F. Schumm (2025):

Images of Lichens Vol. 26
Vezda Lichenes Rariores Exsiccati part 1

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A. Vezda published two important exsiccati works: "Lichenes Rariores Exsiccati" and "Lichenes Selecti Exsiccati". In this book I try to depict with macro photos what was distributed in my copy of "Lichenes Rariores". The pages start with the synonyms, than the copy of the labels with collector and determinator. Than I append descriptions of the species . The numbers in [..] are the numbers of the bags in my private lichen herbarium F. Schumm in Wangen out of which the images are taken.

For the descriptions I consulted
Awasthi, DD. (1991): A key to the Microlichens of India, Nepal and Sri Lanka. - Bibliotheca Lichenologica Band 40.
Lücking, R. (2008): Fl. Neotrop. Monogr. 103.

For the descriptions I consulted and 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

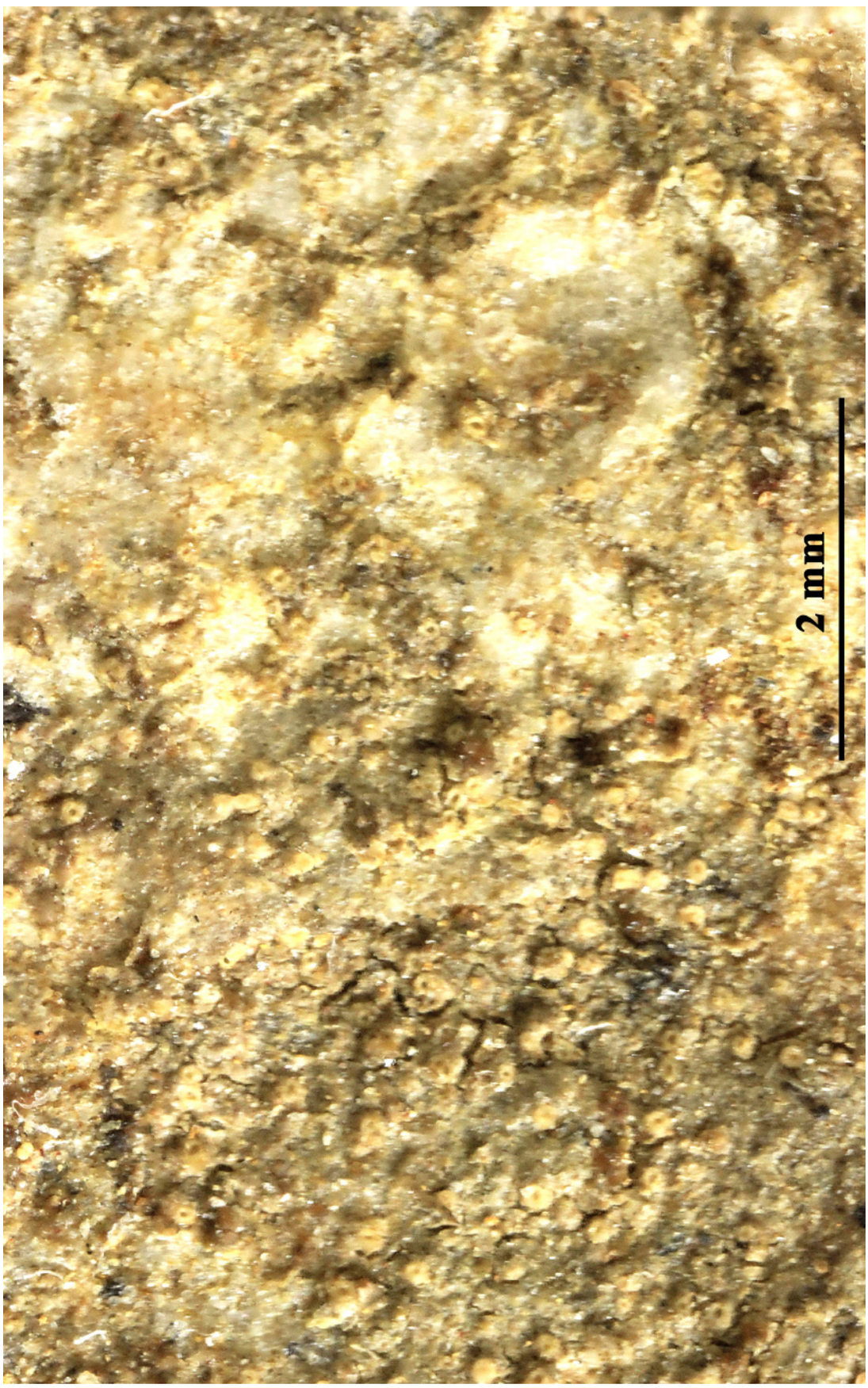
F. Schumm, 08.2025

Absconditella delutula (Nyl.) Coppins & H. Kilias, in Hawksworth, James & Coppins, Lichenologist 12(1): 106 (1980)
= *Absconditella modesta* (Zahlbr.) Vězda, Folia geobot. phytotax. bohemoslov. 1: 243 (1966)
= *Biatorina arnoldii subsp. delutula* (Nyl.) A.L. Sm., Monogr. Brit. Lich. 2: 115 (1911)
= *Biatorina arnoldii var. delutula* (Nyl.) A.L. Sm., Monogr. Brit. Lich., Edn 2 2: 126 (1926)
= *Catillaria delutula* (Nyl.) Zahlbr., Cat. Lich. Univers. 4: 36 (1926) [1927]
= *Catillaria minuta subsp. delutula* (Nyl.) Erichsen, Verh. Naturwiss. Vereins Hamburg, ser. 3 24: 78 (1917)
= *Dimerella modesta* (Zahlbr.) Grummann, Cat. Lich. Germ. (Stuttgart): 18 (1963)
= *Gyalecta modesta* Zahlbr., Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 40(2): 288 (1890)
= *Lecidea delutula* Nyl., Grevillea 8(no. 45): 30 (1879)
= *Lecidea modesta* Hegetschw., in Stizenberger, Ber. Tät. St Gall. naturw. Ges.: 413 (1882) [1880-81]
= *Microphiale modesta* (Zahlbr.) Lettau, Hedwigia 52(3-4): 123 (1912)
= *Secoliga modesta* (Zahlbr.) Arnold, Ber. bayer. bot. Ges. 1(Anhang): 66 (1891)

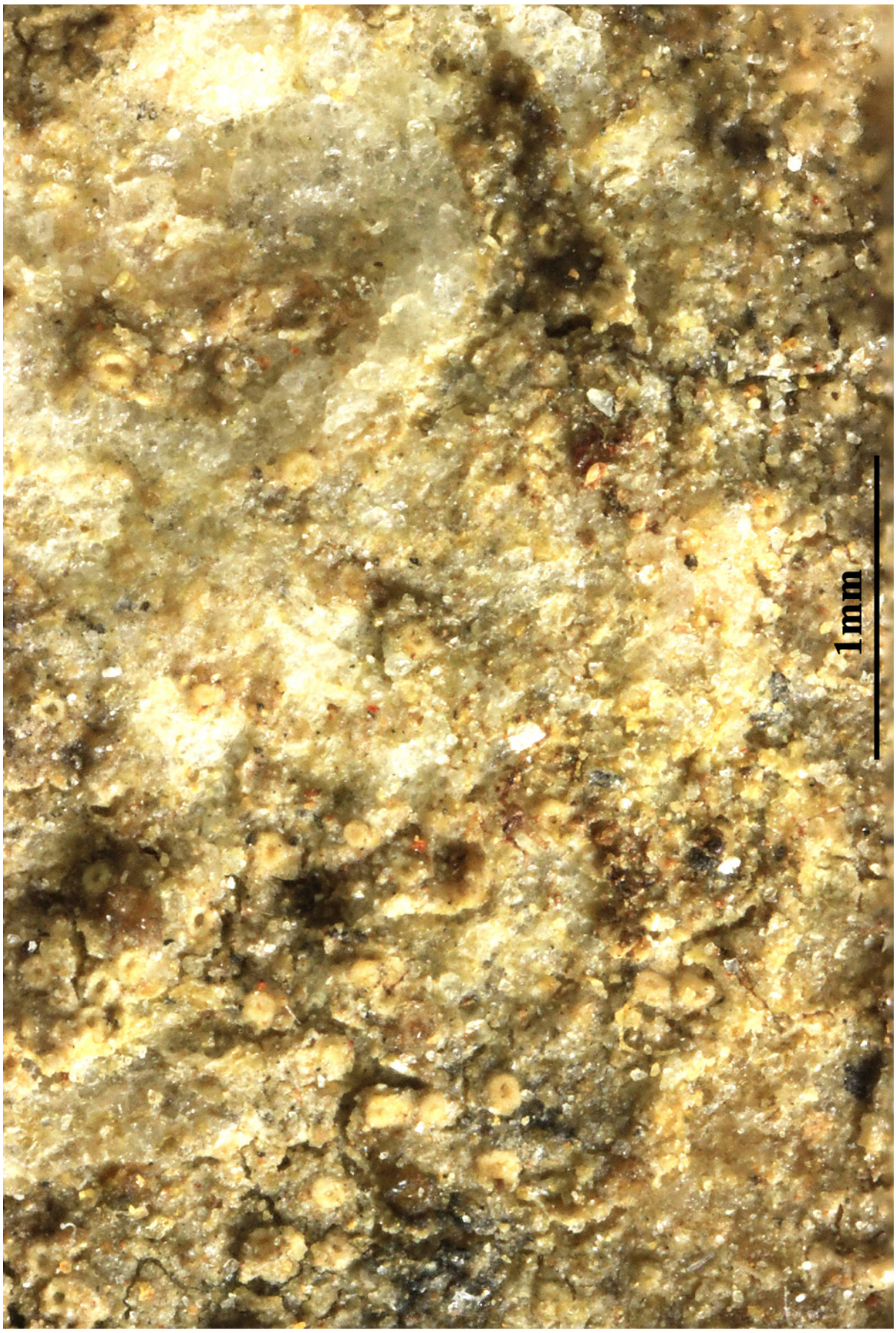
[VZR41, 18442], AUSRIA. Stiria: Koralpe, Stainz, in valle "Mausegger Graben" dicta, 470-290 m. Ad lapillos ad terram humidam. Leg. H. Pittoni, J. Poelt, A. Vězda & C. Wetmore, 05.07.1992. Ex A. Vězda: Lichenes Rariore Exsiccati Nr. 41.

Thallus crustose, episubstratic, 10-100 µm thick, continuous or irregularly rimose-interrupted, grey green to dark olive green. Apothecia abundant, immersed in the thallus or slightly projecting, round, 0.07-0.25 mm across, with a concave, pale waxy yellow disc, and a smooth, concolorous or yellow-brown proper margin. Proper exciple colourless or pale olive-yellow, 20-40 µm thick laterally, 15-20 µm thick in lower part; epithecium indistinct, colourless; hymenium colourless, 60-80 µm high, I+ yellowish, K/I-; paraphyses dense, slender, 1-1.5 µm thick, indistinctly septate, simple or forked in upper part, the apical cells slightly clavate; hypothecium very thin, colourless. Asci 8-spored, long-cylindrical, thin-walled, the upper part with a distinct, K/I- apical dome penetrated by a long, narrow tube extending from the endoascus, with 1-seriately arranged spores. Ascospores 1-septate, hyaline, spindle-shaped, straight, 8-14(-17) x 3-5(-6.5) µm, with very thin walls and septa. Photobiont chlorococcoid, the cells 5-15(-30) µm across. Spot tests: thallus K-, C-, KC-, P-. Chemistry: without lichen

substances. - Note: a coloniser of small siliceous stones and pebbles in moist and shaded situations; so far reported from a few scattered localities in the Alps.



Absconditella delutula



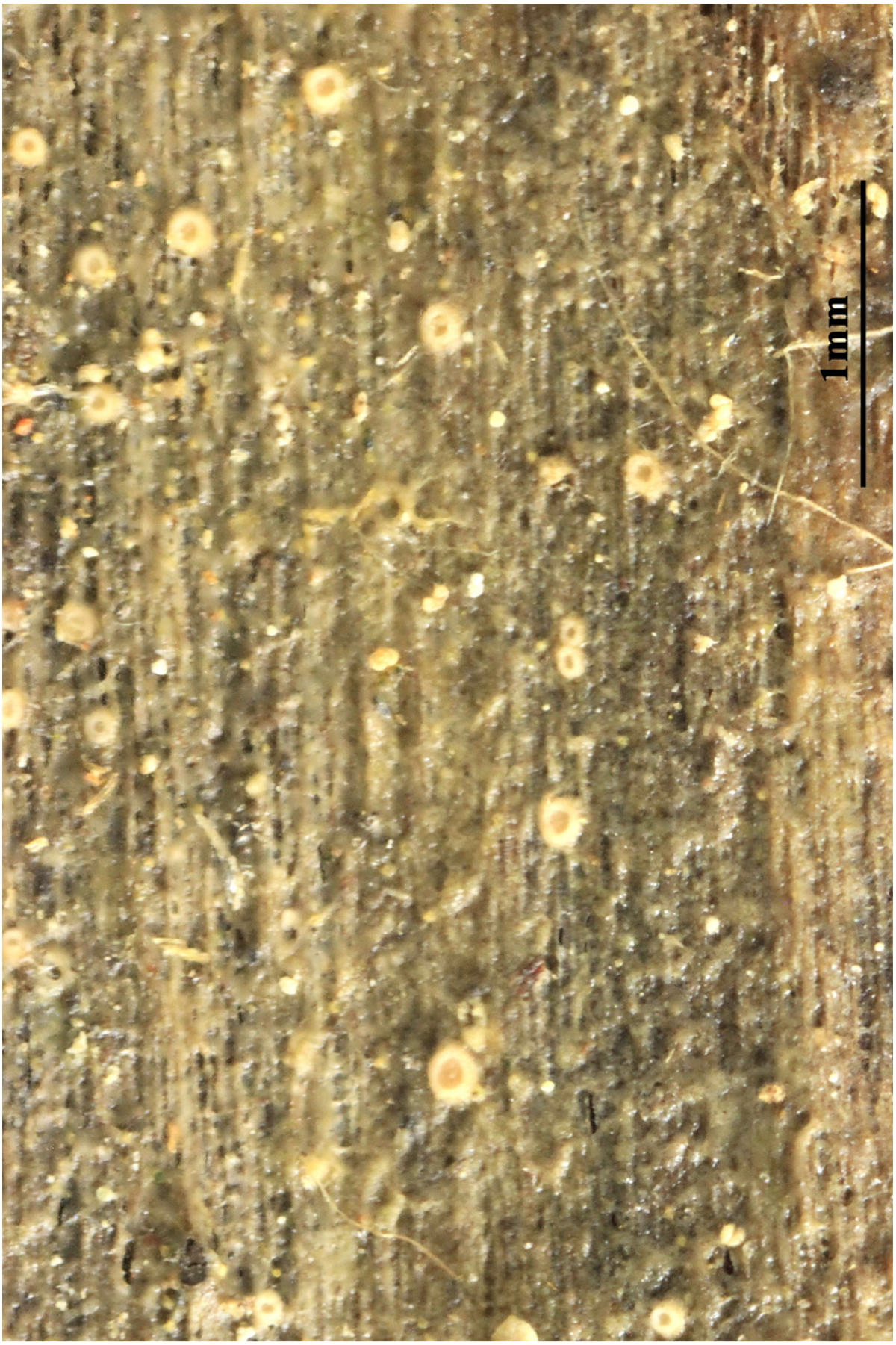
Absconditella delutula

Absconditella lignicola Vězda & Pišút, Nova Hedwigia 40(1-4): 344 (1985) [1984]

[VZR191], Bohemia merid., montes Šumava, distr. Volary, reservatum naturae "Stožecká" dictum, 800-950 m. Ad truncum *Pini excelsae*. Leg. Z. Palice, 13.08.1995. Ex A.Vězda: Lichenes Rariores Exsiccati Nr. 191.

Thallus crustose, very thinly episubstratic, subgelatinous when wet, minutely granulose, greenish grey to dark green, usually intermixed with algal films. Apothecia short-lived, semi-immersed to broadly sessile, whitish or pale waxy yellow when dry, translucent when moist, round, 0.1-0.2 mm across, with a concave to finally flat disc, and a scarcely raised, moderately thick, entire proper margin. Proper exciple colourless, laterally 40-50 µm wide, of conglutinated, parallel hyphae; epithecium indistinct, colourless; hymenium colourless, 60-65(-70) µm high, I+ yellowish, K/I-; paraphyses dense, slender, indistinctly septate, simple or forked, 0.5-0.8 µm thick, irregularly broadened at tips; hypothecium very thin, colourless. Asci 8-spored, long-cylindrical, thin-walled, the upper part with a distinct, K/I- apical dome penetrated by a long, narrow tube extending from the endoascus. Ascospores 3-septate, hyaline, fusiform, 9-15 x 4-7 µm, with very thin walls and septa. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-. Chemistry: without lichen substances. - Note: a boreal-montane, ephemeral lichen, mostly found on horizontal surfaces of stumps and logs, mostly of conifers, with optimum in the subalpine belt. Easily overlooked, it might be more widespread in the Alps.

Absconditella lignicola

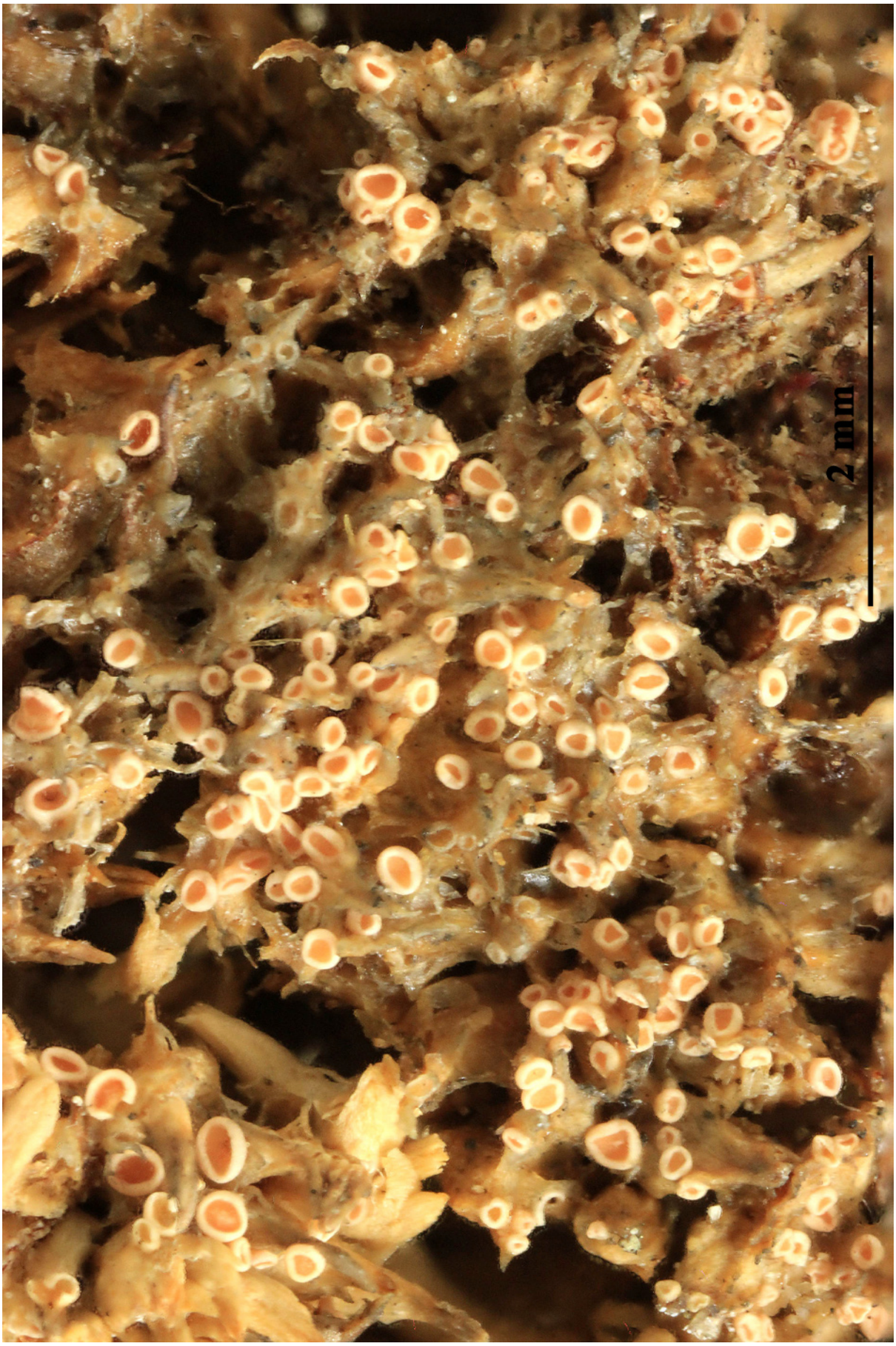


Absconditella lignicola

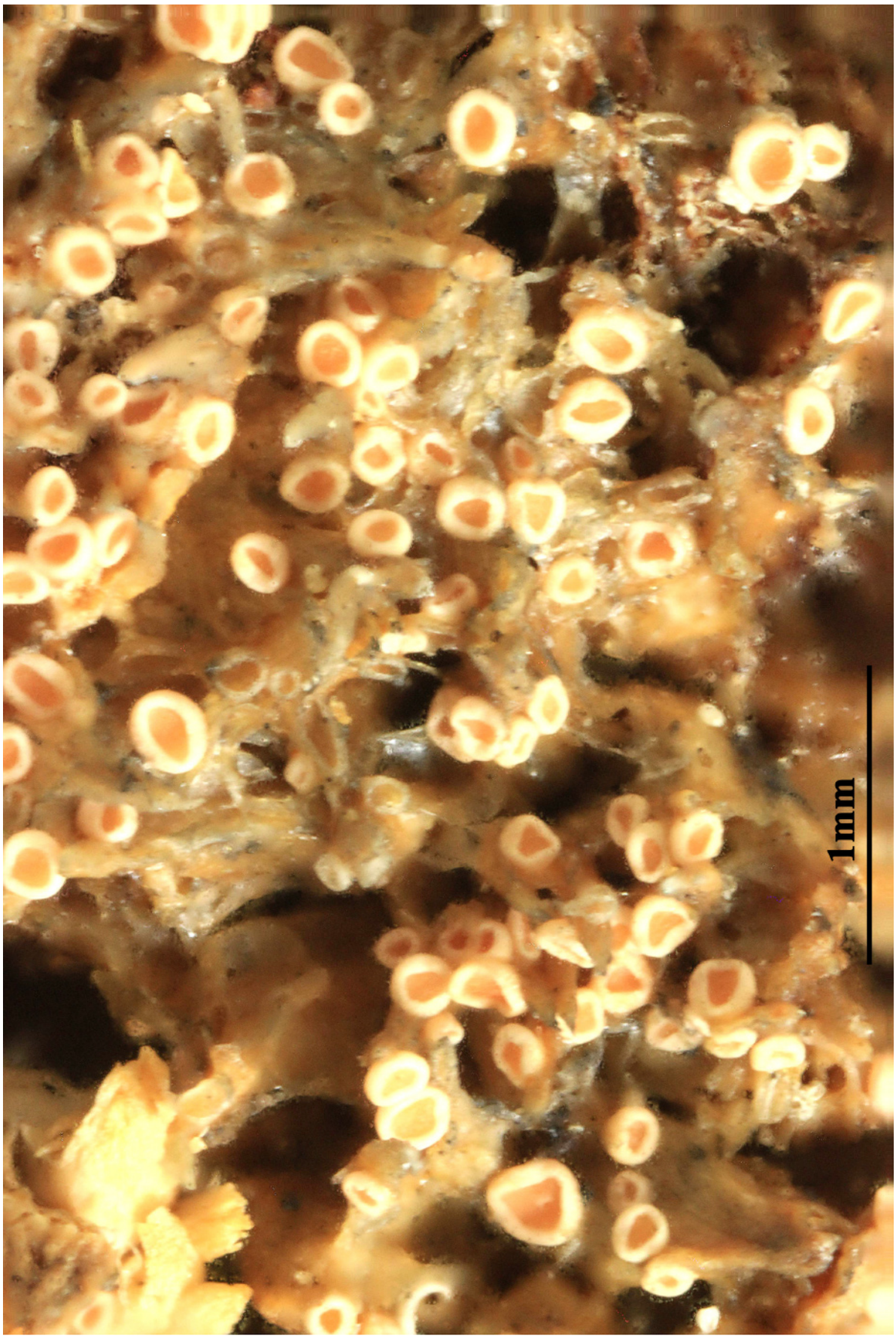
Absconditella sphagnorum Vězda & Poelt, in Vězda, Preslia 37: 238 (1965)

[VZR151], Bohemia meridionalis, Volary montes Šumava, in turfo "Mrtvý luh" dicto prope Černý kříž, 740 m. Ad caespites dense contractos (Sphagnum fuscum). Leg. Z. Palice, 18.12.1994. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 151.

Thallus crustose, c. 100 µm thick, forming smooth, interrupted films on Sphagnum- and liverworts, dirty olive-green to grey-black, sometimes poorly evident. Apothecia abundant, round or irregular in outline due to mutual compression, projecting from thallus to subsessile, 0.2-0.4 mm across, 0.12-0.2 mm tall, with a deeply concave, flesh-coloured disc, and a smooth, pale yellowish white proper margin. Proper exciple colourless, up to 50 µm wide laterally , of conglutinated, parallel hyphae; epithecium indistinct, colourless; hymenium colourless, 65-85 µm high, I+ yellowish, K/I-; paraphyses dense, slender, 0.08-1 µm thick, indistinctly septate, mostly simple, the apical cells hardly swollen to clavate and up to 2 µm wide; hypothecium very thin, colourless. Asci 8-spored, long-cylindrical, thin-walled, the upper part with a distinct, K/I- apical dome penetrated by a long, narrow tube extending from the endoascus, with 1-seriately arranged spores. Ascospores 1-septate, hyaline, spindle-like, straight, 10-12 x 4-5 µm, with very thin walls and septa. Photobiont chlorococcoid, the cells 6-10 µm across. Spot tests: thallus K-, C-, KC-, P-. Chemistry: without lichen substances. - Note: on moribund Sphagnum-cushions in raised bogs, rarely on other bryophytes, usually in the uppermost part of the cushions, in sunny places; known from a few stations in the Alps (Austria, Germany) and locally abundant in late summer and autumn, especially after dry summers; probably somehow overlooked due to its ephemeral character.



Absconditella sphagnorum



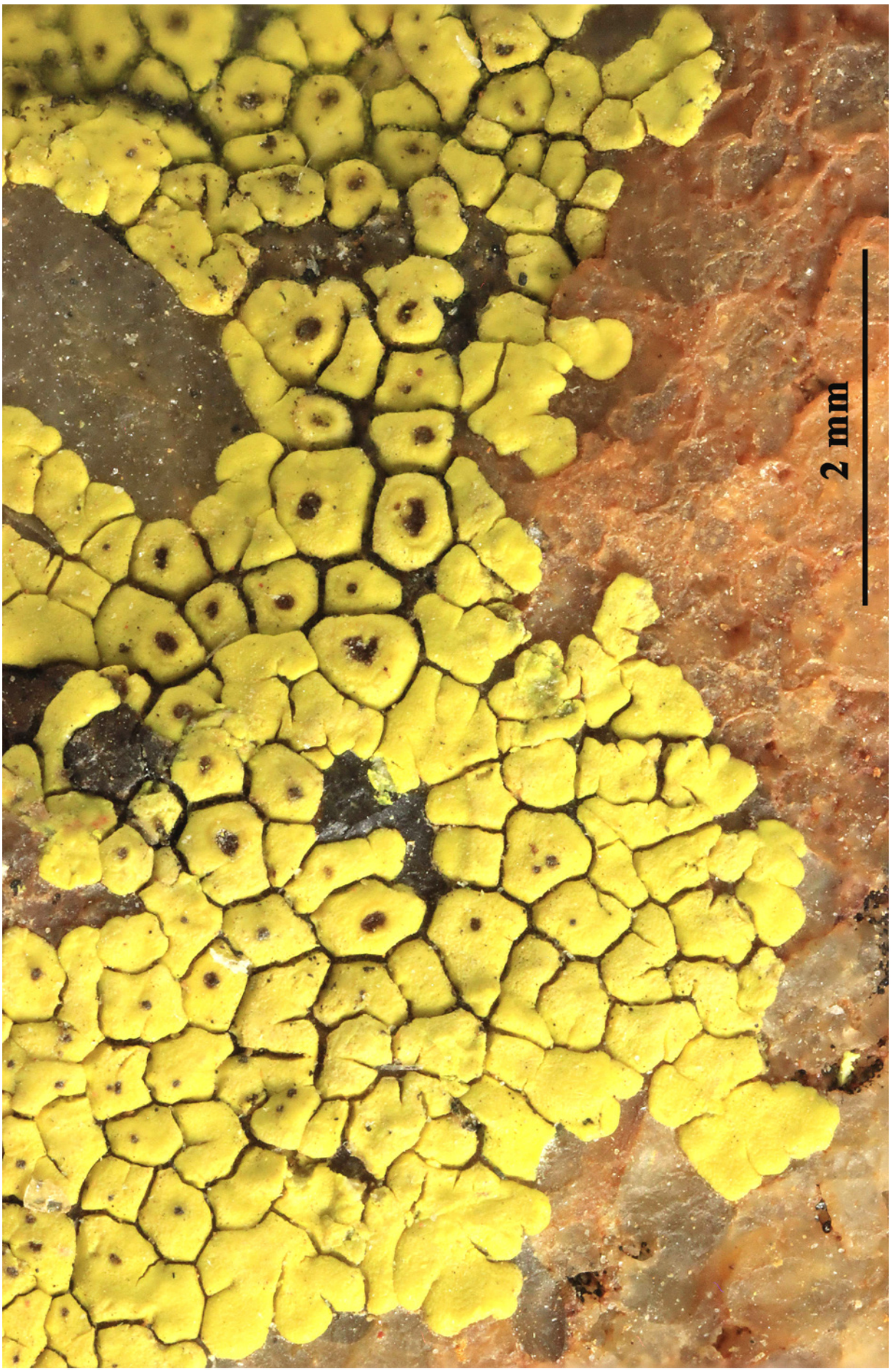
Absconditella sphagnorum

Acarospora hilaris (Dufour ex Nyl.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 30: 124 (1881) [1880]
= *Lecanora hilaris* Dufour ex Nyl. 1861

[VZR21], Italia, Sicilia: Pollina urbs, loco "Final" dicto, 80 m. Ad saxa granitica. Leg. et det. D. Puntillo, 30.03.1991. Ex A. Vězda: Lichenes Rar4iores Exsiccati Nr. 21.

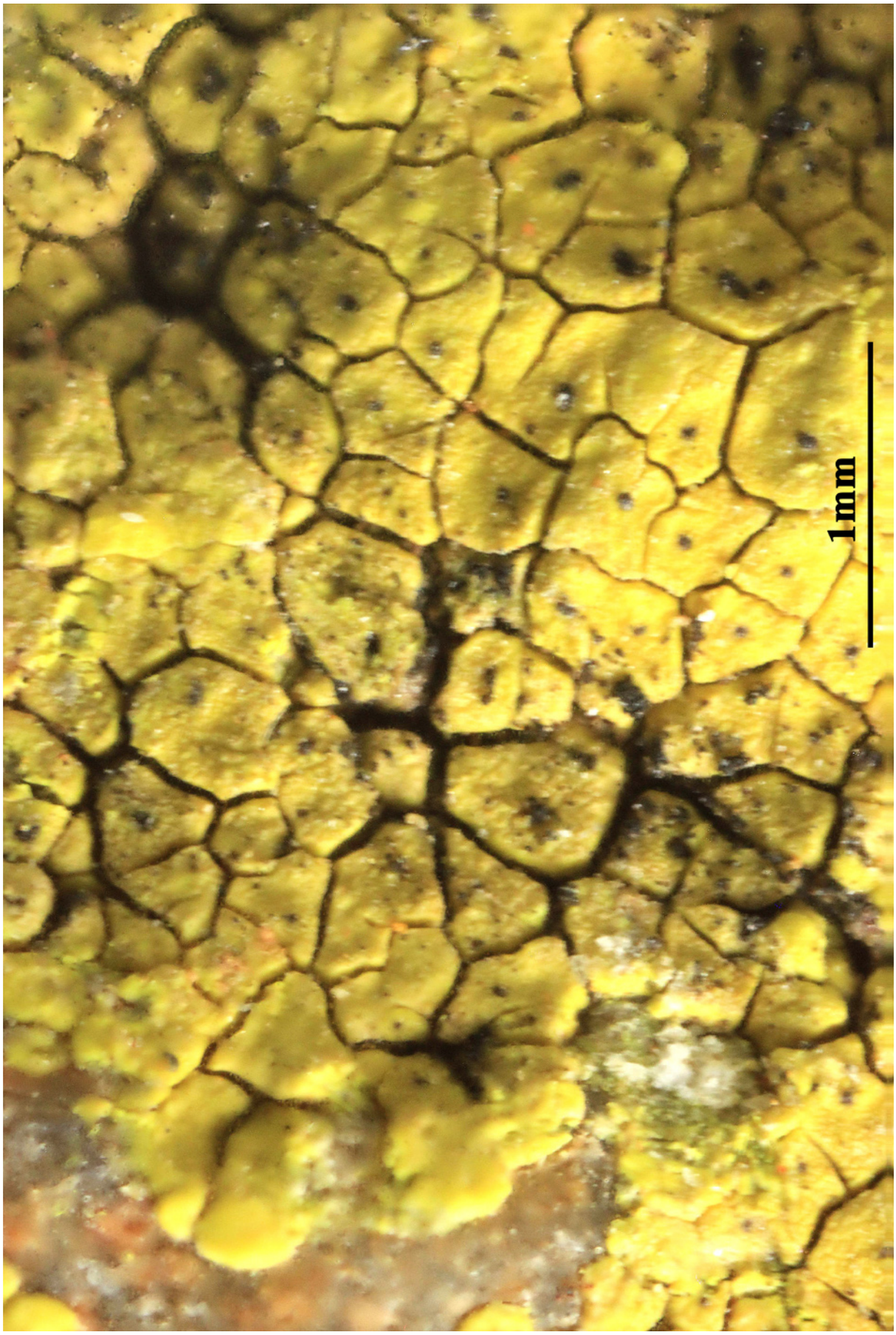
hallus crustose-placodioid, episubstratic, bright lemon yellow, slightly glossy, epruinose, forming orbicular to irregular, often confluent rosettes covering wide surfaces. Central parts of thallus of contiguous, angular, flat to slightly convex areoles; marginal lobes radiating, flat or weakly convex, 1-2(-4) x 0.3-0.6(-1) mm. Medulla white; algal layer continuous. Apothecia lecanorine, immersed in the areoles (1-3 per areole), with a punctiform, dark brown disc and a poorly evident thalline margin. Epithecium brownish; hymenium colourless, 85-100 µm high; paraphyses 1.5-2 µm thick at base, the apical cells hardly swollen; hypothecium colourless. Asci 100-200-spored, broadly ellipsoid, the apical dome K/I-. Ascospores 1-celled, hyaline, ellipsoid, 3-6 x c. 2 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, the cortex UV+ orange. Chemistry: cortex with rhizocarpic acid, rarely with epanorin. - Note: a xeric subtropical species found on vertical, often rain-sheltered faces of hard siliceous rocks, restricted to the driest parts of Mediterranean Italy. Chemically heterogeneous (epanorin or rhizocarpic acid).

Acarospora hilaris



Acarospora hilaris

Acarospora hilaris

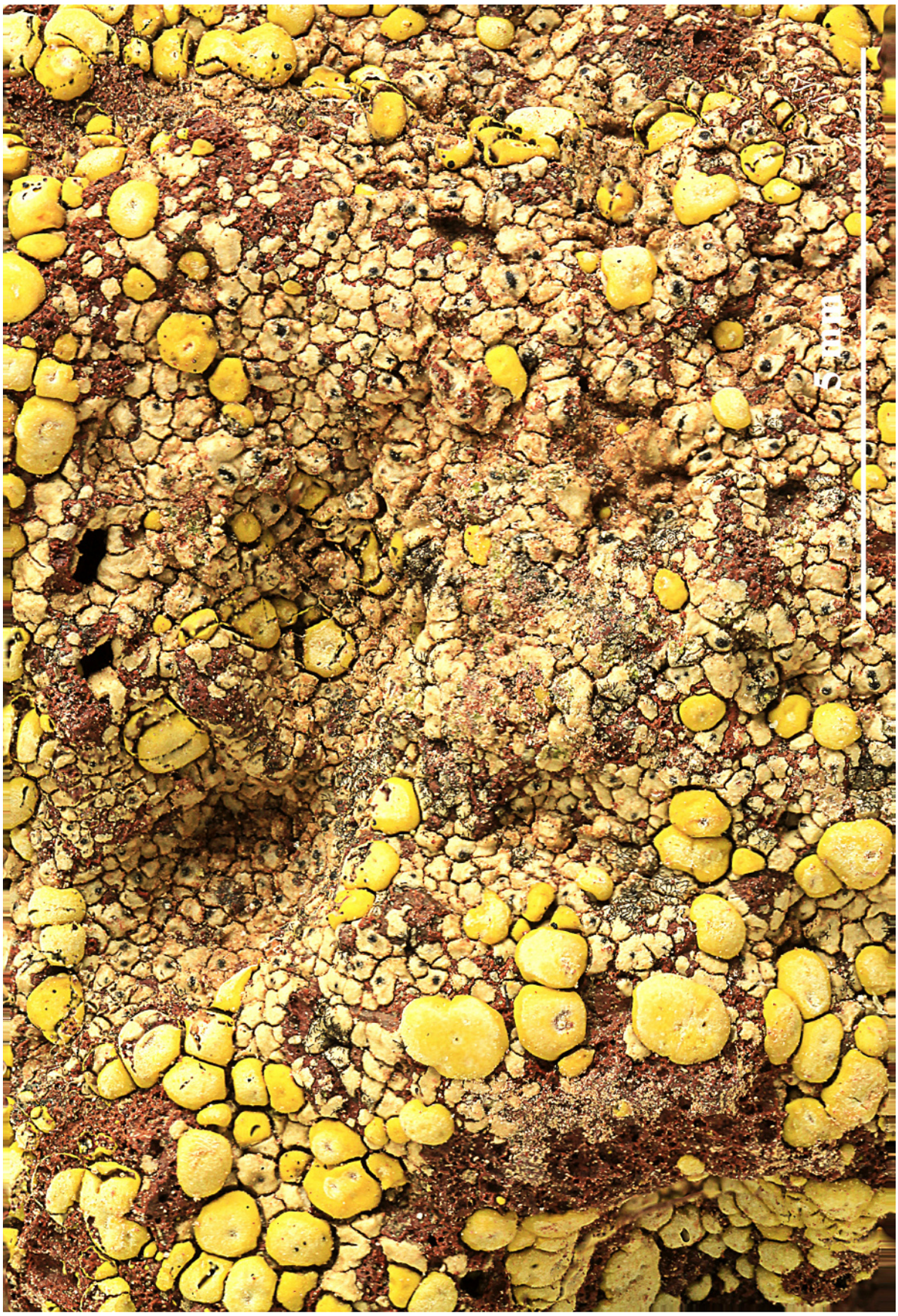


Acarospora hilaris

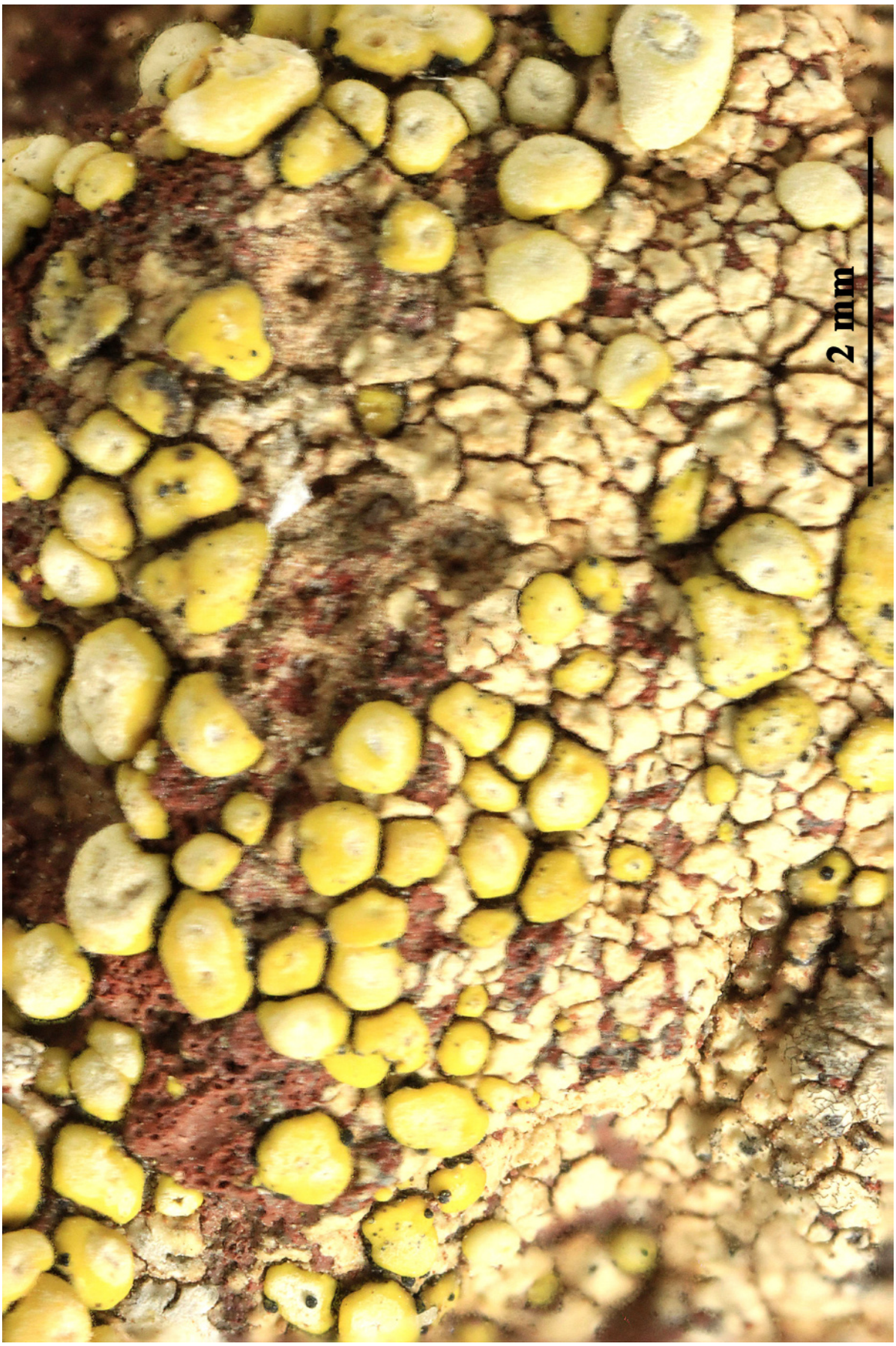
Acarospora lavicola J. Steiner, Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 71: 95 (1902)

[VZR111], Insulae Canarienses, Tenerife. Costa del Silentio, El Médano, in colle olim ignivomo litoreo "Monte Roja" dicto, 150 m. Ad lavam. Leg. A. Vězda & F. Ceni, 17.03.1994, det. A. Vězda. EX A. VEZDA: LICHENES RARIORES EXSICCATI NR. 111.

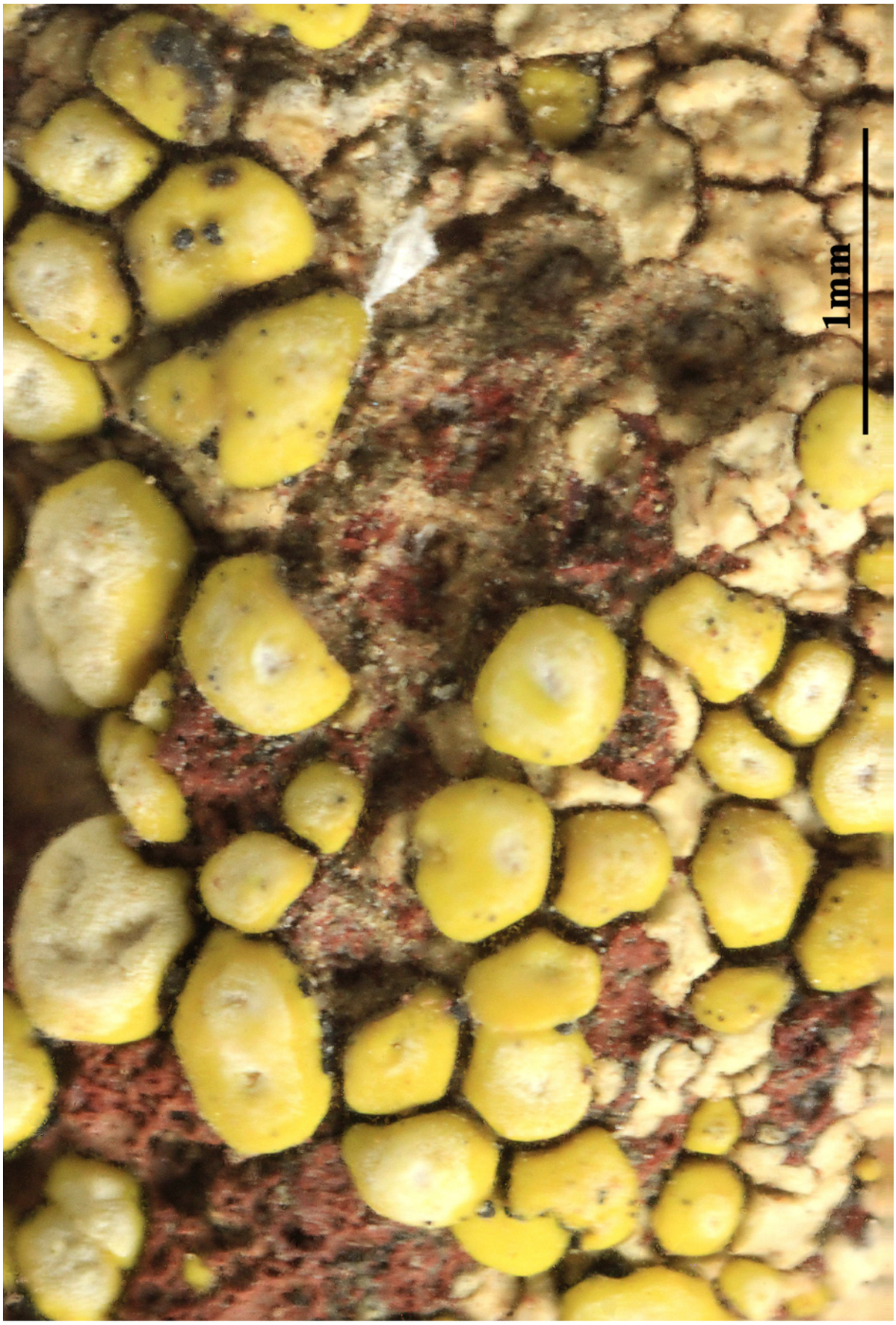
Thallus crustose, episubstratic, sulphur yellow, sometimes finely white-pruinose, areolate. Areoles flat, 0.4-1.5 x 0.2-0.5 mm, scattered to usually contiguous, mostly angular. Cortex 30-50 µm thick; algal layer uneven, interrupted by hyphal bundles; medulla white. Apothecia aspicilioid or lecanorine, immersed in the thallus, mostly round, 0.6-1.4 mm across, with a dark brown disc and a more or less evident thalline margin. Epithecium brownish; hymenium colourless, up to 120 µm high, the hymenial gel hemiamyloid, K/I+ light blue fading to light red; paraphyses coherent, hardly swollen at apex; hypothecium colourless. Asci 100-200-spored, clavate, the apical dome K/I-. Ascospores 1-celled, hyaline, broadly ellipsoid to subglobose, 3.5-4.5 x 2-3.5 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV+ orange. Chemistry: rhizocarpic acid. - Note: a xeric subtropical species of igneous rocks in dry-warm areas, ranging from Macaronesia through southern Europe to Arabia. The species could be confused with forms of *A. heufleriana* which are poor in norstictic acid; previously treated as *A. heufleriana* var. *massiliensis* (Roux in litt.).



Acarospora lavicola



Acarospora lavicola



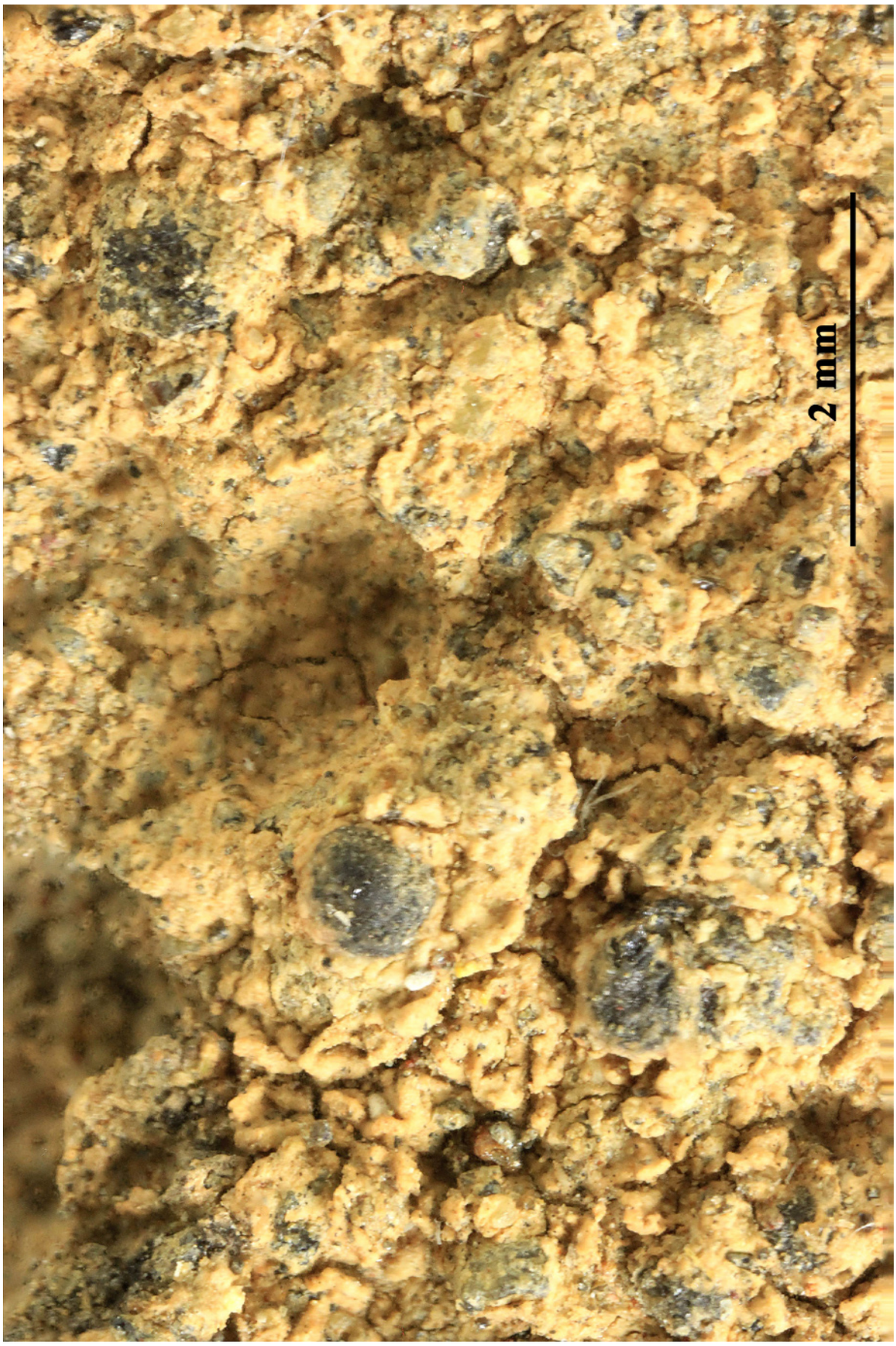
Acarospora lavicola

Acarospora lavicola

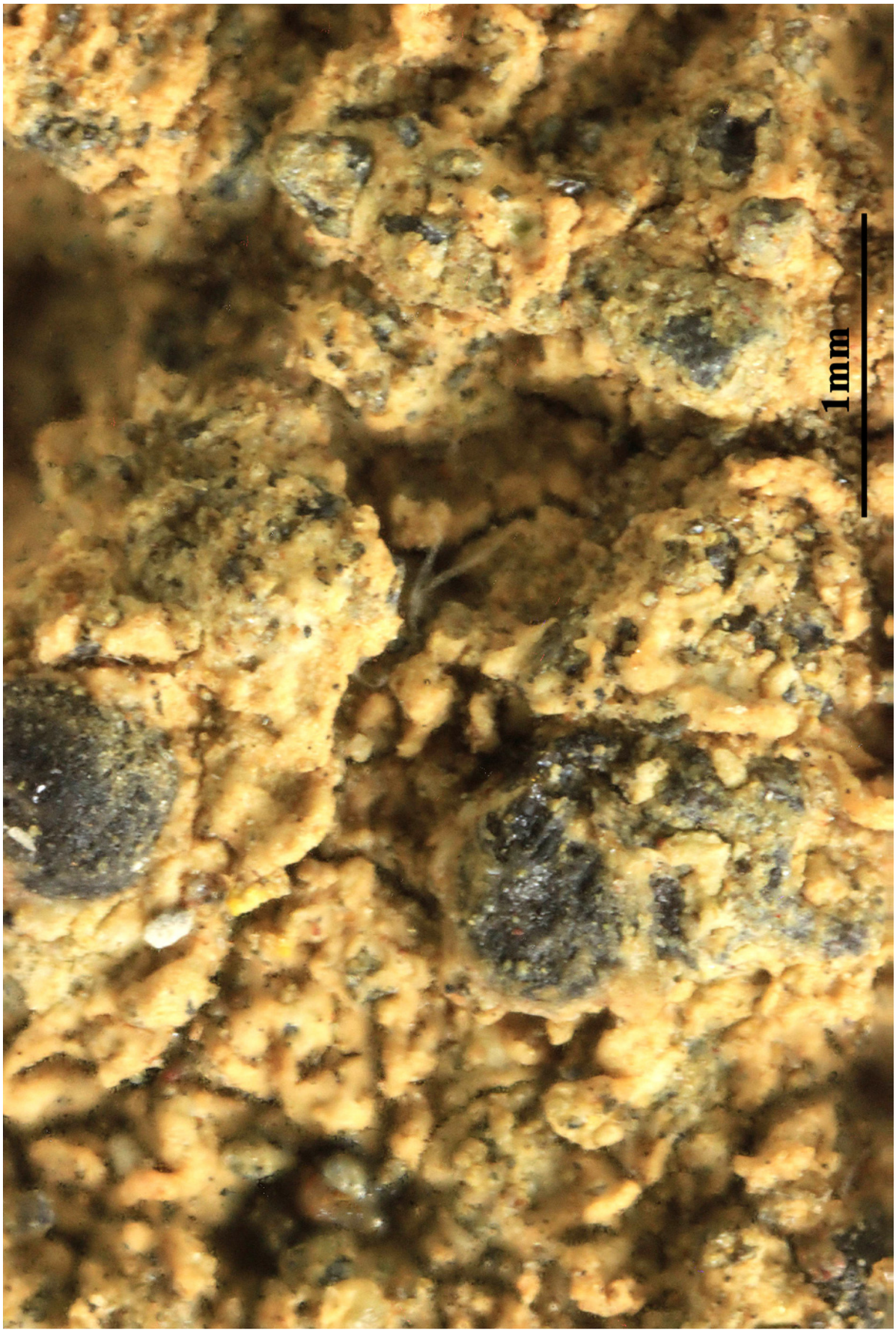
Acrocordia macrospora A. Massal., Symmict. Lich.: 82 (1855)
= *Arthopyrenia macrospora* (A. Massal.) J. Steiner, Annln K. K. naturh. Hofmus. Wien 23: 109 (1909)

[VZR31], Italia, Pelagiae insulae: insula Limosa, in colle "Timpone", 30 m. Ad saxa eruptiva. Leg. D. Puntillo & A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 31.

Thallus crustose, episubstratic, grey to grey-brown, ecorticate, smooth or faintly rimose, especially around the perithecia. Perithecia black, 0.8-1 mm across, rather prominent, the ostiole not papillose. Involucrellum hemispherical, brown-black, spreading laterally, not extending below the hymenium; exciple globose, colourless or pale brownish; hymenial gel I-, K/I-; hamathecium of persistent, slender, sparingly branched or anastomosing, long-celled pseudoparaphyses; periphyses absent. Asci 8-spored, narrowly cylindrical, K/I-, fissitunicate, the apical dome with a broad ocular chamber surmounted by a hemispherical structure, with uniseriately arranged spores. Ascospores 1-septate, not or slightly constricted at septum, the septum thick and the cells equal, hyaline, ellipsoid with rounded ends, 19-29 x 9.5-12 μm, surrounded by a perispore which appears verrucose in water, smooth in K. Pycnidia rare, black, 0.2-0.3 mm in diam. Conidia acrogenous, ellipsoid, simple, hyaline. Photobiont trentepohlioid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: an apparently Mediterranean-Atlantic, mild-temperate species ranging from Macaronesia to Norway, found on base-rich or weakly calciferous siliceous rocks in sheltered situations below the montane belt. Certainly rare in Italy.



Acrocordia macrospora



Acrocordia macrospora

Agonimia opuntiella (Buschardt & Poelt) Vězda, Lichenes Rariores Exsiccati 33(nos 321-330): 4, no. 330 (1997)

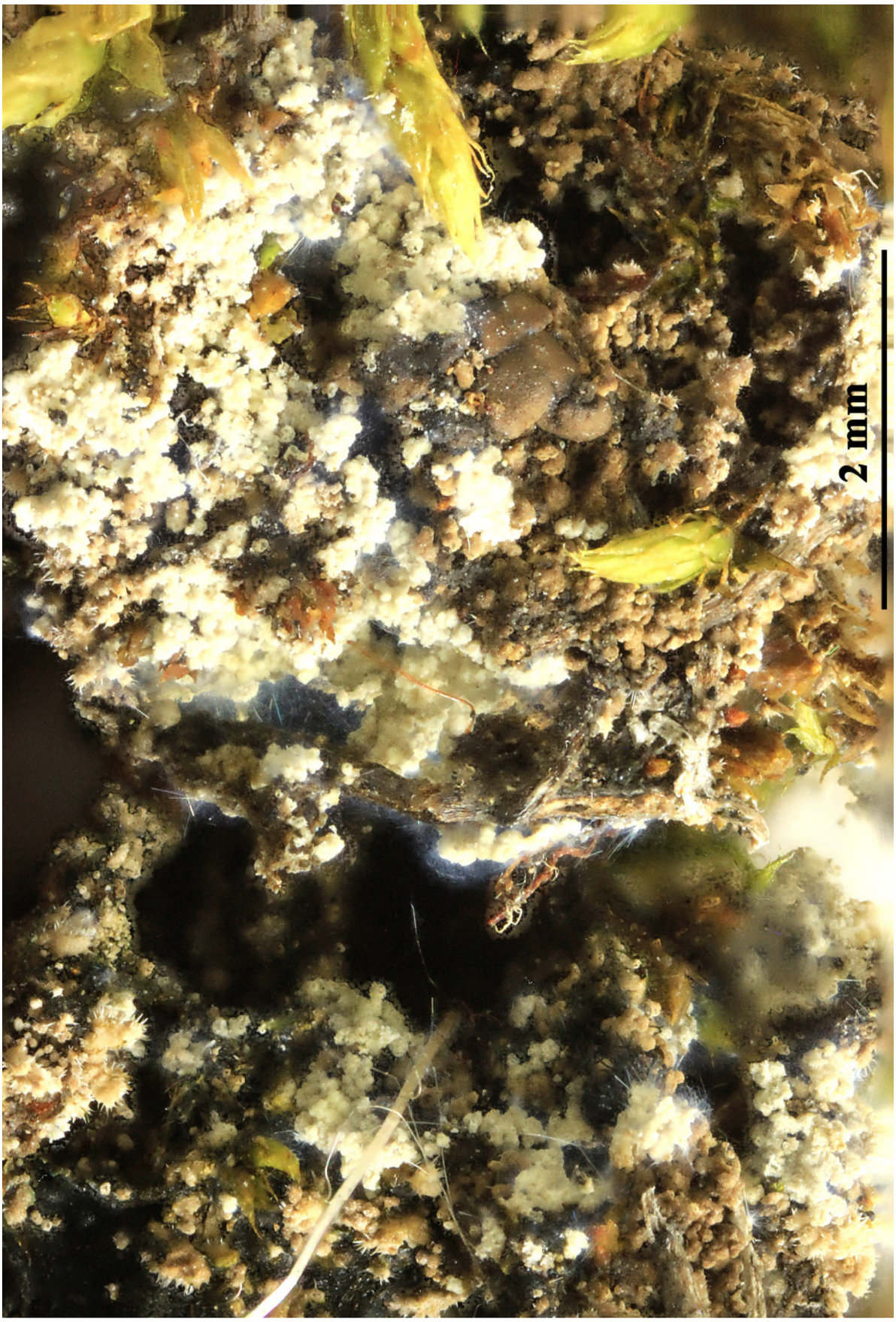
= *Phaeophyscia opuntiella* (Buschardt & Poelt) Hafellner, Mitt. naturw. Ver. Steierm. 122: 116 (1992)

= Phaeophyscia opuntiella (Buschardt & Poelt) Clauzade & Cl. Roux, Bull. Soc. bot. Centre-Ouest, Nouv. sér., num. spec. 7: 598 (1985)

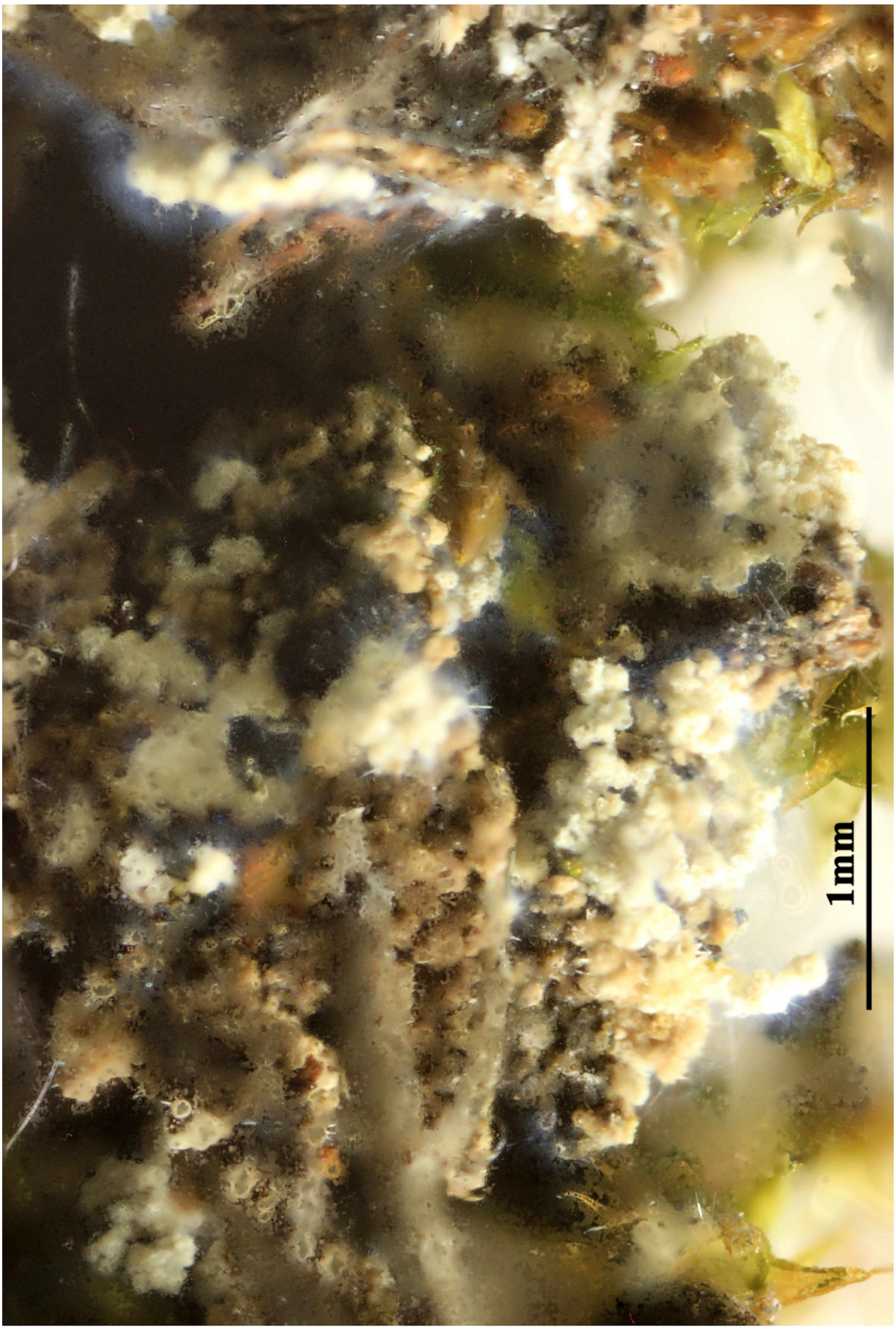
= *Physcia opuntiella* Buschardt & Poelt, in Poelt, Flora, Regensburg 169: 24 (1980)

[VZR247], Bohemia centr. Rakovník, regio Křivoklátsko, loco dicto Čertova skála, ad plantas emortuas et ad terra, in rupibus spiliticis, 315 m. Leg. & det, Jama Horáková. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 247.

Thallus squamulose, grey to brownish- or greenish-grey, loosely attached, the squamules 0.1-0.3(-0.4) mm broad, bullate to slightly flattened, entire to crenate, dispersed or grouped, often articulate in the form of a Opuntia, densely covered in thin transparent hairs, sometimes blastidiate. Thallus paraplectenchymatous throughout, with a brown pseudocortex, overlain by an epinecral layer of isodiametric, 6-10.5 µm wide, conspicuously papillate cells. Perithecia very rare, black, pyriform, without involucrellum, located between the squamules, 0.3-0.4 mm across (in section), with a rugose surface. Exciple distinctly 3-layered, with an outer layer of rounded, heavily pigmented cells, a median layer of similar, but unpigmented cells, and an inner layer of elongated, colourless cells; hamathecium of periphyses and periphysoids, interascal filaments absent; hymenial gel hemiamyloid. Asci (1-)2-spored, clavate, thin-walled, fissitunicate with a very thin exoascus, surrounded by a hemiamyloid gel. Ascospores muriform, at first hyaline, finally sometimes turning pale brown, ellipsoid, 60-70 x 25-28 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. Note: a mild-temperate species found on terricolous mosses and plant debris over calcareous substrata, sometimes amongst mosses on basal parts of old trees, from the Mediterranean to the montane belt.



Agonimia opuntiella



Agonimia opuntiella

Agonimia opuntiella (Buschardt & Poelt) Vězda, Lichenes Rariores Exsiccati 33(nos 321-330): 4, no. 330 (1997)

= *Phaeophyscia opuntiella* (Buschardt & Poelt) Hafellner, Mitt. naturw. Ver. Steierm. 122: 116 (1992)

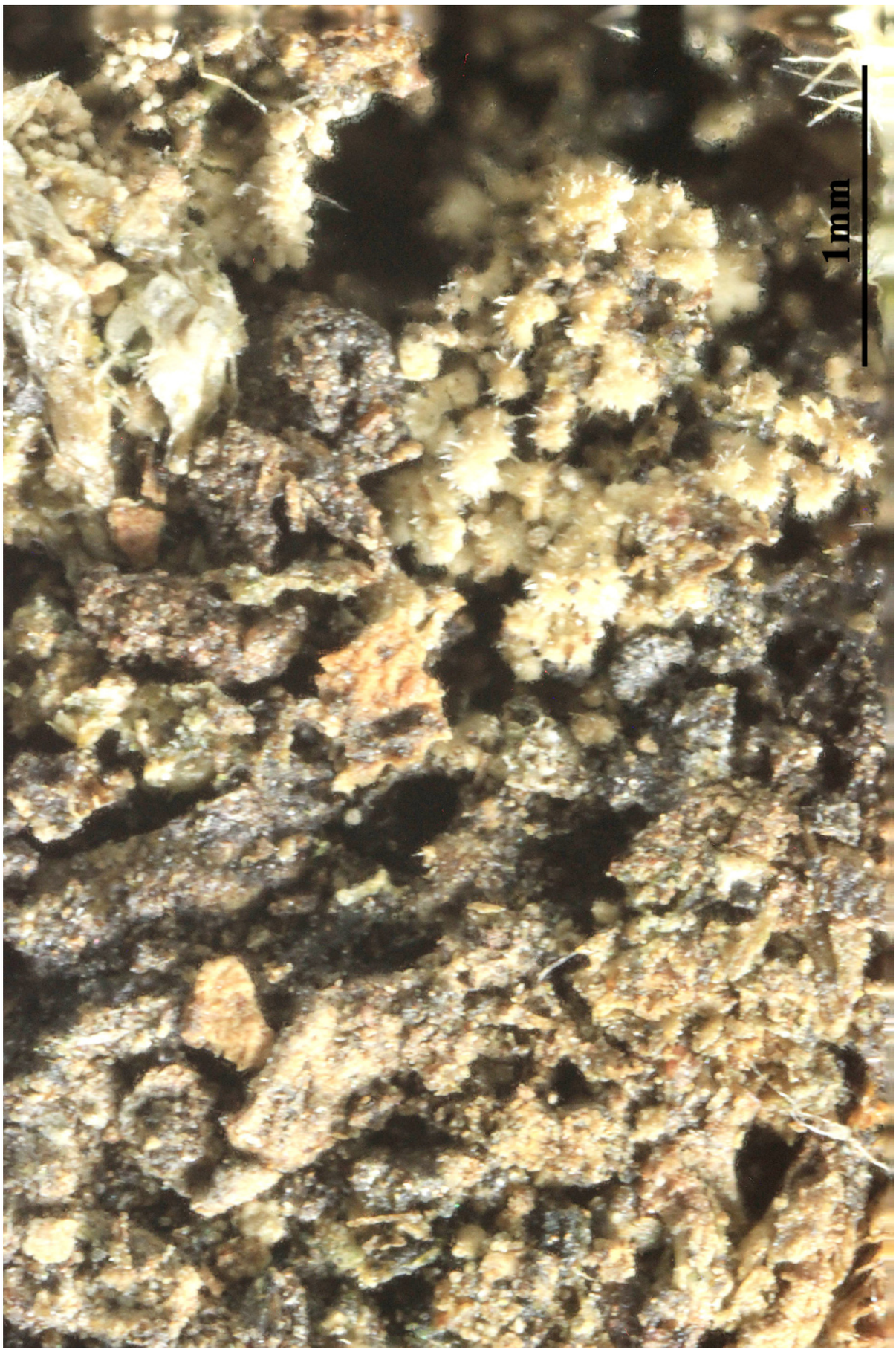
= Phaeophyscia opuntiella (Buschardt & Poelt) Clauzade & Cl. Roux, Bull. Soc. bot. Centre-Ouest, Nouv. sér., num. spec. 7: 598 (1985)

= *Physcia opuntiella* Buschardt & Poelt, in Poelt, Flora, Regensburg 169: 24 (1980)

[VZR330], Moravia, distr. Moravský Krumlov, in valle fluvii Rokytná sub oppidum Budkovice, 300 m. Ad terram humosa pro parte calcariam in rupibus conglomeratis, locis apricis. Leg. A. Vězda & B. Bruna, 19.08.1997. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 330.

Thallus squamulose, grey to brownish- or greenish-grey, loosely attached, the squamules 0.1-0.3(-0.4) mm broad, bullate to slightly flattened, entire to crenate, dispersed or grouped, often articulate in the form of a Opuntia, densely covered in thin transparent hairs, sometimes blastidiate. Thallus paraplectenchymatous throughout, with a brown pseudocortex, overlain by an epinecral layer of isodiametric, 6-10.5 µm wide, conspicuously papillate cells. Perithecia very rare, black, pyriform, without involucrellum, located between the squamules, 0.3-0.4 mm across (in section), with a rugose surface. Exciple distinctly 3-layered, with an outer layer of rounded, heavily pigmented cells, a median layer of similar, but unpigmented cells, and an inner layer of elongated, colourless cells; hamathecium of periphyses and periphysoids, interascal filaments absent; hymenial gel hemiamyloid. Asci (1-)2-spored, clavate, thin-walled, fissitunicate with a very thin exoascus, surrounded by a hemiamyloid gel. Ascospores muriform, at first hyaline, finally sometimes turning pale brown, ellipsoid, 60-70 x 25-28 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. Note: a mild-temperate species found on terricolous mosses and plant debris over calcareous substrata, sometimes amongst mosses on basal parts of old trees, from the Mediterranean to the montane belt.

Agonimia opuntiella

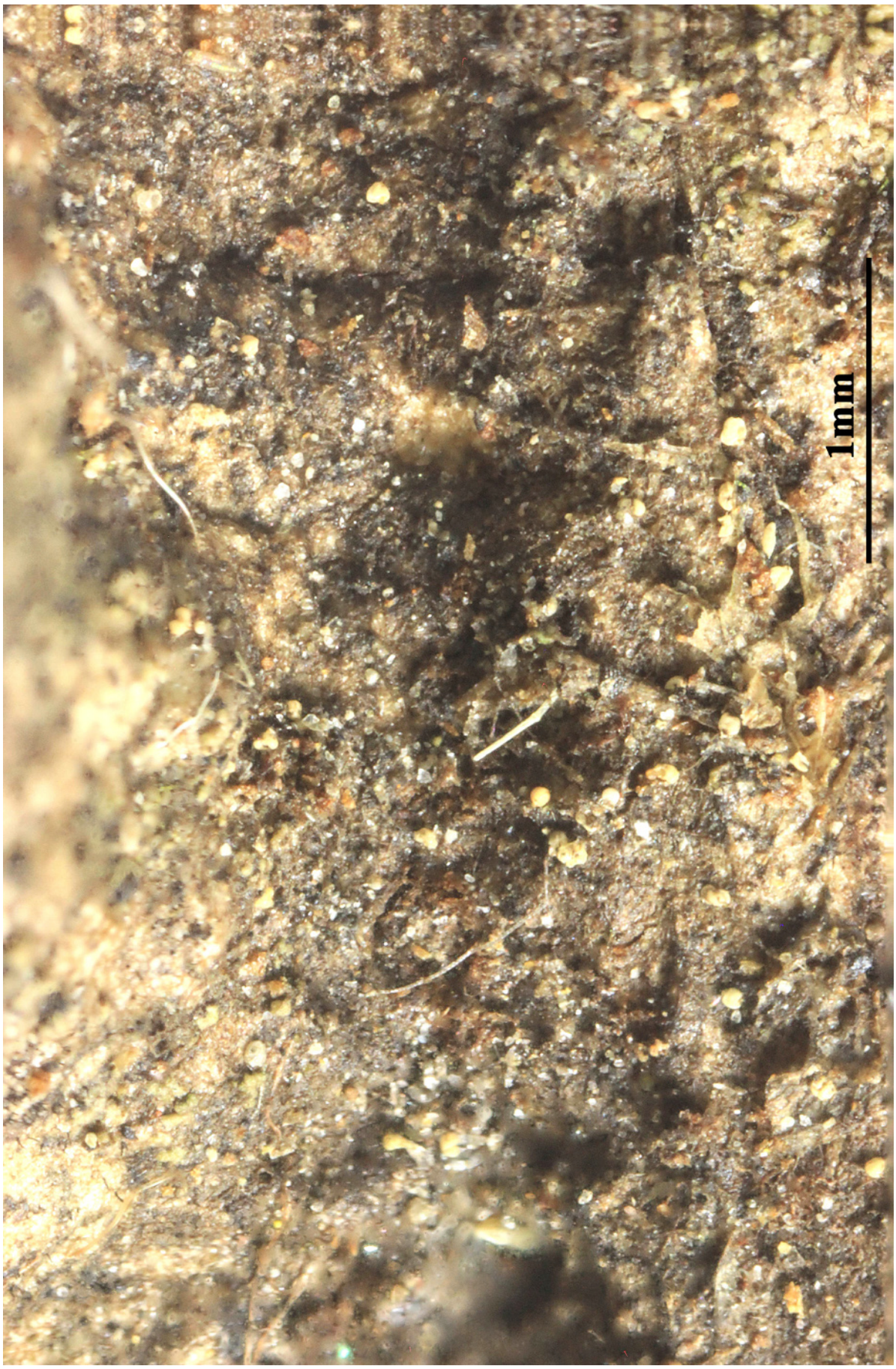


Agonimia opuntiella

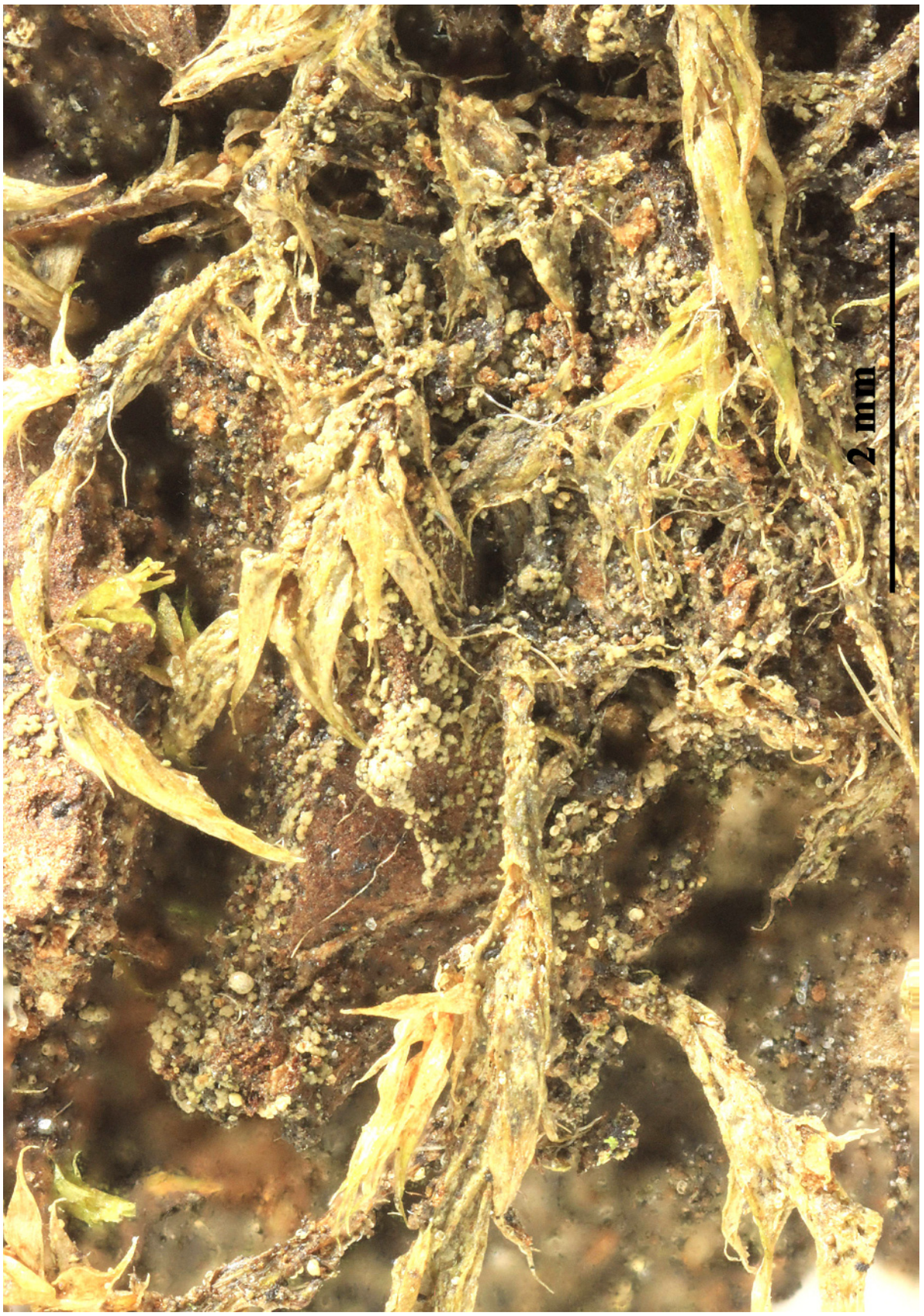
Agonimia repleta Czarnota & Coppins, Graphis Scripta 11(2): 56 (2000)

[VZR446], Bohemia sept. orientalis, Nové Mesto nad Metují, ad septentriones a pago Peklo, prope molam "Suchánkův mlýn", in ripa fluminis "MMetuje", 320 m. Ad corticem Tiliae cordatae vetustae. Leg. & det. J. Halda, conf. P. Czarnota, 3.11.2000. - Thallus squamulosus, viridis, corticem vel muscos incolens, Perithecia rarissima. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 446.

Thallus crustose, episubstratic, dull green, rarely with a brownish tinge, granular or minutely squamulose, with (0.03-)0.04-0.12 mm wide goniocysts often coalescing into a verrucose crust, the squamules, when present, flattened to convex, often minutely lobulate, up to 0.24 x 0.1 mm, adpressed to ascending (especially when developing on mosses). Cortex of the goniocysts of rounded to angular cells, a few of them with up to 1.7 µm high papillae. Perithecia black, including the ostiolar region, half to three-quarters immersed amongst the thalline granules, globose when young, later pear-shaped, 0.14-0.2 mm across, the upper part roughened with vertical furrows. Exciple 2-layered, pigmented in outer part, colourless and of compressed cells within; involucrellum absent; hamathecium of periphysoids which soon dissolve into a poorly differentiated hymenial gel (interascal filaments in mature ascomata lacking). Asci 8-spored, clavate, thin-walled, fissitunicate with a very thin exoascus, surrounded by a hemiamyloid gel. Ascospores muriform, hyaline, ellipsoid to rarely subglobose, 20-46 x 12-20 µm. Photobiont chlorococcoid, the cells 5-10 µm wide. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: mainly on bark among mosses and on mossy rocks in rather humid and shaded situations. The species is apparently widespread in Central Europe; the Italian sample, from the bark of *Q. coccifera*, extends its distribution to the Mediterranean region. It probably does not belong to *Agonimia* in the strict sense; for further details see Czarnota & Coppins (2000).



Agonimia repleta



Agonimia repleta

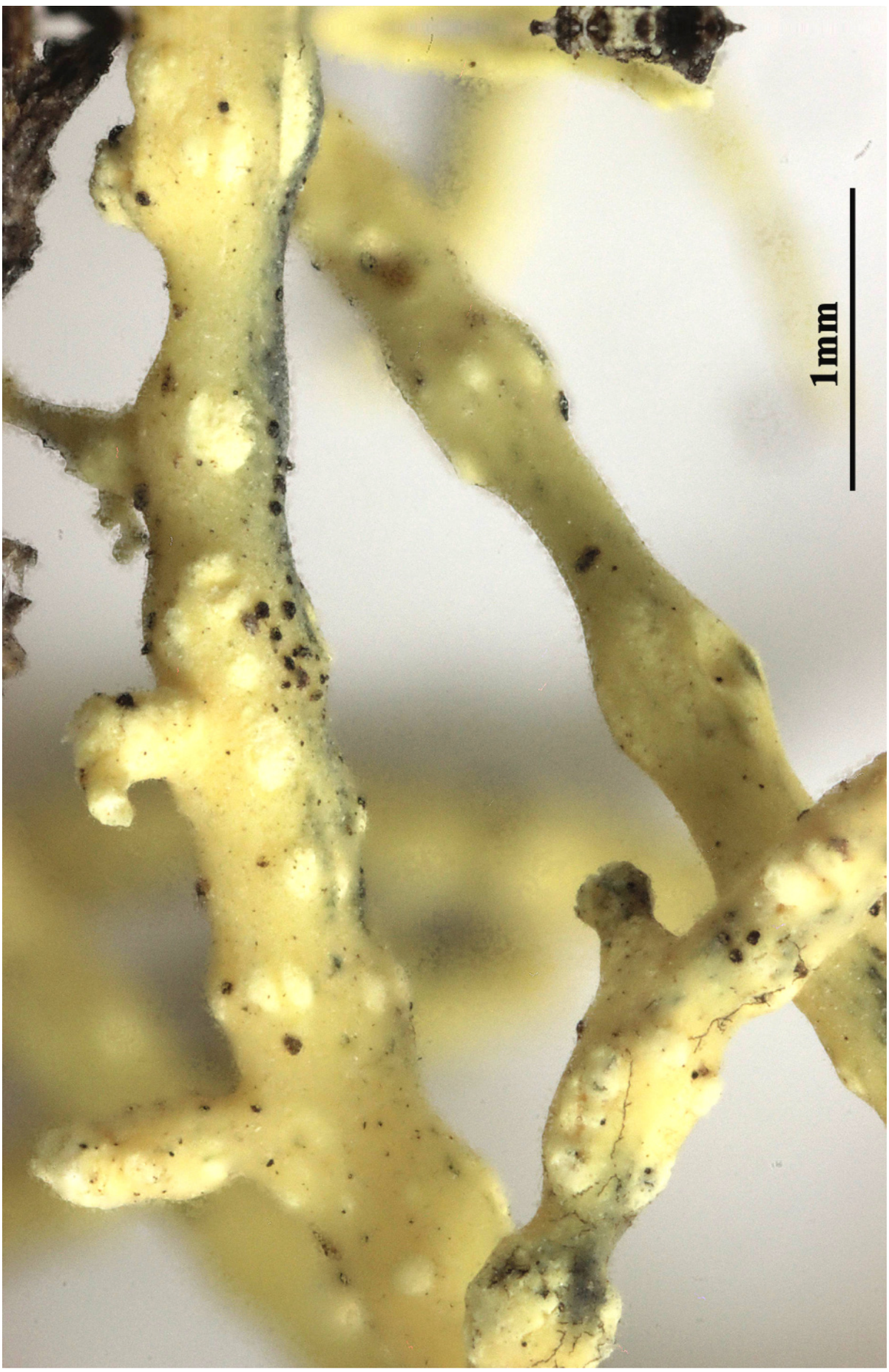
Alectoria ochroleuca (Hoffm.) A. Massal. Sched. Crit., 2: 47, 1856
= *Alectoria ochroleuca* f. *citrina* Räsänen, Ann. bot. Soc. Zool.-Bot. fenn. Vanamo 2(no. 1): 121 (1932)
= *Alectoria ochroleuca* f. *tenuior* Cromb., J. Bot., Lond. 10: 232 (1872)
= *Alectoria ochroleuca* var. *citrina* (Räsänen) D. Hawksw., Bryologist 72: 249 (1969)
= *Bryopogon ochroleucus* (Schrank) Link, Grundr. Krauterk. 3: 164 (1833)
= *Bryopogon ochroleucus* var. *tenuior* (Cromb.) Gyeln., Feddes Repert. Spec. Nov. Regni veg. 38: 248 (1935)
= *Cornicularia ochroleuca* (Schrank) DC., in Lamarck & de Candolle, Fl. franç., Edn 3 (Paris) 2: 330 (1805)
= *Evernia ochroleuca* (Schrank) Fr., Lich. eur. reform. (Lund): 22 (1831)
= *Evernia ochroleuca* f. *rigida* Fr., Lich. eur. reform. (Lund): 22 (1831)
= *Lichen islandicus* var. *ochroleucus* Schrank, Primit. Fl. Salisburg: 234 (1792)
= *Parmelia ochroleuca* (Schrank) Ach., Methodus, Sectio post. (Stockholmiæ): 271 (1803)

[VZR391], Venezuela. Mérida: Mucubaji prope lacum dictum Mucubaji, inter Apartadero et Santo Domingo, in vegetatione montana "paramo" dicta, 3230 m. Ad saxum muscorum. Leg. W. L. Culberson (no. 21088) & C. F. Culberson, 19.08.1989. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 391.

Thallus fruticose, more or less filamentous and shrubby, greenish grey to yellowish green, the apices concolorous or blackened, matt. Branches to 13 cm long (0.5-)1-2(-3) mm thick, stiff, elongate, prostrate to ascending, sparingly anisotomic-dichotomously divided, the apices sometimes drooping. Pseudocyphellae numerous, linear, raised, longitudinally oriented, to c. 1 mm long. Cortex of periclinally arranged hyphae; medulla white, compact. Apothecia extremely rare (not seen in Italian material), lateral, lecanorine, 3-6 mm across, with a reddish brown disc. Epithecium brown; hymenium and hypothecium colourless. Asci 2-4-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, broadly ellipsoid, pigmented when old, 26-42 x 12-28 µm. Pycnidia dark, semi-immersed, mainly apical. Conidia bacilliform, 7-8 x c. 0.8 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC+ pale yellow, P-, UV-; medulla K-, C-, KC-, P-, UV-. Chemistry:

cortex with usnic acid, medulla with diffractaic acid. - Note: an arctic-alpine, circumpolar species found on windy ridges in moss-lichens heaths, more frequent on siliceous substrata, but sometimes also occurring in areas with dolomite, with optimum above treeline. Restricted to the Alps and the Northern Apennines in Italy.

Alectoria ochroleuca

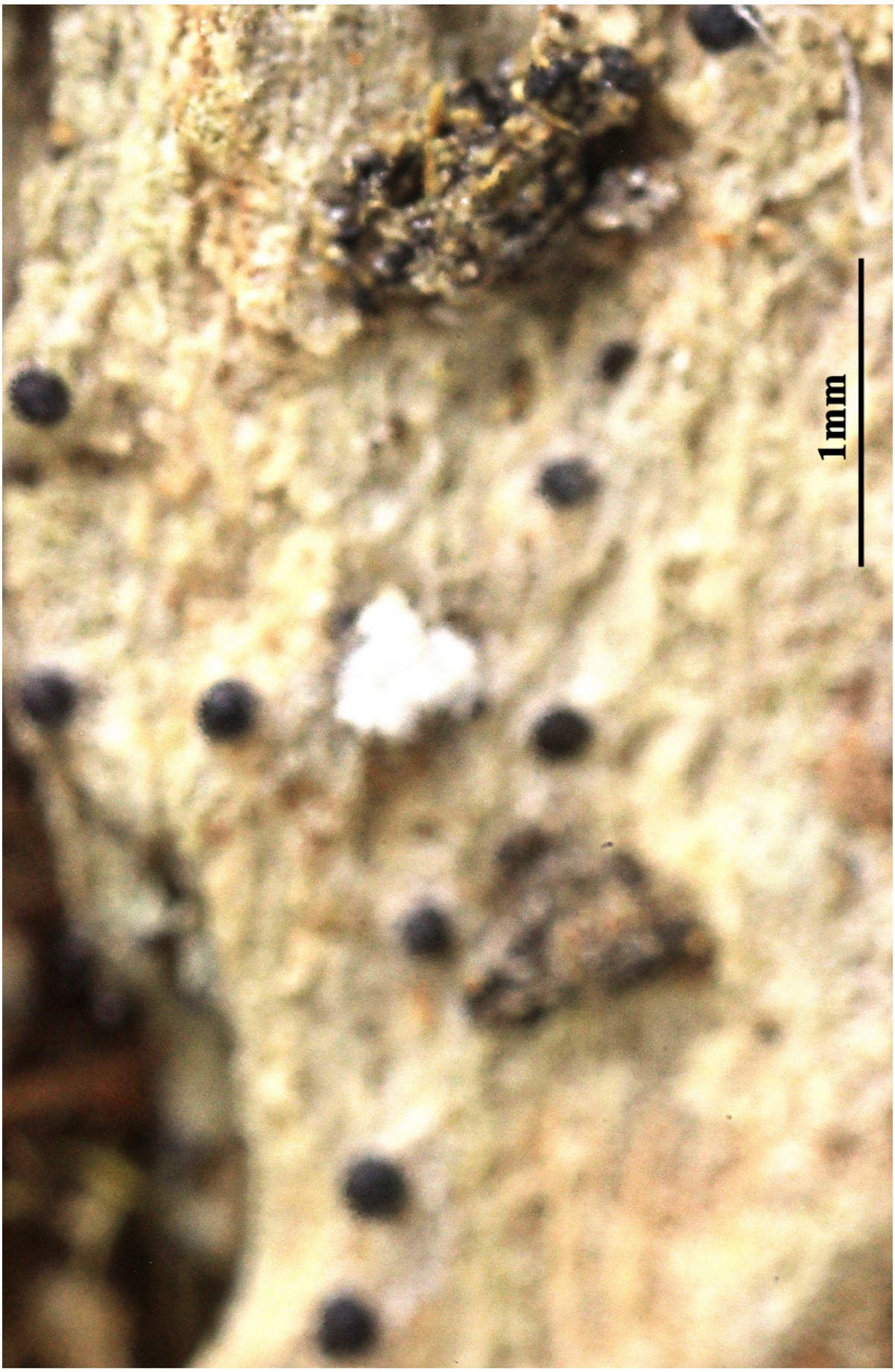


Alectoria ochroleuca

Anisomeridium nyssaegenum (Ellis & Everh.) R.C. Harris [as 'nyssaegenum'], Evansia 2(3): 44 (1985)
= *Zignoella nyssigena* Ellis & Everh. [as 'nyssaegena'] 1893
= *Anisomeridium polypori* (Ellis & Everh.) M.E. Barr, in Barr, Huhndorf & Rogerson 1996

[VZR61], Austria,Stiria, montes Koralpe: Stainz. loco "Sauerbrunn" dicto, 400 m. Ad corticem fruticum (Sambucus nigra) in valle rivi. Leg. J. Poelt & A. Vězda, 5.7.1992. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 61.

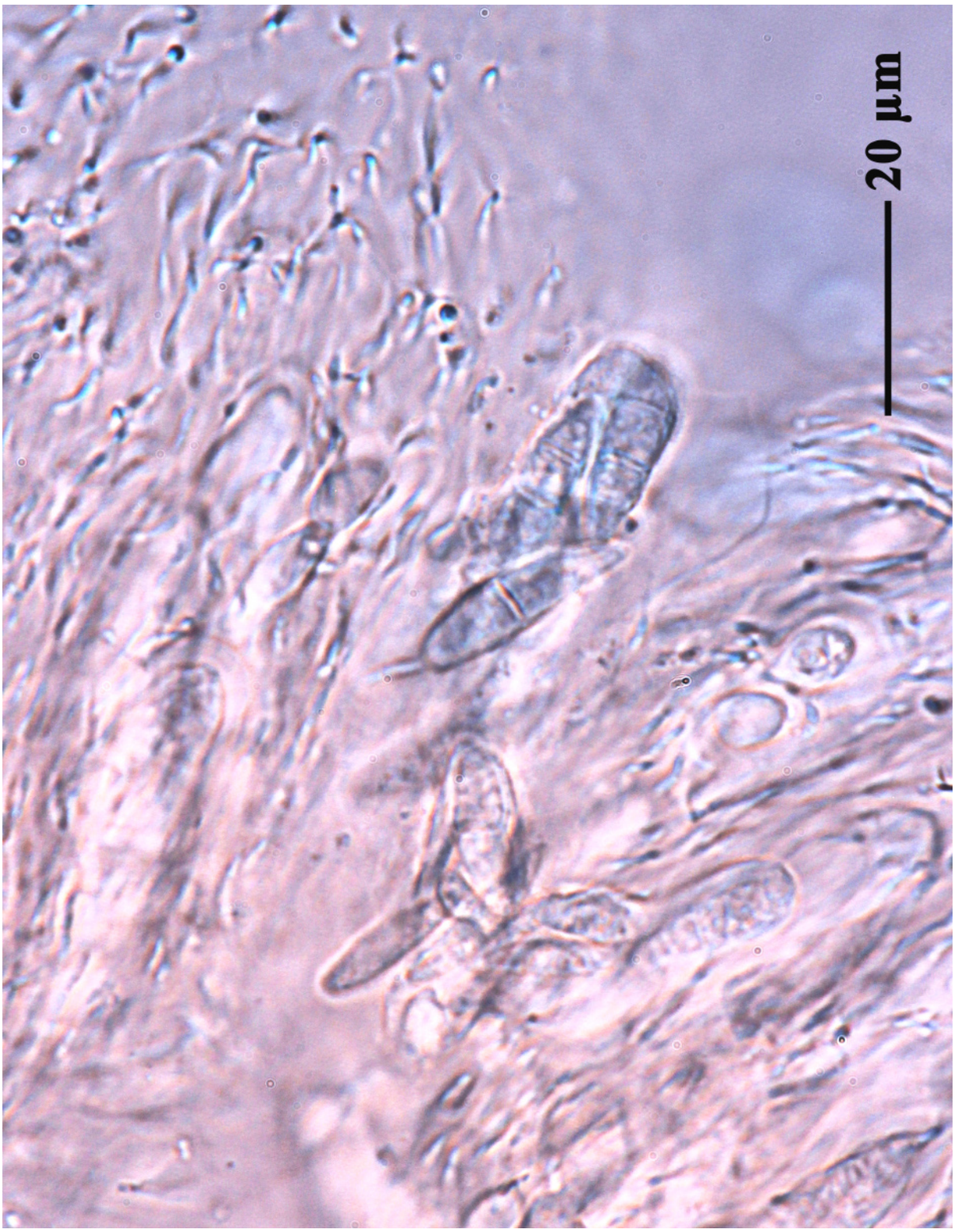
Thallus crustose, mostly endosubstratic and inconspicuous, ecorticate, effuse, whitish grey to pale grey-green. Perithecia rather rare, 0.15-0.25 mm across, globose to subconical, at first immersed, later more or less thinner in lower part, of cellular hyphae, usually without bark cells; involucrellum poorly developed, apical, K+ green; hamathecium of paraphyses; periphyses absent; hymenial gel I-. Asci 8-spored, cylindrical-clavate, K/I-, fissitunicate, the apical dome with an indistinct ocular chamber. Ascospores 1-2(-3)-septate, hyaline, clavate-fusiform, the part above the primary septum wider and about twice as long as the nent, of two types: a) 0.1-0.15 mm across, up to 0.2 mm high, sessile, conical, extruding a white, thread-like, very long gelatinous cirrus containing ellipsoid or ovoid macroconidia with a truncate base, measu- globose, with short-bacilliform to narrowly ellipsoid microconidia K-, C-, KC-, P-, UV-. Chemistry: without lichen substances.



Anisomeridium nyssigenum

Anisomeridium nyssigenum

Anisomeridium nyssigenum



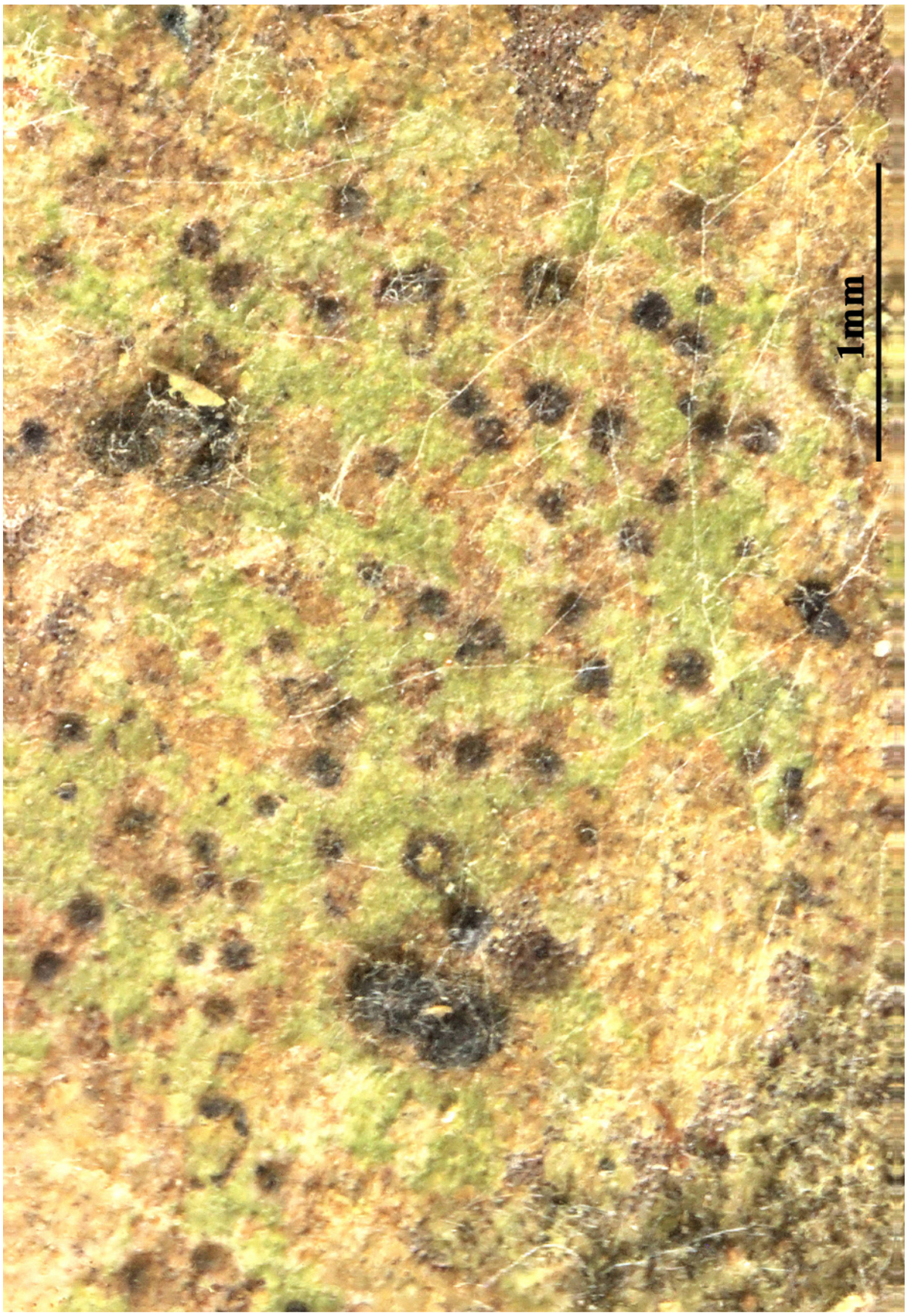
Anisomeridium nyssigenum

Arthonia accolens Stirt., Proc. Roy. phil. Soc. Glasgow 11: 105 (1879) [1878] = *Arthoniopsis accolens* (Stirt.) Müll. Arg., Lich. Epiph. Novi: 17 (1890)

[VZR231], Dominica (Antilles Minores): Northern Forest Reserve, ad latera occid. montis "Marne Dialatins", 600 m. In pluviisilva, foliicola. Leg. A. Vězda, 21.07.1996. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 231.

Thallus dispersed into rounded, partly confluent patches, smooth, 10–20 mm across, very thin (5–10 µm), ecorticate, pale green to brownish yellow, slightly shiny. Photobiont cells rectangular, 7–12×4–5µm, in radiate plates. Ascomata sharply delimited, not raised above thallus level, rounded to slightly irregular in outline, 0.3–1.2 mm diam. and 20–30 µm high, light to dark brown, with velvet-like look. Hypothecium 3–5 µm high, colorless to brown, I+ yellowish brown, KI+ pale yellow. Epithecium formed by a layer of densely packed, parallel, periclinal hyphae, 4–6 µm high, brown, I+ yellowish brown, KI+ pale yellow. Hymenium 17–25 µm high, pale brown, darker in upper part, I+ orange-yellow, KI+ yellow. Asci obovate to globose, 15–20 × 16–13 µm, I–, KI–. Ascospores narrowly obovate, 2-septate, without constrictions at septa, 11–16 × 3–5 µm, distal cell enlarged, colorless. Conidiomata not observed. Chemistry: no substances detected by TLC. Distribution and Ecology. Pantropical; a typical specimen was also found in tropical Africa. A characteristic member of shaded understory communities of rain forests.

Arthonia accolens



Arthonia accolens

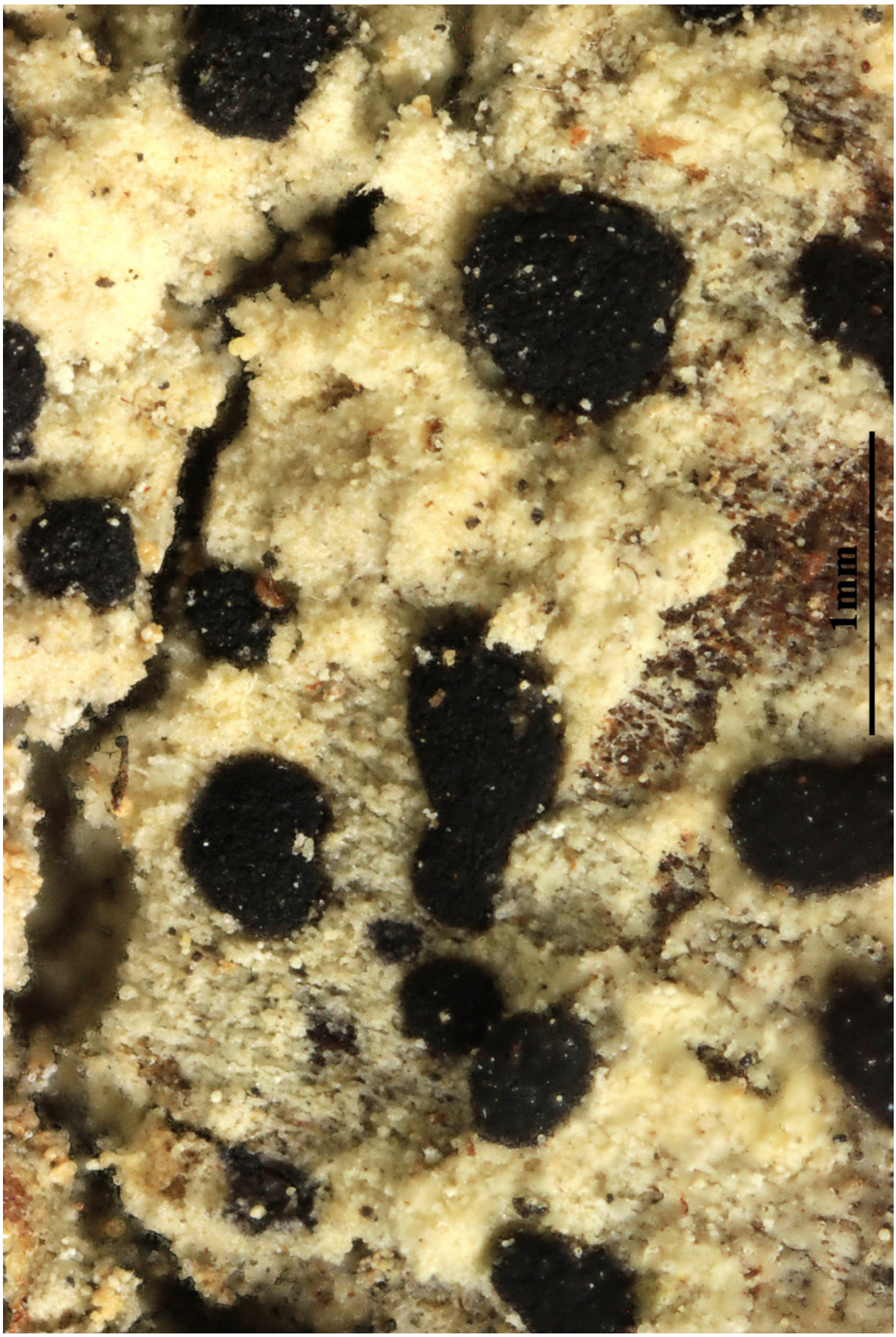
Arthonia arthonioides (Ach.) A.L. Sm., Monogr. Brit. Lich. 2: 213 (1911)
= *Arthonia arthonioides f. corticola* (Eitner) Zahlbr., Cat. Lich. Univers. 2: 12 (1922) [1924]
= *Arthonia aspersa* Leight., Ann. Mag. nat. Hist., Ser. 2 18: 332 (1856)
= *Arthonia lecideoides* f. *corticola* (Eitner) Mig., Flora von Deutschl., Abt. II 12/2: 453 (1930)
= *Arthonia trachylioides* Nyl., Annls Sci. Nat., Bot., sér. 4 3: 169 (1855)
= *Calicium arthonioides* (Ach.) Fr., Lich. eur. reform. (Lund): 403 (1831)
= *Cyphelium trachylioides* Erichsen ex Keissl., Rabenh. Krypt.-Fl., Edn 2 (Leipzig) 9(1.2): 784 (1938)
= *Dicoccum trachylioides* (Nyl.) Keissl., Ark. Bot. 18(no. 16): 12 (1923)
= *Lecidea arthonioides* Ach., Lich. Univ.: 178 (1810)
= *Opegrapha arthonioides* (Ach.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 19(1): 9 (1950)
= *Patellaria arthonioides* (Ach.) Balb., Fl. Lyon. (Lyon) 2: 154 (1828)
= *Trachylia arthonioides* (Ach.) Fr. ex Hampe, Linnaea 15: 382 (1841)
= *Trachylia arthonioides* f. *corticola* Eitner, Jber. schles. Ges. vaterl. Kultur 88(2b Abth.): 51 (1911) [1910]

[VZR443], Bohemia austro-occidentalis, motes Šumava (Gabreta), distr. Klatovy, Povydří. in valle rivi Vydra loco Hálkova chata dicto, 850 m. Ad corticem Piceae excelsae. Leg. Z- Palice & O. Peksa, 6.07.2000, det. Z. Palice. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 443.

Thallus crustose, episubstratic, thin to rather thick, soft, farinose, pinkish white (the pink colour fades in the herbarium), often inapparent in epiphytic samples. Apothecia arthonioid, round to rarely ellipsoid, up to 0.3-1 x 0.5 mm, with a flat to slightly convex, black, epruinose disc, without a distinct proper margin. Proper exciple poorly developed; epithecium dark brown, K+ pale olive-green; hymenium pale reddish brown, 30-40 µm high; paraphysoids c. 1-1.5 µm thick at mid-level, the apical cells often with a brown cap; hypothecium dark brown to black, 100-300 µm high. Asci 8-spored, broadly clavate, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, Arthonia-type. Ascospores (1-)3(-4)-septate, hyaline, clavate, with one of the end cells distinctly enlarged, 11-17 x 4-6 µm. Pycnidia rare, black, immersed. Conidia straight, c. 7 x 2 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a southern species, known from Europe and North America,

found on acidic rocks and exposed roots under dry overhangs, also on dry undersides of trees in sheltered, humid situations, such as in forests.

Arthonia arthonioides

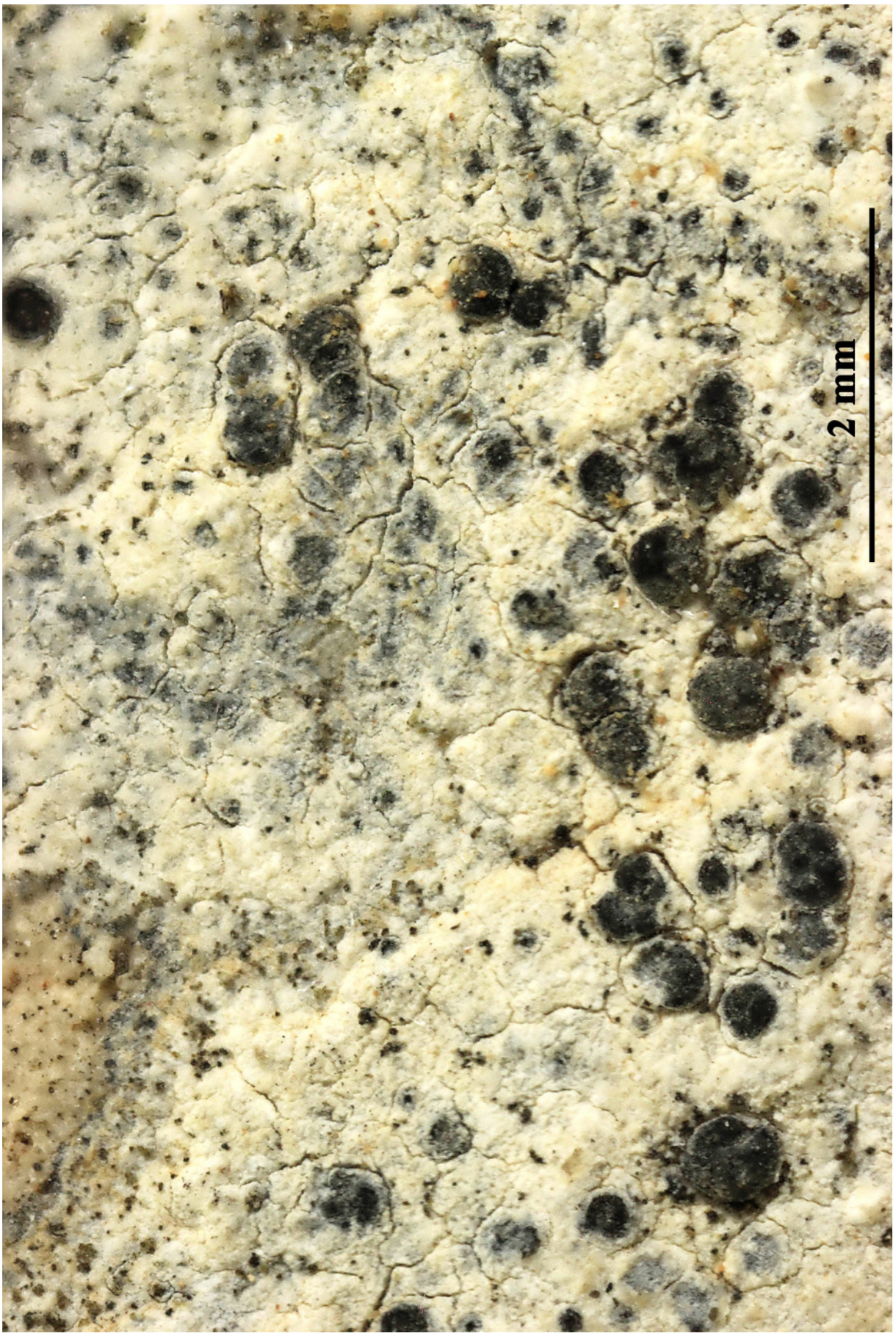


Arthonia arthonioides

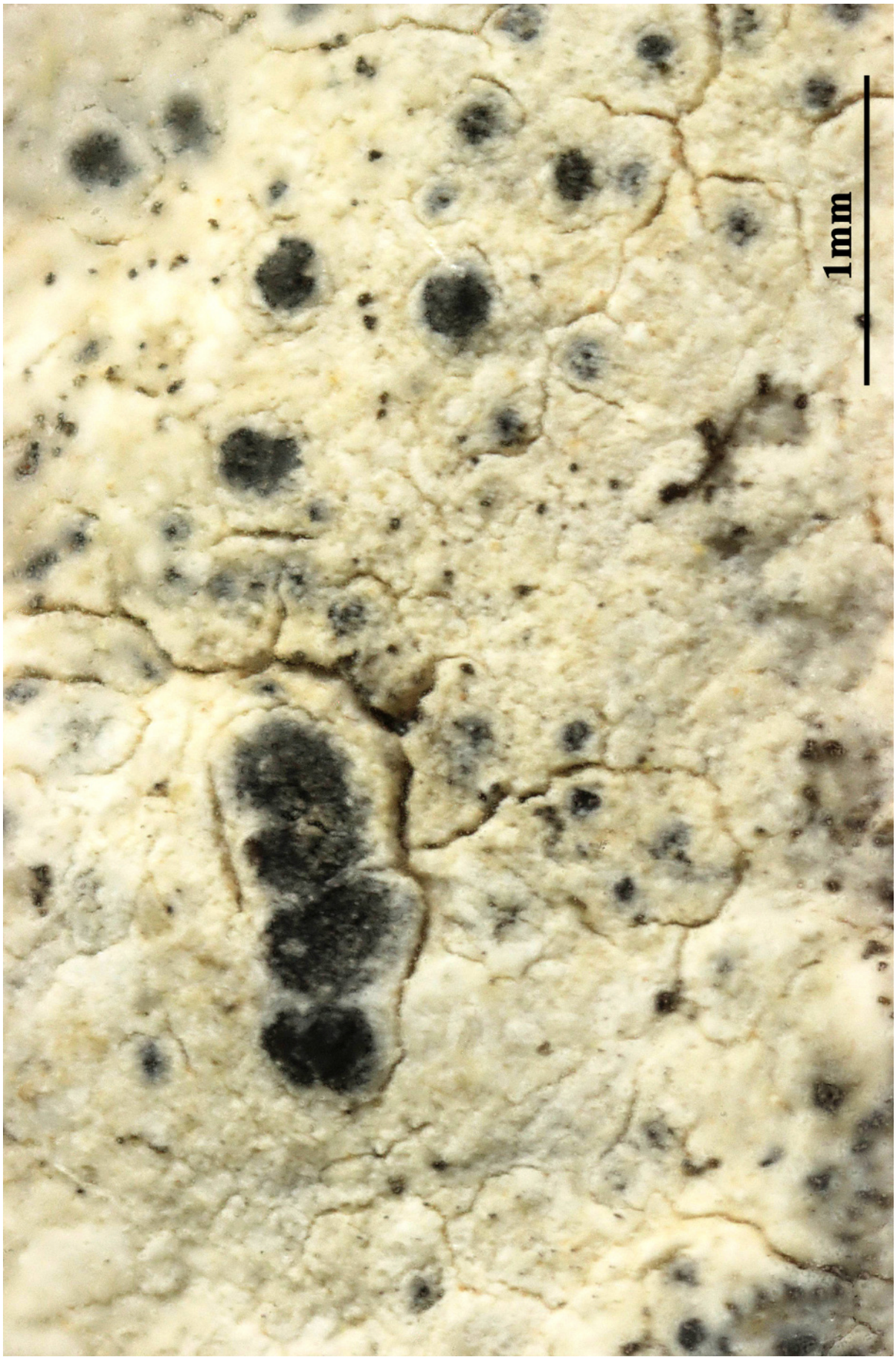
Arthonia cretacea Zahlbr., Öst. bot. Z. 68: 148 (1919)

[VZR32], Italia. Pelagiae insulae: insula Lampedusa, scopulum "Cabo Greco" dictum, 30-50 m. Ad saxa calcarea. Leg. F. Ceni & A. Vězda, 14.04.1992. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 32.

Thallus crustose, episubstratic, 1-1.5 mm thick, ecorticate, forming chalky white, smooth or undulate, well-delimited, up to 2-(-3) cm wide, often confluent patches, without a distinct prothallus. Apothecia arthonioid, black but often grey-pruinose, rounded to elongate, 0.7-1.5 mm across, at first immersed, then broadly sessile, flat to finally convex, without a distinct margin. Proper exciple poorly developed; epithecium green-black, 20-25 μm high; hymenium colourless to very pale brown, 50-85 μm high, I+ blue; paraphysoids thread-like, branched and anastomosing in upper part, with thicker apical cells; hypothecium well-developed, brown-black, wedge-shaped and paler brown in lower part. Asci 8-spored, broadly clavate, semi-fissitunicate, with a large apical dome, a distinct ocular chamber, and a K/I+ bluish ring-structure, Arthonia-type. Ascospores 3-septate, at first hyaline, but turning brown when overmature, with 4 unequal loculi, spindle-shaped, straight, with rounded ends, 10-13 x 5-6 μm. Pycnidia semi-immersed, black, somehow shiny. Conidia bacilliform, straight, 6-8 x c. 1 μm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a mainly Mediterranean species found in shaded, rain-protected surfaces of calcareous rocks subject to humid maritime winds.



Arthonia cretacea



Arthonia cretacea

Arthonia cretacea Zahlbr., Öst. bot. Z. 68: 148 (1919)

[VZR22], Italia. Sicilia, insulae Égadi: insula Marettimo, loco "Cala Maestro" dicto, 20 m. Ad parietes altos rupium calcareum. Leg. et det. D. Puntillo. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 22.

Thallus crustose, episubstratic, 1-1.5 mm thick, ecorticate, forming chalky white, smooth or undulate, well-delimited, up to 2-(-3) cm wide, often confluent patches, without a distinct prothallus. Apothecia arthonioid, black but often grey-pruinose, rounded to elongate, 0.7-1.5 mm across, at first immersed, then broadly sessile, flat to finally convex, without a distinct margin. Proper exciple poorly developed; epithecium green-black, 20-25 μm high; hymenium colourless to very pale brown, 50-85 μm high, I+ blue; paraphysoids thread-like, branched and anastomosing in upper part, with thicker apical cells; hypothecium well-developed, brown-black, wedge-shaped and paler brown in lower part. Asci 8-spored, broadly clavate, semi-fissitunicate, with a large apical dome, a distinct ocular chamber, and a K/I+ bluish ring-structure, Arthonia-type. Ascospores 3-septate, at first hyaline, but turning brown when overmature, with 4 unequal loculi, spindle-shaped, straight, with rounded ends, 10-13 x 5-6 μm. Pycnidia semi-immersed, black, somehow shiny. Conidia bacilliform, straight, 6-8 x c. 1 μm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a mainly Mediterranean species found in shaded, rain-protected surfaces of calcareous rocks subject to humid maritime winds.

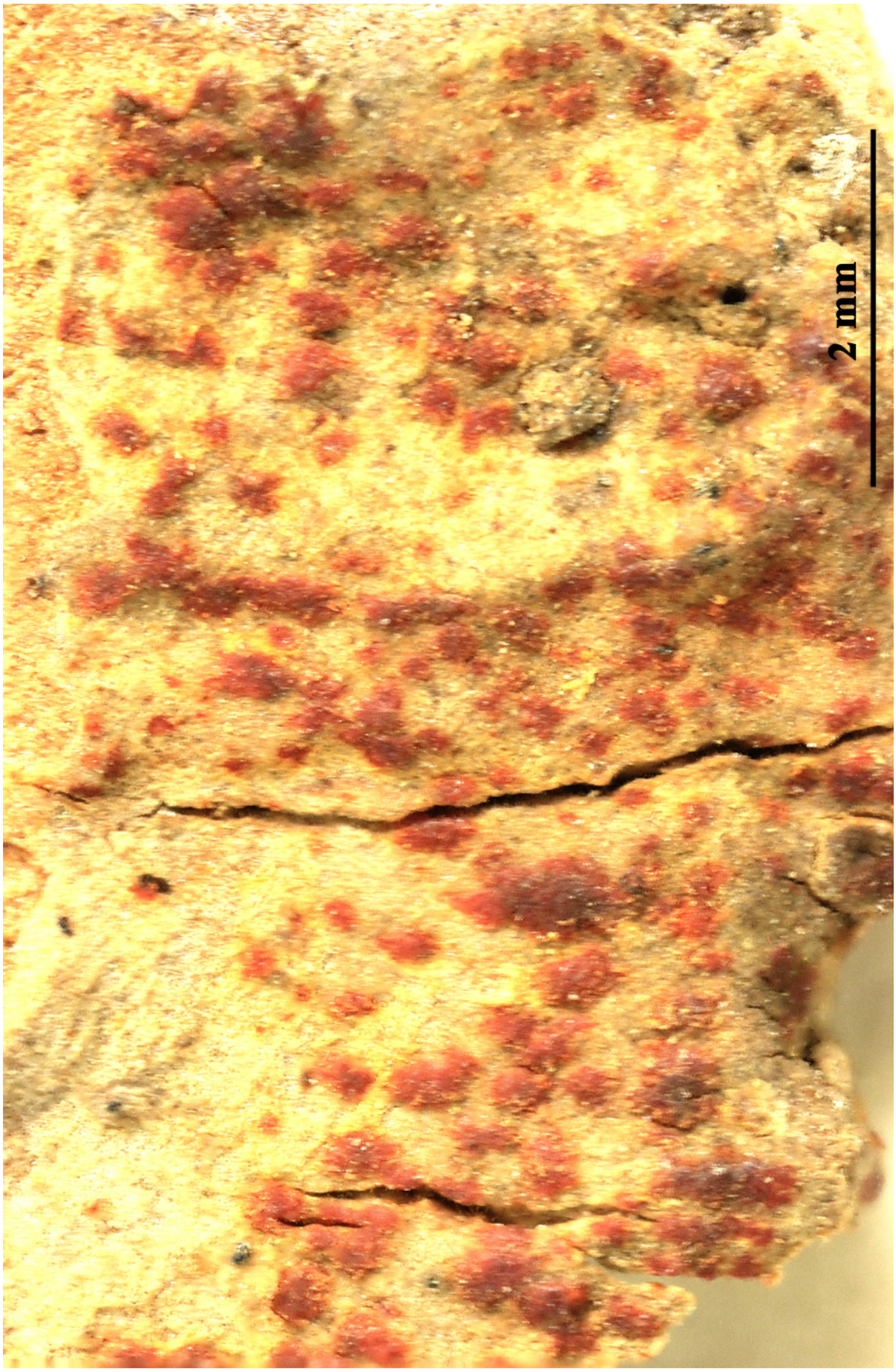
Arthonia cretacea

Arthonia cretacea

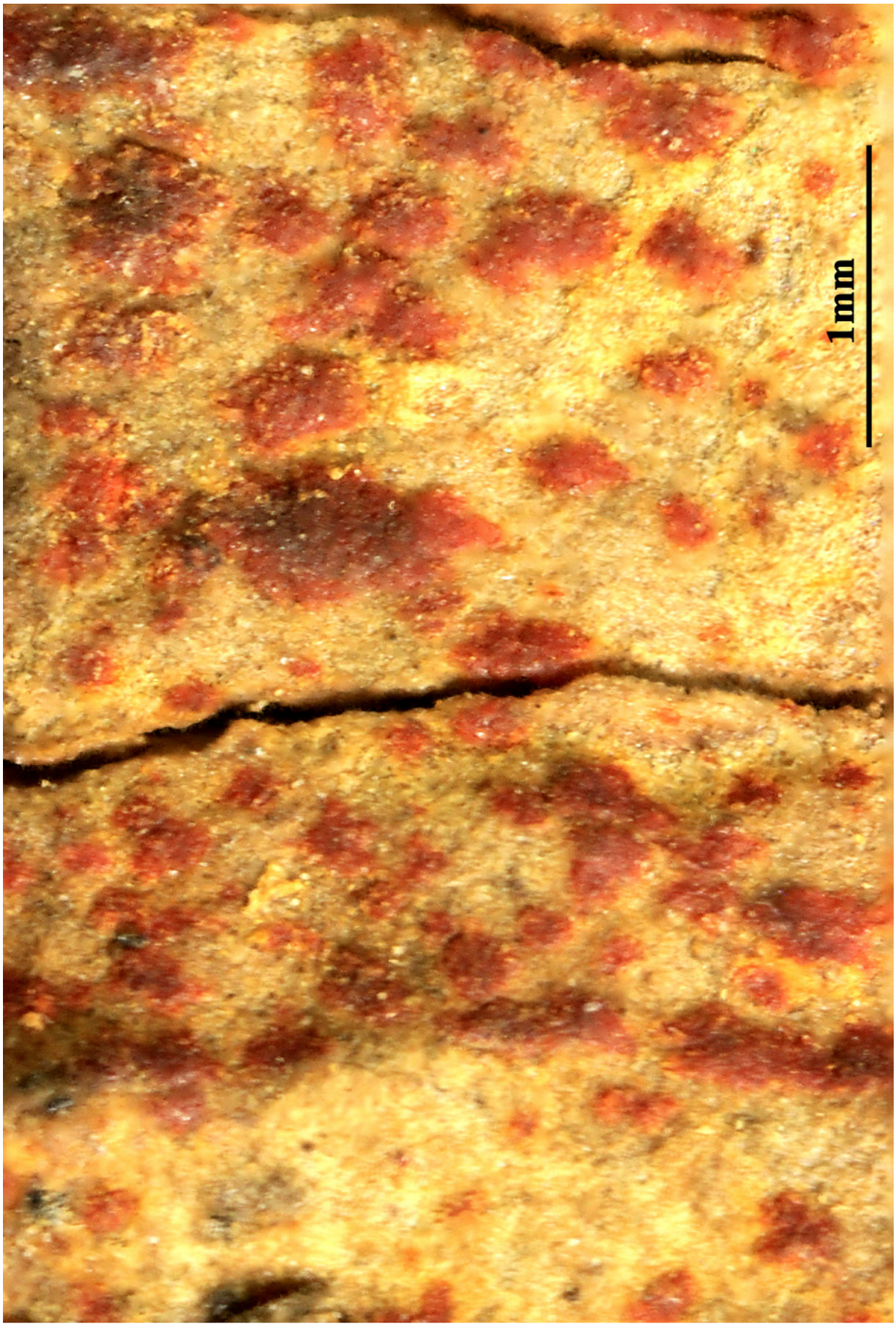
Arthonia helvola (Nyl.) Nyl., Flora, Regensburg 50: 330 (1867)
= *Arthonia pruinosa* var. *helvola* Nyl. 1857

[VZR161], Bohemia centralis, Libice nad Cidlinou, in silva "Libický luh" dicta, 190 m. Ad truncum arboris (*Fraxinus excelsior*) Leg. & comm. Z. Palice. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 161.

Thallus crustose, endosubstratic, smooth, whitish, without a distinct prothallus, the hyphae hyaline, smooth, 1-2 µm thick. Apothecia arthonioid, irregularly maculiform, more or less immersed to erumpent, 0.2-0.8 mm across, 50-90 µm thick, orange-red, epruinose, flat and emarginate. Proper exciple absent; epithecium poorly differentiated from the hymenium, orange-red; hymenium at least in part orange-red, K+ reddish violet, I-, K/I+ blue; paraphyses branched and anastomosing, 1-1.5 µm thick, the apical cells not swollen. Asci 8-spored, clavate, distinctly stipitate, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, Arthonia-type, (20-)27-42 x 8-11(-12) µm. Ascospores 2-septate, slightly constricted at least at the primary septum, hyaline, narrowly ovoid, straight, (18-)20-23(-33) x (2-)3-4 µm, the apical cells of almost equal width, the wall smooth, without an evident epispore. Photobiont trentepohlioid. Thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances; apothecia with an amorphous hydrophobic pigment reacting K+ violet-red. - Note: on bark of deciduous trees, mostly in shaded places with high humidity, confined to old forests with a long ecological continuity; known from several stations in Central Europe, including Switzerland but certainly very rare.



Arthonia helvola



Arthonia helvola

Arthonia ilicina Taylor, in Mackay, Fl. Hibern. (Dublin) 2: 105 (1836)
= *Arthothelium ilicinum* (Taylor) P. James, Lichenologist 3: 97 (1965)

[VZR162], Italia. Calabria. Vibo Valentia, prope Angitola lacum, 50 m. Ad corticem arborum (*Olea europaea*). Leg. & comm. D. Puntillo. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 162.

Thallus crustose, endosubstratic, white to cream-coloured, effuse or delimited by a brown prothalline line. Apothecia arthonioid, immersed to broadly erumpent through uppermost bark layers, scattered, rounded and 0.2-1 mm across, more rarely elongate and c. 0.2-0.6 x 2 mm, 90-130 µm tall, flat and level with thallus or convex and slightly raised, dark red-brown or brown-black, epruinose, without a distinct proper margin. Proper exciple poorly developed; epithecium reddish brown, of mainly anticlinally arranged, brown-walled, branched hyphae, 20-25 µm high, K+ pale olive-green, often covered with a 10-20 µm high, hyaline, gelatinous layer; hymenium colourless to yellowish brown, 60-85 µm high, K+ pale green, I+ blue turning wine-red in upper part, K/I+ blue, later turning red in epihymenial parts, K/I+ blue; paraphysoids scarce, anastomosing, branched in upper part, c. 1 µm thick, the apical cells 1.5-2 µm wide; hypothecium colourless to yellowish brown, 10-30 µm high. Asci 8-spored, broadly clavate, semi-fissitunicate, with a large apical dome, and a distinct ocular chamber, the apex with a K/I+ blue, elongated ring structure and paler bluish tholus flanks, Arthothelium-type, 55-70 x 24-30 µm. Ascospores 5-6(-7)-septate, constricted only at the uppermost septum, hyaline but often turning brown and faintly verruculose when overmature, clavate-obovoid, with one of the terminal cells enlarged, straight to slightly curved, 25-36(-40) x 9-14 µm. Pycnidia rare, brownish, 60-80 µm across, the wall K+ pale green. Conidia bacilliform, 7-9.5 x c. 1 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a Mediterranean-Atlantic species of humid montane woodlands, known from a few localities in Southern Italy.

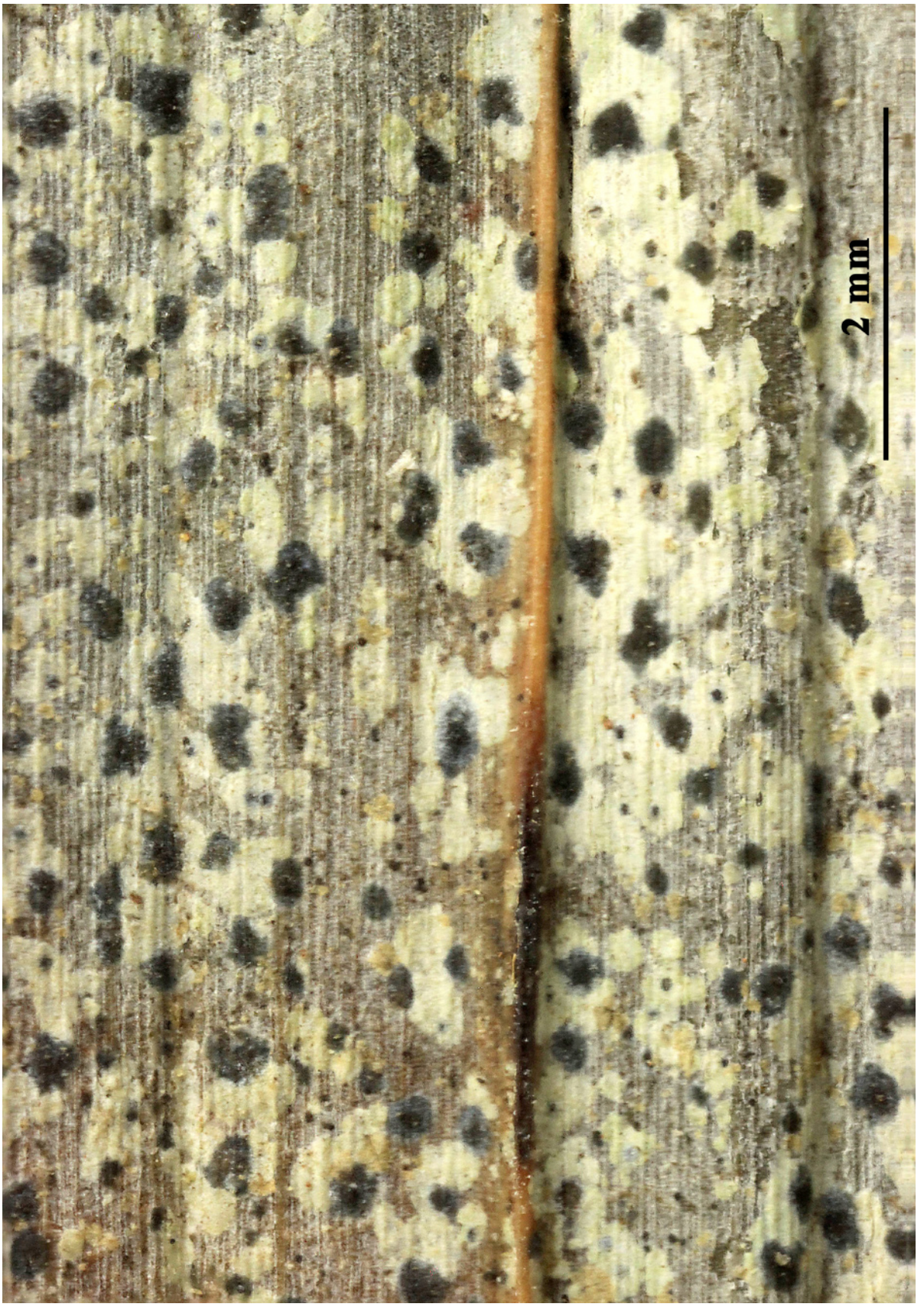
Arthonia ilicina

Arthonia ilicina

Arthonia lividula Vain., Ann. Acad. Sci. fenn., Ser. A 15(no. 6): 309 (1921)
= *Arthoniopsis lividula* (Vain.) Zahlbr., Cat. Lich. Univers. 2: 140 (1922) [1924]

[VZR431], Insulae Seychellenses, Insula Praslin, Grand Anse, pluriisilva ad meridiem spectans secus viam ad Praslin Beach ducentem, 250 m. Foliicola (Palmae sp.). Leg. F. Ceni & A. Vězda, 26.05.2000, det. A. Vězda. EX A. VĚZDA: LICHES RARIORES EXSICCATI NR. 431.

Apothecial margin pale or brown; ascospores macrocephalic, 2-septate. Mature ascospores colourless, 9.5–12 × 4–5 µm, apothecia light to dark brown or with a bluish tinge, non-pruinose, K-.



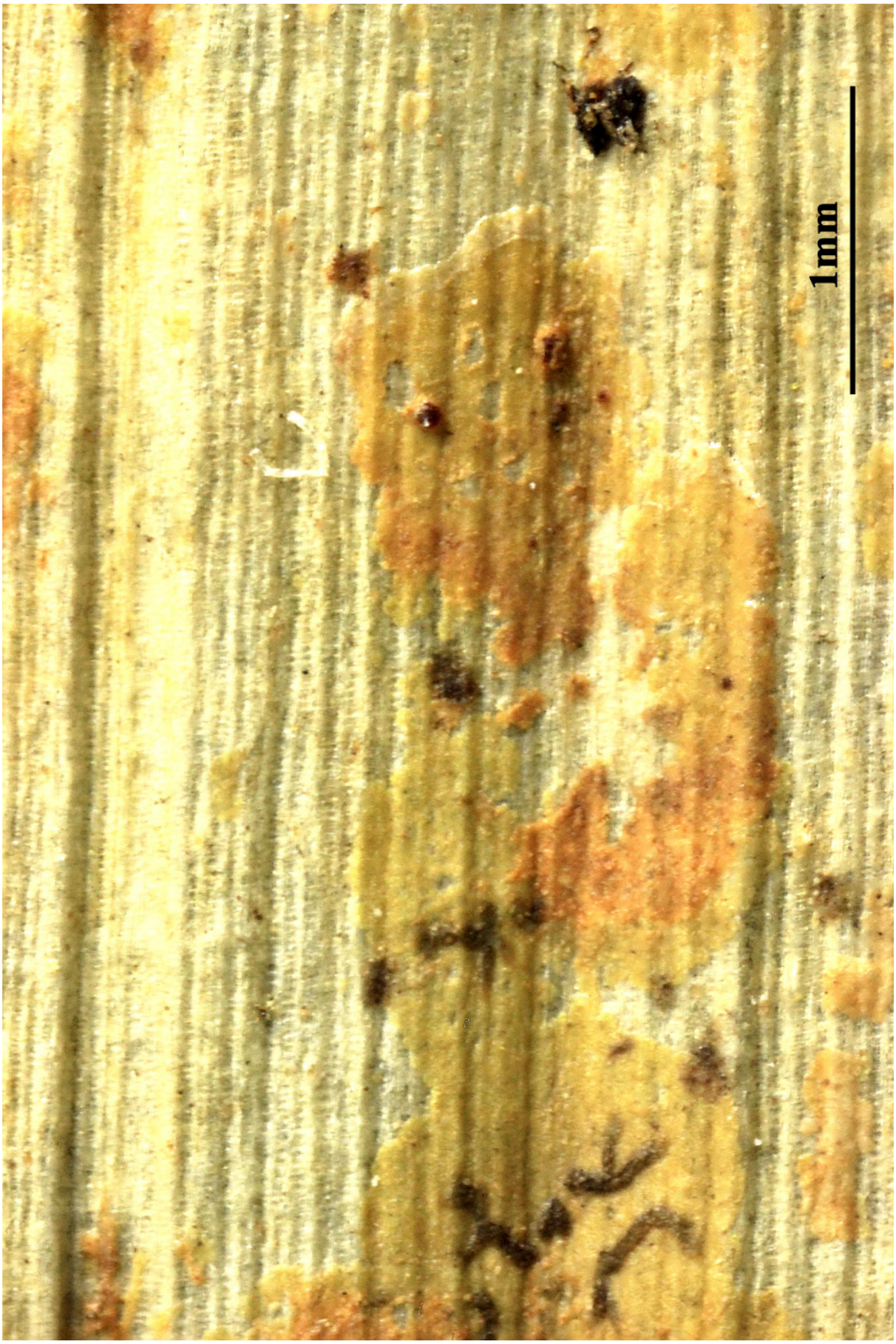
Arthonia lividula

Arthonia lividula

Arthonia opegraphina Lücking, Nova Hedwigia 52(3-4): 270 (1991)

[VZR351], Costa Rica. Prov. San José, reservatum naturae "Braulio Carillo", via San José - Limon, iugum montium Cordilerra Centralis, 800-900 m. In pluviisilva montana. Ad folia Palmae. Leg. et det. R. Lücking (88-906), 07.1988. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 351.

Thallus dispersed into rounded, partly confluent, finely lobate patches, smooth, 5–10 mm across, very thin (5–10 µm), ecorticate, yellowish green to brownish yellow, slightly shiny. Photobiont cells rectangular, 9–17 x 3–6 µm, in radiate plates. Ascomata slightly raised above thallus level, lirellate and usually branched or stellate, 0.3–0.8 mm long and 0.08–0.13 mm broad, 30–45 µm high, dark greyish brown to brownish black. Excipulum absent but thin margin of ascomata formed by rim of periclinal, dead, dark brown, algal cells. Hypothecium 3–6 µm high, green, I+ red, KI+ blue. Epithecium 3–7 µm high, pale brown, I+ yellowish brown, KI+ pale yellow. Hymenium 25–30µm high, colorless to pale brown, I+ red, KI+ blue. Asci broadly clavate to obovate, 20–27 x 14–18 µm, I–, KI–. Ascospores narrowly obovate, 2-septate, without constrictions at septa, 11–15 x 4–6 µm, distal cell enlarged, colorless. Conidiomata not observed. Chemistry: no substances detected by TLC. - Distribution and Ecology**.** Neotropics and tropical Africa. A rare species, typically found in the shaded rain forest understory. - This species is recognized by its lirellate apothecia, which resemble those of *Opegrapha* but lack a well-developed excipulum and feature an anatomy typical of *Arthonia*.



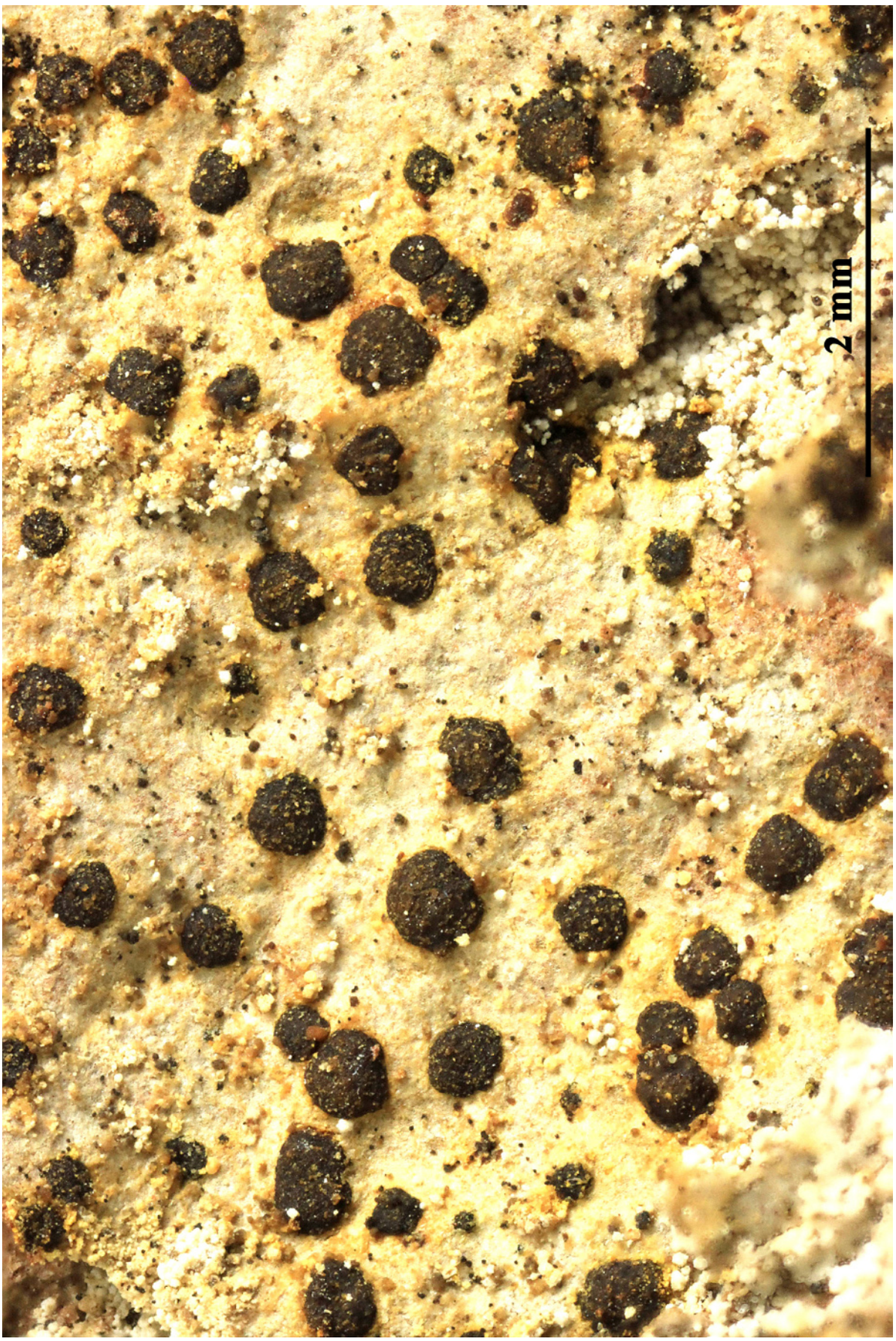
Arthonia opegraphina

Arthonia opegraphina

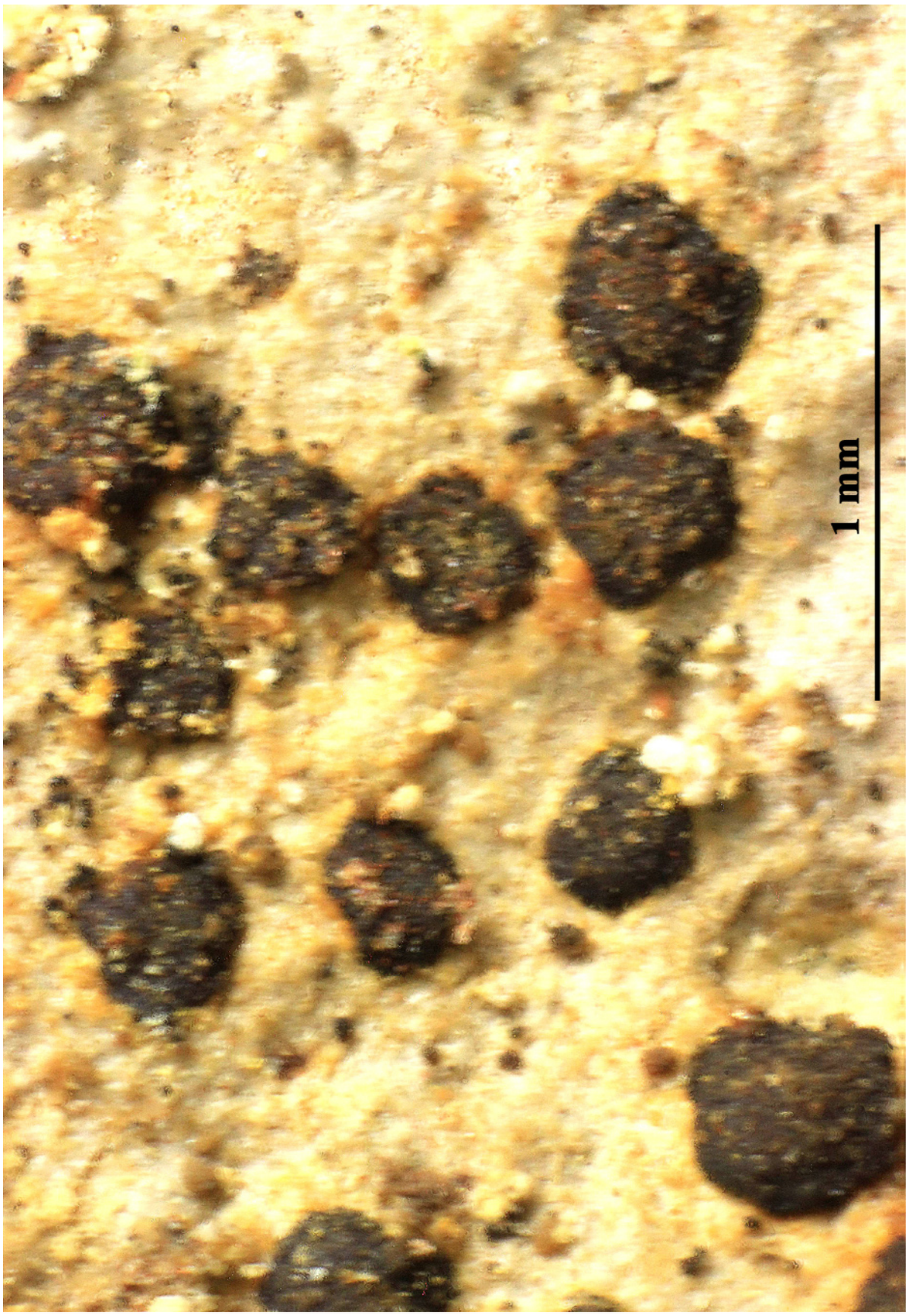
Arthonia vinosa Leight., Ann. Mag. nat. Hist., Ser. 2 18: 331 (1856)
= *Arthonia lurida f. vinosa* (Leight.) Zahlbr., Cat. Lich. Univers. 2: 64 (1922) [1924]
= *Arthonia pineti* Körb., Syst. lich. germ. (Breslau): 292 (1855)
= *Arthonia vinosa var. pineti* (Körb.) Leight., Lich.-Fl. Great Brit.: 392 (1871)
= *Coniangium luridum f. vinosum* (Leight.) Arnold, Flora, Regensburg 67(34): 650 (1884)
= *Coniangium vinosum* (Leight.) A. Massal., Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 10: 677 (1860)
= *Lecidea emphysa* Stirt., Grevillea 3(no. 25): 33 (1874)

[VZR192], Bohemia merid., montes Šumava, distr. Klatovy, Modrava, in monte "Smrkovy vrch", 1100 m. Ad corticem arborum vetustarum (*Acer pseudoplatanus*). Leg. A. Vězda, 21.06.1995. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 192.

Thallus crustose, thin, immersed or thinly powdery to granular, whitish to ochre-coloured, often stained yellow-orange, especially around the apothecia. Apothecia arthonioid, irregularly rounded in outline, 0,3-0.8(-1) mm across, 85-140 µm tall, sessile, with a convex, orange-red-brown to brown-black (red-brown when wet), epruinose disc, without a proper margin. Epithecium indistinct; hymenium yellow-orange to brownish, (30-)40-50(-60) µm high, K+ magenta and K+ purple (the pigments dissolving), I+ red-brown; paraphysoids 0.5-1.5 µm thick, usually not much swollen at apex; hypothecium dark red-brown in upper part, up to 30 µm high, K+ magenta and K+ purple. Asci 8-spored, broadly ovoid, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, Arthonia-type. Ascospores 1-septate, with slightly unequal cells, ovoid-ellipsoid to slightly clavate, colourless (but old ascospores brown and warted), (9-)11-15(-17) x 4-6(-7) µm. Pycnidia frequent, orange-yellow, 0.4-0.6(-0.8) mm across, the wall red-brown, K+ strongly purple. Conidia bacilliform, straight or slightly curved, 4-6 x c. 1 µm. Photobiont trentepohlioid. Spot tests: thallus K+ purple on pigmented spots, C-, KC-, P-, UV-. Chemistry: unidentified anthraquinones in thallus and apothecia. - Note: a mild-temperate lichen found near the base of old trees, mostly on rough bark, especially of oaks, more rarely on lignum, in very humid and closed-canopied deciduous forests. Young or depauperated forms may be confused with *A. didyma*.



Arthonia vinosa



Arthonia vinosa

Arthothelium sanguineum (Nyl.) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 91 (1903)
= *Arthonia sanguinea* Nyl. 1885

[VZR468], Mexico. Baja California Sur: Ad septentr.-occid. a Puerto Cancún, ca. 18 km ad occidentem a compitio viae Ciudad Constitution et viae ad la Paz ductae, 24°38' septentr., 111°40' occid., 50 m. Ad truncum *Pachycereus* sp.. Leg J. Hafellner & A. Hafellner, 18.11.1993, det. J. Hafellner. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 468.

Thallus ±white, effuse, inconspicuous. Ascomata ± round to irregularly elongate, 0.48-0.72 mm in diam., in section 100-140 µm tall, ±at the same level as thallus; dic black, occasionally becoming strongl convex with dark red pruina; exciple similar to epithecial structures,often more green, rarely eith yellowish green to orange pigment pareticles; epihymenium pale to dark brown, 20-30 µm thick, with fine granular or patches of redish pigments; hyphal structure similar as in the layers below, but hyphae more branched; cells 4-8 x 2-3 µm, with olivaceous brown walls; hymenium ±hyaline to pale yellow, 60-70 µm tall; paraphysoids branched and anastomosing, embeded in a rigid gel, not concentrated around the asci; cells 4-8 x 1-2 µm; asci widely spaced; subhymenium hyaline to yellowish brown, 20-40 µm thick; cellls 3-5 µm large; asci subglobose, 47-60 c 35-55 µm, 8-spored, distinctly stipitate, lateral endotunica thickened; ascospores hyaline, muriform, with 5-7 transverse septa and 1-3 longitudinal septa in each transverse segment, ±ellipsoid, (19)23-30 x (9)10-20 µm; Pycnidia not observed. Chemistry:ascomata gel Idil+ deep blue, I+ deep blue (even thin slices opaque), KI+ blue;epihymenial red pigments K+ pale brown but not dissolving; asci without KI+ reactive tholus structures. World distribution: Mexico, Africa and Asia minor.

Arthothelium sanguineum

Arthothelium sanguineum

Austropeltum glareosum Henssen, M. Döring & Kantvilas, in Döring & Kantvilas, Bot. Acta 105(6): 458 (1992)

[VZR291], Nova Zelandia., South Island, distr. Nelson, Westport, planities Denniston, 15 km ad orient. a Westport, 900 m. Ad terram arenosam. Leg. W. Malcolm & A. Vězda, 24.04.1997. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 291.

Thallus terricolous, squamulose to almost foliose. Lobes 4-12(-15)mm diam., dispersed to contiguous and overlapping flat, peltate and ± convex, or shelilike with raised margins, attached by a central holdfast and additional tufts of rhizoidal hyphae. Upper surface of squamules olive-brown to blackened, dull or glossy, smooth, undulate to unevenly wrinkled, becoming fissured in the oldest lobes. Lower surface brownish, naked or occasionally indistinctly veined. Thallus heteromerous, in section 350-760 µm thick; upper cortex 280-480 (-560) µm, composed of reticulate hyphae 2-4 µm thick with strongly gelatinized and agglutinated walls; algal zone 38-60(-85) µm, cells ± spherical, 4.5-7(-9) µm diam., penetrated by 1 to 4 ± globose haustoria. Medulla 120 - 245 µm with interwoven, thick-walled hyphae 6-10 µm wide, walls pigmented at lower surface of the thallus. Holdfast c. 0.8 mm long and 0.20-0.25 mm wide, rhizoidal hyphae 4-6 µm thick. Apothecia marginal, shortly stalked, black, dull or glossy, up to 5mm diam., globose when juvenile, becoming gradually convoluted and glomerately divided. Hymenium 50-80 µm tall, with a grey-black to blackishbrown epithecium, unchanged in KOH. Subhymenium dark-brown in the upper part, c. 450—480 µm tall when young, up to 1600- 2000 µm and deeply divided into stalks in aged apothecia; boundary tissue correspondingly ranging from 45 to 160 µm thick. Pseudopodetium 1.2-1.5mm tall, up to 1.5 mm wide when swollen to a hypophysis in the upper part. Paraphyses 1-1.5 µm thick, slightly branched, apices not enlarged. Asci cylindrical, 44- 52 x 4.5-10 µm, with an amyloid tube-structure. Ascospores fusiform, (9) -11-16 x 3-4.5 µm with 1 to 3 plasma-bridges. Pycnidia marginal, black, ± globose, c. 0.5 mm diam.; pycnidial wall 285- 340 µm tall and 320 - 325 µm wide in section surrounded by a thalline cortex 140-170 µm thick. Conidiophores branched; conidia filiform, curved, 32-62 x c. 0.6 um, intercalary and terminal arising from thin extensions of the conidiogenous cell. Chemistry: no lichen substances detected by TLC. - *A. glareosum* is easily recognized by its conspicuous olive-brown, squamulose thallus bearing

marginal, lecideine, black, ultimately glomerately divided apothecia. In habit, the species resembles *Solenopsora holophaea* aggr., but that species differs by its laminal, lecanorine, brown apothecia.

Austropeltum glareosum

Austropeltum glareosum

Bacidia brasiliensis (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 183 (1926) [1927]

= *Brasilicia brasiliensis* (Müll. Arg.) Lücking, Kalb & Sérus., in Lücking, Fl. Neotrop., Monogr. 103: 667 (2008)

= *Bacidia brasiliensis* var. *laevis* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 183 (1926) [1927]

= *Patellaria brasiliensis* Müll. Arg., Lich. Epiph. Novi: 10 (1890)

= *Patellaria brasiliensis* var. *laevis* Müll. Arg., Lich. Epiph. Novi: 10 (1890)

[VZR331], Dominica (Antilles Minores), ad cataracta "Emerald Pool", 300-400 m. Foliicola. Leg. A. Vězda, 18.07.1996. EX A, VĚZDA: LICHENES RARIORES EXSICCATI NR. 331.

Thallus continuous, 10–40 mm across and 15-30 µm thick, finely verrucose, pale greenish to yellowish grey; verrucae wart-shaped, 0.03–0.07 mm diam., chamois-colored to white. Apothecia rounded, 0.3–0.6 mm diam. and 250–300 µm high; disc plane, reddish brown to dark brown; margin distinct and in young apothecia slightly prominent, persistent, chamois-colored. Excipulum 50–70 µm m broad. Hypothecium 30–60 µm high, yellowish brown, K–. Epithecium 5–10 µm high, composed of colorless granules. Hymenium 70–90 µm high, colorless. Asci 60–80 x 8–10 µm. Ascospores narrowly cylindrical to filiform and slightly tapering towards proximal end, (7–)15-septate, without constrictions at septa, (35–)50–70 x2–3 µm, 20–25 times as long as broad, colorless. Pycnidia rare, sessile, cupuliform to subglobose, 0.05–0.1 mm diam. and 30–70 µm high, chamois-colored to grey. Conidia fusiform, nonseptate, 4–6 x 1.2–1.6 µm, colorless. Chemistry: zeorin. Distribution and ***Ecology.*** Neotropics. Rather widespread and with wide, ecological amplitude from lowland evergreen dry forest to montane rain forest.

Bacidia brasiliensis

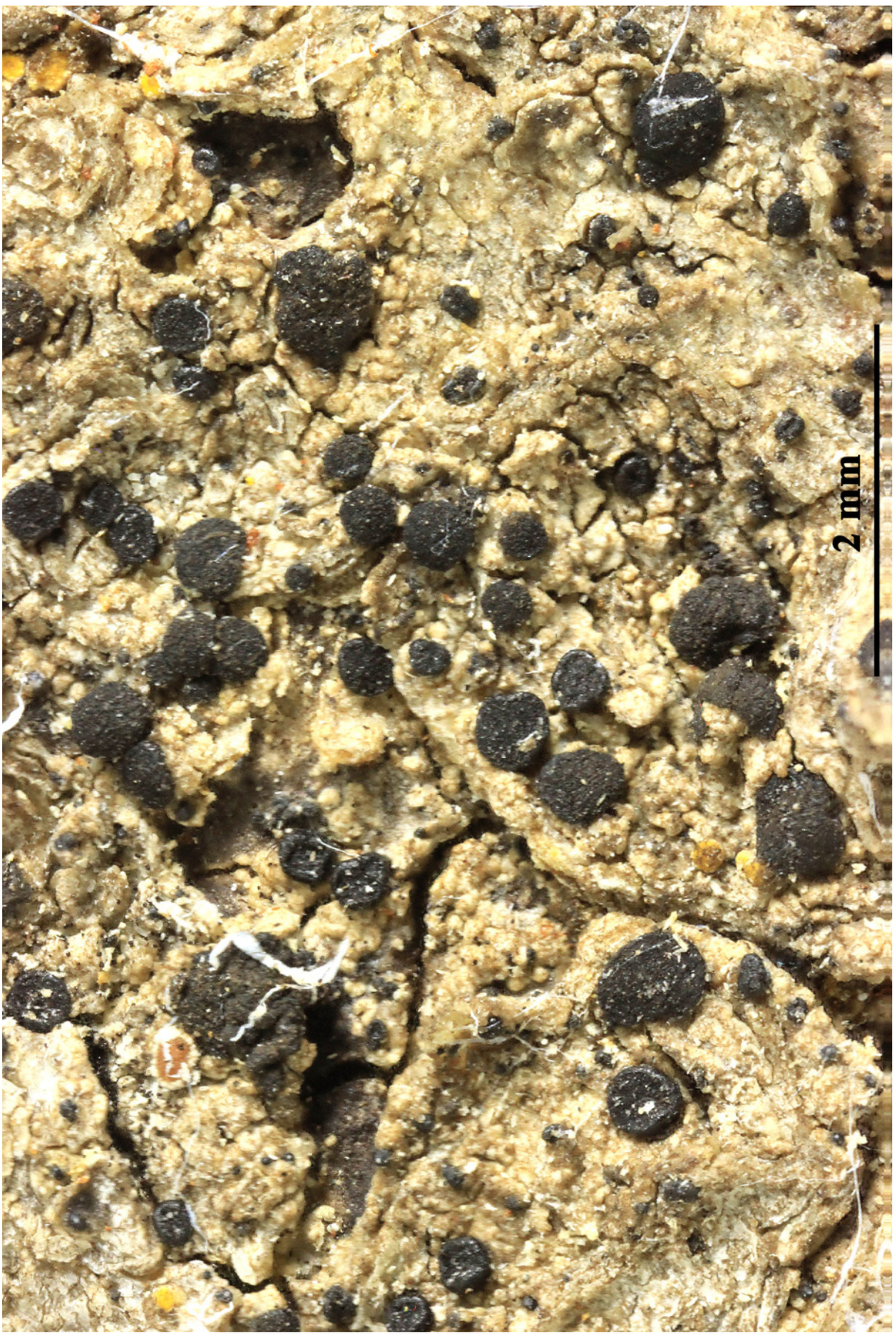
Bacidia brasiliensis

Bacidia hegetschweileri (Hepp) Vain., Acta Soc. Fauna Flora fenn. 53(no. 1): 149 (1922)
= Biatora atrosanguinea f. hegetschweileri Hepp, Flecht. Europ. Nr. 23, 1853

[VZR311], Bohemia merid. Šumava, "České Žleby", in monte "Spáleniště", 900 m. Ad corticem *Fagi* vetustae. Leg. et det. Z. Palice, 7.2.1997. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 311.

Thallus crustose, episubstratic, grey, grey-green or brown-green, usually consisting of scattered, globose or flattened, 40-100 µm wide granules which often form coralloid, isidia-like outgrowths. Apothecia lecideine, (0.3-)0.4-1(-1.2) mm across, with a purple-brown to black, rarely pink-brown, epruinose, flat to finally convex, sometimes tuberculate disc, and a distinct, paler or darker, finally often excluded proper margin. Proper exciple 59-122 µm wide laterally, without crystals, the inner part red-brown or black-brown, K+ purplish, N+ orange-red, often with a green or blue-green tinge at least in upper part, with a single layer of enlarged cells (up to 8 x 5 µm), the outer rim colourless to pale brown; epithecium greenish to brownish green, scarcely differentiated from the hymenium, K- or K+ purple, N+ purple or orange-red (with or without precipitation of blue crystals); hymenium (45-)55-80(-112) µm high, the lower part colourless except for occasional vertical green streaks, the upper part dirty green to blue-green; paraphyses simple, 1.2-2.4 µm thick at mid-level, the apical cells not swollen or up to 5(-6.5) µm wide; hypothecium dark brown at least in upper part, sometimes with a green-brown tinge, well-separated from the lower part of exciple. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus, an I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores (3-)5-13-septate, hyaline, bacilliform, clavate or acicular, straight to sigmoid, (13-)20-36(-40) x 2.5-3.5(-4) µm. Pycnidia immersed in thallus. Conidia simple, filiform, curved, 10-20 x c. 0.8 µm. Photobiont chlorococcoid, the cells 5-12 µm in diam. Spot tests: thallus and apothecia K-, C-, KC-, P-, UV-. Chemistry: no lichen substances in thallus; apothecia with Bagliettoana-green in epithecium and rim of exciple; Laurocerasi-brown in hypothecium and lateral part of exciple; sometimes a mixture of the two pigments in exciple. Rubella-orange in epithecium, hypothecium and exciple (in albino morphs). - Note: a mainly temperate lichen found on the bark of old broad-leaved trees (especially Fagus and Quercus) in open, humid woodlands. This spe-

cies was treated as *Bacidia subincompta* by Coppins & Aptroot (2009) and *Toniniopsis subincompta* by Kistenich & al. (2018).



Bacidia hegetschweileri

Bacidia hegetschweileri

Bacidia incompta (Borrer) Anzi, Cat. Lich. Sondr.: 70 (1860)
= *Lecidea incompta* Borrer, in Hooker & Sowerby 1834
= *Bellicidia incompta* (Borrer) Kistenich, Timdal, Bendiksby & S. Ekman 2018

[VZR193], Bohemia merid. Montes Šumava, distr. Volary, in monte "Snrčí vrch", 850 m. Ad corticem *Fagi silvaticae* vetustae. Leg. & comm. Z. Palice, 15.10.1995. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 193.

Thallus crustose, mostly episubstratic, grey-green, grey-brown or grey-white, granular-verrucose. Apothecia lecideine, (0.2-)0.3-0.8(-1) mm across, sessile an constricted at base, dark purple-brown to black, with a flat to slightly convex disc and a thin, persistent, often slightly paler proper margin. Proper exciple hyphal in construction, with globose outer cells, dark red-brown, K+ purple, the outermost part sometimes colourless; epithecium colourless to reddish, K-; hymenium colourless or pale red in upper part, 35-50 µm high, I+ blue; paraphyses 1.5-2(-2.5) µm thick at mid-level, simple or rarely forked in upper part, the apical cells up to c. 3 µm wide; hypothecium dark red-brown, K+ purple. Asci 8-spored, clavate, the apical dome K/I+ dark blue with a pale, conical-pointed apical cushion (axial mass), the wall I-, but the thin outer gel I+ blue, Bacidia-type. Ascospores (1-)3(-5)-septate, hyaline, elongate-bacilliform to cylindrical, 15-25(-27) x 2-3 µm, fasciculate in the asci. Pycnidia small, semi-immersed, with thin, red-brown, K+ purple walls. Conidia cylindrical-ellipsoid, 0-1-septate, 5-9 x 2-2.5 µm. Photobiont chlorococcoid, the cells globose, 5-12(-14) µm in diam. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a temperate species found on base-rich bark, especially of *Ulmus*, near wounds of the trunk, more rarely on plant debris and terricolous mosses.

Bacidia incompta

Bacidia incompta

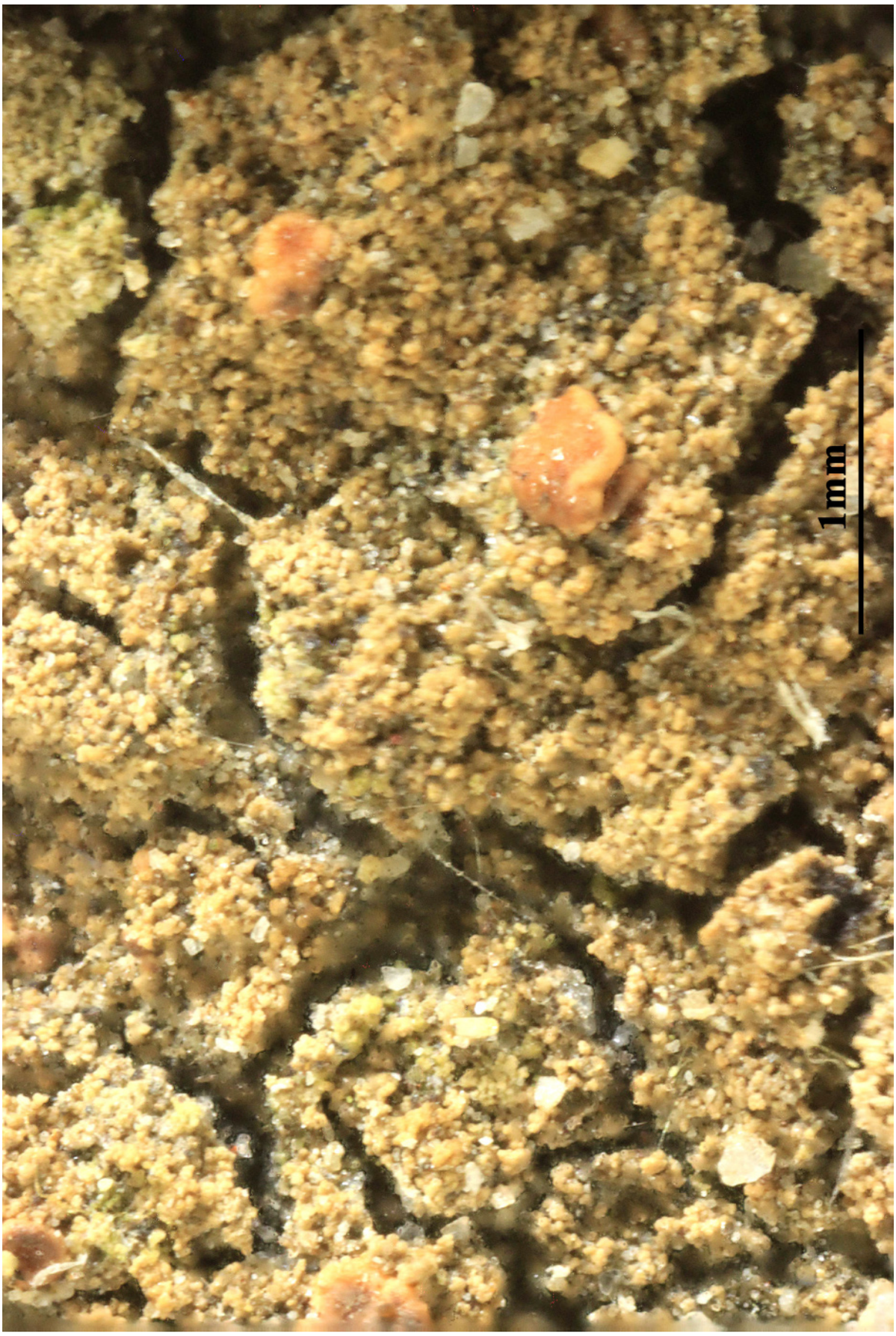
Bacidia neosquamulosa Aptroot & Herk, Lichenologist 31(2): 122 (1999)
= *Woessia neosquamulosa* (Aptroot & Herk) Van den Boom & P. Alvarado, Diversity 17(3, no. 187): 19 (2025)
= *Bacidina neosquamulosa* (Aptroot & Herk) S. Ekman, Lichen Flora of the Greater Sonoran Desert Region (Tempe) 2: 31 (2004)

[VZR497], Hollandia: Brabantia septentr.: Breda, Ginneken, coemeterium, Ad corticem arboris (*Acer*). Leg. et det. P. v. Boom, 2.1.2002. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 497.

Thallus crustose-subsquamulose, episubstratic, greenish grey to olivaceous, dull, corticate, consisting of microsquamules, without a distinct prothallus. Microsquamules deeply incised, crenate, slightly concave to convex, up to 0.4 mm wide, bearing globose, 50-100 µm wide, isidia-like granules mostly along the margins, sometimes over the whole surface; in thalli with poorly developed microsquamules the granules are smaller and form pale soredia. Apothecia frequent, biatorine, round to irregular in outline, 0.2-1 mm across, at first flesh-coloured, than often patchily or entirely blackening, with a flat to convex disc, and a persistent proper margin. Proper exciple well-developed, dark brown in outer part, colourless within, prosoplectenchymatous throughout, but with somewhat expanding lumina towards the periphery and in the lower parts, 50-100 µm wide, the cells 6-12 x 4-8 µm, the pigmented parts K+ purplish, N+ purple-brown, without crystals or granules; epithecium partly hyaline, partly dark brown, the pigmented parts K+ purplish, N+ purple-brown, without crystals; hymenium colourless, 40-55(-60) µm high; paraphyses mostly simple, the apical cells swollen, 3-5 µm wide; hypothecium colourless. Asci 8-spored, clavate to cylindrical-clavate, the apical dome K/I+ dark blue with a pale, conical-pointed apical cushion (axial mass) never penetrating through the entire d-layer, the wall K/I-, but the thin outer gel K/I+ blue, Bacidia-type. Ascospores 3-7-septate, hyaline, needle-like to slightly clavate, coiled in the asci, Bacidia-type, (35-)40-55(-58) x 1.3-1.7 µm. Pycnidia laminal, globose, erumpent, dark in upper part due to an olivaceous-grey pigment reacting K-, N+ purple-red. Macroconidia hyaline, thread-like, curved, 3-7-septate, (35-)40-57 x (1.2-)1.5-2 µm, the proximal end somewhat truncate. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: on trees with subneutral bark in nutrient-rich, dusty situations such as in urban parks and forest edges along secondary dirt roads, very rarely

also on nutrient-enriched rocks; widespread in Europe and also recorded from Western North America, with a single record from the Eastern Alps (Austria), but probably more widespread.

Bacidia neosquamulosa



Bacidia neosquamulosa

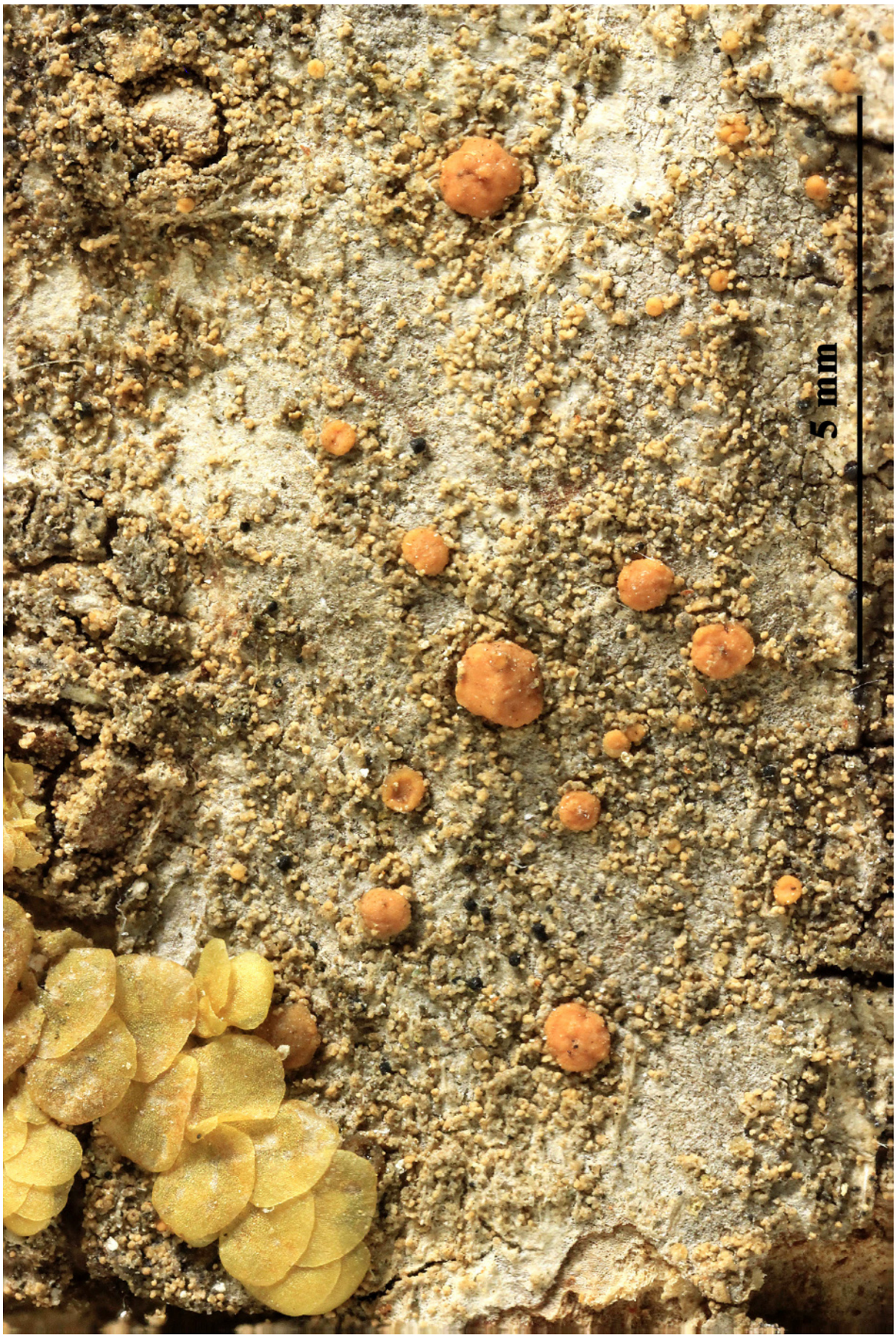
Bacidia subincompta (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Toniniopsis subincompta* (Nyl.) Kistenich, Timdal, Bendiksby & S. Ekman, Taxon 67(5): 898 (2018)
= *Bacidia affinis* (Stizenb.) Vain., Acta Soc. Fauna Flora fenn. 53(no. 1): 146 (1922)
= *Bacidia atrosanguinea* (Schaer.) Anzi, Cat. Lich. Sondr.: 70 (1860)
= *Bacidia atrosanguinea* f. *subincompta* (Nyl.) Blomb. & Forssell, Enum. Pl. Scand.: 81 (1880)
= *Bacidia incompta* var. *atrosanguinea* (Schaer.) Mudd, Man. Brit. Lich.: 184 (1861)
= *Biatora atrosanguinea* (Schaer.) Hepp, Summa veg. Scand., Sectio Prior (Stockholm): 112 (1845)
= *Lecidea anomala* var. *atrosanguinea* Schaer., Lich. helv. spicil. 4-5: 170 (1833)
= *Lecidea atrosanguinea* (Schaer.) Hedl., Bih. K. svenska VetenskAkad. Handl., Afd. 3 18(no. 3): 71 (1892)
= *Lecidea atrosanguinea* f. *subincompta* (Nyl.) Vain., Meddn Soc. Fauna Flora fenn. 10: 17 (1883)
= *Lecidea bacillifera* f. *subincompta* (Nyl.) Nyl., Flora, Regensburg 50(24): 373 (1867)
= *Lecidea bacillifera* subsp. *subincompta* (Nyl.) Nyl., in Norrlin, Meddn Soc. Fauna Flora fenn. 1: 31 (1876)
= *Lecidea bacillifera var. subincompta* (Nyl.) Nyl., Not. Sällsk. Fauna et Fl. Fenn. Förh., Ny Ser. 8: 155 (1866)
= *Lecidea subincompta* Nyl., Flora, Regensburg 48: 147 (1865)
= *Patellaria atrosanguinea* (Schaer.) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 16(2): 401 (1862)
= *Raphiospora atrosanguinea* (Schaer.) Körb., Parerga lichenol. (Breslau) 3: 237 (1861) [1865]
= *Scoliciosporum atrosanguineum* (Schaer.) Arnold, Flora, Regensburg 41(30): 475 (1858)
= *Scoliciosporum atrosanguineum* var. *affine* (Stizenb.) Arnold, Flora, Regensburg 47: 596 (1864)
= *Secoliga atrosanguinea* (Schaer.) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 16 (1863)
= *Secoliga atrosanguinea* var. *affinis* Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 18 (1863)

[VZR163], Austra, Stiria "Windische Büchel" dicti, Gamlitz, vallis angusta in regione Oberfahrenbach, 46°42' ad sept., 15°28' ad occid., 400 m. I silva humida ad rivulum, ad corticem arboreum. Leg. J. Poelt,

19.3.1885, dupl. det. B. Coppins- Annot.: Tantum forma apotheciis pallidis praedita. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 163.

Thallus crustose, mostly episubstratic, grey-green, grey-brown or grey-white, granular-verrucose. Apothecia lecideine, (0.2-)0.3-0.8(-1) mm across, sessile an constricted at base, dark purple-brown to black, with a flat to slightly convex disc and a thin, persistent, often slightly paler proper margin. Proper exciple hyphal in construction, with globose outer cells, dark red-brown, K+ purple, the outermost part sometimes colourless; epithecium colourless to reddish, K-; hymenium colourless or pale red in upper part, 35-50 μm high, I+ blue; paraphyses 1.5-2(-2.5) μm thick at mid-level, simple or rarely forked in upper part, the apical cells up to c. 3 μm wide; hypothecium dark red-brown, K+ purple. Asci 8-spored, clavate, the apical dome K/I+ dark blue with a pale, conical-pointed apical cushion (axial mass), the wall I-, but the thin outer gel I+ blue, Bacidia-type. Ascospores (1-)3(-5)-septate, hyaline, elongate-bacilliform to cylindrical, 15-25(-27) x 2-3 μm, fasciculate in the asci. Pycnidia small, semi-immersed, with thin, red-brown, K+ purple walls. Conidia cylindrical-ellipsoid, 0-1-septate, 5-9 x 2-2.5 μm. Photobiont chlorococcoid, the cells globose, 5-12(-14) μm in diam. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a temperate species found on base-rich bark, especially of *Ulmus*, near wounds of the trunk, more rarely on plant debris and terricolous mosses, certainly declining in Italy.

Bacidia subincompta



Bacidia subincompta

Bacidia subincompta

Badimia dimidiata (Bab. ex Leight.) Vězda, Folia geobot. phytotax. 21(2): 215 (1986)
= *Bacidia dimidiata* (Bab. ex Leight.) R. Sant., Symb. bot. upsal. 12(no. 1): 466 (1952)
= *Lecania dimidiata* (Bab. ex Leight.) Zahlbr., Cat. Lich. Univers. 5: 723 (1928)
= *Lecanora dimidiata* Bab. ex Leight., Trans. Linn. Soc. London 25: 446 (1866)

[VZR445], Aequatoria Prov. Napo, reservatum naturae "Yasuni", Dicaro, 5°56' merid., 76°12' occid. ,300 m. Ad folia arborum. Leg. M Macía, Z. Palica & R. Valencia, 15.08.,1999. det. A. Vězda. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 445.

Thallus continuous, 10–50 mm across and 15–25 µm thick, sparsely to irregularly verrucose, pale greenish grey, rarely with bluish tinge; verrucae hemispherical, 0.1–0.15 mm diam., white. Apothecia rounded, 0.4–0.8 mm diam. and 140–190 µm high; disc plane to slightly concave, pale yellow when young, brownish orange to ferrugineous brown when mature; margin thick, slightly prominent, chamois colored. Excipulum with indistinct structure due to strong incrustation with colorless crystals, 20–40 µm broad, grey, in K under pressure dissolving into free, moniliform hyphae with globose cells and contricted septa. Hypothecium 20–35 µm high, light brown, K–. Epithecium 5–10 µm high, pale yellow. Hymenium 50–70 µm high, colorless. Asci 45–60 x 10–13 µm. Ascospores ellipsoid to fusiform, 3-septate, with slight constrictions at septa, 12–18 x 4–6 µm, 2.5–3.5 times as long as broad, colorless. Campylidia 0.8–1.5 mm broad, ferrugineous brown, wall incrusted with colorless crystals. Conidia filiform, 3–9-septate, 50–70 x 1–1.5 µm, with lateral appendages up to 10 µm long and 0.7 µm thick, colorless. Chemistry: usnic acid, zeorin. - Distribution and Ecology**.** Neotropics and tropical Africa. The most common species of the genus, abundant in the understory of tropical lowland rain forests.

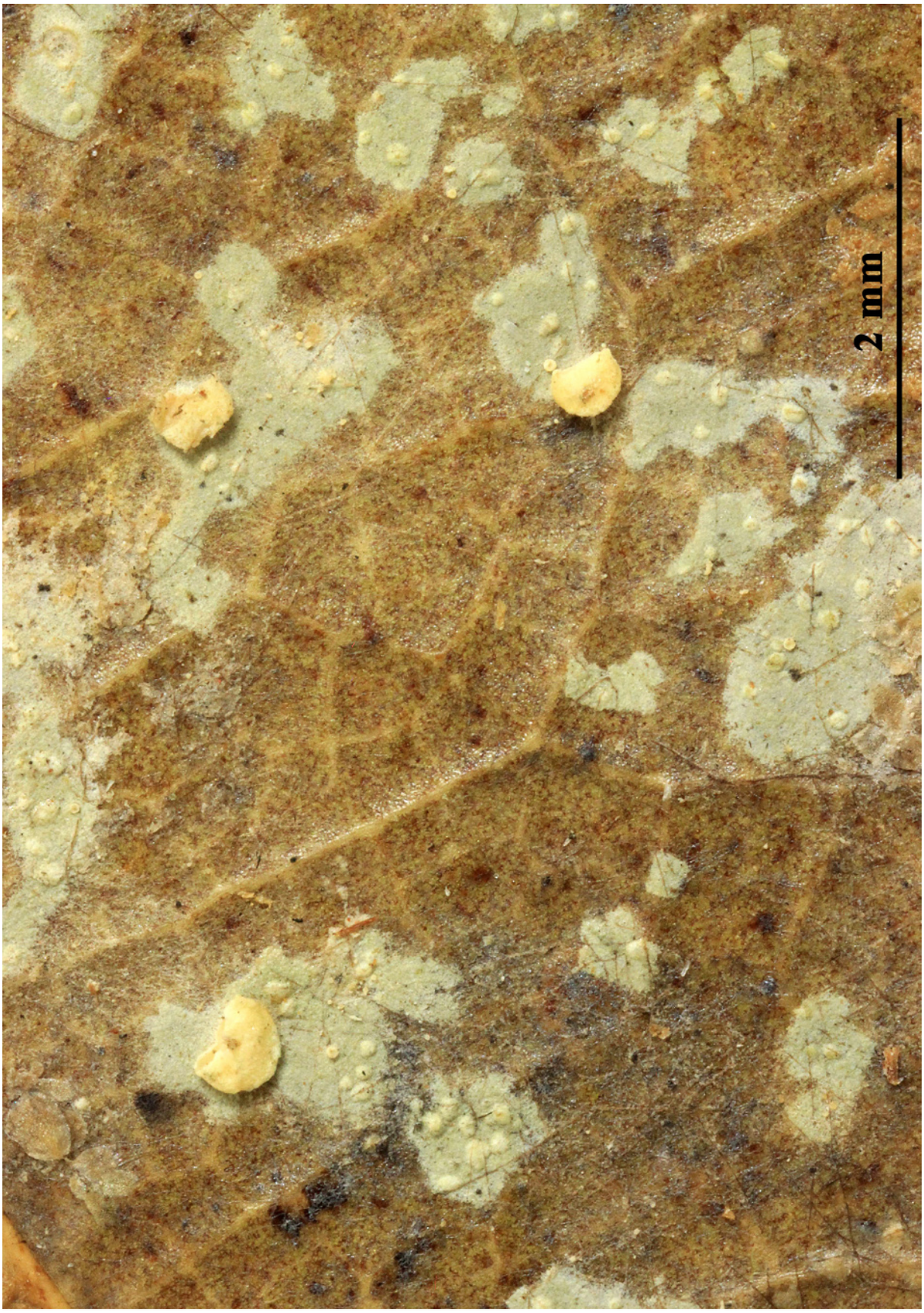
Badimia dimidiata

Badimia dimidiata

Badimia pallidula (Kremp.) Vězda, Folia geobot. phytotax. 21(2): 215 (1986)
= *Bacidia pallidula* (Kremp.) Zahlbr., Cat. Lich. Univers. 4: 135 (1926) [1927]
= *Lecidea pallidula* Kremp., Lich. Foliic. Leg. Beccari: 9 (1874)
= *Patellaria pallidula* (Kremp.) Müll. Arg., Flora, Regensburg 73: 188 (1890)

[VZR423], Insulae Seychellenses. Insula Mahé, Morne Seychellois National Park, secus viam inter Sans Souci et montem Trois Freres, 600 m. Foliicola. Leg. C. Ceni & A. Vězda, 31.5.2000, det.A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 423.

Thallus continuous or irregularly dispersed, 10–30 mm across and 15–30 µm thick, sparsely to densely verrucose, pale bluish to greenish grey; verrucae hemispherical, 0.1–0.15(–0.2) mm diam., white. Apothecia rounded, 0.3–0.7 mm diam. and 150–200 µm high; disc plane, flesh-colored to orange or pinkish and usually slightly translucent; margin thin, slightly prominent, of same color as disc. Excipulum paraplectenchymatous, lacking crystals, 30–50 µm broad, colorless. Hypothecium 20–30 µm high, pale yellow, K–. Epithecium indistinct. Hymenium 40–60 µm high, colorless. Asci 35–50 x 8–12 µm. Ascospores ellipsoid to fusiform, 3-septate, with slight constrictions at septa, 11–15 x 3–4 µm, 3–4 times as long as broad, colorless. Campylidia 0.6–1.2 mm broad, chamois-colored to white. Conidia filiform, 5–7-septate, 40–65 x 1.2–1.5 µm, with lateral appendages up to 7 µm long and 0.7 µm thick, colorless. Chemistry:usnic acid and zeorin.



Badimia pallidula

Badimia pallidula

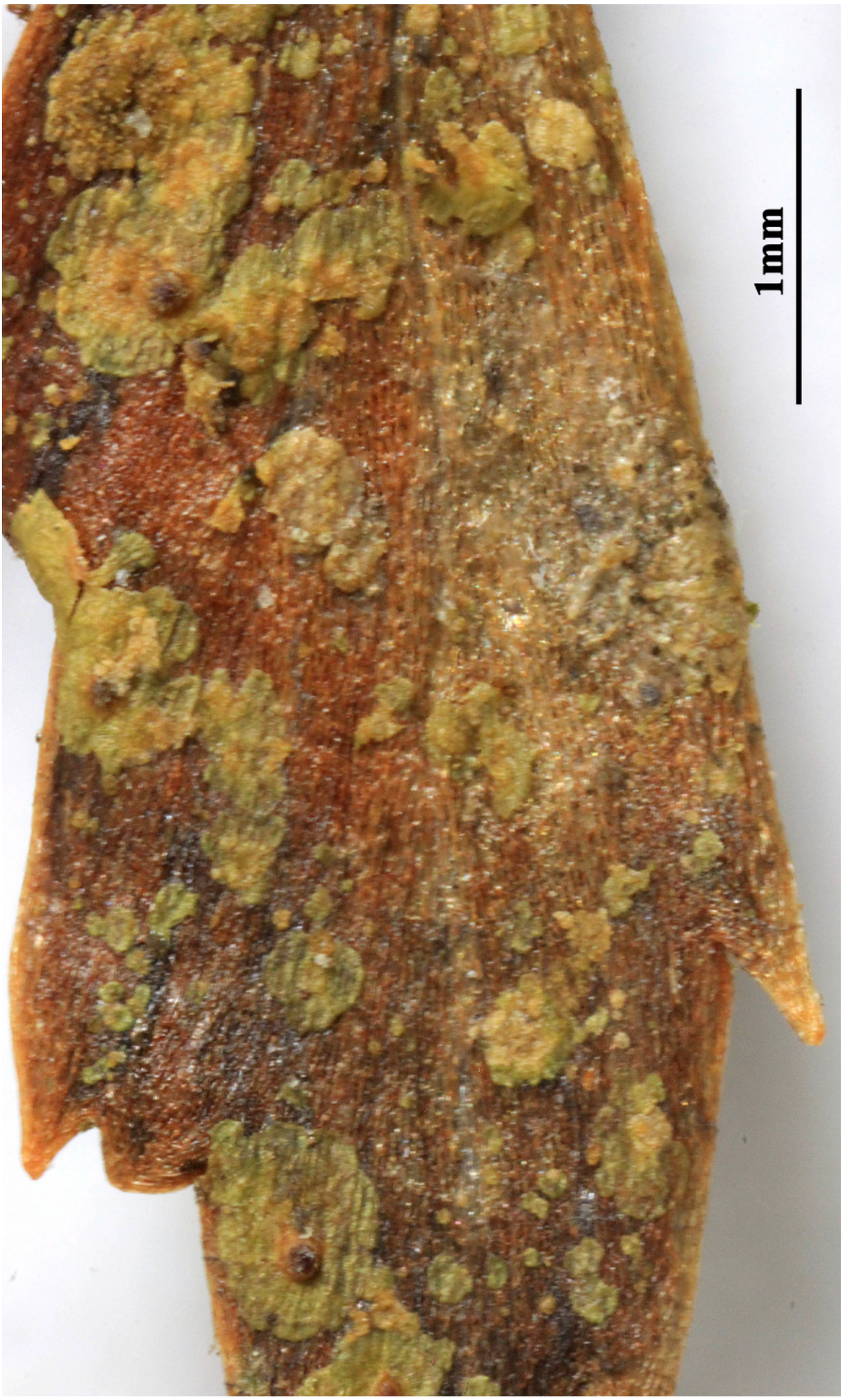
Badimiella serusiauxii Malcolm & Vězda, Nova Hedwigia 59(3-4): 519 (1994)
= *Badimiella pteridophila* (Sacc.) Garn.-Jones & Malcolm, Biblthca Lichenol. 78: 66 (2001)
= *Chaetocypha pteridophila* (Sacc.) Kuntze, Revis. gen. pl. (Leipzig) 2: 847 (1891)
= *Cyphella cookei* Sacc. & P. Syd., Syll. fung. (Abellini) 14(1): 231 (1899)
= *Cyphella filicicola* Cooke [as 'filicola'], Grevillea 14(no. 72): 129 (1886)
= *Cyphella pteridophila* Sacc., Syll. fung. (Abellini) 6: 683 (1888)

[VZR292], Nova Zelandia. South Island, distr. Canterbury, Christchurch. Peel Forest. Foliicolia ad Filices. Leg. W. Malcolm & A. Vězda, 24.04.1997. EX A. VĚZDA LICHENES RARIORES EXSICCATI NR. 292.

Thallus continuous, farinose to arachnoid, 5–15 mm across and 15–25 µm thick, pale green. Apothecia rounded, 0.2–0.3 mm diam. and 120–150 µm high; disc flat, yellowish brown to brown; margin thin, evanescent, pale brown to chamois-colored. Excipulum 30–50 µm broad, its crystals dissolving in K. Hypothecium 20–30 µm high, colorless to pale yellowish brown. Epithecium indistinct. Hymenium 40–50 µm high, colorless. Asci 35–45 x 8–10 µm. Ascospores ellipsoid, 3-septate, 16–20 x 4–5 µm, 3.5–4.5 times as long as broad, colorless. Campylidia sessile, 0.3–0.5 mm broad and up to 0.3 mm high; lobe well-developed, band-shell-shaped with acute lateral projections, white. Conidia bacillar to ellipsoid, 1-septate, 7–11x 2–3 µm. Chemistry: no substances detected by TLC.

Badimiella serusiauxii

Badimiella serusiauxii

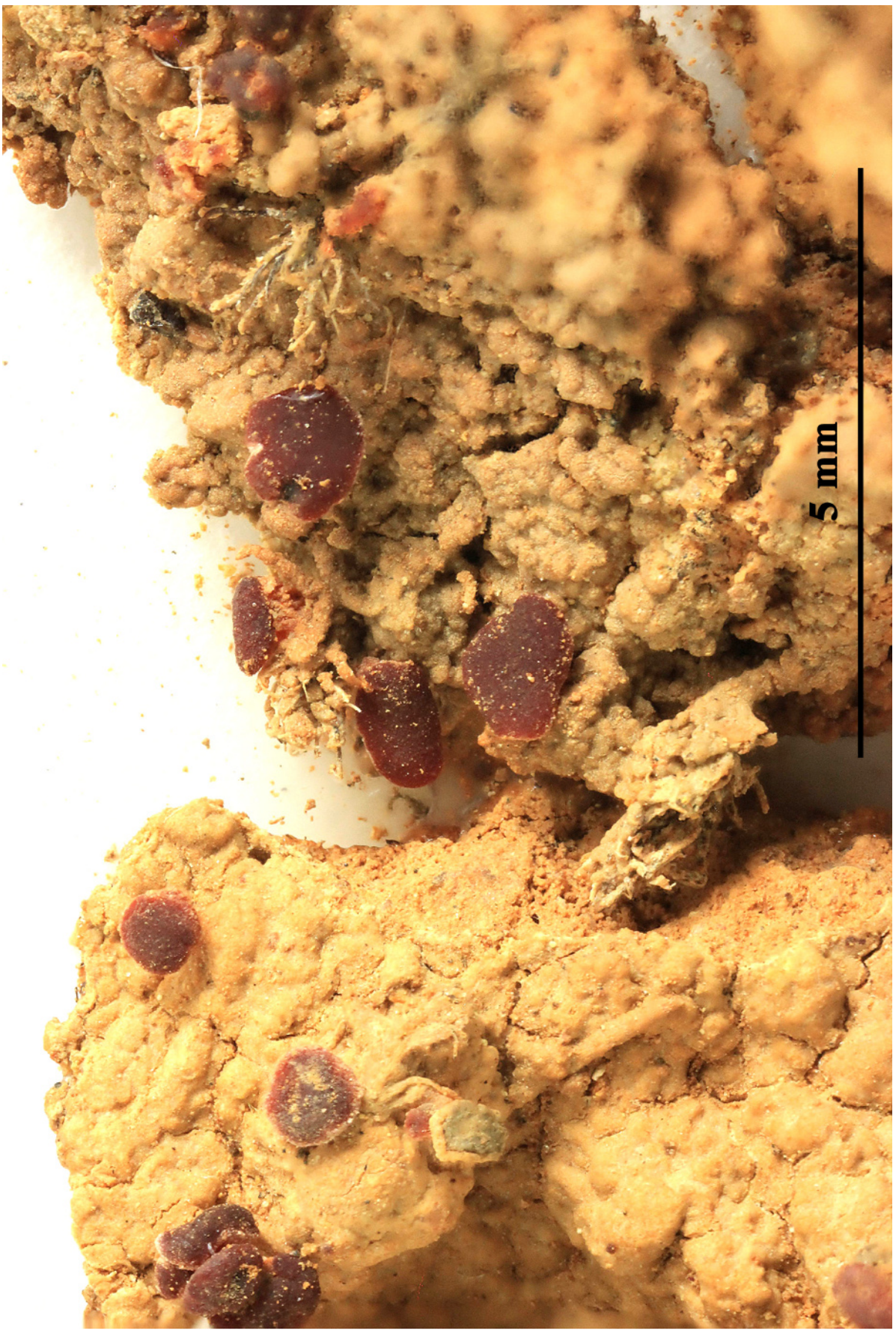


Badimiella serusiauxii

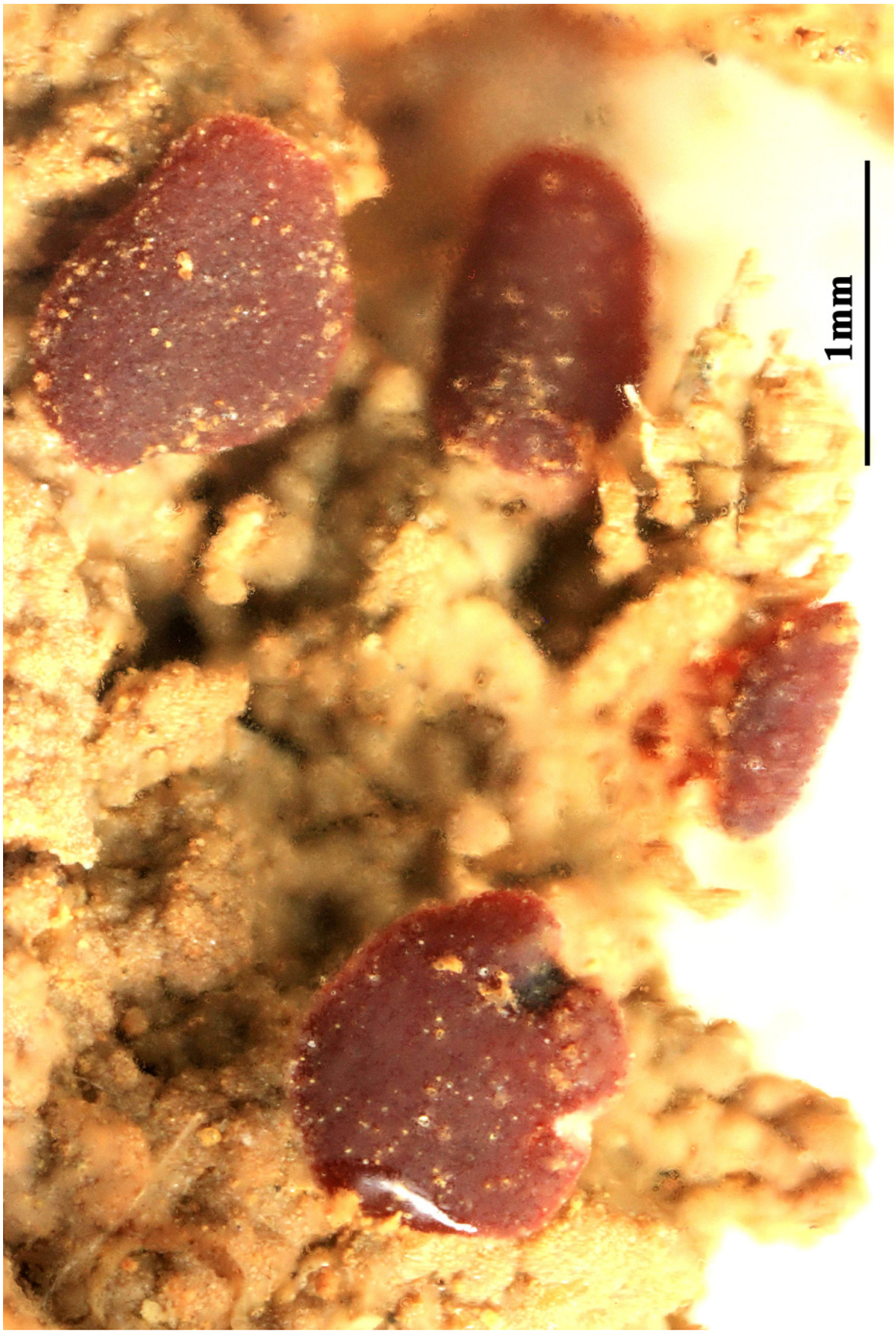
Baeomyces heteromorphus Nyl. ex C. Bab. & Mitt., in Hooker, Bot. Antarct. Voy., III, Fl. Tasman. 2: 351 (1859) [1860]
= *Tubercularia heteromorpha* (Nyl. ex C. Bab. & Mitt.) Kuntze, Revis. gen. pl. (Leipzig) 2: 877 (1891)

[VZR211], Australia Canberra, Blundelis Creek Road, secus rivum, 800 m, 35°21' austr., 148°58' orient., Ad terram. Leg. K. & A. Kalb, 5.9.1995, det. K. Kalb. - annot. norstictic acid, connorstictic acid, hypoprotocetraric acid, anal.K. Kalb with TLC.

Primary thallus crustose to small-squamulose; squamules contiguous, crowded and overlapping, smooth to verruculose to cracked and ±areolate upon drying, with hyphae visible between areoles or scattered squamules at edge of thallus, dull to glossy, chalky white (rare) to pale to grey green or bright green, greener when moist, often buff to pale ochre to yellow ochre after long storage, spuriously maculate on verruculose specimens stained by clay, esorediate, with or without schizidia. Apothecia subsessile to short- or long-stipitate, biatorine, solitary and terminal to clustered (clusters to 5 mm wide) at tips of branched stipes to numerous and subsessile along length of ±unbranched stipes, (0.1–) 0.2–2 (–2.5) mm diam.; stipe terete (when immature) to irregularly laterally compressed, simple to branched, usually 3–7 (–10) mm long, variably lichenised; margin continuous with and concolorous with core of stipe, cream to buff, rarely pale pink, semi-translucent when wet, becoming minutely furrowed and subcrenulate or flexuose to undulate and recurved in large apothecia; disc plane to strongly convex and undulate-distorted with age, very rarely cerebriform, brownish pink to red-brown to fuscous brown, smooth to scabrid. Ascospores ellipsoidal to oval-ellipsoidal, (7–) 8.5–11 (–13.5) × (2.5–) 3–4 (–4.5) µm. Pycnidia not seen. CHEMISTRY: Thallus K+ yellow then deep red, P+ orange, UV–; containing norstictic acid (major), connorstictic acid (minor), subnorstictic acid (±trace), gyrophoric acid (±minor or trace, in apothecium), crustinic acid (±faint trace, in apothecium) and salazinic acid (±faint trace, very rare). - Widespread and often locally common in moist sites, in full sun to partial shade, on soils (often clay-rich), pebbles and gravels and associated bryophytes and litter, acidic and siliceous rocks, rare on charcoal; a primary coloniser of road cuttings, creek banks and root mounds of upturned trees, sometimes forming extensive mats. Also common and widespread in New Zealand, and reported from high altitudes in New Guinea.



Baeomyces heteromorphus



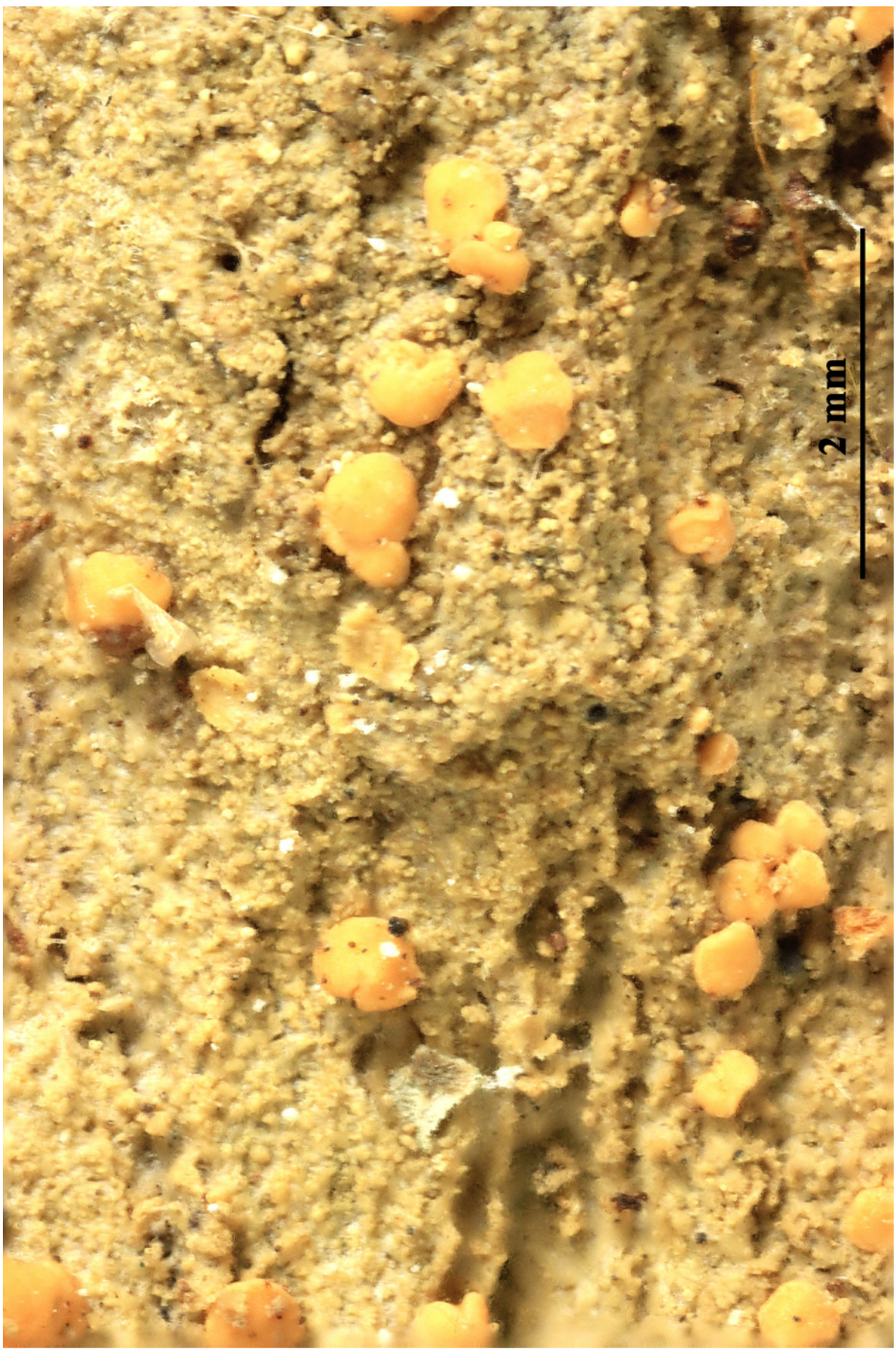
Baeomyces heteromorphus

Biatora carneoalbida (Müll. Arg.) Coppins, Lichenologist 24(4): 367 (1992)
= *Bacidia carneoalbida* (Müll. Arg.) Coppins, in Gilbert, Coppins & Fox, Lichenologist 20(3): 237 (1988)
= *Bacidia sphaeroides* f. *carneoalbida* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 150 (1926) [1927]
= *Bilimbia sphaeroides* f. *carneoalbida* (Müll. Arg.) Vain., Acta Soc. Fauna Flora fenn. 53(no. 1): 236 (1922)
= *Mycobilimbia carneoalbida* (Müll. Arg.) S. Ekman & Printzen, Lichen Flora of the Greater Sonoran Desert Region (Tempe) 2: 366 (2004)
= *Mycobilimbia carneoalbida* (Müll. Arg.) Vitik., Ahti, Kuusinen, Lommi & T. Ulvinen, Norrlinia 6: 42 (1997)
= *Mycobilimbia sphaeroides* D.D. Awasthi, Proc. Indian Acad. Sci., Pl. Sci. 97(6): 502 (1987)
= *Patellaria carneoalbida* Müll. Arg. [as 'carneo-albida'], Flora, Regensburg 51: 50 (1868)

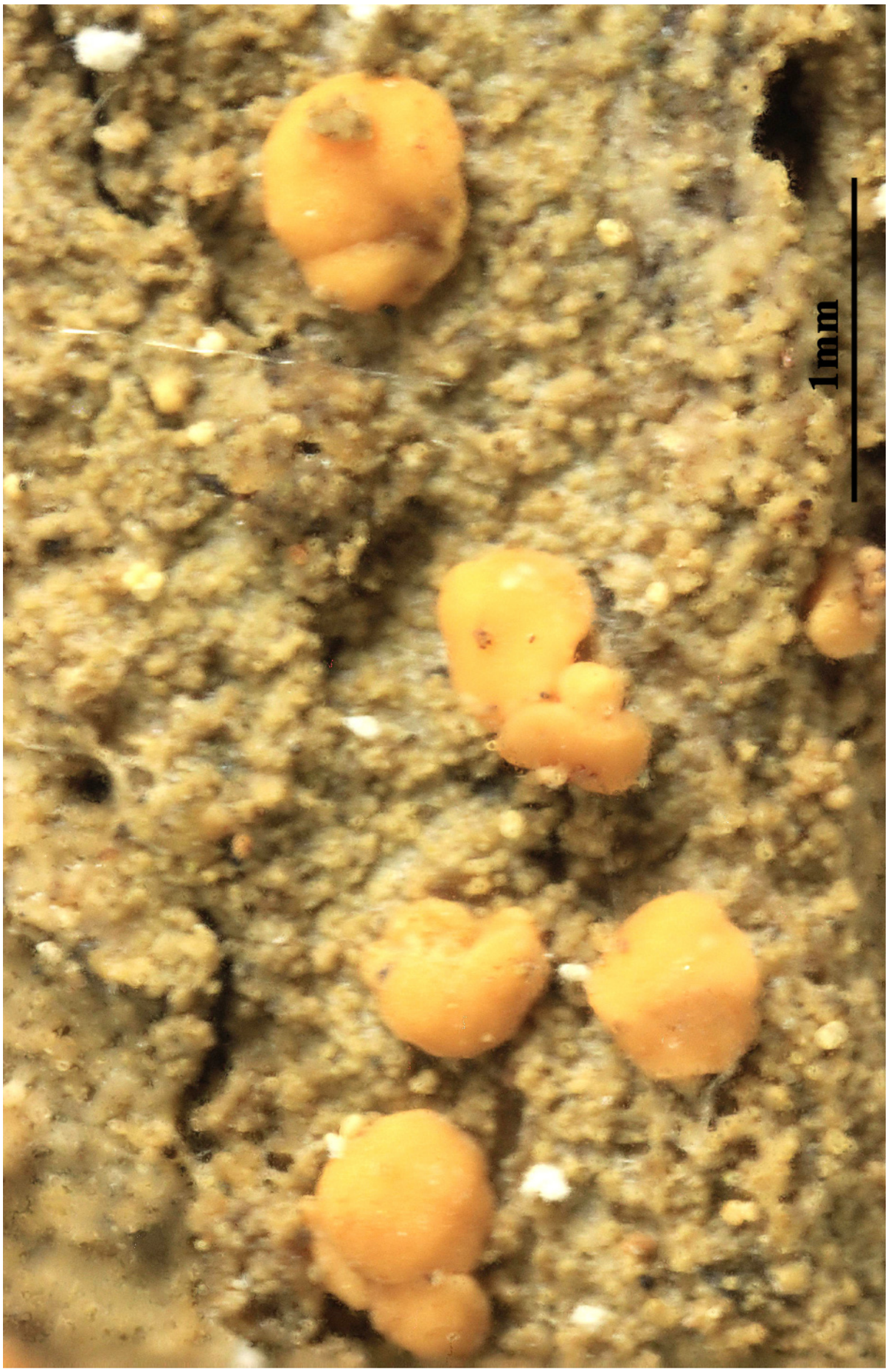
[VZR251], Bohemia merid. Šumava Distr. Klatovy, in monte "Smrkový vrch", 1100 m. Ad corticem arboris (Acer pseudoplatanus). Leg. Z. Palica & A. Vězda, 21.06.1995. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 251.

Thallus crustose, episubstratic, grey to pale greenish, continuous, rather thick, coarsely granular or warted, esorediate. Apothecia biatorine, 0.4-1.4 mm across, sessile and constricted at base, at first almost flat but soon convex and more or less globose, often confluent and tuberculate, pale yellow-orange to almost ivory-white, epruinose, the margin at first distinct and concolorous with or slightly paler than disc, but soon excluded. Proper exciple prosoplectenchymatous, of radiating, branched and anastomosing hyphae, colourless to yellowish in upper part, 60-80 µm wide laterally; hymenium colourless, but often with diffuse streaks of a pale yellow pigment, 60-75 µm high; paraphyses 1.5-2 µm thick at base, more or less clavate, the apical cells up to 5 µm wide; subhymenium 35-55 µm high; hypothecium 120-240 µm high, colourless or pale yellow. Asci 8-spored, cylindrical-clavate, with a K/I+ blue apical dome penetrated by a narrow, K/I- apical cushion surrounded by a narrow, deeply K/I+ blue zone, the wall K/I- but surrounded by an I+ red-brown and K/I+ blue outer layer, the ocular chamber small, Biatora-type. Ascospores (0-)3-septate, hyaline, ellipsoid to fusiform, straight, 11-22 x 4-7 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on bark,

mosses and plant debris, more rarely directly on rock in upland areas with frequent fog.



Biatora carneoalbida



Biatora carneoalbida

Biatora efflorescens (Hedl.) Räsänen, Lich. Fenn. Exs.: no. 133 (1935)
= *Lecidea efflorescens* (Hedl.) Erichsen, Hedwigia 72: 83 (1932)
= *Lecidea epixanthoidiza* Nyl., Flora, Regensburg 58(1): 10 (1875)
= *Lecidea helvola* f. *efflorescens* Hedl., Bih. K. svenska VetenskAkad. Handl., Afd. 3 18(no. 3): 61 (1892)
= *Lecidea vernalis* f. *epixanthoidiza* (Nyl.) Blomb. & Forssell, Enum. Pl. Scand.: 84 (1880)
= *Lecidea vernalis* subsp. *epixanthoidiza* (Nyl.) Vain., Meddn Soc. Fauna Flora fenn. 2: 61 (1878)
= *Lecidea vernalis* var. *epixanthoidiza* (Nyl.) Nyl., in Norrlin, Meddn Soc. Fauna Flora fenn. 1: 28 (1876)

[VZR194], Bohemia merid., montes Šumava. distr. Klatovy. Modrava. in monte "Smrkovy vrch", 1100 m. Ad corticem arborum vetustarum (*Acer pseudoplatanus*. Leg. A. Vězda, 21.06. 1996. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 194.

Thallus crustose, episubstratic, usually forming rounded to irregular patches up to a few cm in diameter, rimose-areolate or (rarely) continuous, sorediate, without a clear prothallus, the areoles discrete or contiguous, greyish or greyish green, up to 0.2 mm wide, flat to slightly convex, rounded, entire to incised, adnate. Soralia pale yellow to bright yellowish green (paler than thallus), laminal or marginal on the areoles, or originating in non-areolate parts of thallus, discrete to diffuse, often efflorescent, 0.2-0.5 mm across, more or less circular when young to irregular and confluent, often forming a leprose-sorediate, sometimes cracked crust; soredia 15-30(-40) µm in diam. Apothecia rather rare, biatorine, 0.3-0.6(-1) mm across, with a pale yellowish or pinkish brown, sometimes reddish or sordid brown, glossy, flat to strongly convex disc, and a slightly paler, finally excluded proper margin. Proper exciple colourless, 35-80(-110) µm wide; hymenium colourless, 30-65 µm high; subhymenium distinct, 50-70 µm high; hypothecium colourless, 20-120 µm high. Asci 8-spored, clavate, with a K/I+ blue apical dome penetrated by a narrow, K/I- apical cushion surrounded by a narrow, deeply K/I+ blue zone, the wall K/I- but surrounded by an I+ red-brown, K/I+ blue outer layer, the ocular chamber relatively small, Biatora-type. Ascospores (0-)1-septate, hyaline, narrowly ellipsoid, 9-18(-22) x 3-5 µm. Photobiont chlorococcoid. Spot tests: thallus and soralia K-, C-, KC-, UV-; soralia P+ rapidly orange-red. Chemistry: argopsin (major), norargopsin. - Note: a probably holarctic lichen found on a wide variety of trees with smooth bark, sometimes overgrowing mosses, rarely on lignum, mostly in upland areas.

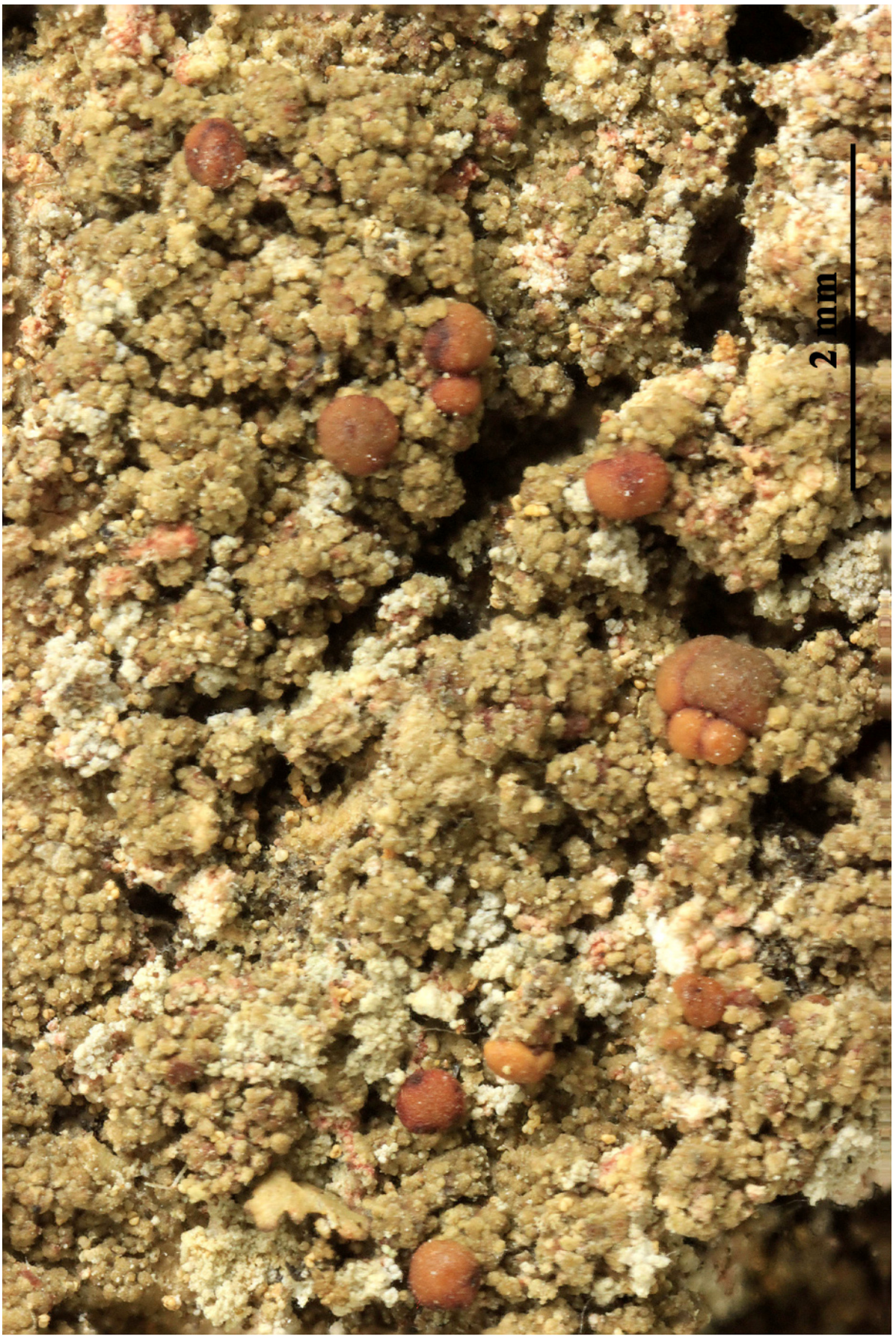
Biatora efflorescens

Biatora efflorescens

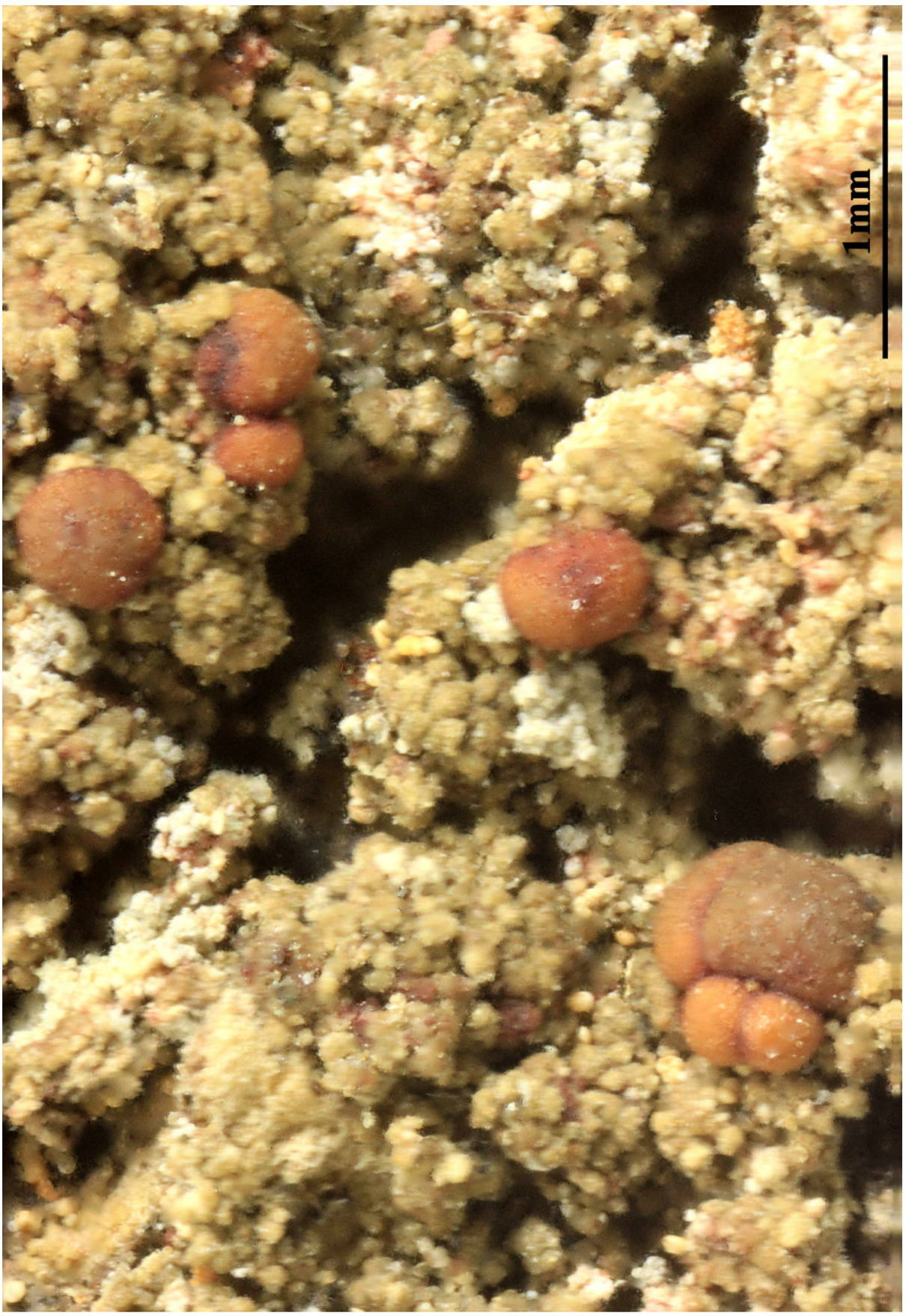
Biatora fallax Hepp, Flecht. Europ.: no. 505 (1860)

[VZR232], Bohemia merid., Šumava, Volary: in monte Stožec, reservatum naturae "Medvědice", 820 m. Ad corticem arborum (Acer pseudoplatanus). Leg. Z- Palice, 9.3.1996, dupl det. Ch. Printzen. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 232.

Thallus crustose, episubstratic, 0.2-0.4 mm thick, bright green to dark green (turning brownish in the herbarium), matt, granular-verrucose to minutely subsquamulose, forming up to 10 cm wide partches; verrucae/squamules small, 0.1-0.2(-0.3) mm in diam., convex, densely crowded and frequently overlapping, rarely finely dissected, dissolving into poorly delimited, 0.3-0.7 mm wide soralia, the soredia 20-40 µm across, sometimes gathered into 30-90 µm wide consoredia. Apothecia biatorine, rounded, sessile, strongly constricted at base, 0.3-0.7(-1.2) mm across, with a beige to reddish brown, strongly convex, epruinose disc, and an indistinct, slightly paler, soon excluded proper margin. Proper exciple colourless, 35-90 µm wide laterally, 100-280 µm wide basally, of radiating, weakly branched and anastomosing hyphae with cylindrical, 1-2.5 µm wide lumina, the lumina of apical cells up to 3 µm wide; epithecium scarcely differentiated from the hymenium; hymenium colourless or pale yellow, 40-55 µm high; paraphyses simple or sparingly branched and anastomosing, 1-1.5 µm thick at mid-level, the apical cells 1.5-3.5 µm wide; subhymenium distinct, colourless to yellowish brown, 50-95 µm high; hypothecium colourless to pale yellow-brown, 145-250 µm high. Asci 8-spored, clavate, with a K/I+ blue apical dome penetrated by a narrow, K/I- apical cushion surrounded by a narrow, deeply K/I+ blue zone, the wall K/I- but surrounded by an I+ red-brown, K/I+ blue outer layer, the ocular chamber relatively small, Biatora-type, 29-45 x 6-10 µm. Ascospores 1-celled or rarely 1-septate, hyaline, ellipsoid, (8.5-)11-14(-19.5) x (3-)3.7-4.5(-5.5) µm. Photobiont chlorococcoid. Spot tests: thallus K-, C- or (especially the soralia) C+ fleeting pink, P+ orange-red. Chemistry: thallus with gyrophoric acid and argopsin (major), and norargopsin (traces). - Note: on the base of coniferous trees near treeline.



Biatora fallax



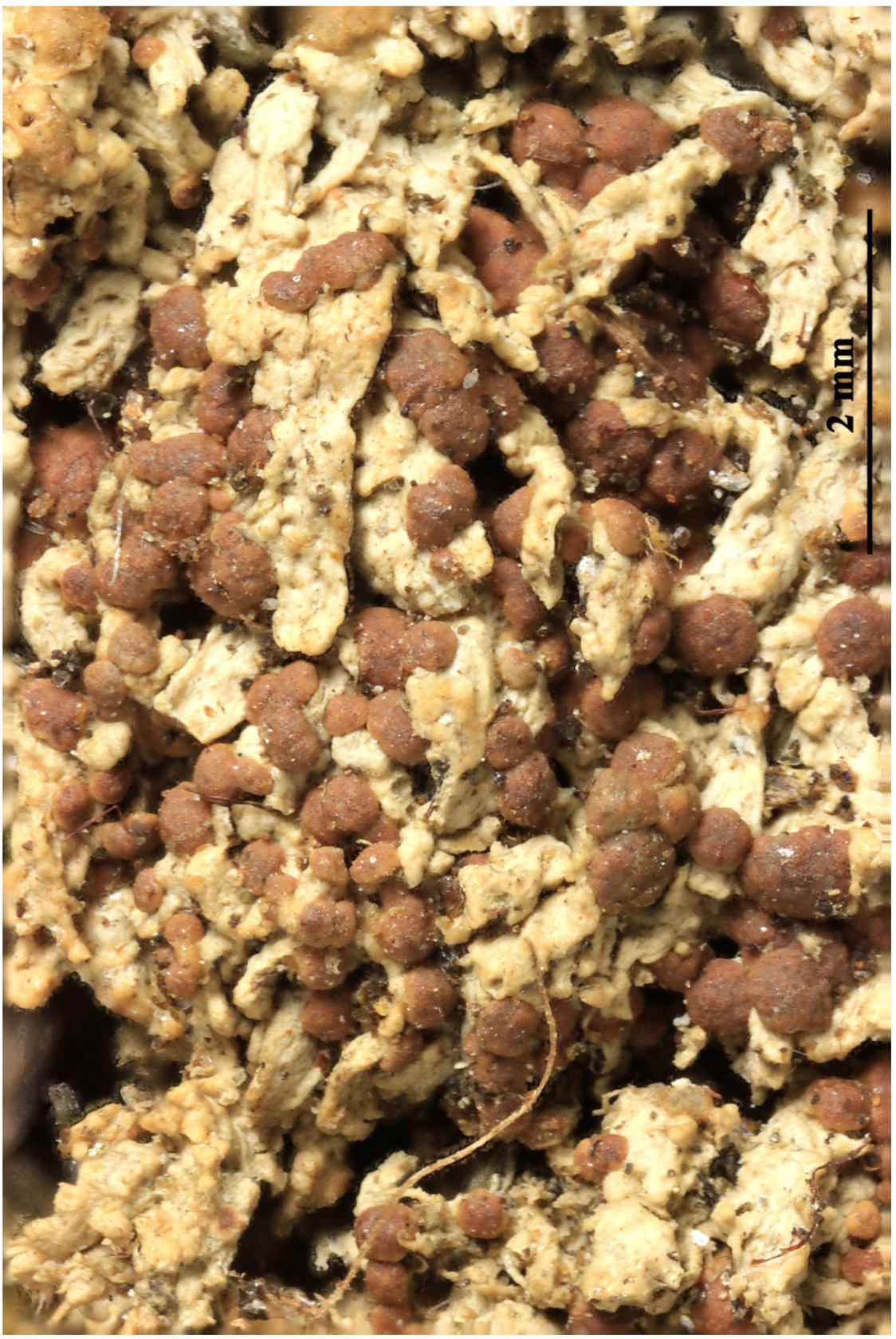
Biatora fallax

Biatora subduplex (Nyl.) Picq., Bull. Acad. Intern. Géogr. Bot. 14: 120 (1904)
= *Biatora vernalis* f. *subduplex* (Nyl.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 30: 132 (1881) [1880]
= *Bilimbia sphaeroides* var. *subduplex* (Nyl.) Branth, Meddr Grønland, Biosc. 3: 494 (1892)
= *Catillaria sphaeroides* f. *subduplex* (Nyl.) Oxner, Flora Lischaĭnikiv Ukraïni (Kiev) 2(1): 128 (1968)
= *Catillaria subduplex* (Nyl.) H. Olivier, Expos. Lich. Ouest France, Suppl. 2: 136 (1901)
= *Lecidea subduplex* (Nyl.) Nyl., in Brenner, Meddn Soc. Fauna Flora fenn. 13: 335 (1886)
= *Lecidea vernalis* f. *subduplex* Nyl., Lich. Scand. (Helsinki): 201 (1861)
= *Lecidea vernalis* var. *subduplex* (Nyl.) Nyl., Flora, Regensburg 45(6): 83 (1862)

[VZR112], Austria. Tirolia merid., Oetztaler Alpen, Oetztal, secus viam montanam inter jugum "Hohe Mut" et "Liebenerspitze" et vallem "Gaisbergtal, 2400-2700 m. Ad terram humosam. Leg. A. Vězda & F. Ceni, 2.9.1993, rev. Z. Palice - (primum sub Biatora vernalis (L.) Fr. edita). Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 112.

Thallus crustose, episubstratic, whitish grey, greenish grey or pale ochre, continuous, rimose or areolate, forming up to 5 cm wide patches, the areoles 0.15-0.55 mm wide, irregular in outline, the margins often crenulate or slightly raised. Apothecia biatorine, sessile and constricted at base, orange-brown to red-brown, 0.2-0.7(-1.5) mm across, with an initially flat, then strongly convex and sometimes tuberculate disc and a paler, thin, smooth, soon excluded proper margin. Proper exciple 25-80(-100) µm wide laterally, colourless in outer part, pale brown within, of radiating hyphae with angular-elongate, 1-2.5 µm wide lumina; epithecium scarcely differentiated from the hymenium, colourless to very pale brown; hymenium colourless, yellowish or brownish, 35-60 µm high; paraphyses coherent, simple or sparingly branched, 1-1.5 µm thick at mid-level, the apical cells to 4 µm wide; subhymenium distinct, 20-95 µm high; hypothecium yellowish or brownish, 35-200(-300) µm high. Asci 8-spored, clavate, thick-walled, the outer wall weakly I+ reddish, Biatora-type. Ascospores 1-celled (rarely 1-septate), hyaline, ellipsoid, (8-)10-15(-21) x 3-5(-6) µm, with a thin perispore. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: one of the commonest Biatora-species in the Alps, especially on plant remains and

on basal parts of subalpine shrubs, overlooked, and certainly more widespread in the Alps, and also known from the northern Apennines. See also notes on B. cuprea and B. vernalis.



Biatora subduplex

Biatora subduplex

Biatorella hemisphaerica Anzi, Cat. Lich. Sondr.: 78 (1860)
= *Biatorella campestris* f. *hemisphaerica* (Anzi) Dalla Torre & Sarnth., Fl. Tirol, Vorarlberg, Leichtenstein, III, Pilze: 348 (1905)
= *Biatorella fossarum* var. *hemisphaerica* (Anzi) Arnold, Flora, Regensburg 58(22): 344 (1875)
= *Lecidea fossarum* f. *hemisphaerica* (Anzi) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 425 (1882) [1880-81]

[VZR], Austria Styria, montes Alpium. Eisenerzer Alpen. Trofaich, Reichenstein, secus viam inter Krumpalm et Krumphals, 1500 m, 47°29'30" septentr., 14°56'20" orient. Supra muscos emortuos. Leg. J. Hafellner (41109) & I. Martinez, 29.9.1996, det. J. Hafellner. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 281.

Thallus crustose, pale grey to greenish grey, thin and often inconspicuous, granulose to arachnoid. Apothecia biatorine, (0.8-)1-1.5(-2) mm across, orange-red to reddish brown, semi-immersed to adnate, not constricted at base, with a weakly to strongly convex disc, without an evident margin. Proper exciple very poorly developed, of more or less parallel hyphae, I+ blue; epithecium pale to orange-yellow, K-, often with a layer of crystals which appear as a dark yellowish-brown pruina; hymenium colourless or yellowish in upper part, 150-300 µm high, I+ blue; paraphyses richly branched and anastomosing, 1-1.5 µm thick in lower part, the apical cells distinctly swollen, 2.5-3.5 µm wide; hypothecium yellowish grey, sometimes inspersed with oil droplets, 150-400 µm high, composed of interwoven hyphae, I+ blue. Asci >100-spored, cylindrical to clavatewith a simple, K/I± faintly blue apical dome surrounded by weakly amyloid wall layers, Biatorella-type (see Hafellner & Casares-Porcel 1992). Ascospores 1-celled, hyaline, elongate-ellipsoid, 5-8 x 2-3.5 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on calciferous soil and amongst bryophytes, most often in rock fissures, mostly in upland areas.

Biatorella hemisphaerica

Biatorella hemisphaerica

Biatorella monasteriensis (J. Lahm ex Körb.) J. Lahm, Jber. Westfäl. Prov.-Vereins 11: 131 (1884) [1882]

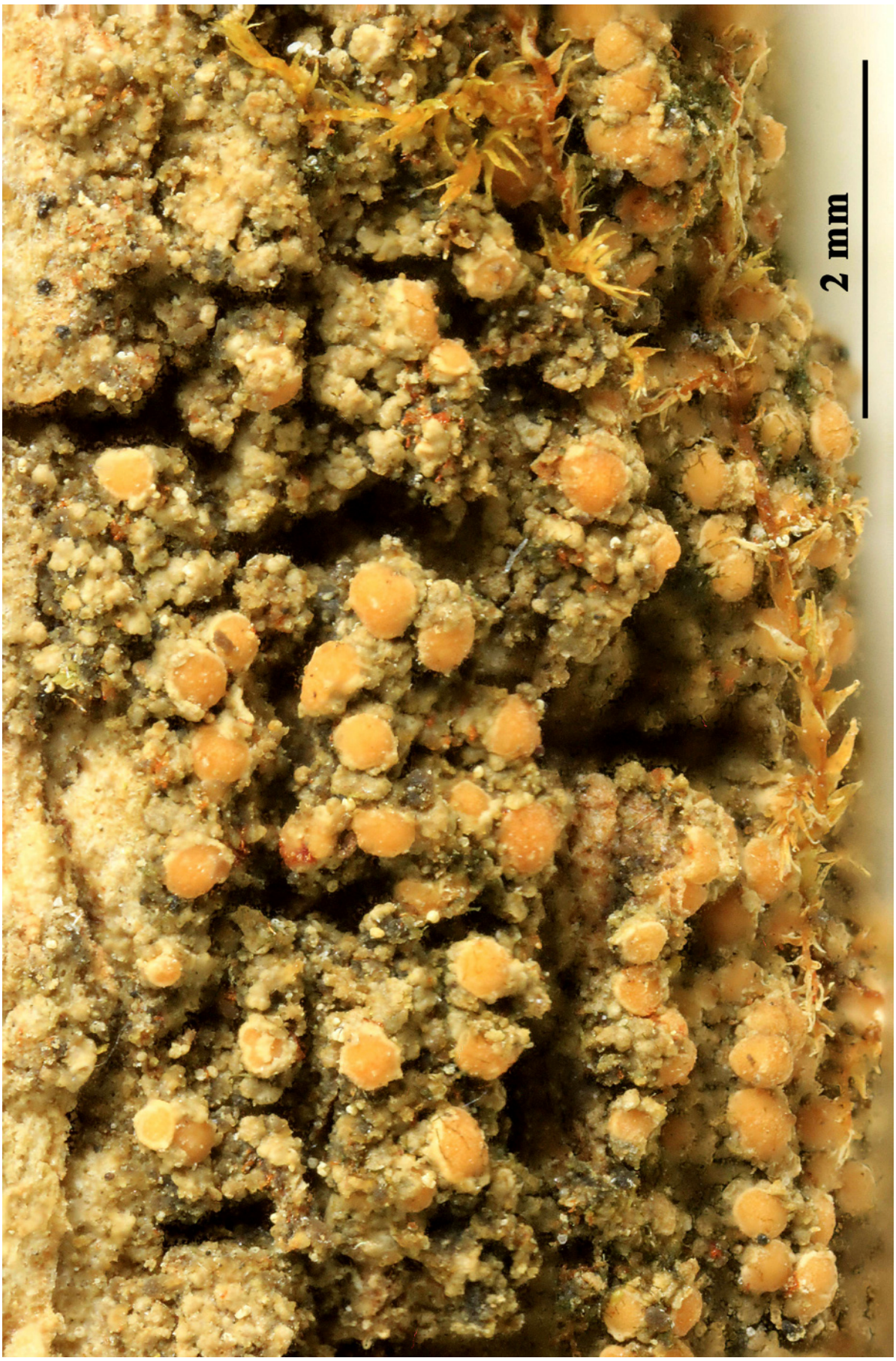
= *Biatora monasteriensis* (J. Lahm ex Körb.) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 16(2): 395 (1862)

= *Biatoridium monasteriense* J. Lahm ex Körb., Parerga lichenol. (Breslau) 2: 172 (1860) [1865]

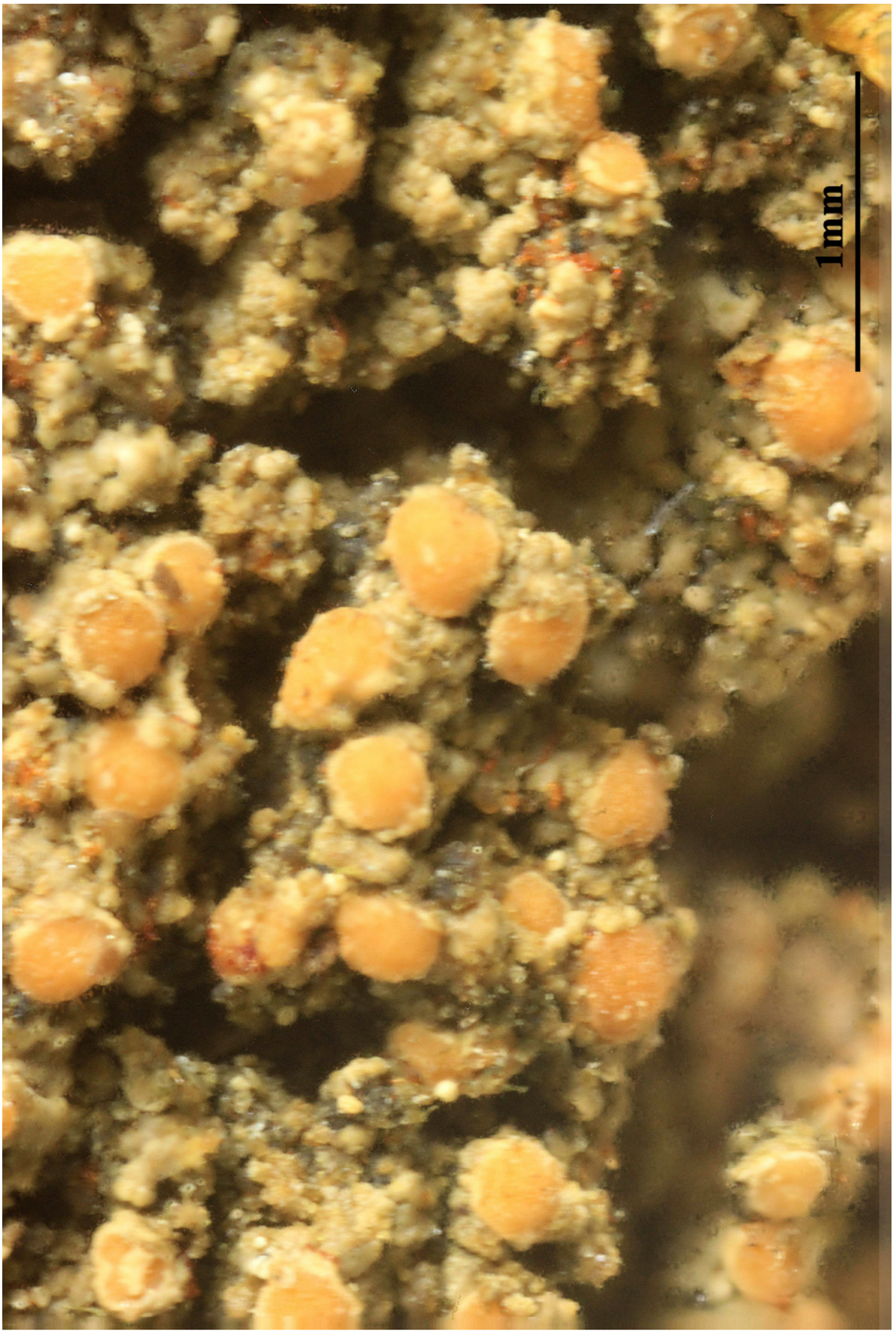
= *Lecidea monasteriensis* (J. Lahm ex Körb.) Nyl., in Zwackh, Die Lichenen Heidelbergs: 52 (1883)

[VZR101], Hibernia. Westerness, ad septentriones a Loch Sunart, 4-5 km ad occid. a Strontian ad merid. a Woodland, 5-40 m. Ad corticem arborum. Leg. B. Coppins, P. James & J. Poelt. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 101.

Thallus crustose, episubstratic, pale grey-green when dry, becoming bright green when wet, effuse, continuous or minutely areolate, usually granular, poorly delimited, without a distinct prothallus. Apothecia biatorine, 0.2-0.5 µm across, partly immersed to sessile, yellowish, pale pink or pale dull red-brown, translucent and almost colourless when wet, with an initially flat but soon convex disc and a distinct, paler, thin, finally excluded proper margin. Proper exciple 15-25 µm thick, of structura globulosa, the hyphae hyaline and thin-walled, I-; epithecium pale red-brown; hymenium colourless or pale yellow, 60-85 µm high, I+ blue; paraphyses separating and clearly visible in K, mostly simple, c. 1.5 µm thick at base, the apical cells 4-6 µm wide; hypothecium colourless or pale yellowish brown, of intricately interwoven hyphae, (25-)40-85 µm high, I+ parchily blue. Asci 100-150(-200)-spored, narrowly clavate, thick-walled, especially at apex, with a layered apical K/I+ blue dome and a K/I+ intensely blue inner cap, the outer wall I+ pale blue, Biatoridium-type (Hafellner 1994). Ascospores 1-celled, hyaline, globose, 3-3.5 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a mild-temperate lichen found on deciduous trees with subacid (e.g. *Quercus*) to base-rich (*Acer*, *Fraxinus*, *Sambucus*) bark; much overlooked in the past, but locally not uncommon, especially in humid situations, e.g. along brooks.



Biatorella monasteriensis



Biatorella monasteriensis

Biatorella ochrophora (Nyl.) Arnold, Flora, Regensburg 53(30–31): 475 (1871) [1870]
= *Piccolia ochrophora* (Nyl.) Hafellner, Symb. bot. upsal. 34(no. 1): 91 (2004)
= *Lecidea ochrophora* Nyl., Flora, Regensburg 48: 355 (1865)
= *Strangospora ochrophora* (Nyl.) R.A. Anderson, Bryologist 78(1): 55 (1975)

[VZR62], Austria, Stiria, Grazer Bergland: in valle "Mühlbachgraben", Stift Rein, prope Grazwein, 500 m. In ramis crassioribus *Sambuci nigrae*. Leg. J. Poelt, 26.5.1991. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 62.

Thallus crustose, very thin, whitish to pale grey, often indistinct. Apothecia biatorine, 0.2-0.5 mm across, very brittle when sectioned, pale ochraceous yellow to deep orange, adnate to subsessile, with a convex, orange-red-pruinose disc and a thin, finally excluded proper margin. Proper exciple red-orange to brown-yellow, 10-20 µm thick, K+ red; epithecium orange-red, densely inspersed with golden yellow, minute granules reacting K+ red and dissolving in K; hymenium pale orange-yellow, (60-)80-110 µm high; paraphyses coherent, branched and anastomosing in upper part, 1-1.5 µm thick at base, the apical cells 3-3.5 µm wide; hypothecium ochre-coloured to colourless in lower part, 50-150 µm high. Asci 100-200-spored, clavate or oval, with a K/I+ blue gelatinous outer layer and an evident apical dome which reacts I+ blue in young asci, I- in old ones. Ascospores 1-celled, hyaline, globose, (2.5-)3-4(-5) µm wide. Pycnidia usually rare, rarely abundant, whitish. Conidia globose, c. 3 µm in diam. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances; apothecia with anthraquinones. - Note: a mild-temperate species found on Populus, but also on Sambucus and other trees with base-rich bark in rather shaded and humid situations; overlooked, but certainly rare and declining.

Biatorella ochrophora

Biatorella ochrophora

Brigantiaea praetermissa Hafellner & St. Clair, in Hafellner, Symb. bot. upsal. 32(no. 1): 64 (1997)

[VZR483], USA, Montana, Sanders County: Kootenai National Forest, "Cabinet Mountains Wilderness Area, East Fork of the Bull River", secus viam Trail no. 646, 985 m. Ad corticem *Thujae plicatae* in silva cum *Larix occidentalis*, *Tsuga heterophylla*, *Pseudotsuga menziesii*, *Pinus monticola* et *Populus tremuloides*, Leg. L. L. St. Clair (4329), C. C. Newberry & A. J. St. Clair, comm. J. Hafellner. EX A. VěZDA: LICHENES RARIOTES EXSICCATI NR. 483.- ISOTYPUS.

Thallus thin, whitish to greyish, spreading, often (always?) with dispersed roundish to irregularily confluent soralia. Apothecia common, sessile, basally constricted, up to 1 mm in diam.; disc more or less plane, becoming slightly convex with age, covered by rust-brown to rust-red pruina; margin prominent, smooth, mostly darker than the disc, not rarely even blackish. Exciple biatorine; cortical layer of anticlinal conglutinated hyphae with thin lumina and dark red-brown crystals mainly on the surface, medullary layer of exciple not always distinct, hyaline. Hymenium hyaline, clear, 90-120 µm tall. Hypothecium pale. Asci singlespored, 80-110x30-50 µm. Paraphyses with few ramifications and anastomoses, c. 2 µm thick; tips slightly enlarged and encrusted with brown anthraquinone crystals. Ascospores hyaline, muriform, ellipsoid to oblong, 60-80 x 20-35 µm. Spore-borne microconidia not observed. Pycnidia not observed. Chemistry: Thallus K+ yellow, C-, P-. Apothecia K+ purple. Apothecial sections K+ purple. TLC: thalline substances: atranorin, zeorin; apothecial substances: unidentified anthraquinones. DISTRIBUTION AND HABITAT. This species is hitherto known only from a few localities in northwestern North America.- The vascular plant vegetation at the type locality is old growth forest with *Larix occidentalis, Tsuga heterophylla, Thuja plicata, Pseudotsuga menziesii, Pinus montic*ola and *Populus tremuloides*. At the type locality, B. praetermissa occurred abundantly on the bark of mature individuals of *Thuja plicata*. - This taxon has been identified in the past as *B. purpurata*. *B. praetermissa* is distinguished from *B. purpurata* by the smaller apothecia with a pale hypothecium, lower hymenium and smaller ascospores as well as a different secondary chemistry of the thallus. Furthermore, *B. purpurata* has a thicker thallus and is not known sorediate. The margins of *B. praetermissa* are often brown.

Brigantiaea praetermissa

Brigantiaea praetermissa

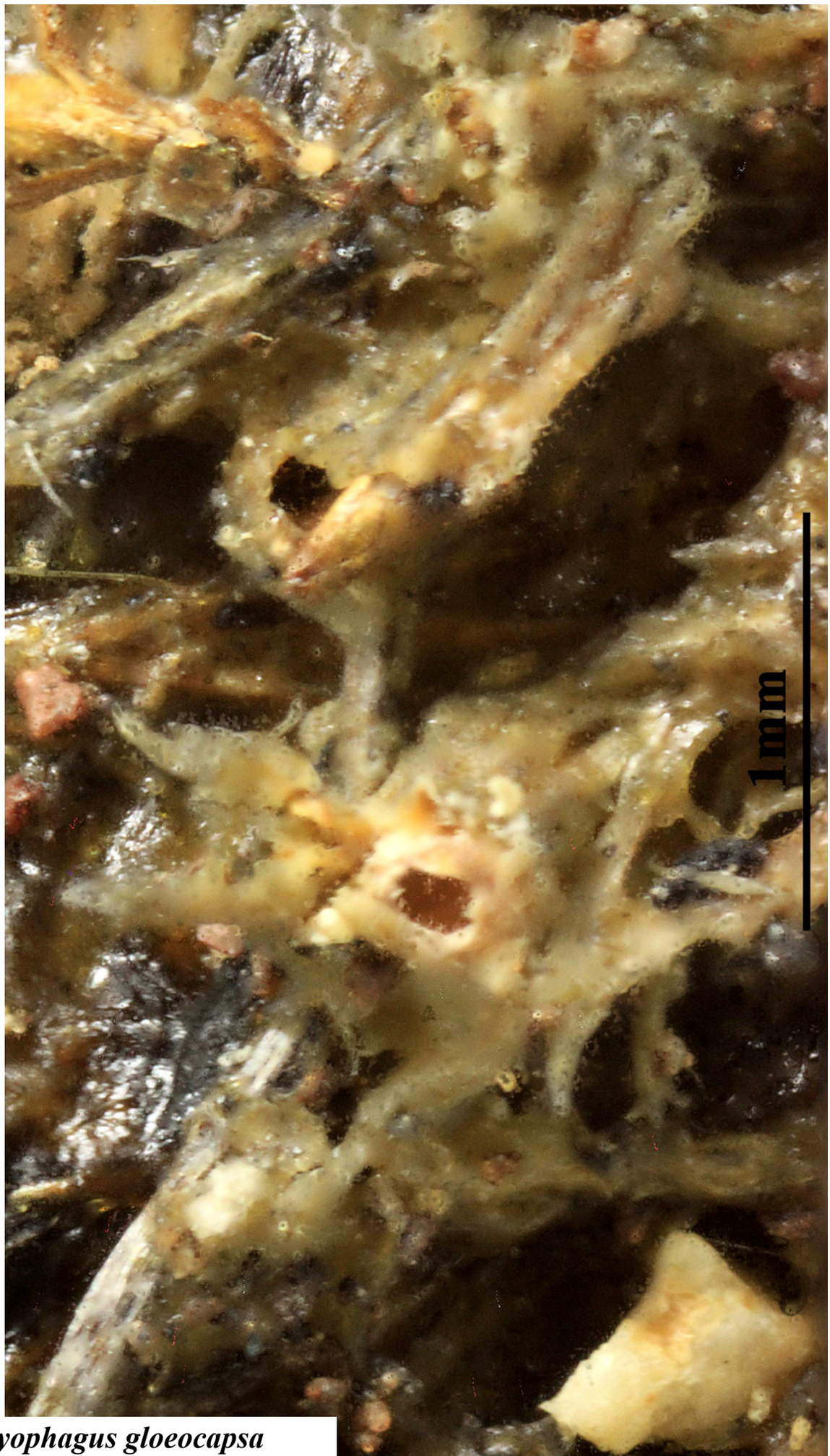
Bryophagus gloeocapsa Nitschke ex Arnold, Flora, Regensburg 45: 58 (1862)
= *Cryptodiscus gloeocapsa* (Nitschke ex Arnold) Baloch, Gilenstam & Wedin, Fungal Diversity 38: 61 (2009)
= *Bacidia bryophaga* (Körb. ex Arnold) Branth & Rostr., Bot. Tidsskr. 3: 231 (1869)
= *Bryophagus gloeocapsa* Nitschke, in Rabenhorst, Flecht. Europ. 21: no. 608 (1861)
= *Gloeolecta bryophaga* (Körb. ex Arnold) Vězda, Folia geobot. phytotax. bohemoslov. 1: 169 (1966)
= *Gloeolecta gloeocapsa* (Nitschke ex Arnold) Lettau, Feddes Repert., Beih. 69(no. 2): 150 (1937)
= *Gyalecta bryophaga* (Körb. ex Arnold) Hellb., Nerik. Laffl.: 47 (1871)
= *Gyalecta gloeocapsa* (Nitschke ex Arnold) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 126 (1905)
= *Lecidea gloeocapsa* (Nitschke ex Arnold) Zwackh, Die Lichenen Heidelbergs: 42 (1883)
= *Secoliga bryophaga* Körb. ex Arnold, Flora, Regensburg 47: 595 (1864)
= *Secoliga gloeocapsa* (Nitschke ex Arnold) Erichsen, Flechtenfl. Nordwestdeutschl.: 96 (1957)

[VZR371], Germania. Bavaria, montes Schwarzwald, Haidmühle, secus viam ad latera merid. montis Dreisesselberg, 1000 m. In fossis viae, ad terram arenosam. Leg. A. Vězda, J. Kocourková & V. Wirth. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 371.

Thallus crustose, very thin when dry, thicker and gelatinous when wet, membranous or film-like, pale brown to pale green, more or less glossy, poorly delimited. Apothecia 0.2-0.5 mm across, scattered or in small clusters, at first immersed and almost perithecioid, later emergent, deeply concave, opening with a broad pore, with a pale yellow-brown to orange-red, rarely dark brown disc, and a paler or concolorous proper margin. Proper exciple 25-70 µm thick, of thin-walled, radially arranged hyphae, paraplectenchymatous in inner part, without crystals; epithecium poorly differentiated from the hymenium; hymenium colourless (brownish in uppermost part), 50-60 µm high, I+ yellow-brown, K/I+ faintly blue; paraphyses coherent, simple, thread-like, not swollen at apex, immersed in a gelatinous matrix; hypothecium colourless. Asci 8-spored, cylindrical, short-stalked, thin-walled, the apex thickened, rounded, K/I+ blue, without any clear apical structures. Ascospores 3-4-septate, not constricted at septa, hyaline, narrowly

cylindrical to cylindrical-fusiform, 20-30 x 1.5-2 µm, often tapering at one end, arranged in a fascicle. Pycnidia pyriform, immersed in the thallus. Conidia short-cylindrical. Photobiont chlorococcoid, Gloeocystis-like, the cells globose or elongate, arranged in clusters. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a terricolous species, encrusting leafy hepatics or bryophytes, usually over sandy to clayey soils, mostly in shaded situations, e.g. along forest roads, with a wide altitudinal range but with optimum in upland areas; widespread in the Holarctic region, with several records from the Alps.

Bryophagus gloeocapsa



Bryophagus gloeocapsa

Bryoria capillaris (Ach.) Brodo & D. Hawksw., Op. bot. 42: 115 (1977)
= *Alectoria cana* (Ach.) Leight., Lich.-Fl. Great Brit.: 88 (1871)
= *Alectoria capillaris* (Ach.) Cromb., J. Bot., Lond. 9: 177 (1871)
= *Alectoria implexa* var. *cana* (Ach.) Flagey, Mém. Soc. ému. Doubs, sér. 5 7: 353 (1882)
= *Alectoria implexa* var. *capillaris* (Ach.) Stizenb., Annln K. K. naturh. Hofmus. Wien 7: 131 (1892)
= *Alectoria jubata [*unranked*] cana* Ach., Lich. Univ.: 593 (1810)
= *Alectoria jubata* f. *cana* (Ach.) Linds., Proc. Linn. Soc. London 9: 375 (1867)
= *Alectoria jubata* var. *capillaris* (Ach.) Ach., Lich. Univ.: 593 (1810)
= *Bryopogon canus* (Ach.) M. Choisy, Icon. Lich. Univ., fasc. 2 (Lyon): 13 (1930)
= *Bryopogon capillaris* (Ach.) Bystrek, Annls Univ. Mariae Curie-Skłodowska, Sect. C, Biol. 26(no. 21): 274 (1971)
= *Bryopogon implexus* f. *canus* (Ach.) Savicz ex Rass., Trav. Mus. Bot. Acad. Sc. URSS. 22: 246 (1930)
= *Bryopogon implexus* f. *capillaris* (Ach.) Gyeln., Feddes Repert. Spec. Nov. Regni veg. 38: 242 (1935)
= *Bryopogon implexus* var. *capillaris* (Ach.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 21: 171 (1952)
= *Bryopogon jubatus* f. *canus* (Ach.) Körb. [as 'canum'], Syst. lich. germ. (Breslau): 5 (1855)
= *Bryopogon jubatus* f. *capillare* (Ach.) Körb., Syst. lich. germ. (Breslau): 5 (1855)
= *Bryopogon jubatus* var. *canum* (Ach.) Arnold, Flora, Regensburg 51(33): 520 (1868)
= *Bryopogon jubatus* var. *capillaris* (Ach.) Rabenh., Krypt.-Fl. Sachsen, Abth. 2 (Breslau): 382 (1870)
= *Cornicularia jubata* var. *cana* (Ach.) Schaer., Enum. critic. lich. europ. (Bern): 5 (1850)
= *Cornicularia jubata* var. *capillaris* (Ach.) Duby, Bot. Gall., Edn 2 (Paris) 2: 616 (1830)
= *Parmelia jubata* var. *cana* (Ach.) Schaer., Lich. helv. spicil. 10: 503 (1840)
= *Parmelia jubata* ß *capillaris* Ach., Methodus, Sectio post. (Stockholmiæ): 273 (1803)

[VZR332], USA, Washington, Spokane County. In summo montis Spokane, ad septentriones et orientem ab urbe Spokane, 1790 m. Ad ramos emortuos *Abies lasiocarpae*. Leg. W. L. Culberson (no.2388), 9.08.1996. -Annot.: Barbatolic acid (trace) and an unidetified triterpene

by TLC, anal. J. Johnson & C. F. Culberson. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 332.

Thallus fruticose, filamentous, attached by a basal holdfast, long-pendent, soft, to 30 cm long, whitish grey to brownish grey, very rarely dark brown in sun-exposed morphs, usually without a main branch, irregularly branching with acute angles, the branches terete to flattened at axils, to 0.5 mm thick. Soralia absent to usually abundant, small, tuberculate, with farinose soredia. Pseudocyphellae sparse, fusiform, usually inconspicuous; medulla white, compact. Apothecia extremely rare (never observed in Italian material), zeorine, with a brown disc, to 1-2 mm across. Asci 8-spored, Lecanora-type. Ascospores 1-celled, hyaline, subglobose to ellipsoid, 5-9 x 4-6 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K+ yellow, C+ red or C-, KC+ red, P+ yellow; soralia P+ red; apothecia P+ yellow. Chemistry: barbatolic acid, sometimes alectorialic acid and atranorin in cortex; fumarprotocetraric acid in soralia; psoromic acid in apothecia. - Note: a temperate to boreal-montane, circumpolar lichen, with optimum in montane humid *Fagus-Abies* forests, mostly on twigs, but also on boles of isolated trees in areas with frequent fog.

Bryoria capillaris

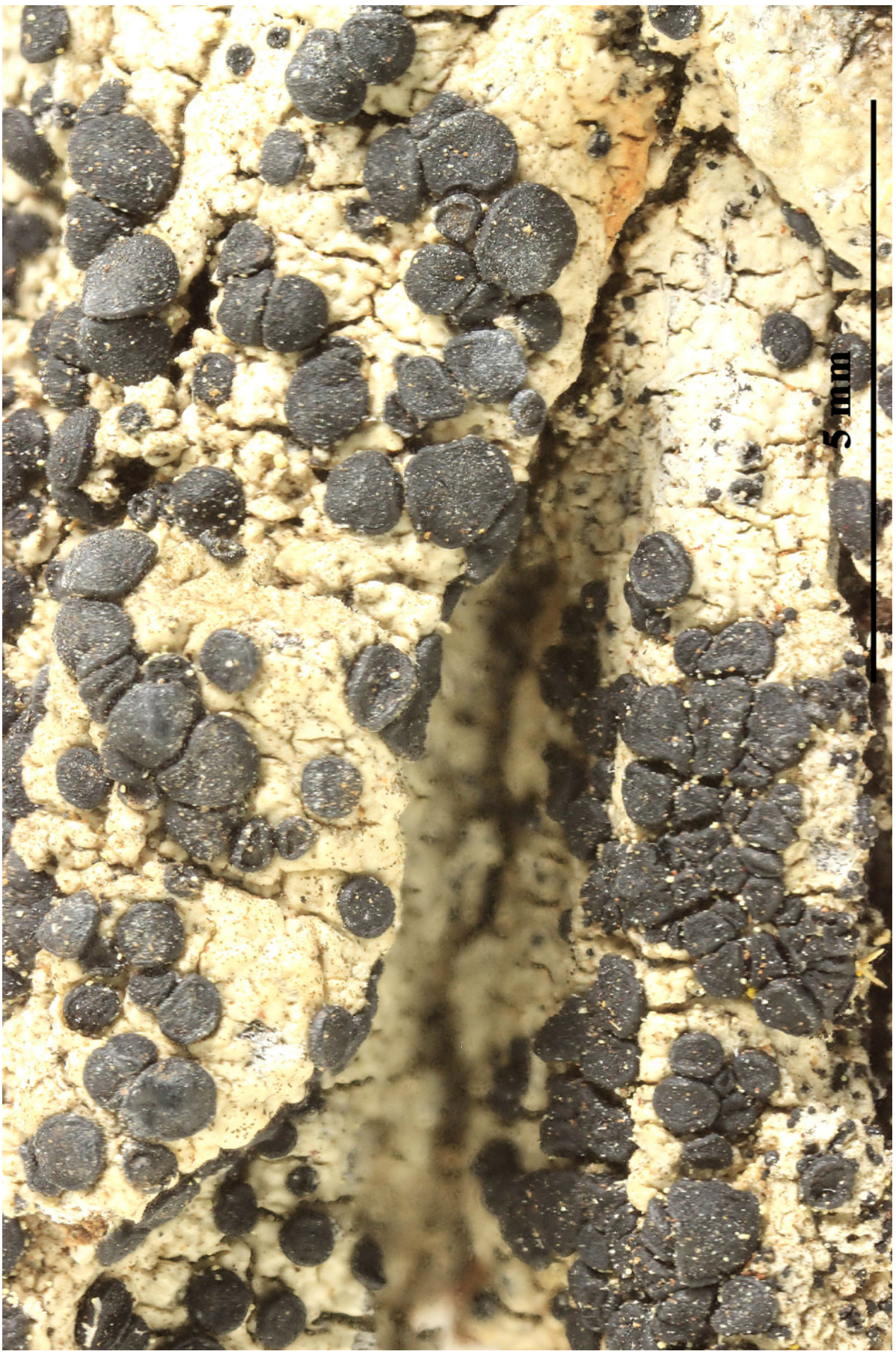
Bryoria capillaris

Bryoria capillaris

Buellia discors (Stizenb.) H. Magn., Ark. Bot., Ser. 2 3(no. 10): 374 (1955)
= *Lecidea discors* Stizenb. 1891
= *Buellia tetrapla* (Nyl.) Müll. Arg. 1888

[VZR212], Australia. Canberra, reservatum naturae Molongo Gorge reserve, 35°20' austr., 149°50' orient. Ad corticem arborum. Leg. K. Kalb, J. Elix & G. Kantvilas, det. K. Kalb & B. Marbach. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 212.

Thallus corticolous or lignicolous, 1–4 cm wide, thin, continuous, membranous to areolate, white, grey-white or pale yellow-grey, uneven or verrucose. Prothallus not apparent. Apothecia 0.2–1.2 mm wide, sessile; disc black, epruinose, plane or becoming convex; margin black, moderately thick, persistent or excluded in convex apothecia. Proper exciple brown. Epihymenium 10–20 μm thick, dark brown, K–. Hymenium 100–120 μm thick, inspersed with oil droplets. Hypothecium 40–50 μm thick, dark brown. Asci usually 4-spored, rarely 3-spored. Ascospores 1-septate, 28–45 × 14–18 μm, with strong subapical and septal wall thickenings; outer wall strongly ornamented. Pycnidia not seen. CHEMISTRY: Thallus K+ yellow, C–, P+ yellow; containing atranorin (major), diploicin (major), isofulgidin (minor), fulgidin (minor or trace). ommon on bark in hinterland forest and woodland in Australia, also in South America, South Africa, the Mascarene Islands (Réunion), New Zealand and the Hawaiian Islands.



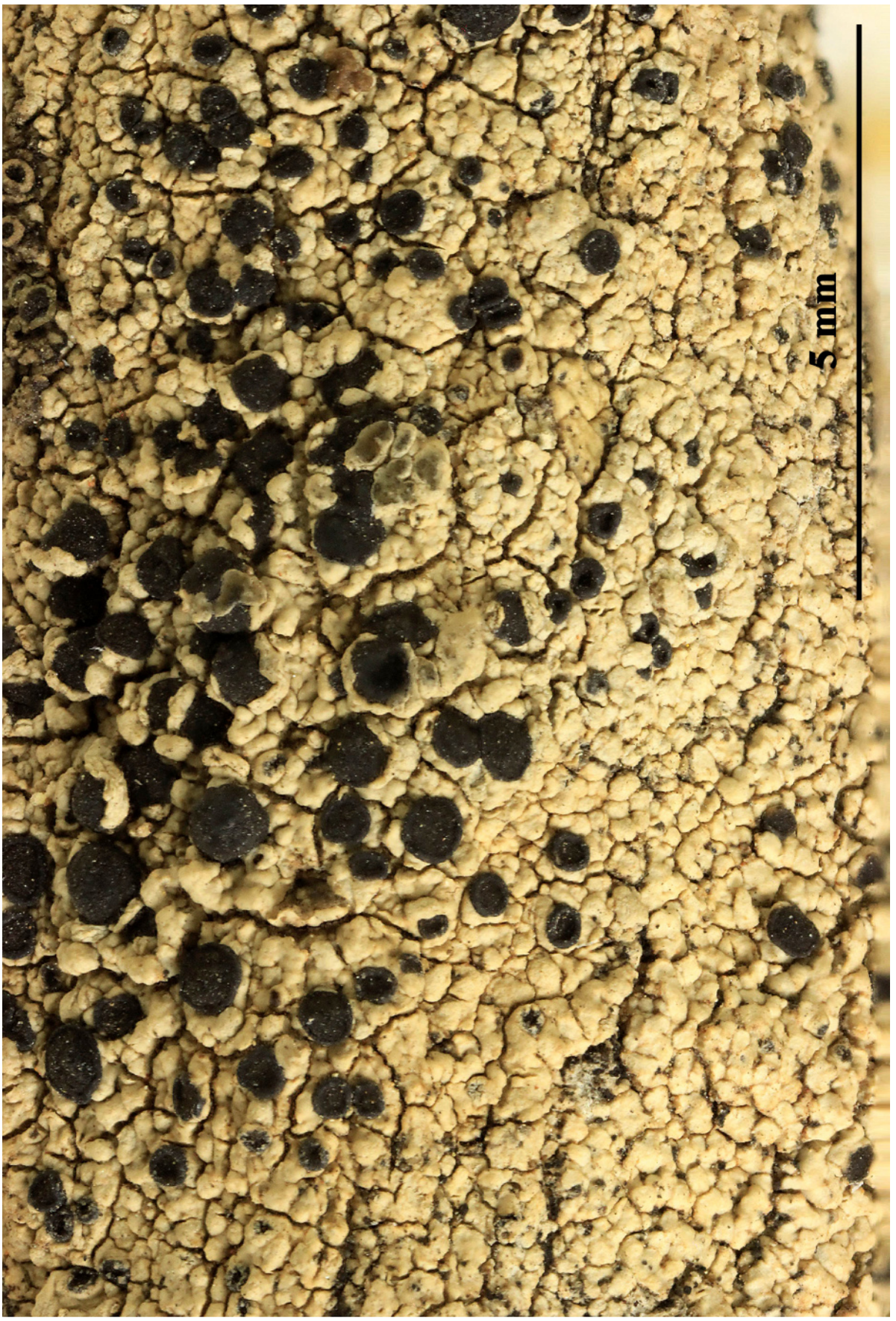
Buellia discors

Buellia discors

Buellia sanguinolenta T. Schauer, Mitt. bot. StSamml., Münch. 5: 620 (1965)
= *Hafellia sanguinolenta* (T. Schauer) Hafellner & Türk, Stapfia 76: 152 (2001)

[VZR490], Insulae Canarienses, insula Tenerife. Los Cristianos, in valle San Lorenzo, loco Mirador de la Centinela dicto, 500 m. Ad corticem *Euphorbiae* sp. Leg. A. Vězda, 10.03.1994, det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 490.

Thallus crustose, thinly episubstratic, continuous or granulose, white-grey, sometimes delimited by a black prothallus. Medulla I-. Apothecia lecideine, black, sessile, (0.3-)0.4-0.6(-0.8) mm across, with a flat to convex, epruinose disc and a thin, persistent or finally excluded proper margin. Proper exciple 60-70 µm wide laterally, K-; epithecium brown; hymenium colourless, 120-140 µm high, inspersed with numerous oil droplets; paraphyses 1-1.5 µm thick at mid-level, the apical cells slightly swollen, 2-3.5(-4) µm wide. Asci 8-spored, clavate to cylindrical-clavate, the apical dome K/I+ dark blue with a pale, conical-pointed apical cushion (axial mass), the wall I-, but the thin outer gel I+ blue, Bacidia-type. Ascospores 1-septate (a few of them rarely 3-septate), brown, often curved, (21-)26-32-(35) x (11-)12-13(-16) µm, Callispora-type, paler at the pointed apices; the inner wall thickened subapically and at septum, the ontogeny of type C (subapical inner wall thickenings produced before septum formation). Pycnidia usually rare, black. Conidia ellipsoid-cylindrical, 3.5-4 x 1-1.5 µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow turning red (needle-like crystals), C-, KC-, P+ yellow-orange, UV-. Chemistry: atranorin (traces), norstictic and connorstictic acids. - Note: a suboceanic species, also known from montane *Fagus-Abies* forests in Austria.



Buellia sanguinolenta

Buellia sanguinolenta

Buellia violaceofusca G. Thor & Muhr
= *Lecanographa amylacea* (Pers.) Egea & Torrente (trebouxioid) Bibl. Lichenol., 54: 122, 1994.
= *Lichen amylaceus* Ehrh. ex Pers. - Plant. Crypt. Exsicc.: 303, 1793.

[VZR441], Austria. Voralbergia, Rätikon, Schruns, in monte Golmer Joches, 2100 m. Ad truncum *Fagi silvaticae* vetustum. Leg. A. Vězda & V. Wirth, 27.07.1986, dipl. det. G. Thor. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 441.

This lichen appears in two very different morphotypes, depending on the photobiont, this description refers to the form with a trebouxioid photobiont: Thallus crustose, endosubstratic or episubstratic and then granular, up to 0.15 mm thick, pale grey to almost white, with scattered, maculiform, 0.15-0.6 mm wide, often confluent soralia which are dark dirty brown with a violet tinge, (greenish when abraded), the soredia 15-20(-23) µm wide, with brown, 1.8-2.5 µm thick outer hyphae, the inner colourless hyphae 1.3-1.7(-2) µm thick. Apothecia and pycnidia not known. Photobiont chlorococcoid. Spot tests: all negative, except the pigmented outer hyphae of the soredia, which react K+ greenish grey, N+ red-brown: medulla UV+ citrine-glaucous. Chemistry: without lichen substances. - Note: a mild-temperate, mainly western lichen found on isolated, old deciduous trees with acid bark, especially oaks, on faces seldom wetted by rain. According to Ertz & al. (2018), the sorediate *Buellia violaceofusca* G. Thor & Muhr seems to be a trebouxioid photomorph of this species, the fungus, depending on the photobiont type, changing the morphology and the reproduction strategy. The trebouxioid morph, known from Scandinavia and Western-Central Europe, and the Eastern Alps (Austria), grows on the fissured bark of more or less isolated old deciduous tress (especially *Quercus* and *Fraxinus*).

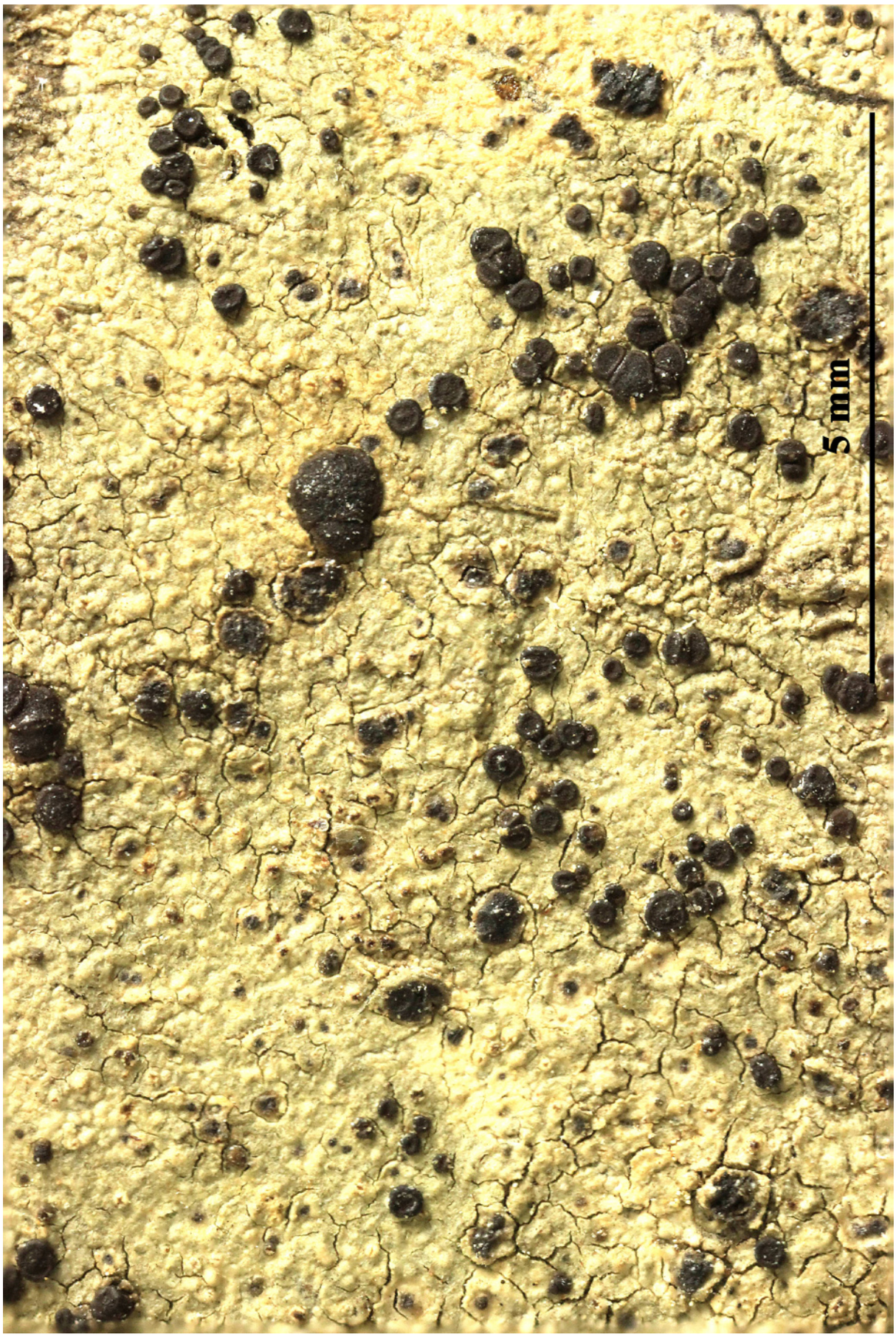
Buellia violaceofusca

Buellia violaceofusca

Buellia stillingiana J. Steiner, Öst. bot. Z. 68: 144 (1919)

[VZR], USA. North Carolina, Durham Vounty: inter Durham et Chapell Hill, in horto nostro Villae Pinae, 120 m. Ad ramos *Quercus falcatae*. Leg. W. L. Culberson (no.22276) & C. F. Culberson, 19.9.1993. - Annot.: Atranorin, norstictic acid and a trace of connorstictic acid by TLC, anal. A. Johnson & C. Culberson. Ex A. VěZDA: Lichenes Rariores Exsiccati Nr. 102.

Buellia stillingiana is a crustose lichen that grows on trees, particularly oak and cedar, in East and Central Texas. It has a gray to brownish-gray thallus with numerous black apothecia, 0.2-0.5 mm in diameter. The species is common in the region, often found on shaded bark of mature trees, especially in areas with high humidity and moderate temperatures. In East Texas, it can be found in deciduous forests, while in Central Texas, it occurs in woodland edges and along streams. - Observations of *Buellia stillingiana* in East and Central Texas reveal its presence on various tree species, including oak and hackberry.



Buellia stillingiana

Buellia stillingiana

Bunodophoron formosanum (Zahlbr.) Wedin, Pl. Syst. Evol. 187(1-4): 233 (1993)

= *Sphaerophorus compressus var. candidus* Müll. Arg. [as 'Sphaerophoron'], Flora, Regensburg 64(32): 505 (1881)

= Sphaerophorus formosanus (Zahlbr.) Asahina, in Mituno, J. Jap. Bot. 14(10): 667 (1938)

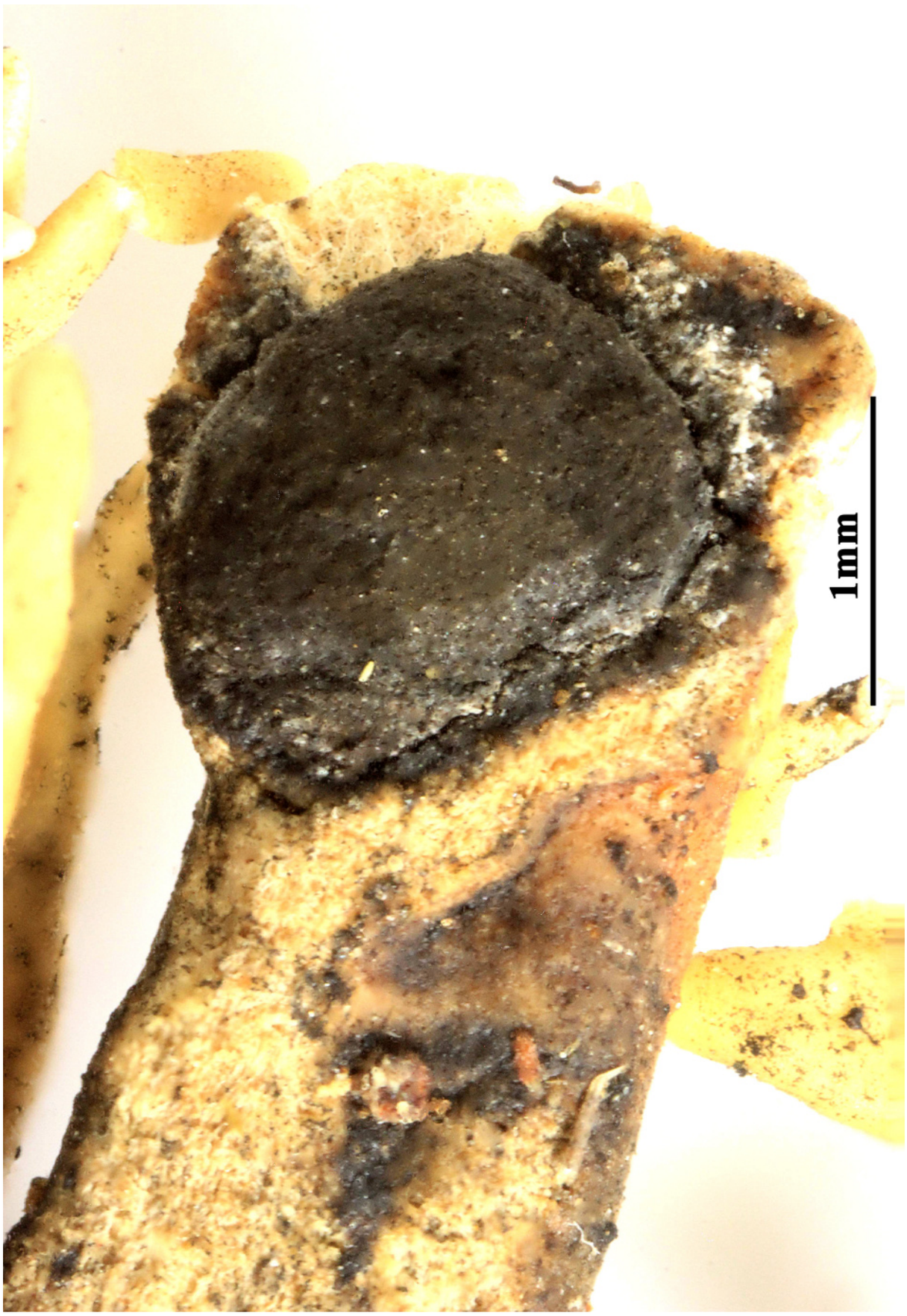
= *Sphaerophorus melanocarpus subsp. formosanus* Zahlbr., Feddes Repert. Spec. Nov. Regni veg. 31: 206 (1933)

= *Sphaerophorus melanocarpus var. candidus* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 1: 695 (1922)

[VZR195], Australia, New South Wales, Gloucester Tops, lat. 38°04.5' austr., long. 151°34' orient., 1150 m.Ad truncum arboris (*Nothofagus moorei*) in pluviisilva. Leg. G. Kantvilas, 2.7.1988, det. G. Kantvilas (381/88). - Annot: Spores 6-8 µm, brown-grey, Medulla P- of P+ faint orange; sphaerophorin, stictic avid (TLC). Ex A. VěZDA: Lichenes Rariores Exsiccatu Nr. 195.

Thallus forming extensive colonies or small patches of numerous crowded thalli. Fertile branches subterete to flattened, particularly at the base, slender, sparingly branched, 2–3.8 cm long, 1.5–3 mm wide. Upper surface pale grey to almost white, smooth, but usually with ±abundant short terete isidioid branchlets. Apothecia sparse to abundant, terminal, 1.2–3 (–3.5) mm wide; supporting branches slender, narrowly compressed to subterete, usually slightly bent upwards, but often not well delimited. Mazaedia subapically exposed, conspicuous, strongly sooty, becoming exposed very early. Ascospores 5.5–7.5 (–9) µm diam., brownish grey to dark grey. Conidia bacilliform, 3.5–6.5 × 1.5–2 µm. CHEMISTRY: Medulla K+ pale yellow, P+ orange (reactions often faint); containing sphaerophorin, stictic acid, constictic acid, cryptostictic acid and norstictic acid. - Epiphytic in temperate and subtropical rainforest at higher altitudes in Australia in Lord Howe Is., widespread in tropical and subtropical high-altitude rainforest throughout the world.

Bunodophoron formosanum



Bunodophoron formosanum

Bunodophoron scrobiculatum (C. Bab.) Wedin, Pl. Syst. Evol. 187(1-4): 234 (1993)

= *Sphaerophorus australis var. scrobiculatus* C. Bab., in Hooker, Bot. Antarct. Voy. Erebus Terror 1839-1843, II, Fl. Nov.-Zeal.: 304 (1855)

= *Sphaerophorus melanocarpus var. scrobiculatus* (C. Bab.) Js. Murray , Trans. Roy. Soc. N.Z. 88: 192 (1960)

= *Sphaerophorus scrobiculatus* (C. Bab.) M. Satô, Miscell. bryol. lichenol., Nichinan 4: 151 (1968)

[VZR], Nova Zelandia. South Island, distr. Nelson, Hira Forest, ad corticem arboris (*Podocarpus*)m 800 m. Leg. W. Malcolm & A. Vězda, 30.04.1997. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 333.

Thallus broadly flattened, erect, ascending or decumbent, forming spreading patches; fertile branches mostly to 50 mm long, 6–12 mm wide, arising amongst shorter, rather lacerate sterile branches, sometimes with marginal, subterete branchlets, apically developing a narrowed, ± terete "waist" or stout stalk 1.5–5 mm wide subtending the globose to conical apothecia; upper surface pale grey-green to yellowish green, sometimes blackened in older or exposed parts, smooth and faintly pruinose when young, developing occasional transverse cracks and becoming very coarsely wrinkled at the apothecial receptacle; lower surface whitish to pale yellowish brown, smooth. Mazaedia subterminal, orientated to the ventral side, exposed from the earliest stages of development, globose when young, at maturity becoming conical, with the receptacle flaring widely to 5–13 mm and becoming ragged. Ascospores grey to grey-brown or red-brown, (9–)9.5–11.6–13(–15) µm diam. Common in western and south-western Tasmania, typically in implicate rainforest where it colonises bryophyte-festooned trunks and horizontal branches; also known from New Zealand and southern South America. When fertile, the broad, flaring, conical apothecia with a wrinkled receptacle are unmistakable. Sterile specimens of short, flattened, basal branches could be confused with *B. macrocarpum* or *Calycidium cuneatum*, but in doubtful cases, the chemistry of *B. scrobiculatum* is diagnostic. Chemistry: 4-O-methylhypoprotocetraric acid; medulla K–, KC–, C–, P–, UV+ white. - Characterised by the corticolous habit; the broad flattened thallus branches that are "waisted" below the coarsely scrobiculate, often broadly flaring apothecia. The chemistry is also distinctive with 4-O-methylhypoprotocetraric acid as a major compound. Chemistry: Medulla K-, P-,

4-O-methylhypoprotocetraric acid (major), isousnic acid (tr), placodiolic acid (tr).

Bunodophoron scrobiculatum

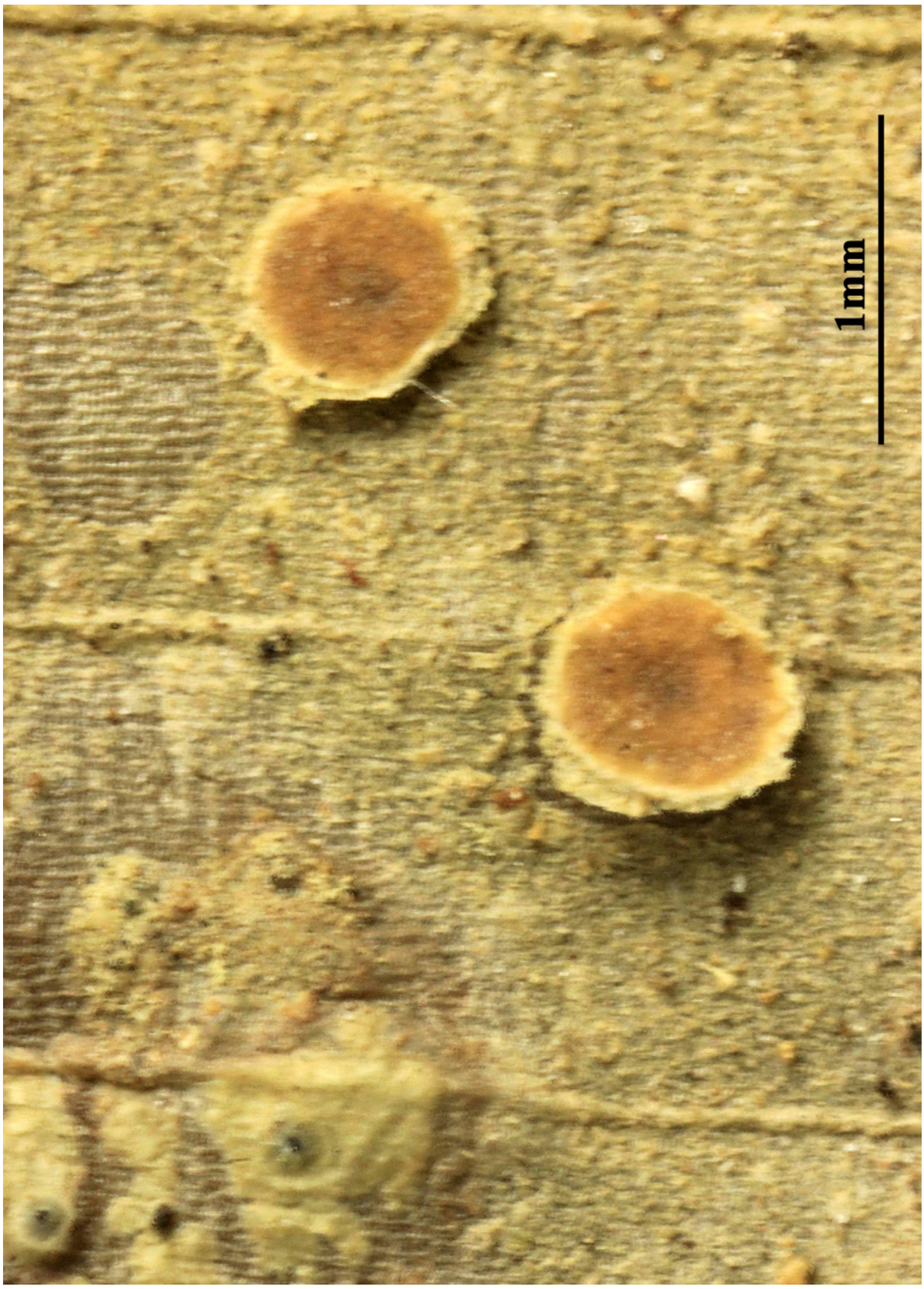
Bunodophoron scrobiculatum

Byssolecania fumosonigricans (Müll. Arg.) R. Sant., Symb. bot. upsal. 12(no. 1): 553 (1952)
= *Patellaria fumosonigricans* Müll. Arg. 1890

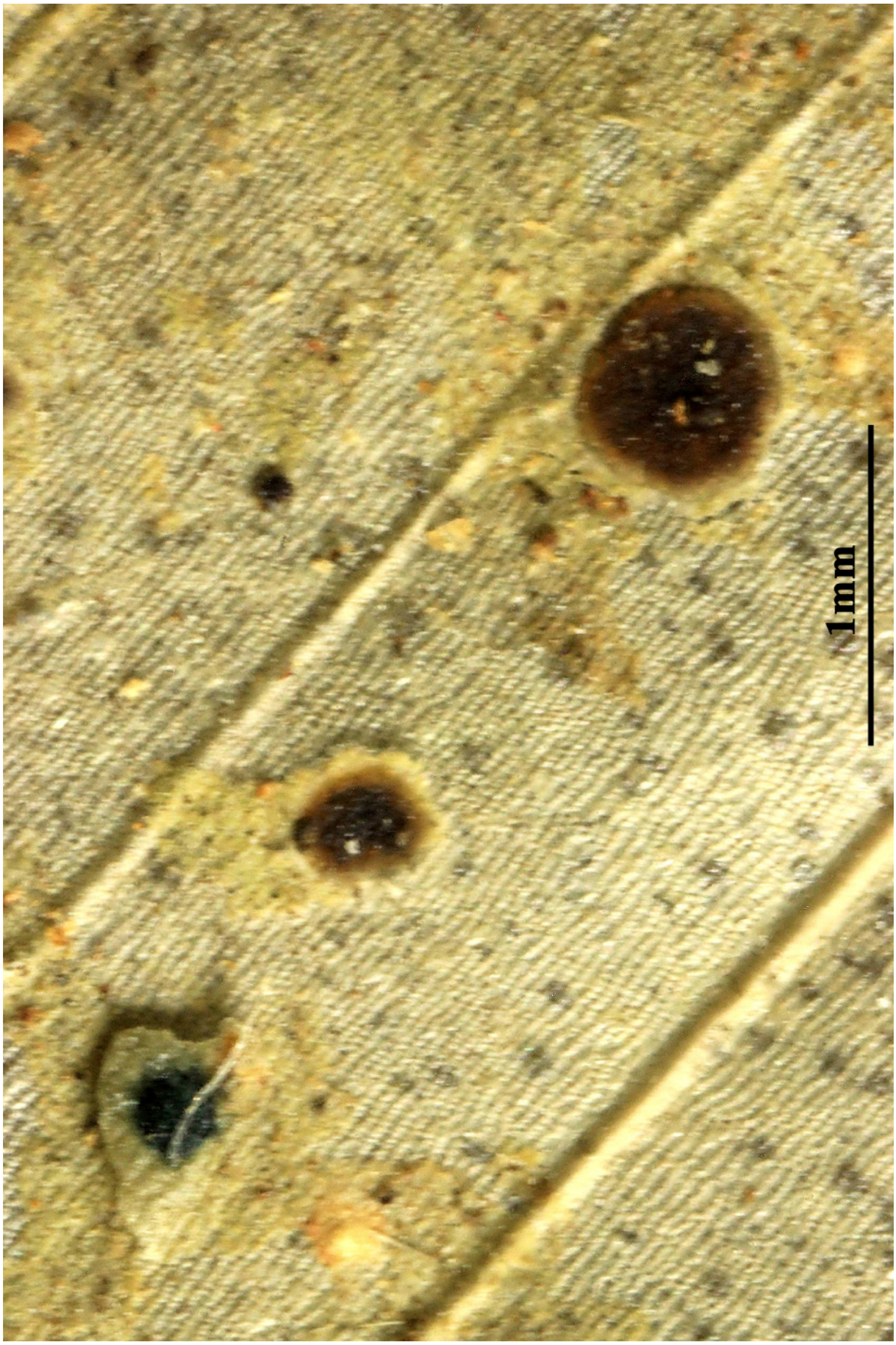
[VZR382], Zaire, Haut-Zaire, secus viam inter Kisangani et Wanie-Rukula, in vicinitate vici Batikalela, in silva secundaria. Leg. S. Lisowski, 3.4.1977, det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 382.

Thallus continuous, 10–30 mm across and 10–20 µm thick, smooth to minutely farinose, brownish to greenish grey. Apothecia very weakly raised above thallus level, rounded, 0.5–0.8 mm diam. and 50–90 µm high; disc plane to slightly convex, dark greyish brown to greyish black with indistinct, paler, marginal zone; margin absent. Excipulum present only below hypothecium, 5–15 µm broad, colorless, laterally with short, free hyphae. Hypothecium 5–15 µm high, dark sordid brown, K–. Hymenium 40–60 µm high, colorless. Asci 35–55 x 9–12 µm. Ascospores (6–)8 per ascus, oblong, 3-septate, without or with very slight constrictions at septa, 14–22 x 2–3 µm, 6–8 times as long as broad, colorless. Pycnidia subglobose to cup-shaped, 0.07–0.15 mm diam., brownish grey to bluish brown. Conidia fusiform, non-septate, 4–5 x 1.3–1.6 µm, colorless. Chemistry: two unidentified substances detected by TLC; no TLC spot color but pale blue fluorescence in long-wave UV after charring (RF 46 and 66 in solvent C). Distribution and Ecology**.** Pantropical. Like the other species of the genus, a typical member of foliicolous communities in the shady understory of lowland rain forests.

Byssolecania fumosonigricans



Byssolecania fumosonigricans



Byssolecania fumosonigricans

Byssolecania hymenocarpa (Vain.) Kalb, Vězda & Lücking, in Lücking & Kalb, Bot. Jb. 122(1): 21 (2000)

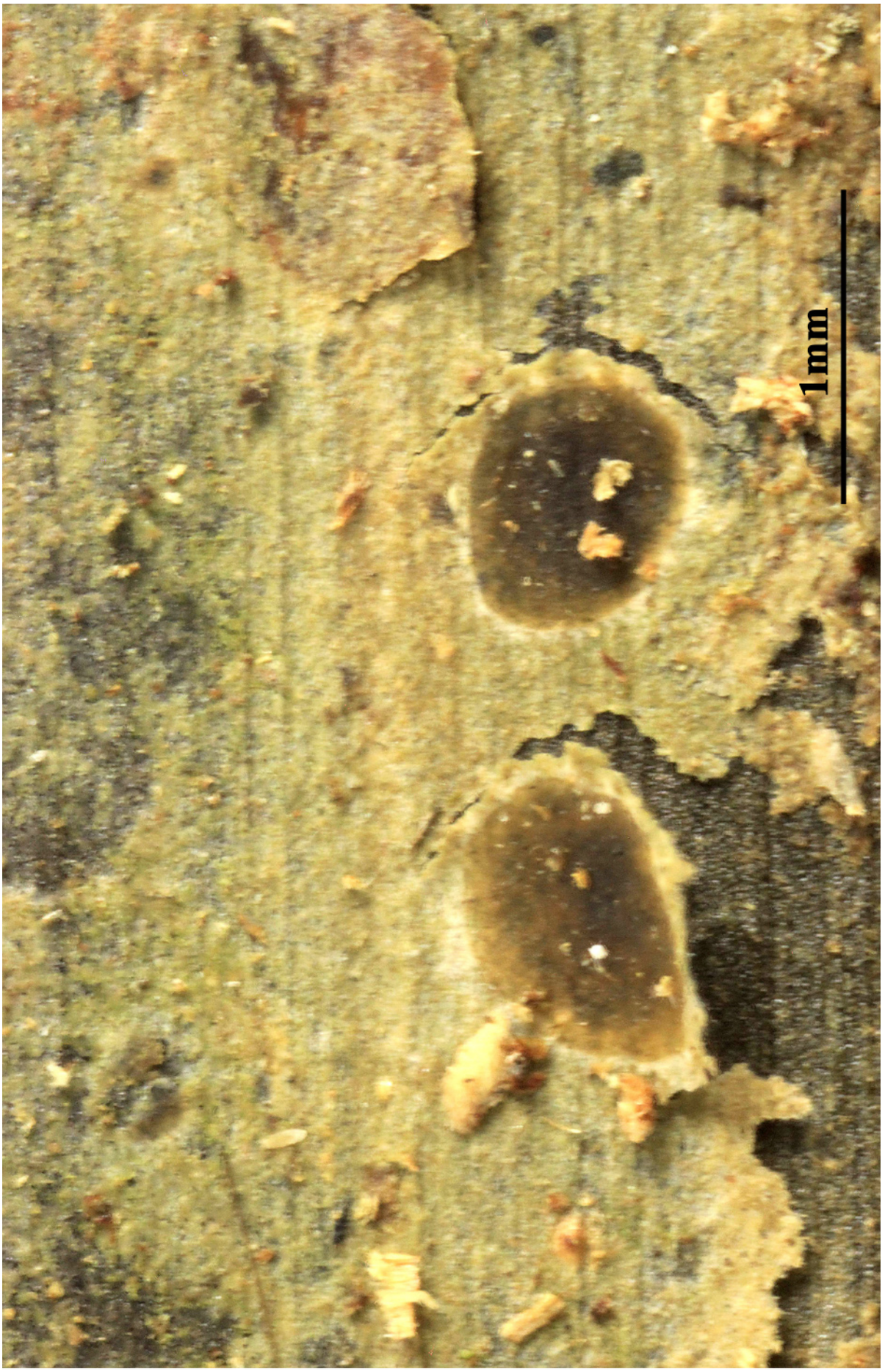
= *Gonolecania hymenocarpa* (Vain.) Zahlbr., Cat. Lich. Univers. 2: 681 (1924)

= *Lecaniella hymenocarpa* (Vain.) Vain., J. Bot., Lond. 34: 205 (1896)

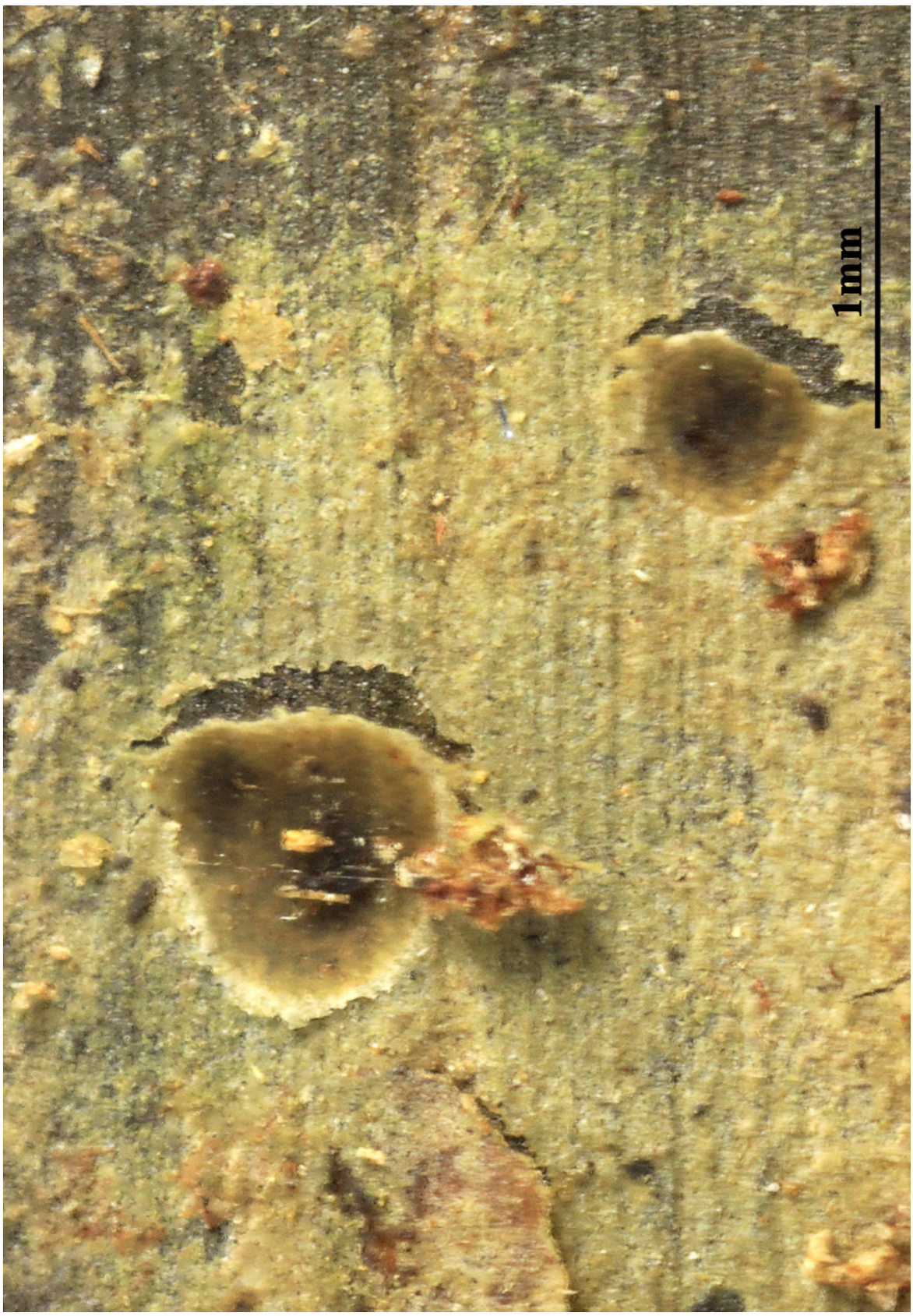
= *Lecanora hymenocarpa* Vain., Acta Soc. Fauna Flora fenn. 7(no. 1): 74 (1890)

[VZR413], Aequatoria. Prov. Napo, reservatum naturae "Yasuni", Rio Tiputini, in vicinitate stationis biologiae, 00°40' merid., 76°24' occid., 300 m. Foliicola. Leg. Z. Palice, 12.08.1999, det. A. Vězda. - Annot.: Apothecia pallide fusca vel fuscolutea, asci 2-4-spor, ascosporae 3-septate, 18-26 x 4 mm. Cum descr. Vainioi congruit. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 413.

Thallus continuous, 10–50 mm across and 10–20 µm thick, smooth to minutely farinose, pale greenish grey to yellowish brown. *Apothecia* not raised above thallus level, rounded, 0.7–1.4 mm diam. and 50–70 µm high; disc plane, pale yellowish brown to brown with broad, paler, marginal zone; margin absent. Excipulum present only below hypothecium, 5–10 µm broad, colorless, laterally with short, free hyphae. Hypothecium 5–15 µm high, light brown, K–. *Hymenium* 40–55 µm high, colorless. Asci 35–50 x 10–13 µm. Ascospores 4–8 per ascus, oblong to ellipsoid, 3-septate, without or with very slight constrictions at septa, 15–23 x 4–5 µm, 3.5–5 times as long as broad, colorless. Pycnidia subglobose to cupshaped, 0.07–0.1 mm diam., brownish black. Conidia fusiform, non-septate, 3–5 x 1–1.5 µm, colorless. Chemistry: no substances detected by TLC. Distribution and Ecology**.** Pantropical. Typical specimens were also found in Papua New Guinea.



Byssolecania hymenocarpa



Byssolecania hymenocarpa

Byssoloma adspersum Malcolm & Vězda, Mycotaxon 55: 358 (1995)

[VZR201], Nova Zelandia. South Island, Nelson, Brook Stream Track, 41°19' austr., 173°17' orient., 160 m. Ad saxa silicea. Leg. W. Malcolm (CHR 470258, 12.5.1993. Ex A. Vezda: Lichenes Rariores Exsiccati Nr. 201.

Thallus crustose, minutely farinose to warty, matt or glossy, with or without a marginal whitish to dark-green prothallus,Apothecia rounded, 0.5-0.8 mm diam., 9,2-0.5 mm tall, sessile, strongly constricted at base; disc plane to convex,black, matt,epruinose, with narrow white, byssoid margin disapearing with age. Hymenium 60-70 µm tall, colourless, often with numerous scattered, inspersed granules; epithecium brown. Hypothecium dark-purple. Asci clavate, 8-spored. Ascospores elliosoidal, one apex mor obtuse than th other; transversely (§-)5-sptate, halonate, 15-18 c 4.5 µm. - Endemic.

Byssoloma adspersum

Byssoloma adspersum

Byssoloma chlorinum (Vain.) Zahlbr., Cat. Lich. Univers. 8: 233 (1932)
= *Pilocarpon chlorinum* Vain., Univ. Calif. Publ. Bot. 12(no. 1): 11 (1924)

[VZR436], Insulae Seychellenses. Insula Prasiln, Grand Anse, silva secundaria austro-occid. spectans secus viam ad Praslin. Beach ducentem. 200 m. Foliicola. Leg. F. Ceni & & A. Vězda, 26.05.2000, det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 436.

Thallus continuous, 10–30 mm across and 15–25 µm thick, minutely farinose to granulose, pale green. Apothecia rounded, 0.2–0.5 mm diam. and 100–150 µm high; disc plane, dark brown to brownish black; margin well-developed and densely byssoid, persistent and spreading laterally over thallus surface, white. Excipulum well-developed, made of loosely woven hyphae, 30–100 µm broad, colorless. Hypothecium 15–25 µm high, dark brown to brownish black, K– or K+ slightly purplish. Apothecial base brownish black, K–. Epithecium indistinct. Hymenium 40–50 µm high, colorless. Asci 35–45 x 10–12 µm. Ascospores oblong-ellipsoid, 3-septate, without constrictions at septa, 10–15 x 2.5–3.5 µm, 3.5–4.5 times as long as broad, colorless. Pycnidia subglobose to barrel-shaped, 0.1–0.15 mm diam., grey to white with blackish center, walls aeruginous. Conidia pyriform, non-septate, 3–4 x 1–1.5 µm, colorless. Chemistry: no substances detected by TLC. Distribution and Ecology. Pantropical. With a wide, ecological amplitude, but commonly found in more open situations, at higher altitudes, and in oceanic climates.

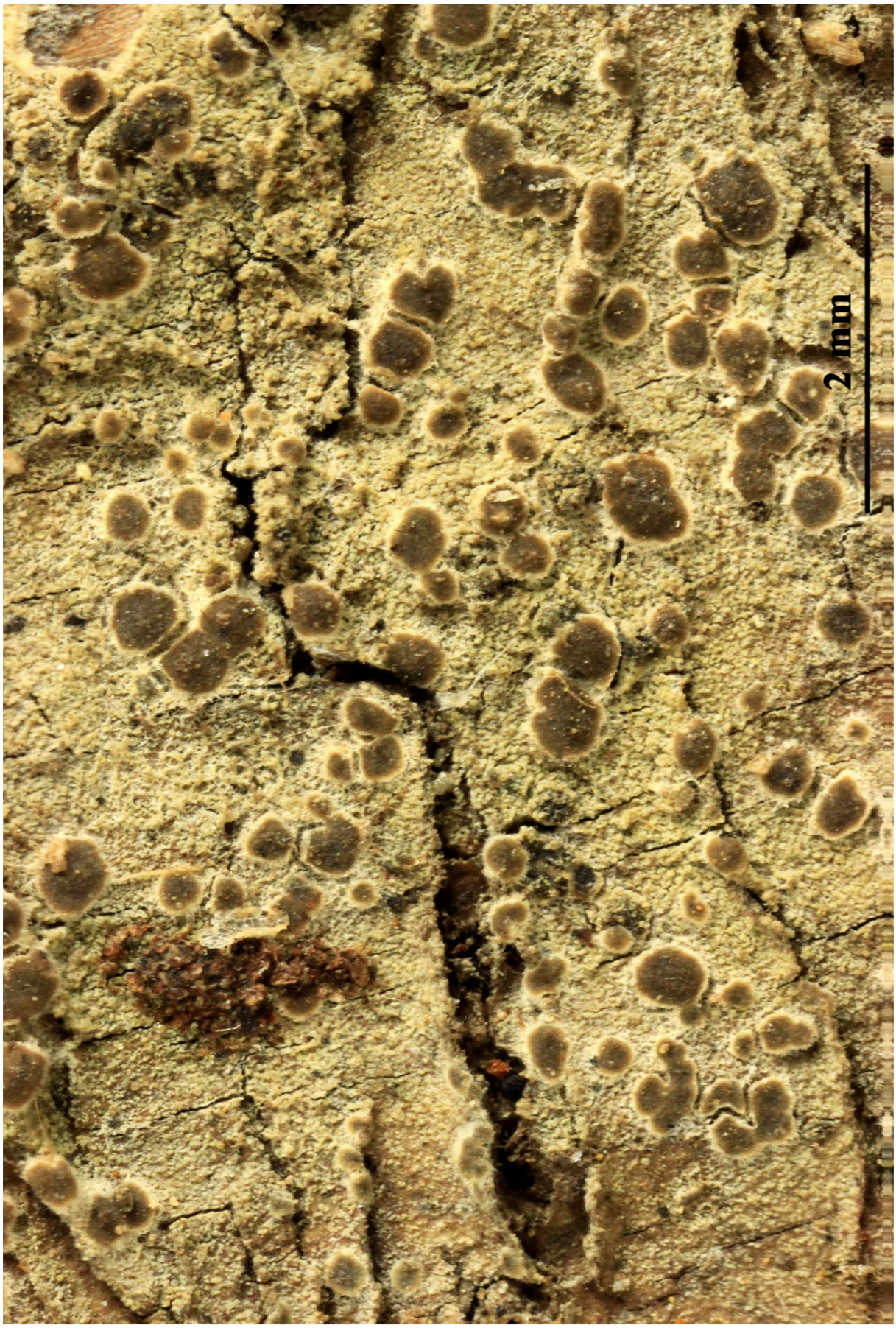
Byssoloma chlorinum

Byssoloma chlorinum

Byssoloma leucoblepharum (Nyl.) Vain., Dansk bot. Ark. 4(no. 11): 23 (1926)
= *Bacidia leucoblephara* (Nyl.) Arnold ex P. James, Lichenologist 5(1-2): 126 (1971)
= *Biatora leucoblephara* (Nyl.) Willey, Bull. Buffalo Soc. nat. Hist. 1: 167 (1873)
= *Bilimbia leucoblephara* (Nyl.) Arnold, Flora, Regensburg 67(30): 574 (1884)
= *Lecania cyrtella var. leucoblephara* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 124 (1903)
= *Lecidea leucoblephara* Nyl., in Triana & Planchon, Annls Sci. Nat., Bot., sér. 4 19: 337 (1863)
= *Patellaria leucoblephara* (Nyl.) Müll. Arg., Flora, Regensburg 64(7): 110 (1881)
= *Pilocarpon leucoblepharum* (Nyl.) Vain., Acta Soc. Fauna Flora fenn. 7(no. 2): 89 (1890)

[VZR241], Italia. Calabria. Cosenza: Buonvicino, in valle fluminis Cervino dicto. Ad corticem arboris (*Alnus glutinosa*). Leg. & det, D. Puntillo, 7.7.1996. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 241.

Thallus crustose, thinly episubstratic, greenish grey to greenish brown, continuous to rimose, minutely granulose or farinose, forming orbicular, often confluent patches 1-3 cm in diam., often delimited by dark prothallus. Apothecia scattered to clustered, round to irregular in outline by mutual compression, 0.3-0.6 mm across, with a flat to slightly convex, orange-brown, grey-brown or finally dark brown disc surrounded by a cottony-arachnoid, tomentose, yellowish white to yellowish grey rim devoid of crystals. Proper exciple formed by loosely intricate hyphae, not inspersed with crystals; epithecium colourless to pale brown, without crystals; hymenium colourless, I+ blue; paraphyses simple or sparingly branched, the apical cells not swollen; hypothecium dark red-brown, K+ purple. Asci 8-spored, clavate, with a K/I+ blue apical dome containing a darker blue, tubular ring-structure, and an amyloid coat, Byssoloma-type. Ascospores 3-septate, hyaline, fusiform, 10-18 x 2-4 µm. Pycnidia grey-black, sessile, globose. Conidia pyriform. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P- or P+ orange red. Chemistry: without lichen substances, or with argopsin. - Note: a pantropical foliicolous species occurring also on bark.



Byssoloma leucoblepharum

Byssoloma leucoblepharum

Byssoloma ortizii Lücking, Nova Hedwigia 52(3-4): 299 (1991)
= Eugeniella ortizii (Lücking) Lücking, Sérus. & Kalb, in Lücking, Fl. Neotrop., Monogr. 103: 715 (2008)

[VZR233], Dominica (Antilles Minores): Northern Forest Reserve, ad latera occid. montis "Marne Diablatins", 600 m. In pluviisilva.foliicola. Leg. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 233.

Thallus continuous, 5–15mm across and 10–15 µm thick, smooth to minutely farinose, pale greenish grey. Apothecia rounded, 0.3–0.6 mm diam. and 170–230 µm high; disc plane, very dark brown to brownish black; margin very distinct, slightly prominent, chamois-colored to white. Excipulum 30–60 µm broad, colorless to grey. Hypothecium 30–60 µm high, dark brown to brownish black and sometimes with slight, red tinge, K–. Apothecial base blackish brown, K–. Epithecium indistinct. Hymenium 50–70 µm high, colorless. Paraphyses unbranched. Asci 45–65 x 11–16 µm. Ascospores oblong-ellipsoid, (3–)5(–7)-septate, with constrictions at septa, 17–26 x 4.5–5.5 µm, 3.5–5 times as long as broad, colorless. Pycnidia not observed. Chemistry: unidentified substances detected by HPLC (currently under study by J. Elix, pers. comm. 2004). Distribution and Ecology**.** Neotropics. Relatively rare and typically found at higher elevations.

Byssoloma ortizii

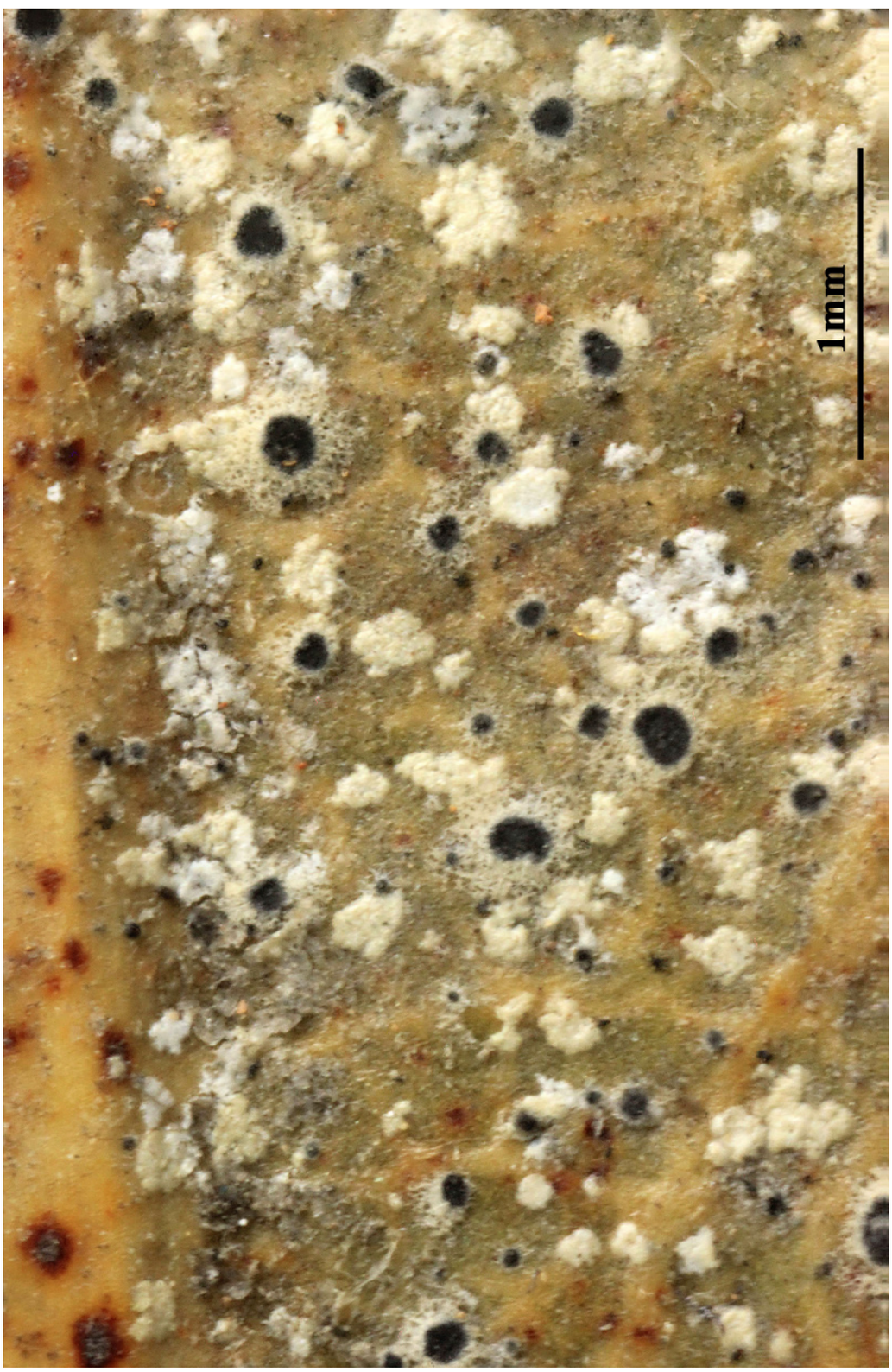
Byssoloma ortizii

Byssoloma subdiscordans (Nyl.) P. James, Lichenologist 5(1-2): 126 (1971)
= *Bacidia leucoblephara var. rupicola* (Wheldon & A. Wilson) P. James , Lichenologist 5(1-2): 126 (1971)
= *Bacidia rotuliformis* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 139 (1926) [1927]
= *Bilimbia leucoblephara* var. *rupicola* Wheldon & A. Wilson, J. Bot., Lond. 53(Suppl.): 63 (1915)
= *Byssoloma rotuliforme* (Müll. Arg.) R. Sant., in Thorold, Lich. Dan. 40: 129 (1952)
= *Byssoloma subdiscordans* f. *puertoricense* Sérus., Occ. Pap. Farlow Herb. Crypt. Bot. 10: 16 (1976)
= *Byssoloma subdiscordans* var. *puertoricense* (Sérus.) Lücking [as 'puertoricensis'], Fl. Neotrop., Monogr. 103: 687 (2008)
= *Byssoloma tricholomum* var. *rupicola* (Wheldon & A. Wilson) Zahlbr. [as 'rupicolum'], Cat. Lich. Univers. 2: 571 (1923) [1924]
= *Chiodecton subdiscordans* Nyl., Flora, Regensburg 62: 221 (1879)
= *Patellaria rotuliformis* Müll. Arg., Flora, Regensburg 64(15): 228 (1881)
= *Pilocarpon rotuliforme* (Müll. Arg.) Vain., J. Bot., Lond. 34: 210 (1896)

[VZR426], Insnlae Seychellenses, Insula Mahé, secus viam inter Sans Souci et Salazie, 400 m, Foliicola. Leg. C. Ceni & A. Vězda, 1.6.2000, det. A. Vězda. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 426.

Thallus crustose, thinly episubstratic, ecorticate, minutely granulose-verruculose, 0.2-0.4 mm thick, whitish to greenish grey, continuous or forming more or less orbicular, often confluent, 0.3-2(-4) cm wide patches. Apothecia biatorine, rounded, constricted at base at least when young, 0.2-0.6 mm across, sometimes clustered and then distorted, with a black to bluish black, flat to slightly convex disc surrounded by a pure white, byssoid margin devoid of crystals. Exciple paraplectenchymatous, 20-50 µm wide laterally, 30-40 µm thick at base, not inspersed with crystals; epithecium blackish brown to aeruginose, not inspersed with crystals; hymenium colourless, 40-60 µm high, I+ blue; paraphyses coherent, simple or furcate, c. 1.5 µm thick at mid-level, the apical cells not swollen; hypothecium dark purplish brown, 20-50 µm thick. Asci 8-spored, clavate, with a K/I+ blue apical dome containing a darker blue, tubular ring-structure, and an amyloid coat, Byssoloma-type. Ascospores 3-septate, hyaline, narrowly ellipsoid, slightly tapering at one end, 10-18 x 2.5-5 µm. Pycnidia rare, globose, sessile, up to 0.15 mm across, bluish black, usually with hyaline hairs on the outer wall. Conidia flask-shaped, 4-5 x 1.5-2 µm. Photobiont chlorococcoid.

Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a humid subtropical to tropical foliicolous species with isolated outliers in humid parts of the mild-temperate zone; in the Italian stations it was found on leaves of Abies, Buxus and Laurus; to be looked for in the Alps, in montane humid forests, on twigs of conifers.



Byssoloma subdiscordans

Byssoloma subdiscordans

Byssoloma subundulatum (Stirt.) Vězda, Folia geobot. phytotax. 21(2): 216 (1986)
= *Bacidia subundulata* (Stirt.) R. Sant., Symb. bot. upsal. 12(no. 1): 453 (1952)
= *Lecania subundulata* (Stirt.) Müll. Arg., Bull. Herb. Boissier 2(app. 1): 50 (1894)
= *Lecanora subundulata* Stirt., Proc. Roy. phil. Soc. Glasgow 10: 295 (1877)

[VZR91], Nova Zelandia. South Island, Nelson, Supplejack trail, 130 m, 41°15'8" austr., 173°20'3" orient., Foliicola (*Podocarpus totara*). Leg. et det. W. Malcolm, 14.05.1993. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 91.

is characterised by: the foliicolous habit; the greenish grey, subfarinose to subsorediate thallus, often best developed at margins of leaves with a thin, whitish, photobiont-free mycelium developed on the lower surface and connected to the photobiont-containing thallus of the upper leaf surface; apothecia abundantly developed on the mycelium of the lower leaf surface or at the margins of the leaves; the chocolate-brown epruinose disc; conspicuously white, downy margins; and 3–5-septate ascospores, 12–18 × 3–4 μm. Santesson (1952: 454) did not locate any original material of Stirton's Lecanora subundulata (none either in E or BM) and instead selected a neotype from material collected by H.H. Allan from leaves of *Polystichum hispidum* on Colonial Knob near Wellington. A recent discovery of original Buchanan material in the herbarium of Otago University (OTA), duplicates of which were sent to James Stirton, allows the Buchanan material (now in WELT) to serve as lectotype.

Byssoloma subundulatum

Byssoloma subundulatum

Byssoloma tricholomum (Mont.) Zahlbr., Cat. Lich. Univers. 2: 569 (1923) [1924]
= *Biatora tricholoma* Mont., Annls Sci. Nat., Bot., sér. 3 16: 53 (1851)
= *Bilimbia tricholoma* (Mont.) Fink, Lich. Fl. U.S.: 225 (1935)
= *Byssoloma leprieurii* Trevis., Spighe Paglie: 7 (1853)
= *Pilocarpon tricholoma* (Mont.) Vain. [as 'tricholomum'], Acta Soc. Fauna Flora fenn. 7(no. 2): 89 (1890)

[VZR416], Aequatoria. Prov. Napo, reservatum naturae "Yasuni", Rio Tiputini, in vicinitate stationis biologicae, 00°40' merid., 76°24' occid., 300 m. Foliicola. Leg. Z. Palice & R. Valencia, 12.08.1999, det. A. Vězda. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 416.

Thallus continuous, 10–30 mm across and 15–30 µm thick, smooth to farinose, pale greenish to yellowish grey. Apothecia rounded, 0.2–0.4 mm diam. and 80–130 µm high; disc plane, dark brown to blackish brown; margin well-developed (in old apothecia rather thin) and densely byssoid, persistent and in young apothecia spreading laterally over thallus surface, ochraceous yellow to pale brown. Excipulum well-developed, made of loosely woven hyphae, 50–100 µm broad, incrusted with yellowish brown crystals, K+ yellow. Hypothecium 10–20 µm high, light to dark purplish brown, K–. Apothecial base brown, K–. Epithecium 5–10 µm high, yellowish to sordid brown. Hymenium 40–55 µm high, colorless. Asci 35–50 x 8–10 µm. Ascospores oblong-ellipsoid, 3-septate, without constrictions at septa, 9–15 x 3–4 µm, 3–4 times as long as broad, colorless. Pycnidia subglobose to cup-shaped, 0.1–0.15 mm diam., yellowish brown, walls aeruginous. Conidia pyriform, non-septate, 3–5 x 0.9–1.2 µm (proximal end) to 1.5–2 µm (distal end), colorless. Chemistry: unidentified pigment(s) in apothecial margin. Distribution and Ecology. Pantropical. One of the most common species of the genus, with a rather wide, ecological amplitude.

Byssoloma tricholomum

Byssoloma tricholomum

Calenia triseptata Zahlbr., Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 83: 121 (1909)

= *Caleniella triseptata* (Zahlbr.) Xavier-Leite, M. Cáceres & Lücking, in Xavier-Leite, Goto, Lücking & Cáceres, Mycol. Progr. 22(12, no. 88): 12 (2023)

[VZR417], Aequatoria. Prov. Napo, reservatum naturae "Yasuni", Rio Tiputini, in vicinitate stationis biologicae, oo°40' merid., 76°24' occid., 300 m. Foliicola. Leg. Z. Palice & R. Valencia, 12.08.1999, det. A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 417.

Thallus continuous or marginally dispersed, 10–30 mm across and 15–25 µm thick, with cartilaginous, corticiform layer, finely verrucose due to incrustation with calcium oxalate crystals, pale green to white. Apothecia immersed-erumpent, zeorine, rounded, 0.2–0.4 mm diam. and 70–100 µm high; disc plane to concave, pale yellowish grey; margin distinct, strongly prominent, white. Excipulum prosoplectenchymatous, 5–10 µm broad, colorless, covered by 20–30 µm thick, corticate, thallus layer containing algae and clusters of calcium oxalate crystals. Hypothecium 5–10 µm high, colorless. Epithecium indistinct. Hymenium 50–60 µm high, colorless. Asci clavate, 40–60 x 11–15 µm. Ascospores (6–)8 per ascus, ellipsoid, 3(–5)-septate, with constrictions at septa, 12–20 x 3–5 µm, 3.5–4.5 times as long as broad. Hyphophores not observed. Chemistry: no substances detected by TLC. Distribution and Ecology. Neotropics (and eastern Paleotropics if the type of Asterothyrium maculans belongs here). A rather common element of the understory community in lowland rain forests.

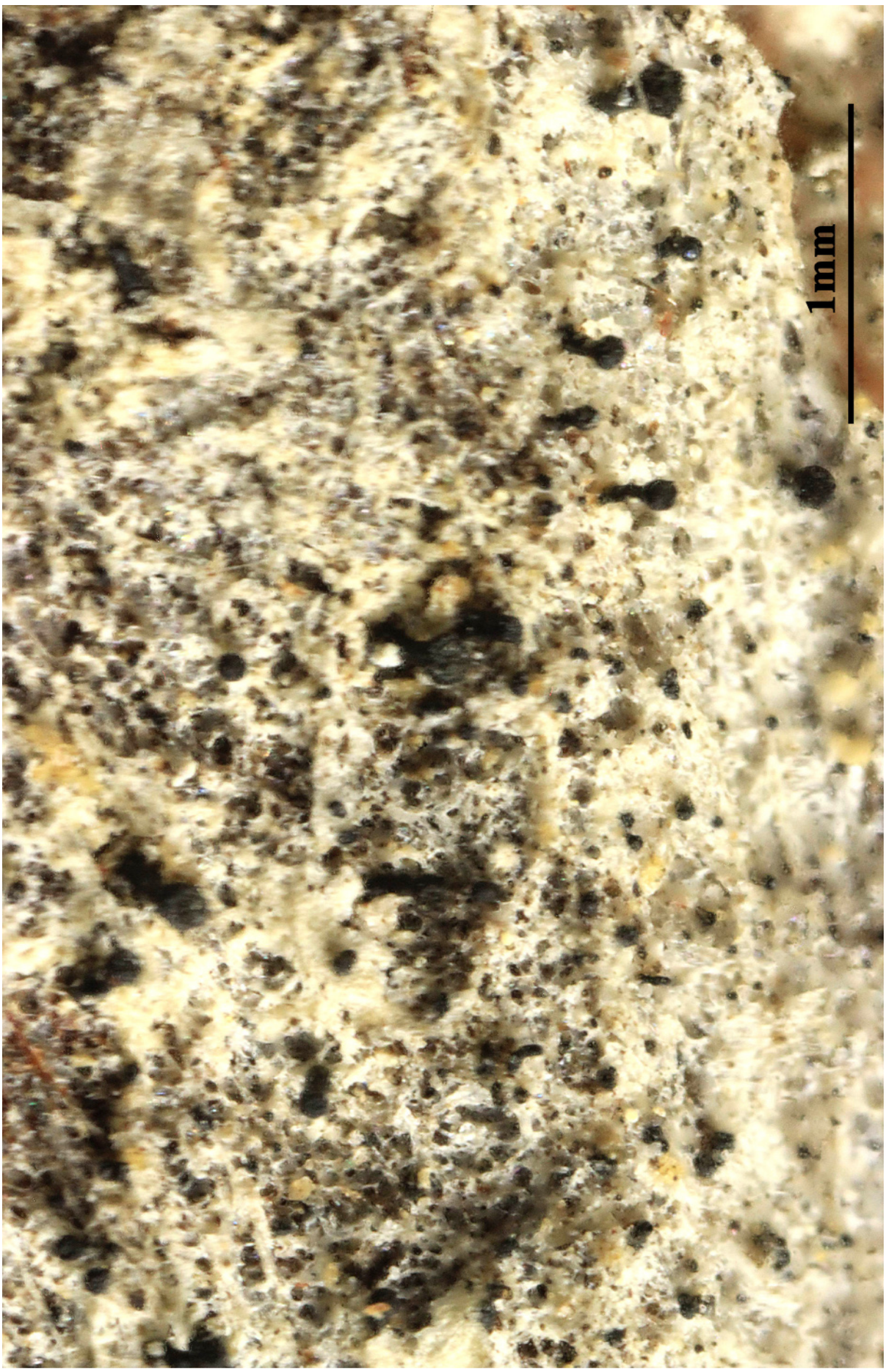
Calenia triseptata

Calenia triseptata

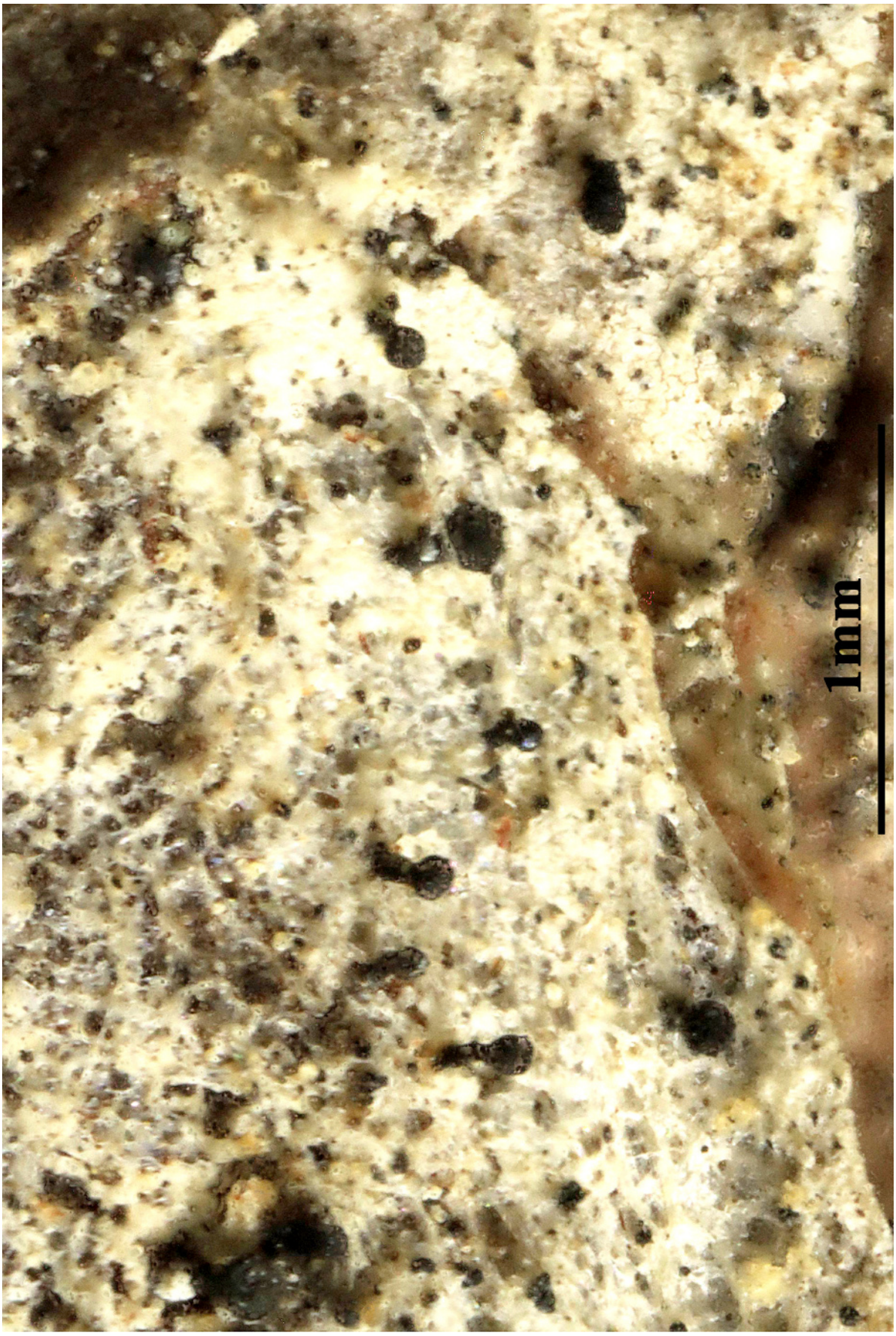
Calicium pinastri Tibell, Mycotaxon 70: 436 (1999)

[VZR], Bohemia merid.: Montes Šumava (Gabreta, distr. Volary, reservatum naturae "Vltavský lih" dictum prope stationem viae ferreae "Pěkná", 740 m. Ad corticem arborum (*Pinus rotundata*). Leg. Z. Palice, J. Kocourková & A. Vězda, 15.10.1998. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NT. 392.

Thallus crustose, poorly evident, endosubstratic or thinly episubstratic, greenish grey. Apothecia short-stalked, epruinose. Stalk shining black, 0.3-0.4 mm high, 0.09-0.15 mm thick, of sclerotized, dark, anticlinally arranged, irregularly interwoven hyphae, with a thin, hyaline, gelatinous outer layer. Capitulum 0.1-0.2 mm across, obconical to lenticular, with a well-developed, cup-shaped exciple of anticlinally (in outer part) or periclinally (in inner part) arranged hyphae; mazaedium well developed, black; hypothecium dark brown, with a flat to slightly convex upper surface. Asci cylindrical, formed singly, dissolving early, with uniseriately arranged ascospores. Ascospores 1-septate, dark brown, broadly ellipsoid, 9.5-13.5 x 5-6.5 µm, with a thick, at first smooth, then irregularly cracked wall. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-; ascomata I- in all parts. Chemistry: thallus with low amounts of several unidentified compounds. - Note: a species found on the bark of conifers (most often *Pinus sylvestris*); recently-described and still with a few records in the Alps, but probably more widespread.



Calicium pinastri



Calicium pinastri

Calopadia foliicola (Fée) Vězda, Folia geobot. phytotax. 21(2): 215 (1986)
= *Lecanora foliicola* Fée, Bull. Soc. bot. Fr. 20: 315 (1873)
= *Lopadium foliicola* (Fée) R. Sant., J. Ecol. 40: 129 (1952)

[VZR352], Costa Rica. Prov.Heredia. La Salva. 60 km septentriones versus a San José, iugum montium Cordillera Centralis, 50 m. In silva secundaria. Leg.et det. R. Lücking (91-5602), 10.1991. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 352.

Thallus dispersed into rounded, usually confluent patches, 20–50 mm across and 20–30 µm thick, ecorticate, smooth, pale grey to brownish grey. Apothecia rounded, 0.5–1 mm diam. and 250–400 µm high; disc convex, light (to dark) brown and with pale yellow pruina; margin thin, chamois-colored. Excipulum 50–80 µm broad. Hypothecium 50–80 µm high, dark brown. Apothecial base aeruginous. Epithecium thin, 5–10 µm high, granular, pale yellowish brown. Hymenium 140–170 µm high, colorless. Asci 120–140 x 24–30 µm. Ascospores 2(–4) per ascus, oblong to cylindrical, muriform, 80–120 x 9–14 µm, 8–10 times as long as broad, colorless. Campylidia sessile, 0.5–0.8 mm broad; lobe well-developed, hood-shaped, grey but sometimes white pruinose; socle not apparent. Conidia filiform with clavate apex, 3–7-septate, 40–50 x 1–1.5 µm. Chemistry: unidentified substance detected by TLC (RF 74 in solvent C, yellow fluorescence after charring). Distribution and Ecology. Pantropical. One of the most abundant species in the genus, frequently found in semi-exposed situations such as light gaps within the forest, forest margins, or free-standing fruit trees including *Citrus* and *Mangifera* spp. *Calopadia foliicola* is readily recognized by the convex, pruinose apothecia in combination with 2–4 cylindrical, muriform ascospores per ascus. Anatomically identical and most closely related is *C. phyllogena*, but it differs in the plane apothecia with a dark brown, epruinose disc. Transitional forms between the two taxa occur but are rare. *Calopadia perpallida* is externally similar to *C. foliicola* but has 1 ascospore per ascus, its ascospores are broader, and its apothecial disc is usually plane.

Calopadia foliicola

Calopadia foliicola

Calopadia perpallida (Nyl.) Vězda, Folia geobot. phytotax. 21(2): 215 (1986)
= *Heterothecium perpallidum* (Nyl.) Müll. Arg., Flora, Regensburg 64(7): 105 (1881)
= *Lecidea perpallida* Nyl., Annls Sci. Nat., Bot., sér. 4 19: 354 (1863)
= *Lopadium perpallidum* (Nyl.) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 137 (1905)

[VZR301], Malaysia. Kuala Lumpur. Kepong Park, 15 km sept.-orient. a Kuala Lumpur, 300 m. In colle in silva virginea, foliicola (*Palmae*). Leg. F. Ceni & A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 301.

Thallus dispersed into rounded, confluent patches, up to 50 mm across and 20–40 µm thick, ecorticate, smooth, pale grey to brownish grey. Apothecia rounded, 0.5–0.8 mm diam. and 250–350 µm high; disc plane, light brown and with thick, pale yellow pruina; margin rather thick and often slightly prominent, chamois-colored. Excipulum 40–60 µm broad. Hypothecium 40–80 µm high, brown. Apothecial base aeruginous. Epithecium thin, 5–10 µm high, granular, pale yellowish brown. Hymenium 120–160 µm high, colorless. Asci 100–130 x 22–30 µm. Ascospores single, oblong, muriform, 80–110 x 20–28 µm, 3.5–4.5 times as long as broad, colorless. Campylidia sessile, 0.4–0.7 mm broad; lobe well-developed, hood-shaped, grey but white to pale yellow pruinose; socle not apparent. Conidia filiform with clavate apex, 3–7-septate, 40–50 x 1–1.5 µm. Chemistry: unidentified substance detected by TLC (RF 74 in solvent C, yellow fluorescence after charring). Distribution and Ecology. Pantropical. Primarily a corticolous and muscicolous species and rather common in open microsites on smooth tree bark and corticolous bryophytes. Foliicolous specimens usually found on exposed trees, in particular, planted *Mangifera indica*

Calopadia perpallida

Calopadia perpallida

Calopadia puiggarii (Müll. Arg.) Vězda, Folia geobot. phytotax. 21(2): 215 (1986)
= *Heterothecium puiggarii* Müll. Arg., Flora, Regensburg 64(7): 105 (1881)
= *Lopadium puiggarii* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 313 (1926) [1927]

[VZR1], Tanzania. Ngorongoro regio, Karatu, Humpati Forest, 1660 - 1700 m. Log T. Pócs & S. Chuwa (89032), 20.1.1989, det. A. Vězda. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 1.

Thallus dispersed into rounded patches, 10–30 mm across and 10–20 µm thick, ecorticate, smooth, pale grey. Apothecia rounded, 0.3–0.5 mm diam. and 180–250 µm high; disc plane to slightly convex, (light to) dark greyish brown; margin thin, pale grey. Excipulum 20–40 µm broad. Hypothecium 10–30 µm high, dark aeruginous brown. Apothecial base aeruginous. Epithecium thin, 5–10 µm high, dark brown. Hymenium 70–110 µm high, colorless. Asci 70–90 x 24–30 µm. Ascospores single, ellipsoid, muriform, 55–85 x 16–28 µm, 3–4 times as long as broad, colorless. Campylidia sessile, 0.4–0.6 mm broad; lobe well-developed, hood-shaped, grey; socle not apparent. Conidia filiform with clavate apex, 3–7-septate, 30–45 x 1–1.5 µm. Chemistry: no substances detected by TLC and HPLC. Distribution and Ecology. Pantropical. The most common species of the genus, usually found on leaves in open situations.

Calopadia puiggarii

Calopadia puiggarii

Caloplaca aetnensis B. de Lesd., Bull. Soc. bot. Fr. 82: 317 (1935)
= *Pyrenodesmia aetnensis* (B. de Lesd.) S.Y. Kondr., in Kondratyuk, Lőkös, Farkas, Kärnefelt, Thell, Yamamoto & Hur, Acta bot. hung. 62(1-2): 122 (2020)

[VZR33, 19548], Italia, Pelagiae insulae, insula Limosa, in pede collis "Bandiera", 25 m, ad saxa eruptiva mollia secus viam.Leg. G. Bolognini & J. Poelt, 16.04.1992. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 33.

Thallus crustose, episubstratic, white, thick, areolate, the areoles flat to convex, contiguous to usually scattered, more or less smooth, white-pruinose, usually forming a large, discontinuous patch. Apothecia common, lecanorine/zeorine, rounded, sessile, slightly constricted at base, up to 1.5 mm across, with a bright rusty red, flat to convex disc, a thick, somehow paler proper margin, and a white thalline margin which is well-evident in young apothecia only. Proper exciple orange in outer part, colourless within, the pigmented parts K+ purple-red, C+ purple; epithecium orange-brown, K+ purple-red, C+ purple; hymenium colourless, 70-90 µm high; paraphyses simple or sparingly branched, thickly septate towards the tips, the apical cells to 4 µm wide; hypothecium colourless. Asci 8-spored, cylindrical-clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid 12-18 x 7-10 µm, the equatorial thickening (“septum”) 1/3-1/4 of spore length. Pycnidia dark, immersed. Conidia ellipsoid, 1-celled. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-; apothecia K+ purple-red, C+ purple (both disc and proper margin). Chemistry: thallus without lichen substances or with low amounts of the Sedifolia-grey pigment; apothecia with chlorinated anthraquinones in both margin and disc: 7-chloroemodin (major), fragilin and emodin (minor). - Note: a Mediterranean lichen found on soil deriving from volcanic base-rich rocks, more rarely directly on weathered volcanic rocks, common only in parts of Sicily, especially in the small volcanic islands.

Caloplaca aetnensis

Caloplaca aetnensis

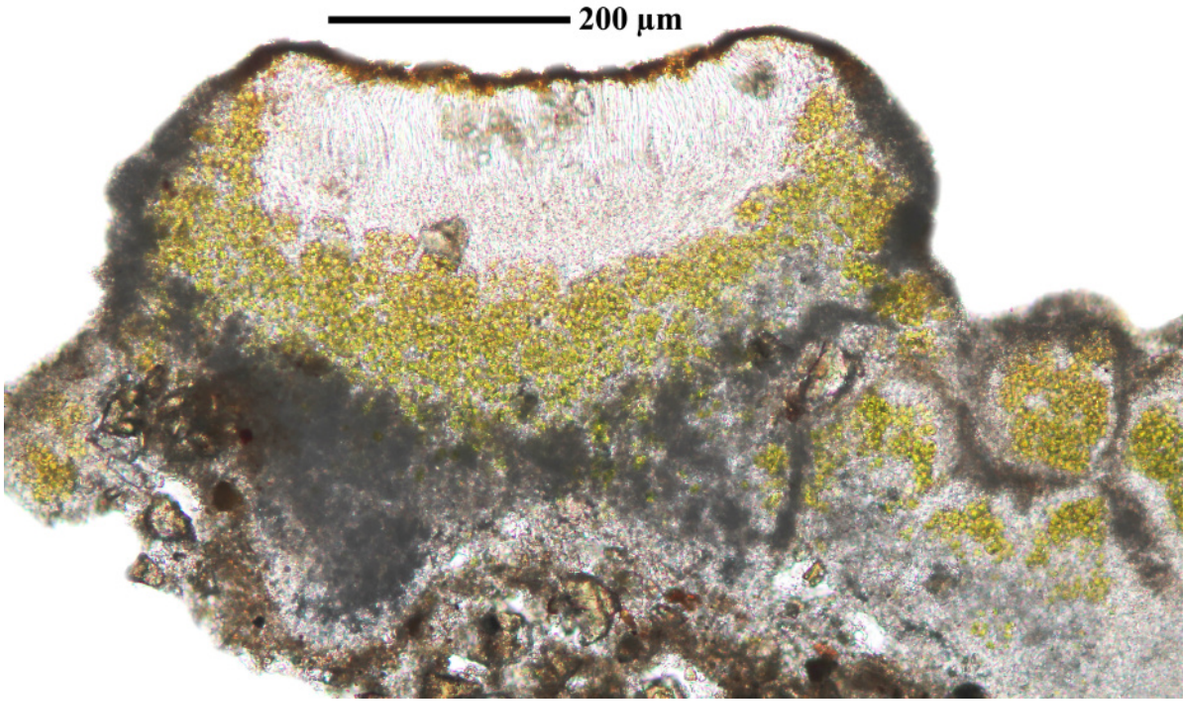
Caloplaca aetnensis

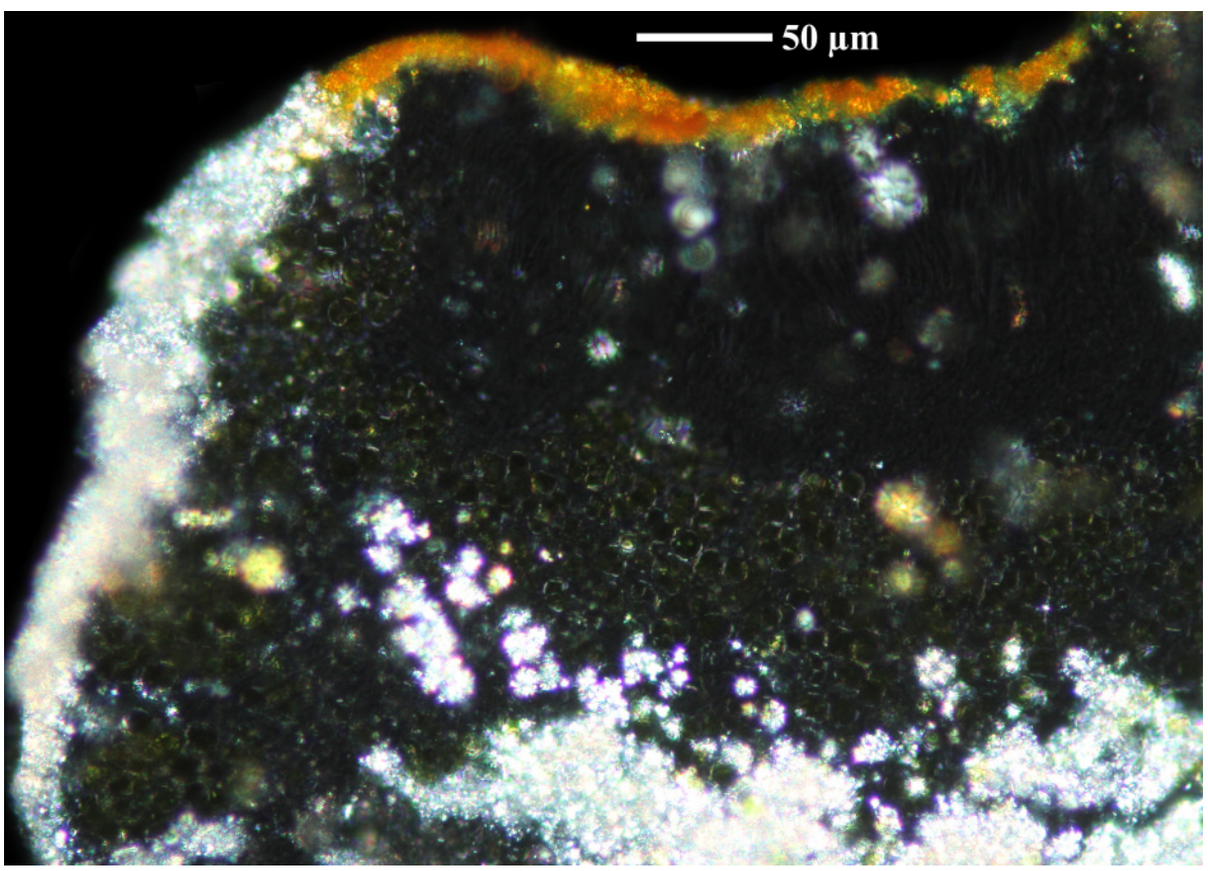
Caloplaca aetnensis

Caloplaca aetnensis

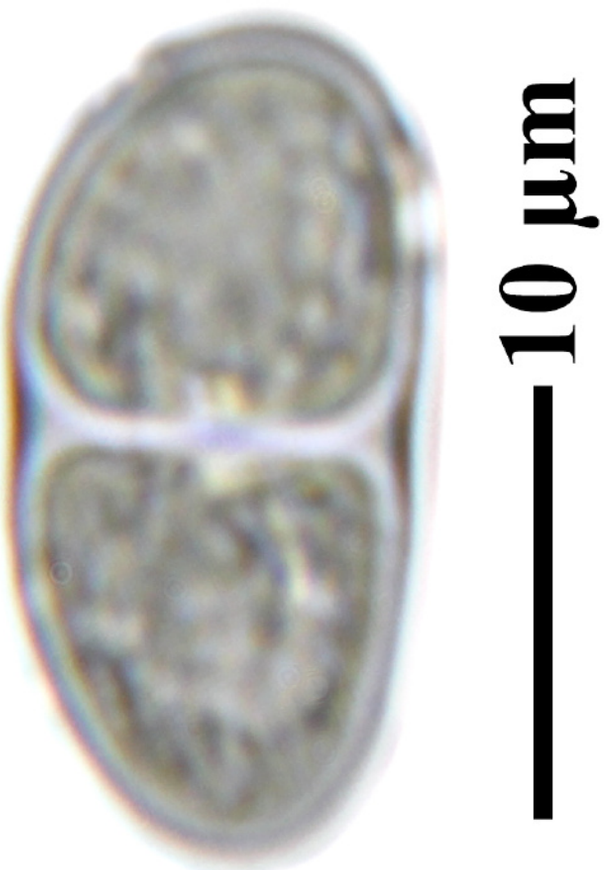
Caloplaca aetnensis

Caloplaca aetnensis





Caloplaca aetnensis



Caloplaca aetnensis

Caloplaca areolata (Zahlbr.) Clauzade, Bull. Soc. linn. Provence 23: 42 (1963)
= *Caloplaca cerina var. areolata* Zahlbr., Öst. bot. Z. 53: 289 (1903)
= *Caloplaca chlorina var. areolata* (Zahlbr.) H. Olivier, Mém. Soc. natn. Sci. nat. Cherbourg 37: 123 (1909)
= *Kuettlingeria areolata* (Zahlbr.) I.V. Frolov, Vondrák & Arup, in Frolov, Vondrák, Košnar & Arup, Journal of Systematics and Evolution 59(3): 468 (2020)

[VZR141,19555], Italia, Carstus Triestinus, in valle Rosandra prope urbem Trieste,. 160 m, ad saxa calcarea. Leg. P. L. Nimis & M. Tretiach, 22.07.1993. Ex A. VěZDA: Lichenes Rariores Exsiccati Nr. 141.

Thallus crustose, areolate, brown-grey to grey, 100-500 µm thick, forming irregular, up to 3 cm wide patches, often starting the life-cycle on the thalli of other crustose lichens. Areoles angular to rounded, flat to slightly convex, usually contiguous. Epinecral layer often present, to c. 10 µm thick; cortex of spherical, thin-walled cells, K+ faintly violet, N+ red in section; medulla well-developed only in thick thalli, loosely prosoplectenchymatous, non-amyloid. Apothecia frequent, zeorine, (0.3-)0.5-0.9(-1.3) mm across, with an initially orange, then dark orange brown to brown disc contrasting with a yellow to orange proper margin, and a grey thalline margin. Epithecium orange-brown, granular, K+ purple-red, C+ purple; hymenium colourless, c. 70–110 µm high, amyloid; paraphyses 2-2.5 µm thick in lower part, but gradually widening to 4-5 µm in upper part; hypothecium colourless, rarely with a few oil droplets, amyloid, with a subhypothecial algal layer. Asci 8-spored, cylindrical-clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid (8-)12-15(-17) x (5-)7-8(-9.5) µm, the equatorial thickening (“septum”) (4-)5-6(-7) µm. Pycnidia appearing as dark grey dots, the wall K+ violet. Conidia ellipsoid to tear-shaped. Spot tests: thallus K-, C-, KC-, P- (but sections of cortex K+ violet, N+ red); apothecial disc and proper margin K+ purple-red, C+ purple. Chemistry: cortex and top of pycnidia with the Sedifolia-grey pigment; apothecia with chlorinated anthraquinones (7□Cl□emodin, fragilin). - Note: a mild-temperate, characteristic, but much misunderstood species found on the top of calcareous birds' perching boulders; in Northern Italy is mostly found at low altitudes, in Southern Italy it reaches the montane belt.

This species was often synonymised with *C. spalatensis* Zahlbr., but according to Vondrák & al. (2013), the holotype of the latter species, contrary to what stated in the description, grows on siliceous rocks and has biatorine apothecia, being a poorly developed Blastenia.

Caloplaca areolata

Caloplaca areolata

Caloplaca cerinelloides (Erichsen) Poelt, in Nimis, Notiziario della Società Lichenologica Italiana 5: 25 (1992)
= *Caloplaca cerinelloides* (Erichsen) Poelt, in Nimis & Poelt, Stud. Geobot. 7(suppl. 1): 59 (1987)
= *Caloplaca cerinelloides* (Erichsen) Poelt, Biblthca Lichenol. 50: 99 (1993)
= *Athallia cerinelloides* (Erichsen) Arup, Frödén & Søchting, Nordic J. Bot. 31(1): 36 (2013)
= *Caloplaca pyracea f. cerinelloides* (Erichsen) Zahlbr., Cat. Lich. Univers. 7: 171 (1930)
= *Caloplaca pyracea var. cerinelloides* Erichsen, Verh. bot. Ver. Prov. Brandenb. 72: 35 (1930)

[VZR113, 19554], Austria, Stiria, pars Alpium "Grazer Bergland" dicta, secus viam publicam. Ad truncum *Larix*. leg. J. Poelt & H. Pittoni, 5.2.1994, det. J. Poelt. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 1213.

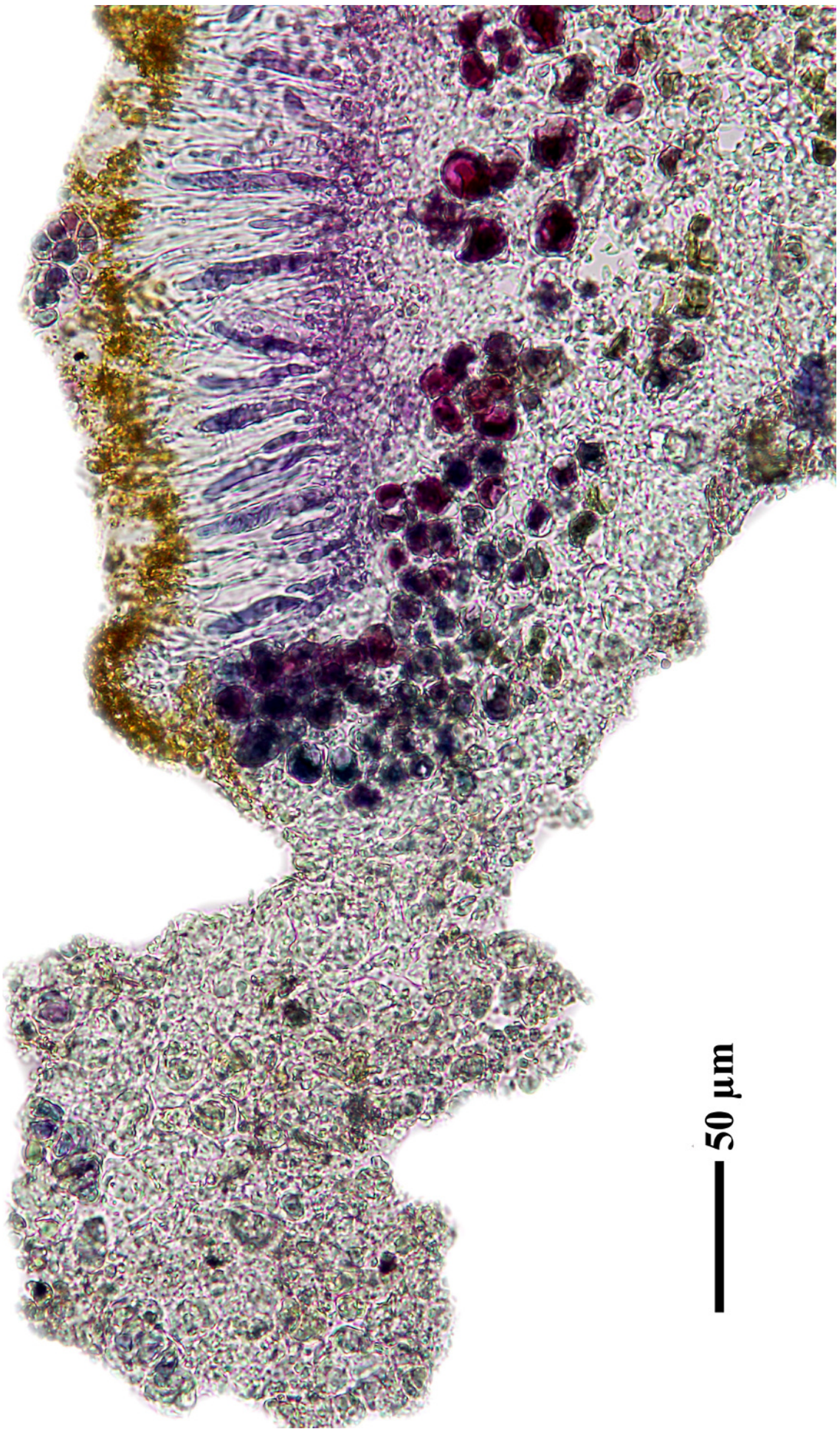
Thallus crustose, poorly evident, endosubstratic to thinly episubstratic and small-granulose, forming small, pale grey to yellowish grey patches. Cortex usually poorly developed, composed of an amorphous layer or indistinctly paraplectenchymatous. Apothecia biatorine/zeorine, sessile, 0.2-0.4 mm across, with a yellow, flat, epruinose disc and a paler proper margin; a grey thalline margin is rarely visible only on the lower surface of apothecia. Thalline exciple ecorticate or with a very poorly developed cortex, up to 35 µm wide; proper exciple 20-40(-50) µm wide, consisting of radiating, thick-walled hyphae with long and narrow short-ellipsoid cells measuring 4-12 x 1-4 µm; epithecium orange, inspersed with granules, K+ purple-red, C-; hymenium colourless, 55-70 µm high; paraphyses simple, submoniliform, 2-2. µm thick at mid-level, the apical cells 4-6 µm wide; hypothecium colourless, (10-)20-45 µm high. Asci 8-spored, cylindrical-clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, (8.5-)10-12.5(-15) x (5-)6-9 µm, the equatorial thickening (“septum”) 3-7 µm, c. 1/3-1/2 of spore length. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-; apothecia K+ purple-red, C-. Chemistry: thallus without lichen substances; apothecia with parietin (major), fallacinal, emodin, teloschistin and parietinic acid (minor), corresponding with chemosyndrome A of Søchting (1997). - Note: superficially similar to

A. cerinella, but with a different number of spores per ascus. On base-rich bark, often of Populus tremula sometimes on nutrient-enriched twigs of conifers, usually absent from coastal-maritime situations.

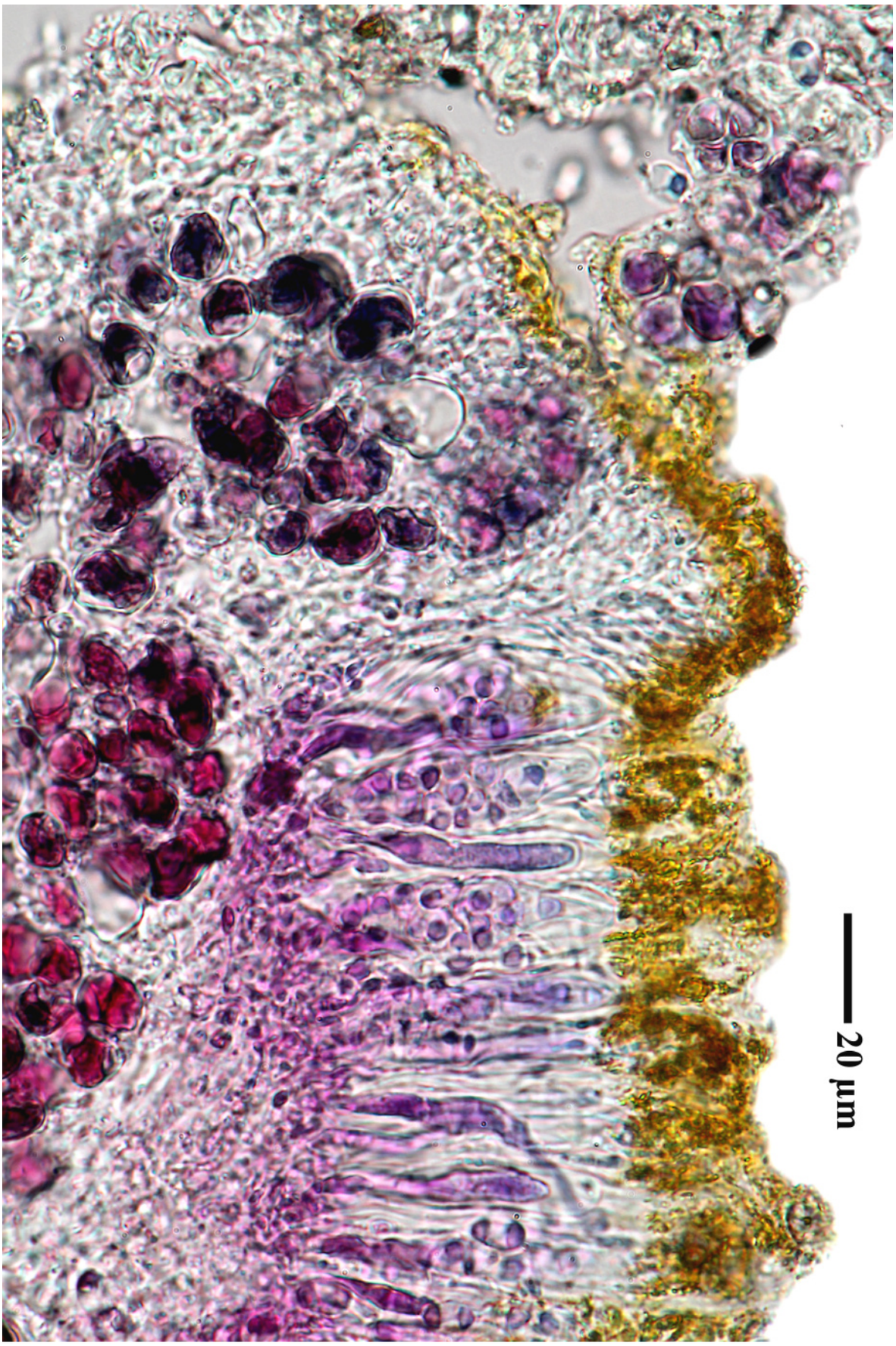
Caloplaca cerinelloides

Caloplaca cerinelloides

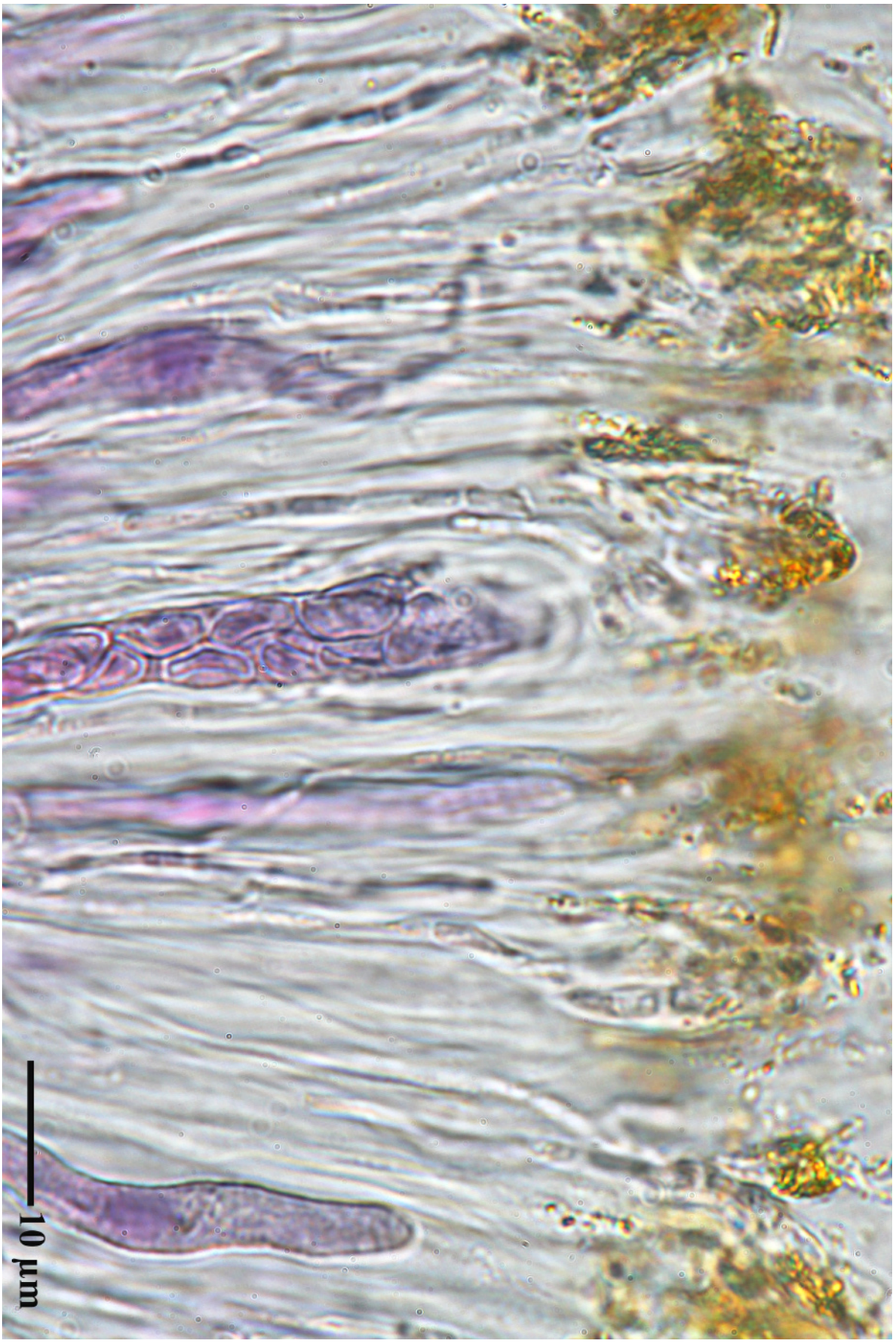
Caloplaca cerinelloides



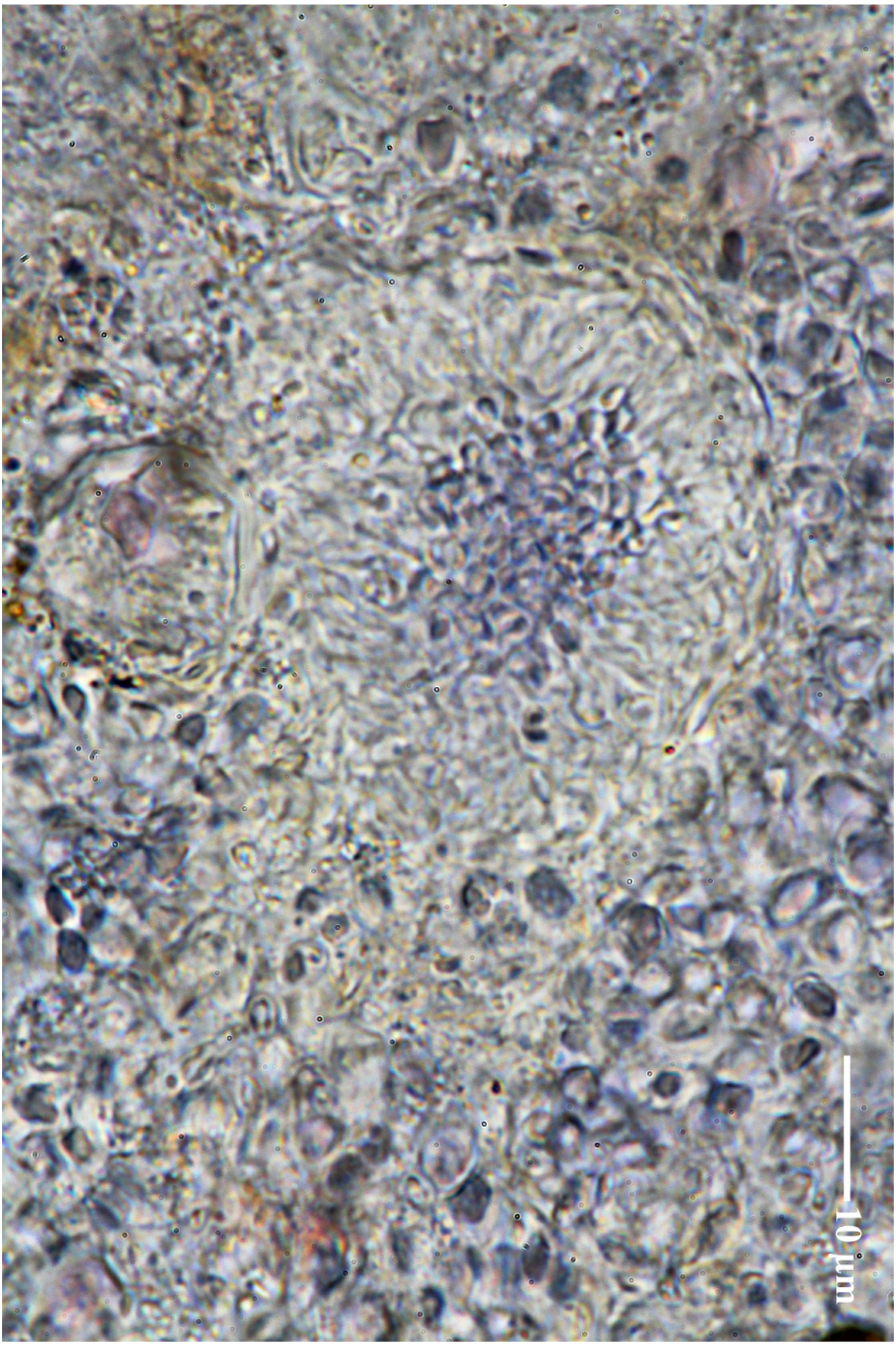
Caloplaca cerinelloides



Caloplaca cerinelloides



Caloplaca cerinelloides



Caloplaca cerinelloides

Caloplaca cerinelloides

Caloplaca erodens Tretiach, Pinna & Grube, Mycol. Progr. 2(2): 129 (2003)
= *Pyrenodesmia erodens* (Tretiach, Pinna & Grube) Søchting, Arup & Frödén, in Arup, Søchting & Frödén, Nordic J. Bot. 31(1): 73 (2013)

[VZR499, 19553], Italia, Abruzzo, prov. L'Aquila, loco Rovere, prope ruinam arcis, 1440 m, ad saxa calcarea. Leg. M. Tretiach & D. Pinna (TSB 34131, Isotypus), 23.6.2003. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 499.

Thallus crustose, mostly endosubstratic and poorly evident, ecorticate, forming characteristic orbicular, often later confluent and irregular, concave-eroded, up to 6-8 cm wide, indistinctly sorediate, pale bluish grey patches on the rock, delimited by a whitish, mostly epilithic and obscurely lobed prothallus. Soralia bluish-grey to violaceous, diffuse, consisting of grey, K+ violet, 45-75 µm thick soredia formed by small, irregular clusters of photobiont cells surrounded by appressed, inflated hyphal cells emerging from the rock surface. Apothecia extremely rare, 0.2-0.4 mm across, round to irregular in outline, with a black but often slightly bluish-grey-pruinose disc, and a thin, grey thalline margin. Proper exciple thick, dark grey or grey-green in outer part, colourless within, with minute crystals insoluble in N; epithecium grey, K+ violet, C+ red-violet, N+ vivid violaceous; hymenium colourless, up to 60-70 µm high, I+ strongly blue; paraphyses simple or slightly branched, the apical cells swollen, up to 4-5 µm thick, pigmented as the outer part of the exciple; hypothecium colourless. Asci (4-)6-8-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, 10-19 x 6-9 µm. Pycnidia very rare, immersed, located in marginal parts of thallus. Conidia bacilliform, 5-7 x 1.5–2 µm. Photobiont chlorococcoid. Spot tests: all negative in thallus, or soredia K+ violet. Chemistry: Sedifolia-grey pigment in soredia and apothecia (outer part of exciple and epithecium). - Note: a recently-described, characteristic species, probably more widespread in upland areas. It occurs on exposed, subvertical faces of hard limestone and dolomite, including old monuments, in dry sites of the montane and subalpine belts.

Caloplaca erodens

Caloplaca erodens

Caloplaca erodens

Caloplaca erodens

Caloplaca gloriae Llimona & Werner, Acta Phytotax. Barcinon. 16: 13 (1975)

= *Elenkiniana gloriae* (Llimona & Werner) S.Y. Kondr., Kärnefelt, Elix, A. Thell, Jung Kim, A.S. Kondr. & Hur, in Kondratyuk, Jeong, Yu, Kärnefelt, Thell, Elix, Kim, Kondratiuk & Hur, Acta bot. hung. 56(1-2): 111 (2014)

[VZR81, 19551], Hispania, Almeria, Vala Blanca in Gata Montibus, 30 m, ad rupes andesiaticas. Leg. E. Barreno & V. Calatayud, 15.03.1993. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 81.

Thallus crustaceus, rosulas aureas aut awrantiacas, 3-10 cm latas et plus etiam formans, areclatus, areolis in centro granis crassis convexisque, 0,5-1 mm in diam., ad ambitum lobis simplicibus dichotomisve, 1-2-3,5 mm longis et 0,3-0,7 (-1) mm latis, plus minus convexis et imbricatis vel nonnunquam planis, compositus, KOH+ vinose nubens, C-, KC-, P-. Contex 37- 65 µm altus, decolor, hyphis intricatis, ramosis et anastomosantibus apicem versus parallelis et pigmento parietino inchustatis, strato amorpho 4 µm alto obductus, pseudocyphellis numerosis praeditus, Haec pseudocyphellae albo- ochraceae ad basin loborum apparentes et copiose areolas invadentes, 0,1- 0,2 mm diam. Stratum algae 50-62,5 (-100) µm altum gonidiis glomeratis, cystococcoideis e genere Trebouxia, globosis vel productis, 6,3-13 µm diam., chromatophoro viridi-flavescente integro praeditis. Medulla 187.5 µm, sub apotheciis 250 µm alta, obscure fuscescens hyphis intricatis 3,8 µmcrassis, plus minus verticalibus, crystallis 2,5-5 µm farcta. Apothecia 0,5-0,7-1,2 mm lata, adnata, singula et rotunda in una- quaque areola aut confluentia, deformia et tum plures areolas tegentia, primum concava, dein plana vel rariora levissime convexa. Discus awrantiacus aut fuscoferrugineus, margine thallino prominente, crasso, magis fulgente, plus minus sinuoso, in apotheeiis convexis evanescente. Cortex amphithecii ut in thallo. Excipulum dimidiatum, intus 25 µm, ad apicem 62.5-87.5 µm latum, hyphis parallelis, ramosis et inter se connexis. Hypothecium fuscescens, hypho-cellulosum, centro usque 187,5 µm altum et medullae superpositum, Iodo caeruleum. Hymenium 62.5-87.5-(-100) µm altum, superne 12,5-25 µm fusco flavens et granoso inspersum, caeterum decolor, lodo caeruleum, K+ vinose rubens. Asci cylindnici, 50-62.5 mu longi, 12.5-15 µm lati, 8- spori. Sporae polocaelae, ovales, 7.5-9-12.5 µu Longae et 4-5.5-6 µm latae , septo 2-4 µm crasso. Paraphyses conglutinatae, septatae, 1.3 µm latae, simplices ramosaeve

el anastomosantes, non articulatae, apicibus non vel vis 2.5 µm inflatae. Pycnidia innata, punctiformia, vertice aurantiaco, concavo indicata; pycnoconidia endobasidialia, bacillaria, recta, centro constricta, 2.5-4.5-(-5) µm longa, 1.3 µm lata.

Caloplaca gloriae

Caloplaca gloriae

Caloplaca gloriae

Caloplaca gloriae Llimona & Werner, Acta Phytotax. Barcinon. 16: 13 (1975)

= *Elenkiniana gloriae* (Llimona & Werner) S.Y. Kondr., Kärnefelt, Elix, A. Thell, Jung Kim, A.S. Kondr. & Hur, in Kondratyuk, Jeong, Yu, Kärnefelt, Thell, Elix, Kim, Kondratiuk & Hur, Acta bot. hung. 56(1-2): 111 (2014)

[VZR71, 19552], Insulae Canarienses, Gran Canaria, distr. Mogán, Puerto Rico, in colle supra portum, 150 m, ad lavam. Leg. A. Vězda, 11.02.1993. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 71.

Thallus crustaceus, rosulas aureas aut awrantiacas, 3-10 cm latas et plus etiam formans, areclatus, areolis in centro granis crassis convexisque, 0,5-1 mm in diam., ad ambitum lobis simplicibus dichotomisve, 1-2-3,5 mm longis et 0,3-0,7 (-1) mm latis, plus minus convexis et imbricatis vel nonnunquam planis, compositus, KOH+ vinose nubens, C-, KC-, P-. Contex 37- 65 µm altus, decolor, hyphis intricatis, ramosis et anastomosantibus apicem versus parallelis et pigmento parietino inchustatis, strato amorpho 4 µm alto obductus, pseudocyphellis numerosis praeditus, Haec pseudocyphellae albo- ochraceae ad basin loborum apparentes et copiose areolas invadentes, 0,1- 0,2 mm diam. Stratum algae 50-62,5 (-100) µm altum gonidiis glomeratis, cystococcoideis e genere Trebouxia, globosis vel productis, 6,3-13 µm diam., chromatophoro viridi-flavescente integro praeditis. Medulla 187.5 µm, sub apotheciis 250 µm alta, obscure fuscescens hyphis intricatis 3,8 µmcrassis, plus minus verticalibus, crystallis 2,5-5 µm farcta. Apothecia 0,5-0,7-1,2 mm lata, adnata, singula et rotunda in una- quaque areola aut confluentia, deformia et tum plures areolas tegentia, primum concava, dein plana vel rariora levissime convexa. Discus awrantiacus aut fuscoferrugineus, margine thallino prominente, crasso, magis fulgente, plus minus sinuoso, in apotheeiis convexis evanescente. Cortex amphithecii ut in thallo. Excipulum dimidiatum, intus 25 µm, ad apicem 62.5-87.5 µm latum, hyphis parallelis, ramosis et inter se connexis. Hypothecium fuscescens, hypho-cellulosum, centro usque 187,5 µm altum et medullae superpositum, Iodo caeruleum. Hymenium 62.5-87.5-(-100) µm altum, superne 12,5-25 µm fusco flavens et granoso inspersum, caeterum decolor, lodo caeruleum, K+ vinose rubens. Asci cylindnici, 50-62.5 mu longi, 12.5-15 µm lati, 8- spori. Sporae polocaelae, ovales, 7.5-9-12.5 µu Longae et 4-5.5-6 µm latae , septo 2-4 µm crasso. Paraphyses conglutinatae, septatae, 1.3 µm latae, simplices ramosaeve

el anastomosantes, non articulatae, apicibus non vel vis 2.5 µm inflatae. Pycnidia innata, punctiformia, vertice aurantiaco, concavo indicata; pycnoconidia endobasidialia, bacillaria, recta, centro constricta, 2.5-4.5-(-5) µm longa, 1.3 µm lata.

Caloplaca gloriae

Caloplaca gloriae

Caloplaca gloriae

Caloplaca gloriae

Caloplaca havaasii H. Magn., in Havaas, Bergens Mus. Årbok, Naturv. raekke(no. 12): 16, 19 (1954)
= *Flavoplaca havaasii* (H. Magn.) Arup, Frödén & Søchting, Nordic J. Bot. 31(1): 45 (2013)

[VZR142,19549], Austria, Carinthia, Pars Alpium "Kreuzeckgruppe" dicta, in pede montis Schwarzstein, 2000 m, ad saxa schistosa. Lef. P.P.G. van den Boom. O. Breuss & A. Vězda, 26.03.1994, det. J. Poelt. Ex A. Vězda: Lichenes Rariores Exsiccati Nr- 142.

Spores 8.8-9.6 x 4-4.8 µm, septum 1.9-2.8 µm.

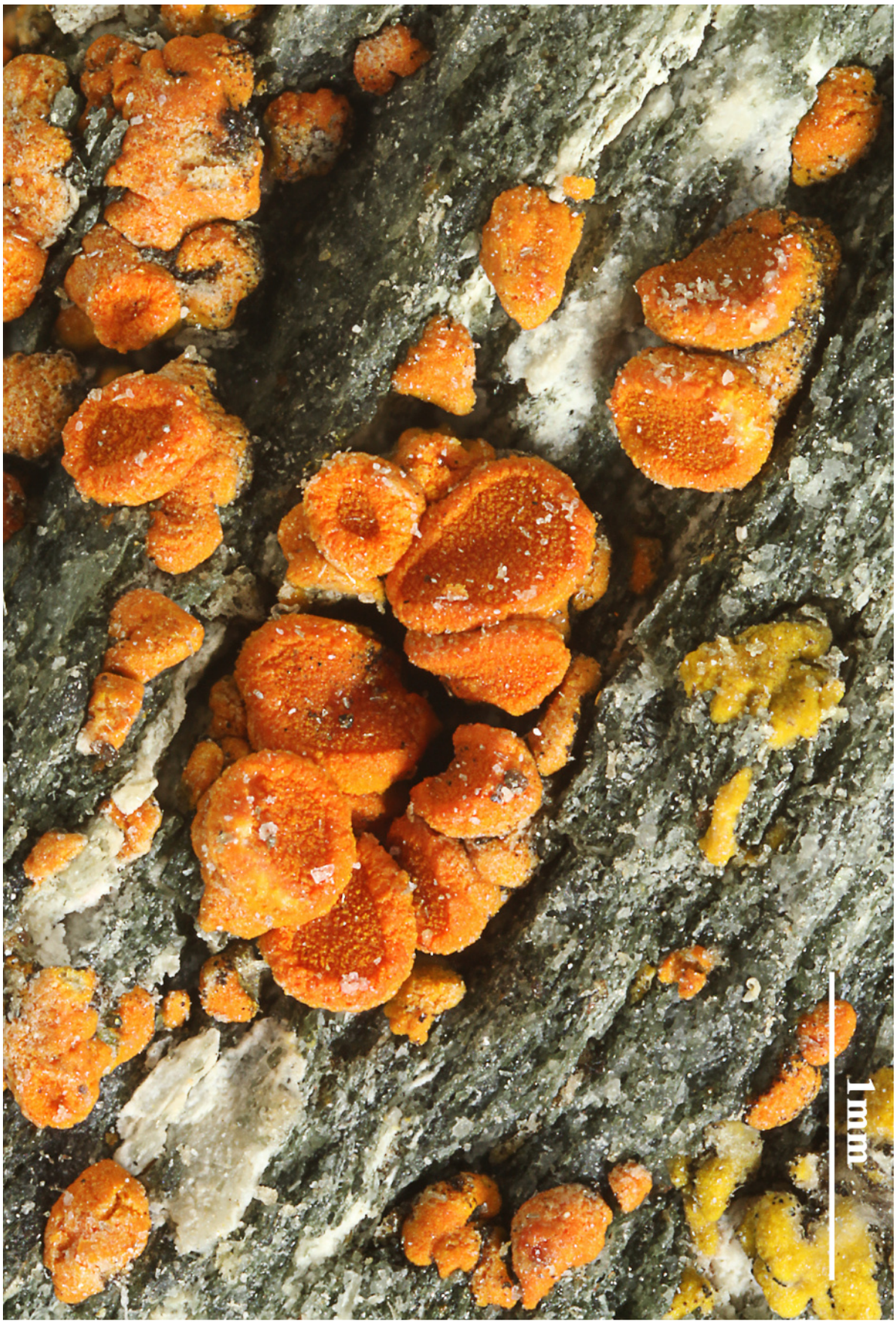
Beschreibung nach Poelt, J & Hafellner, J (1981):Bemerkenswerte Flechtenfunde aus der Steiermark II. - Mitt. naturwiss. Ver. Steiermark, Graz.:
Die Thalli wachsen an gedüngten Überhangflächen eines feinen Schiefers. Die Thalli incl. der Apothecienscheiben sind einheitlich rotorange gefärbt, gleich den mit der Art vergesellschafteten Lagern von *Xanthoria elegans*. Thalli in ausgedehnten Beständen, ohne Vorlager, die Einzelthalli schuppig bis effiguriert, meist einseitig bis unregelmäßig gekerbt, um 1-1.5 mm im Durchmesser, gewölbt-verflacht, nicht bereift, oft in subrosulaten Gruppen beisammen stehend, an der Basis verengt bis kurz gestielt; im Extremfall sitzen Einzelapothecien vergleichsweise langen Stielen auf. Apothecien in manchen Lagerbereichen fehlend bis spärlich, in anderen sind die Schüppchen weithin in Apothecien umgewandelt. Einzelapothecien entweder direkt aus Areolen umgeformt und dann in das Lagerniveau eingesenkt, oder ± aufsitzend, rundlich bis von unregelmäßigem Umriß, der Rand dicklich, in der Jugend vorstehend und außen oft warzig verunebnet, später fast gleich hoch. Eigenrand meist nicht deutlich abgesetzt. Scheiben meist flach. Die Apothecien messen um 0.8-1.5 mm. Lager wie die Apothecienränder deutlich berindet, aber Rinde wenig scharf µmµmµMgesetzt, aus antiklinalen Hyphen paraplektenchymatisch aufgebaut, 15—50 µm dick, die Zellen meist um 4-7 µm im Durchmesser, die äußersten Randzellen oft antiklinal verlängert. Mark wenig locker, die Hyphenzellen nur wenig gestreckt. Algen im Mark verteilt. - Die Lager sind vielfach fraßgeschädigt und dann regeneriert; entsprechend ist dann der anatomische Aufbau abgewandelt. Das Parathecium erweitert sich am Rande etwas strahlig, ohne sich in dem beschriebenen Material (aber im Gegensatz zum Topotypus) zu einem

Eigenrand zu erheben. Die äußersten Zellen erreichen hier bis um 10 µm Länge. Hymenium um 60-70 µm hoch. Paraphysen am Grunde 1-1.5 µm dick, die Endköpfe um 5-6.5 µm erreichend. Asci vom *Teloschistes-Typ.* Sporen zu 8, ellipsoid, um 10-12 x 5-6.5 µm mit um 3 µm dicker Scheidewand. Der Topotypus unterscheidet sich durch meist deutlichen Eigenrand, wenig größere Sporen, etwas weniger rote Färbung, doch sind dies alles schwach quantitative Merkmale, die bei *Caloplaca* in vielen Fällen wenig Gewicht haben und zudem sehr variabel sind.

Caloplaca havaasii

Caloplaca havaasii

Caloplaca havaasii



Caloplaca havaasii

Caloplaca havaasii

Caloplaca havaasii

Caloplaca jungermanniae (Vahl) Th. Fr., Nova Acta R. Soc. Scient. upsal., Ser. 3 3: 221 (1861) [1860]
= *Bryoplaca jungermanniae* (Vahl) Søchting, Frödén & Arup, in Arup, Søchting & Frödén, Nordic J. Bot. 31(1): 68 (2013)
= *Blastenia jungermanniae* (Vahl) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 46: 113 (1896)
= *Callopisma jungermanniae* (Vahl) Räsänen, Lich. Fenn. Exs.: no. 911 (1946)
= *Caloplaca pyracea subvar. jungermanniae* (Vahl) Boistel, Nouv. Fl. Lich. (Paris) 2: 113 (1903)
= *Lecanora jungermanniae* (Vahl) Nyl., in Norrlin, Not. Sällsk. Fauna et Fl. Fenn. Förh., Ny Ser. 13: 329 (1874) [1871-74]
= *Lecidea cinereofusca var. jungermanniae* (Vahl) Ach., K. Vetensk-Acad. Nya Handl. 29: 268 (1808)
= *Lecidea fuscolutea var. jungermanniae* (Vahl) Sommerf., Suppl. Fl. lapp. (Oslo): 166 (1826)
= *Lecidea jungermanniae* (Vahl) Ach., Methodus, Sectio prior (Stockholmiæ): 70 (1803)
= *Lichen jungermanniae* Vahl, Icon. Plant. Dan. 6(18): 6, tab. MLXIII, 1 (1792)
= *Placodium jungermanniae* (Vahl) Tuck., Syn. N. Amer. Lich. (Boston) 1: 176 (1882)

[VZR24, 19550], Georgia, Distr. Dzhava, Caucasus, montes "Rechinski khrebert", in monte "Tagverula" prope vicum Tschordi, 2300-2600 m, supra muscos emortuos in rupibus. Leg. V. Valš'ák, 20.07.1989, det. A. Vězda. Ex A. Vězda: Lichenes Rariore Exsiccati Nr. 24.

Thallus crustose, pale grey to whitish, thin, continuous, with an indistinct, amorphous cortex. Apothecia frequent, biatorine, rounded, sessile, slightly constricted at base, 1-1.5(-2) mm across, with an orange-yellow to mostly brownish orange, flat to weakly convex, roughened disc and a persistent, smooth, paler (brownish)-orange proper margin. Proper exciple brown-yellow; epithecium yellowish-brown, coarsely granular, K+ purple-red, C+ purple; hymenium colourless, 80-100 µm high; paraphyses septate, slender, not capitate, 2-2.5 µm thick, the terminal cell covered with a thick, granular epipsamma; hypothecium colourless. Asci 8-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, (15-)17-21(-23) x 7-10(-12)

µm, the equatorial thickening ("septum") 1-3 µm thick. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-; apothecia K+ dark purple-red, C+ purple. Chemistry: thallus without lichen substances; apothecia with citreorosein, emodinal, emodinic acid, emodin. - Note: an arctic-alpine, circumpolar species of terricolous bryophytes and plant debris on more or less calciferous substrata near and above treeline, but less common in areas with pure limestone.

Caloplaca jungermanniae

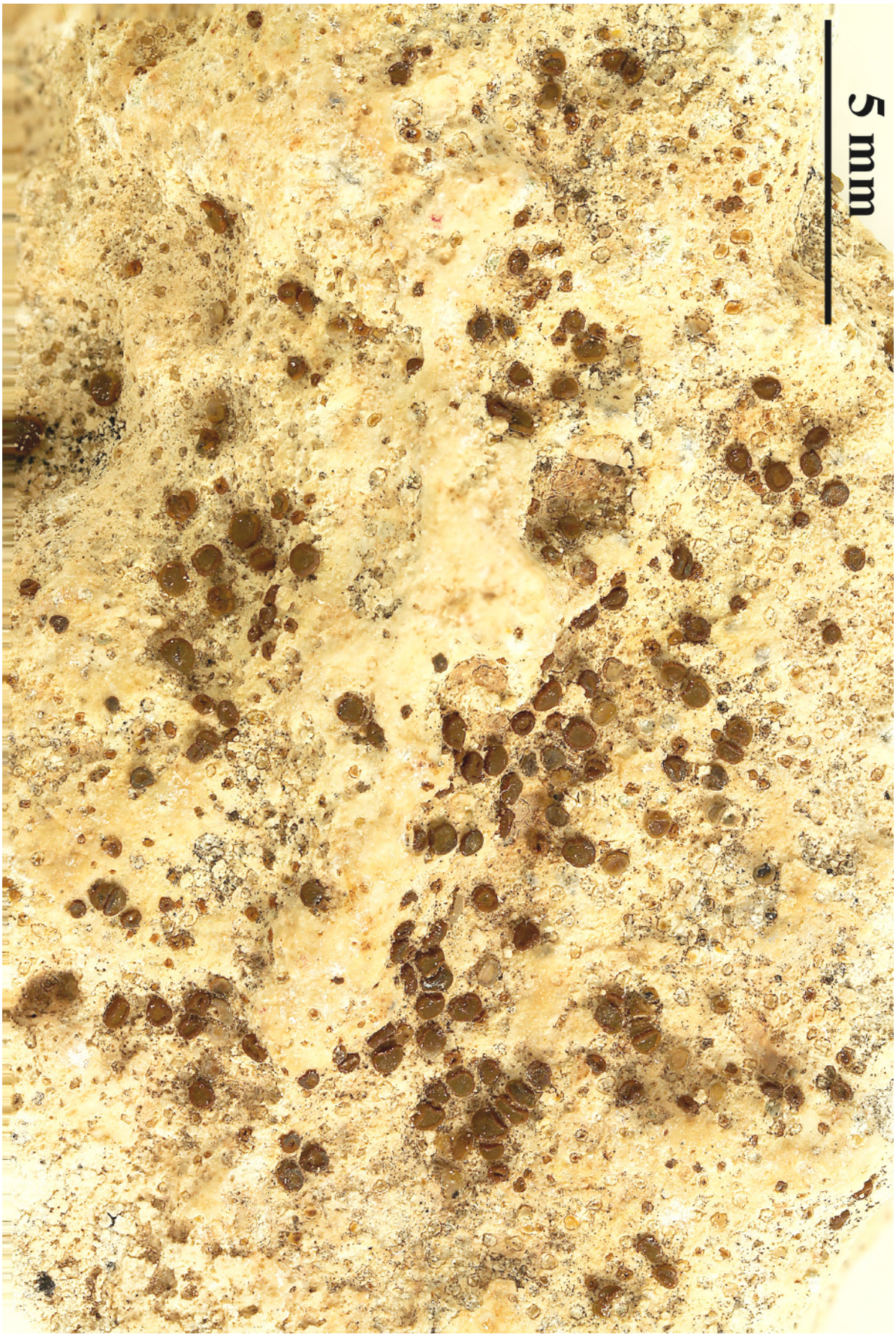
Caloplaca jungermanniae

Caloplaca jungermanniae

Caloplaca marmorata (Bagl.) Jatta, Syll. Lich. Ital. (Trano): 251 (1900)
= *Gyalolechia marmorata* (Bagl.) Nimis & Arup, in Arup, Bertrand, Navarro-Rosinés, Nimis, Roux, Søchting, Borziana: 45 (2023)
= *Callopisma aurantiacum* subsp. *marmoratum* (Bagl.) Arnold, Flora, Regensburg 67(13): 253 (1884)
= *Callopisma marmoratum* Bagl., Nuovo G. bot. ital. 11: 84 (1879)
= *Xanthocarpia marmorata* (Bagl.) Frödén, Arup & Søchting, in Arup, Søchting & Frödén, Nordic J. Bot. 31(1): 57 (2013)

[VZR42, 19556], Italia, Pelagiae insulae: insula Lampedusa, in centro insulae, 50 m, ad lapillos calcareos in terra. Leg. P. L. Nimis, J. Poelt & A. Vězda. EX A. VĚZDA: LICHENES RARIORES EXSICCATI NR. 42.

Thallus crustose, very variable, from endosubstratic and poorly evident to episubstratic and finely rimose-areolate, white to pale yellow, often delimited by a thin, black prothalline line. Apothecia biatorine, at first immersed, then sessile, rounded, 0.2-1.3 mm across, with a rusty red to dark orange-red, at first flat, then convex, epruinose disc, and a somewhat paler, smooth, at first well-visible, finally often excluded proper margin. Epithecium brownish orange, K+ purple-red; hymenium colourless, 40-60(-80) µm high; paraphyses simple or forked in upper part, c. 1 µm thick at base, the apical cells (2-)3-4.5 µm wide; hypothecium colourless. Asci 8-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, (9-)10-13(-14) x (3-)5-6(-10) µm, the equatorial thickening (“septum”) up to 5 µm. Photobiont chlorococcoid. Spot tests: thallus K- or K+ faintly purple-red; C-, KC-, P-; Apothecia K+ purple-red. Chemistry: thallus without lichen substances or with low amounts of fragilin; apothecia with parietin and emodin (major), and citreorosein, emodinal, fallacinal and parietinic acid (minor). - Note: a Mediterranean species found on compact limestone, locally very abundant in coastal situations, rare far from the coast (Arup & al.2023).



Caloplaca marmorata

Caloplaca marmorata

Caloplaca marmorata

Caloplaca ora Poelt & Nimis, in Nimis & Poelt, Stud. Geobot. 7(suppl. 1): 70 (1987)

= *Flavoplaca ora* (Poelt & Nimis) Arup, Frödén & Søchting, Nordic J. Bot. 31(1): 46 (2013)

[VZR34, 19557], Italia, Pelagiae insulae, insula Linosa, litus septendrionale loco "Scoglio dei Bovi Marini" dicto, 5 m, ad lavam. Leg. J. Poelt & A. Vězda. 16.04.1992. EX A. VĚZDA: LICHENES RARIORE EXSICCATI NR. 34.

Thallus crustose, episubstratic, homogeneously bright orange, areolate in central parts, more or less distinctly lobulate in marginal parts, forming irregular rosettes which are often confluent and cover large areas, without a distinct prothallus. Apothecia numerous, sparse or more often clustered, rounded or irregular, 0.2-0.8 mm across, with a more or less flat, deep orange disc, and a thin, usually somehow paler orange margin. Epithecium orange-brown, K+ purple-red; hymenium colourless; paraphyses 1-1.5 µm thick at mid-level, the apical cells weakly enlarged, 1-2(-2.5) µm wide; hypothecium colourless. Asci 8-spored, cylindrical-clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, (9-)10-12 x 4-6 µm, the equatorial thickening ("septum") 3-5 µm. Photobiont chlorococcoid. Spot tests: thallus and apothecia K+ purple-red, C-, KC-, P-. Chemistry: thallus and apothecia with parietin (major), fallacinal, emodin, teloschistin and parietinic acid (minor), corresponding with chemosyndrome A of Søchting (1997). - Note: a Mediterranean lichen found on siliceous, more rarely calcareous rocks near the sea, often associated with specimens identified as *C. marina*, apparently without transitional specimens.

Caloplaca ora

Caloplaca ora

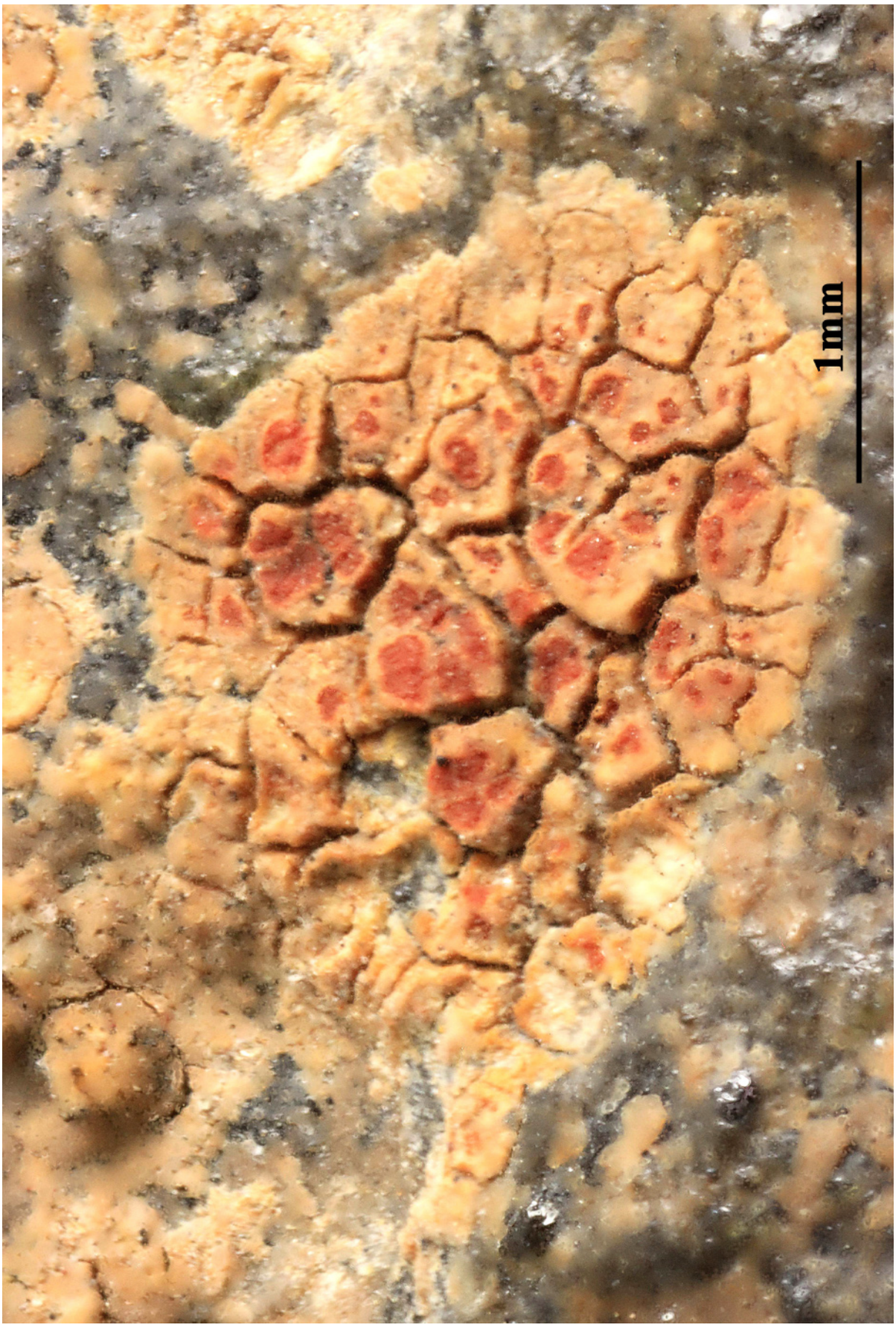
Caloplaca ora

Caloplaca rubelliana (Ach.) Lojka, Mathem. Természettud. Közlem. 11: 47 (1876)
= *Lecanora rubelliana* Ach. 1810

[VZR164, 19558], Italia, Sicilia,Alicudi (insolae Eolie), 50 m, ad lapidem basalticum. Leg. D. Ottonello & D. Puntillo, 26.7.1994, comm. D, Puntillo. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 164.

Thallus crustose, episubstratic, areolate, well-delimited, pinkish grey to cinnamon-red, forming up to 2,5 cm wide patches, sometimes with a grey prothallus. Areoles flat, smooth, up to 1.5 mm wide, the peripheral ones usually larger than the central ones. Cortex paraplectenchymatous, 10-30 µm thick; medulla poorly developed, dense. Apothecia frequent, immersed in the areoles, 0.2-0.5 mm across, with a scarlet red, at first often concave, then flat, epruinose disc and a persistent, but thin and poorly evident margin. Exciple of elongate to oval cells, prosoplecten-chymatous below the hypothecium; epithecium orange, granular, K+ purple-red; hymenium colourless, 55-75 µm high; paraphyses sparingly branched in upper part, 1-1.5(-2) µm thick at base, at the apical cells 3-4 µm wide; hypothecium colourless. Asci 8-spored, clavate, functionally unitunicate, apically thickened with a broad internal beak, the inner part of apex and external cap I+ blue, Teloschistes-type. Ascospores 2-celled, polarilocular, hyaline, ellipsoid, (7-)8-11 x 4-7 µm, the equato-rial thickening (“septum”) 3-5 µm, c. 1/3 of spore length. Photobiont chlorococcoid. Spot tests: thallus and apothecia K+ purple-red, C-, KC-, P-. Chemistry: thallus and apothecia with parietin (major), fallaci-nal, emodin, teloschistin and parietinic acid (minor), corresponding with chemosyndrome A of Søchting (1997). - Note: a warm-temperate to subtropical, widespread lichen found on steeply inclined surfaces of hard, basic siliceous rocks (especially basalt), often with species of *Peltula*.

Caloplaca rubelliana



Caloplaca rubelliana

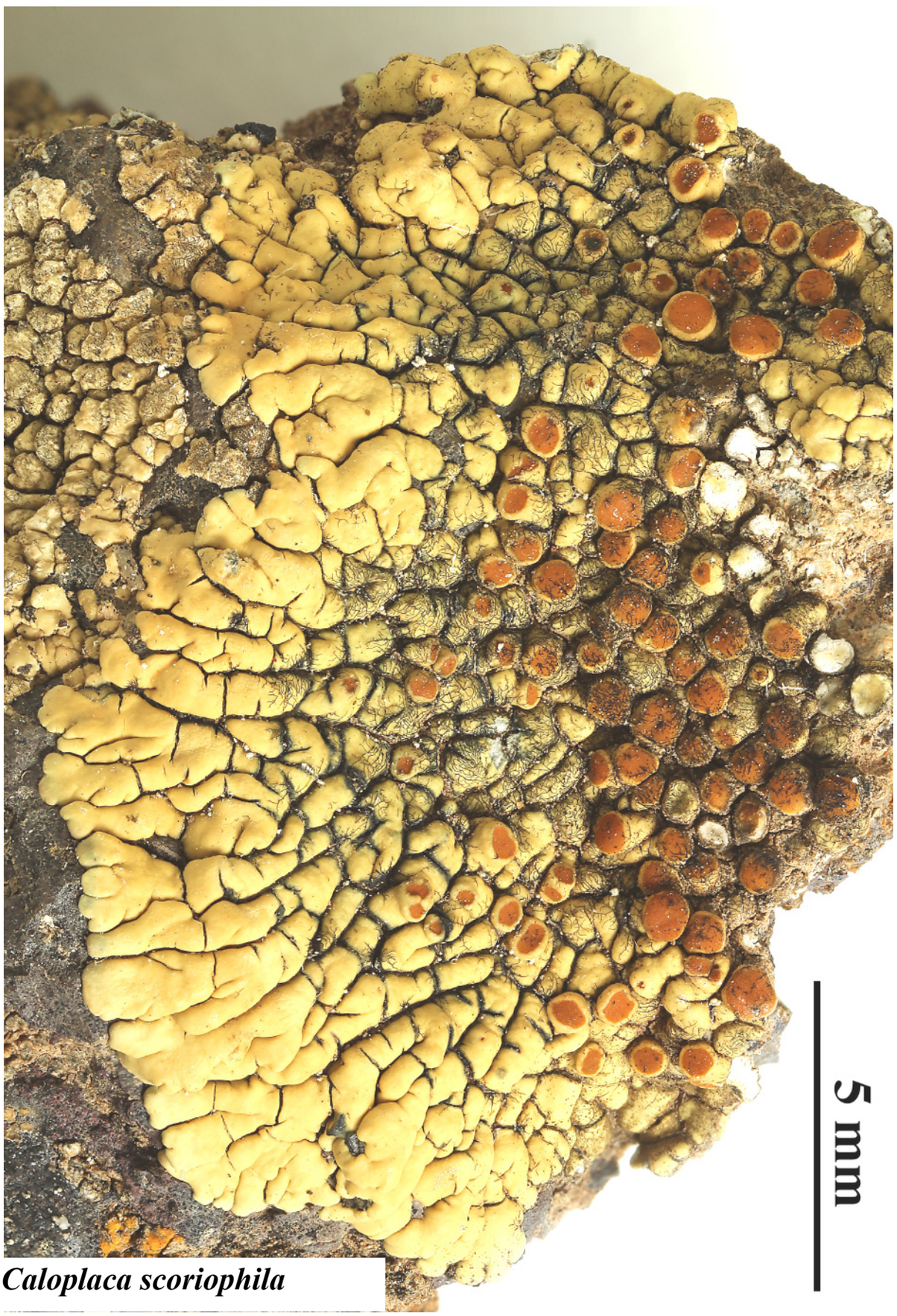
Caloplaca scoriophila (A. Massal.) Zahlbr., Deutsche Südpolar-Expedit. 8: 25 (1906)
= *Usnochroma scoriophilum* (A. Massal.) Søchting, Arup & Frödén [as 'scoriophila'], in Arup, Søchting & Frödén, Nordic J. Bot. 31(1): 75 (2013)
= *Caloplaca carphinea* var. *scoriophila* (A. Massal.) J. Steiner, Öst. bot. Z. 61: 180 (1911)
= *Gasparrinia scoriophila* (A. Massal.) C.W. Dodge, Beih. Nova Hedwigia 38: 113 (1971)
= *Lecanora scoriophila* (A. Massal.) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 194 (1890) [1888-89]
= *Placodium scoriophilum* A. Massal., Mem. Imp. Reale Ist. Veneto 10: 55, tab. I, fig. 20 (1861)

[VZR82, 19559], Insulae Canarienses, Gran Canaria, distr. Mogán, in declivibus occidentalibus montis "Guirre" supra urbem Mogán, 600 m, ad saxa basaltica. Leg. A. Vězda, 15.2.1993. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 82.

Die Rinde zeigt eine schwachgelbe K-Reaktion, das Mark färbt sich mit K + N sowie N rot. Der Ätherextrakt von 4,75 g Flechtenpulver liefert 50 mg (= 1,1 % TM) des Dibenzofuranderivats (—) - U sninsäure und 100 mg (= 2,1 % TM) des Tridepsids G y r o p h o r s ä u r e . In den Apothecien lassen sich mittels DC ferner die beiden familiencharakteristischen Anthrachinone E m o d i n und P a r i e t i n nachweisen. In der typischen *Caioplaca carphinea* (E. M. FRIES) JATTA fand SANTESSON (1970) bis auf Gyrophorsäure die gleichen Verbindungen. Usninsäure ist ein seltener Inhaltsstoff der Gattung und kommt nach SANTESSON (1970) neben *Caloplaca carphinea* (E. M. FRIES) JATTA lediglich noch in *Caloplaca cuyabensis* (MALME) ZAHLBR., *Caloplaca limitosa* (NYL.) OLIV, und *Caloplaca stenospora* (MALME) ZAHLBR. vor. Gyrophorsäure stellt dagegen offenbar einen Neufund für die gesamten Teloschistaceen dar (W. L. CULBERSON und C. F. CULBERSON 1970).

Merkmale nach Breuss, O. (1989): Zur Unterscheidung con *Caloplca carphinea* und *Caloplaca scoriophila*. - Linzer biol. Beitr. 21/2. -
Bei *C. scoriophila* ist die Oberrinde 50 - 80 µm hoch, von skleroplektenchymatischer Textur und in zwei Schichten geteilt, die schon bei mäßiger mikroskopischer Vergrößerung auffallen. Die stark verleimten Hyphen verlaufen in der unteren Schicht regellos und ordnen sich nach oben hin zu einem mehr oder minder deutlich antiklinal ausgerichteten

Geflecht mit im Schnittbild kürzeren Hyphenanschnitten. Diese obere Rindenschicht ist zudem stark mit gelben Körnchen durchsetzt und dadurch optisch deutlich abgehoben. Die Algenzone wird durch vorspringende Partien der unteren Rindenschicht stärker aufgespalten.



Caloplaca scoriophila

Caloplaca scoriophila

Caloplaca scoriophila

Phyllobaeis erythrella (Mont.) Kalb, in Gierl & Kalb, Herzogia 9(3-4): 610 (1993)

= *Baeomyces erythrellus* (Mont.) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 94 (1858) [1857]

= *Baeomyces imbricatus* var. *erythrellus* (Mont.) B.G. de Vries, in Vries & Sipman, Proc. K. Ned. Akad. Wet., Ser. C, Biol. Med. Sci. 87(2): 242 (1984)

= *Biatora erythrella* Mont., Annls Sci. Nat., Bot., sér. 2 8: 356 (1837)

= *Tubercularia erythrella* (Mont.) Kuntze, Revis. gen. pl. (Leipzig) 2: 877 (1891)

[VZR932], Dominica- Layou Road, 400 m. Ad terram. Leg. W. E. Hale (no. 35734), 12.11.1969, det.C. Gierl, 1992. Ex A. Vezda: Lichenes Rariores Exsiccati Nr. 932.

Primary thallus: squamulose, 1.0–3.0 mm long, 0.5–1.5 mm wide, laciniate, mainly ascending from the center to the tips, mainly with crenate margins, smooth upper surface, efigurate to somewhat spotted maculate when fresh, green to greenish in feld, whitish to bluish in herbaria, smooth under whitish surface; schizidia usually present, mainly marginal to laminal, spherical to irregularly spherical, 0.2–0.4 mm in diameter, usually pruinose. Anatomy: cortex 30–110 µm thick, algal layer 80–130 µm thick, medulla 40–70 µm thick. Podetium: stipitate, (1.7–)2.0–4.5 mm tall, 0.5–1.0 mm wide, smooth to rugose surface, longitudinally striate, pinkish to brownish; Apothecia 0.9–1.5 mm in diameter, pinkish to reddish, flat, no pruinose. Epihymenium brownish, 4–9 µm thick, himenium hyaline, 65–80 µm thick, hypohymenium hyaline, 25–35 µm thick, asci clavate, up to 50 µm tall, 8-spored, ascospores hyaline, simple, 6–10 × 3–4 µm. Pycnidia not found. Chemistry: K+ yellow->red, C-, KC-, UV-. Thin layer chromatography: norstictic acid.

Phyllobaeis erythrella

Phyllobaeis erythrella

Phyllobaeis erythrella

Phyllobaeis erythrella

A