F. Schumm (2026):

Images of Lichens
from Japan 09

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With this volume I document a collection of images mainly out of the Exsiccats of Kashiwadani, Kurokawa and Ohmura from Japan 09 . The main names are always the names that are written on the Exsiccats. That is the reason why Parmelia, Punctelia, Flavoparmelia etc appear on different places. New synonyms can be found in the Index. I mostly omitted the search for description from the literature because most of them could be found in the earlier Vols. of Vezda

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

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

F. Schumm, 2026

Parmelia abstrusa Vain., Acta Soc. Fauna Flora fenn. 7(no. 1): 64 (1890)
= *Relicina abstrusa* (Vain.) Hale, Phytologia 28(5): 484 (1974)

[KU320], Japan. Ryukyu Islands: Izena Island. On rocks, 60 m. Leg. S. Kurokawa (no. 73140), 30.8.1973, det. S. Kurokawa. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 320.

Thallus yellowish green, with cortical usnic acid. Thallus isidiate, lacking lobules; lobes ca 0.5–2.0 mm wide; medullary norstictic and connorstictic acids



Parmelia abstrusa



Parmelia abstrusa

Ramalina nervulosa (Müll. Arg.) Abbayes, Bull. Inst. Franç. Afrique Noire 14: 25 (1952)
= *Ramalina farinacea* f. *nervulosa* (Müll. Arg.) B. de Lesd., Mém. Soc. Sci. Nat. Maroc. 8(2): 299 (1924)
= *Ramalina farinacea* var. *nervulosa* Müll. Arg., Flora, Regensburg 66(2): 21 (1883)

[KW346], Japan. Bonin Island: Mt. Mikazuki, Chichi-jima Island. On bark, 200 m. Leg. S. Kurokawa (no. 77106b), 08.08.1977, det. H. Kashiwadani. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NO. 346.

This species is characterized by the corticolous habit, shrubby or subpendulous branches from a narrow holdfast, dorsiventral and sparingly branched thallus often with fenestrations, striate pseudocyphellae, marginal farinose soralia, cracked chondroid tissue, broadly fusiform ascospores of 12-16 x 4-5 µm, and the presence of homosekikaic or divaricatic acids as major chemical substances. - *Ramalina nervulosa* resembles *R. peruviana* in having similar branches with soredia. However, this species can be distinguished from the latter by having wider branches (1.5–3.0 mm wide) with farinose soredia and occasional fenestrations and by shortly fusiform ascospores. *Ramalina peruviana* has narrower branches (less than 1.2 mm wide) with granular soredia, isidioid branchlets, and narrowly fusiform ascospores. In addition, the latter species never forms fenestration on branches. This species is widely distributed in tropical and subtropical regions in the world including Japan and Taiwan.



Ramalina nervulosa



Ramalina nervulosa

Ramalina nervulosa (Müll. Arg.) Abbayes, Bull. Inst. Franç. Afrique Noire 14: 25 (1952)
= *Ramalina farinacea* f. *nervulosa* (Müll. Arg.) B. de Lesd., Mém. Soc. Sci. Nat. Maroc. 8(2): 299 (1924)
= *Ramalina farinacea* var. *nervulosa* Müll. Arg., Flora, Regensburg 66(2): 21 (1883)

[KA345], Japan. Bonin Island: Mt. Mikazuki, Chichi-jima Island. On bark, 100 m. Leg. T. Nakano, 26.12.1980, det. H. Kashiwadani. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NR.345. - (homosekikaic acid. aggr, race)

This species is characterized by the corticolous habit, shrubby or subpendulous branches from a narrow holdfast, dorsiventral and sparingly branched thallus often with fenestrations, striate pseudocyphellae, marginal farinose soralia, cracked chondroid tissue, broadly fusiform ascospores of 12-16 x 4-5 µm, and the presence of homosekikaic or divaricatic acids as major chemical substances. - *Ramalina nervulosa* resembles *R. peruviana* in having similar branches with soredia. However, this species can be distinguished from the latter by having wider branches (1.5–3.0 mm wide) with farinose soredia and occasional fenestrations and by shortly fusiform ascospores. *Ramalina peruviana* has narrower branches (less than 1.2 mm wide) with granular soredia, isidioid branchlets, and narrowly fusiform ascospores. In addition, the latter species never forms fenestration on branches. This species is widely distributed in tropical and subtropical regions in the world including Japan and Taiwan.



Ramalina nervulosa



Ramalina nervulosa

Ramalina nervulosa (Müll. Arg.) Abbayes, Bull. Inst. Franç. Afrique Noire 14: 25 (1952)

= *Ramalina farinacea* f. *nervulosa* (Müll. Arg.) B. de Lesd., Mém. Soc. Sci. Nat. Maroc. 8(2): 299 (1924)

= *Ramalina farinacea* var. *nervulosa* Müll. Arg., Flora, Regensburg 66(2): 21 (1883)

[KU681], Japan. Bonin Islands: Mt. Mikazuki, Chichijima Island. On bark of *Hibiscus glaber*, 210 m. Leg. H. Kashiwadani (no.13888), 17.06.1977, det. H. Kashiwadani. EX S. KUROKAWA & H. KASHIWADANI: LICHENES RARIORES ET CRITICI EXSICCATI NO. 681.

This species is characterized by the corticolous habit, shrubby or subpendulous branches from a narrow holdfast, dorsiventral and sparingly branched thallus often with fenestrations, striate pseudocyphellae, marginal farinose soralia, cracked chondroid tissue, broadly fusiform ascospores of 12-16 x 4-5 µm, and the presence of homosekikaic or divaricatic acids as major chemical substances. - *Ramalina nervulosa* resembles *R. peruviana* in having similar branches with soredia. However, this species can be distinguished from the latter by having wider branches (1.5–3.0 mm wide) with farinose soredia and occasional fenestrations and by shortly fusiform ascospores. *Ramalina peruviana* has narrower branches (less than 1.2 mm wide) with granular soredia, isidioid branchlets, and narrowly fusiform ascospores. In addition, the latter species never forms fenestration on branches. This species is widely distributed in tropical and subtropical regions in the world including Japan and Taiwan.



Ramalina nervulosa



Ramalina nervulosa

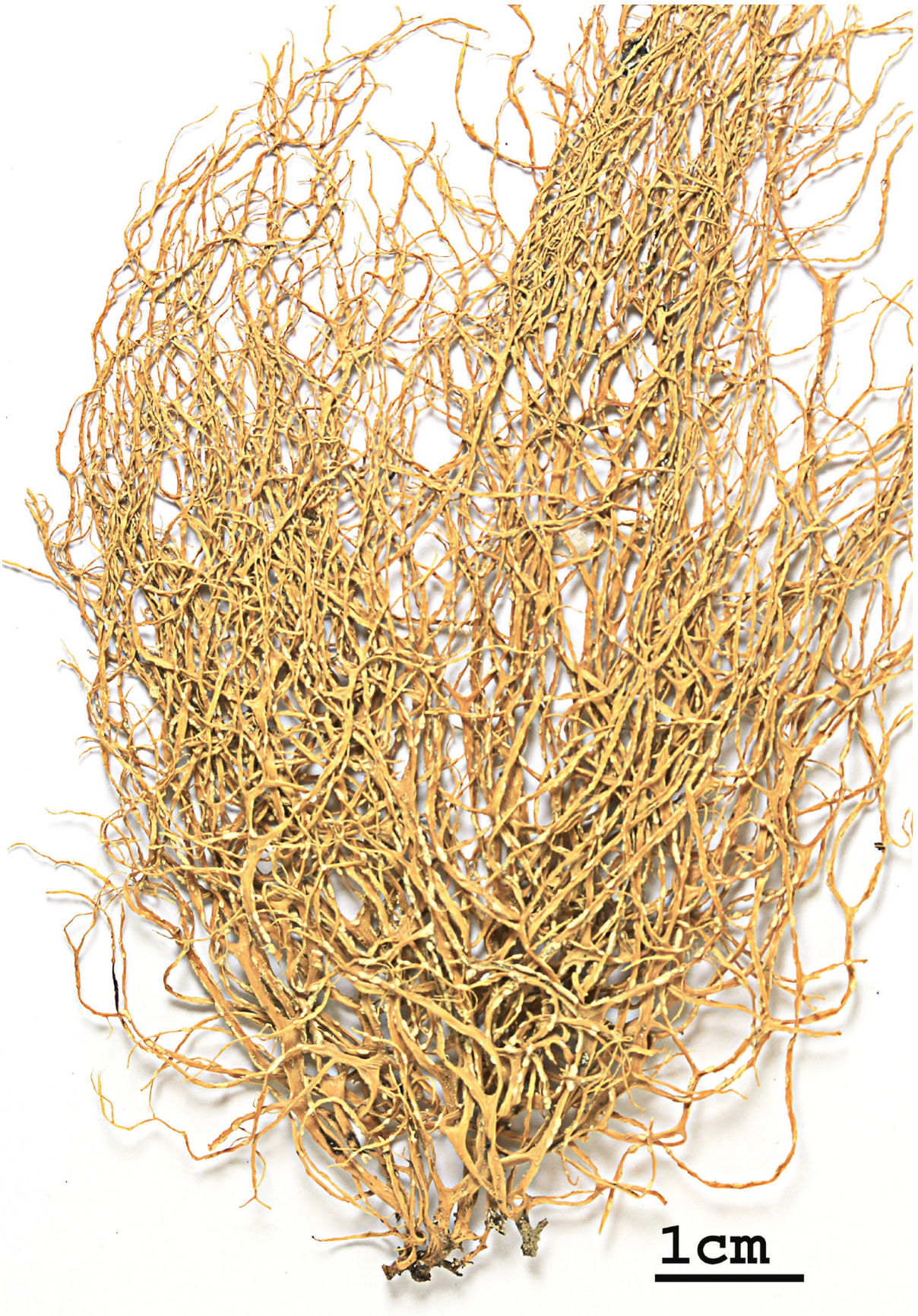


Ramalina nervulosa

Ramalina pacifica Asahina, J. Jap. Bot. 15: 213 (1939)

[KU536], Japan. Bonin Islands. Chichijima Island: Mt. Mikazuki. On bark of tree, 210 m. Leg. H. Kashiwadani (no. 13876), 10.06.1977, det. H. Kashiwadani. EX S. KUROKAWA & H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NO. 536.

Thallus fruticose, corticolous, 5-15(-25) cm long, subpendulous, moderately branched with wide angles near the base, sparsely branched in the upper half. Branches yellowish green, solid, 1-2(-4) rnm wide, more or less flattened and dorsiventral, often becoming angular or terete near the apices, usually with longitudinal striae or cracks on the surface, sorediate. Soralia marginal, ellipsoid, well-delimited. Chondroid tissue under the cortex continuous, never cracked. Apothecia rare, up to 3 mm in diam., stipitate; disc flat to convex; ascospores shortly fusiform, 12-16 × 4-5 μm. Pycinida not seen. Chemistry, (Race 1) Usnic acid and salazinic acid, (Race 2) Usnic acid only. - *Ramalina pacifica* may be confused with *R. intermediella* because they both have similar sorediate branches, non-cracked chondroid tissues, and produce sekikaik and homosekikaik acids as major chemical substances. However this species has coarser thalli growing from a narrow holdfast and wider lobes (1-4 mm wide). In addition the soralia of this species are farinose and crateriform with limited margins. In contrast, *R. intermediella* has a delicate thalli growing from an extended holdfast, narrower branches (less than 1.2 mm wide), and more ore less vonvex sorlia bearing granular soredia, which often have fine spinules.



Ramalina pacifica



Ramalina pacifica



Ramalina pacifica

Ramalina pacifica Asahina, J. Jap. Bot. 15: 213 (1939)

[KU189], Japan. Bonin Islands: Mt. Mikazuki-yama, Chichi-jiama Island. Leg. N. Aimi, 10.1.1971, det. S. Kurokawa. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccati Nr. 189.

Thallus fruticose, corticolous, 5-15(-25) cm long, subpendulous, moderately branched with wide angles near the base, sparsely branched in the upper half. Branches yellowish green, solid, 1-2(-4) rnm wide, more or less flattened and dorsiventral, often becoming angular or terete near the apices, usually with longitudinal striae or cracks on the surface, sorediate. Soralia marginal, ellipsoid, well-delimited. Chondroid tissue under the cortex continuous, never cracked. Apothecia rare, up to 3 mm in diam., stipitate; disc flat to convex; ascospores shortly fusiform, 12-16 × 4-5 µm. Pycinida not seen. Chemistry, (Race 1) Usnic acid and salazinic acid, (Race 2) Usnic acid only. - *Ramalina pacifica* may be confused with *R. intermediella* because they both have similar sorediate branches, non-cracked chondroid tissues, and produce sekikaik and homosekikaik acids as major chemical substances. However this species has coarser thalli growing from a narrow holdfast and wider lobes (1-4 mm wide). In addition the soralia of this species are farinose and crateriform with limited margins. In contrast, *R. intermediella* has a delicate thalli growing from an extended holdfast, narrower branches (less than 1.2 mm wide), and more ore less vonvex sorlia bearing granular soredia, which often have fine spinules.



Ramalina pacifica



Ramalina pacifica

Ramalina pacifica Asahina, J. Jap. Bot. 15: 213 (1939)

[KW347], Japan. Bonin Islands. Hahajima Island: En route between Oki-mura and Cape Minami-zaki, 10 m. Leg. S. Kurokawa (no. 77019), 03.08.1977, det. H. Kashiwadani. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NO. 347.

Thallus fruticose, corticolous, 5-15(-25) cm long, subpendulous, moderately branched with wide angles near the base, sparsely branched in the upper half. Branches yellowish green, solid, 1-2(-4) rnm wide, more or less flattened and dorsiventral, often becoming angular or terete near the apices, usually with longitudinal striae or cracks on the surface, sorediate. Soralia marginal, ellipsoid, well-delimited. Chondroid tissue under the cortex continuous, never cracked. Apothecia rare, up to 3 mm in diam., stipitate; disc flat to convex; ascospores shortly fusiform, 12-16 × 4-5 µm. Pycinida not seen. Chemistry, (Race 1) Usnic acid and salazinic acid, (Race 2) Usnic acid only. - *Ramalina pacifica* may be confused with *R. intermediella* because they both have similar sorediate branches, non-cracked chondroid tissues, and produce sekikaik and homosekikaik acids as major chemical substances. However this species has coarser thalli growing from a narrow holdfast and wider lobes (1-4 mm wide). In addition the soralia of this species are farinose and crateriform with limited margins. In contrast, *R. intermediella* has a delicate thalli growing from an extended holdfast, narrower branches (less than 1.2 mm wide), and more ore less vonvex sorlia bearing granular soredia, which often have fine spinules.



Ramalina pacifica



Ramalina pacifica



Ramalina pacifica

Ramalina peruviana Ach., Lich. Univ.: 599 (1810)
= *Desmazieria peruviana* (Ach.) Follmann & Huneck, Willdenowia 5: 208 (1969)

[KW320], Japan. Honshu. Prov. Izu (Pref. Shizuoka): Kosugihara, Matsuzaki-cho, Kamo-gun. On stone work, 300 m. Leg. H. Kashiwadani (no. 34644) & H. Shibuichi, 07.04.1988, det. H. Kashiwadani. EX H. KASHIWADANI: LICHENES MINUS COGNITI EXSICCATI NO. 320.

Thallus not distinctly originating from a single holdfast; lobes suberect, thin, slender and richly branched, terete or angular, resembling an *Usnea*; with usnic, sekikaic and/or salazinic acid; on bark or wood, rarely on rock. Thallus lobes thin, angular to indistinctly flattened, apically branching into isidiate branchlets, soralia laminal, punctiform, pustulate, exuding coarsely granular soredia and isidiate branchlets; medulla K-, or K+ pinkish (sekikaic acid); on bark or wood, rarely on rock. - A pantropical species. Because of its thin branches and a similar habitus, *R. peruviana* could be mistaken for *R. sorediosa*. Though equally thin, the branches of *R. peruviana* are, however, irregularly angular to indistinctly flattened, and never terete. Most diagnostic are the fine isidiate branchlets, that develop from the soralia and are also typically present at the tip of thallus branches, of *R. peruviana*. These branchlets cannot be observed in *R. sorediosa*.



Ramalina peruviana



Ramalina peruviana

Ramalina peruviana Ach., Lich. Univ.: 599 (1810)
= *Desmazieria peruviana* (Ach.) Follmann & Huneck, Willdenowia 5: 208 (1969)

[OH420], Japan. Kyushu. Prov. Hizen (Pref. Nagasaki): Tera-machi, Nagasaki-city. On rock, 50 m. Leg. Y. Asahina & M. Togashi (s.n.), 25.11.1959, det. Y, Ohmura. EX Y. OHMURA: LICHENES MINUS COGNITI EXSICCATI NO. 420.

Thallus not distinctly originating from a single holdfast; lobes suberect, thin, slender and richly branched, terete or angular, resembling an *Usnea*; with usnic, sekikaic and/or salazinic acid; on bark or wood, rarely on rock. Thallus lobes thin, angular to indistinctly flattened, apically branching into isidiate branchlets, soralia laminal, punctiform, pustulate, exuding coarsely granular soredia and isidiate branchlets; medulla K-, or K+ pinkish (sekikaic acid); on bark or wood, rarely on rock. - A pantropical species. Because of its thin branches and a similar habitus, *R. peruviana* could be mistaken for *R. sorediosa*. Though equally thin, the branches of *R. peruviana* are, however, irregularly angular to indistinctly flattened, and never terete. Most diagnostic are the fine isidiate branchlets, that develop from the soralia and are also typically present at the tip of thallus branches, of *R. peruviana*. These branchlets cannot be observed in *R. sorediosa*.



Ramalina peruviana



Ramalina peruviana

Ramalina peruviana Ach., Lich. Univ.: 599 (1810)
= *Desmazieria peruviana* (Ach.) Follmann & Huneck, Willdenowia 5: 208 (1969)

[OH420], Japan. Kyushu. Prov. Hizen (Pref. Nagasaki): Tera-machi, Nagasaki-city. On rock, 50 m. Leg. Y. Asahina & M. Togashi (s.n.), 25.11.1959, det. Y, Ohmura. EX Y. OHMURA: LICHENES MINUS COGNITI EXSICCATI NO. 420.

Thallus not distinctly originating from a single holdfast; lobes suberect, thin, slender and richly branched, terete or angular, resembling an *Usnea*; with usnic, sekikaic and/or salazinic acid; on bark or wood, rarely on rock. Thallus lobes thin, angular to indistinctly flattened, apically branching into isidiate branchlets, soralia laminal, punctiform, pustulate, exuding coarsely granular soredia and isidiate branchlets; medulla K-, or K+ pinkish (sekikaic acid); on bark or wood, rarely on rock. - A pantropical species. Because of its thin branches and a similar habitus, *R. peruviana* could be mistaken for *R. sorediosa*. Though equally thin, the branches of *R. peruviana* are, however, irregularly angular to indistinctly flattened, and never terete. Most diagnostic are the fine isidiate branchlets, that develop from the soralia and are also typically present at the tip of thallus branches, of *R. peruviana*. These branchlets cannot be observed in *R. sorediosa*.



Ramalina peruviana



Ramalina peruviana

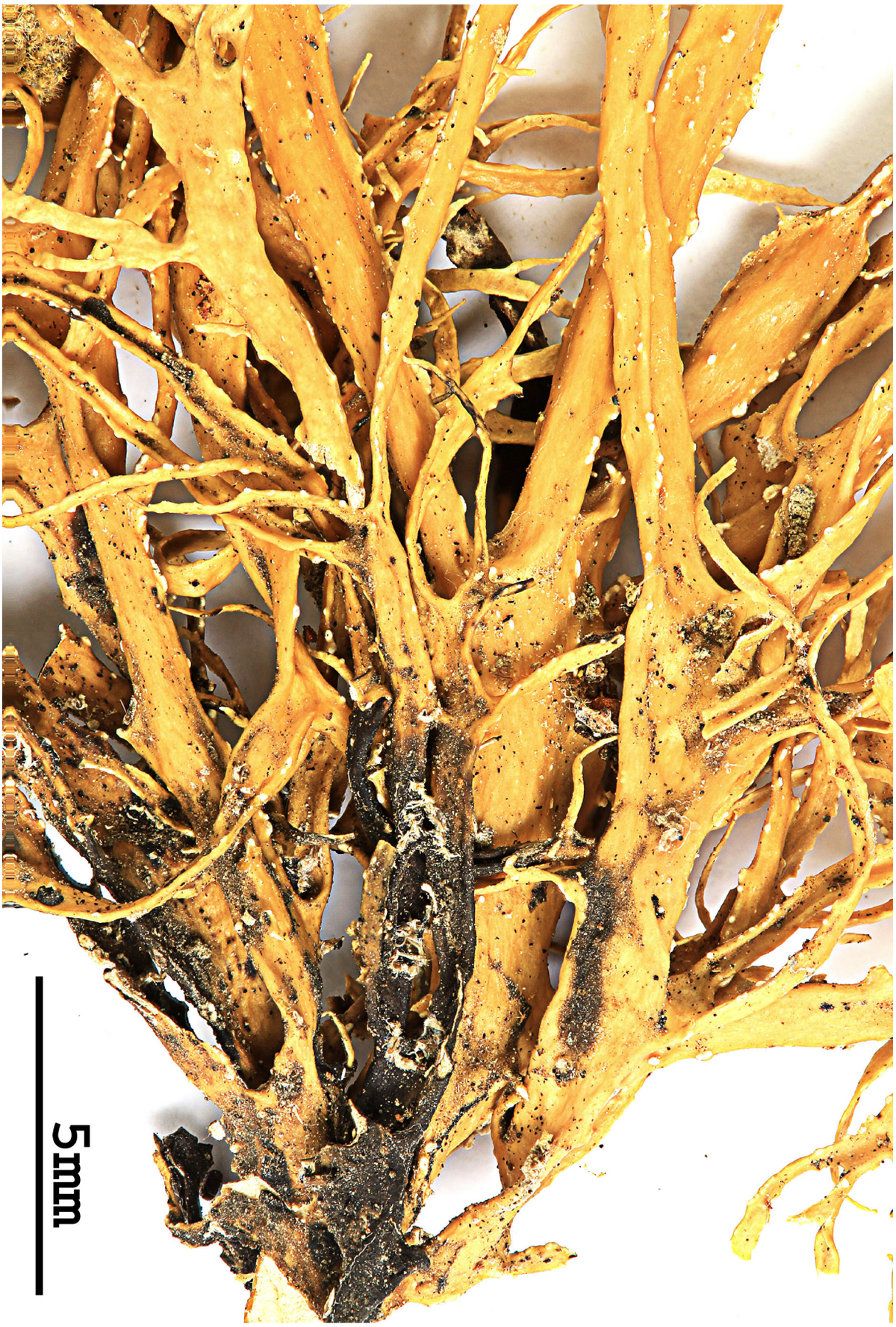
Ramalina quercicola Kashiw. & T.H. Nash, in Nash, Ryan, Diederich, Gries & Bungartz, Lichen Flora of the Greater Sonoran Desert Region (Tempe) 2: 451 (2004)

[KW366], Mexico. Estado De Sinaloa: Sierra Madre Occidental, 1 km S of Barranca Lievre near route 40.2 km W of the Durango border (23°28' N, 105°50' W). On bark of *Quercus sp*., 2300 m. Leg. H. Kashiwadani (no. 7185), 27.05.1992, det. H. Kashiwadani. EX H.KASHIWADANI: LICHENES MINUS COGNITI EXSICCATI NO. 366.

Thallus fruticose, shrubby or tufted to rarely subpendulous, up to 7(-13) cm long, moderately branched, growing from a narrow holdfast; branches solid, flattened to weakly canaliculate, up to 3(-5) mm wide; surface greenish yellow, entire, without soredia; pseudocyphellae common, laminal or marginal, ellipsoid, semi-globose or protruding; cortex distinct, 15-20 µm thick; chondroid strands continuous, weakly to conspicuously cracked. Apothecia common, laminal or subterminal, entire; disc concave, white pruinose, without white margins; margin concolorous with the thallus, entire or dissected, rarely with pseudocyphellae; asci elongate-clavate, 8-spored; ascospores hyaline, 1-septate, broadly fusiform, 14-16 x 5-6 µm. Pycnidia: not observed. Spot tests: cortex K-, C-, KC+ yellow, P-; medulla K-, C-, KC-, P- Secondary metabolites: cortex with usnic acid (major); medulla with (Race 1) 2'-O-methylstenosporic acid (major) and 2'-O-methyldivaricatic (minor), (Race 2) divaricatic acid (major) and 4'-O-demethyldivaricatic (minor), (Race 3) boninic acid (major), and 2'-O-methylsekikaic and 2'-O-methylpaludosic acids (both minor). Substrate and ecology: on twigs, especially on *Quercus spp*., in mountain regions, elevation higher than 1000 m. - Three chemical races are found in *Ramalina quercicola* as shown above. However, no morphological differences among them were observed. *Ramalina quercicola* closely resembles *R. subfraxinea*, a species widely distributed in lowland, in subtropical and tropical regions in the Pacific, that differs in having flat to ±depressed pseudocyphellae and by its disc with a white margin that splits proper and margins. *Ramalina quercicola* is endemic to Mexico where it is primarily restricted on bark of *Quercus* in mountainous regions.



Ramalina quercicola



Ramalina quercicola

Ramalina roesleri Hochst. ex Schaer., Enum. critic. lich. europ. (Bern): 9 (1850)

[OH546], Japan.Hokkaido. Prov. Kushiro: Wakoto Peninsula, Kawakami-gun (43°35' N, 144°19' E). On bark of *Abies sachalinensis*, 100 m. Leg. H. Kashiwadani (no. 45771), 24.07.2003, det. H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NO. 546.

Thallus fruticose, pale green, 1-6 cm long, loosely tufted, erect to subpendulous, the primary branches flattened, 1-2.5 mm broad, richly branched, the secondary branches mostly arranged at right angles to the main axis, often repeatedly branched, ending in many fine, terete, often apically hooked branchlets. Surface smooth, glossy, sparingly to abundantly fenestrate. Medulla subfistulose, arachnoid to hollow in the inflated parts. Soralia punctiform, terminal or subterminal, consisting of a few granular soredia. Apothecia very rare, lecanorine, terminal or subterminal, with an often pruinose disc. 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, hyaline, straight, 11-16 x 5-6.5 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC- or KC+ pale yellow (cortex only), P-. UV-. Chemistry: cortex with usnic acid; medulla with substances of the sekikaic acid complex.



Ramalina roesleri



Ramalina roesleri

Ramalina semicuspidata (Räsänen) Sheard, Can. J. Bot. 56(8): 936 (1978)

[OH670], Japan. Kyushu. Satsuma Prov. (Kagoshima Pref.): Nakanoshioya, Minamitane-cho, Kumage-gun. Tanegashima Island (30°25' N, 130°51' E). On rock (face ESE) along the coast, 3 m. Leg. H. Kashiwadani (no. 47727), 30.09.2005, det. H. Kashiwadani. EX Y. OHMURA: LICHENES MINUS COGNITI EXSICCATI NO. 670.

Thallus elongatus, parce ramosus, rami lineares, 1-2 mm crassi, usque ad 7 cm longi, esorediati. Medul1a alba crebra□ KOH + flavescens, mox rufescens (non rubescens)□P+ rubescens. Apothecia lateralia, parva, 1-2 mm lata, primum plana, tenuiter marginata, mox convexa, semiglobosa, immarginata. Sporae late ellipsoideae,10.5-12 x 5-5.5 µm, uniseptatae, incoloratae.



Ramalina semicuspidata



Ramalina semicuspidata



Ramalina semicuspidata

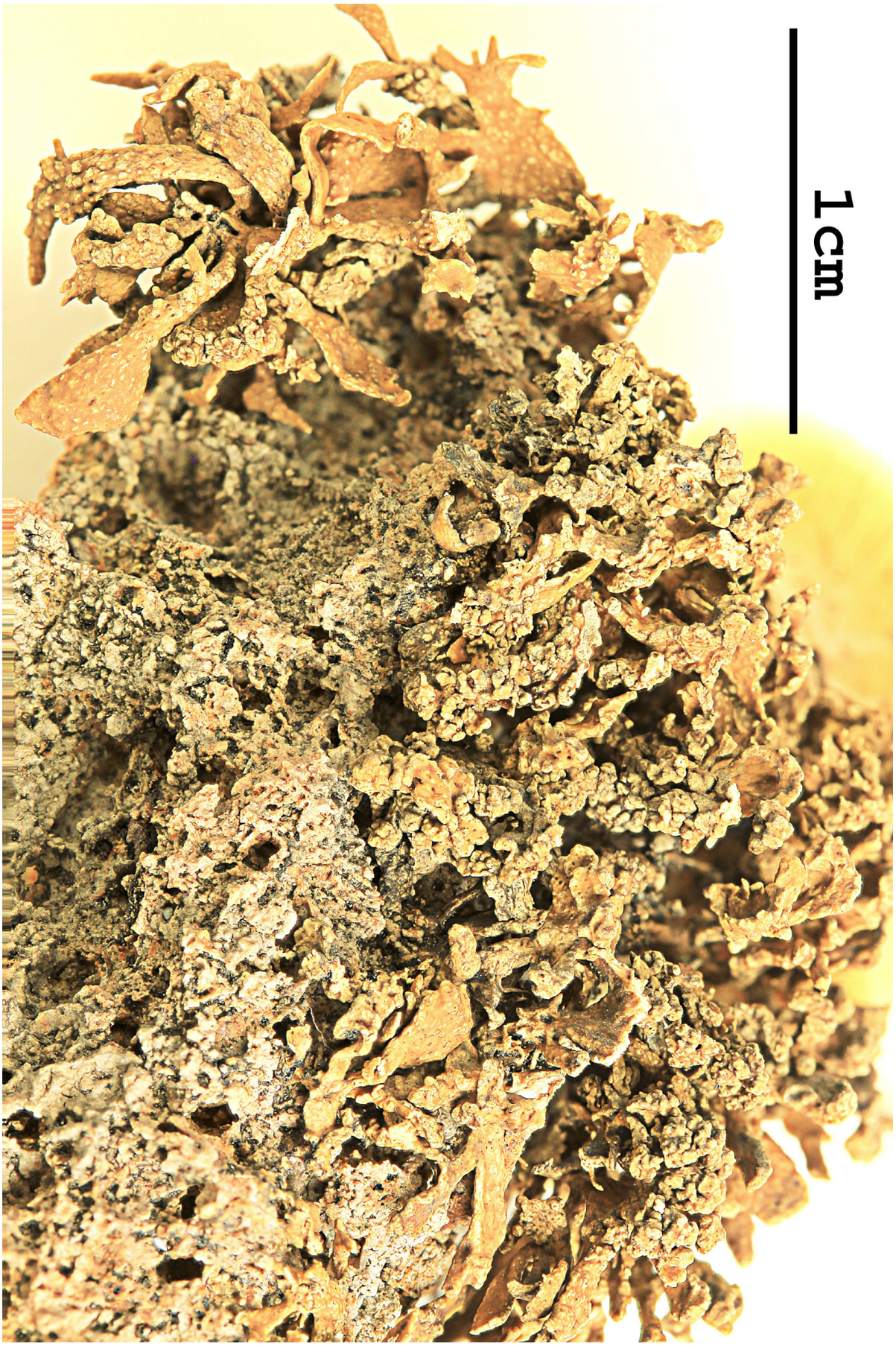
Ramalina siliquosa (Huds.) A.L. Sm., Monogr. Brit. Lich., Edn 2 1: 172 (1918)

[KW321], Japan, Honshu. Prov. Izu (Pref. Shizuoka): Suzaki, Kamo-gun. On rocks along coast, 3 m. Leg. H. Shibuichi (no. 8382) & K. Yoshida, 07.03. 1988, det. H. Kashiwadani. EX H. KASHIWADANI: LICHENES MINUS COGNITI EXSICCATI NO. 321.

Thallus saxicolous, erect or rarely subpendulous, caespitose, 1,5-3 (-8cm) long, growing from a common holdfast. Branches solid, yellowish green, simple or sparingly branched, 1-3 (-5 mm)wide, dorsiventral or terete, dorsiventral branches flattened or more or less slightly canaliculate, mat or subnitid, surface smooth or uneven, irregularly ridged by protruded pycnidia, rarely foveolate. Pseudocyphellae ellipsoid or orbicular, often with slit or tiny crackes near the center, laminal or marginal, sparse or rarely very conspicuous especially towards the base. Thallus 300-800 (-1000) µm thick; cortex indistinct, ca 10 µm thick; chondroid tissue continuous or dissected by pseudocyphellae, often penetrating into the medulla, clearly to moderately cracked , 50-180 (-300) µm thick. Apothecia common, subterminal, submarginal or laminal (lateral on terete branches); disc flat becoming convex with age; thalline exciple entire, pseudocyphellate; hymenium 60-65 µm high; hypothecium 30-40 µm thick; proper exciple 50-100 µm thick; chondroid tissue of thalloid exciple conspicuous, often connected with proper exciple; ascospores colorless, short fusiform, 2-celled, with or without additional septa, 10-12 × 4-5 µm. Pycnidia common, pale colored. Chemistry:(Race 1)Usnic and salazinic acids. (Race 2)Usnic and protocetraric acids. (Race 3) Usnic acid. - Distribution: Japan, U. S. A., Europe. - This species is characterized by the: 1) saxicolous habit; 2) tufted and erect thallus growing from a common holdfast; 3) more or less flattened or terete branches; 4) ellipsoid or orbicular pseudocyphellae; 5) indistinct cortex and the cracked chondroid tissue; 6)short fusiform ascospores; 7) presence of salazinic or protocetraric acids, which are completely lacking in acid deficient race.



Ramalina siliquosa



Ramalina siliquosa



Ramalina siliquosa

Ramalina sinensis Jatta, G. bot. ital., n.s. 9: 462 (1902)

[OH421], China. Prov. Sichuan. Pref. Aba. Songpan County: ca. 20 km E of Chuanxi Temple. On bark of Picea sp., 3300 m. Leg. K. H. Moon (no. 4981), 08.10.1999, det. H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NO. 421.

Thallus fruticose, straw-coloured to greenish, flaccid when wet, loosely tufted or with more or less scattered up to 5 cm long (usually less), erect or hanging laciniae growing from a basal holdfast. Laciniae fan-shaped, to 2(-3) cm wide at apex, simple or palmately divided, flattened, rather thin, slightly dorsiventral, with the lower surface paler than the upper one. Upper surface longitudinally or reticulately wrinkled, with elevated chondroid strands; lower surface with white, decorticate depressions. Cortex 2-layered, the outer part paraplectenchymatous, the inner part of cartilaginous chondroid strands; medulla white, compact. Apothecia lecanorine, laminal or subterminal, 3-10 mm across, with a flat to convex, greenish disc, and a concolorous, ridged-reticulate thalline margin. Epithecium pale brownish-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, hyaline, ellipsoid, straight or curved, 12-17 x 6-7 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC- or KC+ pale yellow (cortex only), P-, UV-. Chemistry: cortex with usnic acid; medulla without lichen substances (traces of atranorin reported from N America). - On twigs of trees and shrubs in montane forests, this species is abundant in *Picea obovata*-stands along rivers in Central Asia.



Ramalina sinensis



Ramalina sinensis

Ramalina sinensis Jatta, G. bot. ital., n.s. 9: 462 (1902)

[KW348], China. Prov. Sichuan. Pref. Aba Songpan County: ca. 20 km E of Chuanxi Temple (32°45' N, 103°39' E). On bark of *Picea sp*., 3300 m. Leg. K. H. Moon (no. 5013), 08.10.1999, det. H. Kashiwadani. EX H.KASHIWADANI: LICHENES MINUS COGNITI EXSICCATI NO. 348.

Thallus fruticose, straw-coloured to greenish, flaccid when wet, loosely tufted or with more or less scattered up to 5 cm long (usually less), erect or hanging laciniae growing from a basal holdfast. Laciniae fan-shaped, to 2(-3) cm wide at apex, simple or palmately divided, flattened, rather thin, slightly dorsiventral, with the lower surface paler than the upper one. Upper surface longitudinally or reticulately wrinkled, with elevated chondroid strands; lower surface with white, decorticate depressions. Cortex 2-layered, the outer part paraplectenchymatous, the inner part of cartilaginous chondroid strands; medulla white, compact. Apothecia lecanorine, laminal or subterminal, 3-10 mm across, with a flat to convex, greenish disc, and a concolorous, ridged-reticulate thalline margin. Epithecium pale brownish-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, hyaline, ellipsoid, straight or curved, 12-17 x 6-7 µm. Photobiont chlorococcoid. Spot tests: K-, C-, KC- or KC+ pale yellow (cortex only), P-, UV-. Chemistry: cortex with usnic acid; medulla without lichen substances (traces of atranorin reported from N America). - On twigs of trees and shrubs in montane forests, this species is abundant in *Picea obovata*-stands along rivers in Central Asia.



Ramalina sinensis



Ramalina sinensis

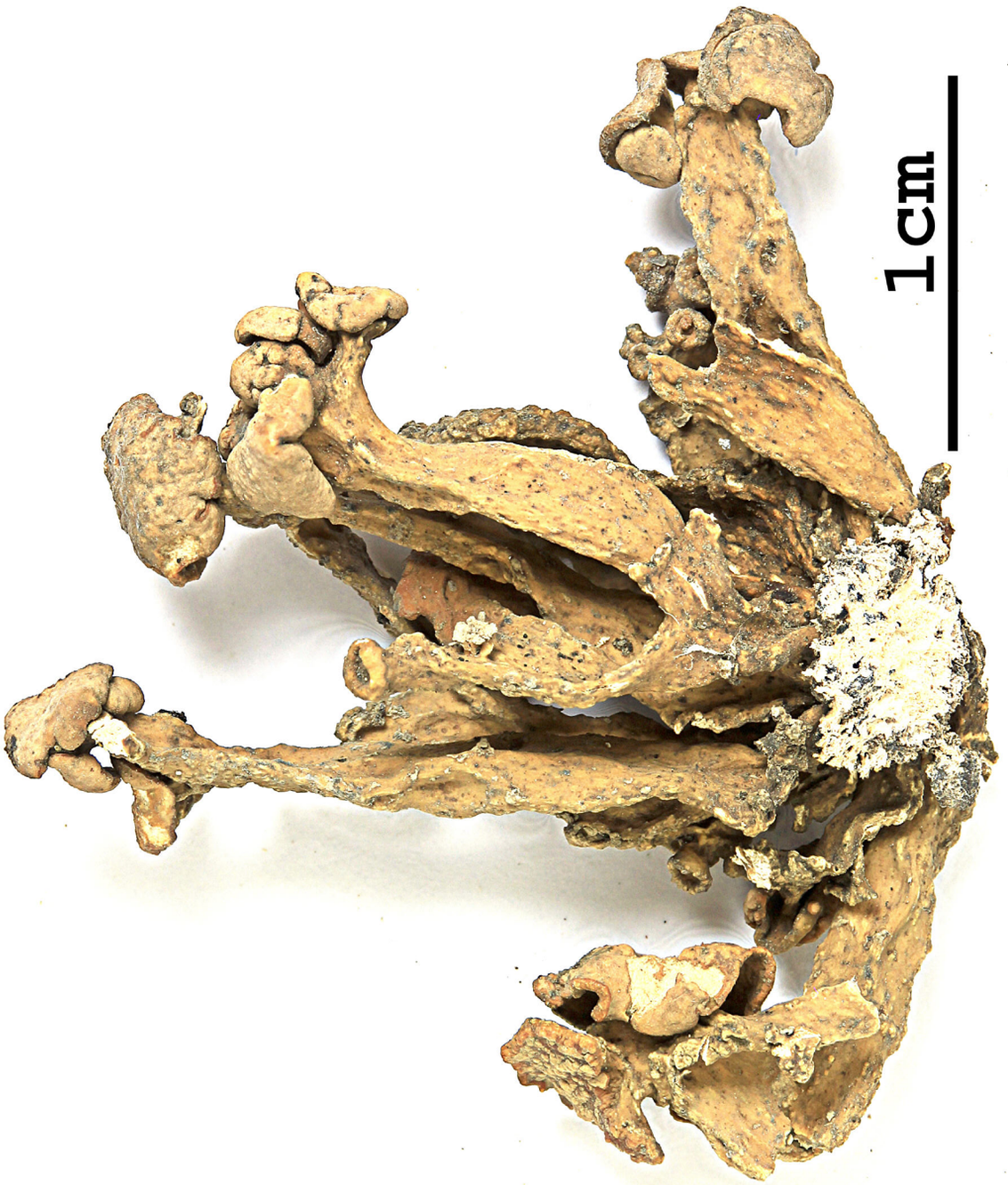
Ramalina subbreviuscula Asahina, J. Jap. Bot. 15: 216 (1939)

[KU590], Japan. Hokkaido. Prov. Kitami: Kutsugata Rishiri Island. On rocks along the coast. Leg. H. Shibuichi (no. 7369), K. Yoshida, & M. Mineta, 03.08.1983, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati No. 590.

Thallus saxicolous, erect, caespitose. 1-2(-3) cm long, growing from a common holdfast. Branches solid, whitish yellow, simple or sparingly furcately branched towards the apices, mostly flattened, mat or subnitid, 1-3 mm wide, surface smooth to uneven, light-colored throughout the branches. Pseudocyphellae ellipsoid or orbicular, flat, laminal or marginal, sparse but rarely conspicuous. Thallus 200-400 µm thick; cortex indistinct,ca. 10 µm thick; chondroid tissue continuous. 50-200 µm thick, clearly cracked. Apothecia common, subterminal or laminal, up to 4 mm in diam.; margin entire, thick; thalloid exciple smooth or pseudocyphellate; hymenium 50-60 µm high; hypothecium 25-30 µm thick; proper exciple 20-25 µm thick; chondroid tissue of thalloid exciple conspicuous, often penetrating into thalloid exciple; ascospores short fusiform, 2-celled with or without additional septa, colorless, l0-13× 4-5 µm. Pycnidia common. pale colored. Chemistry: (Race 1) Usnic, divaricatic and ± salazinic acids. (Race2) Usnic acid. Distribution: Japan (Hokkaidoto northern Honshu).



Ramalina subbreviuscula



Ramalina subbreviuscula



Ramalina subbreviuscula

Ramalina subbreviuscula Asahina, J. Jap. Bot. 15: 216 (1939)

[KW367], Japan. Kyushu. Goto Islands: Tainohana, Tamanoura-cho, Fukue Island. On rocks along the coast. Leg. S. Kurokawa (no.82112), 26.11.1983, det. H. Kashiwadani. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NO. 367.

Thallus saxicolous, erect, caespitose. 1-2(-3) cm long, growing from a common holdfast. Branches solid, whitish yellow, simple or sparingly furcately branched towards the apices, mostly flattened, mat or subnitid, 1-3 mm wide, surface smooth to uneven, light-colored throughout the branches. Pseudocyphellae ellipsoid or orbicular, flat, laminal or marginal, sparse but rarely conspicuous. Thallus 200-400 µm thick; cortex indistinct,ca. 10 µm thick; chondroid tissue continuous. 50-200 µm thick, clearly cracked. Apothecia common, subterminal or laminal, up to 4 mm in diam.; margin entire, thick; thalloid exciple smooth or pseudocyphellate; hymenium 50-60 µm high; hypothecium 25-30 µm thick; proper exciple 20-25 µm thick; chondroid tissue of thalloid exciple conspicuous, often penetrating into thalloid exciple; ascospores short fusiform, 2-celled with or without additional septa, colorless, l0-13× 4-5 µm. Pycnidia common. pale colored. Chemistry: (Race 1) Usnic, divaricatic and ± salazinic acids. (Race2) Usnic acid. Distribution: Japan (Hokkaidoto northern Honshu).



Ramalina subbreviuscula



Ramalina subbreviuscula



Ramalina subbreviuscula

Ramalina subbreviuscula Asahina, J. Jap. Bot. 15: 216 (1939)

[KU682], Japan. Hokkaido. Prov. Kitami: Cape Sukoton, Rebun Island. On rocks along the coast. Leg. M. Mineta (no. 830260), 04.08.1983, det. H. Kashiwadani. EX S. KUROKAWA & H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NO. 682.

Thallus saxicolous, erect, caespitose. 1-2(-3) cm long, growing from a common holdfast. Branches solid, whitish yellow, simple or sparingly furcately branched towards the apices, mostly flattened, mat or subnitid, 1-3 mm wide, surface smooth to uneven, light-colored throughout the branches. Pseudocyphellae ellipsoid or orbicular, flat, laminal or marginal, sparse but rarely conspicuous. Thallus 200-400 µm thick; cortex indistinct,ca. 10 µm thick; chondroid tissue continuous. 50-200 µm thick, clearly cracked. Apothecia common, subterminal or laminal, up to 4 mm in diam.; margin entire, thick; thalloid exciple smooth or pseudocyphellate; hymenium 50-60 µm high; hypothecium 25-30 µm thick; proper exciple 20-25 µm thick; chondroid tissue of thalloid exciple conspicuous, often penetrating into thalloid exciple; ascospores short fusiform, 2-celled with or without additional septa, colorless, l0-13× 4-5 µm. Pycnidia common. pale colored. Chemistry: (Race 1) Usnic, divaricatic and ± salazinic acids. (Race2) Usnic acid. Distribution: Japan (Hokkaido northern Honshu).



Ramalina subbreviuscula



Ramalina subbreviuscula



Ramalina subbreviuscula

Ramalina subcomplanata (Nyl.) Zahlbr., Cat. Lich. Univers. 6: 522 (1930)

[KU683], Japan. Honshu. Prov. Shinauo: Lake side of Matsubara, Koumi-cho, Minamisaku-gun. On truncs of *Juglans mandshurica* var. *sieboldiana*, 1130 m. Leg. H. Kashiwadani (no. 22558), 19.06.1986, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NO. 683.

Thallus fruticose, corticolous, 3-5(10) cm long, dichotomously or irregularly branched, growing from a narrow holdlast. Branches greenish grey or stramineous in the herbarium,solid, 1-3(-5) mm wide, dorsiventral, surface angular or flat,rarely canaliculate, tips of lobes dorsiventral or rarely more or less cylindrical. Soredia or isidia absent, Thallus 150-200 µm thick, cortex 15-20 µm thick, chondroid tissue uneven in thickness, distinctly splitting into bundles of hyphae, 20-70 µm thick, medullary hyphae thin,up to 3-5 µm thick in diameter. Pseudocyphellae common, predominantly marginal or/and on ventral side, more or less convex. Apothecia subterminal or rarely lateral, l.5-3(-5) mm in diameter,often with short dorsiventral spurs, constricted at the base; thalloid exciple pseudocyphellate with concave pseudocyphellae; spores straight, broadly ellipsoid, 10-15 × 4-5 µm in size, colourless, 2-celled or often 4-celled with additional septa. Pycnidianot seen. Chemistry: Race 1: homosekikaic acid, sekikaic acid, 4'-o-methylnorhomoekikaic acid, 4'-o-demethylhomosekikaic acid (±), 4'-o-methylnorsekikaic acid (±), salazinic acid (±),usnic acid, and atranorin (±). Race 2: divaricatic acid, stenosporic acid (±),and usnic acid. Race 3:.salazinic acid (±) and usnic acid.- *Ramalina subcomplanta* is characterized by 1) the solid, dorsiventral lobes growing from a narrow holdfast, 2) the protruding pseudocyphellae of lobes, 3) the subterminal apothecia with short spurs, 4) the chondroid tissue with splitted bundles, and by 5) the presence of homosekikaic and sekikaic acids as major chemical substances.



Ramalina subcomplanata



Ramalina subcomplanata

Ramalina sublitoralis Asahina, J. Jap. Bot. 15: 221 (1939)
= *Ramalina litoralis* Asahina. Journ. Jap, Bot. 15: 220 (1939).

[KU2845], Japan. Izu Islands: Nakanogoh, Hachijo Island. On rocks, 10 m. Leg. H. Kashiwadani (no. 13666) & H. Inoue, 07.09.1976, det. H. Kashiwadani. EX S. KUROKAWA: LICHENES RARIORES ET CRITICI EXSICCATI NO. 285.

Thallus fruticose, saxicolous, 1.5-3 cm long, caespitose, dichotomously or irregularly branched. Branches pale greenish yellow or olivaceous (in herbaria), solid. 0.2-1.o(-1.5) mm wide, branches more or less dorsiventral to subcylindrical, irregularly thickened, usually with tiny, cylindrical, lateral branchlets (c. 0.05-0.2 mm long, 0.001 mm thick) ending in nodules; surface smooth, pseudocyphellate. Pseudocyphellae laminal, ellipsoid, depressed to convex, never producing soredia. Soredia absend. Branches 100-200 µm thick, cortex 10-12 µm thick; chondroid tissue distivtly cracked, composed of bundles of hyphae. Apothecia common, lateral, shortly stipitate, without spurs or pseudocyphellae, up to 1.5 mm in diam., disc flat to convex, pruinose; hymenium 50-55 µm thick; subhymenium c. 20 µm thick; ascospores 2-celled, often with additional septa, 10-13 x 3-4(-5) µm. Pycnoconidia not seen. Chemistry: (Race 1) Usnic acid, sekikaic acid, 4′-O-demethylsekikaic acid, ± norstictic acid, ± salazinic acid and ± atranorin; (Race 2) Usnic acid, divaricatic acid and ± salazinic acid. - *R. sublitoralis* is now simply reduced to a synonym of *R. litoralis*.



Ramalina sublitoralis



Ramalina sublitoralis

Ramalina sublitoralis Asahina, J. Jap. Bot. 15: 221 (1939)
= *Ramalina litoralis* Asahina. Journ. Jap, Bot. 15: 220 (1939).

[KU329], Japan. Ryukyu Islands: Izena Island. On rocks along the coast. Leg. S. Kurokawa (no. 73115), 29.08.1973, det. S. Kurokawa. EX S. KUROKAWA AND H. KASHIWADANI: LICHENES RARIORES ET CRITICI EXSICCATI NO. 329.

Thallus fruticose, saxicolous, 1.5-3 cm long, caespitose, dichotomously or irregularly branched. Branches pale greenish yellow or olivaceous (in herbaria), solid. 0.2-1.o(-1.5) mm wide, branches more or less dorsiventral to subcylindrical, irregularly thickened, usually with tiny, cylindrical, lateral branchlets (c. 0.05-0.2 mm long, 0.001 mm thick) ending in nodules; surface smooth, pseudocyphellate. Pseudocyphellae laminal, ellipsoid, depressed to convex, never producing soredia. Soredia absend. Branches 100-200 µm thick, cortex 10-12 µm thick; chondroid tissue distivtly cracked, composed of bundles of hyphae. Apothecia common, lateral, shortly stipitate, without spurs or pseudocyphellae, up to 1.5 mm in diam., disc flat to convex, pruinose; hymenium 50-55 µm thick; subhymenium c. 20 µm thick; ascospores 2-celled, often with additional septa, 10-13 x 3-4(-5) µm. Pycnoconidia not seen. Chemistry: (Race 1) Usnic acid, sekikaic acid, 4′-O-demethylsekikaic acid, ± norstictic acid, ± salazinic acid and ± atranorin; (Race 2) Usnic acid, divaricatic acid and ± salazinic acid. - *R. sublitoralis* is now simply reduced to a synonym of *R. litoralis*.



Ramalina sublitoralis



Ramalina sublitoralis

Ramalina terebrata Hook. f. & Taylor, London J. Bot. 3: 654 (1844)
= *Ramalina flaccidissima* Bory 1826

[KU592], Chile. Magallanes: Between Onaisin and Cameron. On rocks in open place along the coast, 30 m. Leg. H. Kashiwadani (no. 19020) & H. Deguchi, 08.12.1981, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI: LICHENES RARIORES ET CRITICI EXSICCATI NO. 592.

Thallus sorediate. This species is apparently closely related to *R. laevigata* Fr.,a species often reported from the Falkland Islands,because they both have similar branches with non-cracked chondroid tissue and long fusiform spores and produce no diagnostic medullary substance, However, it can be easily distinguished from the latter by the presence of soredia. - Only in south of Prov. Magallanes and the adjacent islands in subantarctic region.



Ramalina terebrata



Ramalina terebrata

Ramalina terebrata Hook. f. & Taylor, London J. Bot. 3: 654 (1844)
= *Ramalina flaccidissima* Bory 1826

[OH594], Antarctica. South Shetland Islands. Nelson Island. Harmony Cove. On rock, 0-5 m. Leg. M Inoue (no. 21688), 04.01.1989, det. M. Inoue. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NO. 594.

Thallus sorediate. This species is apparently closely related to *R. laevigata* Fr.,a species often reported from the Falkland Islands,because they both have similar branches with non-cracked chondroid tissue and long fusiform spores and produce no diagnostic medullary substance, However, it can be easily distinguished from the latter by the presence of soredia. - Only in south of Prov. Magallanes and the adjacent islands in subantarctic region.



Ramalina terebrata



Ramalina terebrata

Ramalina terebrata Hook. f. & Taylor, London J. Bot. 3: 654 (1844)
= *Ramalina flaccidissima* Bory 1826

[KU591], Chile. Magallanes: Between Onaishin and Cameron. On rocks in open place along the coast, 20 m. Leg. H. Kashiwadani (no. 19019), 08.12.1981, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NO. 591

Thallus sorediate. This species is apparently closely related to *R. laevigata* Fr.,a species often reported from the Falkland Islands,because they both have similar branches with non-cracked chondroid tissue and long fusiform spores and produce no diagnostic medullary substance, However, it can be easily distinguished from the latter by the presence of soredia. - Only in south of Prov. Magallanes and the adjacent islands in subantarctic region.



Ramalina terebrata



Ramalina terebrata

Ramalina terebrata Hook. f. & Taylor, London J. Bot. 3: 654 (1844)
= *Ramalina flaccidissima* Bory 1826

[OH593], Antarctica. South Shetland Islands. King George Island, Ardely Island of Fildes Peninsula. On rock, 10 m. Leg. M. Inoue (no 21075), 19.12.1988, det. M. Inoue. EX Y OHMURA: LICHENES MINUS COGNITI EXSICCATI NO. 593.

Thallus sorediate. This species is apparently closely related to *R. laevigata* Fr.,a species often reported from the Falkland Islands,because they both have similar branches with non-cracked chondroid tissue and long fusiform spores and produce no diagnostic medullary substance, However, it can be easily distinguished from the latter by the presence of soredia. - Only in south of Prov. Magallanes and the adjacent islands in subantarctic region.



Ramalina terebrata



Ramalina terebrata

Ramalina yasudae Räsänen, J. Jap. Bot. 16(2): 87 (1940)

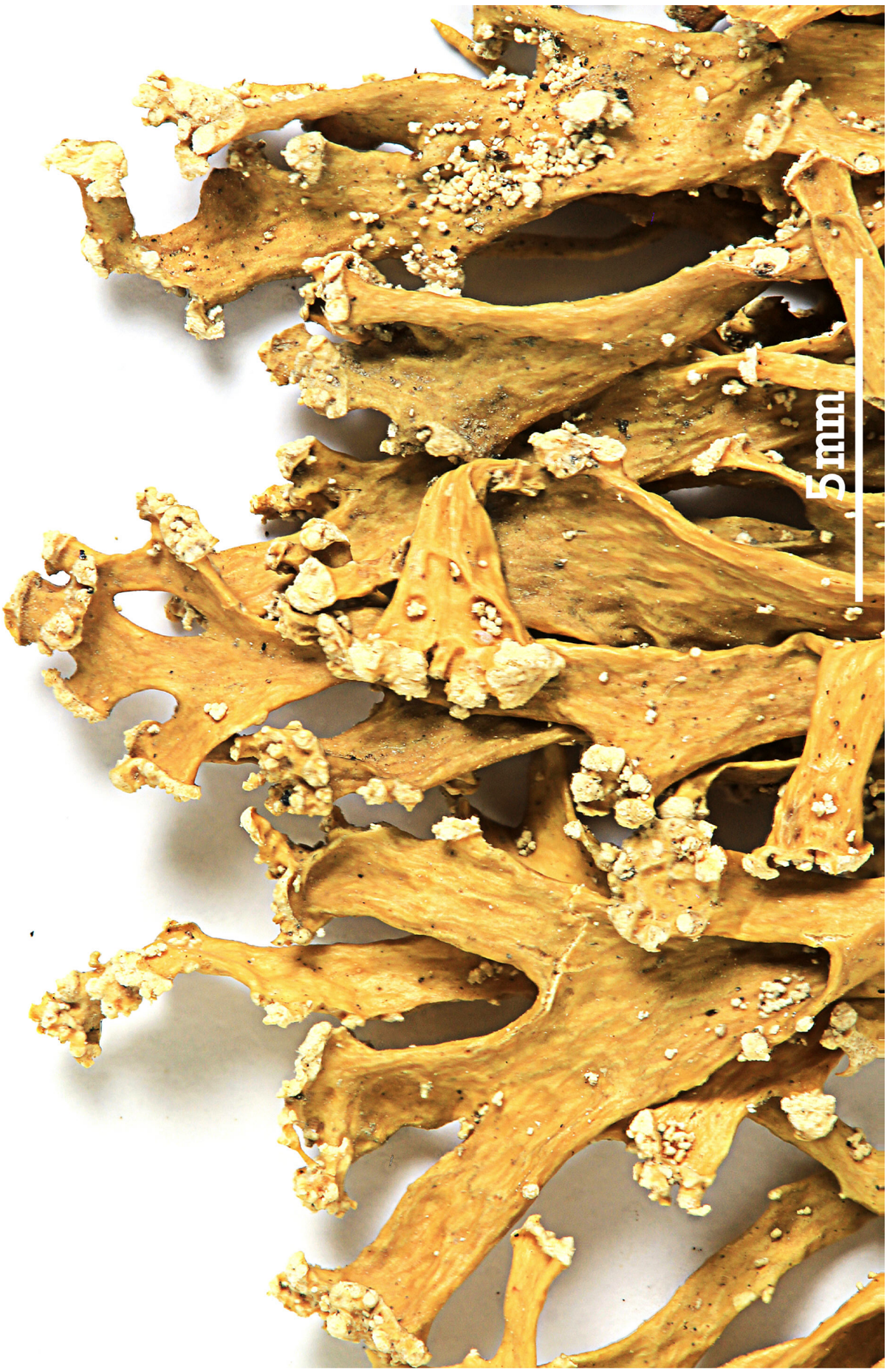
[KU190], Japan. Honshu. Prov. Mino: Kirii, Shirakawamachi, Kamo-gun. On stone work, 500 m. Leg. S. Kurokawa (no. 68022), 26-27.04.1968, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NO. 190.

Thallus 2-4 cm altus, fruticulosus, modice vel parce ramossus, rami 1-2(3) mm lati, apicem versus saepe incurvati, superne laevigatus vel levissime reticulatus, pallido-stramineus, ad marginem et in apicibus punctato - vel ligulato-sorediosus, K-, C-, P-. Apothecia (sec. ASAHINA) rara. apicalia vel supra laciniorum, 1-2 mm lata, albopruinosa. Sporae oblongae, l-septatae, ca 12 x 4 µm.

Thallus 2-4 cm high, bushy, moderately or sparingly branched, branches 1-2(3) mm wide, often curved towards the apex, smoothed or very slightly reticulate above, pale-straminous, punctate at the margin and at the apices - or ligulate-soredate, K-, C-, P-. Apothecia (sec. ASAHINA) rare. apical or supra laciniae, 1-2 mm wide, white-pruinose. Spores oblong, l-septate, ca 12 x 4 µm.



Ramalina yasudae



Ramalina yasudae



Ramalina yasudae

Ramalina yasudae Räsänen, J. Jap. Bot. 16(2): 87 (1940)

[OH389], Japan. Honshu. Prov. Izu (Pref. Shizuoka): Iwachi, Matsuzaki-cho, Kamo-gun. On stone works, 200m. Leg. H. Kashiwadani (no. 47392), 11.04.2005, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NO. 389.

Thallus 2-4 cm altus, fruticulosus, modice vel parce ramossus, rami 1-2(3) mm lati, apicem versus saepe incurvati, superne laevigatus vel levissime reticulatus, pallido-stramineus, ad marginem et in apicibus punctato - vel ligulato-sorediosus, K-, C-, P-. Apothecia (sec. ASAHINA) rara. apicalia vel supra laciniorum, 1-2 mm lata, albopruinosa. Sporae oblongae, l-septatae, ca 12 x 4 µm.

Thallus 2-4 cm high, bushy, moderately or sparingly branched, branches 1-2(3) mm wide, often curved towards the apex, smoothed or very slightly reticulate above, pale-straminous, punctate at the margin and at the apices - or ligulate-soredate, K-, C-, P-. Apothecia (sec. ASAHINA) rare. apical or supra laciniae, 1-2 mm wide, white-pruinose. Spores oblong, l-septate, ca 12 x 4 µm.



Ramalina yasudae



Ramalina yasudae

Ramalina yasudae Räsänen, J. Jap. Bot. 16(2): 87 (1940)
= *Ramalina ligulata* Asahina, Ramalin. Art. Jap.,1939, p. 217 (non Ach.)

[KU191], Japan. Hokkaido. Prov. Kitami: Shanai-Sando, Esashi-gun. On cliffs along the coast. Leg. K. Takahashi (no 1117), 17.08.1970, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NO. 191.

Thallus 2-4 cm altus, fruticulosus, modice vel parce ramossus, rami 1-2(3) mm lati, apicem versus saepe incurvati, superne laevigatus vel levissime reticulatus, pallido-stramineus, ad marginem et in apicibus punctato - vel ligulato-sorediosus, K-, C-, P-. Apothecia (sec. ASAHINA) rara. apicalia vel supra laciniorum, 1-2 mm lata, albopruinosa. Sporae oblongae, l-septatae, ca 12 x 4 µm.

Thallus 2-4 cm high, bushy, moderately or sparingly branched, branches 1-2(3) mm wide, often curved towards the apex, smoothed or very slightly reticulate above, pale-straminous, punctate at the margin and at the apices - or ligulate-soredate, K-, C-, P-. Apothecia (sec. ASAHINA) rare. apical or supra laciniae, 1-2 mm wide, white-pruinose. Spores oblong, l-septate, ca 12 x 4 µm.



Ramalina yasudae



Ramalina yasudae



Ramalina yasudae

Ramalina yasudae Räsänen, J. Jap. Bot. 16(2): 87 (1940)
= *Ramalina ligulata* Asahina, Ramalin. Art. Jap.,1939, p. 217 (non Ach.)

[KU645], Japan. Kyushu. Prov. Satsuma: Akime, Bohnotsu-cho, Kawanabe-gun. On stone works, 10 m. Leg. H. Kashiwadani (no. 20609), 18.02.1984, det. H. Kashiwadani. EX S. KUROKAWA & H. KASHIWADANI LICHENES RARIORES ET CRITICI NO. 645.

Thallus 2-4 cm altus, fruticulosus, modice vel parce ramossus, rami 1-2(3) mm lati, apicem versus saepe incurvati, superne laevigatus vel levissime reticulatus, pallido-stramineus, ad marginem et in apicibus punctato - vel ligulato-sorediosus, K-, C-, P-. Apothecia (sec. ASAHINA) rara. apicalia vel supra laciniorum, 1-2 mm lata, albopruinosa. Sporae oblongae, l-septatae, ca 12 x 4 µm.

Thallus 2-4 cm high, bushy, moderately or sparingly branched, branches 1-2(3) mm wide, often curved towards the apex, smoothed or very slightly reticulate above, pale-straminous, punctate at the margin and at the apices - or ligulate-soredate, K-, C-, P-. Apothecia (sec. ASAHINA) rare. apical or supra laciniae, 1-2 mm wide, white-pruinose. Spores oblong, l-septate, ca 12 x 4 µm.



Ramalina yasudae



Ramalina yasudae

Ramalina yasudae Räsänen, J. Jap. Bot. 16(2): 87 (1940)
= *Ramalina ligulata* Asahina, Ramalin. Art. Jap.,1939, p. 217 (non Ach.)

[OH671], Japan. Kyushu. Bungo Prov. (Ohita Pref.): Mumyobashi near Zennenji Temple, Nagaiwaya. Bungotakada-city. On rock, 120 m. Leg. K. Umezu (no. 8), 12.05.2019, det H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NO. 671.

Thallus 2-4 cm altus, fruticulosus, modice vel parce ramossus, rami 1-2(3) mm lati, apicem versus saepe incurvati, superne laevigatus vel levissime reticulatus, pallido-stramineus, ad marginem et in apicibus punctato - vel ligulato-sorediosus, K-, C-, P-. Apothecia (sec. ASAHINA) rara. apicalia vel supra laciniorum, 1-2 mm lata, albopruinosa. Sporae oblongae, l-septatae, ca 12 x 4 µm.

Thallus 2-4 cm high, bushy, moderately or sparingly branched, branches 1-2(3) mm wide, often curved towards the apex, smoothed or very slightly reticulate above, pale-straminous, punctate at the margin and at the apices - or ligulate-soredate, K-, C-, P-. Apothecia (sec. ASAHINA) rare. apical or supra laciniae, 1-2 mm wide, white-pruinose. Spores oblong, l-septate, ca 12 x 4 µm.



Ramalina yasudae



Ramalina yasudae

Ramalina yasudae Räsänen, J. Jap. Bot. 16(2): 87 (1940)
= *Ramalina ligulata* Asahina, Ramalin. Art. Jap.,1939, p. 217 (non Ach.)

[KU434], Japan. Honshu. Prov. Bitchu: Mt. Gagyu, Takahashi-city. On rocks, 400 m. Leg. H. Kashiwadani (no. 14979), 25.03.1979, det. H. Kashiwadani. EX S. KUROKAWA & H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NO. 434.

Thallus 2-4 cm altus, fruticulosus, modice vel parce ramossus, rami 1-2(3) mm lati, apicem versus saepe incurvati, superne laevigatus vel levissime reticulatus, pallido-stramineus, ad marginem et in apicibus punctato - vel ligulato-sorediosus, K-, C-, P-. Apothecia (sec. ASAHINA) rara. apicalia vel supra laciniorum, 1-2 mm lata, albopruinosa. Sporae oblongae, l-septatae, ca 12 x 4 µm.

Thallus 2-4 cm high, bushy, moderately or sparingly branched, branches 1-2(3) mm wide, often curved towards the apex, smoothed or very slightly reticulate above, pale-straminous, punctate at the margin and at the apices - or ligulate-soredate, K-, C-, P-. Apothecia (sec. ASAHINA) rare. apical or supra laciniae, 1-2 mm wide, white-pruinose. Spores oblong, l-septate, ca 12 x 4 µm.



Ramalina yasudae



Ramalina yasudae

Rhizocarpon lavatum (Ach.) Hazsl., Magyar Birodalom Zuzmó-Flórájá: 206 (1884)

[1449], GERMANY: Niedersachsen, N-Harz. Auf periodisch inudierten Silikatblöcken im Bachbett der Radau oberhalb der Koleborn-Straßenkehre, 475 m. Leg. Hans Ullrich, 28.07.1963, det. Hans Ullrich. Dubl ex Herbario Hans Ullrich. In Herbario F. Schumm Nr.1449.

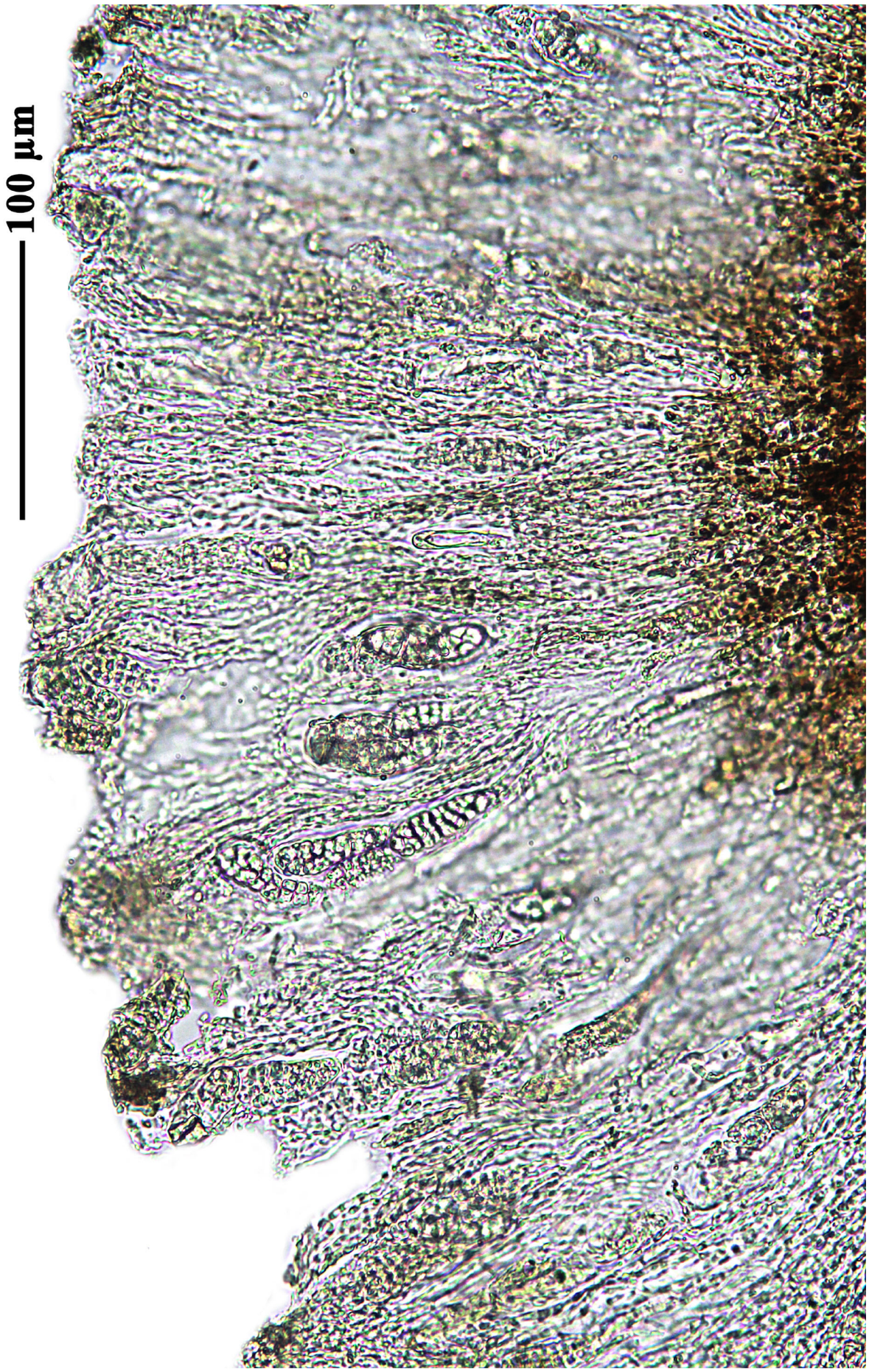
Thallus crustose, episubstratic, grey, pale ochre-brown or rust-brown, smooth, rimose, irregularly cracked or areolate, with an indistinct prothallus, forming patches to 12 cm in diam. Areoles to 0.4 (-1) mm wide, contiguous, angular, more or less flat. Medulla white, I-. Apothecia lecideine, 0.8-1.6 mm across, immersed in the thallus or slightly protruding, dark brown to black, epruinose, round or irregular due to mutual compression, with a weakly concave to weakly convex, sometimes umbonate disc, and a thick, persistent proper margin. Exciple dark brown in outer part, paler within, K-; epithecium olive-green to greenish-brown, sometimes patchily K+ red or K-; hymenium colourless to pale brown, 110-200 µm high; paraphysoids conglutinated, branched and anastomosing, hardly swollen at apex; hypothecium dark red-brown, K-. Asci 8-spored, clavate to cylindrical-clavate, fissitunicate, with a well-developed tholus, lacking an ocular chamber, Rhizocarpon-type. Ascospores muriform, with 6-7 transverse septa and 1-2 longitudinal septa, with (8-)10-14(-18) cells in optical view, long remaining hyaline (older spores sometimes pale brown), 30-42 x 14-18 µm, surrounded by a gelatinous sheath. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: no lichen substances in thallus. - Aa cool-temperate to arctic-alpine, circumpolar lichen found on perennially humid siliceous rocks, e.g. in mountain rivulets, or on small pebbles on moist ground; related to *Rh. obscuratum*.



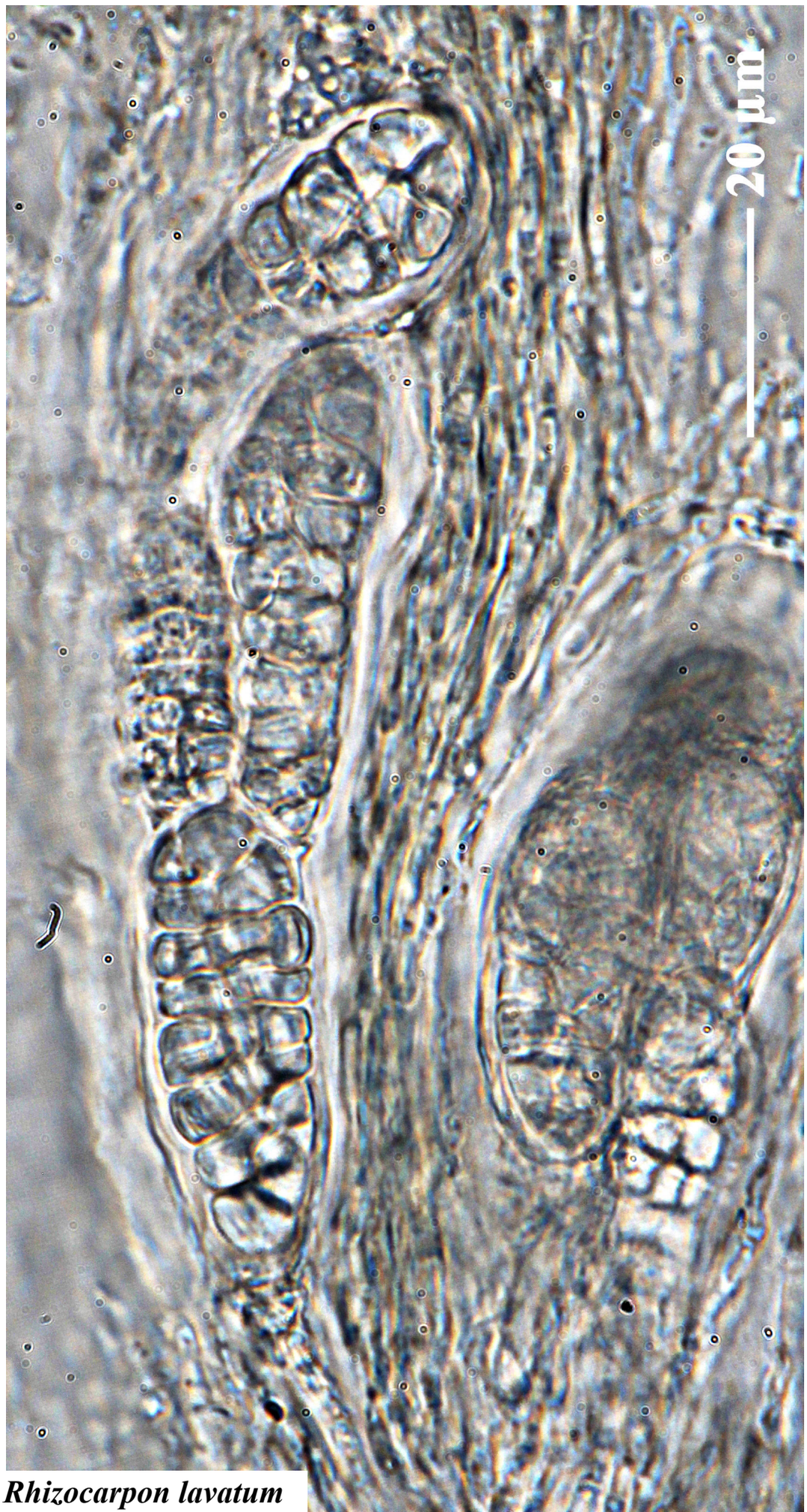
Rhizocarpon lavatum



Rhizocarpon lavatum



Rhizocarpon lavatum

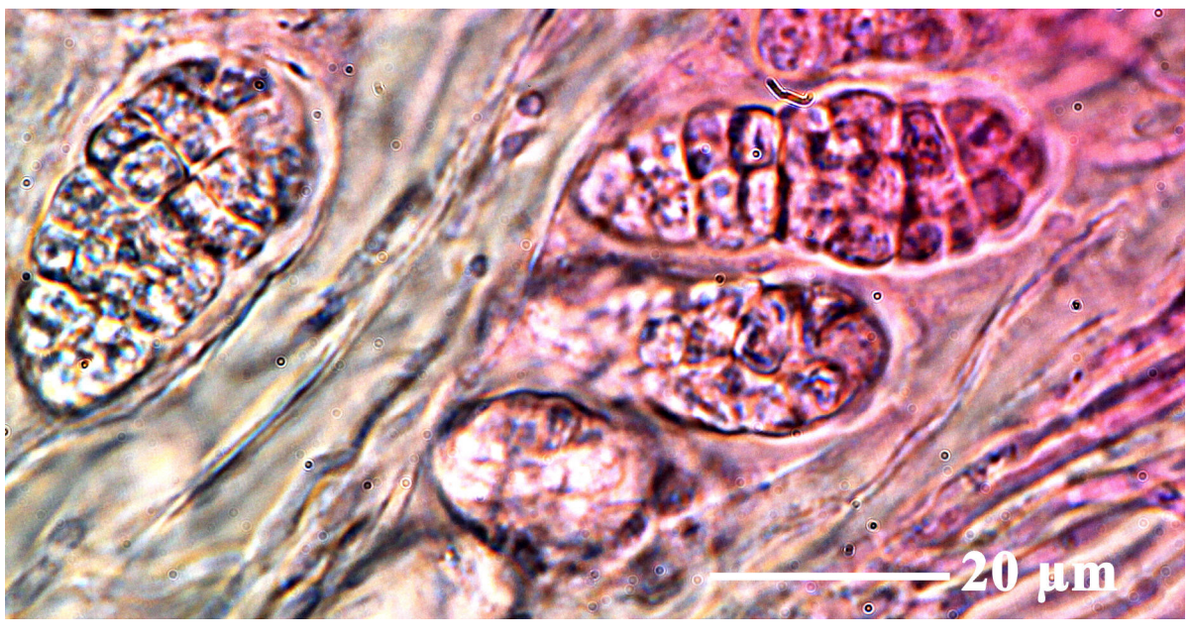


Rhizocarpon lavatum



Rhizocarpon lavatum





Rhizocarpon lavatum



Rhizocarpon lavatum

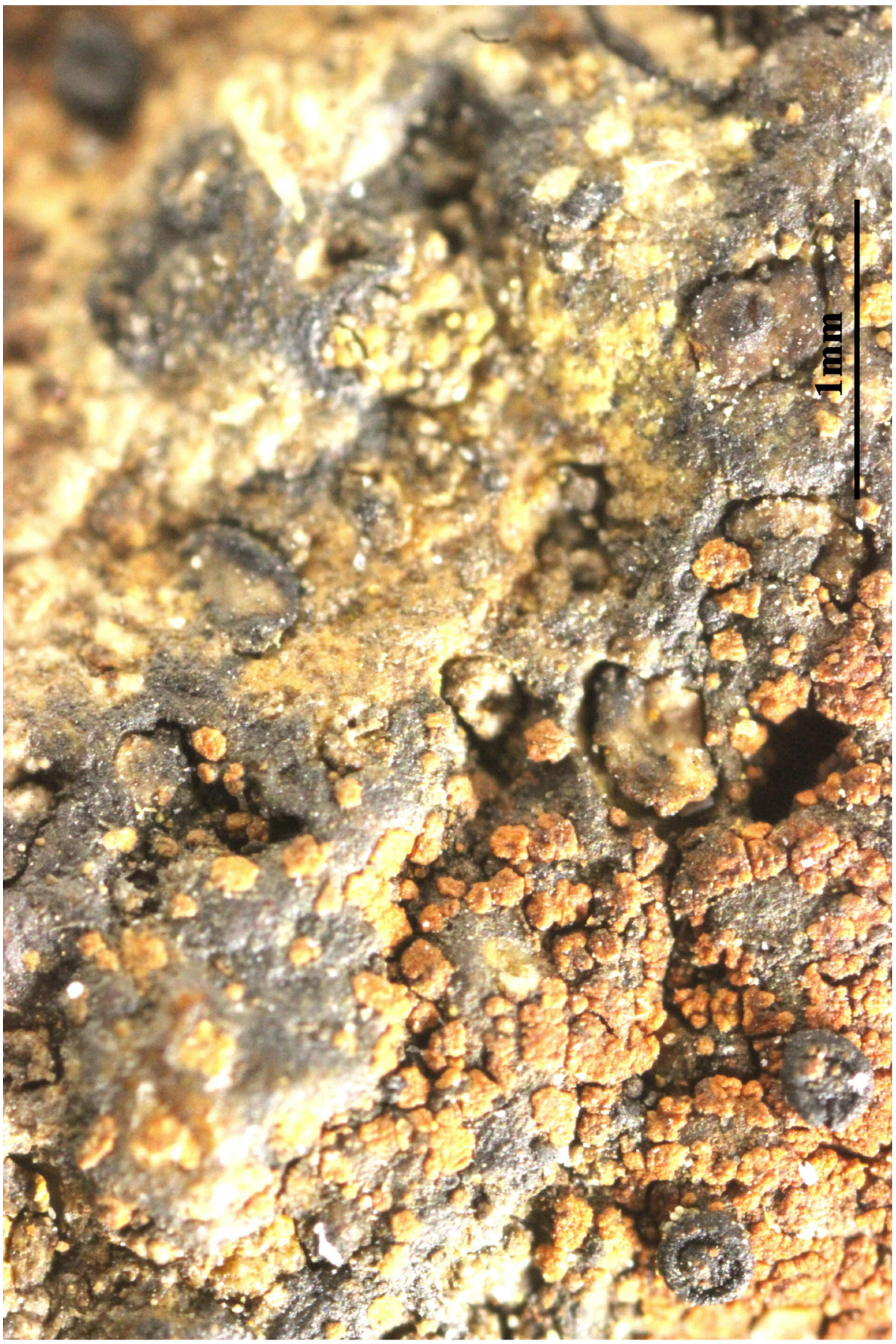
Rhizocarpon lavatum (Ach.) Hazsl., Magyar Birodalom Zuzmó-Flórájá: 206 (1884)
= *Lecidea lavata* Ach. 1827

[OH567], Japan. Honshu. Prov. Ugo (Pref. Akita): Kurikoma Hut, Mt. Kurikoma, Higashinaruse-mura, Ogachi-gun (38°59' E, 140°46' E). On rock, 1100 m. Leg. M. Inoue (nr. 25774), 15.9.1997, det. M. Inoue. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 567.

Thallus crustose, episubstratic, grey, pale ochre-brown or rust-brown, epruinose, smooth, rimose, irregularly cracked or areolate, forming up to 12 cm wide patches usually delimited by a dark prothallus, the areoles to 0.4 (-1) mm wide, contiguous, angular, more or less flat, less than 12 per square cm. Medulla white, I-. Apothecia lecideine, (0.4-)0.5-1(-1.6) mm across, immersed in the thallus or slightly protruding, dark brown to black, epruinose, round or irregular due to mutual compression, with a weakly concave to weakly convex, sometimes umbonate disc, and an up to 0.25 mm thick, persistent proper margin. Exciple dark brown in outer part, paler within, K-; epithecium olive-green to greenish-brown, sometimes patchily K+ purple-red or K-; hymenium colourless to pale brown, (100-)135-260(-375) µm high; paraphysoids coherent, branched and anastomosing, hardly swollen at apex; hypothecium dark red-brown, K-. Asci 8-spored, clavate, fissitunicate, with a well-developed tholus that is K/I- in lower part and K/I+ blue near the apex, lacking an ocular chamber, Rhizocarpon-type. Ascospores muriform, with 6-7 transverse septa and 1-3 longitudinal septa, with (8-)12-21(-28) cells in optical view, long remaining hyaline (older spores sometimes pale brown), ellipsoid to narrowly ellipsoid, 34-44(-50) x (12-)14-29(-25) µm, halonate. Photobiont chlorococcoid. Spot tests: cortex and medulla K-, C-, KC-, P-, UV-. Chemistry: thallus without lichen substances. - Note: a cool-temperate to arctic-alpine, circumpolar lichen found on perennially humid siliceous rocks, e.g. in mountain rivulets, or on small pebbles on moist ground.



Rhizocarpon lavatum



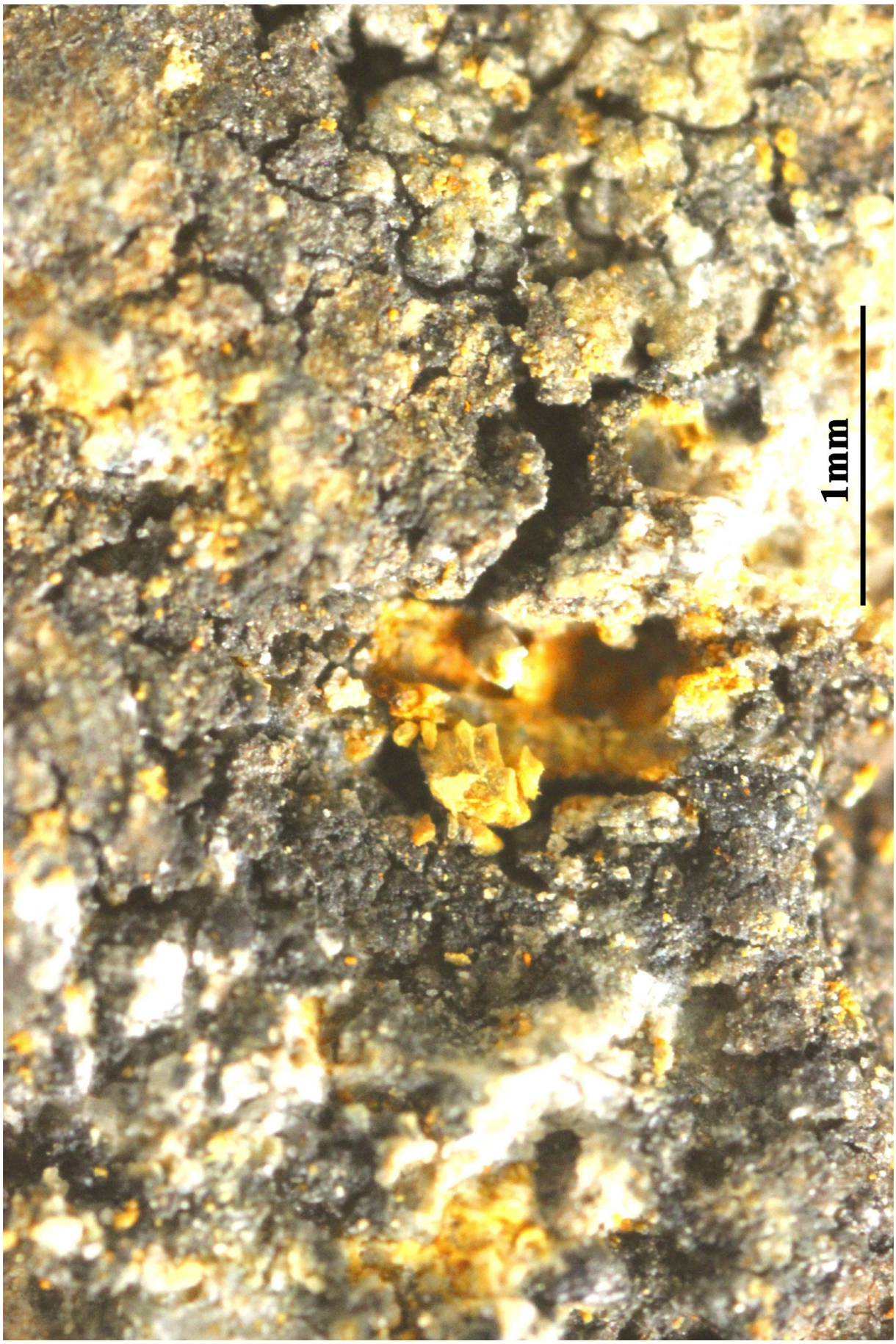
Rhizocarpon lavatum

Rhizocarpon vulcani May. Inoue, Bull. natn. Sci. Mus., Tokyo, B 27(1): 16 (2001)

[OH568], Japan. Kyushu. Prov. Hyuga (pref. Miyazaki): Oojigoku, on the foot of Mt. Karakuni, Ebino Heights, Ebino-city. On rocks, 1350-1400 m. Leg. M. Inoue (no. 25495), 27.3.1996, det. M. Inoue. Ex Y. Ohmura Lichenes Minus Cogniti Exsiccati Nr. 568.



Rhizocarpon vulcani



Rhizocarpon vulcani

Roccella babingtonii Mont.*, Annls Sci. Nat., Bot., sér. 3 18: 305 (1852*)

[KU135], Ecuador. Galapagos Islands: Near Pier, Isla Baltra. Leg. A. Miura (mo. 5), 5.12.1959, det. S. Kurokawa. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccati Nr. 135.

Thallus fruticose, pendent, main branches flattened, usually 5-15 cm long; lobe surface grayish, often uneven with ridges and wrinkles; soredia farinose, in maculiform; soralia which may often fuse to cover much of the lobe surface; medulla white but brown in the holdfast zone, usually with a yellowish tinge . Ascomata: not seen. Spot tests: cortex K+ more or less yellowish red (sometimes inconspicuous), C+ red, KC+ red, P-; medulla K-, C-, KC-, P-; Secondary metabolites: erythrin and lecanoric acid. Substrate and ecology: grows near the sea on any suitable substrate, such as the vertical rocks and cliffs and on the trunks, branches and twigs of various trees and shrubs World distribution uncertain, but probably from California to south-central Chile, and possibly Carribean and pantropical. The name and *R. babingtonii* Mont. (Montagne 1852) has been frequently used for this taxon in California and Mexico. *Roccella babingtonii*, was described by Montagne as having apothecia only; soredia were not mentioned by him.



Roccella babingtonii

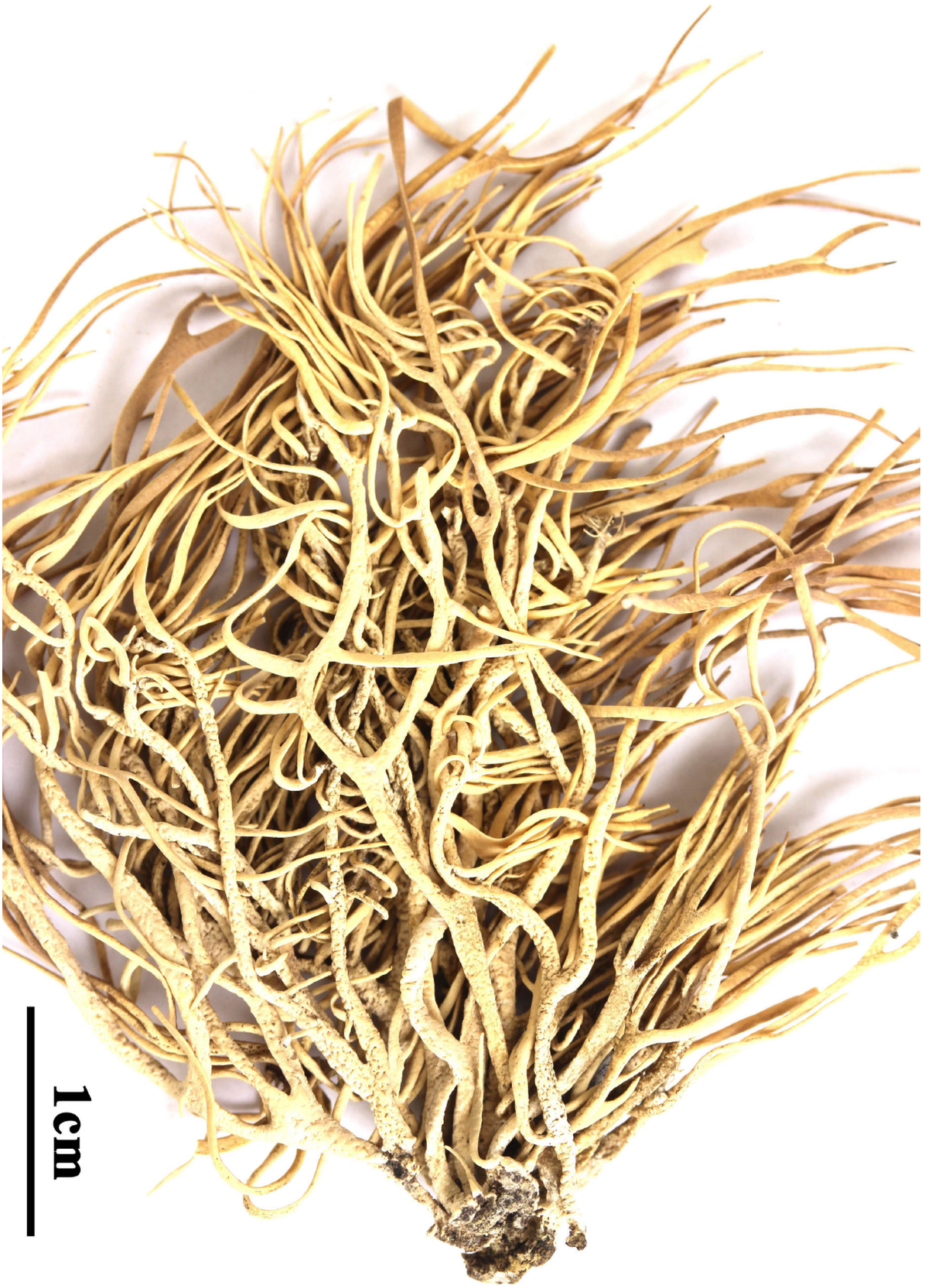


Roccella babingtonii

Roccella decipiens Darb., Ber. dt. bot. Ges. 15: 5 (1897)

[KA349], Mexico. Baja California: Isla Cedros, N-end top of ridge, on S-side of road to mine (28°27' N, 115°14' W). On rock, 360 m. Leg. H. Kashiwadani (no. 47563), 18.3.1994, det. H. Kashiwadani. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NR. 349.

Thallus fruticose, pendent, main branches flattened, usually 5-20 cm long; lobe surface grayish to grayish-brown, often uneven with ridges and wrinkles; without soredia; medulla white but brown in the holdfast zone, usually with a yellowish tinge. Ascomata usually present, circular in outline but often with undulating margin, sessile with constricted base, rarely immersed, up to 2.5 mm diam.; hymenium 70-90 µm; paraphysoids sparsely branched, hyaline, <2 µm diam.; asci clavate, 60-85 x 12-14 µm, 8-spored; ascospores fusiform, curved, hyaline, 3-septate, 22-27 x 5-6 µm; walls smooth. Spot tests: cortex K+ more or less yellowish red (sometimes inconspicuous), C+ red, KC+ red, P-; medulla K-, C-, KC-, P-;Secondary metabolites: erythrin and lecanoric acid. Substrate and ecology: grows near the sea on any suitable substrate, such as the vertical rocks and cliffs and on the trunks, branches and twigs of various trees and shrubs World distribution uncertain, but probably extending from California to south central Chile, and possibly also the Carribean and pantropical. It is also present on the Mexican mainland in the southern part of Sonora and adjacent Sinaloa. - Notes: Roccella decipiens is characterized by the fertile, non-sorediate thallus and feels somewhat stiffer and more robust than *R. peruensis* probably due to the lack of soralia that weaken the cortex. . *Roccella decipiens* was described from southern California by Darbishire (1898) as being a constantly fertile species without soralia.



Roccella decipiens

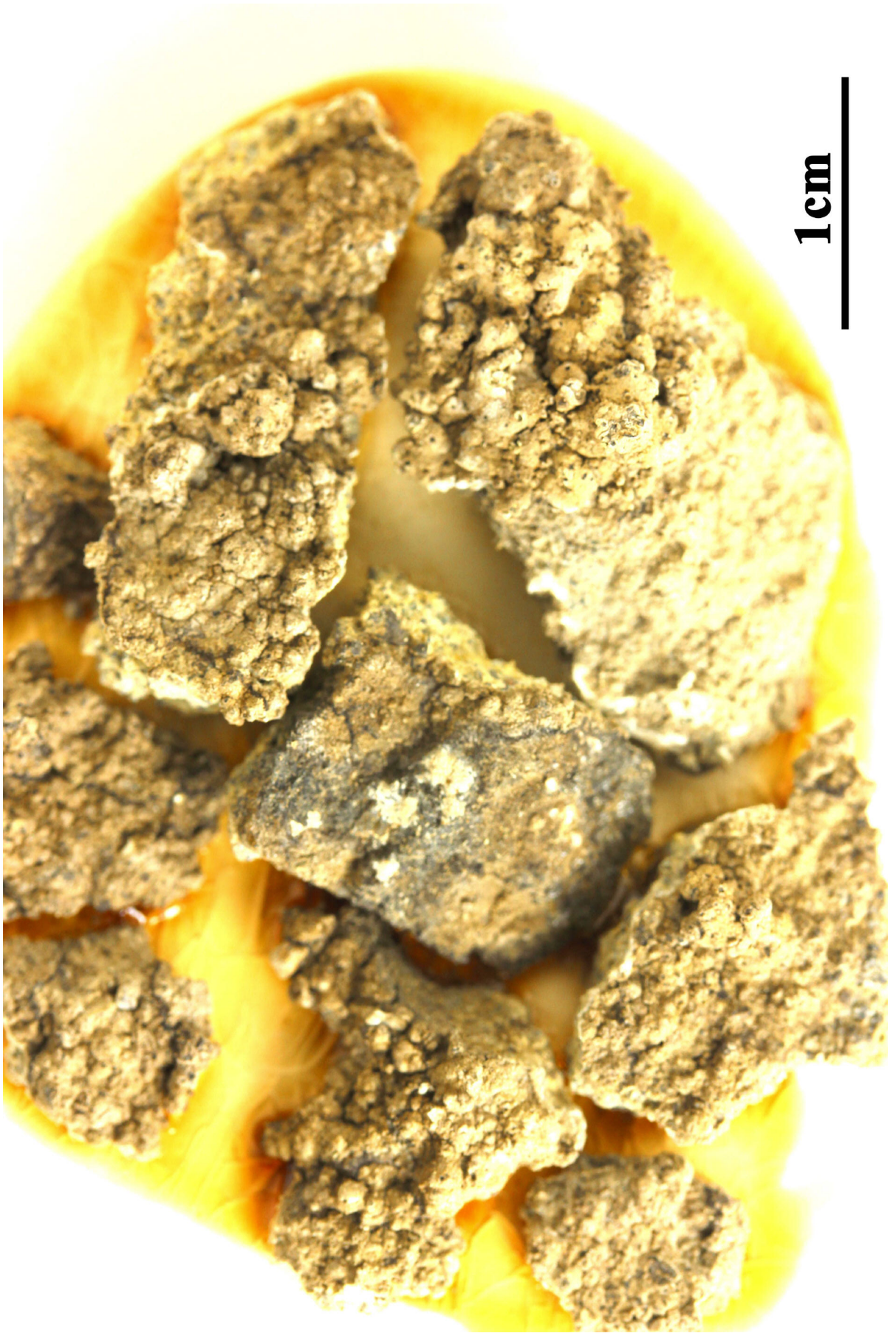


Roccella decipiens

Roccellina nipponica (Nyl.) Tehler [as 'niponica'], Nordic J. Bot. 70: 70 (1983)
= *Dirina nipponica* Nyl. 1890

[OH442], Japan. Honshu. Prov. Izu (Pref. Shizuoka): Ebisu Island, Suzaki, Shimoda-city. On rock along coast, 5 m. Leg. Y. Ohmura (no. 8442) & A. Frisch, 9.2.2012, det. Y. Ohmura & A. Frisch. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 442.

Thallus crustose, effuse, neither lobate nor effigurate, tightly attached to the substrate, dark brown to dirty brown to brown-yellow, finely pruinose, 0.4-0.8 mm thick; cortex more or less inconspicuous, only a thin, brownish gelatinous layer less than 5 um thick with one or another brown-tipped hypha; medulla white, cretaceous; soralia (see Taxonomic remarks below). Ascocarps apothecioid, biatorine, numerous, sessile with constricted base, 0.5-1.9 mm in diameter; disc grey-black; hypothecium extending down to the substrate; hymenial strands missing or inconspicuous (not to be confused with old shrivelled asci); epithecium with paraphysoid tips 3—4 µm in diameter. Spores slightly fusiform, curved or nearly straight, 24-29 x 3-5 µm. Conidia only microconidia seen. Chemistry: roccellic acid; all parts, C—, K—, PD—; hymenium I+ blue. - Taxonomic remarks. *Roccellina niponica* is habitually similar to its closest ally *R. obscura* in Chile, but differs in several anatomical and chemical aspects such as a very poorly developed cortex, a hypothecium extending down to the substrate, longer and more slender spores,



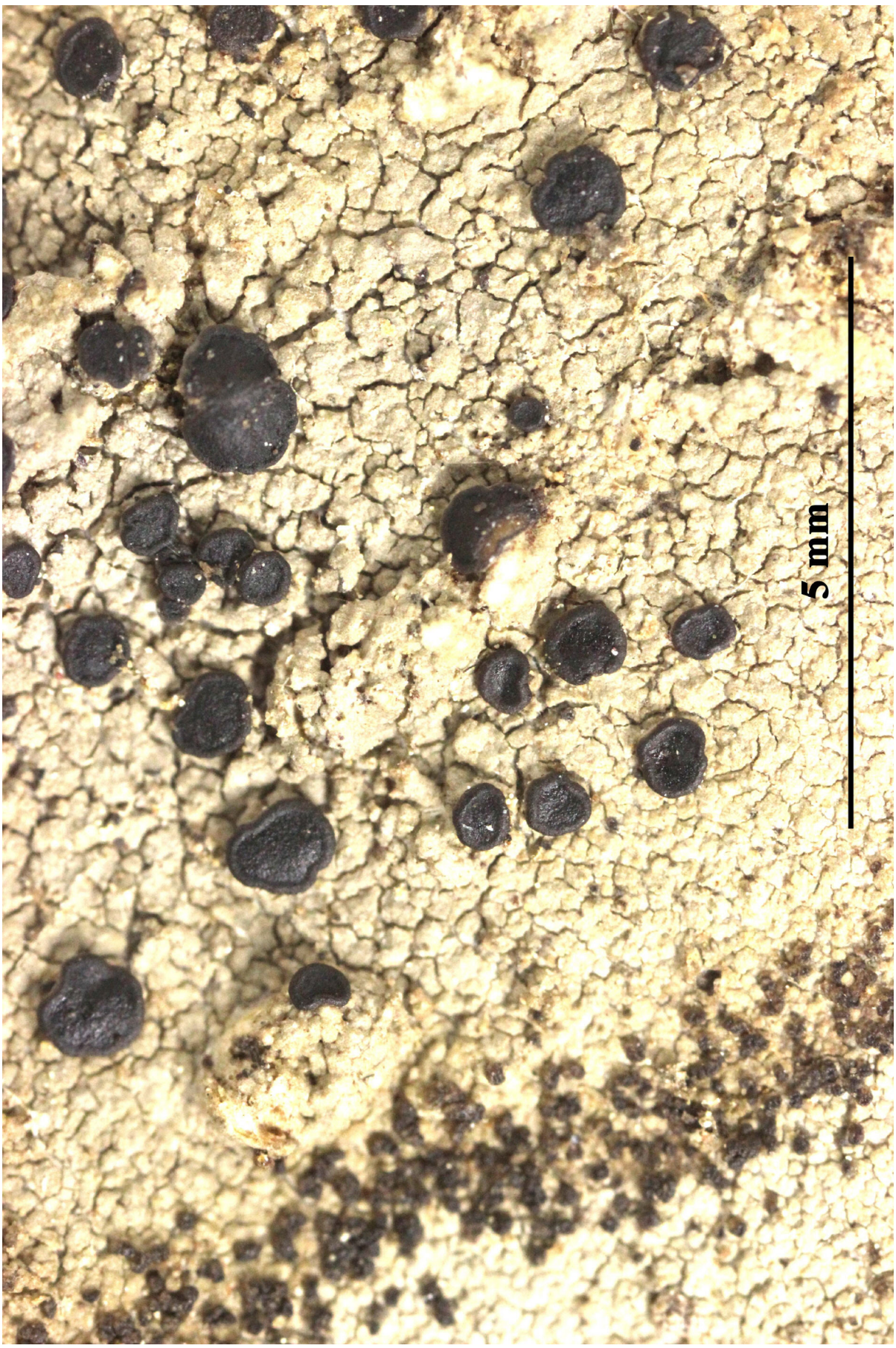
Roccellina nipponica



Roccellina nipponica

Ropalospora phaeoplaca (Zahlbr.) S. Ekman, Op. bot. 127: 128 (1996)
= *Bacidia phaeoplaca* Zahlbr. 1927

[OH646], Japan. Honshu. Prov. Kozuke (Gumma Pref.): Akagisawa, Tonemachi, Bumata-city (36°35'48" N, 139°11'22" E). On bark of Alnus sp.,930 m. Leg. Y. Ohmura (no. 11112), 10.6.2016, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 646.



Ropalospora phaeoplaca



Ropalospora phaeoplaca

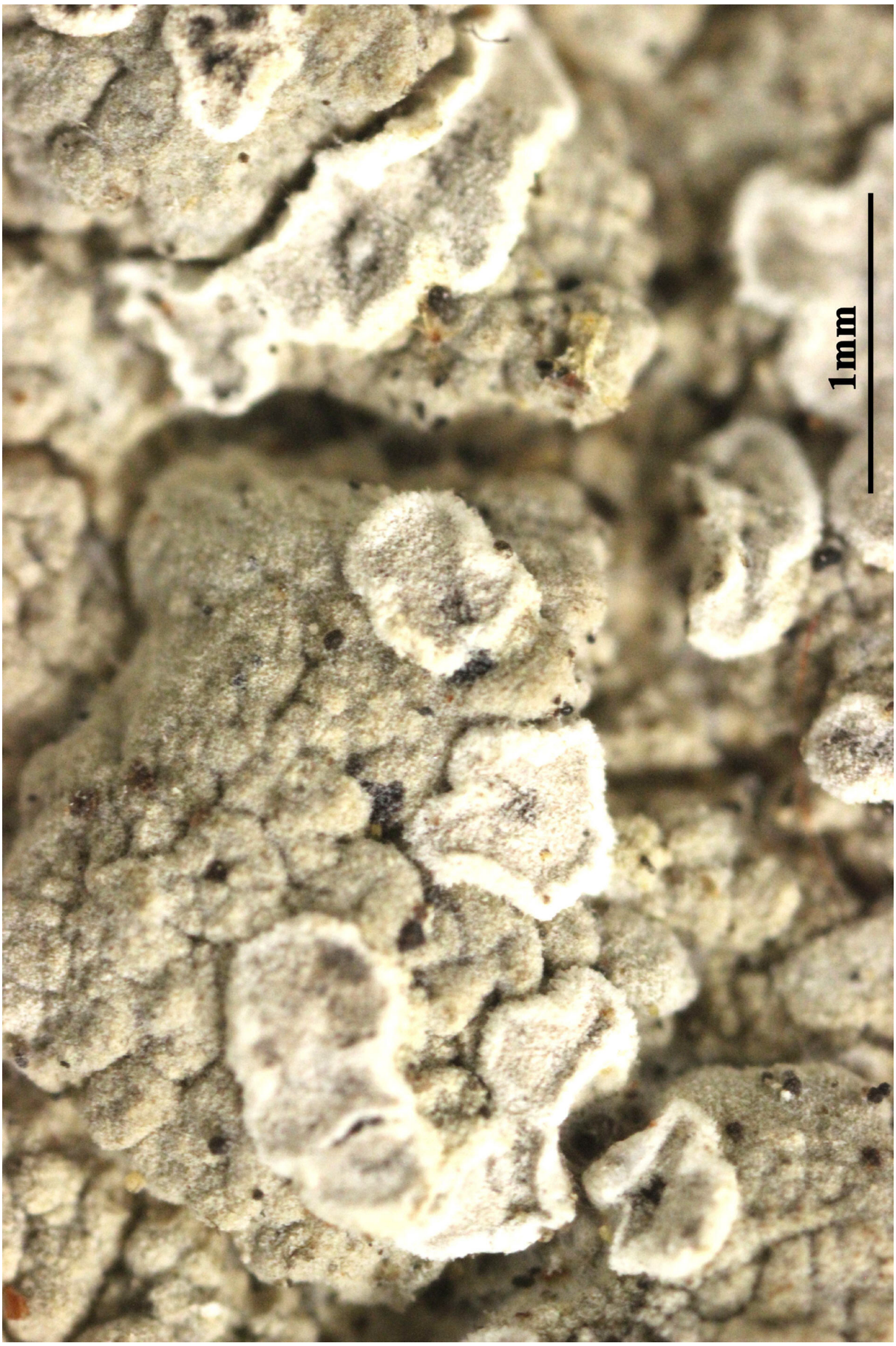
S***agenidiopsis undulata*** (Fée) Egea, Tehler, Torrente & Sipman [as 'undulatum'], Lichenologist 27(5): 358 (1995)
= *Lecanora undulata* Fée 1825

[KA322], Brazil. Rio De Janeiro: National Park of Tijuka. Leg. S. Kurokawa (no. 8393), 21.7.1971, det. G. Thor. EX H. KASHIWADANI LICHENS MINUS COGNITI EXSICCATI NR. 322.

Sagenidiopsis undulatum is distinguished from *S. merrotsii* by the following characters: Ascomata 0-5-2(-3) mm in diam., solitary or aggregated, globose and circular when young, but often undulating at maturity; asci short-stiped, 60-80 x 17-21 µm [40-60 x 10 µm , Tehler]; ascospores fusiform to acicular fusiform, slightly curved, 33-46 x (3-)3-5-4 um [33-37 x 2-3 µm, Tehler]; and thallus C+ reddish, with lecanoric acids and an unidentified pinkish spot of Rf 3,5,2-3. According to Rogers & Hafellner (1987), in *S. merrotsii*: the ascomata are up to 1 mm diam., solitary and not undulating at maturity; the asci are long-stiped, 50-60(-75) x 12-15 µm; the ascospores are almost bacilliform, 24-29 x 2-5-3-5 µm; and the thallus is C - , with protocetraric acid as the major constituent. *Sagenidiopsis undulatum* is known from Cuba, Brazil, Colombia and Guyana, in the Neotropical kingdom. *Sagenidiopsis merrotsii* is known from New South Wales and Queensland, in Australia.



Sagenidiopsis undulata

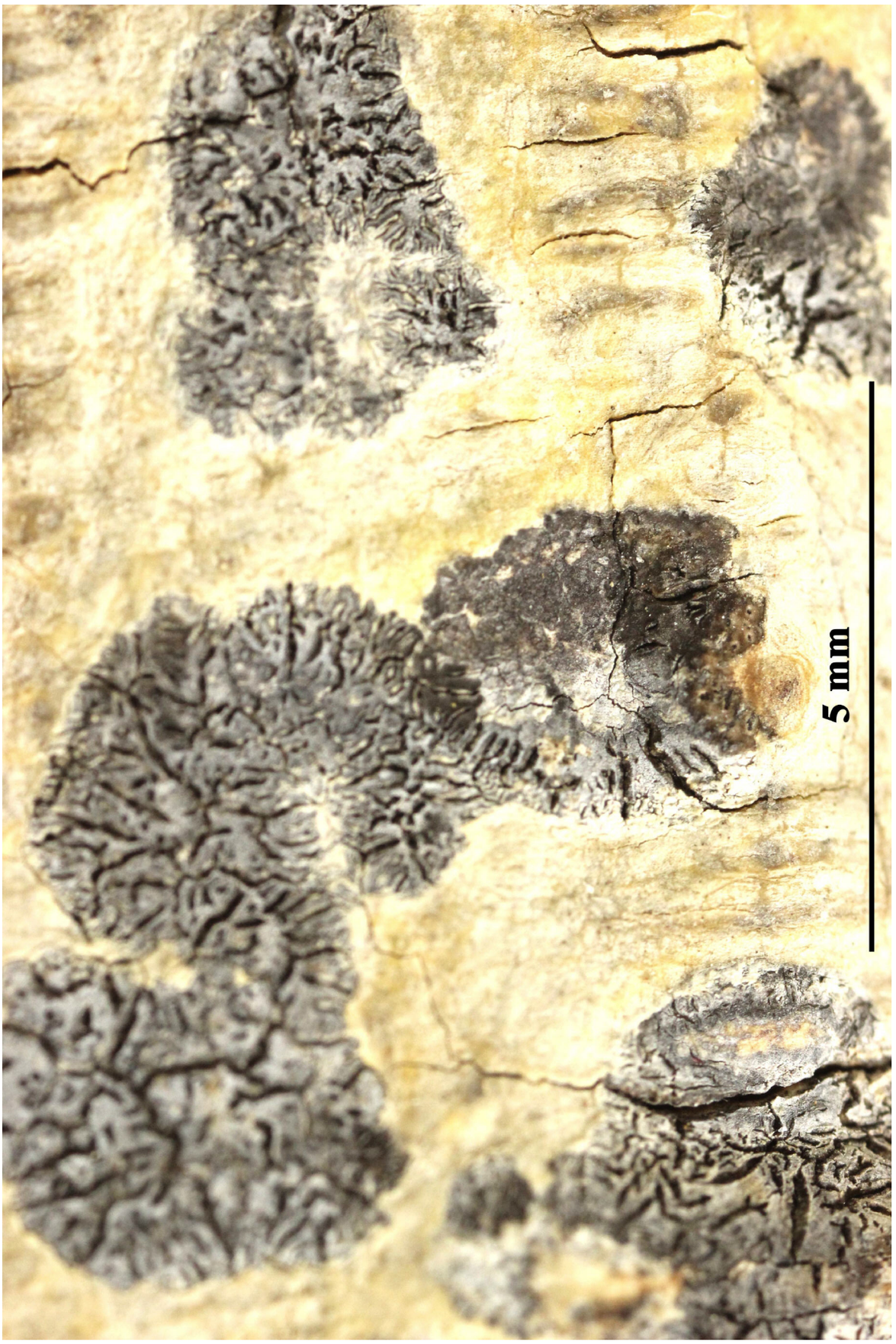


Sagenidiopsis undulata

Sarcographa tricosa (Ach.) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 29(no. 8): 63 (1887)
= *Graphis tricosa* Ach. 1810

[KU136], Jpan. Izu Islands: Eigoh, northern part of Hachijo Island. On tree-truncs. Leg. S. Kurokawa (no. 70052), 15.3.1970, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR.136.

Thallus crustose, pale olive, thin, continuous, epiphloeodal; surface smooth, ecorticate. Photobiont trentepohlioid alga; medulla with calcium oxalate crystals. Ascomata lirellae, immersed, densely aggregate and radially branched in stromata; stroma whitish, farinose to granular, with calcium oxalate crystals between lirellae, up to 3 mm diam., 0.2-0.3 mm thick, bordered white; disk concave to flat, black, epruinose; margin thin, distinct. Exciple entirely carbonized, divergent, epithecium thin, brown; hymenium inspersed, 60-80 μm high; paraphyses ~1.5 μm thick, tips branched and brown-pigmented. Asci 8-spored; ascospores elongate-ellipsoid, brown, 4-celled, 4-21 x 5-8 μm with thickened septa and rounded lumina, end cells larger, I+ red-brown. Chemistry. None detected by TLC. - Substrate and Habitat. Corticolous on trees.



Sarcographa tricosa



Sarcographa tricosa



Sarcographa tricosa



Sarcographa tricosa

Schismatomma ocellatum (Nyl.) Zahlbr., Cat. Lich. Univers. 2: 560 (1923) [1924]
= *Platygrapha ocellata* Nyl. 1863

[OH472], Japan. Hokkaido. Prov. Abashiri: Yobito, Abashiri-city. On tree bark, 1-25 m. Leg. A. Frisch (no. 12/Jp176) & Y. Ohmura, 29.5.2012, drt. A. Frisch. Ex Y. Ohmura Lichenes Minus Cogniti Exsiccati Nt. 472.

Thallus crustose, corticate, slightly shiny, gray, thick, with irregular and confluent warts ~0.1 mm diam., and filled with hyaline crystals; prothallus black. Vegetative diaspores absent. Photobiont trentepohlioid alga. Ascomata immersed to slightly emergent, round to angular, 0.2-0.4 mm diam.; disk concave, dark gray to black, epruinose; margin slightly raised above, gray, often warty and irregular, ~0.2 mm wide. Exciple hyaline, with tiny hyaline crystals and photobiont cells. Hypothecium black, 45-75 µm thick, with large hyaline crystals, extending as a thick (to ~20 µm) parathecium between hymenium and exciple. Epihymenium hyaline to pale brown, without crystals. Hymenium yellowish, clear; paraphyses 1.0-1.5 µm thick. Asci cylindrical, 50-58 x 9-12 µm, 8-spored; ascospores hyaline, clavate-fusiform, 3-septate, 15-18 x 4-5 µm, ends pointed, second lumen from above bulging. Conidiomata not seen. Chemistry. Spot tests negative; no substances detected by TLC. Substrate and habitat. Corticolous on smooth-barked trees in coastal forests. Distribution. Neotropical; in North Carolina found in the Coastal Plain ecoregion.

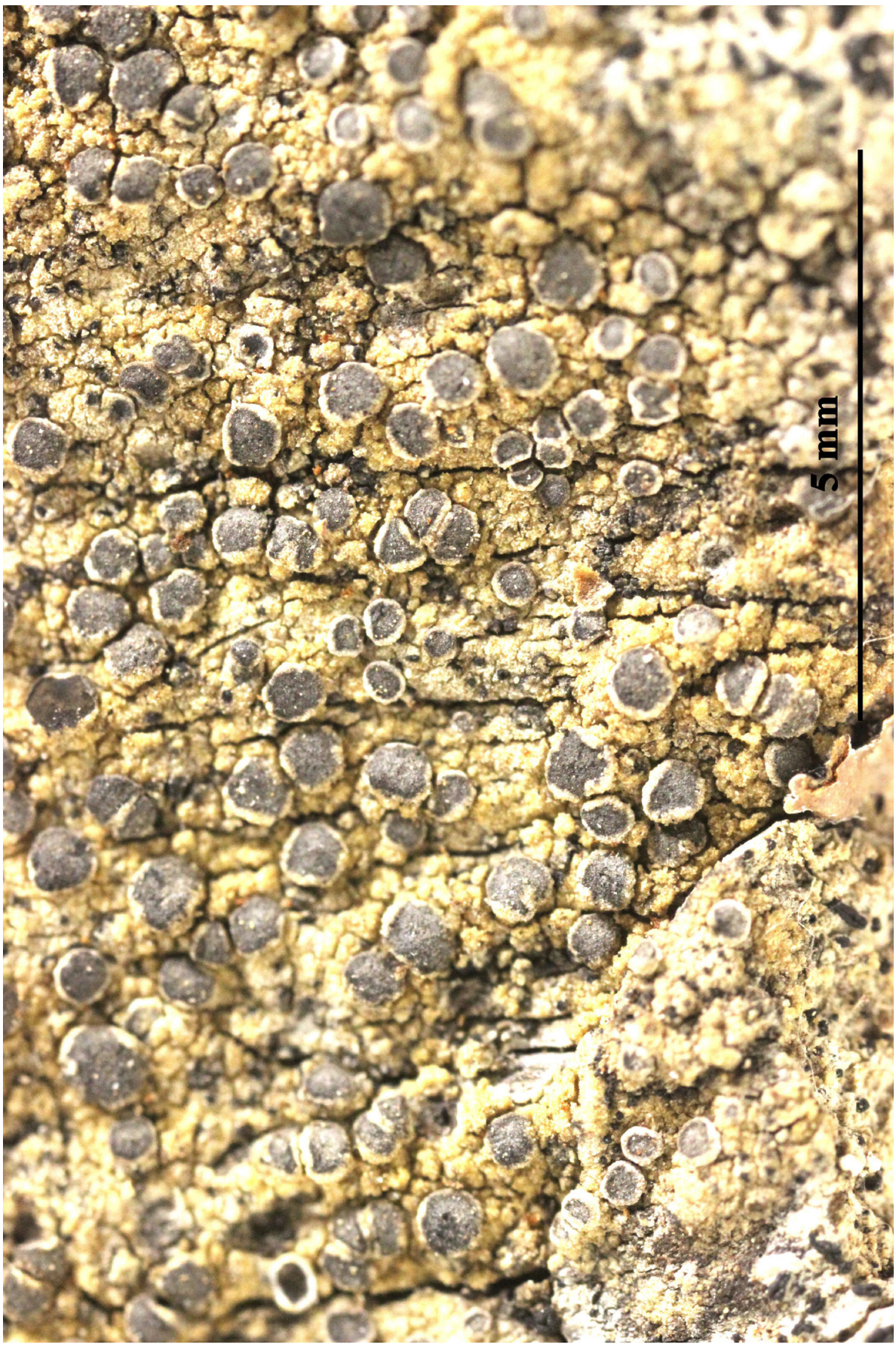
Literature

Aptroot, A., A.A. Menezes, A.B. Xavier-Leite, V.M. dos Santos, M.M.E. Alves & M.E. da S. Cáceres (2014). Revision of the corticolous Mazosia species, with a key to Mazosia species with 3-septate ascospores. The Lichenologist 46(4): 563–572.

Fée, A.L.A. (1825) Essai sur les cryptogames des écorces exotiques officinales. 180 pp. (original description as Urceolaria viridescens).´



Schismatomma ocellatum



Schismatomma ocellatum

Scoliciosporum chlorococcum (Graewe ex Stenh.) Vězda, Folia geobot. phytotax. 13(4): 414 (1978)
= *Biatora hypnophila* var. *chlorococcum* Graewe ex Stenh. 1863

[OH622], Japan. Honshu. Prov. Musashi (Tokyo Metropolis): Institute for Nature Study, National Museum of Nature and Science, Shirokane-dai, Minato-ku (35!38'20" N, 139°43'07" E). On bark of *Cerasus* sp. (branch), 5 m. Leg. Y. Ohmura (no. 11390), M. Sugimoto & H. Masumoto, 27.2.2018, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR.622.

Thallus crustose, thin, finely granular, dirty green, greenish grey to greenish black, sometimes eroded and exposing the medulla, giving the thallus a sorediate appearance. Apothecia biatorine, 0.2-0.3 mm across, soon convex and immarginate, at first brown, then often black, usually glossy. Proper exciple thin, of radiating, branched and anastomosing hyphae; epithecium brown, K-, N-, rarely with a greenish tinge and then K-, N+ purple; hymenium colourless, I+ blue; paraphyses strongly branched and anastomosing up to the upper part, immersed in a gelatinous matrix and resembling excipular hyphae; hypothecium colourless. Asci 8-spored, broadly clavate, surrounded by a gelatinous, amyloid sheet, with a well-developed, amyloid tholus containing a widely cylindrical axial body and a poorly developed, bluntly conical ocular chamber, more or less Lecanora-type. Ascospores (4-)7-septate, hyaline, fusiform, thinner at one end, straight or slightly curved, (20-)25-30(-40) x 4-5 µm. Photobiont chlorococcoid, the cells 7-14(-20) µm wide. Spot tests: thallus K-, C-, KC-, P-, UV-. Chemistry: without lichen substances. - Note: a widespread holarctic, ecologically wide-ranging species found on bark (especially of *Fagus*), lignum, and more rarely siliceous rocks, tolerant to air pollution.



Scoliciosporum chlorococcum



Scoliciosporum chlorococcum

Siphula ceratites (Wahlenb.) Fr., Lich. eur. reform. (Lund): 406 (1831)
= *Baeomyces ceratites* Wahlenb. 1812

[KU286], Canada. British Columbia: Between Rainbow Lake and Prudhomme Lake on route 16, 400 ft., Leg. S. Kurokawa (no. 88580), 15.8.1975, det. S. Kurokawa. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccati Nr. 286.

Thallus to 3 cm tall, branches to 2 mm diam, surface fissured, specially in older parts, apices rounded, cortex paraplectenchymateous, photobiont chlorococcoid. Apothecia unknown. Cortex K+ brownish, C –, KC –, Pd –; medulla K –, C –, KC –, P –, UV+ white to yellowish white; subcortex KC+ yellowish-orange; siphulin. – Circumpolar Fennoscandia, N America, Asia.



Siphula ceratites

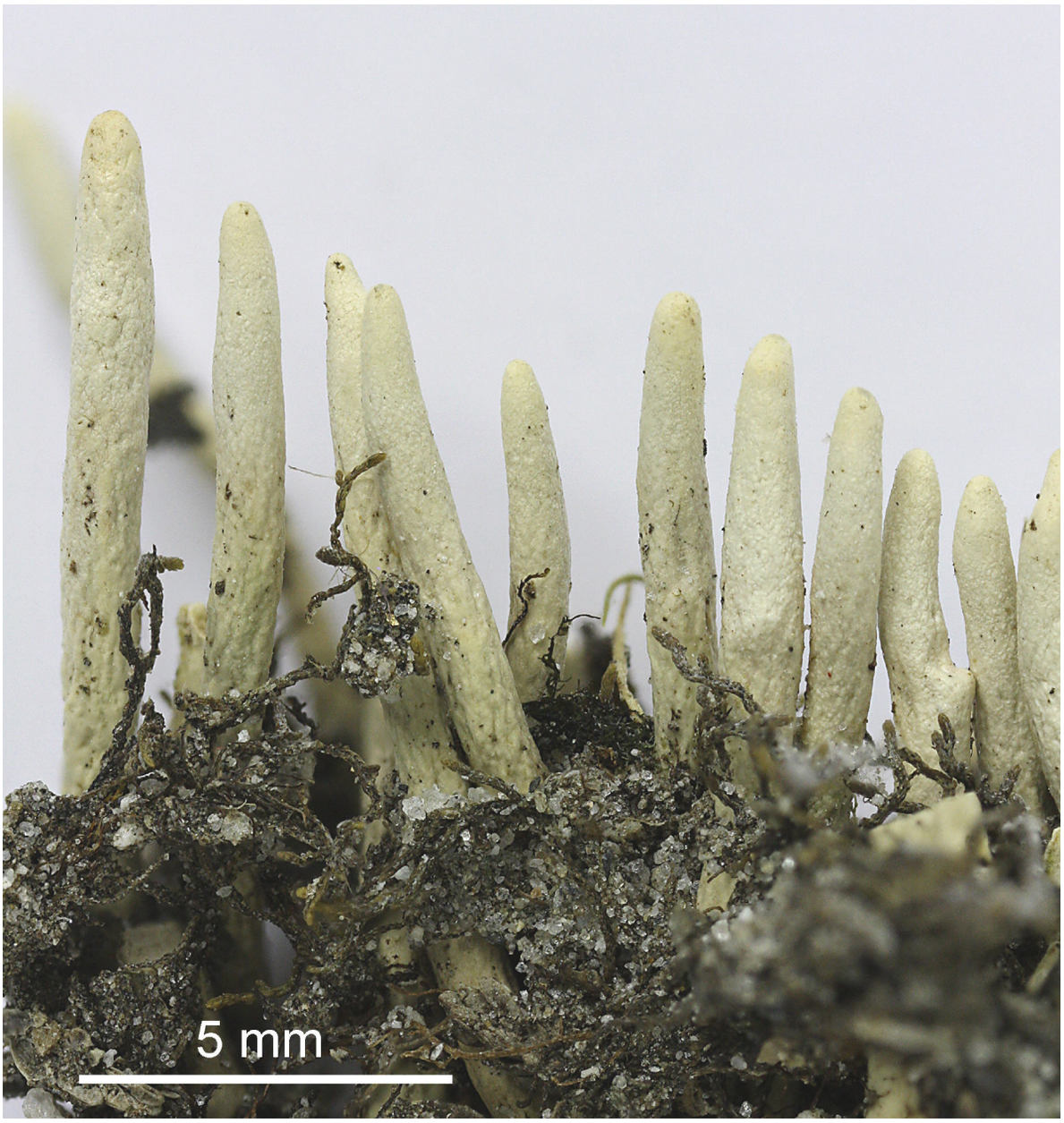


Siphula ceratites

Siphula ceratites (Wahlenb.) Fr. (1831)
= Roccella grayi Stirt. (1883)
= Dufourea ceratites (Wahlenb.) Sommerf. (1823)

[11669], Norway, Nordland, District of Junkerdalen some 30 km north of the Arctic Circle, left bank of Skaitielva, on mossy faces of siliceous rocks temporarily overrun by streamlets from the nearby Tausafjell, caespitose colonies often ice-covered during night, 940-970 m elevation, SW exposition, abundant. Leg. et det. G. Follmann et M. Schulz Sept. 1992. Ex Lichenes Exsiccati Selecti Ab Institito Botanica Universitatis Coloniensis Editi Nr. 490. - EX HERBARIO F. SCHUMM NR. 11669.

Thallus to 3 cm tall, branches to 2 mm diam, surface fissured, specially in older parts, apices rounded, cortex paraplectenchymateous, photobiont chlorococcoid. Apothecia unknown. Cortex K+ brownish, C –, KC –, Pd –; medulla K –, C –, KC –, P –, UV+ white to yellowish white; subcortex KC+ yellowish-orange; siphulin. – Circumpolar Fennoscandia, N America, Asia.



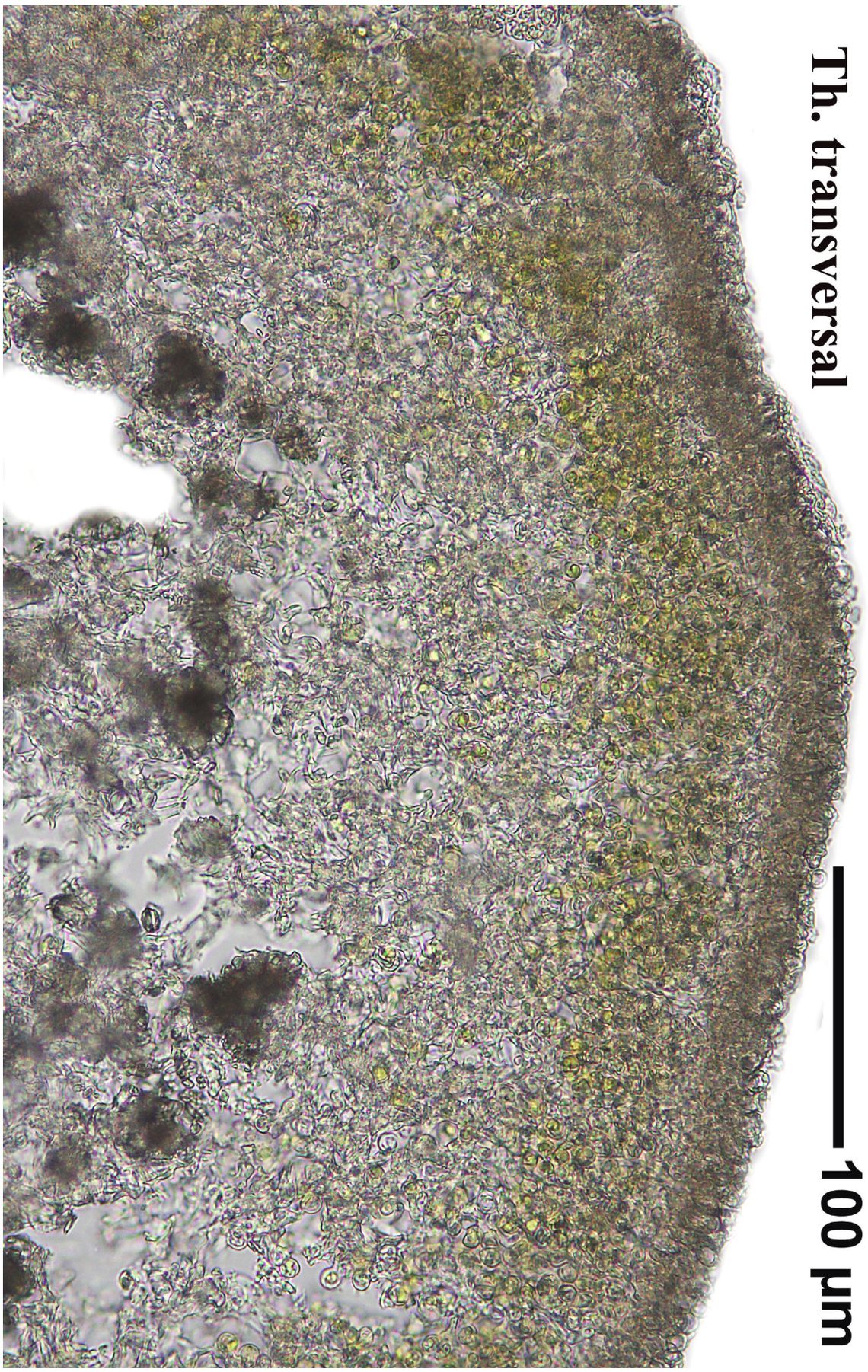
Siphula ceratites



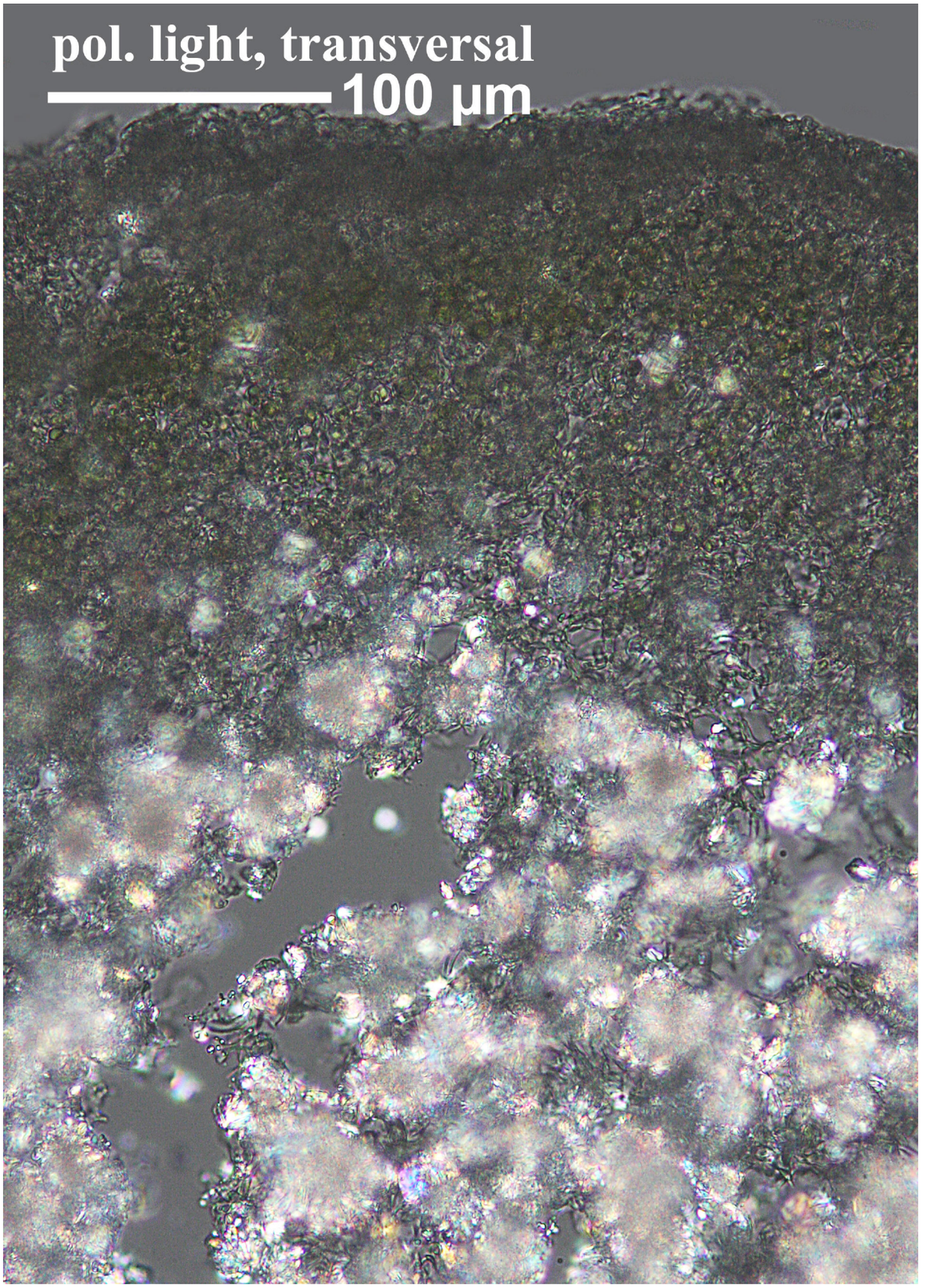
Siphula ceratites



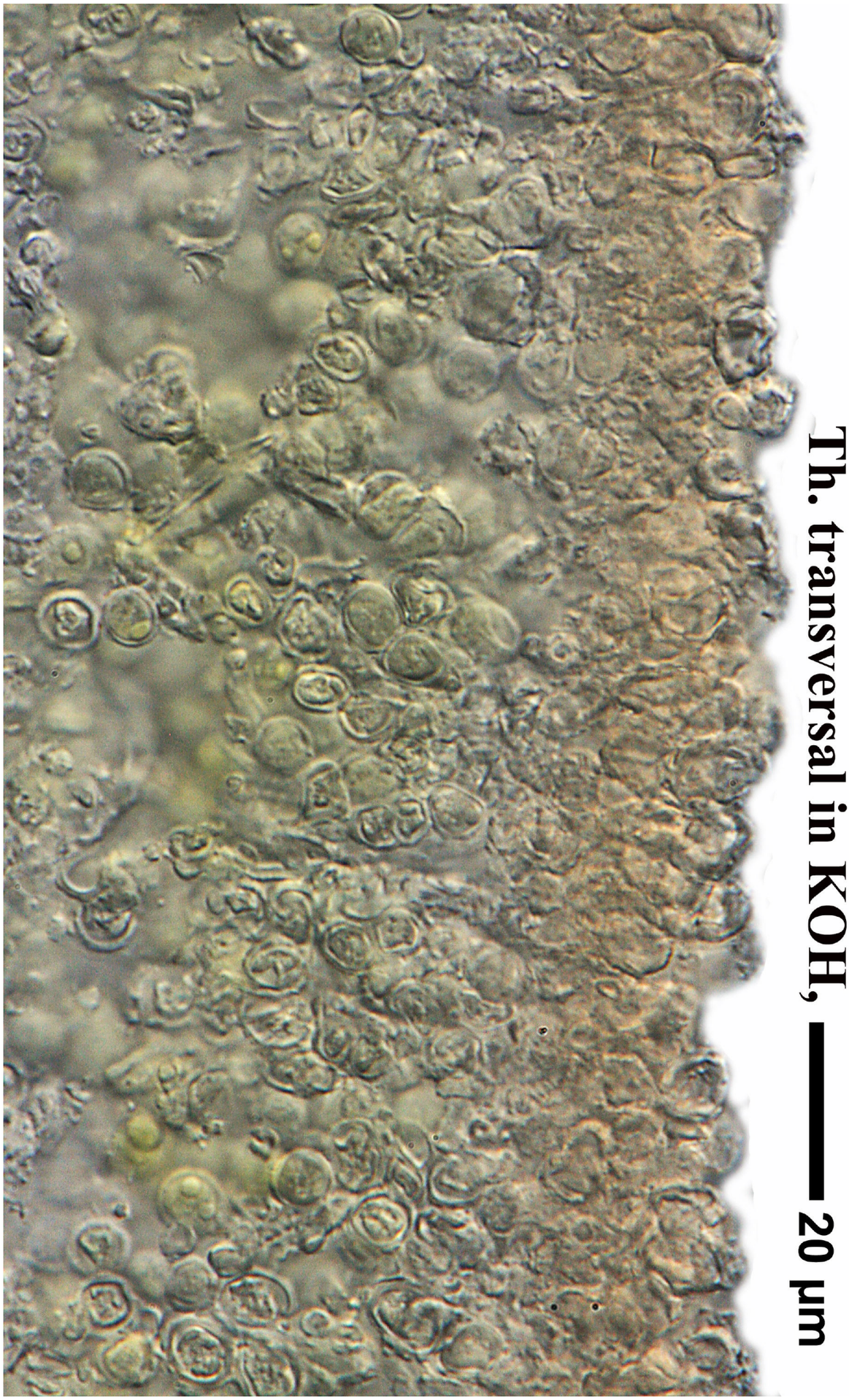
Siphula ceratites



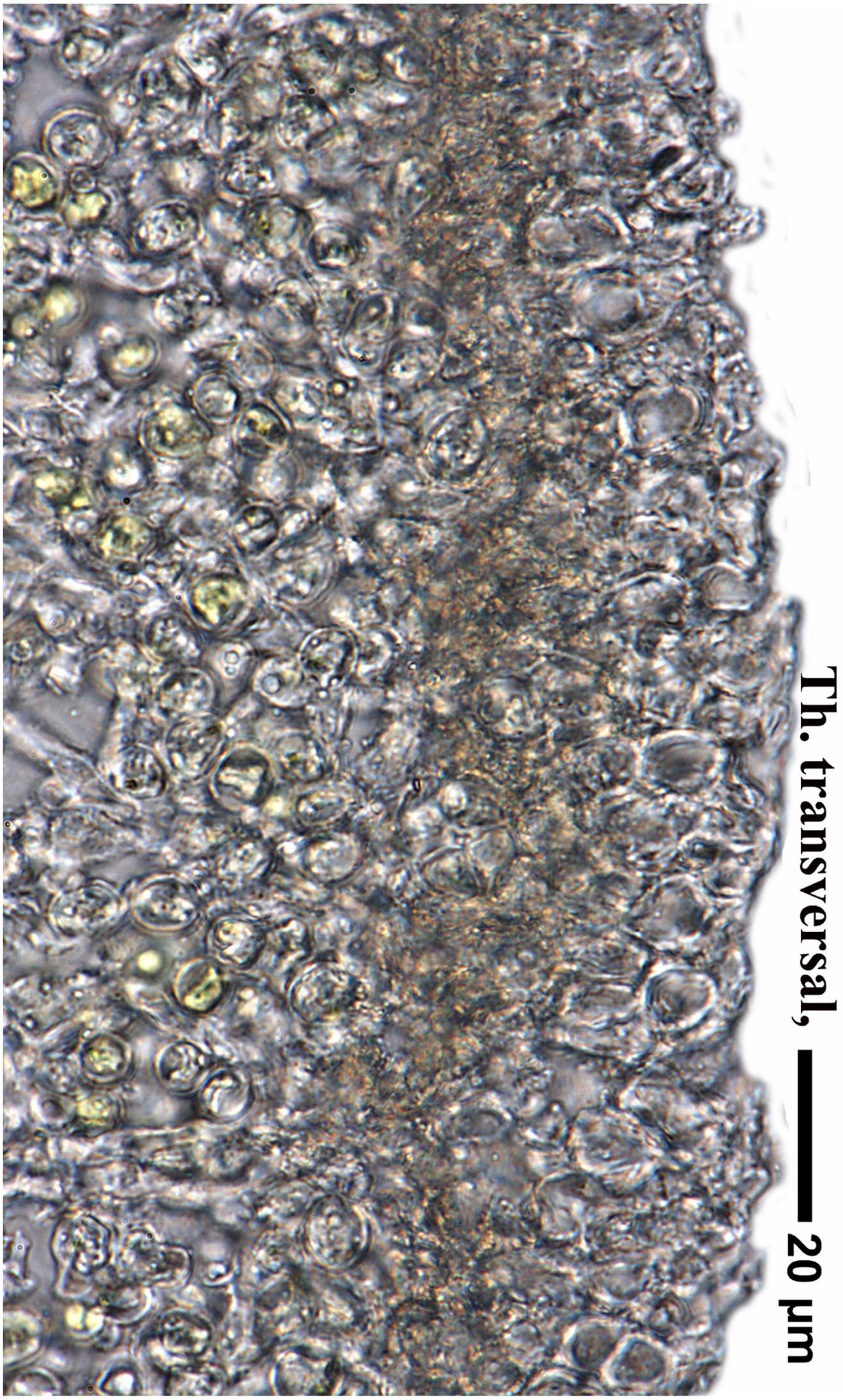
Siphula ceratites



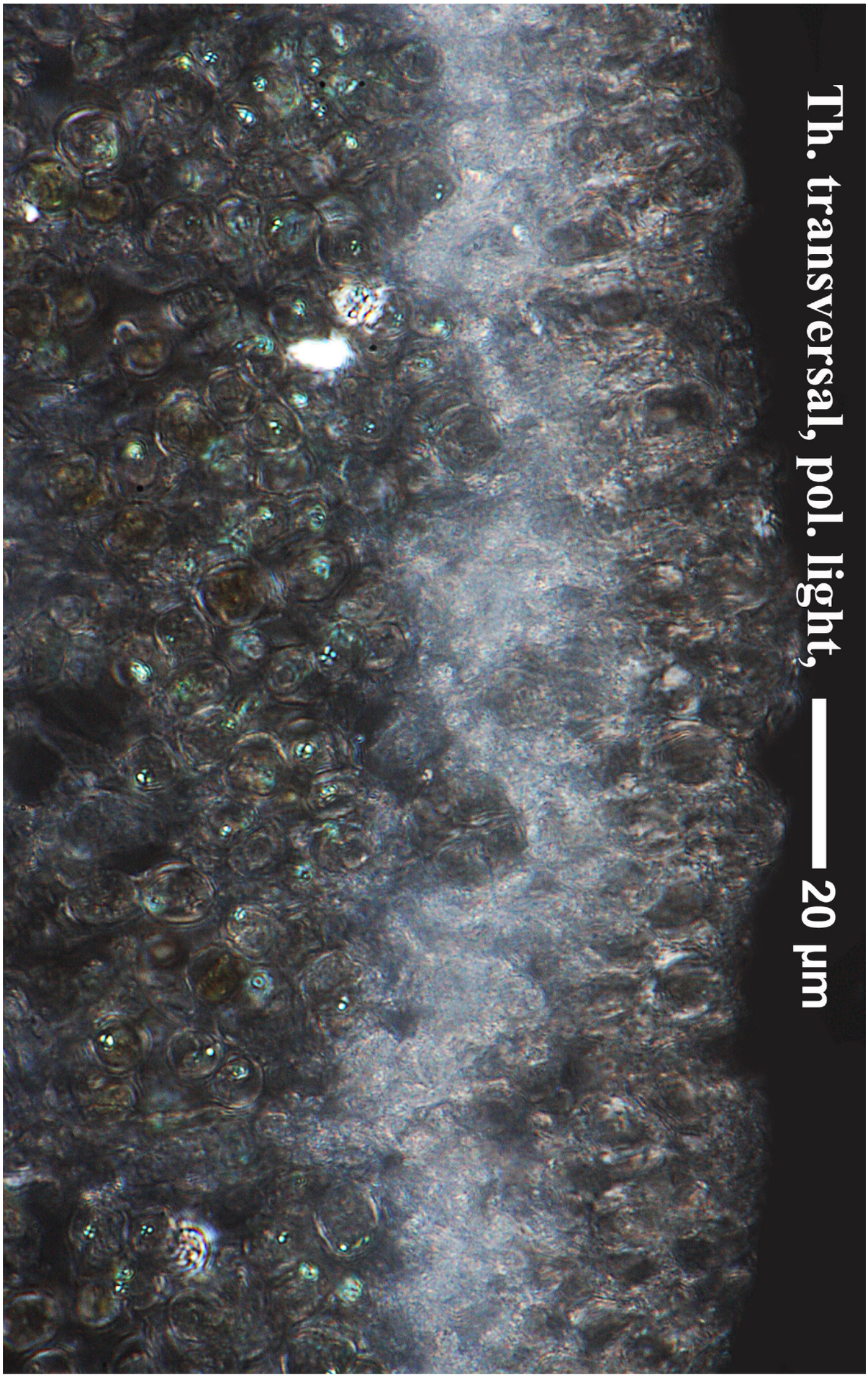
Siphula ceratites



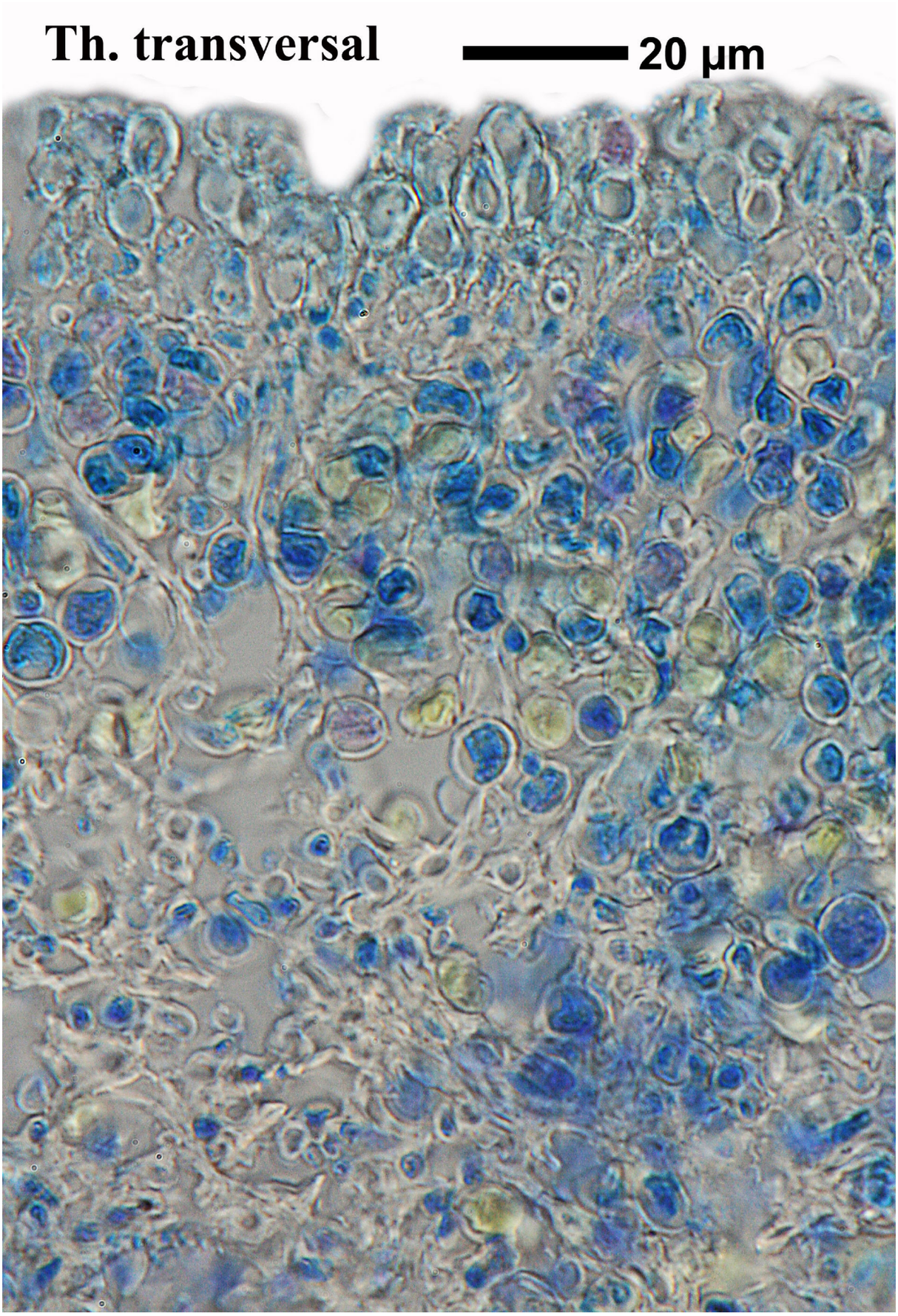
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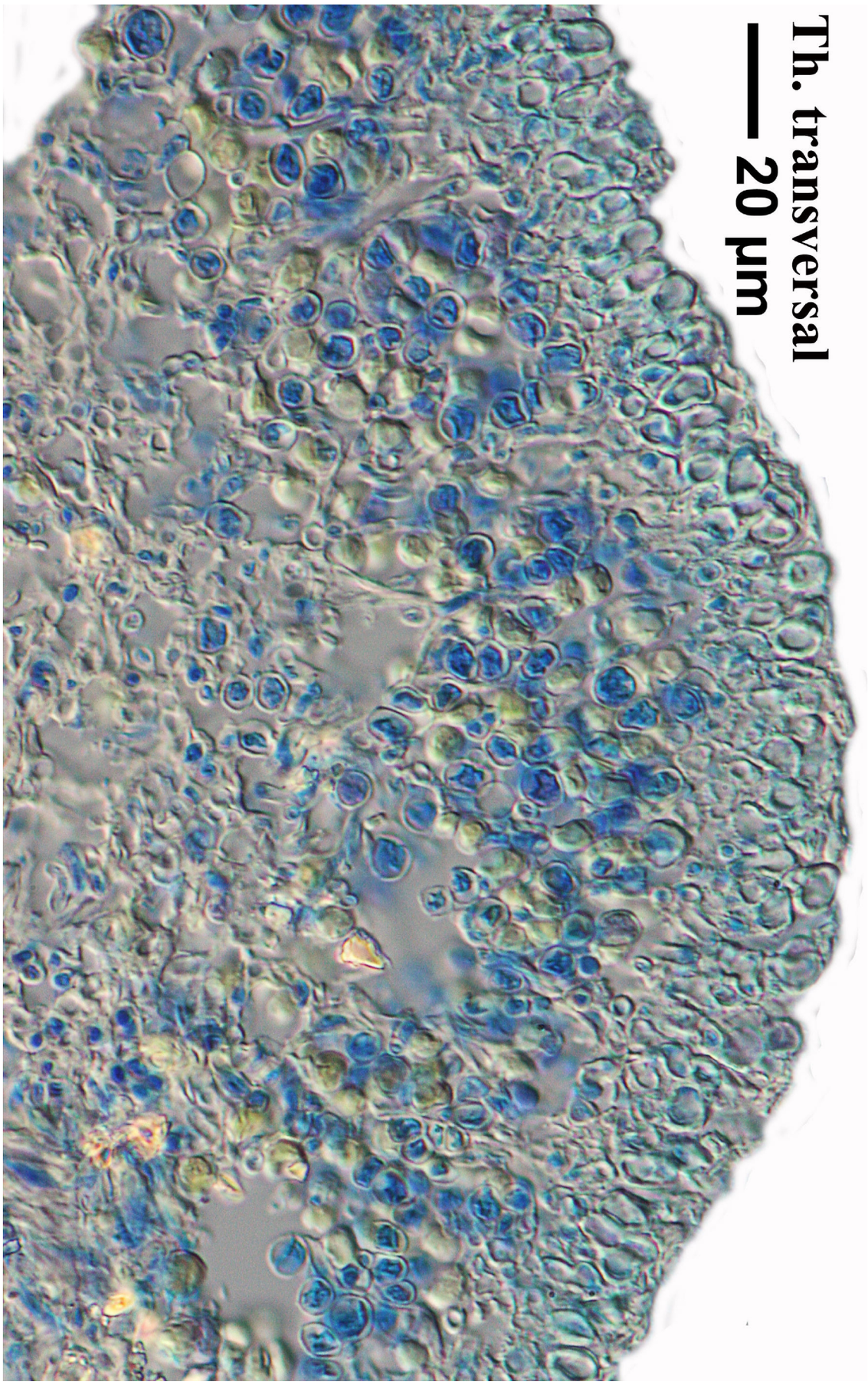
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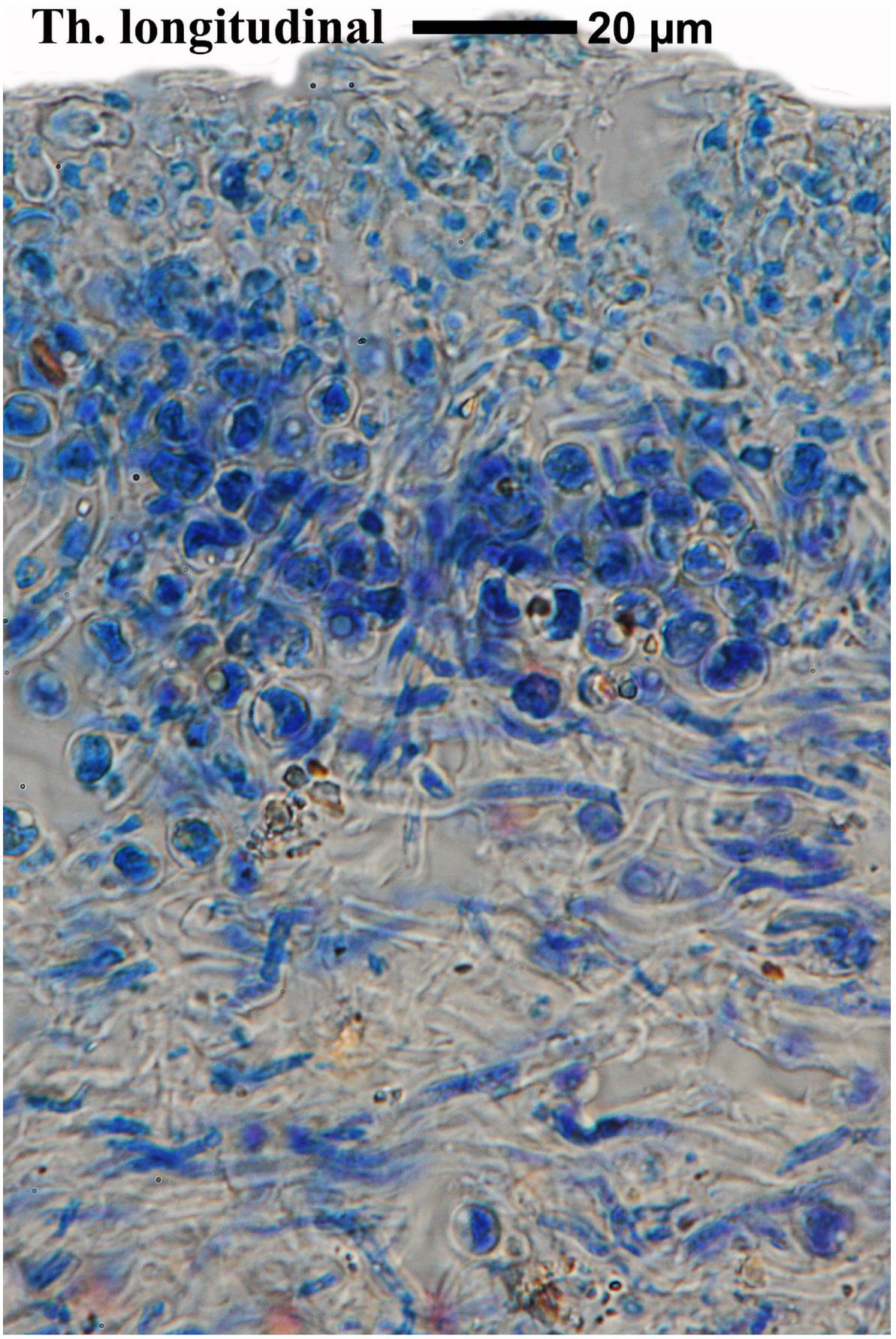
Siphula ceratites



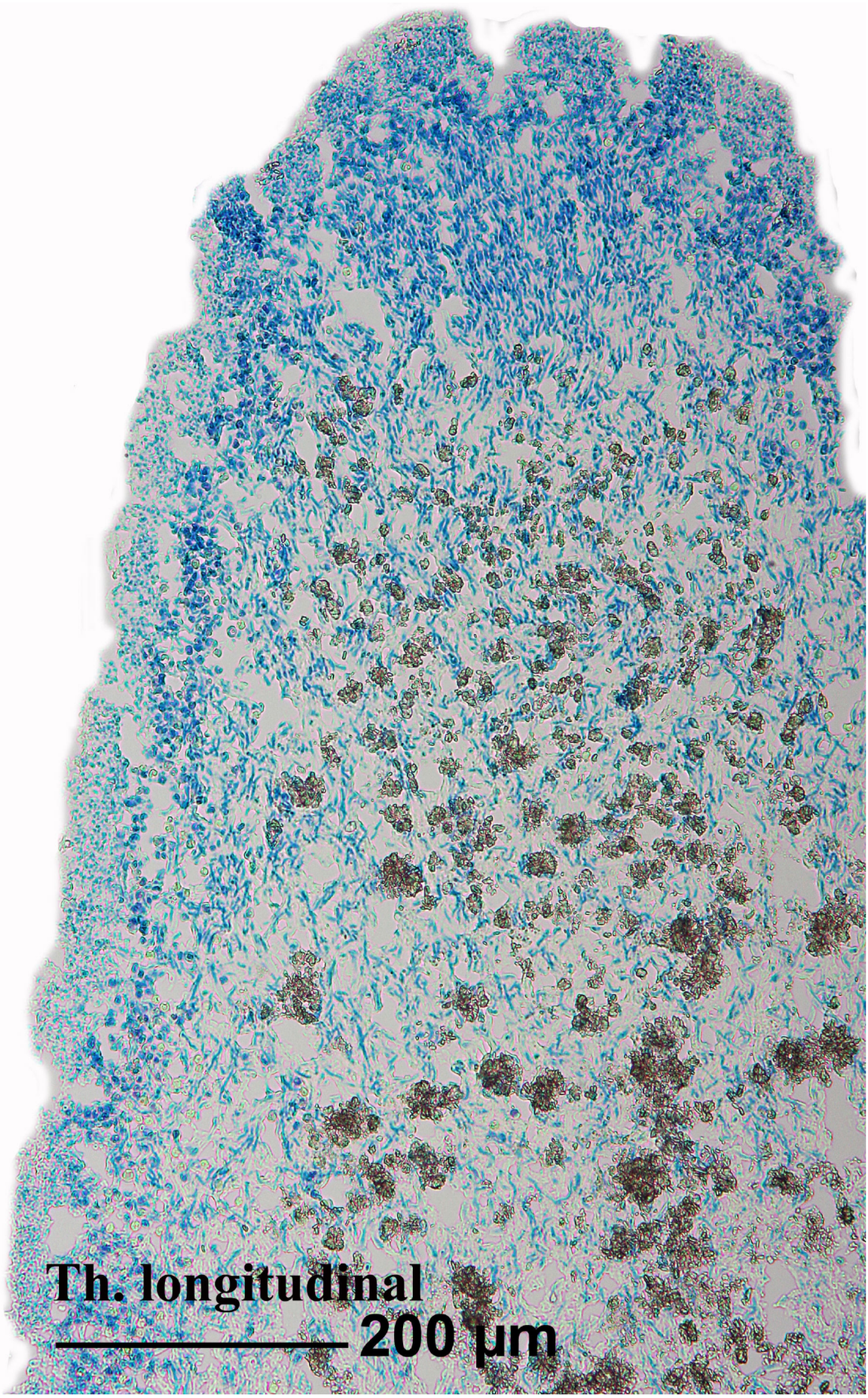
Siphula ceratites



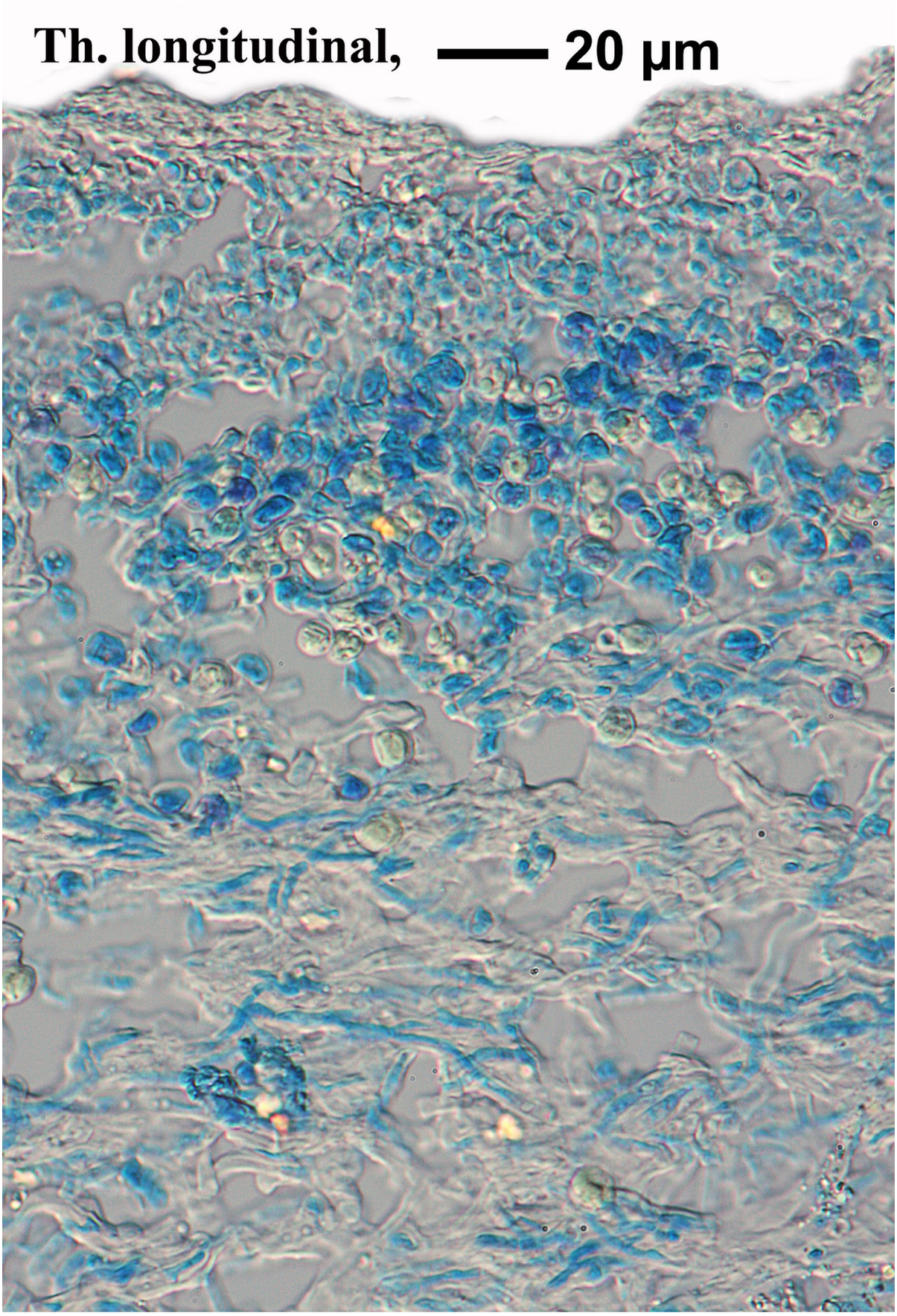
Siphula ceratites



Siphula ceratites



Siphula ceratites



Siphula ceratites

Siphula coriacea Taylor ex Nyl., Syn. meth. lich. (Parisiis) 1(2): 263 (1860)

[KU137], Australia. Wetern Australia: Snake Rocks, 28 miles south-east of Perth. On exposed rocks, 270 m. Leg. S. Kurokawa (no. 6631), 13.12.1965, det. S. Kurokawa. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccati Nr. 137.

Thallus rather small, glebose, basal parts inrolled forming a ± tubular stalk with a well-developed rooting system. Lobes expanded above stalk, flattened to ± terete, divided, often twisted or thick, short, (3-)6-15(-30) mm tall, margins entire, rounded, often swollen, distinctly unilaterally thickened, ± sinuous. Surface white or greyish-blue at apices, smooth or coriaceous or slightly striate-corrugate, apices ± glossy. Chemistry: Medulla K-, C-, Pd-. Barbatic acid (UV+ bluish).



Siphula coriacea



Siphula coriacea

Siphula coriacea Nyl.

[15830], Australia, Western Australia, North Boundary Rock, c. 20 km NNE of Manjimup off North Boundary Road, granite outcrop, associated with *Allocasuarina huegeliana* and *Corymbia calophylla;* 34.072° S, 116.325° E, 320 m. Leg. F. Schumm & E. Stocker-Wörgötter, 25.10.2009. - Chemistry: barbatic acid by TLC, anal. F. Schumm. - Ex Herbario F. Schumm Nr. 15830.

Thallus dorsiventral, grey-white, K-, UV+ bluish white. Lobes thick, coriaceous, apices bluish-white. Chemistry: barbatic acid

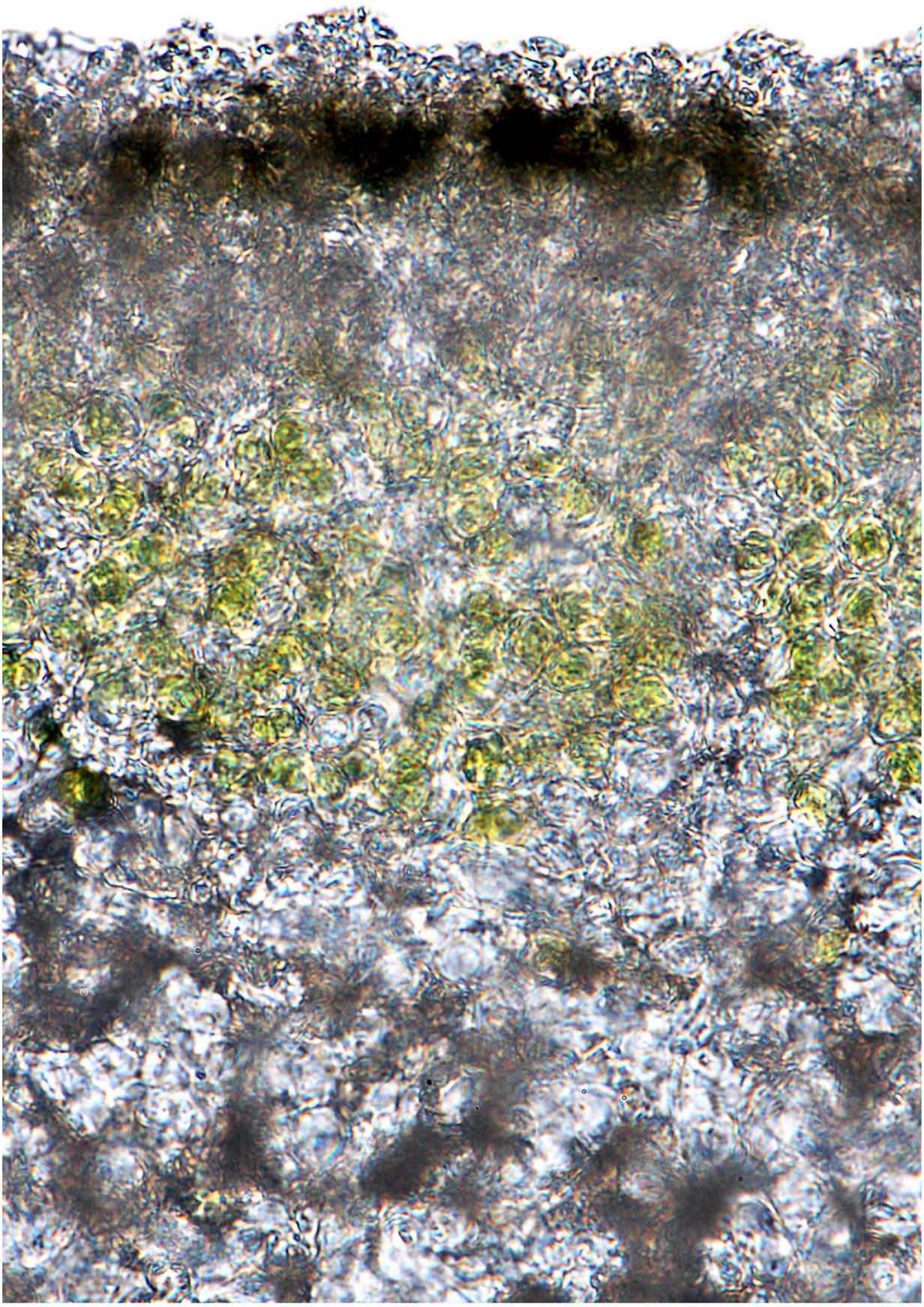


Siphula coriacea

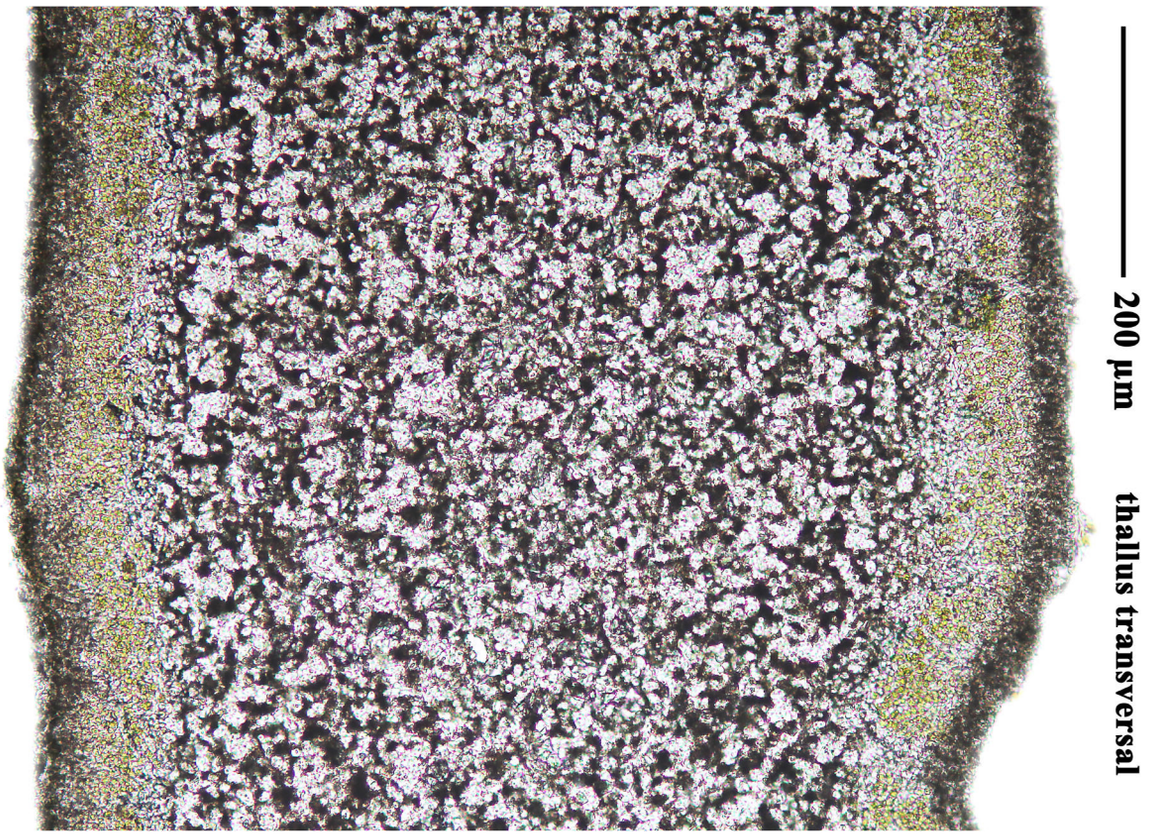


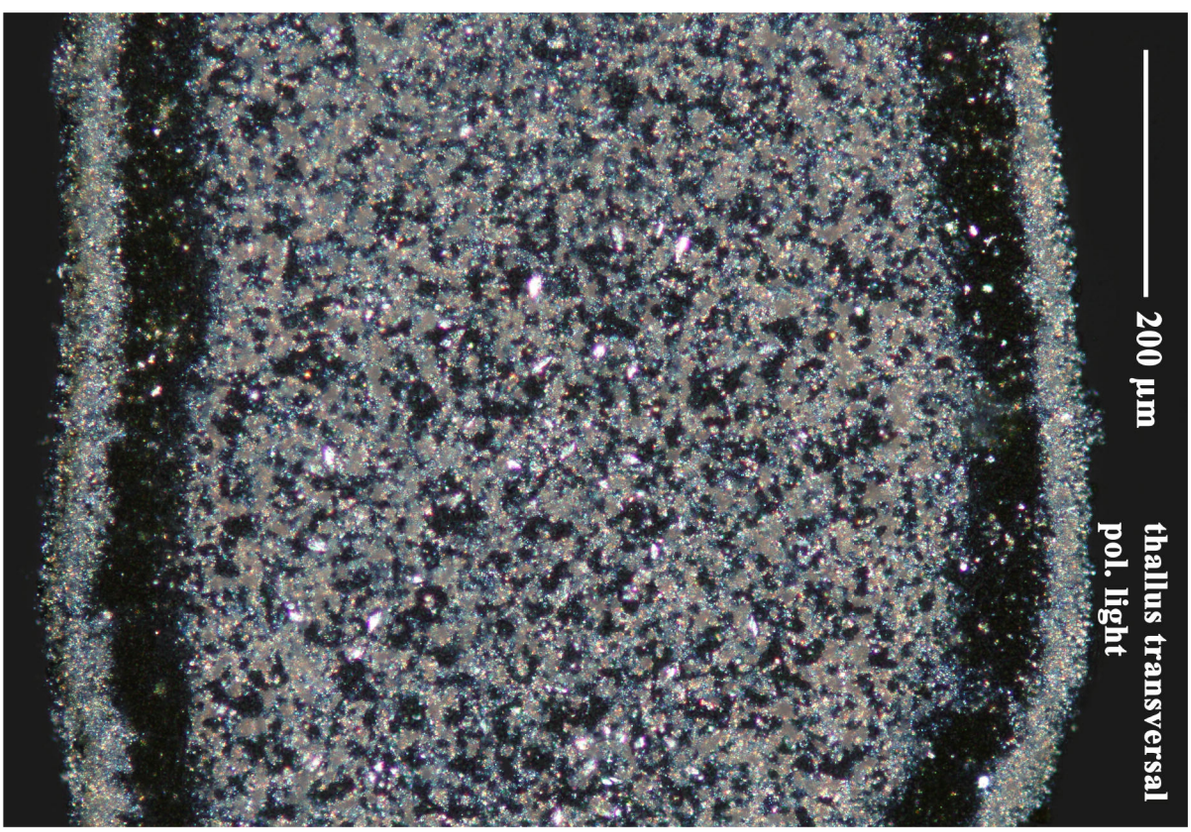
Siphula coriacea

20 µm thallus transversal

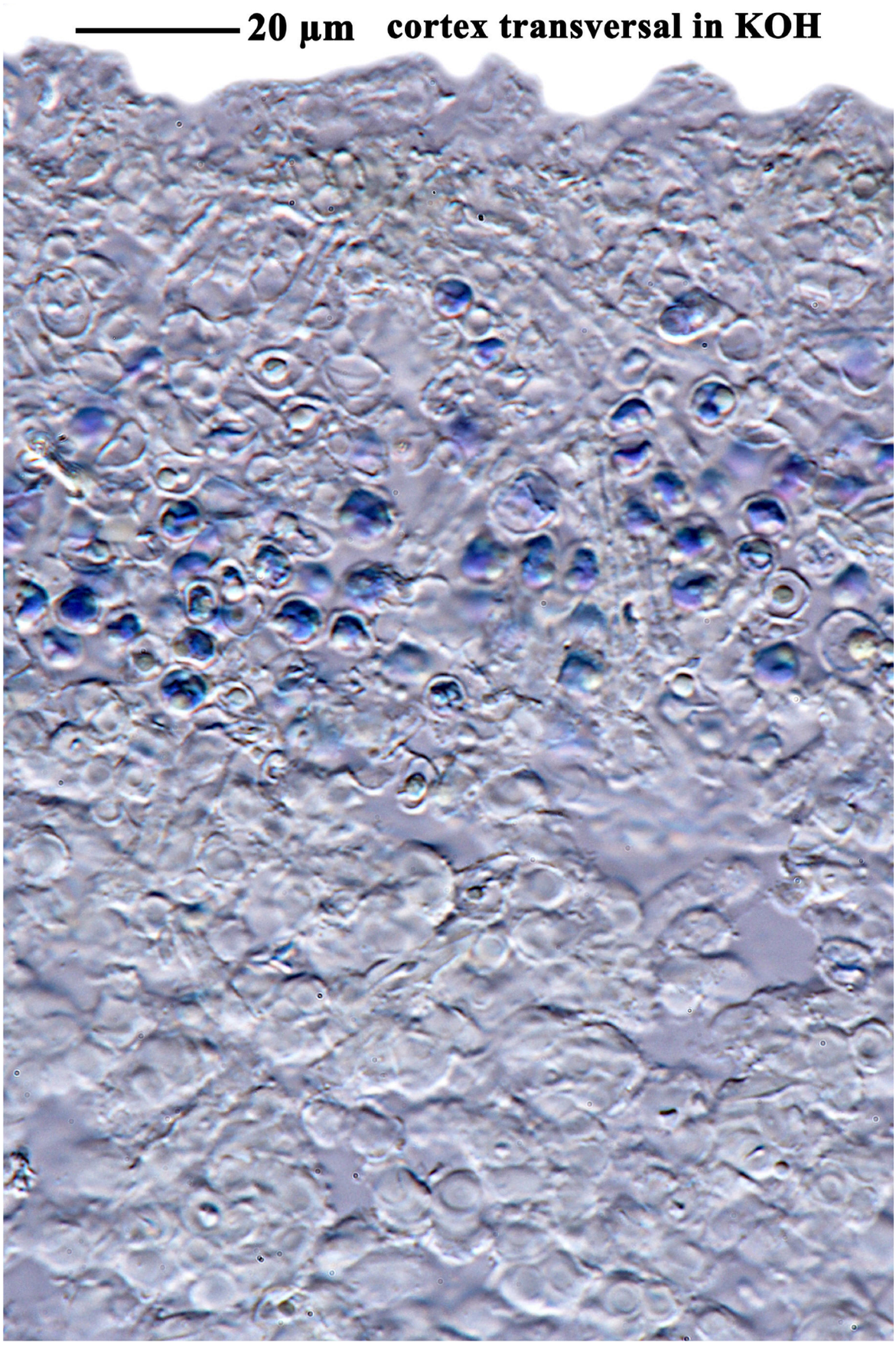


Siphula coriacea

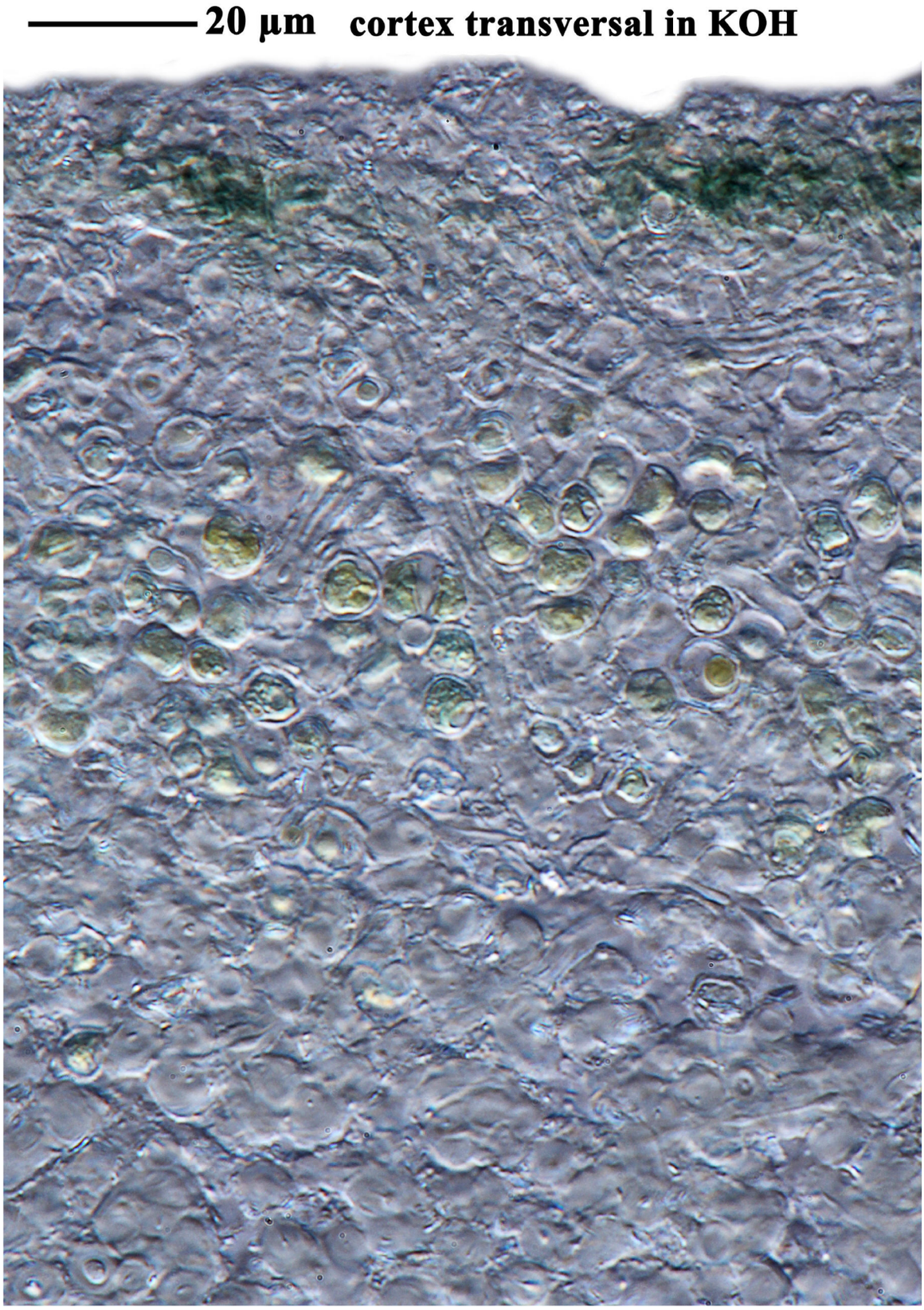




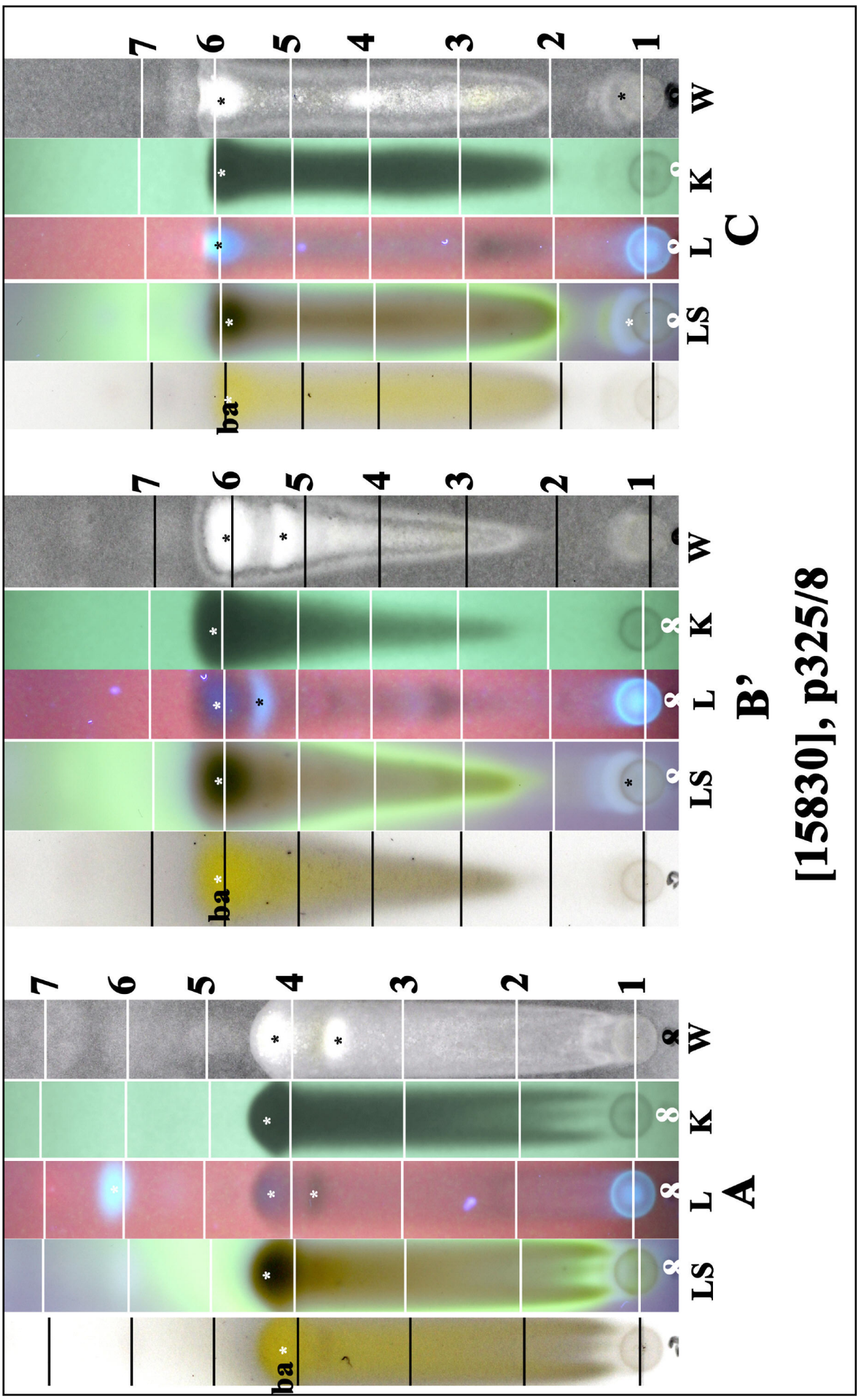
Siphula coriacea



Siphula coriacea



Siphula coriacea



ba: barbatic acid

Siphula coriacea

Siphula fastigiata (Nyl.) Nyl., Annls Sci. Nat., Bot., sér. 4 19: 297 (1863)
= *Siphula torulosa* var. *fastigiata* Nyl., Syn. meth. lich. (Parisiis) 1(2): 263 (1860)

[ABL40919], Brazil, Bahia, Chapada Diamantina, Palmeiras, Morro do Pai Inácio. On siliceous rock on table mountain. 12°27'24" S, 41°28'20" W, 1050 -1140 m. Leg. M. Cáceres & A. Aptroot (no 40919), 23.07.2017, det. A. Aptroot, 2017. - Thallus much dissected with lobes that are much longer than wide. Chemistry: baeomycesic acid, squamatic acid.





Siphula fastigiata

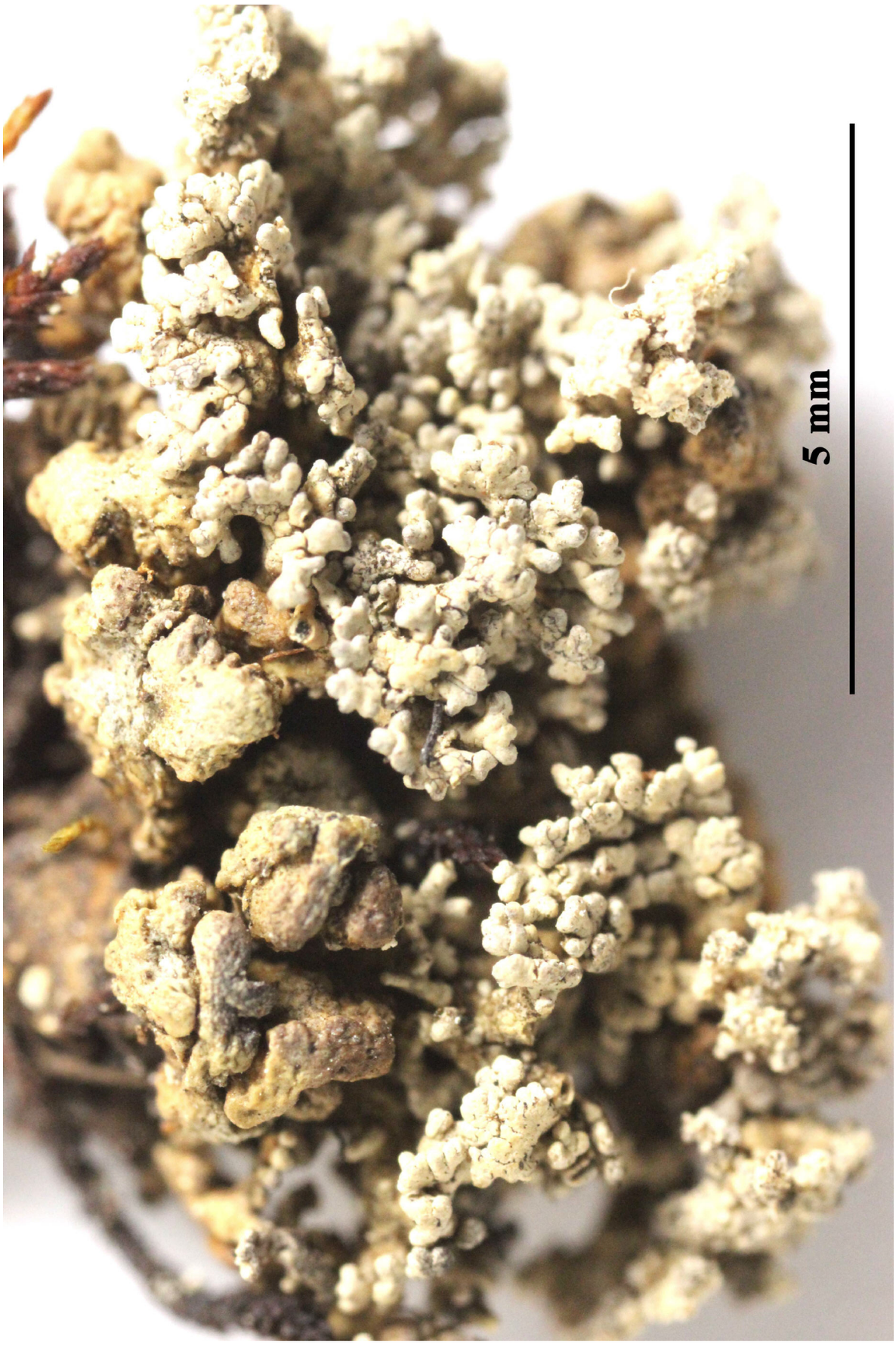
Siphula fastigiata (Nyl.) Nyl., Annls Sci. Nat., Bot., sér. 4 19: 297 (1863)
= *Siphula torulosa* var. *fastigiata* Nyl. 1860

[KA291], Peru. Cuzco. Prov.Quispicanchis Abra Hualla. In upper part of Puna zone, 4500-4600 m. Leg. H. Kashiwadani (no.21499), 14.0.1984, det. G. Kantvilas. EX H. KASHIWADANI LICHENES MINUS COGNITI NR. 291.

This species is characterised by chalky white, flattened, erect lobes containing baeomycesic and squamatic acids (Kantvilas 1998). Since that work, additional collections of this species from tropical South America have been seen, suggesting the species is locally abundant in alpine locations. Specimens from the tropics, including the type, are extremely scabrid and mealy, whereas those from austral areas (Chile, Tasmania and New Zealand) have a smoother thallus. The name *S. mooreae* Zahlbr. is available for this austral material, although the synonymising of these two taxa continues to be supported by the continuum of variation displayed from austral to tropical latitudes.



Siphula fastigiata

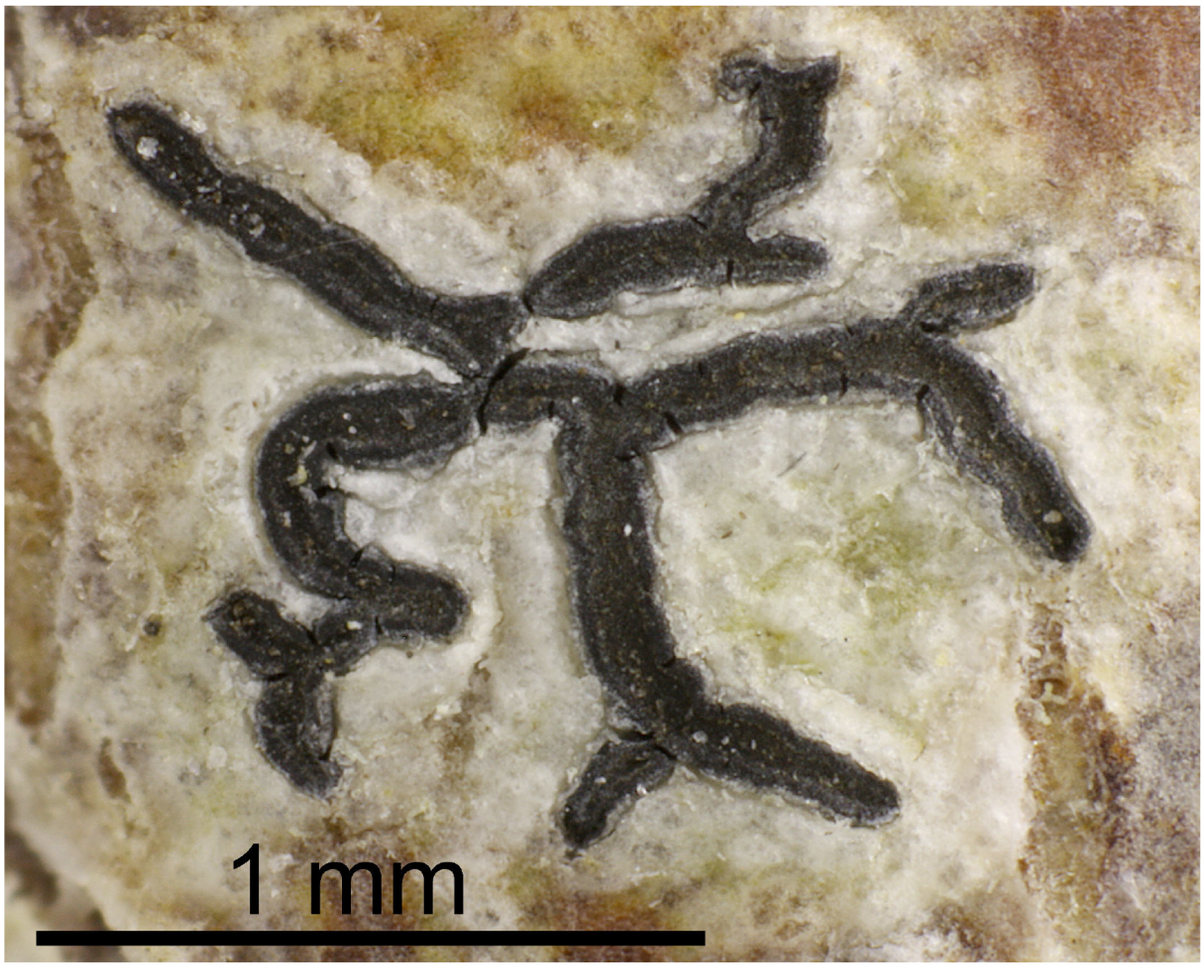


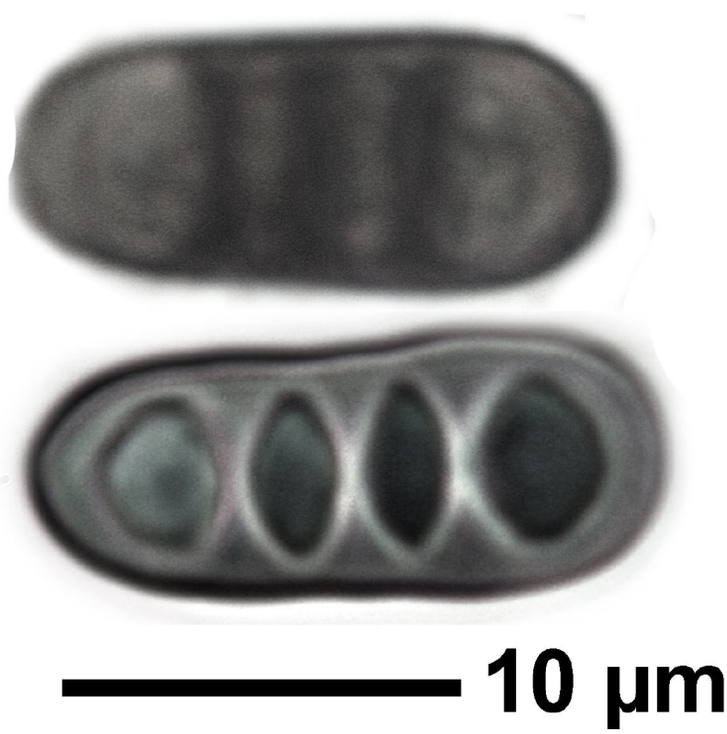
Siphula fastigiata

Sarcographa tricosa (Ach.) Müll. Arg.

[14466], Seychelles, Praslin, Nationalpark Sentier Glacier Noire, 4°19.916' S, 55°44.465' E, ca. 370 m, auf Granitfelsen. Leg. F. Schumm & J.-P. Frahm 30.09.2008, det. A. Aptroot 2008, conf. K. Kalb 2017. Ex Herbario F. Schumm Nr.14466.

Spores brown, 8/ascus, 3-septate, (13)14-21 x 5-7 µm. Hymenium inspersed, I-. Paraphyses branched. Excipulum black brown, entire. Between the lirellae with many crystals but not carbonized. Chemistry: nil, thallus K-, P-. Pantropical.

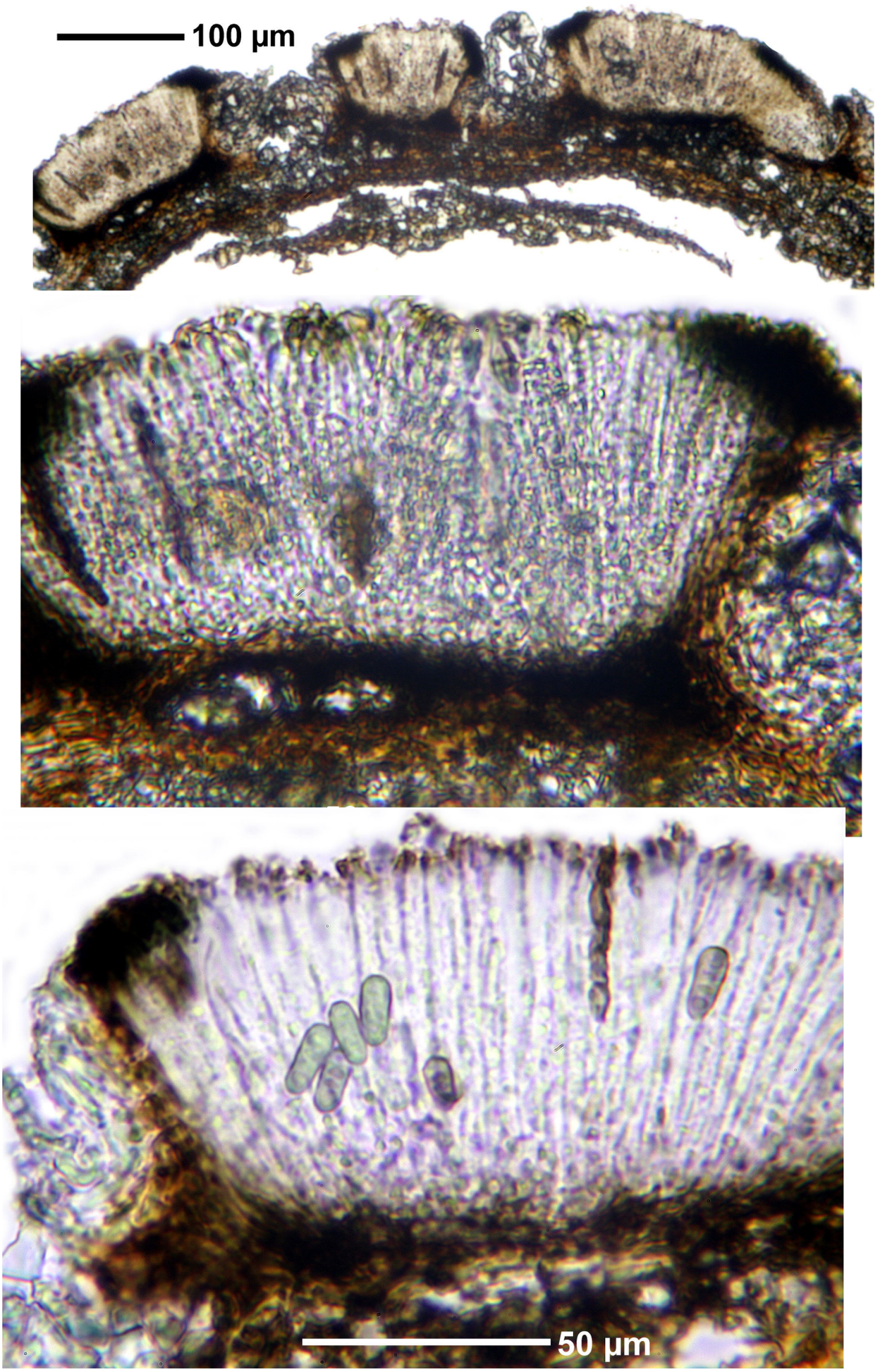




Sarcographa tricosa



Sarcographa tricosa



Sarcographa tricosa

Solorina crocea (L.) Ach., K. Vetensk-Acad. Nya Handl. 29: 228 (1808)
= *Lichen croceus* L. 1753

[KU593], Japan. Hokkaido. Prov. Kitami: Mt. Rishiri, Rishiri Island. On rocks, 1700 m. Leg. H. Shibuichi (no. 7351) & K. Yoshida, 2.8.1983, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 593.

Thallus foliose, heteromerous, dorsiventral, forming up to 15 cm wide rosettes Lobes large, to 30 mm wide (usually less), rounded, flat to concave with up-turned, wavy margins, the upper surface smooth to usually scabrid, ashy to reddish brown when dry, olive-green when wet, sometimes densely white-reticulated, the lower surface bright orange, with brownish-orange, branched veins and yellow to orange interspaces, more or less tomentose, with black rhizines. Upper cortex paraplectenchymatous; photobiont layer divided into an upper part with green algae and a lower part (internal cephalodia) with Nostoc; medulla bright orange; lower cortex absent. Apothecia frequent, rounded, without a thalline margin, semi-immersed in the thallus, up to 12 mm across, with a brown to black disc, emarginate. Proper exciple poorly developed; epithecium brownish; hymenium and hypothecium colourless; paraphyses coherent, not anastomosing, simple, the apical cells hardly swollen. Asci (6-)8-spored, clavate, fissitunicate, the apex of the endoascus with a K/I+ blue ring-shaped structure, Peltigera-type. Ascospores 1-septate, slightly constricted at septa, brown, oblong-ellipsoid, 30-55 x 9-14 µm, the wall ornamented with round papillae. Photobiont chlorococcoid (Coccomyxa) in thallus, Nostoc in the internal cephalodia. Spot tests: upper cortex K-, C-, KC-, P-, UV-; medulla and lower surface K+ purple. Chemistry: medulla with solorinic acid, averantin, 6-O-methylaverantin and gyrophoric acid. - Note: an arctic-alpine, circumpolar lichen found on acid mineral soil with a long snow-lie, mostly above treeline, reaching the nival belt in the Alps.



Solorina crocea

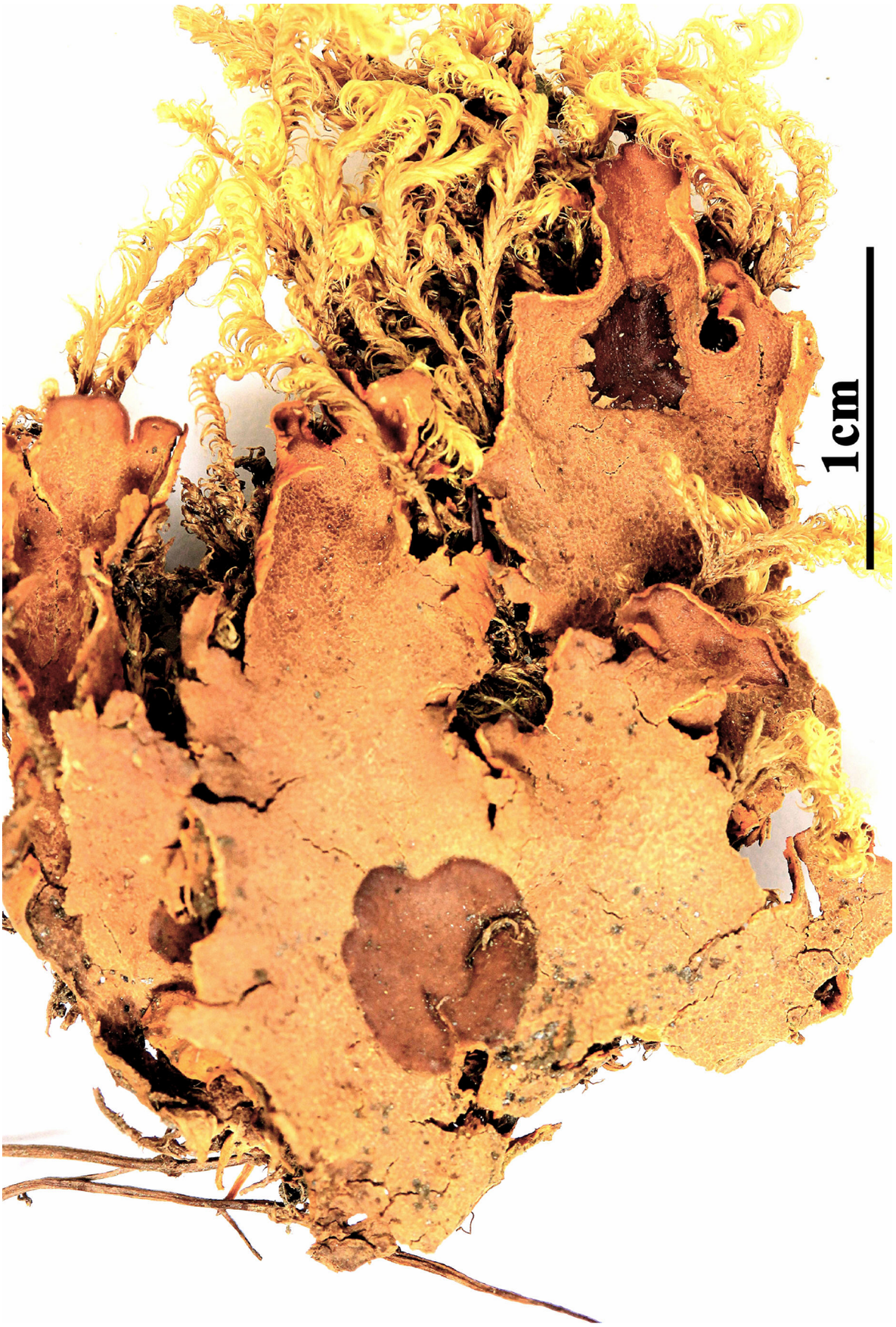


Solorina crocea

Solorina crocea (L.) Ach., K. Vetensk-Acad. Nya Handl. 29: 228 (1808)
= *Lichen croceus* L., Sp. pl. 2: 1149 (1753)
= *Parmelia crocea* (L.) Spreng., Syst. veg., Edn 16 4(1): 280 (1827)
= *Peltidea crocea* (L.) Ach., Methodus, Sectio post. (Stockholmiæ): 290 (1803)
= *Peltigera crocea* (L.) Hoffm., Descr. Adumb. Plant. Lich. 2(3): 60 (1794)

[2399], Schweiz, Flumser Berge beim Walensee, zwischen Leist und Gulmen auf schiefrigem Abhang, ca. 2200 m. Leg. F. Schumm & Günter Branz, 20.07.1977, det. F. Schumm. EX HERBARIO F. SCHUMM NR. 2399.

Thallus foliose, heteromerous, dorsiventral, forming up to 15 cm wide rosettes Lobes large, to 30 mm wide (usually less), rounded, flat to concave with up-turned, wavy margins, the upper surface smooth to usually scabrid, ashy to reddish brown when dry, olive-green when wet, sometimes densely white-reticulated, the lower surface bright orange, with brownish-orange, branched veins and yellow to orange interspaces, more or less tomentose, with black rhizines. Upper cortex paraplectenchymatous; photobiont layer divided into an upper part with green algae and a lower part (internal cephalodia) with Nostoc; medulla bright orange; lower cortex absent. Apothecia frequent, rounded, without a thalline margin, semi-immersed in the thallus, up to 12 mm across, with a brown to black disc, emarginate. Proper exciple poorly developed; epithecium brownish; hymenium and hypothecium colourless; paraphyses coherent, not anastomosing, simple, the apical cells hardly swollen. Asci (6-)8-spored, clavate, fissitunicate, the apex of the endoascus with a K/I+ blue ring-shaped structure, Peltigera-type. Ascospores 1-septate, slightly constricted at septa, brown, oblong-ellipsoid, 30-55 x 9-14 µm, the wall ornamented with round papillae. Photobiont chlorococcoid (Coccomyxa) in thallus, Nostoc in the internal cephalodia. Spot tests: upper cortex K-, C-, KC-, P-, UV-; medulla and lower surface K+ purple. Chemistry: solorinic acid, averantin, 6-O-methylaverantin and gyrophoric acid. - Note: an arctic-alpine, circumpolar lichen found on acid mineral soil with a long snow-lie, mostly above treeline, reaching the nival belt in the Alps.



Solorina crocea



Solorina crocea

Solorina crocea (L.) Ach., K. Vetensk-Acad. Nya Handl. 29: 228 (1808)
= *Lichen croceus* L., Sp. pl. 2: 1149 (1753)
= *Parmelia crocea* (L.) Spreng., Syst. veg., Edn 16 4(1): 280 (1827)
= *Peltidea crocea* (L.) Ach., Methodus, Sectio post. (Stockholmiæ): 290 (1803)
= *Peltigera crocea* (L.) Hoffm., Descr. Adumb. Plant. Lich. 2(3): 60 (1794)

[KU646], Japan. Honshu. Prov. Echigo: Mt. Korenge, Shirouma Mts., Itoigawa-city. On soil,2760 m. Leg. H. Shibuichi (no. 7173), 6.8.1962, det. H. Kashiwadani. Ex S. Kurokawa and H. Kashiwadani Lichenes Rariores Et Critici Exsiccati Nr.646.

Thallus foliose, heteromerous, dorsiventral, forming up to 15 cm wide rosettes Lobes large, to 30 mm wide (usually less), rounded, flat to concave with up-turned, wavy margins, the upper surface smooth to usually scabrid, ashy to reddish brown when dry, olive-green when wet, sometimes densely white-reticulated, the lower surface bright orange, with brownish-orange, branched veins and yellow to orange interspaces, more or less tomentose, with black rhizines. Upper cortex paraplectenchymatous; photobiont layer divided into an upper part with green algae and a lower part (internal cephalodia) with Nostoc; medulla bright orange; lower cortex absent. Apothecia frequent, rounded, without a thalline margin, semi-immersed in the thallus, up to 12 mm across, with a brown to black disc, emarginate. Proper exciple poorly developed; epithecium brownish; hymenium and hypothecium colourless; paraphyses coherent, not anastomosing, simple, the apical cells hardly swollen. Asci (6-)8-spored, clavate, fissitunicate, the apex of the endoascus with a K/I+ blue ring-shaped structure, Peltigera-type. Ascospores 1-septate, slightly constricted at septa, brown, oblong-ellipsoid, 30-55 x 9-14 μm, the wall ornamented with round papillae. Photobiont chlorococcoid (Coccomyxa) in thallus, Nostoc in the internal cephalodia. Spot tests: upper cortex K-, C-, KC-, P-, UV-; medulla and lower surface K+ purple. Chemistry: solorinic acid, averantin, 6-O-methylaverantin and gyrophoric acid. - Note: an arctic-alpine, circumpolar lichen found on acid mineral soil with a long snow-lie, mostly above treeline, reaching the nival belt in the Alps.



Solorina crocea



Solorina crocea

Solorina platycarpa Hue, Bull. Soc. Bot. Fr. 54(6): 419 (1907)

[KU192], Japan. Honshu. Prov. Shinano: Shirahone Hot Spring. On calcreous rocks, 1400 m. Leg. Y. Asahina, 23.9.1934, det. Y. Asahina. Ex S.Kurokawa Lichenes Rariores Et Critici Exsiccati Nr. 192.



Solorina platycarpa



Solorina platycarpa

Sphaerophorus fragilis (L.) Pers., Ann. Bot. (Usteri) 7: 23 (1794)
= *Lichen fragilis* L. 1753

[KU488], Japan. Hokkaido. Prov.Ishikari: Mt. Tomuraushi, Daisetsu Mts. On rocks, 2100 m. Leg. H. Kashiwadani (no.16377) and Y. Endo, 6.8.1980, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 488.

Thallus fruticose, pale whitish grey to pale grey-brown, shrubby, forming very dense, coralloid, up to 4 cm tall and 5-12 cm wide tufts. Branches 0.4-0.8 mm thick, fragile, smooth, ascending to erect, subterete, more or less di- or trichotomously branched, the main branches not differentiated, hence branches of the same thickness; fertile branches rarely present, usually taller and rising above the cushions, 0.5-1.1 mm thick. Cortex of anticlinally arranged hyphae; medulla white, of longitudinally arranged, thick-walled hyphae, I-. Apothecia extremely rare, terminal, 1-3 mm across, with a black, subglobose disc and a persisting thalline margin. Proper exciple thin, poorly evident; epithecium soon disintegrating, brown to green, N+ red; paraphyses thread-like, strongly carbonized, soon disintegrating; hypothecium brown-black. Asci 8-spored, soon disintegrating, cylindrical, unitunicate, thin-walled, formed singly from ascogenous hyphae with croziers, Calicium-type, with uniseriately arranged spores. Ascospores 1-celled, at first deep violet then almost black, subglobose, thick-walled, 8-12 µm in diam., the wall with a dark, irregular ornamentation. Pycnidia 0.1-0.14 mm wide, black, semi-immersed, apical. Conidia 1-celled, hyaline, narrowly ellipsoid, 3-4 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K- or K+ yellow, C-, KC-, P- or P+ yellow, UV+ blue-white. Chemistry: sphaerophorin, and variable amounts of hypothamnolic and squamatic acids. - Note: an arctic-alpine to boreal-montane, circumpolar lichen of siliceous rocks and mineral soil in very rainy areas, near or above treeline.



Sphaerophorus fragilis



Sphaerophorus fragilis

Sphaerophorus fragilis (L.) Pers., Ann. Bot. (Usteri) 7: 23 (1794)
= *Lichen fragilis* L. 1753

[KA292], Japan. Hokkaido. Prov. Ishikari: Mt. Tomuraushi, Daisetsu Mts., 2000 m. Leg. M. Togashi, 19.7.1969, det. H. Kashiwadani. Ex H. Kashiwadani Lichenes Minus Cogniti Exsiccati Nr. 292.

Thallus fruticose, pale whitish grey to pale grey-brown, shrubby, forming very dense, coralloid, up to 4 cm tall and 5-12 cm wide tufts. Branches 0.4-0.8 mm thick, fragile, smooth, ascending to erect, subterete, more or less di- or trichotomously branched, the main branches not differentiated, hence branches of the same thickness; fertile branches rarely present, usually taller and rising above the cushions, 0.5-1.1 mm thick. Cortex of anticlinally arranged hyphae; medulla white, of longitudinally arranged, thick-walled hyphae, I-. Apothecia extremely rare, terminal, 1-3 mm across, with a black, subglobose disc and a persisting thalline margin. Proper exciple thin, poorly evident; epithecium soon disintegrating, brown to green, N+ red; paraphyses thread-like, strongly carbonized, soon disintegrating; hypothecium brown-black. Asci 8-spored, soon disintegrating, cylindrical, unitunicate, thin-walled, formed singly from ascogenous hyphae with croziers, Calicium-type, with uniseriately arranged spores. Ascospores 1-celled, at first deep violet then almost black, subglobose, thick-walled, 8-12 µm in diam., the wall with a dark, irregular ornamentation. Pycnidia 0.1-0.14 mm wide, black, semi-immersed, apical. Conidia 1-celled, hyaline, narrowly ellipsoid, 3-4 x c. 1 µm. Photobiont chlorococcoid. Spot tests: cortex K-, C-, KC-, P-; medulla K- or K+ yellow, C-, KC-, P- or P+ yellow, UV+ blue-white. Chemistry: sphaerophorin, and variable amounts of hypothamnolic and squamatic acids. - Note: an arctic-alpine to boreal-montane, circumpolar lichen of siliceous rocks and mineral soil in very rainy areas, near or above treeline.



Sphaerophorus fragilis

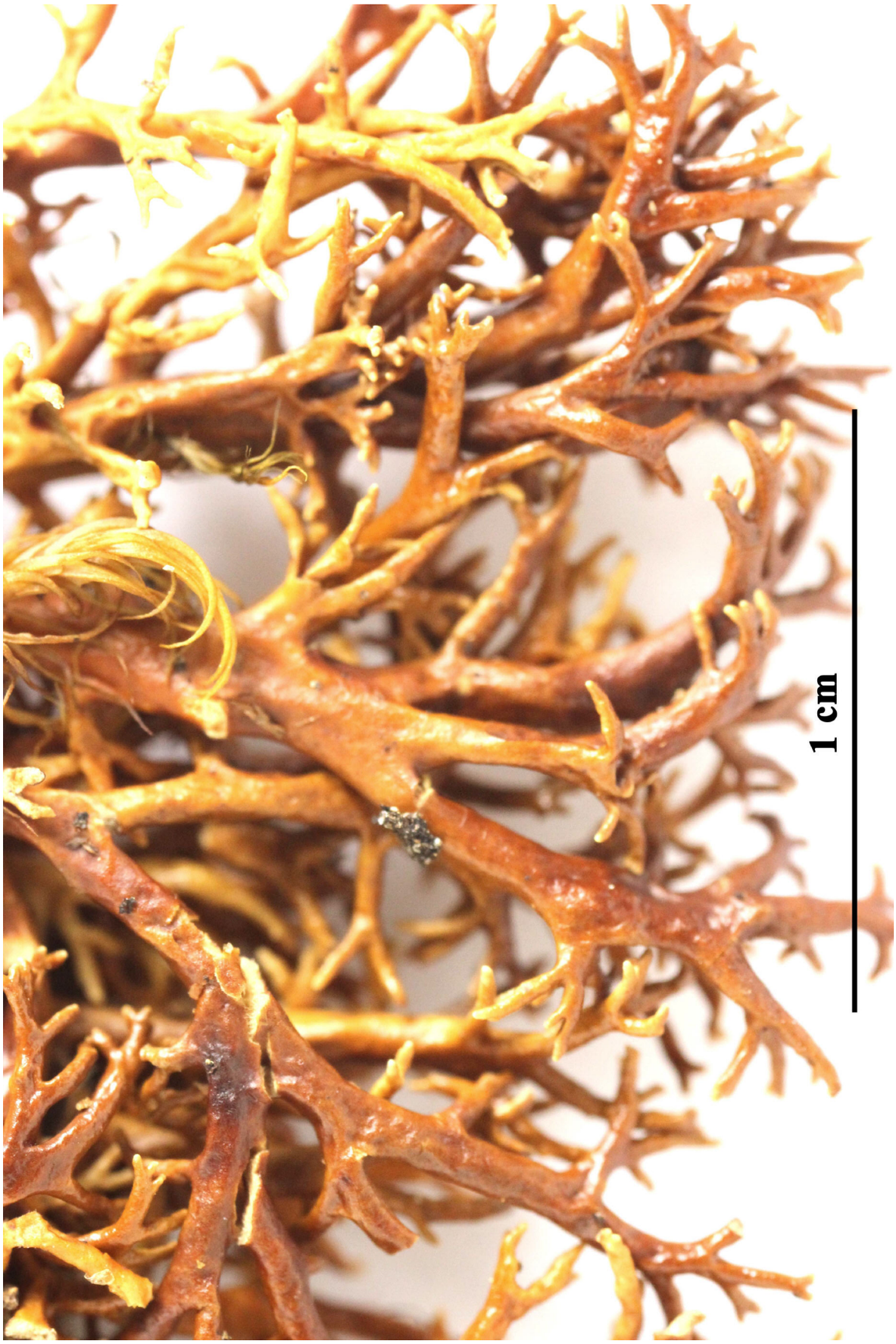


Sphaerophorus fragilis

Sphaerophorus globosus (Huds.) Vain., Résult. Voy. Belgica, Lich.: 35 (1903)
= *Lichen globosus* Huds. 1762

[OH595], Japan. Honshu. Prov. Etchu (Pref. Toyama): Tateyama Mts., Tateyama-machi, Nakashinkawa-gun, 2950 m. Leg. M. Inoue (no. 12908), 22-25.8.1979, det. M. Inoue. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 595.

Thallus fruticose, shrubby-coralloid, grey to brown, the apices often paler, 3-7(-15) cm tall, more or less erect, forming small to large cushions (up to 15 cm across), often richly but loosely and irregularly branched. Main branches terete, erect to decumbent, occasionally becoming pendent, rather coarse, 0.5-1 mm thick, often white-maculate; secondary branches with frequent lateral branching and numerous slender, coralloid branchlets. Surface smooth, generally dull to glossy and maculate, occasionally transversely cracked. Cortex of thick-walled, gelatinized hyphae running in various directions, covered by a thin epicortex; medulla of longitudinally arranged, thick-walled hyphae, I+ dark blue (reaction often faint in old herbarium specimens). Apothecia rare, 1.2-1.8 mm across, terminal, globose, at first immersed in swollen, stalked apices, soon bursting apically to expose a dry mass of black ascospores (mazaedium), surrounded by a torn thalline exciple. Proper exciple thin, poorly evident; epithecium soon disintegrating, brown to green, N+ red; paraphyses thread-like, strongly carbonized, soon disintegrating; hypothecium brown-black. Asci 8-spored, soon disintegrating, cylindrical, unitunicate, thin-walled, formed singly from ascogenous hyphae with croziers, Calicium-type, with uniseriately arranged spores. Ascospores 1-celled, at first greenish, then dark violet to finally blue-black, subglobose to broadly ellipsoid, (5-)7-10(-12) x 7-11 µm, with a dark, irregular ornamentation. Pycnidia rare, terminal, semi-immersed. Conidia 1-celled, hyaline, ellipsoid to obovate, 3-5 x 1-2 µm. Spot tests: cortex K-, C-, KC-, P-; medulla K- or K+ yellow, KC-, C-, P- or P+ yellow, UV+ blue-white, I+ blue. Chemistry: sphaerophorin, and variable amounts of thamnolic, squamatic, and hypothamnolic acids in different combinations. - Note: restricted to cold-humid areas, mostly on rocks, very rarely (in Italy) at the base of old boles in natural forests.



Sphaerophorus globosus



Sphaerophorus globosus

Sphaerophorus globosus (Huds.) Vain.

[10497], Spanien, Kanarische Inseln, La Gomera. An der Straße von Arure nach San Sebastian bei der Abzweigung nach Las Hayas, 28°08.280' N, 17°16.916' W, 1115 m, in der Erica-Myrica-Zone. Leg. F. Schumm 21.04.2003. EX HERBARIO F. SCHUMM NR. 10497.

Thallus grau bis braungrau, aufrecht, strauchig, unregelmäßig und reich verzweigt, 1,5-5 cm hoch. Apothecien selten, 1-3 mm breit, endständig, erst in geschwollenen Astspitzen eingesenkt, dann aufbrechend und braunschwarze Sporenmasse freigebend. Sporen einzellig, grünlich bis bläulich schwarz, mit warzigem Epispor, kugelig, 8-10 µm. Chemie: Sphaerophorin, Squamatsäure, ± Thamnolsäure, ± Hypothamnolsäure. Mark: P- od. ± gelb, K- od. ± gelb, C-, KC-, J ± blau. corticol, zwischen Moosen oder saxicol.





Sphaerophorus globosus

Sphaerophorus globosus (Huds.) Vain., Résult. Voy. Belgica, Lich.: 35 (1903)
= *Lichen globosus* Huds. 1762

[21200], Germany, Baden-Württemberg, Südschwarzwald, Notschrei, ca. 1100 m, an Nadelbäumen, TK: 8113/1. Leg. F. Schumm 4.09.1971, det. F. Schumm. EX HERBARIO F. SCHUMM NR.21200.

Thallus fruticose, shrubby-coralloid, grey to brown, the apices often paler, 3-7(-15) cm tall, more or less erect, forming small to large cushions (up to 15 cm across), often richly but loosely and irregularly branched. Main branches terete, erect to decumbent, occasionally becoming pendent, rather coarse, 0.5-1 mm thick, often white-maculate; secondary branches with frequent lateral branching and numerous slender, coralloid branchlets. Surface smooth, generally dull to glossy and maculate, occasionally transversely cracked. Cortex of thick-walled, gelatinized hyphae running in various directions, covered by a thin epicortex; medulla of longitudinally arranged, thick-walled hyphae, I+ dark blue (reaction often faint in old herbarium specimens). Apothecia rare, 1.2-1.8 mm across, terminal, globose, at first immersed in swollen, stalked apices, soon bursting apically to expose a dry mass of black ascospores (mazaedium), surrounded by a torn thalline exciple. Proper exciple thin, poorly evident; epithecium soon disintegrating, brown to green, N+ red; paraphyses thread-like, strongly carbonized, soon disintegrating; hypothecium brown-black. Asci 8-spored, soon disintegrating, cylindrical, unitunicate, thin-walled, formed singly from ascogenous hyphae with croziers, Calicium-type, with uniseriately arranged spores. Ascospores 1-celled, at first greenish, then dark violet to finally blue-black, subglobose to broadly ellipsoid, (5-)7-10(-12) x 7-11 µm, with a dark, irregular ornamentation. Pycnidia rare, terminal, semi-immersed. Conidia 1-celled, hyaline, ellipsoid to obovate, 3-5 x 1-2 µm. Spot tests: cortex K-, C-, KC-, P-; medulla K- or K+ yellow, KC-, C-, P- or P+ yellow, UV+ blue-white, I+ blue. Chemistry: sphaerophorin, and variable amounts of thamnolic, squamatic, and hypothamnolic acids in different combinations. - Note: restricted to cold-humid areas, mostly on rocks, very rarely (in Italy) at the base of old boles in natural forests.



Sphaerophorus globosus



Sphaerophorus globosus

Sphaerophorus meiophorus (Nyl.) Vain., Bot. Mag., Tokyo 35: 74 (1921)
= *Sphaerophorus coralloides* * *meiophorus* Nyl. 1890

[OH671], Japan. Honshu. Kai Prov. (Yamanashi Pref.): Oniwa, 5-gome, Mt. Fuji. Leg. M. Togashi, 21.7,1961, det. Y. Ohmura. EX Y.OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 672.



Sphaerophorus meiophorus



Sphaerophorus meiophorus

Sphaerophorus meiophorus (Nyl.) Vain., Bot. Mag., Tokyo 35: 74 (1921)
= *Sphaerophorus coralloides* * *meiophorus* Nyl. 1890

[OH569], Japan. Honshu. Prov Shinano (Pref. Nagano): Johgosawa, Yatsuga-take Mts. On tree trunc, 2300-2400 m. Leg. M. Togashi & S. Kurokawa, 26.7.1959, det. Y. Asahina. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 569.



Sphaerophorus meiophorus



Sphaerophorus meiophorus

Sphaerophorus melanocarpus (Sw.) DC. [as 'melanocarpos'], Fl. franç., Edn 3 (Paris) 5/6: 178 (1815)
= *Lichen melanocarpus* Sw. 1788
= *Bunodophoron melanocarpum* (Sw.) Wedin, Mycotaxon 55: [383] (1995)

´[KU138], Japan. Honshu. Prov. Musashi: Mt. Kumotori. On trunc of *Tsuga diversifolia*, 1950 m. Leg. H. Shibuichi (no. 3739), 21.7.1969, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 138.

Thallus fruticose, shrubby-coralloid, 3-5 cm high, often forming extensive mats, the branches highly divided in upper part, markedly flattened, especially towards the base, ending with small, subterete, palmate branchlets, pale greenish to greenish grey, sometimes partly pinkish brown, the surface smooth or transversally cracked in old branches. Cortex of thick-walled, gelatinized, fused hyphae covered by a thin epicortex; medulla white, of longitudinally arranged, thick-walled hyphae, I-. Apothecia rare, developing on the underside of larger, terminal, fertile branches, 1.5-3.5 mm across, globose, with a black mazaedium, the thalline exciple soon excluded. Asci cylindrical, with uniseriately arranged spores, disintegrating before the spores are mature. Ascospores subglobose, at first hyaline, then pale to dark grey, (5.5)6-8(-9) µm in diam. Pycnidia terminal or on the lower side of terminal branches, the conidiophores branched, with terminal and intercalary conidiogenous cells. Conidia 1-celled, hyaline, bacilliform, 3-8 µm long. Photobiont: chlorococcoid. Spot tests: medulla K+ yellow, C-, KC-, P+ orange, UV+ blue-white, I-. Chemistry: sphaerophorin and stictic acid complex, the latter most abundant in the apothecia. - Note: a rare and declining humid subtropical to mild-temperate species found on mossy bark and rocks in very moist forests.



Sphaerophorus melanocarpus



Sphaerophorus melanocarpus

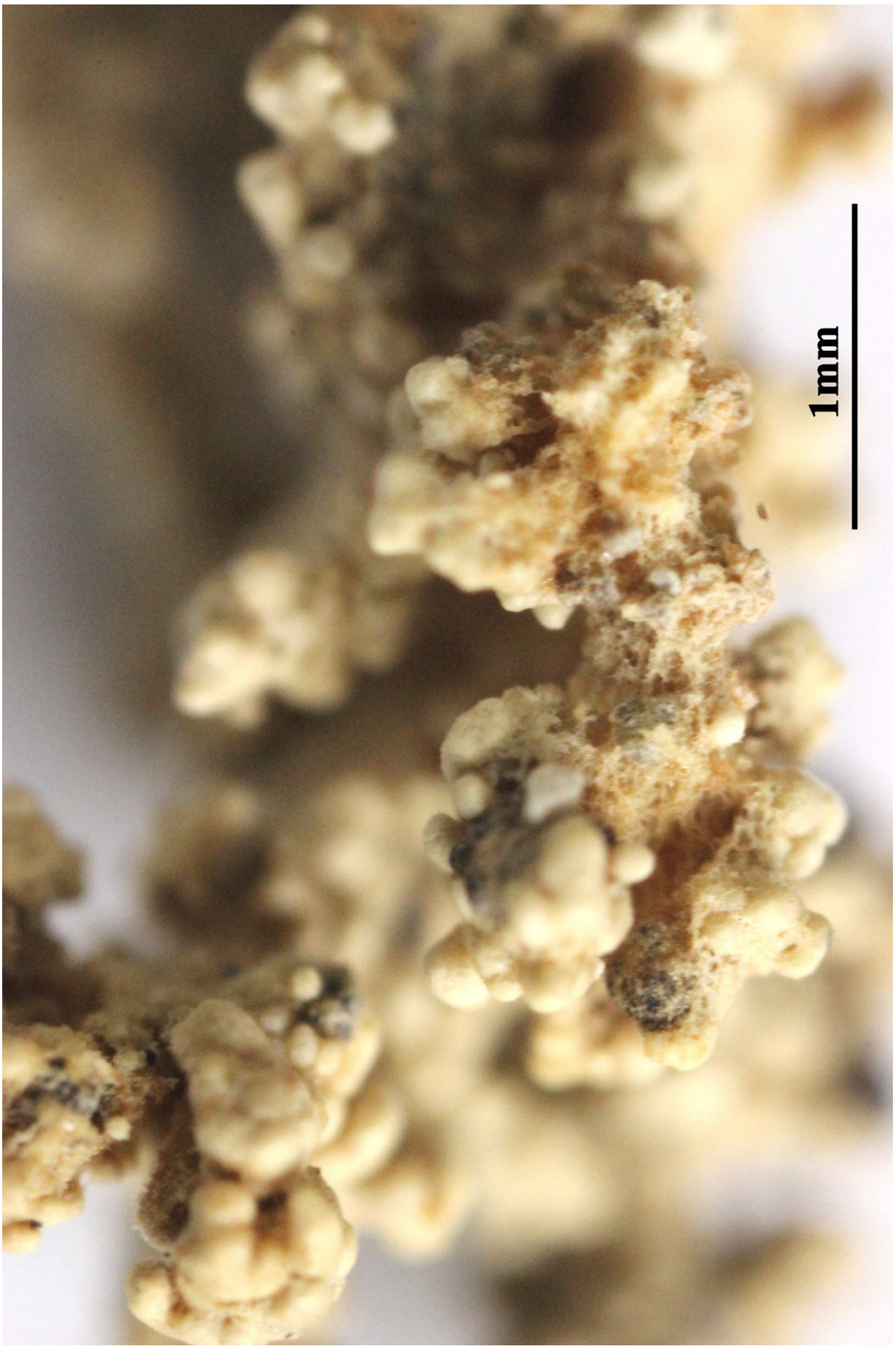
Stereocaulon alpinum Laurer, in Funck, Cryptog. Gewächse (Leipzig) 33: 6 (1827)

[KU684], Svalbard. Spitzbergen. In gabbro area. Ossian Sarsfjellet, Kongsfjorden, 0-100 m. Leg. H. Kashiwadani (no. 23162), 25.7.1985, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 684.

Primary thallus crustose, granular-warted, ephemeral, usually absent in mature individuals, secondary thallus fruticose, forming low, flat cushions. Pseudopodetia rather firmly attached, elongate, prostrate to mostly ascending, 1-4 cm tall, 0.5-1(-2) mm thick at base, sparingly branched, terete, usually dorsiventral, with a solid cartilaginous axis of parallel hyphae surrounded by a lax medulla and with a pale pink tomentum especially on the lower surface. Phyllocladia crowded towards the apices of pseudopodetia but not forming globular clusters, whitish-grey, at first granuliform or united, then somehow flattened and minutely lobed, to 0.5 mm wide. Cephalodia scarce, mainly on the lower side of pseudopodetia, globose, 0.3-0.8 mm across, pale purple or bluish green, scarcely visible because often embedded in the tomentum, with Nostoc. Apothecia rare, without a thalline margin, terminal, with a dark brown, convex disc and a thin, indistinct proper margin. Proper exciple brown in outer part, colourless within; epithecium brown, K-; hymenium colourless; paraphyses simple, 1.7-2 µm thick, the apical cells 3-4 µm wide, with a dark cap; hypothecium colourless. Asci 8-spored, cylindrical-clavate, with a K/I+ blue outer layer and apical dome, and a central, K/I+ darker blue tube, Porpidia-type. Ascospores mainly 3-septate, hyaline, cylindrical with one narrower end, 27-38 x 2.5-3 µm. Pycnidia dark, immersed. Conidia bacilliform, straight. Main photobiont chlorococcoid. Spot tests: K+ yellow, C-, KC- or KC+ violet (reaction often difficult to observe macroscopically, best evident on acetone extract on filter paper!), P+ faintly yellow, UV+ blue-white. Chemistry: atranorin and lobaric acid. - Note: an arctic-alpine, circumpolar early coloniser of mineral soil, especially gravel and sand in the vicinity of glaciers, probably restricted to the Alps in Italy, where it can reach the nival belt.



Stereocaulon alpinum



Stereocaulon alpinum

Stereocaulon alpinum Laurer, in Funck, Cryptog. Gewächse (Leipzig) 33: 6 (1827)

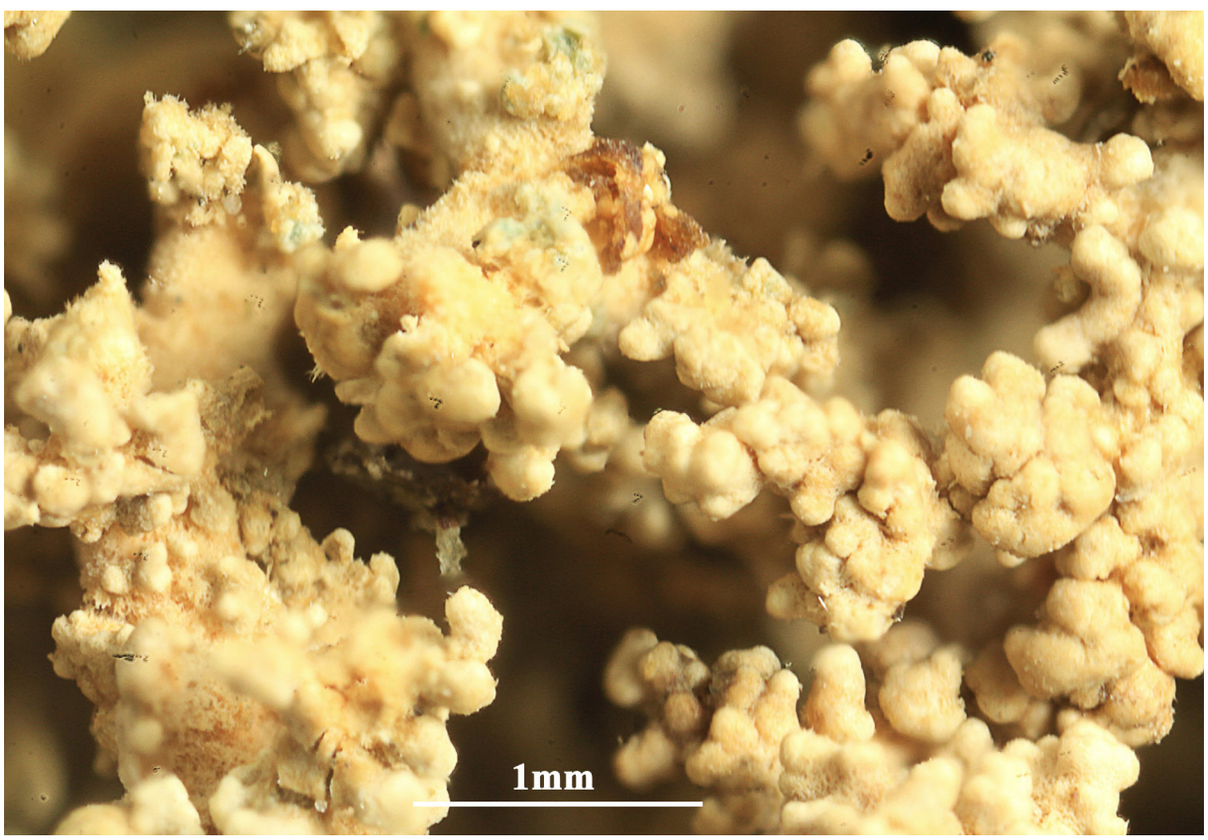
[2757], Schweiz, Oberaar, Zingenstock, Südhang, großer Wang, innerhalb der 1860 Moräne des Oberaargletschers, ca. 2320 m. Leg. F. Schumm 24.08.1979 (BLAM-Exkursion), det. F. Schumm 1979. EX HERBARIO F. SCHUMM NR. 2757.

Primary thallus crustose, granular-warted, ephemeral, usually absent in mature individuals, secondary thallus fruticose, forming low, flat cushions. Pseudopodetia rather firmly attached, elongate, prostrate to mostly ascending, 1-4 cm tall, 0.5-1(-2) mm thick at base, sparingly branched, terete, dorsiventral, with a solid cartilaginous axis of parallel hyphae surrounded by a lax medulla and with a pale pink tomentum especially on the lower surface. Phyllocladia crowded towards the apices of pseudopodetia, whitish-grey, at first granuliform or united, then somehow flattened and minutely lobed, to 0.5 mm broad. Cephalodia scarce, mainly on the lower side of pseudopodetia, globose, 0.3-0.8 mm across, pale purple or bluish green, with *Nostoc*, scarcely visible because often embedded in the tomentum. Apothecia rare, without a thalline margin, terminal, with a dark brown, convex disc and a thin, indistinct proper margin. Proper exciple brown in outer part, colourless within; epithecium brown, K-; hymenium colourless; paraphyses simple, 1.7-2.0 µm thick, the apical cells capitate, 3-4 µm wide, with a dark cap; hypothecium colourless. Asci 8-spored, cylindrical-clavate, with a K/I+ blue outer layer and apical dome, and a central, K/I+ darker blue tube, Porpidia-type. Ascospores mainly 3-septate, hyaline, cylindrical with one end narrower, 27-38 x 2.5-3 µm. Pycnidia dark, immersed. Conidia bacilliform, straight. Main photobiont chlorococcoid. Spot tests: K+ yellow, C-, KC- or KC+ violet (reaction often difficult to observe macroscopically, best evident on acetone extract on filter paper!), P+ faintly yellow, UV+ blue-white. Chemistry: atranorin and lobaric acid. - Note: an arctic-alpine, circumpolar early coloniser of mineral soil, especially gravel and sand in the vicinity of glaciers.



Stereocaulon alpinum

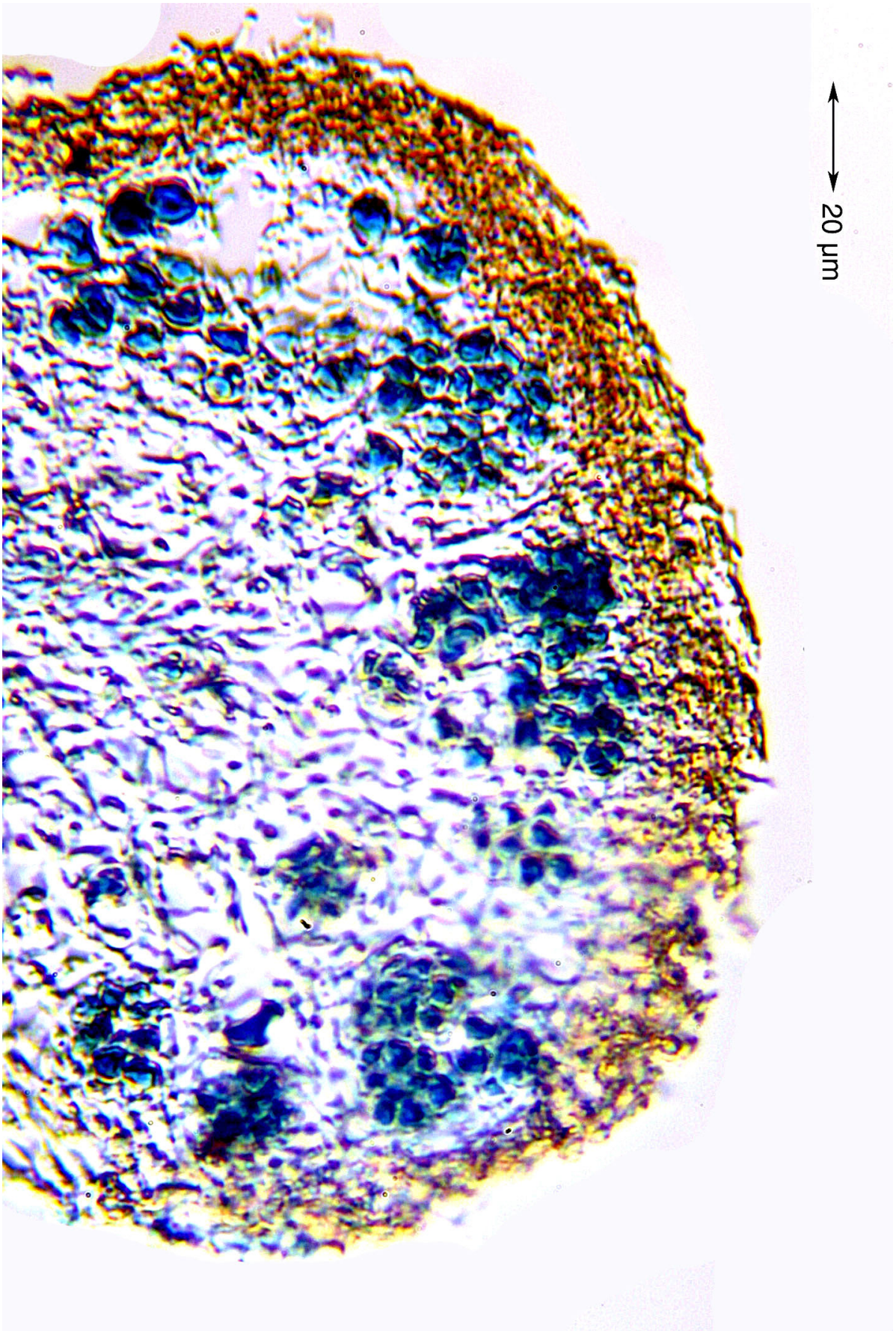




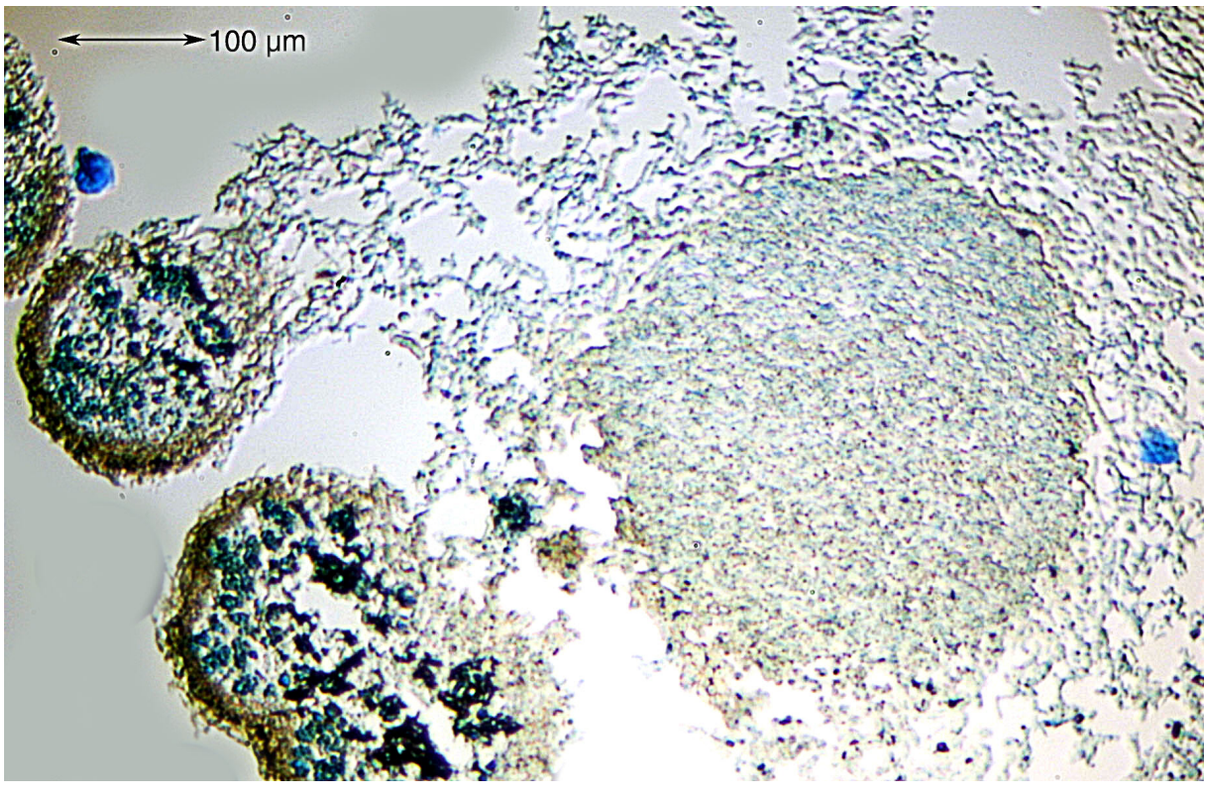
Stereocaulon alpinum

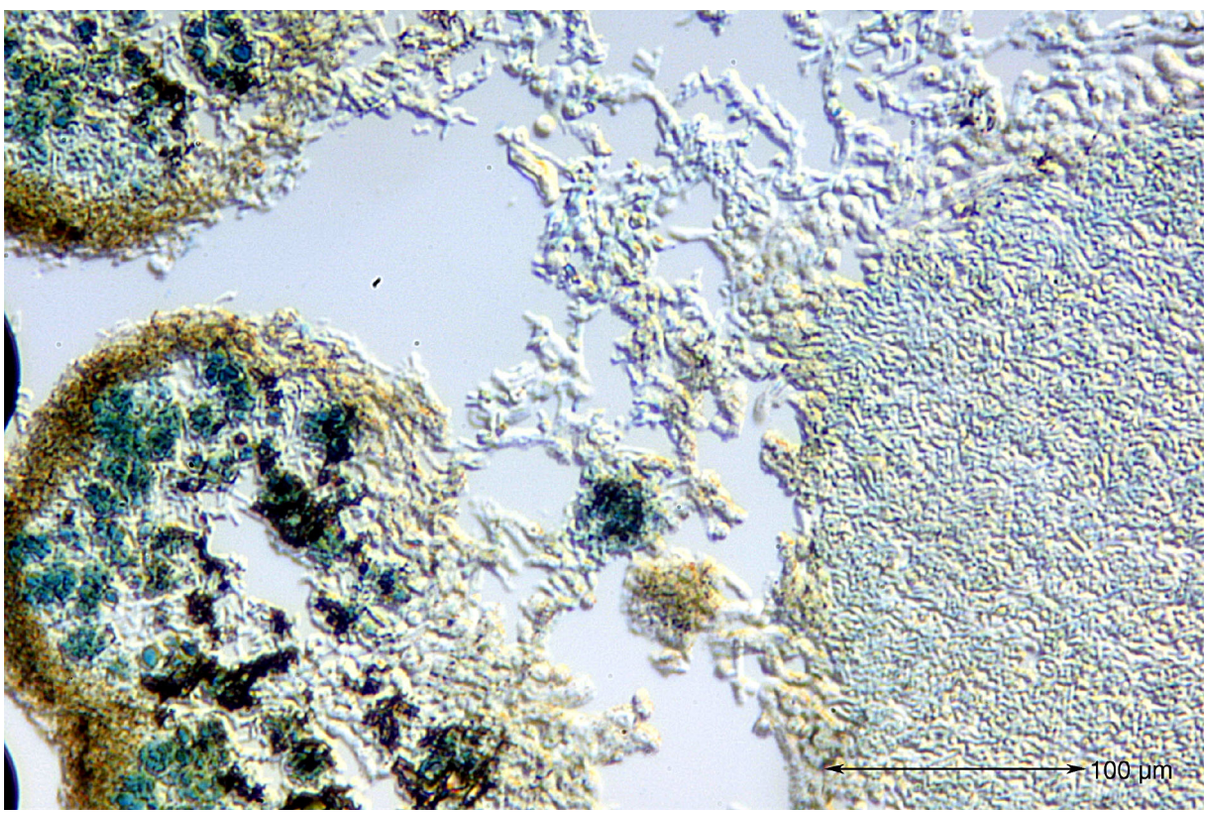


Stereocaulon alpinum

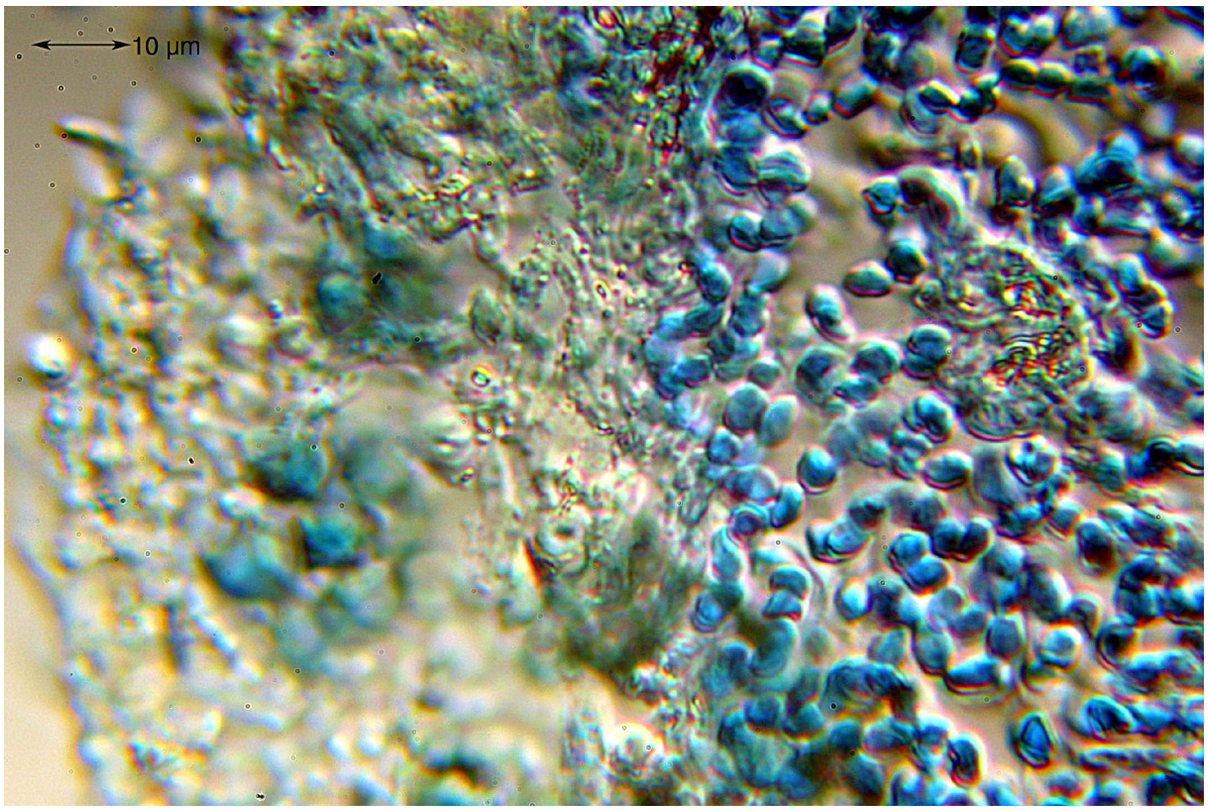


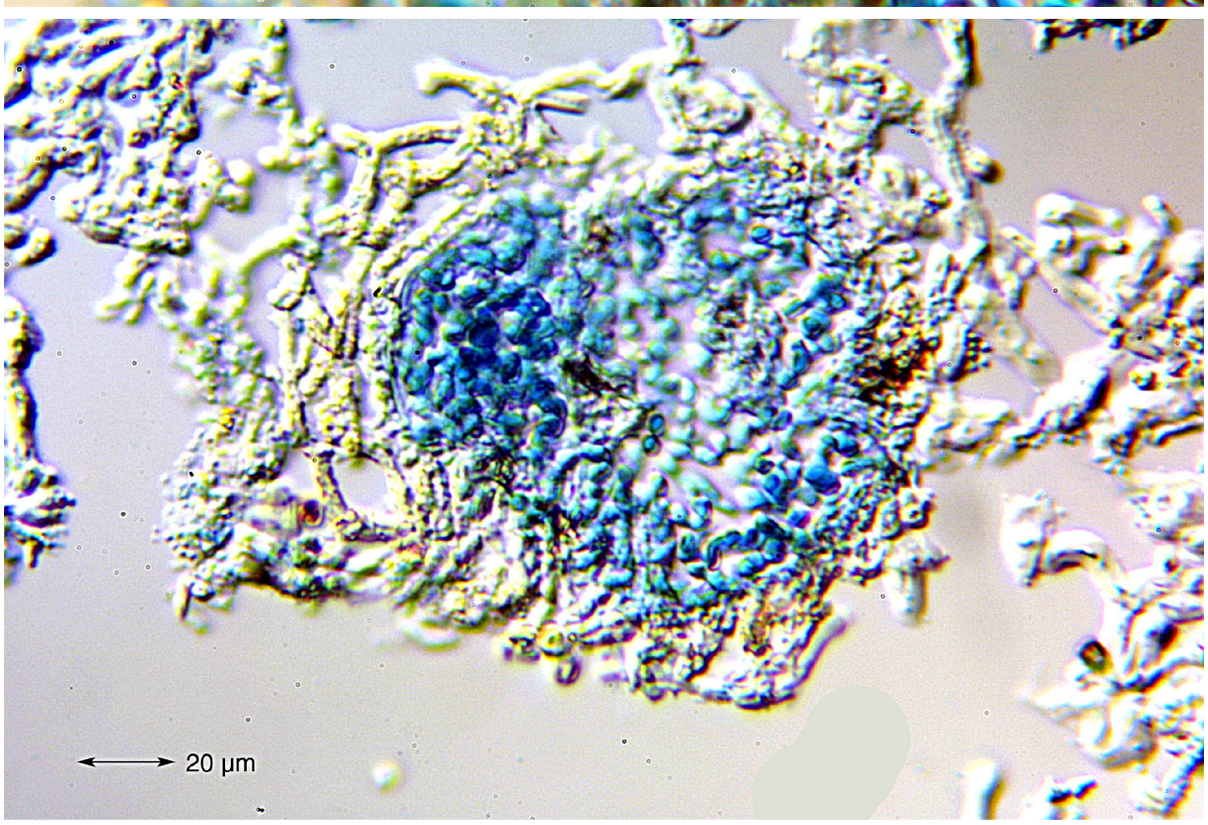
Stereocaulon alpinum



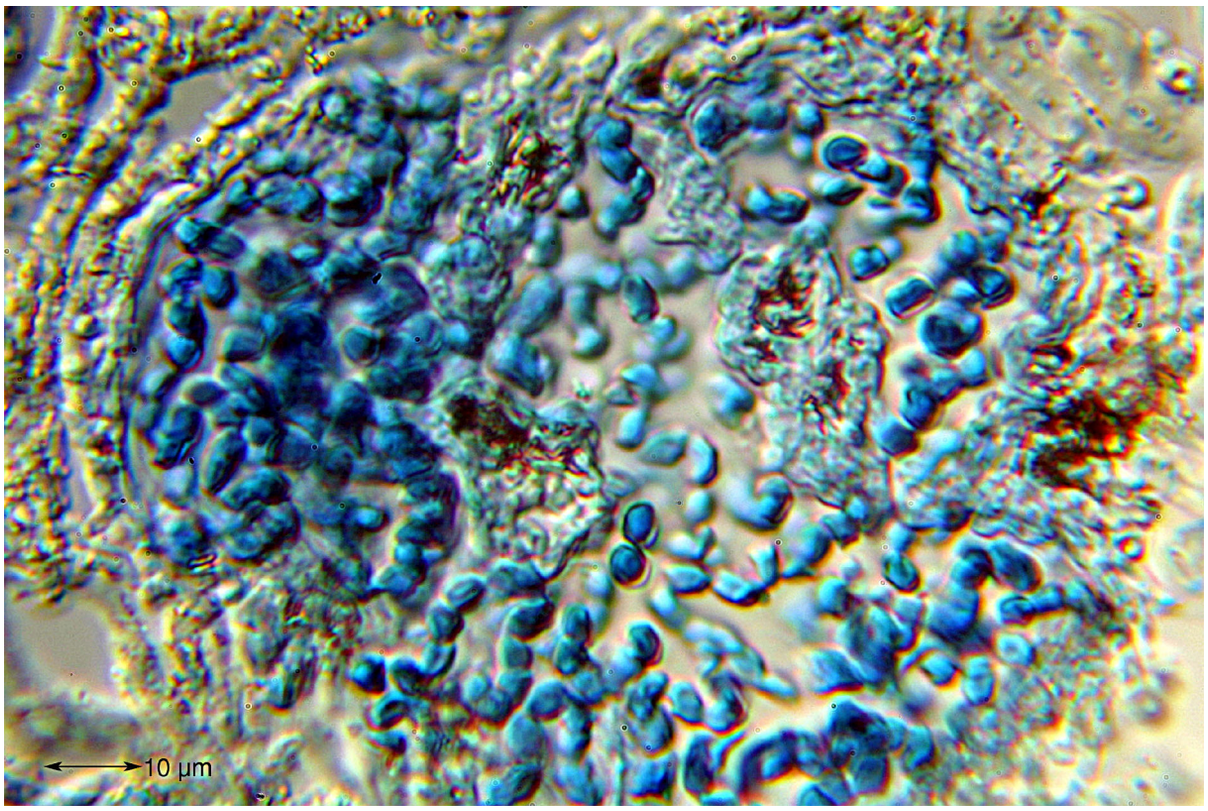


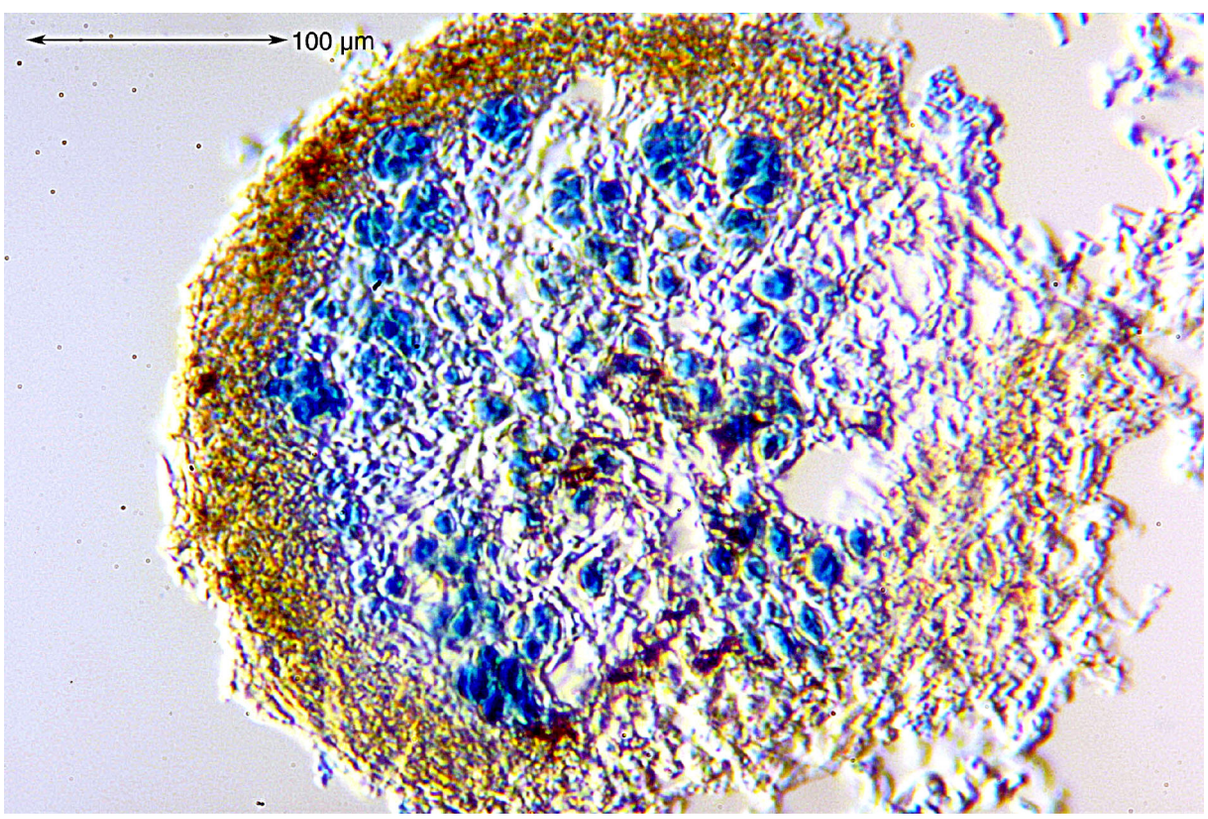
Stereocaulon alpinum





Stereocaulon alpinum





Stereocaulon alpinum

Stereocaulon apocalypticum Nyl., in Middendorff, Reise in den äußersten Norden und Osten Sibiriens, Anhang 4(6): LV (1867)

= *Stereocladium apocalypticum* (Nyl.) Nyl., Bull. Soc. linn. Normandie, sér. 4 1: 268 (1887)

[OH596], Japan. Honshu. Prov. Uzen (Pref.Yamagata): Mt. Chokai, Yuza-machi. On rock, 1490 m. Leg. M. Inoue (no. 16957), 20-21.07.1983, det. M. Inoue. Ex Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 596.

Thallus albidus vel albido-pallescens, fere mediocris, caespitose divisus, apicibus deplanatis subfoliaceis firmulis subrugosis vel rugosis marginibusque crenato-crispis magis albicantibus, stipitibus late versus basin fusco-nigricantibus (crassit. circiter 0.5-1 mm) nudis, sursum subtus parte subfoliacea tomentosa. Spermogonia frequentia; spermatia recta vel subrecta, longit 4.5-6.5 µm. Cephalodia olivacea, syngonimiis sirosiphoideis. Cortex saepe subareolato diffractus, K+ praesertim marginibus flavescens. Lichen faciei recendentis obiterque visus haud absimilis cuidam *Ramalinae pollinariae.* Apothecia marginalia (ad phyllocladia sita), 0.25-0.5 mm in diametro, primo concava, lecanorina et excipulo thallode instructa, ein biatorina, plana vel subglobosa, rufo-fusca vel fusca; hypothecium et excipulum rufofuscum, paraphyses distinctae, incoloratae apicem versus fuscidulae. Asci 20-30 µm longae et 7-12 µm latae. Sporae incoloratae, 3-5-septatae, acutae, 12-22 x 3.5- 4.5 µm.

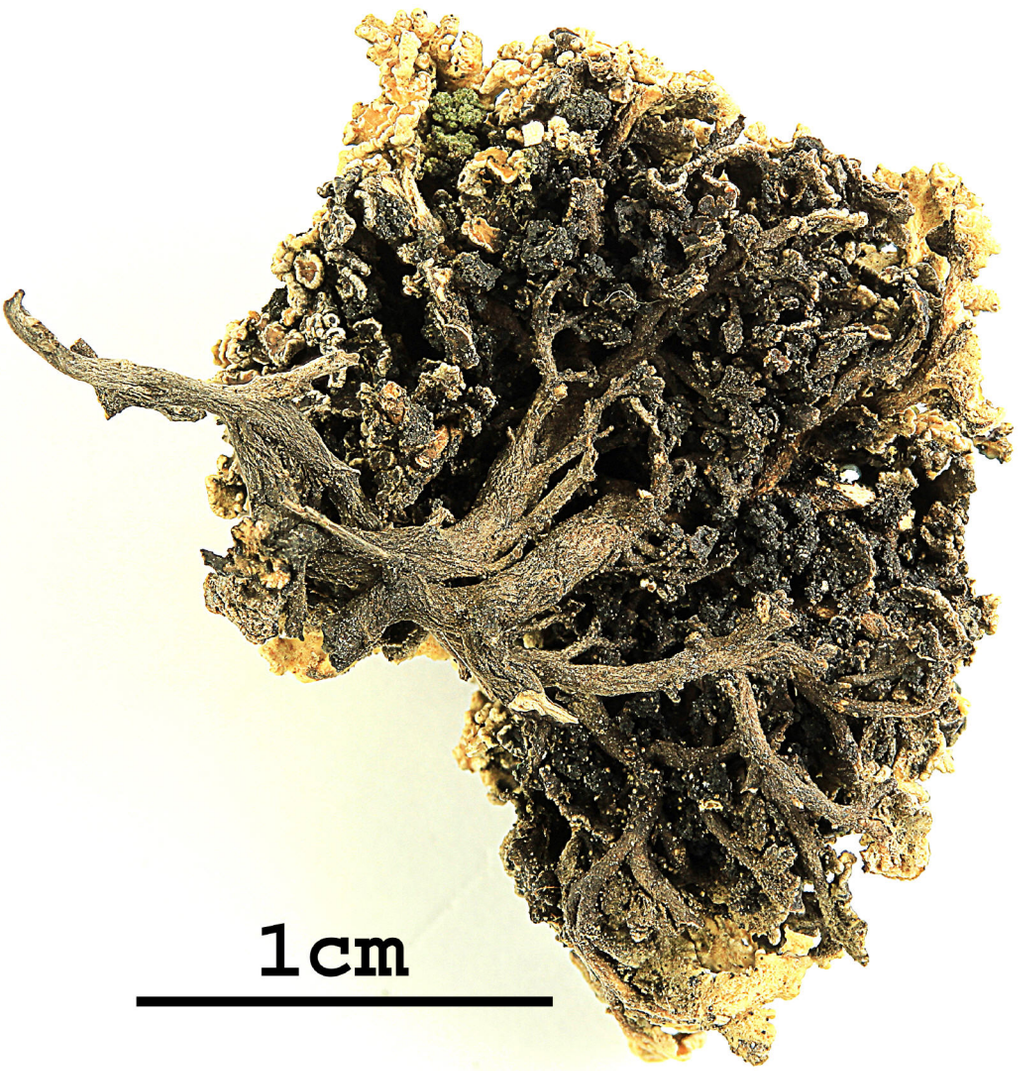
English description:

Thallus whitish or whitish-pale, almost medium-sized, grass-like divided, flattened subfoliaceous tips with subrugose or wrinkled edges and more whitish crenate-crisp edges, stems broadly brownish-blackish towards the base (thickness approx. 0.5-1 mm) bare, subfoliaceous part tomentose above and below. Spermogonia frequency; spermatia straight or substraight, 4.5-6.5 µm long. Cephalodia olivacea. Cortex often subareolato diffracted, K+ yellowing especially at the edges. Lichen's looked not unlike a certain *Ramalina pollinaria* -

Marginal apothecia (located at the phyllocladia), 0.25-0.5 mm in diameter, first concave, lecanorine and equipped with a thallus, ein biatorine, flat or subglobose, rufous-brown or brown; hypothecium and shoot reddish-brown, paraphyses distinct, colorless towards the apex fuscidula. Asci 20-30 µm long and 7-12 µm wide. Spores colorless, 3-5-septate, acute, 12-22 x 3.5- 4.5 µm. -

Sections of phyllocladia 0.4-0.5 mm thick, consisting of a thick gelatinous, transparent cortex, a thin continuous gonidial stratum (in water blackish) and a very thick medullary white stratum, on account of ± richly enclosed air ± darkspotted in water. Cortex (50-)90-110(-150) µm thick, transparent, white, in K+ pale yellowish, consisting of quite gelatinized, certainly very thick and intricate hyphae, their outlines also in K badly discernible (like the very thin thread-like lumina), towards the often very uneven surface gradually ± dark dirty brownish and especially in water not transparent. Gonidia unusually small, 5-10 µm both in KOH and HCl with pale yellowish green colour, lying in a very dense, unbroken, 40-55 µm thick stratum with sharp upper limit and fairly good lower limit. Medu11a 200-300 µm thick, consisting of ± densely intricate, 10-14 (in KOH even 18) µm thick, gelatinous hyphae with not easily discernible, scarcely 1 µm thick lumina. No lower cortex, under side very uneven from the irregular ends of the equally thick hyphae. Between the gonidial stratum and the medulla sometimes run strands of hyphae, belonging to the main-axis, about 100 µm thick and ± round or flattened; hyphae 3-4 µm thick, densely packed, pachydermatous, strictly parallel, unaltered by KOH. Transverse sections of the blackish podetia compressed, containing ± air, white, only the outermost 30-40 µm dark brown from 4-5 µm thick brown hyphae with the surface only slightly rough. Interior hyphae 2-3 µm thick, densely packed, ± conglutinate with very small interstices, pachydermatous, lumina about 0.5 µm. Cephalodia blackish brown, verrucose, situated on the phyllccladia and containing *Stigonema-algae* in lumps or ± lengthened threads. - Chemistry: lobaric acid (the similar *Stereocaulon wrightii* contains instead stictic acid)
*Distribution.*collected in Eastern Asia (Amur-district and Kamchatka) and Western North America (Behring Strait), very rarely fertile.

Stereocaulon apocalypticum



Stereocaulon apocalypticum



Stereocaulon apocalypticum



Stereocaulon apocalypticum



Stereocaulon apocalypticum

Stereocaulon apocalypticum Nyl., in Middendorff, Reise in den äußersten Norden und Osten Sibiriens, Anhang 4(6): LV (1867)

= *Stereocladium apocalypticum* (Nyl.) Nyl., Bull. Soc. linn. Normandie, sér. 4 1: 268 (1887)

[KU385], Japan. Hokkaido. Prov. Ishikari: Mt. Tomuraushi. On rocks; 2000 m. Leg. M. Togashi, 18.07.19´69, det. Y. Asahina. Ex S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 385.

Thallus albidus vel albido-pallescens, fere mediocris, caespitose divisus, apicibus deplanatis subfoliaceis firmulis subrugosis vel rugosis marginibusque crenato-crispis magis albicantibus, stipitibus late versus basin fusco-nigricantibus (crassit. circiter 0.5-1 mm) nudis, sursum subtus parte subfoliacea tomentosa. Spermogonia frequentia; spermatia recta vel subrecta, longit 4.5-6.5 µm. Cephalodia olivacea, syngonimiis sirosiphoideis. Cortex saepe subareolato diffractus, K+ praesertim marginibus flavescens. Lichen faciei recendentis obiterque visus haud absimilis cuidam *Ramalinae pollinariae.* Apothecia marginalia (ad phyllocladia sita), 0.25-0.5 mm in diametro, primo concava, lecanorina et excipulo thallode instructa, ein biatorina, plana vel subglobosa, rufo-fusca vel fusca; hypothecium et excipulum rufofuscum, paraphyses distinctae, incoloratae apicem versus fuscidulae. Asci 20-30 µm longae et 7-12 µm latae. Sporae incoloratae, 3-5-septatae, acutae, 12-22 x 3.5- 4.5 µm.

English description:

Thallus whitish or whitish-pale, almost medium-sized, grass-like divided, flattened subfoliaceous tips with subrugose or wrinkled edges and more whitish crenate-crisp edges, stems broadly brownish-blackish towards the base (thickness approx. 0.5-1 mm) bare, subfoliaceous part tomentose above and below. Spermogonia frequency; spermatia straight or substraight, 4.5-6.5 µm long. Cephalodia olivacea. Cortex often subareolato diffracted, K+ yellowing especially at the edges. Lichen's looked not unlike a certain *Ramalina pollinaria* -

Marginal apothecia (located at the phyllocladia), 0.25-0.5 mm in diameter, first concave, lecanorine and equipped with a thallus, ein biatorine, flat or subglobose, rufous-brown or brown; hypothecium and shoot reddish-brown, paraphyses distinct, colorless towards the apex fuscidula. Asci 20-30 µm long and 7-12 µm wide. Spores colorless, 3-5-septate, acute, 12-22 x 3.5- 4.5 µm. -

Sections of phyllocladia 0.4-0.5 mm thick, consisting of a thick gelatinous, transparent cortex, a thin continuous gonidial stratum (in water blackish) and a very thick medullary white stratum, on account of ± richly enclosed air ± darkspotted in water. Cortex (50-)90-110(-150) µm thick, transparent, white, in K+ pale yellowish, consisting of quite gelatinized, certainly very thick and intricate hyphae, their outlines also in K badly discernible (like the very thin thread-like lumina), towards the often very uneven surface gradually ± dark dirty brownish and especially in water not transparent. Gonidia unusually small, 5-10 µm both in KOH and HCl with pale yellowish green colour, lying in a very dense, unbroken, 40-55 µm thick stratum with sharp upper limit and fairly good lower limit. Medu11a 200-300 µm thick, consisting of ± densely intricate, 10-14 (in KOH even 18) µm thick, gelatinous hyphae with not easily discernible, scarcely 1 µm thick lumina. No lower cortex, under side very uneven from the irregular ends of the equally thick hyphae. Between the gonidial stratum and the medulla sometimes run strands of hyphae, belonging to the main-axis, about 100 µm thick and ± round or flattened; hyphae 3-4 µm thick, densely packed, pachydermatous, strictly parallel, unaltered by KOH. Transverse sections of the blackish podetia compressed, containing ± air, white, only the outermost 30-40 µm dark brown from 4-5 µm thick brown hyphae with the surface only slightly rough. Interior hyphae 2-3 µm thick, densely packed, ± conglutinate with very small interstices, pachydermatous, lumina about 0.5 µm. Cephalodia blackish brown, verrucose, situated on the phyllccladia and containing *Stigonema-algae* in lumps or ± lengthened threads. - Chemistry: lobaric acid (the similar *Stereocaulon wrightii* contains instead stictic acid)
*Distribution.*collected in Eastern Asia (Amur-district and Kamchatka) and Western North America (Behring Strait), very rarely fertile.

Stereocaulon apocalypticum



Stereocaulon apocalypticum

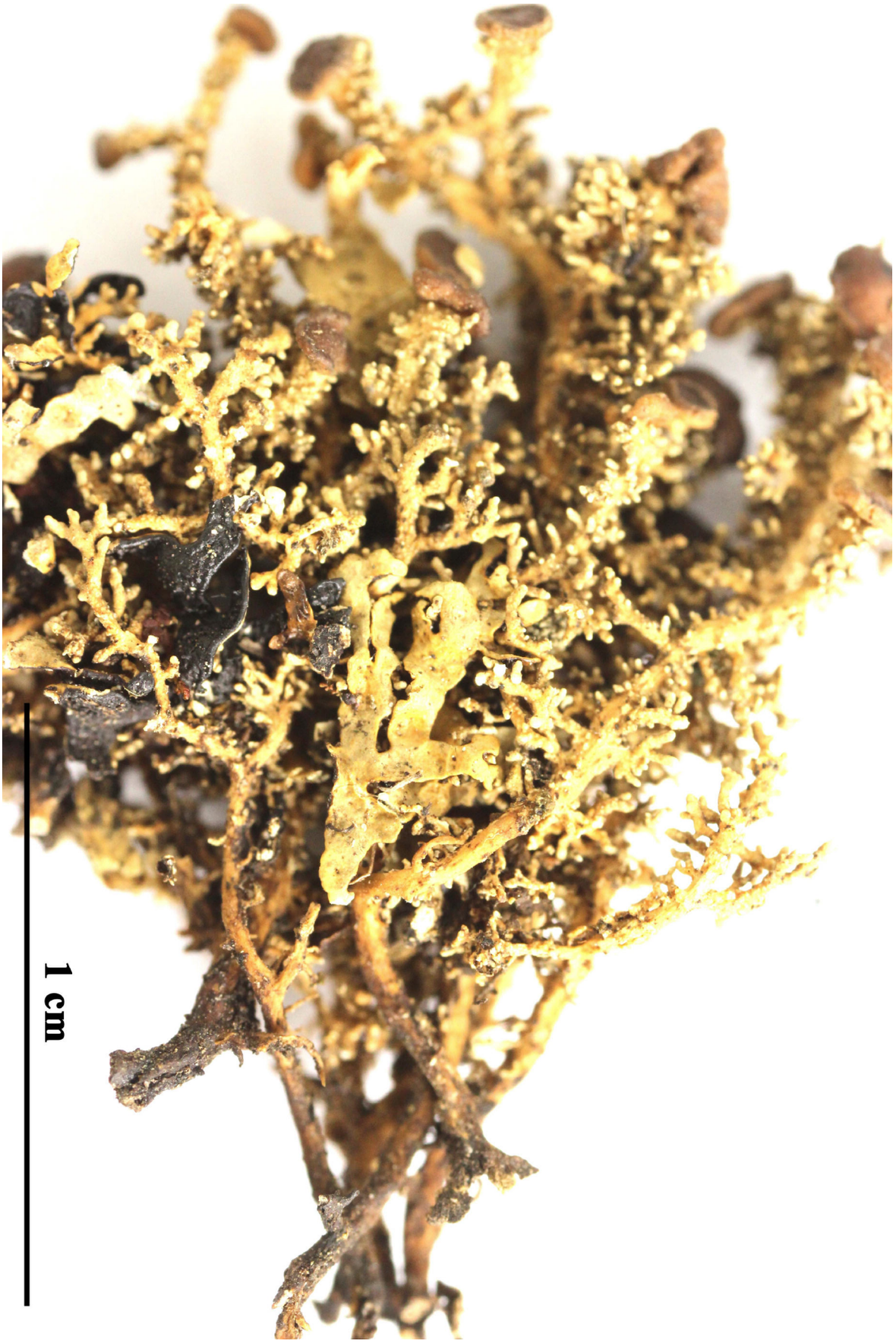


Stereocaulon apocalypticum

Stereocaulon commixtum (Asahina) Asahina, J. Jap. Bot. 44(9): 263 (1969)
= *Stereocaulon japonicum var. commixtum* Asahina 1960

[OH570], Japan. Shikoku. Prov. Tosa (Pref. Kochi): Tosayamada, Iosa-gun. On rock. Leg. S. Kurokawa (no. 60200), 15.12.1960, det. Y. Asahina. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 570.

This species is characterized by having miriquidic acid, densely coralloid phyllocladia and tubercular cephalodia gray to blackish. It closely resembles *S. japonicum*. Both species have stictic acid, but *S. commixtum* additionally produces miriquidic acid. *S. verruculigerum* is also morphologically similar, but *S. verruculigerum* has lobaric acid instead of stictic acid. Although the three afore mentioned species are morphologically very similar, they can be distinguished using the TLC method. - S. commixtum has been reported by Park in Korea and has also been found in Japan.



Stereocaulon commixtum



Stereocaulon commixtum

Stereocaulon commixtum (Asahina) Asahina, J. Jap. Bot. 44: 263 (1969)
= *Stereocaulon japonicum var. commixtum* Asahina, Micromyc. Slavon. 35: 290 (1960)

[KU387], Japan. Kyushu. Prov. Ohsumi: Hananoego, Yakushima Island. On rocks; c. 1650 m. Leg. M. Togashi (Herb. Y. Ashina no. 56126), 6.12.1956. det. Y. Asahina. Ex S. KUROKAWA AND H. KASHIWADANI LICHENS RARIORES ET CRITICI EXSICCATI NR. 387.

This species is characterized by having miriquidic acid, densely coralloid phyllocladia and tubercular cephalodia gray to blackish. It closely resembles *S. japonicum*. Both species have stictic acid, but *S. commixtum* additionally produces miriquidic acid. *S. verruculigerum* is also morphologically similar, but *S. verruculigerum* has lobaric acid instead of stictic acid. Although the three aforementioned species are morphologically very similar, they can be distinguished using the TLC method. S. commixtum has been reported by Park in Korea and has also been found in Japan.



Stereocaulon commixtum



Stereocaulon commixtum

Stereocaulon commixtum (Asahina) Asahina, J. Jap. Bot. 44: 263 (1969)
= *Stereocaulon japonicum var. commixtum* Asahina, Micromyc. Slavon. 35: 290 (1960)

[KU436], Japan. Honshu. Prov. Tamba: Tonase, Ayabecity. On rocks, c. 40 m. Leg. Y. Asahina (no.58217), & M. Togashi, 17.12.1958, det. Y. Asahina. Ex S. KURUKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 436.

This species is characterized by having miriquidic acid, densely coralloid phyllocladia and tubercular cephalodia gray to blackish. It closely resembles *S. japonicum*. Both species have stictic acid, but *S. commixtum* additionally produces miriquidic acid. *S. verruculigerum* is also morphologically similar, but *S. verruculigerum* has lobaric acid instead of stictic acid. Although the three aforementioned species are morphologically very similar, they can be distinguished using the TLC method. S. commixtum has
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Stereocaulon commixtum (Asahina) Asahina, J. Jap. Bot. 44: 263 (1969)
= *Stereocaulon japonicum var. commixtum* Asahina, Micromyc. Slavon. 35: 290 (1960)

[KU246], Japan. Honshu. Prov. Kii: Ryu, Ryujin-mura, Hidaka-gun. On rock,400 m.Leg. S. Kurokawa (no. 71044), det. S. Kurokawa. - Ex S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 246.

This species is characterized by having miriquidic acid, densely coralloid phyllocladia and tubercular cephalodia gray to blackish. It closely resembles *S. japonicum*. Both species have stictic acid, but *S. commixtum* additionally produces miriquidic acid. *S. verruculigerum* is also morphologically similar, but *S. verruculigerum* has lobaric acid instead of stictic acid. Although the three aforementioned species are morphologically very similar, they can be distinguished using the TLC method. S. commixtum has
been reported by Park in Korea and has also been found in Japan.



Stereocaulon commixtum



Stereocaulon commixtum

Stereocaulon curtatum Nyl., Lich. Japon.: 18 (1890)

[KA370],Japan. Honshu. Prov. Shinano: Mt. Ioh-dake, Yatsugadake Mts., Chino-shi. On rocks, 2700 m. Leg. H. Shibuichi (no. 8471) & K. Yoshida & M. Mineta, 09.08.1988. Ex H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NR. 370.

Primary thallus ashy glaucous, glanular or cylindrical, dactyliform, simple or sparingly branched, 1-2 mm long, ±0.3 mm thick, forming pluvinate colony intermingled with cephalodia (2-5 mm in diam.). Podetia 1-1.5 cm long, 0.5-1.0 mm thick, erect or decumbent, simple or shortly branched; phyllocladia granular or fibrilose strigose. Apothecia terminal, often 2 or three crowded on short branches, 1-3 mm wide, margin brown, chondroid, afterwards excluded, disc black. Epithecium brown, not dispersed with sandy crystals (under Nicols!); hymenium 100 µm high, hyalin; hypothecium brown, 60-70 µm thick; the layer immediately within the hypothecium (±80 µm thick) is filled with sandy crystalls (calcium oxalate, under nicols!), medullary hyphae of the central cone 4-6 µm thick, pachydermal. Spores fusiform, one end narrower, transversally 7-septate, often with a few longitudinal septations giving submuraliform spores, 35-40 x 6-8 µm large. Alpine and subalpine region of Central and northern Hondo. Reaction.: K+ yellow, P-. Chemistry: atranorin and an unidentified substance. The dried benzene extract of thallus yields on recrystallization from G.E. solution under cover glass fine radiating trichites together with crossed prisms of atranorin.



Stereocaulon curtatum

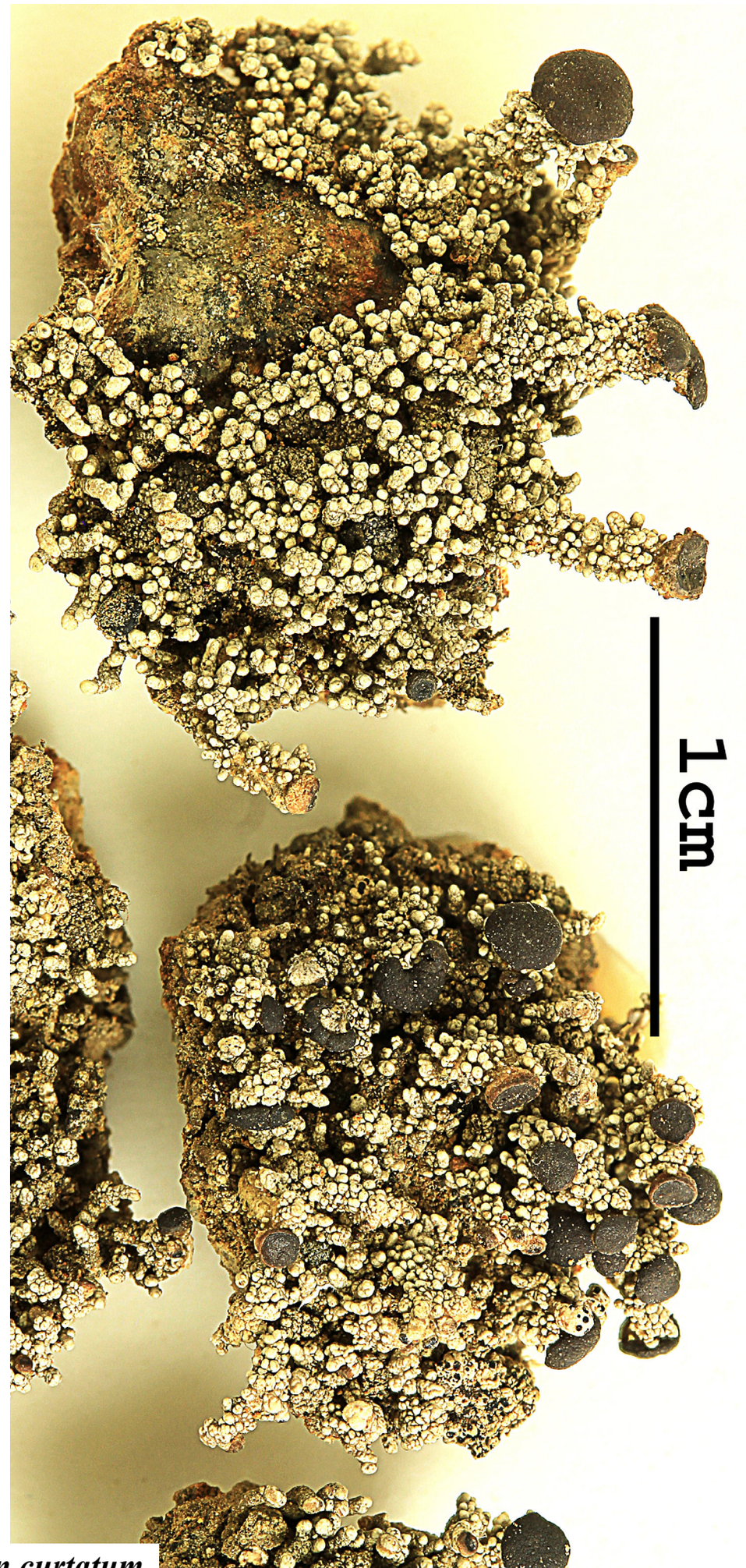


Stereocaulon curtatum

Stereocaulon curtatum Nyl., Lich. Japon.: 18 (1890)

[KU594],Japan. Honshu. Prov. Shimotuke: Konsei Oass, Nikko. On rocks, 2100 m. Leg. H. Shibuichi (no. 6655) & K. Yoshida, 07.08.1981. Ex S. KUROKAWA & H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 594.

Primary thallus ashy glaucous, glanular or cylindrical, dactyliform, simple or sparingly branched, 1-2 mm long, ±0.3 mm thick, forming pluvinate colony intermingled with cephalodia (2-5 mm in diam.). Podetia 1-1.5 cm long, 0.5-1.0 mm thick, erect or decumbent, simple or shortly branched; phyllocladia granular or fibrilose strigose. Apothecia terminal, often 2 or three crowded on short branches, 1-3 mm wide, margin brown, chondroid, afterwards excluded, disc black. Epithecium brown, not dispersed with sandy crystals (under Nicols!); hymenium 100 µm high, hyalin; hypothecium brown, 60-70 µm thick; the layer immediately within the hypothecium (±80 µm thick) is filled with sandy crystalls (calcium oxalate, under nicols!), medullary hyphae of the central cone 4-6 µm thick, pachydermal. Spores fusiform, one end narrower, transversally 7-septate, often with a few longitudinal septations giving submuraliform spores, 35-40 x 6-8 µm large. Alpine and subalpine region of Central and northern Hondo. Reaction.: K+ yellow, P-. Chemistry: atranorin and an unidentified substance. The dried benzene extract of thallus yields on recrystallization from G.E. solution under cover glass fine radiating trichites together with crossed prisms of atranorin.



Stereocaulon curtatum



Stereocaulon curtatum

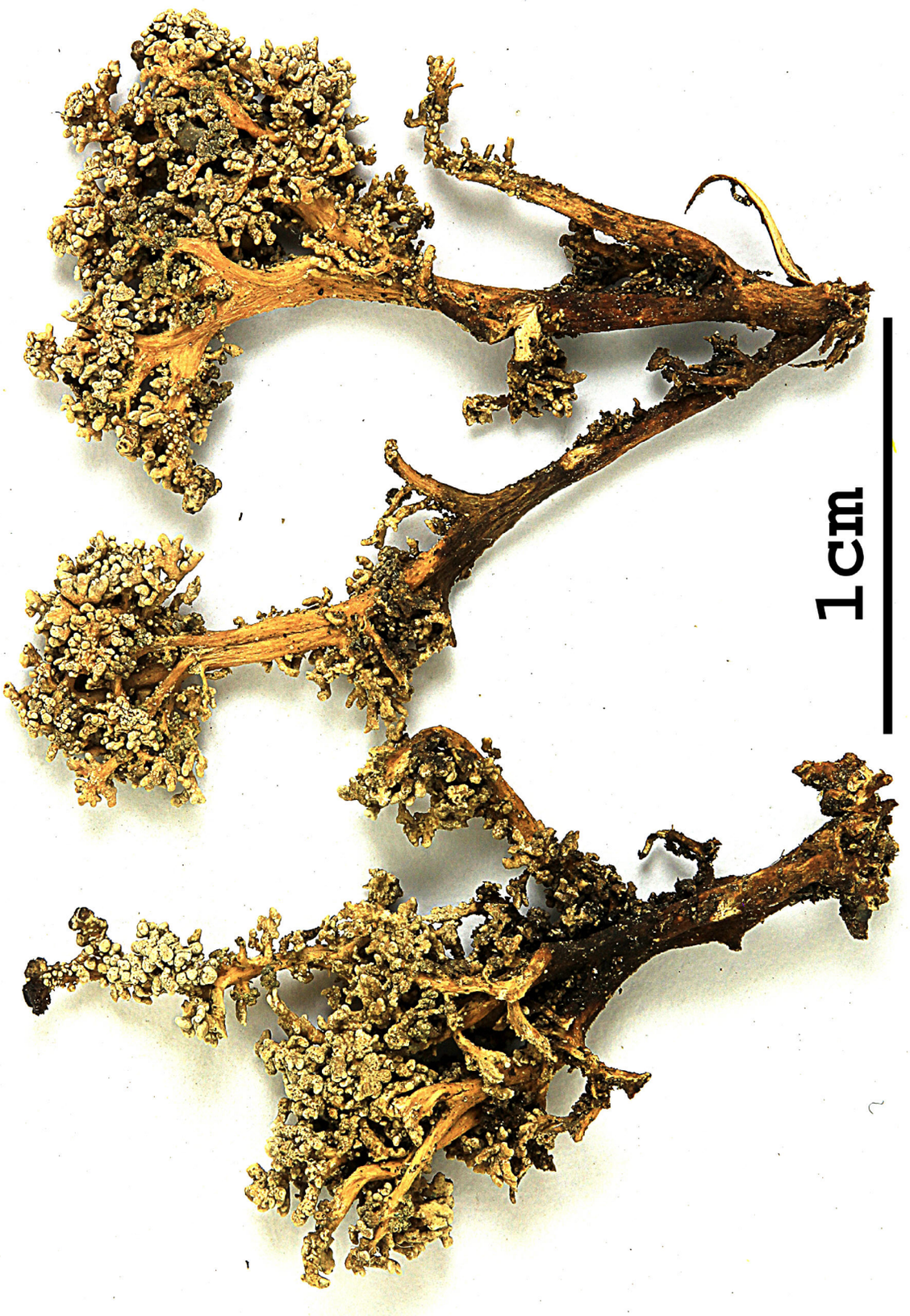
Stereocaulon dendroides Asahina, J. Jap. Bot. 36: 231 (1961)

[KU489], Japan, Honshu. Prov. Musashi: Mt. Sanpoh, Chichibu-gun. On rocks, 2480 m. Leg. H. Shibuich (no. 4965), 02.08.1875, det. H. Kashiwadani - Ex S. KUROKAWA & H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 489.

Pseudopodetia 3-5(-7) cm longa, caulis principalis 1-2-3 mm crassus, inferne decorticata, nuda, pallide isabellina, superne crebre rmaosa, phyllocladiis dense obtecta; phyllocladia partim verruciformia, pro majore parte digitiformia, simplicia, teretiformia, 1-1.5 mm longa, 0.5 mm lata, vel rudimentarie coralloideo ramosa, paullo applanata, apice conspicue albicantia. Cephalodia 0.5-2.0 mm lata, botryosa, obscure cinerea, ad ramos sessilia. Apothecia terminalia, 1-3 mm lata, simplicia vel multo gregaria, margine mox excluso, disco obscure fusco convexo praedita. Hymenium 60-80 µm altum, hyalinum; epithecium fuscum; hypothecium fuscescens, 60-80 µm latum, in medulla receptaculi infra hypothecium materia amorpha fusconigra creberrime disseminata; asci clavati, 70 x 10 µm; paraphyses filiformes, apicibus incrassatae, laxe cohaerentae; sporae cylindricae, altero apice acutae, novella 3-septatae, demum 7-septatae, 35-40(-60) x 4.5-6 µm. Pycnidia non visa. Ad saxa in montibus Hokkaido, Hondo, Shikoku et Kiusiu (Ins. Yakushima incluso). Typus: no. 1207, Mt. Kenzan, Shikoku, leg. F. Fujikawa. - Chemistry: atranorinum et dendroidinum acids.

English description:
Pseudopodetia 3-5(-7) cm long, main stem 1-2-3 mm thick, inferno decorticate, bare, pale isabelline, densely covered with phyllocladia; phyllocladia partly verruciform, for the greater part digitiform, simple, teretiform, 1-1.5 mm long, 0.5 mm wide, or rudimentarily coralloid branched, slightly flattened, tip conspicuously whitish. Cephalodia 0.5-2.0 mm wide, botryose, dark gray, sessile on branches. Apothecia terminal, 1-3 mm wide, simple or very gregarious, the margin just closed, provided with a dark brown convex disc. Hymenium 60-80 µm high, hyaline; brown epithelium; brownish hypothecium, 60-80 µm wide, in the medulla of the receptacle below the hypothecium, amorphous dark-black material is very thickly disseminated; asci clavate, 70 x 10 µm; paraphyses filiform, tips thickened, loosely coherent; cylindric spores, pointed at the other tip, 3-septate young, finally 7-septate, 35-40(-60) x 4.5-6 µm. Pycnidia not seen. To the rocks in the mountains of Hokkaido, Hondo, Shikoku and Kiusiu (Ins. Yakushima included).

Type: no. 1207, Mt. Kenzan, Shikoku, leg. F. Fujikawa. - Chemistry: atranorin and dendroidic acids.



Stereocaulon dendroides



Stereocaulon dendroides

Stereocaulon depreaultii Delise ex Nyl., Syn. meth. lich. (Parisiis) 1(2): 249 (1860)

[KU139], Japan, Honshu. Prov. Shinano: Lakeside of Shirakaba, prope Daimon Pass, Chiisagata-gun. On exposed rocks, 800 m. Leg. Y. Asahina & T. Togashi (no. 58505), 5.05.1958. -Mt Kamikochi, 2700 m. Leg. M. Togashi, 10.07.1971, det. Y. Asahina. - Ex S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 139.

Primary thallus evanescent. Pseudopodetia more or less erect, loosely attached to substratum, not sorediate, entirely glabrous, 1(-5) cm long. Phyllocladia lateral on pseudopodetia, not forming apical foliar expansions, simple, regularly subglobose, not coralloid, not squamuliform, grain-like to verrucose, 0.1-0.2(-0.4) mm diam., P+ yellow. Cephalodia abundant, blackish. Apothecia terminal. Hypohecium faintly pigmented (pale brownish). Hymenium 60-80 µm. Spores not over 4 µm broad. Chemistry: atranorin, lobaric acid, stictic acid absent, porphyrillic acid absent, colensoinic acid absent. - North America, Japan.



Stereocaulon depreaultii



Stereocaulon depreaultii

Stereocaulon depreaultii Delise ex Nyl., Syn. meth. lich. (Parisiis) 1(2): 249 (1860)

[OH689], Japan, Honshu. Prov. Shinano (Nagano Pref.): Lakeside of Shirakaba. On rock. 1400 m. Leg. M. Nuno & T. Togashi , 02.11.1969. - Ex Y. Ohmura LICHENES MINUS COGNITI EXSICCATI NR. 689.

Primary thallus evanescent. Pseudopodetia more or less erect, loosely attached to substratum, not sorediate, entirely glabrous, 1(-5) cm long. Phyllocladia lateral on pseudopodetia, not forming apical foliar expansions, simple, regularly subglobose, not coralloid, not squamuliform, grain-like to verrucose, 0.1-0.2(-0.4) mm diam., P+ yellow. Cephalodia abundant, blackish. Apothecia terminal. Hypohecium faintly pigmented (pale brownish). Hymenium 60-80 µm. Spores not over 4 µm broad. Chemistry: atranorin, lobaric acid, stictic acid absent, porphyrillic acid absent, colensoinic acid absent. - North America, Japan.



Stereocaulon depreaultii

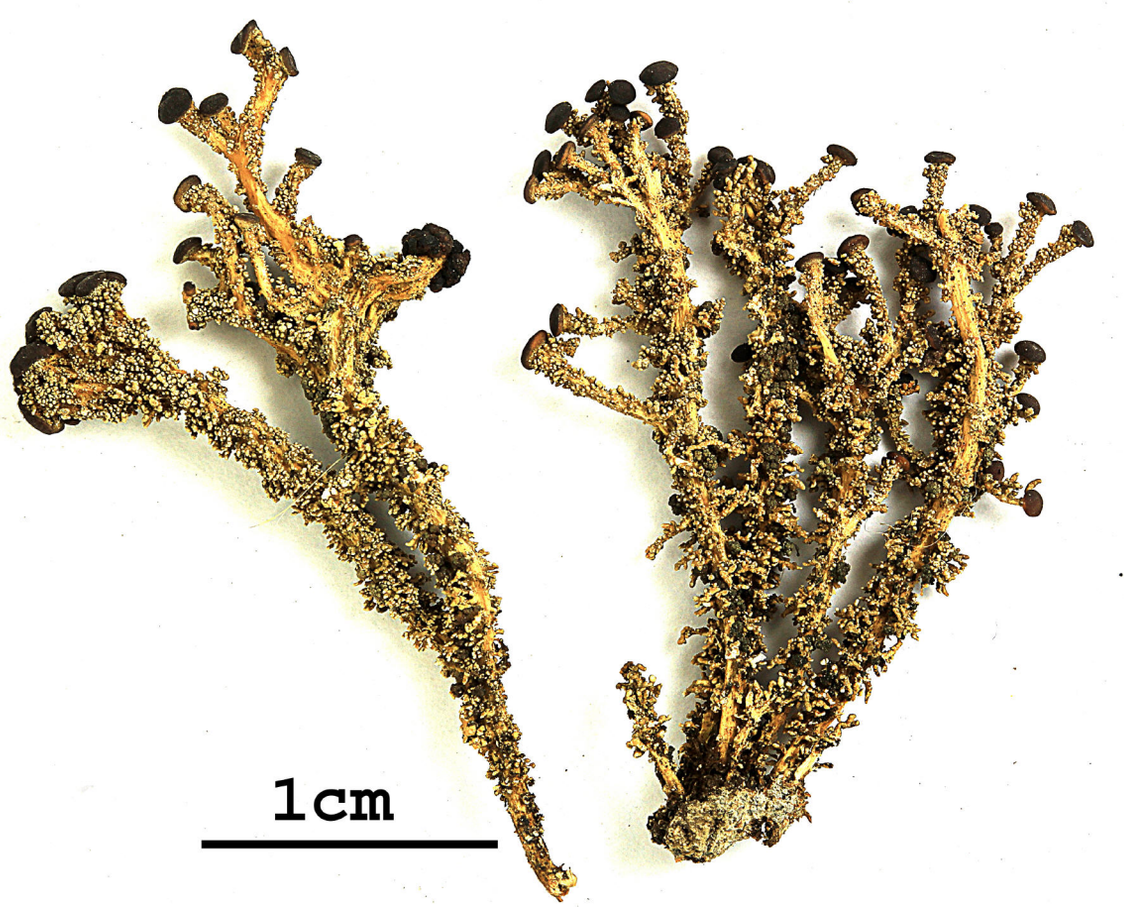


Stereocaulon depreaultii

Stereocaulon etigoense (Asahina) I.M. Lamb [as 'echigoense'], Miscell. bryol. lichenol. (Nichinan) 6(8): 135 (1974)
= *Stereocaulon japonicum* subsp. *etigoense* Asahina 1960

[KU437], Honshu. Prov. Shinano: West Power Station, upper stream of Seki River, Shinanojiri-mura. Kami-Minochi-gun. Leg. M Togashi, 13.05.1958, det. Y. Asahina. Ex S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR.437.

Saxicolous. Thallus primarius persistent or evanescent. Pseudopodetia 2-4 cm long, erect, dorsiventral, moderately to well branched.. Phyllocladia lateral, up to 1 mm, minutely grain-like to shortly coralloid, simple or only slightly branched of terete-cylindrical (coralloid) type, never with darker centers or spots, P+ pale yellow. Hypothecium brownish pigmented. Spores 3-5-septate, 30-55 x 3-5 µm. Chemistry: atranorin, colensoinic acid. - Japan. - Morphologically hardly distinguishable from *Stereocaulon japonicum* Th. Fr. . The difference is the colensoinic acid.





Stereocaulon etigoense

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