F. Schumm (2025):

Images of Lichens Vol. 31
Vezda Lichenes Rariores Exsiccati part 6

ARCHIVE FOR LICHENOLOGY Vol. 72, ISSN 1868-4173
online X. 2025

This is part 6 (of a planned 8-part series) with images from Vezda's "Lichenes Rariores Exsiccati". For the species names, I generally used those given by Vezda, but then listed the synonyms, for which I extensively consulted the Index Fungorum database. In addition, I have included a description for each species, taken from standard literature sources (e.g., The Lichenologist, Bryologist, or monographs by Hale, Lücking, Galloway, etc.).

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, 10.2025

Porina corruscans (Rehm) R. Sant., Symb. bot. upsal. 12(no. 1): 223 (1952)
= *Pseudosagedia corruscans* (Rehm) Hafellner & Kalb, Biblthca Lichenol. 57: 172 (1995)
= *Metasphaeria corruscans* Rehm, Leafl. of Philipp. Bot. 8(no. 118): 2949 (1916)
= *Phylloporina corruscans* (Rehm) Szatala, Annls Mus. natn. Hung., n.s. 7: 21 (1956)

[VZR422], Insulae Seychelles: Insula Praslin, Grand Anse, silva virginea austro-occid. spectans secus viam ad Praslin Beach ducentem, 200 m. Leg. F. Ceni & A. Vězda,26.5.2000. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 422.

Thallus epiphyllous, in small rounded patches that often coalesce, pale greenish grey, smooth, matt to slightly glossy; prothallus not apparent. Algae Phycopeltis; cells in scattered clusters, not forming radiating plates. Perithecia convex to slightly conical, black, 0.23–0.35 mm diam., frequently overgrown almost to the apex by a thin layer of thallus, thus appearing dark grey. Involucrellum spreading at the base, brownish black in thin section. Exciple c. 10 µm thick, pale grey-brown to dark brown. Asci cylindroclavate to narrowly obclavate, 50–60 × 8–10 µm. Ascospores fusiform, 5 (–7)-septate, 20–32 × 4–5 µm; perispore moderately thick or not apparent. Pycnidia not seen. - Occurs in Australia, the Seychelles, India, Nepal, Malesia, China, SE Asia.

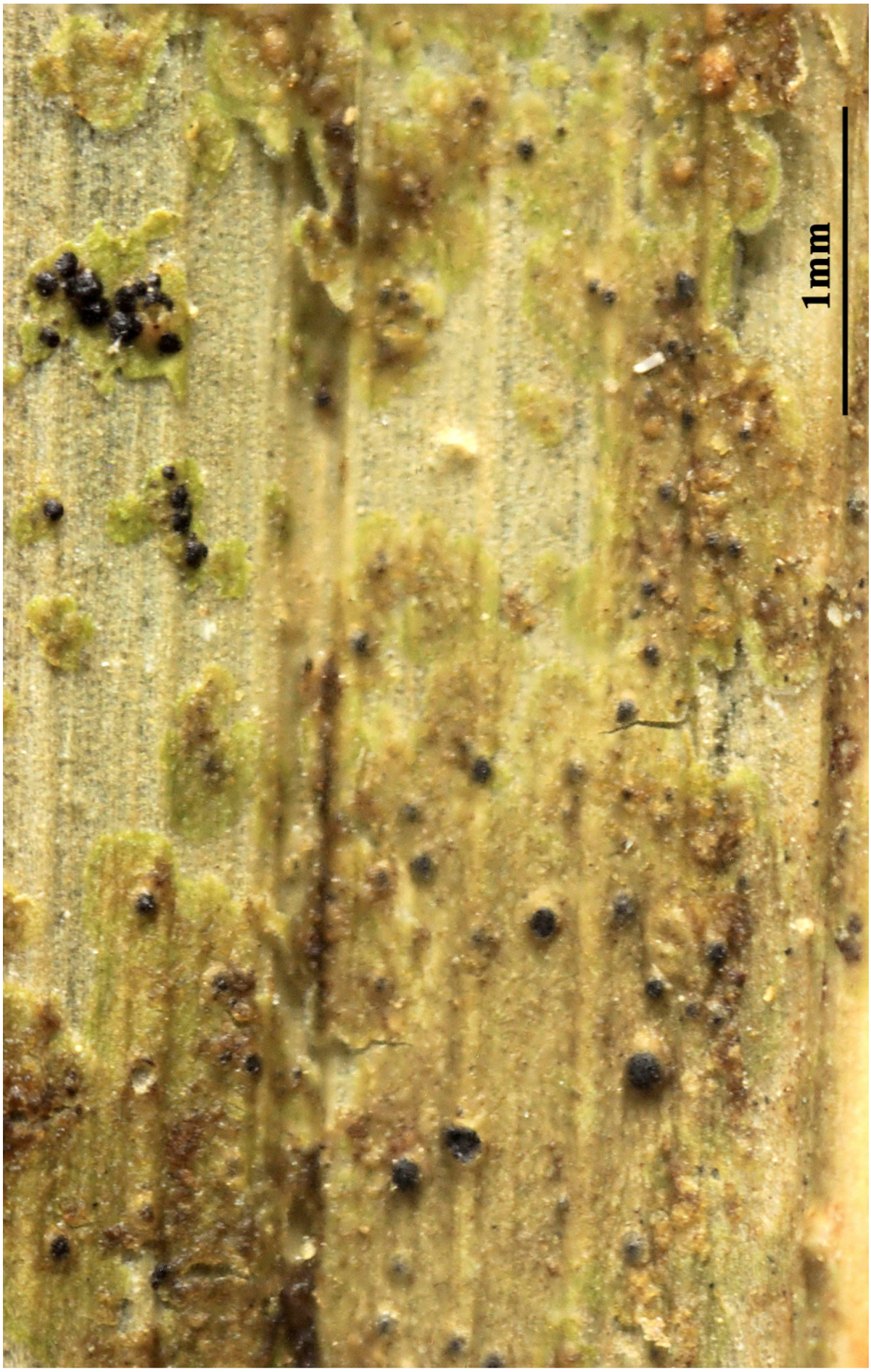
Porina corruscans

Porina corruscans

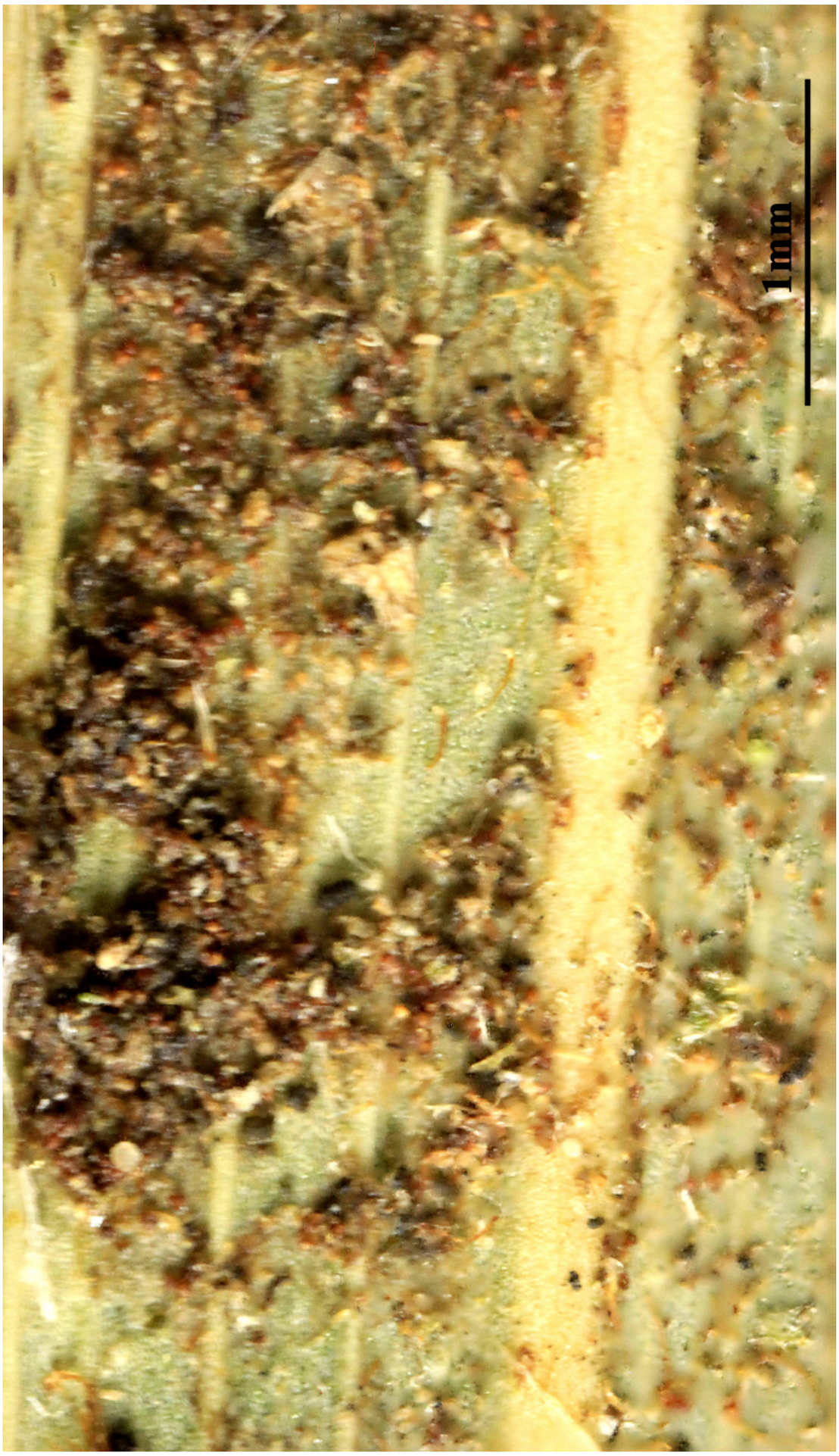
Porina diffluens Malcolm & Vězda, in Vězda, Lichenes Rariores Exsiccati 41(nos 401-410): 1, no. 401 (1999)

[VZR401], Nova Zelandia. South Island, distr. Westland, Paparoi National Park, Punakaiki creak, in ripa rivi ostium in mare. Ad folia Palmarum - Isotypus. Leg. W. Malkolm & A. Vězda. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 401.

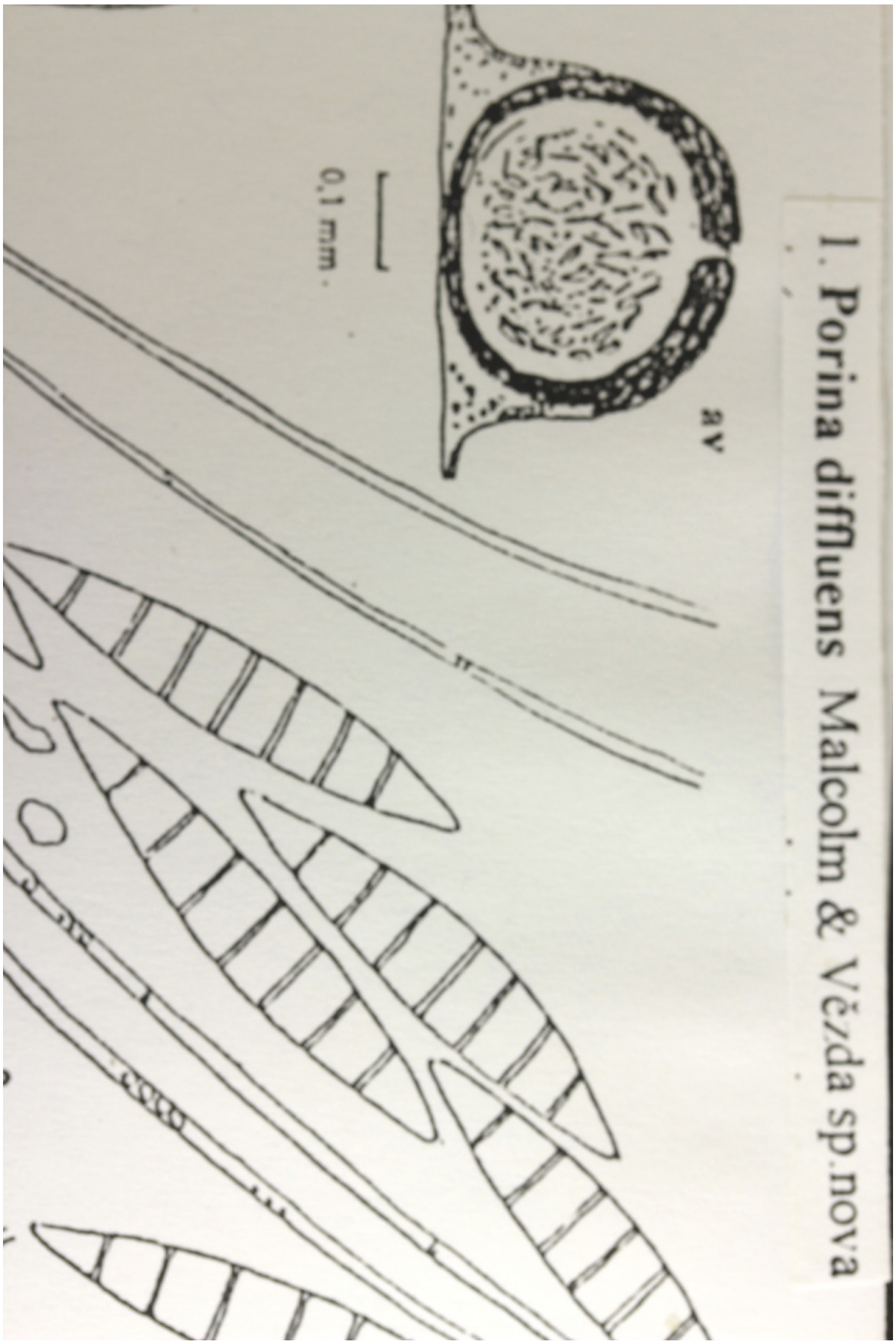
Thallus tenuis, epiphyllus, cinereo-viridis vel fere pellucidus, bene limitatus. Alga cellulis globosus vel rectangularibus, serialibus, radiantibus, plagas continuas formantibus. - Perithecia 9.25-0.4 mm lata, subglobosa, in parte basali thallo nigrofusco tecta, sursum subnada, nigra, nitida. Paries purpureo-nigricans, K-, simpex, clausus, sub ostiolum, 30-35 µm crassus, in parte basali tenuior. Paraphyses non visae. Paraphyses 1 µm crassae, mox tamen diffluentes. Asci membranis in maturae diffluentibus. Ascosporae fusiformes, 7-septatae, 28-30 x 3.5-4 µm, halonatae. Pycnidia copiosa, in thallo immersa, pycnosporae elloipsoideae, 2 x 1 µm.



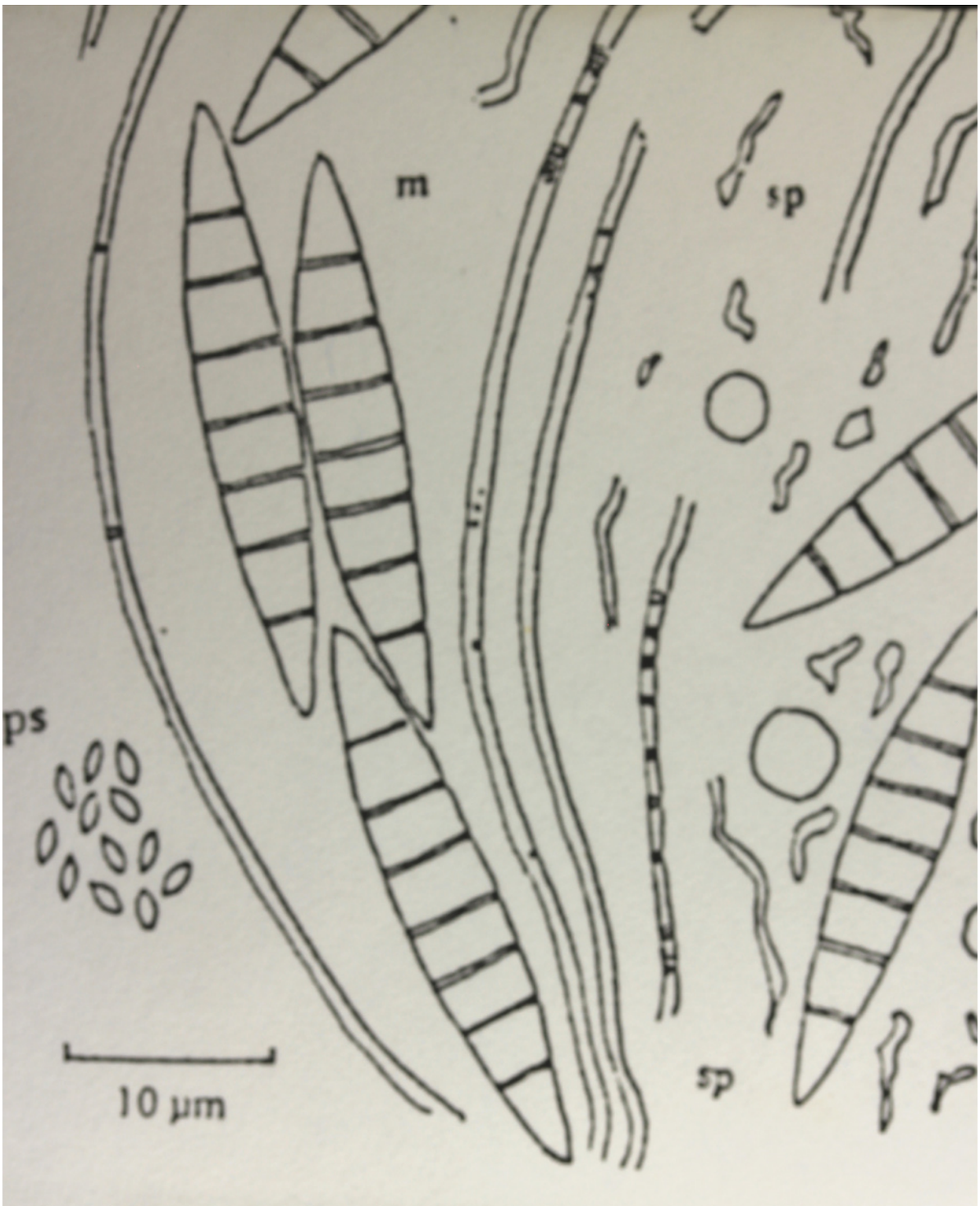
Porina diffluens



Porina diffluens



Porina diffluens



Porina diffluens

Porina laticarpa Lücking, Nova Hedwigia 52(3-4): 280 (1991)
= *Pseudosagedia laticarpa* (Lücking) Hafellner & Kalb, Biblthca Lichenol. 57: 173 (1995)

[VZR96], Costa Rica. Prov. Heredia, La Selva, 60 km ad septentriones versus a San José, pars basalis atlantica montium Cordillera Centralis, 50 m, Foliicola (Palmarum sp.) in pluviisilva. Leg et det. R. Lücking, 9.1991. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 96.

Thallus continuous, smooth, 5–15 mm across and 10–20 µm thick, pale greenish grey, matt. Photobiont cells angular-rounded, 7–13 x 4–5 µm, in irregular plates with small interspaces. Perithecia adnate, applanately lens-shaped with broadly spreading base and slightly prominent, sometimes depressed center, 0.8–1.5 mm diam. and 170–250 µm high, glabrous to thinly pilose, greyish black with a blue tinge, matt, hairs white. Excipulum 10–30 x µm thick, dark brown, upper part colorless to pale brown, K–. Involucrellum basally broadly spreading, 30–40 µm thick, black, K–, externally covered by 5–10 µm thick, thallus layer. Asci obclavate, 90–130 x 25–35 µm. Ascospores in a bundle, very narrowly fusiform to bacillar, (11–)15-septate, without constrictions at septa, 70–100 x 5–6 µm, 13–16 times as long as broad, colorless. Pycnidia not observed. Chemistry: no substances detected by TLC; Pseudosagedia violet in perithecial wall. Distribution and Ecology. Neotropics and tropical Africa. A typical species of lowland rain forests.

Porina laticarpa

Porina laticarpa

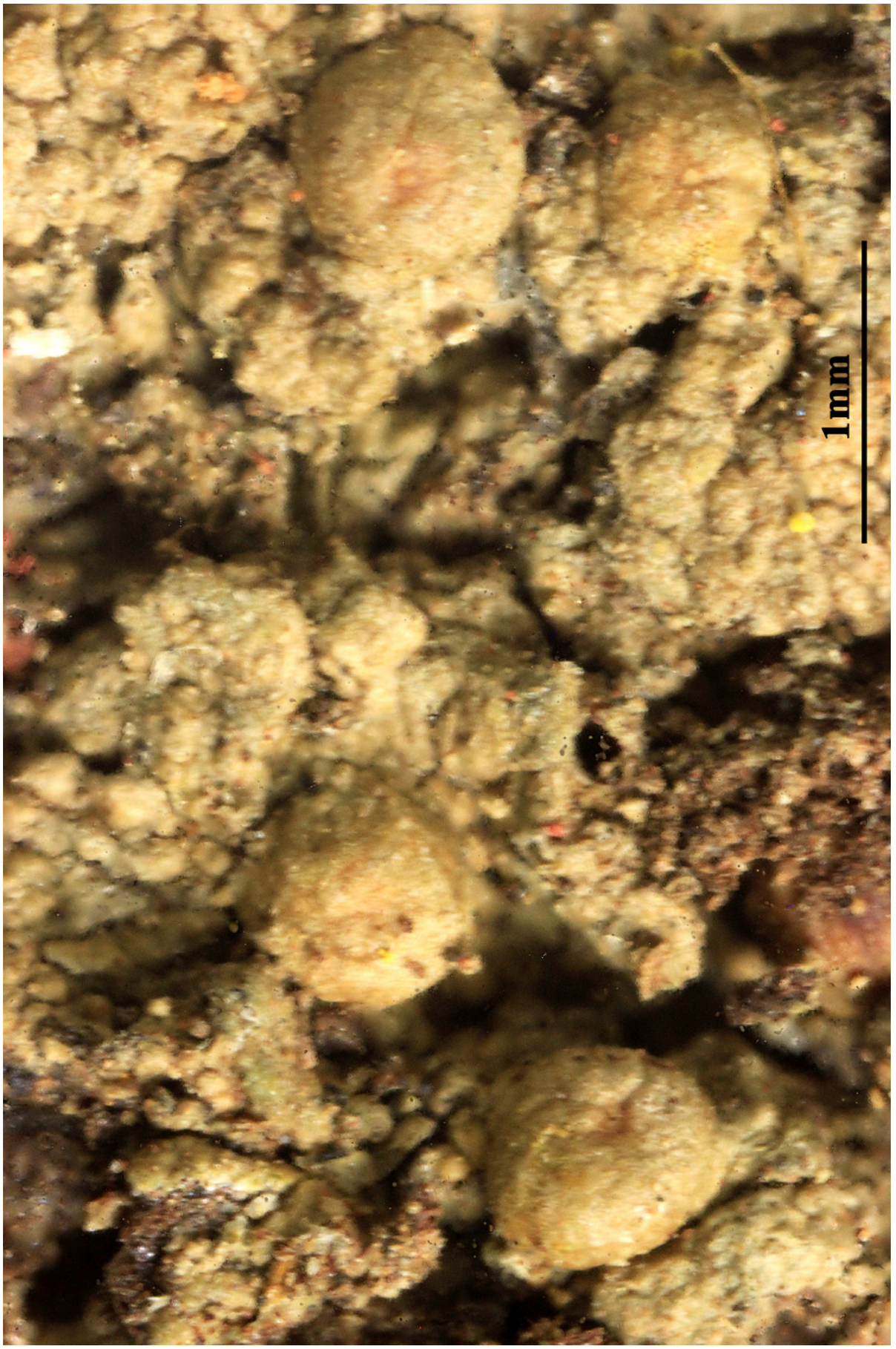
Porina laticarpa

Porina isidiata Kalb & Hafellner, Herzogia 9(1-2): 83 (1992)

[VZR145], Insulae Canarienses. Tenerife. Las Montañas de Anaga, loco La Cumbrilla dicto, 850 m. Ad corticem arboris (*Laurus azorica*) in Laurisilva. Leg. et det. A. Vězda, 14.3.1994, conf. K. Kalb. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 145.

Thallus coticolus, crustaceus,continuus vel leviter areolatus, laete olivaceus vel umbrino-olivaceus, partim isidiosus- isidia turbinata vel cylindrica, 0.25 x 0.05 mm, simplicia vel coralloideo-ramosa, plerumque aggregata - partim nec isidiosus.- Ascomata globosa, numerosa, solitaria vel aggregata, late sessilia vel basi constricta, primum thallo obtecta, demum circa ostiolo fulva ± denudata. Excipulum flavidum, ostiolum versus laete fulvum, c. 20-30 µm altum, K+ aurantiaco-rubescens. Hymenium purum. Asci unitunicati, 250-300 x 20-30 µm, apicaliter non incrassati, (4-)-6-8-spori, J-. Ascosporae fusiformes, 7-9(-10)-septatae, halonatae, 55-65 x 11-14 µm. Halo ca. 3-4 µm crssus.

Porina isidiata



Porina isidiata

Porina minutissima Henssen, Lücking & Vězda, in Lücking & Vězda, Willdenowia 28(1/2): 211 (1998)

[VZR369], Malaysia. Kuala Lumpur, Kepong Park, 15 km ad septentr.-orient. a Kuala Lumpur, 300 m. In colle in silva virginea, foliicola (Palmae). Leg. & Det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 369.

hallus epiphyllous, forming small patches or more extensive colonies, pale grey-green to yellowish grey, smooth, usually matt; prothallus not apparent. Algae Phycopeltis; cells ellipsoidal, angular or irregular, not forming radiating plates. Perithecial verrucae convex, hemispherical or wart-shaped, 0.2–0.3 (–0.35) mm diam., slightly reddish; wall containing a layer of colourless crystals; ostiole concolorous or a little darker; periostiolar area concolorous. Involucrellum apical and ±vestigial. Exciple c. 10 µm thick, pale yellowish brown. Asci narrowly obclavate, 60–70 × 9–12 µm. Ascospores usually bacilliform, or oblong or narrowly fusiform, 7-septate, 18–25 (–30) × 2–3.5 µm; perispore not apparent. Pycnidia not seen. - Occurs in Christmas Is. and north-eastern Qld; grows on leaves of shrubs and trees in rainforest. Also in Malaysia, Vietnam, New Guinea and the Solomon Islands.

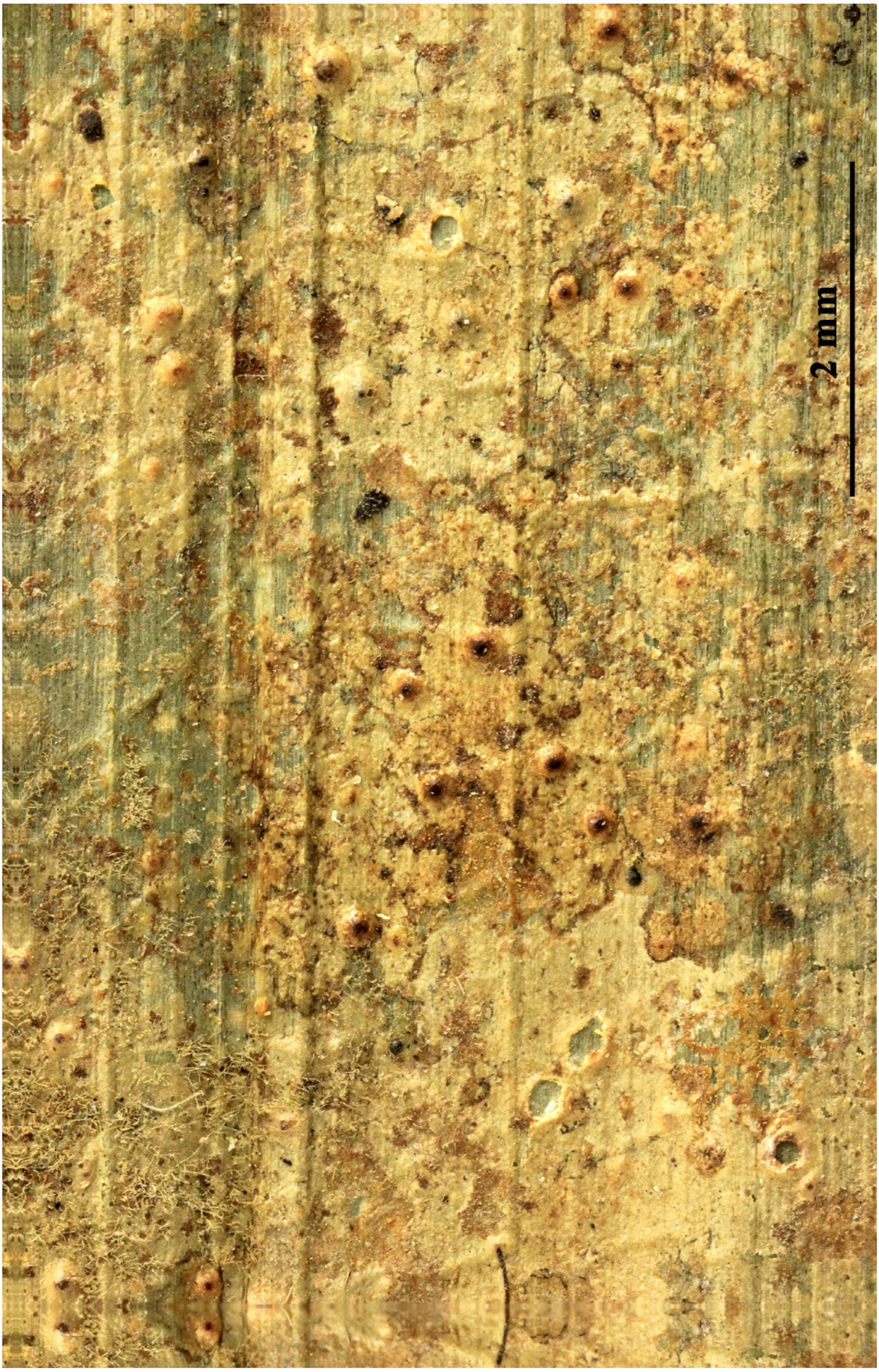
Porina minutissima

Porina minutissima

Porina oxneri R. Sant., Symb. bot. upsal. 12(no. 1): 221 (1952)
= *Pseudosagedia obsoleta* (Oxner) Hafellner & Kalb, Biblthca Lichenol. 57: 173 (1995)
= *Phylloporina obsoleta* Oxner, J. Bot. Acad. Sci. RSS Ukraine 21-22: 309 (1939)

[VZR390], India. Insulae Andaman, Long Island,Lalajee Bay. Ad folia arborunm. Leg. R. Detinský, 4.1998, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 390.

Thallus crustose, thinly episubstratic, forming small, dispersed orbicular, up to 10 mm wide patches or more rarely continuous, smooth, pale grey to dark brownish grey, dull, without a distinct prothallus. Perithecia 0.15-0.25(-0.3) mm across, lenticular to hemispherical, not constricted at base, black to greyish-black, partly covered by hyphal tissue in lower part, the ostiole usually well-evident. Involucrellum 20-30 µm thick, black, K-; exciple prosoplectenchymatous, colourless to almost black, up to 15 µm thick; paraphyses simple or sparingly branched and anastomosing, c. 1 µm thick; hymenial gel I-, K/I-. Asci 8-spored, clavate, thin-walled throughout, functionally unitunicate, dehiscent by rupture of the apex, with no extruded inner layers and an apical ring structure, I-, K/I-. Ascospores 3-septate, hyaline, ellipsoid to fusiform with subobtuse ends, 13-20 x 3-4.5(-5) µm. Pycnidia up to 0.1 mm across, black. Conidia simple, bacilliform. 5-6 x 1-1.5 µm. Photobiont trentepohlioid. Spot tests: thallus K-, C-, KC-, P-. Chemistry: thallus without lichen substances. - Note: an obligately foliicolous lichen, confined to warm-moist forests, on needles of *Abies*, leaves of evergreen trees and shrubs (e.g. *Buxus*), and cladodes of *Ruscus*; mainly Tyrrhenian in Italy.



Porina oxneri

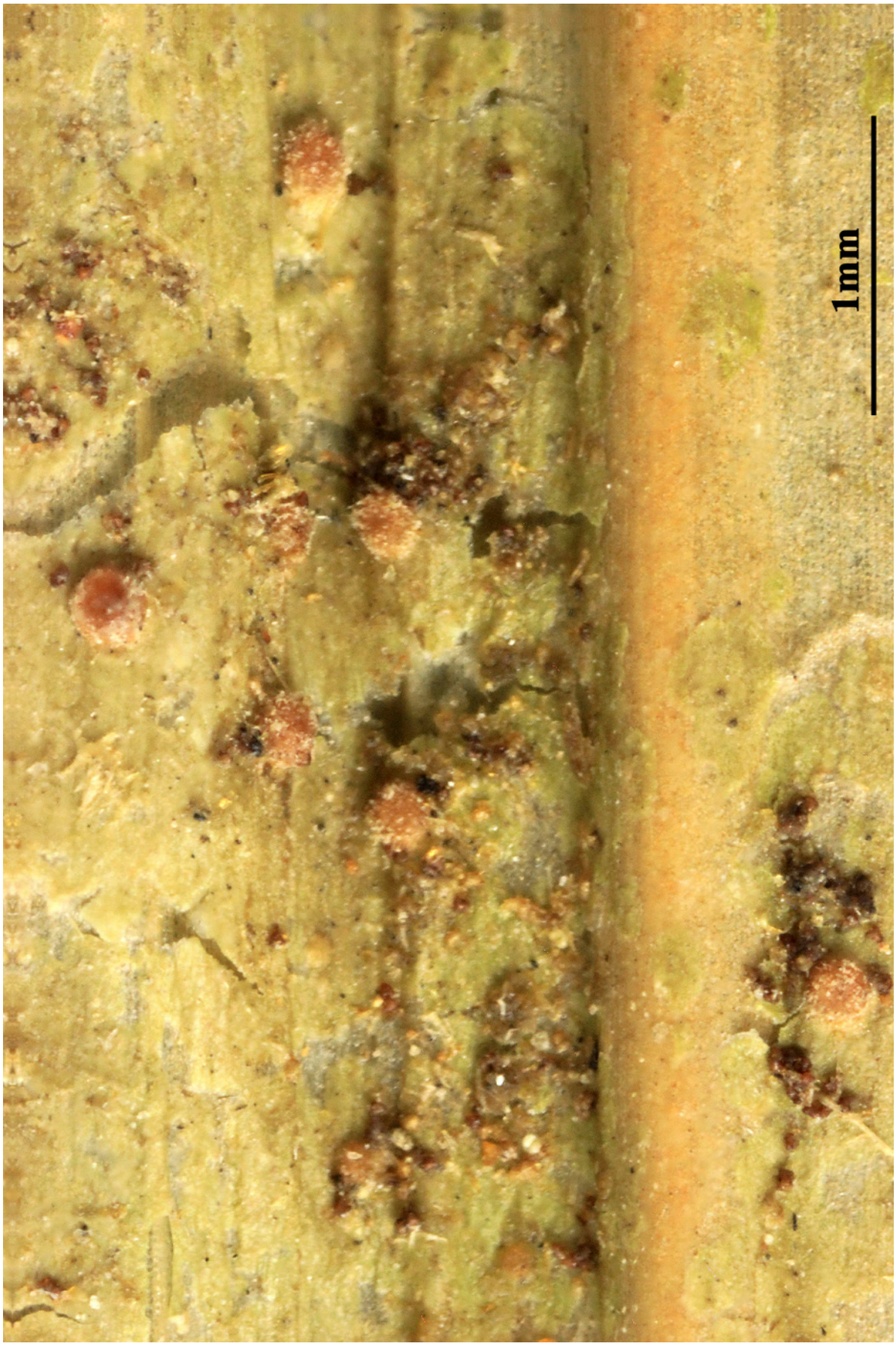
Porina oxneri

Porina oxneri

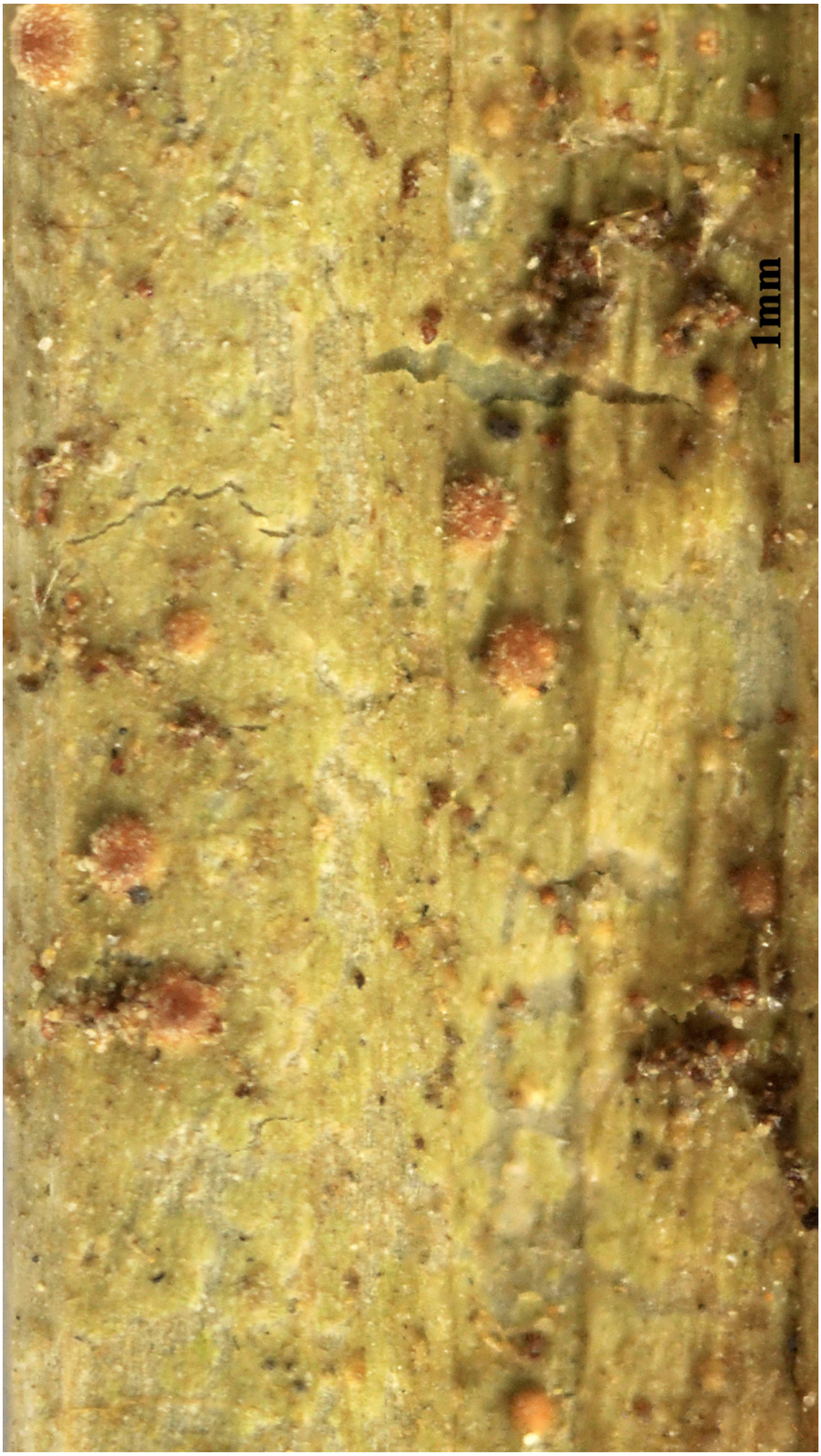
Porina palmicola Malcolm & Vězda, in Vězda, Lichenes Rariores Exsiccati 41(nos 401-410): 2, no. 402 (1999)

[VZR402], Nova Zelandia. South Island, distr. Westland, Paparoi National Park, Punakaiki creak, in ripa rivi prope ostium in mare. Ad folia Palmarum. -ISOTYPUS. Leg. W. Malcolm & A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 402.

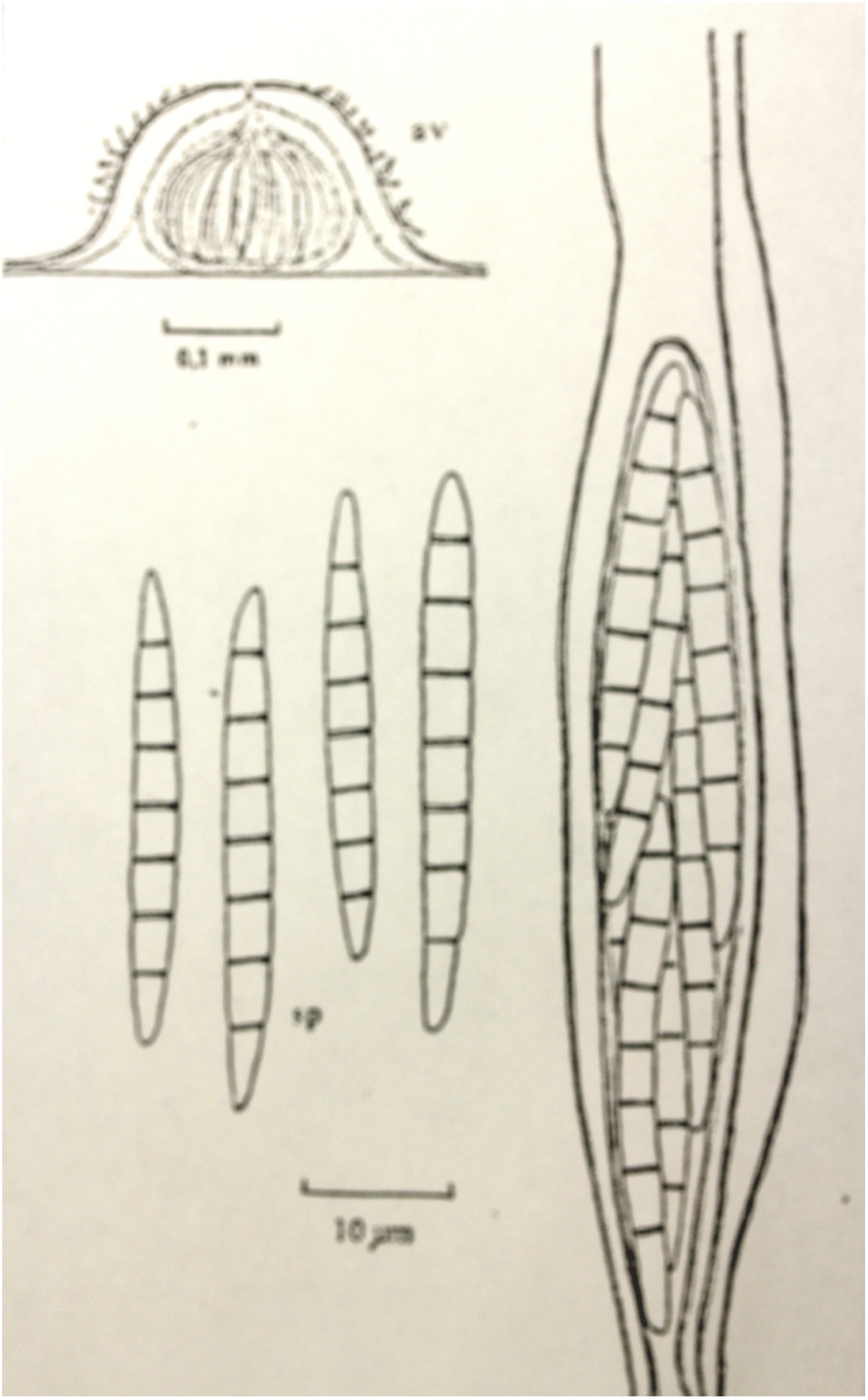
Thallus tenuis, epiphyllus crustaceus, pallide lutescenti-cinereus, opacus. Alga cellulis rectangularibus, concatenatis, radiantibus, plagas in thallo formantibus. Perithecia hemisphaerica vel subglobosa, pallide fuscolutea, 0.2-0.3 mm lata, 0.2 mm alta, thallo tenuiter tecta, juniora dilute pubescentia, in aetate subnuda vel nuda. Paries externus 30 µm crassus, pallide luteus, dimidiatus, K+ rubescens; paries internus hyalinus, clausus, 15-20 µm crassus. Paraphysoides non evolutae. Paraphyses 0.5 µm crassae. Ascosporae anguste fusiformes, 7-septatae, 35-45 x 3 µm. Species affinitate *Porinae epiphyllae* (Fée) Fée, a qua differt praesertim apotheciis hemisphaericis dilute pubescentibus.



Porina palmicola



Porina palmicola



Porina palmicola

Porina perminuta Vain., Univ. Calif. Publ. Bot. 12(no. 1): 14 (1924)
= *Phylloporina perminuta* (Vain.) Zahlbr., Cat. Lich. Univers. 8: 139 (1931) [1932]

[VZR421], Insulae Seychellenses. Insula Praslin, Grand Anse, in litore maris prope rivum Nouvelle Découverte. Foliicola. Leg. F. Ceni & A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 421.

Thallus epicuticular, pale greyish green to medium green, very thin, smooth, rounded, up to c. 0-3 mm diam., coalescing. Perithecia very numerous, superficial, usually hemispherical, occasionally attenuated at the base, glossy black or with a whitish tomentum, (0-07-)0-l(-0-13) mm diam. involucrellum purplish black. Asci elongate-ovate to obclavate, 52-60 x 13- 18 µm. Ascospores 3-septate, cylindrical or fusiform, (15-)19(-24) x (3-)4(-5) µm. Porina perminuta was first described from Tahiti in the Society Islands, and it was later collected in the Philippines (Santesson 1952); it has recently been reported from the Northern Mariana Islands (Harada 1994a) and Papua New Guinea (Aptroot et al. 1995). In Rarotonga it is abundant on pinnules of the fern *Angiopteris evecta* near a stream in a deeply shaded valley.

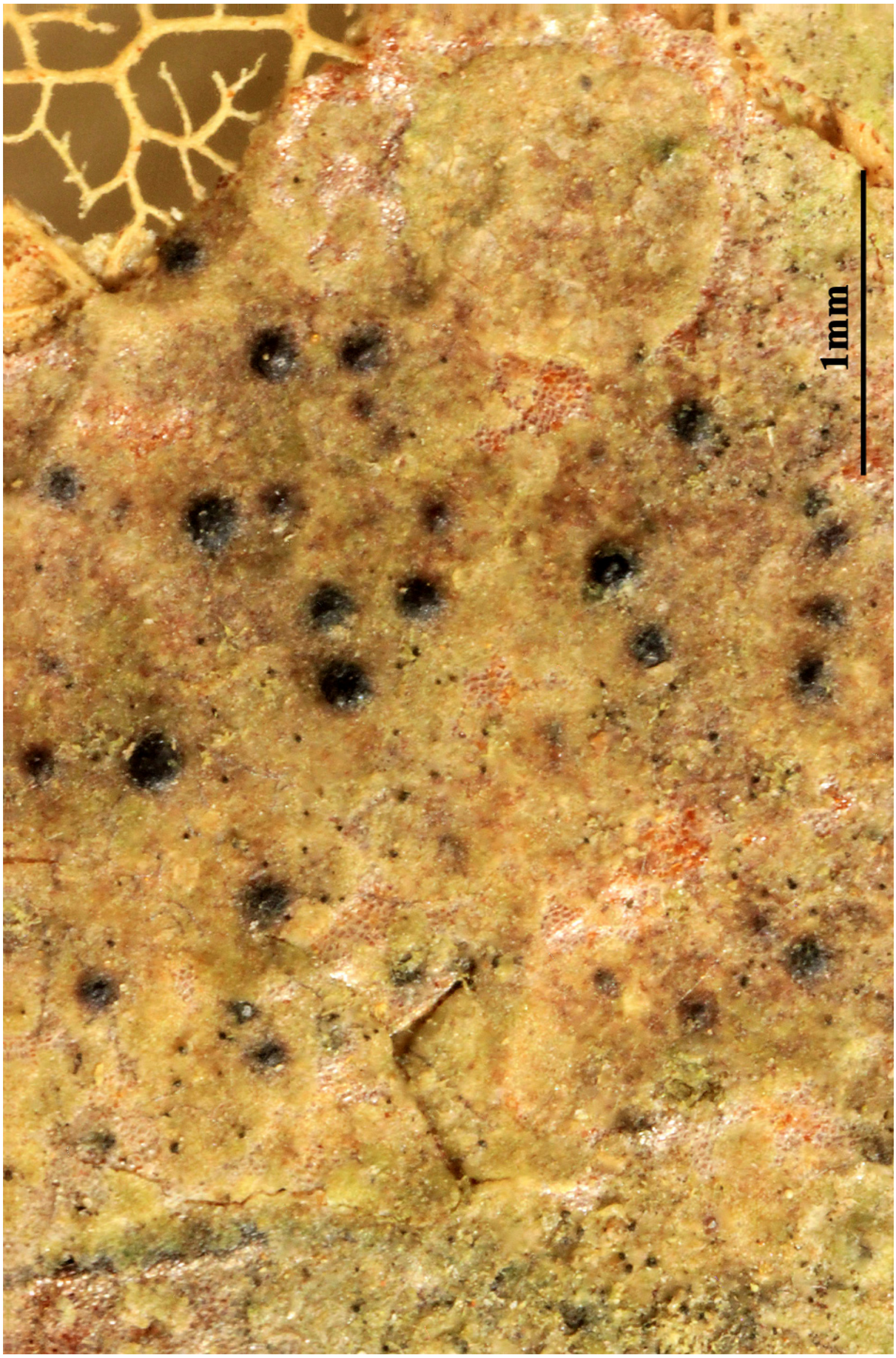
Porina perminuta

Porina perminuta

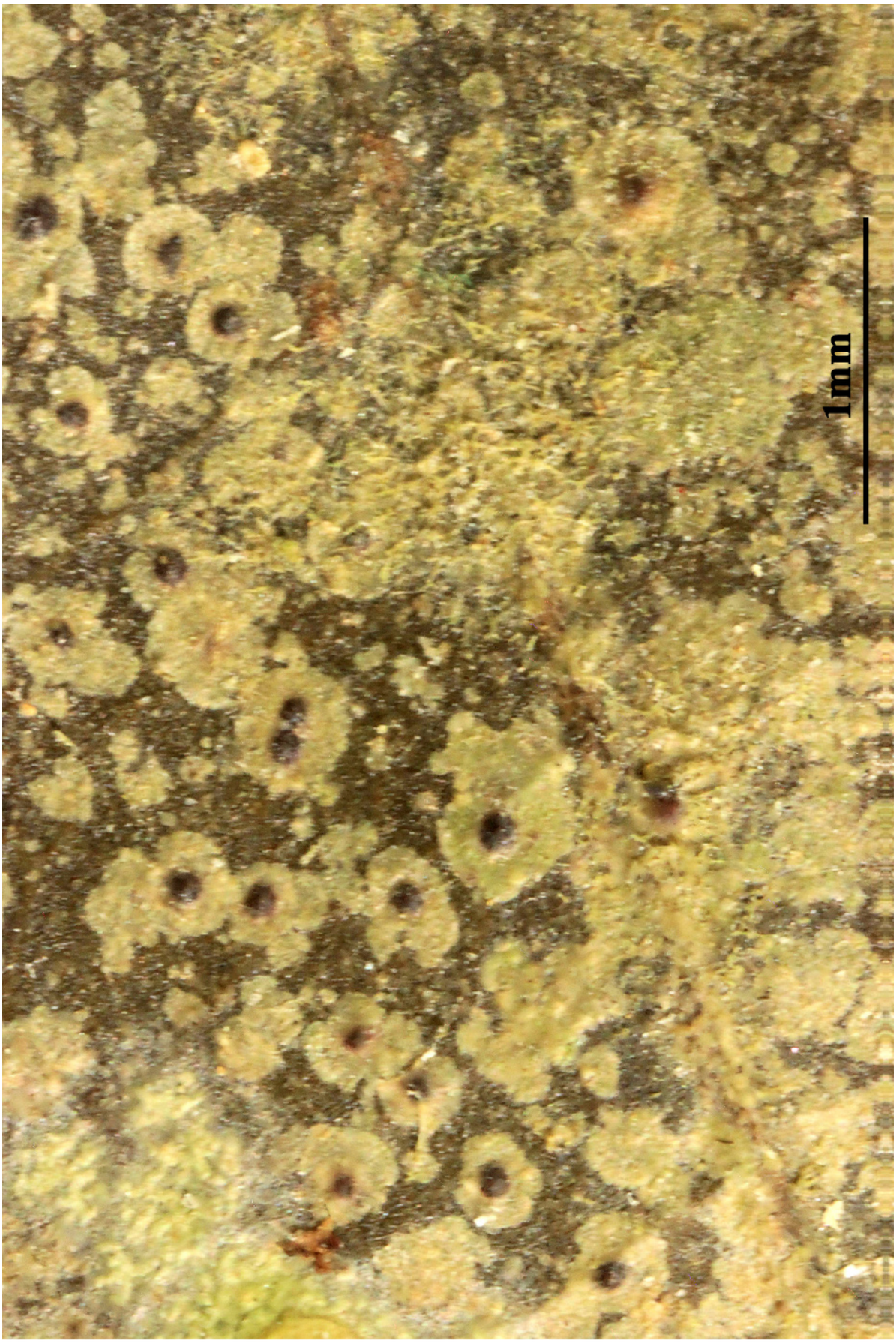
Porina rubentior (Stirt.) Müll. Arg., Flora, Regensburg 66(2): 26 (1883)
= *Segestria rubentior* (Stirt.) R.C. Harris, More Florida Lichens, Incl. 10 Cent Tour Pyrenol. (New York): 176 (1995)
= *Phylloporina rubentior* (Stirt.) Müll. Arg., Lich. Epiph. Novi: 21 (1890)
= *Verrucaria rubentior* Stirt., Proc. Roy. phil. Soc. Glasgow 11: 107 (1879) [1878]

[VZR258], Dominica (Antilles Minores). Northern Forest Reserve, ad latera occid. montis "Morne Diablotins", 600-700 m. In pluviisilva, foliicola. Leg. & det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 258.

Thallus epiphyllous, small and scattered or confluent and forming moderately large colonies, continuous, pale green to medium greyish green, smooth, matt to slightly glossy; prothallus not apparent. Algae Phycopeltis; cells rectangular, forming radiating plates. Perithecia superficial, convex to subhemispherical or subconical, 0.13–0.21 mm diam., medium orange-brown to dark reddish brown or dark cherry-red, smooth, matt to glossy, rarely translucent when wetted; base spreading; apex ±rounded or slightly conical; ostioleinconspicuous. Involucrellum spreading, c. 15–30 µm thick, dark orange-brown to dark red-brown in thin section, with a thin thalline covering near the base. Exciple c. 10 µm thick, pale yellow-brown. Asci narrowly obclavate, 38–50 × 7–10 µm. Ascospores bacilliform to narrowly fusiform, 3-septate, 13–21 × 2–3 µm; perispore not apparent. Pycnidia not seen. - Occurs in north-eastern Qld; an inconspicuous species on the leaves of shrubs and trees in lowland and montane rainforest. This pantropical species is most common in the Americas.



Porina rubentior



Porina rubentior

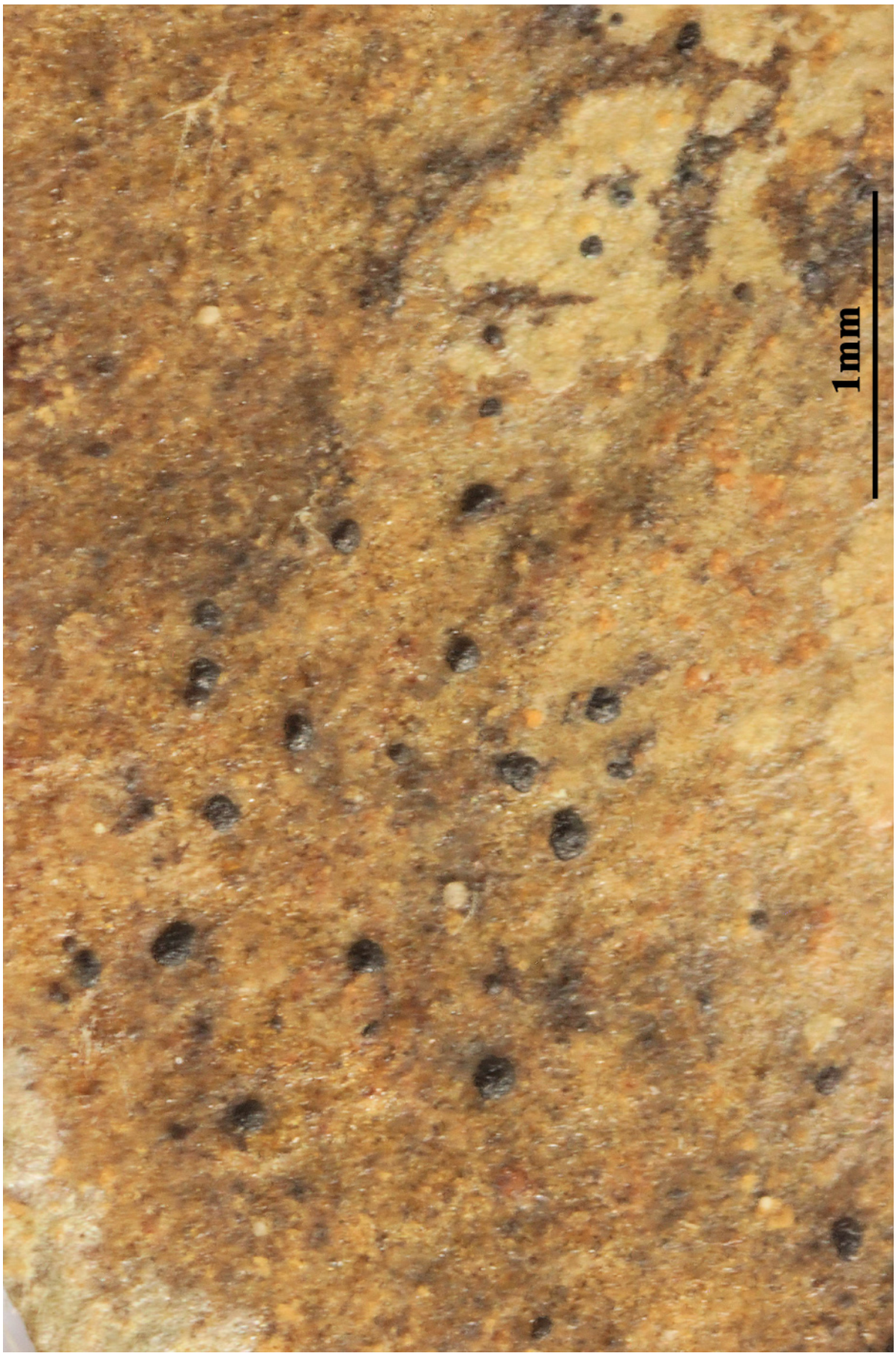
Porina subapplanata Malcolm, Vězda, P.M. McCarthy & Kantvilas, Australas. Lichenol. 45: 22 (1999)

[VZR], Nova Zelandia, South Island, Nelson, Lewis Pass, Watefalls Track, 42°21.0'9 austr., 172°16.1' orient., 680 m. Epiphylla (*Pseudowintera colorata*), in silva submontana, - ISOTYPUS. Leg. W. Malcolm (1335). EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 395.

Thallus subepiphloeodal or epiphyllous, continuous to sparingly rimose, pale greyish green or pale to medium green, usually matt, occasionally slightly glossy, smooth or minutely and irregularly uneven, 15–30 µm thick, ecorticate; prothallus not apparent. Algae Phycopeltis-like; cells forming loose filamentous or radiating plates. Perithecia slightly immersed to ±superficial, applanate, convex or hemispherical, (0.25–) 0.5 (–0.75) mm diam., yellowish brown or orange-brown or ±concolorous with the thallus; apex usually plane to convex, occasionally slightly concave; ostiole inconspicuous. Involucrellum spreading and extending to exciple base level, 30–55 µm thick, K+ reddish brown; space between base of involucrellum and the exciple with a loose reticulum of hyaline hyphae. Exciple 14–20 µm thick, hyaline to pale yellowish brown. Centrum 0.15–0.26 mm wide. Asci elongate-cylindrical to oblong, 82–124 × 14–20 µm. Ascospores elongate-fusiform to oblong, 7-septate, 25–42 × 6–10 µm; perispore usually not apparent. Pycnidia not seen. - Occurs in Australia, and especially common in Tasmania; a common species on the bark and leaves of cool-temperate rainforest trees and on fern pinnae. Also in New Zealand and in the Solomon Islands.

Porina subapplanata

Porina subapplanata



Porina subapplanata

Porina sylvatica McCarthy & Kantvilas, Lichenologist 25(2): 144 (1993)

[VZR146], Australia, Tasmania. Anthony Road, locus 475, lat. 41°49' austr., long. 145°38' occid., 520 m. Ad corticem arborum (*Antherosperma moschatum*) in pluviisilva. Leg. G. Kantvilas & J. Jarman (89/94), 14.5.1994. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 146.

hallus epiphloeodal or overgrowing bryophytes, continuous to sparingly rimose, pale brown to pale greenish brown, matt, smooth to minutely uneven, 20–40 µm thick, ecorticate; prothallus not apparent. Algae Trentepohlia; cells 7–22 × 7–19 µm. Perithecia superficial, hemispherical to subglobose, 0.43–0.72 mm diam., orange-brown to reddish brown; apex rounded; ostiole inconspicuous. Involucrellum contiguous with the exciple and extending to exciple base level, 40–70 µm thick, not containing algae, K+ reddish brown. Exciple c. 20 µm thick, pale yellow-brown. Centrum 0.34–0.52 mm wide. Asci elongate-cylindrical to narrowly fusiform, 188–212 × 20–27 µm. Ascospores elongate-cylindrical to elongate-fusiform, (7–) 9–11 (–15)-septate, 54–88 × 6.5–9.5 µm; perispore not apparent. Pycnidia hemispherical, 0.12–0.18 mm diam., orange-brown. Conidia not seen. - Occurs in Tasmania; grows on deeply shaded trunks and twigs and leafy corticolous hepatics in cool-temperate rainforest. Also on bark and rock in New Zealand.

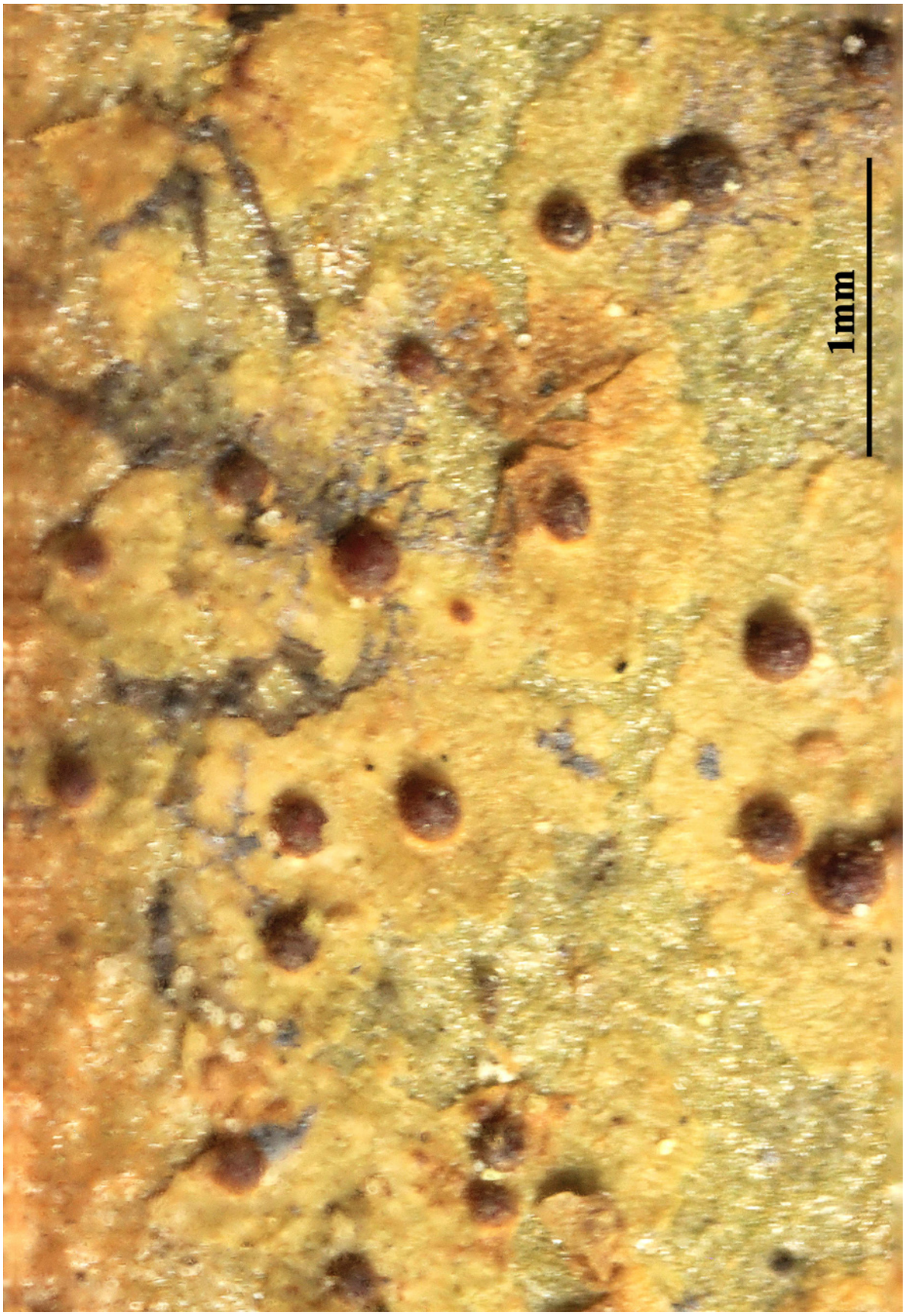
Porina sylvatica

Porina sylvatica

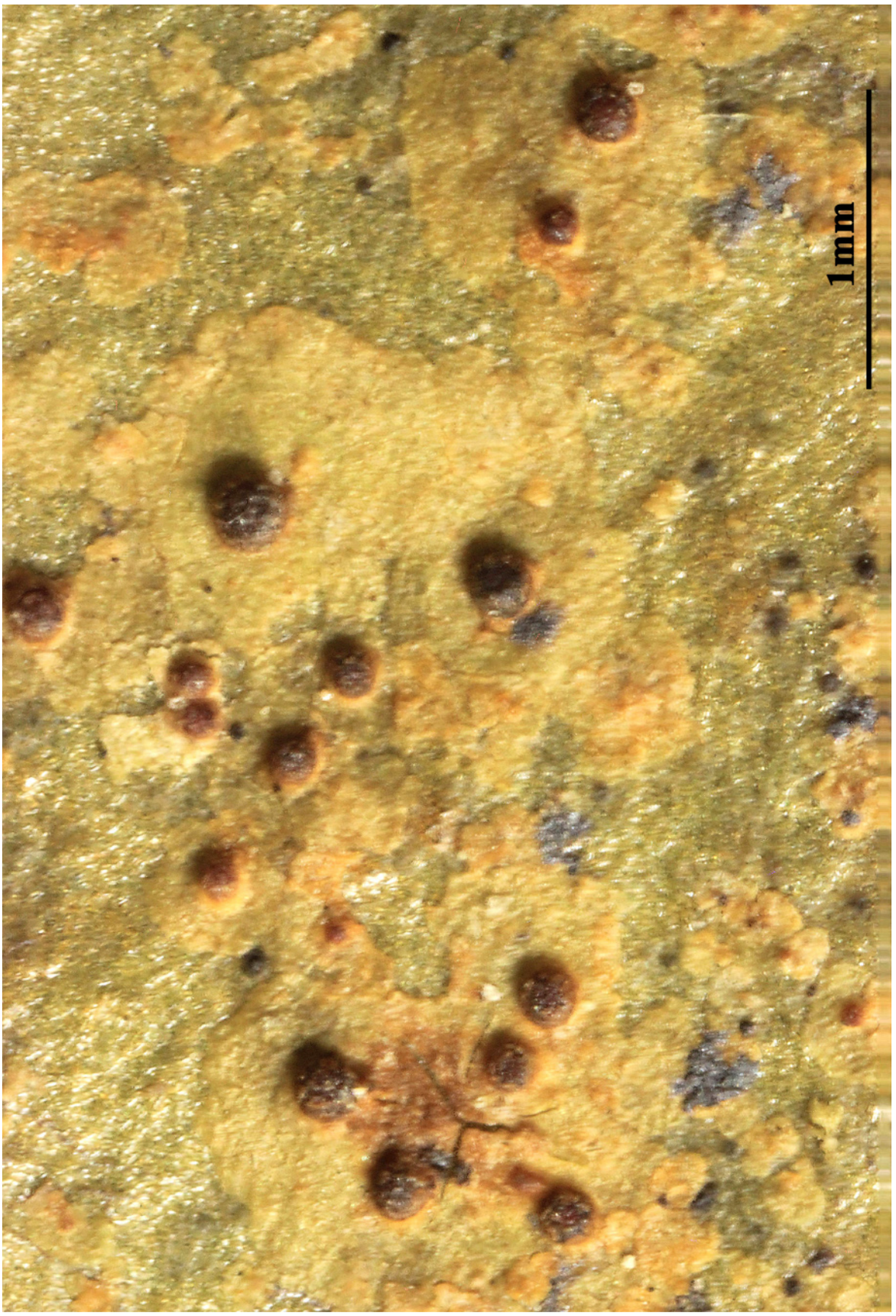
Porina tetramera (Malme) R. Sant., J. Ecol. 40: 129 (1952)
= *Phylloporina tetramera* Malme 1929

[VZR136], Nova Zelandia. South Island, Canterbury Peel Forest, 43°53'35" austr., 141°14'07" orient. Foliicola. Leg. W. Malcolm, 28.12.1993, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR.136.

Thallus irregular in outline, 3-5(-10) mm diam., formed by small, usually monocarpous patches, at first dispersed, then confluent, smooth, grey to grey-green, matt or subnitid, prothallus lacking. Perithecia dark red-brown, globose, constricted at base, 0.15-0.2 mm diam., surface roughened. Paraphyses simple. Asci obclavate, 8-spored, 40-62 × 7-9 µm. Ascospores 3-septate, fusiform, usually one end obtuse, the other acute, 16-22 × 3-4 µm.



Porina tetramera



Porina tetramera

Protoblastenia cyclospora (Hepp ex Körb.) Poelt, Mitt. bot. StSamml., Münch. 12: 5 (1975)
= *Agyrium rubidum* (Nyl.) Th. Fr., Bot. Notiser(5): 111 (1865)
= *Biatora cyclospora* Hepp ex Körb., Parerga lichenol. (Breslau) 2: 152 (1860) [1865]
= *Biatora rubidula* (Nyl.) Walt. Watson, Census Catalogue of British Lichens: ix (1953)
= *Biatorella rubidula* (Nyl.) Zahlbr., Lich. Japon.: 45 (1928)
= *Lecanora globulificans* Nyl., Flora, Regensburg 67: 212 (1884)
= *Lecidea cyclospora* (Hepp ex Körb.) Müll. Arg., Flora, Regensburg 68: 508 (1885)
= Lecidea rubidula Nyl., Flora, Regensburg 67: 214 (1884)
= *Protoblastenia globulificans* (Nyl.) Zahlbr., Cat. Lich. Univers. 7: 3 (1930) [1931]

[VZR326], Italia. Friuli, Alpi Carniche, M. Tinisa, secus viam "T. Weiss" dictam, 1900 m. Ad saxa calcarea verticalibus. Leg. et det, M. Tretiach, 25.8.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 326.

Thallus crustose, endosubstratic or more rarely thinly episubstratic, continuous or rarely finely cracked, pale grey to grey-white, most often inconspicuous. Apothecia biatorine,(0.35-)0.45-0.8 mm across, sessile, slightly to strongly constricted at base, not immersed in pits, with a strongly convex, dark orange-red disc and an indistinct proper margin. Proper exciple poorly developed, of colourless, branched hyphae; epithecium orange-red, 15-25 µm high, with granular crystals reacting K+ red, N-; hymenium colourless or more often with reddish stripes in upper part, 80-100 µm high; paraphyses coherent, sparingly branched and anastomosing, 2-3.5 µm thick at mid-level, the apical cells slightly swollen, 3-4 µm wide; hypothecium yellow-orange to pale orange-red, patchily pigmented. Asci 8-spored, clavate, with a well-developed, amyloid tholus containing a more intensely amyloid, indistinct tube structure, without an ocular chamber, approximating the Porpidia- or Psora-types. Ascospores 1-celled, hyaline, globose or subglobose, (5-)7-9 x 5-7.5 µm, without a distinct perispore. Photobiont chlorococcoid. Spot tests: thallus K-, C-, KC-, P-; apothecia K+ purple-red. Chemistry: apothecia with anthraquinones, mainly parietin. - Note: on steeply inclined surfaces of calcareous rocks in humid-rainy areas below the Alpine belt.

Protoblastenia cyclospora

Protoblastenia cyclospora

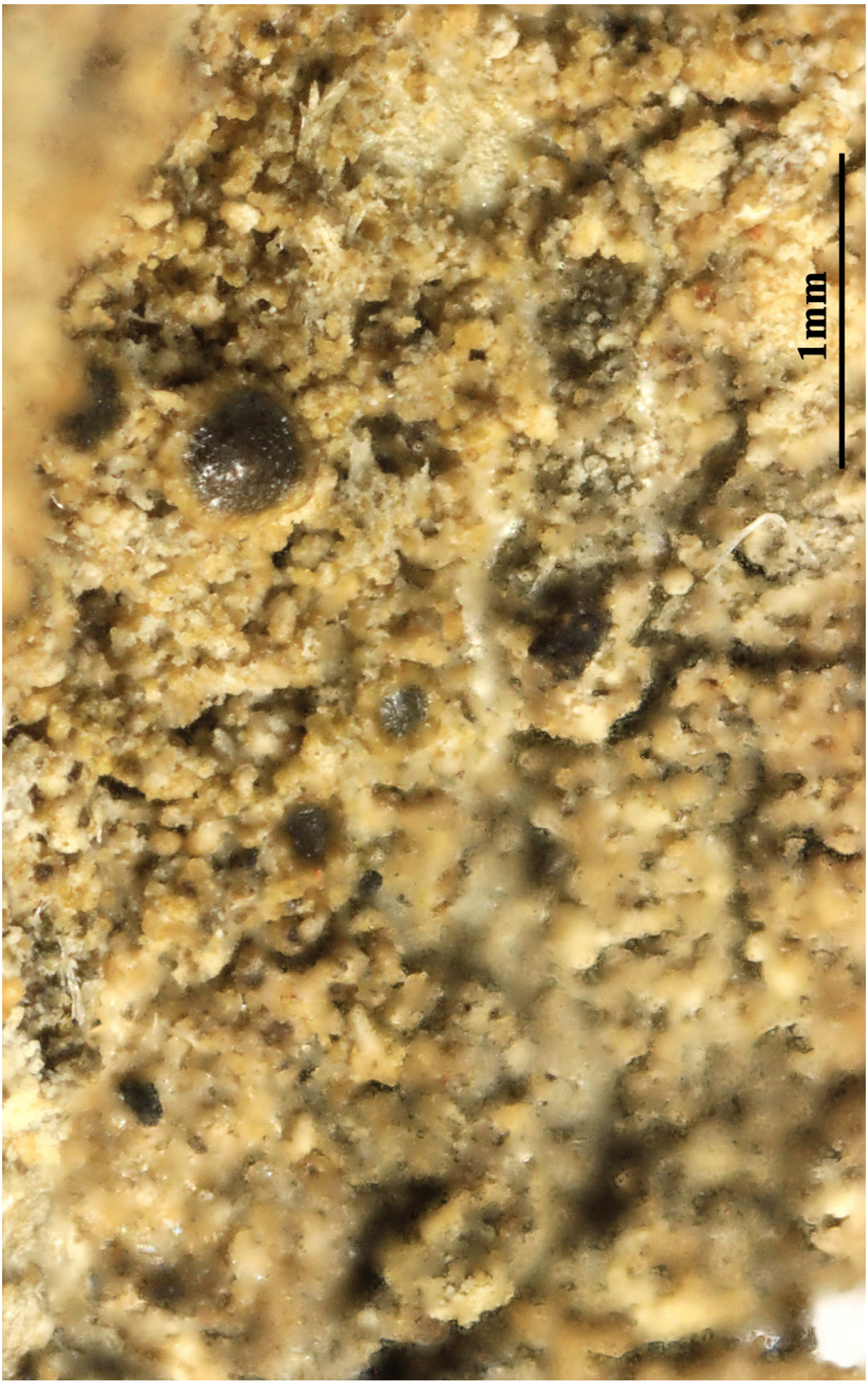
Protoparmelia oleagina (Harm.) Coppins, Lichenologist 24(4): 368 (1992)
= *Lecanora hypoptoides* B. de Lesd., Bull. Soc. bot. Fr. 53: 582 (1907) [1906]
= *Lecanora oleagina* Harm., Lich. Fr. 5: 1023 (1913)

[VZR460], Belgium. Prov. Luxembourg,Bosteubois (ad occidentem a Nasogne, 5°22.7' orient., 50°08.8' septentr.) 400 m. Ad corticem arborum (*Quercus robur*) in silva mixta. Leg & det. P. v. d. Boom. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 460.

hallus crustose, episubstratic, dull olivaceous brown, epruinose, continuous to rimose-areolate, densely covered in 0.07-0.15 mm wide and up to 0.4 mm high blastidia-like granules with a one cell-layer thick, rudimentary cortex, the upper granules forming by budding from those beneath. Apothecia very rare, lecanorine, up to 0.7 mm across, sessile, with a slightly concave to flat, olivaceous grey disc and a thick thalline margin even with disc. Epithecium brownish; hymenium colourless, c. 55 µm high; paraphyses coherent, branched in upper part, c. 2 µm thick at mid-level, the apical cell c. 3 µm wide; hypothecium colourless; algal layer incomplete below hypothecium. Asci 8-spored, clavate, approaching the Lecanora-type, with a well-developed amyloid tholus and a distinct, non-amyloid axial mass. Ascospores 1-celled, hyaline, oblong, 9.5-15 x 3-3.5 µm. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-; thallus sections release oily exudates in K. Chemistry: traces of lobaric acid and unidentified substances. - Note: mostly on lignum, more rarely on acid bark in damp deciduous forests.

Protoparmelia oleagina

Protoparmelia oleagina

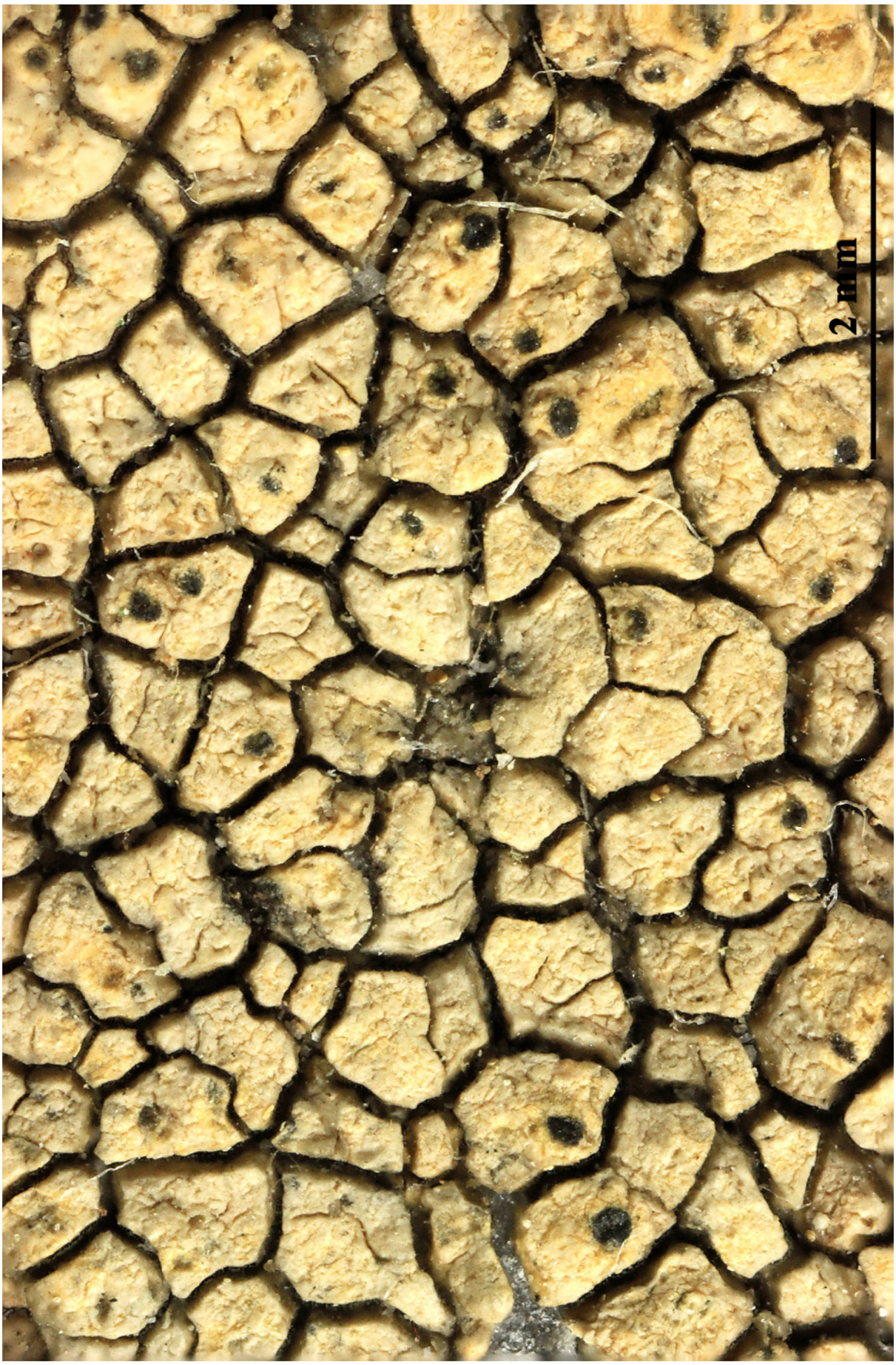


Protoparmelia oleagina

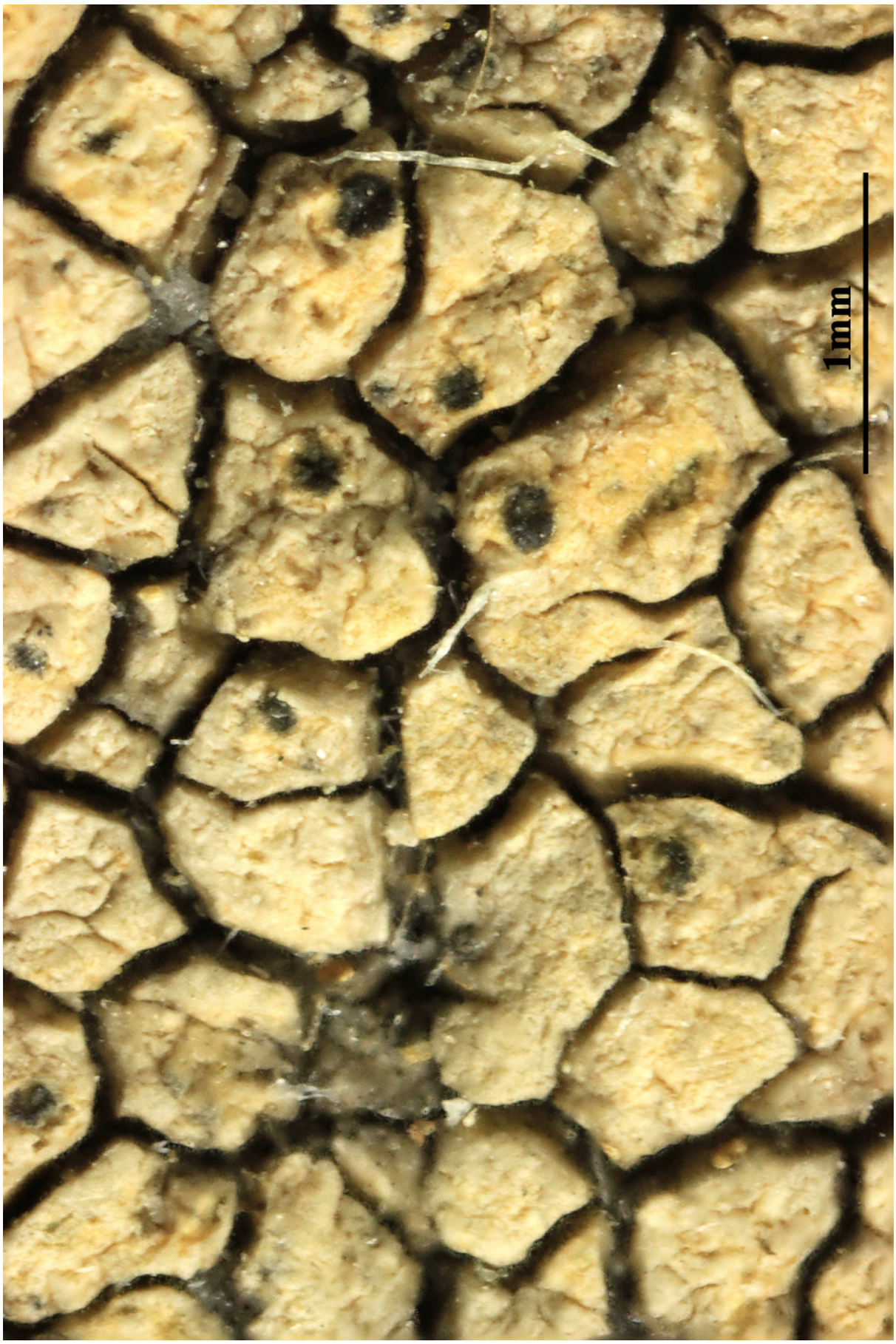
Protoparmelia phaeonesos Poelt, in Poelt & Leuckert, Nova Hedwigia 52(1-2): 56 (1991)

[VZR8], Austria. Styria, pars Alpium "Steirisches Randgebirge, Stubalpe" dicta, ad latera occidentalia montis "Speikogel", 1900 -2000 m. Ad saxa gneiseacea, in thallo *Aspicilae myrini* parasiticans. Leg. J. Poelt & H. Köckinger, 1.6.1990. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 8.

Thallus crustose, episubstratic, areolate-verrucose, pale to dark yellowish brown, often delimited by a black prothallus, forming orbicular patches to 1-2 cm across on the thalli of *Aspilidea myrinii*. Areoles contiguous, strongly convex to subpedicellate, 1-3 mm wide. Cortex 30-80 µm thick, with a brown upper layer overlain by a colourless epinecral layer; medulla white, I-. Apothecia not always present, lecanorine, at first immersed, later sessile, up to 1 mm across, with a chestnut brown to dark brown, flat to slightly convex disc, and a thin, entire, finally excluded thalline margin. Thalline exciple eucorticate; proper exciple thin, brownish in outer part, colourless within; epithecium olive-brown; hymenium colourless, 45-70 µm high, I+ blue; paraphyses coherent, 1.5-2 µm thick in lower part, pale brown at tips; hypothecium colourless. Asci 8-spored, clavate, approaching the Lecanora-type, with a well-developed amyloid tholus and a distinct, non-amyloid axial mass. Ascospores 1-celled, hyaline, oblong-ellipsoid to oblong, blunt at both ends, 8-12(-15) x (4-)5-7 µm. Pycnidia rare, immersed, dark around the ostiole. Conidia filiform, curved, 15-31 x 0.5-0.71 µm. Photobiont chlorococcoid. Spot tests: (best observed in sections) K- or K+ yellow turning red (needle-like crystals), C-, KC-, P+ yellow or orange, UV-; apothecial margin always K+ yellow turning red. Chemistry: norstictic acid. - Note: on acid siliceous rocks near and especially above treeline; probably much more widespread in the Alps. The species does not belong to *Protoparmelia* s.str. and is close to *Miriquidica* (Singh & al. 2013).



Protoparmelia phaeonesos



Protoparmelia phaeonesos

Protoparmelia picea (Dicks.) Hafellner, in Clauzade & Roux, Bull. Soc. bot. Centre-Ouest, Nouv. sér., num. spec. 7: 828 (1985)
= *Protoparmelia badia* (Hoffm.) Hafellner, Beih. Nova Hedwigia 79: 292 (1984)
= *Lecanora badia* (Hoffm.) Ach., Lich. Univ.: 407 (1810)
= *Lecanora badia* f. *picea* (Dicks.) Leight., Lich.-Fl. Great Brit.: 214 (1871)
= *Lecanora badia* subsp. *picea* (Dicks.) Cromb., Monogr. Lich. Brit.(1): 452 (1894)
= *Lecanora badia* var. *cinereobadia* Harm., Lich. Fr. 5: 1053 (1913)
= *Lecanora badia* var. *picea* (Dicks.) Link, Grundr. Krauterk. 3: 195 (1833)
= *Lecanora picea* (Dicks.) Nyl., Flora, Regensburg 51: 478 (1868)
= *Lecidea picea* (Dicks.) Ach., Methodus, Sectio prior (Stockholmiæ): 51 (1803)
= *Lichen badius* (Hoffm.) Ach., Lich. suec. prodr. (Linköping): 67 (1799) [1798]
= *Lichen piceus* Dicks., Fasc. pl. crypt. brit. (London) 4: 22 (1801)
= *Parmelia badia* (Hoffm.) Hepp, Flecht.-Fl. Würzburg: 46 (1824)
= *Parmelia badia* f. *picea* (Dicks.) Fr., Lich. eur. reform. (Lund): 148 (1831)
= *Patellaria badia* (Hoffm.) Hoffm., Descr. Adumb. Plant. Lich. 3(no. 1): 7 (1801)
= *Protoparmelia badia* var. *cinereobadia* (Harm.) Clauzade & Cl. Roux , Stapfia 76: 157 (2001)
= *Rinodina badia* (Hoffm.) Gray, Nat. Arr. Brit. Pl. (London) 1: 450 (1821)
= *Solenopsora badia* (Hoffm.) M. Choisy & Werner, Bull. Soc. Hist. nat. Afr. N. 22: 11 (1931)
= *Solenopsora badia* var. *cinerascens* Flot. ex M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 20: 200 (1951)
= *Verrucaria badia* Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 182 (1796) [1795]

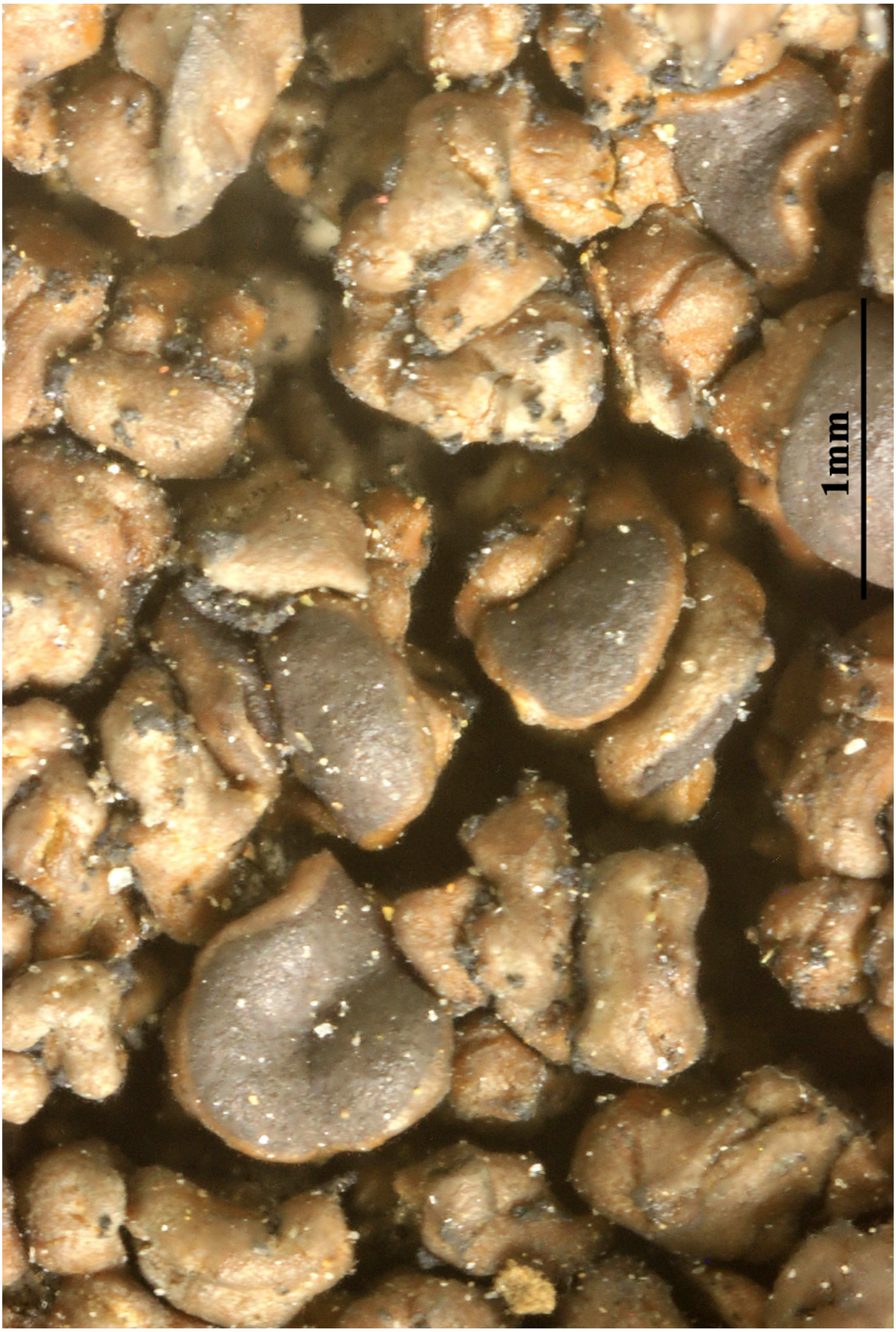
[VZR97], Slovacia. Carpates, montes Tribecské vrchy, in vicinitate ruinae arcis Gymeš, 450 m. Leg. A. Vězda, 30.6.1993. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 97.

Thallus crustose, episubstratic, rimose-areolate to warted, up to 1.5-2.5 mm thick, olivaceous brown, grey-brown or dark brown, often forming up to 10 cm wide patches, rarely delimited by a thin, black prothallus. Areoles mostly contiguous, irregular in shape, 0.6-1.5(-3) mm across, usually convex, epruinose, more or less glossy. Cortex 20-30 µm thick, with a brown upper layer overlain by a thin epinecral layer; medulla white or pale yellowish, I-. Apothecia lecanorine, at first immersed to

adnate, later sessile, round or weakly angular by mutual compression, (0.4-)1-1.5(-2.5) mm across, with a chestnut brown to brown-black, slightly concave to convex, glossy and epruinose disc, and a usually paler, thick, entire to crenulate, persistent thalline margin. Thalline exciple corticate, c. 45 µm wide, with fine granules soluble in K; proper exciple poorly delimited, brown in outer part, colourless within, forming a 40-100 µm thick cupular layer below the hypothecium; epithecium olive-brown to yellowish brown, without granules, 10-20 µm thick; hymenium colourless, 50-70(-80) µm high, I+ blue; paraphyses coherent, branched in upper part, rarely anastomosing, 3-4 µm thick at mid-level, the apical cells 4-6 µm wide, with pale brown walls and a dark brown cap; hypothecium colourless or pale yellow. Asci 8-spored, clavate, approaching the Lecanora-type, with or without an ocular chamber, but always with a distinct, non-amyloid apical cushion. Ascospores 1-celled, hyaline, fusiform with pointed apices, (8-)10-13(-16) x (3-)4-6(-7) µm, the wall to 0.3 µm thick. Pycnidia immersed, black around the ostiole. Conidia straight, acicular, 6-9(-11) µm long. Photobiont chlorococcoid. Spot tests (better visible on microscopic sections): medulla K- or K+ pale yellow, C-, KC- or rarely KC+ fleeting pink to red-violet, P-, usually UV+ white. Chemistry: lobaric acid (major), zeorin, and unknown substances (minor, traces or absent). - Note: on siliceous rocks, with a wide altitudinal range, reaching the nival belt of the Alps; most common above treeline in the Alps, but sometimes extending to lower altitudes.

Protoparmelia picea

Protoparmelia picea

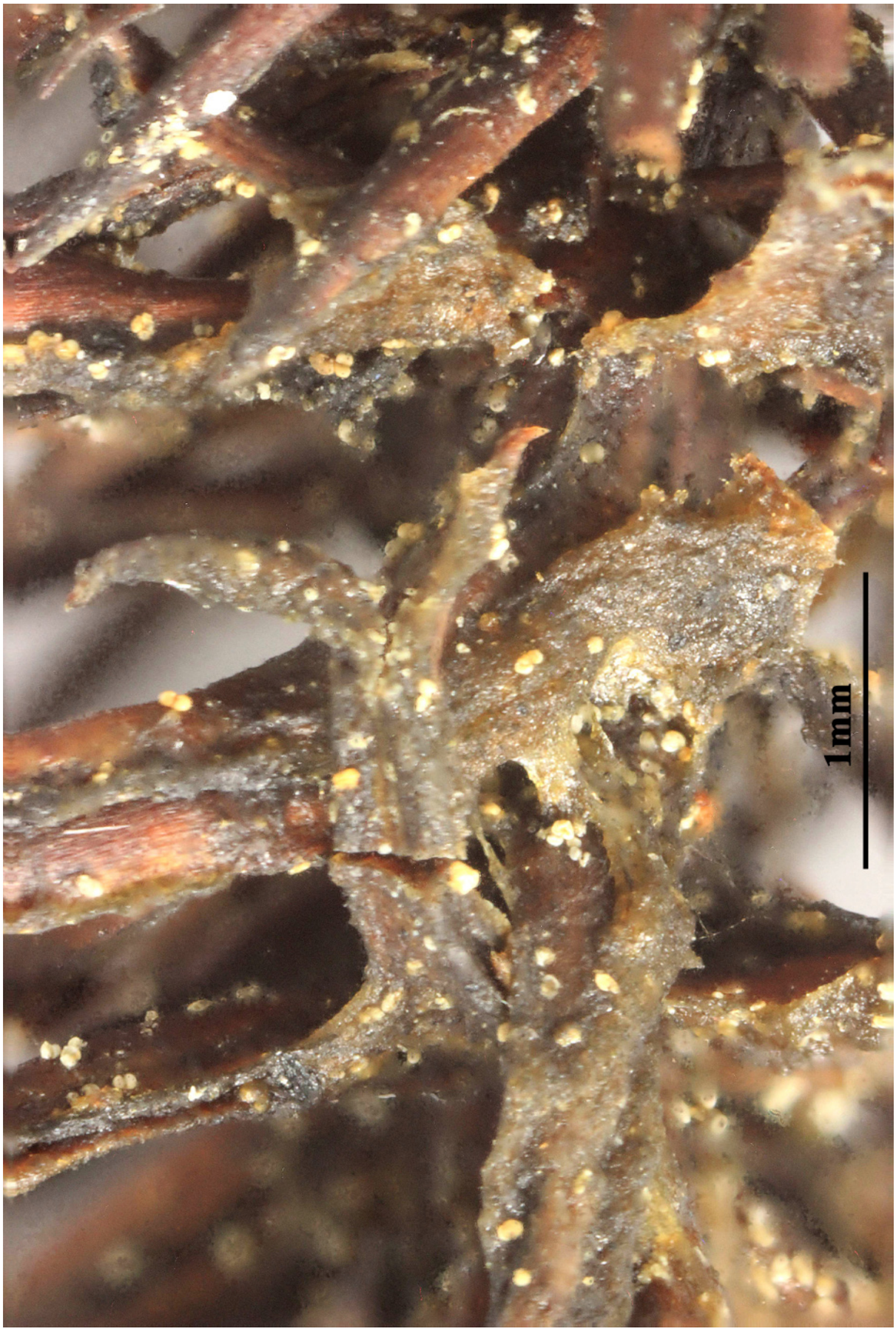


Protoparmelia picea

Protothelenella sphinctrinoidella (Nyl.) H. Mayrhofer & Poelt, Herzogia 7(1-2): 47 (1985)
= *Microglaena sphinctrinoidella* (Nyl.) Arnold, in Norman, Kgl. norske vidensk. Selsk. Skr. 5: 366 (1868)
= *Verrucaria leucothelia ** sphinctrinoidella* (Nyl.) Nyl., Lich. Lapp. Orient.: 171 (1866)
= *Verrucaria sphinctrinoidella* Nyl., Flora, Regensburg 47: 355 (1864)

[VZR373], Bohemia merid. montes Sŭmava (Gabreta), distr. Volary, Nové Udoli, loco "Pavličko" dicto, 850 m. In fodina granitica supra musvos ad terram arenosam. Leg. J. Halda, A. Vězda & V. Wirth. Ex A. VěZDA: LICHENES RARIORES EXSICCATI NR. 373.

Thallus crustose, whitish to pale grey, greenish when wet, very thin, continuous and often film-like and inconspicuous. Perithecia black, more or less shiny, projecting to semi-immersed, globose to slightly pyriform, 0.1-0.3 mm across. Exciple 15-20 µm thick, dull greenish brown and K+ violet in upper part, colourless towards the base, of strongly anastomosing, conglutinate hyphae with up to 1 µm wide lumina. Paraphysoids thread-like, 0.7-1 µm thick, persistent, strongly branched and anastomosing; periphysoids absent; hymenial gel I+ reddish or I+ blue at low concentrations, K/I+ blue. Asci 8-spored, cylindrical, thick-walled, with two functional wall layers, the outer layer I+ dull reddish, K/I+ blue, the apex with an I+ blue, apical apparatus. Ascospores submuriform, hyaline, ellipsoid, 22-33(-36) x 7-10(-12) µm, the outer wall distinctly thicker than the septa. Photobiont chlorococcoid (Elliptochloris), the usually few algal cells surrounded by a gelatinous sheath. Spot tests: K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. Note: on acid to subneutral soil, moribund bryophytes and lichens, more rarely on decaying plants in upland areas, often in rather disturbed habitats, e.g. along mountain track sides.



Protothelenella sphinctrinoidella

Protothelenella sphinctrinoidella

Pseudevernia intensa (Nyl.) Hale & W.L. Culb., Bryologist 69: 165 (1966)
=*Evernia intensa* Nyl. 1873

[VZR734], USA. Arizona. Pima County: In loco dicto Showers Point in Mt. Lemmon, prope urbem Tucson, 2100 m. Ad ramulos arborum (*Pinus ponderosa*) Leg. W. L. Culberson (no. 13187), 8, 1968. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 734.

Thallus foliose to subfruticose to caespitose, 5-20 cm across, lobate; lobes linear, 1-3 (-5) mm wide, separate, subdichotomously branched, loosely imbricate; apices subtruncate, eciliate; upper surface light gray to gray, smooth, plane to rugulose, shiny or dull, maculate or not, usually epruinose; soredia and isidia absent; medulla white, loosely packed; lower surface tan to black, sometimes mottled white, naked, channeled, erhizinate, attached by basal holdfasts Apothecia usually present, laminal on thallus, orbicular, cup-shaped, subpedicellate or pedicellate, 2-10 mm in diam.; margin prominent, with a thalloid rim; disc dark brown; asci: lecanoral, c. 8-spored; ascospores simple, ellipsoid, 7-10 x 4-6 µm; walls thin, hyaline, not amyloid. Pycnidia laminal or marginal, immersed or emergent and sessile; conidia not seen Spot tests upper cortex K+ yellow, C-, KC-, P+ yellow; medulla K-, C+ red, KC+ red, P-. Secondary metabolites upper cortex with atranorin and chloroatranorin; medulla with lecanoric acid (major). Substrate and ecology: usually on confers (especially *Pseudotsuga* and *Abies*) in mixed conifer forests World distribution: neotropics from Central America through Mexico to southwestern U.S.A. - Notes: *Pseudevernia intensa* is one the most common montane lichens on confers from eastern Arizona southwards and exhibits considerable morphological plasticity from narrow to wide lobed individuals and from clearly foliose to robustly subfruticose.

Pseudevernia intensa

Pseudevernia intensa

Pseudevernia intensa

Pseudocyphellaria allanii D.J. Galloway, in Renner & Galloway, Mycotaxon 16(1): 202 (1982)

[VZR377], Nova Zelandia, South Island, distr. Nelson, in valle rivi "Brook Waterfalls", 160 m. Supra muscos ad saxa silicea in rivo. Leg. W. Malcolm & A. Vězda, 18.4.1997, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 377.

Thallus orbicular to spreading, ± entangled, to 18 cm diam., loosely to closely attached. Lobes linear-elongate (3-)5-8(-14) mm wide, 1.5-6.0 cm long, ± subcanaliculate, subdichotomously branched, discrete, margins entire, sinuous, slightly thickened below, faintly white-pubescent towards apices. Upper surface dark greyish-blue to blue-green, tinged brownish at margins when wet, pale greyish-fawn when dry, minutely scabrid, coriaceous, uneven or very slightly wrinkled-undulate, without isidia, soredia or pseudocyphellae. Medulla white. Photobiont blue-green. Lower surface densely tomentose to margins, occasionally naked centrally, pale buff at margins, dark brown to black centrally, tomentum thick, silky, pale whitish to dark brown, occasionally in scattered, squarrose tufts. Pseudocyphellae white, scattered, conspicuous, round to irregular, 0.5-2.5 mm wide, plane to concave, with a raised margin at maturity, often sunk in tomentum. Apothecia not seen. Pycnidia sparse to frequent, immersed, 1.5 mm diam., visible as hemispherical swellings on lower surface. Chemistry: 7β-acetoxyhopan-22-ol and hopane-15α, 22-diol.

Pseudocyphellaria allanii

Pseudocyphellaria allanii

Pseudocyphellaria allanii

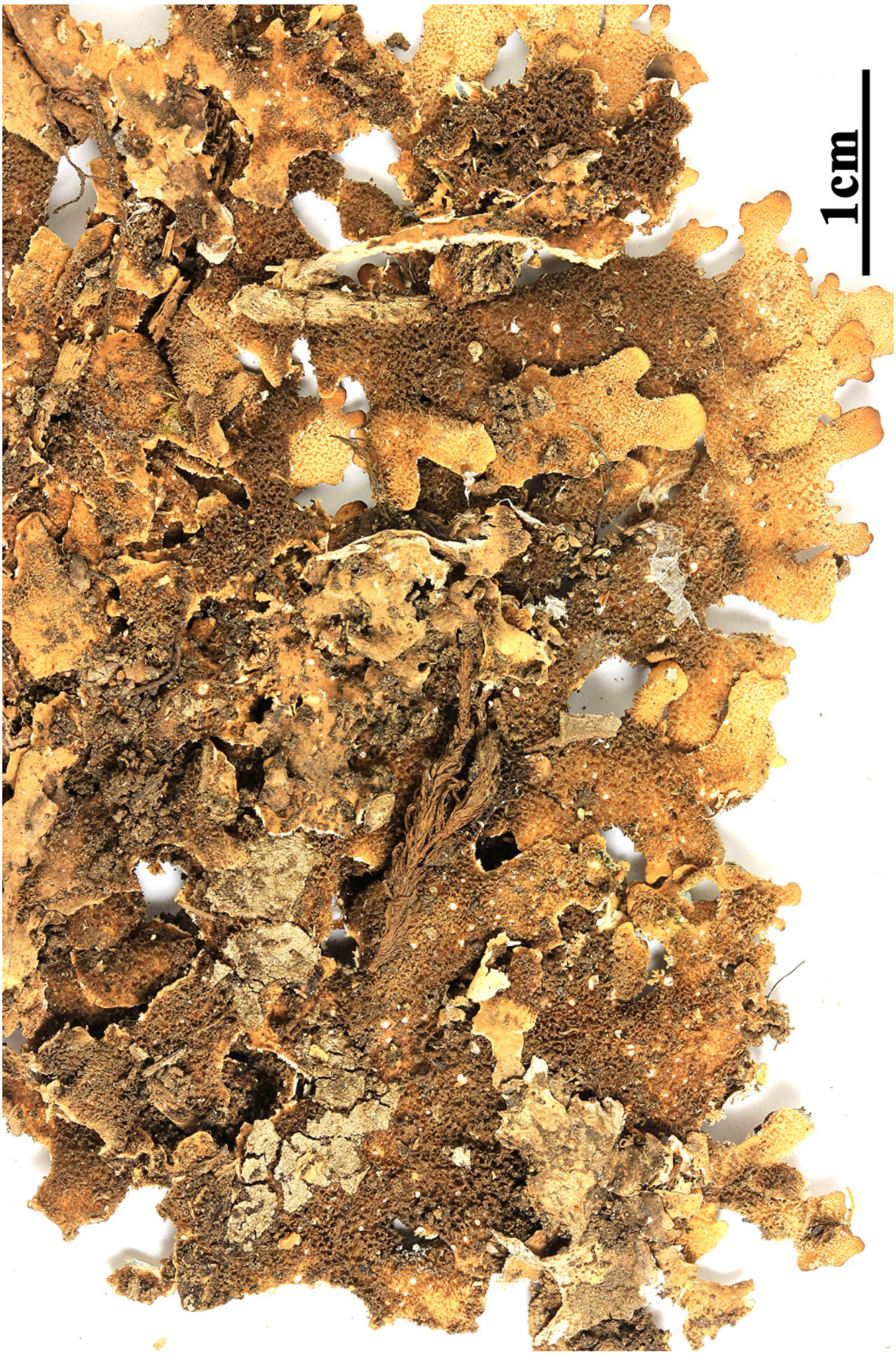
Pseudocyphellaria argyracea (Delise) Vain., Hedwigia 37(Beibl.): (35) (1898)
= *Lichen argyraceus* Bory, in Delise, Hist. Lich. Sticta: 91 (1822)
= *Pseudocyphellaria argyracea* var. *sorediifera* (Delise) Malme, Bih. K. svenska VetenskAkad. Handl., Afd. 3 25(no. 5): 24 (1899)
= *Sticta argyracea* Delise, Hist. Lich. Sticta: 91 (1822)
= *Sticta argyracea* var. *sorediifera* Delise, Mém. Soc. Linn. Normandie 2: 92 (1825)
= *Stictina argyracea* (Delise) Nyl., Syn. meth. lich. (Parisiis) 1(2): 334 (1860)
= *Stictina argyracea* f. *sorediifera* (Delise) Stizenb., Flora, Regensburg 81(1): 127 (1895)
= *Stictina argyracea* var. *sorediifera* (Delise) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 166 (1890) [1888-89]

[VZR387], India merid., montes Nilgiri, Tamul Nady, Mukhurti Dam, 1500 m. Ad corticem arborum. Leg. R. Dětinský, 27.1.1998, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 387.

Thallus rosette-forming to irregularly spreading, loosely attached, 1–5 (–10) cm wide. Lobes irregularly laciniate to rounded, discrete to ±imbricate, 1–3 cm long, 3–10 (–20) mm wide; lobe margins entire to minutely crenate-incised, delicately isidiate. Upper surface pale grey-brown when dry, slatey blue-grey to blue-black when wet, plane to wrinkled, sorediate, isidiate, without maculae or phyllidia; pseudocyphellae laminal, few to numerous, ±evenly spaced, round to irregular, ulcerose, becoming sorediate, to 3 mm diam.; isidia minute, terete, simple to coralloid, clustered at margins of pseudocyphellae and at apices and margins of lobes. Medulla white. Photobiont Nostoc. Lower surface pale brownish, densely tomentose from margins to centre. Pseudocyphellae rather rare, white, scattered, irregular, best seen at margins. CHEMISTRY: Methyl gyrophorate (±), gyrophoric acid (±), 7β-acetoxyhopane-22-ol, hopane-7β,22-diol (trace) and hopane 15α,22-diol.

Pseudocyphellaria argyracea

Pseudocyphellaria argyracea



Pseudocyphellaria argyracea

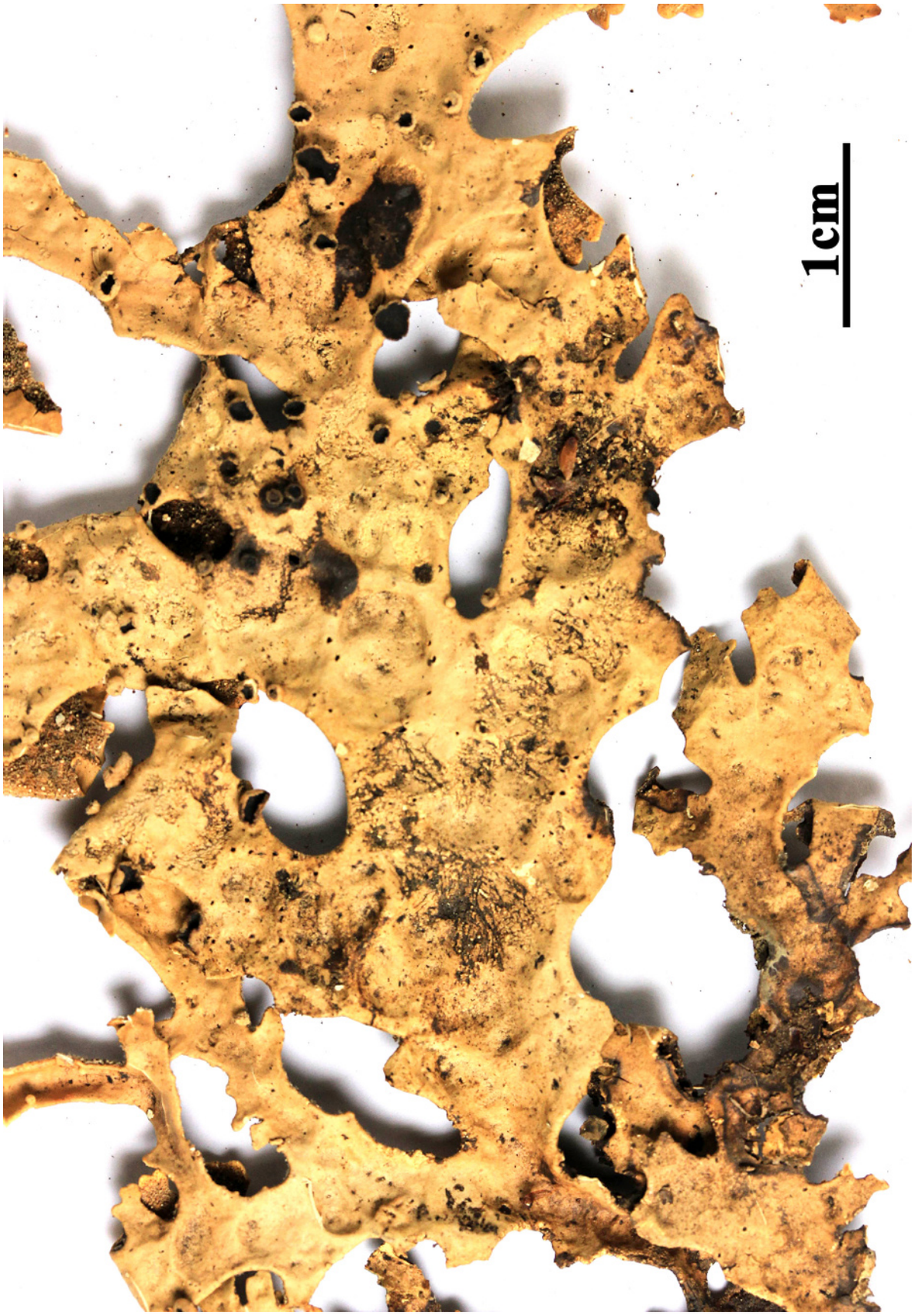
Pseudocyphellaria argyracea

Pseudocyphellaria billardierei (Delise) Räsänen [as 'Billardieri'], Ann. bot. Soc. Zool.-Bot. fenn. Vanamo 2(no. 1): 39 (1932)
= *Crocodia richardii* (Mont.) Trevis., Lichenoth. Veneta 1-2: no. 75 (1869)
= *Lobaria billardierei* (Delise) Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 41 (1896)
= *Lobaria fossulata* var. *linearis* (Hook. f. & Taylor) Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 38 (1896)
= *Lobaria fossulata* var. *richardii* (Mont.) Hellb. [as 'richardi'], Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 38 (1896)
= *Pseudocyphellaria flotowiana* (Laurer) Malme, Bih. K. svenska VetenskAkad. Handl., Afd. 3 25(no. 5): 22 (1899)
= *Pseudocyphellaria linearis* (Hook. f. & Taylor) C.W. Dodge, Nova Hedwigia 19(3-4): 489 (1971) [1970]
= *Pseudocyphellaria richardii* (Mont.) Räsänen [as 'Richardi'], Ann. bot. Soc. Zool.-Bot. fenn. Vanamo 2(no. 1): 39 (1932)
= *Sticta billardierei* Delise, Hist. Lich. Sticta: 99 (1822)
= *Sticta billardierei* var. *lacinulata* (Kremp.) Müll. Arg., Bull. Herb. Boissier 2(app. 1): 36 (1894)
= *Sticta cellulifera* f. *billardierei* (Delise) Nyl. [as 'billardieri'], in Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 3 sér. 2: 306 (1890)
= *Sticta cellulifera* f. *lacinulata* (Kremp.) Stizenb., Flora, Regensburg 81(1): 114 (1895)
= *Sticta faveolata* var. *billardierei* (Delise) C. Bab. [as 'billardieri'], in Hooker, Bot. Antarct. Voy. Erebus Terror 1839-1843, II, Fl. Nov.-Zeal.: 278 (1855)
= *Sticta faveolata* var. *richardii* (Mont.) Linds. [as 'richardi'], Trans. R. Soc. Edinb. 22(1): 197 (1859) [1861]
= *Sticta flotowiana* Laurer, Linnaea 2: 40 (1827)
= *Sticta fossulata* f. *lacinulata* Kremp., in Fenzl, Reise Österr. Novara Bot. 2: 120 (1870)
= *Sticta fossulata* f. *linearis* (Hook. f. & Taylor) Stizenb., Flora, Regensburg 81(1): 114 (1895)
= *Sticta fossulata* f. *richardii* (Mont.) Nyl., Bull. Soc. linn. Normandie, sér. 2 2: 503 (1868)
= *Sticta fossulata* var. *linearis* (Hook. f. & Taylor) Linds., Trans. Linn. Soc. London 25: 499, tab. LX, fig. 5 (1866)
= *Sticta fossulata* var. *richardii* (Mont.) Nyl. [as 'richardi'], Syn. meth. lich. (Parisiis) 1(2): 364 (1860)
= *Sticta foveolata* var. *richardii* (Mont.) Linds. [as 'richardi'], Trans. R. Soc. Edinb. 22(1): 197 (1859) [1861]
= *Sticta linearis* Hook. f. & Taylor, London J. Bot. 3: 647 (1844)
= *Sticta richardii* Mont. [as 'richardi'], Annls Sci. Nat., Bot., sér. 2 4: 89 (1835)

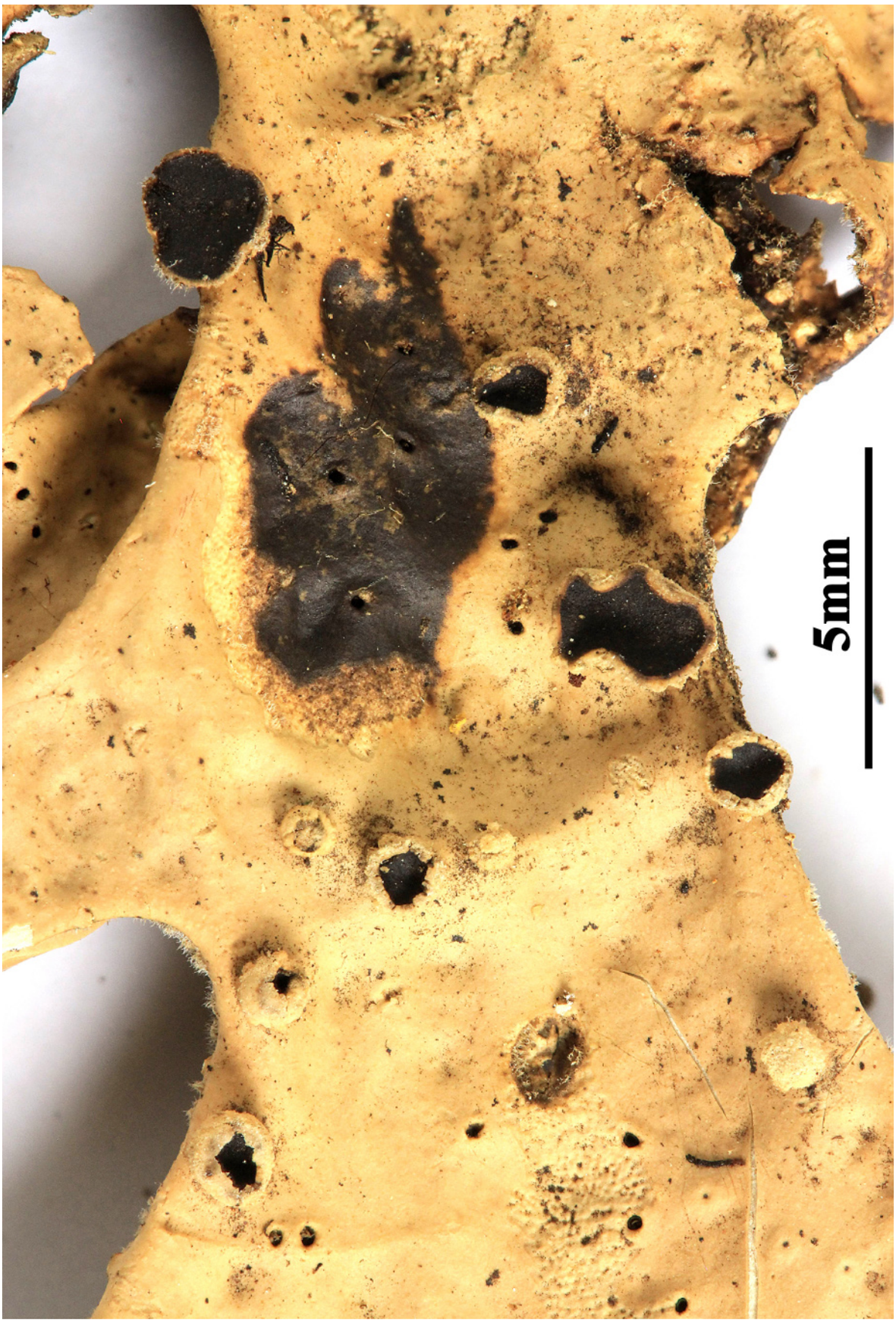
[VZR298], Nova Zelandia. South Island, distr. Nelson, Hira Forest supra urbem Nelson, 800 m, Ad truncos arborum. Leg. W. Malcolm & A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 298.

Thallus irregularly spreading, loosely attached, apices ± free and subascending, 5-15(-25) cm diam., corticolous. Lobes regularly dichotomously to subdichotomously branching, 1-8(-12) mm wide, 1-10 cm long, well separated, discrete at margins, complex and often entangled centrally, rather flat, apices acute or truncate, rounded or bifurcating, margins entire, often thickened, smoothly rounded, without projecting pseudocyphellae. Upper surface matt or glossy, bright lettuce-green when wet, pale green or olive-brownish when dry, shallowly to deeply faveolate, interconnecting ridges smooth and rounded or sharp. Lower surface white or pale buff, conspicuously wrinkled to ± bullate, margins conspicuously thickened, ± glabrous in a narrow to broad marginal zone, thinly to densely tomentose often to margins, tomentum pale, whitish, silky near margins, entangled, brown-black centrally. Pseudocyphellae scattered to ± frequent, white, raised, verruciform, 0.05-0.2 mm diam., on interconnecting ridges, decorticate area small, depressed-punctate or indented below surrounding margins, rarely flat, margins thin ± puckered. Medulla white. Photobiont green. Apothecia marginal or submarginal, rather scattered, often developed towards lobe apices, subpedicellate, 0.5-2.5 mm diam., disc dark red-brown to black, roughened, epruinose, subconcave to plane and ± undulate, margins persistent or excluded in mature fruits, minutely crenate or verrucose, pale-red-brown to flesh-coloured, exciple pale red-brown, concolorous with margins, minutely verrucose-areolate, rarely pubescent or tomentose. Ascospores brown, ellipsoid-fusiform, simple at first, polaribilocular at maturity, 22-30 × 6.8-10.2 µm. Chemistry: Methyl evernate, tenuiorin, methyl lecanorate, methyl gyrophorate, hopane-6α,22-diol, (zeorin), 6α-16βdiacetoxyhopan-22-ol, 6α-acetoxyhopane-16β,22-diol, 6α-acetoxy-22-hydroxyhopan-23-oic acid, 6α-22dihydroxyhopan-23-oic acid, norstictic and stictic acids.

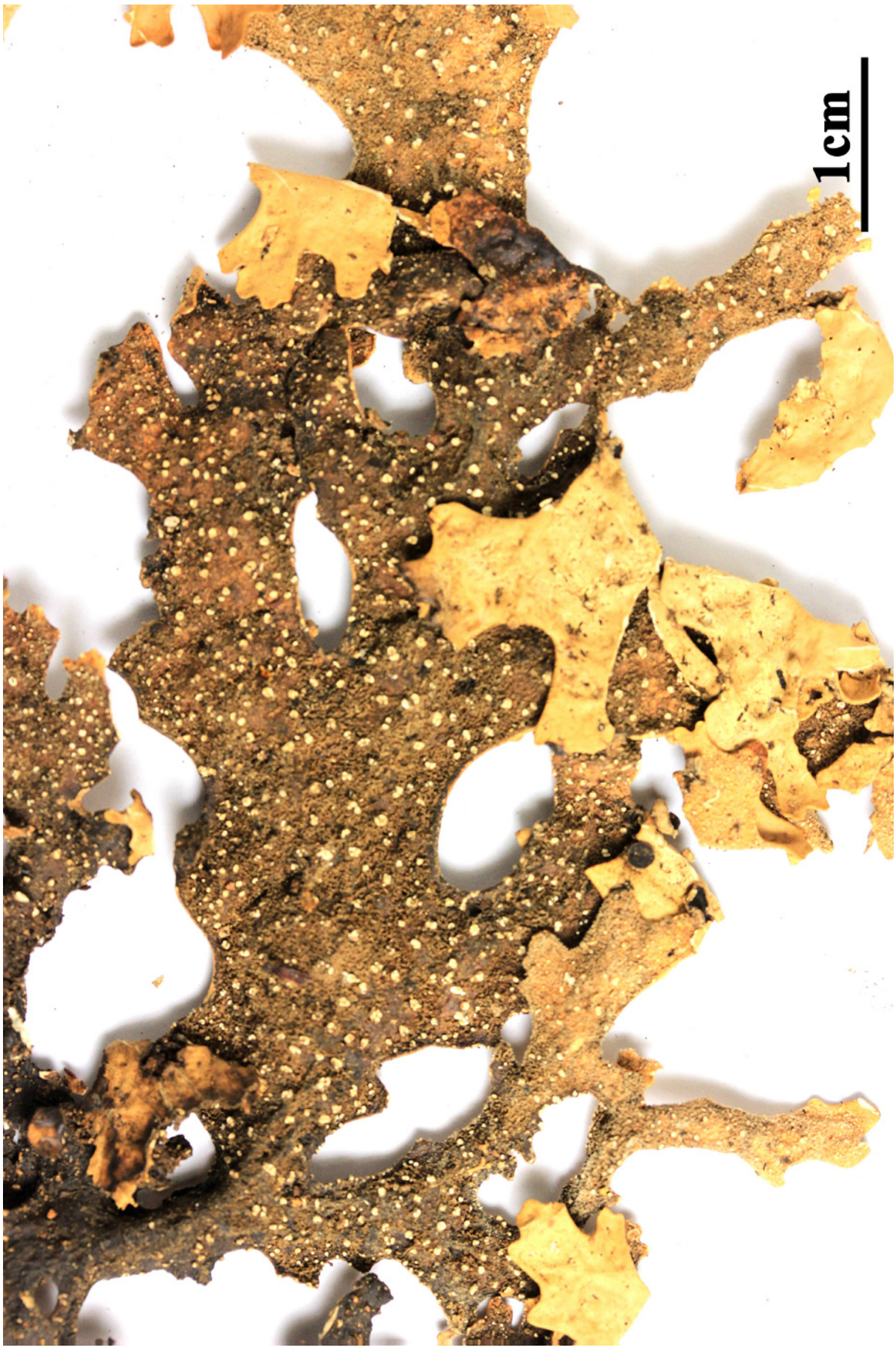
Pseudocyphellaria billardierei



Pseudocyphellaria billardierei



Pseudocyphellaria billardierei



Pseudocyphellaria billardierei

Pseudocyphellaria billardierei

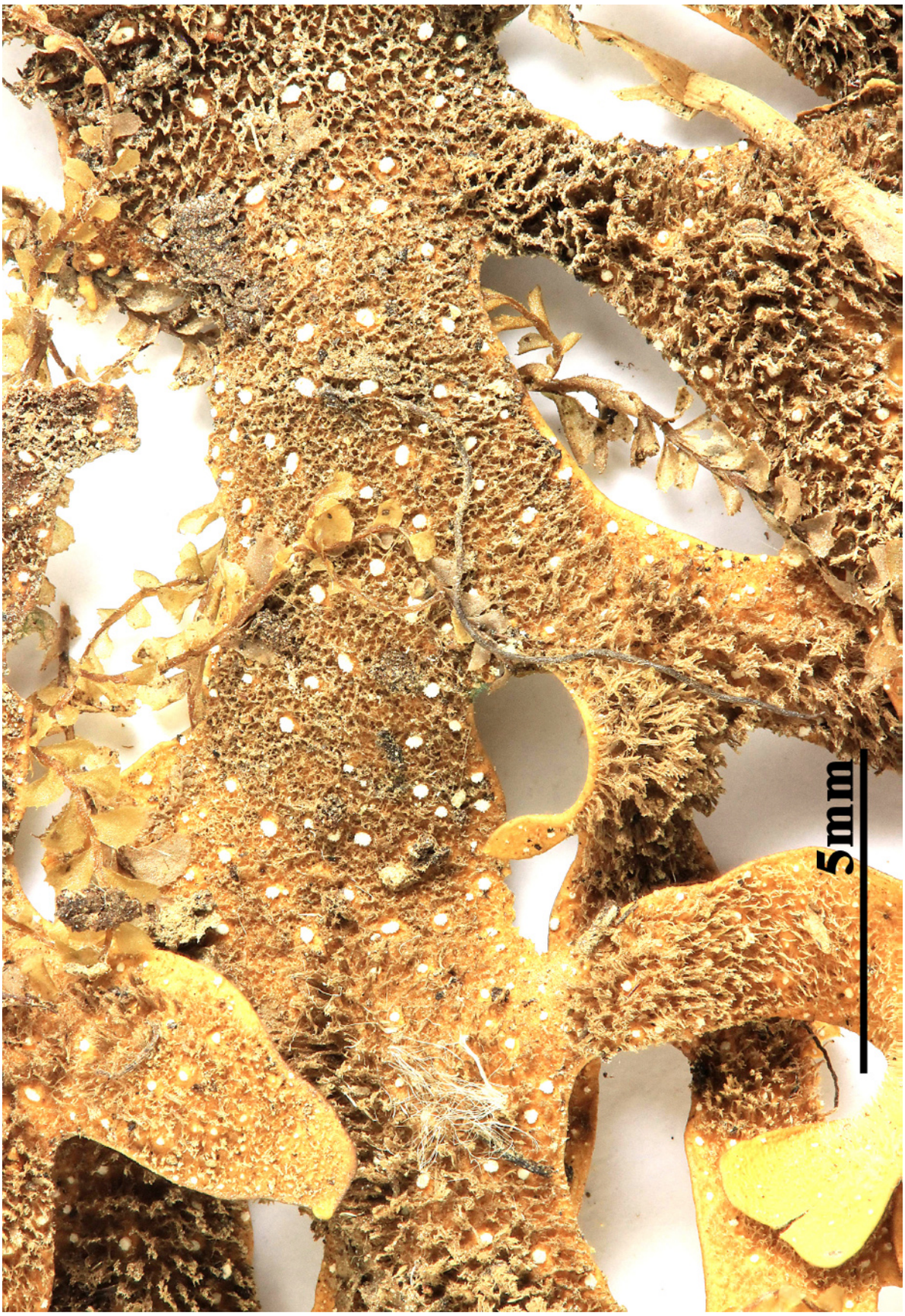
Pseudocyphellaria cinnamomea (A. Rich.) Vain., Philipp. J. Sci., C, Bot. 8(2): 120 (1913)
= *Sticta cinnamomea* A. Rich. 1832

[VZR320], Nova Zelandia, distr. Nelson, Brook Stream. In valle rivi "Brook Waterfalls", 160 m. Supra muscos in rupibus siliceis. Leg. W. Malcolm & A. Vězda, 18.4.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 320.

Thallus laciniate-lobate, loosely attached, to 10 cm diam. Lobes linear-elongate, 2-6(-8) cm long, narrow, 3-5(-8) mm wide, laciniate, strap-shaped, subcanaliculate, irregularly to subdichotomously branched, loosely imbricate or discrete, margins entire, thickened below, subascendent. Upper surface dark slate-blue or yellowish-blue when wet, minutely maculate (×10 lens), cinnamon-brown or yellowish when dry, smooth, often with pale brownish or white spots or blotches, matt, without soredia, isidia, phyllidia or pseudocyphellae. Medulla white. Photobiont blue-green. Lower surface whitish to yellowish-buff, darker centrally, uniformly tomentose to margins, tomentum silky, rather short, pale at margins, darker centrally, conspicuously ribbed, costate centrally. Pseudocyphellae small, white, punctiform, scattered, sunk in tomentum, 0.1-0.2 mm diam., flat. Apothecia laminal, ± sessile, 0.4-4.0 mm diam., disc plane or subconvex, dark red-brown or blackening, margins thin, pale, crenulate, obscuring disc when young, excluded with age, thalline exciple granular-verrucose. Ascospores brown, oblong-fusiform, 1-3-septate, (22-)24-30(-33) × 8-11 µm. Chemistry: 7β-acetoxyhopane-22-ol, hopane-15α,22-diol, ± gyrophoric acid.

Pseudocyphellaria cinnamomea

Pseudocyphellaria cinnamomea

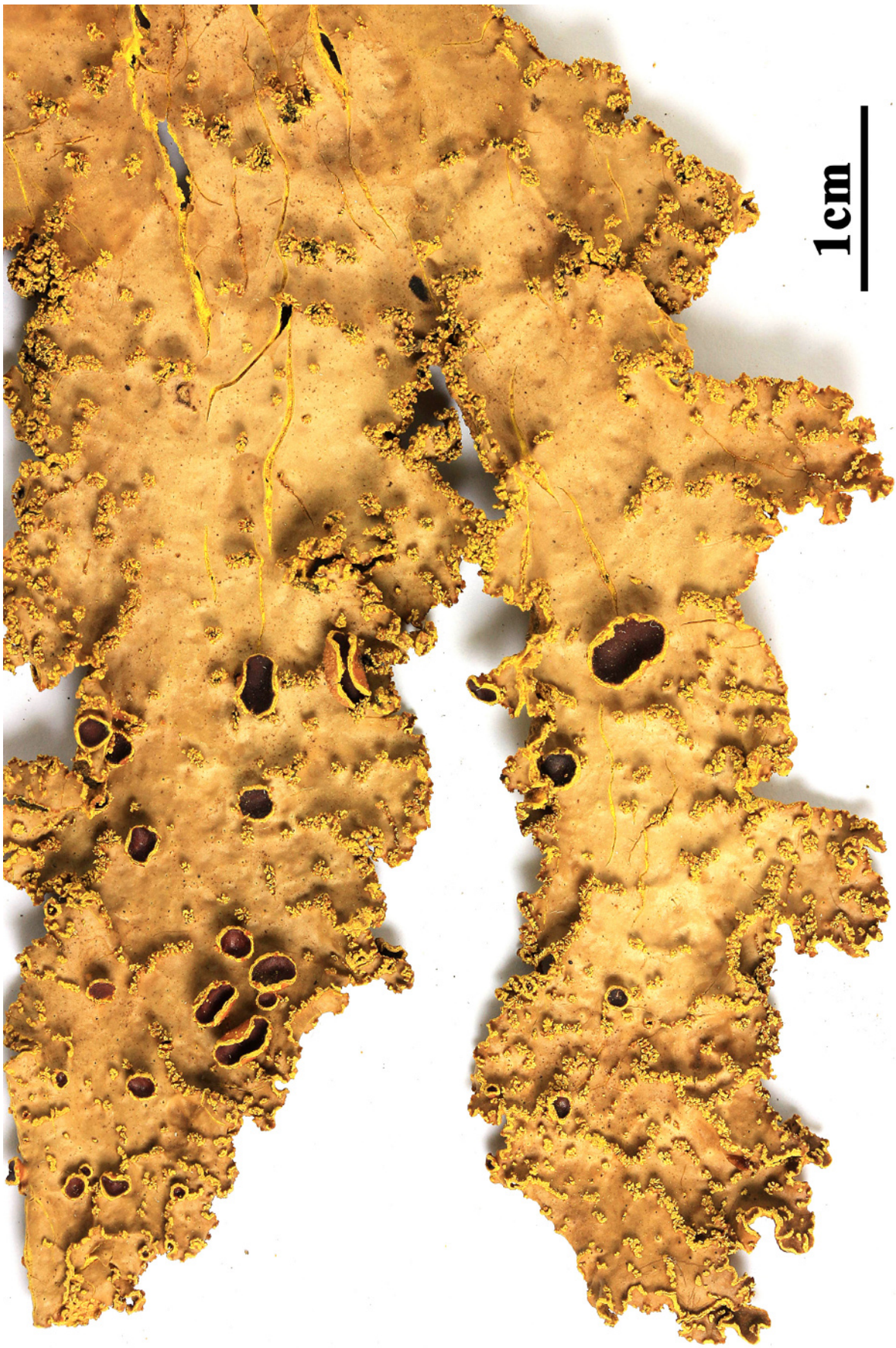


Pseudocyphellaria cinnamomea

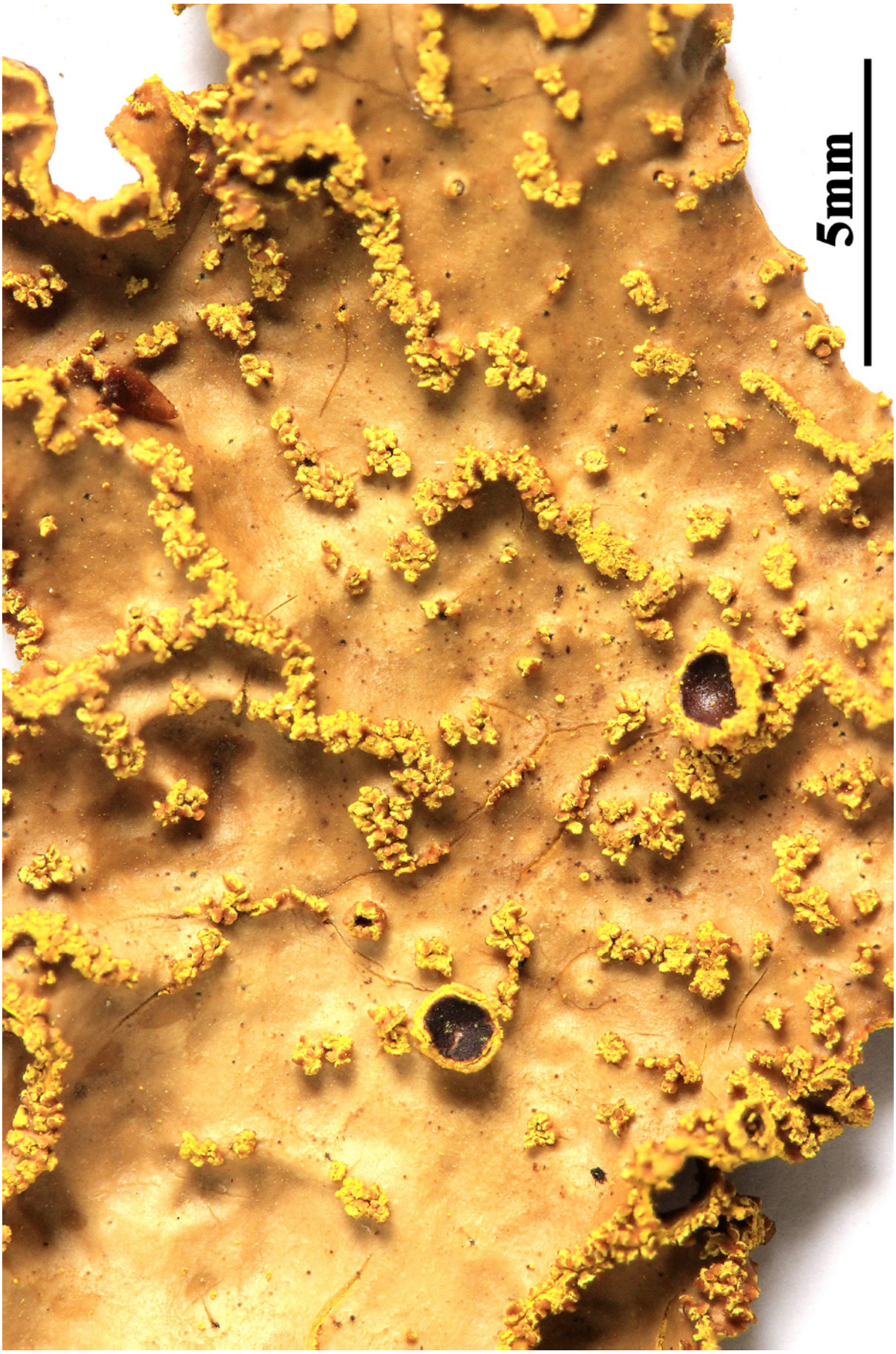
Pseudocyphellaria colensoi (C. Bab.) Vain., Résult. Voy. Belgica, Lich.: 28 (1903)
= *Yarrumia colensoi* (C. Bab.) D.J. Galloway, Phytotaxa 198(1): 55 (2015)
= *Lobaria colensoi* (C. Bab.) Trevis., Lichenoth. Veneta 1-2: no. 75 (1869)
= *Sticta colensoi* C. Bab., in Hooker, Bot. Antarct. Voy. Erebus Terror 1839-1843, II, Fl. Nov.-Zeal.: 274 (1855)
= *Sticta urvillei var. colensoi* (C. Bab.) Nyl., Syn. meth. lich. (Parisiis) 1(2): 360 (1860)

[VZR205], Nova Zelandia. South Island, via Rainbow, 1300 m, 41°53.1' austr., 172°51.5' orient. Ad corticem arborum (*Notofagus menziesii*). Leg & det. W. Malcolm, 21.1.1996. EX A. VěZDA: EX LICHENES RARIORES EXSICCATI NR. 256.

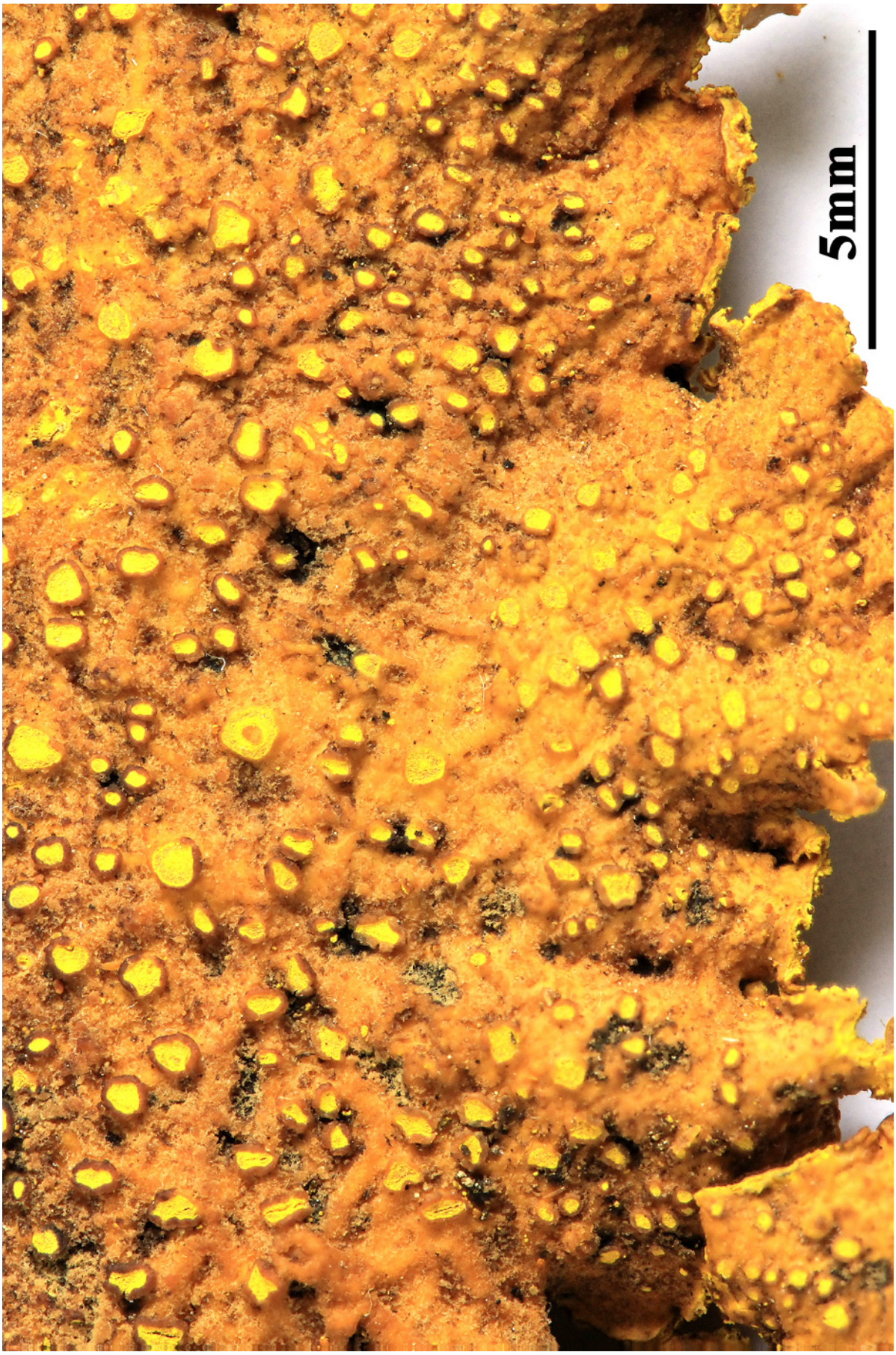
Thallus orbicular to spreading often ± pendulous, 8-20(-30) cm diam. Lobes rounded to linear-enlongate, 10-25 mm wide, to 12 cm long, ± irregularly incised, margins often notched or crenulate, ± ragged or with coarse to verruciform-granular to flattened isidia. Upper surface bright green or yellowish-green or tinged pale bluish-green when wet, pale greenish-grey when dry, slightly undulate to very shallowly faveolate, matt or glossy, minutely scabrid-areolate (×10 lens), occasionally cracked, lacerate, isidiate. Isidia coarse, verruciform-granular or subcoralloid, abraded at apices and exposing yellow, medulla, appearing ± sorediate, marginal and laminal. Medulla yellow. Photobiont green. Lower surface thinly white-tomentose, ± bullate, pale yellowish-buff. Cephalodia in prominent rounded warts. Pseudocyphellae numerous, yellow, crowded, raised in verrucae, 0.1-0.2 mm diam. Apothecia sparse to frequent, 2-10 mm diam., pedicellate, laminal, rarely marginal, disc red-brown, concave to plane, matt, often fissured, with eroded, verruciform-isidiate margins, thalline exciple prominent, pale, verrucose-areolate. Ascospores 1-3-septate, colourless, fusiform-ellipsoid (30-)34-40 × 8-11 µm. Chemistry: Pulvinic dilactone, pulvinic acid, calycin, polyporic acid, 2α,3β,22α-triacetoxystictane, 22α,hydroxystictane-3-one (±), 2α-3β-diacetoxystictane-22α-ol, stictane-3β,22αdiol (±), 2α-acetoxystictane-3β,22,α-diol, 3β-acetoxystictane-2α,22α-diol (±), stictane-2α,3β,22α,-triol (±).



Pseudocyphellaria colensoi



Pseudocyphellaria colensoi



Erioderma barbellatum

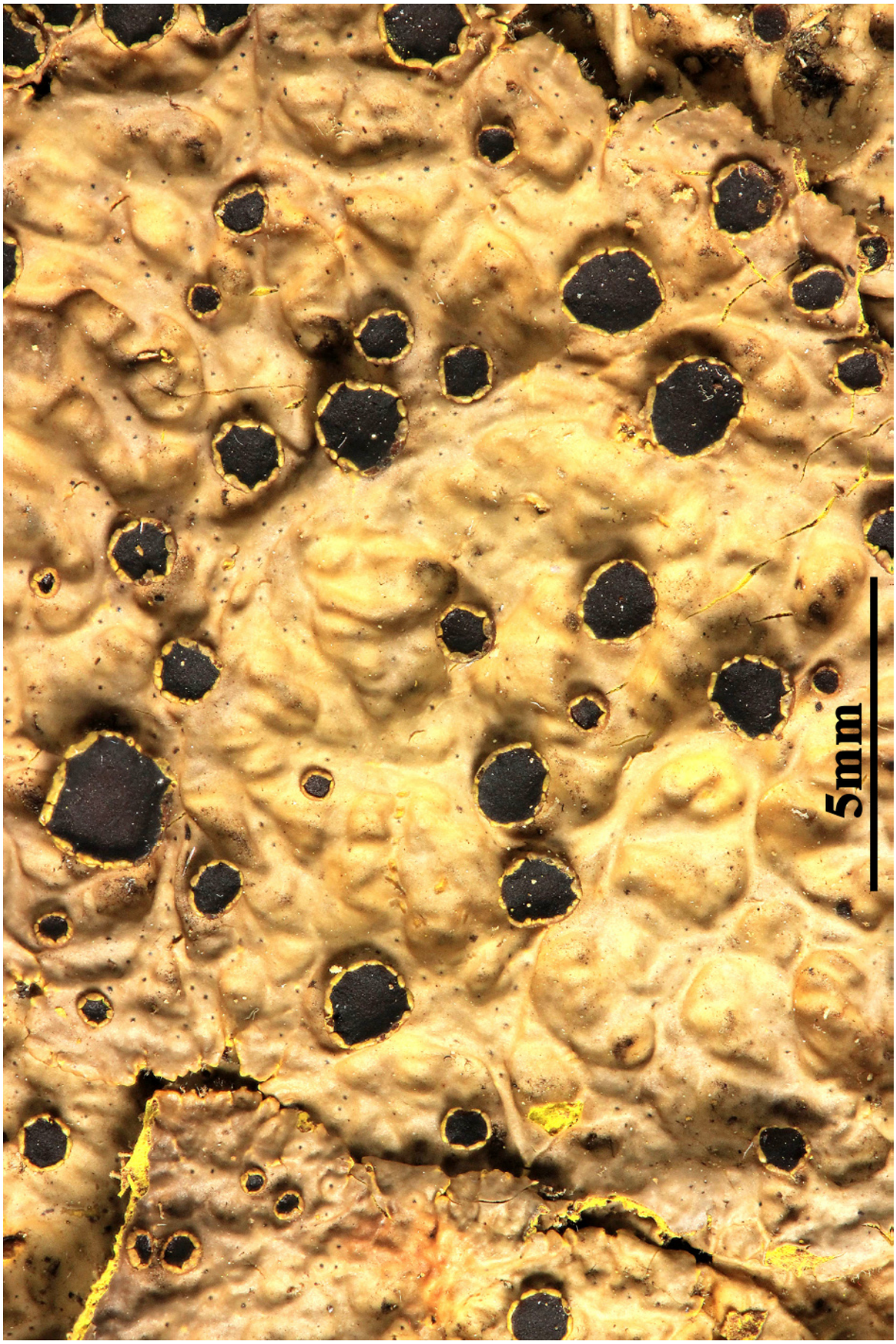
Pseudocyphellaria coronata (Müll. Arg.) Malme, Bih. K. svenska VetenskAkad. Handl., Afd. 3 25(no. 5): 29 (1899)
= *Yarrumia coronata* (Müll. Arg.) D.J. Galloway, Phytotaxa 198(1): 55 (2015)
= *Lichen filix * orygmaea* (Ach.) Lam., Encycl. Méth., Bot. Suppl. (Paris) 3(2): 421 (1813)
= *Lobaria hirta* Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 40 (1896)
= *Lobaria orygmaea* (Ach.) Trevis., Lichenoth. Veneta 1-2: no. 75 (1869)
= *Lobaria urvillei* (C. Bab.) Trevis., Lichenoth. Veneta 1-2: no. 75 (1869)
= *Pseudocyphellaria durvillei* (Delise) Vain., Hedwigia 38(Beibl.): (187) (1899)
= *Pseudocyphellaria hirta* (Hellb.) D.J. Galloway & P. James, Lichenologist 9(2): 95 (1977)
= *Pseudocyphellaria orygmaea* (Ach.) Malme, Bih. K. svenska VetenskAkad. Handl., Afd. 3 25(no. 5): 28 (1899)
= *Pseudocyphellaria orygmaea* var. *urvillei* (C. Bab.) Malme, Bih. K. svenska VetenskAkad. Handl., Afd. 3 25(no. 5): 28 (1899)
= *Sticta coronata* Müll. Arg., Flora, Regensburg 62: 163 (1879)
= *Sticta durvillei* Delise, Hist. Lich. Sticta: 170 (1825) [1822]
= *Sticta endochrysa* var. *urvillei* (C. Bab.) Müll. Arg., Miss. Sci. Cap Horn, Lich. (Paris) 5: 157 (1889)
= *Sticta hirta* Stirt., Trans. Glasgow Soc. Fld Nat. 1: 23 (1873)
= *Sticta orygmaea* Ach., Methodus, Sectio post. (Stockholmiæ): 278 (1803)
= *Sticta urvillei* C. Bab., in Hooker, Bot. Antarct. Voy. Erebus Terror 1839-1843, II, Fl. Nov.-Zeal.: 298 (1855)

[VZR226], Nova Zelandia. South Island, in monte Arthur, 41°11.5' austr., 172°44.5' orient., 1050 m. Ad truncum arborum (*Nothofagus menziesii*). Leg. & det. W. Malcolm, 12.2.1996. Ex A. VěZDA: LICHENES RARIORES EXSICCATI NR. 226.

Thallus ± orbicular, attached centrally, margins ± free, 5-12(-30) cm diam. Lobes large, rounded, 1.5-5.0 cm wide, margins minutely indented-incised, not sorediate or isidiate. Upper surface bright lettuce-green or glaucous-green or pale yellowish-green when wet, pale greyish-green when dry, cinnamon-brown or suffused purplish on storage, matt to rather waxy, glossy and often tinged brown marginally, uneven, ± deeply faveolate-reticulate, especially towards margins. Medulla yellow. Photobiont green. Lower surface complexly wrinkledverrucose, not or sparingly tomentose, pale yellowish or buff, blackish centrally. Pseudocyphellae yellow to reddish-yellow, to 0.6 mm diam., round to irregular, crowded, papillate, ± bursting at apices.Apothecia small 1-2

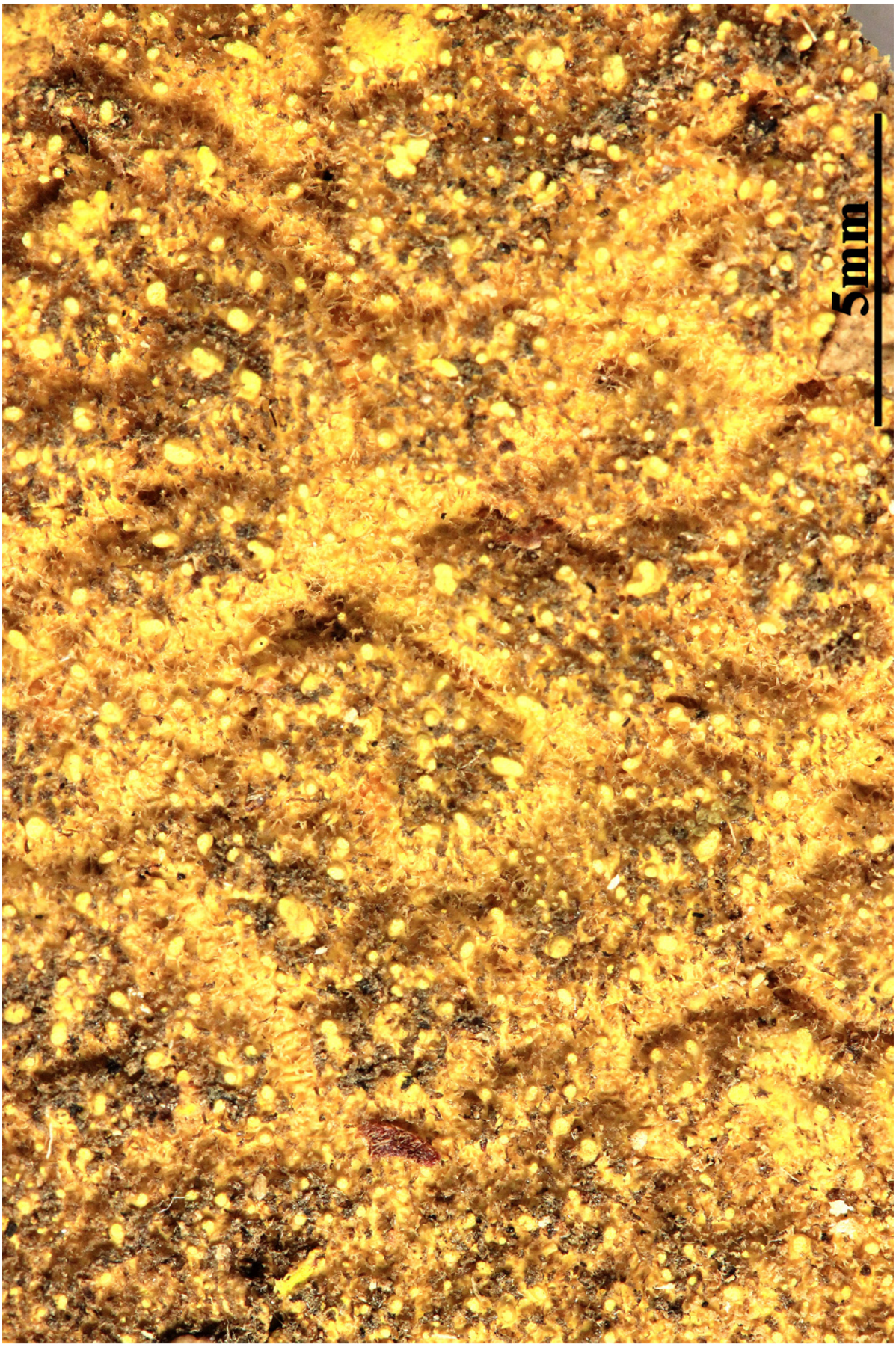
mm diam., abundant, contiguous or scattered, often crowded, disc matt, red-brown to blackish, convex to plane, concave when young, margins thin, crenate or denticulate-coronate, irregular, not isidiate, thalline exciple smooth, glossy. Ascospores fusiform, 1-3-septate, colourless, 25-36 × 7-11 µm. Chemistry: Pulvinic dilactone, pulvinic acid, calycin, polyporic acid, and unidentified pigment (red in acetone) 2α,3β,22α-triacetoxystictane, 22α,hydroxystictane-3-one (±), 2α3β-diacetoxystictane-22α-ol, stictane-3β,22α-diol (±), 2αacetoxystictane-3β,22αdiol, 3β-acetoxystictane-2α,22α-diol (±) and stictane-2α,3β,22α-triol (±).

Pseudocyphellaria coronata



Pseudocyphellaria coronata

Pseudocyphellaria coronata

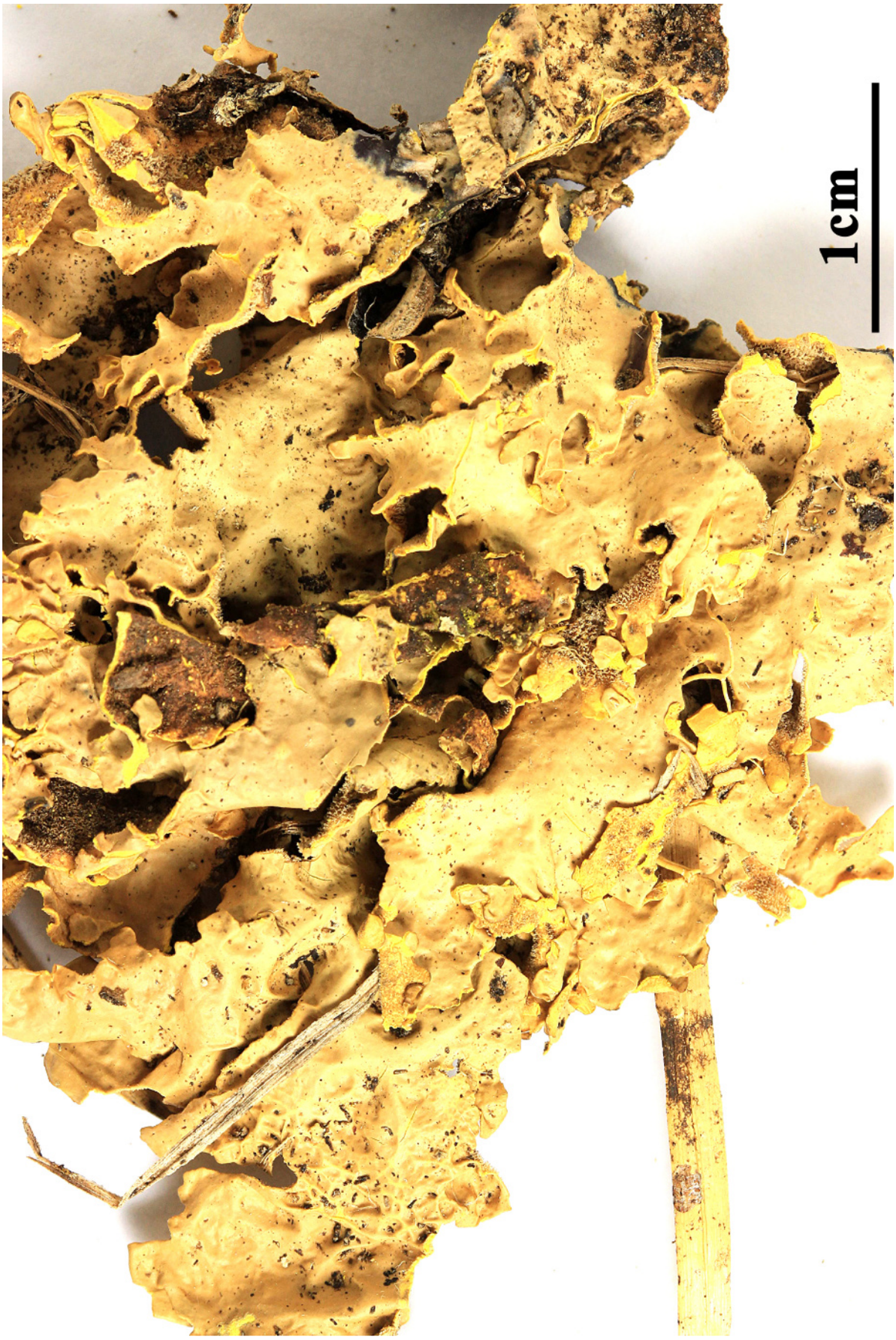


Pseudocyphellaria coronata

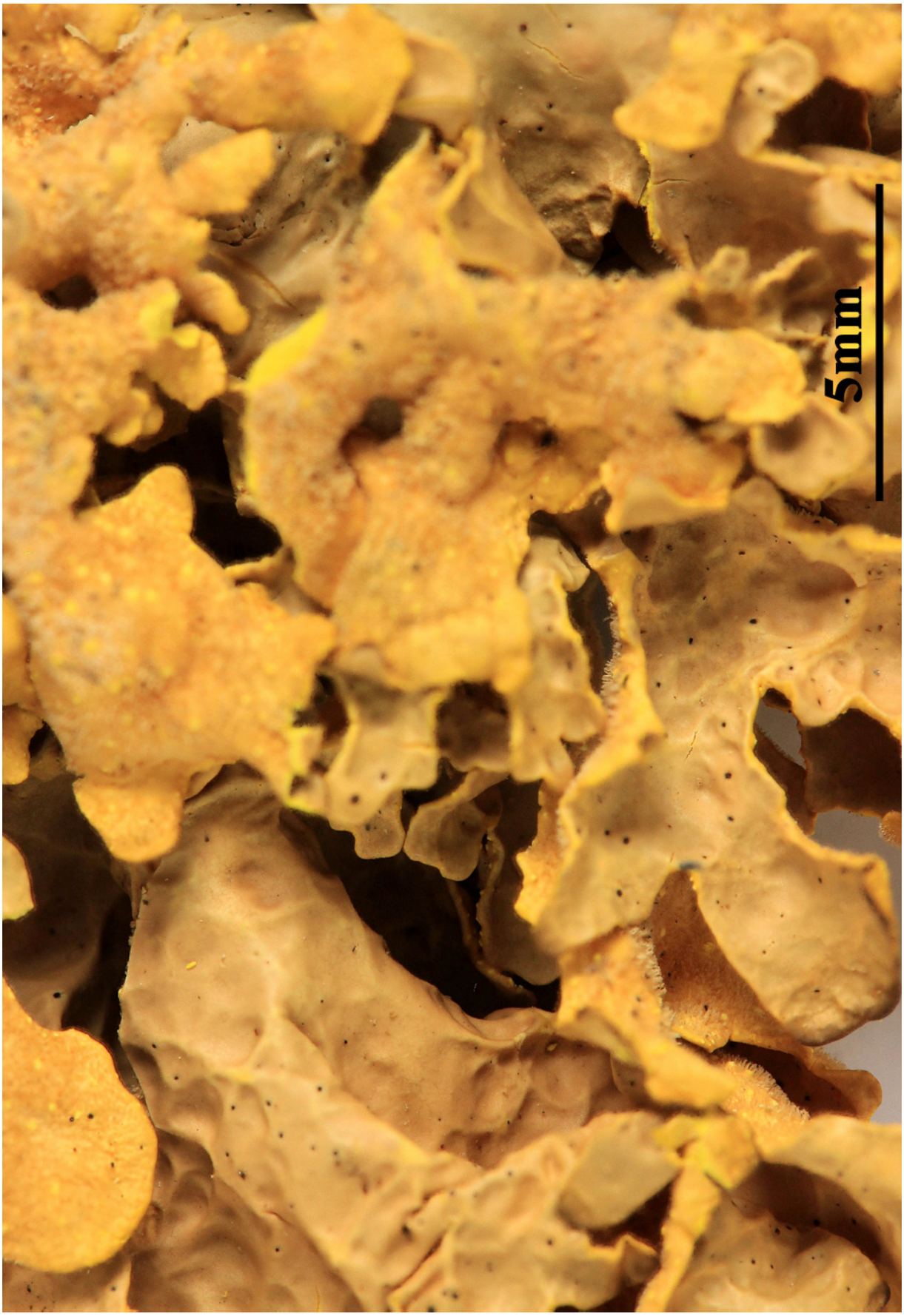
Pseudocyphellaria degelii D.J. Galloway & P. James, in Galloway, James & Wilkins, Lichenologist 15(2): 141 (1983)
= *Podostictina* degelii (D.J. Galloway & P. James) B. Moncada & Lücking, Bryologist 118: 122 (2015)

[VZR268], Nova Zelandia, Nelson, Kahumarangi National Park, in summo montis supra casam alpinam Mt. Arthur, 1400 m. In ramulis fruticum. Leg. F. Ceni, W. Malcolm & A. Vězda, 2.5.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 268.

Thallus orbicular to irregularly spreading, 5-20(-30) cm diam., loosely attached. Lobes numerous, rounded to elongate-laciniate, very variable, 1-1.5(-2.5) cm wide and 2-3(-5) cm long, margins entire, ± sinuous or slightly notched, not phyllidiate, often subascendent, with punctate, yellow pseudocyphellae, sometimes ± canaliculate, rarely plane. Upper surface bright lettuce green, glaucous-green or pale yellowish-green when wet, pale yellowish-grey when dry becoming ochre-brown on storage, undulate or shallowly reticulate-faveolate, interconnecting ridges low, rounded, smooth, matt or shining, sometimes ± areolate-scabrid at or near lobe apices, minutely maculate (×10 lens). Medulla yellow. Photobiont green. Lower surface irregularly wrinkled, pale yellowish to ochre-brown at margins, dark red-brown to blackened centrally, often glabrous to sparsely or patchily tomentose to margins, tomentum silky, pale grey or whitish to medium brown, often ± tufted or ragged. Pseudocyphellae scattered, inconspicuous, sparse to numerous, punctiform, 0.5-1.5 mm diam., low-conical, decorticate area yellow. Apothecia sparse, often absent from well-developed thalli, sessile to subpedicellate, laminal, rarely marginal, 3-5(-10) mm diam., disc not fully exposed until late in development, partly obscured at first by inflexed, scabrid-verrucose exciple, disc red-brown, finely rugose, shining, subconcave to plane, thalline exciple conspicuous, persistent, pale whitish to buff, translucent when wet, very coarsely verrucose-areolate-scabrid. Epithecium granular, pale yellowish-brown, 13-22 µm tall. Hymenium colourless, 80-110 µm tall. Hypothecium c. 100 µm thick, pale yellowish-brown. Paraphyses conglutinate, simple, filiform, 1.5 µm thick, apices swollen to 5 µm thick, yellow-brown. Asci clavate 70-90 × 10-22 µm. Ascospores biseriate, ellipsoid-fusiform, apices pointed, straight or slightly curved, colourless, 1-3septate, 3-septate at maturity, (20-)25-34(-39) × 6.8-8.3 µm. Chemistry: Pulvinic dilactone, pulvinic acid, calycin, stictane-3β,22αdiol (±), 22α-hydroxy3,4,secostict-4(23)-ene-oic acid, 22α,hydroxy-3,4-secostict-4(23)-en-3-ol (±), 3acetoxy-3,4-secostict-4(23)-en-22α-ol (±).



Pseudocyphellaria degelii



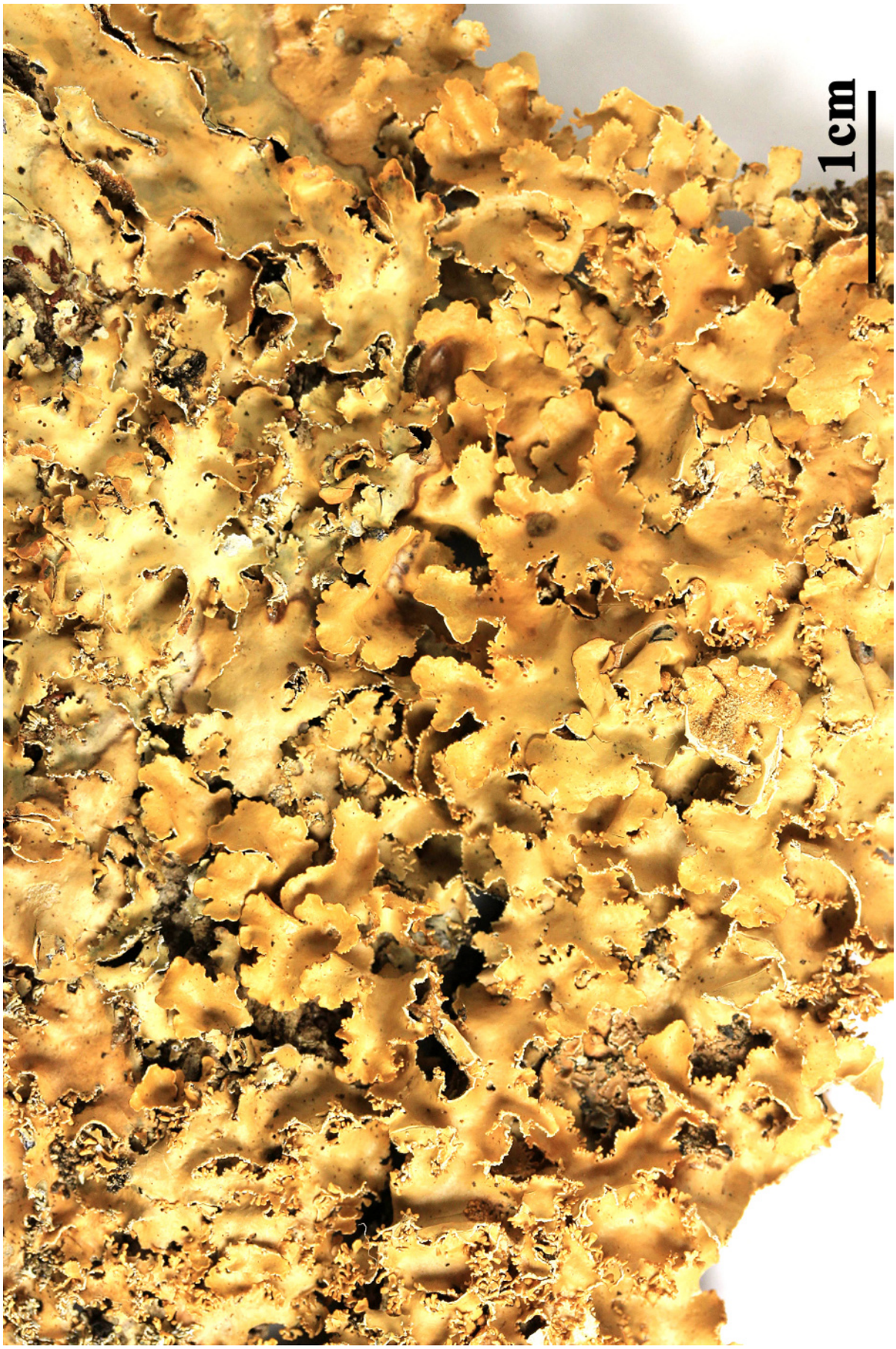
Pseudocyphellaria degelii

Pseudocyphellaria degelii

Pseudocyphellaria delisea (Delise) D.J. Galloway & P. James, Lichenologist 12(3): 297 (1980)
= *Sticta delisea* Delise 1825
= *Pseudocyphellaria glabra* (Hook. f. & Taylor) C.W. Dodge 1948

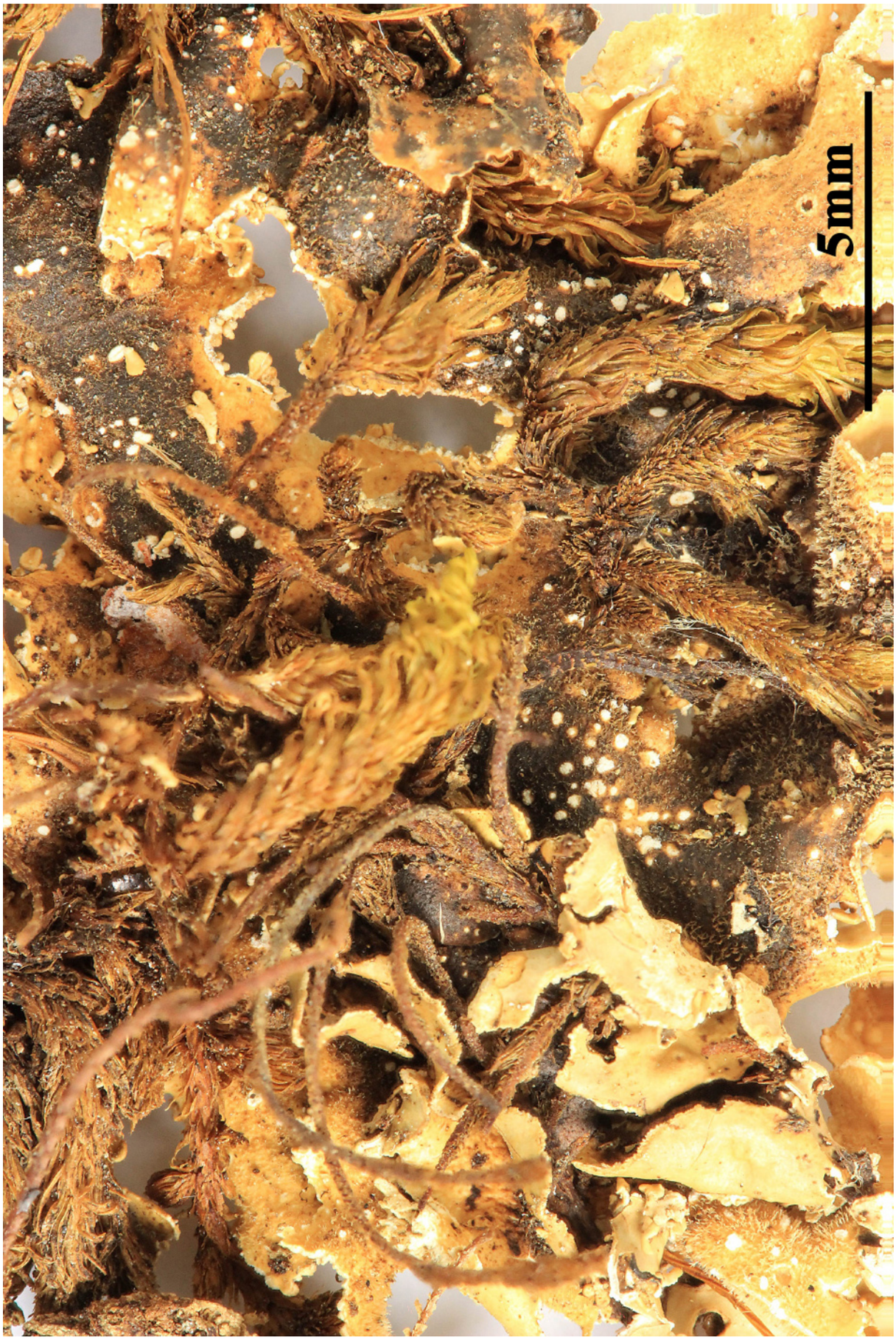
[VZR305], Nova Zelandia, South Island. Distr. Canterbury, Christchurch, transitus Lewis Pass. Nina Valley Track, 700 m. In silva virginea ad truncum arboris (*Podocarpus*). Leg. W. Malcolm & A. Vězda. Ex A. VěZDA: LICHENES RARIORES EXSICCATI NR. 305.

P. delisea is a very polymorphic species of wide distribution occurring in Australia, Tasmania, New Zealand, the subantarctic islands, and in South America. It is characterized by marginal and sometimes also laminal ± terete isidia, a shiny, glabrous upper surface of a yellowish-green colour, often cracked, eroded, browned or blackened in exposed habitats. Forms of this taxon comprise a continuum of individuals with thin, small lobes with indented margins to those with broad and thick lobes. The nomenclature of *P. delisea* has long been confused, with South American collections being widely identified as *P. freycinetii*, a larger species which lacks isidia. The great diversity of form shown by *P. delisea* is not reflected in any chemical variation, but seems rather an adaptation to changing habitat conditions.



Pseudocyphellaria delisea

Pseudocyphellaria delisea



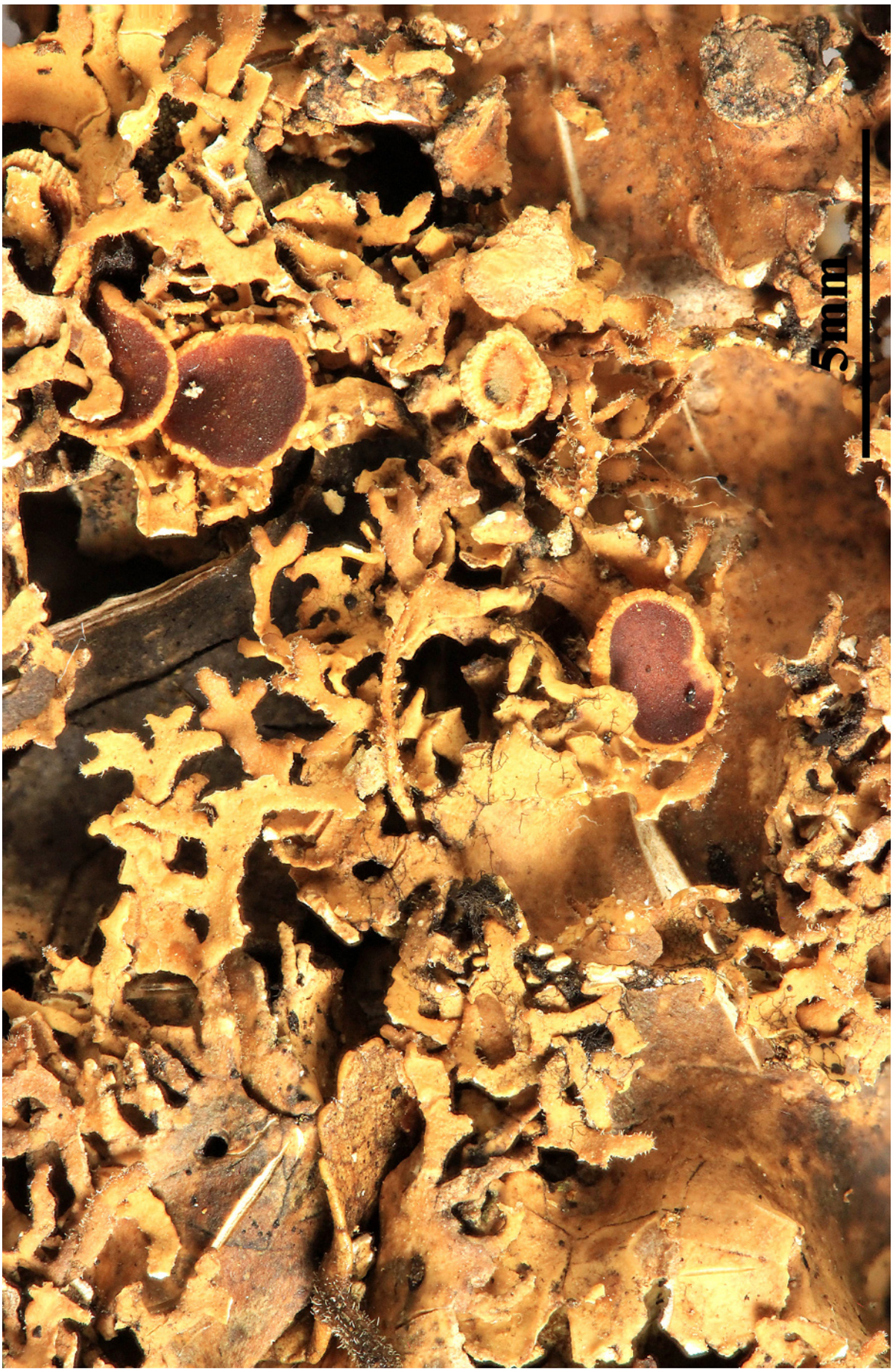
Pseudocyphellaria delisea

Pseudocyphellaria fimbriata D.J. Galloway & P. James, in Galloway, James & Wilkins, Lichenologist 15(2): 142 (1983)

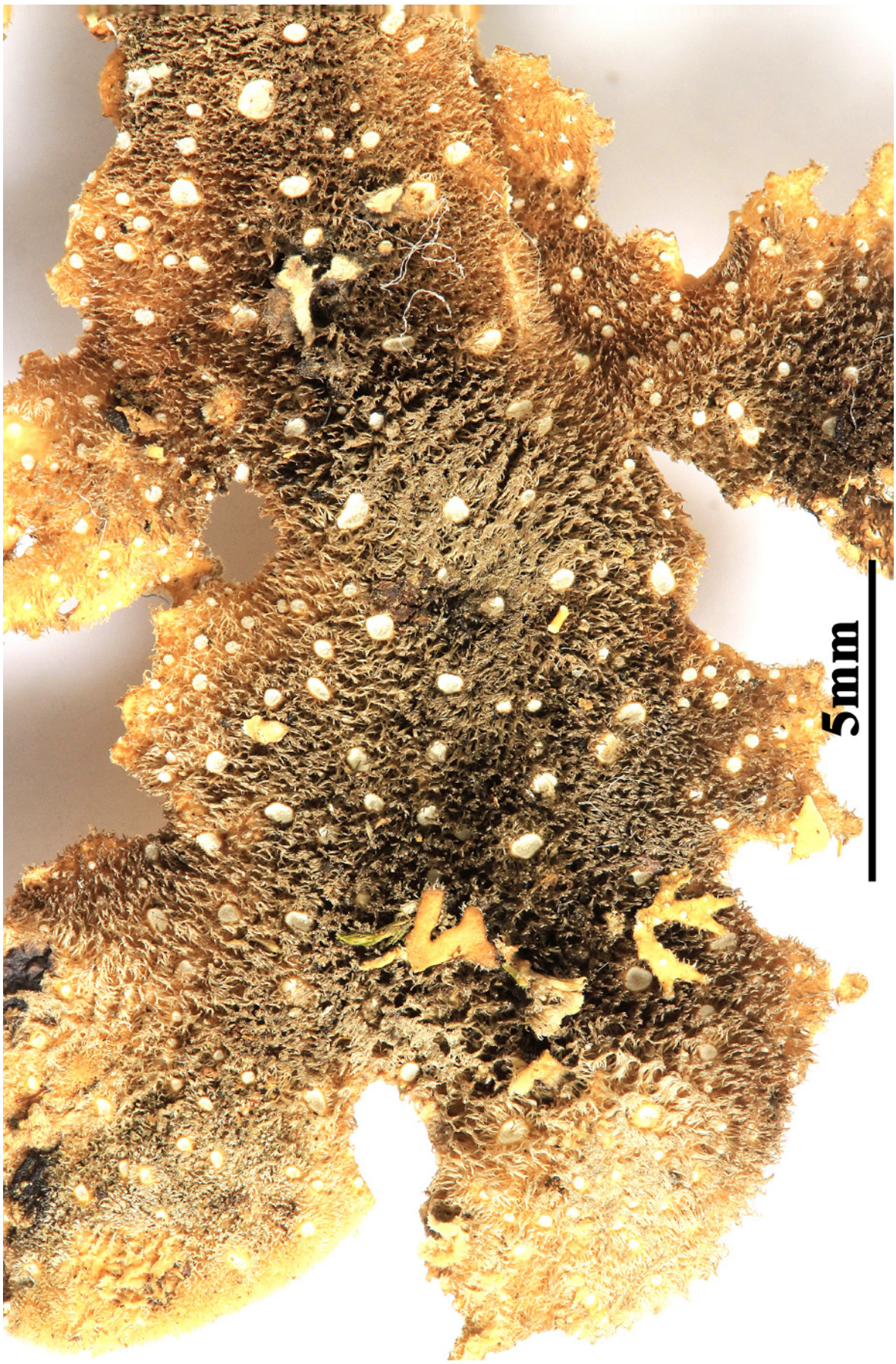
[VZR299], Nova Zelandia, distr. Nelson, Kahurangi National Park, secus viam inter stationem "Flora Carpark" et casam alpinam Mt. Arthur dictam, 1399 m. Ad corticem arborum. Leg. W. Malcolm & A. Vězda, 21.4.1997. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 299.

Thallus rather loosely attached, orbicular to spreading, to 25 cm diam. Lobes dissected, irregularly elongate-laciniate, branching subdichotomous to irregular or subimbricate, margins irregular, lacerate-denticulate, white-pubescent, subascendent, ± copiously phyllidiate. Upper surface bright lettuce-green when wet, yellowish-grey or olivaceous or brownish or reddish when dry, smooth, coriaceous to somewhat scabrid-areolate, even or weakly undulate, without soredia, maculae or pseudocyphellae. Phyllidia mainly marginal occasionally laminal, ± palmately divided, flattened, dorsiventral, upper surface as in main lobes, ± finely white-pubescent, especially at apices. Medulla white, 350 µm thick, rather loose. Photobiont green, 10-13.5 µm diam., in a rather irregular layer, 100-150 µm thick. Apothecia rather sparse, sessile, marginal or submarginal, often associated with phyllidia, to 6 mm diam., disc red-brown to dark brown, smooth, matt, epruinose, with a thick, persistent, raised, crenulate-scabrid margin, thalline exciple massive, verucose-areolate, red-brown. Ascospores 1-septate, brown, fusiform-ellipsoid, 20-25 × 8-11 µm. Chemistry: 7β-acetoxyhopan-22-ol, hopane-15α,22-diol, hopane-7β,22-diol (tr.).

Pseudocyphellaria fimbriata



Pseudocyphellaria fimbriata



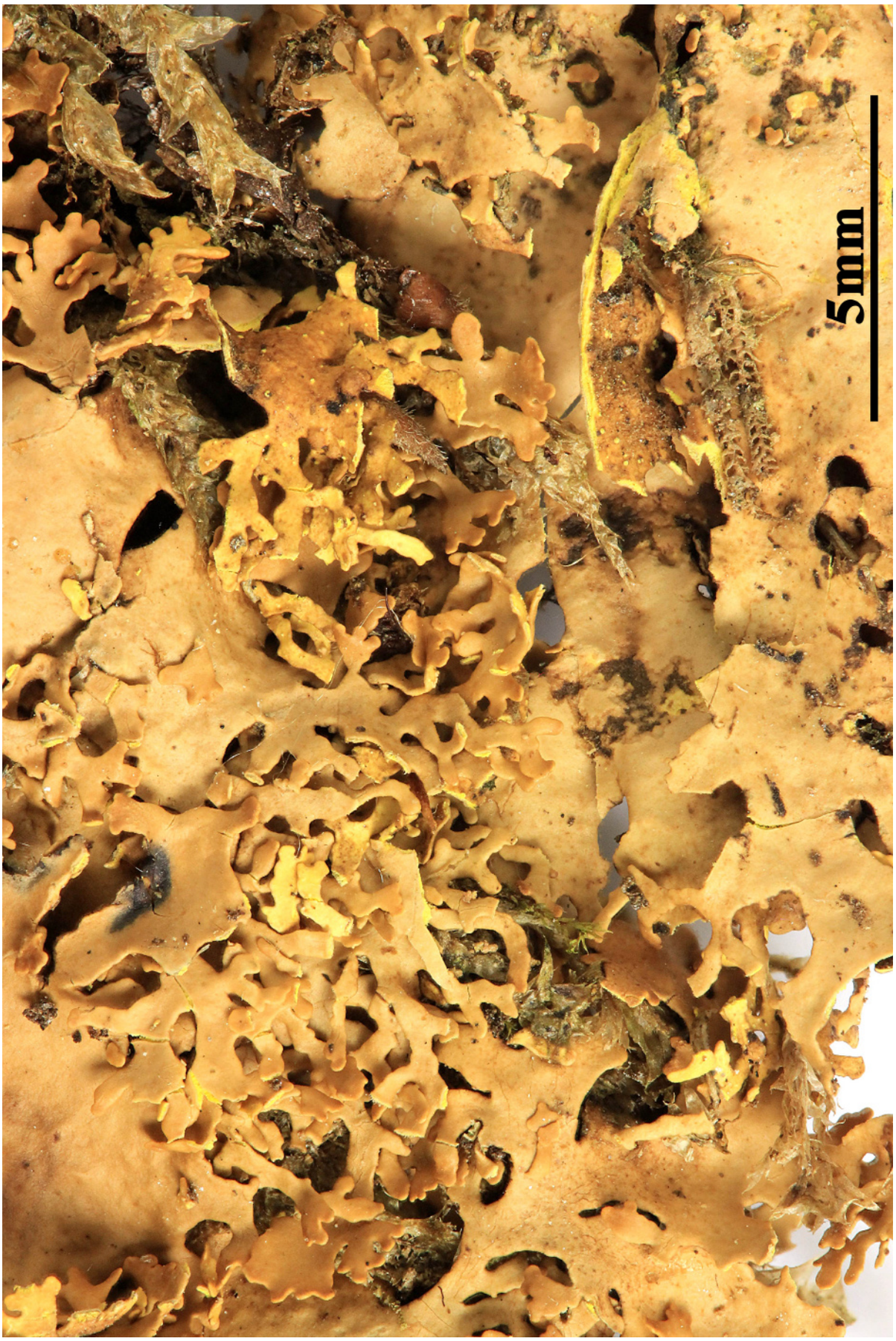
Pseudocyphellaria fimbriata

Pseudocyphellaria flavicans (Hook. f. & Taylor) Vain., Philipp. J. Sci., C, Bot. 8(2): 115 (1913)
= *Podostictina flavicans* (Hook. f. & Taylor) B. Moncada & Lücking, Bryologist 118: 122 (2015)
= *Lobaria urvillei* var. *flavicans* (Hook. f. & Taylor) Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 35 (1896)
= *Pseudocyphellaria durvillei* var. *flavicans* (Hook. f. & Taylor) Vain., Hedwigia 38(Beibl.): (187) (1899)
= *Pseudocyphellaria orygmaea* var. *flavicans* (Hook. f. & Taylor) Malme, Bih. K. svenska VetenskAkad. Handl., Afd. 3 25(no. 5): 28 (1899)
= *Sticta endochrysa* var. *flavicans* (Hook. f. & Taylor) Müll. Arg., Flora, Regensburg 71: 136 (1888)
= *Sticta flavicans* Hook. f. & Taylor, London J. Bot. 3: 648 (1844)
= *Sticta urvillei* var. *flavicans* (Hook. f. & Taylor) Nyl., Syn. meth. lich. (Parisiis) 1(2): 360 (1860)

[VZR327], Nova Zelandia. South Island, distr. Nelson: Kahurangi National Park, secus viam inter "Flore Carpark" et casam alpinam Mt. Arthur dictam, 1200 m. Leg. W. Malkolm & A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 327.

Thallus orbicular to spreading, rather irregular, 5-10(-20) cm diam., ± closely attached to loosely straggling. Lobes broad, rounded, to rather ragged, imbricate centrally, contiguous to subimbricate at apices, margins crisped, variously notched or incised, isidiate. Upper surface bright green to yellow green when wet, pale yellowish-grey when dry, undulate, uneven, slightly and shallowly faveolate, shining, smooth, ± isidiate. Isidia flattened, coralloid-branched, marginal at first, then laminal, often dense. Medulla yellow. Photobiont green. Lower surface pale yellowish or creamish at margins, glabrous or minutely pubescent, darker yellow to brownish centrally. Pseudocyphellae yellow. Apothecia sparse to absent, subpedicellate, disc brown-black, matt, smooth, to 5 mm diam., concave to plane, margins pale or whitish, translucent when wet, crenulate-dentate, thalline exciple massive, white, corrugate-verrucose, obscuring disc when young, often ± short white-tomentose. Ascospores colourless, fusiform, 1-3-septate, 24-30 × 5-7 µm. Chemistry: Pulvinic acid, pulvinic dilactone, calycin, 3β,22α-diacetoxystictane (±), 2α,3β,22α-triacetoxystictane, 2α,3β-diacetoxystictane-22-one (±), 2α,3β-diacetoxys-tictan-22-ol (±), 3β-acetoxystictane-22-ol (±), stictane-3β,22α,-diol (±),2α -acetoxystictane-3β,22α,-diol, 3β-acetoxystictane-2α,22α,-diol, stictane-2β,3β,22α-triol (±).

Pseudocyphellaria flavicans



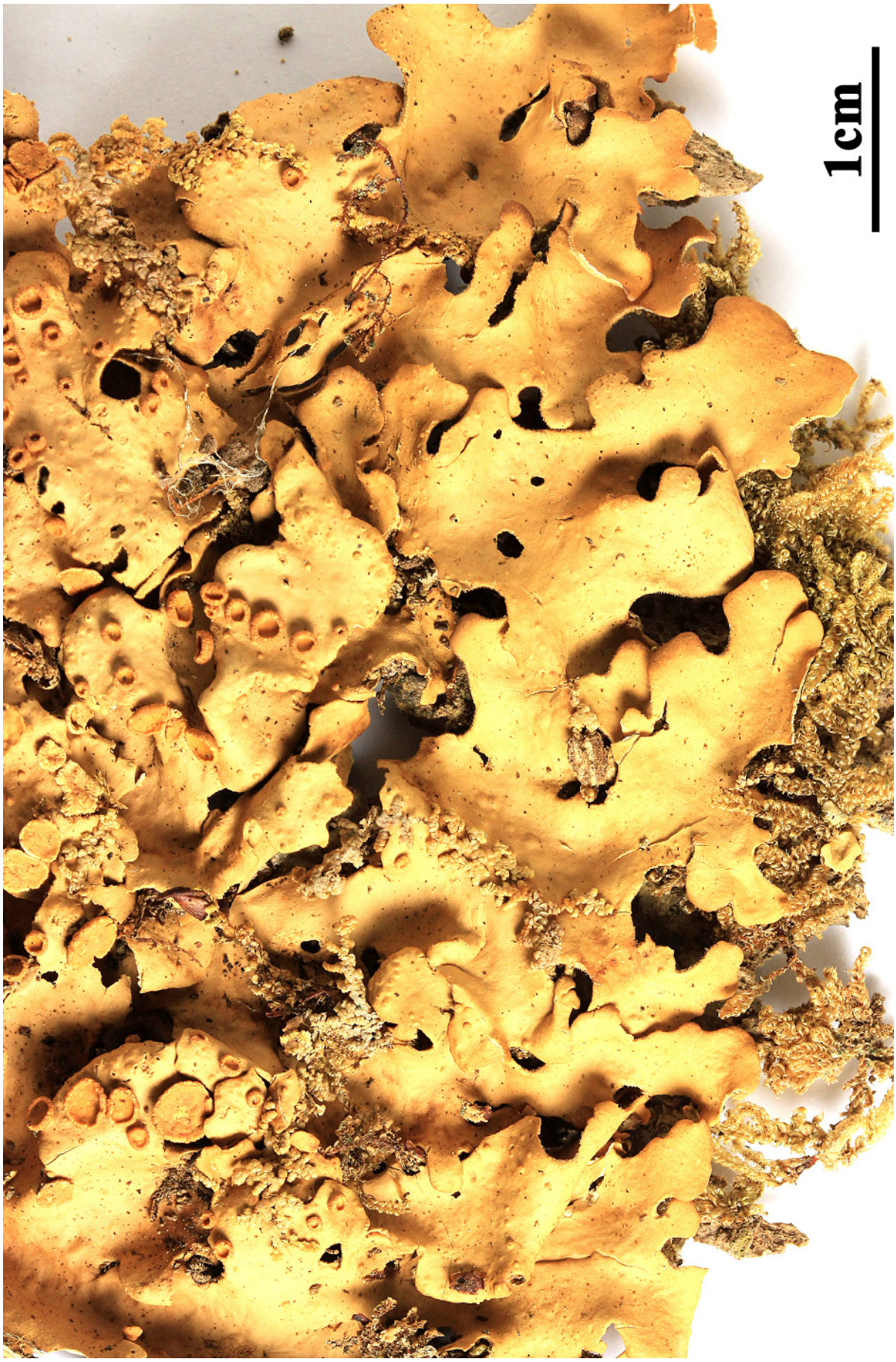
Pseudocyphellaria flavicans

Pseudocyphellaria flavicans

Pseudocyphellaria homoeophylla (Nyl.) C.W. Dodge, Nova Hedwigia 19(3-4): 489 (1971) [1970]
= *Sticta homoeophylla* Nyl. 1867

[VZR274], Nova Zelandia. South Island. distr. Nelson, Kahurangi National Park, regio montis Mt. Arthur, secus viam Flora Carpark casa alpina Mt.Arthur, 1250 m. Ad corticem arborum et ad terram. Leg. W. Malcolm & A. Vězda, 30.04.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 274.

Thallus orbicular to spreading, often in dense swards, 10-20(-40) cm diam., loosely attached. Lobes broad, 1-3 cm wide, linear-elongate, dior trichotomously branching, to 12 cm long, apices discrete, contiguous to imbricate centrally, margins entire, sinuous, apices rounded or shallowly notched, without isidia, soredia, sinuses semicircular. Upper surface coriaceous, greenish or olivaceous when wet, yellowish-green to pale yellowish-grey when dry, smooth, shallowly wrinkled, undulate, matt or shining, without isidia, soredia, maculae or pseudocyphellae. Medulla white. Photobiont green. Lower surface pale buff or whitish at margins, dark brown, or black centrally, ± evenly tomentose, glabrous-wrinkled at lobe apices, tomentum short, dense, brown. Pseudocyphellae white, conspicuous, numerous, scattered, often crowded, to 1 mm diam. Apothecia emergent, submarginal or marginal, sparse to moderately common, 4-6 mm diam., subpedicellate, disc red-brown, epruinose, concave to plane, margins crenulate, pale whitish, thalline exciple corrugate-scabrid. Ascospores colourless to pale brownish, fusiform, 1-3-septate, 24-32 × 5-9 µm. Chemistry: 7β-acetoxyhopane-22-ol, hopane-15α,22-diol, hopane-7β,22-diol, norstictic, constictic and stictic acids.



Pseudocyphellaria homoeophylla

Pseudocyphellaria homoeophylla

Pseudocyphellaria homoeophylla

Pseudocyphellaria maculata D.J. Galloway, in Galloway, James & Wilkins, Lichenologist 15(2): 143 (1983)

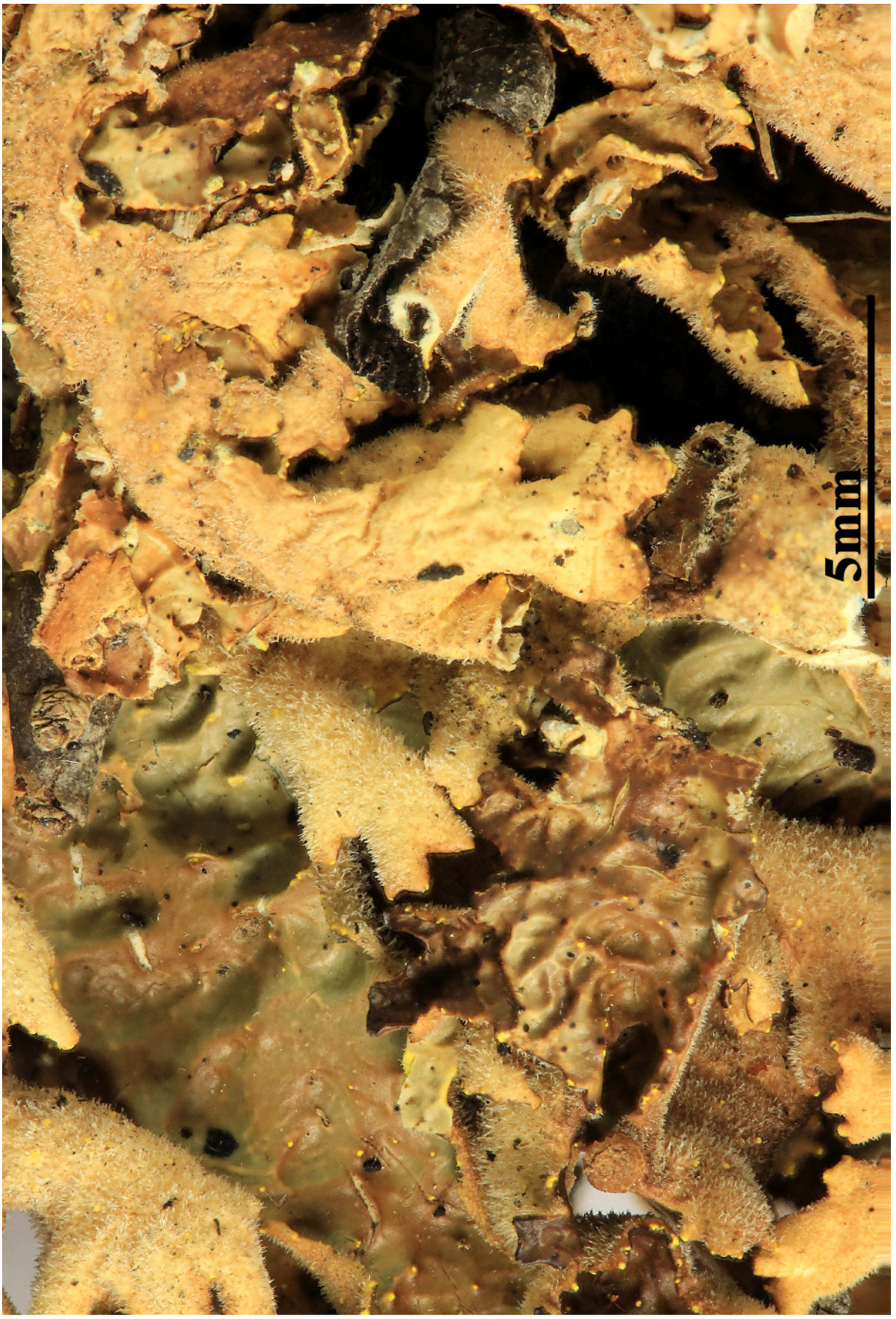
[VZR269], Nova Zelandia. Nelson, Kahurangi National Park, in summo montis supra casam alpinam Mt. Arthur, 1400 m. In ramulis fruticum. Leg. F. Ceni, W. Malcolm & A. Vězda, 2.5.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 269.

Thallus irregularly spreading, (2-)5-15 cm diam., loosely attached, corticolous. Lobes ± linear-elongate, subcanaliculate to plane, subdichotomously to irregularly or complexly branched, 1-10 mm wide and 0.5-5 cm long, margins entire, slightly thickened, occasionally ± ascending, rarely subdenticulate with raised, yellow pseudocyphellae. Upper surface shallowly to deeply faveolate, interconnecting ridges smoothly rounded or sharp, dark grey-blue when wet and conspicuously white-maculate in well-defined patterns (×10 lens), pale greyish or greenish-grey to greyish-buff when dry, sometimes suffused reddish- brown in parts, matt or slightly shining, often irregularly cracked, minutely scabrid-areolate in parts. Medulla white. Photobiont blue-green. Lower surface pale whitish-buff, distinctly wrinkled-bullate, ± evenly tomentose to margins, tomentum thin, silky, short, white or buff, thicker and darker (becoming brown) centrally. Pseudocyphellae minute, bright yellow, round, 0.05-0.3 mm diam., scattered, slightly raised above tomentum, decorticate area plane, margins not prominent. Apothecia marginal or submarginal, subpedicellate, 0.5-3.5 mm diam., plane to shallowly convex-undulate, disc in young stages obscured by margins, at maturity dark red-brown to black, matt, epruinose, margins denticulate, pale buff or flesh-coloured, often obscured by disc, exciple corrugate-scabrid, buff or pale flesh-coloured. Ascospores biseriate, brown, mainly polaribilocular, occasionally 3-septate, 20-30.6 × 8.3-10.2 µm. Pycnidia occasional to frequent, scattered, black, punctiform, minute. Chemistry: Calycin, pulvinic dilactone, pulvinic acid, tenuiorin, methyl lecanorate, gyrophoric acid (tr.), hopane-6α,22- diol, salazinic and consalazinic acids and an unidentified terpene.

Pseudocyphellaria maculata

Pseudocyphellaria maculata

Pseudocyphellaria macu-

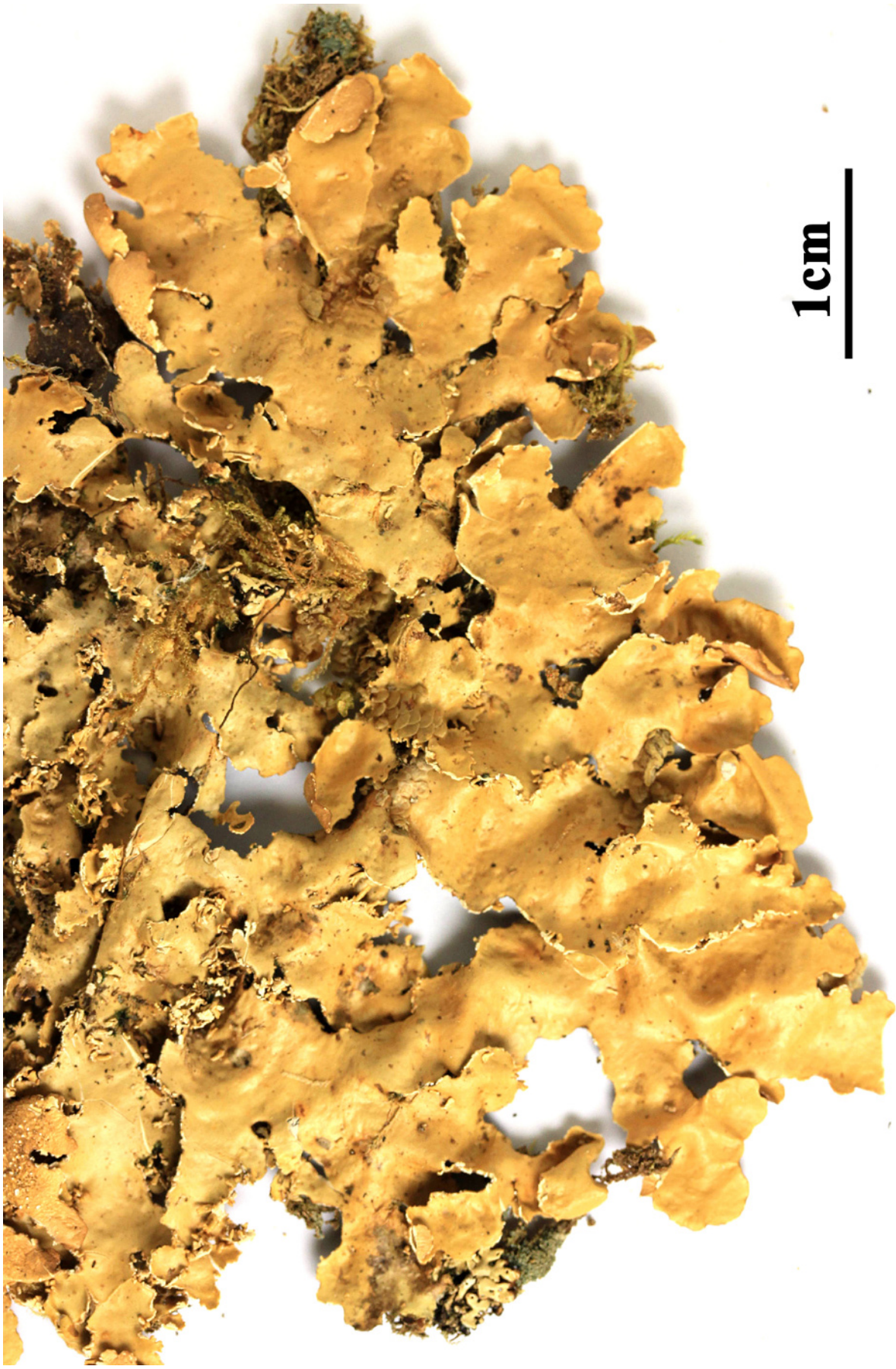


Pseudocyphellaria maculata

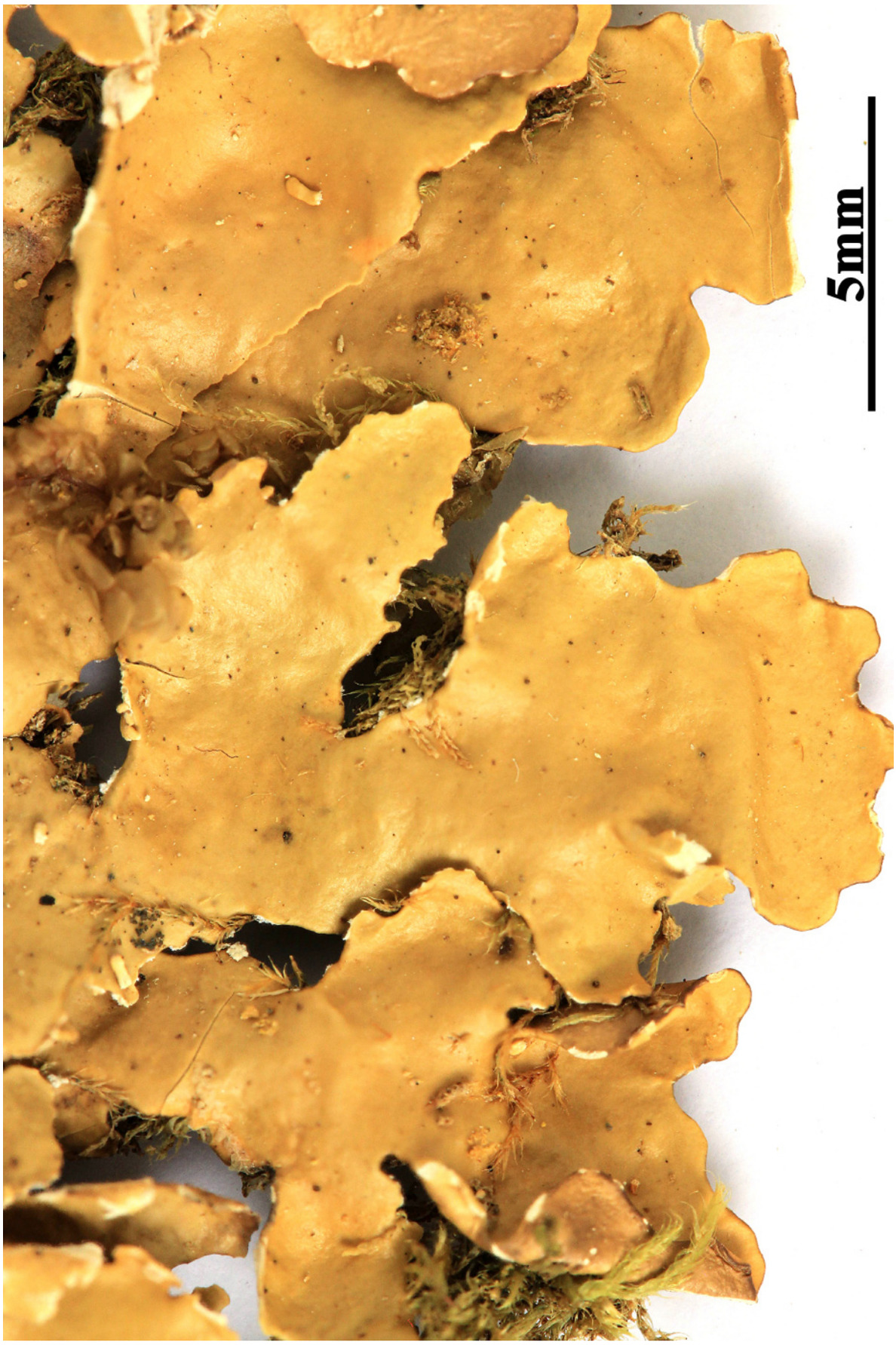
Pseudocyphellaria psilophylla (Müll. Arg.) D.J. Galloway & P. James, Lichenologist 12(3): 301 (1980)
= *Pseudocyphellaria chloroleuca* (Hook. f. & Taylor) Du Rietz, Bot. Notiser: 53 (1924)
= *Sticta chloroleuca* Hook. f. & Taylor, London J. Bot. 3: 649 (1844)
= *Sticta dissimulata* var. *multifida* Nyl., Syn. meth. lich. (Parisiis) 1(2): 363 (1860)
= *Sticta psilophylla* Müll. Arg., Bull. Soc. R. Bot. Belg. 31(no. 2): 29 (1892)

[VZR300], Nova Zelandia. South Island, distr. Nelson, Kuhurangi National Park, secus viam inter stationem "Flore Carpark" et casam alpinam " Mt. Arthur" dictam, 1300 m. Leg. W. Malcolm & A. Vězda, 21.4.1995. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 300.

Thallus ± linear-elongate, spreading, loosely attached, to 20 cm diam. Lobes linear-elongate to 6 mm wide, ± discrete, to contiguous, margins rather fragile, copiously incised, isidiate, ± ascending, becoming concave and ± canaliculate. Upper surface bright lettuce-green when wet, pale greenish-grey or fawn when dry, undulate, ± canaliculate, wrinkled to shallowly faveolate, matt or shining, marginally and then laminally isidiate. Isidia terete to somewhat flattened, simple, becoming coralloid-branched, fragile and easily abraded, leaving small, white pock-like depressions not to be confused with pseudocyphellae. Medulla white. Photobiont green. Lower surface pale pinkish-buff, whitish at margins, obscurely wrinkled-scrobiculate, bullate, glabrous, rarely very thinly and patchily tomentose centrally, tomentum white, silky, often lacking. Pseudocyphellae white, minute, inapparent, punctiform, fleck-like, numerous. Apothecia sparse, submarginal, 1.0-1.8 mm diam., subpedicellate, disc red-brown, matt or shining, concave to plane, margins denticulate-isidiate, thin, concolorous with thallus, thalline exciple wrinkled. Ascospores brown, fusiform, 1-3-septate, (23-)28-34(-42) × 7-11 µm. Chemistry: 7β-acetoxyhopan-22-ol, hopane-15α,22-diol, methylgyrophorate (tr.) and gyrophoric acid (C+ red).

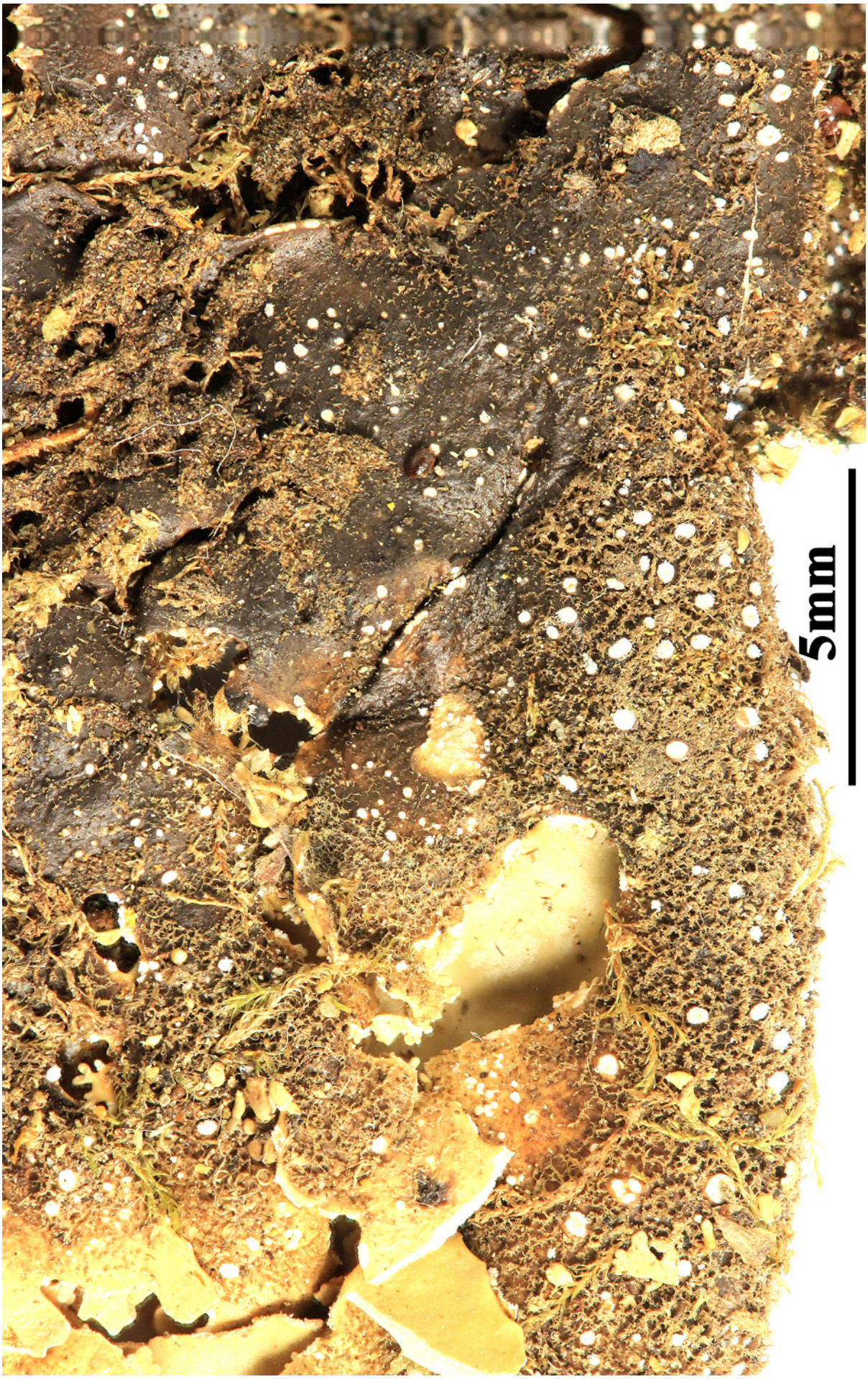


Pseudocyphellaria psilophylla



Pseudocyphellaria psilophylla

Pseudocyphellaria psilophylla

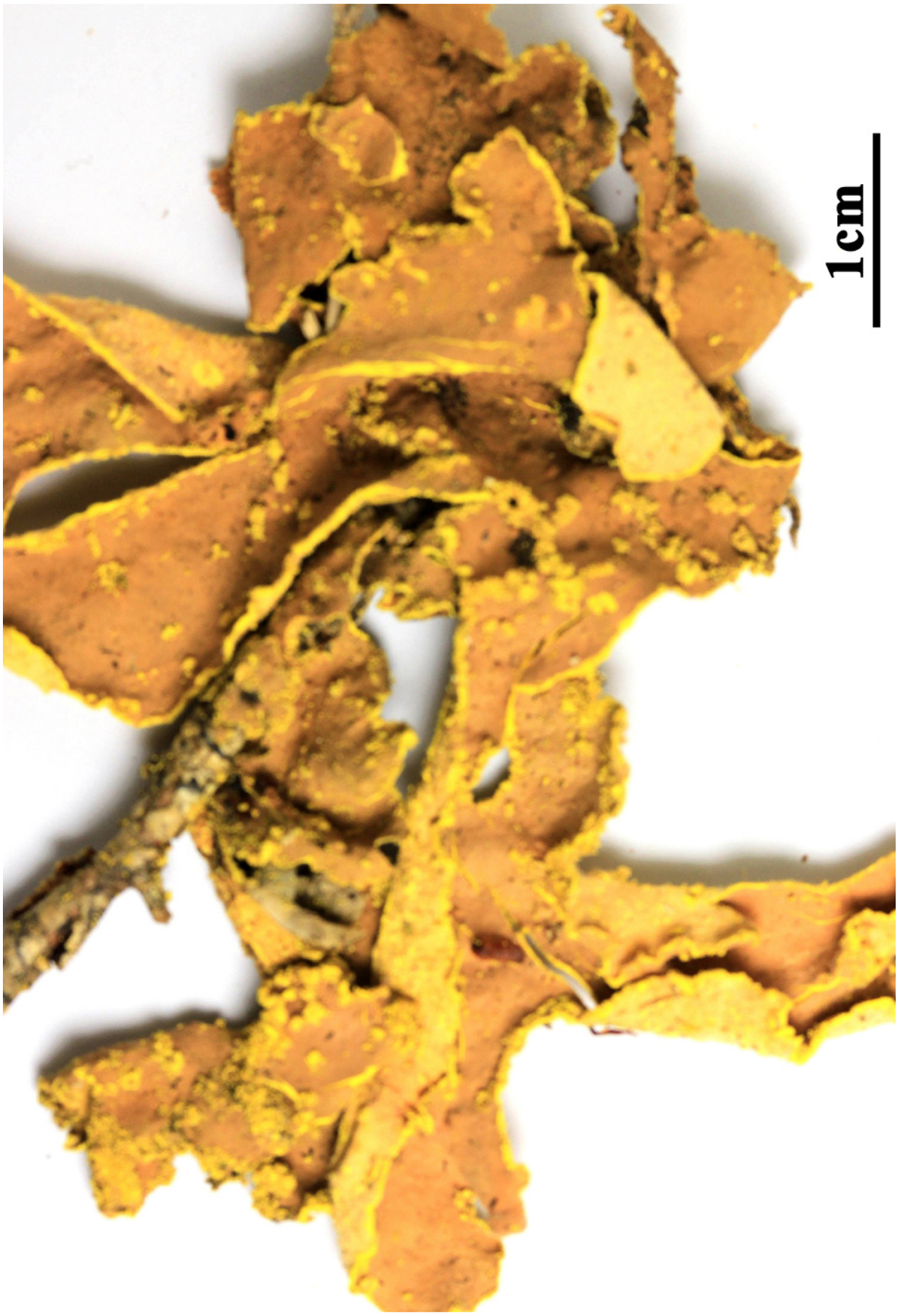


Pseudocyphellaria psilophylla

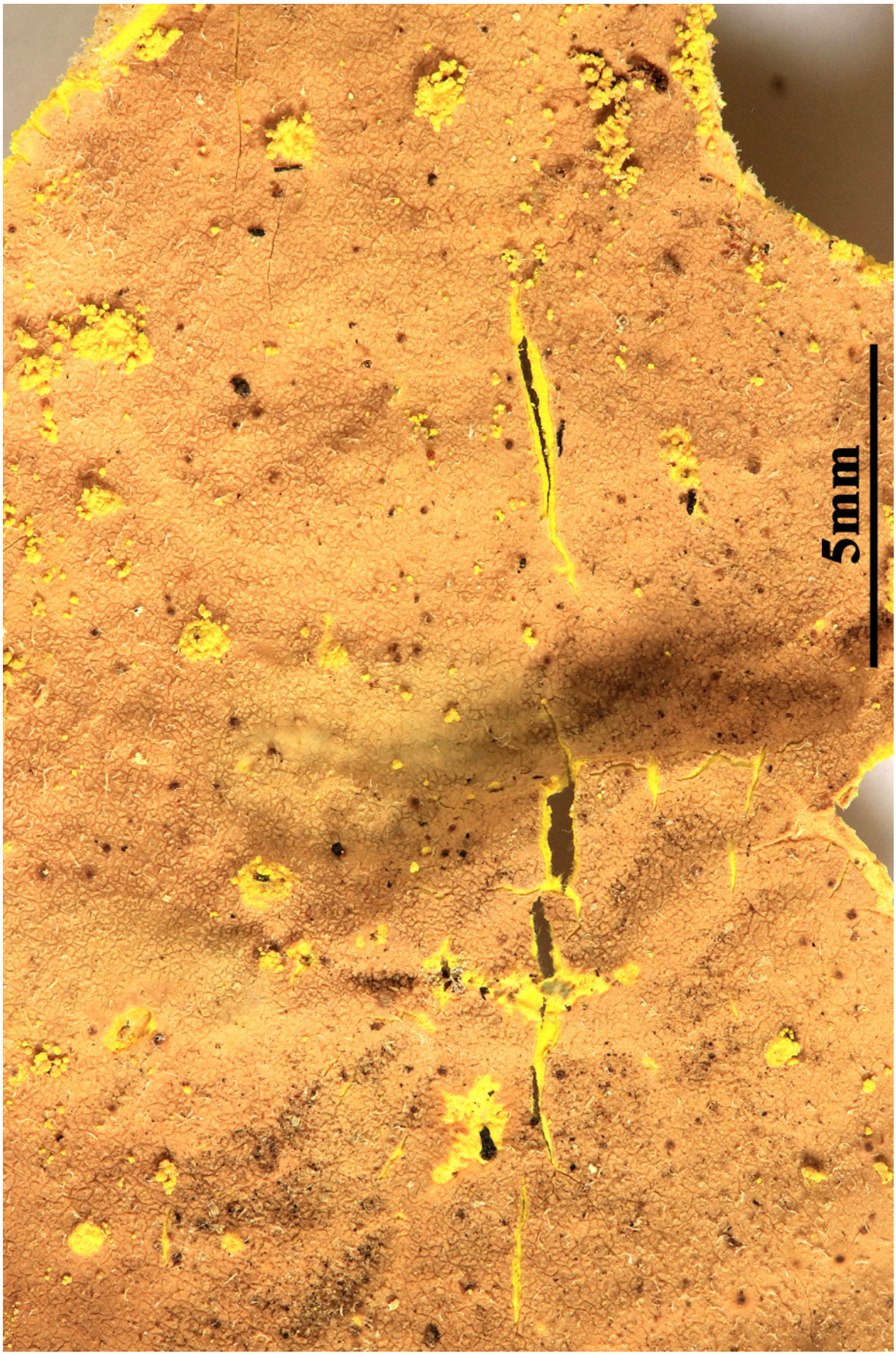
Pseudocyphellaria rubella (Hook. f. & Taylor) D.J. Galloway & P. James, Lichenologist 12(3): 302 (1980)
= *Crocodia rubella* (Hook. f. & Taylor) Trevis., Lichenoth. Veneta 1-2: no. 75 (1869)
= *Lobaria rubella* (Hook. f. & Taylor) Kuntze, Revis. gen. pl. (Leipzig) 2: 876 (1891)
= *Parmosticta purpurascens* Stirt., Trans. Proc. N.Z. Inst. 32: 71 (1900) [1899]
= *Sticta purpurascens* (Stirt.) Zahlbr., Cat. Lich. Univers. 3: 362 (1925)
= *Sticta rubella* Hook. f. & Taylor, London J. Bot. 3: 649 (1844)

[314], Nova Zelandia. South Island, distr. Canterbury, transitus Lewis Pass, in valle Nina Valley Track, 700 m. Ad corticem arboris (*Podocarpus*). Leg. W. Malcolm & A. Vězda, 29.4.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 314.

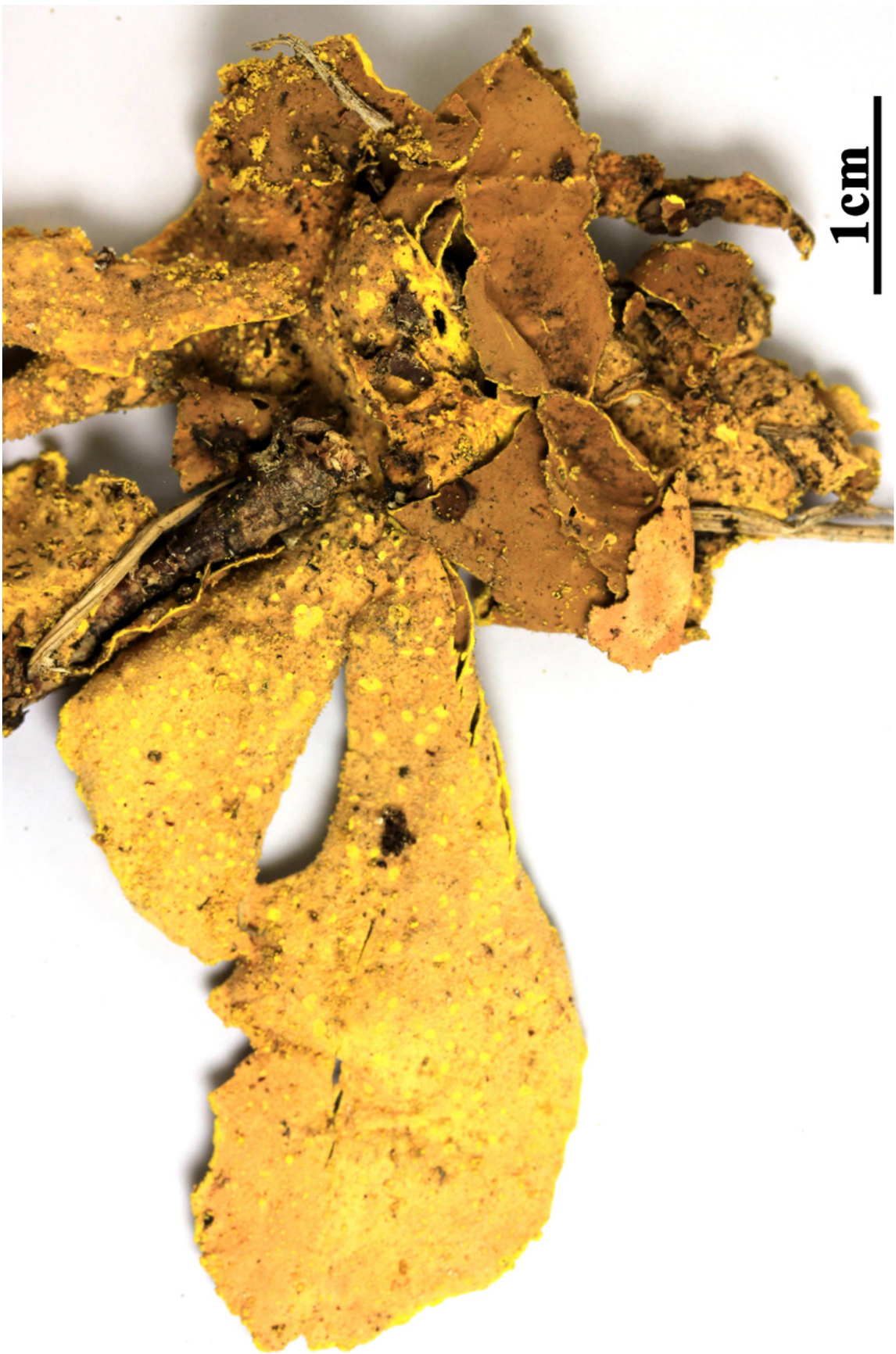
Thallus orbicular, ± rosette-shaped to spreading or straggling, 5-8(-12) cm diam., ± centrally attached, margins often free. Lobes linear, somewhat elongate, margins irregularly incised, ± ragged, granular-sorediate, not phyllidiate or isidiate. Upper surface bright lettuce-green when wet, greyish-green to buff-pink when dry becoming suffused reddish on storage, ± scabrid at margins, smooth, undulate to ± faveolate-impressed centrally, ± silky white-tomentose, ± sorediate. Soredia marginal in linear to sublinear soralia, or laminal in scattered, punctiform to confluent soralia, granular, yellow. Medulla yellow. Photobiont green. Lower surface pale yellow, ± evenly white, silky tomentose to margins. Pseudocyphellae yellow, prominent, numerous, flat, to 1.5 mm diam.Apothecia rather rare, pedicellate, disc dark brown or red-brown, concave to plane, somewhat undulate, matt, epruinose, margins eroded, granular-sorediate, exciple corrugate-scabrid, concolorous with thallus, ridges often yellow-sorediate. Ascospores brown, oblong-ellipsoid to obtusely fusiform, 3-septate, 28-30 × 10-13 µm. Chemistry: Pulvinic acid, pulvinic dilactone, calycin, and a complex mixture (c. 12) of lupane triterpenoids.



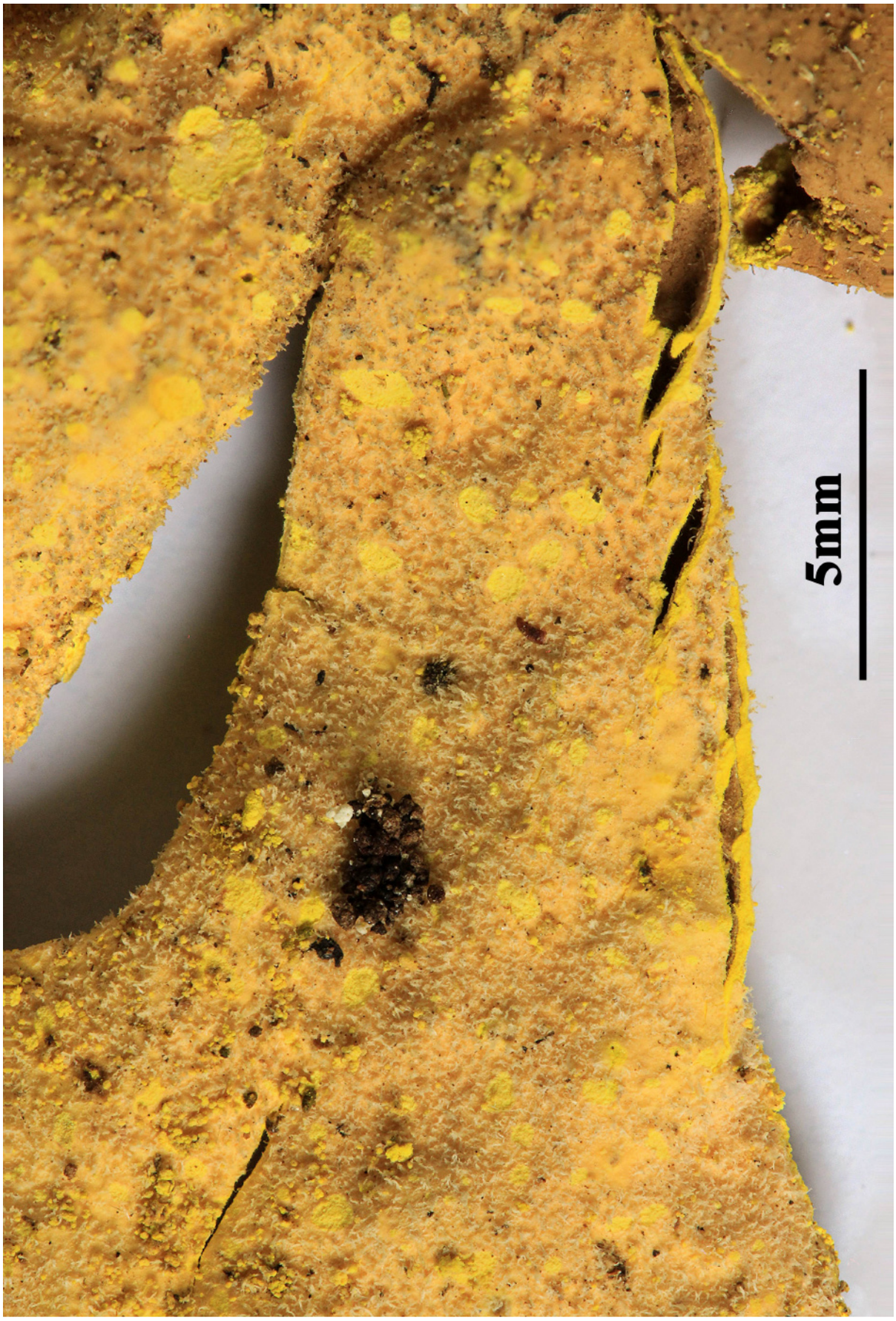
Pseudocyphellaria rubella



Pseudocyphellaria rubella



Pseudocyphellaria rubella



Pseudocyphellaria rubella

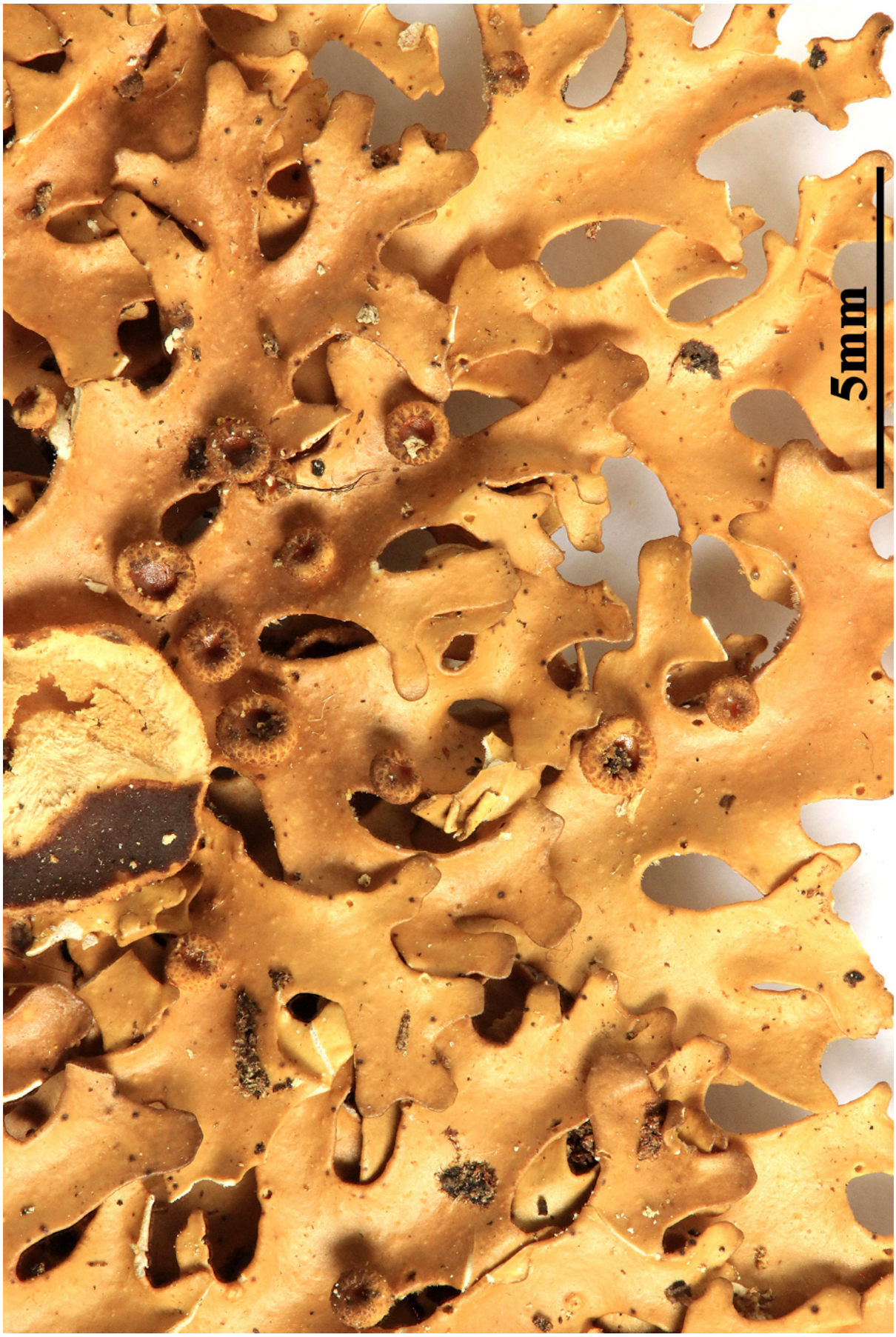
Pseudocyphellaria subvariabilis (Nyl.) Vain., Philipp. J. Sci., C, Bot. 8(2): 116 (1913)
= *Pseudocyphellaria multifida* (Laurer ex Nyl.) D.J. Galloway & P. James, Lichenologist 12(3): 301 (1980)
= *Crocodia dissimulata* (Nyl.) Trevis., Lichenoth. Veneta 1-2: no. 75 (1869)
= *Crocodia multifida* (Laurer ex Nyl.) Trevis., Lichenoth. Veneta 1-2: no. 75 (1869)
= *Cyanisticta subvariabilis* (Nyl.) C.W. Dodge, Nova Hedwigia 19(3-4): 490 (1971) [1970]
= *Lobaria dissimulata* (Nyl.) Kuntze, Revis. gen. pl. (Leipzig) 2: 876 (1891)
= *Lobaria multifida* (Laurer ex Nyl.) Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 38 (1896)
= *Lobaria subvariabilis* (Nyl.) Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 41 (1896)
= *Pseudocyphellaria dissimulata* (Nyl.) Vain., Philipp. J. Sci., C, Bot. 8(2): 118 (1913)
= *Sticta dissecta* Laurer, Linnaea 2: 41 (1827)
= *Sticta dissimulata* Nyl., Syn. meth. lich. (Parisiis) 1(2): 362 (1860)
= *Sticta dissimulata* * *multifida* (Laurer ex Nyl.) Nyl., Lich. Nov. Zeland. (Paris): 37 (1888)
= *Sticta dissimulata subsp. multifida* (Laurer ex Nyl.) Nyl., Flora, Regensburg 48(19): 299 (1865)
= *Sticta multifida* Laurer ex Nyl., Syn. meth. lich. (Parisiis) 1(2): 363 (1860)
= *Sticta subvariabilis* Nyl., Flora, Regensburg 50(24): 439 (1867)

[VZR315], Nova Zelandia. South Island, distr. Canterbury, transitus Lewis Pass, in valle Nina Valley Track, 700 m. In ripa rivuli, ad corticem arborum (*Podocarpus*). Leg. W. Malcolm & A. Vězda, 29.4.1997. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 315.

Thallus small, delicate, entangled-complicate, spreading, 5(-10) cm diam. Lobes complexly branched, entangled-imbricate, narrow, 1-3 mm wide and 4-10 mm long, di- or trichotomously branching at centre, becoming narrower and ± lobulate-phyllidiate at margins, sinuses semicircular. Upper surface bright lettuce-green when wet, pale yellowish-green or fawn when dry, shining, smooth, very slightly faveolate or wrinkled, uneven, without soredia, isidia, maculae or pseudocyphellae. Medulla white. Photobiont green. Lower surface glabrous, white, shining at margins, yellowish-brown, ± costate centrally, thinly tomentose centrally, tomentum pale buff, thin, rather ragged. Pseudocyphellae minute, fleck-like, white, punctiform, conspicuous at or near lobe margins, flat, immarginate. Apothecia submarginal or laminal, sparse to

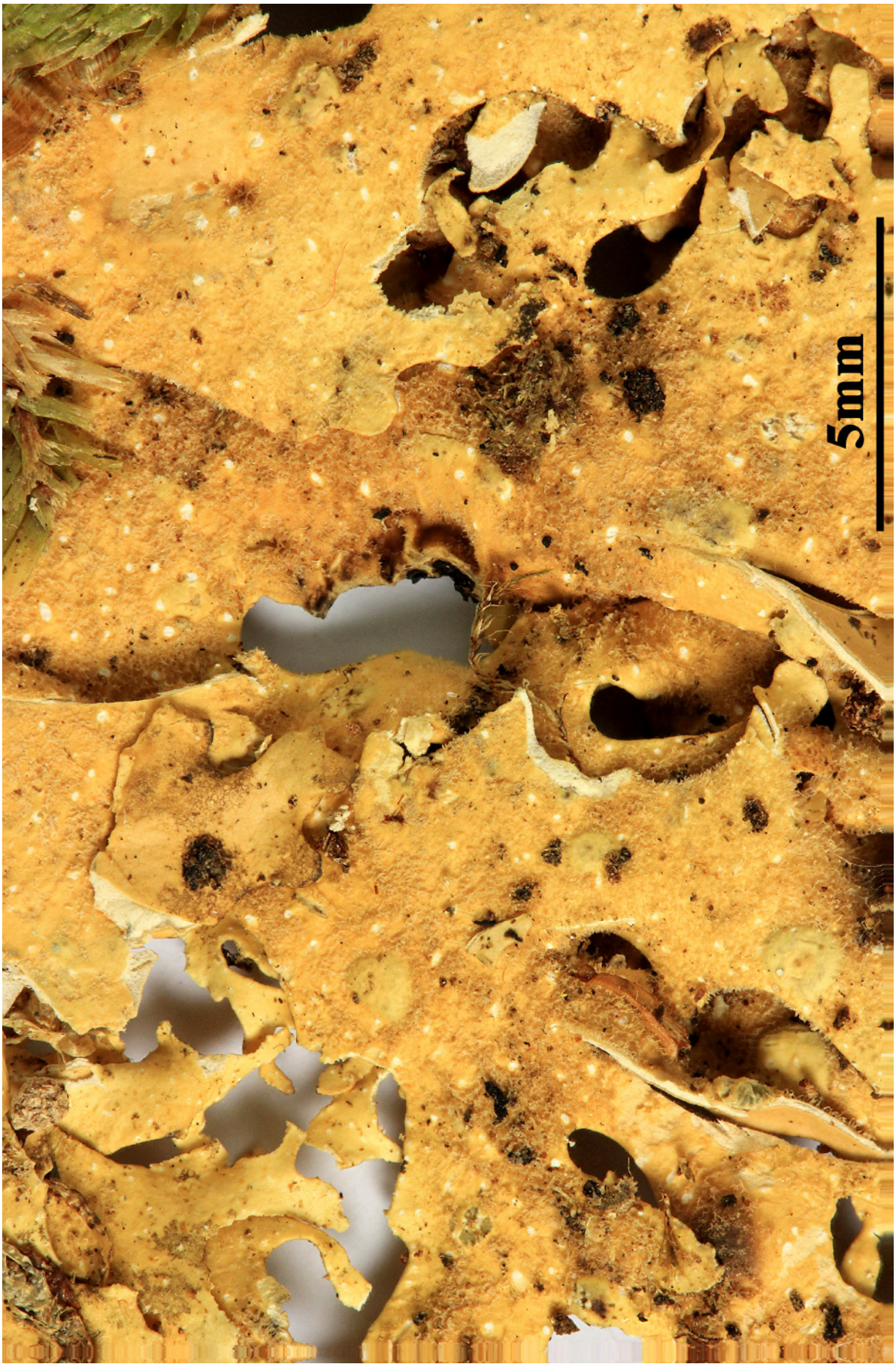
frequent, sessile to subpedicellate, disc pale yellowish-red or brownish, 2-4 mm diam., smooth, matt, plane or subconcave, margins pale flesh-coloured, inflexed at first, becoming crenulate-dentate, thalline exciple pale, verrucose-areolate. Ascospores colourless to pale brown, oblong-fusiform, 1-3-septate, 22-30 × 7-9 µm. Chemistry: 7β-Acetoxyhopan-22-ol, hopane-15α,22-diol, and hopane-7β-22- diol (tr.).

Pseudocyphellaria subvariabilis



Pseudocyphellaria subvariabilis

Pseudocyphellaria subvariabilis

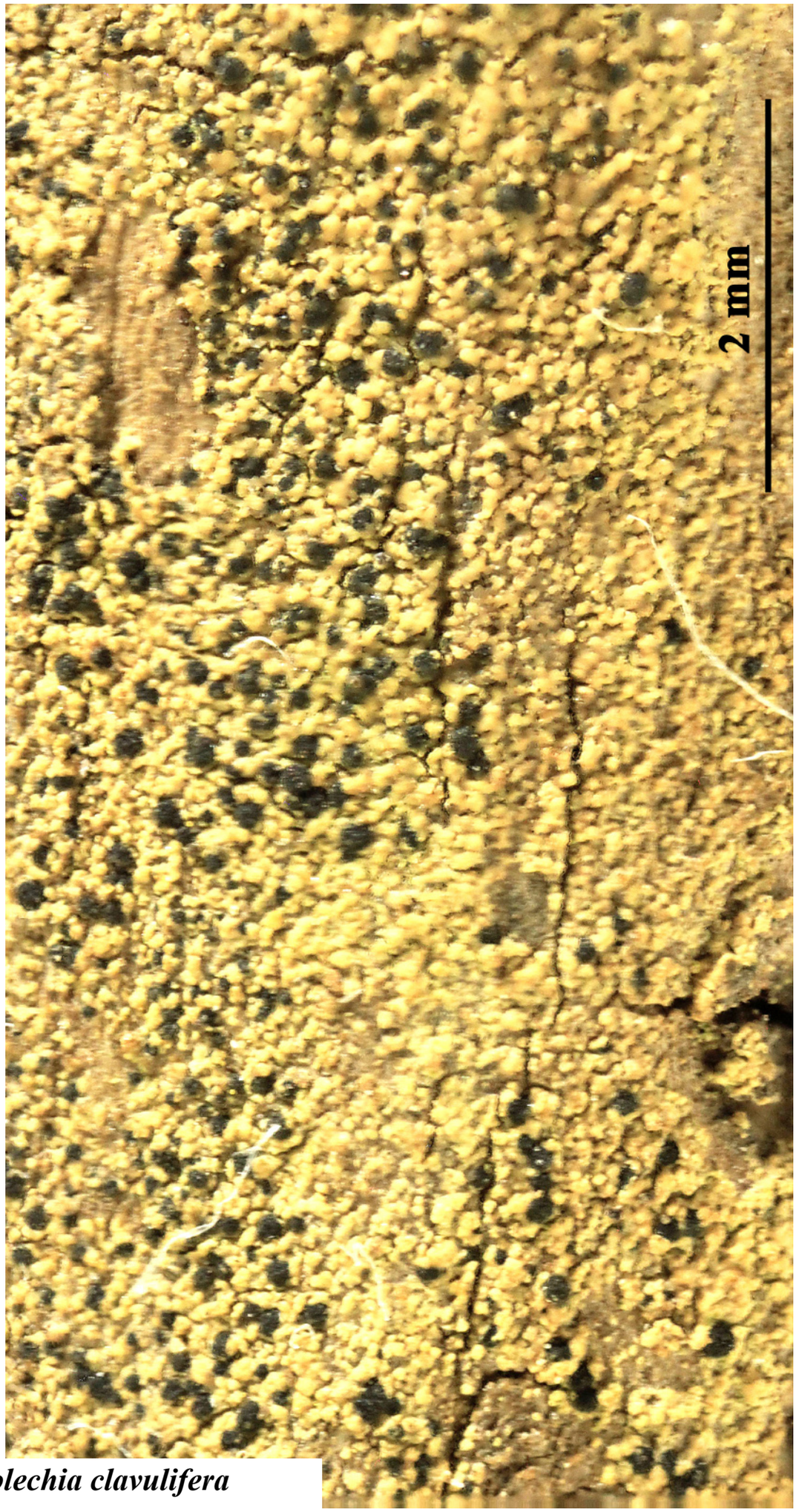


Pseudocyphellaria subvariabilis

Psilolechia clavulifera (Nyl.) Coppins, Bull. Br. Mus. nat. Hist., Bot. 11(2): 201 (1983)
= *Biatora clavulifera* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 476 (1871) [1870]
= *Lecidea clavulifera* Nyl., Flora, Regensburg 52(19): 294 (1869)
= *Lecidea clavulifera f. subviridicans* Nyl., Flora, Regensburg 60: 463 (1877)
= *Micarea clavulifera* (Nyl.) Coppins & P. James, in Hawksworth, James & Coppins, Lichenologist 12(1): 107 (1980)

[VZR348], Bohemia centralis, distr. Přibam, montes "Brdy", prope piscinam "Hořejši Padrt'ský rybnik", in radicibus aversae (*Picea excelsa*), 640 m. Leg. et det. Š. Bayerová. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 349.

Thallus leprose-granular, episubstratic, ecorticate, continuous to cracked, effuse, grey to green, < 0.3 mm thick, entirely consisting of elongate or irregularly shaped, often confluent granules measuring 14-33 x 7-14 µm. Apothecia rare, biatorine, convex to subglobose, immersed in the thallus, sometimes tuberculate, 0.1-0.3(-0.4) mm across, with a dark brown to blue-black disc (pale grey-brown or pale bluish grey in shade-forms), without a distinct margin, but often surrounded by a basal white rim of excipular hyphae. Proper exciple poorly developed, often with protruding hyphae; epithecium pale green to blue-green, olivaceous or greenish black, K+ greenish, N+ purple-red; hymenium greenish, I+ blue; paraphyses simple or forked, the apical cells hardly swollen; hypothecium colourless or pale green, all greenish parts N+ purple-red. Asci cylindrical-clavate, the apical dome K/I+ pale blue, with a dark blue apical tube diverging towards the apex, the wall with a K/I+ dark blue outer layer. Ascospores 1-celled, hyaline, oblong-ovoid to tear-shaped, 4-7 x 1.2-2 µm. Conidiomata frequent, hyphomycetous, superficial, the thallus surface often with scattered, elongated conidiogenous cells. Conidia oblong, 7-15 x 2-2.3 µm. Photobiont chlorococcoid, the cells longer than wide, Stichococcus-like. Spot tests: thallus K-, P-, KC-, C-, P-, UV- or UV+ ice-blue. Chemistry: thallus apparently without lichen substances, or with one to two UV+ unknowns and terpenoids other than zeorin. - Note: on acid siliceous stones and consolidated soil, on banks or on the roots of fallen trees, on dry surfaces protected from rain, mostly in the deciduous forest belts; perhaps overlooked and more widespread.



Psilolechia clavulifera

Psilolechia clavulifera

Psilolechia leprosa Coppins & Purvis, Lichenologist 19(1): 35 (1987)

[VZR169], Batavia. Preov. Nord-Brabant. Eindhoven, in voco Budel, ad murum schistosum umbrosum. Leg. P. v. Boom, 18.10.1994. EX A. VěZDA: LICHENES RARORES EXSICCATI NR. 169. - The Netherlands, N-Brabant, 20 km SSE of Eindhoven, Budel, village, brick wall, on dry shaded red brick, ex coll. P. v. Boom.

Thallus forming small patches, often merging and widespreading, to 30 cm, whitish to pale greenish or yellowish grey, leprose-granular to granular-verrucose, often rimose, effuse; photobiont Trebouxia-like, cells 6-9 µm diam. or ellipsoid and 6- 1 2 x 7-8 µm. Apothecia usually present, 0.1 -0.5 mm diam., often becoming tuberculate, pale pink to pale brown, occasionally with a violet tinge; hymenium (22-)27-35 µm tall; hypothecium colourless. Ascospores 4.5-6.5(-7) x 1.5-2 µm, 0-1-septate, dacryoid. Pycnidia unknown. Thallus C+ red, K-, KC-, P-, UV± glaucous (gyrophoric acid, ± porphyrilic acid). - On vertical, copper-rich rocks in sheltered walls of derelict mine buildings, mineralized rock outcrops and on mortar and stonework near copper lightning conductors, below metal window grills, etc. on church buildings; frequent.; characterized by the C+ beetroot-red reaction which separates it from *Micarea myriocarpa* and other species under dry overhangs. Pale blue inclusions of copper oxalate are sometimes visible where abraded.

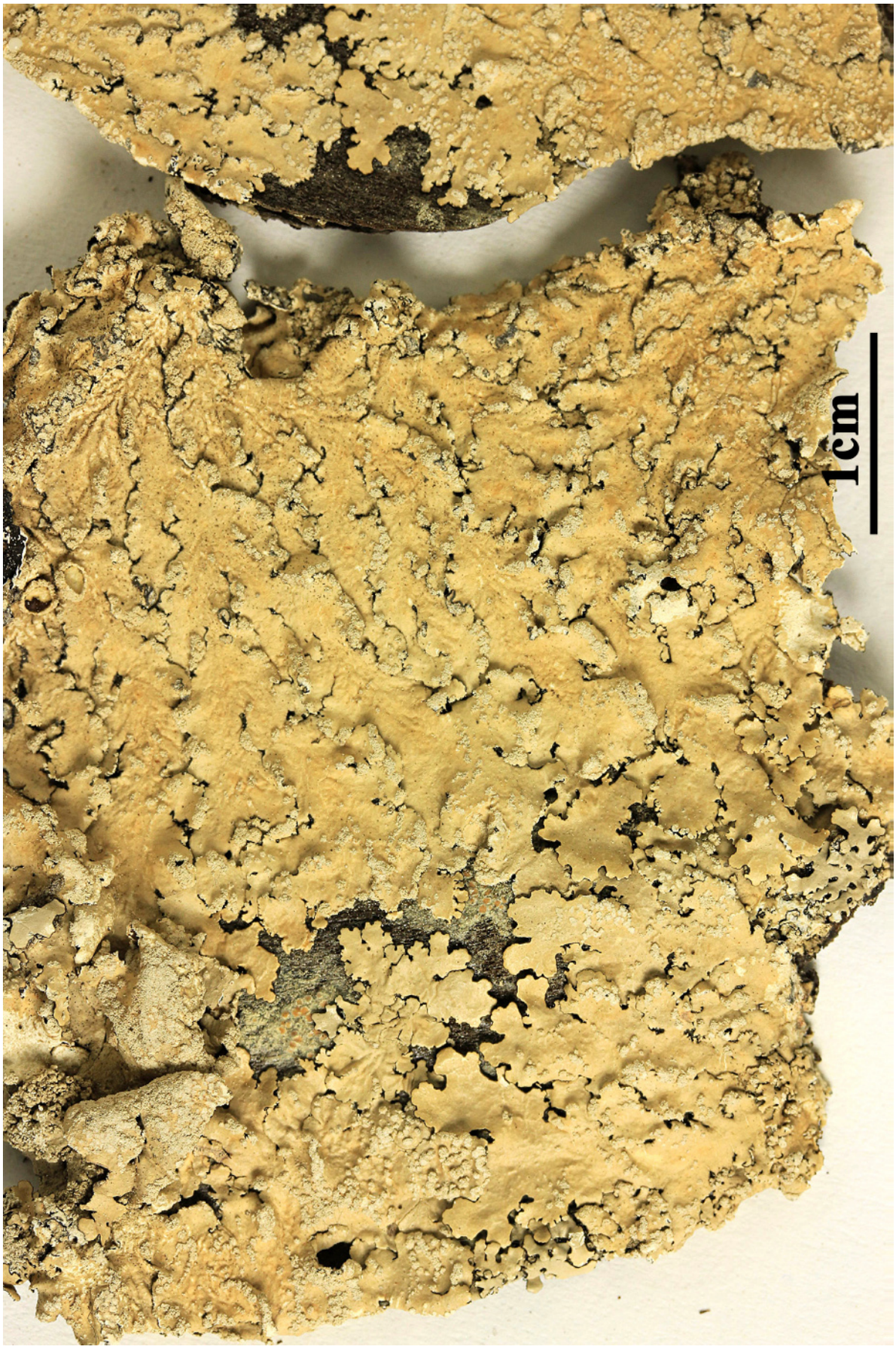
Psilolechia leprosa

Psilolechia leprosa

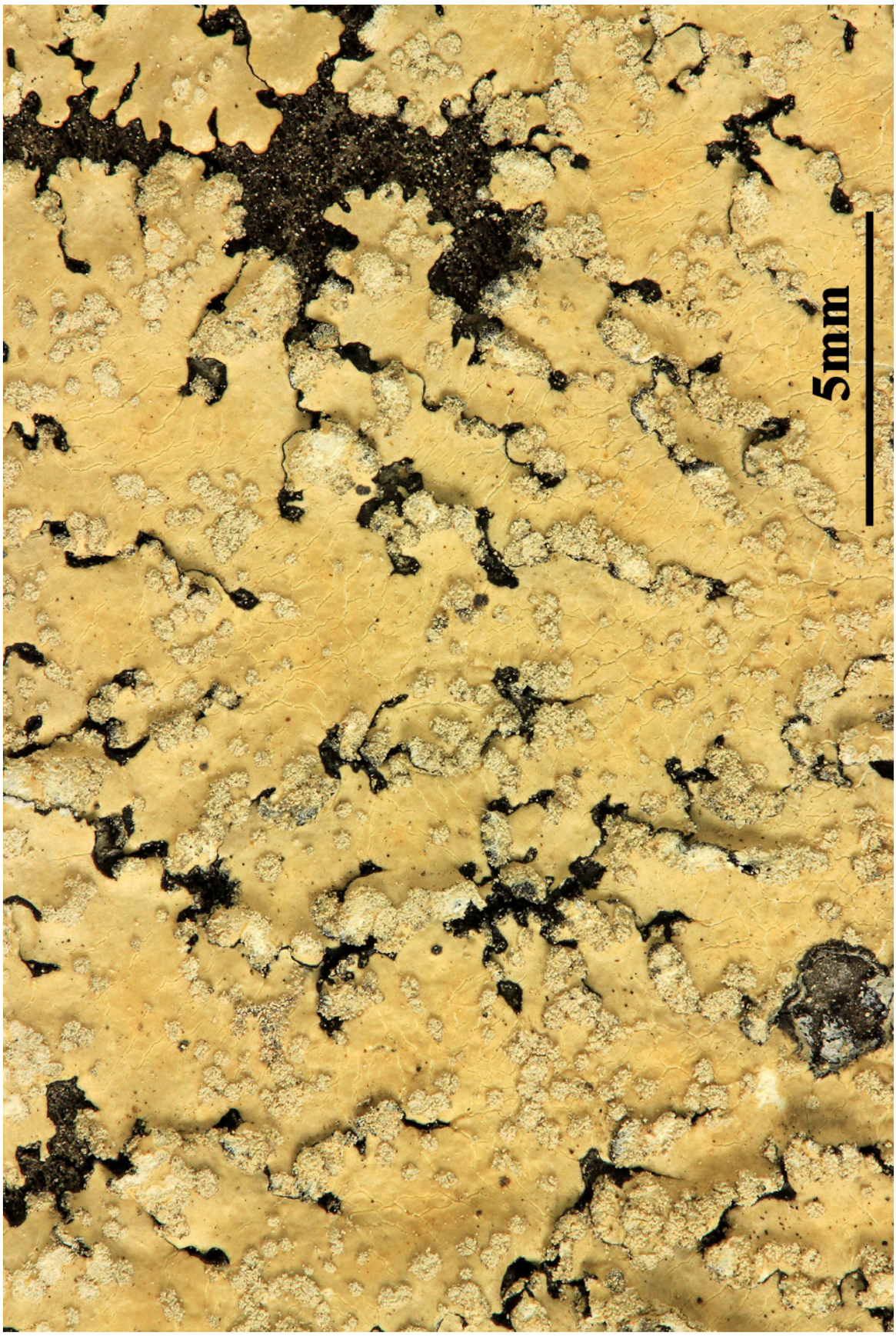
Pseudoparmelia texana (Tuck.) Hale, Phytologia 29(3): 191 (1974)
= *Canoparmelia texana* (Tuck.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 279 (1986)
= *Parmelia sublaevigata var. texana* (Tuck.) Nyl., Annls Sci. Nat., Bot., sér. 5 7: 307 (1867)
= *Parmelia texana* Tuck., Amer. J. Sci. Arts, Ser. 2 25: 424 (1858)

[VZR388], Uruguay. Dept. Canelones, reservatum naturae "F. D. Roosvelt" (inter Americas Ave et viam Carrasco road). Ad corticem *Pini* sp..Leg. H. S. Osorio (no. 8362). EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 388.

Thallus adnate, foliose, 4-12 cm in diam., irregularly lobate; lobes sublinear to subirregular, elongate, plane to subconvex, separate, 3-5 mm wide; apices rotund, crenate to deeply incised, eciliate; upper surface pale gray to ashy white, smooth to rugose, dull, maculate, sorediate; soredia coarse, granular, whitish, laminal, initially in pustulae that develop into orbicular, capitate soralia; soralia usually not confluent; isidia absent; medulla white with continuous algal layer; lower surface black with a brown bare zone marginally; rhizines sparse to moderately dense (except margin), black, simple ;Apothecia rare, laminal on thallus, 2-5 mm wide; disc red-brown to dark brown; margin usually sorediate; ascospores ellipsoid, 8-11 x 5-7 µm; Pycnidia rare, immersed; conidia weakly bifusiform 6-8 x 1 µm; Spot tests upper cortex K+ yellow, C-, KC-, P+ yellow; medulla K-, C-, KC- [or + pale pink], P-; Secondary metabolites upper cortex with atranorin and chloroatranorin; medulla with divaricatic acid (major), nordivaricatic and stenosporic acids (trace). - Substrate and ecology: on pines and hardwoods in dry open woods or along roads in lower to mid-elevation montane areas. World distribution: pantropical and some adjacent temperate areas of North and South America, Asia and Australasia.



Pseudoparmelia texana



Pseudoparmelia texana

Psora saviczii (Tomin) Follmann & A. Crespo, Philippia 2(5): 283 (1975)
= *Lecidea saviczii* Tomin 1927

[VZR259], Italia. Emilia-Romagna, prov. Bologna, Tossignano, loco Croara dicto, 220 m. Ad terram gymsaceam. Leg. D. Puntillo, D. Salvadori & M. Tretiach, 3.11.1996. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 259.

Thallus squamulose, pale pink to pinkish white, often thinly white-pruinose, the squamules rounded, initially concave, then flattened, dispersed to contiguous, not imbricate, 2-4 mm wide, with down-turned, concolorous or more rarely whitish edges. Upper cortex of thin-walled hyphae with round lumina; lower cortex absent. Apothecia biatorine, sessile, 1-1.5 mm across, with a black, sometimes white-pruinose, convex, smooth disc and an indistinct proper margin. Epithecium reddish brown, containing orange crystals dissolving in K, K+ purple, N-; hymenium colourless, amyloid; paraphyses coherent, stout, simple or sparingly branched and anastomosing, the apical cell slightly swollen; hypothecium brownish, with crystals of calcium oxalate. Asci 8-spored, elongate-clavate, with a thin, outer amyloid layer and a thickened tholus penetrated by a tube, the sides of which stain I/KI+ deep blue, without an ocular chamber, Porpidia-type. Ascospores 1-celled, hyaline, ellipsoid, 11-18 x 6-8 µm, thin-walled. Pycnidia immersed. Conidia bacilliform. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances, epithecium with anthraquinones, mainly parietin. - Note: a mainly gypsicolous, southern species in Europe, to be looked for in other areas with gypsum outcrops (e.g. in Sicily).

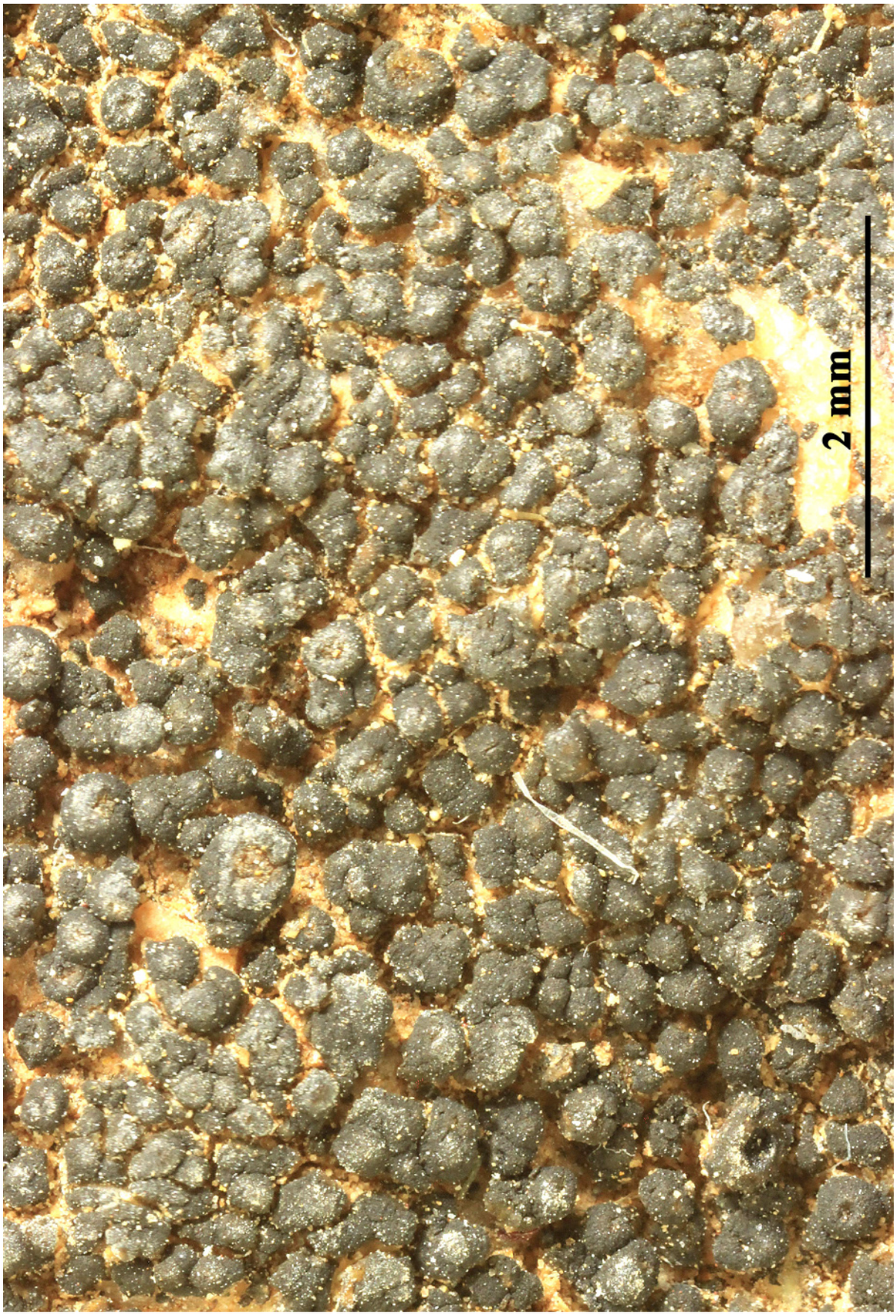
Psora saviczii

Psora saviczii

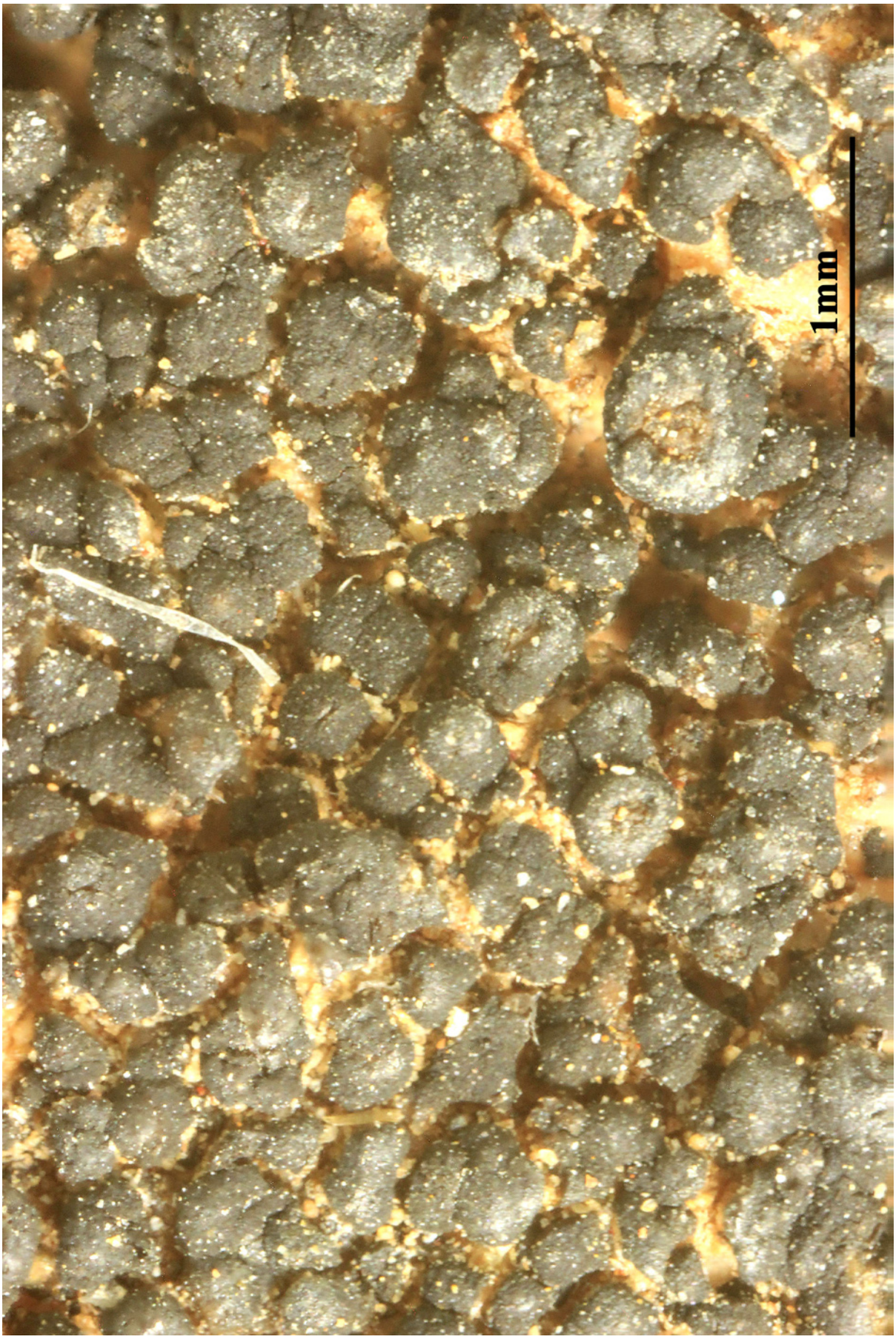
Pterygiopsis affinis (A. Massal.) Henssen, Ber. dt. bot. Ges. 92(2-3): 486 (1980)
= *Enchylium affine* A. Massal. 1853
= *Forssellia affinis* (A. Massal.) Zahlbr. Nat. Pflanzenfam., 1(1*): 161, 1906.

[VZR355], Italia. Sardinia. Cagliari: reservatum naturae "Monte Arcosu", supra domum forestalem " Casa Perdu Melis", loco dicto "Concale Petuntu", 520 m. Ad saxa silicea aprica interdum aqua irrorata. Leg. P. L. Nimis, C. Roux, M. Tretiach & A. Vězda, 29.8.1989, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 355.

Thallus crustose-placodioid, episubstratic, rimose-areolate, black when dry (sometimes bluish-pruinose), dark olive-brown and weakly subgelatinous when wet, forming up to 2 cm wide, orbicular to irregular rosettes, Areoles 0.4-0.7 mm wide, c. 0.2 mm thick, separated by thin fissures, the central ones often reduced to wart-like granules, the peripheral ones distinctly elongated and radiating, up to 0.8(-0.9) x 0.3-0.5 mm, contiguous or slightly diverging at tips, slightly concave to slightly convex, sometimes poorly evident in old thalli. Thallus anatomy paraplectenchymatous throughout, with short-celled, 3-9 µm thick hyphae arranged in a fan-like way. Apothecia zeorine pycnoascoarps, at first immersed, then emerging and semi-sessile, round, 0.25-0.5 mm across, with a concave to flat, dark reddish disc and a thick, persistent, sometimes minutely granulose proper margin. Proper exciple well-developed, cupuliform, prosoplectenchymatous, up to 25 µm thick; epithecium brownish, poorly differentiated; hymenium colourless, in mature apothecia subdivided into separate compartments by bundles of sterile hyphae, 100-130 µm high, I+ and K/I+ blue; paraphyses anastomosing, slightly constricted at septa in upper part, 2-3 µm thick, not capitate; hypothecium colourless, 30-50 µm high. Asci 16-32-spored, prototunicate, with a very thin wall disintegrating or opening by apical ruptures, without apical amyloid thickenings, Lichina-type. Ascospores 1-celled, hyaline, subglobose to broadly ellipsoid, (5-)6-12 x 3-6(-7) µm. Pycnidia immersed, unilocular or rarely secondarily plurilocular, 80-120 µm wide. Conidia globose or subglobose, 2-3 x 1.5-2 µm. Photobiont cyanobacterial, chroococcoid, with vertically arranged clusters of cells measuring 6-10 x 5-7 µm, penetrated by haustoria and surrounded by a yellowish brown gelatinous sheath. Spot tests: all negative. Chemistry: without lichen substances. - Note: on periodically wetted surfaces of calcareous or siliceous rocks, especially along sun-exposed seepage tracks.



Pterygiopsis affinis

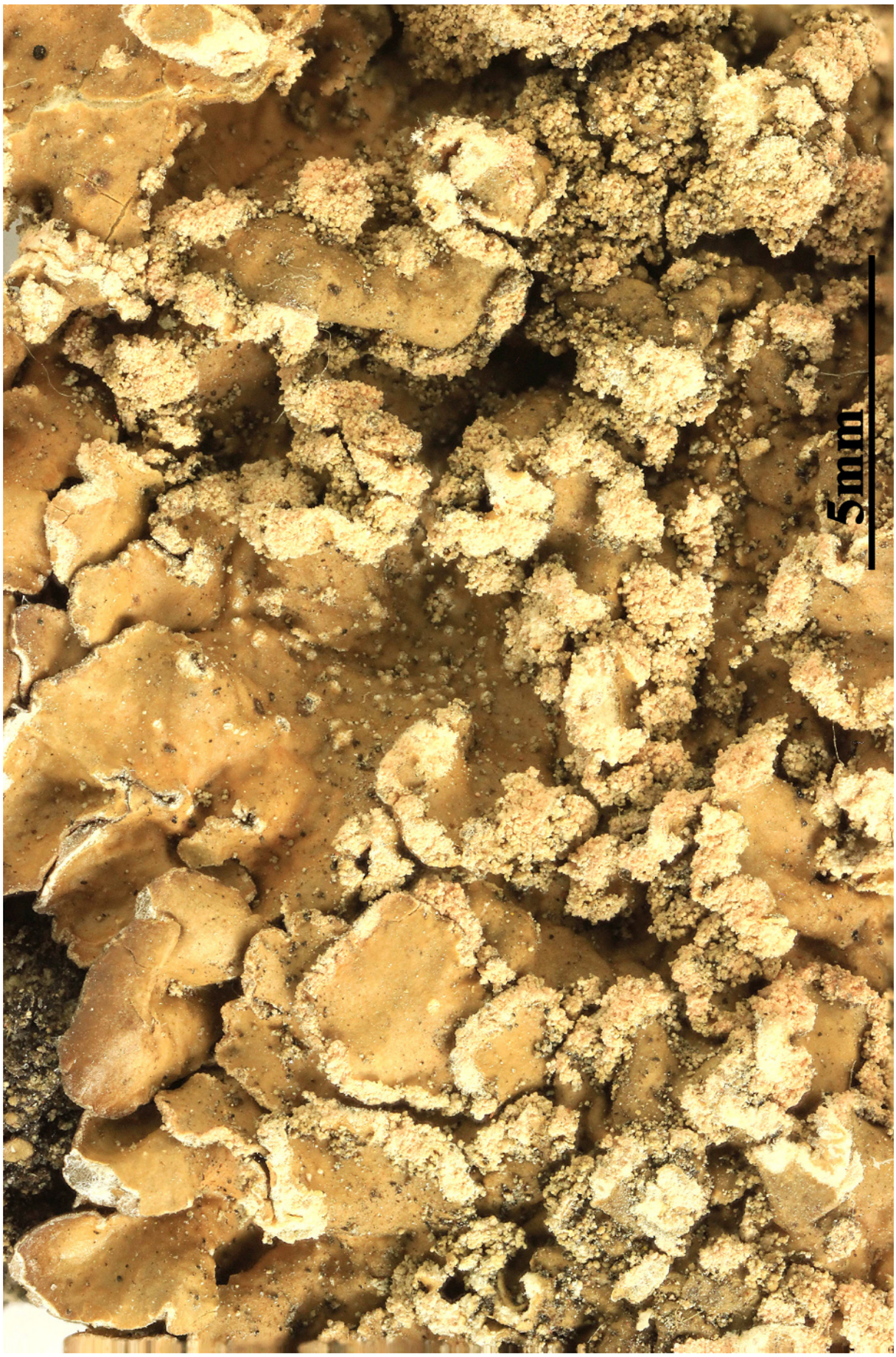


Pterygiopsis affinis

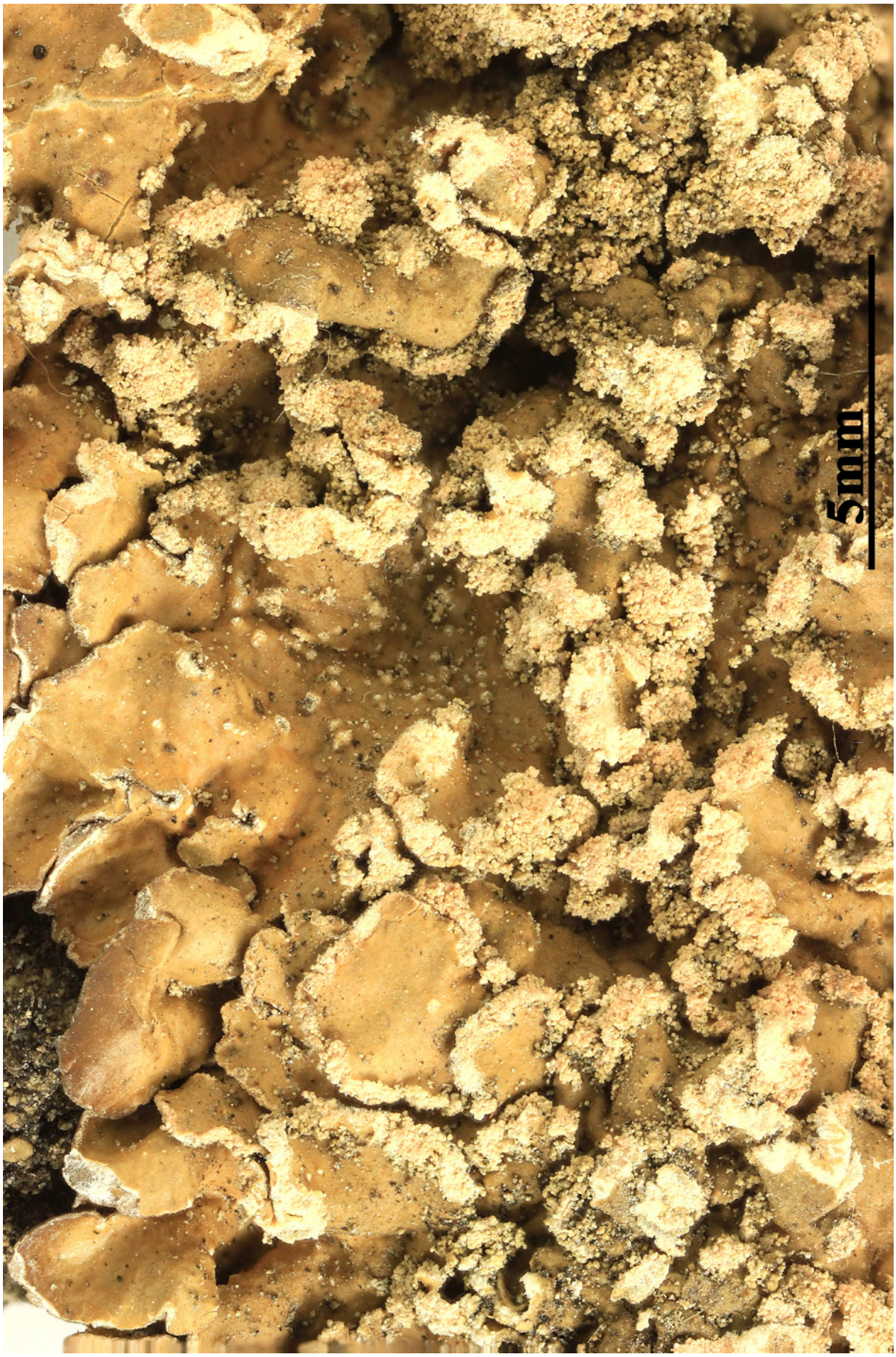
Punctelia ulophylla (Ach.) Herk & Aptroot, Lichenologist 32(3): 239 (2000)
= *Imbricaria borreri* var. *ulophylla* (Ach.) Jatta, G. bot. ital., n.s. 9: 470 (1902)
= *Parmelia borreri* var. *ulophylla* (Ach.) Nyl., Flora, Regensburg 55: 547 (1872)
= *Parmelia caperata ß ulophylla* Ach., Lich. Univ.: 458 (1810)
= *Parmelia dubia* var. *ulophylla* (Ach.) Harm., Bull. Séanc. Soc. Sci. Nancy, Sér. 2 14(31): 224 (1897) [1896]
= *Parmelia ulophylla* (Ach.) F. Wilson, Pap. Proc. R. Soc. Tasm.: 172 (1893) [1892]
= *Parmelia ulophylla* F. Wilson, Pap. Proc. R. Soc. Tasm.: 172 (1893) [1892]
= *Platysma sepincola* subsp. *ulophylla* (Ach.) Nyl., Lich. Scand. (Helsinki): 82 (1861)
= *Punctelia jeckeri* (Roum.) Kalb, Bibl. Lichenol., 95: 312, 2007.
= *Sticta jeckeri* Roum. - Rev. Mycol., 3: 33, 1881.

[VZR434], Hollandia. Brabantia borealis, Son, Hautens, prope pontum parvum supra canalem, ad corticem arboris (*Quercus robur*). Leg. & det. P. v. Boom. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 434.

Thallus foliose, heteromerous, dorsiventral, forming 3-6(-10) cm wide, regular to often irregular rosettes, sorediate. Lobes 3-7 mm wide, with rounded, ascending, eciliate margins, grey-green to (rarely) grey-brown, often pruinose al lobe-tips and along margins, with numerous punctiform, white pseudocyphellae; soralia mainly marginal on secondary ascending lobes, elongated, often crescent-shaped, with farinose to granular soredia. Lower surface cream-white at margins, pale brown in central parts, with simple rhizines except at lobe margins. Upper cortex paraplectenchymatous, of 2-6 layers of densely packed cells, with a non-pored epicortex, the cell walls with isolichenan; medulla white; algal layer continuous; lower cortex paraplectenchymatous. Apothecia unknown. Pycnidia rare, laminal, immersed. Conidia unciform to short-filiform, 3-5 x c. 1 µm. Photobiont chlorococcoid. Spot tests: upper cortex K+ yellow, C-, KC-, P- or P+ faintly yellow; medulla and soralia K-, C+ red, KC+ red, P-, UV-. Chemistry: upper cortex with atranorin; medulla and soralia with lecanoric acid. - Note: a species found on bark of isolated deciduous trees, ecologically intermediate between Xanthorion and Parmelion.



Punctelia ulophylla



Punctelia ulophylla

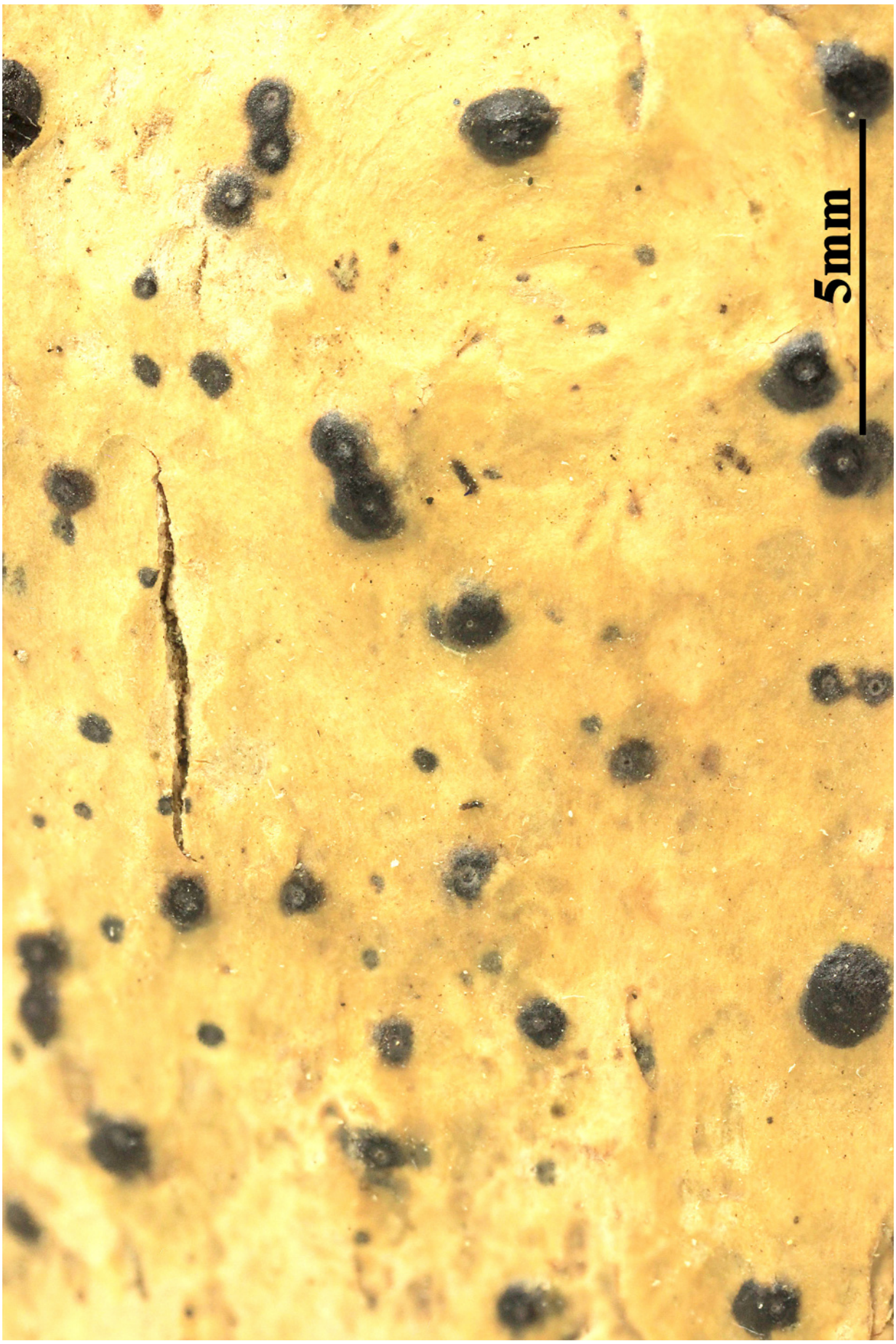
Pyrenula macrospora (Degel.) Coppins & P. James, in Hawksworth, James & Coppins, Lichenologist 12(1): 107 (1980)

= *Pyrenula chlorospila* var. *macrospora* (Degel.) Maas Geest., in Barkman, Phytosociology and Ecology of cryptogamic Epiphytes (Assen): 403 (1958)

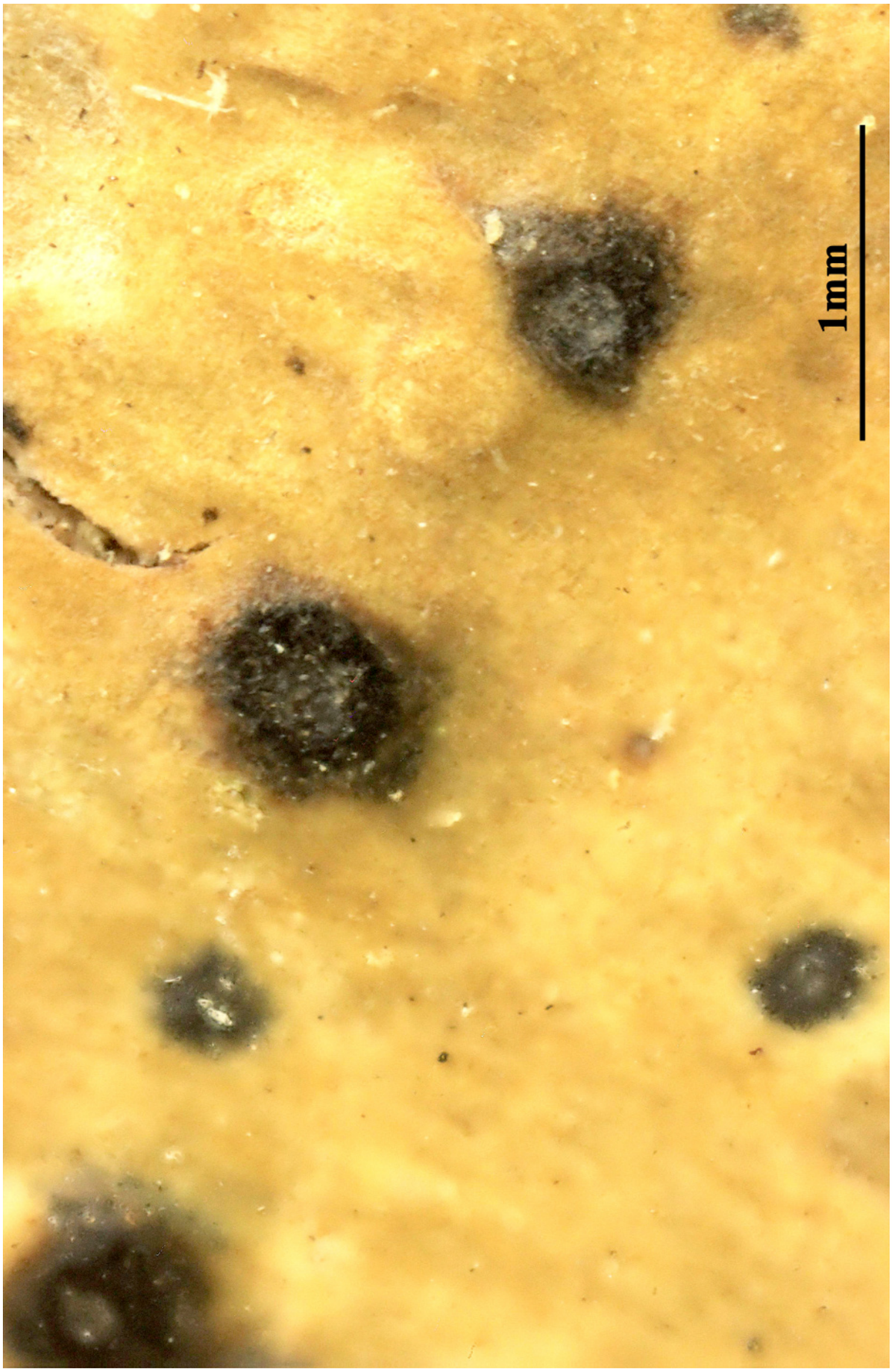
= *Pyrenula nitida* var. *macrospora* Degel., Göteborgs Kungl. Vetensk. Samhälles Handl., Ser. B, Math. Naturvensk. Skr. 1(no. 7): 8 (1941)

[VZR176], Gallia. Hautes Pyrénées. Lourdes, St. Péde Bigorre, in valle Gérie Braque, 500 m. Ad corticem *Ilicis*. Leg. & det. J. Vivant. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 176.

Thallus crustose, more or less immersed, olive-green to olive-brown, with white, punctiform pseudocyphellae, often delimited by a black prothallus and forming mosaics. Perithecia black, (0.4-)0.6-1(-1.2) mm across, hemispherically projecting, with central, often crateriform ostioles. Involucrellum brown-black, closely adhering to the exciple; exciple brown-black throughout, with colourless calcium oxalate crystals that are insuluble in K; hymenium colourless, without anthraquinone crystals and not inspersed with oil droplets; hamathecium of branched and anastomosed periphysoids, later substituted by more or less unbranched paraphyses; ostiole with periphyses. Asci 8-spored, narrowly cylindrical, long-stalked, bitunicate, with tholus, thickened at apex with an internal apical beak, non-amyloid. Ascospores 3-septate, brown, ellipsoid to subfusiform, (23-)27-33(-38) x (8-)10-14(-15) µm, thick-walled, distoseptate, the lumina angular to subglobose, the wall smooth or faintly striate. Pycnidia black, immersed, 0.1-0.8 mm across, often aligned along the prothalline line. Conidia narrowly falcate, 10-16 x c. 0.8 µm. Photobiont trentepohlioid. Spot tests: thallus K+ yellow, C-, KC-, P+ faintly yellow, UV± weakly yellow. Chemistry: thallus with an unidentified substance. - Note: a mild-temperate species found on bark of deciduous trees (especially *Fraxinus*) in humid situations, but never in deep shade, below the montane belt.



Pyrenula macrospora



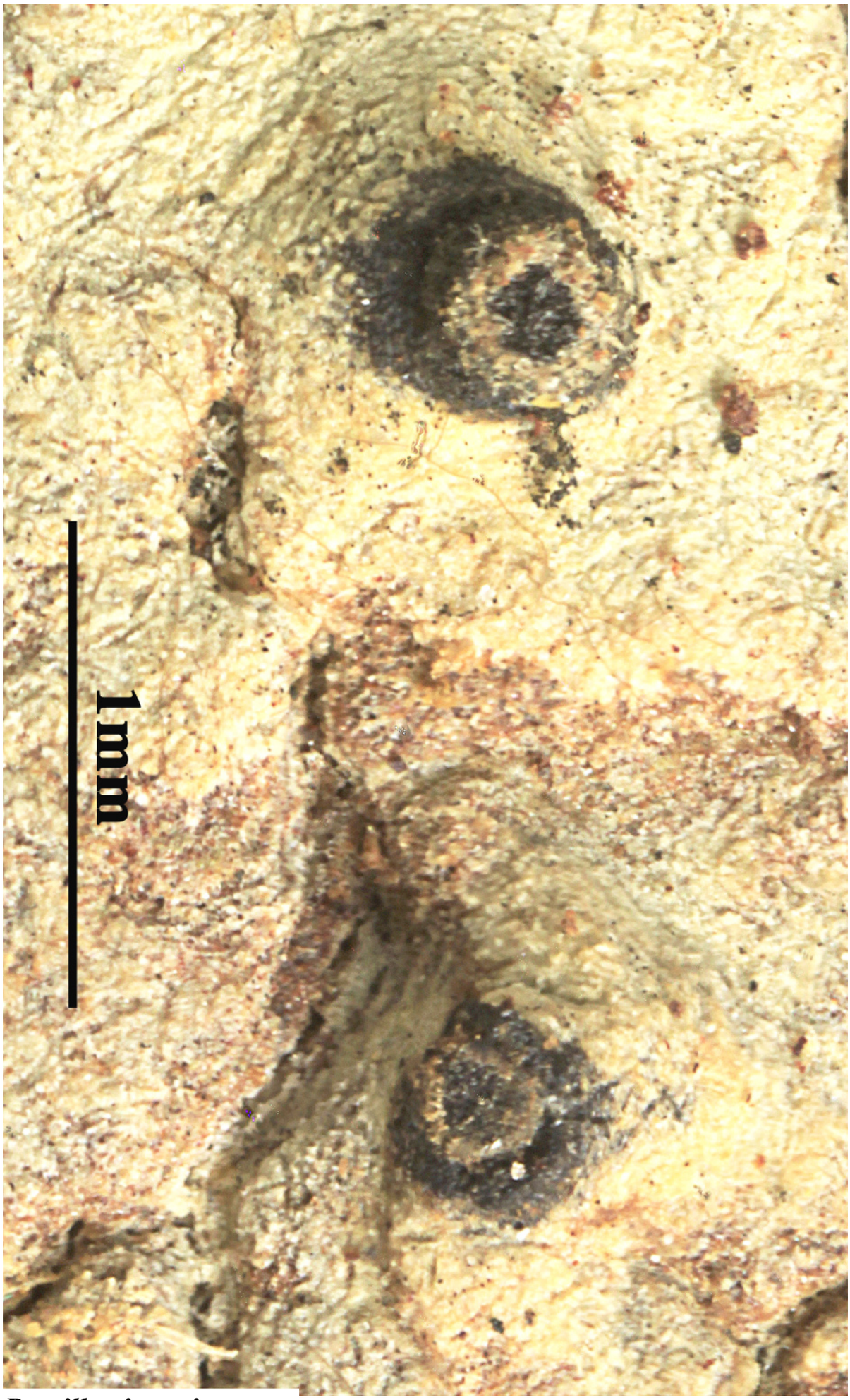
Pyrenula macrospora

Pyrgillus javanicus (Mont. & Bosch) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 334 (1858) [1857]
= *Acolium javanicum* (Mont. & Bosch) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 148 (1862) [1861-62]
= *Calicium javanicum* Mont. & Bosch, in Montagne, Syll. gen. sp. crypt. (Paris): 357 (1856)
= *Pyrgillus australiensis* F. Wilson, in Bailey, Bot. Bull. Dept. Agric., Queensland 7: 31 (1891)
= *Trachylia javanica* (Mont. & Bosch) Nyl., Monogr. Calic.: 33 (1857)

[VZR433], Insulae Seychellenses. Insula Praslin, Vallée de Mai, 250 m. Ad corticem arborum in sylva virginea. Leg. F. Ceni & A. Vězda, 27.05.2000. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 433.

Thallus crustose, corticolous, epiphloeodal, 4.5–10 cm across, 0.6–1.2 mm thick, dirty white-greenish or yellowish grey, continuous, smooth, corticated; prothallus brown-black; cortex 12–15 µm thick, containing minute crystals. Photobiont layer 25–35 µm thick, compactly arranged; photobiont *Trentepohlia*; cells 10–12 × 8–5 µm. Ascomata perithecioid, mazaedioid, sessile, scattered, solitary or paired, 0.8–1.1 mm high, ~ 0.7 mm wide; excipulum strongly sclerotized, 150–200 µm thick; the lower part spherical, partly immersed in substrate; covered by thick thalline margin. Upper compartment of the ascoma short, cylindrical, 0.5–0.7 mm wide and protruding 0. 4–0.55 mm above the surface of the thallus. Excipular margin greyish pruinose, K-; ostiole apical, obconical, 200–400 µm wide. Hamathecium not inspersed I-; paraphyses simple,1.5–2 µm thick. Asci 8-spored, becoming evanescent later on, cylindrical with uniseriate and periclinally arranged ascospores, 70–76 × 6–8 µm. Ascospores dark brown, broadly ellipsoid, 3-septate, smooth, thick walled, (9–) 10.5–12 (–13) × (6.5–) 7–8 µm. Chemistry: UV+ yellow; spot tests negative; lichexanthone. - Corticolous in tropical and subtropical forests. Pantropical.

Pyrgillus javanicus



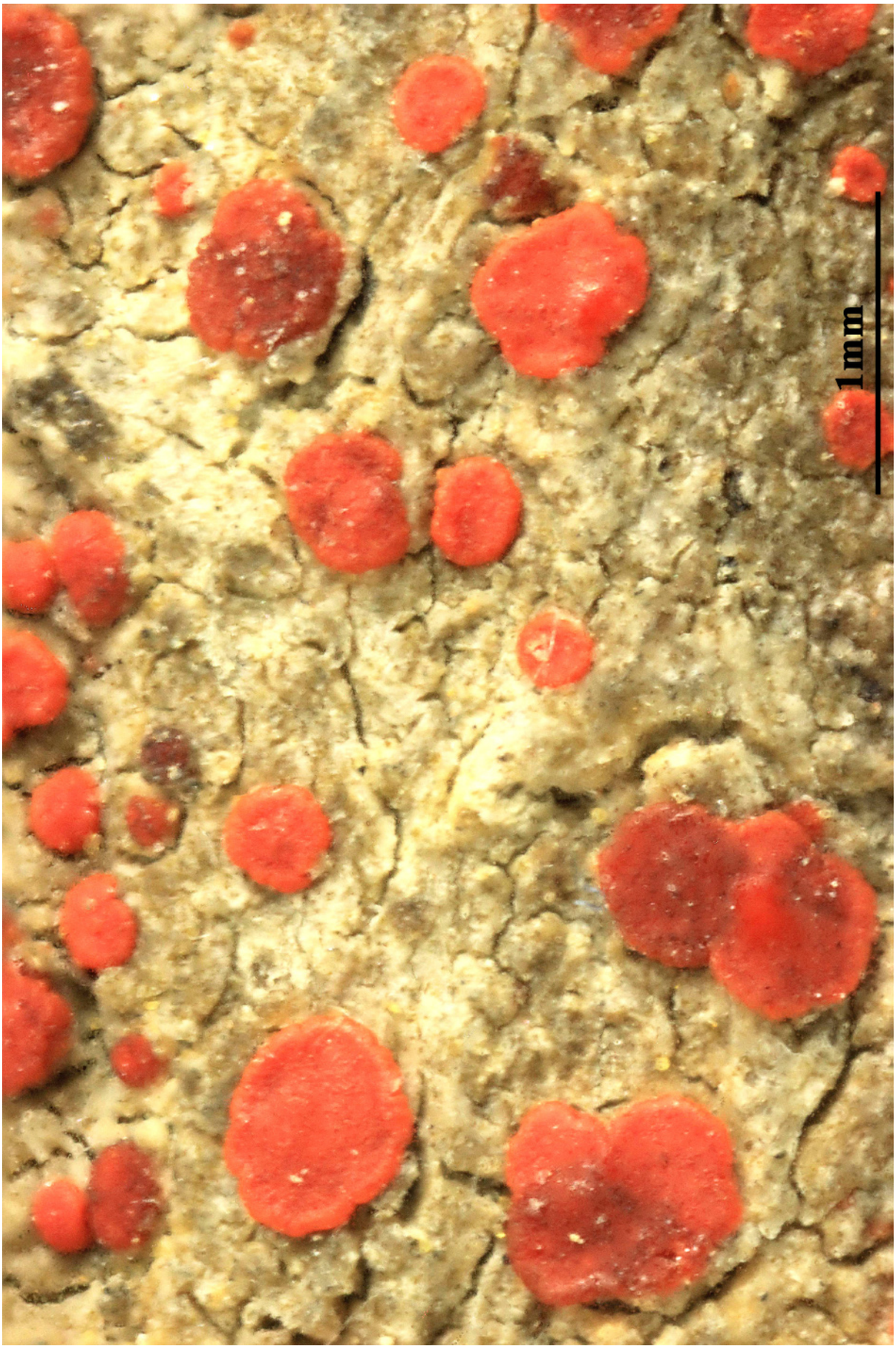
Pyrgillus javanicus

Pyrrhospora laeta (Stirt.) Hafellner, Herzogia 9(1-2): 86 (1992)
= *Ramboldia laeta* (Stirt.) Kalb, Lumbsch & Elix, Nova Hedwigia 86(1-2): 34 (2008)
= *Lecidea laeta* Stirt.

[VZR389], Nova Zelandia, Souths Island, Blue Mountain, 70 km ad occidentem a Dunedin, 45°52' merid., 169°19' orient., 990 m. Ad corticem *Dracophyllum* sp. . Leg. & det. W. Malcolm, 11.1008. Ex A. VěZDA: LICHENES RARIORES EXSICCATI NR. 389.

Thallus pale grey, often eroding with age, lacking soredia and isidia, ecorticate. Apothecia bright orange-red to red-brown; disc ± plane to strongly convex, epruinose; margin thin, soon excluded. Epihymenium orange, 11 µm, hymenium bright, not inspersed, 72 µm; hypothecium hyaline. Ascospores hyaline, simple, 8/ascus, c. 9 x 4 µm. Chemistry: thallus K-, C-, KC-, P-, UV-; apothecia K+ reddish purple; russulone (major), norrussulone (trace). Lit. Elix et al. (AL, 2005: 6-10)

Pyrrhospora laeta



Pyrrhospora laeta

Pyrrhospora laeta (Stirt.) Hafellner, Herzogia 9(1-2): 86 (1992)
= *Ramboldia laeta* (Stirt.) Kalb, Lumbsch & Elix, Nova Hedwigia 86(1-2): 34 (2008)
= *Lecidea laeta* Stirt.

[VZR218], Australia. Canberra, reservatum naturae Molongo Gorge reserve, 35°20' austr., 149°16' orient.. Ad corticem arborum. Leg. K. Kalb, J. Elix & G. Kantvilas, 7.9.1995, det. K. Kalb,.- annot K. Kalb: mit DC keine Inhaltsstoffe nachweisbar. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 219.

Thallus pale grey, often eroding with age, lacking soredia and isidia, ecorticate. Apothecia bright orange-red to red-brown; disc ± plane to strongly convex, epruinose; margin thin, soon excluded. Epihymenium orange, 11 µm, hymenium bright, not inspersed, 72 µm; hypothecium hyaline. Ascospores hyaline, simple, 8/ascus, c. 9 x 4 µm. Chemistry: thallus K-, C-, KC-, P-, UV-; apothecia K+ reddish purple; russulone (major), norrussulone (trace). Lit. Elix et al. (AL, 2005: 6-10)

Pyrrhospora laeta

Pyrrhospora laeta

Pyrrhospora quernea (Dicks.) Körb., Syst. lich. germ. (Breslau): 209, tab. 1, fig. 7 (1855)
= *Biatora quernea* (Dicks.) Fr., K. svenska Vetensk-Akad. Handl., ser. 3: 268 (1822)
= *Lecidea quernea* (Dicks.) Ach., Methodus, Sectio prior (Stockholmiæ): 62 (1803)
= *Lichen peltatus * quernea* (Dicks.) Lam., Encycl. Méth., Bot. Suppl. (Paris) 3(1): 290 (1813)
= *Lichen querneus* Dicks., Fasc. pl. crypt. brit. (London) 1: 9 (1785)
= *Patellaria quernea* (Dicks.) Spreng., Syst. veg., Edn 16 4(1): 265 (1827)
= *Protoblastenia quernea* (Dicks.) Clauzade, in Vězda, Lichenes Selecti Exsiccati, Fasc. (Průhonice) 23: no. 594 (1967)
= *Tetramelas querneus* (Dicks.) Norman, Conat. Praem. Gen. Lich.: 25 (1852)
= *Verrucaria quernea* (Dicks.) Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 195 (1796) [1795]

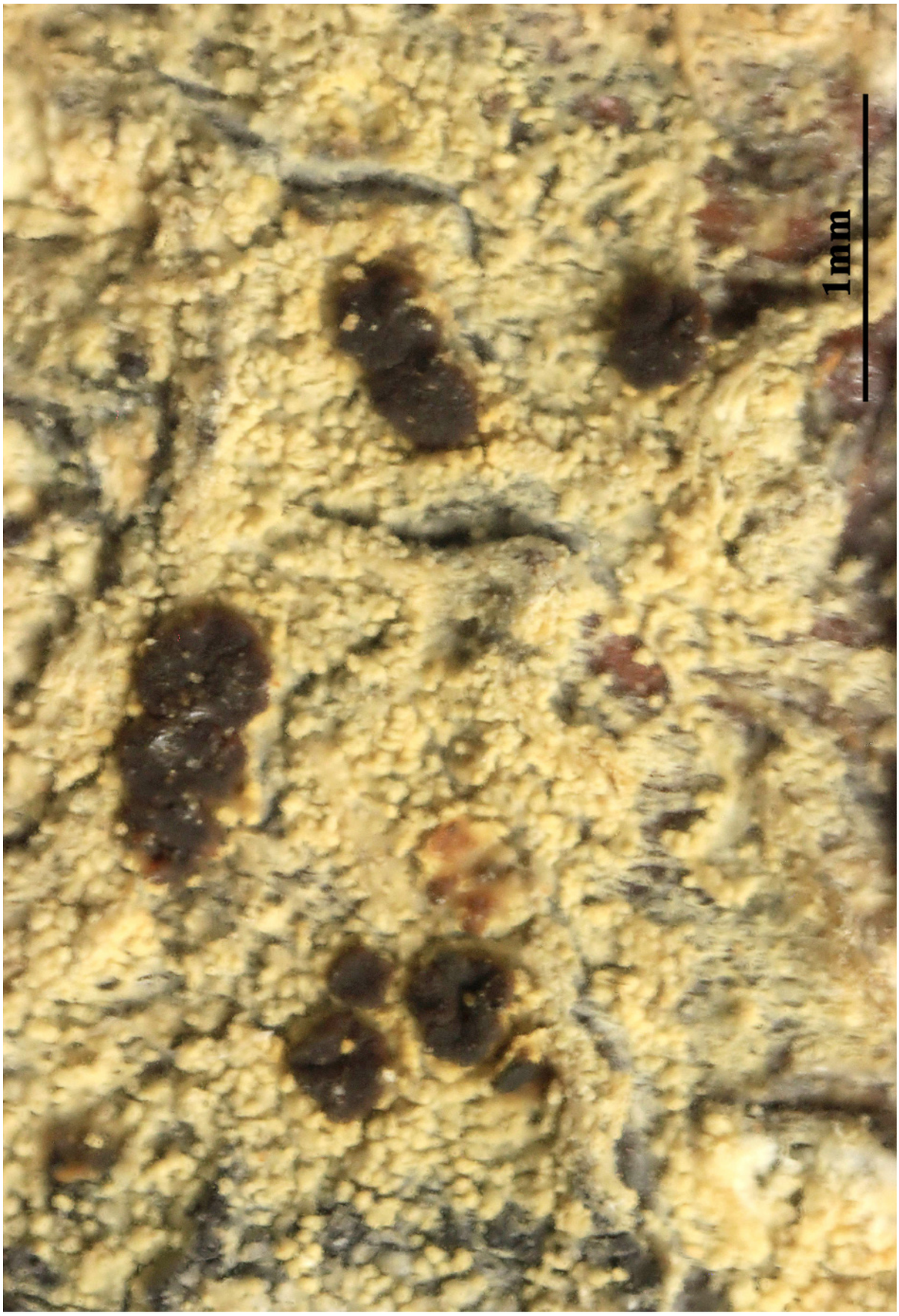
[VZR410], Baleares insulae (Hispania), insula Menorca, Es Mercadal, Cami d'en Kane, loco Sa Roca dicto, 150 m. Ad corticem *Quercus ilicis* in silva *Pinus halepensis*-*Quercus ilex*, 39°59' ad septentr., 4°11' ad orient., Leg. et det. K. Kalb, 31.8.1999. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 410.

hallus crustose, episubstratic, rather thick, straw-coloured, dull sulphur yellow or yellowish brown, greenish yellow in shade-forms, sometimes with a reddish brown tint, continuous to cracked, often entirely dissolved into a sorediose/blastidiate crust, when well-developed forming large patches delimited by a black prothallus. Soredia/blastidia diffuse, pale yellow to yellowish brown, granular, c. 0.15 mm across, sometimes gathered in rounded, up to 0.5 mm wide aggregates. Apothecia biatorine, sessile, rusty red to dark red-brown, sometimes finally blackening, 0.3-1(-1.5) mm across, often irregular in outline, with an initially flat but soon strongly convex disc and an entire or undulate, soon excluded proper margin. Proper exciple poorly developed, of conglutinated, thick-walled, radially oriented hyphae; epithecium inspersed with reddish brown granules, K+ dissolving purple-red; hymenium colourless, c. 50 µm high, K/I+ blue; paraphyses coherent, simple or sparingly branched in upper part, submoniliform, hardly swollen at tips; hypothecium colourless. Asci 8-spored, broadly clavate, with a well developed, amyloid tholus containing an ocular chamber and a

broad axial mass, Lecanora-type. Ascospores 1-celled, hyaline (turning brownish when old), short-ellipsoid to ellipsoid, 7-14 x 5-8 µm. Photobiont chlorococcoid. Spot tests: thallus K- or K+ very pale yellow, C+ and KC+ orange, P- or P+ weakly yellow, UV+ orange. Chemistry: thallus with isoarthothelin (major), thiophanic and thiophaninic acids (minor), plus different xanthones; apothecia with 7-chloroemodin. - Note: a mainly Mediterranean-Atlantic species found on bark, sometimes on lignum, abundant in humid coastal-Mediterranean, mostly Tyrrhenian sites, where it is often fertile, much rarer elsewhere; also occurring, albeit rarely - and then mostly sterile - in the Insubrian District of Lombardy and in lowland areas of Friuli, Veneto and Piemonte.

Pyrrhospora quernea

Pyrrhospora quernea



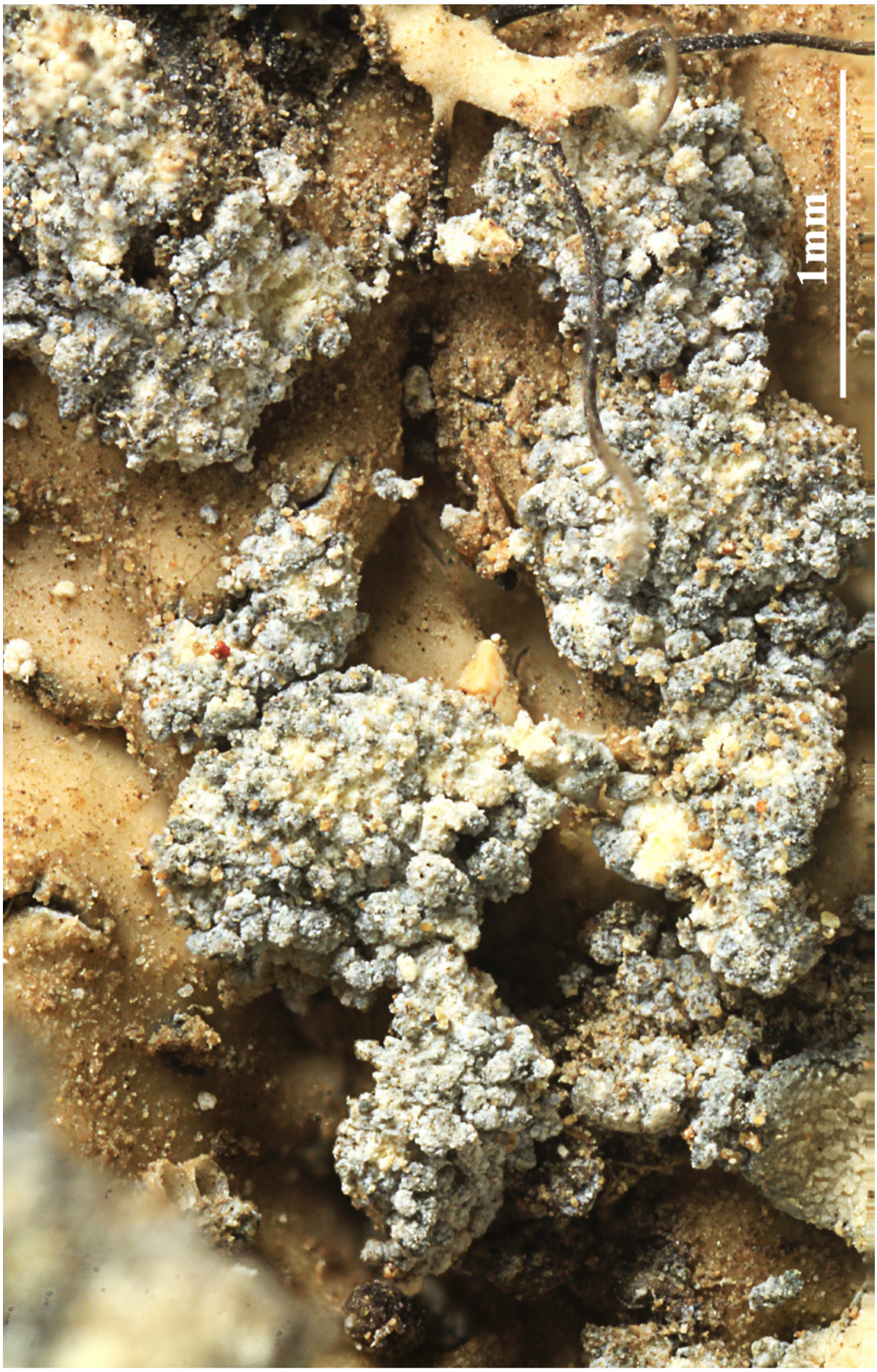
Pyrrhospora quernea

Pyxine sorediata (Ach.) Mont., in Sagra, Hist. phys. Cuba, Bot. Pl. Cell. 9: 124 (1845)
= *Lecidea sorediata* Ach., Syn. meth. lich. (Lund): 54 (1814)
= *Lichen daedaleus* Sm., in Smith & Sowerby, Engl. Bot. 30: tab. 2129 (1810)
= *Parmelia sorediata* (Ach.) Tuck., Proc. Amer. Acad. Arts & Sci. 1: 227 (1848)
= *Placodium daedaleum* (Sm.) Hook., Engl. Fl., Mosses, Hepaticae, Lichens, Characeae and Algae (London) 5(1): 202 (1833)
= *Pyxine cocoes* subsp. *sorediata* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 80 (1882)
= *Pyxine cocoes* var. *sorediata* (Ach.) Nyl. [as 'cocoës'], Annls Sci. Nat., Bot., sér. 4 11: 218 (1859)

[VZR155], Insula Canarienses, Tenerife. Las Montañas de Anaga, ad marginem pagi Taborno, 600 m. Ad saxa eruptiva. Leg. A. Vězda 15.03.1994, det. K. Kalb. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 155.

Thallus foliose, loosely appressed, up to 8 cm in diam; lobes flat or slightly concave, 0.6-1.3 mm wide; upper surface beige gray, brownish gray, leaden or bluish gray; pseudocyphellae very distinct along the lobe margins, sometimes gray pruinose and reticulately confluent; pruina punctiform on the peripheral parts of the lobes; soredia always present, granular, rarely farinose, initially in marginal, fissural, then in laminal, in orbicular soralia, sometimes secondarily with a cortex and then simulating polysidiangia; isidia and true polysidiangia lacking; medulla upper part lemon yellow, ochraceous to orange yellow; lower surface black in center, paler towards lobe tips; rhizines ± dense, blackish to blackish blue, furcately divided. Apothecia obscurascens-type, rare, laminal, 0.5-1.4 mm wide; disc black, not pruinose; internal stipe distinct, upper part dark orange, lower part white; ascospores one-septate, brown, 14-19 x 6-8 µm. Pycnidia immersed; conidia bacilliform, 3-4 x 1 µm. Spot tests: upper cortex K+ yellow or K-, C-, KC-, P- or P+ pale yellow; medulla upper and lower part K-, C-, KC-, P-; internal stipe upper part K+ red, C-, KC+ purple, P-; lower part K-, C-, KC-, P-. Secondary metabolites: upper cortex atranorin (sometimes in very low concentration); medulla with terpenes of a characteristic pattern on TLC plates, and an unknown pigment. - On bark, acidic rocks and over mosses from sea level to subalpine areas. North America, Europe, Africa, Nepal, India, Japan, Australasia and insular Laurimacaronesia.

Pyxine sorediata



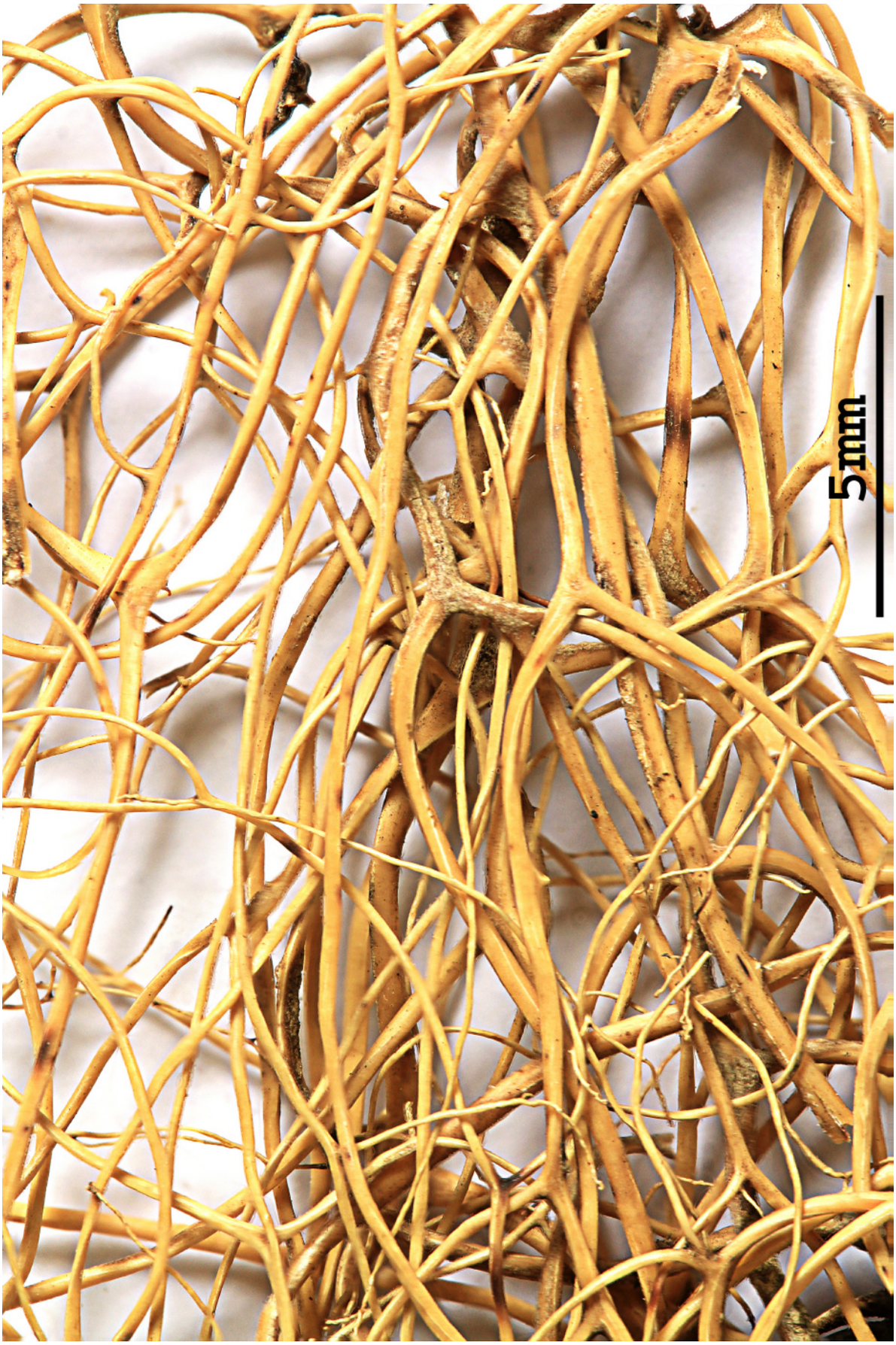
Pyxine sorediata

Ramalina anceps Nyl., Syn. meth. lich. (Parisiis) 1(2): 290 (1860)

[VZR57], Antillarum Insulae. Guadeloupe: insula Basse-Terre, ad austro-orientalum versus a Morne á Louis, 500 m. Ad arbores. Leg. J. Vivant, 02.11.1992, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 57.

NYLANDER 1860:
Thallus stramineus vel stramineo-pallescens, vel pallidus nitidiusculus elongatus (1-2-pdalis) pendulus dichotome ramosissimus compressiusculo-amceps, sat gracilis, ramis valde attenuatis flexuosis intricatis. In Guadalupa Antillarum. - Thallo ancipite dense implexo-ramoso o congeneribus dignota, facie Alectoriae sed textura strati corticalis ut in Ramalinis huijus subdivisionis. Furca ramorum curvata (nec angulum sistens). Thallus basi fere latitudinem 4 mm adtingens. Apothecia et spermogonia mihi ignota

Ramalina anceps



Ramalina anceps

Ramalina arabum (Dill. ex Ach.) Meyen & Flot., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur., Suppl. 1 19: 212 (1843)
= *Alectoria arabum* Dill. ex Ach. 1810

[VZR485], Italia, Pelagiae insulae, insula Linosa: in colle "Timpone", 30 m. Ad saxa eruptiva. Leg. F. Ceni & A. Vězda, 15.04.1992. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 495.

Thallus saxicolous, densely tufted, with numerous branches arising from closely adjacent holdfasts. Branching irregular. Branches up to 6 cm long, irregularly recurved and tangled, in basal parts sometimes flattened into ribbons up to 3 mm wide, but more commonly ca. 1 mm wide and irregularly thickened, foveate, or ridged, here and there with short, thin lateral branchlets, distal parts subterete, tapering, often forming recurved, hookshaped apices. Soredia and isidia absent. Paraplectenchymatous cortex absent, peripheral chondroid tissue well developed, forming a continuous cylinder of uneven thickness, medulla dense, somewhat compressed, without chondroid strands. Apothecia not seen. TLC: Salazinic acid. According to Nimis (1993) the species is found on siliceous rocks, very rarely on limestone, near the coast, in sites with frequent fog and exposed to humid maritime winds.

Ramalina arabum

Ramalina arabum

Ramalina bourgaeana Mont. ex Nyl. [as 'bourgæana'], Bull. Soc. linn. Normandie, sér. 2 4(2): 152 (1870)
= *Niebla bourgaeana* (Nyl.) Rundel & Bowler

[VZR125], Insulae Canarienses, Tenerife. Montañas de Anaga, in valle angusta sub vico Chamoga, 600 m. Ad pariete rupium basalticarum. Leg. et det. A. Vězda, 15.03.1884, EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 125.

Thallus fruticose, consisting of greenish to greenish grey, 0.2-8 cm wide and 1-14 cm long, cuneate, rigid, strongly reticulately ridged, sparingly branched, erect laciniae forming rosettes or tufts, without pseudocyphellae. Cortex 60-80 µm thick; medulla white, solid; discontinuous chondroid strands well-visible in the medulla and under the cortex. Apothecia lecanorine, to 1.2 cm across, mostly laminal, a few also marginal or apical, with a concave to flat, often radially split, greenish disc and a reticulately ridged, thick thalline margin. Epithecium pale olive-brown; hymenium and hypothecium colourless; paraphyses thick-walled, richly branched in upper part. 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 1-septate, hyaline, ellipsoid, slightly curved, 10-14 x 3-5 µm. Pycnidia marginal and laminal, with pale ostioles. Photobiont chlorococcoid. Spot tests: medulla K- or K+ yellow turning red, C-, KC-, P- or P+ red. Chemistry: usnic acid in cortex; salazinic and/or bourgeanic acid in the medulla. - a Mediterranean-Macaronesian species found on coastal siliceous rocks; related to *R. rosacea*, but chemically different.

Ramalina bourgaeana

Ramalina bourgaeana

Ramalina bourgaeana

Ramalina celastri (Spreng.) A. Massal., Mem. Imp. Reale Ist. Veneto 10: 36 (1861)
= *Evernia flavicans* f. *tenuissima* Meyen & Flot., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur., Suppl. 1 19: 220 (1843)
= *Lichen linearis* Sw., Method. Muscor. Illustr. (Upsaliae): 36 (1781)
= *Parmelia celastri* Spreng., Syst. veg., Edn 16 4(1): 328 (1827)
= *Parmelia linearis* (Sw.) Ach., Methodus, Sectio post. (Stockholmiæ): 257 (1803)
= *Ramalina linearis* (Sw.) Ach., Lich. Univ.: 598 (1810)
= *Ramalina ovalis* Hook. f. & Taylor, London J. Bot. 3: 655 (1844)
= *Ramalina yemensis* subsp. *ovalis* (Hook. f. & Taylor) Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 145 (1870)
= *Ramalina yemensis* var. *membranacea* (Laurer) Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 145 (1870)
= *Ramalina yemensis* var. *ovalis* (Hook. f. & Taylor) Zahlbr., Cat. Lich. Univers. 6: 529 (1930)
= *Ramalina yemensis* var. *tenuissima* (Meyen & Flot.) Zahlbr., Cat. Lich. Univers. 6: 529 (1930)

[VZR186], Chile. Prov. de Cautin: Puerto Saavedra, 38°45' austr., 73°24' occid. Ad tabernas valli. Leg. H. Roivanen, 29.03.1970, dupl. det. H.Kashiwadani, 1988. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 186.

Thallus rigid, erect or subpendulous, to 15 cm long, sparingly to moderately branched from an often broad base. Branches stramineous or pale green grey, solid, flattened, lanceolate, plane or somewhat canaliculate, width variable, 1-20 mm, commonly 3-5 mm, young branches thin, more or less smooth, older branches longitudinally or reticulately ridged from strands of cartilaginous tissue, often with holes or cracks. Shortly linear or irregular laminal pseudocyphellae common. Soredia absent. Apothecia numerous, lateral, mainly laminal, stipitate, disc flat or convex, thalline exciple smooth. Spores 11-16 x 4-7 µm. CHEMISTRY: No medullary substances. - Corticolous and lignicolous on trees, shrubs, and posts in natural and artificial habitats in sunny to moderately shady places, common and widespread between 800 and 3400 m. Worldwide in the tropics.

Ramalina celastri

Ramalina celastri

Ramalina crispatula Dèspr. ex Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 154 (1870)
= *Niebla crispatula* (Dèspr. ex Nyl.) Bowler & J.E. Marsh, Lichen Flora of the Greater Sonoran Desert Region (Tempe) 2: 370 (2004)

[VZR147], Insula Canarienses, Tenerife. Las Montañas de Anaga, in margine vici Taborno, 600 m. Ad oarietes rupium. Leg. A. Vězda, 15.03.1994. - Chemistry (TLC anal K. Kalb): salazinic acid (major), protocetraric acid (minor). EX A. VěZDA: LICHENES RARIORE EXSICCATI NR. 147.

Chondroid tissue in the medulla; thallus usually dull, often strongly reticulate, without black tips. Laciniae richly branched and widening towards the tips after each branching. Saxiclous. C–, K+red or K–, P+red or P–, UV– (salazinic, protocetraric, and/or bourgeanic).

Ramalina crispatula

Ramalina crispatula

Ramalina deminuta Krog & Østh., Norw. Jl Bot. 27(3): 271 (1980)

[VZR177], Insulae Canarienses, Gran Canaria. San Bartolome, supra urbem Fataga, 800 m. In abrupto, ad saxa basaltica. Leg. et det. A. Vězda, 07.02.1994. Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 177.

Thallus saxicolus, rigidus, usque ad 1.5 cm altus, caespitosus, laciniis fistulosis sparse ramosis irregulariter inflatis fenestratis. Soralia nulla. Cortex indistinctus, cylindrus chondroideus inaequaliter incrassatus, medulla in partibus juvenalibus discontinua, in partibus veteribus in textura chondroidea inclusa. Pycnidia non visa. Apothecia saepe numerosa, apicalia, in maturitate valde convexa, sporis l2-I5 x 5-6 µm. Acidum divaricaticum et acidum aliphaticum incognitum continens.

Thallus saxicolous, rigid, up to 1.5 cm high, caespitose, with a number of laciniae from a more or less well defined holdfast. Laciniae sparingly to richly branched, 1-3 mm broad, stramineous to green-grey or yellow-green, hollow, unevenly inflated, irregularly cracked and fenestrate. Soralia absent. Cortex indistinct, chondroid cylinder of uneven thickness, medulla discontinuous in younger parts; in older parts scattered groups of algal cells and medullary hyphae become imbedded in the chondroid tissue, lending a nodular appearance to the surface. Pycnidia not seen. Apothecia often numerous, apically situated on main and short lateral branches, thalline exciple smooth, disc up to 8 mm in diameter, variously cracked and strongly convex at maturity, spores 12-15 x 5 µm. TLC: divaricatic acid, undetermined fatty acid. - *Ramalina deminuta* may recall *R. pitardii* in its unevenly inflated laciniae and saxicolous habit, but *R. pitardii* has mainly subapical apothecia and a more fragile thallus which forms spreading colonies up to 4 cm high, and it produces sekikaic acid. *Ramalina parva*, a small, tufted, saxicolous species with divaricatic acid, differs from *R. deminuta* in its much softer thallus and its total lack of apothecia. None of them has the algal cells and medullary hyphae surrounded by chondroid tissue as seen in *R . deminuta*. The anatomical features of *R. deminuta* come closest to those of *R . tortuose*, a principally nonfistulose species.

Ramalina deminuta

Ramalina deminuta

Ramalina glaucescens Kremp., Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 30: 333 (1881) [1880]

[VZR457], Nova Zelandia: South Island, Nelson, Tahunanui Beach, in ramulis arboris. Leg. W. Malcolm & A. Vězda, 19.04.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 457.

Ramalina glaucescens is characterised by: the corticolous/lignicolous (rarely saxicolous) habit; rather variable thallus, size and form depending on habitat; branches flat to occasionally subterete and sometimes appearing almost inflated; pseudocyphellae rare; apothecia crowded, terminal or subterminal; and sekikaic acid in the medulla.

Ramalina glaucescens

Ramalina glaucescens

Ramalina implectens Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 116 (1870)

[VZR78], Insulae Canarienses, Gran Canaria: distr. Arucas, secus viam inter vicos Lanzarote et Valleseco, 850 m. In ramulis arborum (Prunus sp.). Leg. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 78.

Thallus fruticose, erect to subpendent, yellowish green to straw-coloured, somehow glossy, smooth, formed by 0.5-2 mm wide, up to 14 cm long, sparingly branched, flattened to canaliculate laciniae with pointed, often curved apices, originating from a basal holdfast; pseudocyphellae usually present, short-elongate, slightly raised, mostly marginal, sometimes poorly evident. Cortex 8-15 µm thick2-layered, the outer part paraplectenchymatous, the inner part with more or less continuous chondroid strands; medulla white, lax but solid. Apothecia frequent, lecanorine, 2-5 mm across, marginal and subapical, with a yellowish green, flat to convex disc and a smooth thalline margin, often spurred. Epithecium pale olive; hymenium and hypothecium colourless; paraphyses thick-walled, richly branched in upper part. 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 1-septate (some of them may have a subterminal pseudo-septum), hyaline, ellipsoid, usually not curved, 14-17 x 4-5 µm. Pycnidia laminal, with pale ostioles. Conidia bacilliform. Photobiont chlorococcoid. Spot tests: K- or K+ yellow sometimes turning red, C-, KC-, P- or P+ yellow-orange, UV- or UV+ white. Chemistry: cortex with usnic acid; medulla without lichen substances, or with variable amounts of hypoprotocetraric, protocetraric, salazinic, and/or norstictic acids. - A Mediterranean-Macaronesian species found on branches of evergreen trees and shrubs in open, but very humid stands.

Ramalina implectens

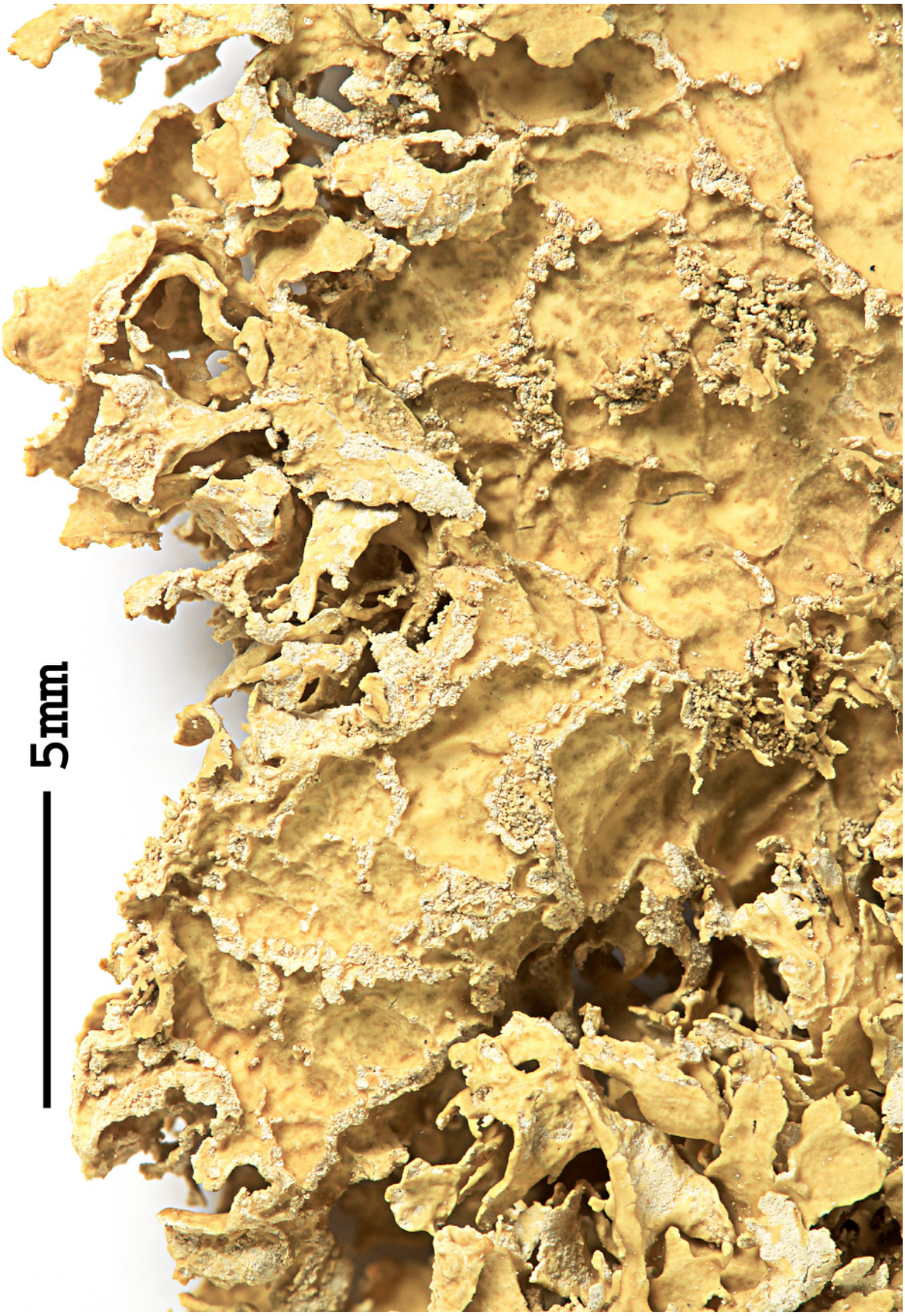
Ramalina implectens

Ramalina lacera (With.) J.R. Laundon, Lichenologist 16(3): 221 (1984)
= *Dievernia duriaei* (De Not.) M. Choisy, Bull. Soc. bot. Fr. 78: 455 (1931)
= *Dievernia lacera* (With.) Bowler & Riefner, Bull. Calif. Lichen Soc. 2(1): 1-5 (1995)
= *Lichen lacerus* With., Bot. arr. veg. Gr. Brit. (London) 2: 716 (1776)
= *Ramalina duriaei* (De Not.) Bagl., Nuovo G. bot. ital. 11: 99 (1879)
= *Ramalina pollinaria* [unranked] *duriaei* De Not., G. bot. ital. 2(1.1): 216 (1846)
= *Ramalina pollinaria* var. *duriaei* (De Not.) Bagl., Nuovo G. bot. ital. 3: 217 (1871)

[VZR038], Italia. Pelagiae insulae: insula Linosa, in colle "Timpone", 30 m. In ramulis fruticum. Leg. F. Ceni & A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 038

Thallus fruticose, shrubby, rather soft, yellowish green to greenish white, dull, consisting of up to 5(-12) cm long, 5-10(-20) mm wide, palmately or irregularly branched, reticulately ridged (especially on the lower surface), flattened laciniae growing from a basal holdfast; pseudocyphellae absent or scarce. Main laciniae monophyllous, with numerous, small, marginal secondary branches; soralia starting as eroded patches on the cortex, later occupying entire lobe ends, especially on the underside; soredia 20-40 µm in diam., farinose. Cortex very thin, of a single prosoplectenchymatous layer, lacking chondroid strands; medulla white. Apothecia and pycnidia very rare (not observed in Italian material). Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC+ yellowish, P-, UV-; medulla KC-. Chemistry: cortex with usnic acid; medulla with bourgeanic acid. - A mainly Mediterranean-Atlantic lichen recently reported also from the Americas, found on twigs, more rarely on rocks in maquis vegetation near the coast.

Ramalina lacera



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[VZR038], Italia. Pelagiae insulae: insula Linosa, in colle "Timpone", 30 m. In ramulis fruticum. Leg. F. Ceni & A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 038

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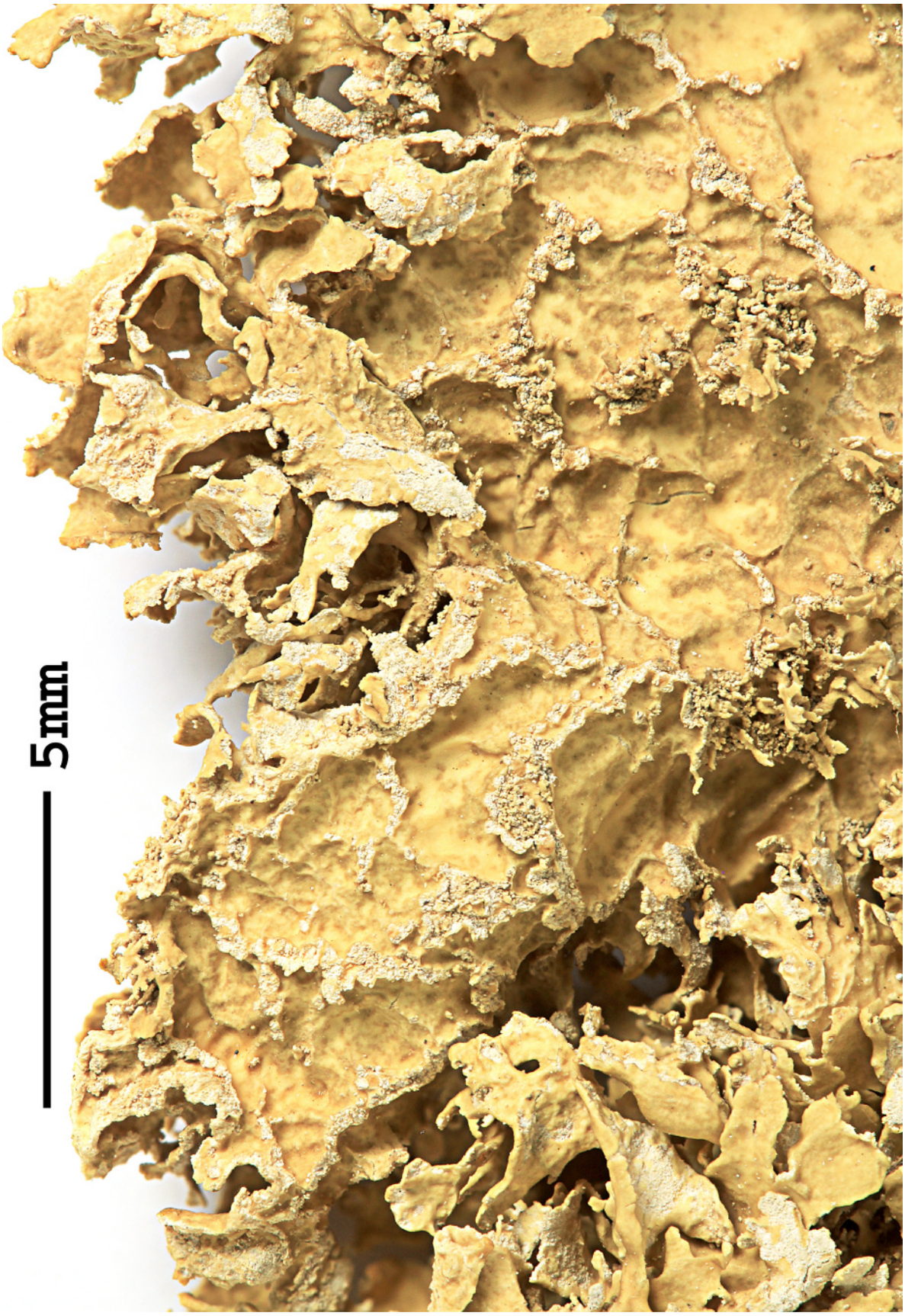
Ramalina lacera



Ramalina lacera

Ramalina leiodea (Nyl.) Müll. Arg., Flora, Regensburg 66(2): 21 (1883)
= *Ramalina subfraxinea subsp. leiodea* Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 141 (1870)
= *Ramalina subfraxinea var. leiodea* (Nyl.) G.N. Stevens, Bull. Br. Mus. nat. Hist., Bot. 16(2): 207 (1987)

[VZR58], Australia. Queensland, Wilsons Beach, 17 km ad australem et orientem versus a Proserpine, 1 m. In litore, in ramulis (*Hibiscus tiliaceus*). Leg. J.A. Elix (20964A), 30.06.1984. - Annot.: Boninic avid (major), 2-O-methylsekikaic acid (major), 4'-O-methylpaludosic acid (minor), 4,4'-di-O-methylcryptochlorophaeic acid (trace), unknows (trace) by TLC, HPLC, anal. J. A. Elix. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 58.

Thallus corticolous, caespitose, rigid, usually approximately 4 cm high, occasionally up to 11 cm and then subpendulous, very sparse to moderate subdichotomous branching, branches compressed, flat, sometimes canaliculate when narrow, usually (05-)2-4(-10) mm wide tapering distally, longitudinal striae (pseudocyphellae) sometimes present on the basal section of the branches, texture of branches varying from smooth to coarse (a greater degree of coarseness of the thallus occurs in those specimens containing boninic acid, but this difference is impossible to gauge without comparison of both forms simultaneously). Apothecia shortly stipitate, marginal and subterminal, rarely laminal; when the thallus is less than 3 cm high the apothecia are mainly subterminal, causing the apices of the branches to protrude sideways producing a spur; disc greenish lemon, pruinose, concave or flat 2-3 mm wide. Thecium 40-45 µm tall, epithecium opaque with numerous tiny granules which dissolve in K, hypothecium 20 µm tall, hyaline. Paraphyses branched, irregular at the apices, not markedly capitate, 1 µm thick. Asci 40-43 x 17 µm, clavate to subcylindrical, eight-spored. Ascospores hyaline, one septate, straight or slightly curved, (8-)10-12(-16) x 4-5(-6) µm. Pycnidia not seen. - Morphological variation: The morphological variability exhibited by Ramalina leiodea is indicative of the ability of the phenotype to be modified to cope with a broad environmental spectrum. Along the Australian coastline both chemical races have been found to occur in a large number of differing forms, from small delicate thalli (2 cm high), through intermediate forms (which are in the majority), to large thalli up to 11 cm long. In its largest form, this taxon occurs in the Bonin Islands. It was described by

Asahina (1938), who found that it contained the newly identified boninic acid. At that time, no other lichen species had been recorded as possessing this acid, so he treated it as a new Ramalina species, *R. boninensis* Asah. The smaller and narrower branched form, *R. boninensis* f. *subcalicariformis* Asah. differs only in being a more slender morphotype (Kashiwadani, in litt.). This latter taxon is identical with the intermediate forms of the cryptochlorophaeic acid race and with the boninic acid specimens collected in the south Pacific.

Chemical variation: The boninic acid race, from the Australian coastline, contains boninic acid as the major constituent, with accessory acids, 2'-O-methylsekikaic, 2,4'-di-O-methylnorsekikaic, 4'-O-methylpaludosic and 4,4'-di-O-methylcryptochlorophaeic acids (Chester & Elix 1978: 2747). The cryptochlorophaeic acid race from the Australian coastline has also been found to contain accessory acids paludosic and 4'-0-methylcryptochlorophaeic in many of the specimens (J. Elix, in litt.). The two chemical races appear to have a close affinity, which is borne out by the fact that one specimen collected from Yamba, New South Wales, lat. 29°S (Stevens 2132) contains both cryptochlorophaeic and boninic acids in the one thallus (Elix, in litt.).

Ramalina leiodea

Ramalina leiodea

Ramalina leiodea

Ramalina maderensis Motyka, Fragm. flor. geobot. (Kraków) 6(4): 705 (1961)

[VZR79], Insulae Canarienses, Gran Canaria: distr. Mogán, in declivibus occidentalibus montis "Guirre" supra urbem Mogán, 600 m. In rupibus basalticis. Leg. A. Vězda, 15.02.1993. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 79.

Thallus saxicolous, rigid, erect to subpendulous, up to 8 cm long, with several laciniae arising from a broad holdfast. Laciniae palmate or sublinear, 24(10) mm broad, matt or more rarely shiny, usually with longitudinally arranged pseudocyphellae, either near the base or along their entire length. Soralia absent. Cortex 25-50 µm thick, chondroid tissue well developed, partly as a disrupted cylinder adjoining the cortex, partly as strands traversing the dense, compressed medulla. Apothecia apical or subapical, often spurred, disc up to 12 mm in diameter, crenate or radially split, spores l0-12(14) x 3-5 µm. Pycnidia marginal and laminal, with pale ostioles, often mixed with tubercles which may be initial apothecia or pycnidia. TLC: (l) lecanoric acid, methylbarbatic acid. (2) 4-O-de-methylbarbatic acid. - Smooth, shiny specimens of *R. maderensis* resemble certain morphotypes of *R. decipiens*, but can be easily distinguished by means of chemical characters. A colour reaction with C in the medulla of R . maderensis is always positive (red in strain (l), orange in strain (2) above), while it is negative in *R. decipiens*. The chemical properties of *R. maderensis* and its relationship with other *Ramalina* species have been discussed by Imshaug & Harris (197l) and Sheard & James (1976). - *Ramalina maderensis* has been collected in exposed, dry habitats near the coast between 250 and 600 m altitude. The two chemical strains have somewhat different distribution areas within the islands, but occur together in, for example, Montafra Taco in Tenerife. The species is known from Madeira and the Cape Verde Islands.

Ramalina maderensis

Ramalina maderensis

Ramalina sprengelii Krog & Swinscow, Norw. Jl Bot. 23(3): 172 (1976)
= *Ramalina ecklonii* (Spreng.) Meyen & Flot. [as 'eckloni'] 1843

[VZR479], Uruguay. Dept. Cerro Largo, Canada del Vichadero et Yaguarón (prope Paso Centurión: 32°07' merid., 53°44' occid.). In ramulis fruticum & arborum. Leg. P. Scarabino, 30.03.2002, det: H. S. Osorio (no. 9559). EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 479.

Thallus corticolous, pendulous, up to 30 cm long, dichotomously or irregularly branched, growing from a narrow holdfast. Branches solid, bifacial or cylindrical to terete throughout the thallus, 0-2-0-5(-l) mm wide; surface subnitid to dull, striate with continuous, linear pseudocyphellae. Soredia absent. Thallus up to 500 µm thick; cortex thin, distinct, rather easily distinguished from the chondroid tissue, 15-20 µm thick; chondroid tissue continuous in bifacial branches, dissected and discontinuous in cylindrical ones, not cracked; medulla loose. Apothecia rather common, marginal or lateral, up to 1 -5 mm in diameter; margin entire; disc flat to convex; thalline exciple entire, lacking pseudocyphellae; hymenium 50-60 µm; hypothecium 20-30 µm; proper exciple 30-40(-50) µm thick; ascospores 2-celled, usually with additional septa, short-fusiform, 12-14 x 4-5 µm. Note: Ramalina sprengelii is characterized by the: (1) pendulous thallus; (2) solid, bifacial to cylindrical branches without soredia or isidia; (3) continuous, linear pseudocyphellae; (4) non-cracked chondroid tissue; (5) short-fusiform ascospores, 12-14 x 4-5 µm in size; (6) absence of medullary substances. Ramalina sprengelii is rather variable in branch morphology. Although the branches are always dorsiventral near the base (up to 10 mm wide), the distal ones may be dorsiventral, as in the type specimen, or almost cylindrical; the surface of branches also varies from subnitid to dull. However, no apparent correlation of branch morphology with anatomy or chemistry was found. This species often occurs intermixed with *R. usnea*, which has long-fusiform ascospores and cracked, chondroid tissue. It grows on tree trunks in open woodlands and at the edges of rainforests from 850-1700 m. It has been reported from Kenya, South Africa, Tanzania, Brazil and Uruguay.

Ramalina sprengelii

Ramalina sprengelii

Ramalina sprengelii Krog & Swinscow, Norw. Jl Bot. 23(3): 172 (1976)
= *Ramalina ecklonii* (Spreng.) Meyen & Flot. [as 'eckloni'] 1843

[VZR494], Uruguay. Depto. Rocha, Cerros de Navarro, Quebrada de los Higuerones, 34°05'26" austr., 53°45'4" occid., in ramulis arborum. Leg. et det. H. S. Osorio (9644) & G. Geymonat, 25.04.2004. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 494.

Thallus corticolous, pendulous, up to 30 cm long, dichotomously or irregularly branched, growing from a narrow holdfast. Branches solid, bifacial or cylindrical to terete throughout the thallus, 0-2-0-5(-l) mm wide; surface subnitid to dull, striate with continuous, linear pseudocyphellae. Soredia absent. Thallus up to 500 µm thick; cortex thin, distinct, rather easily distinguished from the chondroid tissue, 15-20 µm thick; chondroid tissue continuous in bifacial branches, dissected and discontinuous in cylindrical ones, not cracked; medulla loose. Apothecia rather common, marginal or lateral, up to 1 -5 mm in diameter; margin entire; disc flat to convex; thalline exciple entire, lacking pseudocyphellae; hymenium 50-60 µm; hypothecium 20-30 µm; proper exciple 30-40(-50) µm thick; ascospores 2-celled, usually with additional septa, short-fusiform, 12-14 x 4-5 µm. Note: Ramalina sprengelii is characterized by the: (1) pendulous thallus; (2) solid, bifacial to cylindrical branches without soredia or isidia; (3) continuous, linear pseudocyphellae; (4) non-cracked chondroid tissue; (5) short-fusiform ascospores, 12-14 x 4-5 µm in size; (6) absence of medullary substances. Ramalina sprengelii is rather variable in branch morphology. Although the branches are always dorsiventral near the base (up to 10 mm wide), the distal ones may be dorsiventral, as in the type specimen, or almost cylindrical; the surface of branches also varies from subnitid to dull. However, no apparent correlation of branch morphology with anatomy or chemistry was found. This species often occurs intermixed with *R. usnea*, which has long-fusiform ascospores and cracked, chondroid tissue. It grows on tree trunks in open woodlands and at the edges of rainforests from 850-1700 m. It has been reported from Kenya, South Africa, Tanzania, Brazil and Uruguay.

Ramalina sprengelii

Ramalina sprengelii

Ramalina subfraxinea* var. *subfraxinea Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 139 (1870)

[VZR109], Australia. Queenslandia. Laguna Bay, ad septentriones et occidentem a Tewantin, 140 km ad septentriones a Brisbane, 26°20' austr., 153°03' orient. In litore, ad trucos arborum (*Banksia integrifolia* & *Casuarina glauca*), 5 m. Leg. K. & A. Kalb, 23.08.1992.- Chemistry (TLC, anal. K. Kalb): usnic acid, divaricatic acid, atranorin. - Ex A. Vězda: Lichenes Rariores Exsiccati Nr. 109.

Thallus corticolous, pale green to grey-green, erect to subpendulous, up to 3 cm long, exceptionally to 12 cm; branching subdichotomous, sparse; branch width 0.5-1 (-3,5) mm, branches compressed, narrow and canaliculate with attenuate apices or broad and flat with blunt apices; surface matt or shiny, marginal tuberculate pseudocyphellae frequent, laminal punctiform pseudocyphellae on broad branches; hold-fast delimited; soralia absent. Apothecia sparse to numerous, marginal and subterminal; disc 1-4 mm diam. , concave, plane to convex; margin entire; spores ellipsoid, straight to slightly curved, 11-12(-16) x 4-5(-6) µm . Chemistry (Australian taxa). Sekikaic acid, homosekikaic acid, ramalinolic acid, 4'-0-demethylsekikaic acid, paludosic acid, 4'-0-methylnorsekikaic acid, and usnic acid or divaricatic acid faint sekikaic acid and usnic acid.

Ramalina subfraxinea* var. *subfraxinea

Ramalina subfraxinea* var. *subfraxinea

Ramalina superfraxinea Follmann & Sánchez-Pinto, Philippia 4(3): 193 (1980)

[VZR119], Insulae Canarienses, Tenerife. Carachico, inter pagos Las Cruces et Tanque, 300m. Ad ramos areborum (*Prunus* cult.) in horto rusticale. Leg. A. Vězda & F. Ceni, 11.03.1994, det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 119.

Species ex affinitate *Ramalinae fraxineae* (L.) ACH. (sect. *Ramaiina,* subsect. *Myelopoea,* ser. *Compressiusculae);* epiphytica, corticicola, acidophila, photophila, hygrophytica, poleophoba; thallus fruticosus, plus minusve niduliformis, rigidus, suberectus vel subpendulus, 10-20 cm longus, stramineus, luteoviridis vel viridigriseus, opacus, modice subdichotome ramosus; ramuli applanati, glabri vel irregulariter canaliculati, normaliter ad 1.0 cm lati et 0.5 mm crassi, apice acutiusculo; pseudocyphella punctiformia vel elongata rara, soralia isidiaque desunt; stratum corticale prosoplectenchymaticum, leviter luteolum, ad 30 µm in diametro; stratum chondroideum sub cortice continuum, versus medullam fasces hypharum irregulares formans; stratum algarum discontinuum, phycobiontes trebouxioidei, globosi, 8-12 µm in diametro, in glomerulis paucicellulares inter fasces chondroidei dispersi; stratum medullare albidum, compactum, ex hyphis crassiusculis, rugosis et pachydermaticis, 1.5-3.0 µm in diametro, dense contextum; reactiones thalli: K sufflavus, K+ N flavus; substantiae secundariae: acidum usnicum (cortice), acidum divaricaticum (medulla). Ascocarpia apothecioidea, numerosa, lateralia vel subterminalia, lecanorina, ad 1 (- 2) cm in diametro, breve stipitata, calcarata; discus primum cupuliformis, demum planus vel irregulariter undulatus et fere emarginatus, nudus, leviter rugulosus, thallo concolor vel sufflavus; epithecium tenue, granulosum, leviter infuscatum; hypothecium tenue, hyalinum, strato algarum superpositum; hymenium 50-60 µm altum, incoloratum, I intense caerulescens; paraphyses filiformes, eseptatae, capitatae, ad basim 1.5 µm, ad apicem 3.0 µm in diametro; asci clavati, unitunicati, leptodermatici, octospori, 40-50 µm alti, apice rotundo, tholo 3-5 alto; ascosporae uniseriales vel biseriales, reniformes, pachydermaticae, uniseptatae, 5-7 µm latae, 13-16 µm longae; pycnidia ignota.

Thallus meist nestartig (10-20 cm), auch feucht verhältnismäßig steif und deshalb mehr oder minder abstehend, nur ältere Lagerpartien teilweise hängend, mit kleiner, aber kräftiger Haftscheibe an Borken-

schuppen oder Altholz befestigt, Lagergrund bräunlich überlaufen, wie *Ramalina fraxinea* (L) ACH. farblich stark abändernd, strohgelb, gelbgrün oder grüngrau, jedoch weder olivgrün noch schwärzlichgrün wie diese; Lageräste breit bandförmig (um 1.0 cm breit und 0.5 mm dick, oft auch darüber), mehr oder weniger glatt oder unregelmäßig längsadrig, aber nur selten andeutungsweise netzgrubig wie *Ramalina fraxinea* (L.) ACH. f. *ampiiata* (ACH.) ANDERS oder *Ramalina fraxinea* (L.) ACH. f. *lotharingiae* (HUE) KEISSL.; nur vereinzelt mit punktförmigen oder länglichen Pseudocyphellen ausgestattet, Sorale und Isidien gänzlich fehlend; Außenrinde prosoplektenchymatisch aus verhältnismäßig großlumigen, stark verquollenen Hyphengliedern aufgebaut, Innenrinde in feiner Schicht durchlaufend und mit verschieden mächtigen, unregelmäßig geformten Hyphenbündeln in die Markschicht vorspringend; Algenschicht in rundliche wenigzellige Gonidiengruppen zwischen dem Stützgewebe aufgelöst, Phycobionten trebouxioid, frischgrün, kugelig (8-12 µm), dicht von Klammerhyphen umhüllt, Haustorialhypen nicht feststellbar; Markschicht weißlich, aus dicklichen, rauhen starkwandigen Flechthypen bestehend (1.5-3.0 µm), im Gegensatz zu *Ramalina fraxinea* (L.) ACH. verhältnismäßig dicht und ohne deutliche Oxalatablagerungen. Hauptfruchtform als lecanorines Apothecium ausgebildet, bei allen untersuchten Exemplaren (rund 300) stets reichlich vorhanden, seitenständig oder fast endständig, mittlerer Durchmesser ausgewachsener Fruchtkörper um 1 cm (ausnahmsweise auch 2 cm), zunächst becherförmig mit dickem wulstigem Lagerrand, später abgeflacht und unregelmäßig wellig mit feinem schwindendem Lagerrand, unterwärts netzgrubig, deutlich gestielt, im Gegensatz zur Normalform von *Ramalina fraxinea* (L.) ACH. fast stets gespornt, Anhängsel aus dem Fruchtgrund sprossend oder durch abknickende Endlappen hervorgerufen, nicht selten mehrzipflig; Fruchtscheibe ganzrandig, rundlich, nackt, aber fein papillös, hell lagerfarben oder ockergelb, jedoch nicht fleischfarben oder hellbraun wie bei einigen Wuchsformen von *Ramalina fraxinea* (L.) ACH.; Epithecium dünnschichtig, körnig, im Mikroschnitt gelbgrau; Hypothecium i. e. S. (Subhymenium) dünnschichtig, farblos, darunter eine verhältnismäßig kräftige algenführende Markschicht, Fruchtrand jedoch algenfrei; Hymenium farblos, durch I ungewöhnlich stark gebläut (mit 50-60 µm meist schwächer als bei *Ramalina fraxinea* [L] ACH.); Paraphysen fadenförmig, ungegliedert, endlich kopfig verdickt (unteren 1.5 µm, oben 0.3 µm); Sporenschläuche keulenförmig, verhältnismäßig dünnwandig, unitunikat, achtsporig (40-55 µm lang), mit abgerundetem 3-5

Ramalina superfraxinea

µm hohem Apikalapparat; Schlauchsporen ein- bis zweireihig angeordnet, durchgehend nieren- oder bohnenförmig gekrümmt, vergleichsweise dickwandig, zweizeilig (5-7 x 13-16 µm); Nebenfruchtform im gesamten Sammelgut fehlend. Die Lageräste zeigen mit Kalilauge (K) eine gelbliche, mit Kalilauge gefolgt von Calciumhypochlorit (C) oder Natriumhypochlorit (N) eine gelbe Tüpfelreaktion. Nach präparativer Aufarbeitung liefert der Acetonextrakt 0,08% TM (+)-Usninsäure und 2,32% TM Divaricatsäure (FOLLMANN und HUNECK 1980). Das Dibenzofuranderivat kann als gattungsspezifischer Rindeninhaltsstoff angesprochen werden (FOLLMANN und HUNECK 1968). Das Depsid tritt dagegen innerhalb der Ramalinaceen verhältnismäßig selten als Markinhaltsstoff auf (C. F. CULBERSON, W. L CULBERSON und JOHNSON 1977). Die verschiedenen Morphotypen des Verwandtschaftskreises um *Ramalina fraxinea* (L.) ACH. (auch *Ramalina fraxinea* [L.] ACH. var. *calicanformis* NYL. mit gespornten Fruchtkörpern) führen lediglich Usninsäure (KROG und JAMES 1977). Wieweit auch Obtusatsäure und Sekikasäure gebildet werden (KRZACZEK und SMOLARZ 1979), sollte nachgeprüft werden. Der Formenschwarm um *Ramalina calicaris* (L.) E. M. FRIES, besonders die im Aufbau — wenn auch nicht den Abmessungen — ähnliche *Ramalina calicaris* (L.) E. M. FRIES var. *subampliata* NYL., ist dagegen durch Markinhaltsstoffe des Sekikasäurekomplexes ausgezeichnet (KROG und JAMES 1977). Einige Merkmale teilt *Ramalina superfraxinea* FOLLM. et SÄNCH.-PINTO auch mit *Ramalina fastigiata* (PERS.) ACH., die sich jedoch chemotaxonomisch durch ihren Evernsäuregehalt unterscheidet.

Ramalina superfraxinea

Ramalina superfraxinea

Ramalina superfraxinea

Ramalina tenuissima V. Marcano & A. Morales, Bryologist 97(1): 31 (1994)

[VZR496], Aequatoria, Prov. Carchi: volcano Chíles, ad latera rupium secus viam lacus Lag. Verde, 4000 m. Leg. J. Etayo & Z. Palice, 04.03.2003, det. Z. Palice. EX A. VěZDA: LICHENES RARIORE EXSICCATI NR. 496

Thallus corticolous, pendulous, soft, to 32 cm long, pale yellow, older parts often discolored; laciniae filiform, filamentous, richly dichotomously to irregularly branched, subterete, angular, or flat- tened, 0.3-0.6(-0.7) mm broad, with numerous short divergent branchlets terminating in soralia producing granules; pseudocyphellae linear, longitudinally arranged; cortical tissue paraplectenchymatous, 8- 10 µm thick, peripheral chondroid tissue forming discontinuous layers, 28.5-33.25 µm thick, medulla dense. Pycnidia not seen. Photobiont protococcoid, cells subglobose to irregularly ellipsoid, mainly 4.5- 5.4 µm diam., in clusters or forming a new more or less continuous layer in places. Apothecia not seen. Chemistry (TLC). -Sekikaic acid. Distribution and habitat: -Ramalina tenuissima is found in subalpine altitudes (2,200-3,000 m) in very moist rain forests, growing on trees and shrubs. This species resembles *R. usnea* (L.) Howe. Both species contain sekikaic acid as a chemical constituent. However, *R. tenuissima* is filiform and filamentous, sorediate, and pseudocyphellate, whereas in *R. usnea* the thallus is broader and lacks soralia and pseudocyphellae.

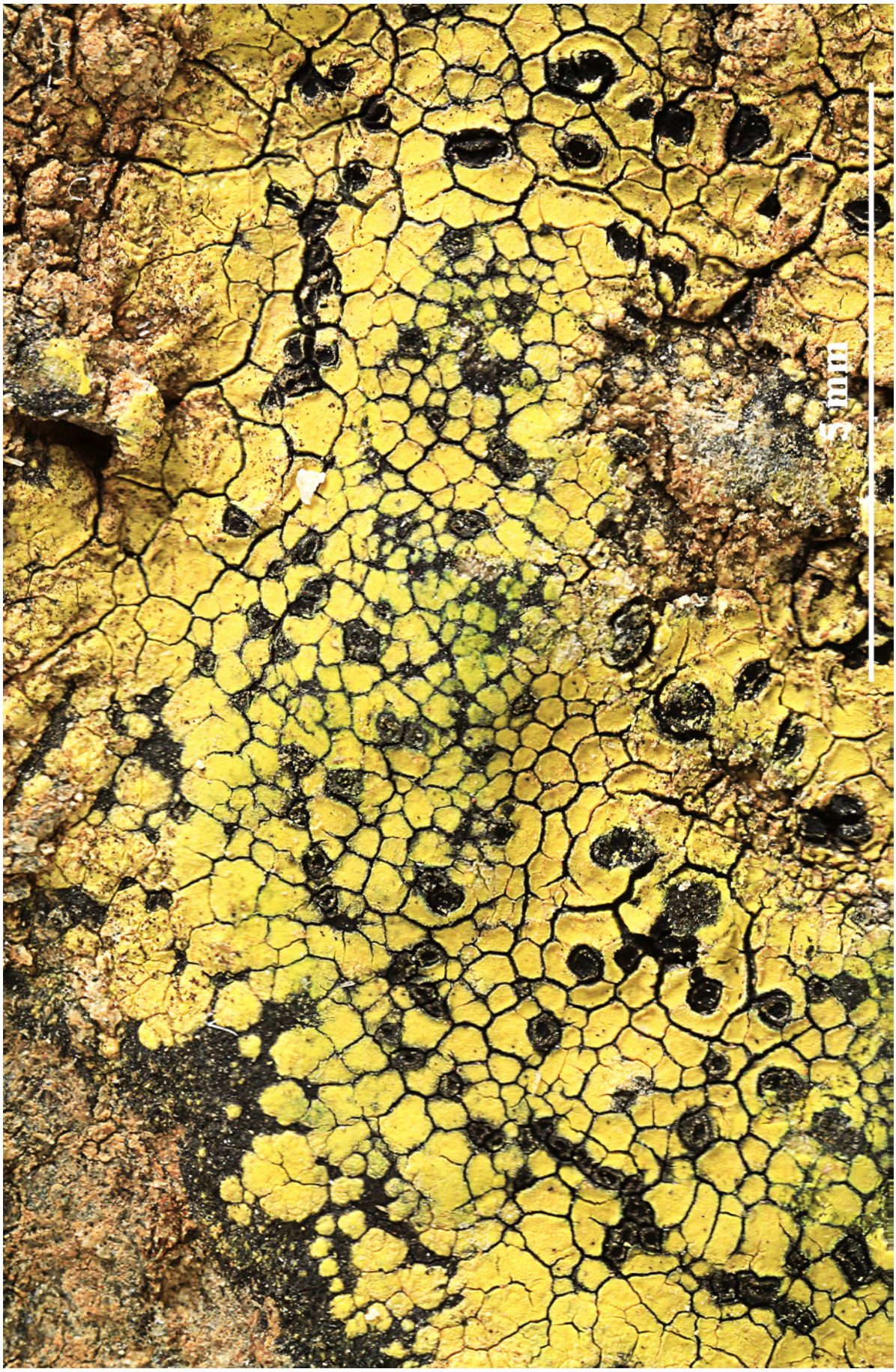
Ramalina tenuissima

Ramalina tenuissima

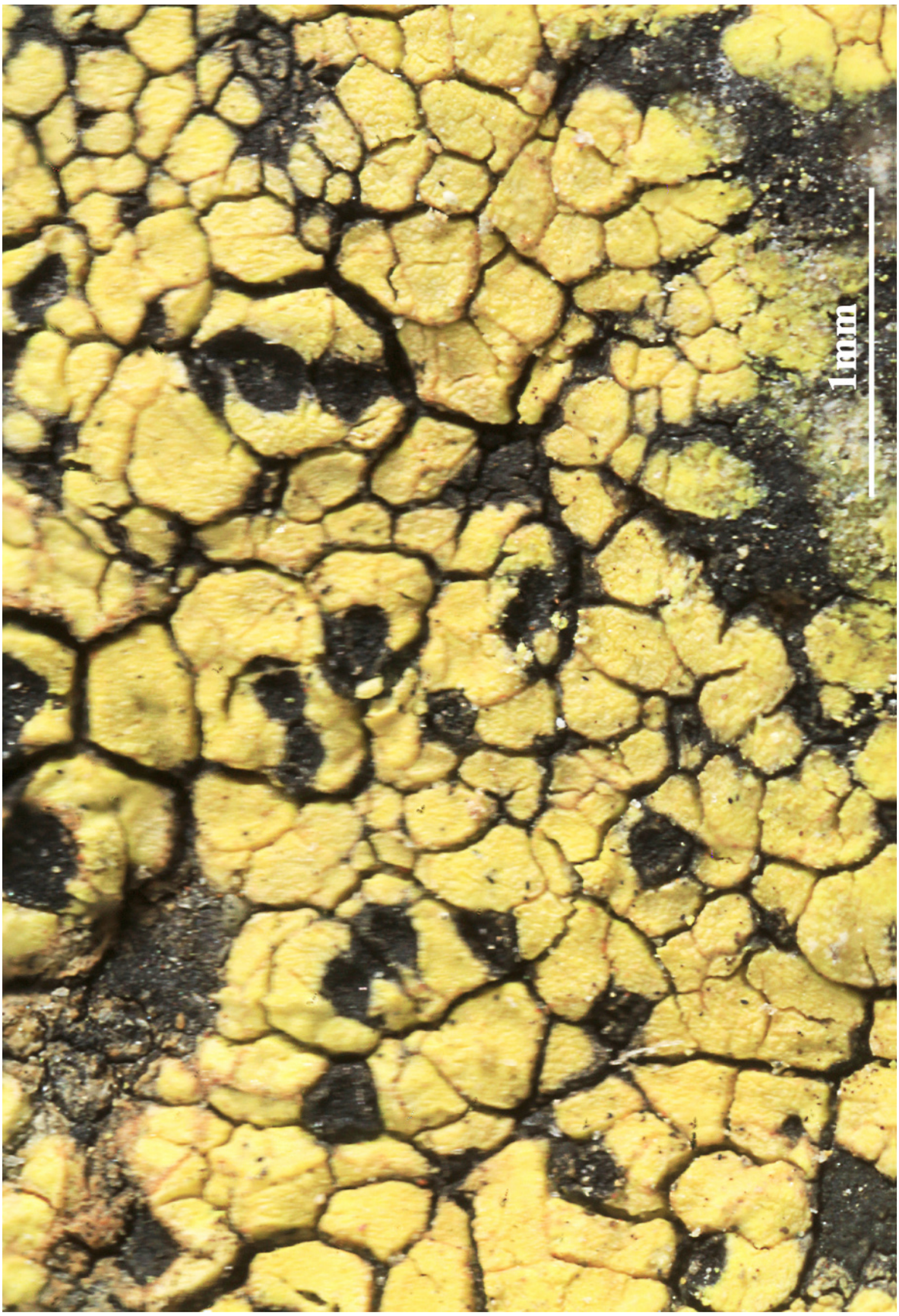
Rhizocarpon tavaresii Räsänen, Arch. Soc. Zool. Bot. fenn. Vanamo 3: 85 (1949)

[VZR69], Insulae Canarienses, Gran Canaria: distr. San Bartolome, loco El Sequen dicto in Barranco de Tirajana, supra urbem San Bartolome, 800 m. Ad saxa basaltica. Leg. A. Vězda, 08.02.1994. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 69.

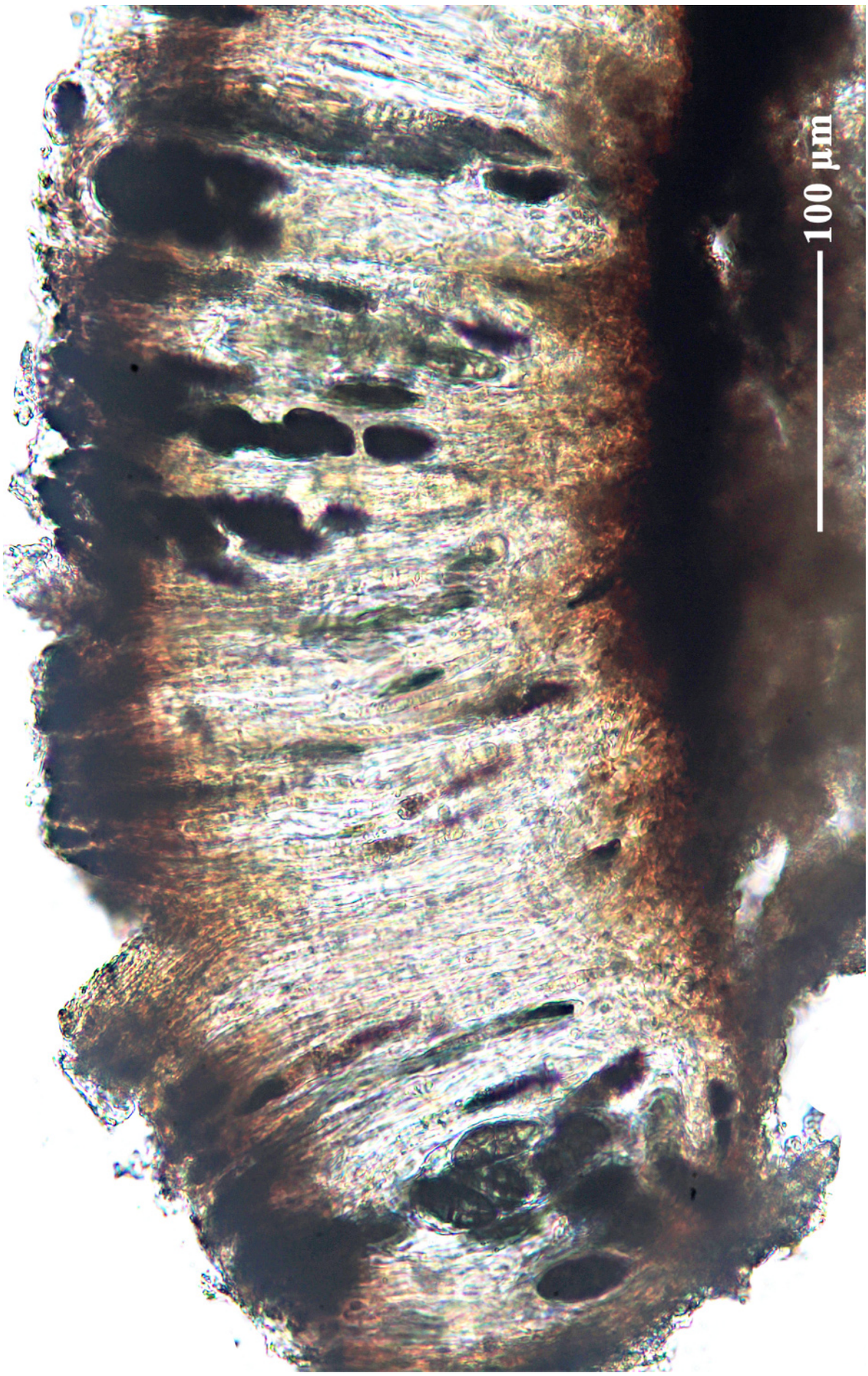
Thallus crustose, episubstratic, areolate, bright yellow-green, dull, delimited by a thin dark prothallus, forming patches 1-5 cm in diam. Areoles contiguous, angular, 0.1-0.6 mm wide, often subdivided into smaller units by cracks, mostly flat. Cortex c. 35 µm thick; medulla white, I+ blue. Apothecia lecideine, black, developing inbetween the areoles, 0.2-0.7 mm across, round to angular, with a flat to slightly concave disc and a thin proper margin. Proper exciple brown and K+ brownish red in outer part, paler within; epithecium greenish, poorly delimited against the hymenium, K+ intensifying green or red; hymenium greenish, (65-)120-160 µm high; paraphysoids strongly conglutinate, richly branched and anastomosing, apically clavate; hypothecium brown, 50-100 µm high, K-. Asci 8-spored, clavate, fissitunicate, with a well-developed tholus, lacking an ocular chamber, Rhizocarpon-type. Ascospores strongly muriform, dark brown, oblong-ellipsoid, 25-40 x 13-16 µm. Photobiont chlorococcoid. Spot tests: medulla K-, C-, KC-, P+ red-brown or P+ yellow. Chemistry: cortex with rhizocarpic acid; medulla with stictic or psoromic acids. - A mainly south European, poorly known taxon found on basic siliceous rocks at relatively low elevations.



Rhizocarpon tavaresii



Rhizocarpon tavaresii



Rhizocarpon tavaresii

Rhizocarpon tavaresii

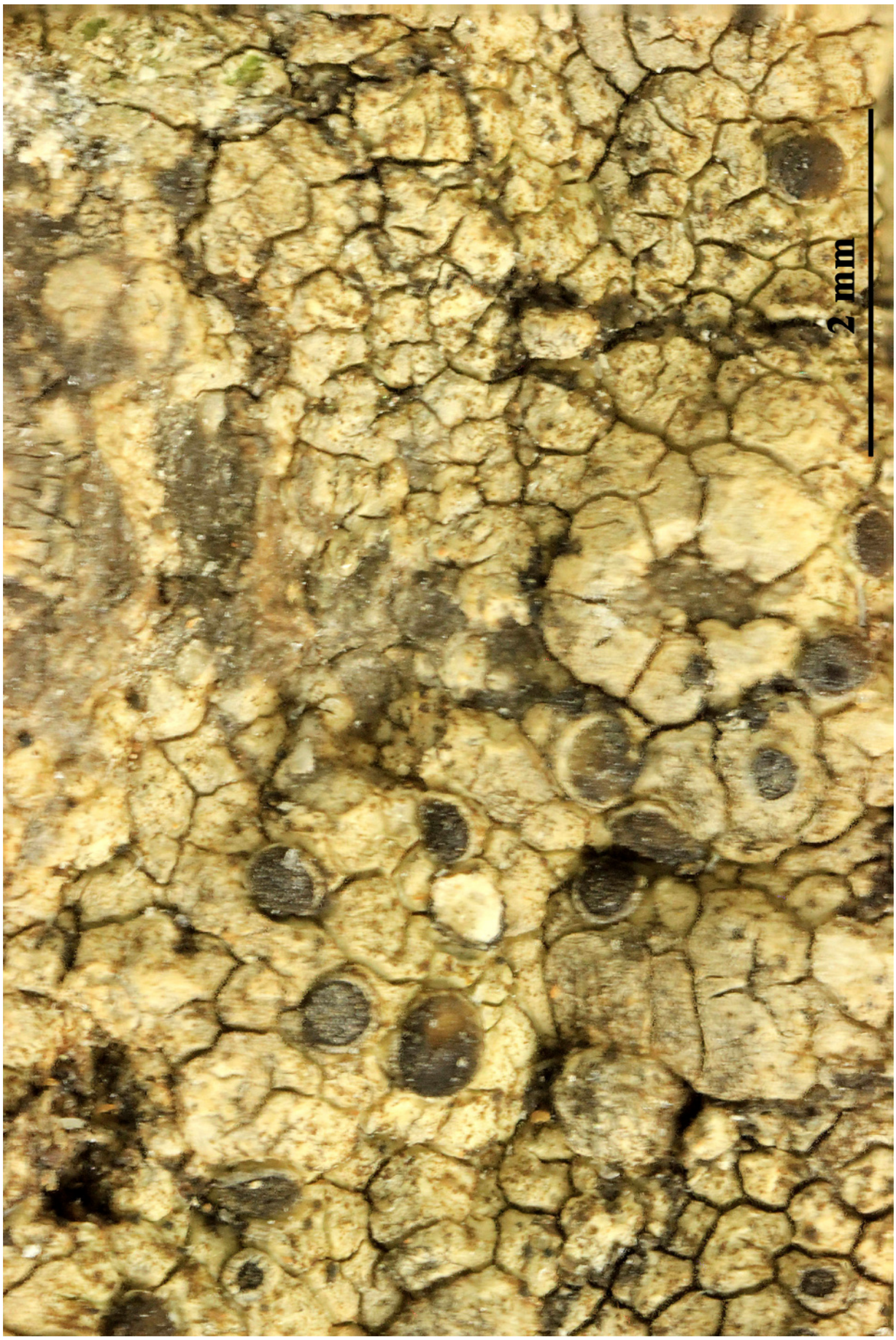
Rhizocarpon tavaresii

Rhizocarpon tavaresii

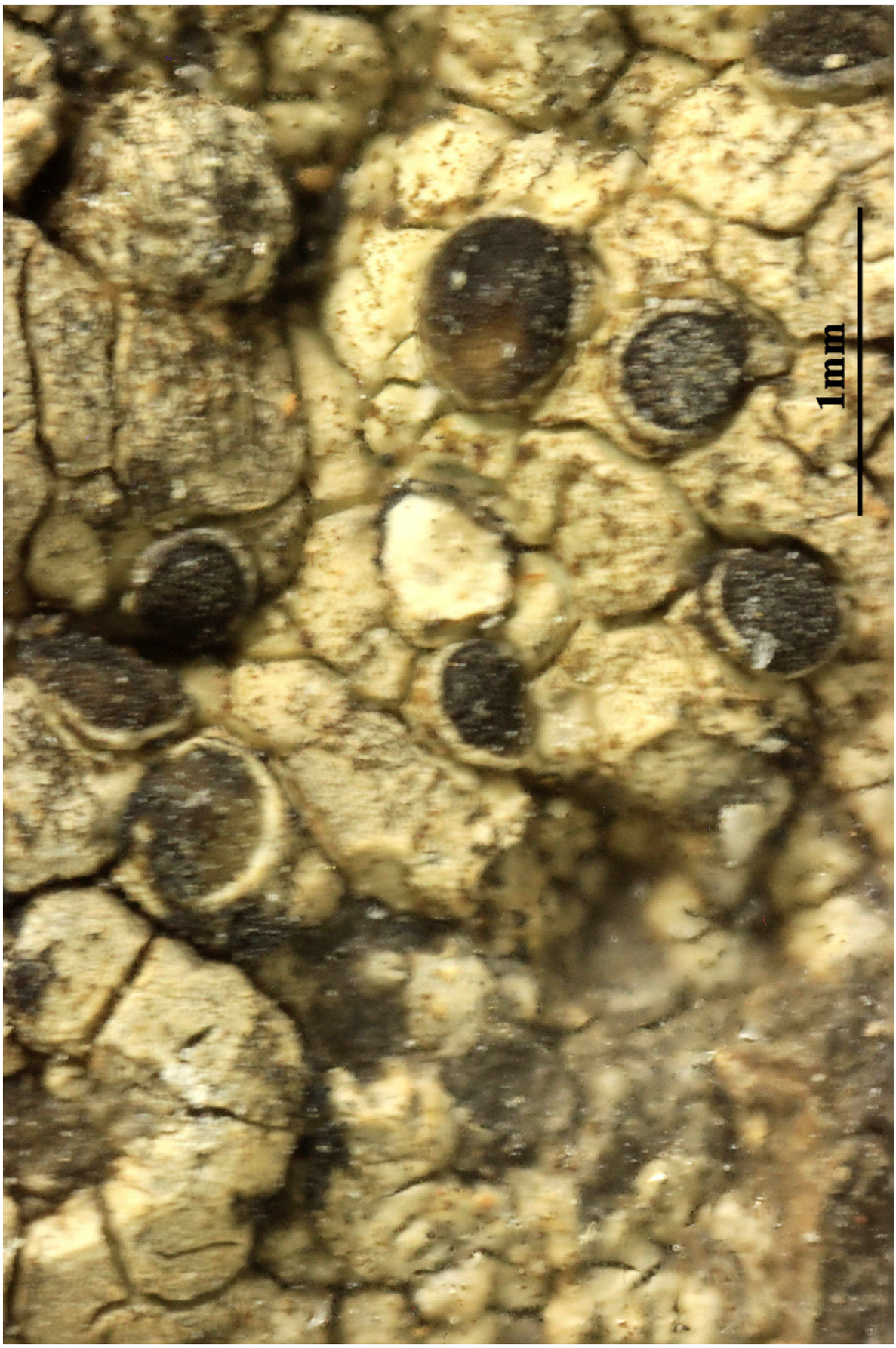
Rinodina alba Metzler ex Arnold, Flora, Regensburg 55(3): 35 (1872)
= *Helmutiopsis alba* (Metzler ex Arnold) S.Y. Kondr., Lőkös & Hur, in Kondratyuk, Lőkös, Kärnefelt, Thell, Jeong, Oh, Kondratiuk, Farkas & Hur, Acta Bot. Hung. 63(3-4): 381 (2021)
= *Lecanora albidorimosula* Harm. [as 'albido-rimosula'], Lich. Fr. 5: 913 (1913)
= *Rinodina albidorimosula* (Harm.) Zahlbr., Cat. Lich. Univers. 7: 481 (1931)

[VZR137], Italia. Sardinia. Insula Giardinelli, La Maddalena, 10 m. Ad saxa granitica. Leg. F. Ceni & A. Vězda, 16.5.1994., det. A. Vězda. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 137.

Thallus crustose, episubstratic, rather thick, whitish, more rarely with a yellowish or pale grey hue, areolate, delimited by a black prothalline line, the areoles flat and angular. Medulla white, I+ blue. Apothecia lecanorine, 0.3-0.5(-0.7) mm across, at first immersed in the thallus, then subsessile, with a dark brown (paler when wet) to black, sometimes slightly pruinose, flat to slightly convex disc and a smooth to crenulate, persistent to finally in part excluded thalline margin, the proper margin often visible as a thin parathecial ring. Epithecium reddish brown, inspersed with small crystals reacting C+ red; hymenium colourless, 60-80 µm high; paraphyses 1-1.5 µm thick at mid-level, the apical cells 3-4 µm wide, with a brown cap; hypothecium colourless, up to 100 µm high. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-septate, pigmented, ellipsoid, (11-)12-15(-17) x (7.5-)8-10(-12) µm, Pachysporaria-type, with very thick, faintly warted walls and rounded lumina which however often have protrusions towards the spore-ends, the ontogeny of type A (apical wall thickening after septum formation). Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C+ red, KC+ red, P-. Chemistry: atranorin and chloroatranorin, gyrophoric acid and variable amounts of 2"-O-methylgyrophoric, lecanoric and orsellinic acids. - Note: on hard siliceous rocks near the shoreline, but sometimes also found at some distance from the coast in the Mediterranean parts of Tyrrhenian Italy, such as as in Sardinia.



Rinodina alba



Rinodina alba

Rinodina atrocinerea (Hook.) Körb., Syst. lich. germ. (Breslau): 125 (1855)
= *Lecidea atrocinerea* Hook. [as 'atro-cinerea'] 1833
= *Helmutiopsis atrocinerea* (Fr.) S.Y. Kondr., Lőkös & Hur, in Kondratyuk, Lőkös, Kärnefelt, Thell, Jeong, Oh, Kondratiuk, Farkas & Hur 2021

[VZR286], Lusitania. Minho, Povoa de Lanhose, Castello de Lanhoso, 300 m, ad rupes graniticas. Leg et det. H. Mayrhofer, 22.7.1996. Annot. Mayrhofer; TLC Atranorin, gyrophoric acid, lecanoric acid, 3.1997. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 286.

Thallus crustose, episubstratic, rather thin, areolate, often delimited by a conspicuous, black, fimbriate prothallus, the areoles dispersed to contiguous, rounded or angular, 0.5-1.5(-2) mm across, flat to slightly convex, whitish, grey or pale bluish-grey. Medulla usually white, but sometimes yellow to reddish brown and often K+ red and C+ red in lower part, I- throughout. Apothecia lecanorine, 0.2-0.8(-1) mm across, at first immersed, then adnate, with a flat to slightly convex, dark brown to brown-black disc and a thin, smooth and persistent thalline margin. Epithecium brown, inspersed with small crystals reacting C+ red; hymenium colourless, 75-120(-140) µm high; hypothecium colourless, up to 150 µm high. Asci 8-spored, cylindrical-clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1- septate, brown, broadly ovoid with rounded ends, not curved, (13-)16-19(-22) x (8-)9-12(-14) µm, Pachysporaria-type, with uniformly very thick walls and rounded lumina often showing protrusions towards the spore-ends, the wall faintly warted, with a well-developed torus, the ontogeny of type A (apical wall thickening after septum formation). Pycnidia black, frequent. Conidia bacilliform 4-6 x 0.5-0.8 µm. Photobiont: chlorococcoid. Spot tests: thallus K+ yellow, C+ faintly red, KC+ faintly red, P+ faintly yellow, UV-; lower part of medulla sometimes (when pigmented) K+ and C+ purple-red. Chemistry: atranorin, chloroatranorin, gyrophoric, ovoic, umbilicaric and 5-0-methylhiascic acids; medulla sometimes with an unknown pigment. - Note: on steeply inclined to vertical surfaces of hard siliceous rocks below the subalpine belt.

Rinodina atrocinerea

Rinodina atrocinerea

Rinodina beccariana Bagl., Nuovo G. bot. ital. 3: 239 (1871)
= *Lecanora subglaucescens* Nyl., Bull. Soc. linn. Normandie, sér. 2 6(2): 305 (1873) [1872]
= *Rinodina confragosa* var. *subglaucescens* (Nyl.) H. Olivier, Expos. Lich. Ouest France 1: 256 (1897)
= *Rinodina subglaucescens* (Nyl.) Sheard, Lichenologist 3: 358 (1967)

[VZR126], Gallia. Corsica: Dept. Haute-Corsae, in valle Golo, 5 km ad orientem a Ponte Leccia, 180 m. Ad saxa schistosa. Leg. H. Mayrhofer & J. Prügger, 6.11.1993, det & comm. H. Mayrhofer. - TLC: Atranorin, Zeorin. EX A. VěZDA: LICHZENES RARIORES EXSICCATI NR. 126.

Thallus crustose, episubstratic, up to 0.25 mm thick, continuous to rimose-areolate, pale glaucous grey to dark grey, rarely delimited by a dark prothallus. Apothecia lecanorine, adnate to sessile, (0.5-)0.7-1-(1.2) mm across, with a flat to finally slightly convex, dark brown to black disc and an entire to crenulate, persistent thalline margin. Proper exciple dark brown to blue-green in outer part, the blue-green parts N+ red: epithecium dark brown to blue-green and then N+ red; hymenium colourless to olivaceous, 80-100 µm high; paraphyses branched in upper part, 1-2 µm thick at mid-level, the apical cells 4-7 µm wide, with a dark cap; hypothecium colourless, up to 250 µm high. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-septate, pigmented, ellipsoid, (15-)16-22(-29) x (6-)8-12(-15) µm, Pachysporaria-type, with thick walls and rounded lumina, when young showing tendencies towards the Physcia-type, the wall warted, the tholus well-developed, the ontogeny of type A (apical wall thickening after septum formation). Pycnidia black, immersed. Conidia bacilliform, 3-6 x 1-1.5 µm. Photobiont chlorococcoid. Spot tests: thallus K+ yellow, C-, KC-, P- or P+ faintly yellow. Chemistry: atranorin, sometimes also chloroatranorin and zeorin. - Note: a mainly Mediterranean-Atlantic lichen of siliceous rocks; common, and often abundant, only in Tyrrhenian Italy.

Rinodina beccariana

Rinodina beccariana

Rinodina brandii Giralt & van den Boom, Belg. Journ. Bot. 129(1): 78 (1996)

[VZR], Belgia, prov. Luxembourg, Chiny, Semois, in pede rupis "Rocher du Hât", 300 m. Ad saxa schistosa. Leg. A. M. Brand, 2.8.1995, com. P. v. d. Boom. - Isotypus-.EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 367.
Thallus crustose, areolate. Areolae usually discrete, more rarely contiguous, subconvex to convex, smooth, regularly rounded to slightly lobate and then appearing subsquamulose, pale whitish grey to greenish grey, 0.2-0.3(-0.6) mm in diam. Prothallus present, dark brown. Apothecia lecanorine, abundant, scattered, rarely confluent, regularly rounded, at first adnate, rapidly becoming sessile and constricted at the base, developing from margins or center of the areolae, 0.3-0.6 mm in diam. Thalline margin concolorous with thallus, thin, entire, smooth and persistent. Proper margin often visible as a ring between the disc and the thalline margin in mature apothecia, paler than the disc. Disc plane to subconvex, dark brown to black, covered with a white, coarse and scattered pruina in young apothecia. Hymenium 100-130 µm high. Hypothecium colourless, up to 100 µm deep, slightly inspersed with oil droplets. Epihymenium orange brown to dark brown, covered with a coarse granular epipsamma reacting Pd+ orange (pannarin!). Parathecium thin, hyaline, up to 30 µm thick and above coloured like the epihymenium. Paraphyses 2 µm thick, apices 2.5-3.5 µm in diam., pale to dark brown, oil paraphyses (Poelt & Pelleter 1984 Giralt et al. 1992, Giralt & Mayrhofer 1994) present, very abundant. Asci of Lecanora-type (Honegger 1978, Rambold et al. 1994). Ascospores of typical Physcia-type, (16-)19-23(-25) x (7.5)8-9.5(-10) µm, swollen around the septum, minutely warted, torus present but usually poorly developed. Pycnidia rare, immersed in the centre of the areolae, 0.01(-0.02) mm diam., with a brownish ostiole. Conidia bacilliform, straight to slightly curved. (3.5-)4-5 x 1-1.5 µm. Chemistry Thallus and thalline margin K+ yellow, C– and KC– (atranorin and zeorin, by TLC); epihymenium PD+ orange (pannarin, by TLC). Ecology a saxicolous species on schistose rocks. Distribution Belgium, prov. Luxembourg. Notes According to the revision of the *Rinodina* species containing pannarin (Giralt et al. 1994), *R. brandii* may be closely related to the corticolous North American species *R. granuligera* H. Magn. and *R. marysvillensis* H. Magn., which also have pannarin located only in the epihymenium,

atranorin in the thallus and Physcia-type ascospores. Both species are distinguished from *R. brandi*i by the corticolous habitat and smaller (6.5-8.5 µm) and wider (10-11 µm) ascospores, respectively. Among the European *Rinodina* species, only the corticolous R. pruinella Bagl. and R. *anomala* (Zahlbr.) H. Mayrhofer & Giralt possess pannarin located solely in the epihymenium. The former is mainly distinguished by its Dirinaria-type ascospores and the latter by its lecideine apothecia and smaller Physcia-type ascospores.

Rinodina brandii

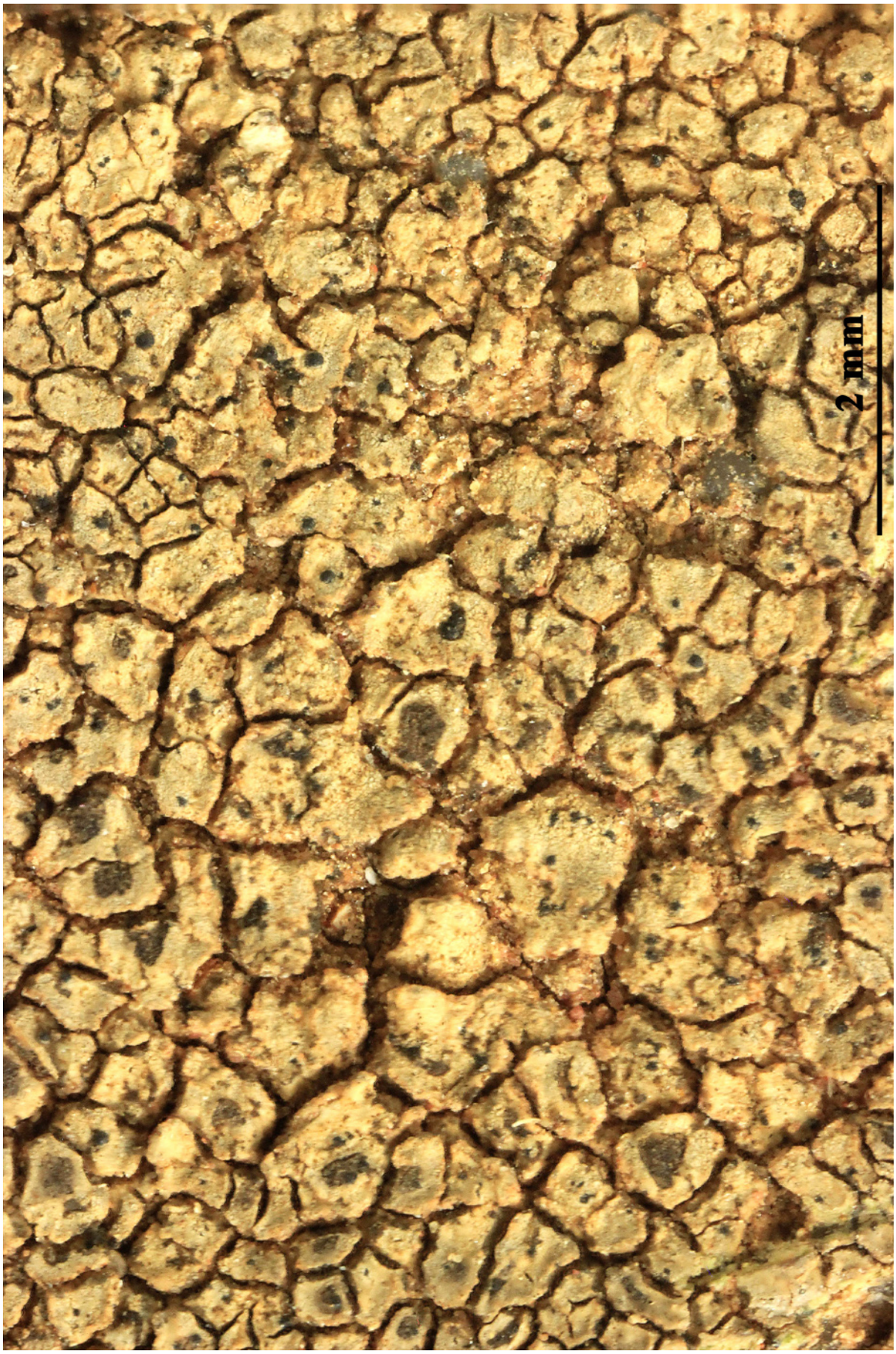
Rinodina brandii

Rinodina brandii

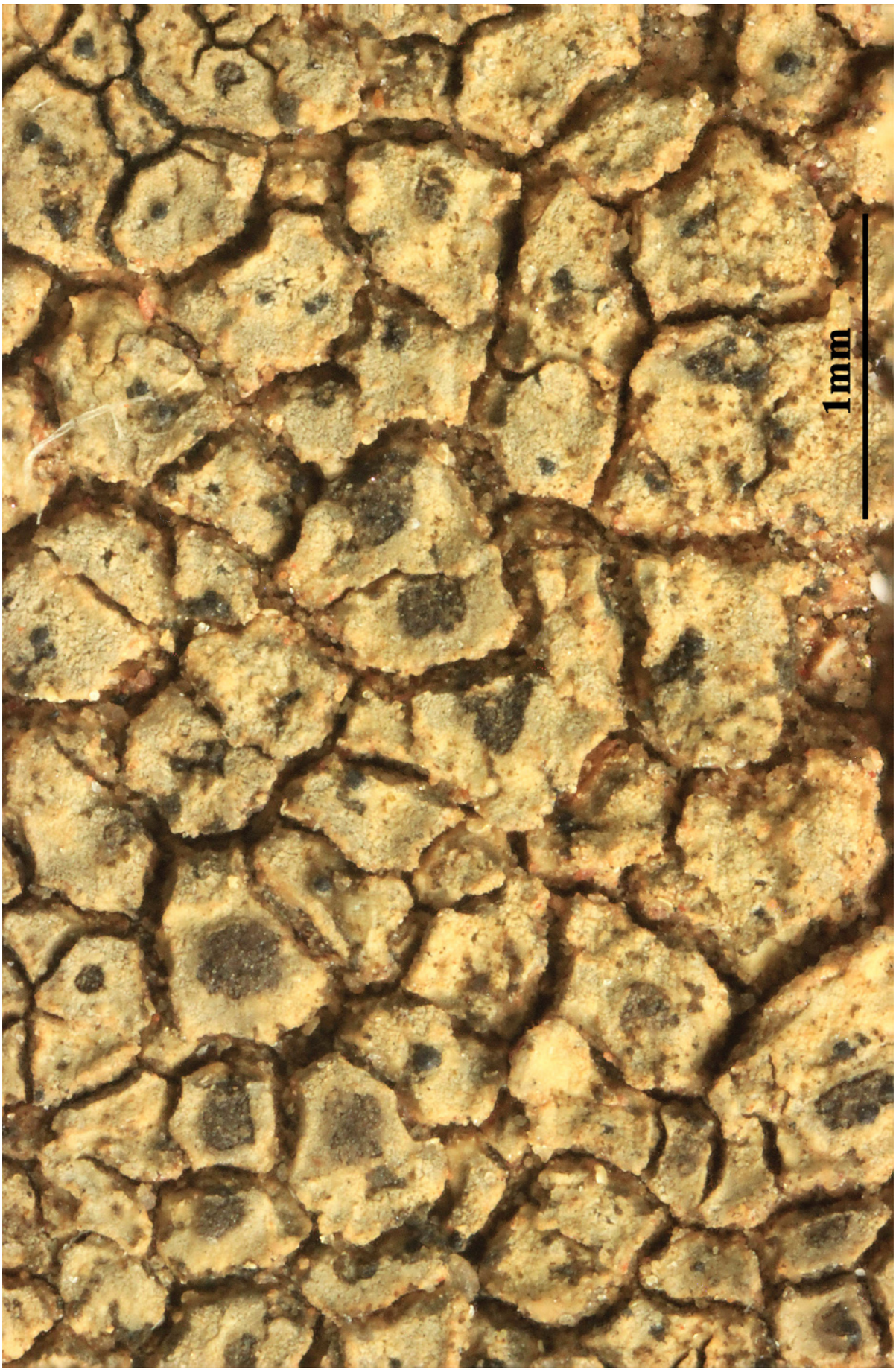
Rinodina cana (Arnold) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 30: 125 (1881) [1880]
= *Rinodina arenaria var. cana* Arnold 1872

[VZR], Hispania. València: In monte El Garbi dicto, prope urbem Sorra, 575 m. Ad saxa quarcitica. Leg. B. Calatayud, 18.10.1992, conf. H. Mayrhofer. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 187.

Thallus crustose, episubstratic, rimose-areolate, grey to ochraceous brown, the areoles contiguous, flat, often brownish to greenish and N+ purple at margins and on lower side. Apothecia aspicilioid, immersed in the areoles, 0.2-0.4(-0.7) mm across, with a concave to flat, brown to black, often faintly grey-pruinose disc and a thin, persistent thalline margin. Epithecium orange-brown to dark brown, with an epipsamma of small crystals dissolving in K, K-; hymenium colourless, 90-110 µm high; paraphyses c. 1.5 µm thick at mid-level, the apical cells 3-5 µm wide, with a brown cap; hypothecium colourless, up to 150 µm high. Asci 8-spored, clavate, the K/I+ blue tholus penetrated by a faintly amyloid apical cushion with parallel or diverging flanks, the wall K/I-, surrounded by a K/I+ blue outer layer, Lecanora-type. Ascospores 1-septate, pigmented, ellipsoid, (16-)18-22(-24) x 9-12(-13.5) µm, Milvina-type grading into the Pachysporaria-type, with a poorly developed torus, the ontogeny of type A (apical wall thickening after septum formation). Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-. Chemistry: without lichen substances. - Note: on steeply inclined surfaces of weakly calcareous schists and basic siliceous rocks, most frequent in dry-warm areas; certainly overlooked and more frequent, at least in the Alps, mostly below treeline.



Rinodina cana



Rinodina cana

Ropalospora viridis (Tønsberg) Tønsberg, Sommerfeltia 14: 293 (1992)
= *Fuscidea viridis* Tønsberg, Mycologia 76(1): 156 (1984)

[VZR406], Bohemia austro-occidentalis, distr. Zelezná Ruda, montes Šumava (Gabreta), in valle confluvii dextri vallis rivi "Debrnik", 750 m. Ad corticem Alni Incanae. Leg. T. Toensberg & A. Vězda, 13.10.1999, det. T. Toensberg. EX A. VěZDA: LICHENES RARIORES EXSICCATI NR. 406.

Thallus crustose, episubstratic, areolate and sorediate, forming orbicular, up to 3 cm wide (or more), irregular patches, occasionally confluent with other thalli and covering much wider areas; prothallus very variable, from well-developed and brown-zoned to poorly developed and shiny, rarely indistinct. Areoles greyish green, matt, rounded, convex, up to 0.2 mm wide. Soralia bursting from the apices of the areoles, green, yellow-green or straw-coloured, irregularly rounded, often becoming confluent, especially towards the centre, forming a more or less continuous subleprose crust, the soredia farinose, 20-30 µm in diam., sometimes loosely packed into larger consoredia. Apothecia very rare, lecideine, black, 0.2-0.4 mm across, with a flat disc and a persistent proper margin. Proper exciple brown in outer part, pale brown within, of c. 2 µm wide, evenly thickened, often tortuous hyphae with at least some lumina which are >4 times as long as wide; epithecium brown; hymenium colourless, 50-75 µm high, non-amyloid, inspersed with oil droplets; paraphyses easily becoming free, mostly simple, 1.5-2 µm thick, the apical cells not or only slightly thickened; hypothecium pale brown. Asci 12-16-spored, clavate to broadly clavate, with a non-amyloid wall and a thin and weakly developed tholus in mature asci, K/I+ deep blue. Ascospores 5-6-septate, hyaline, clavate, straight to curved; 22-31(-44) x (1.7-)2-2.5(-3.7) µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, soralia UV+ white. Chemistry: perlatolic acid (major), hyperlatolic-, isohyperlatolic- and superlatolic acids (minor or traces). - Note: on smooth bark of deciduous and coniferous trees in cold-humid, open woodlands; perhaps more widespread, but certainly not common.

Ropalospora viridis

Ropalospora viridis

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