F. Schumm (2026):

Images of Lichens
Vezda Lichenes Selecti Exsiccati part 19

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With this volume, I continue the documentation of Vezda's works on exiccata, now with Lichenes Selecti as part 19. I have chosen the genus names that Vezda used, even though others are now more common. However, I also include the currently used names in the synonym list and the index. In addition, I have again made every effort to add species descriptions to the detailed information on the labels from the literature.

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

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

F. Schumm, 2026

Anaptychia boryi (Fée) A. Massal., Memor. Lich.: 41 (1853)
= *Heterodermia boryi* (Fée) Kr.P. Singh & S.R. Singh, Geophytology 6(1): 33 (1976)
= *Borrera boryi* Fée 1825
= *Leucodermia boryi* (Fée) Kalb, in Mongkolsuk, Meesim, Poengsungnoen, Buaruang, Schumm & Kalb, Phytotaxa 235(1): 34 (2015)

[VZ1150], Tanzania. Naturae reservatum "Arusha", Kitoto, ad latera montis Meru, 2450-2650. In silva subalpinis, ad Arbores. Leg. E. W. Jones et T. Pócs (no. 6340), det. A. Vězda, Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1150-

Thallus foliose to subfruticose, often in loose rosettes or forming tangled mats, loosely adnate or, in part, unattached, 5–15 cm wide. Lobes 0.4–3.0 mm wide, separate, ± plane, linear-elongate, ribbon-like, tangled, dichotomously branched, often ascending at the apices or, occasionally, the apices reflexed or with circinately revolute tips to the distal lobes, with conspicuous gray to black simple or sparingly branched marginal rhizines, 5–15 mm long. Upper surface ivory to gray-white, smooth. Medulla white. Lower surface mostly ecorticate, canaliculate, arachnoid or powdery, but not sorediate, white throughout or partially pinkish brown or rarely purple; yellow pigments absent; lower margins thickened, corticated. Apothecia ± common, subapical to apical, substipitate to distinctly stipitate, 1–5 mm wide; margin crenulate to lobulate, lobules triangular, to 2 mm long, often with sparse short black cilia; disc concave, dark brown, ± distinctly white-pruinose. Ascospores Polyblastidia-type, ellipsoidal, with numerous small and/or large sporoblastidia, 35–53 × 18–25 μm. Pycnidia rare, immersed, visible as black dots; conidia bacilliform, 4–5 × 1 μm. Chemistry: Cortex K+ yellow, C–, KC–, P+ yellow; medulla K+ yellow, C–, P– or P+ pale yellow; containing atranorin (major), zeorin (major) and japonene (minor or trace). Distribution and habitat:—This species occurs on bark and more rarely on mossy rocks in hill evergreen forest and lower montane forest; it is widespread in tropical to warm temperate regions.

Anaptychia boryi

Anaptychia boryi

Haematomma pustulatum Brodo & W.L. Culb., Bryologist 89(3): 203 (1987) [1986]

= *Lepra pustulata* (Brodo & W.L. Culb.) Lendemer & R.C. Harris, Bryologist 120(2): 188 (2017)

[VZ2152],USA. Carolina Borealis. Orange County: Prope oppidum Hillsborough, in silva dicta Duke Forest, prope lapicinas, 165 m. Ad corticem truncorum Aceris rubri. Leg. W. L. Culberson (no. 15701) et C. F. Culberson, 22.11.1984. - nnot.: Thamnolic acid, squamatic acid, and unidentified triterpenes (traces), by TLC, A. Johnson and C.F. Culberson. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 2152.

This species is always sterile. It is one of the commonest crustose lichens in the western United States. Its referal to *Haematomma* is supported by the fact that some specimens (but not the type collection) produce elatinic acid, a substance known only from that genus.- W. L. Culberson.

Haematomma pustulatum

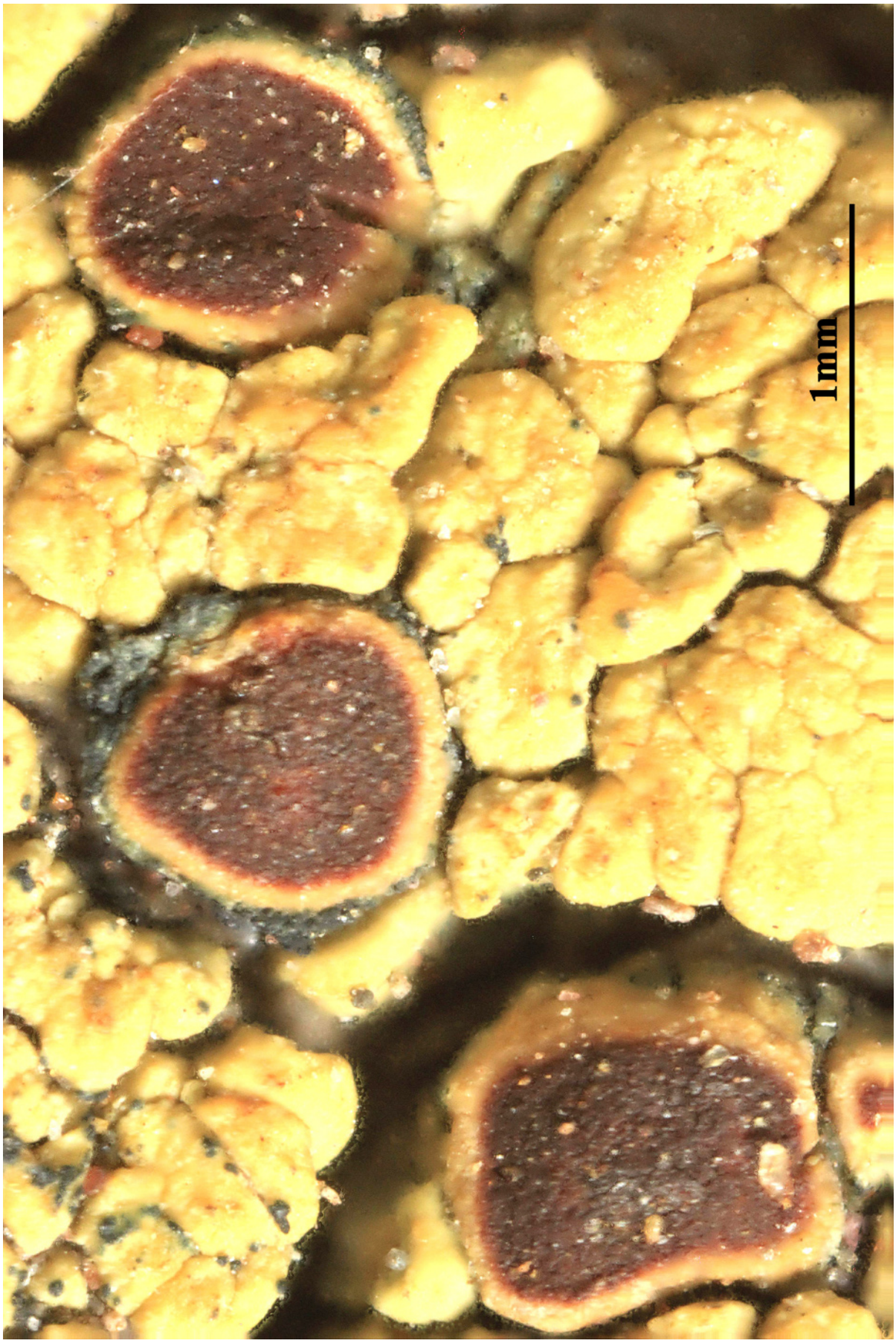
Haematomma pustulatum

Haematomma ventosum (L.) A. Massal., Ric. auton. lich. crost. (Verona): 33, fig. 54 (1852)
= *Ophioparma ventosa* (L.) Norman, Conat. Praem. Gen. Lich.: 19 (1852)
= *Lichen ventosus* L. 1753

[VZ1749],URSS. Caucasus Magnus. Ad latera orientalis montis Elbrus, loco Krugozor dicto, 3200 m. Ad saxa vulcaniva. Leg. A. Vězda, 21.6.1980. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1749.

Thallus crustose, corticate, rimose-areolate, greenish grey, grey-yellow to grey-olive, 3-5(-10) mm thick, forming well-delimited, up to 18 cm wide patches, often surrounded by a pale prothallus. Apothecia lecanorine, sessile, round to irregular, 0.5-3 mm across, with a blood-red, flat to slightly convex disc, a slightly paler or concolorous proper margin, and a thalline margin finally often limited to the lower side of the apothecium. Epithecium orange-red, K+ blue turning violet; hymenium colourless to orange in upper part, 50–75 µm high; paraphyses mostly simple, c. 1 µm thick, slightly thickened at tips; hypothecium colourless, up to 400 µm thick. Asci 8-spored, clavate, with a shallow, uniformly K/I + blue apical dome, lacking a distinct ocular chamber or apical cushion, with spirally arranged spores, Ophioparma-type. Ascospores 3-7-septate, hyaline, curved, with one end blunt and the other subulate, 30-60 x 3.5-6 µm. Pycnidia with distinct black ostioles, surrounded by a thalline swelling. Conidia simple, hyaline, bacilliform, 5-10 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K+ pale yellow, C+ pale yellow, P-; medulla K+ yellow-orange, C-, KC+ yellow-orange, P+ yellow-orange, UV+ glaucous white. Chemistry: thallus with variable concentrations of usnic and divaricatic acids, plus variable amounts of hypothamnolic and miriquidic acids; apothecia with haemoventosin and 4-hydroxyhaemoventosin. - Note: an arctic-alpine circumpolar lichen found on steeply inclined surfaces of siliceous rocks in wind-exposed situations, with optimum above treeline; most frequent in the Alps, where it reaches the nival belt, but reaching south to the mountains of Calabria.

Haematomma ventosum

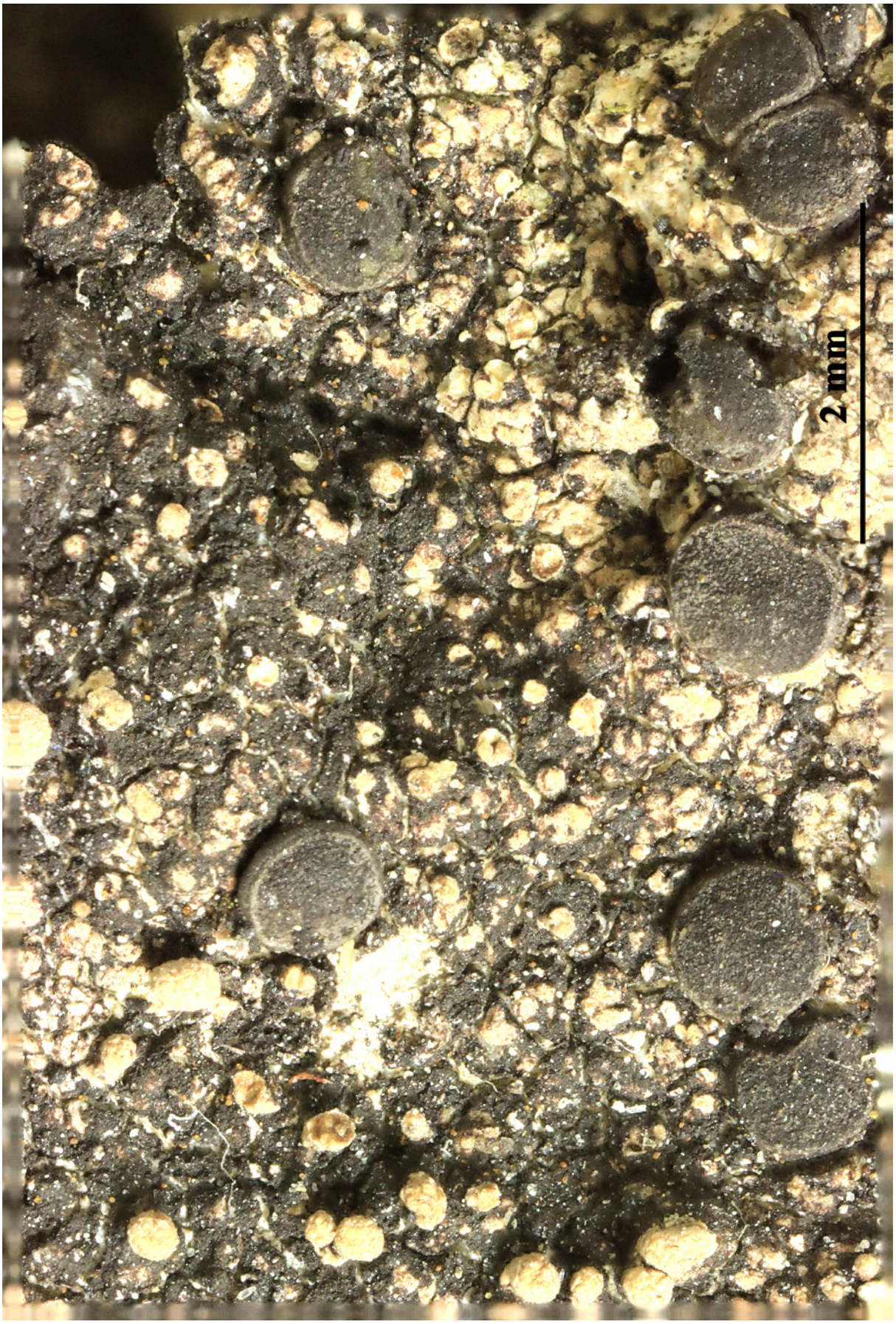


Haematomma ventosum

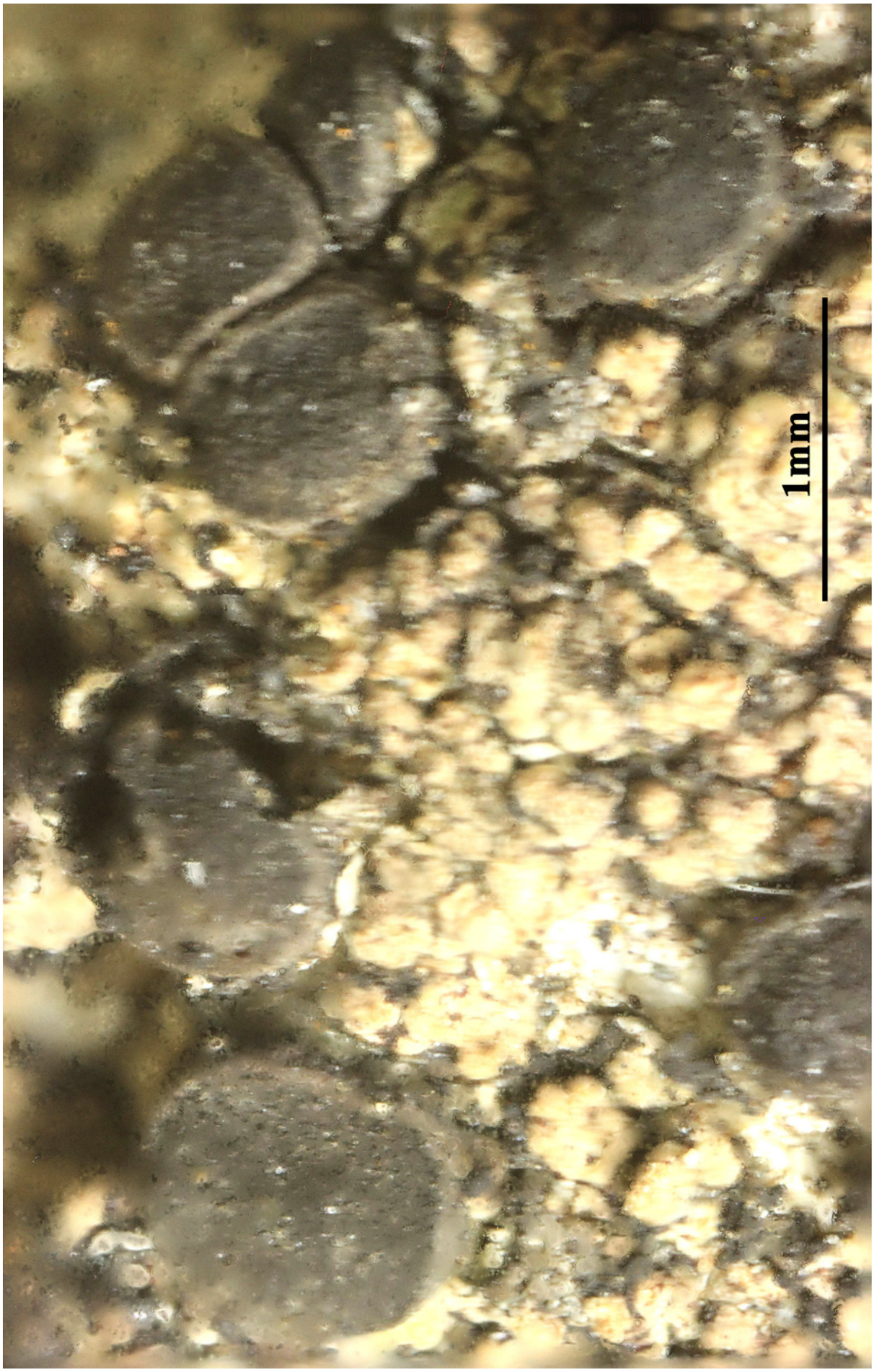
Haplocarpon nadvornikianum Vězda, Preslia 44(3): 209 (1972)
= *Porpidia nadvornikiana* (Vězda) Hertel, Beih. Nova Hedwigia 79: 437 (1984)

[VZ1060}, Bohemoslovacia. Moravia, Sudetes orient., distr. Šumperk, supra vicum Raškov loco " Vysoký kámen" dicto, 550 m. Ad rupem serpentinam. Leg. A. Vězda, 20.9.1970. - Isotypus. - Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1060.

Thallus crustose, episubstratic, poorly delimited, 0.2-0.5 mm thick, whitish grey to ash-grey, continuous to rimose, more rarely rimose-areolate, with initially papillate, later digitiform, 0.1-0.5 mm thick and 1-2 mm high, simple to rarely dichotomously branched isidia with an arachnoid medulla, leaving circular scars when they fall off. Algal layer thick; medulla very lax, I-. Apothecia not always present, lecideine, black-brown, circular in outline, 0.8-1.5(-2) mm across, adnate, with an initially flat, then strongly convex, grey-pruinose disc and a persistent to finally excluded, epruinose proper margin. Proper exciple well-developed, brown-black, paraplectenchymatous, the inner cells angular, 4-5 µm wide, those near the cortex subglobose and c. 10 µm wide; epithecium dark brown to greenish brown; hymenium colourless, 95-110 µm high; paraphyses strongly coherent, branched and anastomosing, c. 1.5 µm thick at med-level, the apical cells slightly swollen; hypothecium black. Asci 8-spored, elongate-clavate, with a thin, outer amyloid layer and a thickened tholus penetrated by a pore, the sides of which are strongly amyloid, Porpidia-type. Ascospores 1-celled, hyaline, ellipsoid to ovoid, (17-)18-20(-22) x (6-)8-9(-10) µm, halonate when young. Photobiont chlorococcoid. Spot tests: medulla K+ yellow, C-, KC-, P+ orange. Chemistry: stictic acid syndrome. - Note: a very rare species of ultramafic rocks, growing in humid situations such as along mountain creeks. Known from a few stations from the Carpathians to the mountains of Atlantic Spain; never found in the Alps.



Haplocarpon nadvornikianum



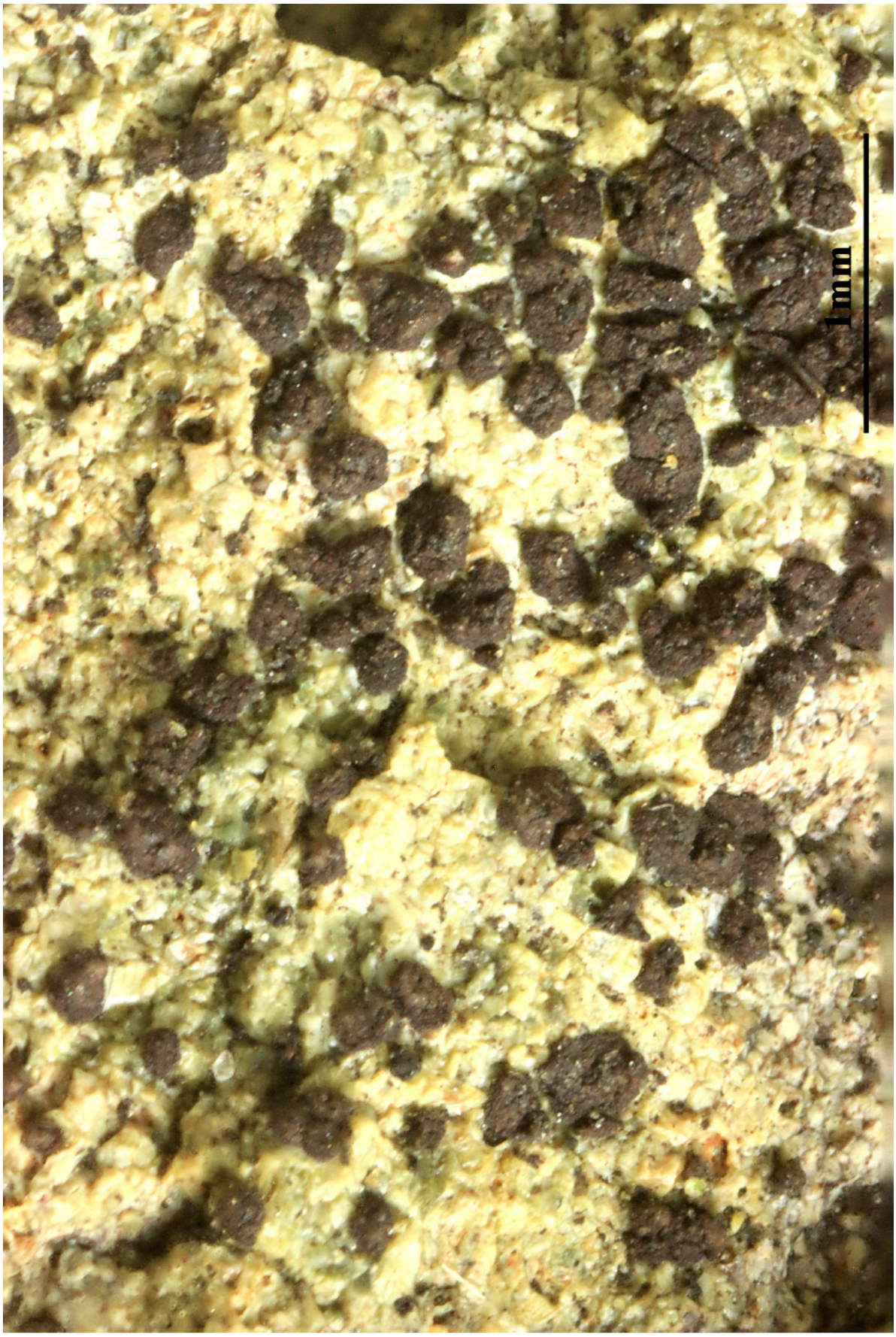
Haplocarpon nadvornikianum

Harpidium rutilans Flot. ex Körb., Syst. lich. germ. (Breslau): 157 (1855)

[VZ1065], Bohemoslovacia. Moravia austro-occident., in valle fluvii Jihlavja prope pagum Mohelno, 300 m. Ad saxa serpentinica. Leg. A. Vězda, 7.12.1971. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1065.

Thallus crustose, episubstratic, dark reddish brown, areolate, the areoles contiguous, angular, 0.2-0.5(-0.9) mm wide, the peripheral ones slightly elongate, up to 1.1 mm long, forming small, subplacodioid, up to 1 cm wide rosettes, without a distinct pro- or hypothallus. In section the thallus is homoiomerous and pseudoparenchymatous throughout, often overlain by a thin epinecral layer, 130-140 mm thick, the hyphae with more or less isodiametrical, 5-8 mm wide cells. Apothecia pycnoascocarps (developing from pycnidia), lecanorine-aspicilioid, 0.1-0.3 mm across, at first punctiform, then with an expanded disc, immersed in the areoles (usually 1 per areole) with a dark reddish brown, sometimes marginally slightly pruinose disc, and a very thin, finally often excluded thalline margin. Proper exciple poorly developed; epithecium pale reddish brown, K+ blue-purple, K/I+ blue; hymenium colourless, 40-50 mm high, K/I+ blue; paraphyses strongly moniliform, branched in upper part, the apical cells not swollen; hypothecium colourless, opaque, 40-45 mm thick. Asci 8-spored, subglobose, unitunicate-rostrate, the wall composed of an outer, non-expansible and an inner, expansible layer surrounding the protoplast as an amyloid collar, which expands during spore release into a long, tapering rostrum, the outer wall layer strongly amyloid. Ascospores 1-celled, hyaline, narrowly ellipsoid, reniform, allantoid to lunate, rarely shortly sigmoid, twisted in the asci, (8-)9.5-15(-17) x (3-)3.5–6(–6.5) μm. Photobiont chlorococcoid. Spot tests: thallus K+ blue-purple, C-, KC-, P-, UV-, I+ reddish. Chemistry: without lichen substances. - Note: on steeply inclined surfaces of siliceous rocks with periodical water seepage after rain, both in the Mediterranean Region and in dry-warm Alpine valleys; perhaps overlooked, but certainly not common.

Harpidium rutilans



Harpidium rutilans

Heppia reticulata (Nyl.) Nyl., Flora, Regensburg 61: 339 (1878)
= *Lecidea reticulata* Nyl. 1864
= *Heppia solorinoides* (Nyl.) Nyl. Syn. Meth. Lich., 2: 46, 1863.
= *Lecanora solorinoides* Nyl. - Mém. Soc. Sc. Nat. Cherbourg, 2: 323, 1854.

[VZ1553], Persia meridionalis. Bandar Abbas, in vicinitate pagu Isin. Ad terram. Leg. J. Soják, 28.4.1977, det. A. Vězda. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1553.

Thallus squamulose, brownish under a thick white layer of clustered crystals (pruina) which tends to accumulate in areolate patches, giving the surface a reticulate appearance. Squamules (2-)3-7 mm broad, 300-400 µm thick, elongate, at first flat, then concave, contiguous, with rounded ends and up-turned, undulate edges, attached by a mat of rhizohyphae. Upper cortex paraplectenchymatous, 35-75 µm thick, overlain by a 15-25 µm thick epinecral layer; medulla 60-100 µm thick, paraplectenchymatous; lower cortex 25-30 µm thick, paraplectenchymatous, hardly differentiated from the medulla. Apothecia frequent, without a thalline margin, semi-immersed in the squamules, 0.5-1.5(-2.5) mm across, with a reddish brown, at first concave, then flat disc. Proper exciple poorly developed: epithecium orange-brown, K-; hymenium colourless, 150-200 µm high; paraphyses mostly simple, lax, distinctly thickened above; hypothecium colourless. Asci 8-spored, cylindrical to obovoid, with a very thin wall disintegrating or opening by apical ruptures, Lichina-type. Ascospores 1-celled, hyaline, ellipsoid, thin-walled, 16-26(-29) x (6-)8-12(-13) µm. Pycnidia dark, immersed. Conidia bacilliform. Photobiont cyanobacterial, Scytonema-like. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. -Note: on clay or sandy-clay soil, restricted to very dry grasslands in Mediterranean Italy.

Heppia reticulata

Heppia reticulata

Heterodermia boryi (Fée) Kr.P. Singh & S.R. Singh, Geophytology 6(1): 33 (1976)

= *Borrera boryi* Fée 1825

= *Leucodermia boryi* (Fée) Kalb, in Mongkolsuk, Meesim, Poengsungnoen, Buaruang, Schumm & Kalb, Phytotaxa 235(1): 34 (2015)

[VZ1421], India. Tamil Nadu. Montes Nigiri,prope Gudalur, 1800 m. Ad terram. Leg. M. E. Hale, 6.11.1973. Ex A. Vězda Lichenes Selecti Exsiccati Nr. !421.

Thallus foliose to subfruticose, often in loose rosettes or forming tangled mats, loosely adnate or, in part, unattached, 5–15 cm wide. Lobes 0.4–3.0 mm wide, separate, ± plane, linear-elongate, ribbon-like, tangled, dichotomously branched, often ascending at the apices or, occasionally, the apices reflexed or with circinately revolute tips to the distal lobes, with conspicuous gray to black simple or sparingly branched marginal rhizines, 5–15 mm long. Upper surface ivory to gray-white, smooth. Medulla white. Lower surface mostly ecorticate, canaliculate, arachnoid or powdery, but not sorediate, white throughout or partially pinkish brown or rarely purple; yellow picgments absent; lower margins thickened, corticated. Apothecia ± common, subapical to apical, substipitate to distinctly stipitate, 1–5 mm wide; margin crenulate to lobulate, lobules triangular, to 2 mm long, often with sparse short black cilia; disc concave, dark brown, ± distinctly white-pruinose. Ascospores Polyblastidia-type, ellipsoidal, with numerous small and/or large sporoblastidia, 35–53 × 18–25 μm. Pycnidia rare, immersed, visible as black dots; conidia bacilliform, 4–5 × 1 μm. Chemistry: Cortex K+ yellow, C–, KC–, P+ yellow; medulla K+ yellow, C–, P– or P+ pale yellow; containing atranorin (major), zeorin (major) and japonene (minor or trace). Distribution and habitat:—This species occurs on bark and more rarely on mossy rocks in hill evergreen forest and lower montane forest; it is widespread in tropical to warm temperate regions.

Heterodermia boryi

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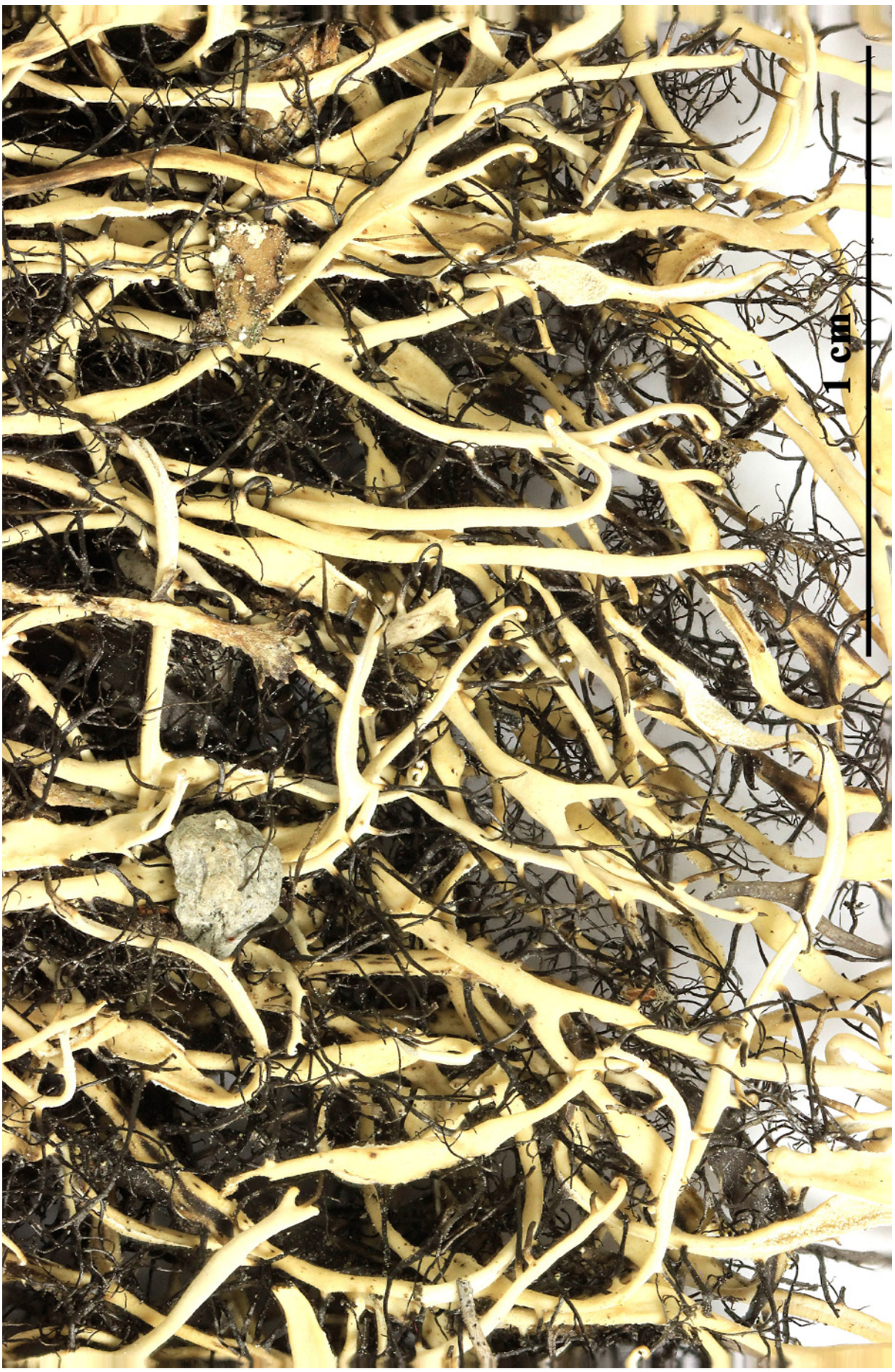
= *Borrera boryi* Fée 1825

= *Leucodermia boryi* (Fée) Kalb, in Mongkolsuk, Meesim, Poengsungnoen, Buaruang, Schumm & Kalb, Phytotaxa 235(1): 34 (2015)

[VZ2245], Aequatoria. Imbabura: Prope lacum dictum Lago Cuicocha, 3400 . Ad terram et rupes in aprico secus viam. Leg. W. L. Culberson (no. 20267) et C. F. Culberson, 20.8.1987. - Annot.: Atranorin and zeorin by TLC, anal. : C. F. Culberson et A. Johnson. EX A. VěZDA LICHENES SELECTI EXSICCATIA NR. 2245.

Thallus foliose to subfruticose, often in loose rosettes or forming tangled mats, loosely adnate or, in part, unattached, 5–15 cm wide. Lobes 0.4–3.0 mm wide, separate, ± plane, linear-elongate, ribbon-like, tangled, dichotomously branched, often ascending at the apices or, occasionally, the apices reflexed or with circinately revolute tips to the distal lobes, with conspicuous gray to black simple or sparingly branched marginal rhizines, 5–15 mm long. Upper surface ivory to gray-white, smooth. Medulla white. Lower surface mostly ecorticate, canaliculate, arachnoid or powdery, but not sorediate, white throughout or partially pinkish brown or rarely purple; yellow picgments absent; lower margins thickened, corticated. Apothecia ± common, subapical to apical, substipitate to distinctly stipitate, 1–5 mm wide; margin crenulate to lobulate, lobules triangular, to 2 mm long, often with sparse short black cilia; disc concave, dark brown, ± distinctly white-pruinose. Ascospores Polyblastidia-type, ellipsoidal, with numerous small and/or large sporoblastidia, 35–53 × 18–25 μm. Pycnidia rare, immersed, visible as black dots; conidia bacilliform, 4–5 × 1 μm. Chemistry: Cortex K+ yellow, C–, KC–, P+ yellow; medulla K+ yellow, C–, P– or P+ pale yellow; containing atranorin (major), zeorin (major) and japonene (minor or trace). Distribution and habitat:—This species occurs on bark and more rarely on mossy rocks in hill evergreen forest and lower montane forest; it is widespread in tropical to warm temperate regions.



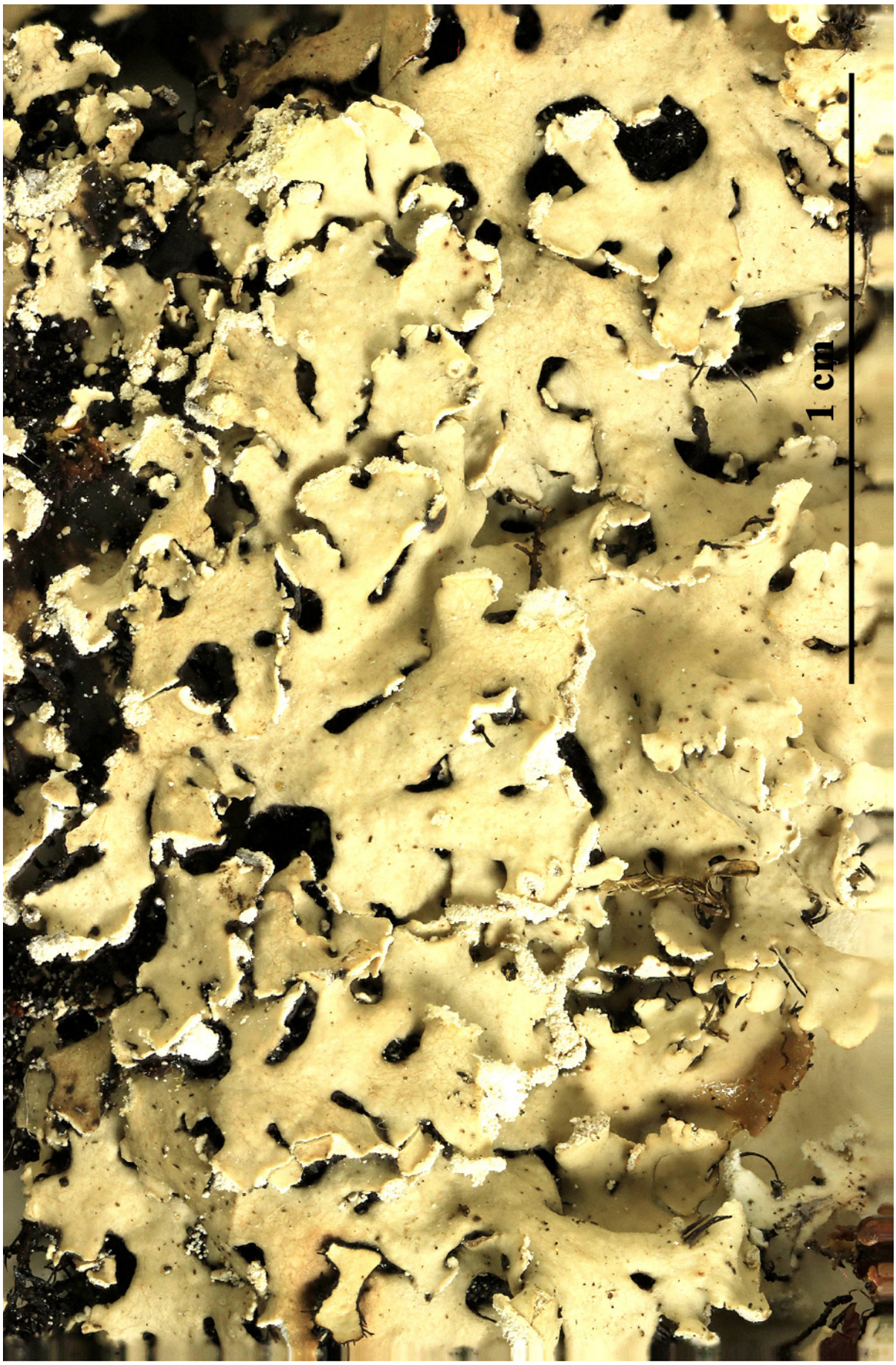
Heterodermia boryi

Heterodermia boryi

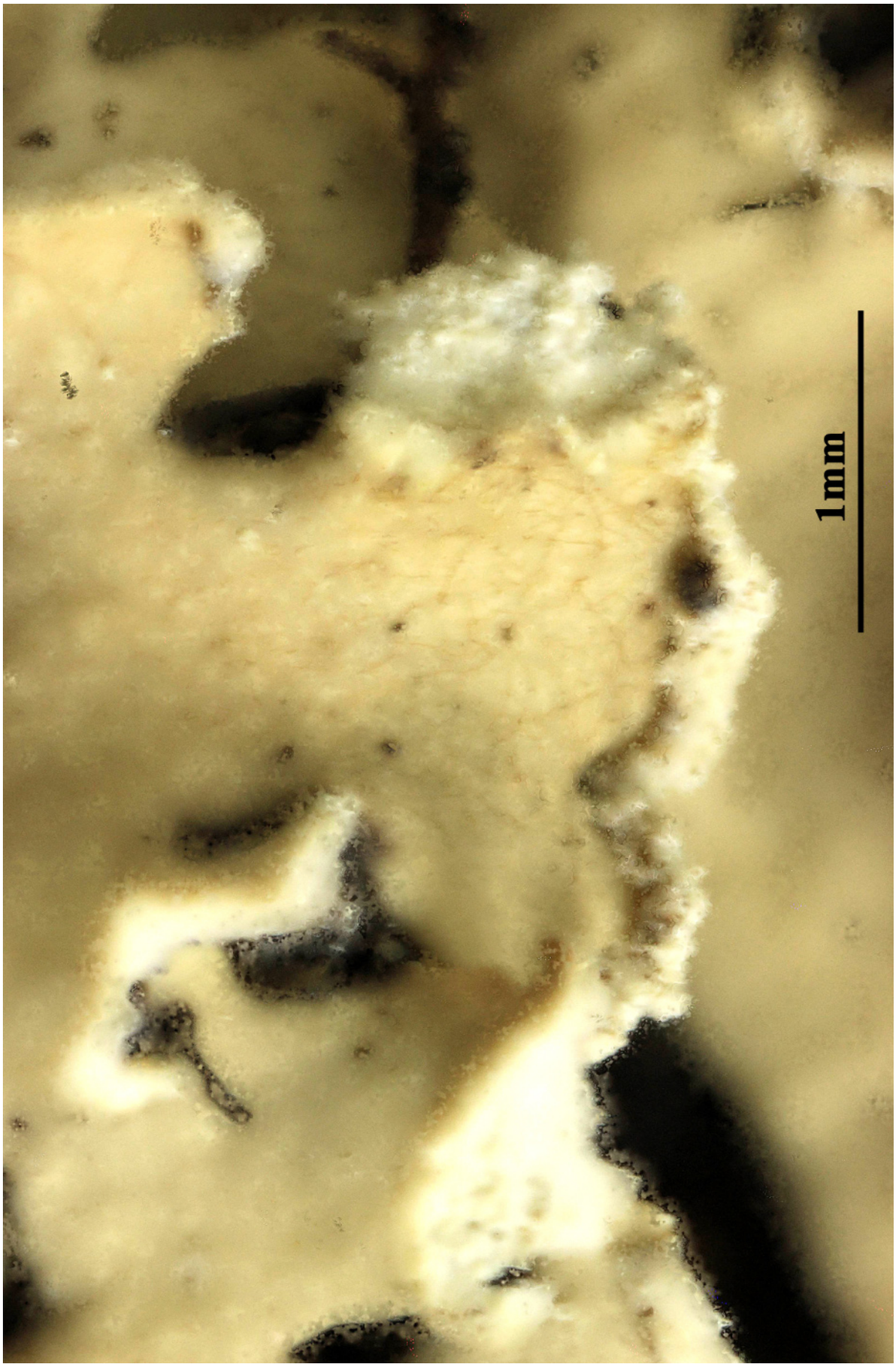
Heterodermia obscurata (Nyl.) Trevis., Nuovo G. bot. ital. 1(2): 114 (1869)
= *Physcia speciosa* subsp. *obscurata* Nyl. 1863

[VZ1147], Gallia,Pyrenaei occidentales, montes Ossau, Pé-de-Hourat, in valle Baset, in declivibus septentrionalibus montis Moncaut, 650 m. Ad saxa basaltica. Leg. J. Vivant, 12.12.1972, det. A. V ězda. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1147.

Thallus foliose, heteromerous, dorsiventral, narrow-lobed, loosely attached, forming irregular to orbicular, up to 5 cm wide rosettes. Lobes sublinear-elongate, radiating, widening towards the ascending lobe-tips, c. 2-3(-4) mm wide at tips, sometimes with lobules along the margins. Upper surface white to cream-coloured, glaucous when moist, sometimes pruinose at tips, with labriform soralia on lateral or terminal lobes. Lower surface white, arachnoid, spotted with an orange-red pigment, with marginal, simple or squarrosely branched, black, 1-3(-7) mm long rhizines. Upper cortex paraplectenchymatous; medulla white; lower cortex absent. Apothecia extremely rare, lecanorine, with a dark brown disc and a usually crenulate thalline margin. Epithecium brown; hymenium and hypothecium colourless. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-septate, brown, broadly ellipsoid, 21-31 x 12-17 µm, Pachysporaria-type. Photobiont: chlorococcoid. Spot tests: cortex and medulla K+ yellow, C-, KC-, P- or P+ pale yellow; orange spots on lower surface K+ purple-violet. Chemistry: cortex with atranorin and chloroatranorin, medulla with zeorin, 6α-acetoxyhopane-16β,22-diol, and 7-chloroemodin. - Note: a mild-temperate species found on more or less isolated trees, occasionally on epilithic mosses.



Heterodermia obscurata

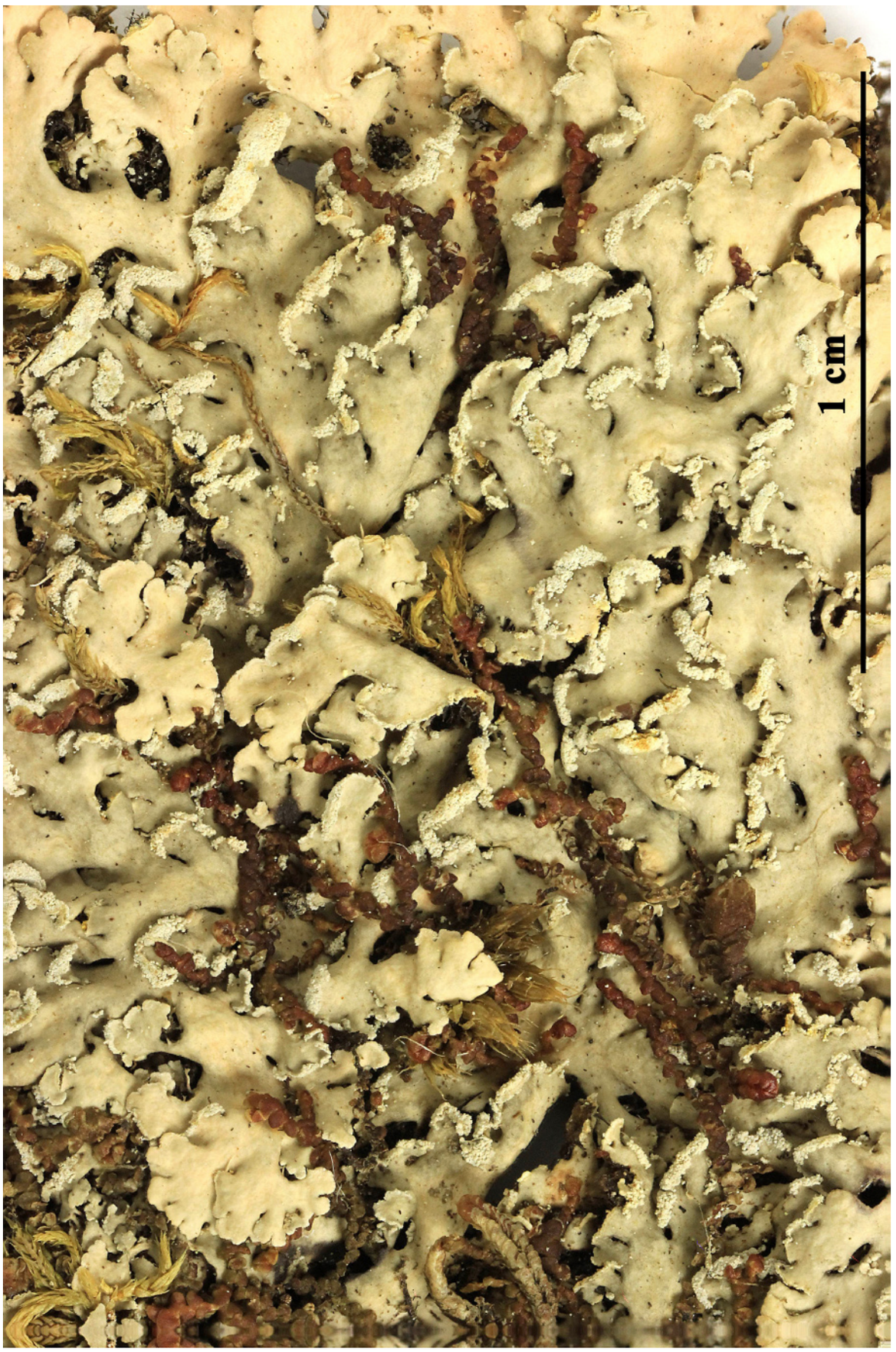


Heterodermia obscurata

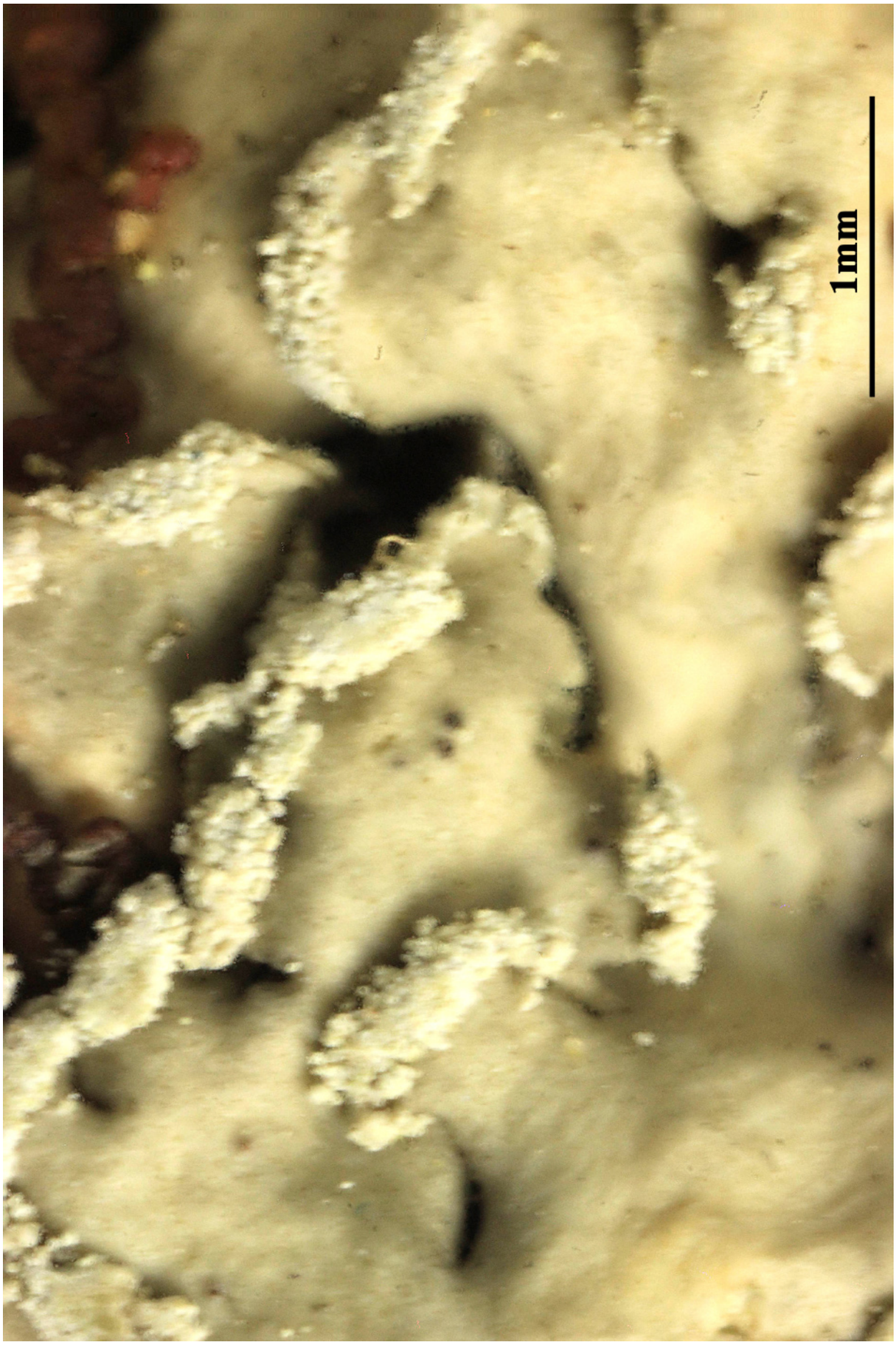
Heterodermia obscurata (Nyl.) Trevis., Nuovo G. bot. ital. 1(2): 114 (1869)
= *Physcia speciosa* subsp. *obscurata* Nyl. 1863

[VZ1681], Italia. Liguria. Prov. La Spezia, inter Corniglia et San Bernhardino, 150 m. Ad truncum (*Olea europaea*). Leg. M. Steiner. 28.4.1966. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1681.

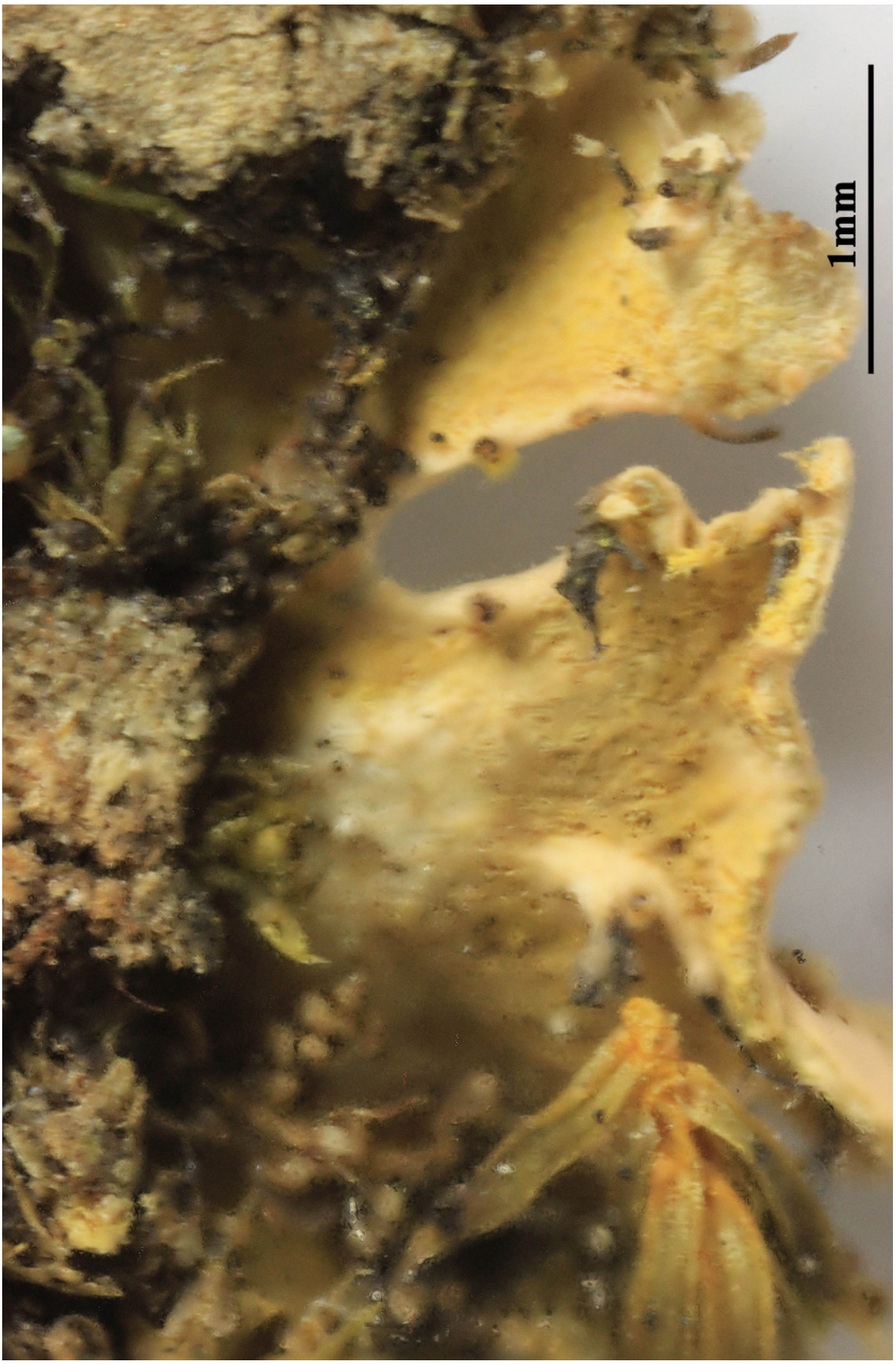
Thallus foliose, heteromerous, dorsiventral, narrow-lobed, loosely attached, forming irregular to orbicular, up to 5 cm wide rosettes. Lobes sublinear-elongate, radiating, widening towards the ascending lobe-tips, c. 2-3(-4) mm wide at tips, sometimes with lobules along the margins. Upper surface white to cream-coloured, glaucous when moist, sometimes pruinose at tips, with labriform soralia on lateral or terminal lobes. Lower surface white, arachnoid, spotted with an orange-red pigment, with marginal, simple or squarrosely branched, black, 1-3(-7) mm long rhizines. Upper cortex paraplectenchymatous; medulla white; lower cortex absent. Apothecia extremely rare, lecanorine, with a dark brown disc and a usually crenulate thalline margin. Epithecium brown; hymenium and hypothecium colourless. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-septate, brown, broadly ellipsoid, 21-31 x 12-17 µm, Pachysporaria-type. Photobiont: chlorococcoid. Spot tests: cortex and medulla K+ yellow, C-, KC-, P- or P+ pale yellow; orange spots on lower surface K+ purple-violet. Chemistry: cortex with atranorin and chloroatranorin, medulla with zeorin, 6α-acetoxyhopane-16β,22-diol, and 7-chloroemodin. - Note: a mild-temperate species found on more or less isolated trees, occasionally on epilithic mosses.



Heterodermia obscurata



Heterodermia obscurata

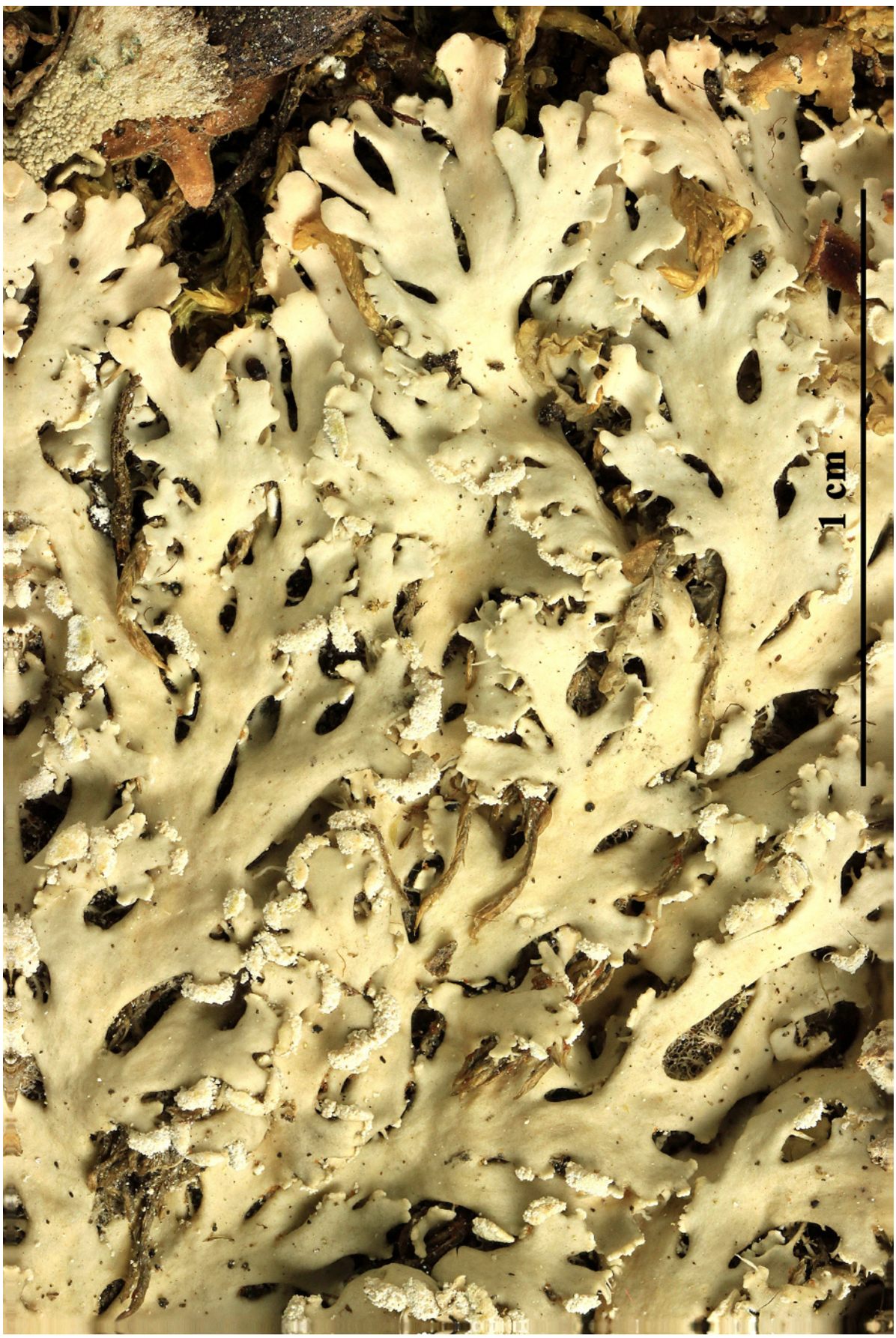


Heterodermia obscurata

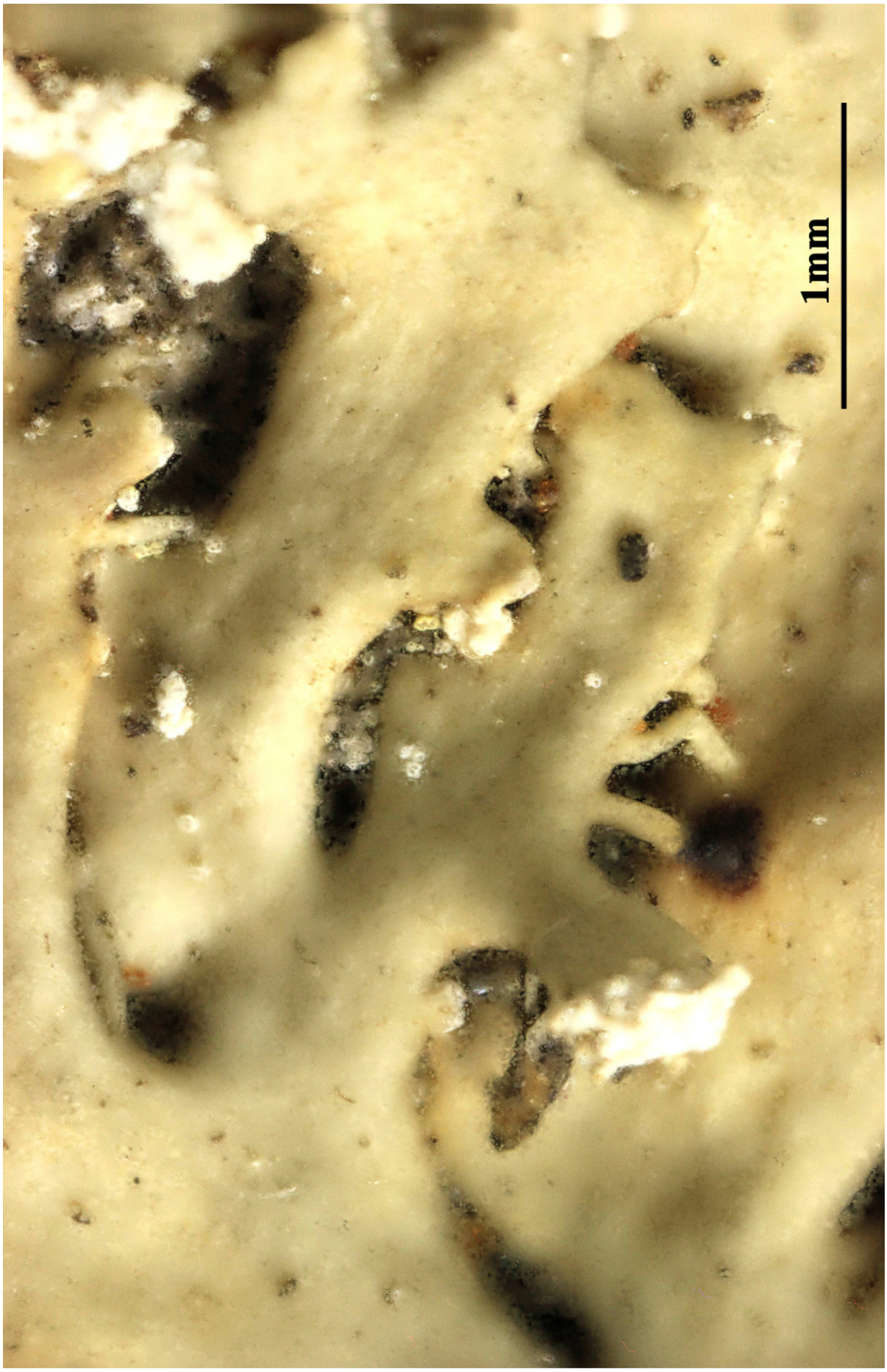
Heterodermia speciosa (Wulfen) Trevis., Atti Soc. ital. Sci. nat. 11: 614 (1868)
= *Lichen speciosus* Wulfen 1791

[VZ1743], URSS. Caucasus Magnus, regio montis Elbrus, Verch, Baksan, in valle torrentis Adyrsu, 1900 m. Supra muscos ad saxa in ripa torrentis. Leg. A. Vězda, 25.6.1980. Ex A. Veěda Lichenes Selecti Exsiccati Nr.1743.

Thallus foliose, heteromerous, dorsiventral, narrow-lobed, adpressed, forming orbicular to irregular, 2-3(-4) cm wide rosettes, often coalescing with other thalli forming larger colonies. Lobes linear-elongate, dichotomously branched, (0.5-)1-2 mm wide, flat to slightly convex, slightly widening towards apices, with or without pale marginal cilia. Upper surface ivory white to cream-coloured, the lobe-tips sometimes darkening, with grey to bluish grey soredia in labriform soralia at the tip of lateral lobes. Lower surface white to tan, with a few, scattered, short and robust, usually black rhizines. Upper cortex prosoplectenchymatous; medulla white; lower cortex prosoplectenchymatous. Apothecia extremely rare in European material, lecanorine, 3-8 mm across, with a dark brown disc and a crenulate 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-septate, brown, ellipsoid, (25-)30-37 x (12-)14-18 µm, Pachysporaria-type. Pycnidia very rare, black, immersed. Conidia bacilliform. Photobiont chlorococcoid. Spot tests: cortex K+ yellow, C-, KC-, P+ pale yellow; medulla K+ yellow, C-, KC-, P-. Chemistry: cortex with atranorin and chloroatranorin; medulla with atranorin, zeorin and an unidentified triterpene. - Note: a temperate species found on bark, epiphytic bryophytes, sometimes on mossy rocks in humid, mostly montane woodlands.



Heterodermia speciosa



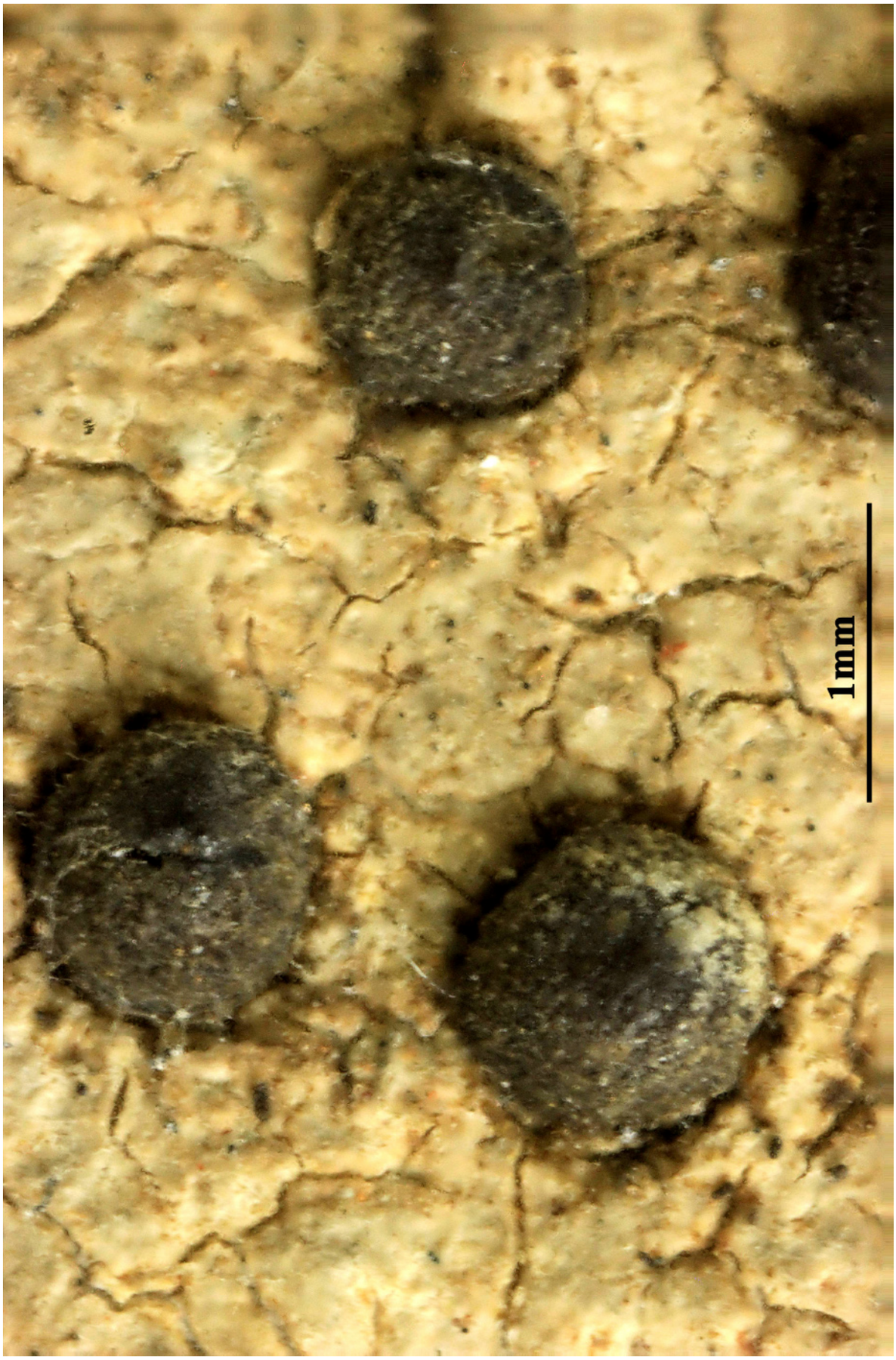
Heterodermia speciosa

Huilia circumnigrata Vězda, Folia geobot. phytotax. 14(2): 205 (1979)
= *Porpidia circumnigrata* (Vězda) Knežević & Mayrhofer, Phyton, Horn 48(2): 310 (2008)
= *Porpidia crustulata* (Ach.) Hertel & Knoph

[VZ1665], Jugoslavia. Montenegro. Sinus Kotor dictus, supra pagum Morin, 50 m. Ad saxa quarzitica. Leg. A. Vězda, 18.7.1975. - Isotypus. - EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1665.

Thallus crustose, endolithic or thinly epilithic, continuous to rimose-areolate, white, yellowish white, or pale grey, rarely ochre-coloured, sometimes delimited by a dark prothallus. Medulla white, I-. Apothecia lecideine, more or less round, sometimes clustered, slightly constricted at base, 0.3-0.8(-1.5) mm across, with a black, slightly concave to convex, usually epruinose disc, and a more or less persistent, usually entire, thin (0.07-0.17 mm wide), barely raised proper margin. Proper exciple black to dark brown in outer part, pale brown and K+ yellow (rarely K-) within, with 4-8 µm wide hyphae; epithecium brown or olivaceous brown; hymenium colourless, 60-90(-110) µm high, I+ blue; paraphyses weakly branched and anastomosing; hypothecium pale to usually dark brown. Asci 8-spored, elongate-clavate, with a thin, outer amyloid layer and a thickened tholus penetrated by a pore, the sides of which are strongly amyloid, Porpidia-type. Ascospores 1-celled, hyaline, ellipsoid, 10-18(-22) x 5-10 µm, not halonate. Pycnidia immersed. Conidia hyaline, bacilliform, 9-14 x c. 1 µm. Photobiont chlorococcoid. Spot tests: thallus K- or K+ yellow, C-, KC-, P- or P+ orange. Chemistry: stictic acid (major), constictic, norstictic and cryptostictic acids (all minor or trace), or without lichen substances.

Huilia circumnigrata



Huilia circumnigrata

Hydrothyria venosa J.L. Russell, Proc. Essex Inst. 1: 188 (1856)
= *Peltigera hydrothyria* Miądl. & Lutzoni, Int. J. Pl. Sci. 161(6): 949 (2000)

[VZ1555], Canada. Columbia britannica: Black Rusk area, Garibaldi Provicial Park, 40 km septentrionem versus a Vancouver. Ad saxa et limum in rivulo pratense in regione subalpine. Leg. W. J. Noble et A. Crane (no. 6351A). Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1555.

Thallus foliose, 2-8 cm wide. Lobes semi-erect, fan-shaped, 3-10 mm wide. Upper surface brownish, greenish or bluish black, smooth or covered with blackish warts, 0.1-0.3 mm wide. Vegetative diapsores absent. Lower surface with pale, branched veins. Thallus not stratified; photobiont Nostoc cyanobacteria.Ascomata biatorine apothecia, frequent, submarginal, 0.7-3.0 mm diam.; disk orange to brownish, convex. Asci 8-spored; ascospores hyaline, clavate-fusiform, 4-celled, 24-29-33 x 6.6-7.2-7.8 µm. Chemistry. Spot tests negative; methyl gyrophorate, methyl lecanorate detected by HPLC. Substrate and habitat. Aquatic, saxicolous in high quality streams (cool, clear, silt-free) with rocky beds in partly shaded environments.

Hydrothyria venosa

Hydrothyria venosa

Hydrothyria venosa

Hydrothyria venosa J.L. Russell, Proc. Essex Inst. 1: 188 (1856)
= *Peltigera hydrothyria* Miądl. & Lutzoni, Int. J. Pl. Sci. 161(6): 949 (2000)

[VZ1727], USA. Tennesee. Sevier County. Appalachian Mountains, Great Smoky Mountains National Park, Chimney Tops, in rivo Road Prong. Ad rupem in rivo submersum. Leg. P. D. Jonathan, 24.5.1979. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1727.

Thallus foliose, 2-8 cm wide. Lobes semi-erect, fan-shaped, 3-10 mm wide. Upper surface brownish, greenish or bluish black, smooth or covered with blackish warts, 0.1-0.3 mm wide. Vegetative diapsores absent. Lower surface with pale, branched veins. Thallus not stratified; photobiont Nostoc cyanobacteria.Ascomata biatorine apothecia, frequent, submarginal, 0.7-3.0 mm diam.; disk orange to brownish, convex. Asci 8-spored; ascospores hyaline, clavate-fusiform, 4-celled, 24-29-33 x 6.6-7.2-7.8 µm. Chemistry. Spot tests negative; methyl gyrophorate, methyl lecanorate detected by HPLC. Substrate and habitat. Aquatic, saxicolous in high quality streams (cool, clear, silt-free) with rocky beds in partly shaded environments.

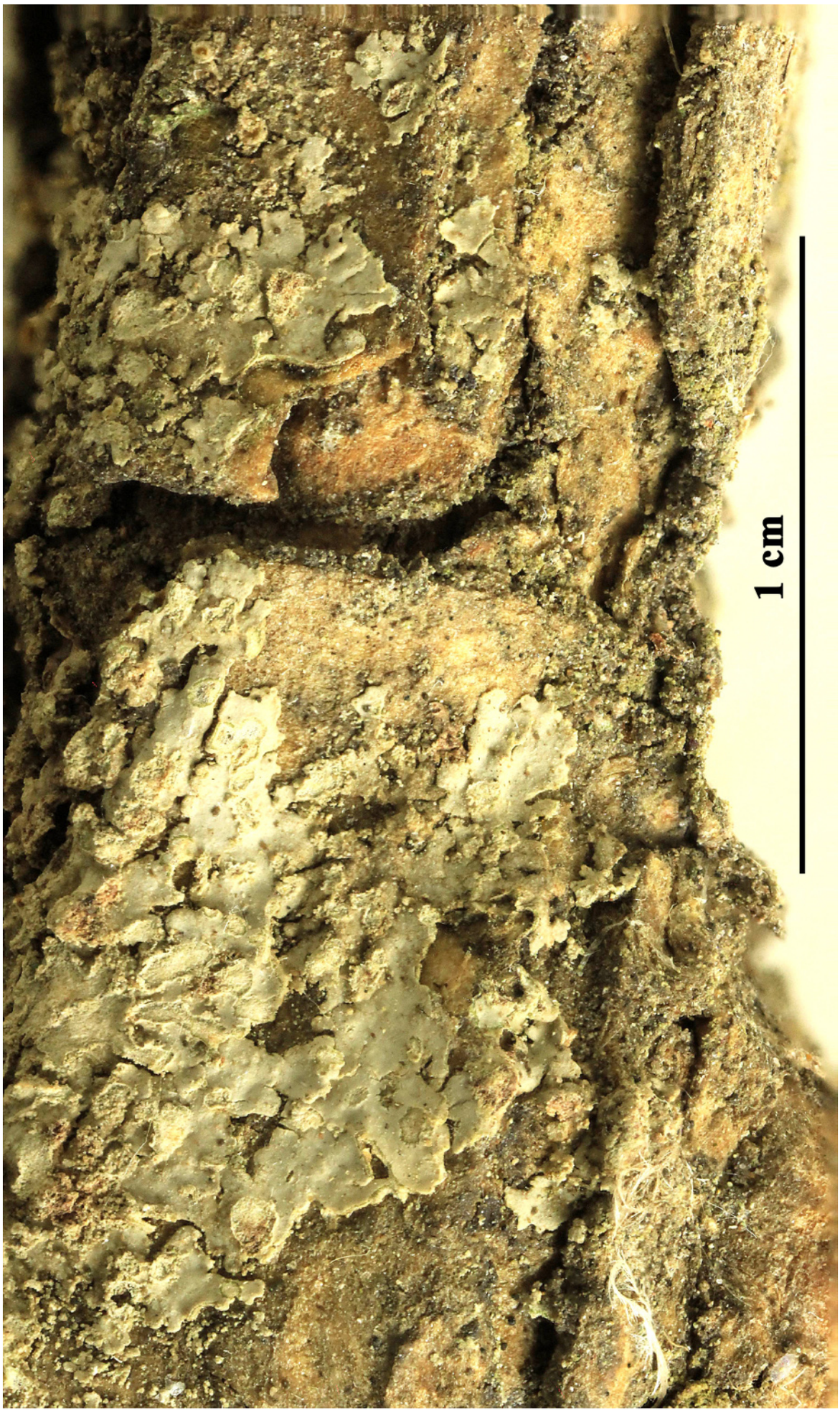
Hydrothyria venosa

Hydrothyria venosa

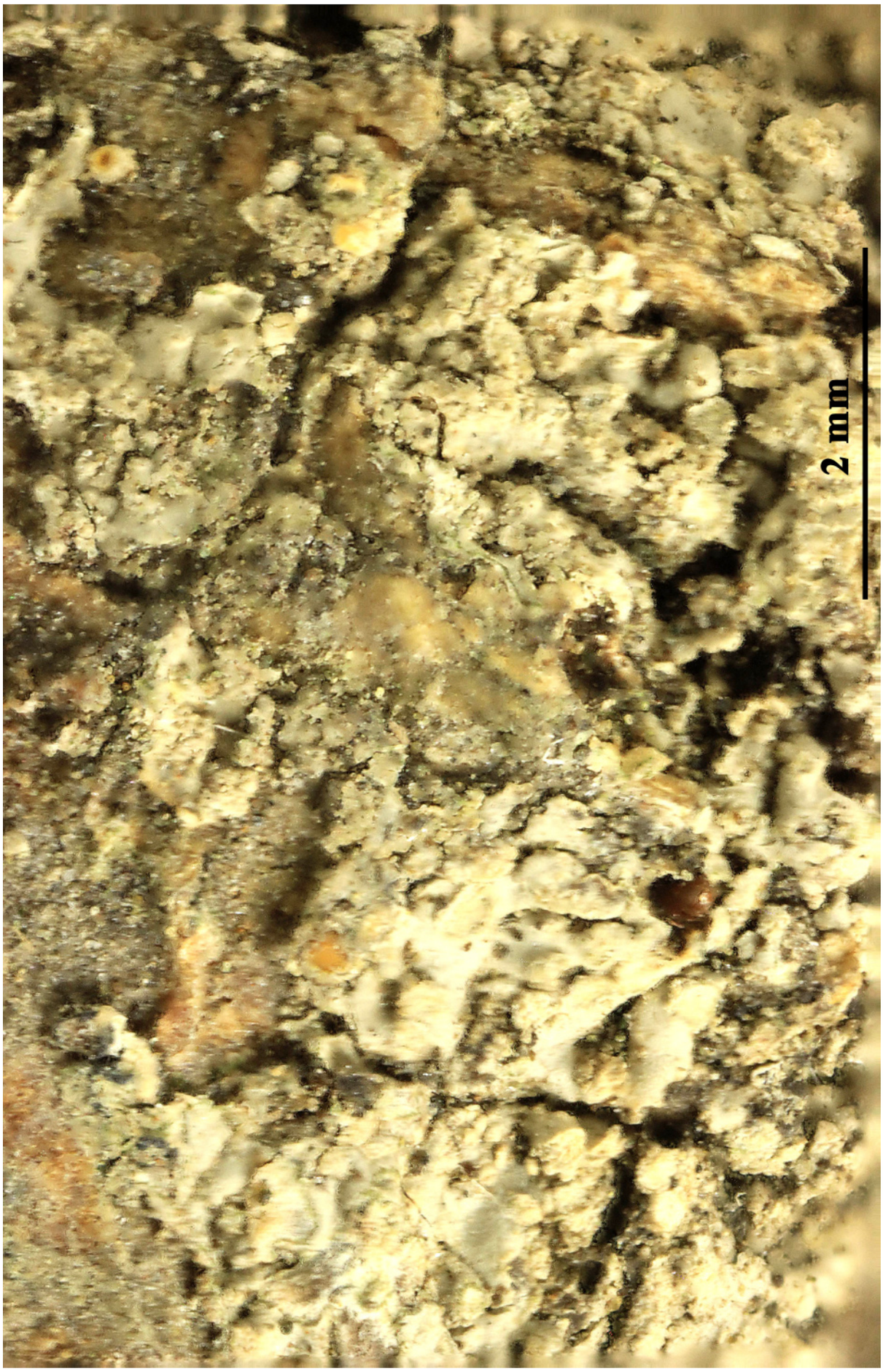
Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt, in Hafellner, Mayrhofer & Poelt, Herzogia 5(1-2): 62 (1979)
= *Lecanora adglutinata* Flörke 1819
= *Anaptychia obscura auct.* var. *lecanorina* A. Massal.
= *Physcia adglutinata* (Flörke) Nyl.
= *Physciopsis adglutinata* (Flörke) M. Choisy

[VZ1841], Nova Zelandia. South Island, Otago, Tikoragi point prope Hampden, 45°22' austr., 170°52' orient. Ad ramulos *Lyciijerocissimi* in litore. Leg. et det. L. Tibell (no. 10813), 10.11.1981. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1841.

Thallus foliose to subcrustose, heteromerous, dorsiventral, narrow-lobed, very tightly adnate, at first forming orbicular, up to 2 cm wide rosettes, but often adjacent thalli becoming confluent and covering larger surfaces. Lobes 0.2-0.4(-0.7) mm wide, at first radiating, then irregularly spreading, flat, grey-brown to dark brown, epruinose or weakly pruinose, with laminal, maculiform, at first rounded then confluent soralia. Lower surface dark in central part, pale at margins, erhizinate or with very few hapters, ecorticate except at lobe tips. Upper cortex paraplectenchymatous; medulla white; lower cortex (when developed at lobe-tips) prosoplectenchymatous. Apothecia rare, c. 1 mm across, lecanorine, with a dark brown to black disc and a persistent thalline margin. Epithecium pale brown; hymenium colourless, I+ blue; paraphyses usually branched in upper part, the apical cells clavate, with a thin dark cap; hypothecium colourless to pale yellowish brown. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-septate, brown, ellipsoid, (13-)15-18(-23) x 7-11 µm, with unequally thickened walls, often poorly developed. Pycnidia rather rare, immersed, with black, weakly projecting tips. Conidia thread-like, (11-)15-20(-22) x 0.5-1 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a widespread mild-temperate species, common throughout Italy on isolated, mostly deciduous trees with nutrient-rich or -enriched bark, also in areas with intensive agriculture.



Hyperphyscia adglutinata

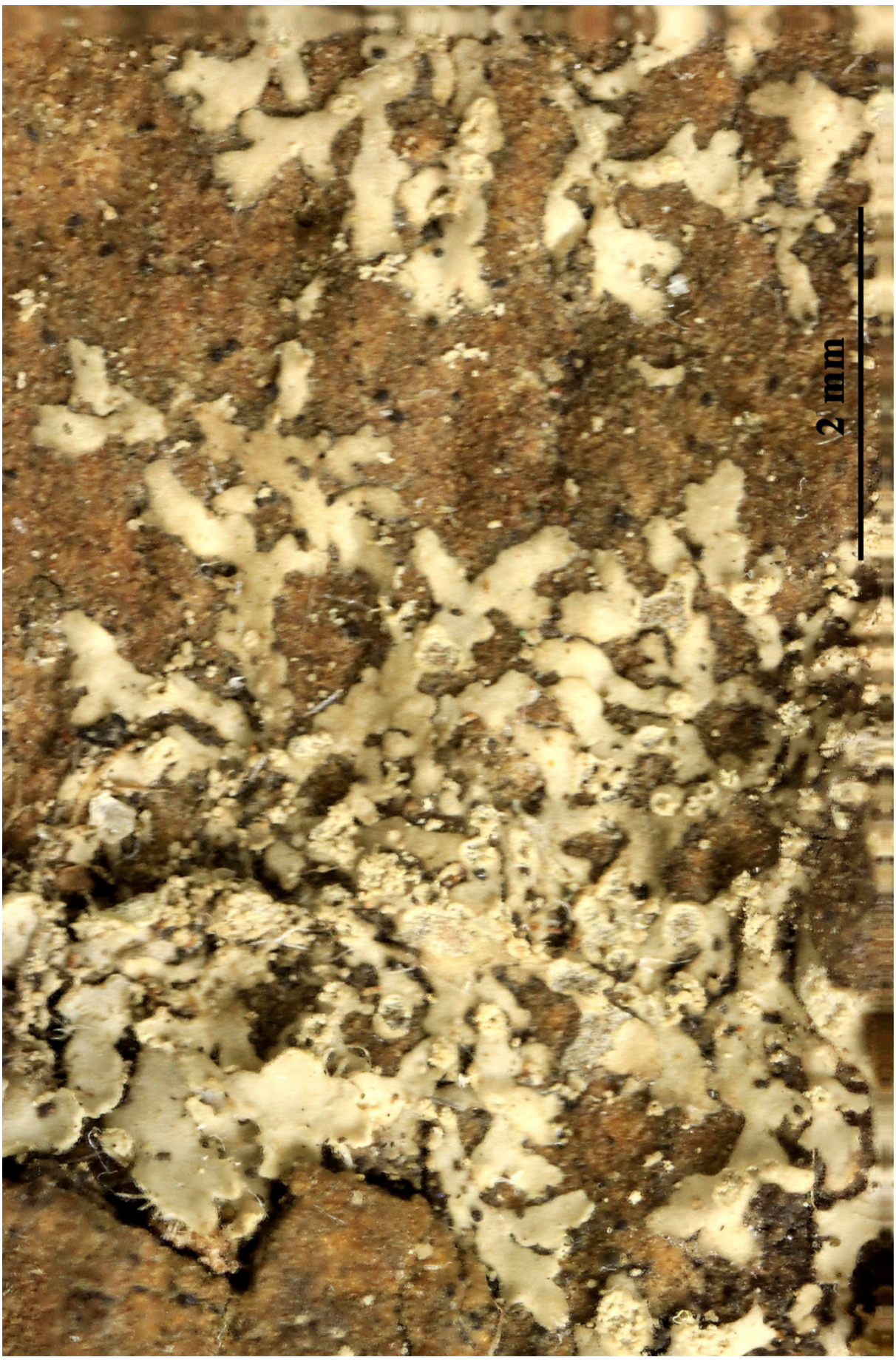


Hyperphyscia adglutinata

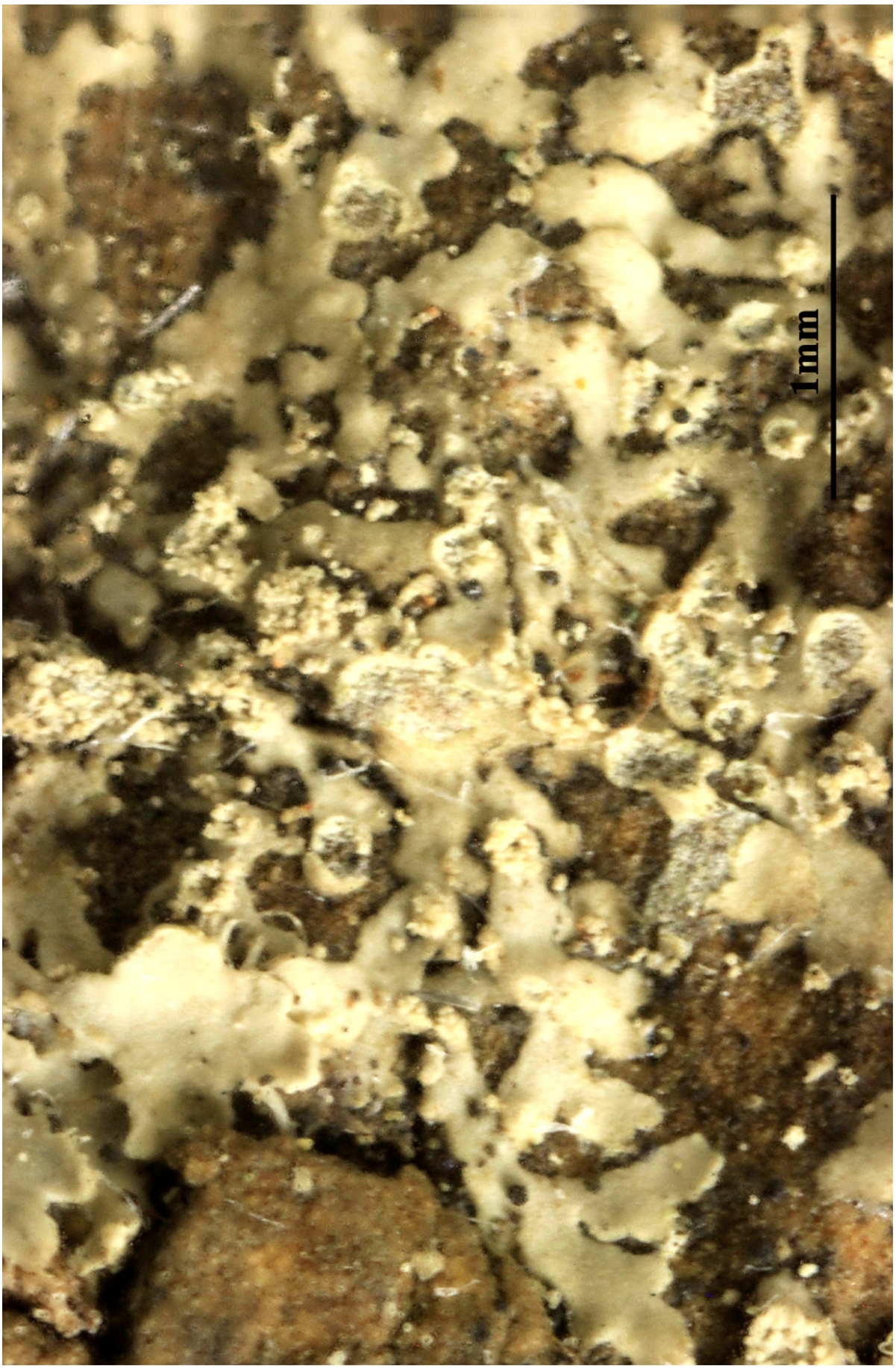
Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt, in Hafellner, Mayrhofer & Poelt, Herzogia 5(1-2): 62 (1979)
= *Lecanora adglutinata* Flörke 1819
= *Anaptychia obscura auct.* var. *lecanorina* A. Massal.
= *Physcia adglutinata* (Flörke) Nyl.
= *Physciopsis adglutinata* (Flörke) M. Choisy

[VZ1718], URSS. Transcaucasia. Colchis, distr. Gagra, in urbe Gagra, 10 m. Ad truncum arboris (*Platanus*). Leg, V, Vašák et A. V ězda, 13.6.1978. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1718.

Thallus foliose to subcrustose, heteromerous, dorsiventral, narrow-lobed, very tightly adnate, at first forming orbicular, up to 2 cm wide rosettes, but often adjacent thalli becoming confluent and covering larger surfaces. Lobes 0.2-0.4(-0.7) mm wide, at first radiating, then irregularly spreading, flat, grey-brown to dark brown, epruinose or weakly pruinose, with laminal, maculiform, at first rounded then confluent soralia. Lower surface dark in central part, pale at margins, erhizinate or with very few hapters, ecorticate except at lobe tips. Upper cortex paraplectenchymatous; medulla white; lower cortex (when developed at lobe-tips) prosoplectenchymatous. Apothecia rare, c. 1 mm across, lecanorine, with a dark brown to black disc and a persistent thalline margin. Epithecium pale brown; hymenium colourless, I+ blue; paraphyses usually branched in upper part, the apical cells clavate, with a thin dark cap; hypothecium colourless to pale yellowish brown. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-septate, brown, ellipsoid, (13-)15-18(-23) x 7-11 µm, with unequally thickened walls, often poorly developed. Pycnidia rather rare, immersed, with black, weakly projecting tips. Conidia thread-like, (11-)15-20(-22) x 0.5-1 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a widespread mild-temperate species, common throughout Italy on isolated, mostly deciduous trees with nutrient-rich or -enriched bark, also in areas with intensive agriculture.



Hyperphyscia adglutinata



Hyperphyscia adglutinata

Hypocenomyce anthracophila (Nyl.) P. James & Gotth. Schneid., in Schneider, Biblthca Lichenol. 13: 81 (1980) [1979]
= Carbonicola anthracophila (Nyl.) Bendiksby & Timdal, Taxon 62(5): 950 (2013)
= *Lecidea anthracophila* Nyl. 1865

[VZ1871], Suecia. Värmland: Fryksände, Bredan, 200 m. Ad lignum ab ignibus carbonisatum, in silva pineali. Leg. S. W. Sundell (no, 24259), 8.9.1980. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1871.

Thallus squamulose grey-green, greenish brown to medium brown, shiny, sorediate. Squamules up to 0.8(-1.3) mm wide, ascending, geotropically oriented, at first weakly concave or flat, later convex, with a slightly upturned, whitish to pale brown, sorediate margin, the soredia grey, farinose to granular, arranged in marginal, labriform soralia. Cortex up to 130 µm thick (including an up to 70 µm thick epinecral layer), of thick-walled hyphae with very narrow lumina; medulla white, I-. Apothecia rare, lecideine to biatorine, up to 0.8(-1.3) mm across, mainly marginal or developing on the underside of squamules, with a reddish brown to brown, convex, epruinose disc, and an entire, more or less prominent, soon excluded proper margin. Proper exciple of closely conglutinated, thin-walled hyphae with ellipsoid to short-cylindrical lumina, pale brown in outer part, colourless in inner part, without crystals, K-, N-; epithecium brown, K-, N-; hymenium colourless, 40-50 µm high; paraphyses sparingly branched and anastomosing, 2-2.5 µm thick at mid-level, the apical cells swollen and dark-capped; hypothecium colourless. Asci 8-spored, clavate, without an apical amyloid cap, with a well-developed, amyloid tholus containing a deeper amyloid tube. Ascospores 1-celled to (rarely) 1-septate, hyaline, narrowly ellipsoid to fusiform, 7-13 x 1.5-2.5 µm. Pycnidia sessile, black, mostly marginal, with a brown wall, N-. Conidia thread-like, slightly curved, 6.5-12.5 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P+ red, UV-; soralia and medulla KC+ purple, UV+ blue-white. Chemistry: fumarprotocetraric acid, protocetraric acid, colensoic acid, 4-O-methylphysodic acid and related compounds. - Note: a circumboreal-montane lichen found on charred wood in upland areas.

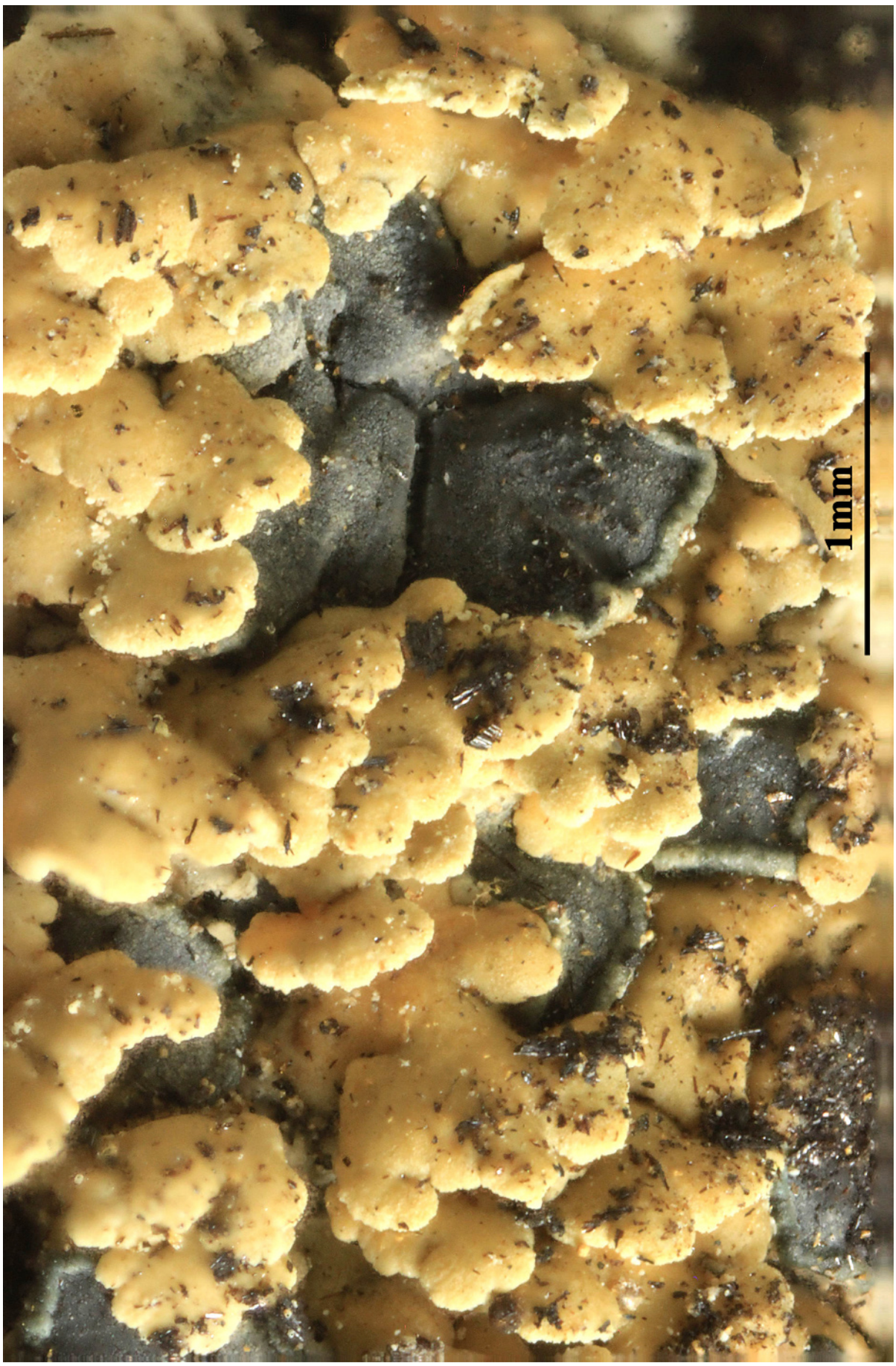
Hypocenomyce anthracophila

Hypocenomyce anthracophila

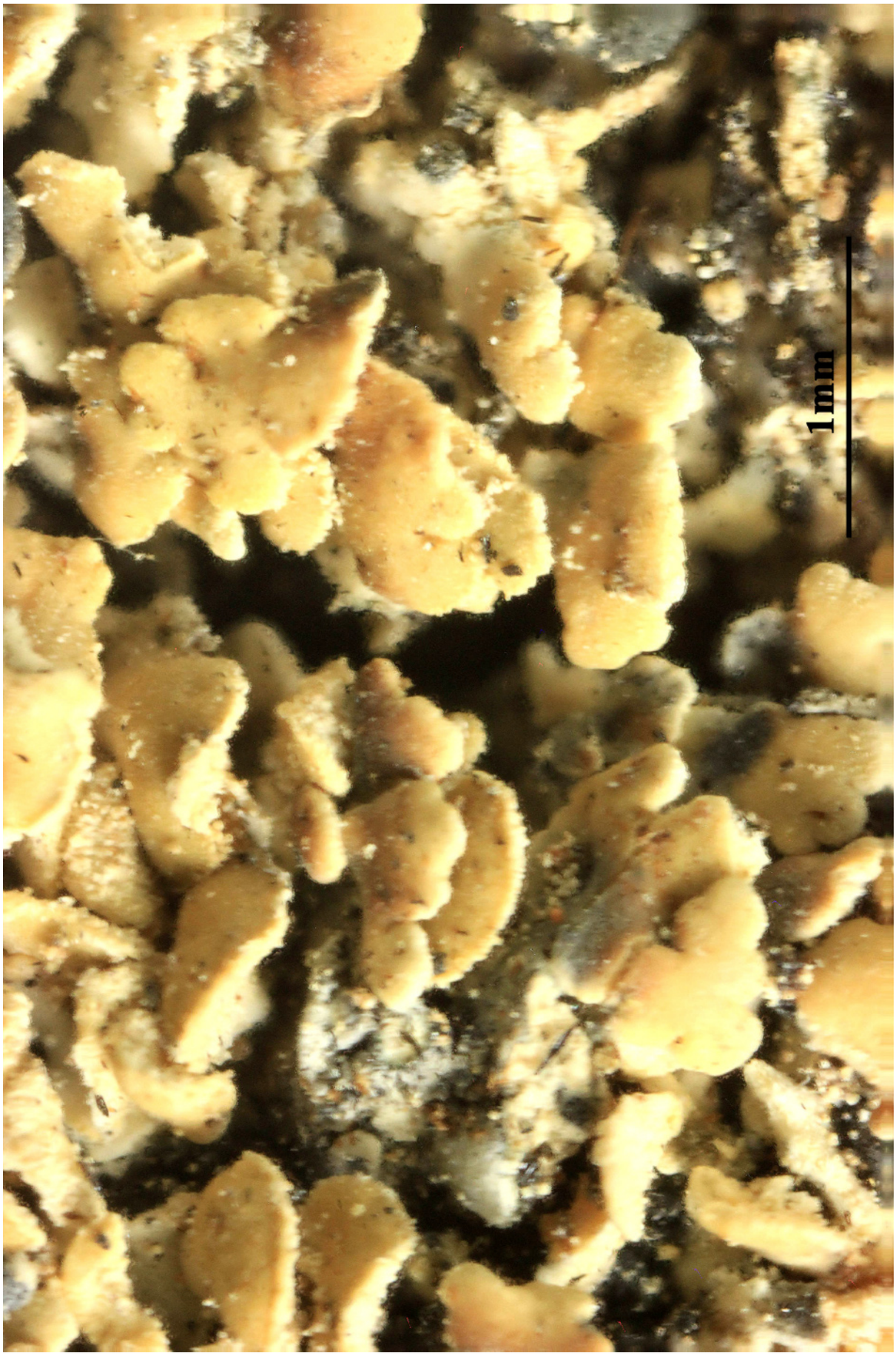
Hypocenomyce scalaris (Ach.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 20: 133 (1951)
= *Lichen scalaris* Ach. 1795

[VZ1910], Suecia. Värmland. N. Ny Paroecia, ad septentriones et orientem versus Tubergstorp, 300 m. Ad lignum ignibus carbonisatum. Leg. S. W. Sundell (no. 15443), 10.7.1982. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1910.

Thallus squamulose, of usually crowded, imbricate, geotropically oriented squamules covering large patches. Squamules up to 1.5(-2.5) mm wide, flat to usually convex, grey-green to brown, dull, with marginal, more or less labriform soralia bearing farinose, yellowish brown soredia; lower surface pale, largely sorediate. Upper cortex up to 40 µm thick, including an up to 15 µm thick epinecral layer, of thin-walled hyphae. Apothecia rare, up to 1.5(-2.5) mm across, marginal, with a black, often bluish-white pruinose disc, and an entire or flexuose proper margin. Proper exciple of loosely conglutinated hyphae, greenish in outer part, colourless within, the pigmented parts K-, N+ violet, the inner part C+ red; epithecium olivaceous green, containing crystals (C+ red), K-, N+ violet; hymenium colourless, 45-60 µm high; paraphyses sparingly branched and anastomosing, the apical cells hardly swollen, without pigment cap; hypothecium pale to dark brown. Asci usually remaining immature, clavate to cylindrical, Biatora-type. Ascospores 1-celled, hyaline, narrowly ellipsoid to fusiform, 7-8 x 3-4 µm. Pycnidia up to 0.2 mm wide, sessile, black, marginal or laminal, with a dirty green, K-, N+ violet wall. Conidia bacilliform, 5-7.5 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C+ red, KC+ red, P-; cortex UV-, medulla and soralia UV+ faintly white. Chemistry: lecanoric acid and unidentified substances. - Note: a temperate to boreal-montane, circumpolar lichen found on acid bark, especially of conifers, but also on *Castanea* and on lignum, incl. charred wood.



Hypocenomyce scalaris



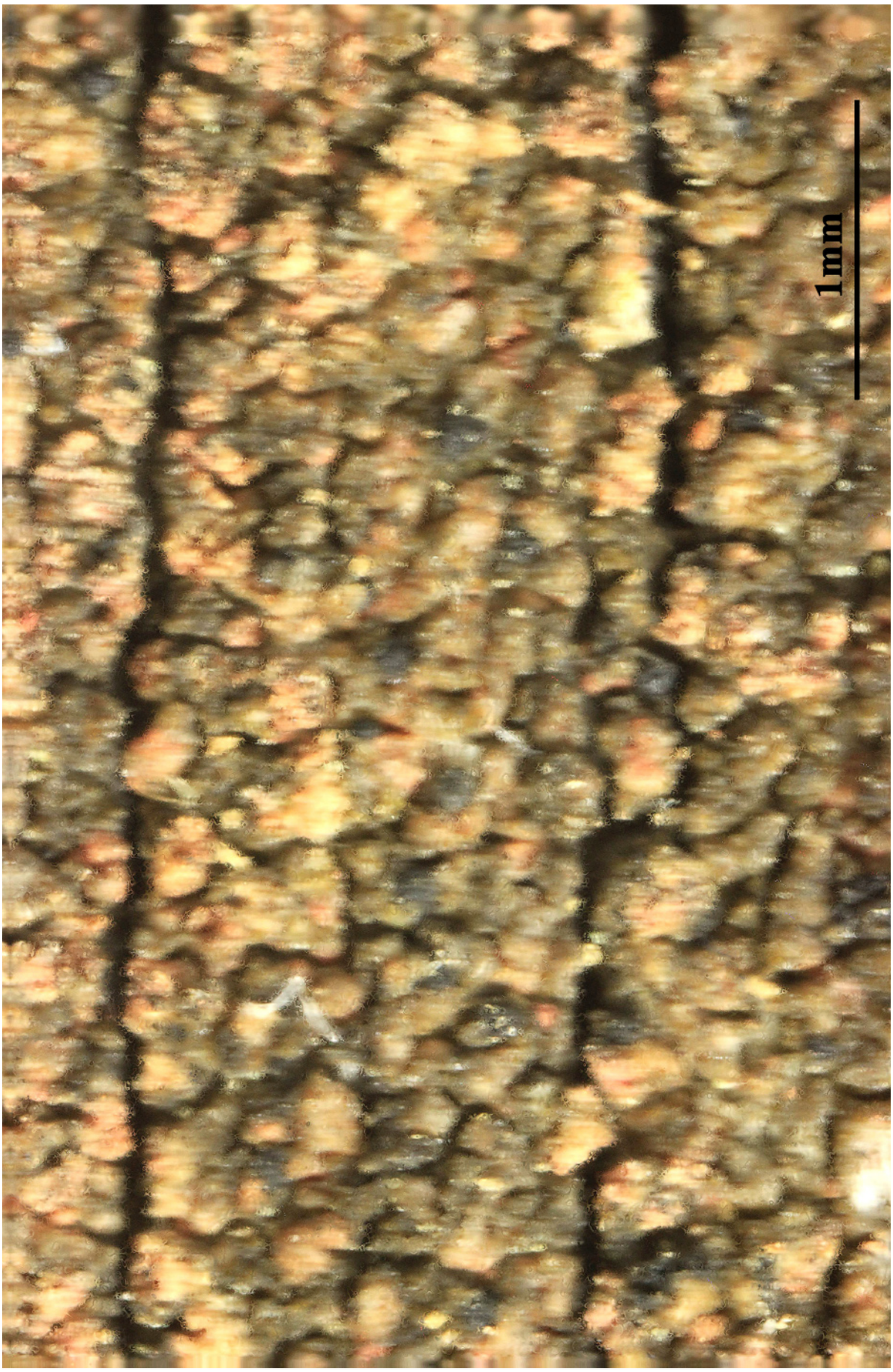
Hypocenomyce scalaris

Hypocenomyce sorophora (Vain.) P. James & Poelt, in Poelt & Vězda, Biblthca Lichenol. 16: 364 (1981)
= *Pycnora sorophora* (Vain.) Hafellner, Stapfia 76: 158 (2001)
= *Lecidea xanthococca* subsp. *sorophora* Vain. 1934

[VZ2447], Austria. Styria, montes "Grazer Bergland" dicti ad septentriones ab urbe Graz: "Kleinstübing", ad latera austr. montis Gamskogel, 480 m. Ad ramos siccos *Pini silvestris*. Leg. J. Poelt et I. Pišùt, 12.5.1990. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 2447.

Thallus crustose, endo- to episubstratic, areolate, the areoles pale grey to yellowish brown, dull, up to 0.5(-1) mm wide, adnate, weakly convex; soredia bursting from apices or from margins of the areoles, yellowish brown, diffuse, farinose. Cortex up to 15 µm thick, of thin-walled hyphae. Apothecia rare, lecideine, up to 0.6 (-0.8) mm across, with a black, flat to weakly convex, epruinose, egyrose disc and a prominent, entire or slightly flexuose proper margin. Proper exciple of closely conglutinated hyphae, black in outer part, brown within, K+ violet, N-; epithecium green to greenish brown, not containing crystals, K+ violet, N+ violet; hymenium colourless, 55-70 µm high; paraphyses sparingly branched and anastomosing, the apical cells hardly swollen; hypothecium brown. Asci 8-spored, broadly clavate, with a well developed, amyloid tholus containing an ocular chamber and a broad axial mass, Lecanora-type. Ascospores 1-celled, hyaline, broadly to narrowly ellipsoid, 6-9 x 2.5-4.5 µm. Pycnidia sessile, black, up to 0.22 mm across, with a dirty green wall reacting K-, N+ violet. Conidia ellipsoid to shortly bacilliform, 3.5-5 x 1.5-2.7 µm. Spot tests: K+ brownish yellow, C+ red, KC+ red, P+ yellow, UV-. Chemistry: alectorialic acid and an unknown substance. - Note: on wood and on the bark of conifers in upland areas.

Hypocenomyce sorophora



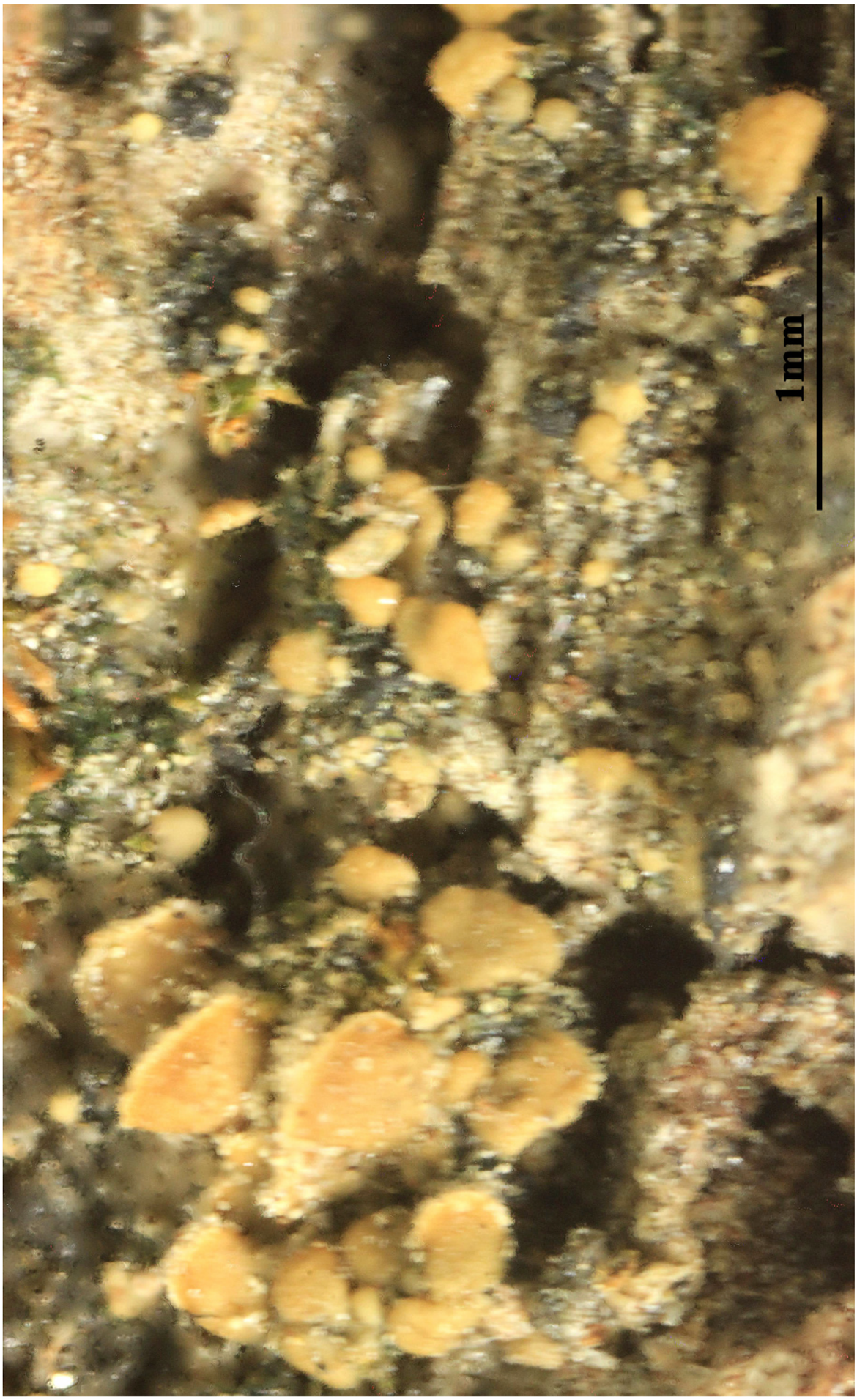
Hypocenomyce sorophora

Hypocenomyce stoechadiana Abbassi Maaf & Cl. Roux [as 'Hypocoenomyce'], Bull. Soc. linn. Provence 36: 191 (1985) [1984]
= *Waynea stoechadiana* (Abbassi Maaf & Cl. Roux) Cl. Roux & P. Clerc Bull. Soc. linn. Provence, 42: 130, 1991.

[VZ2348], Italia. Calabria, Don Gerolamo prope urbem Crotone, 40 m. Ad corticem arboris (*Quercus pubescens*). Leg. D. Puntillo, 14.12.1988. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2348.

Thallus squamulose, sorediate, the squamules numerous, flat to slightly convex, spathulate, 0.3-1.5(2.5) mm wide, ascending, contiguous or densely imbricate, attached by the base, the upper surface smooth, green to greenish brown (turning brown in the herbarium), slightly glossy, the lower surface whitish, with whitish to pale green, marginal, labriform soralia, the soredia 14-38 µm wide, sometimes extending to the lower surface. Upper cortex paraplectenchymatous, (12-)40-60 µm thick; medulla white, 50-100 µm thick, the individual hyphae 3-4.5(-6.5) µm wide; lower cortex absent. Apothecia rare, laminal, sessile, biatorine or cryptolecanorine, 0.3-1.5 mm across, with a flat to convex, grey to black, epruinose disc, a concolorous or paler, persistent to finally excluded proper margin and a poorly developed thalline rim which is sometimes visible at the very base of young apothecia. Proper exciple K+ yellow; epithecium pale green to greenish grey, K+ violet, N+ purple, without granules and crystals; hymenium colourless, 30-50 µm high, I+ blue; paraphyses simple or sparingly branched in upper part, 1.5-2.5 µm thick at base, the apical cells 3-4 µm wide, surrounded by a thin, pigmented, gelatinous layer; hypothecium colourless or pale yellow, prosoplectenchymatous, subtended by an algal layer, the pigmented parts K+ yellow. Asci 8-spored, clavate, distinctly thickened at apex, with a I+ blue tholus, the outer gelatinous coat I+ pale blue, Bacidia to Biatora-type. Ascospores (0-)1(-2)-septate, hyaline, narrowly ellipsoid to subfusiform, straight or slightly curved, 9-13(-17) x 2–3(-3.5) µm. Photobiont chlorococcoid. Spot tests; cortex K-, C-, KC-, P-, UV-; medulla K+ weakly yellow. Chemistry: thallus with an unidentified depsidone and sometimes traces of lecanoric acid; Arceutina-yellow pigment in subhymenium, Sedifolia-grey pigment in epithecium. - Note: a Mediterranean-Macaronesian species found on ancient specimens of evergreen broadleaved trees, such as *Olea* and *Quercus ilex*, in warm-humid areas; exclusively Tyrrhenian in Italy.

Hypocenomyce stoechadiana

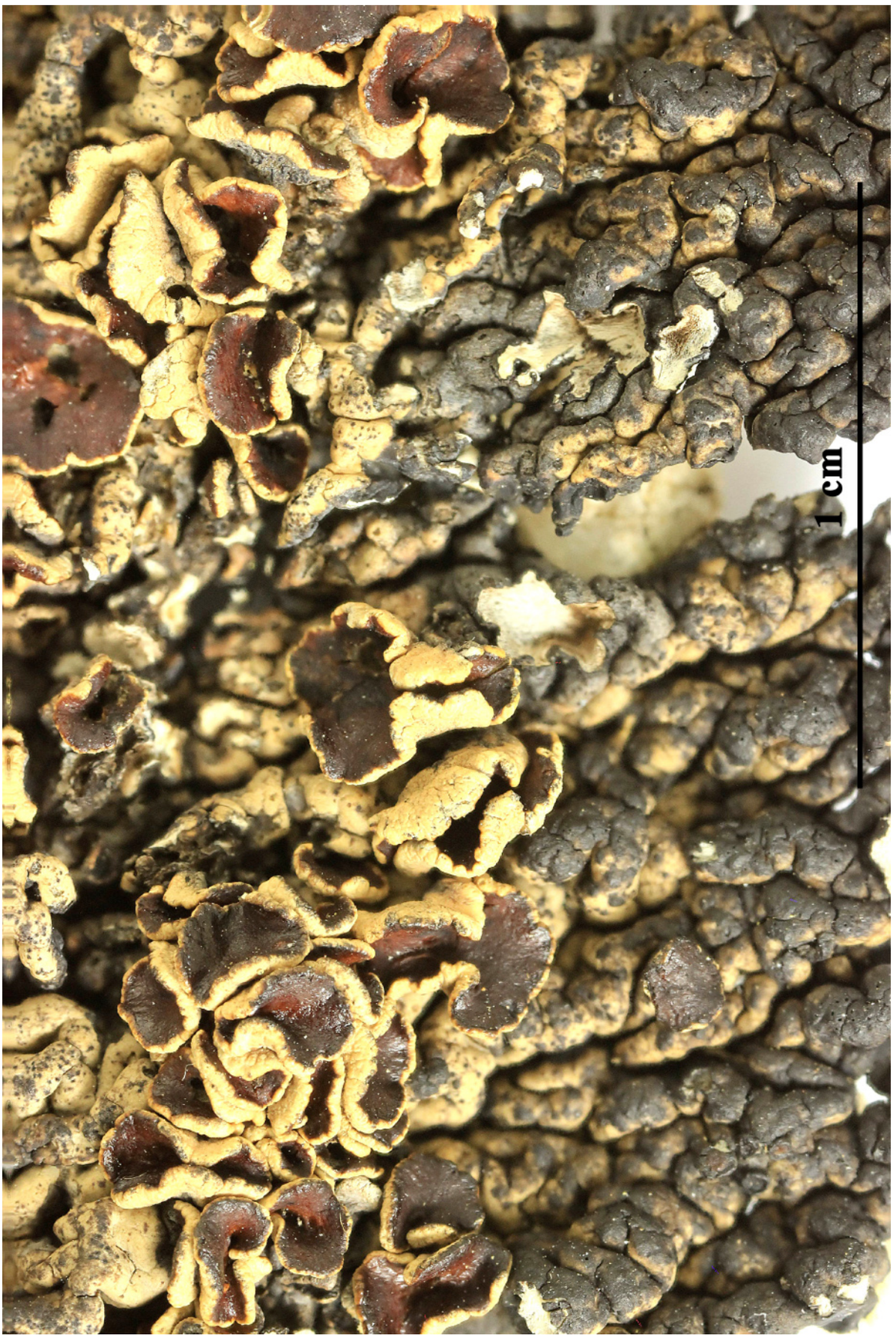


Hypocenomyce stoechadiana

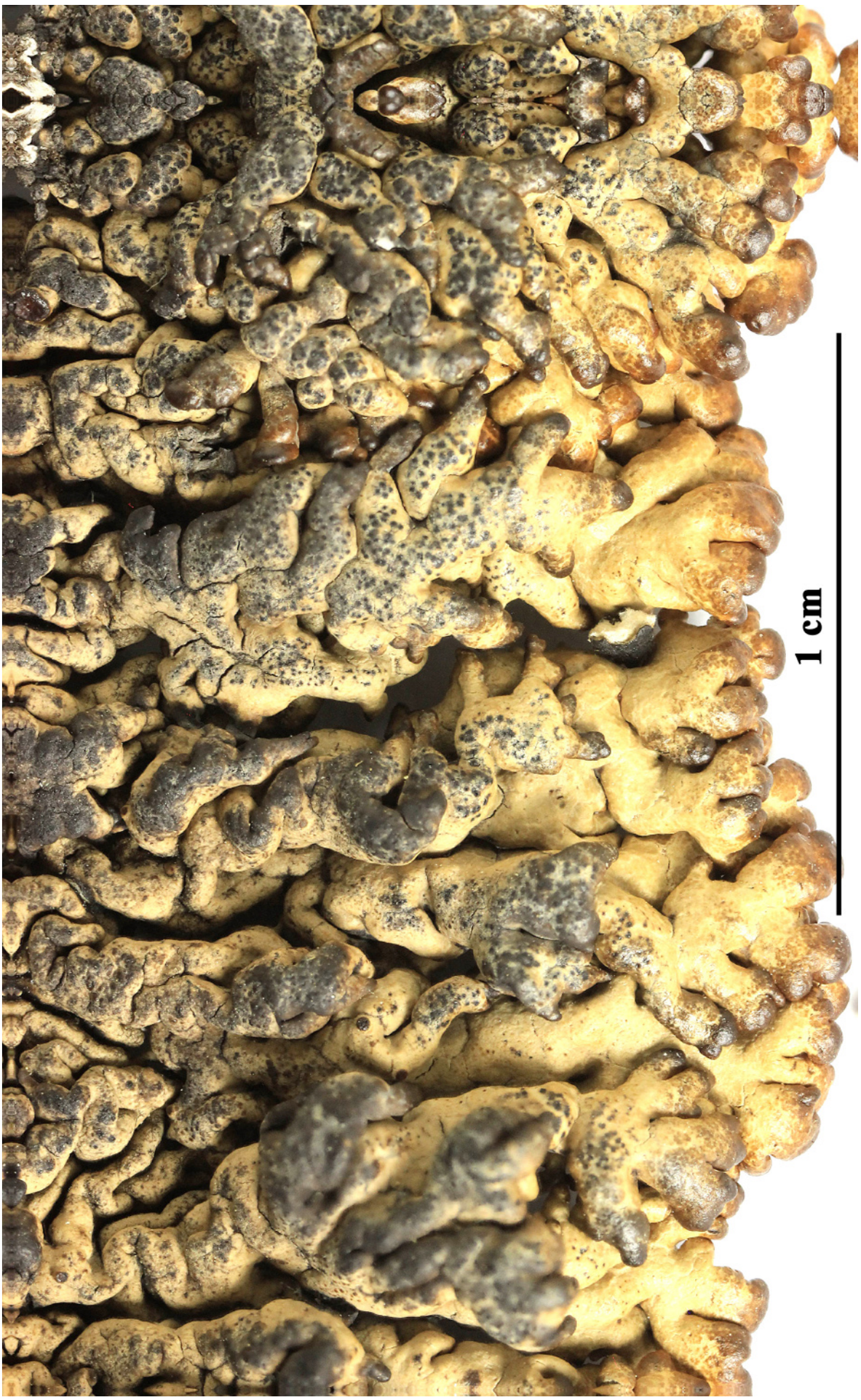
Hypogymnia atrofusca (Schaer.) Räsänen, Ann. bot. Soc. Zool.-Bot. fenn. Vanamo 18(no. 1): 13 (1943)
= *Hypogymnia intestiniformis var. atrofusca* (Schaer.) Poelt
= *Parmelia ceratophylla var. atrofusca* Schaer. 1850
= *Allantoparmelia alpicola* (Th. Fr.) Essl., Mycotaxon 7(1): 46 (1978)
= *Parmelia atrofusca* (Schaer.) Cromb.
= *Parmelia intestiniformis var. atrofusca* (Schaer.) Hasselrot

[VZ1334], Jugoslavia. Macedonia, Bitola, montes Baba, regio montis Pelister, in rupibus Jorgov dictis, 1800 m. Ad saxa schistosa. Leg. A. Vězda,12.12.1975. Ex A. Vezda Lichenes Selecti Exsiccati Nr. 1334.

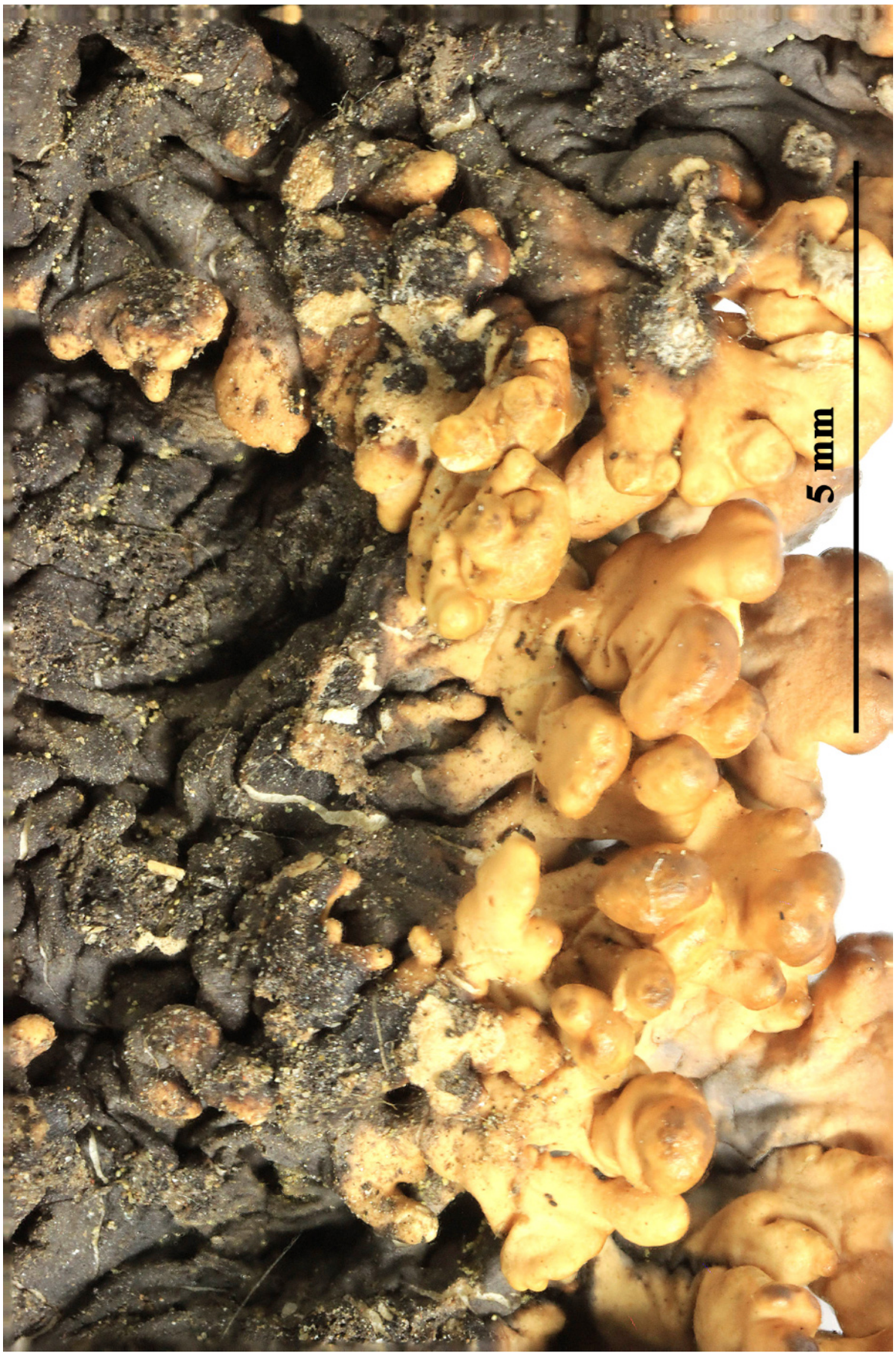
Thallus foliose, heteromerous, dorsiventral, adnate, forming up to 5 (rarely more) cm wide, orbicular or irregular rosettes. Lobes 1-2 mm broad, convex, stiff, contiguous or overlapping; center of thallus sometimes with a few imbricate lobules. Upper surface pale whitish, pale grey to brownish, darkening or blackening especially on the lobules and towards the tips, somehow glossy. Lower surface black, brown toward the tips, smooth to weakly and shallowly wrinkled, erhizinate, with scattered hapters. Upper cortex paraplectenchymatous, the cell walls with Cetraria-type lichenan, with a non-pored epicortex; medulla white; lower cortex paraplectenchymatous, without an epicortex. Apothecia rare, lecanorine, up to 10 mm across, with a dark brown disc and a thin, entire to crenulate thalline margin. Epithecium brownish; hypothecium and hymenium colourless; paraphyses mostly simple. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, hyaline, broadly ellipsoid, (7-)9-11(-12) x 6-7(-8) µm. Pycnidia numerous, immersed, the visible part black to grey-brown. Conidia bifusiform, 5-7 x c. 1 µm. Photobiont chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P-; medulla K-, C-, KC+ red, P+ orange, UV-. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with physodic and protocetraric acids. - Note: on wind-exposed surfaces of acid siliceous rocks wetted by rain near or above treeline; less bound to situations with a long snow cover than *B. intestiniformis*.



Hypogymnia atrofusca



Hypogymnia atrofusca

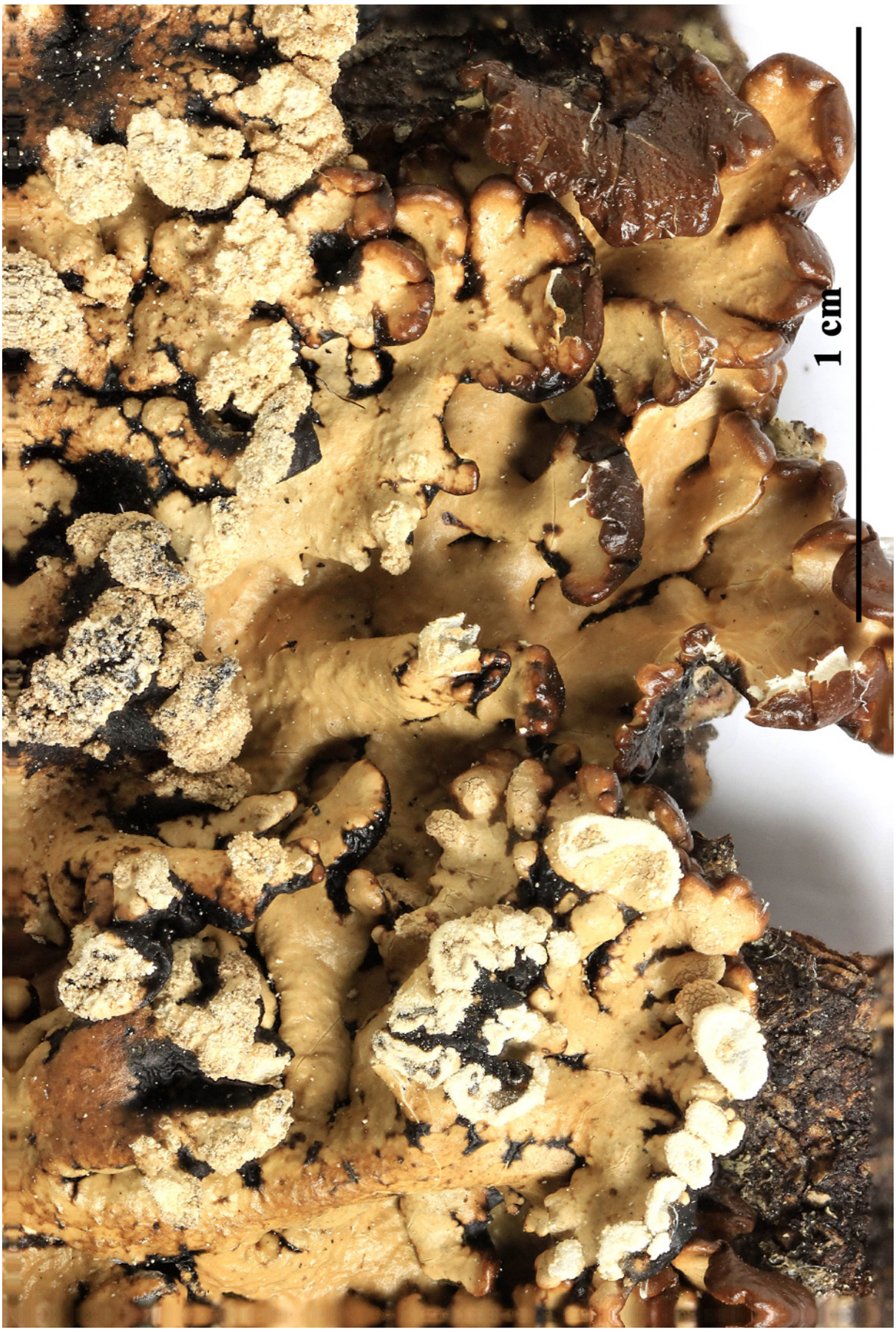


Hypogymnia atrofusca

Hypogymnia bitteri (Lynge) Ahti, Ann. Bot. Fenn. 1: 20 (1964)
= *Parmelia bitteri* Lynge 1921

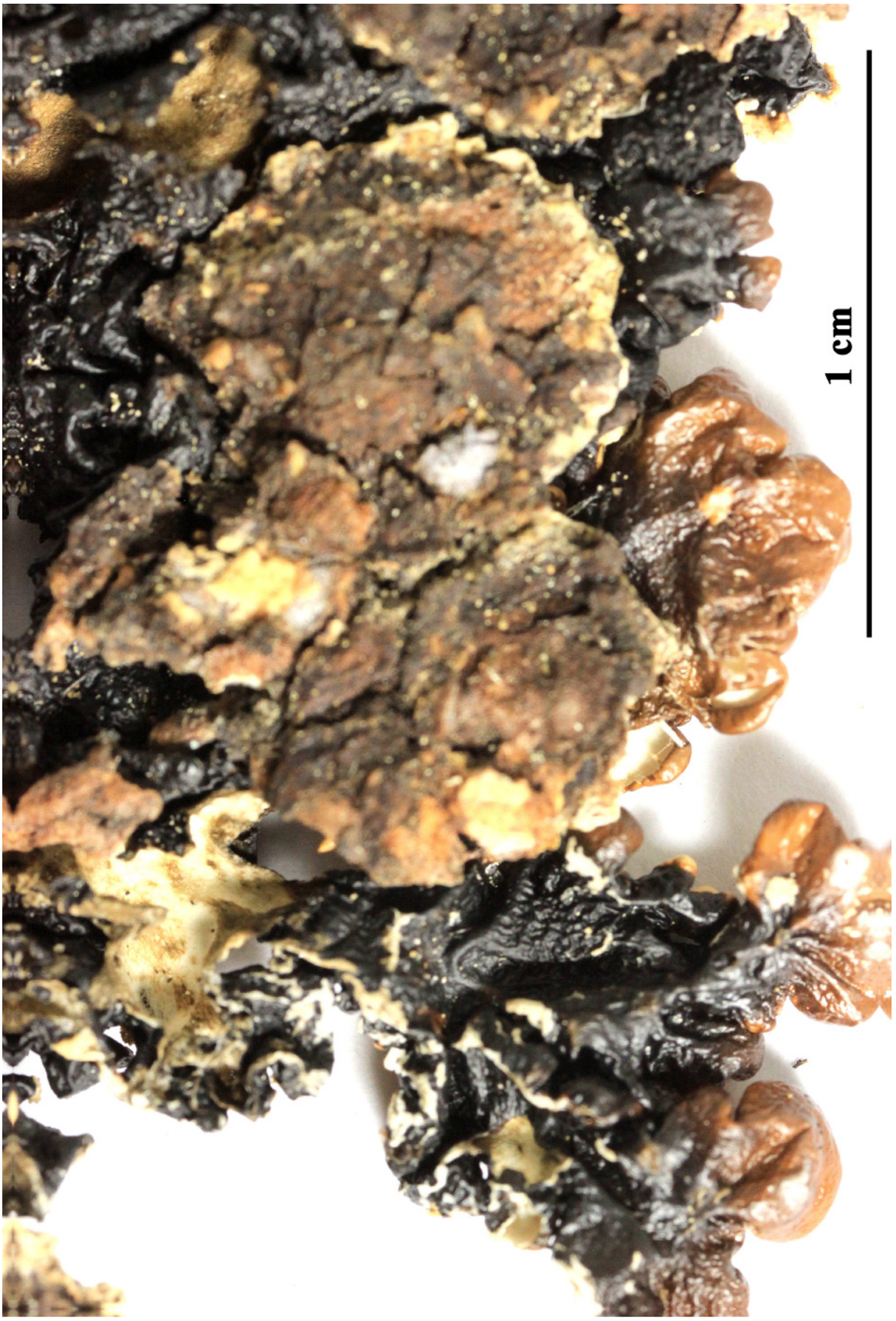
[VZ1541], Suecia. Torne Lappmark, Vittangi Paroecia. Ounistunturi. Ad corticem (*Picea abies*). Leg. S. Ahlner, 8.8.1935. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1541.

Thallus foliose, heteromerous, dorsiventral, adpressed, forming more or less regular, up to 9(-12) cm wide rosettes, the lobes contiguous, (0.5-)1-3(-4) mm broad, clearly swollen especially in apical parts. Upper surface greenish grey to brown in sun-forms and/or in peripheral parts, dark-mottled, rather glossy, becoming rugose, with mainly terminal, blue-grey or whitish grey, capitate soralia both on the main lobes and on short, upturned, lateral lobes, sometimes also with secondarily diffuse laminal soredia. Lower surface black, erhizinate. Upper cortex of tightly packed, more or less anticlinally oriented hyphae, the cell walls with Cetraria-type lichenan; medulla soon becoming hollow, lining the cavity inside the lobes, the ceiling of the cavity white or dark, the floor dark; lower cortex dark, paraplectenchymatous. Apothecia and pycnidia extremely rare (not observed in Italian material). Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ pale yellow, UV-; medulla K-, C-, KC+ orange-red, P-, UV- or UV+ pale blue-violet. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with physodic acid (major), 3-hydroxyphysodic acid, 2'-O-methylphysodic acid (minor and/or accessory), and an unknown accessory substance. - Note: a cool-temperate to boreal-montane, circumpolar lichen found on acid bark, especially of conifers, occasionally on lignum and on siliceous rocks, with optimum near treeline. Most common in the Alps.



Hypogymnia bitteri

Hypogymnia bitteri

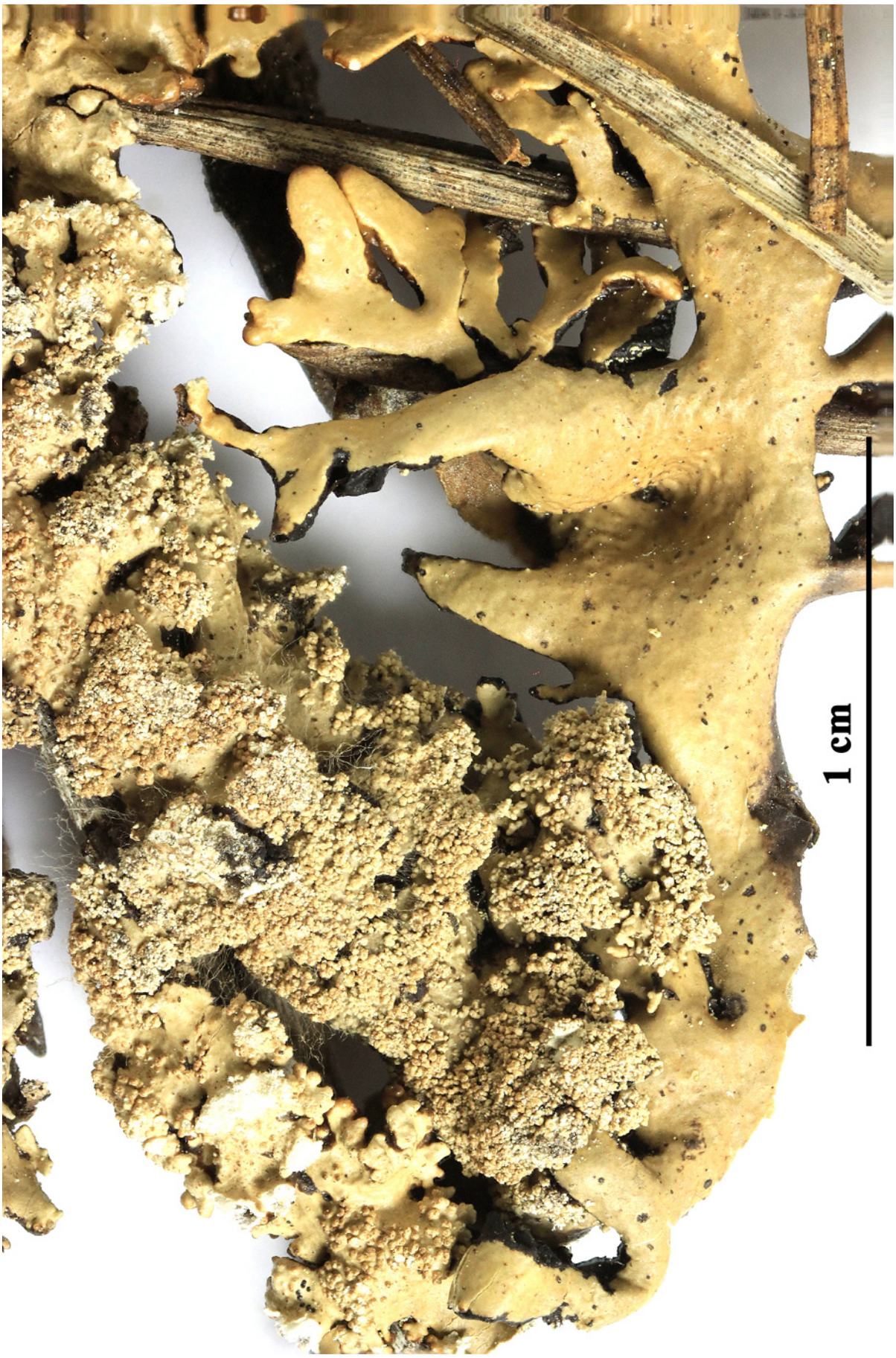


Hypogymnia bitteri

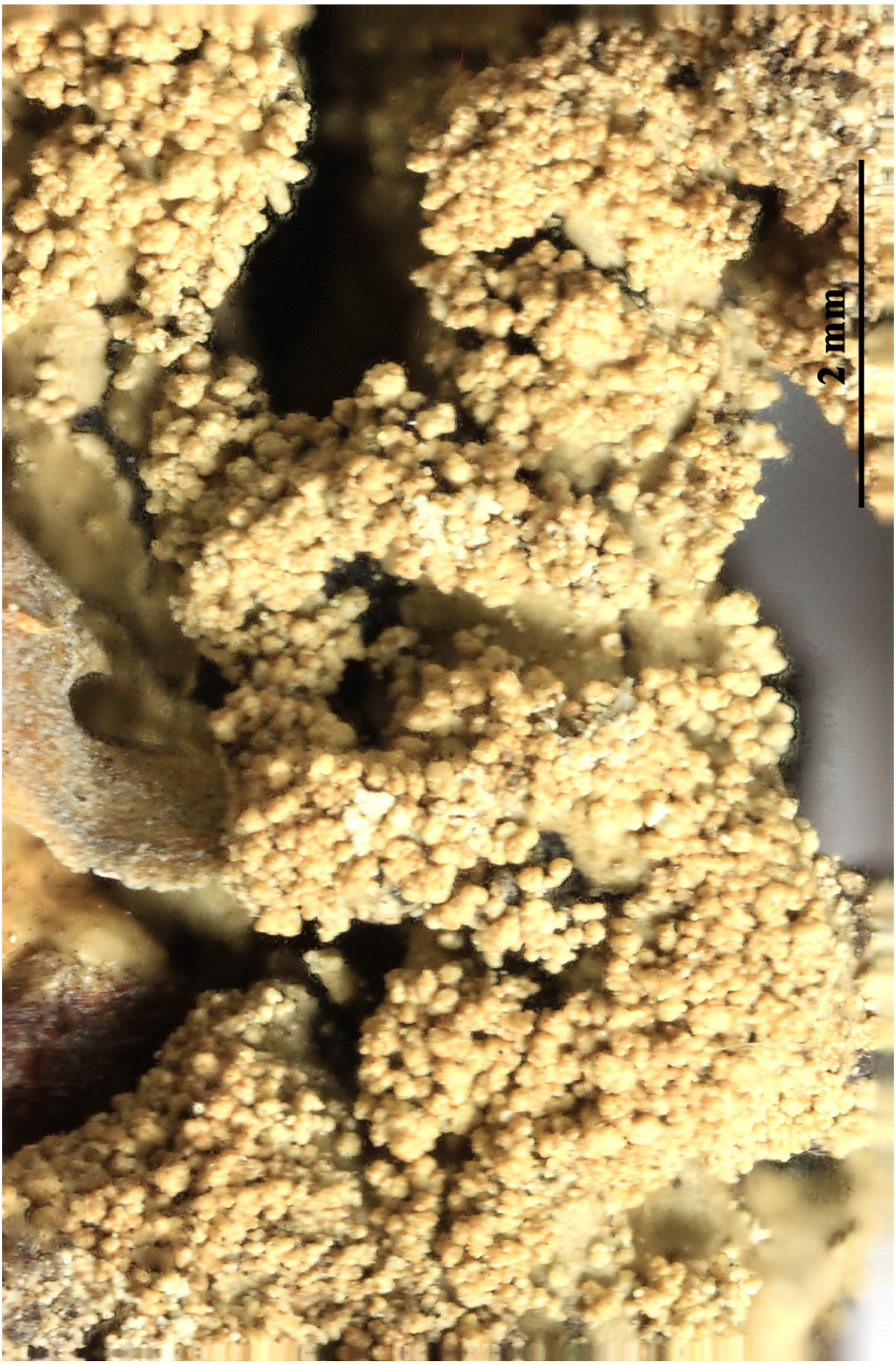
Hypogymnia bitteri (Lynge) Ahti, Ann. Bot. Fenn. 1: 20 (1964)
= *Parmelia bitteri* Lynge 1921

[VZ1746], URSS. Caucasus Magnus, regio m ontis Elbrus. Verch. Baksan, in valle torrentis Adyrsu, 1900 m. Supra muscos , ad saxa in ripa torrentis. Leg. A. Vězda, 25.6.1980. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1746.

Thallus foliose, heteromerous, dorsiventral, adpressed, forming more or less regular, up to 9(-12) cm wide rosettes, the lobes contiguous, (0.5-)1-3(-4) mm broad, clearly swollen especially in apical parts. Upper surface greenish grey to brown in sun-forms and/or in peripheral parts, dark-mottled, rather glossy, becoming rugose, with mainly terminal, blue-grey or whitish grey, capitate soralia both on the main lobes and on short, upturned, lateral lobes, sometimes also with secondarily diffuse laminal soredia. Lower surface black, erhizinate. Upper cortex of tightly packed, more or less anticlinally oriented hyphae, the cell walls with Cetraria-type lichenan; medulla soon becoming hollow, lining the cavity inside the lobes, the ceiling of the cavity white or dark, the floor dark; lower cortex dark, paraplectenchymatous. Apothecia and pycnidia extremely rare (not observed in Italian material). Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ pale yellow, UV-; medulla K-, C-, KC+ orange-red, P-, UV- or UV+ pale blue-violet. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with physodic acid (major), 3-hydroxyphysodic acid, 2'-O-methylphysodic acid (minor and/or accessory), and an unknown accessory substance. - Note: a cool-temperate to boreal-montane, circumpolar lichen found on acid bark, especially of conifers, occasionally on lignum and on siliceous rocks, with optimum near treeline. Most common in the Alps.



Hypogymnia bitteri



Hypogymnia bitteri

Hypogymnia bitteri

Hypogymnia hypotrypella (Asahina) Rass., Bot. Mater. Gerb. bot. Inst. V.A. Komarova 13: 23 (1960)
= *Parmelia hypotrypella* Asahina 1950

[VZ2449], Sina. Yunnan, montes Yulong Shan, 30 km ad septentriones ab oppido Likiang (= Lijiang), 4000 m. Ad corticem arborum. Leg. J. Soják, 25.7.1990, det. A. Vězda. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2449.

Hypogymnia hypotrypa (Nyl.) Rassad., Novosti sistematiki nizshikh rasteniui 1967:297. (Notul. System. e Sect. Cryptog. Inst. Bot. nomine V. L. Komarovii Acad. Sci. URSS) 1967.
= *Parmelia hypotrypa* Nyl., Synopsis Lich. I:403. 1860.
= *P. hypotrypella* Asahina, Acta Phytotax. Geobot. 14:34. 1950. Lectotype in TNS designated by Yoshida (2001).
= *Hypogmnia. hypotrypella* (Asah.) Rass., Bot. Mater. Otd. Spor. Rast. 13:23. 1960.

Type – INDIA. Sikkim: Lachen, reg. alpina, 12,000 ft, J. D. Hooker 2016 (BM); lectotype selected by Awasthi (1984).
Thallus large, appressed to imbricate with broad lobes, neatly dichotomous branching, upper surface yellowish-tinged from usnic acid, with sparse to abundant laminal soredia that often form along the edges of schizidia. Thallus appressed to suberect, to 15(30) cm broad or long; texture papery; branching isotomic dichotomous, budding absent or rare; upper surface smooth to weakly rugose, yellowish green to brownish, sometimes with dark mottles, black border sometimes present; lobes contiguous or separate, 3–7(10) mm broad; lobe outline even to ± nodulose; lobe width:height ratio 2:1–4:1; lobe tips and axils perforate, lower surface perforate; medulla hollow, ceiling of cavity dark, floor of cavity dark; soredia present (though sometimes subtle or incipient in young thalli), laminal, typically developing along edges of schizidia; apothecia rare, substipitate to stipitate, to 10 mm diam, receptacle urn- or funnel-shaped, stipe hollow; ascospores not seen, pycnidia uncommon, spermatia rod shaped to weakly bifusiform, 4.7–5.8 × 1.0–1.2 µm. Chemistry: Usnic acid (major), physodalic acid (major), physodic acid (major, accessory, 14% of 64 specimens), 3-hydroxyphysodic (accessory, 6% of specimens), and protocetraric acid (minor); cortex K-, KC+ yellow, C-, P-; medulla K- (rarely K+ slowly reddish brown), KC- or occasionally KC+ orange red, C-, P+ orange red. Substrate – On bark and wood, occasionally on mossy rock. -

Known distribution – China, India (Sikkim), Japan, Korea, Nepal, Russia (Khabarovsk, Sakhalin), Taiwan.

Notes – McCune & Obermayer (2001) discussed the historical confusion between *H. hypotrypa* and *H. hypotrypella*. Sorediate (*H. hypotrypa*) and esorediate (*H. flavida*) specimens of the big yellowish Asian Hypogymnia are mostly rather easy to separate. But sometimes soredia are only weakly developed in *H. hypotrypa*. Early developmental stages of soredia can, however, usually be found even in small specimens of *H. hypotrypa*. Soredia are formed in several ways: (1) gradual bumpiness and dissolution of the upper cortex into granules, (2) warts bursting apically forming a mound of granules, and (3) cracks in the upper cortex that becoming granular edged. These cracks are usually short and irregular, initiating flakes of the cortex and algal layer (schizidia) that begin to detach from the medulla. These flakes are often marginally sorediate. Soralia that develop in the first two ways often become thickly mounded in discrete, often capitate soralia. Fertile *H. hypotrypa* specimens are rare.

Hypogymnia flavida McCune & Obermayer, Mycotaxon 79:24. 2001.
= *Hypogymnia hypotrypa* (Nyl.) Rassad. sensu Asahina
Lobes large, neatly dichotomous, with yellowish tinge of usnic acid, perforate below; soredia lacking. Thallus appressed to suberect, to 10(20) cm broad or long; texture papery; branching mostly isotomic dichotomous, budding absent or rare; upper surface smooth, yellowish green to brownish, often with dark mottles or black stripes; lobes contiguous or separate, black border often present; lobe outline even to ± nodulose; lobe width 3-6(10)mm; lobe width:height ratio 1:1–5:1; lobe tips and axils perforate, lower surface perforate; medulla hollow, ceiling of cavity dark, floor of cavity dark; soredia, isidia, and lobules lacking; apothecia common, substipitate to stipitate, to 10(17) mm diam, receptacle urn- or funnel-shaped, stipe hollow; hypothecium POL-; ascospores 5.5–7.5 × 4.8–5.5 μm, pycnidia common, spermatia rod shaped to weakly bifusiform, 5.3–6.3 × 1.0–1.3 μm. Chemistry: Usnic acid (major), physodalic acid (major), physodic acid (major, accessory, about 25% of specimens), 3-hydroxyphysodic (accessory, < 10% of specimens), and protocetraric acid (minor); cortex K-, KC+ yellow, C-, P-; medulla K- (rarely K+ slowly reddish brown), KC- or

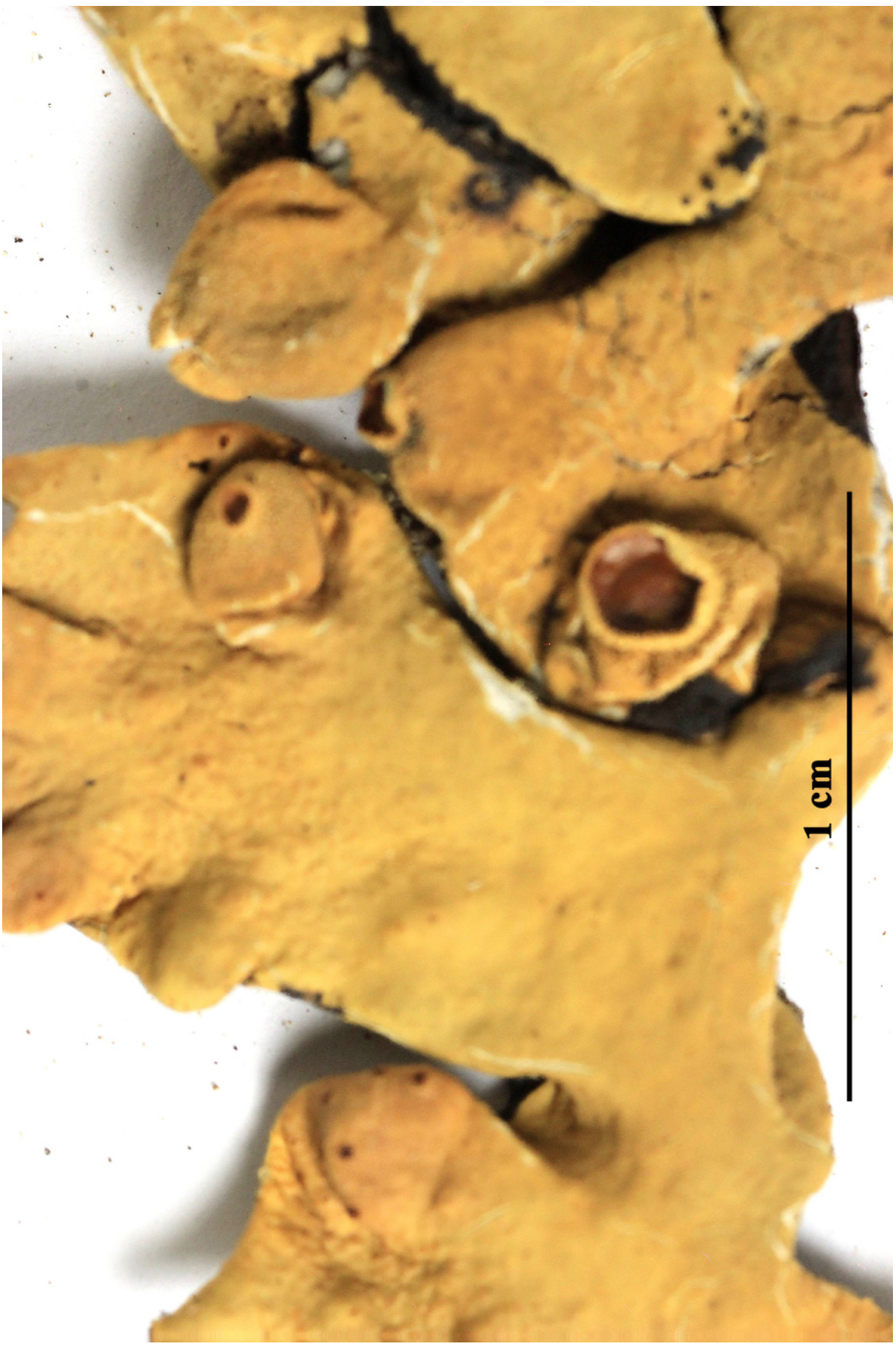
Hypogymnia hypotrypella

occasionally KC+ orange red, C-, P+ orange red. Substrate – On bark and wood, rarely on mossy rock; usually on conifers, but frequently also on Rhododendron, less often on Quercus and other hardwoods. Known distribution: East Asia, including Nepal, China (many provinces), and Taiwan, but as yet unknown from Russia and Japan.
Notes: The historical application of *H. hypotrypa* to esorediate material is incorrect (McCune & Obermayer 2001). Esorediate material should be referred to *H. flavida*, while *H. hypotrypa* is sorediate.

Hypogymnia hypotropa (Nyl.) Rass. from D.D. Awasthii (2007).
Thallus terricolous, distinctly dichotomously branched; lobes (3-) 4-6 mm wide, lackihg adventitive branchlets; upper side yellow, yellow-grey to yellowish brown, lacking isidia and soredia; lower side perforated, perforations 3-4 mm in diam.; lobe outline ellipsoid in cross section. Apothecia not known. Upper cortex K-; medulla K-, C-, KC-, P+ orange. Usnic acid in cortex; physodalic and protocetraric acids in medulla.

Hypogymnia hypotrypella

Hypogymnia hypotrypella



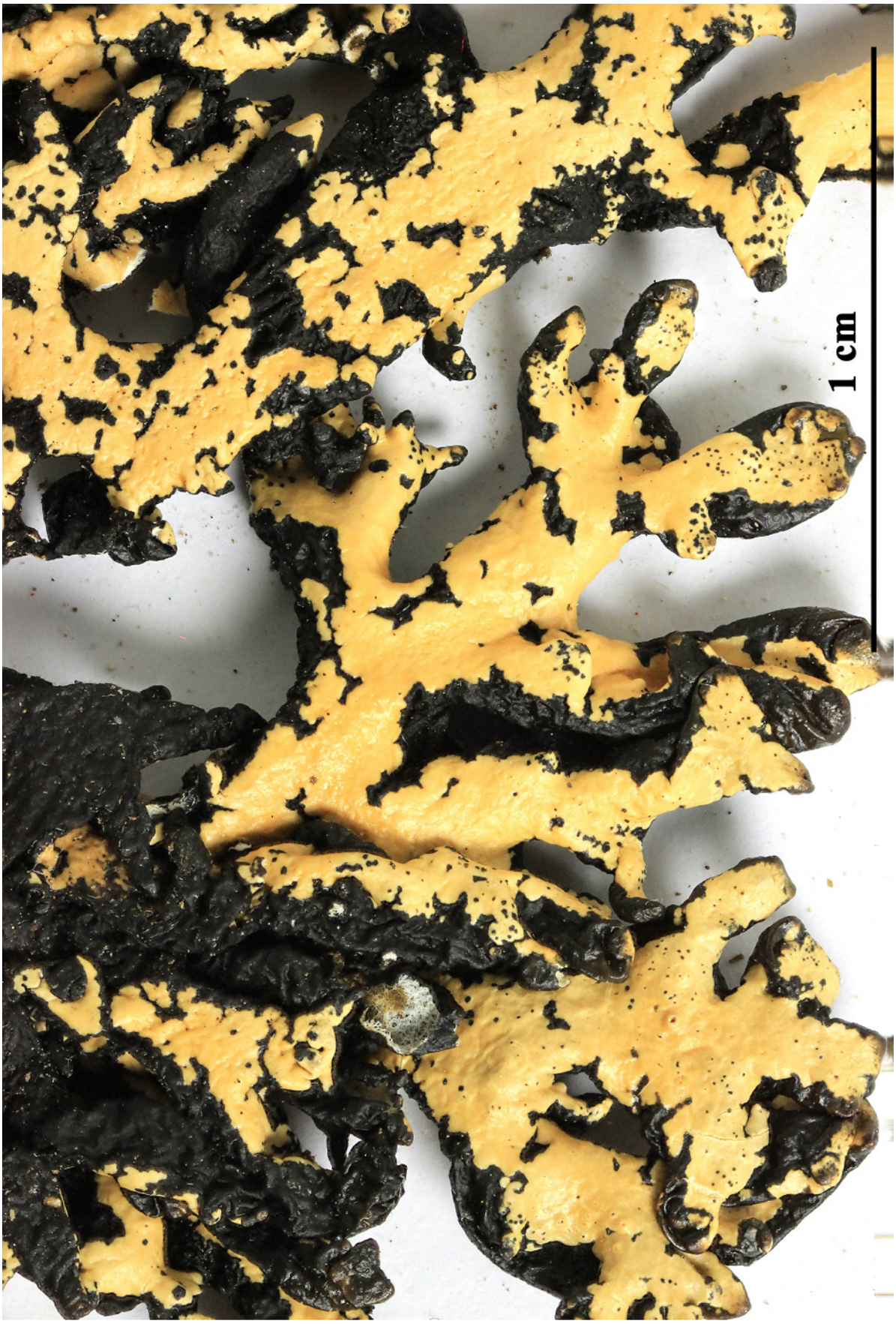
Hypogymnia hypotrypella

Hypogymnia lugubris (Pers.) Krog, Norsk Polarinstitutt Skrifter 144: 99 (1968)
= *Parmelia lugubris* Pers. 1827

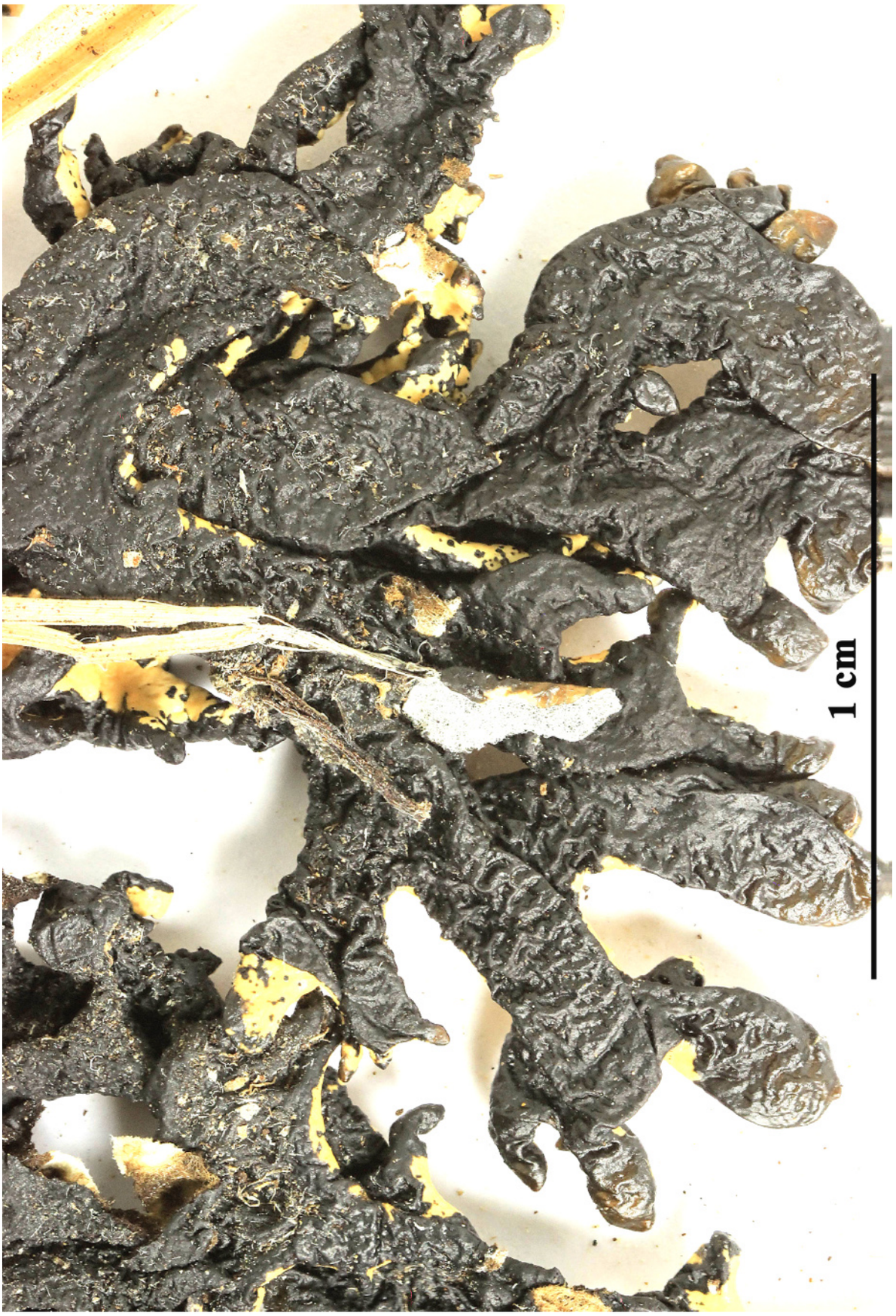
[VZ1718], Insulae Falklandiae. Insula West Falkland, Ella Hill, Roy Cove. Leg. E. Vallentin, 7.1910, det, P, W. Jmes. Ex A. VěZDA Lichenes Selecti Exsiccati N. 1719.

Thallus fragile, orbicular or irregularly spreading, to 20 cm wide, loosely attached to substratum. Lobes 1–2.5 mm wide, rarely to 4 mm, the branching dichotomous or trichotomous to ±irregular; esorediate. Upper surface grey to white, usually with black lines, bands and patches; margins often blackened, not always sharply delimited from lower surface. Medulla thin, hollow, darkened or not. Lower surface deeply and persistently wrinkled, with occasional apical perforations, shining. Apothecia sparse to moderately common, 2–10 mm wide; disc concave becoming ±flat, dark brown; thalline exciple entire to crenate. Ascospores 5–8 × 4–6 µm. CHEMISTRY: cortex K+ yellow; medulla KC+ red, P+ red. Atranorin, chloroatranorin, physodic acid, physodalic acid (major); protocetraric acid, 2'-O-methylphysodic acid, alectoronic acid, 3-hydroxyphysodic acid and vittatolic acid (present or absent).

Occurs in Australia, Tasmania , grows on shrubs, rocks, grasses and soil. Common in the Falkland Islands, South Georgia, southern South America, New Zealand, and the high mountains of Papaua New Guinea.



Hypogymnia lugubris



Hypogymnia lugubris

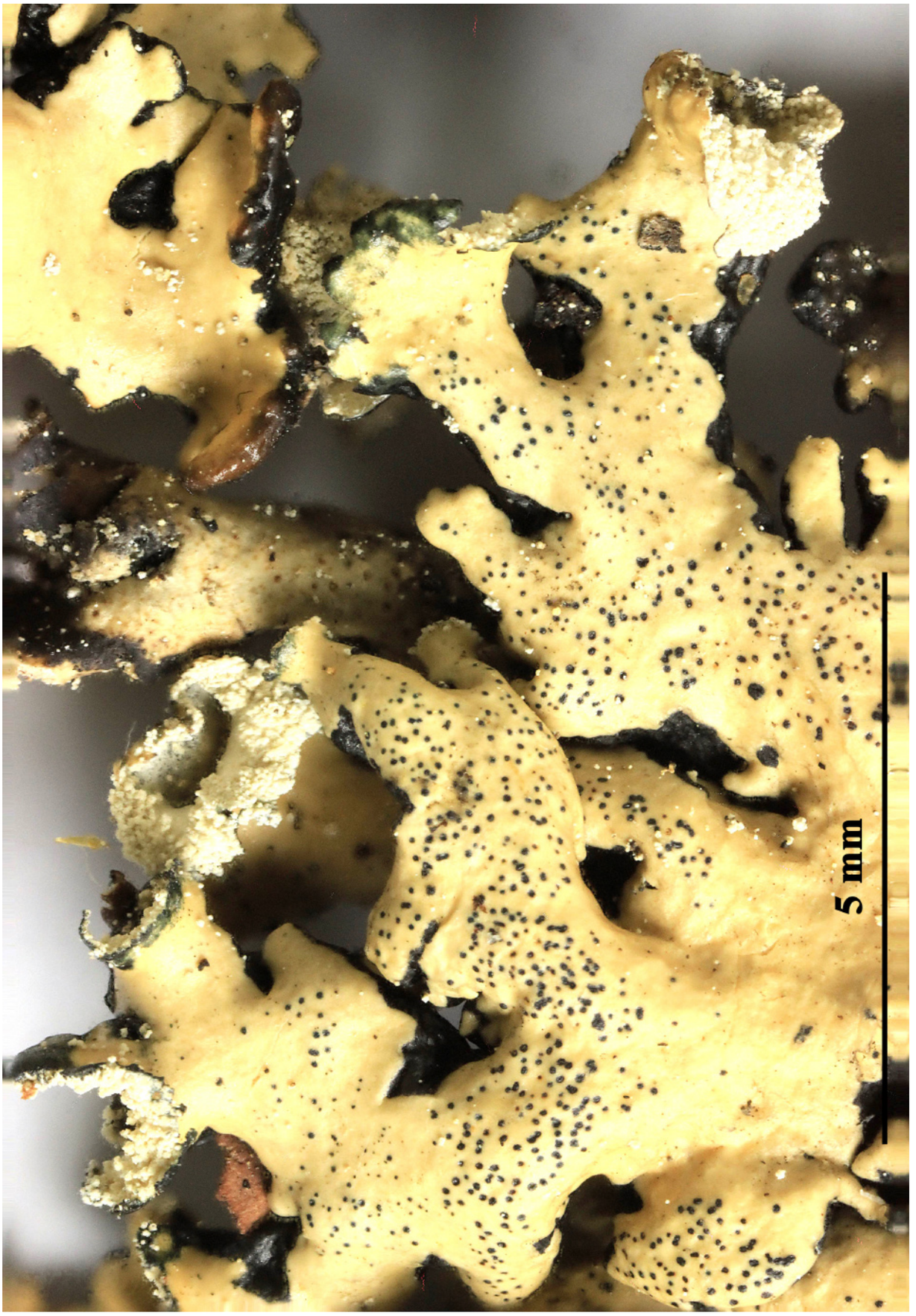
Hypogymnia physodes (L.) Nyl., Lich. Envir. Paris: 39 (1896)
= *Lichen physodes* L. 1753

[VZ1765], Suecia. Härjedalen: Tännäs Paroecia, in ascensu montis Ramundberget, haud procul deversorii Ramundberget, 800 m. In silva subalpina, ad truncum *Betulae*. Leg. R. Santesson (no. 29725), 18.7.1979. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1765.

Thallus foliose, heteromerous, dorsiventral, firmly (when young) to loosely attached, forming up to (4-)6-8(-10) cm broad, regular or irregular rosettes, the lobes much swollen and hollow inside, flat to mostly convex, contiguous to imbricate, often ascending at tips, grey to greenish grey, smooth and often glossy, 1-2(-3) mm broad. Soralia labriform, developing from the rupture of the underside tips of lobes. Lower surface black (brown at margins and lobe tips), rugose, erhizinate. Upper cortex of tightly packed, more or less anticlinally oriented hyphae, the cell walls with Cetraria-type lichenan; medulla soon becoming hollow, lining the cavity inside the lobes, the ceiling of the cavity white or dark, the floor dark; lower cortex dark, paraplectenchymatous. Apothecia very rare, lecanorine, shorthòy stalked, with a red-brown disc and a persistent thalline margin. Epithecium brown; hymenium and hypothecium colourless; paraphyses coherent, simple or sparingly branched in upper part. Asci 8-spored, clavate, Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, (6-)7-8(-9) x 4-5.5 µm. Pycnidia immersed, black. Conidia rod-shaped to weakly bifusiform, 2-2.5 x 0.6-0.9 µm. Photobiont chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ pale yellow, UV-; medulla and soralia K+ slowly reddish brown, C-, KC+ red, P+ orange-red, UV+ pale blue-violet. Chemistry: upper cortex with atranorin and chloroatranorin; medulla and soralia with physodic acid (major), 2'-O-methylphysodic acid (minor or accessory), 3-hydroxyphysodic acid (major), physodalic acid (major), and protocetraric acid (minor). - Note: a widespread holarctic lichen; optimum in natural habitats, from the lowlands to the subalpine belt.

Hypogymnia physodes

Hypogymnia physodes

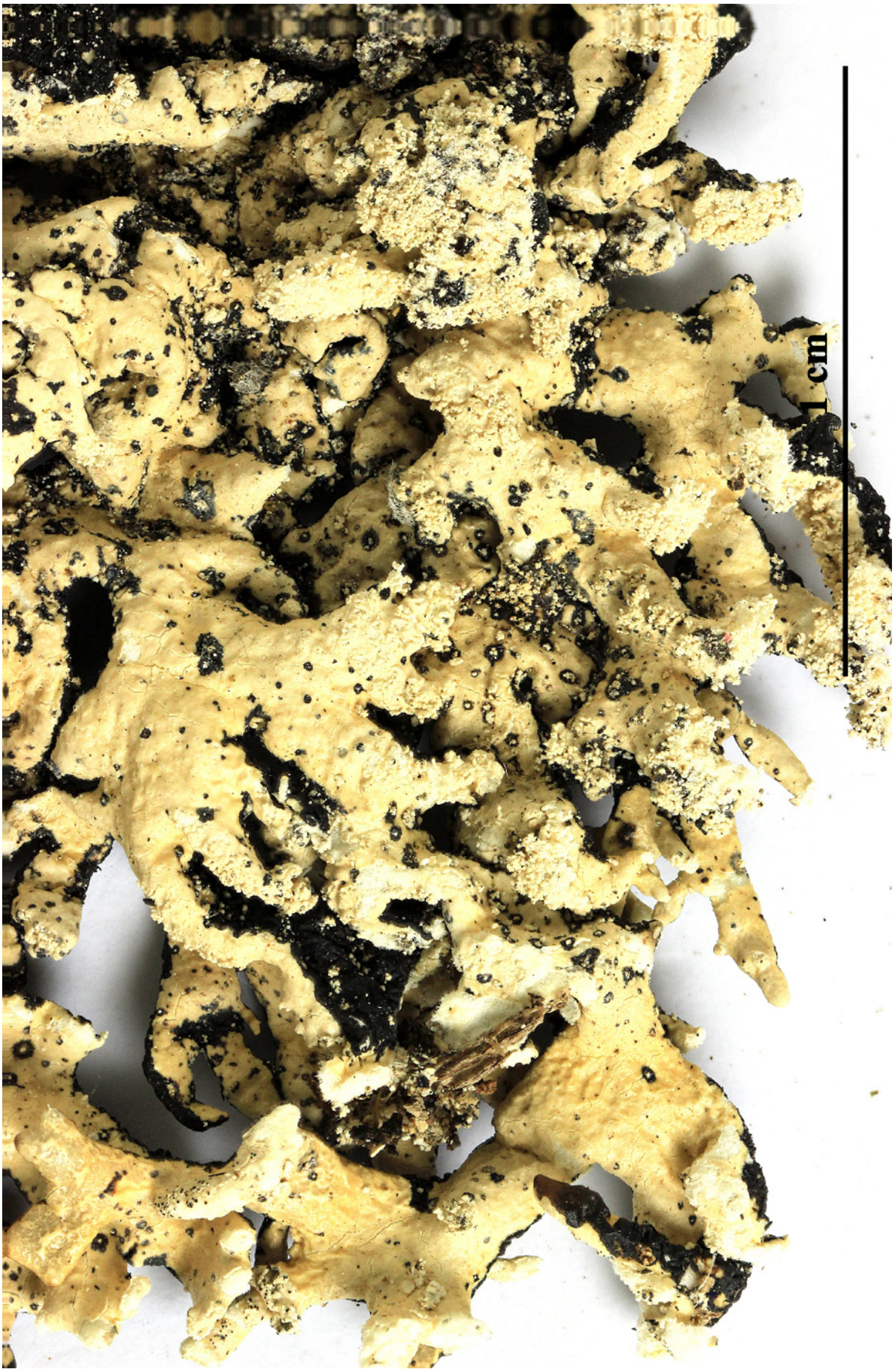


Hypogymnia physodes

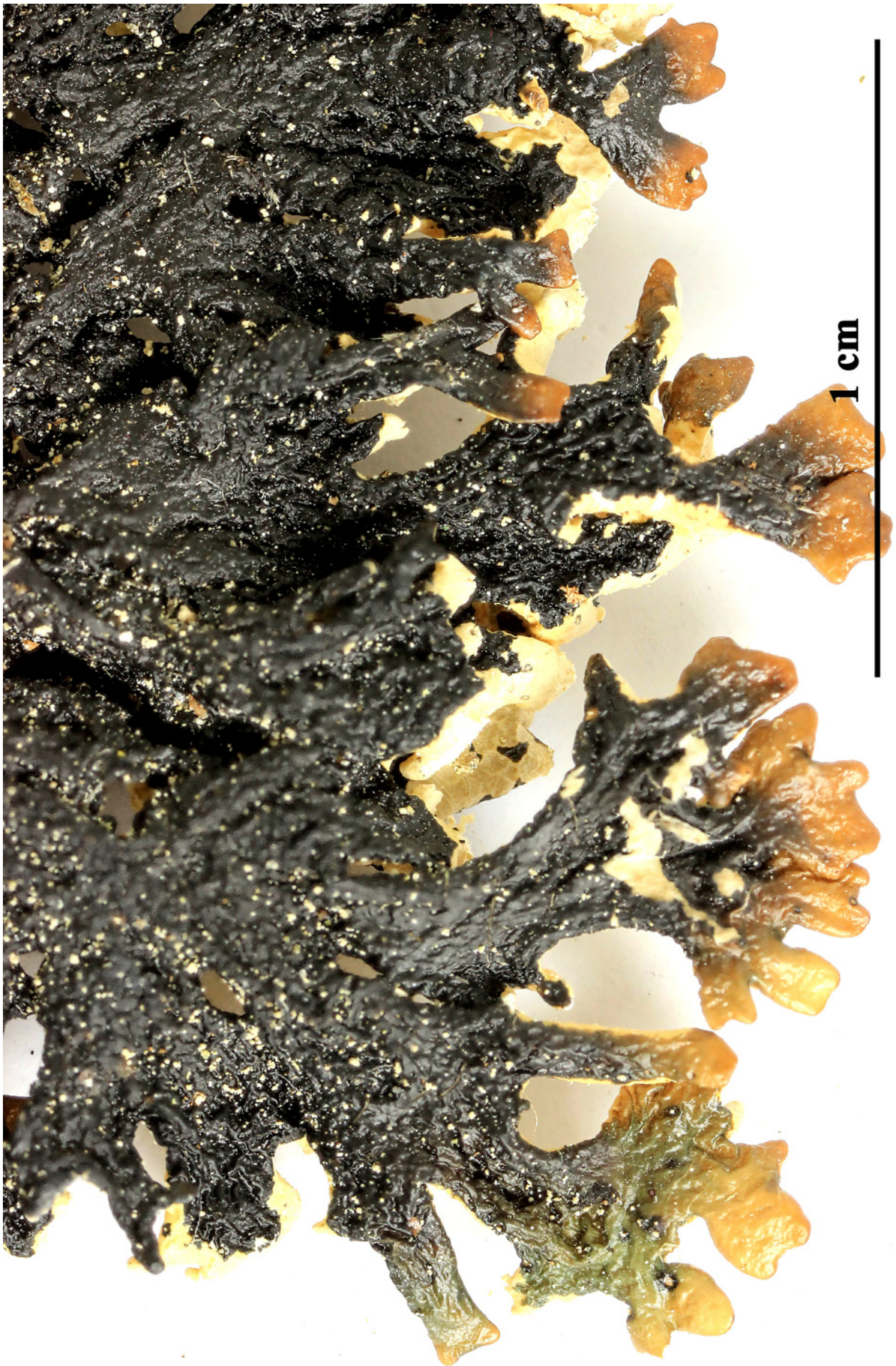
Hypogymnia pulverata Elix, Brunonia 2(2): 217 (1980)
= *Parmelia mundata* var. *pulverata* Nyl. 1879

[VZ2483], Australia occidentalis: Versus meridiem a Manjimup, 13 km ad orientem a Northcliffe, secus viam Rock Road, 13 km ad Murillip Rock. Ad saepimentum ligneum. Leg. W. L. Culberson (no. 21661) et C. F. Culberson, 18.11.1880- - Annot.: Atranorin, physodic acid, oxy-physodic acid, protocetraric acid, 2'-O-mthylphsodic acid and probable traces of virnsic acid and th unknown compund Pmc-1 by TLC, anal. from A. Johnson and C. F. Culberson.

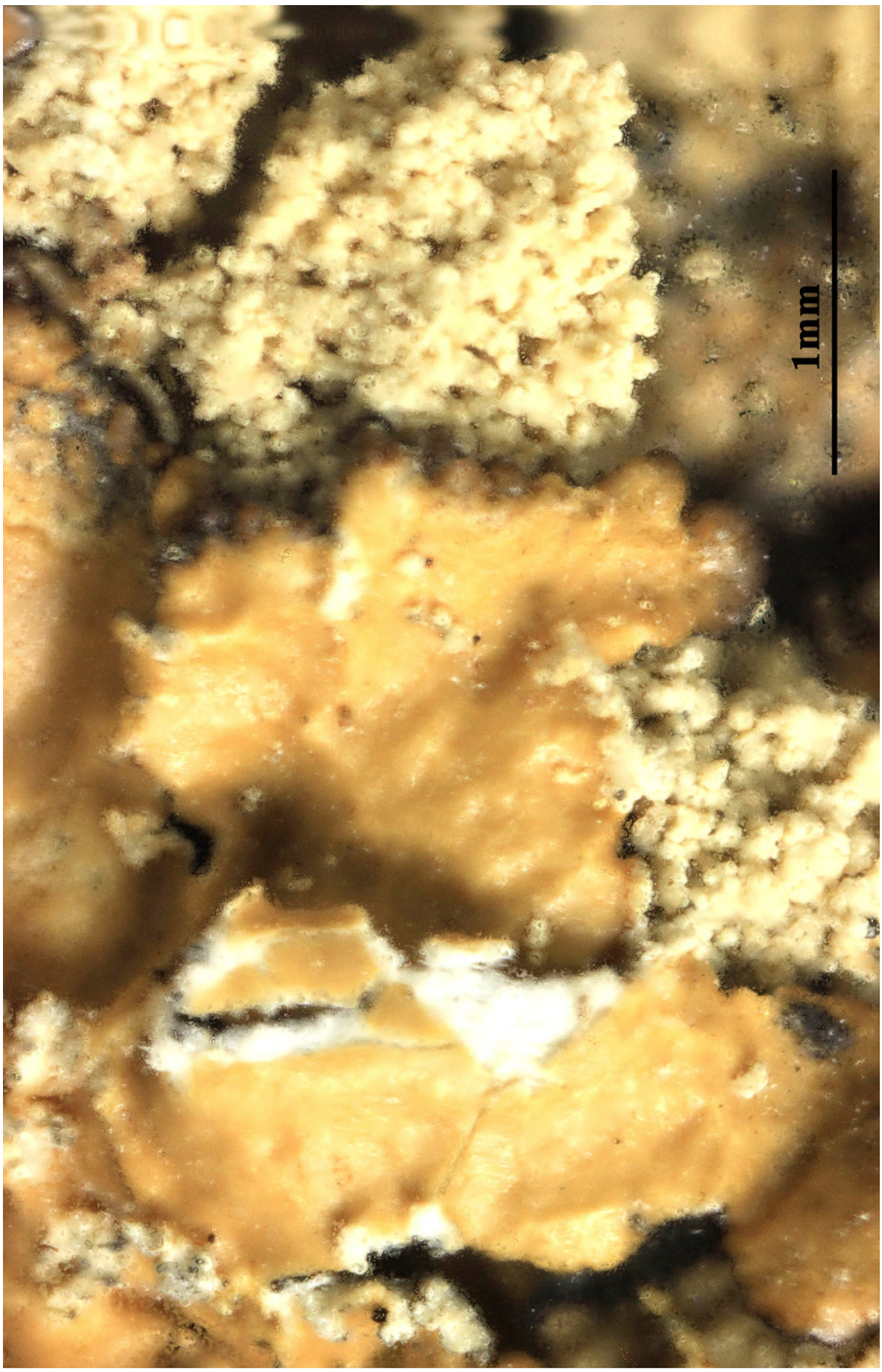
Thallus orbicular, to 15 cm wide, the older central lobes and true marginal lobes adherent to substratum, crowded or contiguous, 3–10 mm wide, often with peripheral and secondary lobes which are linear, suberect, elongated, 1–2 mm wide, lacking lateral contacts and occasionally cartilaginous; dichotomously branched linear lobes sometimes dominant. Upper surface with laminal wrinkles, grey; upper cortex erupting, sorediate, finally covered with granular soredia often in confluent glomerules 3–5 mm wide. Medulla mostly solid, blanching in older, highly sorediate specimens. Lower surface strongly wrinkled, pale brown or off-white near the apices. Apothecia rare, subpedicellate; receptacle sorediate, funnel-shaped; disc 3–12 mm wide, concave becoming flat, red-brown; thalline exciple entire then sorediate. Ascospores 6–9 × 4–5 µm. CHEMISTRY: cortex K+ yellow; medulla KC+ red, P± red. Atranorin, chloroatranorin, physodic acid (major); 3-hydroxyphiodic acid, 2'-O-methylphysodic acid (minor); alectoronic acid, physodalic acid and protocetraric acid (present or absent).; grows on dead wood, bark and occasionally rocks. Also in New Zealand and Japan.



Hypogymnia pulverata



Huilia circumnigrata

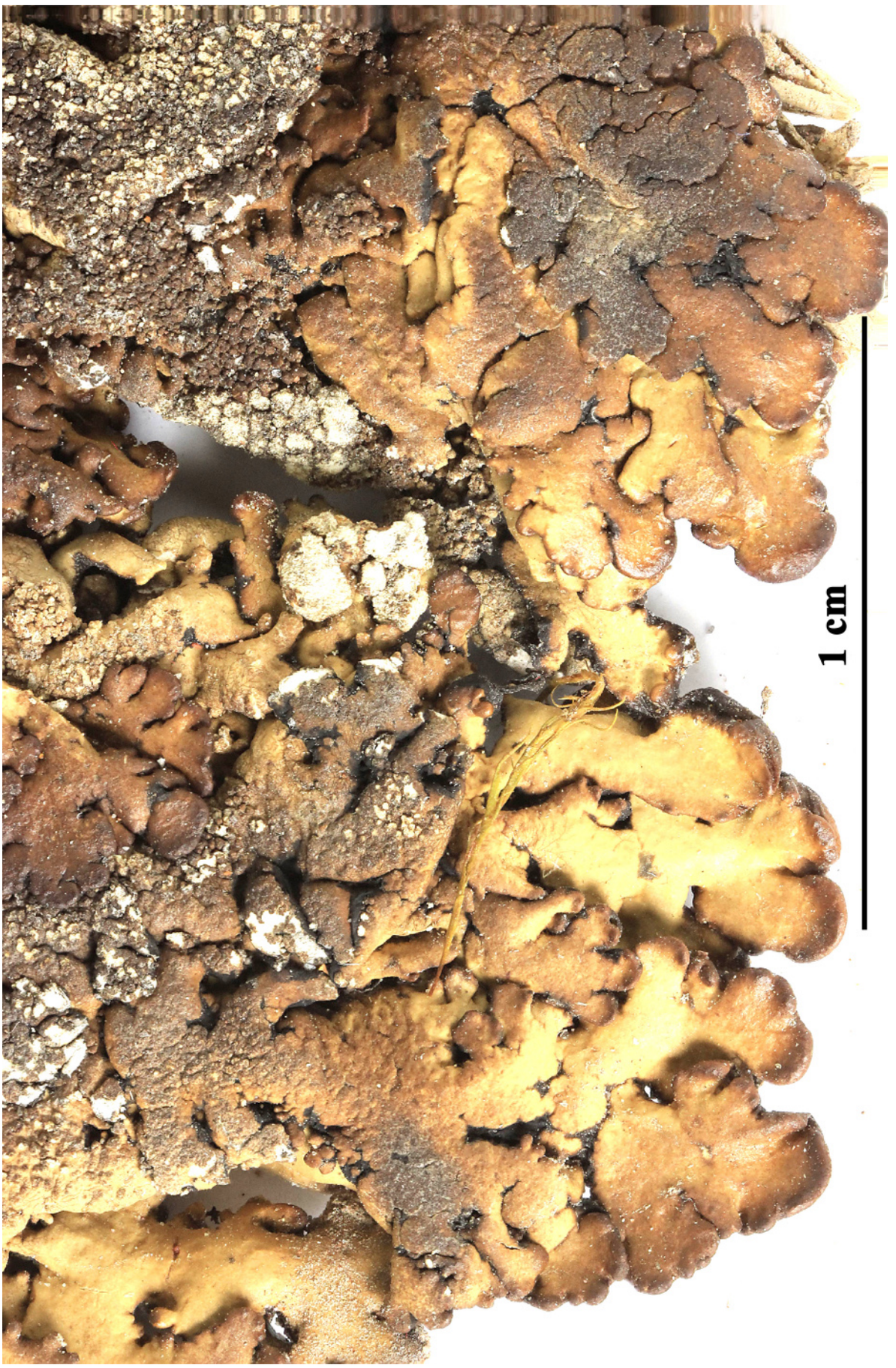


Huilia circumnigrata

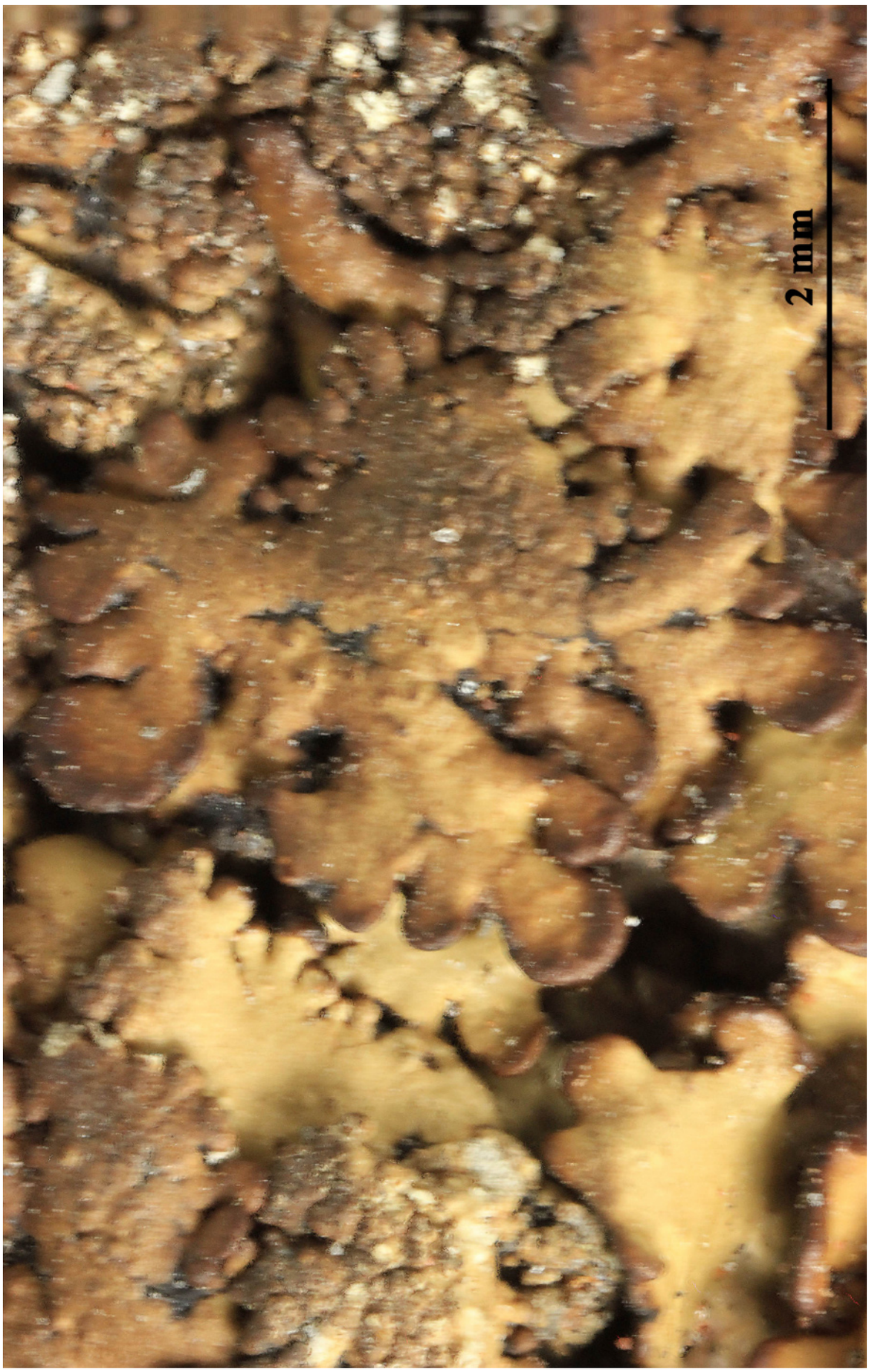
Hypogymnia subobscura (Vain.) Poelt, Mitt. bot. StSamml., Münch. 4: 297 (1962)
= *Parmelia subobscura* Vain. 1909
= *Hypogymnia kosciuskoensis* Elix, Brunonia 2: 194 (1980)

[VZ1747], URSS. Caucasus Magnus. Ad latera occidentalia montis Elbrus, loco Krugozor dicto, 3200 m. Supra plantas destructas in rupibus vulcanicis. Leg. A. Vězda, 21.6.1980. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1747.

Thallus placodioid, forming orbicular patches to 8 cm wide; marginal and primary central lobes contiguous, crowded, very rugose, subirregularly divided, 0.8–3 mm wide; secondary lobes loose, subdichotomously branched, becoming very imbricate. Upper surface grey with black variegations, to brown-black; lobulate or lobulate-isidioid projections near centre; esorediate. Medulla discolouring with age, hollow. Lower surface dull, roughened, pale brown at apices. Apothecia commonly absent, rarely many, to 5 mm wide, sessile or shortly pedicellate; receptacle pitted, wrinkled, funnel-shaped; disc concave then ±flat, dark brown to bay; thalline exciple entire, persistent, at first ±markedly involute. Ascospores 5–8 × 4–6 µm. CHEMISTRY: cortex K+ yellow; medulla KC+ red, P± red. Physodic acid (major); atranorin, chloroatranorin, 3-hydroxyphysodic acid (minor); alectoronic acid, 2'-O-methylphysodic acid, physodalic acid and protocetraric acid (present or absent). - On rocks in high alpine areas.



Hypogymnia subobscura



Hypogymnia subobscura

Hypogymnia subobscura

Hypogymnia vittata (Ach.) Parrique, Act. Soc. linn. Bordeaux 53: 66 (1898)
= *Parmelia physodes* ***var****. vittata* Ach. 1803

[VZ1766], URSS, Caucasus Magnus, regtio montis Elbrus, Baksan, in valle torrentis Adyrsu, 1700-2200 m. Supra muscos, ad saxa in ripa torrentis. Leg. A. Vězda, 25.6.1980. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1766.

Thallus foliose to subfruticose, heteromerous, dorsiventral, at first loosely adnate, but often soon ascending or pendent, forming up to 10(-15)cm broad, irregular rosettes or irregularly spreading, the lobes swollen, hollow inside, 0.5-2(-3) mm wide, elongate, slender, irregularly branching, separate to imbricate, with small, marginal secondary lobules. Soredia terminal, at first labriform, then becoming strongly lacerate. Upper surface smooth to weakly rugose, whitish, greenish grey or sometimes partially brown, often with a black border. Lower surface black to brownish black, sparsely perforate near tips and at the branching points, erhizinate, often visible from above along lobe margins. Upper cortex of tightly packed, more or less anticlinally oriented hyphae, the cell walls with Cetraria-type lichenan; medulla soon becoming hollow, lining the cavity inside the lobes; lower cortex dark, paraplectenchymatous. Apothecia rare, lecanorine, mainly laminal, brought by hollow stipes, 6-8(10) mm across, with a brown disc. Epithecium brown; hymenium and hypothecium colourless; paraphyses coherent, simple or sparingly branched in upper part. Asci 8-spored, clavate, Lecanora-type. Ascospores 1-celled, hyaline, broadly ellipsoid, 4.5-7 x 4-5.5 µm. Pycnidia frequent, laminal, black, often in clusters. Conidia narrowly cylindrical to weakly bifusiform, 4.5-6.5 x c. 1 µm. Photobiont chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ pale yellow, UV-; medulla K-, C-, KC+ orange-red, P-, UV+ pale blue-violet. Chemistry: upper cortex with atranorin; medulla with physodic acid, 3-hydroxyphysodic acid (both major), and vittatolic acid (minor/accessory). - Note: a circumboreal-montane lichen found on acid bark, often on basal parts of trunks, on acid soil and overgrowing moribund bryophytes, probably restricted to the Alps in Italy.

Hypogymnia vittata

Hypogymnia vittata

Hypogymnia zeylanica (R. Sant.) D.D. Awasthi & Kr.P. Singh, Geophytology 1(2): 100 (1971)
= P*armelia zeylanica* R. Sant. 1942

[VZ1390], India. Tamil Nadu. Montes Plni, prope Berijam, 2100 m. Ad corticam Rhododendron. Leg. M. E. Hale (no. 43871). Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1390.

Thallus isidiate, isidia short or long, often sorediate, soredia also from verrucae, lobes up to 3.5 mm wide, lax, grey to brown-black, apothecia up to 2 mm diam., spores 5-8 x 3.5- 5 µm; medulla C + orange (physodic acid present); from Nilgiri and Palni Hills.

Hypogymnia zeylanica

Hypogymnia zeylanica

Hypotrachyna awasthii Hale & Patw., Bryologist 77(4): 637 (1975) [1974]
= Remototrachyna awasthii (Hale & Patw.) Divakar & A. Crespo, in Divakar, Lumbsch, Ferencová, Prado & Crespo, Am. J. Bot. 97(4): 586 (2010)

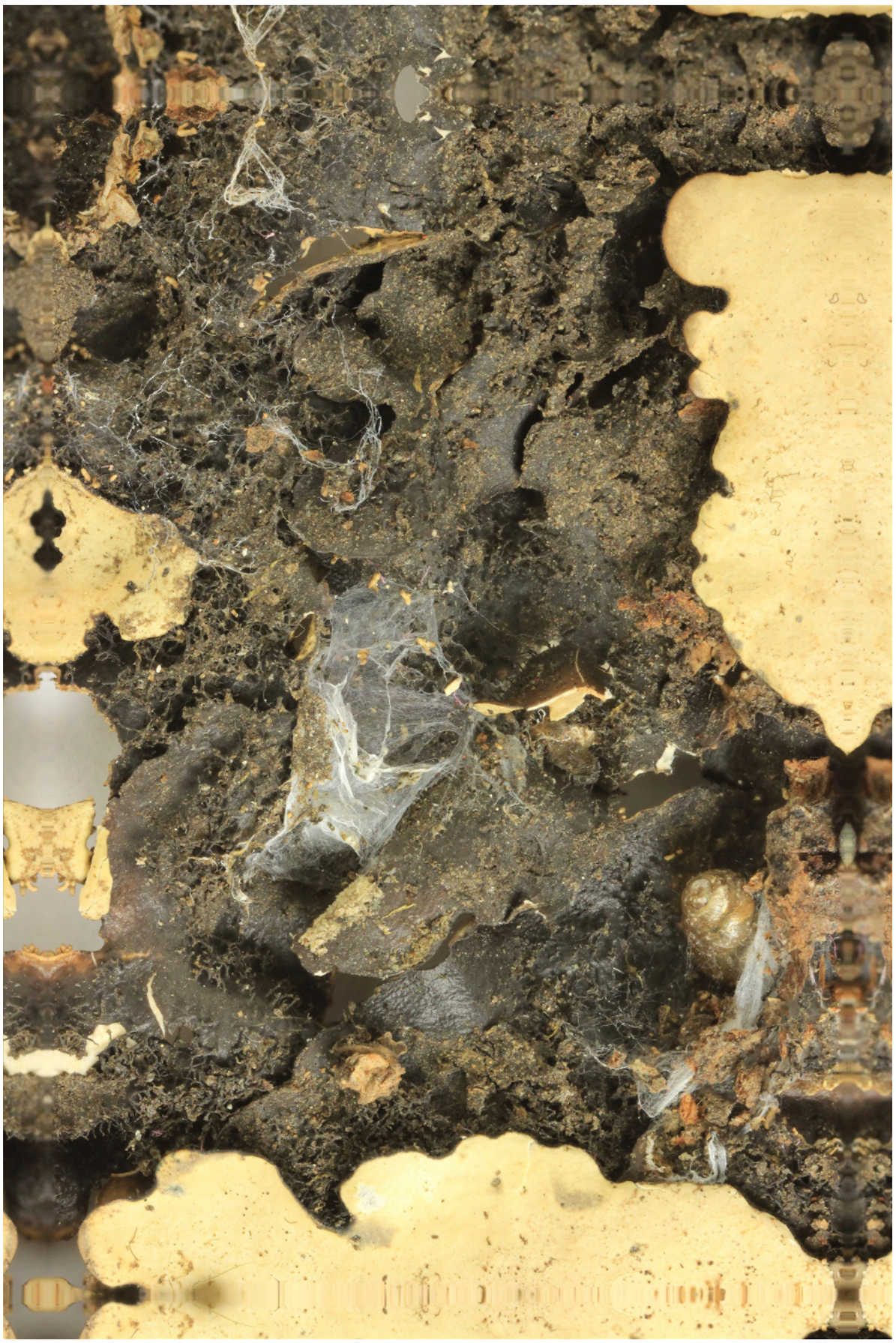
[VZ1392], India. Maharshtra. Mahabaleshwar, 1200 m. Ad *Grevillea*. Leg. M. E. Hale (no. 40070), 3,11,1973. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1392.

Thallus corticola, laxe adnatus, 6-10 cm diametro, albido-cinereus, lobis latis, subir- regularibus, apice rotundatus, usque ad 1 cm latis, isidiatis, isidiis densis, simplicibus ramosis, cylindricis, 0.1-0.2 mm diametro, 0.5 mm altis; superne planus, nitidus, cortex superior 12-14 /m crassus, stratum gonidiale 16-18 /m crassum, medulla alba, 90-110 µm crassa, cortex inferior 16-18 µm crassus; subtus niger, modice rhizinosus, rhizinis sparse dichotome ramosis. Apothecia rara, adnata, 1.0-2.5 mm diametro; hymenium 50-60 µm altum, sporis octonis, simplicibus, 8 x 10 µm. - India - Chemistry: Atranorin, norstictic acid, salazinic acid (at times trace only).

Hypotrachyna awasthii

Hypotrachyna awasthii

Hypotrachyna awasthii



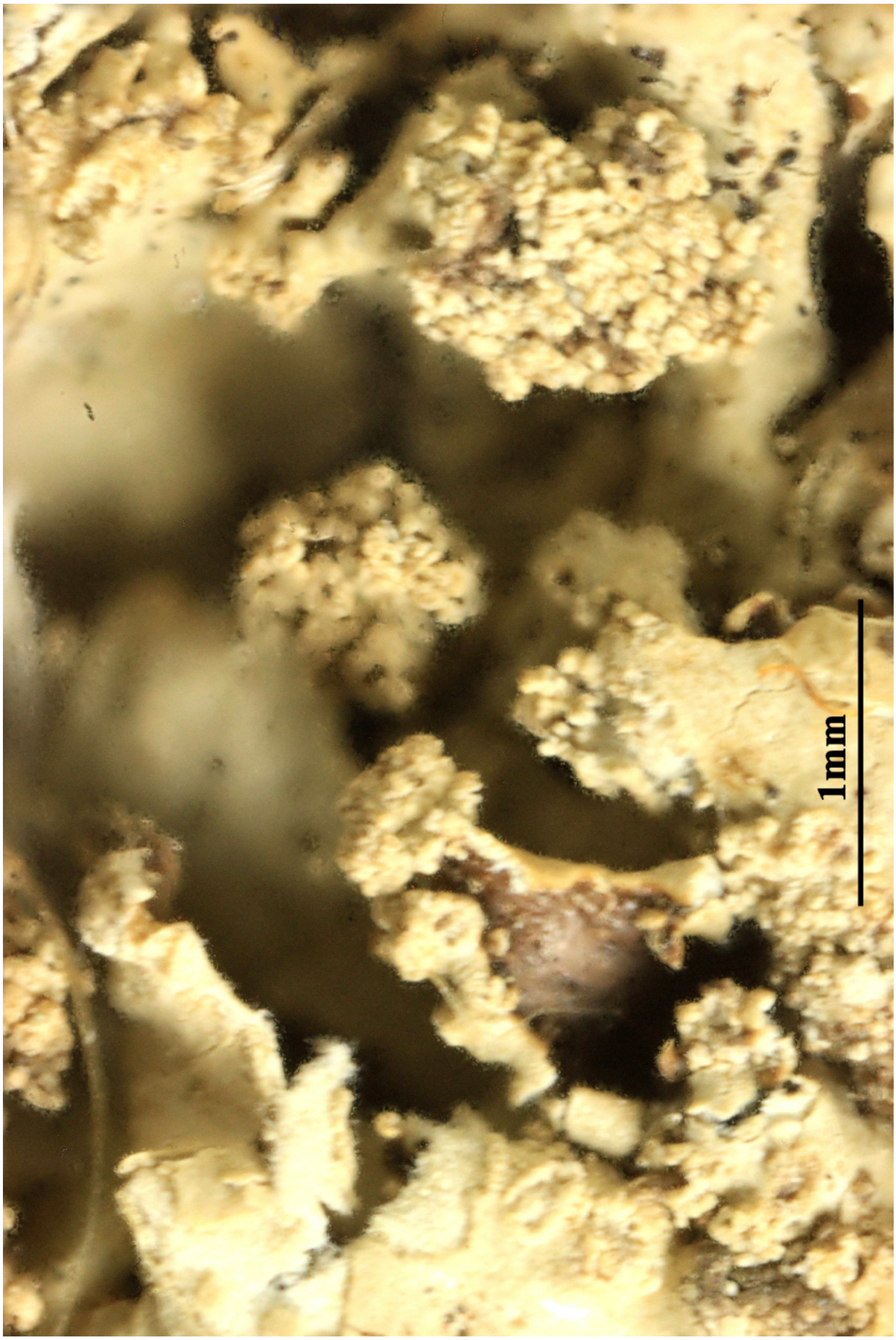
Hypotrachyna awasthii

Hypotrachyna britannica (D. Hawksw. & P. James) Coppins, Checklist of Lichens of Great Britain and Ireland (UK): 86 (2002)
= *Parmelia britannica* D. Hawksw. & P. James 1973

[VZ1164], Magna Britannia, Cambria, Anglesey, Holy Island, Holyhead, inter Plas Meilw et Bod-Warren, 15 m, in rupibus siliceis umbrosis maritimis. ;eg. P. W. James, 6,4,1973. Ex A. VěZDA: Lichenes Selecti Exsiccati Nr. 1164.

Thallus foliose, heteromerous, dorsiventral, moderately adnate to appressed, forming more or less regular, up to 6(-8) cm wide rosettes, sorediate. Lobes 0.5-3 (-4) mm wide, dichotomously to irregularly branched with rounded axils and truncate tips, often suberect in central parts of thallus, rarely short-ciliate, the upper surface pale ash-grey or pale blue-grey, emaculate or faintly maculate at lobe-tips, smooth, but often patchily pustulose, the pustules tending to break off into subterminal or laminal soralia, the soredia granulose, dark blue or almost black when dry; lower surface matt, more or less veined or canaliculate, black in central parts, dark brown at margins, with short, mostly forked, sometimes simple or dichotomously branched, black or brown-black rhizines. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with isolichenan; medulla white, but appearing black in the exposed parts under eroded soralia; lower cortex brown, of anticlinally oriented hyphae. Apothecia unknown. Photobiont: chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ faintly yellow; medulla: K-, C+ pink, KC+ pink-red, P-, UV-. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with gyrophoric acid (major), lecanoric acid, hiascic acid, 4,5-di-0-methylhiascic acid, 4-0-methylhiascic acid (minor). - Note: a mainly Atlantic, silicicolous species, also known from Southern France, Corsica (Roux & Coll. 2014), and the southern Swiss Alps.

Hypotrachyna britannica



Hypotrachyna britannica

Hypotrachyna britannica (D. Hawksw. & P. James) Coppins, Checklist of Lichens of Great Britain and Ireland (UK): 86 (2002)
= *Parmelia britannica* D. Hawksw. & P. James 1973

[VZ1189], Romania, Dobrogea, Distr. Tulcea, supra pagum Camena, 150 m, ad saxa silicea locis septentrionem spectantibus. Leg. A. Vězda, 15.07.1973. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1189.

Thallus foliose, heteromerous, dorsiventral, moderately adnate to appressed, forming more or less regular, up to 6(-8) cm wide rosettes, sorediate. Lobes 0.5-3 (-4) mm wide, dichotomously to irregularly branched with rounded axils and truncate tips, often suberect in central parts of thallus, rarely short-ciliate, the upper surface pale ash-grey or pale blue-grey, emaculate or faintly maculate at lobe-tips, smooth, but often patchily pustulose, the pustules tending to break off into subterminal or laminal soralia, the soredia granulose, dark blue or almost black when dry; lower surface matt, more or less veined or canaliculate, black in central parts, dark brown at margins, with short, mostly forked, sometimes simple or dichotomously branched, black or brown-black rhizines. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with isolichenan; medulla white, but appearing black in the exposed parts under eroded soralia; lower cortex brown, of anticlinally oriented hyphae. Apothecia unknown. Photobiont: chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ faintly yellow; medulla: K-, C+ pink, KC+ pink-red, P-, UV-. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with gyrophoric acid (major), lecanoric acid, hiascic acid, 4,5-di-0-methylhiascic acid, 4-0-methylhiascic acid (minor). - Note: a mainly Atlantic, silicicolous species, also known from Southern France, Corsica (Roux & Coll. 2014), and the southern Swiss Alps.

Hypotrachyna britannica

Hypotrachyna britannica

Hypotrachyna caraccensis (Taylor) Hale, Smithson. Contr. bot. 25: 26 (1975)
= *Parmelia caraccensis* Taylor 1847

[VZ1782], Costa Rica. Cartago: In monte igivomo dicto Volcán Irazú, 3130 m. Ad corticem arboris in pascuo. Leg. W. L. Culberson (no. 16859) et C. F. Culberson, 14.12.1976. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1782.

Thallus corticolous, 5-30 cm wide, loosely adnate or in part freely pendent, not coriaceous, subdichoto mously lobate. Lobes linear, elongate, separate to slightly imbricate, (1.5)2-6 mm wide, with entire to crenate margins and subtruncate to subrotund apices. Upper surface yellow-green to yellow, ±plane, emaculate, shiny at the apices, shallowly rugose throughout, lacking soredia, isidia, pustules, dactyls, and lobules. Medulla white (reddish if improperly dried). Lower surface black centrally, blackish brown peripherally, partially denuded. Rhizines dense, forming a mat along the lobe margins, 0.3-1 mm long, 1-3 times dichoto mously branched. Apothecia relatively common, ses sile, 3-9 mm wide, with brown, concave, glossy discs and smooth to crenate, incurved, sometimes sorediate margins. Ascospores ellipsoid to broadly ellipsoid, 11 13 x 6-8 um. Pycnidia occasional, laminal. Conidia not seen. Chemistry. Spot tests and fluorescence: upper cortex K-, C-, KC+ yellow, P-, UV-; medulla K+ yellow, turning deep red; C-, KC-, P+ orange. Secondary metabolites: upper cortex with usnic acid (major/minor) and ±atranorin (trace); medulla with galbinic acid (major), norstictic acid (submajor), salazinic acid (minor), and protocetraric acid (trace). - Widespread at higher ele vations in Central America from Guatemala south wards and in the northern Andes from Venezuela to Bolivia, at (1400-)3100-4000(-4200) m. Most fre quent in subparamo vegetation, on mossy branches and among mosses on exposed boulders. Not known outside the Neotropics.

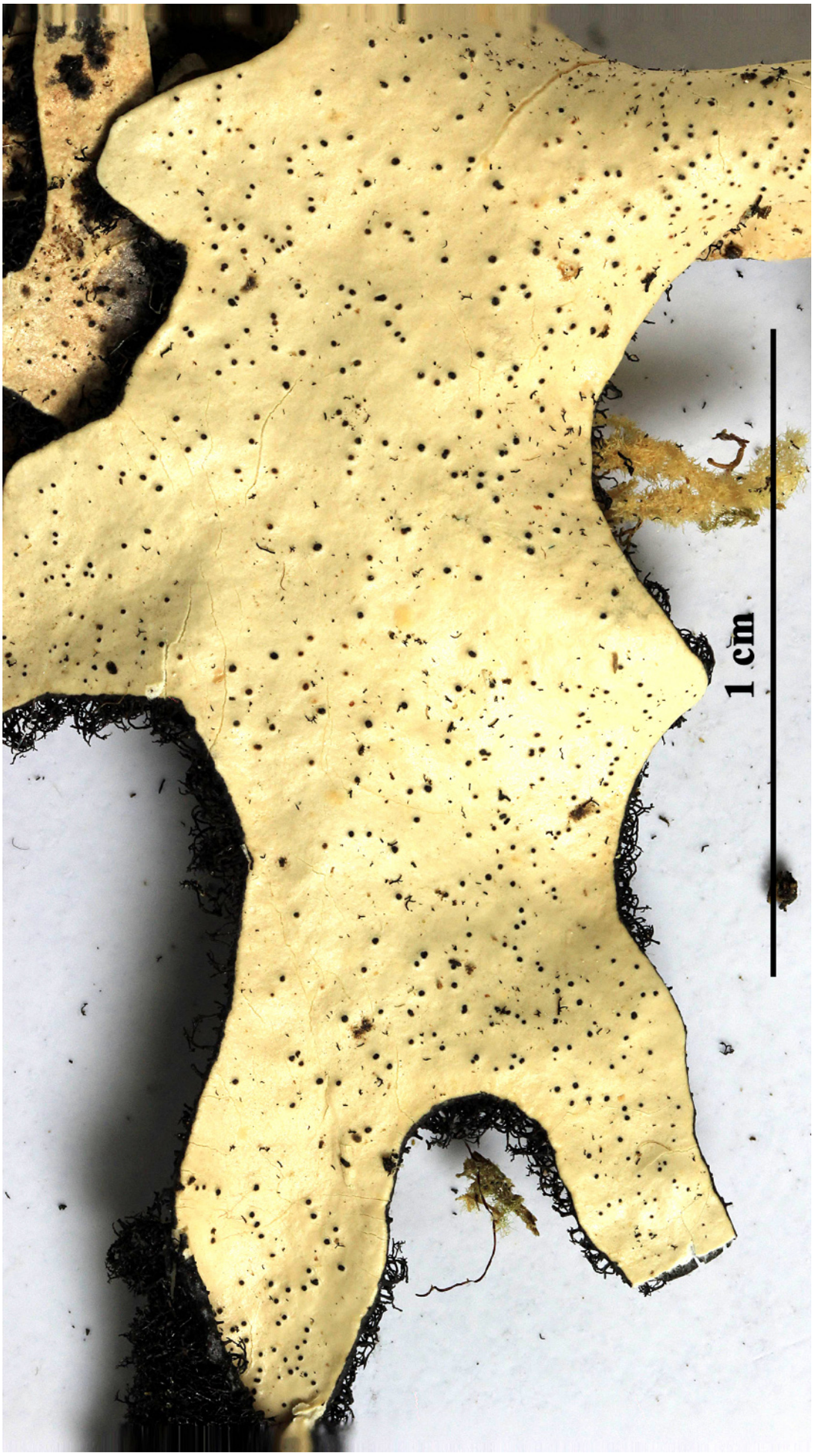
Hypotrachyna caraccensis

Hypotrachyna caraccensis

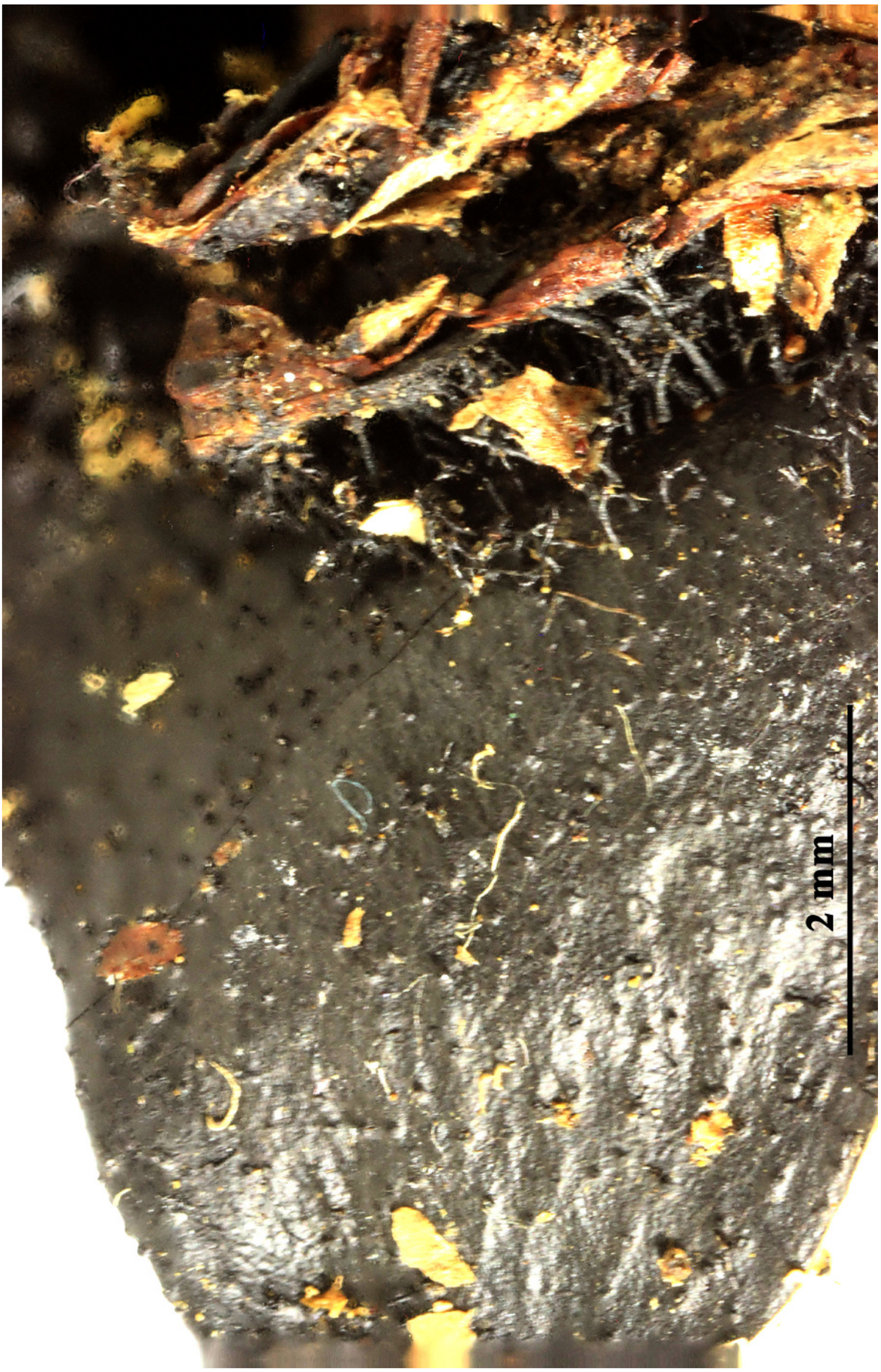
Hypotrachyna gigas (Kurok.) Hale, Smithson. Contr. bot. 25: 38 (1975)
= *Hypotrachyna longiloba* (H. Magnusson) Hale, Phytologia 28: 341. 1879.
= *Parmelia gigas* Kurok. 1964

[VZ2114], Venezuela. Estado Mérida: Sierra Nevada de Mérida, páramo de Mucubají, inter Los Patos et Laguna Negra, 3500 m. Ad saxum. Leg. M. López-Figueiras (32539), 4.2.1936. - Annot.: UV fluorecente, atranorin, gyrophoric acid, alectoronic acid; anal. H. Sipman. - Ex A. Vězda Lichenes Selecti Exsiccati Nr.2114.

Thallus corticolous, 8-40 cm wide, loosely adnate, not coriaceous, dichotomoudly lobate. Lobessublinear to linear, elongate, separate to somewhat imbricate, c. 2-7 mm wide, plane or slightly concave, with entire margins and subtruncate apices, Upper surface pale to whitish grey, with c, 0.1 mm wide, black marginal rim due visibility of the lowercortex, shallowly rugulose throughout, more or less shuny, rarely slightly pruinose at the tips, emaculate, lackin soredia, isidia, pustules, dactyls, and lobules. Medulla white. Lower surface black, peripherally brown. Rhizines rather dense but sometimes sparse. forming a thin or dense marginal finge, c. 0.4-0.7 mm long, 2-5 times dichotomously branched. Apothecia occasionly, sessile, c. 5-15 mm wide, with strongly concave, brown, glossy discs and crenulated, incurved margins. Ascospores ellipsoid, 16-18 x 8-10 µµm. Pycnidia occasional, laminal. Conidia cylindrical, 5-6 x 0.8 µm. Chemistry: upper cortex K+ yellow, C-, KC-. P+yellow, UV-: medulla:K-, C-, KC+ red, P-. UV+ bluish wfite. atranorin, chloroatranorin, alectoronic acid, β-alectoronic acid, α-collatolic acid, β-collatolic acid, 4-O- methylphysodic acid, 4-O-methylisophysodic acid, gyrophori acid, lecanoric acid.



Hypotrachyna gigas



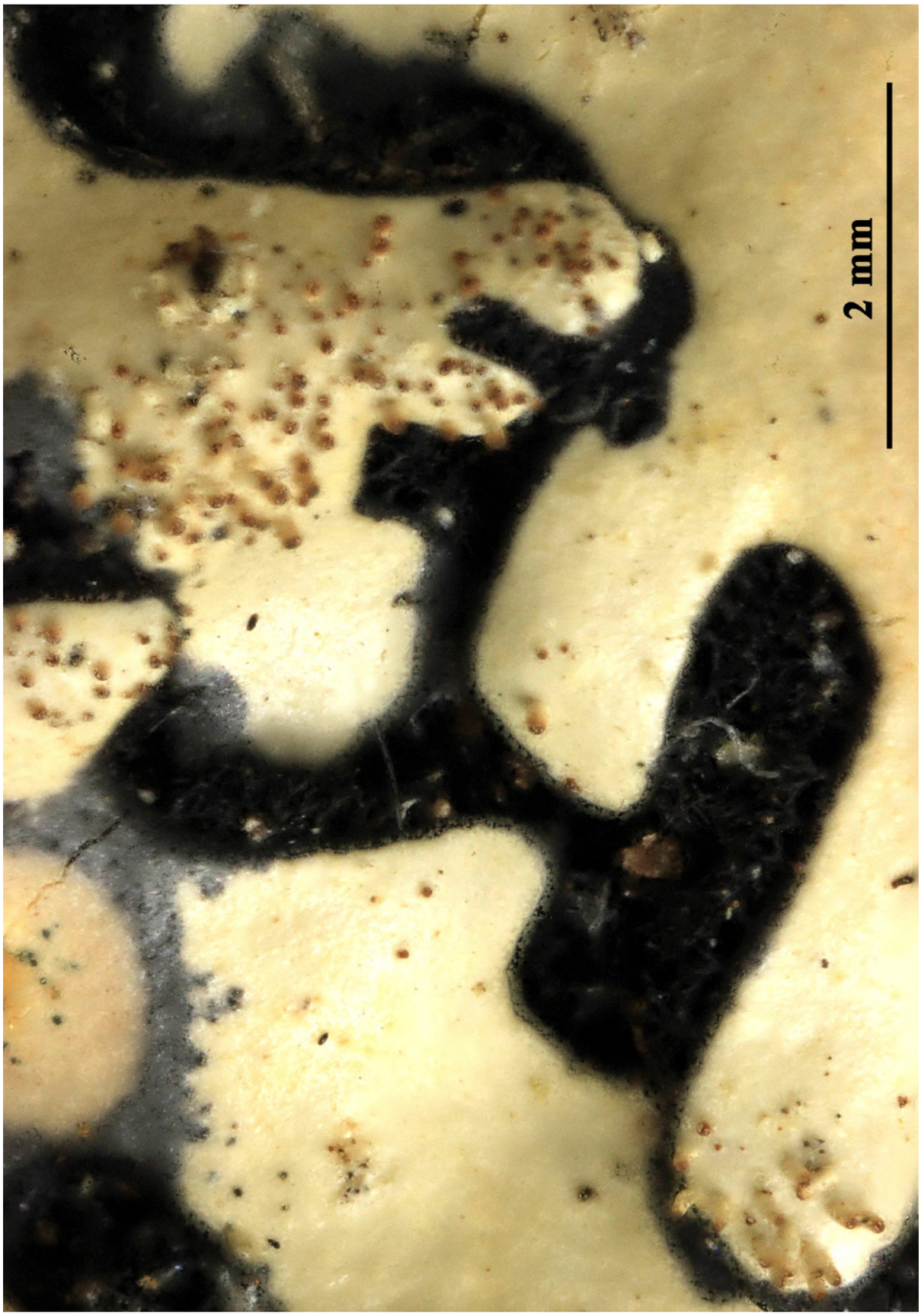
Hypotrachyna gigas

Hypotrachyna imbricatula (Zahlbr.) Hale, Smithson. Contr. bot. 25: 41 (1975)
= *Parmelia imbricatula* Zahlbr. 1909

[VZ2038], Panama. Chiriquí: Boquete, in monte supra oppidum, 1675 m. Ad truncum putrefactum arboris in pascuo- Leg. W. L. Culberson (no. 19330) et C. F. Culberson, 14.7.1983. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 2038.

Thallus corticolous, 3-15 cm wide, adnate to loosely adnate, somewhat fragile, subdichotomously lobate. Lobes sublinear, elongate, separate, becoming partially imbricate, 1.5-4 mm wide, plane, with entire margins and subtruncate to truncate apices. Upper surface whitish gray (tan in herbarium with age), smooth, shiny, usually strongly white-maculate, isidi ate, sometimes lobulate, lacking soredia, pustules, and dactyls. Isidia laminal to marginal, dense, cylin drical, simple to coralloid branched, slender, rarely becoming lobulate, concolorous with the thallus but tips sometimes blackened. Medulla white. Lower surface black peripherally brownish black, shiny. Rhizines dense. Apothecia rare, sessile, 2-10 mm wide, with brown discs and crenulate, smooth mar gins. Ascospores broadly ellipsoid, 11-16 x 7-10 urn. Pycnidia marginal. Conidia not seen. Chemistry: Spot tests and fluorescence: upper cortex K+ yellow, C-, KC-, P+ yellow, UV-; medulla K-, C+ yellow-orange, KC+ yellow-orange, P-. Secondary metabolites: upper cortex with atranorin (minor) and chloroatranorin (minor); medulla with barbatic acid (major/minor), obtusatic acid (minor), 4-0 demethylbarbatic acid (major), norobtusatic acid (minor), ± isoobtusatic acid (trace), ± norisoobtusatic acid (trace), ± evernic acid (trace), ± lecanoric acid (trace), and ± vioxanthin (trace). Distribution Widespread and common throughout the Neotropics, from Mexico and the Windward Antilles to Bolivia and southeastern Brazil, from sea level up to 3700 m. Usually epiphytic but also among moss on rocks, on roadbanks, in undisturbed forest canopies as well as in secondary vegeta tion and cultivated areas. Outside the Neotropics known from the Azores (Aptroot).

Hypotrachyna imbricatula



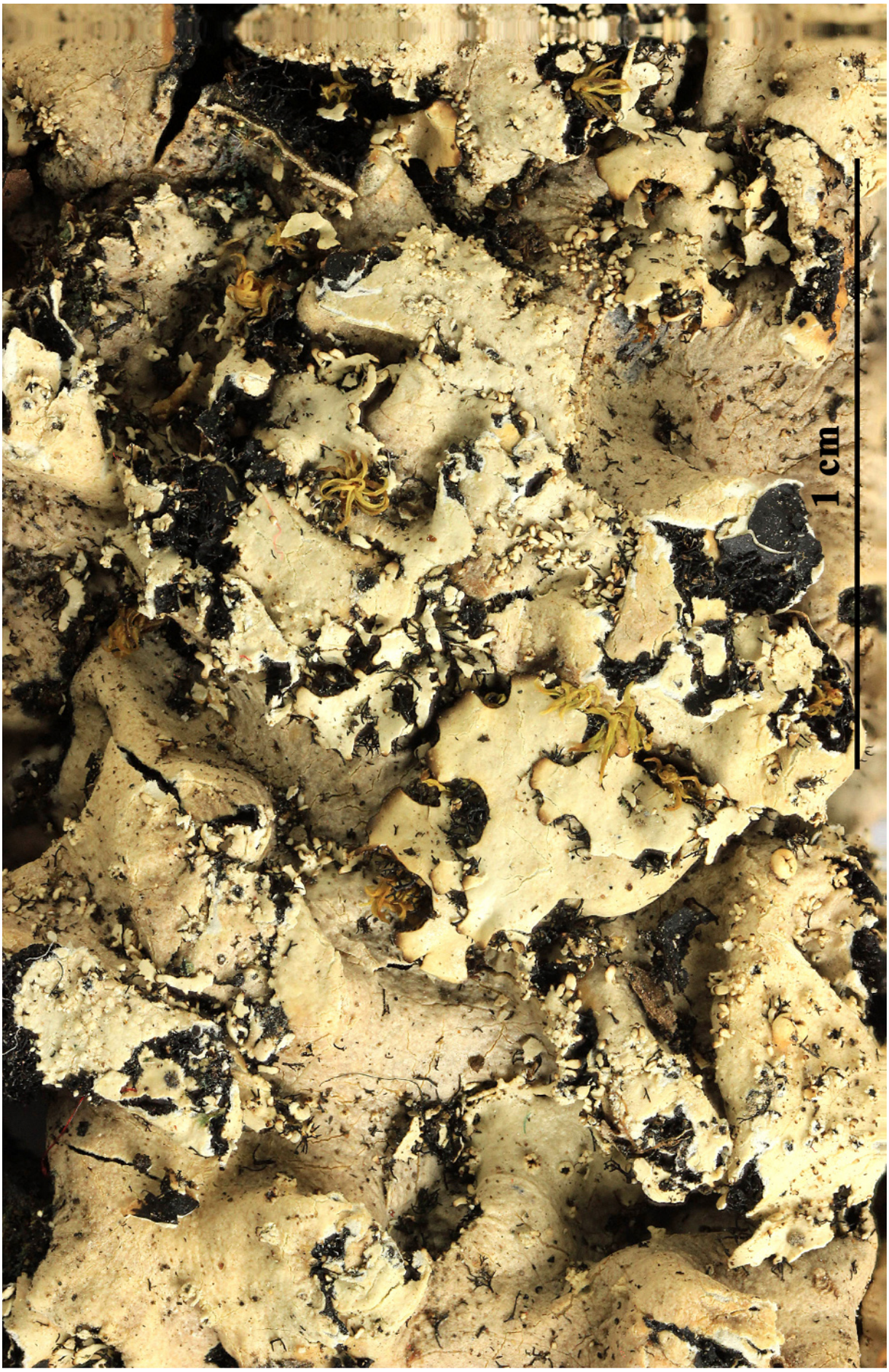
Hypotrachyna imbricatula

Hypotrachyna imbricatula

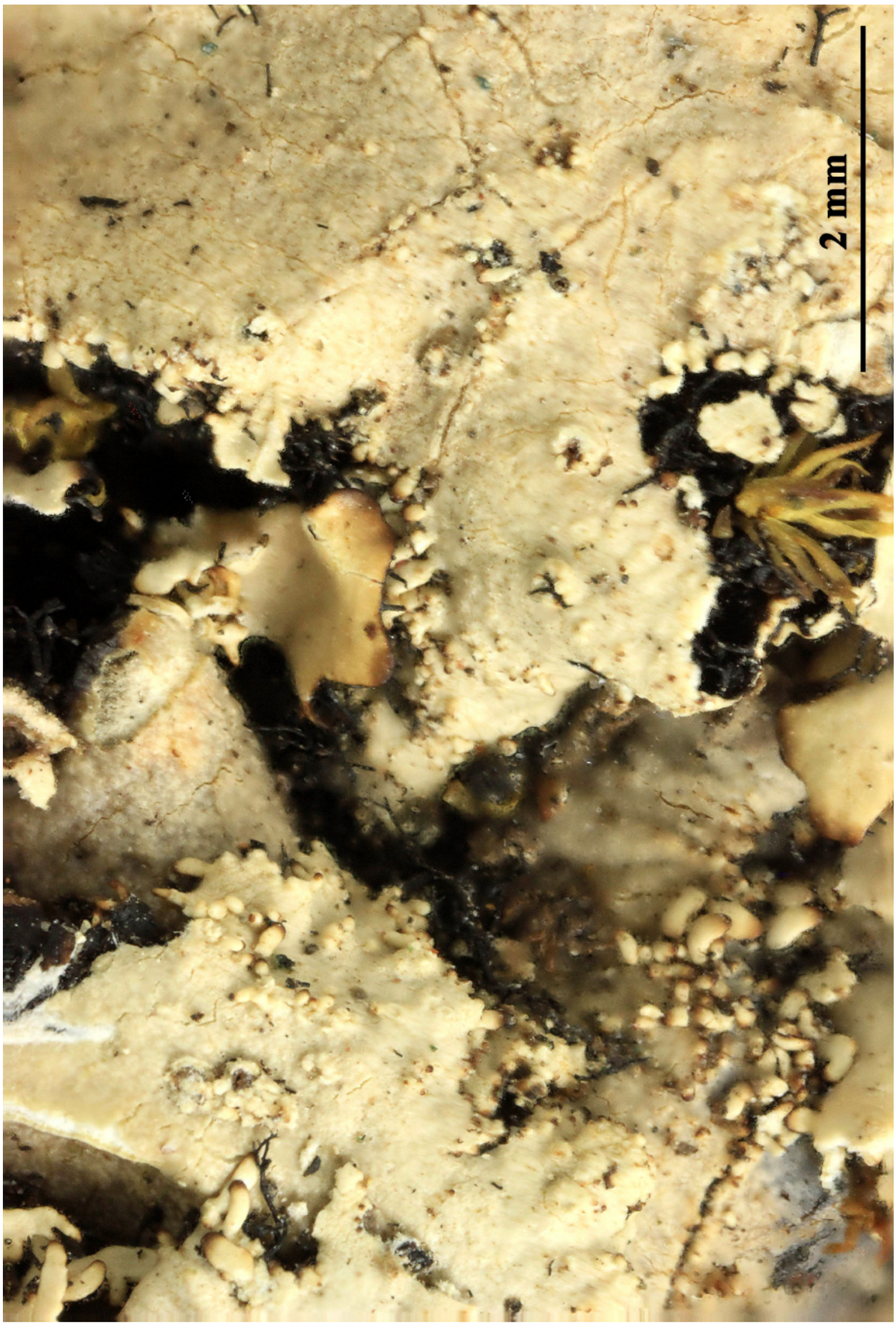
Hypotrachyna imbricatula (Zahlbr.) Hale, Smithson. Contr. bot. 25: 41 (1975)
= *Parmelia imbricatula* Zahlbr. 1909

[VZ1783], Costa Rica. Cartago: In monte ignivomo dicto Volcán Irazú, 3075 m. Ad corticem arboris angiospermae in pascuo. Leg. W. L. Culberson (no. 16872) et C. F. Culberson, 14.12.1976. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1783.

Thallus corticolous, 3-15 cm wide, adnate to loosely adnate, somewhat fragile, subdichotomously lobate. Lobes sublinear, elongate, separate, becoming partially imbricate, 1.5-4 mm wide, plane, with entire margins and subtruncate to truncate apices. Upper surface whitish gray (tan in herbarium with age), smooth, shiny, usually strongly white-maculate, isidi ate, sometimes lobulate, lacking soredia, pustules, and dactyls. Isidia laminal to marginal, dense, cylin drical, simple to coralloid branched, slender, rarely becoming lobulate, concolorous with the thallus but tips sometimes blackened. Medulla white. Lower surface black peripherally brownish black, shiny. Rhizines dense. Apothecia rare, sessile, 2-10 mm wide, with brown discs and crenulate, smooth mar gins. Ascospores broadly ellipsoid, 11-16 x 7-10 urn. Pycnidia marginal. Conidia not seen. Chemistry: Spot tests and fluorescence: upper cortex K+ yellow, C-, KC-, P+ yellow, UV-; medulla K-, C+ yellow-orange, KC+ yellow-orange, P-. Secondary metabolites: upper cortex with atranorin (minor) and chloroatranorin (minor); medulla with barbatic acid (major/minor), obtusatic acid (minor), 4-0 demethylbarbatic acid (major), norobtusatic acid (minor), ± isoobtusatic acid (trace), ± norisoobtusatic acid (trace), ± evernic acid (trace), ± lecanoric acid (trace), and ± vioxanthin (trace). Distribution Widespread and common throughout the Neotropics, from Mexico and the Windward Antilles to Bolivia and southeastern Brazil, from sea level up to 3700 m. Usually epiphytic but also among moss on rocks, on roadbanks, in undisturbed forest canopies as well as in secondary vegeta tion and cultivated areas. Outside the Neotropics known from the Azores (Aptroot).



Hypotrachyna imbricatula



Hypotrachyna imbricatula

Hypotrachyna physcioides (Nyl.) Hale, Smithson. Contr. bot. 25: 54 (1975)
= *Parmelia physcioides* Nyl. 1860

[VZ1784], Costa Rica, Cartago: In montis ignivomo Volcán Irazú, 3075 m. Ad corticem arboris angiospermae in pascuo. Leg. W. L. Culberson (no. 16847) et C. F. Culberson, 14.12.1976. Ex A. VěZDA Lichenes Selecti Exsiccati Nr. 1784.

Thallus corticolous, 5-15 cm wide, loosely ad nate, often coriaceous, subdichotomously lobate. Lobes sublinear, elongate, initially separate, becoming slightly imbricate, 2-6 mm wide, plane to subconvex, with entire margins and subtruncate apices. Upper surface gray, plane to convex, smooth to shallowly rugulose, dull, somewhat pruinose towards tips, strongly white-maculate, sometimes lobulate, lacking soredia, isidia, pustules, and dactyls. Lobules devel oping centrally. Medulla white. Lower surface black, somewhat shiny. Rhizines dense, 1-4 times dichoto mously branched. Apothecia common, sessile to substipitate, 2-10 mm wide, with brown discs and crenulate margins. Ascospores ellipsoid, 12-16 x 6 9 µm. Pycnidia not seen. Chemistry: Spot tests and fluorescence: upper cortex K+ yellow, C-, KC-, P+ yellow, UV-; medulla K-, C+ yellow-orange, KC+ yellow-orange, P-. Secondary metabolites: upper cortex with atranorin (minor) and chloroatranorin (minor); medulla with barbatic acid (major/minor), 4-0 demethylbarbatic acid (major/minor), obtusatic acid (minor/trace), ± norobtusatic acid (trace), ± evernic acid (minor), ± gyrophoric acid (minor/trace), ± pig mentosin A (minor), and ± pigmentosin D (minor). Distribution: Widespread and common in the mountains throughout the Neotropics from Mexico and Hispaniola to Bolivia and southeastern Brazil, at (400-)200O-3800m. Inhabiting a wide range of habitats, especially tree trunks in montane forests and exposed, mossy boulders in alpine areas. Also known from Argentina (Adler & Calvelo, 2007), China (Chen et al., 2003), India (Divakar & Upreti, 2003), the Philippines (Elix & Schumm, 2001), and Thailand (Pooprang et al., 1999).

Hypotrachyna physcioides

Hypotrachyna physcioides

Hypotrachyna taylorensis (M.E. Mitch.) Hale, Phytologia 28(4): 342 (1975) [1974]
= *Parmelia taylorensis* M.E. Mitch. 1961

[VZ1738], Magna Brittania, Cambria, Merionethshire, Penmaenpool, ad murum venustum. Leg. W. L. Culberson (no. 14069) et C. F. Culbersonh, 23.7.2962. - Annot.: Atranorin, evernic acid, lecnoric acid by TLC; anal. A. Johnson and C. Culberson. - Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1738.

Thallus foliose, heteromerous, dorsiventral, ash-grey, loosely attached, forming orbicular to irregular, up to 15 cm wide patches. Lobes dichotomously to irregularly branched, with rounded axils and down-turned margins, overlapping and often imbricate, (1-)2-6(-8) mm wide; upper surface pale ash-grey, more or less distinctly white-maculate, sometimes pruinose at lobe-tips, the upper cortex tending to flake-off into small, flattened schizidia, exposing the white to blackish medulla; soralia rarely present, pustular, laminal, more or less maculiform, with whitish granulose soredia; lower surface dark brown near margins, otherwise black and shiny, with shiny, richly dichotomously branched rhizines which sometimes project beyond lobe margins. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with isolichenan; medulla white; lower cortex brown, of anticlinally oriented hyphae. Apothecia very rare, lecanorine, laminal, up to 5 mm across, with a brown disc and a crenulate thalline margin. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, clavate, Lecanora-type. Ascospores 1-celled, hyaline, broadly ellipsoid to subglobose, 9-14 x 6-10 µm. Pycnidia rare, black, immersed. Conidia bacilliform, wider at one or both ends, 4-5 x c. 1 µm. Photobiont chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ faintly yellow; medulla K-, C+ pink, KC+ pink-red, P-, UV+ bluish white. Chemistry: upper cortex with atranorin; medulla with lecanoric and evernic acids. - Note: a mild-temperate, mostly oceanic species found on mossy trunks in ancient, undisturbed, moist forests.

Hypotrachyna taylorensis

Hypotrachyna taylorensis

Icmadophila ericetorum (L.) Zahlbr., Wiss. Mittellung. Bosnien und der Hercegov. 3: 605 (1895)
= *Lichen ericetorum* L. 1753

[VZ1872], Suecia. Värmland: Rämen, ad septentriones a Stjärnberget, 360 m. Ad sphagna in turfoso. Leg. S. W. Sundell (no. 24223), 5.9.1980. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1872.

Thallus crustose, episubstratic, pale green, glaucous green or whitish grey, brighter green when wet, continuous, consisting of a soft layer of 100-300 µm thick, ecorticate, soredia-like to wart-like granules. Apothecia biatorine, round to irregular in outline, strongly constricted to substipitate, 1-2(-3.5) mm across, with a flesh-coloured to pale orange-pink, sometimes faintly white-pruinose, smooth to finally wrinkled, flat to convex disc, and a thin, smooth, sometimes irregularly lobulate, often paler, sometimes whitish-pruinose, finally often excluded proper margin. Proper exciple of intricately interwoven hyphae, extending below the hymenium; epithecium reddish brown, with many small crystals, K+ orange-red; hymenium colourless, 120-160 µm high, I+ blue; paraphyses simple or sparingly branched in upper part, slender, c. 1 µm thick at mid-level, the apical cells swollen, up to 5 µm wide; hypothecium colourless, the central part with colourless crystals not dissolving in K. Asci (6-)8-spored, narrowly cylindrical, K/I- except for a thin K/I+ dark blue cap in the apical wall, Icmadophila-type. Ascospores 1(-3)-septate, hyaline, fusiform-elongate, 12-28(-30) x 4-6(-7) µm. Pycnidia pale, immersed, with a colourless wall, the conidiogenous cells enteroblastic, short-cylindrical. Conidia simple, hyaline, bacilliform, 3.5-4.5 x 0.5-1 µm. Photobiont chlorococcoid (Coccomyxa), the cells ellipsoid, 5-8 x 3-4 µm, with a large parietal chloroplast, surrounded by a gelatinous layer. Spot tests: thallus K+ orange turning brownish orange, C-, KC+ orange, P+ orange, UV+ glaucous; apothecia K+ and P+ orange-red, UV-. Chemistry: thallus with thamnolic and perlatolic acid, apothecia with thamnolic acid only. - Note: a cool-temperate to boreal-montane, circumpolar species found on decaying wood and muribund bryophytes, usually in upland areas; common in the Alps, rarer on the high Mediterranean mountains.

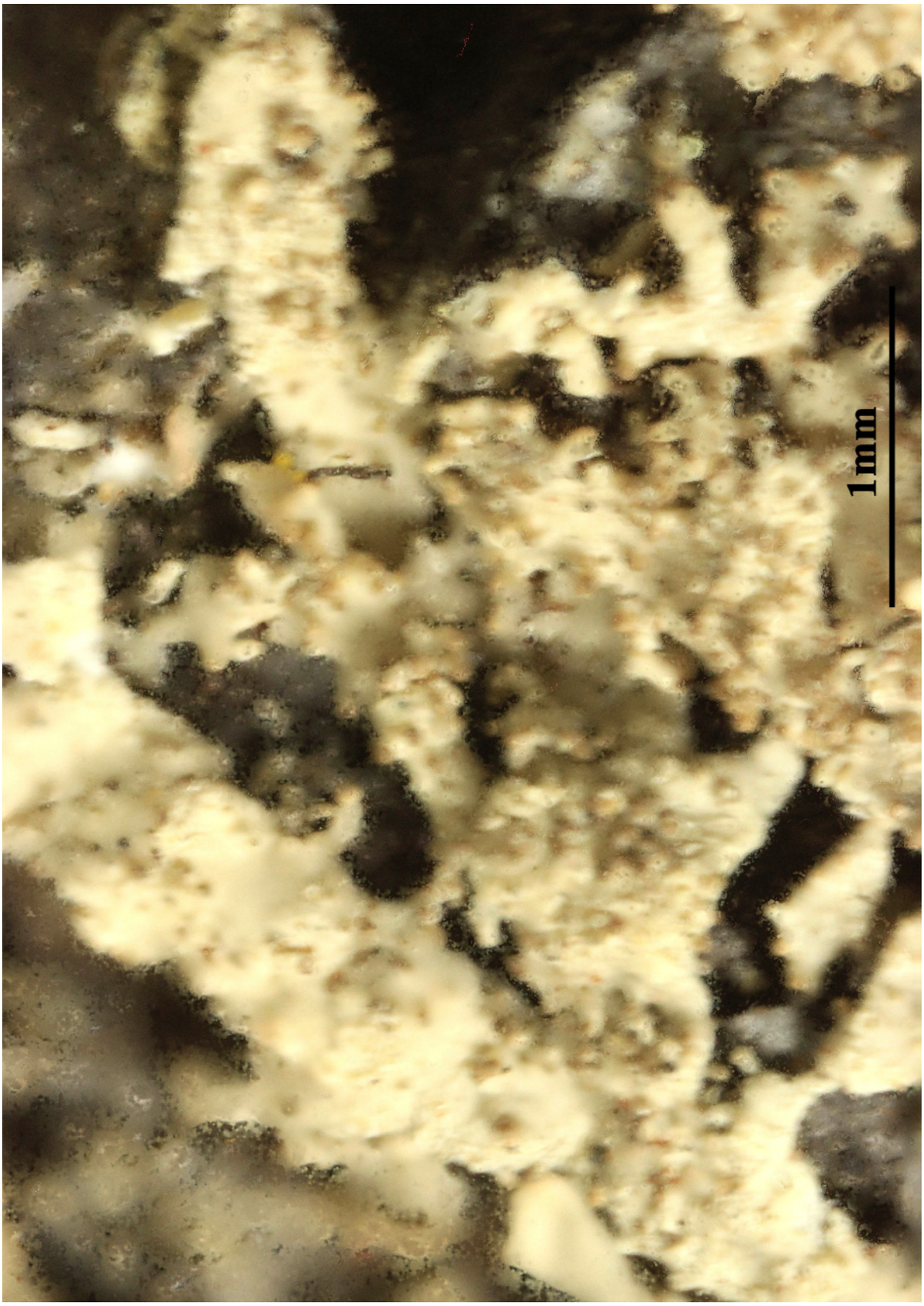
Icmadophila ericetorum

Icmadophila ericetorum

Imshaugia aleurites (Ach.) S.L.F. Mey., Mycologia 77(2): 338 (1985)
= *Lichen aleurites* Ach. 1799
= *Parmeliopsis aleurites* (Ach.) Nyl.

[VZ1967], U.S.A. Carolina Borealis, Grandville County, Creedmore, ad truncum *Pini* sp. Legt. W. L. Culberson, 03.1955. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1967.

Thallus foliose, heteromerous, dorsiventral, adnate, forming orbicular to irregular (2-)3-5(-7) cm wide rosettes. Lobes 1-4 mm long, 0.5-1.5(-3) mm wide, flat, linear to sublinear, divergent to contiguous, irregularly branched, with rounded, often forked tips. Upper surface whitish grey to bluish grey, sometimes wrinkled or shallowly pitted in older parts, shiny at the tips of lobes, with abundant, laminal, cylindrical, simple to branched, to c. 2 mm tall, fragile isidia that with age tend to break and coalesce into a granulose mass. Lower surface white to tan, somewhat wrinkled, with brownish, simple, c. 0.2-0.5(-1) mm long rhizines. Upper cortex paraplectenchymatous, of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with Cetraria-type lichenan; medulla white; lower cortex paraplectenchymatous. Apothecia rare, lecanorine, constricted at base, 2-7 mm across, with a convex to flat, brown, epruinose disc and a persistent, often isidiate thalline margin. Epithecium brown; hymenium and hypothecium colourless; paraphyses mostly simple, the apical cells hardly swollen. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, (5-)6-7(-9) x (3.5-)4-5(-6) µm. Pycnidia rare, black, mostly marginal, clearly projecting. Conidia ellipsoid to dumbbell-shaped, 3-4(-5) x c. 1 µm, Psora-type, borne terminally from joints of conidiogenous hyphae. Photobiont chlorococcoid. Spot tests: K+ deep yellow, C-, KC-, P+ deep yellow-orange, UV-. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with thamnolic acid (major) and decarboxythamnolic acid (trace). - Note: a circumboreal-montane to cool-temperate species found on acid bark, mostly of conifers and on decorticated stumps, with optimum near treeline; common only in the Alps, much rarer in the mountains of Southern Italy.



Imshaugia aleurites

Imshaugia aleurites

Imshaugia aleurites

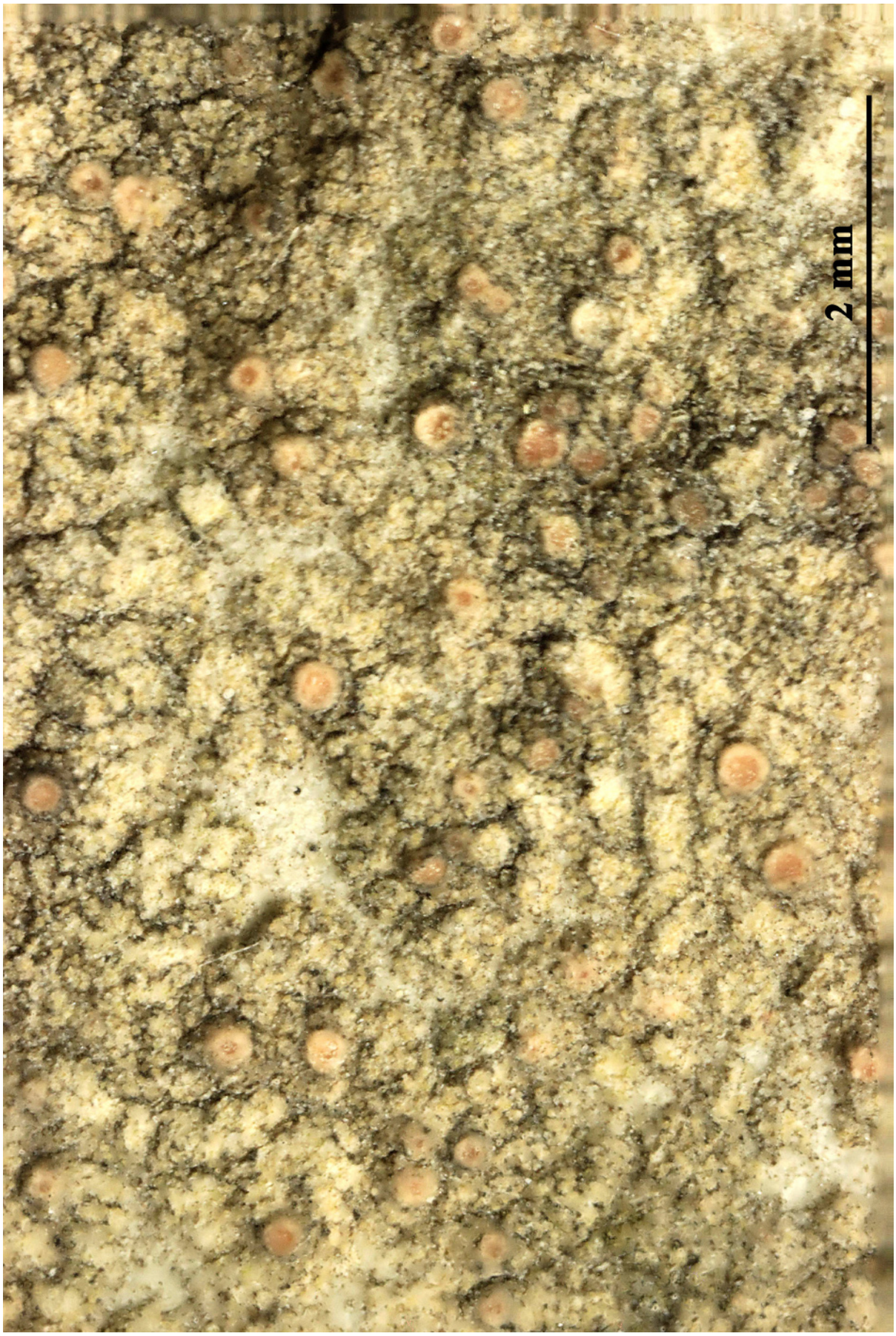
Imshaugia aleurites

Imshaugia aleurites

Ionaspis epulotica (Ach.) Blomb. & Forssell, in Fries, Lich. Scand. (Upsaliae)(1): 273 (1871)
= *Hymenelia epulotica* (Ach.) Lutzoni, in Lutzoni & Brodo, Syst. Bot. 20(3): 250 (1995)
= *Gyalecta epulotica* Ach. 1810

[VZ1955], USA., Michigan. Delta County, in peninsula dicta "Garden", Carbonean Point. Ad rupes calcareas ad litorem. Leg. et det. R. C. Harris (no. 1177). EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1955.

Thallus crustose, endosubstratic, continuous to finely rimose, pinkish orange, yellowish, brownish or grey, without a distinct prothallus. Apothecia immersed in the thallus and often separated by a circular crack, 0.2-0.7 mm across, rounded or irregular in outline, with an initially concave, then flat, pink to pale brown disc, and a rather evident, whitish margin. Proper exciple thin, poorly developed; epithecium colourless, K-, N-; hymenium colourless, (75-)100-120(-140) µm high; paraphyses simple or sparingly branched, submoniliform in upper part, the apical cells slightly swollen; hypothecium colourless. Asci 8-spored, cylindrical-clavate, the outer coat I+ blue, but the inner walls and apical dome K/I-. Ascospores 1-celled, hyaline, ellipsoid, 13-22 x 5-12 µm. Pycnidia immersed, pale, the wall colourless, N-. Conidia bacilliform. Photobiont trentepohlioid, the cells 10-18 µm wide. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: an arctic-alpine to cool-temperate, circumpolar species found on hard, compact calciferous rocks, such as limestone, dolomite, calcareous schists, in sheltered-humid situations; most frequent in the Alps, but reaching south to Calabria along the Apennines.



Ionaspis epulotica

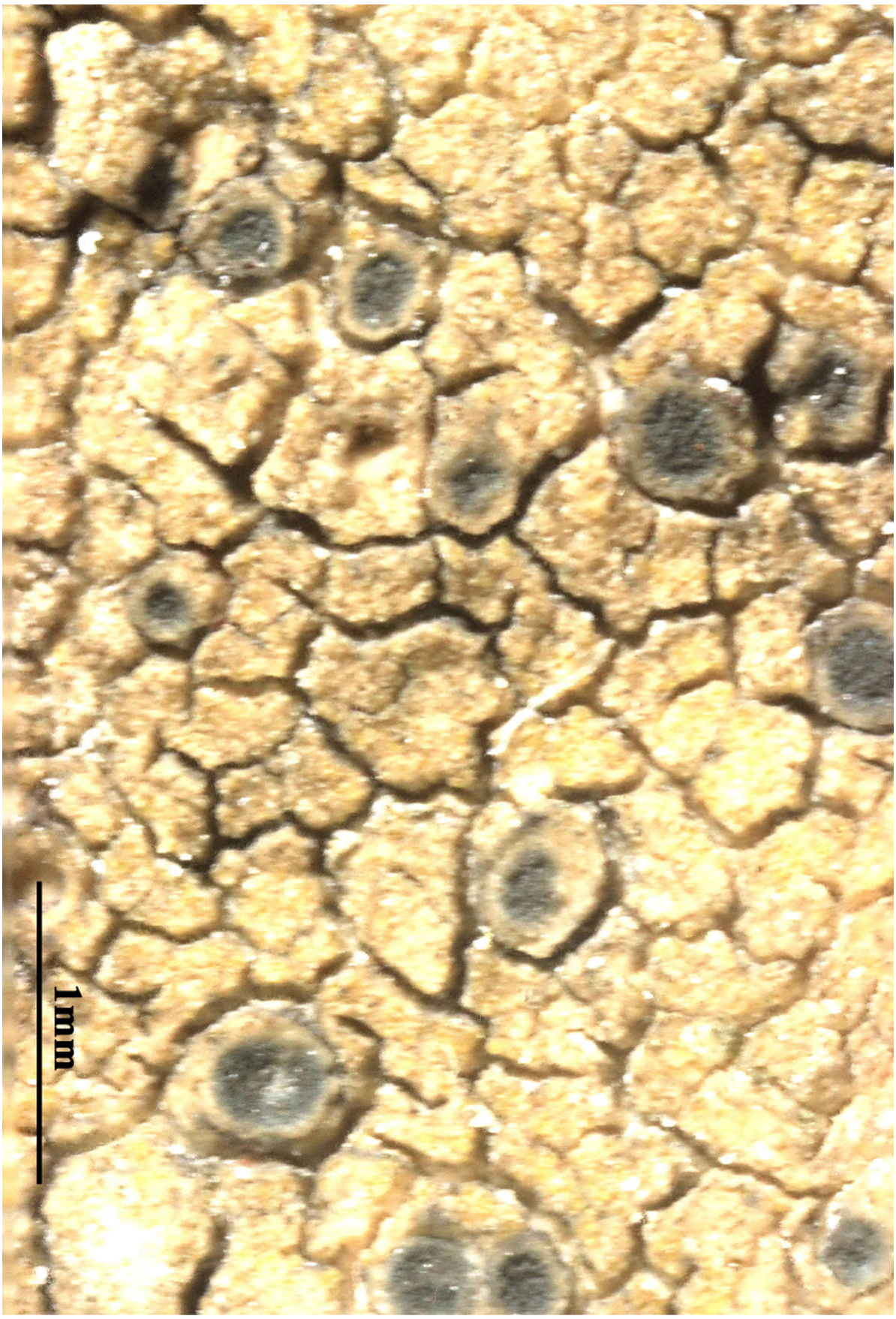
Ionaspis epulotica

Ionaspis melanocarpa* var. *crustosa H. Magn., Meddn Göteb. Bot. Trädg. 8: 41 (1933)

= *Hymenelia prevostii var melanocarpa* Krempelhuber, in Flora 35:25, 1851.

[VZ1140], Bohemoslovacia. Slovacia. Montes Velká Fatra, in latere montis Velký Rozsutec, loco Poludňové skály dicto, 1100 m. Ad lapidem magnam calcaream. Leg. A. Vězda, 6.9.1972. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1140.

Thallus crustose, endosubstratic or thinly episubstratic, continuous or very finely rimose, pinkish white to yellowish grey. Apothecia (0.2-)0.5-1 mm across, immersed in thalline warts and often separated from the thallus by a circular crack, with a black, at first pore-like and concave, then expanded and flat disc, and a more or less prominent, black proper margin. Proper exciple brown-black; epithecium greenish brown to blue-green, K-, N+ red; hymenium 120-150(-240) µm high, blue-green in upper part, colourless in lower part, the pigmented parts K-, N+ red; paraphyses simple or sparingly branched, submoniliform in upper part, the apical cells slightly swollen; hypothecium colourless. Asci 8-spored, cylindrical-clavate, the outer wall K/I+ blue, but the inner walls and apical dome K/I-. Ascospores 1-celled, hyaline, broadly ellipsoid, (10-)14-20(-24) x 8-13 µm. Pycnidia immersed, with a green wall reacting N+ red. Conidia short-bacilliform. Photobiont trentepohlioid, the cells 10-18 µm wide. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a mainly arctic-alpine, circumpolar species, most common on hard, compact calciferous rocks in upland areas; probably widespread throughout the Alps.



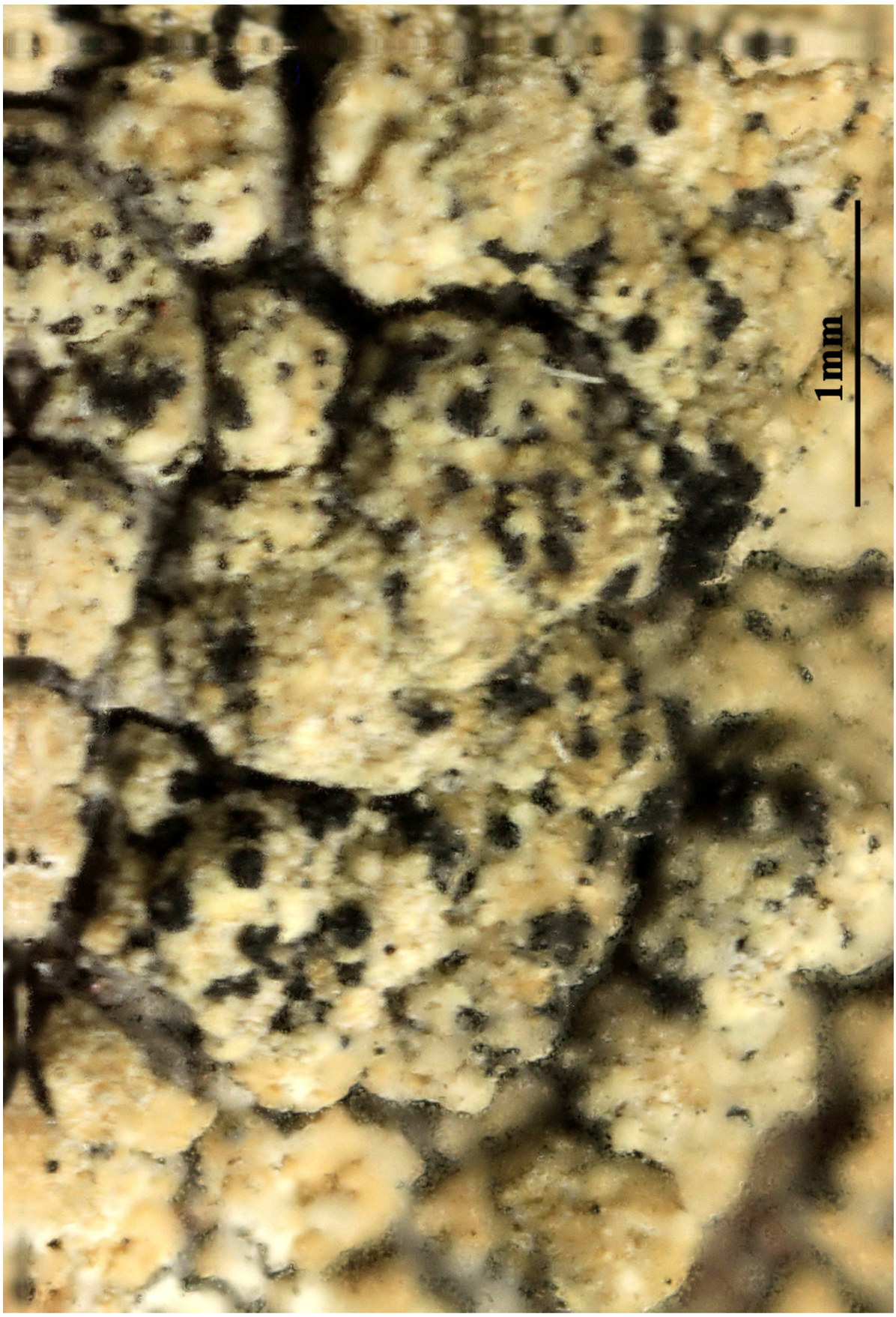
Ionaspis melanocarpa **(var.** ***crustosa***

Ionaspis melanocarpa **(var.** ***crustosa***

Karschia talcophila (Ach.) Körb., Parerga lichenol. (Breslau) 5: 460 (1865) =Lecidea talcophila Ach. 1810

[VZ], Bohemoslovacia. Moravia. Moravský Krumlov, in colle Tábor prope pagum Rokytná. 280 m.Ad rupes conglomeratas, in thallo lichenis (*Diploschistes scruposus*) vigens. Leg. A. Vězda, 5.1966. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1650.

Thallus not evident, not lichenized, immersed in the thallus of the host lichen. Apothecia black, epruinose, lirelliform to elongate-fusiform, unbranched, 0.3-0.4 x 0.1-0.15 mm, with a slit-like disc and a rather thick proper margin. Proper exciple pseudoparenchymatous, dark brown to black, carbonized, extending below the hymenium in a stalk-like extension, K-, with periphyses developing from the inner excipular layer (visible only in young apothecia); epithecium dark brown, up to 15 µm high; hymenium colourless, 50-75 µm high, I-; paraphyses sparingly branched from the base, 2.5-3.5 µm thick at mid-level, the apical cells up to 4 µm wide; hypothecium dark brown to black. Asci 8-spored, subglobose to shortly clavate, bitunicate, thickened at apex, with a distinct internal apical beak, I- and K/I-. Ascospores 1-septate, slightly constricted at septum, with subequal cells, at first hyaline then turning brown, 14-21 x 6-9.5 µm, smooth-walled. Photobiont absent. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a lichenicolous fungus found on silicicolous *pertusarioid* species.



Karschia talcophila

Karschia talcophila

Knightiella splachnirima (Hook. f. & Taylor) Gyeln., Feddes Repert. Spec. Nov. Regni veg. 29: 1 (1931)
= *Parmelia splachnirima* Hook. f. & Taylor 1844
= *Icmadophila splachnirima* (Hook. f. & Taylor) D.J. Galloway, Lichenologist 32(3): 295 (2000)

[VZ2021], Australia, Tasmania. Raminea Plains, 80 m. Ad terram arenosam in silva (*Eucalyptus amygdalina*). Leg. G. Kantvilas (no. 585/84), 30.3.1984. Ex A. Vězda Lichenes Selecti Exsiccat Nr. 2021.

Thallus squamulose to foliose, lobate, moderately to tightly adnate, forming patches to 8 cm wide; lobes discrete to contiguous to subimbricate, rounded to flabellate or rarely ±truncate, (0.5–) 1–2.5 (–5) mm wide, continuous to subcrustose centrally, plane, becoming undulate to rugulose, ±ascending or rarely inflexed, pale to bright green when fresh and moist, ivory to ash grey to pale green-grey when dry, turning buff to fawn to pink on long storage; outer lobes ±white-pruinose, emaculate or sparingly maculate in densely shaded sites, smooth near margins and lobe apices, but often papillate to short-dactylate laminally with young apothecial initials; margins thickened, slightly recurved, ±paler; cortex pseudo-parenchymatous; medulla white, ±tinged buff or pink on long storage; lower surface ±smooth, arachnoid. Apothecia laminal, often clustered or densely crowded; apothecial initials present as pale hemispherical swellings or papillae in upper cortex which become short-dactylate as stipes elongate, before expanding laterally at apex as disc forms; initially concolorous with upper cortex, soon becoming paler then pinker as disc develops; mature apothecia sessile to shortly stipitate, solitary or clustered and ±confluent, (0.3–) 1–3 (–5) mm wide; disc plane or weakly concave, becoming strongly undulate and irregular to recurved, initially smooth to scabrid to rugulose-scabrid to rarely fissured, ±white-pruinose, ivory to pale brown to mushroom-pink to rose-pink; margin lecideine, buff or ivory to concolorous with thallus on long storage, smooth, eventually crenulate or rugulose. Ascospores at first simple, becoming 1-septate at maturity, ellipsoidal to narrowly ovoid, straight or rarely weakly curved, 12–17.5 (–20.5) × 3–6 (–7) µm (Australian specimens). Pycnidia not seen. CHEMISTRY: Cortex K+ pale yellow, C–, KC–, P+ yellow, UV+ white; apothecia (disc and stipe) K+ yellow then brown, C–, P+ yellow-orange; containing thamnolic acid (major), decarboxythamnolic acid (±trace), 4-O-methylcrypto-

chlorophaeic acid (±trace) and 1–4 unknown depsides (±traces). - Widespread in Tasmania and also in New Zealand (South Island), including Auckland Is. and Campbell Is. Grows in cool, humid habitats in damp, lightly shaded or sheltered sites on acidic substrata, often on earth banks on sandy, gravelly or peaty soils, organic litter, rarely on wood, over bryophytes and small tussocks, forming extensive patches in favourable sites.

Knightiella splachnirima

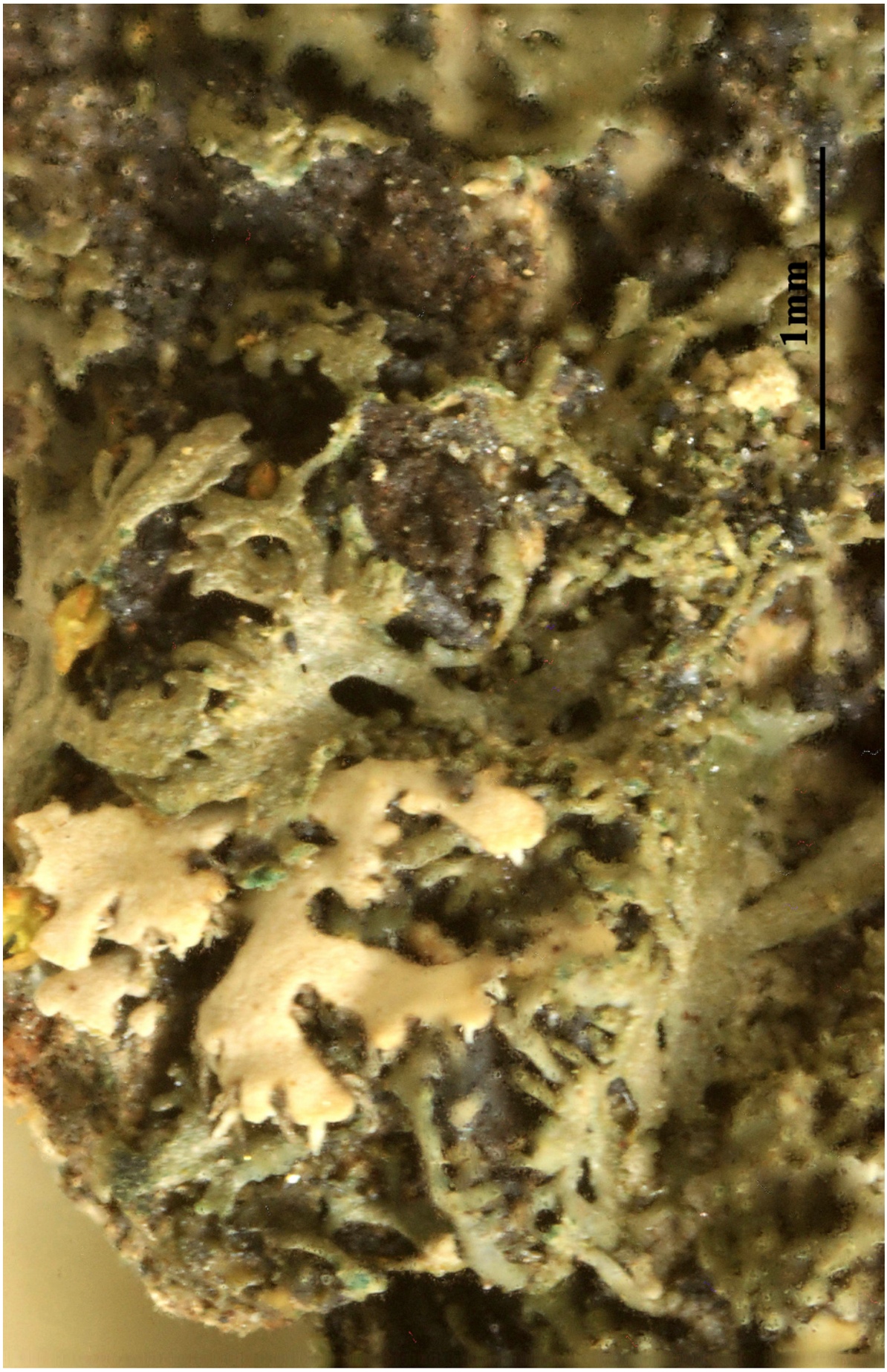
Knightiella splachnirima

Knightiella splachnirima

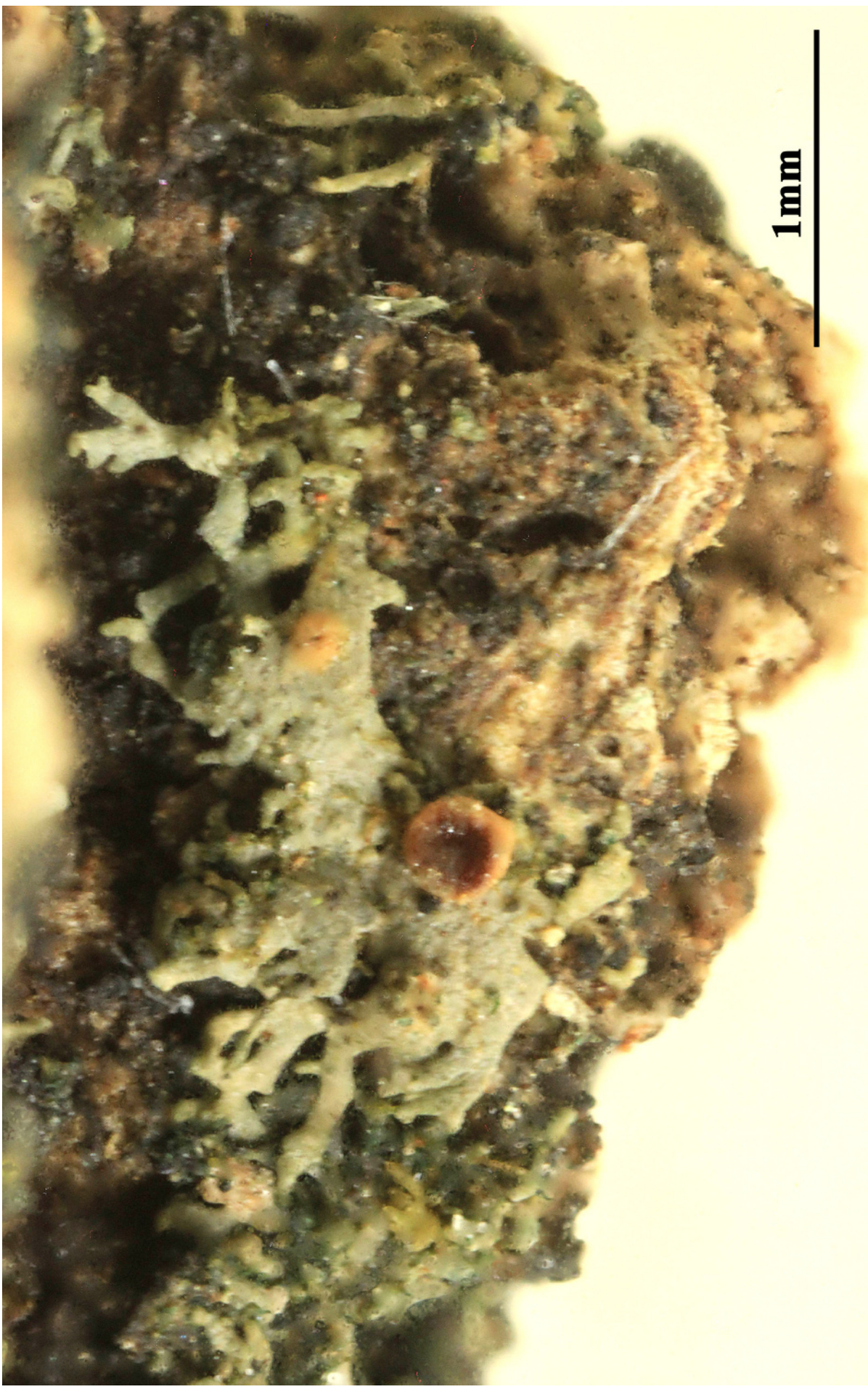
Koerberia biformis A. Massal., Geneac. lich. (Verona): 6 (1854)

[VZ1193], Jugoslavia. Dalmatia. Starigrad, in vallecula haud procul a faucibus Paklenika. In cortice *Quercus pubescentis*. Leg. J. Poelt et J. Hafellner, 13.6.1973. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1103.

Thallus minutely foliose, not gelatinous when wet, forming small, 0.5-3 cm wide rosettes, the lobes adnate, elongate, up to 2 mm long and 0.3-0.5(-0.8) mm wide, stellately radiating, dark olive-green to grey geen, turning glaucous green when wet, smooth to slightly wrinkled, with laminal, cylindrical, erect, up to 1 mm tall and 45-75(-90) µm thick isidia. Lower surface pale olive, with tufts of pale, short-celled anchoring hapters. Upper cortex (pseudocortex) composed of only one or two discontinuous layers of cells, lower cortex pseudoparenchymatous with short-celled, longitudinally extended hyphae. Apothecia frequent, deep red-brown, soon convex, 0.4-1 (-1.5) mm across, soon emarginate. Proper margin formed by a 30-60 µm wide pseudoexciple; epithecium brownish; hymenium colourless, 65-100 µm high, I+ blue; hypothecium colourless, partly pseudoparenchymatous. Asci 8-spored, cylindrical-clavate, with an apically thickened wall. Ascospores 1-celled, hyaline, acicular to slightly curved, spirally twisted in the asci, 35-45(-55) x 1.5-3(-4) µm. Pycnidia laminal, pyriform, with a brown ostiole. Conidia bacilliform, 4.5-6 x c. 1 µm. Photobiont cyanobacterial, Scytonema-like, the cells 6-10 x c. 15 µm, often arranged in short filaments. Spot tests: all negative. Chemistry: without lichen substances. - Note: a mild-temperate species found on rough bark, mostly of old deciduous trees, especially *Castanea* and *Quercus*, in humid areas; much rarer in the North than in Tyrrhenian Italy.



Koerberia biformis



Koerberia biformis

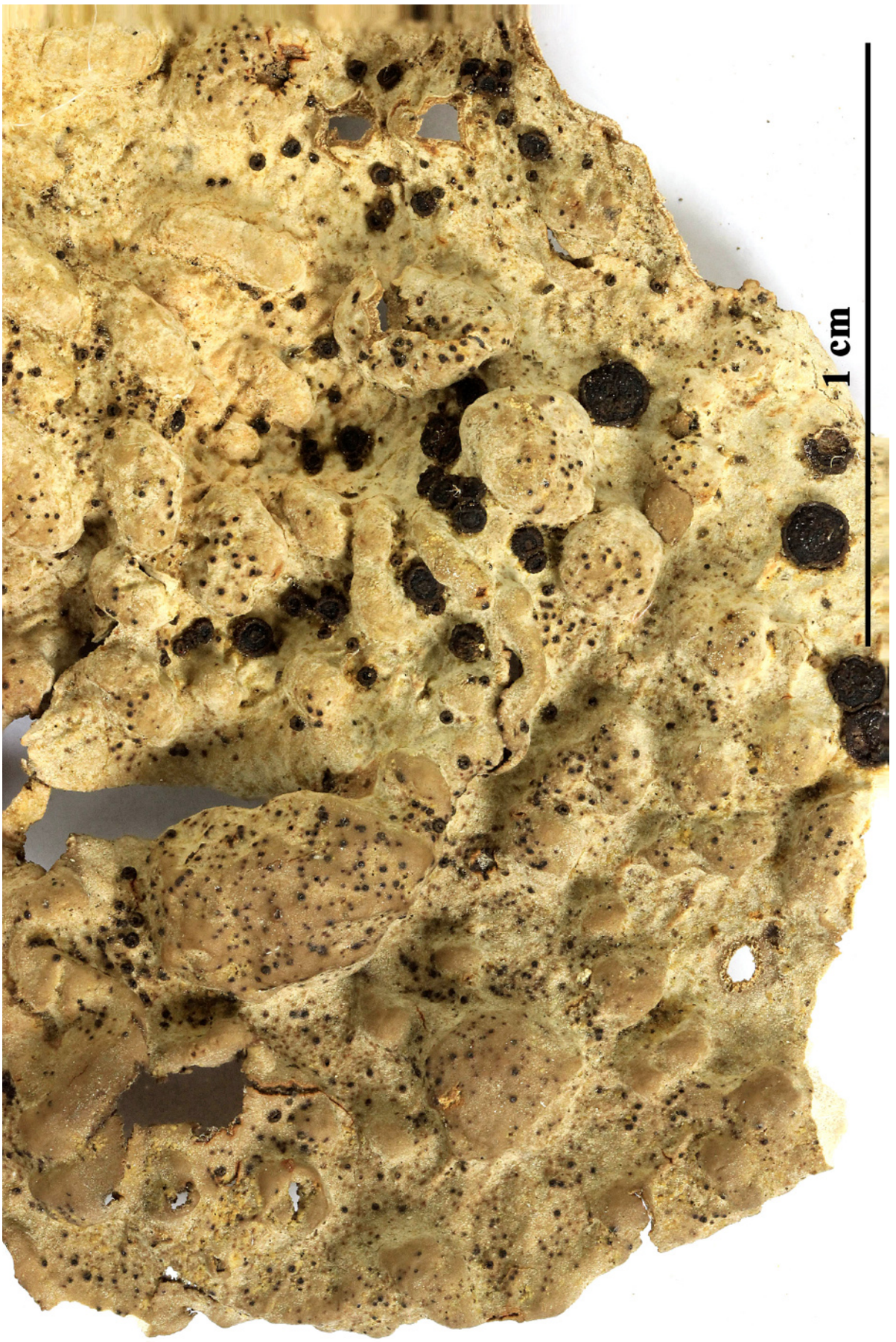
Lasallia papulosa (Ach.) Llano, Monograph of the Lichen Family Umbilicariaceae in the Western Hemisphere: 32 (1950)
= *Gyrophora papulosa* Ach. 1810

[VZ1488], USA. Massachusetts. Plymouth, Rocky Point, secus via no. 2A. Ad saxa granitica in vicinitate maris. Leg. E. Serusiaux (no. 1357), 17.1.1976, det. A. Věza. - Annot.: Lecanoric acid, umbilicaric acid, gyrophoric acid, anal. B. Feige. - Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1488.

Thallus 9-18 cm. in diameter, monophyllous, very rarely subpolyphyllous, thin to medium and fragile, orbicular, the margins entire to irregularly crenate or scalloped, pustules large to medium, in juvenile thalli finely blisterlike, occasionally crowded together or contorted with crebriform wrinkles or rugose veins, usually without a pattern, but more or less radiating from the umbo, smooth or occasionally reticulate be tween pustules, pustules sometimes fenestrate, or with tears or holes in thallus becoming lacerate marginally or with lobules developing over thallus, umbo moderately elevated with obscure folds, surface dull, deep mouse gray, buffy brown, cinnamon drab, rarely mahogany red, more or less pruinose; below naked, lacunose, umbilicus small to moderate, central, with occasional creases fading peripherally, smooth to papillose, color some shade of brown never black, avellaneous to wood brown, or clove brown, rarely stained with orange or light yellow, or pruinose. Thallus 165-250 µm thick, upper cortex about 20 µm thick, plechtenchymatous, brown with an overlying necral zone up to 10 µm, thick algal layer continuous, protococcoid, 30-40 µm thick, medulla loose, hyphae 7.2 µm in diameter, encrusted with opaque granules ex tending throughout the upper part of the medulla, about 70 µm thick, lower cortex scleroplechtenchymatous, about 50 µm, outer zone strongly dentate outline, brown. Apothecia 1-2.5 mm. in diameter, rarely absent, free and scattered over thallus almost to umbo, crowded between pustules, or depressed in pustules, frequently agglomerate when several appear as one, sessile to subpedicellate, disk plane or irregular, brown black or rarely mahogany red, with a proper, smooth to crenulate, margin; parathecium about 40 µm. thick, hypothecium about 99 µm, dark, irregular, thecium 115-150 µm deep, asci 52-100 x 20-50 µm, thin walled, elliptical-oblong, paraphyses 2.4 µm, expanding apicallyto about 4.8 long, slender, mostly branched, spores large, 49.5 - 99 x 39 µm broad, at first hyaline, becoming brown, muriform. . - This

species is as ubiquitous in North America as *L. pustulata* is in Europe; like the latter species it shows variation throughout its range, with an almost corresponding terminology. Tuckerman (1882) described this species as a variety of *L. pustulata*, "thallus middling to large, darker, and often brownish, apothecia soon proliferous, " but with longer spores. His use of the word "proliferous" refers to the bunching arrangement frequently assumed by adjoining apothecia.

Lasallia papulosa



Lasallia papulosa

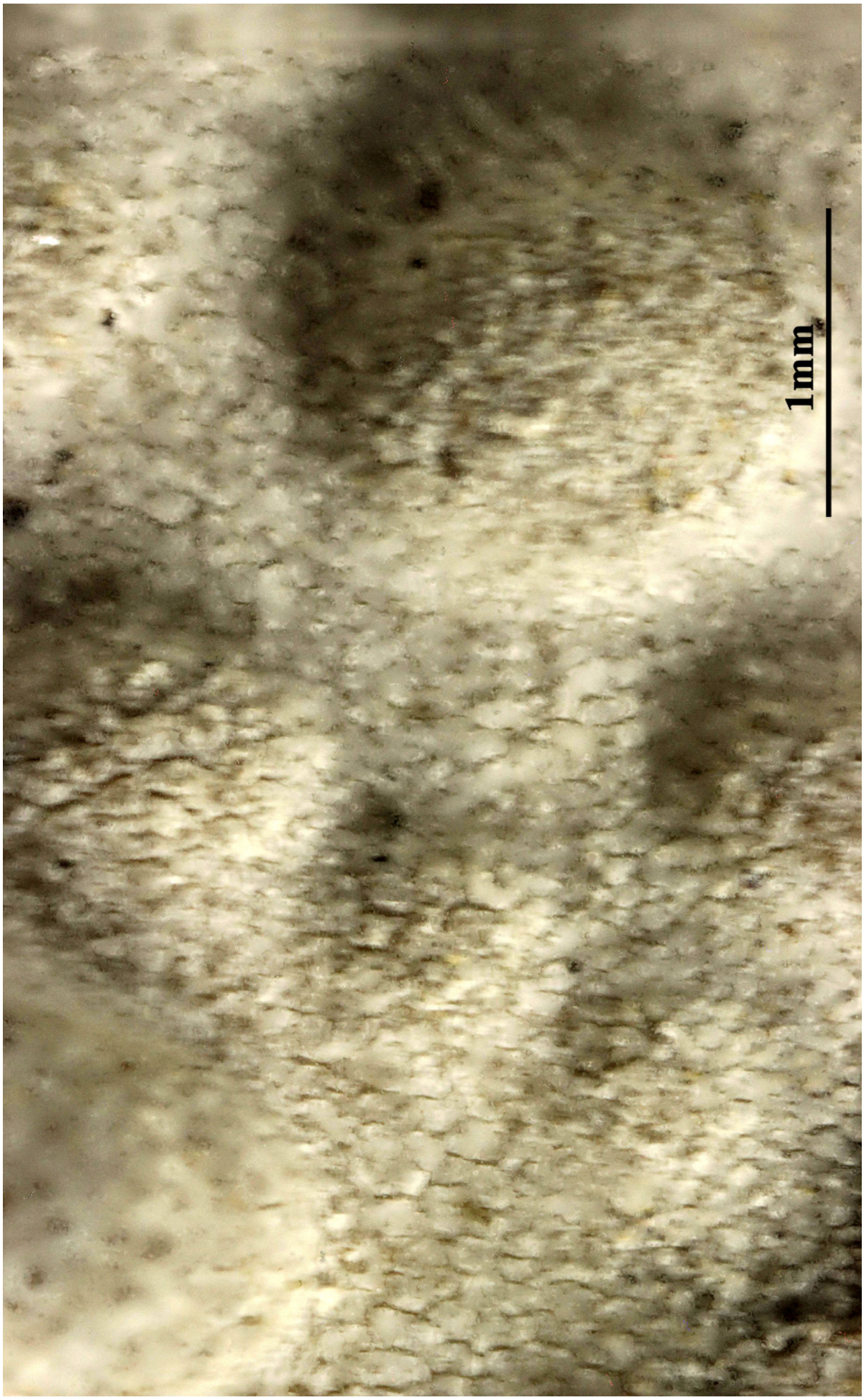
Lasallia papulosa

Lasallia brigantium (Zschacke) Llano, Monograph of the Lichen Family Umbilicariaceae in the Western Hemisphere: 45 (1950)
= *Umbilicaria brigantium* Zschacke 1927

[VZ2390], Gallia. Corsica. Bocca di Piavone, 195 m. Ad saxa granitica. Leg. D. Puntillo, 27.7.1989. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 2390.

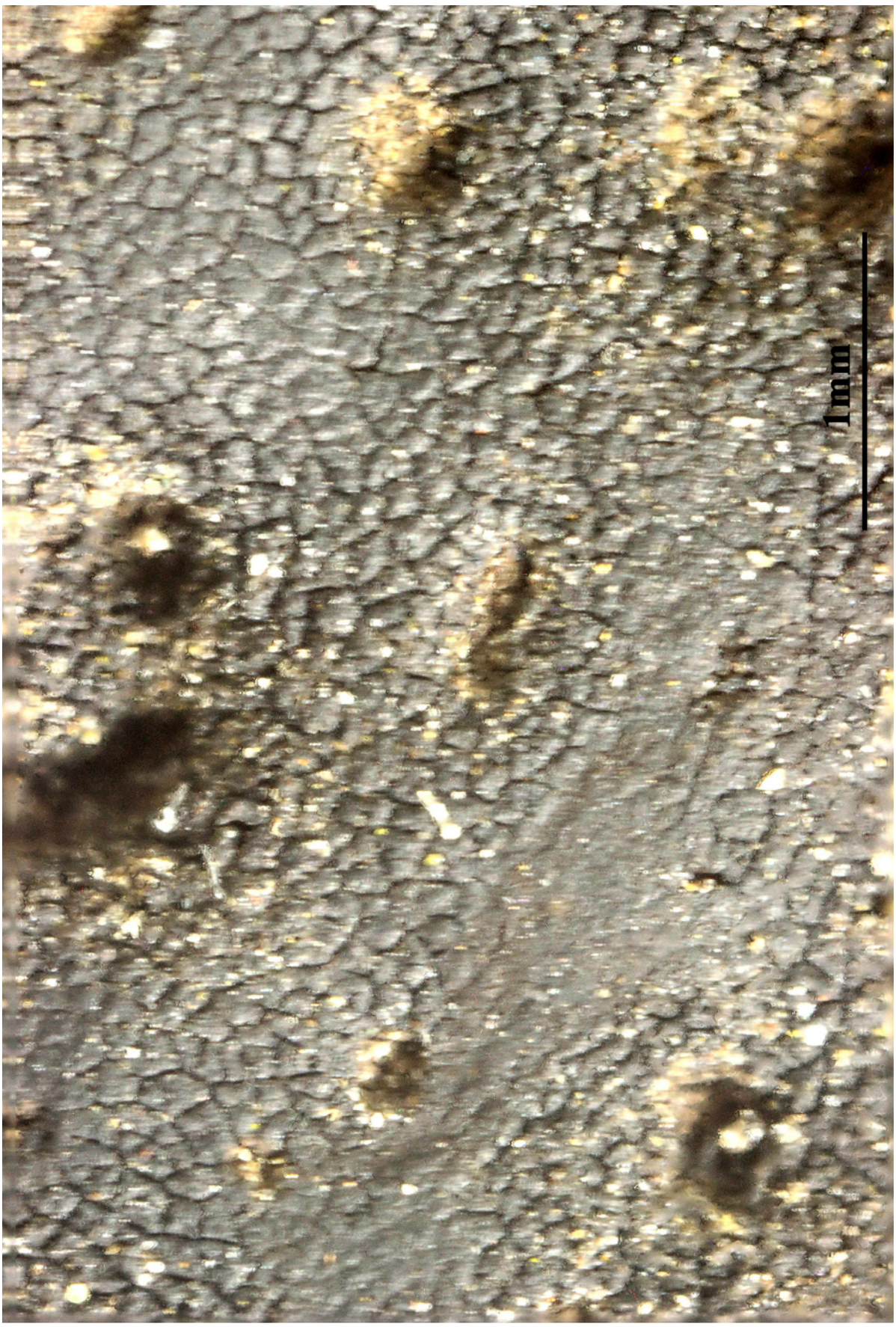
Thallus foliose-umbilicate, heteromerous, dorsiventral, usually monophyllous, 190-300 µm thick, 2-8 cm wide, attached by a stout, central holdfast. Upper surface grey to white, with numerous, conspicuous, convex, circular to oval pustules, the central parts areolate, the margins becoming more or less eroded; isidia scarce, marginal or laminal, black, irregularly branched but not coralloid. Lower surface black, strongly areolate, erhizinate. Upper cortex 30-40 µm thick, paraplectenchymatous, with a layer or dark-walled cells close to the photobiont layer; epicortex discontinuous, of hyaline, large, thin-walled hyphae; medulla composed of an up to 25 µm thick upper, arachnoid layer with hyphae encrusted with crystals, and a lower layer of thick-walled hyphae; lower cortex of periclinally arranged, thin-walled hyphae, up to 150 µm thick, with a conspicuous necrotic layer of slightly darkened cells. Apothecia common, 1-2.5(-3) mm across, immersed to sessile but not stipitate, with a black, flat, smooth disc and a persistent, smooth, ecorticate proper margin. Proper exciple 30-50 µm thick, persistent, dark in outer rim, colourless within, palisade plectenchymatous with an outer necrotic layer, without an arachnoid medullary layer; epithecium brown; hymenium colourless to brownish; paraphyses simple or sparingly branched, the apical cells more or less swollen; hypothecium dark. Asci 1(-2)-spored, elongate-clavate, thick-walled, with a K/I+ blue apical dome. Ascospores muriform, at first hyaline, then pale to dark brown, 50-75 x 22-35 µm. Pycnidia black, immersed. Conidia bacilliform. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-, UV-. Chemistry: medulla with gyrophoric acid. - Note: on basic siliceous rocks, apparently restricted to Sardinia, Corsica, Tuscany and adjacent islands, always at low altitudes and mostly near the coast.

Lasallia brigantium



Lasallia brigantium

Lasallia brigantium



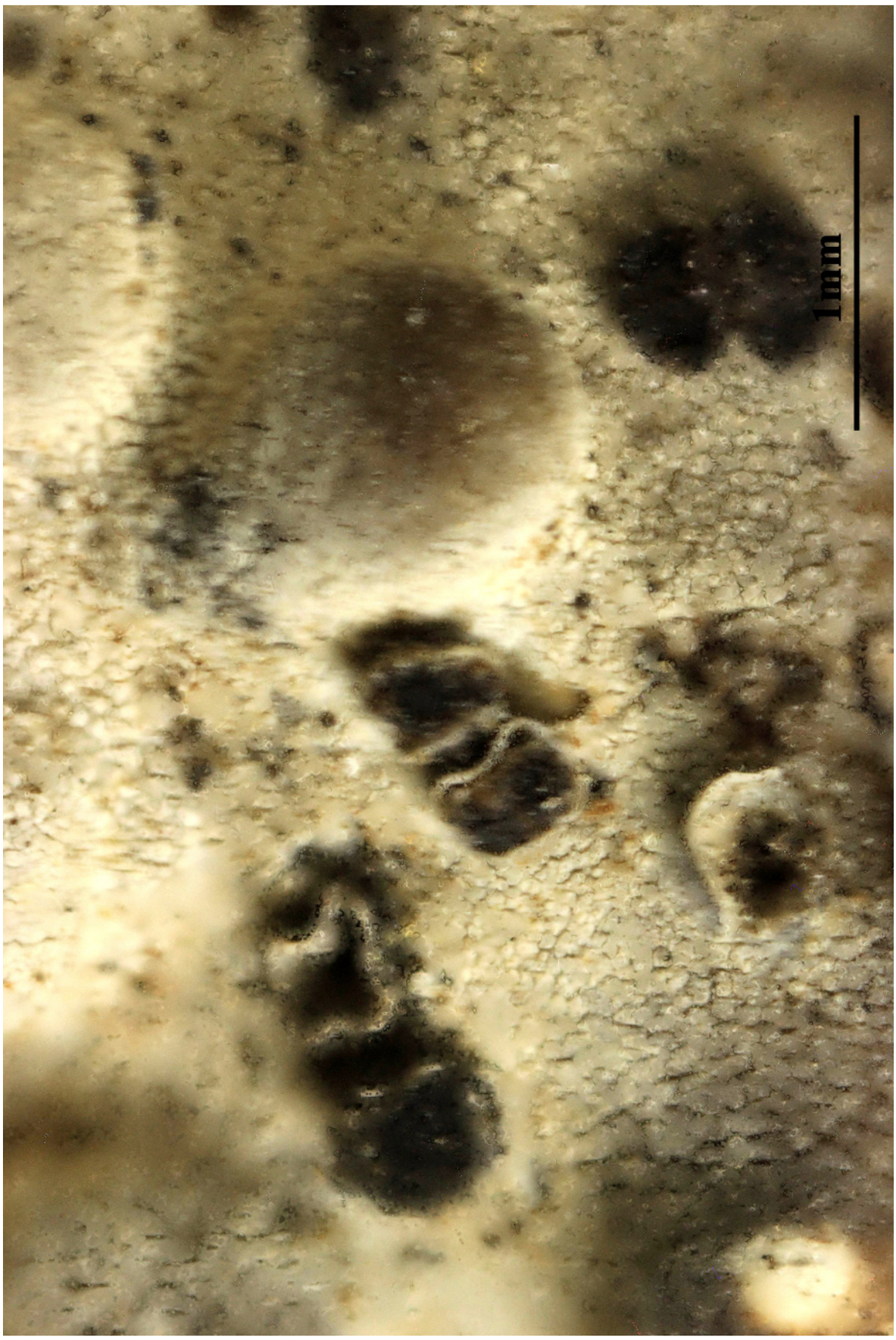
Lasallia brigantium

Lasallia brigantium (Zschacke) Llano, Monograph of the Lichen Family Umbilicariaceae in the Western Hemisphere: 45 (1950)
= *Umbilicaria brigantium* Zschacke 1927

[VZ2083],Italia, Sardinia. Prov. Nuoro, Torre Argentina, ad septentriones a Bosa, in vivinitate maris, 20 m. Ad saxa tofosa. Leg. P. L. Nimis et J. Poelt, 22.7.1985. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2083.

Thallus foliose-umbilicate, heteromerous, dorsiventral, usually monophyllous, 190-300 µm thick, 2-8 cm wide, attached by a stout, central holdfast. Upper surface grey to white, with numerous, conspicuous, convex, circular to oval pustules, the central parts areolate, the margins becoming more or less eroded; isidia scarce, marginal or laminal, black, irregularly branched but not coralloid. Lower surface black, strongly areolate, erhizinate. Upper cortex 30-40 µm thick, paraplectenchymatous, with a layer or dark-walled cells close to the photobiont layer; epicortex discontinuous, of hyaline, large, thin-walled hyphae; medulla composed of an up to 25 µm thick upper, arachnoid layer with hyphae encrusted with crystals, and a lower layer of thick-walled hyphae; lower cortex of periclinally arranged, thin-walled hyphae, up to 150 µm thick, with a conspicuous necrotic layer of slightly darkened cells. Apothecia common, 1-2.5(-3) mm across, immersed to sessile but not stipitate, with a black, flat, smooth disc and a persistent, smooth, ecorticate proper margin. Proper exciple 30-50 µm thick, persistent, dark in outer rim, colourless within, palisade plectenchymatous with an outer necrotic layer, without an arachnoid medullary layer; epithecium brown; hymenium colourless to brownish; paraphyses simple or sparingly branched, the apical cells more or less swollen; hypothecium dark. Asci 1(-2)-spored, elongate-clavate, thick-walled, with a K/I+ blue apical dome. Ascospores muriform, at first hyaline, then pale to dark brown, 50-75 x 22-35 µm. Pycnidia black, immersed. Conidia bacilliform. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-, UV-. Chemistry: medulla with gyrophoric acid. - Note: on basic siliceous rocks, apparently restricted to Sardinia, Corsica, Tuscany and adjacent islands, always at low altitudes and mostly near the coast.

Lasallia brigantium



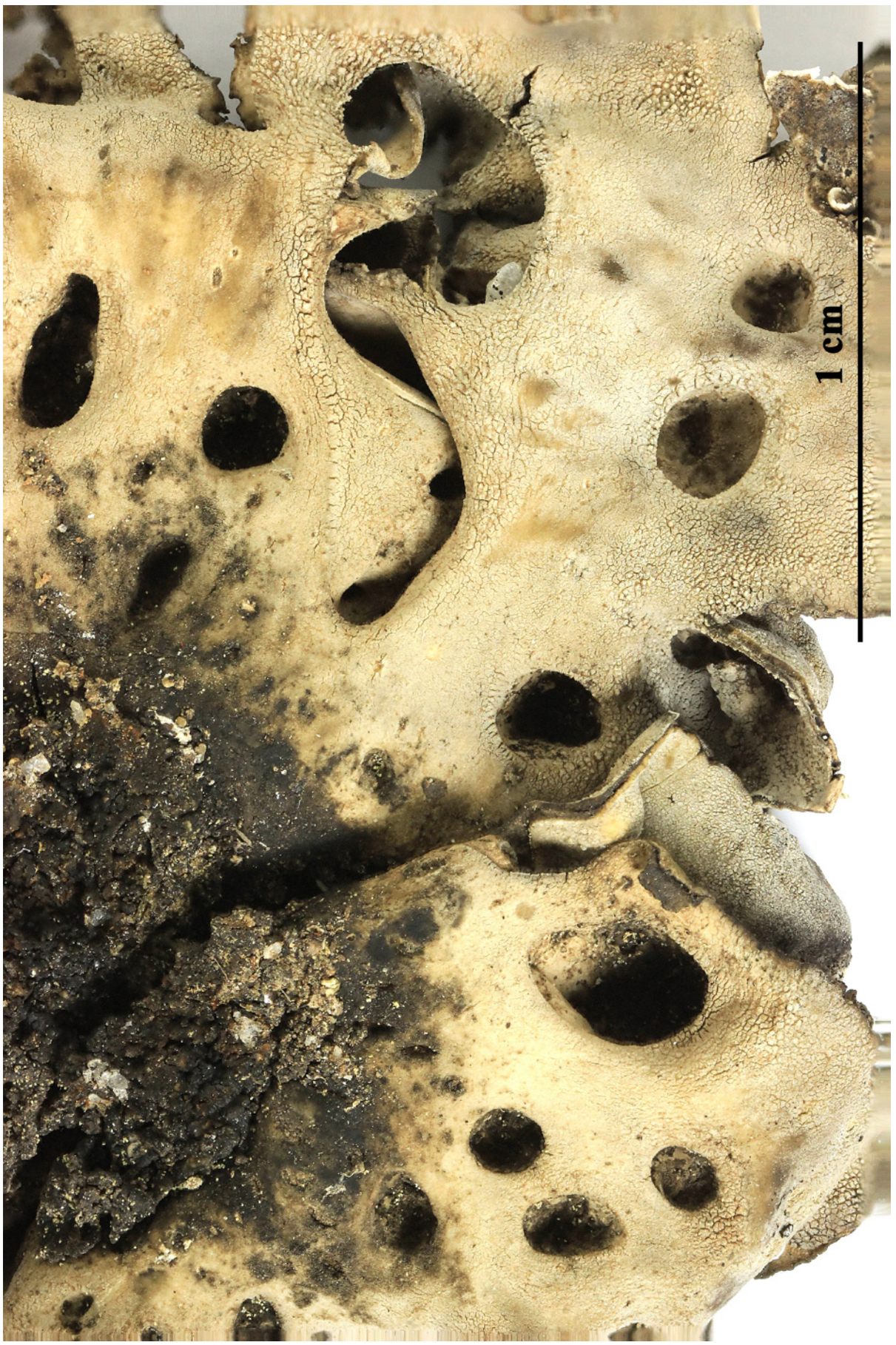
Lasallia brigantium

Lasallia hispanica (Frey) Sancho & A. Crespo, Lichenologist 21(1): 46 (1989)
= *Umbilicaria brigantium* var. *hispanica* Frey 1949
= *Umbilicaria hispanica* (Frey) Davydov, Peršoh & Rambold, Taxon 67(1): 221 (2018)

[VZ2303], Italia. Calabria, Prov. Cosenza: Montagna Grande, 12 km ad septentriones et occidentem versus a San Giovanni in Flore, 1500 m. Ad saxa granitica. Leg. M. Codogno et S. Puntillo, 18.10.1987. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2303.

Thallus foliose-umbilicate, usually monophyllous, 190-300 µm thick, 2-8 cm in diam., grey to white, attached by a stout, central holdfast. Upper surface with numerous, conspicuous, convex, circular to oval pustules, the central parts echinate-areolate, the margins becoming more or less eroded. Isidia scarce, marginal or laminal, black, irregularly branched but not coralloid. Lower surface creamy grey or brown, blackish around the umbilicus, smooth or slightly areolate, erhizinate. Upper cortex 30-40 µm thick, paraplectenchymatous, with a layer or dark-walled cells close to the photobiont layer; epicortex discontinuous, of hyaline, large, thin-walled hyphae; medulla composed of an up to 25 µm thick upper, arachnoid layer with hyphae encrusted with crystals, and a lower layer of thick-walled hyphae; lower cortex of periclinally arranged, thin-walled hyphae, up to 30 µm thick, with a layer of slightly darkened cells. Apothecia common, 1-2.5(-3) mm across, stipitate, with a black, flat, smooth disc and a persistent, smooth, corticate proper margin. Proper exciple 30-50 µm thick, persistent, dark in outer rim, colourless within, paraplectenchymatous, composed of mesodermatous or pachydermatous cells arranged in a more or less regular palisade, with an arachnoid medullary layer. Asci 1(-2)-spored, elongate-clavate, thick-walled, with a K/I+ blue apical dome. Ascospores muriform, at first hyaline, then pale to dark brown, 40-65 x (17-)20-25 µm. Pycnidia black, immersed. Conidia bacilliform. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-, UV-. Chemistry: medulla with gyrophoric acid. - Note: on wind-exposed basic siliceous rocks wetted by rain, but avoiding seepage tracks, mostly in upland areas of the Mediterranean Region.

Lasallia hispanica



Lasallia hispanica

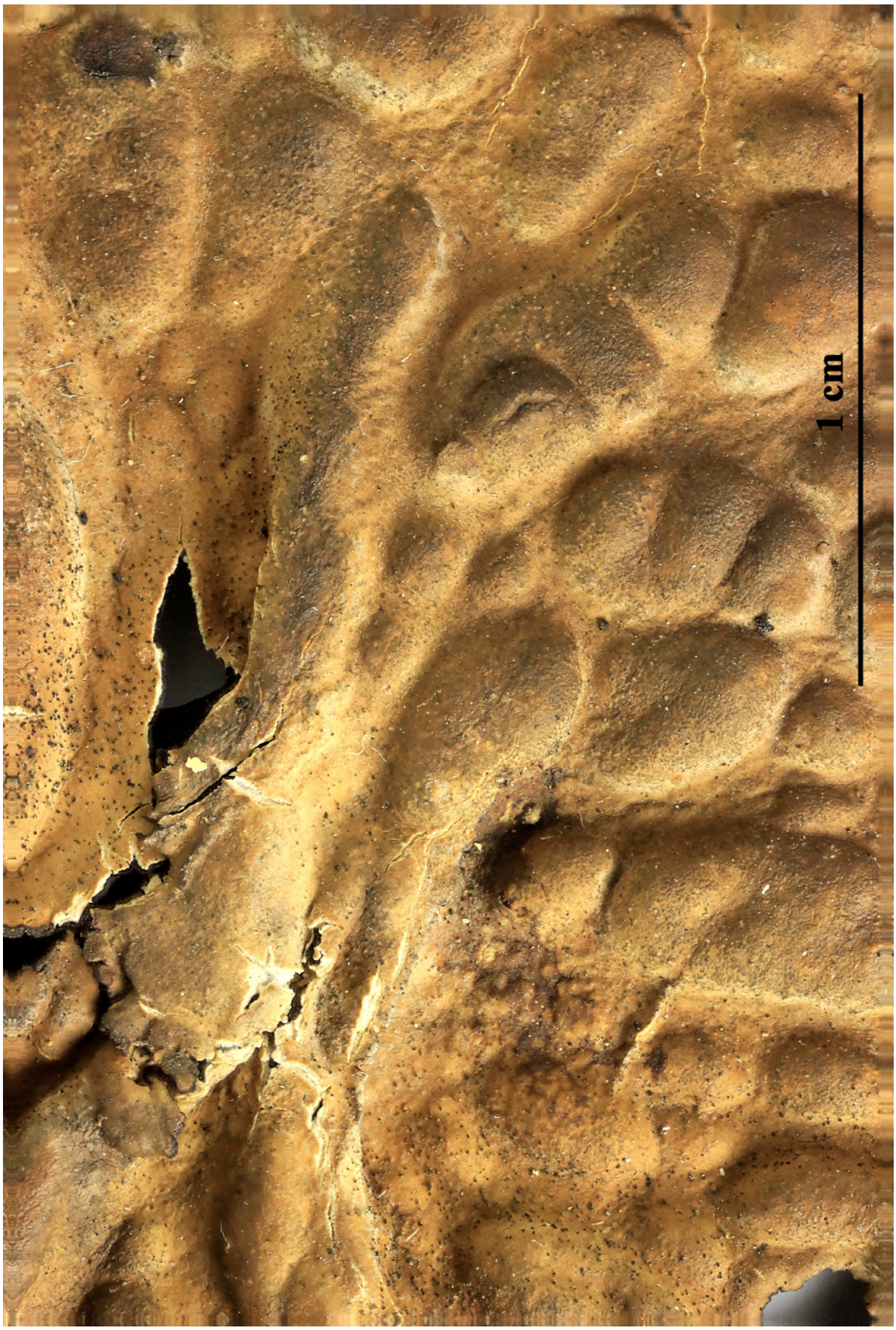
Lasallia pensylvanica (Hoffm.) Llano.
= *Umbilicaria pensylvanica* Hoffm., Descr. Adumb. PI. Lich. 3(4): 5-6, pi. 69, fig. 1-2. 1801.

[VZ1962}, USA. Massachusetts, Lynnfield County, 3 km ad septentriones et occidentem versus a Lynnfield. Ad saxa. Leg. et det. W. L. Culberson, 3.1955. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1962.

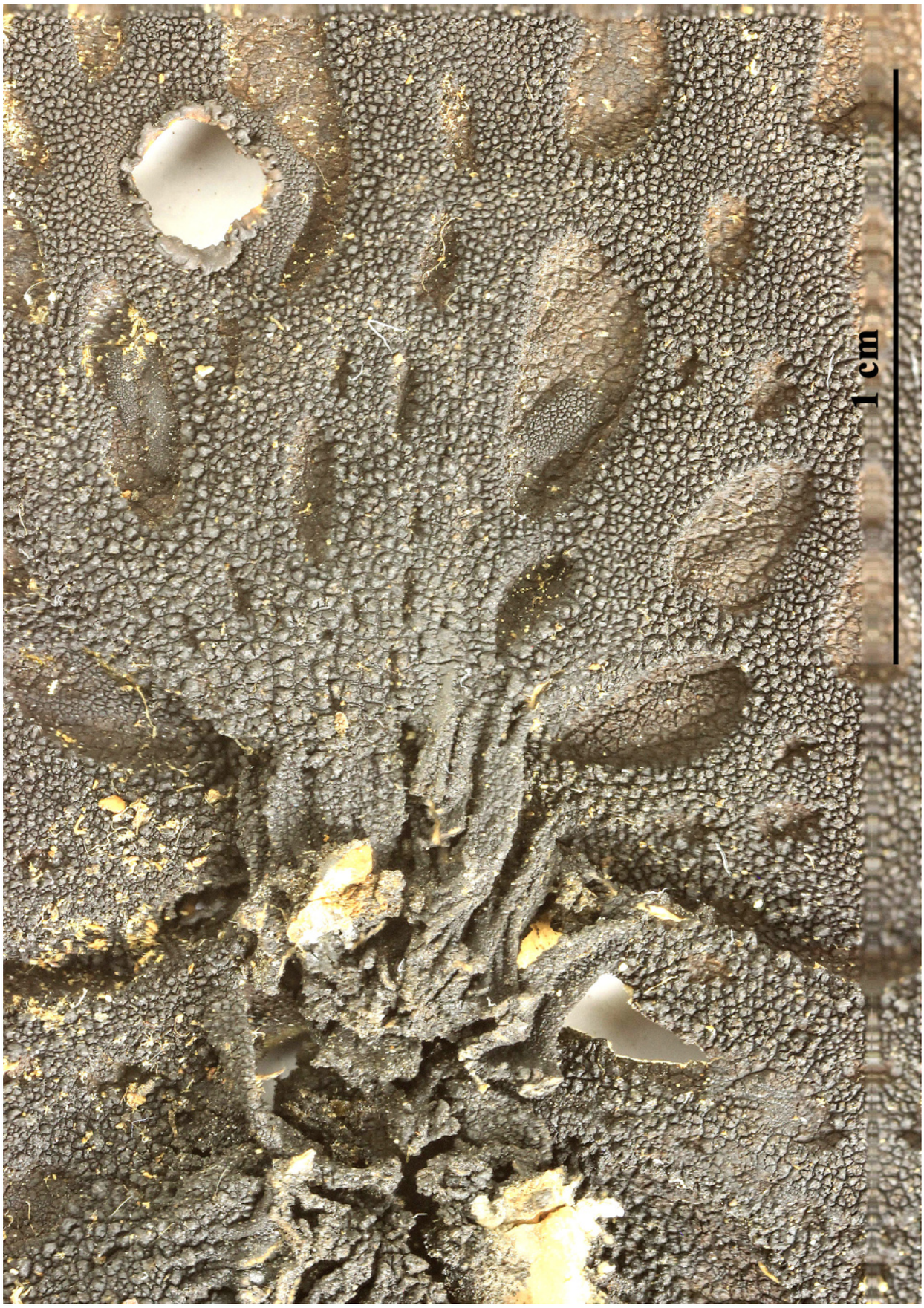
Thallus 9-25 an. in diameter, orbicular, monophyllous, membranaceous to rigid, margins undulating to crenate or subcrenate, frequently laciniate or irregularly incisedtorn, sometimes fenestrate, upper surface pustulate up to 2.5 cm. large, cortex smooth, umbo elevated, more or less areolate-papilate or dermatoid, or with obscure vermiform pattern or veined, occasionally cracked, or with few weak folds extending radially from umbo, occasionally with lacinae on margins of holes and tears, or rarely in clusters on upper surface, surface dull to shiny, warm buff, wood brown, or Prout's brown over umbo, fading into fuscous black or light brownish olive, dark olive buff, or olive citrine margins, with a more or less persistent pruina; lower surface uniformly black with coarse papillae which may become lighter peripherally appearing as a light-edged zone (Japanese specimens deep mouse gray) umbilicus medium to compact or fasciate, becoming shaggy, stipe-like, or eroded, papillae in vicinity of umbilicus less regular, charred, interior of lacunae light brown and devoid of papillae, lower surface uneven. Thallus 250-300 µm thick, upper cortex brown, paraplechtenchymatous, 6-14 µm, with a thin evanescent necral zone 9.9 µm high, occasionally developing into palisadeplechtenchymatous tissue 80 µm high; algal layer continuous, protococcoid, about 33 µm deep; medulla loose, about 135 µm, of mesodermate hyphae 6.6 µm, in diameter, densely impregnated with a granular zone below the algal layer; lower cortex about 120 µm, scleroplectenchymatous with a strong, black dentate outline. Apothecia 1-2 mm. in diameter, common, free or grouped, mostly marginal, black, sessile to subpedicellate, rarely adnate but occurring in shallow depressions, disk plane to subconcave, exciple prominent, parathecium of isodiametric cells 66-82.5 µm, hypothecium 66-140 µm, brown, irregular, thecium 99 µm, with a dark brown to black epithecium, paraphyses agglutinate, simple, rarely forked, brown tipped, septate, 1.4-3. 4 µm in diameter, asci 68 x 22 µm, l-spored

asoospores muriform, light to dark brown, 36-60 x 14.4-28.8 µm, spermogonia moderately protruding above thallus surface, spherical 210 x 210 µm, with dark brown walls 14 µm thick, spermatiophores branched, spermatia rod shaped 2.4-4.5 x 1. 5 µm. - This common North American species extends throughout the north temperate zone into Asia and eastern Europe.

Lasallia pensylvanica



Lasallia pensylvanica



Lasallia pensylvanica

Lasallia pensylvanica (Hoffm.) Llano.
= *Umbilicaria pensylvanica* Hoffm., Descr. Adumb. PI. Lich. 3(4): 5-6, pi. 69, fig. 1-2. 1801.

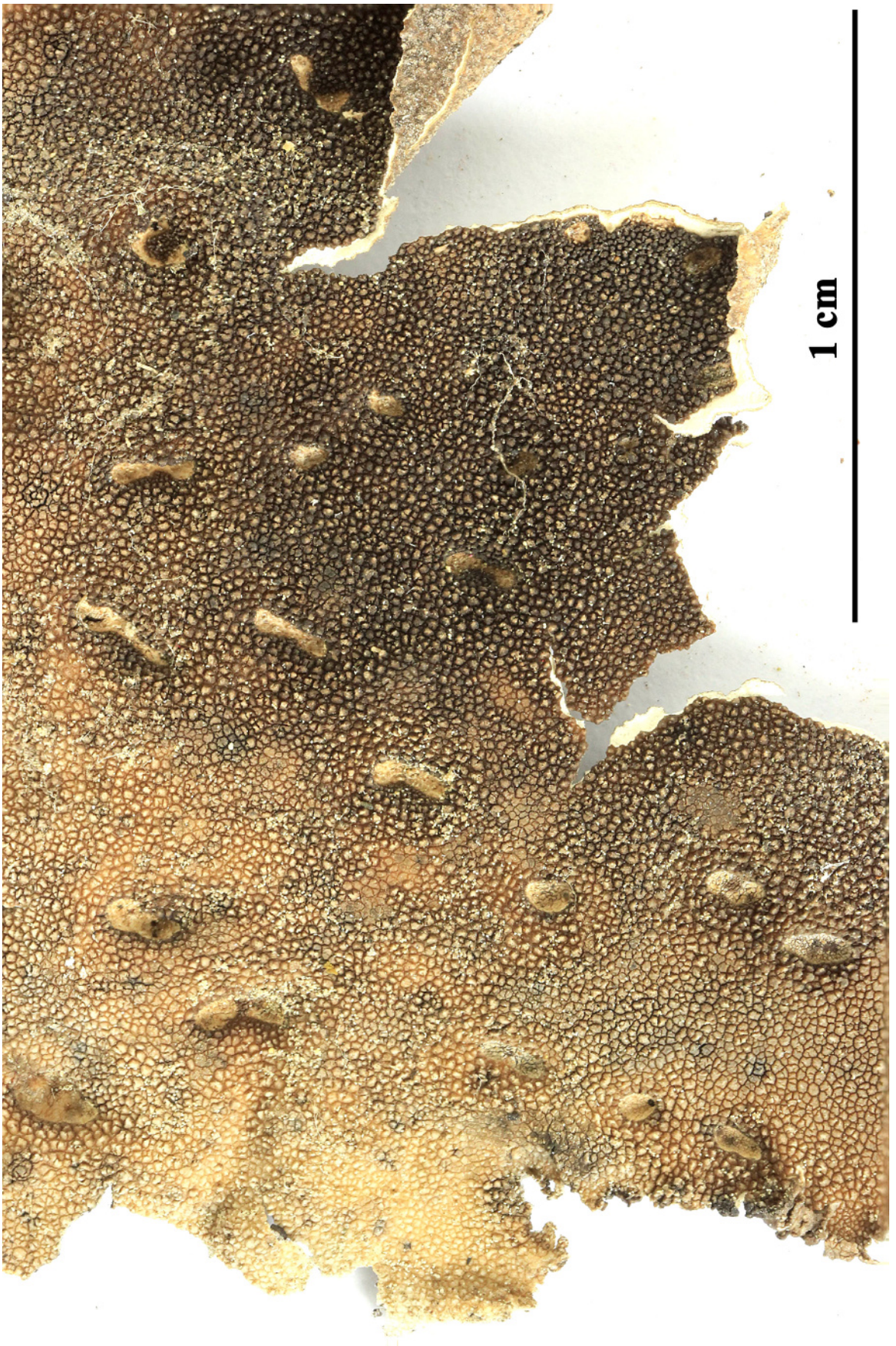
[VZ1648], URSS. Rossia australis, Caucasus Magnus: Dombai, reservatum naturae "Těberidinskij zapovednik" sictum, in valle rivi Dzemagat, 1500 m. Ad saxa granitica. Leg, J. Liška, 14.7.1978. EX A. VEZDA LICHENES SELECTI EXSICCATI NR. 1648.

Thallus 9-25 an. in diameter, orbicular, monophyllous, membranaceous to rigid, margins undulating to crenate or subcrenate, frequently laciniate or irregularly incisedtorn, sometimes fenestrate, upper surface pustulate up to 2.5 cm. large, cortex smooth, umbo elevated, more or less areolate-papilate or dermatoid, or with obscure vermiform pattern or veined, occasionally cracked, or with few weak folds extending radially from umbo, occasionally with lacinae on margins of holes and tears, or rarely in clusters on upper surface, surface dull to shiny, warm buff, wood brown, or Prout's brown over umbo, fading into fuscous black or light brownish olive, dark olive buff, or olive citrine margins, with a more or less persistent pruina; lower surface uniformly black with coarse papillae which may become lighter peripherally appearing as a light-edged zone (Japanese specimens deep mouse gray) umbilicus medium to compact or fasciate, becoming shaggy, stipe-like, or eroded, papillae in vicinity of umbilicus less regular, charred, interior of lacunae light brown and devoid of papillae, lower surface uneven. Thallus 250-300 µm thick, upper cortex brown, paraplechtenchymatous, 6-14 µm, with a thin evanescent necral zone 9.9 µm high, occasionally developing into palisadeplechtenchymatous tissue 80 µm high; algal layer continuous, protococcoid, about 33 µm deep; medulla loose, about 135 µm, of mesodermate hyphae 6.6 µm, in diameter, densely impregnated with a granular zone below the algal layer; lower cortex about 120 µm, scleroplectenchymatous with a strong, black dentate outline. Apothecia 1-2 mm. in diameter, common, free or grouped, mostly marginal, black, sessile to subpedicellate, rarely adnate but occurring in shallow depressions, disk plane to subconcave, exciple prominent, parathecium of isodiametric cells 66-82.5 µm, hypothecium 66-140 µm, brown, irregular, thecium 99 µm, with a dark brown to black epithecium, paraphyses agglutinate, simple, rarely forked, brown tipped, septate, 1.4-3. 4 µm in diameter, asci 68 x 22 µm, l-spored

asoospores muriform, light to dark brown, 36-60 x 14.4-28.8 µm, spermogonia moderately protruding above thallus surface, spherical 210 x 210 µm, with dark brown walls 14 µm thick, spermatiophores branched, spermatia rod shaped 2.4-4.5 x 1. 5 µm. - This common North American species extends throughout the north temperate zone into Asia and eastern Europe.

Lasallia pensylvanica

Lasallia pensylvanica



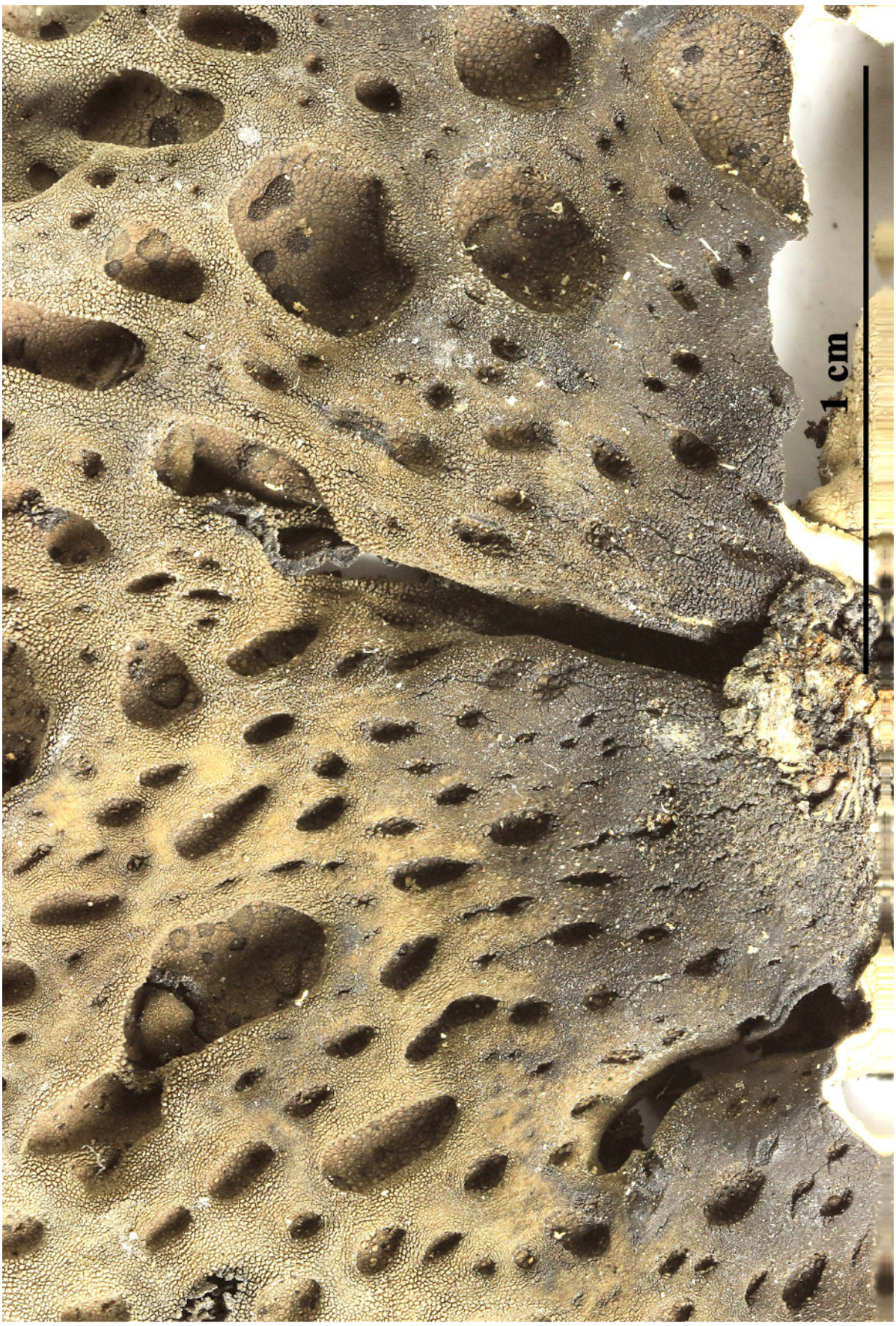
Lasallia pensylvanica

Lasallia pustulata (L.) Mérat, Nouv. Fl. Environs Paris, Edn 2 1: 202 (1821)
= *Umbilicaria pustulata* (L.) Hoffm. Descr. Adumb. Plant. Lich. 2, 1: 13, 1791.
= *Lichen pustulatus* L. , Sp. Pl.: 1150, 1753.

[VZ1416], URSS. Caucasus Magnus, Osettija Sept., distr. Ordžonikidze: in valle rivi 30 km occidentem versus ab urbe Ordžonikidze, loco Karmadon dicto, 1250 m. Ad rupes schistosas apricas. Leg. A. Vězda, 1.6.1976. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1416.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, usually large to very large, 3-10(-20) cm diam., dull brown but often coarsely white-pruinose when dry, green-brown when wet, attached by a stout, central holdfast. Upper surface with numerous conspicuous, convex, round to oval pustules, the margins becoming more or less eroded; isidia coralloid, dark, arranged in clusters, especially around cracks of the upper cortex. Lower surface grey to brown-black, reticulate, with broad depressions corresponding to the pustules, erhizinate; thalloconidia absent. Apothecia very rare, 1-3 mm across, with a black, flat, smooth disc and a persistent, smooth or partially isidiate true exciple. Epithecium black-brown; hymenium colourless, c. 100 µm high; paraphyses simple or sparingly branched, with enlarged apical cells; hypothecium dark brown, to 160 µm high. Asci 1(-2)-spored, elongate-clavate, thick-walled, with a K/I+ blue apical dome. Ascospores muriform, at fist hyaline, then brown, 28-70 x 18-34 µm. Pycnidia black, immersed, bottle-shaped, with a brown wall of isodiametrical cells. Conidia bacilliform, 2.5-3 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-, UV-. Chemistry: medulla with gyrophoric acid. Note: a temperate to boreal-montane, circumpolar species found on periodically wetted, but rapidly drying surfaces of basic siliceous rocks, usually in seepage tracks, with a wide altitudinal range, but usually absent above treeline. The species is widespread both in the Alps and in the mountains of Mediterranean Italy.

Lasallia pustulata



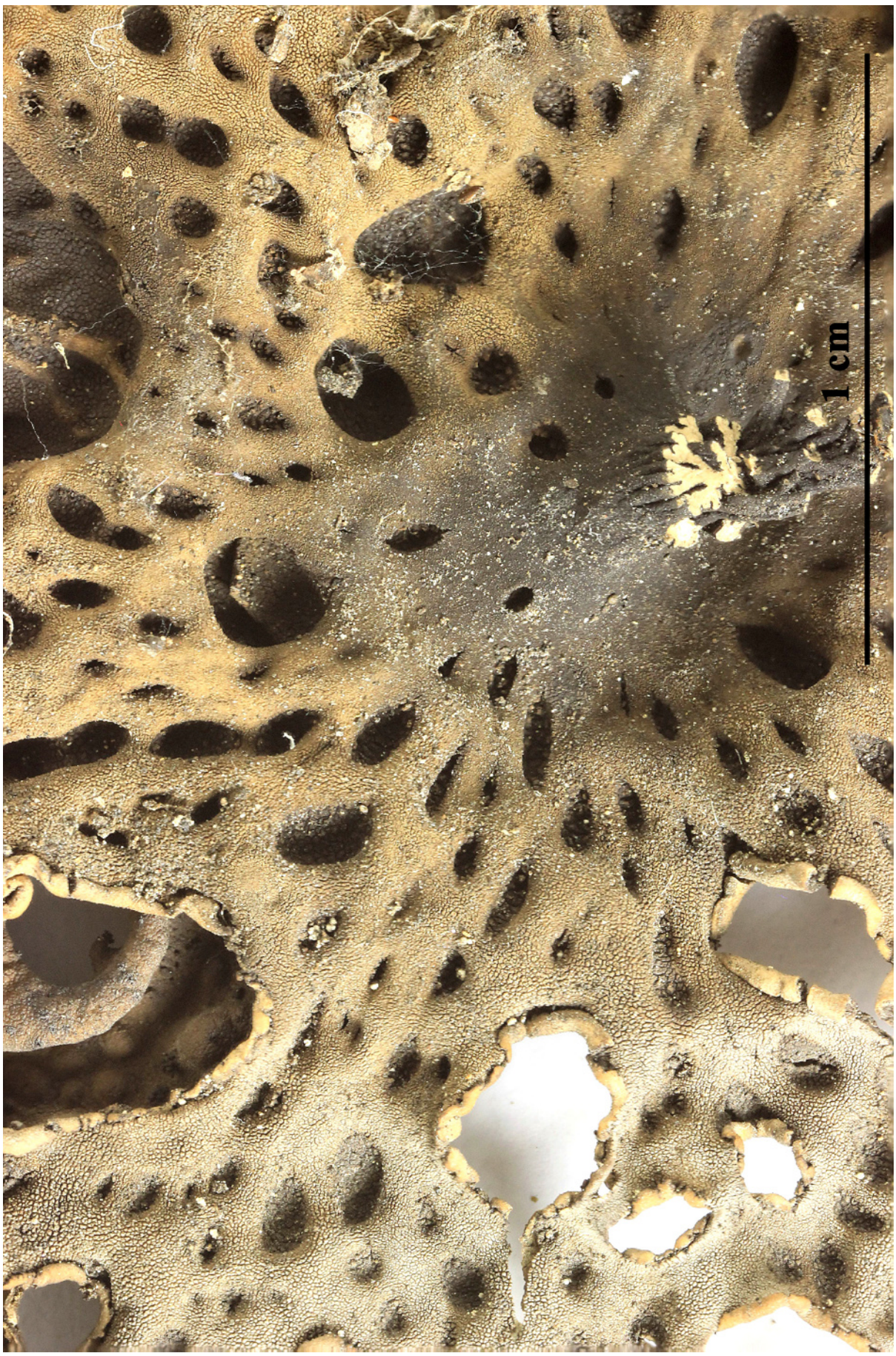
Lasallia pustulata

Lasallia pustulata (L.) Mérat, Nouv. Fl. Environs Paris, Edn 2 1: 202 (1821)
= *Umbilicaria pustulata* (L.) Hoffm. Descr. Adumb. Plant. Lich. 2, 1: 13, 1791.
= *Lichen pustulatus* L. , Sp. Pl.: 1150, 1753.

[VZ2123], Bohemoslovacia. Moravia, distr. Brno, in valle rivi Veverka prope arcem Veveří, 300m. Ad saxa silicea aprica. Leg. E. Farkas et A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2123.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, usually large to very large, 3-10(-20) cm diam., dull brown but often coarsely white-pruinose when dry, green-brown when wet, attached by a stout, central holdfast. Upper surface with numerous conspicuous, convex, round to oval pustules, the margins becoming more or less eroded; isidia coralloid, dark, arranged in clusters, especially around cracks of the upper cortex. Lower surface grey to brown-black, reticulate, with broad depressions corresponding to the pustules, erhizinate; thalloconidia absent. Apothecia very rare, 1-3 mm across, with a black, flat, smooth disc and a persistent, smooth or partially isidiate true exciple. Epithecium black-brown; hymenium colourless, c. 100 µm high; paraphyses simple or sparingly branched, with enlarged apical cells; hypothecium dark brown, to 160 µm high. Asci 1(-2)-spored, elongate-clavate, thick-walled, with a K/I+ blue apical dome. Ascospores muriform, at fist hyaline, then brown, 28-70 x 18-34 µm. Pycnidia black, immersed, bottle-shaped, with a brown wall of isodiametrical cells. Conidia bacilliform, 2.5-3 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-, UV-. Chemistry: medulla with gyrophoric acid. Note: a temperate to boreal-montane, circumpolar species found on periodically wetted, but rapidly drying surfaces of basic siliceous rocks, usually in seepage tracks, with a wide altitudinal range, but usually absent above treeline. The species is widespread both in the Alps and in the mountains of Mediterranean Italy.

Lasallia pustulata



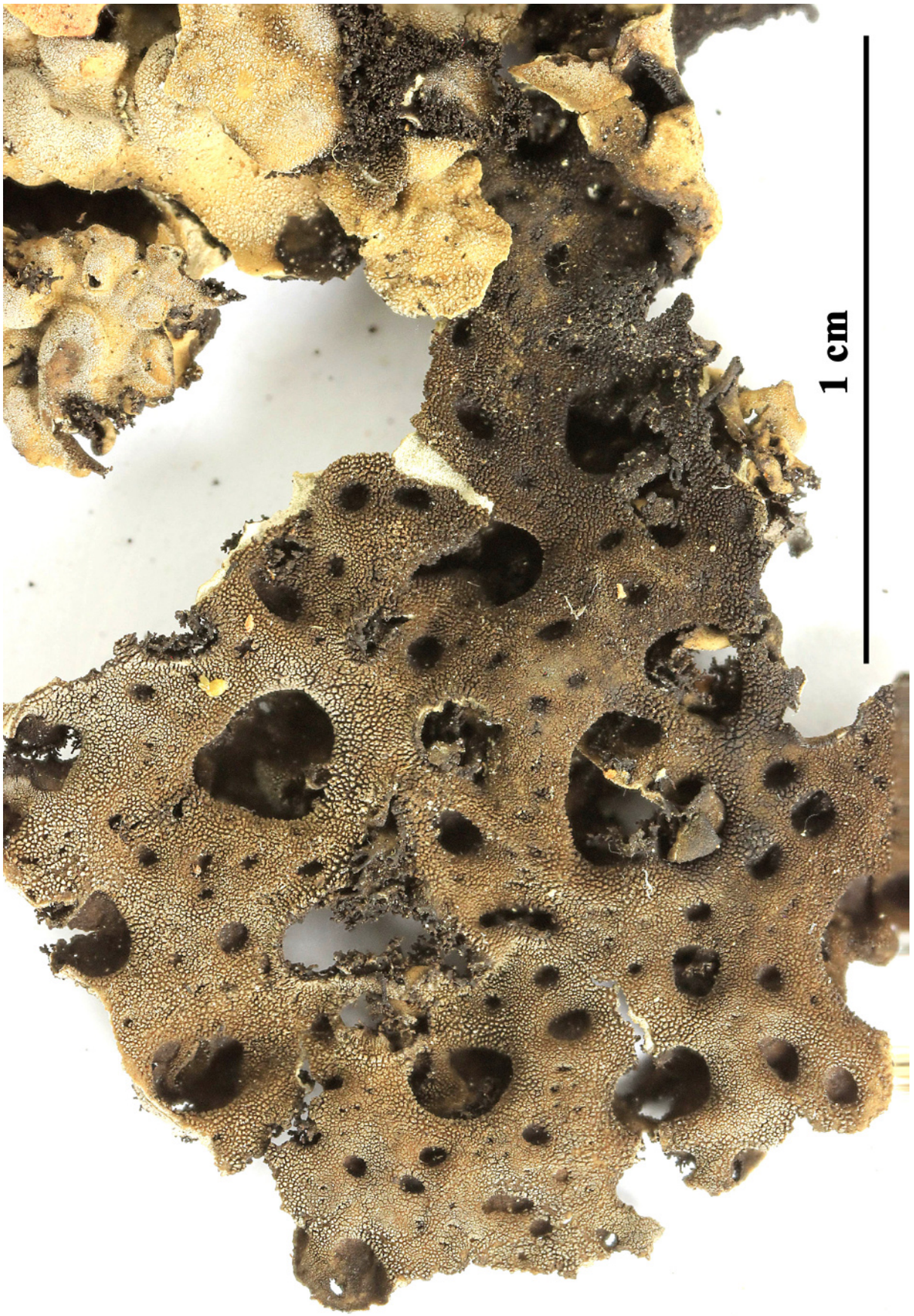
Lasallia pustulata

Lasallia pustulata (L.) Mérat, Nouv. Fl. Environs Paris, Edn 2 1: 202 (1821)
= *Umbilicaria pustulata* (L.) Hoffm. Descr. Adumb. Plant. Lich. 2, 1: 13, 1791.
= *Lichen pustulatus* L. , Sp. Pl.: 1150, 1753.

[VZ1438], Tanzania. Kilimanjaro: prope casam alpinam Barranco dictam, 3900 m. Ad parietes rupium. Leg. T. Pócs (no- 6934, 3.7.1976, det A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR.1438.

Thallus foliose-umbilicate, heteromerous, dorsiventral, monophyllous, usually large to very large, 3-10(-20) cm diam., dull brown but often coarsely white-pruinose when dry, green-brown when wet, attached by a stout, central holdfast. Upper surface with numerous conspicuous, convex, round to oval pustules, the margins becoming more or less eroded; isidia coralloid, dark, arranged in clusters, especially around cracks of the upper cortex. Lower surface grey to brown-black, reticulate, with broad depressions corresponding to the pustules, erhizinate; thalloconidia absent. Apothecia very rare, 1-3 mm across, with a black, flat, smooth disc and a persistent, smooth or partially isidiate true exciple. Epithecium black-brown; hymenium colourless, c. 100 µm high; paraphyses simple or sparingly branched, with enlarged apical cells; hypothecium dark brown, to 160 µm high. Asci 1(-2)-spored, elongate-clavate, thick-walled, with a K/I+ blue apical dome. Ascospores muriform, at fist hyaline, then brown, 28-70 x 18-34 µm. Pycnidia black, immersed, bottle-shaped, with a brown wall of isodiametrical cells. Conidia bacilliform, 2.5-3 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K-, C+ red, KC+ red, P-, UV-. Chemistry: medulla with gyrophoric acid. Note: a temperate to boreal-montane, circumpolar species found on periodically wetted, but rapidly drying surfaces of basic siliceous rocks, usually in seepage tracks, with a wide altitudinal range, but usually absent above treeline. The species is widespread both in the Alps and in the mountains of Mediterranean Italy.

Lasallia pustulata

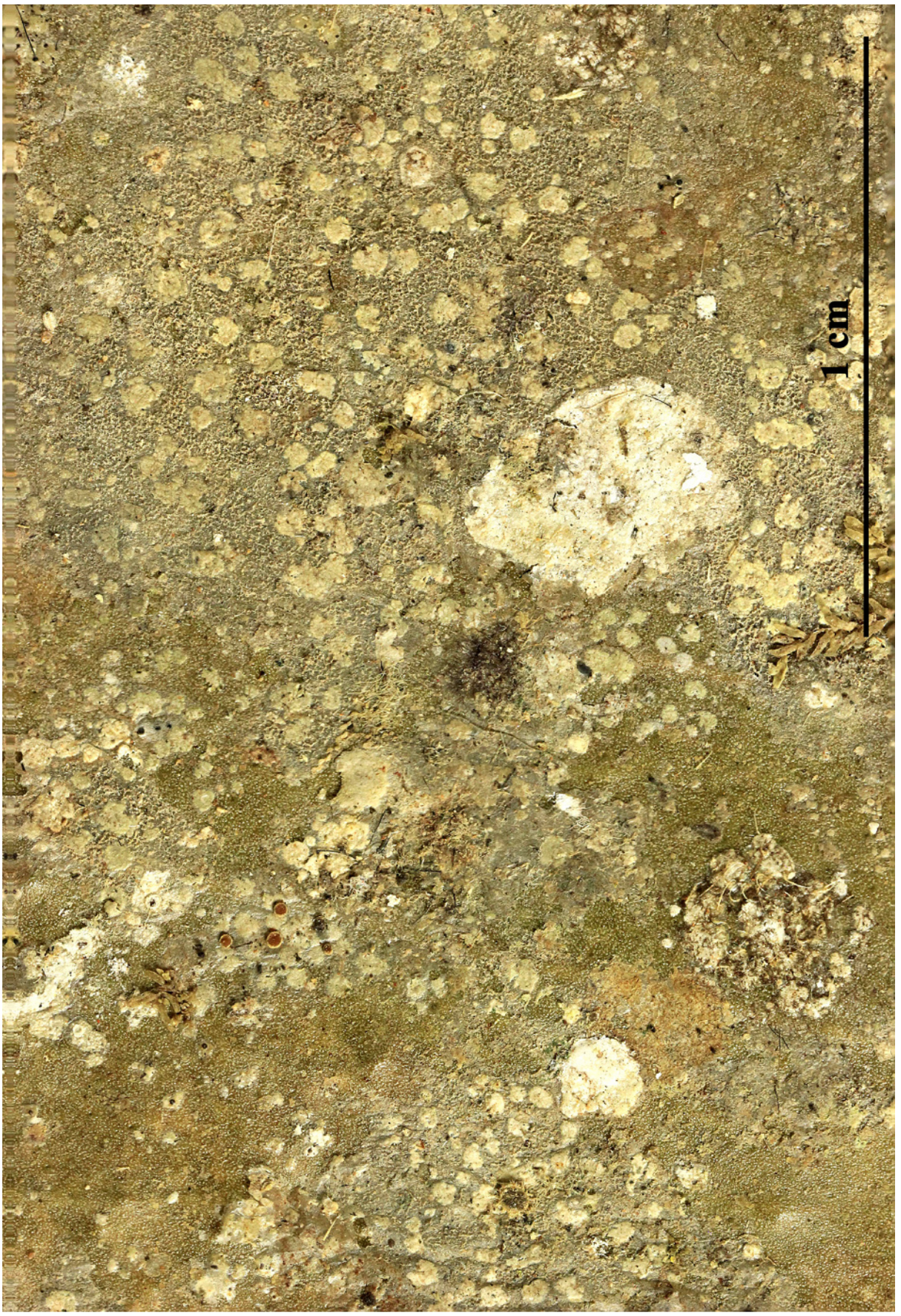


Lasallia pustulata

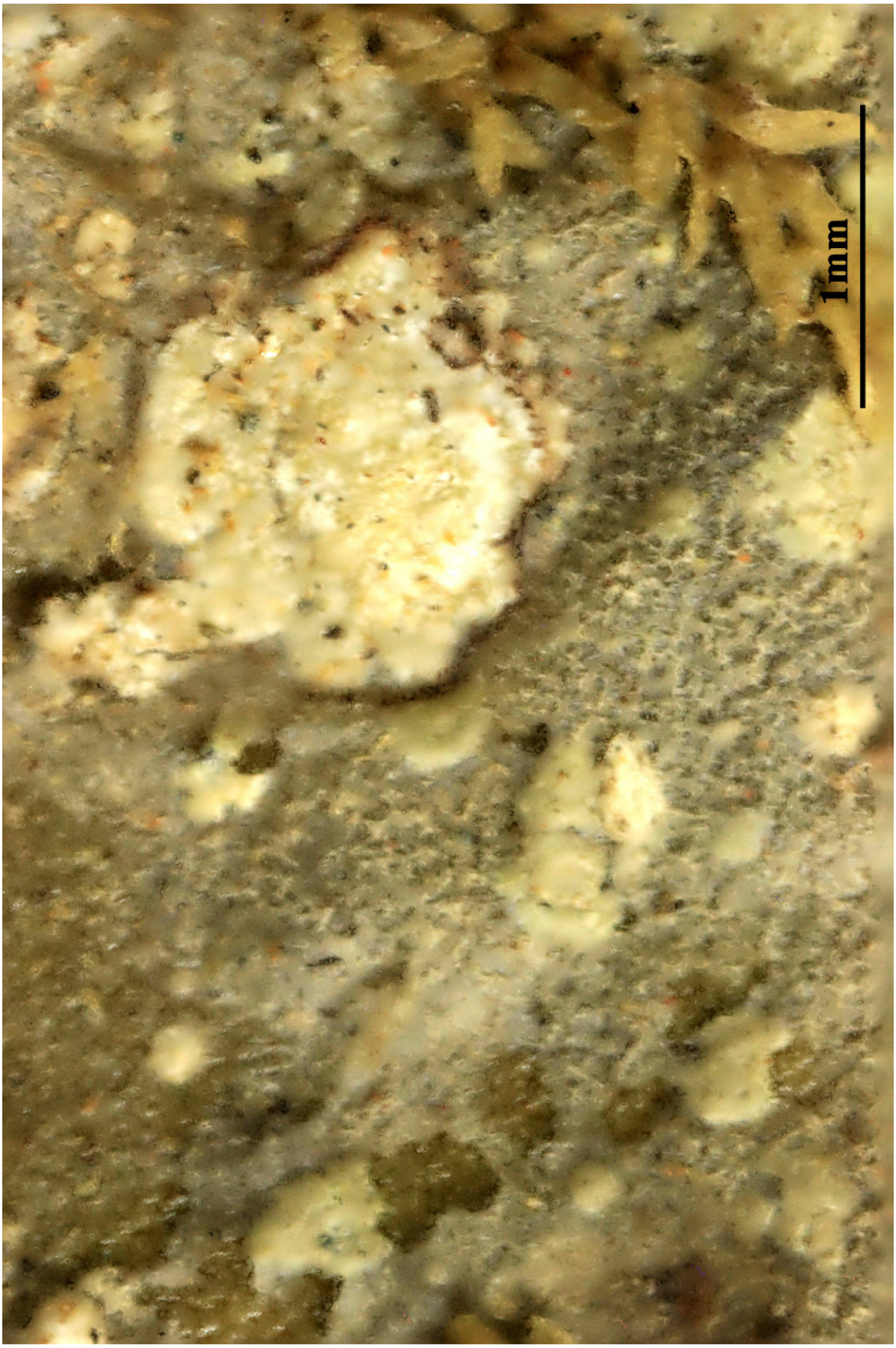
Lasioloma arachnoideum (Kremp.) R. Sant., Symb. bot. upsal. 12(no. 1): 547 (1952)
= *Lopadium arachnoideum* (Kremp.) Müll. Arg., Flora, Regensburg 73: 190 (1890)
= *Phlyctis arachnoidea* Kremp., Nuovo G. bot. ital. 7(1): 16 (1875)
= *Sporopodium leprieurii* var. *arachnoideum* (Kremp.) Vain., Ann. Acad. Sci. fenn., Ser. A 15(no. 6): 100 (1921)

[VZ2144], Tanzania. Tanga regio, montes Usambara orient. . Amani, prope Amani Forest House, 900 m. Ad folia Citri sinensis. Leg. E. Farkas (86210), 25.10.1986. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 2144.

Thallus dispersed into rounded, partly confluent patches, 10–40 mm across and 20–35 µm thick, ecorticate, smooth, pale grey; prothallus well-developed between algiferous, thallus patches. Apothecia rounded, 0.4–0.8 mm diam. and 200–300 µm high; disc plane, dark greyish brown; margin thick, pale grey, laterally densely pilose. Excipulum 30–60 µm broad, laterally with numerous hairs, up to 100 µm long. Hypothecium 20–60 µm high, dark aeruginous brown. Apothecial base aeruginous. Epithecium thin, 5–10 µm high, pale brown. Hymenium 100–130 µm high, colourless. Asci 90–110 x 20–30 µm. Ascospores single, oblong, muriform, 70–105 x 18–28 µm, 3.5–4.5 times as long as broad, colourless. Campylidia sessile, 0.5–0.9 mm broad; lobe dark grey to slightly bluish grey. Conidia filiform with 3–5 branches originating from single point, each branch 3–5-septate, 20–30 x 1.3–1.7 µm. Chemistry: no substances detected by TLC and HPLC.



Lasioloma arachnoideum



Lasioloma arachnoideum

Lecanactis chloroconia Tuck., Proc. Amer. Acad. Arts & Sci. 6: 285 (1866) [1864]

= *Cresponea chloroconia* (Tuck.) Egea & Torrente, Mycotaxon 48: 310 (1993)

[VZ1499], USA. Michigan, Cheboygan County: in oriente a Carp Creek prope University of Michigan Biological Station. Ad corticem *Thujae occidentakis* in silva uliginosa. Leg. R. C. Harris (no. 9171), 21.7.1974. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1499.

Thallus small, thin, uniform, continuous, smooth to granulose, definite and limited by a dark brown black prothalline line, or thallus diffuse or indistinct; surface smooth, white or pale green, pale yellowish green to yellowish gray; Apothecia numerous, scattered, ±round, sessile, constricted at base, 0.2-0.7(-1) mm in diam; disc black, plane or slightly concave, greenish pruinose when young, finally epruinose; exciple with an erect proper margin, rather thin, mostly entire, becoming somewhat rugulose or wavy to dentate; "epihymenium" granulose, green-black; hymenium hyaline, 45-70 µm tall, I+ pale red, K/I+ blue; paraphysoids branching or simple, free, up to 1.5 µm wide below, with tips thickened (3-4 µm wide) and dark green, with dark brown cap formed in the inner part of the cell wall; subhymenium hyaline, 25-40 µm thick, I± slightly blue/red or pale red, K/I+ blue; hypothecium: broad, black, continuous with the broad black exciple; asci clavate, 35-45 x 10-12 µm at maturity, 8-spored; ascospores hyaline, (2-)3(-4)-septate, straight or slightly curved, ovoid to oblong-ellipsoid, finger-shaped or broadly fusiform, often somewhat widened at one end, 11-15(-17) x 3-5 µm; walls slightly thickened at septa; Pycnidia immersed or semi-immersed in the thallus, 100-120 µm tall, 90-100 µm wide; conidia hyaline, 3-5 x 1-1.5 µm; Spot tests: thallus K+ yellow, C-, KC-, P-; Secondary metabolites: none detected; Substrate and ecology: on trees and old wood of conifers (*Picea*, *Abies*, *Cedrus*, *Taxus*, etc.) or deciduous trees (*Acer, Populus, Fraxinus, Quercu*s, etc.), often in coniferous or mixed forest; sometimes near the ocean; World distribution: warm to cold temperate areas of the Northern Hemisphere in Europe, Asia; and North America (mainly in the East).

Lecanactis chloroconia

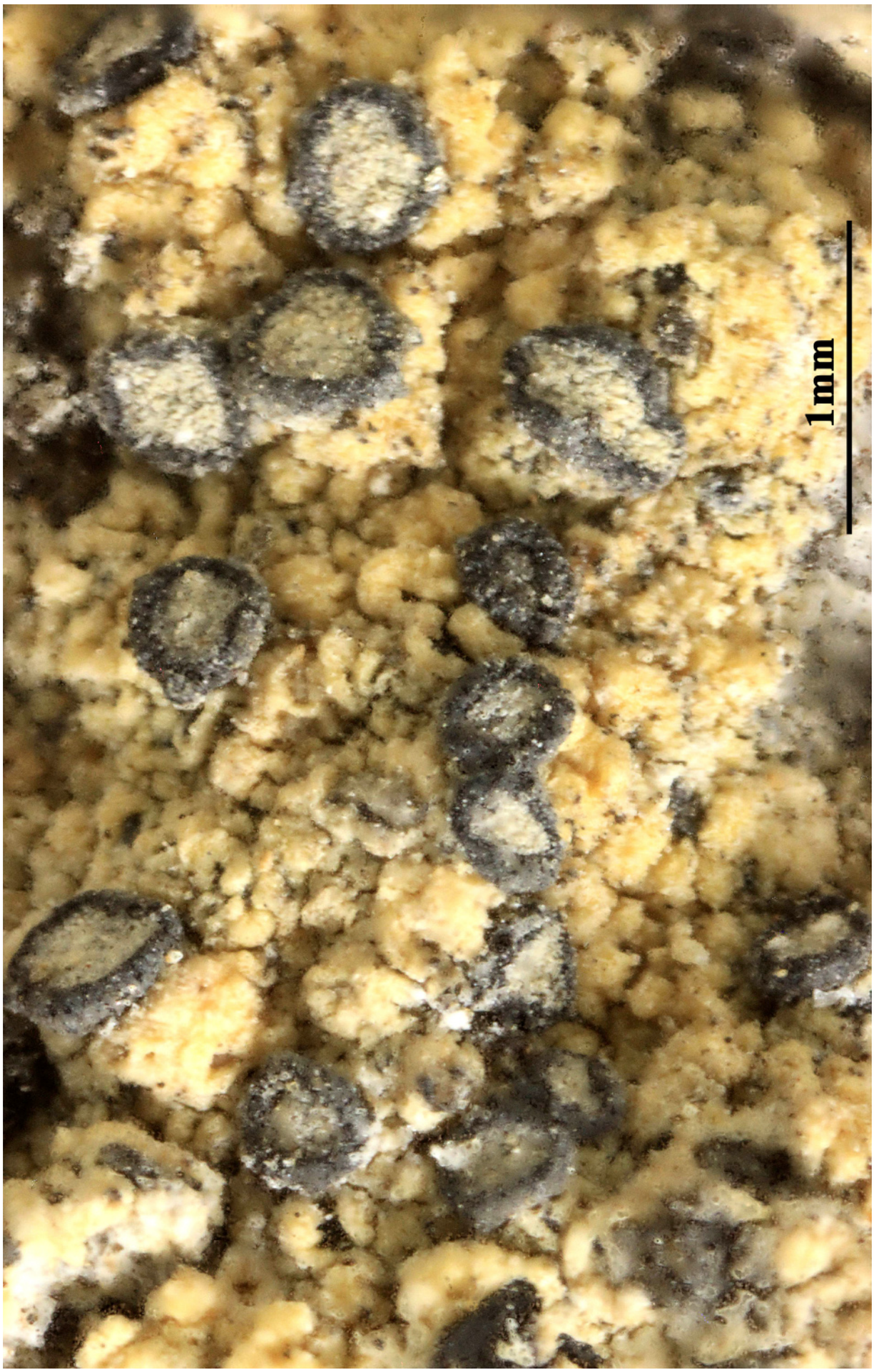
Lecanactis chloroconia

Lecanactis dilleniana (Ach.) Körb., Syst. lich. germ. (Breslau): 276 (1855)
= *Lichen dillenianus* Ach. 1799
= *Psoronactis dilleniana* (Ach.) Ertz & Tehler, in Ertz, Tehler, Irestedt, Frisch, Thor & van den Boom, Fungal Diversity 70: 46 (2014) [2015]
= *Schismatomma epipolium* A. Massal.

[VZ1276], Hungaria. Montes Matra, in rupibus Saskö dictis, in redione montis Kakes, 880 m. Ad saxa andesitica locis umbrosis. Leg. A. Kiszely et A. Vězda, 6.4.1974. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 1276.

Thallus crustose, episubstratic, up to 3 mm thick, more or less effuse, somewhat tomentose-scurfy, ecorticate, soft, areolate to verrucose, whitish to very pale grey, more or less tinged mauve-pink or pink-orange, sometimes delimited by a thin dark prothallus. Medulla white, I+ blue. Apothecia immersed to subsessile, constricted at base, (0.4-)0.6-1.5(-2) mm wide, round, angular or more rarely elongate, with a more or less exposed, black but often grey-pruinose, flat to convex disc and a raised, blackish, epruinose, persistent proper margin. Proper exciple dark brown, K+ olivaceous green; epithecium brown; hymenium colourless, 70-100 µm thick, I+ red; paraphysoids mostly simple, 1.5-2 µm thick, with slightly enlarged apical cells; subhymenium 15-25 µm high, brownish, K+ olivaceous green, I+ blue; hypothecium black, carbonized, up to 280 µm thick. Asci 8-spored, cylindrical-clavate, fissitunicate, the apex with a K/I+ pale blue apical dome penetrated by a small ocular chamber. Ascospores 3-septate, fusiform, straight or slightly curved, 18-35(-40) x 4-5 µm. Pycnidia rare, black, semi-immersed, with a dark brown wall. Conidia bacilliform, straight, 5-8 x 1-1.5 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P+ yellow-orange; medulla UV+ glaucous or yellowish grey. Chemistry: psoromic and 2'-0-demethylpsoromic acids, plus variable amounts of schizopeltic acid. - Note: on hard crystalline rocks, beneath overhangs and in crevices which are seldom wetted by rain, mostly in upland areas.

Lecanactis dilleniana



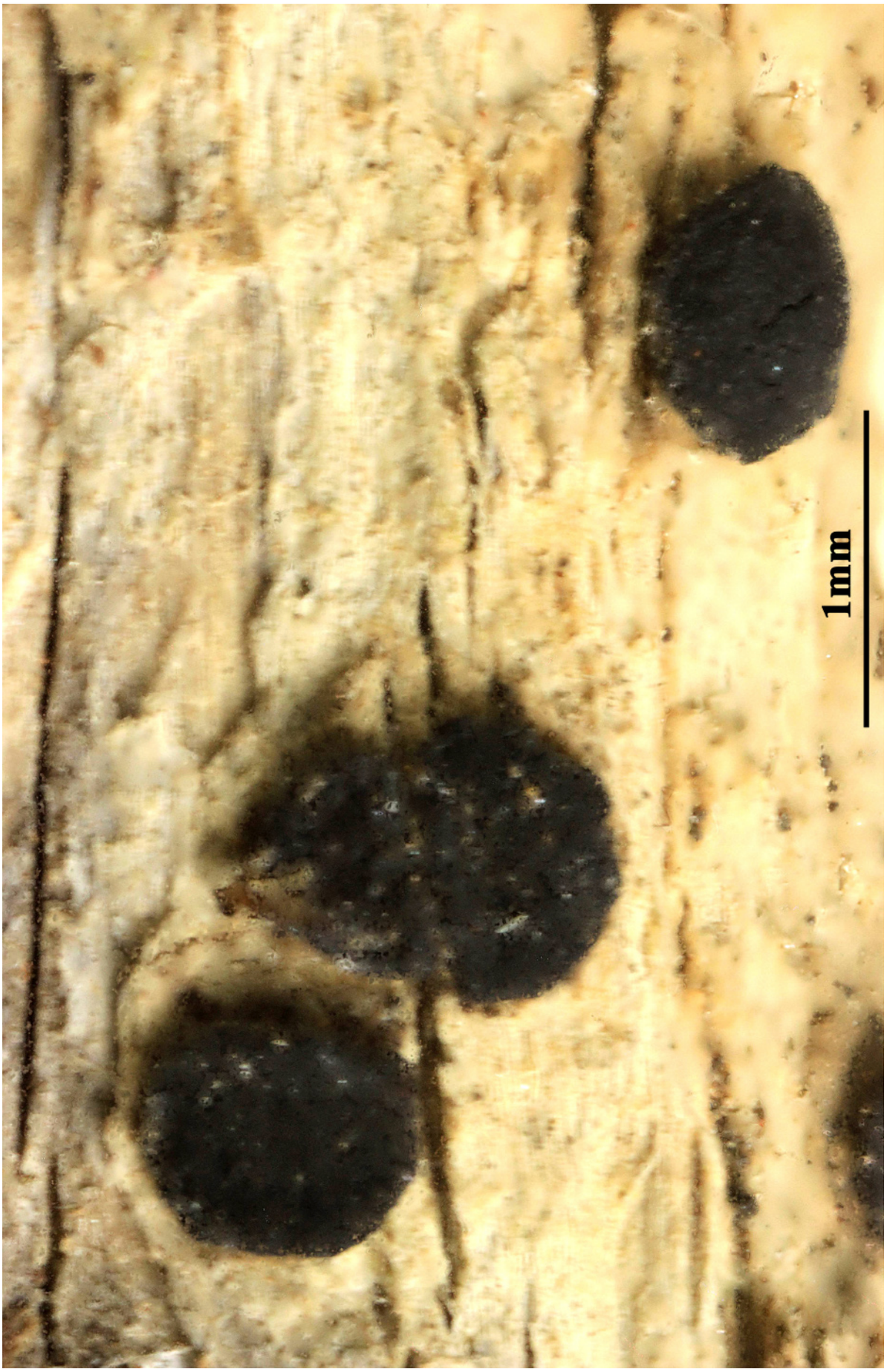
Lecanactis dilleniana

Lecanactis patellarioides (Nyl.) Vain., Ann. Acad. Sci. Fenn., Ser. A 6(no. 7): 143 (1915)
= *Lecidea patellarioides* Nyl. 1854
= *Bactrospora patellarioides* (Nyl.) Almq. *var. patellarioides* Skandin. , Artern Schismatomma, Opegrapha och Bactrospora: 24, 1869.

[VZ2409], Italia. Sardinia, prov. Cagliari: in litore inter Cabo Ferrato et Torre Salinas loco dicto "La Stagno Feraxi", 3 m. Ad corticem *Juniperi phoeniceae*. Leg. P. ;. Nimis, C. Roux, M. Tretiach et A. Vězda. Ex A. Vezda Lichenes Selecti Exsiccati Nr. 2409.

Thallus crustose, episubstratic, continuous to rimose, white, creamy white or pale brownish grey, smooth to farinose, ecorticate, with a thick epinecral layer filled with crystals, sometimes delimited by a thin dark prothallus. Apothecia lecideine, black, adnate to sessile, round to slightly irregular in outline, 0.4-1.2 mm across, with a slightly concave to slightly convex, epruinose disc, and a thin, smooth, rarely finally excluded proper margin. Proper exciple orange brown to dark brown, usually not extending below the hymenium (rarely closed), 60-160(-250) µm thick at base; epithecium dark reddish brown, granulose; hymenium colourless to pale brown, 110-200 µm high, I+ pale red, K/I+ pale blue; paraphysoids richly branched in upper part, not coherent, c. 1.5 µm thick at base, the apical cells up to 4 µm wide; subhymenium colourless to pale yellowish brown in lower part, 90-180(-220) µm high, I+ reddish or deep blue, K/I+ deep blue. Asci (6-)8-spored, narrowly clavate to cylindrical, with a distinct stipe and foot-like base, easily separated from the ascogenous hyphae, bitunicate-fissitunicate, with a narrow, K/I+ pale blue apex, with a shallow apical dome penetrated by a small ocular chamber surrounded at the base by a small K/I+ dark blue ring-like zone, the exoascus thin and refringent, the endoascus slightly hemiamyloid, (80-)90-135 x 11-13(-14) µm. Ascospores 9-17(-26)-septate, acicular or cylindrical, straight or slightly curved, (42-)60-95(-120) x 2-4(-5) µm. Pycnidia semi-immersed, the wall brown in upper part, colourless at base. Conidia cylindrical, slightly curved, 8-14 x c. 1 µm. Photobiont trentepohlioid. Spot tests: thallus K-, KC-, C-, P-, UV-. Chemistry: without lichen substances. - Note: a mild-temperate to humid subtropical, Mediterranean-Atlantic lichen found on acid bark of mature, isolated, mostly broad-leaved trees, especially *Quercus* and *Olea*, occasionally on siliceous rocks, often near the coast in Tyrrhenian Italy.

Lecanactis patellarioides



Lecanactis patellarioides

Images of Lichens (Vezda Exsiccat Lichenes Selecti Part 19)

A
Allantoparmelia alpicola (Th. Fr.) Essl..... 64
Anaptychia boryi (Fée) A. Massal..... 2
Anaptychia obscura auct. var. lecanorina A. Massal..... 46, 49
armelia zeylanica R. Sant..... 99
B
Bactrospora patellarioides (Nyl.) Almq. var. patellarioides Skandin. 198
Borrera boryi Fée..... 2, 20, 23
C
Carbonicola anthracophila (Nyl.)..... 52
Cresponea chloroconia (Tuck.) Egea & Torrente..... 192
G
Gyalecta epulotica Ach..... 141
Gyrophora papulosa Ach..... 157
H
Haematomma pustulatum Brodo & W.L. Culb..... 5
Haematomma ventosum (L.) A. Massal..... 8
Haplocarpon nadvornikianum Vězda..... 11
Harpidium rutilans Flot. ex Körb..... 14
Heppia reticulata (Nyl.) Nyl..... 17
Heppia solorinoides (Nyl.) Nyl..... 17
Heterodermia boryi (Fée) Kr.P. Singh & S.R. Singh..... 2, 20, 23
Heterodermia obscurata (Nyl.) Trevis..... 26, 29
Heterodermia speciosa (Wulfen) Trevis..... 33
Huilia circumnigrata Vězda..... 36
Hydrothyria venosa J.L. Russell..... 39, 43
Hymenelia epulotica (Ach.) Lutzoni..... 141
Hymenelia prevostii var melanocarpa Krempelhuber..... 144
Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt..... 46, 49
Hypocenomyce anthracophila (Nyl.) P. James & Gotth. Schneid..... 52
Hypocenomyce scalaris (Ach.) M. Choisy..... 55
Hypocenomyce sorophora (Vain.) P. James & Poelt..... 58
Hypocenomyce stoechadiana Abbassi Maaf & Cl. Roux..... 61
Hypogmnia. hypotrypella (Asah.) Rass..... 76
Hypogymnia atrofusca (Schaer.) Räsänen..... 64
Hypogymnia bitteri (Lynge) Ahti..... 68, 72
Hypogymnia flavida McCune & Obermayer..... 77
Hypogymnia hypotropa (Nyl.) Rass..... 78
Hypogymnia hypotrypa (Nyl.) Rassad..... 77

Hypogymnia hypotrypella (Asahina) Rass..... 76
Hypogymnia intestiniformis var. atrofusca (Schaer.) Poelt..... 64
Hypogymnia kosciuskoensis Elix..... 92
Hypogymnia lugubris (Pers.) Krog..... 81
Hypogymnia physodes (L.) Nyl..... 84
Hypogymnia pulverata Elix..... 88
Hypogymnia subobscura (Vain.) Poelt..... 92
Hypogymnia vittata (Ach.) Parrique..... 96
Hypogymnia zeylanica (R. Sant.) D.D. Awasthi & Kr.P. Singh..... 99
Hypotrachyna awasthii Hale & Patw..... 102
Hypotrachyna britannica (D. Hawksw. & P. James) Coppins.. 107, 110
Hypotrachyna caraccensis (Taylor) Hale..... 113
Hypotrachyna gigas (Kurok.) Hale..... 116
Hypotrachyna imbricatula (Zahlbr.) Hale..... 119, 123
Hypotrachyna longiloba (H. Magnusson) Hale..... 116
Hypotrachyna physcioides (Nyl.) Hale..... 126
Hypotrachyna taylorensis (M.E. Mitch.) Hale..... 129
I
Icmadophila ericetorum (L.) Zahlbr..... 132
Icmadophila splachnirima (Hook. f. & Taylor) D.J. Galloway..... 150
Imshaugia aleurites (Ach.) S.L.F. Mey..... 135
Ionaspis epulotica (Ach.) Blomb. & Forssell..... 141
Ionaspis melanocarpa var. crustosa H. Magn..... 144
K
Karschia talcophila (Ach.) Körb..... 147
Knightiella splachnirima (Hook. f. & Taylor) Gyeln..... 150
Koerberia biformis A. Massal..... 154
L
Lasallia brigantium (Zschacke) Llano..... 161, 166
Lasallia hispanica (Frey) Sancho & A. Crespo..... 169
Lasallia papulosa (Ach.) Llano..... 157
Lasallia pensylvanica (Hoffm.) Llano..... 172, 176
Lasallia pustulata (L.) Mérat..... 180, 183, 186
Lecanactis chloroconia Tuck..... 192
Lecanactis dilleniana (Ach.) Körb..... 195
Lecanactis patellarioides (Nyl.) Vain..... 198
Lecanora adglutinata Flörke..... 46, 49
Lecanora solorinoides Nyl..... 17
Lecidea anthracophila Nyl..... 52
Lecidea patellarioides Nyl..... 198
Lecidea reticulata Nyl..... 17

Lecidea talcophila Ach..... 147
Lecidea xanthococca subsp. sorophora Vain..... 58
Lepra pustulata (Brodo & W.L. Culb.) Lendemer & R.C. Harris..... 5
Leucodermia boryi (Fée) Kalb..... 2, 20, 23
Lichen aleurites Ach..... 135
Lichen dillenianus Ach..... 195
Lichen ericetorum L..... 132
Lichen physodes L..... 84
Lichen pustulatus L..... 180, 183, 186
Lichen scalaris Ach..... 55
Lichen speciosus Wulfen..... 33
Lichen ventosus L..... 8
O
Ophioparma ventosa (L.) Norman..... 8
P
P. hypotrypella Asahina..... 76
Parmelia atrofusca (Schaer.) Cromb..... 64
Parmelia bitteri Lynge..... 68, 72
Parmelia britannica D. Hawksw. & P. James..... 107, 110
Parmelia caraccensis Taylor..... 113
Parmelia ceratophylla var. atrofusca Schaer..... 64
Parmelia gigas Kurok..... 116
Parmelia hypotrypa Nyl..... 76
Parmelia hypotrypella Asahina..... 76
Parmelia imbricatula Zahlbr..... 119, 123
Parmelia intestiniformis var. atrofusca (Schaer.) Hasselrot..... 64
Parmelia lugubris Pers..... 81
Parmelia mundata var. pulverata Nyl..... 88
Parmelia physcioides Nyl..... 126
Parmelia physodes var. vittata Ach..... 96
Parmelia splachnirima Hook. f. & Taylor..... 150
Parmelia subobscura Vain..... 92
Parmelia taylorensis M.E. Mitch..... 129
Parmeliopsis aleurites (Ach.) Nyl..... 135
Peltigera hydrothyria Miądl. & Lutzoni..... 39, 43
Physcia adglutinata (Flörke) Nyl..... 46, 49
Physcia speciosa subsp. obscurata Nyl..... 26, 29
Physciopsis adglutinata (Flörke) M. Choisy..... 46, 49
Porpidia circumnigrata (Vězda) Knežević & Mayrhofer..... 36
Porpidia crustulata (Ach.) Hertel & Knoph..... 36
Porpidia nadvornikiana (Vězda) Hertel..... 11

Psoronactis dilleniana (Ach.) Ertz & Tehler..... 195
Pycnora sorophora (Vain.) Hafellner..... 58
R
Remototrachyna awasthii (Hale & Patw.) Divakar & A. Crespo..... 102
S
Schismatomma epipolium A. Massal..... 195
U
Umbilicaria brigantium var. hispanica Frey..... 169
Umbilicaria brigantium Zschacke..... 161, 166
Umbilicaria hispanica (Frey) Davydov, Peršoh & Rambold..... 169
Umbilicaria pensylvanica Hoffm..... 172, 176
Umbilicaria pustulata (L.) Hoffm..... 180, 183, 186
W
Waynea stoechadiana (Abbassi Maaf & Cl. Roux) Cl. Roux & P. Clerc 61