus spadochrous* (Hoffm.) Schol., Nytt Mag. Natur. 75: 26 (1934)
= *Umbilicaria hirsuta* * *spodochroa* Hoffm. [as 'hirsuta * spadochroa'], Deutschl. Fl., Zweiter Theil (Erlangen): 113 (1796) [1795]
= *Umbilicaria hirsuta* var. *spodochroa* (Hoffm.) D. Dietr., Deutschl. Kryptog. Gewächse, 4 Abth.: 65, tab. 152 (1846)
= *Umbilicaria vellea* var. *spodochroa* (Hoffm.) Fr., Sched. Crit. Lich. Suec., Fasc. 5-6: 4 (1825)

[VZ1531], Bulgaria. Pontus, distr. Burgas: Sozopol - Primorsko, loco Veselita skala dicto supra fluminem Ropotamo, 30 m. In rupibus andesiticis. Leg. I. Pisút et. A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1531.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, 2-5 cm wide, soft, pliable and somewhat leathery when wet, fragile when dry, attached by a more or less central holdfast. Upper surface grey-brown, often whitish-pruinose, rather smooth, the margins sinuous, more or less entire. Lower surface mostly dark brown to black, rimose-warted, with abundant, branched, brown-black rhizinomorphs; thalloconidia absent. Medulla not always clearly differentiated from lower cortex. Apothecia frequent, especially in marginal parts, omphalodisc, black, 1-1.5(-2) mm across, sessile to shortly stalked. Epithecium black-brown; hymenium colourless; paraphyses simple or

sparingly branched, with enlarged apical cells; hypothecium brown. Asci 8-spored, elongate-clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores at first 1-celled and hyaline, but soon turning brown and muriform, ellipsoid, 20-30(-36) x 11-19 µm. Photobiont chlorococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric acid. - Note: a mainly western-oceanic species growing on inclined surfaces of siliceous rocks near or above treeline.

Umbilicaria spodochroa



Umbilicaria spodochroa



Umbilicaria spodochroa

Umbilicaria subglabra (Nyl.) Harm., Lich. Fr. 4: 707 (1910) [1909]
= *Agyrophora subglabra* (Nyl.) Llano, Monograph of the Lichen Family Umbilicariaceae in the Western Hemisphere: 69 (1950)
= *Gyrophora polyphylla* f. *subglabra* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 41 (1903)
= *Gyrophora subglabra* Nyl., Lich. Envir. Paris: 135 (1896)

[VZ1331], Jugoslavia. Macedonia. Bitola, montes Baba, regio montis Pelister, in rupibus Jorgov kamen dictis, 1800 m. Ad saxa cilicea schistosa. Leg. A. Vězda, 12.12.1975. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR. 1331.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, but ften deeply dissected appearing polyphyllous, more or less circular in outline, rigid, often with ragged margins, 1-3(-6) cm wide, 0.1-0.2 mm thick, attached by a central holdfast. Upper surface pale to dark grey, dull, smooth to minutely roughened, with a white necral layer centrally, and a few short folds or ridges or numerous fine striae radiating from the umbo. Lower surface smooth, dull, grey or patchily sooty black where covered with dark brown, simple or rarely 1-septate, spherical, delicately roughened, c. 7-7.5 µm wide thalloconidia. Upper cortex 10-20 µm thick; algal layer discontinuous; medulla white, 45-80 µm thick, well differentiated from lower cortex; lower cortex scleroplectenchymatous, 14–24 µm, thick. Apothecia rare, black, leiodisc. Epithecium black-brown; hymenium colourless; paraphyses simple or sparingly branched, with enlarged apical cells; hypothecium brown. Asci 8-spored, elongate-clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled, hyaline, narrowly ellipsoid, 10-20 x 3-7 µm. Photobiont chlorococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric acid, plus small amounts of lecanoric and umbilicaric acids. - Note: on steeply inclined to horizontal, exposed surfaces of siliceous rocks, often at the top of large boulders; certainly widespread throughout the Alps.



Umbilicaria subglabra



Umbilicaria subglabra



Umbilicaria subglabra

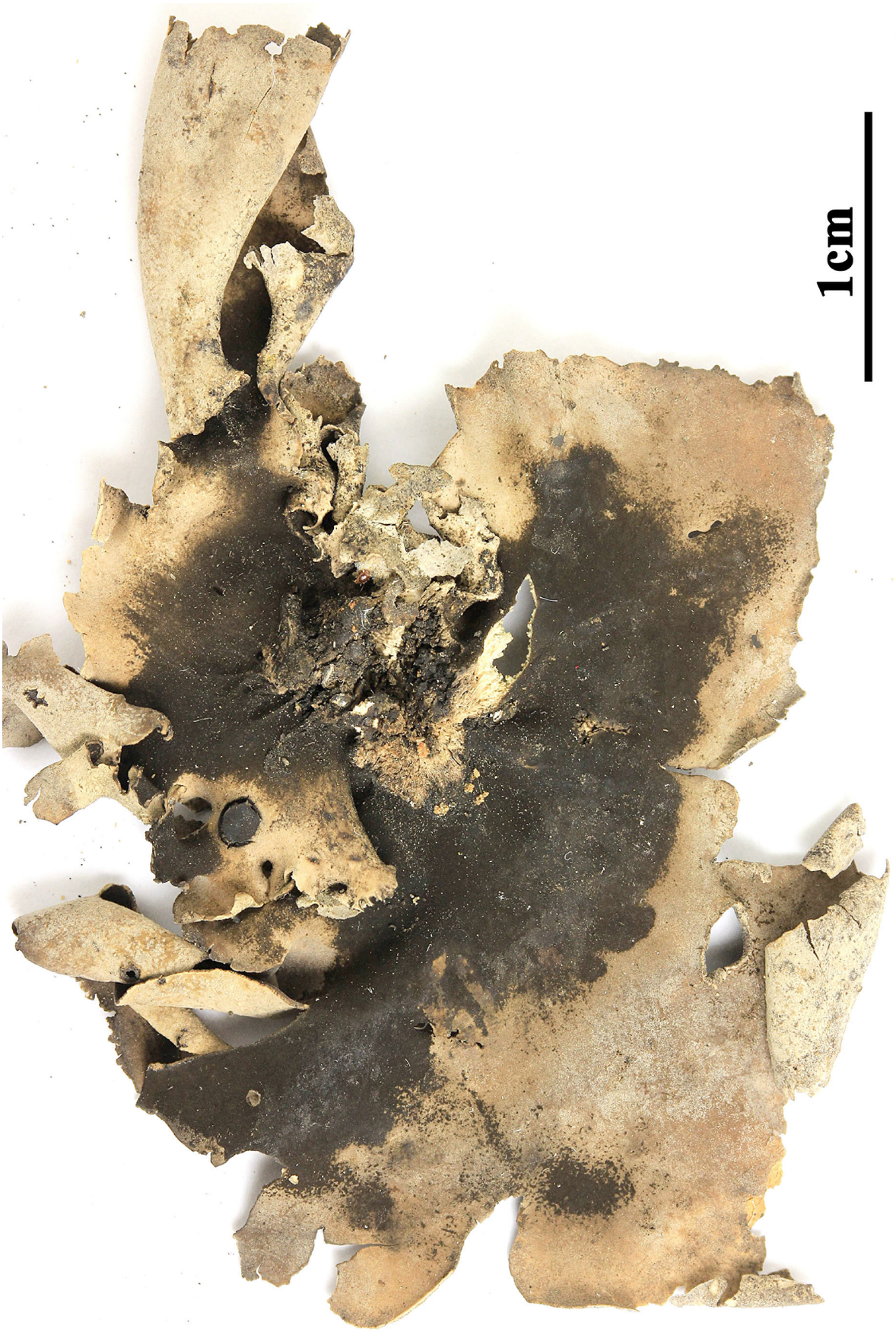
Umbilicaria subglabra (Nyl.) Harm., Lich. Fr. 4: 707 (1910) [1909]
= *Agyrophora subglabra* (Nyl.) Llano, Monograph of the Lichen Family Umbilicariaceae in the Western Hemisphere: 69 (1950)
= *Gyrophora polyphylla* f. *subglabra* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 41 (1903)
= *Gyrophora subglabra* Nyl., Lich. Envir. Paris: 135 (1896)

[VZ1415], U. R. S. S. Armenia. Caucasus Minor, iugum montium Sevanskij chrebet dictum, distr. Krasnoselsk, supra lacum Sevan, prope pagum Čavagjukh, 2500 m. Ad saxa silicea. Leg. A. Vězda, 24.05.1976. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1415.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, but ften deeply dissected appearing polyphyllous, more or less circular in outline, rigid, often with ragged margins, 1-3(-6) cm wide, 0.1-0.2 mm thick, attached by a central holdfast. Upper surface pale to dark grey, dull, smooth to minutely roughened, with a white necral layer centrally, and a few short folds or ridges or numerous fine striae radiating from the umbo. Lower surface smooth, dull, grey or patchily sooty black where covered with dark brown, simple or rarely 1-septate, spherical, delicately roughened, c. 7-7.5 µm wide thalloconidia. Upper cortex 10-20 µm thick; algal layer discontinuous; medulla white, 45-80 µm thick, well differentiated from lower cortex; lower cortex scleroplectenchymatous, 14–24 µm, thick. Apothecia rare, black, leiodisc. Epithecium black-brown; hymenium colourless; paraphyses simple or sparingly branched, with enlarged apical cells; hypothecium brown. Asci 8-spored, elongate-clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled, hyaline, narrowly ellipsoid, 10-20 x 3-7 µm. Photobiont chlorococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric acid, plus small amounts of lecanoric and umbilicaric acids. - Note: on steeply inclined to horizontal, exposed surfaces of siliceous rocks, often at the top of large boulders; certainly widespread throughout the Alps.



Umbilicaria subglabra



Umbilicaria subglabra

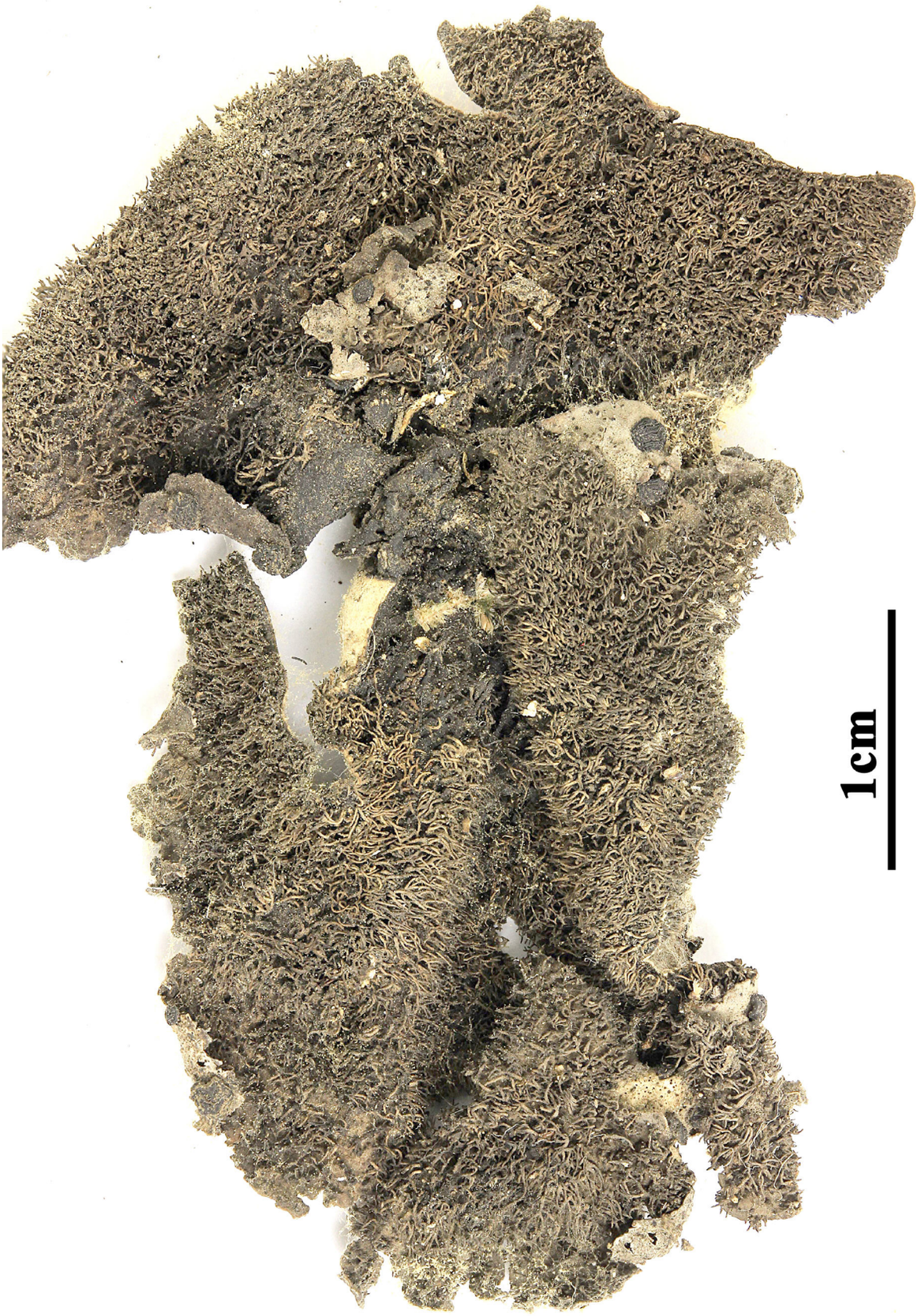
Umbilicaria vellea (L.) Michx., Fl. Boreali-Americ. (Paris) 2: 323 (1803)
= *Gyromium velleum* (L.) Wahlenb., Fl. lapp.: 484 (1812)
= *Gyrophora depressa* f. *vellea* (L.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 6 (1818)
= *Gyrophora vellea* (L.) Ach., Methodus, Sectio prior (Stockholmiæ): 109 (1803)
= *Lecidea vellea* (L.) Spreng., Syst. veg., Edn 16 4(1): 264 (1827)
= *Lichen velleus* L., Sp. pl. 2: 1150 (1753)

[VZ1413], U.R. S. S. Armenia. Distr. Krasnoselsk, Caucasus Minor, iugum montium Sevanskij chrebet dictum, supra lacum Sevan prope pagum Cavagjukh, 2500 m. Ad saxa silicea. Leg. A. Vězda, 24.05.1976. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1413.

Thallus foliose-umbilicate, heteromerous, dorsiventral, mainly monophyllous, rigid, 4-8(-20) cm wide, 0.2-0.3(-0.4) mm thick, with entire to incised, slightly up- or down-tuned margins, attached by a thick, dark, more or less central holdfast. Upper surface pale brown to greyish violet, dull, smooth to scabrous, distinctly rimose with dark cracks, slightly raised over the umbilicus and with a few trabeculate folds. Lower surface black, more or less scabrous, with a dense felt of rhizinomorphs except around the umbilicus and in the marginal zone. Rhizinomorphs of two types: black, short, stout and ball-tipped, immixed with others which are pale brown to ivory white, cylindrical, simple or branched. Thalloconidia large, 22-40 x 31-60 µm, multiseptate, 50-300-celled, dark brown to black, irregular, arising both on the lower cortex and in clusters on the tips of rhizinomorphs. Upper cortex palisade-plectenchymatous, 11-30 µm thick; medulla white, dense, 45-130 µm thick; lower cortex brown, scleroplectenchymatous, 20-60 µm thick. Apothecia rare, gyrodisc, black, to 3 mm across. Epithecium black-brown; hymenium colourless; paraphyses mostly simple, with enlarged apical cells; hypothecium brown. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled, hyaline, broadly ellipsoid, 9-12 x 6-8 µm. Photobiont chlorococcoid. Spot tests: medulla K-, C+ red, KC+ red, P-. Chemistry: medulla with gyrophoric, lecanoric, hiascic and umbilicaric acids. - Note: an arctic-alpine, probably circumpolar lichen found on steeply inclined to vertical, exposed surfaces of siliceous rocks with some water seepage, especially along fissures, with optimum above treeline.



Umbilicaria vellea



Umbilicaria vellea

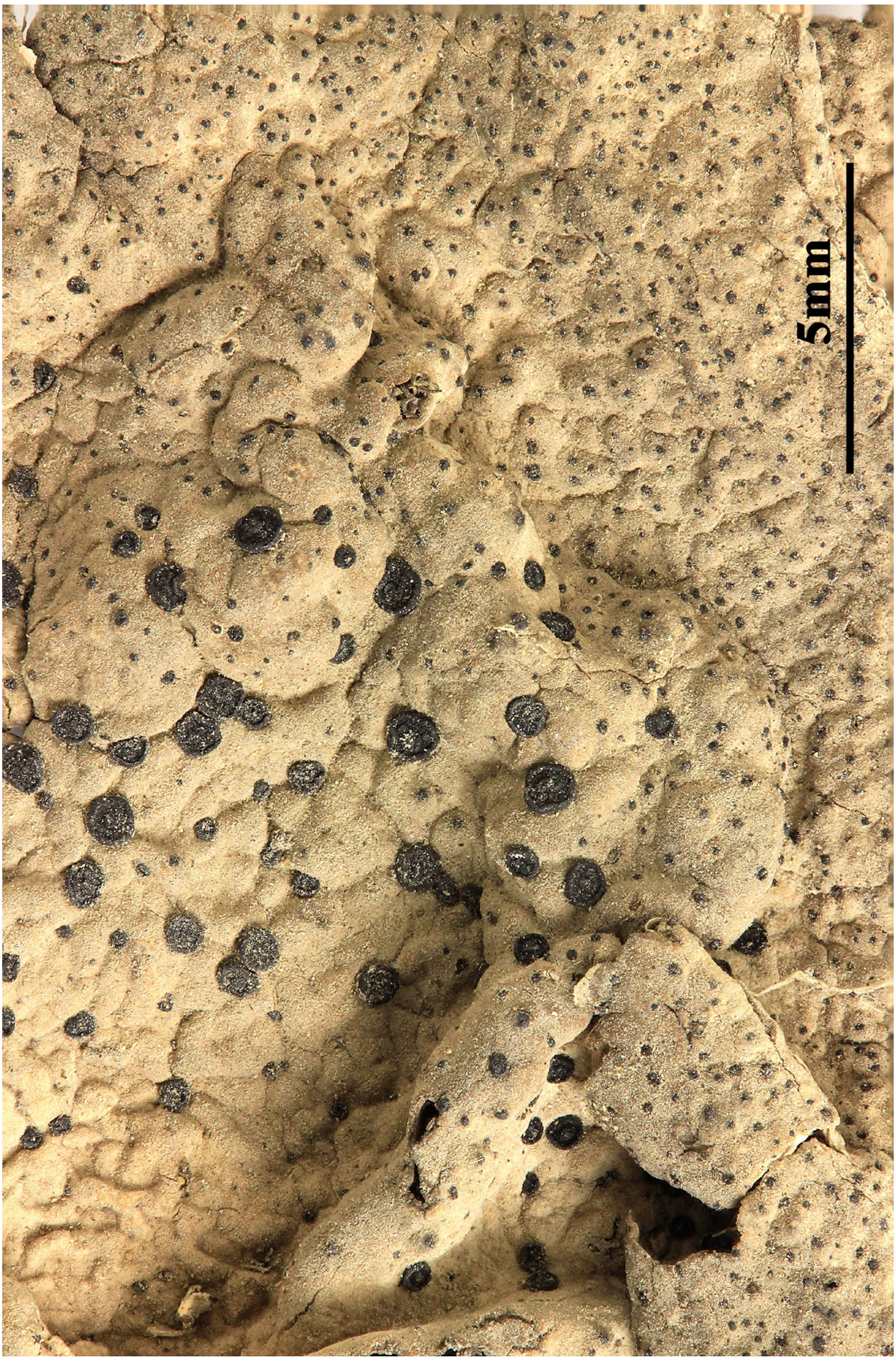
Umbilicaria virginis Schaer., Lich. helv. spicil. 11: 564 (1842)
= *Agyrophora stipitata* (Nyl.) Nyl., Lich. Envir. Paris: 43 (1896)
= *Agyrophora virginis* (Schaer.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 22: 181 (1950)
= *Gyrophora rugifera var. stipitata* (Nyl.) K.G.W. Lång, Annln K. K. naturh. Hofmus. Wien 26: 170 (1927)
= *Gyrophora stipitata* (Nyl.) Branth, in Hue, Rev. Bot. 5: 15 (1887) [1886-87]
= *Gyrophora virginis* (Schaer.) Frey, Hedwigia 69: 222 (1929)
= *Gyrophora virginis var. stipitata* (Nyl.) Räsänen, Lich. Fenn. Exs.: no. 360 (1939)
= *Omphalodiscus virginis* (Schaer.) Schol., Nytt Mag. Natur. 75: 25 (1936)
= *Umbilicaria stipitata* Nyl., Lich. Scand. (Helsinki): 289 (1861)
= *Umbilicaria virginis* Schrad., Bibl. Univ. Genève 36: 153 (1841)

[VZ2147], U.R.S.S. Asia centralis, Kirghiza: montes Titan-shan, iugum Kirghizki khrebet, in valle fluminis Ala-Archa, 37 km ad australem ab oppido Frunze, 2000-2200 m. Ad saxa silicea. Leg: Vašák, 29.04.1986, det. A. Vězda. EX A. VĚZDA: LICHENES SELECTI EXSICCATI NR, 2147.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, rigid, more or less circular in outline, 1.5-4(-20) cm wide, attached by a more or less central holdfast. Upper surface ivory to light grey or brownish grey, dull, with sharp radiating ridges and coarsely pruinose near the umbilicus. Lower surface white to pink, smooth to minutely roughened, usually brown-black around the umbilicus, with dense, long, slender, white, branched rhizinomorphs; thalloconidia absent. Apothecia common, black, weakly omphalodisc, sometimes with several circular elevations, sessile to substipitate, up to 3 mm across. Epithecium black-brown; hymenium colourless; paraphyses mostly simple, with enlarged apical cells; hypothecium brown. Asci 8-spored, clavate, thick-walled, with an amyloid apical dome, Umbilicaria-type. Ascospores 1-celled, hyaline, ellipsoid, 10-15 x 5-8 µm. Photobiont chlorococcoid. Spot tests: medulla K- or K+ red, C+ red, KC+ red, P- or P+ orange. Chemistry: medulla with gyrophoric acid and variable amounts of stictic acid. - Note: an arctic-alpine, probably circumpolar lichen found on wind-exposed siliceous cliffs, often in small niches and under overhangs.



Umbilicaria virginis



Umbilicaria virginis



Umbilicaria virginis



Umbilicaria virginis

Usnea arizonica Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 1: 232, 248 (1936)

[VZ1696], Mexico, Guanajuato: In monte dicto Cerro Zamorano. Ad corticem arborum (*Abies* sp.) in silva humida (*Abies-Quercus*). Leg. W. L. Culberson (no. 17588) et C. F. Culberson, 16.12.1978. - Annot.: Usnic acid, salazinic acid, an unidentified triterpene, and unidentified aliphatic compounds by TLC; anal. from A. Johnson et C. F. Culberon. - EX A. VěZDA LICHENES SELECTI ESICCATI NR. 1696.

Thallus shrubby to subpendant, 2-12 cm long, compact to loose; branching anisotomic-dichotomous; basal part usually black on a narrow and irregular zone, rarely conspicuously blackened on 2-4 mm, sometimes concolorous with the branches, with few indistinct annular cracks; branches irregular; lateral branches not narrowed at attachment point, but sometimes ±fusiform; annulations usually few (1-4/0.5 cm) and indistinct, rarely conspicuous and numerous; segments terete to flattened, slightly to distinctly sausage-like, usually with foveoles and/or transverse furrows; papillae verrucose, few to numerous, irregularly to dense on main and secondary branches; tubercles few to numerous, ±large and conspicuous, sometimes of irregular shape, often eroded and white at their top, mainly on terminal branches bearing apothecia fibrilles present mainly mainly on terminal branches bearing apothecia; fibrils spinulous to slender, 1-6 mm long, few to numerous, mostly irregularly distributed on the whole thallus; isidiomorphs absent; pseudocyphellae present on fibrils growing on branches or at the edge of apothecia cortex: thin to moderately thick (5-8%), dull to ±shiny; medulla lax to dense, unpigmented; axis usually of the same width than medulla; Apothecia 2-13 mm in diam., terminal, subterminal or lateral; ascospores broadly ellipsoid, 7-9 x 5-6 µm; Spot tests K+ yellow turning red, C-, KC-, P+ orangish yellow, or K-, C-, KC-, P-; Secondary metabolites salazinic acid (major) or no medullary substances. Substrate and ecology: on bark rarely on wood or rock, mainly on *Quercus* spp., *Pinus* spp., and *Pseudotsuga* in mixed conifer forests or pine-oak-fir forests or Douglas fir forests or in the spruce fir zone, between 1800 and 2900 m World distribution: Europe and western North America



Usnea arizonica



Usnea arizonica

Usnea aurantiacoatra (Jacq.) Bory, in Dumont-D'Urville, Mém. Soc. Linn. Paris 4: 596 (1826)
= *Lichen aurantiacoater* Jacq. [as 'aurantiaco-ater'] 1781

[VZ2373], Argentina. Tierra del Fuego: Dept. Ushuaia. Sierra Alvear, in monte ad septentriones hospitii "Tierra Mayor", 1000-1200 m. In rupibus siliceis duris venti expositis. Leg. T. Ahti, J. Poelt, N. Scutari et S. Stenroos, 14.1.1989. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 2373.

Thallus: fruticose, yellow-green, 5-10 cm high. Apothecia: common, to 1 mm diam., with black disc and prominant verrucose margin Ascospores: hyaline, simple, 9-11 x 6-8 µm. Ecology and distribution: Common and widespread on the Falkland Islands where it forms extensive colonies on acid rocks from sea-level to summit fellfields. Also reported from southern South America, the Antarctic Peninsula and islands in the south Atlantic Ocean. Apparently absent from the southern Indian Ocean islands, Australia and New Zealand.



Usnea aurantiacoatra



Usnea aurantiacoatra

Usnea australis Fr., Syst. orb. veg. (Lundae): 282 (1825)

[VZ1490], Hawaii Insulae. Hawaii, reservatum naturale. Kipuka Ki, 1250 m. In ramulis Acacía koa. Leg. O. et I. Degener (no. 34224), 17.1.1977., det. K. Kalb. Ex A. VěZDA LICHENES SELECTI EXSICCATI NR.1490.

Thallus vulgo parvus, ca 3-5. rarius usque ad 7 cm longus, erectus, fruticulosus aut caespitosus, statu vivo pallide stramineo viridis, in herbario pulchre aut sordide fuscus, ad ramos tenuiores pallidior, basi brevissima, attenuata, fere indistincta, valgo parce et erebrius tantum ad basin ramosus, axillis clausis, ramis fere parallelis. Rami ad basin paulo attenuati et ca. 0.8 mm crassi, supra sensim modice incrassati, parte mediali, crassissima, ca. 1-1.3 mm crassi, exceptione tantum crassiores, ad apices paulo attenuati sed usque ad summilates crassuli, parce dichotome et subdichotome ramosi, continui aut tantum rare simpliciter fracti, teretes, rarius paulo deformatuli, crassiores sat crebre papillati, papillis minutis, fere semiglobosis, concoloribus aut interdum paulo obseurioribus, non farinosis sat dense sparsi, praeterea laeves et glabri, tenuiores crebrius papillati, papillis acutis, ramulis parcis, pallidioribus, fere perpendicularibus, varie curvatis, vulgo continuis et saepius iterum ramulosis, tuberculatis, apice obtusis sat rare sparsi. Summilates fere nullae, vulgo apotheciis terminatae. Apothecia non rara, protinus lateralia, mox terminalia, parva, rarius sat lata, protinus fere globosa, postea concava et dein subplana, Excipulum fere semper distincte semiglobosum, laeve, glaberfimum, nitidum, thallo concolor. Cilia pauca, brevia, vulgo vix 1 mm longa, basi fere infundibuliformiter incrassata, supra attenuata, laevia, ad apices pallidiora. Discus concavus, vulgo leviter marginatus, crebre pruinosus. Epithecium obscuratum. Sporae ca. 7 x 10 µm, uni- aut biserialiter in ascis sitae. Cortex ca. 100 µm crassus, rigidus, chondroideus. Medulla 200-300 µm crassa, laxissima, alba, K-. Axis ca. 150-200 µm crassus, chondroideus, saepius. fuscidulus. -Distributio Insulae Hawaii, California. (Ex Motyka, 1936, p. 536,)



Usnea australis



Usnea australis

Usnea bogotensis Vain., Hedwigia 38(Beibl.): (121) (1899)

[VZ2248], Aequatoria. Pichincha: In reservato Parque National de Cotopaxi, in latere septentrionali montis ignivomi Cotopaxi, 4100 m. Ad terram volcanicam loco aprico cum *Stereocaulo verrucifero*. Leg, W. L. Culberson (no. 20382) et C. F. Culberson, 22.8.1987.- Annot.: Usnic acid, salazinic acid, and probably traces of consalazinic acid by TLC; anal. from A. Johnson et C. F. Culberson. - EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 2248.

Thallo apicem versus bene soredioso ab ea (Usnea jamaicensis Ach.) differens. Thallus erectus, long. circ. 90 mm, basin versus rigidus, ramis primariis circ. 1.5-1 mm crassis, crebre minuteque verruculosus, glaucescenti-stramineus, ramis omnibus teretibus, ramis adventitiis raro evolutis. Stratum myelohyphicum crebrum, jodo non reagens, K lutescens, dein subrubescens. Ad saxa 8000' s m. prope Bogota.



Usnea bogotensis



Usnea bogotensis

Usnea bornmuelleri J. Steiner, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 53: 227 (1903)

[VZ1447], Tanzania. Kilimanjaro: prope casam alpinam Barranco dictam, 3900 m. Ad saxa. Leg, T. Pócs (no. 6934), 3.7.1976, det. A. Vězda. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1447.

Thallus shrub-like, to about 10(15) qn, black at base. Branches pale to dark greenish grey, stiff, terete, many swollen to 2.5 mm diam., narrowed at joints, generally fastigiate. Cortex thick and cartilaginous. Spinules absent. Fibrils sparse. Pseudocyphellae large, spaced out, and conspicuous on main branches, dense and small on secondary branches, mostly raised. Papillae present on larger branches. Medulla mainly lax but sometimes dense in peripheral branches. Axis white to pale pink, thin. Isidia numerous on distal'pseudocyphellae, often dark tipped, present also on cortex of main branches, and then pale tipped. Soredia absent. Apothecia lateral or subterminal on smaller branches. CHEMISTRY: (1) Psoromic acid, ± conpsoromic acid, (2) norstictic acid and/or salazinic acid, (3) protocetraric acid and/or fumarprotocetraric acid, with or without accessory substances of less importance. ECOLOGY: Common on fully exposed rocks in the montane and low alpine zone at 2400 to 4200 m. DISTRIBUTION: Central and west Africa. (Ex T. D. V. Swinscow & H. Krog, 1988: Macrolichens of East Africa).



Usnea bornmuelleri

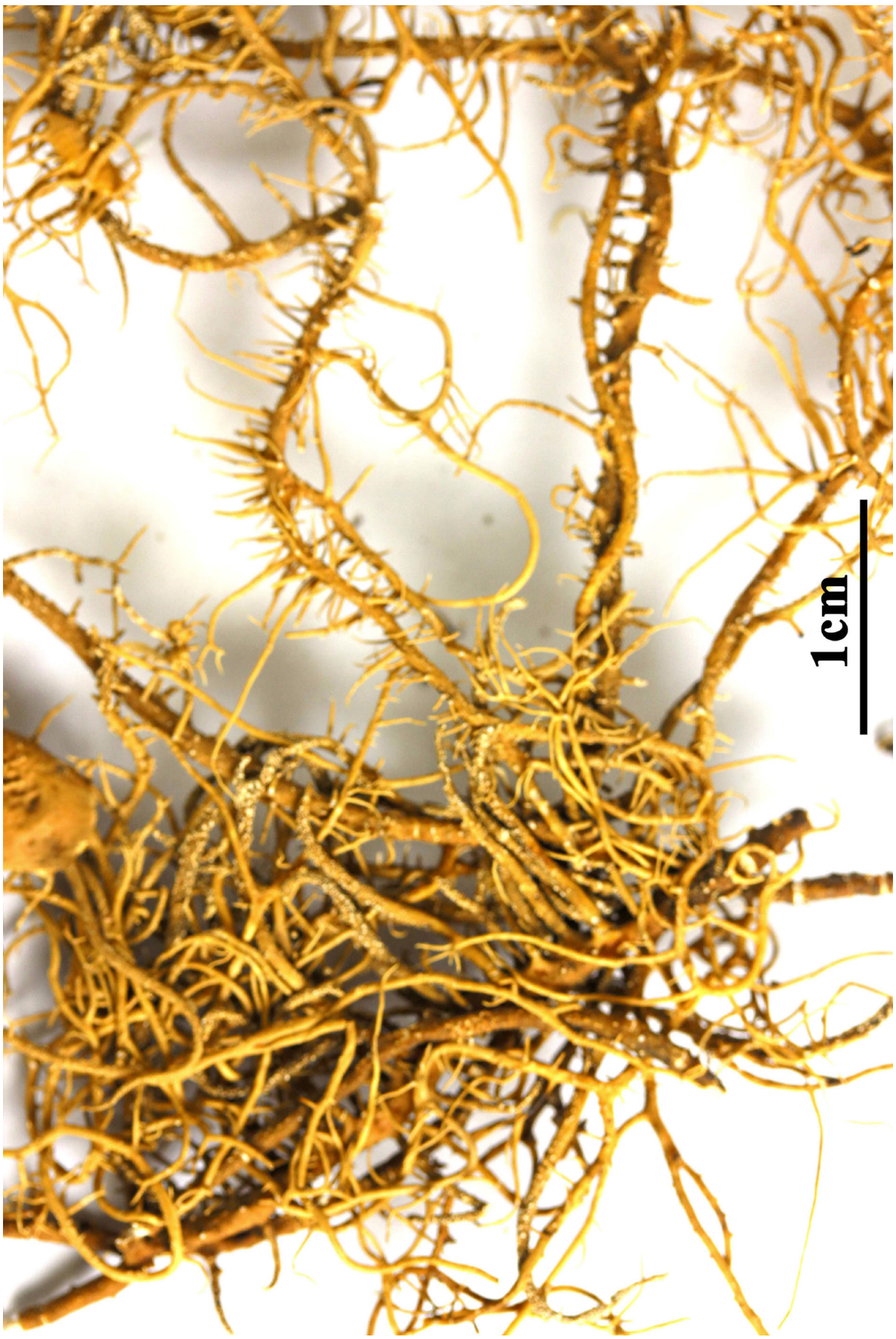


Usnea bornmuelleri

Usnea ceratina Ach., Lich. Univ.: 619 (1810)

[VZ1693], Magna Britannia. Cornwall. Lostwhitiel,Boconnoc. Ad ramulos *Crataegi* sp. In silva vivaria vetusta. Leg. P. James, 1.4.1972. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1693.

Thallus fruticose-filamentous, rigid, greenish to greenish grey, shrubby when young, then pendulous, 20-30(-50) cm long, branching mainly isotomic-dichotomously with divergent to parallel branches. Main branches cylindrical or irregular, ochre-coloured or greenish grey at base, with numerous annular cracks, the segments cylindrical to more or less sausage-like, terete to subangular, usually without foveoles or transverse furrows; fibrils and papillae sparse to numerous, the fibrils perpendicular to the main branches, up to 1 cm long; lateral branches not constricted at attachment point, with wart-like tubercles which become white at the top and bear stipitate, ulcerose soralia and/or isidiomorphs. Soralia originating from the top of tubercles or occasionally on large fibrils, at first punctiform (<1/2 of branch diameter), finally sometimes completely covering the terminal branches; isidiomorphs rare to numerous, 0.1–0.2 mm long, clustered in the soralia. Cortex hard, vitreous in longitudinal section, 6-11% of total branch thickness; medulla dense to compact, 18-28%, pink (rarely white or yellowish); central axis pink to almost red, sometimes white or pale yellow, 26-48%; ratio axis/medulla ranging between 1.1 and 2.7. Apothecia usually absent. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ yellow, CK+ yellow-orange, P-. Chemistry: cortex with usnic acid; medulla with diffractaic acid (major), and variable amounts of barbatic and 4-O-demethylbarbatic acids, rarely with squamatic acid. - Note: a cool-temperate to boreal-montane lichen also known from the Southern Hemisphere, found on branches of trees in damp forests with frequent fog; most common in the Alps.



Usnea ceratina



Usnea ceratina

Usnea ciliata (Müll. Arg.) Vain., Philipp. J. Sci., C, Bot. 4(5): 654 (1909)
= *Usnea trichodea* ***var****. ciliata* Müll. Arg. 1877

[VZ2074], Nova Zelandia. Otago: Rock et Pillar Range, 1300 m. Ad saxa schistosa. Leg. D. J. Galloway, 2.1967. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2074.

Thallus fruticose, erect, tufted to spreading, to 9 cm tall. Branches 2-3 mm wide at base, weakly dichotomously to richly branching above. Surface yellow to brown-red at base, often with black cracks, becoming conspicuously blackened or yellow-grey or bluish-purple above with conspicuous black bands, not papillate or sorediate, smooth, waxy and shining, often ± strongly faveolate. Apothecia frequent, lateral on branches, disc bluish-black, margins smooth, concolorous with thallus, with ray-like branchlets, black, few to many, thalline exciple smooth. Chemistry: Cortex K-; medulla K+ yellow-red, C-, KC+ red, Pd+ orange-red. Norstictic, ± protocetraric, salazinic and usnic acids.



Usnea ciliata



Usnea ciliata

Usnea cladocarpa Fée, Essai Crypt. Exot. (Paris): xcvii (1825) [1824]

[VZ1920], Brasilia. Rio de Janairo, Serra da Mantiqueira: Itatiaia, inter Registro do Picú et Agulhas Negras, 1900 m. Ad corticem arborum in pluviisilva montana. Leg. K. Kalb et G. Plöbst,1.11.1978. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1920.

Thallo pendulo, cinerascente, sub-tereti-compresso, subflaccido, ramis paulis, grossis, verruculosis, ad originem constrictis; cephalodiis cat-neo-rufis, rugosissimis; ramulis fibrillosis, abreviatis, fibrillis sub-op-positis, verticillatis, rugosis, truncato-obtusis. Apotheciis (orbilis) concoloribus, subplanis, latis; margine undulato, ramulifero. ramis fibrillosis crevris. (Ex Fée,1824, p. 101)



Usnea cladocarpa



Usnea cladocarpa

Usnea complanata (Müll. Arg.) Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 2: 404 (1937)
= *Usnea barbata* f. *complanata* Müll. Arg. 1892

[VZ1945], Zaire, Reservatum naturale Upemba, regio montis Kibanga, Lupuala, 250 m. Substratum non indicatum. Leg. G. F. de Witte (no. 3077), 17.11.1947, det. E. Sérusiaux. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1945.

Thallus minutus, ca. 3 cm longus et latus, sat crebre ramosuset ciliatus, complanatus, crassulus sed mollis, apotheciis comparate eximiis onustus, stato vivo non vius, in herbariocinereo fuscidulus, ad cilia pallidior, opacus, uniformis. Basis brevissima. constricta, et in gomphum dilatata. A basi usque ad apices thallus pluries sed incebre ramosus, axillis subclausis. Rami usque ad 2 mm crassiad apices fere non attenuati, distincte complanati et fere bilteraliter compressi, distincte foveolari et inter sub subangulati, ad angula cristati, laeves, continui aut irregulariter rupti. Cilia leteralia nunc nulla, nunc crebra, brevissima, cuneiformiter e ramis excrescentia, leviter inflata, ad apices suas obtuse accuminata, mollia, maiora complanata et iterum ramosa. Omnes rami apotheciis terminati. Apothecia ad dimensiones thalli comparate eximia,usque ad 1.5 cm in diametro. Excipulum fere laeve sed ramulis denticulatis dense munitum. Ciliua marginalia numerosa, crassa, brewvia, obtusissima, denticulata, Discus planus, emarginatus, leviter pruinosus. Hymenium ca. 60 µm altum. Epithecium incolor. Asci angusti. Sporae ca. 6 x 8 µm, episporio tenui sed distincto. Corte valde tenuis, ca. 50 µm crassus, valde mollis, extus fuscidulus. intus pellucidus. Medulla medio ca. 600 µm crassa, in angulis ramorum etiam crassior, laxa, e hyphis stuppeis, K-. Axis ca. 500 µm crassus, albus, leviter complanatus, (Ex Motyca 1936, 109)



Usnea complanata



Usnea complanata

Usnea diffracta Vain., Bot. Mag., Tokyo 35: 45 (1921)
= *Dolichousnea diffracta* (Vain.) Articus, Taxon 53(4): 932 (2004)

[VZ1374], URSS. Insulae Kurilenses. Insula Kunashir: inter vicos Mendelejevo et Sernovodsk (43°55' lat. bor., 145°08' long. orient.) 150 m. Ad ramos *Abietis sachaliensis*. Leg. V. Vašák, J. M. Jegorova et A. Alexejeva, 22.9.1968, det. A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1373.

Thallus ca. 20 cm longus, sat rigidus, pallide cinereo viridis, opacus, basi leviter infuscatus, basi fere infuscatus, basi fere indistincta, dilatata, indistincte in ramum primarium transiente aut leviter attenuata, protinus simplex, mox supra dichotome, repetitim sat rare ramosus, ramis divergentibus, axillis late clausis. Rami omnes valde uniformes, usque ad 1 mm crassi, vulgo tenuiores, paulo arcuati, rarius subrecti, eleganter teretes, in tota longitudine dense annulatim profunde fracti, annulis brevibus, cylindricis, crassioribus medio vulgo levissime concavis, leviter limbato marginatis, fissuris angustissimis, medulla in eis saltem ad ramos crassiores bene visibili, eciliati, omnino laeves. Summitates elongatae, sat dense dichotome ramosae, plicatae, capillaceae, simpliciter indistincte annulatim fractae. Apothecia non crebra, lateralia aut subterminalia, ca. 5 mm lata, saepius deformata. Excipulum fere planum, laeve, nitidum, sat [ragile, ramis non rare armatum. Cilia marginalia aut omnino nulla aut pauca sed valde elongata, ramis similia. Discus vulgo leviter deformatus, submarginatus, margine tenui, irregulari, rufo aut subrubente fuscus, fere epruinosus. Hymeninm superne infuscatum. Sporae non inventae. Cortex ca. 80 µm crassus, chondroideus, valde fragilis, vitreo subpellucidus. Medulla ca. 120 µm crassa, crebra, alba, K fere non reagens aut levissime lutescens, I ± caerulescens. Axis ca. 260 µm crassus, solidus, ex hyphis valde conglutinatis. Distributio Japonia. Corea, Formosa. (Ex Motyka 1936, 309).



Usnea diffracta

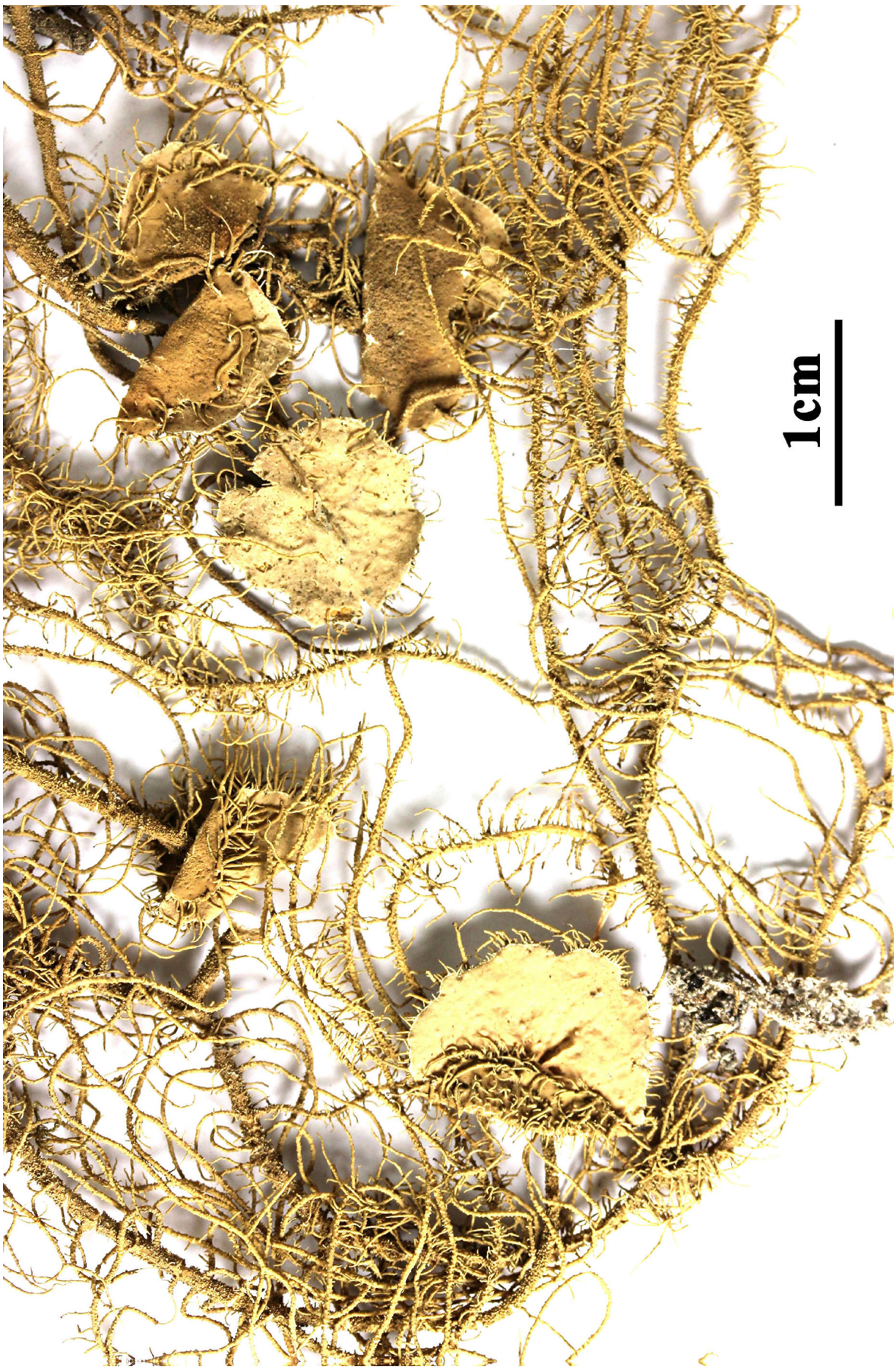


Usnea diffracta

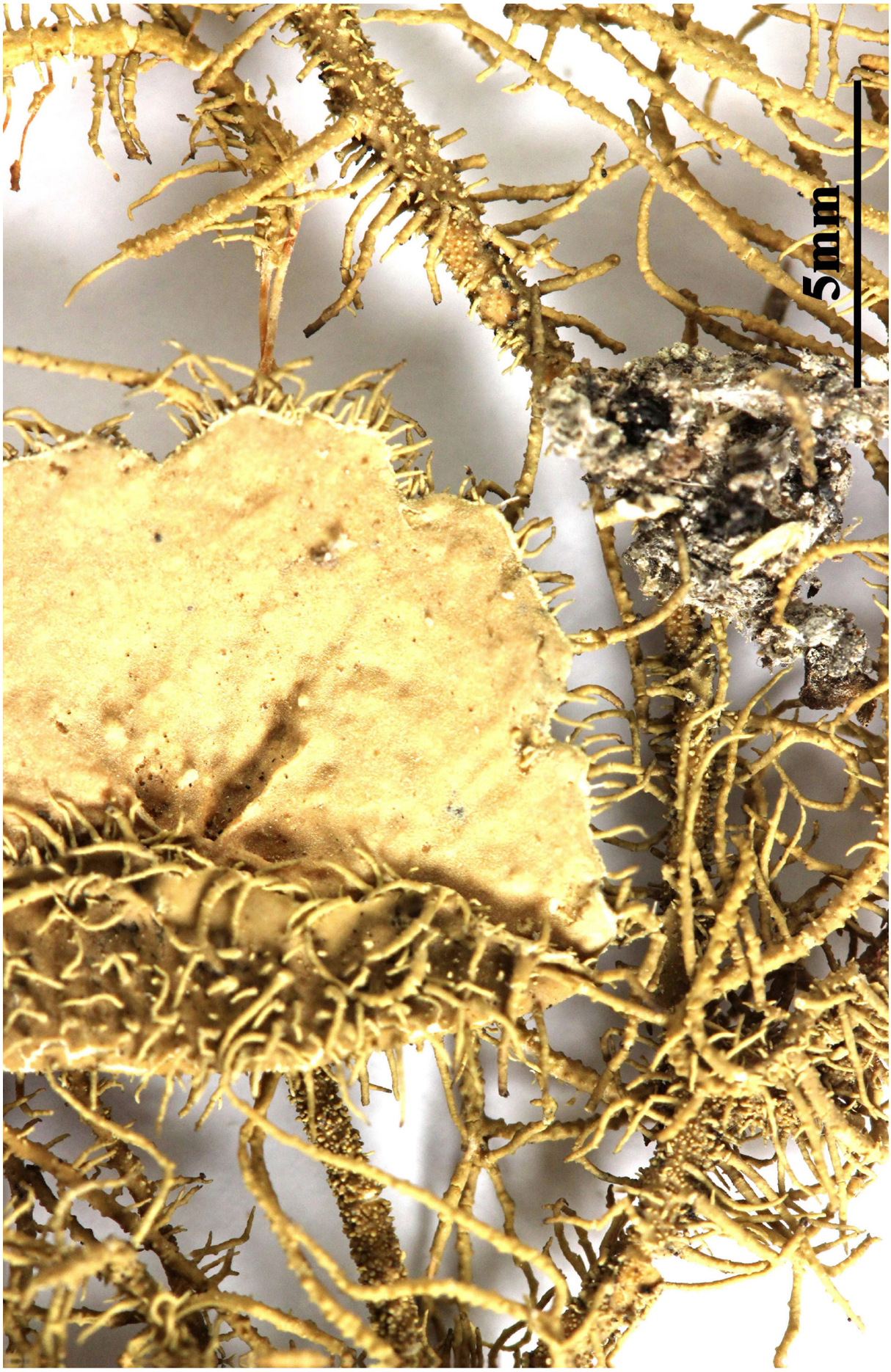
Usnea florida* var. *rubrireagens Vězda, in Poelt & Vězda, Lichenes Selecti Exsiccati, Fasc. (Průhonice) 59: 7 (no. 1473) (1977)

[VZ1473], URSS., Caucasus Magnus: Osetia Septentrionalis, distr. Ordžonikidze: in valle rivi Fiagdon, supra cicum Živgis, 1700m. In ramulis *Juniperi* sp. Leg. A. Vězda, 31.5.1976. EX A. VĚZDA LICHENES SELECTI EXSICCATI,

Medulla K+ flavescens dein rubescens.



Usnea florida* var. *rubrireagens



Usnea florida* var. *rubrireagens

Usnea hawaiiensis Motyka, Usnea 2(1): 502 (1937)

[VZ2321], Hawaii Insulae. Kilauea, prope locum "Uweka" dictum, in ramulis fruticcum. Leg. I. et O. Degener, 23.2.1978, det. V. Wirth. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2321.

Thallus vulgo 4-5 cm longus, evidenter erectus, valde rigidus, fruticulosus, sat compressus, statu vivo pallide luteola viridis, in herbario stramineus et dein fuscus, glaber et fere nitidus, basi brevi, distincte constricta, sat rigida, mox sat crebre sub sympodialiter iteru parce ramosus, axillis late clausis. Rami ad basin sensim sed valde distincte attenuati, ad medium usque ad 2 mm incrassati, ad apices subulato attenuati, sed usque ad apices crassuli, teretes, rare sed sat typice articulato fracti aut etiam continui, articulis ad apices constrictis aut abrupte simpliciter ruptis, indistincte verruculoso rare papillate. Ramuli haud rari, crassuli, breves, ramis similes, apice vulgo sorediosi, Summitates subuliformes, indistinctae. Apothecia typica non visa. Soredia ad partes superiores ramorm crebra, isidiosa, minuta, ellipsoideo oblonga, in nidulia capilliformibus sita in soraliis maiusculis, albis, acute limitatis. Cortex ca. 60 µm crassus, rigidus, extus fuscidulus. Medulla 300 µm crassa, laxa, alba, K in for. typica non reagens. Axis 250 µm crassus. - Insulae Hawaii, in omnibus evidenter insulis non rara.



Usnea hawaiiensis



Usnea hawaiiensis

Usnea hawaiiensis Motyka, Usnea 2(1): 502 (1937)

[VZ1894], Hawaii Insulae. Hawaii, in monte Mauna Kea, Hopuwai, 2000 m. In ramulis *Sophorae* sp. Leg. O. et I. Degener (15705), 12.10.1982, det. A. Vězda. EX A. VĚZDA LICHCES SELECTI EXSICCATI NR. 1894.

Thallus vulgo 4-5 cm longus, evidenter erectus, valde rigidus, fruticulosus, sat compressus, statu vivo pallide luteola viridis, in herbario stramineus et dein fuscus, glaber et fere nitidus, basi brevi, distincte constricta, sat rigida, mox sat crebre sub sympodialiter iteru parce ramosus, axillis late clausis. Rami ad basin sensim sed valde distincte attenuati, ad medium usque ad 2 mm incrassati, ad apices subulato attenuati, sed usque ad apices crassuli, teretes, rare sed sat typice articulato fracti aut etiam continui, articulis ad apices constrictis aut abrupte simpliciter ruptis, indistincte verruculoso rare papillate. Ramuli haud rari, crassuli, breves, ramis similes, apice vulgo sorediosi, Summitates subuliformes, indistinctae. Apothecia typica non visa. Soredia ad partes superiores ramorm crebra, isidiosa, minuta, ellipsoideo oblonga, in nidulia capilliformibus sita in soraliis maiusculis, albis, acute limitatis. Cortex ca. 60 µm crassus, rigidus, extus fuscidulus. Medulla 300 µm crassa, laxa, alba, K in for. typica non reagens. Axis 250 µm crassus. - Insulae Hawaii, in omnibus evidenter insulis non rara.



Usnea hawaiiensis



Usnea hawaiiensis

Usnea implicita (Stirt.) Zahlbr. [as 'implicata'], Cat. Lich. Univers. 6: 582 (1930)
= *Eumitria implicita* Stirt. 1881
= Eumitria baileyi Stirt., Scott. Natural. 6(3): 100 (1881) [1881-1882]

[VZ1242], Respublica Guinea (Africa occid.). Regio Macenta, montes Ziama, prope montem Sérédou, 900 m. Arboricola. Leg. S. Lisowski, 29.4.1962, det. J. Motyka. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1242.



Usnea implicita



Usnea implicita

Usnea intricata Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 136 (1796) [1795]
= *Lethariella intricata* (Moris) Krog Norw. J. Bot., 23: 94, 1976.
= *Stereocaulon intricatum* Moris - El. Stir. Sard., 3: 22, 1827.
= *Chlorea soleirolii var. arborea* Jatta.
= *Letharia soleirolii* (Schaer.) Hue.
= *Neuropogon arboricola* (Jatta) Jatta
= *Neuropogon soleirolii* (Schaer.) Jatta
= *Usnea arboricola* Jatta
= *Usnea intricata* (Moris) Th. Fr.
= *Usnea soleirolii* (Schaer.) Jatta

[VZ1143], Gallia. Haute-Soule. Montes Pyrenaei occidentales, Forêt d'Iraty, in monte Arthonolazeégagnia, 1450 m. Ad truncos Fagi silvaticae. Leg. J. Vivant, 22.10.1972. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1143.

Thallus fruticose, attached with a basal holdfast, shrubby to subpendulous, up to 15 cm long, rather rigid but not fragile, irregularly branched, isidiate. Branches pale grey in basal parts, dark grey in upper parts, terete, with a more or less scrobiculate surface. Isidia usually abundant, irregularly dispersed, at first verruciform, later cylindrical to branched-coralloid, concolorous with the branches or sometimes darkened at tips. Cortex paraplectenchymatous, 30-40 µm thick; medulla dense, forming a hollow axis in the older part of the branches, the cavity with a few hyphal strands, the space between medulla and cortex filled with crystals of calcium oxalates. Apothecia rare, lecanorine, mostly lateral, strongly constricted at base and often subpedicellate, with a brown to finally black disc and a smooth to scrobiculate-verrucose, sometimes isidiate thalline margin. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, 7-9 x 2-3 µm. Pycnidia black, immersed. Conidia pleurogenous, slightly inflated in the center or weakly bifusiform, 8-9 x 1.2-1.5 µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC-, P-. Chemistry: cortex with atranorin (minor) and chloroatranorin (minor), medulla with merochlorophaeic acid (major), submero-chlorophaeic acid (minor), 4-0-methylcrypto-

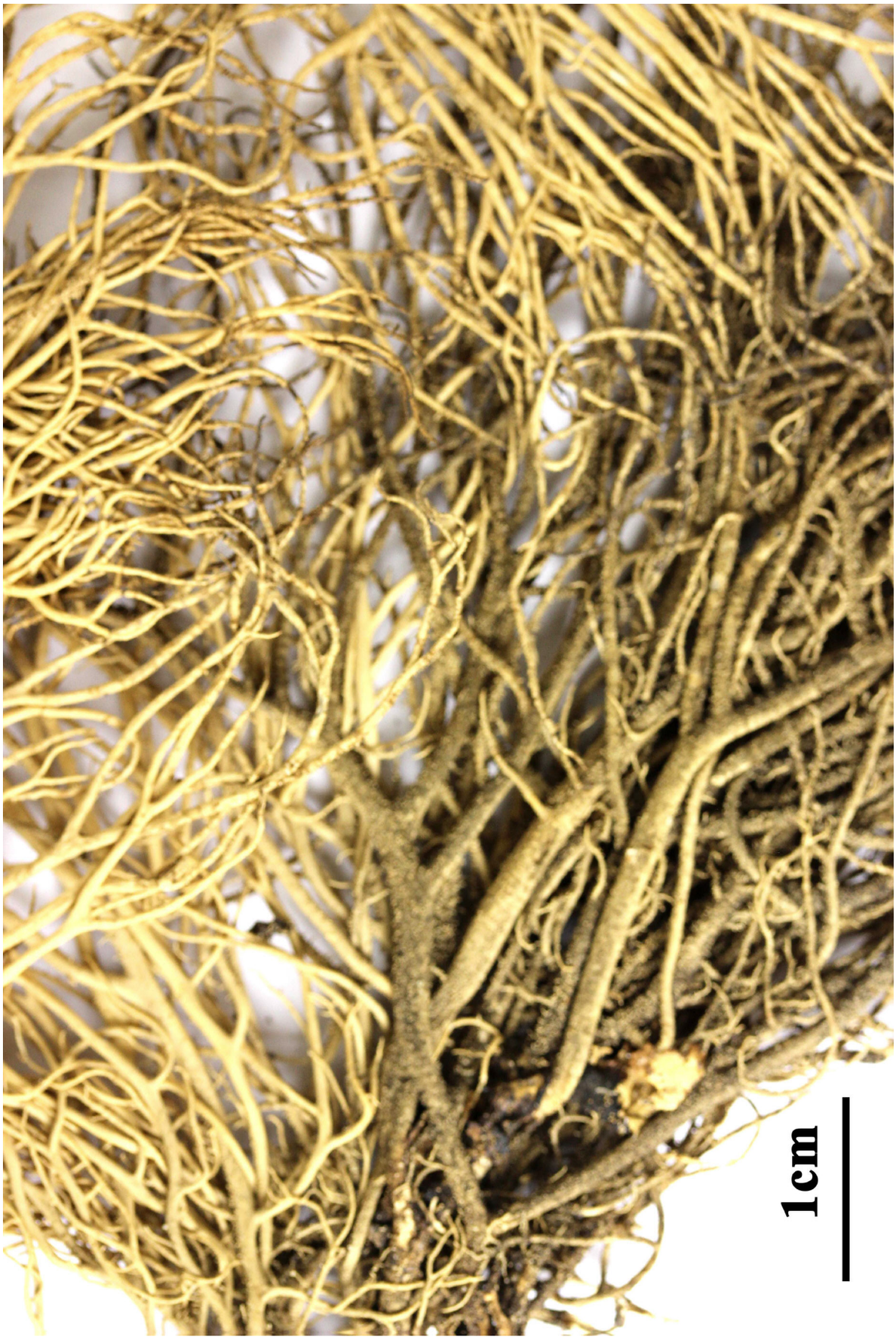
chlorophaeic acid (minor); ± fatty acid(s) of the rangiformic / norrangiformic / isorangiformic acid complex.



Usnea intricata



Usnea intricata



Usnea intricata



Usnea intricata

Usnea leprosa Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 1: 106 (1936)

[VZ1243], Respublica Guinea (Africa occid.), Regio Macenta, montes Ziama, prope Sérédou, 900 m. Arboricola. Leg. S. Lisowski, 29.4.1963, duol. det J. Motyca. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1243

Thallus ca. 7cm longus, subpendulus, sat crebre divergenter ramosus, infra sat crebre, supra fere non ramulosus, valde mollis, crebre sorediis sparsus et leprosus apparens, cinereo albido viridis, opacus. Basi thallus attenuatus, statim sat crebre ramosus, axillis subrectis, Rami ad basin constricti et articulatim affixi, mox incrassati, crassitudine usque ad 1.3 mm, saepius sat distincte articulati, articulis apice constrictis et leviter discretis, ± teretes etsi passim foveolatuli, laeves, propter soredia crebra farinacei. Ramuli laterales irregulariter, ad basin ramorum vulgo crebre dispositi, tenues et fere fibrilliformes, 0.5-5 mm longi, rectiusculi, crassiores iterum ramulosi et sorediosi. Summitates vulgo sat elongatae, parce ramosae, fere eramulosae, flexuosae, sensim attenuatae, crebre sorediosae. Apothecia non rara, sublateralia, valgo convoluta, parva, ca, ad 5 mm in diametro, Excipulum fere laeve aut spinulis tectum, opacum. Cilia lateralia pauca, brevia, crassa, obtusa, sorediis vulgo tecta. Discus planus autconvolutus, emarginatus, crebre farinosus. Soredia isidiosa, creberrime in tota planta disposita. - parte basali et summitatibus exceptis - in rugis minus distinctis in nidulis sita, magnitudine sat variabili, albida, opaca. Inter soredia et ramulos fere omnes adsunt status intermedii. Sorediis destructis - quod fere semper in herbario - rami apparent crebre farinosi et leprosi, quasi farinoso sorediosi. Cortex ca. 100 µm crasus, sat mollis. Medulla ea.500 µm crassa, laxa, alba, K fere - .Axis ea. 250 µm in diametro.



Usnea leprosa

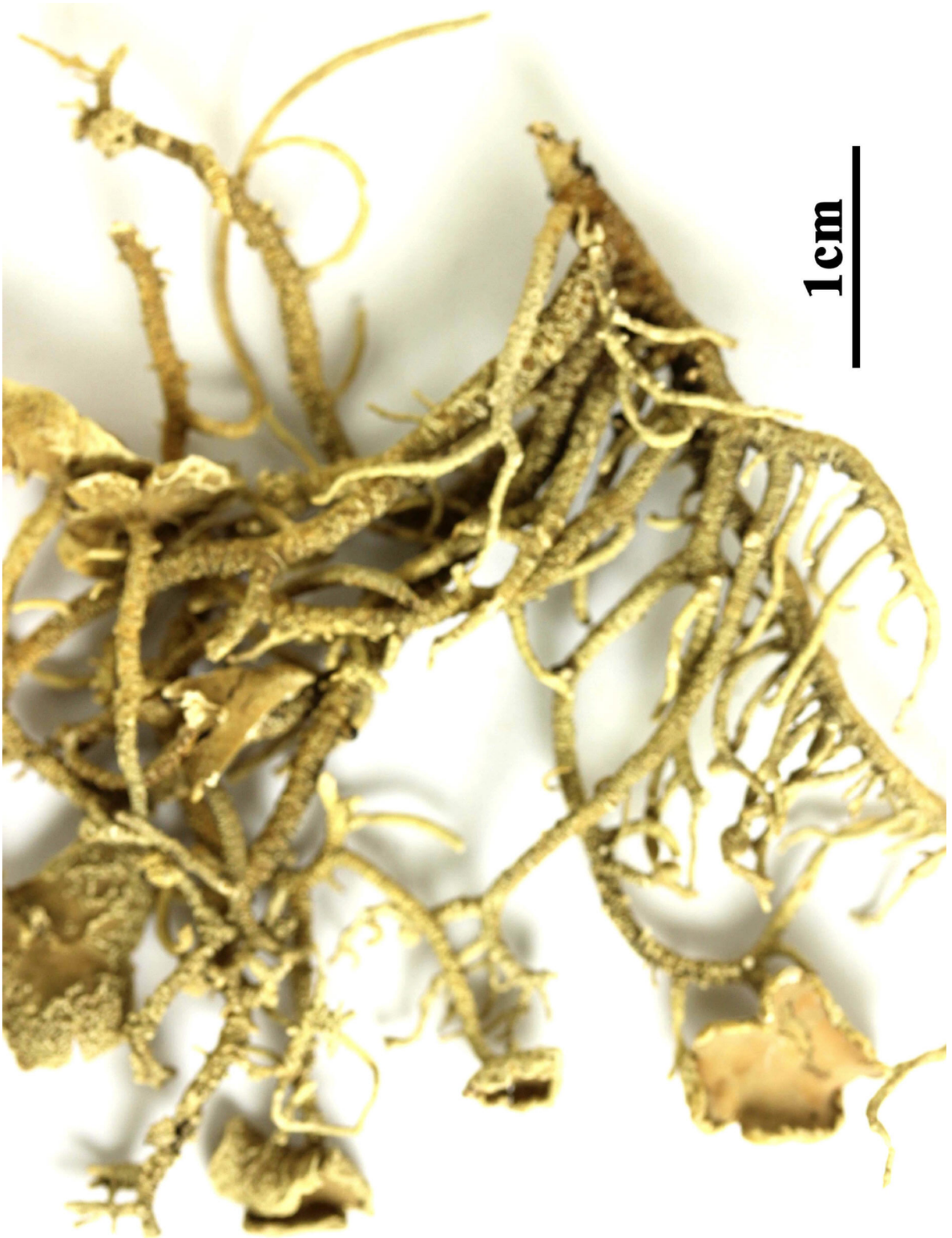


Usnea leprosa

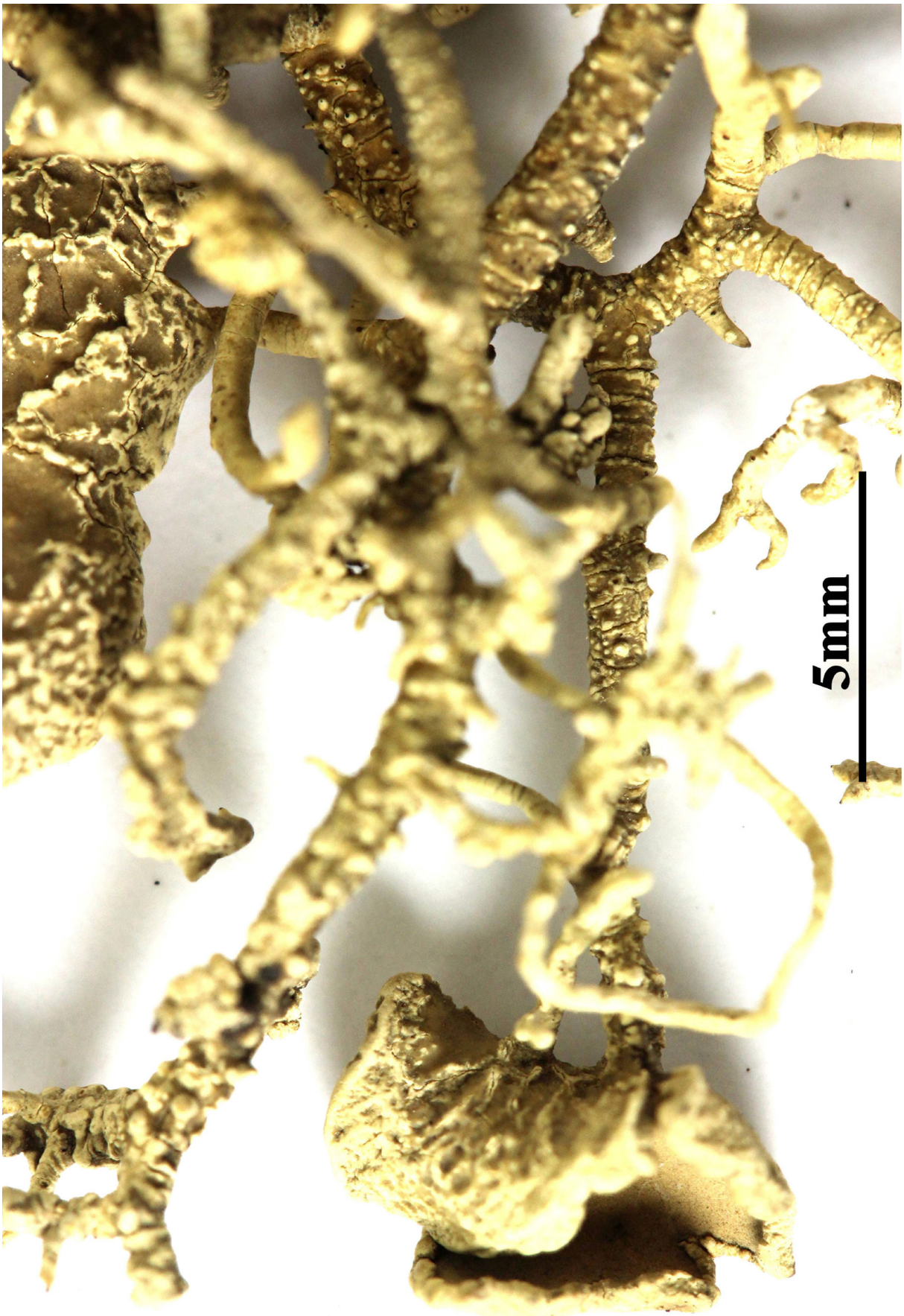
Usnea liechtensteinii J. Steiner, Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 106: 211 (1897)

[VZ2145], Tanzania. Morogoro, in monte Nguru Ya Ndege, 1100 m. Ad saxa granitica. Leg. T. Pócs (8648) et B. J. Hall, 20.4.1986, det A. Vězda. EX A. VěZDA LICHENES SELECTI EXICCATI NR. 2145.

Thallus shrub-like' to 15(20) em, black at base. Main branches stramineous or yellowish-green, stiff, terete, to 2 mm diam.; secondary branches slender, sparse and often fastigiate, absent from some main branches. Spinules absent or sparse. Fibrils commonly produced on distal half of main branches, giving a feathered appearance. Pseudocyphellae numerous, some plane and of irregular shape, many formed on the apices of the tubercles. Tubercles numerous, large and verrucose, becoming pseudocyphellate and sometime crateriform at apex. Medulla dense. Axis packed with dense white tissue in which are some pink to buff chondroid strands. No pigmented layer round axis. Isidia and soredia absent. Apothecia frequent, terminal on larger branches. CHEMISTRY: Protocetraric acid.



Usnea liechtensteinii



Usnea liechtensteinii

Usnea liechtensteinii J. Steiner, Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 106: 211 (1897)

[14574], Seychellen, Mahe, Sentier de Randonée de Glacis-Trois Frères Nature Trail, 4°38.210' S, 55°26.7968' E, ca. 480 m, an Granitfelsen. Leg. F. Schumm & J-P. Frahm 07.10.2008, det. A. Aptroot, 2008. - Thallus mit hohen Warzen (gemeinsam mit Usnea leprosa [14688])

Thallus shrub-like' to 15(20) em, black at base. Main branches stramineous or yellowish-green, stiff, terete, to 2 mm diam.; secondary branches slender, sparse and often fastigiate, absent from some main branches. Spinules absent or sparse. Fibrils commonly produced on distal half of main branches, giving a feathered appearance. Pseudocyphellae numerous, some plane and of irregular shape, many formed on the apices of the tubercles. Tubercles numerous, large and verrucose, becoming pseudocyphellate and sometime crateriform at apex. Medulla dense. Axis packed with dense white tissue in which are some pink to buff chondroid strands. No pigmented layer round axis. Isidia and soredia absent. Apothecia frequent, terminal on larger branches. CHEMISTRY: Protocetraric acid.



Usnea liechtensteinii





Usnea liechtensteinii

Usnea liechtensteinii

Usnea lutea Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 3: 556, 557 (1938)

[VZ2311], Hawaii Insulae, Mauna Kea, prope locum "David Douglas Monumentum" dictum, 1800 m. Ad ramulos *Acaciae koa*. Leg. I. et O. Degener et S. Higashi, 12.10. 19821., det. A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2322.

Thallus fruticulosus, ca. 7 ¢cm longus, vulgo minor, statu vivo straminеo luteus, in herbario ad ramos crassiores fuscescens, glaber, opacus, basi brevi, rigida et firma, paulo attenuata, subdichotome, fere a basi increhre sed pluries, repetito rarius ramosus, axillis subrectis aut etiam subclausis, ramis vulgo divergentibus, rarius subparallelis. Rami prope basin ca. 1.5 mm crassi, supra sensim attenuati, continui aut tantum rare simpliciter fractt, sublaeves aut vulgo papillati, papilllis varie evolutis, vulgo sat regularibus, mediocribus cylindricis, saepius leviter oblongis, plerumque humilibus, semiglobosis aut fungiformibus, tuberculiformibus, pallidioribus sed cortibosis aut fungiformibus, tuberculiformibus, pallidioribus sed corticatis. Ramuli vulgo crebri etsi passim non evoluti, 1-1.5 cm longi, virgato adscendentes aut passim patebte strict, subinfundibuliformiter e ramis excrescentes, supr eleganter attenuati et acutiusculo acuminati, crassuli, laevissimi et tantum maximi ramis similes et basi subpapillati, non rare iterum ramosi. Summitates vulgo aptheciis terminatae, sterles ramulis similes, longiusculo crasse capillaceae. Apothecia crebra, terminalia ad ramos primarios et ramulos creassiores, rarius sulateralia et tum minora, vulgo ca. 7 mm lata. Excipulum cupulifdorme, dein subplanum, laevissimum et nitidulum. Cilia sat crebra, firmula, longitudine discum superantia, ramulis similia. Discus conhcavus, saepius leviter rugosus, albidus, subtiliter carneo suffusus. Sporae 8 x 10 µm, in ascis angustis. Cortex c. 100 µm crassus, durus et elasticus. Medulla c. 200 µm crassa, subcrebra, alba K-. Axis c. 380 µm in diametro.
- in insulis Hawaii evidenter non rara.



Usnea lutea



Usnea lutea

Usnea lutea Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 3: 556, 557 (1938)

[VZ1810], Hawaii Insulae, Mauna Kea, Strip Road, Hawaii Volcano National Park, 1500 m. Ad ramulos arborum (*Acacia koa*). Leg. O. et I. Degener (no. 35207), det A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1810.

Thallus fruticulosus, ca. 7 ¢cm longus, vulgo minor, statu vivo straminеo luteus, in herbario ad ramos crassiores fuscescens, glaber, opacus, basi brevi, rigida et firma, paulo attenuata, subdichotome, fere a basi increhre sed pluries, repetito rarius ramosus, axillis subrectis aut etiam subclausis, ramis vulgo divergentibus, rarius subparallelis. Rami prope basin ca. 1.5 mm crassi, supra sensim attenuati, continui aut tantum rare simpliciter fractt, sublaeves aut vulgo papillati, papilllis varie evolutis, vulgo sat regularibus, mediocribus cylindricis, saepius leviter oblongis, plerumque humilibus, semiglobosis aut fungiformibus, tuberculiformibus, pallidioribus sed cortibosis aut fungiformibus, tuberculiformibus, pallidioribus sed corticatis. Ramuli vulgo crebri etsi passim non evoluti, 1-1.5 cm longi, virgato adscendentes aut passim patebte strict, subinfundibuliformiter e ramis excrescentes, supr eleganter attenuati et acutiusculo acuminati, crassuli, laevissimi et tantum maximi ramis similes et basi subpapillati, non rare iterum ramosi. Summitates vulgo aptheciis terminatae, sterles ramulis similes, longiusculo crasse capillaceae. Apothecia crebra, terminalia ad ramos primarios et ramulos creassiores, rarius sulateralia et tum minora, vulgo ca. 7 mm lata. Excipulum cupulifdorme, dein subplanum, laevissimum et nitidulum. Cilia sat crebra, firmula, longitudine discum superantia, ramulis similia. Discus conhcavus, saepius leviter rugosus, albidus, subtiliter carneo suffusus. Sporae 8 x 10 µm, in ascis angustis. Cortex c. 100 µm crassus, durus et elasticus. Medulla c. 200 µm crassa, subcrebra, alba K-. Axis c. 380 µm in diametro.
- in insulis Hawaii evidenter non rara.



Usnea lutea



Usnea lutea

Usnea maculata Stirton

[19360], Australia, Western Australia, 75 km south of Mt. Chudalup, wetland with *Agonis junipera* and *Eucalyptus marginata*, *Eucalyptus* forest with rocks, 34.73380° S, 116.08760° E, 75 m, growing on sunny rock. Leg. F. Schumm & E. Stocker-Wörgötter 24.10.2009, det. F. Schumm. Chemistry: usnic acid, protocetraric acid.

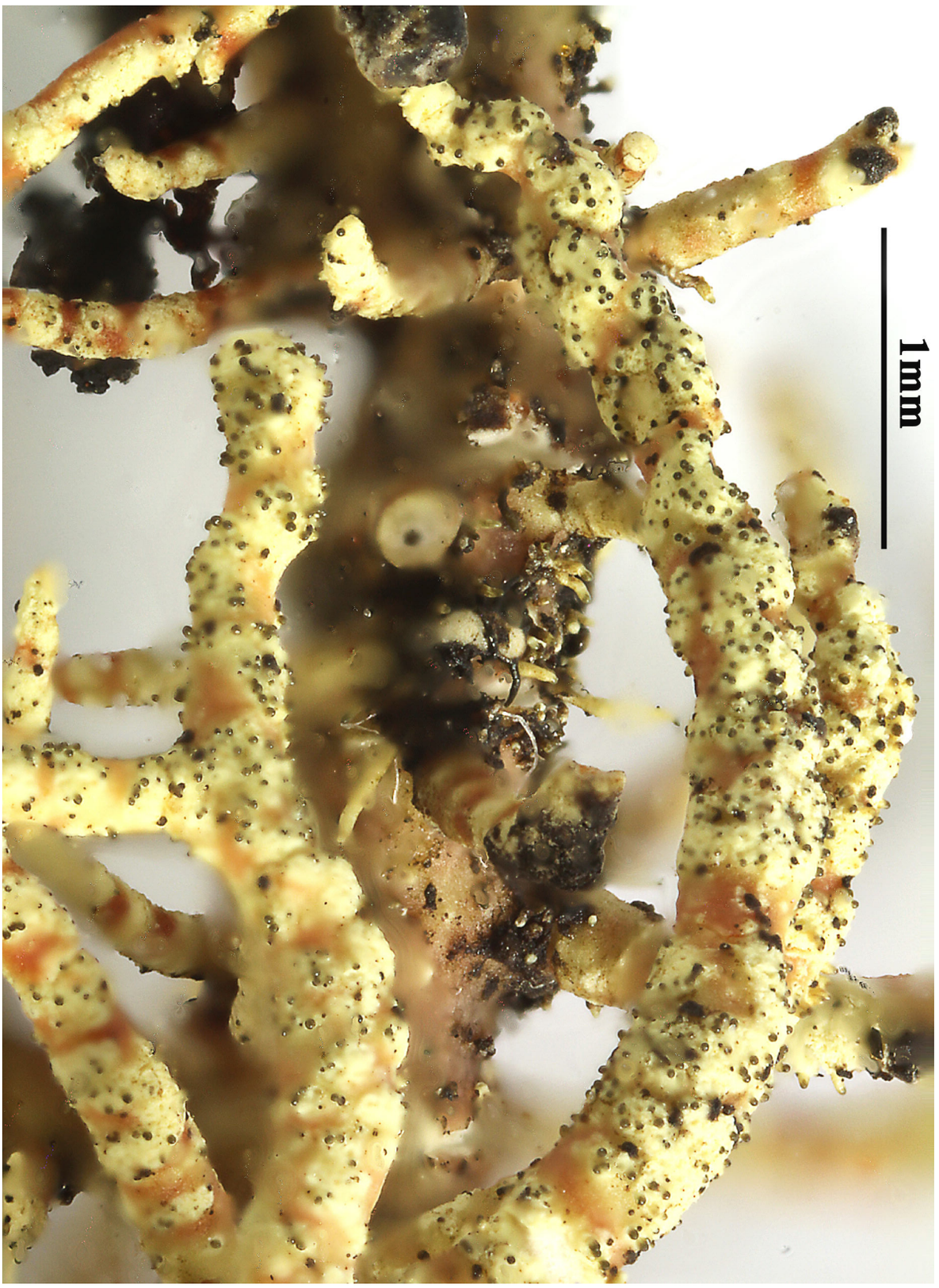
Thallus patchy red; basis black, growing on rocks. Cortex with red pigment, 16 %, Medulla white, 20 %, axis white, 33 %.



Usnea maculata



Usnea maculata



Usnea maculata



Usnea maculata



Usnea maculata

Usnea maculata

Usnea maculata Stirt., Scott. Natural. 6: 293 (1882) [1881-1882]

[VZ1720], Tanzania. Kilimanjaro, planities Shira dicta, 3000 m. Ad saxa in regione subalpina. Leg. T. Pócs (no. 6923), 27.6.1976, det. A. Vězda. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1720.- Plantae juniores haud evolutis.

Thallus shrub-like, black at base. Branches reddish grey, with red pigment in cortex in patches, stiff, terete, to 1.5 mm diam., not or slightly narrowed at joints, many fastigiate. Cortex cartilaginous. Pseudocyphellae numerous on all branches, plane or on tubercles. Papillae absent. Medulla dense. Isidia numerous on distal pseudocyphellae, often dark tipped, sometimes also on cortex of main branches, and then pale. Soredia absent. Apothecia rare. CHEMISTRY: Protocetraric acid, with occasional traces of accessory substances, pigment. ECOLOGY: Common on exposed rocks in the low alpine zone at 3500 to 4200 m. DISTRIBUTION: Sudan, Zaire, Madagascar, South Africa, Australia. (ex T. D. V. Swinscow & H. Krog., 1988, Macrolichens of East Africa).



Usnea maculata



Usnea maculata

Usnea marocana Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 2: 354 (1937)

[VT1244], Respublica Guinea (Africa occident.). Regio macenta, in silvis secundariis prope urbem Macenta, 600- 700 m. Arboricola. Leg. S. Lisowski, 4.1963. dupl. det. J. Motyka. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1244.

Thallus ca. 5 cm altus et latus, caespitoso fruticulosus, sat tenuis, pallide cinereo viridulus, opacus, leviter apparens tomentosulus, basi brevi, crassula, statim supra basin subdichotome, ut etiam in tota planta, increbre ramosus, multo crebrius ramulosus. Rami leviter virgatim aut sigmoideo curvatuli, ad_hasin indistincte aut fere non attenuati, usque ad ca. 3/4 longitudinis ca. 1.2 mm crassi, leviter detormatuli sed ±teretes, passim leviter subloveolatim impressi, continui et tantum rarius indistincte transversim rupti, irregulariter verruculosi, verruculis sat parvis, ± semiglobosis, pallidioribus, saepius in ramulos excrescentibus. Bamuli perpendiculares, saepius tamen varie curvati, nunc breviusculi nunc usque ad 1.5 cm longi et in ramos excrescentes, ad basin leviter attenuati, medio subincrassati, ad apices sat obtusi, fere semper tuberculosi et sorediosi. Summitates sat breves, virgaeformiter attenunatae. Apothecia ignota. Soredia crebra, isidiosa, minuta et fere farinosa apparentia, e soraliis excrescentia minutis, punctiformibus, farinosis, in tuberculis sitis farinosis et leviter pallidioribus. Cortex ca. 50 µm crassus, sat durus, thallo concolor. Medulla ca. 250 µm crassa, sublaxa, intense rosea, K decolorans. Axis ca. 210 µm in diametro, solidus.- In Hispania et Maroco.



Usnea marocana



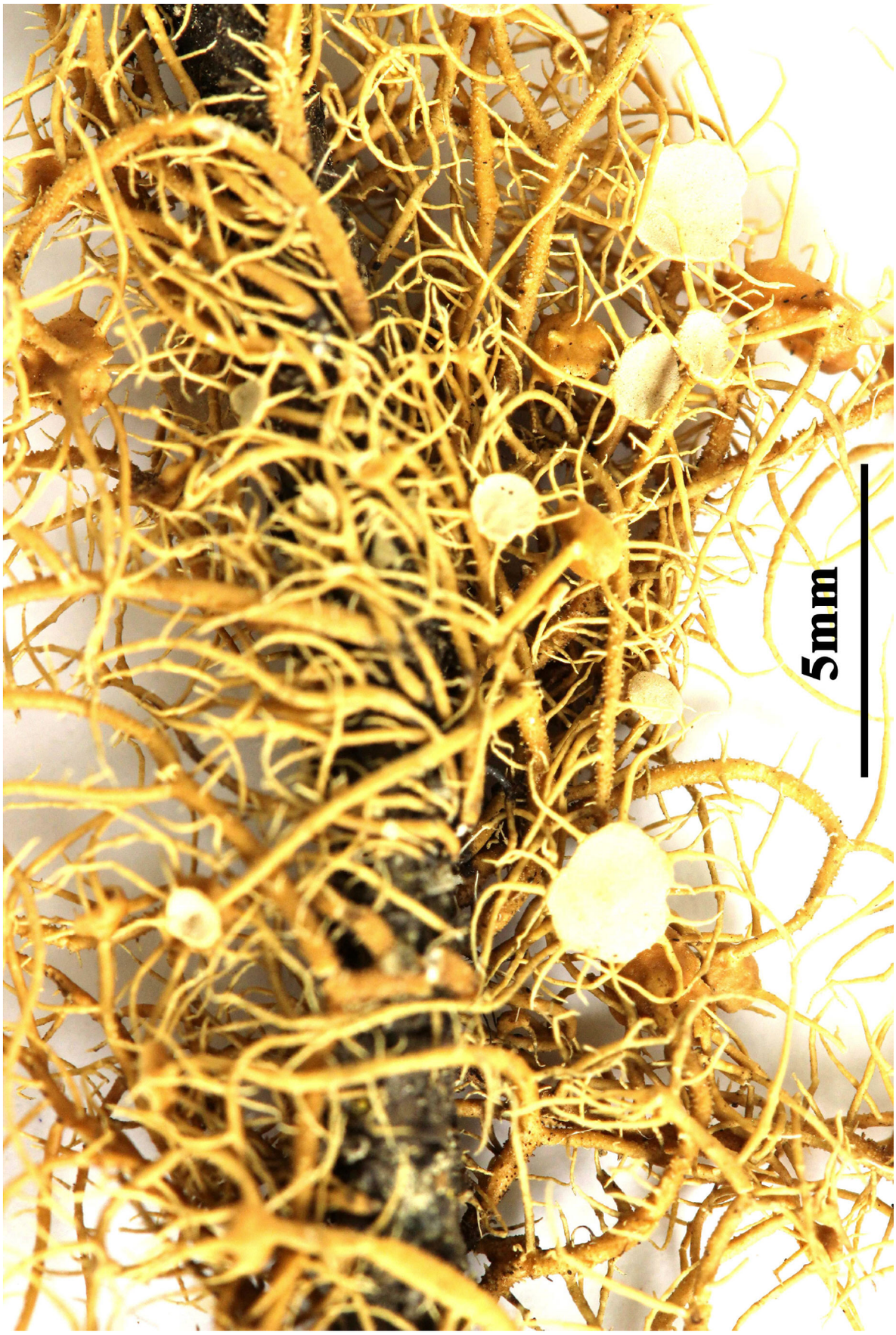
Usnea marocana

Usnea simplicissima Motyka, in Zahlbruckner & Hauman, Nat. Hist. Danish Lich. 5(no. 2): 29 (1936)

[VZ1174], Tanzania. Montes Kilimanjaro. Supra Marangu, prope casam alpinam Mandara (Bismarckhütte) dictam, 2659 m. In ramulis *Ericae arboreae*. Leg. T. et S. Pócs (no. 6241), 14.9.1970, det. J. Motyka.. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1174.



Usnea simplicissima



Usnea simplicissima

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