

F. Schumm (2025):

Images of Lichens Vol. 33

Vežda Lichenes Rariores Exsiccati
part 8

This is the eighth and final part of my series of images of Vezda's "Lichenes Rariores". I intend to continue the series with images of Vezda's "Lichenes Selecti", as this dried specimen contains many different species in addition to repetitions. I have again included descriptions compiled from the literature to accompany the plates.

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, 11.2025

Roccella babingtonii Mont., Annls Sci. Nat., Bot., sér. 3 18: 305 (1852)

[VZR339], Mexico. Baja California Sur. 14 km ad meridiem versus ab urbe Todos Santos, 30 m. In ramulis fruticis (*Acacia* sp.). Leg. J. Halda, 22.11.1997., det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 339.

Thallus: fruticose, pendent, main branches flattened, usually 5-15 cm long lobe surface: grayish, often uneven with ridges and wrinkles soredia: farinose, in maculiform soralia which may often fuse to cover much of the lobe surface medulla: white but brown in the holdfast zone, usually with a yellowish tinge Ascomata: not seen Spot tests: cortex K+ more or less yellowish red (sometimes inconspicuous), C+ red, KC+ red, P-; medulla K-, C-, KC-, P- Secondary metabolites: erythrin and lecanoric acid. Substrate and ecology: grows near the sea on any suitable substrate, such as the vertical rocks and cliffs and on the trunks, branches and twigs of various trees and shrubs World distribution: uncertain, but probably from California to south-central Chile, and possibly Caribbean and pantropical Sonoran distribution: extending from southern California south to the tip of Baja California along the Pacific coast and also occurring in southern parts of Sonora and adjacent Sinaloa. Notes: *Roccella peruensis* is characterized by its sterile, sorediate thallus. *Roccella peruensis* feels somewhat softer and less robust than *R. decipiens*, probably due to the presence of soralia. The name and *R. babingtonii* Mont. (Montagne 1852) has been frequently used for this taxon in California and Mexico. *Roccella babingtonii*, however, was described by Montagne as having apothecia only; soredia were not mentioned by him. Thus, Montagne's description cannot be applied to the sterile, sorediate taxon *R. peruensis* (Krempelh.) Darb. The description of *R. babingtonii* Mont. better fits to the fertile *R. decipiens* Darb. above and may in fact be the oldest name for that taxon. Morphological, chemical and molecular investigations (Myllys et al., 1999) indicate that *Roccella peruensis* may be the sterile counterpart in a species pair relationship with the fertile *R. decipiens* (above). Thus, the name *R. peruensis* may be subject to change when the the genus *Roccella* is revised.



Rocella babingtonii

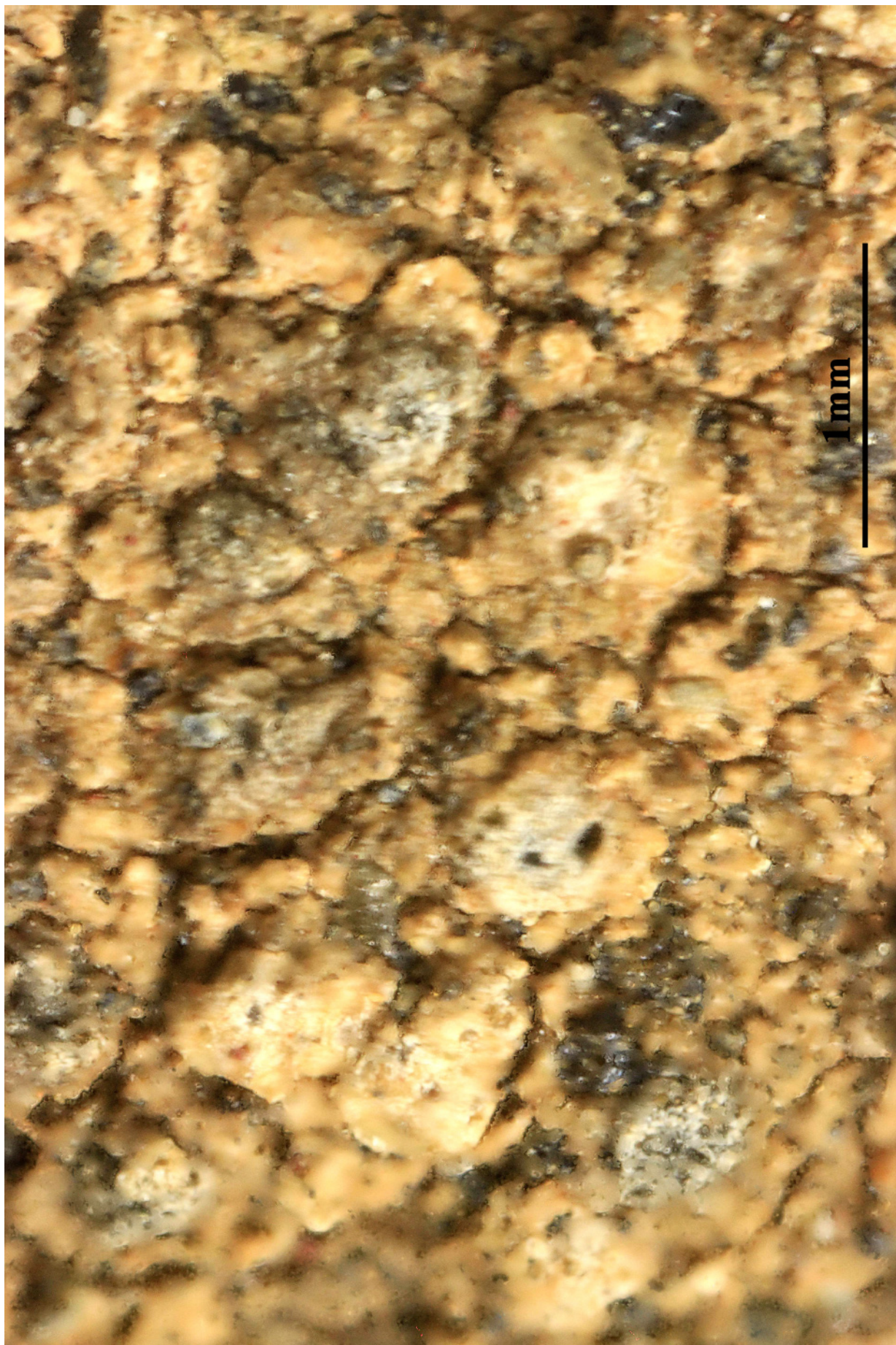


Roccella babingtonii

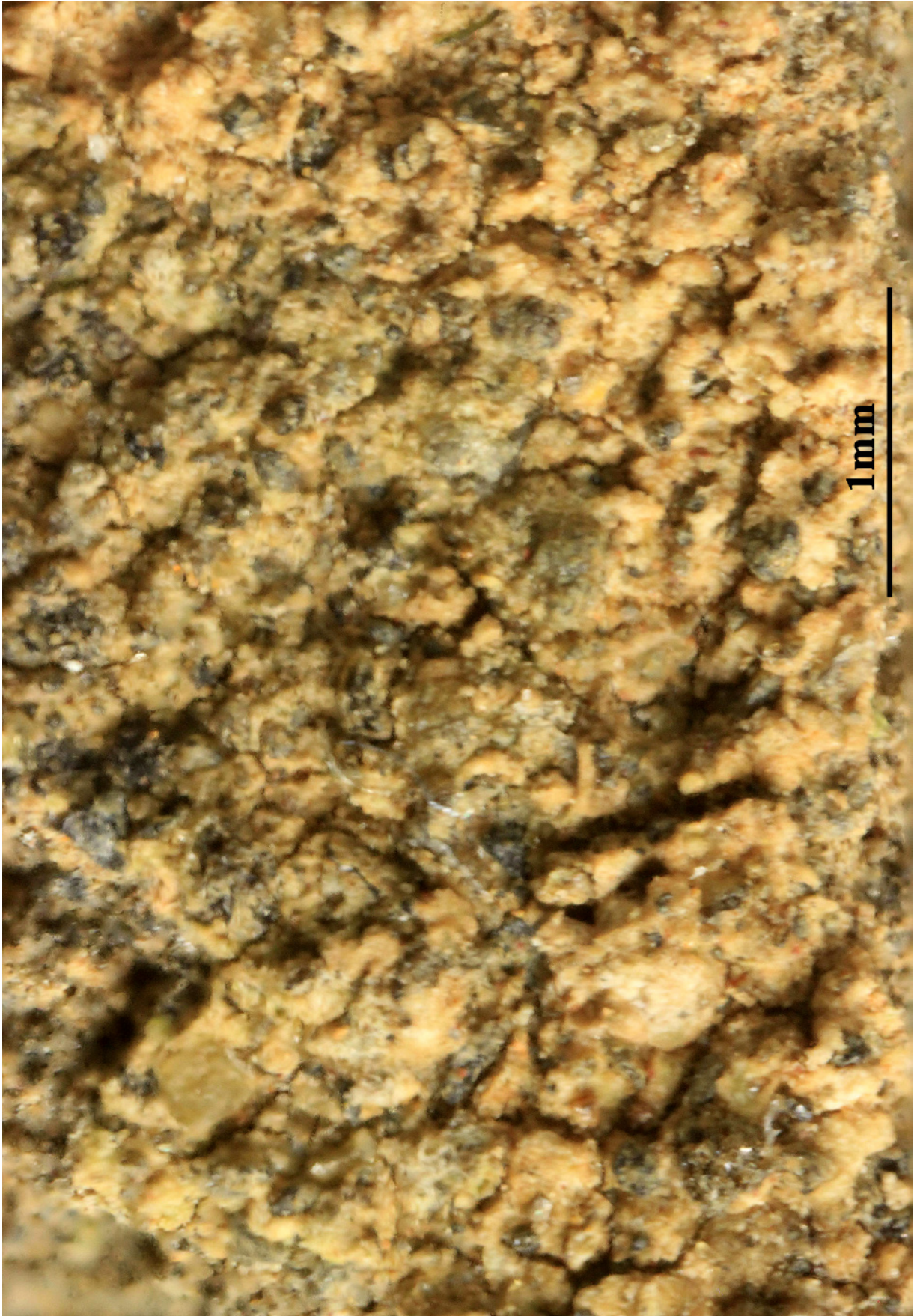
Thelopsis isiaca Stizenb., Ber. Tät. St Gall. naturw. Ges.: 262 (1895) [1893-94]

[VZR50], Italia. Pelagiae insulae: insula Linosa, in colle "Timpone", 30 m. Ad saxa eruptiva. Leg. D. Puntillo & A. Vezda, 15.4.1992. - Annot: Perithecia ab initio albipruinosa. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 50.

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); paraphyses 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

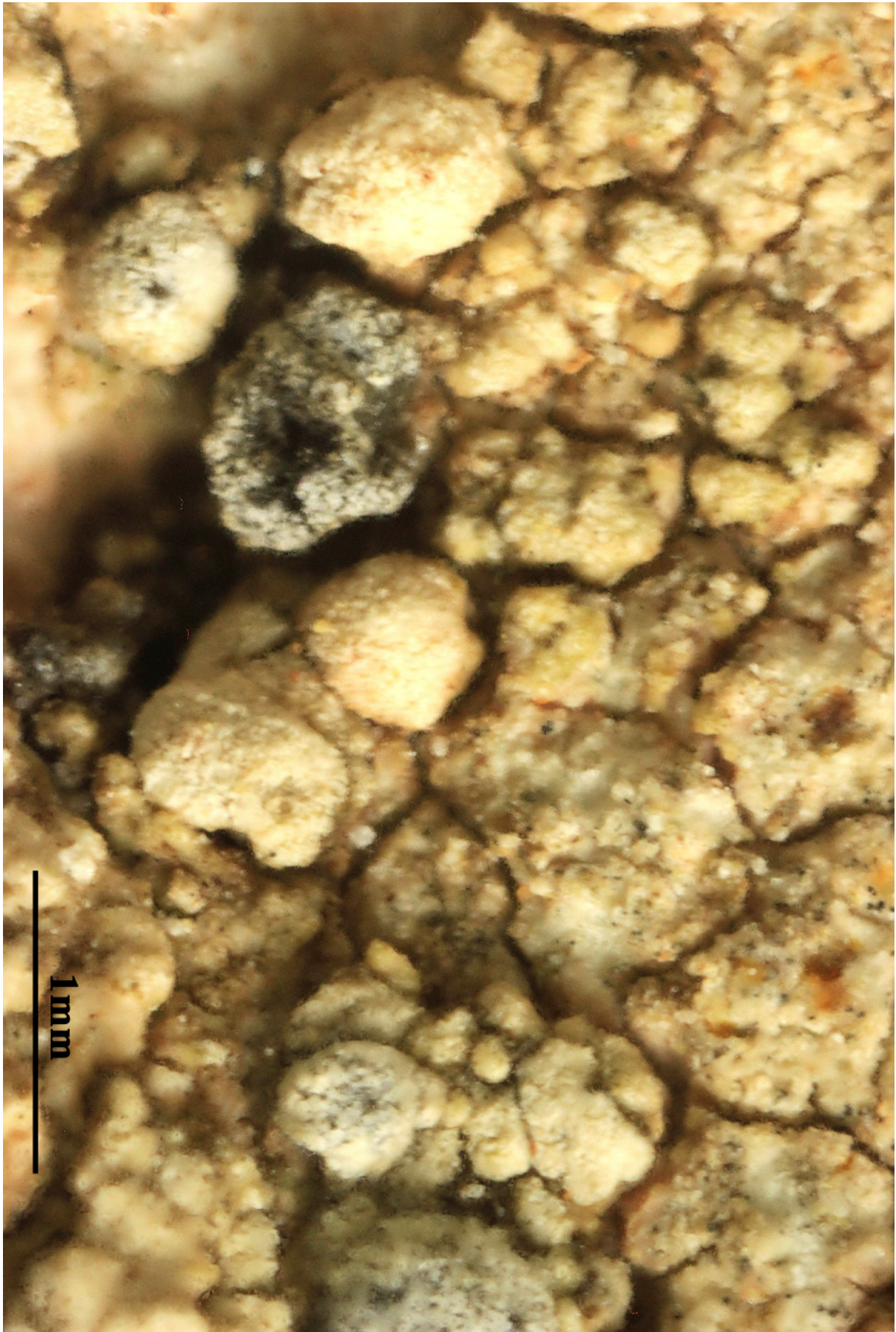


Thelopsis isiaca

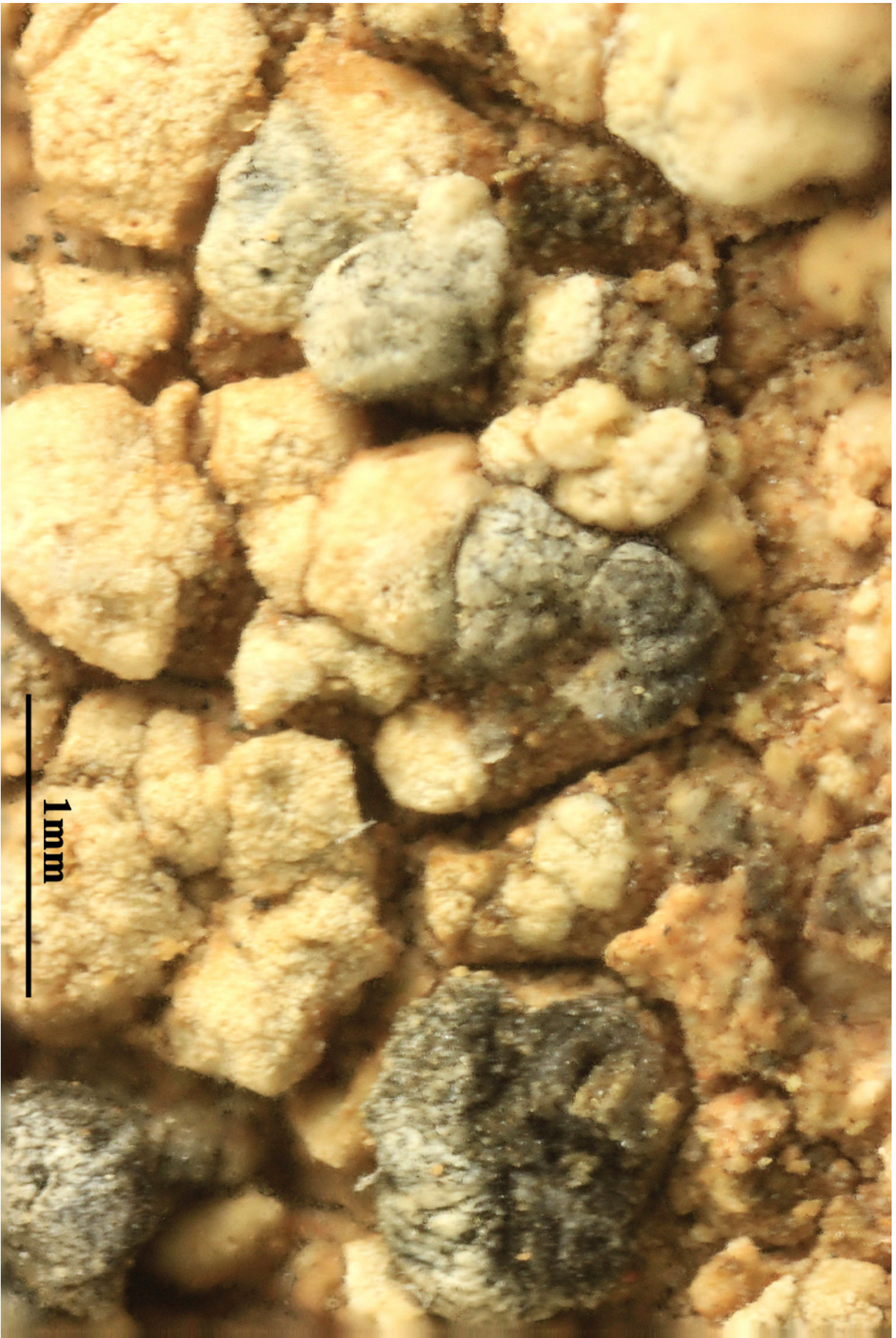
Thelopsis isiaca Stizenb., Ber. Tät. St Gall. naturw. Ges.: 262 (1895) [1893-94]

[VZR59], Italia. Pelagiae insulae: insula Lampedusa, scopulum "Cabo Greco" dictum, 30-50 m. Ad saxa calcarea. Leg. F. Ceni & A. Vězda, 13.4.1992. - Annot: Forma peritheciiis ab initio albipruinosi, a plantis corticolis (peritheciiis nudis instructis) valde distincta. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 49.

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, I+ 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]

[VZR40], Italia. Pelagiae insulae: insula Linosa, loco dicto "Arena Bianca", 20 m. Ad corticem *Lycii intricati*. Leg. P. L. Nimis, J. Poelt & A. Vězda, 16.4.1992. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 40.

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); paraphyses 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

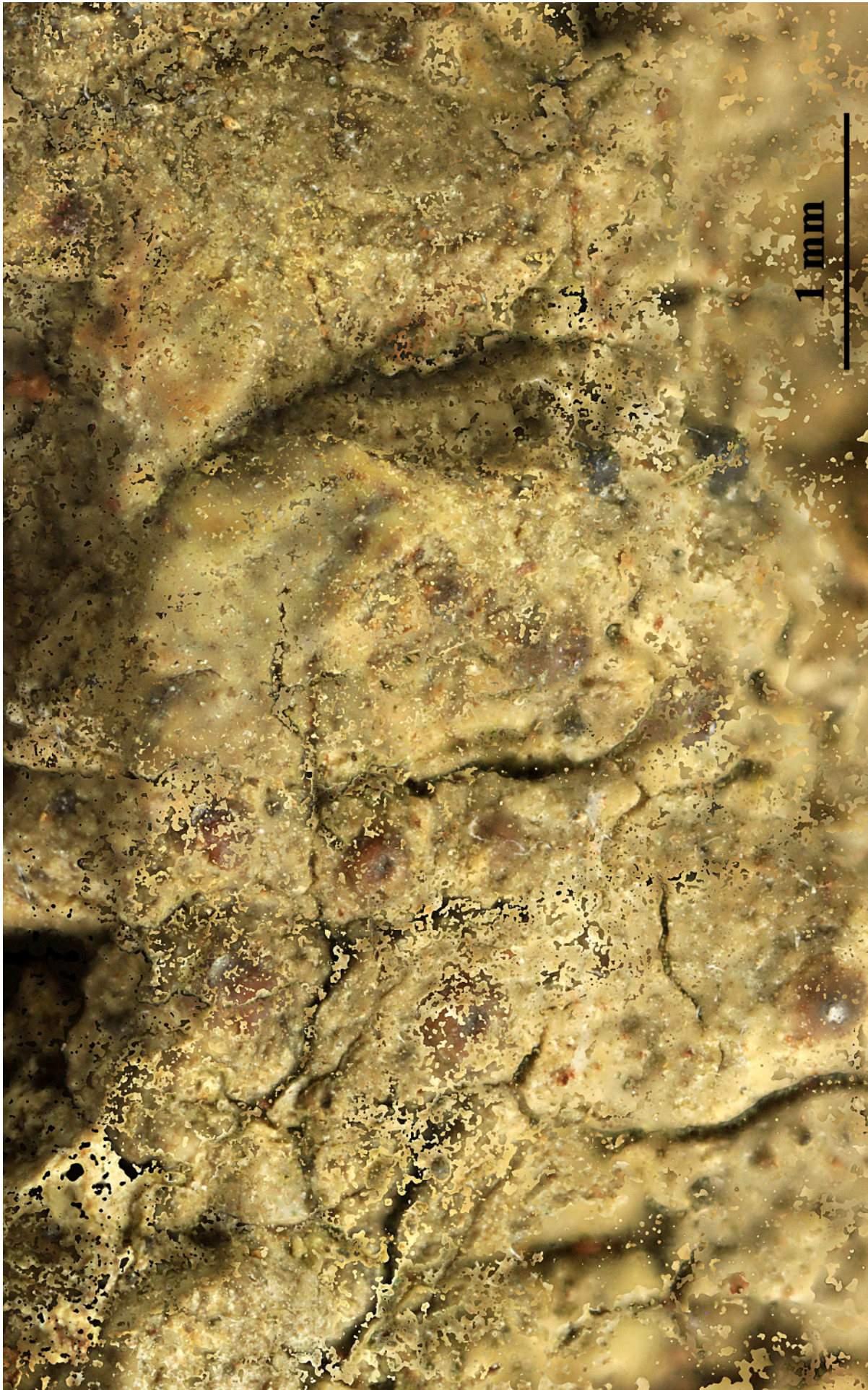


Thelopsis isiaca

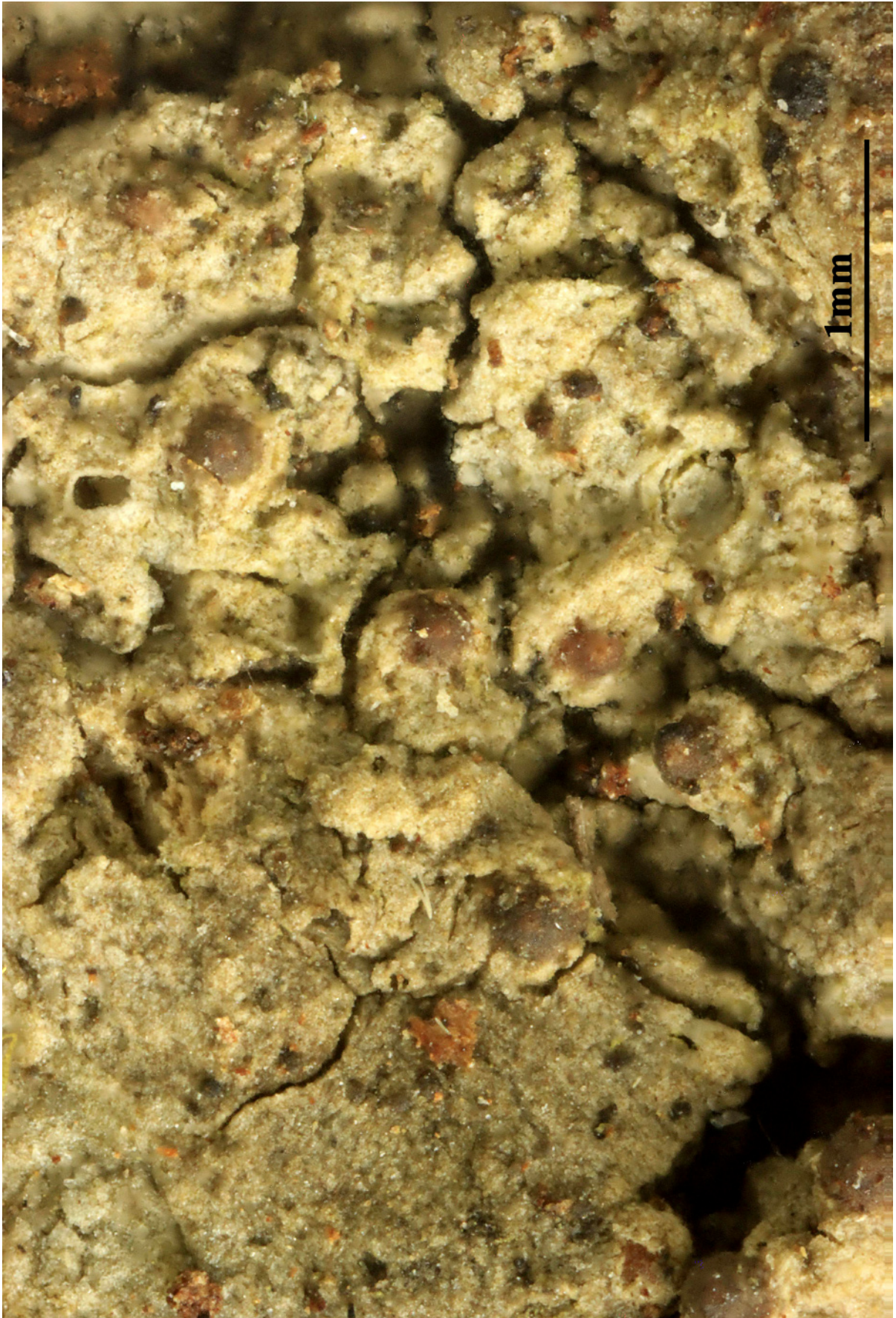
Thelopsis rubella Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 3: 194 (1855)
= *Sagedia rubella* (Nyl.) Jatta, Syll. Lich. Ital. (Trano): 553 (1900)
= *Thelopsidomyces rubellae* Cif. & Tomas., Atti Ist. bot. Univ. Lab. crittog.
Pavia, sér. 5 10(1): 60 (1953)
= *Verrucaria rubella* (Nyl.) Leight., Lich.-Fl.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

[VZR474], Slovakia. Planities "Muránská planina", rezervatum naturae "Polud'-nica", 700 m. Ad corticem *Fagi silvaticae*. Leg. Š. Bayerová & Z. Palice. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 474.

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; periphyses 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: thallus 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

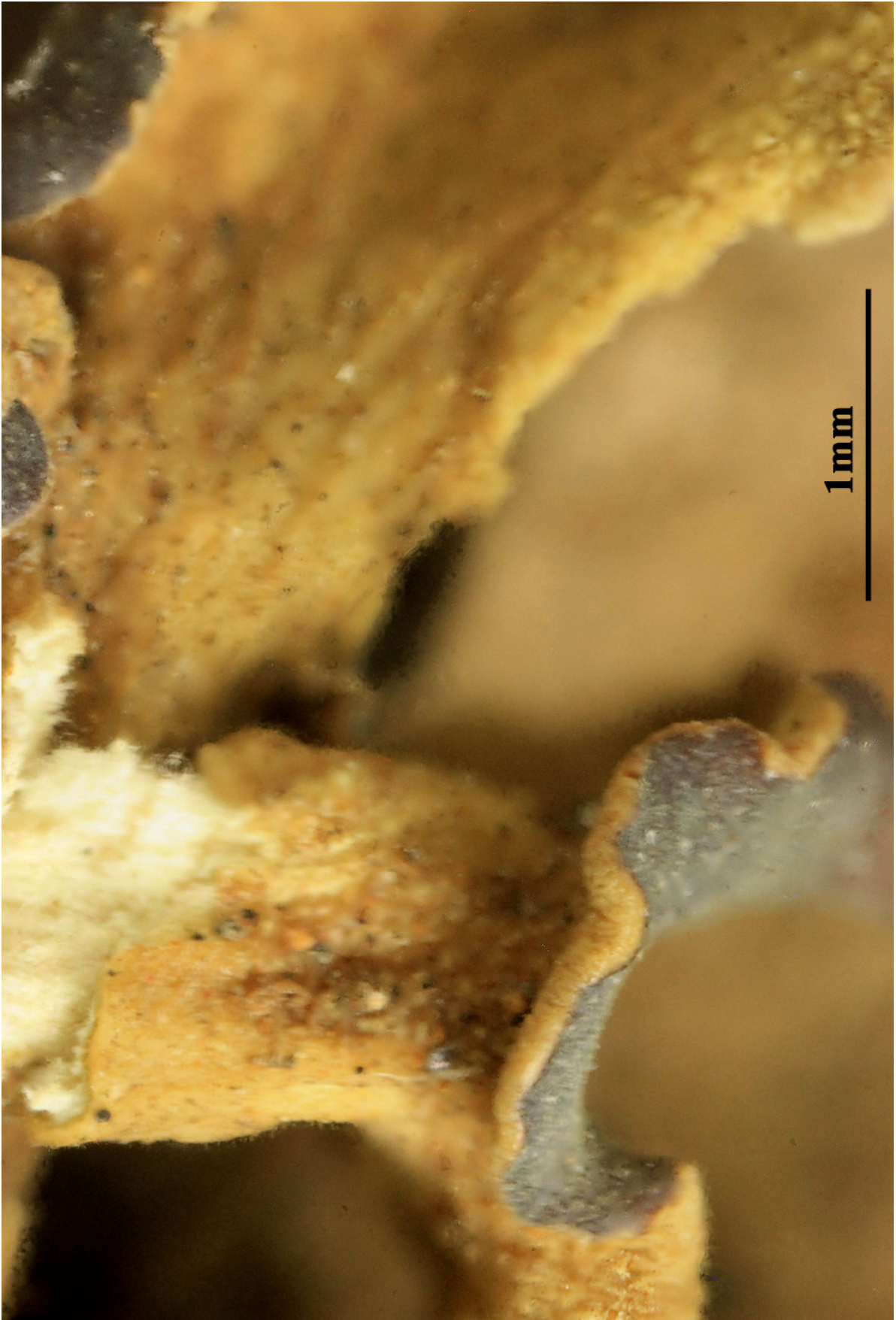
Thysanothecium hookeri Mont. & Berk., London J. Bot. 5: 257 (1846)
=*Thysanothecium hookeri* subsp. *xanthonicum* Elix, Australas. Lichenol.
64: 26 (2009)

[VZR9], Australia. Australia Occidentalis: ad septentriones versus ab Albany, in jugo Sterling Range, loco "White Gum Flat Picnic Arena", in pede montis Mt. Magog. Ad terram tumuli (nidi) termitum. Leg. W. L. Culberson (21455) & C. F. Culberson, 15.11.1990. - Annot: Usnic acid, barbatic acid, 4-O-demethylbarbatic acid, obtusatic acid (trace) and strepsilin (trace) by TLC, anal. A. Johnson & C. F. Culberson. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 9.

Primary squamules convex, scattered, closely attached to substratum, yellow-green to yellow-brown or red-brown or $\pm$ blackened, whitish below; cortex $\pm$ continuous. Upper surface below apothecia markedly ribbed-striate, yellow-green to olive; ridges glossy, cracked, without exposing corticate granules from medulla. Pseudopodetia 1.5–4 mm wide at base, expanding to 3–9 mm wide at apices, $\pm$ terete basally, flattening and flaring or pectinate towards apices, often lacerate, incised or fissured, 0.5–10 mm tall. Apothecia mainly terminal, solitary, rarely 2–6 per pseudopodetium, flaring, undulate and often deeply lacerate, spathulate or pectinate; disc sometimes faintly white-pruinose in part, dark red-brown or purplish brown. Ascospores ellipsoidal to subclavate, straight or curved, $7\text{--}9 \times 2\text{--}3 \mu\text{m}$. Pycnidia 1–2.5 mm tall. CHEMISTRY: usnic, barbatic, 4-O-demethylbarbatic (trace) acids. - Occurs in W.Australia and Tasmania; also in New.Zealand. Found on soil, anthills, termite mounds and sometimes sandstone boulders.



Thysanothecium hookeri



Thysanothecium hookeri

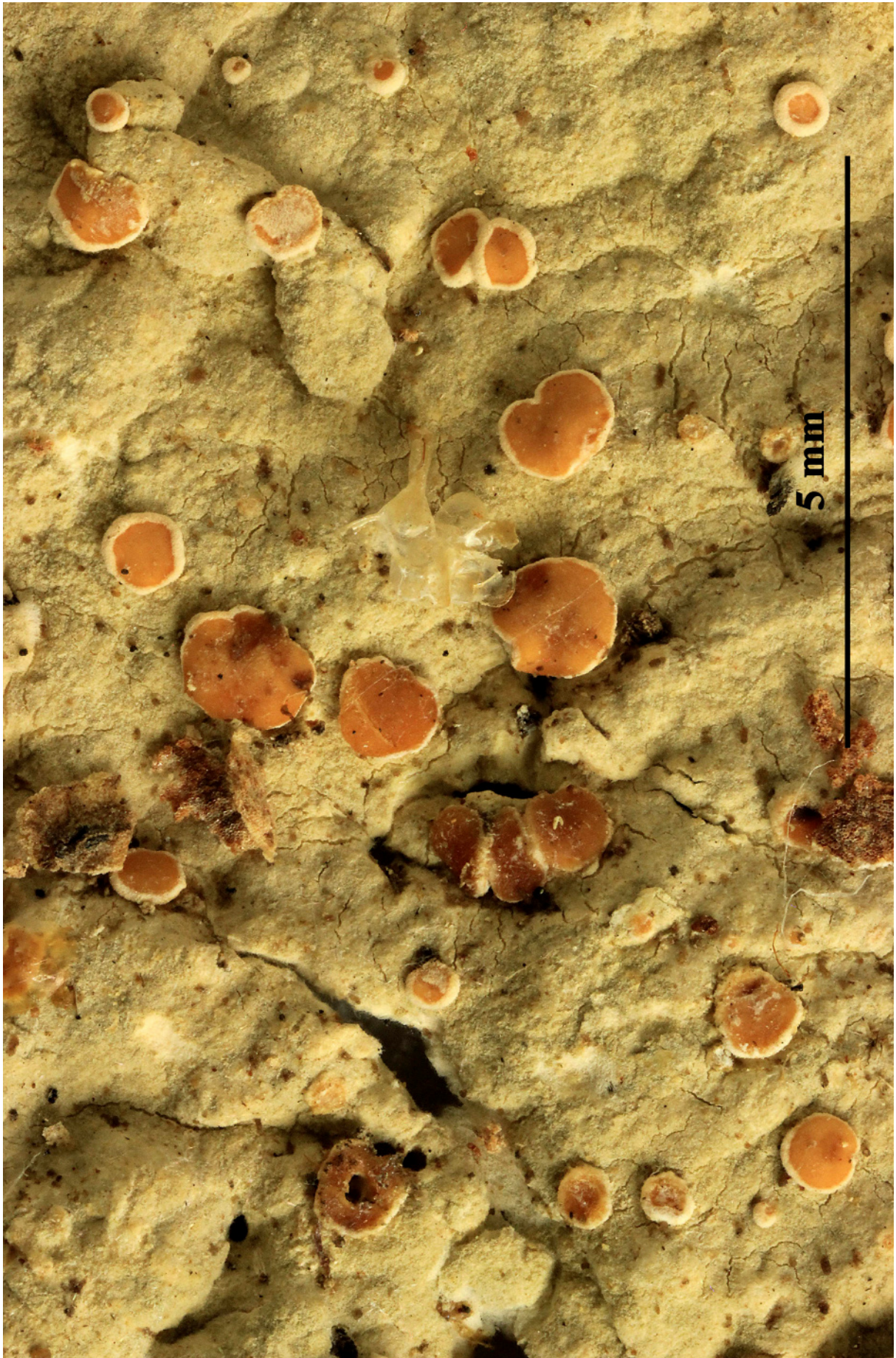
Tibellia dimerelloides Vězda & Hafellner, Nova Hedwigia 55(1-2): 186 (1992)

[VZR89], Australia. Queenslandia: McPherson Range, Duck Creek Road, 900 m, 24°14' austr., 153°07' orient. Ad corticem arborum in pluviisilva subtropicali. Leg. et det. K. Kalb, 18.8.1992. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 80.

Thallus byssaceus, late expansus, continuus, pallide cinereus ad viridescens, planus, aequalis, zona marginali pallide ochracea; hyphis hyalinis dense contextis, 3-3,5 μm crassis, luminibus 0,5-1 μm ; algis globosis, cellulis 4-6 μm crassis, glomerulosis, glomerulis dispersis sed superficiem versus copiosis, in parte medullari sparsis vel nullis, Thallus atranorinum continens. Apothecia copiosa, adnata, basin versus arcte constricta, orbicularia, 0,5-1,1 mm lata, 0,3 mm alta, discis planis, pallide fuscoluteis, marginibus crassis, testaceis, hyphis dilute hyalinis pubescentibus. Excipulum hyalinum, pars exterior apotheciorum ex hyphis hyalinis contexta, crystallis hyalinis copiosis implexa. Hypothecium 60-70 μm altum, hyalinum, hyphis modice laxis contextum, Hymenium 65-70 μm altum, hyalinum, non inspersum. Paraphyses ramosae pro parte anastomosantesque, 2 μm crassae. Asci ut in genere *Bacidia* constructi, cylindrici ad leviter clavati, tholis amyloideis instructi, 8-spori, Ascosporae ellipsoideae, hyalinae, uniseptatae, 10-14 x 3-3,5 μm magnae,.

Thallus krustig, byssoid, weit ausgebreitet, bis 20 cm im Durchmesser, zusammenhängend, flach, blaß grau bis grünlich, mit blaß ockerfarbener Randzone, beiderseits unberindet; aus hyalinen, dicht verwobenen, 3-3,5 μm dicken Hyphen mit 0,5-1 μm dicken Lumina; Hyphen im oberen Bereich besonders dicht und kurzgliedrig, der Basis zu deutlich lockerer und langgliedrig. Photobiont zu den Chlorococcales gehörend, Algenzellen 4-6 μm im Durchmesser, in zerstreuten, der Thallusoberfläche zu zahlreichen Gruppen; Algengruppen der Medulla zu rasch weniger werdend und tiefer ganz fehlend. Unmittelbar unter der Algenzone ist eine Zone, die mit Flechtenstoffkristallen durchsetzt ist, erkennbar. Apothecien an solche von *Dimerella* erinnernd, zahlreich, rund, 0,5-1,1 mm im Durchmesser, aufsitzend, basal zusammengezogen, mit flachen, ockerbräunlichen Scheiben und leicht vorstehenden, weißlichen, sehr fein filzigen Rändern. Excipulum ungefärbt, aus hyalinen, verwobenen Hyphen mit nach außen freien Enden; zwischen den Hyphen zahlreiche hyaline Kristalle eingelagert, diese im

Schnitt in ach außen keilförmig verbreiterten Aggregaten. Kristalle in K löslich. Hypothecium 60-70 µm hoch, hyalin. Hymenium 65-70 µm hoch, hyalin, nicht inspers. Paraphysen mit einigen Verzweigungen und Anastomosen, ca. 2 µm dick, mit kaum verdickten, nicht pigmentierten Enden. Asci zylindrisch oder leich keulig, 8-sporig, vom Bacidia-Typ, außen von etwas amyloider Gallerte umgeben, die in Lugol amyloiden Tholi zentral mit spitzkegeliger "masse axiale", 45-50 x 10 µm groß, bei der Sporenabgabe sich rostrat öffnend. Ascosporen hyalin, elliptisch bis fast oblong, mit breit abgerundeten Enden, mit einem Querseptum, im Lichtmikroskop ohne erkennbares Perispor, 10-14 x 3-3,5 µm groß. Pyknidien nicht beobachtet. Flechtenstoffe: Atranorin mittels TLC.



Tibellia dimerelloides



Tibellia dimerelloides

- Toninia aromatica*** (Sm.) A. Massal., Framm. Lichenogr.: 24 (1855)
 = *Toniniopsis aromatica* (Sm.) Kistenich, Timdal, Bendiksby & S. Ekman, Taxon 67(5): 898 (2018)
 = *Arthrosporum squamulosum* (Mudd) Arnold [as 'squamulosa'], Flora, Regensburg 53(30–31): 473 (1871) [1870]
 = *Bacidia candida* (A.L. Sm.) Zahlbr., Cat. Lich. Univers. 4: 103 (1926) [1927]
 = *Biatora acervulata* (Nyl.) Hepp, Flecht. Europ.: no. 736 (1860)
 = *Biatora aromatica* (Sm.) Hepp, Flecht. Europ. 5: no. 283 (1857)
 = *Bilimbia acervulata* (Nyl.) Jatta, Syll. Lich. Ital. (Trano): 402 (1900)
 = *Bilimbia aromatica* (Sm.) Jatta, Syll. Lich. Ital. (Trano): 402 (1900)
 = *Bilimbia candida* A.L. Sm., Monogr. Brit. Lich. 2: 137 (1911)
 = *Bilimbia squamulosa* (Mudd) A.L. Sm., Monogr. Brit. Lich. 2: 134 (1911)
 = *Bilimbia turneri* (H. Olivier) A.L. Sm., Monogr. Brit. Lich., Edn 2 2: 149 (1926)
 = *Lecidea acervulata* Nyl., Bot. Notiser(12): 183 (1853)
 = *Lecidea aromatica* (Sm.) Turner, Trans. Linn. Soc. London 9: 140 (1808)
 = *Lecidea coeruleonigricans* var. *aromatica* (Sm.) Taylor, in Mackay, Fl. Hibern. (Dublin) 2: 131 (1836)
 = *Lecidea squamulosa* (Mudd) Leight., Lich.-Fl. Great Brit.: 331 (1871)
 = *Lecidea turneri* Leight., Lich.-Fl. Great Brit.: 330 (1871)
 = *Lecidea turneri* Clemente, Ensayo Varied. Vid Comun Andalusia: 298 (1807)
 = *Lichen aromaticus* Sm., in Smith & Sowerby, Engl. Bot. 25: tab. 1777 (1807)
 = *Lichen candidus* Turner ex Sm., in Smith & Sowerby, Engl. Bot. 16: [1138] (1803)
 = *Lichen peltatus* * *aromatica* (Sm.) Lam., Encycl. Méth., Bot. Suppl. (Paris) 3(2): 387 (1813)
 = *Patellaria aromatica* (Sm.) Mathieu, Fl. Génér. Belg 2: 134 (1853)
 = *Psora aromatica* (Sm.) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Psora aromatica* var. *acervulata* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Psora aromatica* var. *squamulosa* (Mudd) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Syncomista aromatica* (Sm.) Nieuwl., Am. Midl. Nat. 4: 386 (1916)
 = *Thalloidima acervulatum* (Nyl.) Körb., Syst. lich. germ. (Breslau): 180 (1855)
 = *Thalloidima aromaticum* (Sm.) Müll. Arg., Flora, Regensburg 68(29): 529 (1885)
 = *Toninia acervulata* (Nyl.) Kremp., Flora, Regensburg 52: 265 (1869)
 = *Toninia aromatica* var. *acervulata* (Nyl.) Th. Fr., Lich. Scand. (Upsaliae)(2): 332 (1874)

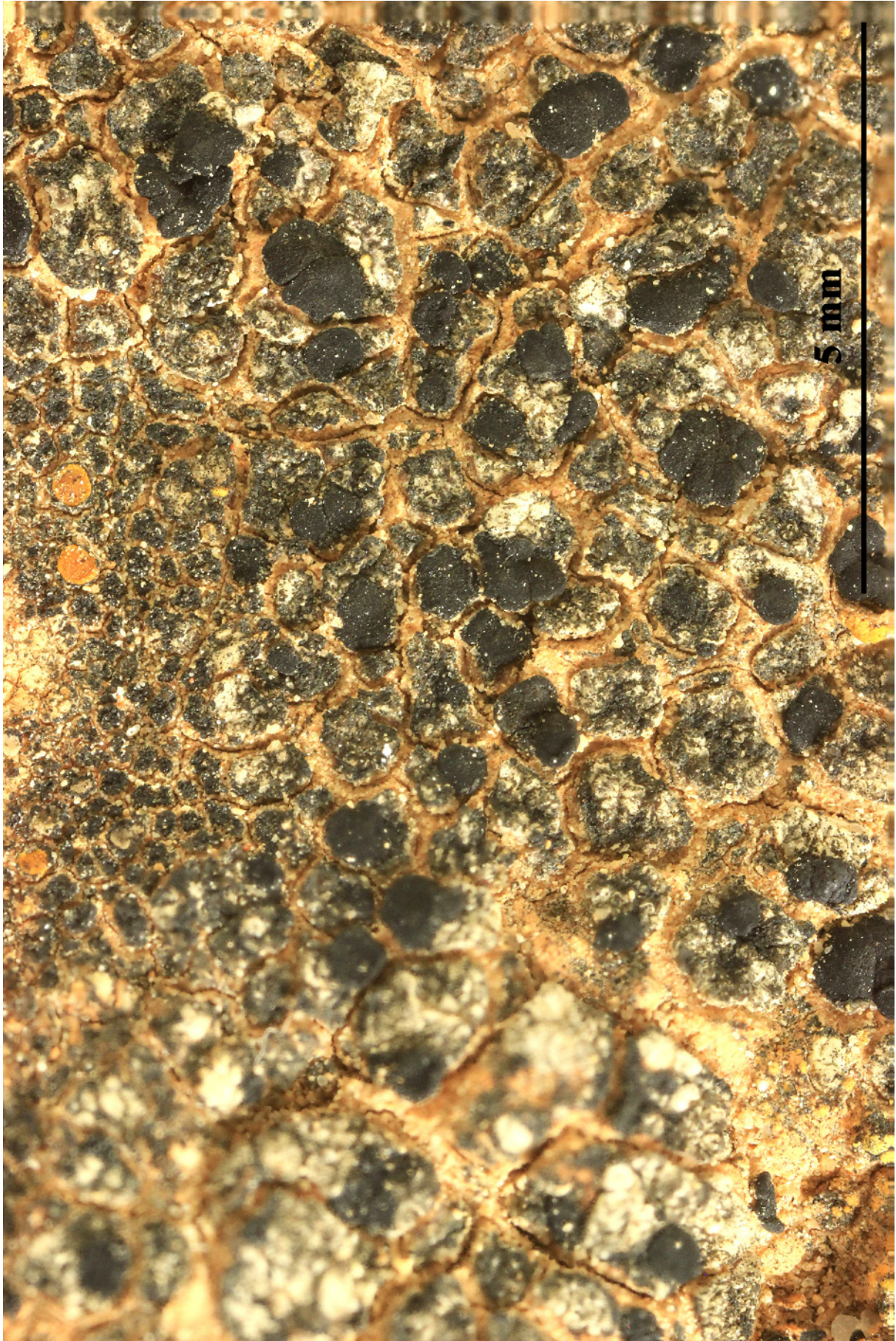
= *Toninia squamulosa* Mudd, Man. Brit. Lich.: 174 (1861)

= *Toninia turneri* H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 173 (1911)

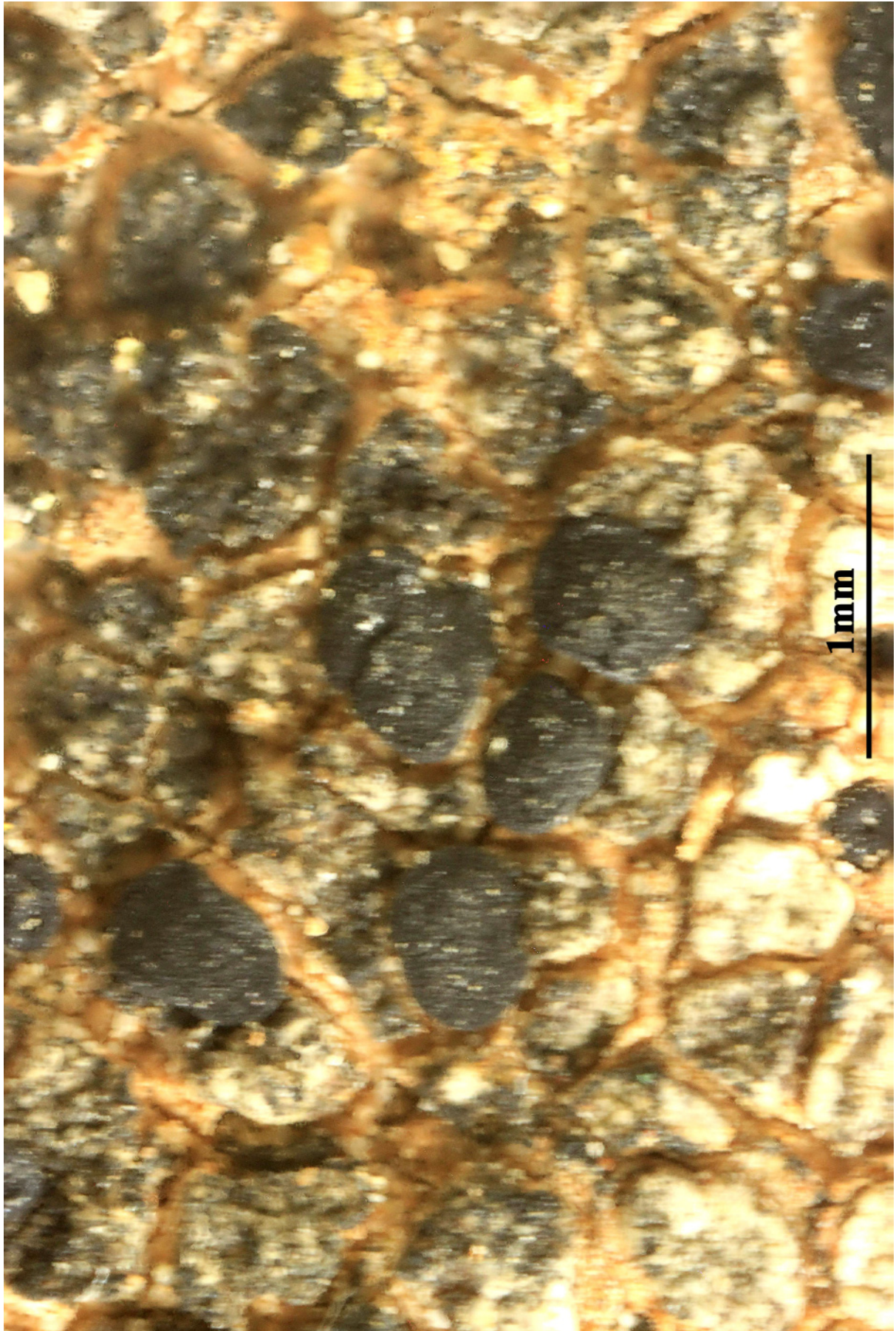
[VZR59], Italia. Pelagiae insulae: insula Lampedusa, supra scopulum "Punta Parise" dictum, 100 m. Ad saxa calcarea. Leg. J. Poelt, P. L. Nimis & A. Vězda, 16.4.1992. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 59.

Thallus small-squamulose to subcrustose-areolate, pale grey to brown-green, often white-spotted, dull, epruinose or completely covered with a white pruina, the squamules up to 4 mm wide (usually less), weakly concave to mostly slightly convex, orbicular to irregular, scattered to aggregated; lower surface pale brown. Upper cortex 60-90 µm thick, lacking crystals and epinecral layer; algal layer continuous; medulla white, without crystals. Apothecia frequent, lecideine, strongly constricted at base, up to 1.5 mm across, with a black, rarely faintly pruinose, flat, disc and a distinct, smooth proper margin. Proper exciple dark reddish brown, K-, N-; epithecium dark olivaceous green to bright green, K-, N+ violet; hymenium colourless, 70-85 µm high, I+ blue; paraphyses not conglutinated, simple or sparingly branched and anastomosing in upper part, thin-walled, the apical cell distinctly swollen and covered by a gelatinous pigment cap; hypothecium dark reddish brown in lower part, paler in upper part. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus, an I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores (1-)3-septate, hyaline, bacilliform to ellipsoid-cylindrical, with rounded ends, 11-23 x (3-)4-5(-6) µm. Pycnidia dark, immersed. Conidia thread-like. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-. UV-. Chemistry: thallus without lichen substances. - Note: a holarctic species with a wide latitudinal range, found on horizontal to weakly inclined surfaces of calcareous to basic siliceous substrata, including bricks and roofing tiles in urban areas, often starting the life-cycle on other crustose lichens; the species seems to be most common in Tyrrhenian Italy at low elevations.

Toninia aromatica



Toninia aromatica



Toninia aromatica

- Toninia aromatica*** (Sm.) A. Massal., Framm. Lichenogr.: 24 (1855)
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 = *Biatora aromatica* (Sm.) Hepp, Flecht. Europ. 5: no. 283 (1857)
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 = *Bilimbia aromatica* (Sm.) Jatta, Syll. Lich. Ital. (Trano): 402 (1900)
 = *Bilimbia candida* A.L. Sm., Monogr. Brit. Lich. 2: 137 (1911)
 = *Bilimbia squamulosa* (Mudd) A.L. Sm., Monogr. Brit. Lich. 2: 134 (1911)
 = *Bilimbia turneri* (H. Olivier) A.L. Sm., Monogr. Brit. Lich., Edn 2 2: 149 (1926)
 = *Lecidea acervulata* Nyl., Bot. Notiser(12): 183 (1853)
 = *Lecidea aromatica* (Sm.) Turner, Trans. Linn. Soc. London 9: 140 (1808)
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 = *Lecidea squamulosa* (Mudd) Leight., Lich.-Fl. Great Brit.: 331 (1871)
 = *Lecidea turneri* Leight., Lich.-Fl. Great Brit.: 330 (1871)
 = *Lecidea turneri* Clemente, Ensayo Varied. Vid Comun Andalusia: 298 (1807)
 = *Lichen aromaticus* Sm., in Smith & Sowerby, Engl. Bot. 25: tab. 1777 (1807)
 = *Lichen candidus* Turner ex Sm., in Smith & Sowerby, Engl. Bot. 16: [1138] (1803)
 = *Lichen peltatus* * *aromatica* (Sm.) Lam., Encycl. Méth., Bot. Suppl. (Paris) 3(2): 387 (1813)
 = *Patellaria aromatica* (Sm.) Mathieu, Fl. Génér. Belg 2: 134 (1853)
 = *Psora aromatica* (Sm.) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Psora aromatica* var. *acervulata* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Psora aromatica* var. *squamulosa* (Mudd) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Syncomista aromatica* (Sm.) Nieuwl., Am. Midl. Nat. 4: 386 (1916)
 = *Thalloidima acervulatum* (Nyl.) Körb., Syst. lich. germ. (Breslau): 180 (1855)
 = *Thalloidima aromaticum* (Sm.) Müll. Arg., Flora, Regensburg 68(29): 529 (1885)
 = *Toninia acervulata* (Nyl.) Kremp., Flora, Regensburg 52: 265 (1869)
 = *Toninia aromatica* var. *acervulata* (Nyl.) Th. Fr., Lich. Scand. (Upsaliae)(2): 332 (1874)

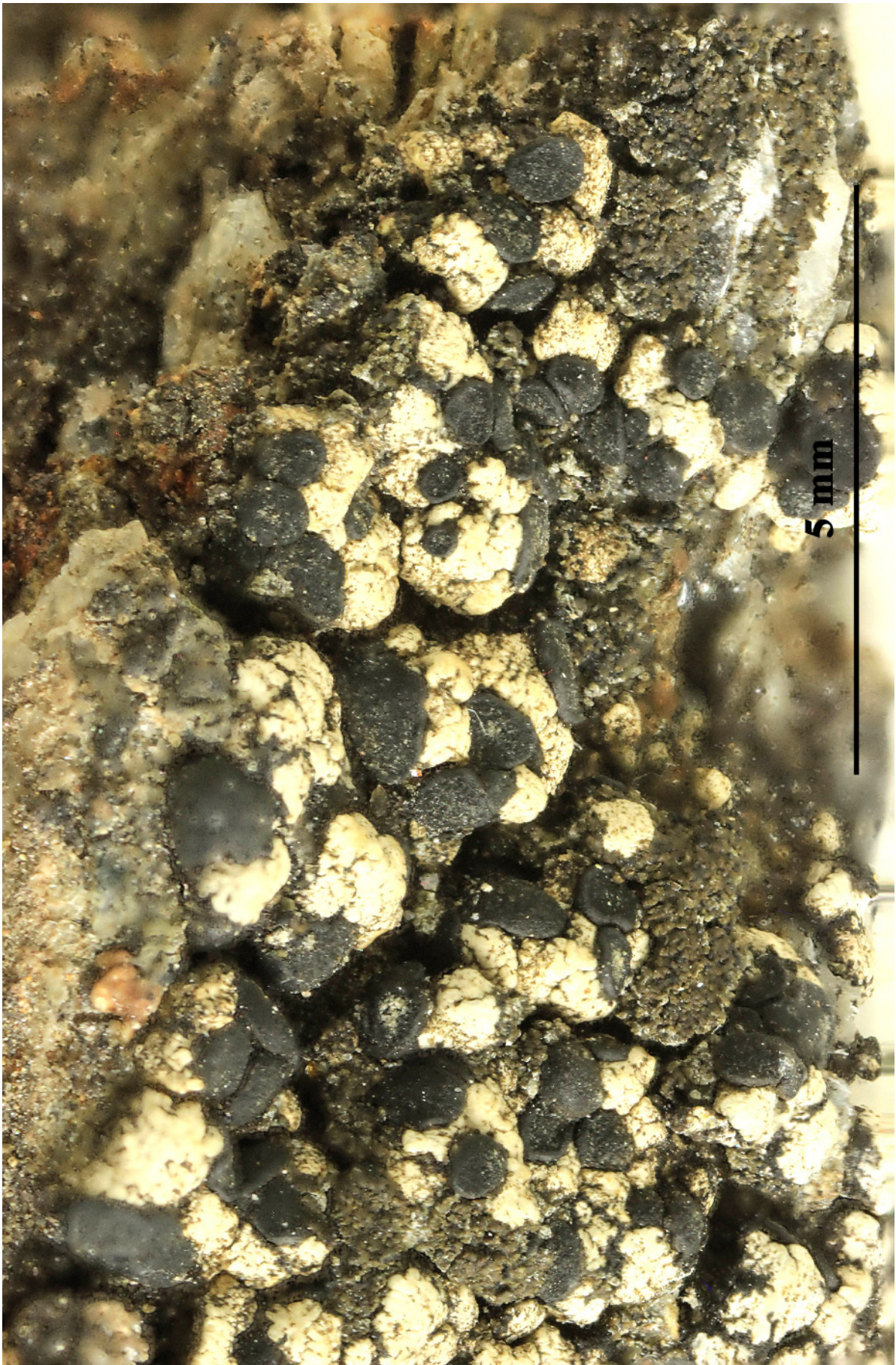
= *Toninia squamulosa* Mudd, Man. Brit. Lich.: 174 (1861)

= *Toninia turneri* H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 173 (1911)

[VZR210}, Austria. Tirolia merid., Oetztales Alpen, Obergurgl: secus viam montanam inter iugum "Hohe Mut" et "Liebenerspitze" in valle "Gaisbergtal", 2400 m. Ad saxum gneissaceum pro parte calcareum, in fissuris. Leg. A. Vězda & F. Ceni, 2.9.1993, det. A. Vězda, conf. E. Timdal. Annot: The densely pruinose morphotype is not uncommon on calciferous substrata in alpine localities, and has been named *Toninia fuispora* (Körb.) Th. Fr. from E. Timdal in lit. EX A. VĚZDA. LICHENES RARIORES EXSICCATI NR. 210.

Thallus small-squamulose to subcrustose-areolate, pale grey to brown-green, often white-spotted, dull, epruinose or completely covered with a white pruina, the squamules up to 4 mm wide (usually less), weakly concave to mostly slightly convex, orbicular to irregular, scattered to aggregated; lower surface pale brown. Upper cortex 60-90 µm thick, lacking crystals and epinecral layer; algal layer continuous; medulla white, without crystals. Apothecia frequent, lecideine, strongly constricted at base, up to 1.5 mm across, with a black, rarely faintly pruinose, flat, disc and a distinct, smooth proper margin. Proper exciple dark reddish brown, K-, N-; epithecium dark olivaceous green to bright green, K-, N+ violet; hymenium colourless, 70-85 µm high, I+ blue; paraphyses not conglutinated, simple or sparingly branched and anastomosing in upper part, thin-walled, the apical cell distinctly swollen and covered by a gelatinous pigment cap; hypothecium dark reddish brown in lower part, paler in upper part. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus, an I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores (1-)3-septate, hyaline, bacilliform to ellipsoid-cylindrical, with rounded ends, 11-23 x (3-)4-5(-6) µm. Pycnidia dark, immersed. Conidia thread-like. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-. UV-. Chemistry: thallus without lichen substances. - Note: a holarctic species with a wide latitudinal range, found on horizontal to weakly inclined surfaces of calcareous to basic siliceous substrata, including bricks and roofing tiles in urban areas, often starting the life-cycle on other crustose lichens; the species seems to be most common in Tyrrhenian Italy at low elevations.

Toninia aromatica



Toninia aromatica



Toninia aromatica

- Toninia aromatica*** (Sm.) A. Massal., Framm. Lichenogr.: 24 (1855)
 = *Toniniopsis aromatica* (Sm.) Kistenich, Timdal, Bendiksby & S. Ekman, Taxon 67(5): 898 (2018)
 = *Arthrosporum squamulosum* (Mudd) Arnold [as 'squamulosa'], Flora, Regensburg 53(30–31): 473 (1871) [1870]
 = *Bacidia candida* (A.L. Sm.) Zahlbr., Cat. Lich. Univers. 4: 103 (1926) [1927]
 = *Biatora acervulata* (Nyl.) Hepp, Flecht. Europ.: no. 736 (1860)
 = *Biatora aromatica* (Sm.) Hepp, Flecht. Europ. 5: no. 283 (1857)
 = *Bilimbia acervulata* (Nyl.) Jatta, Syll. Lich. Ital. (Trano): 402 (1900)
 = *Bilimbia aromatica* (Sm.) Jatta, Syll. Lich. Ital. (Trano): 402 (1900)
 = *Bilimbia candida* A.L. Sm., Monogr. Brit. Lich. 2: 137 (1911)
 = *Bilimbia squamulosa* (Mudd) A.L. Sm., Monogr. Brit. Lich. 2: 134 (1911)
 = *Bilimbia turneri* (H. Olivier) A.L. Sm., Monogr. Brit. Lich., Edn 2 2: 149 (1926)
 = *Lecidea acervulata* Nyl., Bot. Notiser(12): 183 (1853)
 = *Lecidea aromatica* (Sm.) Turner, Trans. Linn. Soc. London 9: 140 (1808)
 = *Lecidea coeruleonigricans* var. *aromatica* (Sm.) Taylor, in Mackay, Fl. Hibern. (Dublin) 2: 131 (1836)
 = *Lecidea squamulosa* (Mudd) Leight., Lich.-Fl. Great Brit.: 331 (1871)
 = *Lecidea turneri* Leight., Lich.-Fl. Great Brit.: 330 (1871)
 = *Lecidea turneri* Clemente, Ensayo Varied. Vid Comun Andalusia: 298 (1807)
 = *Lichen aromaticus* Sm., in Smith & Sowerby, Engl. Bot. 25: tab. 1777 (1807)
 = *Lichen candidus* Turner ex Sm., in Smith & Sowerby, Engl. Bot. 16: [1138] (1803)
 = *Lichen peltatus* * *aromatica* (Sm.) Lam., Encycl. Méth., Bot. Suppl. (Paris) 3(2): 387 (1813)
 = *Patellaria aromatica* (Sm.) Mathieu, Fl. Génér. Belg 2: 134 (1853)
 = *Psora aromatica* (Sm.) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Psora aromatica* var. *acervulata* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Psora aromatica* var. *squamulosa* (Mudd) Boistel, Nouv. Fl. Lich. (Paris) 2: 96 (1903)
 = *Syncomista aromatica* (Sm.) Nieuwl., Am. Midl. Nat. 4: 386 (1916)
 = *Thalloidima acervulatum* (Nyl.) Körb., Syst. lich. germ. (Breslau): 180 (1855)
 = *Thalloidima aromaticum* (Sm.) Müll. Arg., Flora, Regensburg 68(29): 529 (1885)
 = *Toninia acervulata* (Nyl.) Kremp., Flora, Regensburg 52: 265 (1869)
 = *Toninia aromatica* var. *acervulata* (Nyl.) Th. Fr., Lich. Scand. (Upsaliae)(2): 332 (1874)

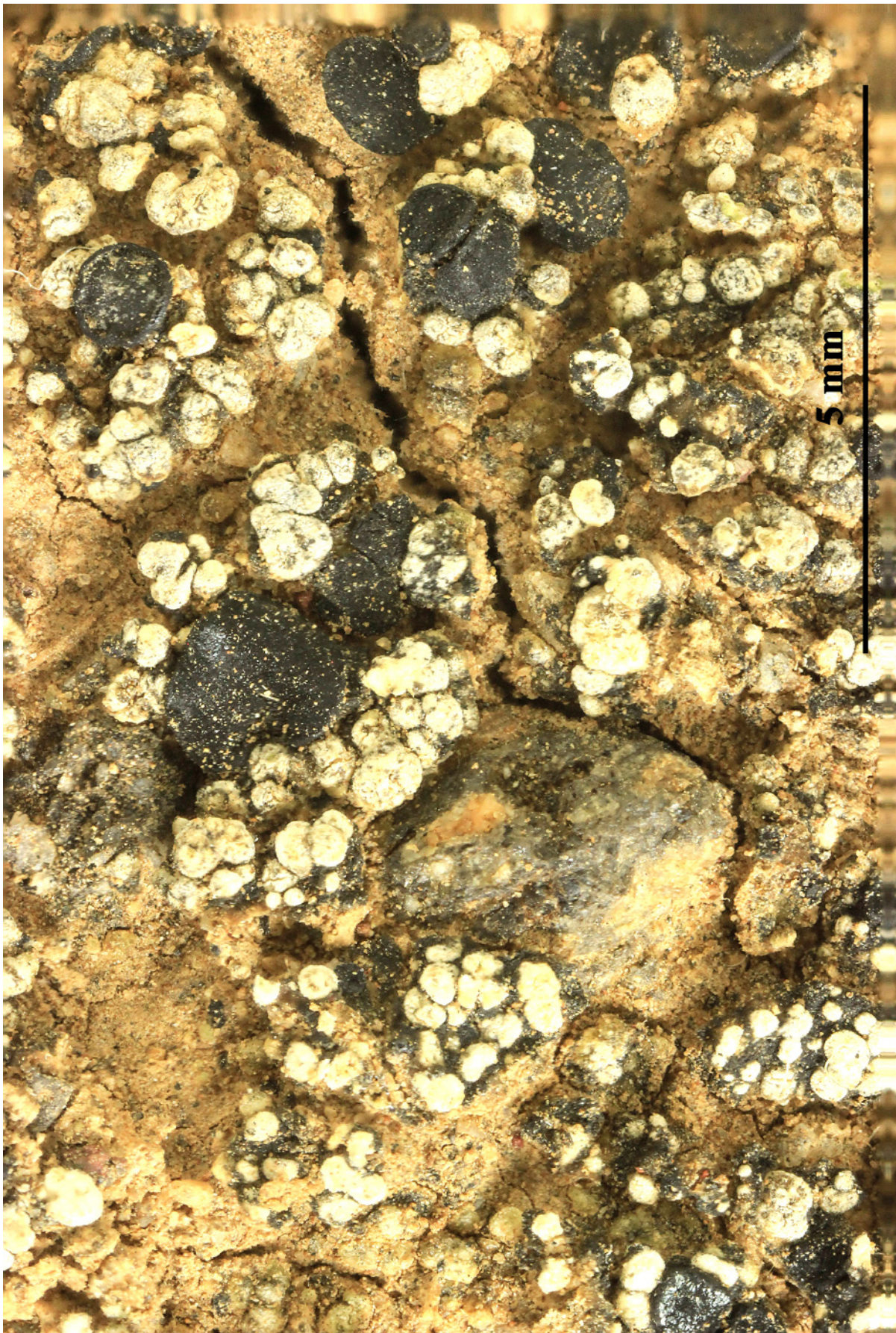
= *Toninia squamulosa* Mudd, Man. Brit. Lich.: 174 (1861)

= *Toninia turneri* H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 173 (1911)

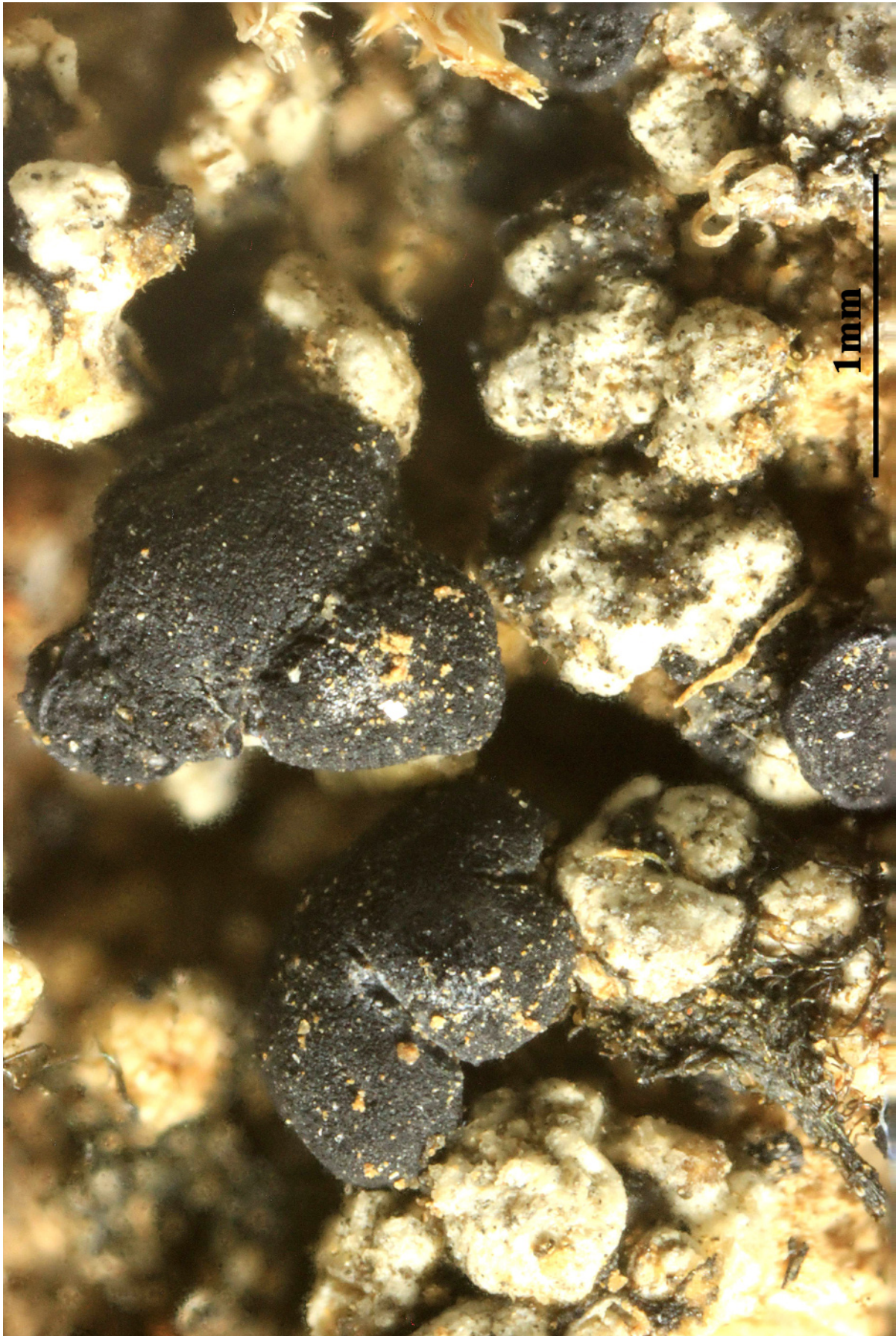
[VZR90], Italia Sardinia. Prov. Cagliari, insula S. Antióco, scopulum "Capo Siddi" dictum, 10 m. Ad terram in litore. Leg. P. L. Nimis, C. Roux, M. Tretiach & A. Vězda, 6.9.1098, det. A. Vezda. EX A. VěZDA: LICHENES RARIORES EXSIVVATI NR. 90.

Thallus small-squamulose to subcrustose-areolate, pale grey to brown-green, often white-spotted, dull, epruinose or completely covered with a white pruina, the squamules up to 4 mm wide (usually less), weakly concave to mostly slightly convex, orbicular to irregular, scattered to aggregated; lower surface pale brown. Upper cortex 60-90 µm thick, lacking crystals and epinecral layer; algal layer continuous; medulla white, without crystals. Apothecia frequent, lecideine, strongly constricted at base, up to 1.5 mm across, with a black, rarely faintly pruinose, flat, disc and a distinct, smooth proper margin. Proper exciple dark reddish brown, K-, N-; epithecium dark olivaceous green to bright green, K-, N+ violet; hymenium colourless, 70-85 µm high, I+ blue; paraphyses not conglutinated, simple or sparingly branched and anastomosing in upper part, thin-walled, the apical cell distinctly swollen and covered by a gelatinous pigment cap; hypothecium dark reddish brown in lower part, paler in upper part. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus, an I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores (1-)3-septate, hyaline, bacilliform to ellipsoid-cylindrical, with rounded ends, 11-23 x (3-)4-5(-6) µm. Pycnidia dark, immersed. Conidia thread-like. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-. UV-. Chemistry: thallus without lichen substances. - Note: a holarctic species with a wide latitudinal range, found on horizontal to weakly inclined surfaces of calcareous to basic siliceous substrata, including bricks and roofing tiles in urban areas, often starting the life-cycle on other crustose lichens; the species seems to be most common in Tyrrhenian Italy at low elevations.

Toninia aromatica



Toninia aromatica



Toninia aromatica

Toninia toepfferi (Stein) Navás, Brotéria, sér. bot. 11: 9 (1913)
= *Thalloidima toepfferi* Stein 1883

[VZR80], Insulae Canarienses, Gran Canaria: distr. Mogán, in declivibus occidentalibus montis "Guirre" supra urbem Mogán, 500-600 m. In fissuris rupium basalticarum. Leg. A. Vězda, 15.2.1993. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 80.

Thallus squamulose, olivaceous brown to reddish brown, almost black in extreme sun-forms, green when wet, epruinose, somehow shiny, the squamules scattered to contiguous, up to 4 mm wide, bullate, mostly simple, never columnar, with conspicuous, white, punctiform pseudocyphellae. Upper cortex 30-70 µm thick, with a poorly developed epinecral layer; medulla white, often with crystals dissolving in K. Apothecia frequent, lecideine, rounded, sessile and strongly constricted at base, up to 4 mm across, with a black, epruinose to moderately pruinose, smooth disc, and a distinct, smooth, black proper margin, finally often convex and immarginate. Proper exciple dark grey in outer part, reddish brown within, the grey parts K+ and N+ violet; epithecium grey, K+ and N+ violet, sometimes with crystals of calcium oxalates; hymenium colourless, 60-70 µm high; paraphyses coherent, simple or sparingly branched and anastomosing in upper part, thin-walled, the apical cell distinctly swollen and covered by a gelatinous pigment cap; hypothecium dark reddish brown in upper part, paler in lower part, without crystals. 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, narrowly fusiform, 15-23 x 3-3.5 µm. Pycnidia dark, immersed. Conidia filiform. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances or with traces of terpenoids; apothecia with the Sedifolia grey-pigment. - Note: a Mediterranean-Macaronesian lichen found on soil developing from basic siliceous substrata in dry-warm regions with a mild climate, usually in very open grasslands, sometimes starting the life-cycle on cyanobacterial films or on cyanolichens.



Toninia toepfferi



Toninia toepfferi

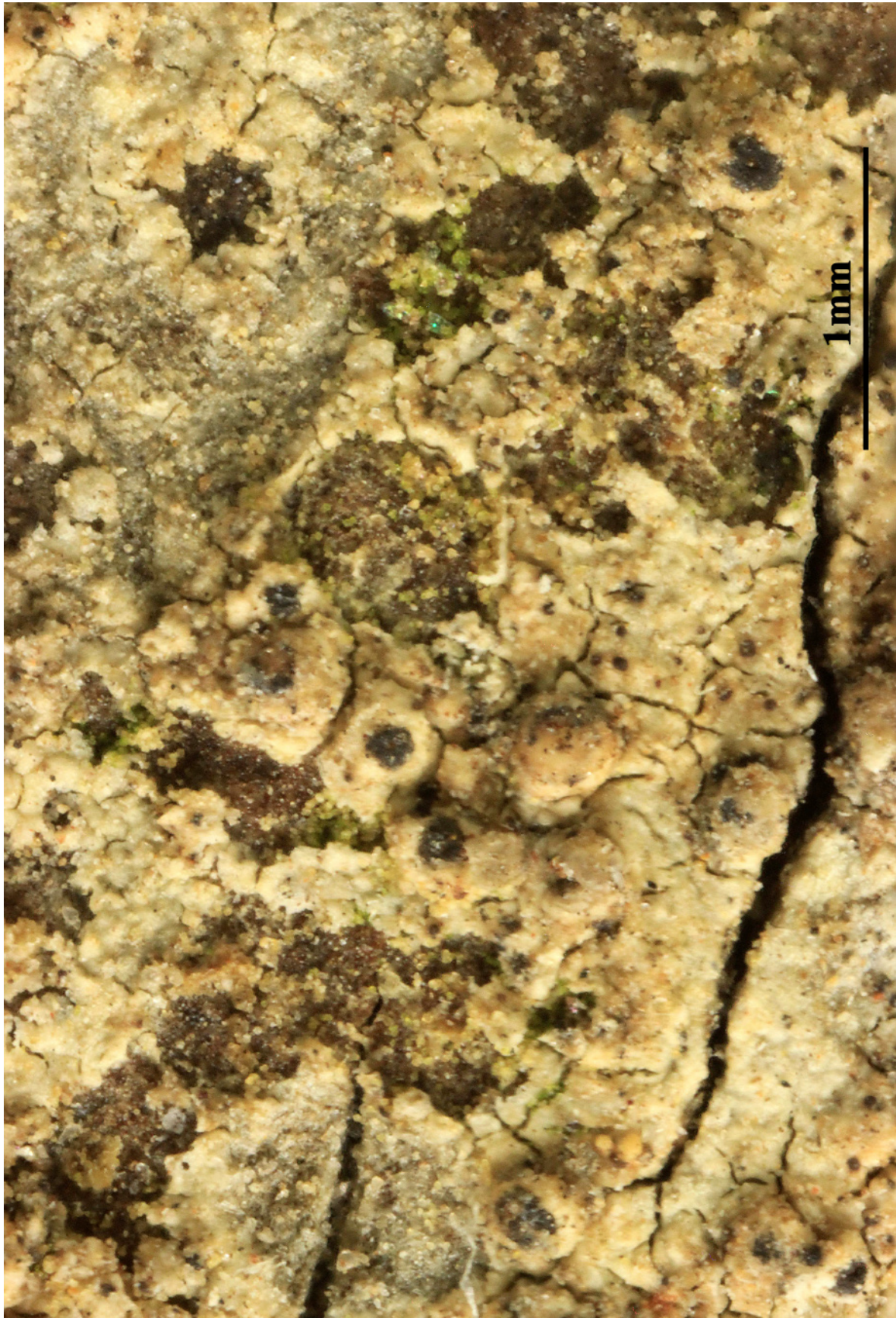
Topelia californica P.M. Jørg. & Vězda, Beih. Nova Hedwigia 79: 504 (1984)

[VZR180], USA, California, Channel Islands, insula Santa Cruz - Canada Lobos, 80 m. Ad corticem arborum. Leg. P. L. Nimis & M. Tretiach, 4.1.1994. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 180.

Thallus: crustose, thin upper surface: gray to pinkish, smooth to minutely warty Ascomata: initially perithecioid but expanding and appearing to be apothecioid, ochraceous, often aggregated, immersed to subimmersed, up to 0.5 mm diam.; "margin": thalline, appearing as a white rim; "disc": flat, dull, epruinose; exciple: brown to dark brown peripherally, 30-60 μm wide hymenium: hyaline or pale brown, I+ blue-green, rapidly changing to red-brown; paraphyses: slender, c. 200 x 1.5-2 μm , flexuose, not branched and without apical thickening asci: narrowly cylindrical, tapering apically, thin-walled, without apical thickening or apparatus, 8-spored ascospores: ellipsoid, muriform, colorless, (20-) 23-28 (-32) x 9-12 μm Pycnidia: immersed conidia: cylindrical, 3-4 (-6) x 1-1.3 μm Spot tests: cortex and medulla K-, C-, KC-, P- Secondary metabolites: cortex with an unknown rusty red pigment. Substrate and ecology: on trees (*Quercus agrifolia*) in open habitats World distribution: central and southern California Sonoran distribution: Channel Islands of southern California.



Topelia californica



Topelia californica



Topelia californica

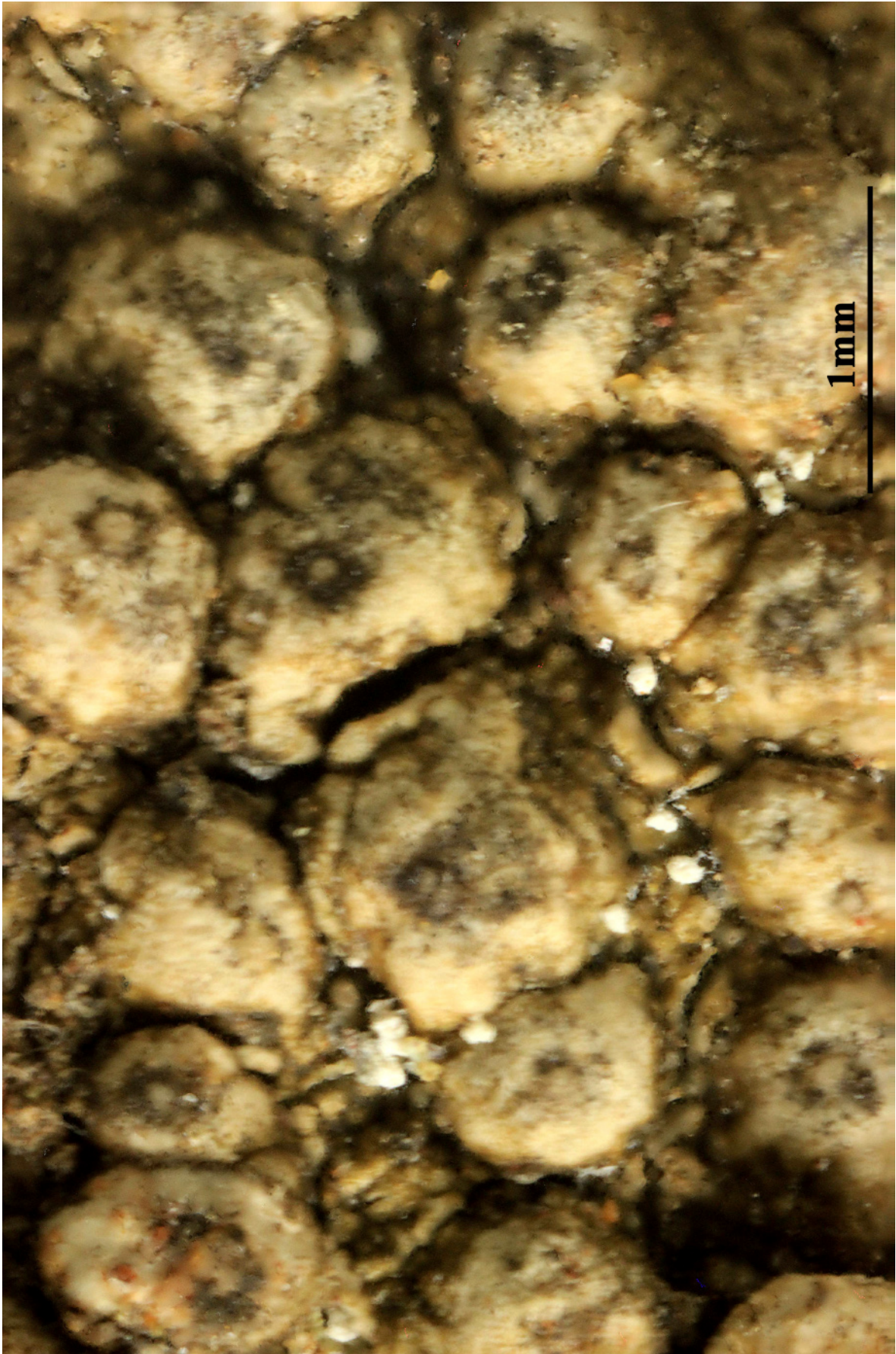
Topelia rosea (Servít) P.M. Jørg. & Vězda, Beih. Nova Hedwigia 79: 507 (1984)
= *Microglaena rosea* Servít, Webbia 8: 419 (1952)

[VZR120], Insulae Canarienses, Tenerife. Carachico, inter pagos Las Cruces et Tanque, 300 m. Ad muros vetustos, ad lapides basalticos. Leg. A. Vězda & F. Ceni, 11.3.1994. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 120.

Thallus crustose, thinly episubstratic, continuous, granulose-farinose, white to pale pinkish grey, the colour rapidly fading in the herbarium, sometimes poorly visible. Perithecia globose, 0.4-0.5(-0.7) mm across, pale pink to pinkish white, immersed in thalline warts, not flattened but with a punctiform, depressed, darker ostiole. Exciple colourless, of short-celled hyphae, with stiff periphyses around the ostiole; hymenium colourless, I+ blue-green, rapidly turning reddish-brown; paraphyses simple, flexuose, not anastomosing, not apically thickened, free. 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

Topeliopsis muscicola Kantvilas & Vězda, Lichenologist 32(4): 348 (2000)

= *Topeliopsis muscigena* (Stizenb.) Kalb, Mycotaxon 79: 322 (2001)

= *Thelotrema muscigenum* Stizenb., Ber. Tät. St Gall. naturw. Ges.: 247 (1890) [1888-89]

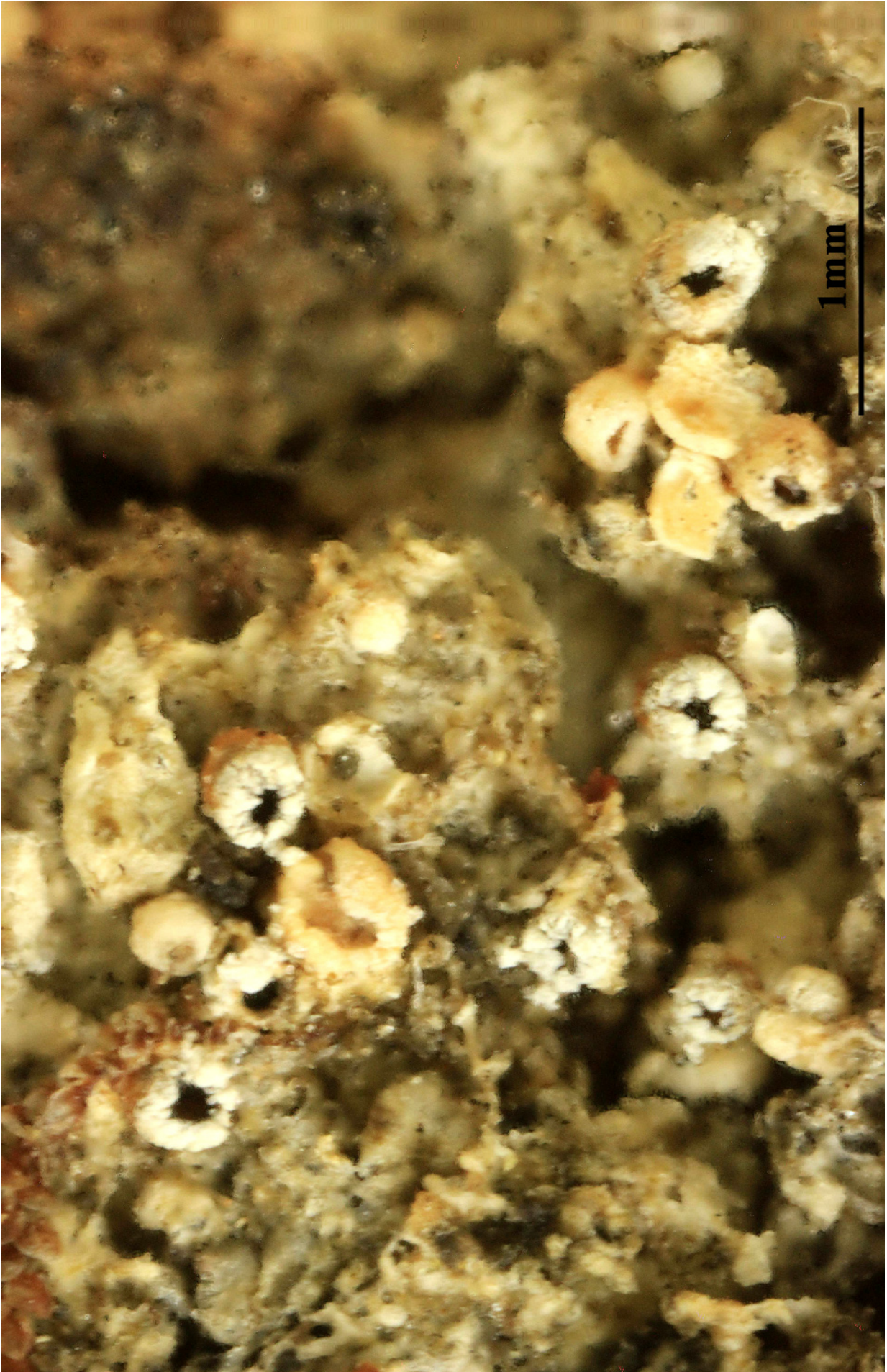
[VZR459], Nova Zelandia. South Island, Canterbury, Boyle River Lodge, 380 m. *Muscicola*, ad corticem arboris. Leg. F. J. Walker, 9.1981, det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 459.

Thallus immersed to superficial, to c. 150 µm thick, pale yellowish grey to greyish green or pale to medium olive, dull to slightly glossy, smooth, continuous to verruculose, non-rimose. True cortex continuous or discontinuous, to c. 20 µm thick, consisting of periclinal hyphae, occasionally the cortex absent or replaced by a discontinuous protocortex to c. 10 µm thick. Algal layer poorly to well developed, continuous or not; calcium oxalate crystals not seen. Vegetative propagules not seen. Ascomata conspicuous, to c. 0.7 mm diam., ±rounded, initially perithecioid, becoming apothecioid, sessile, solitary to marginally slightly fused, distinctly emergent, subglobular in younger stages, becoming urceolate. Disc not visible from above, occasionally becoming partly visible, flesh-coloured in younger ascomata, becoming pale to dark brownish grey, epruinose. Pores small to moderately broad, rarely gaping, to c. 0.5 mm diam., irregular to stellate; pore margin split; proper exciple not visible from above. Thalline rim margin coarsely cracked to slightly lacerate; thalline rim apically pruinose, off-white, incurved; base smooth, ±cylindrical, conspicuously reddish brown. Proper exciple fused, thick, hyaline to pale yellowish internally, pale yellowish brown marginally, apically sometimes dark brown; internal part of exciple and subhymenium usually slightly to distinctly amyloid. Hymenium to c. 250 (–300) µm thick, conglutinated; paraphyses parallel, with unthickened to slightly thickened tips; lateral paraphyses inconspicuous, to c. 30 µm long. Epihymenium initially hyaline, becoming brownish, without granules, rarely with small sparse crystals. Asci 1 (–2)-spored; tholus initially thick, becoming thin. Ascospores muriform, cylindrical to ±rounded-fusiform, with ±rounded to narrowly rounded ends, initially hyaline, becoming yellowish to pale brown at late maturity, mature ascospores strongly amyloid, 100–210 ×

20–55 µm, with numerous locules; locules small, mostly ±rounded to slightly angular, subglobose to irregularly subglobose; ascospore wall initially somewhat thickened, thin at maturity, with a thin halo; endospore thin; transverse septa thin, distinct and ±regular in younger stages, becoming irregular and disappearing, finally the ascospores dissolving internally and generating ascoconidia. Ascoconidia oblong-irregular, to c. 4×1 µm. CHEMISTRY: Thallus K–, C–, P–; no secondary compounds detectable by TLC. - Occurs in southern Vic. and Tas.; grows over epiphytic bryophytes, rarely on wood or tree bark and on rocks in cool-temperate rainforest, wet-sclerophyll forest, and in coastal, subalpine and alpine heath and moorland, at altitudes of 40–1080 m. Also in southern Africa, India and New Zealand.



Topeliopsis muscicola



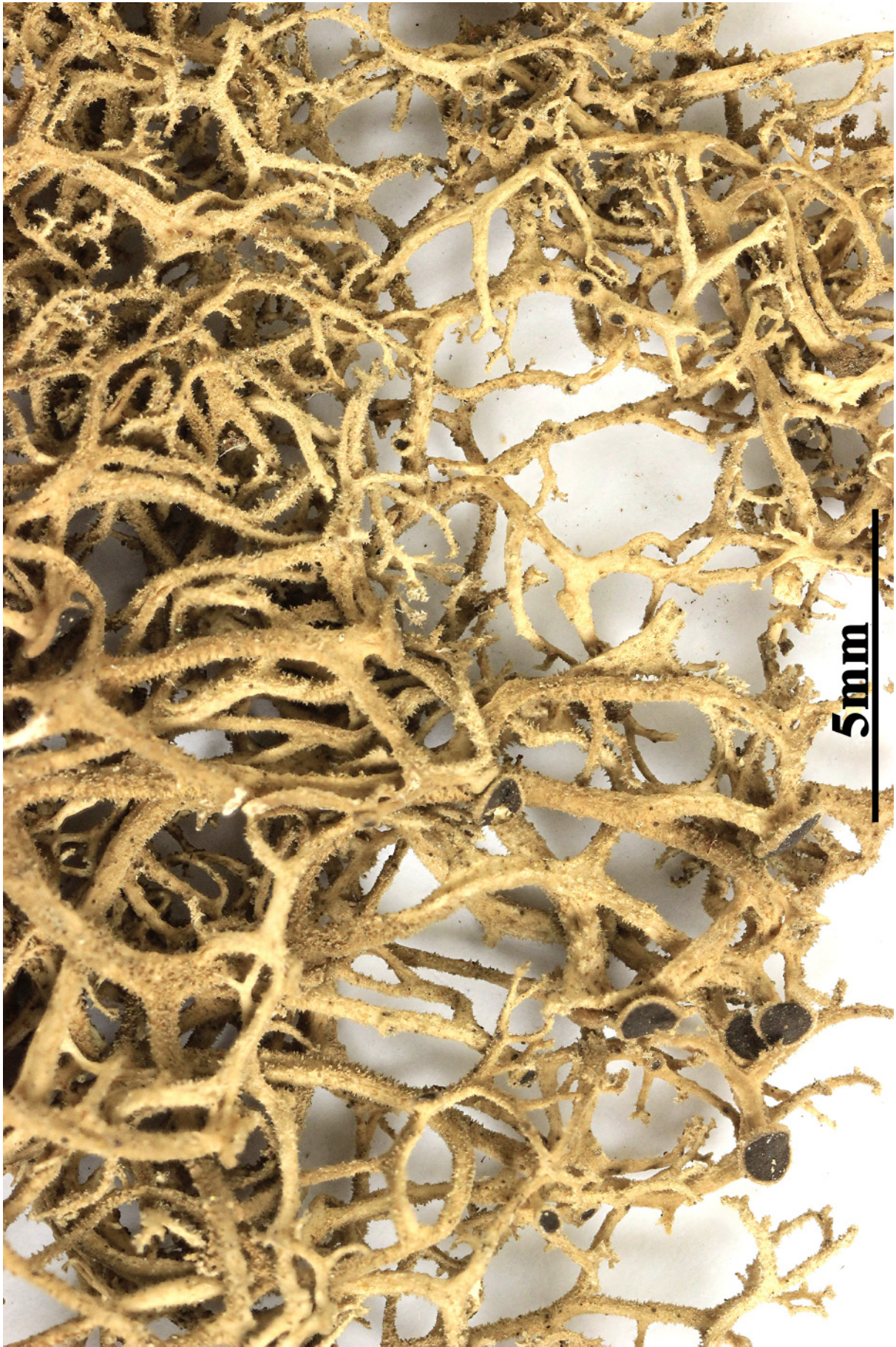
Topeliopsis muscicola

- Tornabea scutellifera*** (With.) J.R. Laundon, Lichenologist 16(3): 226 (1984)
- = *Anaptychia intricata* (DC.) A. Massal., Memor. Lich.: 36 (1853)
- = *Borrera atlantica* (Ach.) Ach., Lich. Univ.: 502 (1810)
- = *Borrera intricata* (DC.) Mudd, Man. Brit. Lich.: 104 (1861)
- = *Cornicularia intricata* DC., in Lamarck & de Candolle, Fl. franç., Edn 3 (Paris) 2: 331 (1805)
- = *Evernia intricata* (DC.) Fr., Lich. eur. reform. (Lund): 27 (1831)
- = *Hagenia intricata* (DC.) De Not., G. bot. ital. 2(1.1): 182 (1846)
- = *Lichen atlanticus* (Ach.) Sm., in Smith & Sowerby, Engl. Bot. 24: tab. 1715 (1807)
- = *Lichen intricatus* Desf., Fl. Atl. 2: 420 (1799)
- = *Lichen scutelliferus* With., Bot. arr. veg. Gr. Brit. (London) 2: 728 (1776)
- = *Parmelia atlantica* Ach., Methodus, Suppl. (Stockholmiae): 50 (1803)
- = *Physcia intricata* (DC.) Schaer., Enum. critic. lich. europ. (Bern): 11 (1850)
- = *Teloschistes intricatus* (DC.) Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 4 sér. 1: 102 (1899)
- = *Tornabea atlantica* (Ach.) Østh., in Østhagen & Sunding, Taxon 29(5-6): 688 (1980)
- = *Tornabea atlantica* var. *intricata* (DC.) Clauzade & Cl. Roux, Bull. Soc. bot. Centre-Ouest, Nouv. sér., num. spec. 7: 829 (1985)
- = *Tornabenia atlantica* (Ach.) Kurok., J. Jap. Bot. 37(10): 291 (1962)
- = *Tornabenia intricata* (DC.) Trevis., Tornab. Blasteniosp. (Padova): 1 (1853)
- = *Tornabenia montagnei* Trevis., Tornab. Blasteniosp. (Padova): 1 (1853)
- = *Xanthoria intricata* (DC.) Horw., Hand-list Lich. Gr. Brit.: 13 (1912)

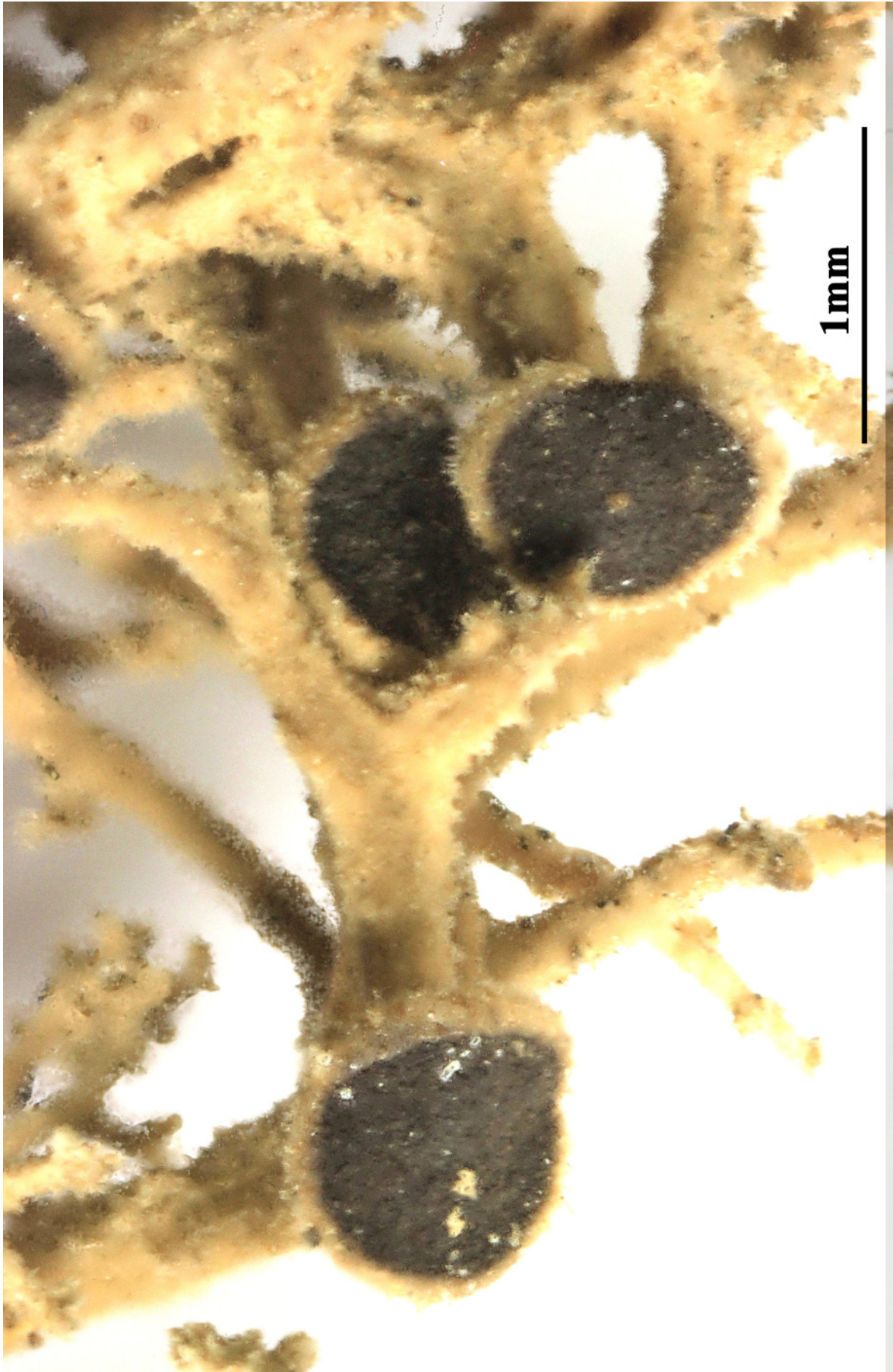
[VZR158], Syria. Yayladagi, limes Turciae - Syriae, 1200 m. Supra plantas siccas. Leg. J. Troneček, 8.1994, det. A. Vězda. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 158.

Thallus fruticose, shrubby to subpendent, up to 5 cm long, 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; 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 1.2 mm across, mostly lateral, with a brown-black to black disc and a smooth thalline margin. 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(-30) x 10-15 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 ostium. 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 (e.g. it is still abundant in the village of Erice in Sicily); much more widespread in the past, but presently restricted to a few, localised stations with natural vegetation, especially sand dunes, mostly along the Tyrrhenian coast, in sites with a high persistence of fog, or with frequent humid maritime winds alternating with dry periods.



Tornabea scutellifera

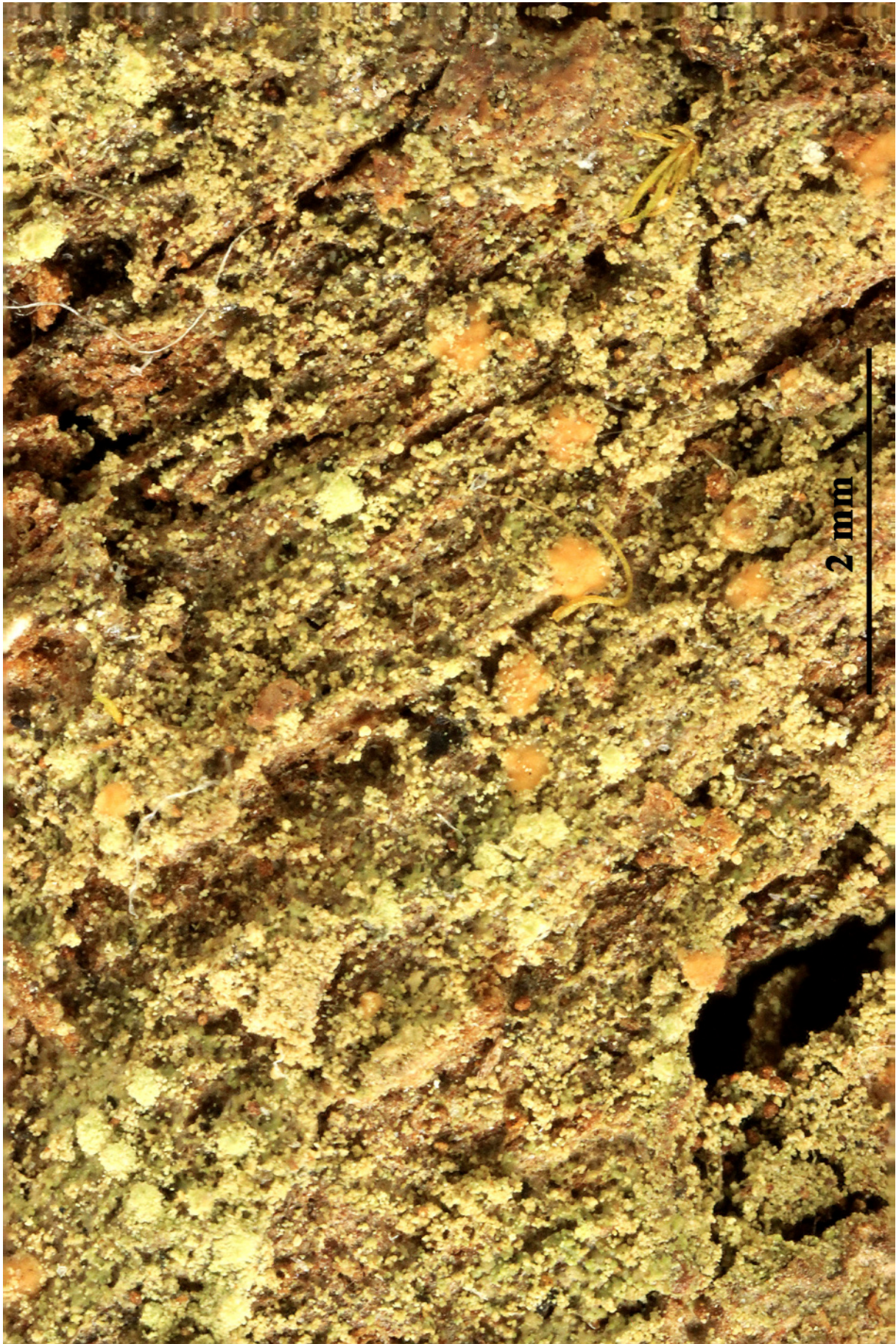


Tornabea scutellifera

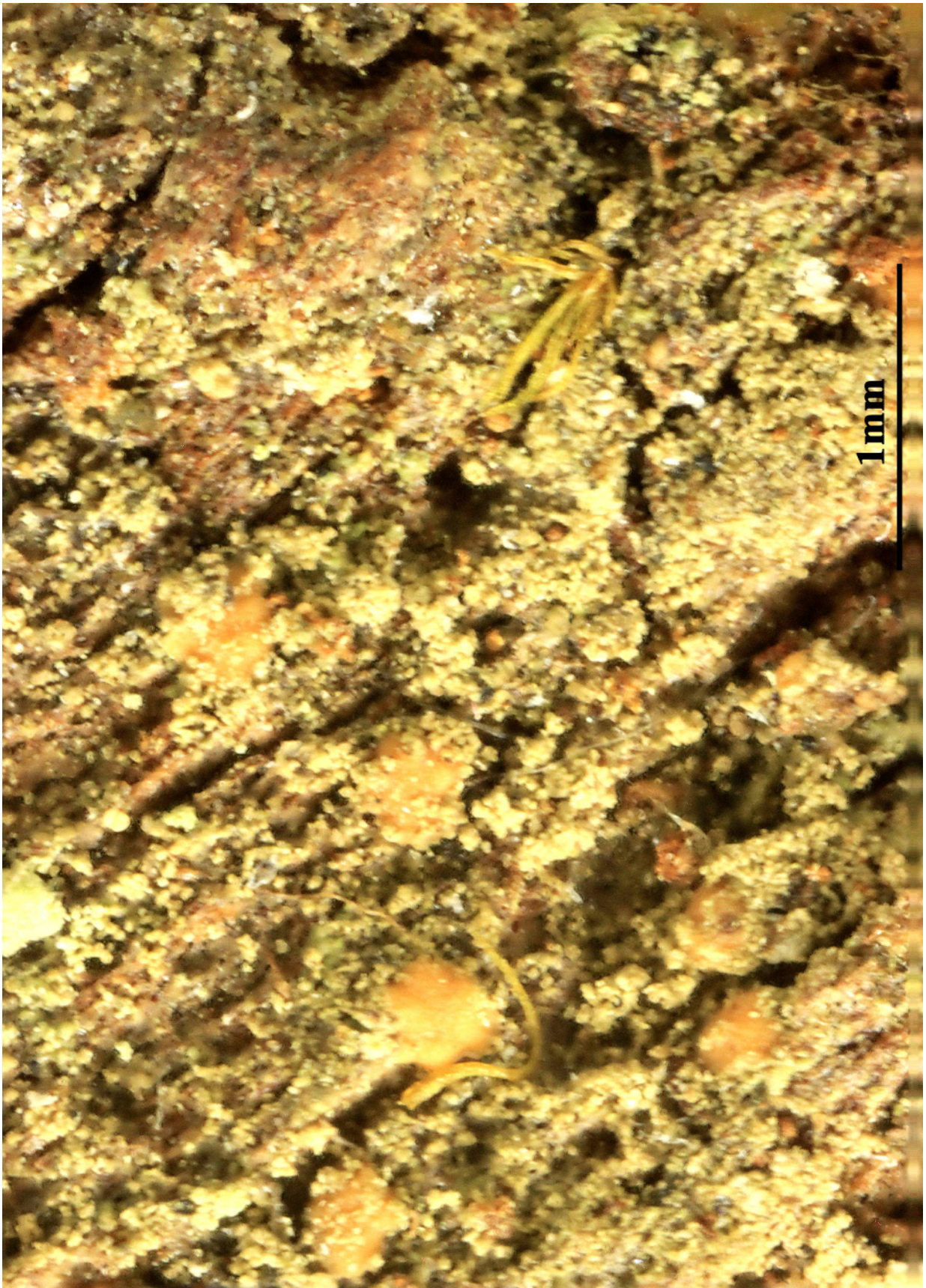
Trapelia corticola Coppins & P. James, Lichenologist 16(3): 254 (1984)
= *Trapejamesia corticola* (Coppins & P. James) S.Y. Kondr., in Kondratyuk, Lőkös, Kondratiuk, Kärnefelt, Thell, Farkas & Hur, Acta Bot. Hung. 64(1-2): 131 (2022)

[VZR362], Bohemia, austr. occidentalis, Montes Šumava (Gabreta), distr. Železná Ruda, in valle conflvii dextri vallis rivi "Debrenik", 750 m. Ad corticem *Tiliae* secus viam. Leg. Z. Palice & C. Printzen. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 362.

Thallus crustose, endosubstratic or thinly episubstratic, poorly delimited, green to brownish green, when best developed of more or less scattered, up to 1.5 mm wide, sorediate areoles. Soralia punctiform, 0.1-0.25(-0.4) mm across, usually discrete but sometimes confluent, strongly convex, pale brown to pale greenish brown, with farinose soredia. Apothecia very rare, lecideine, sessile, up to 0.2 mm across, with a concave to flat, pinkish brown disc, and a very thin, paler proper margin. 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. 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, 11-14 x 5-6.5 µm. Photobiont chlorococcoid. Spot tests: soralia K-, C+ red, KC+ red, P-, UV+ white. Chemistry: gyrophoric acid (major), and traces of lecanoric and 5-O-methylhiassic acids. - Note: on the spongy, loose bark of deciduous trees, sometimes on moribund epiphytic bryophytes in sheltered, humid woodlands at low elevations.



Trapelia corticola



Trapelia corticola

- Trapelia geochroa*** (Körb.) Hertel, *Herzogia* 1: 127 (1969)
- = *Ainoia geochroa* (Körb.) Lumbsch & I. Schmitt, in Lumbsch, Schmitt, Döring & Wedin, *Mycol. Res.* 105(3): 272 (2001)
- = *Biatora geochroa* Körb., *Parerga lichenol.* (Breslau) 2: 151 (1860) [1865]
- = *Buellia myriocarpa* f. *muscicola* (Hepp) Stein, in Cohn, *Krypt.-Fl. Schlesien* (Breslau) 2(2): 220 (1879)
- = *Buellia punctata* f. *muscicola* Körb., *Parerga lichenol.* (Breslau) 2: 191 (1860) [1865]
- = *Buellia punctata* var. *muscicola* Lojka, *Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien* 19: 495 (1869)
- = *Buellia punctiformis* f. *muscicola* Arnold, *Flora, Regensburg* 67(30): 586 (1884)
- = *Buellia punctiformis* var. *muscicola* Anzi, *Cat. Lich. Sondr.*: 89 (1860)
- = *Buellia stigmatea* var. *muscicola* (Hepp) Hazsl., *Magyar Birodalom Zuzmó-Flórájá*: 182 (1884)
- = *Lecidea geochroa* (Körb.) Lettau, *Hedwigia* 52(3-4): 141 (1912)
- = *Lecidea geochroa* (Ach.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 464 (1821)
- = *Lecidea geochroella* Zahlbr. [as 'geochroëlla'], *Cat. Lich. Univers.* 3: 766 (1925)
- = *Lecidea muscorum* var. *geochroa* Ach., *K. Vetensk-Acad. Nya Handl.* 29: 261 (1808)
- = *Lecidea punctiformis* var. *muscicola* Hepp, *Flecht. Europ.*: no. 318 (1857)
- = *Lecidea sabuletorum* var. *muscorum* Schaer., *Lich. helv. spicil.* 3: 151 (1828)
- = *Lichen muscorum* var. *geochroa* (Ach.) Lam., *Encycl. Méth., Bot. Suppl.* (Paris) 3(2): 371 (1813)
- = *Patellaria sabuletorum* var. *bryophila* Wallr., *Fl. crypt. Germ.* (Norimbergae) 1: 350 (1831)
- = *Patellaria sabuletorum* var. *geochroa* (Ach.) Duby, *Bot. Gall., Edn 2* (Paris) 2: 649 (1830)

[VZR100], Slovakia. Carpates. Tatra Magna: in valle Bialovodská dolina, 1080 m. In fossis viae silvaticae. Leg. A. Vězda, 4.7.1993. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 100.

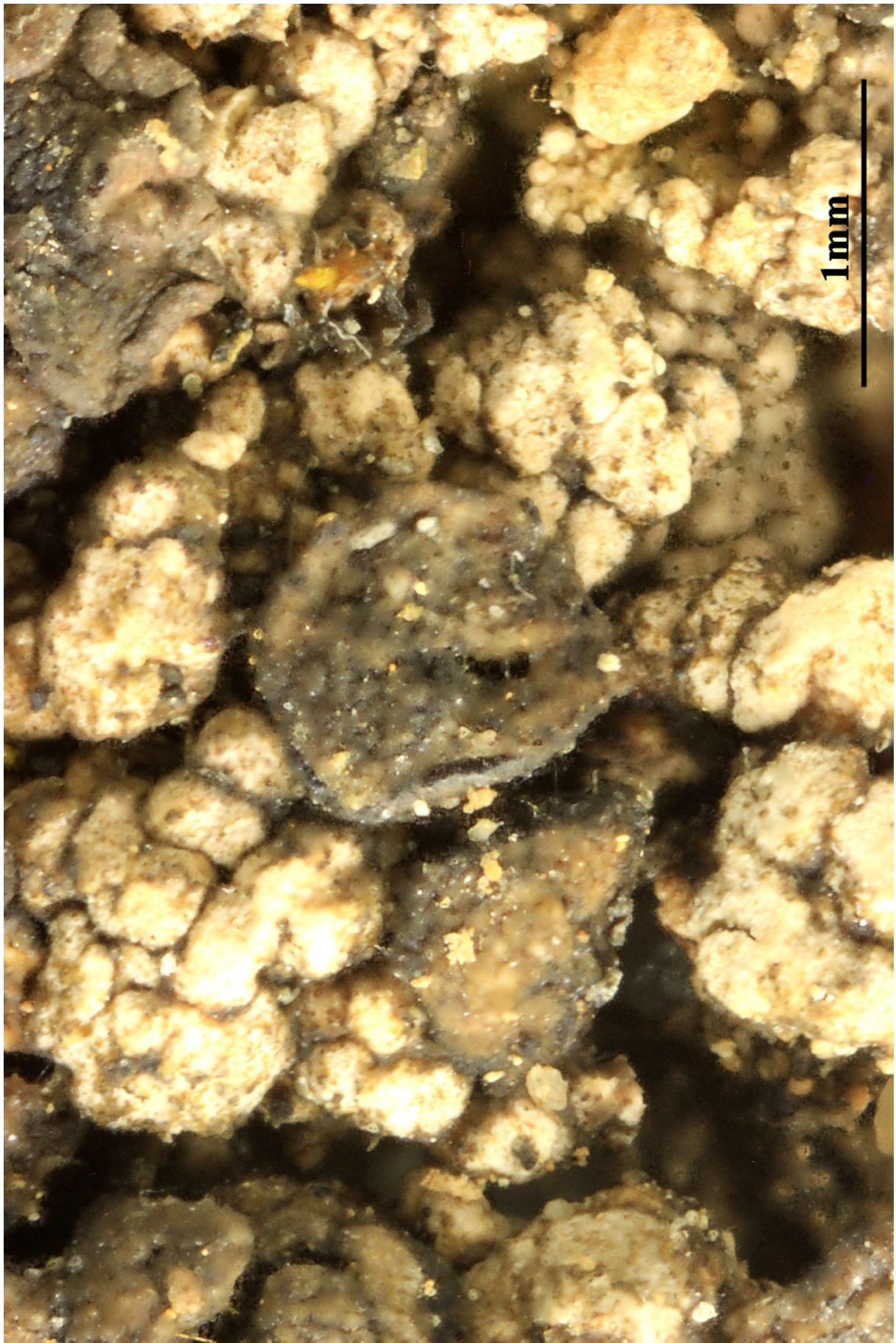
Thallus crustose, episubstratic, granular-verrucose, whitish, consisting of 0.4-1.6 mm wide, initially flat, later hemispherical and more or less hollow, easily breakable warts. Medulla white, I-. Apothecia lecideine, sessile and strongly constricted at base, 0.7-2(-3.5) mm across, single to confluent, with a slightly concave to slightly convex, brown to black-brown, rough disc, and a rather thick, flexuose to crenulate proper margin which is pale brown in lower part, black-brown in upper part. Proper exciple 40-80 µm wide, cupulate, dark brown, of long-

celled and thick-walled hyphae, C+ pink; epithecium colourless to brownish; hymenium colourless, 90-150 μm high, C+ pink; paraphyses sparingly branched, 0.8-1.2 μm thick, easily separated; hypothecium pale brown in upper part, darker brown in lowermost part. Asci 8-spored, cylindrical-clavate, thin-walled, the apical dome K/I- or K/I+ pale blue, Trapelia-type. Ascospores 1-celled, hyaline, narrowly ellipsoid, 15-32 x 6-14 μm . Pycnidia 0.5-0.8 mm across, immersed in thalline warts, C+ pink. Conidia narrowly bacilliform, 5-6 x c. 0.7 μm . Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P- (but the primordia of apothecia and the parts surrounding the pycnidia reacting C+ red); apothecial sections and pycnidia C+ pink. Chemistry: gyrophoric acid in apothecia and pycnidia. - Note: on fresh acidic mineral soil in open vegetation developing in areas with a long snow cover (Solorinion croceae-communities); distribution in the Alps poorly known.

Trapelia geochroa



Trapelia geochroa



Trapelia geochroa

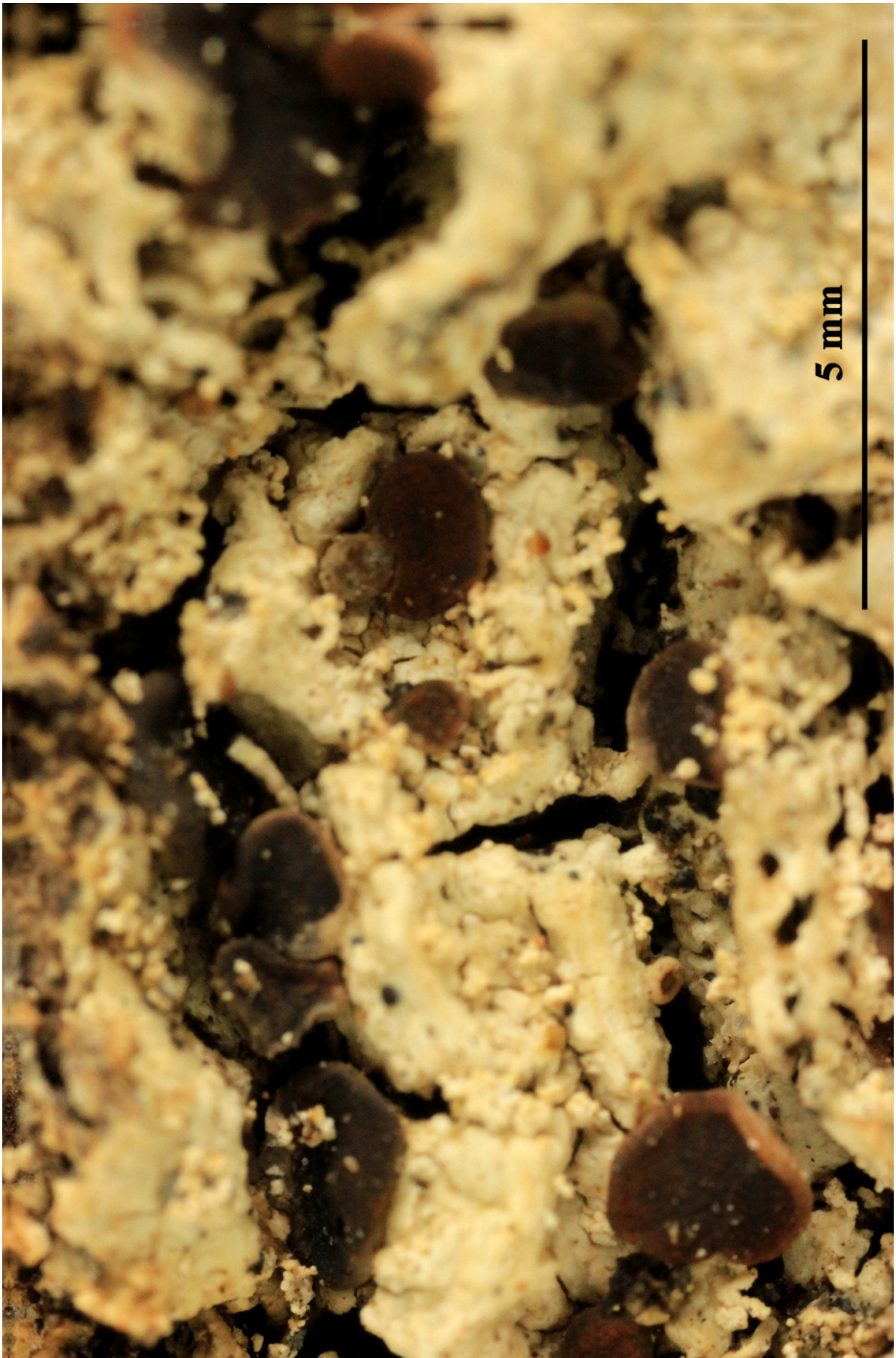
Trapeliopsis congregans (Zahlbr.) Brako, Mycotaxon 35(1): 16 (1989)
= *Lecidea congregans* Zahlbr., Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-
Naturwiss. Kl. 104: 305 (1941)
= *Phyllopsora congregans* (Zahlbr.) D.J. Galloway, New Zealand J. Bot.
21(2): 196 (1983)

[VZR309], Nova Zelandia, South Island, distr. Nelson, Kahurangi National Park, secus viam inter stationem "Flora Carpark" et casam alpinam Mt. Arthur dictam, 1300 m. Ad truncum putridum arboris (*Podocarpus*)- Leg. W. Malcolm & A. Vězda, 21.4.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 309.

Thallus microphylline, subsquamulose, squamules crowded, $\pm$ imbricate, pale grey-green to yellow-green or dark olive or green in shaded sites, continuous, spreading, to 10 cm diam., but generally much less, on rotting logs. Apothecia rarely solitary, congested, confluent, irregular, to 5 mm diam., rusty red-brown, margins thin, pale, undulate-irregular. Ascospores 8 per ascus, biseriate, ellipsoid, apices narrowly rounded, straight, $11-12 \times 6 \mu\text{m}$.



Trapeliopsis congregans

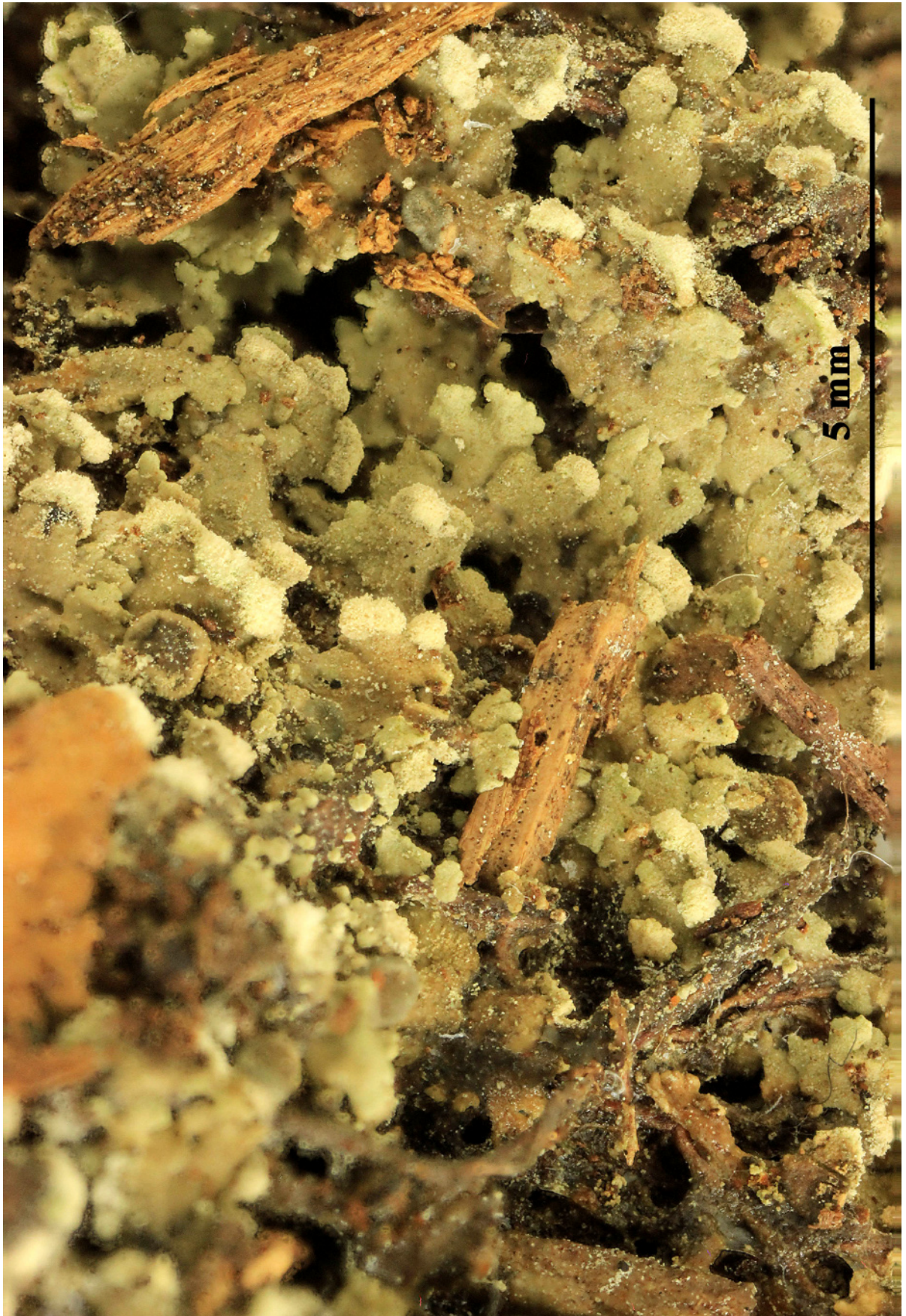


Trapeliopsis congregans

Trapeliopsis percrenata (Nyl.) Gotth. Schneid., Biblthca Lichenol. 13: 151 (1980) [1979]
 = *Lecidea percrenata* Nyl., Flora, Regensburg 69: 462 (1886)
 = *Psora percrenata* (Nyl.) Zahlbr., Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 38: 664 (1888)
 = *Trapelia percrenata* (Nyl.) V. Wirth, Die Flecht. Baden-Württembergs. Verbreitungsatlas (Stuttgart): 511 (1987)

[VZR378], Bohemia merid., montes Šumava (Gabreta), distr. Volary, reservatum naturae "Vltavský luh" prope stationem viae ferreae "Pěkna", 780 m. Ad turfam in radicibus arboris. Leg. Z. Palice, J. Kocourková & A. Vězda, 15.10.1998. EX A. VĚZDA: LICHENES RARI-ORES EXSICCATI NR. 378.

Thallus squamulose, consisting of pale grey green to olive-green, 0.3-1(-2.5) mm wide squamules with ascending, lobulate, sorediate margins, the soralia labriform to subcapitate, pale grey to grey-green (creamy white in shade-forms), sometimes confluent and covering the whole surface, Apothecia rare, lecideine, up to 1-1.5(-2) mm across, with a brown to dark grey green, at first flat, then convex disc, and a usually paler, finally often excluded proper margin. Epithecium pale yellowish brown; hymenium colourless; paraphyses coherent, slender, branched and anastomosing, only slightly thickened at apex; hypothecium pale yellowish brown. sometimes with brownish, Ascospores 1-celled, hyaline, ellipsoid, 8-11 x 3.5-5.5 µm. Photobiont chlorococcoid. Spot tests: thallus and soredia K-, C-, KC-, P-, UV+ glaucous. Chemistry: an unidentified lichen compound. - Note: a species whose thallus resembles the primary squamules of *Cladonia*, mostly sterile, found on plant debris and rotting wood. Widespread worldwide, in Central Europe it mostly occurs in montane forests; known from several localities in the Alps, mainly in Austria, elsewhere probably overlooked or confused with other species, being mostly sterile.



Trapeliopsis percrenata

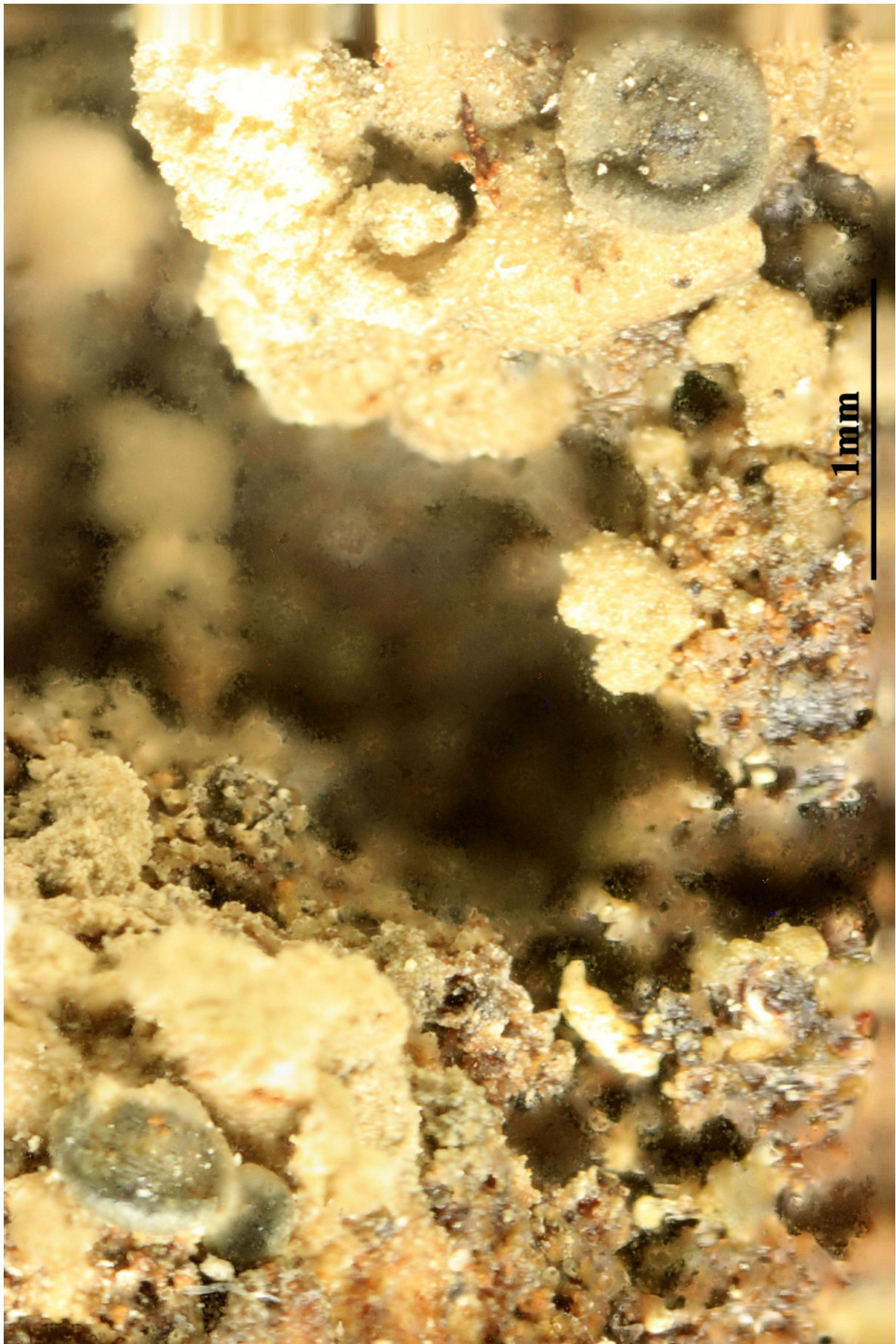


Trapeliopsis percrenata

- Trapeliopsis percrenata*** (Nyl.) Gotth. Schneid., *Bibliotheca Lichenol.* 13: 151 (1980) [1979]
 = *Lecidea percrenata* Nyl., *Flora, Regensburg* 69: 462 (1886)
 = *Psora percrenata* (Nyl.) Zahlbr., *Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien* 38: 664 (1888)
 = *Trapelia percrenata* (Nyl.) V. Wirth, *Die Flecht. Baden-Württembergs. Verbreitungsatlas* (Stuttgart): 511 (1987)

[VZR290], *Errore s.n.* as *Trapeliopsis glaucolepida* distributed in fasc. 20 edita. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 290.

Thallus squamulose, consisting of pale grey green to olive-green, 0.3-1(-2.5) mm wide squamules with ascending, lobulate, sorediate margins, the soralia labriiform to subcapitate, pale grey to grey-green (creamy white in shade-forms), sometimes confluent and covering the whole surface, Apothecia rare, lecideine, up to 1-1.5(-2) mm across, with a brown to dark grey green, at first flat, then convex disc, and a usually paler, finally often excluded proper margin. Epithecium pale yellowish brown; hymenium colourless; paraphyses coherent, slender, branched and anastomosing, only slightly thickened at apex; hypothecium pale yellowish brown. sometimes with brownish, Ascospores 1-celled, hyaline, ellipsoid, 8-11 x 3.5-5.5 µm. Photobiont chlorococcoid. Spot tests: thallus and soredia K-, C-, KC-, P-, UV+ glaucous. Chemistry: an unidentified lichen compound. - Note: a species whose thallus resembles the primary squamules of *Cladonia*, mostly sterile, found on plant debris and rotting wood. Widespread worldwide, in Central Europe it mostly occurs in montane forests; known from several localities in the Alps, mainly in Austria, elsewhere probably overlooked or confused with other species, being mostly sterile.



Trapeliopsis percrenata

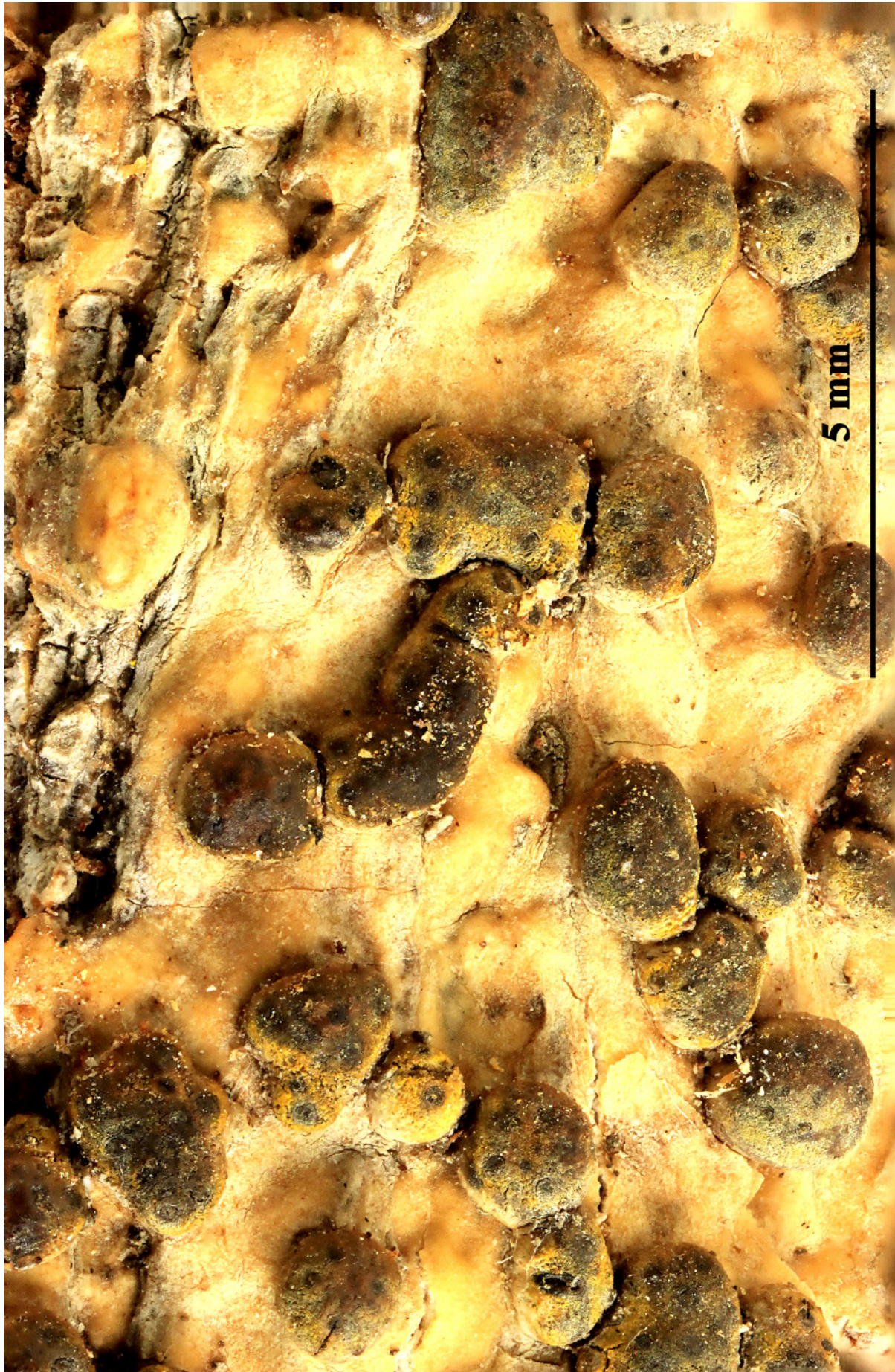


Trapeliopsis percrenata

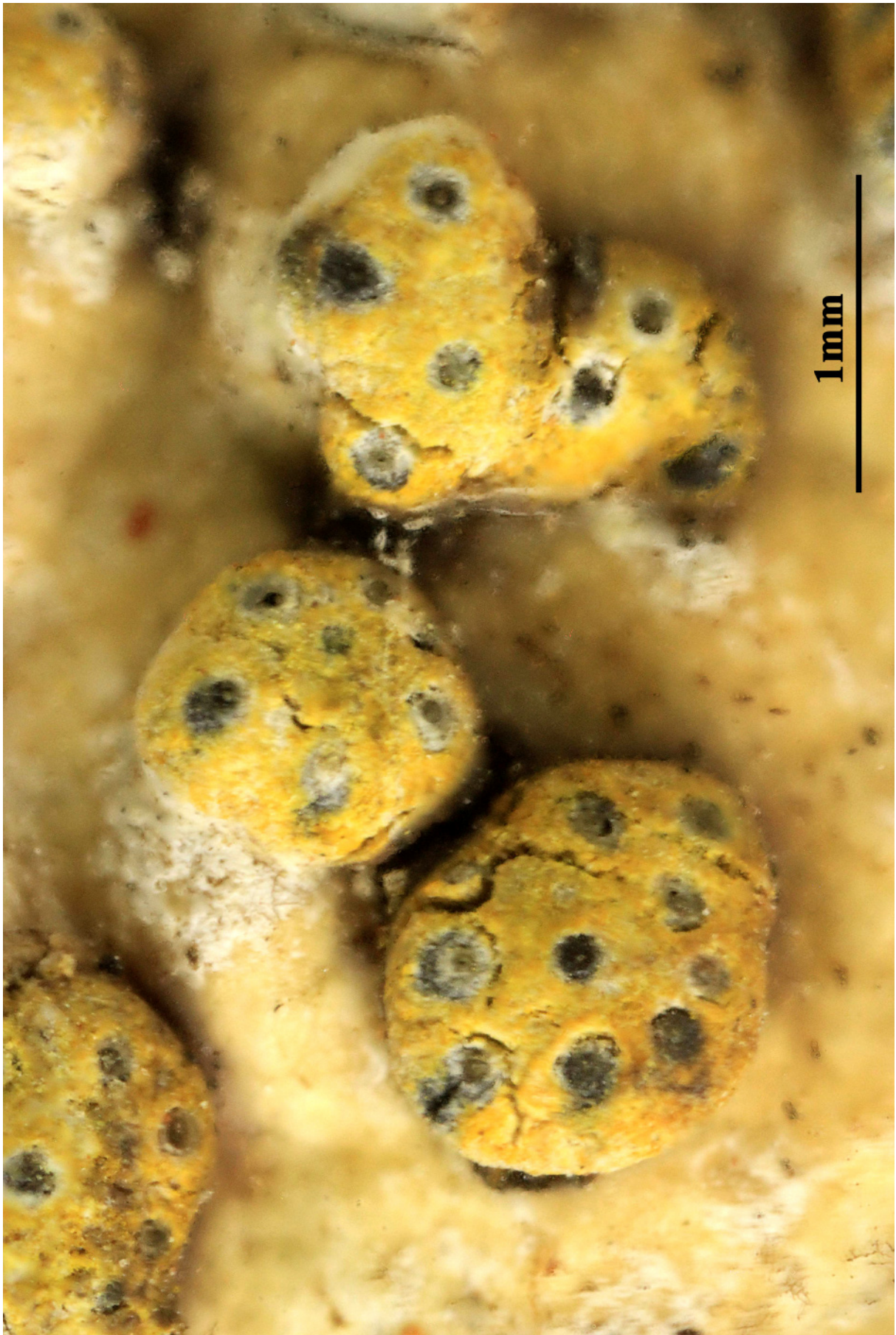
Trypethelium platystomum Mont., Annls Sci. Nat., Bot., sér. 2 19: 72 (1843)

[VZR60], Antillarum Insulae, Guadeloupe, insula Désirade. sub vicum Beauséjour, 50 m, ad corticem arborum (*Crossopetalum rhacoma*). Leg. J. Vivant & A. Vězda, 16.03.1992. det. A. Aptroot, 2010. - First distributed as *Trypethelium eluteriae* Spreng. det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 60.

Thallus green to yellowish, smooth to somewhat bullate. Ascomata fully immersed in the pseudostroma. Pseudostroma irregularly raised, flat-topped, crème, generally at least partly with orange, K+ purple, UV+ red pigment. Ostioles apical. Hamathecium not inspersed. Ascospores hyaline, 12–18-septate, $55\text{--}75 \times 8\text{--}15 \mu\text{m}$, lumina rounded. Chemistry. Thallus UV–, K–; pseudostroma with orange, K+ purple, UV+ red anthraquinone. Distribution. Pantropical (Costa Rica, Guyana, French Guiana, Venezuela, Brazil, Paraguay, India, Sri Lanka, Thailand, Vietnam, Indonesia: Java: Mt. Parangklakah (Groenhart 5830, 1937).



Trypethelium platystomum



Trypethelium platystomum

Tuckermannopsis americana (Spreng.) Hale, in Egan, Bryologist 90(2): 164 (1987)

= *Nephroma americanum* Spreng. [as 'americana'] 1820

= *Nephromopsis americana* (Spreng.) Divakar, A. Crespo & Lumbsch, in Divakar, Crespo, Kraichak, Leavitt, Singh, Schmitt & Lumbsch 2017

[VZR399], Canada. Alberta: secus viam dictam Grande Cache Highway, 4 km ad septentiones a loco Rock Lake, 53°34' septentr., 118°01' occid. Ad ramulos (*Picea*) in silva boreali. Leg. et det. W. L. Culberson (22362) & Ch, F, Culberson. - Annot.: α -collatolic acid, alectoronic acid, physodic acid by TLC, anal. A. Johnson & Ch. F. Culberson. Ex A. Vězdea: Lichenes Rariores Exsiccati Nr. 399.

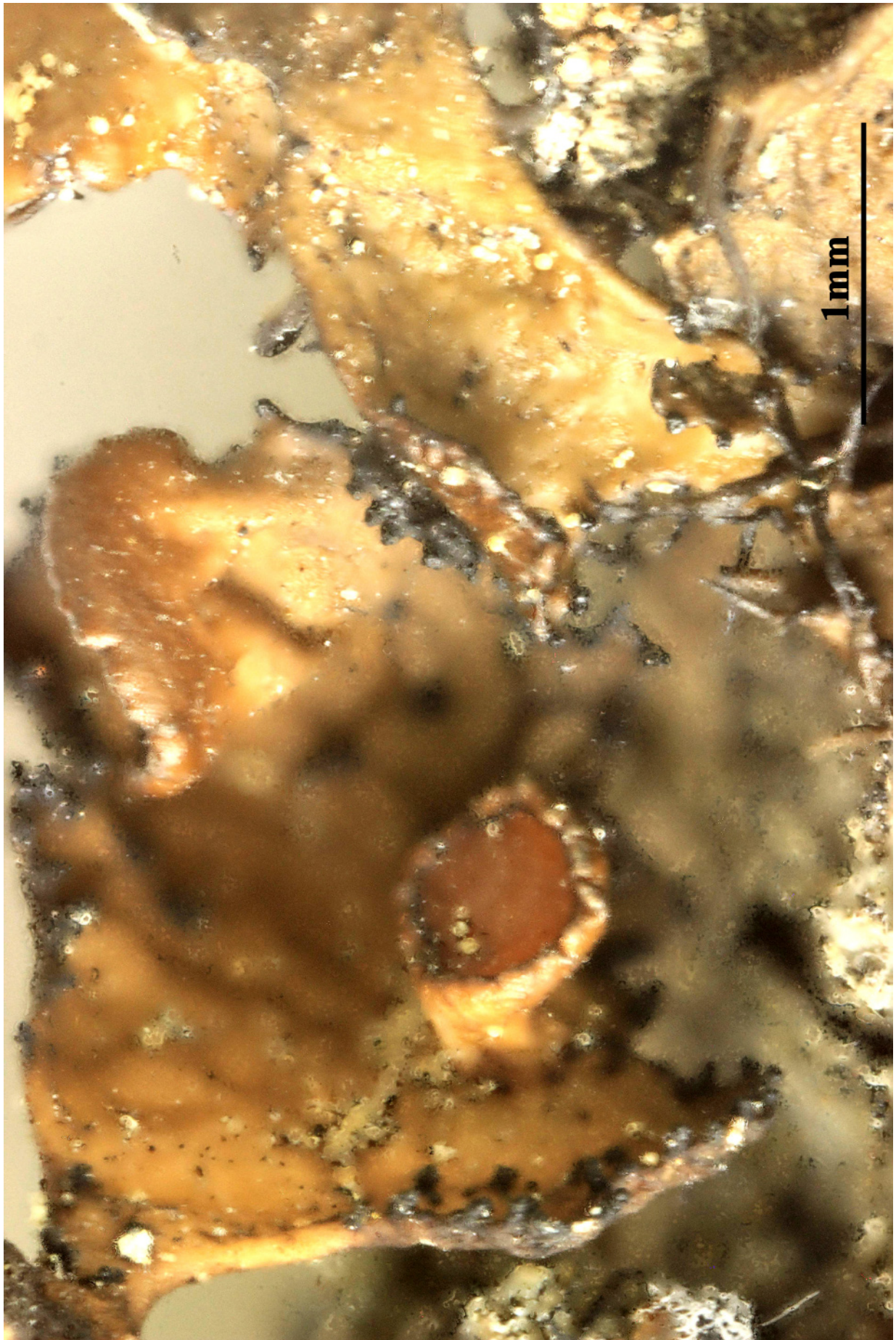
Brown, broad lobed foliose lichen. Often with marginal cilia and always with black projecting pycnidia. upper surface pale brown, wrinkled. Lower surface dark with sparse rhizines. Apothecia thalline and common. Medulla with allectoric acid (KC+ orange to pink). Weak UV+ Blueish white.



Tuckermannopsis americana



Tuckermannopsis americana



Tuckermannopsis americana

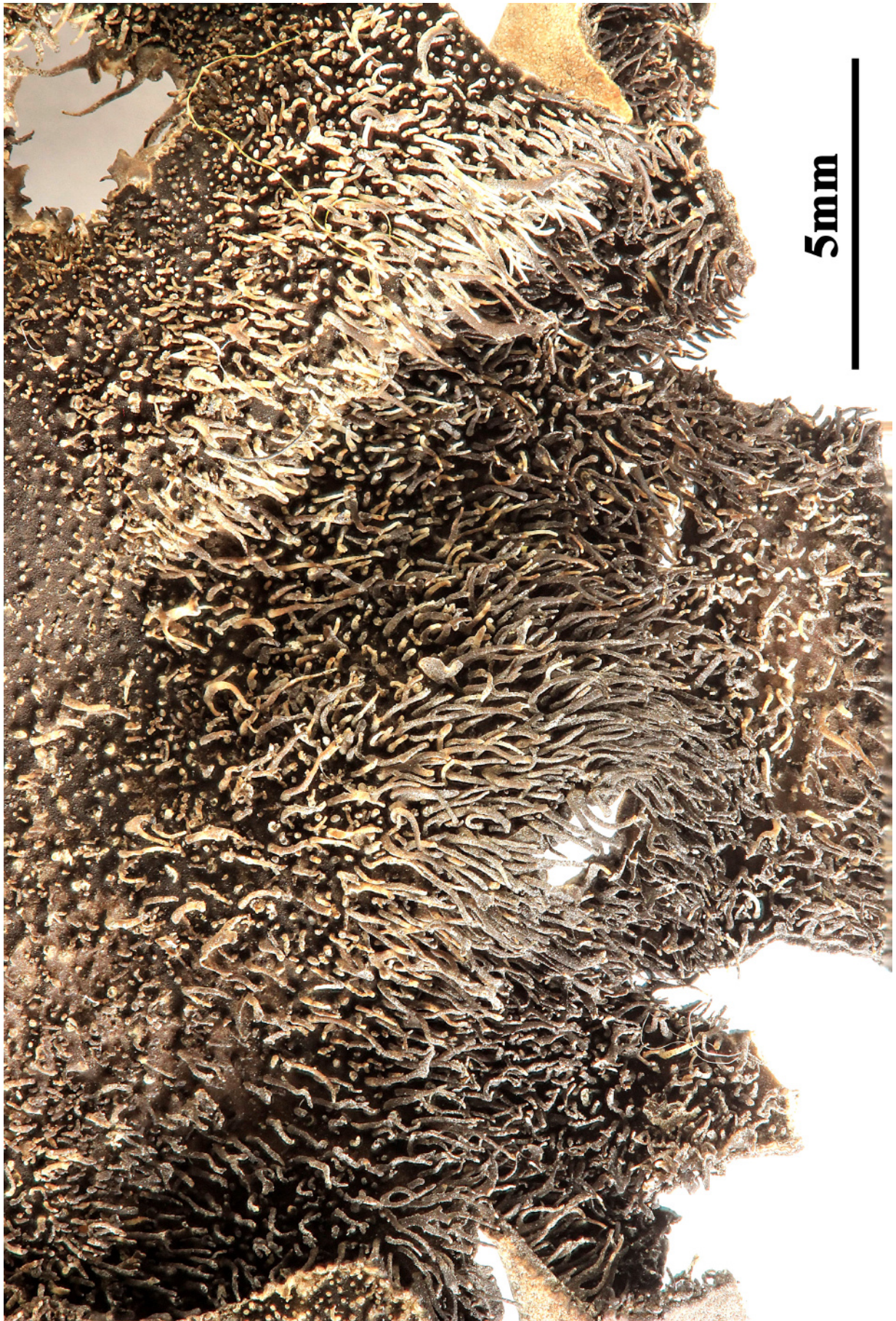
Umbilicaria antarctica Frey & I.M. Lamb, Trans. Br. mycol. Soc. 22(3-4): 270 (1939)
 = *Gyrophora antarctica* (Frey & I.M. Lamb) N.S. Golubk., Nov. sist. Niz. Rast. 3: 258 (1966)
 = *Omphalodiscus antarcticus* (Frey & I.M. Lamb) Llano, Monograph of the Lichen Family Umbilicariaceae in the Western Hemisphere: 76 (1950)
 = *Umbilicaria kappenii* Sancho, B. Schroet. & Vallad. [as 'kappenii'], Nova Hedwigia 67(3-4): 281 (1998)

[VZR463], Antarctis. Insulae South Shetland, insula King George, Sphinx Hill, Admiralty Bay; 02°05'29.6" austr., 58°28'16.11" occid., 140 m. Ad saxa. Leg. L.Rektorys, 1.2001, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 463.

Thallus up to 18 cm. in diameter, monophyllous, rigid, irregular with deeply to moderately incised or torn margins, dorsal surface uneven, umbo elevated, weakly rugose, upper cortex smooth or obscurely granular, almost grainy peripherally, with irregular dendritic, obscure to large cracks, occasionally perforate marginally, surface dull, a very light brown more or less fuscous stained, (cream buff to colonial buff, stainschaetura black), lower surface uneven, umbilicus strong, compact, extruded, the cortex partly smooth to verrucose, the verrucae rounded, peripherally more coarsely verrucose or smooth, rhizinae moderate to dense, few about the umbilicus, stubby, becoming large, cylindrical, commonly flat, simple or divided, base dark, becoming lighter apically, or all light, lower surface sooty about the umbilicus, lighter brown peripherally, occasionally all lower side dark. Fertile specimens not seen; Frey (1939, p. 270) states that the apothecia are scattered, numerous, 0.8-1.5 mm. in diam. sessile, base constricted, at first orbicular with the proper margin usually whole then becoming irregular, disk black, finely scabrous not shining, sometimes with a slight, indistinct central projection, but at no time gyrose, lecideine, spores simple, hyaline, ellipsoidovate, 4-6 (8) per ascus, 15-16 x 7-7.5 µm. Thallus 200 - 450 µm thick, necral zone hyaline, evanescent, 9-15 µm thick, upper cortex palisade-scleroplechtenchymatous, 16.5-26.4 µm thick, light brown, algal layer discontinuous, protococcoid, 82.5-99 µm thick, medulla loose, about 135 µm thick, hyphae 6.6 µm in diameter, mesodermate, lower cortex scleroplechtenchymatous, about 90 µm thick, hyaline becoming brown in lower zone. Spermogonia not seen.



Umbilicaria antarctica



Umbilicaria antarctica



Umbilicaria antarctica



Umbilicaria antarctica



Umbilicaria antarctica



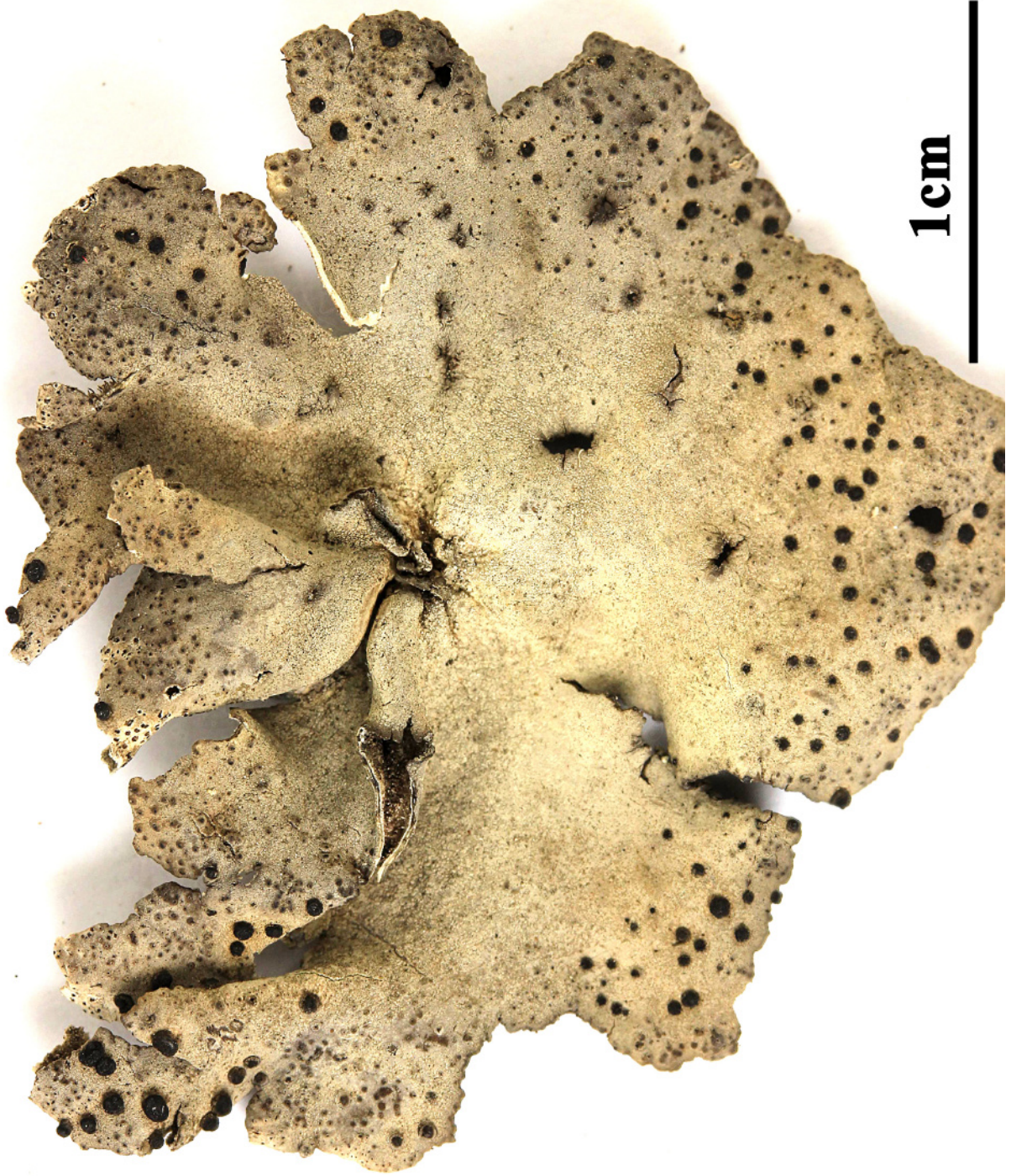
Umbilicaria antarctica

- Umbilicaria crustulosa* (Ach.) Lamy, Bull. Soc. bot. Fr. 25(5): 386 (1880) [1878]
 = *Gyrophora crustulosa* Ach., Lich. Univ.: 673 (1810)
 = *Gyrophora depressa* f. *crustulosa* (Ach.) Dalla Torre & Sarnth., Fl. Tirol, Vorarlberg, Liechtenstein, IV Band. Die Flechten von Tirol: 144 (1902)
 = *Gyrophora depressa* var. *crustulosa* (Ach.) Dalla Torre & Sarnth., Fl. Tirol, Vorarlberg, Liechtenstein, IV Band. Die Flechten von Tirol: 144 (1902)
 = *Gyrophora spodochoa* var. *crustulosa* (Ach.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 28: 264 (1878)
 = *Gyrophoropsis crustulosa* (Ach.) Räsänen, Lich. Fenn. Exs.: no. 601 (1949)
 = *Lichen leiocarpus* * *crustulosa* (Ach.) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 425 (1813)
 = *Omphalodiscus crustulosus* (Ach.) Schol., Nytt Mag. Natur. 75: 26 (1934)
 = *Umbilicaria spodochoa* var. *crustulosa* (Ach.) Nyl., Not. Sällsk. Fauna et Fl. Fenn. Förh., Ny Ser. 5: 115 (1861)

[VZR179], Italia, inula Elba, in summo montis Capanne, 1000 m. Ad saxa granitica. Leg. F. Ceni & A. Vězda, 18.05.1995. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 179.

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 colourless, 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



Umbilicaria crustulosa



Umbilicaria crustulosa

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

[VZR17], Tanzania. Montes Kilimanjaro: via Umbwe dicta, Barranco Valley, 3940 m. Ad saxa. Leg. T. Pócs (89238), 25.-25.11.1989, det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 17.

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



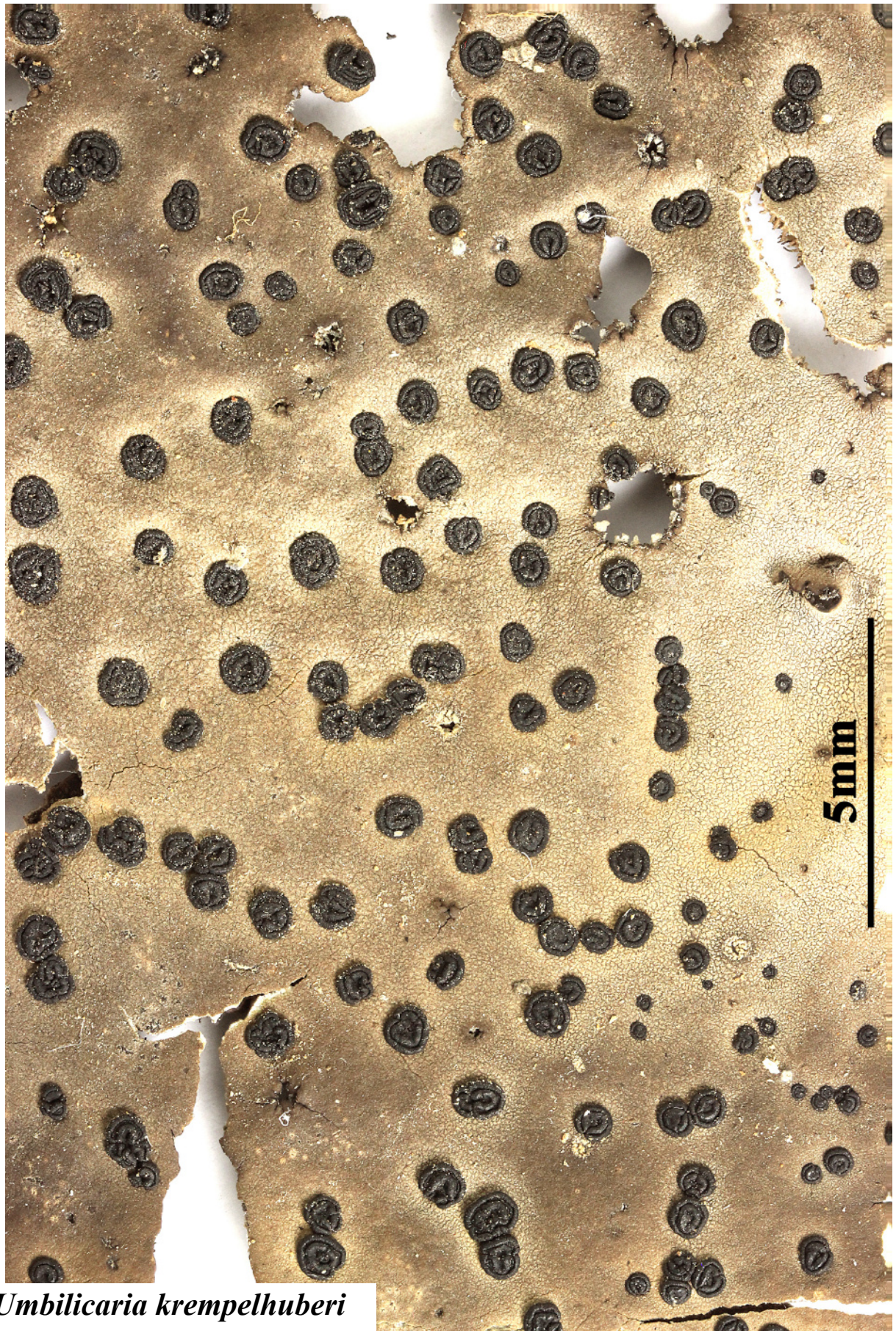
Umbilicaria haumaniana

Umbilicaria krempelhuberi Müll. Arg., Flora, Regensburg 72(1): 64 (1889)

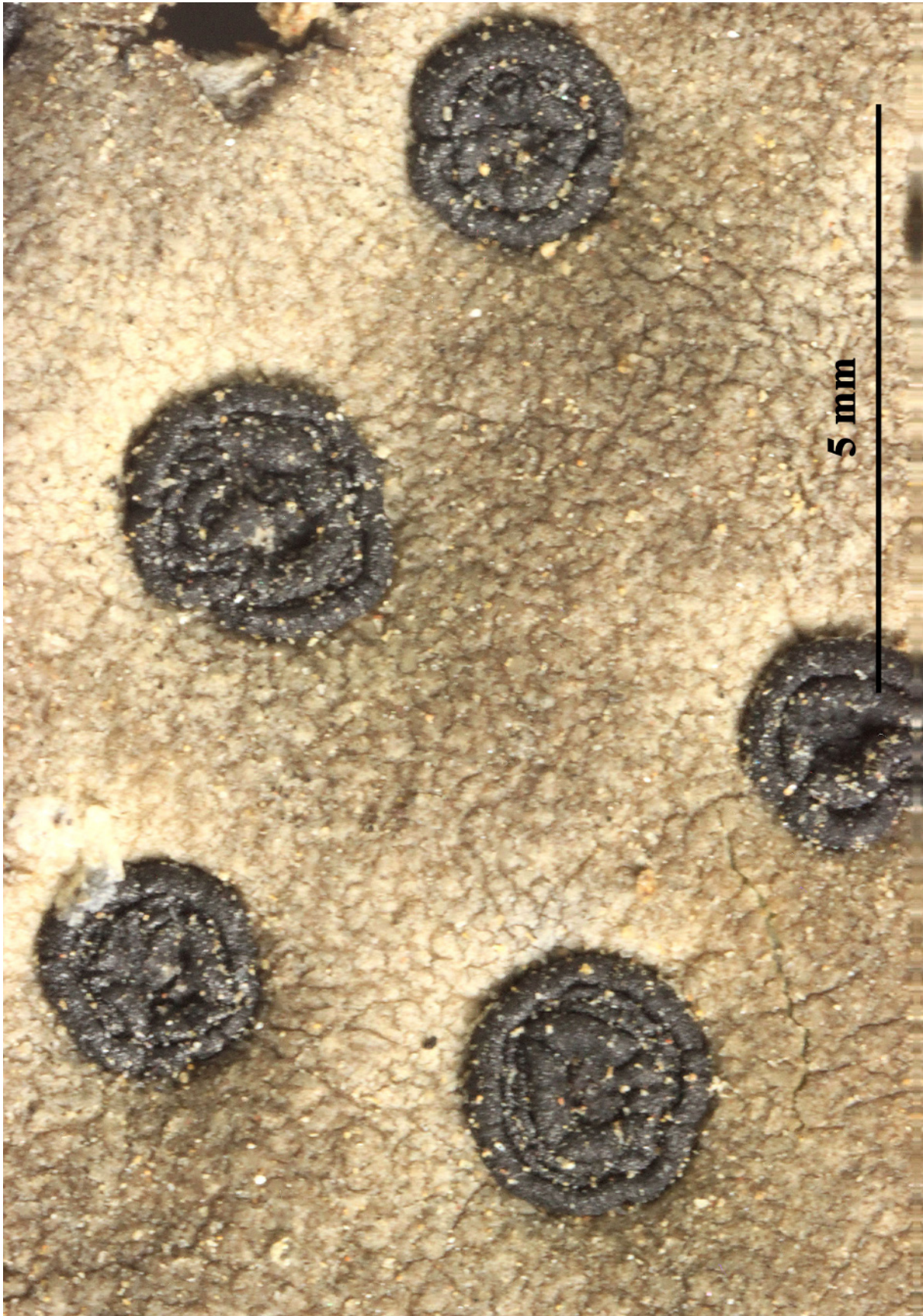
[VZR159], Insula Canarienses, Tenerife. Reservatum nationale Teide, loco Llano de Ucanga dicto, 2200 m. Ade rupes eruptivas. Leg. et det. A. Vězda, 16.3.1994. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 158.

Thallus 4-7 cm. in diameter, monophyllous, very rigid, coriaceous, umbo weakly elevated, with an occasional fold, plane to slightly undulating upper surface, margins irregularly scalloped to sinuate and dentate, edges sometimes reflexed, sometimes perforated peripherally, upper cortex powdery to scabrous over umbo, more or less cracked, surface dull, smoke gray, pale smoke gray, or smudged with brown when the color is more tilleul buff to echru drab or drab, below weakly undulating, umbilous small, compact, or slightly extruding, usually central, lower cortex smooth to granulose-areolate, coarsest around the center, with shallow circular indentations immediately below the dorsally located apothecia, color pinkish buff, vinaceous buff or darker to avellaneous or wood brown, usually smudged dark around the umbilicus, rhizinae absent or sparse, weakly developed, simple or divided, cylindrical and of the same color as the lower surface. Thallus 280-325 μm thick, necral zone about 16.5 μm thick, hyaline, evanescent, upper cortex 16.5-20 μm thick, scleroplechtenchymatous, with a top light brown zone, algal layer continuous, protococcoid, about 33 μm thick, obscured partly by a dense zone of granules adhering to hyphae walls, medulla compact to loose, of intertwining and parallel mesodermate 2.4-6.6 μm in diameter hyphae, where the hyphae are at right angle to the section they appear to be scleroplechtenchymatous so that medulla appears to be composed of isolated patches of such tissue, upper part of medulla partly obscured by algal layer granular zone, lower cortex about 66 μm thick, hyaline, scleroplechtenchymatous, with a rough dentate outline. Apothecia common, 0.7-2.5 mm. in diameter, (numerous even on specimens 1.5-3 cm. in diameter) scattered almost to umbo, or only marginally, free, adnate or slightly depressed into thallus, disk black, strongly gyrate, plane becoming convex, in shape circular, thin exciple, parathecium 50-100 μm thick, black outer zone, of isodiametric cells, hypothecium light brown, irregular, about 140 μm thick, thecium about 115.5 μm thick. The distribution of *U. krempelhuberi* Müll. Arg. in the Western Hemisphere is limited to South America

to which it is, undoubtedly, endemic. *U. krempelhuberi* appears to keep to lower (below 4200 m.s.m.) altitudes. It would appear that *U. krempelhuberi* might well extend further north along the Andes.



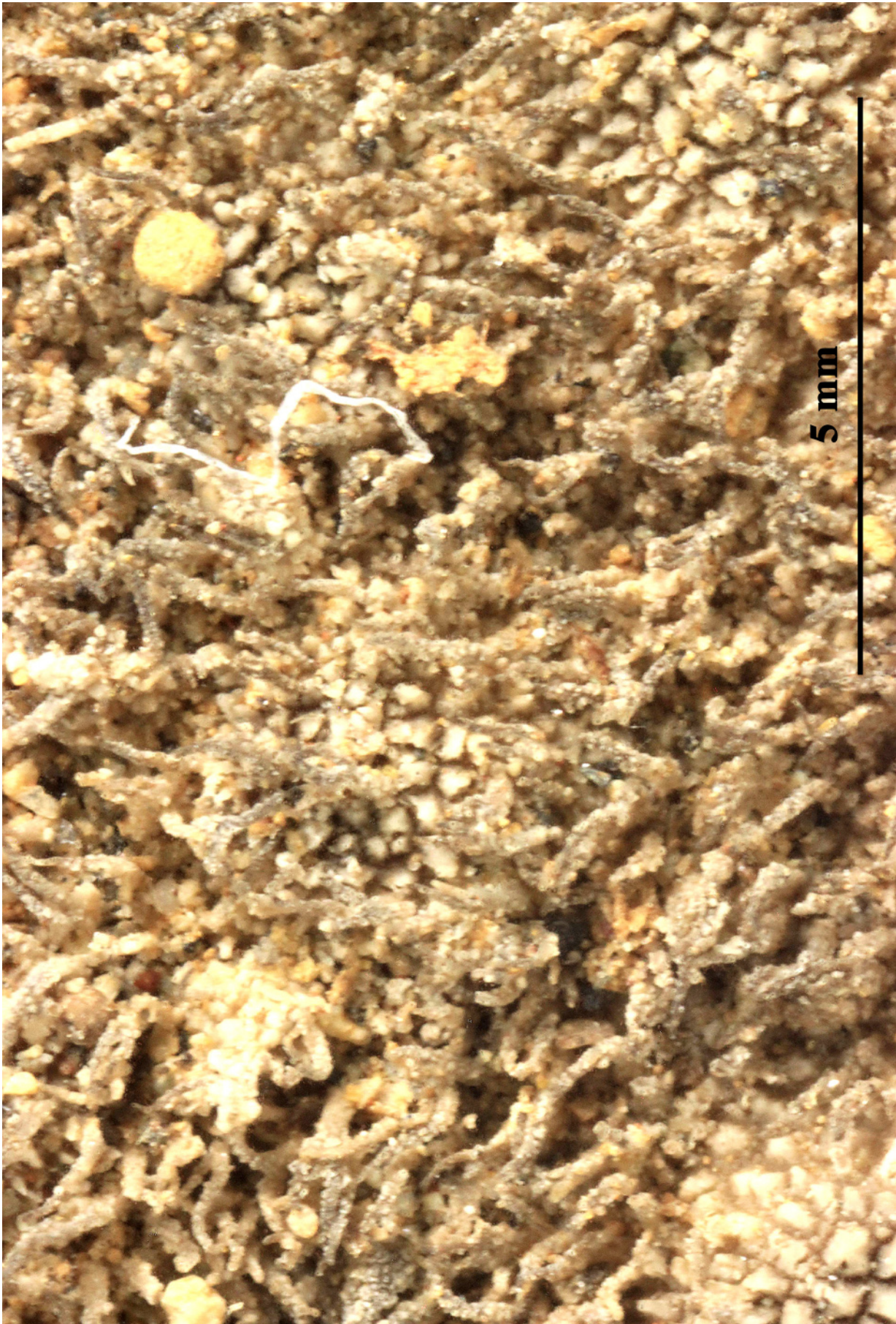
Umbilicaria krempelhuberi



Umbilicaria krempelhuberi



Umbilicaria krempelhuberi

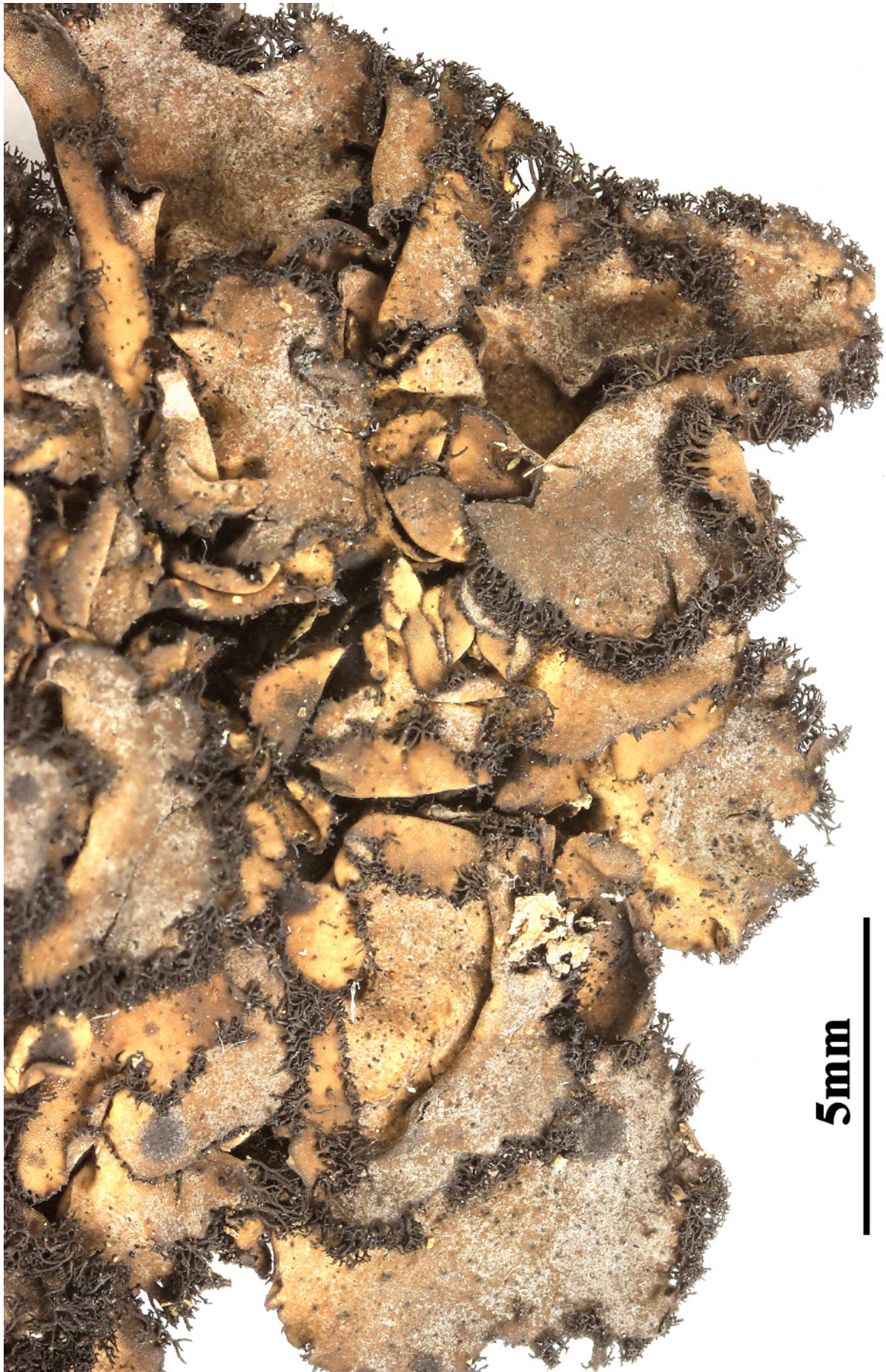


Umbilicaria krempelhuberi

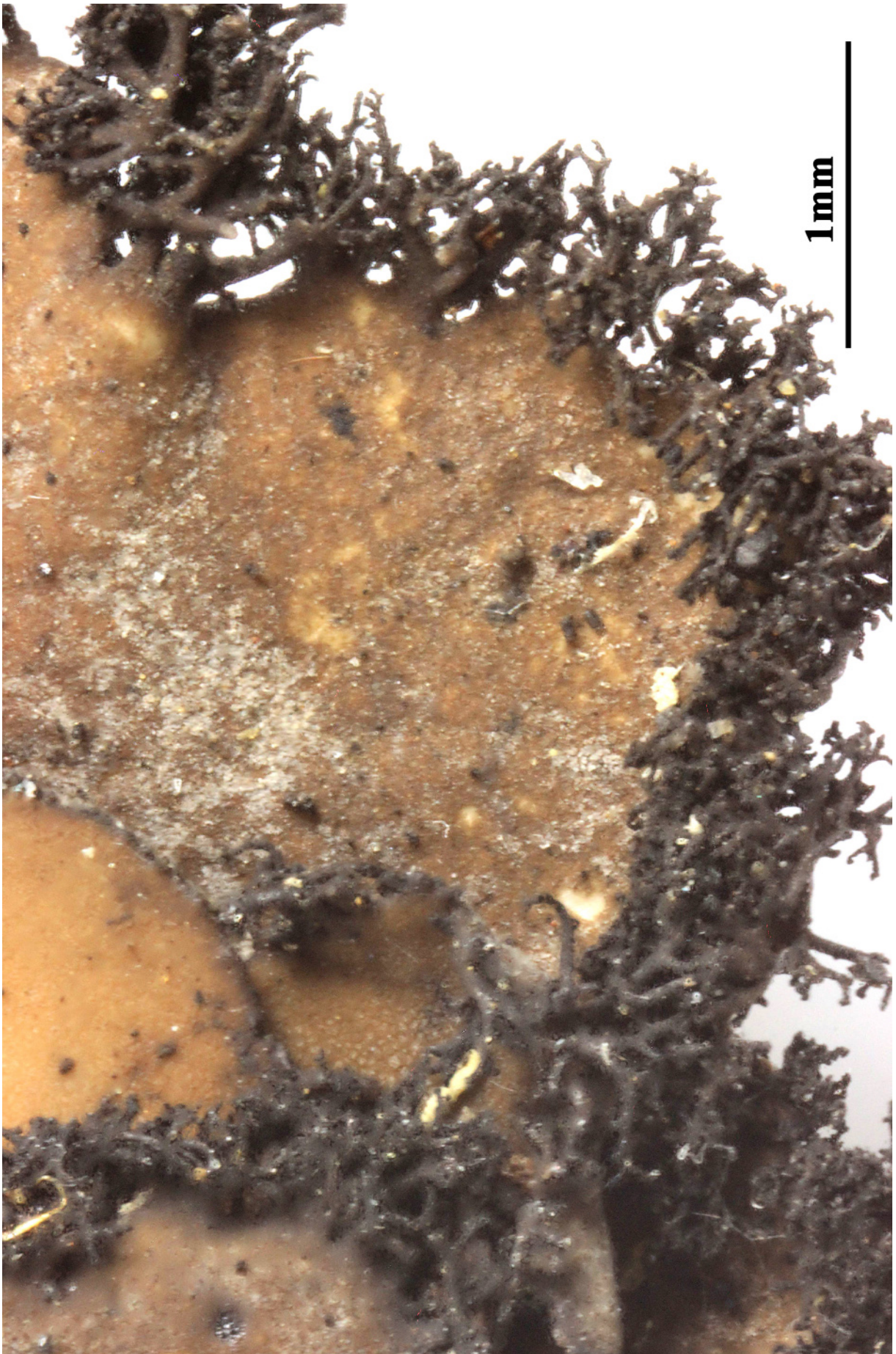
Umbilicaria umbilicarioides (Stein) Krog & Swinscow, Nordic J. Bot.
6(1): 83 (1986)
= *Gyrophora umbilicarioides* Stein 1888

[VZR18], Tanzania. Montes Kilimanjaro: via Umbwe dicta, Barranco Valley, 3940 m. Ad saxa. Leg. T. Pócs (89238), 25.-27.11.1989, det. E. Farkas & L. Lökös. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 18.

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 thalloses. 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. ECOLOGY: Saxicolous in the ericaceous and alpine zones, common and widespread at 3400 to 4600 m. - South Africa, Zaire, Patagonia, the antarctic region.



Umbilicaria umbilicarioides



Umbilicaria umbilicarioides



Umbilicaria umbilicarioides

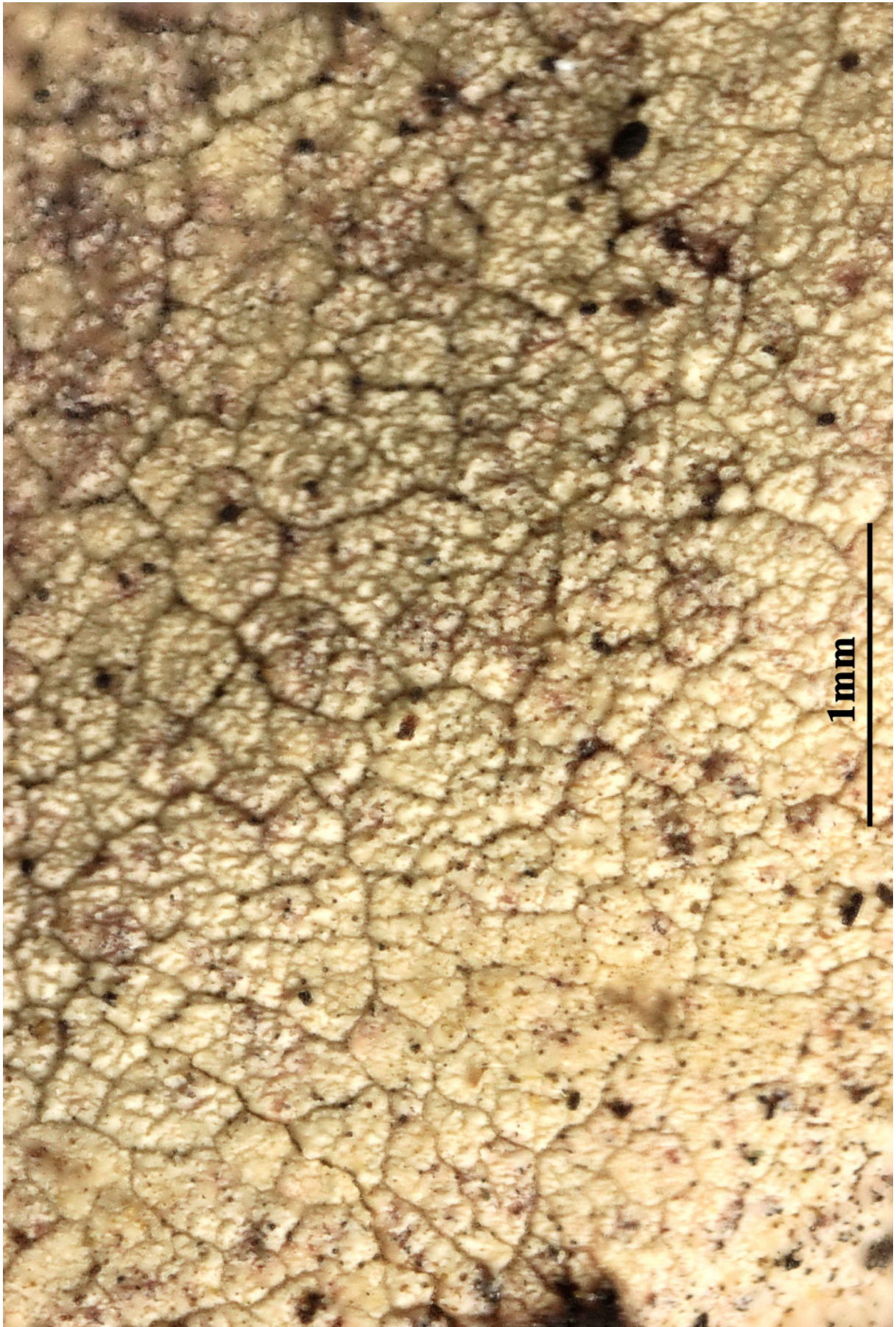
Umbilicaria vellea (L.) Michx., Fl. Boreali-Americ. (Paris) 2: 323 (1803)
 = *Gyromium velleum* (L.) Wahlenb., Fl. lapp.: 484 (1812)
 = *Gyrophora depressa* f. *vellea* (L.) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 1: 6 (1818)
 = *Gyrophora vellea* (L.) Ach., Methodus, Sectio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

[VZR180], Italia, Brescia. Alpi bresciani, Adamello, Val di Fumo, in ripa lacus Lago di Malga Bissina, 1800 m. In rupibus graniticis. Leg. A. Vězda & F. Ceni, 29.07.1995. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 190.

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, imixed with others which are pale brown to ivory white, cylindrical, simple or branched. Thalloconidia large, 22-40 x 31-60 µm, multi-septate, 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, hiassic 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 vellea

- Usnea antarctica* Du Rietz, Svensk bot. Tidskr. 20: 93 (1926)
 = *Neuropogon antarcticus* (Du Rietz) I.M. Lamb, Bot. J. Linn. Soc. 52: 210 (1939)
 = *Neuropogon antarcticus* f. *sorediifera* (Cromb.) I.M. Lamb, Bot. J. Linn. Soc. 52: 213 (1939)
 = *Neuropogon insularis* I.M. Lamb, Bot. J. Linn. Soc. 52: 215 (1939)
 = *Neuropogon melaxanthus* var. *sorediifera* Cromb., J. Linn. Soc., Bot. 15: 182 (1876) [1877]
 = *Usnea crombiei* C.W. Dodge [as 'Crombii'], B.A.N.Z. Antarct. Res. Exped. Rep., Ser. B 7: 212 (1948)
 = *Usnea crombiei* var. *sublaevis* C.W. Dodge, B.A.N.Z. Antarct. Res. Exped. Rep., Ser. B 7: 213 (1948)
 = *Usnea insularis* (I.M. Lamb) C.W. Dodge, B.A.N.Z. Antarct. Res. Exped. Rep., Ser. B 7: 211 (1948)
 = *Usnea melaxantha* var. *sorediifera* (Cromb.) Müll. Arg., J. Linn. Soc., Bot. 32: 201 (1896)
 = *Usnea sulphurea* var. *sorediifera* (Cromb.) Vain., Rapports Scientifiques belges, Resultats Voyage S.Y. Belgica, 1897-1899 Bot. (Anvers)(Lichens): 11 (1903)

[VZR462], Antarctis. Insula South Shetland, insula King George, Admiralty Bay prope stationem peruvianum "Macchu Pichu", 62°05'29.6" austr., 58°28'16.11" occid., 70 m. Ad saxa. Leg. J. Gloser, 1.2001, det. A. Vězda. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 462.

Thallus fruticose, tufted, to 8 cm tall. Branches sparingly to copiously divided, becoming entangled-complex at apices. Surface yellow or brownish-yellow at base, variegated yellow and black apices, without annulations, distinctly papillate or coarsely warted towards base. Soralia blackened, granular. Apothecia not seen in New Zealand material. Chemistry: Cortex K-; medulla K+ brown, C-, KC-, P+ red. Fumarprotocetraric and usnic acids.



Usnea antarctica



Usnea antarctica

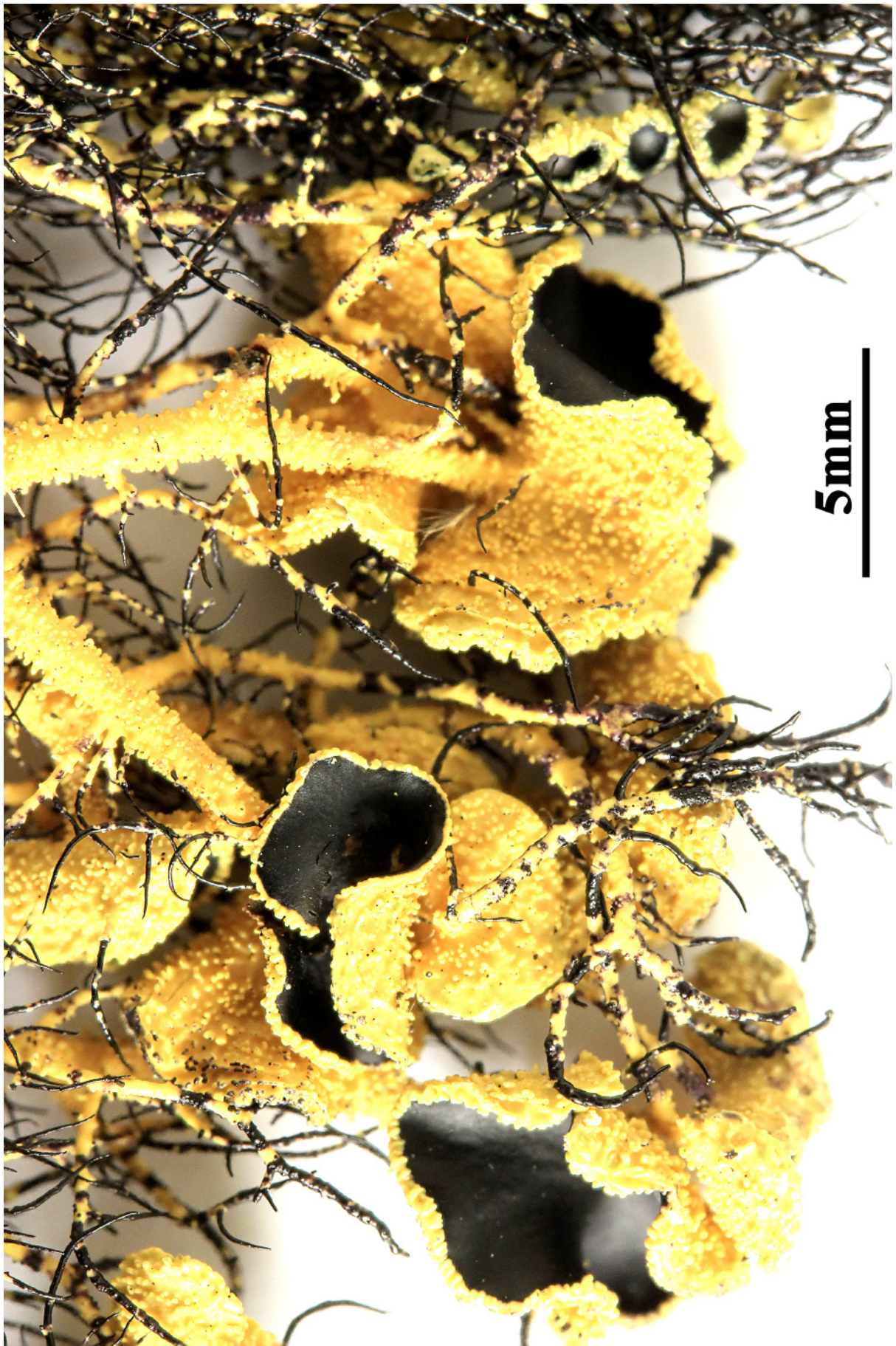


Usnea antarctica

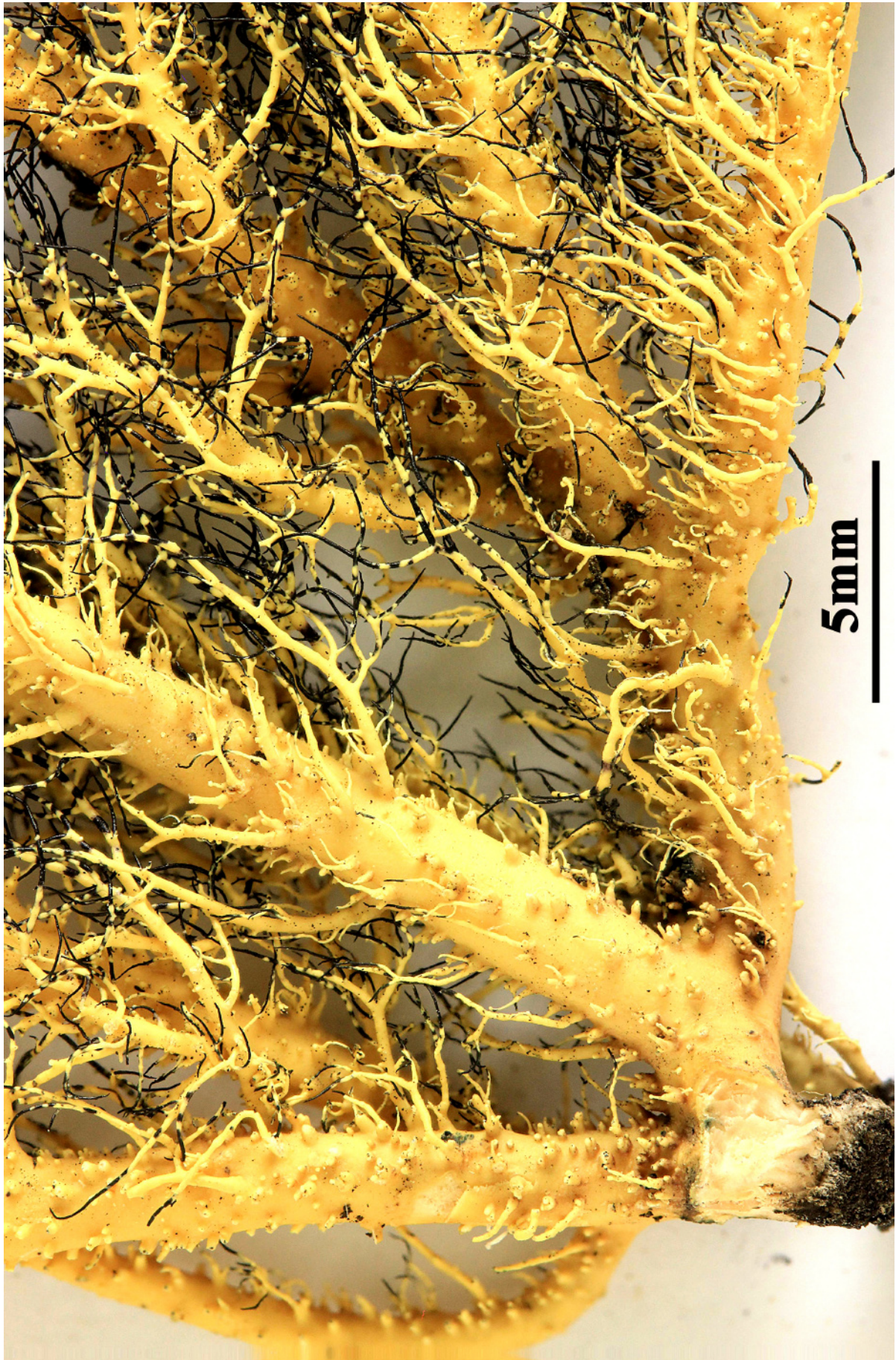
Usnea aurantiacoatra (Jacq.) Bory, in Dumont-D'Urville, Mém. Soc. Linn.
Paris 4: 596 (1826)
= *Lichen aurantiacoater* Jacq. [as 'aurantiaco-ater'] 1781

[VZR461], Antartcis. Insulae South Shetland, insula King George, Admiralty Bay prope stationem peruvianum, "Macchu Pichu", 62°05'29.6" austr., 58°28'16.11" occid., 70 m- Ad saxa. Leg. Kamil Láska, 1.2000, det. A Vězda. EX A. VěZDA: LICHENES RARIORES EX-SICCATI NR. 461.

Thallus: fruticose, yellow-green, 5-10 cm high. Apothecia: common, to 1 mm diam., with black disc and prominent 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 aurantiacoatra

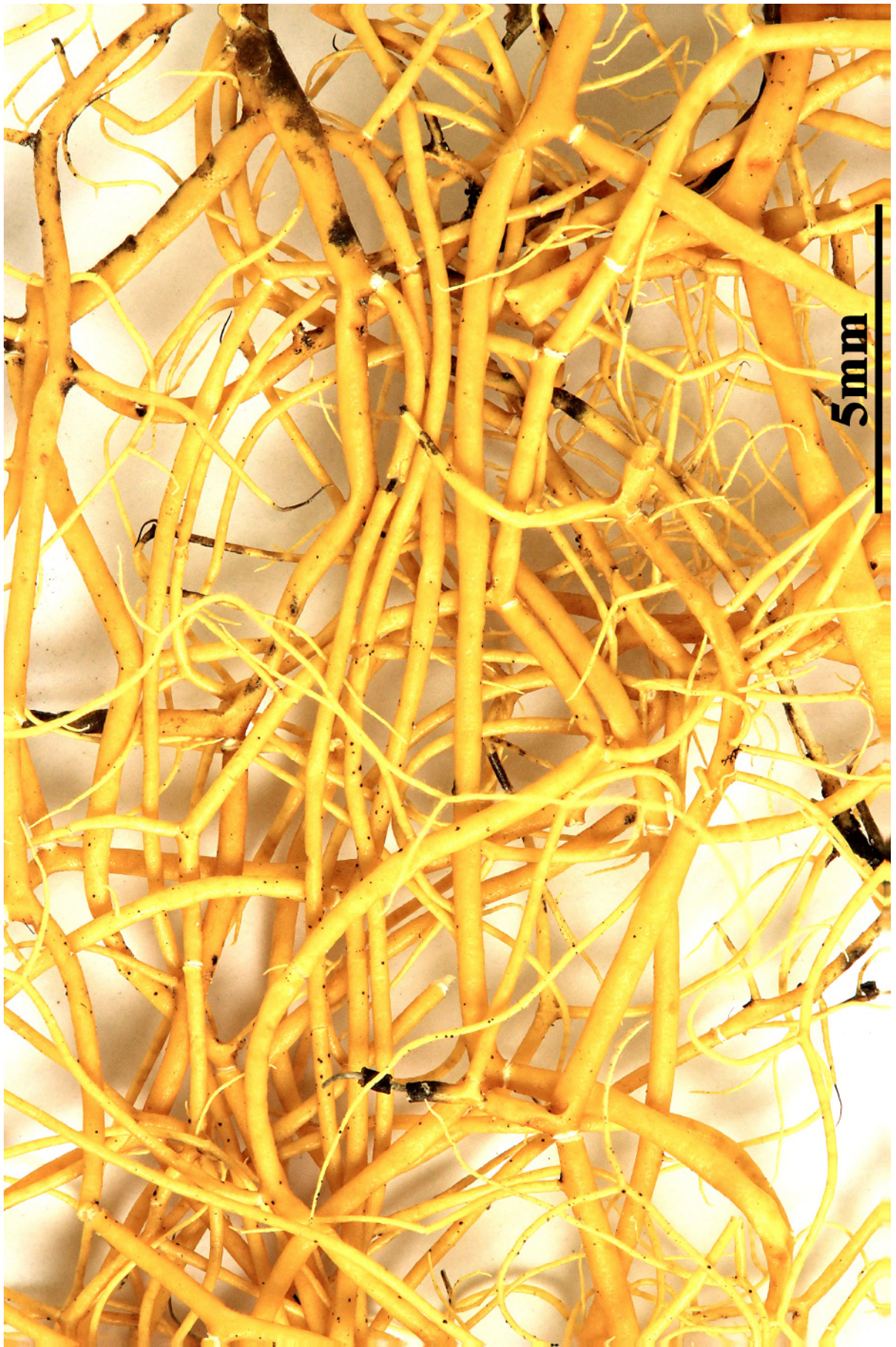
Usnea capillacea Motyka, Usnea 2(1): 438 (1937)

[VZR310], Nova Zelandia. South Island, distr. Nelson, Kahurangi National Park. secus viam inter stationem "Flora Carpark" et casam alpinam Mt. Arthur dictam, 1300 m. In ramulis arborum, Leg. W. Malcolm & A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 310.

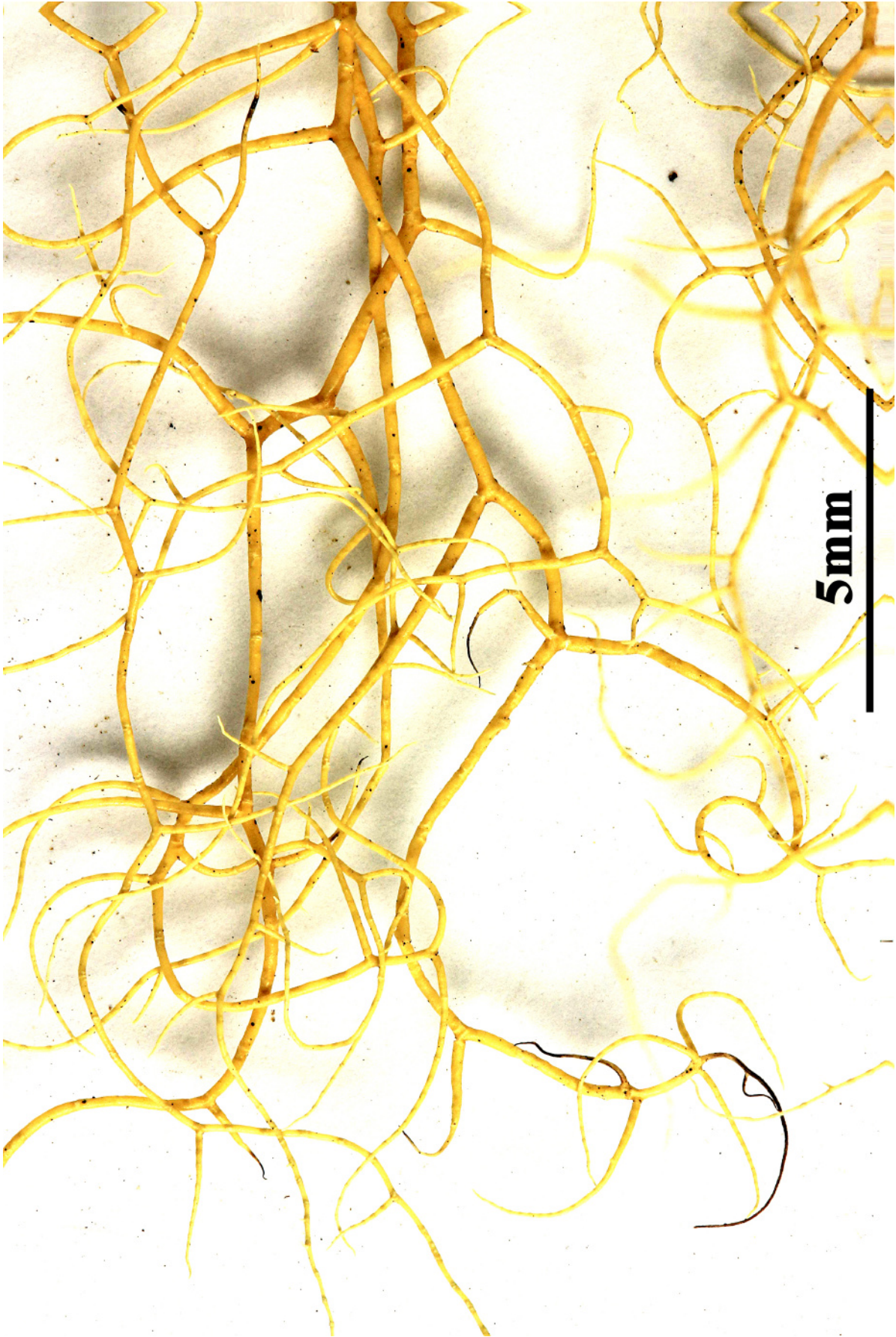
Thallus pendulous 5-25(-40) cm long, soft, uniform pale yellowish-green or whitish, dull or shining, base somewhat indistinct, dichotomously to sympodially branched, axils straight, branches intricate, plicate, corticolous. Branches 0.7 mm thick, thinner at apices, jointed in parts, sometimes fractured, without secondary branchlets, spinules, isidia or soredia. Apothecia rare, on thicker branches, geniculate, sessile, minute, to 2 mm diam., disc plane, greenish, marginal ray-like branchlets few, exciple cupuliform, smooth. Ascospores $12 \times 8 \mu\text{m}$. Chemistry: Fumarprotocetraric and usnic acids.



Usnea capillacea



Usnea capillacea



Usnea capillacea

Usnea chloreoides (Vain.) Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 2: 388 (1937)
= *Usnea angulata* f. *chloreoides* Vain. 1898

[VZR19], Tanzania. Iringa regio, montes Image, Miombo, supra vallem Kitonga, 1300-1600 m. In ramulis arborum. Leg. T. Pócs (88261), 28.10.1988., det. A. Vězda. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 19.

Thallus pendulous to 50 cm. Main branches greenish grey, slender to moderately robust, with 5-8 regular parallel, longitudinal ridges; segments c. 7-13 per cm. Spinules and fibrils variable from sparse to abundant. Tubercles usually abundant on the ridges. Axis medium to deep salmon pink. Apothecia on side branches. CHEMISTRY: (1) Salazinic acid, diffractaic acid, (2) diffractaic acid (in one specimen). ECOLOGY: Uncommon on branches of shrubs in hot, dry, sheltered localities from sea level to about 1500 m.



Usnea chloreoides



Usnea chloreoides

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

[VZR20], Tanzania. Massai distr., supra vicum Longido, ad latera australia montis Longido, 1400-1600 m. Ad ramulos arborum. Leg. T. Pócs (88168) & V. R. Naolomo, 4.7.1888, det. A. Vězda: EX A. VěZDA: LICHENES RARIORES EXSICCATI NR.20.

Thallus shrub-like, pale at base. Branches greenish grey, tapered, terete or slightly angulate. Spinules numerous and sometimes dense. Papillae and tubercles few to none. Pseudocyphellae few to none. ~sidia absent-to sparse. Soredia absent. Apothecia always present. CHEMISTRY: (1) Psoromic and conpsoromic acids, (2) salazinic acid with accessory substances, (3) norstictic acid, $\pm$ salazinic acid, (4) galbinic acid with norstictic and salazinic acids accessory, (5) stictic acid with constictic and norstictic acids accessory, and (6) usnic acid only or with a fatty acid. ECOLOGY: Widespread on shrubs and trees in open places at 1000 to 1800 m alt. This is one of the few *Usnea* species that is common in man-made habitats such as parks and town avenues. DISTRIBUTION: E, K, T, U. Probably widespread in Africa. - NOTE: This species comprises an aggregate of morphotypes and chemotypes, with many intermediates (Swinscow & Krog, 1979a).



Usnea complanata



Usnea complanata

Usnea densirostra Taylor, London J. Bot. 6: 192 (1847)

[VZR492], Uruguay. Depto. Rocha, Cerro Lechiguana, 34°05'33" austr., 53°50'59" occid., ad saxa. Leg. & det. H. S. Osorio (9638) & G. Geymonat. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 492.

Thallus shrubby, compact, very rigid, up to 6 cm long, with both isotomic–dichotomous and anisotomic–dichotomous ramifications; trunk inconspicuous to 9 mm long, reddish brown or concolorous with main branches, with annular cracks; branches irregular to tapering, sometimes slightly attenuated toward their basal part, with lateral branches not narrowed at point of attachment; terminal branches thick, usually with black tips; segments cylindrical and terete to ridged, with cortex irregularly cracked and displaying a rough surface; fibrils spinulose, short and thick always present and regularly distributed on whole thallus, usually with black tips; fiberclles few; tubercles and papillae absent; pseudocyphellae and maculae absent on main branches (but sometimes present on fibrils); soralia and isidiomorphs absent; cortex mat to slightly glossy and cracked; thin, medulla compact, white, $\pm$ thin; axis thick, usually fistulose in main branches close to the base and irregular in longitudinal section, often brownish pigmented. Apothecia always present, terminal or subterminal to lateral, up to 15 mm in diameter, becoming flat when mature; disc yellowish, with or without pruina, with fibrils both on the margin; pycnidia present on fibrils and terminal branches; conidia sublageliform, 7.3 μ m long. Chemistry. 1. Usnic, norstictic, salazinic, protocetraric and fumarprotocetraric acids, medulla K⁺ yellow turning red, C[–], P⁺ red or P[–]. 2. Usnic and salazinic acids medulla K⁺ yellow to orange, C[–], P[–]. - Variation. The characters that show the largest variability are the frequency of apothecia, the density of fibrils and fiberclles and the morphology of the axis. - Diagnosis. The diagnostic characters are: the simple, not proliferating base, the spinulose and dense fibrils, the absence of maculae or pseudocyphellae, the well delimited trunk and the presence of salazinic acid as main substance in the medulla. - Ecology and distribution. *Usnea densirostra* grows exclusively on rocks. It is the commonest saxicolous species in the Ventania and Tandilia hills as well as in the mountains of Uruguay where the climate is warm and sub-tropical. This species colonizes rock outcrops apparently without any specific prefe-

rence. It is commonly found together with *Usnea fastuosa* in humid sites. On the other hand, it occupies exposed and dry rocks together with *U. amblyoclada*. *Usnea densirostra* is very rare in other regions. It has been recorded in South America from Argentina, Brazil, Mexico, Paraguay, Peru and Uruguay.



Usnea densirostra

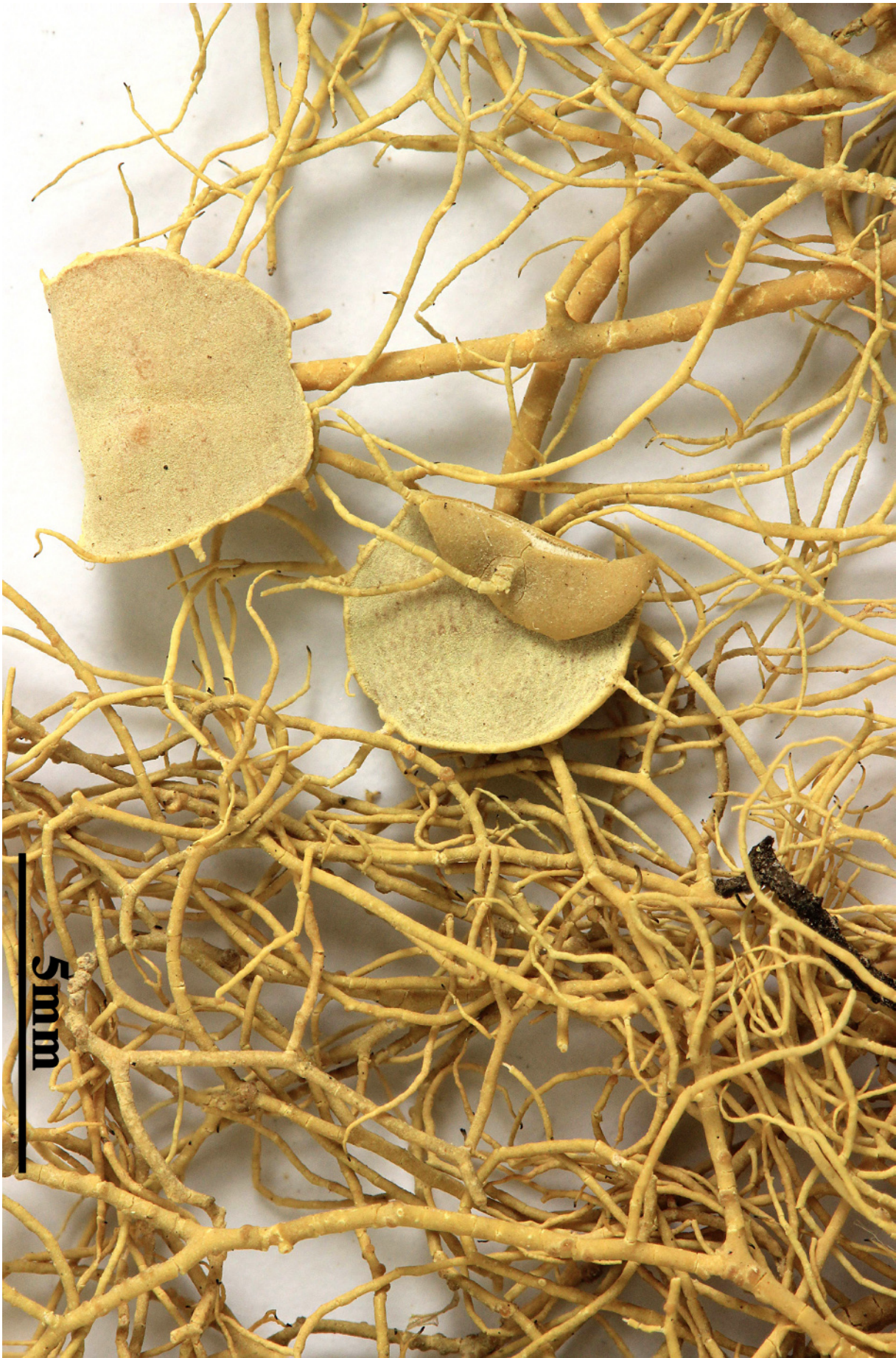


Usnea densirostra

Usnea roccellina Motyka, Lich. Gen. Usnea, Stud. Monogr. (Leopoli) 3: 632, 638 (1938)

[VZR489], Aequatoria. Prov. Pichincha, ca. 25 km septentr. a Quito: ad latera septentrionalia collis Loma de Chivo in caldera Pululagua, 2700-2750 m. In rupibus. Leg. Z. Palice (2727), 22.8.1999, det. H. Sipman. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 489.

Thallus ca. 5 cm longus, evidenter erectus, caespitoso fruticulosus, vulgo socialiter crescens, sat rigidus; opaco albido stramineus et leviter apparens pruinosis, basi distincta, crassa, infra dilatata, infuscata aut obscurata, a basi crebre; caespitoso, dichotome et iteratim camosus, axillis anguste clausis. Rami basi usque ad 2 mm crassi, post ramificationes distincte et sat abrupte, ad apices sensim attenuescentes, leviter flexuosi, eleganter teretes, laeves, non rare annulato aut etiam varie fracti aut etiam areolatuli, fissuris angustissimis, albido farinoso punctati, distinctius non papillati, eramulosi. Summitates sat breves, crassulae, rectiusculae aut paulo flexuosae, obtusatae. Apothecia crebra, terminalia, 3-5, rarius usque ad 20 mm lata. Excipulum laeve, paulo inaequale, thallo concolor. Cilia pauca et brevissima. Discus leviter concavus, submarginalis, pruinosis, albido caesio suffusus. Sporae ea. 6 x 8 μm , in ascis angustis. Cortex ea. 100 μm crassus, sat mollis et chondroideus. Medulla ca. 140 μm crassa, crebra, alba, K lutescens, postea subrubescens fuscens. Axis ea. 500 μm crassus, solidus. Plerumque mixta erat adhuc cum *U. laevis*, cui affinis sed diversa thallo minore, crebrius ramoso, albido punctato. Dum punctuli haec, qui sunt verrucula farinosula, melius evoluti, ab *U. aspera* minus arcte limitanda. Maxime similis vero *U. laevigata* differt thallo omnino non papillato et tuberculis destituto, medulla K fere non reagente. Distributio : America aequatorialis, in locis elevatis Andium et Brasilia area comparate limitata, ad saxa. Columbia, regione Bogota; Suba pr. Bogota ; Mont de Guadalupe ; San Cristobal.



Usnea roccellina



Usnea roccellina



Usnea roccellina

Usnea rubicunda Stirt., Scott. Natural. 6(3): 102 (1881) [1881-1882]
 = *Usnea protensa* Stirt., Scott. Natural., N.S. 1 ('7): 76 (1883) [1883-1884]
 = *Usnea rubicunda* var. *spilota* (Stirt.) G.N. Stevens, Bibliotheca Lichenol. 72: 90 (1999)
 = *Usnea spilota* Stirt., Scott. Natural. 6: 294 (1882) [1881-1882]
 = *Usnea subpurida* Stirt., Trans. Proc. N.Z. Inst. 30: 389 (1898) [1897]

[VZR130], Insulae Canarienses Tenerife. Montañas de Anaga, ad marginem pagi Taborno, 600m. In ramulis *Quercus* sp. Leg & det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 130.

Thallus fruticose-filamentous, reddish-brown at least in basal parts, otherwise greenish-grey with red-brown flecks, at first shrubby, later becoming subpendulous, 3-10(-20) cm long, branching anisotomic-dichotomously with divergent branches. Main branches up to 2 mm thick, not inflated, frequently transversally or longitudinally cracked, the basal parts darker or concolorous, with conspicuous annular cracks; lateral branches not constricted at attachment point. Papillae absent to numerous and indistinct on main branches; tubercles absent to numerous on main and secondary branches, usually absent on terminal branches, short and verrucose, sometimes eroded at top; fibrils nearly absent to numerous, short and spinulose to long and slender, irregularly distributed on the whole thallus. Soralia punctiform, irregular in outline, even or slightly stipitate, flat to erumpent, developing initially from the cortex (on the whole thallus) or on top of tubercles (on main branches), or on fibercles (on main and secondary branches), covered in abundant, clustered isidiomorphs. Cortex moderately thick to thick (9-13% of total branch thickness), shiny to vitreous in longitudinal section; medulla white, dense to compact; central axis white, rather thick (40-56%). Apothecia very rare, lecanorine. Asci 8-spored, Ascospores 1-celled, hyaline, ellipsoid. Photobiont chlorococcoid. Spot tests (medulla): chemotype 1) K+ yellow slowly turning orange, C-, KC-, P+ deep orange, with stictic acid (main) and norstictic and psoromic acids (accessory); chemotype 2) K+ yellow turning red, C-, KC-, P+ orange, with salazinic acid (main), and norstictic acid (accessory). Chemistry: usnic acid in cortex, medulla with stictic (major), ±norstictic (minor), ±constictic (minor), ±cryptostictic (minor), ±menegazziaic (minor) acids. - Note: a mild-temperate, chiefly Mediterranean-Atlantic species found on ancient specimens of *Quercus cerris*, *Q. suber*, and other acid-barked broad-leaved trees in open, but semi-natural, warm-humid

forests below the montane belt; locally abundant only in parts of Tyrrhenian Italy, from Tuscany to Calabria, mostly not far from the coast.



Usnea rubicunda

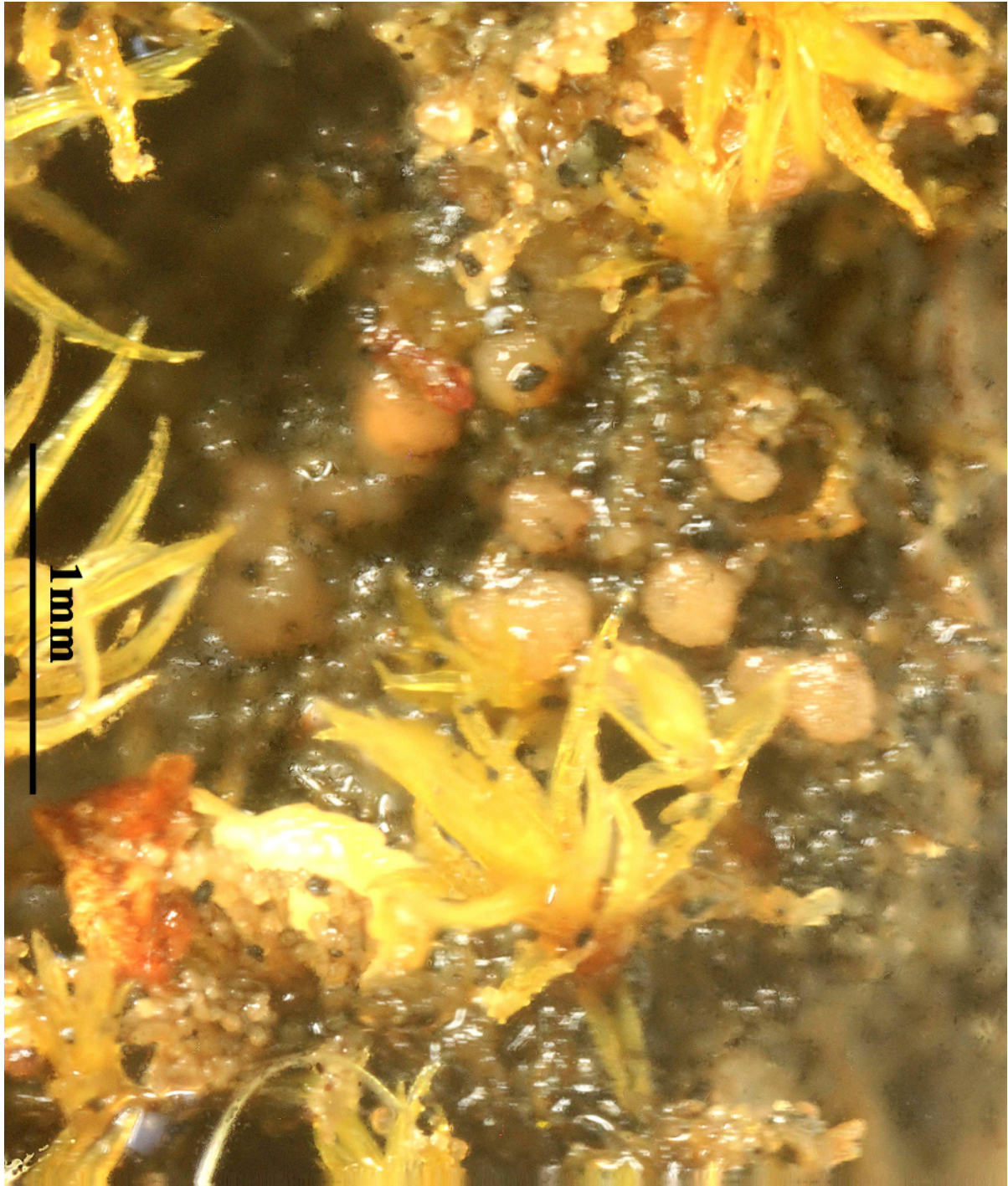


Usnea rubicunda

Vezdaea acicularis Coppins, Lichenologist 19(2): 169 (1987)

[VZR229], Bohemia centralis, Chvaletice, statio vim electricam fabricanda, 220 m. Ad terram prugamine corruptam. Leg & det. Z. Palice, 5.11.1995. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 229.

Thallus crustose, thinly episubstratic, consisting of dark green, subglobose goniocysts, the wall smooth or covered in shallow, to 2 µm tall papillae. Apothecia short-lived, 0.2-0.4 mm across, without a proper margin, scattered or confluent in clusters of 2-3, convex and appressed, rarely shortly turbinate when young, grey-white to pink-brown, matt, sometimes finely tomentose (microscope!). Proper exciple absent; hymenium lacking gelatine, consisting of asci and strongly branched, sparse paraphyses which rarely reach the surface of the hymenium; hypothecium absent. Asci 8-spored, cylindrical, thick-walled, with a thick I+ blue apex (except for an apical pore). Ascospores 7-11-septate, hyaline, thread-like, 60-85 x 2-2.5 µm, the lower end tapered to a narrow point. Photobiont chlorococcoid (*Leptosira*). Spot tests: all negative. Chemistry: without lichen substances. - Note: on soil, moribund bryophytes and algal films over siliceous substrata in sheltered, moist situations, often also on metal-contaminated ground. Most frequent, but generally rare, in Western Europe.



Vezdaea acicularis

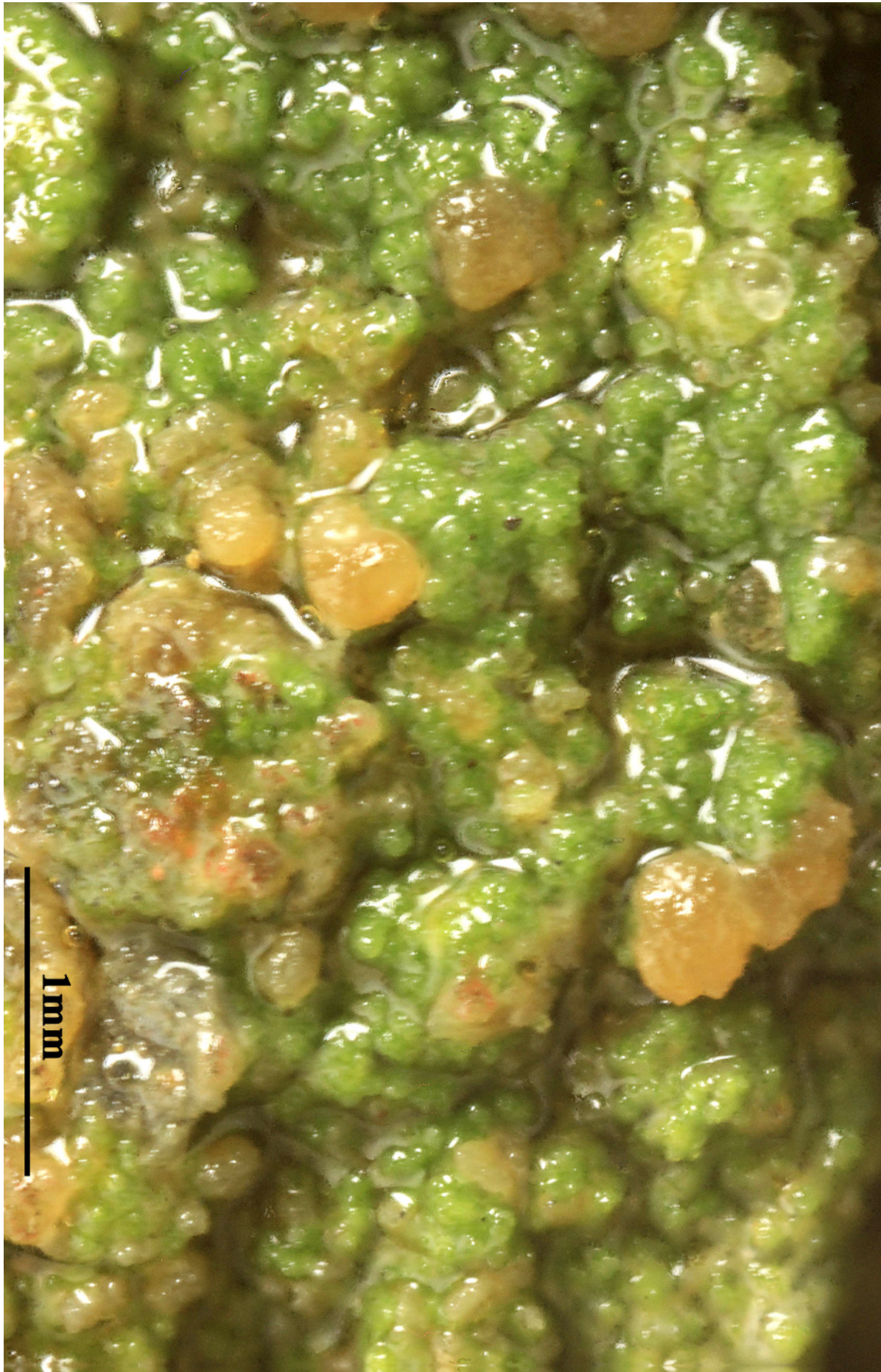


Vezdaea acicularis

Vezdaea leprosa (P. James) Vězda, in Poelt & Döbbeler, Lichenologist 9(2): 170 (1977)
= *Micarea leprosa* P. James, Lichenologist 5(1-2): 133 (1971)

[VZR230], Germania. (A) Schleswig-Holstein, distr. Stormarn, viaductus supra autoraedarum viam E 4, prope Stapelfeld, 45 m. Leg. G. Ernst, 16.5.1995. (B) Niedersachsen, distr. Harburg, Königsmoor, in ponte supra viam ferream, 35 m. Supra terram humosam in margine viae. Leg. G. Ernst, 16.5.1886. - Annot: De geographica, anatomia et ecologia *Vezdaee leprosa* vide G. Ernst, Herzogia 11: 175-188, 1995. Ex A. Vězda: LICHENES RARIORES EXSICCATI NR. 230.

Thallus crustose, episubstratic, minutely granular, dark to pale green, entirely consisting of slightly warted, rarely spinulose goniocysts. Apothecia short-lived, without a proper margin, 0.3-1 mm across, stalked or appearing sessile when crowded amongst goniocysts, turbinate when young, becoming convex to globose, pale flesh-coloured to orange-brown. Proper exciple absent; hymenium lacking gelatine, consisting of asci and abundant, branched and anastomosing, contorted paraphyses not entwining the asci. Asci 8-spored, cylindrical, thick-walled, with a thick I+ blue apex (except for an apical pore). Ascospores (0-)1-septate, hyaline, cylindrical or narrowly ellipsoid, 10-16(-18) x 2.5-4(-5) μm , with rounded apices and a smooth wall. Photobiont chlorococcoid (*Leptosira*). Spot tests: all negative. Chemistry: without lichen substances. - Note: a widespread but poorly collected species growing on disturbed sandy soil, more rarely on rocks in sheltered to open, often heavy metal-enriched (zinc and lead) habitats, more rarely on bark near fencing wire staples.

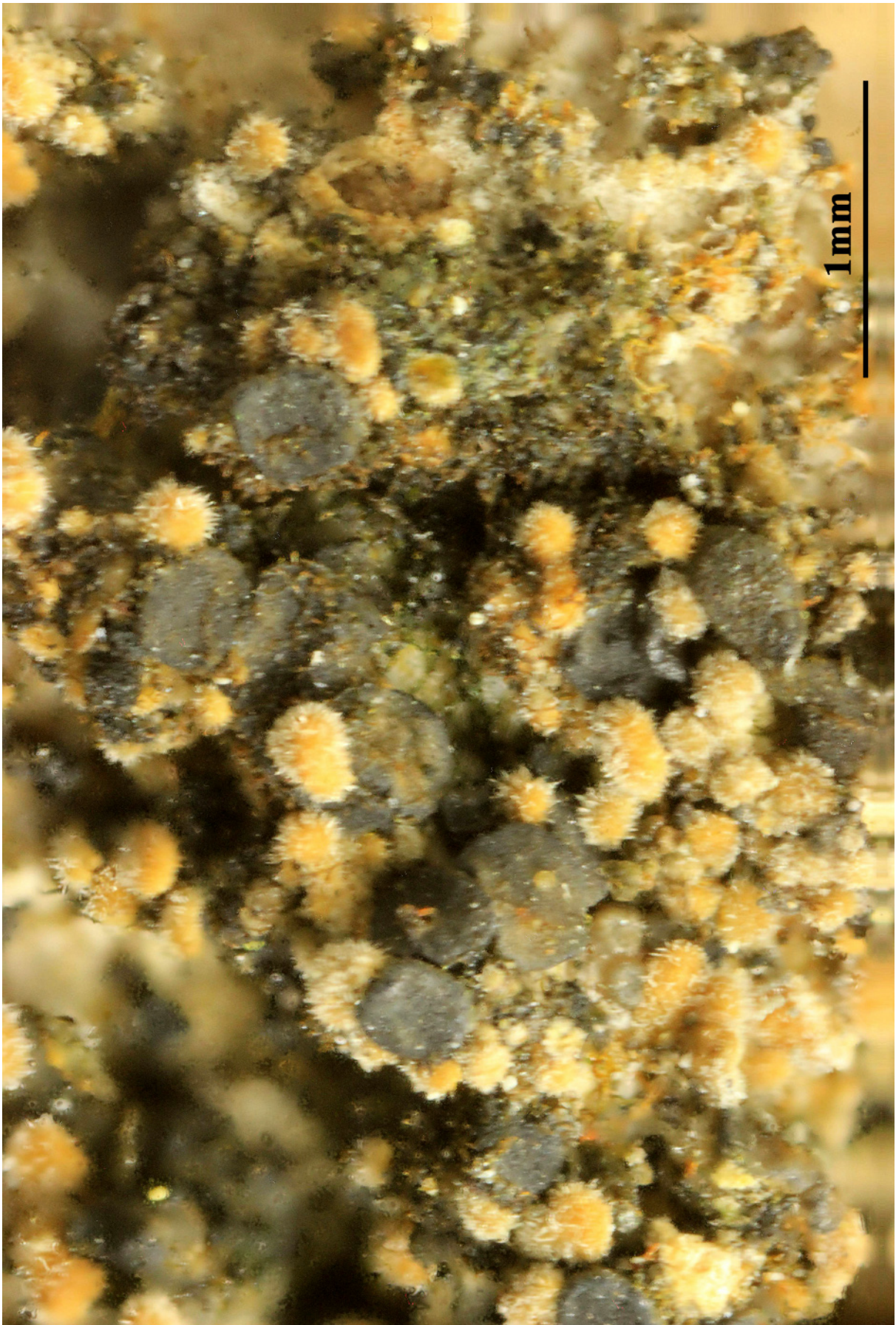


Vezdaea leprosa

Waynea hirsuta Tretiach, Nordic J. Bot. 18(6): 722 (1999) [1998]

[VZR400], Russia. Sibiria Burjatya, Tunkinsky distr., initium fluminis Tubota, loco Zum Murino, 1200 m. Ad ortivem arborum (*Populus balsamifera*). Leg. M. Tretiach & P. L. Nimis, 6.7.1997 - Isotypus. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 400.

Waynea hirsuta is a species of squamulose lichen in the family Ramalinaceae. This sorediate lichen was described from specimens collected in the Tunkinsky District in the Lake Baikal region of central Siberia. The type material of *W. hirsuta* was collected on the bark of old *Populus balsamifera* trees growing within a closed stand of *Pinus sibirica*. The lichen forms small, scale-like thalli whose squamules are densely clothed in colourless hairs—a feature that gives the species its name. The soralia are labriform (lip-like), and the ascospores are (0–)1(–3)-septate. In standard chemical spot tests the epithecium, excipulum, and upper cortex give positive reactions with K and with N. *Waynea giraltiae* also has hairy squamules, but its ascospores are 1-septate and somewhat shorter (10–15 x 2–2.4 µm) compared to *W. hirsuta*.



Waynea hirsuta

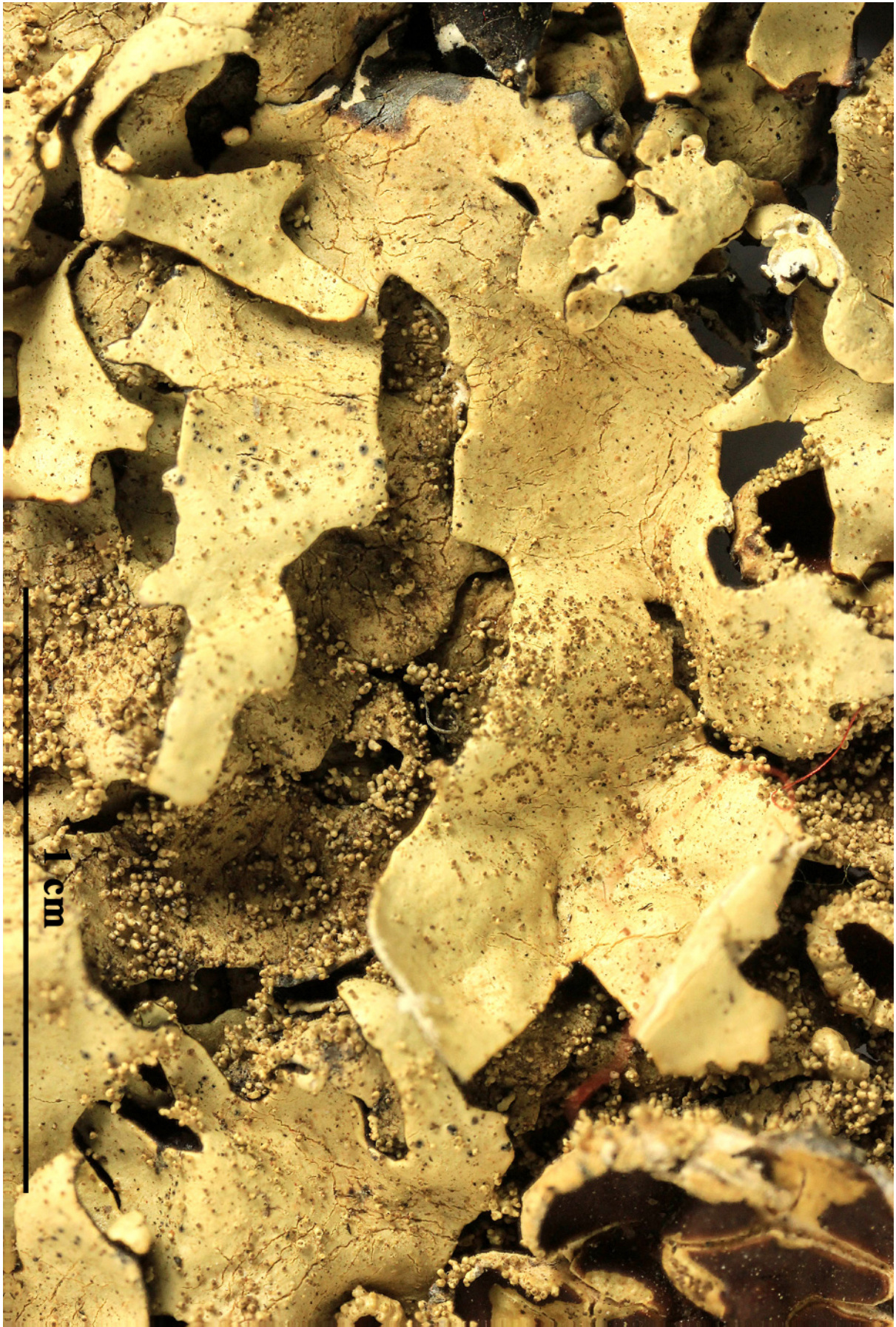


Waynea hirsuta

Xanthoparmelia australasica D.J. Galloway, New Zealand J. Bot. 18(4): 531 (1981)
= *Parmelia australasica* (D.J. Galloway) Filson, Aust. J. Bot. 30(5): 519 (1982)

[VZR10], Australia. Tasmania: Triabunna, Spring Bay, 60 km ad septentriones et orientem ab Hobart (147°55' orient., 42°30' merid.), 1 m. Ad scopulum graniticum. Leg. A. & M. Aptroot, 4.1988, det. A. Aptroot. EX VĚZDA: LICHENES RARIORES EXSICCATI NR. 10.

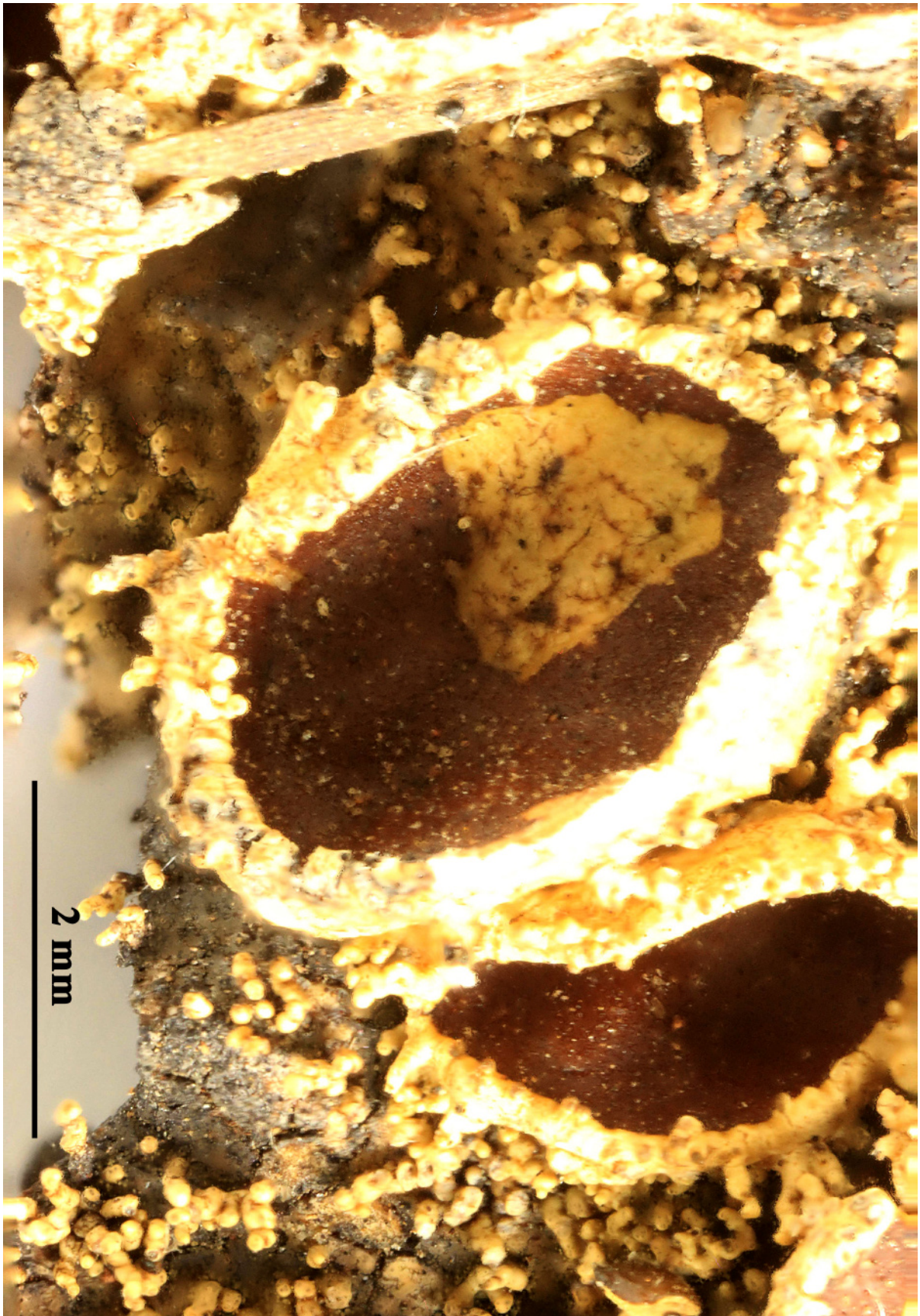
Thallus foliose, lobate, loosely attached, 5-12 cm diam., saxicolous. Lobes variable, broad, rounded, to 5 mm diam., to narrow (1-2 mm diam.) and ± strap-like, often densely imbricate, margins entire, subcrenate, suffused brownish, apices rounded or slightly incised. Upper surface yellowish-green, smooth, shining at margins, wrinkled-cracked centrally, moderately to densely isidiate, maculae, pycnidia and soredia absent. Isidia laminal, often forming a dense ± areolate crust, slender, terete, simple, becoming coralloid-branched, to 1-5 mm tall. Lower surface black, with a narrow, brown, naked marginal zone, smooth and shining at margins, matt and wrinkled centrally. Rhizines sparse, simple, black or brown. Apothecia infrequent, sessile, 2-6 mm diam., deeply cupuliform at first, then shallowly convex with age, disc smooth, red-brown, imperforate, margins conspicuously isidiate, thalline exciple wrinkled, shining, becoming isidiate with age. Spores 8-10 × 4-5 µm. Chemistry: Cortex K-; medulla K+ yellow → red, C-, KC+ red, Pd+ orange. Salazinic and usnic acids.



Xanthoparmelia australasica



Xanthoparmelia australasica



Xanthoparmelia australasica

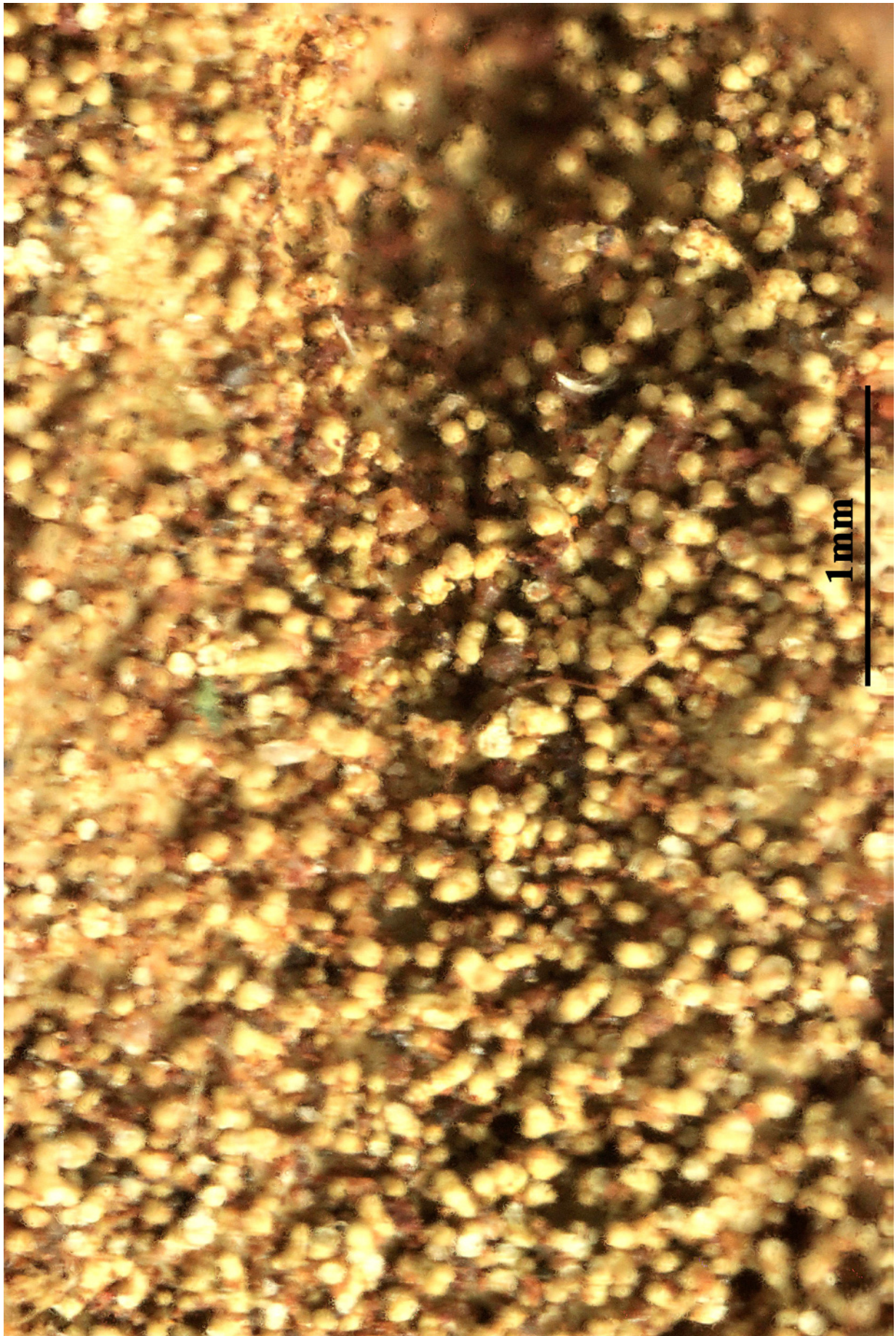
Xanthoparmelia plittii (Gyeln.) Hale, Phytologia 28(5): 488 (1974)
= *Parmelia plittii* Gyeln., Feddes Repert. Spec. Nov. Regni veg. 29: 287 (1931)

[VZR455], Brasilia. Matto Grosso, Ponta Porá, 22°32' austr., 55°34' occid. Ad saxa in pluviisilva. Leg. E. Montes (10158), 1.6.1958, det. M. S. Osorio (40005). EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 455.

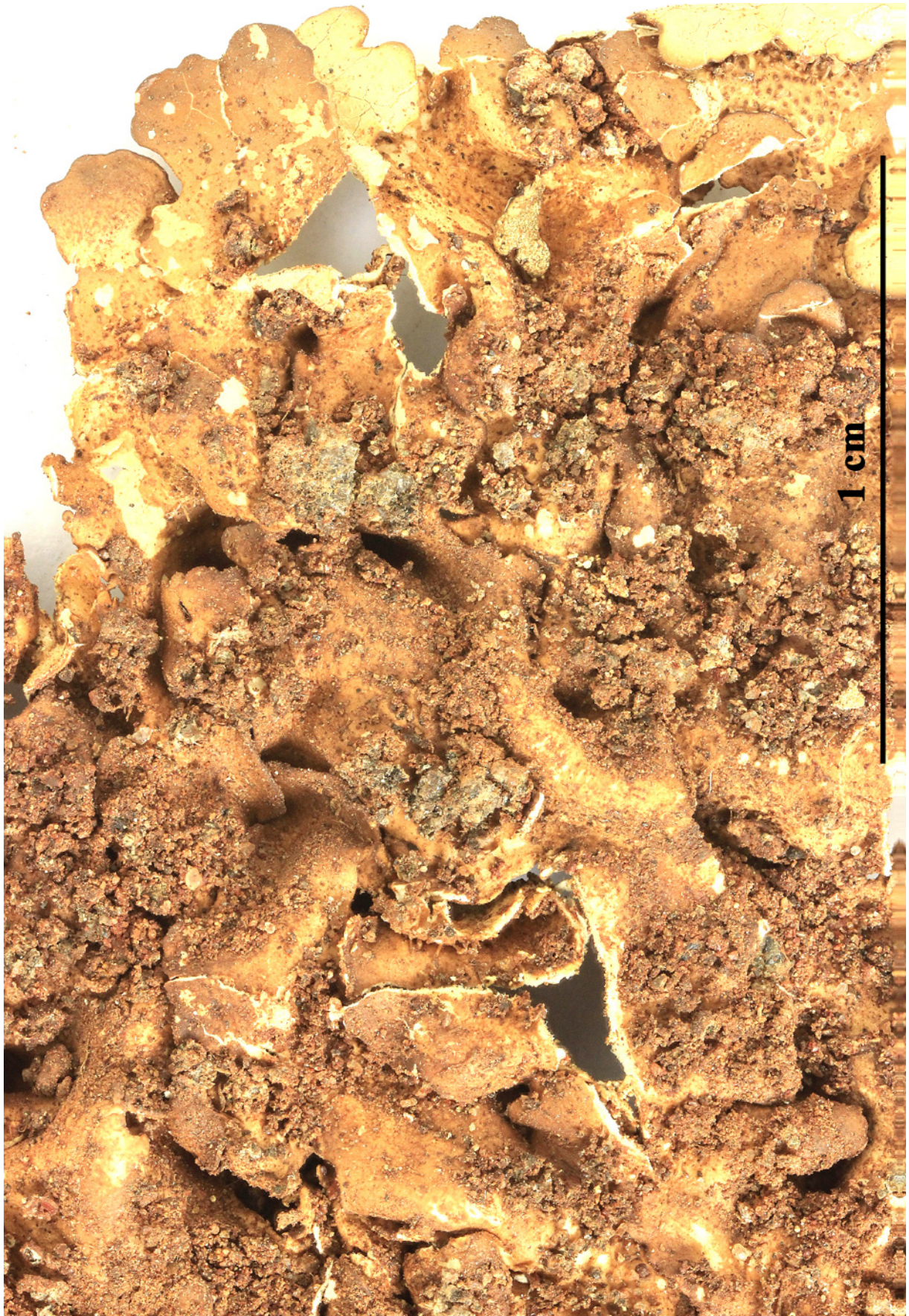
Thallus foliose, moderately to tightly adnate, centrally lobate, forming patches to 10 cm wide. Lobes separate or barely imbricate, flat, irregularly crowded, elongate, irregularly branched, 2–2.5 (–3) mm wide. Upper surface yellow-green, darkening to olive-green or blackish, dull, shiny towards apices, smooth or rugulose, without maculae or soredia; lobe margins black near apices; isidia sparse to moderately dense, often covering thallus centre, slender, cylindrical, simple or becoming extensively branched; isidia apices syncorticate and intact. Medulla white. Lower surface pale tan to brown; rhizines moderately dense, simple, ±tufted or not, concolorous or blackening. Apothecia rare, sessile, 2–4 mm wide; disc concave, then flat or nearly so, ±with stellate cracks, dark brown; thalline exciple thick, involute, becoming undulating, isidiate. Ascospores $7\text{--}9 \times 4\text{--}5.5 \mu\text{m}$. Pycnidia not seen. CHEMISTRY: cortex K-, UV-; medulla K+ yellow, C-, KC-, P+ yellow-orange; containing usnic acid, stictic acid (major), constictic acid (minor), salazinic acid (minor), norstictic acid (trace) and cryptostictic acid (trace). -Very rare, on rock in coastal ranges and subarid areas in southern Australia, also in South America (Brazil).



Xanthoparmelia plittii



Xanthoparmelia plittii



Xanthoparmelia plittii

- Xanthoria elegans* (Link) Th. Fr., Lich. arct. (Uppsala): 69 (1860)
 = *Amphiloma elegans* (Link) Körb., Syst. lich. germ. (Breslau): 110 (1855)
 = *Callopisma elegans* (Link) Trevis., Revta Period. Lav. Imp. Reale Acad.,
 Padova 1(3): 263 (1852) [1851-52]
 = *Caloplaca dissidens* (Nyl.) Mérat, Bull. Soc. bot. Fr. 67: 195 (1920)
 = *Caloplaca elegans* (Link) Th. Fr., Lich. Scand. (Upsaliae)(1): 168 (1871)
 = *Gasparrinia elegans* (Link) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau)
 2(2): 103 (1879)
 = *Lecanora dissidens* (Nyl.) Cromb., Monogr. Lich. Brit.(1): 361 (1894)
 = *Lecanora elegans* (Link) Ach., Lich. Univ.: 435 (1810)
 = *Lecanora murorum* var. *dissidens* (Nyl.) Cromb., Grevillea 12(no. 62):
 61 (1883)
 = *Lichen elegans* Link, Ann. Nat. urgesch. 1: 37 (1791)
 = *Parmelia elegans* (Link) Ach., Methodus, Sectio post. (Stockholmiae): 193
 (1803)
 = *Parmelia murorum* var. *elegans* (Link) J. Becker, Fl. Frankfurt, Zweite
 Abth. (Frankfurt): 170 (1828)
 = *Physcia dissidens* (Nyl.) Arnold, Flora, Regensburg 64(20): 306 (1881)
 = *Physcia elegans* (Link) De Not., G. bot. ital. 2(2): 198 (1847)
 = *Placodium dissidens* Nyl., Flora, Regensburg 58: 298 (1875)
 = *Placodium elegans* (Link) DC., in Lamarck & de Candolle, Fl. franç., Edn
 3 (Paris) 2: 379 (1805)
 = *Placodium murorum* f. *dissidens* (Nyl.) Leight., Lich.-Fl. Great Brit.,
 Edn 3: 161 (1879)
 = *Placodium murorum* var. *dissidens* (Nyl.) Boistel, Nouv. Fl. Lich.
 (Paris) 2: 99 (1903)
 = *Rusavskia elegans* (Link) S.Y. Kondr. & Kärnefelt, Ukr. bot. Zh. 60(4):
 434 (2003)
 = *Squamaria elegans* (Link) Fée, Dict. Class. Hist. Nat. 15: 598 (1829)
 = *Teloschistes elegans* (Link) Norman, Conat. Praem. Gen. Lich.: 17 (1852)

[VZR420], Nova Zelandia. South Island. Otago (pars centralis), 45°4.3' austr., 169°45.8' orient., 1900 m, ad saxa. Leg. & det. W. Malcolm. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 420.

Thallus rosette-forming to irregularly spreading, often eroded or lacking in parts, to 6 cm diam., saxicolous. Lobes radiate, contiguous or partly imbricate and loosely attached, convex or subconvex, sparingly branched, c. 1 mm wide, margins crenate to subsinuous. Upper surface orange-red or red, smooth, matt, wrinkled or minutely faveolate or pitted centrally, without isidia, maculae, pseudocyphellae or soredia.

Apothecia central, occasional, to 1.2 mm diam., disc red, margins persistent, rather thin, concolorous with thallus. Ascospores $10\text{-}13 \times 6\text{-}8 \mu\text{m}$.



Xanthoria elegans



Xanthoria elegans

- Xanthoria elegans* (Link) Th. Fr., Lich. arct. (Uppsala): 69 (1860)
 = *Amphiloma elegans* (Link) Körb., Syst. lich. germ. (Breslau): 110 (1855)
 = *Callopisma elegans* (Link) Trevis., Revta Period. Lav. Imp. Reale Acad.,
 Padova 1(3): 263 (1852) [1851-52]
 = *Caloplaca dissidens* (Nyl.) Mérat, Bull. Soc. bot. Fr. 67: 195 (1920)
 = *Caloplaca elegans* (Link) Th. Fr., Lich. Scand. (Upsaliae)(1): 168 (1871)
 = *Gasparrinia elegans* (Link) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau)
 2(2): 103 (1879)
 = *Lecanora dissidens* (Nyl.) Cromb., Monogr. Lich. Brit.(1): 361 (1894)
 = *Lecanora elegans* (Link) Ach., Lich. Univ.: 435 (1810)
 = *Lecanora murorum* var. *dissidens* (Nyl.) Cromb., Grevillea 12(no. 62):
 61 (1883)
 = *Lichen elegans* Link, Ann. Nat. urgesch. 1: 37 (1791)
 = *Parmelia elegans* (Link) Ach., Methodus, Sectio post. (Stockholmiaë): 193
 (1803)
 = *Parmelia murorum* var. *elegans* (Link) J. Becker, Fl. Frankfurt, Zweite
 Abth. (Frankfurt): 170 (1828)
 = *Physcia dissidens* (Nyl.) Arnold, Flora, Regensburg 64(20): 306 (1881)
 = *Physcia elegans* (Link) De Not., G. bot. ital. 2(2): 198 (1847)
 = *Placodium dissidens* Nyl., Flora, Regensburg 58: 298 (1875)
 = *Placodium elegans* (Link) DC., in Lamarck & de Candolle, Fl. franç., Edn
 3 (Paris) 2: 379 (1805)
 = *Placodium murorum* f. *dissidens* (Nyl.) Leight., Lich.-Fl. Great Brit.,
 Edn 3: 161 (1879)
 = *Placodium murorum* var. *dissidens* (Nyl.) Boistel, Nouv. Fl. Lich.
 (Paris) 2: 99 (1903)
 = *Rusavskia elegans* (Link) S.Y. Kondr. & Kärnefelt, Ukr. bot. Zh. 60(4):
 434 (2003)
 = *Squamaria elegans* (Link) Fée, Dict. Class. Hist. Nat. 15: 598 (1829)
 = *Teloschistes elegans* (Link) Norman, Conat. Praem. Gen. Lich.: 17 (1852)

[VZR370], Tanzania. Arusha National Park. Meru Crater, Kitito Cam-
 pus, 2480-2600 m. Ad lavam in vegetatione subalpina cum *Erica*. Leg.
 T. Pócs, 16.-16.12.1888, dupl. det. H. Krog. EX VěZDA: LICHENES
 RARIORES EXSICCATI NR. 370.

Thallus foliose, heteromerous, dorsiventral, tightly adnate, deep orange
 to orange-red, forming up to 6 cm wide, often confluent rosettes, the
 central parts sometimes dying off in old thalli. Lobes strongly convex,
 0.5-1(-1.3) mm wide, remaining discrete for their entire length, with
 pale maculae visible at high magnification; lower surface white, rarely
 with very short, white hapters. Upper and lower cortex mesodermate

paraplectenchymatous; medulla white. Apothecia common, lecanorine/zeorine, laminal, substipitate, up to 2.5 mm across, orange to orange-red. Epithecium orange-brown, c. 10 μm thick, K+ purple-red; hymenium colourless, 60-90 μm high; paraphyses simple or sparingly branched, septate, the apical cells swollen; hypothecium colourless to pale brown, 20-80 μm high. 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, (9-)11-16(-18) x 5-9 μm , the equatorial thickening ("septum") (1-)3-5 μm . Pycnidia immersed, slightly darker than thallus. Conidia narrowly ellipsoid, 2-3.5 x 1-1.5 μm . Photobiont chlorococcoid. Spot tests: upper surface K+ purple-red, C-, KC-, P-, UV+ intensely orange-red. Chemistry: parietin (major), fallacinal, emodin, teloschistin and parietinic acid, corresponding with chemosyndrome A of S  chting (1997). Note: a northern holarctic species found both on well-lit natural rock outcrops and on man-made substrata (especially tiles), mostly in upland areas, descending to lower elevations in continental sites; in strongly eutrophicated situations it can occasionally overgrow bryophytes and plant remains. The species is extraordinarily variable in colour and form, very different individuals often occurring side by side on the same surface.



Xanthoria elegans



Xanthoria elegans

Xanthoria flammea (L. f.) Hillmann, Hedwigia 62: 199 (1920)
 = *Dufourea flammea* (L. f.) Ach., Lich. Univ.: 524 (1810)
 = *Lichen flammeus* L. f., Suppl. Pl.: 451 (1781)
 = *Lichenoides flammea* (L. f.) Hoffm. [as 'flammeum'], Descr. pl. cl. crypt.
 1.1(fasc. 1 [intro.], 2): 11 (1789)
 = *Lichenoides flammeum* (L. f.) Hoffm., Descr. Adumb. Plant. Lich. 1(1):
 11 (1789) [1790]
 = *Lobaria flammea* (L. f.) Raeusch., Nomencl. bot., Edn 3: 830 (1797)
 = *Parmelia flammea* (L. f.) Ach., Methodus, Sectio post. (Stockholmiaë): 253
 (1803)
 = *Physcia flammea* (L. f.) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 3: 174
 (1855)
 = *Xanthodactylon flammeum* (L. f.) C.W. Dodge, Beih. Nova Hedwigia 38:
 116 (1971)

[VZR419], Namibia. Diamont Area 1, 30 km ad meidiem versus ab
 urbe Lüderitz, 50 m. In ramulis fruticum. Leg. et det. J. Halda,
 25.8.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 419.

Hillmann (1920): - Diese von alteren Autoren bald zu *Physcia*, bald zu
Parmelia oder *Dufourea*, von Hoffmann zu *Lichenoides* gestellte Art
 gehört wegen ihres Gehaltes an Parietin unzweifelhaft zu den Thelo-
 schistaceen, und zwar ist sie wegen der Thallusform der Gattung *Xan-*
thoria einzuordnen. - Lager blattartig, hellgelb bis dunkelorange, oft
 fehlend, ohne Soredien. Apothezien in die Spitzen hohler, zylindrischer,
 gedunsener, einfacher oder oberwärts wenig verzweigter „Podetien“ ±
 eingesenkt, mit zuerst vertiefter, dann flacher, endlich schwach ge-
 wolbter und erweiterter Scheibe, und ganzem, dünnem, anfangs vortre-
 tendem, später zurückgedrangtem Rande. Sporen zu 8 im Schlauch,
 ellipsoidisch bis fast breit spindelförmig, 11—16,5 x 5—8 µm,
 zweizellig, mit dünner Querwand (in Kalilauge wird der die Zellen
 verbindende Kanal sichtbar). Pykniden orangerot, auf den Lagerlappen
 sitzend, Pyknokonidien langlich ellipsoidisch, klein, 2—2,5 x 0,5—1,0
 µm. *X. flammea* ist in Südafrika heimisch und sicherlich dort an Rinden
 recht häufig, da sie von vielen Reisenden gesammelt worden ist. Man
 kann von ihr zwei Hauptformen unterscheiden: var. *thallophora*: Thal-
 lus bene evolutus, foliaceus, lobis crassiusculis, substrato appositis.
 Apothecia fere sessilia (podetia 2—3 mm longa). Scheint die seltenere
 Form zu sein. Die Lagerlappen sind ziemlich dick, oben kräftig gelb bis
 orange gefärbt und abgerundet oder gekerbt; die Unterseite ist weißlich
 (nur am Rande gelb) und faltigrunzelig. Synonym zu dieser Abart ist

Parmelia flammea Flot. Linnaea (1843), S. 27 (sec. spec. orig. in Museo Botan. Berol.). var. *podetiifera*: Thallus foliaceus evanescens. Podetia evoluta, usque ad 25 mm longa, fere caespitose crescentia. Die an die Podetien der Cladonien erinnernden Apothezienstiele sind oberwärts kraftig gelb bis orange, nach unten zu werden sie heller, am Grunde sind sie oft grau oder weißlich (offenbar wegen des Mangels an Belichtung); ihre Oberfläche zeigt zerstreute grubige Vertiefungen, die Innenwand der Rohre ist weißfilzig.



Erioderma barbellatum

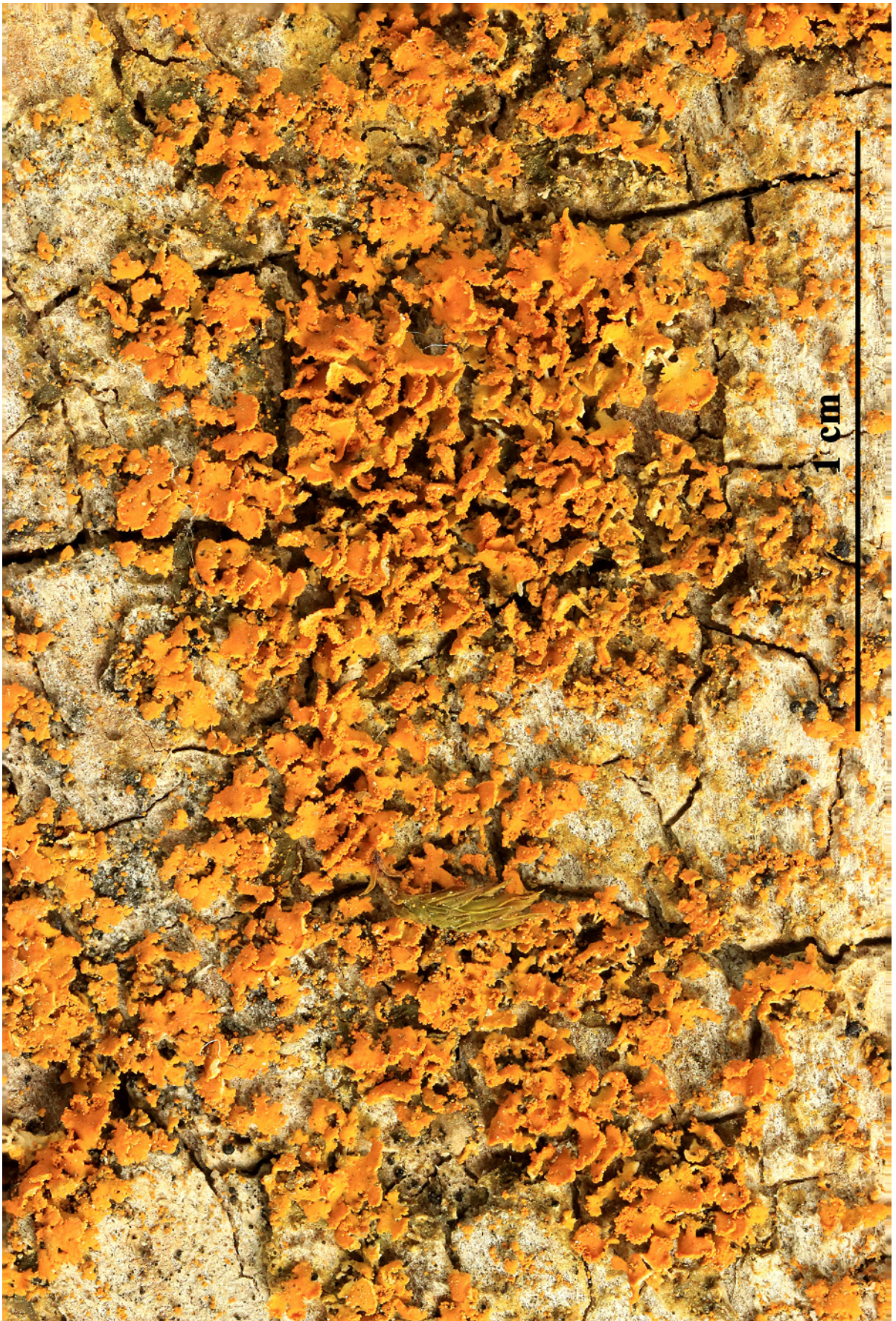


Erioderma barbellatum

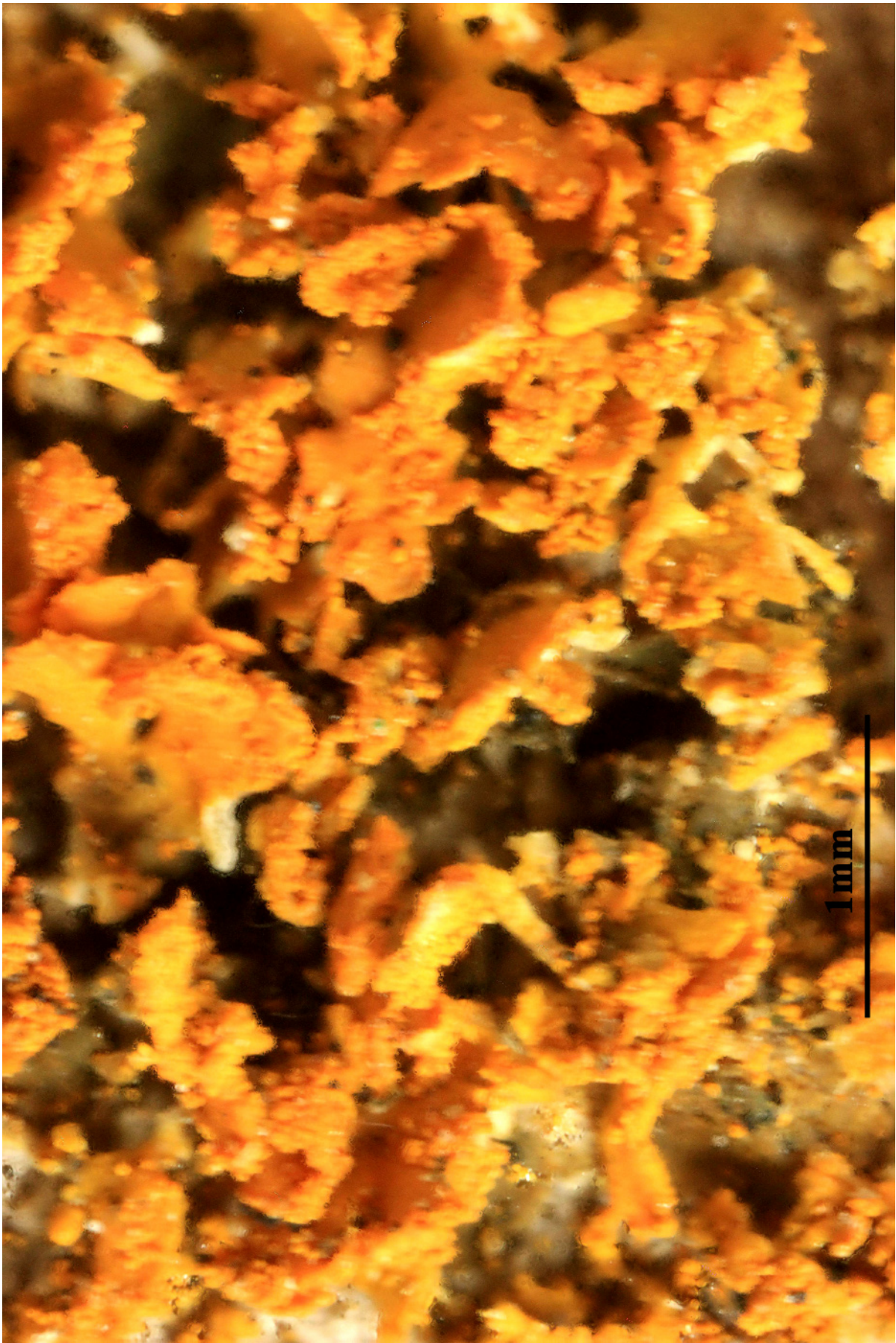
- Xanthoria fulva* (Hoffm.) Poelt & Petut., Nova Hedwigia 54(1-2): 24 (1992)
 = *Gallowayella fulva* (Hoffm.) S.Y. Kondr., Fedorenko, S. Stenroos, Kärnefelt, Elix, Hur & A. Thell, in Fedorenko, Stenroos, Thell, Kärnefelt, Elix, Hur & Kondratyuk, Bibliotheca Lichenol. 108: 57 (2012)
 = *Lobaria fulva* Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 159 (1796) [1795]
 = *Oxneria fulva* (Hoffm.) S.Y. Kondr. & Kärnefelt, Ukr. bot. Zh. 60(4): 431 (2003)
 = *Physcia lychnea* var. *fulva* (Hoffm.) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 324 (1882) [1880-81]
 = *Xanthomendoza fulva* (Hoffm.) Søchting, Kärnefelt & S.Y. Kondr., Mitt. Inst. Allg. Bot. Hamburg 30-32: 237 (2002)

[VZR160], Italia. Calabria. Cosenza, Sila Grande in loco Camigliatello Silano dicto, 1180 m. Ad corticem *Populi nigrae*. Leg. & det. D. Puntillo, 19.6.1994. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 160.

Thallus foliose, heteromerous, dorsiventral, dark red-orange, lobed, not forming regular rosettes, but thalli often coalescing to cover large surfaces. Lobes up to 2 mm long, 0.2-0.7(-1) mm wide, ascending, blastidiate along most of the lower surface, the blastidia 25-30 µm diam., in marginal parts sometimes gathered into 50-60 µm wide conblastidia; rhizines or hapters few, mostly located at the base of lobes. Apothecia very rare, lecanorine, orange-red. Thalline exciple paraplectenchymatous; proper exciple a strongly gelatinized plectenchyma with unoriented, short-celled hyphae; epithecium orange-brown, K+ purple-red; hymenium colourless; paraphyses simple or rarely branched, septate; hypothecium colourless or pale orange-brown. 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, broadly ellipsoid, with broadly rounded ends, 13.5-17.5 x 8-10.5 µm, the equatorial thickening ("septum") 4-6.5 µm. Pycnidia common, darker orange than thallus. Conidia baciliform, 3-4.5 x 1-1.2 µm. Photobiont chlorococcoid. Spot tests: upper surface K+ purple-red, C-, KC-, P-, UV+ orange. Chemistry: parietin (major), fallacinal (major), emodin, teloschistin (major) and parietinic acid (chemosyndrome A3 of Søchting 1997). - Note: most frequent on isolated deciduous trees along roads in continental Alpine valleys; often confused with *X. fallax* in the past, and with a similar ecology, but perhaps more xerophytic. Luxuriant specimens can be very difficult to distinguish from *X. oregana*.



Xanthoria fulva



Xanthoria fulva

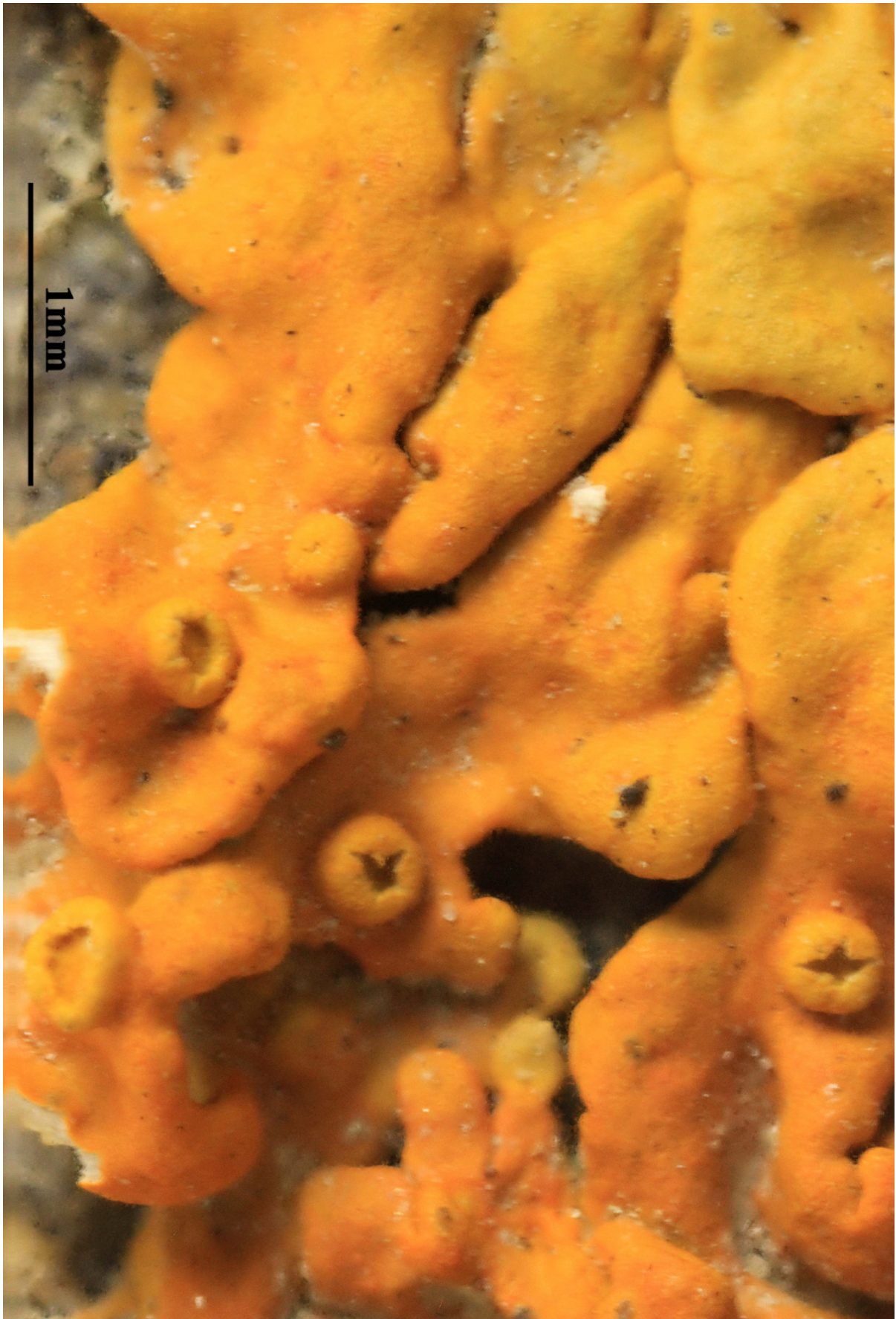
- Xanthoria ligulata* (Körb.) P. James, in Galloway, New Zealand J. Bot. 21(2): 198 (1983)
 = *Dufourea ligulata* (Körb.) Frödén, Arup & Söchting, in Arup, Söchting & Frödén, Nordic J. Bot. 31(1): 43 (2013)
 = *Jackelixia ligulata* (Körb.) S.Y. Kondr., Fedorenko, S. Stenroos, Kärnefelt & A. Thell, in Fedorenko, Stenroos, Thell, Kärnefelt & Kondratyuk, Bibliotheca Lichenol. 100: 78 (2009)
 = *Physcia ligulata* Körb., Abh. Schles. Ges. Vaterl. Kult., Abth. Naturw. Med. 2: 30 (1862)

[VZR280], Nova Zelandia. South Island, distr, Nelson, Boulder Bank Reserve, in litore, 3 m. Ad lapides magnos siliceos. Leg et det. F. Ceni, W. Malcolm & A. Vězda., 20.4.1997. EX A. VĚZDA: LICHENES RARI-ORES EXSICCATI NR. 280.

Thallus foliose, spreading, closely attached, rosette-forming to $\pm$ irregular, 1-3(-5) cm diam., saxicolous. Lobes subdichotomously to irregularly branched, mainly convex, 0.1-1.2(-1.6) mm wide, 3-5(-8) mm long, 100-300(-450) μ m thick, $\pm$ discrete at margins, often widely separated, to $\pm$ contiguous, imbricate centrally, margins entire, noticeably downturned, apices rounded or shallowly incised, somewhat thickened, often with small, sparse to numerous, subapical, adventitious globose lobules or branchlets. Upper surface matt, smooth or minutely roughened or $\pm$ scabrid in parts, coarsely undulate-plicate, coriaceous, not pitted or faveolate, deep yellow to orange, rarely orange-red. Lower surface white at margins, pale pinkish-buff or brownish centrally, glossy or dull, wrinkled-puckered, sparsely rhizinate. Rhizines rare, short, pale brownish-pink or blackened, less than 0.1 mm long, fasciculate. Apothecia sparse to numerous, mainly central, solitary or clustered, rounded or irregularly deformed through mutual pressure, 0.1-2.0 mm diam., innate at first, slowly emergent with a thick, rounded rim, becoming sessile, disc concave at first, often hidden by inflexed margins, normally plane to subconvex-undulate at maturity, deep orange to orange-red, darker than margins or thallus, minutely roughened, margins persistent, entire to subcrenulate, inflexed at first, thinner at maturity, concolorous with thallus. Hymenium colourless, 50-65 μ m tall. Apices of paraphyses clavate, to 6-7 μ m diam. Ascospores (10-)12-15 $\times$ 6.5-9 μ m.



Xanthoria ligulata



Xanthoria ligulata

- Xanthoria polycarpa* (Hoffm.) Rieber, Jber. vaterl. Kultur Württemberg 47: 252 (1891)
- = *Polycauliona polycarpa* (Hoffm.) Frödén, Arup & Söchting, in Arup, Söchting & Frödén, Nordic J. Bot. 31(1): 53 (2013)
- = *Imbricaria parietina* f. *polycarpa* (Hoffm.) Flot., Jber. schles. Ges. vaterl. Kultur 28: 135 (1850)
- = *Lecanora candelaria* var. *polycarpa* (Hoffm.) Ach., Lich. Univ.: 416 (1810)
- = *Lichen polycarpus* (Hoffm.) Ehrh., in Acharius, Lich. suec. prodr. (Linköping): 135 (1799) [1798]
- = *Lobaria parietina* var. *polycarpa* (Hoffm.) Fürnr., Naturhist. Topogr. Regensburg (Regensburg) 2: 249 (1839)
- = *Lobaria polycarpa* Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 159 (1796) [1795]
- = *Massjukiella polycarpa* (Hoffm.) S.Y. Kondr., Fedorenko, S. Stenroos, Kärnefelt, Elix, Hur & A. Thell, in Fedorenko, Stenroos, Thell, Kärnefelt, Elix, Hur & Kondratyuk, Biblthca Lichenol. 108: 60 (2012)
- = *Parmelia candelaria* var. *polycarpa* (Hoffm.) Ach., Methodus, Sectio post. (Stockholmiae): 187 (1803)
- = *Parmelia parietina* f. *polycarpa* (Hoffm.) Körb., Lichenogr. germ. (Breslau): 17 (1846)
- = *Parmelia parietina* var. *polycarpa* (Hoffm.) Fr., Lich. eur. reform. (Lund): 73 (1831)
- = *Parmelia polycarpa* (Hoffm.) Spreng., Mag. Neuesten Entdeck. Gesammten Naturk. Ges. Naturf. Freunde Berlin 1: 228 (1820)
- = *Physcia parietina* f. *polycarpa* (Hoffm.) Körb., Syst. lich. germ. (Breslau): 91 (1855)
- = *Physcia parietina* subsp. *polycarpa* (Hoffm.) Lamy, Bull. Soc. bot. Fr. 25(5): 381 (1880) [1878]
- = *Physcia parietina* var. *polycarpa* (Hoffm.) A. Massal., Atti Inst. Veneto Sci. lett., ed Arti, Sér. 2 3(App. 3): 43 (1852)
- = *Physcia polycarpa* (Hoffm.) Linds., Bulletin of the United States National Museum 9: 91 (1869)
- = *Placodium polycarpum* (Hoffm.) Frege, Deutsch. Botan. Taschenb. 2: 178 (1812)
- = *Psoroma polycarpum* (Hoffm.) Gray, Nat. Arr. Brit. Pl. (London) 1: 445 (1821)
- = *Squamaria candelaria* var. *polycarpa* (Hoffm.) Hook., Engl. Fl., Mosses, Hepaticae, Lichens, Characeae and Algae (London) 5(1): 198 (1833)
- = *Squamaria polycarpa* (Hoffm.) Sm., in Smith & Sowerby, Engl. bot., Edn 2 11: 6 (1844)
- = *Teloschistes parietinus* subsp. *polycarpus* (Hoffm.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 50 (1882)

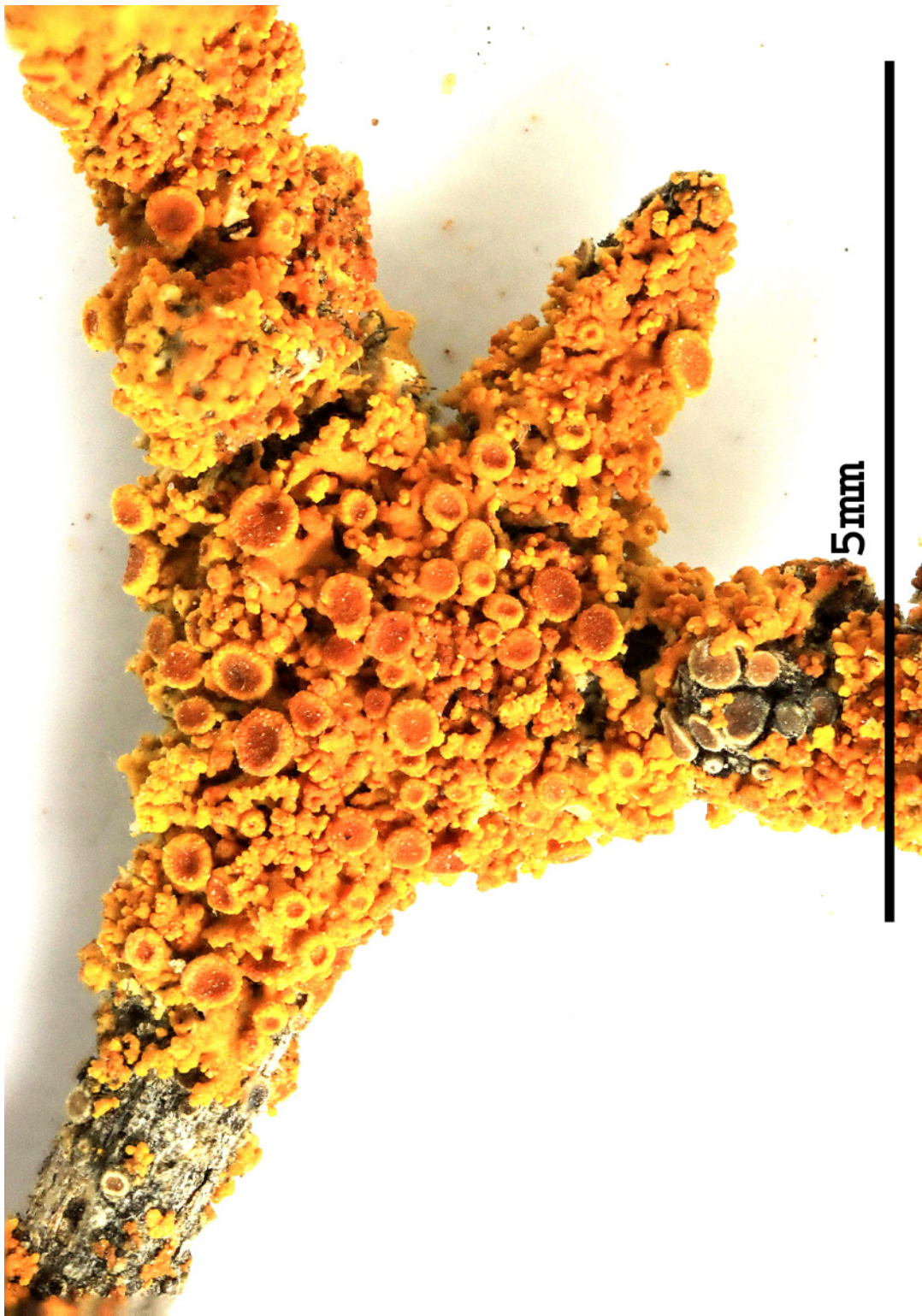
- = *Teloschistes parietinus* var. *polycarpus* (Hoffm.) Tuck., Lichens of California (Berkeley): 13 (1866)
- = *Teloschistes polycarpus* (Hoffm.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 50 (1882)
- = *Xanthoria lichnea* f. *polycarpa* (Hoffm.) Eitner, Jber. schles. Ges. vaterl. Kultur 78(2b Abth.): 7 (1901) [1900]
- = *Xanthoria lichnea* subsp. *polycarpa* (Hoffm.) Hasse, Contr. U.S. natnl. Herb. 17(1): 117 (1913)
- = *Xanthoria lichnea* var. *polycarpa* (Hoffm.) Th. Fr., Lich. Scand. (Upsaliae)(1): 146 (1871)
- = *Xanthoria parietina* f. *polycarpa* (Hoffm.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 30: 121 (1881) [1880]

[VZR398], USA. Washington, Spokane County. In urbe Spokane, loco Riverside State Park, Ad ramunculos fruticis Pineto (*Pinus ponderosa*). Leg. W. L. Culberson, 9.8.1996. - annot.: Parietin, teloschistin, and traces of fallacinal and parietinic acid, by TLC, anal.: A. Johnson & C. F. Culberson. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 398.

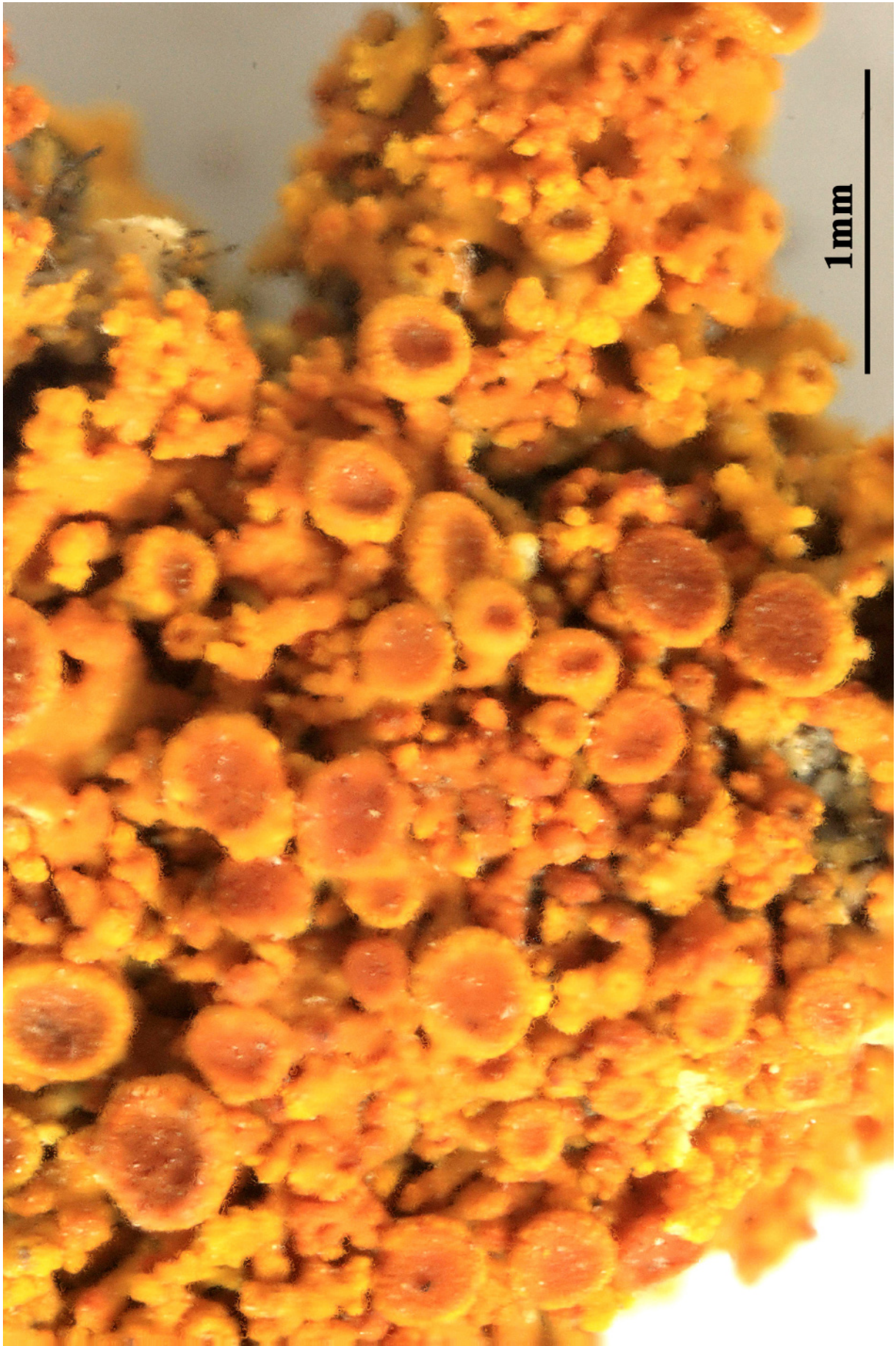
Thallus foliose, heteromerous, dorsiventral, tightly adnate, forming up to 2(-3) cm wide rosettes, yellow to yellowish grey in shade-forms, esorediate. Lobes flat to convex, very short, 0.2-0.7(-1) mm wide, broadening towards apices which are finely divided into 0.1-0.3 mm wide, rounded lobe-tips; lower surface white, somewhat wrinkled, with scattered short, white hapters. Apothecia lecanorine, extremely abundant, usually crowded and occupying most of the rosette obscuring the thallus, circular or deformed by mutual compression, laminal, substipitate, to 4 mm across (usually less), with a yellow-orange, concave to flat disc and a yellow to grey-yellow, thin, smooth to crenulate, finally sometimes excluded thalline margin. Thalline exciple paraplectenchymatous; epithecium orange-brown, c. 10 µm high, K+ purple-red; hymenium colourless, 40-90 µm high; paraphyses simple or sparingly branched, the apical cells swollen; hypothecium colourless to pale brown, 15-50 µm high. 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, 11-15 x 5-8 µm, the equatorial thickening ("septum") 2-4(-6.5) µm. Pycnidia common, immersed, slightly darker

Xanthoria polycarpa

orange than upper surface. Conidia ellipsoid, $2-3 \times 1-1.5 \mu\text{m}$. Photobiont chlorococcoid. Spot tests: thallus and apothecia K+ purple-red, C-, KC-, P-, UV+ intensely orange-red. Chemistry: parietin (major), fallacinal, emodin, teloschistin and parietinic acid corresponding to chemosyndrome A of Søchting (1997). - Note: a mainly boreal-montane, circumpolar species found on isolated trees and sun-exposed branches and small twigs, on wooden poles and fences; most frequent in the



Xanthoria polycarpa



Xanthoria polycarpa

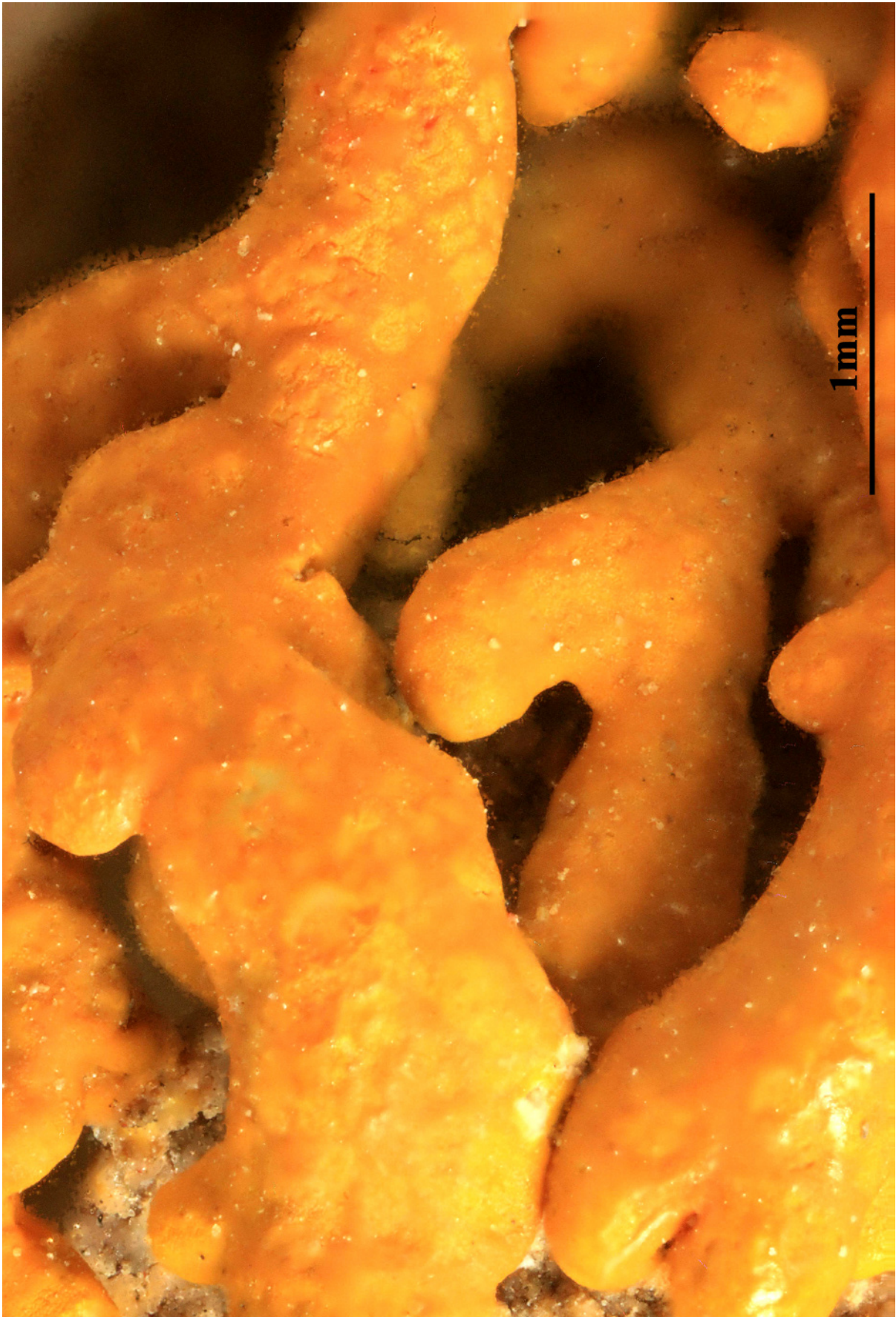
Xanthoria resendei Poelt & Tav., Portug. acta biol., Sér. B 9: 302 (1968)
= *Martinjahnsia resendei* (Poelt & Tav.) S.Y. Kondr., Fedorenko, S. Stenroos, Kärnefelt, Elix, Hur & A. Thell, in Fedorenko, Stenroos, Thell, Kärnefelt, Elix, Hur & Kondratyuk, Bibliotheca Lichenol. 108: 61 (2012)
= *Rusavskia resendei* (Poelt & Tav.) S.Y. Kondr. & Kärnefelt, Ukr. bot. Zh. 60(4): 434 (2003)

[VZR72], Insulae Canarienses, Gran Canaria: distr. Mogán, Puerto Rico, in colle supra portum, 150 m. Ad saxa basaltica et ad lavam. Leg. A. Vězda, 11.11.1993. EX A. Vězda: LICHENES RARIORES EXSICCATI NR. 75.

Thallus foliose, heteromerous, dorsiventral, closely attached, bright orange-yellow to deep orange, forming 3-8 cm wide, more or less regular rosettes. Lobes radiating, 0.4-0.6 mm wide, contiguous to separate, bifurcate or sparingly dichotomously branched, markedly convex and worm-like, stiff, the surface granulose to verrucose, with scattered paler maculae. Upper cortex palisade paraplectenchymatous; medulla white, with 17-35 µm wide chondroid strands of densely compacted hyphae; lower cortex mesodermatous paraplectenchymatous. Apothecia lecanorine/zeorine, sessile, 1-1.5(-2) mm across, with an orange, flat disc, and a smooth to crenulate, usually paler, often finally excluded margin. Epithecium interspersed with orange granules reacting K⁺ purple-red; hymenium colourless, 40-60 µm high; paraphyses simple or bifurcate, swollen at tips; hypothecium colourless, underlain by a more or less continuous algal layer. 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, broadly ellipsoid, 8-12 x 6-8 µm, the equatorial thickening ("septum") 3-4.5 µm. Pycnidia immersed into orange warts, most frequent in central parts of thallus. Conidia ellipsoid-bacilliform, 2-3 x 0.8-1 µm. Photobiont chlorococcoid. Spot tests: thallus and apothecia K⁺ purple-red, C⁻, KC⁻, P⁻, UV⁺ intensely orange-red. Chemistry: thallus and apothecia with different anthraquinones (physcion, fallacinal, fallacinol). - Note: an apparently western Mediterranean (Macaronesia, NW Africa, Iberian Peninsula to Italy), strictly coastal silicicolous species, most frequent on steeply inclined surfaces of basic siliceous rocks in exposed situations.



Xanthoria resendei



Xanthoria resendei

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