

F. Schumm (2026):

Images of Lichens
from Japan 03

With this volume I document a collection of images mainly out of the Exsiccats of Kashiwadani, Kurokawa and Ohmura from Japan 03. I 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

Cladonia crispata (Ach.) Flot., Flechten Hirschberg-Warmbrunn: 4 (1839)
= *Baeomyces turbinatus* var. *crispatus* Ach. 1803

[KU305], Japan. Hokkaido. Prov. Iburi: Mt. Tarumae. On soil, 600 m.
Leg. H. Kashiwadani (no.14149), 9.11.1977, det. H. Kashiwadani. EX
S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI
EXSICCATI NR. 305.

Primary thallus squamulose, persistent or evanescent, the squamules middle-sized, 1-4 mm long, c. 0.5 mm broad, indented, grey-green above, white beneath. Podetia hollow inside, greenish grey to brown, extremely polymorphic, slender, 2-7 cm tall and up to 4 mm thick (usually much less), unbranched or sparingly branched in upper part, with open axillary or terminal funnels which proliferate from margins, thus terminating in a cup-like perforation with spinulose margins, not melanotic at base, continuously corticate to areolate, esorediate, sometimes squamulose. Apothecia dark brown, convex, usually stipitate, developing at the margins of cups. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, semi-immersed, mostly in the margins of cups or on the primary squamules, often constricted at base, with a reddish jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K-, C-, KC-, P-, UV+ white. Chemistry: squamatic acid and variable amounts of barbatolic acid. In Central Europe rarely also with thamnolic acid (K+ and P+ yellow). - Note: a boreal-montane to subarctic-subalpine, circumpolar species found on soil, more rarely on lignum, in open habitats, in areas near treeline with siliceous substrata.



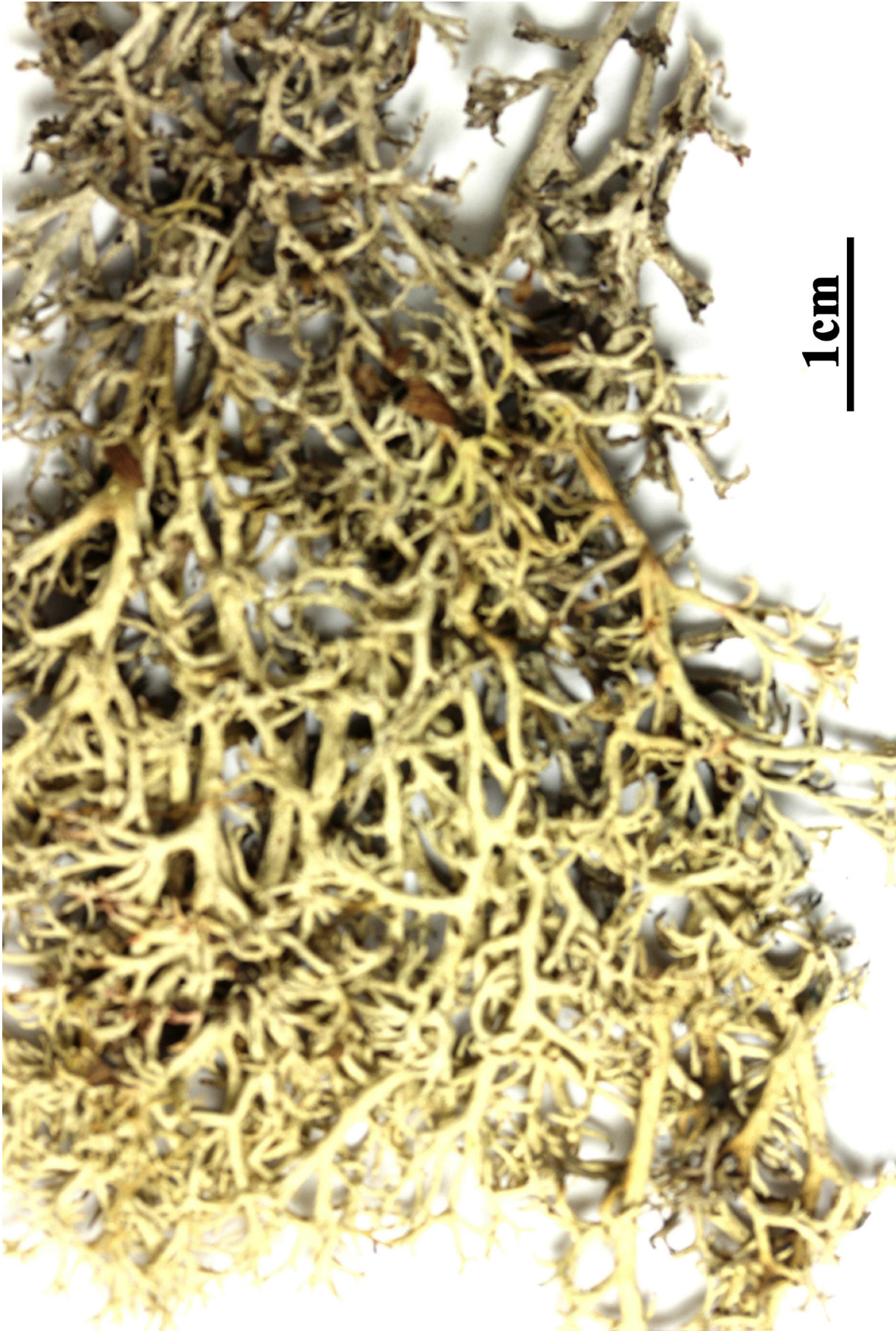
Cladonia crispata



Cladonia crispata

Cladonia crispatula (Nyl.) Ahti, Lichenologist 9(1): 14 (1977)
= *Cladina rangiferina* var. *crispatula* Nyl. 1869

[KU559], Brazil. Paraiba: Open gras-land along evergreen forest, Conde., 150 m. Leg. S. Kurokawa (no. 8100) & L. X. Filho, 29.6.1971, det. T. Ahti. EX S. KUROKAWA AND H. KASHIWADANI LICHENS RARIORES ET CRITICI EXSICCATI NR. 559.



Cladonia crispatula

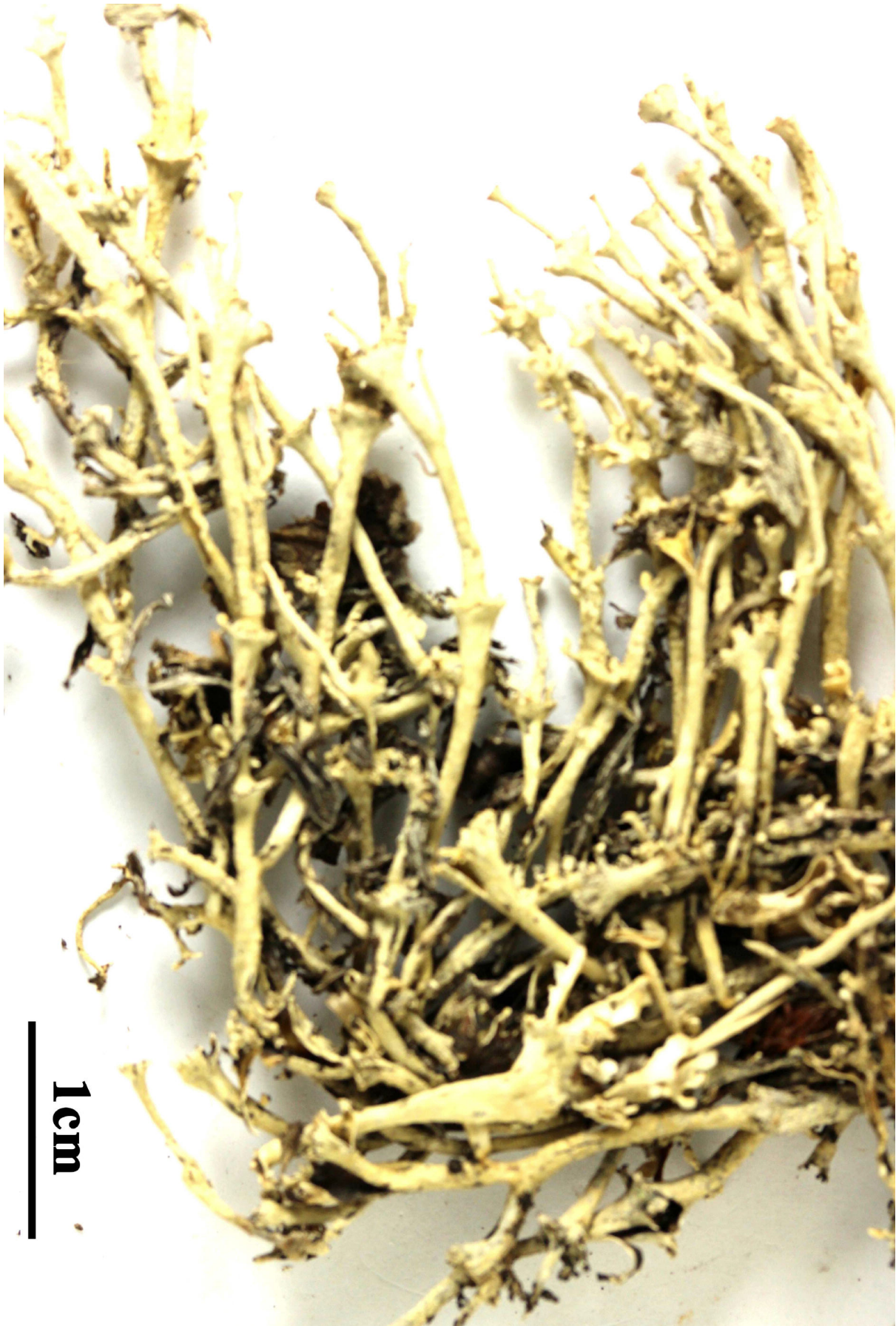


Cladonia crispatula

Cladonia dissimilis (Asahina) Asahina, Lichens of Japan, 1. Genus Cladonia: 190 (1950)

= *Cladonia verticillata* subsp. *dissimilis* Asahina 1940

[KU158], Japan, Hokkaido. Prov. Kitami: 2 km north-east of Hamatombetsu. On soil, 2. Leg. S. Kurokawa (no. 70843), 18.8.1970, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 158.



Cladonia dissimilis



Cladonia dissimilis

Cladonia dissimilis (Asahina) Asahina, Lichens of Japan, 1. Genus Cladonia: 190 (1950)

= *Cladonia verticillata* subsp. *dissimilis* Asahina 1940

[KA328], Japan. Honshu. Prov. Echigo (Pref. Niigata): Mt. Lide, en route from Mt. Mikuni to the summit of Mt. Lide. Among mosses on soil, 1850 m. Leg. H. Kashiwadani (no. 48120), 31.7.1971, det. H. Kashiwadani. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NR. 328.



Cladonia dissimilis

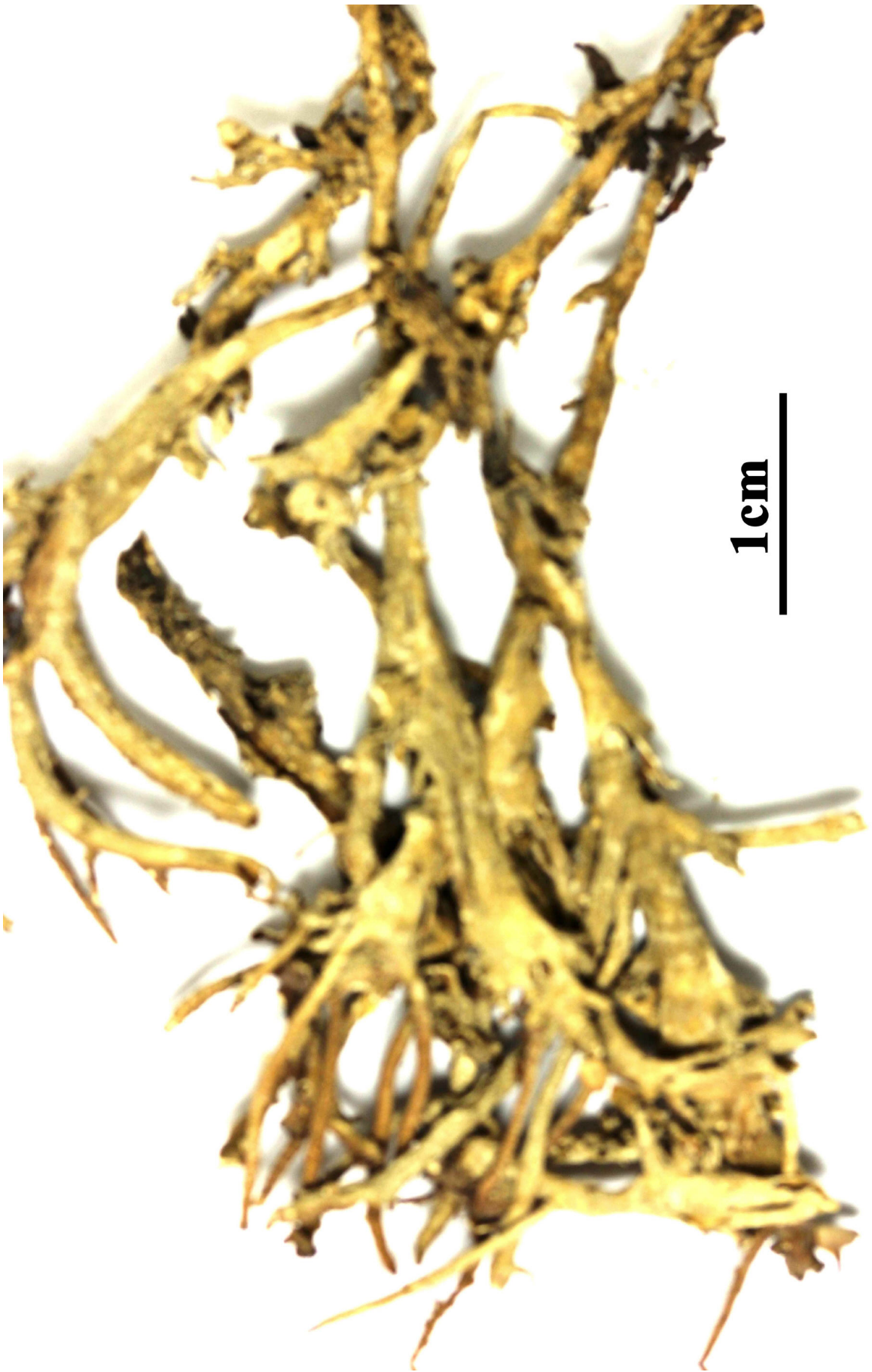


Cladonia dissimilis

Cladonia ecmocyna (Ach.) Leight., Ann. Mag. nat. Hist., Ser. 3 18: 406
(1866)
= *Cenomyce ecmocyna* Ach. 1810

[KU467], Japan, Hokkaido. Prov. Ishikari: Mt. Tomuraushi, Daitsu Mts.. Among mosses, 2040 m. - Chemistry Fumarprotocetraric acid, protocetraric acid, atranorin, 2'-O-Methylatranorin, anal. O. Dippl, 7.12.94. - Leg. H. Kashiwadani (no.16375) and Y. Endo, 6.8.1980, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 467.

Primary thallus squamulose, ephemeral, the squamules middle-sized, 1-4(-5) mm long, greenish brown to greenish grey above, pure white beneath. Podetia elongate, hollow inside, dull glaucous green, greenish grey or greenish brown in sun-forms, sometimes browned or weakly pruinose at the tips, often yellowish at the emorient bases, 5-10 cm tall, 0.5-4(-5) mm thick, cupless or with narrow (1.5-5 mm wide) cups, esquamulose or sparsely squamulose in lower parts, the cortex subcontinuous to checkered-areolate, the areoles often separated by a network of white medullary interspaces. Apothecia rare, brown to almost black, convex, developing along the margins of cups. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, Cladonia-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, pyriform, semi-immersed along the margins of the cups, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K+ instantly yellow, C-, KC-, P+ red; yellow pigment at the base K+ red. Chemistry: atranorin, fumarprotocetraric acid, and terpenoids. Note: a mainly boreal-montane to subarctic-subalpine, circumpolar lichen found on organic soil and amongst bryophytes in cool depressions with a late snow lie near or above treeline.



Cladonia ecmocyna



Cladonia ecmocyna

Cladonia ecmocyna (Ach.) Leight., Ann. Mag. nat. Hist., Ser. 3 18: 406
(1866)
= *Cenomyce ecmocyna* Ach. 1810

[KU262], Canada, British Columbia: Beside airstrip, 15. miles south of Kinaskan Lake. On soil, 2500 ft. Leg.S. Kurokawa (no. 6980), 29.8.1975, det. S. Kurokawa. EX S. KUOKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 262.

Chemistry: Fumarprotocetraric acid, Protocetraric acid, Atranorin, 2' O-Mezhylatranorin, anal.by P. Dippl 7.12.94.

Primary thallus squamulose, ephemeral, the squamules middle-sized, 1-4(-5) mm long, greenish brown to greenish grey above, pure white beneath. Podetia elongate, hollow inside, dull glaucous green, greenish grey or greenish brown in sun-forms, sometimes browned or weakly pruinose at the tips, often yellowish at the emorient bases, 5-10 cm tall, 0.5-4(-5) mm thick, cupless or with narrow (1.5-5 mm wide) cups, esquamulose or sparsely squamulose in lower parts, the cortex subcontinuous to checkered-areolate, the areoles often separated by a network of white medullary interspaces. Apothecia rare, brown to almost black, convex, developing along the margins of cups. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, Cladonia-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, pyriform, semi-immersed along the margins of the cups, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K+ instantly yellow, C-, KC-, P+ red; yellow pigment at the base K+ red. Chemistry: atranorin, fumarprotocetraric acid, and terpenoids. Note: a mainly boreal-montane to subarctic-subalpine, circumpolar lichen found on organic soil and amongst bryophytes in cool depressions with a late snow lie near or above treeline.



Cladonia ecmocyna



Cladonia ecmocyna

Cladonia fenestralis Nuno, J. Jap. Bot. 50(10): 291 (1975)

[KU306], Malaya. North Sabah: On trail from Carson's Camp to Pauar Laban Huts, Mt. Kinabalu. On soil, 2800 m. Leg. M. Nuno, 3.8.1976, det. M. Nuno. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 306.



Cladonia fenestralis



Cladonia fenestralis

Cladonia fenestralis Nuno, J. Jap. Bot. 50(10): 291 (1975)

[KU212], Malaya. North Sabah: Paka Cave, Mt. Kinabalu. In the forest of *Leptospermum* sp. 3000 m- Leg. M. Togashi, 21.9.1975, det. M. Nuno. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 212.



Cladonia fenestralis



Cladonia fenestralis

Cladonia furcata (Huds.) Baumg., Fl. Lips.: 577 (1790)
= *Lichen furcatus* Huds. 1762

[OH403], Japan. Honshu. Prov. Kai (Pref. Yamanashi): Gotenniwa, Fujikawaguchico-machi, Mitamitsuru-gun. On humus, 965 m. Leg. Y. Ohmura (no. 6909), 37.4.2010, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR.403.

Primary thallus squamulose, the squamules mostly ephemeral, middle-sized, 1-4 mm long, 1-3 mm wide, crenate, ascending, glaucescent above, white beneath. Podetia elongate, hollow inside, anisotomically branched, up to 8(-10) cm tall, 0.7-2 mm thick, greenish-grey to brown in sun-forms, forming irregular and loose tufts, with pointed apices and a smooth surface, sparsely squamulose, the squamules 2-3 mm long and c. 2 mm wide; fertile podetia thicker, often perforate, the tips longitudinally fissurate, flattened, sometimes forming a pseudo-cup with involute margins. Algal layer continuous or forming a mosaic intersected by thin white lines, or dispersed in scattered (not raised) clusters. Apothecia rare, dark brown, convex, sometimes arranged in corymbose clusters. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, semi-immersed on the tips of podetia, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests and chemistry: chemically variable, with the following chemotypes (all of them C-, KC-, UV-): 1) K- or K+ yellowish slowly turning brown, P+ red (fumarprotocetraric acid complex, sometimes with traces of physodalic and/or hypoprotocetraric acids), 2) K- or K+ yellowish slowly turning brown, P+ red (fumarprotocetraric acid complex and bourgeanic acid), 3) K- or K+ yellowish slowly turning brown, P+ red (fumarprotocetraric acid complex, psoromic and conpsoromic acids), 4) K+ yellow sometimes slowly turning brownish, P+ red (atranorin, fumarprotocetraric acid complex), 5) K+ yellow, P+ yellow (atranorin, psoromic and conpsoromic acids), 6) K-, P+ yellow (psoromic and conpsoromic acids), 7) K+ yellow, P- (atranorin and bourgeanic acid, with traces of fumarprotocetraric acid). - Note: a holarctic, temperate to boreal-montane lichen found on soil, amongst mosses, sometimes on bark and lignum, in areas with calcareous or siliceous base-rich rocks, with a wide altitudinal range.



Cladonia furcata



Cladonia furcata

Cladonia furcata (Huds.) Baumg., Fl. Lips.: 577 (1790)
= *Lichen furcatus* Huds. 1762

[OH429], Japan. Izu Islands: along the Prefectural Road 223, NE slope of Mt. Nagataki, Mikura jima Island. On humus along the slope-side of the road, 680 m. Leg. Y. Ohmura (no. 8447), 10.11.2011, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 4298.

Primary thallus squamulose, the squamules mostly ephemeral, middle-sized, 1-4 mm long, 1-3 mm wide, crenate, ascending, glaucescent above, white beneath. Podetia elongate, hollow inside, anisotomically branched, up to 8(-10) cm tall, 0.7-2 mm thick, greenish-grey to brown in sun-forms, forming irregular and loose tufts, with pointed apices and a smooth surface, sparsely squamulose, the squamules 2-3 mm long and c. 2 mm wide; fertile podetia thicker, often perforate, the tips longitudinally fissurate, flattened, sometimes forming a pseudo-cup with involute margins. Algal layer continuous or forming a mosaic intersected by thin white lines, or dispersed in scattered (not raised) clusters. Apothecia rare, dark brown, convex, sometimes arranged in corymbose clusters. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, semi-immersed on the tips of podetia, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests and chemistry: chemically variable, with the following chemotypes (all of them C-, KC-, UV-): 1) K- or K+ yellowish slowly turning brown, P+ red (fumarprotocetraric acid complex, sometimes with traces of physodalic and/or hypoprotocetraric acids), 2) K- or K+ yellowish slowly turning brown, P+ red (fumarprotocetraric acid complex and bourgeanic acid), 3) K- or K+ yellowish slowly turning brown, P+ red (fumarprotocetraric acid complex, psoromic and conpsoromic acids), 4) K+ yellow sometimes slowly turning brownish, P+ red (atranorin, fumarprotocetraric acid complex), 5) K+ yellow, P+ yellow (atranorin, psoromic and conpsoromic acids), 6) K-, P+ yellow (psoromic and conpsoromic acids), 7) K+ yellow, P- (atranorin and bourgeanic acid, with traces of fumarprotocetraric acid). - Note: a holarctic, temperate to boreal-montane lichen found on soil, amongst mosses, sometimes on bark and lignum, in areas with calcareous or siliceous base-rich rocks, with a wide altitudinal range.



Cladonia furcata



Cladonia furcata

Cladonia graciliformis Zahlbr., Annls mycol. 14(1/2): 55 (1916)

[KU159], Japan, Honshu, Prov. Shinano, Honzawa Hot Spring, Yatsugatake Mts., on soil, 2200 m. Leg. M. Togashi, 16.11.1972, det. Y. Asahina. EX S. KUROKAWA: LICHENES RARIORES ET CRITICI EXSICCATI NR. 159.

1 cm



Cladonia graciliformis



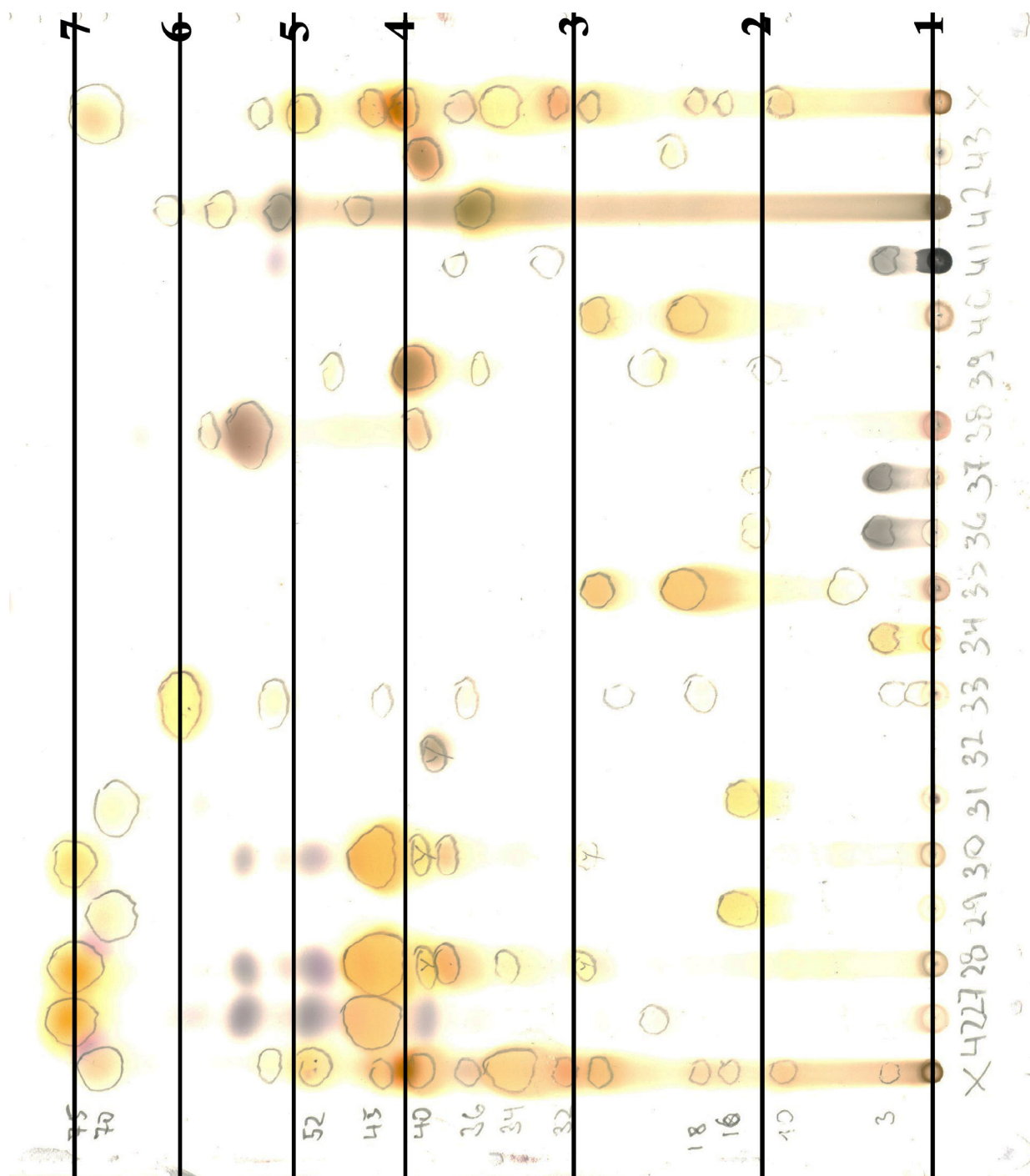
Cladonia graciliformis

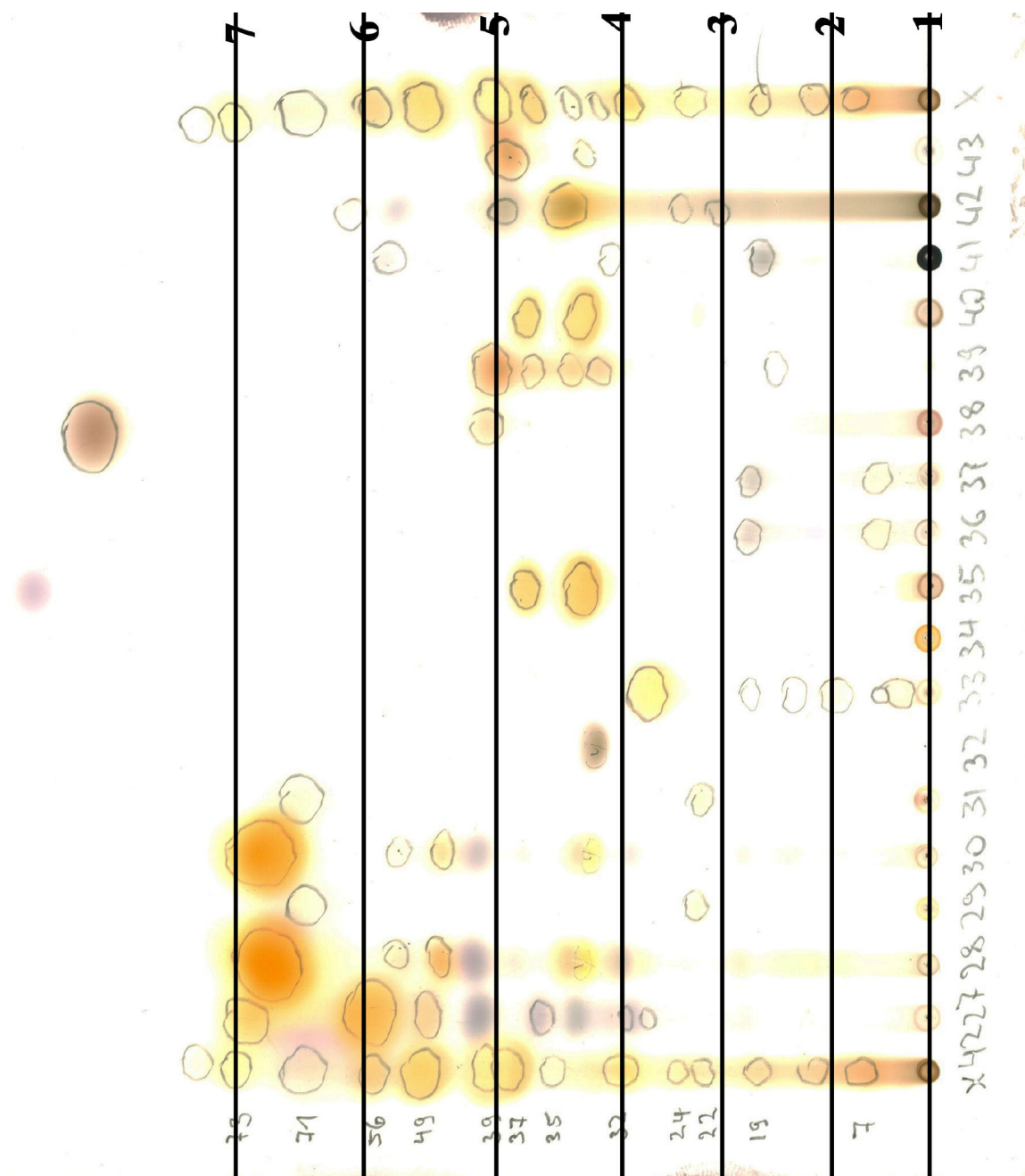


Cladonia graciliformis

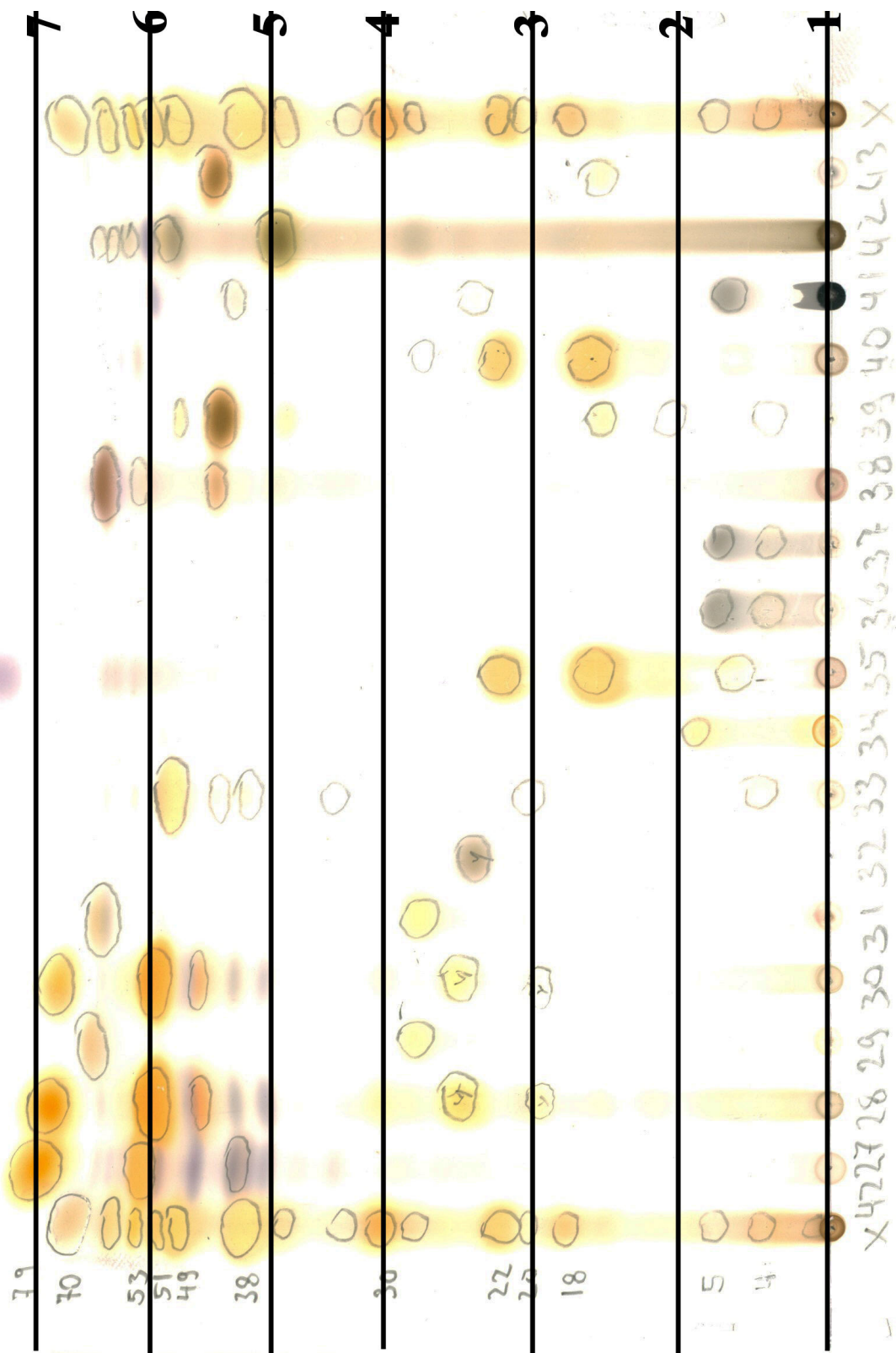


Cladonia graciliformis





Cladonia graciliformis



Cladonia graciliformis

Cladonia gracilis (L.) Willd., Fl. berol. prodr.: 363 (1787)
= *Lichen gracilis* L. 1753

[KU560], Chile. Aisén: Parque Nacional de Rio Simpson, along route 245. Among mosses in open *Nothofagus* forest, 150-230 m. Leg. Kashiwadani (no. 18345), 24.11.1981, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 560.

Primary thallus squamulose, often persistent only at the base of podetia or ephemeral, the squamules ascending, small to middle-sized 2-5 mm long, 0.8-5 mm wide, irregularly crenate or lobed, glaucescent to olive-green above, white beneath. Podetia slender and elongate, hollow inside, greenish glaucescent in shade-forms to brownish grey or dark brown, non- or scarcely squamulose, 4-8(-12) cm tall, 0.5-1.5 mm thick (fertile podetia to 2 mm thick), unbranched or sparingly branched, pointed or with small, rapidly flaring, closed, toothed cups, smooth, corticate-areolate, the cortex continuous or disrupted into flat areoles separated by white lines. Apothecia rare, brown, convex, terminal or on the margins of cups. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, semi-immersed, on the margins of the cups or at the tip of cupless podetia, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K- or K+ yellowish slowly turning brown, C-, KC-, P+ red, UV-. Chemistry: substances of the fumarprotocetraric acid complex. - Note: a circumpolar, cool-temperate to southern arctic lichen found on acid soil, more rarely on decaying wood in upland areas.



Cladonia gracilis



Cladonia gracilis

Cladonia gracilis subsp. turbinata (Ach.) Ahti, Ann. Bot. Fenn. 17(2):
212 (1980)
= *Lichen turbinatus* Ach. 1799

[OH630], Japan. Honshu. Prov. Shinano (Nagano Pref.): Mugikusa Pass, Kita-Yatsugatake, Yatsugatake Mts. Chino-city (36°03'19" n, 138°20'03" E). on humus over rock, 2064 m. Leg. M. Sugimoto (no. 612), 20.7.2019, det. M. Sugimoto & Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 630.



Cladonia gracilis subsp. *turbinata*



Cladonia gracilis subsp. *turbinata*

Cladonia gracilis var. *elongata* (Jacq.) Mont., Annls Sci. Nat., Bot., sér. 2
4: 92 (1835)
= *Lichen elongatus* Jacq. 1781

[KU612], Chile. Aisén: Parque Nacional de Rio Simpson along route 245. On decayed wood, 200 m. Leg. H. Kashiwadani (no.18267), 24.11.1981, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSAICCATI NR. 612.



Cladonia gracilis var. *elongata*



Cladonia gracilis var. *elongata*

Cladonia gracilis subsp. valdiviensis Ahti, in Stenroos & Ahti, Ann. Bot. Fenn. 27(4): 322 (1990)

[OH480], Chile. Llanquihue: eastern slope of Cerro Pavilo, 16 km west of Tegu-alda. On humus in *Nothofagus* mixed forest, 210 m. Leg. H. Kashiwadani (no. 17835), 14.11.1981, det. S. Stenroos. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 480.



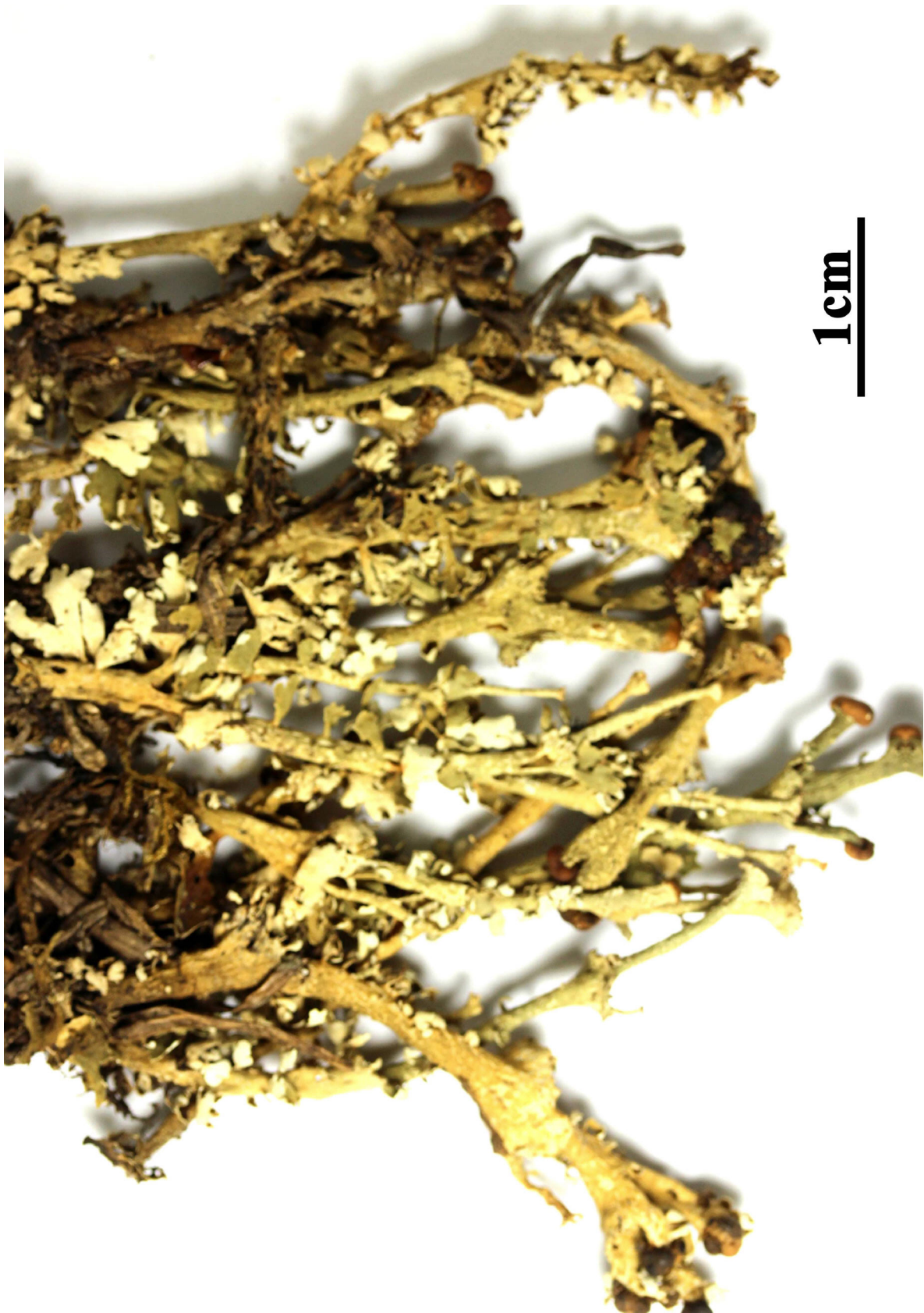
Cladonia gracilis subsp. *valdiviensis*



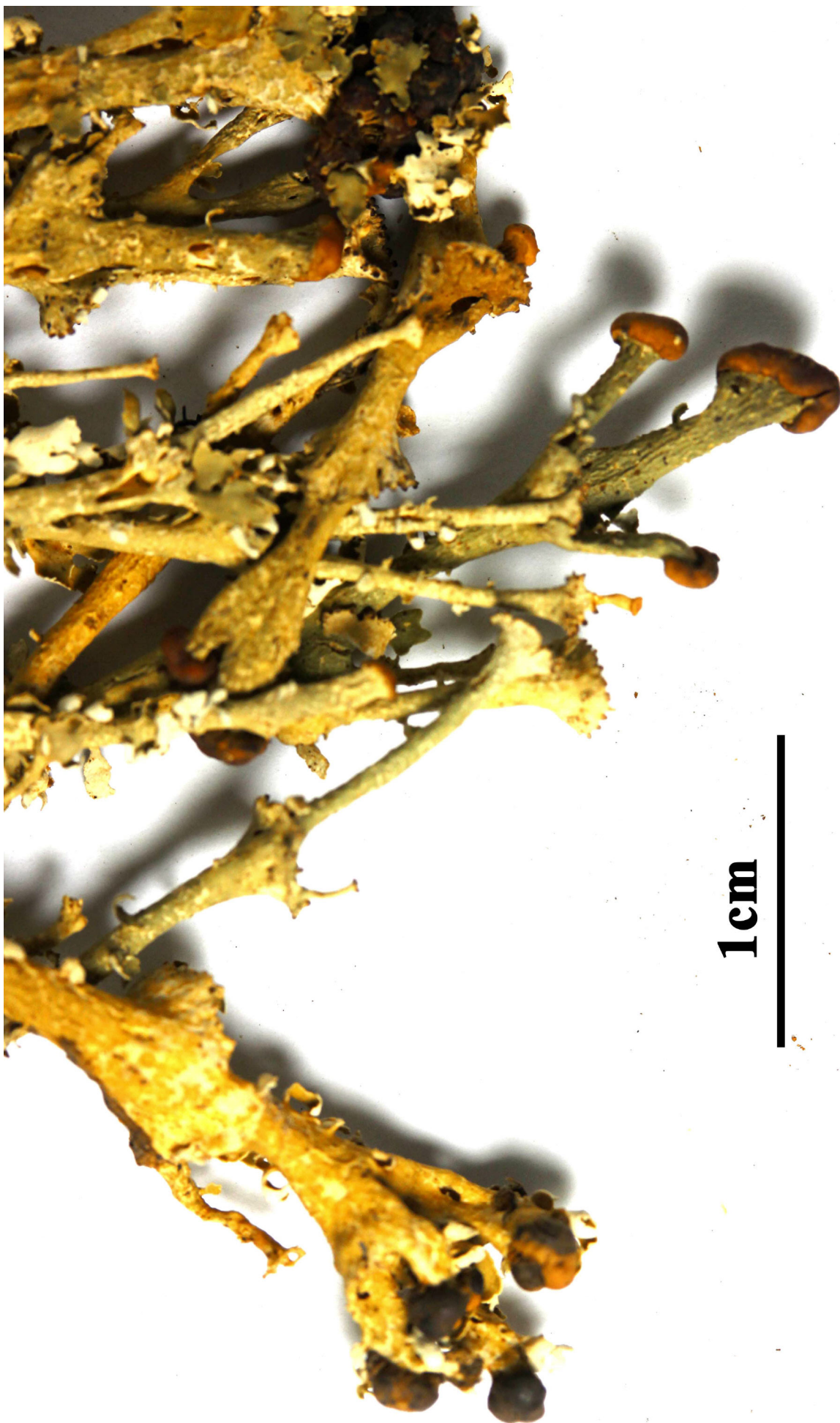
Cladonia gracilis subsp. *valdiviensis*

Cladonia gracilis var. *dilatata* (Hoffm.) Vain., Acta Soc. Fauna Flora fenn.
10: 87 (1894)
= *Cladonia dilatata* Hoffm. 1796

[KU160], Japan. Honshu. Prov. Kai: Mt. Kokushi, Higashi-Yamanashi-gun. Among mosses on decayed wood, 2450 m. Leg. H. Shibuchi (no.4679), and K. Yoshida, 25.7.1972, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 160.



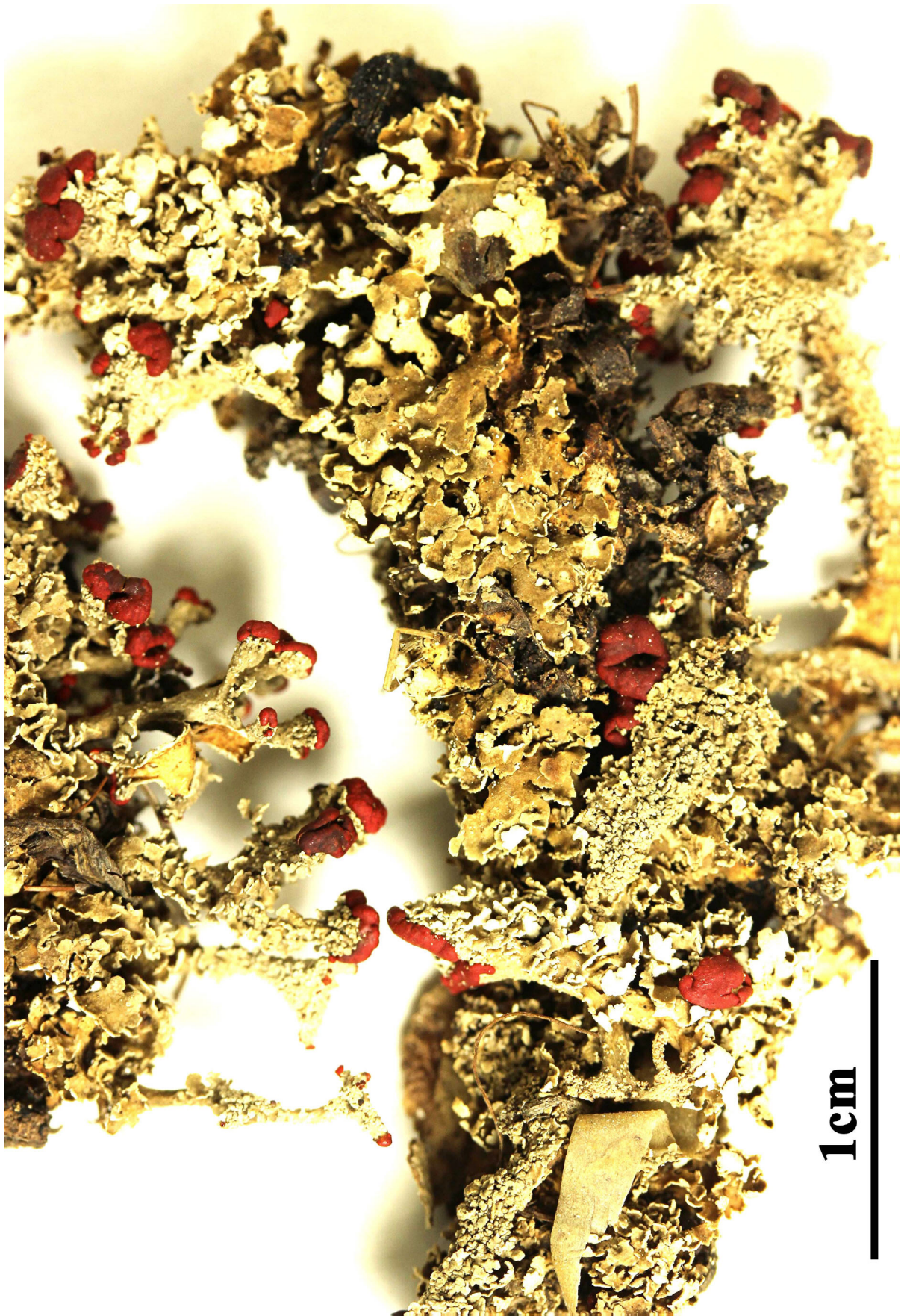
Cladonia gracilis var. *dilatata*



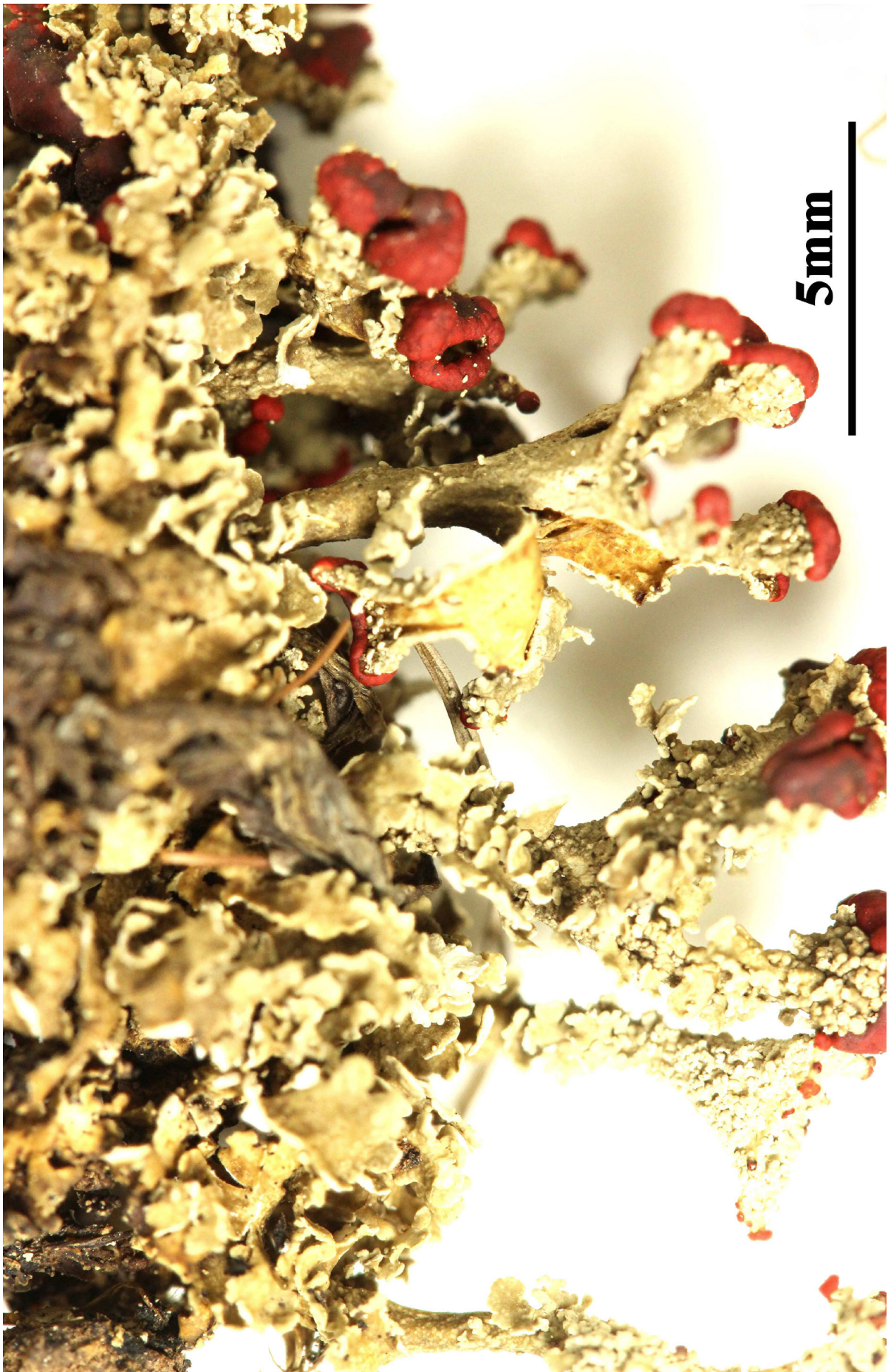
Cladonia gracilis var. *dilatata*

Cladonia granulans Vain., Bot. Mag., Tokyo 35: 65 (1921)

[KU119], Japan. Hokkaido. Prov. Ishikari: Kohgen Hot Spring, Daisetsu Mts. On soil, 1000-1100 m. Leg. Y. Endo (no. 267), 20.9.1964, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 119.



Cladonia granulans



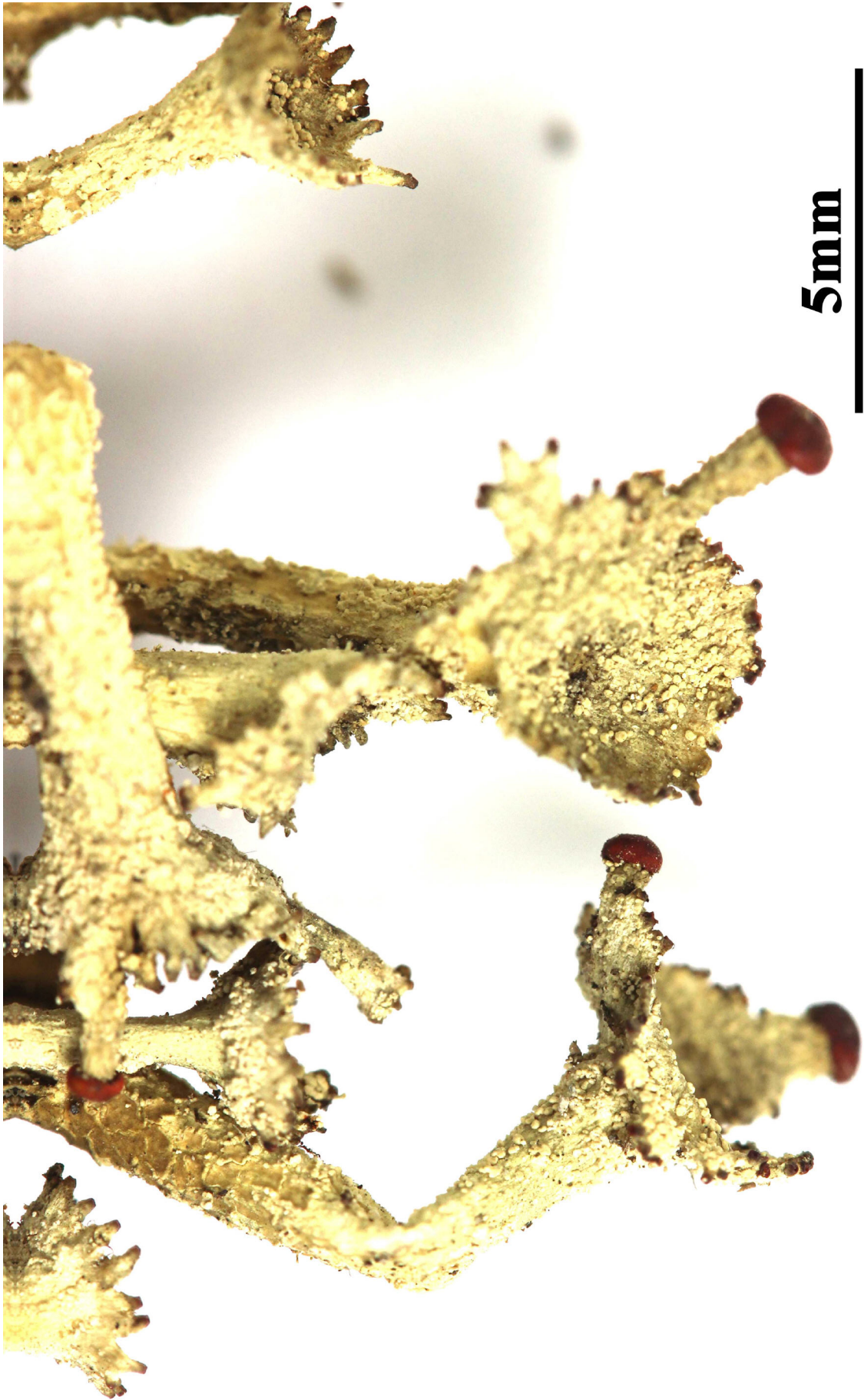
Cladonia granulans

Cladonia granulans Vain., Bot. Mag., Tokyo 35: 65 (1921)

[KU265], Japan. Hokkaido. Prov. Ishikari: Along trail between Bogaku-dai and Shirogane Hot Spring, Mt. Tokachi. On soil, 670-1200 m. Leg. S. Kurokawa (no. 72102), 2.9.1972, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 265.



Cladonia granulans



Cladonia granulans

Cladonia incrassata Flörke, Clad. Comm.: 21 (1827)

[KU509], Japan.Hokkaido. Prov. Ishikari: Tokachidake Hot Spring, Mt. Tokachi-dake. On soil, 1450 m. Leg. H. Shibuichi (no. 6203) & K. Yoshida, 7.8.1980, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWASANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 509.

Primary thallus squamulose, the squamules very small, 1-3(-4) mm long, 0.9-2 mm wide, crenulate-incised, often contorted, densely sorediate especially along the margins and on the lower surface, sometimes dissolving into greenish to brownish masses of soredia, yellowish green above, white beneath. Podetia rare, yellowish grey in upper part, often orange yellow at the base, usually simple to very sparsely branched in upper part, often deformed, more or less flattened or club-like, 1-4(-7) mm tall, 0.3-1(-2) mm thick (but luxuriant specimens may be up to 3 cm tall and much branched in upper part), with a partly corticate, partly granulose-verruculose, sometimes partly farinose-sorediate surface, rarely squamulose. Apothecia rather rare, scarlet red, at the tips of podetia, often confluent and to 2.5 mm across. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia scarlet red, semi-immersed in the primary squamules, with a red jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K-, C-, KC- or KC+ yellow, P-, UV+ white. Chemistry: usnic, squamatic and didymic acids; some rare strains contain also grayanic acid; rhodocladonic acid in apothecia and pycnidia. - Note: a cool-temperate to boreal-montane species with a fragmented circumpolar range, found on peaty and humus-rich soil and on strongly weathered lignum.



Cladonia incrassata

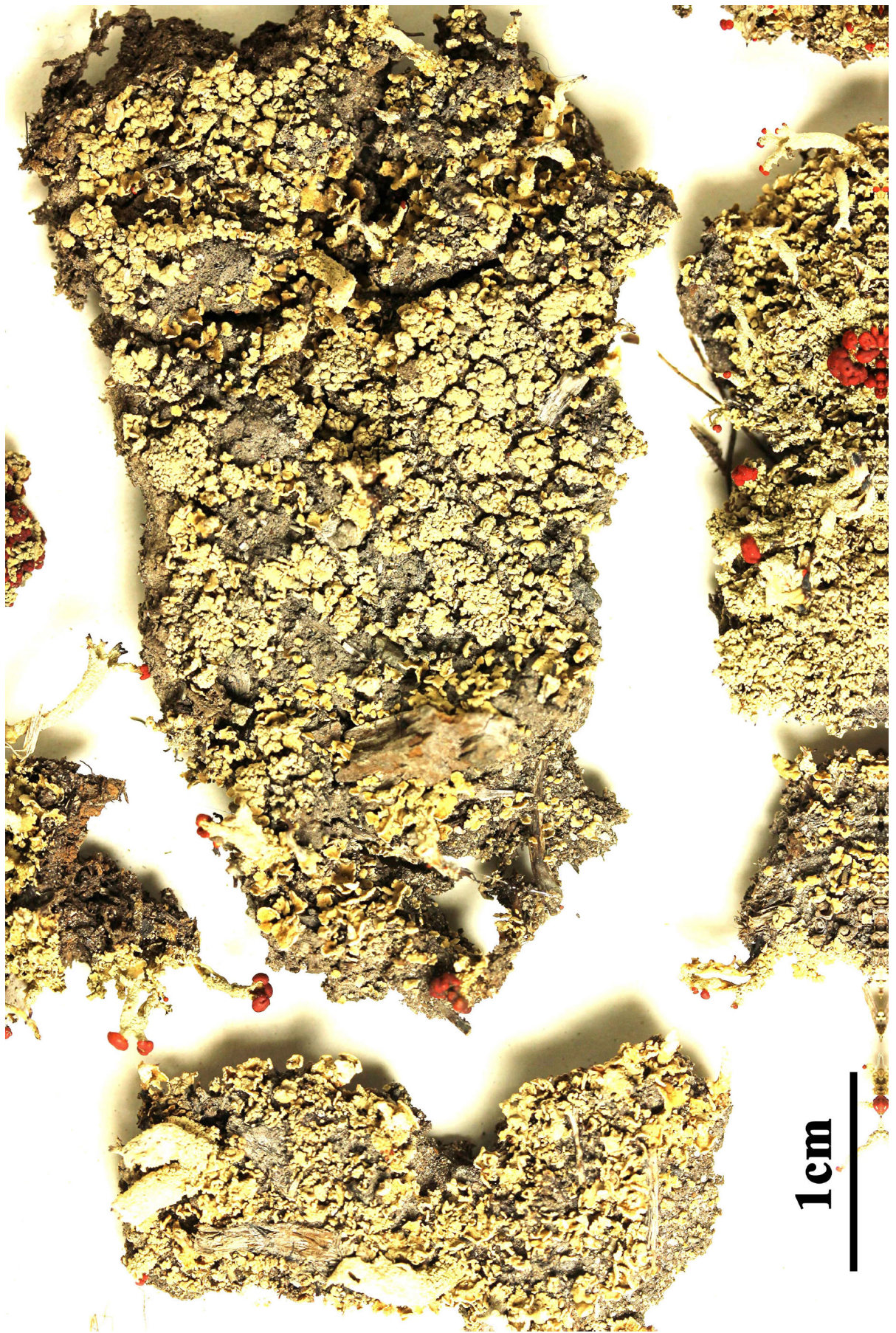


Cladonia incrassata

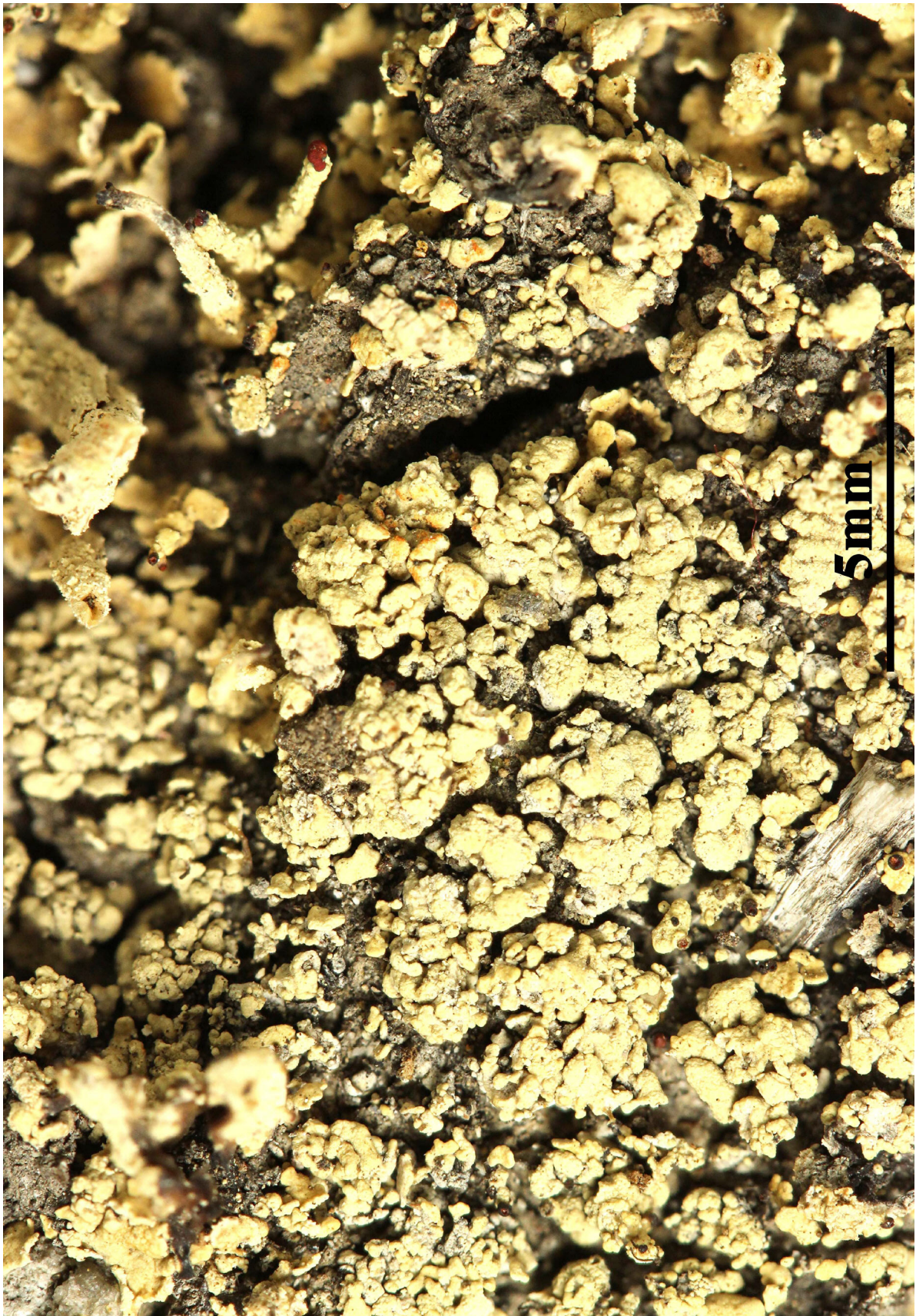
Cladonia incrassata Flörke, Clad. Comm.: 21 (1827)

[KU120], Japan. Honshu. Prov. Shimotsuke: Mt.Nasu-dake. On soil, 1800 m. Leg. S. Kurokawa (no.69031), 17.6.1969, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 120.

Primary thallus squamulose, the squamules very small, 1-3(-4) mm long, 0.9-2 mm wide, crenulate-incised, often contorted, densely sorediate especially along the margins and on the lower surface, sometimes dissolving into greenish to brownish masses of soredia, yellowish green above, white beneath. Podetia rare, yellowish grey in upper part, often orange yellow at the base, usually simple to very sparsely branched in upper part, often deformed, more or less flattened or club-like, 1-4(-7) mm tall, 0.3-1(-2) mm thick (but luxuriant specimens may be up to 3 cm tall and much branched in upper part), with a partly corticate, partly granulose-verruculose, sometimes partly farinose-sorediate surface, rarely squamulose. Apothecia rather rare, scarlet red, at the tips of podetia, often confluent and to 2.5 mm across. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, Cladonia-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia scarlet red, semi-immersed in the primary squamules, with a red jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K-, C-, KC- or KC+ yellow, P-, UV+ white. Chemistry: usnic, squamatic and didymic acids; some rare strains contain also grayanic acid; rhodocladonic acid in apothecia and pycnidia. - Note: a cool-temperate to boreal-montane species with a fragmented circumpolar range, found on peaty and humus-rich soil and on strongly weathered lignum.



Cladonia incrassata



Cladonia incrassata

Cladonia kanewskii Oxner, Ukrainian Botan. Rev. 3: 9 (1926)

[OH680], Japan. Honshu. Shinano Prov. (Nagano Pref.): Azusayama, Kawakami-mura, Minamisaku-gun. On rocks, 1200 m. Legt. M. Nuno, 8.8.1959, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI N. 680.



Cladonia kanewskii



Cladonia kanewskii

Cladonia kanewskii Oxner, Ukrainian Botan. Rev. 3: 9 (1926)

[KU613], Japan. Hokkaido. Prov. Nemuro: En route from Mt. Sashirui to Futatsuike-pond, Menashi-gun. On soil, 13409-1550 m. Leg. H. Kashiwadani (no. 20050), 14.8.1983, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 623.



Cladonia kanewskii



Cladonia kanewskii

Cladonia kanewskii Oxner, Ukrainian Botan. Rev. 3: 9 (1926)

[OH656], Japan. Honshu. Shinano Prov. (Nagano Pref.): Azusayama, Minamisaku-gun. On humus. Leg. M. Nuno, 11.8.1964, det. M. Nuno. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI N. 656.



Cladonia kanewskii



Cladonia kanewskii

Cladonia koyaensis Asahina, J. Jap. Bot. 28(6): 162 (1953)

[KU665], Japan. Oki Islands. Tamawakasu Shrine, Saigo-cho. On bark of *Cryptomeria japonica*, 10 m. Leg. H. Kashiwadani (no. 20782), 24.2.1985, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 665.



Cladonia koyaensis



Cladonia koyaensis

Cladonia krempelhuberi (Vain.) Vain., Acta Soc. Fauna Flora fenn. 53(no. 1): 102 (1922)

[OH505], Japan. Shikoku. Prov. Iyo (Pref. Ehime): Omogo, Kumakogen-cho, Kamiugena-gun (33°44' N, 133°08' E). On humus, 990 m. Leg. Y. Ohmura (no. 10298), 11.11.2013, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI NR.505.



Cladonia krempelhuberi

5mm

Cladonia krempelhuberi

Cladonia krempelhuberi (Vain.) Vain., Acta Soc. Fauna Flora fenn. 53(no. 1): 102 (1922)

[OH658], Japan. Honshu. Kai Prov. (Yamanashi Pref.): en route from Kagosaka Pass to Mt. Ohora, Yamanakako-mura, Minamitsuru-gun. On humus, 1300 m. Leg. M. Nuno, 27.2.1977, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 658.



Cladonia krempelhuberi



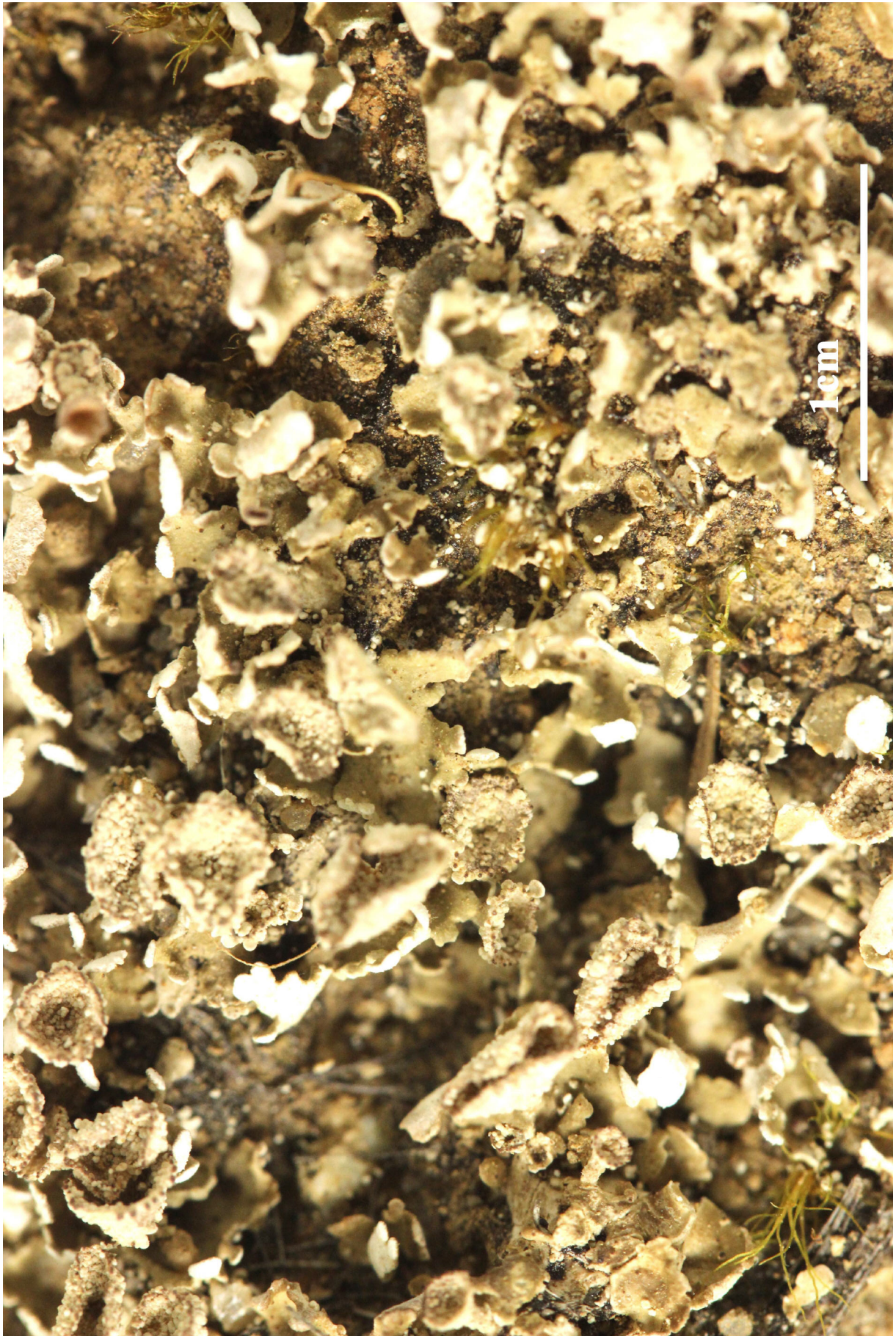
Cladonia krempelhuberi

Cladonia kurokawae Ahti & S. Stenroos, in Ahti, Stenroos, Chen & Guo, Mycosystema 8-9: 54 (1996) [1995-1996]

[OH532], Japan. Honshu. Prov. Tohtomi (Pref. Shizuoka): Aritama-nishi-machi, Hamamatsu-city (34°45'10" N, 137°44'15" E) On soil, 90 m. leg. Y. Ohmura (no. 111072), 2.1.2016, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR.532.



Cladonia kurokawae



Cladonia kurokawae

Cladonia kurokawae Ahti & S. Stenroos, in Ahti, Stenroos, Chen & Guo, Mycosystema 8-9: 54 (1996) [1995-1996]

[OH681], Japan. Hokkaido, Kitami Prov.: along the route 238, Minami-hama-cho, Esashi-cho, Esashi-gun (44°55'17" N, 142°34'43" E). On soil, 10 m. Leg. Y. Ohmura (no. 11194), 20.6.2016, det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI NR. 681.



Cladonia kurokawae



Cladonia kurokawae

Cladonia macilenta Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 126 (1796) [1795]

[OH481], Japan. Hokkaido. Prov Kitami: Mt. Iwo, Shari-gun. On soil. Leg. M. Nonaka, 28.6.1953, det. Y. Asahina. EX Y. OHMURA LICHENES MINUS CXOGNITI EXSICCATI NR. 481.

Primary thallus squamulose, usually persistent, the squamules divided, very small 1-2 mm long and wide, grey-green above, white beneath, sometimes sorediate at margins. Podetia bacilliform, often slightly broadening below the apothecium and becoming club-like, hollow inside, greenish grey to whitish in the parts which have lost the soredia, 1-3 cm tall, to 1.5 mm thick at base, simple or very rarely sparingly branched in upper part, without cups, corticate and sometimes micro-squamulose only at base, farinose-sorediate, the soredia 20-50 μm in diam. Apothecia rather frequent, scarlet red, terminal, up to 2 mm diam. (usually smaller). Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, Cladonia-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia scarlet red, semi-immersed in the tips of podetia or on the surface or margins of the primary squamules, with a red jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests and chemistry: two chemotypes (both of them C-, UV-): 1) thallus K+ yellow, P+ yellow (thamnolic, barbatic and didymic acids, rarely with additional usnic acid), 2) thallus K-, P- (barbatic and didymic acids). The apothecia contain rhodocladonic acid. - Note: a cool-temperate to boreal-montane, circumpolar lichen found on different organic substrata such as rotting wood, bark (mostly on basal parts of trunks) and more rarely on acid soil rich in humus.



Cladonia macilenta



Cladonia macilenta

Cladonia maxima (Asahina) Ahti, Ann. Bot. Fenn. 15(1): 12 (1978)
= *Cladonia gracilis* f. *maxima* Asahina 1971

[KU561], Japan. Hokkaido. Prov. Kitami: En route from Mt. Mitsumine to Mt. Sashirui, Shari-gun, On ground with mosses, 1200 m. Leg. H. Kashiwadani (no. 20008), 14.8.1982, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 561.



Cladonia maxima



Cladonia maxima

Cladonia merochlorophaea Asahina, J. Jap. Bot. 16(12): 713 (1940)

[KU471], Japan. Honshu. Prov. Shinano: Mt. Kai-Komagatake. Kami-Ina-gun. 2300 m. Leg. S. Kurokawa (no. 79081), 30.7.1979, det. S. Kurokawa. - Chemistry merochlorophaeic acid, 4-O-mero-chlorophaeic acid, anal. P. Dippl, 1984. - Ex S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 471.

Primary thallus squamulose, persistent, the squamules thin, small, ascending, 1-2 mm long, 1-3 mm wide, broadly lobed, greenish grey above, white but turning dark brown to black near the attachment point beneath, esorediate. Podetia goblet-shaped, hollow inside, greenish brown to greenish grey, strongly melanotic at base, usually esquamulose, 0.6-2(-4) cm tall, with 3-9 mm wide, regular or marginally proliferating cups gradually tapering to a short, 1-2 mm thick stalk. Surface of podetia at first corticate-areolate, soon becoming verruculose, the warts giving rise to rough, (20-) 40-80 μ m wide granules, schizidia, phyllidia and microsquamules (true soredia absent). Apothecia infrequent, brown, shortly stalked on the margin of cups. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, Cladonia-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia rare, developing along the margin of cups, pyriform, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K- or rarely K+ yellowish slowly turning brown, C- or C+ reddish, KC+ red in extracts only (microscope!), P+ red or P-, UV+ pale bluish white. Chemistry: chemotype 1) has merochlorophaeic, 4-O-methylcryptochlorophaeic and fumarprotocetraric acids as major and constant substances, chemotype 2) lacks fumarprotocetraric acid. - Note: a mainly cool-temperate, probably circumpolar lichen found on humus-rich soil.



Cladonia merochlorophaea



Cladonia merochlorophaea

Cladonia mitis Sandst., Cladon. Exsicc.: no. 55 (1918)

[KU122], Japan. Honshu. Prov. Kai: Lakeside of Saiko, Mt. Fuji. On soil, 910 m. Leg. S. Kurokawa (no. 69082), 9.1.1969, det. S. Kurokawa. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR.122.

Primary thallus crustose, ephemeral, rarely seen. Podetia shrub-like, hollow inside, esquamulose, ecorticate, the surface compact or finely arachnoid, pale yellowish white, anisotomically (i.e. main branches thicker) mainly trichotomously branched, 4-12 cm tall, the terminal branchlets generally - not always – spreading in all directions, not or only slightly browned at tips. Apothecia rare, brown, convex, very small. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, semi-immersed, on the tips of podetia, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K-, C-, KC+ yellow, P-, UV-. Chemistry: mostly usnic, isousnic, rangiformic and norrangiformic acids; rarely rangiformic acid absent. - Note: a typical member of subalpine-alpine tundras, perhaps more common at higher altitudes than *C. arbuscula*.



Cladonia mitis



Cladonia mitis

Cladonia mitis Sandst., Cladon. Exsicc.: no. 55 (1918)

[KU511], Japan. Honshu. Prov. Shimotsuke: on trail from Mt. Akanagi to Mt. Nyoho, Nikko. On soil, 2250 m. Leg. H. Shibuichi (no. 6639), 6.8.1981, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 511.

Primary thallus crustose, ephemeral, rarely seen. Podetia shrub-like, hollow inside, esquamulose, ecorticate, the surface compact or finely arachnoid, pale yellowish white, anisotomically (i.e. main branches thicker) mainly trichotomously branched, 4-12 cm tall, the terminal branchlets generally - not always – spreading in all directions, not or only slightly browned at tips. Apothecia rare, brown, convex, very small. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, Cladonia-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, semi-immersed, on the tips of podetia, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K-, C-, KC+ yellow, P-, UV-. Chemistry: mostly usnic, isousnic, rangiformic and norrangiformic acids; rarely rangiformic acid absent. - Note: a typical member of subalpine-alpine tundras, perhaps more common at higher altitudes than *C. arbuscula*.



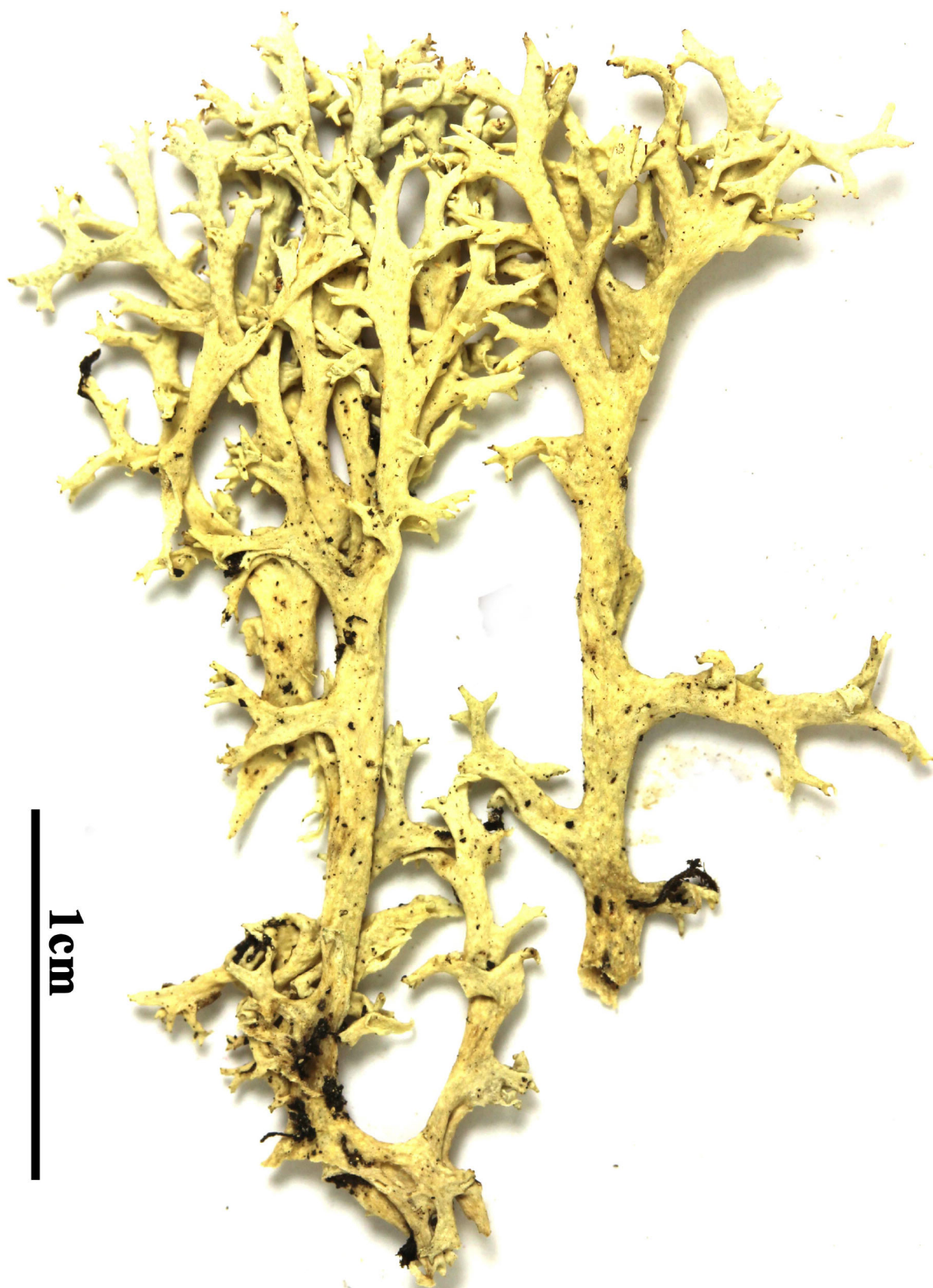
Cladonia mitis



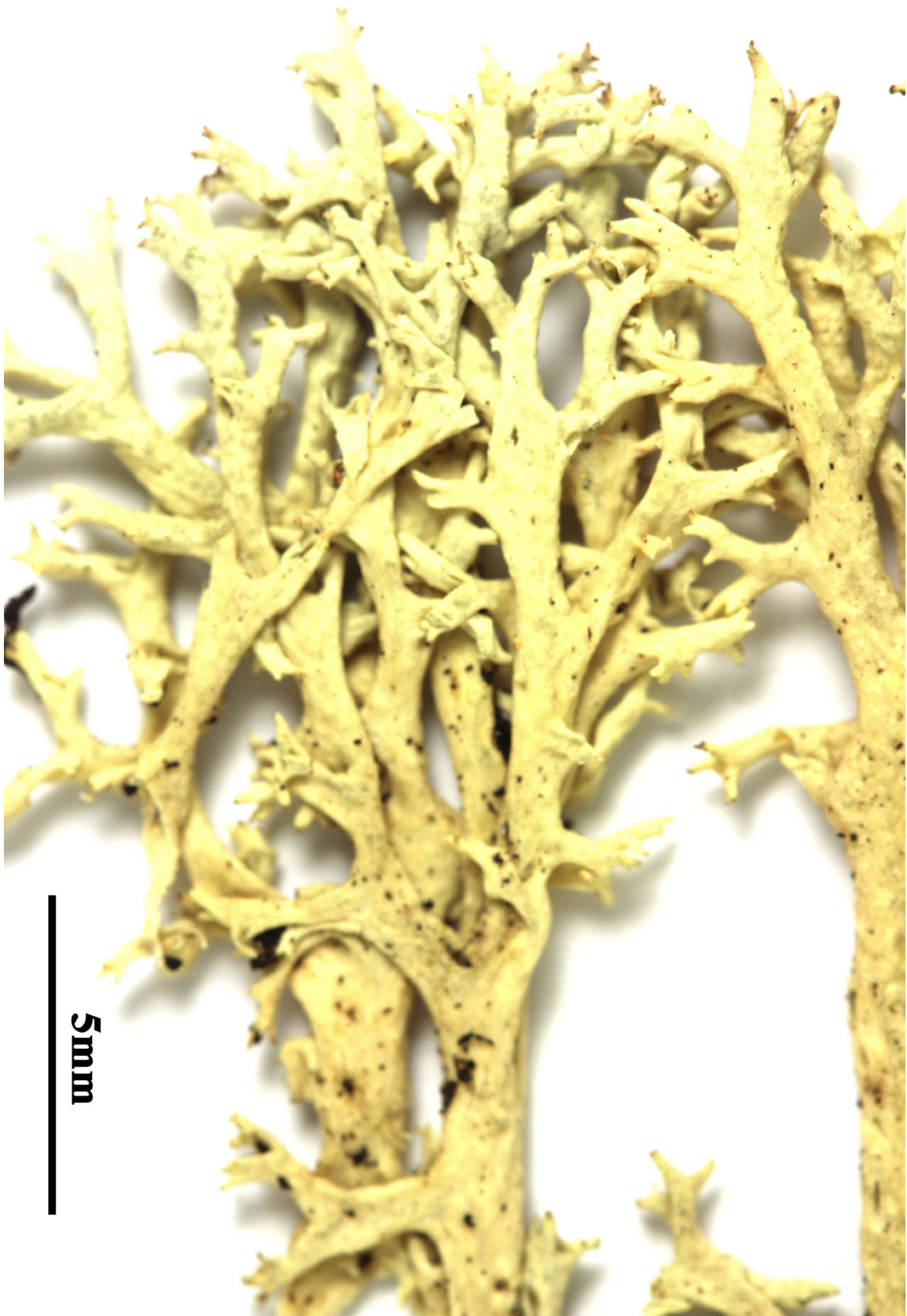
Cladonia mitis

Cladonia nipponica Asahina, Lichens of Japan, 1. Genus Cladonia: 121
(1950)

[KU214], Japan. Honshu. Prov. Kai: Sensui Pass, Kai-komagadake
Mts. Naka- Koma-gun. On rock (granite), 2250 m. Leg. H. Shibuichi
(no, 5012), 16.8.1974, det. S. Kurokawa. EX S. KUROKAWA LICHENES
RARIORES ET CRITICI EXSICCATI NR. 214.



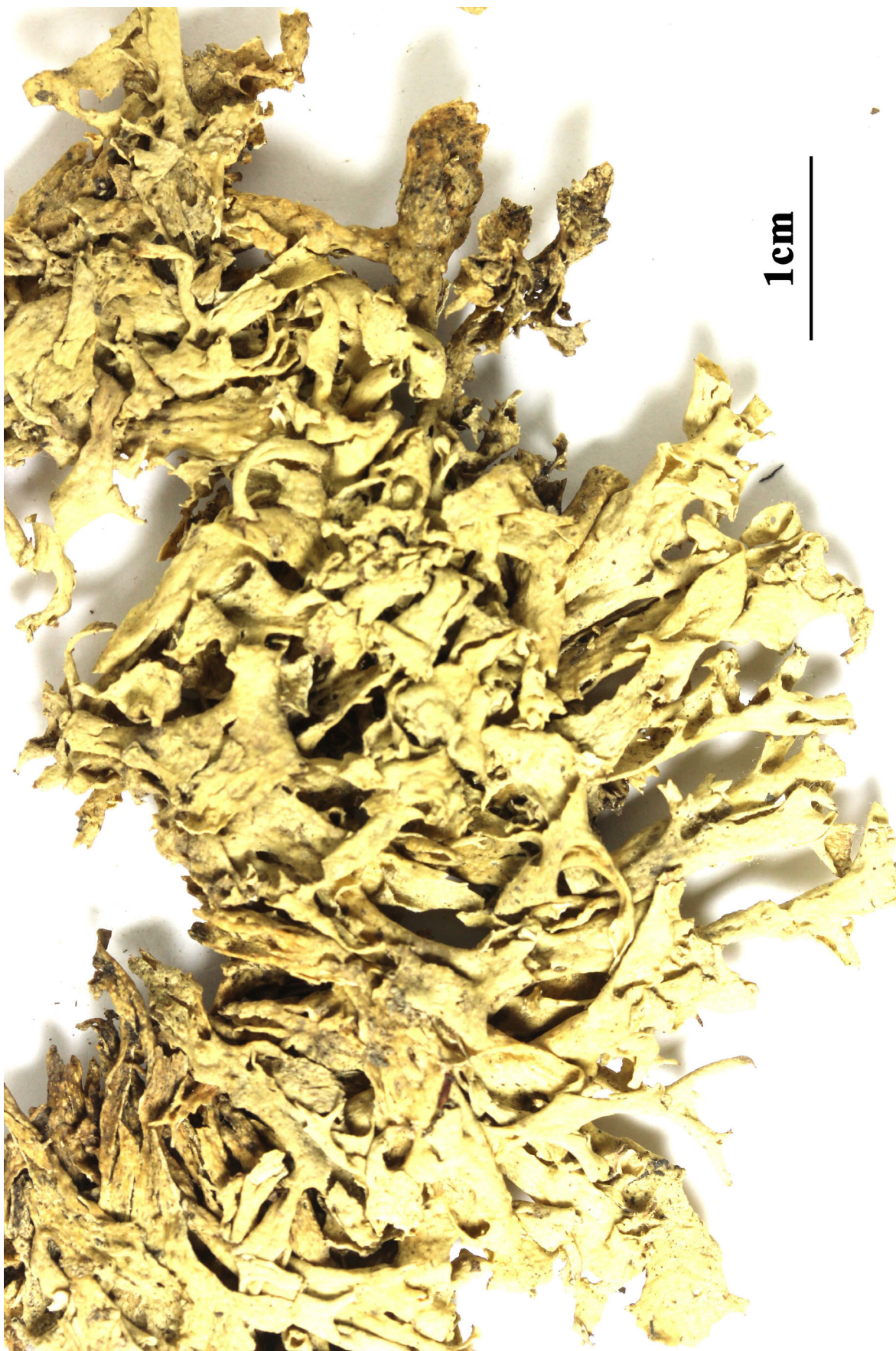
Cladonia nipponica



Cladonia nipponica

Cladonia nipponica* var. *turgescens Asahina, Lichens of Japan, 1. Genus
Cladonia: 122 (1950)

[KU162], Japan. Hokkaido. Prov. Ishikari: Eastern slope of Mt. Tomuraushi, Daitsu Mts. On soil, 1700 m. Leg. M. Togashi 20.7.1969, det. Y. Asahina. EX S. KUROKAWA LICHENES RARIORES ET CRITICI EXSICCATI NR. 162.



Cladonia nipponica var. *turgescens*



Cladonia nipponica var. *turgescens*

Cladonia ochrochlora Flörke, Clad. Comm.: 75 (1827)

= *Cladonia coniocraea* (Flörke) Spreng. Syst. Veg., 4, 1: 272, 1827.

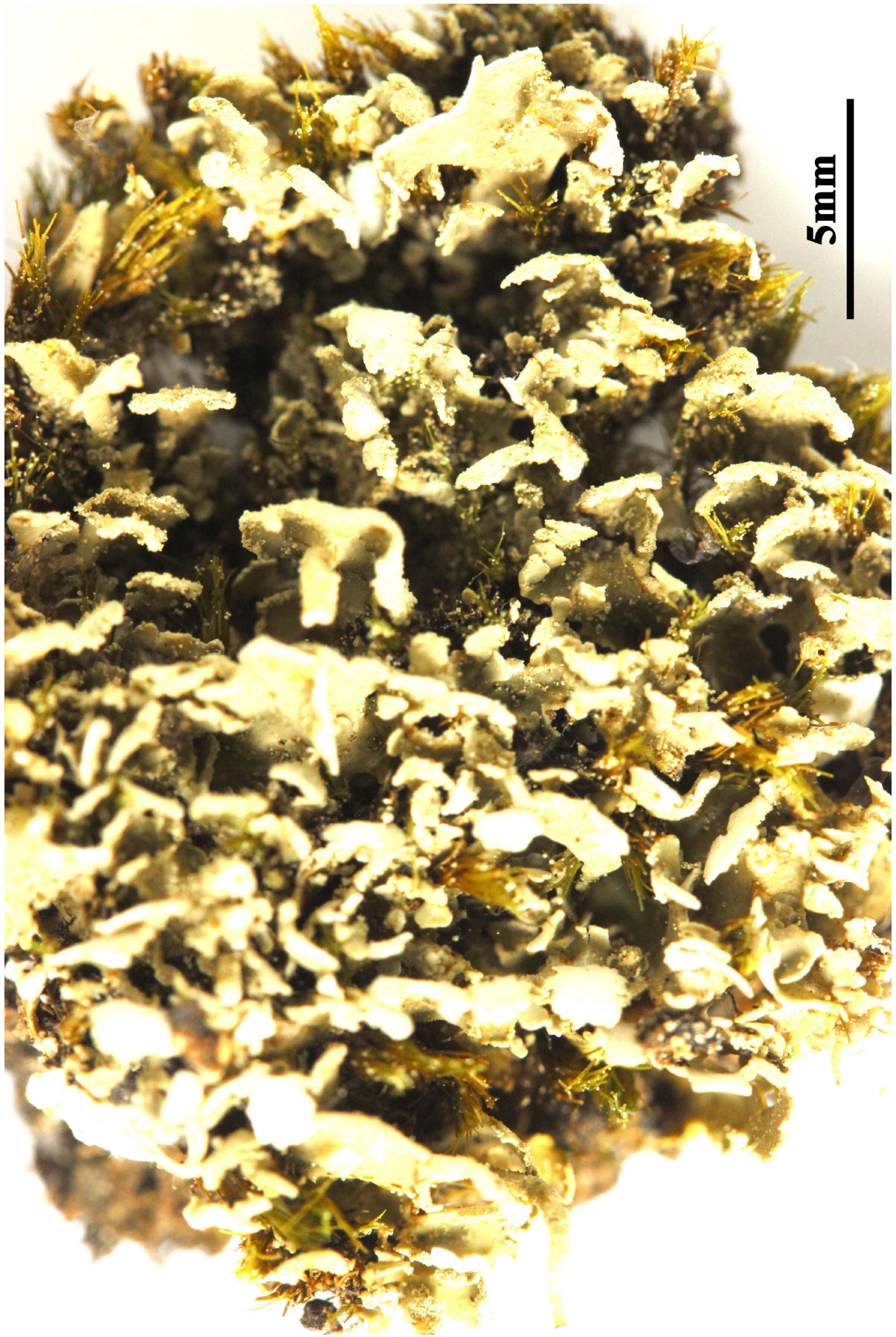
= *Cenomyce coniocraea* Flörke - Deutsche Lich., 7: 14, 1821.

[OH660], Japan. Honshu. Iwashiro Prov. (Fukushima Pref.): Ozegahara, Oze National Park. Hineomata-mura. Minamiaizu-gun (36°56'05" N, 139°15'06" E). On trunc base of *Alnus* sp., 1408 m. Leg. Y. Ohmura (no.13015B), 15.10.2019, det. Y. Ohmura. Ex Y. Ohmura Lichenes Minus Cogniti Exsiccati Nr.660.

Primary thallus squamulose, usually persistent, the squamules middle-sized, 1-5 mm long, crenate to entire, convex to concave, grey, olive-green or brownish in upper part, white beneath, often becoming sorediate. Podetia grey-green (whitish in the parts where the soredia have fallen off), bacilliform, corticate only at base, 1-2(-3) cm tall, 0.5-1(-1.5) mm thick, usually unbranched and with pointed ends, only occasionally with very small cups, with a corticate and sometimes squamulose zone in lower part, farinose-sorediate in upper part, the soredia 20-50 µm in diam. Apothecia rather rare, terminal, brown, convex. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark brown to black, semi-immersed in the tips of podetia, often also developing on the primary squamules. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K- or K+ yellowish slowly turning brown, C-, KC-, P+ red; medulla UV-. Chemistry: fumarprotocetraric acid, rarely also quaesitic acid. - Note: a widespread holarctic species found on a wide variety of organic substrata, incl. bark, and then mostly on the basal parts of boles, but mostly on soil rich in humus and rotten wood, with a wide altitudinal range.



Cladonia ochrochlora



Cladonia ochrochlora

Cladonia ochrochlora Flörke, Clad. Comm.: 75 (1827)

= *Cladonia coniocraea* (Flörke) Spreng. Syst. Veg., 4, 1: 272, 1827.

= *Cenomyce coniocraea* Flörke - Deutsche Lich., 7: 14, 1821.

[OH404], Japan. Honshu.Prov. Awa (Pref.Chiba): Kotadai, Ohtaki-machi, Isumi gun. On trunc base of *Cryptomeria japonica*, 170 m. Leg. Y. Ohmura (no. 7240), 4.9.2010., det. Y. Ohmura. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 404.

Primary thallus squamulose, usually persistent, the squamules middle-sized, 1-5 mm long, crenate to entire, convex to concave, grey, olive-green or brownish in upper part, white beneath, often becoming sorediate. Podetia grey-green (whitish in the parts where the soredia have fallen off), bacilliform, corticate only at base, 1-2(-3) cm tall, 0.5-1(-1.5) mm thick, usually unbranched and with pointed ends, only occasionally with very small cups, with a corticate and sometimes squamulose zone in lower part, farinose-sorediate in upper part, the soredia 20-50 μm in diam. Apothecia rather rare, terminal, brown, convex. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark brown to black, semi-immersed in the tips of podetia, often also developing on the primary squamules. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K- or K+ yellowish slowly turning brown, C-, KC-, P+ red; medulla UV-. Chemistry: fumarprotocetraric acid, rarely also quaesitic acid. - Note: a widespread holarctic species found on a wide variety of organic substrata, incl. bark, and then mostly on the basal parts of boles, but mostly on soil rich in humus and rotten wood, with a wide altitudinal range.



Cladonia ochrochlora



Cladonia ochrochlora

Cladonia papuana S. Stenroos, Ann. Bot. Fenn. 23(2): 161 (1986)

[KU666], Papua New Guinea. Central District: Around the summit of Mt. Albert-Edwrd, 3700-3800 m. Leg. S. Kurokawa (no. 9374), 27.10.1986, det. S. Stenroos. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 666.



Cladonia papuana



Cladonia papuana

Cladonia parasitica (Hoffm.) Hoffm., Deutschl. Fl., Zweiter Theil
(Erlangen): 127 (1796) [1795]
= *Lichen parasiticus* Hoffm. 1784

[KU123], Japan. Honshu. Prov. Kii: Mt. Koya. On trunc of *Cryptomeria japonica*, 800 m. Leg. Y. Asahina, 18.10.1952, det. Y. Asahina. Ex S. Kurokawa Lichenes Rariores Et Critici Exsiccati Nr. 123.

Primary thallus squamulose, persistent, the squamules whitish to pale greenish grey, white beneath, 1-3(5) mm long, 0.2-1(-2) mm broad, very finely divided and often with an almost coralloid appearance, granulose along the margins. Podetia rather rare, hollow inside, whitish grey to pale grey-brown, 1-10(-20) mm tall, deformed and very irregularly branched, fissured, with gaping holes, often covered by isidioid granules and partly decorticated, with scattered to usually numerous, small, dichotomously divided squamules. Apothecia rare, dark brown, convex, often clustered. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, Cladonia-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark, semi-immersed in the upper part of squamules, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K+ yellow, C-, KC-, P+ yellow-orange, UV-. Chemistry: thamnolic acid and variable amounts of barbatic acid, the latter only in the apothecia. - Note: a mainly temperate, probably holarctic species, normally lignicolous, on stumps, sometimes on basal parts of old trunks, with optimum in old *Castanea*-stands.



Cladonia parasitica



Cladonia parasitica

Cladonia phyllophora Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 123
(1796) [1795]

[KU163], Japan. Hokkaido. Prof. Kitami: 2 km north-east of Hamatom-betsu, Eashi-gun. On soil, 2m. Leg. S. Kurokawa (no. 70842), 18.8.1970, det. S. Kurokawa. EX S. KUOKAWA LICHENES RARIORES ET CRITICI EXSICCATI N. 163.

Primary thallus squamulose, persistent or usually disappearing, the squamules small to middle-sized, 2-5 mm long (rarely more), up to 4 mm broad (usually less), more or less round, crenate to incised, ascending, glaucescent above, white beneath. Podetia to 5(-8) cm tall (usually much less) and up to 4 mm thick, hollow inside, with irregular, 1-3 mm wide, usually closed cups which often proliferate marginally, the margins often squamulose, grey, brownish grey or dark brown in exposed situations, the base strongly melanotic also in the medulla (in upper basal parts black interspaces are visible between the cortical areoles), with a subarachnoid surface (the part between corticate areolae is ecorticate and subtomentose), variously squamulose. Apothecia rather rare, brown, convex, on the tips of the proliferations. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia dark brown, semi-immersed on the margins of cups or on the proliferations, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K- or K+ yellowish slowly turning brown, C-, KC-, P+ red, UV-. Chemistry: fumarprotocetraric acid complex, rarely zeorin and traces of an unknown compound. - Note: a cool-temperate to boreal-montane, probably holarctic lichen found on acid mineral soil.



Cladonia phyllophora



Cladonia phyllophora

Cladonia pityrea var. *zwackhii* Vain., Acta Soc. Fauna Flora fenn. 10: 354
(1894)

[KU472], Japan. Honshu. Prov. Shinano: En route from Todai to Kitazawa Pass, Kami-Ina-gun. On soil, 1200m. Leg. S. Kurokawa (no. 79015), 27.7.1979, det. S. Kurokawa. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 472.



Cladonia pityrea var. *zwackhii*



Cladonia pityrea var. *zwackhii*

Cladonia pityrea var. *zwackhii* Vain., Acta Soc. Fauna Flora fenn. 10: 354
(1894)

[KU513], Japan. Shikoku. Prof. Awa: Sabase, Kainan-cho, Kaiu-gun.
On soil, 3 m. Leg. H. Kashiwadani (no. 14358), 28.3.1978, det. H.
Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES
RARIORES ET CRITICI EXSICCATI NR. 513.



Cladonia pityrea var. *zwackhii*



Cladonia pityrea var. *zwackhii*

Cladonia pseudohondoensis Asahina, J. Jap. Bot. 34(11): 348 (1959)

[KU415], Japanb. Honshu. Prov. Rikuzen: Nakayamadaira, Tamazukuri-gun. On soil, 270 m. Leg. M. Togashi, 22.10.1954, det. Y. Asahina. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 415.



Cladonia pseudohondoensis



Cladonia pseudohondoensis

Cladonia pseudorangiformis Asahina, J. Jap. Bot. 18(10): 549 (1942)

[KU562], Japan. Hokkaido. Prov. Kitami: En route from Mt. Mitsumino to Mt. Sashirui, Shari-gun. Among mosses, 1400-1500 m. Leg. H. Kashiwadani (no. 19988) & Y. Endo, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI EX LICHENES RARIORES ET CRITICI EXSICCATI NR. 562.



Cladonia pseudorangiformis



Cladonia pseudorangiformis

Cladonia pseudorangiformis Asahina, J. Jap. Bot. 18(10): 549 (1942)

[KU614], Japan. Hokkaido. Prov. Nemuro: En route from Mt. Sashirui to Futatsuike-pond, Menashi-gun. On soil with mosses, 1340 m. Leg. H. Kashiwadani (no 20053), 14.8.1983, det. H. Kashiwadani. EX S. KUROKAEA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 614.



Cladonia pseudorangiformis



Cladonia pseudorangiformis

Cladonia pseudomacilenta Asahina, J. Jap. Bot. 19(7): 190 (1943)

[KU359], Japan, Honshu. Prov. Ugo: Arayu Hot Spring, Ogachi-gun. On soil, 550 m. Leg. K. Yoshida (no. 3332), 13.7, 1978, det. H. Kashiwadani. EX S. KUROKAWA AND H. KASHIWADANI LICHENES RARIORES ET CRITICI EXSICCATI NR. 359.



Cladonia pseudomacilenta



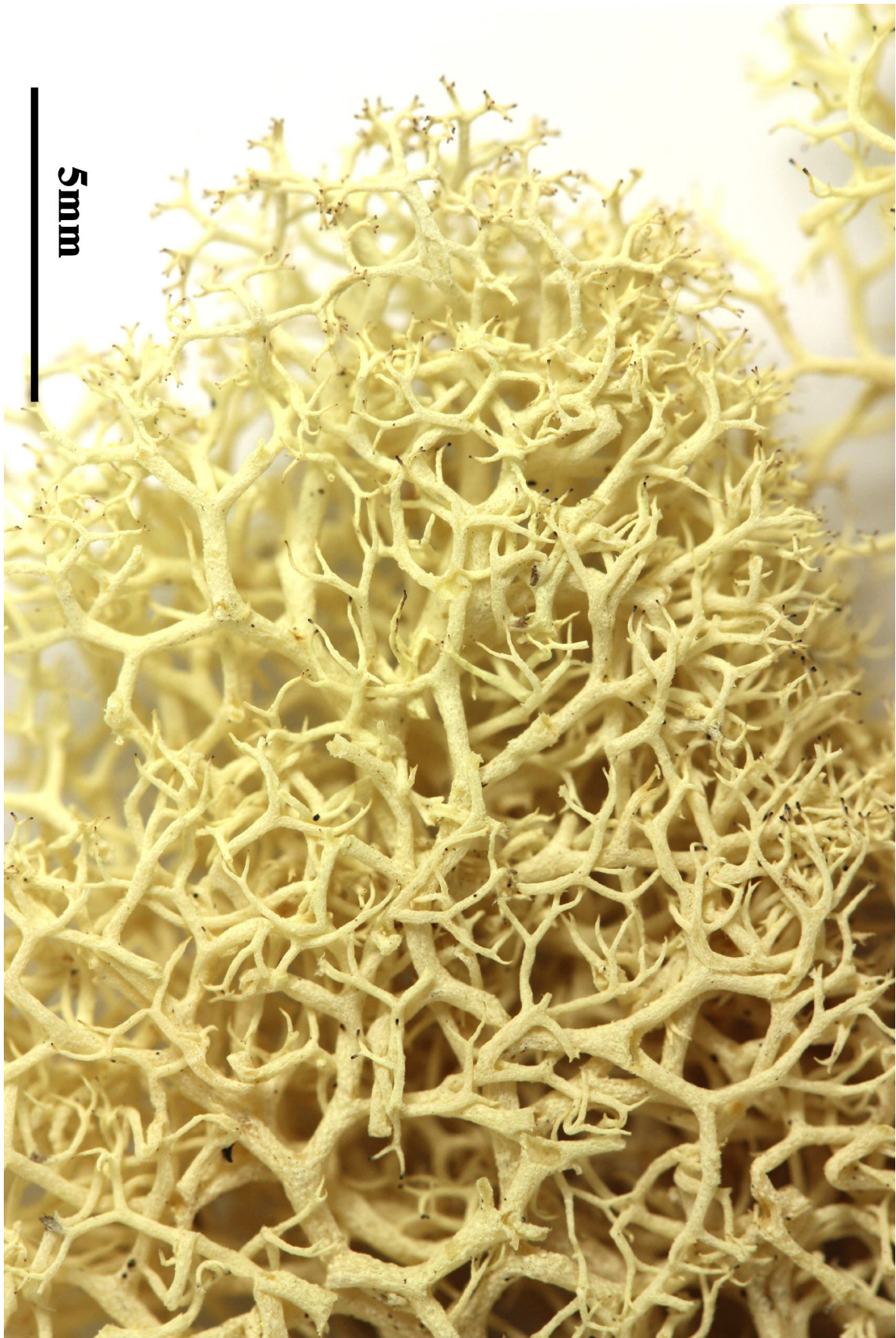
Cladonia pseudomacilenta

Cladonia pycnoclada (Pers.) Nyl., J. Linn. Soc., Bot. 9: 244 (1867)
= *Cenomyce pycnoclada* Pers. 1827

[KU555], Chile. Chiloe: Between Ancud and Chacao, along route 5.
On ground in dry *Drimys-Nothofagus* mixed forest along the coast.
Leg. H. Kashiwadani (no.18555), 28.11.1981, det. H. Kashiwadani. EX
S. KUROKAWA AND HA. KASHIWADANI LICHENES RARIOIRES ET CRITI-
CI EXSICCATI NR. 555.



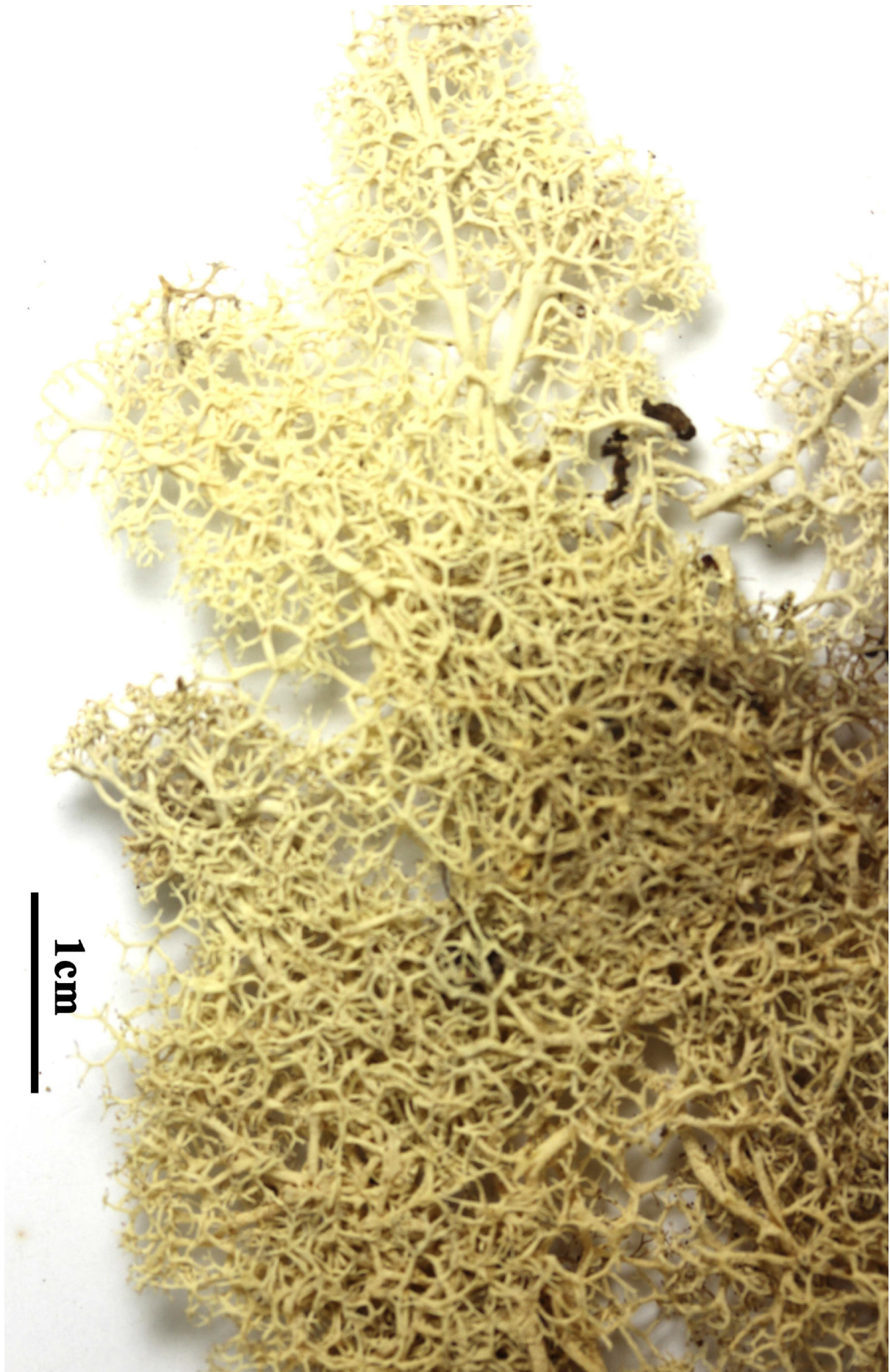
Cladonia pycnoclada



Cladonia pycnoclada

Cladonia pycnoclada (Pers.) Nyl., J. Linn. Soc., Bot. 9: 244 (1867)
= *Cenomyce pycnoclada* Pers. 1827

[KA329], Chile. Llanquihue. Foot of Volcan Osorno, north of Ensenada. On ground with mosses in *Nothofagus* forest, 100 m. Leg. Kashiwadani (no.17117), 6.11.1981, det. H. Kashiwadani. EX H. KASHIWADANI LICHENES MINUS COGNITI EXSICCATI NR. 329.



Cladonia pycnoclada



Cladonia pycnoclada

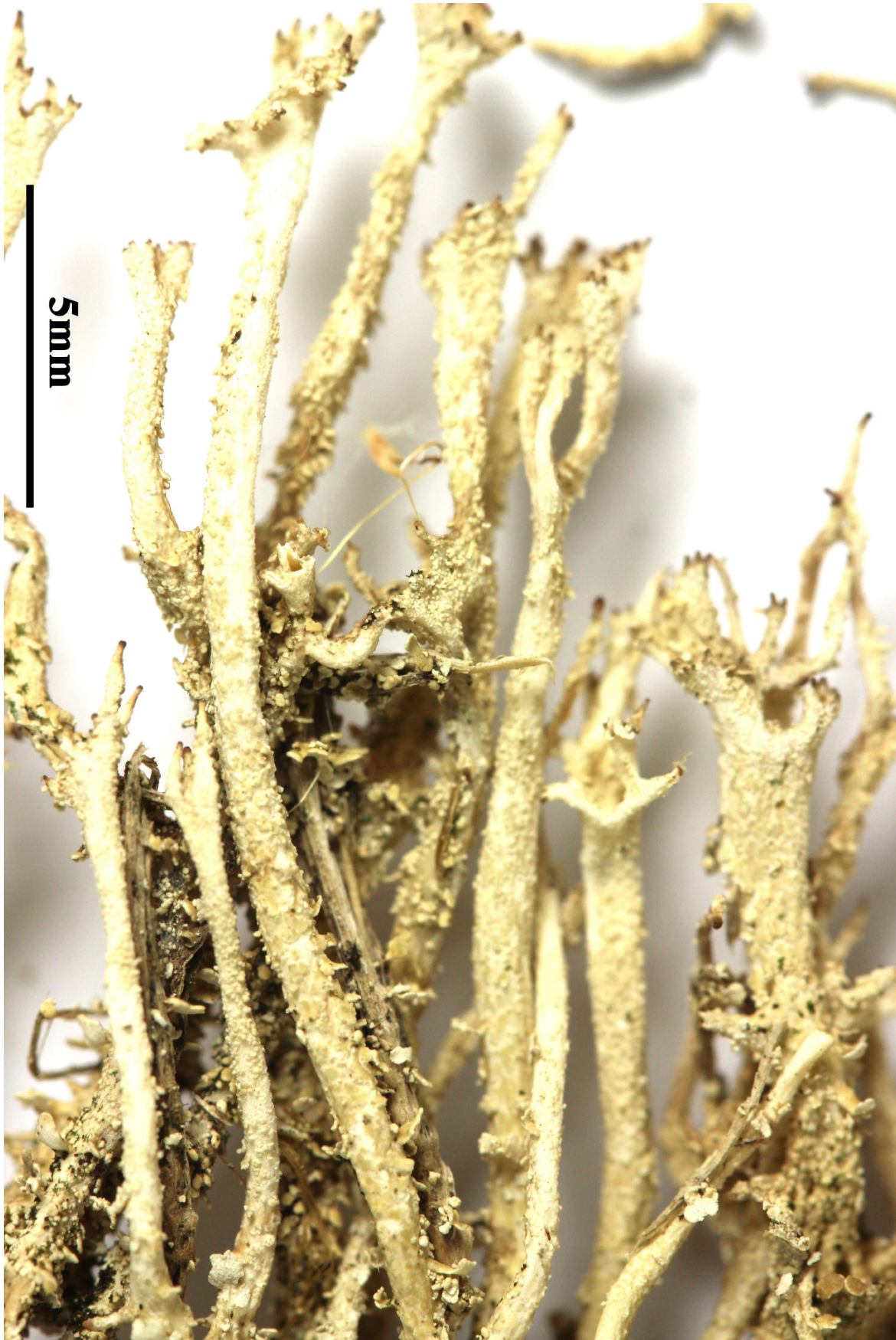
Cladonia ramulosa (With.) J.R. Laundon, Lichenologist 16(3): 225 (1984)
= *Lichen ramulosus* With. 1776

[OH453], Japan. Ryukyu Islands (Pref. Okinawa): Kinsakubaru, Naze-city, Amami Oshima Island. On rock with mosses along the road, 300 m. Legf. H. Kashiwadani (no.35521), 3.12.1988, det. H. Kashiwadani. EX Y. OHMURA LICHENES MINUS COGNITI EXSICCATI NR. 453.

Primary thallus squamulose, persistent or evanescent, the squamules small, 0.5-2(-5) mm long, 0.5-2 mm wide, elongate and deeply indented, fragile, glaucous green to greenish brown above, white beneath, rarely granulose-soeridiate. Podetia simple or sparingly branched, hollow inside, greenish brown to brown, 0.5-3(-4) cm tall, 0.5-1(-3) mm thick, with pointed apices or with irregular, dentate and often marginally proliferating, small cups, squamulose-granular to partly decorticated, the areas without cortex usually with corticate granules or squamules, most abundant inside the cups. Apothecia frequent, pale to dark brown, convex, rather small, usually forming glomerules. Asci 8-spored, clavate, thickened at apex, with a K/I+ blue tholus and a K/I+ strongly blue outer gelatinous sheath, *Cladonia*-type. Ascospores 1-celled, hyaline, ellipsoid. Pycnidia developing on basal squamules and along margins of cups, subpedicellate, constricted at base, with a colourless jelly. Conidia hyaline, curved. Photobiont chlorococcoid. Spot tests: K- or K+ yellowish slowly turning brown, C-, KC-, P+ red, UV-. Chemistry: fumarprotocetraric acid complex, occasionally with low amounts of atranorin and zeorin. - Note: a mainly temperate to southern boreal-montane lichen found on epilithic bryophytes, rotting wood and organic soil, most common in upland areas with siliceous substrata.



Cladonia ramulosa



Cladonia ramulosa

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