F. Schumm (2025):

Images of Lichens Vol. 35
Vezda Lichenes Selecti Exsiccati part 10

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With this volume, I continue the documentation of Vezda's works on exiccata, now with Lichenes Selecti as part 10. I have chosen the genus names that Vezda used, even though others are now more common (for example, for Alectoria and Bryoria). However, I also include the currently used names in the synonym list and the index. In addition, I have again made every effort to add species descriptions to the detailed information on the labels from the literature.

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

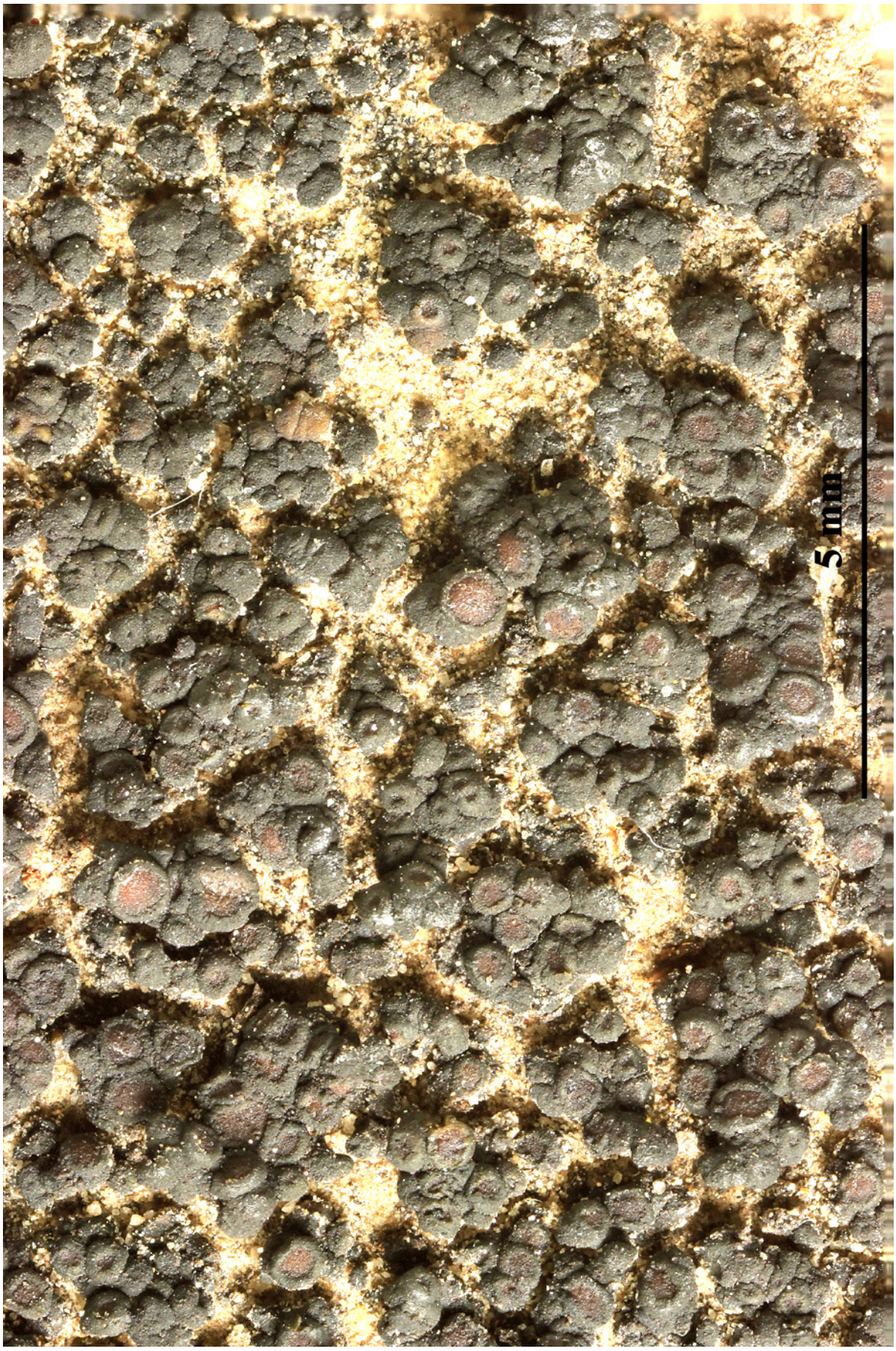
and the Australian Lichenslist under the Url:
https://www.anbg.gov.au/abrs/lichenlist/lichenchecklist_e_o.html

F. Schumm, 11.2025

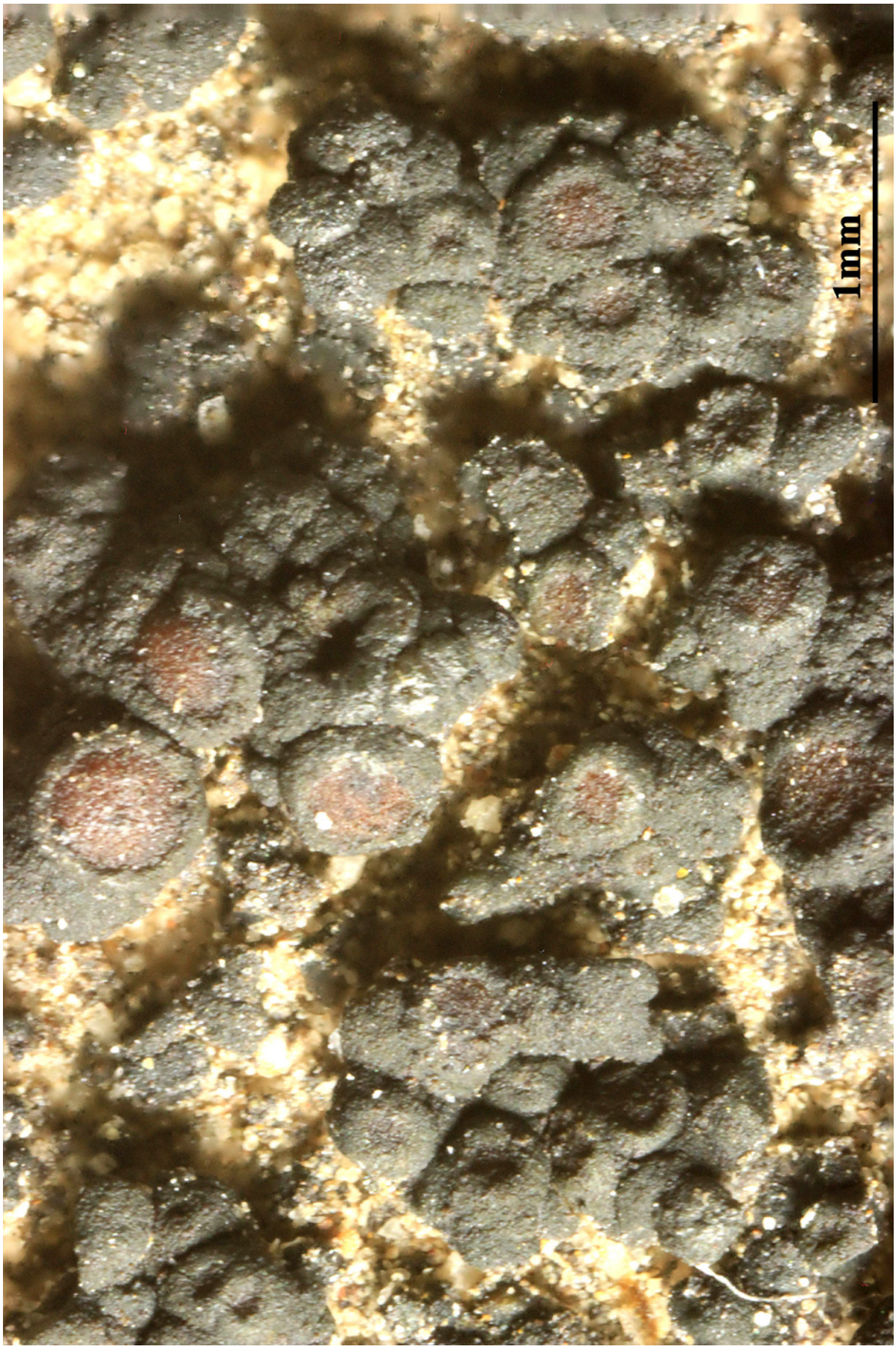
Anema nummularium (Dufour ex Durieu & Mont.) Nyl., Flora, Regensburg 62: 354 (1879)
= *Collema nummularium* Dufour ex Durieu & Mont., in Montagne, in Durieu 1847
= *Anema nummulariellum* Nyl.
= *Omphalaria frustillata* Nyl.
= *Tyrea nummularia* (Durieu & Mont.) Zahlbr.

[VZ1674], Jugoslavia. Dalmatia, peninsula Peliješac, prope vicum Žuljana, in litore, 2-5 m. Ad scopulos calcareos. Leg. A. Vězda., 17.7.1979. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1674.

Thallus squamulose-umbilicate, homoiomerous, slightly gelatinous when wet, 0.3-0.45 mm thick, in section with a loosely reticulate network of thin hyphae enclosing groups of cyanobacterial cells. Squamules black, epruinose, dispersed to crowded, closely attached, 5-10(-12) mm wide, button-like, epruinose, not isidiate, attached by a central, compact bundle of rhizohyphae, with a distinctly lobulate margin, the lobules radiating, discrete, diverging and rounded at apex, more or less dichotomously branched, smooth, slightly convex. Apothecia pycnoascocarps, 2-10 or more per squamule, at first immersed and urceolate but soon expanded and clearly lecanorine, 0.3-0.9(-1.2) mm across, with a dark reddish brown, concave to flat disc, and a thick, usually smooth thalline margin. Proper exciple poorly developed; epithecium brownish orange, 5-15 µm high; hymenium colourless, 80-150 µm high, the hymenial gel I+ blue, paraphyses moniliform, 3-4.3 µm thick, the upper cell clearly swollen and to 7 µm wide; hypothecium yellowish, 70-130 µm high. Asci 8-spored, broadly clavate, thin-walled, with a distinct amyloid outer cap, but no apical dome, Peccania-type. Ascospores 1-celled, hyaline broadly ellipsoid to ellipsoid, 7-15 x 4-10(-12) µm, the wall 1-2 µm thick. Pycnidia immersed, globose, unilocular. Conidia hyaline, ellipsoid, 2-4 x 0.5-1.5 µm. Photobiont cyanobacterial, chroococcoid, of a few 8-13 µm wide cells often penetrated by haustoria and surrounded by a gelatinous sheath which is colourless in inner parts, yellowish brown near the thallus surface. Spot tests: all negative. Chemistry: without lichen substances. - Note: on steeply inclined surfaces of limestone and dolomite with periodical water seepage after rain, below the subalpine belt.



Anema nummularium



Anema nummularium

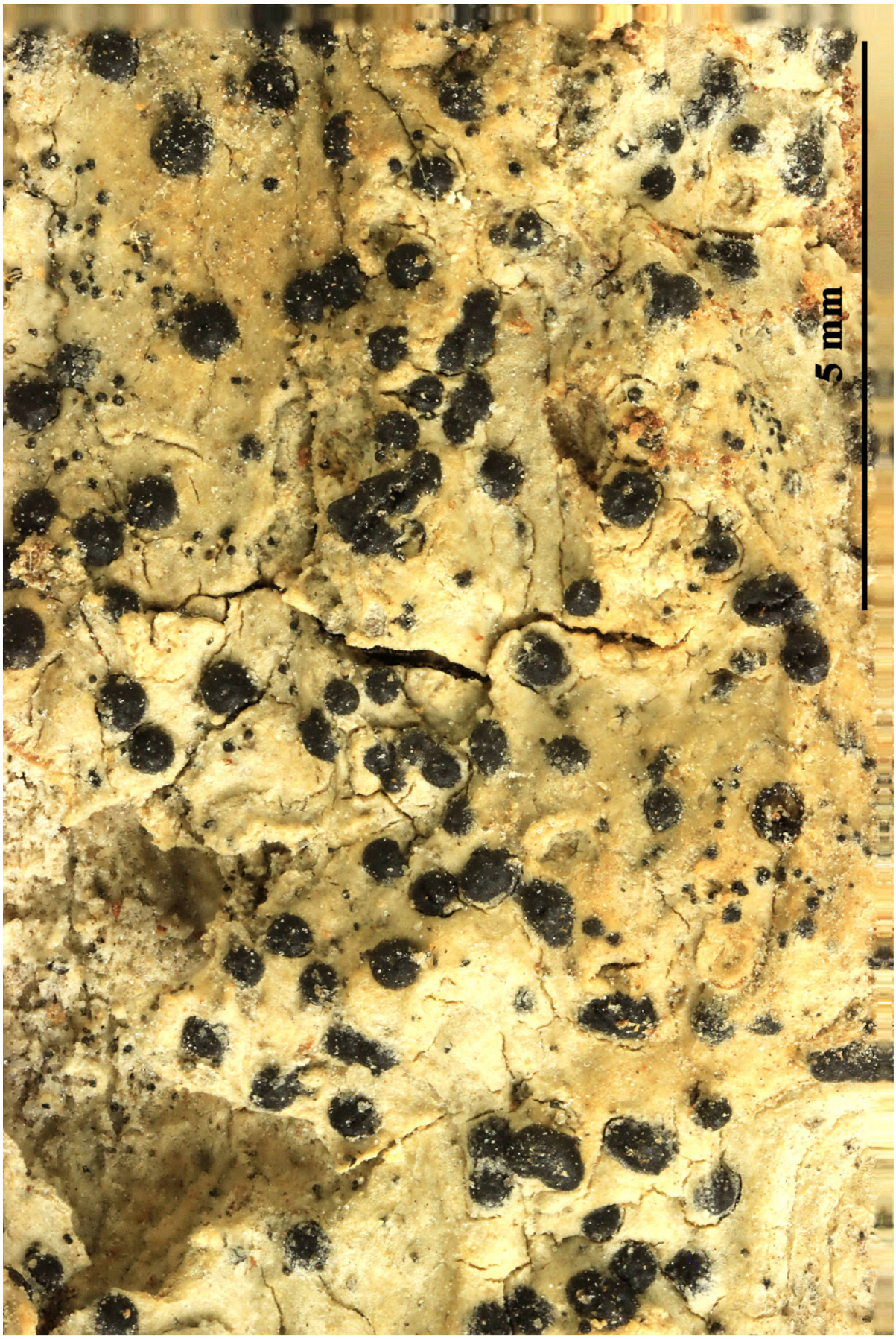
Anisomeridium biforme (Schaer.) R.C. Harris, in Vězda, Lichenes Selecti Exsiccati, Fascicle 61 (Průhonice): no. 1503 (1978)
= *Acrocordia biformis* (Schaer.) Arnold, Flora, Regensburg 44: 537 (1861)
= *Acrocordia conformis* (Nyl.) Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 137 (1896)
= Amphisphaeria biformis (Schaer.) Rehm, Annls mycol. 4(3): 264 (1906)
= *Arthopyrenia biformis* (Schaer.) A. Massal., Framm. Lichenogr.: 26 (1855)
= *Arthopyrenia byssacea* A.L. Sm., Monogr. Brit. Lich. 2: 321 (1911)
= *Arthopyrenia conformis* (Nyl.) Müll. Arg., Bull. Herb. Boissier 2(app. 1): 90 (1894)
= *Ditremis biformis* (Schaer.) R.C. Harris, Some Florida Lichens (New York): 32 (1990)
= *Epicymatia thallophila* (Cooke) Sacc., Syll. fung. (Abellini) 1: 572 (1882)
= *Leiophloea biformis* (Schaer.) Trevis., Conspect. Verruc.: 9 (1860)
= *Lembidium biforme* (Schaer.) Arnold, Flora, Regensburg 53(30–31): 486 (1871) [1870]
= *Pharcidia thallophila* (Cooke) Vouaux, Bull. Soc. Mycol. France 28: 244 (1912)
= *Psilosphaeria thallophila* (Cooke) Stev., Mycol. Scot.: 388 (1879)
= *Sagedia biformis* (Schaer.) Müll. Arg., Flora, Regensburg 63: 290 (1880)
= *Segestrella biformis* (Schaer.) Branth & Rostr., Bot. Tidsskr. 3: 256 (1869)
= *Sphaerella thallophila* (Cooke) Cooke, Grevillea 19(no. 90): 44 (1890)
= *Sphaeria thallophila* Cooke, Handb. Brit. Fungi 2: 872 (1871)
= *Thelidium biforme* (Schaer.) Mudd [as 'biformis'], Man. Brit. Lich.: 297 (1861)
= *Verrucaria biformis* Schaer., Lich. helv. spicil. 2: 56 (1826)
= *Verrucaria biformis* Borrer, in Hooker & Sowerby, Suppl. Engl. Bot. 1: tab. 2617, fig. 1 (1831)
= *Verrucaria conformis* Nyl., Flora, Regensburg 47: 357 (1864)

[VZ1503], USA. Michigan, Oakland County, Highland Recreation Area, prope Pickerel Lake. Ad corticem *Quercus albae* in silvis. Leg. R. C. Harris (no. 10150), 14.8.1975. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1503.

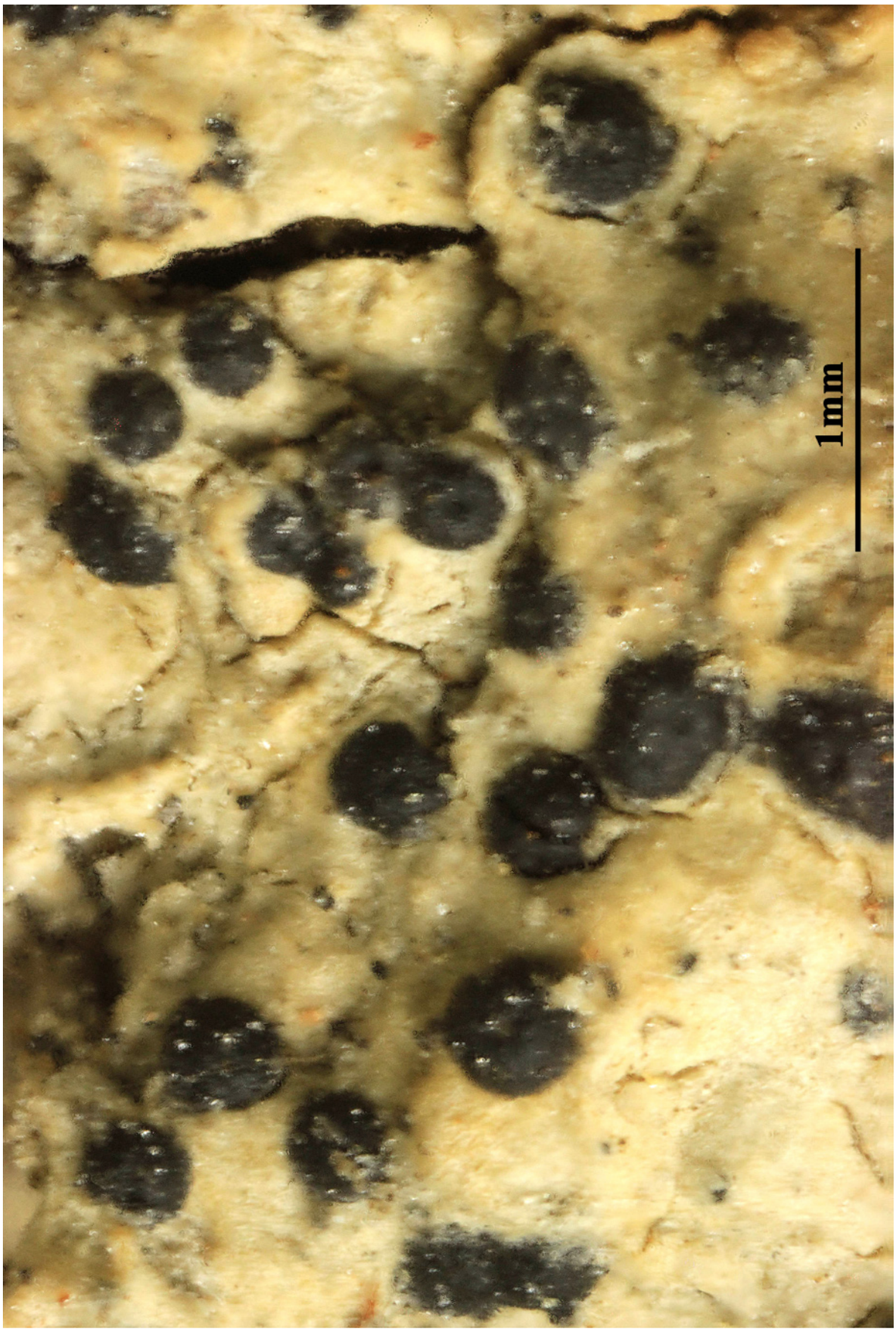
Thallus crustose, endosubstratic or thinly episubstratic, ecorticate, usually well-evident, white to pale grey, sometimes delimited by a black prothalline line. Perithecia black, 0.3-0.4(-0.6) mm across, hemispherical to globose, simple or compound, 1/4 to almost totally immersed, usually numerous. Exciple of cellular hyphae, usually without bark

cells, with a well-differentiated involucrellum, brown-black in upper part, pale or colourless in lower part; pseudoparaphyses slender, branched and anastomosing, long-celled, c. 1 µm thick, not inspersed with oil droplets; periphyses absent; hymenial gel I-. Asci 8-spored, cylindrical, K/I-, fissitunicate, the apical dome with an indistinct ocular chamber, c. 70-100 x 10 µm. Ascospores 1-septate, uniseriate in the asci, hyaline, ovoid- to fusiform-ellipsoid, (9-)12-15(-16) x 4.5-6(-7) µm, without a distinct perispore, one cell sometimes larger than the other. Pycnidia black, of two types: (a) 100-200 µm in diam., with subglobose to ellipsoid macroconidia measuring 2.3-4 x 1.8-2.7 µm, extruded as a blob of conidia bound by mucilage; or (b) 40-100 µm in diam., more or less immersed, hemispherical or globose, with globose, 1-1.5 µm wide microconidia. Photobiont trentepohlioid. Spot tests: thallus K- C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a mild-temperate, probably holarctic species found on deciduous trees in open and humid woodlands, e.g. along creeks and rivers on *Fraxinus*, *Populus* and *Salix*, sometimes also on oaks.

Anisomeridium biforme



Anisomeridium biforme

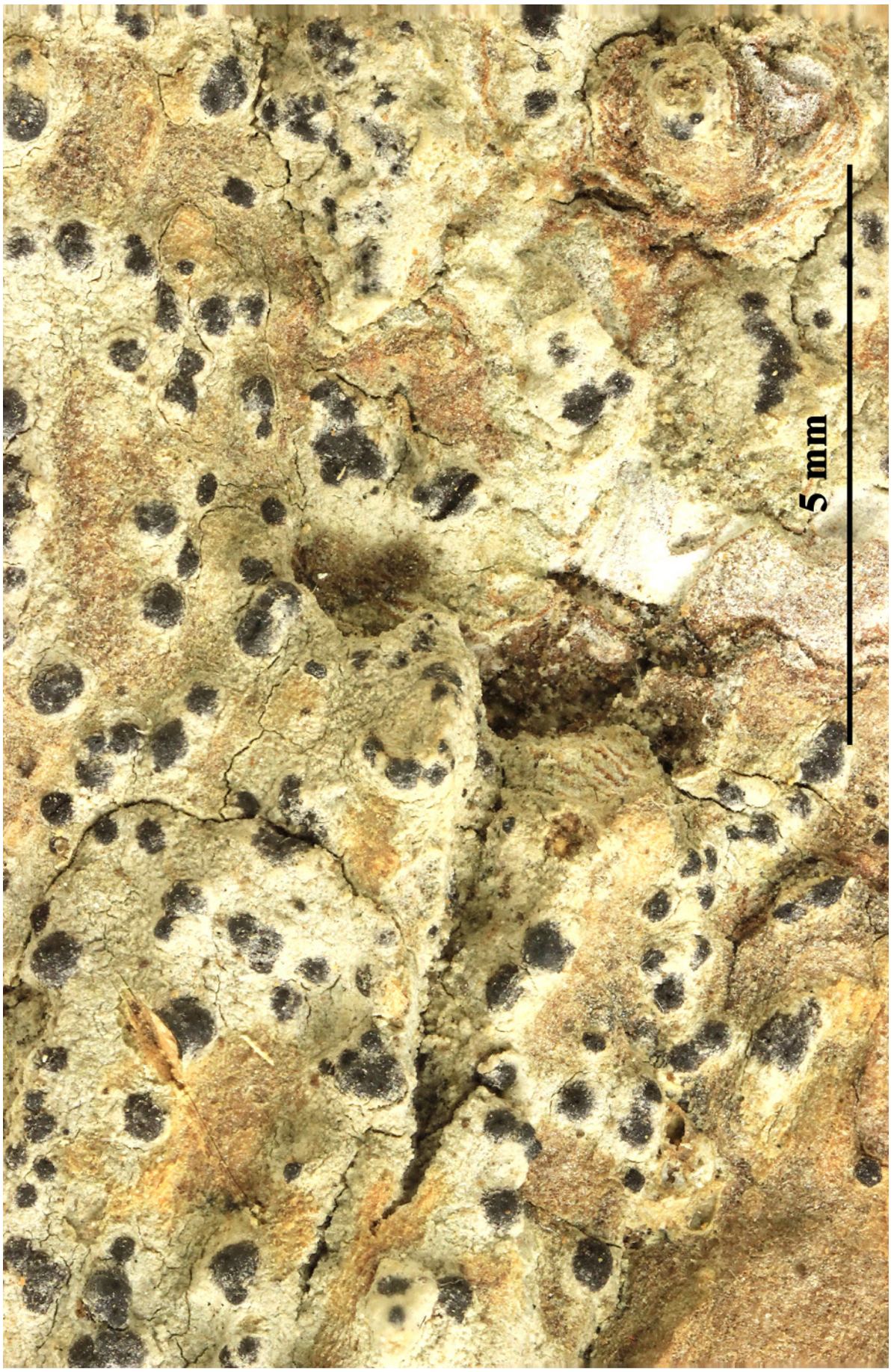


Anisomeridium biforme

Anisomeridium tuckeri R.C. Harris , in Tucker & Harris, Bryologist 83(1): 4 (1980)

[VZ1976], USA., Lousiana, East Baton Rouge paroecia: Burden Research Plantation, Essen Lane. Ad corticem *Nyssae aquaticae*. Leg. S. C. Tucker (no. 21221), 3.4.1980. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1976.

Species distincta Anisomeridin thallo UV + flavo (lichexanthone), macroconidiis cylindricis, 7.5-12 x 2-2.5 µm, et spores 15-20 x 5 6 µm. This species is very distinct in that it is the only species with cylindrical macroconidia; all of the other species of Anisomeridium have globose or subglobose macroconidia. Also lichexanthone occurs in only a few other species in the genus providing a ready means of identification if macroconidia cannot be located. Anisomeridium *tuckeri* is locally abundant in Louisiana and known from a few stations in Florida. It is a pleasure to name this species tor Dr. Shirley Tucker, whose careful, persistent collecting has brought to light many novel lichens.



Anisomeridium tuckeri

Anisomeridium tuckeri

Anthracothecium leucostomum (Ach.) Malme, Ark. Bot. 22A(no. 11): 32 (1929)
= *Pyrenula leucostoma* Ach. 1814

[VZ1627], USA. Lousiana. East Baton Rouge Paroecia Baton Rouge: Baird Drive, 20°22'45" septentr., 91°07'30" occid. Ad cortivem *Carpini carolinoanae*. Leg. S. C. Tucker (no. 15906). EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1627.

Lichenized fungus. Thallus crustose, smooth, continuous, olive green, sometimes with white dots (pseucocyphellae), corticate; vegetative diaspores absent; photobiont Trentepohlia. Ascomata perithecia, black, initially immersed, subglobose, 0.5-1.5 mm diam; ostiole apical; wall with abundant crystals; hymenium not inspersed with oil droplets; hymenial gel IKl + pale orange; paraphyses mostly unbranched. Asci 8-spored. Ascospores colorless to brown, ellipsoid, muriform, locules large, often angular, 27.5–52.5 × 12.5–15.0 µm. Pycnidia not reported. Chemistry. UV-; Secondary metabolites not detected. Substrate and Habitat. On bark on hardwood trees in shaded forests. Distribution. Southeastern North America, Caribbean, New Zealand; in North Carolina fount throughout.

EX MALME 1929:
Thallus tenuissimus, glaucescens vel isabellinus, laevigatus, subnitidus, KOH lutescens vel rubescens. A pothecia satis crebra, discreta, rarius 2-5 approximata et fere confluentia, semiimmersa, parte prominente depresse semiglobosa., circiter 0,5 mm lata, basi vulgo thallo tumidulo tecta, ceterum denudata, atra. opaca, ostiolo minuto, saepe pallescente. Perithecium integrum, nigricans, basi vulgo plus minusve applanata paullulo tenuius, haud anguloso-productum. Nucleus depresse-globosus, diam. vulgo 0,35-4 mm, haud oleoso inspersns, J sordide rubens (KOH, HNOs et J tractatus coeruleseens). Paraphyses subsimplices, usque 1 µm crassae. Asci paullulum ventricosi, usque 160 µm longi et 33 µm erassi. Sporae 8/ascus, irregulariter distiehae, ellipsoideo·oblongae, (22-)27-35(-43) µm longae, (11-)13-17(-19) 11 crassae, utroque apice rotundatae, media non constrietae, halone subnullo, loculis satis numerosis,septis transversis vulgo 7, stria obscuriore saepe notatis.

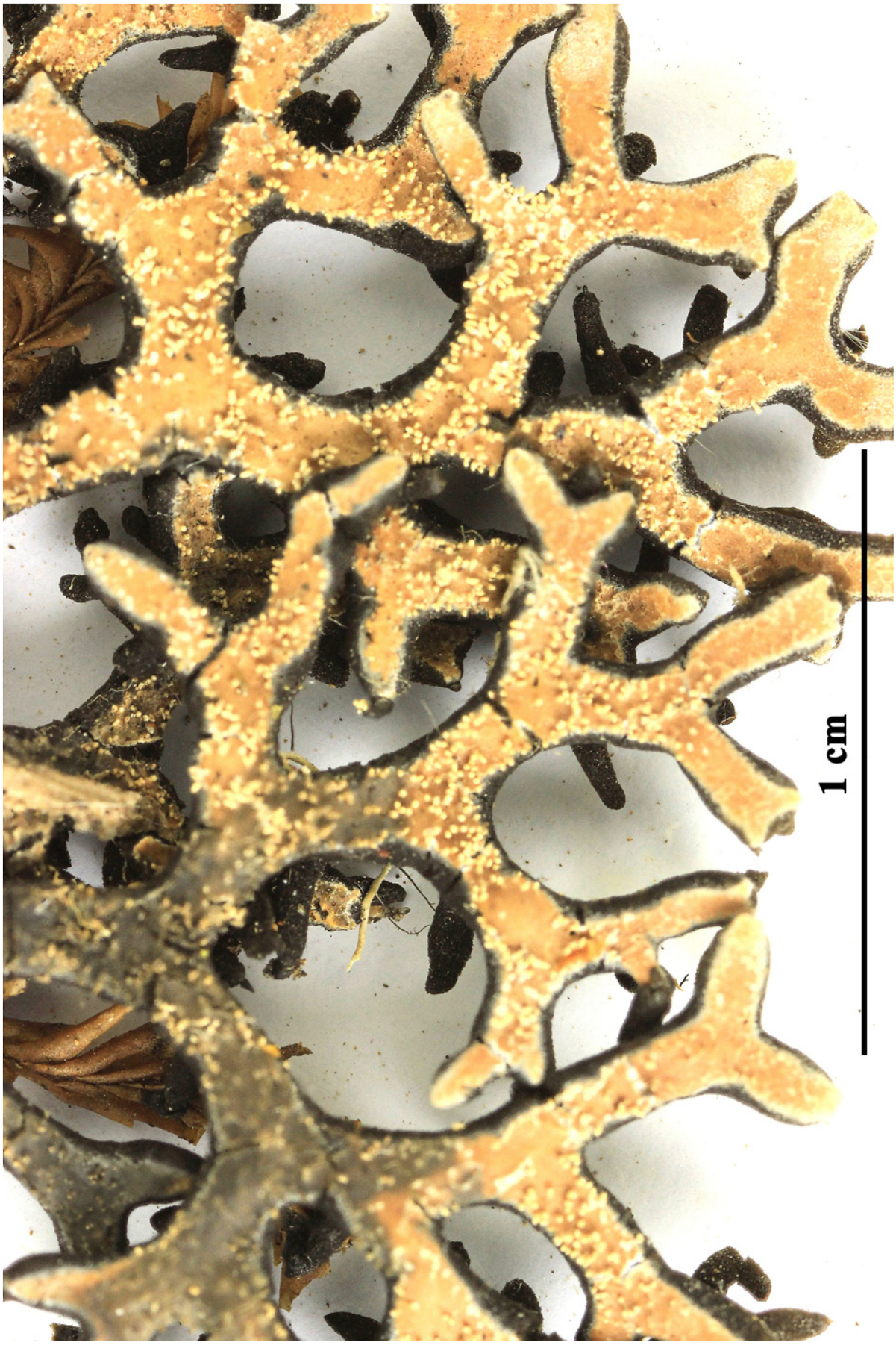
Anthracothecium leucostomum

Anthracothecium leucostomum

Anzia leucobates (Nyl.) Müll. Arg., Flora, Regensburg 72: 507 (1889)
= *Parmelia leucobates* Nyl. 1867

[VZ2118, 19770),Venezuela, Estado Merida, Sierra Nevada de Santo Domingo,páramo de Mucubají, prope Laguna Negra, 3500 m, ad arbores. Leg. M. López-Figueiras (18724) & H. Sipman, 24.01.2979. - HPTLC: p400/9: atranorin, divaricatic acid, anal. F. Schumm EX A.VěZDA: LICHENES SELECTI EXSICCATI NR. 2118.

Thallus foliose, surface olive-ochre in herbaria, below pale brown, laciniated, laciniae plane, dichotomously branched, 1.5 - 1 mm wide, with marginal isidia; isidia cylindrical, often much branched, 0.2 - 0.6, rarely 1.0 mm long, derived horizontally from the margin of lobes like denticules or spines; apex of lobes obtuse, dorsal surface pruinose at apex; ventral surface densely covered with blackish spongiotratum; chondroidal axis, often with spongiostratum. Chemistry: divaricatic acid and atranorin present. Habitat: bark of trees in paramo, disturbed mossy or open forest, montane scrub, and *Polylepis* forest at 2000 - 3500 m. Range: northern Andes of Venezuela, Colombia and Ecuador.



Anzia leucobates

Anzia leucobates

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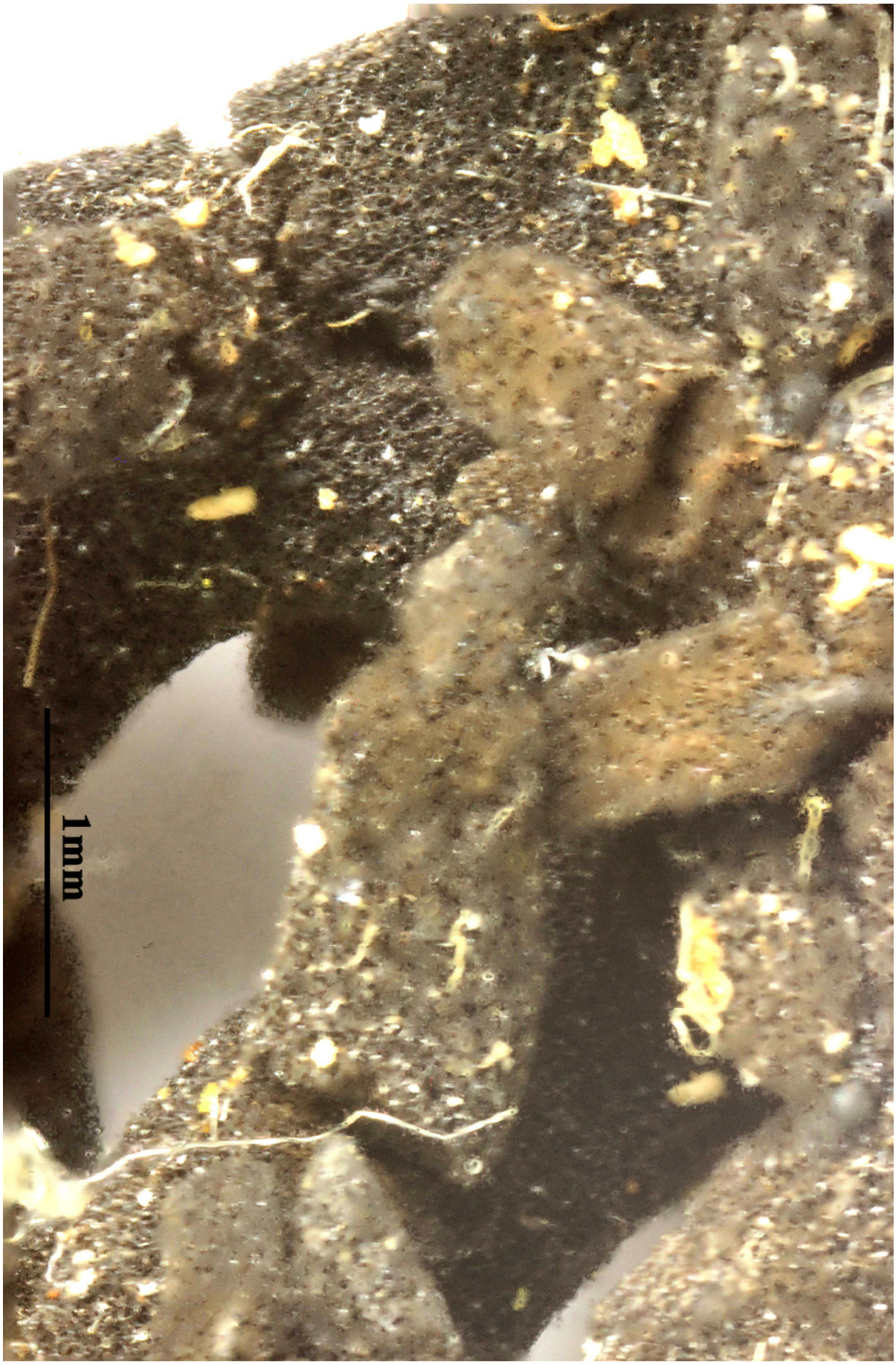
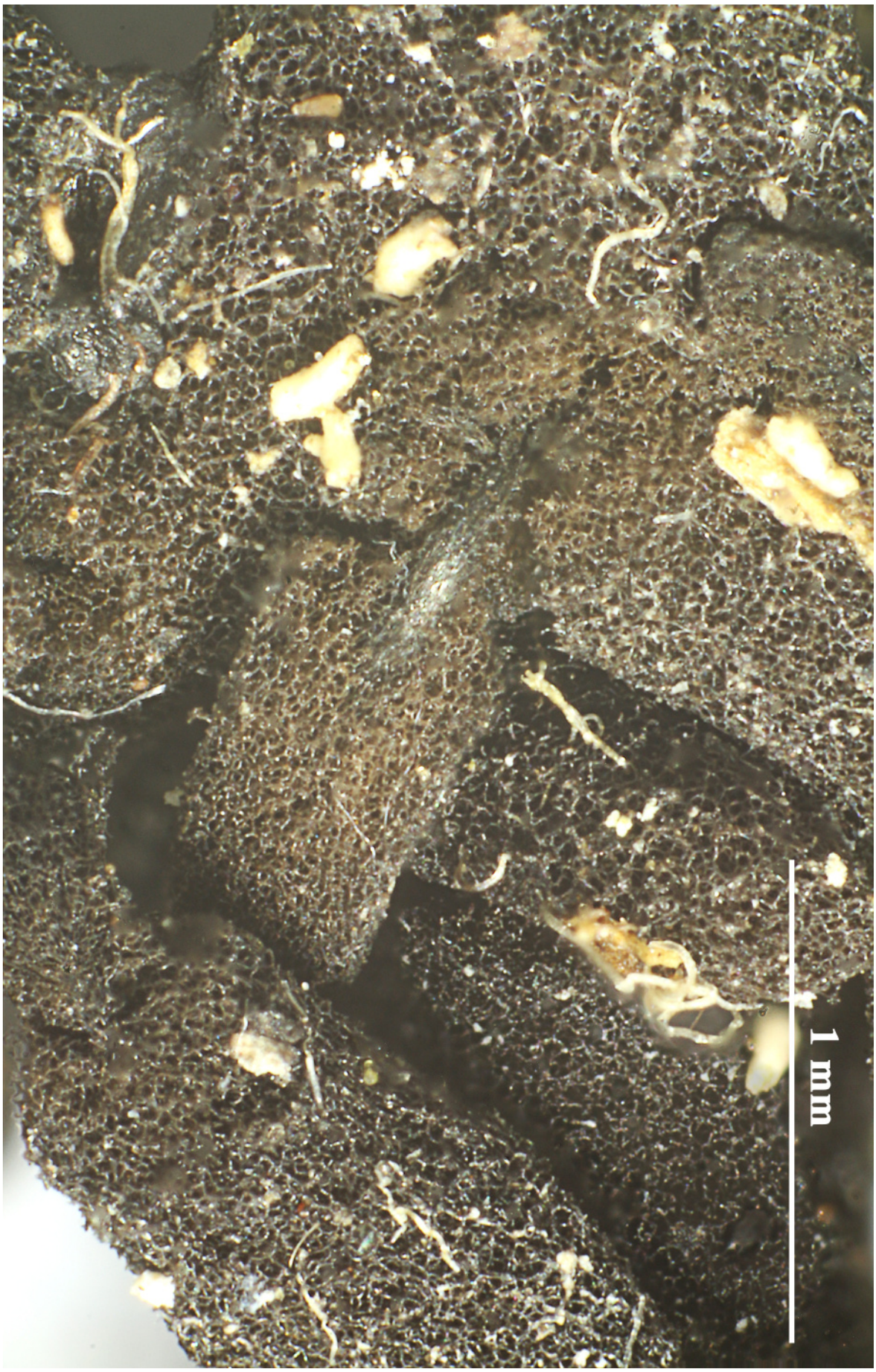
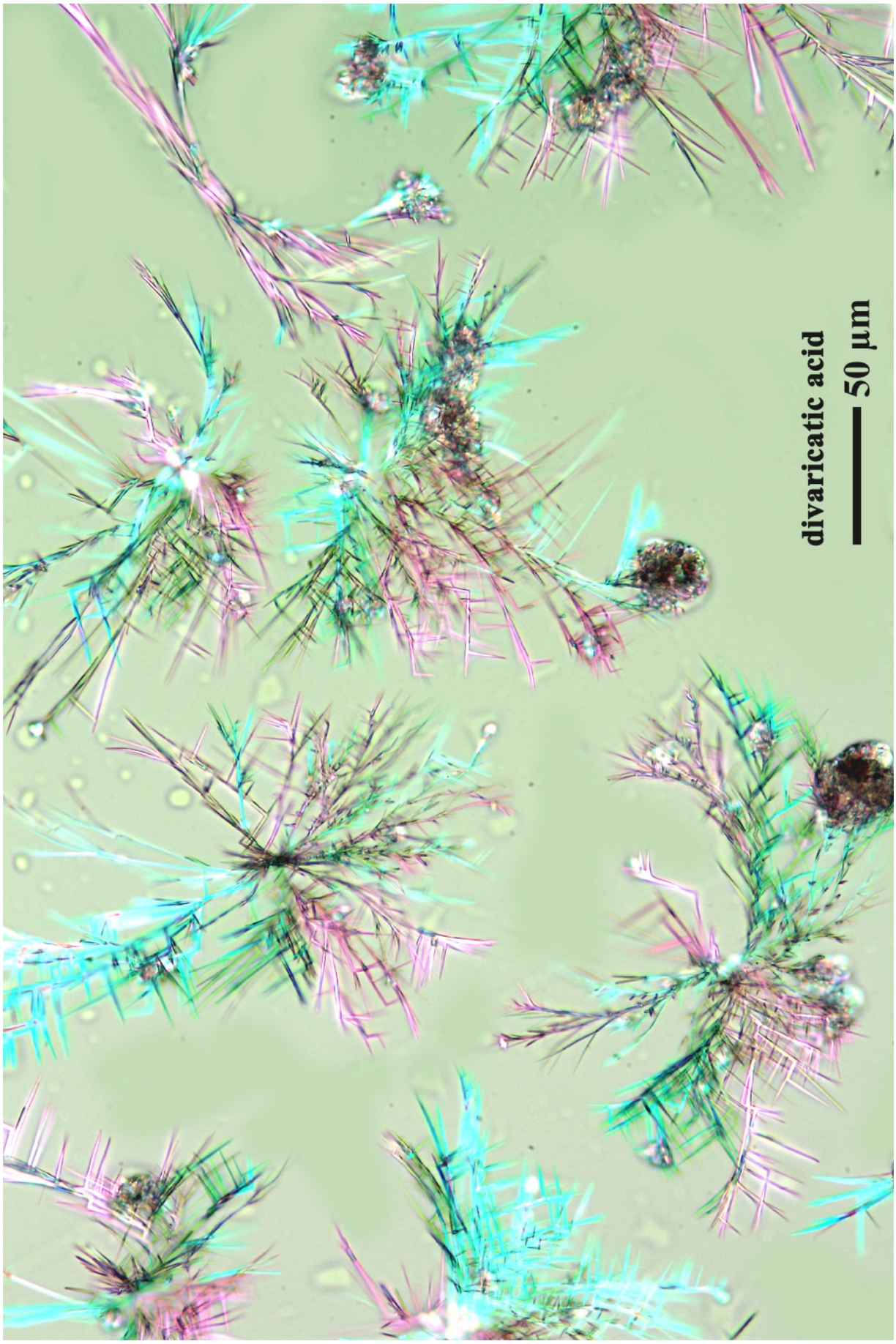
Anzia leucobates



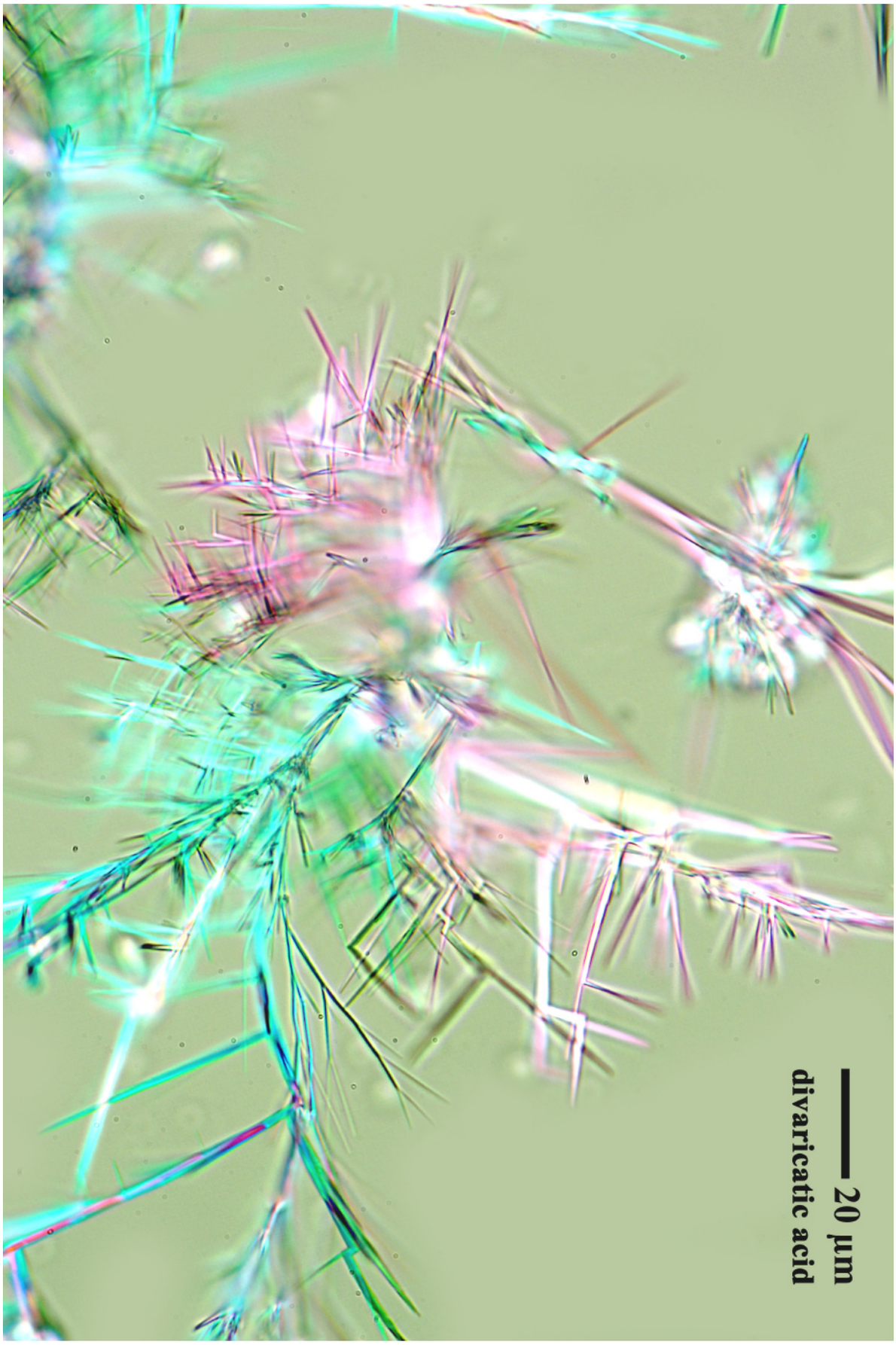
Anzia leucobates



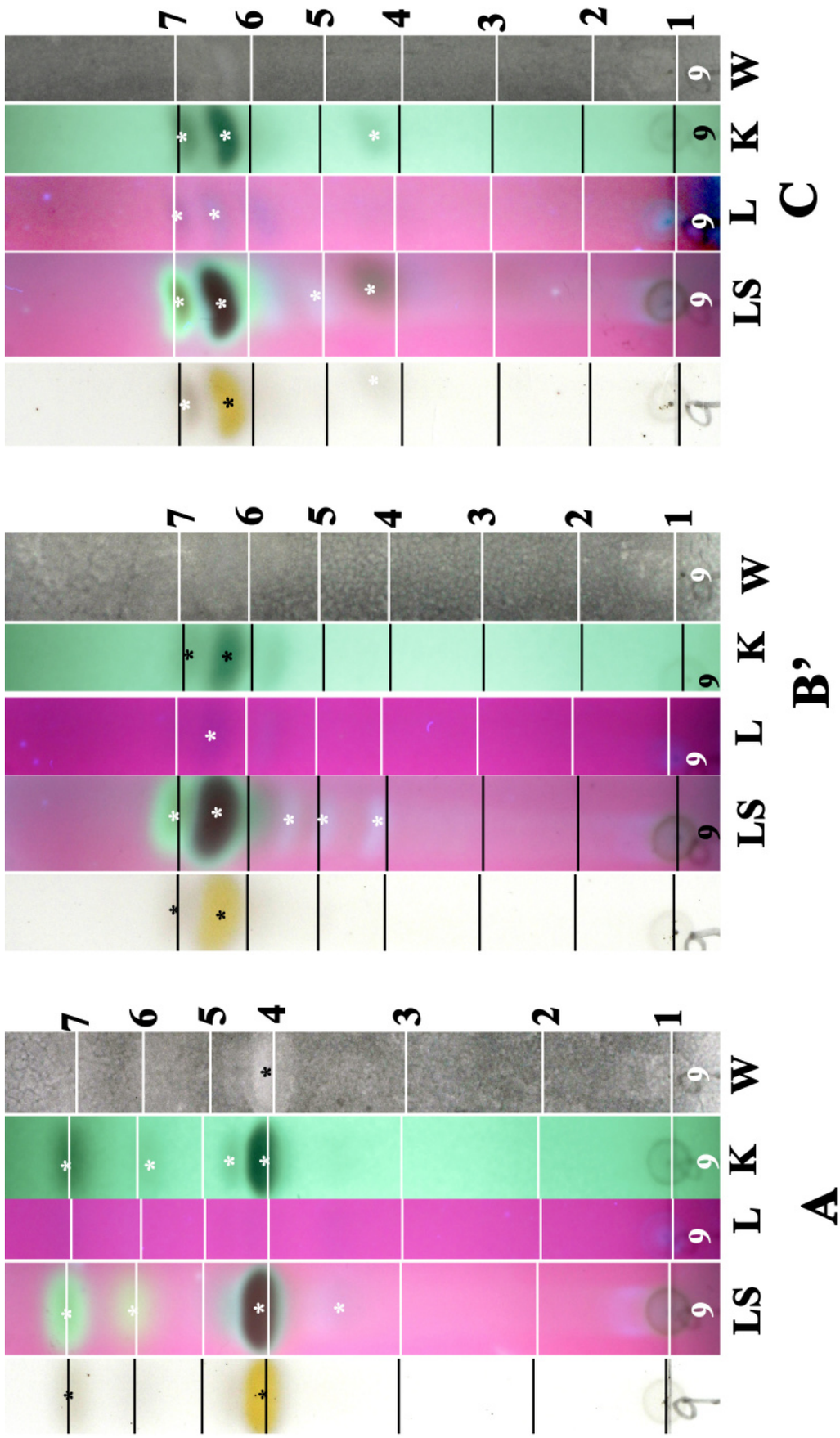
Anzia leucobates



Anzia leucobates



Anzia leucobates



[19770], p400/9

Anzia leucobates

Anzina carneonivea (Anzi) Scheid., in Vězda, Lichenes Selecti Exsiccati, Fascicle 73 (Průhonice): 5 (1982)
= *Varicellaria carneonivea* (Anzi) Erichsen, Rabenh. Krypt.-Fl., Edn 2 (Leipzig) 9(5.1): 688 (1936)
= *Gyalolechia carneonivea* Anzi [as 'carneo-nivea'], Atti Soc. ital. Sci. nat. 11: 163 (1868)
= *Pertusaria carneonivea* (Anzi) Vain., Meddn Soc. Fauna Flora fenn. 14: 24 (1888)

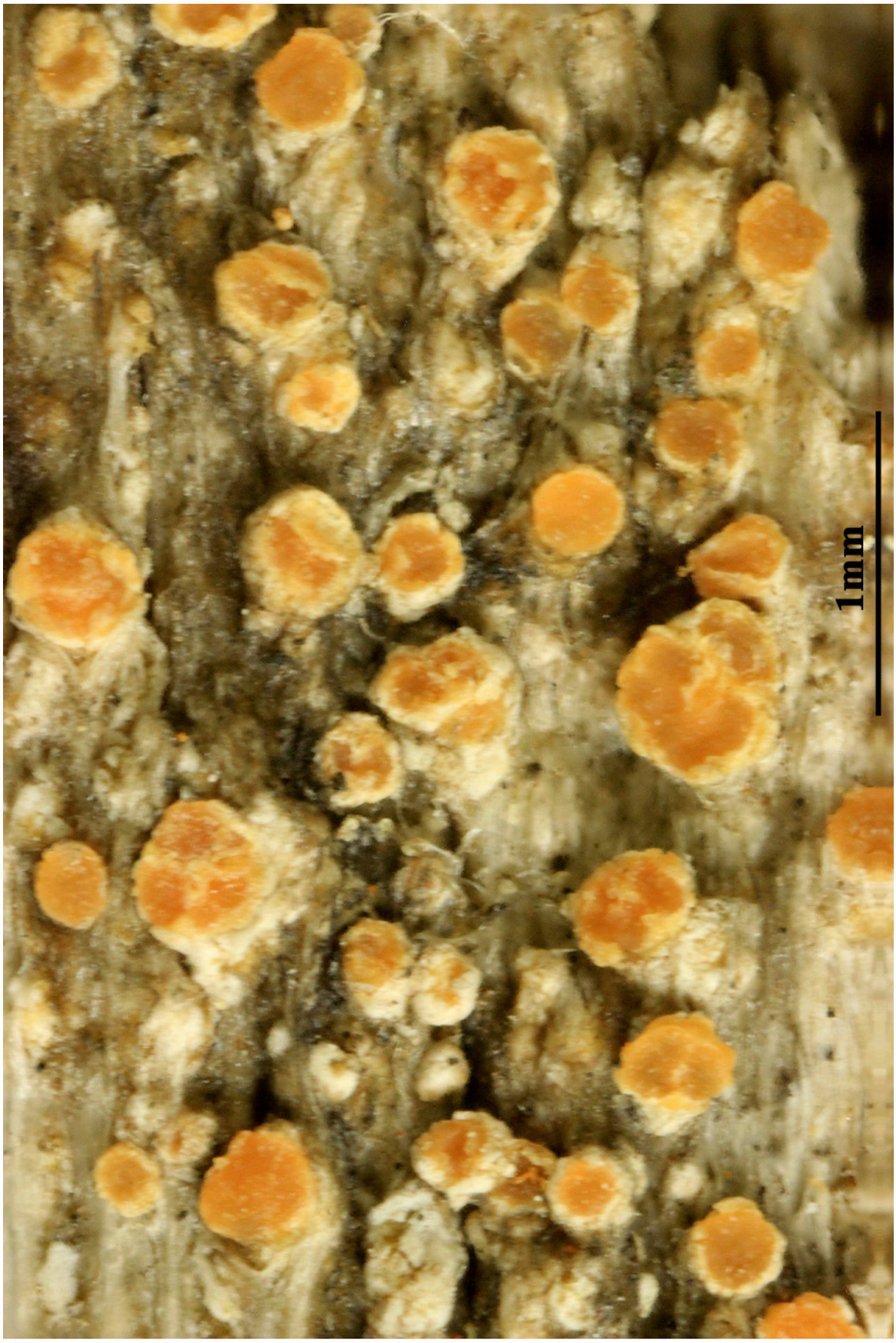
Austria. Salisburgia, Lungau, in alpibus "Schladminger Tauern" dictis, in valle dicta Weisspriachtal, inter Kühbarnhütte et Kühbarnalm, 1450 m. Ad lignum putridum et supra musos. Leg. J. Poelt & C. Scheidegger, 8.9.1981. EX A, VěZDA: LICHENES SELECTI EXSICCATI NR. 1815.

[VZ1066], Suecua. Vermlandia. Södra Finnskoga Paroecia, Ivanna, 500 m. Supra muscos ad saxa. Leg. S. W. Sundell (no. 8166), 4.7.1972. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1066.

Thallus crustose, whitish grey to pale grey-green, thin, most often hemiendosubstratic, more or less continuous, without a distinct prothallus, forming large patches especially when growing on rotting wood. Apothecia very common, 0.12-0.3 mm across, immersed in thalline warts, initially single, then becoming confluent, with a yellowish-brown to orange, flat disc and a thin, smooth, paler thalline margin. Thalline exciple more or less developed, especially in older apothecia; proper exciple poorly developed, colourless, of periclinally arranged hyphae; epithecium yellowish brown, K-, C+ red, KC+ red; hymenium colourless, 40-80 µm high, I-, K/I-; paraphysoids c. 1.5 µm thick, branched and anastomosing, the apical cells not swollen; hypothecium colourless, up to 50 µm high. Asci (6-)8-spored, subcylindrical, unitunicate, the apex not thickened, I-, surrounded by an amyloid ring and surmounted by a thin amyloid cap, 70-80 x 15-20 µm. Ascospores 1(-3)-septate, hyaline, ellipsoid to narrowly ellipsoid, thin-walled, with a thin halo, (11-)13-15(-18) x 4.5-7.5 µm. Pycnidia dark, semi-immersed to projecting, 90-160 µm in diam., the ostiole at first punctiform, then enlarged. Conidia pleurogenous, short-bacilliform, 3.5-4.5(-5) x c. 0.7 µm. Photobiont chlorococcoid (Asterochloris). Spot tests: thallus K+ yellowish, C-, KC-, P-; apothecia C+ and KC+ red. Chemistry: apothecia with gyrophoric acid (major) and traces of lecanoric acid. - Note: on acidic substrata such as bark, especially of conifers, wood, plant debris, moribund bryophytes, in the understory of upper montane moist forest, and among shrubs in the subalpine belt of the Alps.

Description of ***Anzina*** Scheidegger (gen. nov.):
Prothallus vix evolutus. Thallus tenuis sine pigmento, sine soraliis isidiisque. Apothecia solitaria vel complura in verrucis. Excipulum non evolutum. Paraphyses laxae sed palmato-ramosae et anastomosantes, apicibus non incrassatis. Asci functionaliter unitunicati, oblongi vel subclavati. Tholus satis amyloideus. Sporae incolores, abgustatae-ellipsoideae vel subfusiformes, cellulis 2 ad 4, parietibus subcrassis. Species typica *Gyalolechia carneonivea* Anzi.

Anzina carneonivea

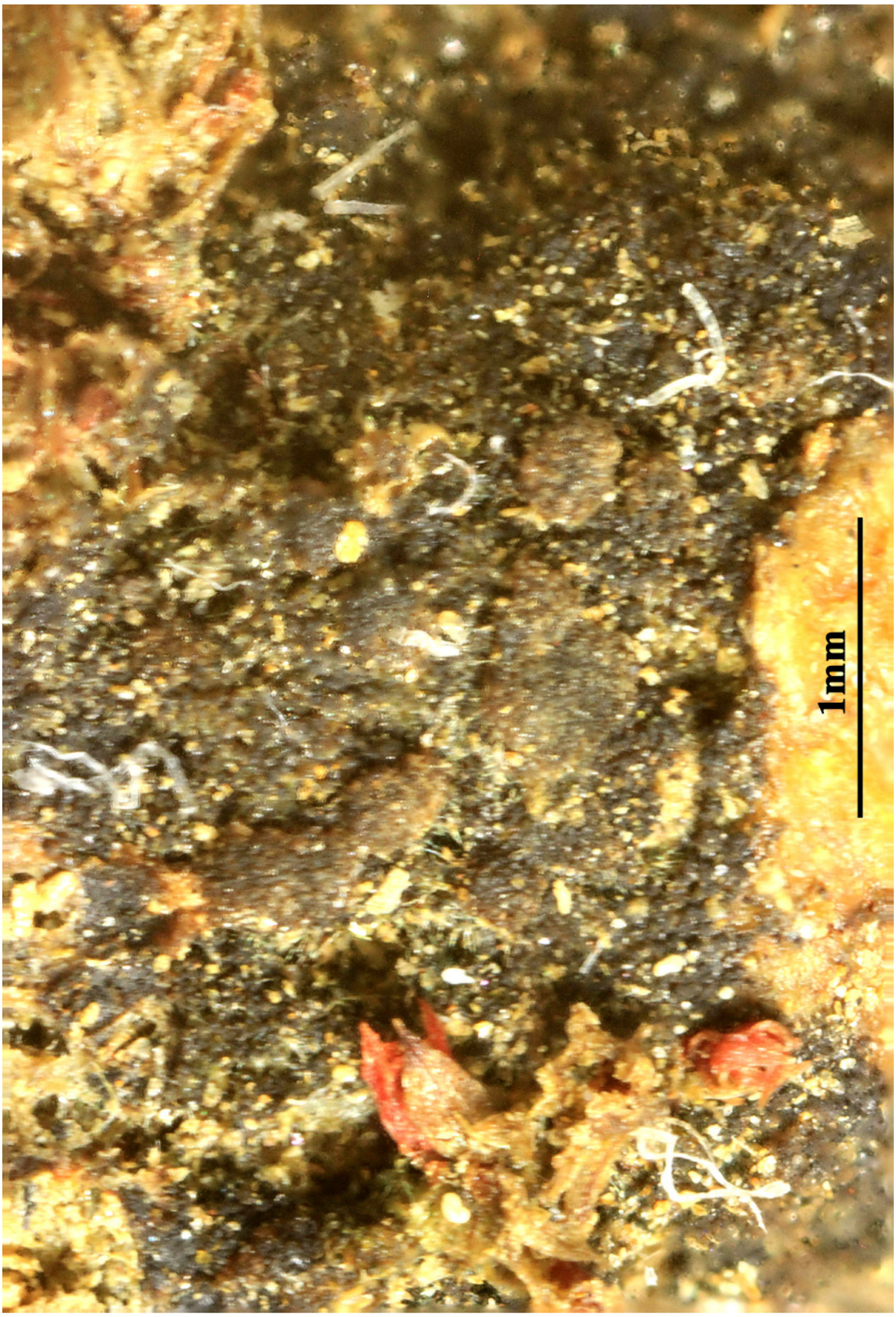


Anzina carneonivea

Aphanopsis coenosa (Ach.) Coppins & P. James, Lichenologist 16(3): 248 (1984)
= *Biatora humigena* (Taylor) Walt. Watson, Census Catalogue of British Lichens: viii (1953)
= *Biatora uliginosa* f. *coenosa* (Ach.) Fr., Lich. eur. reform. (Lund): 275 (1831)
= *Biatora uliginosa* var. *coenosa* (Ach.) Fr., Lich. eur. reform. (Lund): 275 (1831)
= *Collema coenosum* Ach., Lich. Univ.: 629 (1810)
= *Lecidea humigena* Taylor, London J. Bot. 6: 150 (1847)
= *Lecidea praecox* Vězda, Preslia 39: 1 (1967)
= *Lecidea uliginosa* var. *coenosa* (Ach.) Link, Grundr. Krauterk. 3: 203 (1833)
= *Lichen furvus* * *coenosum* (Ach.) Lam., Encycl. Méth., Bot. Suppl. (Paris) 3(2): 414 (1813)

[VZ2347], Austria. Styria: Gleinalpe, Oswaldgraben prope Kainach, 850 m. Ad terram in fossis viae silvaticae. Legt. J. Poelt & H. Pittino, 7.5.1989. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2347.

Thallus crustose, poorly delimited, dark green to green-brown, gelatinous when wet, pseudoparenchymatous, consisting of goniocysts surrounded by hyphae, the outer ones with brown-pigmented walls. Apothecia micareoid, 0.2-0.6 mm across, with a brown to brown-black, strongly convex disc, without a distinct proper margin. Proper exciple very much reduced, of a few thread-like hyphae resembling paraphyses, colourless to brownish; hymenium colourless, with red-brown vertical streaks reacting K+ dark brown, 150-200 µm high, I- (but appearing I+ blue due to the amyloid ascal walls); paraphyses simple or rarely forked in upper part, arranged in densely entangled clusters, with conspicuous septa, 2-3.5(-4) µm thick, not surrounded by a distinct hymenial gel; hypothecium pale brown, scarcely distinguishable from the hymenium. Asci 8-spored, cylindrical-clavate, with relatively thick, multi-layered, amyloid walls, the apical dome with a broad, K/I+ blue plug flattening out at maturity, opening apically with an irregular fissure. Ascospores 1-celled, hyaline to pale brown when overmature, broadly ellipsoid, sometimes apiculate at one or both ends, 25-38 x 13-18 µm, thin-walled, often guttulate. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on humid, bare, clayey or fine-grained sandy soil on track sides or ditch margins in deciduous woodlands, with optimum in the montane belt. Easy to overlook.



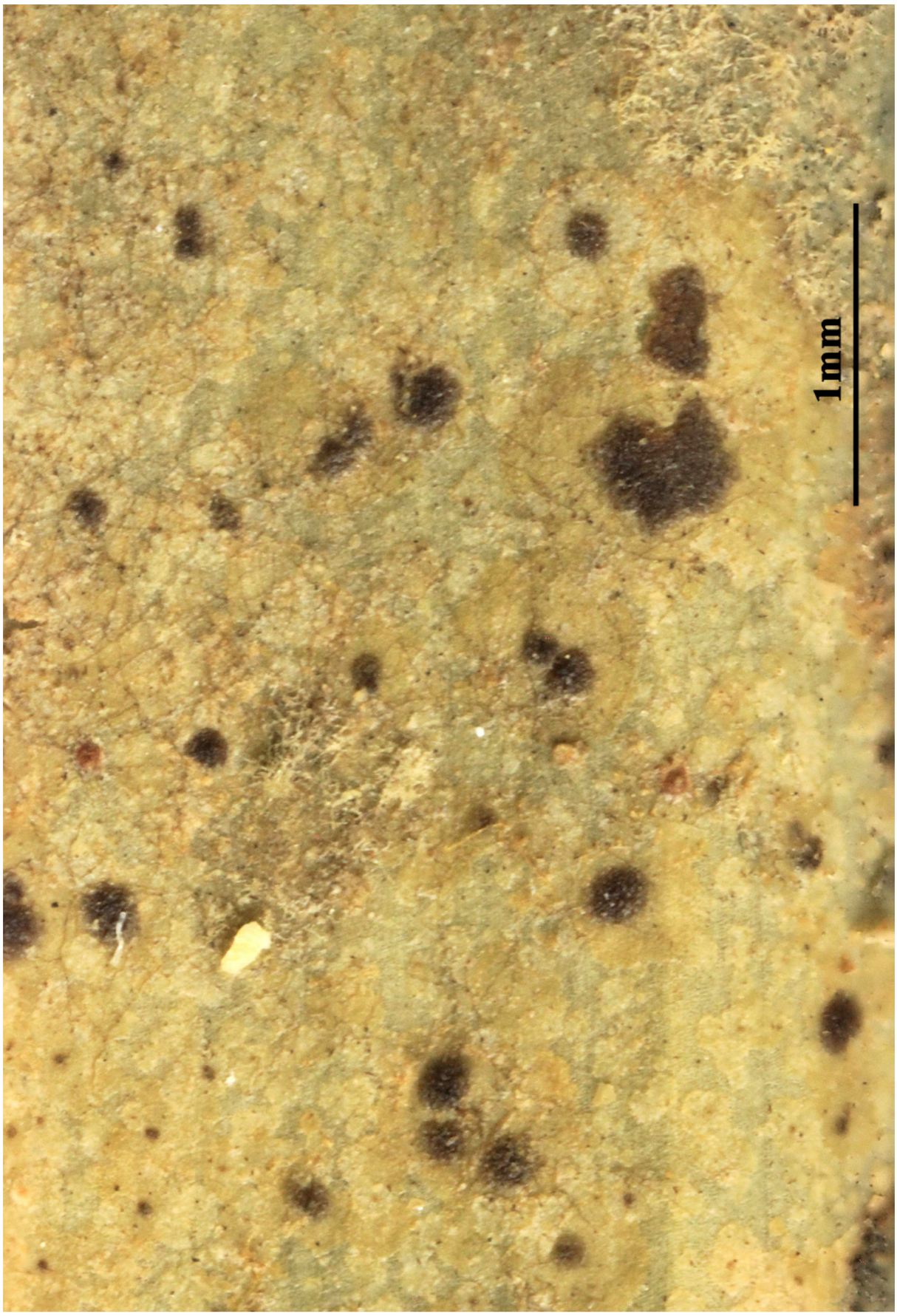
Aphanopsis coenosa

Aphanopsis coenosa

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

[VZ2027], Brasilia. São Paulo. Ilha de São Sebastiao: 130 km ad orientem a Sao Paulo, Morro das Tacas, 200 m. Foliicola, in pluviisilva umbrosa in ripa fluminis. Leg. K. Kalb & G. Plöbst, 21.4.1978, det. A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2027.

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 x 4–5 µm, 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 x 16–13 µm, I–, KI–. Ascospores narrowly obovate, 2-septate, without constrictions at septa, 11–16 x 3–5 µm, distal cell enlarged, colorless. Conidiomata not observed. Chemistry: no substances detected by TLC.



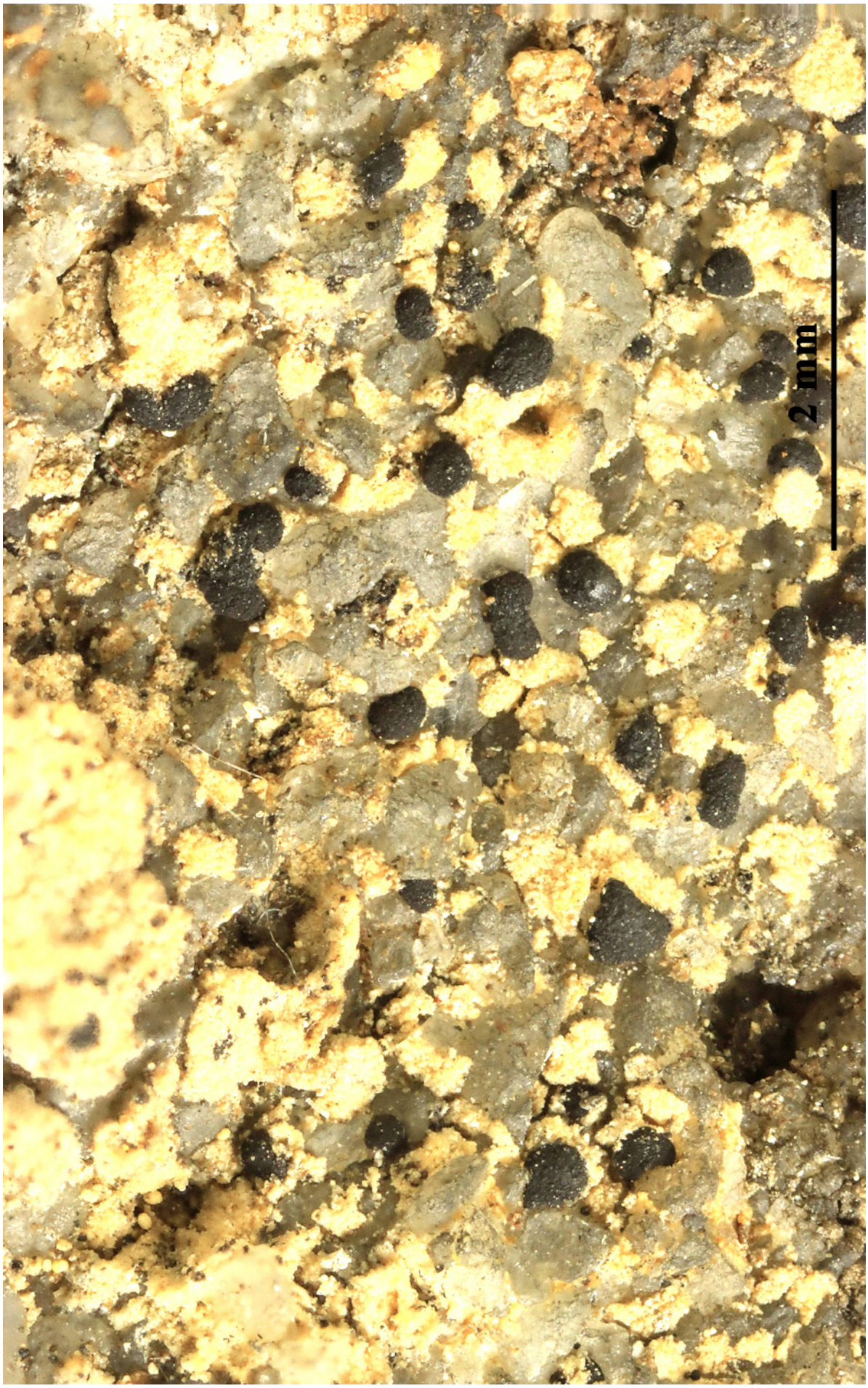
Arthonia accolens

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]

[VZ1076], Bohemoslovacia. Bohemia. Distr. Litomyšl: in monte Mašatale prope pagum Proseč, 500 m. Ad saxa arenacea umbrosa. Leg. A. Vězda, 19.4.1972. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1076.

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

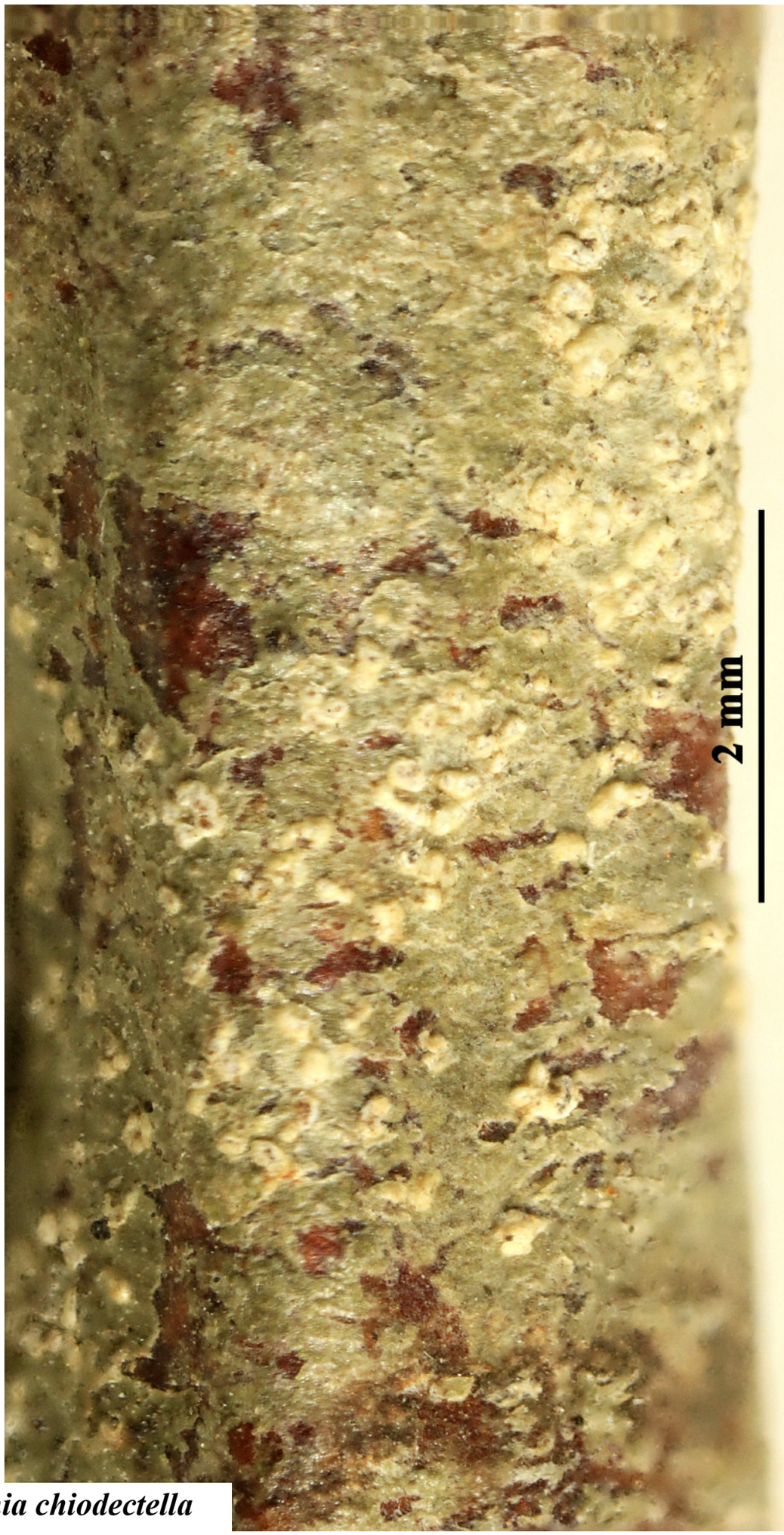
Arthonia chiodectella Nyl., Flora, Regensburg 52: 125 (1869)
=*Arthonia impolita* (Hoffm.) Borrer,
= *Arthonia impolita f. impolita* (Hoffm.) Borrer,
= Arthonia impolita f. subtilis (Erichsen) Zahlbr.
= *Arthonia impolita* var. *chiodectonoides* Tuck.
= *Arthonia impolita var. fuscescens* Erichsen
= *Arthonia impolita var. impolita* (Hoffm.) Borrer
= *Arthonia impolita var. macrospora* Erichsen
= *Arthonia pruinata* (Pers.) A. L. Sm.
= *Arthonia pruinosa* Ach.
= *Arthonia pruinosa* var. *pruinosa* Ach.
= *Arthonia pruinosa var. spilomatica* Ach.
= *Lecanactis impolita* (Ehrh.) Fr.
= *Leprantha impolita* (Ehrh.) Körb.
= *Lichen impolitus* Ehrh.
= *Lichen pruinatus* Pers.
= *Opegrapha impolita* (Ehrh.) M. Choisy
= *Pachnolepia impolita* (Ehrh.) A. Massal.
= *Parmelia impolita* (Ehrh.) Ach.
= *Urceolaria impolita* (Ehrh.) Link
= *Verrucaria impolita* (Ehrh.) Hoffm.

[VZ1626], USA. Lousiana, East Baton Rouge Paroecia. Baton Rouge: Baird Drive, 30°22'45" septentr., 81°07'30" occid. Ad corticem in ramulis *Pyracanthae coccineae*. Leg. S. C. Tucker (no. 13745), 25.1.1975. Ex A. Vězda; Lichenes Selecti Exsiccati Nr. 1626.

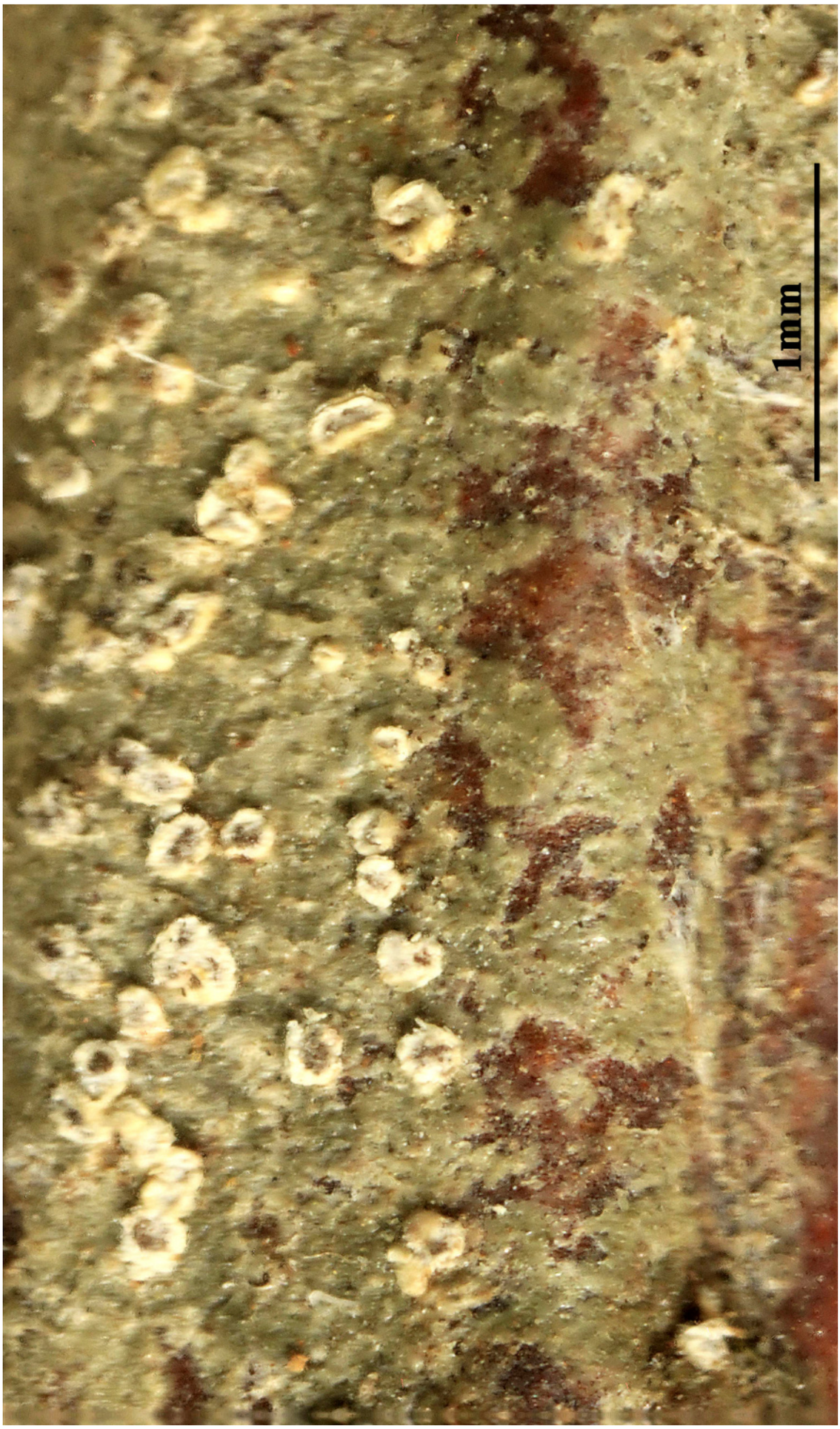
Thallus: effuse, rimose, cracked, 0.1-0.3 mm thick photobiont: Trentepohlia Ascomata: rounded or angular, immersed to erumpent or sessile, up to 1 mm wide disc: pale gray due to white pruina of calcium oxalate, underneath reddish brown; peripheric hyphal structures: with crystals between hyphae; epihymenium with pale brown gelatinous matrix, c. 15 µm (pruina on top ca. 20 µm) thick, sometimes with airfilled holes; hyphal tips not distinctly thickened, anastomosing, widely spaced and pale reddish brown, to 2 µm thick; hymenium hyaline to pale reddish brown, 45-60 µm tall; paraphysoids branched and anastomosed, c. 1.5 µm wide; subhymenium hyaline, 90-150 µm thick; asci clavate, of Arthonia type, 40-55 x 17-25 µm, 8-spored; ascospores persistently hyaline, 3-5-septate, narrowly obovate, 14-17 x 6-8 µm, septal ontogeny bi-directional, lacking a distinct epispore. Pycnidia not observed.

Chemical reactions thallus and ascomata C- or C+ red; thallus and subhymenium I+ pale blue; ascomatal gels I+ blue rapidly turning red, KI+ blue; ascus tholus KI-. Secondary metabolite: arthoniaic acid (and calcium oxalate crystals often present in ascomata and thallus). Substrate and ecology: on young twigs or on isolated, old broad-leafed trees, more common in humid areas, but avoiding direct rainfall and in habitats with somewhat lower humidities. World distribution: widespread in the Mediterranean area parts of Europe and north Africa, and North America. Sonoran distribution: southern California (Channel Islands and mainland), Baja California, and Baja California Sur. Notes: *Arthonia pruinata* is perhaps the most common Arthonia species in the Sonoran Desert area. It is also rather variable in its morphology. Its thallus color may vary from pale yellow to white. *Arthonia pruinata*, as accepted here, also containing morphs with a C- reaction, because no clear morphological characters of the mycobiont distinguish these forms and because the C+ red reaction can be variable or restricted to the apothecia or their surrounding thallus parts.

Arthonia chiodectella



Arthonia chiodectella

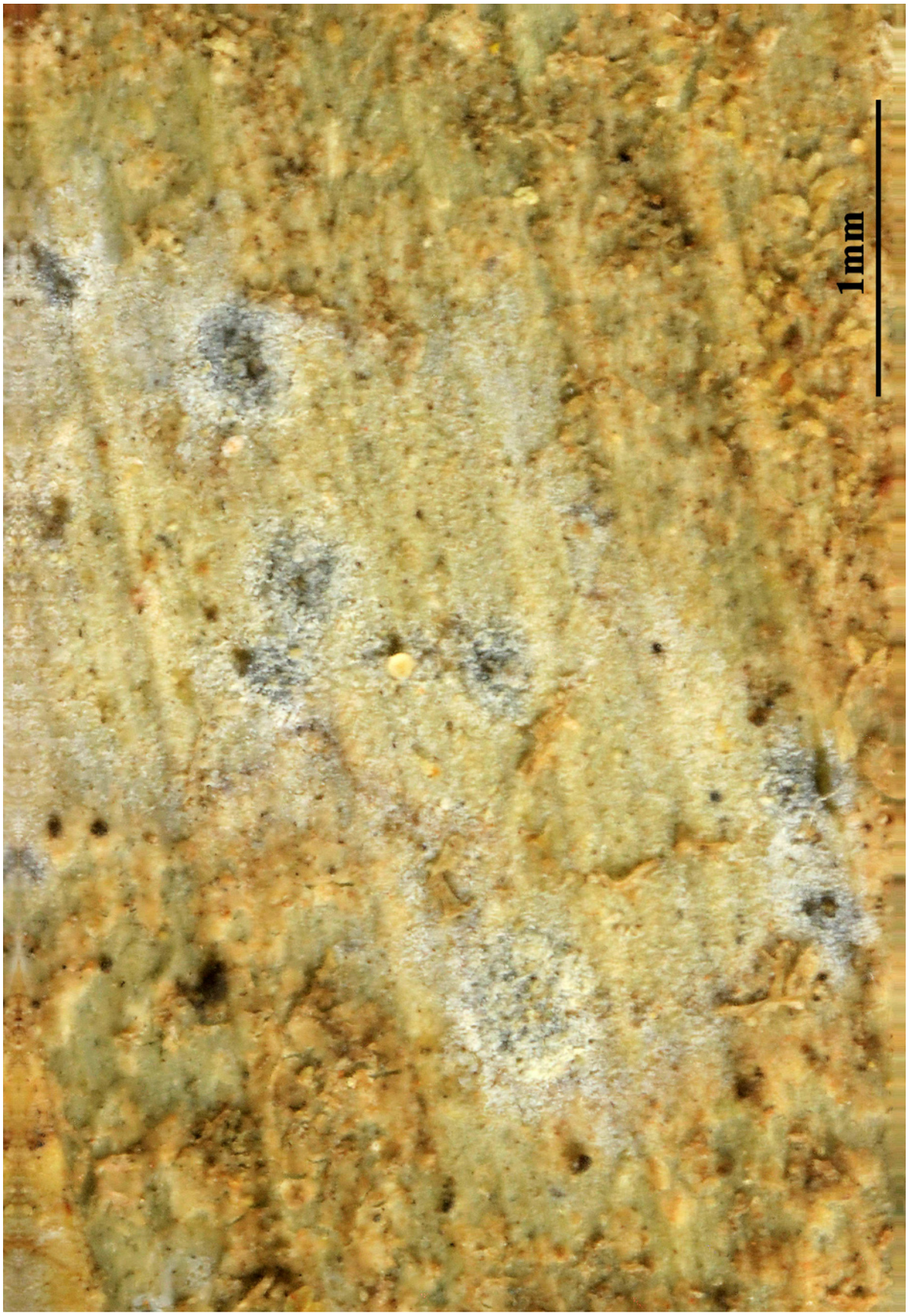


Arthonia chiodectella

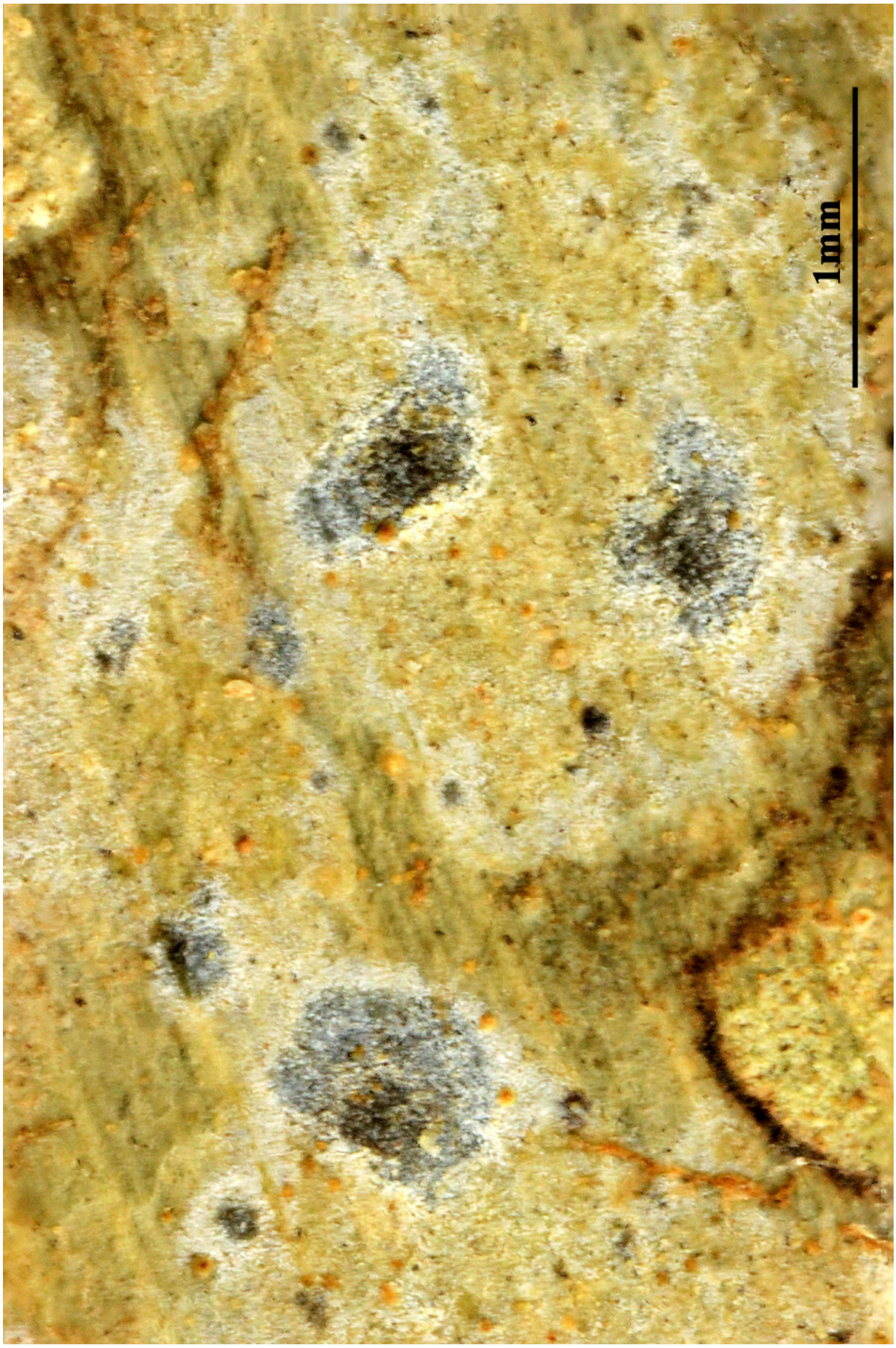
Arthonia cyanea Müll. Arg., Flora, Regensburg 64(15): 233 (1881)
= *Arthoniopsis cyanea* (Müll. Arg.) Müll. Arg., Lich. Epiph. Novi: 17 (1890)

[VZ1777], Brasila. São paulo, Serra do Mar: Serra do Garrãozonho, inter Moji das Cruzes et Bertioga, 850 m. Ad folia *Palmae*, in pluviisilva virginea, Leg. K. Kalb, 28.10.1978. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1777.

Thallus dispersed into rounded, centrally confluent patches, smooth, 5–10(–20) mm across, very thin (5–12 µm), ecorticate, pale greenish grey, matt. Photobiont cells rectangular, 8–16 x 3–6 µm, in radiate plates. Ascomata sharply delimited, hardly raised above thallus level, rounded to angular, 0.2–0.9mm diam. and 30–45 µm high, dark bluish to greenish grey but with white pruina causing distinctly blue appearance. Hypothecium 2–4 µm high, colorless to brown, I+ yellow, KI+ pale yellow. Epithecium formed by single layer of periclinal hyphae below which an irregular layer of colorless to sordid green granules (dissolving in K) is formed, 5–10 µm high, I+ orange-yellow, KI+ pale yellow. Hymenium 25–35 µm high, colorless, I+ orange-red, KI+ yellow. Asci obovate to globose, 18–30 x 15–25 µm, I–, KI+ blue in inner parts of tholus and aeruginous along outer walls. Ascospores clavate, 2–4-septate, with constrictions at septa, 11–25(–29) x 3.5–6.5(–8) µm, distal cell enlarged, colorless to greyish brown. Conidiomata pycnidia, applanate, rounded, 0.1–0.2 mm diam., dark grey to greyish black. Conidia of at least 2 types present in different individuals: [1] bacillar, non-septate, (6–)10–13 x 0.6–0.8 µm, colorless (microconidia?); [2] acicular, 1–3(–5)-septate, 10–24 x 0.7–0.9 µm, colorless (macroconidia). Chemistry: unknown substance (possibly fatty acid) detected in solvent A (RF ≈ 70, acid spray color pale yellow, post-acid long wave UV yellow-blue); the same substance also occurs in the two species of *Amazonomyces*. Three infraspecific taxa are distinguished in this species.



Arthonia cyanea



Arthonia cyanea

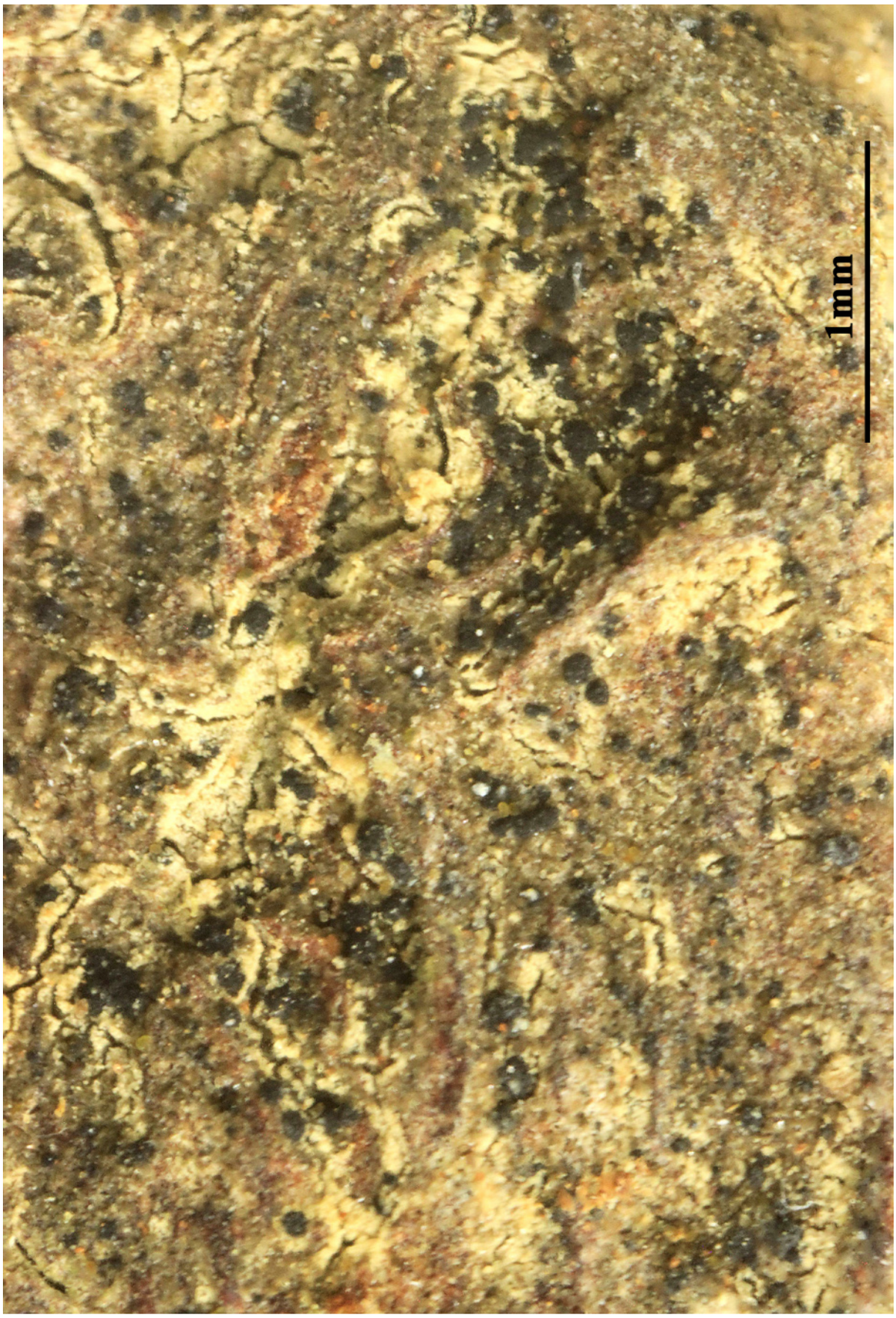
Arthonia exilis (Flörke) Anzi, Cat. Lich. Sondr.: 94 (1860)
= *Allarthonia exilis* (Flörke) Sandst., Abh. naturw. Ver. Bremen 21(1): 46 (1912)
= *Abrothallus exilis* (Flörke) A. Massal., Ric. auton. lich. crost. (Verona): 88 (1852)
= *Arthonia vagans* var. *exilis* (Flörke) Blomb. & Forssell, Enum. Pl. Scand.: 103 (1880)
= *Buellia exilis* (Flörke) Kremp., Denkschr. Kgl. Bayer. Bot. Ges., Abt. 2 4: 202 (1861)
= *Catillaria exilis* (Flörke) A. Massal., Geneac. lich. (Verona): 19 (1854)
= *Coniangium exile* (Flörke) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 19: 627 (1869)
= *Lecidea exilis* (Flörke) Nyl., Act. Soc. linn. Bordeaux 21(4): 382 (1857) [1856]
= *Lecidea lignaria* var. *exilis* (Flörke) Schaer., Enum. critic. lich. europ. (Bern): 135 (1850)
= *Lecidea synothea* var. *exilis* Flörke, Deutsche Lich. 7: 5 (no. 187) (1821)
= *Opegrapha dispersa* var. *exilis* (Flörke) Chevall., Hist. Graphidées: 38, tab. VIII, fig. 2 (1824)

[VZ1701], Magna Britannia. Anglia, Hertfortshire, 2.5 km ad orientem versus a Wheathampstead, prope River Lee, 75 m. Ad corticem *Ulmi*. Leg. B. J. Coppins (no. 4722), 23.3.1980. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1701.

Thallus crustose, inconspicuous, more or less continuous, grey-brown or olive-brown, of brownish hyphae loosely growing between the algal cells, but tightly arranged around them. Apothecia arthonioid, black, 0.15-0.4 mm across, irregular in shape but not much longer than wide (not lirelliform), with a convex, smooth disc and a poorly visible proper margin. Proper exciple absent; epithecium grey-brown, of branched hyphae in a gelatinous matrix, granulose; hymenium colourless to very pale red-brown, 40-60 µm high, hemiamyloid, I+ red, K/I+ blue; paraphysoids slender, c. 1 µm thick, the terminal parts extending periclinally along the surface of the epithecium, the apical cells brown-black-capped and 3-4.5 µm wide; hypothecium colourless to pale olive brown. Asci 8-spored, clavate-subglobose, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, the tholus with a K/I+ ring and pale blue flanks, 30-40 x 18-22 µm. Ascospores 1-septate and constricted at septum, with unequal cells, hyaline, ovoid, (10-)12-14(-16) x 3.5-5(-6) µm, with a very thin gelatinous sheath reacting K/I-.

Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a mainly temperate species found on base-rich and soft bark, especially of *Sambucus*, and on young twigs of deciduous trees in sheltered situations, with optimum in the submediterranean belt.

Arthonia exilis



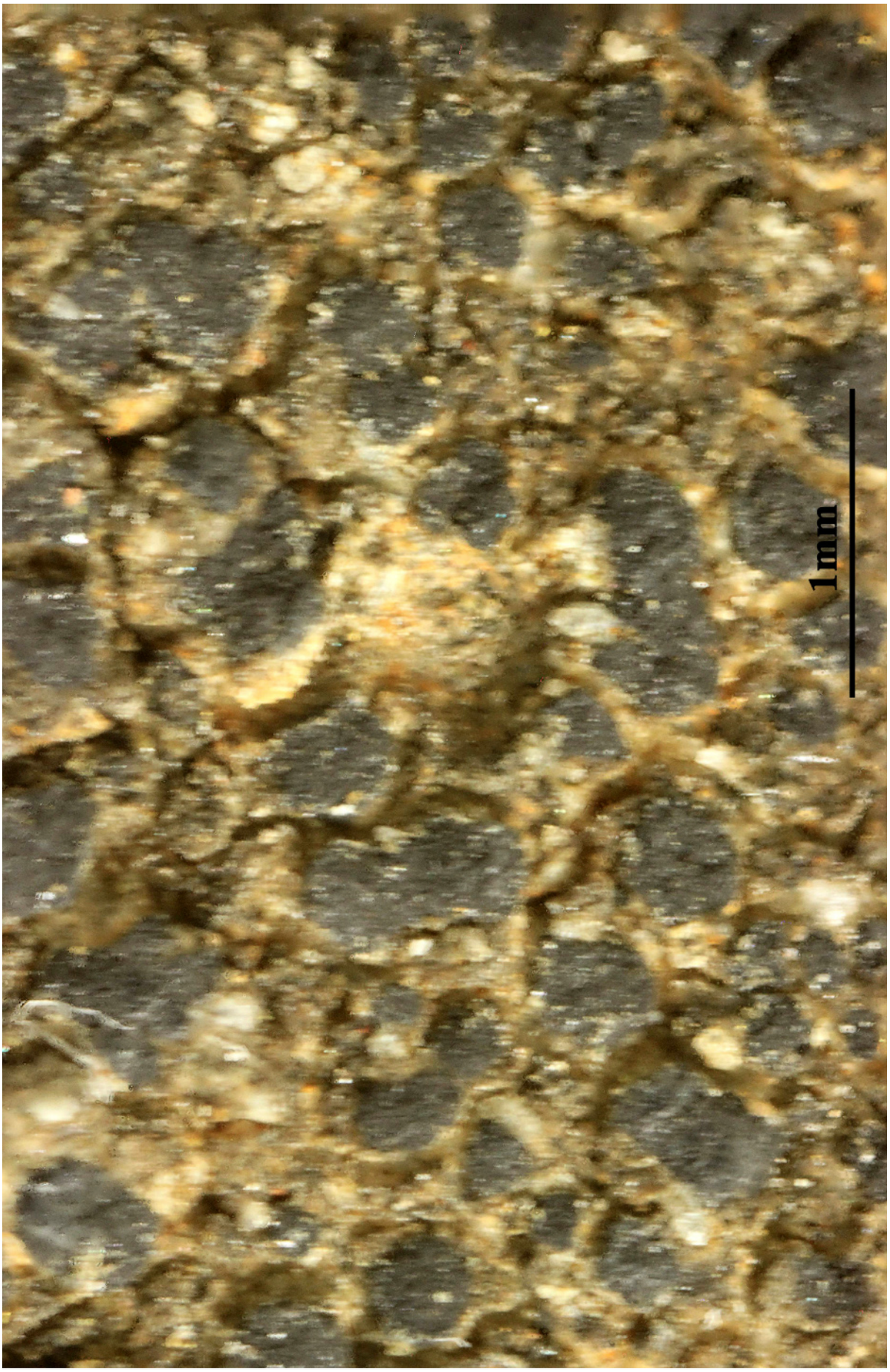
Arthonia exilis

Arthonia fusca (A. Massal.) Hepp, Flecht. Europ.: no. 534 (1860)
= *Catillaria fusca* A. Massal. 1852

[VZ1077], Bohemoslovacia. Moravia. Distr. Brno, Vev. Bítýška, in calcifodina prope pagum Lažánky, 380 m. Ad lapides schistoso-calcareos. Leg. A. Vězda, 28.4.1972. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1077.

Thallus crustose, thin and mostly poorly evident, endosubstratic or thinly episubstratic and then continuous to scurfy, grey-brown. Apothecia arthonioid, emarginate, innate to adnate, angular or rounded, up to 0.5(-0.8) mm across, black, epruinose, flat to convex. Proper exciple poorly developed; epithecium reddish brown to brown-black, up to 15 µm high; hymenium colourless to greenish yellow in upper part, (35-)50-60 µm high, not inspersed with oil droplets, 1+ red, K/I+ blue; paraphysoids loose, (1-)1.5-2 µm thick, sparingly branched in upper part, the apical cells up to 3.5 µm wide, with a dark cap; hypothecium reddish brown to olive-brown. Asci 8-spored, broadly clavate to subglobose, semi-fissitunicate, with a large, non-amyloid apical dome, and a distinct ocular chamber, Arthonia-type. Ascospores 1-septate, constricted at septum, with subequal cells, hyaline, elongate-ovate to slightly sole-shaped, 11-18 x 4-7 µm. Pycnidia red-brown, immersed. Conidia bacilliform, 4-6 x c. 1 µm. Photobiont absent or species associated with green algae (perhaps lichenicolous, the algae being those of the host). Spot tests: K-, C-, KC-, P-. Chemistry: without lichen substances. - Note: a holarctic species of calcareous rocks and mortar, most frequent on pebbles, but also on walls, roofing tiles etc.

Arthonia fusca



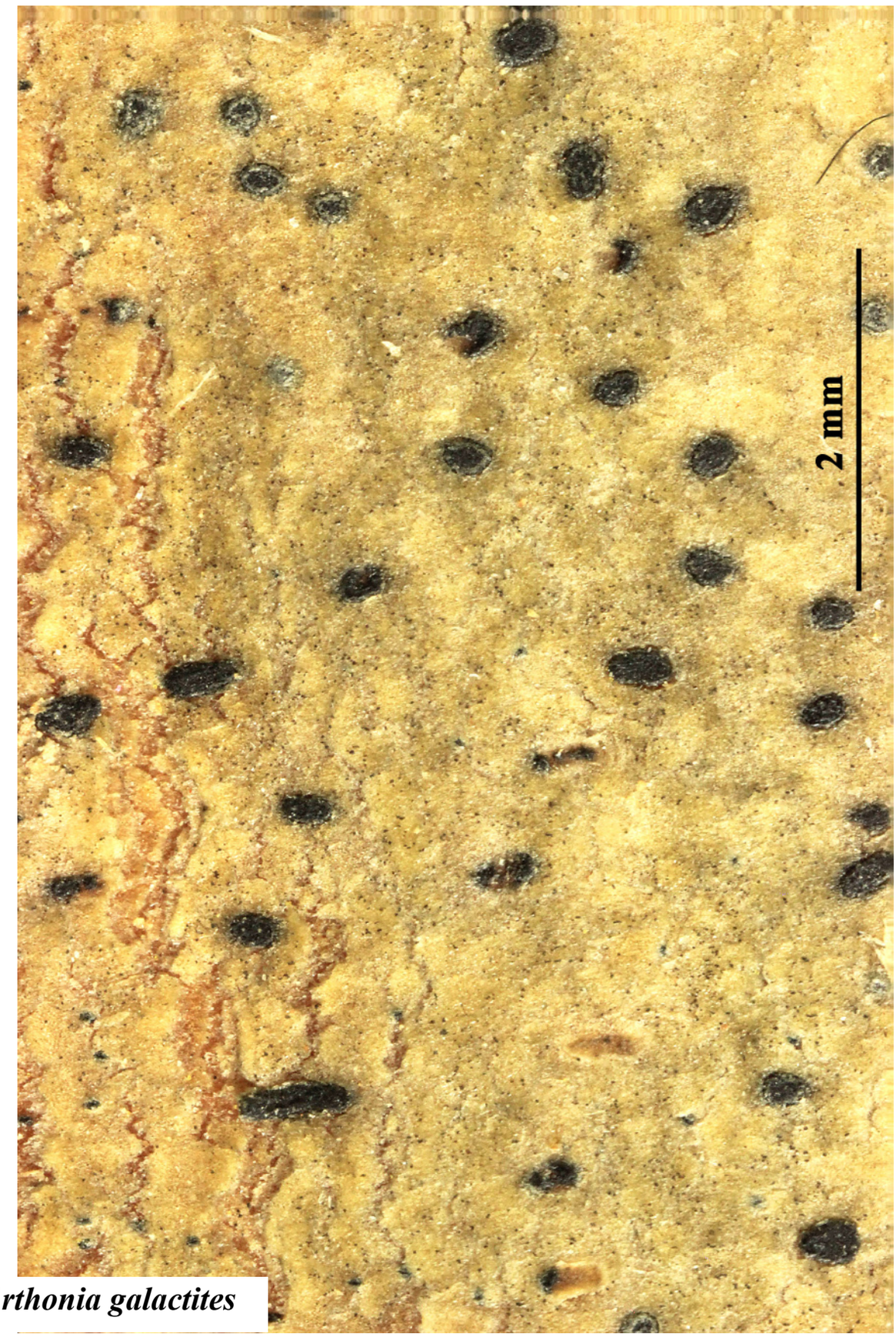
Arthonia fusca

Arthonia galactites (DC.) Dufour, J. Phys. Chim. Hist. nat. Arts 87: 203 (1818)
= *Arthonia populina* f. *galactites* (DC.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 23: 526 (1873)
= *Arthonia punctiformis* var. *galactina* Ach., K. Vetensk-Acad. Nya Handl. 29: 130 (1808)
= *Arthopyrenia cinereopruinosa* var. *galactites* (DC.) Anzi, Cat. Lich. Sondr.: 108 (1860)
= *Arthopyrenia epidermidis* b *galactites* (DC.) Mudd, Man. Brit. Lich.: 305 (1861)
= *Lecideopsis galactites* (DC.) Rehm, Rabenh. Krypt.-Fl., Edn 2 (Leipzig) 1.3(lief. 34): 433 (1891) [1896]
= *Naevia galactites* (DC.) Flot., Linnaea 22: 354 (1849)
= *Opegrapha galactites* (DC.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 19(1): 10 (1950)
= *Tomaselliella galactites* (DC.) Cif., in Tomaselli & Ciferri, Arch. Bot. (Forlì) 28: 3 (1952)
= T*omaselliellomyces galactitis* Cif., in Ciferri & Tomaselli, Atti Ist. bot. Univ. Lab. crittog. Pavia, sér. 5 10(1): 68 (1953)
= *Verrucaria cinereopruinosa* var. *galactites* (DC.) Schaer., Enum. critic. lich. europ. (Bern): 221 (1850)
= *Verrucaria epidermidis* f. *galactites* (DC.) Linds., Trans. Linn. Soc. London 28: 289, tab. XIV, fig. 31-32 (1872)
= *Verrucaria galactites* DC., in Lamarck & de Candolle, Fl. franç., Edn 3 (Paris) 2: 315 (1805)

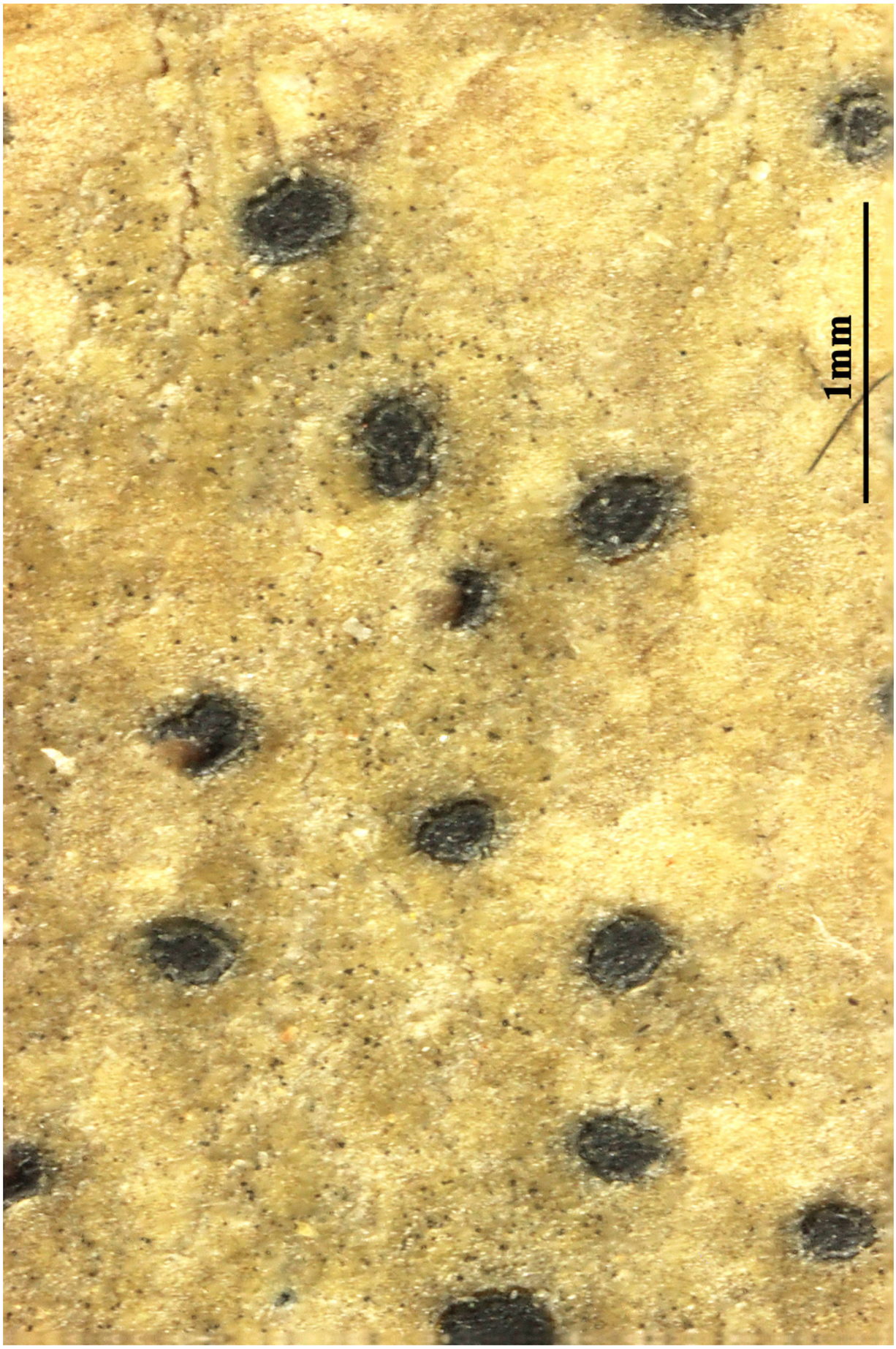
[VZ1078], Germania. Baden. Bötzingen prope Freiburg, 190 m. Ad corticem *Populi* sp.. Leg. V. Wirth, 1874-1876. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1078.

Thallus crustose, white, mostly endosubstratic, facultatively lichenized, forming orbicular, up to 2 cm wide patches, without a distinct dark prothallus. Apothecia arthonioid, emarginate, black, epruinose, circular to slightly elongate, flat to weakly convex, 0.2-0.8(-1) x 0.2-0.7 mm. Epithecium dark brown, K+ violet; hymenium pale yellowish green, c. 20-35 µm high, K-; paraphysoids 1-2 µm thick, brown-walled, the apical cells to 3 µm wide, a few of them brown-capped; hypothecium brown or yellowish green, the yellow green-pigment K+ violet, not dissolving. Asci 8-spored, broadly ovoid, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, Arthonia-type. Ascospores 1-septate, hyaline, ovoid, (10-)12-15 x (3-)4-5 µm. Pycnidia usually numerous, black around the ostiole, with brown, K+ olive

walls. Conidia long-filiform, curved, 10-16 x c. 0.5 µm. Photobiont absent or trentepohlioid. Spot tests: thallus K- or K+ faintly yellow, C-, KC-, P-, UV-. Chemistry: no lichen substances detected. - Note: a mild-temperate species with optimum on the smooth bark of *Fraxinus ornus*, but also on *Populus* and even *Pistacia.*



Arthonia galactites



Arthonia galactites

Arthonia impolita (Hoffm.) Borrer, in Hooker & Sowerby, Suppl. Engl. Bot. 1: tab. 2692, fig. 1 (1831)
= *Pachnolepia pruinata* (Torss.) Frisch & G. Thor, in Frisch, Thor, Ertz & Grube, Taxon 63(4): 740 (2014)
= *Arthonia pruinosa* Ach., K. Vetensk-Acad. Nya Handl. 29: 132 (1808)
= *Lecanactis impolita* (Hoffm.) Fr., Lich. eur. reform. (Lund): 377 (1831)
= *Leprantha impolita* (Hoffm.) Körb., Syst. lich. germ. (Breslau): 295 (1855)
= *Lichen impolitus* (Hoffm.) Ach., Lich. suec. prodr. (Linköping): 56 (1799) [1798]
= *Lichen pruinatus* Pers., Ann. Bot. (Usteri) 5: 19 (1794)
= *Opegrapha impolita* (Hoffm.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 19(1): 9 (1950)
= *Pachnolepia impolita* (Hoffm.) A. Massal., Framm. Lichenogr.: 6 (1855)
= *Parmelia impolita* Fr., Lich. eur. reform. (Lund): 183 (1831)
= *Parmelia impolita* (Hoffm.) Ach., Methodus, Sectio post. (Stockholmiæ): 160 (1803)
= *Parmelia impolita* * *pruinata* Torss., Enum. Lich. Byssac. Scandin. (Upsaliae): 25 (1843)
= *Urceolaria impolita* (Hoffm.) Link, Grundr. Krauterk. 3: 198 (1833)
= *Verrucaria impolita* Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 172 (1796) [1795]

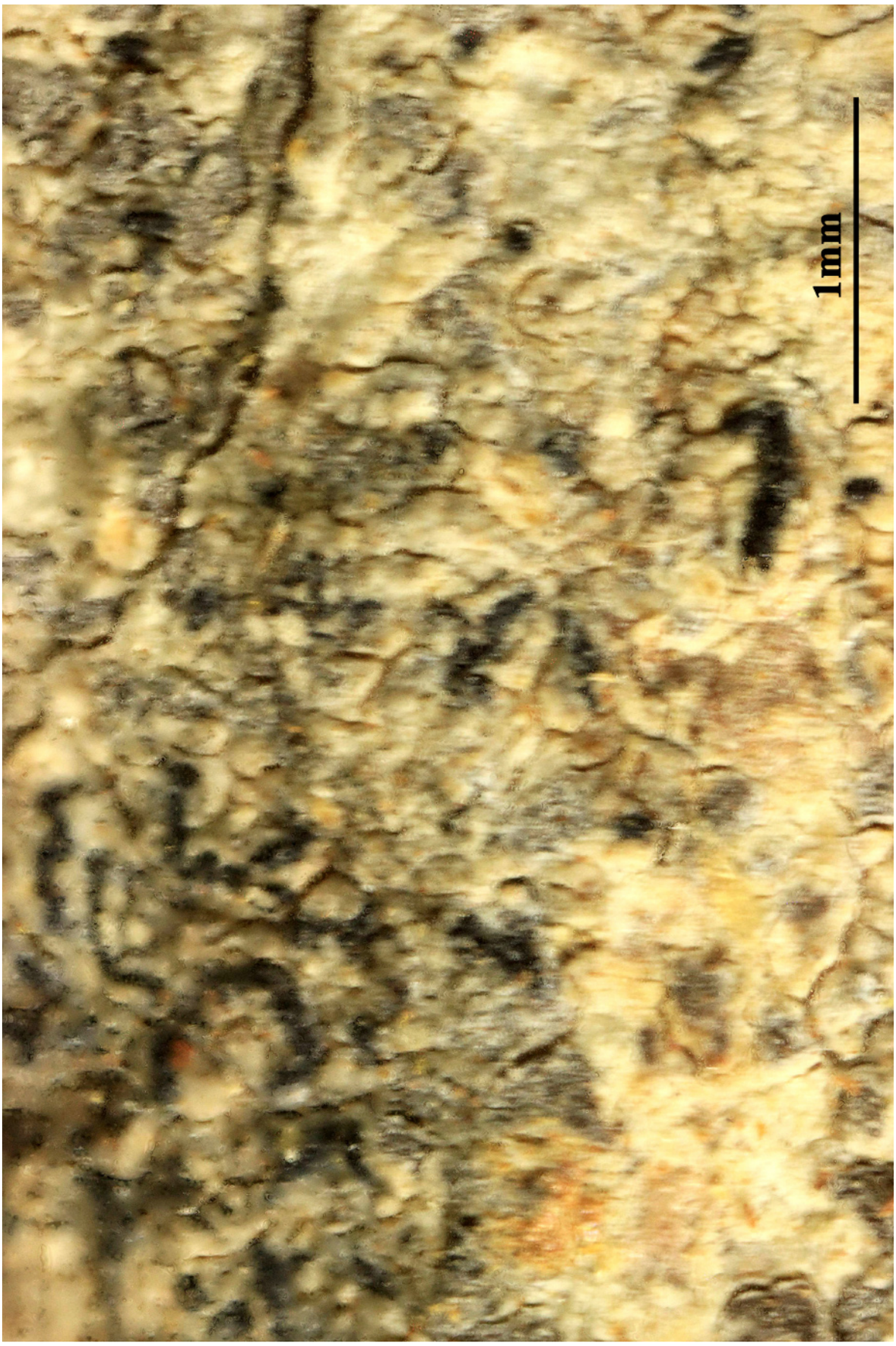
[VZ1656], Magna Britannia. South Wales, Cardiganshire, Newcastle Emlyn, Cilgwyn. Ad corticem *Aceris pseudoplatani*. Leg. P. James, 21.4.1973. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1656.

Thallus crustose, episubstratic, whitish grey to pale brown, effuse, rimose-cracked, 0.1-0.5(-1) mm thick, without a distinct prothallus. Apothecia arthonioid, round to angular, sometimes lobed, immersed to slightly erumpent, sometimes finally sessile, 0.3-0.7(-1) mm across, 0.1-0.25 mm tall, with a pinkish brown to dark brown, but heavily grey- to white-pruinose disc (calcium oxalates), without a distinct proper margin. Proper exciple poorly developed, of peripheral hyphal structures with crystals of calcium oxalates between hyphae; epithecium reddish brown, c. 15 µm high, covered in a thick layer of crystals, K+ grey or pale green; hymenium colourless to pale reddish brown, (40-)45-60 µm high, I+ blue rapidly turning red, K/I+ blue; paraphysoids branched and anastomosing, c. 1.5 µm thick, the apical cells up to 2.5 µm wide, with brown walls; hypothecium colourless, (70-)90-150(-170) µm high, I+ pale blue. Asci 8-spored, broadly clavate, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, the

tholus K/I-, Arthonia-type, 40-55 x 17-25 µm. Ascospores (3-)4-5-septate, hyaline, narrowly obovate, slightly pointed at one end, the upper cell not enlarged, (11-)14-17(-24) x (4-)5-7(-8) µm, without a distinct epispore. Pycnidia rare, immersed, 0.1-0.2 mm across, pale to red brown, the wall colourless or pale red-brown in which case it reacts K+ pale green. Conidia thread-like, usually curved, 10-16 x 0.5-1 µm. Photobiont trentepohlioid. Spot tests: thallus and apothecial pruina K-, C+ red, P-, UV-. Chemistry: arthoniaic acid. - Note: a mild-temperate lichen found on isolated, old deciduous trees, especially oaks, in parts of the boles seldom wetted by rain, restricted to humid areas; presently extremely rare in Northern Italy, more frequent in Tyrrhenian Italy.

Arthonia impolita

Arthonia impolita

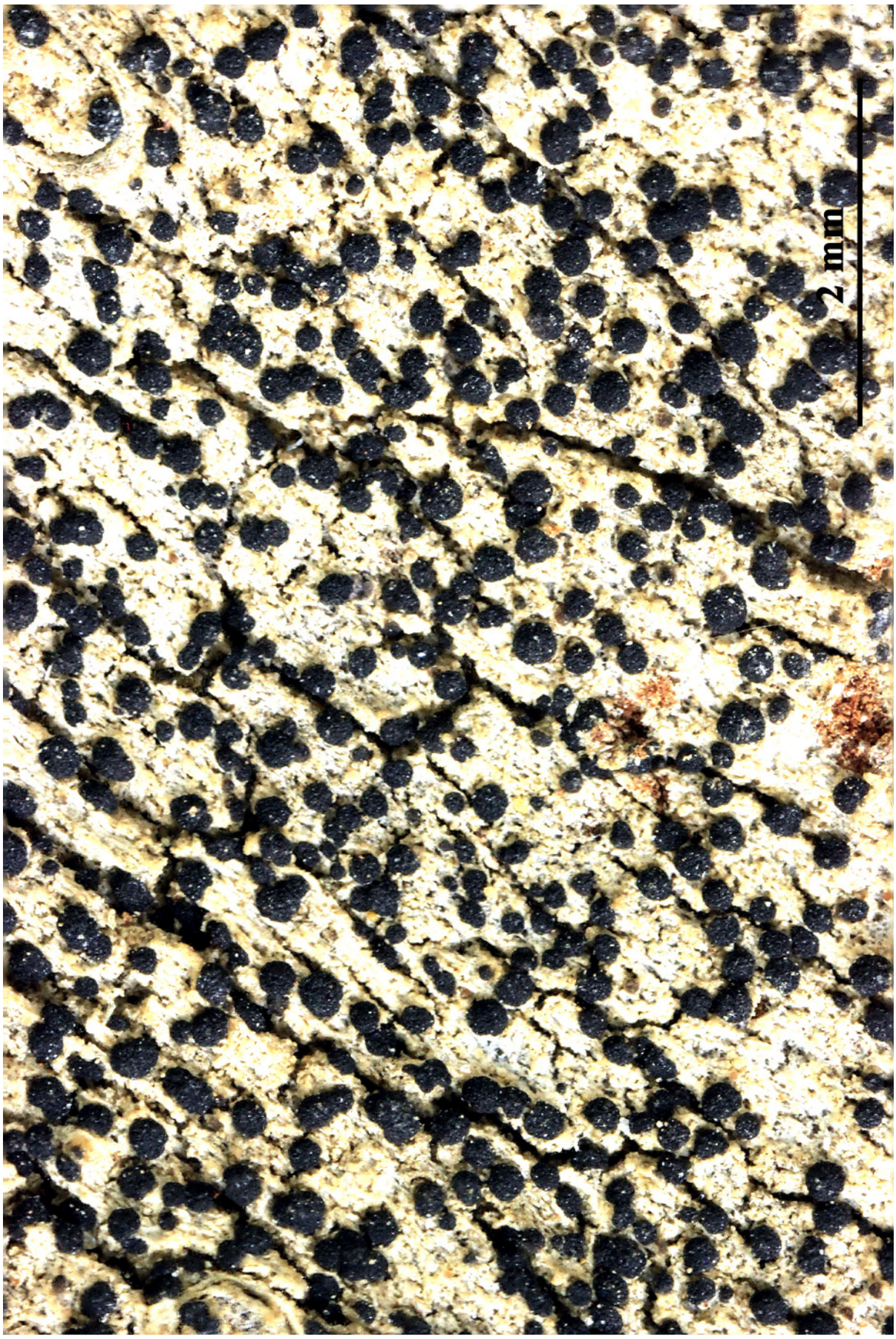


Arthonia impolita

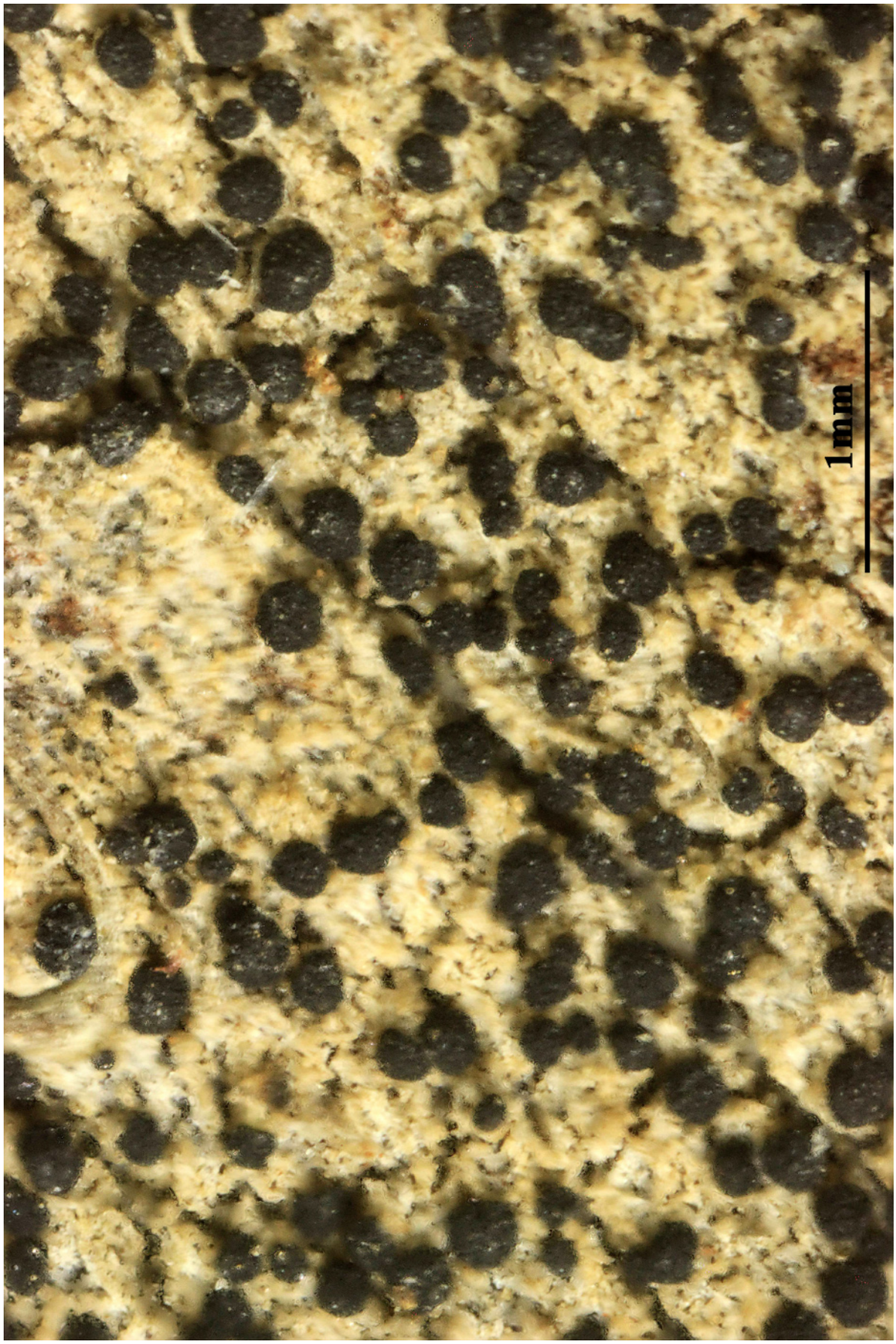
Arthonia mediella Nyl., Not. Sällsk. Fauna et Fl. Fenn. Förh., Ny Ser. 4(no. 1): 238 (1859) [1858-59]
= *Opegrapha mediella* (Nyl.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 19(1): 9 (1950)

[VZ1605], Turcia.Prov. Bursa, Uladag, 20 km ad merid.-occidentem versus a Bursa, 1900 m. Ad corticem *Abietis*. Leg. K. Kalb & G. Plöbst, 1.9.1976. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1605.

Thallus crustose, thin, continuous to finely rimose, smooth or roughened, grey to yellowish grey. Apothecia arthonioid, black, round to weakly angular, 0.2-0.5 mm across, with a flat to slightly convex, dull, epruinose disc, without a distinct proper margin. Proper exciple poorly evident; epithecium brown-black; hymenium colourless to pale yellow, (30-)40-60 µm high, not inspersed with oil droplets, K-, I+ orange-yellow; paraphysoids strongly coherent, simple or slightly branched, thin, the apical cells capitate, 3-5 µm wide, with a dark brown cap; hypothecium reddish brown in upper part, brown-black in lower part, 30-70 µm high. Asci 8-spored, broadly clavate, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, Arthonia-type. Ascospores 3(-4)-septate, slightly constricted at septa, with subequal cells, hyaline, spindle-shaped, (10-)11-16(-18) x (2.5-)3-4(-5) µm. Pycnidia dark, immersed to sessile, 0.3-0.6 mm across. Conidia bacilliform, 4-6 x c. 1 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a cool-temperate to boreal-montane, probably circumpolar, early coloniser of acid bark, mostly of conifers, found both in humid *Abies-Fagus* forests and in open *Larix*-stands, certainly more widespread in the subalpine belt of the Alps and extending to Calabria along the Apennines



Arthonia mediella



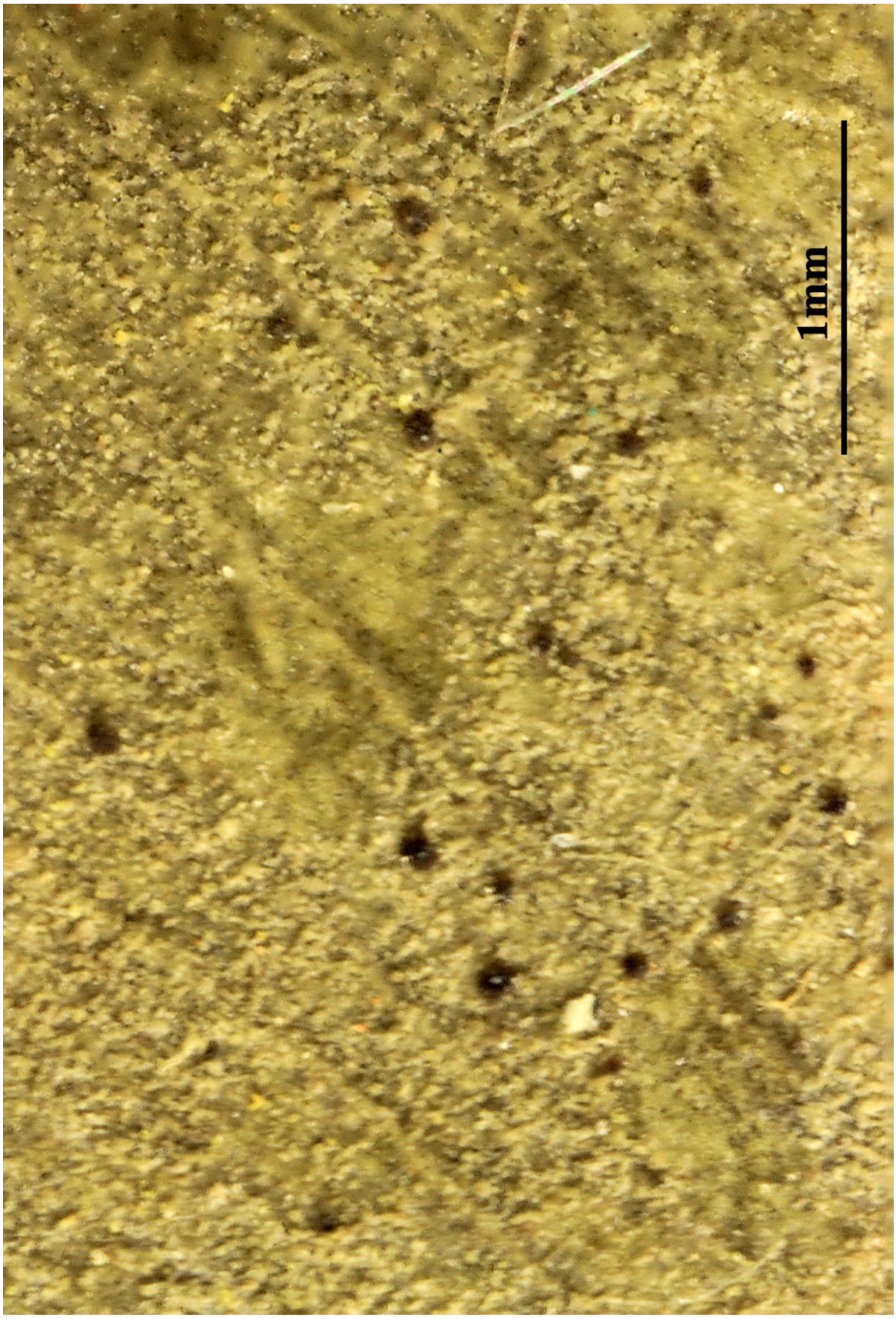
Arthonia mediella

Arthonia microsticta Vain., J. Bot., Lond. 34: 264 (1896)
= *Arthonia microsticta* auct.
= *Arthonia muscigena* Th. Fr.
= Bryostigma lapidicola (Taylor) S.Y. Kondr. & J.-S. Hur
= *Bryostigma muscigenum* (Th. Fr.) Frisch & G. Thor
= *Catillaria melanobola* f. *frullaniae* B. de Lesd.

[VZ1656], URSS. Transcaucasia. Colchis. Distr. Lazarevskoje: Dagomys, in faucibus rivi Dagomys Vostočnyi, supra vicum Baranovka, 100-150 m. Ad folia Buxi colchicae, supra thallum lichenis alieni vigens. Leg. A. Vězda, 24.6.1979. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1676.

Thallus crustose, endosubstratic or thinly episubstratic, olive-grey to olive-brown, thin, filmy or minutely granular, usually forming <5 mm wide patches, sometimes poorly evident. Apothecia arthonioid, black, epruinose, glossy, 0.1-0.3 mm across, slightly constricted at base, with a strongly and irregularly convex disc, without a distinct proper margin. Epithecium pale green-brown or red-brown, K+ greenish; hymenium colourless or pale green, 25-30 µm high; paraphysoids very scanty, 0.5-1 µm thick, brown-capped, especially towards apices distinctly oriented horizontally; hypothecium red-brown, 30-70 µm high, K+ olive-brown. Asci 8-spored, clavate, semi-fissitunicate, the apex broad and rounded, very thick-walled. Ascospores 1-septate, hyaline, ovoid to clavate, 8-12(-14) x 2.5-4(-5) µm, often with a slightly pointed end, thick-walled. Pycnidia rare, with a pale brown, K+ olive wall. Conidia bacilliform, 3-4 x c. 0.5 µm. Photobiont chlorococcoid, the cells 6-14(-17) µm wide. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a species with a strongly reduced thallus containing a chlorococcoid photobiont, and minute hemispherical ascomata, sometimes confused with *Arthonia apatetica*; it grows on the bark of deciduous trees, but also on epiphytic bryophytes (e.g. *Leucodon sciuroides*), on evergreen leaves in humid forests, and sometimes on siliceous rock; it is widespread, but it was probably often overlooked in Italy.

Arthonia microsticta

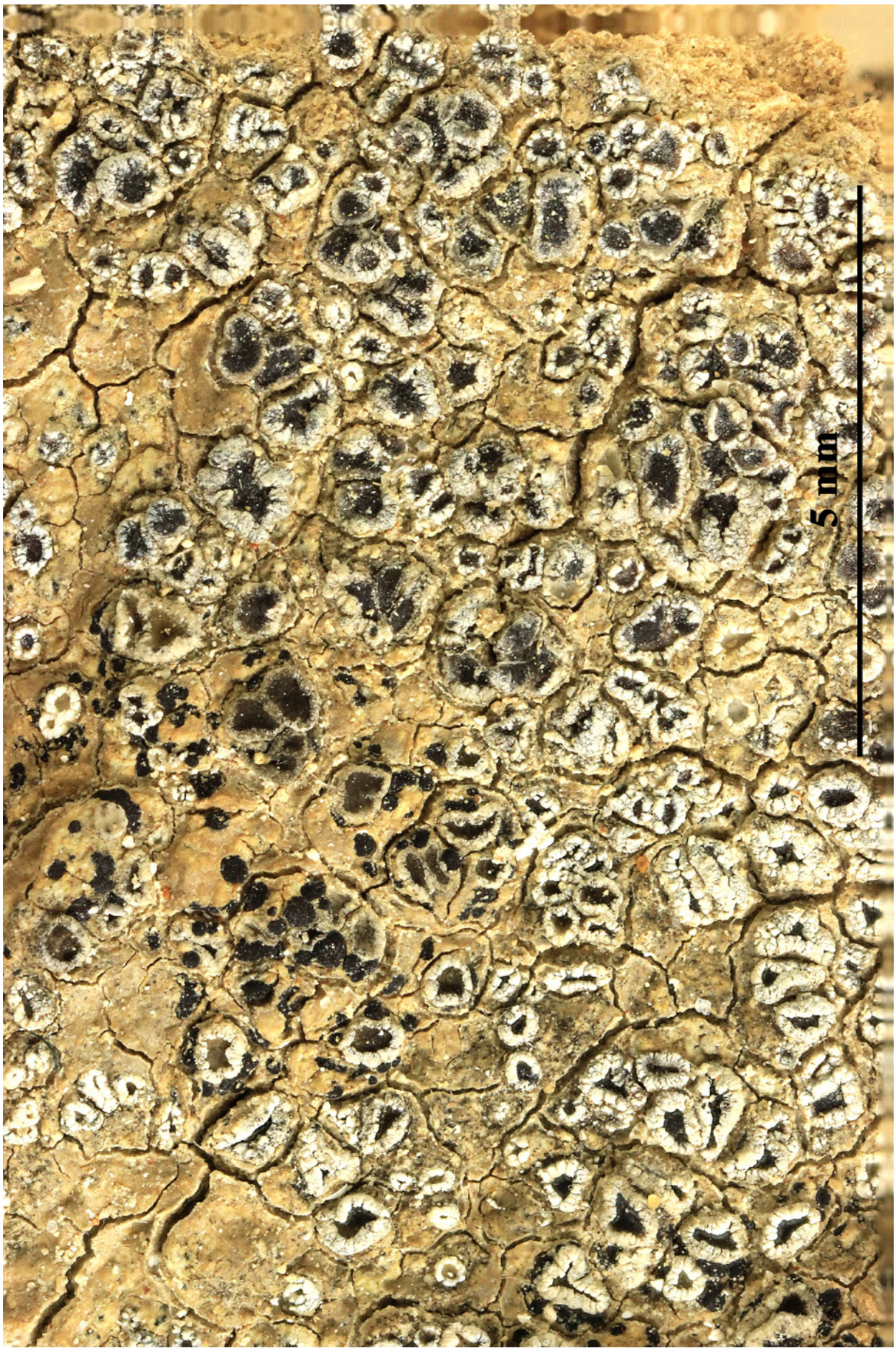


Arthonia microsticta

Arthonia oligospora Vězda, Lichenes Selecti Exsiccati, Fasc. (Průhonice) 47: 2 (no. 1154) (1973)

[VZ1154], Bulgaria. Pontus, distr. Balchik: in vicinitate pagi Tuzia, 10 m. In saxosis maritimis cretaceis. Leg. A. Vězda, 19.7.1971. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1154.

Ascocarpia in thallo et apotheciis *Lecanorae crenulatae* vel *Lecaniae nylanderianae* vigenta, ambitu suborbicularia, 0.2-0.4 mm lata, leviter convexa, nigra. Stratum ascigerum 45 µm altum, pallide olevaceum-caeruleum, superne fusco-nigrum. Paraphyses 1.5 µm crassae, apicibus capitatis usque ad 4 µm crassis. Stratum hypothecioideum atrum, Sporae 4/ascus, late ellipsoideae, 1-septatae, 10 - 12 x 5-6 µm.



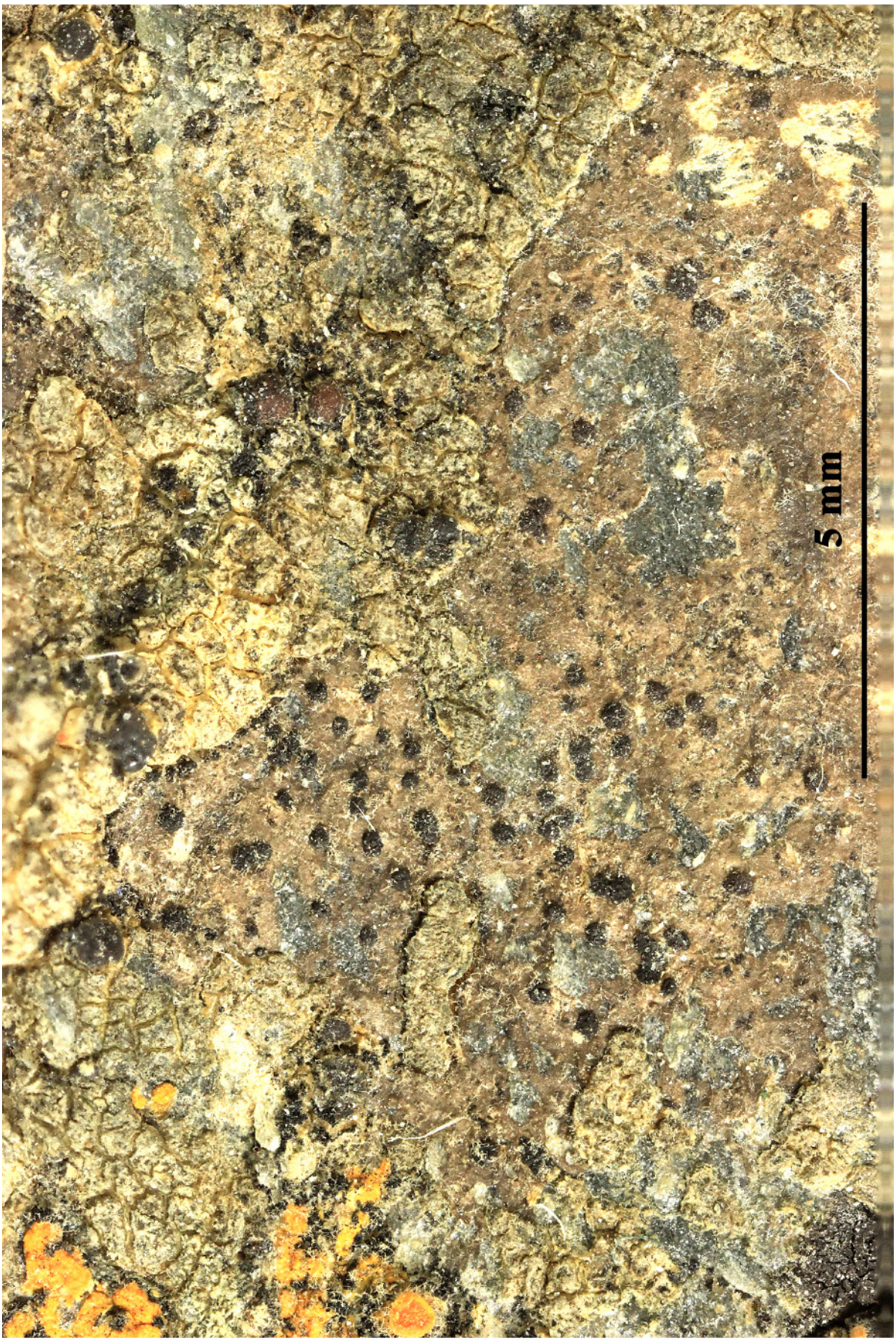
Arthonia oligospora

Arthonia oligospora

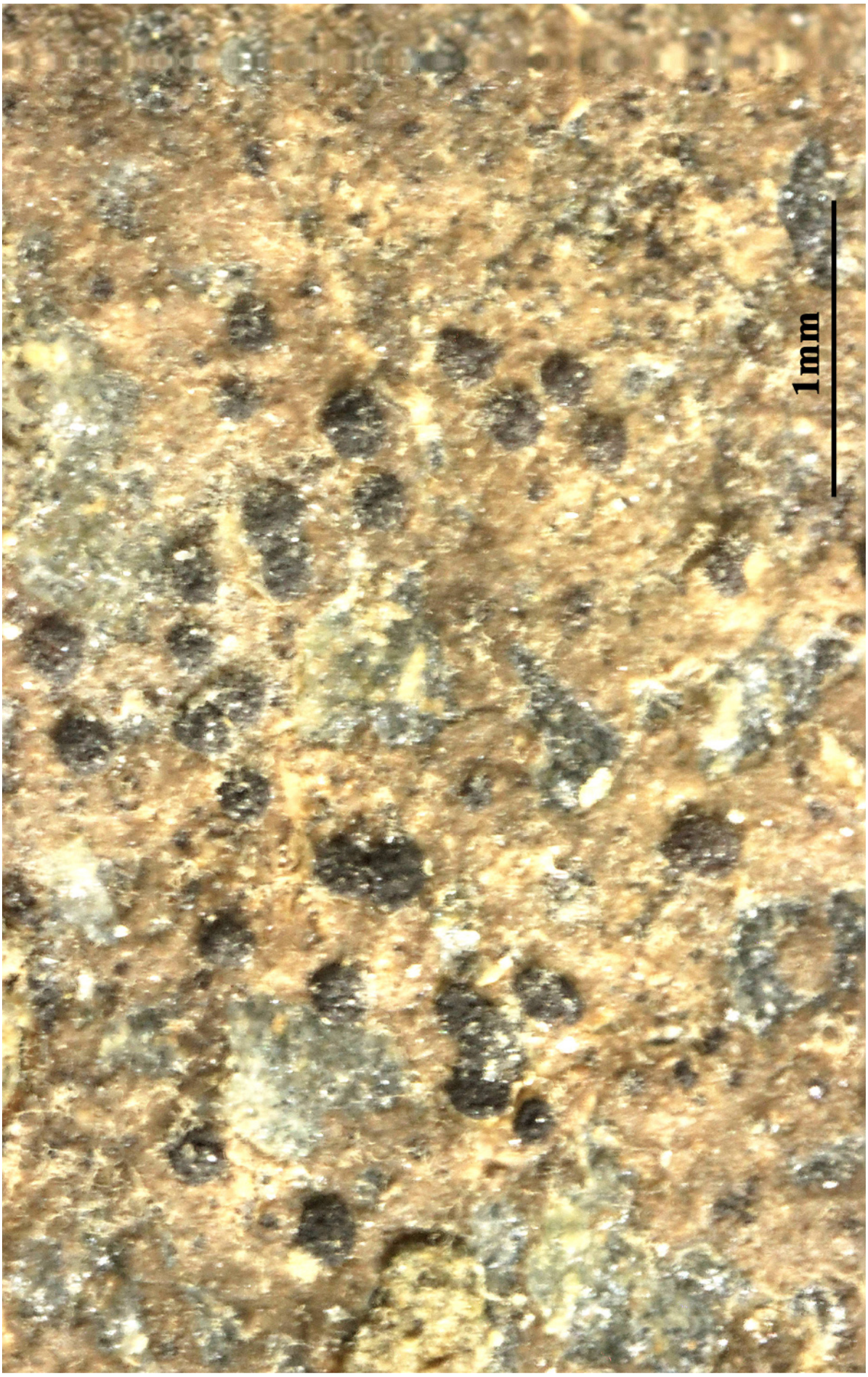
Arthonia phaeobaea (Norman) Norman, Flora, Regensburg 52: 525 (1869)
= *Allarthonia phaeobaea* (Norman) Zahlbr., Cat. Lich. Univers. 2: 115 (1922) [1924]=
= *Arthonia paralia* Nyl., Flora, Regensburg 60: 565 (1877)
= *Segestrella phaeobaea* Norman, Kgl. norske vidensk. Selsk. Skr. 5: 367 (1868)

[VZ1702], Magtna Britannia. Caledonia. Argyll, Benderloch, Lochnell, Fuaeachadh, prope Camas Nathais Bay. Ad scopulos maritimos. Leg. P. W. James, 21.7.1976. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1702.

Thallus brown with faint mauve tinge, thin, smooth or slightly cracked, usually forming delimited patches but without any bordering line, to 0.1 mm thick, cortex of ± globose brown-walled cells c. 3-4 µm diam.; photobiont cells 7- 12 µm diam., chlorococcoid. Apothecia 0.1 6-0.3 mm diam., rounded, flat to slightly convex, brown-black or black; in section 90 - 120 µm tall; epithecium dark red-brown, K-; hymenium 35-50 µm tall, colourless; hypothecium c. 48-85 µm tall, pale straw-brown or colourless, K-; paraphysoids I- 1.5 µm wide; apices brown-capped, coherent. Ascospores 17-30 x 5-7 µm, 3- to 5-septate, oblong, constricted at mid-septum and upper half slightly broader than lower, colourless; epispore usually distinct, c. 2 µm thick in K. Pycnidia c. 40-80 µm diam., numerous, black, immersed; wall brown, K+ olive-brown; conidia 4-5.5 x 1.5-2 µm, oblong. Lichen products not detected by t.I.c. On hard, siliceous, coastal rocks, mesic-supralittoral zone; common. W. British Isles. W. Europe, NAmerica. Easily overlooked, especially when sterile, but then recognized by the characteristic thallus colour and the numerous punctiform pycnidia.



Arthonia phaeobaea



Arthonia phaeobaea

Arthonia radiata (Pers.) Ach., K. Vetensk-Acad. Nya Handl. 29: 131 (1808)
= *Arthonia astroidea* (Ach.) Ach., Neues J. Bot. 1(3. Stück): 17 (1806)
= *Arthonia astroidea* f. *opegraphina* (Ach.) H. Olivier [as 'opegraphyna'], Fl. Lich. Orne 2: 252 (1884)
= *Arthonia astroidea f. parallela* Harm., Bull. Séanc. Soc. Sci. Nancy, Sér. 2 34: 66 (1900) [1899]
= *Arthonia astroidea* f. *radiata* (Pers.) Ach., Syn. meth. lich. (Lund): 6 (1814)
= *Arthonia astroidea* subsp. *swartziana* (Ach.) Arnold, Flora, Regensburg 67(34): 647 (1884)
= *Arthonia astroidea* var. *epipastoides* Nyl. ex Leight., Lich.-Fl. Great Brit.: 397 (1871)
= *Arthonia astroidea* var. *opegraphina* (Ach.) Ach., Syn. meth. lich. (Lund): 6 (1814)
= *Arthonia astroidea* var. *parallela* (Harm.) B. de Lesd., Bull. Soc. bot. Fr. 55: 423 (1908)
= *Arthonia astroidea* var. *radiata* (Pers.) H. Olivier, Bull. Géogr. Bot. 27: 201 (1917)
= *Arthonia astroidea* var. *simulans* Leight., Lich.-Fl. Great Brit., Edn 3: 240 (1879)
= *Arthonia astroidea* var. *swartziana* (Ach.) Sacc., in Saccardo & Traverso, Syll. fung. (Abellini) 19: 99 (1910)
= *Arthonia astroidea* ß *tynnocarpa* Ach., Neues J. Bot. 1(3. Stück): 18 (1806)
= *Arthonia astroidea ? radiata* (Pers.) Ach., Neues J. Bot. 1(3. Stück): 19 (1806)
= *Arthonia cinnabarina* var. *epipastoides* (Nyl. ex Leight.) Leight., Lich.-Fl. Great Brit., Edn 3: 423 (1879)
= *Arthonia cinnabarina* var. *opegraphina* (Ach.) Leight., Lich.-Fl. Great Brit., Edn 3: 423 (1879)
= *Arthonia epipastoides* (Nyl. ex Leight.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 23: 527 (1873)
= *Arthonia gregaria* var. *opegraphina* (Ach.) Müll. Arg., Flora, Regensburg 72: 147 (1889)
= *Arthonia opegraphina* (Ach.) Leight., Grevillea 1(no. 4): Pl. IV, fig. 7 (1872)
= *Arthonia radiata* f. *astroidea* (Ach.) Ach., Lich. Univ.: 131 (1810)
= *Arthonia radiata* f. *parallela* (Harm.) Zahlbr., Cat. Lich. Univers. 2: 90 (1922) [1924]
= *Arthonia radiata* subsp. *swartziana* (Ach.) Fink, Contr. U.S. natnl. Herb. 14(1): 58 (1910)
= *Arthonia radiata* var. *astroidea* (Ach.) Ach., K. Vetensk-Acad. Nya Handl. 29(2): 131 (1808)

= *Arthonia radiata* var. *epipastoides* (Nyl. ex Leight.) A.L. Sm., Monogr. Brit. Lich. 2: 216 (1911)
= *Arthonia radiata* var. *opegraphina* Ach., K. Vetensk-Acad. Nya Handl. 29: 131 (1808)
= *Arthonia radiata* var. *parallela* (Harm.) Zahlbr., Cat. Lich. Univers. 2: 90 (1922) [1924]
= *Arthonia radiata* var. *swartziana* (Ach.) Almq., K. svenska Vetensk-Akad. Handl., ny följd 17(no. 6): 36 (1880)
= *Arthonia swartziana* Ach., Neues J. Bot. 1(3. Stück): 13 (1806)
= *Arthonia vulgaris* f. *astroidea* (Ach.) Boberski, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 36: 276 (1886)
= *Arthonia vulgaris* f. *radiata* (Pers.) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau) 2(2): 285 (1879)
= *Arthonia vulgaris* f. *swartziana* (Ach.) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau) 2(2): 285 (1879)
= *Arthonia vulgaris* var. *astroidea* (Ach.) Schaer., Lich. helv. spicil. 1: 8 (1823)
= *Arthonia vulgaris* var. *radiata* (Pers.) Schaer., Lich. helv. spicil. 1: 8 (1823)
= *Arthonia vulgaris* var. *swartziana* (Ach.) Schaer., Lich. helv. spicil. 1: 8 (1823)
= *Graphis atra* var. *astroidea* (Ach.) Spreng., Fl. halensis, Edn 2: 508 (1832)
= *Lichen astroites* Ach., Lich. suec. prodr. (Linköping): 24 (1799) [1798]
= *Lichen swartzianus* (Ach.) DC. [as 'swartianus'], in Lamarck, Encycl. Méth., Bot. Suppl. (Paris) 3(1): 354 (1813)
= *Opegrapha astroidea* Ach., Methodus, Sectio prior (Stockholmiæ): 25 (1803)
= *Opegrapha astroidea* var. *radiata* (Pers.) Ach., Methodus, Sectio prior (Stockholmiæ): 25 (1803)
= *Opegrapha atra* var. *astroidea* (Ach.) Schaer., Lich. helv. spicil. 7: 326 (1836)
= *Opegrapha atra* var. *radiata* (Pers.) Schaer., Lich. helv. spicil. 7: 326 (1836)
= *Opegrapha atra* var. *swartziana* (Ach.) Schaer., Lich. helv. spicil. 7: 326 (1836)
= *Opegrapha gregaria* var. *radiata* (Pers.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 19(1): 10 (1950)
= *Opegrapha radiata* Pers., Ann. Bot. (Usteri) 7: 29 (1794)
= *Opegrapha radiata* var. *astroidea* (Ach.) Fingerh., Tentam. Flor. Lich. Eiffliac.: 25 (1829)

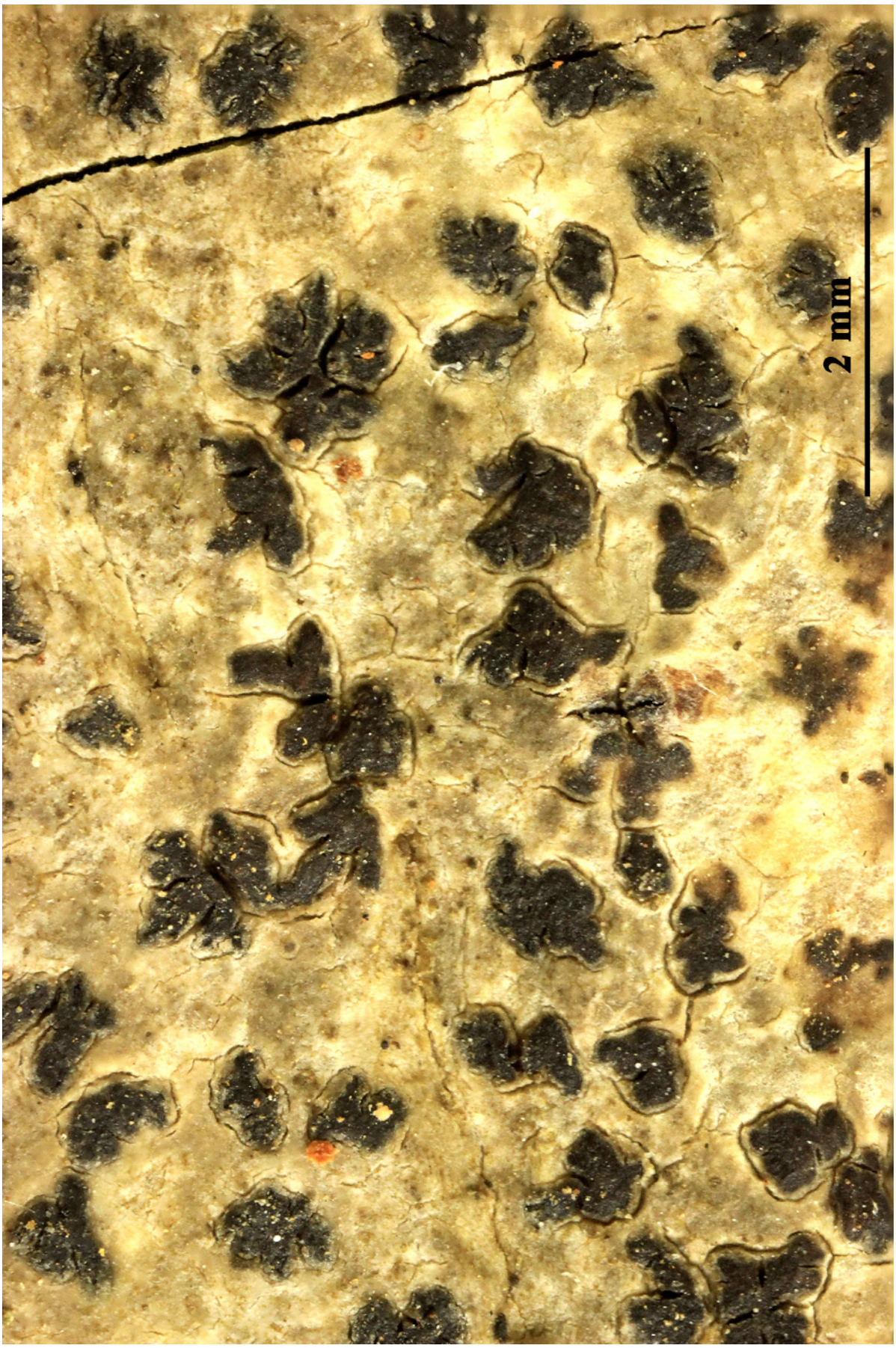
Arthonia radiata

= *Opegrapha radiata* var. *swartziana* (Ach.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 19(1): 9 (1950)
= *Opegrapha swartziana* (Ach.) Hepp, Flecht.-Fl. Würzburg: 76 (1824)
= *Opegrapha vulgata* var. *swartziana* (Ach.) Grognot, Pl. crypt.-cellul. Saône-et-Loire: 75 (1863)

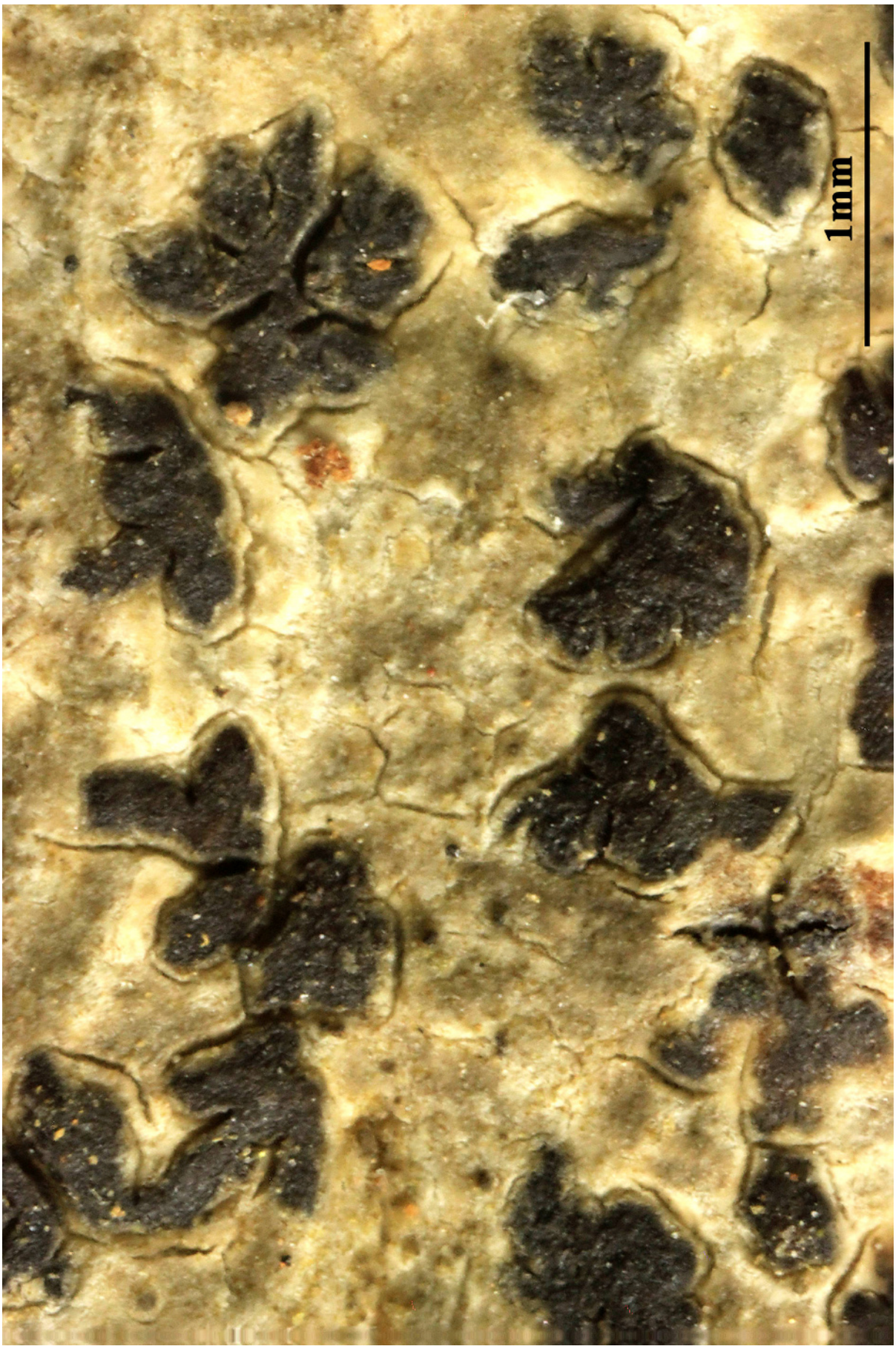
[VZ1103], Romania. Distr. Mehedinti. Baile Herculane, in faucibus as latera occidentalia montis Domogled, 400 m. Ad corticem *Juglandis regiae*. Leg. A. Vězda, 3.6.1972. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1103.

Thallus immersed, usually delimited by brown line and often mosaic-forming, white, pale grey, sometimes with a brown or olive tinge. Apothecia variably shaped, rounded to substellate and 0.15-0.8 mm diam., linear or sparingly branched and to 1 4 x 0.1 -0.2 mm, or stellate and to 1.5 (-2.2) mm diam., flat or slightly convex, black, not pruinose; in section 70-100 µm tall; epithecium brown or olive-brown, K+ pale green; hymenium 35-50 µm tall, colourless; hypothecium 10-25 µm tall, colourless to pale olive-brown, K+ pale green; paraphysoids numerous, 1-2 µm wide, often to 3 µm wide and brown-walled in the epithecium, often with dark apical caps. Ascospores 15-20 x 4.5-6 µm, oblong-ovoid to oblong, 3 -septate; apical cell not enlarged. Pycnidia 60-85 µm diam., rare, immersed, black, the wall brown, K+ pale green; conidia c. 4-5 x 1 µm, bacilliform. Lichen products not detected by t.l.c. Mostly on smooth bark of many trees and shrubs; widespread and common except in air-polluted areas. Throughout the British Isles. Europe, N. America, Asia, Africa, New Zealand. A common and very variable species, often confused with *A. punctiformis* . Host to *Stigmidium arthoniae* (Arnold) Hafellner (1 994).

Arthonia radiata



Arthonia radiata



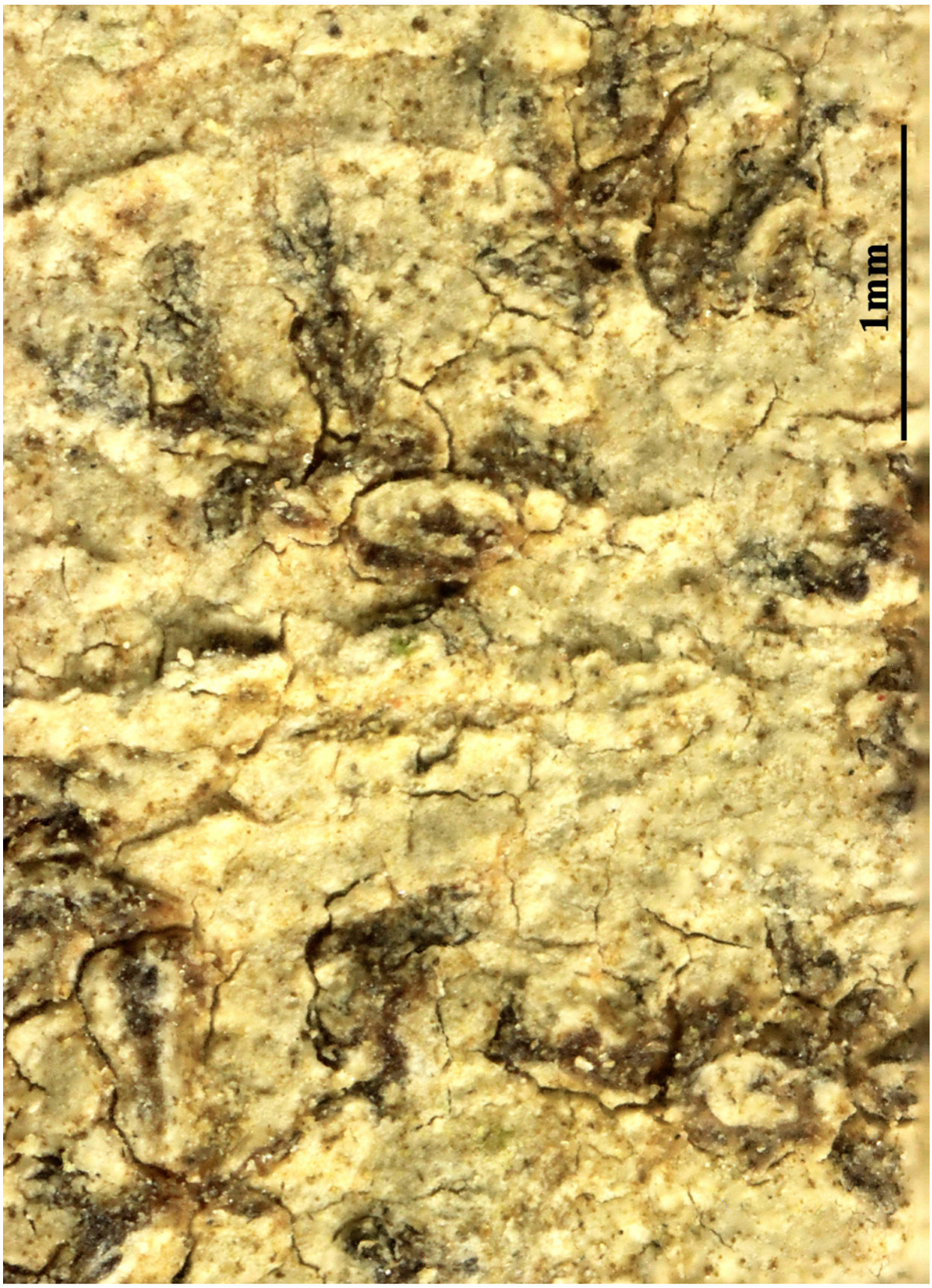
Arthonia radiata

Arthonia rubella (Fée) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 4: 98 (1856)
= *Graphis rubella* Fée, Essai Crypt. Exot. (Paris): 43 (1825) [1824]

[VZ1985], USA. East Baton Rouge paroecia, Essen Lane, Baton Rouge, Burden Research, Plantation. Ad corticem arboris (*Celtis laevigata*). Leg. S. C. Tucker (no. 20981), 20.5.1980. Ex A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1985.

Thallus crustose, thin, pale brownish with dark prothallus, vegetative diaspores absent; photobiont *Trentepohlia* alga. Ascomata lirellate, branched, immersed, dark reddish brown, 0.1-0.2 x 0.5-1.5 mm; exciple absent; epithecium reddish brown; hymenium hyaline, paraphyses absent. Asci pyriform, 8-spored. Ascospores colorless, ovoid-ellipsoid, 3-5-septate, end cells larger, 25-34 x 10-14 µm. Chemistry. Spot tests all negative, secondary metabolites unknown. Substrate and Habitat: On bark of hardwood trunks in mesic mixed forests, often near streams. Distribution. Eastern North America, Neotropics, Bermuda, Taiwan; in North Carolina throughout, locally common.

Arthonia rubella



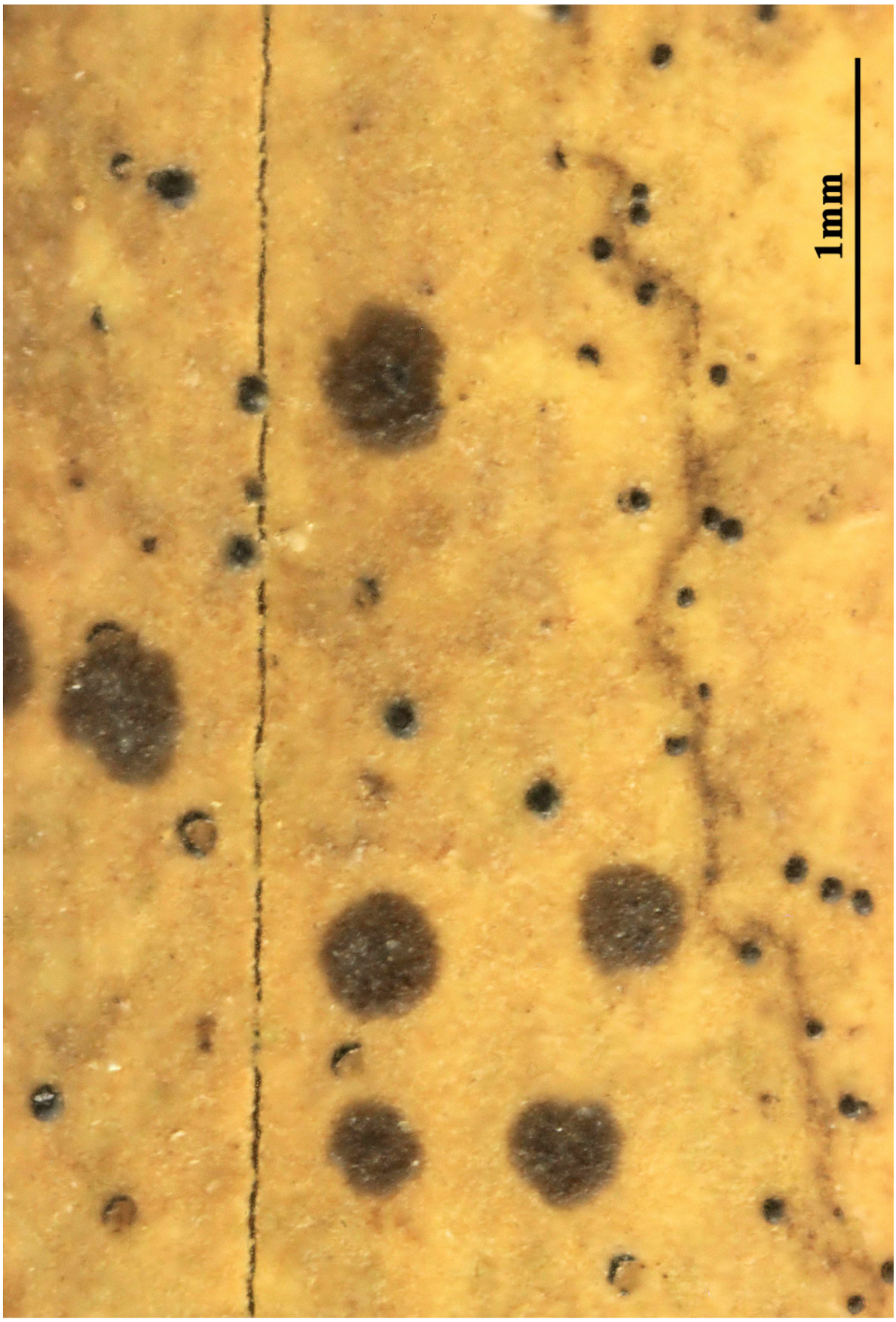
Arthonia rubella

Arthonia trilocularis Müll. Arg., Flora, Regensburg 64(15): 233 (1881)
= *Arthoniopsis trilocularis* (Müll. Arg.) Müll. Arg., Lich. Epiph. Novi: 17 (1890)

[VZ2401], Phillipines. Luzon, prov. Sorsogon: Irosin, 230 m. Ad truncum *Bambusae* sp. Leg. A. Elmer (16427), 7.1915, det, H. Sipman. EX A. VěZDA LICHENES SELECTI EXSICCATI NR. 2401.

Thallus irregular in outline and partly composed of finely lobate patches, smooth, 5–10(–20,) mm across, very thin (5–15 µm), ecorticate, pale brownish grey to yellowish brown, matt. Photobiont cells rectangular, 7–14 x 5–7 µm, in radiate plates. Ascomata sharply delimited, hardly raised above thallus level, angular-rounded to irregular in outline, 0.3–1.3 mm diam. and 30–40 µm high, blackish brown to black, sometimes marginal parts with thin, brown to grey pruina. Hypothecium 2–4 µm high, colorless to brown, I– to I pale yellow, KI– to KI pale yellow. Epithecium formed by thin layer of densely packed, parallel, periclinal hyphae, 3–6 µm high, brown, K sordid brown, I orange-brown, KI yellow. Hymenium 25–35 µm high, colorless to very pale brown, I orange-red, KI orange-yellow. Asci obovate, 17–30 x 10–18 µm, I–, KI+ blue in inner parts of tholus. Ascospores narrowly obovate, 2-septate, without constrictions at septa, 11–19(–24) x 4–6(–9) µm, distal cell enlarged, greyish brown. Conidiomata pycnidia, applanately conical, rounded, 0.1–0.2 mm diam., dark grey to greyish black or pure black. Conidia of at least 4 types present in different individuals: [1] fusiform-ellipsoid to narrowly bean-shaped, 8–13(–16) x 2.5–3.5 µm, colorless (macroconidia); [2] bacillar, non-septate, 11–14 x 0.8–1 µm, colorless (macroconidia?); [3] bacillar, non-septate, 4–7 x 0.7–0.9 µm, colorless (microconidia?); [4] oblong-ellipsoid, non-septate, 2–3 x 0.5–0.7 µm, colorless (microconidia). Chemistry: no substances detected by TLC. Distribution and Ecology. Pantropical, extending into subtropical and temperate regions. With a very wide, ecological amplitude concerning microhabitat and elevation.

Arthonia trilocularis



Arthonia trilocularis

Arthonia tumidula (Ach.) Ach., Neues J. Bot. 1(3. Stück): 11 (1806)
= *Coniocarpon cinnabarinum* DC., in Lamarck & de Candolle, Fl. franç., Edn 3 (Paris) 2: 323 (1805)
= *Arthonia aspersa* d *concolor* (Turner) Arnold, Flora, Regensburg 44(43): 675 (1861)
= *Arthonia cinnabarina* (DC.) Wallr., Fl. crypt. Germ. (Norimbergae) 1: 320 (1831)
= *Arthonia cinnabarina* f. *astroidea* (Leight.) Leight., Lich.-Fl. Great Brit.: 400 (1871)
= *Arthonia cinnabarina* f. *concolor* (Turner) Leight., Lich.-Fl. Great Brit., Edn 3: 422 (1879)
= *Arthonia cinnabarina* f. *dubia* (Hook.) Leight., Lich.-Fl. Great Brit.: 399 (1871)
= *Arthonia cinnabarina* f. *gregaria* (Weigel) Malbr., Bull. Soc. Amis Sci. Nat. Rouen 5: 287 (1870) [1869]
= *Arthonia cinnabarina* f. *kermesina* (Schaer.) Malbr., Bull. Soc. Amis Sci. Nat. Rouen 5: 287 (1870) [1869]
= *Arthonia cinnabarina* f. *marginata* (Turner) Leight., Lich.-Fl. Great Brit.: 399 (1871)
= *Arthonia cinnabarina* f. *microstigma* (Turner & Borrer) Leight., Lich.-Fl. Great Brit.: 399 (1871)
= *Arthonia cinnabarina* var. *anerythrea* Nyl., Lich. Scand. (Helsinki): 257 (1861)
= *Arthonia cinnabarina* var. *astroidea* (Leight.) Leight., Lich.-Fl. Great Brit., Edn 3: 423 (1879)
= *Arthonia cinnabarina* var. *coccinea* (Flörke) Zahlbr., Cat. Lich. Univers. 2: 24 (1922) [1924]
= *Arthonia cinnabarina* var. *gregaria* (Weigel) H. Olivier, Fl. Lich. Orne 2: 250 (1884)
= *Arthonia cinnabarina* var. *kermesina* (Schaer.) Nyl., Lich. Scand. (Helsinki): 257 (1861)
= *Arthonia cinnabarina* var. *marginata* (Turner) Mudd, Man. Brit. Lich.: 249 (1861)
= *Arthonia cinnabarina* var. *nudata* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 2: 26 (1922) [1924]
= *Arthonia cinnabarina* var. *pruinata* Delise ex Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 4: 89 (1856)
= *Arthonia cinnabarina* var. *pruinata* Delise, in Nylander, Act. Soc. linn. Bordeaux 21(4): 410 (1857) [1856]
= *Arthonia cinnabarina* var. *purpurea* (Flörke) Zahlbr., Cat. Lich. Univers. 2: 29 (1922) [1924]

= *Arthonia cinnabarina* var. *tumidula* (Ach.) Wallr., Fl. crypt. Germ. (Norimbergae) 1: 320 (1831)
= *Arthonia coccinea* (Flörke) D. Dietr., Deutschl. Kryptog. Gewächse, 4 Abth.: 79 (1846)
= *Arthonia gregaria* (Weigel) Körb., Syst. lich. germ. (Breslau): 291 (1855)
= *Arthonia gregaria* f. *astroidea* (Leight.) Willey, Syn. Gen. Arthonia: 8 (1890)
= *Arthonia gregaria* f. *coccinea* (Flörke) Jatta, Syll. Lich. Ital. (Trano): 466 (1900)
= *Arthonia gregaria* f. *concolor* (Turner) Willey, Syn. Gen. Arthonia: 7 (1890)
= *Arthonia gregaria f. dubia* (Hook.) Willey, Syn. Gen. Arthonia: 7 (1890)
= *Arthonia gregaria* f. *pruinata* (Delise ex Nyl.) Hue, Bull. Soc. bot. Fr. 54(Mem. 12): 18 (1908)
= *Arthonia gregaria* var. *anerythrea* (Nyl.) Willey, Syn. Gen. Arthonia: 7 (1890)
= *Arthonia gregaria* var. *astroidea* (Leight.) Mudd, Man. Brit. Lich.: 250 (1861)
= *Arthonia gregaria* var. *cinnabarina* (DC.) Mudd, Man. Brit. Lich.: 249 (1861)
= *Arthonia gregaria* var. *concolor* (Turner) Mudd, Man. Brit. Lich.: 249 (1861)
= *Arthonia gregaria* var. *cuspidans* A.L. Sm., Monogr. Brit. Lich., Edn 2 2: 30 (1926)
= *Arthonia gregaria* var. *dubia* (Hook.) Mudd, Man. Brit. Lich.: 249 (1861)
= *Arthonia gregaria* var. *kermesina* (Schaer.) Willey, Syn. Gen. Arthonia: 7 (1890)
= *Arthonia gregaria* var. *marginata* (Turner) Mudd, Man. Brit. Lich.: 249 (1861)
= *Arthonia gregaria* var. *nudata* Müll. Arg., Hedwigia 30: 183 (1891)
= *Arthonia gregaria* var. *pruinata* (Delise ex Nyl.) A.L. Sm., Monogr. Brit. Lich. 2: 210 (1911)
= *Arthonia gregaria* var. *purpurea* (Flörke) Müll. Arg., Bull. Soc. R. Bot. Belg. 30(no. 1): 85 (1891)
= *Arthonia gregaria* var. *tumidula* (Ach.) Vain., in Hiern, Cat. Afr. Pl. 2(2): 448 (1901)
= *Arthonia tumidula* f. *astroidea* (Leight.) J. Nowak, Flora Polska, Porosty (Lichenes) (Warszawa-Kraków) 1(1): 84 (1983)
= *Arthonia tumidula* f. *concolor* (Turner) J. Nowak, Flora Polska, Porosty (Lichenes) (Warszawa-Kraków) 1(1): 85 (1983)

Arthonia tumidula

= *Arthonia tumidula* f. *kermesina* (Schaer.) J. Nowak, Flora Polska, Porosty (Lichenes) (Warszawa-Kraków) 1(1): 85 (1983)
= *Arthonia tumidula* var. *coccinea* (Flörke) J. Nowak, Flora Polska, Porosty (Lichenes) (Warszawa-Kraków) 1(1): 85 (1983)
= *Coniocarpon cinnabarinum* var. *astroideum* Leight., Ann. Mag. nat. Hist., Ser. 2 13(no. 78): 444 (1854)
= *Coniocarpon cinnabarinum* var. *concolor* (Turner) Leight., Ann. Mag. nat. Hist., Ser. 2 13(no. 78): 445 (1854)
= *Coniocarpon cinnabarinum* var. *dubium* (Hook.) Leight., Ann. Mag. nat. Hist., Ser. 2 13(no. 78): 445 (1854)
= *Coniocarpon cinnabarinum* var. *marginatum* (Turner) Leight., Ann. Mag. nat. Hist., Ser. 2 13(no. 78): 444 (1854)
= *Coniocarpon gregarium* (Weigel) Schaer., Naturwiss. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 5: 34 (1821)
= *Coniocarpon gregarium* b *marginatum* (Turner) Arnold, Flora, Regensburg 67(34): 645 (1884)
= *Coniocarpon gregarium* f. *concolor* (Turner) Arnold, Flora, Regensburg 67(30): 596 (1884)
= *Coniocarpon gregarium* var. *coccineum* (Flörke) A. Massal., Memor. Lich.: 116 (1853)
= *Conioloma coccineum* Flörke, Deutsche Lich. 2: [3] (no. 21) (1815)
= *Conioloma coccineum [*unranked*] purpureum* (Flörke) Eschw., in Martius, Fl. bras. enum. pl. 1(1): 170 (1833)
= *Conioloma purpureum* Flörke, in Eschweiler, Syst. Lich.: 26 (1824)
= *Lecanactis cinnabarina* (DC.) Fr., Lich. eur. reform. (Lund): 379 (1831)
= *Lepra kermesina* Schaer., Enum. critic. lich. europ. (Bern): 240 (1850)
= *Lichen tumidulus* (Ach.) DC., in Lamarck, Encycl. Méth., Bot. Suppl. (Paris) 3(1): 353 (1813)
= *Melaspilea coccinea* Stein, in Meyer, Ostafr. Gletscherfahrten: 320 (1890)
= *Opegrapha gregaria* (Weigel) M. Choisy, Bull. mens. Soc. linn. Lyon 19: 10 (1950)
= *Opegrapha gregaria var. pruinata* (Delise ex Nyl.) M. Choisy, Bull. mens. Soc. linn. Lyon 19: 10 (1950)
= *Sphaeria gregaria* Weigel, Observ. Bot.: 43 (1772)
= *Spiloma cinnabarinum* (DC.) Chevall., Fl. gén. env. Paris (Paris) 1: 581 (1826)
= *Spiloma gregarium* (Weigel) Hook., Engl. Fl., Mosses, Hepaticae, Lichens, Characeae and Algae (London) 5(1): 167 (1833)
= *Spiloma gregarium* f. *microstigma* Turner & Borrer, Spec. lichonogr. brit. (Yarmouth): 35 (1839)

Arthonia tumidula

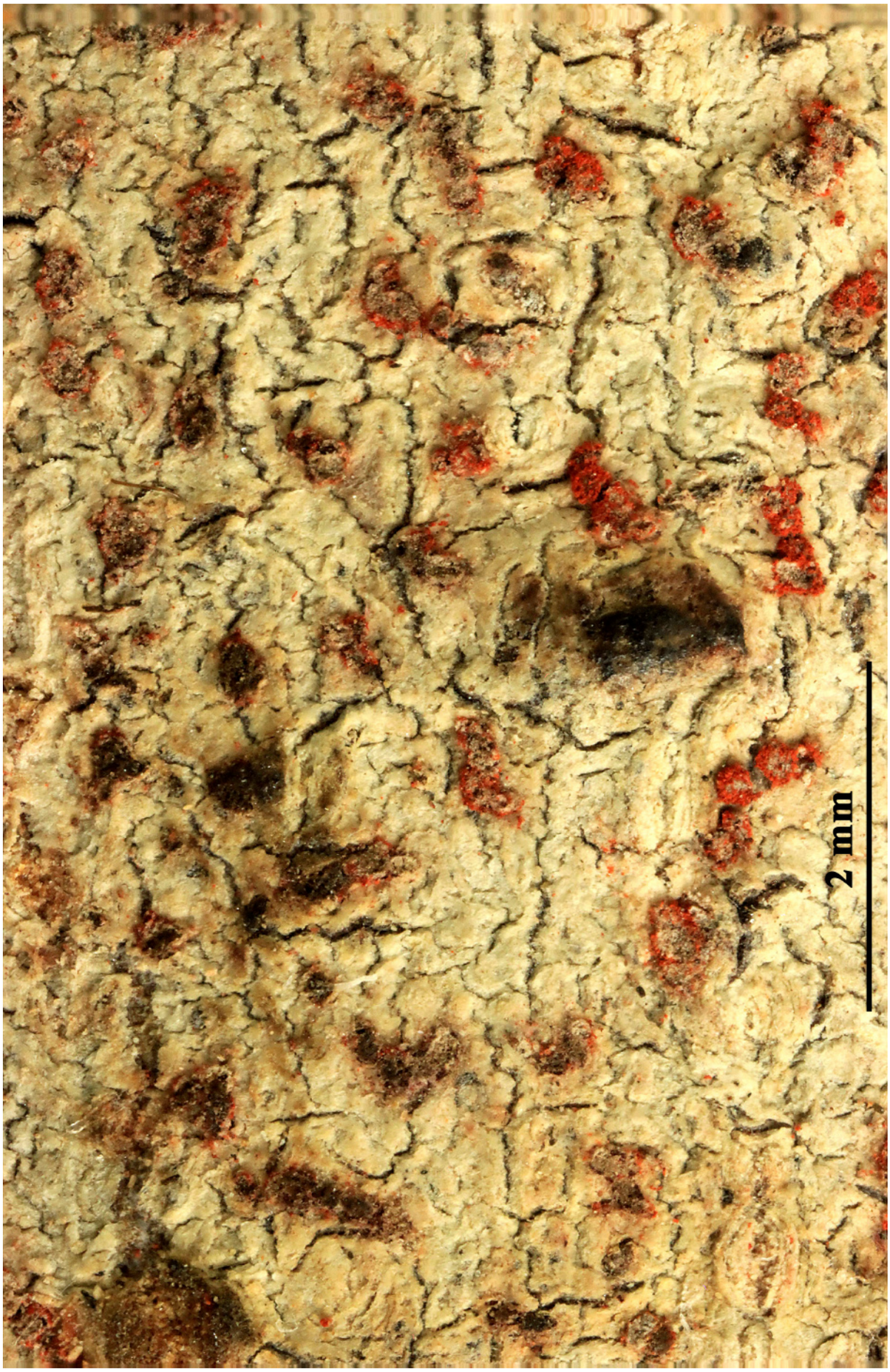
= *Spiloma gregarium* var. *cinnabarinum* (DC.) Turner, Spec. lichonogr. brit. (Yarmouth): 42 (1839)
= *Spiloma gregarium* var. *concolor* Turner, Spec. lichonogr. brit. (Yarmouth): 42 (1839)
= *Spiloma gregarium* var. *dubium* Turner & Borrer, Spec. lichonogr. brit. (Yarmouth): 42 (1839)
= *Spiloma gregarium* var. *dubium* Hook., Engl. Fl., Mosses, Hepaticae, Lichens, Characeae and Algae (London) 5(1): 167 (1833)
= *Spiloma gregarium* var. *marginatum* Turner, Spec. lichonogr. brit. (Yarmouth): 42 (1839)
= *Spiloma tumidulum* Ach. [as 'tumidula'], Methodus, Sectio prior (Stockholmiæ): 11 (1803)
= *Trachylia gregaria* (Weigel) Vain., Bolm Soc. broteriana, Coimbra, sér. 2 6: 171 (1930) [1929-30]
= *Trachylia gregaria* var. *tumidula* (Ach.) Vain., Bolm Soc. broteriana, Coimbra, sér. 2 6: 171 (1930) [1929-30]

[VZ1508], Persia borealis. Prov. Gorgan: Shari, 6 km ad occidentem versus a vico Zirab. Ad corticem Diospyros lotus K, Leg. J. Soják, 24.6.1977, det. A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1508.

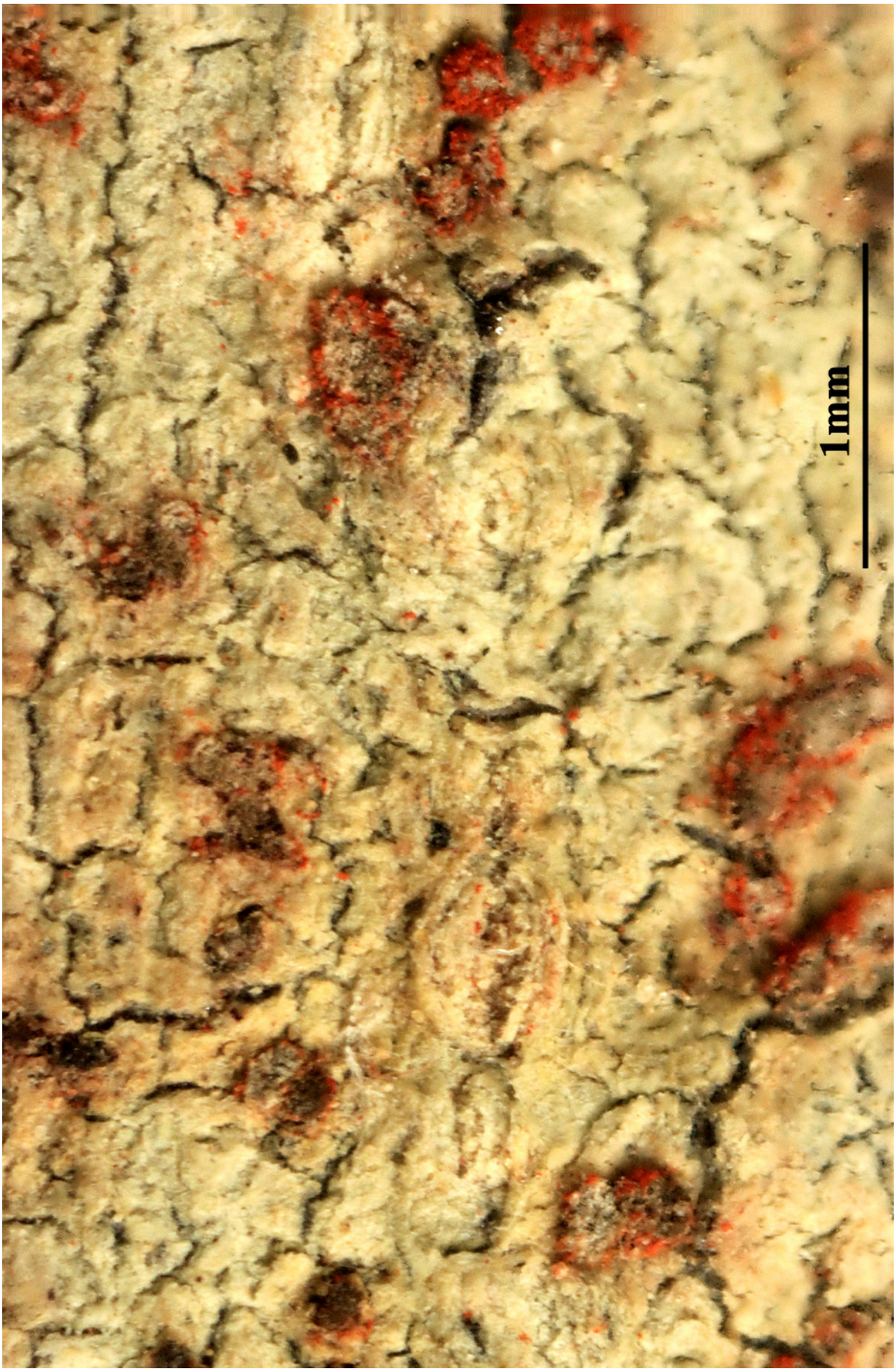
Thallus crustose, endosubstratic or thinly episubstratic, up to 70 µm thick, white to pale grey, sometimes with a pale orange tinge, often bordered by red-brown prothalline lines. Apothecia arthonioid, soon erumpent and sessile, round to narrowly ellipsoid or polygonal, rarely lobed, 0.2-0.7(-1.3) mm, with a reddish brown, flat to convex disc often densely covered by a white or red pruina, the marginal parts almost always bright red-pruinose, especially in young apothecia. Proper exciple poorly developed, of branched and anastomosing, vertically oriented, paraphysoid-like hyphae often incrusted by orange, red or purple granules, amyloid; epithecium more or less inspersed with orange, red or purple and/or colourless crystals soluble in K, 10-20 µm high, K+ red; hymenium colourless to pale yellow, 60-70(-100) µm high, K-, hemiamyloid, I+ red, K/I+ blue; paraphysoids branched and anastomosing above the asci, slightly sinuous, 1-1.5 µm thick, but often brown-walled and to 2.5 µm thick in epithecium; hypothecium colourless to yellowish or pale reddish brown, 25-40(-50) µm high, hemiamyloid, I+ red, K/I+ blue. Asci 8-spored, broadly clavate to subglobose, semi-

fissitunicate, with a large apical dome and a distinct ocular chamber, with a hemiamyloid ring in the tholus, approaching the Arthonia-type. Ascospores (2-)4-5(-7)-septate, at first hyaline, then brownish, oblong ovoid, much larger at one end with progressively smaller cells, (18-)20-28(-33) x (8-)10-11(-12) µm. Pycnidia rare, immersed, the wall red-brown, K+ olive-grey. Conidia hyaline, simple, bacilliform, 3.5-6 x 0.8-1.2(-1.5) µm. Photobiont trentepohlioid. Spot tests: red pigments K+ red-violet, dissolving. Chemistry: different unidentified quinoid pigments in the apothecia. - Note: a mild-temperate, perhaps holarctic species mainly found on *Fraxinus*, but also on trees with harder, more acid bark, such as *Carpinus*, *Fagus* and even *Quercus ilex*, in open, humid broad-leaved woodlands, e.g. along rivers; more frequent in the past, especially in Northern Italy.

Arthonia tumidula



Arthonia tumidula

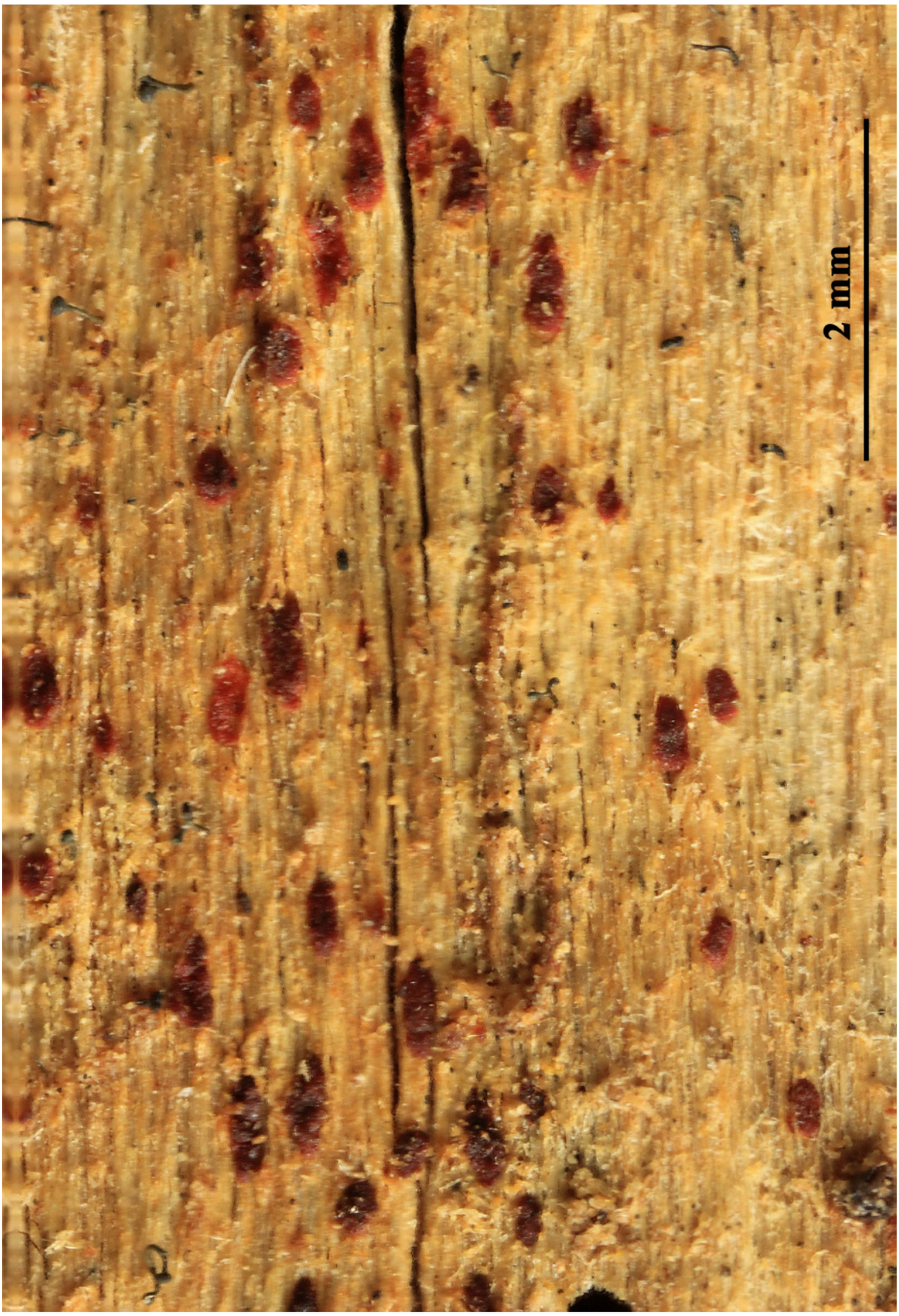


Arthonia tumidula

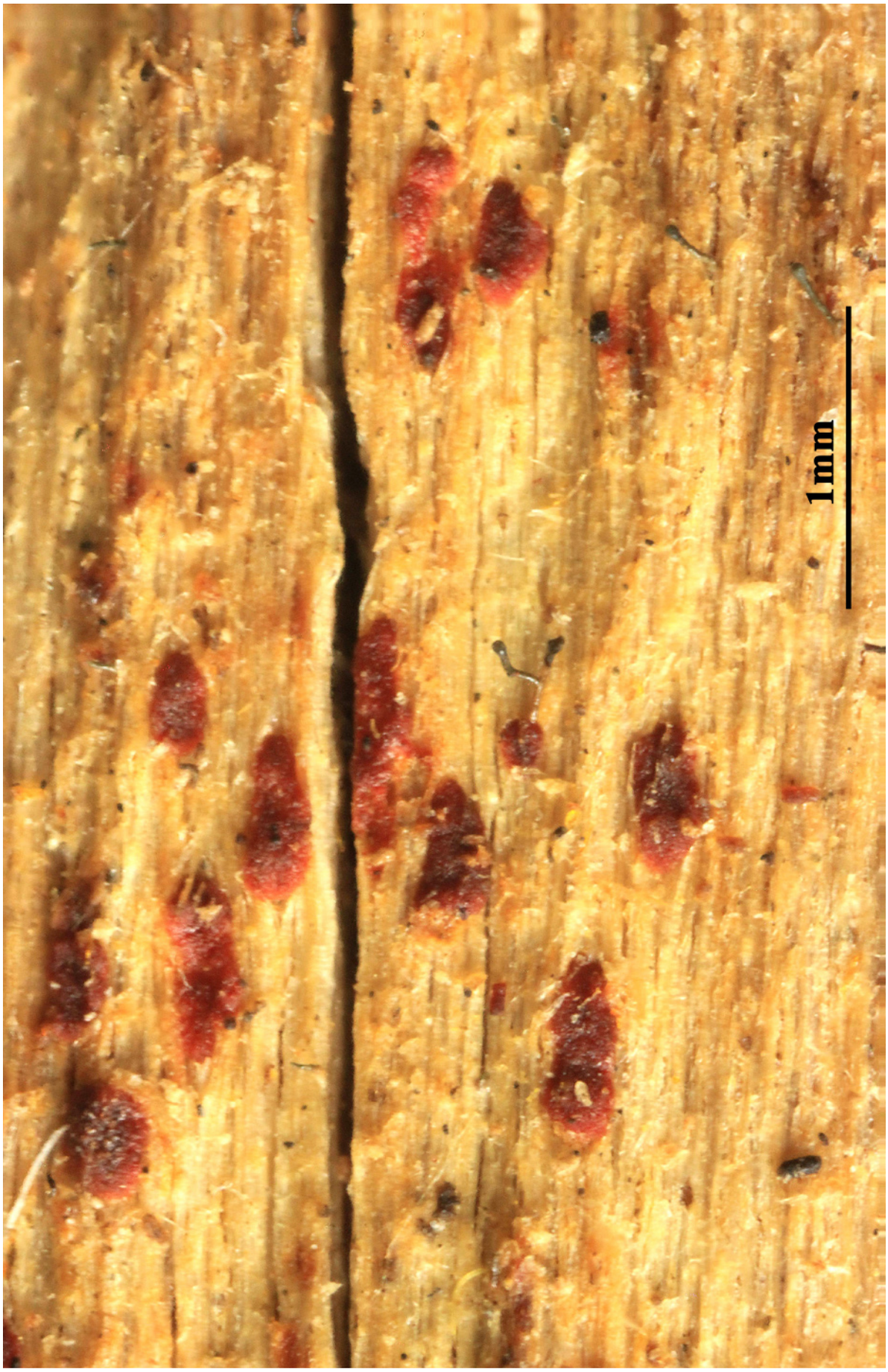
Arthonia vinosa Leight., Ann. Mag. nat. Hist., Ser. 2 18: 331 (1856)
= *Arthonia lurida f. vinosa* (Leight.) Zahlbr., Cat. Lich. Univers. 2: 64 (1922) [1924]
= *Arthonia pineti* Körb., Syst. lich. germ. (Breslau): 292 (1855)
= *Arthonia vinosa var. pineti* (Körb.) Leight., Lich.-Fl. Great Brit.: 392 (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)

[VZ1842], Nova Zelandia. North Island: Wellington, Tararua State Forest, 17 km ad sept.-occid. versus a Masterton, 40°54' austr., 175°28' orient., 550 m. Ad trncum decorticatum *Nothofagi*. Leg et det. L. Tibell (no. 12933), 14.5.1982. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1842.

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

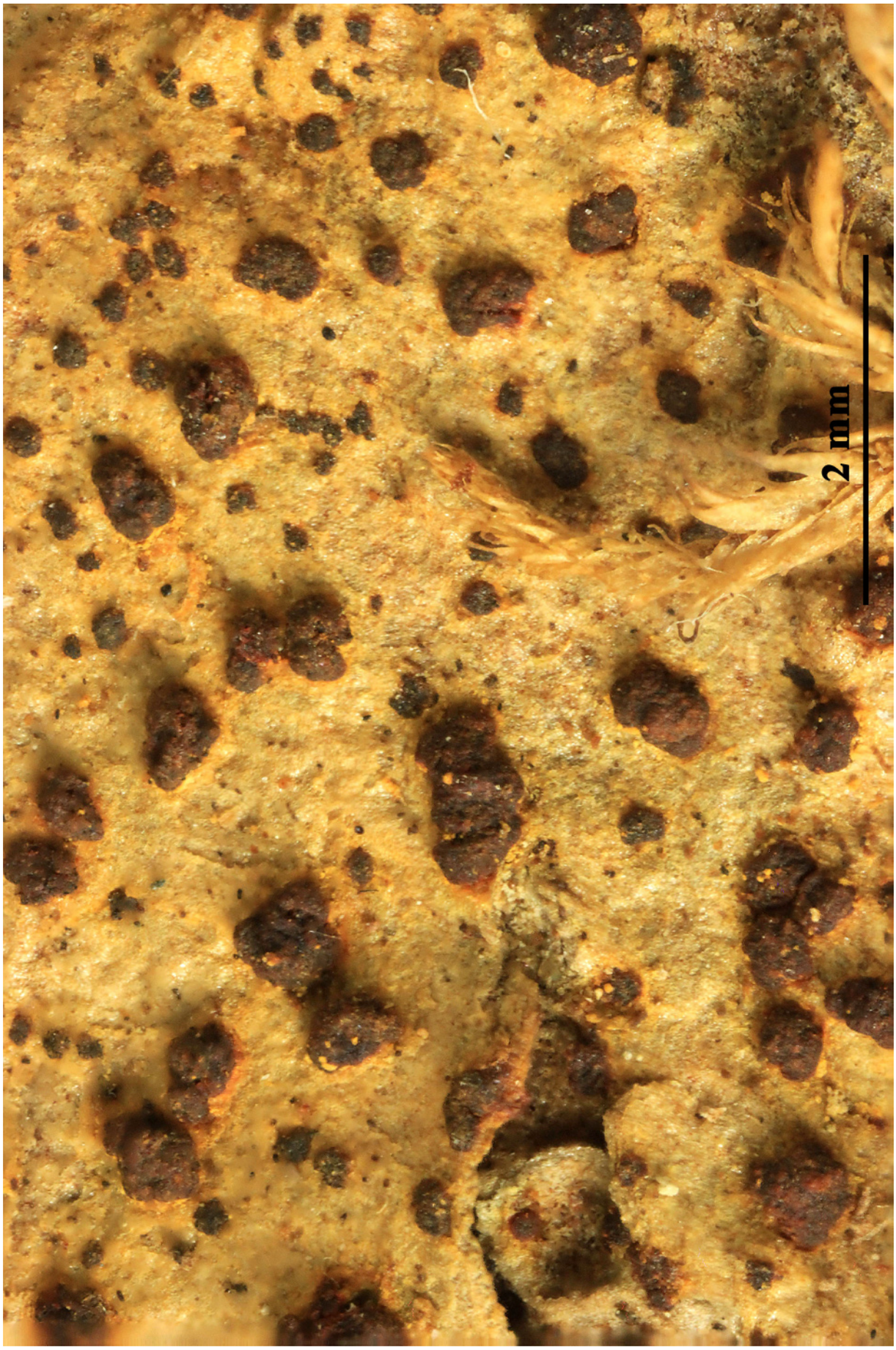


Arthonia vinosa

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)

[VZ1986], Dania. Jutlandia: Sönder-Vissing, in silva "Praestegaard Skov" prope Silkeborg, 100 m. Ad truncum *Quercus petraeae* vetustae. Leg. M. S. Christiansen, 5.8.1983. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1986.

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*.



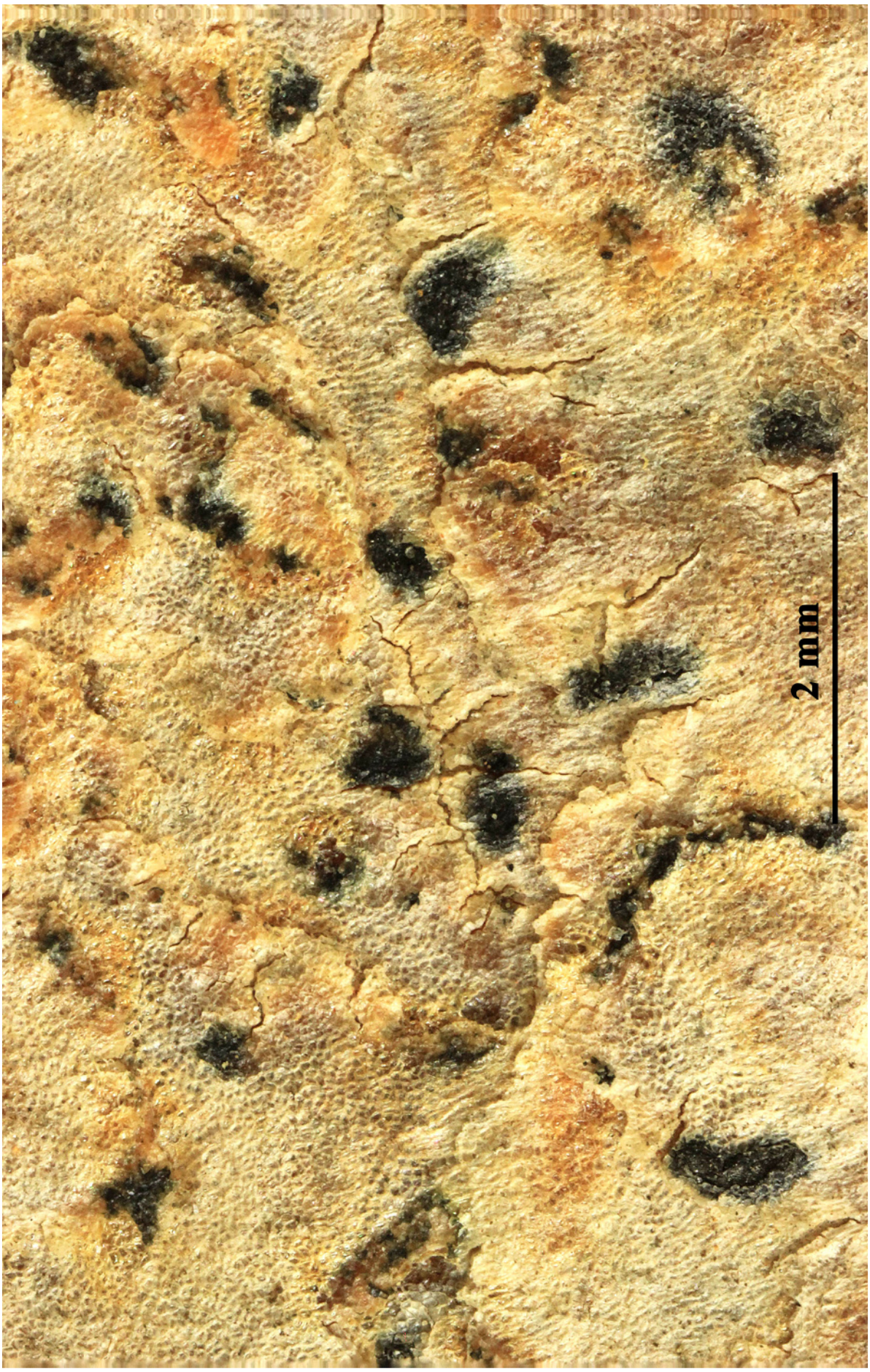
Arthonia vinosa

Arthonia vinosa

Arthothelium crozalsianum B. de Lesd., in Crozals, Ann. Soc. Hist. nat. Toulon no. 10: 112 (1924)
=*Arthonia crozalsiana* B. de Lesd.
= *Arthothelium adriaticum* Zahlbr.
= *Arthothelium burolletii* B. de Lesd.
= *Arthothelium xylographoides* Müll. Arg.

[VZ1302], Hispania. Almería: prope Cabo de Gata, in valle El Sabinar dicta, 50 m. Ad corticem *Opuntiae ficus-indica*. Leg. X. Llimona, 26.3.1975. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1302.

Thallus crustose, not lichenized, very thin, usually continuous, white to pale grey, sometimes delimited by a very thin, dark grey to black prothalline line. Apothecia arthonioid, irregularly rounded (0.3-0.6 mm across) to weakly elongate and (0.5-)1-2(-5) x 0.1-0.3 mm, simple to branched-stellate, slightly raised above thallus level, black and usually epruinose, rarely faintly white-pruinose. Proper exciple absent; epithecium olivaceous-brown to green-black, 10-15 µm high, K+ olivaceous green; hymenium colourless, 35-60 µm high, I+ blue rapidly turning blood-red, K/I+ blue; paraphysoids anastomosing, branched in upper part, 1-1.5 µm thick; hypothecium colourless to pale brown, (10-)20-40(-70) 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 ring-structure. Ascospores submuriform, with (3-)4-5(-6) transverse septa and (0-)1(-2) longitudinal septa in each of the tranverse segments, ellipsoid, persistently hyaline, without a distinct gelatinous sheath, (14-)15-18(-23) x 5.5-9 µm, the wall I-. Pycnidia frequent, more or less hemispherical. Conidia bacilliform, (4-)5-6-5 x c. 1.5 µm. Photobiont: absent. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a mild-temperate, non-lichenized species also known from western North America, mainly found near the coast, mostly on the smooth bark of *Pinus* in stands subject to humid maritime winds, but less bound to humid situations than *A. beccariana*.



Arthothelium crozalsianum

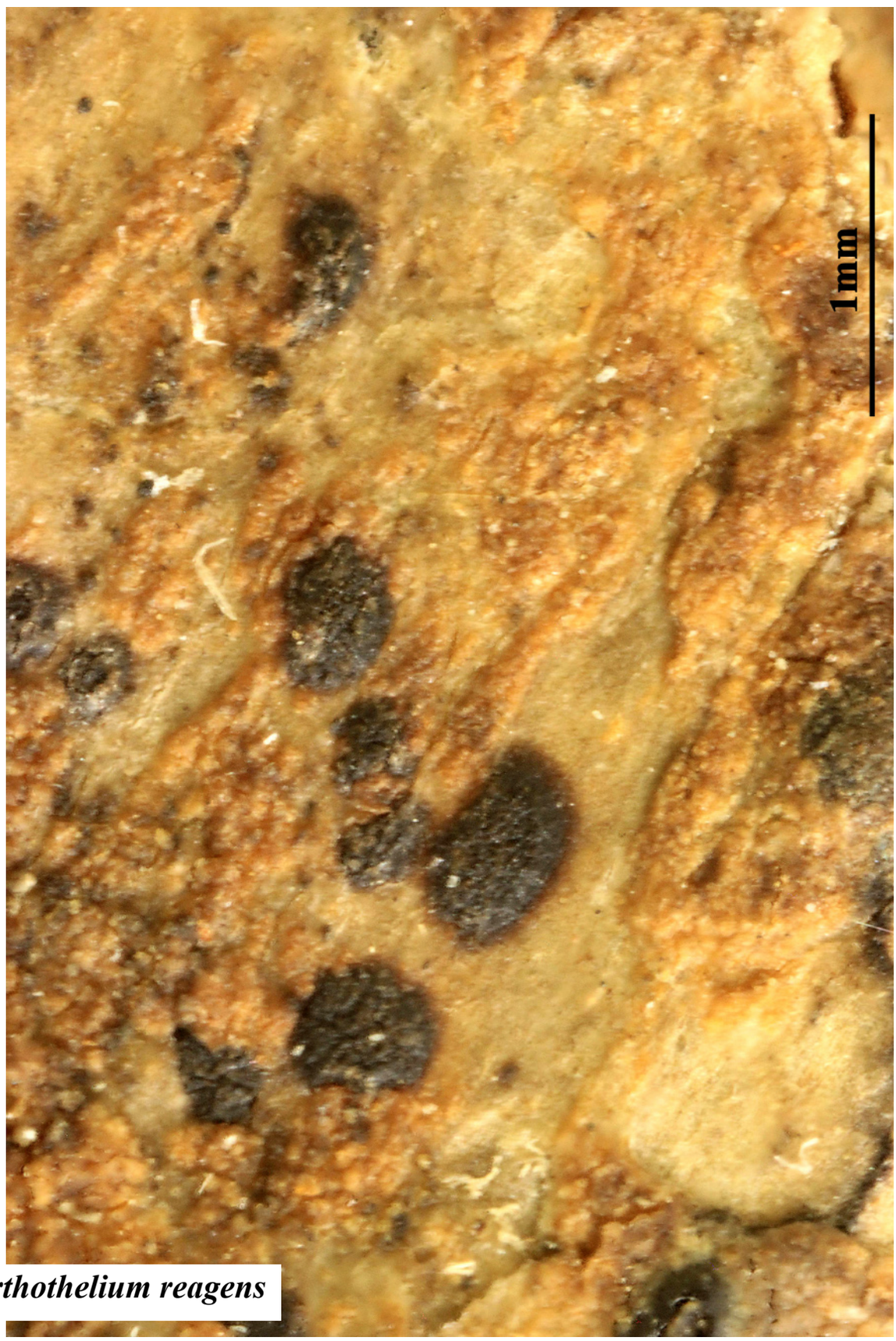
Arthothelium crozalsianum

Arthothelium reagens (Coppins & P. James) Coppins & P. James, in Vězda, Lichenes Selecti Exsiccati, Fascicle 72 (Průhonice): 1 (1981)
= *Arthothelium macounii* (G. Merr.) W.J. Noble, in Ahti, Brodo & Noble, Mycotaxon 28(1): 91 (1987)
= *Arthonia macounii* G. Merr., Ottawa Nat. 30: 36 (1914)
= *Arthothelium ilicinum var. reagens* Coppins & P. James, Lichenologist 11(1): 28 (1979)

[VZ1776], Magna Britannia. Caledonia: Argyll, Seil, Ballachuan, 0-30 m. Ad corticem Coryli. Leg. B. J. Coppins (no. 8129) & P. W. James, 6.8.1980 - TOPOTYPUS. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1776.

Description in Coppins and James (1979):
***Arthothelium ilicinum* var. *reagens* Coppins & P. James var. nov.**
SimiJis *var. ilicino* sed differt apotheciis externe et interioriter aurantiacis ad violaceis et K+ magenta, et ascosporae interdum rubro-brunneae, clavatae, cellula terminali grandi, anteriori 4-6 transversaliter et 1-7 longitudinaliter septata. Typus: Scotia, V.C. 98, Argyll: Seil, Ballachuan, sylva australis e Port Mor, 17/76.15, e Corylo, 30.vi.1976, B.J. Coppins 2558 (E—holotypus; BM—isotypus). Thallus and ascocarps (ardellae) similar to the species; disc of fruits with a scattered, granular, brown-purple pruina. Thecium c. 100 µm high, epithecium of numerous, compacted, irregular, orangebrown to ± violaceous granules, K+ dissolving violet-magenta. Thecium colourless or pale grey in parts, often interspersed with scattered, irregular, orange-brownviolet granules. Hypothecium pale, semi-opaque, with numerous aggregations of orange crystals, K+ dissolving orange-red, rarely magenta. Asci sphaerical or ± ovoid, 50-70 x 40-50 µm, with a very thick (15-30 (µm) wall towards the apex and a well-developed internal dimple, 8-spored. Paraphysoids numerous, anastomosing, irregular and occasionally knotted. Ascospores colourless at first, becoming semiopaque and grey-black, eventually red-brown and opaque, 20-38 x 10-14 µm, clavate, with an enlarged, undivided end cell and an anterior part with 4-6 transverse and 1-7 longitudinal septa. Although similar in most respects to the species, this new variety differs strikingly in the internal and external orange pigmentation of the apothecia which gives a purple-magenta colouration with K. - The spores, with rather sparse longitudinal septation and an enlarged end cell, resemble those of *A. ilicinum var. dictyospora*; however, unlike that variety and var. ilicinum, the spores of *var. reagens* usually become grey-black to deep red-brown at

maturity. Further study of the genus may indicate that this new variety is worthy of species status but on the basis of a single collection and its similarities in anatomy to the ardellae and spores of *var. ilicinum* we prefer to give it an infraspecific rank. A thorough search for similar material in BM from the Atlantic islands and the West Indies failed to reveal any material of *var. reagens*.



Arthothelium reagens

Arthothelium reagens

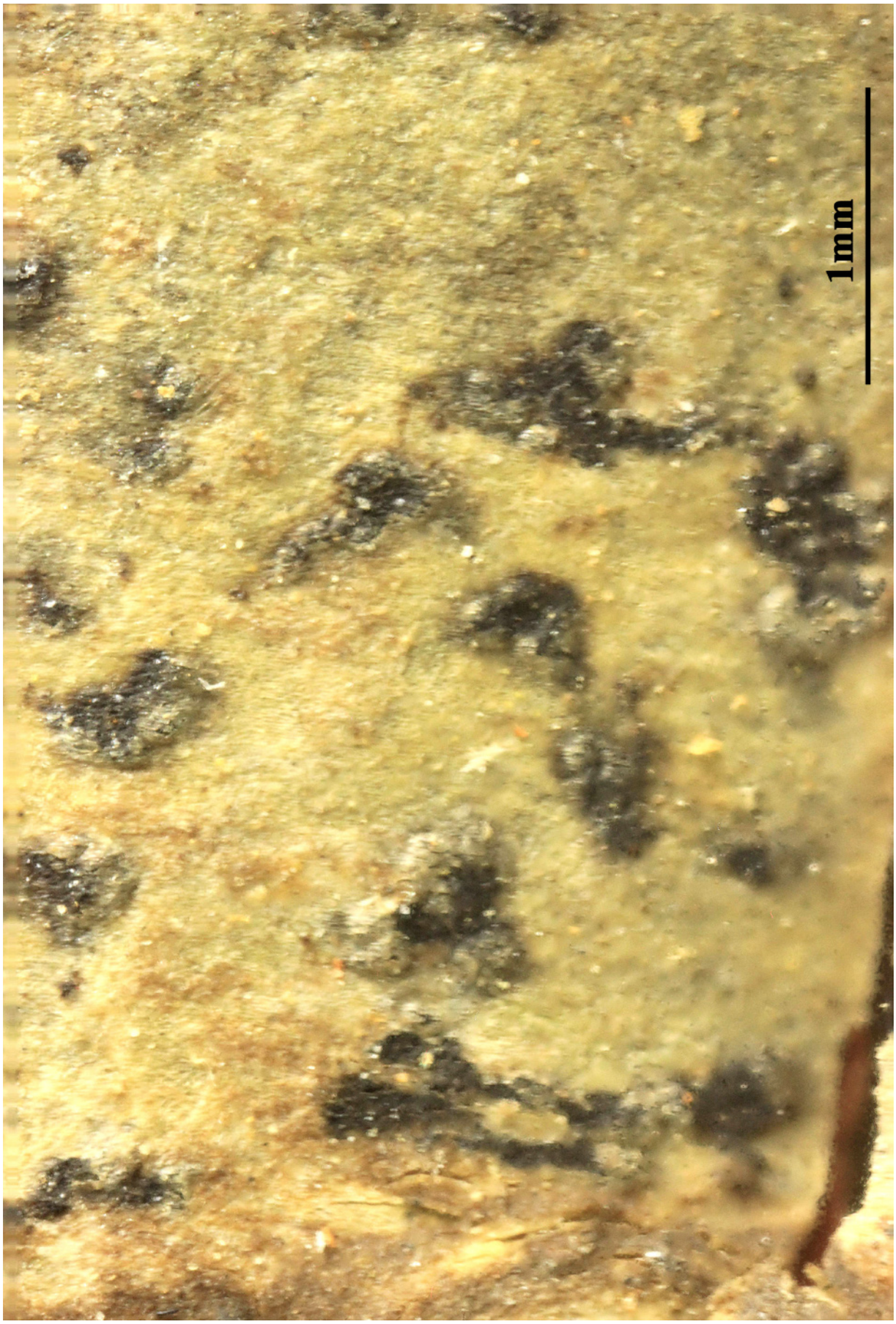
Arthothelium ruanum (A. Massal.) Körb., Parerga lichenol. (Breslau) 3: 263 (1861) [1865]
= *Arthonia astroidea var. rosacea* (Anzi) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 23: 527 (1873)
= *Arthonia rosacea* Anzi, Atti Soc. ital. Sci. nat. 9: 253 (1866)
= *Arthonia ruana* A. Massal., Ric. auton. lich. crost. (Verona): 49 (1852)
= *Arthonia ruanidea* Nyl., in Stizenberger, Ber. Tät. St Gall. naturw. Ges.: 477 (1882) [1880-81]
= *Arthoniopsis ruana* (A. Massal.) Trevis., Lichenoth. Veneta: no. 131 (1869)
= *Arthotheliomyces ruanii* Cif. & Tomas. [as 'ruani'], Atti Ist. bot. Univ. Lab. crittog. Pavia, Ser. 4 10(1): 42, 68 (1953)
= Arthothelium rosaceum (Anzi) Zahlbr., Cat. Lich. Univers. 2: 131 (1922) [1924]
= *Arthothelium ruanideum* (Nyl.) Arnold, Lich. Exsicc.: no. 1078 (1892)
= *Dermatina ruanidea* (Nyl.) Zahlbr., Annln K. K. naturh. Hofmus. Wien 15: 181 (1900)

[VZ1703], Magna Britannia. Anglia. East Sussex: Tunbridge Wells, Nap Wood, 2 km ad meridiem versus a Frant: Ad corticem *Coryli*, in valle rivi. Leg. B. J. Coppins & F. Rose, 22.2.1973. EX A. VěZDA; LICHENES SELECTI EXSICCATI NR. 1703.

Thallus crustose, endosubstratic, dull white, greyish brown to yellowish grey, smooth, thin, effuse, sometimes delimited by a dark prothallus, the thalline hyphae I-. Apothecia arthonioid, rounded to irregularly stellate in outline, 0.5-2 mm across, 70-95(-100) µm tall, slightly immersed and level with thallus, with a black, epruinose, rough, often cracked disc, without a distinct margin, often disintegrating in the central part and peripherically regenerating as small segregated hymenial patches. Epithecium brown-black, 13-21 µm high, K+ greenish; hymenium colourless to pale brown, 35-50 µm high, I+ reddish, K/I+ blue; paraphysoids coherent, simple or sparingly branched in upper part, 1-1.5 µm thick; hypothecium dark reddish brown, 20-50 µm high. Asci 8-spored, broadly clavate, semi-fissitunicate, with a large apical dome, a distinct ocular chamber, and a K/I+ blue ring. Ascospores muriform, with 4-9 transverse septa and 1-3 longitudinal septa, hyaline to pale brown and faintly warted when overmature, obovoid to broadly ellipsoid, (15-)17-24(-26) x 7-9(-11) µm. Pycnidia hemispherical, brown to black, the wall red-brown, K+ greenish. Conidia bacilliform, 4-6.5 x 1-1.5 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-,

KC-, P-, UV-. Chemistry: without lichen substances. - Note: a temperate-suboceanic lichen found on smooth bark of deciduous trees and shrubs (e.g. *Alnus*, *Fagus*, *Fraxinus*, *Corylus*, etc.) in humid deciduous forests, often on the basal parts of trunks; widespread.

Arthothelium ruanum

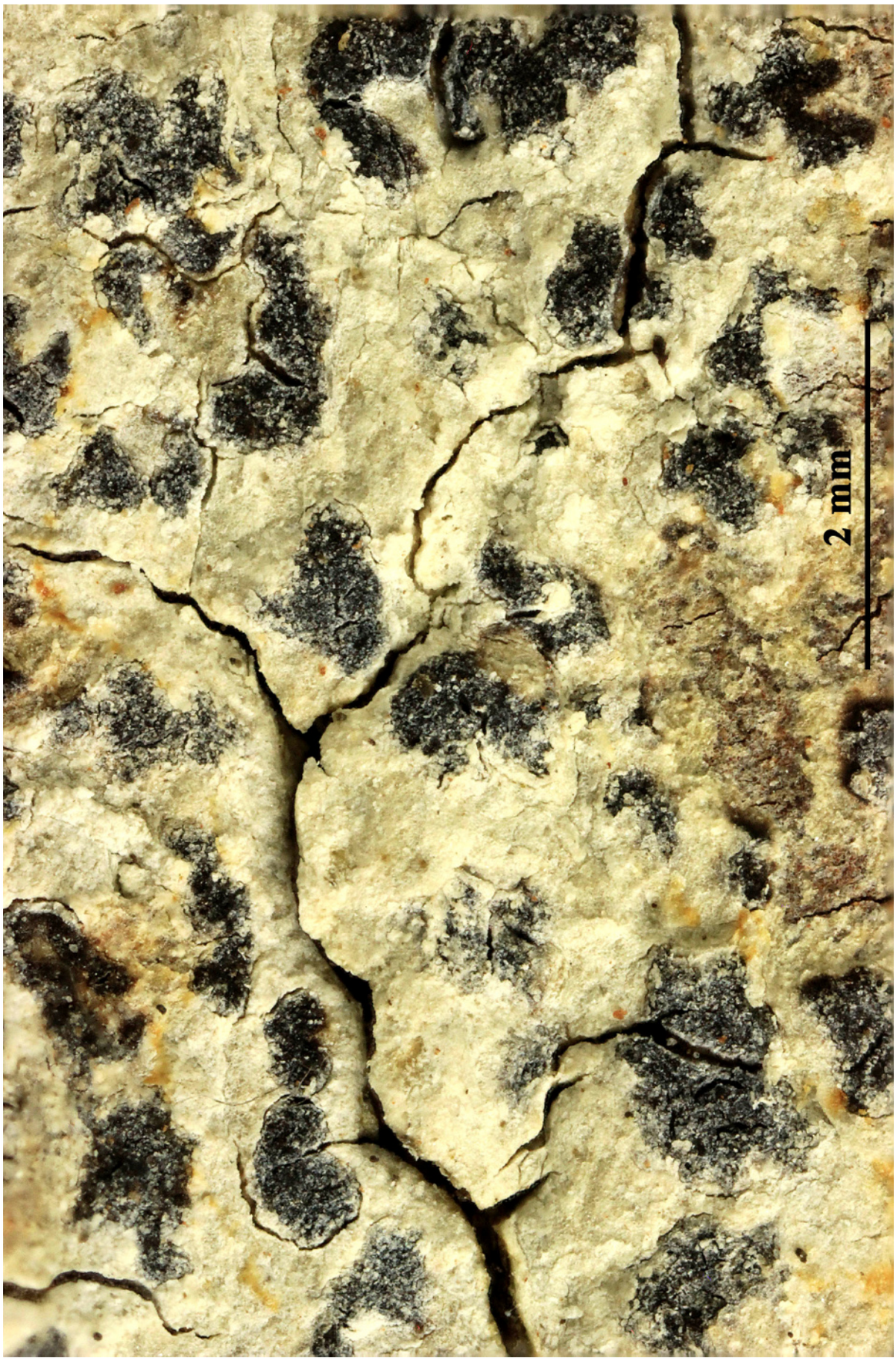


Arthothelium ruanum

Arthothelium spectabile A. Massal., Ric. auton. lich. crost. (Verona): 54 (1852)
= *Arthonia spectabilis* Flot., in Fries, Lich. eur. reform. (Lund): 371 (1831)
= *Arthonia spectabilis* (A. Massal.) Anzi, Cat. Lich. Sondr.: 93 (1860)

[VZ1851], URSS. Transcaucasia, Colchis: distr. Soci, in valle fluvii Macesta, supra pagum Razdolje, 100 m. Ad corticam *Quercus* vetustae. Leg. A. Vězda,, 25.3.1982. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1851.

Thallus crustose, mostly endosubstratic, effuse, greyish white to greenish grey, with or without a dark prothallus, the thalline hyphae I+ blue. Apothecia arthonioid, rounded to angular, up to 2 mm across, level with thallus, with a flat to slightly convex, black, epruinose, rough disc, without a distinct proper margin. Epithecium pale to dark reddish brown, often with bark fragments, K+ reddish; hymenium patchily brownish, up to 150 µm high, I+ red, K/I+ blue, K+ faintly green; paraphysoids branched and anastomosing, sinuous, c. 0.5-1.5 µm thick, the apices without a brown cap; hypothecium brownish, c. 50 µm high, with bark fragments, K+ faintly green. Asci 8-spored, subglobose, semi-fissitunicate, with a large apical dome and a distinct ocular chamber, lacking K/I+ blue structures. Ascospores muriform, with 5-7 transverse septa and 1-3 longitudinal septa in each transverse segment, hyaline, ellipsoid, 26-37 x 12-15 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-. Chemistry: without lichen substances. - Note: a temperate-suboceanic lichen found on the smooth bark of deciduous trees in ancient forests.



Arthothelium spectabile

Arthothelium spectabile

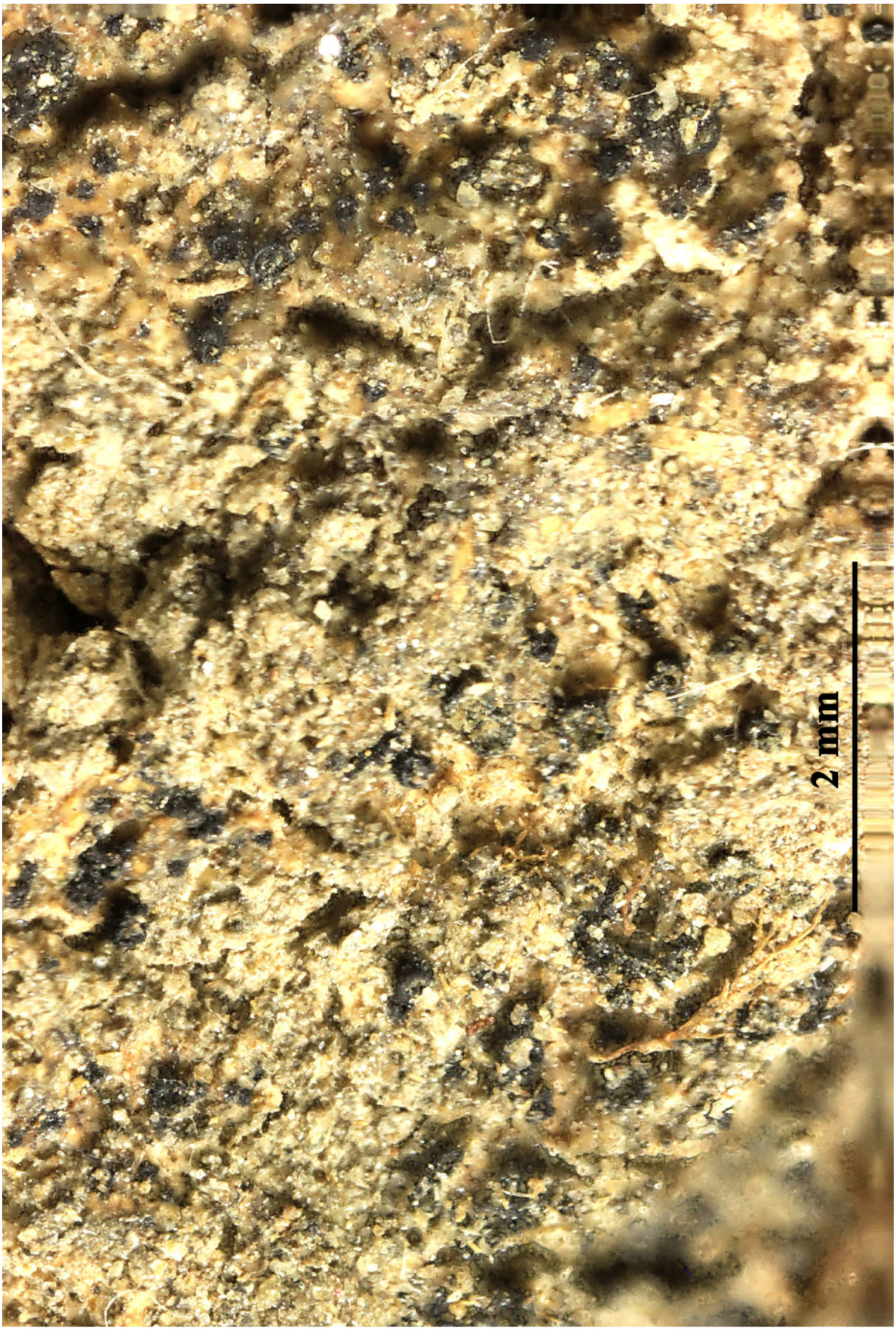
Arthrorhaphis grisea Th. Fr., Nova Acta R. Soc. Scient. upsal., Ser. 3 3: 304 (1861) [1860]
= *Arthrorhaphis fuscoreagens* (Vain.) Poelt [as 'fuscireagens'], Best. europ. Flecht. (Vaduz): 127 (1969)
= *Bacidia arenicola* (Mudd) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 15: 214 (1905)
= *Bacidia flavovirescens* var. *arenicola* (Mudd) A.L. Sm., Monogr. Brit. Lich. 2: 165 (1911)
= *Bacidia fuscoreagens* (Vain.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 167 (1911)
= *Gongylia sabuletorum* (Fr.) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau) 2(2): 330 (1879)
= *Gongylia viridis* A.L. Sm., J. Bot., Lond. 49: 42 (1911)
= *Lahmia fueistingii* Körb. [as 'füistingii'], Parerga lichenol. (Breslau) 5: 464 (1865)
= *Lecidea arenicola* (Nyl.) Linds., Quart. J. Microscop. Sci., N.S. 9: 136 (1896)
= *Lecidea fuscoreagens* Vain. [as 'fusco-reagens'], Meddn Soc. Fauna Flora fenn. 10: 16 (1883)
= *Mycobacidia arenicola* (Mudd) Sacc. & D. Sacc., Syll. fung. (Abellini) 18: 183 (1906)
= *Parathalle fueistingii* (Körb.) Clem. [as 'fuistingi'], Gen. fung. (Minneapolis): 174 (1909)
= *Pragmopora fueistingii* (Körb.) J. Schröt. [as 'fuistingii'], in Cohn, Krypt.-Fl. Schlesien (Breslau) 3.2(1–2): 128 (1893) [1908]
= *Raphiospora arenicola* Mudd, Man. Brit. Lich.: 186 (1861)
= *Raphiospora flavovirescens* f. *arenicola* (Mudd) Arnold, Flora, Regensburg 54(4): 50 (1871)
= *Raphiospora flavovirescens* var. *arenicola* (Mudd) Arnold, Flora, Regensburg 46(38): 601 (1863)
= *Raphiospora grisea* (Th. Fr.) Arnold, Flora, Regensburg 54(4): 50 (1871)
= *Sagedia sabuletorum* (Fr.) A. Massal., Symmict. Lich.: 98 (1855)
= *Secoliga flavovirescens* var. *arenicola* (Mudd) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 13 (1863)
= *Segestria sabuletorum* (Fr.) Trevis., Conspect. Verruc.: 6 (1860)
= *Verrucaria epigaea* var. *sabuletorum* Fr., Lich. eur. reform. (Lund): 432 (1831)
= *Verrucaria sabuletorum* (Fr.) Fr., Corpus Fl. Prov. Suec. 1: 288 (1835)

[VZ2450], Bohemoslovacia. Moravia septentrionalis: montes Sudetes orientales, in declivitate montis "Praděd", 1459 m. Ad terram in fossis

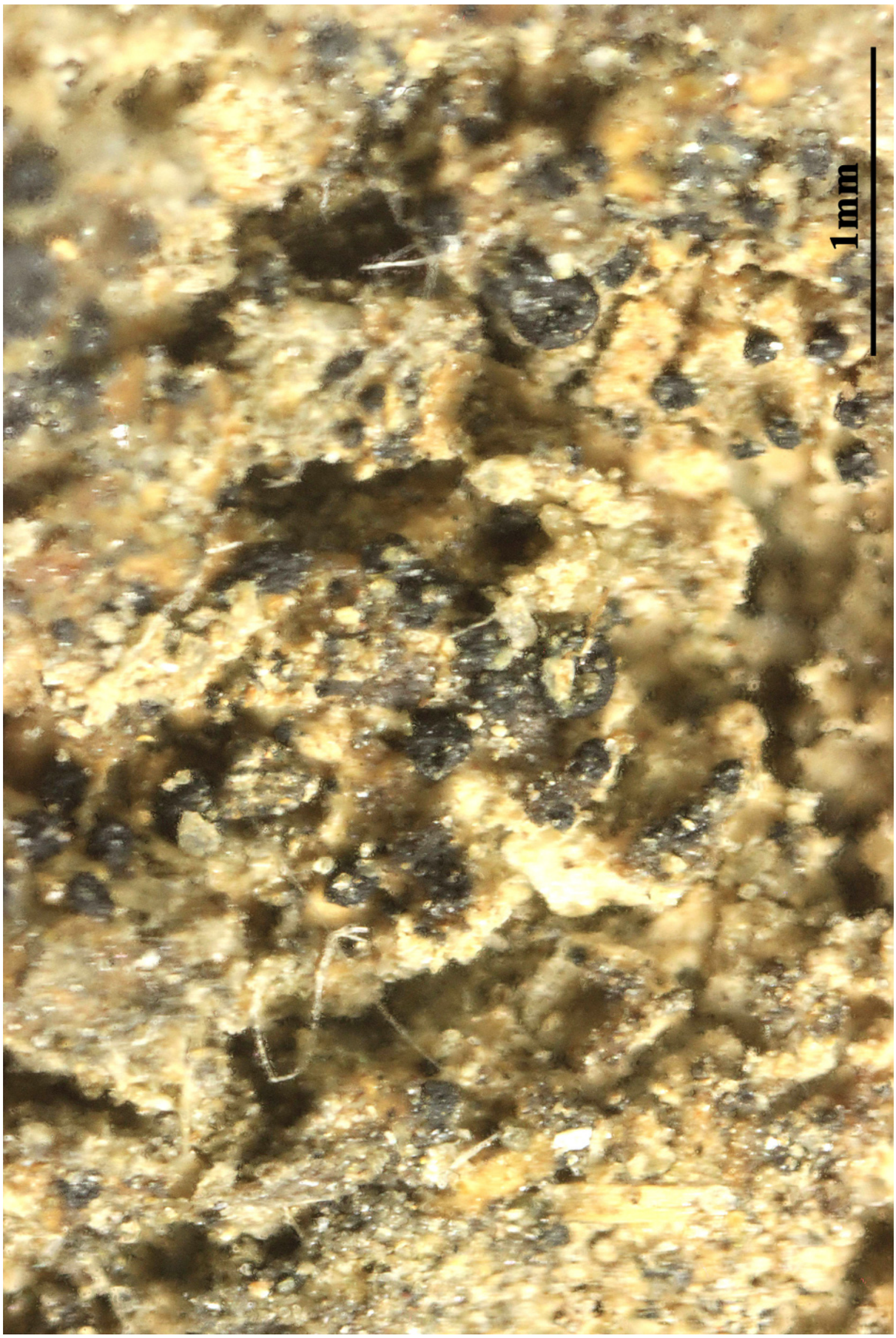
viae, in thallo lichenis (*Baeomyces rufus*) vigens. Leg. A. Vězda, 1.5.1969. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2450.

Thallus crustose, episubstratic, grey-white to dark grey-green, thin, developing on the thalli of Baeomyces-species, immersed in the thallus of the host and appearing as a dark spot. Apothecia lecideine, black, 0.2-0.5 mm across, sessile, not constricted at base, with an initially urceolate, then concave to finally flat, smooth disc, and a thick, rugose, persistent proper margin. Exciple dark brownish green in the outer and innermost parts, paler inbetween; epithecium brownish to greenish brown, K-; hymenium colourless, inspersed with oil droplets, I ; paraphyses free, slender (to 2 µm thick), branched and anastomosing, not thickened at apex; hypothecium brown in lower part. Asci 8-spored, subcylindrical to clavate, the wall of young asci with a poorly developed tholus and an ocular chamber, that of mature asci more or less uniformly thick throughout. Ascospores (8-)12-15-septate, hyaline, acicular, thin-walled, (20-)30-70(-90) x 2-3.5(-4) µm. Pycnidia black, usually superficial, rarely immersed. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: an arctic-alpine species found on soil and weathered siliceous rocks near and above treeline, starting the life-cycle on specie of *Baeomyces* (*B. carneus, B. rufus* and, more rarely, *B. placophyllus*), later an autonomous lichen.

Arthrorhaphis grisea



Arthrorhaphis grisea



Arthrorhaphis grisea

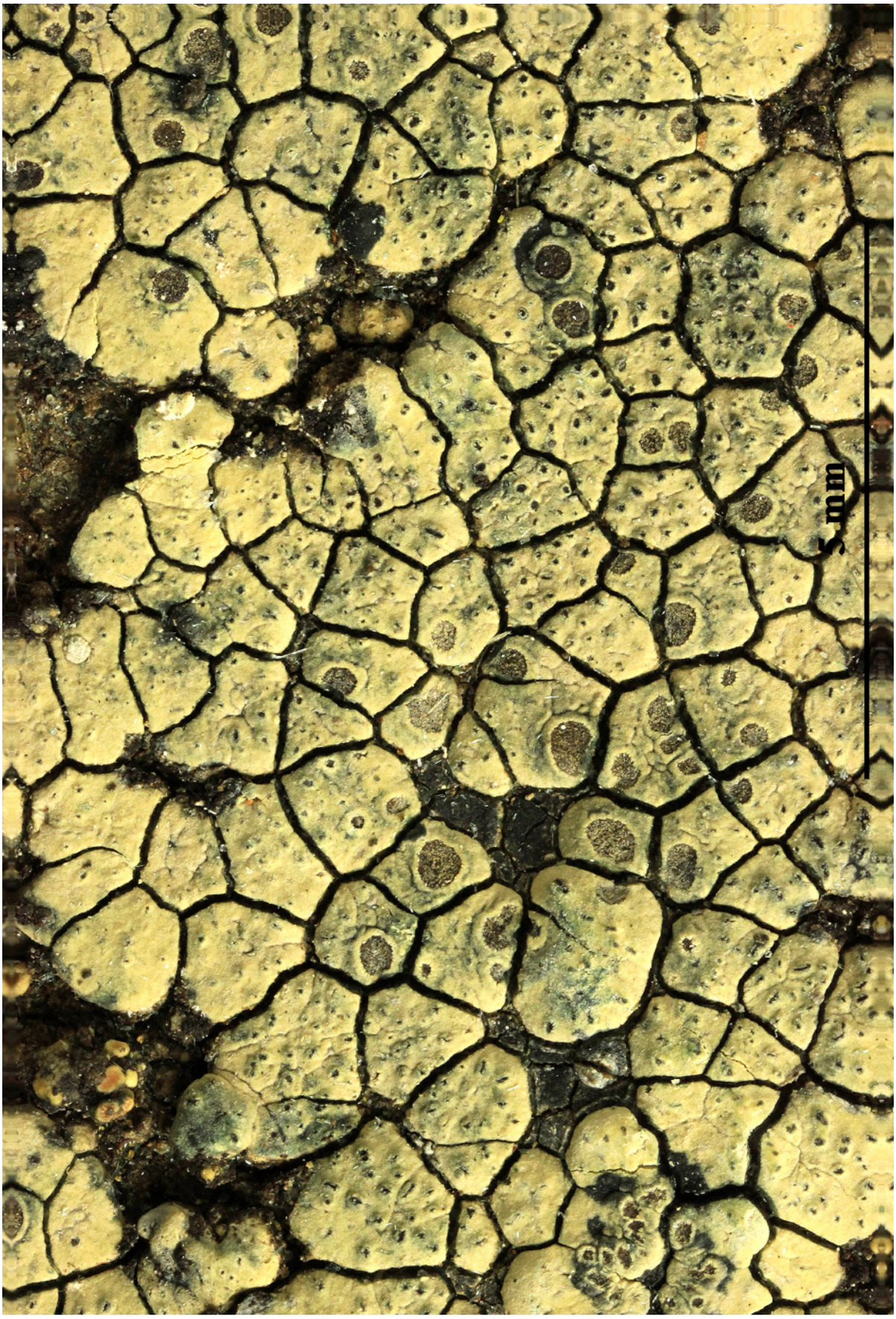
Aspicilia alpina (Sommerf.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 21(3-4): 1107 (1871)
= *Bellemerea alpina* (Sommerf.) Clauzade & Cl. Roux, Bull. Soc. bot. Centre-Ouest, Nouv. sér. 15: 129 (1984)
= *Aspicilia alpina* var. *evolutior* (Zahlbr.) Oxner, Novosti Sist. Nizsh. Rast. 9: 286 (1972)
= Aspicilia cinereorufescens var. alpina (Sommerf.) Th. Fr., Nova Acta R. Soc. Scient. upsal., Ser. 3 3: 234 (1861) [1860]
= *Cornicularia muricata* f. *alpina* (Schaer.) Gyeln., Lichenoth. univers., Fasc. 2: no. 40 (1935)
= *Cornicularia tenuissima* f. *alpina* (Schaer.) Erichsen, Flechtenfl. Nordwestdeutschl.: 342 (1957)
= *Cornicularia tenuissima* var. *alpina* (Schaer.) Zahlbr., Cat. Lich. Univers. 6: 427 (1930)
= *Gussonea cinerea* var. *alpina* (Sommerf.) Tornab., Atti Accad. Gioenia Sci. Nat. Catania, Ser. II 5(Suppl.): 23 (1848)
= *Lecanora alpina* Sommerf., Suppl. Fl. lapp. (Oslo): 91 (1826)
= *Lecanora alpina* var. *evolutior* Zahlbr., Rep. Sci. Res. Norweg. Exped. Novaya Zemlya, 1921(no. 43): 5 (1928)
= *Lecidea alpina* Schaer., Lich. helv. spicil. 3: 147 (1828)
= *Parmelia alpina* (Sommerf.) Amo, Flora cryptogamica de la Péninsula Iberica, descripcion de las plantas acotyledoneas que crecen en Espana y Portugal (Granada): 410 (1870)
= *Parmelia cinerea* var. *alpina* (Sommerf.) Hornem., Dansk Oekon. Plantel.: 536 (1837)
= *Raphiospora flavovirescens* f. *alpina* (Schaer.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 25: 458 (1875)

[VZ1549], Suecia. Härjedalen: Tännäs Paroecia Gruvvålen prope Mittakläppen, 900 m. Ad rupes prope metalla cupri vetusta. Leg. R. Santesson ,(no. 25150), 16.8.1974. - Annot from R. Santesson: the cooper-ore modification described as var. *sulphurata* Th. Fr. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1549.

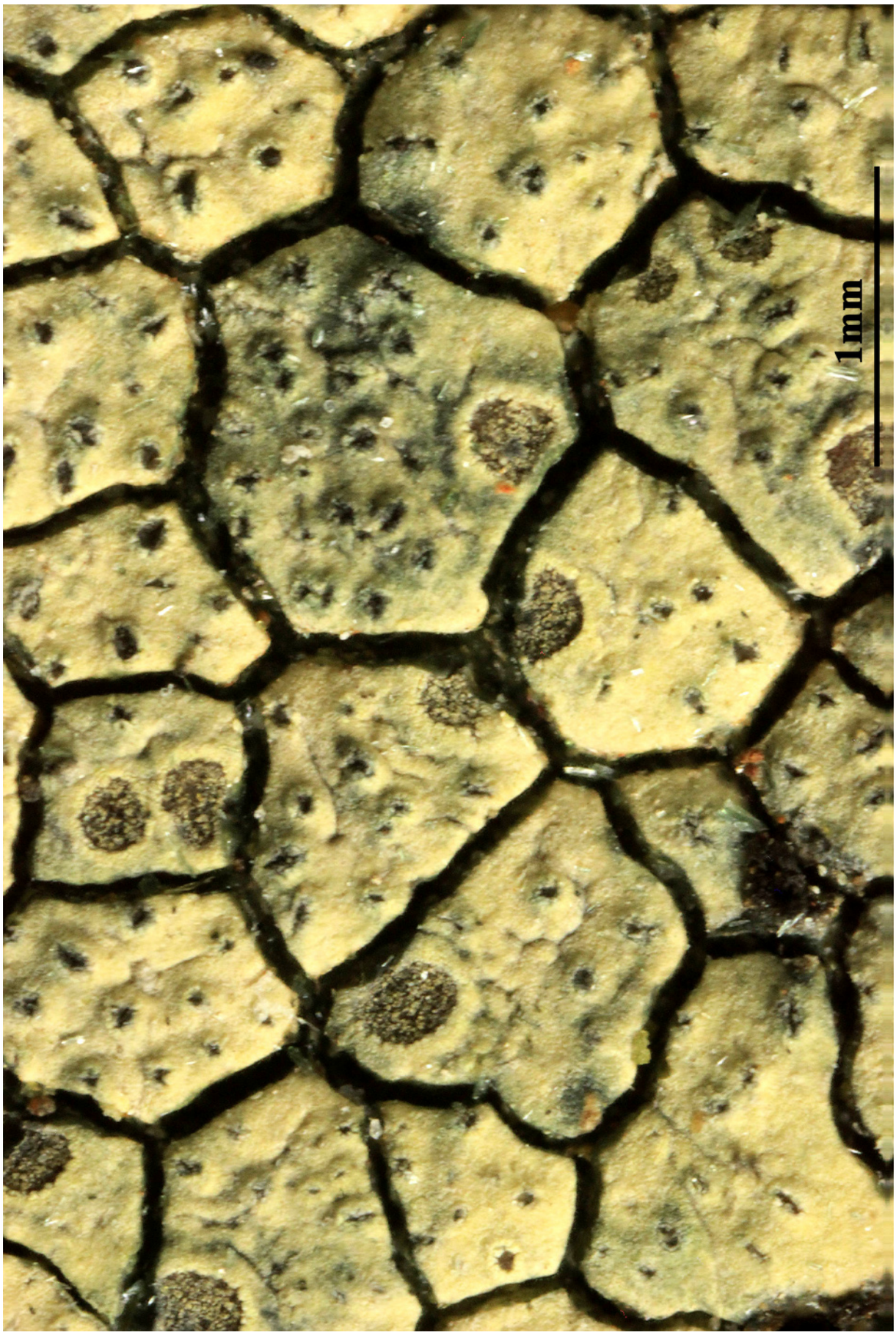
Thallus conspicuously areolate-cracked, rather thick, 1-5 cm in diam., ±orbicular, at times spreading irregularly among other lichens; different thalli often growing adjacent to each other in a mosaic pattern; areoles flat to convex, angular or rounded, often fertile, (0.2-)0.5-2(-2.7) mm in diam., contiguous, separated by cracks or ±dispersed, especially at margins; prothallus black; surface whitish to beige, fawn, or pale brown, or gray to blue-gray, dull, without soredia; cortex 10-30 µm

thick, uppermost part ±brown, 5-12(-15) µm thick, with cells 5-7 µm in diam., covered with a thin epinecral layer, (0-)1-5 µm thick; photobiont chlorococcoid, cells ± round, 7-18 (-20) µm in diam. Apothecia: immersed, aspicilioid, numerous, (0.2)0.5-1.5 mm in diam., 1-2(-5) per areole, round to irregular or ±angular, concave at first, becoming plane or convex and ±sessile in older fruits; disc brown-red to red-brown when wet or blackish brown to brown-black when dry, rather often pruinose; thalline margin thin, ±elevated, concolorous with thallus; exciple thin or absent, (0-)1025(-30) µm wide, I+ blue; uppermost cells brown, ±globose, 4-5(-6) µm in diam;. epihymenium brown, N- hymenium: hyaline, I+ blue, (60-)70-100(-110) µm tall; paraphyses 2-2.5(-3) µm wide, with ±swollen apices 2.5-4 µm wide, usually with a thin, dark brown cap; subhymenium and hypothecium pale, I+ blue, together 30-60 µm thick asci: clavate, (35-)40-50 x (12-)15-20 µm, Porpidia-type, 8-spored; ascospores hyaline, simple, ellipsoid, (8-)10-17(-20) x (5-)6-13 µm. Pycnidia often present, immersed, 1-6/areole; conidia bacilliform, at times ±fusiform, (4-)5-6 x 1-1.5 µm; Spot tests thallus K+ red, C-, KC-, P+ yellow-orange; medulla I+ blue; Secondary metabolite norstictic acid. Substrate and ecology: on ±exposed, siliceous rock, crystalline schist or volcanic rock as basalt in alpine areas and upper coniferous forests World distribution bipolar; arctic-alpine; Eurasia; North America, Australia, New Zealand. - Notes: *Bellemerea alpina* is a rather common and abundant species at high elevation, at least in the Pacific NW. It is quite variable, but easily recognizable by its typical thallus and the K+ red reaction (norstictic acid).

Aspicilia alpina



Aspicilia alpina



Aspicilia alpina

Aspicilia caesiascens Pišút, Preslia 50(3): 194 (1978)

[VZ1602], Persia. Teheran, in declivibus praeruptis in pede montis Elburz supra Evine-Tehran, 2300 m. Ad parietes altos rupium graniticarum. Leg. J. Soják, 8.5.1977. det. A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1602.

Ex Pisut:
Planta saxicola, foliacea, monophylla, irregulariter orbiculata, gompho centrali substrato a ffixa, ex affinitate *Aspiciliae oxnerianae* BLUM. Ab ea differt praesertim thallo minore (0,5-2 cm diam.), tenuiore (in centro ad 1 mm crasso), superne caesio vel caesiascenti (haud sordide olivaceo vel .flavo fuscescenti), subtus rugoso (haud levi), sporis minoribus [(13,5)16 - 19 x 8 - ll µm] ellipticis (haud sphaeroidalibus). Usbekistania: ad parietem verticalem rupis calcareae in dec1ivi supra pagum Aman Kutau (ad viam publicam Samarkand - 8achrisabe), alt. 1500 m. 24. 4. 1975.

Das Lager ist einblättrig, unregelmässig rundlich, mit einem Nabel der Unterlage angewachsen, 0,5-2 cm gross, in der Mitte bis l mm dick, oben bläulichgrau bis blaugrau , areoliert, unten blass gelbbräunlich, auffalend faltig-rillig oder runzelig. Die obere Rinde ist 50 - 100 µm hoch, paraplektenchymatisch, die untere 30 - 80 µm hoch , unregelmässig paraplektenchymatisch. Apothezien zahlreich, häufig das ganze Lager bis zum Rand bedeckend, zuerst punktförmig, später mit verbreiterten bläulichgrau bereiften Scheiben und mit wenig erhabenen Rändern. Das Hypothezium ist 50 - 70 µm hoch , blassgelblich, das Hymenium farblos, 110 - 125 µm hoch, das Epihymenium oliv bräunlich, mit einer ca. 10 - 13 µm hohen amorphen Schicht bedeckt. Die Paraphysen sind 4 - 5 µm dick; die Asci 70 - 100 x 10-21 µm gross, mit 8 zweireihig angeordneten Sporen. Die Sporen sind einzellig, farblos, kurz- bis langelliptisch , (13 ,5) 16 - 19 x 8 - ll µm gross. Die Gonidien zu Trebouxia gehörend, ca. 8 - 21 µm im Durchmesser. Das Lager und das Mark reagieren mit K, P und C negativ, der untere Teil des Hypotheziums reagiert mit JKJ blau , das Hymenium bläulichgrün. Von der ebenfalls blättrigen *Aspicilia oxneriana* BLUM unterscheidet sich unsere Sippe besonders durch die bläuliche Färbung der Oberseite, durch die Lagergrössc und -dicke und besonders durch die auffalend faltig-rillige oder runzelige Unterseite. Anatomisch unterscheidet sie sich besonders durch kleinere und elliptische Sporen, kleinere Asci und

ein niedrigeres Hymenium. *Aspicilia caesiascens* wuchs spärlich auf einer steilen Kalkwand.

Aspicilia caesiascens

Aspicilia caesiascens

Apicilia calcarea (L.) Mudd var. ***dobrogensis*** Vězda, Vězda in Lichenes Selecti Nr. 1637

Aspicilia calcarea (L.) Körb., Parerga lichenol. (Breslau) 1: 94 (1859) [1865]

= *Lichen calcareus* L., Sp. pl. 2: 1140 (1753)

= *Circinaria calcarea (L.) A. Nordin, Savić & Tibell*, Mycologia 102(6): 1341 (2010)

= *Aspicilia caesioalba* (Le Prévost ex Duby) Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 5 sér. 2(1): 59 (1910)

= *Aspicilia calcarea f. caesioalba* (Le Prévost ex Duby) Eitner, Jber. schles. Ges. vaterl. Kultur 78(2b Abth.): 10 (1901) [1900]

= *Aspicilia calcarea var. caesioalba* (Le Prévost ex Duby) Hazsl., Magyar Birodalom Zuzmó-Flórájá: 129 (1884)

= *Aspicilia contorta var. caesioalba* (Le Prévost ex Duby) Kremp., Denkschr. Kgl. Bayer. Bot. Ges., Abt. 2 4: 176 (1861)

= *Aspicilia contorta var. calcarea* (L.) Körb., Syst. lich. germ. (Breslau): 166 (1855)

= *Lecanora calcarea* (L.) Sommerf., Suppl. Fl. lapp. (Oslo): 102 (1826)

= *Lecanora calcarea f. caesioalba* (Le Prévost ex Duby) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 113 (1858) [1857]

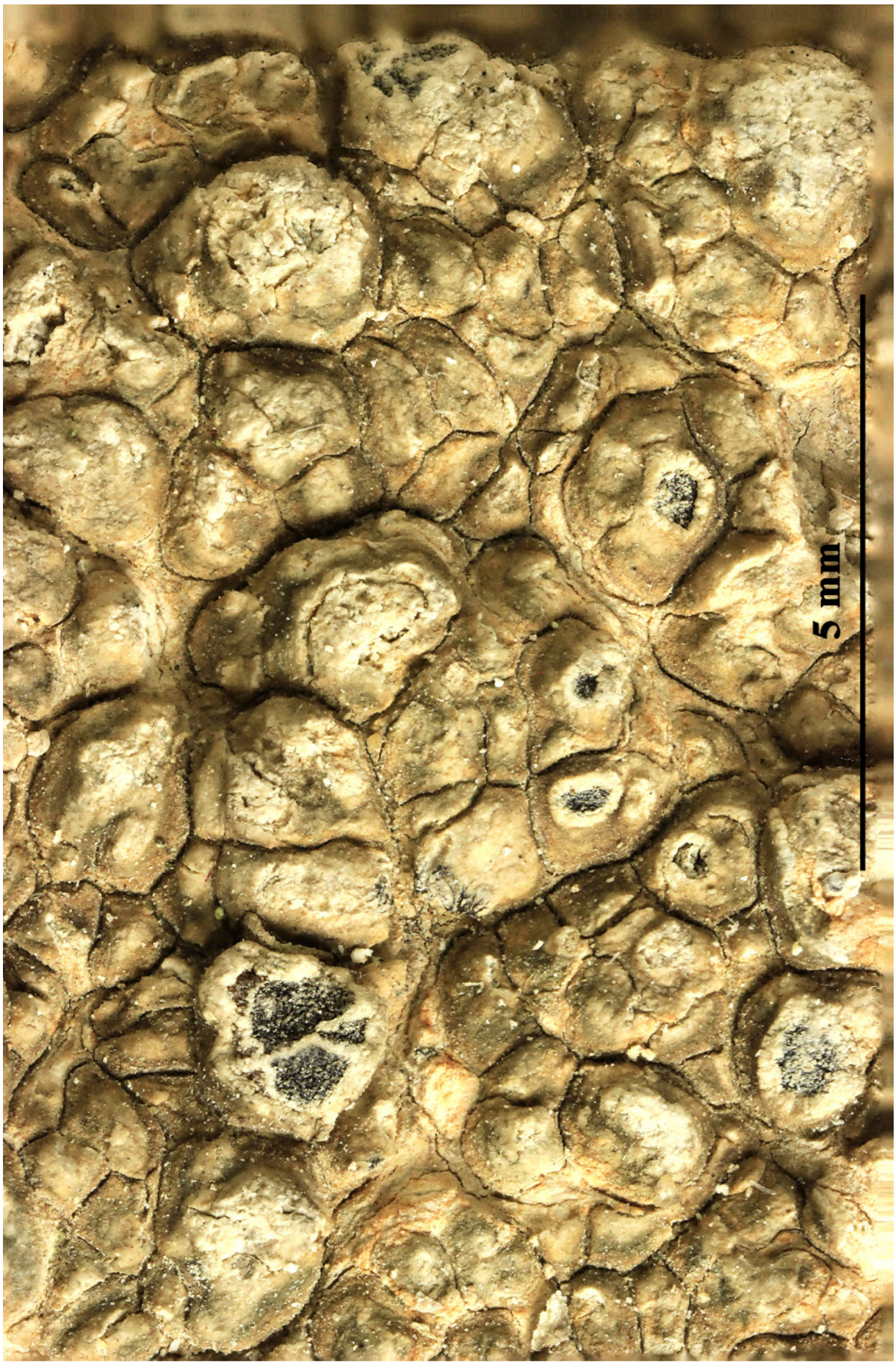
[VZ1637], Romania. Dobrogea. Distr. Constanta: In valle rivi Tirguşoi inter vicos Gura Dobrogei et Tirguşor, 50 m. Ad saxa calcarea. Leg.A. Vězda, 10.8.1974. Ex A. Vězda: Lichenes selecti Exsiccati Nr. 1637.

hallus crustose, episubstratic or rarely hemiendosubstratic, chalky white to rarely white-grey, 0.25-0.8 mm thick, finely rimose-areolate, sometimes delimited by a white to grey, more or less zoned prothallus, forming orbicular, up to 30 cm wide patches. Areoles angular, smooth, the peripheral ones often longer than wide and radially arranged. Cortex entirely filled by crystals visible under polarized light, its structure therefore poorly visible, lacking pigments; algal layer 30-65 µm high; medulla white, filled by crystals of calcium carbonate, 0.17-0.3 mm thick, I-. Apothecia aspicilioid, immersed, 1(-4) per areole, irregular in size and shape, from punctiform to angular or even linear, 0.15-0.7(-1) mm wide, with a concave to flat, black, sometimes slightly white-pruinose disc, and an up to 0.15 mm thick, chalky white, slightly raised, finally often excluded thalline margin. Proper exciple thin, colourless, extending below the hymenium; epithecium olive-green, N+ brighter green, K+ brown; hymenium colourless, I+ blue soon turning red-brown; paraphyses septate and anastomosing, sometimes moniliform in upper part; hypothecium colourless. Asci (2-)4(-6)-spored, clavate, the

thin outer coat K/I+ blue, the wall and apical dome K/I-. Ascospores 1-celled, hyaline, broadly ellipsoid to globose, 18-30 x 14-28 µm. Pycnidia immersed, appearing as black dots. Conidia (6-)7.5-10(-11.5) x 1(-1.5) µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: aspicilin. Note: a mainly Mediterranean to mild-temperate species found on limestone and dolomite, sometimes also on other calciferous substrata, much rarer in heavily disturbed habitats.

var. *dobrogensis* Vězda:
Thallus valde crassus (1-5 mm), obscure cinereus. Apothecia 1-3 mm lata, discis simplicibus vel compositis. Habitu Aspiciliae grossheimii (Oxner ex Azerbajdzhania cognitae similis, ad ea sporis usque ad 35 µm crassis paraphysibusque articulatis differens.

Apicilia calcarea var. ***dobrogensis***



Apicilia calcarea var. ***dobrogensis***

Apicilia calcarea var. ***dobrogensis***

Aspicilia cernohorskyana* var. *macedonica Vězda, Lichenes Selecti Exsiccati, Fascicle 66 (Průhonice): 4 (1979)

= *Lobothallia chadefaudiana* (Cl. Roux) A. Nordin, Cl. Roux & Sohrabi in Roux, Bull. Soc. linn. Provence, num. spéc. 16: 216, 2012.

= *Aspicilia chadefaudiana* Cl. Roux - Rev. Bryol. Lichénol., N.S. 43, 2: 167, 1977.

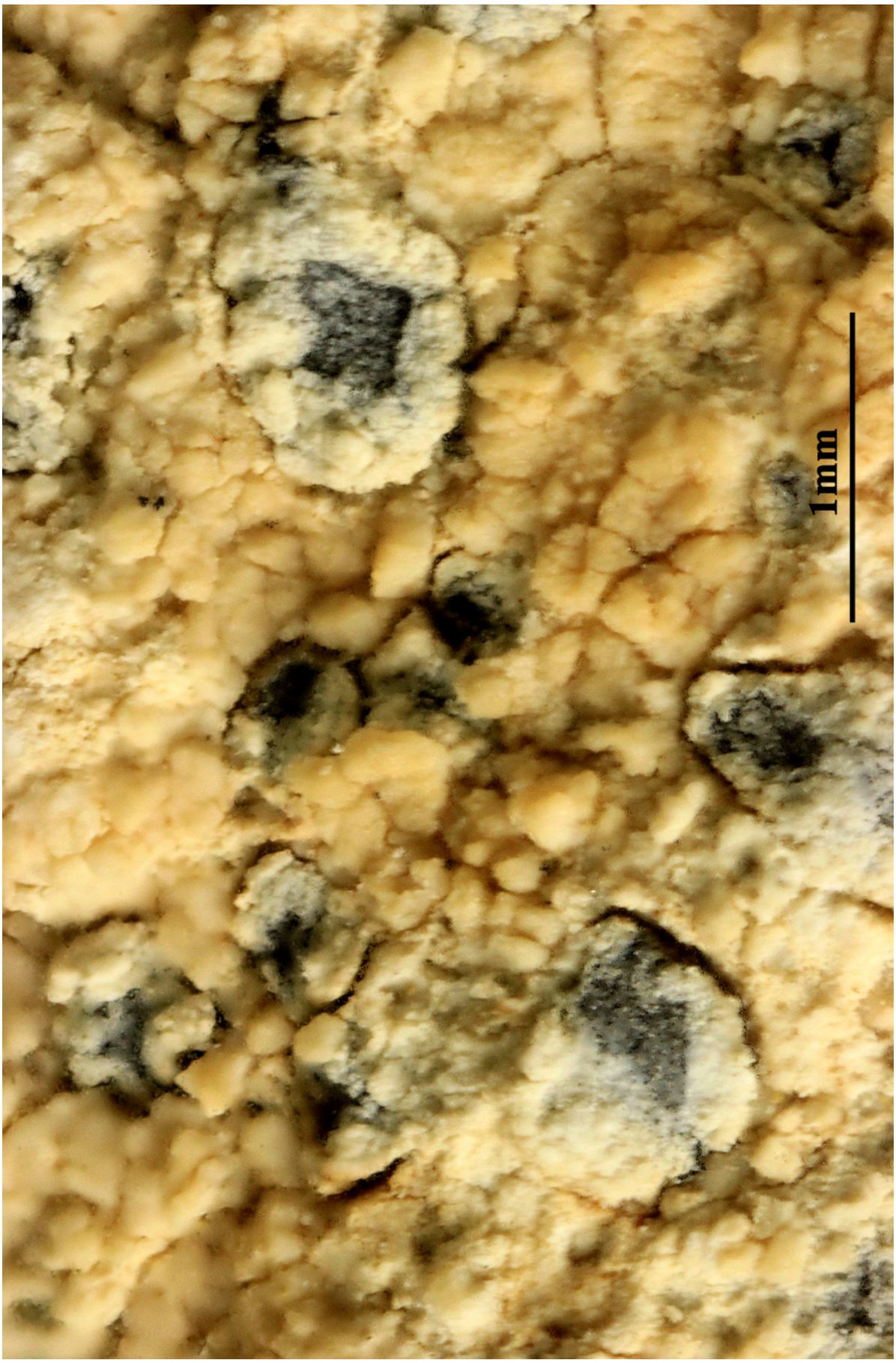
= *Aspicilia cernohorskyana* (Clauzade & Vězda) Cl. Roux var. *macedonica* Vězda

[VZ1638], Jugoslavia. Macedonia. Ohrid, supra lacum Ohridsko ezero, prope vicum Elsani haud procul Peštani, 800 m. Ad rupes calcareas. Leg. A. Vězda, 10.12.1975. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1638.

Thallus crustose, episubstratic, areolate-subsquamulose, 1.5-3 cm wide, 1-1.5 mm thick, chalky white, consisting of 1.5-10 mm wide, subsquamulose areoles with an irregular, usually slightly papillose surface, the marginal ones often slightly elongate. Cortex of anticlinally arranged hyphae, containing crystals visible under polarized light, with a 30-90 µm thick epinecral layer; algal layer irregular; medulla thick, white, lax, filled with crystals. Apothecia lecanorine-aspicilioid, immersed in the thallus, 1-8 per areole, sometimes confluent, often of irregular outline, 0.2-1 mm wide, with a concave to finally flat, blue-grey-pruinose disc and a poorly evident thalline margin. Epithecium 20-40 µm high, 2-layered, the upper layer grey, consisting of crystals (pruina), the lower layer brownish green, N-; hymenium colourless, 80-95 µm high, I+ blue then reddish; paraphyses sparingly branched and anastomosing, strongly coherent, 3-6 µm thick, the apical cells only slightly swollen; hypothecium colourless, 35-55 µm high, devoid of crystals, subtended by an algal layer. Asci 8-spored, cylindrical-clavate, the thin outer coat K/I+ blue, the wall and apical dome K/I-. Ascospores 1-celled, hyaline, broadly ellipsoid, (9-)11-15(-17) x (6-)7-10(-12) µm, the wall 0.5-1 µm thick. Photobiont chlorococcoid. Spot tests; cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: on dolomite; reported from the lowlands to the subalpine belt in the Alps.

EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1638.
A typo differt colore flavescente medullaque apotheciorum K-. Interna structura ut in planta typica. Praetera *Aspiciliae chadefaudianae* C. Roux affinis, sed thallo haud disperso coloreque flavescente ad ea differt.

Aspicilia cernohorskyana* var. *macedonica

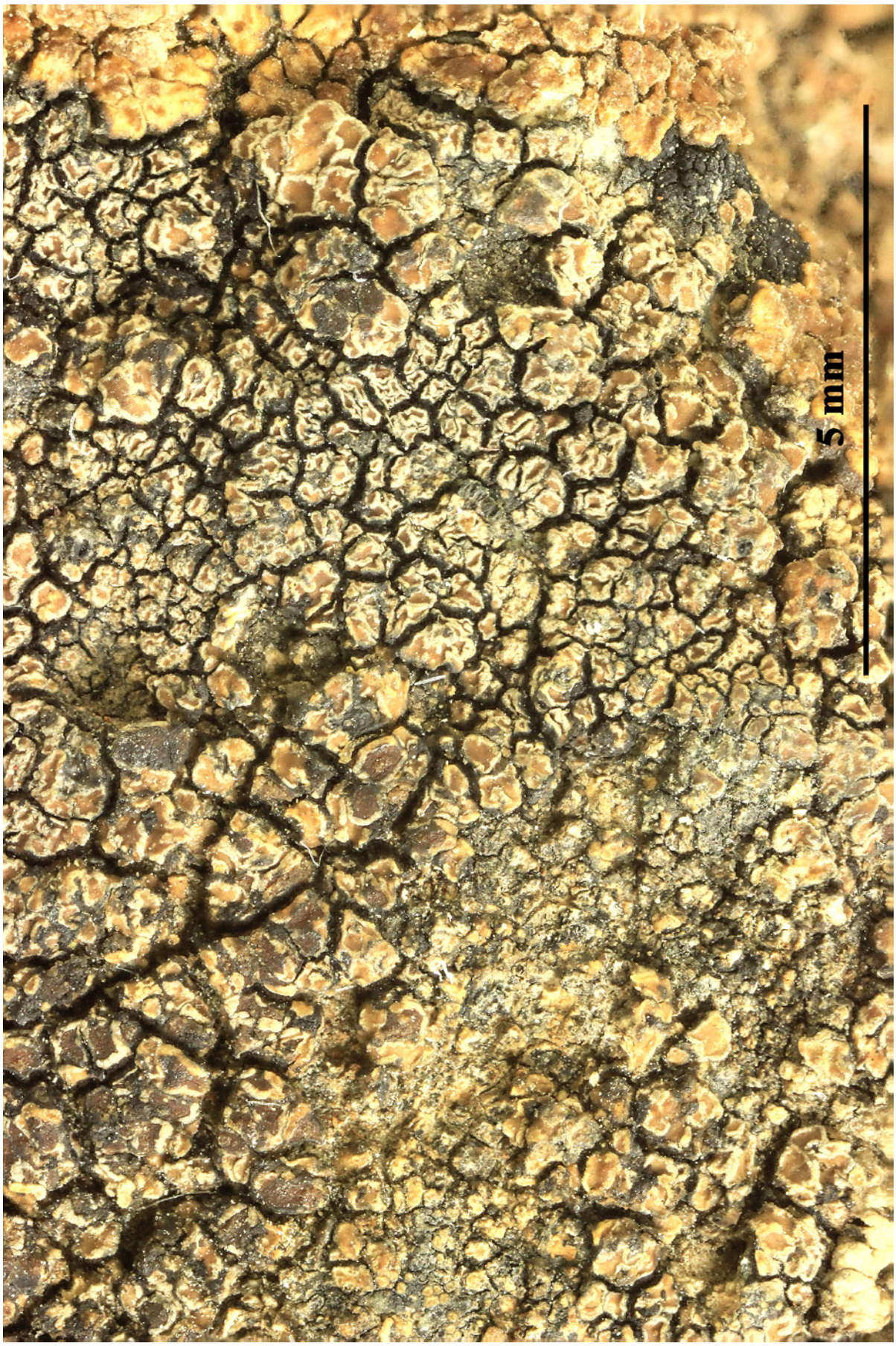


Aspicilia cernohorskyana* var. *macedonica

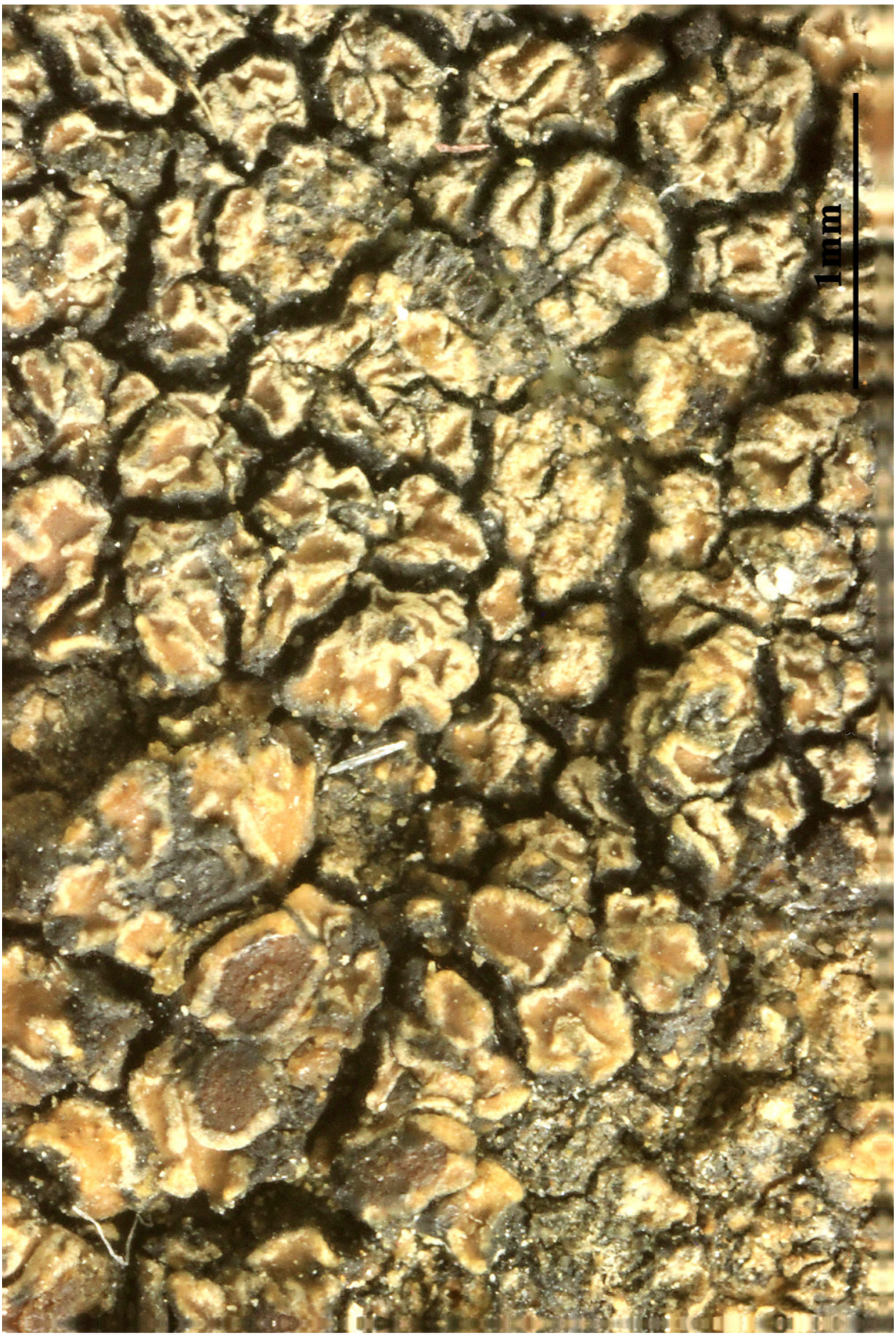
Aspicilia cupreoatra (Nyl.) Arnold, Flora, Regensburg 53(30–31): 470 (1871) [1870]
= *Lecaimmeria cupreoatra* (Nyl.) C.M. Xie, in Xie, Wang, Zhao, Zhang, Wang & Zhang, MycoKeys 87: 119 (2022)
= *Bellemerea cupreoatra* (Nyl.) Clauzade & Cl. Roux, Bull. Soc. bot. Centre-Ouest, Nouv. sér. 15: 129 (1984)
= *Immersaria cupreoatra* (Nyl.) Calat. & Rambold, Lichenologist 30(3): 232 (1998)
= *Lecanora cupreoatra* Nyl., Not. Sällsk. Fauna et Fl. Fenn. Förh., Ny Ser. 8: 181 (1866)

[VZ1482], Bulgaria. Pontus, distr. Burgas: in litore inter pagos Mičurin et Varvara, 3 m. Ad scopulos siliceos. Leg. A. Kiszely & A. Vězda, 18.8.1975. Ex A. Vězda: Lichenes Selecti Exsiccati Nr. 1482.

Thallus crustose, episubstratic, areolate, 0.2-0.3 mm thick, brown, somewhat shiny, often delimited by a pale prothallus, forming up to several cm wide patches, the areoles contiguous, slightly concave to flat, angular, very irregular in outline, 0.3-0.8 mm wide, with a slightly raised, whitish-grey margin. Cortex 10-25 µm thick, brown in upper part, with an up to 20 µm thick epinecral layer; medulla white, I+ blue. Apothecia cryptolecanorine-aspicilioid, immersed, 1 per areole, 0.2-0.3(-0.4) mm across, round to very irregular in outline, with a brownish black, epruinose, flat disc and a whitish-grey thalline margin, the proper margin corresponding to the phenocortex and algal layer of the areoles. Proper exciple very thin, poorly developed; epithecium brown to greenish brown, c. 10 µm high, N+ purple; hymenium colourless, 100-110 µm high, I+ blue; paraphyses branched and anastomosing, 1.5-2 µm thick at base, the apical cells 3-5 µm wide; hypothecium colourless, c. 50 µm high, underlain by an algal layer. Asci 8-spored, narrowly cylindrical-clavate, with a I+ blue tholus and an internal, darker I+ tubular structure, the external gel I+ faintly blue, Porpidia-type. Ascospores 1-celled, hyaline, ellipsoid, 8-18 x 5-9 µm, halonate, non-amyloid. Pycnidia dark, immersed in the areoles, sometimes with a prominent ostiole. Conidia bacilliform. Photobiont chlorococcoid. Spot tests: K-, C+ faintly red, KC+ faintly red, P-. Chemistry: gyrophoric acid. - Note: an arctic-alpine lichen of siliceous rocks starting the life-cycle on Buellia-species; most frequent in the Alps above treeline.



Aspicilia cupreoatra



Aspicilia cupreoatra

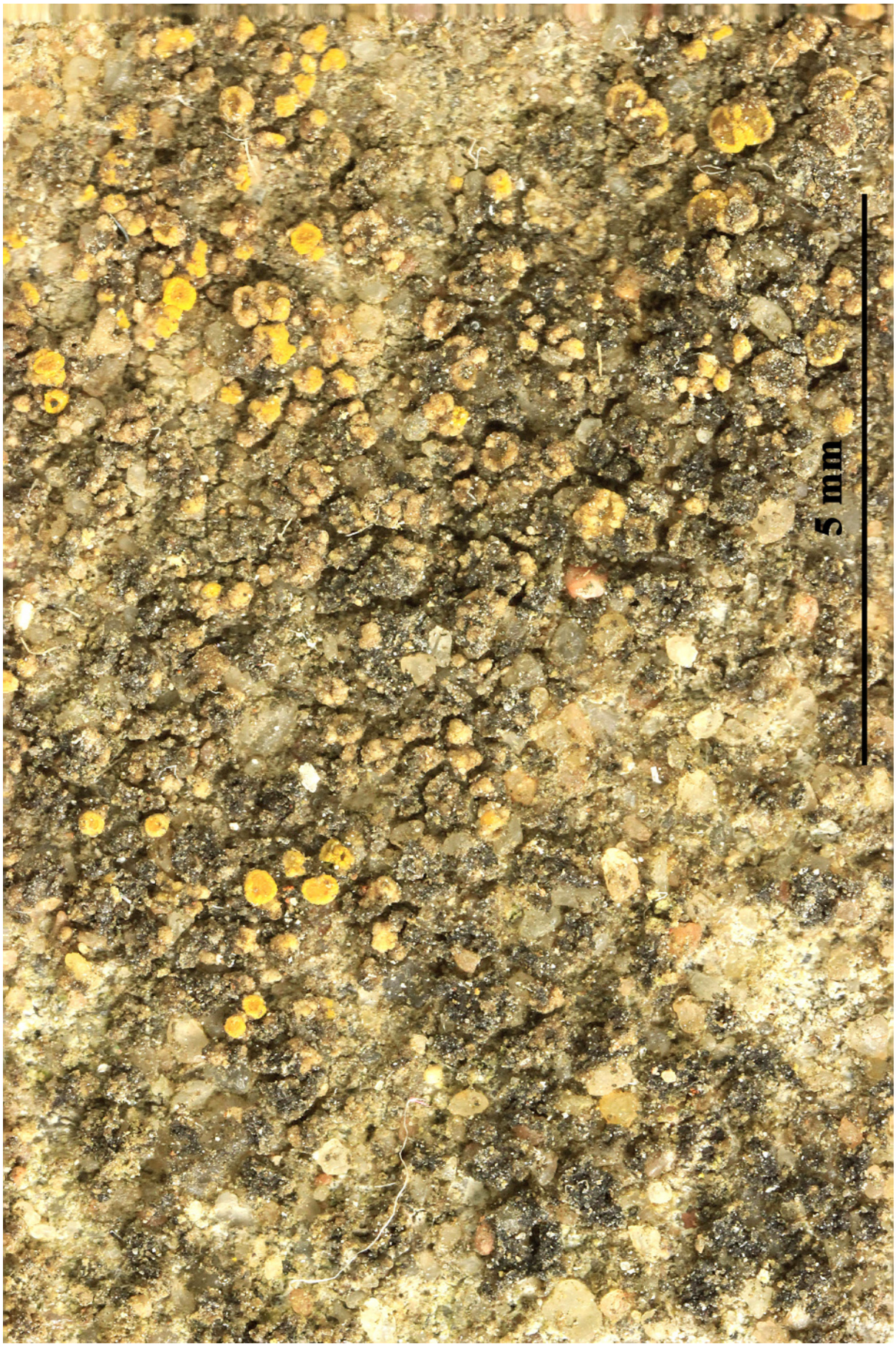
Aspicilia excavata G. Thor & Timdal, Lichenologist 18(2): 179 (1986)
= *Acarospora moenium* (Vain.) Räsänen, Lich. Fenn. Exs.: no. 306 (1936)
= *Aspicilia moenium* (Vain.) G. Thor & Timdal, Graphis Scripta 4(2): 66 (1992)
= *Endocarpon moenium* Vain., Acta Soc. Fauna Flora fenn. 49(no. 2): 83 (1921)

[VZ2484], URSS. Estonia: distr. Tartu, Emajogi. Ad caementum. Leg. S. Kondratjuk & T. Randlar, 4.3.1989. EX A. V ěZDA: LICHENES SELECTI EXSICCAT NR. 2484.

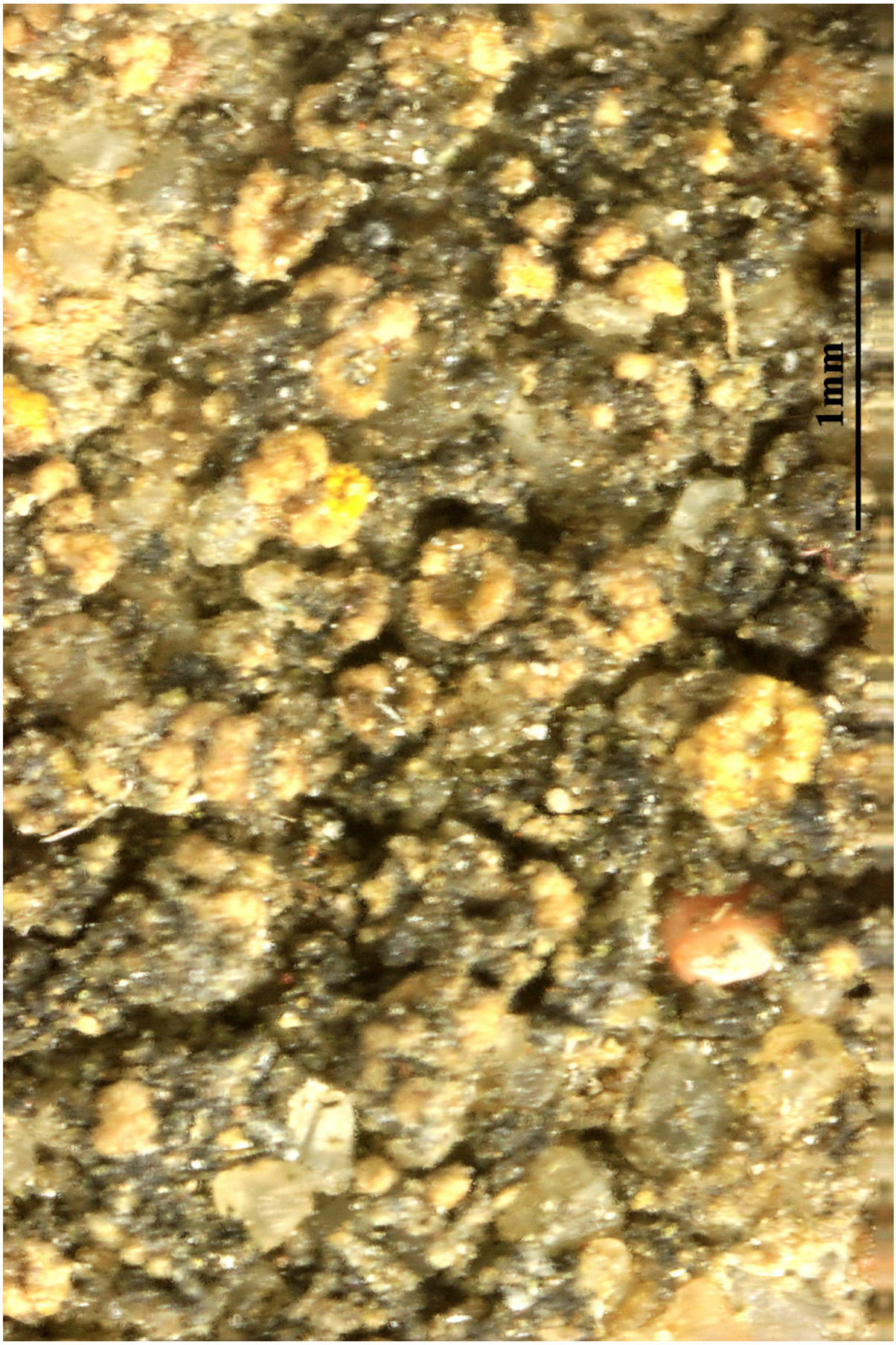
description from G. Thor & E. Timdal 1986:
Thallus crustose, indeterminate, formed by appressed or slightly protruding squamules; squamules up to 1 mm diam, grey or partly olivaceous to pure brown, with a white pruina consisting of calcium oxalate crystals; upper cortex paraplectenchymatous with cell lumina 4-10 x 4—8 µm. Photobiont green, unicellular, 6-11 µm diam. Soralia frequent, developing from the margin, growing inwards in the algal layer and excavating the squamules; soredia dark brown to black, 18-24 µm diam. Apothecia rare, only seen immature in one collection, innate, in the centre of the squamules; disc concave, brown, pruinose; hypothecium colourless; epithecium brown, K- , HNO3-, HC1- ; hymenium 80-100 µm high; paraphyses septate, 2-3 µm thick, sparingly branched and slightly moniliform in the upper part, tips 2-4 µm thick, brown. Asci, ascospores and pycnidia not seen. Chemistry: No detectable substances by TLC; all parts C - , K - , P - , UV - . This characteristic species is easily recognized by the small, white pruinose squamules excavated from the margin by dark brown to black soralia. We first found it sterile in a small island in the Gulf of Finland in 1981. The species was then provisionally placed in Aspicilia due to its overall similarity to several Aspicilia species, especially to the esorediate A. contorta (Hoffm.) Krempelh. In 1984 we found it with immature apothecia in one locality in Norway collection), but no spores or asci were present. The anatomy of the innate apothecia, however, especially the slightly moniliform paraphyses, further supports its inclusion in Aspicilia. Until mature apothecia are found this arrangement will still remain somewhat uncertain. According to Wirth (1980), only species with a brown epithecium which is HC1- belong in *Aspicilia* s. str. Clauzade & Roux (1984) on the other hand provide an infrageneric scheme for Aspicilia, in which *Aspicilia* subgenus *Aspicilia* contains species with

an HNO3+ green epithecium and not immersed arjothecia. The difference mainly depends on the typification of the genus Aspicilia being somewhat unclear. In A. excavata the epithecium is brown, K- , HNO3- and HC1- . In *A. contorta* the epithecium is more olivaceous brown, K- HNO3+ green, HC1+ green (i.e. the 'Aspiciliagriin' of Bachmann 1890). This indicates that *A. contorta* and *A. excavata* may not be very closely related. Aspicilia excavata is presently known from Austria, Finland, Norway and Sweden. It has probably been much overlooked, being usually sterile and not
very conspicuous. The species is frequently found in south-facing, dry, open habitats without or with sparse tree vegetation. The altitude ranges from about sea-level to 1030 m in South Norway (low-alpine region). Its natural habitat seems to be steep faces of limestone or calcareous schist. - In 15 of the 22 known localities, however, the lichen was collected from old walls and buildings, where the species occurs mainly on the mortar. In these sites the species may also occur in rather shady and moist habitats. *Aspicilia excavata* is usually accompanied by only a few or no other lichens at the sites. Associated species noted include *A. contorta*, *Caloplaca citrina, Candelariella aurella, Lecanora dispersa*, *Phaeophyscia nigricans, P. orbicularis and Physcia caesia*.

Aspicilia excavata



Aspicilia excavata



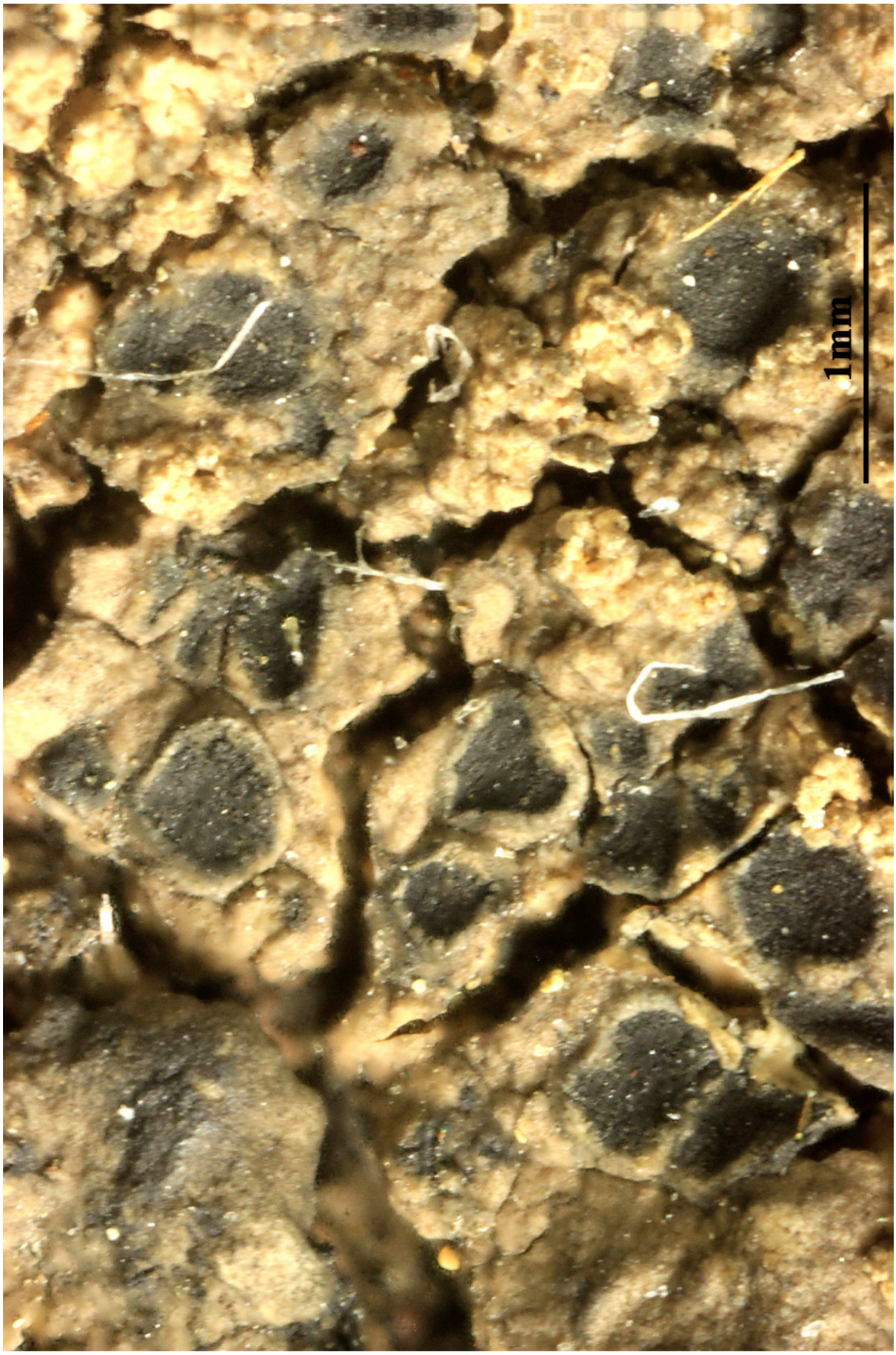
Aspicilia excavata

Aspicilia grisea Arnold, Ber. bayer. bot. Ges. 1(Anhang): 62 (1891)
= *Aspicilia insolata* (H. Magn.) Hav., Lich. Exs. Norveg.: no. 638 (1944)
= *Lecanora grisea* (Arnold) Lettau, Hedwigia 52(3-4): 202 (1912)
= *Lecanora griseolans* Zahlbr., Cat. Lich. Univers. 5: 316 (1928)
= *Lecanora insolata* H. Magn., K. svenska Vetensk-Akad. Handl., ser. 3 17(no. 5): 137 (1939)

[VZ1183], Austria. Stiria: montes Koralpe, in confinibus Stiriae Carinthiaeque loco Hebalm ducto, 1450 m. Ad super-ficiem leviter inclinatem saxi humilis. Leg. J. Poelt, 27.5.1973. EX A. VEZDA: LICHENES SELECTI EXSICCATI NR. 1183.

Thallus thin, rimose, becoming irregularly angular, cracked-areolate, with a narrow zonate margin, or often poorly delimited, medium to dark grey, medulla yellow-white; areoles plane to convex, discrete, often rounded, 0.3-0.5 mm diam., petering out thinly at the thallus edge; prothallus black, distinct; areoles bearing scattered, circular, dot-like, flat, abraded soralia, which develop a few, yellow-white, farinose-erose soredia, 50-80 µm wide, much paler than the cortex, they can develop shiny black tips and resemble isidia. Apothecia 0.3-0.6 mm diam., infrequent, sessile; proper margin well developed; disc black, epithecium N+ green, with a thin, colourless layer above the epithecium, paraphyses weakly branched, beaded at tips, widening to 3 µm. Asci 8-spored. Ascospores 1 8-22 x 9- 1 2 µm. Thallus K+ red, Pd+ orange (norstictic acid). On well-lit siliceous rocks, somewhat nutrient-enriched; rare.

Aspicilia grisea



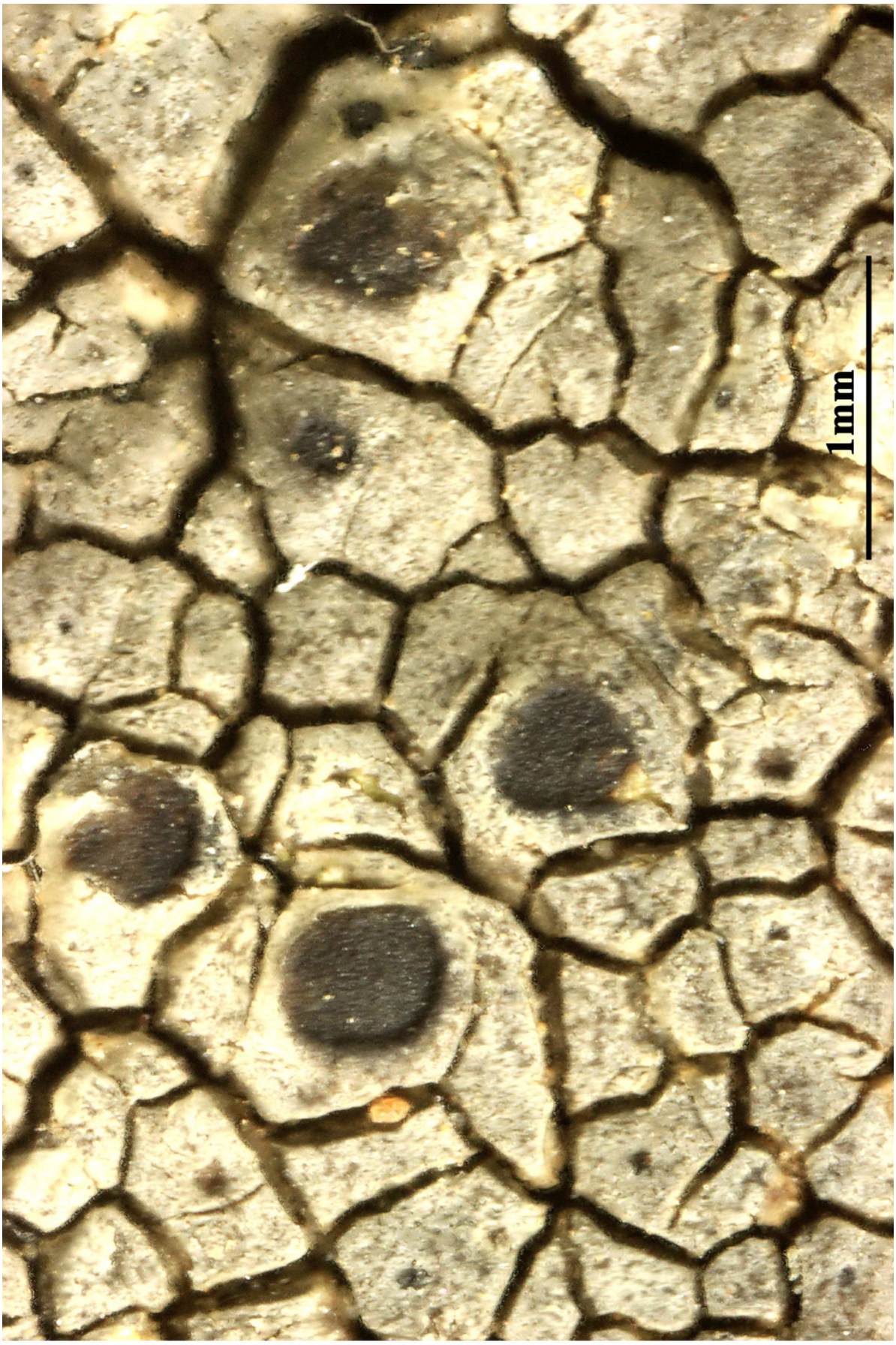
Aspicilia grisea

Aspicilia hydrocharis Poelt & Nimis, in Nimis & Poelt, Stud. Geobot. 7(suppl. 1): 44 (1987)
= *Lobothallia hydrocharis* (Poelt & Nimis) Sohrabi & Nimis, in Nimis, The lichens of Italy, A second annotated catalogue (Trieste): 19 (2016)

[VZ2217], Italia. Sardinia. Prov. Nuoro: Catena del Marghine, infra Pinta Palai, 920 m. Ad saxa schistosa rivi aestate sicci. Leg. M. Codogno, M. Tretiach, J. Poelt & A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2217.

Thallus crustose-placodioid, episubstratic, dark lead-grey to bluish-grey, rarely with a brownish tinge, thick, areolate in central parts, distinctly lobed at margins, forming orbicular rosettes, with distinctly flattened areoles and lobes, the lobes contiguous, separated by longitudinal cracks and then divided, 2-4 x 1-1.5 mm, with sharp margins. Areoles more or less polygonal, with sharp edges, the fertile ones often somewhat thicker than the others. Thallus with a paraplectenchymatous structure; medulla white, I-; algal layer very irregular, with relatively small algae. Apothecia aspicilioid, 1-6 per areole, completely immersed and immarginate, or more rarely with an indistinct black exciple, 0.5-1 mm across, with a rounded to irregular, black, epruinose, concave to flat disc. Proper exciple paraplectenchymatous in outer part; epithecium violet-brown, K+ reddish brown; hymenium colourless, c. 100 µm high; paraphyses submoniliform at least in upper part; hypothecium colourless, of roundish, small but distinct cells, subtended by a usually discontinuous algal layer. Asci (6-)8-spored, oblong-clavate, the thin outer coat K/I+ blue, the wall and apical dome K/I-. Ascospores, 1-celled, hyaline, mostly ovoid, 10-12.5 x 5-8 µm. Pycnidia black, immersed, with a colourless wall except in the dark periostiolar region. Conidia bacilliform, straight, c. 5-10 x c. 0.7 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a very characteristic species known only from Sardinia, where it appears to be quite widespread on periodically submerged basaltic rocks in creeks that are dry during summer.

Aspicilia hydrocharis

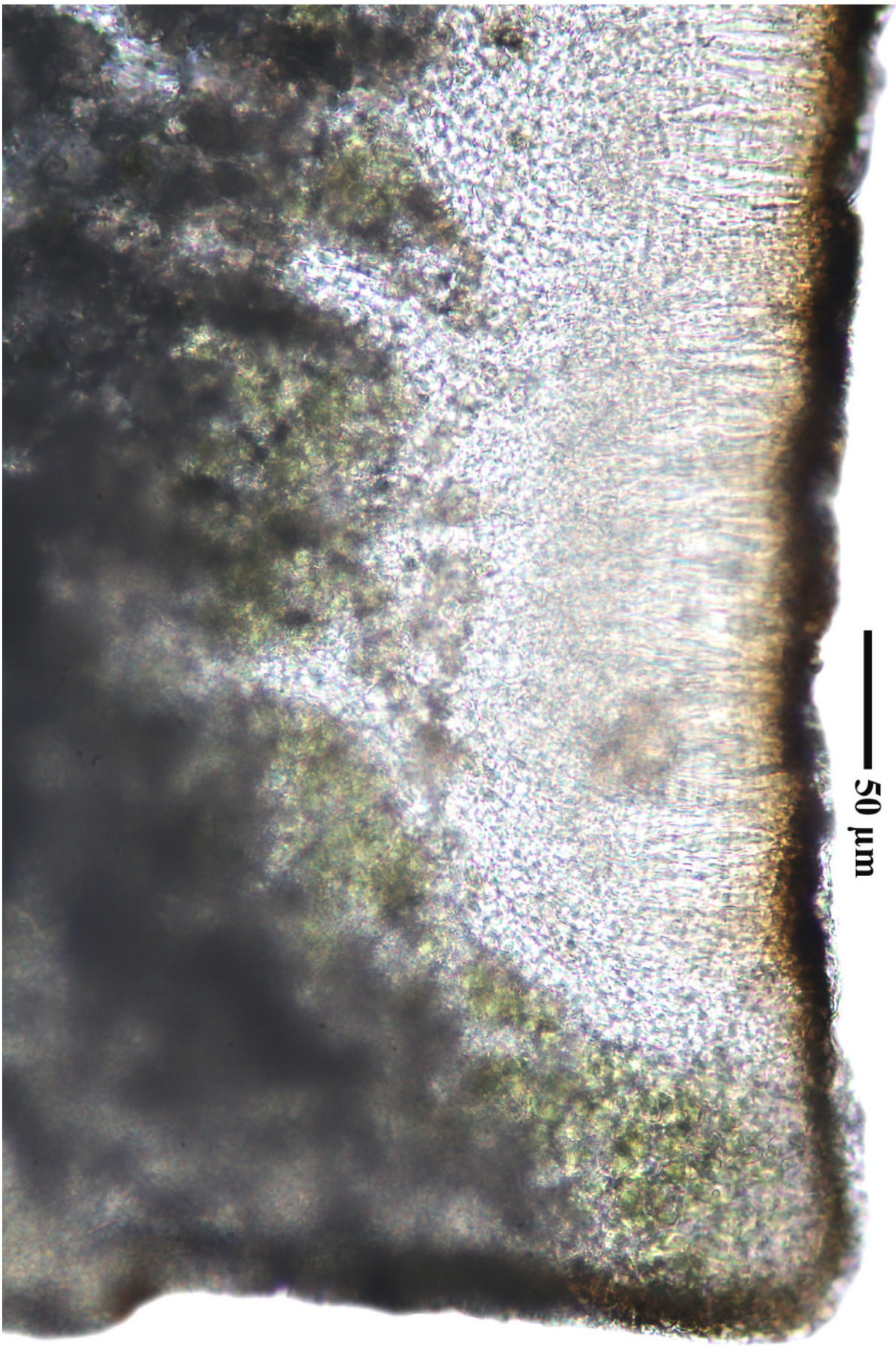


Aspicilia hydrocharis

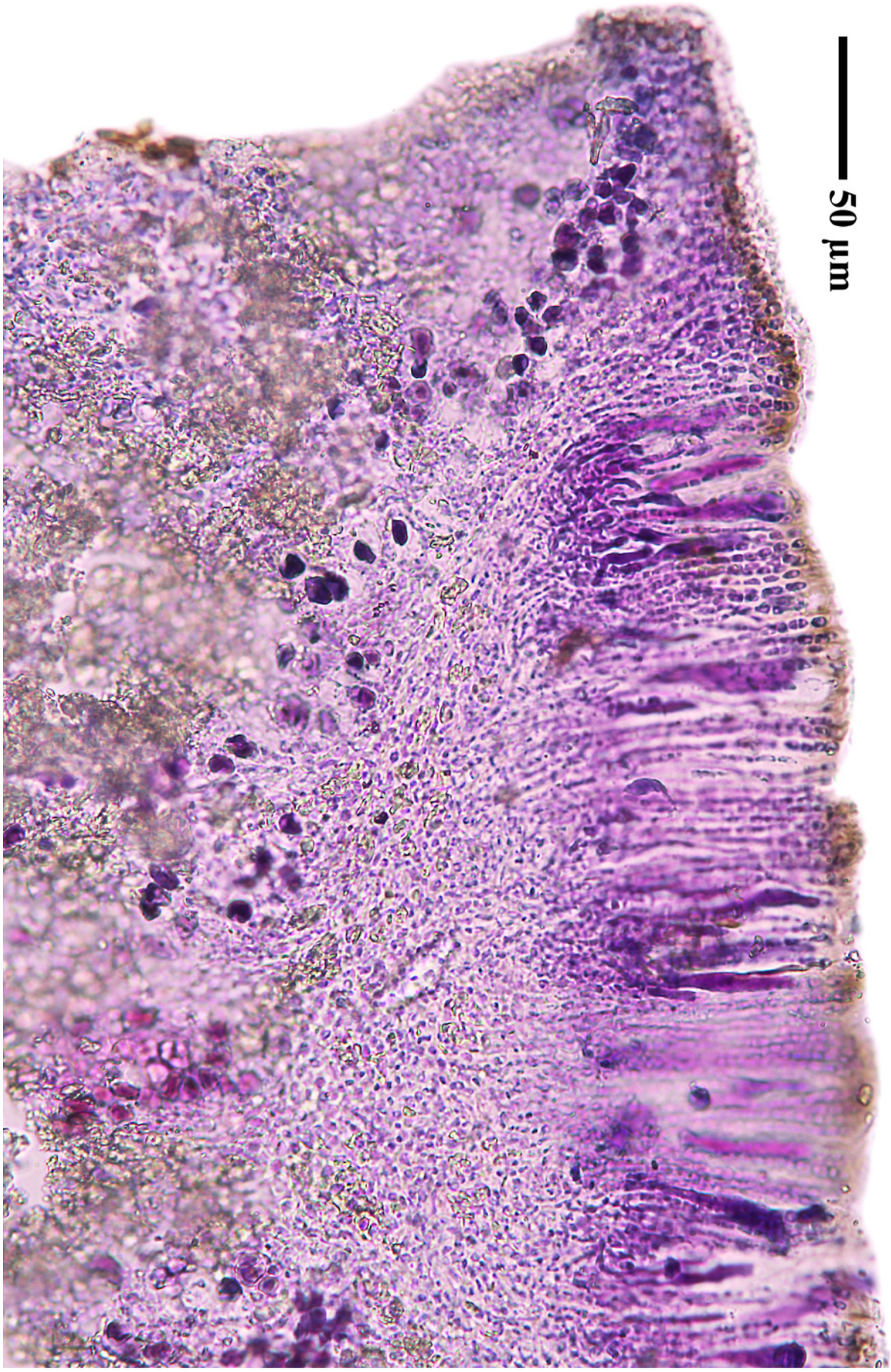
Aspicilia hydrocharis

Aspicilia hydrocharis

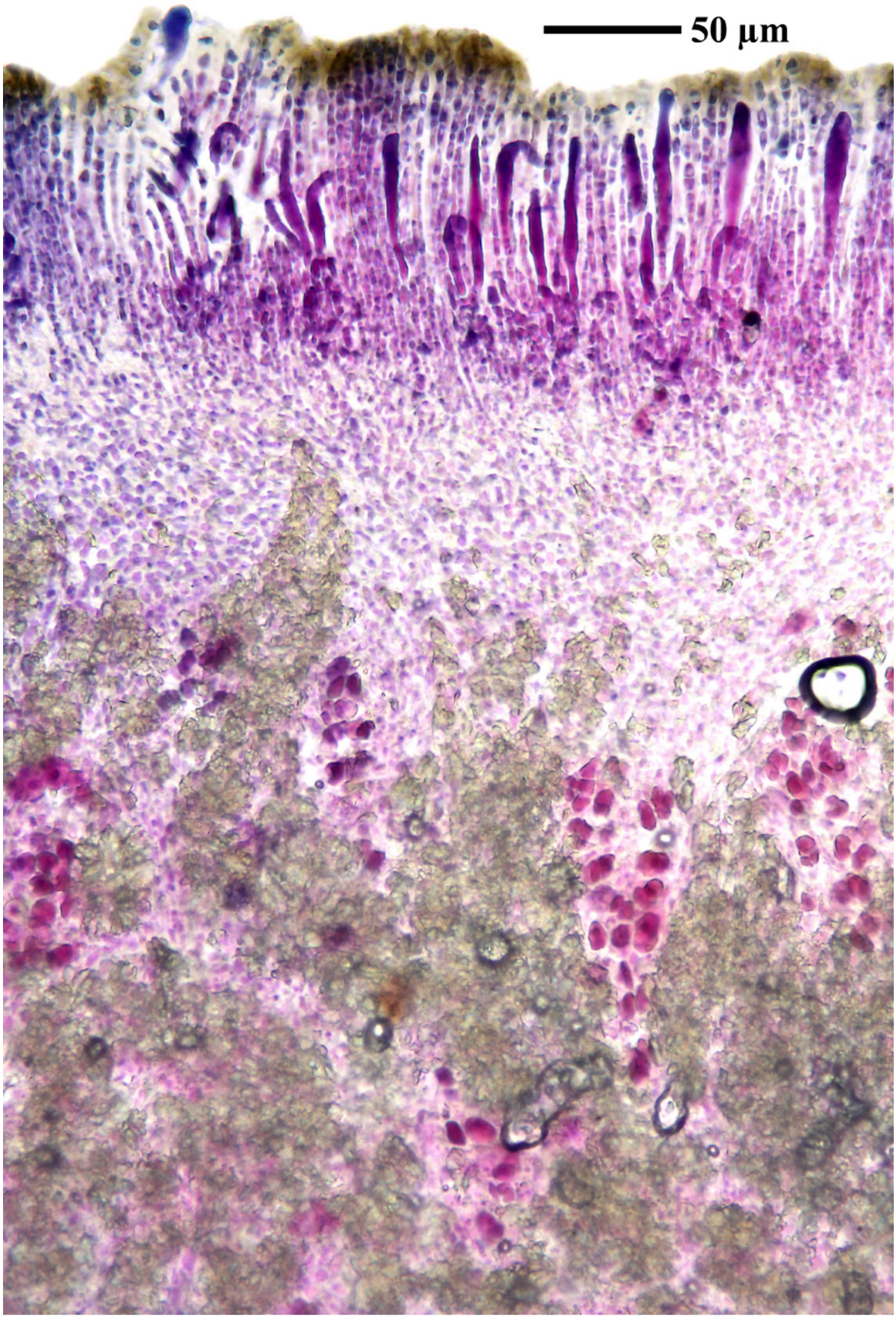
Aspicilia hydrocharis



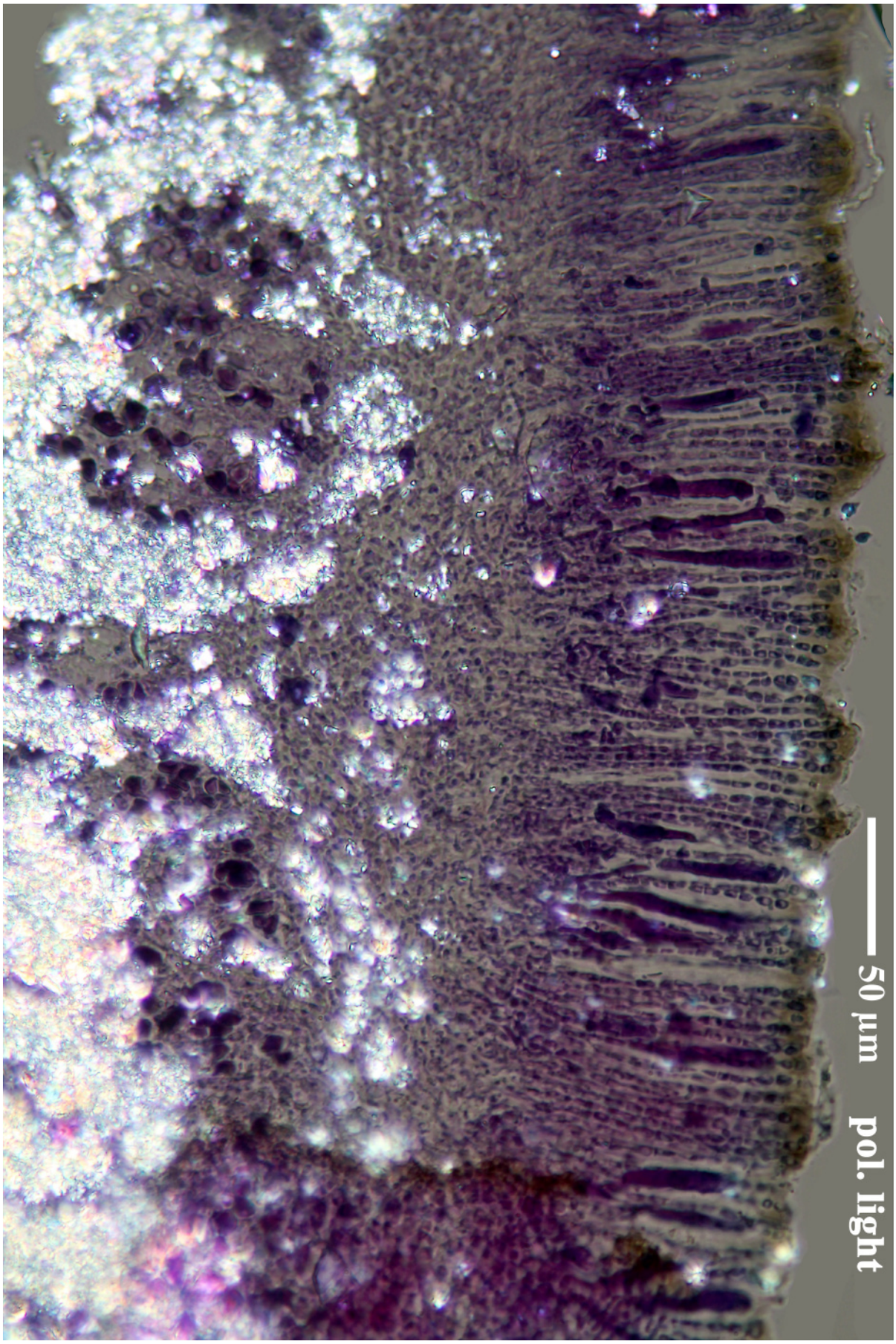
Aspicilia hydrocharis



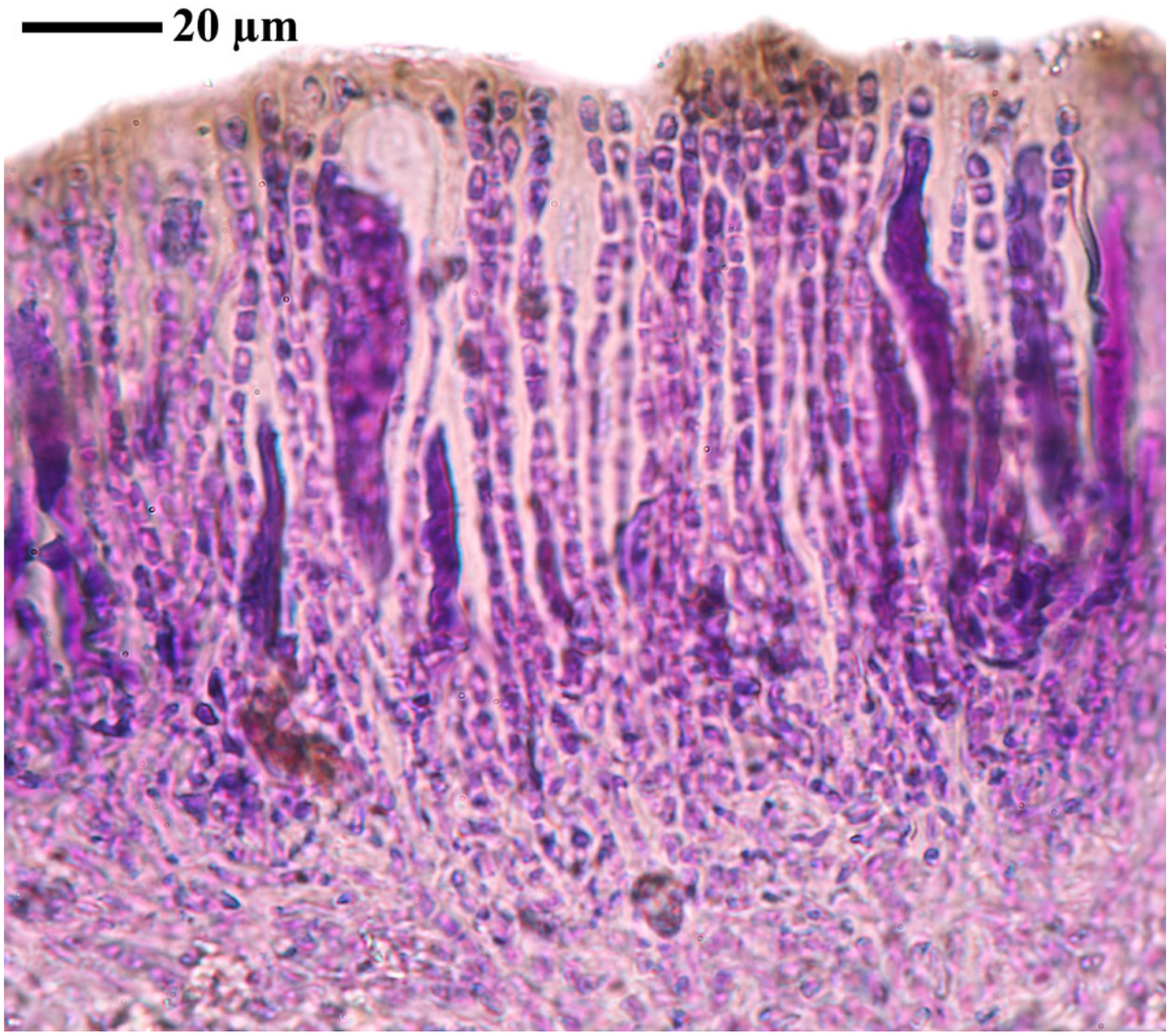
Aspicilia hydrocharis



Aspicilia hydrocharis

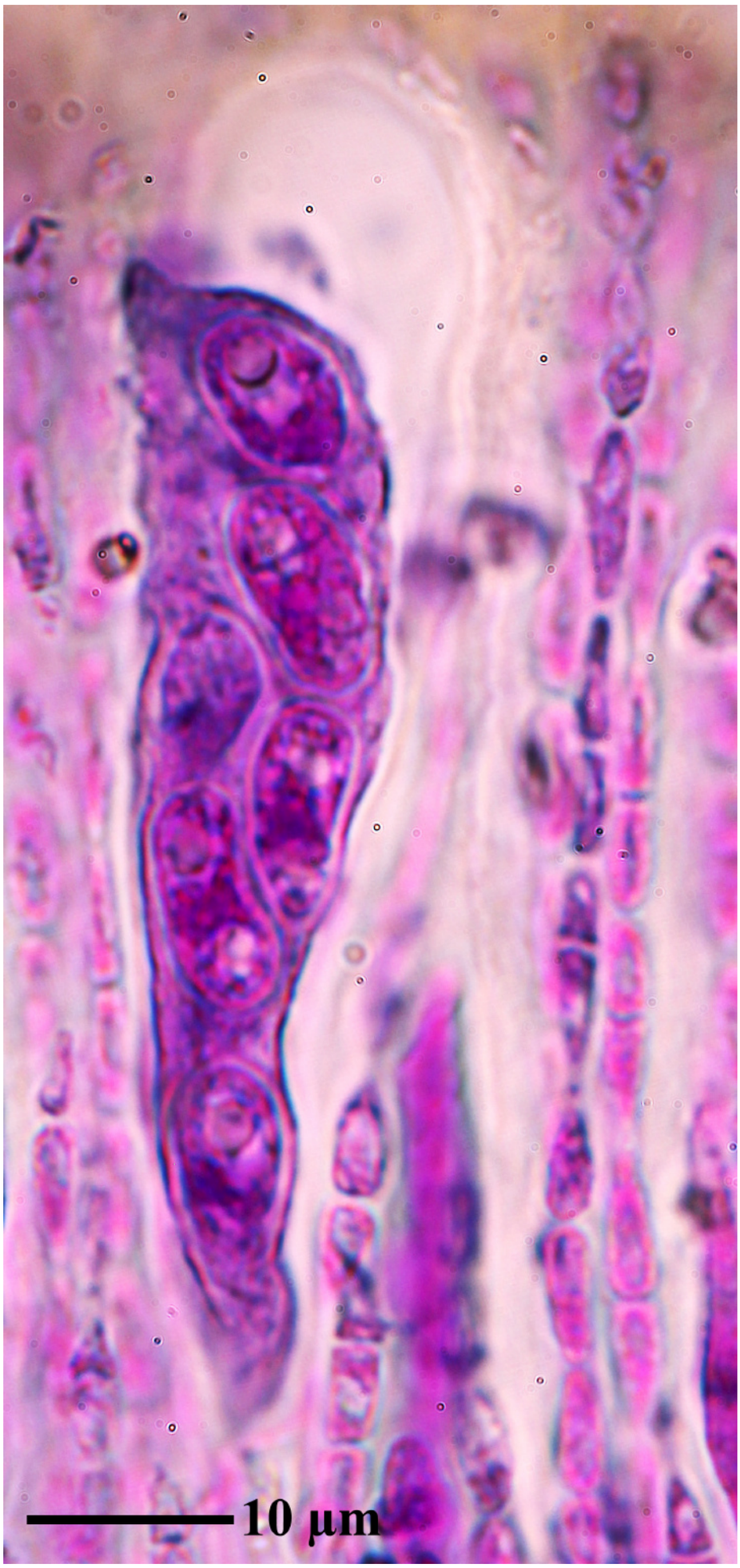


Aspicilia hydrocharis

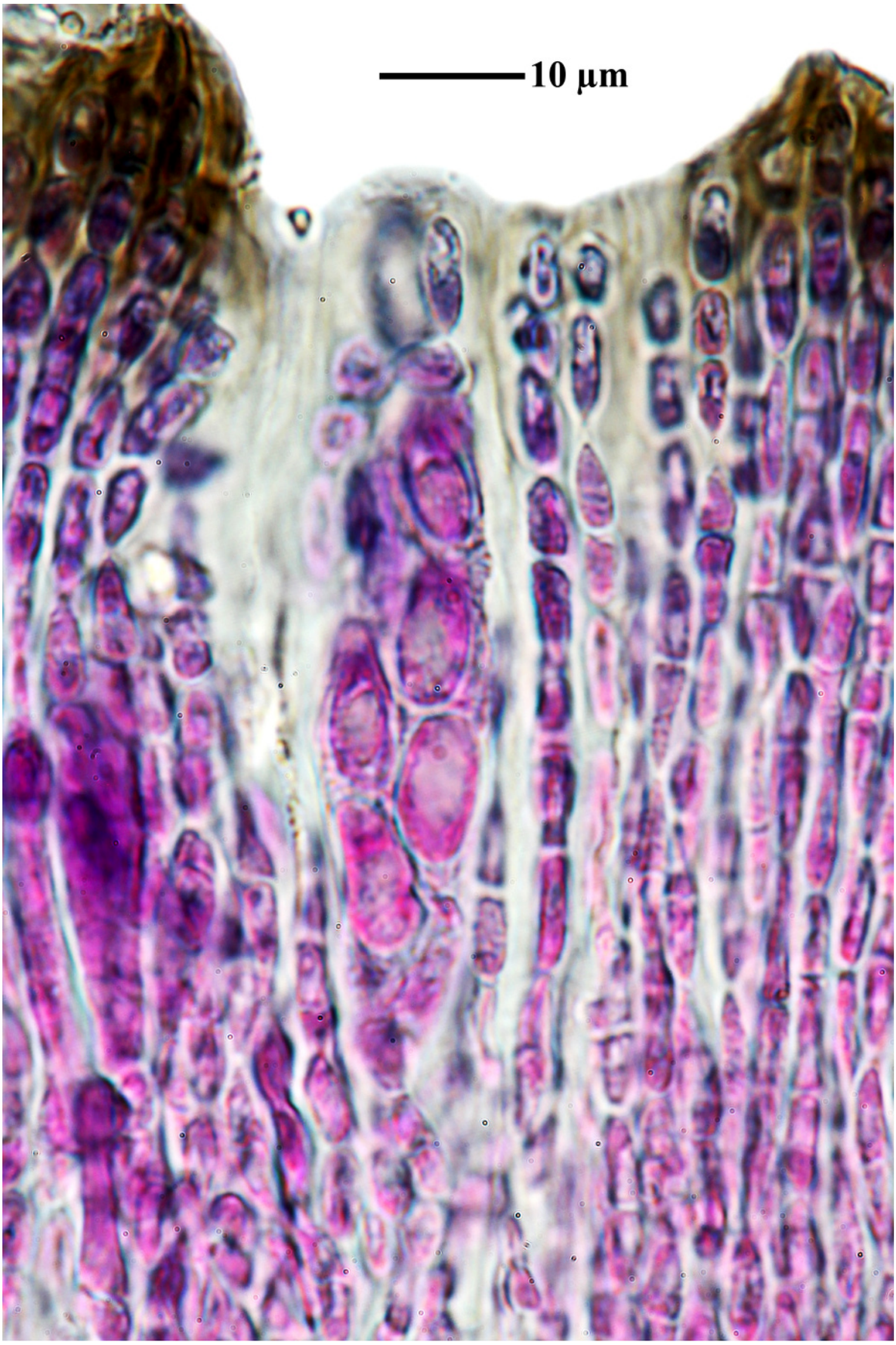


Aspicilia hydrocharis

Aspicilia hydrocharis



Aspicilia hydrocharis



Aspicilia hydrocharis

Aspicilia jussuffii (Link) Mereschk. [as 'jussufii'], Trudy Obshch. Estestvoisp. Imp. Kazansk. Univ. 43: 33 (1911)
= *Circinaria jussuffii* (Link) Sohrabi, in Sohrabi, Stenroos, Myllys, Søchting, Ahti & Hyvönen, Mycol. Progr. 12(2): 258 (2012) [2013]
= *Aspicilia esculenta var. jussuffii* (Link) S.Y. Kondr. [as 'jussufii'], in Kondratyuk & Zelenko, Ukr. bot. Zh. 59(5): 598-607 (2002)
= *Lecanora jussuffii* (Link) Follmann & Huneck [as 'jussufii'], Z. Naturf, B 23: 571 (1968)
= *Lichen jussuffii* (Link) Trevis., Bot. Ztg. 7: 729 (1849)
= *Placodium jussuffii* Link [as 'jussufii'], Bot. Ztg. 6: 666 (1848)
= *Sphaerothallia esculenta var. jussuffii* (Link) Reichardt, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 14: 558 (1864)
= *Sphaerothallia jussuffii* (Link) Follmann & A. Crespo [as 'jussufii'], An. Inst. bot. A.J. Cavanilles 31(1): 331 (1974)

[VZ2381], Regnum Maroccanum, inter Taourirt et Taza. 75 km ad occidentem a Taza, 350 m. Ad terram arenaream steppae. Leg. J-Hafellner & G. Follmann, 24.9.1989, det. J. Hafellner. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2381.

Thallus vagrant, rarely invades small pebbles, folded, globose-angular in shape, convoluted subsquamulose, compact, forming areole-like surface, deeply cracked, hard, densely imbricate, interconnected by the central axis, up to 3–10(–25) mm diam. Surface smooth, concave to convex, often reddish brown, rusty red (when ferriferous sediments are present in soil), yellowish brown, brown, more rarely red-brown. Pseudocyphellae very common, conspicuous, ±white spots along the subsquamuloes. Cortex one layer, (30–)50–75(–90) µm thick, paraplectenchymatous, ±brown, cells (4–)5–7(–10) µm in diam., inner part indistinct, more or less prosoplectenchymatous, mixed with anticlinal hyphae of medulla. Epinecral layer 5–15(–25)µm thick, usually brown to red. Photobiont chlorococcoid, cells 5–15 µm in diam., arranged and clustered in some small groups, each up to 80–170 × 80–150 µm wide, distance between groups 20–100 µm. Medulla prosoplectenchymatous with irregularly oriented hyphae (textura intricata), white, I–, containing crystals of calcium oxalate, visible in (H2SO2 10 % solution). Apothecia aspicilioid, urceolate, immersed, not common, round, sometimes angular, 0.2–0.6 mm in diam., 1–2(–4) per subsquamulose. Thalline exciple flat to ± elevated, prominent in older apothecia, entire, concolorous with thallus or with a thin white rim. True exciple (30–)35–65(–85) µm, ± I +blue, uppermost cell brown, ±

globose, 4–5(–7) µm in diam. Epihymenium brownish to dark brown, usually contain some crystals, K + colour fading from brown to light yellowish green, N+ pale green (caesiocinerea-green). Hymenium hyaline, I + persistently blue, (80–)100–120(–135) µm tall. Paraphysoids moniliform to submoniliform, with upper cells ± globose, 4–5 µm wide, in lower part with ± cylindrical cell 6–7 × 2–3 µm wide; branched. Hypothecium and subhymenium pale, (35–)50–65(–90) µm thick, I + blue. Asci broadly clavate, with distinctly thickened apex dome (15–35 µm. thick), I–, 70–110 × 20–35 µm, 1–4(–6) spored. Ascospores hyaline, globose to subglobose, (15–)19.2–[22.5]–25.7(–31) × (10–)15.8–[19.1]–22.3(–26) µm. Pycnidia immersed, single, stretch flask-shaped, internal wall colourless, frequently with black to brownish ostiole. Conidia filiform, straight to very slightly curved, (8–)10–14(–16) × 1–1.3 µm. Chemistry: All spot-tests (K, C, KC, CK) negative both in the cortex and medulla, but in some thalli P±. TLC: Three common chemotypes containing (1) stictic acid and hypostictic acid, (2) only stictic acid, (3) no substances. Ecology and distribution: Circinaria jussuffii most commonly grows as vagrant on calcareous soil, or on gypsum crusts. It is very rarely found on small pebbles. The known distribution is restricted to North Africa, particularly in the Northern Saharan (Algeria, Libya and Moroco) steppes and semideserts areas. The total distribution of C. jussuffii is rather poorly known, but in North Africa the species seems to be very common, although overlooked, or misidentified as *C. esculenta*.

Aspicilia jussuffii

Aspicilia jussuffii

Aspicilia jussuffii

Aspicilia leucophyma (Leight.) Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 5 sér. 2(1): 113 (1910)
= *Koerberiella wimmeriana* (Körb.) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau) 2(2): 143 (1879)
= *Lecanora leucophyma* Leight., Lich.-Fl. Great Brit.: 205 (1871)
= *Lecanora wimmeriana* (Körb.) Poetsch, in Poetsch & Schiedermayr, System. Aufzähl. samenlos. Pflanzen (Krypt.): 232 (1872)
= *Perspicinora leucophyma* (Leight.) Riedl, Linzer biol. Beitr. 22(1): 153 (1990)
= *Zeora wimmeriana* Körb., Denkschr. Feier fünfz. Best. Schles. Gesellsch. Vaterl. Kultur: 232 (1853)

[VZ1796], Norwegia. Hordaland: Granvin. in loco dicto Grahestahang, 565 m. In rupibus. Leg. et det. J. J. Havaas & W. L. Culberson, 23.8.1952. - Annot from W. L. Culberson: unknown pigment, and two unidentified compounds by TLC, anal.A. Johnson and C. F. Culberson. EX A. VěZDA: LICHENES SELECTI EXSOCCATI NR. 1706.

Thallus crustose, episubstratic, granulose to rimose-areolate, 0.2-1 mm thick, grey-white, pale cream-coloured to pinkish-brown, often delimited by a dark prothallus, with numerous, whitish grey to pinkish grey, isidia-like, cylindrical to subclavate, 0.5-1.2 mm tall papillae bearing a pycnidium on the top. Cortex paraplectenchymatous, brownish in uppermost part, without a distinct epinecral layer; medulla poorly developed, I-. Apothecia lecanorine, sessile, sometimes slightly constricted at base, 0.5-1.2(-1.4) mm across, with a pale brown to dark red-brown, flat to slightly convex disc and a thick, smooth thalline margin. Thalline exciple corticate, paraplectenchymatous, brownish in outer part; proper exciple poorly developed; epithecium brownish, with coarse granules dissolving in N, K+ orange-brown; hymenium colourless, 110-180 µm high; paraphyses coherent, slender, sparingly branched and anastomosing, with subglobose terminal cells; hypothecium colourless or pale brown in lower part. Asci 8-spored, elongate-clavate, with a thin, outer amyloid layer and a thickened tholus penetrated by a pore, the sides of which stain I/KI+ deep blue, Porpidia-type. Ascospores 1-celled, hyaline, ellipsoid, (17-)19-30(-35) x 8-13(-17) µm, when young often with a gelatinous sheath, the wall thin, I-. Pycnidia black, immersed at the top of the papillae. Conidia bacilliform, (3.5-)4.5-5 x 1-1.5 µm, often with a short attachment peg at one end. Photobiont chlorococcoid, the cells 7-16 µm wide. Spot tests: thallus K-, C-, KC-, P-. Chemistry:

traces of gyrophoric acid and 5-0-acethyl-4-methylhyascic acid, and of an unidentified substance. - Note: an arctic-alpine, circumpolar species found on periodically wetted, base rich siliceous rocks, with optimum near and above treeline; being often sterile, it might have been largely overlooked in the Alps.

Aspicilia leucophyma

Aspicilia leucophyma

Aspicilia oxneriana O.B. Blum, Novosti Sist. Nizsh. Rast. 6: 237 (1970) [1969]

[VZ1317], USSR. Usbekika RSS: supra pagum Aman Kutan, ad viam Samarkand - Schachrisabe, 1500 m. Ad parietes altos rupium cahlcarearum. Leg. I. Pisŭt. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1317.

Thallus foliose, monophylous, yellowish-olive, yellowish-brownish, or brownish-yellow above, lower surface of the thallus light brownish-yellow, smooth, sometimes with small pits, mostly in the center; apothecium numerous, 1–4(5) per areole, at first immersed, later emergent; disc black or blackish-brown, densly whitish pruinose, often cracked, rounded, at first concave, later flat to convex; asci cylindrical-clavate, (1)3–4(8)-spored; ascospores (16)21–29(31) µm, globose.

Aspicilia oxneriana

Aspicilia oxneriana

Aspicilia subsorediza (Lynge ex E. Dahl) R. Sant., in Vězda, Lichenes Selecti Exsiccati, Fasc. (Průhonice) 58: 3 (no. 1434) (1976)

= *Bellemerea subsorediza* (Lynge ex E. Dahl) R. Sant., in Moberg, Thunbergia 5: 2 (1987)

= *Lecidea subsorediza* Lynge ex E. Dahl, in Dahl, Lynge & Scholander, Skr. Svalbard Ishavet (Oslo)(no. 70): 22 (1937)

[VZ1434], Suecia. Härjedalen: Storsjö Paroecia, septentrionem versus a Ruvallen, Evagraven, 850 m. Ad saxa silicea in regione alpina. Leg. R Santesson (no. 26422), 8.8.1975. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1434.

Thallus crustose, episubstratic, rimose-areolate, white to yellowish white, but usually blue-grey pruinose, often delimited by a black prothallus. Areoles discrete, developing on a black prothallus, 0.4-0.6(-1) mm wide, each one with a single, well-defined, round and crater-like, laminal soralium bearing blackish, granular, 40-50 µm thick soredia. Medulla white, I+ blue. Apothecia extremely rare (not observed in Italian material). Photobiont chlorococcoid. Spot tests: medulla K+ yellow turning red (needle-like crystals), C-, KC-, P+ yellow-orange, N+ red. Chemistry: medulla with norstictic acid. - Note: on siliceous rocks in open lichen communities near or above treeline (i.e. near glaciers); probably more widespread in the Alps, but overlooked, being mostly sterile.

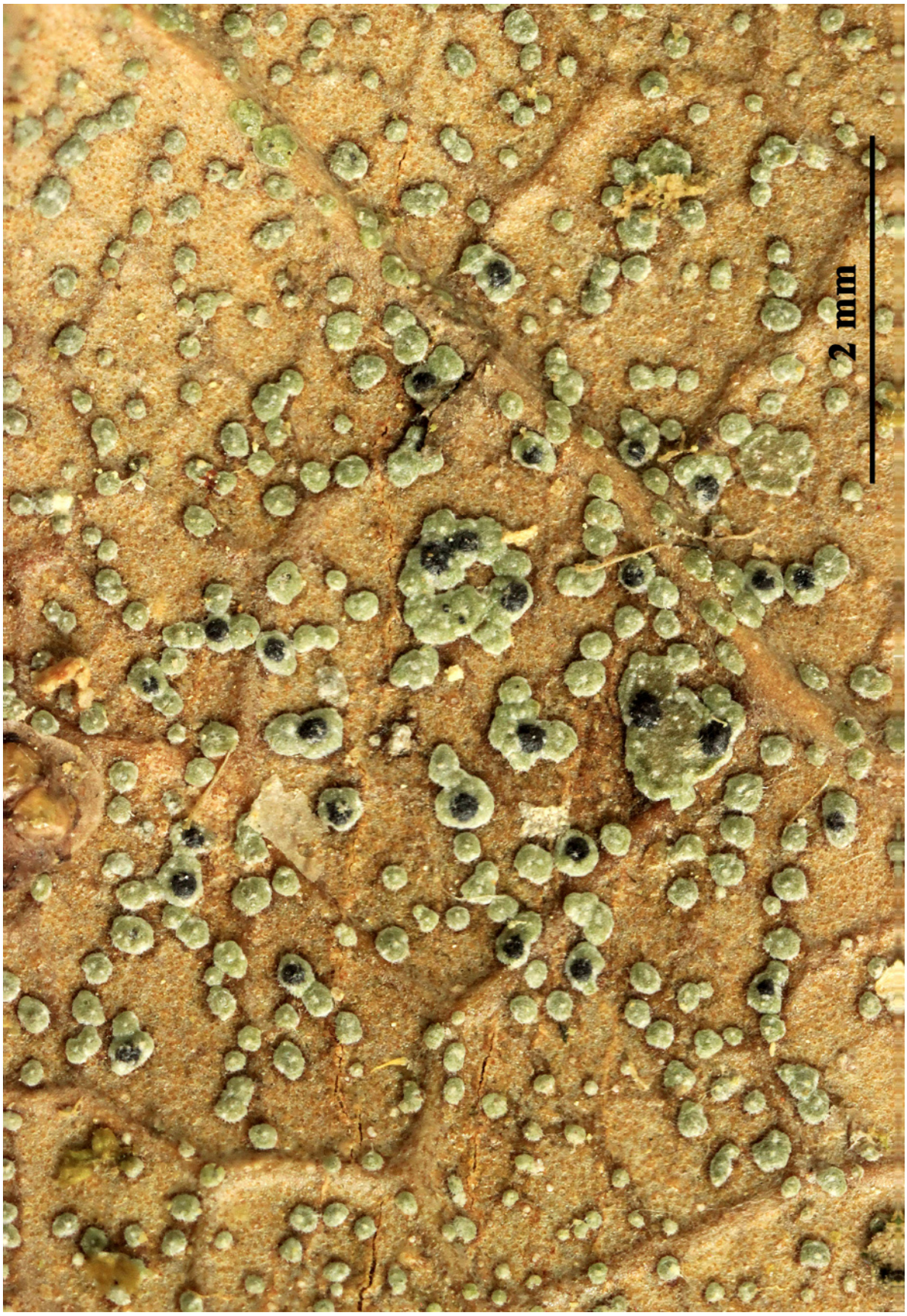
Aspicilia subsorediza

Aspicilia subsorediza

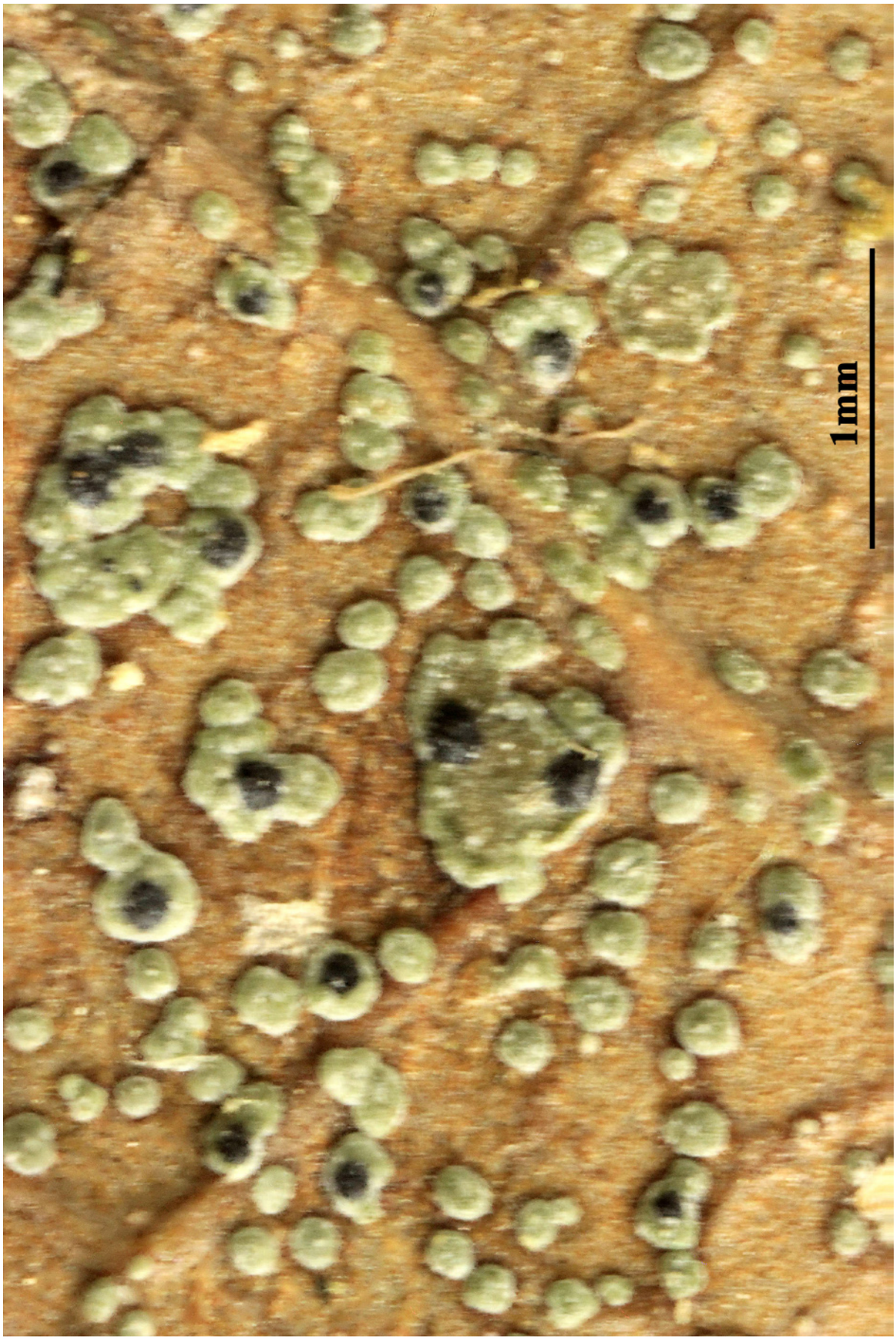
Aspidothelium fugiens (Müll. Arg.) R. Sant., in Thorold, J. Ecol. 40: 129 (1952)
= *Thelenella fugiens* (Müll. Arg.) R.C. Harris, More Florida Lichens, Incl. 10 Cent Tour Pyrenol. (New York): 165 (1995)
= *Lecania fugiens* Müll. Arg., Lich. Epiph. Novi: 3 (1890)

[VZ1226], Tanzania. Montes Uluguru, reservatum silvestre in clivo septentrionali montis Bondwa, 1400 m. In pluviisilva submontana, ad folia *Zenkerellae egregiae*. Leg. T. Pócs (no. 6855) & C. Crosby, 15.11.1972. EX A. VěZDA: LICHENES SELECTI EXSICCAT NR. 1226.

Thallus continuous or dispersed into rounded to irregular patches, smooth, 5–20 mm across, thin (15–30 µm), pale greenish grey to white. Perithecia sessile (sometimes marginally hypophyllous), wartshaped, 0.2–0.5 mm diam. and 200–350 µm high, white to pale yellow or pinkish, apically with tiny warts or irregular, short appendages (up to 0.1mm long). Excipulum 10–20 µm thick, colorless. Involucrellum paraplectenchymatous, 40–120 µm thick, colorless, I+ orange-red, KI+ blue; apical warts and appendages formed by densely intricate, prosoplectenchymatous hyphae. Asci 120–200 x 25–40 µm. Ascospores (2–)4–8 per ascus, fusiform, 15–29-septate, without or with very slight constrictions at septa, 50–90 x 12–20 µm, 4–6 times as long as broad, individual cells very thin (2–4 µm long), colorless. Conidiomata not observed. Chemistry: no substances detected by TLC. Distribution and Ecology. Pantropical. The most common member of the genus, with a wide, ecological amplitude from sea level to the upper montane cloud forest zone and in both shady and exposed conditions.



Aspidothelium fugiens



Aspidothelium fugiens

Asterothyrium leucophthalmum (Müll. Arg.) R. Sant., Symb. bot. upsal. 12(no. 1): 322 (1952)
= *Mazosia leucophthalma* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 2: 502 (1923) [1924]
= *Platygrapha leucophthalma* Müll. Arg., Revue mycol., Toulouse 10(no. 39): 117 (1888)
= *Rotula leucophthalma* (Müll. Arg.) Müll. Arg., Lich. Epiph. Novi: 19 (1890)

[VZ1705], Brasilia. Prov. São Paulo. Serra da Mantiqueira, Campos do Jordao, 1650. Ad folia filicis arboreae. Leg. H. Schindler (no. 9199), 13.10.1979, det. A. Vězda. EX A. VěZDA: LICHENHES SELECTI EXSICCATI NR. 1705.

Thallus dispersed into rounded patches 0.5–1.5mm diam., whole thallus 5–25 mm across and 20–50 µm thick, corticate and usually with thin medulla formed by loosely interwoven hyphae, smooth, light silvery grey to white; cortex composed of rectangular cells, 4–10 x 3–4 µm, in radiating rows when seen from above, colorless. Apothecia often several on each thallus patch, immersed-erumpent, zeorine, rounded, 0.15–0.3 mm diam. and 80–120 µm high; disc plane, yellowish to brownish grey, slightly translucent; margin rather thick, slightly prominent, entire or dissected into indistinct lobes, dark grey to greyish black, in young apothecia covering disc. Excipulum paraplectenchymatous, 10–20 µm broad, colorless, laterally covered by black, corticate, thallus tissue. Hypothecium 5–15 µm high, colorless. Epithecium indistinct. Hymenium 60–80 µm high, colorless. Asci cylindrical, 55–75 x 5–8 µm. Ascospores 8 per ascus, cylindrical, 1-septate, distinctly tapering towards septum and often broken into parts, 15–25 x 3–5 µm, 5 times as long as broad, colorless. Pycnidia marginal, erumpent to adnate, wart-shaped to conical, 0.1–0.15 mm diam. and 50–70 µm high, greyish black; wall formed by meandering hyphae, blackish brown and covered by thin, thallus tissue. Conidia fusiform-ellipsoid, non-septate, 6–8 x 1.5–2 µm, colorless. Chemistry: no substances detected by TLC. Distribution and Ecology. Neotropics and tropical Africa. One of the most common species of the genus, often growing together with *Asterothyrium rotuliforme* on leaves of exposed, planted trees and bushes from the lowland to the montane rain forest zone.

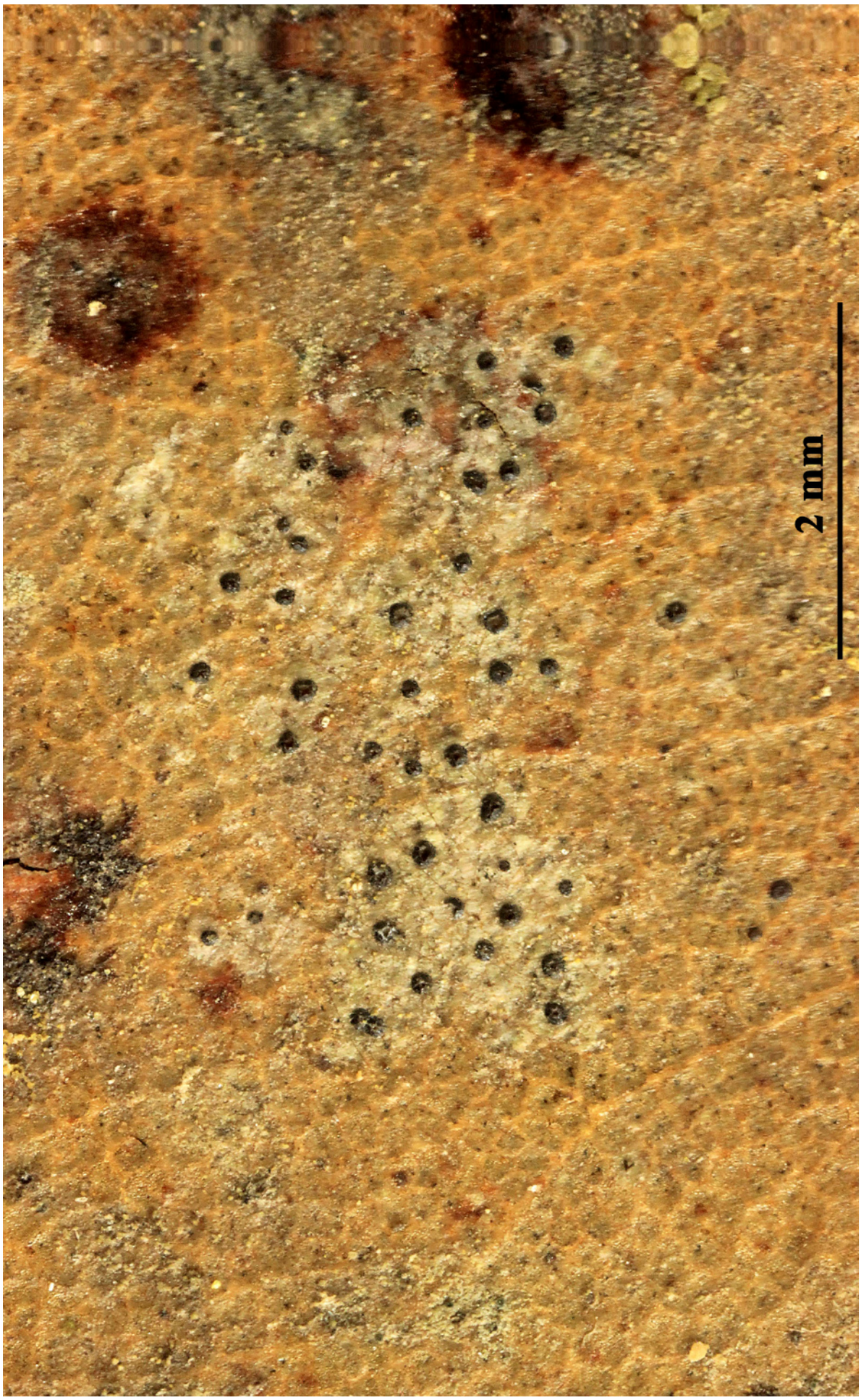
Asterothyrium leucophthal-

Asterothyrium leucophthalmum

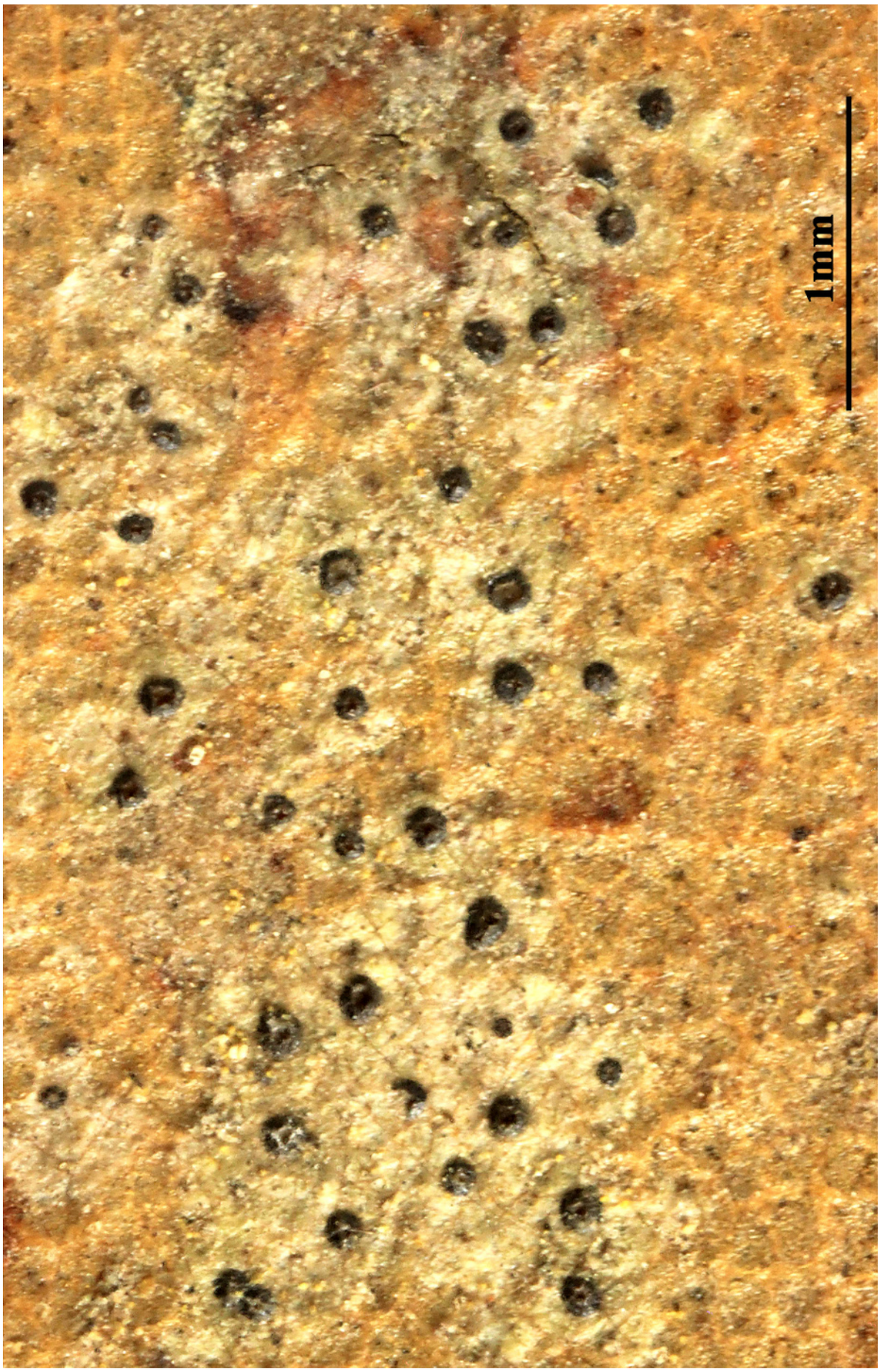
Aulaxina microphana (Vain.) R. Sant., Symb. bot. upsal. 12(no. 1): 299 (1952)
= *Bilimbia microphana* Vain. 1921

[VZ1557], USA. Florida. Apalachiola National Forest, secus flumine Sopchopy. Ad folia arborum. Leg. E. Sérusiaux (no. 1794), 9.6.1976. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1557.

Thallus continuous or dispersed into rounded patches, 5–15 mm across and 10–15 µm thick, with cartilaginous, corticiform layer, smooth, green, connected by translucent prothallus. Apothecia adnate erumpent, zeorine but with carbonized, thalline margin, rounded, 0.15–0.35 mm diam. and 40–70 µm high; disc in young apothecia completely covered by margin, in mature apothecia plane, pale yellowish grey; margin very distinct, strongly prominent, gently sloping outwards and, therefore, appearing rather thick, pure black. Excipulum strongly reduced, prosoplectenchymatous, 3–7 µm broad, colorless, covered by 10–20 µm thick, entirely carbonized, thallus layer lacking algae. Hypothecium 5–10 µm high, colorless. Epithecium indistinct. Hymenium 20–30 µm high, colorless. Asci clavate, 20–30 x 8–12 µm. Ascospores 8 per ascus, fusiform ellipsoid, 3-septate, with slight constrictions at septa, (7–)10–20 x 2.5–4 µm, 3–5 times as long as broad. Hyphophores not observed. Chemistry: no substances detected by TLC. Distribution and Ecology. Pantropical, extending into subtropical regions. Not abundant but found under a great variety of ecological conditions, seemingly with a preference for palm-type leaves.



Aulaxina microphana

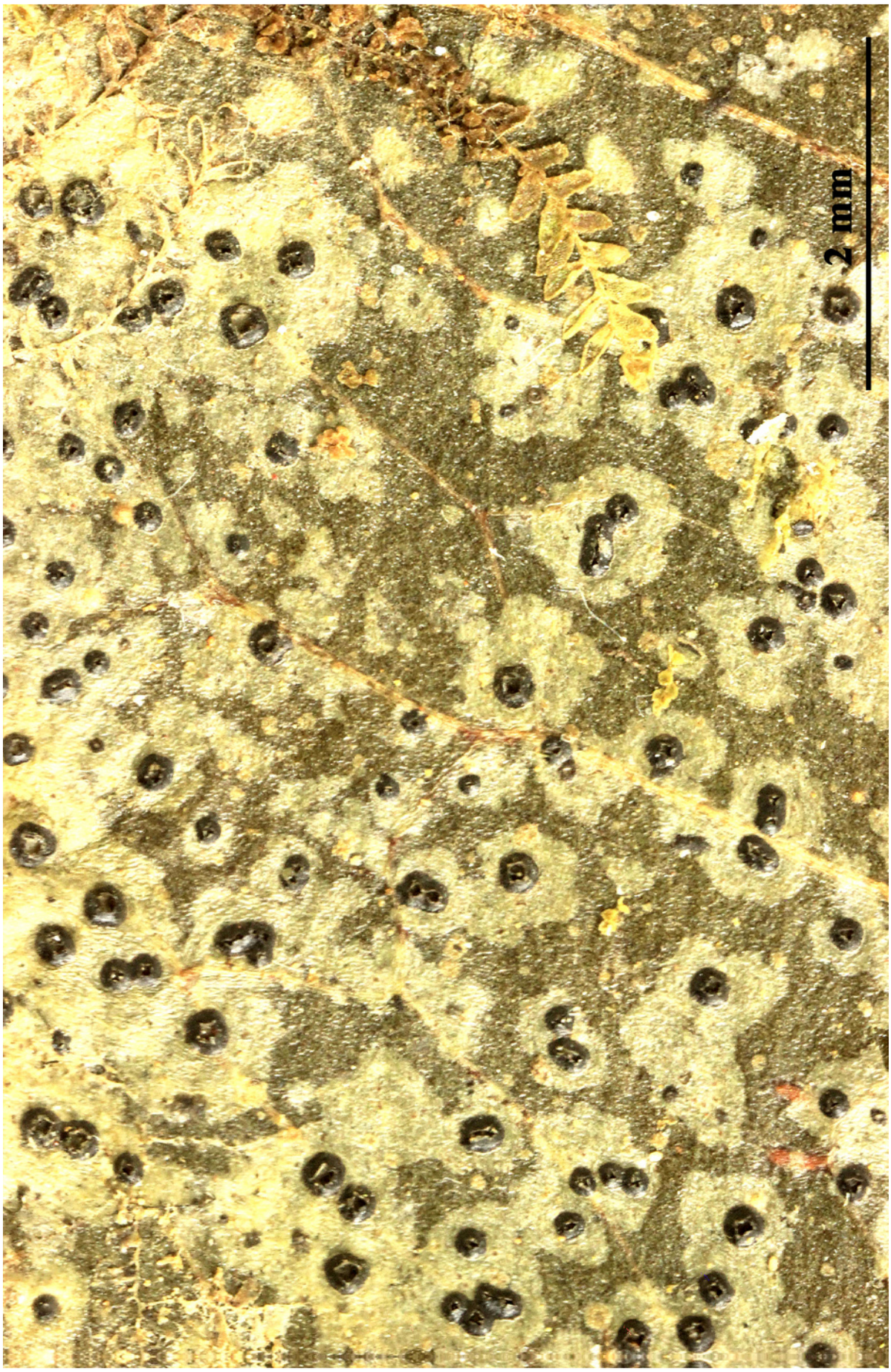


Aulaxina microphana

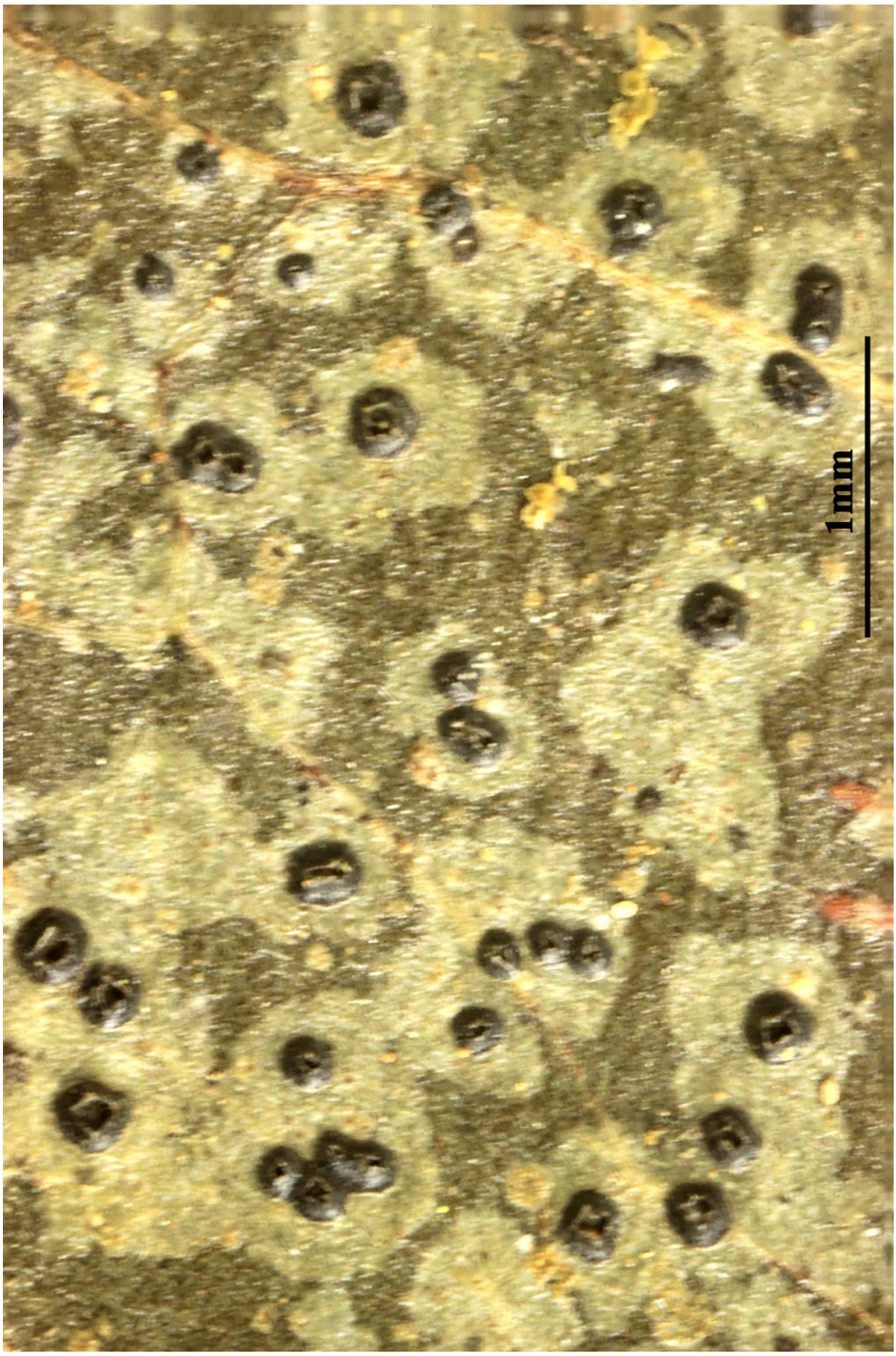
Aulaxina quadrangula (Stirt.) R. Sant., J. Ecol. 40(1): 129 (1952)
= *Platygrapha quadrangula* Stirt. 1879

[VZ1127], Republica Guinea (Africa occident.). Distr. Macenta, montes Ziama, in silvis densis in regione collis Sérédou, 900 m. Ad folia arborum variarum. Leg. S. Lisowski, 3.1962, det. A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1127.

Thallus dispersed into rounded patches, 10–30mm across and 10–15 µm thick, with cartilaginous, corticiform layer, smooth, green, with translucent prothallus. Apothecia adnate-erumpent, zeorine but with carbonized, thalline margin, angular-rounded, 0.2–0.5 mm diam. and 50–80 µm high; disc in young apothecia covered by margin, in mature apothecia plane, pale grey; margin very distinct, strongly prominent, gently sloping outwards and, therefore, appearing rather thick, sometimes divided into 3–5 triangular lobules, pure black. Excipulum strongly reduced, prosoplectenchymatous, 5–8 µm broad, colorless, covered by 10–20 µm thick, entirely carbonized, thallus layer lacking algae. Hypothecium 10–15 µm high, colorless. Epithecium indistinct. Hymenium 40–50 µm high, colorless. Asci broadly clavate to ellipsoid, 30–50 x 8–16 µm. Ascospores (1–)2–8 per ascus, ellipsoid, submuriform with (3–)5(–9) transverse septa and 0–1 longitudinal septum per segment, with distinct constrictions at septa, 13–25 x 5–10 µm, 2.5–3 times as long as broad. Hyphophores produced on translucent prothallus, setiform with blunt apex, 0.1–0.2 mm high, entirely black. Diahyphae inserted apically, 'palmate', in 3–5 separate bunches, each one emerging from thicker hypha and branched throughout, moniliform, segments ellipsoid, very rarely 1-septate. Chemistry: no substances detected by TLC. Distribution and Ecology. Neotropics and tropical Africa. By far the most common species of the genus, typically found in more exposed situations, such as the inner canopy region, from sea level to the upper montane rain forest zone. - *Aulaxina quadrangula* is a very conspicuous taxon due to its usually large thallus and apothecia. Ascospores are variable but mostly 5-septate with the two median cells featuring one longitudinal septum each. Immature specimens might be confused with *A. microphana*. *Aulaxina intermedia* can usually be distinguished by its more elongate ascospores that lack longitudinal septa. In *A. submuralis*, ascospores are larger on average and provided with more numerous, longitudinal septa.



Aulaxina quadrangula



Aulaxina quadrangula

Austroblastenia pupa Sipman, Biblthca Lichenol. 18: 84 (1983)
= *Megalospora pupa* (Sipman) Kantvilas & Lumbsch, Aust. Syst. Bot. 25(3): 215 (2012)

[VZ2351], Australia, Tasmania. 1 km ad occidentem versus a monte Charter, 780 m. Ad corticem arborum (*Atherosperma moschatum*) in pluviisilva. Leg. G. Kantvilas (161/89), 8.4.1989. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2351.

Thallus pale grey to pale greenish-grey, thin, slightly wrinkled or smooth, occasionally thicker and cracked, soredia and isidia absent. Apothecia scattered 0.6-2.1 mm diam., disc consistently plane, brown, with scattered, coarse, whitish pruina, dull, margins prominent, narrow, black, epruinose, glossy. Epithecium pale yellow-orange or red-brown, diffuse, with a granular upper layer, 18-24 µm thick. Hymenium 180-250 µm tall, I+ dark blue. Ascospores 4-8 per ascus, ovoid to subglobose, straight, muriform, 45-80 × 23-32 µm (10-14 transverse septa and 4-5 vertical septa). Chemistry: KC-, P+ orange. Pannarin and zeorin.

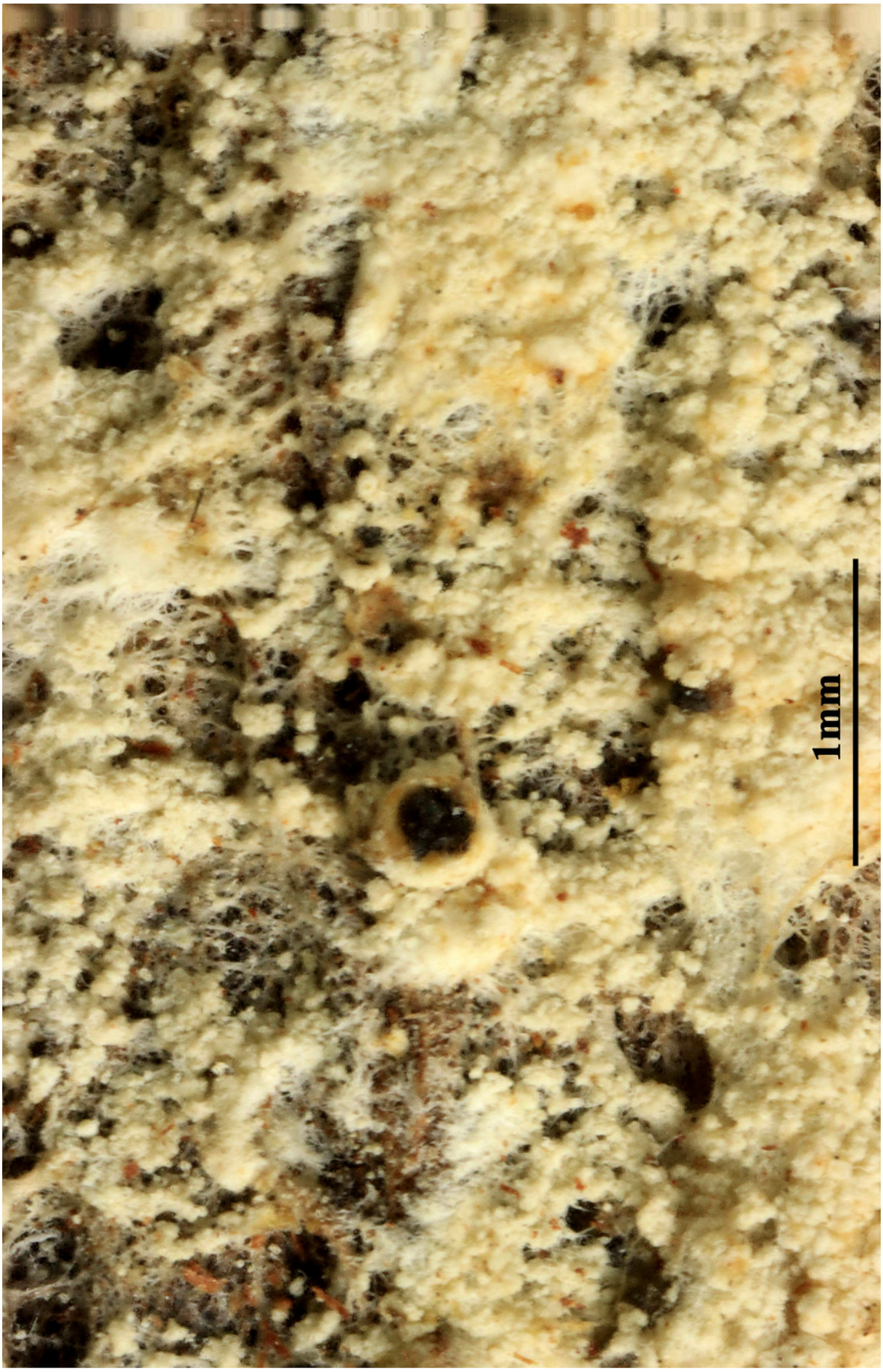
Austroblastenia pupa

Austroblastenia pupa

Auriculora byssomorpha (Nyl.) Kalb, Lichenes Neotropici, Fascicle X (nos 401-450) (Neumarkt): 2 (1988)
= *Bacidia byssomorpha* (Nyl.) Zahlbr., Cat. Lich. Univers. 4: 102 (1926) [1927]
= *Lecidea byssomorpha* Nyl., Acta Soc. Sci. fenn. 7(2): 458 (1863)

[VZ2301], Tanzania. Tanga regio, montes Usambara Occidentalis: reservatum naturae forestale Shagayu dictum, in monte Kashemhambu, 1750-1800. Ad corticem arborum in pluviisilva montana. Leg. E. Farkas (no. 86202M), 20.10.1986., det. A. Vezda, - TLC from K. Kalb 1999: baepmycesis acid, squamatic acid. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2301.

The ontogeny of the apothecia is characterized by the repeated formation of new hymenia within the subhymenial layer. The development of the first hymenium is gymnocarpous but the de novo' differentiation of new hymenia, each beneath the next older disintegrating one, gives rise to a peculiar type of secondary hemiangiocarpy. Portions of the decaying hymenia and adjacent subhymenial tissue frequently remain fastened to the apothecial margin and disc in the shape of ear-like appendages or as superimposed layers. In aged apothecia such decaying tissue may form a sheath around the apothecial margin and on the disc.



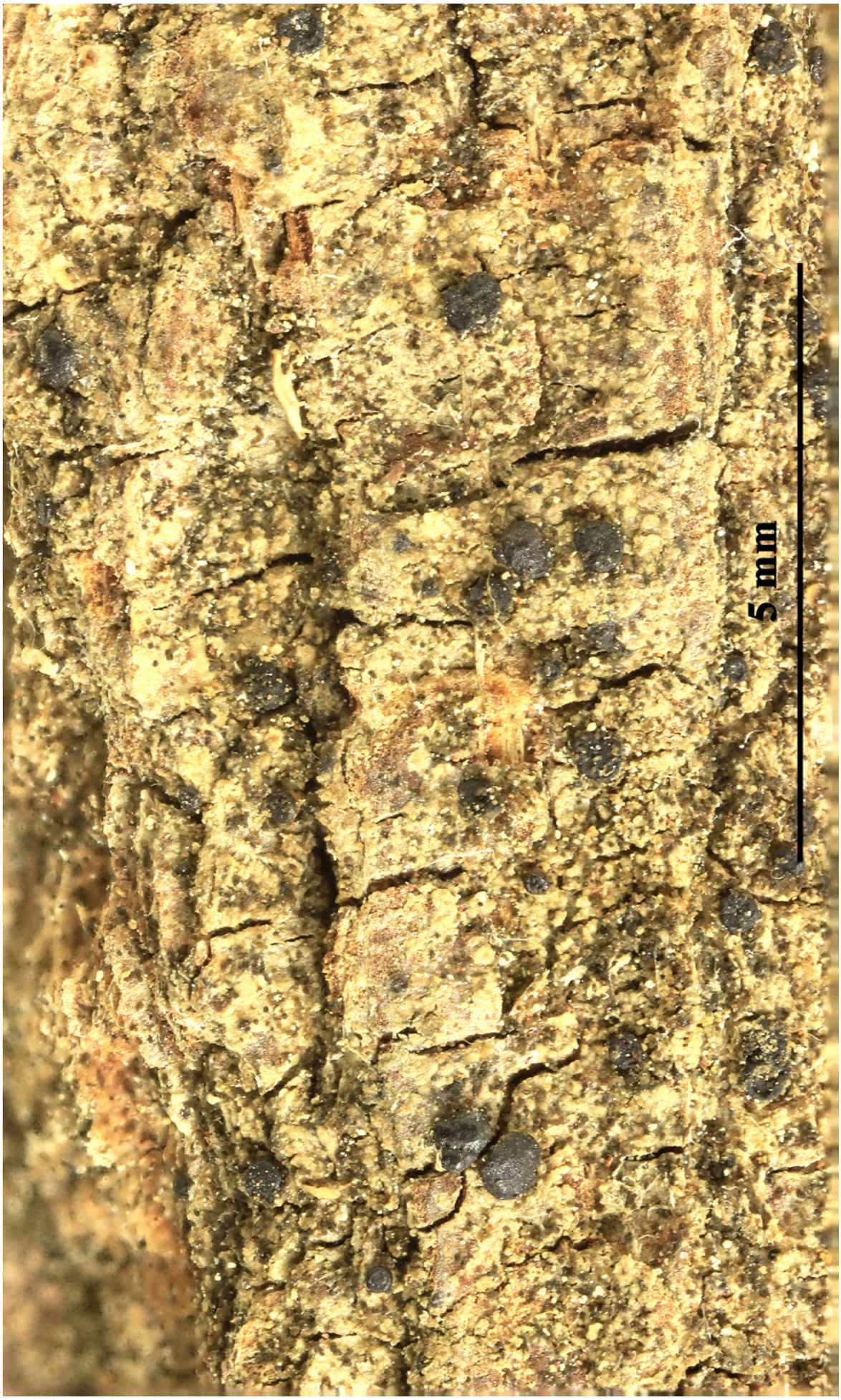
Auriculora byssomorpha

Auriculora byssomorpha

Bacidia absistens (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Bacidia acerina* var. *intermissa* (Nyl.) Lettau, Feddes Repert. Spec. Nov. Regni veg. 61(2): 134 (1958)
= *Bacidia endoleuca* f. *intermissa* (Nyl.) Blomb. & Forssell, Enum. Pl. Scand.: 80 (1880)
= *Bacidia endoleuca* var. *absistens* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 183 (1903)
= *Bacidia intermissa* (Nyl.) Malme, Bot. Notiser: 208 (1895)
= *Bacidia subacerina* var. *intermissa* (Nyl.) Lettau, Feddes Repert. Spec. Nov. Regni veg. 54(1): 96 (1944)
= *Lecidea absistens* Nyl., Flora, Regensburg 52(19): 295 (1869)
= *Lecidea endoleuca* subsp. *absistens* (Nyl.) Nyl., Flora, Regensburg 64(34): 539 (1881)
= *Lecidea intermissa* Nyl., Flora, Regensburg 55: 355 (1872)

[VZ1645], Suecia. Värmland: Östra Ämtervik, Eldebecksberget, 180 m. Ad corticem Salicis. Leg. S. W. Sundell (no. 12773), 18.9.1978. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1645.

Thallus crustose, thinly episubstratic, white to grey, continuous, smooth or granular-warted. Apothecia lecideine, 0.3-0.6(-1) mm across, black to grey in shade-forms, with a flat to rarely convex disc, and a thin, usually persistent proper margin. Proper exciple dark green and K+ intensifying green in outer part, pale red-brown and K- or K+ purple within, with abundant small crystals dissolving in K, visible under polarized light; epithecium blue-violet or purple-brown, rarely green, K+ green N+ purple-violet (with the precipitation of small blue crystals); hymenium colourless, 60-95 µm high; paraphyses simple or forked, 1-1.5 µm thick at mid-level, the apical cells up to 4 µm wide; hypothecium colourless or pale yellowish brown in lower part. 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 7-16-septate, hyaline, needle-like, 45-80 x 2-3(-4) µm. Pycnidia very small, immersed. Conidia thread-like, curved, 7-32 x c. 0.5 µm. Photobiont chlorococcoid, the cells 5-12(-14) µm in diam. Spot tests: thallus K, C-, KC-, P-, UV-. Chemistry: unidentified orcinol meta-depsides. - Note: a mild-temperate to humid subtropical species found on acid bark in clearings of ancient forests, sometimes on epiphytic bryophytes.



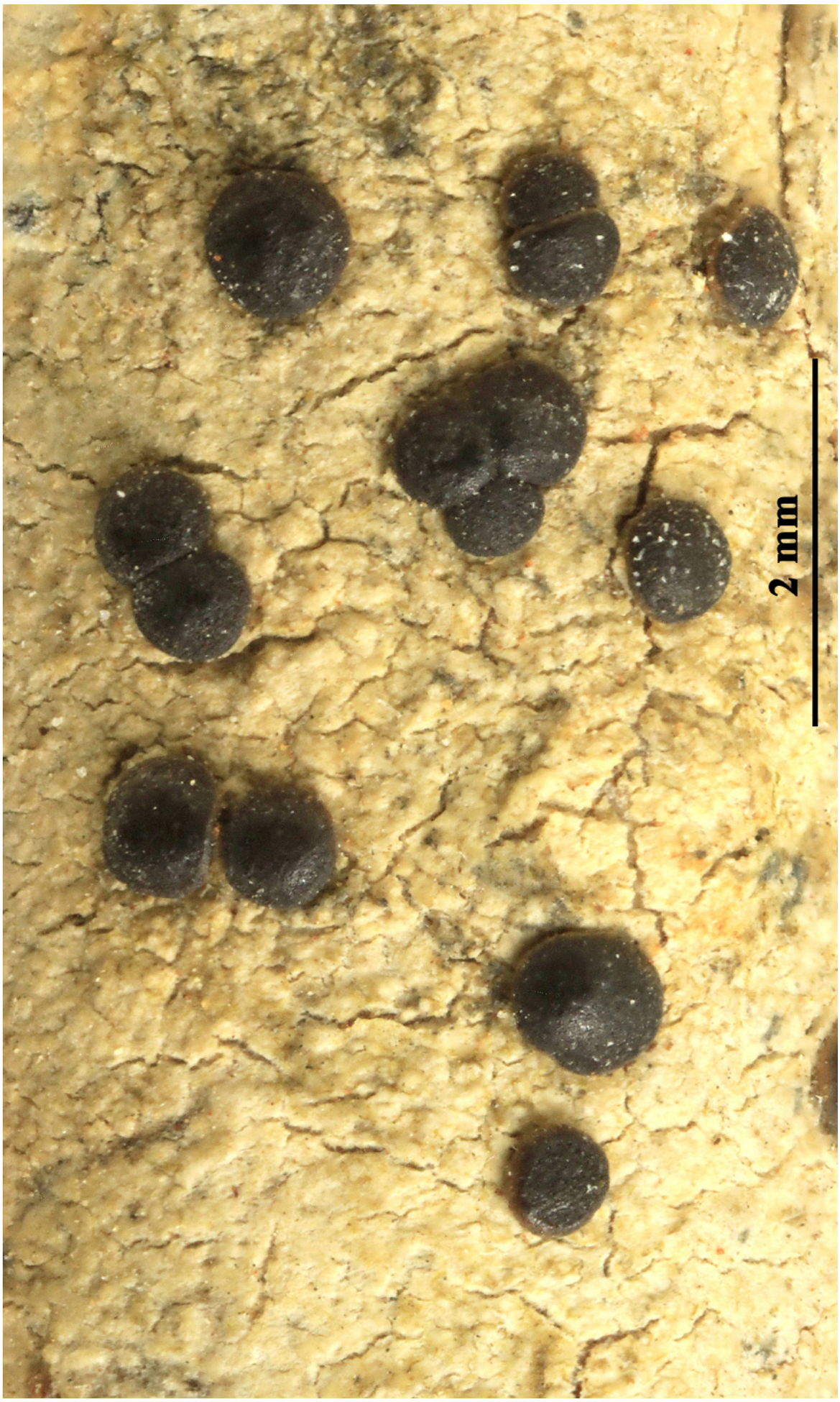
Bacidia absistens

Bacidia absistens

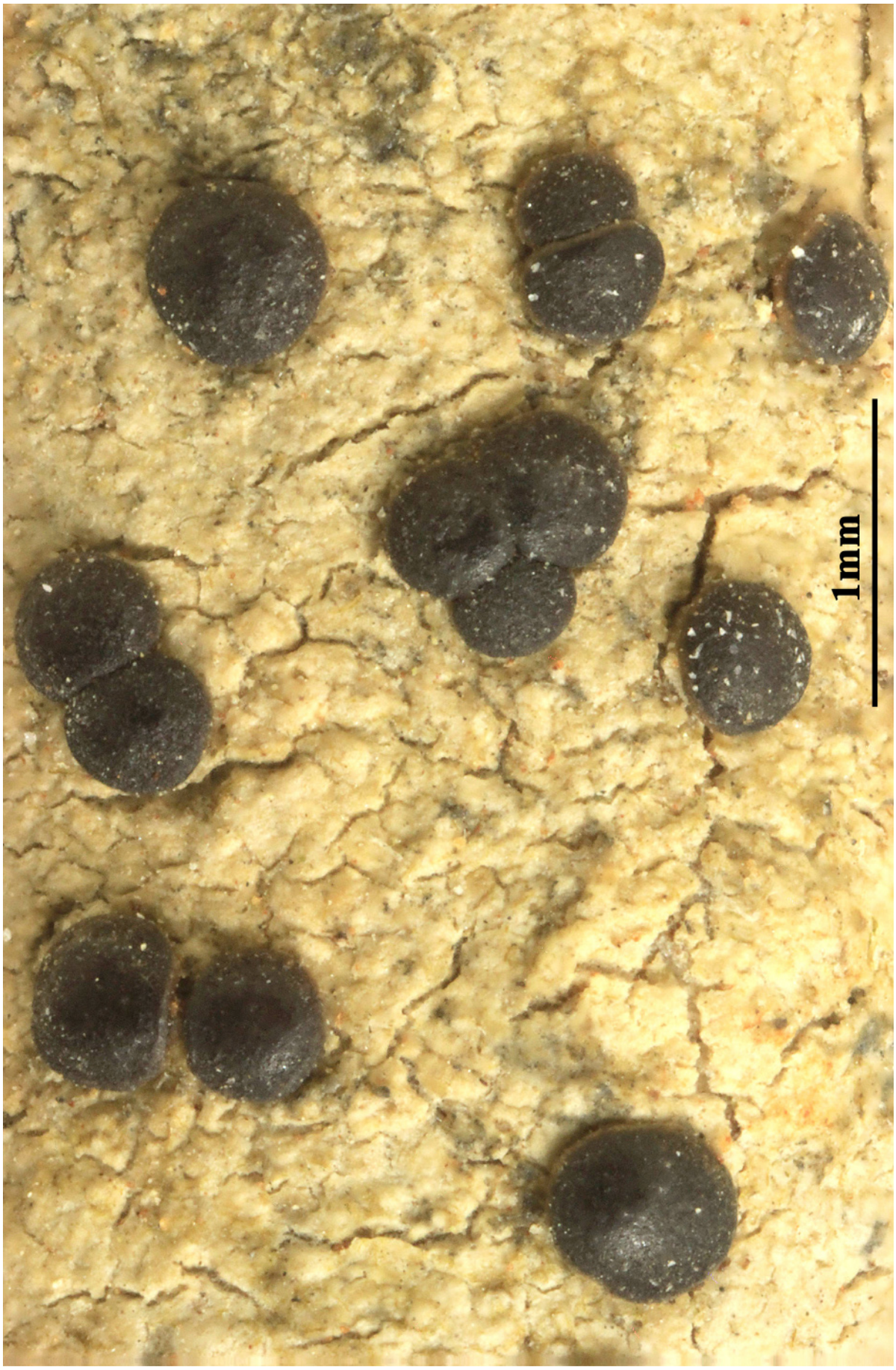
Bacidia alutacea (Kremp.) Zahlbr., Cat. Lich. Univers. 4: 174 (1926) [1927]
= *Lecidea alutacea* Kremp., Flora, Regensburg 61: 519 (1878)
= *Patellaria alutacea* (Kremp.) Müll. Arg., Flora, Regensburg 65: 212 (1882)

[VZ1606], Hawaii Insulae. Puna, Nanawale Forest Reserve, prope Halepuaa. Ad corticem arboris. Leg. O. et I. Degener (no. 34235), 4.2.1977, det. K. Kalb. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1606.

Thallus corticolous, effuse, unequal, smooth, yellowish brown. Apothecia numerous, constricted at base, 0-2-1 mm in diameter; disc plane to convex, dark brown to black, epruinose; margin entire, distinct, brown to black in young apothecia and later excluded. Exciple colourless to pale brown, 48-64 µm thick and brown at margin, K-. Epithecium brown, 10-12 µm thick, K+ violet; hymenium 70-80 µm thick, I+ blue then vinose red; hypothecium pale yellow, 36-42 µm thick, K-. Spores acicular, transversely 9-15 septate, 40-62 x 3.2-4 µm; paraphyses simple to branched, thickened at apices. TLC: yellow spot at Rf value 0.69 and pale brown spot at Rf value 0-58. *B. alutacea* is close to *B. personata* in K+ violet epithecium, but in the latter the apothecia are always black and the spores are longer (52-110 µm) and more septate (l 5-25).



Bacidia alutacea



Bacidia alutacea

Bacidia arceutina (Ach.) Th. Fr., Bot. Notiser(10): 187 (1865)
= *Bacidia arceutina* f. *hypnaea* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Bacidia arceutina* var. *hypnaea* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Bacidia leightoniana* (Larbal. ex Leight.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 169 (1911)
= *Biatora carneola* var. *arceutina* (Ach.) Steud. & Hochst., Enum. Pl. Germ.: 208 (1826)
= *Biatora effusa* var. *arceutina* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 45 (1888)
= *Biatora luteola* var. *arceutina* (Ach.) Tuck., Gen. lich. (Amherst): 167 (1872)
= *Biatora luteola* ß *fuscella* (Nyl.) Mudd, Man. Brit. Lich.: 183 (1861)
= *Biatora rubella* f. *arceutina* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 45 (1888)
= *Biatorina arceutina* (Ach.) A. Massal. [as 'arceutica'], Ric. auton. lich. crost. (Verona): 137, fig. 270 (1852)
= *Lecidea arceutina* (Ach.) Gray, Nat. Arr. Brit. Pl. (London) 1: 472 (1821)
= *Lecidea arceutina* var. *hypnaea* Nyl., Flora, Regensburg 51: 165 (1868)
= *Lecidea carneola* var. *arceutina* (Ach.) Ach., Syn. meth. lich. (Lund): 42 (1814)
= *Lecidea effusa* var. *fuscella* (Nyl.) Leight., Lich.-Fl. Great Brit.: 344 (1871)
= *Lecidea leightoniana* Larbal. ex Leight., Lich.-Fl. Great Brit., Edn 3: 368 (1879)
= *Lecidea luteola* f. *arceutina* (Ach.) Nyl., Lich. Lapp. Orient.: 154 (1866)
= *Lecidea luteola* var. *arceutina* Ach., Methodus, Sectio prior (Stockholmiæ): 61 (1803)
= *Lecidea luteola* var. *fuscella* Nyl., Act. Soc. linn. Bordeaux 21(4): 360 (1857) [1856]
= *Secoliga arceutina* (Ach.) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 38 (1863)
= *Sporoblastia arceutina* (Ach.) Trevis. [as 'arceutica'], Linnaea 28: 291 (1857) [1856]

[VZ1259], Suecia. Värmland: Östra Fågelvik, septentrionem versus a Flatvik, 70 m. Ad corticem *Populi tremulae*. Leg. S. W. Sundell (no. 9528), 16.3.1974. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1259.

Thallus crustose, endosubstratic or thinly episubstratic, white to pale grey, continuous to rimose, rarely minutely granular. Apothecia lecideine, (0.2-)0.5-0.8(-1) mm across, at first yellowish brown, then brown to brown-black, with a flat to finally convex, epruinose disc, and a usually darker, finally sometimes excluded proper margin. Proper exciple brownish in outer part, colourless or pale yellow within, 60-95 µm thick laterally, 100-125 µm thick at base, of radiating hyphae, usually with a single row of up to 6 µm thick, rounded cells along the outer edge, the pigmented parts K- or K+ yellow; epithecium yellow-brown or olive-brown, K-, N-; hymenium colourless, 45-70(-90) µm high, I+ blue, K/I+ deep blue; paraphyses simple or irregularly forked in upper part, 0.8-1.5 µm thick at mid-level, the apical cells up to 2.5(-4) µm wide; hypothecium colourless or yellow-brown and K+ intensifying yellow in upper part, 20-35 µm high. 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, 3-7-septate, hyaline, acicular. (32-)35-55(-70) x 1.2-2(-2.5) µm. Pycnidia rare, inconspicuous, immersed. Conidia filiform, curved, 9-17 x c. 0.7 µm. Photobiont chlorococcoid, the cells 5-12 µm in diam. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a mild-temperate to humid subtropical species found on bark of broad-leaved trees (especially *Acer*, *Fraxinus* and *Populus*) in open deciduous woodlands near rivers, very rarely calcicolous or muscicolous.

Bacidia arceutina

Bacidia arceutina

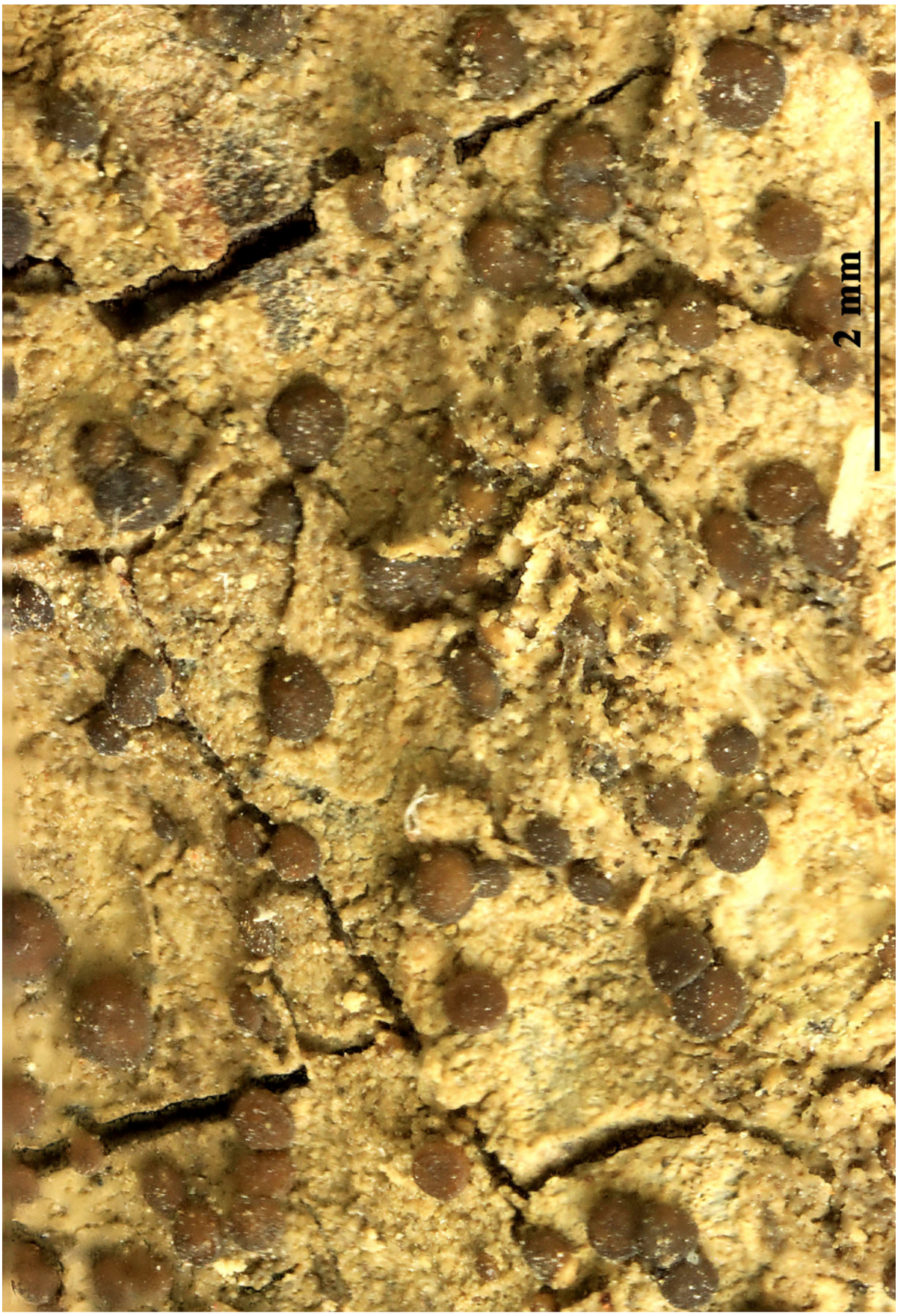
Bacidia arceutina

Bacidia arceutina (Ach.) Th. Fr., Bot. Notiser(10): 187 (1865)
= *Bacidia arceutina* f. *hypnaea* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Bacidia arceutina* var. *hypnaea* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Bacidia leightoniana* (Larbal. ex Leight.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 169 (1911)
= *Biatora carneola* var. *arceutina* (Ach.) Steud. & Hochst., Enum. Pl. Germ.: 208 (1826)
= *Biatora effusa* var. *arceutina* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 45 (1888)
= *Biatora luteola* var. *arceutina* (Ach.) Tuck., Gen. lich. (Amherst): 167 (1872)
= *Biatora luteola* ß *fuscella* (Nyl.) Mudd, Man. Brit. Lich.: 183 (1861)
= *Biatora rubella* f. *arceutina* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 45 (1888)
= *Biatorina arceutina* (Ach.) A. Massal. [as 'arceutica'], Ric. auton. lich. crost. (Verona): 137, fig. 270 (1852)
= *Lecidea arceutina* (Ach.) Gray, Nat. Arr. Brit. Pl. (London) 1: 472 (1821)
= *Lecidea arceutina* var. *hypnaea* Nyl., Flora, Regensburg 51: 165 (1868)
= *Lecidea carneola* var. *arceutina* (Ach.) Ach., Syn. meth. lich. (Lund): 42 (1814)
= *Lecidea effusa* var. *fuscella* (Nyl.) Leight., Lich.-Fl. Great Brit.: 344 (1871)
= *Lecidea leightoniana* Larbal. ex Leight., Lich.-Fl. Great Brit., Edn 3: 368 (1879)
= *Lecidea luteola* f. *arceutina* (Ach.) Nyl., Lich. Lapp. Orient.: 154 (1866)
= *Lecidea luteola* var. *arceutina* Ach., Methodus, Sectio prior (Stockholmiæ): 61 (1803)
= *Lecidea luteola* var. *fuscella* Nyl., Act. Soc. linn. Bordeaux 21(4): 360 (1857) [1856]
= *Secoliga arceutina* (Ach.) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 38 (1863)
= *Sporoblastia arceutina* (Ach.) Trevis. [as 'arceutica'], Linnaea 28: 291 (1857) [1856]

[VZ2402], Austria. Styria, regio Grazer Bergland: Mühlbachgraben in occidente a Stift Rein, Gratkorn, 500 m. In ramulis emortuis *Piceae excelsae* in ripa rivi. Leg. J. Hafellner, 17.10.1987, det. A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2402.

Thallus crustose, endosubstratic or thinly episubstratic, white to pale grey, continuous to rimose, rarely minutely granular. Apothecia lecideine, (0.2-)0.5-0.8(-1) mm across, at first yellowish brown, then brown to brown-black, with a flat to finally convex, epruinose disc, and a usually darker, finally sometimes excluded proper margin. Proper exciple brownish in outer part, colourless or pale yellow within, 60-95 µm thick laterally, 100-125 µm thick at base, of radiating hyphae, usually with a single row of up to 6 µm thick, rounded cells along the outer edge, the pigmented parts K- or K+ yellow; epithecium yellow-brown or olive-brown, K-, N-; hymenium colourless, 45-70(-90) µm high, I+ blue, K/I+ deep blue; paraphyses simple or irregularly forked in upper part, 0.8-1.5 µm thick at mid-level, the apical cells up to 2.5(-4) µm wide; hypothecium colourless or yellow-brown and K+ intensifying yellow in upper part, 20-35 µm high. 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, 3-7-septate, hyaline, acicular. (32-)35-55(-70) x 1.2-2(-2.5) µm. Pycnidia rare, inconspicuous, immersed. Conidia filiform, curved, 9-17 x c. 0.7 µm. Photobiont chlorococcoid, the cells 5-12 µm in diam. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a mild-temperate to humid subtropical species found on bark of broad-leaved trees (especially *Acer*, *Fraxinus* and *Populus*) in open deciduous woodlands near rivers, very rarely calcicolous or muscicolous.

Bacidia arceutina



Bacidia arceutina

Bacidia arceutina

Bacidia bagliettoana (A. Massal. & De Not.) Jatta, Syll. Lich. Ital. (Trano): 421 (1900)

= *Toniniopsis bagliettoana* (A. Massal. & De Not.) Kistenich & Timdal , in Cannon, Ekman, Kistenich, LaGreca, Printzen, Timdal, Aptroot, Coppins, Fletcher, Sanderson & Simkin, Revisions of British and Irish Lichens 3: 76 (2021)

= *Bacidia atrosanguinea* f. *bagliettoana* (A. Massal. & De Not.) Blomb. & Forssell, Enum. Pl. Scand.: 81 (1880)

= *Bacidia bacillifera* var. *muscorum* (Ach.) Branth & Rostr., Bot. Tidss-kr. 3: 235 (1869)

= *Bacidia muscorum* (Ach.) Mudd, Man. Brit. Lich.: 184 (1861)

= *Bacidia muscorum* f. *bagliettoanum* (A. Massal. & De Not.) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau) 2(2): 180 (1879)

= *Bacidia muscorum* var. *atriseda* Wheldon & Travis, J. Linn. Soc., Bot. 43: 129 (1915)

= *Biatora muscorum* (Ach.) Fr., K. svenska Vetensk-Akad. Handl., ser. 3: 276 (1822)

= *Biatora sphaeroides* var. *muscorum* (Ach.) Rabenh., Deutschl. Krypt.-Fl. (Leipzig) 2(1): 94 (1845)

= *Bilimbia muscorum* (Ach.) Trevis., Linnaea 28: 293 (1857) [1856]

= *Bilimbia sphaeroides 1 muscorum* (Ach.) Körb., Syst. lich. germ. (Breslau): 213 (1855)

= *Bilimbia sphaeroides* var. *muscorum* (Ach.) Anzi, Cat. Lich. Sondr.: 71 (1860)

= *Lecidea bacillifera* var. *muscorum* (Ach.) Nyl., Not. Sällsk. Fauna et Fl. Fenn. Förh., Ny Ser. 8: 155 (1866)

= *Lecidea luteola* var. *muscorum* (Ach.) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 3: 183 (1855)

= *Lecidea muscorum* Ach., Methodus, Sectio prior (Stockholmiæ): 33 (1803)

= *Lecidea sphaeroides* var. *muscorum* (Ach.) Schaer., Lich. helv. spicil. 4-5: 166 (1833)

= *Lichen muscorum* Sw., Method. Muscor. Illustr. (Upsaliae): 36 (1781)

= *Raphiospora muscorum* (Ach.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]

= *Scoliciosporum bagliettoanum* A. Massal. & De Not., in Massalongo, Memor. Lich.: 126 (1853)

[VZ2456], Italia. Calabria. Cosenza, Saracena: Piano de Novacco, 1340 m. Ad terram et supra muscos. Leg. D. Puntillo, 12.8.1990- EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2456.

Thallus crustose, whitish (sometimes with a greenish tinge), thin, small-granulose to small-verrucose. Apothecia lecideine, black, epruinose, sessile, strongly constricted at base, 0.3-1(-1.4) mm across, with a flat to finally convex disc and a smooth, finally often excluded proper margin. Proper exciple reddish brown in upper and outer parts, colourless within and in lower part, of radiating hyphae; epithecium green-black to bright green, K-, N+ violet, with blue granules; hymenium colourless, 40-60 µm high; paraphyses simple or forked in upper part, 1.5-2 µm thick at base, the apical cells swollen, up to 4(-5) µm wide; hypothecium red-brown and K+ intensifying red in upper part, paler brown to colourless in lower part. Asci 8-spored, clavate, surrounded by a gelatinous I+ blue coat, with a well-developed I+ blue tholus with an I+ darker blue tube and a well-developed ocular chamber, Bacidia-type. Ascospores (3-)5-7(-10)-septate, hyaline, needle-like or narrowly bacilliform, 25-45 x 2-2.5(-3.5) µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: an arctic-alpine to boreal-montane, circumpolar lichen of moribund bryophytes and plant debris in dry grasslands, or in fissures of calcareous rocks and dolomite, with optimum in upland areas.

Bacidia bagliettoana

Bacidia bagliettoana

Bacidia bagliettoana

Bacidia colchica Vězda, Folia geobot. phytotax. 14(2): 203 (1979)
= *Fellhanera colchica* (Vězda) Llop, Lichenologist 39(4): 393 (2007)

[VZ1660], URSS. Transcaucasica, Colchis. Distr. Gagra, in valle angusta rivi Žo Ekvara, 30 m. Ad folia *Buxi Colchicae* - Isotypus- leg. A. Vězda, 13.6.1978. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1660.

EX:FOLIA GEOBOTANICA ET PHYTOTAXONOMICA, PRAHA, 18, 1983: Apothecien meist in geringer Zahl auf dem Lager vorhanden, rund, 0,2—0,45 mm breit und 0,1 —0,15 mm hoch, mit eingezogener Basis dem Lager aufsitzend. Discus. zuerst flach, braun oder rotbraun, Rand diinn, ungeteilt, blass gelbbraun; ältere Apothecien linsenformig gewolbt, ohne sichtbaren Rand. Vertikalschnitt durch ein. Apothecium: Excipulum paraplectenchymatisch, gebräunt. Hypothecium um 20 bis 30 pm hoch, kastanienbraun, K-, in der Mitte nahe der Unterlage blaugrün. Hymenium 40—45 µm hoch, farblos, J+ blau. Paraphysen sehr spärlich, diinn 1 bis 1.5 µm, einfach oder selten verzweigt und anastomosierend, mit nur wenig verdickten Enden. Asci zylindrisch-keulig, 8-sporig. Sporen lang ellipsoidisch bis stäbchenförmig, an einem Ende etwas verdickt, gerade oder leicht gekriimmt, 5-7 (-9)-septiert, 16-25 µm lang, 2-3 µm breit, an den Septen leicht eingeschnürt, mit gelatinosen Wandaussenschichten. Der Aufbau der Apothecien dieser neuen Art ähnelt in vielen Punkten der aus Malesien bekannten *Bacidia olivaceorufa* VAIN.; diese unterscheidet sich von *B. colchica* durch rostroten Thallus, durch einen fast schwarzen Discus und rotbraunen Apotheciumrand. Die in der Kolchis auf den Blättern von Buxus (einmal auch auf Ilex) nicht seltene Art bevorzugt halbschattige, sehr luftfeuchte Standorte.

Bacidia colchica

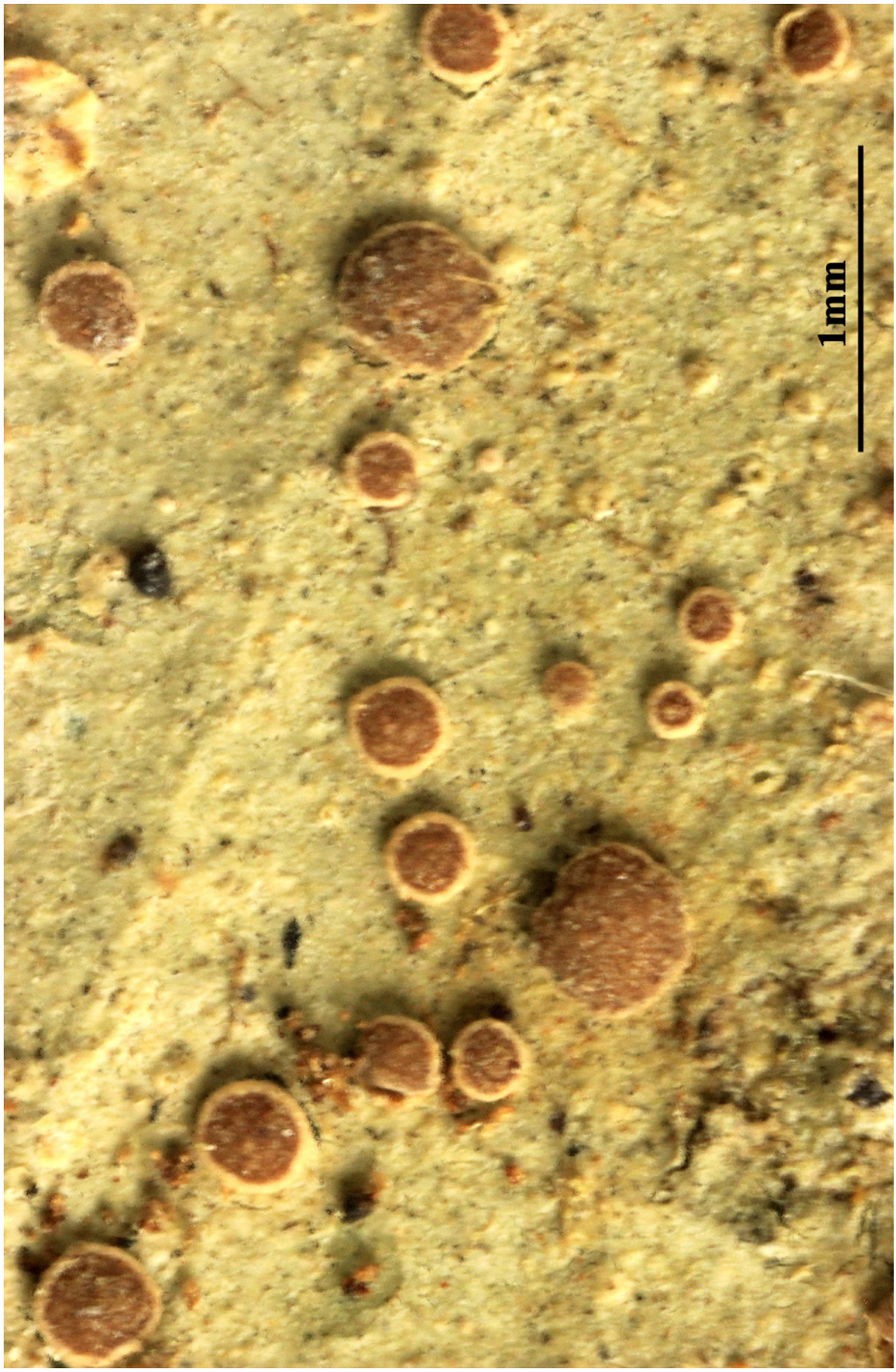
Bacidia colchica

Bacidia dimerelloides Vězda, Acta Mus. Silesiae, Ser. A 23: 179 (1974)

[VZ2376], Tanzania. Regio Morogoro: in monte Kanga, secus rivum Mkange dictum, 850-1200 m. Foliicola in pluviisilva. leg- E. Farkias (89110), 30.3.1989, det. A. Vězda. - Annot Vezda: Plantae nostrae ascosporis vulgo 7-septatis praeditar. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2376.

Thallgs tenuis, cinereo.viridescens, usque ad 2 cm latus, continuus, haud distincte _limitatus, opacus, protothallo nullo. Apothecia copiosa, dispersa, orbicularia, 0.3-0.6 mm lata, 0.1-0.2 mm alta, basi arcte constricta, margine crasso integro, vitellino vel testaceo, disco plano vel postremo convexo, aurantiaco vel rubrofusco, Excipilum laterale 30-40 µm, in parte subhymeniali 50 µm crassum, paraplectenchymäticum, cavitatibus cellularum 4-6 µm latis, pallidä fuscum, in centro partis subhymenialis nigro-caeruleum. Hypothecium 20-30 µm altum,fuscescens, Hymenium 50-60 µm altum, in sectione tenue hyalinun. Paraphyses simplices, tubulis 1.5 µm crassii, apicibus paulum incrassati. Asci cylindrico-clavata, 8 spori; sporae cylindricae uno.apice vulgo magis attenuato, (7-) 9 (-12)-septatae , 15-45 x 3-3.5 µm. Hymenium J+ caerulescens. Pycnidia globosa, 0.1 mm lata, strato thallino algifero tecta,, paries 10 µm erassa, caerulea. Conidia simlicia, bacillaria 4-6 x 1 µm. Algae virides, globosis vel irregulariter depressis,6-8 µm crasis, cellulis membranis tenuibus.

Bacidia dimerelloides

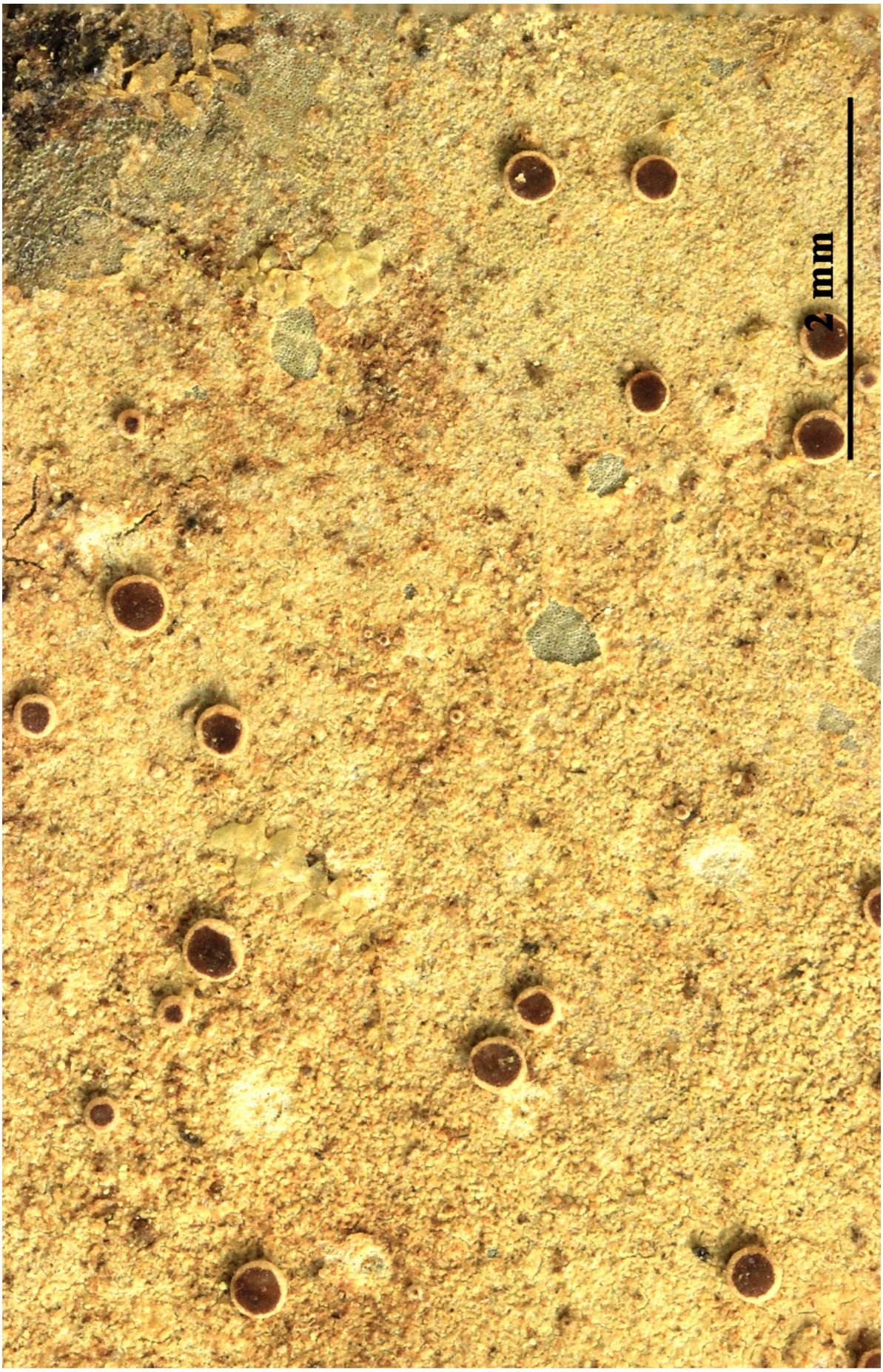


Bacidia dimerelloides

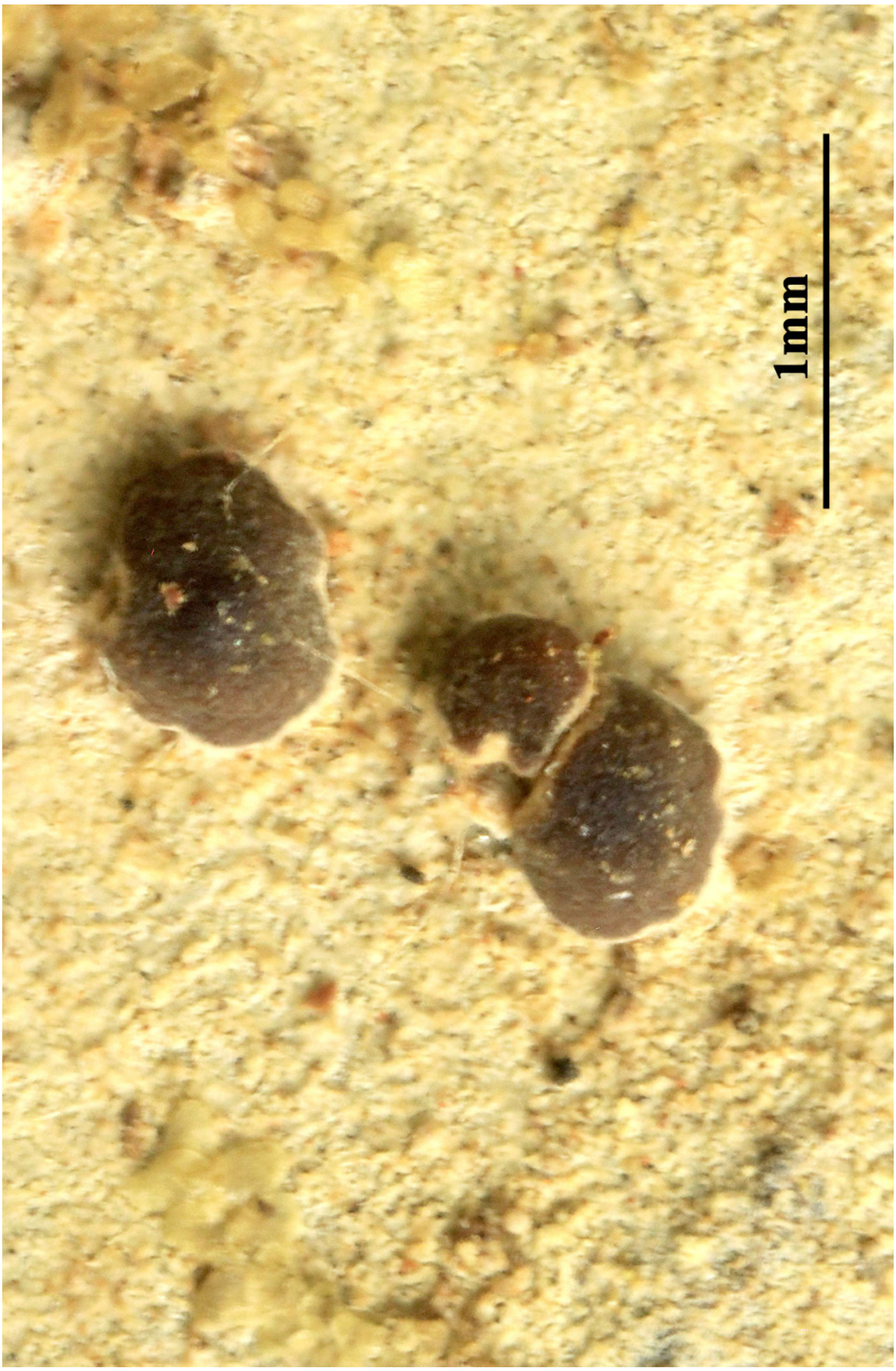
Bacidia dimerelloides Vězda, Acta Mus. Silesiae, Ser. A 23: 179 (1974)

[VZ2150], Tansania. Regio Tanga, Usambara Orientalis, reservatum naturae Kwamkoro Forest dictum, prope Kwamkoro Tea Estate, 900-1030 m. Foliicola in pluviisilva. Legt. A. Borhidi et E. Farkas (86214), 28.10.1986, det. A. Vězda.- Annot Vězda: Ascosporae 7-9 septatae. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 2158.

Thallgs tenuis, cinereo.viridescens, usque ad 2 cm latus, continuus, haud distincte _limitatus, opacus, protothallo nullo. Apothecia copiosa, dispersa, orbicularia, 0.3-0.6 mm lata, 0.1-0.2 mm alta, basi arcte constricta, margine crasso integro, vitellino vel testaceo, disco plano vel postremo convexo, aurantiaco vel rubrofusco, Excipilum laterale 30-40 µm, in parte subhymeniali 50 µm crassum, paraplectenchymäticum, cavitatibus cellularum 4-6 µm latis, pallidä fuscum, in centro partis subhymenialis nigro-caeruleum. Hypothecium 20-30 µm altum,fuscescens, Hymenium 50-60 µm altum, in sectione tenue hyalinun. Paraphyses simplices, tubulis 1.5 µm crassii, apicibus paulum incrassati. Asci cylindrico-clavata, 8 spori; sporae cylindricae uno.apice vulgo magis attenuato, (7-) 9 (-12)-septatae , 15-45 x 3-3.5 µm. Hymenium J+ caerulescens. Pycnidia globosa, 0.1 mm lata, strato thallino algifero tecta,, paries 10 µm erassa, caerulea. Conidia simlicia, bacillaria 4-6 x 1 µm. Algae virides, globosis vel irregulariter depressis,6-8 µm crasis, cellulis membranis tenuibus.



Bacidia dimerelloides



Bacidia dimerelloides

Bacidia dissimulabilis (Nyl.) Zahlbr., Cat. Lich. Univers. 4: 189 (1926) [1927]
= *Lecidea dissimulabilis* Nyl., in Nylander & Crombie 1883

[VZ1607], Hawaii Insulae. Puna, Nanawale Forest Reserve, prope Halepuaa. Ad corticem arboris. Leg. O. et I. Degener (n0. 34234), 4.2.1977,det. K. Kalb. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1607.

No description foud.

Bacidia dissimulabilis

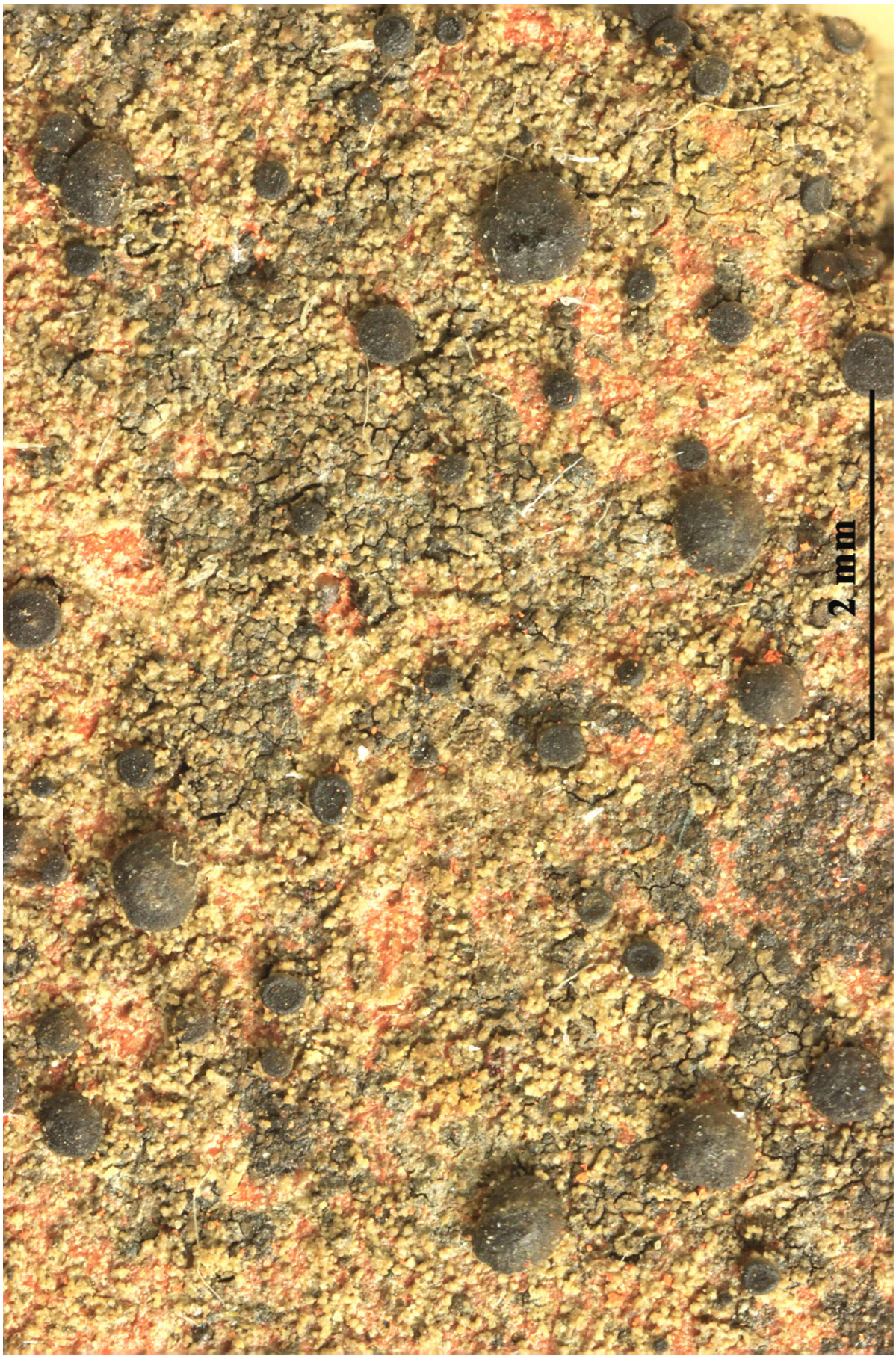
Bacidia egenula (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Woessia egenula* (Nyl.) van den Boom & P. Alvarado, Diversity 17(3, no. 187): 18 (2025)
= *Bacidia arceutina* ***var***. *egenula* (Nyl.) Grønlund, Bot. Tidsskr. 4: 166 (1871)
= *Bacidia endoleuca* var. *egenula* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 183 (1903)
= *Bacidia epiphylla* Wheldon & Travis, J. Linn. Soc., Bot. 43: 128 (1915)
= *Bacidia peltigericola* Vain., Acta Soc. Fauna Flora fenn. 53(no. 1): 147, 165 (1922)
= *Bacidina egenula* (Nyl.) Vězda, Folia geobot. phytotax. 25(4): 432 (1991) [1990]
= *Lecidea egenula* Nyl., Flora, Regensburg 48: 147 (1865)

[VZ1713], Magna Britannia. Anglia. West Sussex, prope Midhurst, Rogate, Rogate Field Centre, 60 m. Ad lateres muri loco umbroso. Leg. B. J. Coppins, 30.5.1973, det. B. J. Coppins et A. Vězda. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1713.

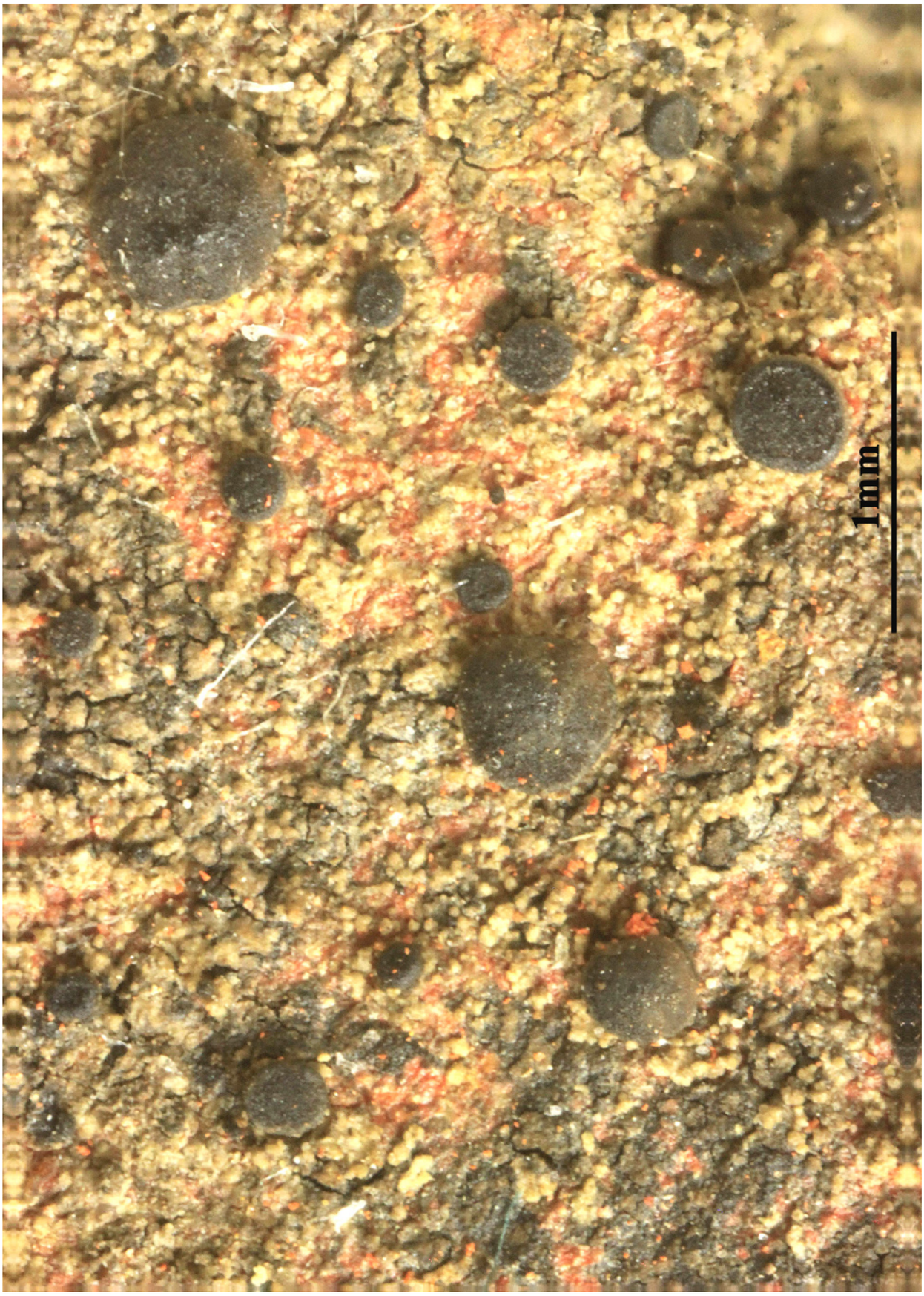
Thallus crustose, episubstratic, finely granulose, continuous to rimose, glaucous green to greenish brown, consisting of (15-)20-60(-90) µm thick goniocysts. Apothecia biatorine, (0.15-)0.2-0.6(-0.8) mm across, with a grey-brown, bluish-brown to black, flat to slightly convex, epruinose disc, and a usually persistent, often paler, finally sometimes excluded proper margin. Proper exciple 30-50 µm wide laterally, without crystals, blue-green, green-brown to purplish brown in upper and outer parts, more or less colourless in lower and inner parts; epithecium blue-green, green-brown to green-black, K-, N+ violet-red, sometimes with brown spots reacting K+ purplish, N+ orange; hymenium colourless, 35-60 µm high (more than a third of the apothecium height); paraphyses rather coherent, mostly simple, 1-1.5(-2) µm thick at mid-level, the apical cells 2-6 µm wide; hypothecium orange-brown in upper part, colourless in lower part, the pigmented parts K+ green-brown. 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, acicular, clavate, or long-bacilliform, mostly curved or flexuose, (15-)25-40(-45) x 1.5-2.5 µm, tapering at one end. Pycnidia semi-immersed

in thallus, white. Conidia curved to sigmoid, 0-3-septate, 20-35 x c. 1 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances; hypothecium with the Arnoldiana-brown pigment. - Note: a mild-temperate to humid subtropical species, most common on pebbles, old bricks or roofing tiles in shaded or semi-shaded habitats, also over moist ground in areas with siliceous substrata, sometimes on bark in the basal parts of trunks or on wood.

Bacidia egenula



Bacidia egenula

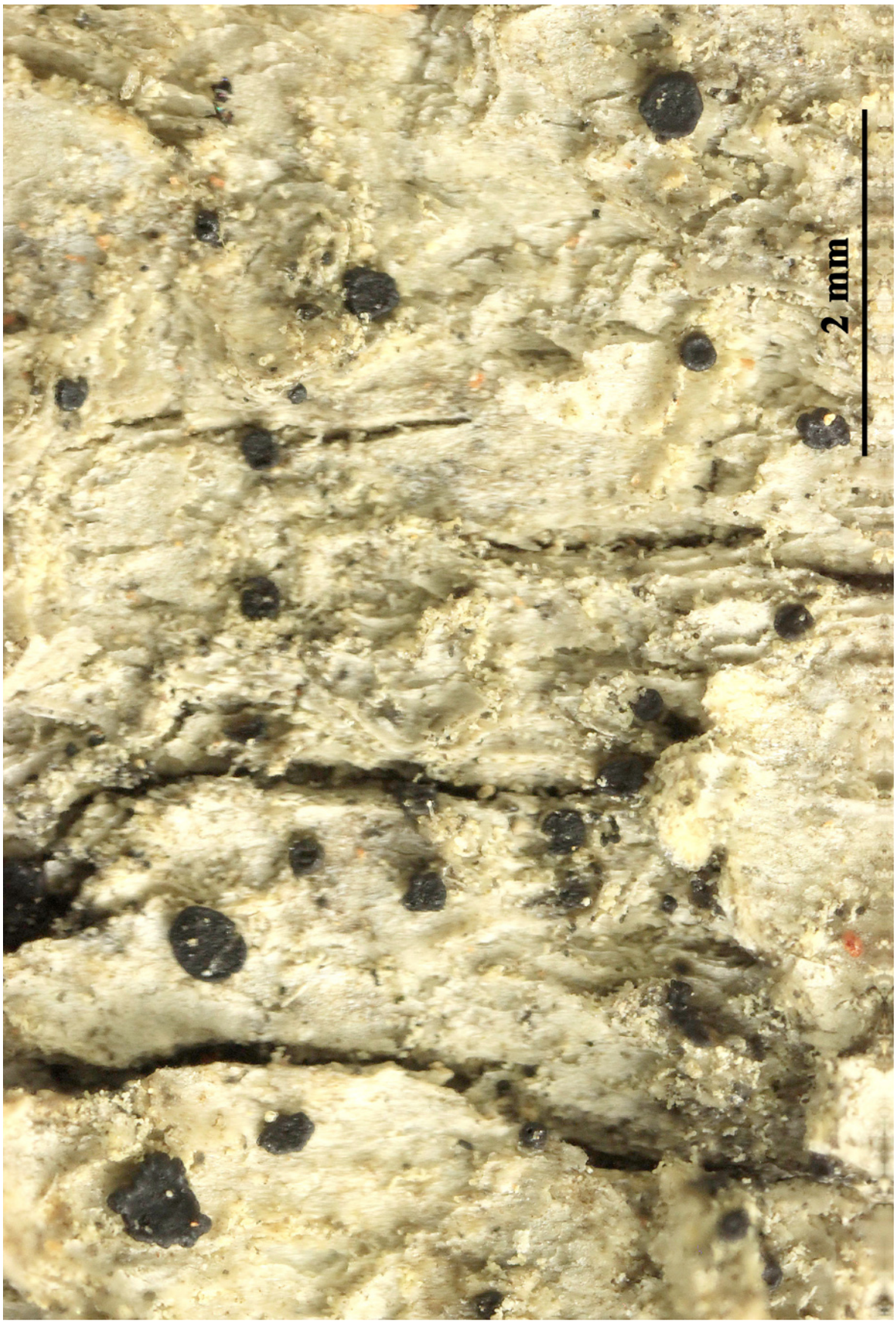


Bacidia egenula

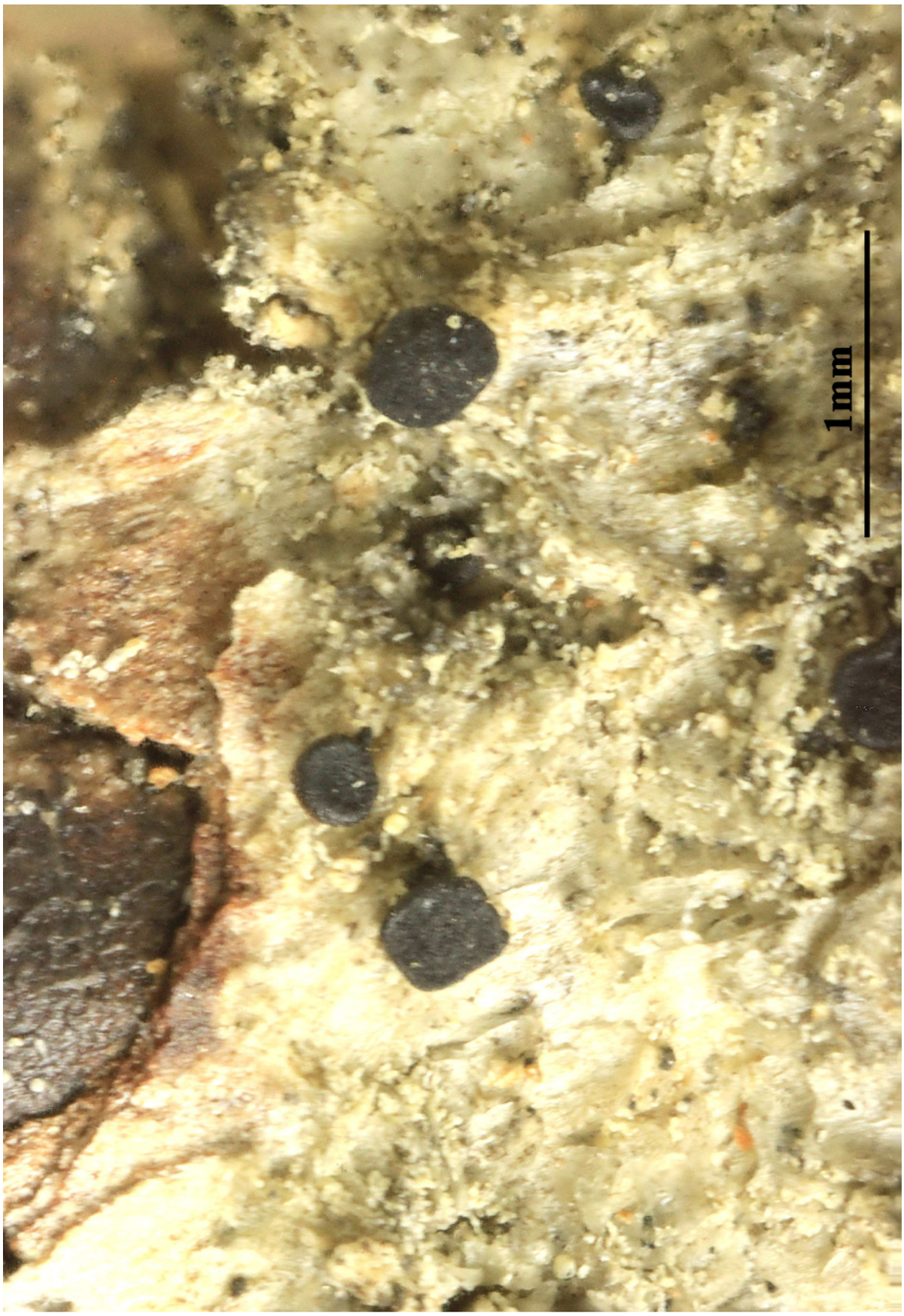
Bacidia igniarii (Nyl.) Oxner, Flora Lischaĭnikiv Ukraini (Kiev) 2(1): 166 (1968)
= *Scutula igniarii* (Nyl.) S. Ekman, in Cannon, Ekman, Kistenich, LaGreca, Printzen, Timdal, Aptroot, Coppins, Fletcher, Sanderson & Simkin, Revisions of British and Irish Lichens 10: 76 (2021)
= *Bacidia abbrevians* var. *igniarii* (Nyl.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 201 (1911)
= *Bilimbia igniarii* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 473 (1871) [1870]
= *Lecidea igniarii* Nyl., Flora, Regensburg 50: 328 (1867)

[VZ1483], Suecia. Värmland: Gräsmakk, Hornkamakk, 400 m. Ad corticem *Betulae verrucosae*. Leg. S. W. Sundell (no. 11194). Ex A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1483.

Thallus crustose, episubstratic, rather thin, pale brown-grey, of discrete or contiguous, convex areoles. Apothecia lecideine, sessile and constricted at base, 0.2-0.4 mm across, with a flat to slightly convex, black disc and a black (in upper part) to pale yellow-brown (in lower part), persistent proper margin. Proper exciple c. 35 µm wide laterally, without crystals, strongly developed below the hypothecium, the outermost part dark brown green (in upper part) to dirty brown or colourless (in lower part), formed by radiating hyphae with cylindrical lumina, the inner part more or less colourless, of narrow, intricately intertwined and richly branched hyphae; epithecium blue-green or green, K- or partly K+ purplish, N+ purple with the formation of blue crystals; hymenium colourless in lower part, 40-50 µm high; paraphyses 1.2-2 µm thick at mid-level, the apical cells clavate, 2.8-4(-5) µm wide, often with an external cap of green pigment; hypothecium very pale brown, K+ purplish, N+ orange-red. Asci 8-spored, cylindrical-clavate, with an amyloid tholus and diffuse non-amyloid apical cushion, and an outer amyloid wall layer. Ascospores 3-septate, hyaline, bacilliform to clavate, slightly curved or a few straight, 12-20 x 2.5-3 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances; apothecia with the Bagliettoana-green and Laurocerasi-brown pigments. - Note: a species found on smooth bark, very rarely on lignum; on the whole a critical taxon, which needs revision.



Bacidia igniarii



Bacidia igniarii

Bacidia igniarii (Nyl.) Oxner, Flora Lischaĭnikiv Ukraini (Kiev) 2(1): 166 (1968)
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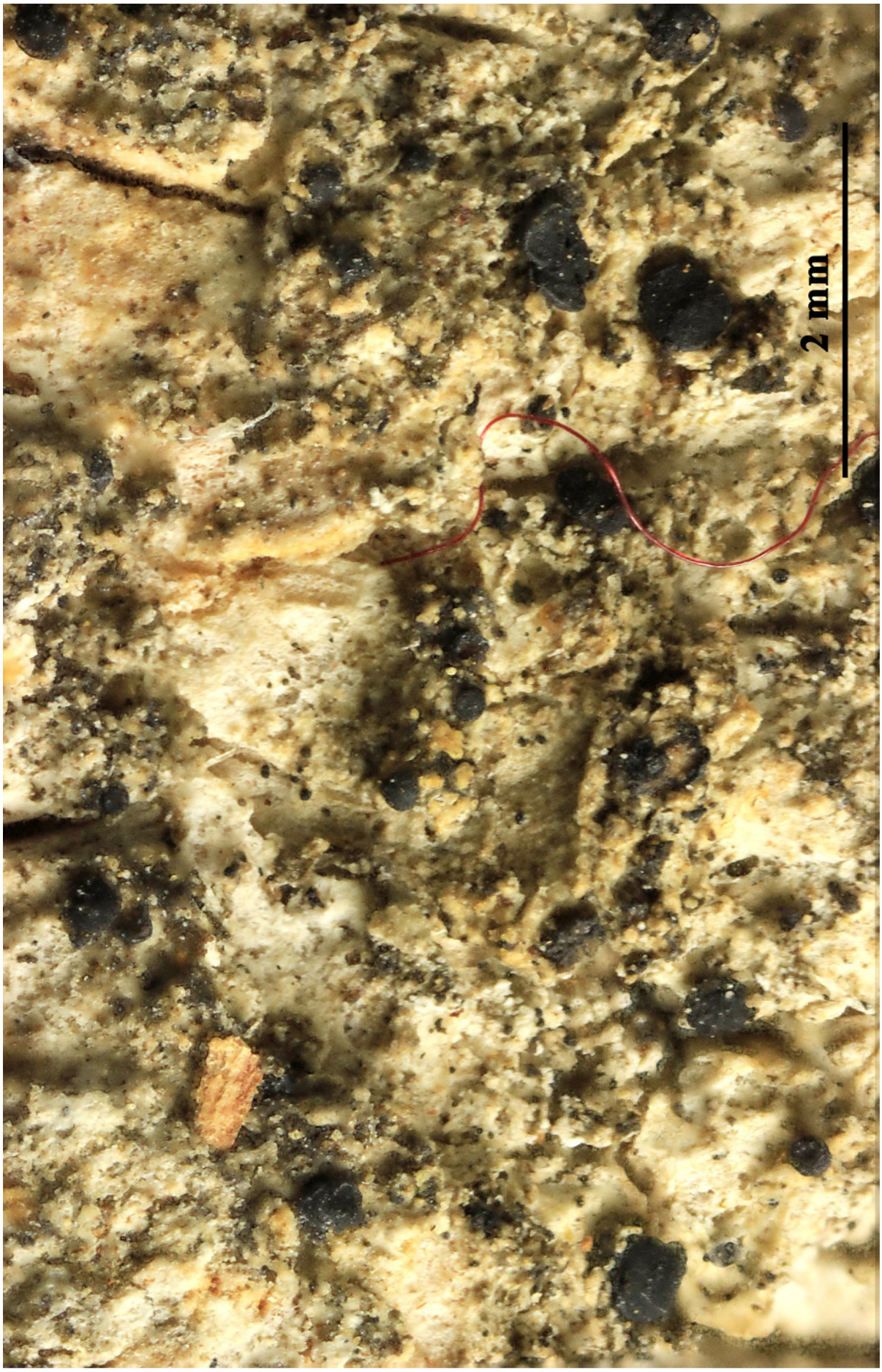
= *Bacidia abbrevians* var. *igniarii* (Nyl.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 201 (1911)
= *Bilimbia igniarii* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 473 (1871) [1870]
= *Lecidea igniarii* Nyl., Flora, Regensburg 50: 328 (1867)

[VZ1714], Suecia. Norbotten: Tärendö Paroecia. 6.5 km ad meridiem versus a Masugrusbyn, resevatum naturale Rissa, prope Juterijaki, 300 m. Ad corticem *Populi*. Leg. B. J. Coppins et L. Tibell, 16.7.1977. Ex A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1714.

Thallus crustose, episubstratic, rather thin, pale brown-grey, of discrete or contiguous, convex areoles. Apothecia lecideine, sessile and constricted at base, 0.2-0.4 mm across, with a flat to slightly convex, black disc and a black (in upper part) to pale yellow-brown (in lower part), persistent proper margin. Proper exciple c. 35 µm wide laterally, without crystals, strongly developed below the hypothecium, the outermost part dark brown green (in upper part) to dirty brown or colourless (in lower part), formed by radiating hyphae with cylindrical lumina, the inner part more or less colourless, of narrow, intricately intertwined and richly branched hyphae; epithecium blue-green or green, K- or partly K+ purplish, N+ purple with the formation of blue crystals; hymenium colourless in lower part, 40-50 µm high; paraphyses 1.2-2 µm thick at mid-level, the apical cells clavate, 2.8-4(-5) µm wide, often with an external cap of green pigment; hypothecium very pale brown, K+ purplish, N+ orange-red. Asci 8-spored, cylindrical-clavate, with an amyloid tholus and diffuse non-amyloid apical cushion, and an outer amyloid wall layer. Ascospores 3-septate, hyaline, bacilliform to clavate, slightly curved or a few straight, 12-20 x 2.5-3 µm. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances; apothecia with the Bagliettoana-green and Laurocerasi-brown pigments. - Note: a species found on smooth bark, very rarely on lignum; on the whole a critical taxon, which needs revision.



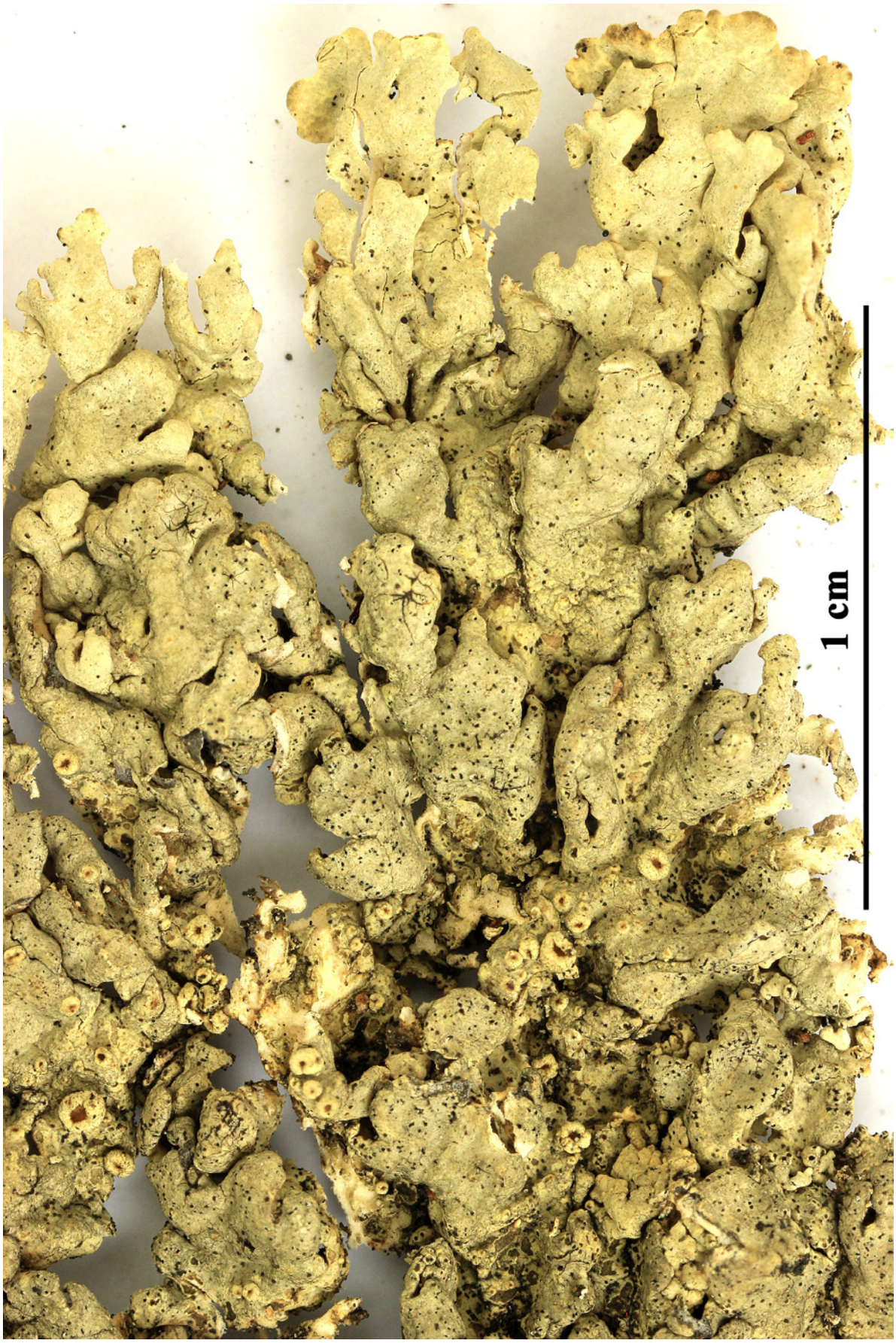
Bacidia igniarii

Bacidia igniarii

Parmelia centrifuga (L.) Ach., Methodus, Sectio post. (Stockholmiæ): 206 (1803)
= *Arctoparmelia centrifuga* (L.) Hale, Mycotaxon 25(1): 252 (1986)
= *Imbricaria centrifuga* (L.) DC., Fl. franç., Edn 3 (Paris) 5/6: 188 (1815)
= *Lichen centrifugus* L., Sp. pl. 2: 1142 (1753)
=*Xanthoparmelia centrifuga* (L.) Hale, Phytologia 28(5): 486 (1974)

[VZ1540, 20359], Bohemoslovacia, Bohemia merid., Vyšší Brod, in jugo montis Luč haud procul, p. Lipno, 820-850 m, ad saxa granitica soli exposita. Leg. Z. Černohorský, J. Váňa et al., 30.09.1977. EX A. VěZDA: EX LICHENES SELECTI EXSICCATI NR. 1540.

Thallus foliose, heteromerous, dorsiventral, closely adnate, dying in the center and forming concentric rings which can reach almost 1 m in diameter. Lobes irregularly branched, flat to slightly convex, 1-2 mm broad, with pointed tips, the upper surface greenish yellow or partly whitish green, darkening toward center, the lower surface whitish or pale brown, with sparse, brown to blackish rhizines. Upper cortex of tightly packed, anticlinally oriented hyphae, with a pored epicortex, the cell walls with Cetraria-type lichenan; medulla white, not amyloid; lower cortex appearing velvety due to minutely papillose, projecting hyphae. Apothecia lecanorine, laminal, adnate, to 5 mm across, with a reddish brown to dark brown disc and an entire to crenulate, sometimes inflexed thalline margin. Epithecium brown; hymenium colourless, I+ blue; paraphyses sparingly branched, the apical cells slightly swollen; hypothecium colourless. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-celled, hyaline, ellipsoid, 8-14 x 4.5-6 µm. Pycnidia frequent, laminal immersed. Conidia slightly dumbbell-shaped 5-7 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K+ yellow, C-, KC-, P-; medulla K-, KC+ red, P-, UV+ glaucous blue. Chemistry: cortex with usnic acid and atranorin; medulla with alectoronic acid. - Note: an arctic-alpine lichen of exposed siliceous rocks near or above treeline, certainly very rare in the Alps (Austria).



Parmelia centrifuga

Parmelia centrifuga

Parmelia centrifuga

Parmelia centrifuga

Parmelia centrifuga

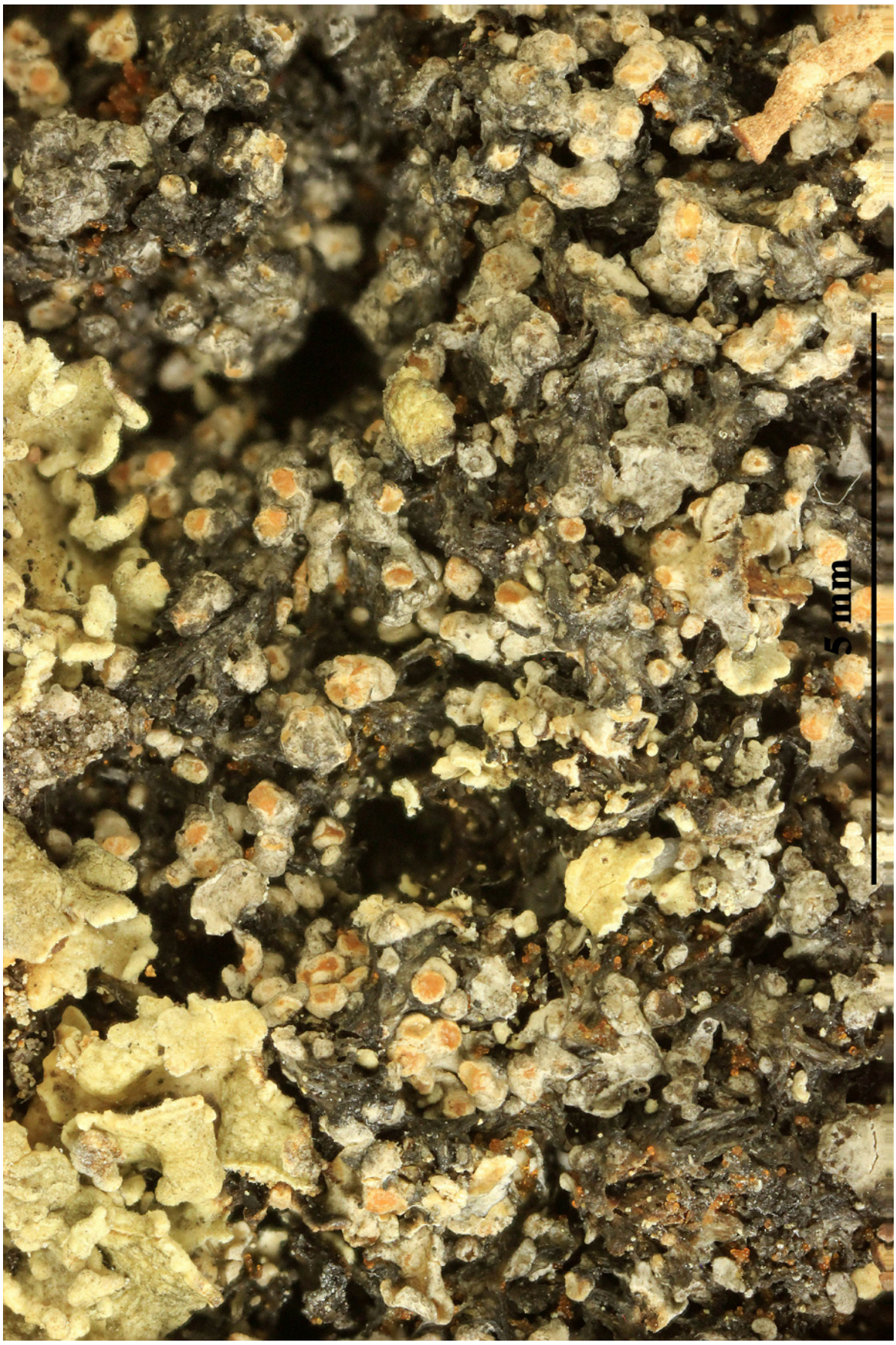
Parmelia centrifuga

Parmelia centrifuga

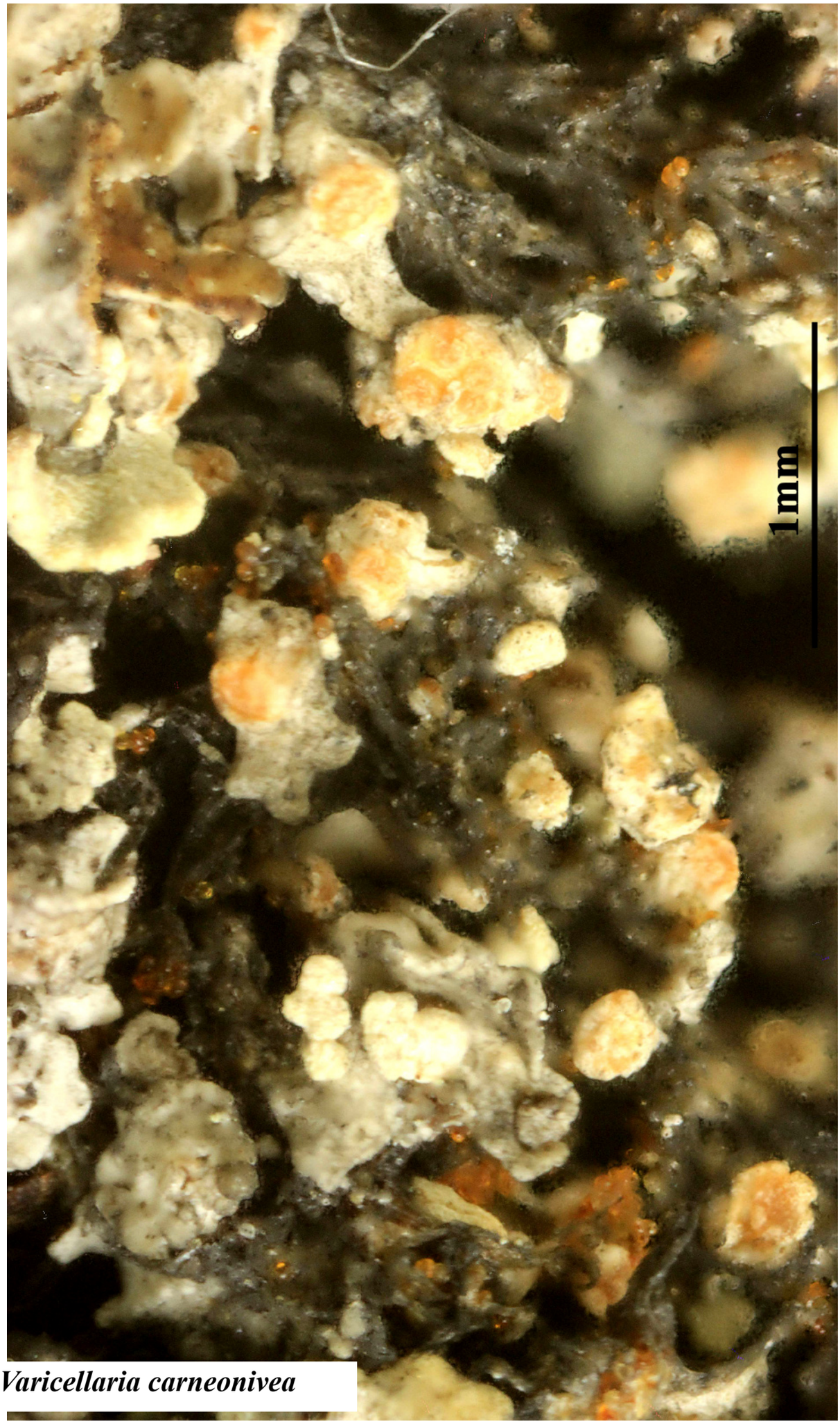
Varicellaria carneonivea (Anzi) Erichsen, Rabenh. Krypt.-Fl., Edn 2 (Leipzig) 9(5.1): 688 (1936)
= *Anzina carneonivea* (Anzi) Scheid., in Vězda, Lichenes Selecti Exsiccati, Fascicle 73 (Průhonice): 5 (1982)
= *Gyalolechia carneonivea* Anzi [as 'carneo-nivea'], Atti Soc. ital. Sci. nat. 11: 163 (1868)
= *Pertusaria carneonivea* (Anzi) Vain., Meddn Soc. Fauna Flora fenn. 14: 24 (1888)

[VZ1066], Suecua. Vermlandia. Södra Finnskoga Paroecia, Ivanna, 500 m. Supra muscos ad saxa. Leg. S. W. Sundell (no. 8166), 4.7.1972. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1066.

Thallus crustose, whitish grey to pale grey-green, thin, most often hemiendosubstratic, more or less continuous, without a distinct prothallus, forming large patches especially when growing on rotting wood. Apothecia very common, 0.12-0.3 mm across, immersed in thalline warts, initially single, then becoming confluent, with a yellowish-brown to orange, flat disc and a thin, smooth, paler thalline margin. Thalline exciple more or less developed, especially in older apothecia; proper exciple poorly developed, colourless, of periclinally arranged hyphae; epithecium yellowish brown, K-, C+ red, KC+ red; hymenium colourless, 40-80 µm high, I-, K/I-; paraphysoids c. 1.5 µm thick, branched and anastomosing, the apical cells not swollen; hypothecium colourless, up to 50 µm high. Asci (6-)8-spored, subcylindrical, unitunicate, the apex not thickened, I-, surrounded by an amyloid ring and surmounted by a thin amyloid cap, 70-80 x 15-20 µm. Ascospores 1(-3)-septate, hyaline, ellipsoid to narrowly ellipsoid, thin-walled, with a thin halo, (11-)13-15(-18) x 4.5-7.5 µm. Pycnidia dark, semi-immersed to projecting, 90-160 µm in diam., the ostiole at first punctiform, then enlarged. Conidia pleurogenous, short-bacilliform, 3.5-4.5(-5) x c. 0.7 µm. Photobiont chlorococcoid (Asterochloris). Spot tests: thallus K+ yellowish, C-, KC-, P-; apothecia C+ and KC+ red. Chemistry: apothecia with gyrophoric acid (major) and traces of lecanoric acid. - Note: on acidic substrata such as bark, especially of conifers, wood, plant debris, moribund bryophytes, in the understory of upper montane moist forest, and among shrubs in the subalpine belt of the Alps.



Varicellaria carneonivea



Varicellaria carneonivea

Varicellaria carneonivea (Anzi) Erichsen, Rabenh. Krypt.-Fl., Edn 2 (Leipzig) 9(5.1): 688 (1936)
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= *Pertusaria carneonivea* (Anzi) Vain., Meddn Soc. Fauna Flora fenn. 14: 24 (1888)

[VZ1114], Romania. Distr. Hunedoara. Montes Retezat, supra lacum Zanoaga, 1950 m. Ad corticem *Pini montanae*. Leg. A. Vězda, 5.6.1972. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1114.

Thallus crustose, whitish grey to pale grey-green, thin, most often hemiendosubstratic, more or less continuous, without a distinct prothallus, forming large patches especially when growing on rotting wood. Apothecia very common, 0.12-0.3 mm across, immersed in thalline warts, initially single, then becoming confluent, with a yellowish-brown to orange, flat disc and a thin, smooth, paler thalline margin. Thalline exciple more or less developed, especially in older apothecia; proper exciple poorly developed, colourless, of periclinally arranged hyphae; epithecium yellowish brown, K-, C+ red, KC+ red; hymenium colourless, 40-80 µm high, I-, K/I-; paraphysoids c. 1.5 µm thick, branched and anastomosing, the apical cells not swollen; hypothecium colourless, up to 50 µm high. Asci (6-)8-spored, subcylindrical, unitunicate, the apex not thickened, I-, surrounded by an amyloid ring and surmounted by a thin amyloid cap, 70-80 x 15-20 µm. Ascospores 1(-3)-septate, hyaline, ellipsoid to narrowly ellipsoid, thin-walled, with a thin halo, (11-)13-15(-18) x 4.5-7.5 µm. Pycnidia dark, semi-immersed to projecting, 90-160 µm in diam., the ostiole at first punctiform, then enlarged. Conidia pleurogenous, short-bacilliform, 3.5-4.5(-5) x c. 0.7 µm. Photobiont chlorococcoid (Asterochloris). Spot tests: thallus K+ yellowish, C-, KC-, P-; apothecia C+ and KC+ red. Chemistry: apothecia with gyrophoric acid (major) and traces of lecanoric acid. - Note: on acidic substrata such as bark, especially of conifers, wood, plant debris, moribund bryophytes, in the understory of upper montane moist forest, and among shrubs in the subalpine belt of the Alps.

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Varicellaria carneonivea

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