

F. Schumm (2025):

Images of Lichens Vol. 25

Erioderma

It is with great hesitation that I publish this book with a collection of my pictures of the genus *Erioderma*. The numbers in [...] are the numbers of the bags in my private lichen herbarium F. Schumm in Wangen out of which the images are taken.

For the descriptions I consulted and used mainly:

Keuck, G. (1977): Ontogenetisch-systematische Studie über *Erioderma*. - Bibliotheca Lichenologica Bd. 6.

Jørgensen, P. M. & H. J. M. Sipman (2002) The lichen genus *Erioderma* in Southeast Asia - Ann. Bot. Fennici 39: 201-211.

Awasthi, DD. (1991): A key to the Microlichens of India, Nepal and Sri Lanka. - Bibliotheca Lichenologica Band 40.

I often used also the excellent descriptions that are provided in Prof. Nimis ITALIC 7.0 under the URL:

<https://italic.units.it/>

and the Australian Lichenslist under the Url:

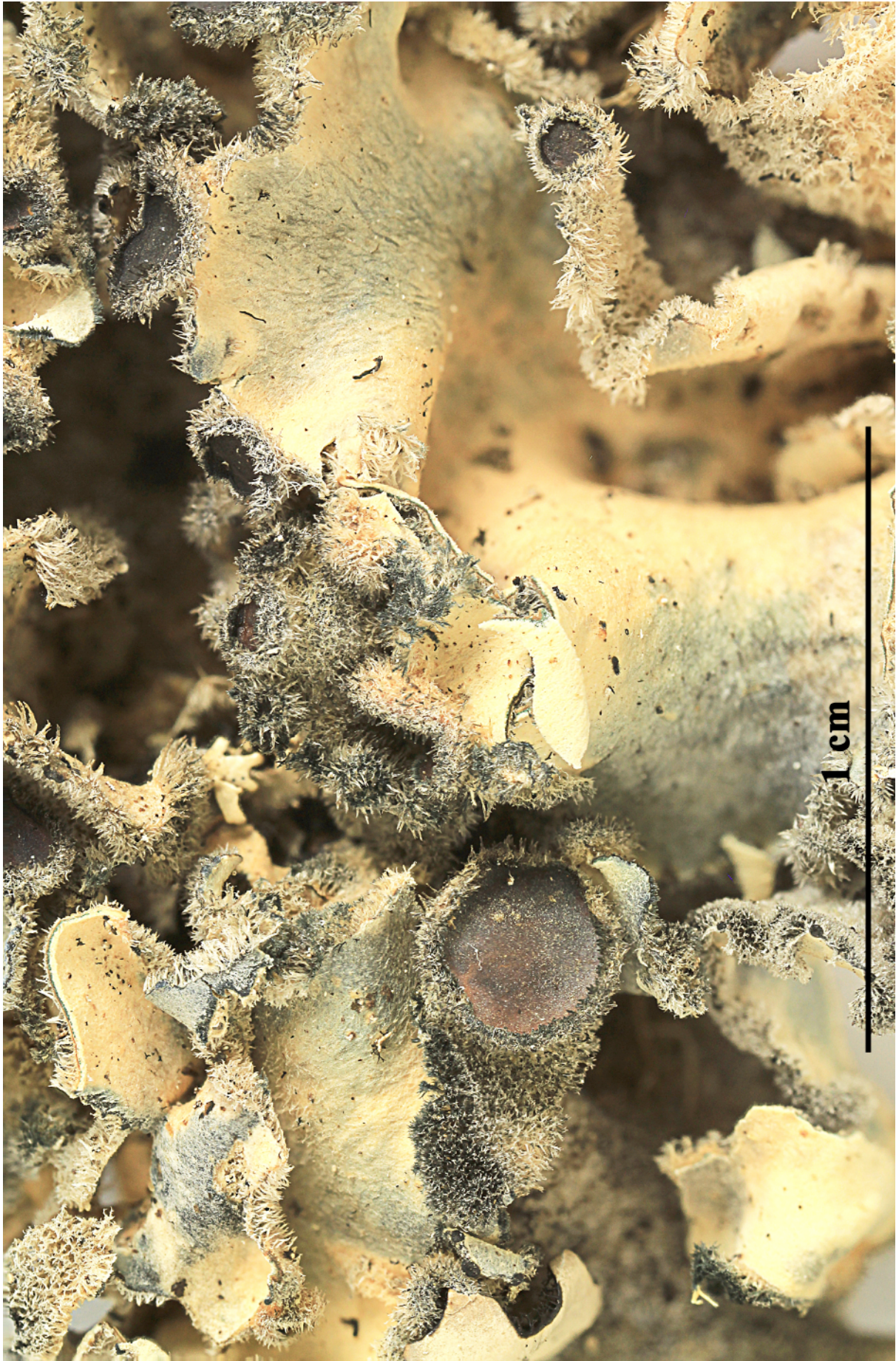
https://www.anbg.gov.au/abrs/lichenlist/lichenchecklist_e_o.html

F. Schumm, 08.2025

Erioderma barbellatum P.M. Jørg. & Arv., Nordic J. Bot. 22(1): 89 (2002)

[LN548, 17122], Venezuela/Merida. Distr. Rangel: zwischen Laguna Mucubaij und Pico Mucuñuque, etwa 15 km SE von Apartaderos, an Büschen in der Nähe eines Wasserfalles, 8°45' N, 70°45' W. Leg. K. & A. Kalb & López-Figueiras 16.08.1989, det. P. M. Jørgensen. Ex K. Kalb: Lichenes Neotropici Nr. 549.

Thallus mostly orbicular, loosely attached, forming cushions up to 6 cm diam, shallowly lobed. Lobes up to 15 mm broad, margins flat to ascending, more or less undulate, often showing the white to ochraceous lower surface. Upper surface grey, densely hairy with stiff (to 500 µm long), erect, sometimes clustered hairs, blackish blue towards the margin and there merging with bundles of blackish rhizohyphae from the otherwise naked, lower surface. Apothecia to 5 (10) mm diam., common, sessile on margins; disc concave to flat, dark to chestnut brown; margins concolorous with thallus, strongly hairy. In section 230-270 µm thick with irregularly celled, 30-40 µm thick, cortex. Ascospores simple, colourless, thickwalled, broadly ellipsoid, 10-12 x 8-9 µm. Pycnidia infrequent, marginal, immersed, globose, black, surrounded by a crown of hairs, to 0.2 mm producing colourless; bacilliform conidia, 3-4 x 1-2 µm. Chemistry: Pd-, containing atranorin (trace), methyl-4-0-demethylbarbatate (major), 5-chloro-4-0-demethylbarbatate (major), and a related unknown depside (trace), or P+ orange (argopsin and norargopsin). - Notes: This is a most distinctive species, which may be confused with the most hairy forms of *E. leylandii* ssp. *velligerum* (= *E. chilense*), which has a chemistry identical with one of the chemotypes of *E. barbellatum*. *E. barbellatum*, however, is more strongly hairy (hence the epithet), reminiscent of those on an Old English Sheepdog, often with conspicuous muffs of hairs along the margins, and the larger apothecia have a thicker, very hairy exciple. It is also present in parts of the Andes where the former taxon does not occur.



Erioderma barbellatum



Erioderma barbellatum



Erioderma barbellatum

Erioderma chilense Mont., Annls Sci. Nat., Bot., sér. 3 18: 309 (1852)

[LN318, 18260], Brasilien/ Rio de Janeiro. Serra da Mantiqueira. Itatiaia. Zwischen Registro do Picú und Agulhas Negras. An freistehenden Laubbäumen, an einem stark gestörten Weidehang. 2130 m. Leg. K. Kalb und G. Plöbst, 15.03.1980. EX K. KALB: LICHENES NEOTROPICI NR. 318.

Thallus mainly monophyllous, orbicular, shallowly incised, to 5 cm diam., the margins often involute when dry, exposing the whitish lower surface. Upper surface grey, mostly smooth with scattered, sometimes aggregated stiff hairs. Lower surface white, occasionally with a shallow vein-like pattern, with bundles of blackish rhizohyphae marginally. In section 200-250 μm with irregularly celled, 25-30 μm thick, cortex. Apothecia common, marginal, sessile to subpedicellate, to 1 mm diam.; disc flat, blackish brown, becoming convex and then more or less excluding the narrow, sparsely hairy margin. Ascospores simple, colourless, thick-walled, ellipsoid, 10-12 x 6-7 μm . Pycnidia rare, immersed, rounded, black, producing bacilliform conidia, 3-4 x 1-2 μm . Chemistry: P⁺ orange, containing pannarin and traces of related substances. - Notes: *E. leylandii* may be confused with *E. papyraceum* which occurs down to 2000 m, but it is thinner and has smaller, darker apothecia with narrower margins, and patchier, erect hairs and rhizohyphae. The thallus is always P⁺ orange (due to pannarin). For possible confusion with *E. barbellatum* see above under that species.



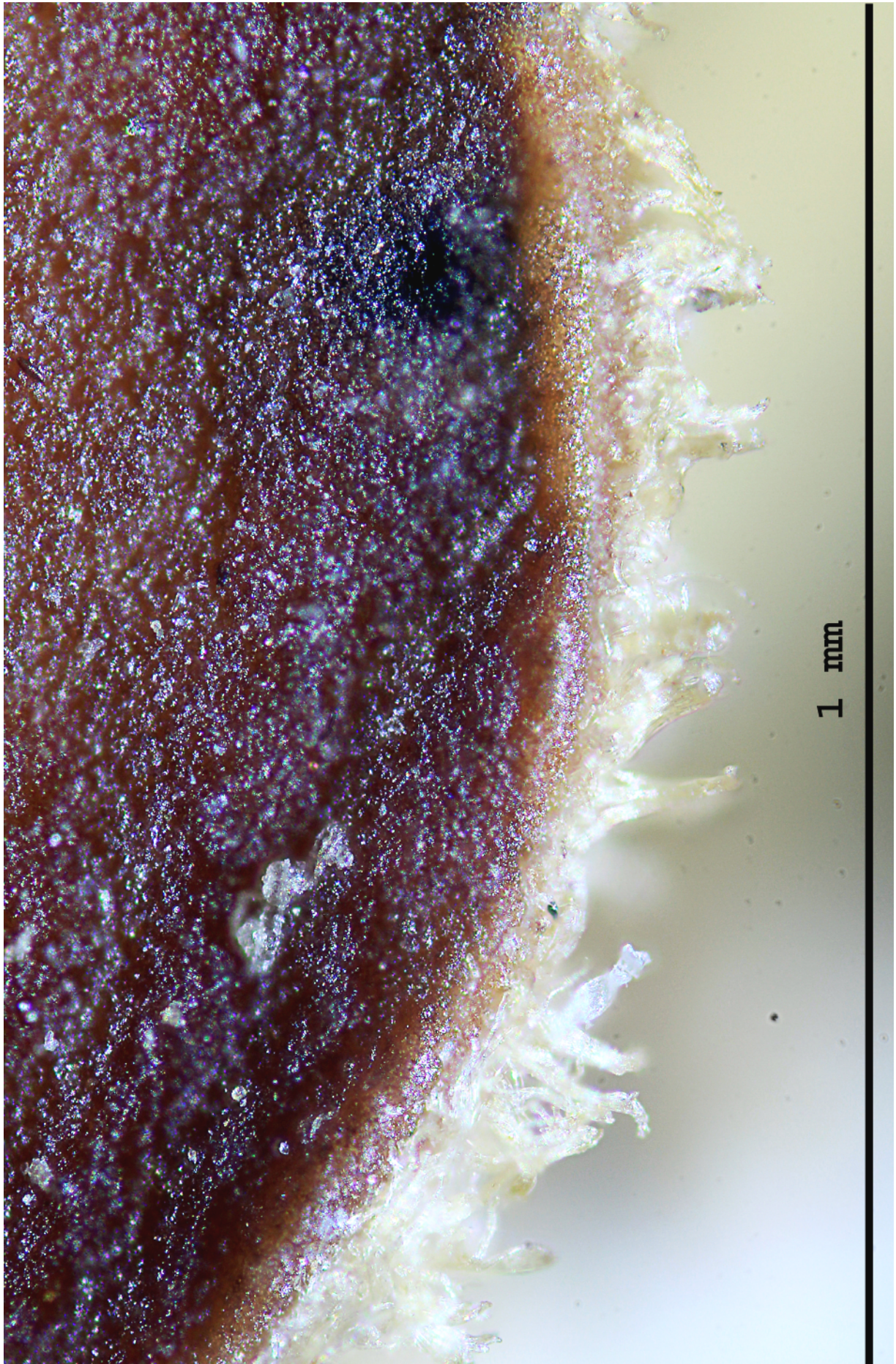
Erioderma chilense



Erioderma chilense



Erioderma chilense



Erioderma chilense

Erioderma chilense Mont., Annls Sci. Nat., Bot., sér. 3 18: 309 (1852)

[LN319, 18259], Brasilien/ Rio de Janeiro. Serra da Mantiqueira. Itatiaia. Zwischen Registro do Picú und Agulhas Negras. An beschatteten Bäumen in einer Bachschlucht. 2200 m. Leg. K. Kalb und G. Plöbst, 23.07.1978, det. H. Schissel, 03.1983 - Chemistry: Argopsin anal. S. Hunek. EX K. KALB: LICHENES NEOTROPICI NR. 319.

Thallus mainly monophyllous, orbicular, shallowly incised, to 5 cm diam., the margins often involute when dry, exposing the whitish lower surface. Upper surface grey, mostly smooth with scattered, sometimes aggregated stiff hairs. Lower surface white, occasionally with a shallow vein-like pattern, with bundles of blackish rhizohyphae marginally. In section 200-250 μm with irregularly celled, 25-30 μm thick, cortex. Apothecia common, marginal, sessile to subpedicellate, to 1 mm diam.; disc flat, blackish brown, becoming convex and then more or less excluding the narrow, sparsely hairy margin. Ascospores simple, colourless, thick-walled, ellipsoid, 10-12 x 6-7 μm . Pycnidia rare, immersed, rounded, black, producing bacilliform conidia, 3-4 x 1-2 μm . Chemistry: P⁺ orange, containing pannarin and traces of related substances. - Notes: *E. leylandii* may be confused with *E. papyraceum* which occurs down to 2000 m, but it is thinner and has smaller, darker apothecia with narrower margins, and patchier, erect hairs and rhizohyphae. The thallus is always P⁺ orange (due to pannarin). For possible confusion with *E. barbellatum* see above under that species.



Erioderma chilense



Erioderma chilense



Erioderma chilense

Erioderma chilense Mont., Annls Sci. Nat., Bot., sér. 3 18: 309 (1852)

[VZ1919], Brasilia. Rio de Janeiro, Serra da Mantiqueira: Itatiaia, inter Registro do Picú et Agulhas Negras, 2300 m. Ad truncum arborum in pluvii silva montana. Leg. K. Kalb et G. Plöbst, 23.07.1978 - Argopsin. anal Jørgensen, 20.08.1986. EX A. V&ZDA: LICHENES SELECTI EXSICCATI NR. 1919.

Notes of P. M. Jørgensen: *Erioderma chilense* Mont., Ann. Sci. Nat. Bot., ser. 3, vol. 18: 309 (Nov. 1852).

Montagne published this name twice in the same year, but according to Stafleu & Cowan (1981: 563), the paper cited here is the older one (by one month), with clear reference to the later treatment in Gay (1852). I saw the original material collected by Gay at PC in 1974, but unfortunately it was later lost in the mail, so the excellent, detailed illustration in Gay has to serve as lectotype with a well-developed specimen from the region where the original material was collected, serving as epitype. Taxonomy: Closely related to *E. leylandii* s.str. from which most specimens can be distinguished by the thicker, greyer, stronger hairy thallus, often with a yellowish lower surface, and by containing argopsin instead of pannarin. However, there are specimens that are impossible to place according to morphology alone. Most significantly, I have been unable to do so in cases where they grow together. This suggests that the morphological differences may be environmentally controlled, and that the only real difference is chemical.

Thallus mainly monophyllous, orbicular, shallowly incised, to 5 cm diam., the margins often involute when dry, exposing the whitish lower surface. Upper surface grey, mostly smooth with scattered, sometimes aggregated stiff hairs. Lower surface white, occasionally with a shallow vein-like pattern, with bundles of blackish rhizohyphae marginally. In section 200-250 µm with irregularly celled, 25-30 µm thick, cortex. Apothecia common, marginal, sessile to subpedicellate, to 1 mm diam.; disc flat, blackish brown, becoming convex and then more or less excluding the narrow, sparsely hairy margin. Ascospores simple, colourless, thick-walled, ellipsoid, 10-12 x 6-7 µm. Pycnidia rare, immersed, rounded, black, producing bacilliform conidia, 3-4 x 1-2 µm. Chemistry: P⁺ orange, containing pannarin and traces of related substances. - Notes: *E. leylandii* may be confused with *E. papyraceum* which occurs down to 2000 m, but it is thinner and has smaller, darker

apothecia with narrower margins, and patchier, erect hairs and rhizohyphae. The thallus is always P+ orange (due to pannarin). For possible confusion with *E. barbellatum* see above under that species.



Erioderma chilense



Erioderma chilense



Erioderma chilense

[LN550, 17121], Ecuador/Azuay. Zwischen Remigio Crespo und Arenillas, wenig unterhalb der Passhöhe; etwa 60 km ESE von Cuenca. In einem Paramo, 3400 m, 03°15' S, 79°30' W. Leg. K. & A. Kalb, 28.08.1987, det. P. M. Jorgensen. EX K. KALB: LICHENES NEOTROPICI NR. 550.

Thallus orbicular, to 13 cm diam., shallowly lobed. Lobes dichotomously divided, to 8 mm broad with flat, thickened margins, often involute and brownish. Upper surface grey, densely covered in short, stiff hairs, giving it a furry appearance. Lower surface white to ochraceous, naked except for marginal bundles of blackish rhizohyphae. In section 250-300 µm thick, with cortex of irregular cells with thickened walls, 30-40 µm wide. Apothecia common, to 8 mm diam, on ascending, short convex lobes, appearing stipitate; disc concave, dark to chestnut-brown; margin prominent, densely short-haired, concolorous with thallus. Ascospores simple, colourless, thickwalled, ellipsoid, 12-15 x 8-10 µm. Pycnidia marginal, common, protruding, pointed, blackish brown, to 0.1 mm diam., producing colourless, bacilliform conidia, 3-4 x 1-2 µm. Chemistry: P+ orange, containing argopsin (major) and norargopsin (major). -Notes: In spite of the rather narrow, dichotomously divided lobes this species hardly belongs in the *E. divisum*-group because of its large, cupuliform, marginal apothecia and stiff hairs. It is rather more closely related to *E. barbellatum*, apparently having converged towards *E. divisum* by developing dichotomously divided lobes. It is readily recognized by its furry appearance and large, marginal, hairy, cupuliform apothecia (hence the epithet) and the protruding, pointed pycnidia. Habitat and distribution: Another species of the upper montane cloud forests ("ceja andina") and bush paramos at 3100-3600 m.



Erioderma cyathophorum



Erioderma cyathophorum



Erioderma cyathophorum



Erioderma cyathophorum

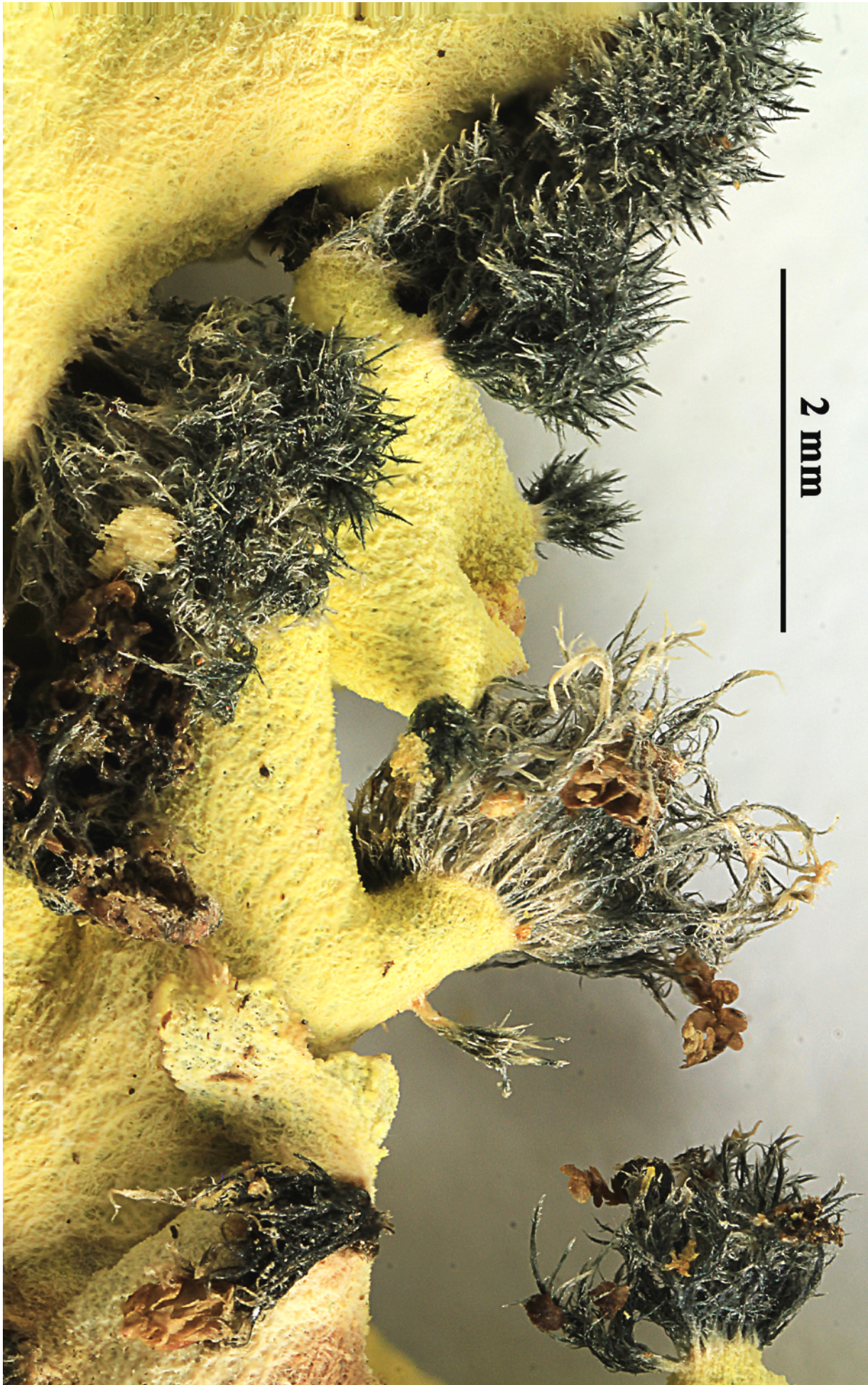
Erioderma leylandii (Taylor) Müll. Arg. [as 'leylandi'], Flora, Regensburg 71(2): 24 (1888)
 = *Cetraria eriophylla* (C. Knight ex Shirley) Zahlbr., Cat. Lich. Univers. 6: 287 (1929) [1930]
 = *Erioderma knightii* Shirley, in Bailey, Bot. Bull. Dept. Agric., Queensland 8: 96 (1893)
 = *Erioderma leylandii* subsp. *azoricum* P.M. Jørg. & P. James, Lichenologist 33(6): 483 (2001)
 = *Erioderma leylandii* subsp. *velligerum* (Tuck.) P.M. Jørg., Taxon 50(2): 534 (2001)
 = *Platysma eriophyllum* C. Knight ex Shirley, Proc. R. Soc. Qd. 5: 8 (1888)
 = *Sticta leylandii* Taylor [as 'leylandi'], London J. Bot. 6: 179 (1847)

[ABL27853], Brazil, Santa Catarina, São Francisco do Sul, Parque Estadual do Acaraí. 26°19'14" S, 48°33'13" W, 10 m. In restinga vegetation on tree. Leg. M. Cáceres & A. Aptroot (no 27853), 7 October 2015, det. A. Aptroot 2015. -

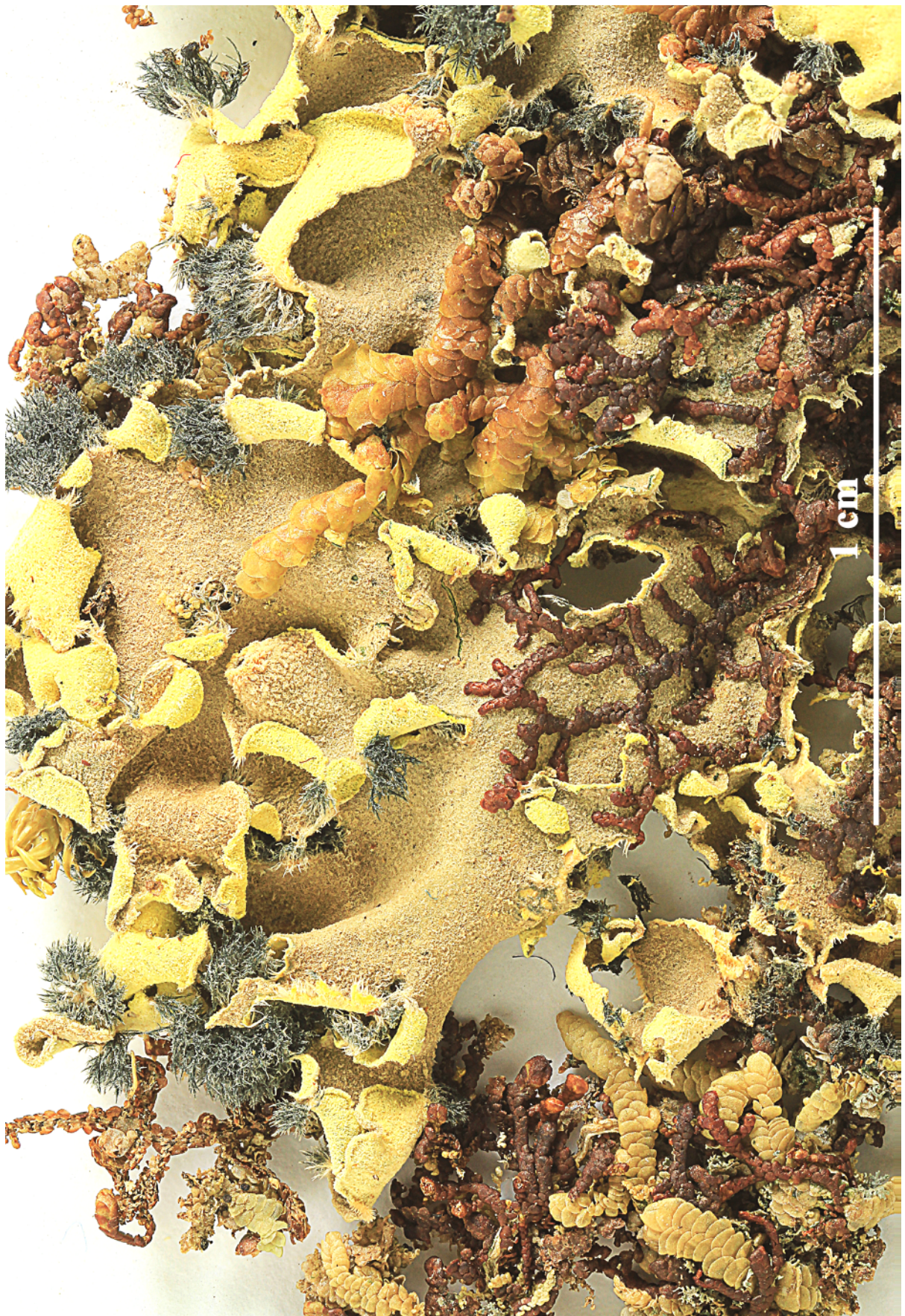
Thallus foliose, loosely attached, ±shallowly lobed, to 5 cm wide. Lobes short, 4–6 mm wide; margins entire, often ascending and involute when dry, showing whitish lower surface. Upper surface grey, ±smooth, but with a dense covering of stiff hairs, sometimes aggregated. Lower surface white, occasionally with hyphae forming a shallow vein-like pattern (x10 lens), with blackish rhizohyphae in marginal bundles. Apothecia marginal, sessile to subpedicellate; disc flat, becoming convex, often ±pruinose, dark brown to chestnut brown; proper exciple sparsely hairy, ±excluded at maturity, concolorous with thallus. Ascospores 10–12 × 7–8 µm, thick-walled. Chemistry: medulla P+ yellow-orange; pannarin.

description of *E. leylandii*: Thallus mainly monophyllous, orbicular, shallowly incised, to 5 cm diam., the margins often involute when dry, exposing the whitish lower surface. Upper surface grey, mostly smooth with scattered, sometimes aggregated stiff hairs. Lower surface white, occasionally with a shallow vein-like pattern, with bundles of blackish rhizohyphae marginally. In section 200–250 µm with irregularly celled, 25–30 µm thick, cortex. Apothecia common, marginal, sessile to subpedicellate, to 1 mm diam.; disc flat, blackish brown, becoming convex and then more or less excluding the narrow, sparsely hairy margin. Ascospores simple, colourless, thick-walled, ellipsoid, 10–12 x 6–7 µm.

Pycnidia rare, immersed, rounded, black, producing bacilliform conidia, 3-4 x 1-2 μm . Chemistry: Pd+ orange, containing pannarin and traces of related substances. - Notes: *E. leylandii* may be confused with *E. papyraceum* which occurs down to 2000 m, but it is thinner and has smaller, darker apothecia with narrower margins, and patchier, erect hairs and rhizohyphae. The thallus is always P+ orange (due to pannarin). For possible confusion with *E. barbellatum* see under that species.



Erioderma leylandii



Erioderma leylandii

Erioderma physcioides Vain. [as 'physcoides'], J. Bot., Lond. 34: 70 (1896)
= *Erioderma unguigerum* (Bory) Vain.
= *Erioderma unguigerum* (Bory) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg
5: 110 (1858)
= *Lichen unguigerus* Bory 1804

[LN320,18230], Brasilien/ Sao Paulo. Praia de Peruibe bei Itanhaém, an
Laguncularia racemosa, in einer dichten Mangrove. 2 m. Leg. K. Kalb,
09.07.1979, det. H. Schissel, 3.1983. EX K. KALB: LICHENES NEOTRO-
PICI NR. 320. - Chemie: Erioderm, anal. S. Huneck.

Note from P. M. Jorgtensen: *Erioderma physcioides* Vain., J. Bot. 34:
70 (1896). - Type: West Indies, Vincent, Bow-wood, 1891, W. R. Elliott
150 (TUR-V 12039, holotype!; BM, iso- type!). - *Malmella physcioides*
(Vain.) Dodge, Ann. Miss. Bot. Garden 20: (1933). = *Erioderma ungu-*
igerum (Bory) Vain. Nomenclature: The name was based on this speci-
men, obviously the holotype, which is just a very well-developed
specimen of *E. unguigerum* with unusually elongated lobes, but other-
wise typical, containing eriodermin.

Description for *E. unguigerum* from D.D. Awasthi: Thallus eorticolous;
lobes to 5 mm wide with incised secondary lobules; upper side grey-
brown, tomentose, lacking isidia and soredia; lower side whitish yellow
with blue-black tufts of rhizohyphae. Apothecia to 4 mm in diam.;
ascospores 12-18 x 6-8 µm. Medulla P+ orange. Eriodermin present.
Distribution: Widely distributed in East Africa, Madagascar, West In-
dies, Atlantic Coast of South America, Mascarenes, and Marquesas in
Pacific Coast.



Erioderma physcioides



Erioderma physcioides



Erioderma physcioides

Erioderma solediatum D.J. Galloway & P.M. Jørg., Lichenologist 7(2): 139 (1975)

[8741], Philippinen, Leyte, Prov. Leyte, Lake Kasudsuran (N 11°01.539, E 124°44.931, 740 m) bei Barangay Liberty (Ormoc-City). Leg. F. Schumm & U. Schwarz, 23.08.2000, det. H. Sipman. 08.2001.

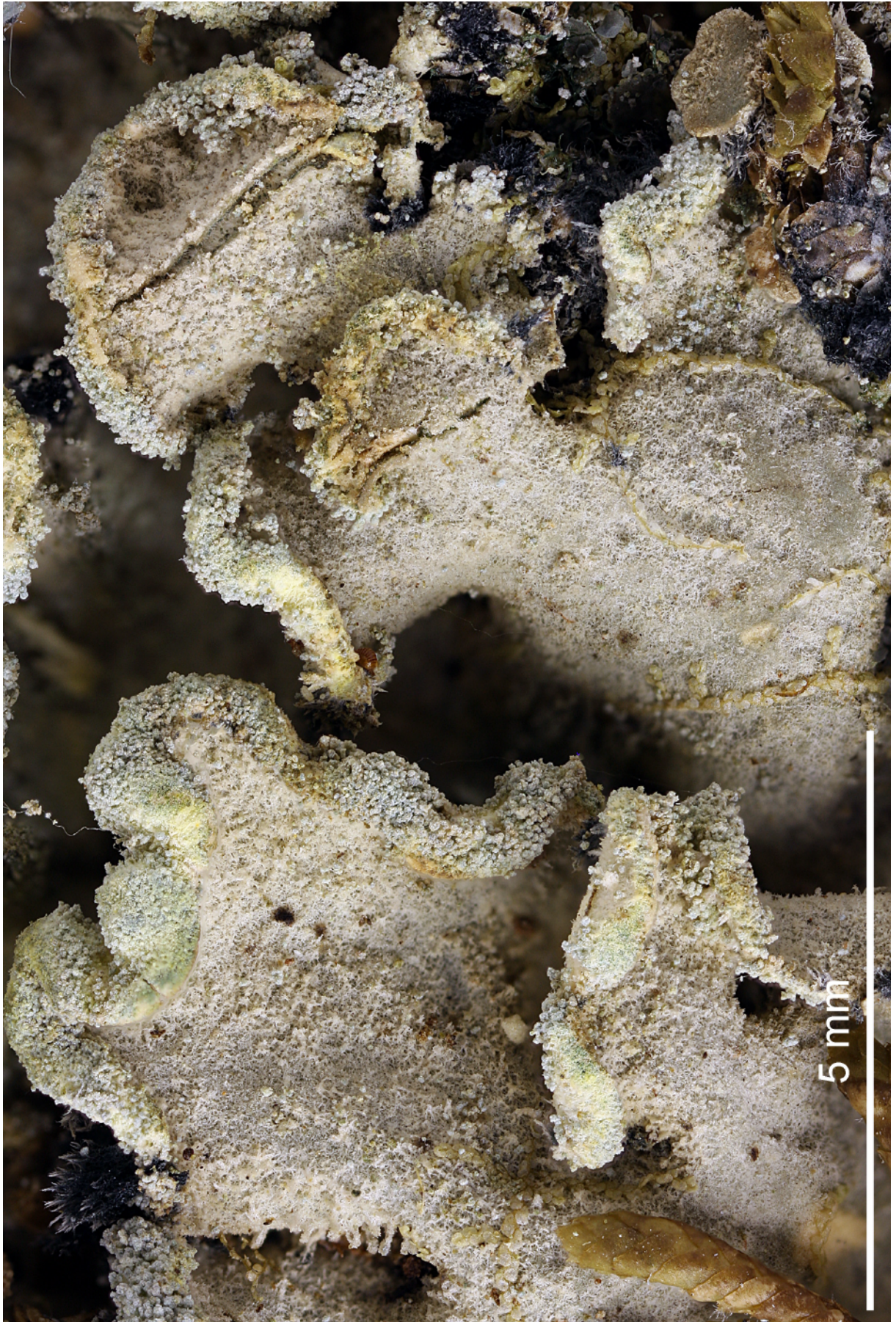
Thallus foliaceus, lobatus; lobis c. 3-5 mm latis, ambitu subintegris marginibus adscendentibus, crenatis, involutis et demum soraliis limbi-formibus caesiellis. Thallus superne cinereo-fuscescens, tenuiter arachnoideo-tomentoso; subtus pallidus nervis destitutis, rhizinis coeruleo-nigricantibus, preasertim marginalibus aggregatis. Thallus P+ aurantiacus. Apothecia et pycnidia ignota. Holotypus: New Zealand, Three Kings Islands, Great Island, south side of Tasman Valley, on prostrate *Leptospermum ericoides* scrub, 21 November 1970,

Thallus lobate (to 40 mm broad) of short, broadly laciniate lobes to 5 mm wide. Margins ascending, sometimes strongly involute and crenate, developing prominent bluish, limbiform soralia on the edges of the upturned lower surface of the lobes; soredia coarse, granular, greyish-blue, c. 0-1 mm diam, often trapped on tomentum of the upper surface and thus becoming spread superficially over the lobes. Upper surface greyish-brown, finely tomentose. Tomentum rather variable in appearance and texture, from a uniform, thin, whitish bloom to a long (to 12 mm) buff or yellowish, tangled or loosely-woven, mat. Apothecia and pycnidia not observed. Lower surface white or pale cream, not distinctly yellow as in *E. chilense* Mont. Lower cortex and veins absent; rhizines blue-black, simple to squarrosely branched (to 3 mm long), restricted to margins where they form small dense tufts. Chemistry: Thin-layer chromatography (Culberson, 1972) of cold acetone extracts of *E. solediatum* showed a simple chemistry viz., one persistently greenishyellow spot, having an R_f value slightly higher than that of pannarin, in the three solvent systems used. This, as yet unidentified compound, is the same as that reported from *E. pedicellatum* (Hue) P. M. Jørg. (Ahti and Jørgensen, 1971) and is also present in *E. physcioides* Vain. Affinity and variation: *Erioderma solediatum* differs from *E. mollissimum*, the only other known solediate *Erioderma*, in a number of respects. The latter is a large-lobed, brown species with hirsute margins which become revolute but are never ascending. It also has a uniform, dense mat of brownish rhizines covering the lower surface,

not restricted to more or less marginal tufts as in *E. solediatum*. Thin-layer chromatography of acetone extracts of *E. mollissimum* failed to reveal any chemical constituents. It therefore seems that *E. solediatum* has little affinity with *E. mollissimum* but is more closely related to the non-solediate West Indian species *E. physcioides* Vain. (Vainio, 1896). *E. solediatum* and *E. physcioides* constitute a typical species pair (Poelt, 1970) with the solediate species presumably having evolved from the non-solediate one. Habitat and distribution: *Erioderma solediatum* is a corticolous species found mainly on twigs and (or) bark of the three Myrtaceous species *Leptospermum ericoides*, *L. scoparium* and *Metrosideros excelsa*.



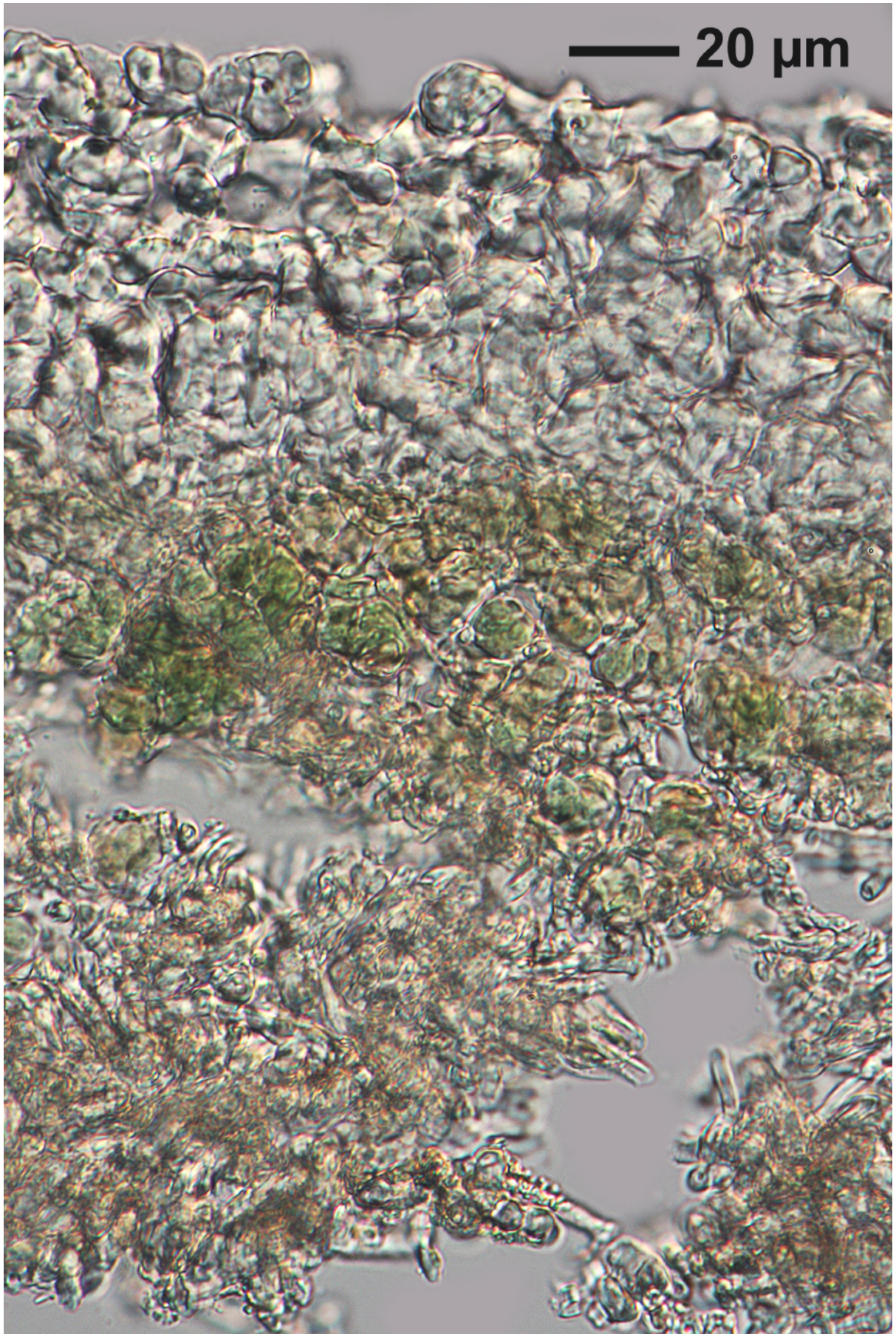
Erioderma solediatum



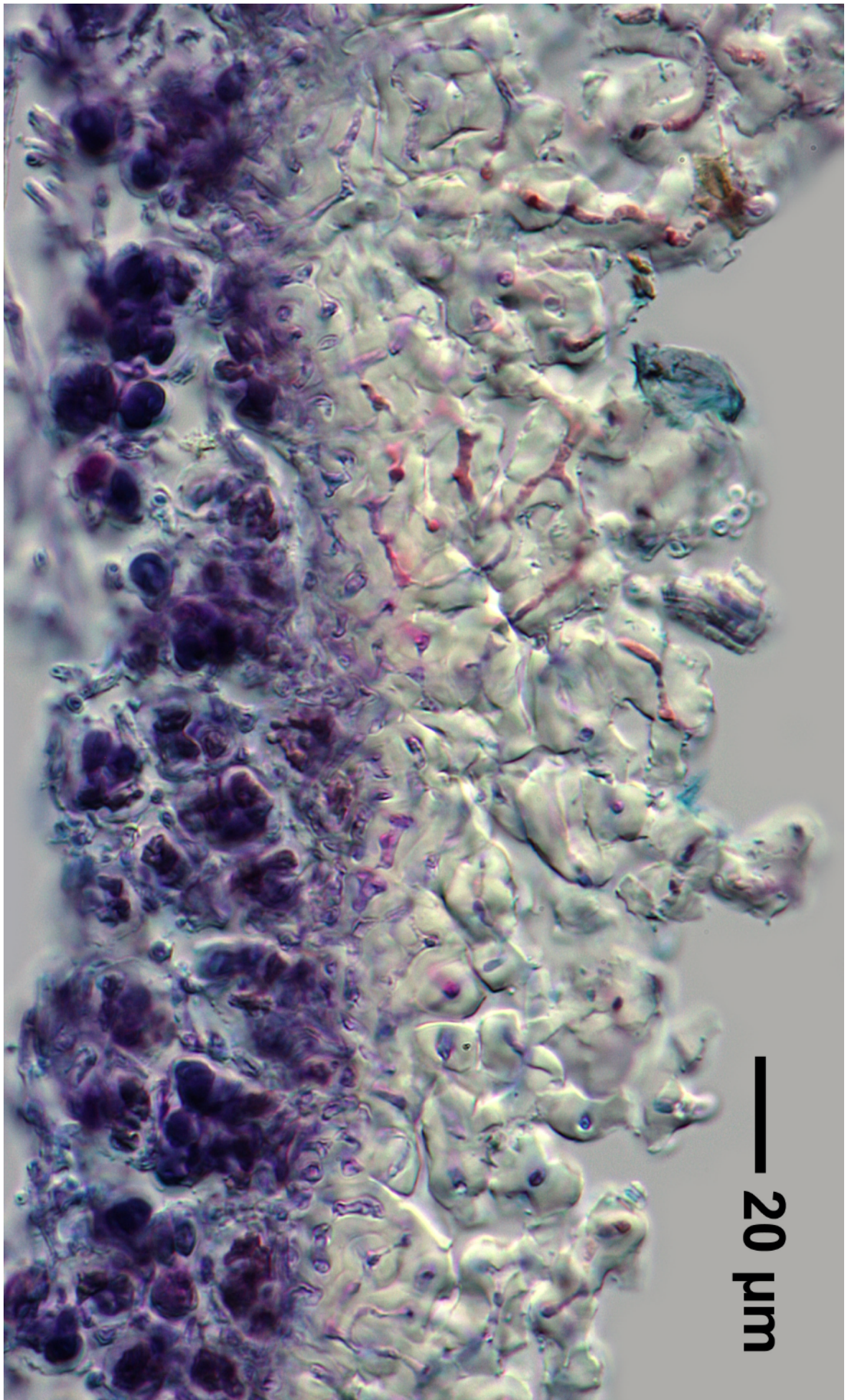
Erioderma solediatum



Erioderma solediatum



Erioderma solediatum



Erioderma solediatum



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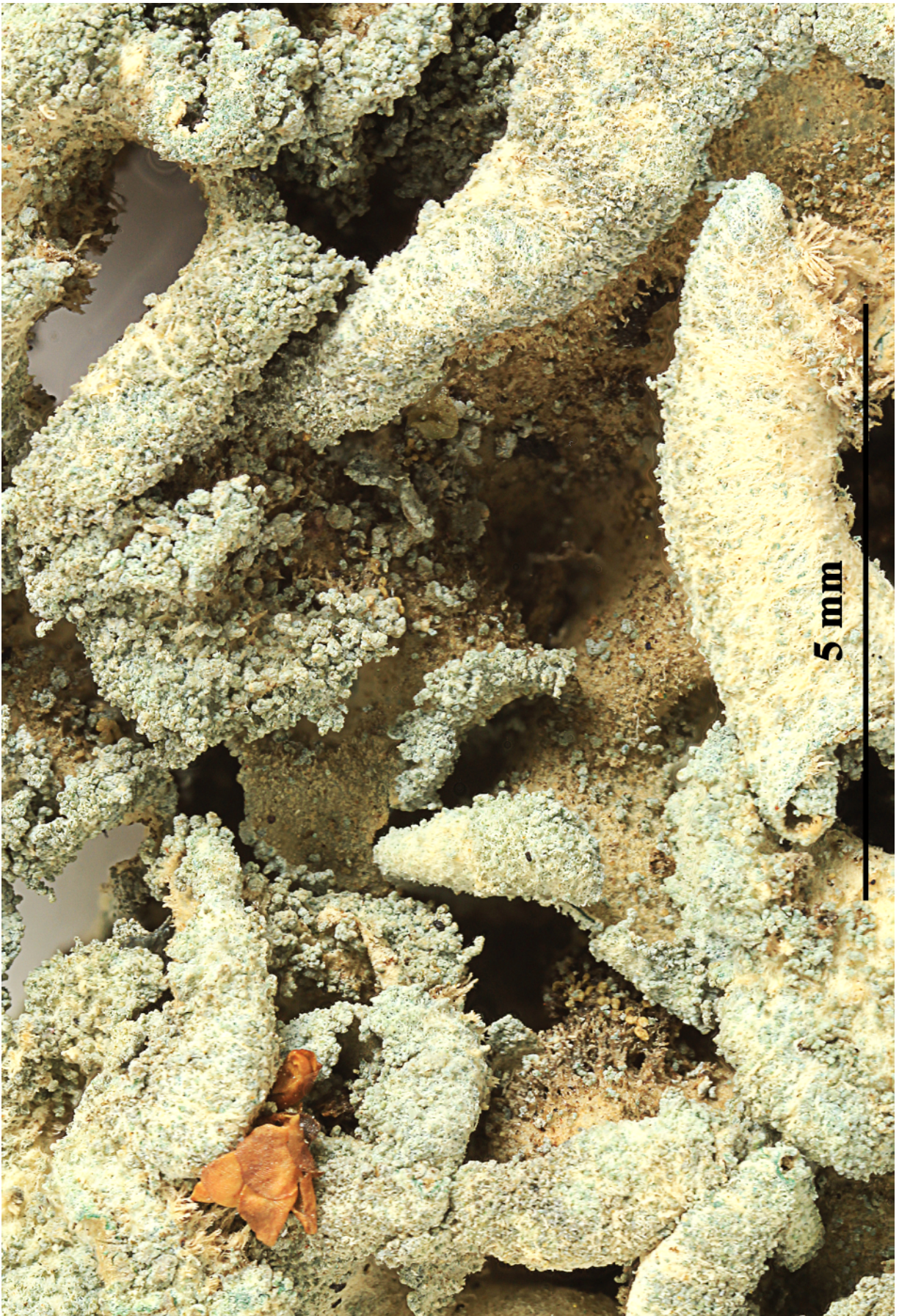
Erioderma solediatum D.J. Galloway & P.M. Jørg., Lichenologist 7(2): 139 (1975)

[LN321, 18229], Brasilien/ Rio de Janeiro. Serra da Mantiqueira. Itatiaia, zwischen Registro do Picú und Agulhas Negras. Am freistehenden Laubbäumen, an einem stark gestörten Weidehang. 2130 m. Leg. K. Kalb, 15.03.1980, det. H. Schissel, 3.1983- Chemistry: Eriodermin anal. K. Kalb. EX K. KALB: LICHENES NEOTROPICI NR. 321.

Thallus lobate (to 40 mm broad) of short, broadly laciniate lobes to 5 mm wide. Margins ascending, sometimes strongly involute and crenate, developing prominent bluish, limbiform soralia on the edges of the upturned lower surface of the lobes; soredia coarse, granular, greyish-blue, c. 0-1 mm diam, often trapped on tomentum of the upper surface and thus becoming spread superficially over the lobes. Upper surface greyish-brown, finely tomentose. Tomentum rather variable in appearance and texture, from a uniform, thin, whitish bloom to a long (to 12 mm) buff or yellowish, tangled or loosely-woven, mat. Apothecia and pycnidia not observed. Lower surface white or pale cream, not distinctly yellow as in *E. chilense* Mont. Lower cortex and veins absent; rhizines blue-black, simple to squarrosely branched (to 3 mm long), restricted to margins where they form small dense tufts. Chemistry: Thin-layer chromatography (Culberson, 1972) of cold acetone extracts of *E. solediatum* showed a simple chemistry viz., one persistently greenishyellow spot, having an R_f value slightly higher than that of pannarin, in the three solvent systems used. This, as yet unidentified compound, is the same as that reported from *E. pedicellatum* (Hue) P. M. Jørg. (Ahti and Jorgensen, 1971) and is also present in *E. physcioides* Vain. (= eriodermin !). *Erioderma solediatum* differs from *E. mollissimum*, the only other known sorediate Erioderma, in a number of respects. The latter is a large-lobed, brown species with hirsute margins which become revolute but are never ascending. It also has a uniform, dense mat of brownish rhizines covering the lower surface, not restricted to more or less marginal tufts as in *E. solediatum*. Thin-layer chromatography of acetone extracts of *E. mollissimum* failed to reveal any chemical constituents. It therefore seems that *E. solediatum* has little affinity with *E. mollissimum* but is more closely related to the non-sorediate West Indian species *E. physcioides* Vain. (Vainio, 1896). *E. solediatum* and *E. physcioides* constitute a typical species pair (Poelt, 1970) with the sorediate species presumably having evolved from the non-sorediate one.



Erioderma solediatum



Erioderma solediatum



Erioderma solediatum

Erioderma solediatum D.J. Galloway & P.M. Jørg., Lichenologist 7(2): 139 (1975)

[7529], Philippinen, Negros, Prov. Negros Oriental, Mt. Talinis (Cuernos de Negros), Lunga Nature Trail vom Camp Vendiola (09°16.281'N, 123°11.410' E) bis zum Lake Nailig 9°14.882' N, 123°10.490' E), 1188 m. Leg. F. Schumm & U. Schwarz 10.08.2000, det. A. ptroot, 2009.

Thallus foliaceus, lobatus; lobis c. 3-5 mm latis, ambitu subintegrus marginibus adscendentibus, crenatis, involutis et demum soraliis limbiformibus caesiellis. Thallus superne cinereo-fuscescens, tenuiter arachnoideo-tomentoso; subtus pallidus nervis destitutis, rhizinis coeruleo-nigricantibus, praesertim marginalibus aggregatis. Thallus P+ aurantiacus. Apothecia et pycnidia ignota. Holotypus: New Zealand, Three Kings Islands, Great Island, south side of Tasman Valley, on prostrate *Leptospermum ericoides* scrub, 21 November 1970,

Thallus lobate (to 40 mm broad) of short, broadly laciniate lobes to 5 mm wide. Margins ascending, sometimes strongly involute and crenate, developing prominent bluish, limbiform soralia on the edges of the upturned lower surface of the lobes; soredia coarse, granular, greyish-blue, c. 0-1 mm diam, often trapped on tomentum of the upper surface and thus becoming spread superficially over the lobes. Upper surface greyish-brown, finely tomentose. Tomentum rather variable in appearance and texture, from a uniform, thin, whitish bloom to a long (to 12 mm) buff or yellowish, tangled or loosely-woven, mat. Apothecia and pycnidia not observed. Lower surface white or pale cream, not distinctly yellow as in *E. chilense* Mont. Lower cortex and veins absent; rhizines blue-black, simple to squarrosely branched (to 3 mm long), restricted to margins where they form small dense tufts. Chemistry: Thin-layer chromatography (Culberson, 1972) of cold acetone extracts of *E. solediatum* showed a simple chemistry viz., one persistently greenishyellow spot, having an R_f value slightly higher than that of pannarin, in the three solvent systems used. This, as yet unidentified compound, is the same as that reported from *E. pedicellatum* (Hue) P. M. Jørg. (Ahti and Jørgensen, 1971) and is also present in *E. physcioides* Vain. Affinity and variation: *Erioderma solediatum* differs from *E. mollissimum*, the only other known solediate *Erioderma*, in a number of respects. The latter is a large-lobed, brown species with hirsute margins which become revolute but are never ascending. It also has a uniform, dense mat of brownish rhizines covering the lower surface,

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Erioderma solediatum



Erioderma solediatum

Erioderma tomentosum Hue, Bull. Soc. bot. Fr. 48: XLIX (1902) [1901]

[6306], Philippinen, Mindanao, Provinz Bukidnon, westlich Malabalay, tropischer Regenwald am Mt. Kitanglad ab Zwischen-Campsite , 08°09.637' N, 124°55.871' E, 1870-2800 m. Leg. F. Schumm, 19.08.1999, det. F. Schumm, 25.06.2000, conf. H. Sipman 08.2001. - P -/(ganz schwach gelblich); Soren einzellig, zu 8, ± warzig, 12-13 x 7,6-8,7 µm; Apothecien Rand. ohne Algen, zellig; Pykno-sporen 4.3 x 1.1 µm.

Thallus foliose, orbicular, 5–8 cm diam., with lobes broad, to 1.5 cm. Upper surface brownish green, scrobiculate, arachnoid tomentose, except in central parts. Lower surface whitish naked with distinct, elevated veins, partly beset with fascicles of yellowish brown (rarely blackened) rhizohyphae, except in the marginal zone. In section 200–300 µm thick with upper cortex, 20–30 µm thick of irregular cells. Apothecia rare, marginal, 3–5 mm wide with brown disc and scabrous-tomentose margin; ascospores simple, colourless. , 9–13 x 6–8 µm. Pycnidia scattered, marginal, black, conical, protruding, basally 150–200 µm wide, producing bacilliform conidia, 4–5 x 1 µm. CHEMISTRY: Mainly P– (type), containing vicanicin and norvicanicin (and trace of atranorin), occasionally with traces of argopsin and related substances giving a P+ orange reaction (Hamat et al. 1993). - NOTES: An easily recognized Peltigera-like species with a brittle thallus which disintegrates easily when collected. When well developed it has the largest thallus of all species in the region, and is the only one with distinct, raised veins on the lower surface. Previously often confused, however, with the Southern Hemisphere *E. groendalianum* Ach. (Jørgensen 2001a). It has a rather isolated position in the genus, and is possibly closest related to the tropical South American *E. wrightii* Tuck. HABITAT AND DISTRIBUTION: A corticolous species of mossy or lower montane forests (not exceeding 3000 m) with its main distribution area in SE Asia, with only a few records outside it (Madagascar, Japan and Hawaii).



Erioderma tomentosum



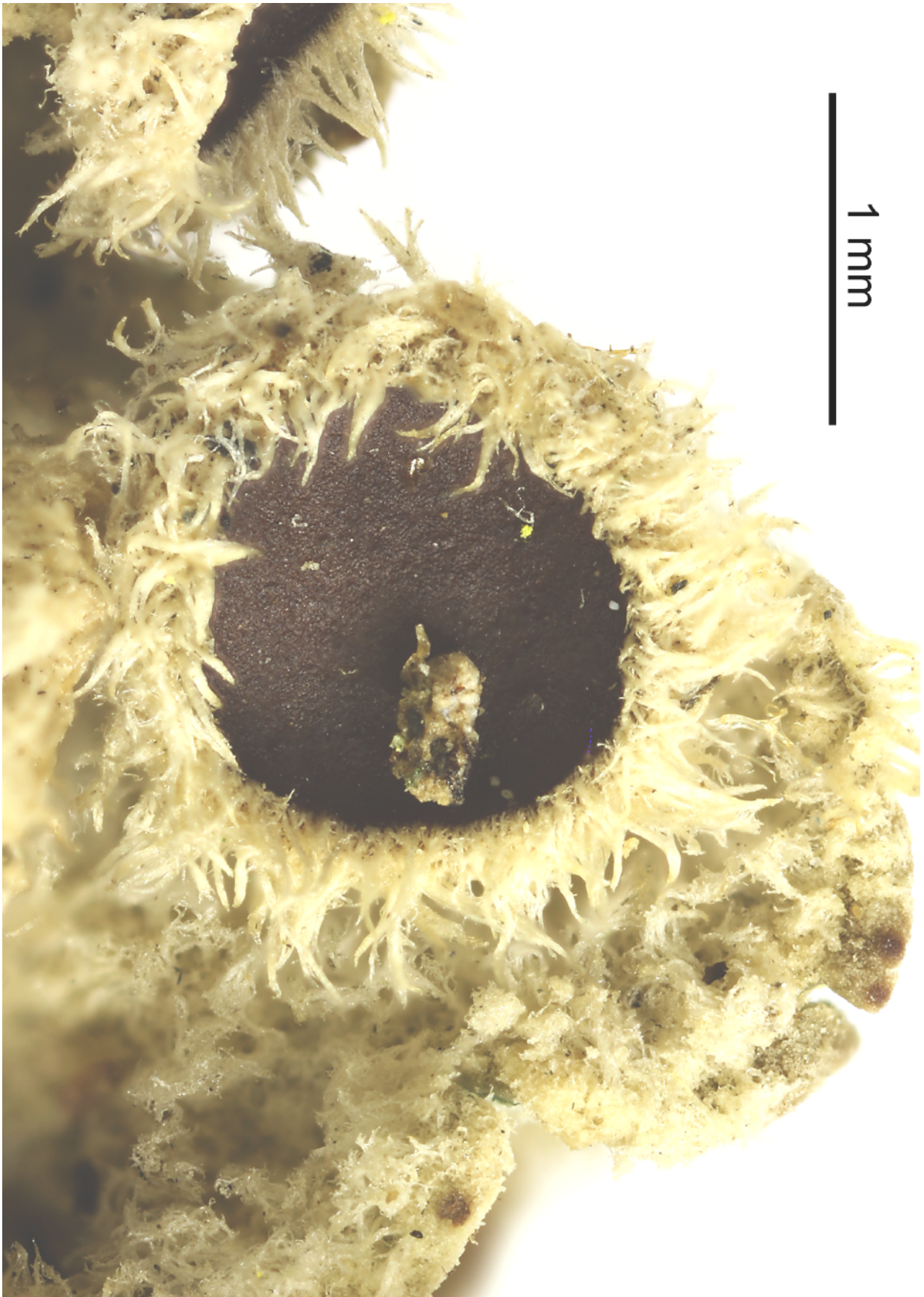
Erioderma tomentosum



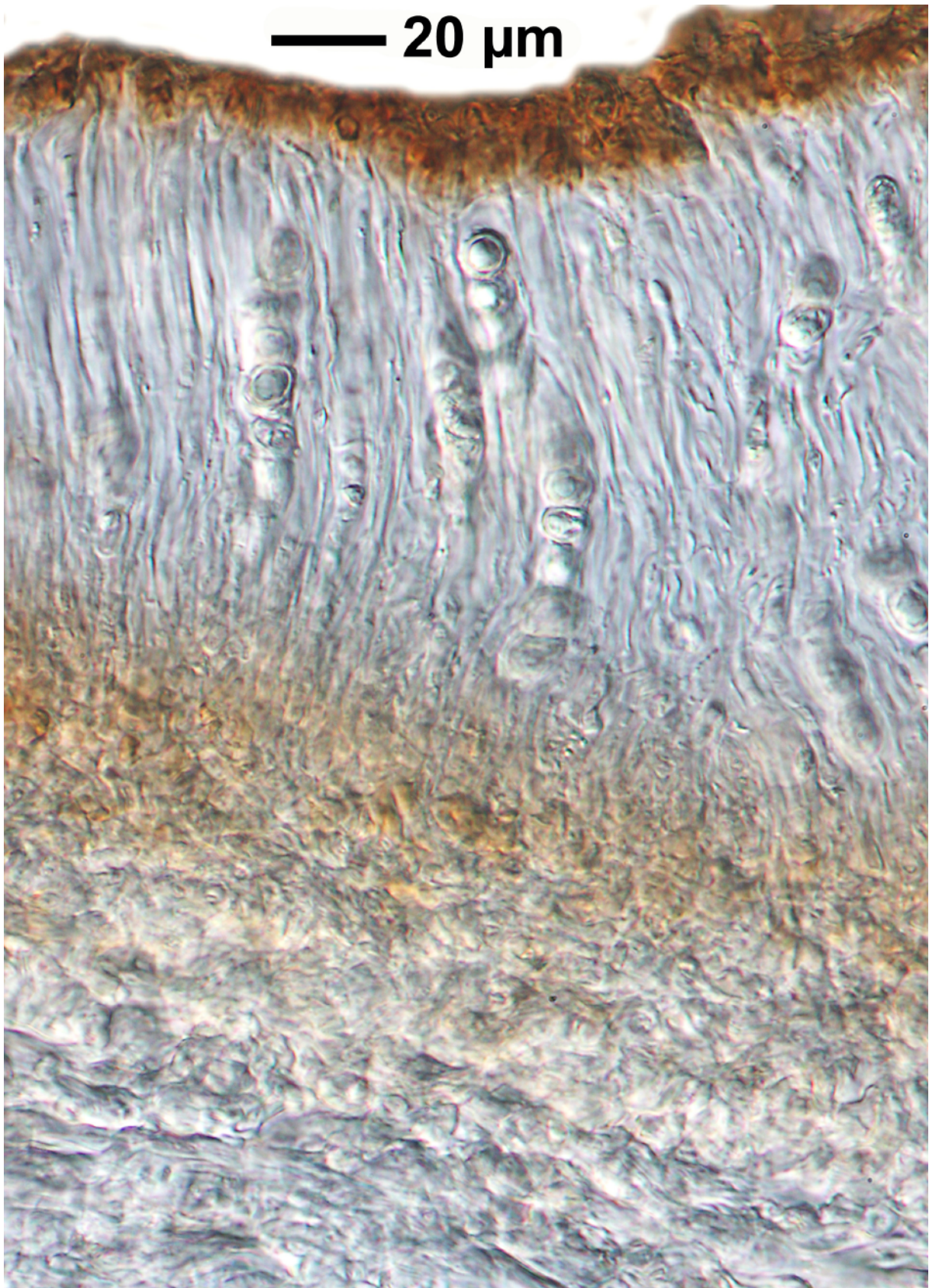
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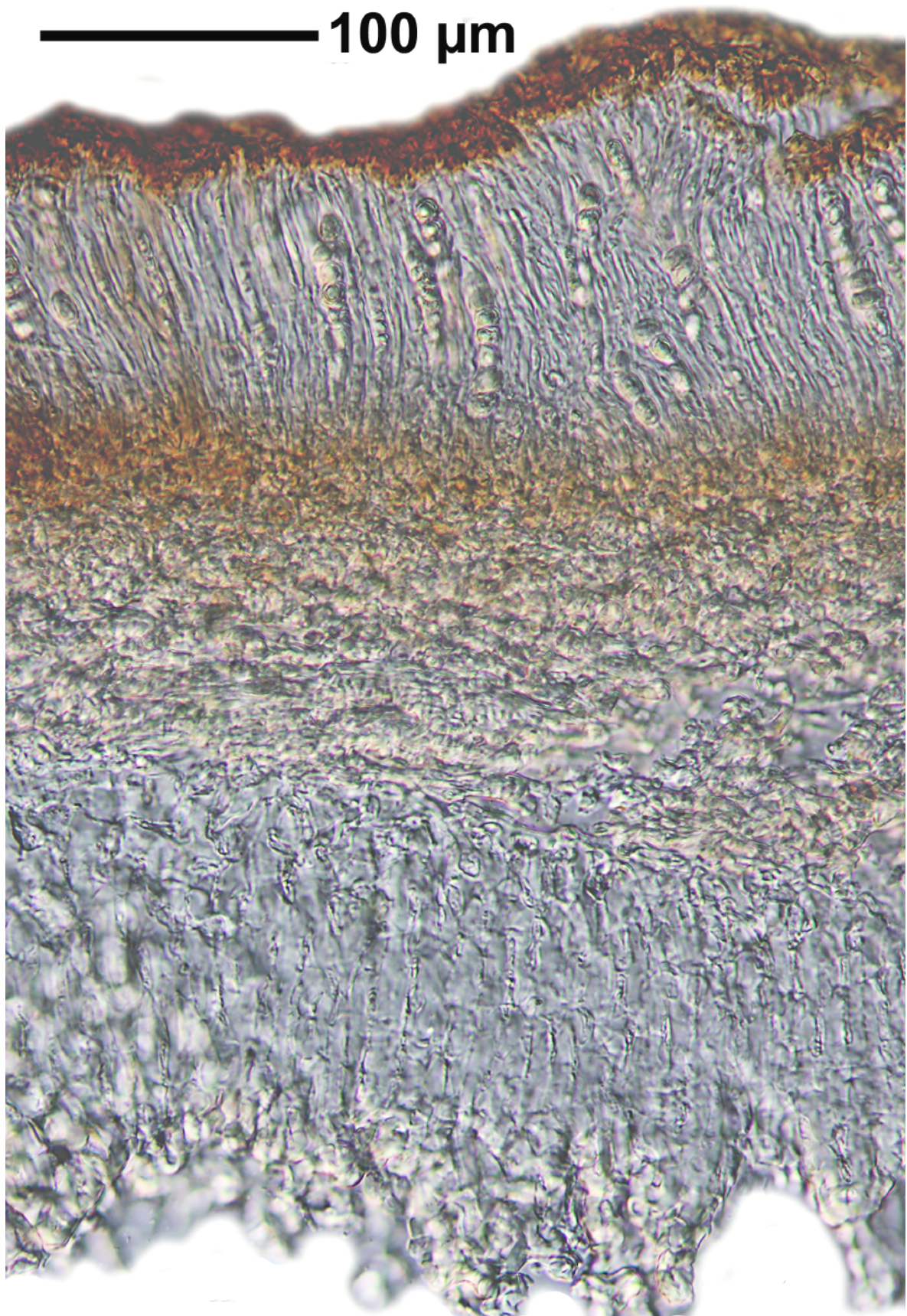
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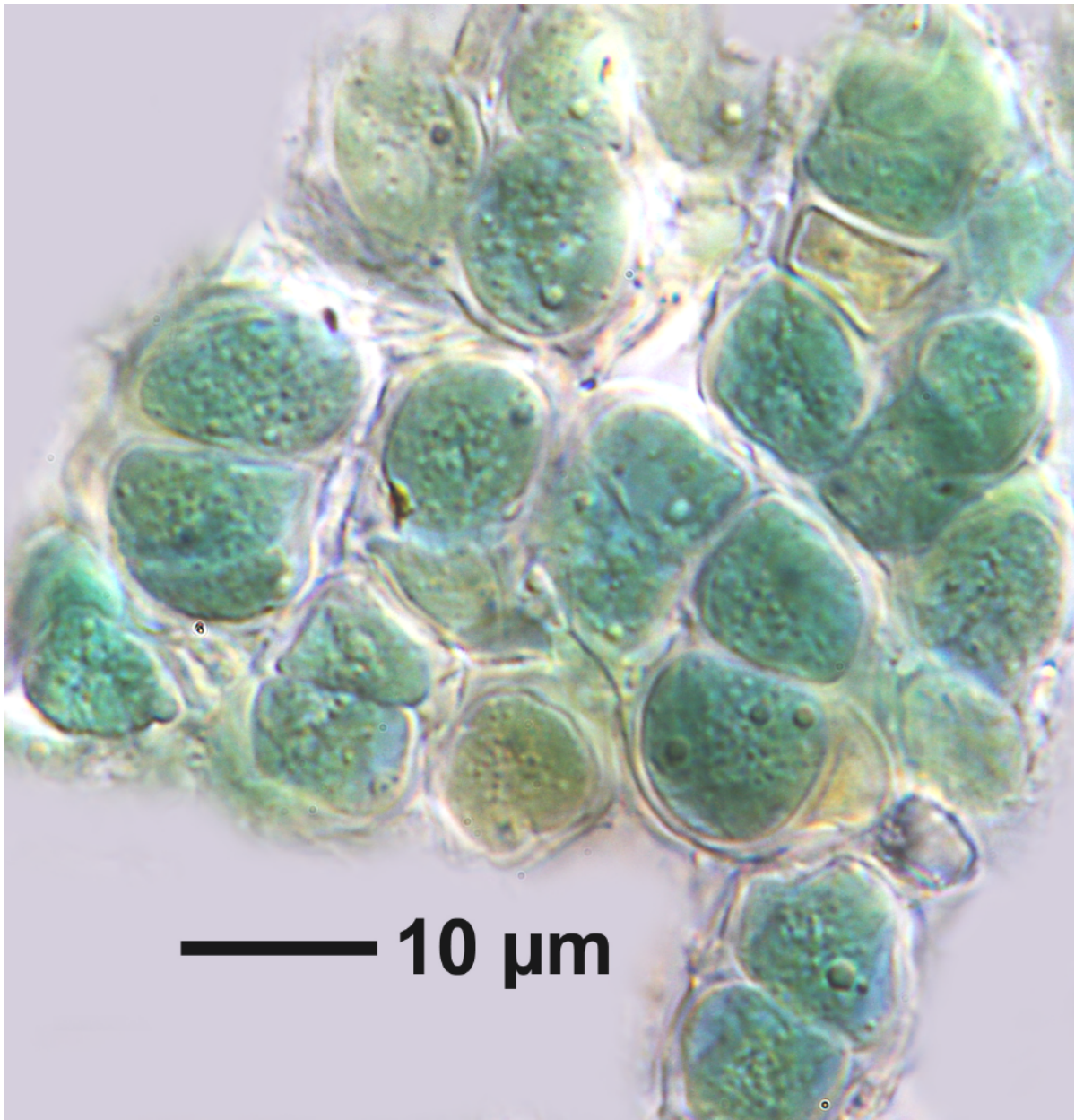
Erioderma tomentosum



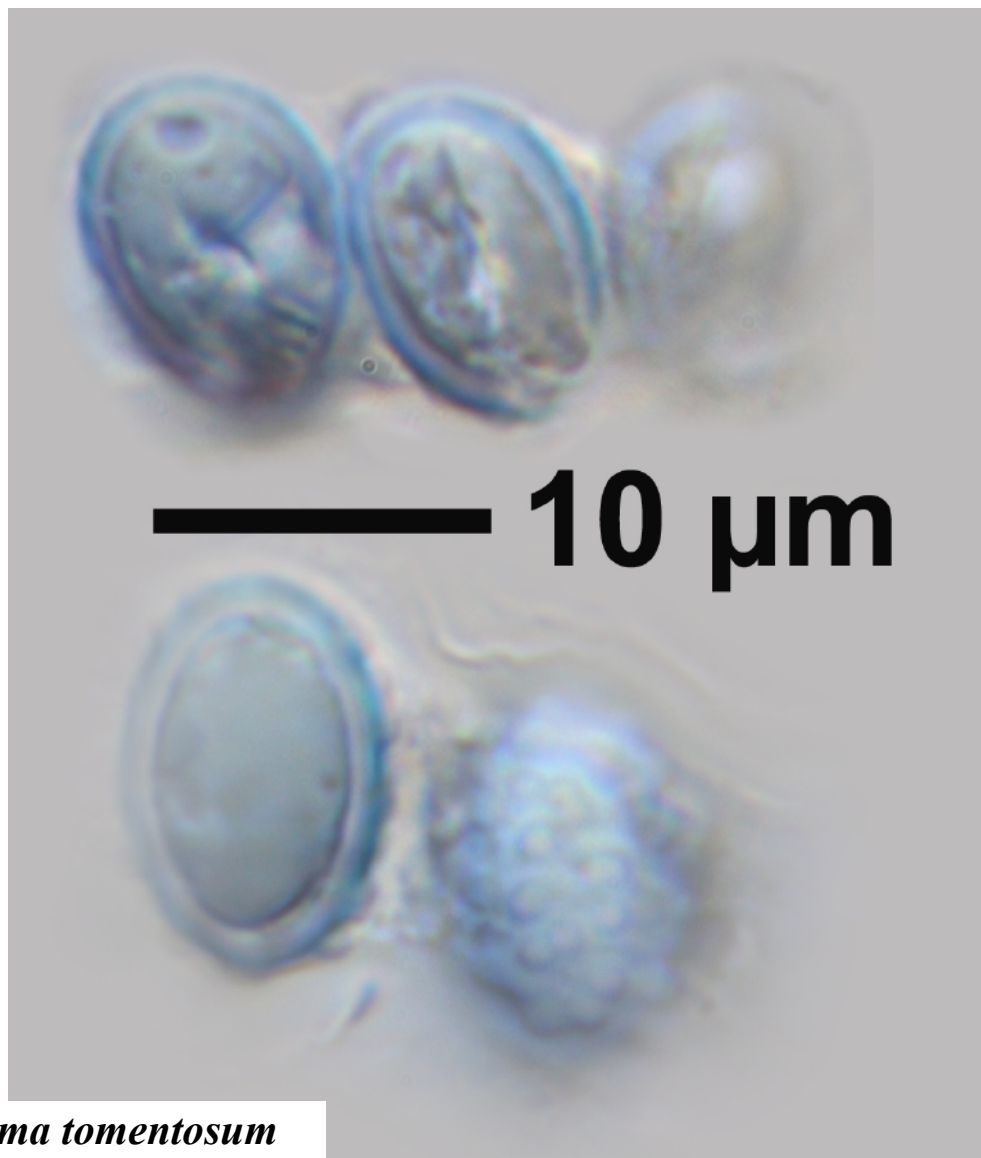
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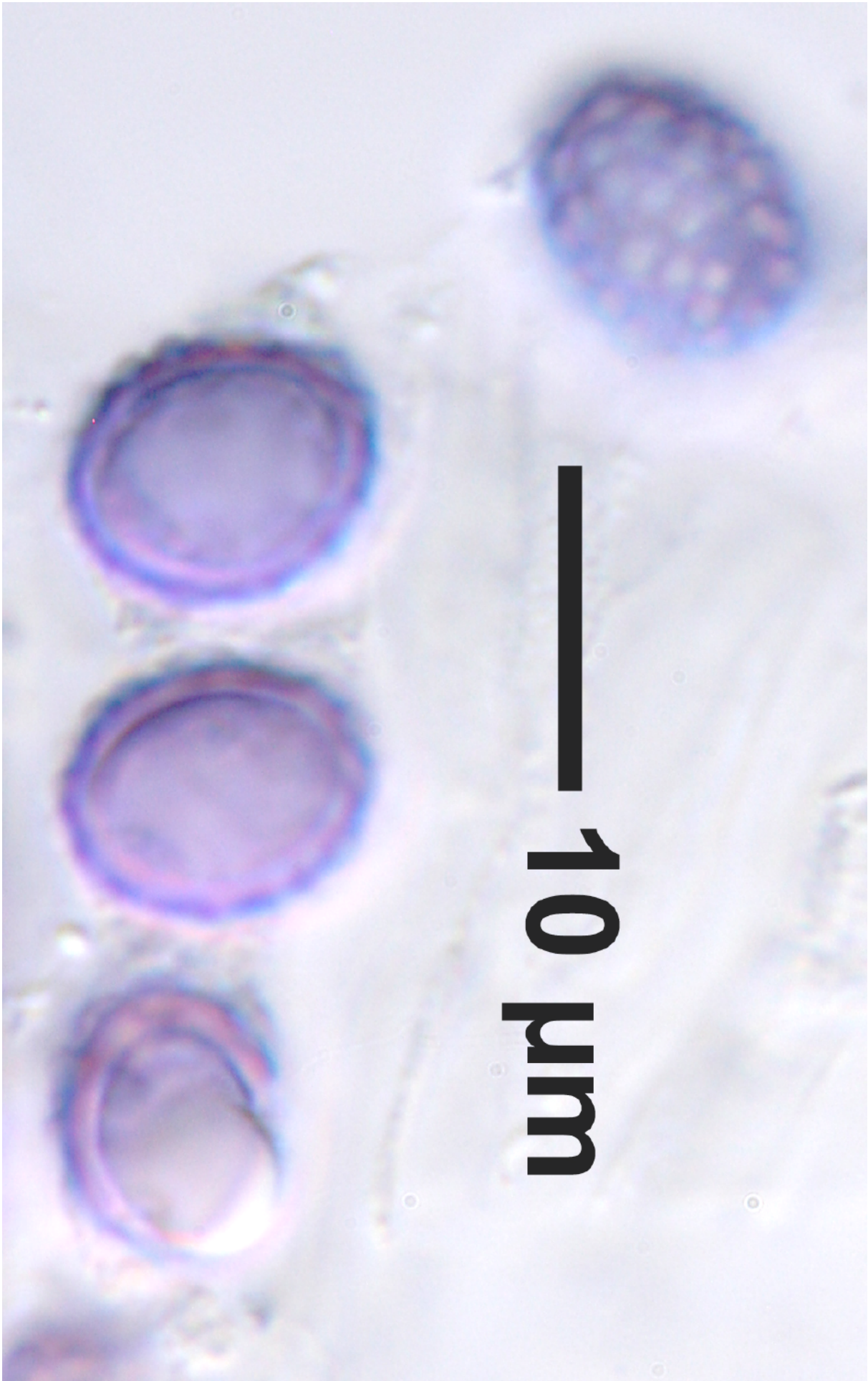
Erioderma tomentosum



Erioderma tomentosum

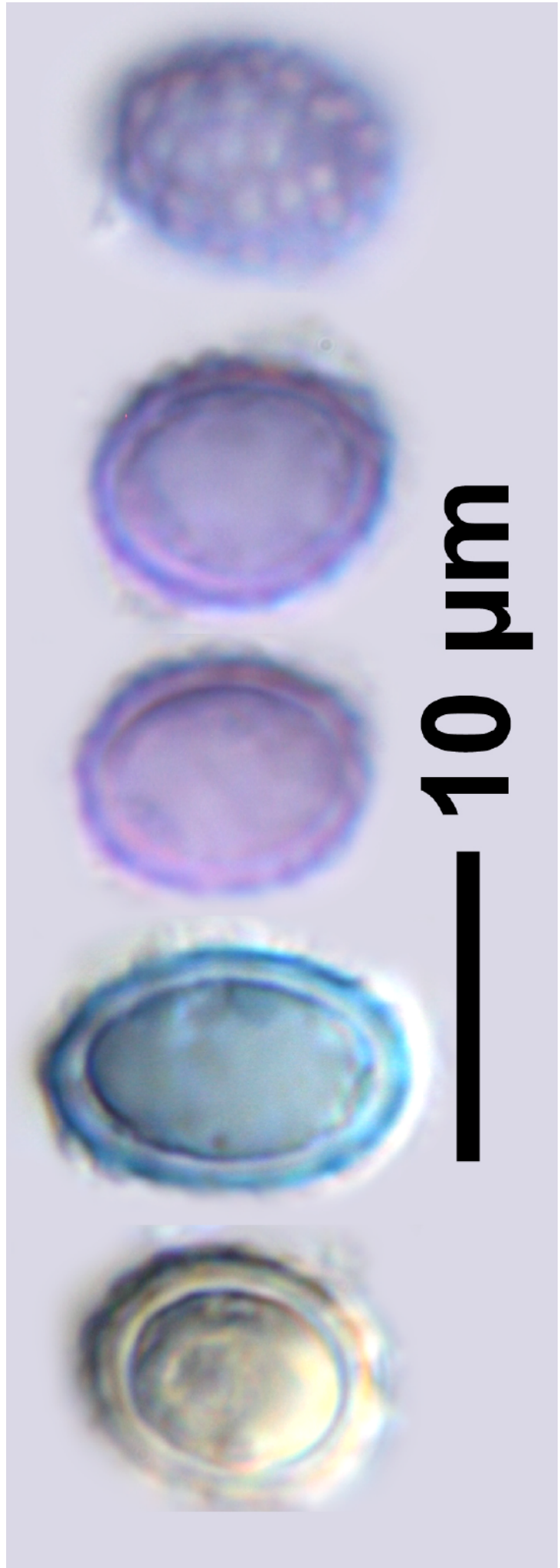


Erioderma tomentosum



Erioderma tomentosum

Erioderma tomentosum



Erioderma unguigerum (Bory) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg
5: 110 (1858) [1857]
= *Lichen unguigerus* Bory 1804

[815597], La Reunion, Wanderpfad westlich Col de Bellevue in Richtung Col de Bébour; 21,14605° S, 55,57029° E, 1550 m. Leg. F. Schumm & J.-P. Frahm, 16.09.2009, det. P. M. Jorgensen, 2009. Publ. an P. M. Jorgensen geschickt.

Thallus flat, somewhat laciniate, 3-5 cm diam., lobes to 5 mm wide, apically truncata with curved- sinuate axils: side-lobes often involute. Upper surface greenish grey, faintly tomentose towards the apices, glabrous/shiny centrally. Lower surface yellowish, naked except for marginal bundles of blackish rhizohyphae. In section 200-250 µm thick with rather regularly celled cortex. 25-30 µm thick. Apothecia rare marginal or submarginal, pedicellate, 2-3 mm diam. with brown disc and tomentose- scabrous margin. Ascospores simple, colourless, ellipsoid. 12-15 x 5-6 µm. Pycnidia not observed. Chemistry: P+ orange, containing eriodermin and traces of vicanicin. - Note: Previously confused with *Erioderma leylandii* from which it differs in the smooth, mostly glabrous upper surface, the greenish colour and lobation with truncate lobes and curved-sinuate axils, as well chemistry. Closest related to *E. divisum*.



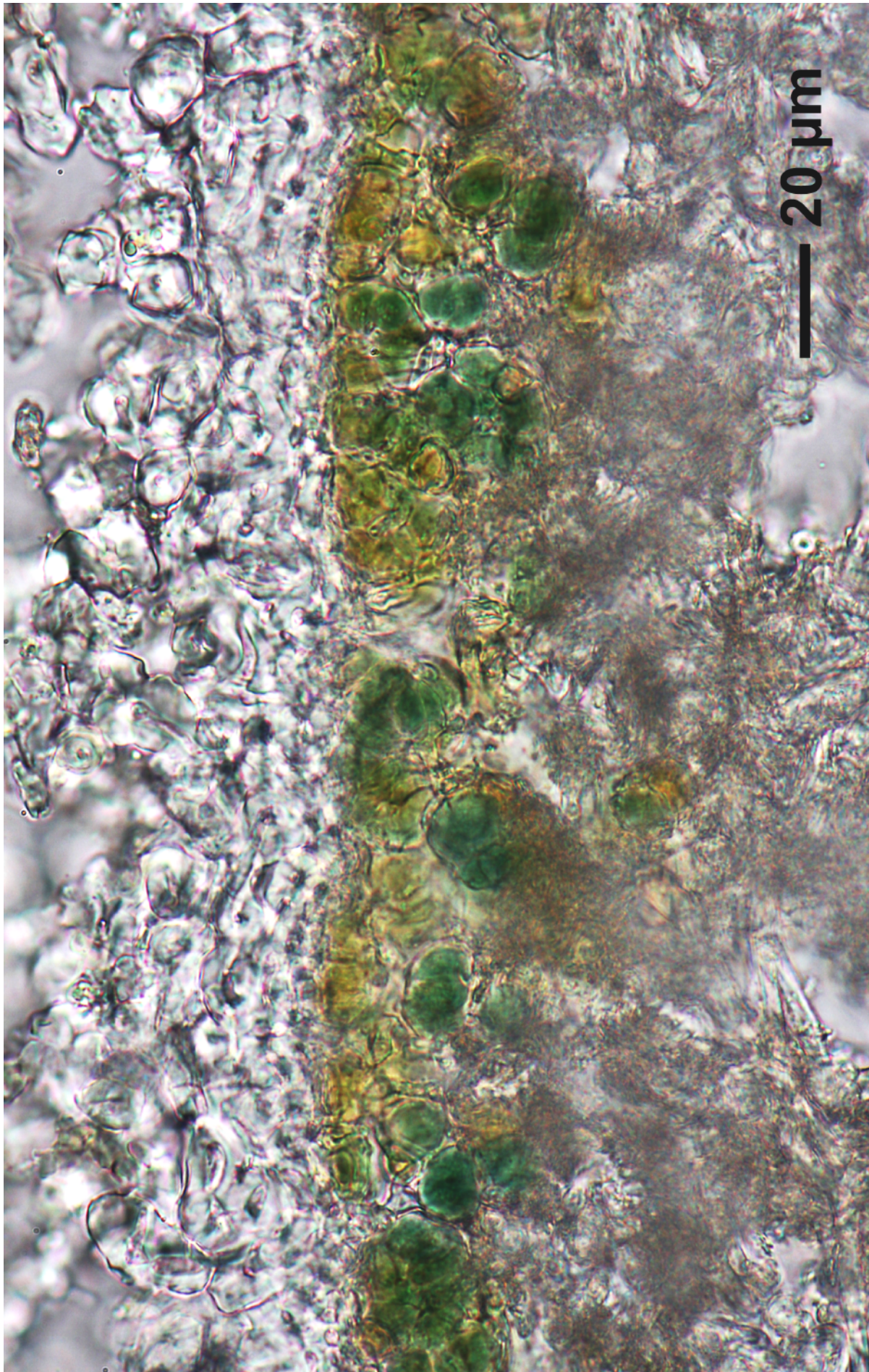
Erioderma unguigerum



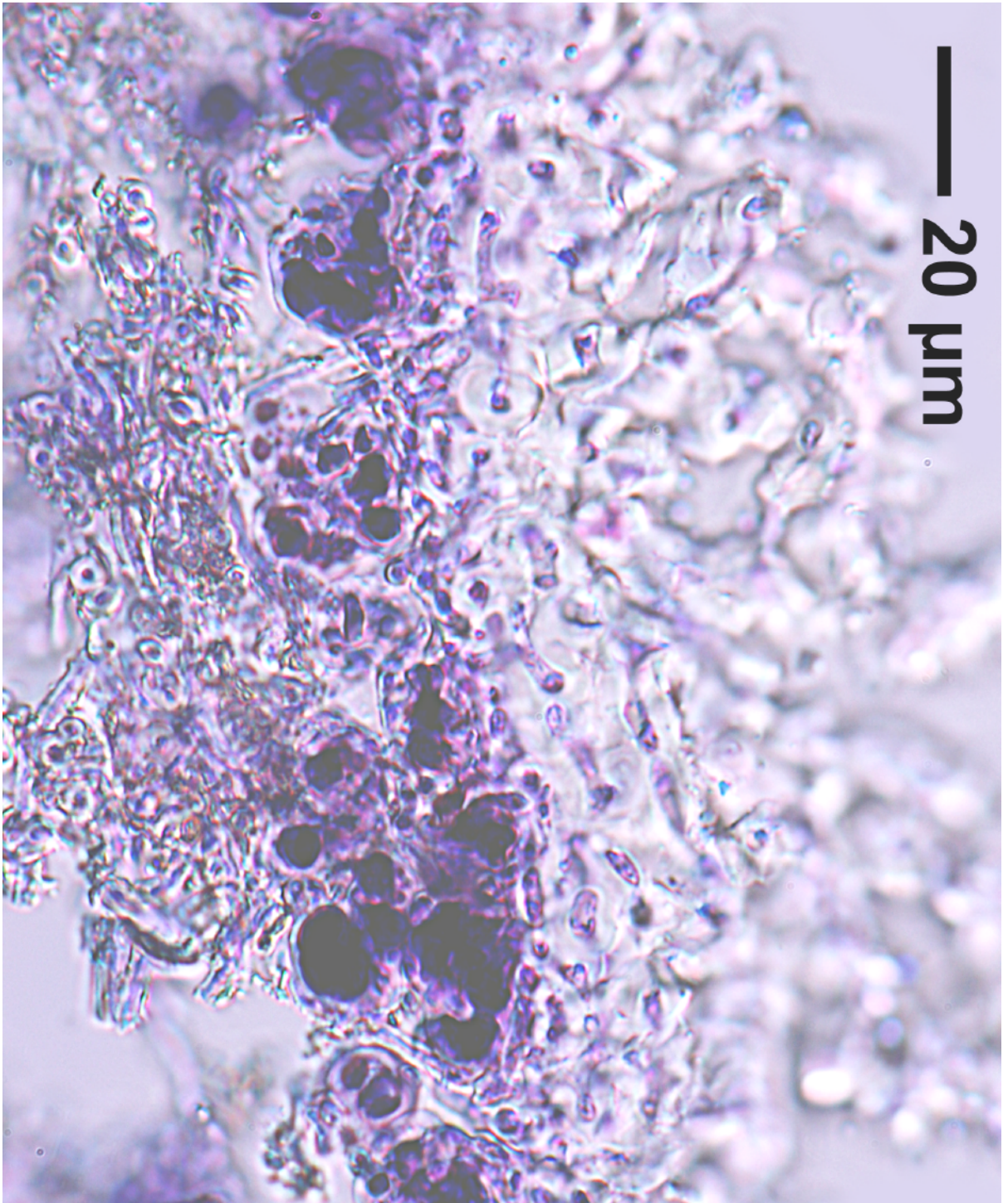
Erioderma unguigerum



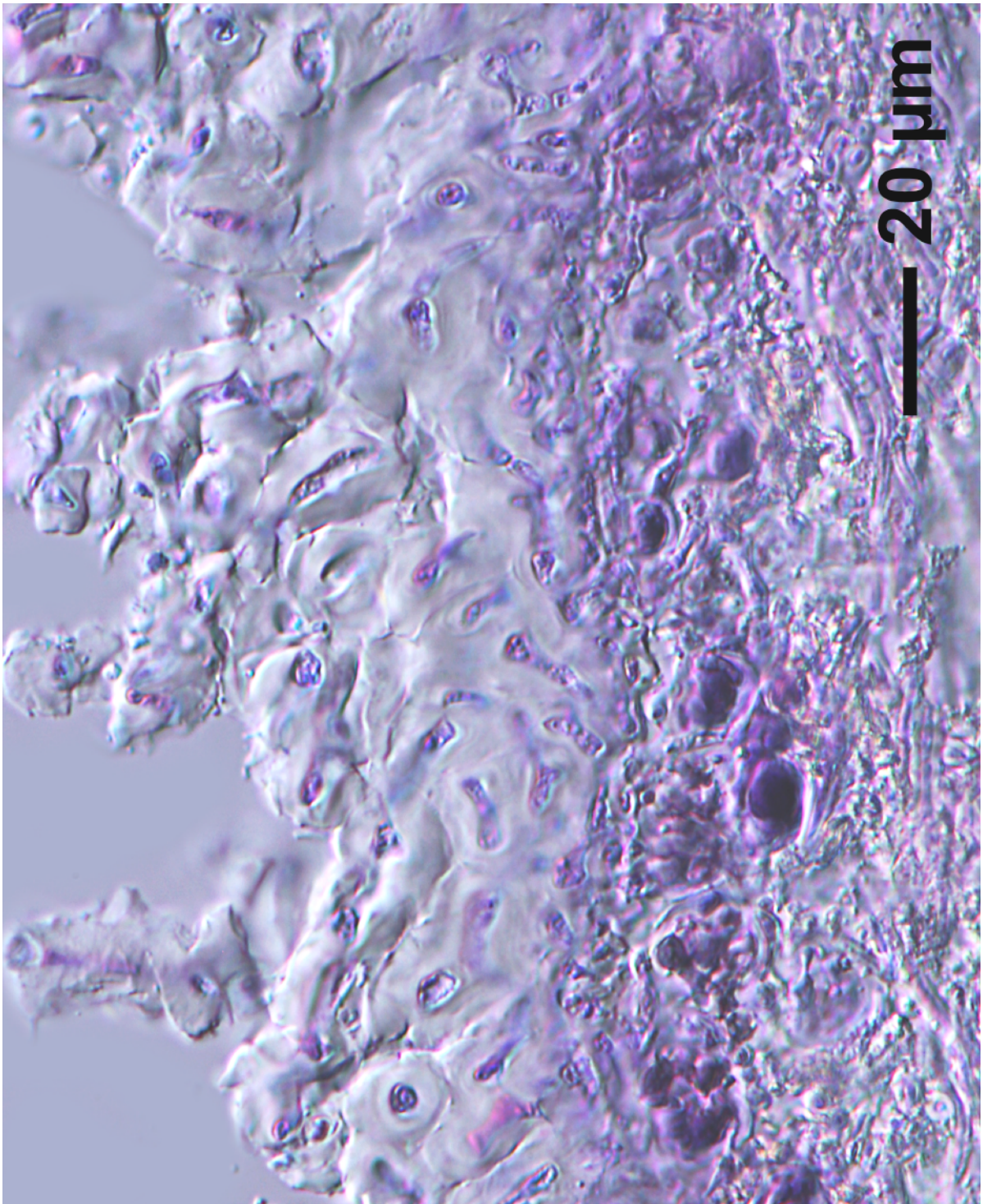
Erioderma unguigerum



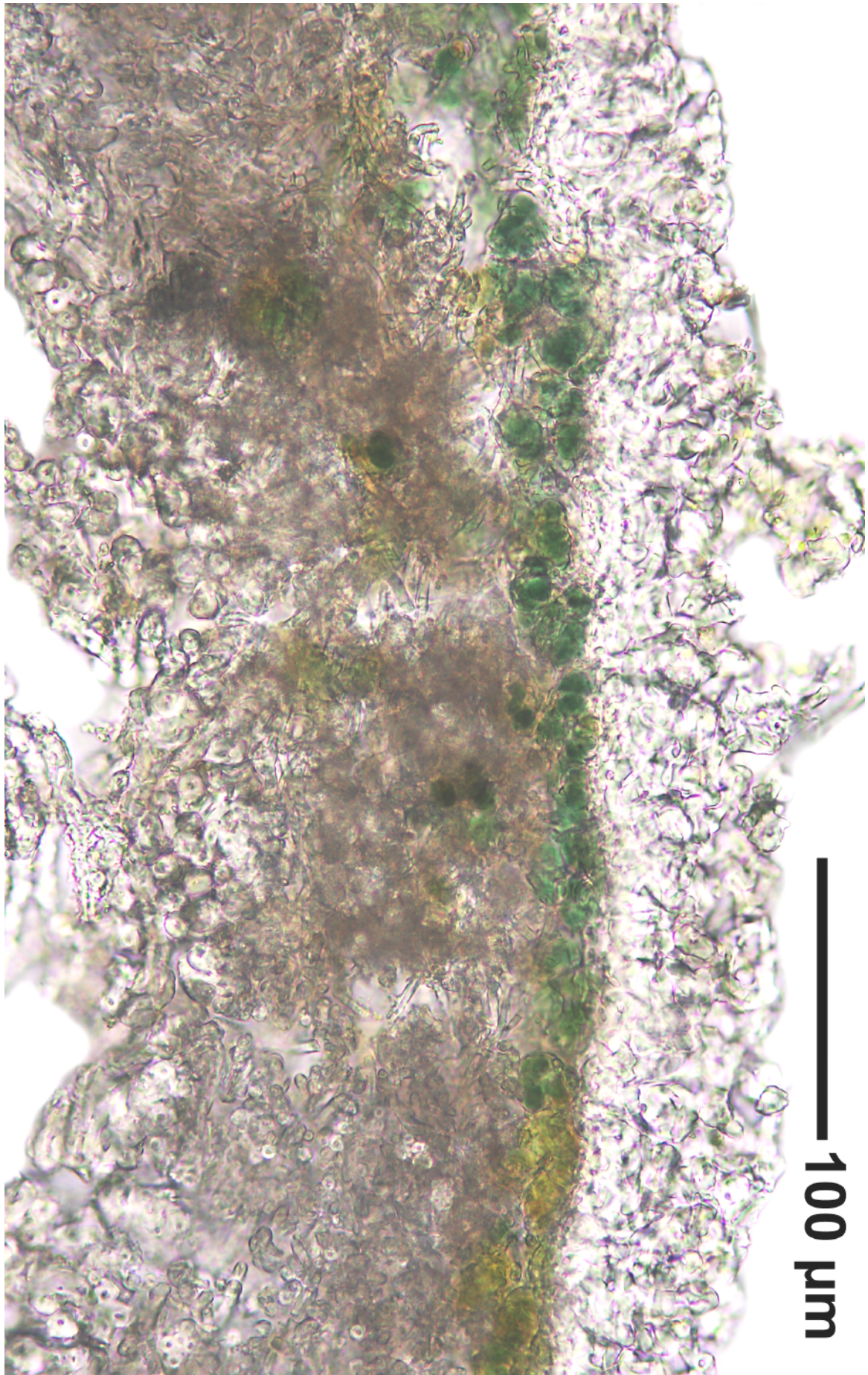
Erioderma unguigerum



Erioderma unguigerum



Erioderma unguigerum



Erioderma unguigerum

Erioderma wrightii Tuck., Amer. J. Sci. Arts, Ser. 2 25: 423 (1858)

[ABL27764], Brazil, Santa Catarina, São Francisco do Sul, Parque Estadual do Acaraí. 26°17'20" S, 48°32'35" W, 10 m. In restinga vegetation on tree. Leg. M. Cáceres & A. Aptroot (no 27564), 6 October 2015, det. A. Aptroot 2015.

Thallus foliose, loosely attached, lobed, to 5 cm wide. Lobes short, 4–6 mm wide; margins entire, often involute, showing whitish lower surface. Upper surface pinkish grey with a dense covering of stiff hairs. Lower surface white, with dispersed brownish rhizohyphae. A very characteristic species, probably the largest of the genus broad, involute, brown-hairy lobes, containing the unusual depsidone wrightin, resting on a voluminose, brown "spongiostratum". Distribution: Only known from subtropical parts of South and Central America as well as the Antilles.

Aus G. Keuck (1977): Thallus bis über 10 cm breit, in lange Loben mit tief buchtigem Rand geteilt, Oberseite dunkel olivbraun bis silbergrau, wit arachnoiden Haaren bedeckt, die die alteren Loben oft "areoliert" erscheinen lassen. Rand mit dunkelbraunen Rhizoptenbuscheln. Unterseite dicht mit einem braunschwarzen Spongiostratum bedeckt, das etwa 3 mm vor dem Rand aufhört und ein ebenfalls sehr dichtes Eriostratum aus dunklen Rhizopten ausbildet. Apothecien randständig, mit meist dichter randlicher Behaarung, Scheibe schwarz. Sporen distich, lang ellipsoid.



Erioderma wrightii



Erioderma wrightii

Erioderma wrightii Tuck., Amer. J. Sci. Arts, Ser. 2 25: 423 (1858)

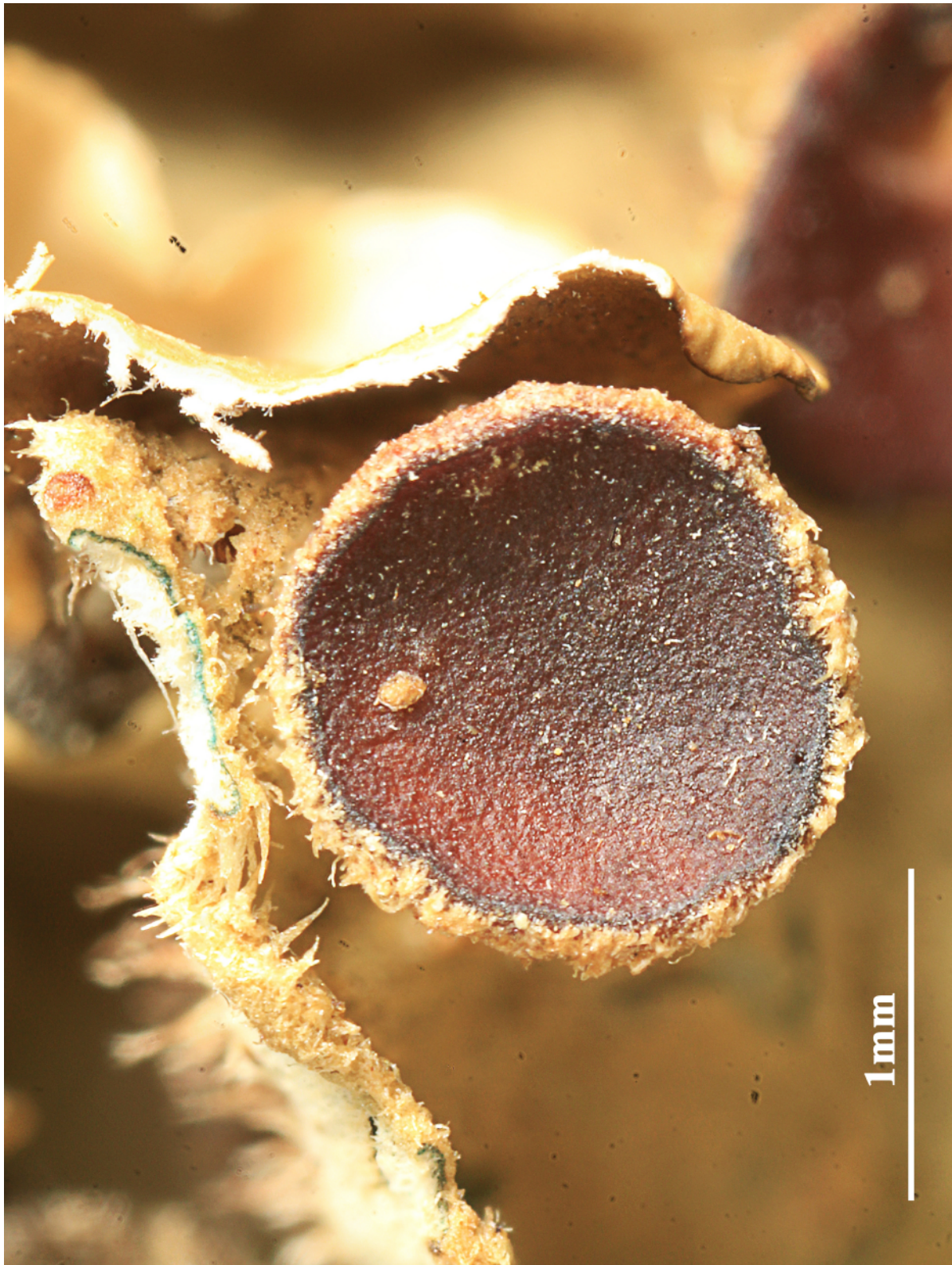
[VZ1944], Costa Rica. Prov. Puntaneras, Monteverde, prope domum diversorii "La Montana", 1500 m. Ad truncum arborum in silva submontana. Leg. et det. E. Sérusiaux (no 3204), 4.1.1979. EX A. VěZDA: LICHENES SELECTI EXSICCATI NR. 1944.

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Erioderma wrightii



Erioderma wrightii

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