

F. Schumm (2026):

Images of Lichens

Vežda Lichenes Selecti Exsiccati
part 25

With this volume, I continue the documentation of Vezda's works on exiccata, now with Lichenes Selecti as part 25. 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 european 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

Parmelia arnoldii Du Rietz, Nytt Mag. Natur. 62: 80 (1924)

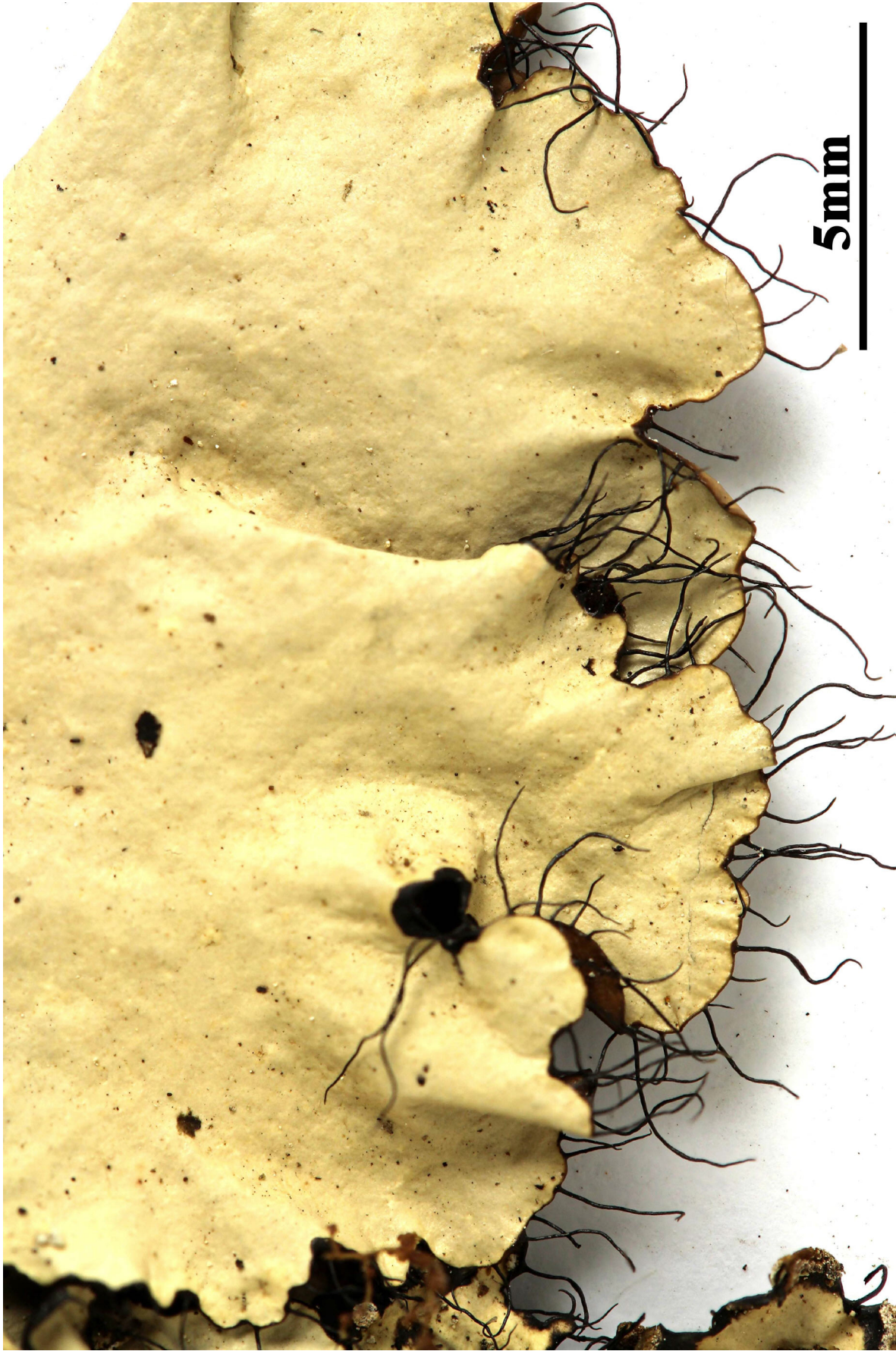
= *Parmotrema arnoldii* (Du Rietz) Hale, Phytologia 28(4): 335 (1974)

[VZ2435], Italia, Carnica: montes Alpi Carniche, distr. Ampezzo, supra lacum " Lago di Sauris", 1150 m In ramulis arborum (*Abies alba*). Lerg. P. L. Nimis & A. Vězda, 27.09.1990. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2435.

Thallus foliose, heteromerous, dorsiventral, broad-lobed, loosely adnate, irregularly shaped, 5-20 cm in diam., sorediate. Lobes 5-15(-20) mm wide, often slightly imbricate, at first flat then concave, with ascending, rotund or undulate margins, with often conspicuous, black, to 5 mm long marginal cilia. Upper surface grey with some blackened areas, smooth, dull to somewhat shiny, faintly white-maculate, with granular soredia arranged in globose to finally linear, marginal to submarginal soralia. Lower surface black with a brown, naked marginal zone, centrally with dark, simple rhizines. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with lichenan intermediate between the *Cetraria*- and the *Xanthoparmelia*-types; medulla white; algal layer continuous; lower cortex prosoplectenchymatous, with rounded and thick-walled cells. Apothecia very rare, lecanorine, substipitate, up to 10 mm across, with a brown, often perforate disc and a smooth to sorediate thalline margin. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, clavate, *Lecanora*-type. Ascospores 1-celled, hyaline, ellipsoid to broadly ellipsoid, 15-22 x 9.5-12 μm . Pycnidia rare, black, laminar, immersed. Conidia long-bacilliform to thread-like, 10-14 x 0.5-1 μm . Photobiont chlorococcoid. Spot tests: upper cortex K⁺ yellow, C⁻, KC⁻, P⁻ or P⁺ faintly yellow; medulla K⁻, C⁻, KC⁺ red, P⁻, UV⁺ ice-blue. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with alectoronic acid (major) and α -collatolic acid (minor). - Note: a cool-temperate to tropical lichen, in Italy restricted to humid beech forests; it frequently grows in the upper branches of the tree canopy in forests with frequent fog, and therefore it often goes unnoticed.



Parmelia arnoldii



Parmelia arnoldii



Parmelia arnoldii

Parmelia arnoldii Du Rietz, Nytt Mag. Natur. 62: 80 (1924)

= *Parmotrema arnoldii* (Du Rietz) Hale, Phytologia 28(4): 335 (1974)

[VZ1385], Rwanda (Africa centralis), in silva dicta Nyungwe, secundum via inter Pindura et Bweyeye, 2050 m, ad ramos arborum (*Newtonia buchananii*). Leg. J. Lambinon (74/884), 16.08.1974. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1385.

Thallus foliose, heteromerous, dorsiventral, broad-lobed, loosely adnate, irregularly shaped, 5-20 cm in diam., sorediate. Lobes 5-15(-20) mm wide, often slightly imbricate, at first flat then concave, with ascending, rotund or undulate margins, with often conspicuous, black, to 5 mm long marginal cilia. Upper surface grey with some blackened areas, smooth, dull to somewhat shiny, faintly white-maculate, with granular soredia arranged in globose to finally linear, marginal to submarginal soralia. Lower surface black with a brown, naked marginal zone, centrally with dark, simple rhizines. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with lichenan intermediate between the *Cetraria*- and the *Xanthoparmelia*-types; medulla white; algal layer continuous; lower cortex prosoplectenchymatous, with rounded and thick-walled cells. Apothecia very rare, lecanorine, substipitate, up to 10 mm across, with a brown, often perforate disc and a smooth to sorediate thalline margin. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, clavate, *Lecanora*-type. Ascospores 1-celled, hyaline, ellipsoid to broadly ellipsoid, 15-22 x 9.5-12 μm . Pycnidia rare, black, laminar, immersed. Conidia long-bacilliform to thread-like, 10-14 x 0.5-1 μm . Photobiont chlorococcoid. Spot tests: upper cortex K⁺ yellow, C⁻, KC⁻, P⁻ or P⁺ faintly yellow; medulla K⁻, C⁻, KC⁺ red, P⁻, UV⁺ ice-blue. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with alectoronic acid (major) and α -collatolic acid (minor). - Note: a cool-temperate to tropical lichen, in Italy restricted to humid beech forests; it frequently grows in the upper branches of the tree canopy in forests with frequent fog, and therefore it often goes unnoticed.



Parmelia arnoldii



Parmelia arnoldii

Parmelia austrosinensis Zahlbr., in Handel-Mazzetti, Symb. Sinic. 3: 192 (1930)
= *Parmotrema austrosinense* (Zahlbr.) Hale, Phytologia 28(4): 335 (1974)

[VZ1384], Zaire (Africa centralis), Birunga montes, in planitie Rukumi montis ignovomi Karisimbi, 3550 m. Ad truncum dejectum *Senetionis johnstonii* subsp. *refractisquamati*. Leg. J. Lambinon (no.72/235), 22.01.1972. EX A. VEZDA LICHENES SELECTI EXSICCATI NR. 1384.

Thallus loosely adnate, coriaceous, to 6–10 cm wide. Lobes rounded, 10–30 mm wide, lacking laciniae; margins entire or crenate, eciliate, sinuate, often ascending. Upper surface pale grey, ash grey, or grey-green, weakly maculate, sometimes distinctly maculate especially in thallus centre, ±rugose and reticulately cracked, without isidia; soralia marginal and submarginal, linear; soredia granular. Medulla white. Lower surface black, with a white, brown, or mottled erhizinate marginal zone; rhizines sparse, simple, unevenly distributed, short. Apothecia rare, subpedicellate, to 10 mm wide; disc perforate or imperforate; thalline exciple sorediate. Ascospores 12–20 × 7–10 μm. Pycnidia uncommon. Conidia filiform, 10–14 × 1 μm. CHEMISTRY: cortex K+ yellow; medulla K-, C+ red, KC+ red, P-; containing atranorin, chloro-atranorin and lecanoric acid. - Common on bark of trees, and, more rarely, on rock, in moist subtropical and tropical areas. - Australia, Lord Howe Is. A widespread species in tropical and temperate regions.



Parmelia austrosinensis

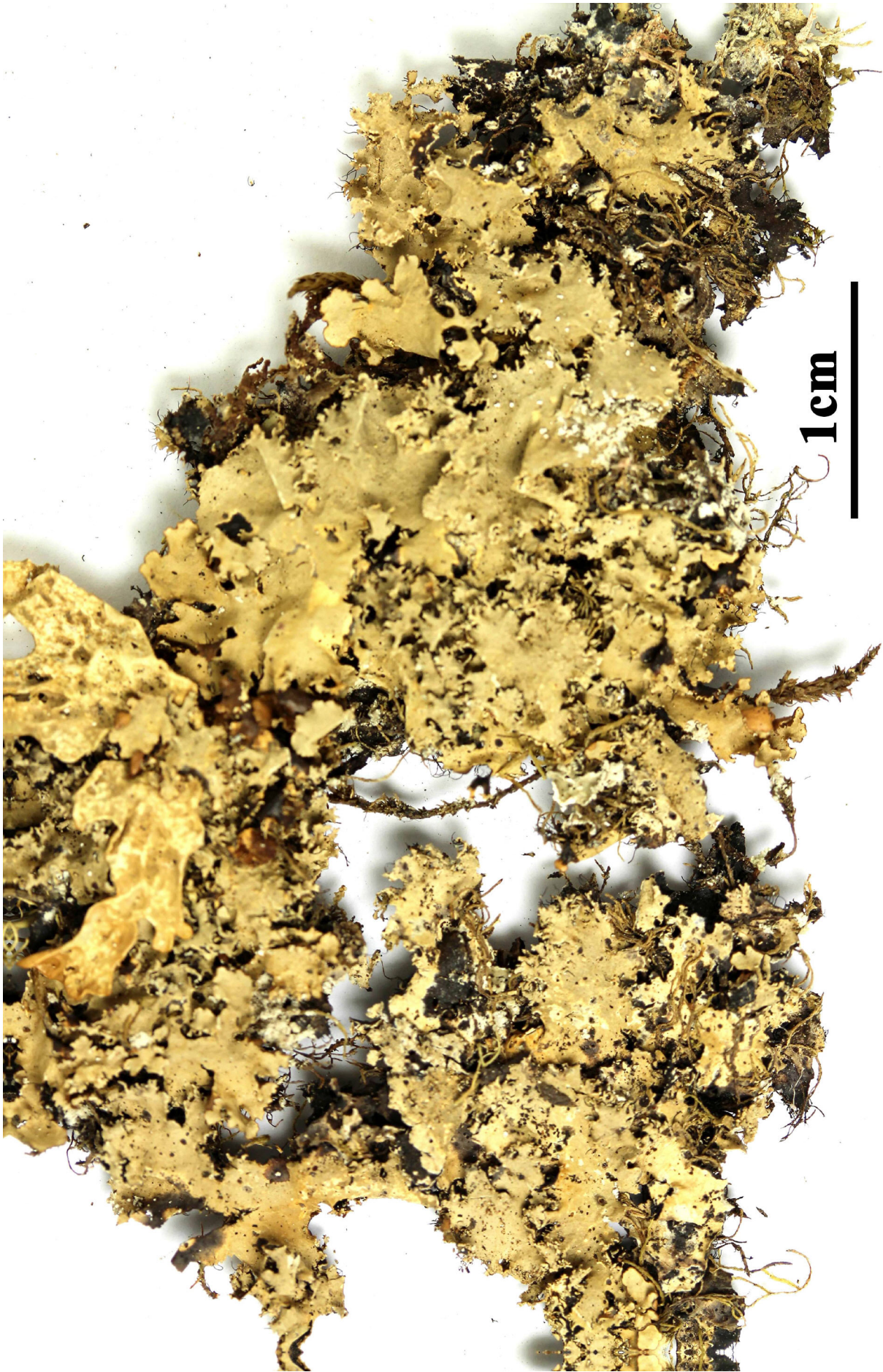


Parmelia austrosinensis

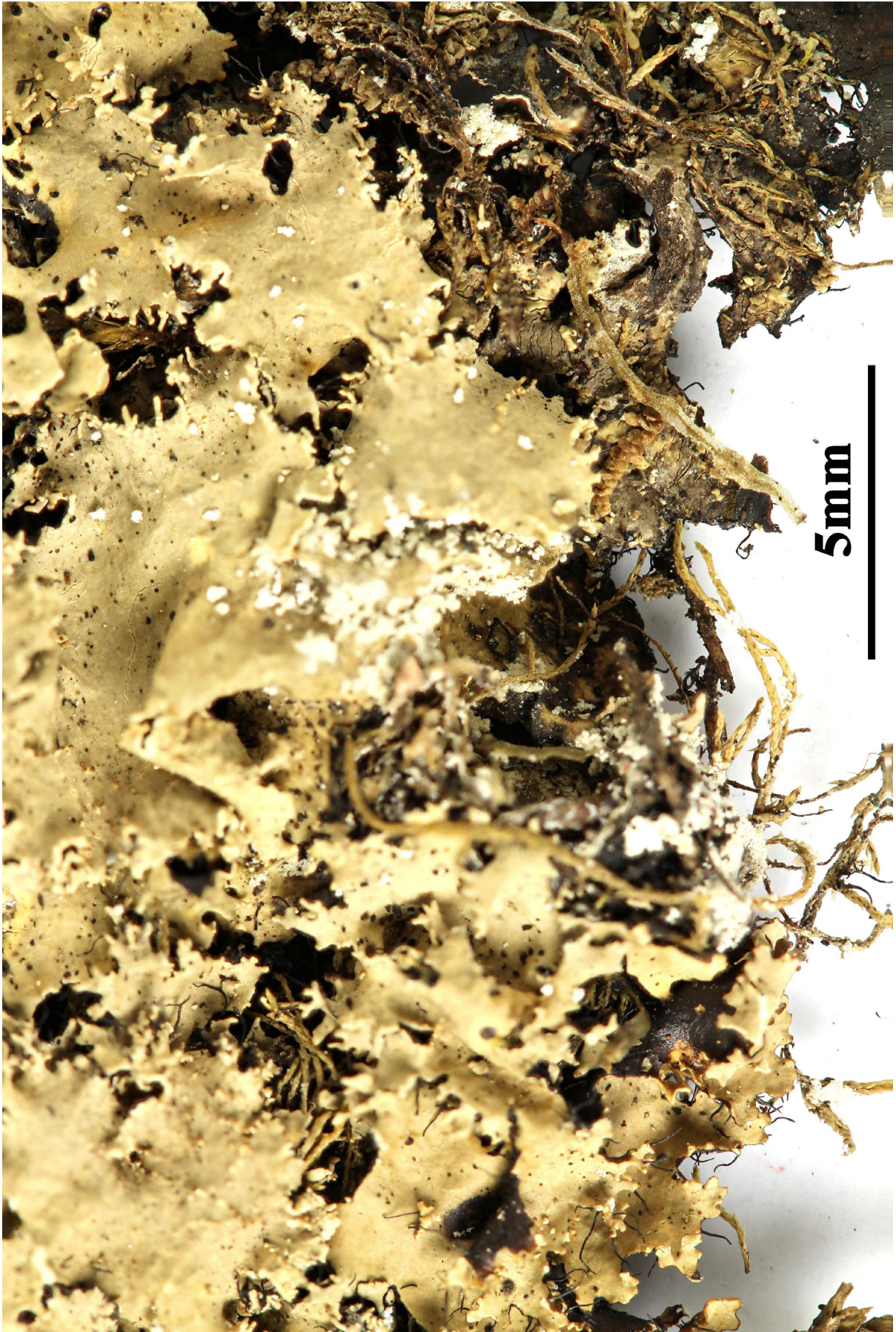
Parmelia crinita Ach., Syn. meth. lich. (Lund): 196 (1814)
= *Parmotrema crinitum* (Ach.) M. Choisy [as 'crinita'], Bull. mens. Soc.
linn. Soc. Bot. Lyon 21: 175 (1952)

[VZ1117], Romania, Distr. Brasov, Montes Fagaras, Simbata de Sus, in
valle Simbetei, 1100 m. Ad corticem *Piceae excelsae*. Leg. A. Vězda,
14.07.1972. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1117.

Thallus foliose, heteromerous, dorsiventral, broad-lobed, loosely attached, 3-15(-25) cm diam. Lobes subirregular, slightly imbricate, flattened, 5-15(-20) mm wide, with broadly rounded apices, becoming crenate and dissected with age, often ascending, with usually abundant, black, up to 3 mm long marginal cilia. Upper surface grey with some blackened areas, smooth, faintly maculate, with simple to coralloid, often apically ciliate, laminal and marginal isidia. Lower surface black with a brown naked peripheral zone, centrally with simple, black rhizines. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with lichenan intermediate between the *Cetraria*- and the *Xanthoparmelia*-types; medulla white; algal layer continuous; lower cortex prosoplectenchymatous, with rounded and thick-walled cells. Apothecia rare, lecanorine, substipitate, to 8 mm across, with a sparsely isidiate margin and a brown, imperforate disc. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, *Lecanora*-type. Ascospores 1-celled, hyaline, ellipsoid, 21-31(-35) x 11-18 μm . Pycnidia rare, black, laminal, immersed. Conidia long-bacilliform to thread-like. Photobiont chlorococcoid. Spot tests: upper cortex K⁺ yellow, C⁻, KC⁻, P⁻ or P⁺ faintly yellow; medulla K⁺ yellow-orange, C⁻, KC⁻ or KC⁺ yellow-orange, P⁺ orange, UV⁻. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with stictic acid (major), constictic acid (minor), and menegazziic acid (trace) plus other accessory substances. - Note: a cool-temperate lichen found on bark in open humid montane forests, rarely on epilithic bryophytes, exceptionally descending to the submediterranean belt in very humid areas; most common in the Alps, but extending to the mountains of Calabria.



Parmelia crinita



Parmelia crinita

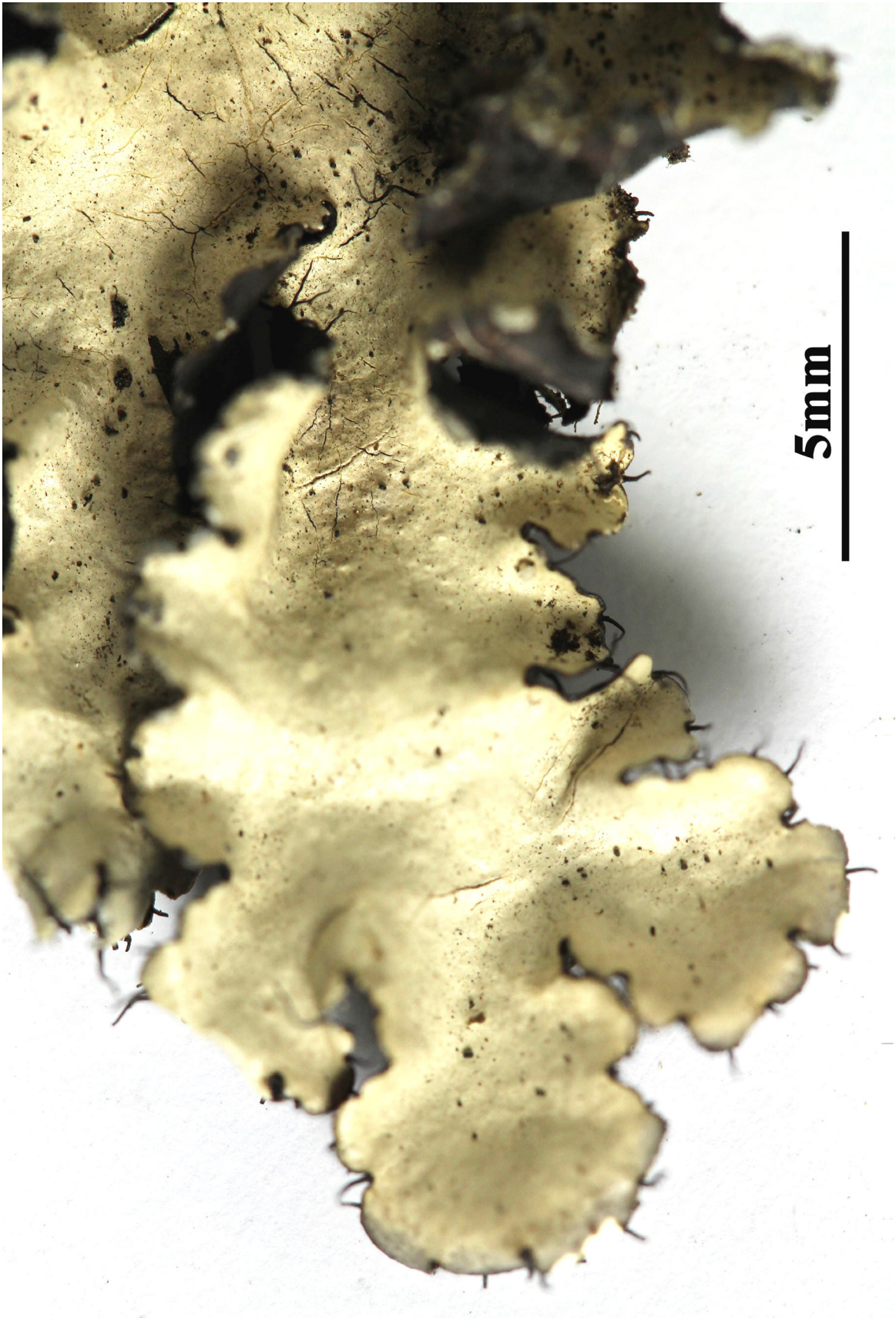
Parmelia grayana Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 4 sér. 1: 184 (1899)
= *Parmotrema grayanum* (Hue) Hale, Phytologia 28(4): 336 (1974)

[VZ2397], Tanzania, Distr. Morogoro, montes Uluguru: planities "Lukwangule", supra cataracta rivi "Mgeta", 2360 m. Ad saxa gneissacea aprica. Leg. T. Pócs (nr. 88258/K), 25.-26.10.1988, det. A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2397.

Thallus adnate, coriaceous, to 3–6 cm wide. Lobes rounded, 4–8 mm wide; margins ascending, crenate; cilia sparse to moderately dense, conspicuous, 0.5–1.5 mm long. Upper surface pale grey, emaculate, smooth, often pruinose, lacking isidia; soralia marginal and submarginal; soredia often with a grey-brown tinge. Medulla white. Lower surface black, with a broad, brown, erhizinate marginal zone; rhizines sparse, simple, coarse. Apothecia rare, sessile, 2–4 mm wide; disc perforate; thalline exciple becoming sorediate. Ascospores 12–16 × 5–8 μm. Pycnidia common. Conidia sublageniform to bacilliform, 8–10 × 1 μm. CHEMISTRY: cortex K⁺ yellow; medulla K⁻, C⁻, KC⁻, P⁻, containing atranorin, chloroatranorin, protolichesterinic acid and unidentified fatty acids. A scattered species on rock. Also known from Australia, Africa, New Zealand, Japan, North America, India and the Canary Island.



Parmelia grayana



Parmelia grayana



Parmelia grayana

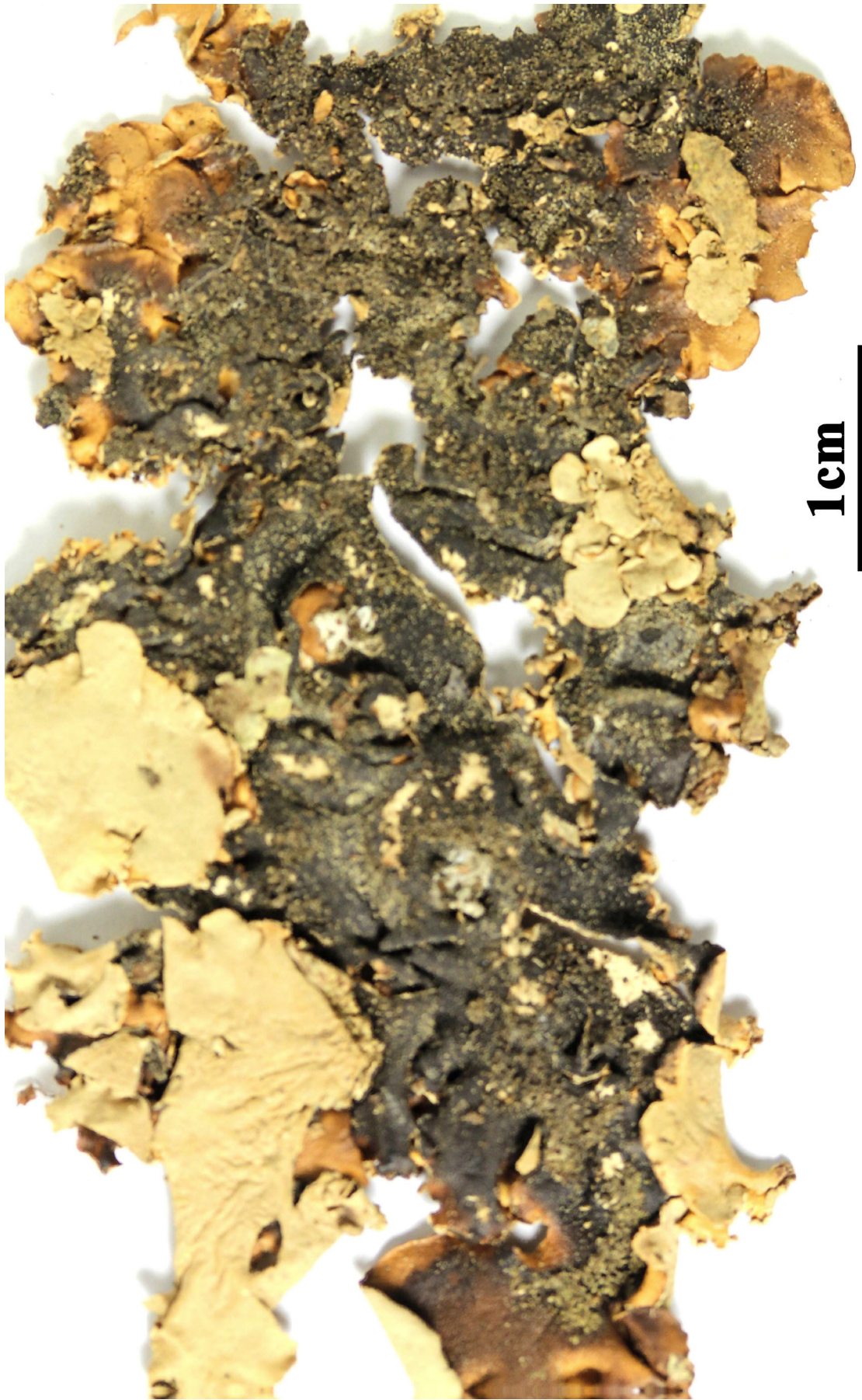
Parmelia praesorediosa Nyl., Sert. Lich. Trop. Labuan Singapore: 18 (1891)
= *Parmotrema praesorediosum* (Nyl.) Hale, Phytologia 28(4): 338
(1974)

[VZ1621], U.S.A. Louisiana, East Baton Rouge Paroecia, Baton Rouge, Baird Drive, 30°22'45" septentr., 91°07'30" occid.. Ad corticem *Carpini carolinianae*. Leg. Shirley C. Tucker (no. 15935), 15.04.1976. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1621.

Thallus corticolous, lignicolous, rarely saxicolous; upper surface white to whitish gray, dull to ± shiny, epruinose, emaculate, occasionally cracked, but not forming a distinctly reticulate pattern; abundantly soresiate; soralia marginal, linear to labriform (± crescent-shaped), or subcapitate; soredia ± granular, ± concolorous or slightly paler than the thallus, their surface often discolored by a dark gray tinge, pale inside; lobes moderate-sized, 5–7(–10) mm wide, rotund, axils incised, margins eciliate; lower surface with an erhizinate, ~ 1–2(–2.5) mm wide, deep brown margin, moderately to densely rhizinate and blackened towards the center; rhizines short, stout, black, simple to sparsely branched; medulla white. Chemistry. Cortex with atranorin [P+ yellow, K+ yellow, KC–, C–, UV–]; medulla with ± caperatic, praesorediosic and protopraesorediosic acid [P–, K–, KC–, C–, UV–]. - Distribution. Oceania, Africa, Asia, North, Central and South America (Hale 1965; Swinscow & Krog 1988; Marcelli 1992; Elix 1994; Louwhoff & Elix 1999; Divakar & Upreti 2005; Jungbluth 2006; Spielmann & Marcelli 2009; Marcelli & Benatti 2010; Benatti & Marcelli 2010; Egan et al. 2016). - Typically on bark, rarely on rock, most frequently on *Bursera graveolens*, occasionally on other, mostly native or endemic trees and shrubs.



Parmelia praesorediosa



Parmelia praesorediosa



Parmelia praesorediosa

Parmelia stuppea Taylor, London J. Bot. 6: 175 (1847)

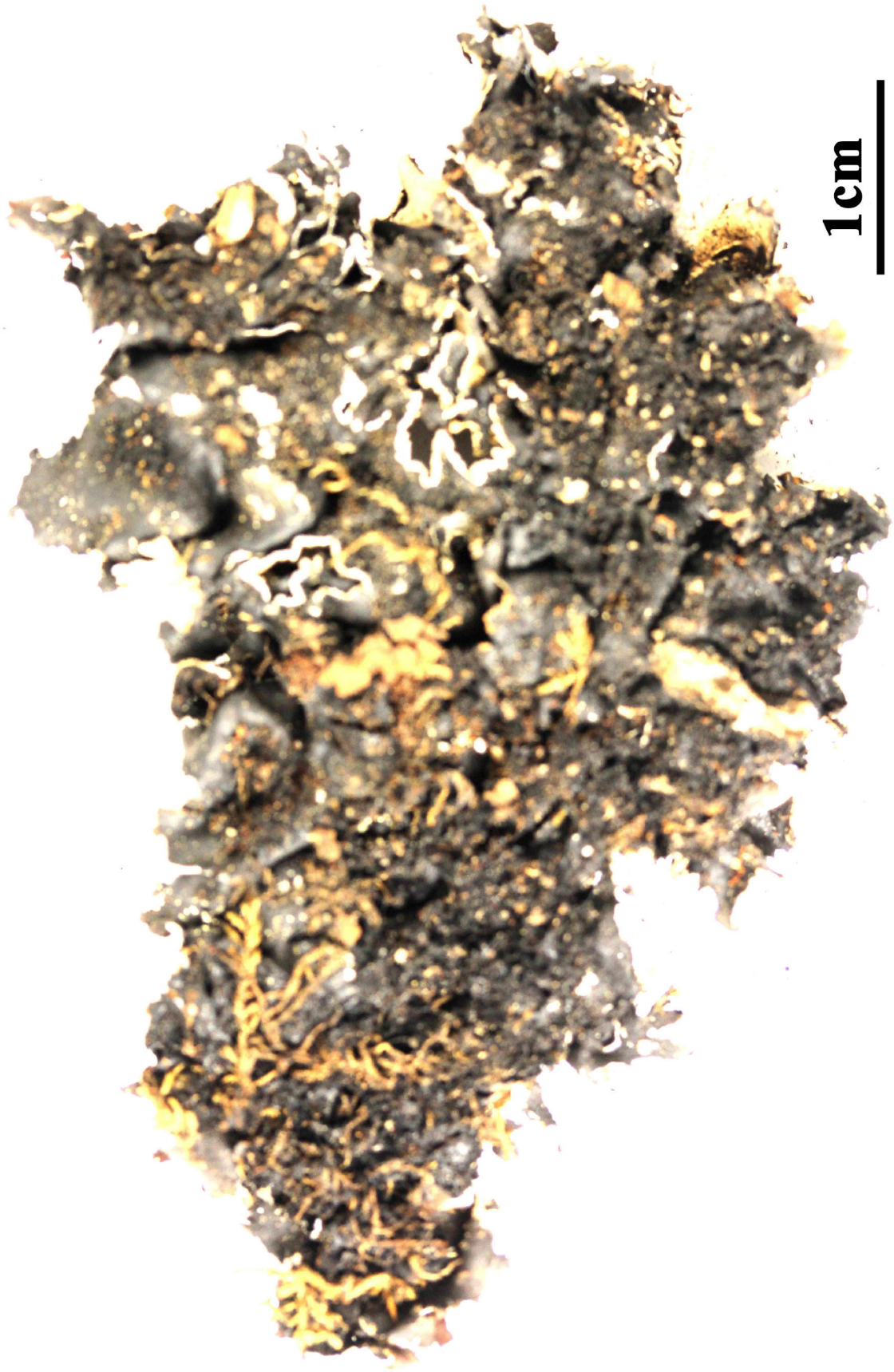
= *Parmotrema stuppeum* (Taylor) Hale [as 'stuppea'], Phytologia 28(4): 339 (1974)

[VZ2364], Germaniy, Bavaria, Berchtesgadener Land, Bischofswiesen, secus viam ad Winkl ductam, 660 m. Ad corticem Fagi silvaticae. Leg. R. Türk (8343) & H. Wunder, 4.4.1989. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2364.

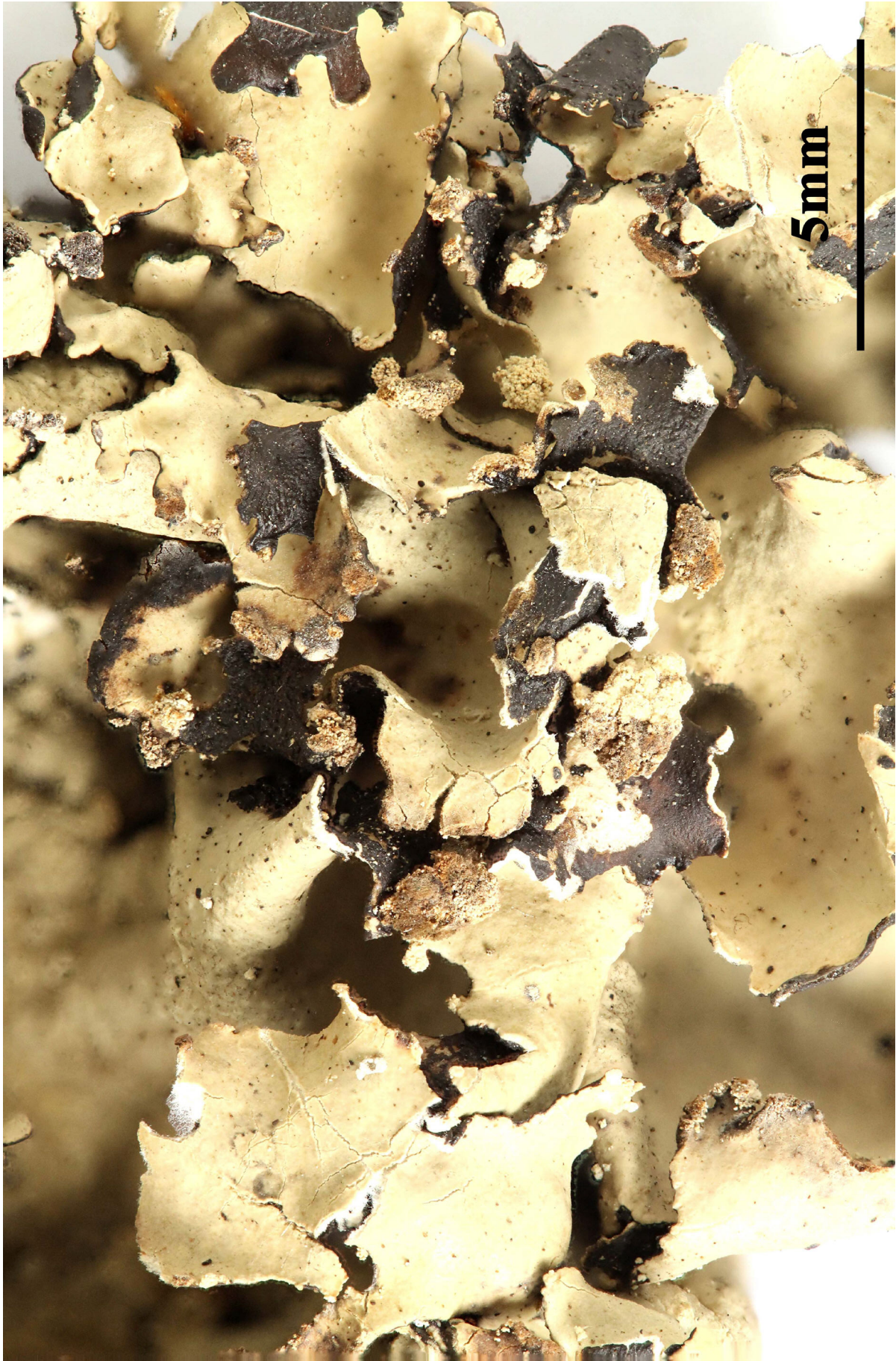
Thallus foliose, heteromerous, dorsiventral, adnate to loosely adnate, grey, (5-)10-20 cm in diam., sorediate. Lobes elongate, slightly imbricate, emaculate, (4-)8-15 mm wide, rounded at apices, the margins with up to 2 mm long, black cilia. Soredia granular, arranged in linear to orbicular, laminal or marginal, usually confluent soralia. Lower surface black in central parts, with black, simple rhizines, the marginal zone pale brown, erhizinate. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with lichenan intermediate between the *Cetraria*- and the *Xanthoparmelia*-types; medulla white; algal layer continuous; lower cortex prosoplectenchymatous, with rounded and thick-walled cells. Apothecia very rare, lecanorine, substipitate, up to 30 mm across, with a brown, imperforate disc, and a smooth, raised thalline margin. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, *Lecanora*-type. Ascospores 1-celled, hyaline, ellipsoid, 12-17 x 6-9 μm . Pycnidia common only in fertile specimens, immersed, punctiform, black. Conidia sublageniform, 4-6 x c. 1 μm . Photobiont chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ faintly yellow, UV-; medulla K+ yellow turning deep red, C-, KC- or KC+ orange, P+ orange, UV-. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with salazinic acid (major) and consalazinic acid (minor). - Note: a mainly mild-temperate species found in open woodlands with frequent fog, mostly on ancient trees, but also on epilithic bryophytes.



Parmelia stuppea



Parmelia stuppea



Parmelia stuppea

Parmeliopsis subambigua Gyeln., Anns mycol. 30(5/6): 457 (1932)

[2140], USA. Carolina Australis, Charleston County, In insula dicta Bull vel Bulls Island, 5 m, ad truncum arboris (*Pinus taeda*). Annot.: Usnic and divaricatic acids and a trace of an unidentified compound by TLC, anal.: A. Johnson ad C. F. Culberson. Leg. W. L. Culberson (no 20109) et C. F. Culberson, 11.07.1986. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2140.

Thallus foliose. Lobes radiating, linear, appressed, ~0.5 mm wide, greenish yellow. Photobiont *Trebouxia?* alga; vegetative diaspores soredia developing from laminal pustules. Lower surface yellowish white; rhizines simple, pale. Ascomata lecanorine, apothecia, sessile, uncommon (originally described as sterile). Disk brown; exciple hyaline; epithecium brownish; hymenium hyaline; subhymenium hyaline; paraphyses simple. Asci 8-spored; ascus walls K/I+ blue. Ascospores colorless, reniform, simple. Pycnidia black, laminal, immersed; conidia falcate (strongly curved). Chemistry: Cortex UV+ blue-white, K+ yellow, KC-, C-; medulla K-, KC-, C-; soredia K+ yellow, KC-, C-; usnic and divaricatic acids. Substrate and Habitat: On conifers in exposed habitats. Distribution: Eastern North America; in North Carolina primarily in coastal plain and piedmont ecoregions.

Literature

Brodo, I.M., S. Duran Sharnoff & S. Sharnoff. (2001) *Lichens of North America*. Yale University Press, New Haven & London. 795 pp.

Gyelnik, V. (1932) Über einige Arten der Gattung *Parmeliopsis* (Stiz.) Nyl. *Annales Mycologici* 30: 456-459.

Meyer, S.L.F. (1982) Segregation of the New Lichen Genus *Foraminella* from *Parmeliopsis*. *Mycologia* 74(4): 592–598 (description as *Foraminella subambigua*).



Parmeliopsis subambigua



Parmeliopsis subambigua

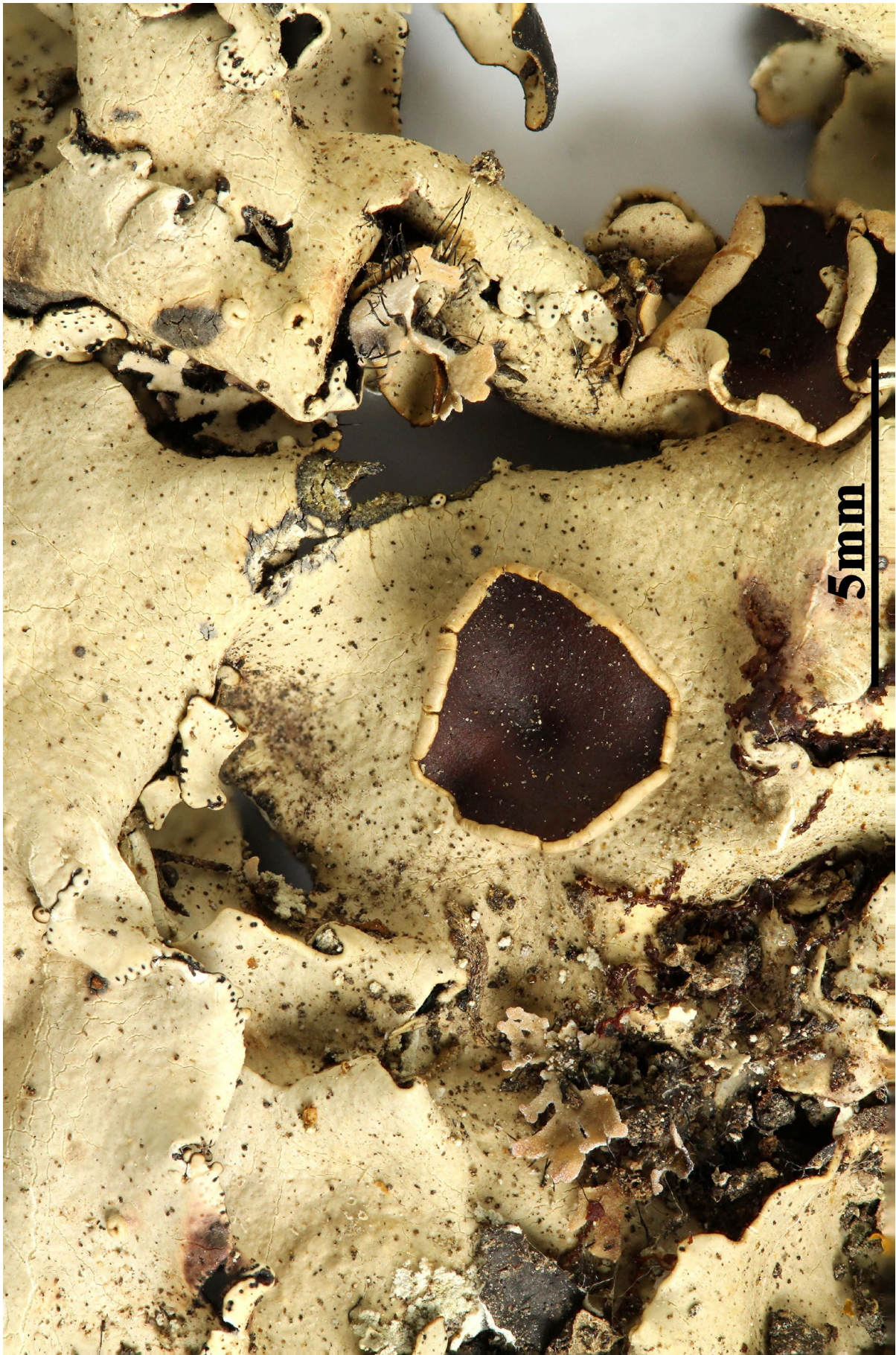
Parmotrema eborinum (Hale) Hale, Phytologia 28(4): 336 (1974)
= *Parmelia eborina* Hale 1965

[VZ1787], Honduras, Distrito Central: 36 km septentriones et orientem versus a Comayagüela, prope viam dictam Rt. 3, 760 m, Ad petras verticales, locis partim umbrosis, in pascuo. - Annot.: Atranorin, protocetraric and caperatic acid ba TLC; anal. A. Johnson & C. F. Culberson. Leg. W. L. Culberson (no 18474) et C. F. Culberson, 30.12.1979. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1787.

Thallus saxicolous; upper surface whitish gray to bright white, shiny, epruinose, emaculate, not cracked; lacking vegetative propagules, but densely lobulate; lobes small to moderate-sized, 2–7 mm wide, ± rotund, eciliate, distinctly delimited along the lobe edge by a conspicuous black rim; lower surface with a ± narrow, deep brown rhizinate, ~ 1–2.5 mm wide margin, blackening and rhizinate towards the thallus center; rhizines short, stout, black, mostly simple, rarely sparsely branched; medulla white. Apothecia rare to moderately abundant, 0.3–8 mm in diam., with a cupulate thalline margin, disc dark brown, deeply concave, imperforate; asci clavate, Lecanora-type, ascospores 8/ascus, simple, broadly ellipsoid, (10.5–)11.6–13.0(–13.5) × (6.4–)6.5–6.8(–7.0) μm, thick-walled (~ 1 μm thick). Pycnidia immersed, flask-shaped to globose; ostiole brownish black; conidia sublageniform, (5–)6–8 × ~ 1 μm. Chemistry. Cortex with atranorin [P+ yellow, K+ yellow, KC–, C–, UV–]; medulla with protocetraric and echinocarpic acid [P+ yellow turning orange, K+ dirty yellowish brown, KC± rosé to faintly orange, C–, UV–]. Distribution. Central and South America, Galapagos- Notes. *Parmotrema eborinum*, *P. dilatatum* and *P. weberi* are superficially similar. They share the same white, shiny thallus with conspicuous lobulate lobes that are distinctly blackened along their edge. In the field the three species can be confused, especially if not producing soredia. *Parmotrema eborinum* and *P. dilatatum* share the same secondary chemistry.



Parmotrema eborinum



Parmotrema eborinum

Parmotrema flavescens (Kremp.) Hale, *Phytologia* 28(4): 336 (1974)
= *Parmelia glaberrima* var. *flavescens* Kremp. 1869

[VZ1789]. Honduras, Distrito Central, 36 km septentriones et orientem versus a Comayagüela, prope viam dictam Rt. 3, 760 m, ad petras inpascuo. - Annot.: Usnic, gyrophoric, salazinic, consalazinic, unknown pigment SV-1 - A: anal. Johnson & C. F. Culberson. Leg. W. L. Culberson (no 18477) et C. F. Culberson, 30.12.1979. Ex A. Vězda *Lichenes Selecti Exsiccati* Nr. 1789.

Thallus saxicolous; upper surface pale greenish yellow, dull to ± shiny, emaculate, but especially the older parts frequently with conspicuous, ± reticulate cracks; abundantly isidiate; isidia both marginal and laminal, cylindrical and simple to abundantly branched, becoming coralloid, brown to blackened at their tip and frequently ciliate; lobes moderate-sized, 2–8 mm wide, rotund, axils rounded, forming ± indistinct loops, margins sparsely to densely ciliate; cilia short and slender, 0.5–2.5 mm long, black, mostly simple, very rarely branched; lower surface with a deep brown, erhizinate, ~ 2–5 mm wide margin, soon blackened and densely rhizinate towards the center; rhizines long, slender, black, mostly simple, rarely sparsely branched; medulla white. Chemistry. Cortex with usnic acid [P–, K–, KC± dirty yellowish brown, C–, UV–]; medulla with salazinic and gyrophoric acid [P+ strongly yellow, K+ yellow, quickly turning blood-red, C+/KC+ pale pink (C and KC reactions are evanescent and must be examined under continuous observation); UV–]. - Distribution. Africa (Müller Argoviensis 1880), Central America (Hue 1899; Hale 1965; South America (Hale 1965). In South America most reports are from Brazil (Krempelhuber 1869, 1876; Nylander 1885; Zahlbruckner 1909; Hale 1965; Fleig & Riquelme 1991; Fleig 1997; Ribeiro 1998; Eliasaro 2001; Benatti & Marcelli 2009; Donha 2005; Spielmann 2009). - Notes. The morphology of saxicolous *P. flavescens* is extremely similar to its corticolous counterpart, *P. niasense*. Apart from inhabiting different substrates, the two species also differ by their chemistry. Both share gyrophoric acid within their medulla, but *P. flavescens* additionally contains salazinic acid.

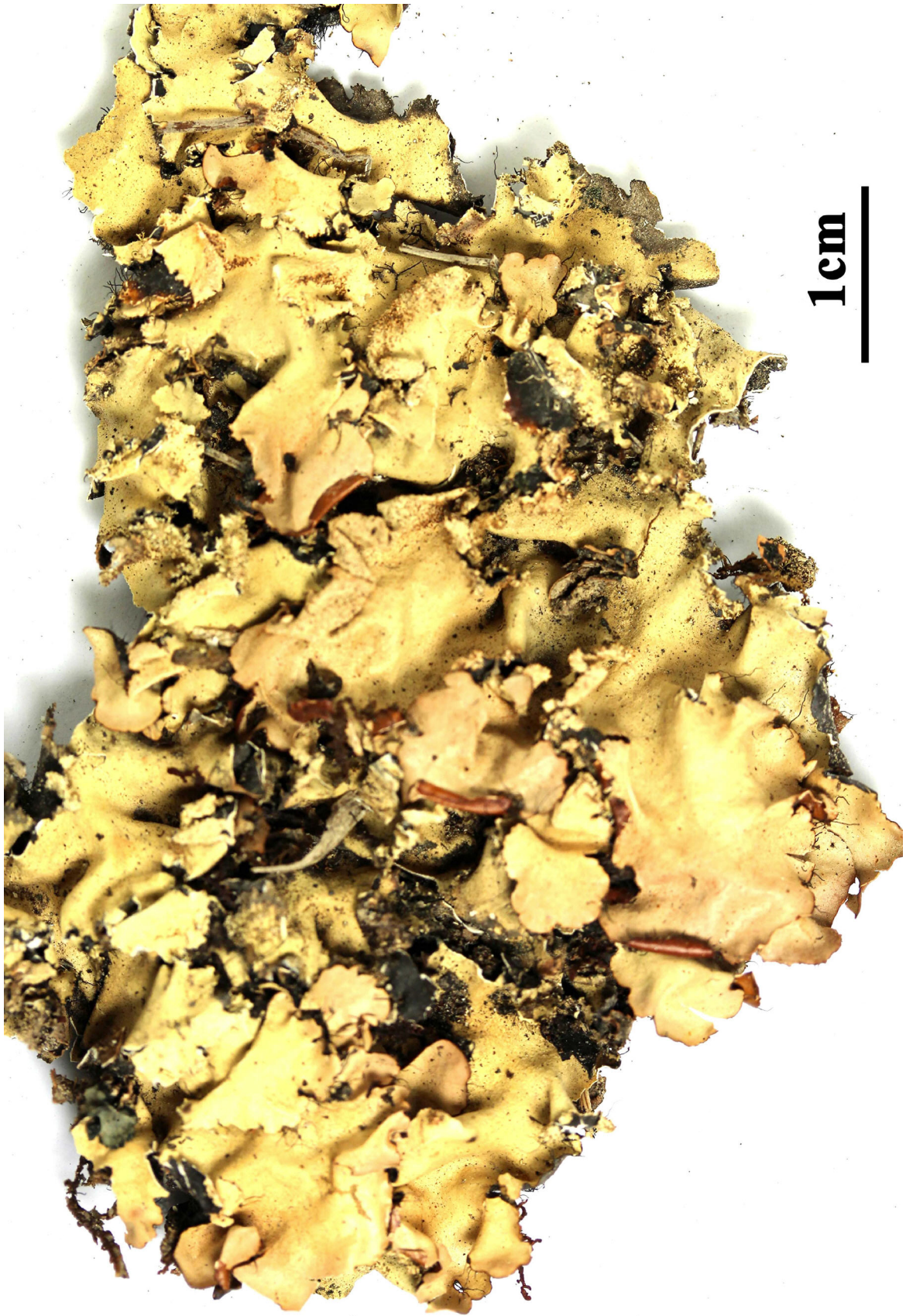


Parmotrema flavescens

Parmotrema flavescens (Kremp.) Hale, Phytologia 28(4): 336 (1974)
= *Parmelia glaberrima* var. *flavescens* Kremp. 1869

[VZ1788], Honduras, El Paraíso, secus viam ad Teupasenti, 2 km ad septentriones versus a via inter Tegucigalpa et Danilí, ad saxum. - Annot.: Usnic, gyrophoric, salazinic, consalazinic, unknown pigment SV-1 by TLC; anal. A. Johnson & C. F. Culberson. Leg. W. L. Culberson (no 18358) et C. F. Culberson, 28.12.1979. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1788.

Thallus saxicolous; upper surface pale greenish yellow, dull to \pm shiny, emaculate, but especially the older parts frequently with conspicuous, \pm reticulate cracks; abundantly isidiate; isidia both marginal and laminar, cylindrical and simple to abundantly branched, becoming coralloid, brown to blackened at their tip and frequently ciliate; lobes moderate-sized, 2–8 mm wide, rotund, axils rounded, forming \pm indistinct loops, margins sparsely to densely ciliate; cilia short and slender, 0.5–2.5 mm long, black, mostly simple, very rarely branched; lower surface with a deep brown, erhizinate, \sim 2–5 mm wide margin, soon blackened and densely rhizinate towards the center; rhizines long, slender, black, mostly simple, rarely sparsely branched; medulla white. Chemistry. Cortex with usnic acid [P–, K–, KC \pm dirty yellowish brown, C–, UV–]; medulla with salazinic and gyrophoric acid [P+ strongly yellow, K+ yellow, quickly turning blood-red, C+/KC+ pale pink (C and KC reactions are evanescent and must be examined under continuous observation); UV–]. - Distribution. Africa (Müller Argoviensis 1880), Central America (Hue 1899; Hale 1965; South America (Hale 1965). In South America most reports are from Brazil (Krempelhuber 1869, 1876; Nylander 1885; Zahlbruckner 1909; Hale 1965; Fleig & Riquelme 1991; Fleig 1997; Ribeiro 1998; Eliasaro 2001; Benatti & Marcelli 2009; Donha 2005; Spielmann 2009). - Notes. The morphology of saxicolous *P. flavescens* is extremely similar to its corticolous counterpart, *P. nyasense*. Apart from inhabiting different substrates, the two species also differ by their chemistry. Both share gyrophoric acid within their medulla, but *P. flavescens* additionally contains salazinic acid.



Parmotrema flavescens



Parmotrema flavescens

Parmelia austrosinensis Zahlbr., in Handel-Mazzetti, Symb. Sinic. 3: 192 (1930)
= *Parmotrema austrosinense* (Zahlbr.) Hale, Phytologia 28(4): 335 (1974)

[VZ1384], Zaire (Africa centralis), Birunga montes, in planitie Rukumi montis ignovomi Karisimbi, 3550 m. Ad truncum dejectum *Senetionis johnstonii* subsp. *refractisquamati*. Leg. J. Lambinon (no.72/235), 22.01.1972. EX A. VEZDA LICHENES SELECTI EXSICCATI NR. 1384.

Thallus loosely adnate, coriaceous, to 6–10 cm wide. Lobes rounded, 10–30 mm wide, lacking laciniae; margins entire or crenate, eciliate, sinuate, often ascending. Upper surface pale grey, ash grey, or grey-green, weakly maculate, sometimes distinctly maculate especially in thallus centre, ±rugose and reticulately cracked, without isidia; soralia marginal and submarginal, linear; soredia granular. Medulla white. Lower surface black, with a white, brown, or mottled erhizinate marginal zone; rhizines sparse, simple, unevenly distributed, short. Apothecia rare, subpedicellate, to 10 mm wide; disc perforate or imperforate; thalline exciple sorediate. Ascospores 12–20 × 7–10 μm. Pycnidia uncommon. Conidia filiform, 10–14 × 1 μm. CHEMISTRY: cortex K+ yellow; medulla K-, C+ red, KC+ red, P-; containing atranorin, chloro-atranorin and lecanoric acid. - Common on bark of trees, and, more rarely, on rock, in moist subtropical and tropical areas. - Australia, Lord Howe Is. A widespread species in tropical and temperate regions.



Parmelia austrosinensis

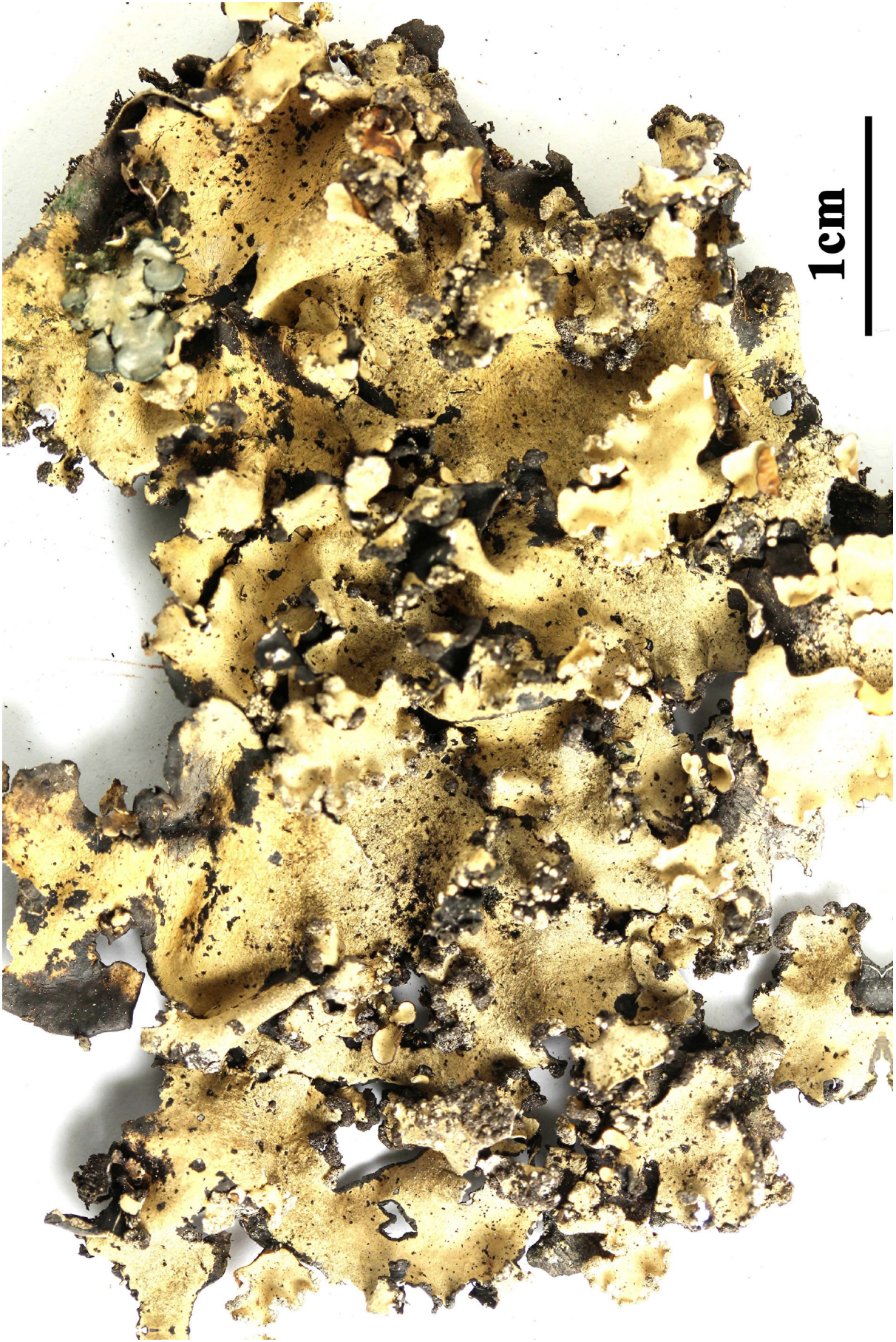


Parmelia austrosinensis

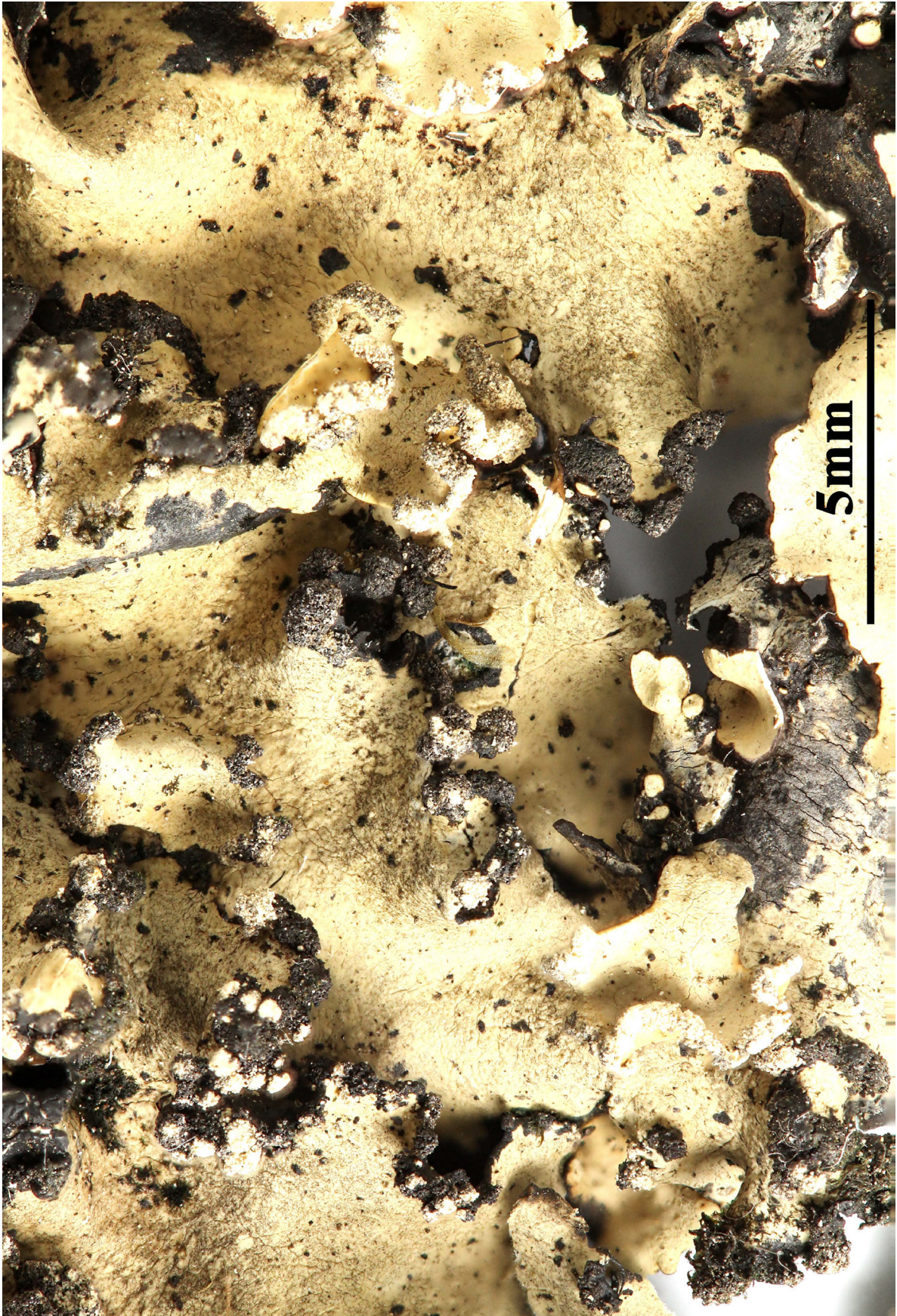
Parmotrema indicum Hale, Mycotaxon 5(2): 436 (1977)

[VZ1573], ISOTYPUS. India, Tamil Nadu: Silver Cascade, Kodaikanal, Palni Hills, 1800 m. Aad saxa in vicinitate fluminis. Leg. M. E. Hale (no. 43874), 1.1975. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1573.

Thallus corticola vel (ut typus) saxicola, laxe adnatus, paulo coriaceus, viridi- vel albo-cinereus, 8-20 cm latus, lobis rotundatis, 8-16 mm latis, margine ciliatis sorediatisque, ciliis sparsis vel modicis, usque ad 2 mm longis, soraliis linearibus, aetate submarginalibus et orbicularibus; superne opacus, emaculatus, continuus vel aetate rimosus; cortex superior epicorticatus, 11-13 μm crassus, stratum gonidiale 15-18 μm crassum, medulla alba, 100-130 μm crassa, cortex inferior 15 μm crassus; subtus niger et modice rhizinosus ad centrum, obscure castaneus nudusque marginem versus. Apothecia non visa. Chemistry: Atranorin, gyrophoric acid, and norlobaridone.



Parmotrema indicum

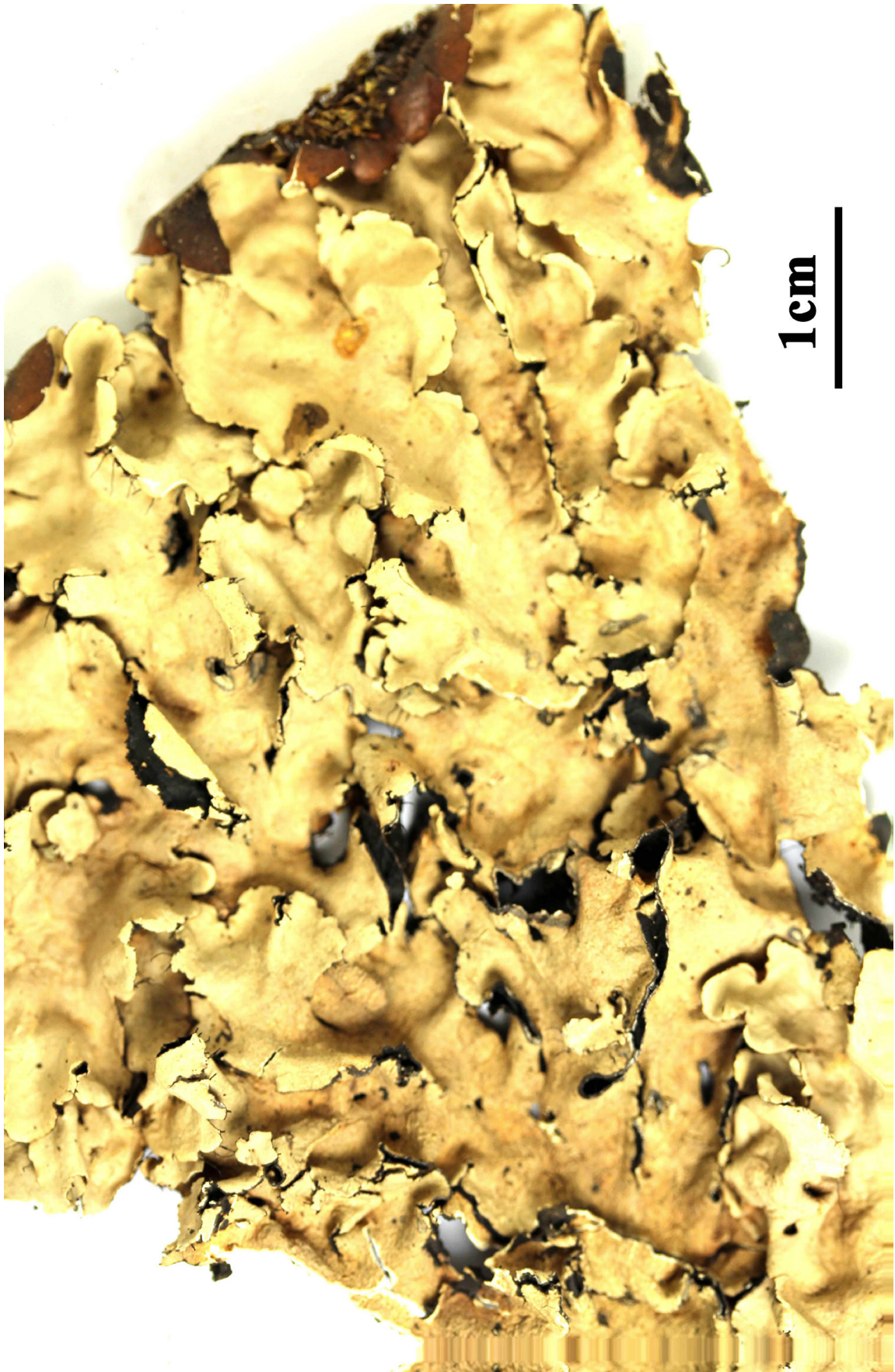


Parmotrema indicum

Parmotrema maclayanum (Müll. Arg.) Hale, Phytologia 28(4): 337 (1974)
= *Parmelia maclayana* Müll. Arg. 1891

[VZ1942], Zaire, Reservatum naturale Upemba, regio montis Kibanga, Lupuala, 250 m. S Leg. Substratum non indicatum. Leg. de Witte G. F. (no. 3077), 17.11.1947, det. E. Sérusiaux. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1942.

Thallus loosely attached, more or less coriaceous, 6-10 cm. in diameter, mineral gray; lobes rotund, 10-15 mm. wide, margins entire, become short, comely digitate-lobulate toward the center, ciliate, cilia rather sparse, to 2 mm. long, more common on lateral margins; upper surface plane, dull or rather shiny, very faintly maculate in part, continuous to more or less cracked with age; isidia and soredia lacking; lower side black, sparsely rhizinate, brown to tan and naked in a broad zone along the margins. Apothecia substipitate, 8-12 mm. in diameter, amphitheciurn maculate, rugulose, disc perforate; hymenium 60-70 μm high; spores 6-10 x 12-15 μm , episporium 1.0-1.5 μm ; pycnidia present, conidia not seen. Reactions: Thallus K⁺ yellow; medulla K⁻, C⁻, KC⁺ orange red, P⁻, atranorine and alectoronic acid present. - *Parmelia maclayana* is differentiated from three other nonsorediate African *Amphigymnia* species containing alectoronic acid (*P. brevieiliatu* Hale, *P. procera* Stein. & Zahlbr., and *P. wainii* A. L. Sm.) by perforate apothecia.



Parmotrema maclayanum

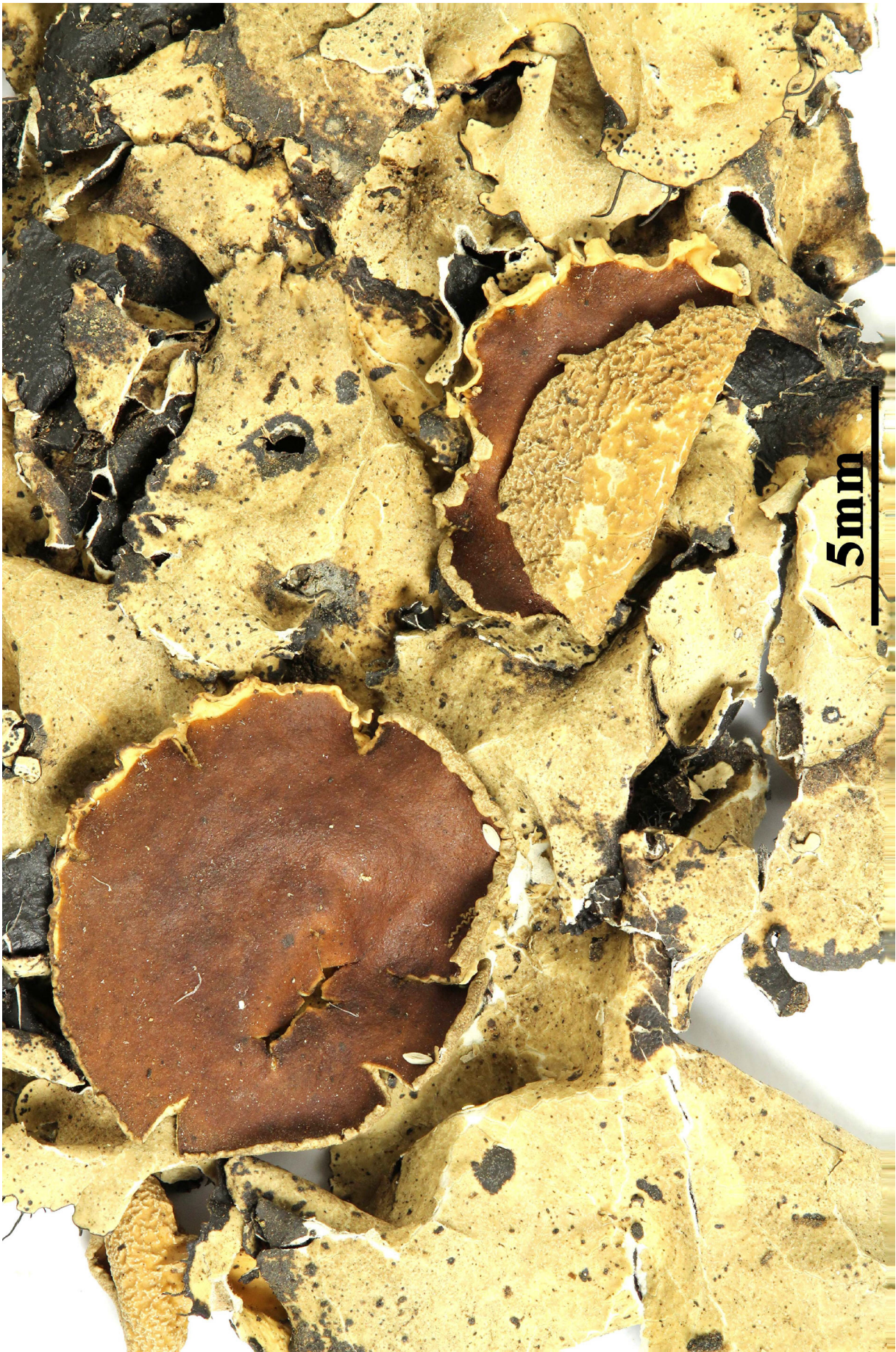


Parmotrema maclayanum

Parmotrema nilgherrense (Nyl.) Hale, Phytologia 28(4): 338 (1974)
= *Parmelia nilgherrensis* Nyl. 1869

[VZ1393], India, Tamil Nadu, Montes Nilgiri, Korakhunda, prope Ooty, 2000 m. Leg. M. E.Hale, 7.11.1973. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1393.

Thallus loosely attached to bark, 8-15 cm. wide, mineral gray, turning buff in the herbarium; lobes rotund, 10-15 mm. wide, margins entire to crenate or dentate toward the center, ciliate, cilia 1-3 mm. long, rather coarse, often furcate; upper surface plane, shiny, strongly white-maculate, isidia and soredia lacking; lower side black and coarsely rhizinate, dark brown and naked in a broad zone at the margins. Apothecia large, numerous, 8-20 mm. in diameter, stalked, amphithecium strongly rugose and maculate, disc perforate; hymenium 100-130 μm high; spores 10-18 x 17-26 μm , episporium 2.0-2.5 μm ; pycnidia abundant, conidia 14-16 μm long. Reactions: Thallus K⁺ yellow; medulla K⁻, C⁻, KC⁺ red or orange red, P⁻, atranorine, a-collatolic acid (predominantly), and alectoronic acid present; medulla, if pigmented, K⁺ purple, rhodophyscin present. - *Parmelia nilgherrensis* is a typical Asian species especially common in the foothills of the Himalayan Mountains. It is characterized by strong maculae, perforate apothecia, and a dark lower side even at the margins. The predominant chemical is a-collatolic acid and the medulla does not fluoresce at all. The sorediate counterpart appears to be *P. pseudonilgherrensis* Asah.



Parmotrema nilgherrense

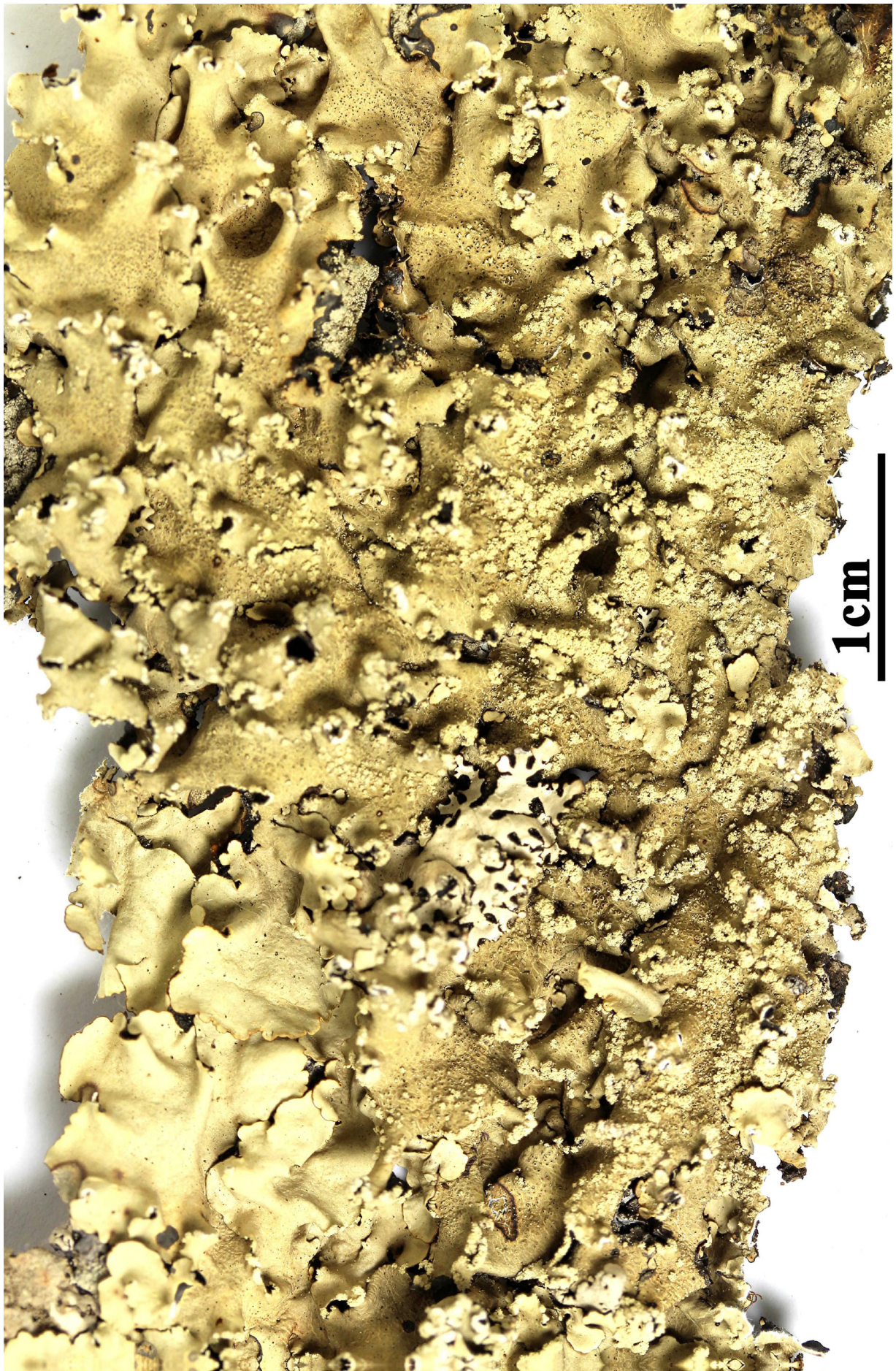


Parmotrema nilgherrense

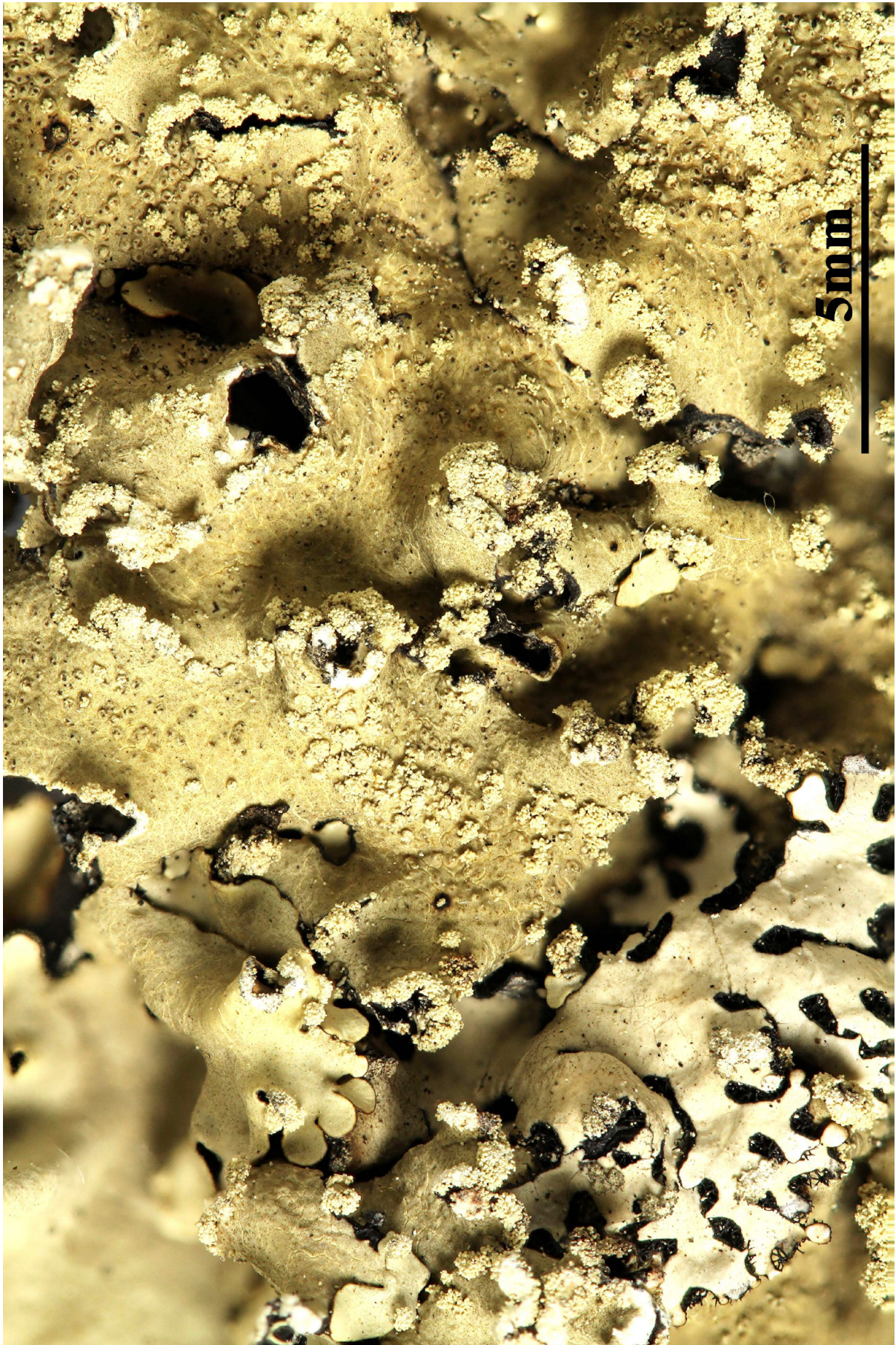
Parmotrema ravum (Krog & Swinscow) Sérus., in Vězda, Lichenes
Selecti Exsiccati, Fascicle 75 (Průhonice): 3 (1983)
= *Parmelia rava* Krog & Swinscow 1981

[VZ1857], Burundi, Prov. Cankuzo, Gitwenge, in colle Gatuntu, inter
Gitwenge et Muzire, 1750 m: Ad ramulos *Monotes elegans*, in silva
clara. Annot.: TLC Atranorin, usnic, protocetraric acids, anal. E. Sérusiaux. Leg. J. Lambinon (nr.80/538), 2.5.1980, de. E. Sérusiaux. EX A.
VEZDA LICHENES SELECTI EXSICCATI NR. 1857.

Thallus corticolous, adnate or loosely attached, pale yellow-grey. Lobes
0.5-1 (1.5) cm broad, entire or weakly crenate, eciliate. Upper side
emaculate, matt, more or less rugose and cracked towards the centre.
Medulla white. Underside black, with a brown, naked marginal zone,
rhizines short. Soralia marginal and linear on peripheral lobes, subcapitate
on ascending lateral lobes, often spreading laminally, soredia
granular, pale green-grey. Apothecia sparse, laminal, thalline exciple
sorediate, disc imperforate, spores 18-20 (22) x 8-10 μm . Pycnidia rare,
conidia filiform, 10-12 μm long. TLC: Protocetraric acid, fatty acid,
usnic acid, atranorin. Type: Ethiopia. Sidamo Province.



Parmotrema ravum



Parmotrema ravum



Parmotrema ravum

Parmotrema reticulatum (Taylor) M. Choisy, Bull. mens. Soc. linn. Soc.
Bot. Lyon 21: 148 (1952)
= *Parmelia reticulata* Taylor 1836
= *Rimelia reticulata* (Taylor) Hale & A. Fletcher

[VZ2285], Mexico, Chihuahua, Convexum angustissimum prope Cascada de Basaseachic, 1620 m. Aad saxa. Leg. T. H. Nash (no. 13617), 11.06.1976. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2285.

Thallus foliose, heteromerous, dorsiventral, broad-lobed, loosely attached, 4-20(-30) cm in diam., sorediate. Lobes elongate, slightly overlapping, 5-15 mm wide, crenate at margins, rounded and sometimes subascending at apices, the margins thin, with black, simple, up to 3 mm long cilia, sometimes eciliate. Upper surface pale grey to grey-green, smooth, dull, strongly reticulately white-maculate, with mostly marginal, convex to subcapitate soralia which often arise on small lacinate lobes (sometimes becoming diffuse in old specimens). Lower surface black, with a narrow, papillate and erhizinate zone at margin, centrally with mostly simple, black rhizines. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with lichenan intermediate between the Cetraria- and the Xanthoparmelia-types; medulla white; algal layer continuous; lower cortex prosoplectenchymatous, with rounded and thick-walled cells. Apothecia extremely rare, lecanorine, submarginal, substipitate, up to 8 mm across, with a sometimes perforate, brown disc and a raised thalline margin. Epithecium brownish; hymenium and hypothecium colourless. Asci 8-spored, Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, 10-18 x 7.5-11 μm . Pycnidia rare, punctiform, black, immersed. Conidia filiform, (7.5-)12-16 x 1-1.5 μm . Photobiont chlorococcoid. Spot tests: upper cortex K⁺ yellow, C⁻, KC⁻, P⁻ or P⁺ faintly yellow; medulla K⁺ yellow turning orange-red, C⁻, KC⁻ or KC⁺ red, P⁺ orange-red, UV⁻. Chemistry: upper cortex with atranorin and chloroatranorin; medulla with salazinic acid (major) and consalazinic acid (minor). - Note: a Mediterranean-Atlantic to mild-temperate lichen found on bark, rarely on mossy siliceous rocks.



Parmotrema reticulatum



Parmotrema reticulatum

Parmotrema rigidum (Lynge) Hale, Phytologia 28(4): 338 (1974)
= *Parmelia rigida* Lynge 1914

[VZ1617], U.S.A., Carolina Borealis, Carteret County: 21 km ad occidentem versus a Morehead City, 10 m. Ad ramos emortuos *Quercus virginiana*e in pineto (*Pinus silverstris*). - Annot.: atranorin, alectoronic, norstictic, connorstictic acids; anal. by A. Johnson & C. F. Culberson. - Leg. W. L. Culberson (no. 17399) et C. F. Culberson, 26.11.1976. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1617.

Thallus loosely attached, 6-12 cm. in diameter, mineral gray; lobes often suberect, rotund, 6-12 mm. wide, margins crenate to lachiate, ciliate, cilia 1-3 mm. long; upper surface shiny, minutely pitted, strongly white-maculate, rugose with age, soredia and isidia lacking; lower side black and sparsely rhizinate at the center, white to ivory and naked in a broad zone along the margins. Apothecia common, pedicellate, to 20 mm. in diameter, exciple rarely ciliate, amphithecium rugose, white-maculate, disc perforate; hymenium 60-80 μm high; spores variable, 7-12 x 14-19 μm , episporium 1.0-1.5 μm thick; pycnidia common, conidia not seen. Reactions: Thallus K⁺ yellow; medulla K⁻, C⁻, KC⁺ red, P⁻, atranorine and alectoronic acid present. *Parmelia rigida* is virtually indistinguishable from *P. perforata* without chemical tests.



Parmotrema rigidum



Parmotrema rigidum

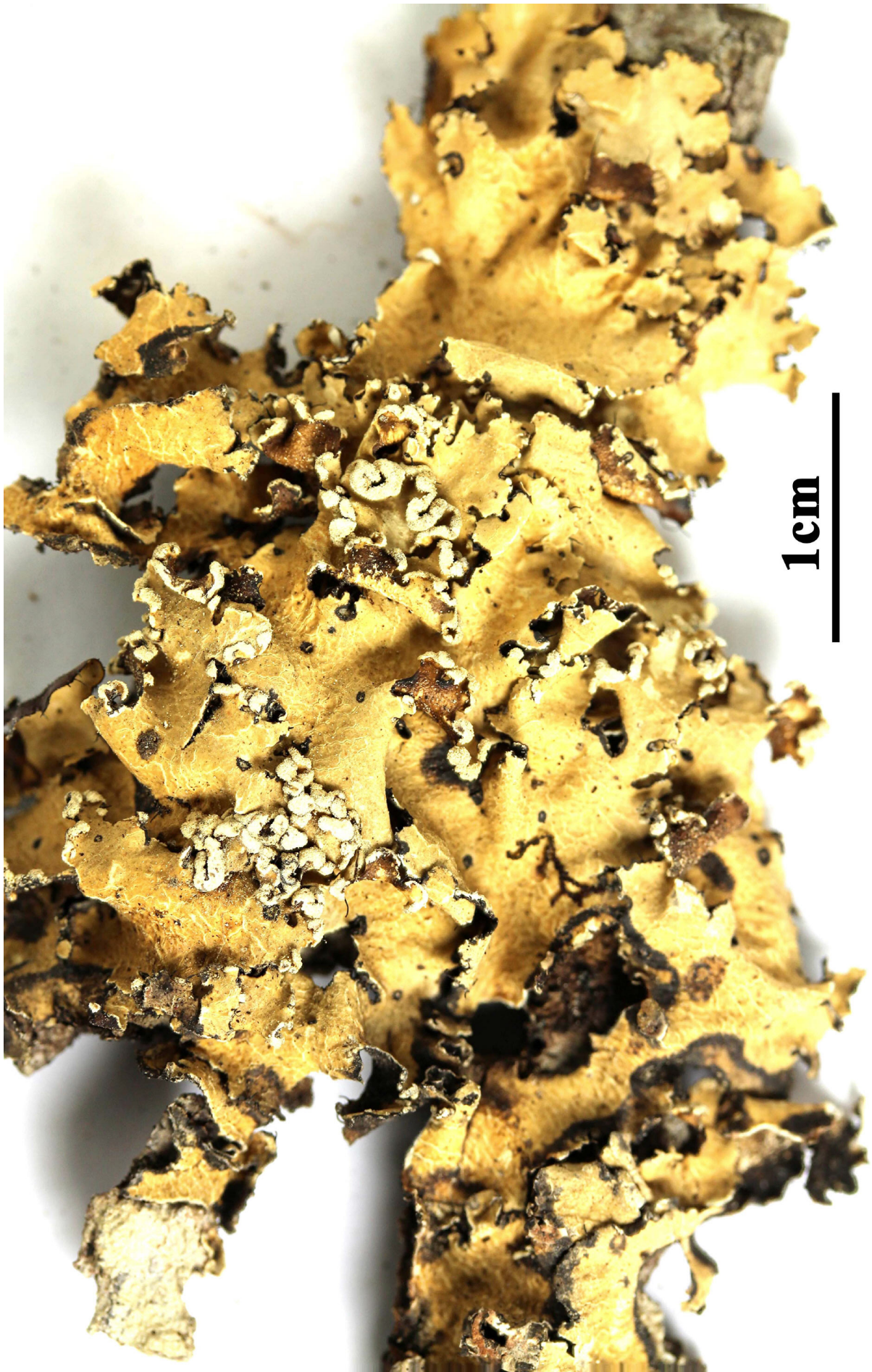
Parmotrema subsumptum (Nyl.) Hale, Mycotaxon 5(2): 434 (1977)
= *Parmelia subsumpta* Nyl. 1869
= *Canomaculina recipienda* (Nyl.) Elix, Mycotaxon 65: 477 (1997)

[VZ1511], India, Tamil Nadu, Montes Palni, prope Kodaikanal, 2200 m. Ad corticem arborum. Leg. M. E. Hale (no. 43873), 23.1.1975. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1511.

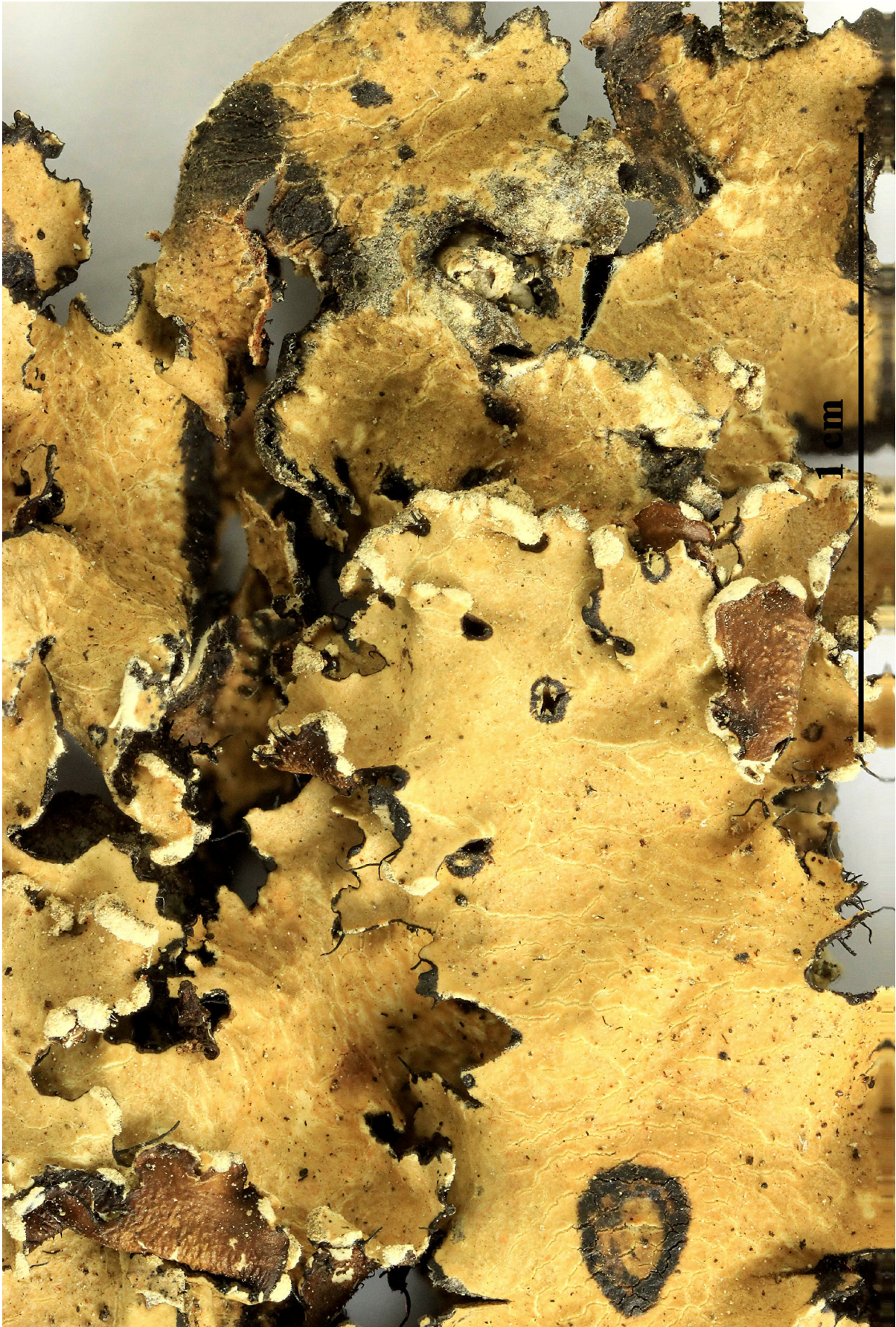
Thallus loosely adnate, coriaceous, to 7–15 cm wide. Lobes irregular, 7–12 mm wide; margins entire; cilia sparse to moderately dense, commonly branched, 1–2 mm long. Upper surface grey to pale green, shiny, strongly effigurate-maculate, without isidia; soralia marginal or submarginal, linear to subcapitate. Lower surface pale tan to brown, sometimes becoming black at centre; short rhizines extending to lobe margin, simple, rarely branched, 0.2–0.5 mm long; long rhizines c. 2 mm long. Apothecia rare, subpedicellate, 2–5 mm wide; disc perforate, red-brown; thalline exciple rugose, white-maculate, sorediate. Ascospores 10–13 × 7–8 μm. Pycnidia not seen. CHEMISTRY: cortex K+ yellow; medulla K+ yellow then dark red, C-, P+ yellow-orange; containing atranorin, chloroatranorin, salazinic acid (major) and consalazinic acid. - A scattered species growing on bark, more rarely on rock. In Australia, North and South America, Africa, SE Asia and Papua New Guinea.



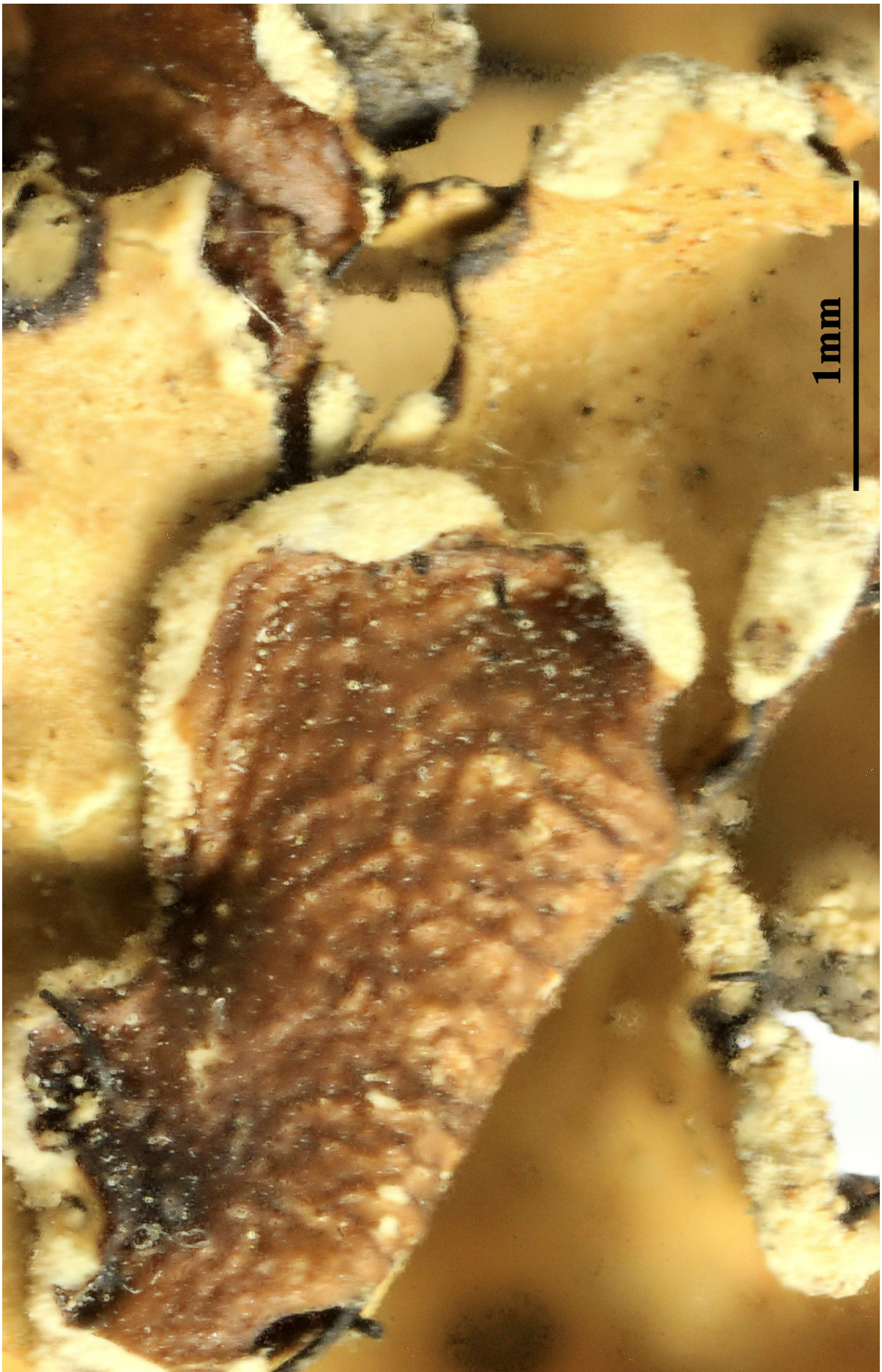
Parmotrema subsumptum



Parmotrema subsumptum



Parmotrema subsumptum

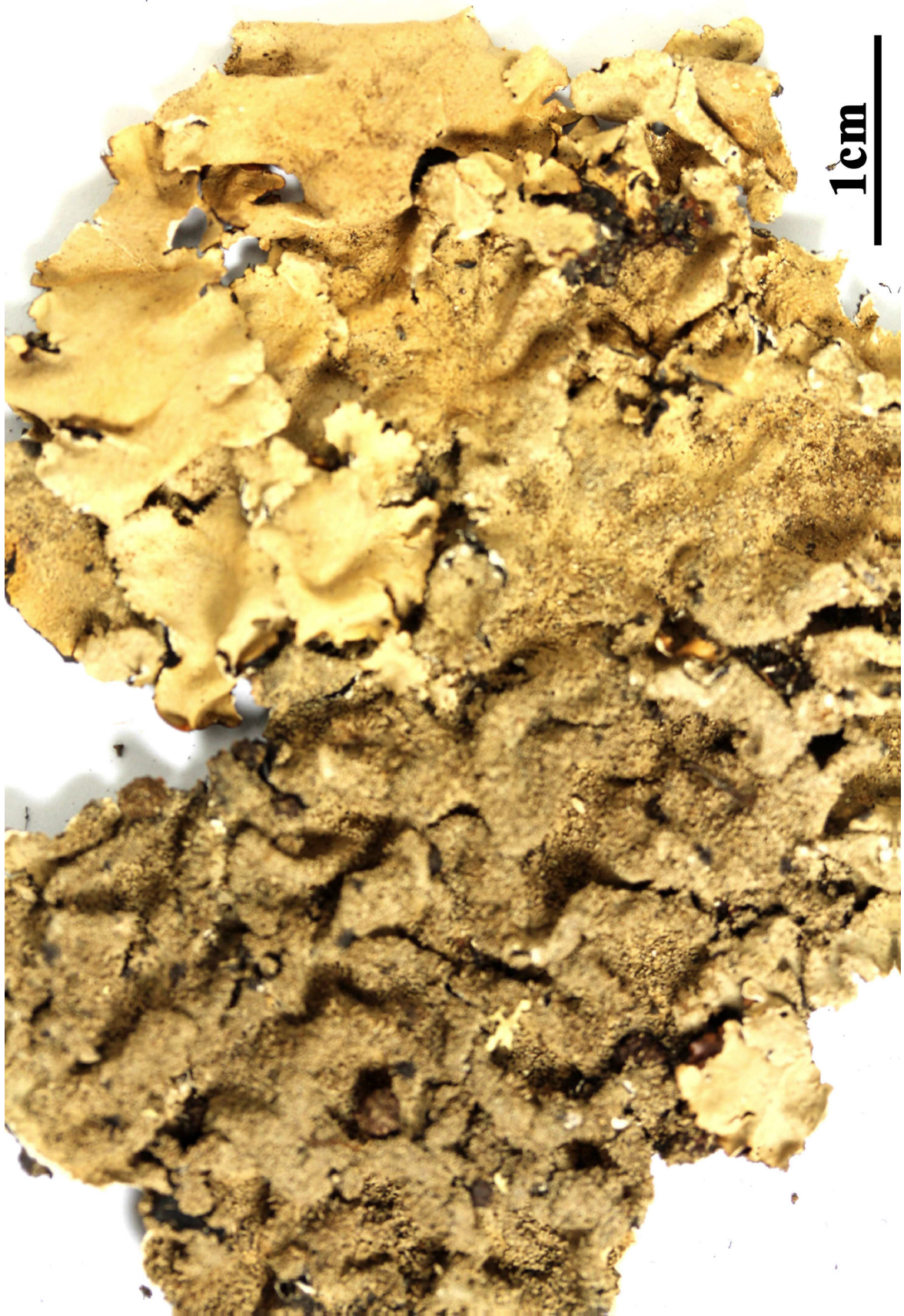


Parmotrema subsumptum

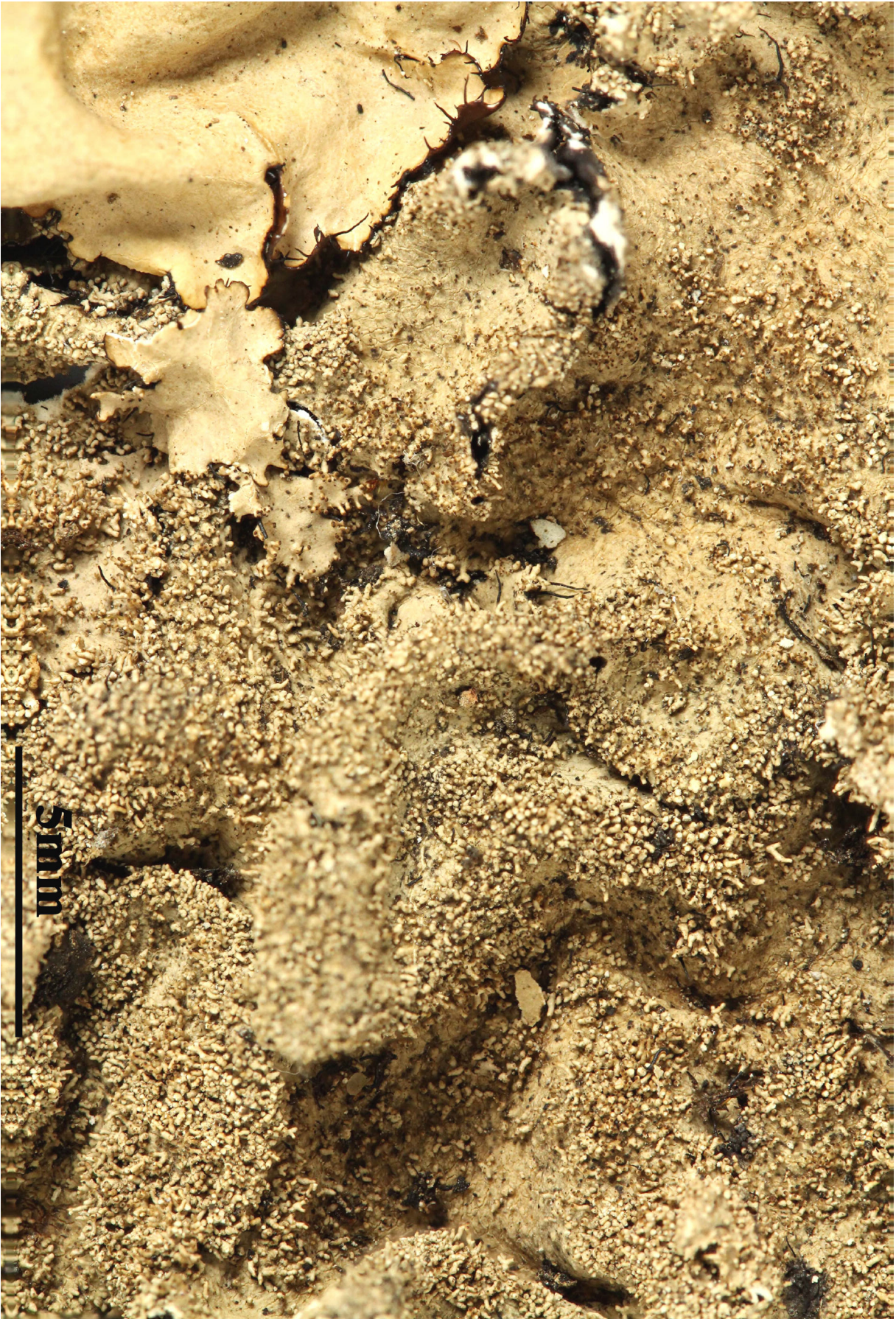
Parmotrema ultralucens (Krog) Hale, Phytologia 28(4): 339 (1974)
= *Parmelia ultralucens* Krog 1974
= *Canomaculina ultralucens* (Krog) Elix & J.B.Chen

[VZ1804], USA., North Carolina, Chatham County, 5 km ad septentriones versus a Bynum. In rupibus in silva. Annot.: Atranorin, lichexanthone, salazinic acid and consalazinic acid by TLC - A. Johnson and C.F. Culberson (no 1955). Leg. W. L. Culberson (No 11667), 01.1965,- Annot.: Atranorin, lichexanthone, salazinic acid and consalazinic acid by TLC, anal. A. Johnson et C. F. Culberson. EX A. V&ZDA LICHENES SELECTI EXSICCATI NR. 1804.

Thallus loosely adnate, coriaceous, to 10–20 cm wide. Lobes rounded to subirregular, 8–15 mm wide; margins crenate; cilia 0.5–2 mm long. Upper surface pale grey, dull to shiny, emaculate, becoming irregularly cracked in older parts, without soredia; isidia laminal, moderately dense, cylindrical, simple to coralloid-branched, often ciliate apically, brown-tipped. Medulla white. Lower surface black, with a broad, brown, erhizinate marginal zone; rhizines dense, simple, of varying length. Apothecia rare, pedicellate, 3–8 mm wide; disc imperforate; thalline exciple rugose, isidiate. Ascospores 15–17 × 10–12 µm. Pycnidia not seen. CHEMISTRY: cortex K+ yellow; medulla K+ yellow then red, C-, P+ orange, UV+ bright yellow; containing atranorin, chloroatranorin, lichexanthone and salazinic acid. - A rare species in tropical Australia. East Africa and North and Central America. Grows on bark and rock.



Parmotrema ultralucens



Parmotrema ultralucens



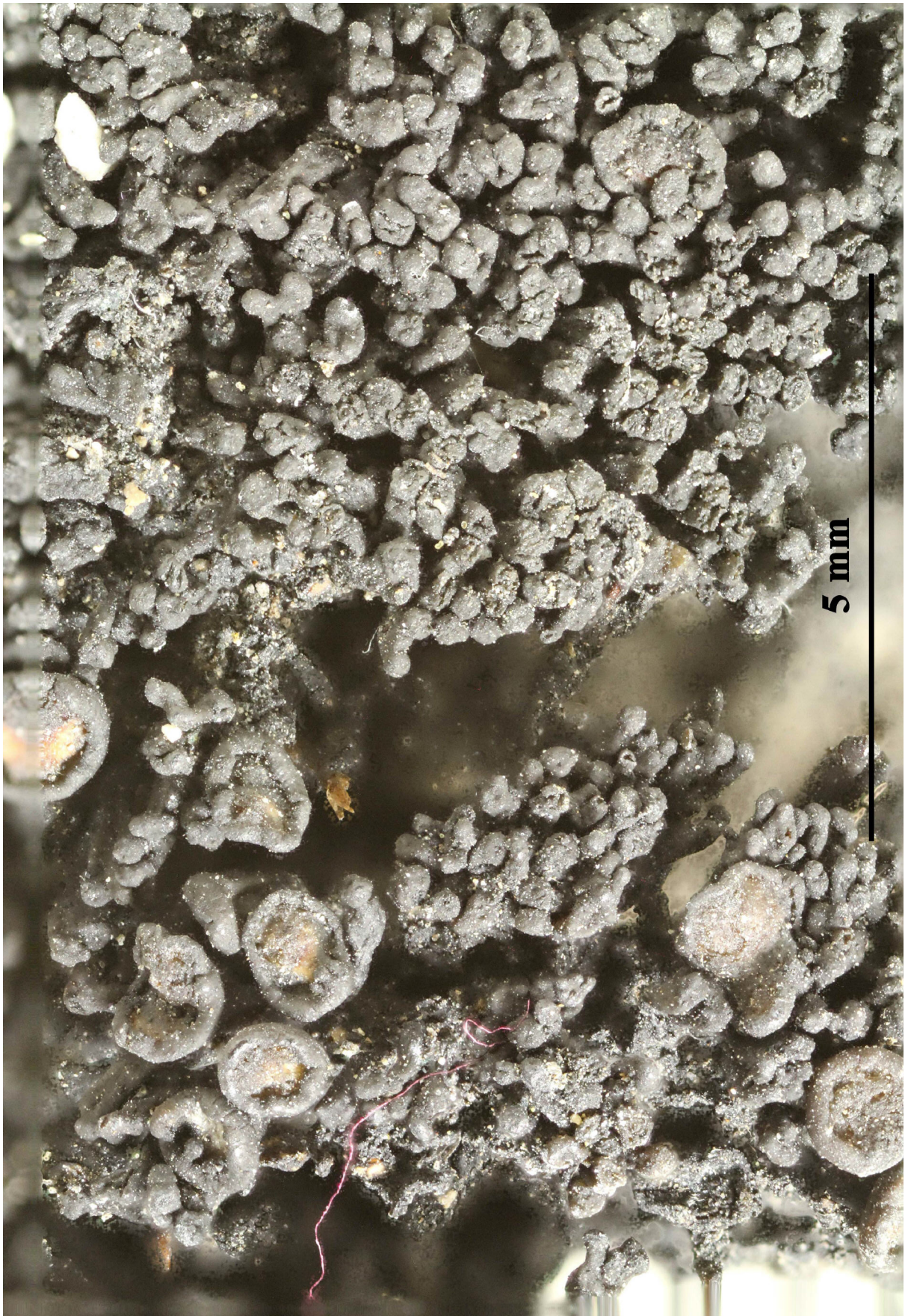
Parmotrema ultralucens

Peccania coralloides (A. Massal.) Arnold, Flora, Regensburg 41(6): 93 (1858)

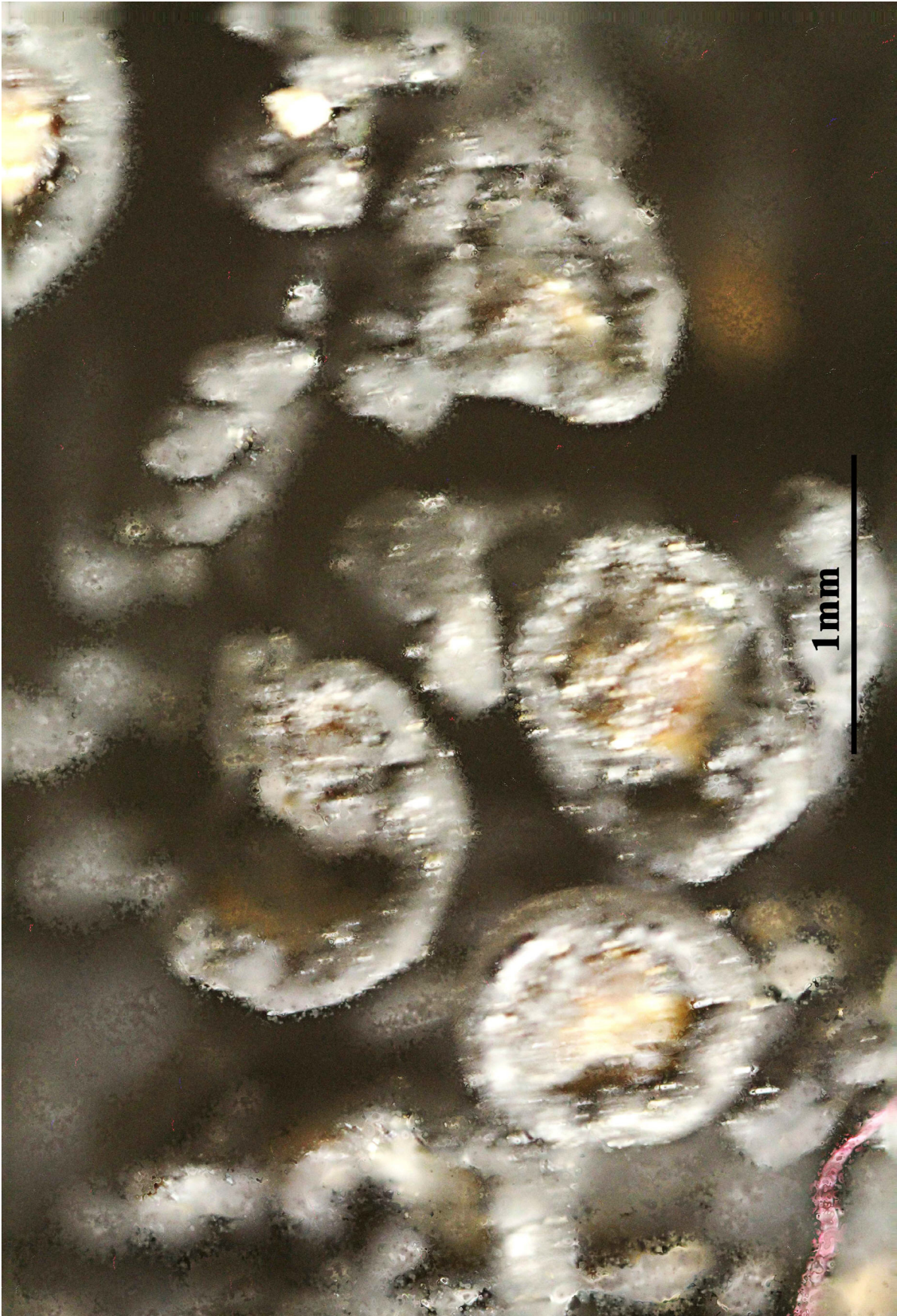
= *Corinophoros coralloides* A. Massal. 1856

[VZ1006], Bohemoslovakia. Slovakia, iugum Carpatorum "Strážovská hormatina" dictum, supra pagum Súlov, 450 m. Ad saxa calcrea aprica. Leg. A. Pišút et A. Vězda, 1.6.1971. EX A. VĚZDA LICHENES SELECTI EXSICCATI NNR. 1006.

Thallus minutely fruticose, subgelatinous when wet, forming up to 2(-2.5) cm wide and to 1.5 cm tall coralloid pillows, dull black but sometimes blue-grey pruinose when dry, dark olivaceous brown when wet, attached by bundles of rhizohyphae. Branches subcylindrical to rarely weakly flattened, erect, irregularly dichotomously branched, ecorticate, the peripheral part 75-150 μm thick, with a loose network of anticlinally oriented hyphae enclosing the photobiont, the inner part with an irregular, up to 500 μm thick axial strand made of 3-5 μm thick, longitudinally oriented hyphae, most evident near the base. Apothecia terminal, 0.5-1.5(-2) mm across, at first urceolate, then clearly lecanorine, with a concave to flat, black to dark brown, often pruinose disc and a thick thalline margin. Proper exciple absent or very poorly developed; epithecium scarcely differentiated from the hymenium, patchily reddish brown to dark brown due to ascus walls decaying after spore discharge, K⁺ brown-purple, rarely K⁻; hymenium colourless to patchily brown in upper part, K/I⁺ deep blue, 100-120 μm high; paraphyses branched and anastomosing, hardly constricted at septa, weakly or non-capitate; hypothecium yellowish brown, 30-60 μm high. Asci 8-spored, broadly clavate, thin-walled, with a distinct gelatinose, amyloid outer cap, but no apical dome, Peccania-type. Ascospores 1-celled, hyaline, globose to broadly ellipsoid, 8-15 x 6-10 μm . Pycnidia terminal or marginal, immersed, globose to pyriform, 300-500 μm across, with colourless, not convoluted walls, the conidiophores terminally branched, with elongated cells. Conidia 1-celled, hyaline, falcate or sigmoid, irregularly curved, (15-)20-40 x c. 1 μm . Photobiont cyanobacterial, chroococoid, with single or paired 8-15 x 7-11 μm large cells often penetrated by haustoria, surrounded by a yellowish brown gelatinous sheath which tends to become thinner and paler in internal parts. Spot test: all negative. Chemistry: without lichen substances. - Note: on steeply inclined, usually south-exposed seepage tracks of calciferous rocks, with a wide altitudinal range.



Peccania coralloides



Peccania coralloides

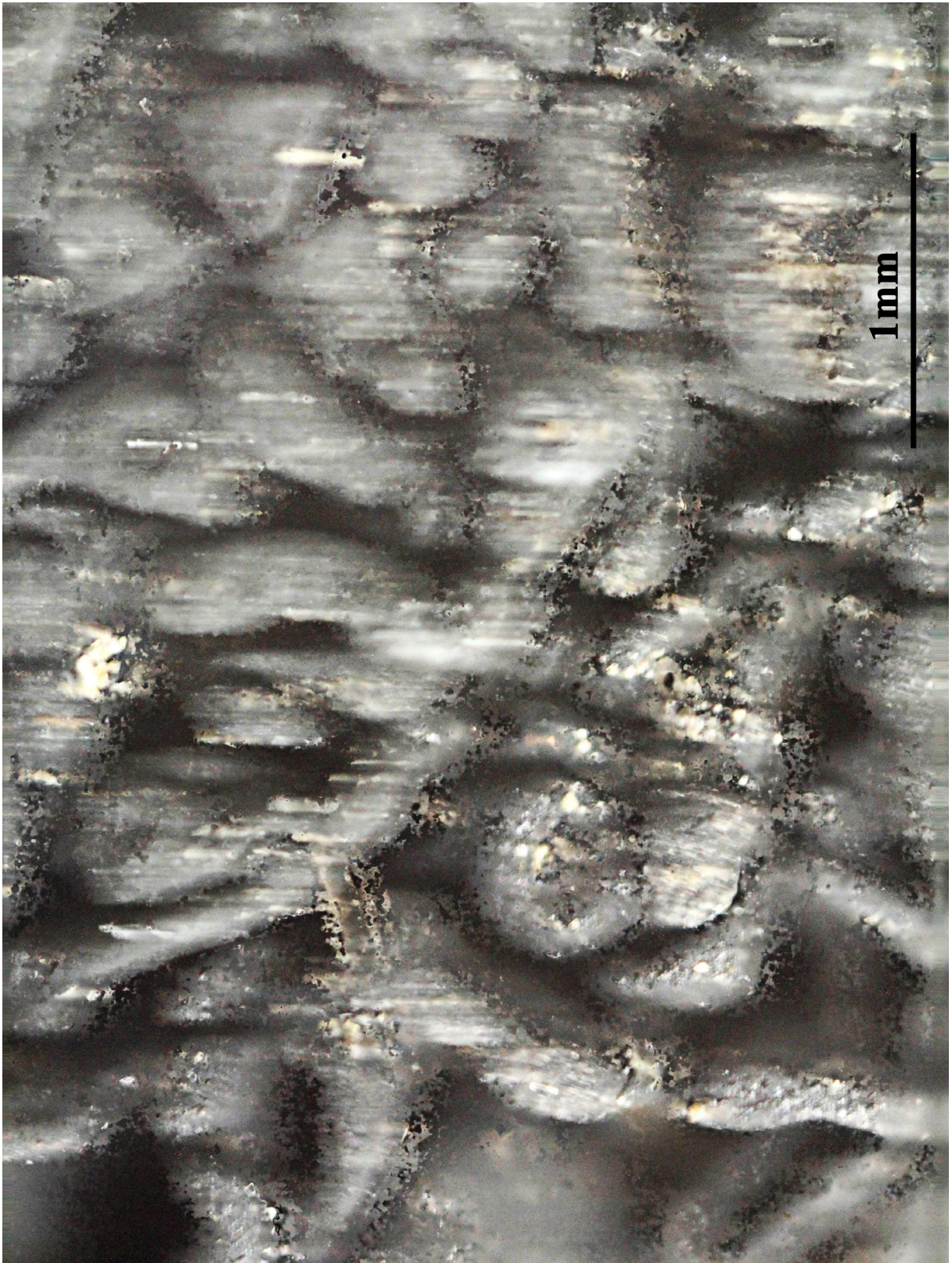
Peccania coralloides (A. Massal.) Arnold, Flora, Regensburg 41(6): 93
(1858)
= *Corinophoros coralloides* A. Massal. 1856

[VZ1256], Romania. Dobrogea. Tirgușor, Valea Baba prope pagum Cheia, 50 m. Ad saxa calcarea. Leg. A. Vězda, 2.5.1974. EX A. Vězda LICHENES SELECTI EXSICCATI NR. 1256.

Thallus minutely fruticose, subgelatinous when wet, forming up to 2(-2.5) cm wide and to 1.5 cm tall coralloid pillows, dull black but sometimes blue-grey pruinose when dry, dark olivaceous brown when wet, attached by bundles of rhizohyphae. Branches subcylindrical to rarely weakly flattened, erect, irregularly dichotomously branched, ecorticate, the peripheral part 75-150 μm thick, with a loose network of anticlinally oriented hyphae enclosing the photobiont, the inner part with an irregular, up to 500 μm thick axial strand made of 3-5 μm thick, longitudinally oriented hyphae, most evident near the base. Apothecia terminal, 0.5-1.5(-2) mm across, at first urceolate, then clearly lecanorine, with a concave to flat, black to dark brown, often pruinose disc and a thick thalline margin. Proper exciple absent or very poorly developed; epithecium scarcely differentiated from the hymenium, patchily reddish brown to dark brown due to ascus walls decaying after spore discharge, K+ brown-purple, rarely K-; hymenium colourless to patchily brown in upper part, K/I+ deep blue, 100-120 μm high; paraphyses branched and anastomosing, hardly constricted at septa, weakly or non-capitate; hypothecium yellowish brown, 30-60 μm high. Asci 8-spored, broadly clavate, thin-walled, with a distinct gelatinose, amyloid outer cap, but no apical dome, *Peccania*-type. Ascospores 1-celled, hyaline, globose to broadly ellipsoid, 8-15 x 6-10 μm . Pycnidia terminal or marginal, immersed, globose to pyriform, 300-500 μm across, with colourless, not convoluted walls, the conidiophores terminally branched, with elongated cells. Conidia 1-celled, hyaline, falcate or sigmoid, irregularly curved, (15-)20-40 x c. 1 μm . Photobiont cyanobacterial, chroococoid, with single or paired 8-15 x 7-11 μm large cells often penetrated by haustoria, surrounded by a yellowish brown gelatinous sheath which tends to become thinner and paler in internal parts. Spot test: all negative. Chemistry: without lichen substances. - Note: on steeply inclined, usually south-exposed seepage tracks of calciferous rocks, with a wide altitudinal range.



Peccania coralloides



Peccania coralloides

Peltigera britannica (Gyeln.) Holt.-Hartw. & Tønsberg, Nordic J Bot. 3: 681-688 (1983)
= *Peltigera aphthosa* f. *britannica* (Gyeln.) Zahlbr., Cat. Lich. Univers. 10: 287 (1939)
= *Peltigera variolosa* f. *britannica* Gyeln., Anns mycol. 30(5/6): 453 (1932)

[VZ2014], Norvegia. Nordland, Salten, Saltdalen, Rusanen, 100 m, ad parietem rupis. Leg T. Tønsberg (no. 7672), 20.09.1982. Ex A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2014.

Green when wet, like *P. leucophlebia*, photobiont green (*Coccomyxa*), but the cephalodia (with *Nostoc*) on the upper surface are concave, button or saucer-shaped with free entire or somewhat crenulate, rarely proliferating margins and are easily detached leaving white scars; lower surface usually lacking or with indistinct veins; rhizines often few, in scattered groups, bottlebrush-like. Apothecia not seen in European material. Thallus with tenuiorin, methylgyrophorate, \pm gyrophoric acid (C \pm red), phlebic acid A and B, T2 and T5. On bark or mossy rocks and walls in damp, sheltered habitats, often in woods but avoiding calcareous sites. - The more continental *P. aphthosa* (L.) Willd. has cephalodia which are appressed, convex, somewhat corrugate and not readily detached from the surface, the lower surface is blackened towards the centre, woolly but without rhizines and, unlike *P. leucophlebia*, the apothecia are uniformly corticate on the underside. The relationship between *P. leucophlebia*, *P. aphthosa* and *P. britannica* is in need of further investigation



Peltigera britannica



Peltigera britannica



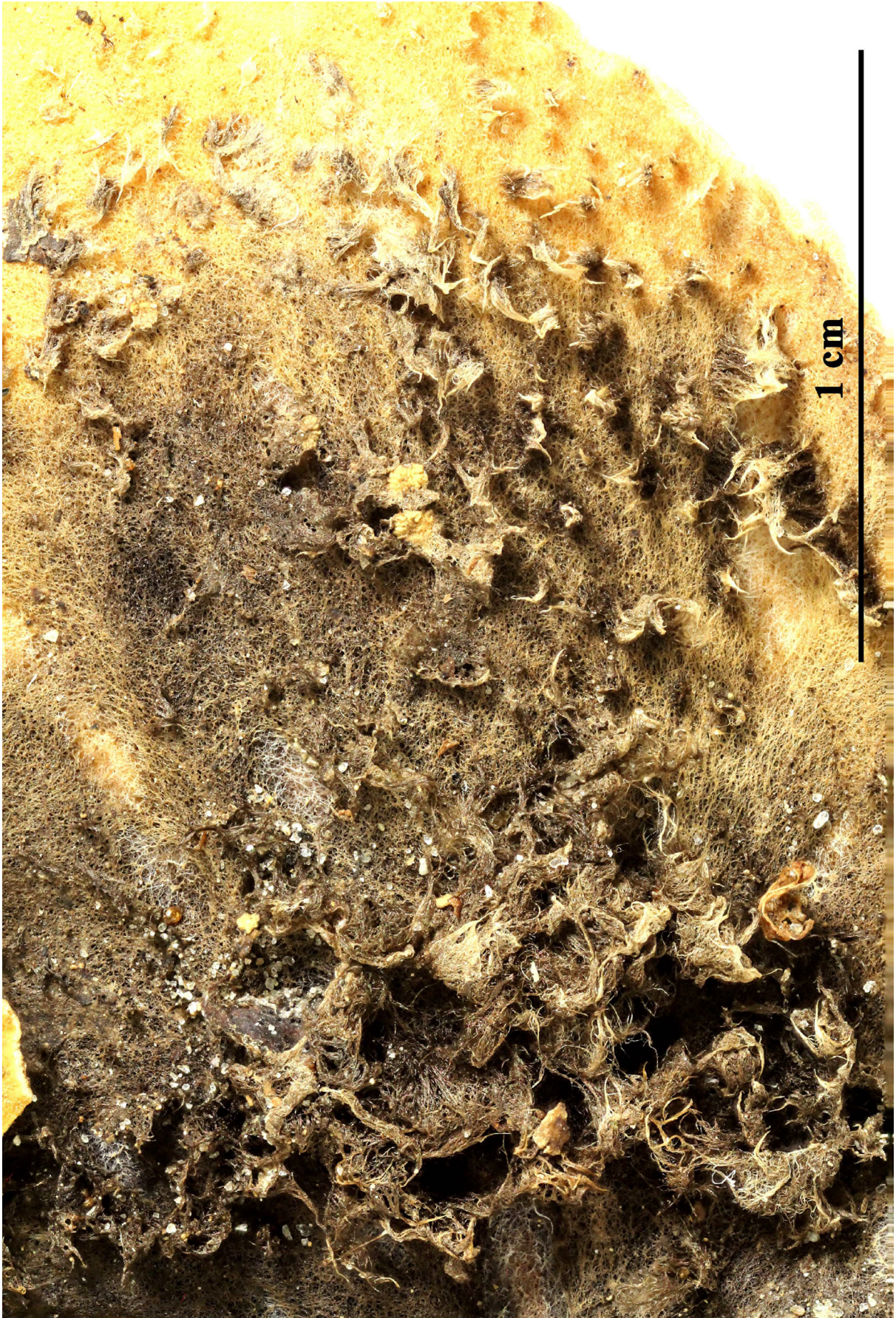
Peltigera britannica



Peltigera britannica



Peltigera britannica

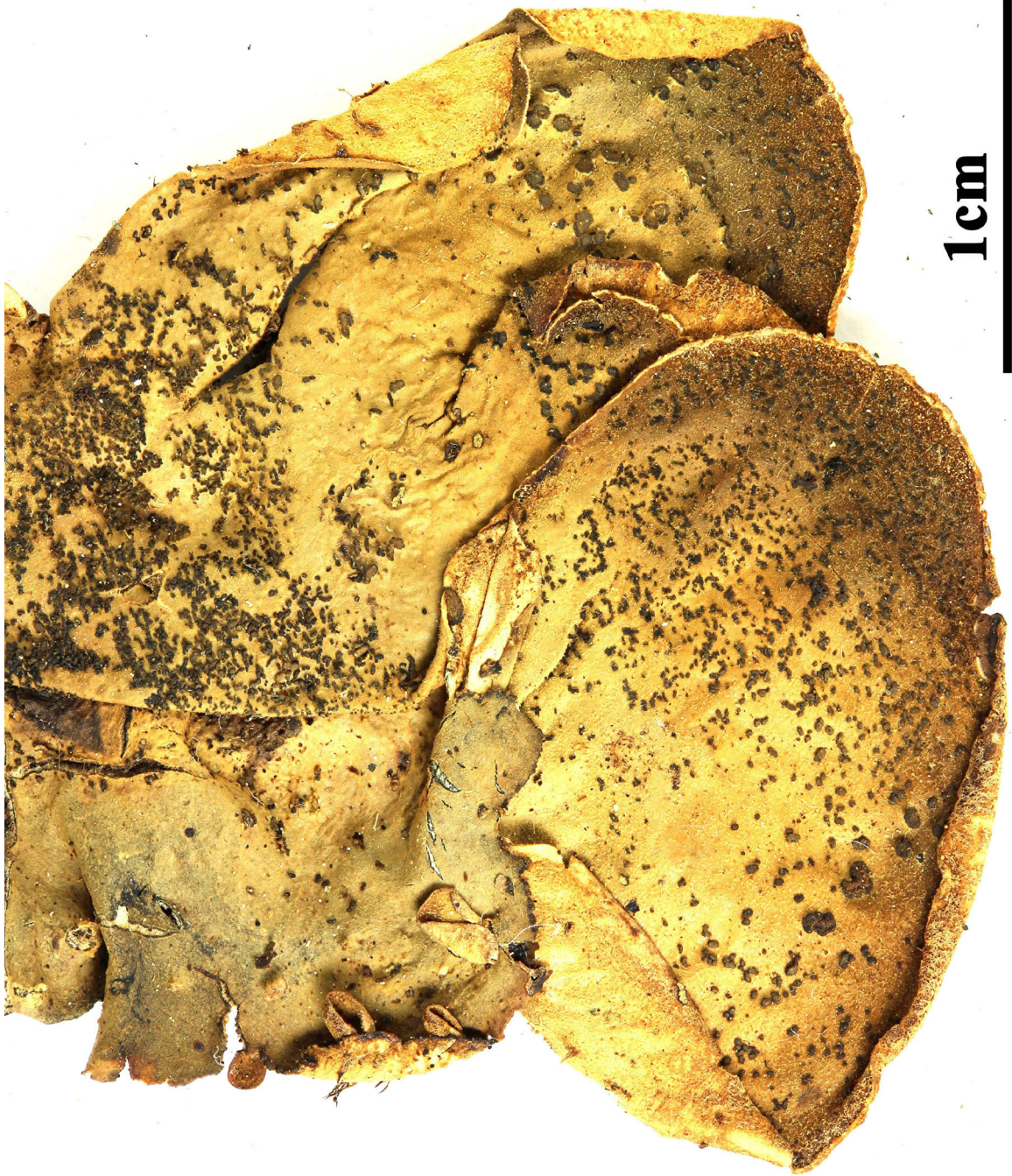


Peltigera britannica

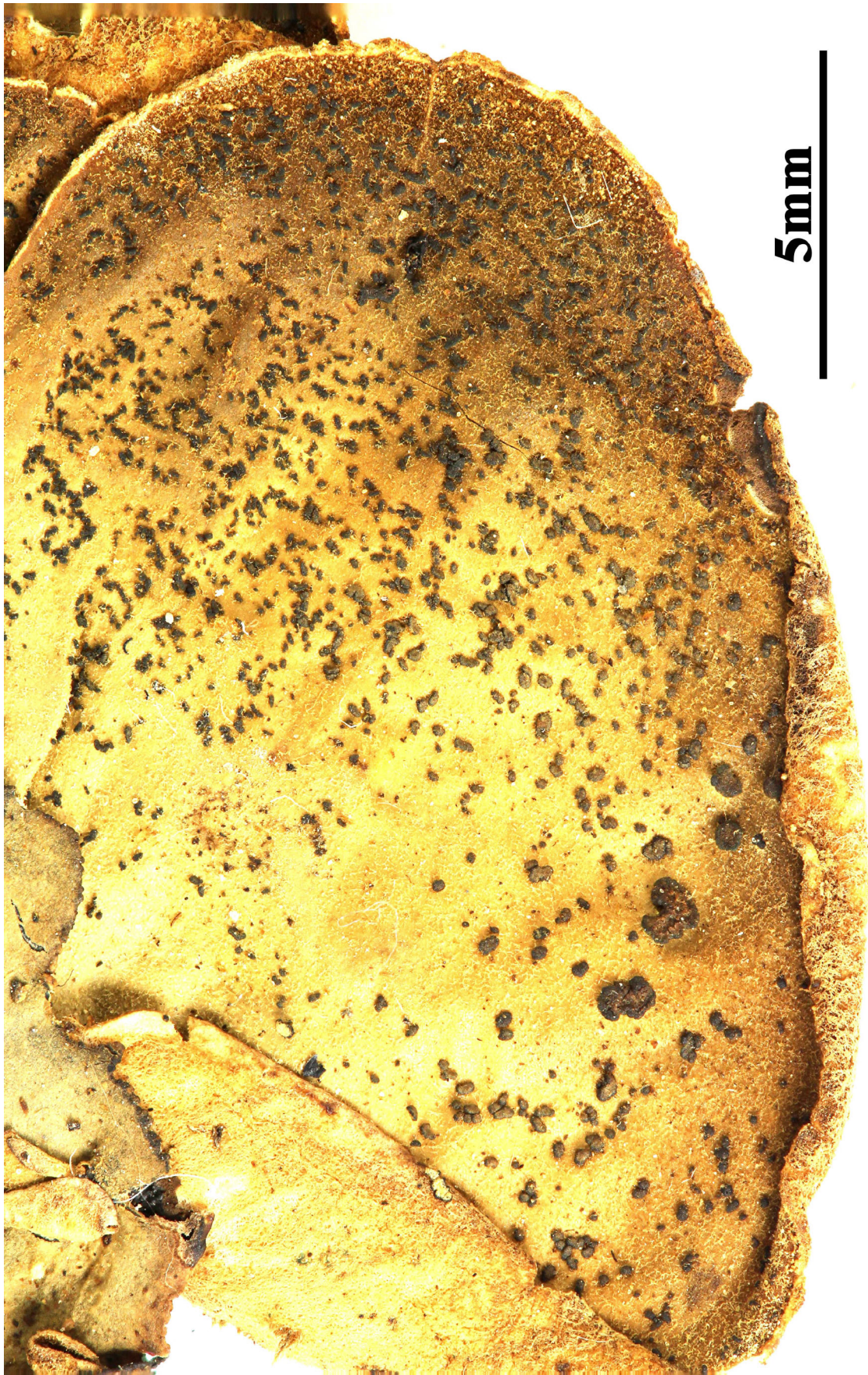
Peltigera britannica (Gyeln.) Holt.-Hartw. & Tønsberg, Nordic J Bot. 3: 681-688 (1983)
= *Peltigera aphthosa* f. *britannica* (Gyeln.) Zahlbr., Cat. Lich. Univers. 10: 287 (1939)
= *Peltigera variolosa* f. *britannica* Gyeln., Anns mycol. 30(5/6): 453 (1932)

[VZ2485], Norvegis. Sør-Trøndelag. Trøndheim, Byneset, in cole Högstein, 40-50 m. In rupe muscosa. Leg. T. Tønsberg (no. 6521), 21.10.1081. EX A. V&ZDA LICHENES SELECTI RXSICCATI NR. 2485.

Green when wet, like *P. leucophlebia*, photobiont green (*Coccomyxa*), but the cephalodia (with *Nostoc*) on the upper surface are concave, button or saucer-shaped with free entire or somewhat crenulate, rarely proliferating margins and are easily detached leaving white scars; lower surface usually lacking or with indistinct veins; rhizines often few, in scattered groups, bottlebrush-like. Apothecia not seen in European material. Thallus with tenuiorin, methylgyrophorate, \pm gyrophoric acid (C \pm red), phlebic acid A and B, T2 and T5. On bark or mossy rocks and walls in damp, sheltered habitats, often in woods but avoiding calcareous sites. - The more continental *P. aphthosa* (L.) Willd. has cephalodia which are appressed, convex, somewhat corrugate and not readily detached from the surface, the lower surface is blackened towards the centre, woolly but without rhizines and, unlike *P. leucophlebia*, the apothecia are uniformly corticate on the underside. The relationship between *P. leucophlebia*, *P. aphthosa* and *P. britannica* is in need of further investigation



Peltigera britannica



Peltigera britannica



Peltigera britannica

- Peltigera collina* (Ach.) Schrad., J. Bot. (Schrader) 1: 78 (1801)
 = *Lichen collinus* Ach., Lich. suec. prodr. (Linköping): 162 (1799) [1798]
 = *Lichen scutatus* * *collina* (Ach.) Lam., Encycl. Méth. Bot., Suppl.(Paris) 2(2): 422 (1813)
 = *Peltidea collina* (Ach.) Röhl., Deutschl. Fl. (Frankfurt) 3(2): 116 (1813)
 = *Peltidea horizontalis* var. *collina* (Ach.) Wahlenb., Fl. Suec. 2: 842 (1826)
 = *Peltidea polydactylon* var. *collina* (Ach.) Sommerf., Suppl. Fl. lapp. (Oslo): 124 (1826)
 = *Peltidea rufescens* var. *collina* (Ach.) Ach., Methodus, Sectio post. (Stockholmiæ): 285 (1803)
 = *Peltidea scutata* var. *collina* (Ach.) Ach., Lich. Univ.: 515 (1810)
 = *Peltigera apthosa* var. *collina* (Ach.) Wallr., Fl. crypt. Germ.(Norimbergae) 1: 560 (1831)
 = *Peltigera polydactylon* var. *collina* (Ach.) Sommerf., Suppl. Fl. lapp. (Oslo): 124 (1826)
 = *Peltigera scutata* var. *collina* (Ach.) Duby, Bot. Gall., Edn 2 (Paris) 2: 598 (1830)

[VZ2439], Austria. Styria. Wildalpen, in valle "Imbach Tal", introitu rivi "Hebenstreit Bach", 600 m, ad corticem Fagi. Leg. J. & A. Hafellner, 11.11.1989. EX A. V&ZDA: LICHENES SELECTI EXSICATI NR. 2439.

Thallus foliose, broad-lobed, heteromerous and dorsiventral, bluish to brownish grey when dry, blackish when wet, loosely attached, to 10(-15) in diam. (usually less). Lobes 0.5-1 cm wide, up to 3 cm long, radiating or randomly arranged in old specimens, flattened, with rounded ends, glabrous and more or less glossy, rarely somewhat pruinose, the margins raised, undulate, with marginal, linear, pale grey to blue-grey soralia sometimes extending to the upper surface, bearing granular soredia which are partly corticate when young. Lower surface pale, with diffuse, flat, pale brown veins and simple or rarely tufted, up to 3 mm long rhizines. Upper cortex pseudoparenchymatous; medulla white; lower cortex absent. Apothecia very rare, on short ascending lobes. round or saddle-shaped, dark brown to black. Paraphyses simple, distinctly thickened above. Asci 8-spored, fissitunicate, the thickened apex with a K/I+ blue ring, *Peltigera*-type. Ascospores 3-5-septate, hyaline to pale brown when mature, fusiform, thin-walled, 37-70 x cyanobacterial (*Nostoc* the cells in short chains). Spot tests: cortex and medulla/soralia K-, C-, KC-, P-, or medulla/soralia weakly and fleeting KC+ red. Chemistry: four chemotypes, with different combinations of

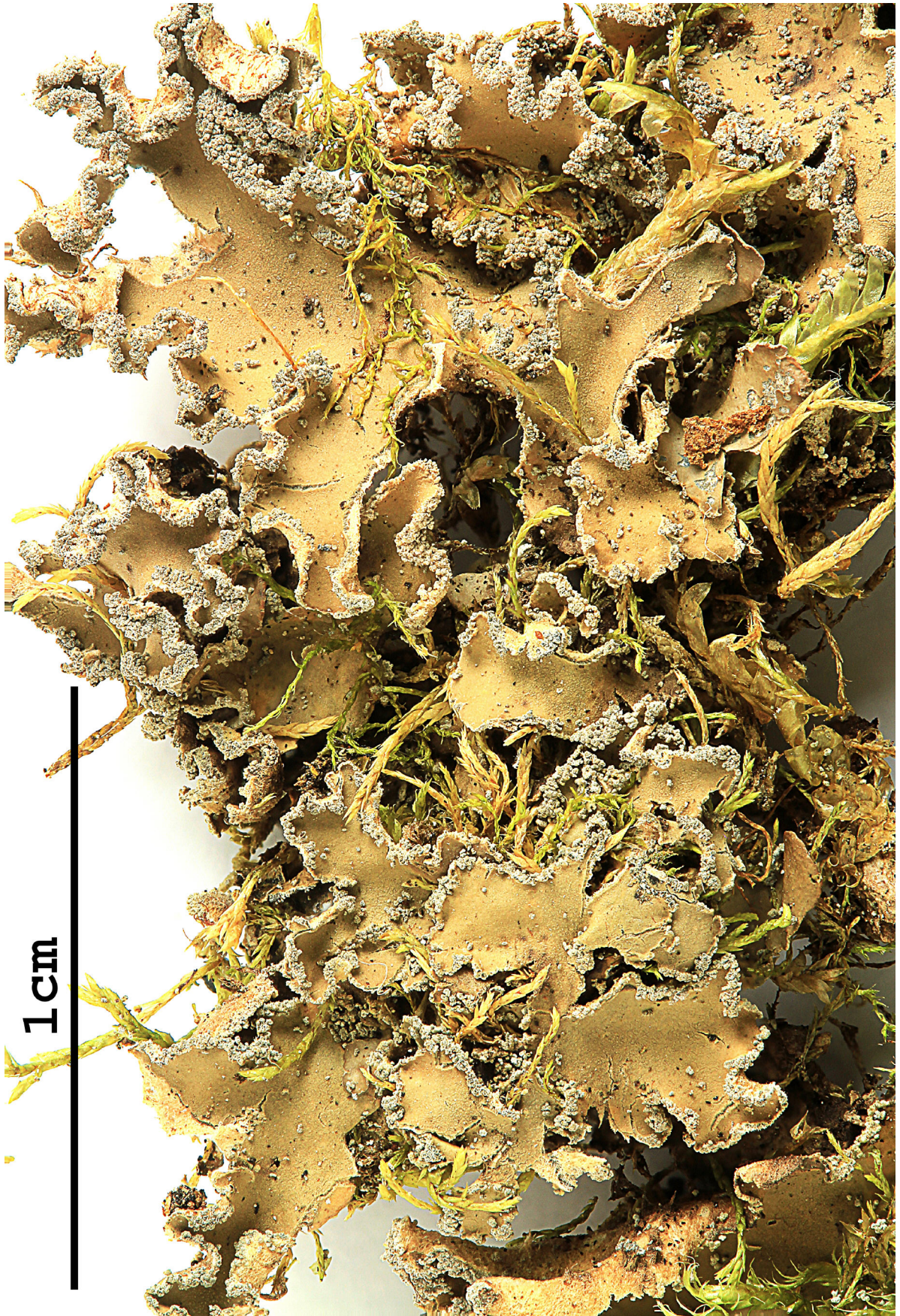
tenuiorin, methyl gyrophorate, zeorin and peltidactylin, plus variable, usually low amounts of gyrophoric acid. - Note: a typical Lobarionspecies found on the mossy bark of old deciduous trees in humid, open forests, sometimes on epilithic mosses.



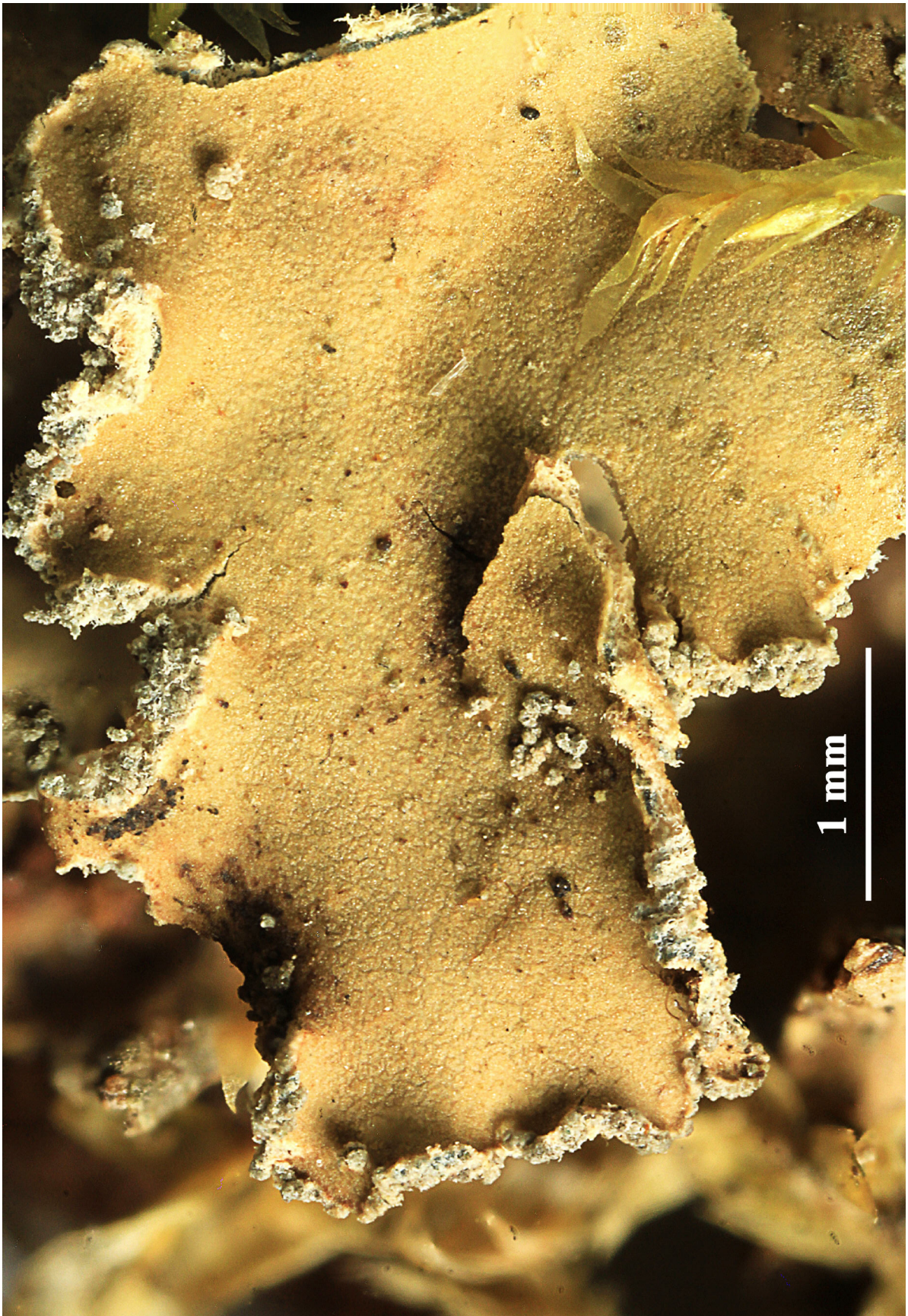
Peltigera collina



Peltigera collina



Peltigera collina



Peltigera collina

Peltigera degenii Gyeln., Magy. Bot. Lapok 25: 253 (1927) [1926]

[VZ1429], Tanzania. Kilimanjaro: prope casam alpinam Mandare dicta, 2800 m. Ad terram in silva. Leg. T. Pócs (no. 6943), 8.7.1976, det, A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1429.

Thallus foliose, broad-lobed, heteromerous and dorsiventral, bluish grey when dry, blackish when wet, loosely attached, forming up to 12(-20) cm wide rosettes. Lobes elongate, flattened, contiguous, rounded at tips, 0.5-1(-1.5) cm broad, 2-5 cm long, with a bluish grey, glabrous, glossy, shiny, smooth to weakly wrinkled upper surface, the margins often up-turned, sometimes phyllidiate. Lower surface whitish near margins, pale brown in central parts, with whitish, raised veins becoming pale brown in central parts, and pale, mostly simple, up to 5-7 mm long rhizines. Upper cortex pseudoparenchymatous; medulla white; lower cortex absent. Apothecia frequent on up-turned short lobes, saddle-shaped, pale brown, 4-9 mm across. Paraphyses simple, distinctly thickened above. Asci 8-spored, fissitunicate, the thickened apex with a K/I+ blue ring, *Peltigera*-type. Ascospores 3-5-septate, hyaline turning pale brown at maturity, acicular, thin-walled, (40-)45-60(-68) x 2.5-5 μm . Photobiont cyanobacterial (*Nostoc*, the cells not in long chains). Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a temperate to southern boreal species found on terricolous bryophytes, on soil rich in humus and on mossy rocks in forests, sometimes on bark in the basal parts of trunks, with optimum in the montane belt; apparently most common in the Eastern Alps and the Northern Apennines.



Peltigera degenii



Peltigera degenii



Peltigera degenii

Peltigera scabrosa Th. Fr., Lich. arct. (Uppsala): 45 (1860)

[VZ1890], Suecia. Värmlandia: Östra Ämtervik Paroecia, Humletorp, 200 m. Supra muscos in rupe. Leg. S. W. Sundell (no. 15623), 12.10.1982. Ex A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1890.

Thallus large, up to 20 cm in diameter, lobes 10-30 mm broad and up to 10(-18) cm long, margins upturned or plane. Colour dark green when wet, grey when dry, often with a pale brownish cast. Lower surface distinctly veined, veins 0.8-1.2 mm, brown to blackened in central part, interstitia 1-2 mm. Rhizines 2-3(-5) mm, fibrillose to fasciculate, dark brown to black. Apothecia rather common, discs 3-6 mm, convex. Spores (52-)75-90(-95) x 3-5 μ m. Chemistry: Tenuiorin, methylgyrophorate, gyrophoric acid, peltidactylin, dolichorrhizin, zeorin, hopane-6 α ,7 β -22-triol, and unidentified triterpenoids. - *P. scabrosa* is fairly easily distinguished from other species of the genus on account of its scabrose, non tomentose upper surface and more or less distinct and darkened veins. Large specimens may exhibit a rather even surface in their central parts and thus confusion with *P. neopolydactyla*, is possible. Features distinguishing it from *P. pulverulenta* (Taylor) Nyl., essentially a Neotropical lichen, include an even more pronounced scabrosity and a veining pattern that is less distinct or lacking in the latter species. In Europe, the only closely related taxa are *P. lyngei*, which is distinguished by its non-veined underside, and *P. scabrosella*. The separation of the former species from *P. scabrosa* may be difficult. *P. scabrosella* is characterized by its smaller size, different growth habit, and chemistry.



Peltigera scabrosa



Peltigera scabrosa

Peltigera spuria var. *uluguruensis* Vězda, Lichenes Selecti Exsiccati, Fasc. (Průhonice) 52: 6 (no. 1293 (1975))

[VZ1293], Tanzania. Distr. Morogoro, montes Uluguru: Morningside, in monte Bodwa, 1600 m. Supra terram nudam secus viam in pluviisilva montana. Leg. T. Pócs (no. 6118], 8.2.1974. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1283.

Thallus rigidus, superne glaber, subnitidus, soraliis pulverulents ad margines loborum solum formantibus instructus Cortex c. 70 μ m crassus. Apothecia ignota.



Peltigera spuria var. *uluguruensis*

Peltigera spuria (Ach.) DC., in Lamarck & de Candolle, Fl. franç., Edn 3
(Paris) 2: 406 (1805)
= *Lichen spurius* Ach. 1799
= *Peltigera didactyla* (With.) J.R. Laundon, Lichenologist 16(3): 217 (1984)

[VZ2087], Austria, Carinthia: Turracher Höhe, supra lacum Schwarzsee dictum, 1800 m. Ad terram macram. Leg. A. Vězda, 13.9.1985. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2087.

Thallus foliose, broad-lobed, heteromerous, dorsiventral, greenish grey to brownish when dry, blackish green when wet, forming 1-3(-5) cm wide rosettes or consisting of a few scattered lobes only. Lobes 5-10 mm broad, 1-2 cm long, rounded, concave, ear-shaped and sorediate when young, later ascending, esorediate and bearing vertically arranged apothecia. Soralia maculiform, laminar, flat, tending to disappear in fertile specimens (leaving discoloured patches), at first orbicular and 1-3(-4) mm across, then becoming confluent, with grey to grey-brown soredia. Upper surface finely tomentose, at least in marginal parts and in young lobes; lower surface whitish, with narrow (0.4-0.7 mm broad) whitish to brownish veins and dense, up to 4 mm long rhizines becoming tufted and darkening. Upper cortex pseudoparenchymatous; medulla white, with loosely interwoven hyphae; lower cortex absent. Apothecia rare in sorediate specimens, common in esorediate ones, saddle-shaped, brown, located at the tip of short, vertically arranged lobes, with a minutely denticulate margin, 3-4(-6) mm wide. Paraphyses simple, distinctly thickened above. Asci fissitunicate, the thickened apex with a K/I+ blue ring, *Peltigera*-type. Ascospores 3-5(-7)-septate, hyaline to pale brown at maturity, fusiform, (36-)45-65(-80) x 3-5 μm . Pycnidia rare, dark, immersed. Conidia fusiform, 6-8 x 3-4 μm . Photobiont cyanobacterial (*Nostoc*, the cells not in long chains). Spot tests: cortex and medulla K-, C-, KC-, P- (soralia very rarely faintly C+ and KC+ pink). Chemistry: without lichen substances, or occasionally with low amounts of gyrophoric acid and methyl gyrophorate in the soralia. - Note: a cool-temperate to boreal-montane, ephemeral lichen of disturbed mineral soil, most common in the Alps near and above treeline.



Peltigera spuria



Peltigera spuria

Peltigera venosa (L.) Hoffm., Descr. Adumb. Plant. Lich. 1(1): 31 (1789)
[1790]
= *Lichen venosus* L. 1753

[VZ2365], Italia, Calabria. Consenza in Sila Grande loco dicto Camigliatello Silano, 1250 m. Ad terram macram. Leg. D. Puntillo, 5.1989. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2365.

Thallus foliose, heteromerous and dorsiventral, loosely attached by a single, stout hapter, up to 2.5 cm in diam. Lobes flattened, smooth, rounded to fan-shaped, up to 25(-30) mm across and up to 1 mm thick. Upper surface smooth, somehow shiny, grey to grey green when dry (turning brown in the herbarium), bright green when wet. Lower surface erhizinate, pale, with a very evident network of black, flat, reticulate, villose veins, and granular-warty, dark cephalodia located on the veins. Upper cortex pseudoparenchymatous; medulla white; lower cortex absent. Apothecia frequent, 1-6 per lobe, rounded or oval, flat, up to 5(-6) mm across, dark brown to black, the lower side with a thick, dark, pseudoparenchymatous cortex. Paraphyses simple, distinctly thickened above. Asci 8-spored, fissitunicate, the thickened apex with a K/I+ blue ring, *Peltigera*-type. Ascospores usually 3-septate, hyaline to pale brown at maturity, acicular, thin-walled, (29-)35-43(-47) x 4-8 μm . Photobiont chlorococcoid (*Coccomyxa*), cephalodia with *Nostoc*. Spot tests: cortex and medulla K-, C-, KC-, P-, UV- or very rarely medulla faintly C+ and KC+ pink. Chemistry: medulla with tenuiorin, methyl gyrophorate and triterpenoids, sometimes with traces of gyrophoric acid. - Note: an arctic-alpine to boreal-montane, circumpolar lichen found on soil rich in humus in cold-humid sites near and above treeline; most frequent in the Alps, very rare in the mountains of Central and Southern Italy.



Peltigera venosa



Peltigera venosa

Peltigera venosa (L.) Hoffm., Descr. Adumb. Plant. Lich. 1(1): 31 (1789)
[1790]
= *Lichen venosus* L. 1753

[VZ1231], Gallia. Hautes-Alpes: La Chapelle-en-Valgaudemar, 1200 m. Ad terram arenosam. Leg. Y. Rondon, 7.10.1973. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 1231.

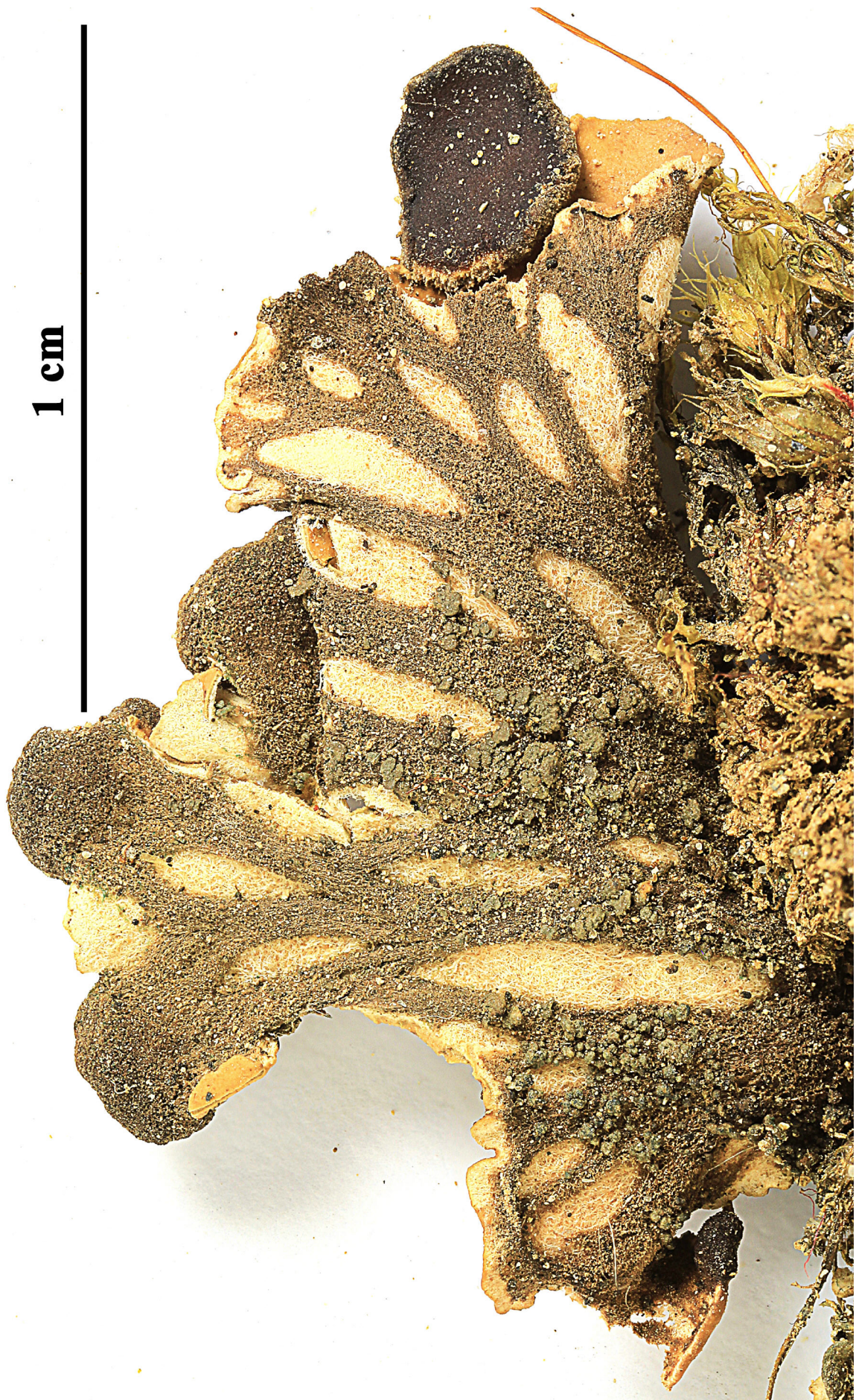
Thallus foliose, heteromerous and dorsiventral, loosely attached by a single, stout hapter, up to 2.5 cm in diam. Lobes flattened, smooth, rounded to fan-shaped, up to 25(-30) mm across and up to 1 mm thick. Upper surface smooth, somehow shiny, grey to grey green when dry (turning brown in the herbarium), bright green when wet. Lower surface erhizinate, pale, with a very evident network of black, flat, reticulate, villose veins, and granular-warty, dark cephalodia located on the veins. Upper cortex pseudoparenchymatous; medulla white; lower cortex absent. Apothecia frequent, 1-6 per lobe, rounded or oval, flat, up to 5(-6) mm across, dark brown to black, the lower side with a thick, dark, pseudoparenchymatous cortex. Paraphyses simple, distinctly thickened above. Asci 8-spored, fissitunicate, the thickened apex with a K/I+ blue ring, *Peltigera*-type. Ascospores usually 3-septate, hyaline to pale brown at maturity, acicular, thin-walled, (29-)35-43(-47) x 4-8 μm . Photobiont chlorococcoid (*Coccomyxa*), cephalodia with *Nostoc*. Spot tests: cortex and medulla K-, C-, KC-, P-, UV- or very rarely medulla faintly C+ and KC+ pink. Chemistry: medulla with tenuiorin, methyl gyrophorate and triterpenoids, sometimes with traces of gyrophoric acid. - Note: an arctic-alpine to boreal-montane, circumpolar lichen found on soil rich in humus in cold-humid sites near and above treeline; most frequent in the Alps, very rare in the mountains of Central and Southern Italy.



Peltigera venosa



Peltigera venosa



1 cm

Peltigera venosa



Peltigera venosa

Peltula patellata (Bagl.) Swinscow & Krog, Norw. Jl Bot. 26: 221 (1979)
= *Acarospora patellata* Bagl. 1875

[VZ2286], Maroccanum Regnum. Atlas Altus. Marruecos. Tinerhir: ad cataracta fluvii Todra, 1400 m. Ad terram. Leg. J. M. Egea, 14.4.1987. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2786.

Thallus squamulose, pale to olivaceous brown or greyish-green, rarely with a faint whitish pruina, dull, thick, K-, C-, KC-, P-. Squamules 0.5-4 mm broad, rounded to somewhat lobulate, concave, dispersed to contiguous, with an up-turned, undulate, often darker edge, attached by a dense mat of rhizohyphae. Upper cortex poorly developed, substituted by an epinecral layer. Medulla paraplectenchymatous. Lower cortex paraplectenchymatous, 40-60 μm thick, composed by (2-)4-8 layers of more or less isodiametrical cells. Photobiont: an unicellular cyanobacterium. Apothecia frequent, lecanorine, semi-immersed in the squamules, 1-20 per squamule, 0.5-1.5 mm diam. Disc reddish to dark brown, smooth, margin indistinct, thin. Epithecium dark yellowish brown, K+ violet-red. Hymenium colourless, I+ blue-green turning wine-red. Hypothecium colourless. Paraphyses anastomosing, simple, slightly thickened above. Asci unitunicate-rostrate (lecanorean type), obclavate, the wall I+ orange, K/I+ blue. Ascospores 1-celled, hyaline, subglobose, thin-walled, more than 100 per ascus, 3-8(-9) x (3-)5-7 μm . Pycnidia dark, immersed. Conidia fusiform, 3.7-4.3 x 1.2-2.8 μm . Chemistry Without lichen substances. Ecology on soil in dry grasslands over siliceous substrata Distribution hitherto known only from Liguria and Sardegna, to be looked for in dry areas of the south, also known from Alpine dry valleys outside Italy.



Peltula patellata

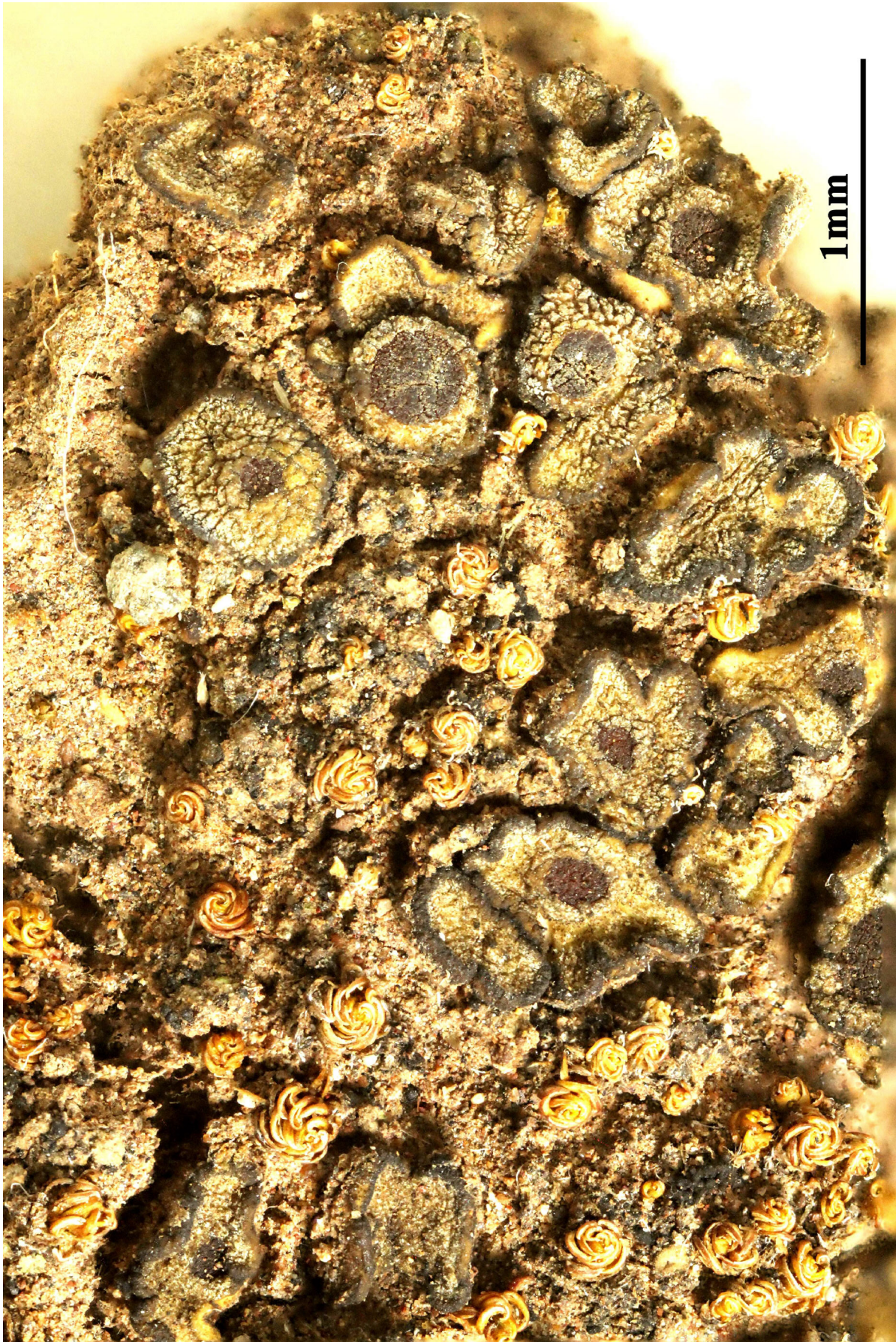


Peltula patellata

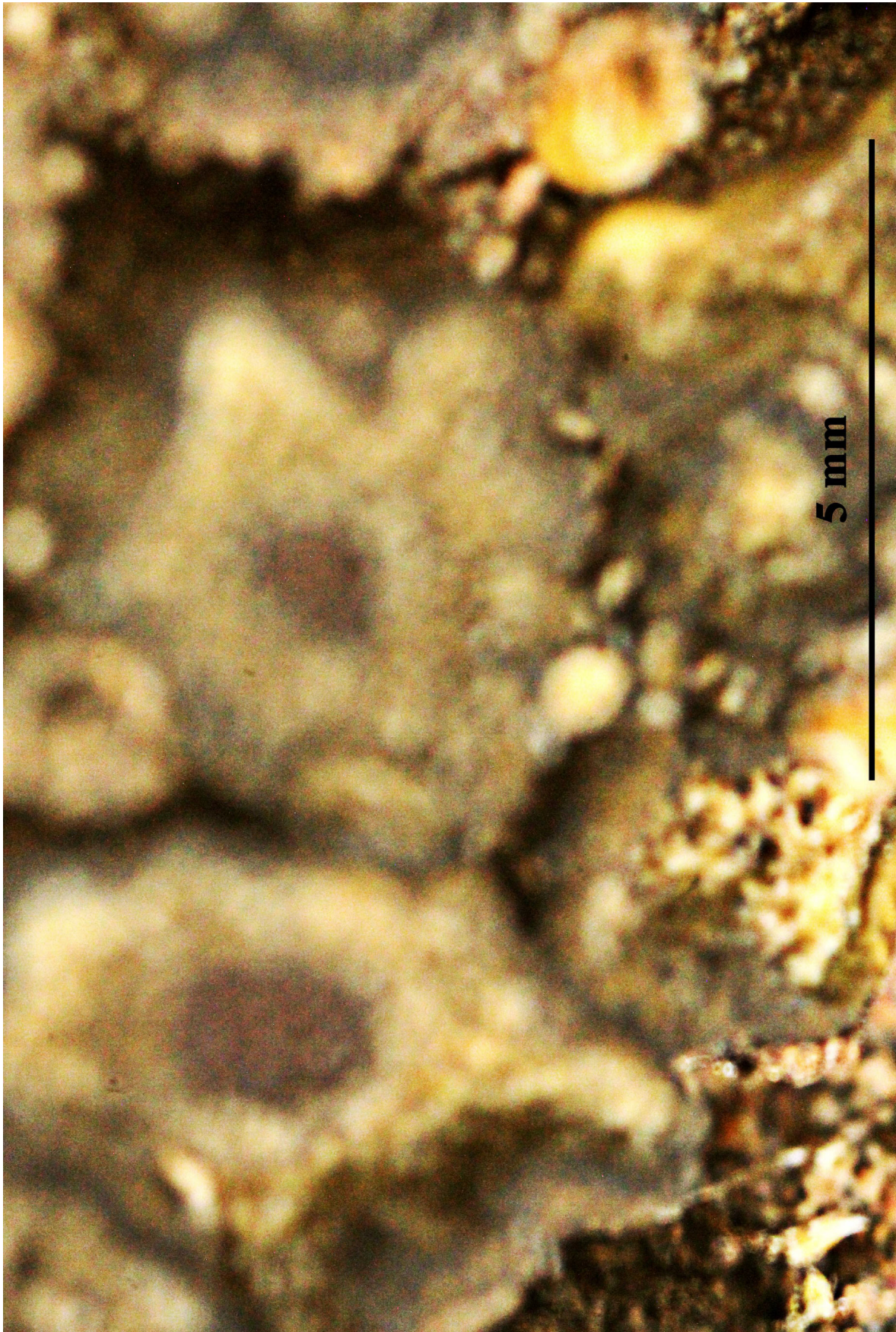
Peltula psammophila (Nyl.) Egea, Biblioth. Lichenol. 31: 101 (1989)
= *Heppia psammophila* Nyl. 1878

[VZ2417], Insulae Canarienses. Tenerife: secus viam inter Arona et Las Canadas del Teide, 1.2 km prope Arona, 810 m. Ad terram. Leg. P. L. Nimis, 14.1.1985. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2417.

Squamules orbicular flat or concave on top, often angulate or lobulate, up to 4 mm diam. and 0.7 mm high; upper surface olive-brown to dark brown, rugose and fissured, not soresiate; upper cortex not developed but with an epinecral layer (10-30 μm thick); medulla composed of loosely interwoven hyphae; algal layer 140-200 μm thick; lower cortex paraplectenchymatous, 10-50 μm thick, composed of 4-7 layers of isodiametric cells; lower surface paler than the upper surface, attached by a tuft of hyphae; Apothecia one or two per squamule, centrally immersed, with slightly raised rim when mature; disc dark red to almost black, expanded, up to 1 mm in diam.; epihymenium K- or rarely K+ red-violet, >100-spored; ascospores globose, 5-8 μm diam. Pycnidia not observed; Spot tests all negative; Secondary metabolites none detected. Substrate and ecology: on poor or sandy soils and on detritus in rock fissures in deserts and other open, arid habitats World distribution: North Africa, SW North America. . The squamules of *P. patellata* are somewhat smaller and usually half as thin as those of *P. psammophila*. In addition, *P. psammophila* has a thicker epinecral layer and a more lax medulla than *P. patellata*. Perhaps the best separating character is the fact that the epithecium is almost always K- in *P. psammophila* and K+ red in *P. patellata*.



Peltula psammophila



Peltula psammophila

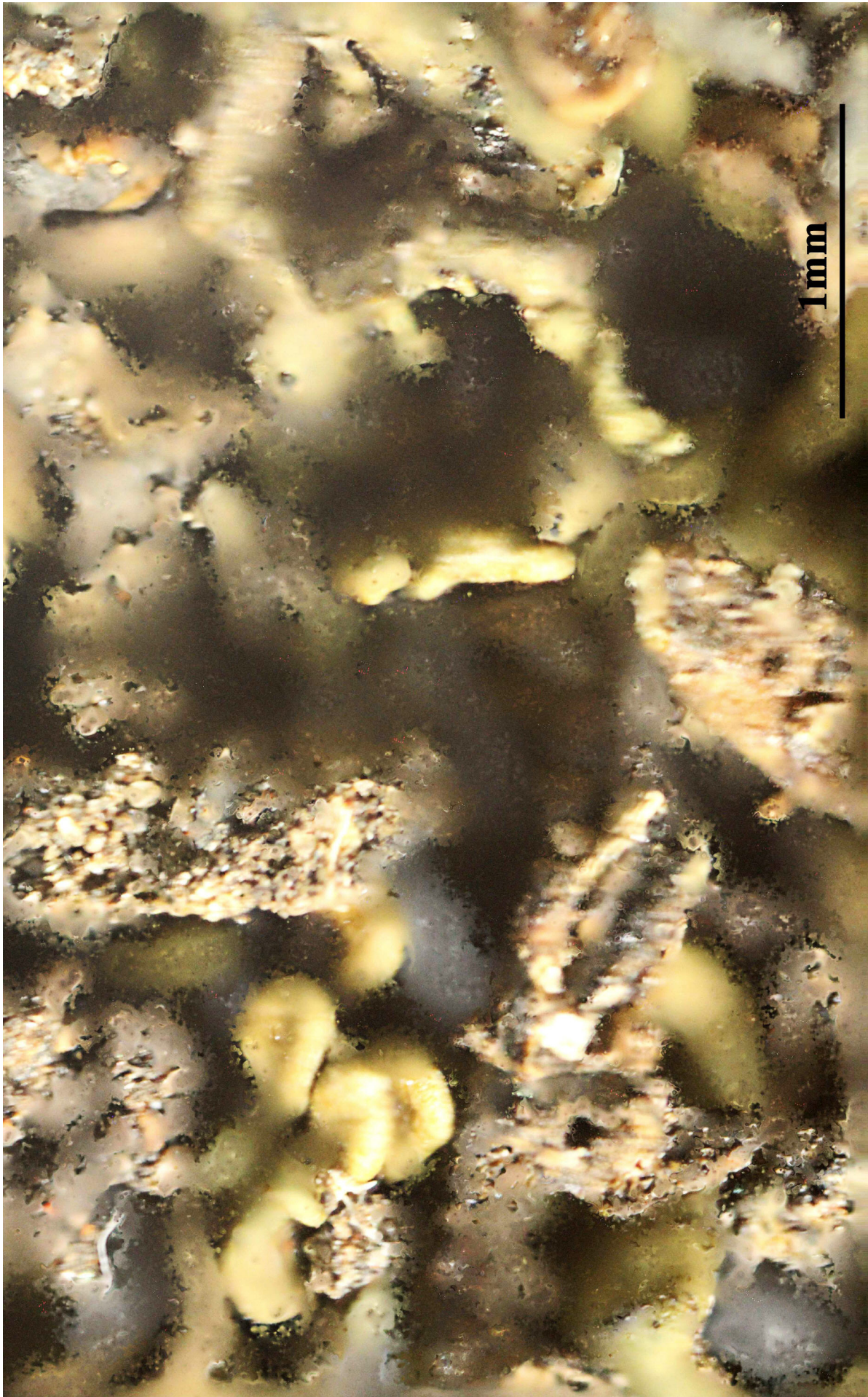
Peltula tortuosa (Nees) Wetmore, Ann. Mo. bot. Gdn 57(2): 205 (1971)
[1970]
= *Dufourea tortuosa* Nees 1820

[VZ2149], Tanzania. Morogoro, Mindu Hill loco Kasanga dicto, 640 m. Ad saxa granitica. Leg. T. Pócs (86148), det. A. Vězda. Ex A. Vězda Lichenes Selecti Exsiccati Nr. 2149.

Thallus suffruticose, often forming a tuft of aggregated thalli; lobate lobes upright, flattened, somewhat branched, often twisted, occasionally partially terete; lobes up to 8 (-15) mm long and 0.4-1 mm wide at top; upper surface dark olive-brown to olive-green, smooth, not sorediate; cortex not developed in the upper part of the lobes but surrounded by a yellow-brown epinecral layer (5-12 μm thick), forming a rudimentary cortex (consisting of several layers of globose cells) at the base of the lobes; medulla paraplectenchymatous, composed of loosely interwoven hyphae with large air spaces, giving the impression of a hollow thallus lobes; algal layer indistinctly delimited, scattered throughout; lower surface paler than the upper surface, attached by an umbilicus; Apothecia very rare, one the sides or in swollen ends of the lobes, several per lobe, immersed and punctiform; disc slightly enlarging when mature; epihymenium yellowish brown, K-; hymenium I+ wine-red, >100-spored; ascospores globose to subglobose, 4.5 x 3-4.5 μm ; Pycnidia immersed, spherical, on the sides or in swollen ends of lobes; conidia fusiform, 3.1-3.7 x 1.2 μm ; Spot tests all negative; Secondary metabolites none detected. Substrate and ecology: on granitic rocks in deserts and other open, arid habitats; World distribution India, southern North America, Venezuela, and southern and tropical Africa.



Peltula tortuosa

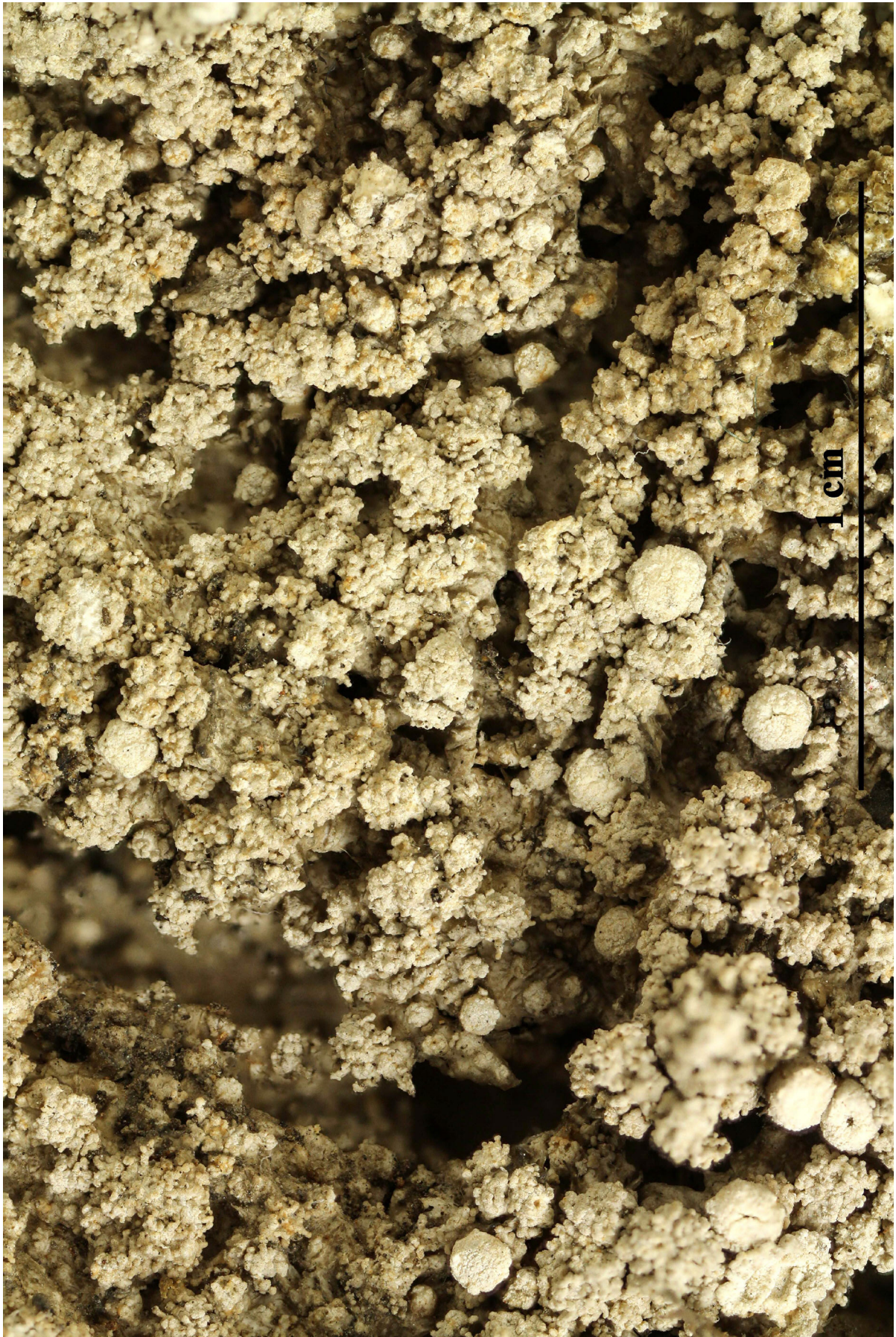


Peltula tortuosa

Pertusaria albescens (Huds.) M. Choisy & Werner, Cavanillesia 5: 165
(1932)
= *Lichen albescens* Huds. 1762
= *Lepra albescens* (Huds.) Hafellner, in Hafellner & Türk, Stapfia 104(1):
171 (2016)

[VZ1356], Bulgaria. Distr. Burčas, in silvis prope pagum Kondolovo,
350 m. Ad corticem *Quercuum* vetustarum. - cum apotheciis!. - . Leg.
A. Kiszely et A. Vězda, 17.8.1975. EX A. VĚZDA LICHENES SELECTI
EXSICCATI NR. 1356.

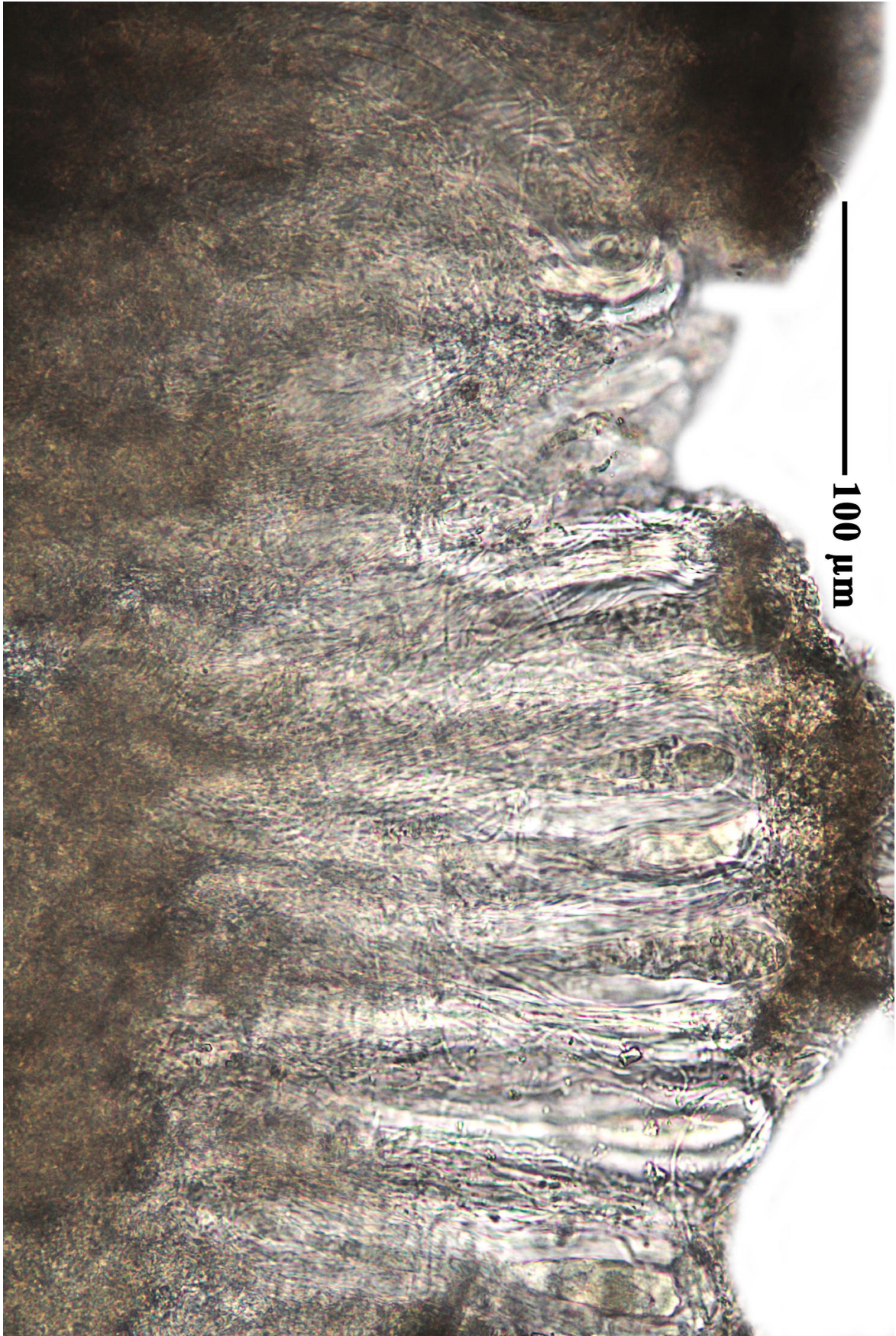
Thallus crustose, episubstratic, continuous to fissured, whitish, pale grey or pale greenish grey, usually conspicuously zoned at margins, delimited by a white prothallus, sorediate, not tasting bitter. Central parts of thallus with numerous, circular, 0.5-5 mm wide, usually concave to flattened, white soralia delimited by an often slightly raised thalline rim; soredia white, granular (the forms corresponding to *Pertusaria jurana* have hemispherical, basally constricted, 0.5-1 mm wide warts, the largest ones with an orbicular soralium surrounded by a thin, raised thalline rim). Apothecia extremely rare, immersed in soralia-like warts and not visible without sectioning the warts, often combined into a single wart, the disc densely white-pruinose. Hymenium colourless, the hymenial gel not or only weakly amyloid; paraphyses lax, branched and richly anastomosing; hypothecium colourless. Asci 1(-2)-spored, broadly cylindrical, the apex without a distinct ocular chamber, the outer sheath K/I+ blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid, (150-)170-200(-300) x (30-)50-90(-115) μm . Photobiont chlorococcoid. Spot tests: thallus and soralia K-, C-, KC-, P-, UV-. Chemistry: allopertusaric (major) and dihydropertusaric (minor) acids. - Note: a widespread, mainly temperate lichen found on bark, with optimum on old oaks, rare in agricultural areas (e.g. the Po-Plain) and in the Mediterranean belt, most common in deciduous open woodlands of the submediterranean and montane belts.



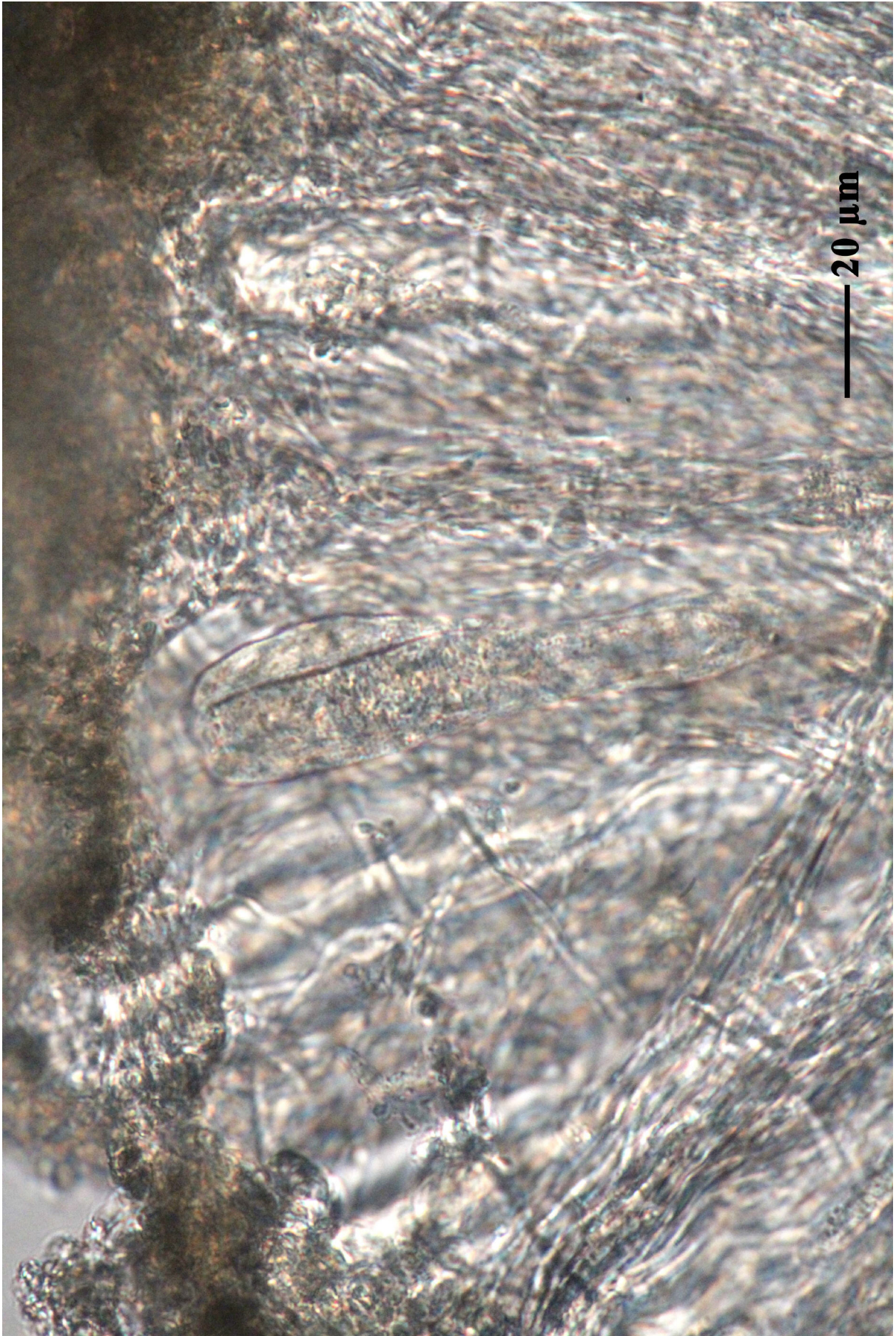
Pertusaria albescens



Pertusaria albescens



Pertusaria albescens



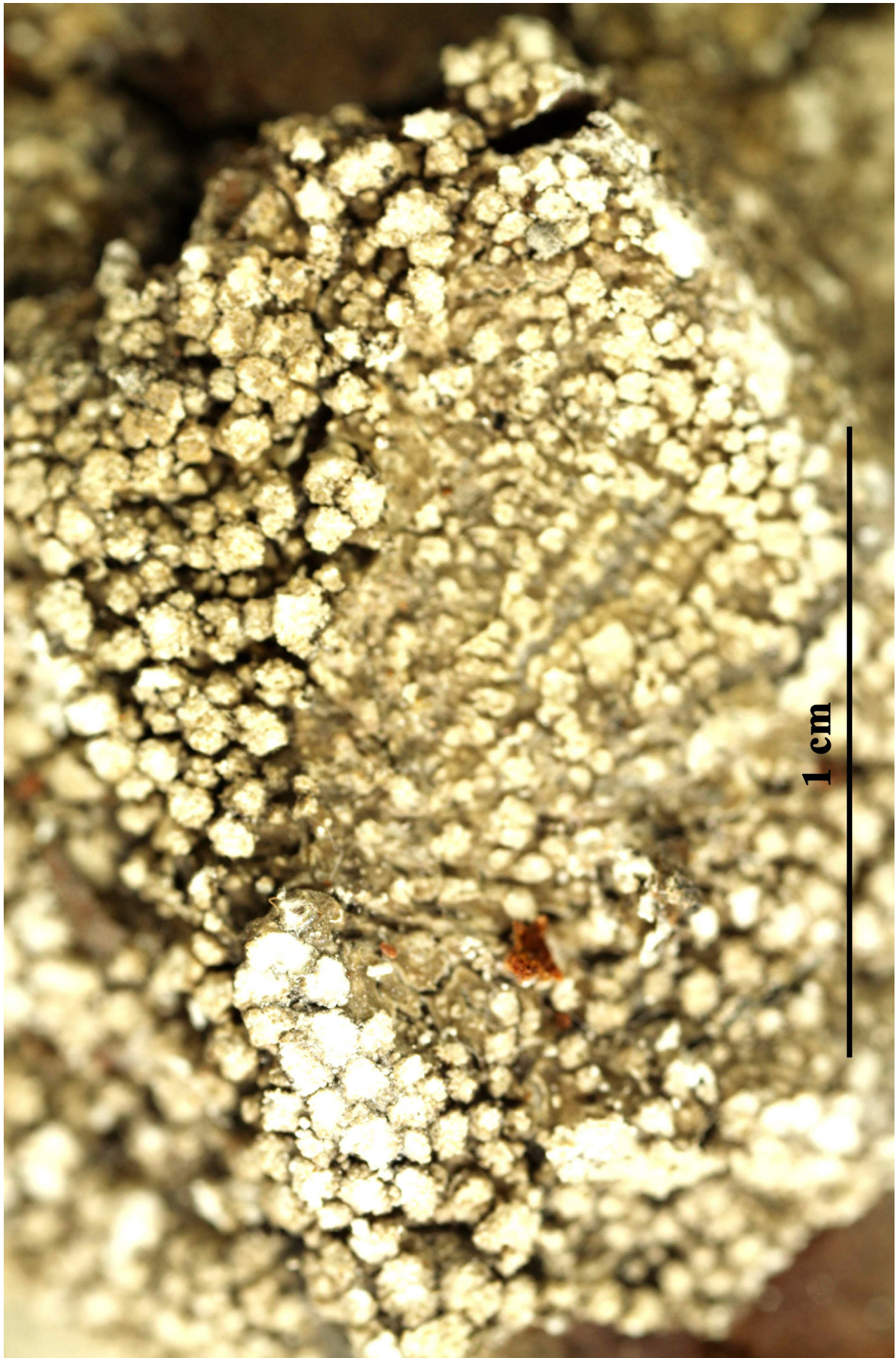
Pertusaria albescens

Pertusaria amara f. sanguinescens Erichsen, in Grummann, Feddes Re-
pert., Beih. 81: 31 (1935)

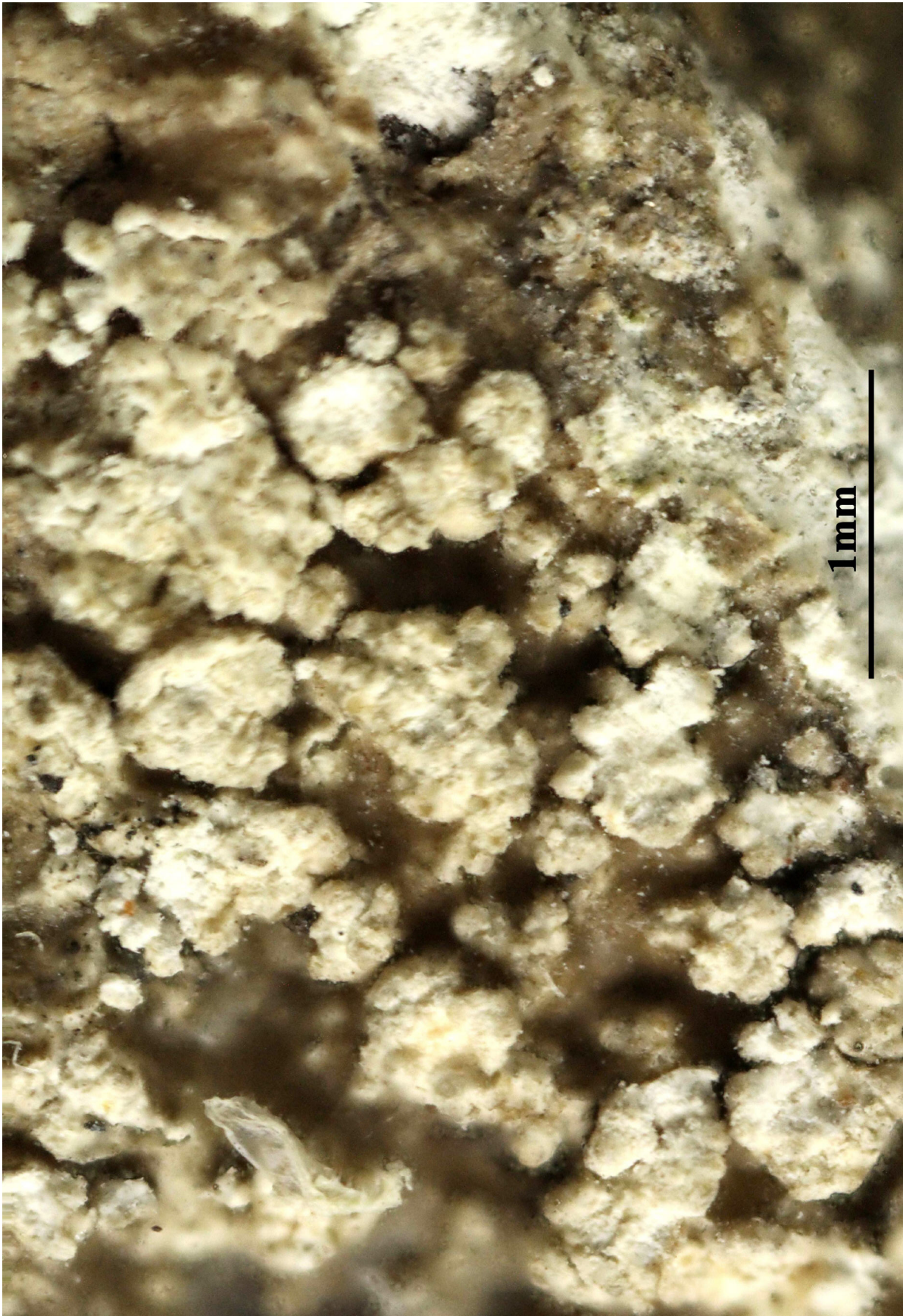
[VZ1109], Gallia. War, Insula Port-Cross: La Grande Garde, 100 m. Ad
corticem Pini Halepensis, Leg. Y. Rondon, 22.6.1972, det. A. Vězda.
EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1109.

Thallus crustose, episubstratic, continuous to fissured, whitish, pale
grey or pale greenish grey, often weakly zoned at margin, delimited by
a white prothallus, sorediate, tasting extremely bitter. Central parts of
thallus with numerous, circular, 0.5-1.5(-2) mm wide, white, usually
convex to hemispherical soralia which long remain discrete and are
sometimes arranged in concentric lines, rarely becoming confluent in
central parts. In some forms the thallus is densely covered in warts that
break down apically into small, elevated, punctiform soralia, never
forming discrete round soralia. Apothecia extremely rare, immersed in
soralia-like warts and not visible without sectioning the warts, the disc
densely white-pruinose. Hymenium colourless, the hymenial gel not or
only weakly amyloid; paraphyses lax, branched and richly anastomo-
sing; hypothecium colourless. Asci 1-spored, broadly cylindrical, the
apex without a distinct ocular chamber, the outer sheath K/I+ blue,
otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Asco-
spores 1-celled, hyaline, ellipsoid, 130-150 x 40-50 µm. Photobiont
chlorococcoid. Spot tests: cortex K- or K+ yellow turning orange-red,
C-, KC-, P- or P+ yellow to red; soralia and medulla K- or K+ yellow
turning orange-red, C-, KC+ fleeting violet, P- or P+ yellow to red,
UV-. Chemistry: picrolichenic acid; a chemotype with additional proto-
cetraric and conprotocetraric acids is also widespread. - Note: a wide-
spread holarctic lichen, certainly the most common epiphytic species.

f. *sanguinescens*: Sorale und Mark durch K langsam tiefrot oder blutrot
dur KC rasch und kräftig violett



Pertusaria amara f. *sanguinescens*

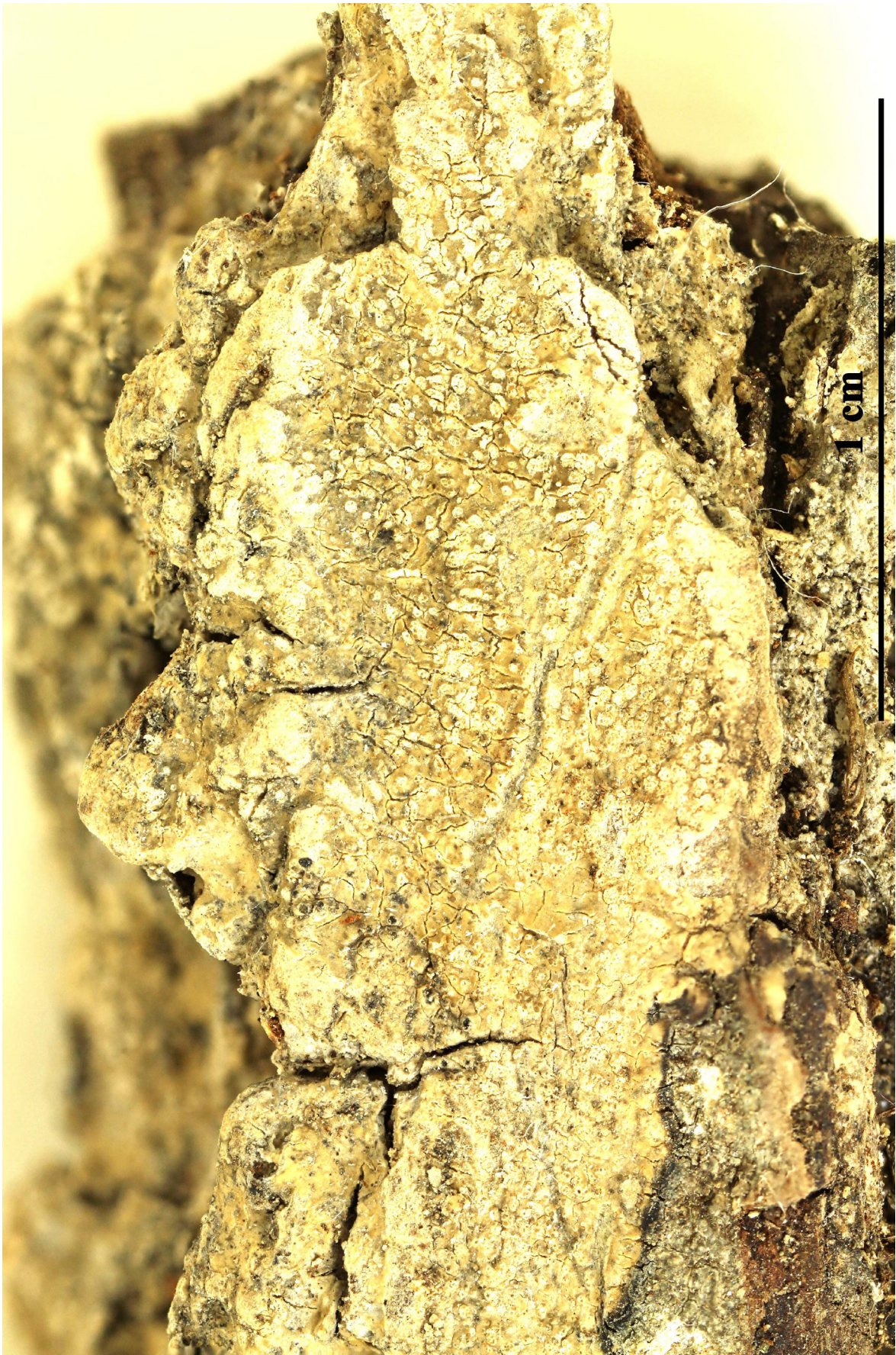


Pertusaria amara f. *sanguinescens*

Pertusaria coccodes (Ach.) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 116
(1858) [1857]
= *Lichen coccodes* Ach. 1799

[VZ1716], Magna Britannia. Anglia. South Hampshire, New Forest, Bramshaw Wood. Ad corticem arborum. Leg. F. Rose, 4.1976, det. P. W. James. - Annot.: norstictic and connorstictic acids, anal. from P. W. James with TLC. - EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1716.

Thallus crustose, thin to moderately thick, smooth to slightly verrucose, whitish, pale grey or brownish grey, usually well-delimited, sometimes with a pale grey to brown prothallus, isidiate. Isidia abundant, often clustered, globose to oval, not restricted at base, simple, rarely cylindrical and branched in shade-forms, to 0.4 mm thick, concolorous with thallus but the apex often darker, fragile and leaving circular scars when shed from which, albeit rarely, soredia may originate. Apothecia very rare, perithecioid, 1-1.5 mm diam., immersed into globose warts, the disc punctiform. Asci (1-)2(-4)-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I+ blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, thick-walled, narrowly fusiform, 100-180(-200) x 30-60 µm. Spot tests: thallus K+ yellow slowly turning blood-red, C-, KC-, P+ yellow to orange, UV-. Chemistry: norstictic and connorstictic acids. - Note: a mild-temperate lichen, locally common, especially along the Apennines, mostly on old oaks or beech trees in open situations, with optimum in open oak woodlands, much more rarely - in western Europe - on siliceous rocks.



Pertusaria coccodes

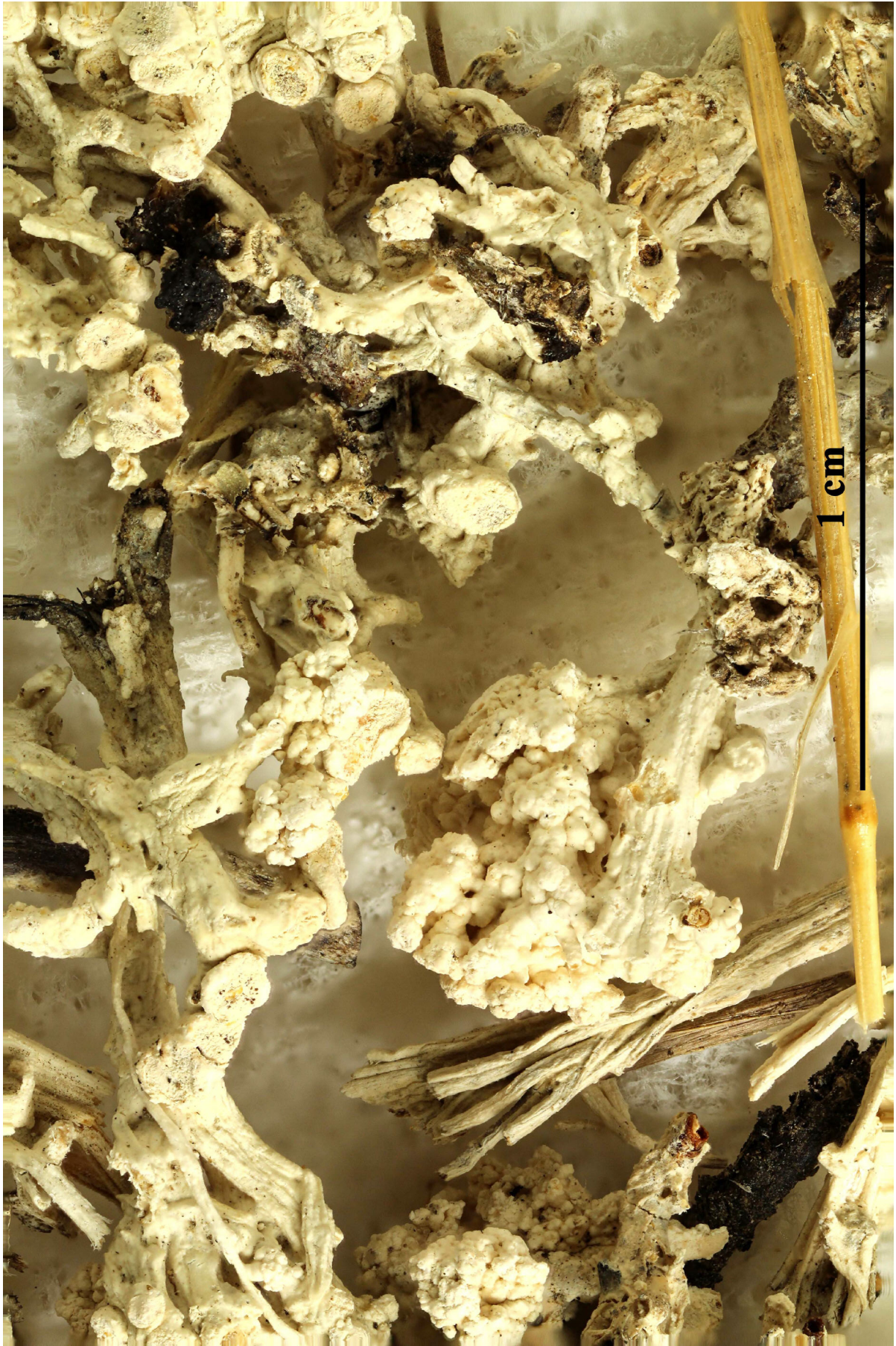


Pertusaria coccodes

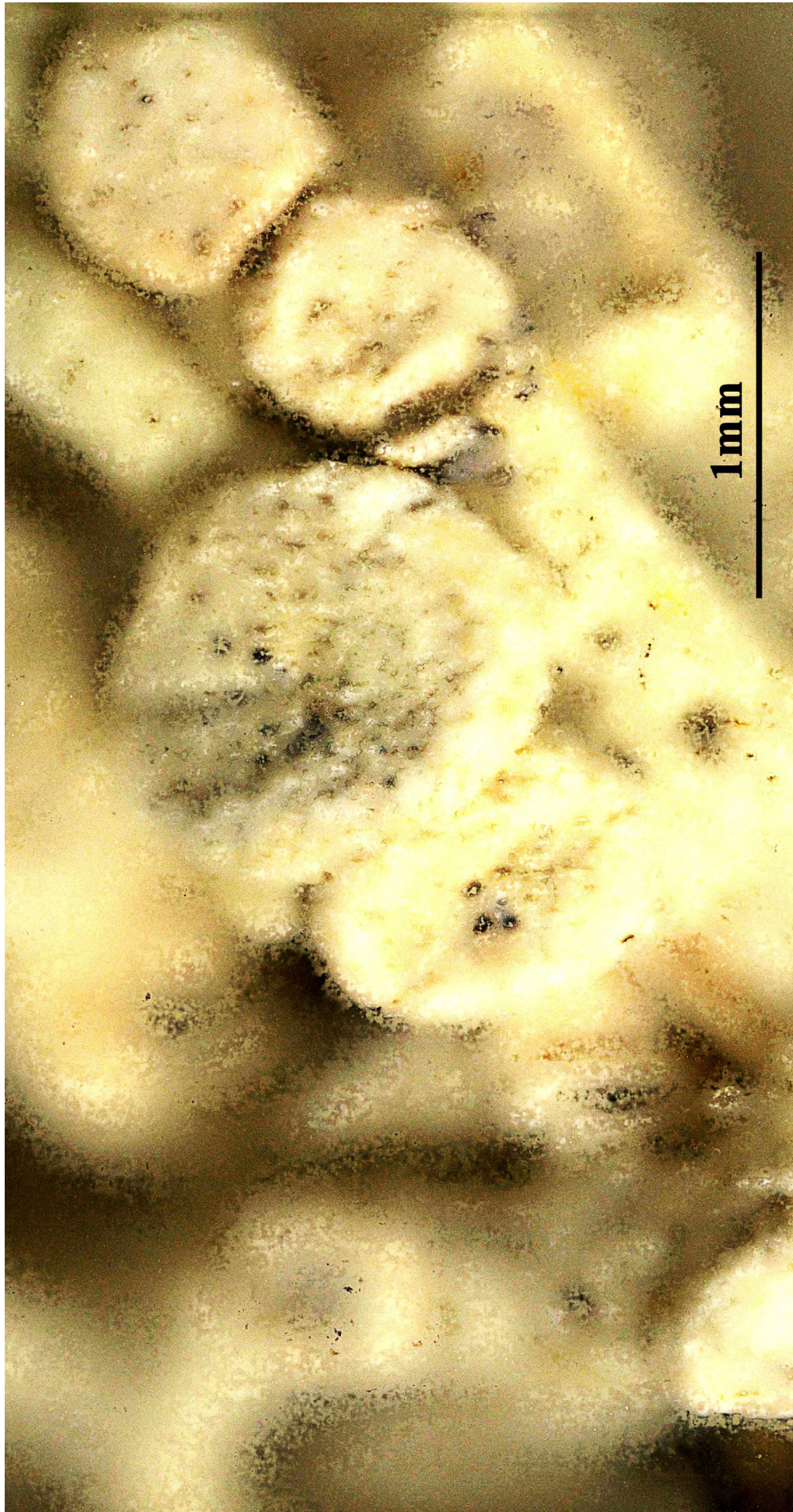
Pertusaria culbersonii Vězda, Lichenes Selecti Exsiccati, Fasc. (Průhonice)
60: 4 (no. 1487) (1977)
= *Varicellaria culbersonii* (Vězda) I. Schmitt & Lumbsch, in Schmitt,
Otte, Parmen, Sadowska-Deś, Lücking & Lumbsch, MycoKeys 4: 29 (2012)

[VZ1487], Costa Rica. San José: Cerro de la Muerte, in loco dicto
Asunción, secus viam dictam Carretera unteramericana, 3330 m. Ad
terram supra plantas emortuas. Leg. W. L. Culberson (n0. 13195),
3.1976. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1487.

Species subgeneris *Lecanorastrum* Müll. Arg. - Thallus plantas des-
tructas obducens, albidus, continuus, laevigatus, disperse verrucosus,
verrucis vulgo conglomeratis tubera nodosa haud soresiosa formanti-
bus, K-, C+ sanguinescens, P-. Apothecia 1-1.5 mm lata, aggregata,
ochrolechioidea, crasse marginata, thallo concoloria, discis pruina albi-
da dense tectis. Hymenium 300-350 µm, altum, pruina 100 µm crassa.
Sporae solitariae, anguste ellipsoideae, 160-190 x 70-80 µm, pariete
laevi, 7-8 µm crasso.



Pertusaria culbersonii

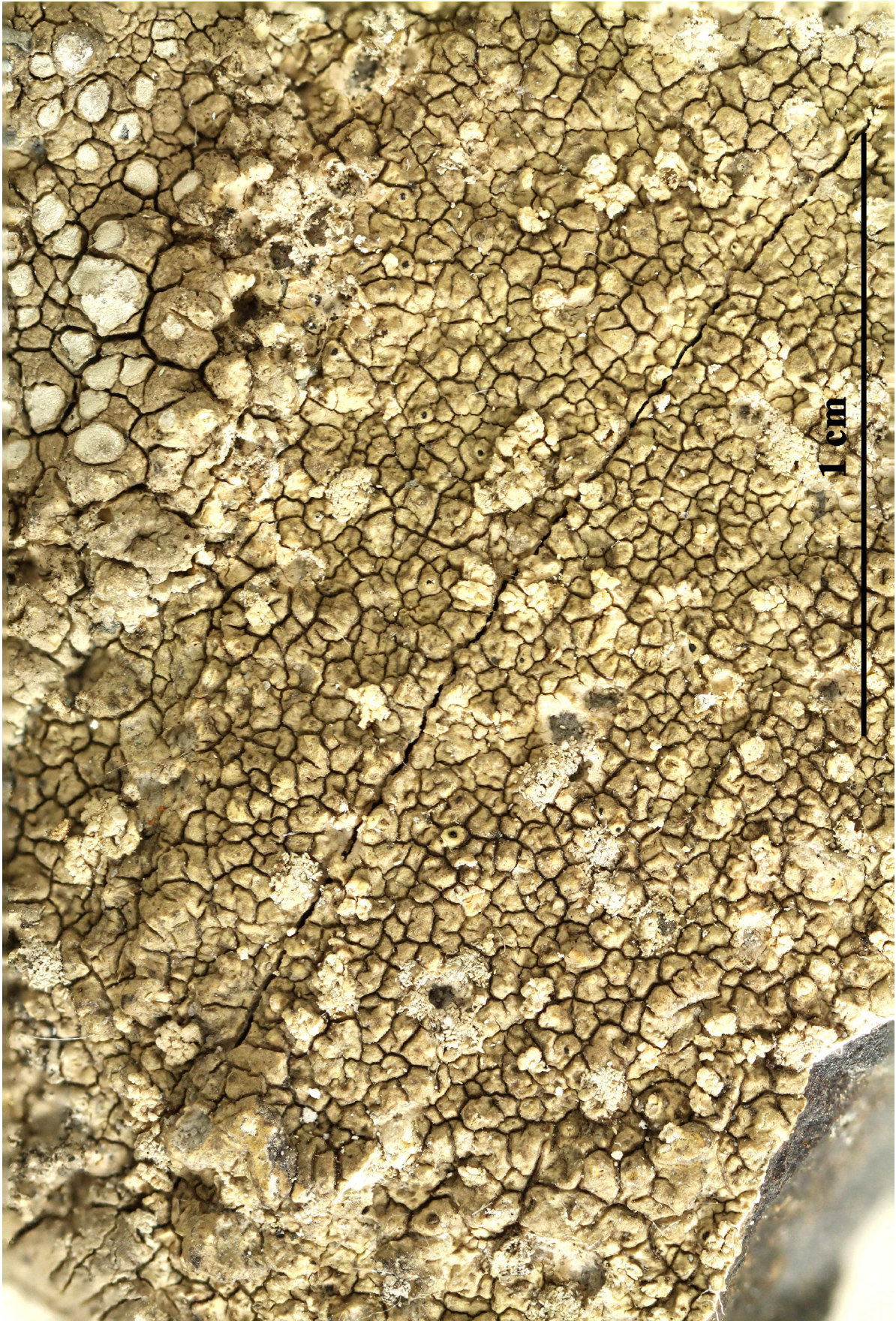


Pertusaria culbersonii

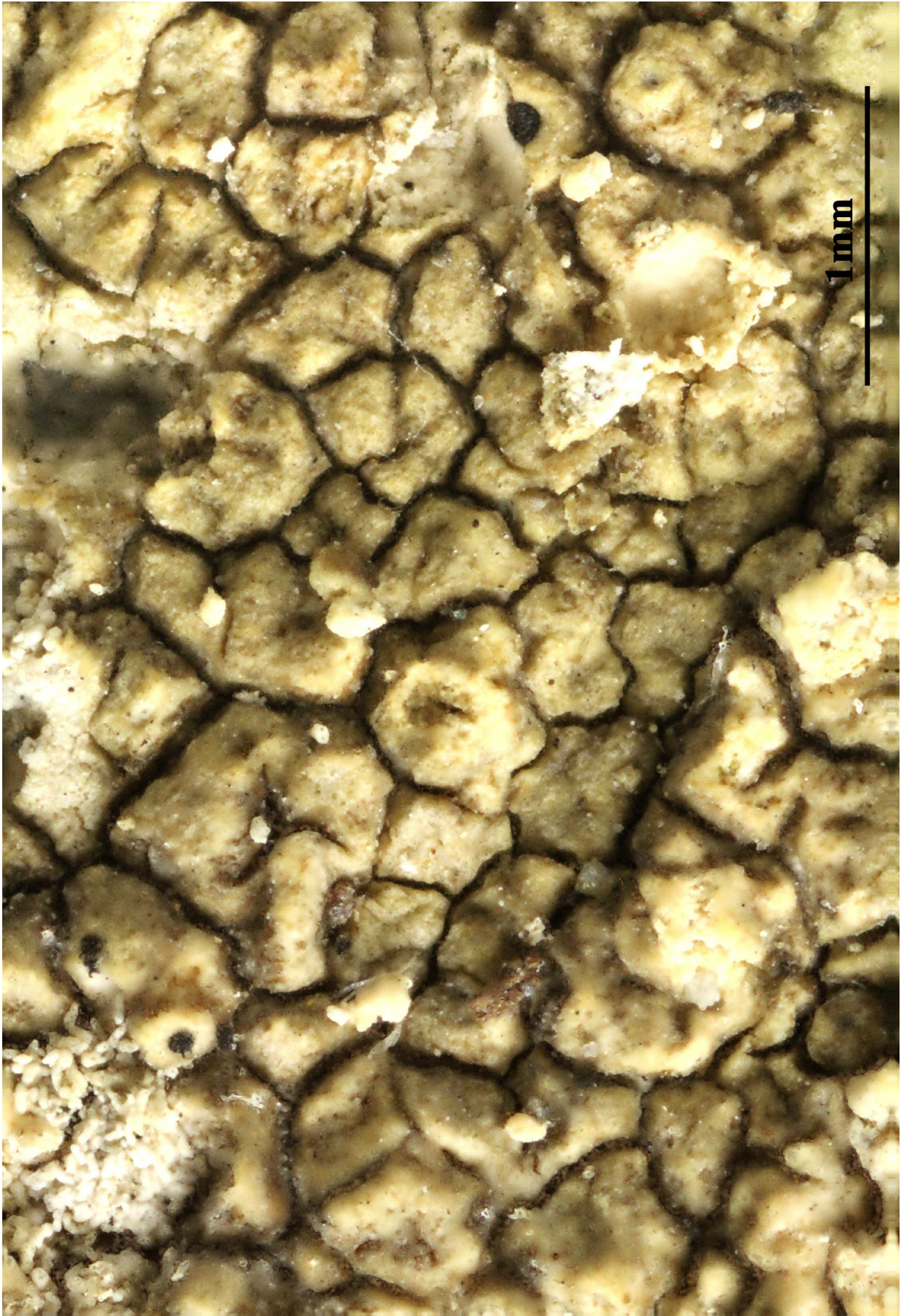
Pertusaria flavicans Lamy, Bull. Soc. Bot. France 25(5): 427 (1880) [1878]

[VZ1404], IRSS. Caucasus Magnus, Osetija Sept., distr. Ordžonnikidze: in valle 30 km occidentem versus ab urbe Ordžonnikidze, loco Karmadon dicto, 1200 m. Ad rupes schictosas. Leg. A. Vězda, 1.6.1976. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1404.

Thallus crustose, episubstratic, rather thick, yellowish to greyish green, rimose-areolate, forming large patches, sometimes delimited by a pale prothallus, sorediate, the areoles flat to convex, 0.5-1.5(-2) mm wide. Soralia 0.4-1.2 mm across, at first orbicular, then often confluent, yellowish green (paler than thallus); soredia coarsely to finely granular, 35-90 μm . Apothecia rare, lecanorine, immersed in thalline warts, with an initially punctiform, later expanded disc. Epithecium K⁺ violet; hymenium and hypothecium colourless. Asci 8-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I⁺ blue, otherwise K/I⁻, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid, 60-75 x 20-30 μm . Photobiont chlorococcoid. Spot tests: thallus and soralia K⁻, C⁺ orange, KC⁺ orange, P⁻, UV⁺ orange (soralia UV⁺ brighter orange), UV⁺ orange. Chemistry: thiophaninic acid and variable amounts of O-methylmonochlornorlichexanthone. - Note: on base-rich or calciferous siliceous rocks, especially calciferous schists, mostly on sheltered, steeply inclined surfaces; of the two chemical strains known from Europe, only that with the more complex set of secondary compounds occurs in the central and southern parts of the continent.



Pertusaria flavicans

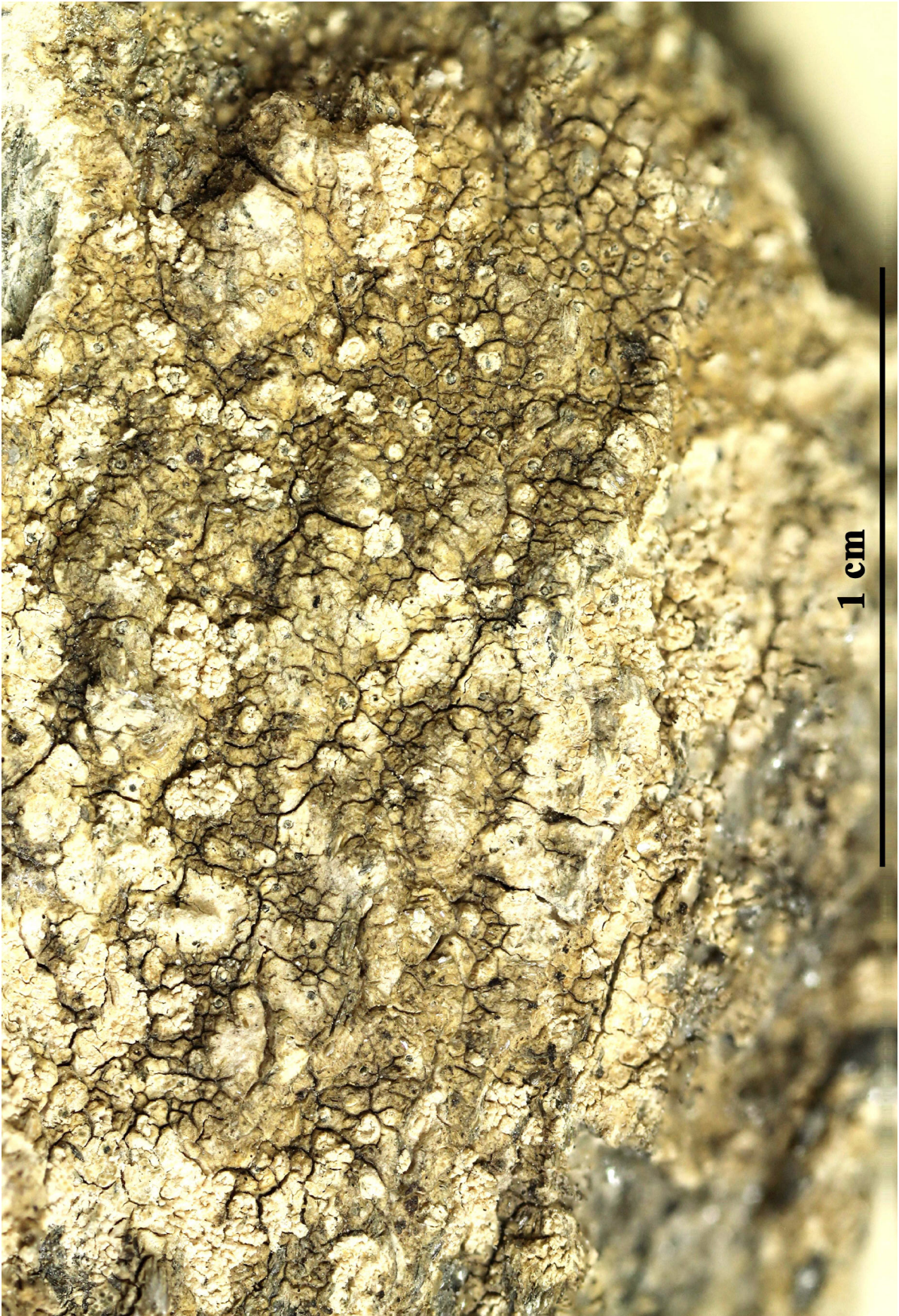


Pertusaria flavicans

Pertusaria flavicans var. *schistosa* Erichsen, Rabenh. Krypt.-Fl., Edn 2
(Leipzig) 9(5.1): 632 (1936)
= *Pertusaria amarescens* Nyl. Flora, 57: 311, 1874.
= *Pertusaria affinis* Erichsen
= *Pertusaria coudercii* Harm.
= *Pertusaria flavicans* var. *coudercii* (Harm.) Erichsen

[VZ1188], Bohemoslovakia. Slovakia, Carpati, montes Liptovské hole:
in valle Zdiarská dolina, in pede montis Baranec, 1300 m. Ad saxa
calcareo. Leg. A. Vězda, 1.1973. EX A. VĚZDA LICHENES SELECTI
EXSICCATI NR. 1188.

Thallus crustose, episubstratic, rather thin, continuous to rimose, pale grey or whitish grey, sometimes with a yellowish tinge, at first radiately rimose, later rimose-areolate, sorediate. Soralia maculiform, 0.3-0.8 mm across, slightly paler than thallus, at first orbicular, then often confluent and diffuse, especially in central parts of thallus. Apothecia and pycnidia unknown. Spot tests: thallus K+ yellow, C+ orange, KC+ orange, P-; soralia P+ brick-red (slow reaction), UV+ pale orange and more or less spotted blue-white. Chemistry: thiophaninic, stictic, menegazziaic acids and variable amounts of norstictic acid. Note: on basic or slightly calciferous siliceous rocks.



Pertusaria flavicans var. *schistosa*

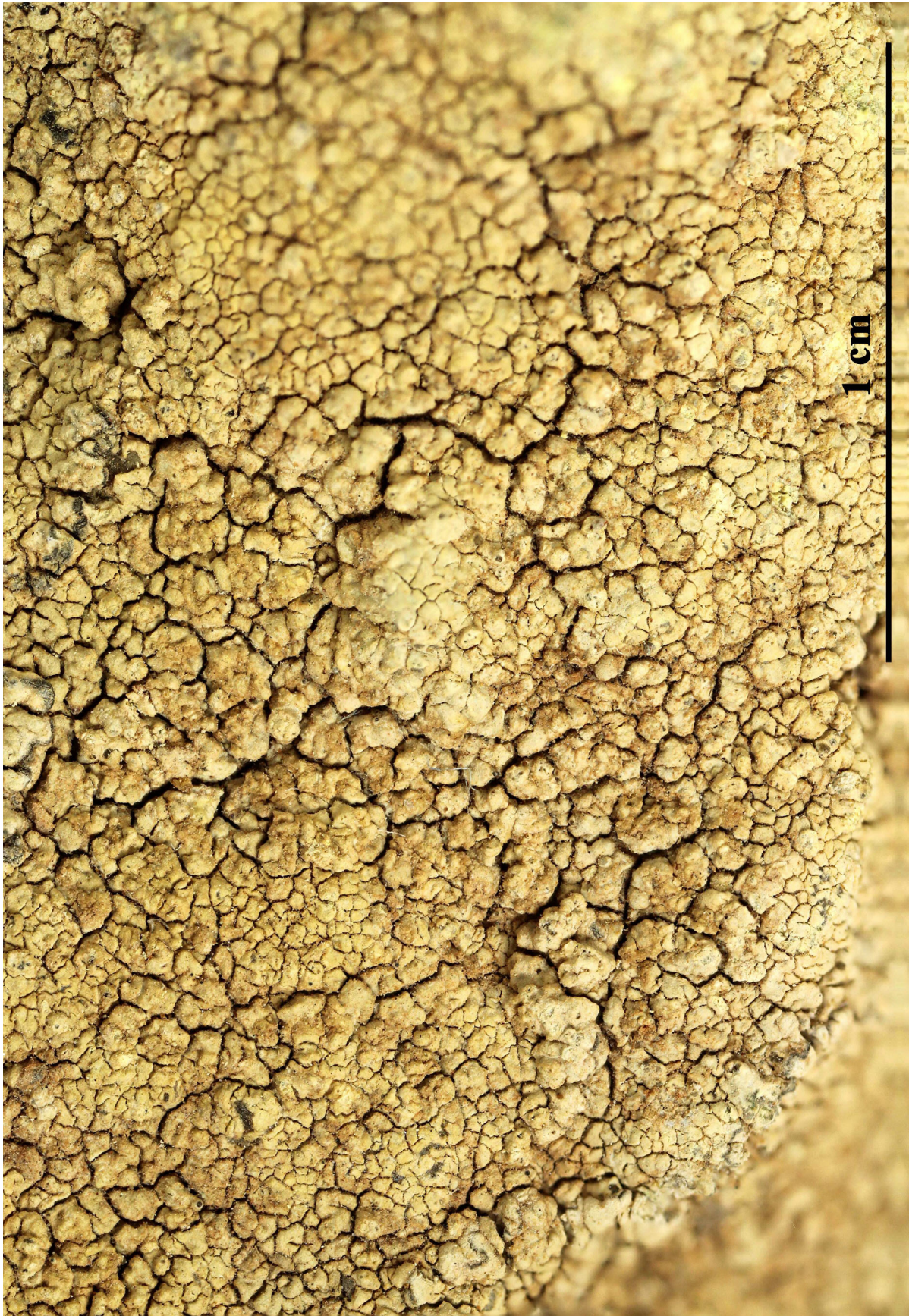


Pertusaria flavicans var. *schistosa*

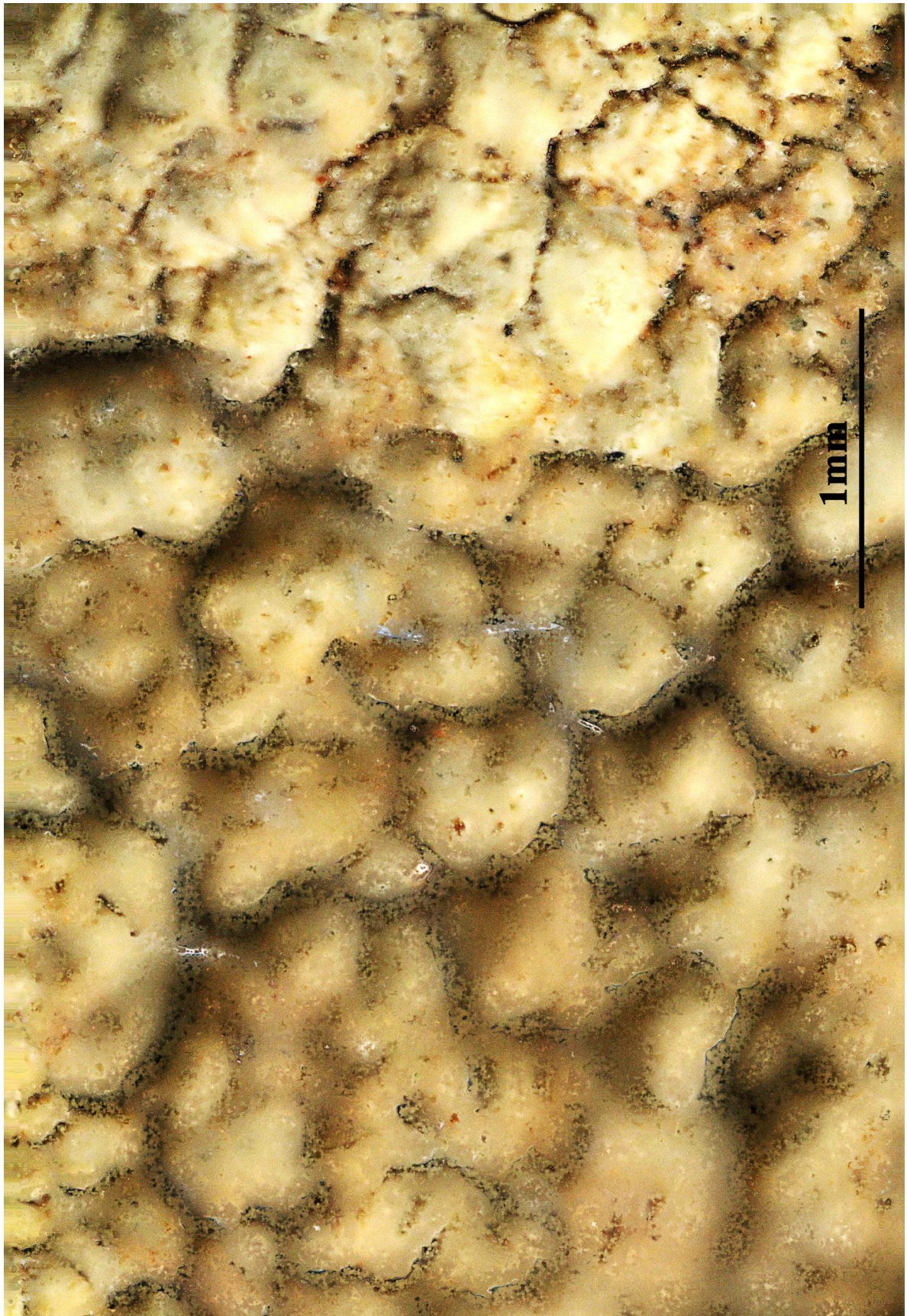
Pertusaria gallica B. de Lesd., Bull. Soc. Bot. France 72: 788 (1925)
= *Pertusaria pluripuncta* Nyl., Flora, Regensburg 66(34): 532 (1883)

[VZ1998], Hispania. Prov. Murcia: Cabo de Palos, insula Perdiguera. Ad rupes andesiticas. Leg. J. M. Egea, 4.3.1984. EX A. VĚZDA LICHE-
NES SELECTI EXSICCATI NR. 1998.

Thallus crustose, episubstratic, thin to rather thick, smooth to rimose-areolate, markedly verrucose in central parts, yellowish grey or greenish grey, often delimited by a pale to dark prothalline line, or narrowly zoned. Apothecia rare, immersed in 0.5-2 mm wide fertile warts which are expanded at base and often flattened at top, 1(-3) per wart, with an initially punctiform, later expanded, 0.3-0.5 mm wide, ochre yellow to black disc and a prominent thalline margin. Epithecium brownish, K- or K+ violet; hymenium and hypothecium colourless; paraphyses branched, c. 2 μm thick. Asci 2-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I+ blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline or pale grey, ellipsoid, 70-140 x 25-60 μm , 3-layered, the wall 10-15 μm thick, transversely striate, the inner wall with a rough surface. Pycnidia black, immersed. Conidia bacilliform, 15-20 μm long. Photobiont chlorococcoid. Spot tests: thallus K+ pale yellow, C+ orange, KC+ orange, P+ orange, UV+ deep orange-red. Chemistry: thiophanic and stictic acids, sometimes with variable, usually low amounts of norstictic, cryptostictic, constictic, hypostictic and menegazziaic acids. - Note: a characteristic species of coastal communities on base- or mineral-rich siliceous rocks, where it can be very abundant; exclusively Tyrrhenian in Italy. For synonymies see Lumbsch & al. (1993).



Pertusaria gallica



Pertusaria gallica

Pertusaria graphica C. Knight, Trans. Proc. N.Z. Inst. 8: 313 (1876) [1875]

[VZ1832], Nova Zelandia. South Island, Otago: Tikoraki Point prope Hampden, 25°22' austr., 179°52' orient. Ad scopulos arenaros. Leg et det. L. Tibell (no. 10807), 10.11.1981. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1832.

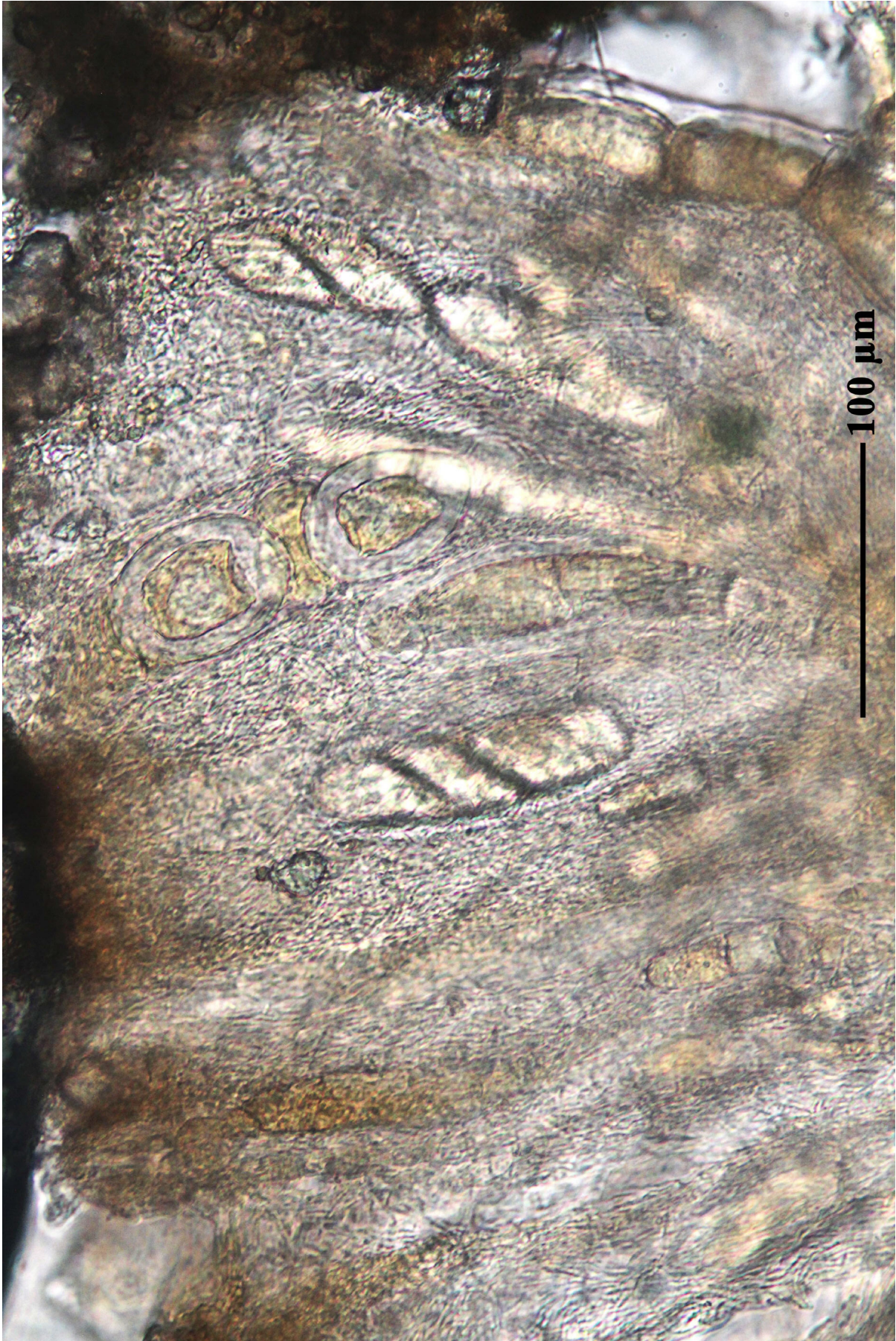
Thallus thick, chalky white or creamish-white, areolate-cracked or ± continuous or irregularly cracked to verrucose-uneven or plicate-rugose, surface smooth coriaceous, to ± roughened-tartareous, spreading in irregular often coalescing patches, 2-5(-20) cm diam. Fertile verrucae round to irregular, ± hemispherical, apex flattened or ± eroded and level with thallus surface, 1-8 mm diam., with 1-5 apothecia per verruca. Apothecia immersed, disc black or dark brown, epruinose, round to irregular and becoming ± stellate, 0.2-1.0 mm diam., often absent. Asci clavate, 4-spored. Ascospores uniseriate, oval 61-91.3(-115) × 30-43.5 μm. Wall 4-5 μm thick. Chemistry: K+ yellow → red, C-, KC+ red, Pd+ orange. Norstictic and connorstictic acids.



Pertusaria graphica



Pertusaria graphica



Pertusaria graphica

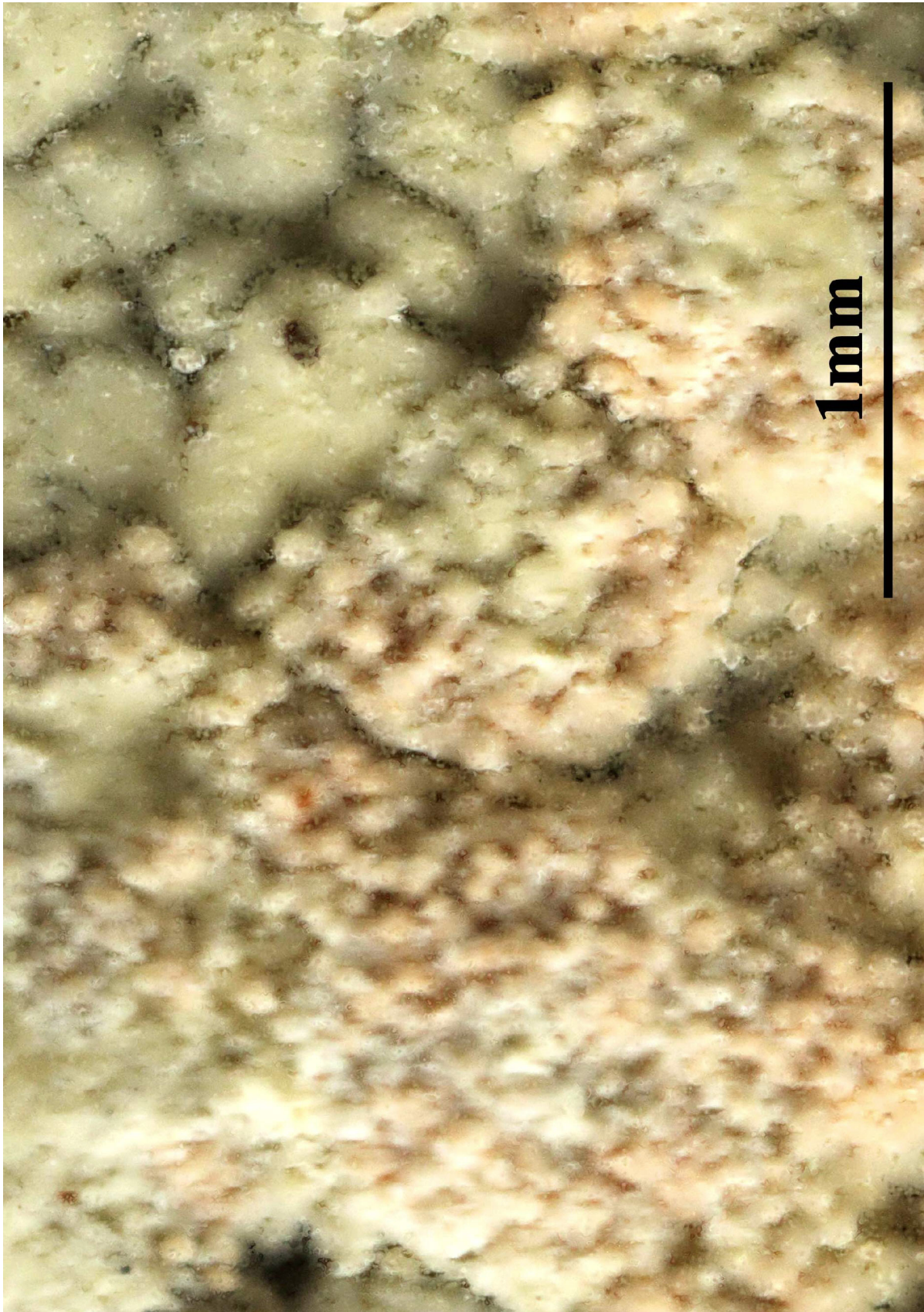


Pertusaria graphica

Pertusaria hemisphaerica (Flörke) Erichsen, Hedwigia 72: 85 (1932)
= *Variolaria hemisphaerica* Flörke 1815
= *Varicellaria hemisphaerica* (Flörke) I. Schmitt & Lumbsch, in Schmitt,
Otte, Parmen, Sadowska-Deś, Lücking & Lumbsch, MycoKeys 4: 29 (2012)

[VZ1717], Magna Britannia. Anglia. Shropshire, Stiperstones. Ad corticem arborum. Leg. P. W. James 4.1976. -TLC Lecanoric acid anal by P. W. James. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1717.

Thallus crustose, rather thick, white-grey to pale grey, often with a bluish tinge, smooth to cracked or slightly warted, sometimes wrinkled, forming large patches delimited by a white, rarely brownish, often zoned prothallus. Soralia rounded, 0.8-1.5(-2) mm across, usually discrete and strongly convex, sometimes coalescing when old, especially in central parts of thallus, not constricted at base, white to pale green-grey, the soralia granular, 40-100 µm in diam. Cortex thin, cartilaginous, paraplectenchymatous, of thick-walled, agglutinated hyphae; medulla white, of periclinally arranged hyphae. Apothecia unknown. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P; soralia K-, C+ carmine red; KC+ red, P-, UV+ bluish white. Chemistry: lecanoric acid (major), plus additional unknown substances. - Note: a mild-temperate species found on old deciduous trees, mainly oaks, in open forests, widespread throughout the country but not common, with optimum below the montane belt. For further details see Kosecka & Oset (2024).



Pertusaria hemisphaerica

Pertusaria leptospora Nitschke ex Nyl., Flora, Regensburg 63(25): 393
(1880)
= *Lepra multipuncta* (Turner) Hafellner, in Hafellner & Türk, Stapfia
104(1): 173 (2016)

[VZ1522], Persia borealis. Prov. Gorgan, Shahi, 6 km ad occidentem
versus a vico Zirag. Ad corticem *Diospyros lotus*. Leg. J. Soják,
24.6.1977, det A. Vězda. EX A. VĚZDA LICHENES SELECTI EXSICCATI
NR. 1522.

Thallus crustose, episubstratic, ash-grey to bluish grey, 1-3 mm thick,
sometimes thinner, continuous to rimose, coarsely warted, usually
well-delimited by a pale prothallus. Fruiting warts 0.5-1.5(-2) mm
across, flattened, covered in white, granular soredia. Apothecia immer-
sed in the fruiting warts (and hence visible only when these are section-
ed), 1-2(-5) per wart, with a pale yellowish brown to blackish brown,
white-pruinose, c. 0.5(-1) mm wide disc. Asci 1-spored, cylindrical,
with thick, amyloid walls, *Pertusaria*-type. Ascospores 1-celled, elon-
gate-ellipsoid to cylindrical, 90-180(-200) x 30-60(-70) μm , the wall up
to 10 μm thick, uniform. Photobiont chlorococcoid. Spot tests: cortex
and soralia K⁺ yellow-brown, C⁻, KC⁺ yellow, P⁺ bright orange-red,
UV⁻ or faintly glaucous. Chemistry: physodalic acid (major), proto-
cetraric acid (traces). - Note: a mainly temperate species found on
smooth bark of deciduous trees (especially *Carpinus* and *Fagus*) in
open, humid deciduous woodlands.



Pertusaria leptospora

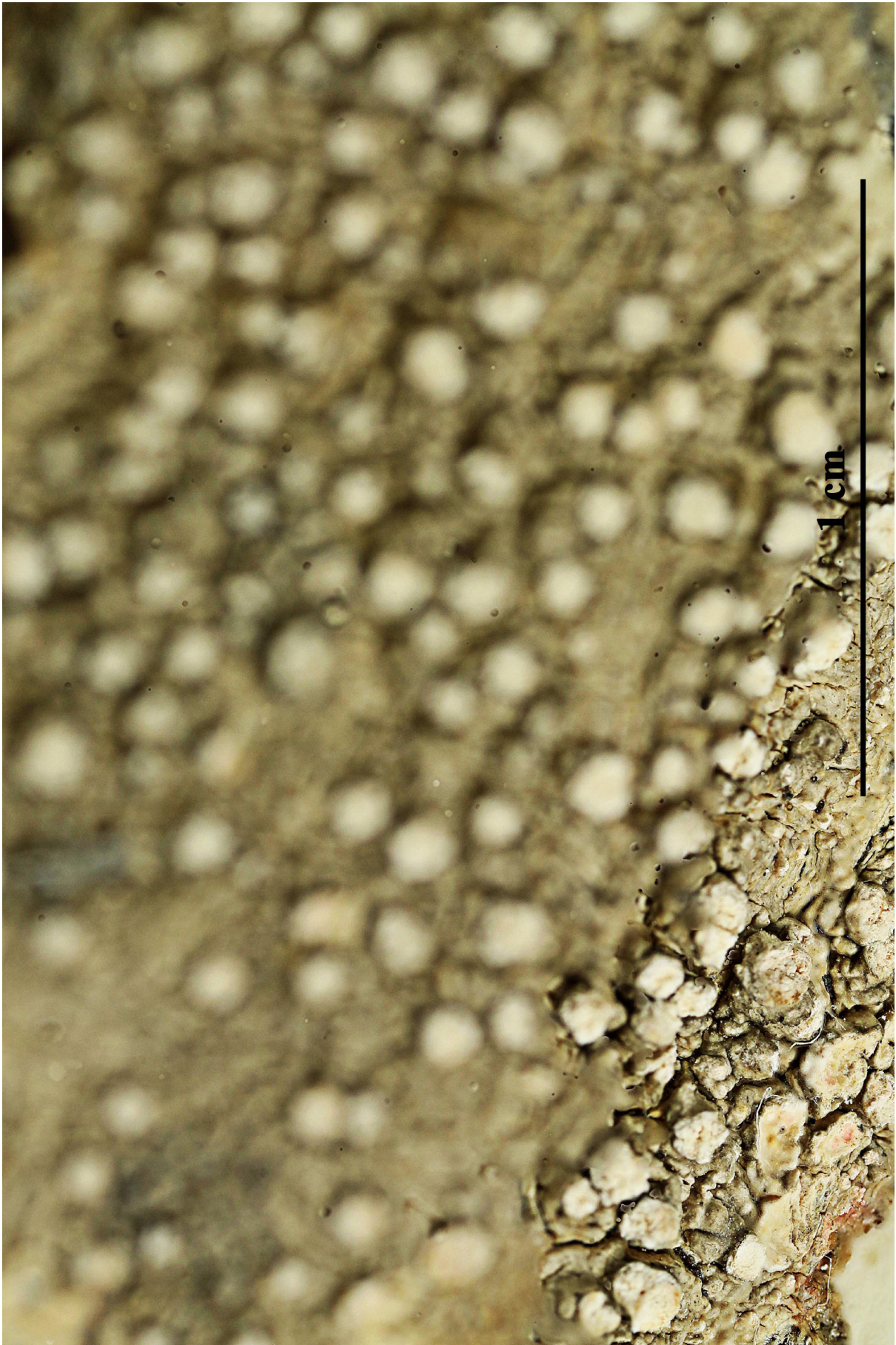


Pertusaria leptospora

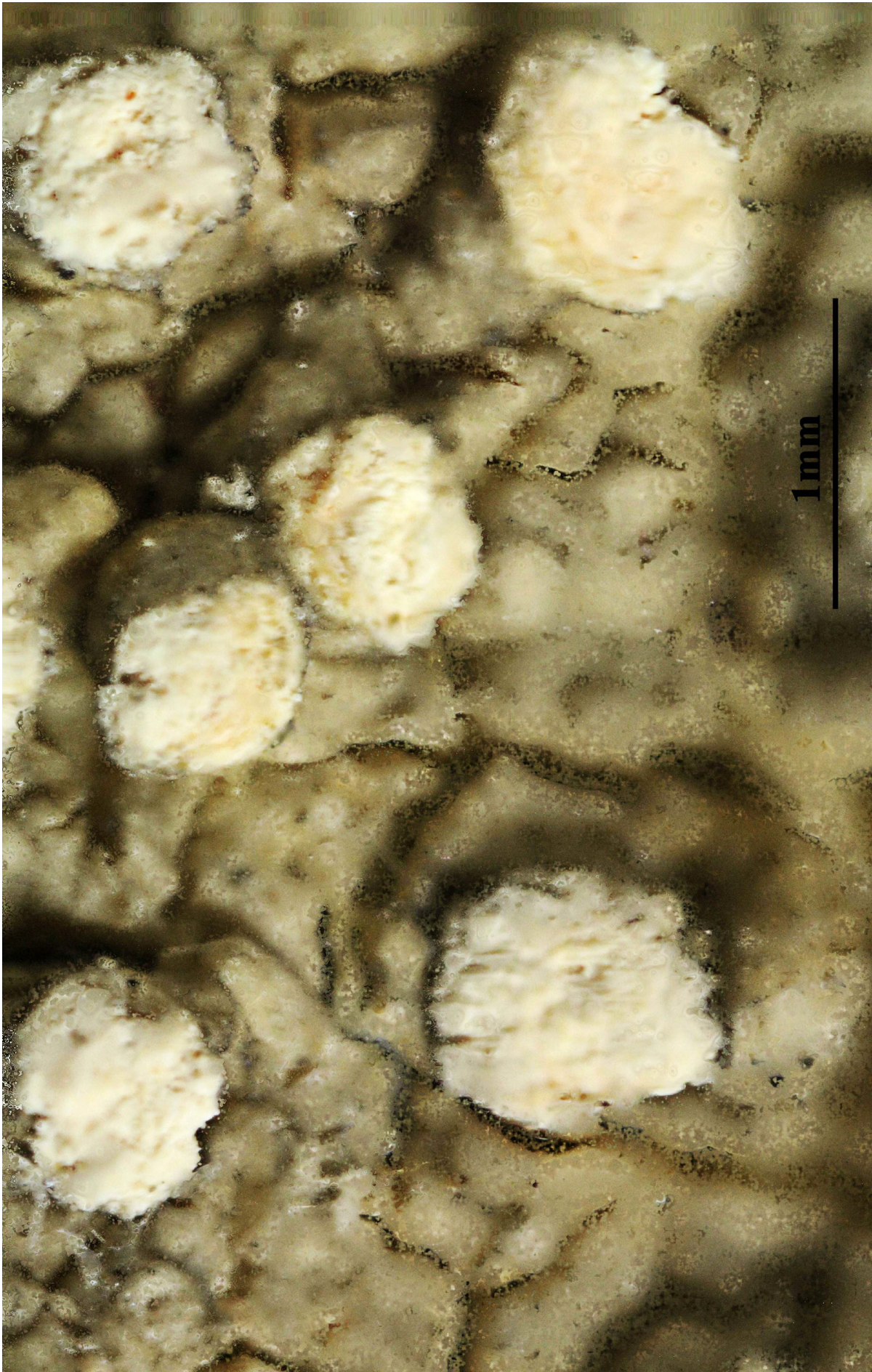
Pertusaria leptospora Nitschke ex Nyl., Flora, Regensburg 63(25): 393 (1880)
= *Lepra multipuncta* (Turner) Hafellner, in Hafellner & Türk, Stapfia 104(1): 173 (2016)

[VZ1110], Romania. Distr. Hunedoara. Montes Retezat. I valle Rivul Mare, 950 m. Ad corticem Alni incanae. Leg. I. Pišút et A. Vězda, 7.6.1972. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1110.

Thallus crustose, episubstratic, ash-grey to bluish grey, 1-3 mm thick, sometimes thinner, continuous to rimose, coarsely warted, usually well-delimited by a pale prothallus. Fruiting warts 0.5-1.5(-2) mm across, flattened, covered in white, granular soredia. Apothecia immersed in the fruiting warts (and hence visible only when these are sectioned), 1-2(-5) per wart, with a pale yellowish brown to blackish brown, white-pruinose, c. 0.5(-1) mm wide disc. Asci 1-spored, cylindrical, with thick, amyloid walls, *Pertusaria*-type. Ascospores 1-celled, elongate-ellipsoid to cylindrical, 90-180(-200) x 30-60(-70) μm , the wall up to 10 μm thick, uniform. Photobiont chlorococcoid. Spot tests: cortex and soralia K⁺ yellow-brown, C⁻, KC⁺ yellow, P⁺ bright orange-red, UV⁻ or faintly glaucous. Chemistry: physodalic acid (major), protocetraric acid (traces). - Note: a mainly temperate species found on smooth bark of deciduous trees (especially *Carpinus* and *Fagus*) in open, humid deciduous woodlands.



Pertusaria leptospora

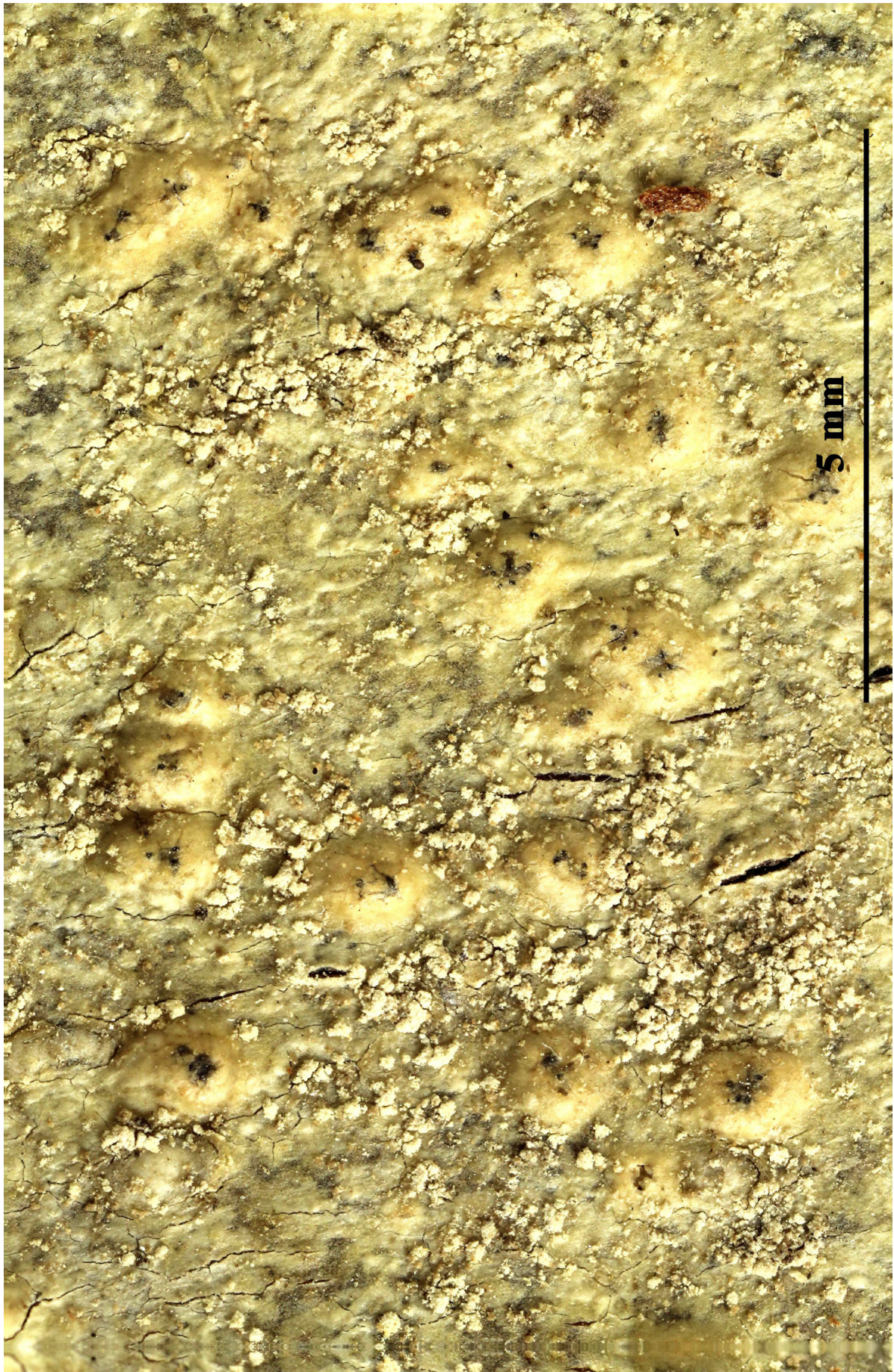


Pertusaria leptospora

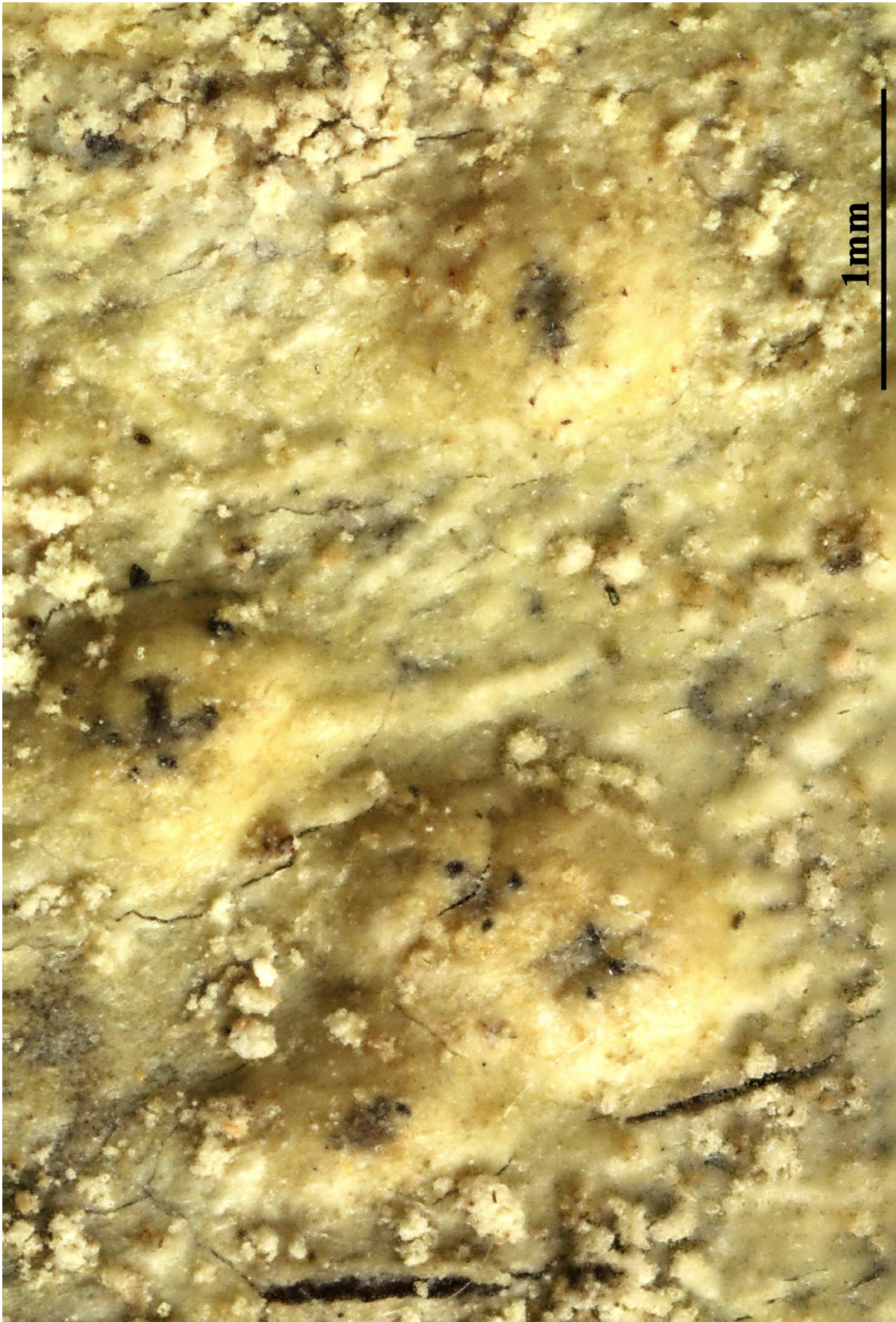
Pertusaria leucostoma (Ach.) A. Massal., Ric. auton. lich. crost. (Verona):
188 (1852)
= *Thelotrema leucostomum* Ach. 1803
= *Pertusaria leioplaca* (Ach.) DC., Fl. franç., Edn 3 (Paris) 5/6: 173 (1815)

[VZ2207], Italia. Sardinia, Nuoro: Catena deö Marghine, Badde Sa-
lighes, 950 m. Ad corticem *Castaneae sativae*. Leg. J. Poelt, C. Schei-
degger et A. Vězda, EX A. VĚZDA LICHENES SELECTI EXSICCATI NR.
2207.

Thallus crustose, thinly episubstratic or partly endosubstratic, continuo-
us to (rarely) finely cracked, whitish, ash-grey or yellowish grey,
smooth to tuberculate, densely covered with clusters of small crystals,
unzoned. Apothecia perithecioid, completely immersed in scattered,
basally enlarged. 0.5-1.5(-2.5) mm wide, conical, often flat-topped
fertile warts opening through a punctiform ostiole, with 1-2(-4) ostioles
per wart. Epithecium colourless to dark brown to black-brown, K-;
hymenium colourless; paraphyses lax, branched and richly anastomo-
sing; hypothecium colourless to pale yellow. Asci (3-)4-spored, broadly
cylindrical, the apex with a broad ocular chamber, the outer sheath K/I+
blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type.
Ascospores 1-celled, hyaline, ellipsoid, (40-)50-90(-130) x (20-)25-
40(-50) μm , with a 4-15 μm thick, 2-layered, smooth wall (the outer
wall much thinner than the inner one), the apices to 28 μm thick.
Pycnidia rare, immersed. Conidia bacilliform, 7-10 x 0.5-1 μm . Photo-
biont chlorococcoid. Spot tests: thallus K- or K+ faintly yellow, C-,
KC+ yellow, P- or P+ orange-red, UV- or UV+ pale orange-pink.
Chemistry: 4,5-dichlorolichexanthone and stictic acid (major), con-
stictic and norstictic acids (minor or traces). - Note: a holartic, mainly
temperate early coloniser of smooth bark found on a wide variety of
(mostly) broad-leaved trees; most common in the montane belt, in the
Mediterranean belt it is restricted to humid situations.



Pertusaria leucostoma



Pertusaria leucostoma

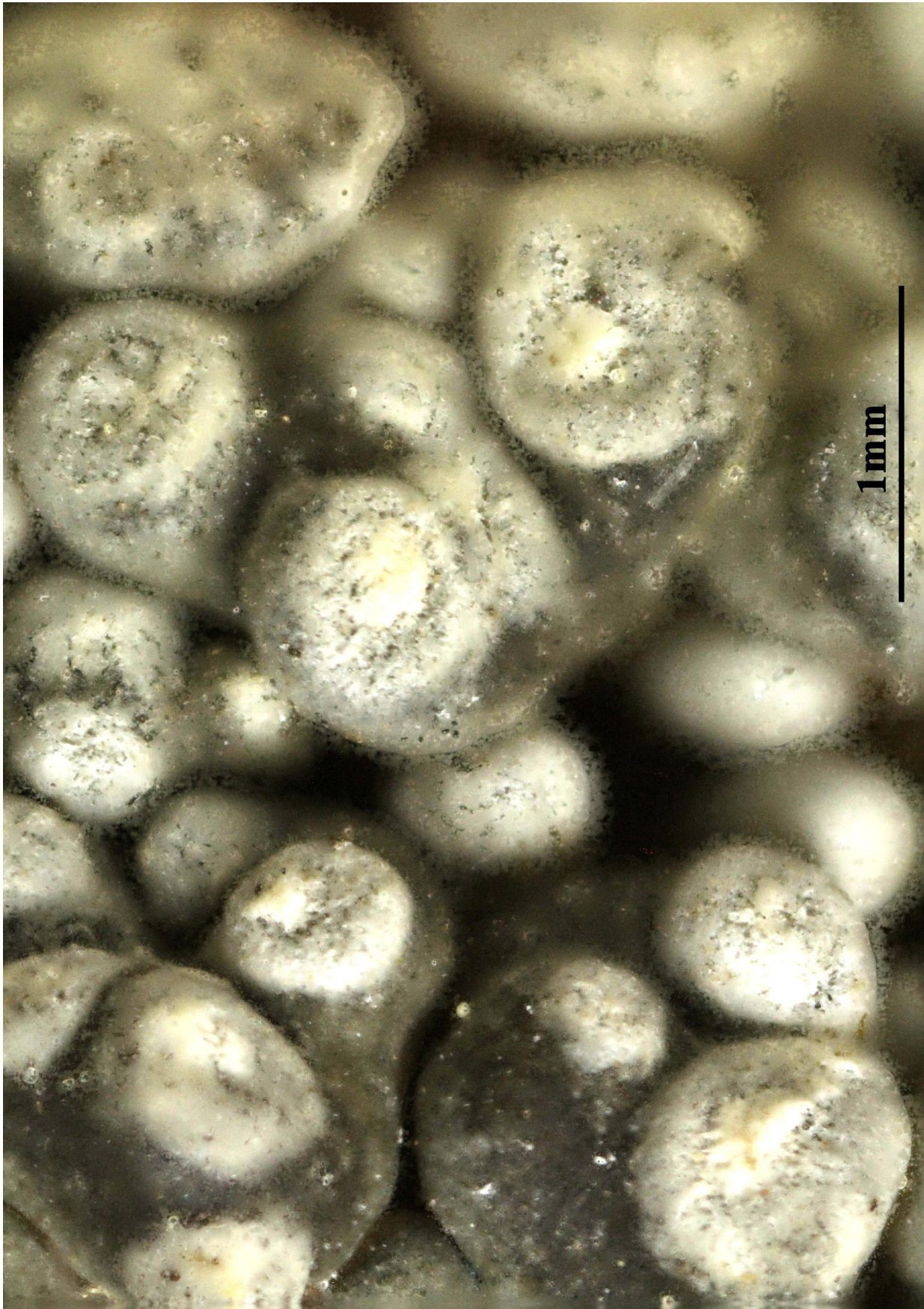
Pertusaria melanochlora (DC.) Nyl., Bull. Soc. linn. Normandie, sér. 2
6(2): 289 (1873) [1872]
= *Isidium melanochlorum* DC. 1805
= *Lepra melanochlora* (DC.) Hafellner, in Hafellner & Türk, Stapfia 104(1):
172 (2016)

[VZ1141], Hispania. Girona, montes Pyrenaei, orientales. Nuria, prope Ribas, 2000 m. Ad parietes altos rupium gneissiaceum. Leg. X. Llimona et V. Wirth, 29.7.1972. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1141.

Thallus crustose, episubstratic, 1-3 mm thick, continuous to rimose or indistinctly areolate, grey to dark grey, often concentrically zoned at margins, forming up to 12 cm wide patches, densely covered with isidia-like, 2-3 mm long, 0.5-1.5(-2) mm wide, simple or sparingly branched papillae with eroded, whitish, rarely sparingly soresiate, flat to concave tips. Apothecia rare, immersed in 2-4 mm wide fertile papillae, 1-5 per papilla, with an initially punctiform, then expanded, 1.5-2 mm wide, black but often white-pruinose disc and a prominent, wrinkled thalline margin. Epithecium dark brown, K-; hymenium colourless, 250-350 µm high; paraphyses sparingly branched, 1.5-2 µm thick; hypothecium colourless. Asci 1-spored, broadly cylindrical, the apex without a distinct ocular chamber, the outer sheath K/I+ blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid, 180-260(-300) x 70-150(-200) µm, the wall c. 20 µm thick, smooth. Pycnidia black, immersed. Conidia cylindrical, 4-5 µm long. Photobiont chlorococcoid. Spot tests: K+ yellowish brown, C-, KC+ fleeting magenta, P+ orange-red, UV-; medulla with a strongly bitter taste. Chemistry: picrolichenic and protocetraric acids. Note: a probably Mediterranean-Atlantic, very poorly known and often misunderstood taxon (e.g. confused with *L. mammosa*), found on compact siliceous rocks, usually below the montane belt.



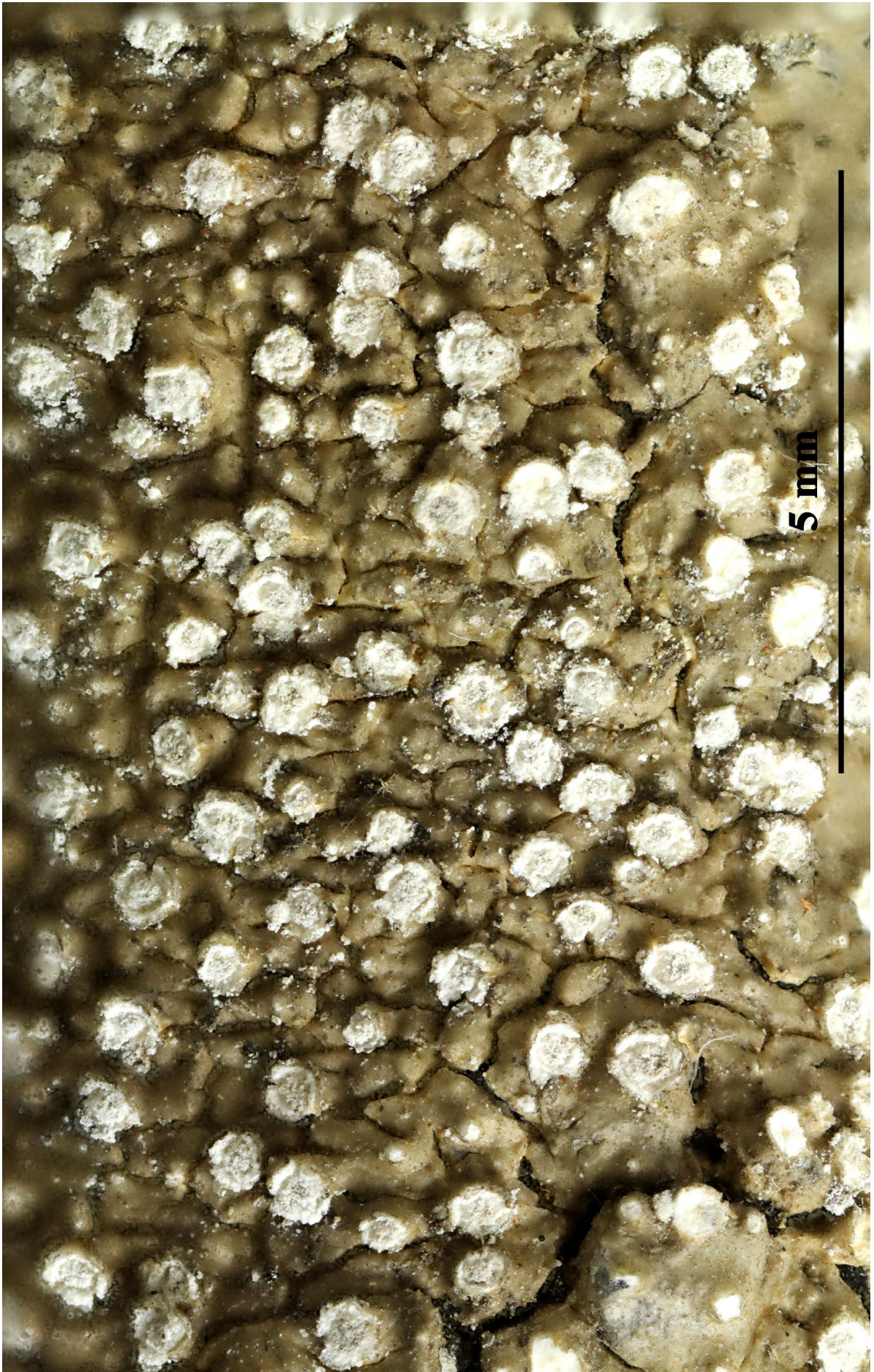
Pertusaria melanochlora



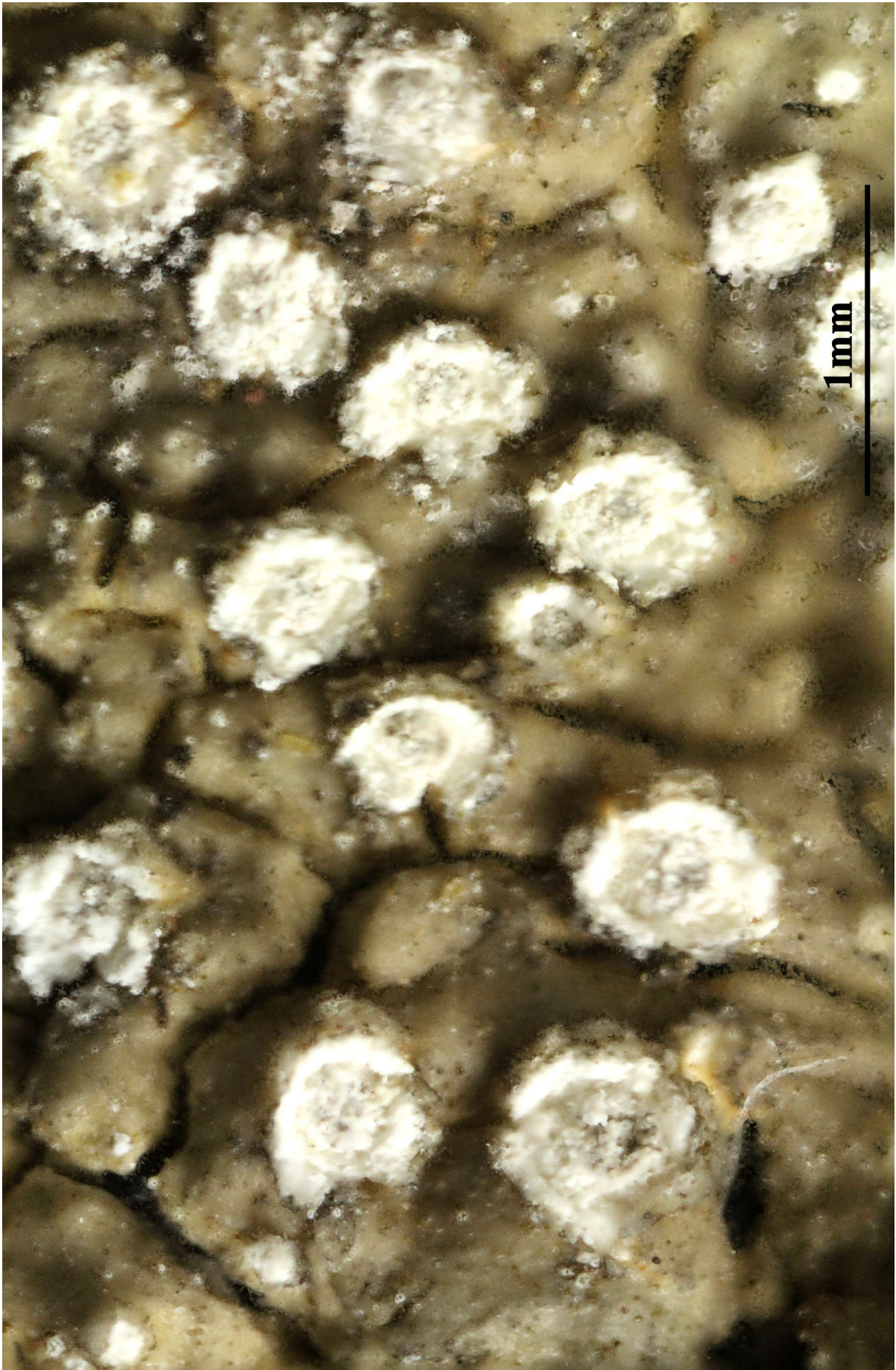
Pertusaria multipuncta (Turner) Nyl. [as 'multipunctata'], Lich. Scand. (Helsinki): 179 (1861)
= *Variolaria multipuncta* Turner 1808
= *Lepra multipuncta* (Turner) Hafellner, in Hafellner & Türk, Stapfia 104(1): 173 (2016)

[VZ1521], Persia borealis. Prov. Gorgan: Shahi, 6 km ad occidentem versus a vico Zirag. Ad corticem *Diospyros lotus* L. Leg. J. Soják, 24.6.1977, det. A Vězda. EX A. VĚZDA LICHENES AELECTI EXSICCATI NR. 1521.

Thallus crustose, episubstratic, ash-grey to bluish grey, 1-3 mm thick, sometimes thinner, continuous to rimose, coarsely warted, usually well-delimited by a pale prothallus. Fruiting warts 0.5-1.5(-2) mm across, flattened, covered in white, granular soredia. Apothecia immersed in the fruiting warts (and hence visible only when these are sectioned), 1-2(-5) per wart, with a pale yellowish brown to blackish brown, white-pruinose, c. 0.5(-1) mm wide disc. Asci 1-spored, cylindrical, with thick, amyloid walls, *Pertusaria*-type. Ascospores 1-celled, elongate-ellipsoid to cylindrical, 90-180(-200) x 30-60(-70) μm , the wall up to 10 μm thick, uniform. Photobiont chlorococcoid. Spot tests: cortex and soralia K⁺ yellow-brown, C⁻, KC⁺ yellow, P⁺ bright orange-red, UV⁻ or faintly glaucous. Chemistry: physodalic acid (major), protocetraric acid (traces). Note: a mainly temperate species found on smooth bark of deciduous trees (especially *Carpinus* and *Fagus*) in open, humid deciduous woodlands.



Pertusaria multipuncta

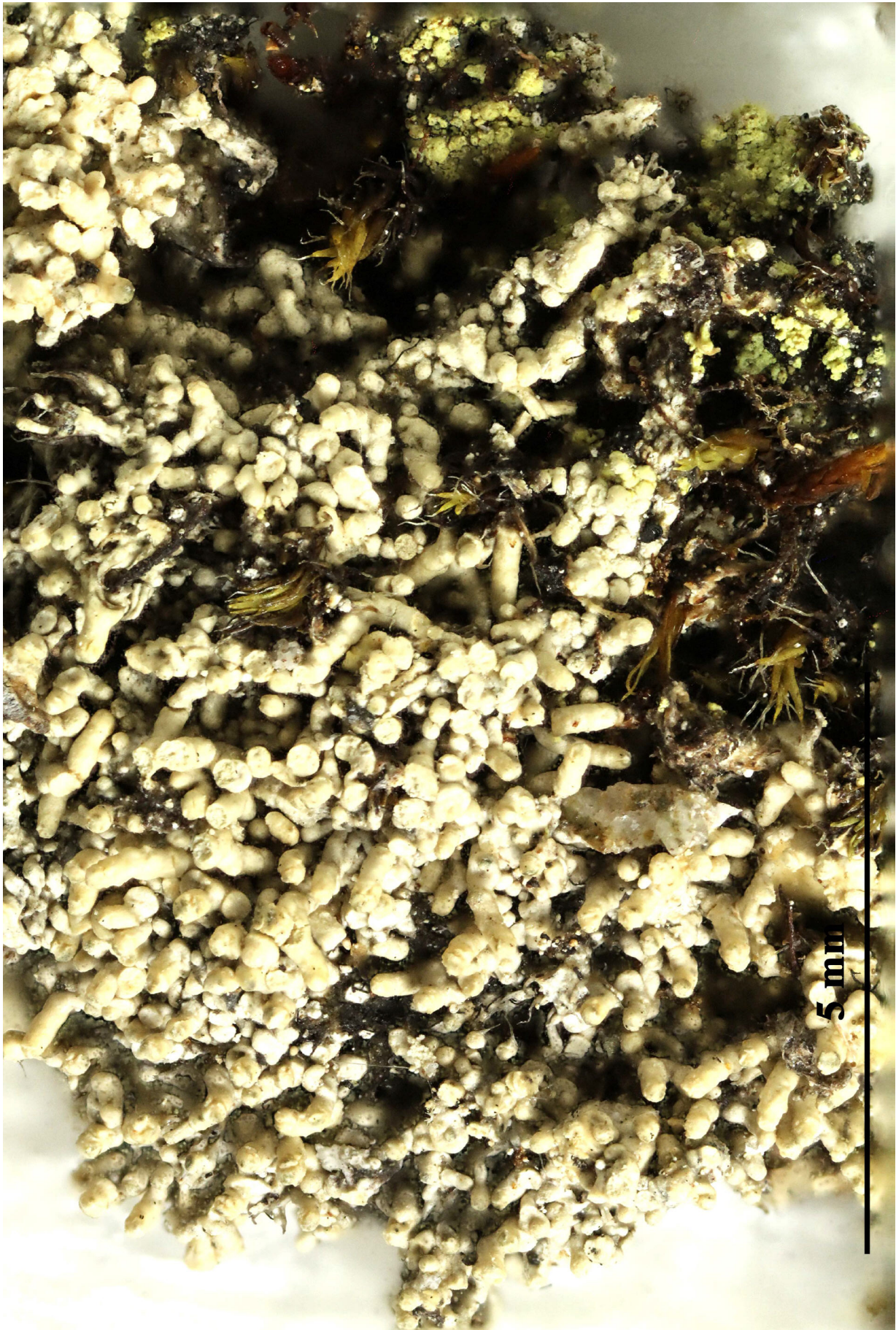


Pertusaria multipuncta

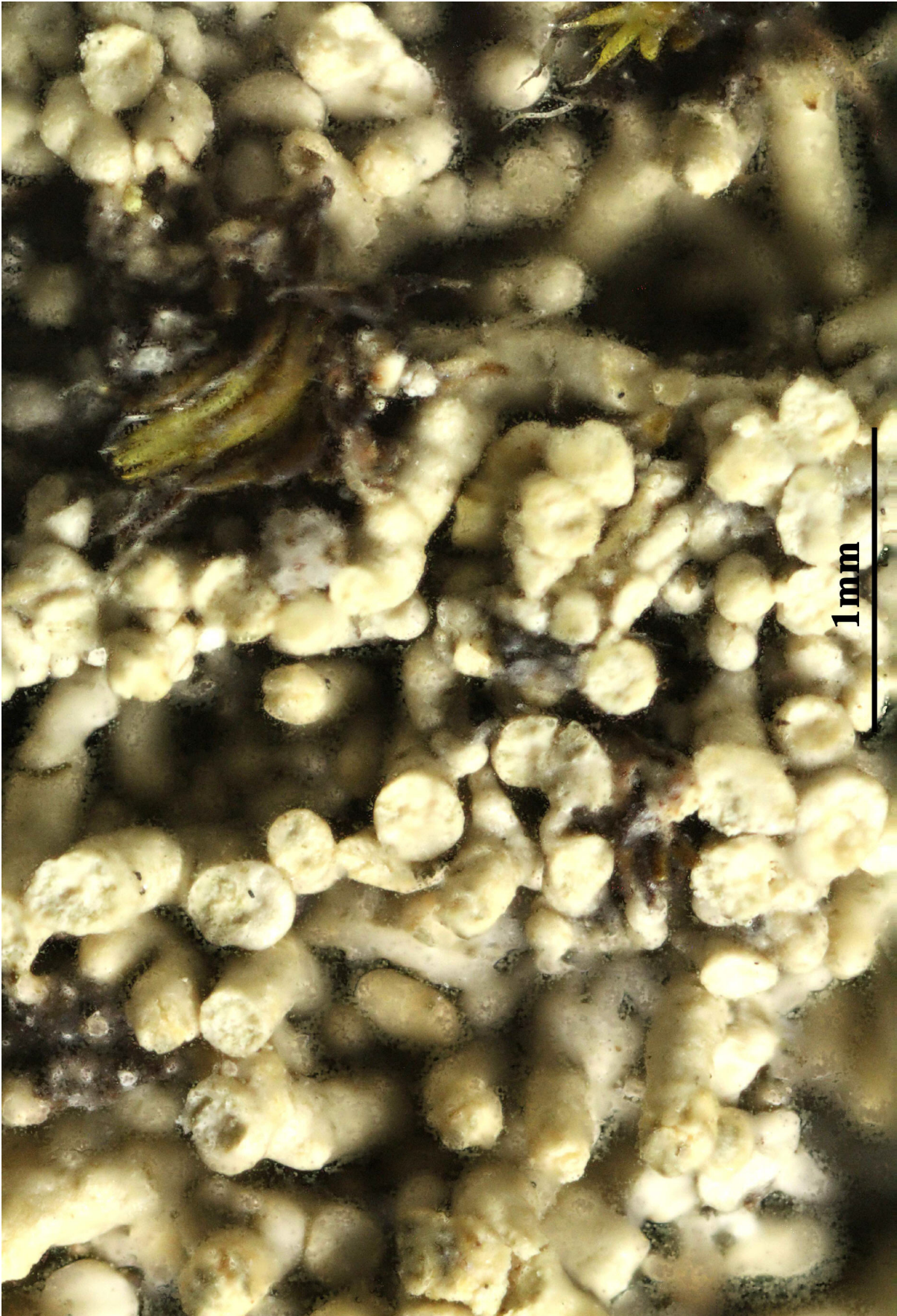
Pertusaria oculata (Dicks.) Th. Fr., Lich. Scand. (Upsaliae)(1): 307 (1871)
= *Lichen oculatus* Dicks. 1790

[VZ1396], Gallia. Haute-Savoie, Chamonix: La Tête de Combasses in proximitate vallis Bernard, 1400 m. Ad plantas destructas in rupibus siliceis. Leg. J. Asta, 18.8.1975. EX A. VEZDA LICHENES SELECTI EXSICCATI NR. 1396.

Thallus crustose, episubstratic, rather thin, continuous, cracked or faintly tuberculate, isidiate, forming regular or irregular, up to 10 cm wide patches, without a distinct prothallus. Non-isidiate parts grey or white-grey. Isidia conspicuous, easily shedding off, concolorous with non-isidiate parts or, more often, tinged pale brown or pale yellow, simple to bifurcately branched, more or less cylindrical throughout or, occasionally, with somewhat swollen apices, 0.3-0.5 mm thick and 1-3 mm tall, often with greyish black apices reacting K⁺ violet, and N⁺ violet. Medulla distinct, white. Apothecia rare, lecanorine, up to 2.8 mm across, with a brown to black, epruinose, slightly concave to slightly convex disc and a distinct, smooth or isidiate, finally sometimes excluded thalline margin. Epithecium dark brown to black, K⁺ violet; hymenium colourless; paraphyses lax, richly branched and anastomosing; hypothecium pale to dark brown. Asci (6-)8-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I⁺ blue, otherwise K/I⁻, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid to fusiform, (15-)20-28(-31) x (8-)10-14(-16) μm, the wall 1-3(-6) μm thick, smooth. Pycnidia immersed in the apices of the isidia. Conidia short-bacilliform, c. 3.5 x 0.5 μm. Photobiont chlorococcoid. Spot tests: K⁺ yellow turning red-brown, C⁻, KC⁻ or KC⁺ faintly yellow-red, P⁺ yellow turning orange-red, UV⁺ faintly whitish blue. Chemistry: fumarprotocetraric acid (major), protocetraric acid, sometimes gyrophoric acid (traces). - Note: a circumpolar, arctic-alpine lichen found on soil and plant remains on siliceous substrata, mostly above treeline; restricted to the Alps and the Northern Apennines in Italy.



Pertusaria oculata

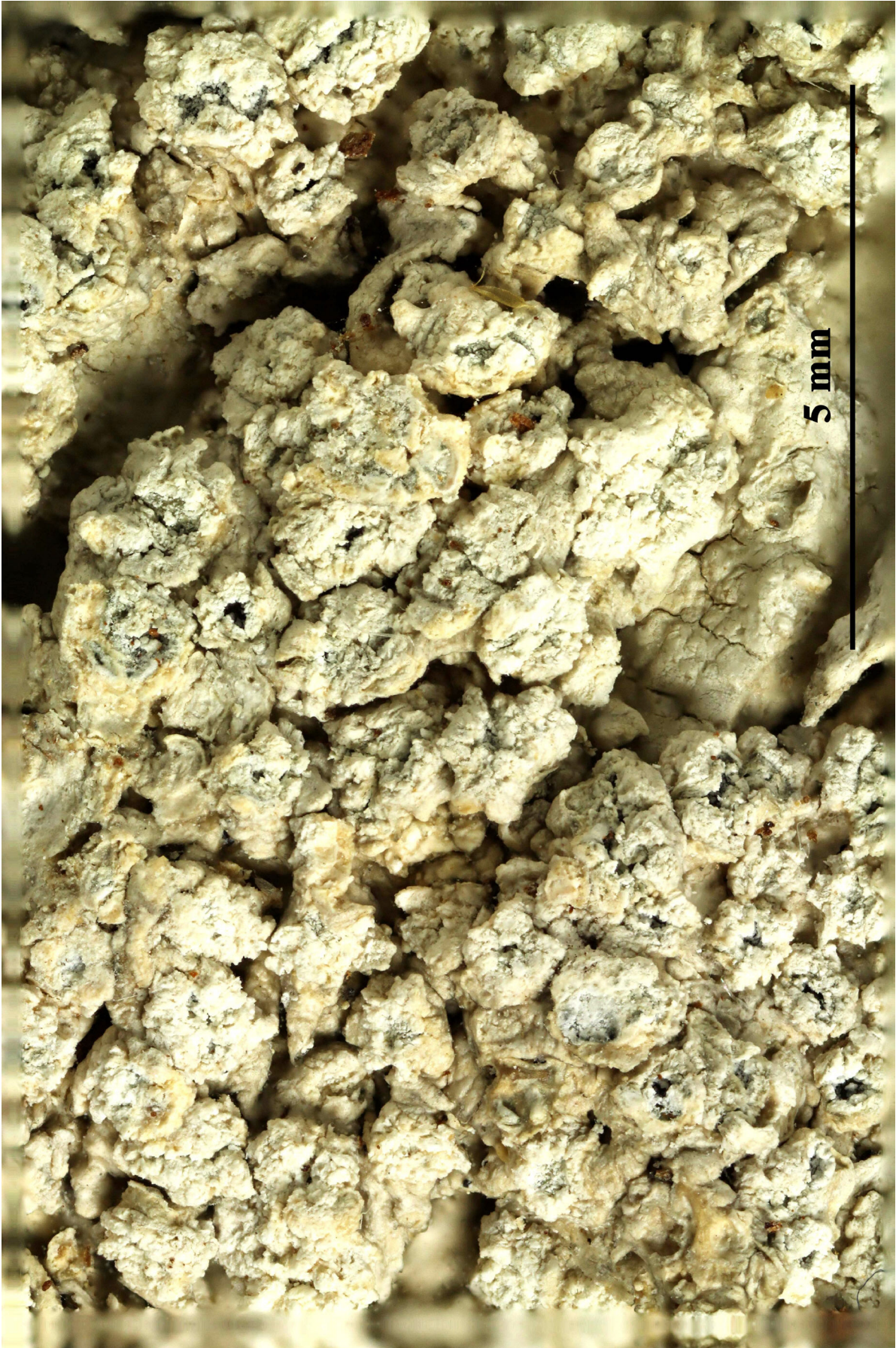


Pertusaria oculata

Pertusaria ophthalmiza (Nyl.) Nyl., Flora, Regensburg 48: 354 (1865)
= *Pertusaria multipuncta* var. *ophthalmiza* Nyl. 1861
= *Lepra ophthalmiza* (Nyl.) Hafellner, in Hafellner & Türk, Stapfia 104(1):
173 (2016)

[VZ2085], Caledonia. West Ross, Coulin Forest, 200 m. Ad truncum
Alni in pineto. Leg. B. J. Coppins et P. W. James. EX A. VĚZDA LICHE-
NES SELECTI EXSICCATI NR. 2085.

Thallus crustose, episubstratic, continuous to rimose-areolate, ash grey to dark grey, smooth to verrucose-tuberculate, often zoned at margins. Fertile warts soralia-like, coarsely white-pruinose, c. 0.4-1.5 mm across, with a raised, crenulate margin; apothecia 1(-3) per wart, with a blackish brown, whitish-pruinose disc which is totally concealed by the coarse pruina. Epithecium dark brown to black, K-; hymenium colourless; hypothecium yellowish brown. Asci 1-spored, broadly cylindrical, the apex without a distinct ocular chamber, the outer sheath K/I+ blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid to cylindrical, 85-190 x 25-75 μm , the wall up to 10 μm thick, 1-layered. Pycnidia immersed. Conidia bacilliform, 4-7 x 0.5-1.0 μm Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: four unidentified fatty acids. - Note: a cool-temperate to southern boreal lichen with optimum on the bark of coniferous trees (*Abies*, *Picea*), both on boles and twigs in humid-cold situations (e.g. in gorges and sinkholes), but also occurring on *Fagus*; certainly more widespread in the Alps, and also reported from the Gargano Peninsula, and from the mountains of Sardinia.



Pertusaria ophthalmiza



Pertusaria ophthalmiza

Pertusaria paramerae A. Crespo & Vězda, An. Jard. bot. Madr. 41(2): 252
(1985) [1984]

[VZ1979], Hispania. Prov. Soria, prope vicum Judes, Paramera, 1250 m. Ad corticem *Juniperi thuriferae*, in Junipereto thuriferae soluto. Leg. A. Crespo et A. Vězda, 24.5.1983.- Isotypus - EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1979.

Thallus crustose, thinly episubstratic, white-grey or with a yellow-brown tinge, continuous to rimose-areolate. Apothecia numerous, crateriform, not constricted at base, immersed into 0.5-1.5 mm wide fertile warts, with an initially punctiform, later irregularly open, black disc covered in a thick, white pruina, and a prominent thalline margin. Epithecium yellowish green, K⁺ and N⁺ pink-violet; hymenium colourless; paraphyses rather lax, branched and anastomosing; hypothecium colourless. Asci 1-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I⁺ blue, otherwise K/I⁻, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid, 120-190 x (40-)60-75(-90) μm, double-walled, the wall 5-8 μm thick, faintly transversally striate. Photobiont chlorococcoid. Spot tests; thallus K⁺ pale yellow, C⁻, KC⁺ yellow orange P⁻, UV⁺ orange. Chemistry: planaic acid (major), 4-O-dimethylplanaic acid, plus traces of thiophaninic acid, atranorin (trace), 2,4-dichloronorlichexanthone, and an unidentified substance. - Note: this species was described from the Iberian Peninsula, where it mostly grows on *Juniperus thuriferain* the supramediterranean belt, but also on *J. phoenicea* and *J. oxycedrus* in the eu-Mediterranean belt.



Pertusaria paramerae



Pertusaria paramerae

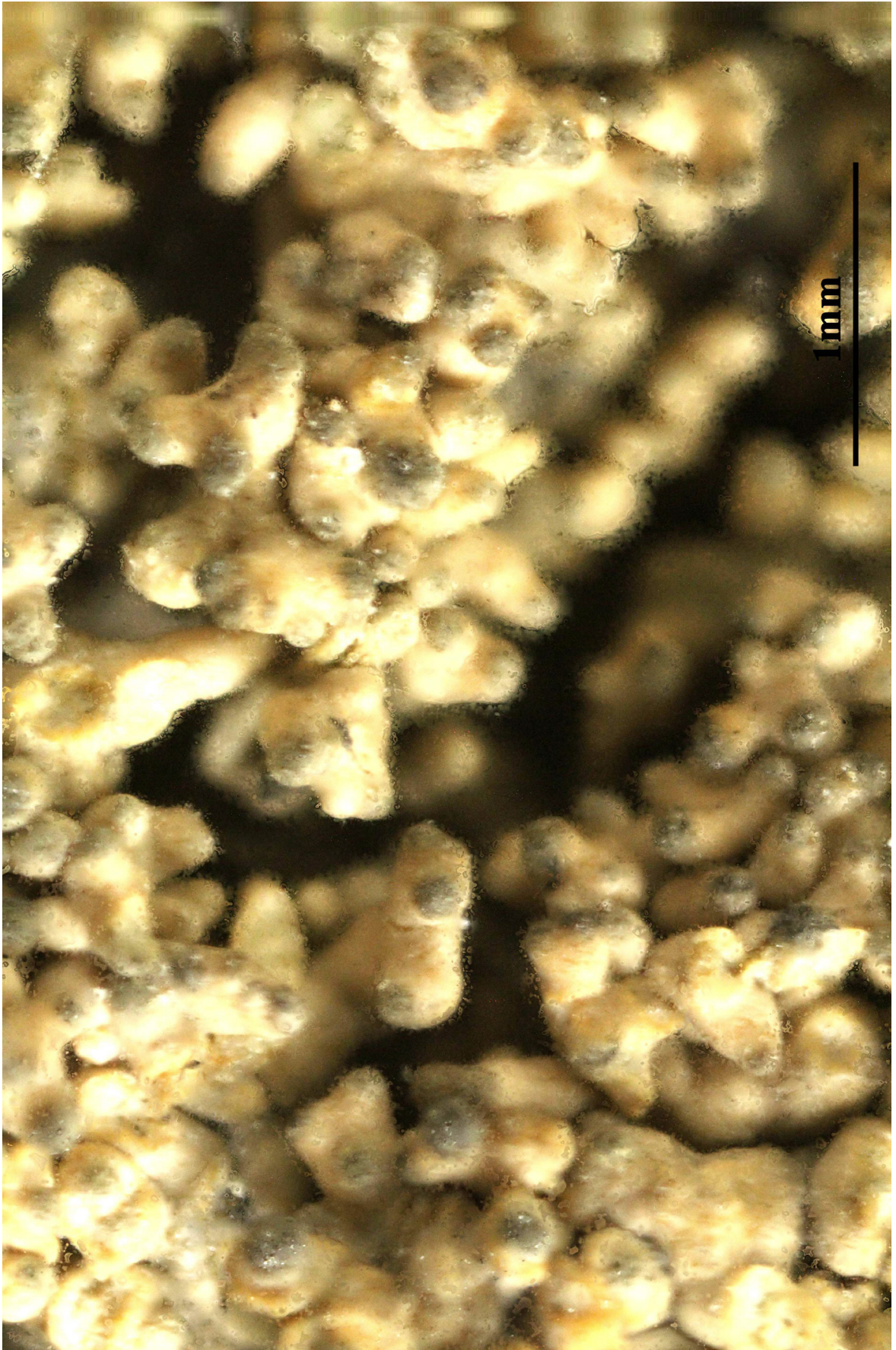
Pertusaria pseudocorallina (Lilj.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 37: 84 (1887)
= *Lichen pseudocorallinus* Lilj. - K. Svenska Vetensk.-Akad. Handl.: 129, 1791.

[VZ2238], Austria. Voralbergia. Rätikon, Schruns: in monte Golmer Joches, 2000 m. Ad saxa silicea in prato alpina. Leg. A. Vězda, 27.7.1986. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 2238.

Thallus crustose, episubstratic, isidiate, 0.3-2 mm thick, grey-white or pale ochre-yellow, continuous to irregularly rimose, smooth to verrucose, sometimes delimited by a pale to dark prothallus, forming large, up to 20 cm wide patches. Isidia most abundant in sterile specimens, subglobose to short-cylindrical, 0.1-0.3 mm thick, to 0.8-1 mm high, simple or branched, the apices often slightly thicker and brown-pigmented, the base constricted, often breaking off, leaving non-soresidate, crater-like depressions. Medulla white, I-. Apothecia rare, lecanorine-perithecioid, immersed in 1-3 mm wide, semi-globose thalline warts, with 2-7 apothecia per warts, with a punctiform, grey-black disc. Asci 2-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I+ blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid, (90-)120-170(-200) x 45-80 µm, the wall 5-10 µm thick, 2-layered, smooth. Photobiont chlorococcoid. Spot tests: thallus K+ yellow turning red, C-, KC-, P+ golden yellow, UV-. Chemistry: norstictic acid (major) connorstictic and subnorstictic acids (both minor). - Note: a mild-temperate species found on steeply inclined surfaces of siliceous rocks wetted by rain.



Pertusaria pseudocorallina

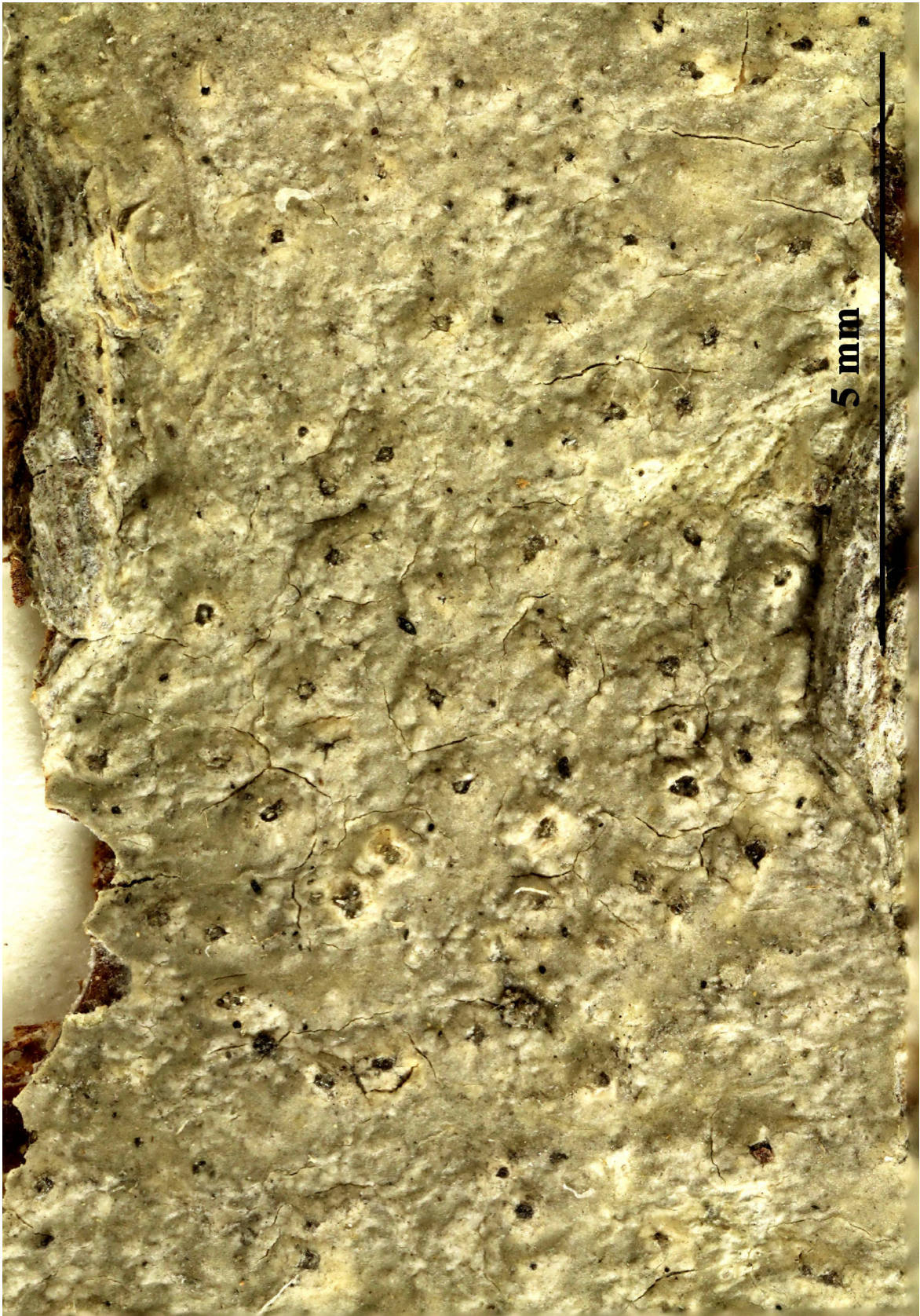


Pertusaria pseudocorallina

Pertusaria pustulata (Ach.) Duby, Bot. Gall., Edn 2 (Paris) 2: 673 (1830)
= *Porina pustulata* Ach. 1810

[VZ1586], URSS., Transcaucasus, Colchis. Distr. Sochi, in valle Bytcha, 300 m. Ad corticem *Tiliae caucasicae* Rupr. Leg. V. Vašák et A. Vězda, 12.6.1978. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1586.

Thallus crustose, continuous to finely cracked-areolate, yellowish-grey to green-grey, smooth to finely tuberculate, somewhat shiny, epruinose, sometimes delimited by a thin, unzoned, pale prothallus. Apothecia immersed in 0.3-1.4 mm wide, flattened, basally expanded thalline warts, initially perithecioid and opening through a darker ostiole (1-4 per wart), later with an expanded, 0.4-0.8 mm wide disc surrounded by the lacerate margin of the wart. Epithecium dark brown to black, K+ violet; hymenium and hypothecium colourless; paraphyses lax, branched and richly anastomosed. Asci (1-)2(-3)-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I+ blue, otherwise K/I-, with an inner extensible layer, *Pertusaria*-type. Ascospores 1-celled, hyaline, ellipsoid to subcylindrical, (40-)50-100(-160) x (20-)25-40(-48) μm , with a finely striate, 2-layered wall, the outer wall c. 1-5 μm thick, the inner one 2-8 μm thick, the apices up to 20 μm thick. Pycnidia immersed. Conidia bacilliform, 9-16 x 1-1.5 μm . Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C+ yellow-orange, KC+ yellow, P+ yellow to orange, UV+ yellow-orange to orange-red. Chemistry: 2-chloro-6-O-methylnorlichexanthone and stictic acid (both major), 4-chloro-6-O-methylnorlichexanthone, constictic, cryptostictic, hypostictic, menegazziaic, thiophaninic acids (all minor). - Note: a mainly temperate species found on deciduous trees with smooth bark, especially *Carpinus* and *Fagus*, more rarely on deciduous oaks in moist woodlands; most frequent in Northern Italy and in upland areas of the South, but also occurring near the coast in humid situations.



Pertusaria pustulata



Pertusaria pustulata



Pertusaria pustulata



Pertusaria pustulata

Pertusaria raesaenenii Erichsen, Feddes Repert. Spec. Nov. Regni veg. 35: 386 (1934)

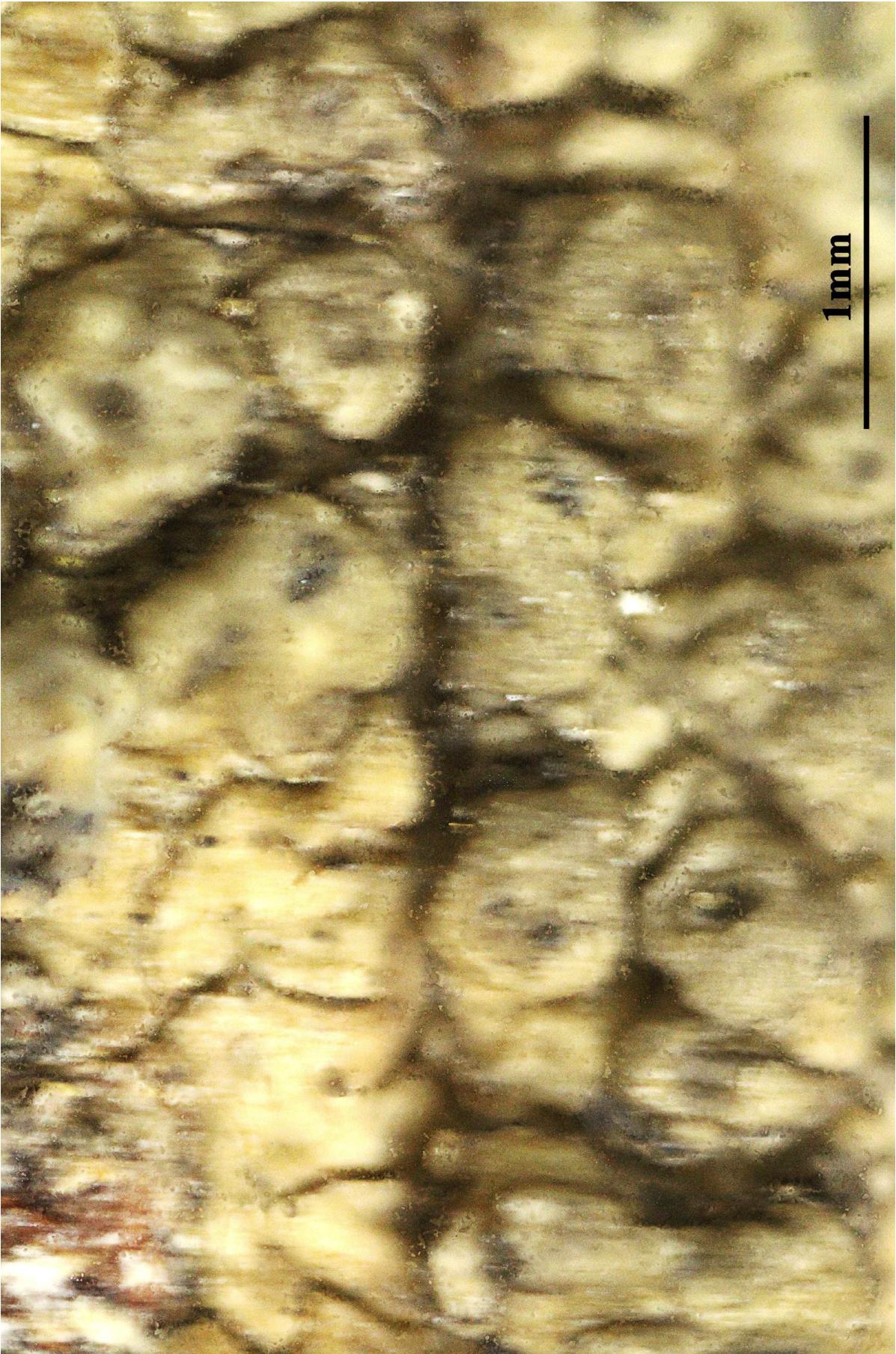
[VZ1641], URSS., Transcaucasus, Colchis: distr. Sochi, in monte Achun, 600-700 m. Ad corticem *Fagi orientalis*. Leg. A. Vězda, 8.6.1978. EX A. VĚZDA LICHZENES SELECTI EXSICCATI NR. 1641.

Fertile wart tips concolorous with thallus; ostioles blackish; thallus grey, strong; in deciduous forest zone. Ascospores 6/ascus, about 60-90 x 30-40 μm ; thallus grey; fertile warts scattered, basally strongly constricted, with 1-several ostioles; coronation, sometimes with stictic (+ tr. norstictic) acid; on *Populus* in Finland.

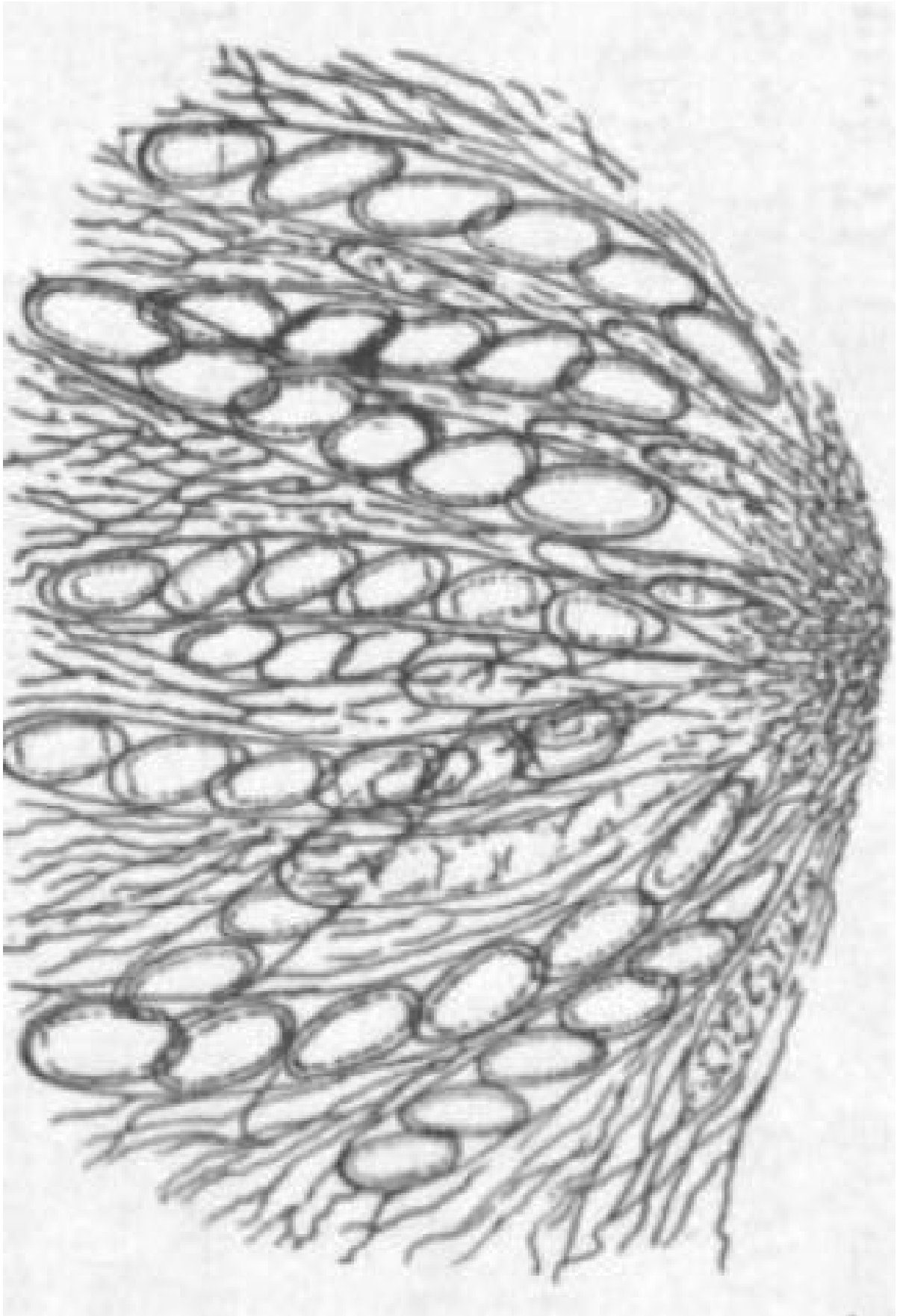
Lager hellgrau, oberrindig, mäßig dick, ausgebreitet, matt, uneben, mit auffälligem, dem Lager fast gleichfarbigem Rand, nicht isidiös oder sorediös; im feuchten Zustand mit sehr leichtem gelblichen Ton. Goniidien hellgrün, kugelig, 9-15 μm breit. Fruchtwarzen zerstreut, am Grunde stark eingeschnürt, lagerfarbig, mit glatter oder meistens unebener Oberfläche, 1-1.5 mm breit und 0.5-0.7 mm hoch, entweder mit einer Frucht und dann rundlich und glatt oder meistens mit mehreren, bis 6 Früchten und dann unregelmäßiger geformt, mit mehr oder weniger unebener, oft leicht aufbrechender Oberfläche. Ostiolen punktförmig, schwärzlich, ca. 0.1 mm breit, eingesenkt. Hypothezium farblos. Paraphysen zart, locker, wirr, mitunter ästig, ca. 1.5 μm dick. Schläuche und Sporen stets gut entwickelt. Schläuche schmal zylindrisch, 360-430 x 42 - 50 μm , einreihig sechssporig, selten fünfsporig. Sporen farblos, ellipsoidisch, (57) 62-94 x 29-39 μm groß. Sporenwände meist 4-6 μm dick, ausnahmsweise dünner, nicht gezont oder gerippt, manchmal mit gestutzten Enden. Pykniden unbekannt. Chemische Reaktionen: K=; KC=; C=; P=—, nur das Mark der Fruchtwarzen leicht rötlich. Mark J—.. Schläuche J + tiefblau. Vorkommen: An Laubholzrinden. Finnland (Ostrobothnia): an Espen bei Simo, mehrfach, 1915 (Rässänen). Sicher weiter verbreitet. *P. raesaenenii* unterscheidet sich von den äußerlich ähnlichen *P. pertusa*, *leucostoma* und *sommerfeltii* *besonders durch die sechssporigen Schläuche.



Pertusaria raesaenenii



Pertusaria raesaenenii



Pertusaria raesaenenii

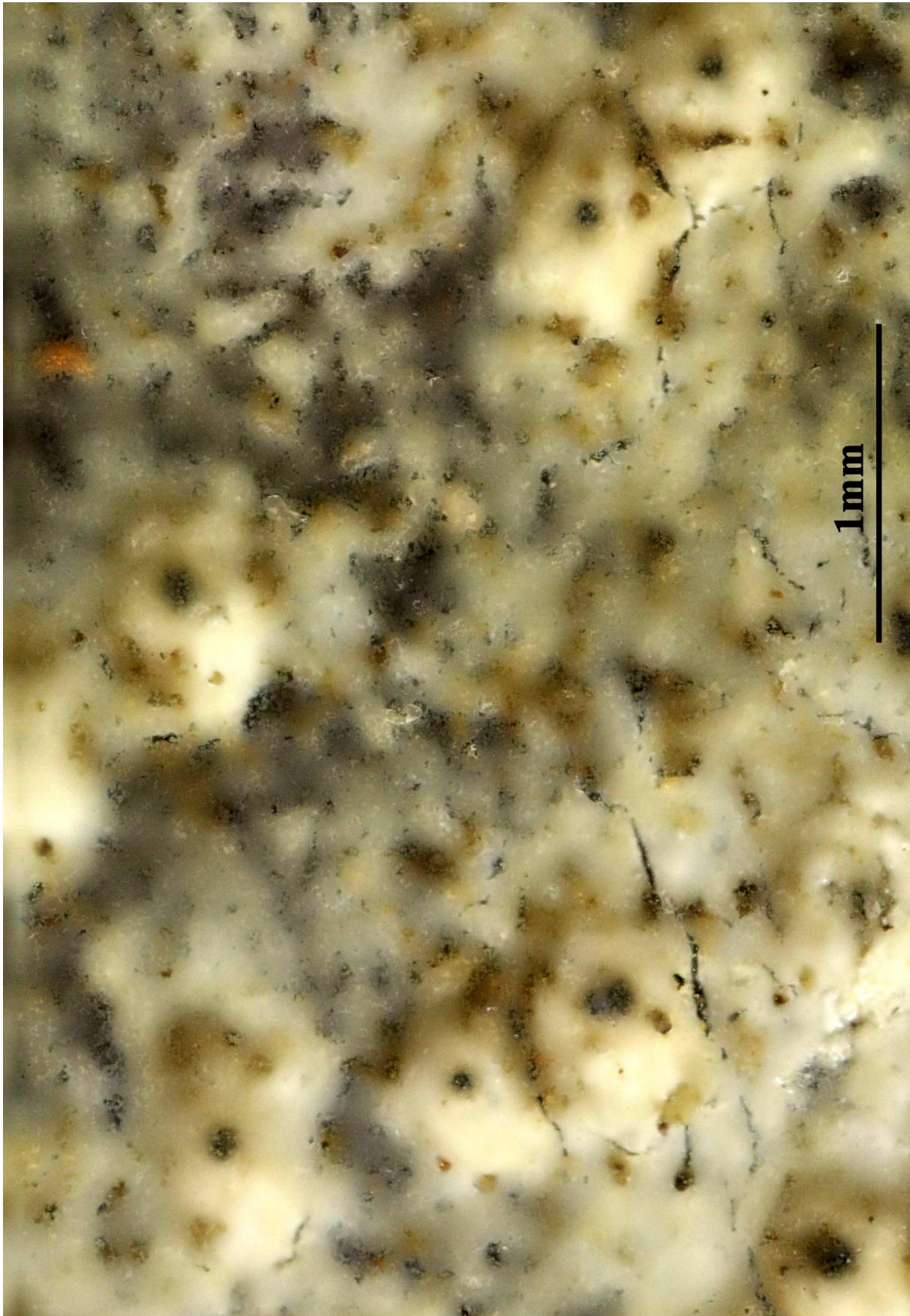
Pertusaria sommerfeltii (Sommerf.) Flörke, in Fries, Lich. eur. reform.
(Lund): 423 (1831)
= *Endocarpon sommerfeltii* Sommerf. 1826

[VZ1442], Jugoslavia. Montenegro: Durmitor montes, prope lacum Crno jezero haud procul Žabljak, 1500 m. Ad corticem *Abietis*. Leg. A. Vězda et V. Wirth, 8.8.1976. EX A. VĚZDA LICHENES SELECTI EXSICCATI NR. 1442.

Thallus crustose, endosubstratic or thinly episubstratic, continuous to faintly rimose, covered in fruiting warts, whitish, grey to greenish or yellowish grey, sometimes pruinose. Apothecia verruciform-perithecioid, completely immersed in basally not strongly constricted, apically flattened thalline warts which are c. 0.2-1.2 mm in diam., 1-3(-5) per wart, opening through dark brown punctiform pores. Epithecium dark brown to brown-black, K⁺ violet; hymenium colourless; paraphyses lax, branched and anastomosing; hypothecium yellowish. Asci (6-)8-spored, broadly cylindrical, the apex with a broad ocular chamber, the outer sheath K/I⁺ blue, otherwise K/I⁻, with an inner extensible layer, *Pertusaria*-type, with uniseriately arranged spores. Ascospores 1-celled, hyaline, oval to ellipsoid, (18-)22-35(-48) x (9-)10-33 μm, the wall 2-layered, the outer wall 1-3 μm thick, the inner wall 1-4 μm thick, smooth, the apices up to 8 μm thick. Photobiont chlorococcoid. Spot tests: K⁻ or K⁺ faintly yellow, C⁻, KC⁻ or KC⁺ faintly yellow, P⁻ or P⁺ yellow-orange, UV⁻ or UV⁺ weakly yellow. Chemistry: 4,5-dichloronorlichexanthone and stictic acid (both major), constictic acid and traces of unknowns (minor). - Note: a circumpolar, subarctic-subalpine to boreal-montane lichen found on smooth bark of subalpine shrubs; most frequent in the Alps, rarer in the Apennines.



Pertusaria sommerfeltii



Pertusaria sommerfeltii

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