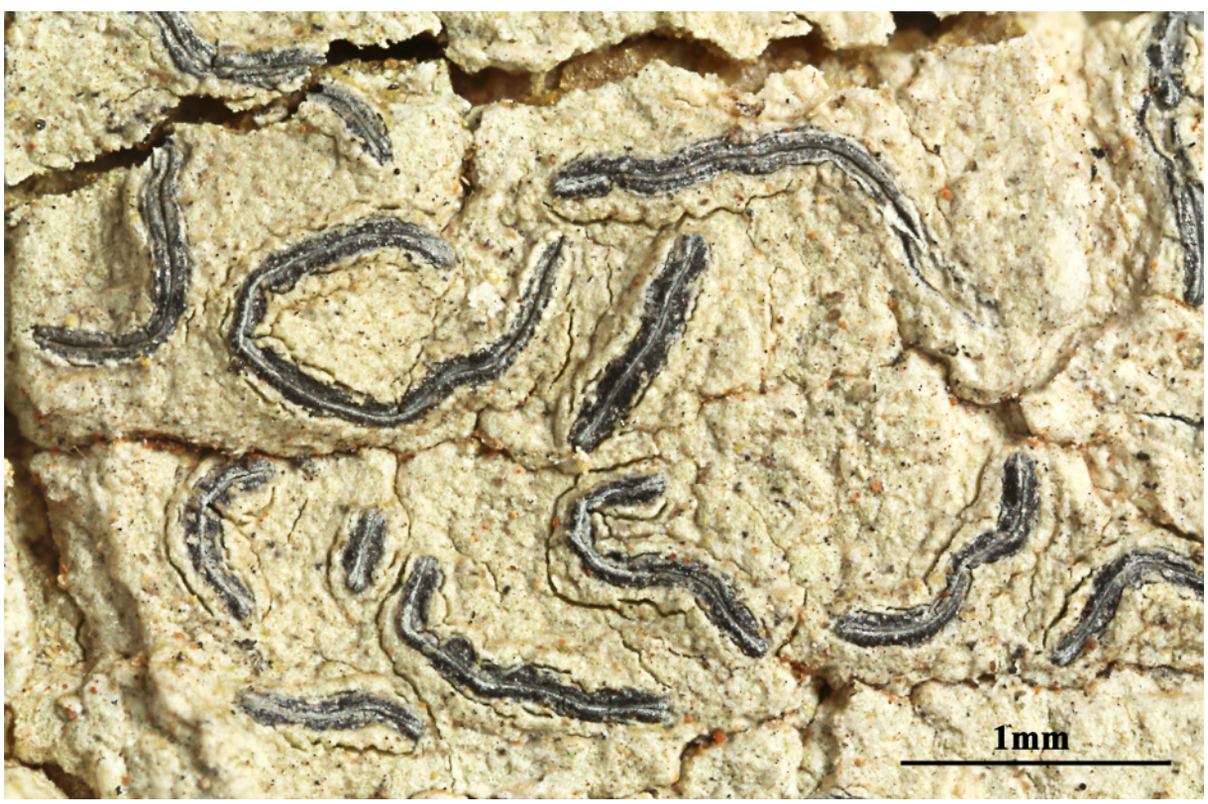
Felix Schumm & André Aptroot

Brazilian Lichens collected by Dr. André Aptroot

Vol III - Mato Grosso do Sul



Felix Schumm & André Aptroot

Brazilian Lichens Vol III -Mato Grosso do Sul

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Introduction:

The second author spent almost four years in the state of Mato Grosso do Sul, as visiting professor at UFMS university. During this time, he collected in many places, often on excursions with students and/or collegues.
Mato Grosso do Sul state is one of the most recent states, and old lichen records, mainly by Malme and Redinger, have been reported as originating from Mato Grosso with which the area was combined previously.
The state is mostly altiplano, and largely deforested, but more or less natural areas remain as it was only colonized late (1880s), especially along rivers and in the Pantanal, which is the largest wetland on earth.
The collecting numbers in this volume are sequential Aptroot collections, all of which are preserved in the CGMS herbarium.
The pictures are made from duplicates ex ABL in the herbarium of the first author.

Regarding further issues, see the more elaborate introduction of volume 1.

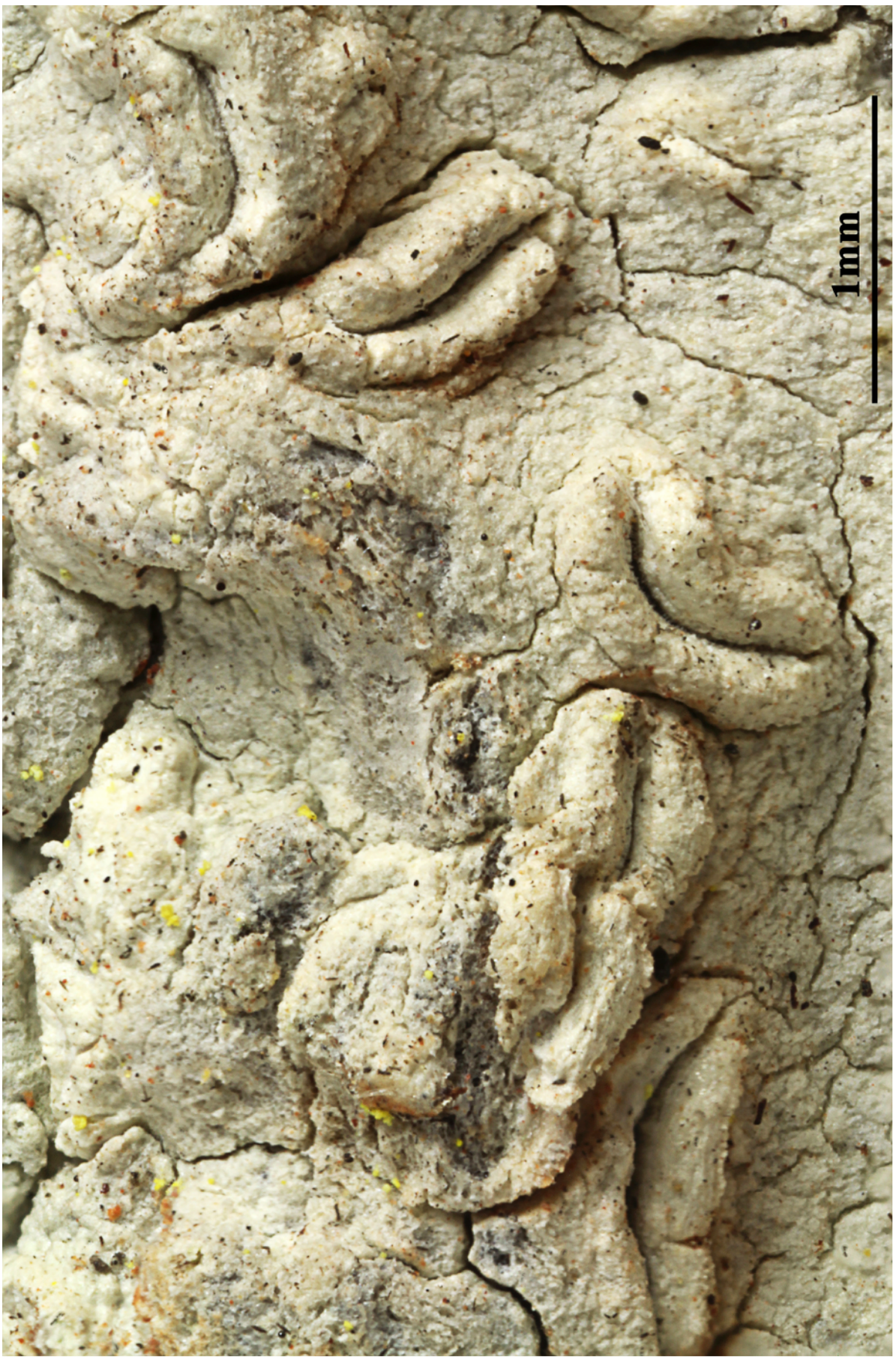
Felix Schumm & André Aptroot

New species:
Constrictolumina fusca Aptroot & Schumm sp. nov.
Pyrenula lilaceoreagens Aptroot, Carollo & Schumm sp. nov.
Thelopsis flavosorediata Aptroot & Schumm sp. nov.

Acanthothecis corcovadensis (Redinger) Staiger & Kalb, Mycotaxon 73: 98 (1999)
= *Graphina corcovadensis* Redinger 1934

[ABL77019], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58' S, 56°42' W, 650 m. Leg. A. Aptroot (no 77019), 30.10.2018, det. A. Aptroot, 2019. - Thallus UV-; spores 1/asus, muriform, 80-120 x 25-30 µm.





Acanthothecis corcovadensis

Acanthothecis leucoxantha (Müll. Arg.) Staiger & Kalb, Mycotaxon 73: 106 (1999)
= *Graphis leucoxantha* Müll. Arg. 1880

[ABL79059], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 79059), 3.07.2019, det. A. Aptroot, 2018. - Spores transversely 5-9 septate, 20-30 x 5-6 µm, IKI+ weakly blue; hymenium not inspersed TLC: stictic acid.

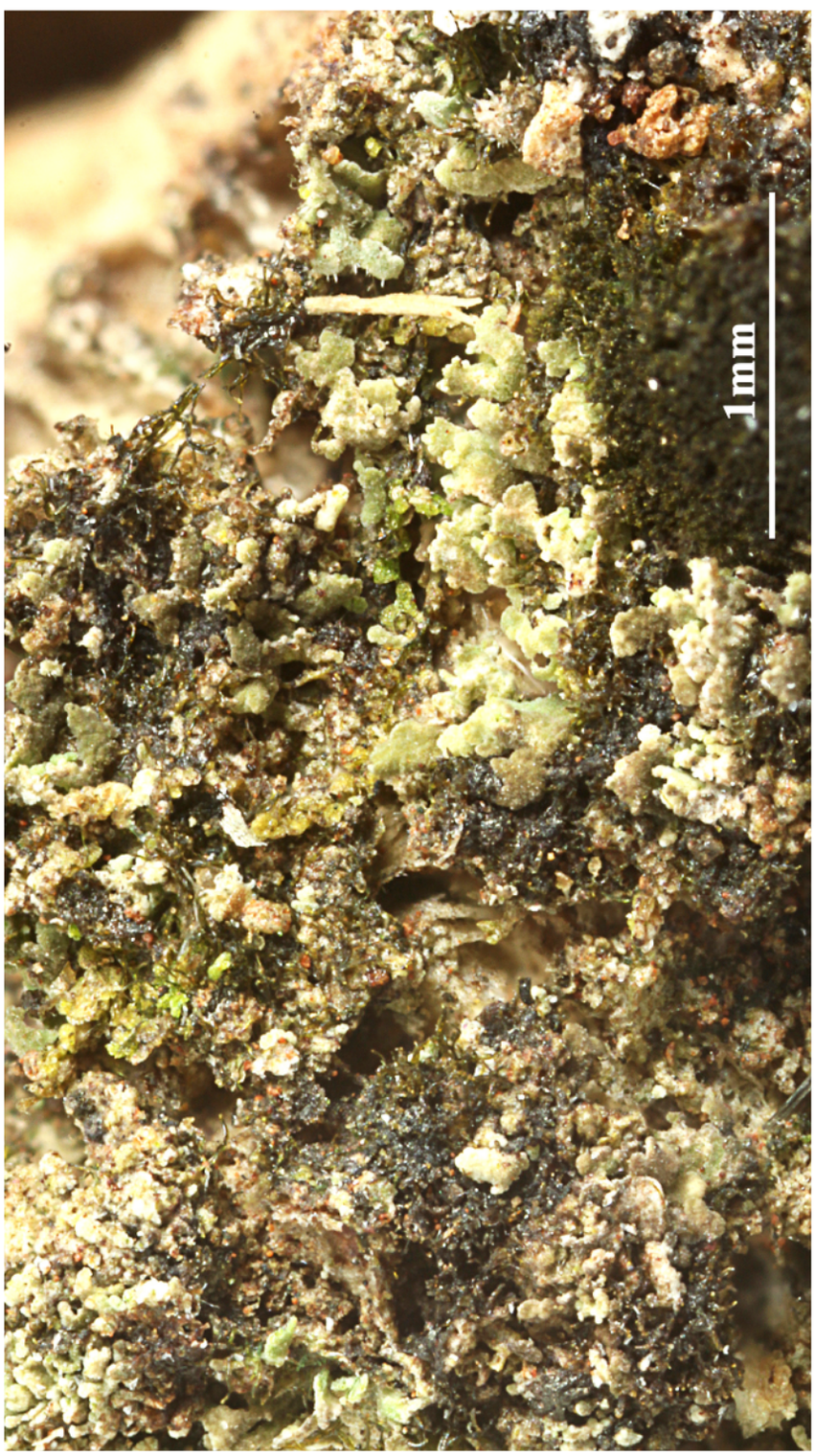




Acanthothecis leucoxantha

Agonimia tristicula (Nyl.) Zahlbr., Öst. bot. Z. 59(9): 351 (1909)
= *Polyblastia tristicula* (Nyl.) Arnold, Flora, Regensburg 53: 20 (1870)
= *Sporodictyon tristiculum* (Nyl.) Dalla Torre & Sarnth., Fl. Tirol, Vorarlberg, Liechtenstein, IV Band. Die Flechten von Tirol: 554 (1902)
= *Verrucaria tristicula* Nyl., Flora, Regensburg 48: 356 (1865)

[ABL78392], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in Park on tree bark.
20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78392), 26.03.2019, det. A. Aptroot, 2019.



Allographa angustata (Eschw.) Lücking & Kalb, Herzogia 31(1, Teil 2): 547 (2018)
= *Graphis angustata* Eschw., in Martius, Fl. bras. enum. pl. 1(1): 73 (1833)

[ABL80343], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06’08” S, 53°48’42” W, 300 m. Leg. A. Aptroot (no 80343), 29.09.2019, det. A. Aptroot, 2019 - Thallus K-,





Allographa angustata

Allographa argentata (Lücking & L. Umaña) Lücking & Kalb, Herzogia 31(1, Teil 2): 547 (2018)

= *Graphis argentata* Lücking & L. Umaña, in Lücking, Chaves, Sipman, Umaña & Aptroot, Fieldiana, Bot. 46(no. 1549): 59 (2008)

[ABL78370], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78370), 25.03.2019, det. A. Aptroot, 2019. - Excipulum completely carbonized; hymenium strongly inspersed, disappearinng in KOH; paraphyses unbranched; spores 4-8/ascus, hyaline, muriform, 80-140 x 12-20 µm; no substances detected by TCL.





Allographa argentata

Allographa argentata (Lücking & L. Umaña) Lücking & Kalb, Herzogia 31(1, Teil 2): 547 (2018)

= *Graphis argentata* Lücking & L. Umaña, in Lücking, Chaves, Sipman, Umaña & Aptroot, Fieldiana, Bot. 46(no. 1549): 59 (2008)

[ABL79953], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°45' W, 240 m. Leg. A. Aptroot (no 79953), 24.09.2019, det. A. Aptroot, 2019. - Lirellae flexuose, partly branched, prominent, with complete thalline margin; labia entire to strate. Excipulum completelx carbonized. Hymenium strongly inspersed. Spores 4-8/ascus, colourles, oblonge, muriform, 80-149 x 12-20 µm. TLC: No substances detected.





Allographa argentata

Allographa ingarum (Vain.) Lücking & Kalb, Herzogia 31(1, Teil 2): 551 (2018)

= *Graphis angustata var. ingarum* Vain., Ann. Acad. Sci. fenn., Ser. A 6(no. 7): 158 (1915)

= *Graphis ingarum* (Vain.) Lücking, in Lücking, Archer & Aptroot, Lichenologist 41(4): 436 (2009)

[ABL80216], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80216), 23-26.09.2019, det. A. Aptroot, 2019. - Thallus K-, apothecium laterally carbonized, hymenium not inspersed, spores 55 x 12 µm.





Allographa ingarum

Allographa pavoniana (Fée) Lücking & Kalb, in Kalb, Lücking & Kalb, Phytotaxa 377(1): 21 (2018)

= *Graphis pavoniana* Fée, Essai Crypt. Exot. (Paris): 40 (1825) [1824]

[ABL80437], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30' S, 54°37' W, 550 m. Leg. A. Aptroot (no 80437), 23.10.2019, det. A. Aptroot, 2019. - Hymenium not inspersed, apothecium laterally carbonized, spores 9-14-septate, 50 x 8 µm.





Allographa pavoniana

Allographa striatula (Ach.) Lücking & Kalb, in Kalb, Lücking & Kalb, Phytotaxa 377(1): 26 (2018)
= *Graphis elegans* f. *striatula* (Ach.) Tuck., Proc. Amer. Acad. Arts & Sci. 7: 230 (1868)
= *Graphis elegans* var. *striatula* (Ach.) Zahlbr., Cat. Lich. Univers. 2: 354 (1923) [1924]
= *Graphis striatula* (Ach.) Spreng., Syst. veg., Edn 16 4(1): 250 (1827)
= *Graphis striatula* var. *sublaevis* Nyl., Flora, Regensburg 41: 381 (1858)
= *Hysterium striatulum* (Ach.) Fr., Elench. fung. (Greifswald) 2: 140 (1828)
= *Opegrapha striatula* Ach., Syn. meth. lich. (Lund): 74 (1814)

[ABL77569], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on treebark and twigs. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77569), 3.11.2018, det. A. Aptroot, 2019. - Labia striatae, lirellae prominent, thalline margin absent, spores traversely 9-15-septate, 40-65 µm long,





Allographa striatula

Amandinea extenuata (Müll. Arg.) Marbach, Biblthca Lichenol. 74: 71 (2000)
= *Buellia extenuata* Müll. Arg., Nuovo G. bot. ital. 23(1): 128 (1891)

[ABL77082], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on wood. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77082), 30.10.2018, det. A. Aptroot, 2019.

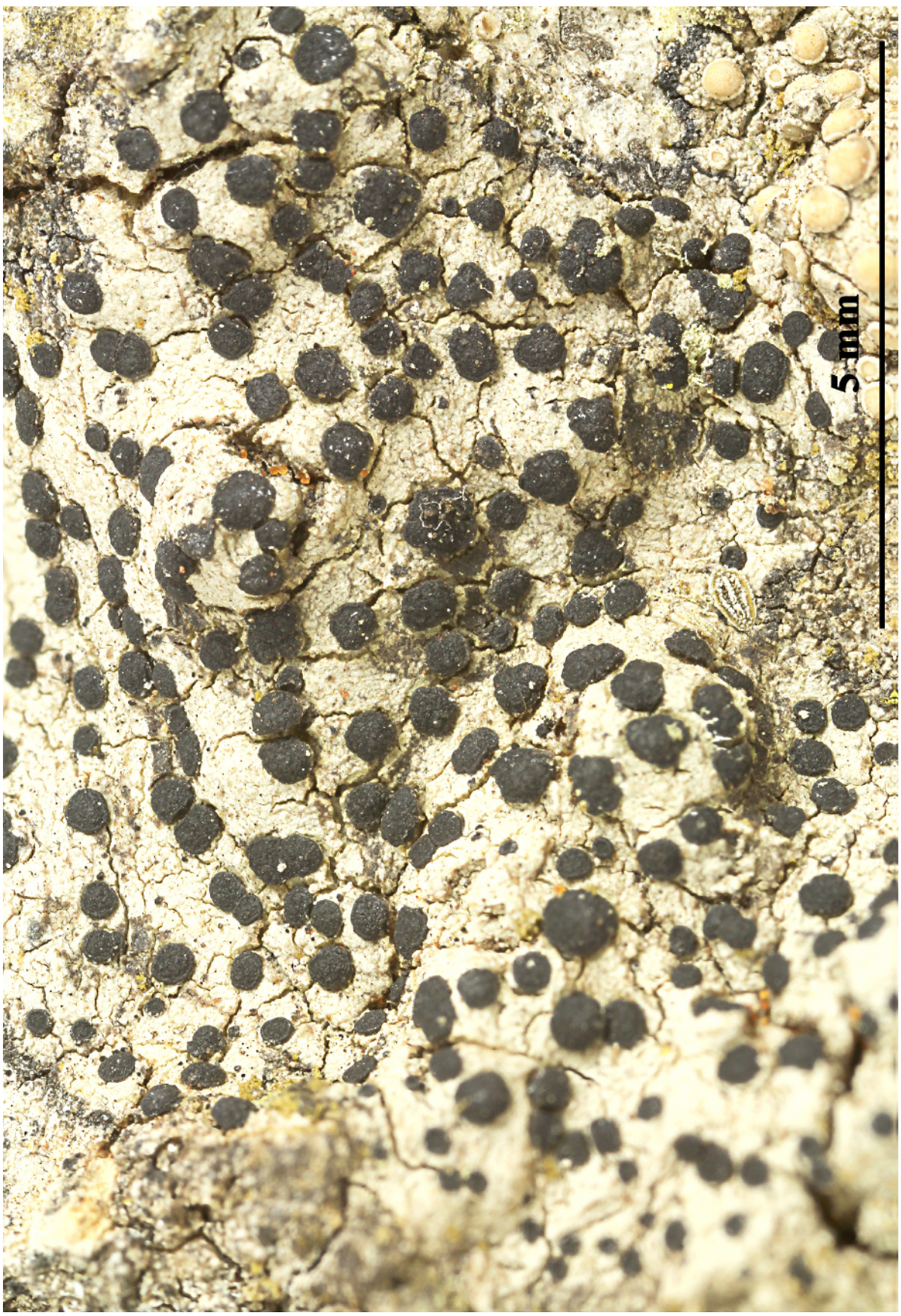




Amandinea extenuata

Amandinea submontana Marbach, Biblthca Lichenol. 74: 105 (2000)

[ABL77028], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77028), 30.10.2018, det. A. Aptroot, 2019. - Thallus K-, UV-; hymenium not inspersed, spores 1-septate, 8/ascus, 15 x 7 µm.



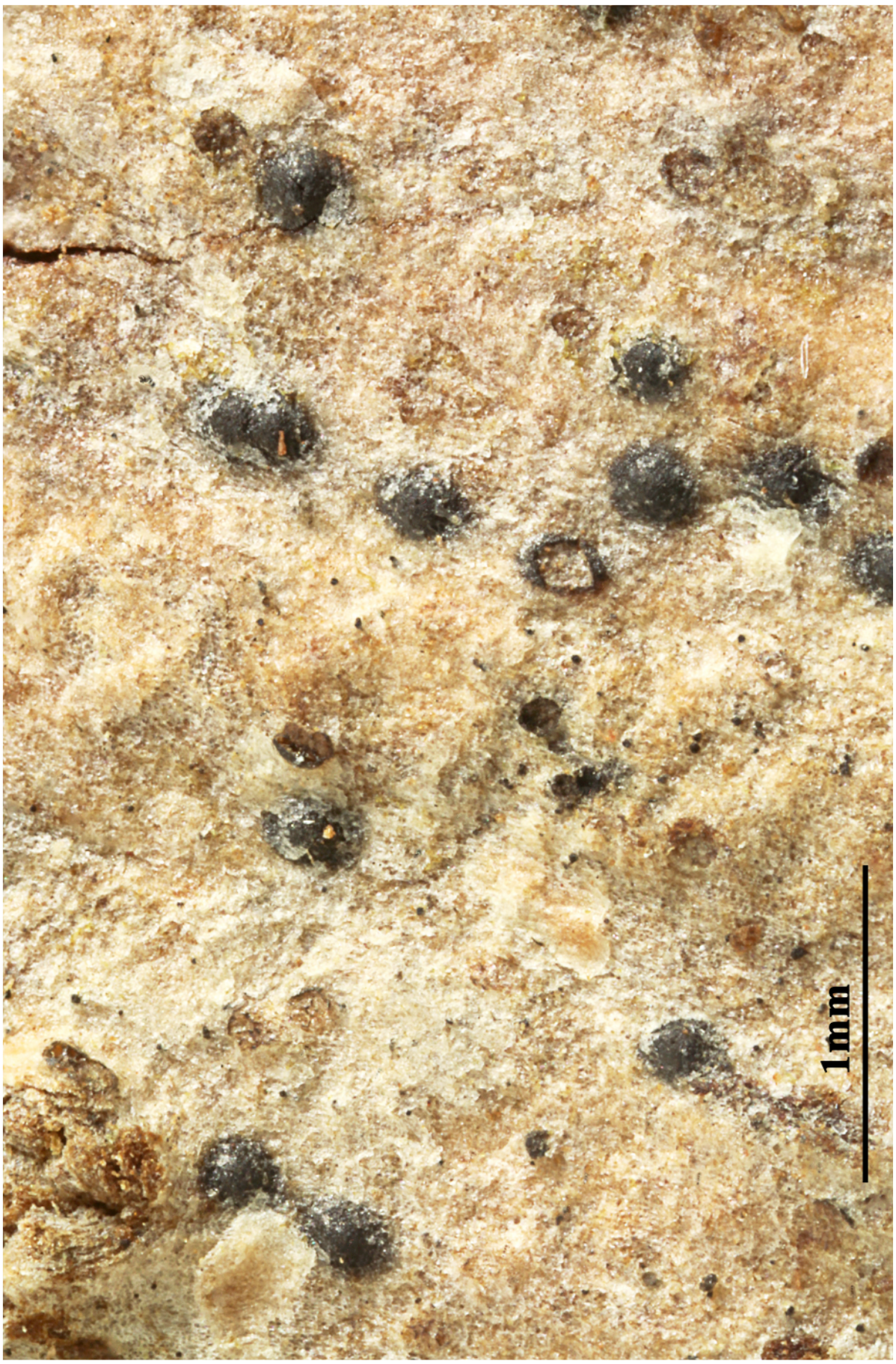


Amandinea submontana

Anisomeridium albisedum (Nyl.) R.C. Harris, in Egan, Bryologist 90(2): 163 (1987)
= *Verrucaria viridiseda f. albiseda* Nyl. 1890

[ABL77738], Brazil, Mato Grosso do Sul, Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77738), 6.11.2018, det. A. Aptroot, 2019





Anisomeridium albisedum

Anisomeridium guttuliferum Lücking, Fl. Neotrop., Monogr. 103: 207 (2008)

[ABL78255], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78255), 03.03.2019, det. A. Aptroot, 2019.



Aspidothelium glabrum Lücking, Aptroot & Sipman, in Aptroot, Lücking, Sipman, Umaña & Chaves, Biblthca Lichenol. 97: 42 (2008)

[ABL80340], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06’08’’ S, 53°48’42’’ W, 300 m. Leg. A. Aptroot (no 80340), 29.09.2019, det. A. Aptroot, 2019





Aspidothelium glabrum

Astrothelium aenascens Aptroot, in Aptroot, Ertz, Etayo Salazar, Gueidan, Mercado Diaz, Schumm & Weerakoon, Lichenologist 48(6): 611 (2016)

[ABL77642], Brazil, Mato Grosso do Sul, Morraria do Sul, Morraria do Sul Fazenda Sol de Maio, in Atlantic rain forest on tree bark. 20°35’33" S, 56°51’40" W, 525 m. Leg. A. Aptroot (no 77642), 5.11.2018, det. A. Aptroot, 2019 - Hymenium ispersed, spores 3-septate, 20 x 6 µm.







Astrothelium aenascens

Astrothelium leucosessile Lücking, M.P. Nelsen & Aptroot, in Lücking, Nelsen, Aptroot, Benatti, Binh, Gueidan, Gutiérrez, Jungbluth, Lumbsch, Marcelli, Moncada, Naksuwankul, Orozco, Salazar-Allen & Upreti, Lichenologist 48(6): 646 (2016)

[ABL78160], Brazil, Mato Grosso do Sul, Pantanal 43 km SE of Corumbá, in pantanal forest on tree bark. 19°32’ S, 57°24’ W, 85 m, area39. Leg. A. Aptroot (no 78160), 02.03.2019, det. A. Aptroot, 2019.





Astrothelium leucosessile

Astrothelium megaspermum (Mont.) Aptroot & Lücking, Lichenologist 48(6): 870 (2016)

= *Bathelium megaspermum* (Mont.) Trevis., Spighe Paglie: 20 (1853)

= *Laurera megasperma* (Mont.) Riddle, Bull. Torrey bot. Club 44(7): 323 (1917)

= *Trypethelium megaspermum* Mont., Annls Sci. Nat., Bot., sér. 2 19: 68 (1843)

[ABL77299], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on tree bark. 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77299), 1.11.2018, det. A. Aptroot, 2019. - Ascomata 140–220 × 30–75µm, without distinctly thickened median septum, hyaline, IKI−. Chemistry. Thallus and ascomata UV−, K−. TLC: no substances detected.

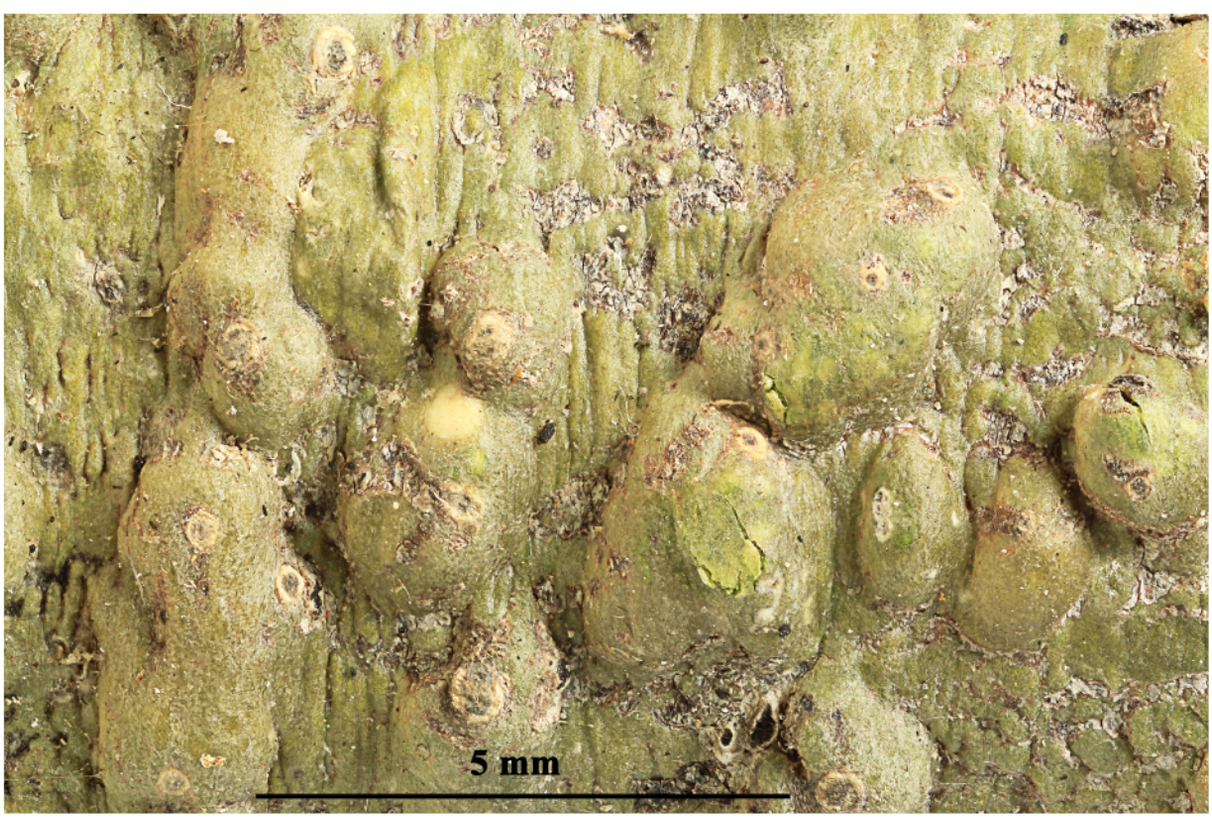




Astrothelium megaspermum

Astrothelium megeustomum Aptroot & C.A.V. Fraga, in Aptroot, Mendonça, Andrade, Silva, Martins, Gumboski, Fraga Junior & Cáceres, Lichenologist 48(6): 718 (2016)

[ABL77490], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on treebark. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77490), 3.11.2018, det. A. Aptroot, 2019. - Thallus corticate, smooth, somewhat shiny, continuous, covering areas ≤7 cm diam., c. 0.2mm thick, pale yellowish green, not surrounded by prothallus, not inducing gall formation of the host bark. Ascomata pyriform, c. 0.6–1.2mm diam., mostly aggregated 2–5, mostly immersed in the bark tissue below pseudostromata with a surface not much different from the thallus, and which are distinctly raised above the thallus and mostly irregular in outline, not forming a network. Wall carbonized, ≤c. 80 µm thick. Ostioles eccentric, fused, flat, pale brownish, white-pruinose, surrounded by a whitish zone. Hamathecium not inspersed with oil globules. Asci with 8 ascospores. Ascospores hyaline, muriform, fusiform, 117–125 × 17–21 µm, ends pointed, surrounded by a gelatinous layer ≤10 µm thick, median septum thickened. Pycnidia not observed. Chemistry. Thallus surface UV−, thallus medulla K−; ostiolar region UV+ yellow. TLC: lichexanthone.





Astrothelium megeustomum

Astrothelium neoinspersum Aptroot, in Aptroot, Ertz, Etayo Salazar, Gueidan, Mercado Diaz, Schumm & Weerakoon, Lichenologist 48(6): 624 (2016)

[ABL79941], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°45' W, 240 m. Leg. A. Aptroot (no 79941), 24.09.2019, det. A. Aptroot, 2019. - Ascomata globose, 0.4–0.7mm diam., immersed in groups of 2–10 in pseudostromata with a surface different from the thallus, and which are distinctly raised above the thallus, irregular to often linear in outline, sides sloping, bright yellow, inside with a cream layer containing bark tissue. Ostioles apical, not fused, flat to convex, black. Hamathecium inspersed with oil globules. Ascospores hyaline, 8/ascus, 3-septate, fusiform, 18–23 × 7–8 µm, ends rounded, lumina diamond-shaped, surrounded by a 3 µm thick gelatinous layer. Chemistry: Thallus UV−, pseudostromata UV+ red, K+ purple. TLC: an anthraquinone.

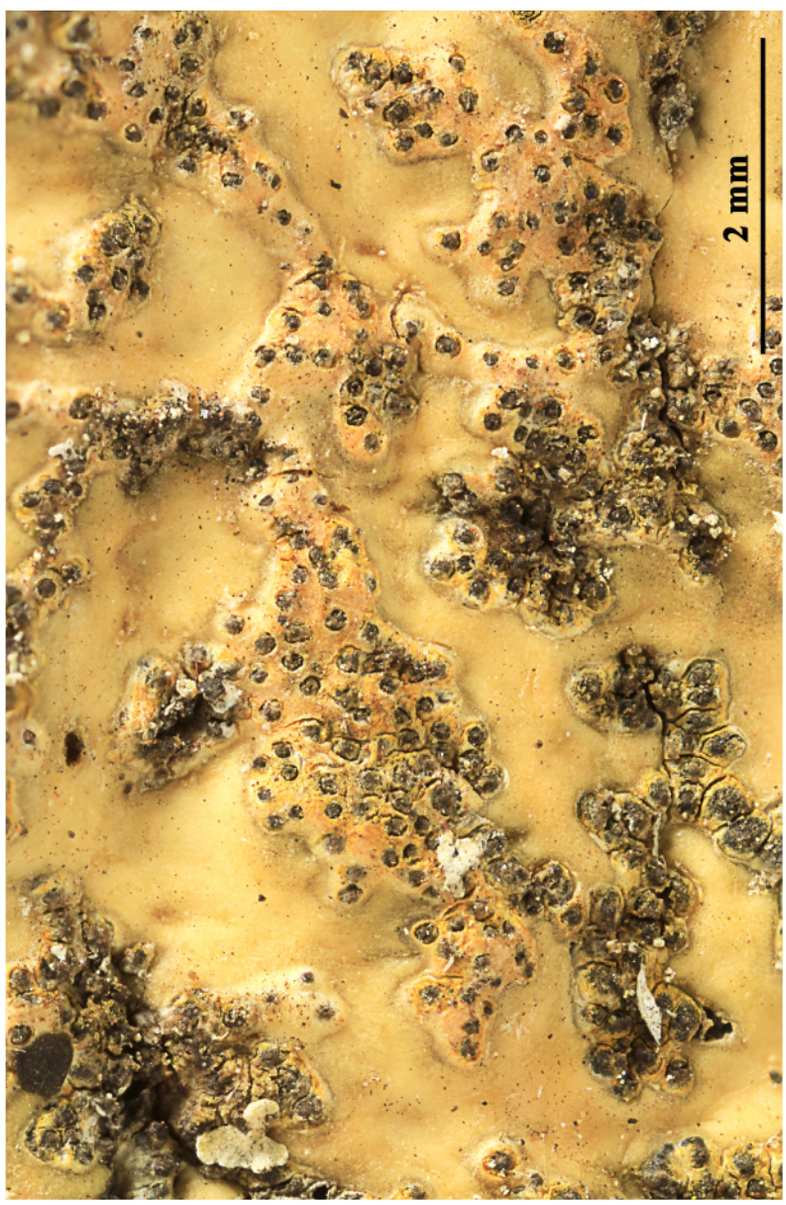




Astrothelium neoinspersum

Astrothelium neoinspersum Aptroot, in Aptroot, Ertz, Etayo Salazar, Gueidan, Mercado Diaz, Schumm & Weerakoon, Lichenologist 48(6): 624 (2016)

[ABL79982], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 79982), 23-26.09.2019, det. A. Aptroot, 2019.- Ascomata globose, 0.4–0.7mm diam., immersed in groups of 2–10 in pseudostromata with a surface different from the thallus, and which are distinctly raised above the thallus, irregular to often linear in outline, sides sloping, bright yellow, inside with a cream layer containing bark tissue. Ostioles apical, not fused, flat to convex, black. Hamathecium inspersed with oil globules. Ascospores hyaline, 8/ascus, 3-septate, fusiform, 18–23 × 7–8 µm, ends rounded, lumina diamond-shaped, surrounded by a 3 µm thick gelatinous layer. Chemistry: Thallus UV−, pseudostromata UV+ red, K+ purple. TLC: an anthraquinone.





Astrothelium neoinspersum

Astrothelium phlyctaena (Fée) Aptroot & Lücking, Lichenologist 48(6): 877 (2016)

= *Trypethelium phlyctaena* Fée, Essai Crypt. Exot. (Paris): 68 (1825) [1824]

= *Trypethelium scoria var. phlyctaena* (Fée) Trevis., Flora, Regensburg 44: 19 (1861)

[ABL78236], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78236), 03.03.2019, det. A. Aptroot, 2019. - Thallus and stroma K-, UV+ yellow (lichexanthone); hymenium not inspersed; spores 8/ascus, fusiform-ellipsoid, 3-septate, 15–27 ×7–10 µm, hyaline, IKI−.





Astrothelium phlyctaena

Bacidia arceutina (Ach.) Th. Fr., Bot. Notiser(10): 187 (1865)
= *Bacidia arceutina* f. *hypnaea* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Bacidia arceutina* var. *hypnaea* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]
= *Bacidia leightoniana* (Larbal. ex Leight.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 169 (1911)
= *Biatora carneola* var. *arceutina* (Ach.) Steud. & Hochst., Enum. Pl. Germ.: 208 (1826)
= *Biatora effusa* var. *arceutina* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 45 (1888)
= *Biatora luteola* var. *arceutina* (Ach.) Tuck., Gen. lich. (Amherst): 167 (1872)
= *Biatora luteola* var. *fuscella* Fr., Summa veg. Scand., Sectio Prior (Stockholm): 112 (1845)
= *Biatora luteola ß fuscella* (Nyl.) Mudd, Man. Brit. Lich.: 183 (1861)
= *Biatora rubella* f. *arceutina* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 45 (1888)
= *Biatorina arceutina* (Ach.) A. Massal. [as 'arceutica'], Ric. auton. lich. crost. (Verona): 137, fig. 270 (1852)
= *Lecidea arceutina* (Ach.) Gray, Nat. Arr. Brit. Pl. (London) 1: 472 (1821)
= *Lecidea arceutina* var. *hypnaea* Nyl., Flora, Regensburg 51: 165 (1868)
= *Lecidea carneola* var. *arceutina* (Ach.) Ach., Syn. meth. lich. (Lund): 42 (1814)
= *Lecidea effusa* var. *fuscella* (Nyl.) Leight., Lich.-Fl. Great Brit.: 344 (1871)
= *Lecidea leightoniana* Larbal. ex Leight., Lich.-Fl. Great Brit., Edn 3: 368 (1879)
= *Lecidea luteola* f. *arceutina* (Ach.) Nyl., Lich. Lapp. Orient.: 154 (1866)
= *Lecidea luteola* var. *arceutina* Ach., Methodus, Sectio prior (Stockholmiæ): 61 (1803)
= *Lecidea luteola* var. *fuscella* Nyl., Act. Soc. linn. Bordeaux 21(4): 360 (1857) [1856]
= Secoliga arceutina (Ach.) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 38 (1863)
= *Sporoblastia arceutina* (Ach.) Trevis. [as 'arceutica'], Linnaea 28: 291 (1856)

[ABL80294], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55’ S, 53°39’ W, 240 m. Leg. A. Aptroot (no 80294), 23-26.09.2019, det. A. Aptroot, 2019. - Spores 7-septate, 50 x 4 µm.





Bacidia arceutina

Bacidia igniarii (Nyl.) Oxner, Flora Lischaĭnikiv Ukraini (Kiev) 2(1): 166 (1968)

= *Scutula igniarii* (Nyl.) S. Ekman, in Cannon, Ekman, Kistenich, LaGreca, Printzen, Timdal, Aptroot, Coppins, Fletcher, Sanderson & Simkin, Revisions of British and Irish Lichens 10: 76 (2021)

= *Bacidia abbrevians var. igniarii* (Nyl.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 201 (1911)

= *Bilimbia igniarii* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 473 (1871) [1870]

= *Lecidea igniarii* Nyl., Flora, Regensburg 50: 328 (1867)

[ABL78257], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78257), 03.03.2019, det. A. Aptroot, 2019. Spore 3-7-septate, 40 x 3.5 µm.





Bacidia igniarii

Bacidia laurocerasi (Delise ex Duby) Zahlbr., Cat. Lich. Univers. 4: 213 (1926) [1927]

= *Bacidia atrogrisea* (Delise ex Hepp) Arnold, Flora, Regensburg 41(31): 505 (1858)

= *Bacidia atrogrisea* f. *laurocerasi* (Delise ex Duby) A.L. Sm., Monogr. Brit. Lich. 2: 162 (1911)

= *Bacidia endoleuca* (Nyl.) J. Kickx f., Fl. Crypt. Flandres (Paris) 1: 261 (1867)

= *Bacidia endoleuca* f. *atrogrisea* (Delise ex Hepp) Erichsen, Trud. In-ta Bot., Baku: 178 (1957)

= *Bacidia endoleuca* f. *laurocerasi* (Delise ex Duby) Arnold, Flora, Regensburg 53(30–31): 472 (1871) [1870]

= *Bacidia endoleuca* var. *laurocerasi* (Delise ex Duby) Zahlbr., Öst. bot. Z. 59(11): 439 (1909)

= *Biatora atrogrisea* Delise ex Hepp, Flecht. Europ.: no. 26 (1853)

= *Biatora luteola* f. *endoleuca* Nyl., Bot. Notiser(6-7): 98 (1853)

= *Biatora luteola* var. *atrogrisea* (Delise ex Hepp) Tuck., Gen. lich. (Amherst): 166 (1872)

= *Biatora rubella* subsp. *atrogrisea* (Delise ex Hepp) Tuck., Syn. N. Amer. Lich. (Boston) 2: 44 (1888)

= *Lecidea atrogrisea* (Delise ex Hepp) Linds., Trans. R. Soc. Edinb. 28: 260 (1872)

= *Lecidea endoleuca* (Nyl.) Nyl., Hedwigia 5(9): 141 (1866)

= *Lecidea endoleuca* f. *laurocerasi* (Delise ex Duby) Nyl., Flora, Regensburg 47: 620 (1864)

= *Lecidea endoleuca* var. *laurocerasi* (Delise ex Duby) Nyl., Annls Sci. Nat., Bot., sér. 5 7: 325 (1867)

= *Lecidea laurocerasi* (Delise ex Duby) Nyl. ex P. Crouan & H. Crouan , in Crouan & Crouan, Florule Finistère (Paris): 92 (1867)

= *Lecidea luteola* var. *endoleuca* (Nyl.) Nyl., Annls Sci. Nat., Bot., sér. 4 3: 162 (1855)

= *Lecidea pulverea* f. *laurocerasi* (Delise ex Duby) Nyl., J. Linn. Soc., Bot. 9: 255 (1865)

= *Patellaria atrogrisea* (Delise ex Hepp) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 16(2): 401 (1862)

= *Patellaria endoleuca* (Nyl.) Müll. Arg., Flora, Regensburg 65: 330 (1882)

= *Patellaria laurocerasi* Delise ex Duby [as 'lauro-cerasi'], Bot. Gall., Edn 2 (Paris) 2: 653 (1830)

= *Secoliga atrogrisea* (Delise ex Hepp) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 62 (1863)

[ABL79025], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 79025), 3.07.2019, det. A. Aptroot, 2019.



Bacidia laurocerasi



Bacidia laurocerasi

Bacidia polychroa (Th. Fr.) Körb., Parerga lichenol. (Breslau) 2: 131 (1860) [1865]
= *Bacidia acerina* (Ach.) Arnold, Flora, Regensburg 45: 391 (1862)
= *Bacidia fuscorubella* (Hoffm.) Bausch, Verh. naturw. Verein. Karlsruhe 4: 107 (1869)
= *Bacidia fuscorubella* var. *polychroa* (Th. Fr.) Th. Fr., Lich. Scand. (Upsaliae)(2): 346 (1874)
= *Bacidia luteola* var. *fuscorubella* (Hoffm.) Boistel, Nouv. Fl. Lich. (Paris) 2: 183 (1903)
= *Bacidia polysita* (Stirt.) A.L. Sm., Monogr. Brit. Lich. 2: 368 (1911)
= *Biatora fuscorubella* (Hoffm.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 43 (1888)
= *Biatora luteola* var. *acerina* (Ach.) Boistel, Nouv. Fl. Lich. (Paris): 71 (1896)
= *Biatora luteola* var. *fuscorubella* (Hoffm.) Tuck., Gen. lich. (Amherst): 166 (1872)
= *Biatora polychroa* Th. Fr., Öfvers. K. Svensk. Vetensk.-Akad. Förhandl. 12: 17 (1855)
= *Biatora rubella* subsp. *fuscorubella* (Hoffm.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 43 (1888)
= *Lecidea acerina* (Ach.) Röhl., Deutschl. Fl. (Frankfurt) 3(2): 40 (1813)
= *Lecidea fuscorubella* (Hoffm.) Röhl., Deutschl. Fl. (Frankfurt) 3(2): 40 (1813)
= *Lecidea luteola* subsp. *fuscorubella* (Hoffm.) Nyl., Flora, Regensburg 52(5): 70 (1869)
= *Lecidea luteola* var. *acerina* Ach., Methodus, Sectio prior (Stockholmiæ): 61 (1803)
= *Lecidea luteola* var. *fuscorubella* (Hoffm.) Ach., Methodus, Sectio prior (Stockholmiæ): 61 (1803)
= *Lecidea polysita* Stirt., Scott. Natural. 4: 28 (1878) [1877-78]
= *Patellaria acerina* (Ach.) Müll. Arg., Flora, Regensburg 69(20): 308 (1886)
= *Secoliga acerina* (Ach.) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 60 (1863)
= *Secoliga fuscorubella* (Hoffm.) Stizenb., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 30(no. 3): 53 (1863)
= *Toninia polysita* (Stirt.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 21: 162 (1911)
= *Verrucaria fuscorubella* Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 175 (1796) [1795]

[ABL80144], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°55’ S, 53°44’

W, 230 m. Leg. A. Aptroot (no 80144), 27.09.2019, det. A. Aptroot, 2019.



Bacidia polychroa



Bacidia polychroa

Bacidia termitophila Aptroot & M. Cáceres, Lichenologist 46(3): 367 (2014)

[ABL77664], Brazil, Mato Grosso do Sul, Morraria do Sul, Morraria do Sul Fazenda Sol de Maio, in Atlantic rain forest on limestone. 20°35’33" S, 56°51’40" W, 525 m. Leg. A. Aptroot (no 77664), 5.11.2018, det. A. Aptroot, 2019 - Hypothecium orange brown, spores 3 septate, 17 x 4 µm.





Bacidia termitophila

Bacidina apiahica (Müll. Arg.) Vězda, Folia geobot. phytotax. 25(4): 432 (1991) [1990]

= *Bacidia apiahica* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 174 (1926) [1927]

= *Lecania apiahica* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 5: 48 (1927) [1928]

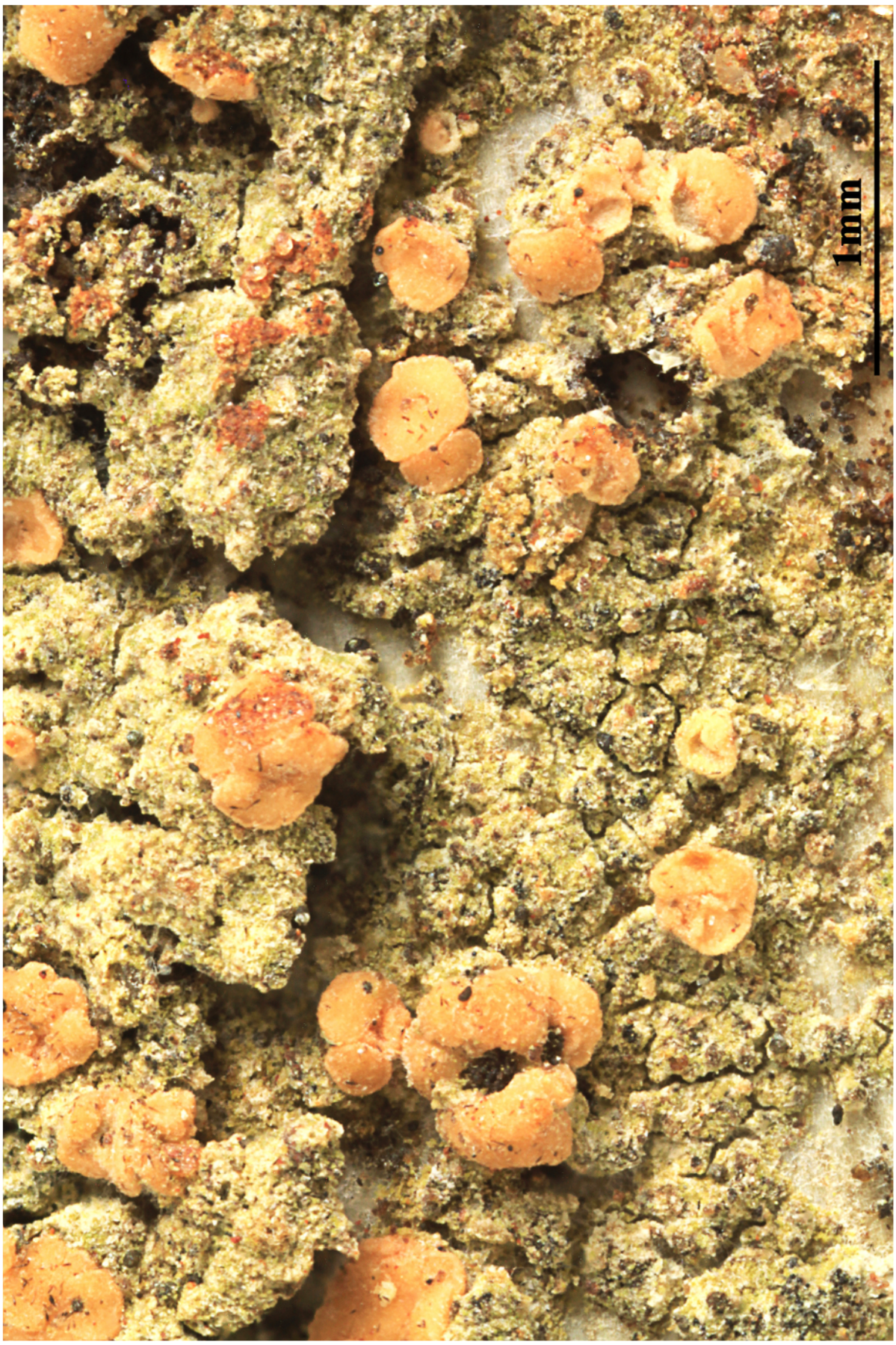
= Maronea apiahica (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 5: 48 (1927) [1928]

= *Patellaria apiahica* Müll. Arg., Lichenes Epiphylli Novi: 9 (1890)

= *Woessia apiahica* (Müll. Arg.) Sérus., Lichenologist 28(3): 224 (1996)

[ABL79075a], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 79075a), 3.07.2019, det. A. Aptroot, 2019 -Spores 4-septate, 25-30 x 2.5 µm.





Bacidina apiahica

Baculifera cinereocincta (Müll. Arg.) Marbach, Biblthca Lichenol. 74: 115 (2000)

= *Buellia cinereocincta* Müll. Arg., Flora, Regensburg 73: 344 (1890)

= *Lecidea cinereocincta* (Müll. Arg.) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 171 (1891) [1889-90]

[ABL78220], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78220), 03.03.2019, det. A. Aptroot, 2019. - Thallus UV-, K+ red (norstictic acid, connorstoctic acid); hypothecium brown to carbonized, hymenium not inspersed, spores 1-septate, brown, 10-15 x 5-7 µm.





Baculifera cinereocincta

Bathelium pruinosum Flakus, Kukwa & Aptroot, Lichenologist 48(6): 680 (2016)

[ABL77658], Brazil, Mato Grosso do Sul, Morraria do Sul, Morraria do Sul Fazenda Sol de Maio, in Atlantic rain forest on tree bark. 20°35’33" S, 56°51’40" W, 525 m. Leg. A. Aptroot (no 77658), 5.11.2018, det. A. Aptroot, 2019. - Thallus and apothecia UV+ yellow, hymenium not inspersed, spores 8/ascus, muriform, 25 x 10 µm.





Bathelium pruinosum

Bogoriella miculiformis (Müll. Arg.) Aptroot & Lücking, Lichenologist 48(6): 912 (2016)

= *Pseudobogoriella miculiformis* (Müll. Arg.) Lücking, R. Miranda & Aptroot, Index Fungorum 472: 1 (2021)

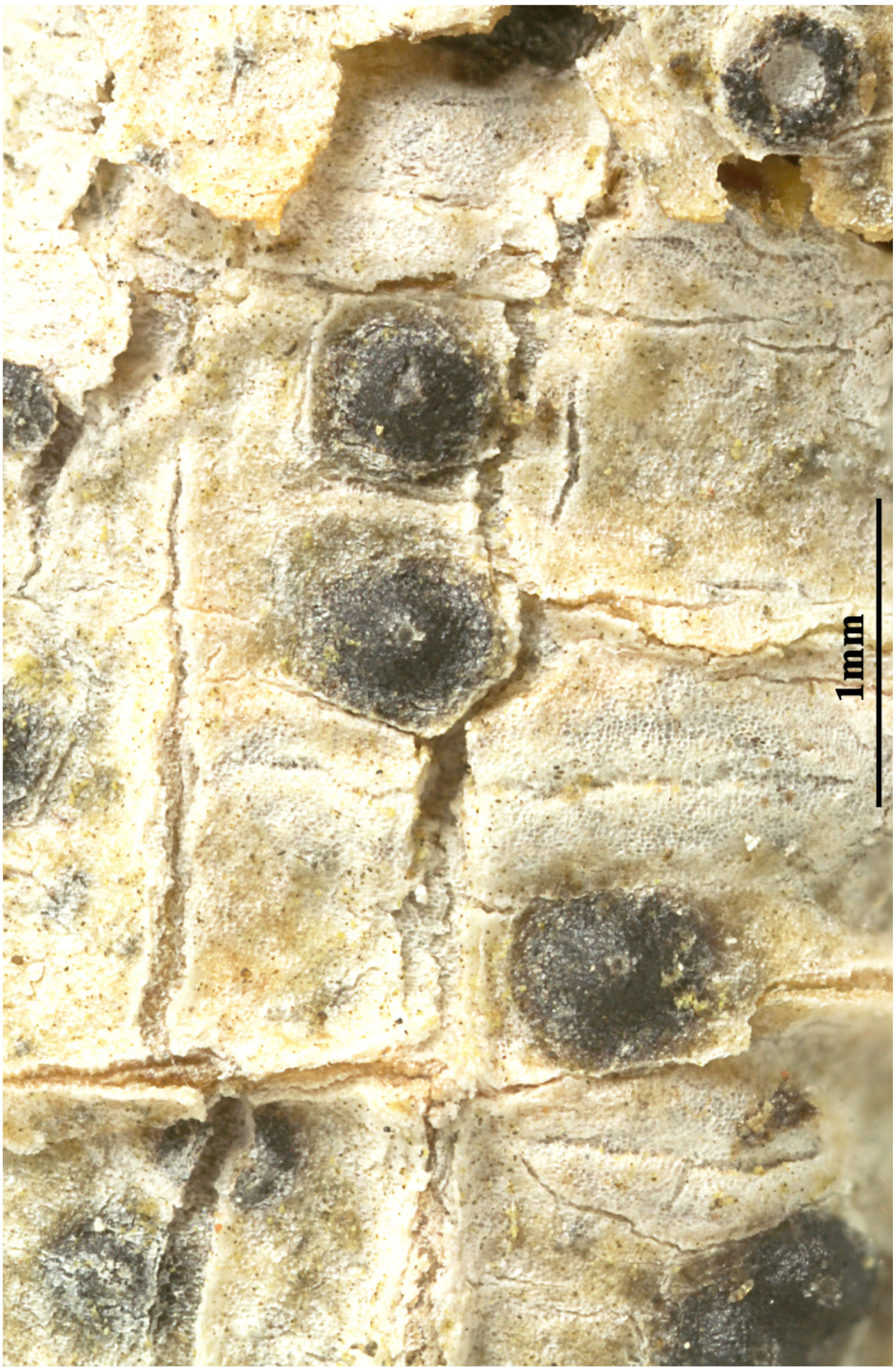
= *Microthelia miculiformis* Müll. Arg., Bot. Jb. 6: 417 (1885)

= *Mycomicrothelia miculiformis* (Müll. Arg.) D. Hawksw., Bull. Br. Mus. nat. Hist., Bot. 14(2): 99 (1985)

= *Verrucaria miculiformis* Nyl., Flora, Regensburg 59(23): 364 (1876)

[ABL77907], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazin Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77907), 8.11.2018, det. A. Aptroot, 2019. - Thallus UV-, spores 1-septate, 15 x 7 µm.



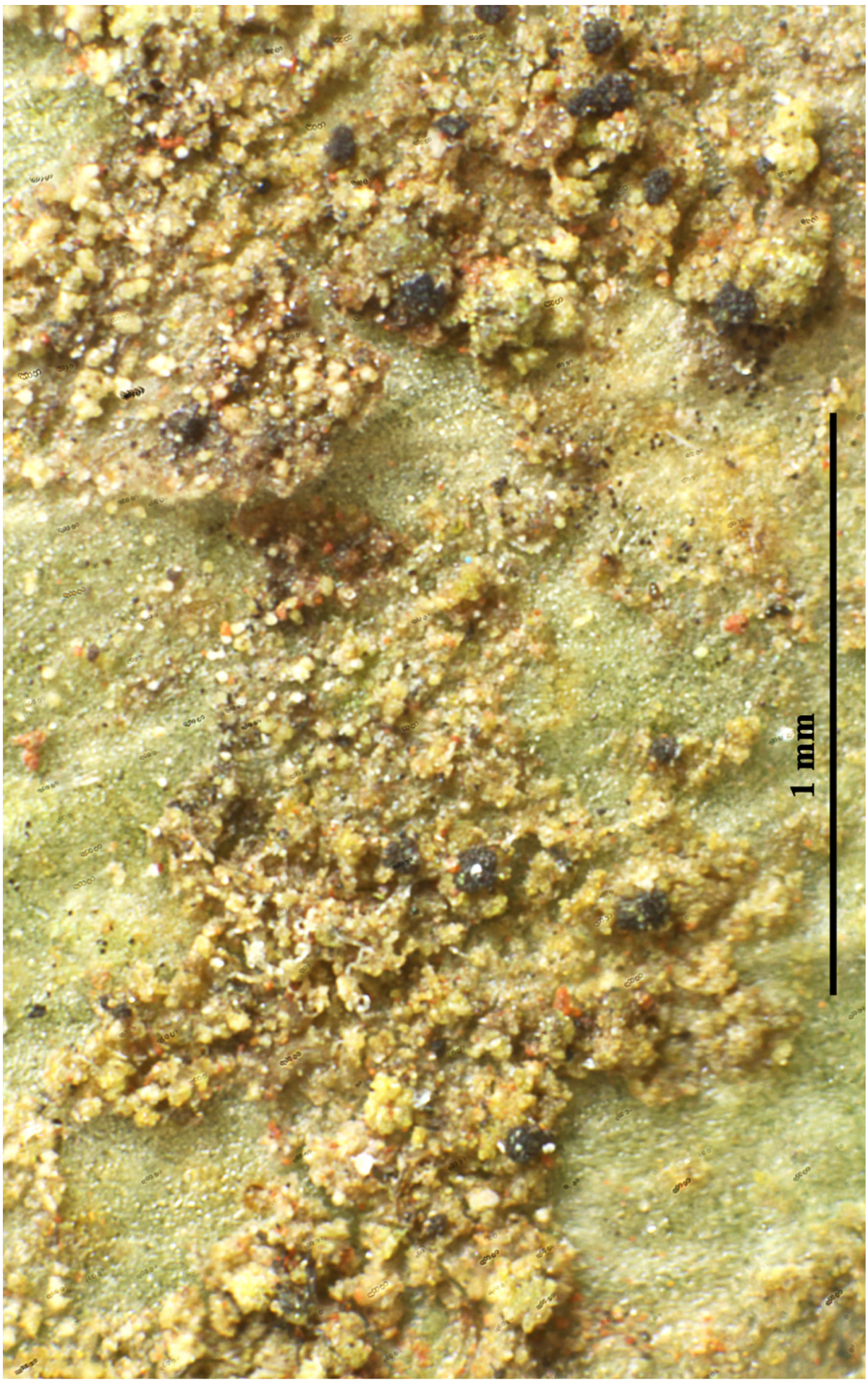


Bogoriella miculiformis

Bryostigma lapidicola (Taylor) S.Y. Kondr. & J.-S. Hur (2020) LC NS
= *Arthonia lapidicola* (Taylor) Branth & Rostr. (1869)

[ABL78054a], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on living leaves. 20°30’ S, 43°37’ W, 550 m. Leg. A. Aptroot (no 78054a), 23.11.2018, det. A. Aptroot, 2018. - Apothecia 0.05-0.25 (-0.3) mm diam., convex, black, not pruinose; in section 60-100 µm tall; epithecium 5-7 µm tall, pale green or red-brown, K+ pale green, composed of 2-3 rows of periclinally arranged, dark-walled hyphae *ca* 1.5-2 µm diam.; hymenium 25-30 µm tall, colourless or pale green; hypothecium 30-70 µm tall, reddish brown, K+ dull olive-brown; paraphysoids 0.5-1 µm diam., very scanty. Ascospores 8-12 (-14) × 2.5-4 µm, 1-septate, obovoid, the upper cell broader and shorter than the lower but often with a slightly pointed apex. Pycnidia occasional, *ca* 40 µm diam., the wall pale brown, K+ olive; conidia bacilliform, 3-4 × *ca* 0.5 µm. Lichen products not detected by TLC.





Bryostigma lapidicola

Buellia griseovirens (Turner & Borrer ex Sm.) Almb., Bot. Notiser: 246 (1952)

= *Aplotomma betulinum* (Hepp ex Zwackh) A. Massal. ex Bausch, in Zwackh, Verh. naturw. Verein. Karlsruhe 4: 132 (1869)

= *Buellia betulina* (Hepp ex Zwackh) Th. Fr., Lich. Scand. (Upsaliae)(2): 610 (1874)

= *Diplotomma betulinum* (Hepp ex Zwackh) Arnold, Flora, Regensburg 67: 591 (1884)

= *Lecidea betulina* Hepp ex Zwackh, Flora, Regensburg 45(33): 524 (1862)

= *Lecidea betulina* (Hepp ex Zwackh) Nyl., Bull. Soc. linn. Normandie, sér. 2 6(2): 305 (1873)

= *Rhizocarpon betulinum* Hepp ex Zwackh, Flora, Regensburg 45(33): 524 (1862)

= *Sporopodium betulinum* (Hepp ex Zwackh) Vain., Acta Soc. Fauna Flora fenn. 53(no. 1): 269 (1922)

= *Variolaria griseovirens* Turner & Borrer ex Sm., in Smith & Sowerby, Engl. Bot. 34: tab. 2400 (1812)

[ABL77799], Brazil, Mato Grosso do Sul, Morraria do Sul, Bodoquena, Fazenda Santa Laura, in Atlantic rain forest on wood. 20°47’10" S, 56°43’48" W, 450 m. Leg. A. Aptroot (no 77799), 7.11.2018, det. A. Aptroot, 2019

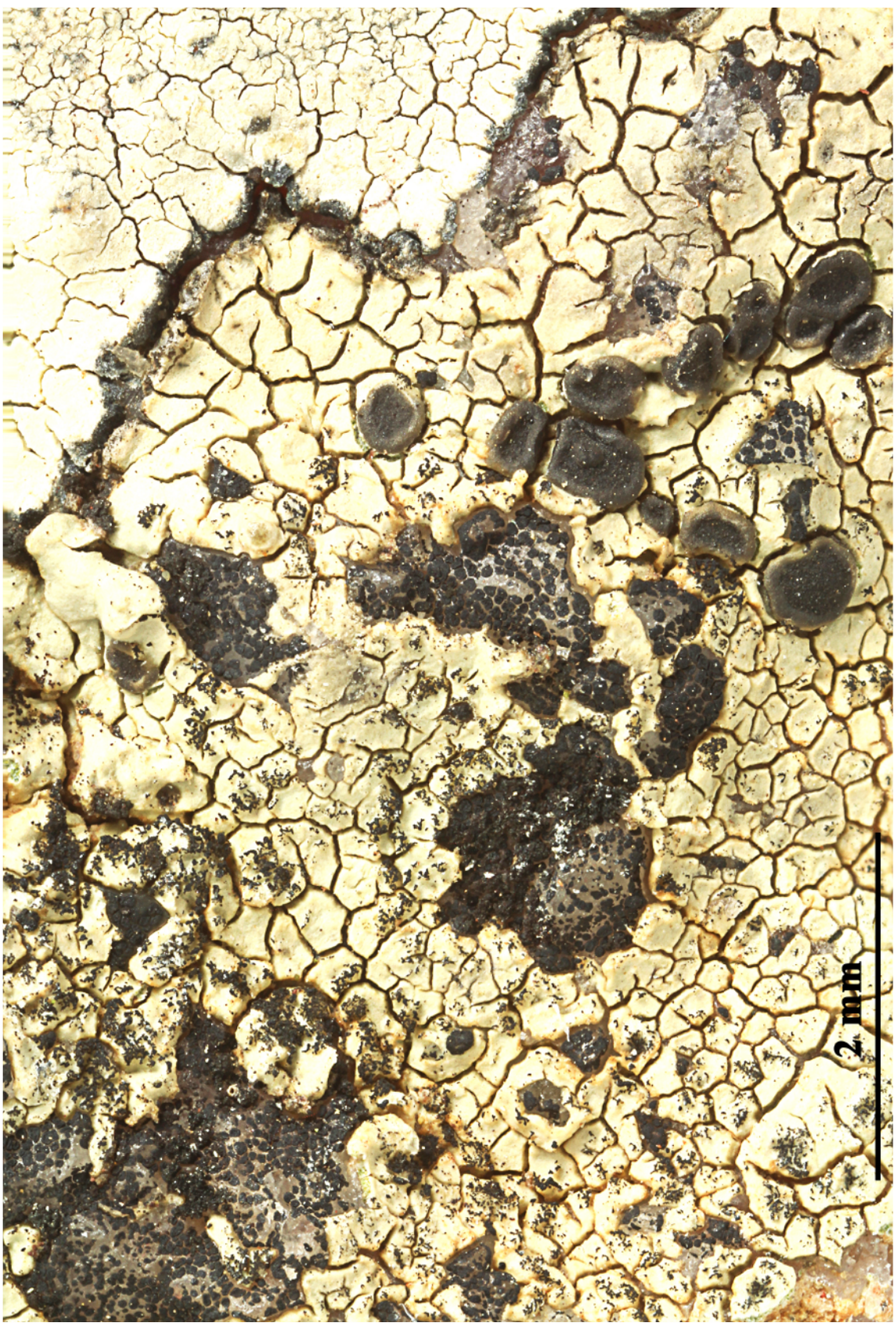




Buellia griseovirens

Buellia halonia (Ach.) Tuck., Lichens of California (Berkeley): 26 (1866)
= *Lecidea halonia* Ach. 1803

[ABL77974], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, in Atlantic rain forest on siliceous rock. 21°07’44" S, 56°30’41" W, 800 m. Leg. A. Aptroot (no 77974), 6.11.2018, det. A. Aptroot, 2019. - Thallus C+ orange, UV+ orange; spores 8/ascus, brown, 1-septate.





Buellia halonia

Buellia stellulata (Taylor) Mudd, Man. Brit. Lich.: 216 (1861)
= *Buellia stellulata* var. *tasmanica* Elix & Kantvilas, Australas. Lichenol. 73: 32 (2013)
= *Lecidea minutula* (Hepp) Nyl. ex Lamy, Bull. Soc. bot. Fr. 25(5): 469 (1880) [1878]
= *Lecidea spuria* var. *minutula* Hepp, Flecht. Europ.: no. 313 (1857)
= *Lecidea stellulata* Taylor, in Mackay, Fl. Hibern. 2: 118 (1836)

[ABL77767], Brazil, Mato Grosso do Sul, Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tile. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77767), 6.11.2018, det. A. Aptroot, 2019





Buellia stellulata

Buellia stellulata (Taylor) Mudd, Man. Brit. Lich.: 216 (1861)
= *Buellia stellulata* var. *tasmanica* Elix & Kantvilas, Australas. Lichenol. 73: 32 (2013)
= *Lecidea minutula* (Hepp) Nyl. ex Lamy, Bull. Soc. bot. Fr. 25(5): 469 (1880) [1878]
= *Lecidea spuria* var. *minutula* Hepp, Flecht. Europ.: no. 313 (1857)
= *Lecidea stellulata* Taylor, in Mackay, Fl. Hibern. 2: 118 (1836)

[ABL77786], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, in Atlantic rain forest on siliceous rock.rk. 21°07’44" S, 56°30’41" W, 800 m. Leg. A. Aptroot (no 77786), 6.11.2018, det. A. Aptroot, 2019



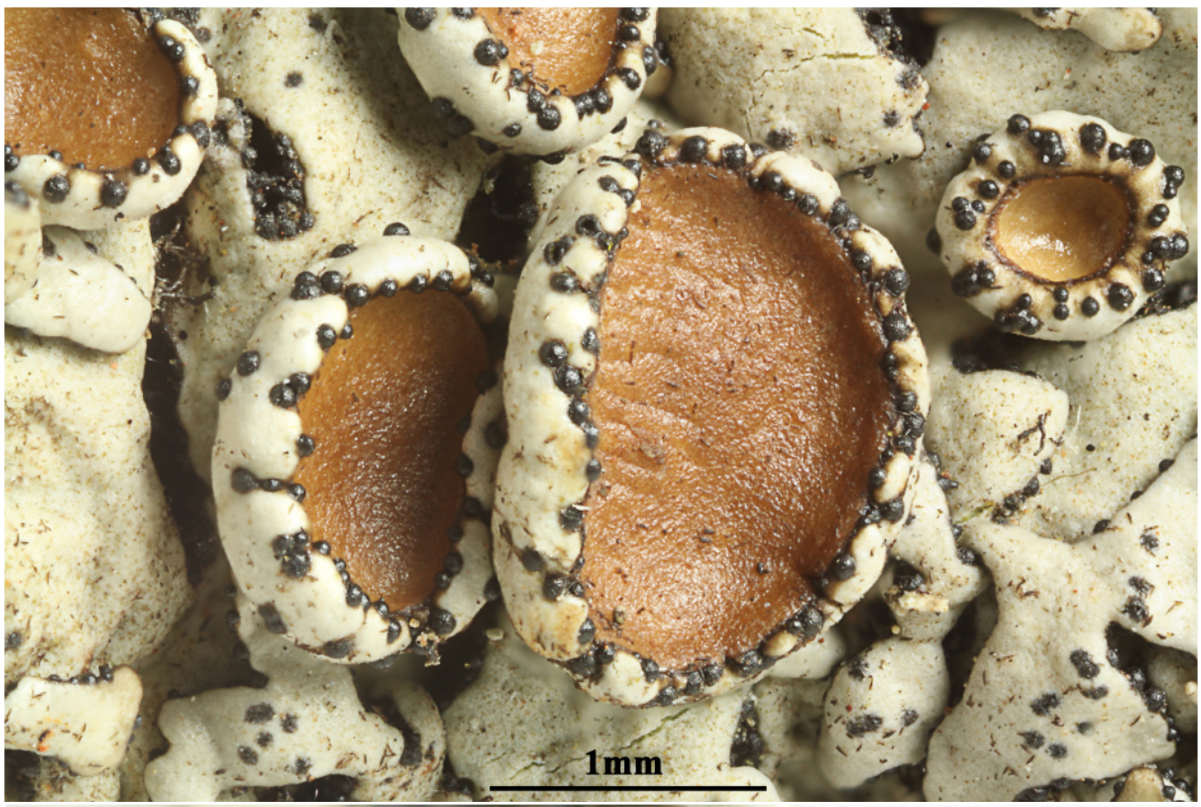


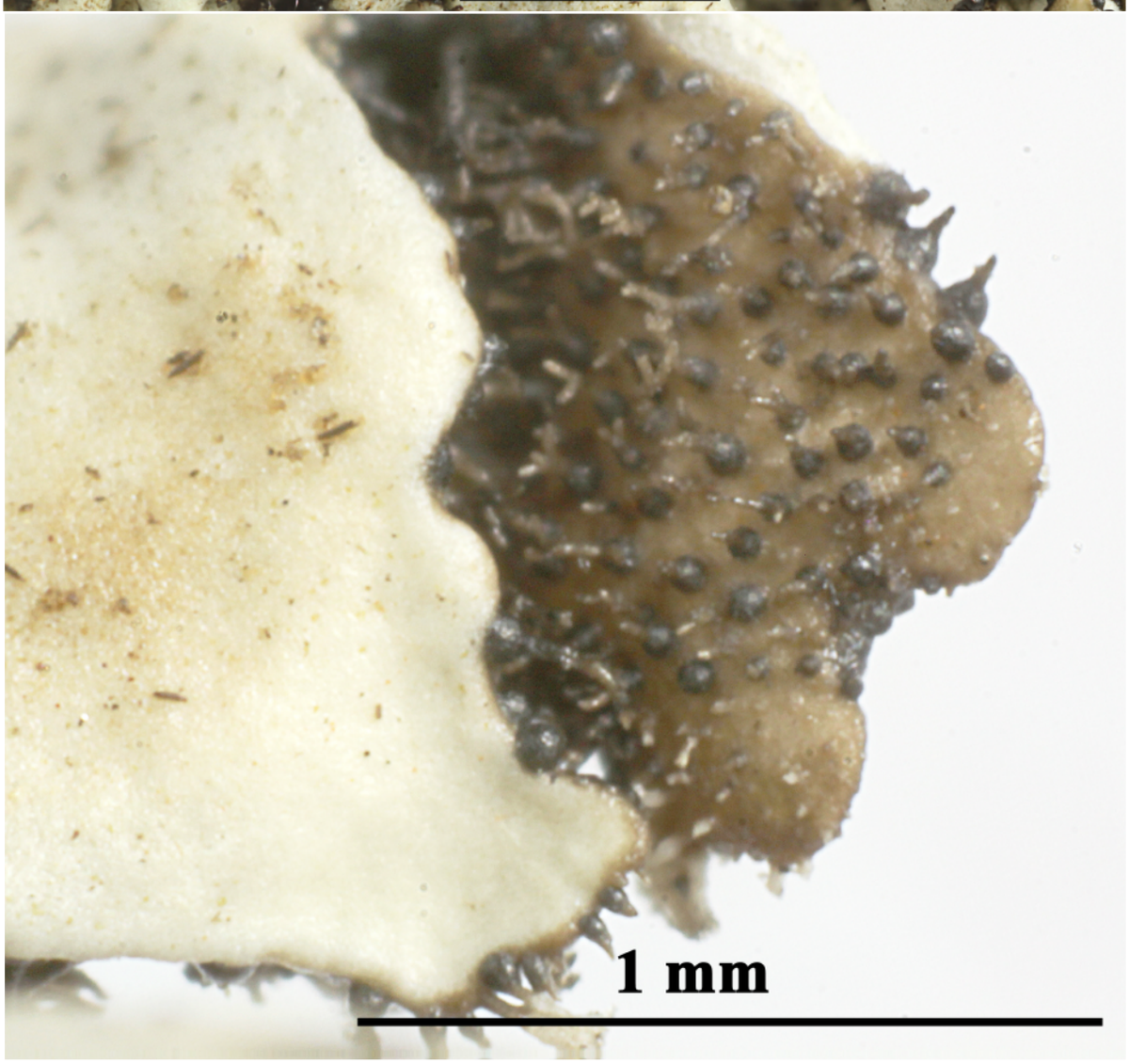
Buellia stellulata

Bulbothrix coronata (Fée) Hale, Phytologia 28(5): 480 (1974)
= *Parmelia coronata* Fée 1825

[ABL77020], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77020), 30.10.2018, det. A. Aptroot, 2019.







Bulbothrix coronata

Bulbothrix isidiza (Nyl.) Hale, Phytologia 28(5): 480 (1974)
= *Parmelia isidiza* Nyl., Bolm Soc. broteriana, Coimbra, sér. 1 3(3): 130 (1885)

[ABL77081], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77081
), 30.10.2018, det. A. Aptroot, 2019.

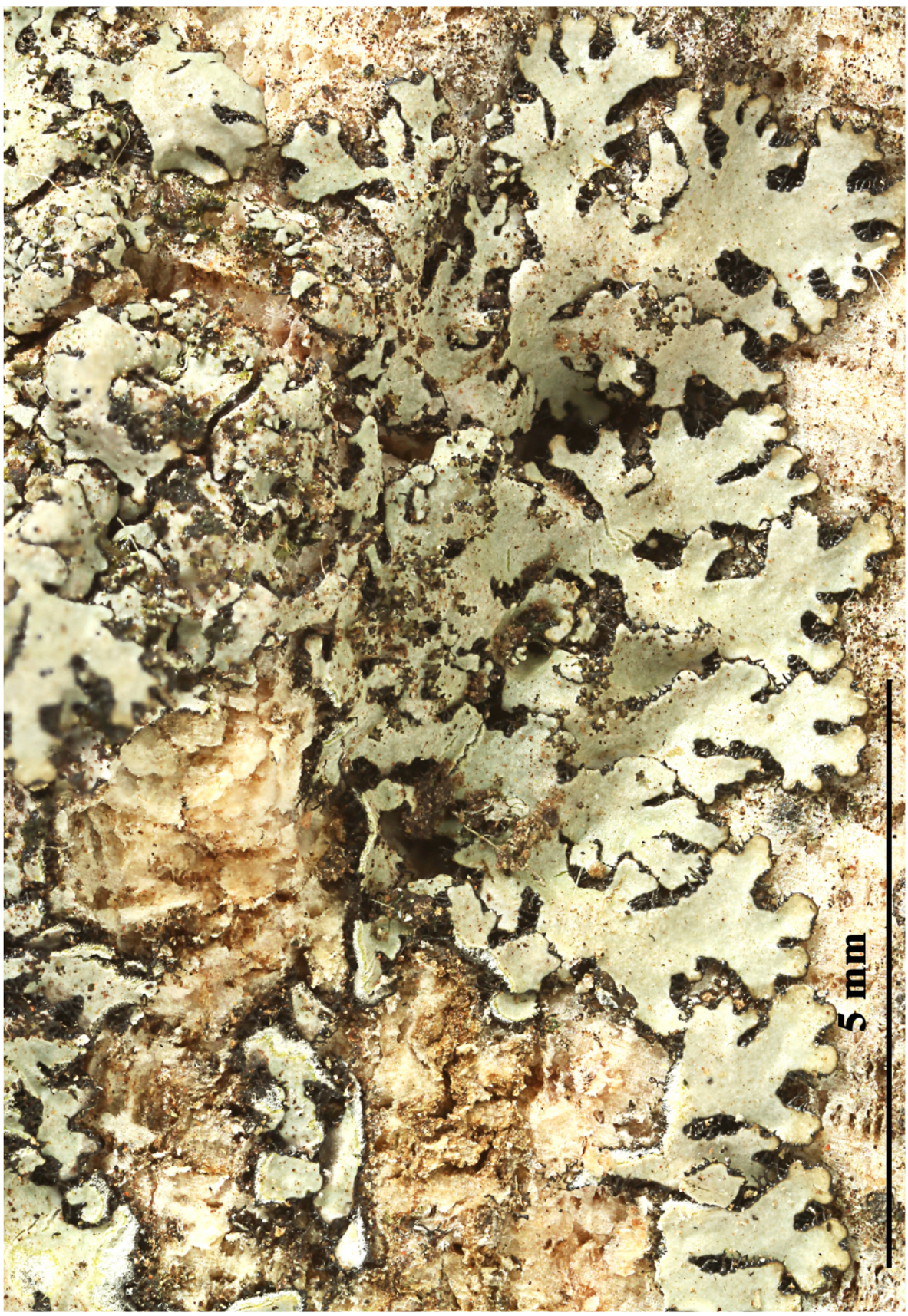




Bulbothrix isidiza

Bulbothrix fungicola (Lynge) Hale, Phytologia 28(5): 480 (1974)
= *Parmelia fungicola* Lynge 1914

[ABL78048], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, in disturbed cerrado forrest on tree bark. 20°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78048), 9.11.2018, det. A. Aptroot, 2019.

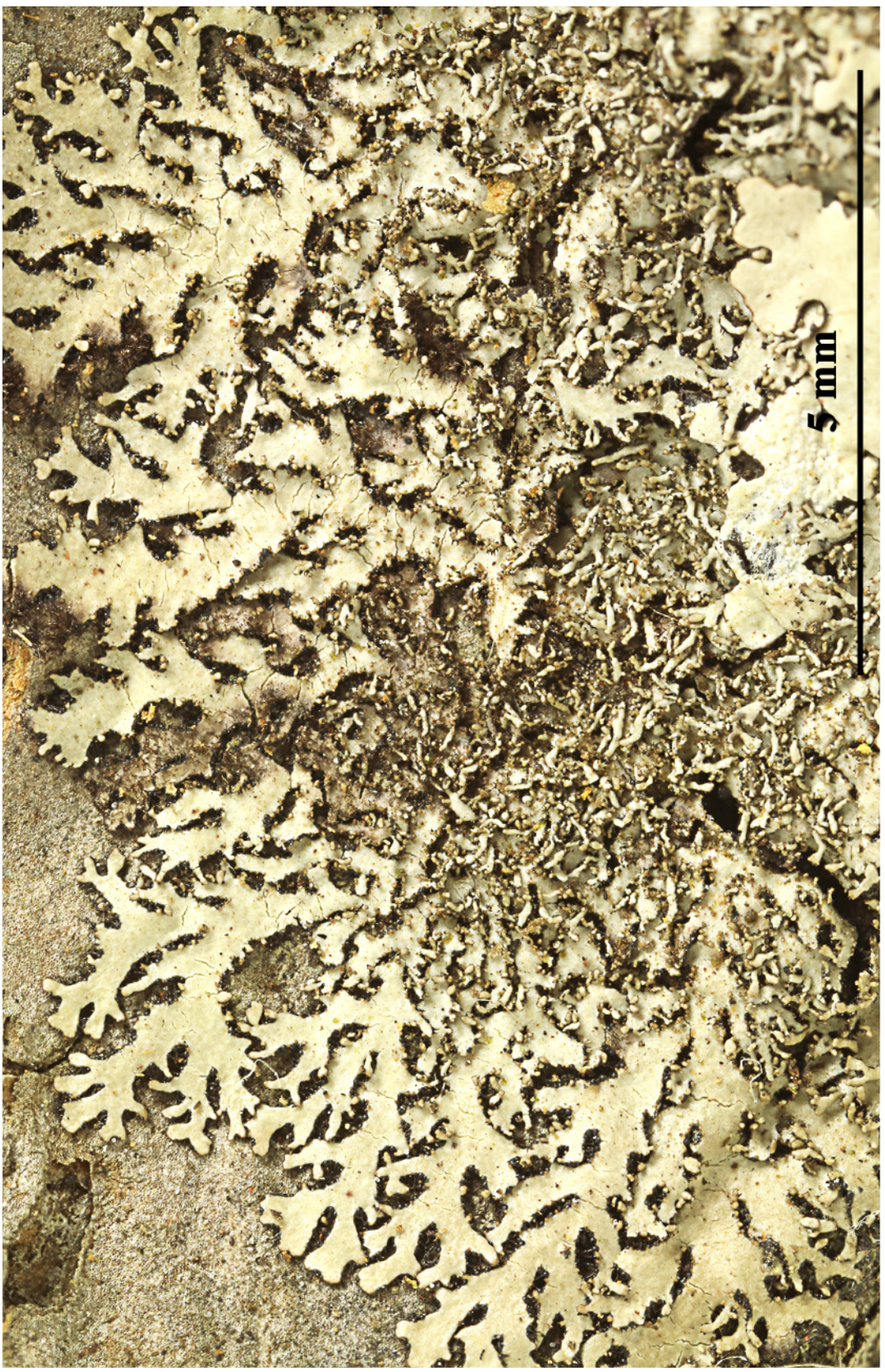




Bulbothrix fungicola

Bulbothrix pseudocoronata (Gyeln.) Benatti, Mycology 3(1): 49 (2012)
= *Parmelia pseudocoronata* Gyeln., Feddes Repert. Spec. Nov. Regni Veg. 29: 289 (1931)

[ABL78033], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, in disturbed cerrado forrest on tree bark. 20°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78033), 9.11.2018, det. A. Aptroot, 2019.





Bulbothrix pseudocoronata

Bulbothrix regnelliana Jungbluth, Marcelli & Elix, Mycotaxon 104: 58 (2008)

[ABL80406], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80406), 23.10.2019, det. A. Aptroot, 2019.





Bulbothrix regnelliana



Bulbothrix regnelliana

Byssoloma chlorinum (Vain.) Zahlbr., Cat. Lich. Univers. 8: 233 (1932)
= *Pilocarpon chlorinum* Vain., Univ. Calif. Publ. Bot. 12(no. 1): 11 (1924)

[ABL77351], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on tree bark (twigt). 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77351), 1.11.2018, det. A. Aptroot, 2019.



Calicium salicinum Pers., Ann. Bot. (Usteri) 7: 20 (1794)
= Calicium clavellum (Ach.) DC., in Lamarck & de Candolle, Fl. franç., Edn 3 (Paris) 2: 344 (1805)
= *Calicium clavellum* var. *salicinum* (Pers.) Lam. & DC., Fl. franç., Edn 3 (Paris) 2: 344 (1805)
= *Calicium claviculare* var. *trachelinum* Ach., Methodus, Sectio prior (Stockholmiæ): 91 (1803)
= *Calicium dimorphum* var. *salicinum* (Pers.) L. Marchand, in Hall, Vrolik & Mulder, Bijdr. Natuurk. Wetensch. 5: 191 (1830)
= *Calicium hyperellum* var. *salicinum* (Pers.) Schaer., Lich. helv. spicil. 4-5: 230 (1833)
= *Calicium lichenoides* (L.) Schumach., Enum. pl. (Kjbenhavn) 2: 180 (1803)
= *Calicium melanophaeum* var. *xylonellum* (Ach.) Wahlenb., Fl. Suec. 2: 880 (1826)
= *Calicium salicinum* f. *xylonellum* (Ach.) Sandst., Abh. naturw. Ver. Bremen 21(1): 36 (1912)
= *Calicium salicinum* var. *xylonellum* (Ach.) Trevis., Flora, Regensburg 45: 5 (1862)
= *Calicium sphaerocephalum* f. *hemiphaeum* (Nyl. ex Leight.) Zahlbr., Cat. Lich. Univers. 1: 623 (1922)
= *Calicium sphaerocephalum* f. *trachelinum* (Ach.) Erichsen, Flechtenfl. Nordwestdeutschl.: 55 (1957)
= *Calicium sphaerocephalum* var. *crustosum* Turner & Borrer, Spec. lichonogr. brit. (Yarmouth): 153 (1839)
= *Calicium sphaerocephalum* var. *salicinum* (Pers.) Schaer., Naturw. Anzeiger Allgem. Schweizer. Gesellsch. Naturwiss. 5: 36 (1821)
= *Calicium sphaerocephalum* var. *trachelinum* (Ach.) Branth & Rostr., Bot. Tidsskr. 3: 271, tab. IV, fig. 58, a-b (1869)
= *Calicium sphaerocephalum* var. *xylonellum* (Ach.) Wahlenb., Fl. lapp.: 486 (1812)
= *Calicium trachelinum* Ach., K. Vetensk-Acad. Nya Handl. 29: 279 (1808)
= *Calicium trachelinum* f. *hemiphaeum* (Nyl. ex Leight.) Cromb., Grevillea 15(no. 75): 14 (1886)
= *Calicium trachelinum* f. *salicinum* (Pers.) Hepp, Flecht. Europ.: no. 760 (1867)
= *Calicium trachelinum* var. *hemiphaeum* Nyl. ex Leight. [as 'hemiplodum'], Lich.-Fl. Great Brit., Edn 3: 43 (1879)
= *Calicium trachelinum* var. *salicinum* (Pers.) Sacc., in Saccardo & Traverso, Syll. fung. (Abellini) 19: 208 (1910)
= *Calicium trachelinum* var. *xylonellum* (Ach.) Fr., Sched. Crit. Lich. Suec., Fasc. 1-4: 5 (1824)
= *Calicium xylonellum* Ach., Methodus, Sectio prior (Stockholmiæ): 92 (1803)

= *Clathrus sphaerocephalus* var. *lichenoides* (L.) Lilj., Utkast Sv. Fl., Edn 2: 461 (1798)
= *Cyphelium trachelinum* (Ach.) Chevall., Fl. gén. env. Paris (Paris) 1: 319 (1826)
= *Lichen clavellus* Ach., Lich. suec. prodr. (Linköping): 83 (1799) [1798]
= *Lichen sphaerocephalus* var. *lichenoides* (L.) Weber, Spicil. fl. goetting.: 198 (1778)
= *Lichen sphaerocephalus* var. *quercinus* Retz., Fl. scand. prodr., Edn altera: 274 (1795)
= *Mucor lichenoides* L., Sp. pl. 2: 1185 (1753)

[ABL79934], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on wood. 22°54' S, 53°45' W, 240 m. Leg. A. Aptroot (no 79934), 24.09.2019, det. A. Aptroot, 2019. - Spore brown, 1-septate, 8 x 5 µm.



Calicium salicinum

Caloplaca atroflava (Turner) Mong., Bull. Acad. Intern. Géogr. Bot. 23: 192 (1914)

= *Lecidea atroflava* Turner 1808

= *Kuettlingeria atroflava* (Turner) I.V. Frolov, Vondrák & Arup, in Frolov, Vondrák, Košnar & Arup 2020

[ABL77766], Brazil, Mato Grosso do Sul, Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tile. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77766), 6.11.2018, det. A. Aptroot, 2019 - Spores 1-septate,





Caloplaca atroflava

Caloplaca bassiae (Ach.) Zahlbr., Cat. Lich. Univers. 7: 78 (1930) [1931]
= *Oxneriopsis bassiae* (Ach.) S.Y. Kondr., Upreti & Hur, in Mishra, Upreti, Sanjeeva Nayaka, Thell, Kärnefelt, Hur, Sinha & Kondratyuk, Acta bot. hung. 62(3-4): 367 (2020)
= *Gyalolechia bassiae* (Ach.) Søchting, Frödén & Arup, in Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 70 (2013)
= *Gyalolechia bassiae* (Ach.) Søchting, Frödén & Arup ex Ahti, in Ahti, Kondratyuk, Kärnefelt & Thell, Graphis Scripta 27(1-2): 38 (2015)
= *Isidium bassiae* (Ach.) Ach., Lich. Univ.: 579 (1810)
= *Lepraria bassiae* Ach., Methodus, Sectio prior (Stockholmiæ): 5 (1803)
= *Placodium bassiae* (Ach.) Vain., Hedwigia 37(Beibl.): (38) (1898)

[ABL77960], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77960), 8.11.2018, det. A. Aptroot, 2019.





Caloplaca bassiae

Caloplaca crocina (Kremp.) Wilk & R. Vargas, Mycotaxon 132(1): 127 (2017) [2016]
= *Huneckia crocina* (Kremp.) Wilk, Mycotaxon 136(2): 395 (2021)
= *Blastenia crocina* (Kremp.) Müll. Arg., Revue mycol., Toulouse 10(no. 38): 68 (1888)
= *Callopisma crocinum* (Kremp.) Malme, Ark. Bot. 20A(no. 9): 10 (1926)
= *Lecanora crocina* (Kremp.) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 235 (1895) [1893-94]
= *Lecidea crocina* Kremp., Flora, Regensburg 61: 519 (1878)
= *Placodium crocinum* (Kremp.) Räsänen, Borbásia 1: 129 (1939)

[ABL78035], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78035), 9.11.2018, det. A. Aptroot, 2019.



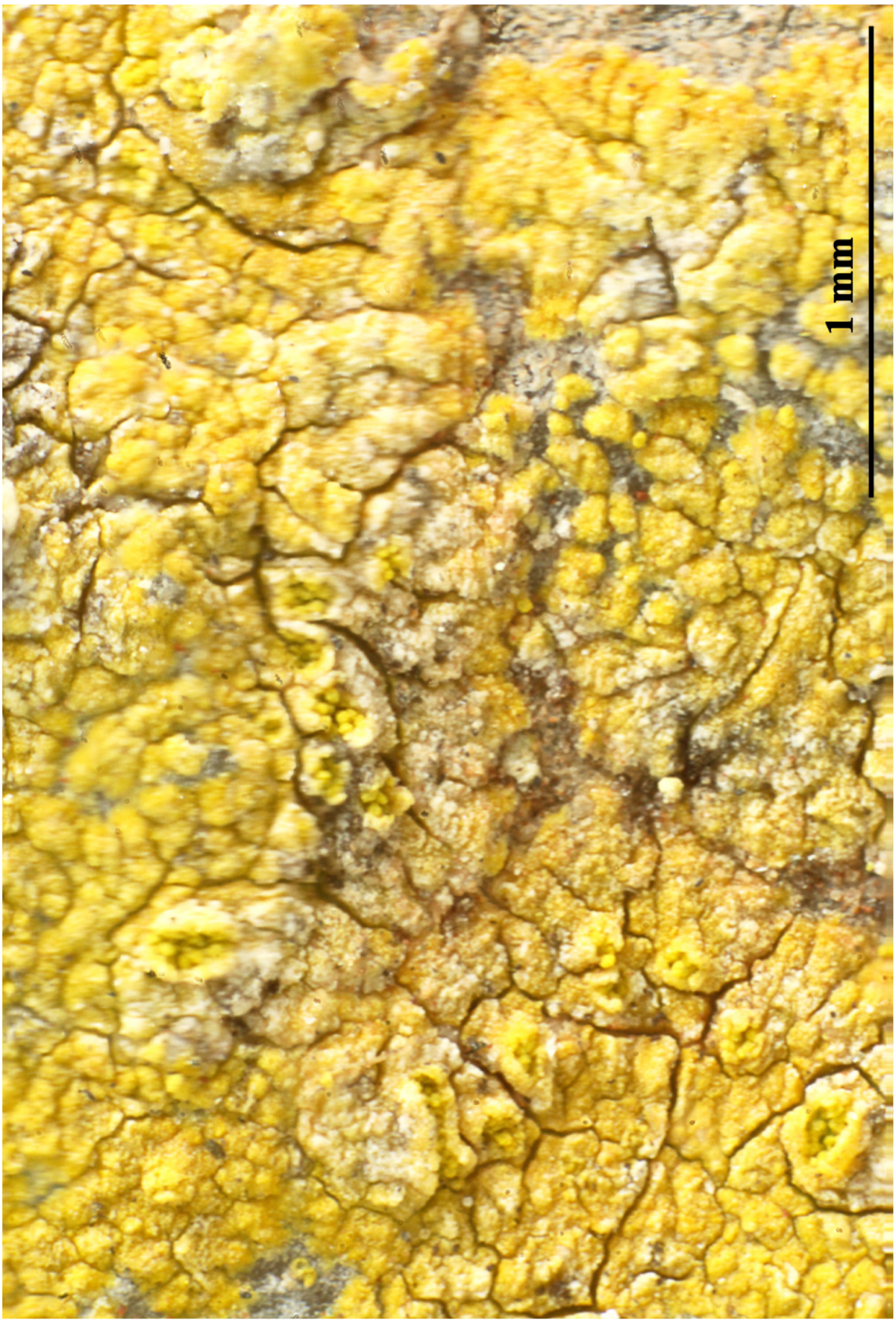


Caloplaca crocina

Caloplaca cupulifera (Vain.) Zahlbr., Cat. Lich. Univers. 7: 226 (1931)
= *Placodium cupuliferum* Vain., Ann. Acad. Sci. fenn., Ser. A 6(no. 7): 44 (1915)

[ABL77825], Brazil, Mato Grosso do Sul, Bodoquena, Dente de Cão summit,in Atlantic rain forest on exposed limestone. 20°47’´05" S, 56°45’03" W, 450 m. Leg. A. Aptroot (no 77825), 7.11.2018, det. A. Aptroot, 2019





Caloplaca cupulifera

Caloplaca erythrantha (Tuck.) Zahlbr., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 111: 409 (1902)
= *Lecanora erythrantha* Tuck. 1862

[ABL77800a], Brazil, Mato Grosso do Sul, Morraria do Sul, Bodoquena, Fazenda Santa Laura, in Atlantic rain forest on wood. 20°47’10" S, 56°43’48" W, 450 m. Leg. A. Aptroot (no 77800a), 7.11.2018, det. A. Aptroot, 2019 - Spores 1-septate, 18 x 7 µm.





Caloplaca erythrantha

Caloplaca flavorubescens (Huds.) J.R. Laundon, Lichenologist 8(2): 147 (1976)

= *Opeltia flavorubescens* (Huds.) S.Y. Kondr. & Hur, in Mishra, Upreti, Sanjeeva Nayaka, Thell, Kärnefelt, Hur, Sinha & Kondratyuk, Acta bot. hung. 62(3-4): 365 (2020)

= *Caloplaca flavorubescens* f. *microthelia* (Ach.) Verseghy, Bot. Közl. 74-75(1-2): 33 (1988) [1987]

= *Caloplaca flavorubescens* var. *quercina* (Flagey) Giralt, Nimis & Poelt, Cryptog. Bryol.-Lichénol. 13(3): 273 (1992)

= *Caloplaca quercina* Flagey, Revue mycol., Toulouse 13(no. 51): 114 (1891)

= *Caloplaca salicina* f. *microthelia* (Ach.) Verseghy [as 'microthallina'], Stud. Bot. Hungar. 8: 42 (1973)

= *Gyalolechia flavorubescens* (Huds.) Søchting, Frödén & Arup, in Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 70 (2013)

= *Gyalolechia flavorubescens* var. *quercina* (Flagey) Nimis, The lichens of Italy, A second annotated catalogue (Trieste): 19 (2016)

= *Lecanora aurantiaca* var. *microthelia* (Ach.) Nyl., Lich. Scand. (Helsinki): 142 (1861)

= *Lecanora salicina* f. *microthelia* (Ach.) Ach., Syn. meth. lich. (Lund): 175 (1814)

= *Lecanora salicina* var. *microthelia* (Ach.) Ach., Lich. Univ.: 401 (1810)

= *Lichen flavorubescens* Huds. [as 'flavo-rubescens'], Fl. Angl.: 443 (1762)

= *Parmelia microthelia* Ach., Methodus, Sectio post. (Stockholmiæ): 174 (1803)

= *Patellaria oblitterata* f. *populina* Wallr., Fl. crypt. Germ. (Norimbergae) 1: 385 (1831)

[ABL78022], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78022), 9.11.2018, det. A. Aptroot, 2019.





Caloplaca flavorubescens

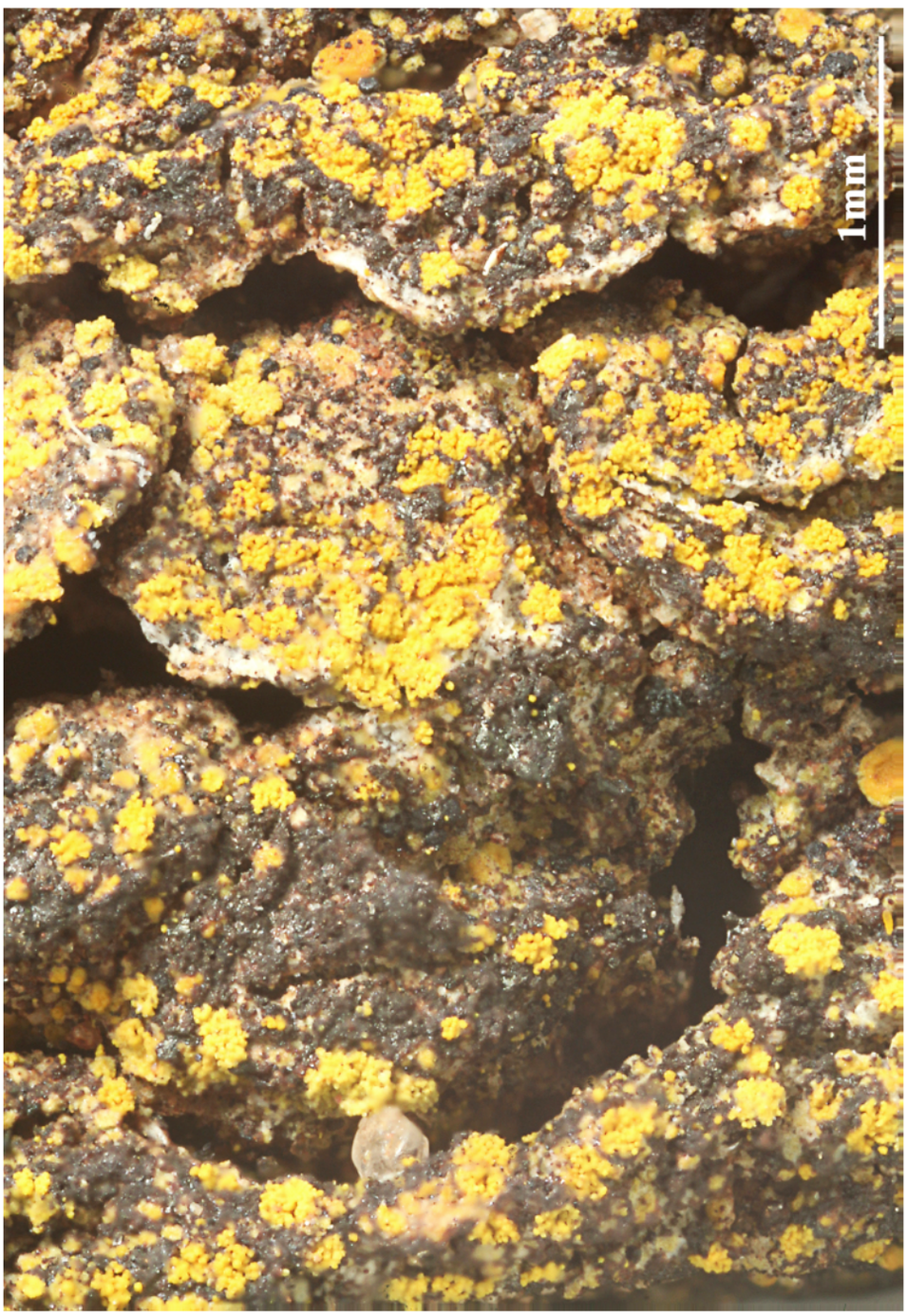
Caloplaca granularis (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 7: 141 (1930) [1931]

= *Callopisma aurantiacum* var. *granulare* Müll. Arg., Revue mycol., Toulouse 10(no. 38): 63 (1888)

= *Callopisma granulare* (Müll. Arg.) Malme, Ark. Bot. 20A(no. 9): 13 (1926)

= *Placodium granulare* (Müll. Arg.) Vain., Ann. Acad. Sci. fenn., Ser. A 6(no. 7): 46 (1915)

[ABL78341], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in Park on tree bark.
20°26’41" S, 54°33’40" W, 640 m. Leg. A. Aptroot (no 78341), 26.03.2019, det. A. Aptroot, 2019.



Caloplaca subsoluta (Nyl.) Zahlbr., Cat. Lich. Univers. 7: 185 (1931)
= *Squamulea subsoluta* (Nyl.) Arup, Søchting & Frödén, in Arup, Søchting & Frödén, Nordic Jl Bot. 31(1): 56 (2013)
= *Caloplaca lobulata* var. *subsoluta* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 118 (1903)
= *Lecanora murorum* var. *subsoluta* Nyl., Flora, Regensburg 56(13): 197 (1873)
= *Lecanora subsoluta* (Nyl.) Nyl., in Weddell, Bull. Soc. bot. Fr. 23: 98 (1876)
= *Physcia pusilla* var. *subsoluta* (Nyl.) Arnold, Flora, Regensburg 58: 154 (1875)
= *Physcia subsoluta* (Nyl.) Arnold, Flora, Regensburg 64(20): 309 (1881)

[ABL77848], Brazil, Mato Grosso do Sul, Bodoquena, along Salubre river, along river on shale. 20°46’´56" S, 56°44’33" W, 210 m. Leg. A. Aptroot (no 77848), 7.11.2018, det. A. Aptroot, 2019.

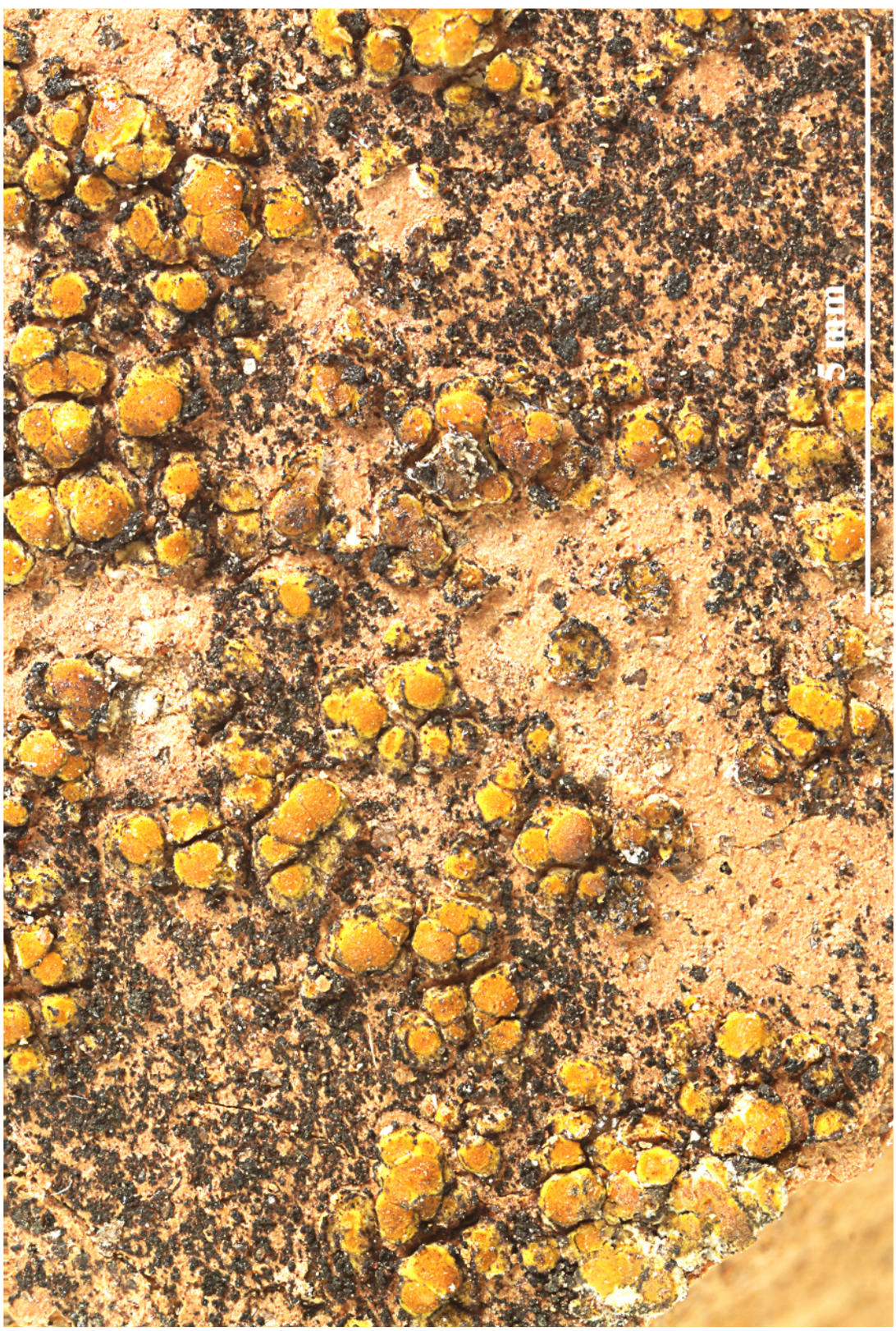




Caloplaca subsoluta

Caloplaca subvitellina (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 7: 186 (1931)
= *Callopisma subvitellinum* Müll. Arg. 1889

[ABL78291], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on roof tile. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78291), 03.03.2019, det. A. Aptroot, 2019.

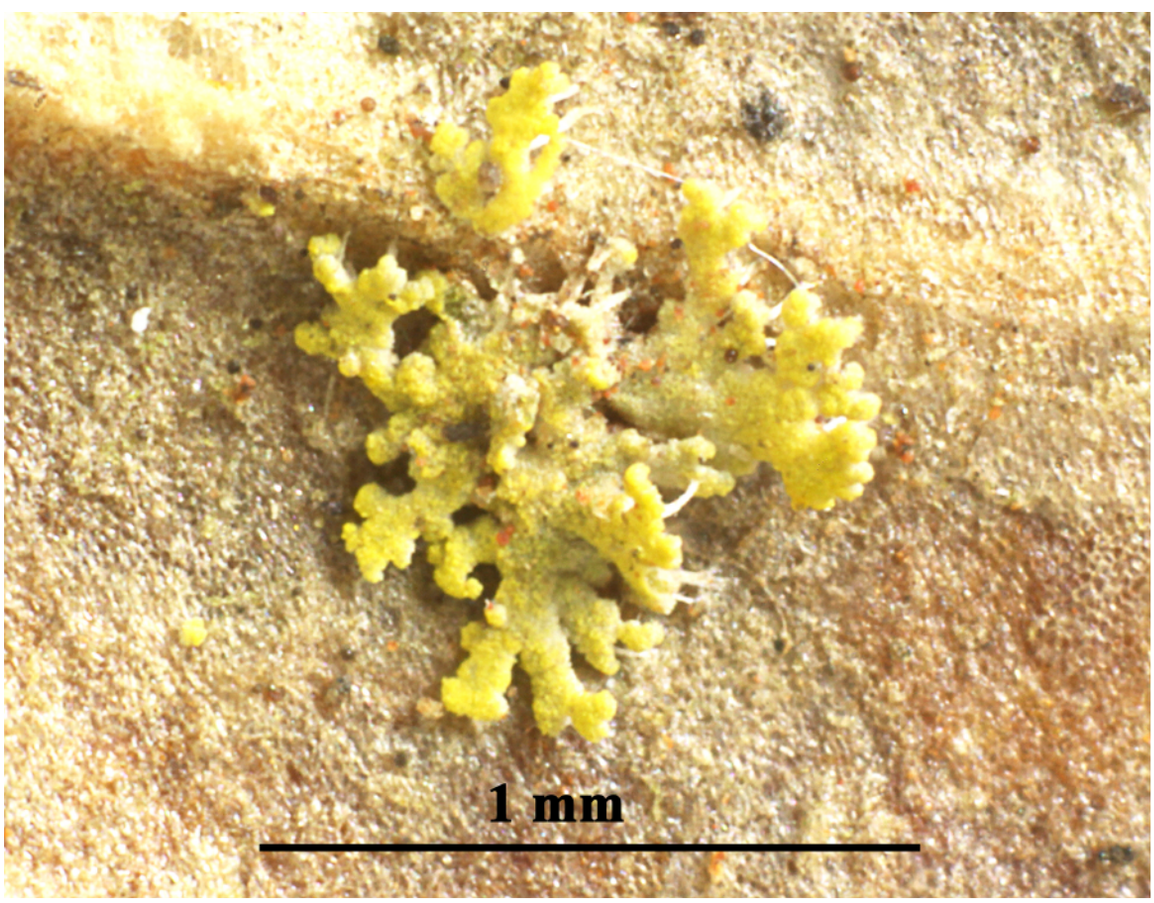




Caloplaca subvitellina

Candelaria concolor (Dicks.) Arnold, Flora, Regensburg 62: 364 (1879)
= *Blasteniospora concolor* (Dicks.) Trevis., Lichenoth. Veneta 7-8: no. 216 (1869)
= *Caloplaca concolor* (Dicks.) Jatta, Syll. Lich. Ital. (Trano): 262 (1900)
= *Lecanora concolor* (Dicks.) Lamy, Bull. Soc. bot. Fr. 25(5): 401 (1880) [1878]
= *Lichen concolor* Dicks., Fasc. pl. crypt. Brit. (London) 3: 18 (1793)
= *Lobaria concolor* (Dicks.) Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 159 (1796) [1795]
= *Parmelia parietina* f. *concolor* (Dicks.) Fr., Lich. eur. reform. (Lund): 73 (1831)
= *Parmelia parietina* var. *concolor* (Dicks.) Fr., Lich. eur. reform. (Lund): 73 (1831)
= *Physcia concolor* (Dicks.) Bagl. & Carestia, Comm. Soc. crittog. Ital. 2: 171 (1880)
= *Physcia parietina* var. *concolor* (Dicks.) Mudd, Man. Brit. Lich.: 114 (1861)
= *Teloschistes concolor* (Dicks.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 51 (1882)
= *Xanthoria concolor* (Dicks.) Th. Fr., Lich. Scand. (Upsaliae)(1): 147 (1871)

[ABL77062], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77062), 30.10.2018, det. A. Aptroot, 2019.



Candelaria concolor (Dicks.) Arnold, Flora, Regensburg 62: 364 (1879)
= *Blasteniospora concolor* (Dicks.) Trevis., Lichenoth. Veneta 7-8: no. 216 (1869)
= *Caloplaca concolor* (Dicks.) Jatta, Syll. Lich. Ital. (Trano): 262 (1900)
= *Lecanora concolor* (Dicks.) Lamy, Bull. Soc. bot. Fr. 25(5): 401 (1880) [1878]
= *Lichen concolor* Dicks., Fasc. pl. crypt. Brit. (London) 3: 18 (1793)
= *Lobaria concolor* (Dicks.) Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 159 (1796) [1795]
= *Parmelia parietina* f. *concolor* (Dicks.) Fr., Lich. eur. reform. (Lund): 73 (1831)
= *Parmelia parietina* var. *concolor* (Dicks.) Fr., Lich. eur. reform. (Lund): 73 (1831)
= *Physcia concolor* (Dicks.) Bagl. & Carestia, Comm. Soc. crittog. Ital. 2: 171 (1880)
= *Physcia parietina* var. *concolor* (Dicks.) Mudd, Man. Brit. Lich.: 114 (1861)
= *Teloschistes concolor* (Dicks.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 51 (1882)
= *Xanthoria concolor* (Dicks.) Th. Fr., Lich. Scand. (Upsaliae)(1): 147 (1871)

[ABL77011], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77011), 30.10.2018, det. A. Aptroot, 2019.





Candelaria concolor

Canoparmelia amazonica (Nyl.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 278 (1986)

= *Parmelia amazonica* Nyl. 1885

= *Parmelinella amazonica* (Nyl.) A.S. Rodrigues, A.P. Lorenz & Canêz 2021

[ABL78361], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78361), 25.03.2019, det. A. Aptroot, 2019. - Thallus K-, UV-, P+ red.





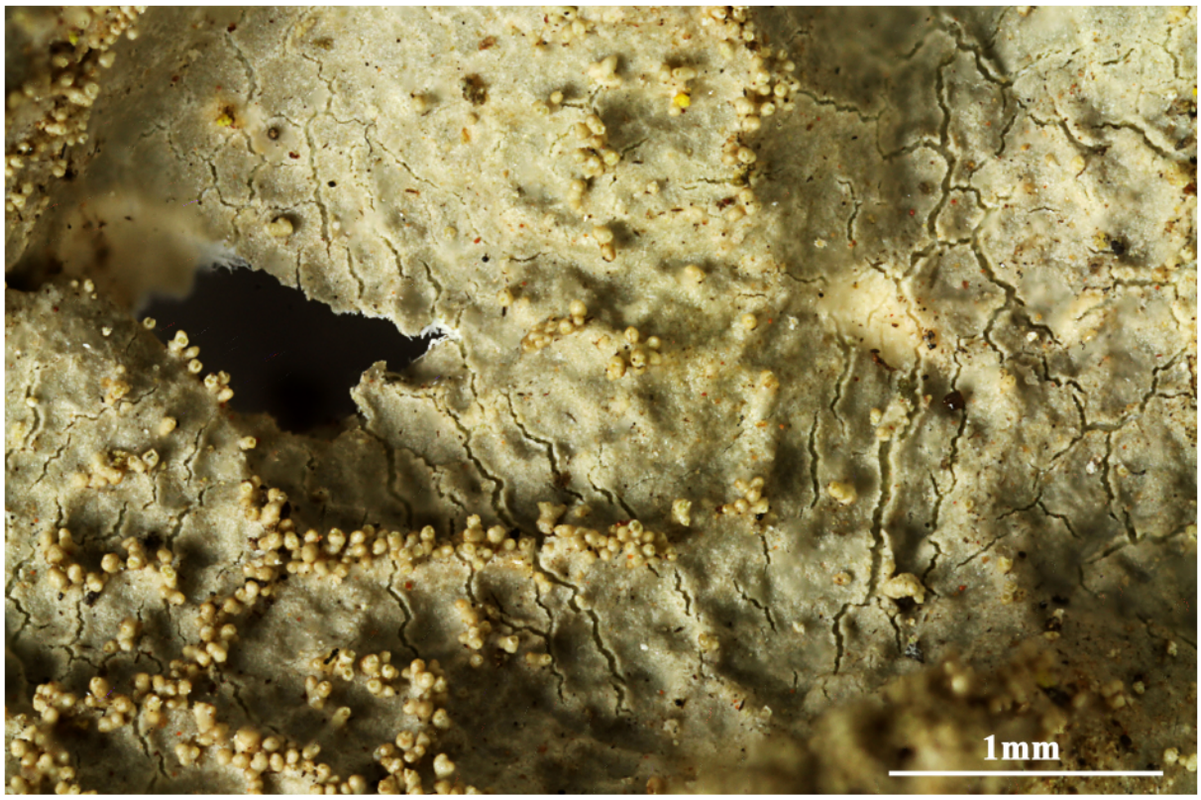


Canoparmelia amazonica

Canoparmelia martinicana (Nyl.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 278 (1986)
= *Parmelia martinicana* Nyl. 1885

[ABL77038], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77038), 30.10.2018, det. A. Aptroot, 2019.







Canoparmelia martinicana

Canoparmelia scrobicularis (Kremp.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 279 (1986)

= *Crespoa scrobicularis* (Kremp.) Benatti & Lendemer, Brittonia 66(3): 288 (2014)

= *Parmelia scrobicularis* Kremp., Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn [35]: 10 (1873) [1873-74]

= *Pseudoparmelia scrobicularis* (Kremp.) Hale, Phytologia 29(3): 191 (1974)

[ABL77006], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77006), 30.10.2018, det. A. Aptroot, 2019.





Canoparmelia scrobicularis





Canoparmelia scrobicularis



lower surface

Canoparmelia scrobicularis

Canoparmelia texana (Tuck.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 279 (1986)

= *Parmelia sublaevigata var. texana* (Tuck.) Nyl., Annls Sci. Nat., Bot., sér. 5 7: 307 (1867)

= *Parmelia texana* Tuck., Amer. J. Sci. Arts, Ser. 2 25: 424 (1858)

= *Pseudoparmelia texana* (Tuck.) Hale, Phytologia 29(3): 191 (1974)

[ABL77179], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Tqzaral, in Atlantic rain forest on tree bark. 21°06' S, 56°38' W, 500 m. Leg. A. Aptroot (no 77769), 31.10.2018, det. A. Aptroot, 2019. - Thallus UV+, C-, P+ yellow.







lower surfacw

Canoparmelia texana

Catinaria atropurpurea (Schaer.) Vězda & Poelt [as 'atripurpurea'], in Poelt & Vězda, Biblthca Lichenol. 16: 363 (1981)

= *Biatora atropurpurea* (Schaer.) Hepp, Flecht. Europ.: no. 279 (1857)

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

= *Biatorina atropurpurea* (Schaer.) A. Massal. [as 'atro-purpurea'], Ric. auton. lich. crost. (Verona): 135 (1852)

= *Bilimbia atropurpurea* (Schaer.) Branth & Rostr., Bot. Tidsskr. 3: 225, tab. III, fig. 36 (1869)

= *Catillaria atropurpurea* (Schaer.) Th. Fr., Lich. Scand. (Upsaliae)(2): 565 (1874)

= *Lecanora atropurpurea* (Schaer.) Hedl., Bih. K. svenska VetenskAkad. Handl., Afd. 3 18(no. 3): 51 (1892)

= *Lecidea atropurpurascens* Nyl., Flora, Regensburg 56(19): 294 (1873)

= *Lecidea atropurpurea* (Schaer.) Leight., Lich.-Fl. Great Brit.: 324 (1871)

= *Lecidea sphaeroides* var. *atropurpurea* Schaer., Lich. helv. spicil. 4-5: 165 (1833)

= *Patellaria atropurpurea* (Schaer.) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 16(2): 397 (1862)

= *Sporoblastia atropurpurea* (Schaer.) Trevis., Linnaea 28: 291 (1856)

[ABL77486], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on treebark and twigs. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77486), 3.11.2018, det. A. Aptroot, 2019. - Spores hyaline, 8/ascus, 1-septate, 14 x 6 µm.





Catinaria atropurpurea

Chrysothrix occidentalis Elix & Kantvilas, Lichenologist 39(4): 361 (2007)

[ABL78218], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78218), 03.03.2019, det. A. Aptroot, 2019.





Chrysothrix occidentalis

Chapsa leprocarpa (Nyl.) Frisch, Biblthca Lichenol. 92: 108 (2006)
= *Graphina leprocarpa* (Nyl.) Zahlbr., Cat. Lich. Univers. 2: 412 (1923) [1924]
= *Graphis leprocarpa* Nyl., Acta Soc. Sci. fenn. 7(2): 472 (1863)
= *Thelotrema leprocarpum* (Nyl.) Tuck., Gen. lich. (Amherst): 139 (1872)

[ABL79952], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°45' W, 240 m. Leg. A. Aptroot (no 79952), 24.09.2019, det. A. Aptroot, 2019.





Chapsa leprocarpa

Chrysothrix granulosa G. Thor, Bryologist 91(4): 361 (1988)

[ABL79901], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on wood. 22°54’ S, 53°45’ W, 240 m. Leg. A. Aptroot (no 79901), 24.09.2019, det. A. Aptroot, 2019.- Spores hyaline, 1-septate, obovate, 8/ascus, 3-septate, 11-15 x 3 µm; thallus C-, K- to+ orange.





Chrysothrix granulosa

Coccocarpia epiphylla (Fée) Kremp., Nuovo G. bot. ital. 7(1): 13 (1875)
= *Circinaria epiphylla* Fée 1825

[ABL78395], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78395), 25.03.2019, det. A. Aptroot, 2019.





Coccocarpia epiphylla

Coccocarpia microphyllina Lücking & Aptroot, in Lücking, Aptroot, Chaves, Sipman & Umaña, Biblthca Lichenol. 95: 444 (2007)

[ABL80083], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80083), 26.09.2019, det. A. Aptroot, 2019.



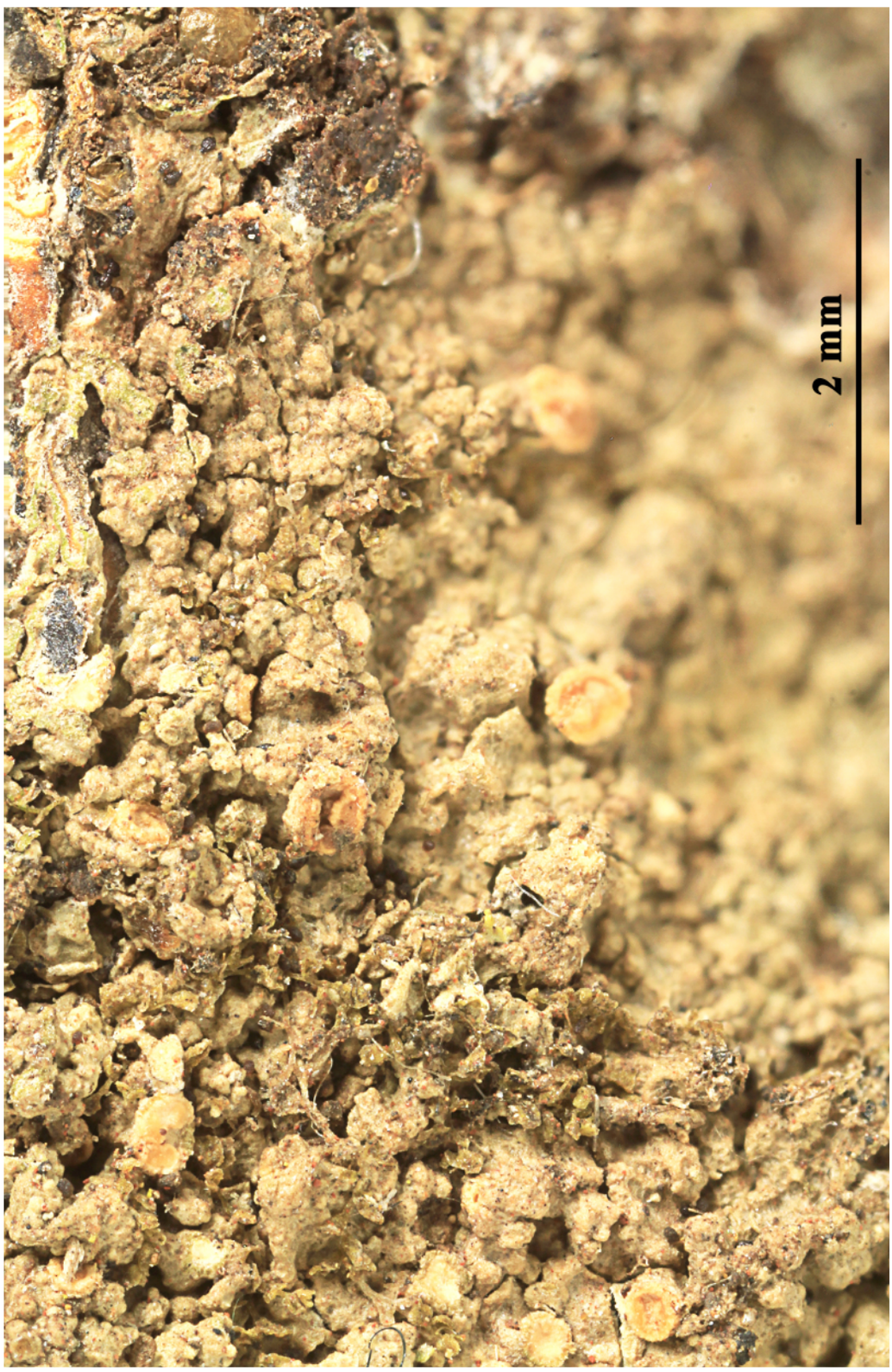


Coccocarpia microphyllina

Coenogonium isidiosum (Breuss) Rivas Plata, Lücking, L. Umaña & Chaves, in Rivas Plata, Lücking, Aptroot, Sipman, Chaves, Umaña & Lizano, Fungal Diversity 23: 297 (2006)

= *Dimerella isidiosa* Breuss, Linzer biol. Beitr. 34(2): 1063 (2002)

[ABL79980], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 79980), 23-26.09.2019, det. A. Aptroot, 2019. -Spore 1-septate, 12 x 2.5 µm.

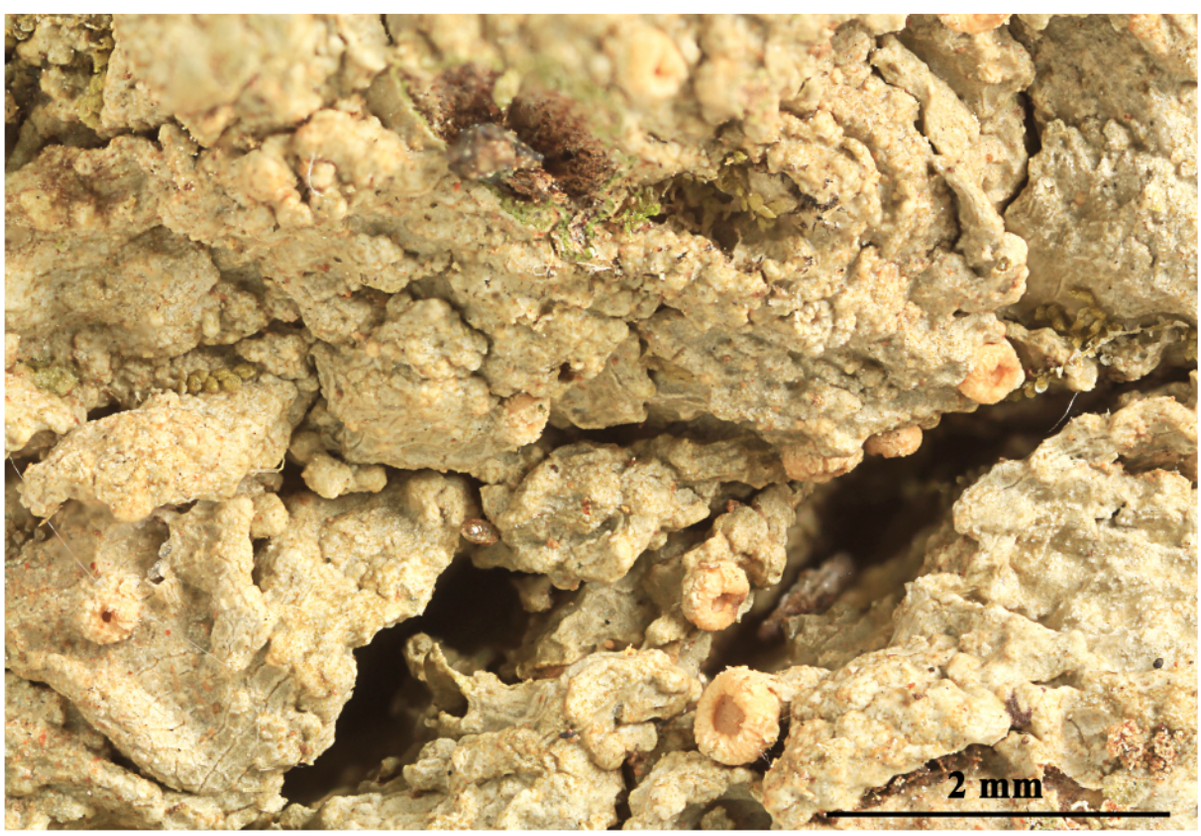




Coenogonium isidiosum

Coenogonium luteum (Dicks.) Kalb & Lücking, in Lücking & Kalb, Bot. Jb. 122(1): 32 (2000)
= *Biatora lutea* (Dicks.) Hepp, Flecht. Europ.: no. 501 (1860)
= *Biatora pineti* var. *lutea* (Dicks.) Fr., Summa veg. Scand., Sectio Prior (Stockholm): 112 (1845)
= *Biatorina lutea* (Dicks.) Arnold, Flora, Regensburg 42(10): 152 (1859)
= *Biatorinopsis lutea* (Dicks.) Müll. Arg., Flora, Regensburg 64(7): 102 (1881)
= *Dimerella lutea* (Dicks.) Trevis., Rc. Ist. Lomb., Milano, ser. 2 13: 65 (1880)
= *Gyalecta lutea* (Dicks.) Hornem., Dansk Oekon. Plantel.: 548 (1837)
= *Gyalecta pineti* var. *lutea* (Dicks.) Boistel, Nouv. Fl. Lich. (Paris) 2: 179 (1903)
= *Lecidea lutea* (Dicks.) Taylor ex Hook., Engl. Fl., Mosses, Hepaticae, Lichens, Characeae and Algae (London) 5(1): 185 (1833)
= *Lichen luteus* Dicks., Fasc. pl. crypt. Brit. (London) 1: 11 (1785)
= *Microphiale lutea* (Dicks.) Zahlbr., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 111: 393 (1902)
= *Secoliga lutea* (Dicks.) Norman, Conat. Praem. Gen. Lich.: 19 (1852)

[ABL77425], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45' W, 500 m. Leg. A. Aptroot (no 77425), 2.11.2018, det. A. Aptroot, 2019. - Spores 1-septate, 11 x 5 µm.



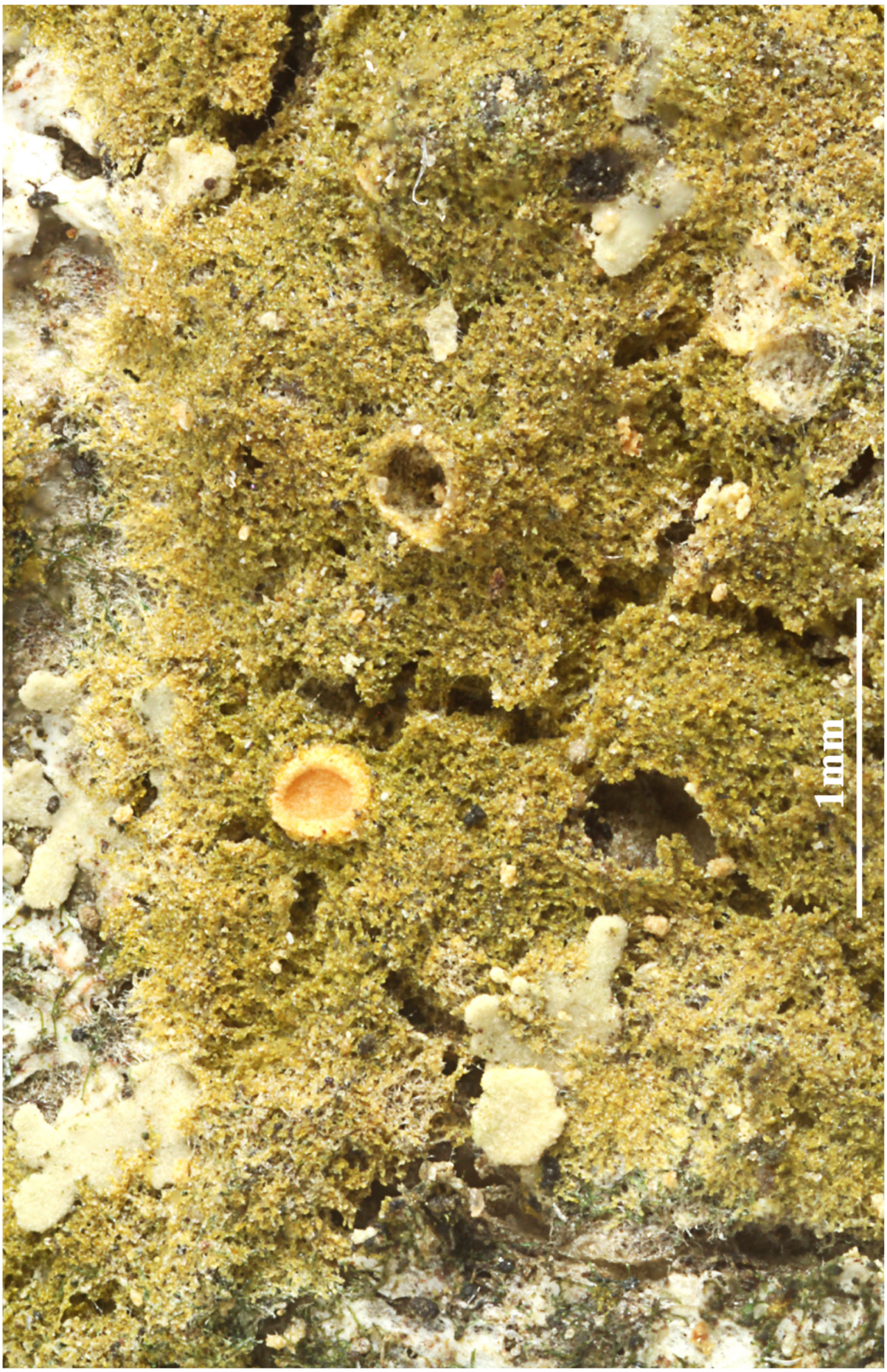


Coenogonium luteum

Coenogonium moniliforme Tuck., Proc. Amer. Acad. Arts & Sci. 5: 416 (1862) [1860]

[ABL78209], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78209), 03.03.2019, det. A. Aptroot, 2019.





Coenogonium moniliforme

Coenogonium pyrophthalmum (Mont.) Lücking, Aptroot & Sipman, in Rivas Plata, Lücking, Aptroot, Sipman, Chaves, Umaña & Lizano, Fungal Diversity 23: 298 (2006)

= *Biatora pyrophthalma* Mont., Annls Sci. Nat., Bot., sér. 2 20: 357 (1843)

= *Biatorina pyrophthalma* (Mont.) Hellb., Bih. K. svenska VetenskA-kad. Handl., Afd. 3 21(no. 13): 108 (1896)

= *Catillaria pyrophthalma* (Mont.) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 134 (1905)

= *Dimerella pyrophthalma* (Mont.) Vězda, Folia geobot. phytotax. 4(4): 446 (1969)

= *Lecidea pyrophthalma* (Mont.) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 121 (1858)

= *Parmelia pyrophthalma* (Mont.) C. Bab., in Hooker, Bot. Antarct. Voy. Erebus Terror 1839-1843, II, Fl. Nov.-Zeal.: 292 (1855)

= *Patellaria pyrophthalma* (Mont.) Müll. Arg., Bull. Herb. Boissier 2(app. 1): 62 (1894)

= *Sporoblastia pyrophthalma* (Mont.) Trevis., Linnaea 28: 291 (1856)

[ABL80143], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°55' S, 53°44' W, 230 m. Leg. A. Aptroot (no 80143), 27.09.2019, det. A. Aptroot, 2019.-Spores 1-septate, 17 x 3 µm.





Coenogonium pyrophthalmum

Coenogonium roumeguerianum (Müll. Arg.) Kalb, Lichenes Neotropici, Fascicle 13: 3 (sched.) (2001)

= *Biatorinopsis roumegueriana* Müll. Arg., Revue mycol., Toulouse 9(no. 34): 80 (1887)

= *Dimerella roumegueriana* (Müll. Arg.) Malme, Ark. Bot. 26A(no. 13): 3 (1934)

= *Microphiale roumegueriana* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 2: 701 (1924)

[ABL78010], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78010), 9.11.2018, det. A. Aptroot, 2019. - Spores 1-septate, 11 x 5 µm.





Coenogonium roumeguerianum

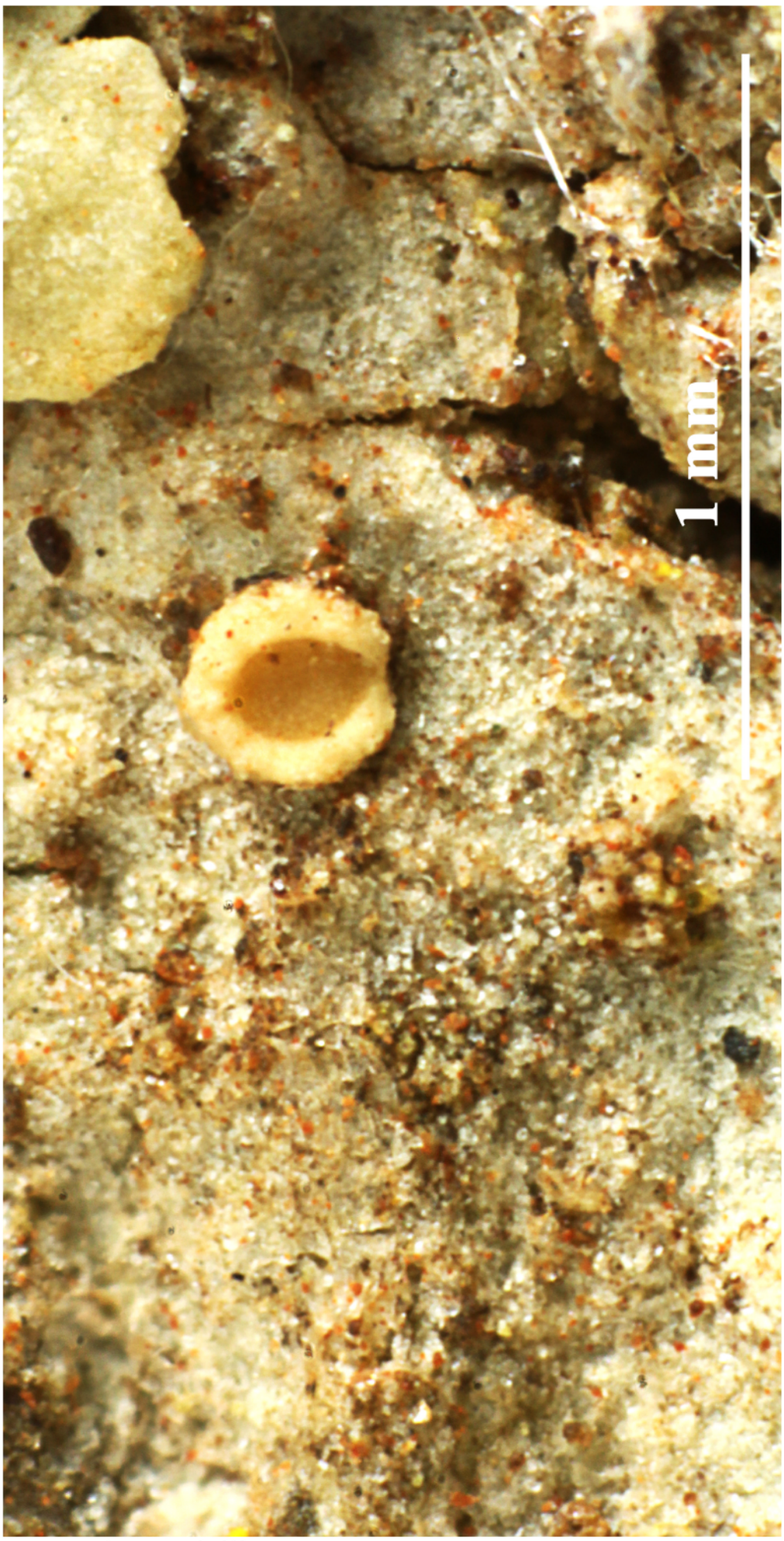
Coenogonium subdilutum (Malme) Kalb, Lichenes Neotropici, Fascicle 13: no. 545 (2001)

= *Dimerella subdiluta* Malme, Ark. Bot. 26A(no. 13): 6 (1935) [1934]

= *Microphiale subdiluta* (Malme) Zahlbr., Cat. Lich. Univers. 10: 230 (1939)

[ABL80330], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06'08'' S, 53°48'42'' W, 300 m. Leg. A. Aptroot (no 80330), 29.09.2019, det. A. Aptroot, 2019. - Spores 1-septate, 10 x 3.5 µm.





Coenogonium subdilutum

[ABL78861], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78861), 25.03.2019, det. A. Aptroot, 2019.





Coenogonium upretianum

Coenogonium zonatum (Müll. Arg.) Kalb & Lücking, in Lücking & Kalb, Bot. Jb. 122(1): 34 (2000)

= *Biatorinopsis zonata* Müll. Arg., Lich. Epiphylli Novi: 16 (1890)

= *Dimerella zonata* (Müll. Arg.) R. Sant., Symb. bot. upsal. 12(no. 1): 399 (1952)

= *Microphiale zonata* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 2: 702 (1924)

[ABL78266], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78266), 03.03.2019, det. A. Aptroot, 2019. - Spores 1-septate, 12 x 3 µm.





Coenogonium zonatum

Collema furfuraceum (Schaer.) Du Rietz, Ark. Bot. 22A(no. 13): 5 (1929)
= *Collema furfuraceum* var. *luzonense* (Räsänen) Degel., Symb. bot. upsal. 20(no. 2): 179 (1974)
= *Collema nigrescens* f. *furfuraceum* Schaer., Enum. critic. lich. europ. (Bern): 252 (1850)
= *Synechoblastus nigrescens* f. *furfuraceus* (Schaer.) Zahlbr., Cat. Lich. Univers. 3: 56 (1924) [1925]
= *Synechoblastus nigrescens* var. *furfuraceum* (Schaer.) Arnold, Flora, Regensburg 64(8): 115 (1881)

[ABL77734], Brazil, Mato Grosso do Sul, Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77734), 6.11.2018, det. A. Aptroot, 2019



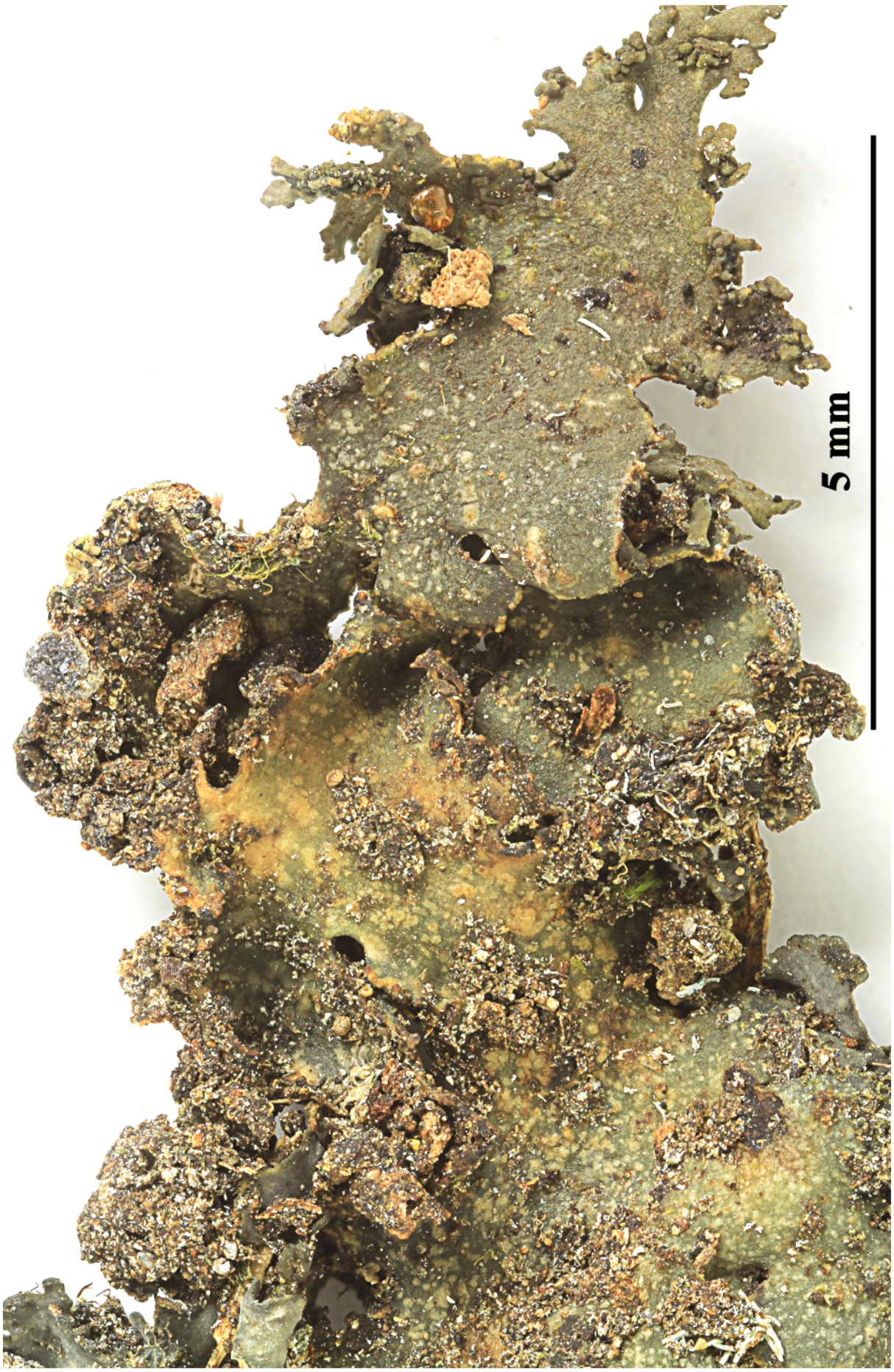


Collema furfuraceum

Collema cristatum (L.) Weber ex F.H. Wigg. [as 'cristata'], Prim. fl. holsat. (Kiliae): 89 (1780)
= *Lathagrium cristatum* (L.) Otálora, P.M. Jørg. & Wedin, Fungal Diversity 64(1): 287 (2013) [2014]
= *Collema auriculatum* var. *cristatum* (L.) Flot., Linnaea 23: 196 (1850)
= *Collema complicatum* Fr., Syst. orb. veg. (Lundae) 1: 287 (1825)
= *Collema crispum* C *cristatus* (L.) Mérat, Nouv. Fl. Environs Paris, Edn 2 1: 186 (1821)
= *Collema crispum* f. *cristatum* (L.) Ach., Syn. meth. lich. (Lund): 312 (1814)
= *Collema crispum* var. *cristatum* (L.) Ach., Syn. meth. lich. (Lund): 312 (1814)
= *Collema cristatum* f. *granuliferum* (Nyl.) Harm., Bull. Séanc. Soc. Sci. Nancy 13(29): 99 (1895)
= *Collema cristatum* var. *granuliferum* (Nyl.) Harm., Bull. Séanc. Soc. Sci. Nancy, Sér. 2 29: 99 (1895) [1894]
= *Collema granuliferum* Nyl., Flora, Regensburg 58(7): 103 (1875)
= *Collema granuliferum* f. *minus* Cromb. ex Leight. [as 'minor'], Lich.-Fl. Great Brit., Edn 3: 22 (1879)
= *Collema gyrosum* (Gunnerus) Röhl., Deutschl. Fl. (Frankfurt) 3(2): 148 (1813)
= *Collema hypergenum* Nyl., Flora, Regensburg 59: 232 (1876)
= *Collema melaenum* f. *cristatum* (L.) Nyl., Annls Sci. Nat., Bot., sér. 4 11: 248 (1859)
= *Collema melaenum* f. *gyrosum* (Gunnerus) Ach., Syn. meth. lich. (Lund): 315 (1814)
= *Collema melaenum* subsp. *hypergenum* (Nyl.) Cromb., Monogr. Lich. Brit. 1: 52 (1894)
= *Collema melaenum* var. *complicatum* (Fr.) Leight., Lich.-Fl. Great Brit.: 20 (1871)
= *Collema melaenum* var. *cristatum* (L.) Linds., Trans. R. Soc. Edinb. 22: 271 (1859) [1861]
= *Collema melaenum* var. *gyrosum* (Gunnerus) Ach., Lich. Univ.: 638 (1810)
= *Collema multifidum* f. *gyrosum* (Gunnerus) A.L. Sm., Cat. Lich. Univers. 3: 90 (1924) [1925]
= *Collema multifidum* f. *hypergenum* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 304 (1903)
= *Collema multifidum* var. *cristatum* (L.) Rabenh., Deutschl. Krypt.-Fl. (Leipzig) 2(1): 51 (1845)
= *Collema multifidum* var. *granuliferum* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 305 (1903)
= *Collema multifidum* var. *gyrosum* (Gunnerus) A.L. Sm., Monogr. Brit. Lich., Edn 2 1: 55 (1924)

= *Collema pulposum* P. Gaertn., B. Mey. & Scherb., Ökonom.-techn. Fl Wetterau 3(2): 183-184 (1802) [1801]
= *Collema pulposum* var. *cristatum* (L.) Ach., Lich. Univ.: 632-633 (1810)
= *Eucollema cristatum* (L.) Horw., Hand-list Lich. Gr. Brit.: 6 (1912)
= *Eucollema granuliferum* (Nyl.) Horw., Hand-list Lich. Gr. Brit.: 6 (1912)
= *Eucollema hypergenum* (Nyl.) Horw., Hand-list Lich. Gr. Brit.: 6 (1912)
= *Eucollema melaenum* f. *gyrosum* (Gunnerus) Horw., Hand-list Lich. Gr. Brit.: 6 (1912)
= *Lichen cristatus* L., Sp. pl. 2: 1143 (1753)
= *Lichen gyrosus* Gunnerus, Fl. Norveg. 2: 123 (1772)
= *Lichen gyrosus* Oeder, Icon. Plant. Dan. 3(8): 7 (1769)
= *Lichen jacobaeifolius* * *gyrosum* (Gunnerus) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 412 (1813)
= *Parmelia crispa* var. *cristata* (L.) Ach., Methodus, Sectio post. (Stockholmiæ): 235 (1803)
= *Parmelia melaena* var. *gyrosa* (Gunnerus) Ach., Methodus, Sectio post. (Stockholmiæ): 242 (1803)
= *Parmelia multifida* var. *complicata* (Fr.) Schaer., Lich. helv. spicil. 11: 531 (1842)
= *Parmelia multifida var. cristata* (L.) Schaer., Lich. helv. spicil. 11: 531 (1842)
= *Synechoblastus complicatus* (Fr.) Mudd, Man. Brit. Lich.: 44 (1861)

[ABL77462], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on shaded limestone. 21°30° S, 56°45’ W, 500 m. Leg. A. Aptroot (no 77462), 2.11.2018, det. A. Aptroot, 2019.



Collema cristatum

Collema glaucophthalmum Nyl., Flora, Regensburg 41: 377 (1858)
= *Collema aggregatum f. glaucophthalmum* (Nyl.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 146 (1882)
= *Collema aggregatum var. glaucophthalmum* (Nyl.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 146 (1882)
= *Gabura glaucophthalma* (Nyl.) Kuntze, Revis. gen. pl. (Leipzig) 2: 873 (1891)
= *Synechoblastus glaucophthalmus* (Nyl.) Shirley, in Bailey, Queensl. Depart. Agricult. Bull.(no. 9): 20 (1891)

[ABL80094], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80094), 26.09.2019, det. A. Aptroot, 2019. - Spores fusiform, 5-septate, 50 x 7 µm.





Collema glaucophthalmum

Collema leptaleum Tuck., Proc. Amer. Acad. Arts & Sci. 6: 263 (1866) [1864]
= *Collema aggregatum subsp. leptaleum* (Tuck.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 146 (1882)
= *Collema gwytheri* Stirt., in Bailey, Queensland Agric. J. 5: 484 (1899)
= *Synechoblastus leptaleus* (Tuck.) Fink, Lich. Fl. U.S.: 153 (1935)

[ABL77070], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58' S, 56°42' W, 650 m. Leg. A. Aptroot (no 77070), 30.10.2018, det. A. Aptroot, 2019.





Collema leptaleum

Constrictolumina fusca Aptroot & Schumm, sp. nov.

MycoBank MB 848367

Diagnosis: Corticolous *Constrictolumina* with brown ascospores.

Type: Brazil, Mato Grosso do Sul, Porto Murtinho, Reserva Indígena Kadiwéu, surroundings of parcela 14, 20° 31' S, 57° 02' W, alt. 130 m. On tree bark in Cerrado forest. Leg. A. Aptroot 85850, 12 March 2022 (CGMS, holotype; ABL, isotype).

Description. Thallus dull, pale brownish, essentially immersed in the bark, surrounded by a thin black prothallus. Ascomata hemiglobose, c. 0.2 mm diam., superficial, not in pseudostromata. Ostioles apical, single, black. Hamathecium not inspersed. Ascospores 8/ascus, brown, 1-septate, 18–19 × 6.5–7 µm, clavate, lower lumen slightly constricted in the middel, not surrounded by a gelatinous sheath. Pycnidia not observed.

Chemistry. Thallus UV–, C–, K–, KC–, P–.

Etymology. Named for the brown ascospores.

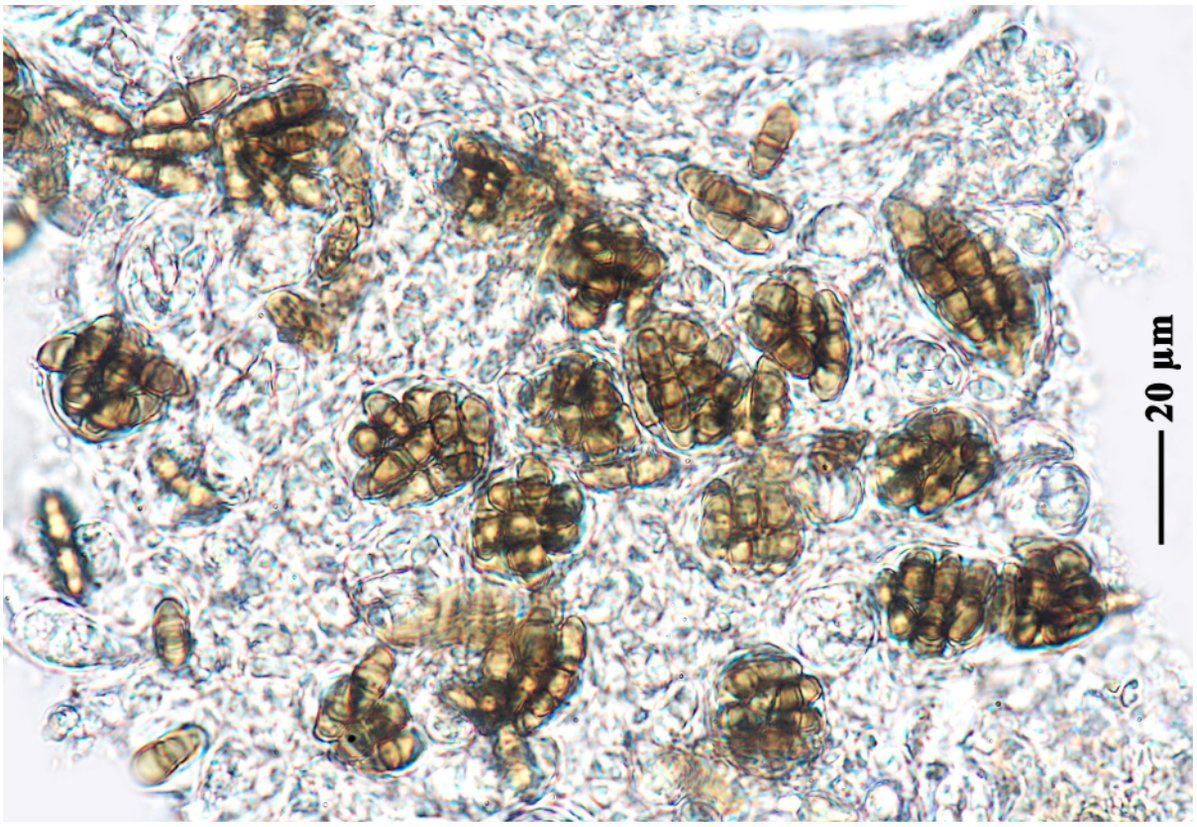
Ecology and distribution. On tree bark in forest; only known from Brazil.

Discussion. This species would key out as follows in the world key by Schumm & Aptroot (2022): key R, couplet 2: Ascospores brown.



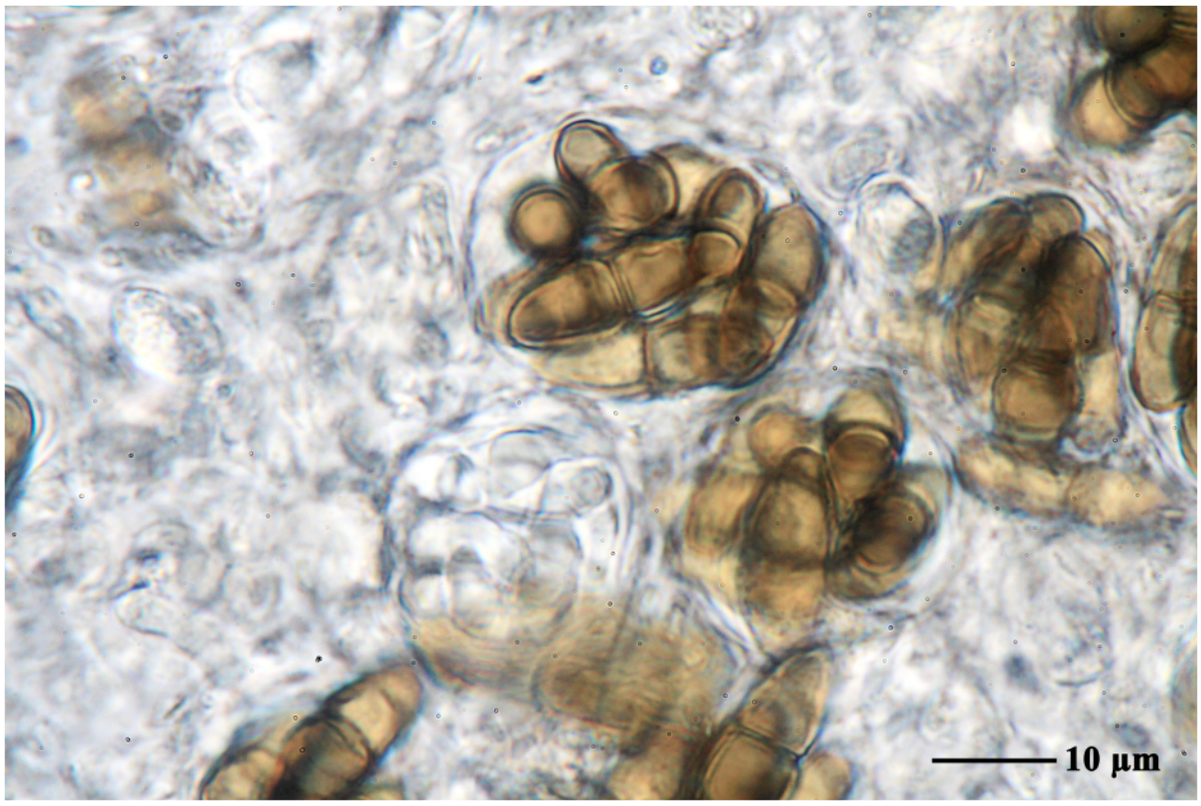


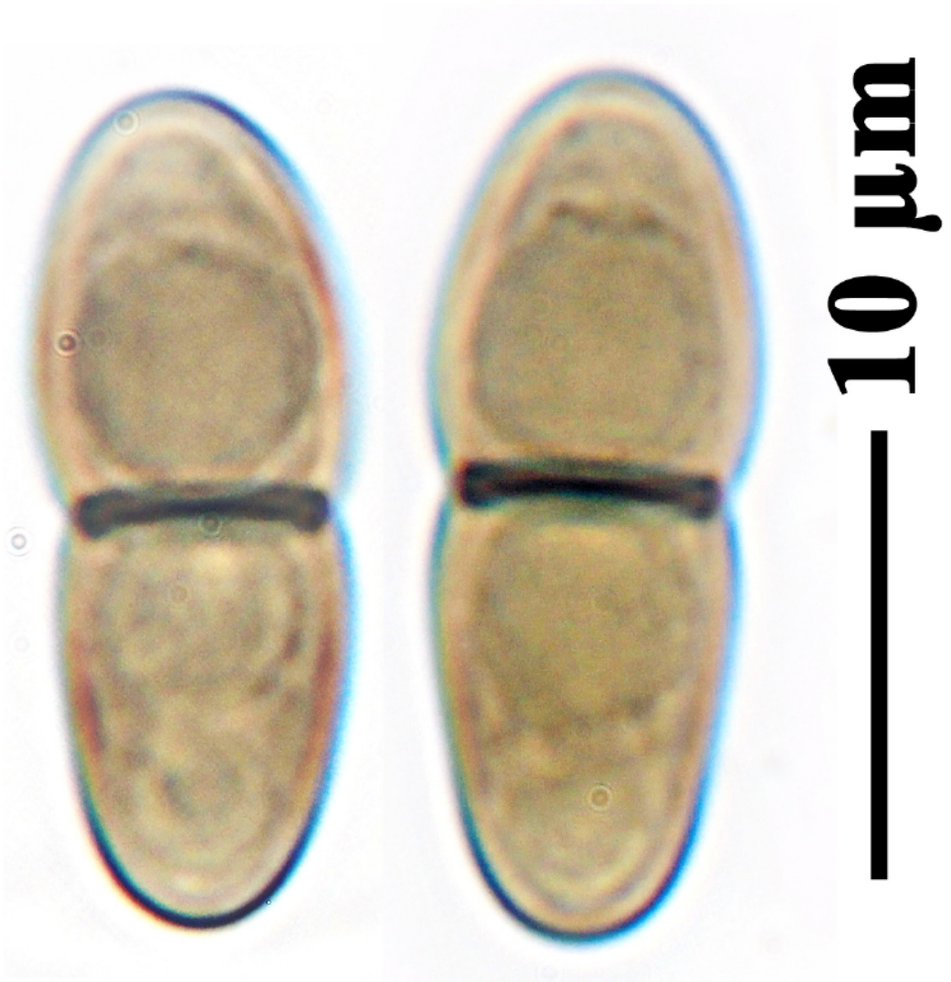
Constrictolumina fusca



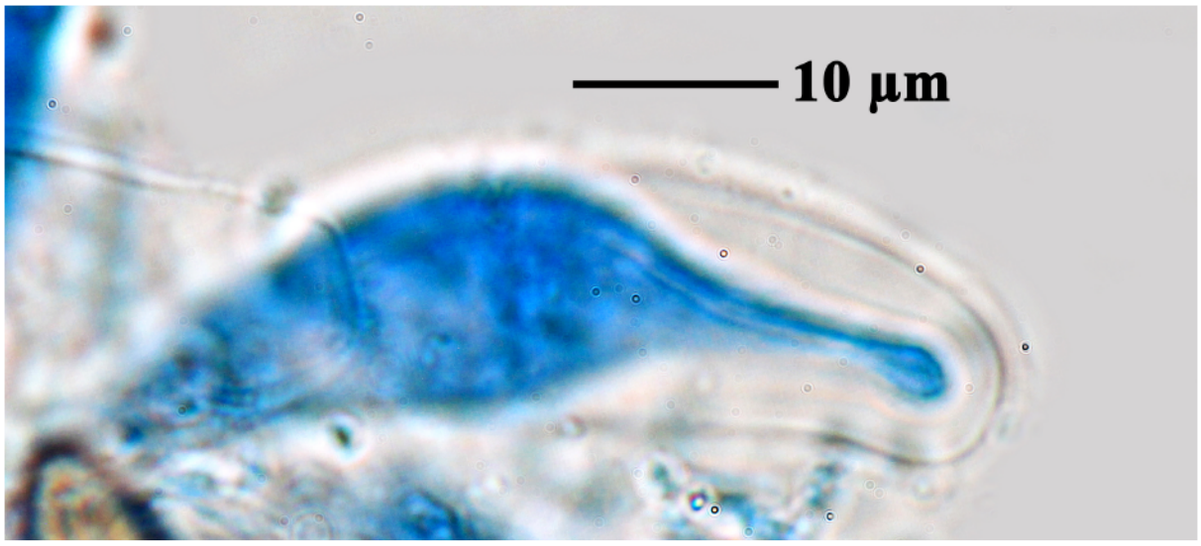


Constrictolumina fusca





Constrictolumina fusca





Constrictolumina fusca

Constrictolumina planorbis (Ach.) Lücking, M.P. Nelsen & Aptroot, in Lücking et al., Lichenologist 48(6): 756 (2016)

= *Arthopyrenia planorbis* (Ach.) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 30(no. 3): 27 (1888)

= *Pyrenula planorbis* (Ach.) Trevis., Spighe Paglie: 17 (1853)

= *Sagedia planorbis* (Ach.) A. Massal., Ric. auton. lich. crost. (Verona): 161 (1852)

= *Spermatodium planorbis* (Ach.) Trevis., Conspect. Verruc.: 11 (1860)

= *Verrucaria planorbis* Ach., Syn. meth. lich. (Lund): 92 (1814)

[ABL77142], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Tqzaral, in Atlantic rain forest on tree bark. 21°06' S, 56°38' W, 500 m. Leg. A. Aptroot (no 77142), 31.10.2018, det. A. Aptroot, 2019. -Spores 8/ascus, 1-septate, 16 x 7 µm.





Constrictolumina planorbis

Cratiria lauricassiae (Fée) Marbach, Biblthca Lichenol. 74: 160 (2000)
= *Lecidea lauricassiae* Fée [as 'lauri cassiae'] 1837

[ABL77033], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77033), 30.10.2018, det. A. Aptroot, 2019. - Spores brown, 1-3-septate, 25(-28) x 7-13 µm; chemistry: norstictic acid and atranorin or xanthone.





Cratiria lauricassiae

Cratiria saltensis (H. Magn.) Marbach, Biblthca Lichenol. 74: 198 (2000)
= *Buellia saltensis* H. Magn., Meddn Göteb. Bot. Trädg. 17: 68 (1947)

[ABL77944], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazin Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77944), 8.11.2018, det. A. Aptroot, 2019 - Thallus K+ orange, hymenium inspersed, spores 1-septate, 17 x 7 µm.





Cratiria saltensis

Crespoa carneopruinata (Zahlbr.) Lendemer & B.P. Hodk., N. Amer. Fung. 7(2): 3 (2013)

= *Canoparmelia carneopruinata* (Zahlbr.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 278 (1986)

= *Parmelia carneopruinata* Zahlbr., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 111: 419 (1902)

= *Parmotrema carneopruinatum* (Zahlbr.) D. Hawksw., Lichenologist 43(6): 648 (2011)

= *Pseudoparmelia carneopruinata* (Zahlbr.) Hale, Phytologia 29(3): 189 (1974)

[ABL77007], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77007), 30.10.2018, det. A. Aptroot, 2019.





Crespoa carneopruinata

Crespoa crozalsiana (B. de Lesd. ex Harm.) Lendemer & B.P. Hodk., N. Amer. Fung. 7(2): 3 (2013)

= *Canoparmelia crozalsiana* (B. de Lesd. ex Harm.) Elix & Hale, in Elix, Johnston & Verdon, Mycotaxon 27: 278 (1986)

= *Parmelia crozalsiana* B. de Lesd. ex Harm., Lich. Fr. 4: 555 (1910) [1909]

= *Parmotrema crozalsianum* (B. de Lesd. ex Harm.) D. Hawksw., Lichenologist 43(6): 648 (2011)

= *Pseudoparmelia crozalsiana* (B. de Lesd. ex Harm.) Hale, Phytologia 29(3): 189 (1974)

[ABL80326], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06’08” S, 53°48’42” W, 300 m. Leg. A. Aptroot (no 80326), 29.09.2019, det. A. Aptroot, 2019





Crespoa crozalsiana



Crespoa crozalsiana

Cresponea flava (Vain.) Egea & Torrente, Mycotaxon 48: 314 (1993)
= *Lecanactis flava* Vain., in Hiern, Cat. Afr. Pl. 2(2): 430 (1901)

[ABL78207], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78207), 03.03.2019, det. A. Aptroot, 2019. - Spores 4-septate, 15-17 x 5 µm.





Cresponea flava

Cresponea leprieurii (Mont.) Egea & Torrente, Mycotaxon 48: 317 (1993)
= *Bombyliospora dolichospora var. obscurata* Räsänen, Arch. Soc. Zool. Bot. fenn. Vanamo 3: 182 (1949)
= *Lecanactis leprieurii* (Mont.) Tuck., Proc. Amer. Acad. Arts & Sci. 6: 285 (1866) [1864]
= *Lecidea leprieurii* Mont., Annls Sci. Nat., Bot., sér. 3 16: 56 (1851)

[ABL77753], Brazil, Mato Grosso do Sul, Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77753), 6.11.2018, det. A. Aptroot, 2019 - Spores 7-septate, 37 x 6 µm.





Cresponea leprieurii

Cryptothecia effusa (Müll. Arg.) R. Sant., Symb. bot. upsal. 12(no. 1): 64 (1952)
= *Phlyctis effusa* Müll. Arg. 1880

[ABL7727], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on tree bark. 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77271), 1.11.2018, det. A. Aptroot, 2019.- Thallus UV-,spores 8/ascus, muriform, 1 x 2-5-septate, 37 x 16 µm.





Cryptothecia effusa

Cryptothecia rhizophora Aptroot & M. Cáceres, Bryologist 119(3): 258 (2016)

[ABL77292], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on tree bark. 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77292), 1.11.2018, det. A. Aptroot, 2019. - Thallus UV+ yellow, spores muriform, 8/ascus, 80 x 30 µm.





Cryptothecia rhizophora

Dichoporis taylorii (Carroll ex Nyl.) S.H. Jiang, Lücking & Sérus., in Hongsanan et al., Fungal Diversity: 10.1007/s13225-020-00462-6, [129] (2020)

= *Strigula taylorii* (Carroll ex Nyl.) R.C. Harris, in Hawksworth, James & Coppins, Lichenologist 12(1): 107 (1980)

= *Arthopyrenia taylorii* (Carroll ex Nyl.) Mudd, Man. Brit. Lich.: 302 (1861)

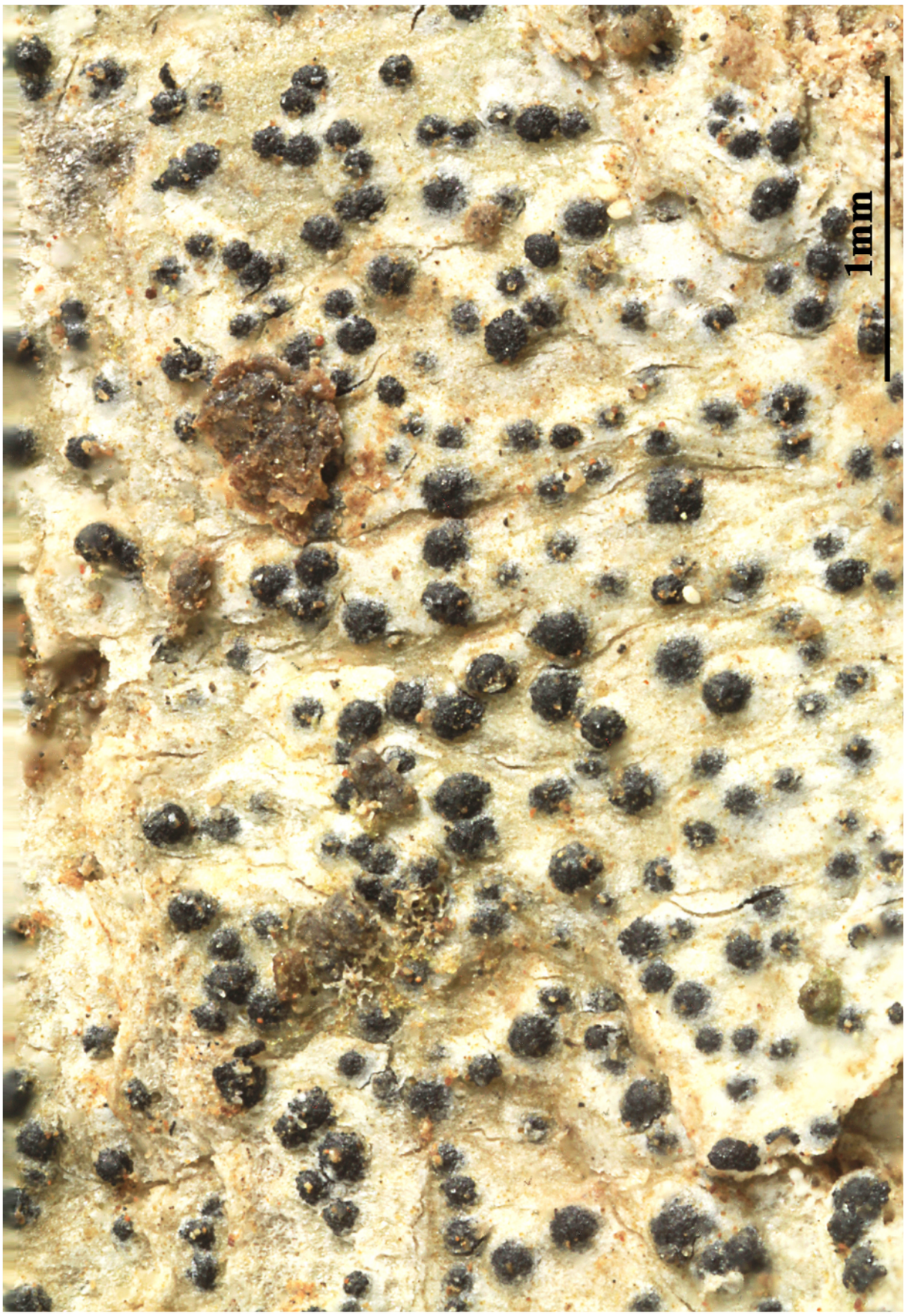
= *Porina taylorii* (Carroll ex Nyl.) Swinscow, Lichenologist 2: 169 (1962)

= *Spermatodium taylorii* (Carroll ex Nyl.) Trevis. [as 'taylori'], Conspect. Verruc.: 11 (1860)

= *Verrucaria taylorii* Carroll ex Nyl. [as 'taylori'], Expos. Synopt. Pyrenocarp.: 82 (1858)

[ABL77493], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on treebark and twigs. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77493), 3.11.2018, det. A. Aptroot, 2019. - Spores hyaline, 1-septate, 25 x 7 µm.





Dichoporis taylorii

Dictyomeridium amylosporum (Vain.) Aptroot, M.P. Nelsen & Lücking, in Aptroot & Lücking, Lichenologist 48(6): 923 (2016)

= *Campylothelium amylosporum* (Vain.) R.C. Harris, in Tucker & Harris, Bryologist 83(1): 7 (1980)

= *Polyblastiopsis amylospora* (Vain.) Zahlbr., Cat. Lich. Univers. 1: 347 (1922)

= *Polymeridium amylosporum* (Vain.) Aptroot, Nova Hedwigia 98(1-2): 10 (2013) [2014]

= *Thelenella amylospora* Vain., Acta Soc. Fauna Flora fenn. 7(no. 2): 218 (1890)

[ABL77283], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on tree bark. 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77283), 1.11.2018, det. A. Aptroot, 2019. - Thallus UV-; spores 7/ascus, 1-septate, 55 x 17 µm.





Dictyomeridium amylosporum

Diorygma africanum Kalb, Staiger & Elix, Symb. bot. upsal. 34(no. 1): 144 (2004)

[ABL78858], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78858), 25.03.2019, det. A. Aptroot, 2019. - Thallus creamy grey, light grey or dirty grey, partly reddish (probably due to humid storage). Ascocarps oval to oblong, ± flexuous and branched, mostly rounded at the ends, 1–5 x 0.5–1 mm. Excipledivergent, a narrow layer of orange-brown to brownish-carbonised hyphae present; hymenium 160–200 µm high, not inspersed, I– or I+ weakly bluish violet. Spores 1/ascus, hyaline, densely muriform, peripheral cells distinctly smaller than the central ones, 140–200 x 40–65 µm, IKI– or IKI+ bluish-violet. CHEMISTRY:. Protocetraric acid with additional 4-*O*-methylhypoprotocetraric acid.





Diorygma africanum

Diorygma circumfusum (Stirt.) Kalb, Staiger & Elix, Symb. bot. upsal. 34(no. 1): 145 (2004)
= *Graphis baileyana* Müll. Arg., Hedwigia 32(2): 132 (1893)
= *Graphis circumfusa* Stirt., Trans. & Proc. Roy. Soc. Victoria 17: 73 (1881)
= *Graphis innata* C. Knight ex Shirley, Proc. R. Soc. Qd. 6: 201 (1889)

[ABL78149], Brazil, Mato Grosso do Sul, Pantanal 43 km SE of Corumbá, in pantanal forest on tree bark. 19°32’ S, 57°24’ W, 85 m, area39. Leg. A. Aptroot (no 78149), 02.03.2019, det. A. Aptroot, 2019. - Hymenium not inspersed; spores hyaline, 20 septate; thallus K+ red.





Diorygma circumfusum

Dirinaria melanoclina (C. Knight) D.D. Awasthi, Biblthca Lichenol. 2: 77 (1975)

= *Physcia melanoclina* C. Knight, Trans. Linn. Soc. London, Bot., Ser. 2 2(2): 49 (1882)

[ABL78156], Brazil, Mato Grosso do Sul, Pantanal 43 km SE of Corumbá, in pantanal forest on tree bark. 19°32’ S, 57°24’ W, 85 m, area39. Leg. A. Aptroot (no 78156), 02.03.2019, det. A. Aptroot, 2019. - Medulla UV+ white.





Dirinaria melanoclina

Dirinaria aegialita (Afzel. ex Ach.) B.J. Moore, Bryologist 71: 248 (1968)
= *Hagenia aegialita* (Afzel. ex Ach.) Bagl., Nuovo G. bot. ital. 7(3): 241 (1875)
= *Lecanora aegialita* (Afzel. ex Ach.) Ach., Lich. Univ.: 423 (1810)
= *Lichen peltatus* * *aegiliata* (Afzel. ex Ach.) Lam., Encycl. Méth. Bot., Suppl. (Paris) 3(2): 398 (1813)
= *Parmelia aegialita* Afzel. ex Ach., Methodus, Sectio post. (Stockholmiæ): 191 (1803)
= *Physcia aegialita* (Afzel. ex Ach.) Nyl., Annls Sci. Nat., Bot., sér. 4 15: 43 (1861)
= *Physcia picta* var. *aegiliata* (Afzel. ex Ach.) Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 4 sér. 2: 50 (1900)

[ABL80064], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80064), 26.09.2019, det. A. Aptroot, 2019.





Dirinaria aegialita





Dirinaria aegialita

Dirinaria confluens* var. *coccinea (Lynge) D.D. Awasthi, Bull. Soc. bot. Fr., Let. bot. 121(7-8): 31 (1975)
= *Physcia aegialita* f. *coccinea* Lynge 1924
= *Dirinaria rhodocladonica* Kalb, Schumm & Elix 2020

[ABL77794], Brazil, Mato Grosso do Sul, Morraria do Sul, Bodoquena, Fazenda Santa Laura, in Atlantic rain forest on wood. 20°47'10" S, 56°43'48" W, 450 m. Leg. A. Aptroot (no 77794), 7.11.2018, det. A. Aptroot, 2019

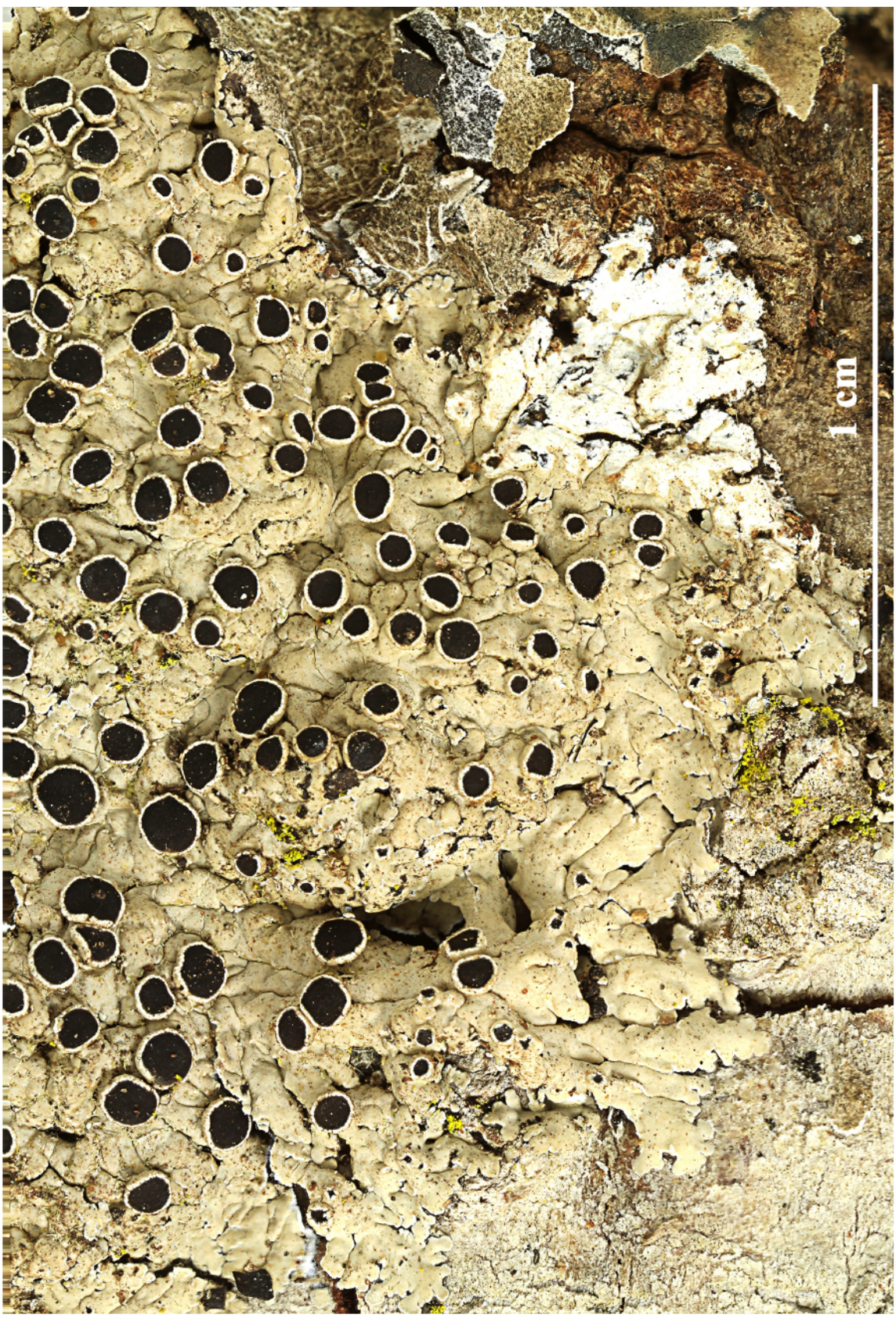




Dirinaria confluens* var. *coccinea

Dirinaria melanocarpa (Müll. Arg.) C.W. Dodge, Beih. Nova Hedwigia 38: 183 (1971)
= *Physcia melanocarpa* Müll. Arg. 1888

[ABL77026], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77026), 30.10.2018, det. A. Aptroot, 2019.





Dirinaria melanocarpa

Dirinaria papillulifera (Nyl.) D.D. Awasthi, Bryologist 67: 369 (1964)
= *Physcia papillulifera* Nyl. 1900

[ABL78232], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78232), 03.03.2019, det. A. Aptroot, 2019.

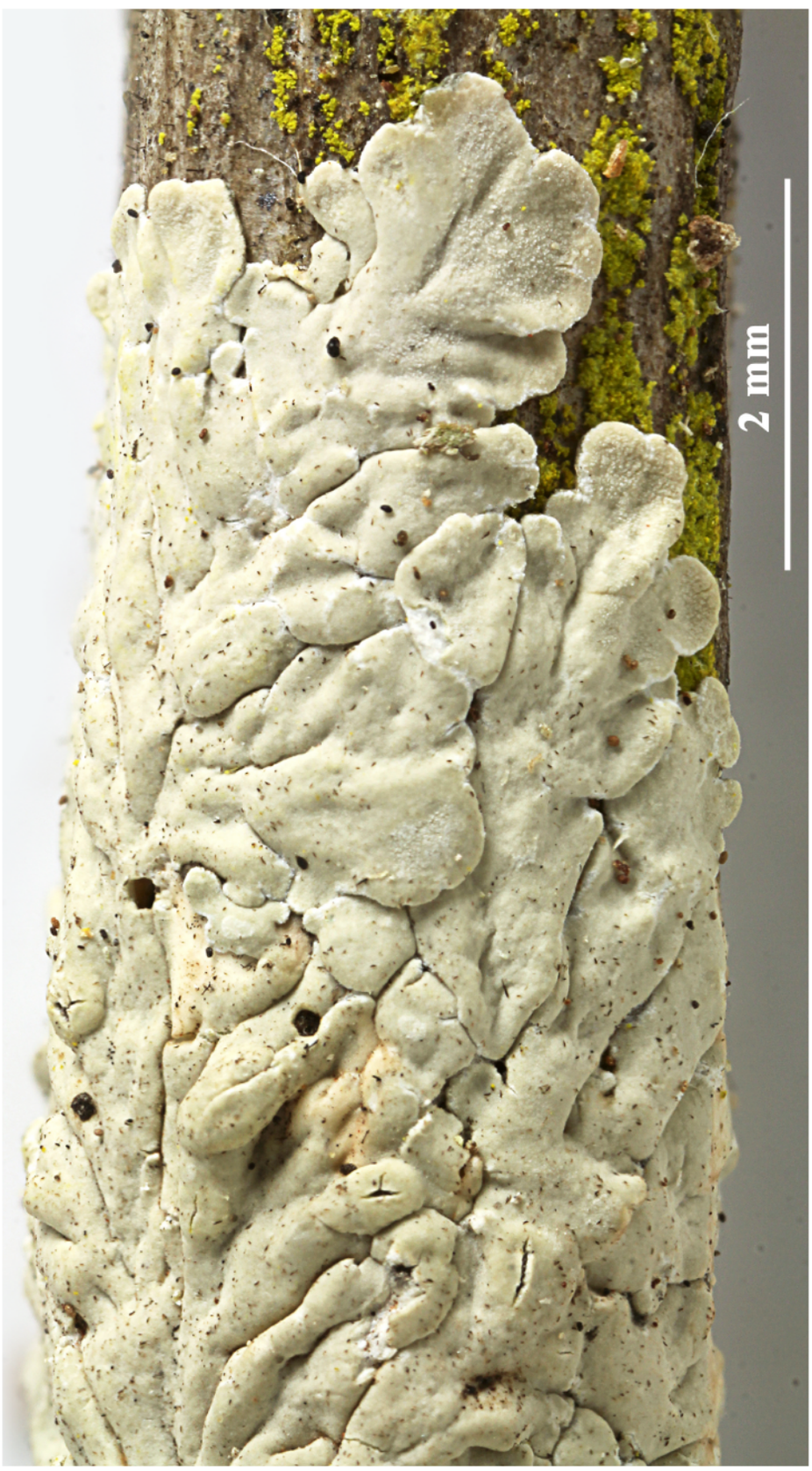


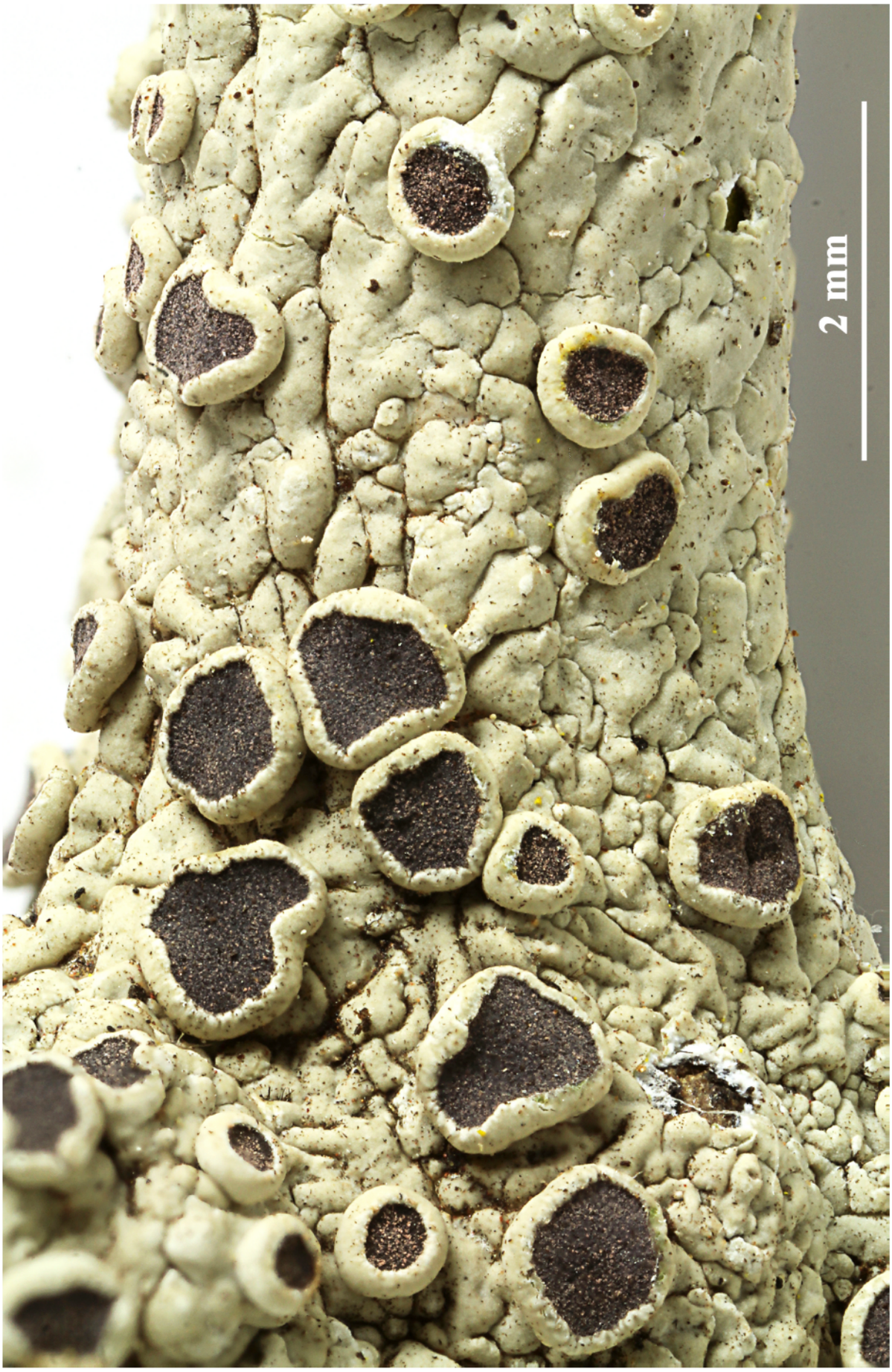


Dirinaria papillulifera

Dirinaria purpurascens (Vain.) B.J. Moore, Bryologist 71: 251 (1968)
= *Physcia purpurascens* Vain., Ann. Acad. Sci. fenn., Ser. A 6(no. 7): 67 (1915)

[ABL78138], Brazil, Mato Grosso do Sul, Pantanal 43 km SE of Corumbá, in pantanal forest on tree bark. 19°32’ S, 57°24’ W, 85 m, area39. Leg. A. Aptroot (no 78138), 02.03.2019, det. A. Aptroot, 2019.





Dirinaria purpurascens

Enterographa tropica Sparrius, Biblthca Lichenol. 89: 61 (2004)

[ABL79892], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 79892), 23-26.09.2019, det. A. Aptroot, 2019.- Thallus and pseudostromata KOH–, Pd–, C–, with large pycnidia. Spores 7–15-septate.





Enterographa tropica

Eremothecella calamicola Syd. & P. Syd., Annls mycol. 15(3/4): 236 (1917)
= *Arthonia calamicola* (Syd. & P. Syd.) R. Sant., Symb. bot. upsal. 12(no. 1): 88 (1952)
= *Arthoniopsis calamicola* (Syd. & P. Syd.) Szatala, Annls Mus. natn. Hung., n.s. 7: 26 (1956)

[ABL78211], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78211), 03.03.2019, det. A. Aptroot, 2019. - Spores c. 9-septate, c. 55 x 1.5 µm.





Eremothecella calamicola

Fissurina adscribens (Nyl.) Z.F. Jia & Lücking, MycoKeys 25: 22 (2017)
= *Graphina adscribens* (Nyl.) Müll. Arg., Hedwigia 31: 284 (1892)
= *Graphis adscribens* Nyl., Bull. Soc. linn. Normandie, sér. 2 2: 117 (1868)
= *Phaeographina adscribens* (Nyl.) Redinger, Rev. Bryol. Lichénol. 9(fasc. 1-2): 92, 103, tab. VI, fig. 78 (1936)

[ABL80091], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80091), 26.09.2019, det. A. Aptroot, 2019. - Hymenium not inspersed, spores muriform, 20-30 x 10 µm

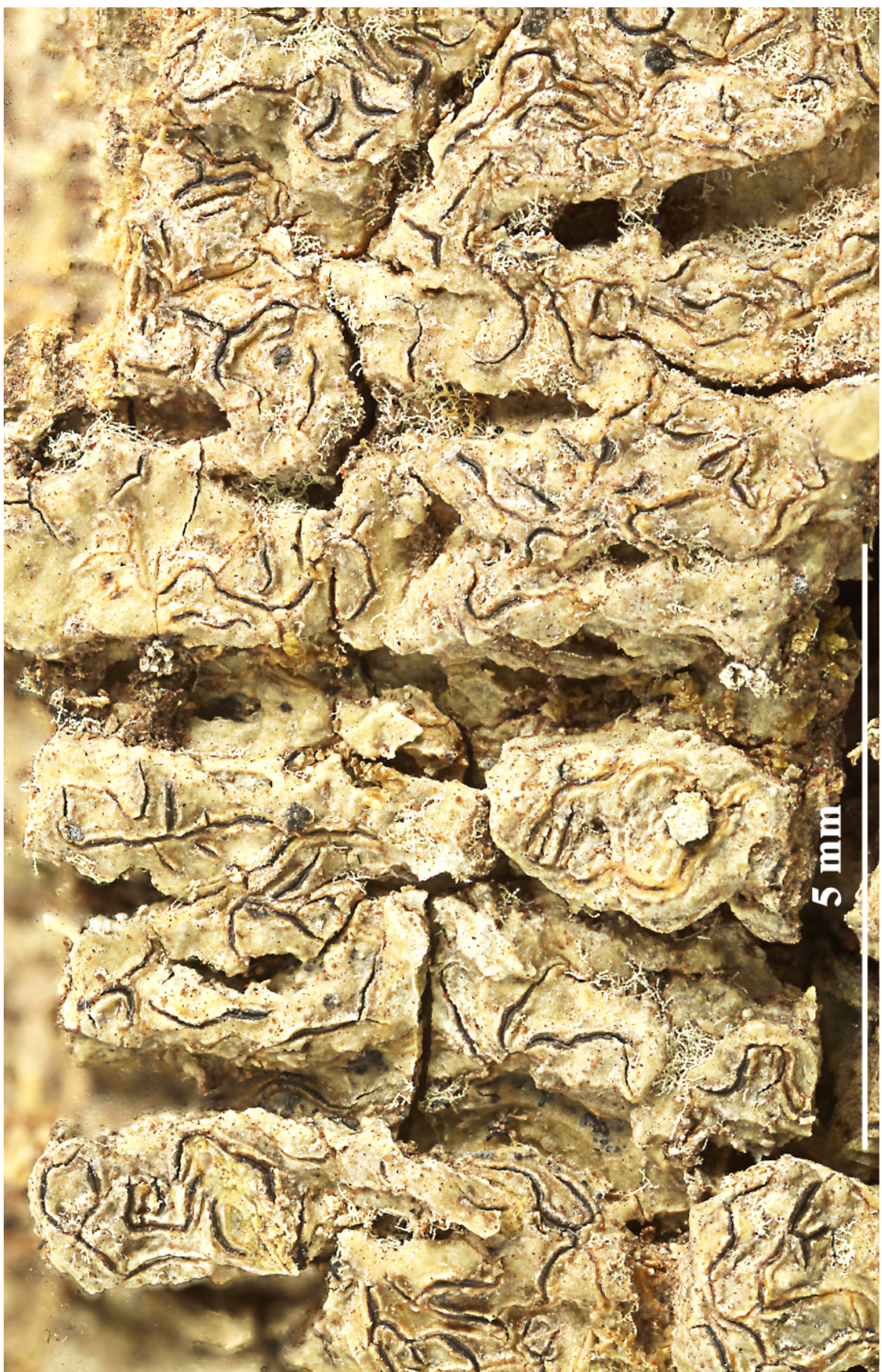




Fissurina adscribens

Fissurina comparimuralis Staiger, Biblthca Lichenol. 85: 134 (2002)

[ABL80202], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80201), 25.09.2019, det. A. Aptroot, 2019.





Fissurina comparimuralis

Flegographa leprieurii (Mont.) A. Massal., Atti Inst. Veneto Sci. lett., ed Arti, Sér. 3 5: 314 (1860) [1859-1860]

= *Actinoglyphis leprieurii* (Mont.) Mont., Syll. gen. sp. crypt. (Paris): 355 (1856)

= *Graphis leprieurii* (Mont.) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 130 (1857)

= *Opegrapha leprieurii* Mont., Annls Sci. Nat., Bot., sér. 2 8: 357 (1837)

= *Phaeographis leprieurii* (Mont.) Staiger, Biblthca Lichenol. 85: 338 (2002)

= *Sarcographa leprieurii* (Mont.) Müll. Arg., Flora, Regensburg 70(5): 77 (1887)

[ABL80096], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80096), 25.09.2019, det. A. Aptroot, 2019.





Flegographa leprieurii

Gassicurtia subpulchella (Vain.) Marbach [as 'subpulcella'], Biblthca Lichenol. 74: 244 (2000)
= *Buellia subpulchella* Vain. [as 'subpulcella'] 1930

[ABL77140], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77140), 30.10.2018, det. A. Aptroot, 2019. - Thallus K-, UV+ orange; hymenium not inspersed; spores brown, 1-septate, 8/ascus, 10-15 x 4-5.5 µm





Gassicurtia subpulchella

Graphis dendrogramma Nyl., in Crombie, J. Linn. Soc., Bot. 16(2): 226 (1877)

[ABL78203], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78203), 03.03.2019, det. A. Aptroot, 2019.- Excipulum laterally carbonized; hymenium not inspersed; spores hyaline, 8/ascus, transversely 7-9 septate, 20-30 x 6-8 µm; TLC: stictic and constictic acid.





Graphis dendrogramma

Graphis erythrocardia Müll. Arg., Bot. Jb. 20: 280 (1894)

[ABL80409], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80409), 23.10.2019, det. A. Aptroot, 2019. - Lirellae short and sparsely branched, immersed to erumpent, with lateral thalline margin; labia entire; excipulum laterally carbonized; hymenium not inspersed; spores traversely 11-15-septate, 50-70 x 7-10 µm. TLC: norstictic and/or salazinic acid, sometimes aditional stictic acid, thallus K+ yellow or K+ yellow forming red crystals.





Graphis erythrocardia

Graphis erythrocardia Müll. Arg., Bot. Jb. 20: 280 (1894)

[ABL77091], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77091), 30.10.2018, det. A. Aptroot, 2019. - Excipulum laterally carbonized, hymenium not inspersed, spores 7-13 traversely septate, 50-50 x 7-10 µm, with norstictic acid.



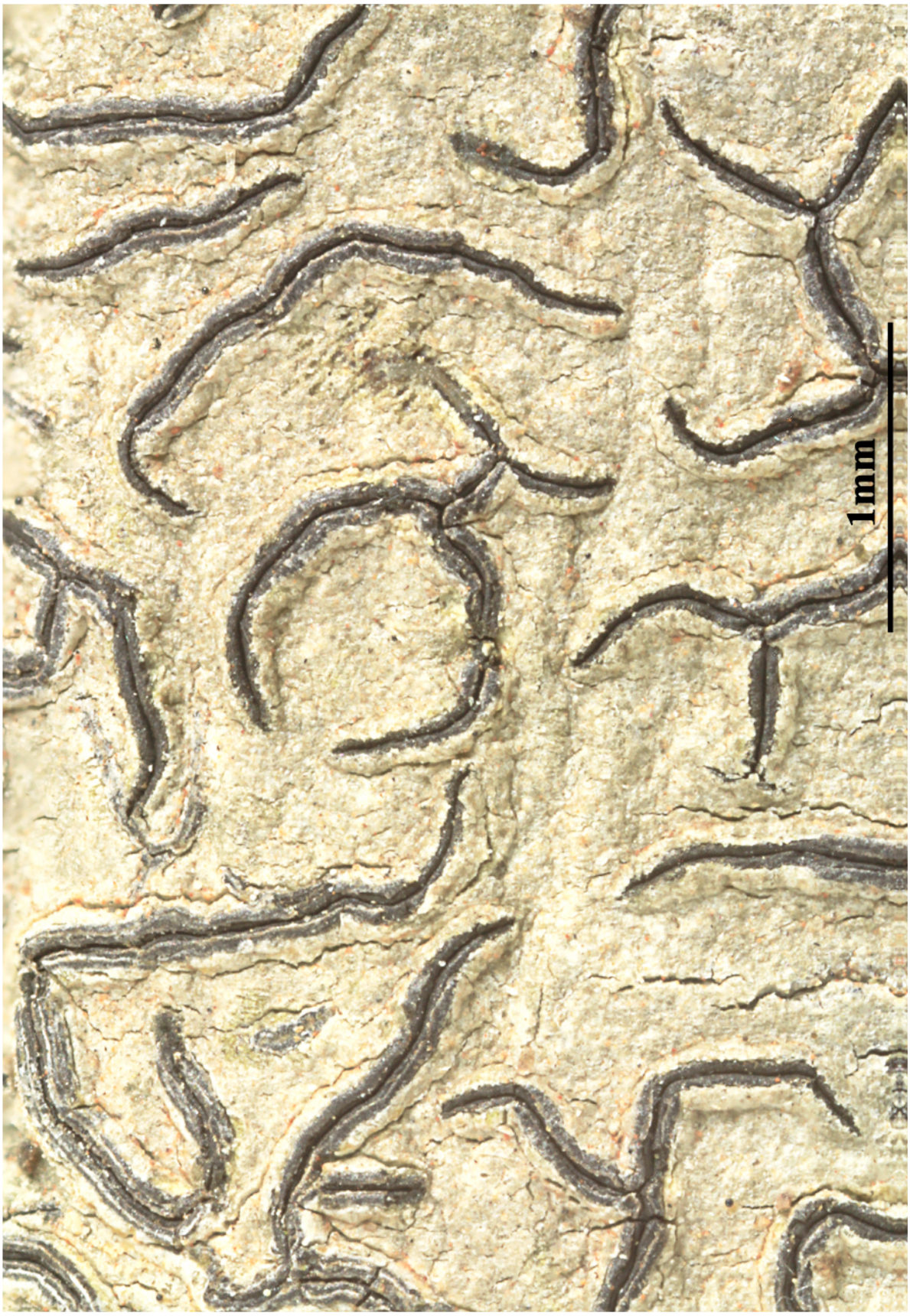


Graphis erythrocardia

Graphis geraensis Redinger [as 'geraënsis'], Ark. Bot. 27A(no. 3): 12 (1935)

[ABL79940], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54’ S, 53°45’ W, 240 m. Leg. A. Aptroot (no 79940), 24.09.2019, det. A. Aptroot, 2019. - Lirellae prominent, rarely branched, nlacking thalline margin. Excipulum completely carbonized. Hymenium not inspersed. Spores 4-8/ascus, transversely 5-9-septate, hyaline, 20-40 x 5-7 µm. TLC: no substances detected.





Graphis geraensis

Graphis hyphosa Staiger, Biblthca Lichenol. 85: 235 (2002)

[ABL77865], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77865), 8.11.2018, det. A. Aptroot, 2019 - Lirellae appearing pseudostromatic, excipulum completely carbonized, hymenium not inspersed; spores hyaline, 8/asus, traversely 5-9-septate, 20-35 x 6-9 µm.





Graphis hyphosa

Graphis lineola Ach., Lich. Univ.: 264 (1810)

[ABL78234], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78234), 03.03.2019, det. A. Aptroot, 2019. - Excipulum laterally carbonized; hymenium inspersed; spores hyaline, 8/ascus, transversely 7-9-septate, 20-40 x 6-8 µm; TLC: no substances detected.





Graphis lineola

Graphis oxyclada Müll. Arg., Flora, Regensburg 68(28): 512 (1885)

[ABL80149], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°55' S, 53°44' W, 230 m. Leg. A. Aptroot (no 80149), 27.09.2019, det. A. Aptroot, 2019. - Lirellae prominent, partly branched, with lateral thalline margin; labia entire; excipulum completely carbonized; hymenium not inspersed; spores 8/ascus, traversely 8-11-septate, hyaline, 30-45 x 7-9 µm; TLC: no substances.





Graphis oxyclada

Graphis parilis Kremp., Flora, Regensburg 59: 422 (1876)

[ABL77865], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77865), 8.11.2018, det. A. Aptroot, 2019.
Lirellae erumpent, with thick lateral thalline margin; labia striate; excipilum apically carbonized; hymenium not inspersed; spores hyaline, 8/ascus, muriform, 40 - 70 x 15 -20 µm; with stictic acid.





Graphis parilis

Graphis platycarpa Eschw., in Martius, Fl. bras. enum. pl. 1(1): 74 (1833)
= *Graphina platycarpa* (Eschw.) Zahlbr., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 111: 385 (1902)
= *Graphina platycarpa* var. *recta* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 2: 419 (1923) [1924]
= *Graphina sophistica* var. *recta* Müll. Arg., Bull. Herb. Boissier 3: 321 (1895)

[ABL77955], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77955), 8.11.2018, det. A. Aptroot, 2019 - Lirellae erumpent, rarely branched; labia striate; excipulum apically carbonized; hymenium not inspersed; spores 8/ascus, hyaline, muriform, 50-70 x 14-21 µm; TLC: no substances.





Graphis platycarpa

Graphis plumierae Vain., Ann. Acad. Sci. fenn., Ser. A 6(no. 7): 161 (1915)

[ABL80291], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80291), 23-26.09.2019, det. A. Aptroot, 2019. - Labia white pruinose, lirellar immersed with lateral thalline margin; thallus K+ yellow > red with norstictic acid; hymenium laterally carbonized, imspersed, spores 1/ascus, 32 x 7 µm.





Graphis plumierae

Graphis subcontorta (Müll. Arg.) Lücking & Chaves, in Lücking, Chaves, Sipman, Umaña & Aptroot, Fieldiana, Bot. 46(no. 1549): 110 (2008)
= *Graphina subcontorta* Müll. Arg., Revue mycol., Toulouse 10(no. 39): 120 (1888)

[ABL77111], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58' S, 56°42' W, 650 m. Leg. A. Aptroot (no 77111), 30.10.2018, det. A. Aptroot, 2019. - Labia entire,excipulum apically carbonized, hymenium not inspersed, spores 1-4/ascus, muriform, 80-100 x 25-35 µm, tallus K-.





Graphis subcontorta

Graphis submarginata Lücking, in Lücking, Chaves, Sipman, Umaña & Aptroot, Fieldiana, Bot. 46(no. 1549): 112 (2008)

= *Graphis lineola var. marginata* Zahlbr., Cat. Lich. Univers. 2: 317 (1923) [1924]

[ABL77440], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45' W, 500 m. Leg. A. Aptroot (no 77440), 2.11.2018, det. A. Aptroot, 2019. - Lirellae erumpent, rarely branched, with lateral thalline margin; labia entire; excipulum laterally carbonized; hymenium inspersed; spores 8/ascus, hyaline, traversely 5-9-septate, 25-35 x 6-8 µm; K-, TLC: no substances detected.





Graphis submarginata

Graphis symplecta Nyl., Annls Sci. Nat., Bot., sér. 4 20: 263 (1863)

[ABL77865], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77865), 8.11.2018, det. A. Aptroot, 2019 - Lirellae immersed, partly branched, with apically thin complete thalline cover; labia striate; excipulum apically carbonized; hymenium not inspersed; spores 6-8/ascus, hyaline, muriform, 36-45 x 15-20 µm; K-, TLC: no substances.



Gyalecta geoicoides Vain., Acta Soc. Fauna Flora fenn. 7(no. 2): 69 (1890)
= *Cryptolechia geoicoides* (Vain.) Kalb, Biblthca Lichenol. 95: 309 (2007)
= *Pachyphiale geoicoides* (Vain.) Vězda [as 'geocoides'], Folia geobot. phytotax. 4: 445 (1969)

[ABL77894], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77894), 8.11.2018, det. A. Aptroot, 2019 - Spores 24-48/ascus, 3-septate, 12-16 x 3-4.5 µm.



Gyalecta nana Tuck., Proc. Amer. Acad. Arts & Sci. 5: 415 (1862) [1860]
= *Cryptolechia nana* (Tuck.) D. Hawksw. & Dibben, Lichenologist 14(1): 100 (1982)
= *Gyalectina nana* (Tuck.) Vězda, Folia geobot. phytotax. 4(4): 444 (1969)
= *Secoliga nana* (Tuck.) Müll. Arg., Revue mycol., Toulouse 10(no. 38): 65 (1888)

[ABL77144], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Tqzaral, in Atlantic rain forest on tree bark. 21°06' S, 56°38' W, 500 m. Leg. A. Aptroot (no 77144), 31.10.2018, det. A. Aptroot, 2019. - Spores 16/ascus, 3(-4)-septate, 16-19 x 4-5 µm.





Gyalecta nana

Gyalideopsis confluens Kalb & Vězda, Biblthca Lichenol. 29: 37 (1988)

[ABL77855], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on bark of liana. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77855), 8.11.2018, det. A. Aptroot, 2019 - Apothecia 0.5-1 mm, yellow-brown to brown; spores 1-2(-4)/ascus, muriform, 25-50 x 12-15 µm.





Gyalideopsis confluens

Gyalideopsis haliotidiformis Kalb & Vězda, Biblthca Lichenol. 29: 38 (1988)

[ABL80038], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80038), 25.09.2019, det. A. Aptroot, 2019.





Gyalideopsis haliotidiformis

Gyalideopsis kalbii Vězda, Mitt. bot. StSamml., Münch. 19: 153 (1983)

[ABL77064], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77064), 30.10.2018, det. A. Aptroot, 2019.





Gyalideopsis kalbii

Haematomma matogrossense Kalb & Staiger, in Staiger & Kalb, Biblthca Lichenol. 59: 133 (1995)

[ABL77796], Brazil, Mato Grosso do Sul, Morraria do Sul, Bodoquena, Fazenda Santa Laura, in Atlantic rain forest on wood. 20°47’10" S, 56°43’48" W, 450 m. Leg. A. Aptroot (no 77796), 7.11.2018, det. A. Aptroot, 2019 - Spores 8/ascus, 7-13-septate, 40-57 x 4.5-6 µm, apothecia with haematomon.

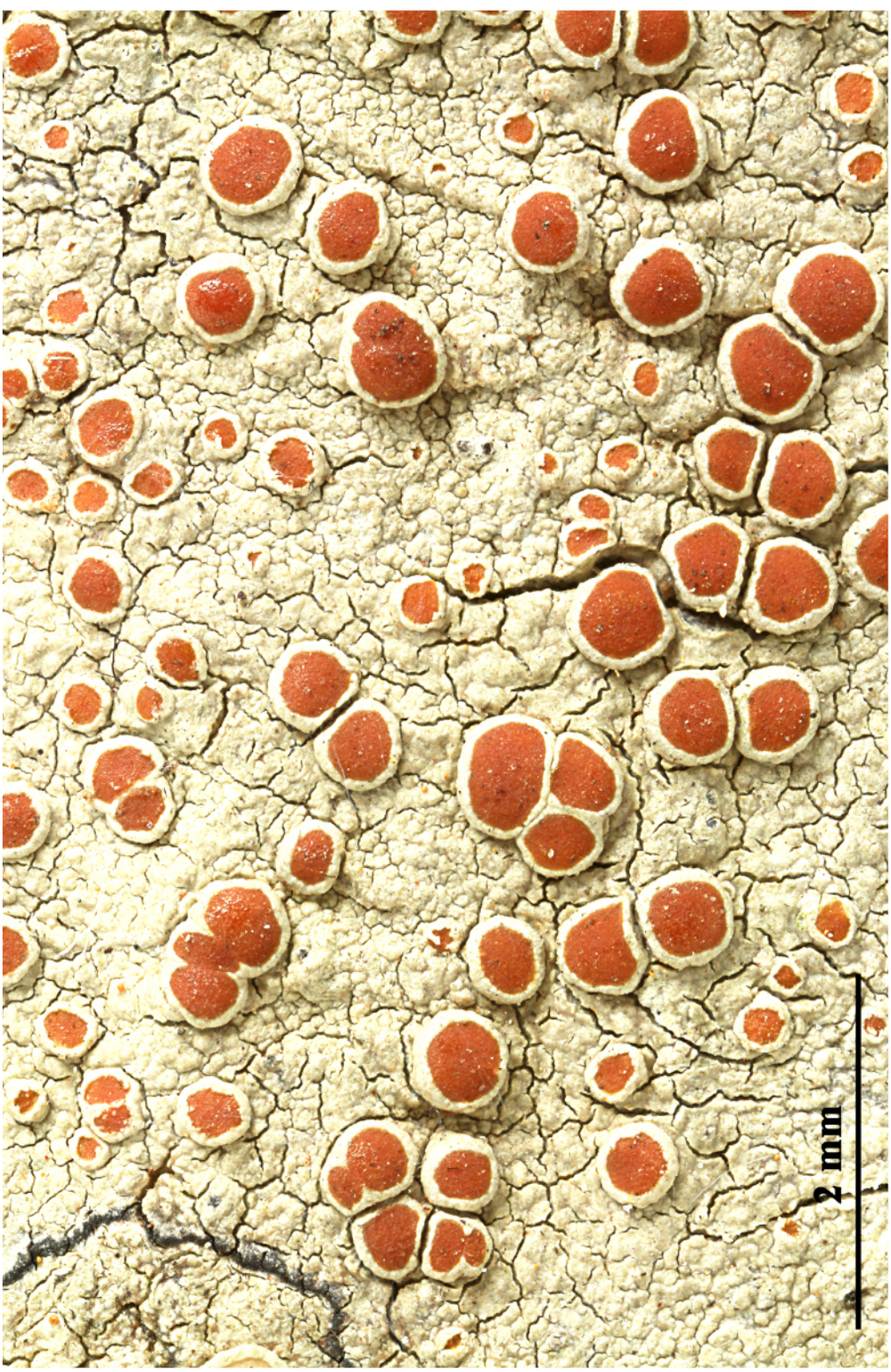




Haematomma matogrossense

Haematomma persoonii (Fée) A. Massal., Atti Inst. Veneto Sci. lett., ed Arti, Sér. 3 5: 253 (1860) [1859-1860]
= *Lecanora persoonii* Fée, Essai Crypt. Exot. (Paris): 119 (1825) [1824]

[ABL78019], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78019), 9.11.2018, det. A. Aptroot, 2019. - Spores hyaline, 8/ascus, traversely 6-7-septate, 30-55 x 3.5-5 µm; TLC: atranorin, sphaerophorin, russulone, UV-.





Haematomma persoonii

Haematomma subinnatum (Malme) Kalb & Staiger, Biblthca Lichenol. 59: 171 (1995)
= *Haematomma puniceum* var. *subinnatum* Malme 1937

[ABL77661], Brazil, Mato Grosso do Sul, Morraria do Sul, Morraria do Sul Fazenda Sol de Maio, in Atlantic rain forest on tree bark. 20°35'33" S, 56°51'40" W, 525 m. Leg. A. Aptroot (no 77661), 5.11.2018, det. A. Aptroot, 2019 - Thallus without soralia, UV+ yellow; apothecia immersed in the thallus, 0.5-1.5 mm; spores 8/ascus, 5-7 septate, 30-50 x 4-6 µm; Chemistry: lichexanthon, atranorin, russulone, ± psoromic acid, ± demethylpsoromic acid

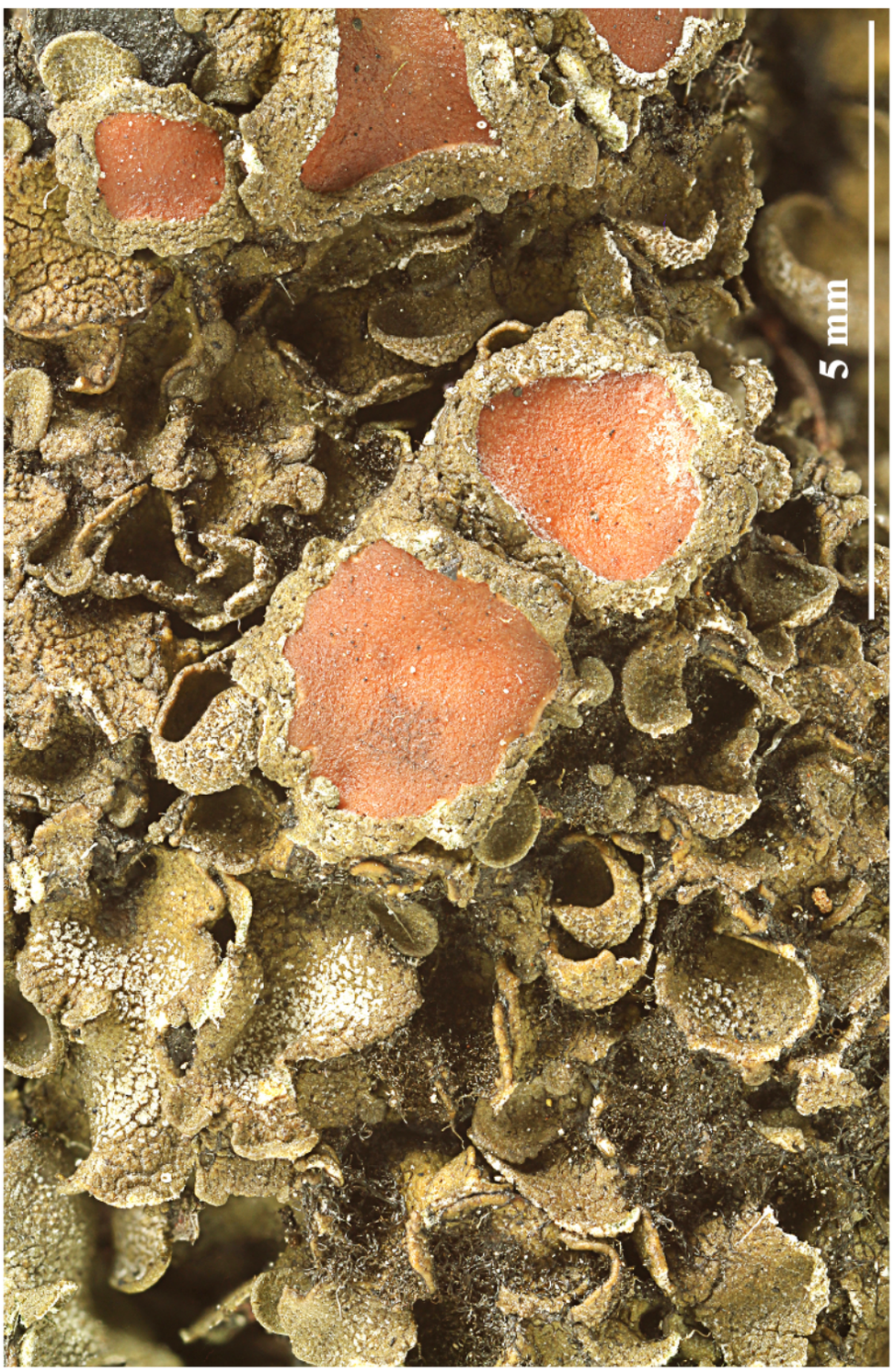




Haematomma subinnatum

Heppia despreauxii (Mont.) Tuck., Gen. lich. (Amherst): 46 (1872)
= *Solorina despreauxii* Mont., in Webb & Berthelot, Hist. nat. Iles Canar. (Paris) 3(2): 104 (1840)
= *Solorinaria despreauxii* (Mont.) M. Choisy & Werner, in Werner, Bull. Soc. Sci. Nat. phys. Maroc 12(4-6): 159 (1932)
= *Solorinaria despreauxii* (Mont.) Fink, Lich. Fl. U.S.: 170 (1935)

[ABL77805], Brazil, Mato Grosso do Sul, Bodoquena, Dente de Cão summit,in Atlantic rain forest on exposed limestone. 20°47’´05" S, 56°45’03" W, 450 m. Leg. A. Aptroot (no 77805), 7.11.2018, det. A. Aptroot, 2019





Heppia despreauxii

Heterocyphelium leucampyx (Tuck.) Vain., Acta Soc. Fauna Flora fenn. 57(no. 1): 16 (1927)

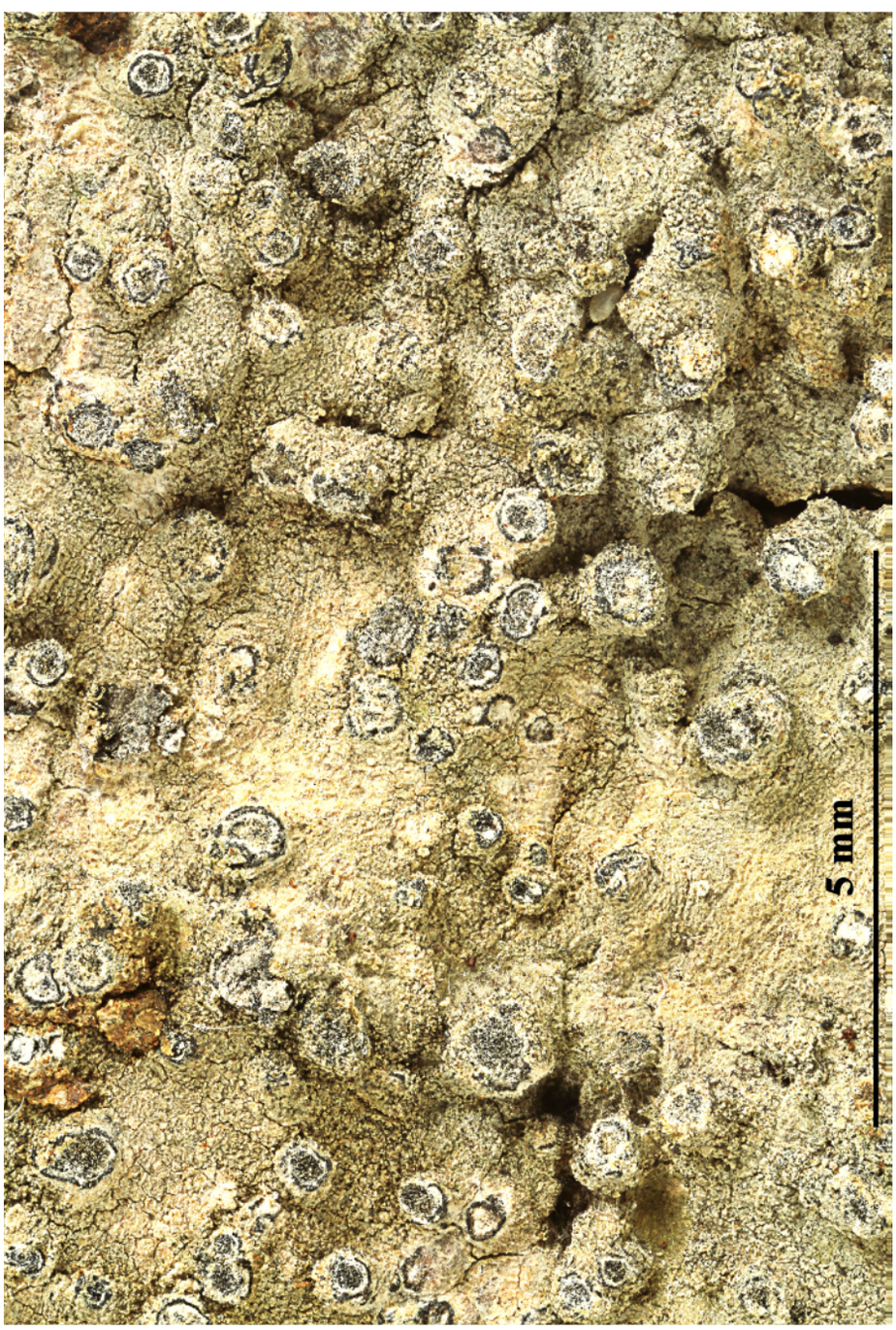
= *Acolium leucampyx* (Tuck.) Tuck., Syn. N. Amer. Lich. (Boston) 2: 162 (1888)

= *Cyphelium leucampyx* (Tuck.) Zahlbr., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1(1*): 84 (1903)

= *Trachylia leucampyx* Tuck., Proc. Amer. Acad. Arts & Sci. 5: 390 (1862) [1860]

= *Tylophoron triloculare* Müll. Arg., Hedwigia 32(2): 122 (1893)

[ABL77899], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77899), 8.11.2018, det. A. Aptroot, 2019 - Spores (1-)2(-3)-septate, 15 x 7 µm.





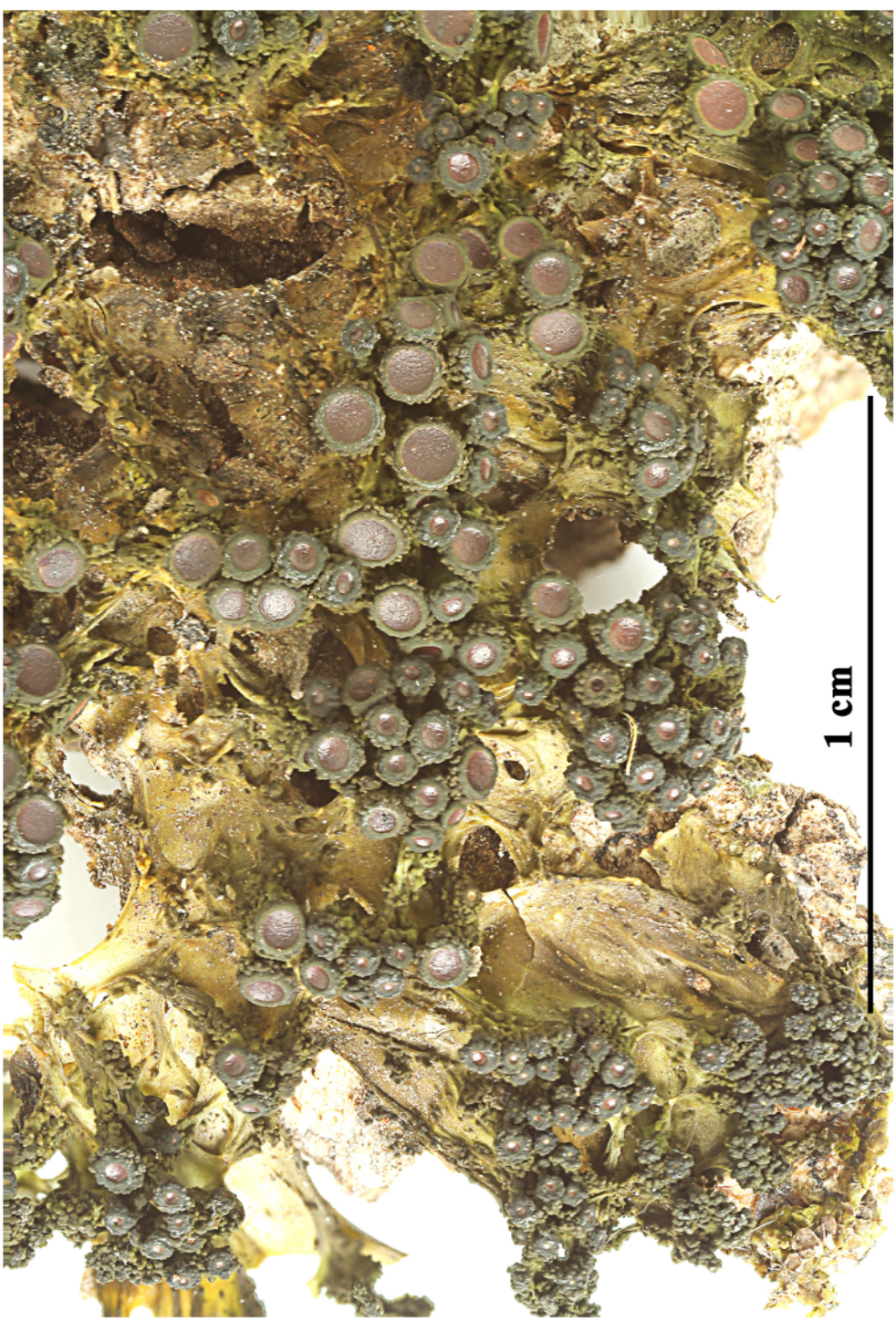
Heterocyphelium leucampyx

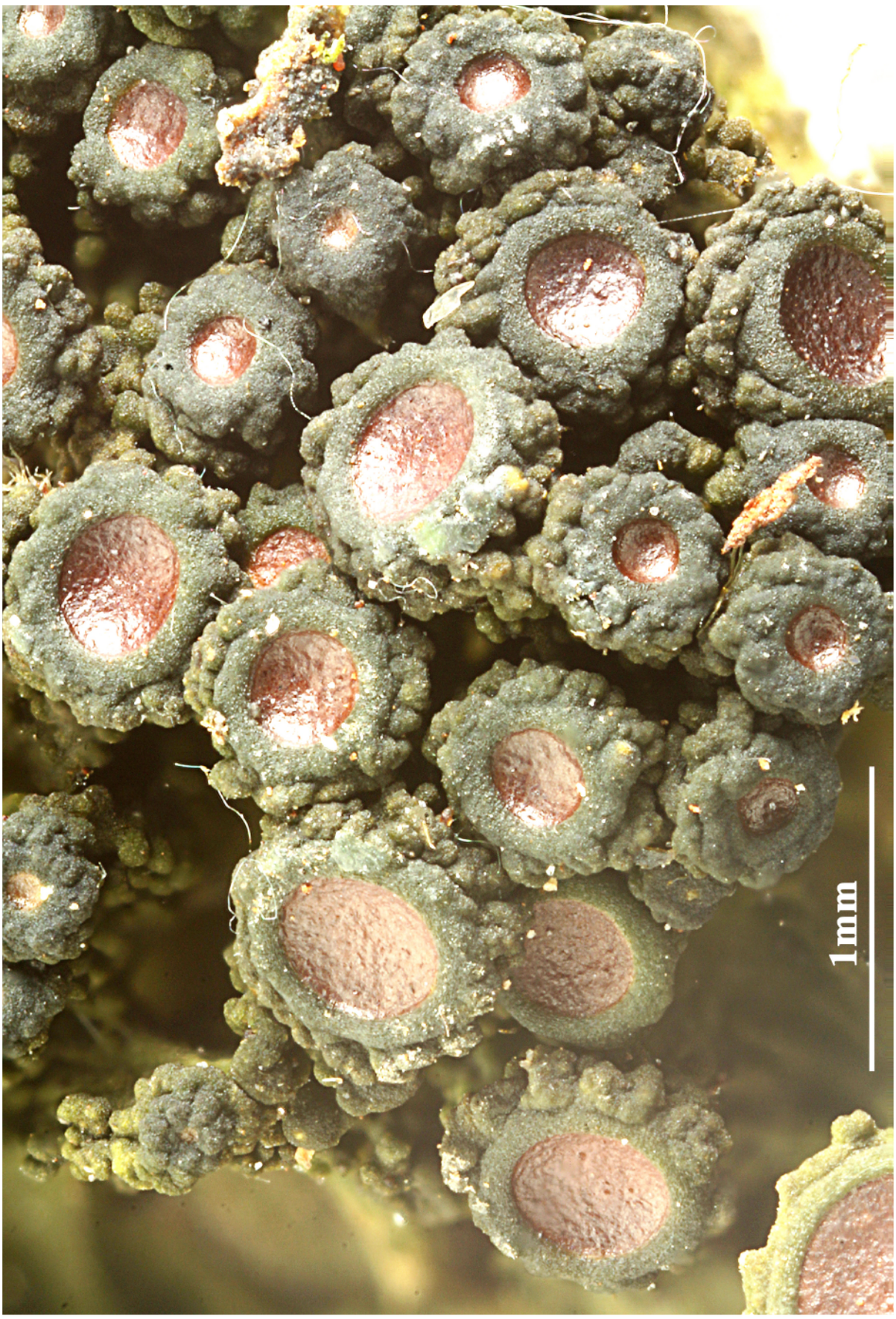
Hondaria leptospora (Malme) Kitaura, M.C. Scur & A.P. Lorenz, in Kitaura, Scur, Theodoro, Piovezan-Borges & Lorenz, Acta Bot. Brasilica 34(4): 618 (2020)

= *Collema leptosporum* Malme, Ark. Bot. 19(no. 8): 6 (1924)

= *Arctomia leptospora* (Malme) Otálora & Wedin, Lichenologist 45(3): 302 (2013)

[ABL78016], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78016), 9.11.2018, det. A. Aptroot, 2019. - Spores 110-200 x 3-4(-5) µm, filiforme, pluriseptate.



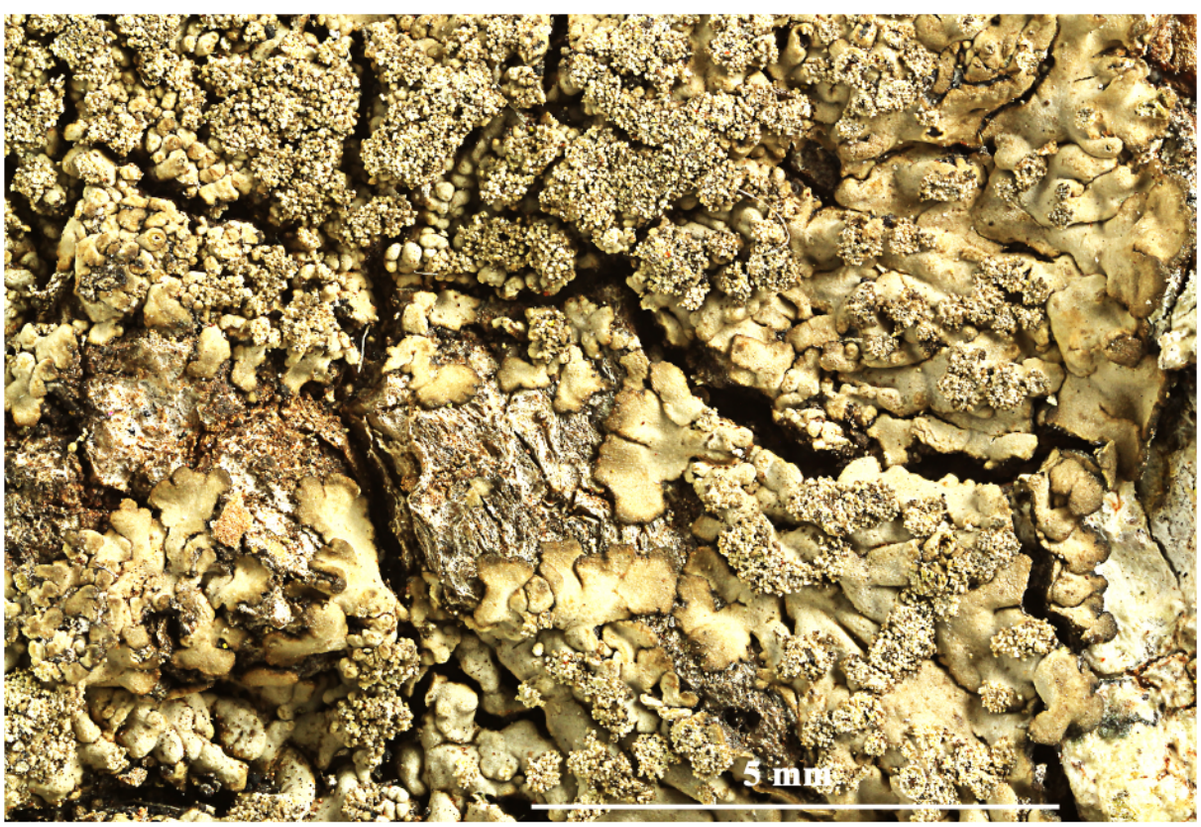


Hondaria leptospora

Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt, in Hafellner, Mayrhofer & Poelt, Herzogia 5(1-2): 62 (1979)
= *Astroplaca adglutinata* (Flörke) Arnold, Flora, Regensburg 53(30–31): 471 (1871) [1870]
= *Borrera obscura* var. *adglutinata* (Flörke) Mudd, Man. Brit. Lich.: 110 (1861)
= *Dimelaena adglutinata* (Flörke) Trevis., Atti Soc. ital. Sci. nat. 11: 622 (1868)
= *Hagenia adglutinata* (Flörke) Bagl. & Carestia, Atti Soc. Crittogam. Ital. 2: 170 (1880) [1879]
= *Hagenia elaeina* (Sm.) Bagl., Comm. Soc. crittog. Ital. 1(fasc. 4): 299 (1863)
= *Hagenia elaeina* var. *adglutinata* (Flörke) Bagl., Nuovo G. bot. ital. 11: 62 (1879)
= *Hyperphyscia adglutinata* f. *pyrithrocardia* (Müll. Arg.) Kalb, Herzogia 6(1-2): 78 (1983)
= *Hyperphyscia adglutinata* var. *pyrithrocardia* (Müll. Arg.) D.D. Awasthi, A Compendium of the Macrolichens from India, Nepal and Sri Lanka (Dehra Dun): 197 (2007)
= *Hyperphyscia pyrithrocardia* (Müll. Arg.) Moberg & Aptroot, in Aptroot, Flora of the Guianas, Series E: Fungi and Lichens. Fascicle 1. Pyxinaceae (Koenigstein): 34 (1987)
= *Imbricaria adglutinata* (Flörke) Chevall., Fl. gén. env. Paris (Paris) 1: 627 (1826)
= *Lecanora adglutinata* Flörke, Deutsche Lich. 4: 7 (1819)
= *Lichen elaeinus* Sm., in Smith & Sowerby, Engl. Bot. 30: tab. 2158 (1810)
= *Lobaria obscura* var. *adglutinata* (Flörke) Hepp, Flecht. Europ.: no. 374 (1857)
= *Parmelia adglutinata* (Flörke) Taylor, in Mackay, Fl. Hibern. 2: 146 (1836)
= *Parmelia cycloselis* var. *adglutinata* (Flörke) F. Desp., Flore de la Sarthe: 382 (1838)
= *Parmelia elaeina* (Sm.) Gray, Nat. Arr. Brit. Pl. (London) 1: 439 (1821)
= *Parmelia obscura* f. *adglutinata* (Flörke) Körb., Syst. lich. germ. (Breslau): 88 (1855)
= *Parmelia obscura* var. *adglutinata* (Flörke) Schaer., Lich. helv. spicil. 9: 442 (1840)
= *Physcia adglutinata* (Flörke) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 107 (1858)
= *Physcia adglutinata* var. *pyrithrocardia* Müll. Arg., Flora, Regensburg 63(18): 278 (1880)
= *Physcia elaeina* (Sm.) A.L. Sm., Monogr. Brit. Lich., Edn 2 1: 244 (1918)
= *Physcia elaeina* f. *pyrithrocardia* (Müll. Arg.) J.W. Thomson, Beih. Nova Hedwigia 7: 30 (1963)
= *Physcia obscura* f. *adglutinata* (Flörke) Branth & Rostr., Bot. Tidsskr. 3: 192 (1869)

= *Physcia obscura* subsp. *adglutinata* (Flörke) Nyl., Syn. meth. lich. (Parisiis) 1(2): 428 (1860)
= *Physcia obscura var. adglutinata* (Flörke) Nyl., Act. Soc. linn. Bordeaux 21(4): 309 (1857) [1856]
= *Physcia pyrithrocardia* (Müll. Arg.) Räsänen, Ann. Mo. bot. Gdn 20: 15 (1933)
= *Physcia stellaris* var. *adglutinata* (Flörke) Linds., Trans. R. Soc. Edinb. 22: 245, tab. XIV, fig. 18-19 (1859) [1861]
= *Physciopsis adglutinata* (Flörke) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 19: 20 (1950)
= *Physciopsis elaeina* (Sm.) Poelt, Nova Hedwigia 9: 30 (1965)
= *Physciopsis elaeina* var. *pyrithrocardia* (Müll. Arg.) D.D. Awasthi & Kr.P. Singh, Geophytology 1(2): 101 (1971)
= *Squamaria elaeina* (Sm.) Hook., in Smith, Engl. Fl., Mosses, Hepaticae, Lichens, Characeae and Algae (London) 5(1): 201 (1833)
= *Squamaria elaeina* var. *adglutinata* (Flörke) A. Massal., Sched. Crit. Lich. Exsicc. (Veronae) 7: 137 (1856)
= *Xanthoria adglutinata* (Flörke) Horw., Hand-list Lich. Gr. Brit.: 14 (1912)

[ABL80275], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80275), 23-26.09.2019, det. A. Aptroot, 2019.



Hyperphyscia adglutinata



Hyperphyscia adglutinata

Hyperphyscia cochlearis Scutari, Mycotaxon 61: 94 (1997)

[ABL80410], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80410), 15.10.2019, det. A. Aptroot, 2019.





Hyperphyscia cochlearis

Hyperphyscia isidiata Moberg, Nordic Jl Bot. 7(6): 722 (1987)

[ABL80324], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06’08’’ S, 53°48’42’’ W, 300 m. Leg. A. Aptroot (no 80324), 29.09.2019, det. A. Aptroot, 2019





Hyperphyscia isidiata

Hyperphyscia minor (Fée) Kalb, Lichenes Neotropici, Fascicle X (nos 401-450) (Neumarkt): 9 (1988)

[ABL80265], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80265), 23-26.09.2019, det. A. Aptroot, 2019.

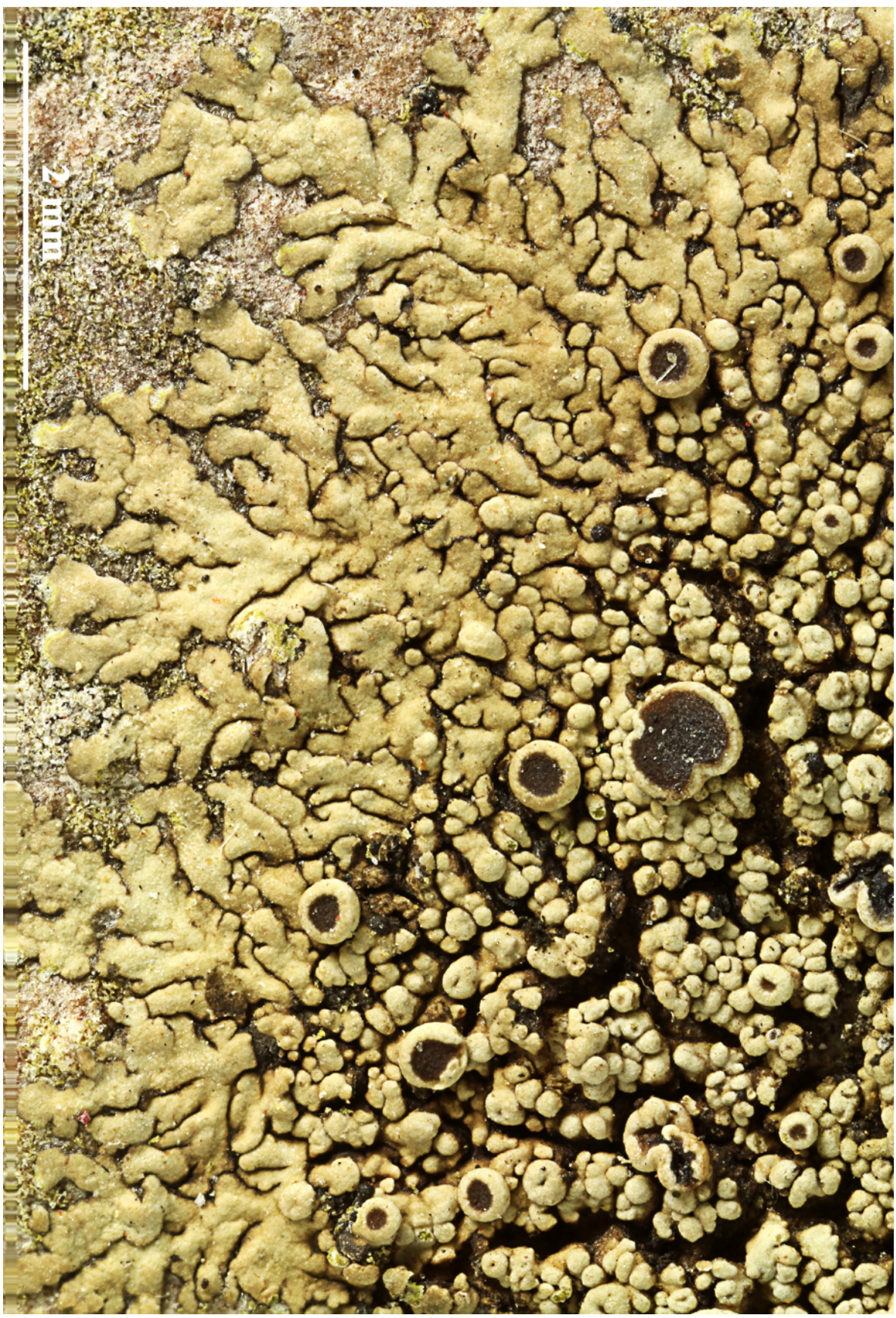




Hyperphyscia minor

Hyperphysica viridissima (Müll. Arg.) Scutari, Lichenologist 23(1): 21 (1991)

[ABL80455], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80455), 23.10.2019, det. A. Aptroot, 2019.





Hyperphysica viridissima

Hypotrachyna degelii (Hale) Hale, Smithson. Contr. bot. 25: 31 (1975)
= *Parmelia degelii* Hale, in Hale & Kurokawa, Contr. U.S. natnl. Herb. 36(4): 170 (1964)

[ABL78358], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78358), 25.03.2019, det. A. Aptroot, 2019. - Medulla white; lower surface black; spores 8-11 x 4-5 µm; chemistry: upper cortex K+ yellow, C-, KC-, P+ yellow, UV-, medulla K-, C-, KC+ red, P-, UV+ bluish white; TLC: atranorin, chloroatranorin, alectoronic, α-collatolic, β-collatolic, β-alectoronic acid.





Hypotrachyna degelii





Hypotrachyna degelii



Hypotrachyna degelii

Julella geminella (Nyl.) R.C. Harris, More Florida Lichens, Incl. 10 Cent Tour Pyrenol. (New York): 87 (1995)
= *Verrucaria geminella* Nyl. 1858

[ABL78109], Brazil, Mato Grosso do Sul, Pantanal 43 km SE of Corumbá, in pantanal forest on tree bark. 19°32’ S, 57°24’ W, 85 m, area39. Leg. A. Aptroot (no 78109), 02.03.2019, det. A. Aptroot, 2019. - Thallus non-lichenized, UV-; hymenium not inspersed, filaments anastomosing; spores 2/ascus, IKI-, muriform, 30-35 x 15-17 µm, not ornamented, wall not thickened.

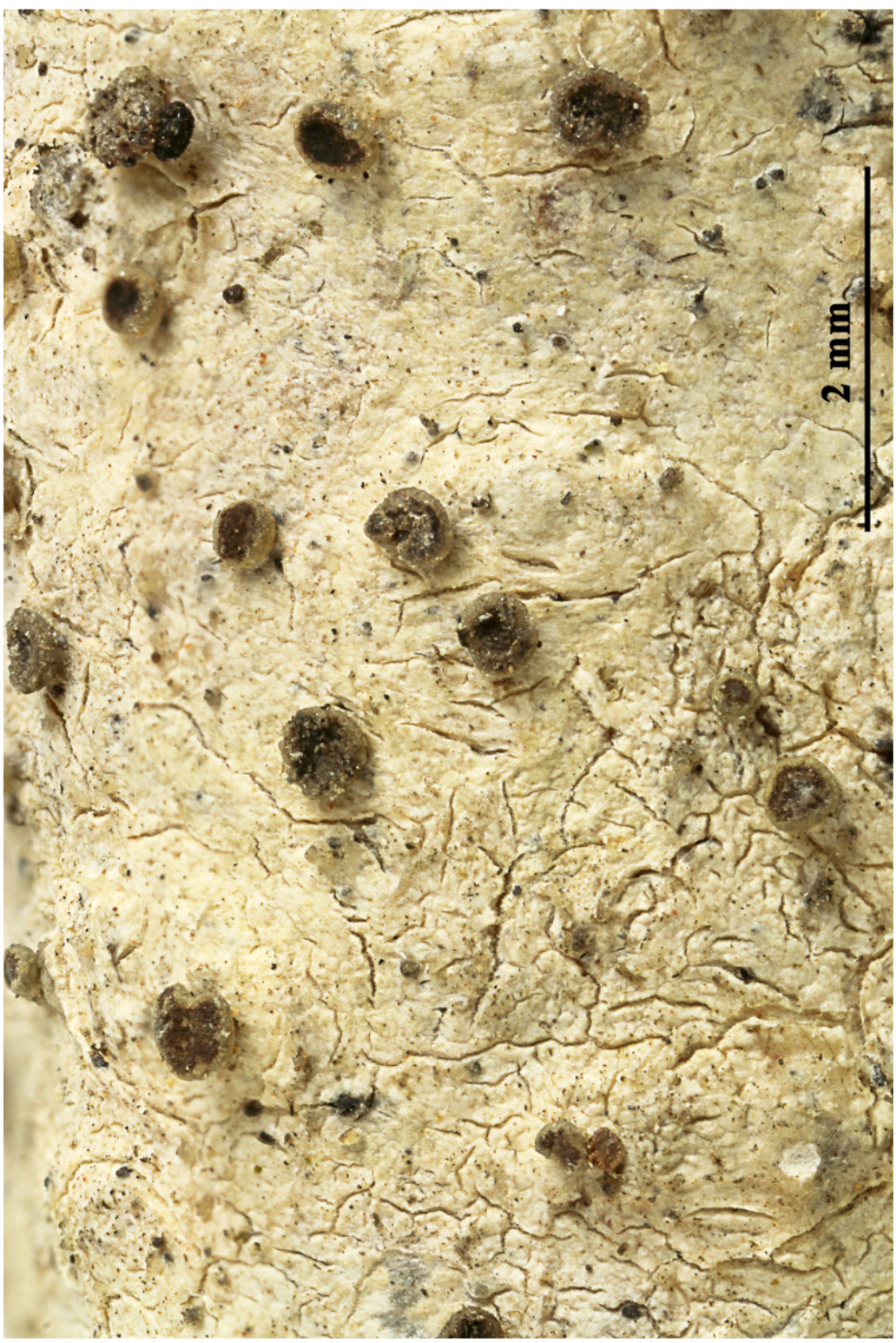




Julella geminella

Lecanactis elaeocarpa (Nyl.) Tehler, Willdenowia 22(1-2): 204 (1992)
= *Gyronactis elaeocarpa* (Nyl.) Ertz & Tehler, in Ertz, Tehler, Irestedt, Frisch, Thor & van den Boom, Fungal Diversity 70: 43 (2014) [2015]
= *Platygrapha elaeocarpa* Nyl., Annls Sci. Nat., Bot., sér. 5 7: 339 (1867)
= *Schismatomma elaeocarpum* (Nyl.) Zahlbr., Cat. Lich. Univers. 2: 555 (1923) [1924]

[ABL77733], Brazil, Mato Grosso do Sul, Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77733), 6.11.2018, det. A. Aptroot, 2019





Lecanactis elaeocarpa

Lecanora albellula (Nyl.) Th. Fr. (1871)
= *Biatora albellula* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 201 (1903)
= *Lecanora aitema* f. *glaucella* (Flot.) Anzi, Cat. Lich. Sondr.: 51 (1860)
= *Lecanora aitema* var. *glaucella* (Flot.) Hepp, Flecht. Europ.: no. 385 (1857)
= *Lecanora albella* f. *glaucella* Flot., Jber. schles. Ges. vaterl. Kultur [27]: 131 (1849)
= *Lecanora albella* var. *piniperda* (Körb.) Boistel, Nouv. Fl. Lich. (Paris): 54 (1896)
= *Lecanora albellula* var. *macroconidiata* M. Brand & van den Boom, Lichenologist 40(6): 468 (2008)
= *Lecanora effusa* f. *glaucella* (Flot.) Stein, in Cohn, Krypt.-Fl. Schlesien (Breslau) 2(2): 139 (1879)
= *Lecanora glaucella* (Flot.) Nyl., Grevillea 19(no. 91): 60 (1891)
= *Lecanora hagenii* var. *glaucella* (Flot.) Körb., Syst. lich. germ. (Breslau): 143 (1855)
= *Lecanora piniperda* Körb., Parerga lichenol. (Breslau) 1: 81 (1859) [1865]
= *Lecanora piniperda* f. *glaucella* (Flot.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 30: 127 (1881) [1880]
= *Lecanora piniperda* subsp. *glaucella* (Flot.) Cromb., Monogr. Lich. Brit.: 436 (1894)
= *Lecanora piniperda* var. *glaucella* (Flot.) Körb., Parerga lichenol. (Breslau) 1: 81 (1859) [1865]
= *Lecanora subintricata* var. *glaucella* (Flot.) Vain., Meddn Soc. Fauna Flora fenn. 6: 162 (1881)
= *Lecanora symmicta* var. *piniperda* (Körb.) Boistel, Nouv. Fl. Lich. (Paris) 2: 130 (1903)
= *Lecanora varia* var. *glaucella* (Flot.) Rabenh., Flecht. Europ. 29: no. 784 (1867)
= *Lecidea albellula* Nyl., Not. Sällsk. Fauna et Fl. Fenn. Förh., Ny Ser. 8: 147 (1866)
= *Lecidora glaucella* (Flot.) Motyka, Porosty (Lichenes). 2, Rodzina Lecanoraceae. Pinacisca, Lecidorina, Urceolaria, Semilecanora, Paraplacodium, Koerberiella, Lecidora, Pseudoplacodium, Tephromela (Lublin): 531 (1996)
= *Lecidorina albellula* (Nyl.) Motyka, Porosty (Lichenes). 2, Rodzina Lecanoraceae. Pinacisca, Lecidorina, Urceolaria, Semilecanora, Paraplacodium, Koerberiella, Lecidora, Pseudoplacodium, Tephromela (Lublin): 24 (1996)

[ABL79926 Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on wood. 22°54’ S, 53°45’ W, 240 m. Leg. A. Aptroot (no 79926 24.09.2019, det. A. Aptroot, 2019.



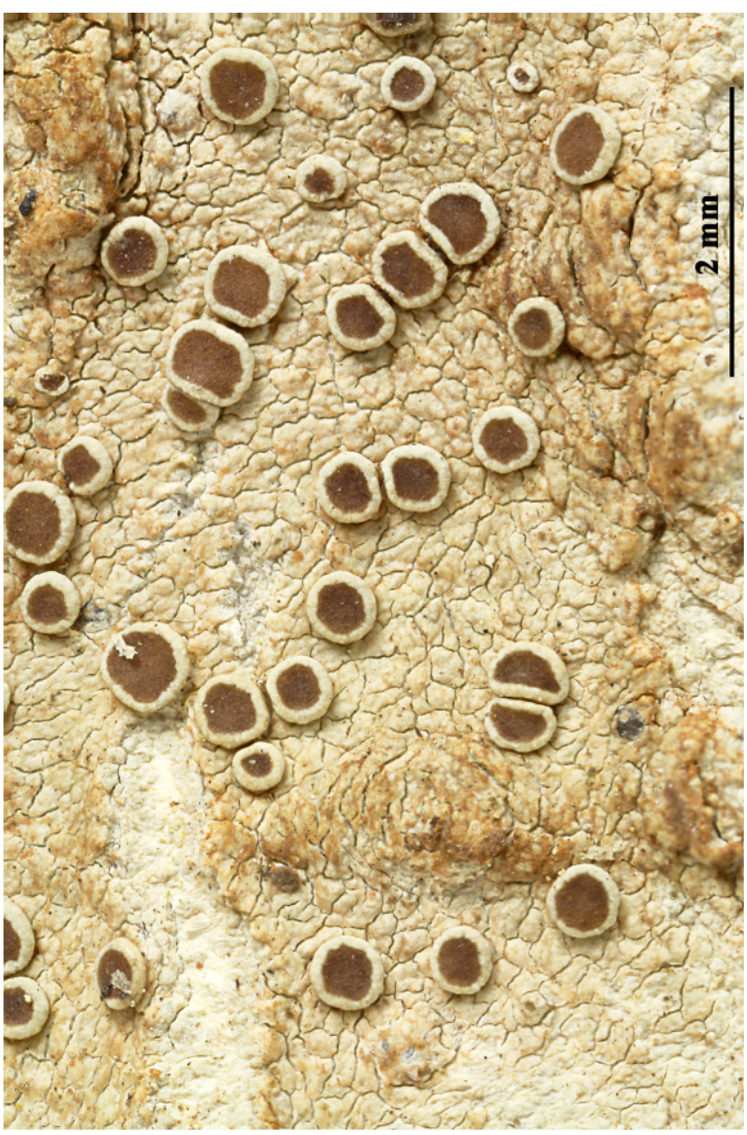
Lecanora albellula



Lecanora albellula

Lecanora argentata (Ach.) Röhl., Deutschl. Fl. (Frankfurt) 3(2): 82 (1813)
= *Lecanora allophana* f. *argentata* (Ach.) Savicz, Bull. Jard. Imp. Bot. Pierre le Grand 16: 106 (1916)
= *Lecanora subfusca* f. *argentata* (Ach.) Flot., Jber. schles. Ges. vaterl. Kultur [27]: 130 (1849)
= *Lecanora subfusca* subsp. *argentata* (Ach.) Fink, Contr. U.S. natnl. Herb. 14(1): 179 (1910)
= *Lecanora subfusca* subvar. *argentata* (Ach.) Wedd., Bull. Soc. bot. Fr. 16(3): 201 (1869)
= *Lecanora subfusca* var. *argentata* (Ach.) Boistel, Nouv. Fl. Lich. (Paris) 2: 136 (1903)
= *Lecanora subfuscata* H. Magn., Acta horti götoburg. 7: 79 (1932)
= *Parmelia subfusca* var. *argentata* Ach., Methodus, Sectio post. (Stockholmiæ): 169 (1803)
= *Urceolaria acharii* var. *argentata* Ach., Lich. Univ.: 393 (1810)

[ABL77059], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77059), 30.10.2018, det. A. Aptroot, 2019.





Lecanora argentata

Lecanora flavidomarginata B. de Lesd., Lich. Mexique: 14 (1914)

[ABL79962], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°45' W, 240 m. Leg. A. Aptroot (no 79962), 24.09.2019, det. A. Aptroot, 2019.





Lecanora flavidomarginata

Lecanora neomerrillii L.A. Santos, Aptroot, M. Cáceres and Lücking, J. Fungi 2023. 9, 415.

= *Lecanora caesiorubella Ach.* subsp. *merrillii* Imshaug and Brodo, Nova Hedwigia 12: 28. 1966.

[ABL77029], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58' S, 56°42' W, 650 m. Leg. A. Aptroot (no 77029), 30.10.2018, det. A. Aptroot, 2019. - Thallus crustose, corticolous, up to 7 cm wide, c. 0.1 mm thick, continuous, rimose to verruculose, whitish grey, dull, epruinose. Soredia absent. Prothallus absent or greyish black. Apothecia adnate, 0.5–2 mm diam.; disc pale yellow to brownish orange, carneous, whitish grey pruina, flat to convex; margin slightly paler than the thallus, prominent, becoming excluded or persisting, crenate. Amphithecium with small crystals which are dissolving in KOH (=allophana-type), parathecium with small crystals. Hymenium hyaline, 50–62.5 µm high; brown to dark brown with pigment and small crystals dissolving in KOH (=chlarotera-type), c. 12 µm high. Hypothecium hyaline. Ascospores 8 per ascus, ellipsoid, (14–) 15–18 x 8–12 µm. Pycnidia not observed. Chemistry: Thallus K+ yellow, C–, P+ orange to red, UV–. TLC, Chemotype I: atranorin and norstictic acid. Chemotype II: atranorin and protocetraric acid.





Lecanora neomerrillii

Lecanora pseudistera Nyl., Flora, Regensburg 55: 354 (1872)

= Omphalodina pseudistera (Nyl.) S.Y. Kondr., Lőkös & Farkas, in Kondratyuk, Lőkös, Jang, Hur & Farkas, Acta bot. hung. 61(1-2): 155 (2019)

= *Lecanora campestris f. pseudistera* (Nyl.) Grummann, Cat. Lich. Germ. (Stuttgart): 18 (1963)

= *Lecanora campestris subsp. pseudistera* (Nyl.) Harm., Lich. France: 982 (1913)

= *Lecanora convexella* Räsänen, Arch. Soc. Zool. Bot. fenn. Vanamo 3: 180 (1949)

= *Lecanora glebularis* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 5: 624 (1928)

= *Lecanora melanophthalma var. subpeltata* (Lynge) Lynge, Skr. Svalbard Ishavet (Oslo)(no. 81): 102 (1940)

= *Lecanora subfusca f. pseudistera* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 139 (1903)

= *Lecanora subfuscella* Räsänen, Arch. Soc. Zool. Bot. fenn. Vanamo 3: 180 (1949)

= *Lecanora subpeltata* Lynge, Skr. Svalbard Ishavet (Oslo)(no. 81): 102 (1939)

= *Omphalodina subpeltata* (Lynge) Klem., Feddes Repert. Spec. Nov. Regni veg. 72: 114 (1966)

= *Placodium glebulare* Müll. Arg., Flora, Regensburg 71: 204 (1888)

[ABL77847], Brazil, Mato Grosso do Sul, Bodoquena, along Salubre river, along river on shale. 20°46’´56" S, 56°44’33" W, 210 m. Leg. A. Aptroot (no 77847), 7.11.2018, det. A. Aptroot, 2019.





Lecanora pseudistera

Lecanora subalbellina Vain., Acta Soc. Fauna Flora fenn. 7(no. 1): 78 (1890)

[ABL78008], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78008), 9.11.2018, det. A. Aptroot, 2019. - Apothecia white pruinose.





Lecanora subalbellina

Lecanora thysanophora R.C. Harris, in Harris, Brodo & Tønsberg, Bryologist 103(4): 790 (2000)

Verseghya thysanophora (R.C. Harris) S.Y. Kondr., Lőkös, Farkas & Hur, in Kondratyuk, Lőkös, Jang, Hur & Farkas, Acta bot. hung. 61(1-2): 158 (2019)

[ABL77896], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77896), 8.11.2018, det. A. Aptroot, 2019.





Lecanora thysanophora

Lecanora tropica Zahlbr., Cat. Lich. Univers. 5: 589 (1928)
= *Lecanora byssinula* Kalb, Lichenes Neotropici, Fascicle VII (nos 251-300) (Neumarkt): no. 273 (1983)
= *Lecanora subcrenulata* (Nyl.) Nyl., Lich. Ins. Guin.: 15 (1889)
= *Lecanora subfusca* var. *subcrenulata* Nyl., Annls Sci. Nat., Bot., sér. 5 7: 310 (1867)

[ABL77087], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58' S, 56°42' W, 650 m. Leg. A. Aptroot (no 77087), 30.10.2018, det. A. Aptroot, 2019.





Lecanora tropica

Lecidella punctuliformis (Nyl.) Kalb, Lichenes Neotropici, Fascicle IX (nos 351-400) (Neumarkt): 11, no. 380 (1986)

[ABL80292], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80292), 23-26.09.2019, det. A. Aptroot, 2019. - Hymenium inspersed, spores simple, hyaline,10 x 6 µm.





Lecidella punctuliformis

Leprocollema americanum Vain., Acta Soc. Fauna Flora fenn. 7(no. 1): 233 (1890)

[ABL78241], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on concrete. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78241), 03.03.2019, det. A. Aptroot, 2019.



Leptogium milligranum Sierk, Bryologist 67: 290 (1964)

[ABL77207], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Taquaral, in Atlantic rain forest on wood. 21°06’ S, 56°38’ W, 500 m. Leg. A. Aptroot (no 77207), 31.10.2018, det. A. Aptroot, 2019.





Leptogium milligranum

Letrouitia flavocrocea (Nyl.) Hafellner & Bellem., Nova Hedwigia 35(2 & 3): 281 (1982) [1981]

= *Bombyliospora domingensis* var. *flavocrocea* (Nyl.) Zahlbr., Cat. Lich. Univers. 7: 52 (1930) [1931]

= *Bombyliospora flavocrocea* A. Massal., Atti Inst. Veneto Sci. lett., ed Arti, Sér. 3 5: 262 (1860) [1859-1860]

= *Lecanora flavocrocea* Nyl., Bull. Soc. linn. Normandie, sér. 2 3: 7 (1869)

= Lecidea flavocrocea Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 123 (1858)

= *Placodium flavocroceum* (Nyl.) Vain., Ann. Acad. Sci. fenn., Ser. A 2(no. 3): 9 (1926)

[ABL77423], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45’ W, 500 m. Leg. A. Aptroot (no 77423), 2.11.2018, det. A. Aptroot, 2019. - Spore 5-7-septate, 26 x 11 µm.



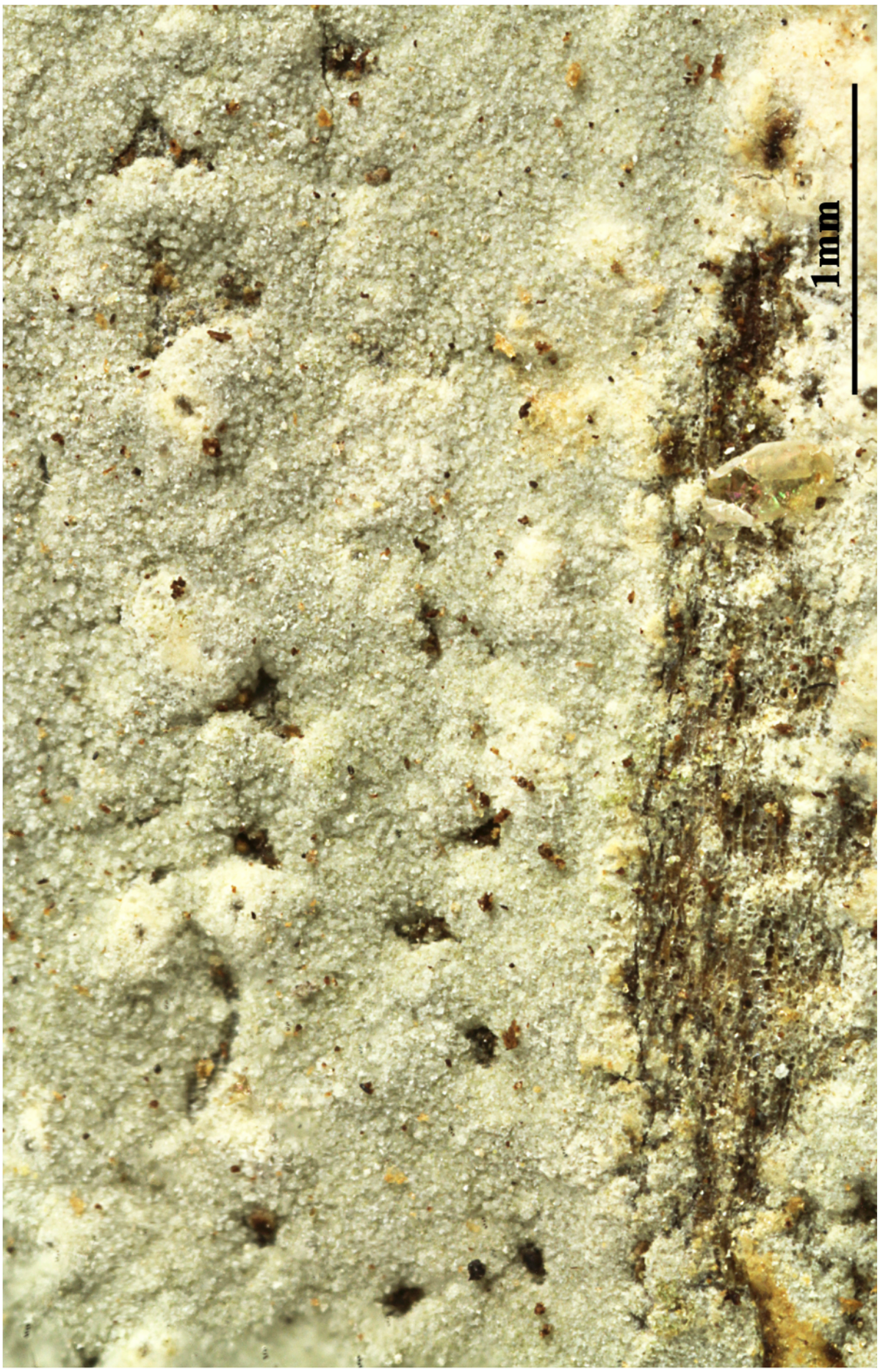


Letrouitia flavocrocea

Leucodecton glaucescens (Nyl.) Frisch, Biblthca Lichenol. 92: 162 (2006)
= *Leptotrema glaucescens* (Nyl.) Müll. Arg., Flora, Regensburg 65: 499 (1882)
= *Myriotrema glaucescens* (Nyl.) Hale, Mycotaxon 11(1): 133 (1980)
= *Thelotrema glaucescens* Nyl., in Triana & Planchon, Annls Sci. Nat., Bot., sér. 4 19: 332 (1863)

[ABL77885], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77885), 8.11.2018, det. A. Aptroot, 2019.





Leucodecton glaucescens





Leucodecton glaucescens

Lithocalla ecorticata (J.R. Laundon) Orange 2020
= *Lepraria ecorticata* (J.R. Laundon) Kukwa, Mycotaxon 97: 64 (2006)
= *Lecanora ecorticata* J.R. Laundon, (2003)

[ABL77209], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Taquaral, in Atlantic rain forest on tree bark. 21°06’ S, 56°38’ W, 500 m. Leg. A. Aptroot (no 77209), 31.10.2018, det. A. Aptroot, 2019. - TLC: usnic acid, zeorin.





Lithocalla ecorticata

Lithothelium cubanum Müll. Arg., Bot. Jb. 6: 386 (1885)

[ABL77315], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on limestone. 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77315), 1.11.2018, det. A. Aptroot, 2019. - Spores hyaline, 3-septate, 15 x 7.5 µm.





Lithothelium cubanum

Lithothelium grossum Aptroot, Lichenologist 38(6): 543 (2006)

[ABL77286], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on tree bark. 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77286), 1.11.2018, det. A. Aptroot, 2019. - Spores hyaline, 8/ascus, 3-septate, 32 x 12 µm; thallus UV-.



Lithothelium paraguayense Müll. Arg. [as 'paraguaense'], Revue mycol., Toulouse 10(no. 40): 180 (1888)

[ABL77859], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77859), 8.11.2018, det. A. Aptroot, 2019. - Spores hyaline, 3-septate, 20 x 10 µm.





Lithothelium paraguayense

Malmidea fellhaneroides (Lücking) Kalb & Lücking, in Kalb, Rivas Plata, Lücking & Lumbsch, Biblthca Lichenol. 106: 165 (2011)

= *Malcolmiella fellhaneroides* Lücking, Fl. Neotrop., Monogr. 103: 626 (2008)

[ABL77143], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Tqzaral, in Atlantic rain forest on tree bark. 21°06' S, 56°38' W, 500 m. Leg. A. Aptroot (no 77143), 31.10.2018, det. A. Aptroot, 2019. - Thallus farinose to granulose, hypothecium pale yellow, spores 9-11 x 4-6 µm.





Malmidea fellhaneroides

Malmidea polycampia (Tuck.) Kalb & Lücking, in Kalb, Rivas Plata, Lücking & Lumbsch, Biblthca Lichenol. 106: 165 (2011)

= *Biatora polycampia* (Tuck.) Tuck., Gen. lich. (Amherst): 160 (1872)

= *Lecidea polycampia* Tuck., Proc. Amer. Acad. Arts & Sci. 6: 274 (1866) [1864]

= *Malcolmiella polycampia* (Tuck.) M. Cáceres & Lücking, in Cáceres, Libri Botanici 22: 107 (2007)

[ABL77875], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77875), 8.11.2018, det. A. Aptroot, 2019.





Malmidea polycampia

Malmidea polycampia (Tuck.) Kalb & Lücking, in Kalb, Rivas Plata, Lücking & Lumbsch, Biblthca Lichenol. 106: 165 (2011)

= *Biatora polycampia* (Tuck.) Tuck., Gen. lich. (Amherst): 160 (1872)

= *Lecidea polycampia* Tuck., Proc. Amer. Acad. Arts & Sci. 6: 274 (1866) [1864]

= *Malcolmiella polycampia* (Tuck.) M. Cáceres & Lücking, *in Cáceres, Libri Botanici 22: 107 (2007*)

= *Malmidea flavopustulosa* (M. Cáceres & Lücking) M. Cáceres & Kalb, in Kalb, Rivas Plata, Lücking & Lumbsch, Biblthca Lichenol. 106: 165 (2011)

= *Malcolmiella flavopustulosa* M. Cáceres & Lücking, in Cáceres, Libri Botanici 22: 103 (2007)

[ABL77118], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77118), 30.10.2018, det. A. Aptroot, 2019. - Thallus densely pustulose-verrucose soon breaking up in coarse soralia, K+ yellow to orange, hypothecium blackish brown, spore simple, 8/ascus, 10-14 x 5-8 µm. chemistry: unknown anthraquinone.





Malmidea polycampia

[ABL79930], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on wood. 22°54’ S, 53°45’ W, 240 m. Leg. A. Aptroot (no 79930), 24.09.2019, det. A. Aptroot, 2019.





Maronora cyanosora

Monerolechia badia (Fr.) Kalb, Biblthca Lichenol. 88: 312 (2004)
= *Buellia badia* (Fr.) A. Massal. 1853
= *Lecidea badia* Fr. 1825

[ABL78288], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on roof tile. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78288), 03.03.2019, det. A. Aptroot, 2019. - Spores 8/ascus, brown, 1-septate, 10-15 x 6-8 µm.





Monerolechia badia

Mycoporum acervatum R.C. Harris, More Florida Lichens, Incl. 10 Cent Tour Pyrenol. (New York): 66 (1995)

[ABL80434], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80434), 23.10.2019, det. A. Aptroot, 2019. - Spores muri-fom, 30 x 12 µm.





Mycoporum acervatum

Myelochroa immiscens (Nyl.) Elix & Hale, Mycotaxon 29: 240 (1987)
= *Parmelia immiscens* Nyl. 1885

[ABL77479], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45’ W, 500 m. Leg. A. Aptroot (no 77479), 2.11.2018, det. A. Aptroot, 2019. - Thallus without soredia, medulla yellow.



Myelochroa immiscens



Myelochroa immiscens

Myelochroa lindmanii (Lynge) Elix & Hale, Mycotaxon 29: 241 (1987)
= *Parmelia lindmanii* Lynge 1914
= *Parmelinella lindmanii* (Lynge) A.S. Rodrigues, Canêz & A.P. Lorenz 2021

[ABL79985], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 79985), 23-26.09.2019, det. A. Aptroot, 2019. - Medulla yellow.





Myelochroa lindmanii





Myelochroa lindmanii



Myelochroa lindmanii

Myriotrema myrioporum (Tuck.) Hale, Mycotaxon 11(1): 134 (1980)
= *Ocellularia myriopora* (Tuck.) Müll. Arg., Revue mycol., Toulouse 10(no. 39): 114 (1888)
= *Thelotrema myrioporum* Tuck., Proc. Amer. Acad. Arts & Sci. 5: 412 (1862) [1860]

[ABL77178], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Tqzaral, in Atlantic rain forest on tree bark. 21°06' S, 56°38' W, 500 m. Leg. A. Aptroot (no 77178), 31.10.2018, det. A. Aptroot, 2019. - Thallus P-, UV-. hymenium not inspersed, spores 8/ascus, hyaline, 1-septate, 12 x 5 µm.

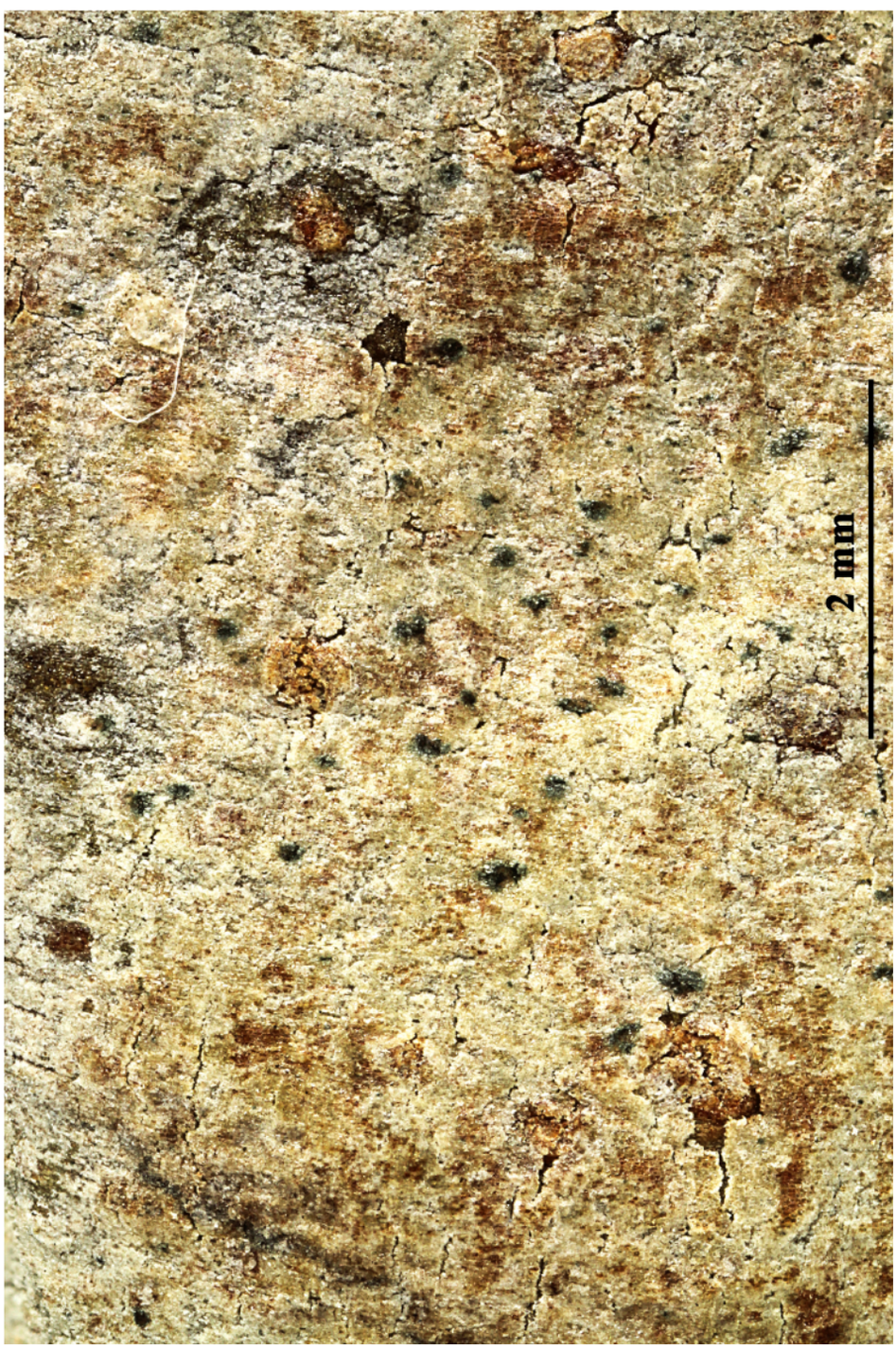


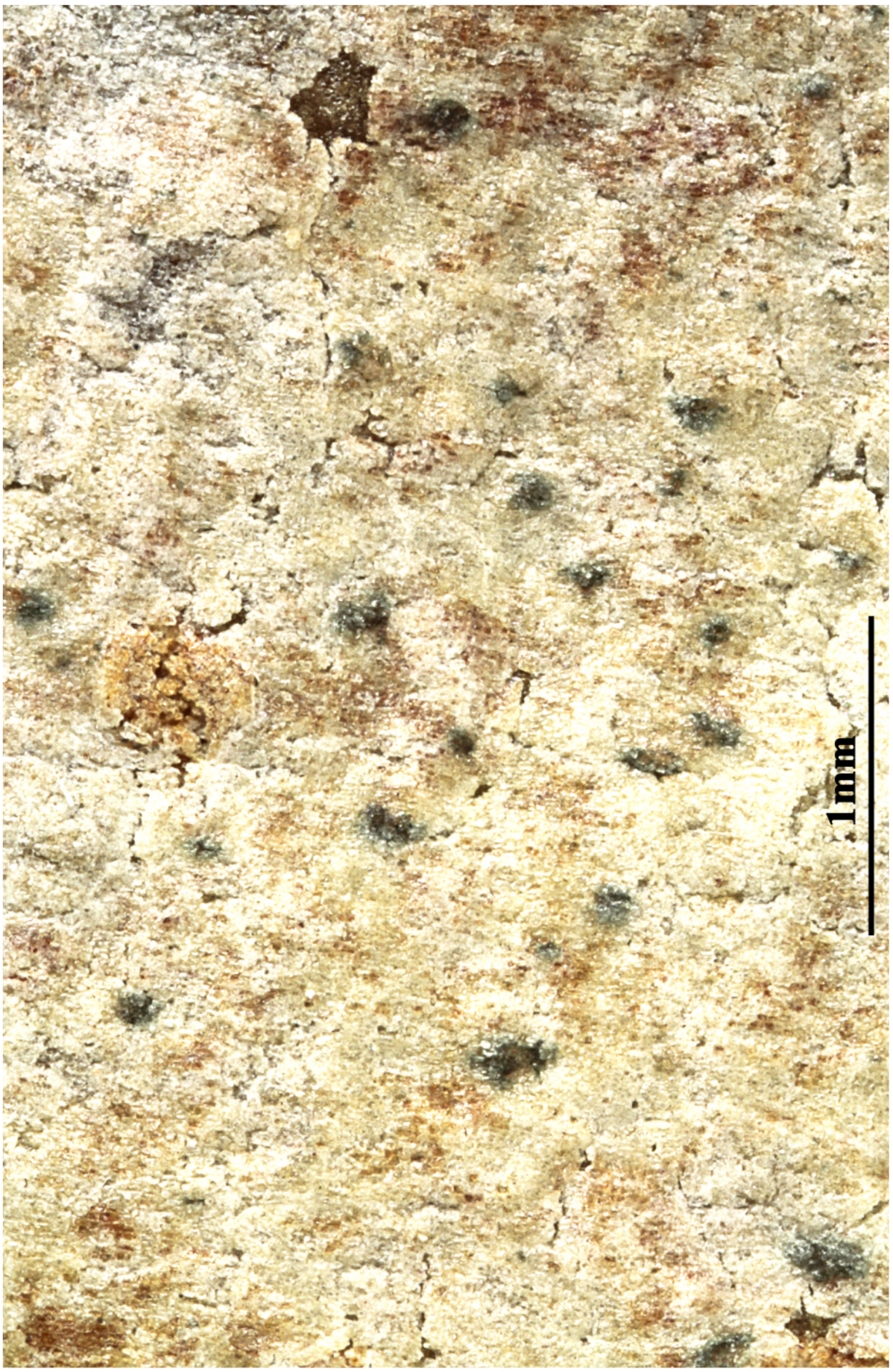


Myriotrema myrioporum

Naetrocymbe quassiicola (Fée) R.C. Harris [as 'quassiaecola'], More Florida Lichens, Incl. 10 Cent Tour Pyrenol. (New York): 63 (1995)
= *Arthopyrenia quassiicola* (Fée) Müll. Arg. [as 'quassiaecola'], Mém. Soc. Phys. Hist. nat. Genève 30(no. 3): 26 (1888)
= *Spermatodium epidermide* var. *quassiaecola* (Fée) Trevis., Conspect. Verruc.: 11 (1860)
= *Verrucaria epidermidis* var. *quassiaecola* Fée, Essai Crypt. Exot. (Paris): 84 (1825) [1824]

[ABL78130], Brazil, Mato Grosso do Sul, Pantanal 43 km SE of Corumbá, in pantanal forest on tree bark. 19°32’ S, 57°24’ W, 85 m, area39. Leg. A. Aptroot (no 78130), 02.03.2019, det. A. Aptroot, 2019. - Spores 1-septate, 15 x 3.5 µm.





Naetrocymbe quassiicola

Neoprotoparmelia capitata (Lendemer) Garima Singh, Lumbsch & I. Schmitt, in Singh, Aptroot, Rico, Otte, Divakar, Crespo, Cáceres, Lumbsch & Schmitt, MycoKeys 44: 36 (2018)

= *Maronina capitata* (Lendemer) Divakar, A. Crespo & Lumbsch, in Divakar, Crespo, Kraichak, Leavitt, Singh, Schmitt & Lumbsch, Fungal Diversity 84: 114 (2017)

= *Protoparmelia capitata* Lendemer, in Lendemer & Lumbsch, Lichenologist 40(4): 332 (2008)

[ABL80091], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80091), 25.09.2019, det. A. Aptroot, 2019.





Neoprotoparmelia capitata

Neoprotoparmelia multifera (Nyl.) Garima Singh, Lumbsch & I. Schmitt, in Singh, Aptroot, Rico, Otte, Divakar, Crespo, Cáceres, Lumbsch & Schmitt, MycoKeys 44: 41 (2018)

= *Lecanora multifera* Nyl., Acta Soc. Sci. fenn. 7(2): 445 (1863)

= *Maronea multifera* (Nyl.) Vain., Acta Soc. Fauna Flora fenn. 7(no. 1): 100 (1890)

= *Maronina multifera* (Nyl.) Hafellner & R.W. Rogers, in Jahns, Biblthca Lichenol. 38: 106 (1990)

= *Protoparmelia multifera* (Nyl.) Kantvilas, Papong & Lumbsch, in Papong, Kantvilas & Lumbsch, Lichenologist 43(6): 566 (2011)

[ABL80377], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 80377), 14.10.2019, det. A. Aptroot, 2019.





Neoprotoparmelia multifera

Ocellularia garoana Patw. & Nagarkar, Biovigyanam 6(1): 7 (1980)

[ABL80092], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80092), 25.09.2019, det. A. Aptroot, 2019. - Thallus P+ yellow, spores hyaline, 7-septate, 30 × 10 µm.





Ocellularia garoana

Ocellularia pluripora Hale, Bull. Br. Mus. nat. Hist., Bot. 8(3): 319 (1981)

[ABL77857], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77857), 8.11.2018, det. A. Aptroot, 2019. - Thallus P+ yellow; hymenium not inspersed; spores hyaline, 6-8-septate, 25-28 x 7 µm.

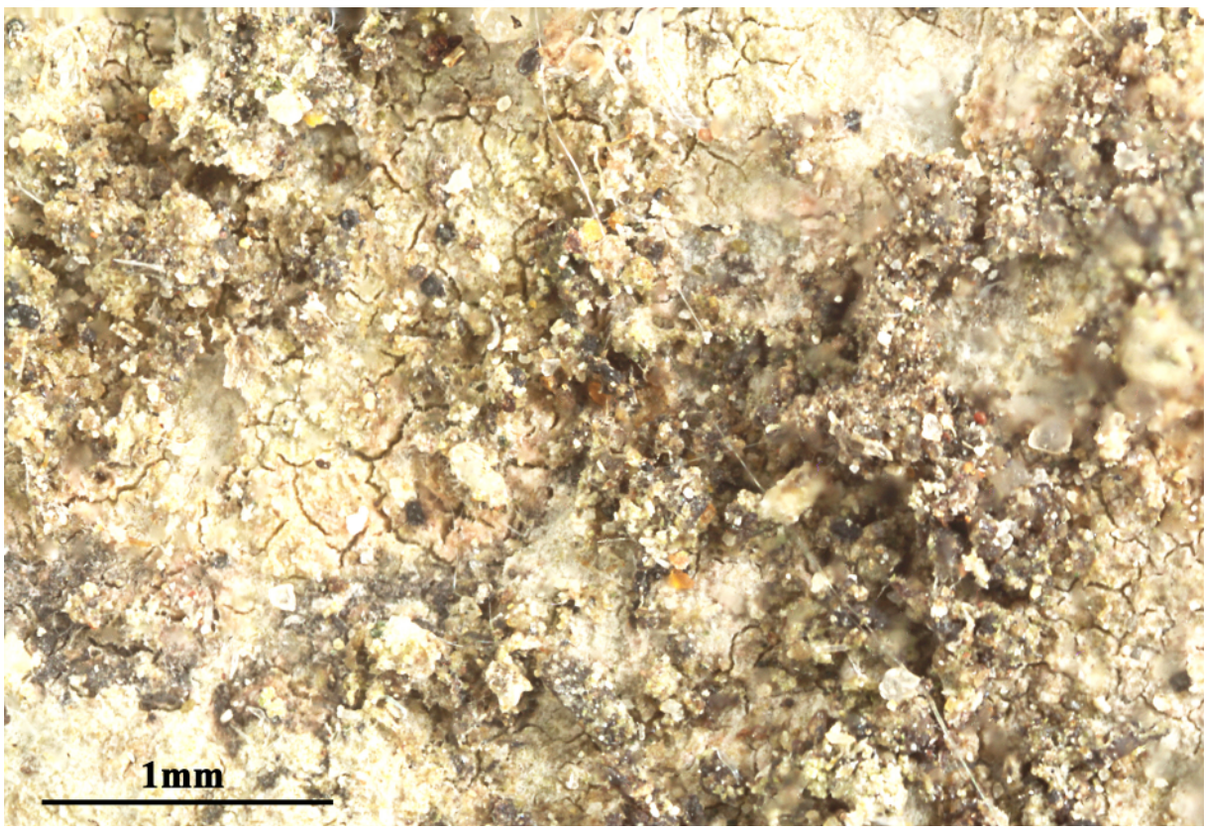


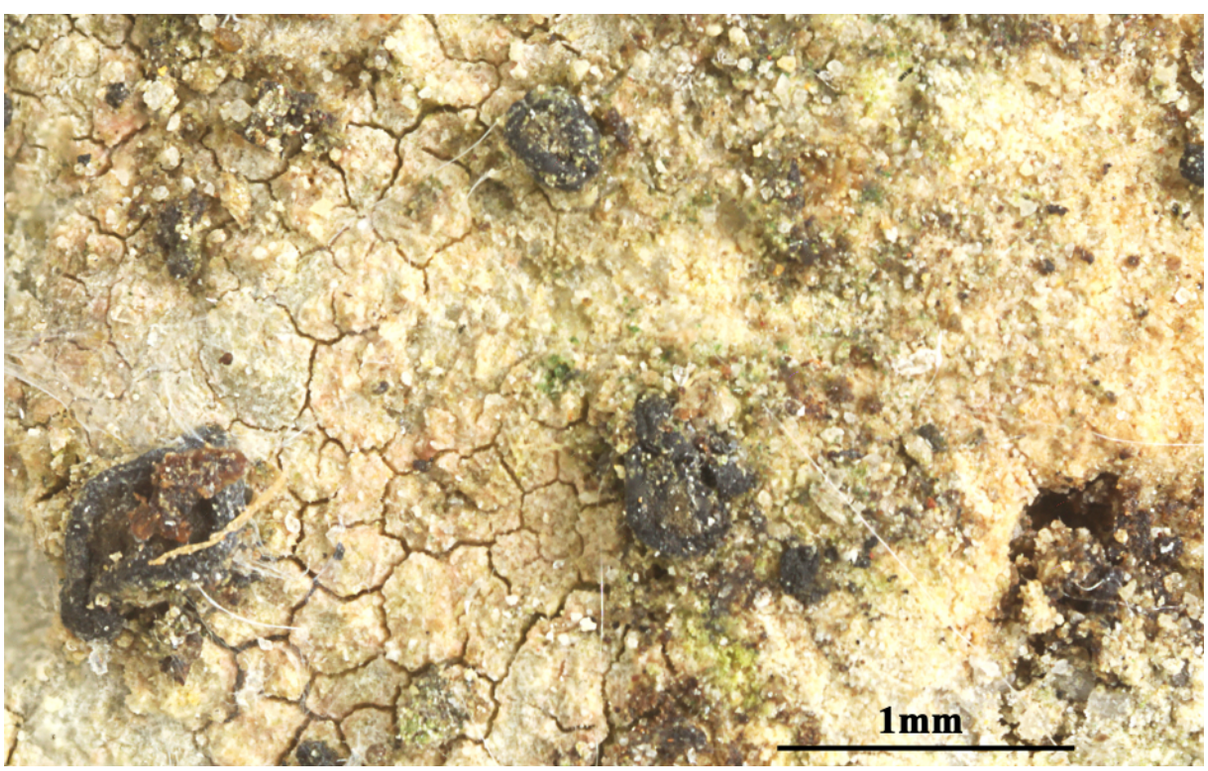


Ocellularia pluripora

Opegrapha aperiens Vain., Acta Soc. Fauna Flora fenn. 7(no. 2): 135 (1890)

[ABL78166], Brazil, Mato Grosso do Sul, Pantanal 41 km SE of Corumbá, along Paraguayani river, along river on limestone. 19°30’ S, 57°26’ W, 90 m. Leg. A. Aptroot (no 78166), 02.03.2019, det. A. Aptroot, 2019. - Sopres 3-septate, 22 x 6 µm.









Opegrapha aperiens

Opegrapha astraea Tuck., Lichens of California (Berkeley): 33 (1866)

[ABL77169], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Tqzaral, in Atlantic rain forest on tree bark. 21°06’ S, 56°38’ W, 500 m. Leg. A. Aptroot (no 77169), 31.10.2018, det. A. Aptroot, 2019.





Opegrapha astraea

Opegrapha corumbensis Redinger, Ark. Bot. 29A(no. 19): 19 (1940)

[ABL77843], Brazil, Mato Grosso do Sul, Bodoquena, along Salubre river, along river on shale. 20°46’´56" S, 56°44’33" W, 210 m. Leg. A. Aptroot (no 77843), 7.11.2018, det. A. Aptroot, 2019. - Spores 4-6-septate, 26 x 6 µm.





Opegrapha corumbensis

Opegrapha ramisorediata Aptroot & M. Cáceres, Lichenologist 49(6): 613 (2017)

[ABL78283], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78283), 03.03.2019, det. A. Aptroot, 2019.- *Opegrapha* having a thallus with initially rounded soralia that soon cover the complete thallus with a layer of fine yellowish green soredia, and containing. Thallus UV− , C+ red, P−, K− . TLC: gyrophoric acid.



Parmotrema argentinum (Kremp.) Hale, Phytologia 28(4): 334 (1974)

[ABL80441], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80441), 23.10.2019, det. A. Aptroot, 2019.



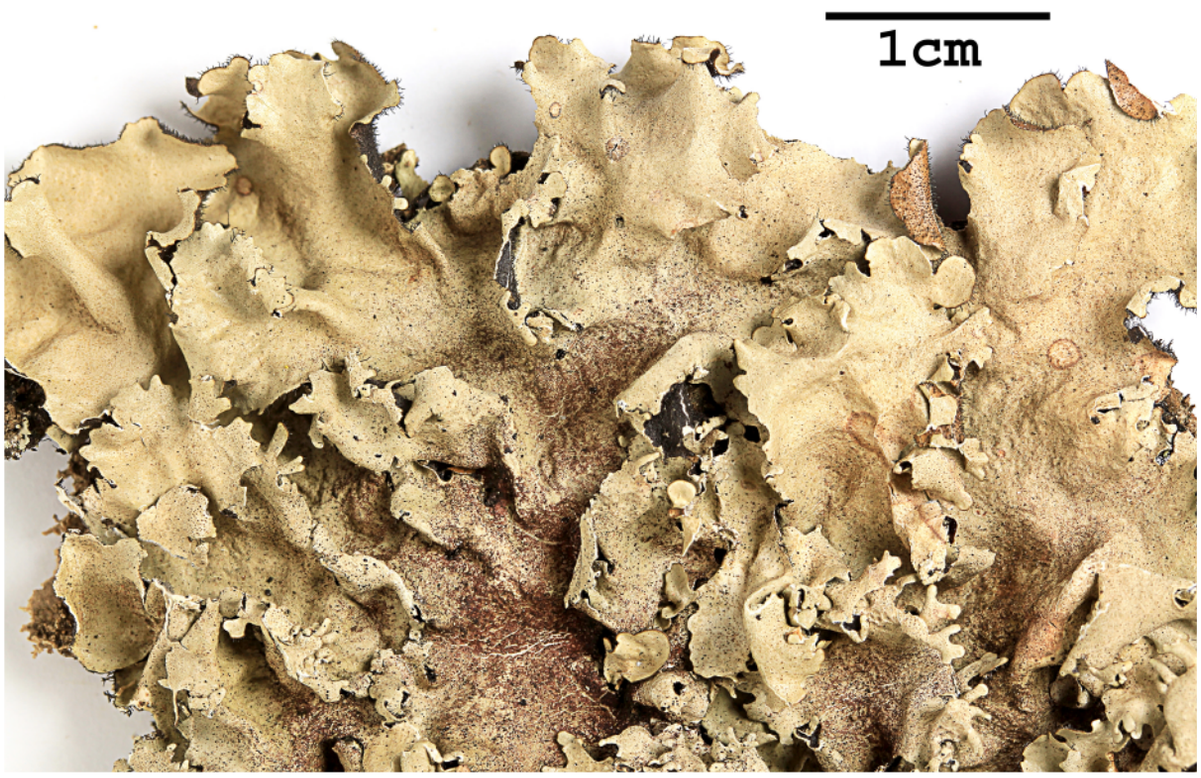


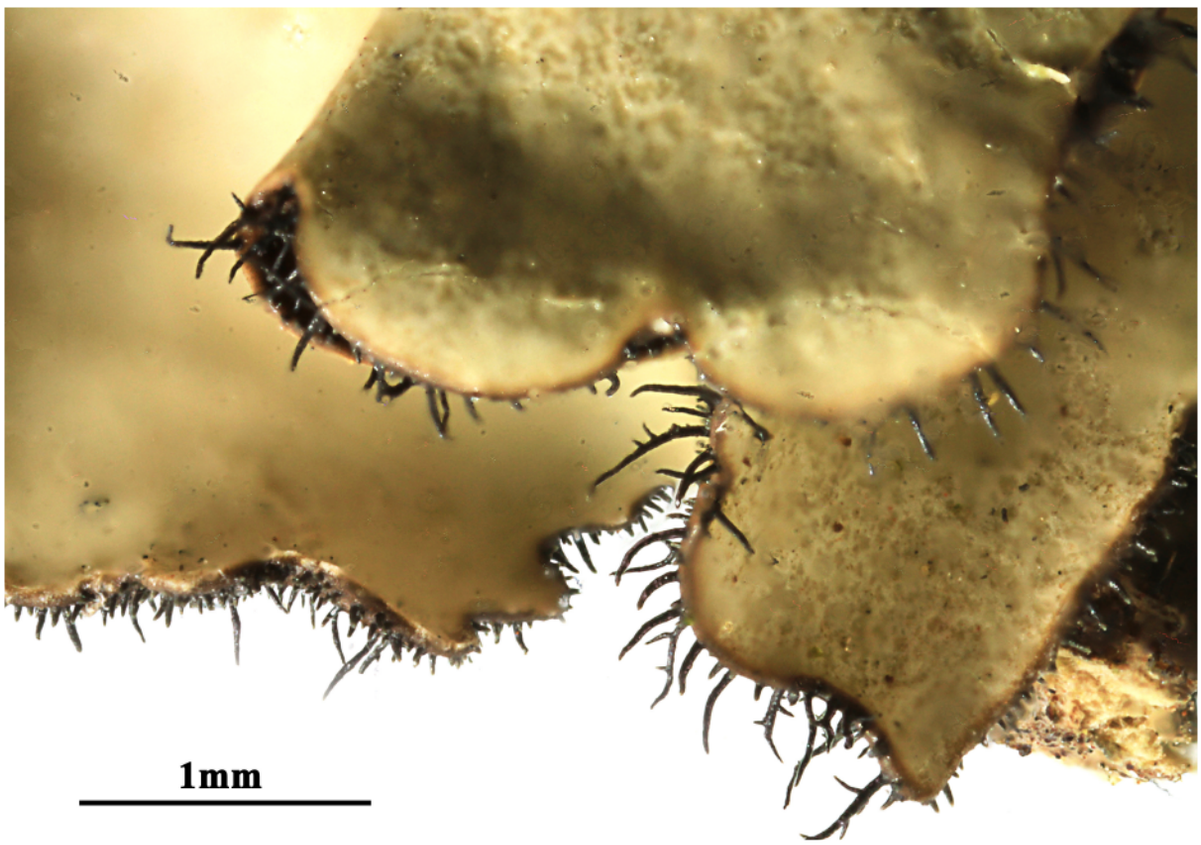


Parmotrema argentinum

Parmotrema cetratum (Ach.) Hale, Phytologia 28(4): 335 (1974)
= *Parmelia cetrata* Ach., Syn. meth. lich. (Lund): 198 (1814)
= *Parmelia perforata* subsp. *cetrata* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 54 (1882)
= *Parmelia perforata* var. *cetrata* (Ach.) Fr., Lich. eur. reform. (Lund): 58 (1831)
= *Parmelia perlata* subsp. *cetrata* (Ach.) Boistel, Nouv. Fl. Lich. (Paris) 2: 60 (1903)
= *Rimelia cetrata* (Ach.) Hale & A. Fletcher, Bryologist 93(1): 26 (1990)

[ABL78868], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78868), 25.03.2019, det. A. Aptroot, 2019. - Thallus greenish gray, becoming rugose and reticulate cracked towards de center; lower surface black with brown margin. Cilia black, simple to squarrose. Pustules, soredia and isidia absent. Medulla white. Spores 8.5-15.0 × 5.0-10.0 µm. Color tests: cortex K+ yellow, UV-; medulla K+ yellow → blood red, C+ slowly yellowish or orange, KC+ orange, P+ yellow → orange, UV- . TLC: atranorin, salazinic and consalazinic acids.







Parmotrema cetratum





Parmotrema cetratum

Parmotrema consors (Nyl.) Krog & Swinscow, Lichenologist 15(2): 129 (1983)
= *Canomaculina consors* (Nyl.) Elix & Hale, Mycotaxon 29: 239 (1987)
= *Parmelia consors* Nyl., Flora, Regensburg 68: 613 (1885)
= *Parmelina consors* (Nyl.) Hale, Phytologia 28(5): 482 (1974)

[ABL78022], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78022), 9.11.2018, det. A. Aptroot, 2019. - Surface smooth to rugose and scrobiculate, usually pruinose, becoming strongly rugose in the center; margin smooth to incise-crenate. Lacinules, pustules soredia and isidia absent. Maculae distinct, punctiform to irregular, laminal. Cilia black, simple to furcated or irregularly branched, spiked and robust or slender. Medulla white. Lower surface black, marginal zone brown. Spores ellipsoid, 11.0-16.5 × 7.0-10.0 µm. Color tests: cortex K+ yellow, UV-; medulla K-, C-, KC-, P-, UV- , TLC: atranorin and an unidentified fatty acid.

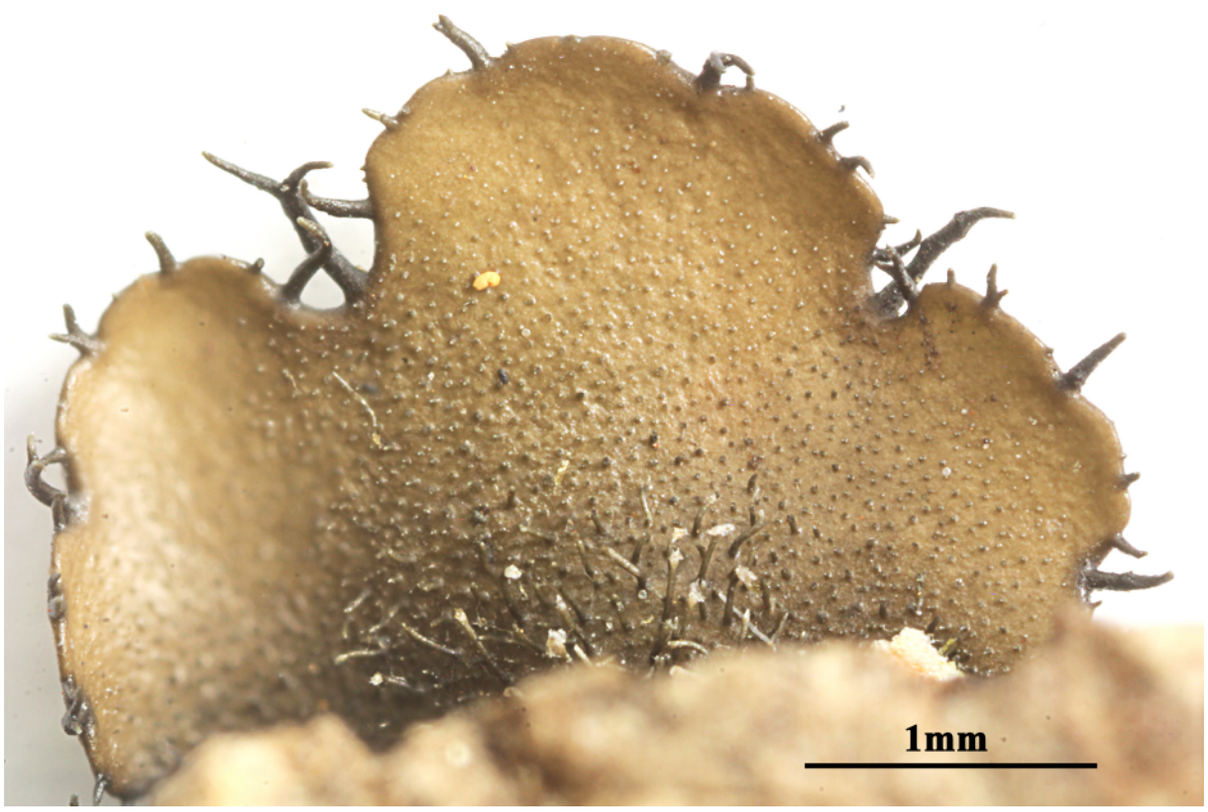






Parmotrema consors





Parmotrema consors

Parmotrema crinitum (Ach.) M. Choisy [as 'crinita'], Bull. mens. Soc. linn. Soc. Bot. Lyon 21: 175 (1952)
= *Imbricaria crinita* (Ach.) Arnold, Flora, Regensburg 67: 159 (1884)
= *Imbricaria proboscidea* (Taylor) Jatta, Nuovo G. bot. ital. 22(1): 50 (1890)
= *Parmelia crinita* Ach., Syn. meth. lich. (Lund): 196 (1814)
= *Parmelia perforata subsp. crinita* (Ach.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 55 (1882)
= *Parmelia proboscidea* Taylor, in Mackay, Fl. Hibern. 2: 143 (1836)

[ABL78043], Brazil, Mato Grosso do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78043), 9.11.2018, det. A. Aptroot, 2019. - Isidia ciliate. cylindrical, simple and not sorediate, medulla K+ yellow, P+ orange red; TLC: stictic acid present.







Parmotrema crinitum

Parmotrema cristatum (Nyl.) Hale, Phytologia 28(4): 335 (1974)
= *Parmelia cristata* Nyl., Flora, Regensburg 52(19): 291 (1869)
= *Parmelia lyngeana* Zahlbr., Cat. Lich. Univers. 6: 243 (1929) [1930]
= *Parmelia merrillii* Lynge, Ark. Bot. 13(no. 13): 79 (1914)
= *Parmotrema lyngeanum* (Zahlbr.) Hale, Mycotaxon 1(2): 111 (1974)

[ABL77918], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77918), 8.11.2018, det. A. Aptroot, 2019.





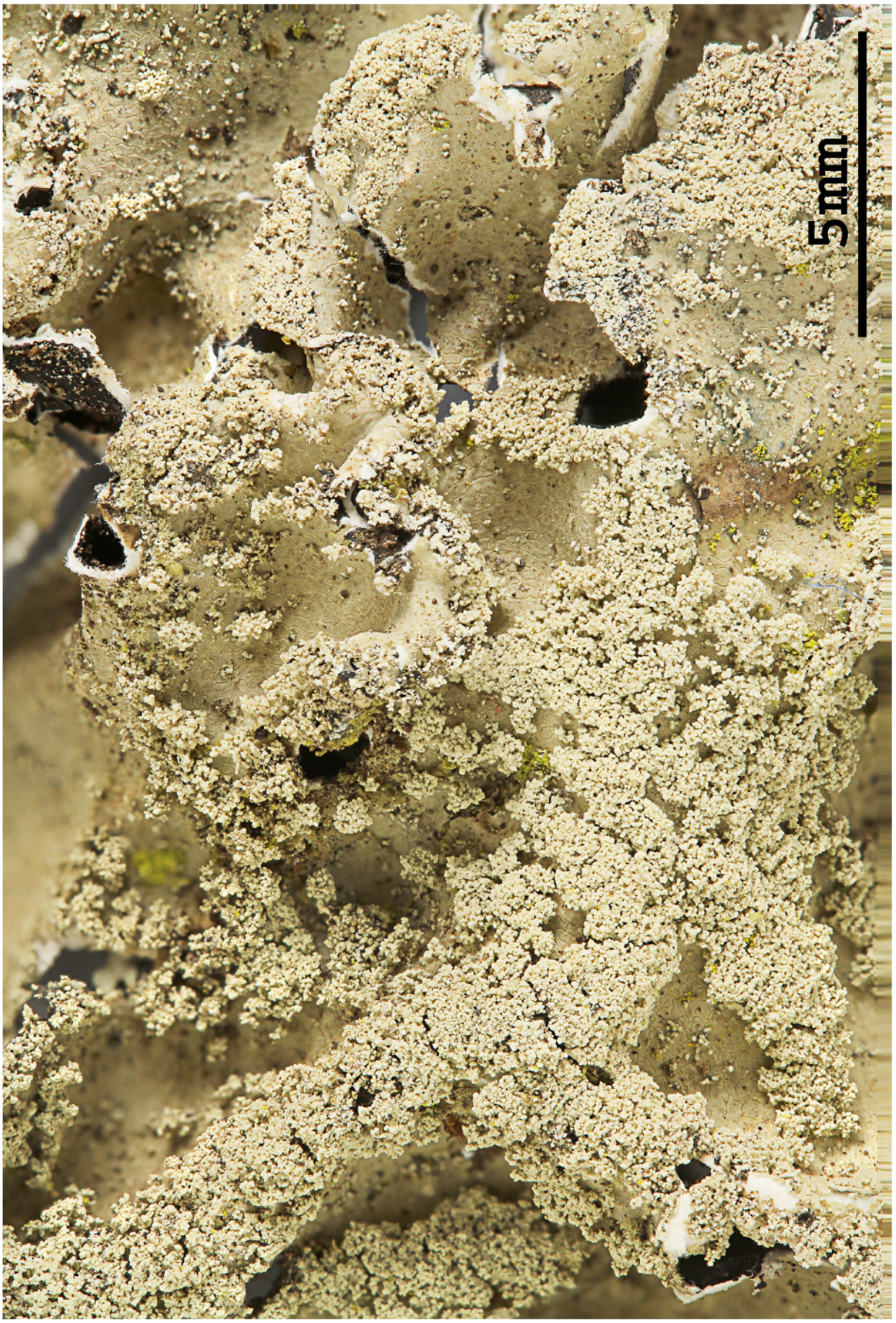
lower surface

Parmotrema cristatum

Parmotrema eitenii Marcelli & Benatti, in Marcelli, Jungbluth, Benatti, Spielmann, Canêz, Cunha & Martins, Biblthca Lichenol. 96: 212 (2007)

[ABL78387], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78387), 25.03.2019, det. A. Aptroot, 2019. - Thallus with marginal soredia composed of granular soredia with isidioid aspect, but without true isidia. Upper medulla C+red, cortex KC+ red, P-, K+ yellow, UV-, medulla K-, C+; atranorin, lecanoric acid.





Parmotrema eitenii

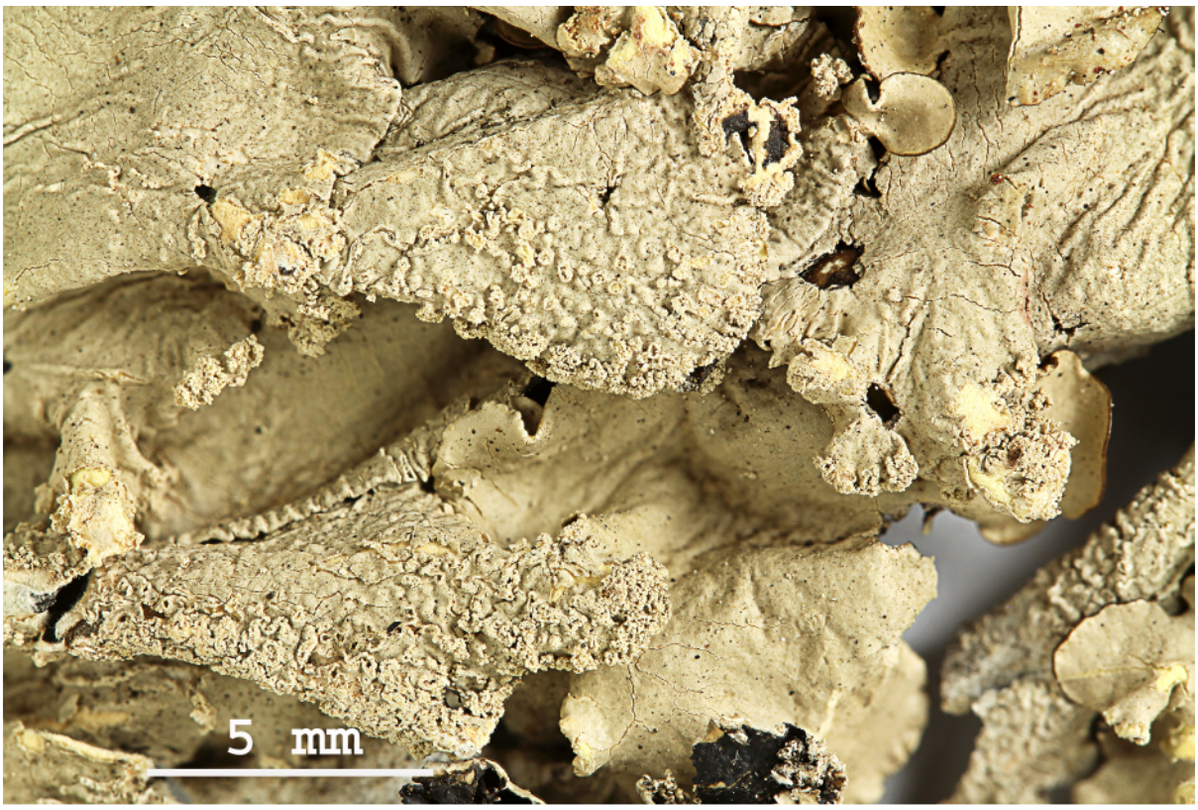


Parmotrema eitenii

Parmotrema flavomedullosum Hale, Mycotaxon 1(2): 110 (1974)

[ABL77092], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77092), 30.10.2018, det. A. Aptroot, 2019. - Thallus P-, C+ yellow, medulla yelloish.







Parmotrema flavomedullosum

Parmotrema melanochaetum (Kurok.) O. Blanco, A. Crespo, Divakar, Elix & Lumbsch, Mycologia 97(1): 157 (2005)

= *Canomaculina melanochaeta* (Kurok.) Elix, Mycotaxon 47: 127 (1993)

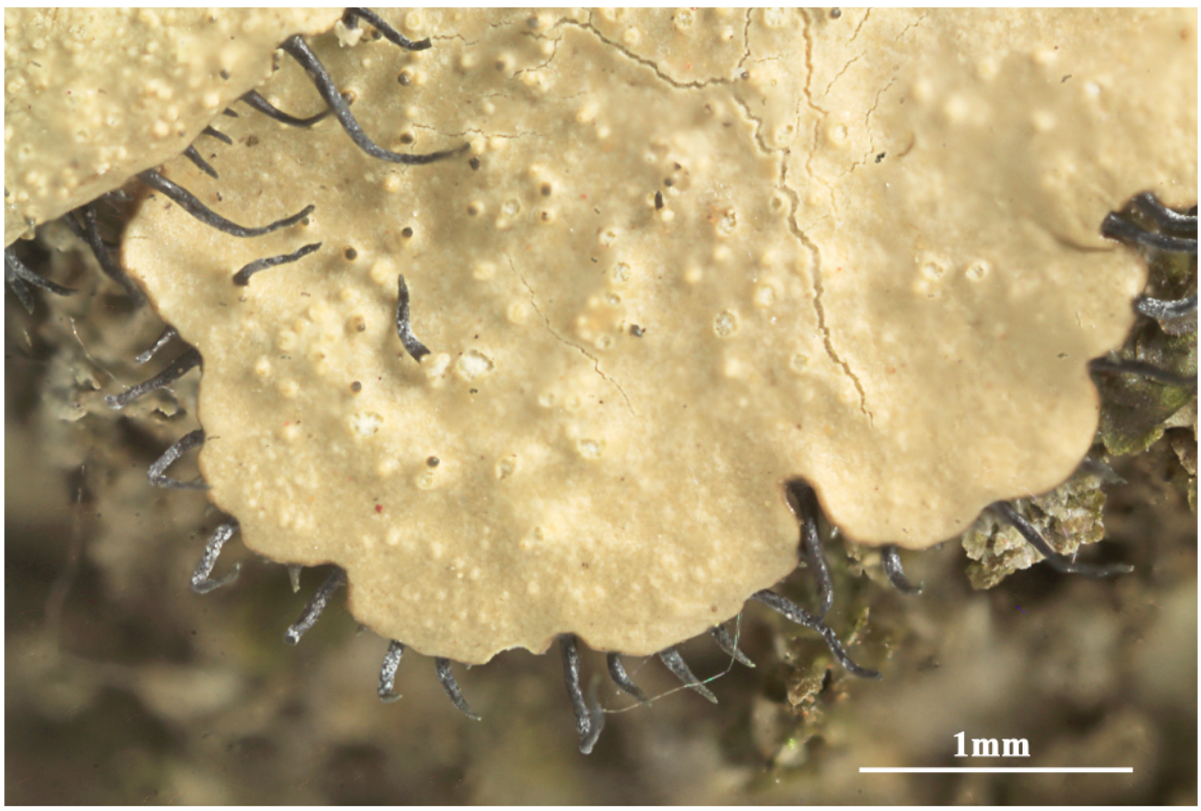
= *Parmelia melanochaeta* Kurok., in Hale & Kurokawa, Contr. U.S. natnl. Herb. 36(4): 133 (1964)

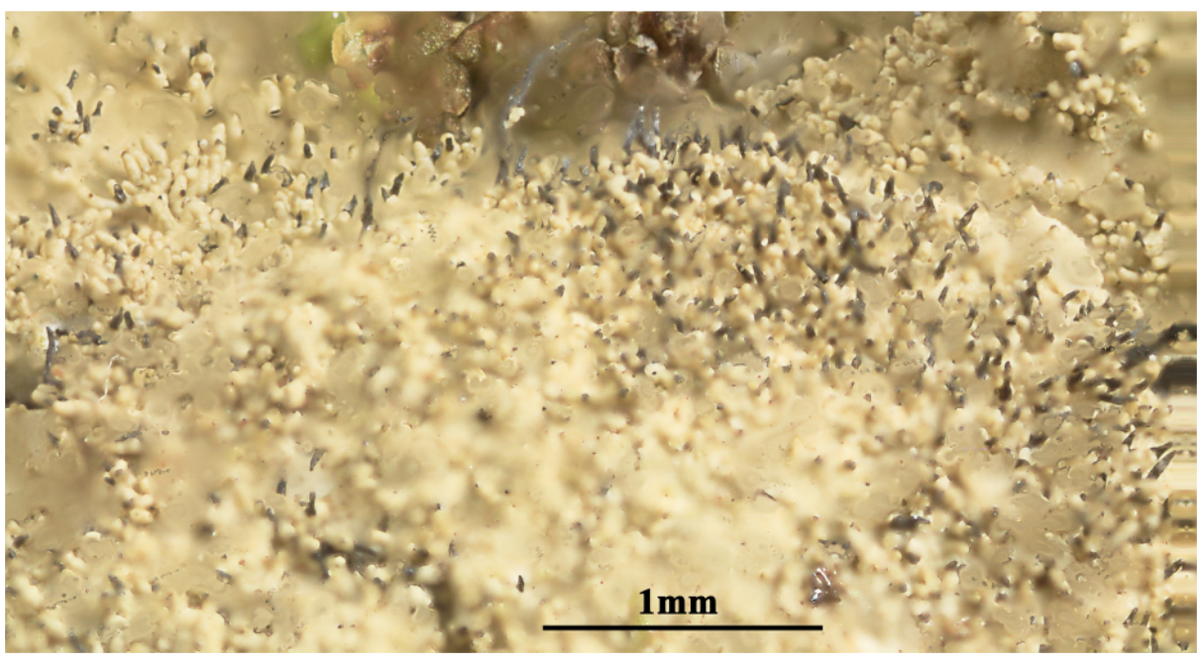
= *Parmelina melanochaeta* (Kurok.) Hale, Phytologia 28(5): 483 (1974)

= *Parmelinopsis melanochaeta* (Kurok.) Elix & Hale, Mycotaxon 29: 242 (1987)

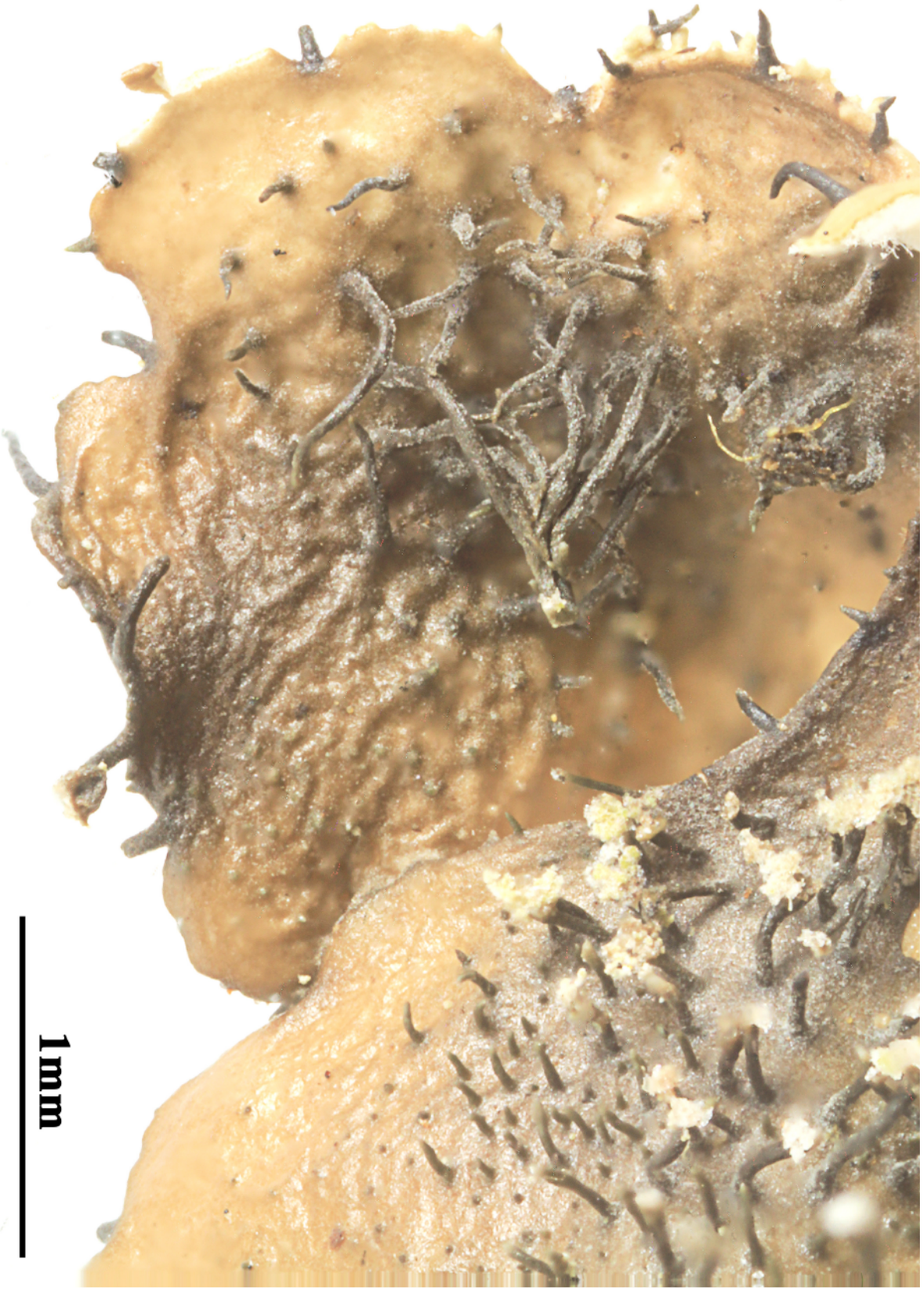
[ABL77429], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45' W, 500 m. Leg. A. Aptroot (no 77429), 2.11.2018, det. A. Aptroot, 2019. - Isidsa thin, cylindrical, often branched and with black spinules or cilia; spores 8-10 x 13-15 µm; thallus K+ yellow; medulla K-, C+ rose, KC+ red, P-; TLC: atranorine, gyrophoric acid.







Parmotrema melanochaetum

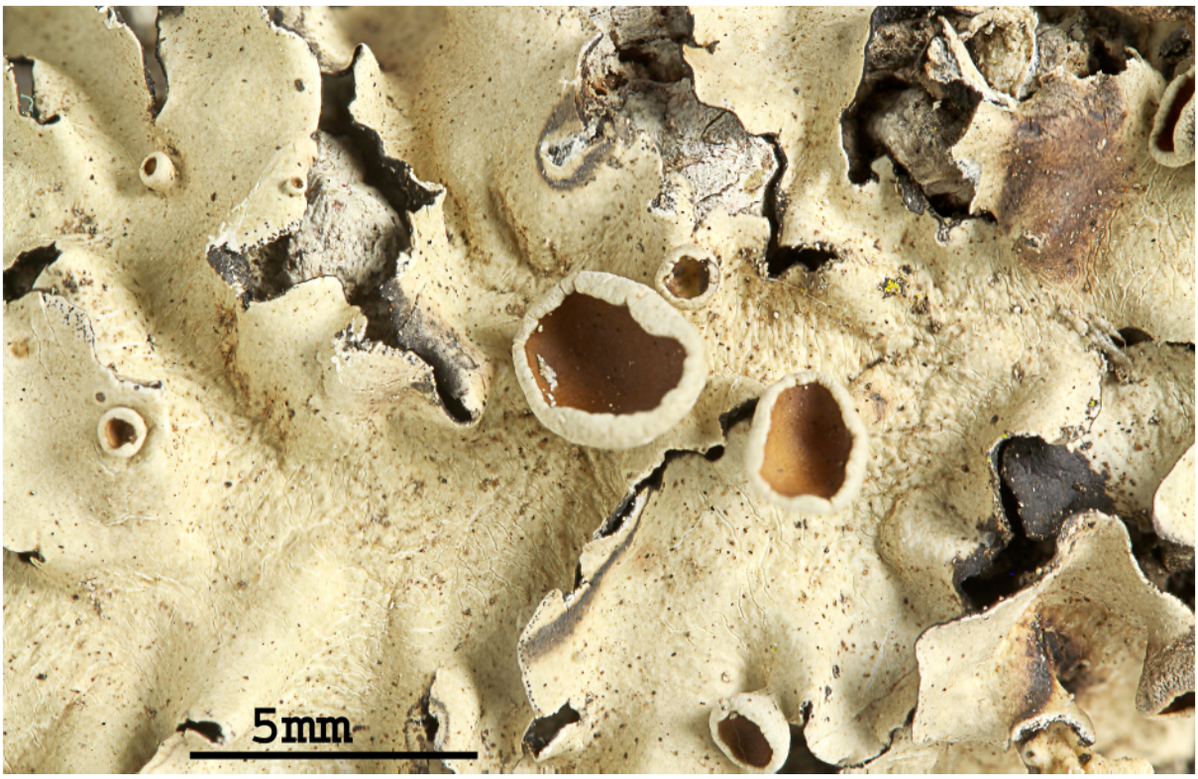


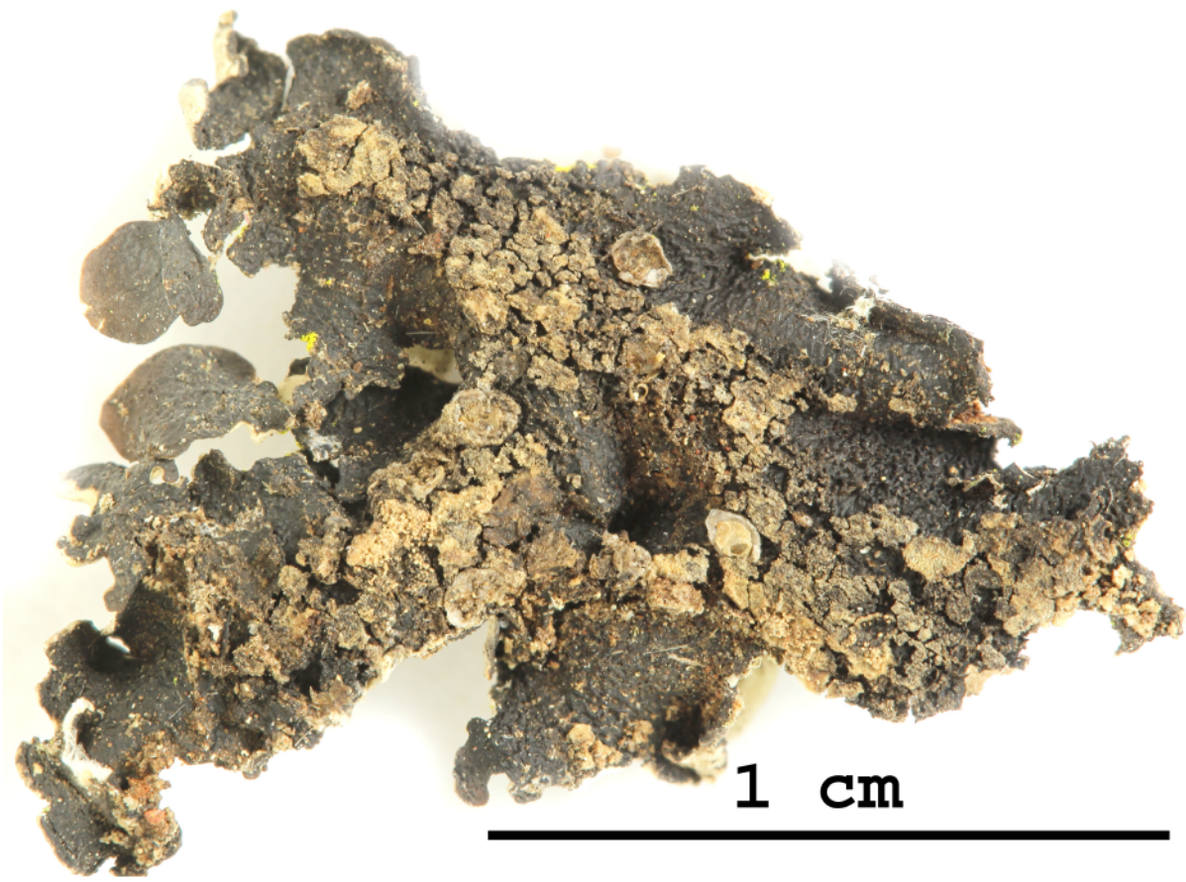
Parmotrema melanochaetum

Parmotrema mesotropum (Müll. Arg.) Hale, Phytologia 28(4): 337 (1974)
= *Parmelia mesotropa* Müll. Arg. 1888

[ABL77037], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77037), 30.10.2018, det. A. Aptroot, 2019.







Parmotrema mesotropum

Parmotrema rampoddense (Nyl.) Hale, Phytologia 28(4): 338 (1974)
= *Parmelia rampoddensis* Nyl., Acta Soc. Sci. fenn. 26(no. 10): 7 (1900)

[ABL78385], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78385), 25.03.2019, det. A. Aptroot, 2019 - Lower surface black, rarely brown or white variegated; maculae absent. Cilia black or cupreous and then K+ purplish, simple, furcated or irregularly branched, 0.50−6.0 × 0.02−0.10 mm, frequent to abundant. Pustules and isidia absent. Soralia whitish, marginal to sub-marginal, linear interrupted or wider (up to 2.5 mm) and approaching the lamina. Soredia farinose to grossly granular. Medulla white, except by some orange parts K+ red in older parts, close to the lower cortex. Lower surface black, marginal zone brown or sometimes black or with parts white or beige variegated. Rhizines black, simple, furcated or irregularly branched. Disc imperforate. Spores 10–12 × 6–7 µm. Color tests: cortex K+ yellow, UV−; medulla K−, C+ rose → quickly orange or C– (rarely C+ yellowish in some areas), KC+ rose → quickly orange, P−, UV+ greenish blue. Soredia sometimes UV+ slightly yellowish . The orange pigment (skyrin) is lacking in some specimens. TLC: atranorin, alectoronic acid, α-collatolic acid and skyrin.





Parmotrema rampoddense



Parmotrema rampoddense



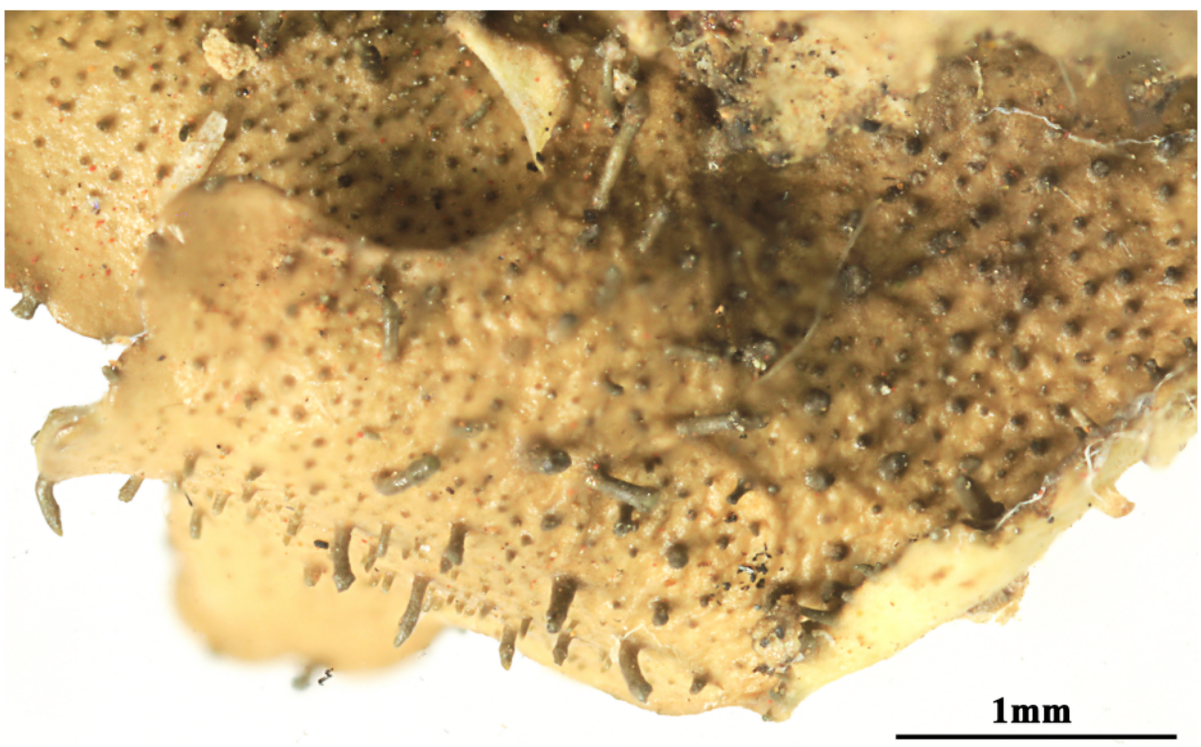
Parmotrema rampoddense

Parmotrema subcaperatum (Kremp.) Hale, Phytologia 28(4): 339 (1974)
= *Canomaculina subcaperata* (Kremp.) Elix, Mycotaxon 65: 477 (1997)
= *Parmelia subcaperata* Kremp., Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn [35]: 10 (1873) [1873-74]
= *Rimeliella subcaperata* (Kremp.) Kurok., Annals of the Tsukuba Botanical Garden 10: 7 (1991)

[ABL79976], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 79976), 23-26.09.2019, det. A. Aptroot, 2019. - Upper surface clearly maculate, underside rhizinate up to the margin or more rarely nude, often brown throughout or black only in the center. Thallus without soredia. Medulla K+ yellow → red (salazinic acid).







Parmotrema subcaperatum

Peltula obscurans (Nyl.) Gyeln., Feddes Repert. Spec. Nov. Regni veg. 38: 308 (1935)
= *Acarospora subglebosa* (Müll. Arg.) Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 5 sér. 1(2): 162 (1909)
= *Endocarpiscum obscurans* Nyl., Bull. Soc. linn. Normandie, sér. 2 6(2): 309 (1872)
= *Heppia acarosporoides* Müll. Arg., Hedwigia 31: 194 (1892)
= *Heppia guepinii* var. *obscurans* (Nyl.) Boistel, Nouv. Fl. Lich. (Paris) 2: 87 (1903)
= *Heppia obscurans* (Nyl.) Nyl., in Hue, Rev. Bot. 5: 18 (1887) [1886-87]
= *Heppia subglebosa* (Müll. Arg.) I.M. Lamb, An. Parques Nac., Buenos Aires 7: 48 (1959) [1958]
= *Peltula subglebosa* (Müll. Arg.) Filson, Muelleria 6(6): 511 (1988)
= *Placodium subglebosum* Müll. Arg., Flora, Regensburg 72: 510 (1889)

[ABL77819], Brazil, Mato Grosso do Sul, Bodoquena, Dente de Cão summit,in Atlantic rain forest on exposed limestone. 20°47’´05" S, 56°45’03" W, 450 m. Leg. A. Aptroot (no 77819), 7.11.2018, det. A. Aptroot, 2019.





Peltula obscurans

Pertusaria carneola (Eschw.) Müll. Arg., Flora, Regensburg 67(18): 352, 686 (1884)
= *Pertusaria communis var. carneola* Eschw., in Martius 1833

[ABL78044], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78044), 9.11.2018, det. A. Aptroot, 2019. - Soralia absent, spores 2/ascus, thallus UV-, K-.

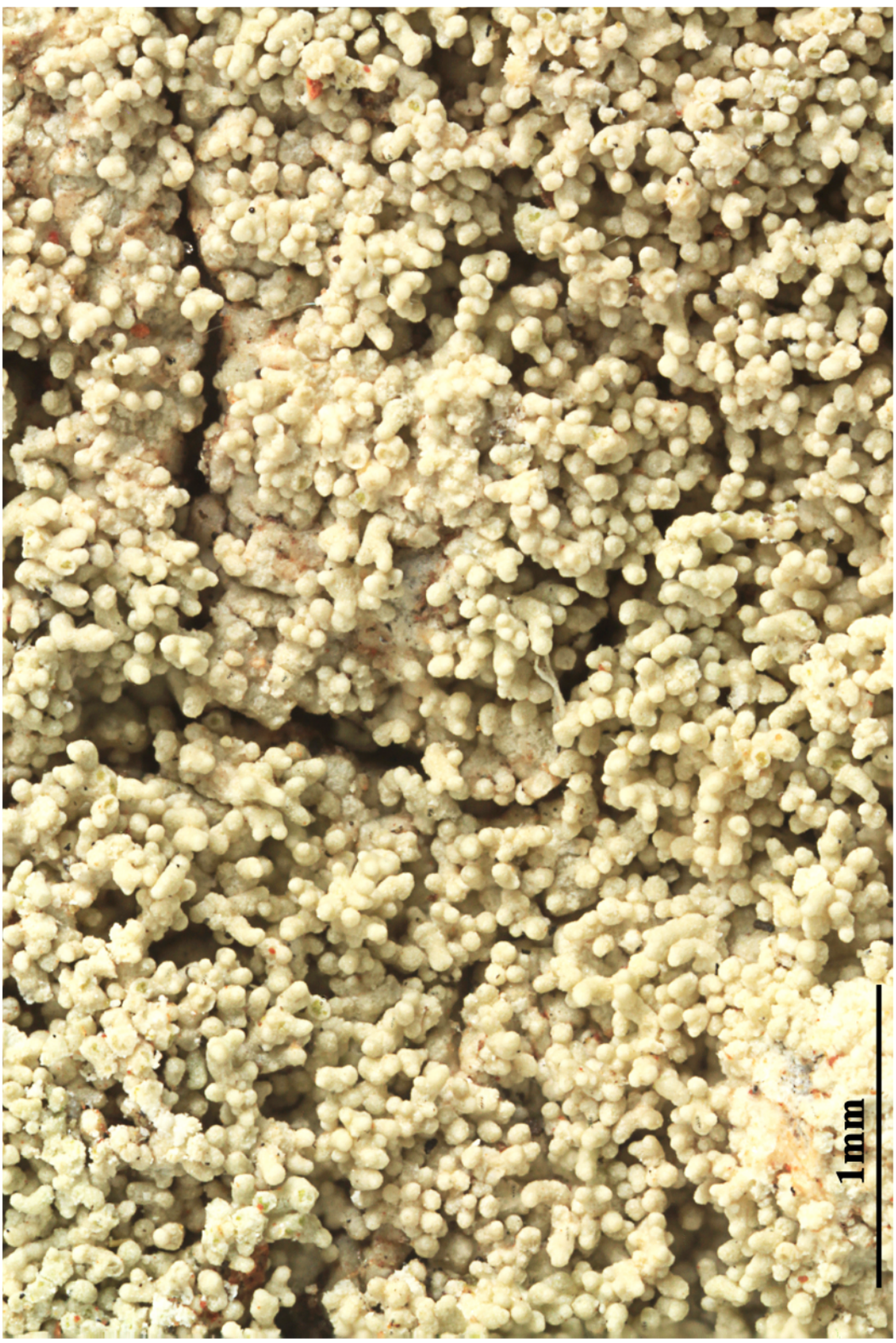




Pertusaria carneola

Pertusaria flavoisidiata A.W. Archer & Elix, Mycotaxon 49: 144 (1993)

[ABL78351], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78351), 25.03.2019, det. A. Aptroot, 2019. - Thallus dull yellowish, isidiate, lacking soredia, K-, KC+ orange, C+ weak orange, P-, thiophaninic acid (major), stictic acid (major), constitictic (major), cryptostictic acid (trace), menegazziaic acid (trace)



[ABL78860], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78860), 25.03.2019, det. A. Aptroot, 2019. - Epithecium K+ violet; spores (2)4(6) /ascus, 70-110 x 35-55 µm; cortex K ± yellow, C+ yellow, KC+ yellow or orange, P-, UV+ orange or red; medulla K+ yellow to red, C-, KC- P+ yellow to orange; TLC: norstictic and thiophaninic acid





Pertusaria wulfenioides

Phaeographis caesiodisca Staiger, Biblthca Lichenol. 85: 319 (2002)

[ABL77030], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77030), 30.10.2018, det. A. Aptroot, 2019. - Hymenium inspersed, spores brown. muriform, 10-16/2-4 locular, 40-80 x 15-20 µm.





Phaeographis caesiodisca

Phaeographis inconspicua (Fée) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 29(no. 8): 25 (1887)
= *Graphis inconspicua* Fée 1825

[ABL80206], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80206), 25.09.2019, det. A. Aptroot, 2019. - Thallus K-. hymenium not inspersed, spores 8-septate,10 x 5 µm.





Phaeographis inconspicua

Phaeographis intricans (Nyl.) Staiger, Biblthca Lichenol. 85: 329 (2002)
= *Sarcographa intricans* (Nyl.) Müll. Arg., Flora, Regensburg 70: 77 (1887)
= *Graphis intricans* Nyl., Acta Soc. Sci. fenn. 7(2): 473 (1863)

[ABL77080], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58' S, 56°42' W, 650 m. Leg. A. Aptroot (no 77080), 30.10.2018, det. A. Aptroot, 2019. - Thallus K+ yellow then red (norstictic and connorstictic acid), hymenium not inspersed, spores brownish, 8/ascus, transversally 4-7-septate, 14-26 x 5-7 µm, IKI+ red.





Phaeographis intricans

Phaeographis medusiformis (Kremp.) Müll. Arg., Flora, Regensburg 65: 382 (1882)
= *Graphis medusiformis* Kremp. 1876

[ABL80113], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80113), 26.09.2019, det. A. Aptroot, 2019. - Thallus K-, hymenium not inspersed, spores 5-septate, 25 x 8 µm.





Phaeographis medusiformis

Phaeographis neotricosa Redinger, Ark. Bot. 27A(no. 3): 93 (1935)

[ABL79997], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 79997), 25.09.2019, det. A. Aptroot, 2019. - Thallus K-: hymenium not inspersed; spores brown, 3-septate, 21 x 7 µm.





Phaeographis neotricosa

Phaeographis neotricosa Redinger, Ark. Bot. 27A(no. 3): 93 (1935)

[ABL79072], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 79072), 3.07.2019, det. A. Aptroot, 2019 - Thallus K+redbrown to red, without isidia or soredia; disc grey pruinose; hymenium not inspersed; spores 8/ascus, brown, 4-septate, 17-25 x 6-8 µm.





Phaeographis neotricosa

Phlyctis brasiliensis Nyl., Flora, Regensburg 52: 121 (1869)

[ABL77856], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77856), 8.11.2018, det. A. Aptroot, 2019.





Phlyctis brasiliensis

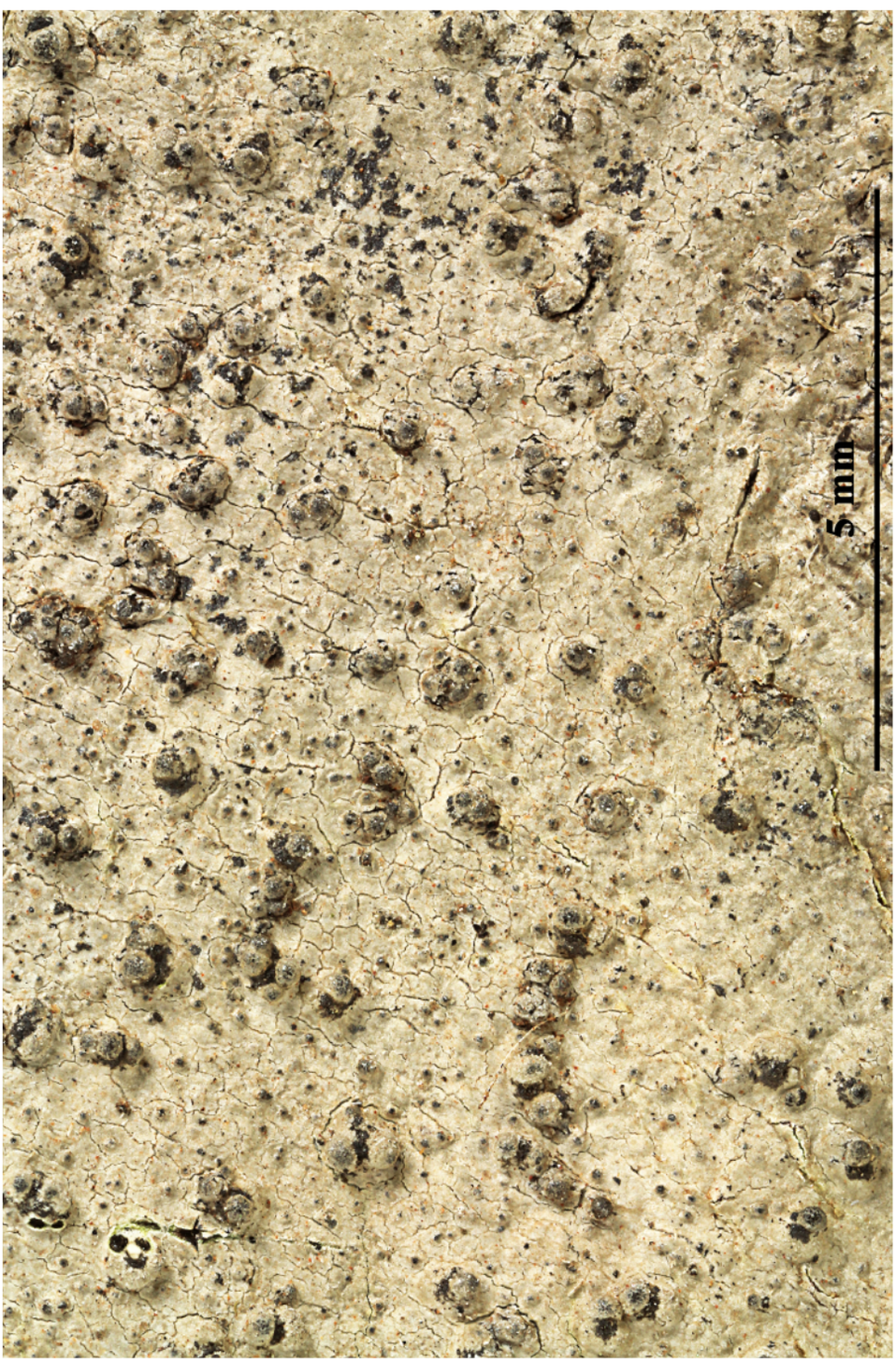
Phyllobathelium chlorogastricum (Müll. Arg.) Aptroot & Lücking, Lichenologist 48(6): 976 (2016)

= *Campylothelium chlorogastricum* (Müll. Arg.) Aptroot, in Aptroot, Lücking, Sipman, Umaña & Chaves, Biblthca Lichenol. 97: 53 (2008)

= *Cryptothelium chlorogastricum* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 1: 521 (1922)

= *Heufleria chlorogastrica* Müll. Arg., Flora, Regensburg 66(16): 243 (1883)

[ABL80104], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80104), 26.09.2019, det. A. Aptroot, 2019. - Thallus UV-, spores hyaline, muriform, 8/ascus, 50 x 22 µm.





Phyllobathelium chlorogastricum

Phyllopsora buettneri (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 396 (1926) [1927]
= *Psora buettneri* Müll. Arg. 1893

[ABL77123], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77123), 30.10.2018, det. A. Aptroot, 2019.





Phyllopsora buettneri

Phyllopsora cinchonarum (Fée) Timdal, Lichenologist 40(4): 346 (2008)
= *Mycobilimbia cinchonarum* (Fée) S.Y. Kondr., in Kondratyuk, Lőkös, Farkas, Jang, Liu, Halda, Persson, Hansson, Kärnefelt, Thell & Hur, Acta bot. hung. 61(3-4): 303 (2019)
= *Psoroma cinchonarum* (Fée) Müll. Arg., Flora, Regensburg 68: 516 (1885)
= *Triclinum cinchonarum* Fée, Essai Crypt. Exot. (Paris): 148 (1825) [1824]

[ABL80282], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80282), 23-26.09.2019, det. A. Aptroot, 2019.



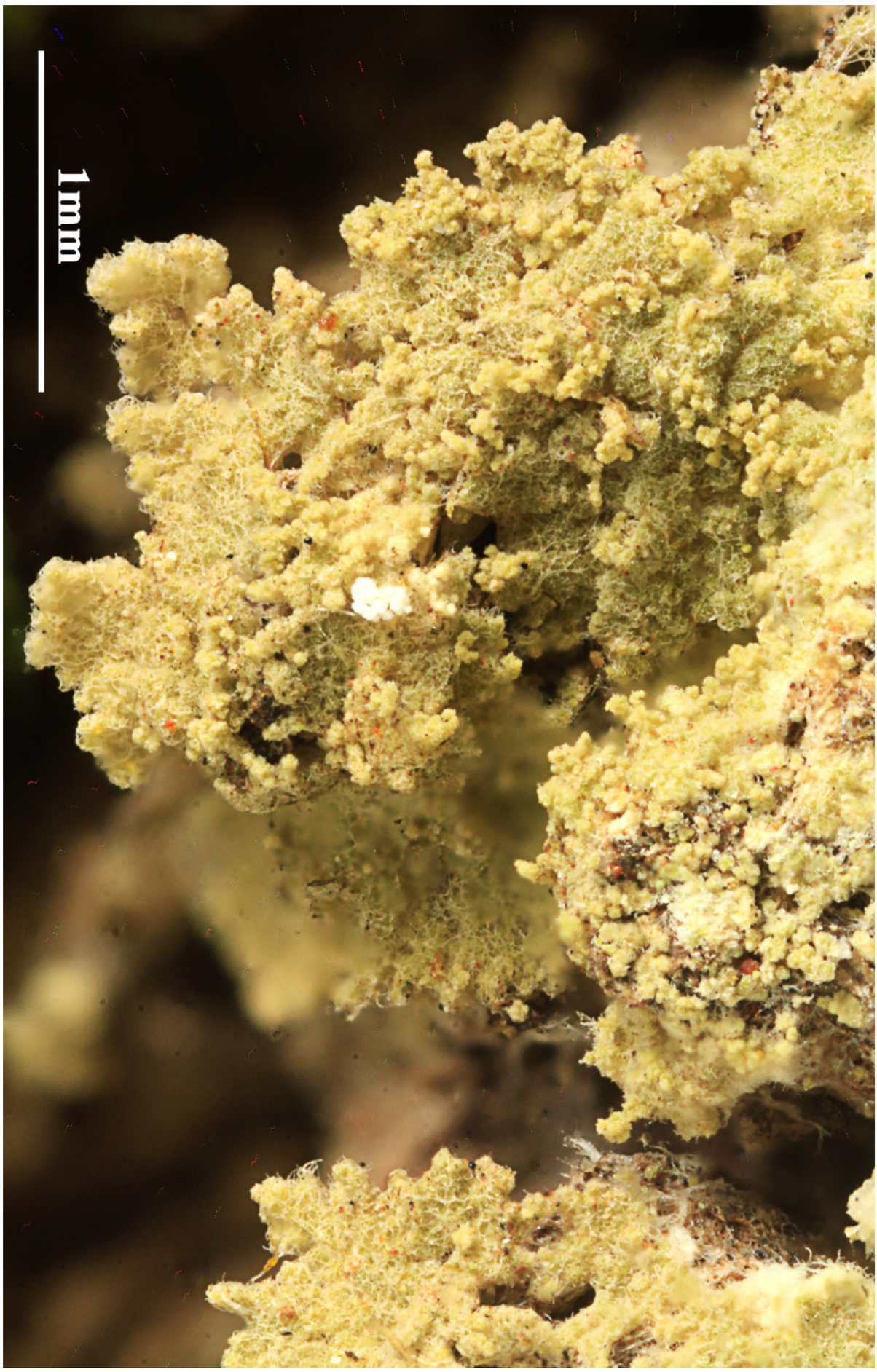


Phyllopsora cinchonarum

Phyllopsora cuyabensis (Malme) Zahlbr., Cat. Lich. Univers. 10: 377 (1939)
= *Lecidea cuyabensis* Malme 1936
= *Biatora cuyabensis* (Malme) S.Y. Kondr., in Kondratyuk, Lőkös, Farkas, Jang, Liu, Halda, Persson, Hansson, Kärnefelt, Thell & Hur 2019

[ABL79037], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30' S, 54°37' W, 550 m. Leg. A. Aptroot (no 79037), 3.07.2019, det. A. Aptroot, 2019





Phyllopsora cuyabensis

Physcia aipolia (Ehrh. ex Humb.) Fürnr., Naturhist. Topogr. Regensburg (Regensburg) 2: 249 (1839)
= *Anaptychia stellaris* var. *aipolia* (Ehrh. ex Humb.) A. Massal., Memor. Lich.: 37 (1853)
= *Dimelaena stellaris* f. *cercidia* (Ach.) Trevis., Atti Soc. ital. Sci. nat. 11: 618 (1868)
= *Dimelaena stellaris* var. *aipolia* (Ehrh. ex Humb.) Trevis., Atti Soc. ital. Sci. nat. 11: 619 (1868)
= *Imbricaria aipolia* (Ehrh. ex Humb.) DC., in Lamarck & de Candolle, Fl. franç., Edn 3 (Paris) 2: 386 (1805)
= *Lichen aipolius* Ehrh. ex Humb., Fl. Friberg. Spec. (Berlin): 19 (1793)
= *Lichen stellaris* var. *aipolius* (Ehrh. ex Humb.) Wahlenb., Fl. Suec. 2: 816 (1826)
= *Lobaria aipolia* (Ehrh. ex Humb.) Hoffm., Deutschl. Fl., Zweiter Theil (Erlangen): 152 (1796) [1795]
= *Lobaria stellaris* var. *aipolia* (Ehrh. ex Humb.) Hepp, Flecht. Europ.: no. 879 (1867)
= *Parmelia aipolia* (Ehrh. ex Humb.) Ach., Methodus, Sectio post. (Stockholmiæ): 209 (1803)
= *Parmelia cercidia* (Ach.) Röhl., Deutschl. Fl. (Frankfurt) 3(2): 105 (1813)
= *Parmelia stellaris* f. *aipolia* (Ehrh. ex Humb.) Hazsl., Magyar Birodalom Zuzmó-Flórájá: 69 (1884)
= *Parmelia stellaris* var. *aipolia* (Ehrh. ex Humb.) Fr., Sched. Crit. Lich. Suec., Fasc. 7: 4 (1826)
= *Physcia aipolia* f. *cercidia* (Ach.) Mig., Flora von Deutschl., Abt. II 12: 51 (1924)
= *Physcia stellaris* f. *aipolia* (Ehrh. ex Humb.) Th. Fr., Lich. Scand. (Upsaliae)(1): 139 (1871)
= *Physcia stellaris* f. *cercidia* (Ach.) Nyl., Lich. Scand. (Helsinki): 111 (1861)
= *Physcia stellaris* subsp. *aipolia* (Ehrh. ex Humb.) Fink, Contr. U.S. natnl. Herb. 14(1): 228 (1910)
= *Physcia stellaris* var. *aipolia* (Ehrh. ex Humb.) Tuck., Proc. Amer. Acad. Arts & Sci. 4: 395 (1860)
= *Squamaria aipolia* (Ehrh. ex Humb.) Frege, Deutsch. Botan. Taschenb. 2: 170 (1812)
= *Xanthoria aipolia* (Ehrh. ex Humb.) Horw., Hand-list Lich. Gr. Brit.: 13 (1912)
= *Xanthoria aipolia* var. *cercidia* (Ach.) Horw., Hand-list Lich. Gr. Brit.: 13 (1912)

[ABL77048], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77048), 30.10.2018, det. A. Aptroot, 2019.



Physcia aipolia



Physcia aipolia

Physcia alba (Fée) Müll. Arg. 1887

[ABL79091], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 79091), 3.07.2019, det. A. Aptroot, 2019







Physcia alba

Physcia convexa Müll. Arg., Revue mycol., Toulouse 10(no. 38): 57 (1888)

[ABL77777], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, in Atlantic rain forest on siliceous rock. 21°07’44" S, 56°30’41" W, 800 m. Leg. A. Aptroot (no 77777), 6.11.2018, det. A. Aptroot, 2019.



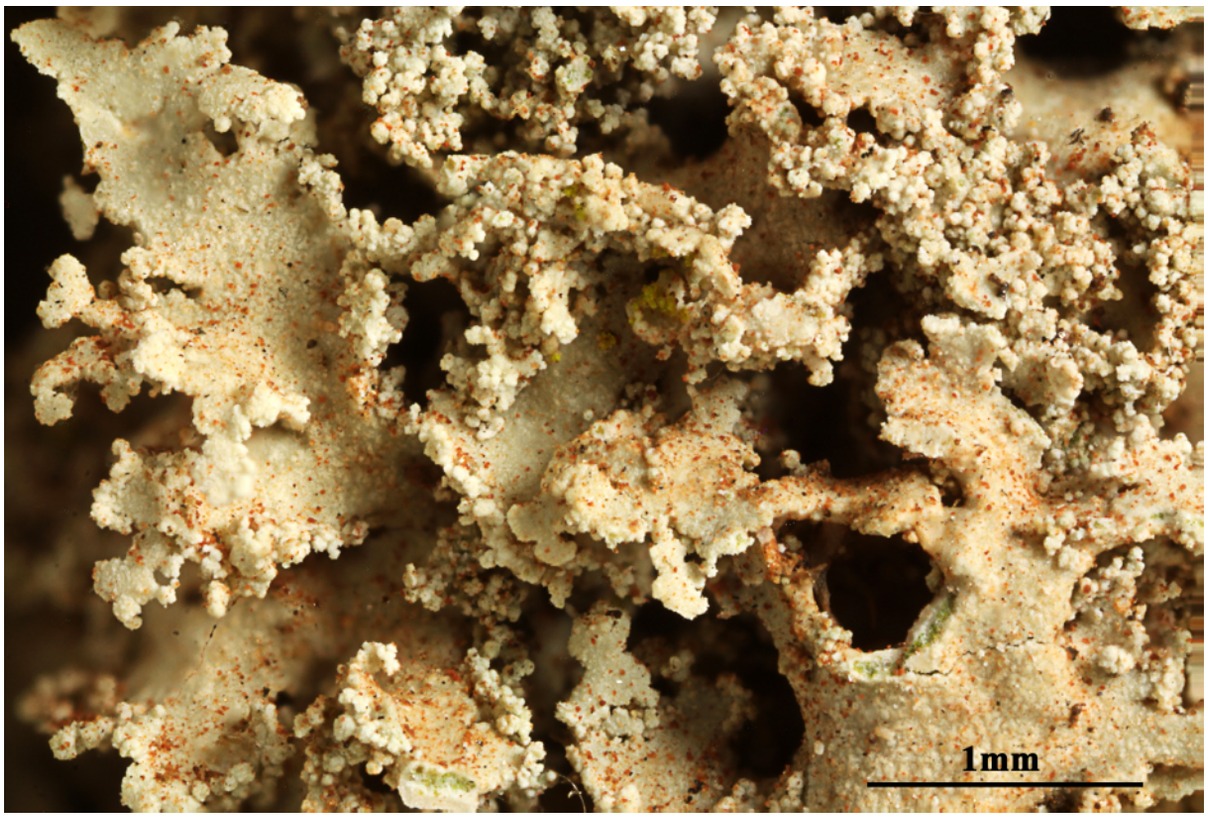


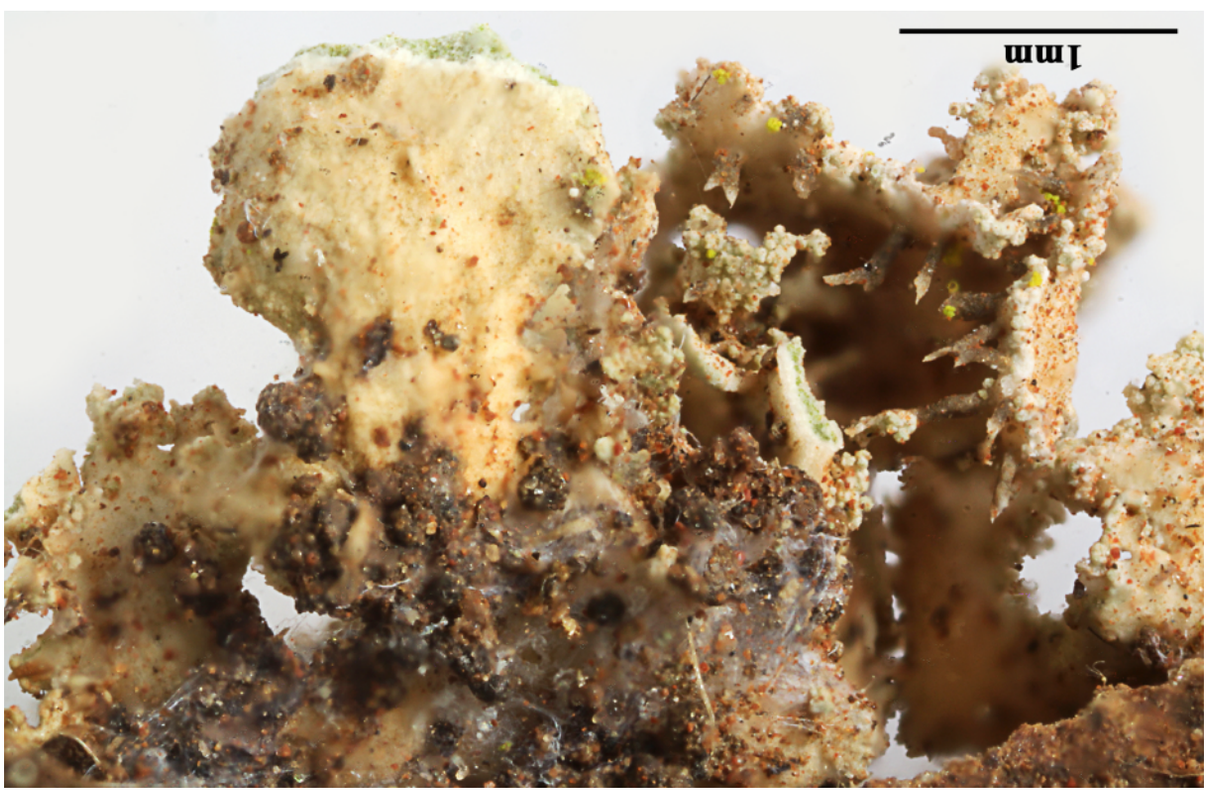
Physcia convexa

Physcia crispa Nyl., Syn. meth. lich. (Parisiis) 1(2): 423 (1860)
= *Dimelaena crispa* (Nyl.) Trevis., Atti Soc. ital. Sci. nat. 11: 618 (1868)
= *Physcia stellaris* subsp. *crispa* (Nyl.) Tuck., Syn. N. Amer. Lich. (Boston) 1: 74 (1882)

[ABL80335], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06’08’’ S, 53°48’42’’ W, 300 m. Leg. A. Aptroot (no 80335), 29.09.2019, det. A. Aptroot, 2019







lower side

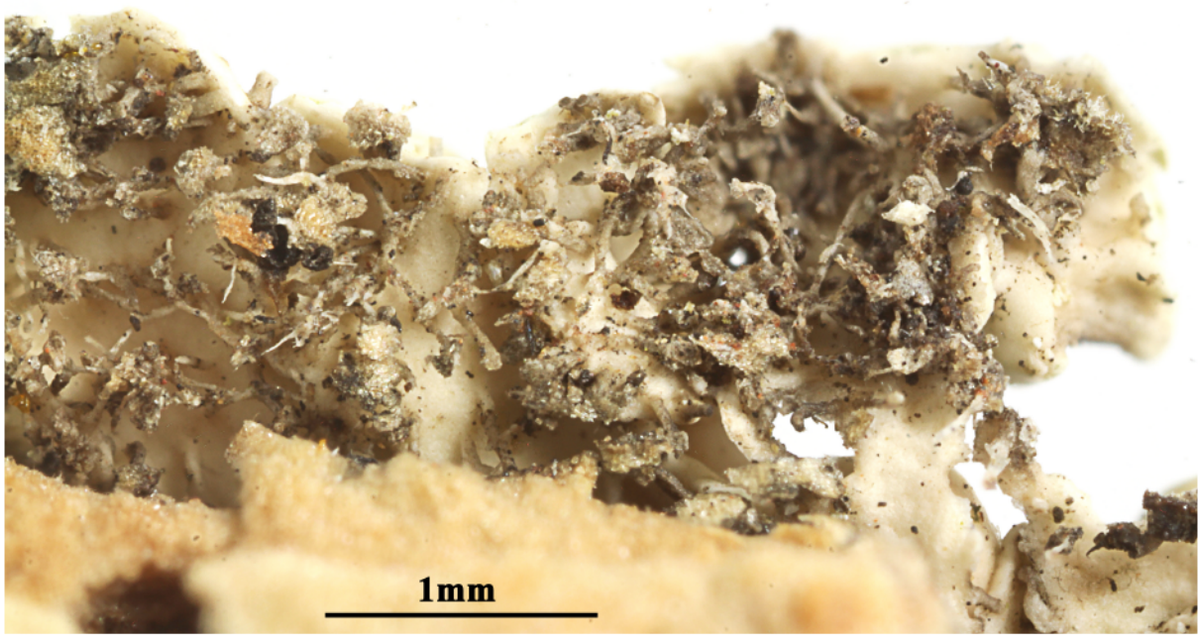
Physcia crispa

Physcia kalbii Moberg, Nordic Jl Bot. 10(3): 331 (1990)

[ABL77735], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77735), 6.11.2018, det. A. Aptroot, 2019.







lower surface

Physcia kalbii

Physcia ochroleuca Müll. Arg., Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 43: 296 (1893)

[ABL80321], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06’08’’ S, 53°49’08’’ W, 310 m. Leg. A. Aptroot (no 80321), 29.09.2019, det. A. Aptroot, 2019





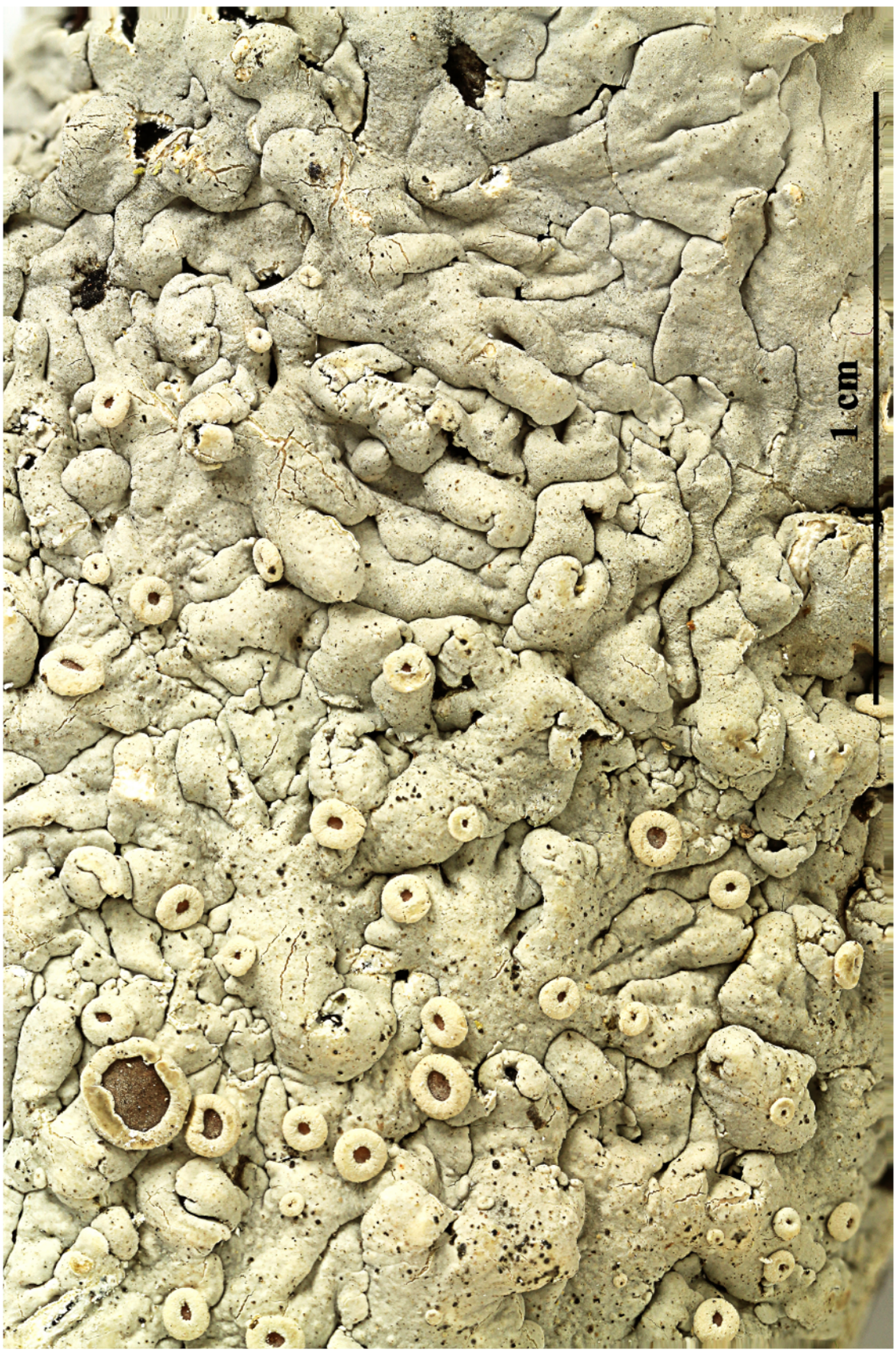


lower side

Physcia ochroleuca

Physcia pachyphylla Müll. Arg., Revue mycol., Toulouse 10(no. 38): 57 (1888)

[ABL77911], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77911), 8.11.2018, det. A. Aptroot, 2019.





Physcia pachyphylla

Physcia phaeocarpa Nyl., Syn. meth. lich. (Parisiis) 1(2): 424 (1860)

[ABL77737], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77737), 6.11.2018, det. A. Aptroot, 2019.





Physcia phaeocarpa





lower surface

Physcia phaeocarpa

Physcia rolfii Moberg, Nordic Jl Bot. 10(3): 337 (1990)

[ABL78000], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on limestone. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78000), 9.11.2018, det. A. Aptroot, 2019. - Cortex and medulla K+ yellow; atranorin, zeorin, unknown triterpenoids.





Physcia rolfii

Physcia sinuosa Moberg, Nordic Jl Bot. 10(3): 338 (1990)

[ABL77071], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77071), 30.10.2018, det. A. Aptroot, 2019.





Physcia sinuosa

Piccolia conspersa (Fée) Hafellner, Biblthca Lichenol. 58: 109 (1995)
= *Biatorella conspersa* (Fée) Vain., Acta Soc. Fauna Flora fenn. 7(no. 2): 62 (1890)
= *Heterothecium conspersum* (Fée) Flot., Bot. Ztg. 8: 554 (1850)
= *Lecidea conspersa* Fée, Essai Crypt. Exot. (Paris): 108 (1825) [1824]
= *Parmelia aurea* Spreng., Syst. veg., Edn 16 4(1): 298 (1827)

[ABL77281], Brazil, Mato Grosso do Sul, Bonito, Fazenda La Harmonia, in Atlantic rain forest on tree bark. 21°15'' S, 56°43' W, 500 m. Leg. A. Aptroot (no 77281), 1.11.2018, det. A. Aptroot, 2019. - Thallus yellow. Ascospores >100/ascus, globose, not septate, hyaline; thallus and apothecium pigment K+ purple or violet.





Piccolia conspersa

Porina africana Müll. Arg., Linnaea 43(9): 41 (1880)
= *Porina platystoma* Müll. Arg., Bull. Herb. Boissier 3: 326 (1895)
= *Verrucaria africana* (Müll. Arg.) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 212 (1891) [1889-90]

[ABL80349], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06’08’’ S, 53°49’08’’ W, 310 m. Leg. A. Aptroot (no 80349), 29.09.2019, det. A. Aptroot, 2019. - Spores 7-septate, 30 x 5 µm.





Porina africana

Porina chlorotica (Ach.) Müll. Arg., Revue mycol., Toulouse 6(no. 21): 20 (1884)
= *Pseudosagedia chlorotica* (Ach.) Hafellner & Kalb, Biblthca Lichenol. 57: 172 (1995)
= *Arthopyrenia chlorotica* (Ach.) H. Olivier, Flora Lich. Orne 2: 267 (1884)
= *Bacidia luteola* f. *chlorotica* (Ach.) Zahlbr., Cat. Lich. Univers. 4: 218 (1926) [1927]
= *Lithoicea chlorotica* (Ach.) Arnold, Flora, Regensburg 42(10): 153 (1859)
= *Porina chlorotica* f. *tenuifera* (Nyl.) Swinscow, Lichenologist 2: 23 (1962)
= *Porina tenuifera* (Nyl.) A.L. Sm., Monogr. Brit. Lich. 2: 336 (1911)
= *Porinula chlorotica* (Ach.) Flagey, Catal. Lich. Algérie: 98 (1896)
= *Pyrenula chlorotica* (Ach.) Trevis., Spighe Paglie: 18 (1853)
= *Sagedia chlorotica* (Ach.) A. Massal., Ric. auton. lich. crost. (Verona): 159 (1852)
= *Sagedia macularis* var. *chlorotica* (Ach.) Körb., Parerga lichenol. (Breslau) 4: 354 (1863) [1865]
= *Sagedia persicina* var. *chlorotica* (Ach.) Jatta, Syll. Lich. Ital. (Trano): 548 (1900)
= *Sagedia tenuifera* (Nyl.) Arnold, Flora, Regensburg 65: 143 (1882)
= *Segestrella chlorotica* (Ach.) Branth & Rostr., Bot. Tidsskr. 3: 258 (1869)
= *Segestria chlorotica* (Ach.) Hellb., K. svenska Vetensk-Akad. Handl., ny följd 9(no. 11): 85 (1870)
= *Segestria macularis* var. *chlorotica* (Ach.) Zwackh, Flora, Regensburg 59: 549 (1876)
= *Spermatodium maculare* var. *chloroticum* (Ach.) Trevis., Conspect. Verruc.: 12 (1860)
= *Trichothelium chloroticum* (Ach.) R.C. Harris, More Florida Lichens, Incl. 10 Cent Tour Pyrenol. (New York): 179 (1995)
= *Verrucaria chlorotica* Ach., Lich. Univ.: 283 (1810)
= *Verrucaria macularis* b *chlorotica* (Ach.) Körb., Syst. lich. germ. (Breslau): 364 (1855)
= *Verrucaria margacea* var. *chlorotica* (Ach.) Rabenh., Deutschl. Krypt.-Fl. (Leipzig) 2(1): 10 (1845)
= *Verrucaria tenuifera* Nyl., Flora, Regensburg 59: 237 (1876)

[ABL77190], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Taquaral, in Atlantic rain forest on limestone. 21°06’ S, 56°38’ W, 500 m. Leg. A. Aptroot (no 77190), 31.10.2018, det. A. Aptroot, 2019. - Spores 3-septate, 15 x 4 µm.



Porina chlorotica

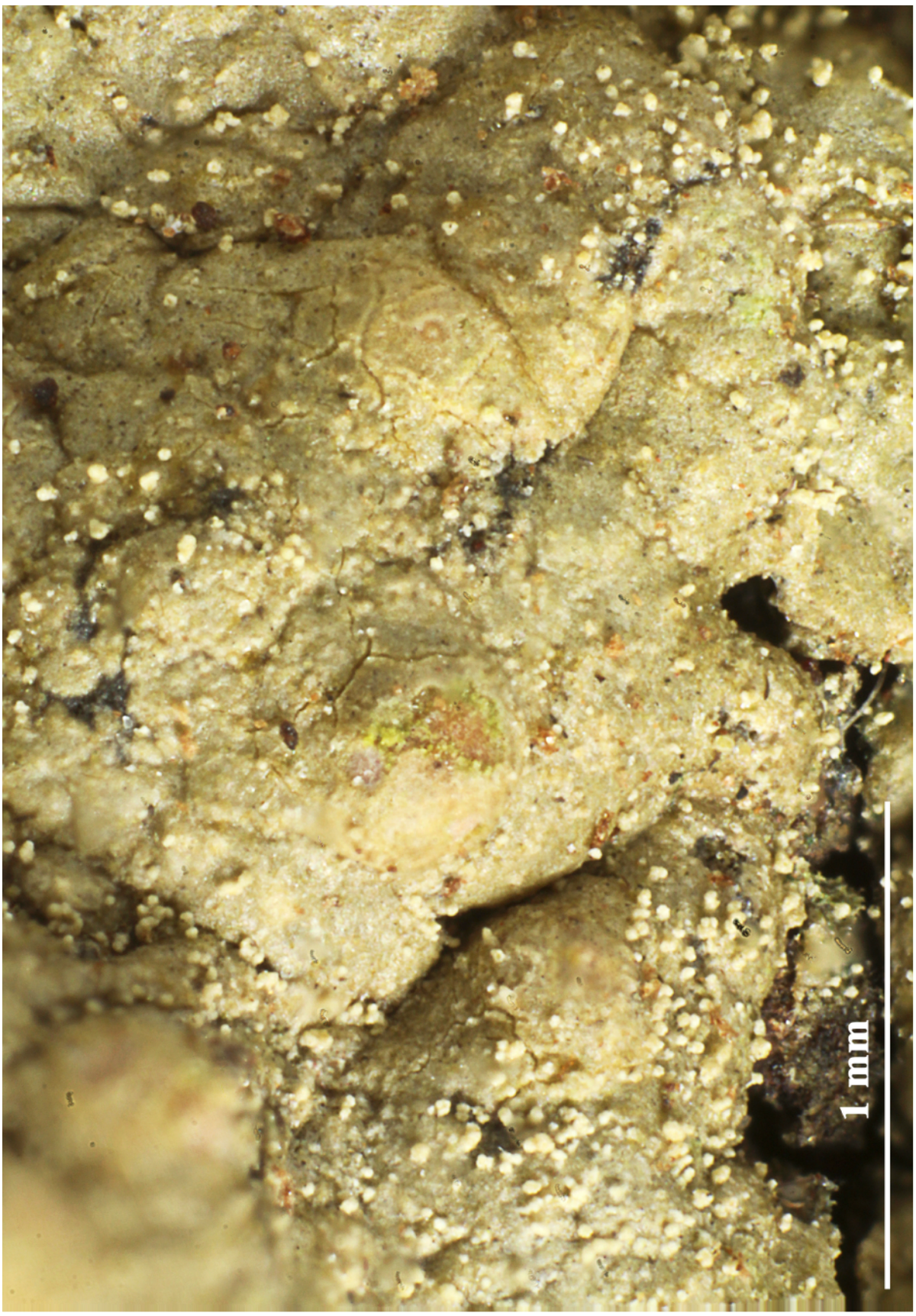


Porina chlorotica

Porina conspersa Malme, Ark. Bot. 23A(no. 1): 16 (1929)

[ABL77145], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Taquaral, in Atlantic rain forest on tree bark. 21°06’ S, 56°38’ W, 500 m. Leg. A. Aptroot (no 77145), 31.10.2018, det. A. Aptroot, 2019.





Porina conspersa

Porina cryptostoma Mont., Annls Sci. Nat., Bot., sér. 3 7: 176 (1847)

[ABL77212], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Taquaral, in Atlantic rain forest on tree bark. 21°06’ S, 56°38’ W, 500 m. Leg. A. Aptroot (no 77212), 31.10.2018, det. A. Aptroot, 2019. - Spores 7-septate, 35 x 5.5 µm.





Porina cryptostoma

Porina cubana Vězda, Folia geobot. phytotax. 19(2): 186 (1984)
= *Porina cubana* f. *irregularis* Lücking, Fl. Neotrop., Monogr. 103: 315 (2008)

[ABL77735], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77735), 6.11.2018, det. A. Aptroot, 2019. - Spres 7-septate, 15 x 7 µm.





Porina cubana

Porina nitidula Müll. Arg., Flora, Regensburg 66(21): 336 (1883)
= *Pseudosagedia nitidula* (Müll. Arg.) Hafellner & Kalb, Biblthca Lichenol. 57: 173 (1995)
= *Phylloporina nitidula* (Müll. Arg.) Müll. Arg., Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 81: 233 (1890)
= *Trichothelium nitidulum* (Müll. Arg.) R.C. Harris, More Florida Lichens, Incl. 10 Cent Tour Pyrenol. (New York): 180 (1995)

[ABL80145], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°55' S, 53°44' W, 230 m. Leg. A. Aptroot (no 80145), 27.09.2019, det. A. Aptroot, 2019. - Spores 5-septate





Porina nitidula

Porina nucula Ach., Syn. meth. lich. (Lund): 112 (1814)
= *Porina endochrysa* Mont., Annls Sci. Nat., Bot., sér. 2 19: 79 (1843)
= *Porina mastoidea* var. *rudis* Müll. Arg., Flora, Regensburg 65(33): 517 (1882)
= *Porina nucula* var. *endochrysa* (Mont.) Zahlbr., Cat. Lich. Univers. 1: 397 (1922)
= *Porina pallida* Müll. Arg., Bull. Herb. Boissier 3: 326 (1895)
= *Porina rudis* (Müll. Arg.) Müll. Arg., Annln K. K. naturh. Hofmus. Wien 7: 305 (1892)
= *Porophora nucula* (Ach.) Spreng., Syst. veg., Edn 16 4(1): 241 (1827)
= *Segestria nucula* (Ach.) Hellb., Bih. K. svenska VetenskAkad. Handl., Afd. 3 21(no. 13): 132 (1896)
= *Sphaeromphale nucula* (Ach.) Trevis., Flora, Regensburg 38: 182 (1855)
= *Verrucaria endochrysa* (Mont.) Nyl., Flora, Regensburg 49: 294 (1866)
= *Verrucaria nucula* (Ach.) Nyl., Expos. Synopt. Pyrenocarp.: 40 (1858)

[ABL77121], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77121), 30.10.2018, det. A. Aptroot, 2019.





Porina nucula

Porina vezdae Lücking, Nova Hedwigia 52(3-4): 285 (1991)

[ABL77568], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on treebark and twigs. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77568), 3.11.2018, det. A. Aptroot, 2019. - Spores traversely 7-septate, 28 x 6 µm.





Porina vezdae

Pseudobogoriella captiosa (Kremp.) Lücking, R. Miranda & Aptroot, in Hongsanan et al., Fungal Diversity: 10.1007/s13225-020-00462-6, [172] (2020)

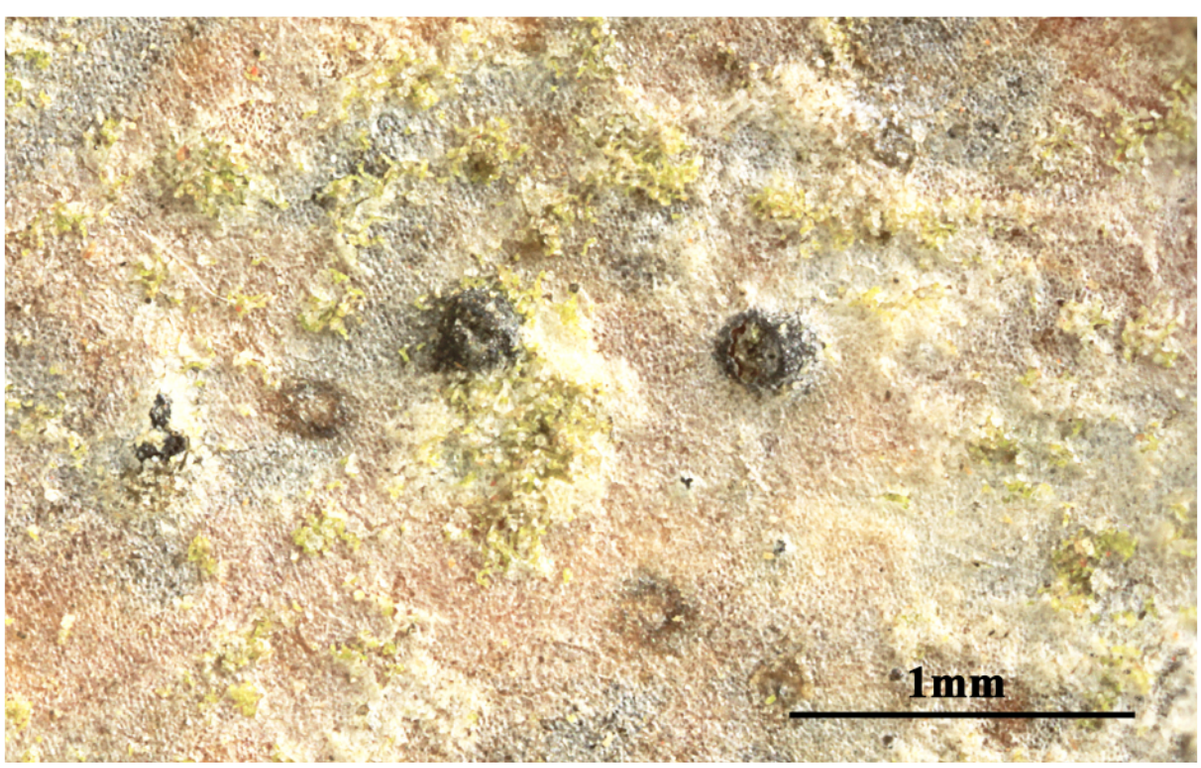
= *Bogoriella captiosa* (Kremp.) Aptroot & Lücking, Lichenologist 48(6): 908 (2016)

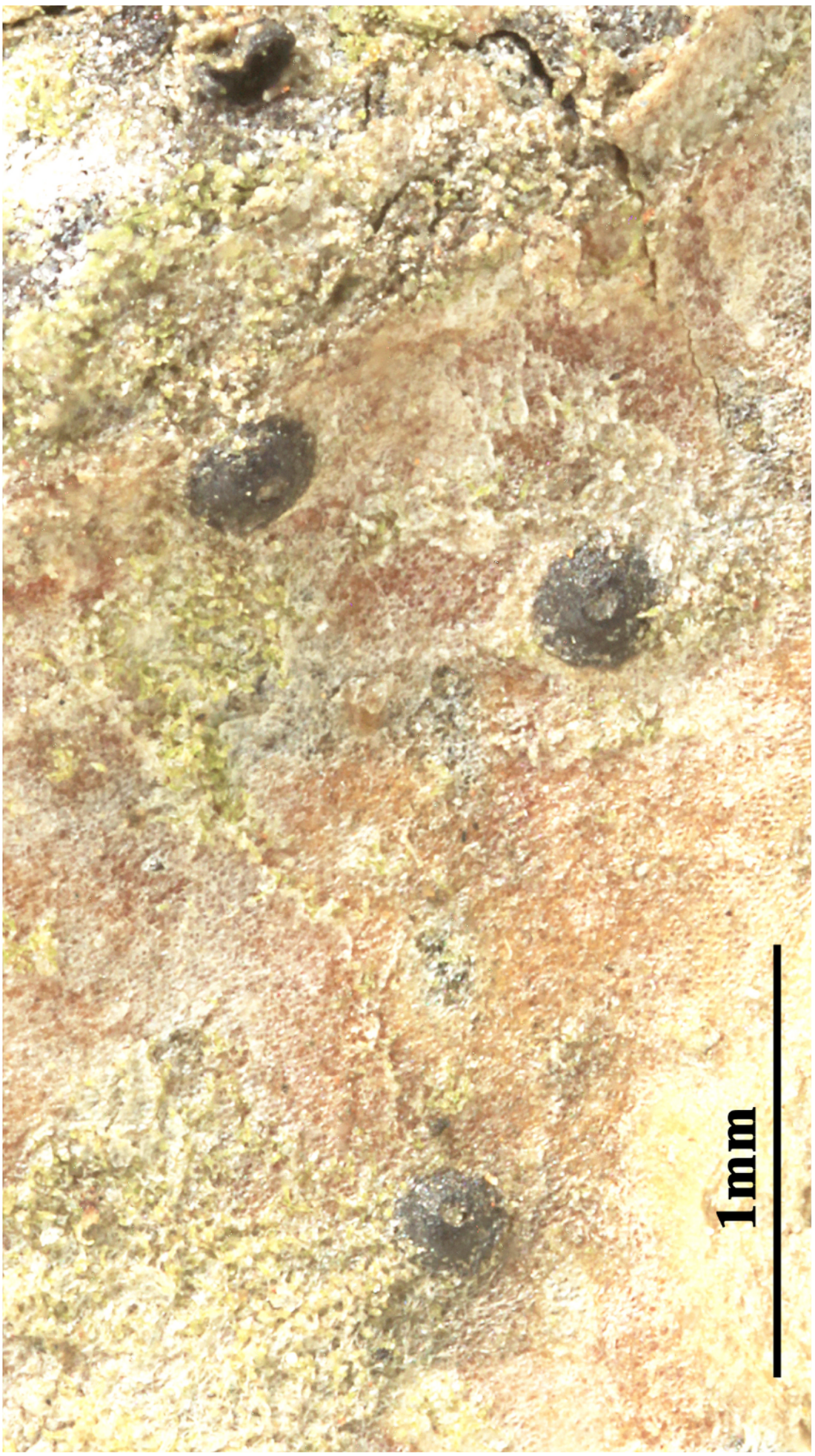
= *Microthelia captiosa* (Kremp.) Müll. Arg., Flora, Regensburg 66: 272 (1883)

= *Mycomicrothelia captiosa* (Kremp.) D. Hawksw., Bull. Br. Mus. nat. Hist., Bot. 14(2): 73 (1985)

= *Verrucaria captiosa* Kremp., Flora, Regensburg 59: 524 (1876)

[ABL77391], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45' W, 500 m. Leg. A. Aptroot (no 77391), 2.11.2018, det. A. Aptroot, 2019. - Thallus whitish rose, with black prothallus lines. Ascomata with apical ostioles, solitary, 0.3–0.4mm diam. and 0.15–0.25mm high, erumpent, conical, without distinct fringe. Wall 50–65 µm thick. Asci (55–)65–73 × (12–)13–14 µm. Spores (13.5–)17.0–19.0(–21.0) × (5.5–)6·5–7.5(–8.5) µm, with equal locules or larger upper locule, with rounded (-attenuate) ends, verruculose, olivaceous brown. Pycnidia absent. Chemistry. Thallus and ascomata UV−, K−. TLC: no substances detected.





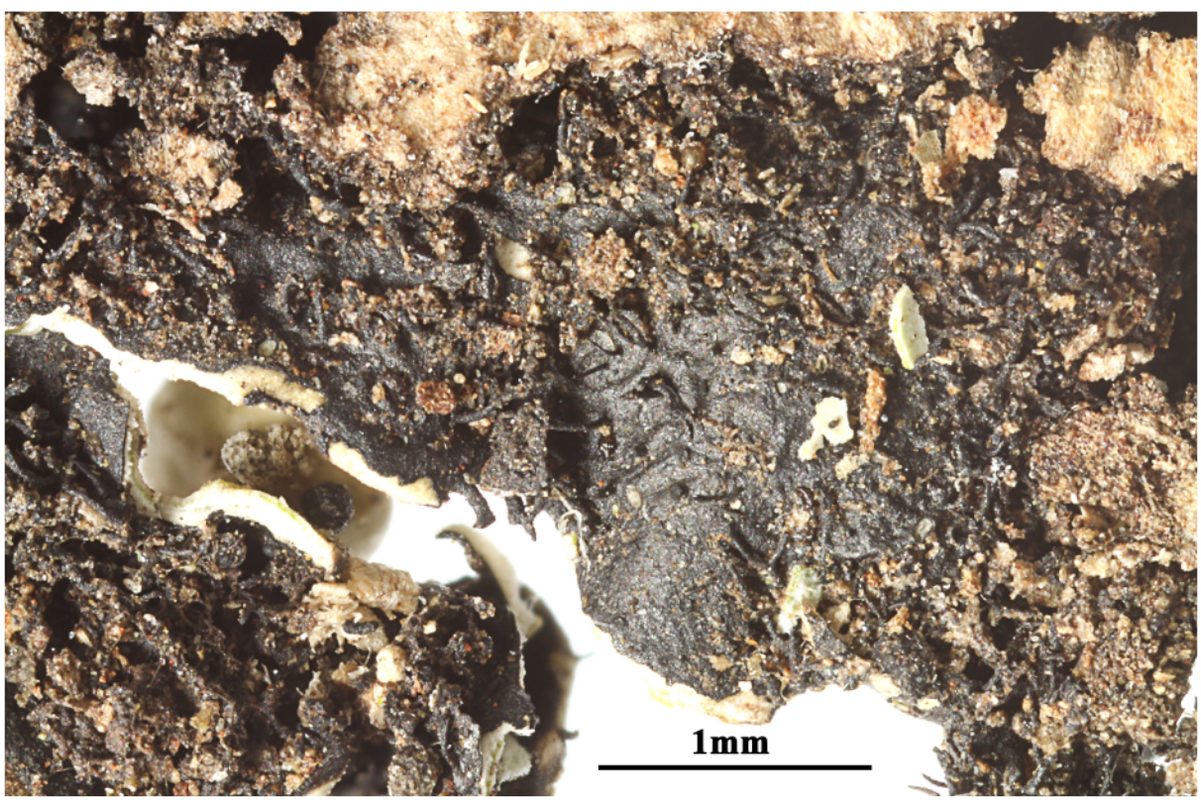
Pseudobogoriella captiosa

Pseudoparmelia uleana (Müll. Arg.) Elix & T.H. Nash, Bryologist 100(4): 496 (1998) [1997]
= *Parmelia uleana* Müll. Arg. 1889

[ABL80o54], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80054), 25.09.2019, det. A. Aptroot, 2019. - Thallus UV+ white, K-, C-, KC-, P-.







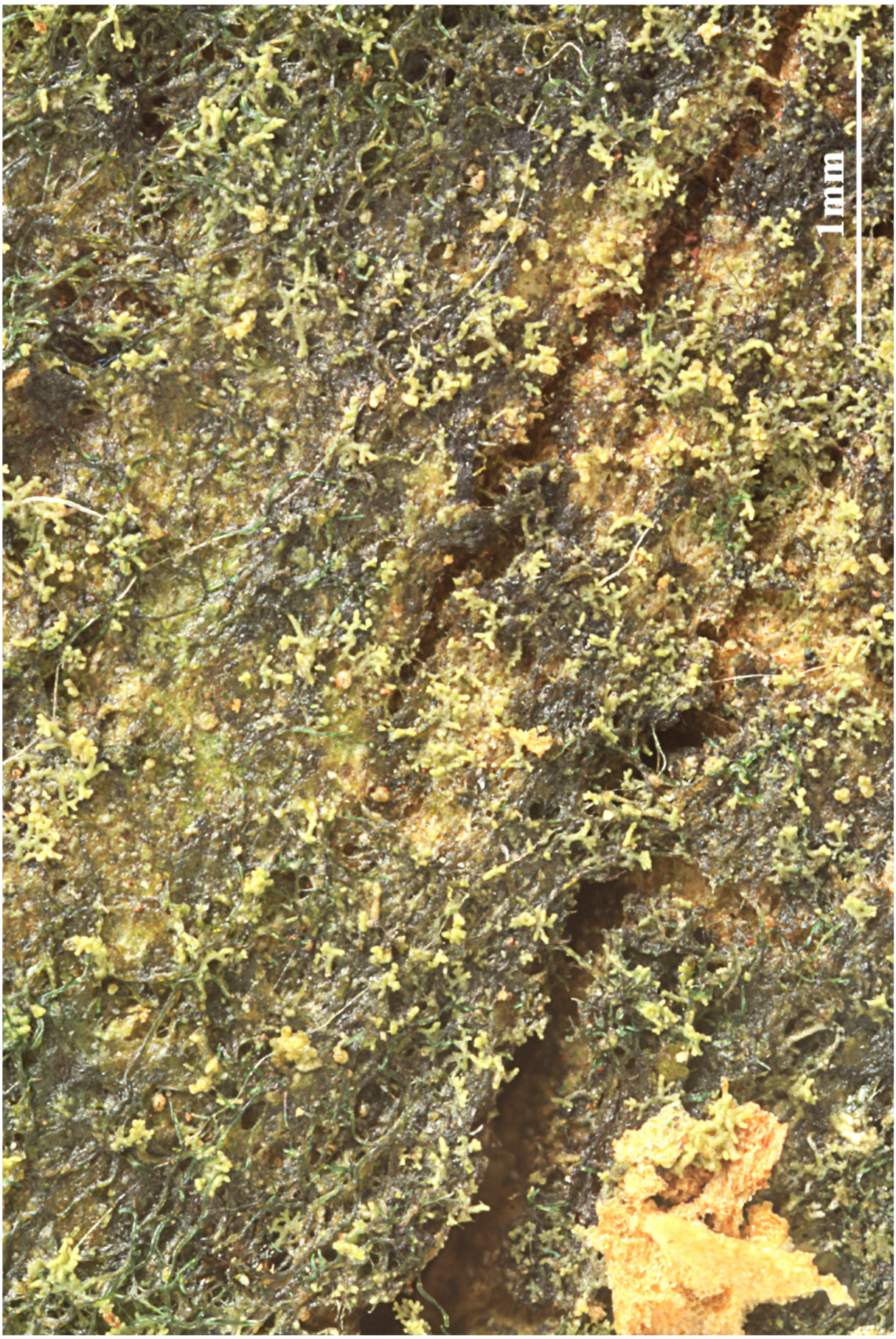
lower side

Pseudoparmelia uleana

Psoroglaena cubensis Müll. Arg., Flora, Regensburg 74(3): 381 (1891)

[ABL77404], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45’ W, 500 m. Leg. A. Aptroot (no 77404), 2.11.2018, det. A. Aptroot, 2019. - Thallus lobes minutely squamulose, ascospores muriform.

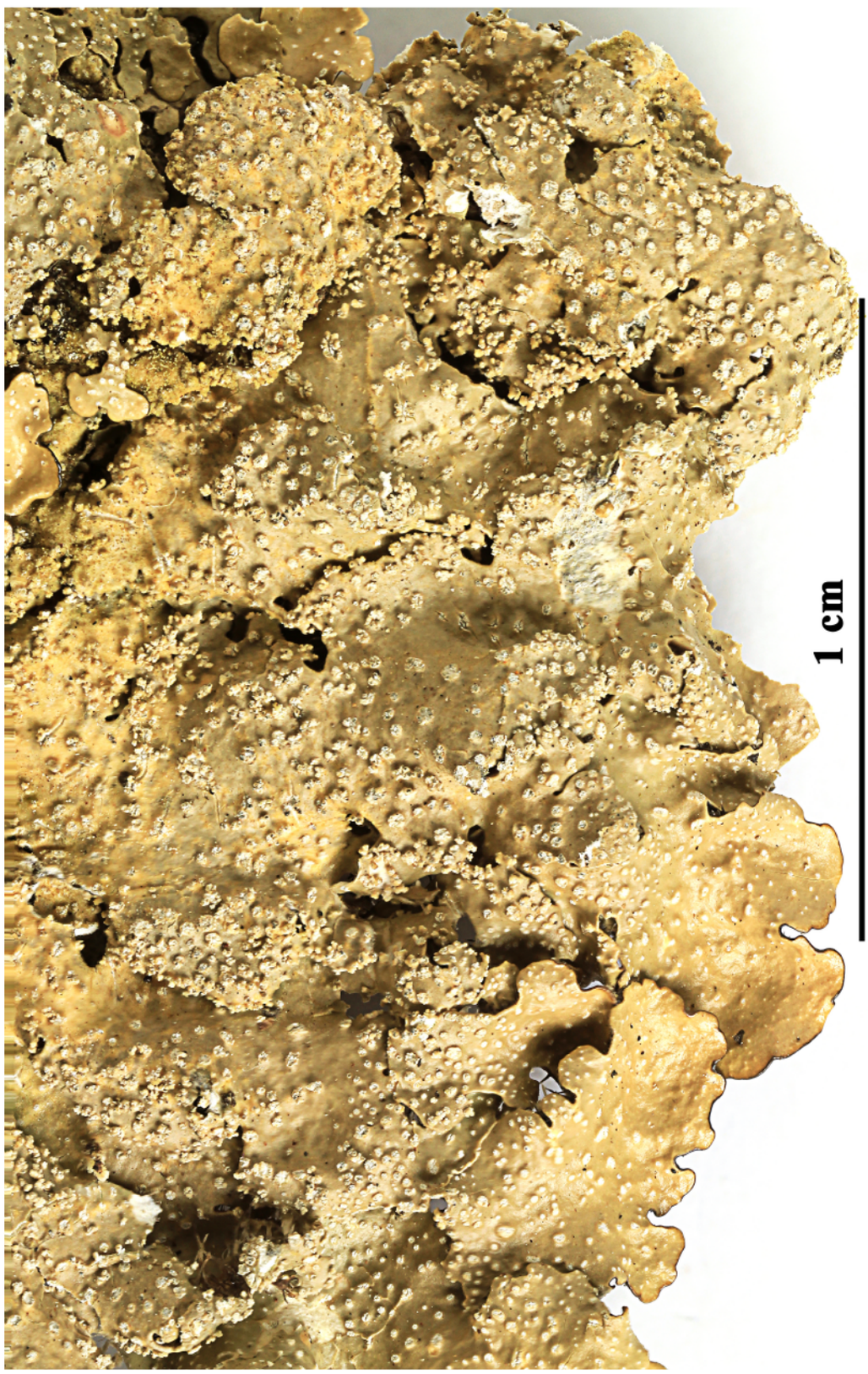




Psoroglaena cubensis

Punctelia missouriensis G. Wilh. & Ladd, Mycotaxon 44(2): 495 (1992)

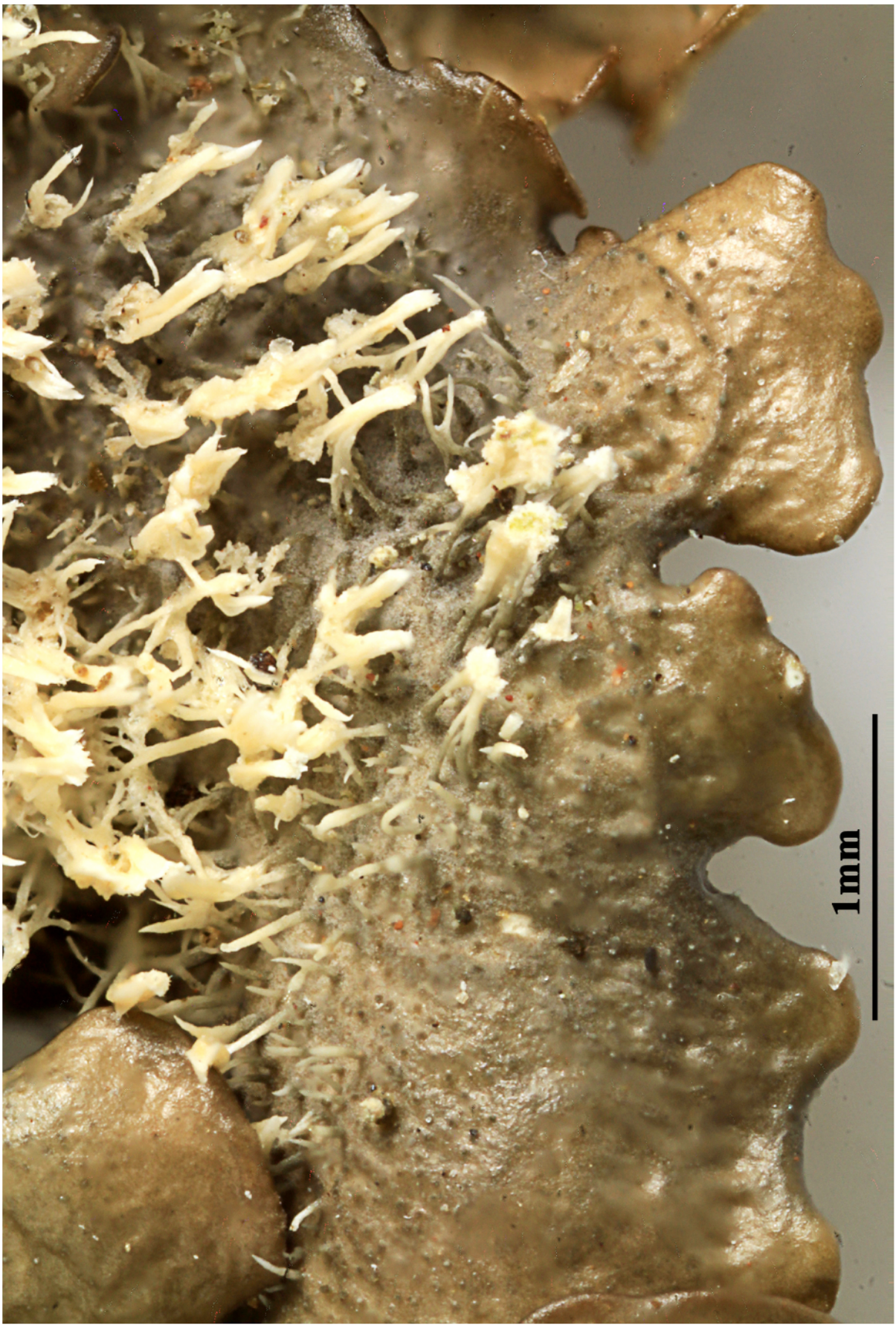
[ABL77482], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on tree bark. 21°30° S, 56°45' W, 500 m. Leg. A. Aptroot (no 77482), 2.11.2018, det. A. Aptroot, 2019. - Lower cortex pale to light tan; rhizines white to pale; soredia granular or lobuliform, discrete or coalescing; cortex C-, K+ yellow (atranorin); medulla C+ red (lecanoric acid), K-.







Punctelia missouriensis

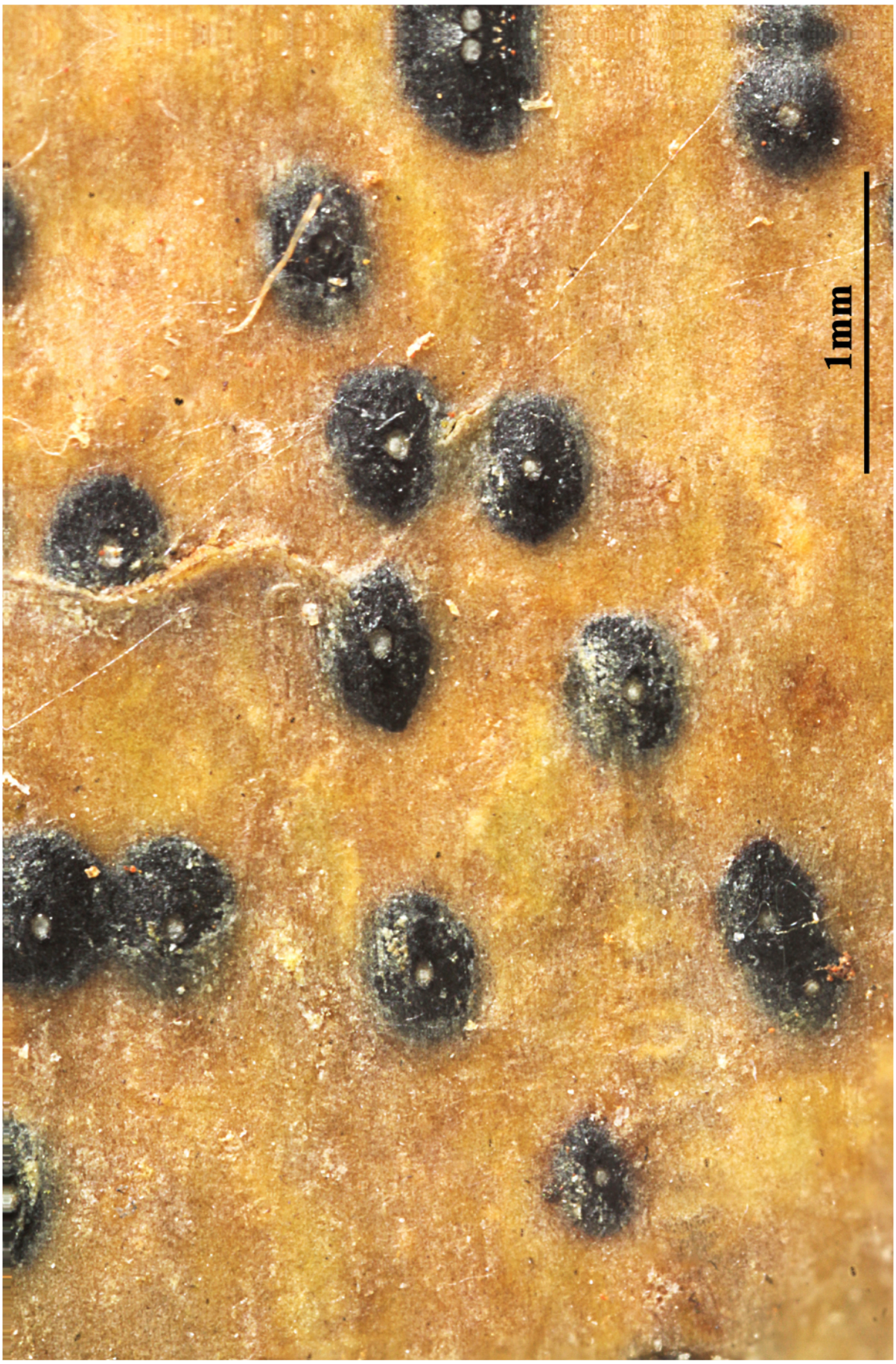


Punctelia missouriensis

Pyrenula acutispora Kalb & Hafellner, Herzogia 9(1-2): 84 (1992)
= *Pyrenula kakouettae* Sérus., Nova Hedwigia 55(3-4): 533 (1992)

[ABL80122], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80122), 26.09.2019, det. A. Aptroot, 2019. - Hymenium not inspersed, spores 3-septate, 21-25 x 7-9 µm.



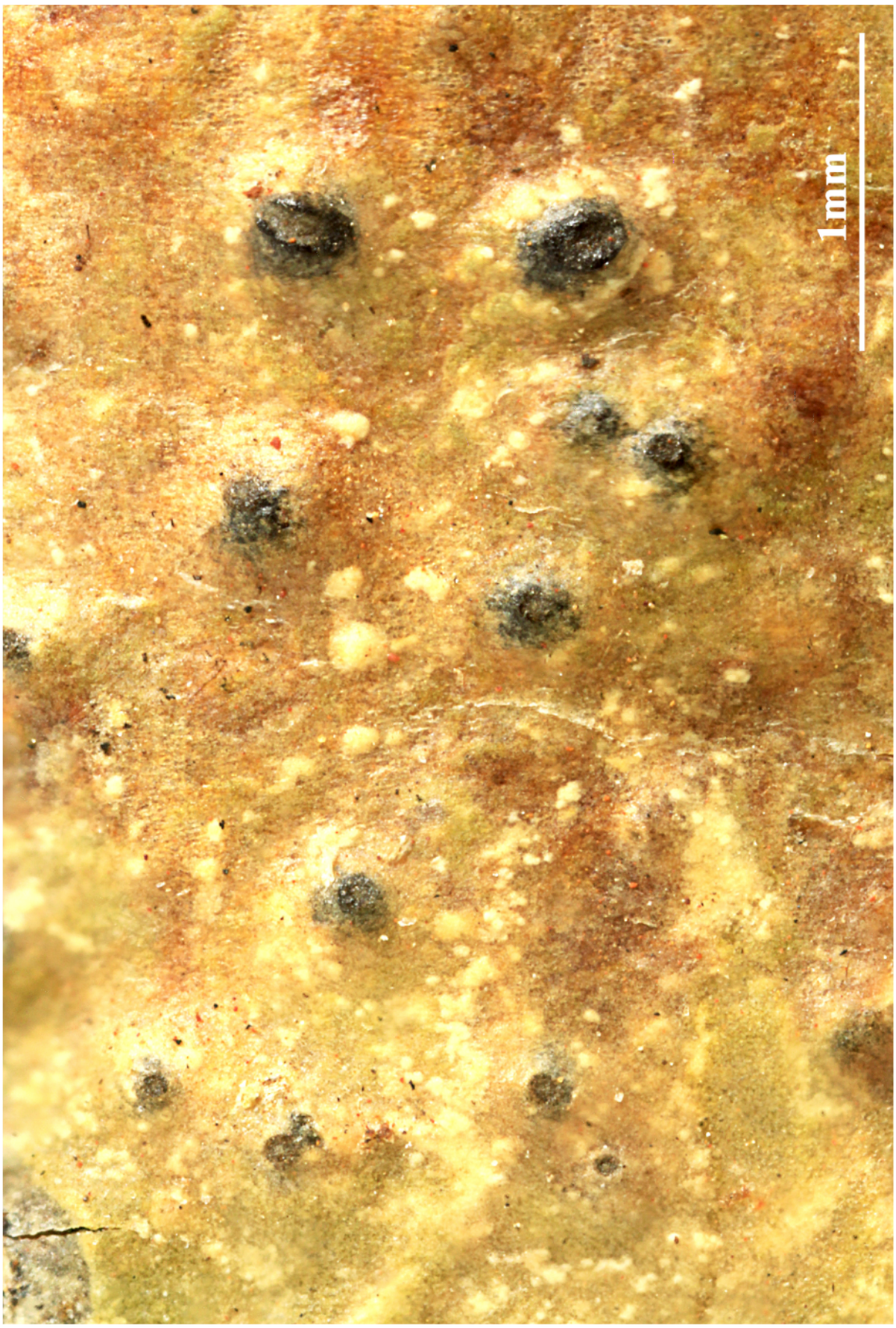


Pyrenula acutispora

Pyrenula bahiana Malme, Ark. Bot. 22A(no. 11): 26 (1929)

[ABL79881], Brazil, Mato Grosso do Sul, Rio Brilhante, along road in Cerrado forest on tree bark. 21°49’24" S, 54°31’51" W, 300 m. Leg. A. Aptroot (no 79881), 23.09.2019, det. A. Aptroot, 2019. - Thallus corticate, greenish to brownish; ascomata mostly single; spores 8/ascus, brown old with red oil, 3-septate, (23-)26-33 x 8-12 µm,





Pyrenula bahiana

Pyrenula globifera (Eschw.) Aptroot, in Aptroot, Lücking, Sipman, Umaña & Chaves, Biblthca Lichenol. 97: 103 (2008)

= *Anthracothecium globiferum* (Eschw.) Müll. Arg., Flora, Regensburg 67(35): 666 (1884)

= *Sporodictyon globiferum* (Eschw.) Trevis., Conspect. Verruc.: 13 (1860)

= *Verrucaria globifera* Eschw., in Martius, Fl. bras. enum. pl. 1(1): 131 (1833)

[ABL77645], Brazil, Mato Grosso do Sul, Morraria do Sul, Morraria do Sul Fazenda Sol de Maio, in Atlantic rain forest on tree bark. 20°35'33" S, 56°51'40" W, 525 m. Leg. A. Aptroot (no 77645), 5.11.2018, det. A. Aptroot, 2019. - Thallus UV-; hymenium inspersed; sores muriform, 1/ascus, 100 x 30 µm.





Pyrenula globifera

Pyrenula lilaceoreagens Aptroot, Carollo & Schumm nov. spec.

MycoBank 848368

Diagnosis: Corticolous *Pyrenula* with thallus minium red, K+ lilac, ascomata in loose groups, ascospores 3-septate, 14–16 × 6.5–7.5 µm, lumina diamond-shaped, outer lumina longer than central lumina.

Type: Brazil, Mato Grosso do Sul, Porto Murtinho, Reserva Indígena Kadiwéu, surroundings of parcela 14, 20° 31' S, 57° 02' W, alt. 130 m. On tree bark in Cerrado forest. Leg. A. Aptroot 85683, 9 March 2022 (CGMS, holotype; ABL, isotype).

Description. Thallus dull, minium (lead tetroxide) red, not surrounded by a prothallus. Ascomata pyriform, 0.25–0.4 mm diam., erumpent from the thallus, in rather loose, irregular pseudostromatic groups of 3–50. Ostioles apical, brown, surrounded by a small whitish area. Hamathecium not inspersed. Ascospores 8/ascus, brown, 3-septate, 14–16 × 6.5–7.5 µm, ellipsoid, lumina diamond-shaped, outer lumina longer than central lumina, not surrounded by a gelatinous sheath. Pycnidia not observed.

Chemistry. Thallus UV–, C–, P–, K+ lilac-blue. TLC: two anthraquinones (draculone, haematommone identified by Prof. C. Carollo UFMS).

Etymology. Named for the lilac K-reaction.

Ecology and distribution. On tree bark in rain forest; only known from Brazil.

Discussion. This species is the first known in this genus with muriform ascospores; hence, it would key out in the world key by Schumm & Aptroot (2022): key B, couplet 86: Only thallus red.

Literature:

F. Schumm & A. Aptroot. 2022. Atlas of Pyrenulaceae and Trypetheliaceae. Books on Demand, Norderstedt

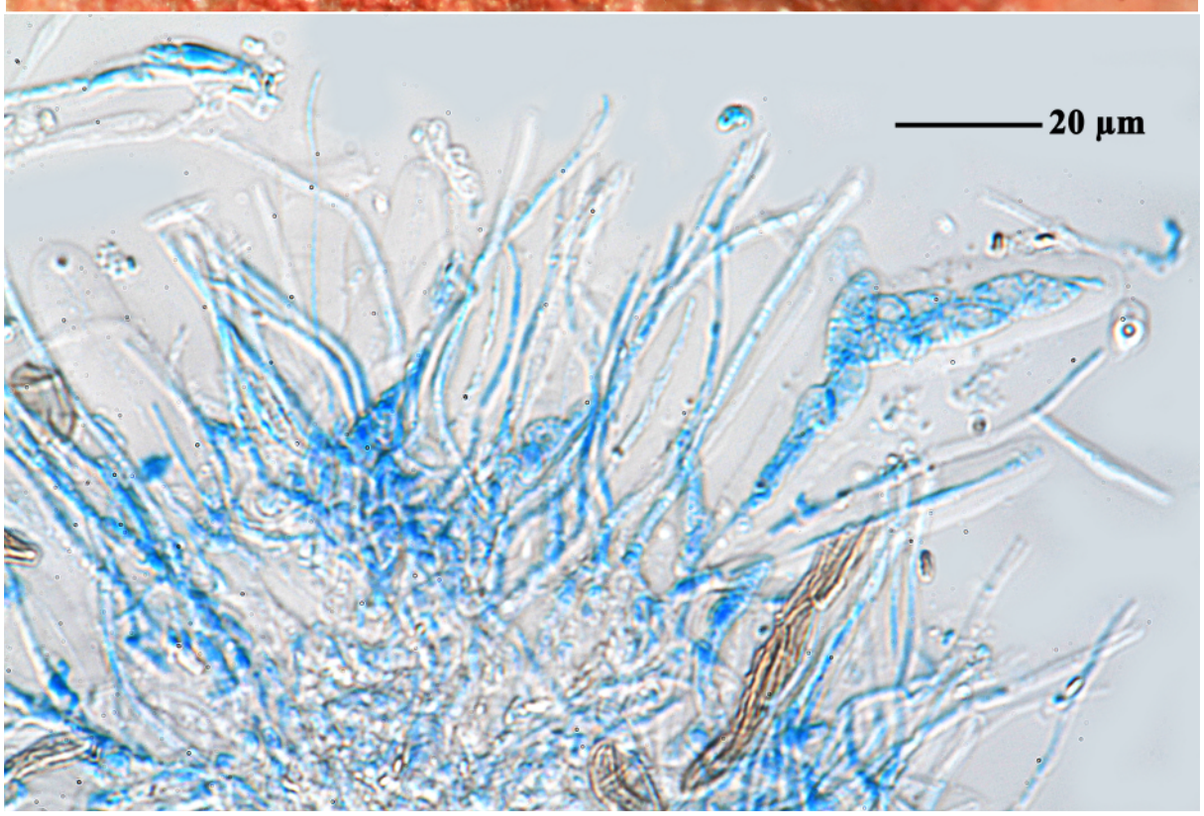


Pyrenula lilaceoreagens



Pyrenula lilaceoreagens







Pyrenula lilaceoreagens

Pyrenula rubrostigma Aptroot & M. Cáceres, Lichenologist 45(2): 190 (2013)

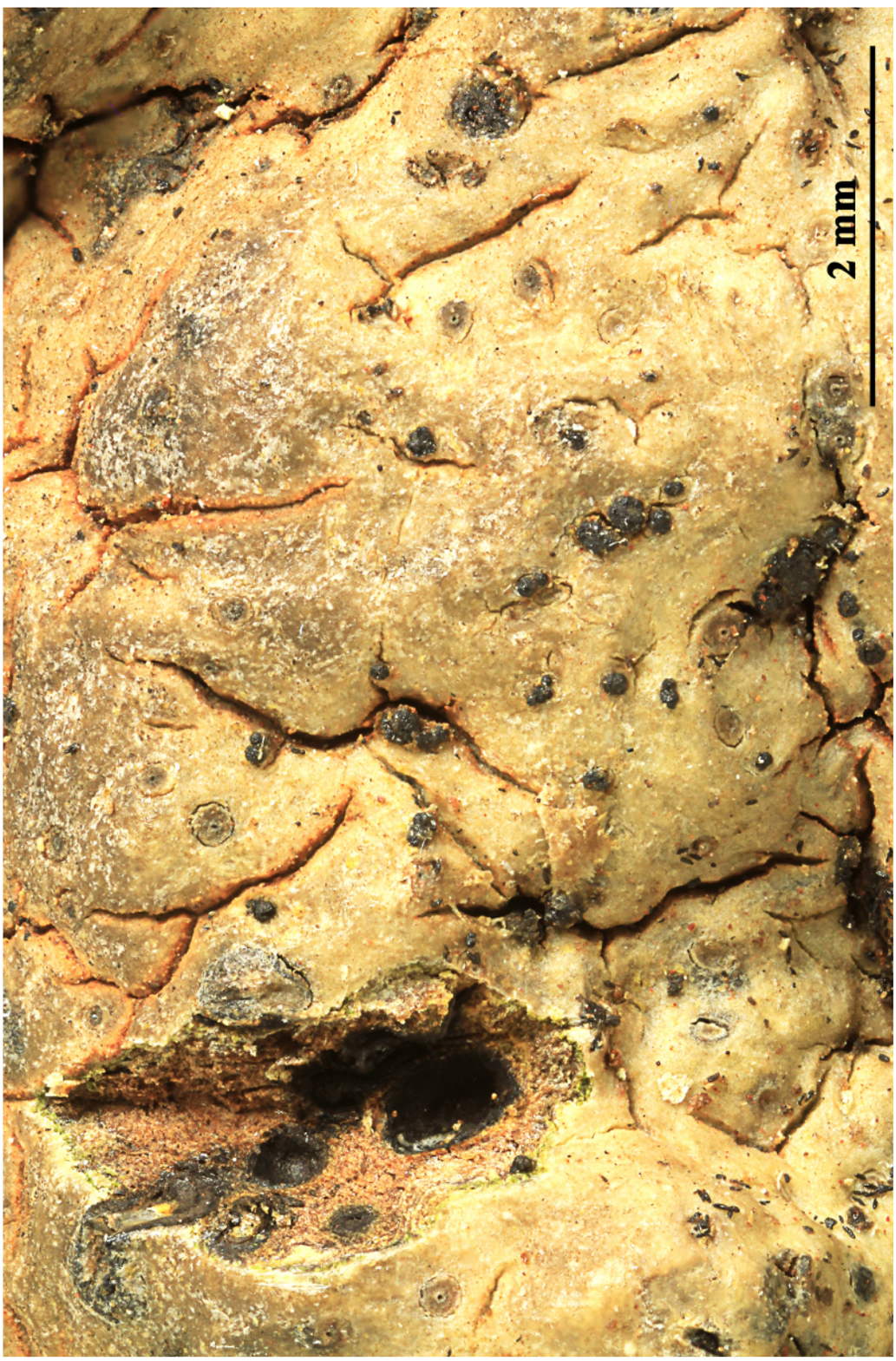
[ABL80011], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80011), 25.09.2019, det. A. Aptroot, 2019. -

Thallus thin, olive-brown, smooth but not glossy, without pseudocyphellae, surrounded by a thin black prothallus line. Ascomata superficial, conical, somewhat flattened, 0.6–1.2 mm diam., solitary. Ostiole apical, red. Hamathecium inspersed with hyaline oil globules. Spores 8/ascus, irregularly biseriate, 3-septate, 15–18 x 6–7 µm, ends rounded, lumina rounded to angular, often somewhat wider than long, with a thick layer of endospore in the spore tips, sometimes with distinct eusepta between the lumina. Pycnidia not observed. Chemistry: Ostiole with a red, KOH+ purple anthraquinone.



Pyrenula schiffneri (Zahlbr.) Aptroot, Lichenologist 44(1): 36 (2011) [2012]
= *Parmentaria schiffneri* Zahlbr., Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 83: 95 (1909)

[ABL79876], Brazil, Mato Grosso do Sul, Rio Brilhante, along road in Cerrado forest on tree bark. 21°49’24" S, 54°31’51" W, 300 m. Leg. A. Aptroot (no 79876), 23.09.2019, det. A. Aptroot, 2019. - Hamathecium not inspersed; spores brown, densely muriform, 2-3/ascus, 100-130 x 30-40 µm.

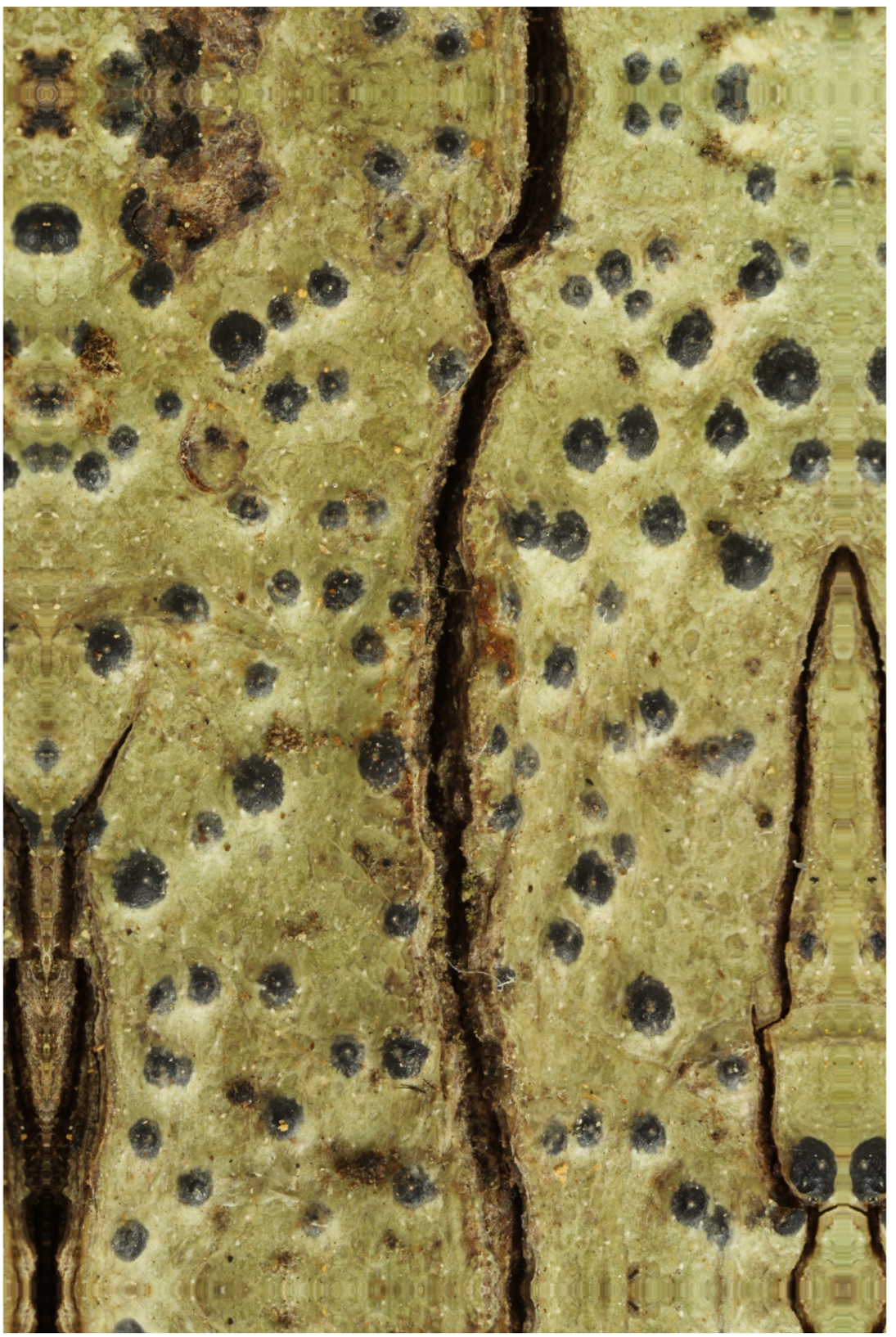




Pyrenula schiffneri

Pyrenula subducta (Nyl.) Müll. Arg., Flora, Regensburg 67(35): 666 (1884)
= *Verrucaria subducta* Nyl. 1863

[ABL77748], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77748), 6.11.2018, det. A. Aptroot, 2019. - Hymenium not inspersed; spores 3-septate, lumina round, 49 x 15 µm.





Pyrenula subducta

Pyrenula subgregantula Müll. Arg., Bull. Soc. R. Bot. Belg. 30(no. 1): 94 (1891)

[ABL77554], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on treebark and twigs. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77554), 3.11.2018, det. A. Aptroot, 2019. - Hymenium not inspersed, spores 3-septate, 20-22 x 7 µm.





Pyrenula subgregantula

Pyrenula xanthoglobulifera Aptroot, Lücking & M. Cáceres, Bryologist 116(3): 303 (2013)

[ABL774969], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on treebark and twigs. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77496), 3.11.2018, det. A. Aptroot, 2019. - Thallus UV+ yellow; hymenium inspersed; spores densely muriform, 110-150 x 30-40 µm.





Pyrenula xanthoglobulifera

Pyxine daedalea Krog & R. Sant., in Moberg, Thunbergia 2: 7 (1986)

[ABL77036], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77036), 30.10.2018, det. A. Aptroot, 2019. - Thallus K+ yellow, UV-.

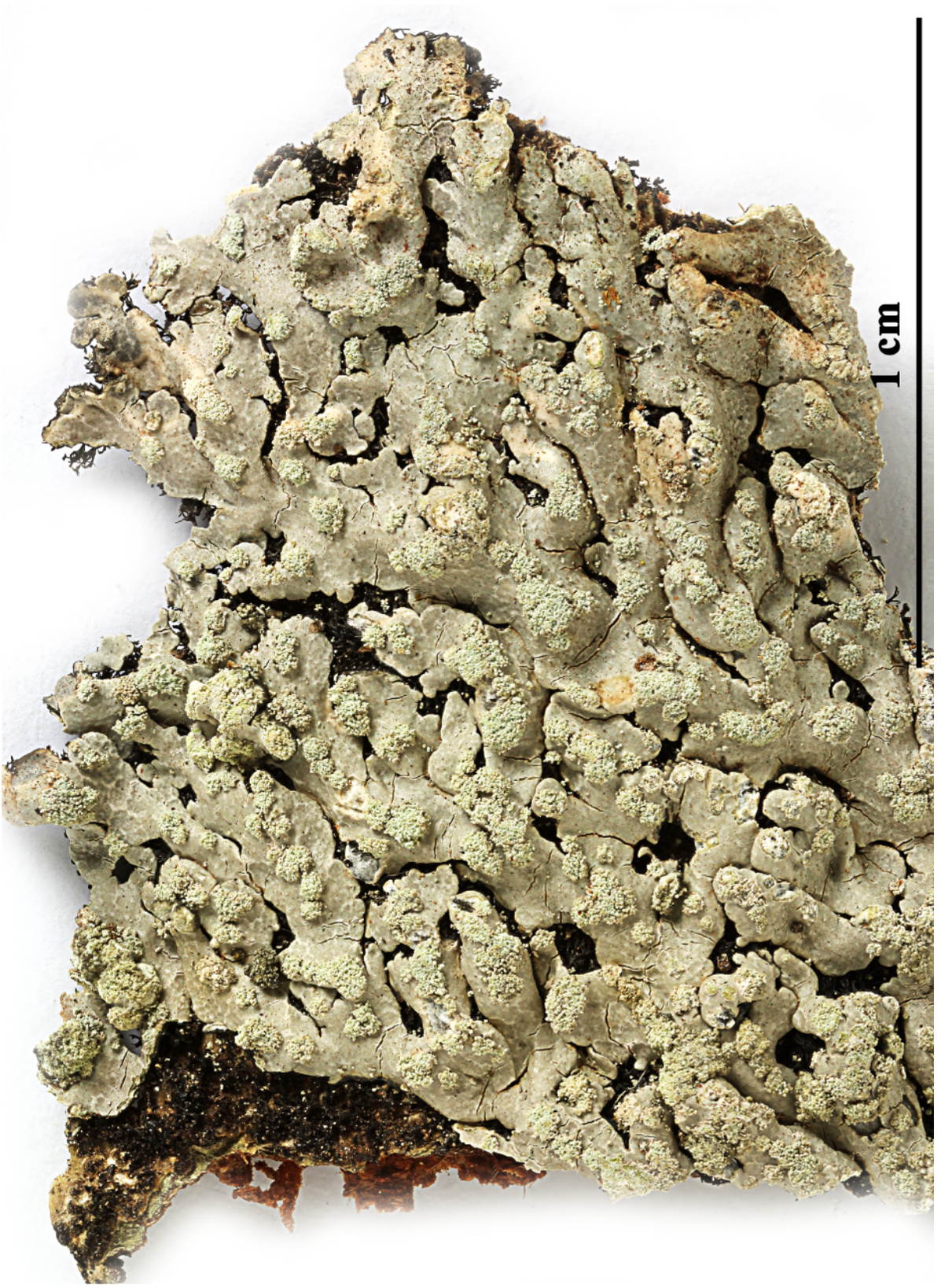




Pyxine daedalea

Pyxine fallax Kalb, Biblthca Lichenol. 88: 315 (2004)
= *Parmelia fallax* Zahlbr. 1912

[ABL80188], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80188), 25.09.2019, det. A. Aptroot, 2019.







lower side

Pyxine fallax

Pyxine mantiqueirensis Marcelli & Jungbluth, in Jungbluth & Marcelli, Bryologist 114(1): 172 (2011)

[ABL77133], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77133), 30.10.2018, det. A. Aptroot, 2019. Thallus UV-.

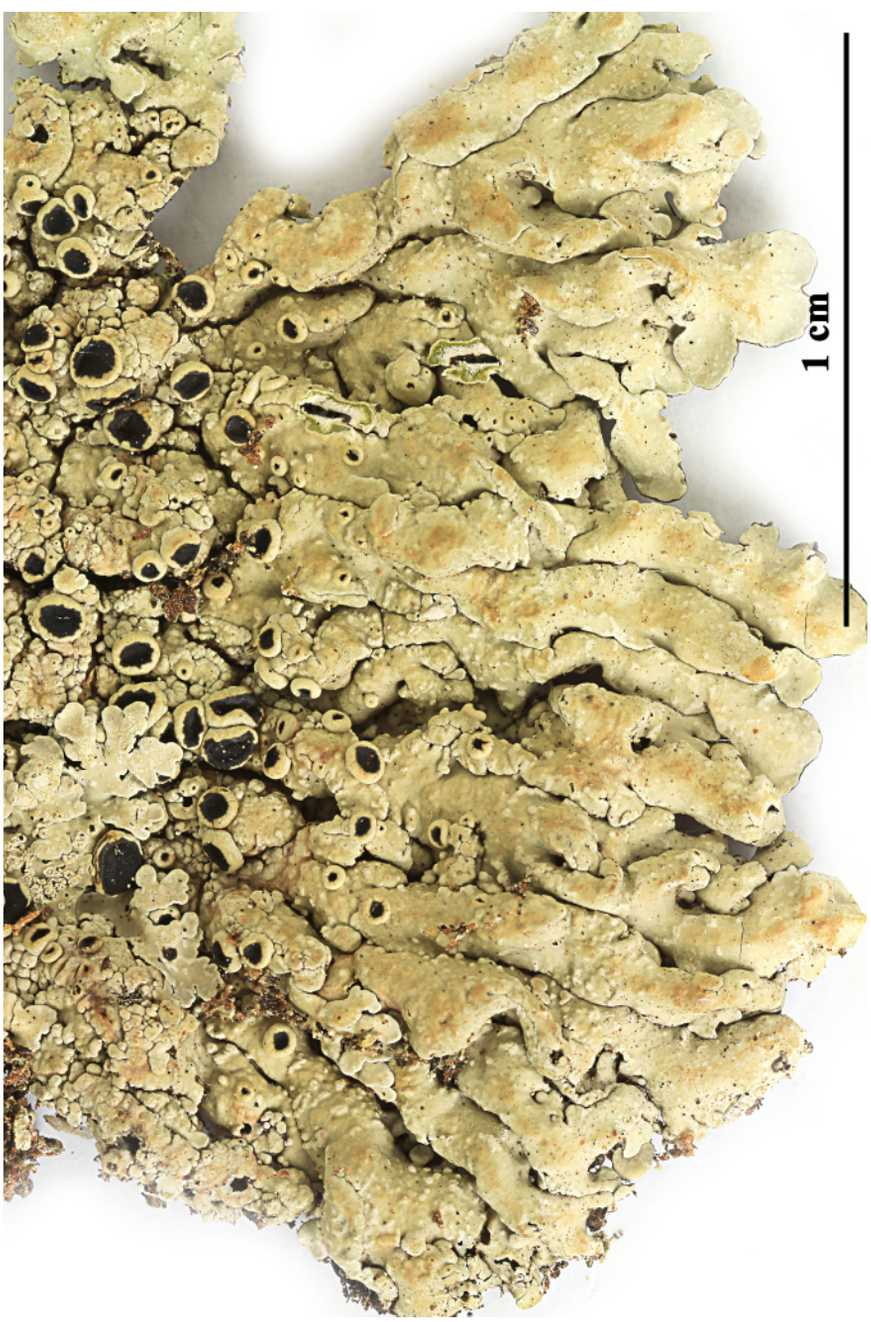




Pyxine mantiqueirensis

Pyxine petricola Nyl., in Crombie, J. Bot., Lond. 14: 263 (1876)
= *Pyxine endoleuca* (Müll. Arg.) Vain., Hedwigia 37(Beibl.): (42) (1898)
= *Pyxine meissneri var. endoleuca* Müll. Arg., Flora, Regensburg 62: 290 (1879)
= *Pyxine subvelata* Stirt., Trans. Proc. N.Z. Inst. 30: 396 (1898) [1897]

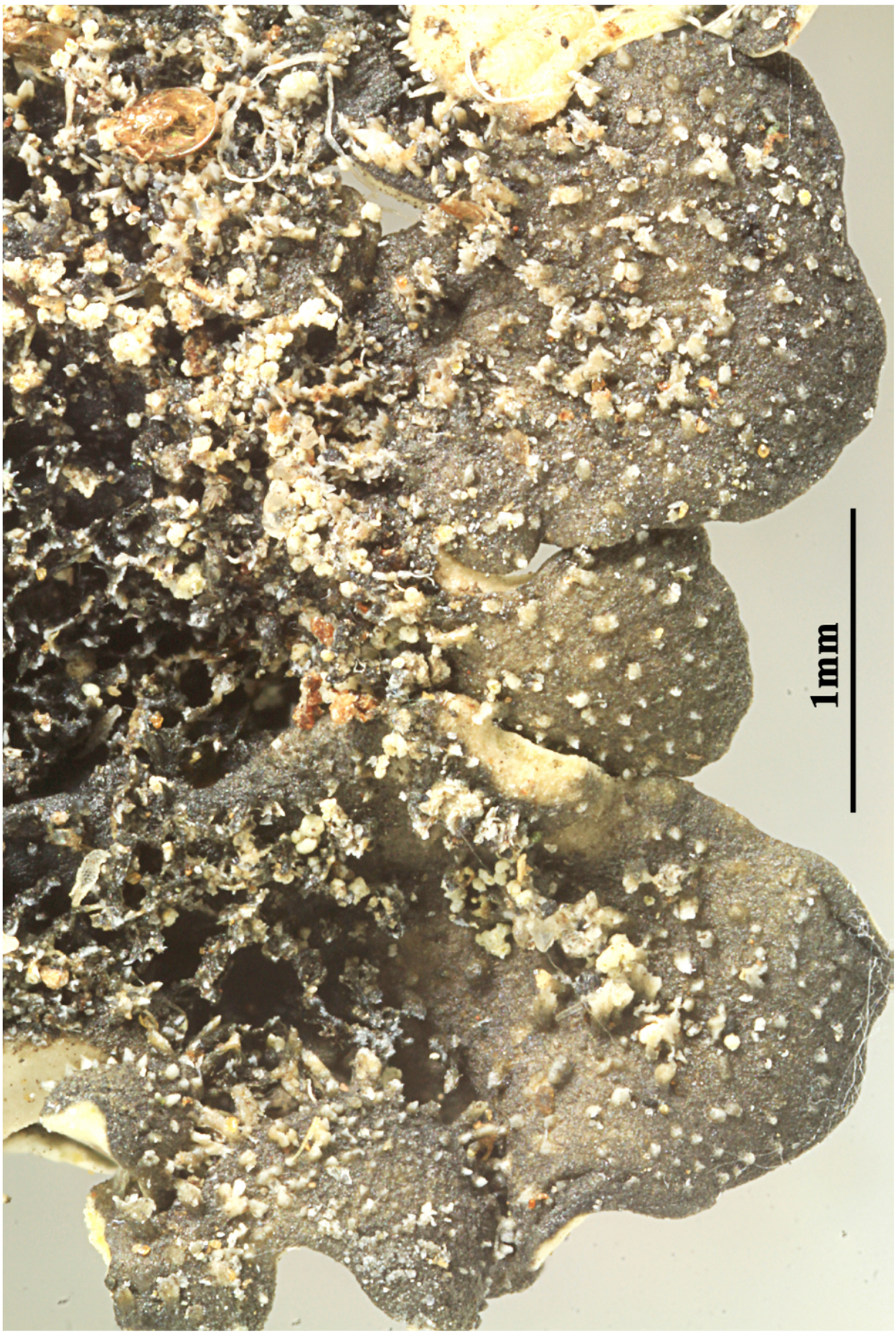
[ABL78180], Brazil, Mato Grosso do Sul, Pantanal 83 km SE of Corumbá, around Base de UFMS, in pantanal forest on tree bark. 19°34’ S, 57°01’05" W, 90 m. Leg. A. Aptroot (no 78180), 03.03.2019, det. A. Aptroot, 2019. - Upper side with marginal and laminal pseudocyphellae, ruina present. Isidia and soralia absent. Medulla white. Lower surface black. Spores brown, 1-septate, 12-18(-22) x 6-8(-10) µm. Triterpenoids, pigment (trace), lichexanthone (UV+ yellow), atranorin (trace).







Pyxine petricola



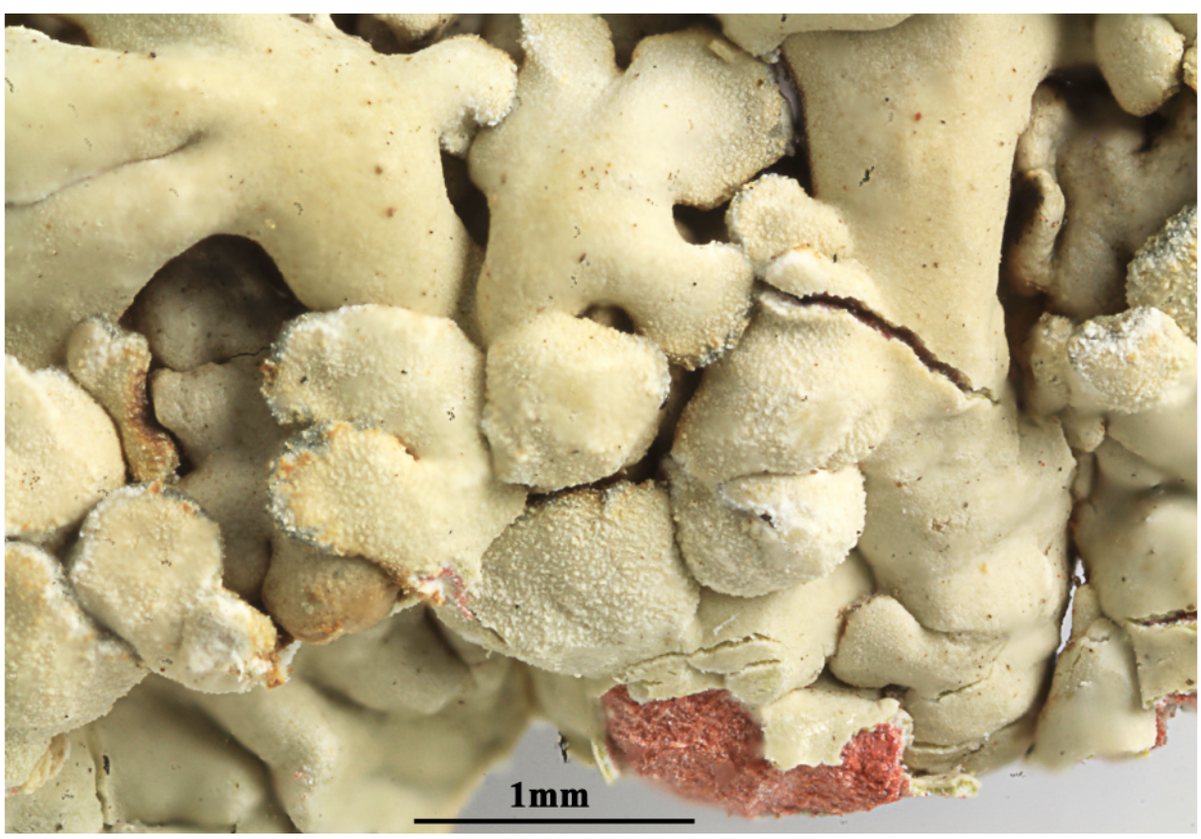
Pyxine petricola

Pyxine pungens Zahlbr., Annals Cryptog. Exot. 1(2): 210 (1928)

[ABL78396], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78396), 25.03.2019, det. A. Aptroot, 2019. - Soredia and isidia absent, medulla dark yellow to rust-coloured, lower surface black; spores brown, 1-septate, 16-19 x 5-9 µm; cortex K+ yellow, C-, P-, UV-, medulla K-, C-, P-, UV-; atranorin, terpinoids.







Pyxine pungens

Pyxine pyxinoides (Müll. Arg.) Kalb, Biblthca Lichenol. 24: 66 (1987)
= *Catolechia pyxinoides* Müll. Arg., Flora, Regensburg 44: 509 (1861)
= *Pyxine microspora* Vain., Philipp. J. Sci., C, Bot. 8(2): 110 (1913)

[ABL78005], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on siliceous rock. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78005), 9.11.2018, det. A. Aptroot, 2019. - Lacking soredia and isidia; medulla orange; spores brown, 1-septate, 10-17 x 4-6 µm; thallus K-, C-, P-, KC-, UV+ yellow; lichexanthone, triterpenoids, pigment.





Pyxine pyxinoides

Pyxine rhodesiaca Vain. ex Lynge, Rev. Bryol. Lichénol. 10: 90 (1937)
2021

[ABL78362], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 78362), 25.03.2019, det. A. Aptroot, 2019.- Upper surface with laminal and marginal pseudocyphellae, more or less reticulate, isidia and soralia absent, medula ochraceous yellow, spores brown, 1-septate, 15-20 x 6-8 µm; terpenoids, pigment, atranorin.





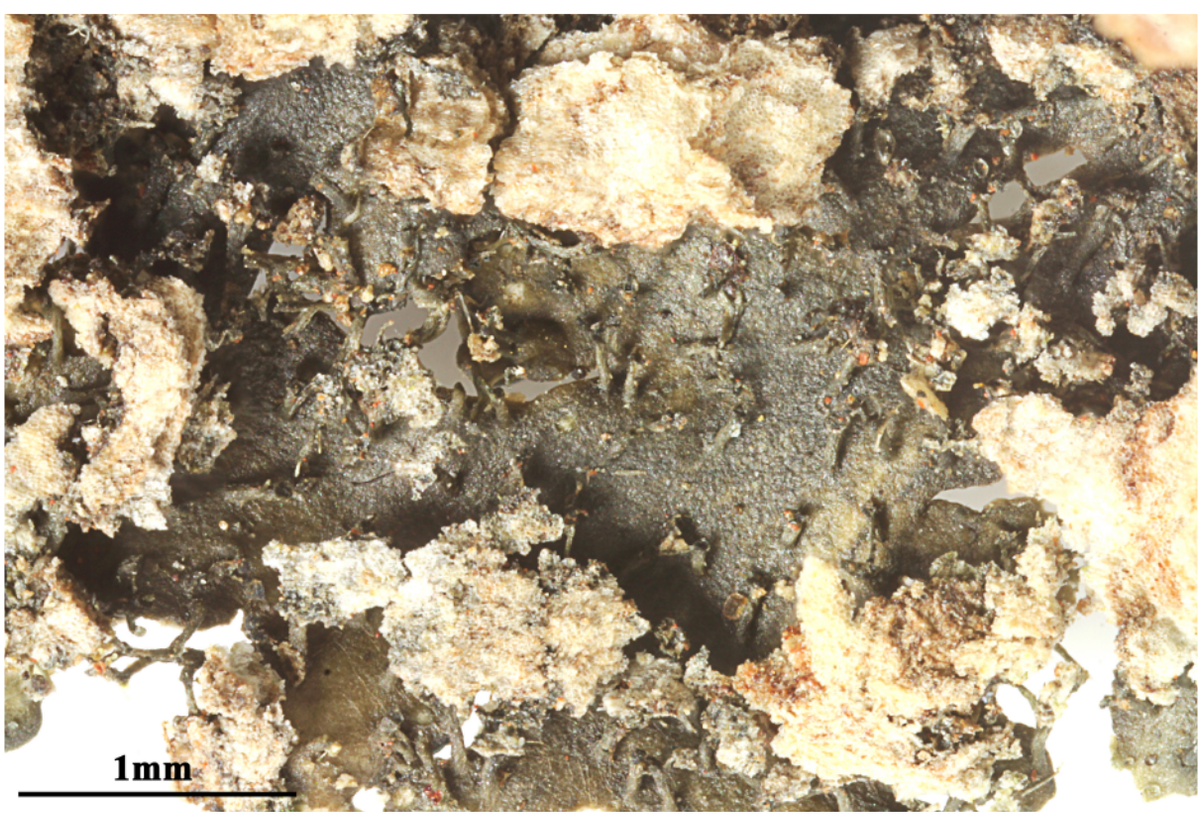
Pyxine rhodesiaca

Pyxine schechingeri Kalb, Biblthca Lichenol. 24: 71 (1987)

[ABL80197], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80197), 25.09.2019, det. A. Aptroot, 2019.







lower side

Pyxine schechingeri

Pyxine simulans Kalb, Biblthca Lichenol. 24: 72 (1987)

[ABL80272], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80272), 23-26.09.2019, det. A. Aptroot, 2019. - Thallus UV+ yellow.







Pyxine simulans

Ramalina celastri (Spreng.) A. Massal., Mem. Imp. Reale Ist. Veneto 10: 36 (1861)
= *Evernia flavicans* f. *tenuissima* Meyen & Flot., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur., Suppl. 1 19: 220 (1843)
= *Lichen linearis* Sw., Method. Muscor.: 36 (1781)
= *Lobaria linearis* (Sw.) Raeusch., Nomencl. bot., Edn 3: 329 (1797)
= *Parmelia celastri* Spreng., Syst. veg., Edn 16 4(1): 328 (1827)
= *Parmelia linearis* (Sw.) Ach., Methodus, Sectio post. (Stockholmiæ): 257 (1803)
= *Ramalina calicaris* f. *linearis* (Sw.) Nyl., Syn. meth. lich. (Parisiis) 1(2): 295 (1860)
= *Ramalina calicaris* var. *membranacea* (Laurer) C. Bab., in Hooker, Bot. Antarct. Voy. Erebus Terror 1839-1843, II, Fl. Nov.-Zeal.: 270 (1855)
= *Ramalina calicaris* var. *ovalis* (Hook. f. & Taylor) Bab., in Hooker, Hooker Fl. Tasman. 2: 344 (1860)
= *Ramalina canaliculata subsp. linearis* (Sw.) Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 129 (1870)
= *Ramalina celastri* subsp. *ovalis* (Hook. f. & Taylor) G.N. Stevens, Bull. Br. Mus. nat. Hist., Bot. 16(2): 184 (1987)
= *Ramalina ecklonii* var. *membranacea* (Laurer) Müll. Arg., Bull. Herb. Boissier 2(app. 1): 30 (1894)
= *Ramalina ecklonii* var. *ovalis* (Hook. f. & Taylor) F. Wilson, Pap. Proc. R. Soc. Tasm.: 159 (1893) [1892]
= *Ramalina ecklonii var. tenuissima* Meyen & Flot., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur., Suppl. 1 19: 213 (1843)
= *Ramalina fraxinea* var. *membranacea* Laurer, Linnaea 2: 43 (1827)
= *Ramalina lanceolata* var. *tenuissima* (Meyen & Flot.) Müll. Arg., Jb. Königl. Bot. Gart. Berlin 2: 311 (1883)
= *Ramalina linearis* (Sw.) Ach., Lich. Univ.: 598 (1810)
= *Ramalina ovalis* Hook. f. & Taylor, London J. Bot. 3: 655 (1844)
= *Ramalina yemensis* f. *membranacea* (Laurer) Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 145 (1870)
= *Ramalina yemensis* subsp. *ovalis* (Hook. f. & Taylor) Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 145 (1870)
= *Ramalina yemensis* var. *membranacea* (Laurer) Nyl., Bull. Soc. linn. Normandie, sér. 2 4(2): 145 (1870)
= *Ramalina yemensis* var. *ovalis* (Hook. f. & Taylor) Zahlbr., Cat. Lich. Univers. 6: 529 (1930)
= *Ramalina yemensis* var. *tenuissima* (Meyen & Flot.) Zahlbr., Cat. Lich. Univers. 6: 529 (1930)
= *Sticta ecklonii* Spreng. [as 'ecklonis'], Syst. veg., Edn 16 4(1): 330 (1827)
= *Teloschistes flavicans* var. *tenuissimus* Meyen & Flot. ex Müll. Arg., Jb. Königl. Bot. Gart. Berlin 2: 309 (1883)

[ABL80276], Brazil, Mato Grosso do Sul, Jatei, Parque Estadual das Várzeas do Rio Ivinhema, in open area near river on tree bark. 22°55' S, 53°39' W, 240 m. Leg. A. Aptroot (no 80276), 23-26.09.2019, det. A. Aptroot, 2019.



Ramalina celastri

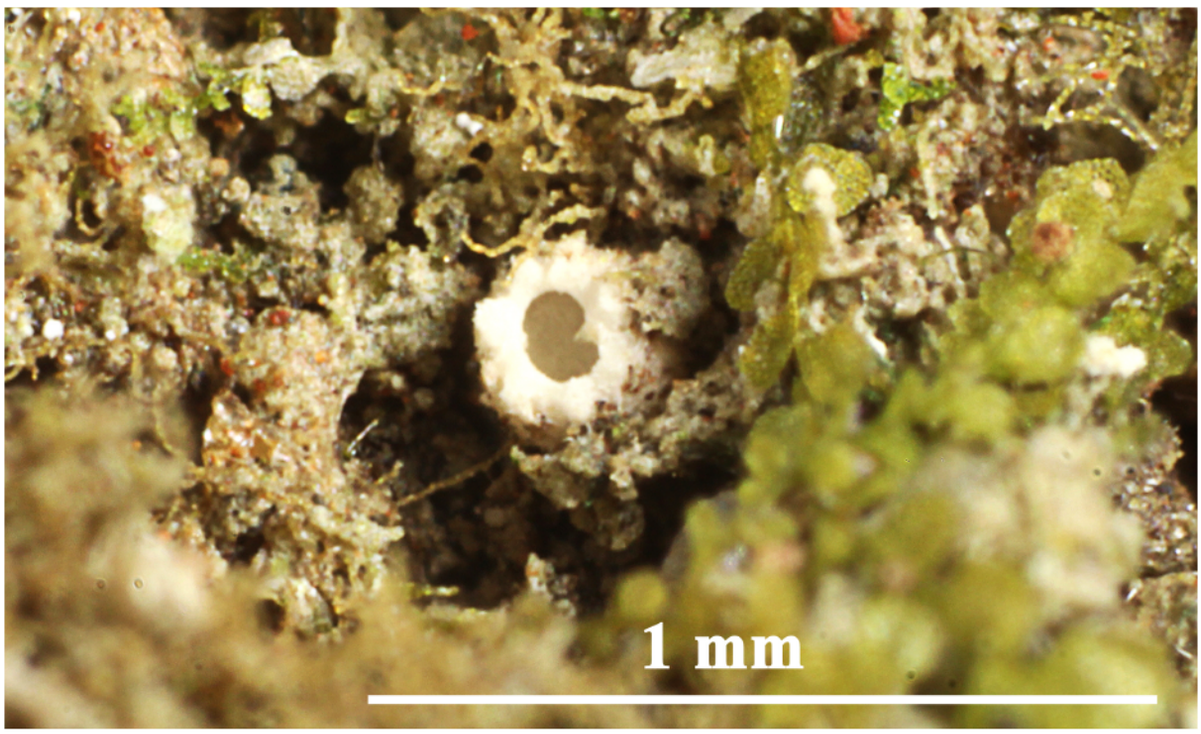


Ramalina celastri

Ramonia intermedia Kalb, Lichenes Neotropici, Fascicle VI (nos 201-250) (Neumarkt): no. 242 (1983)

[ABL80137], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°55' S, 53°44' W, 230 m. Leg. A. Aptroot (no 80137), 27.09.2019, det. A. Aptroot, 2019.- Spores, 32-62/ascus, 5.5 x 3 µm.







Ramonia intermedia

Ramonia kandleri Kalb [as 'kandlerii'], Lichenes Neotropici, Fascicle VI (nos 201-250) (Neumarkt): no. 243 (1983)

[ABL77069], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77069), 30.10.2018, det. A. Aptroot, 2019. - Spores c. 50/ascus, simple, with 2 µ thick halo, 8 x 5 µm.





Ramonia kandleri

Reimnitzia santensis (Tuck.) Kalb, Mycotaxon 79: 325 (2001)
= *Leptotrema heterosporum* (C. Knight) Zahlbr., Cat. Lich. Univers. 2: 635 (1923) [1924]
= *Leptotrema mastoideum* Müll. Arg., Flora, Regensburg 70: 400 (1887)
= *Leptotrema santense* (Tuck.) Zahlbr., Cat. Lich. Univers. 2: 639 (1923) [1924]
= *Thelotrema heterosporum* C. Knight, in Bailey, Syn. Queensl. Fl. 1(Suppl.): 72 (1886)
= *Thelotrema santense* Tuck., Proc. Amer. Acad. Arts & Sci. 5: 406 (1862) [1860]

[ABL80118], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80118), 26.09.2019, det. A. Aptroot, 2019.





Reimnitzia santensis

Rinodina guianensis Aptroot, Proc. K. Ned. Akad. Wet., Ser. C, Biol. Med. Sci. 90: 240 (1997)

[ABL77010], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77010), 30.10.2018, det. A. Aptroot, 2019. - With up to 0.4 mm long isidia.



Rinodina maculans (Kremp.) Müll. Arg., Flora, Regensburg 72: 66 (1889)
= *Lecidea maculans* Kremp. 1878

[ABL80302], Brazil, Mato Grosso do Sul, Jateí, Parque Natural Municipal de Jateí, in marsh forest on tree bark. 23°07’52” S, 53°43’10” W, 235 m. Leg. A. Aptroot (no 80302), 28.09.2019, det. A. Aptroot, 2019. - Spores 1-septate, 17 x 10 µm.





Rinodina maculans

Rinodina oxydata (A. Massal.) A. Massal., Geneac. lich. (Verona): 19 (1854)
= *Mischoblastia oxydata* A. Massal. 1852

[ABL77771], Brazil, Mato Grosso do Sul, Morraria do Sul, outlook, in Atlantic rain forest on siliceous rock. 20°33’ S, 56°54’03 W, 580 m. Leg. A. Aptroot (no 77771), 6.11.2018, det. A. Aptroot, 2019 - Spores 1-septate, 12 x 5 µm.



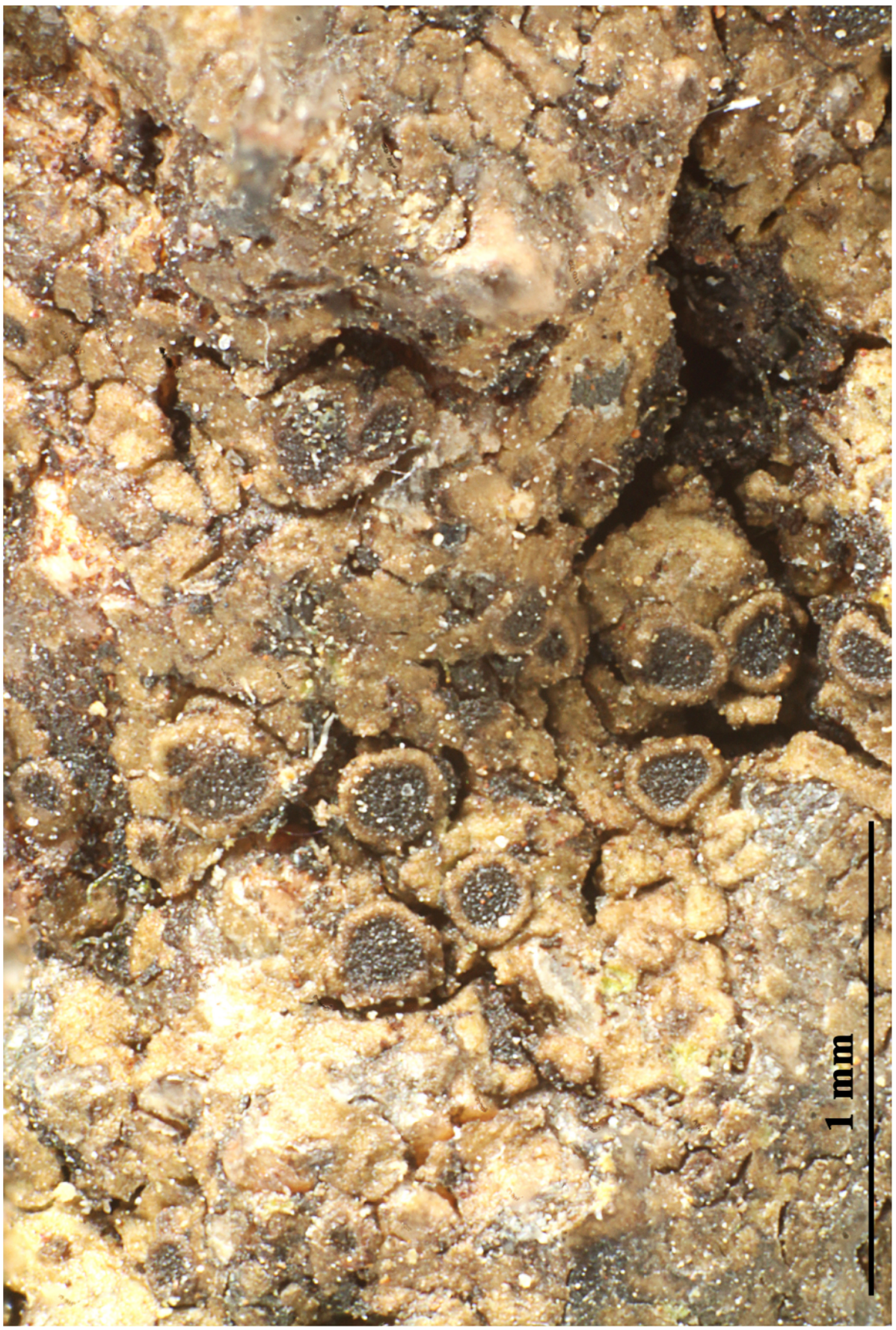


Rinodina oxydata

Rinodina teichophila (Nyl.) Arnold, Flora, Regensburg 46: 329 (1863)
= *Lecanora sophodes* var. *teichophila* Nyl., Flora, Regensburg 46(5): 78 (1863)
= *Lecanora teichophila* (Nyl.) Lamy, Bull. Soc. bot. Fr. 25(5): 405 (1880) [1878]
= *Pachysporaria teichophila* (Nyl.) M. Choisy, Bull. mens. Soc. linn. Soc. Bot. Lyon 18: 111 (1949)
= *Rinodina caesiella* var. *teichophila* (Nyl.) Zwackh, Flora, Regensburg 47: 85 (1864)

[ABL77773], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, in Atlantic rain forest on siliceous rock.rk. 20°32’19" S, 56°54’ W, 580 m. Leg. A. Aptroot (no 77773), 6.11.2018, det. A. Aptroot, 2019. Spores brown, 1-septate, 17 x 7 µm.





Rinodina teichophila

Rinodina saulensis Aptroot, Proc. K. Ned. Akad. Wet., Ser. C, Biol. Med. Sci. 90: 241 (1997)

[ABL80390], Brazil, Mato Grosso do Sul, Campo Grande, Avenida Mato Grosso, Parque de Poderes, in park on tree bark. 20°26'41" S, 54°33'40" W, 640 m. Leg. A. Aptroot (no 80390), 14.10.2019, det. A. Aptroot, 2019. - Spores 1-septate, 24 x 12 µm.

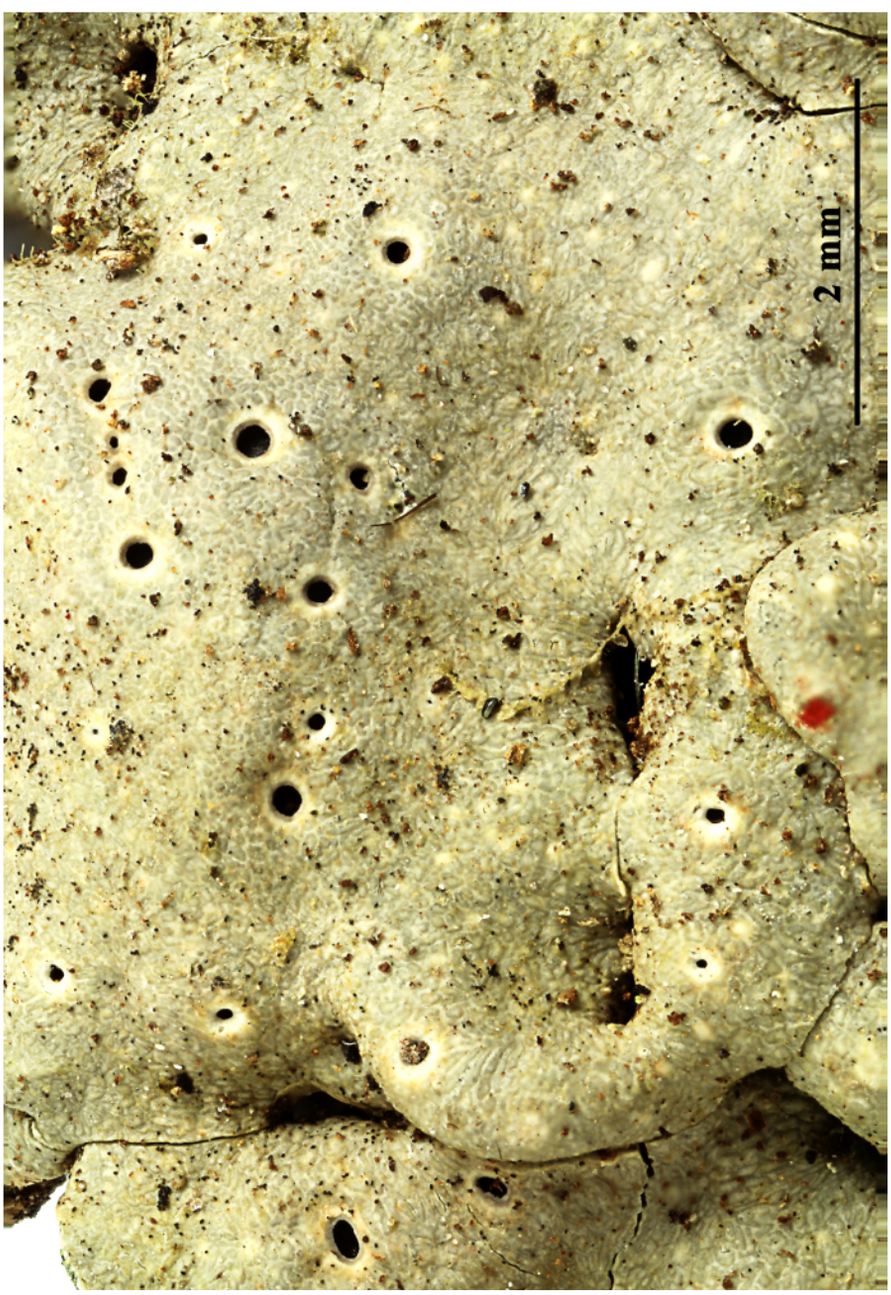


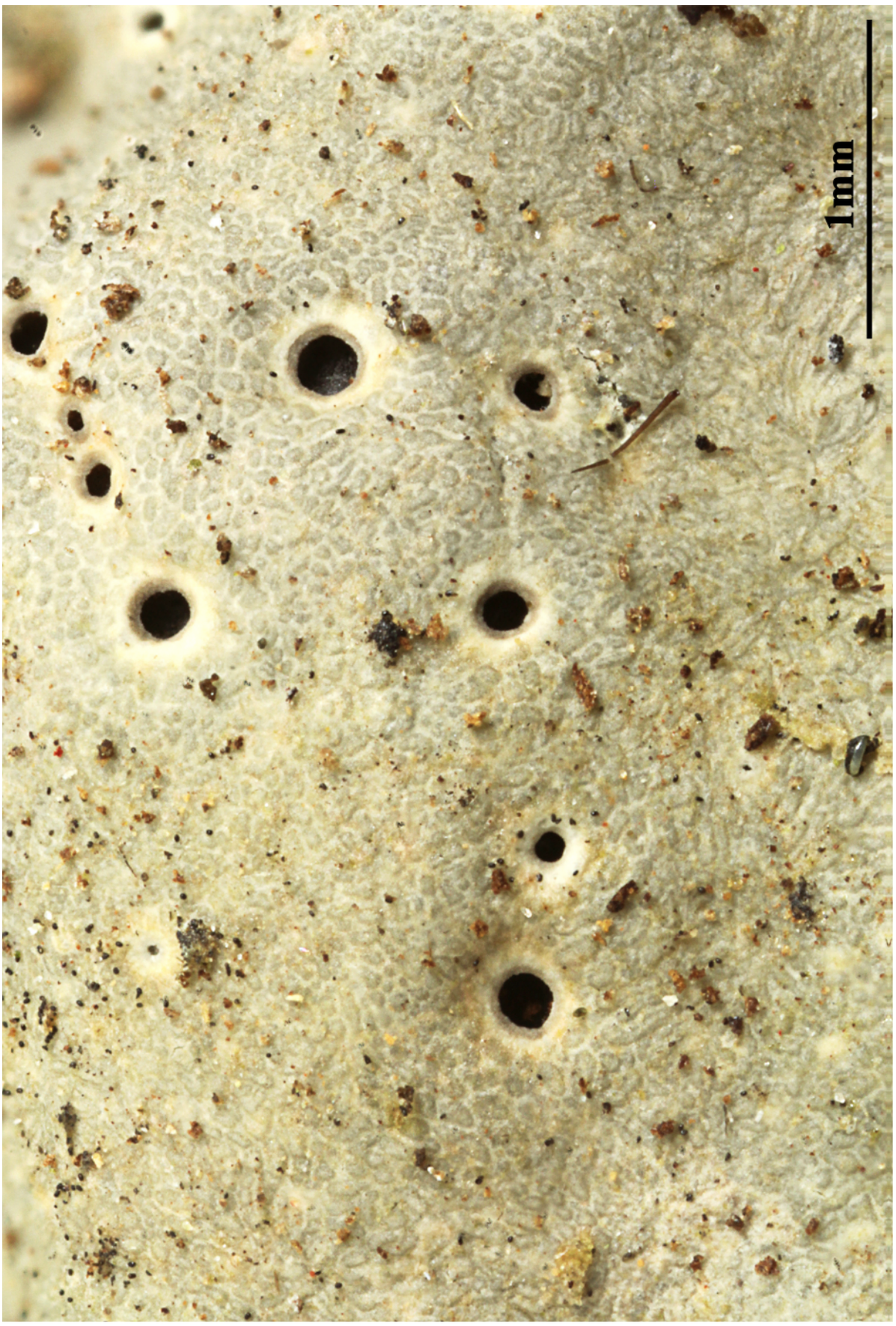


Rinodina saulensis

Sanguinotrema wightii (Taylor) Lücking, in Lücking, Mangold, Plata, Parnmen, Kraichak & Lumbsch, Bot. J. Linn. Soc. 436: 441 (2015)
= *Endocarpon baileyi* Stirt., Trans. & Proc. Roy. Soc. Victoria 17: 74 (1881)
= *Endocarpon wightii* Taylor, London J. Bot. 6: 155 (1847)
= *Leptotrema baileyi* (Stirt.) Shirley, Proc. R. Soc. Qd. 6: 194 (1889)
= *Leptotrema wightii* (Taylor) Müll. Arg., Flora, Regensburg 65: 499 (1882)
= *Myriotrema wightii* (Taylor) Hale, Mycotaxon 11(1): 135 (1980)
= *Phaeotrema wightii* (Taylor) Zahlbr., in Magnusson & Zahlbruckner, Ark. Bot. 31A(no. 1): 48 (1944)
= *Thelotrema wightii* (Taylor) Nyl., Mém. Soc. Imp. Sci. Nat. Cherbourg 5: 118 (1858)

[ABL77105], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77105), 30.10.2018, det. A. Aptroot, 2019.





Sanguinotrema wightii

Sarcographa fenicis (Vain.) Zahlbr., Cat. Lich. Univers. 2: 460 (1923) [1924]
= *Graphis fenicis* Vain., Ann. Acad. Sci. fenn., Ser. A 15(no. 6): 228 (1921)

[ABL77746], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77746), 6.11.2018, det. A. Aptroot, 2019. - Hymenium inspersed.





Sarcographa fenicis

Scoliciosporum camptosporum (Vain.) Aptroot, Fungal Diversity 9: 30 (2002)

= Lecidea camptospora Vain., Acta Soc. Fauna Flora fenn. 7(no. 2): 59 (1890)

[ABL77785], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, in Atlantic rain forest on siliceous rock. 21°07’44" S, 56°30’41" W, 800 m. Leg. A. Aptroot (no 77785), 6.11.2018, det. A. Aptroot, 2019.



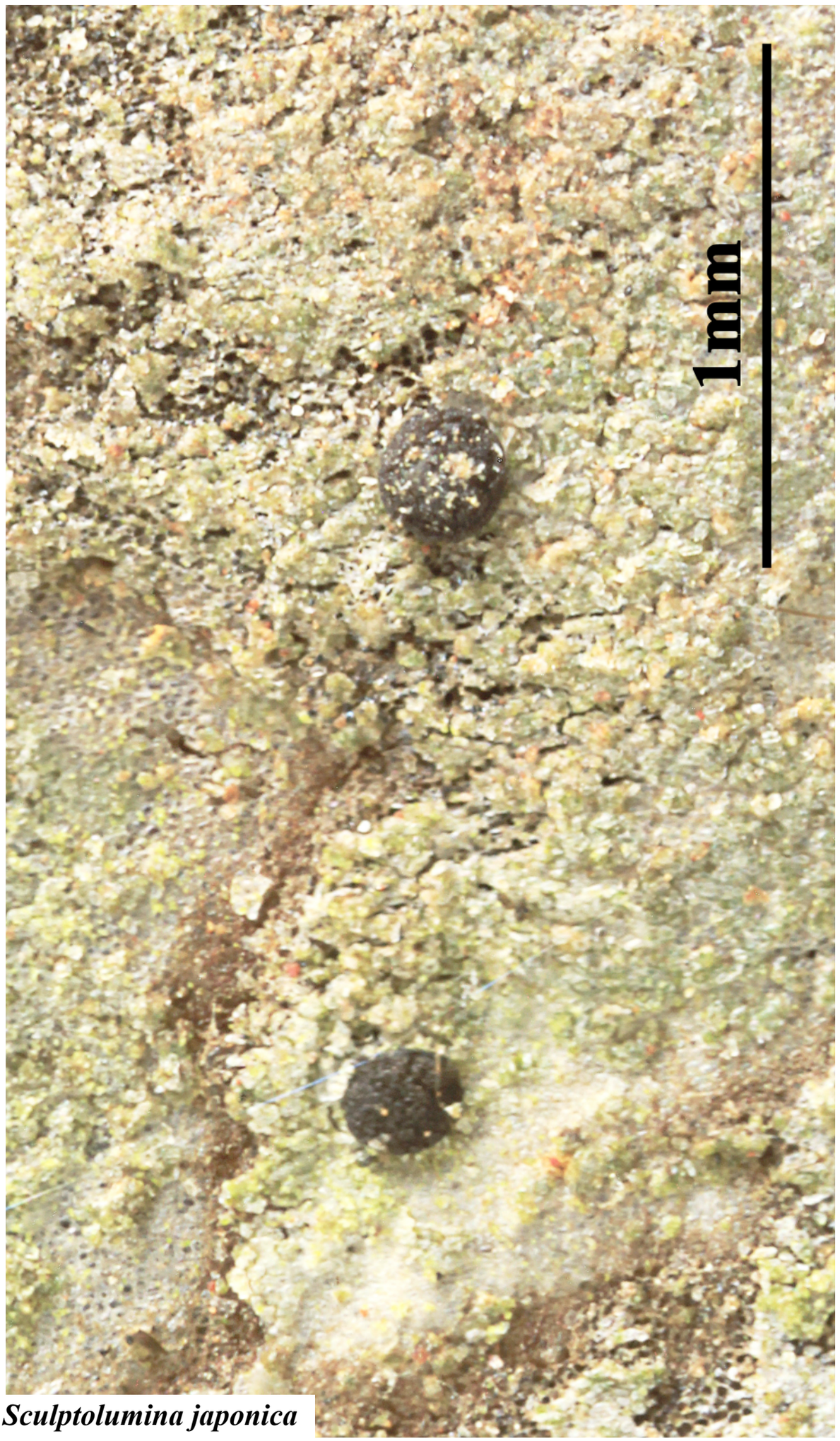


Scoliciosporum camptosporum

Sculptolumina japonica (Tuck.) Marbach, Biblthca Lichenol. 74: 296 (2000)
= *Buellia japonica* (Tuck.) Tuck., Lichens of California (Berkeley): 25 (1866)
= *Lecidea japonica* Tuck., Proc. Amer. Acad. Arts & Sci. 5: 421 (1862) [1860]

[ABL79021], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30' S, 54°37' W, 550 m. Leg. A. Aptroot (no 79021), 3.07.2019, det. A. Aptroot, 2019. - Spores 7/ascus, 1-septate, 16x 6 µm. The green sorediado not belongto the species but are superficial.





Sculptolumina japonica

Sticta xanthotropa (Kremp.) D.J. Galloway, Lichen Flora of the Greater Sonoran Desert Region (Tempe) 2: 523 (2004)

= *Biatorella testudinea var. xanthotropa* (Kremp.) Hue, Nouv. Arch. Mus. Hist. Nat., Paris, 4 sér. 3: 96 (1901)

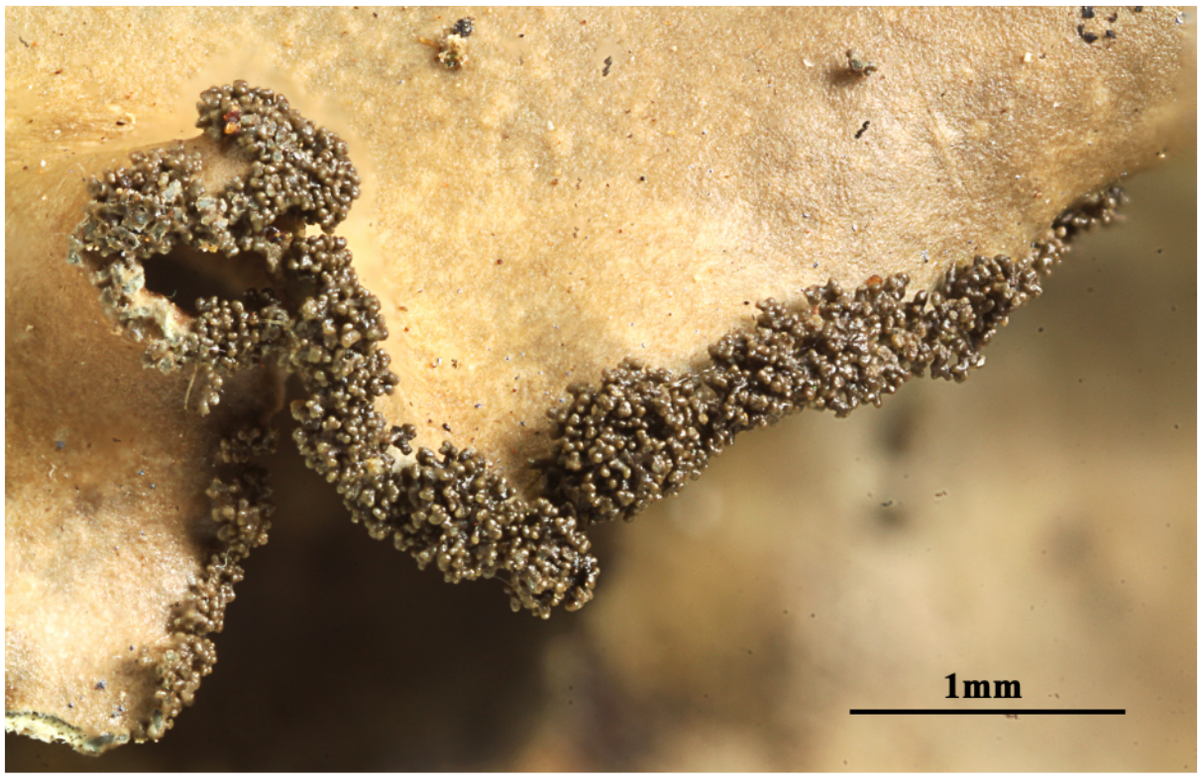
= *Sticta quercizans* var. *xanthotropa* Kremp., Flora, Regensburg 59: 62 (1876)

= *Stictina quercizans* var. *xanthotropa* (Kremp.) Müll. Arg., Flora, Regensburg 71: 138 (1888)

= *Stictina weigelii* var. *xanthotropa* (Kremp.) Stizenb., Flora, Regensburg 81: 133 (1895)

[ABL80176], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80176), 25.09.2019, det. A. Aptroot, 2019.



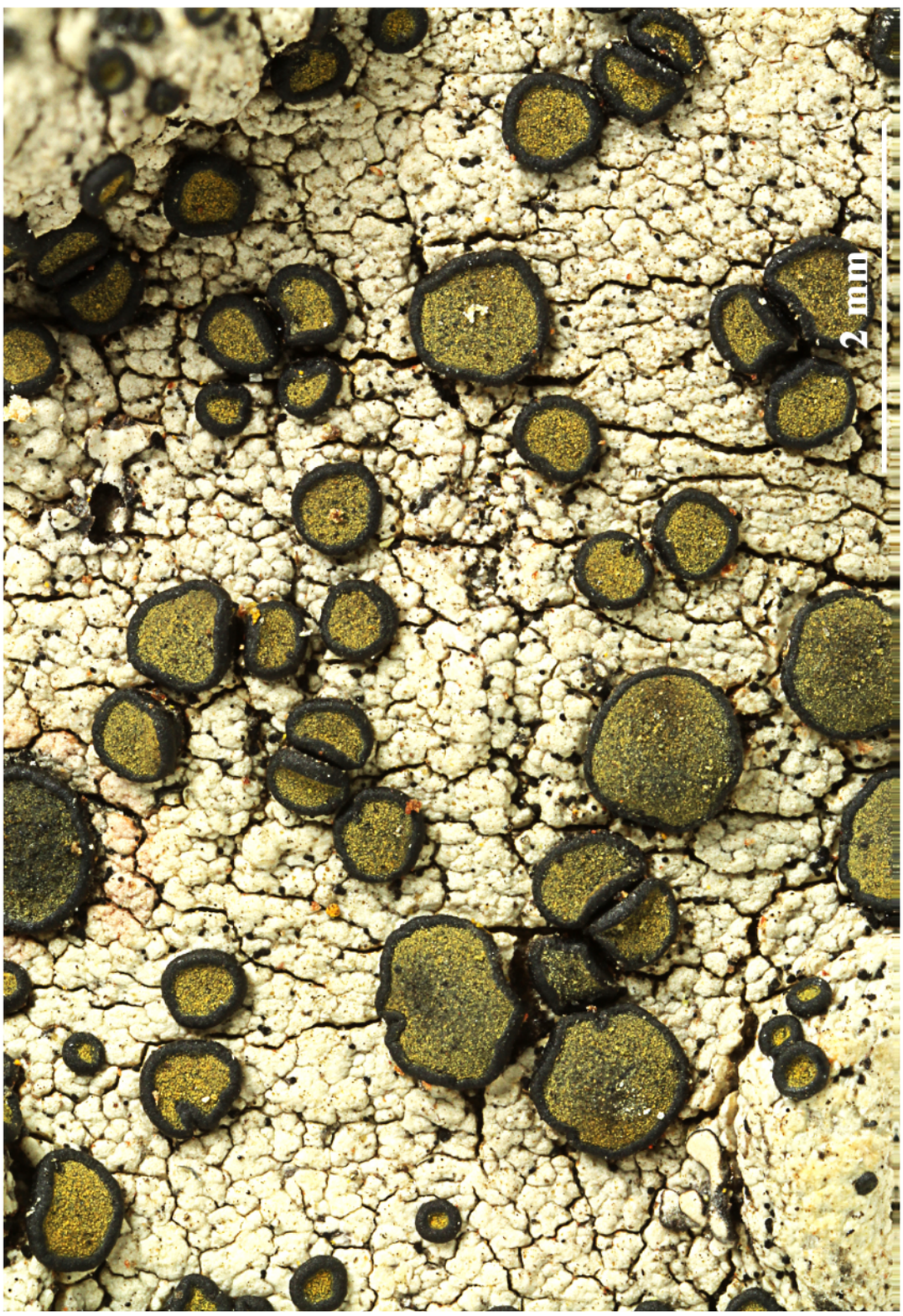


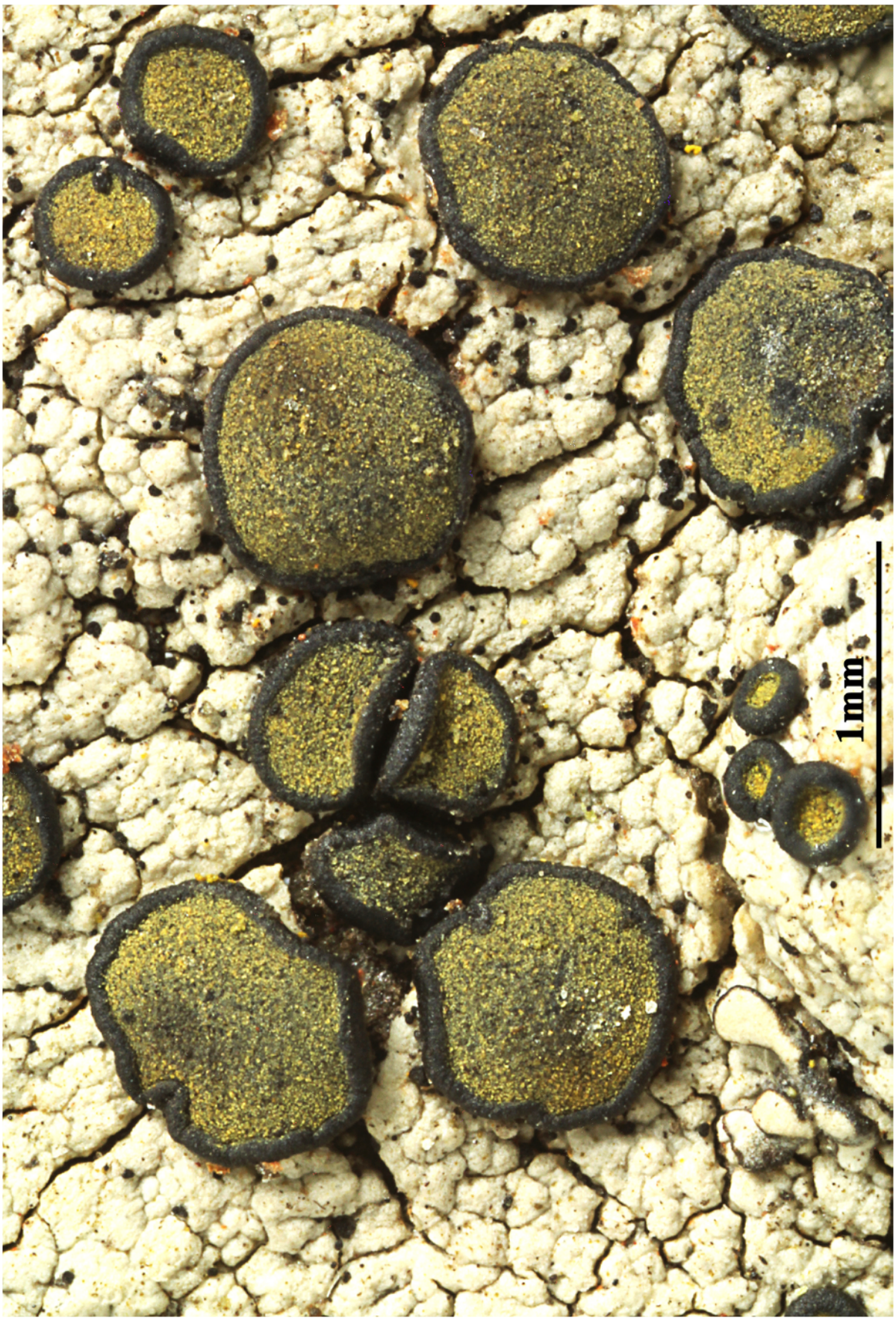


Sticta xanthotropa

Stigmatochroma kryptoviolascens Marbach, Biblthca Lichenol. 74: 317 (2000)

[ABL77097], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77097), 30.10.2018, det. A. Aptroot, 2019. - Thallus K+ yellow > red (norstictic and connorstictic acid); disk yellow pruinose, UV+ yellow (lichexanthone); spores brown, 8/ascus, 1-septate, 16-22 x 7-8 µm





Stigmatochroma kryptoviolascens

Stirtonia lucida M.M.E. Alves, Aptroot & M. Cáceres, Lichenologist 46(5): 664 (2014)

[ABL77957], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54'25" S, 56°48'04" W, 530 m. Leg. A. Aptroot (no 77957), 8.11.2018, det. A. Aptroot, 2019. - *Stirtonia* with rather small ascigerous areas, lichexanthone and zeorine in the thallus, asci globose, ascospores 8 per ascus, ellipsoid, 17–19 x 8–10 µm, occasionally with some longitudinal septa. Ascigerous zones delimited, round to mostly elongated to irregular in outline, not raised above the thallus, partly single but often partly fused in groups or rows, white pruinose, not dotted by the asci. Interascal hyphae thin, curly anastomosing, IKI+ blue (amyloid). Asci globose, IKI+ brownish (dextrinoid), with 8 ascospores, c. 50–60 mm diam. Ascospores hyaline, IKI+ brownish (dextrinoid), longitudinally septate or occasionally sparsely muriform, 5(–7) x 0–1(–2)-septate with in total 0–1(–4) longitudinal thick septa, ellipsoid, 17–19 x 8–10 µm, ends rounded, lumina more or less regular, terminal lumina sometimes larger, sometimes smaller than the others, not macrocephalic. Chemistry: Thallus C-, K-, KC-, P-, UV+ yellow, ascigerous areas UV+ white, strongly contrasting with the thallus. TLC: lichexanthone and zeorin.





Stirtonia lucida

Stirtonia viridis Aptroot, L.I. Ferraro, Sipman & M. Cáceres, in Aptroot, Sipman, Käffer, Martins, Ferraro & Cáceres, Lichenologist 46(5): 677 (2014)

[ABL77226], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Taquaral, in Atlantic rain forest on tree bark. 21°06' S, 56°38' W, 500 m. Leg. A. Aptroot (no 77226), 31.10.2018, det. A. Aptroot, 2019. - Thallus C-, P-, UV-; spores 8/ascus, 8-10-septate, 55 x 20 µm.





Stirtonia viridis

Swinscowia amphora (Aptroot & Lücking) S.H. Jiang, Lücking & Sérus., in Hongsanan et al., Fungal Diversity: 10.1007/s13225-020-00462-6, [138] (2020)

= *Strigula amphora* Aptroot & Lücking, in Aptroot, Lücking, Sipman, Umaña & Chaves, Biblthca Lichenol. 97: 130 (2008)

[ABL77159], Brazil, Mato Grosso do Sul, Bonito, Saci, near Córrego Taquaral, in Atlantic rain forest on tree bark. 21°06' S, 56°38' W, 500 m. Leg. A. Aptroot (no 77159), 31.10.2018, det. A. Aptroot, 2019. - Hymenium not inspersed, filaments branched; spores 8/ascus, hyaline, muriform, c. 11 x 3-septate. 42-50 x 14-17 µm.





Swinscowia amphora

Synarthonia inconspicua (Stirt.) Van den Broeck & Ertz, in Van den Broeck, Frisch, Razafindrahaja, Van de Vijver & Ertz, Plant Ecology and Evolution 151(3): 333 (2018)

= *Arthonia inconspicua* Stirt., Proc. Roy. phil. Soc. Glasgow 11: 319 (1879) [1878]

[ABL80361], Brazil, Mato Grosso do Sul, Naviraí, Fazenda Três Irmãos, on farm on tree bark. 23°06'08'' S, 53°49'08'' W, 310 m. Leg. A. Aptroot (no 80361), 29.09.2019, det. A. Aptroot, 2019





Synarthonia inconspicua

Synarthonia sarcographoides Aptroot, A.A. Menezes, E.L. Lima & M. Cáceres, Lichenologist 45(5): 616 (2013)

[ABL80728], Brazil, Mato Grosso do Sul, Rochedo, 7 km NE in cerrado on tree bark. 19°55' S, 54°50' W, 300 m. Leg. A. Aptroot (no 80738), 8.12.2019, det. A. Aptroot, 2019



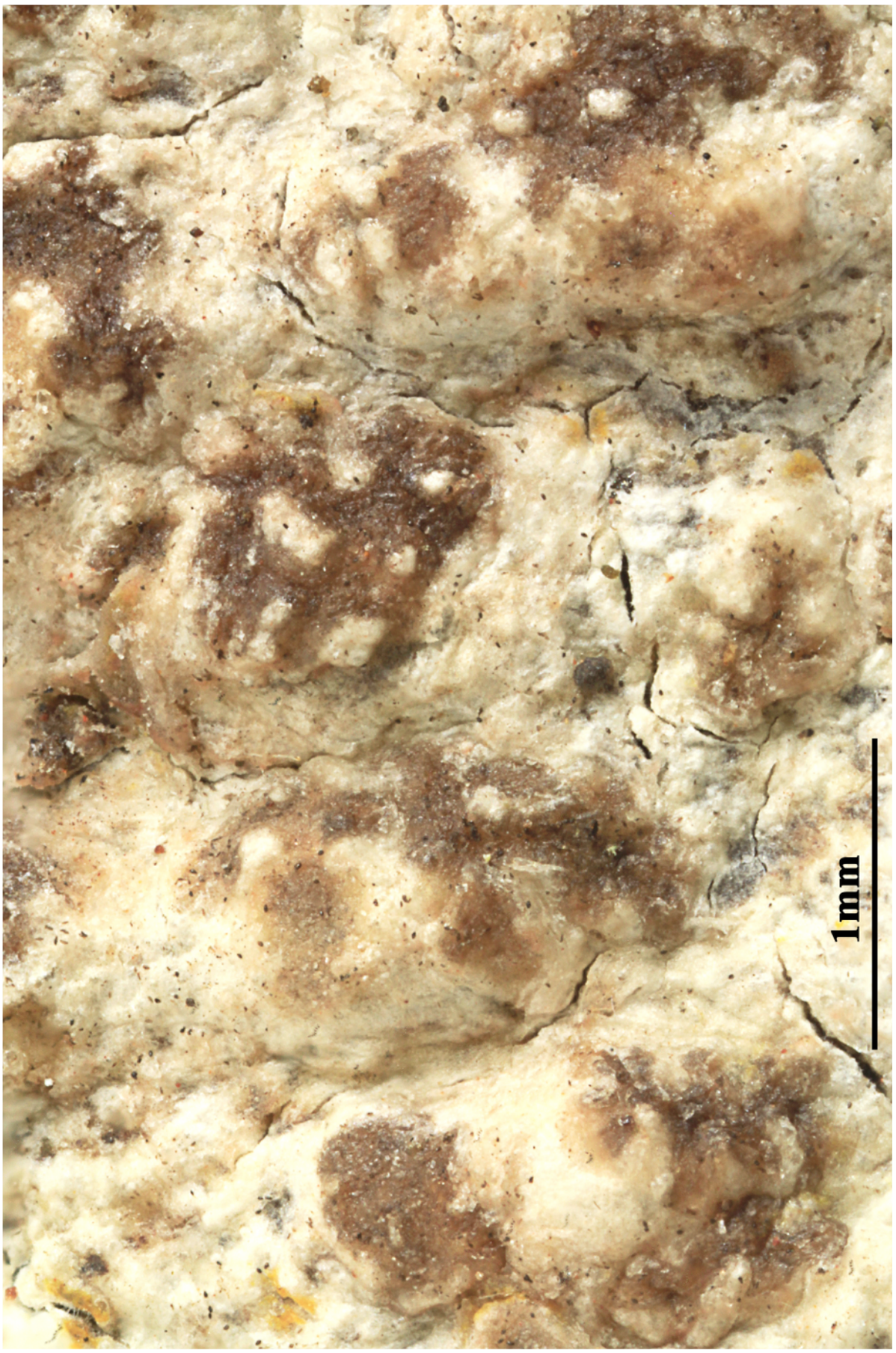


Synarthonia sarcographoides

Synarthothelium cerebriforme Sparrius [as 'cerebrifome'], Biblthca Lichenol. 99: 375 (2009)

[ABL78025], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, outskirts, near tower in disturbed cerrado forrest on tree bark. 21°07’44" S, 56°30’41" W, 475 m. Leg. A. Aptroot (no 78025), 9.11.2018, det. A. Aptroot, 2019. - Thallus crustose, not corticate, upper surface dull or shiny, whitish or greenish to grey or brown. Soredia and isidia absent. Photobiont trentepohlioid. Apothecia present, aggregated in pseudostromata, elongate to stellate to irregular in outline. Paraphyses anastomosing. Asci globose to broadly clavate. Spores clavate to ellipsoid, transversely 6-septate, hyaline, 55–70 × 22–28 μm. Reactions: all negative.





Synarthothelium cerebriforme

Tephromela vinacea L.A. Santos, Aptroot, Lücking & M. Cáceres, in Santos, Aptroot, Souza, Lücking, Guzman-Guillermo & Cáceres, Cryptog. Mycol. 44(2): 18 (2023)

[ABL77088], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58’ S, 56°42’ W, 650 m. Leg. A. Aptroot (no 77088), 30.10.2018, det. A. Aptroot, 2019. - Medulla UV+ white.





Tephromela vinacea

Thalloloma cinnabarinum (Fée) Staiger, Biblthca Lichenol. 85: 432 (2002)
= *Graphis cinnabarina* Fée, Essai Crypt. Exot. (Paris): 44 (1825) [1824]
= *Phaeographis cinnabarina* (Fée) Müll. Arg., Mém. Soc. Phys. Hist. nat. Genève 29(no. 8): 27 (1887)

[ABL77891], Brazil, Mato Grosso do Sul, Morraria do Sul, Bonito, Fazenda Monte Negro, in Atlantic rain forest on tree bark. 20°54’25" S, 56°48’04" W, 530 m. Leg. A. Aptroot (no 77891), 8.11.2018, det. A. Aptroot, 2019. - Hymenium not inspersed; spores hyaline, 8/ascus, 5-9-septate, IKI+ blue, 25-40(-45) x 6-9(-10) µm; Chemistry: isohypocrellin.





Thalloloma cinnabarinum

Thelenella brasiliensis (Müll. Arg.) Vain., J. Bot., Lond. 34: 293 (1896)
= *Microglaena brasiliensis* Müll. Arg., Flora, Regensburg 71: 547 (1888)

[ABL77802], Brazil, Mato Grosso do Sul, Morraria do Sul, Bodoquena, Fazenda Santa Laura, in Atlantic rain forest on siliceous rock. 20°47'10" S, 56°43'48" W, 450 m. Leg. A. Aptroot (no 77802), 7.11.2018, det. A. Aptroot, 2019. - Spores hyaline, muriform, 7 x 1-3-septate, 26-28 x 10 µm.





Thelenella brasiliensis

Thelenella paraguayensis Malme, Ark. Bot. 22A(no. 1): 5 (1928)

[ABL80002], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80002), 25.09.2019, det. A. Aptroot, 2019. - Spores,hyaline, muriform, ≥ 2/ascus, c. 15 x 1-5-septate, 60 x 12 µm.



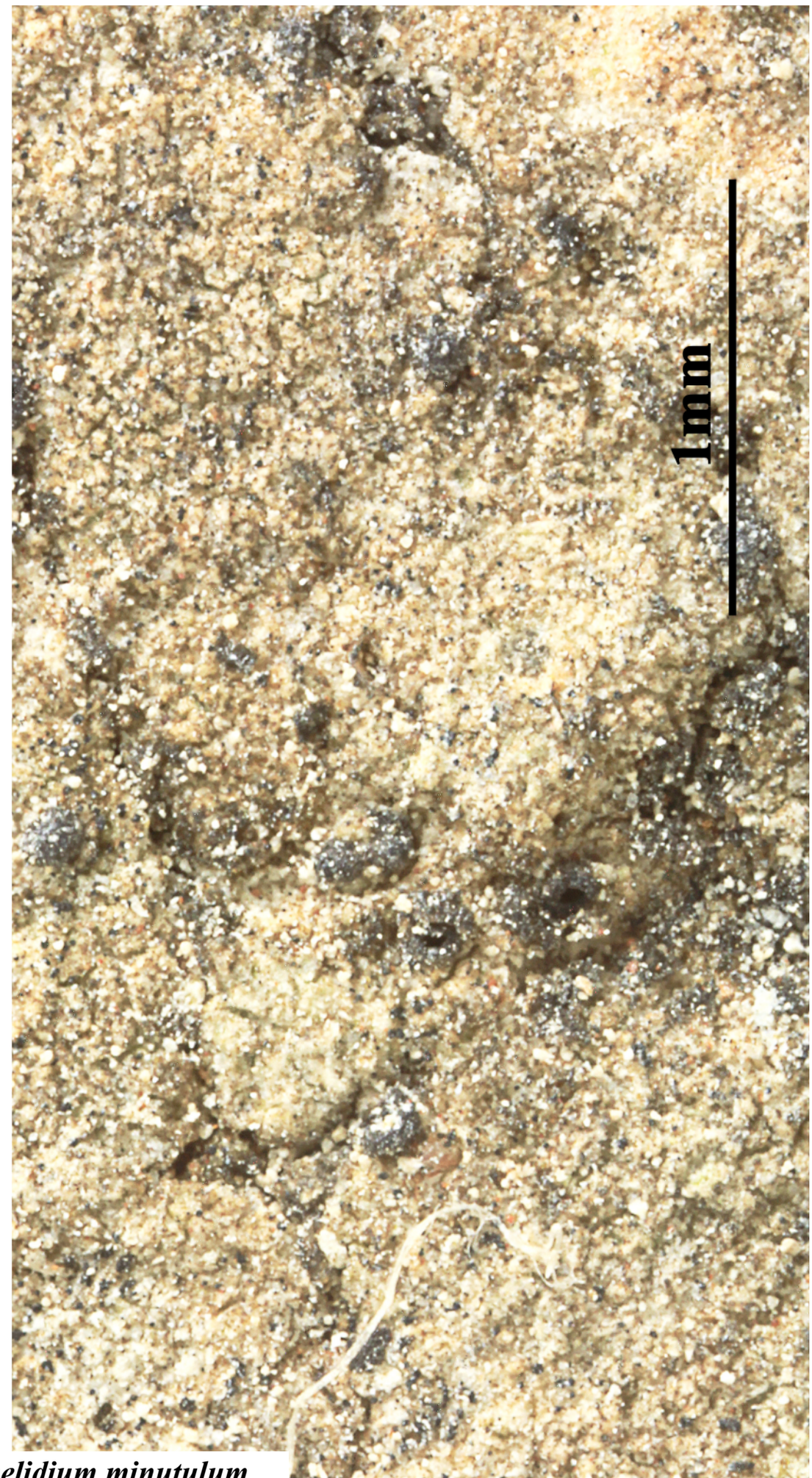


Thelenella paraguayensis

Thelidium minutulum Körb., Parerga lichenol. (Breslau) 4: 351 (1863)
= *Verrucaria gemmata* var. *minutula* (Körb.) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 507 (1882)
= *Thelidium acrotellum* Arnold, Flora, Regensburg 49: 532 (1866)
= *Verrucaria mesotropa* Nyl., Flora, Regensburg 49: 419 (1866)
= *Arthopyrenia mesotropa* (Nyl.) Arnold, Flora, Regensburg 53(30–31): 485 (1871)
= *Thelidium mesotropum* (Nyl.) A.L. Sm., Monogr. Brit. Lich. 2: 297 (1911)
= *Thelidium exile* Arnold, Flora, Regensburg 65(26): 410 (1882)
= *Thelidium parvulum* Arnold, Flora, Regensburg 65: 441 (1882)
= *Verrucaria parvula* (Arnold) Stizenb., Ber. Tät. St Gall. naturw. Ges.: 215 (1891)
= *Thelidium terrestre* Walt. Watson, J. Bot., Lond. 55: 107 (1917)

[ABL77544], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on siliceous rock. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77544), 3.11.2018, det. A. Aptroot, 2019. - Spores hyaline,1-septate, 17 x 7 µm.





Thelidium minutulum

Thelopsis flavosorediata Aptroot & Schumm, sp. nov.

MycoBank MB 848369

Diagnosis: Corticolous *Thelopsis* with discrete soralia and ascospores 8/ascus, uniseriate, submuriform, 10–13 × 6.5–7.5 µm.

Type: Brazil, Mato Grosso do Sul, Porto Murtinho, Reserva Indígena Kadiwéu, surroundings of parcela 14, 20° 31' S, 57° 02' W, alt. 130 m. On tree bark in Cerrado forest. Leg. A. Aptroot 85666, 9 March 2022 (CGMS, holotype; ABL, isotype).

Description. Thallus dull, mineral grey, under 0.1 mm thick, not surrounded by a prothallus, with soralia. Soralia sessile, pale yellowish to orangish grey (due to the trentepohlioid algae; not due to a pigment), 0.2–0.4 mm diam., with farinose soredia. Ascomata globose, 0.2–0.35 mm diam., sessile, reddish brown, not covered by thallus. Ostioles apical, inconspicuous. Hamathecium not inspersed. Ascospores 8/ascus, uniseriate, hyaline, submuriform, 10–13 × 6.5–7.5 µm, ellipsoid, lumina rounded, not surrounded by a gelatinous sheath. Pycnidia not observed.

Chemistry. Thallus UV–, C–, K–, KC–, P–. TLC: nil.

Etymology. Named for the yellowish soredia.

Ecology and distribution. On tree bark in dry forest; only known from Brazil.

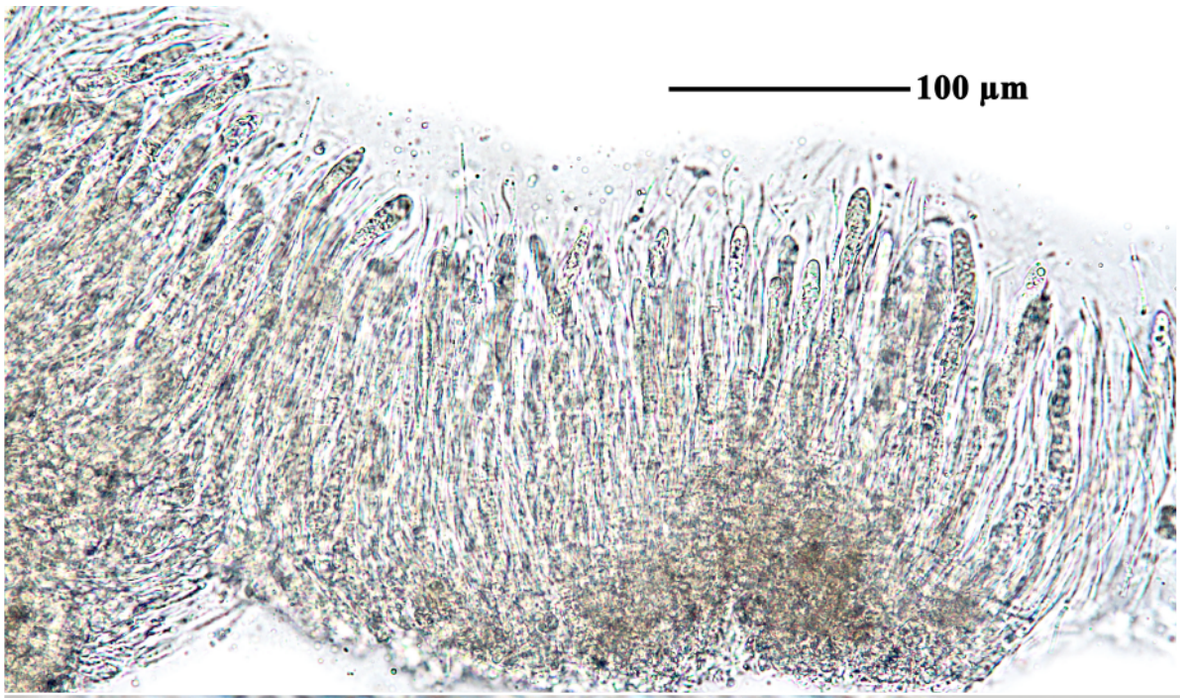
Discussion. This species would key out as follows in the world key by Aptroot et al. (2014): couplet 12: Ascospores 8/ascus, 10–13 × 6.5–7.5 µm. Thallus on bark.

Literature:

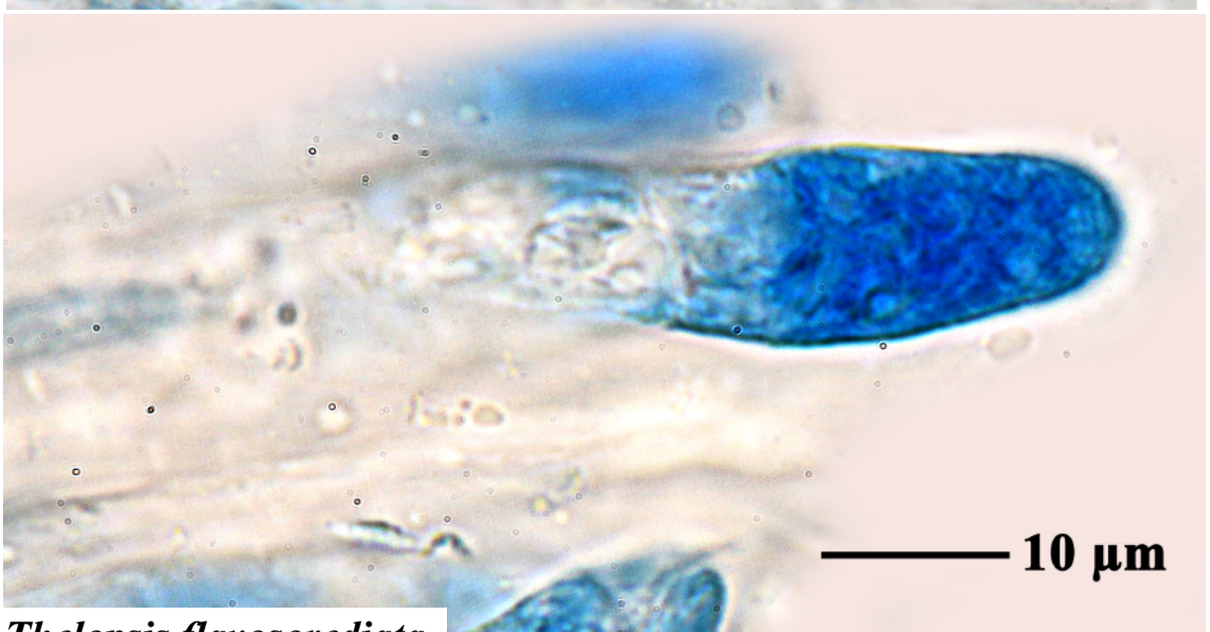
A. Aptroot, C.O. Mendonça, L.I. Ferraro & M.E.S. Cáceres. 2014. A world key to species of the genera *Topelia* and *Thelopsis (Stictidaceae),* with the description of three new species from Brazil and Argentina. Lichenologist 46: 801-807.



Thelopsis flavosorediata







Thelopsis flavosorediata

Toniniopsis mesoidea (Nyl.) Timdal, in Kistenich, Timdal, Bendiksby & Ekman, Taxon 67(5): 898 (2018)

= *Toninia mesoidea* (Nyl.) Zahlbr., Cat. Lich. Univers. 4: 289 (1926) [1927]

= *Arthrosporum mesoideum* (Nyl.) Arnold [as 'Arthrospora mesoidea'], Flora, Regensburg 53(30–31): 473 (1871) [1870]

= *Bacidia mesoidea* (Nyl.) Samp., Brotéria, sér. bot. 19: 25 (1921)

= *Bilimbia mesoidea* (Nyl.) A.L. Sm., Monogr. Brit. Lich. 2: 135 (1911)

= *Lecidea mesoidea* Nyl., Flora, Regensburg 51: 475 (1868)

[ABL77543], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on limestone. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77543), 3.11.2018, det. A. Aptroot, 2019. - Hypothecium redbrown, epihymenium green;spores 3-septate, 16-17 x 3-3.5 µm.

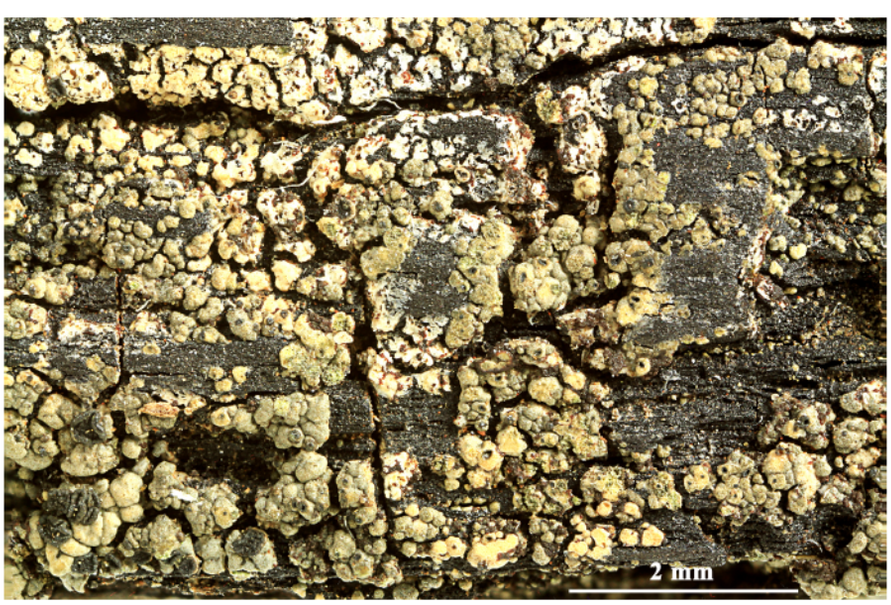




Toniniopsis mesoidea

Trapeliopsis flexuosa (Fr.) Coppins & P. James, Lichenologist 16(3): 258 (1984)
= *Biatora decolorans subvar. flexuosa* (Fr.) Amo, Fl. Crypt. Penins. Ibér.: 331 (1870)
= *Biatora decolorans* var. *flexuosa* (Fr.) Fr., Lich. eur. reform. (Lund): 267 (1831)
= *Biatora flexuosa* Fr., Nov. Sched. Critic. Lich. (Lundae): 11 (1826)
= *Biatora granulosa* var. *flexuosa* (Fr.) Flot., Flechten Hirschberg-Warmbrunn: 14 (1839)
= *Lecidea aeruginosa* Borrer, in Hooker & Sowerby, Suppl. Engl. Bot. 1: tab. 2682 (1831)
= *Lecidea decolorans* var. *flexuosa* (Fr.) Link, Grundr. Krauterk. 3: 202 (1833)
= *Lecidea flexuosa* Fr., Bull. Soc. linn. Bordeaux 21: 356 (1825)
= *Lecidea flexuosa* f. *aeruginosa* (Mudd) Leight., Lich.-Fl. Great Brit.: 260 (1871)
= *Lecidea flexuosa* var. *aeruginosa* Mudd, Man. Brit. Lich.: 197 (1861)
= *Lecidea granulosa* var. *flexuosa* (Fr.) Schaer., Enum. critic. lich. europ. (Bern): 138 (1850)
= *Lecidea sapinea* f. *aeruginosa* (Mudd) Zahlbr., Cat. Lich. Univers. 3: 828 (1925)
= *Lecidea sporadiza* Stirt., Grevillea 3(no. 25): 33 (1874)
= *Lecidea wallrothii* subsp. *flexuosa* (Fr.) Lamy, Bull. Soc. bot. Fr. 25(5): 434 (1880) [1878]
= *Trapelia flexuosa* (Fr.) Neuwirth & Türk, Beitr. Naturk. Oberösterreichs 1: 142 (1993)

[ABL79935], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on wood. 22°54’ S, 53°45’ W, 240 m. Leg. A. Aptroot (no 79935), 24.09.2019, det. A. Aptroot, 2019.





Trapeliopsis flexuosa

Traponora asterella Aptroot, in Aptroot, Diederich, Sérusiaux & Sipman, Biblthca Lichenol. 64: 199 (1997)

[ABL80453], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80453), 23.10.2019, det. A. Aptroot, 2019. - Hymenium inspersed, spores simple, 10 x 4 µm.





Traponora asterella

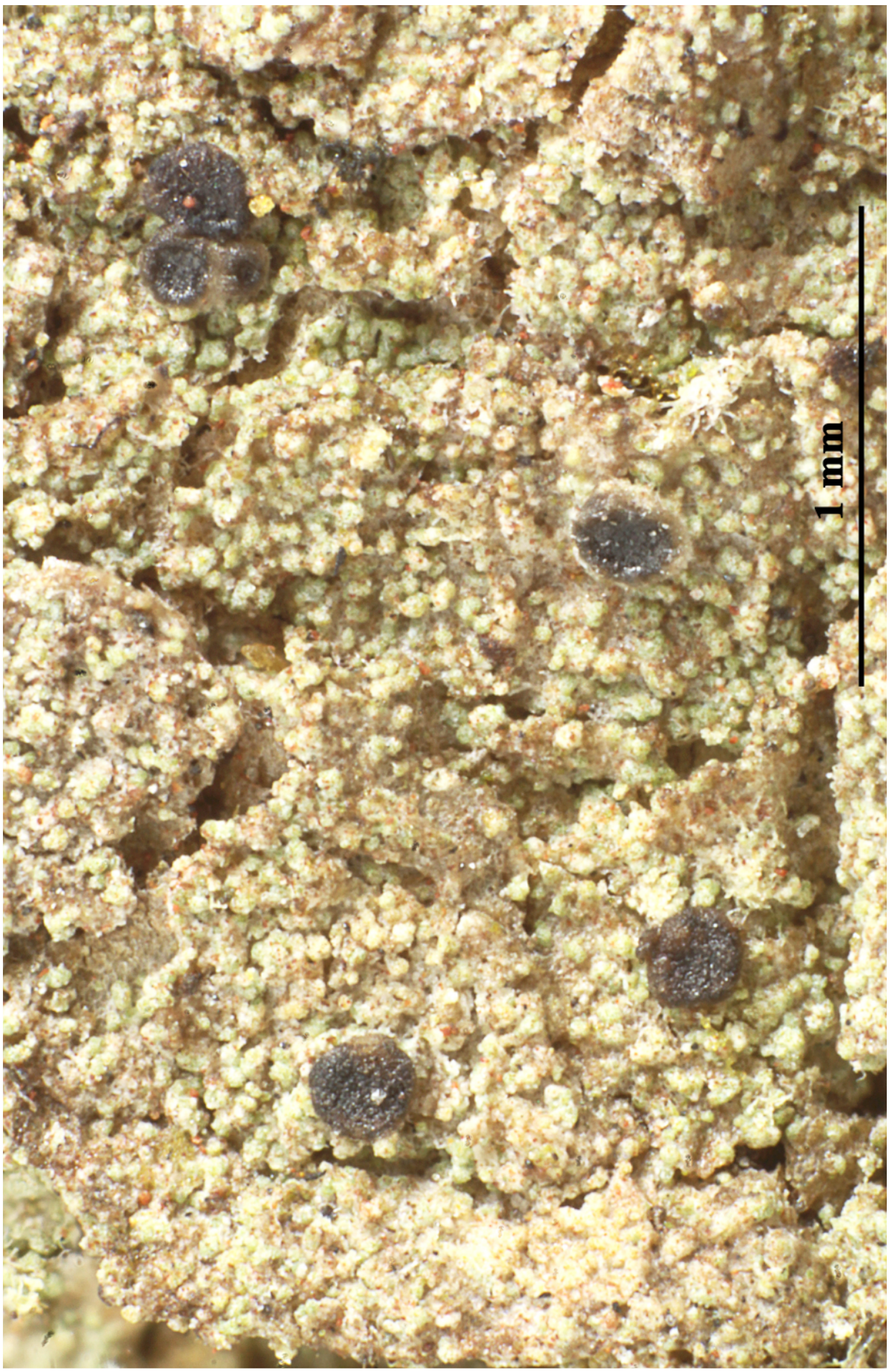


Traponora asterella

Traponora globosa Aptroot, Australas. Lichenol. 66: 58 (2010)

[ABL80436], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, in park on tree bark, 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 80436), 23.10.2019, det. A. Aptroot, 2019. - Hymenium not inspersed, spores simple, 10 x 4 µm.





Traponora globosa

Traponora varians (Ach.) J. Kalb & Kalb, Phytotaxa 332(2): 153 (2017)
= *Pyrrhospora varians* (Ach.) R.C. Harris, Evansia 2(3): 46 (1985)
= *Biatora varians* (Ach.) Eschw., Syst. Lich.: 26 (1824)
= *Biatora vernalis* var. *varians* (Ach.) Mont., Annls Sci. Nat., Bot., sér. 2 16: 121 (1841)
= *Lecania rechingeriana* Szatala, in Rechinger, Annln naturh. Mus. Wien 50: 529 (1940) [1939]
= *Lecidea varians* Ach., Syn. meth. lich. (Lund): 38 (1814)
= *Lecidea vernalis* [unranked] *varians* Eschw., in Martius, Fl. bras. enum. pl. 1(1): 253 (1833)
= *Lecidea vernalis* var. *varians* (Ach.) Zahlbr., Cat. Lich. Univers. 3: 851 (1925)
= *Biatora exigua* (Chaub.) Fr., Lich. eur. reform. (Lund): 278 (1831)
= *Lecidea exigua* Chaub., in Saint-Amans 1821

[ABL79039], Brazil, Mato Grosso do Sul, Campo Grande, campus UFMS, on park on tree bark. 20°30’ S, 54°37’ W, 550 m. Leg. A. Aptroot (no 79039), 3.07.2019, det. A. Aptroot, 2019





Traponora varians

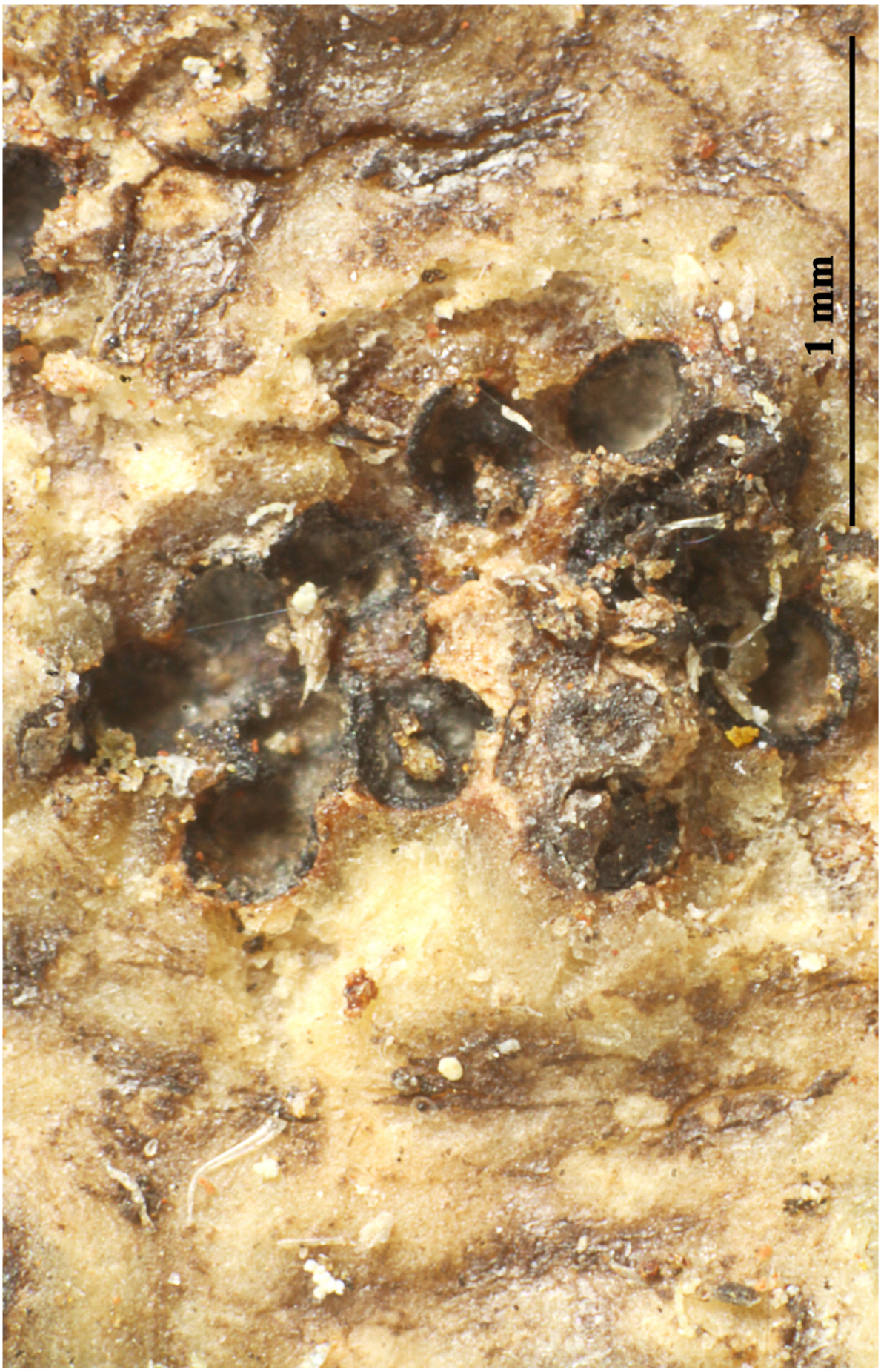
Trypethelium foveolatum Müll. Arg., Flora, Regensburg 68(12): 255 (1885)
= *Trypethelium papillosum* Kremp. 1876

[ABL80059], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°56' S, 53°43' W, 230 m. Leg. A. Aptroot (no 80059), 25.09.2019, det. A. Aptroot, 2019. - Thallus UV-, hymenium not inspersed, spores 13-septate, 60 x 12 µm.





Trypethelium foveolatum



Trypethelium foveolatum

Trypethelium foveolatum Müll. Arg., Flora, Regensburg 68(12): 255 (1885)
= *Trypethelium papillosum* Kremp. 1876

[ABL80732], Brazil, Mato Grosso do Sul, Rochedo, 7 km NE in cerrado on tree bark. 19°55’ S, 54°50’ W, 300 m. Leg. A. Aptroot (no 80732), 8.12.2019, det. A. Aptroot, 2019





Trypethelium foveolatum

Trypethelium krempelhuberi Makhija & Patw. [as 'krempelhuberii'], Int. J. Mycol. Lichenol. 5(3): 241 (1992)

[ABL80132], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°55’ S, 53°44’ W, 230 m. Leg. A. Aptroot (no 80132), 27.09.2019, det. A. Aptroot, 2019.





Trypethelium krempelhuberi

Trypethelium luteolucidum Aptroot, C. Mendonça & M. Cáceres, in Aptroot, Mendonça, Andrade, Silva, Martins, Gumboski, Fraga Junior & Cáceres, Lichenologist 48(6): 724 (2016)

[ABL77639], Brazil, Mato Grosso do Sul, Morraria do Sul, Morraria do Sul Fazenda Sol de Maio, in Atlantic rain forest on tree bark. 20°35’33" S, 56°51’40" W, 525 m. Leg. A. Aptroot (no 77639), 5.11.2018, det. A. Aptroot, 2019 - Thallus IV+ yellow; hymenium inspersed; spores 11-septate, 60 x 15 µm.





Trypethelium luteolucidum

Trypethelium regnellii Malme, Ark. Bot. 19(no. 1): 25 (1924)

[ABL79957], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°45' W, 240 m. Leg. A. Aptroot (no 79957), 24.09.2019, det. A. Aptroot, 2019. - Thallus and stroma UV+ yellow; spores 17-septate, 85 x 13 µm.





Trypethelium regnellii

Usnea flavocardia Räsänen, Revta Univ. (Santiago) 21: 139 (1936)
= *Usnea wirthii* P. Clerc, Saussurea 15: 34 (1984)

[ABL80129], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on tree bark. 22°54' S, 53°40' W, 230 m. Leg. A. Aptroot (no 80129), 26.09.2019, det. A. Aptroot, 2019.







Usnea flavocardia

Usnea subelegans (Vain.) Motyka ex B. de Lesd., Annals Cryptog. Exot. 6(2): 122 (1933)
= *Usnea barbata var. subelegans* Vain. 1890

[ABL77743], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, Fazenda Ouro Verde, in Atlantic rain forest on tree bark. 20°43’54" S, 56°50’03" W, 500 m. Leg. A. Aptroot (no 77743), 6.11.2018, det. A. Aptroot, 2019.







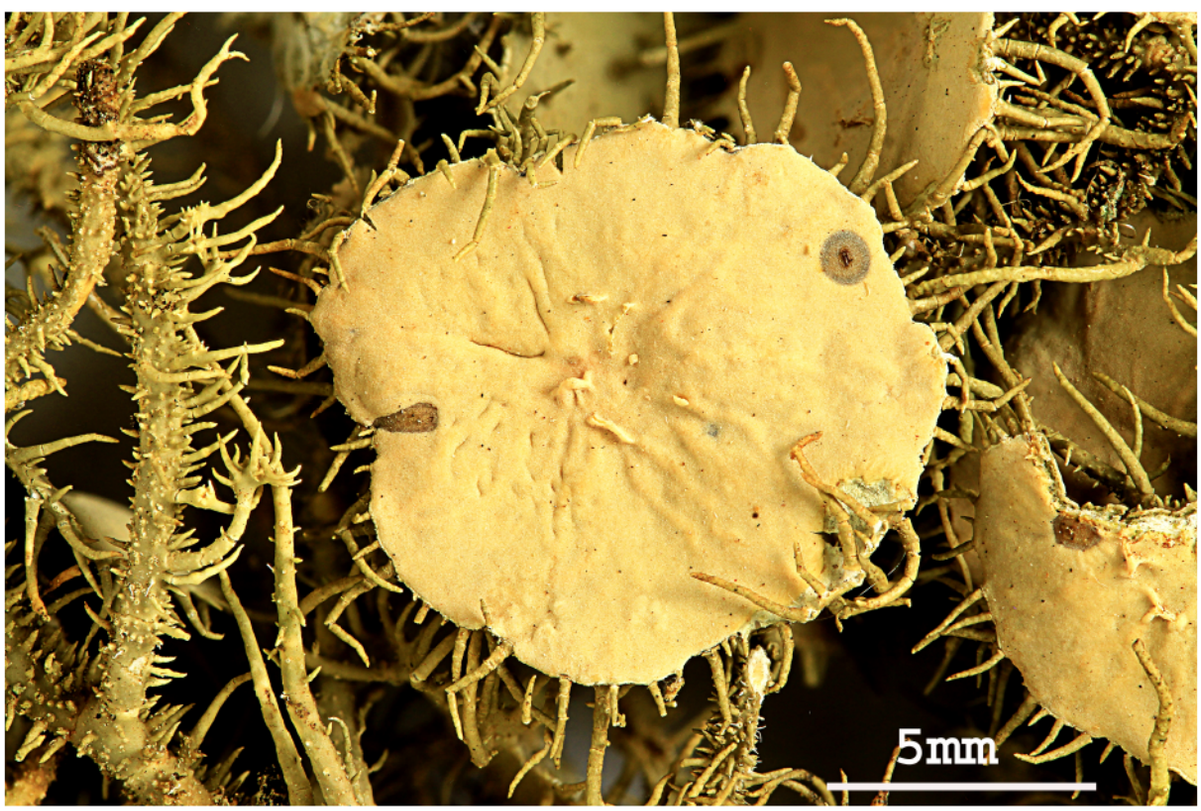
Usnea subelegans

Usnea subparvula A.C.L. Gerlach & P. Clerc, in Gerlach, Clerc & Borges da Silveira, Lichenologist 49(3): 231 (2017)

[ABL79906], Brazil, Mato Grosso do Sul, Jateí, Parque Estadual das Várzeas do Rio Ivinhema, in marsh forest on wood. 22°54’ S, 53°45’ W, 240 m. Leg. A. Aptroot (no 79906), 24.09.2019, det. A. Aptroot, 2019.



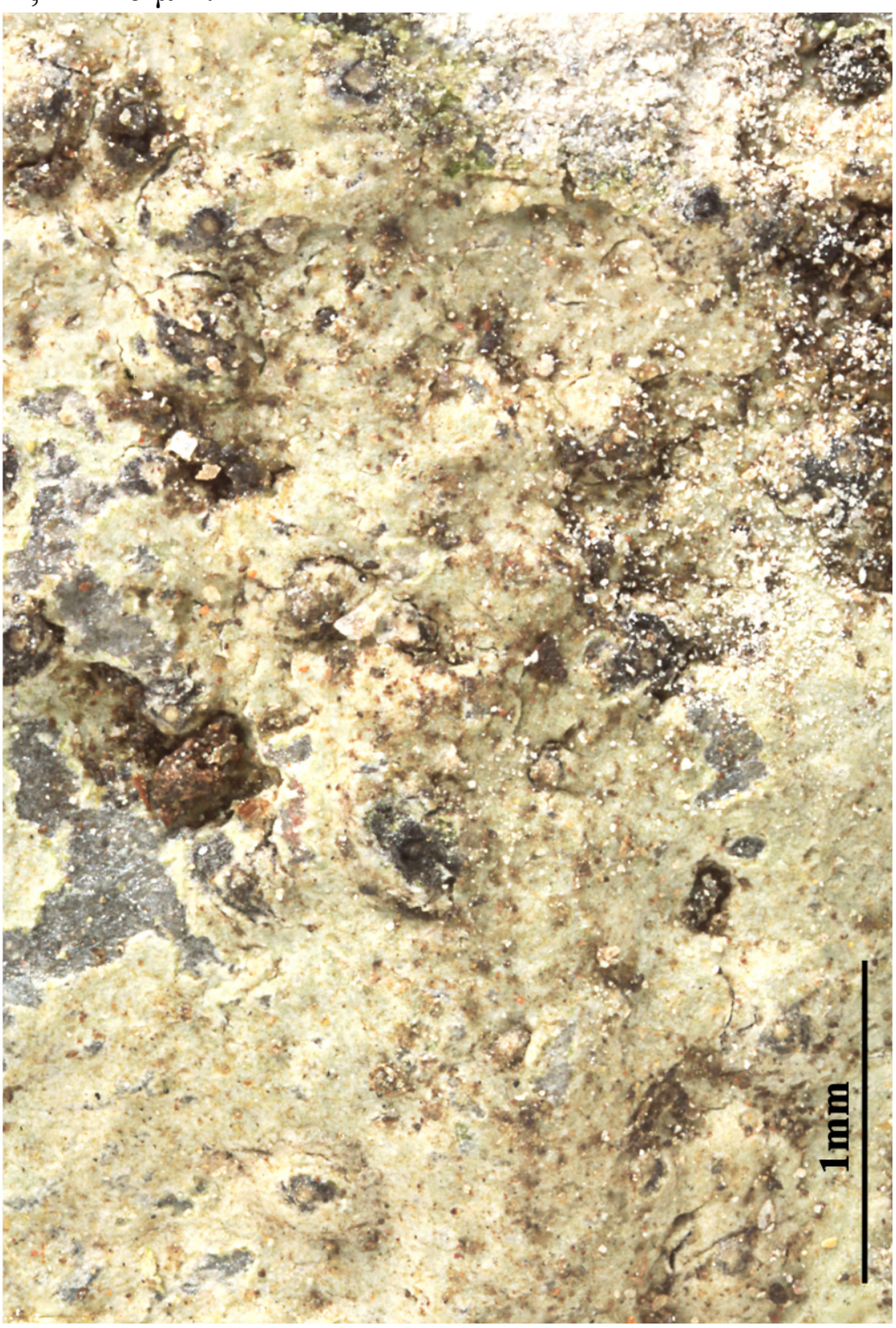


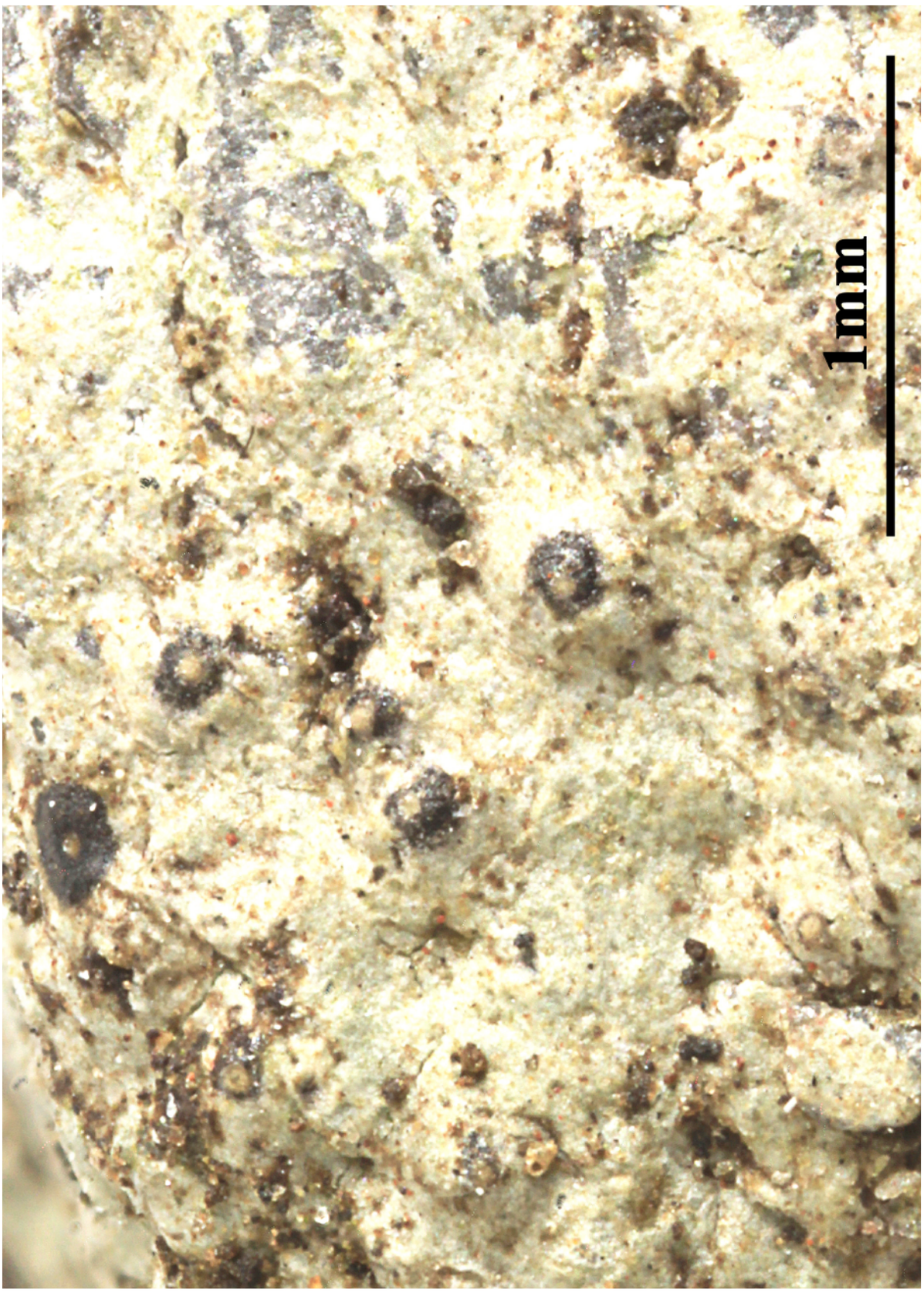


Usnea subparvula

Verrucaria elaeina Borrer, in Smith & Sowerby, Engl. Bot. 35: tab. 2455, fig. 2 (1813)
= *Leiophloea elaeina* (Borrer) Trevis., Conspect. Verruc.: 10 (1860)
= *Lithoicea elaeina* (Borrer) A. Massal., Memor. Lich.: 142 (1853)
= *Pyrenula elaeina* (Borrer) Schaer., Enum. critic. lich. europ. (Bern): 208 (1850)
= *Thelidium elaeinum* (Borrer) Mudd, Man. Brit. Lich.: 296 (1861)

[ABL77422], Brazil, Mato Grosso do Sul, Jardim, Fazenda Santa Fé, in Atlantic rain forest on limestone. 21°30° S, 56°45' W, 500 m. Leg. A. Aptroot (no 77422), 2.11.2018, det. A. Aptroot, 2019. - Spores simple, hyalin, 14 x 6 µm.





Verrucaria elaeina

Verrucaria elaeomelaena (A. Massal.) Arnold, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 18: 958 (1868)

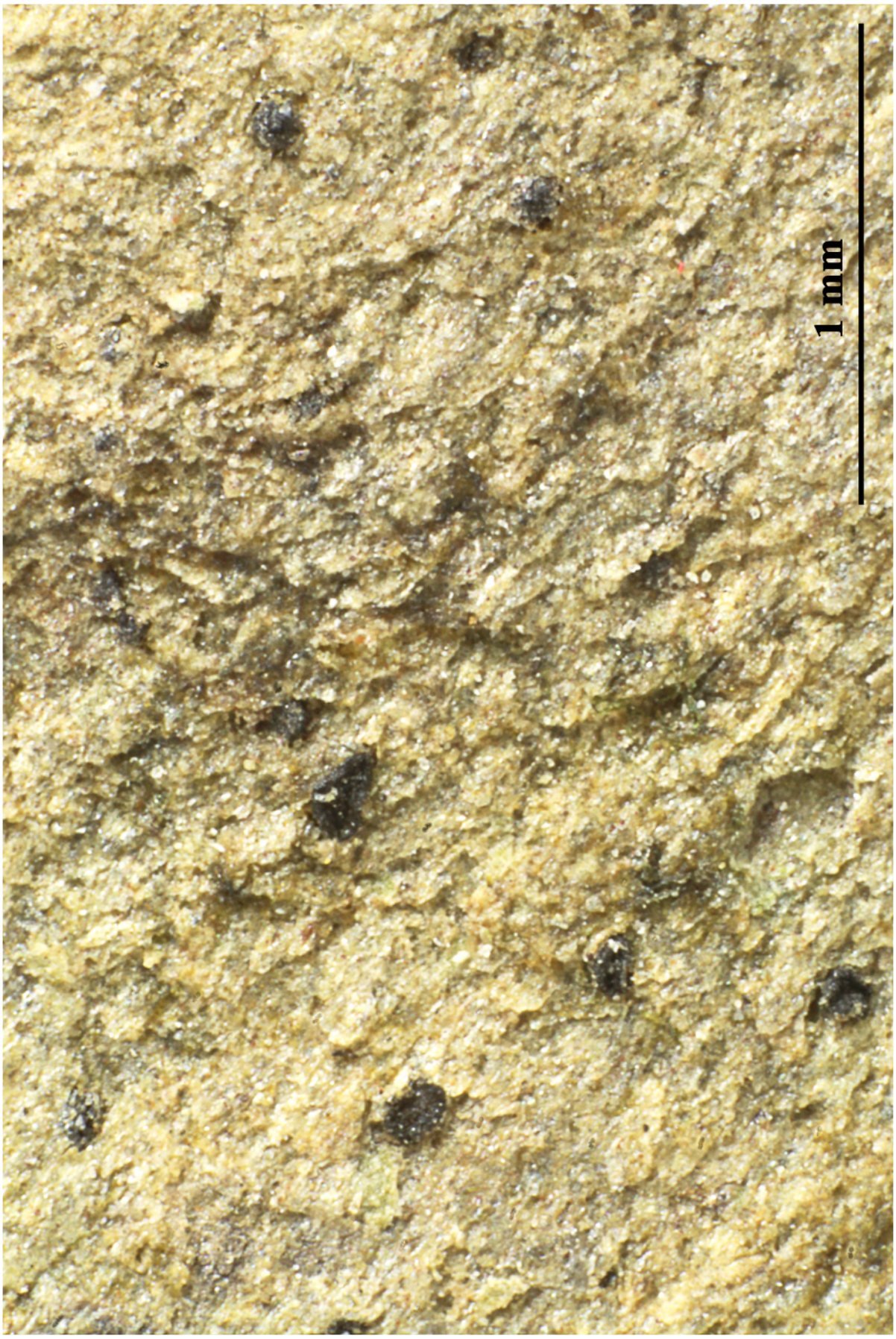
= *Lithoicea elaeomelaena* A. Massal., Atti Inst. Veneto Sci. lett., ed Arti, Sér. 3 2: 380 (1856)

= *Verrucaria aethiobola* var. *elaeomelaena* (A. Massal.) Trevis., Conspect. Verruc.: 7 (1860)

= *Verrucaria hydrela* var. *elaeomelaena* (A. Massal.) Lojka, Verh. Kaiserl.-Königl. zool.-bot. Ges. Wien 19: 486 (1869)

[ABL77844], Brazil, Mato Grosso do Sul, Bodoquena, along Salubre river, along river on shale. 20°46’´56" S, 56°44’33" W, 210 m. Leg. A. Aptroot (no 77844), 7.11.2018, det. A. Aptroot, 2019. - Spores hyaline, simple, 25 x 1 µm.





Verrucaria elaeomelaena

Verrucaria nigrescens Pers., Ann. Bot. (Usteri) 14: 36 (1795)
= *Lichen umbrinus* Ach., Lich. suec. prodr. (Linköping): 14 (1799) [1798]
= *Lithoicea nigrescens* (Pers.) A. Massal., Memor. Lich.: 142 (1853)
= *Lithoicea tectorum* A. Massal., Geneac. lich. (Verona): 23 (1854)
= *Lithoicea tectorum* A. Massal., Symmict. Lich.: 91 (1855)
= *Pyrenula funckii* Spreng., in Steudel & Hochstetter, Enum. Pl. Germ.: 218 (1826)
= *Pyrenula nigrescens* (Pers.) Ach., Mag. Gesell. naturf. Freunde, Berlin 6(1): 23 (1814)
= *Tichothecium nigrescens* (Pers.) Flot., Linnaea 22: 354 (1849)
= *Verrucaria fuscoatra* var. *munda* Körb., Syst. lich. germ. (Breslau): 341 (1855)
= *Verrucaria fuscoatra* var. *nigrescens* (Pers.) Wallr., Fl. crypt. Germ. (Norimbergae) 1: 307 (1831)
= *Verrucaria rupestris* var. *nigrescens* (Pers.) Branth & Rostr., Bot. Tidsskr. 3: 254 (1869)
= *Verrucaria tectorum* (A. Massal.) Körb., Parerga lichenol. (Breslau) 4: 368 (1863) [1865]
= *Verrucaria umbrina* (Ach.) Ach., Methodus, Sectio prior (Stockholmiæ): 122 (1803)
= *Verrucaria umbrina* var. *nigrescens* (Pers.) Ach., K. Vetensk-Acad. Nya Handl. 30: 153 (1809)
= *Verrucaria viridula* f. *tectorum* (A. Massal.) J.R. Laundon, Lichenologist 3: 324 (1967)
= *Zschackea nigrescens* (Pers.) M. Choisy & Werner, Rev. Bryol. Lichénol. 5(4): 211 (1932)

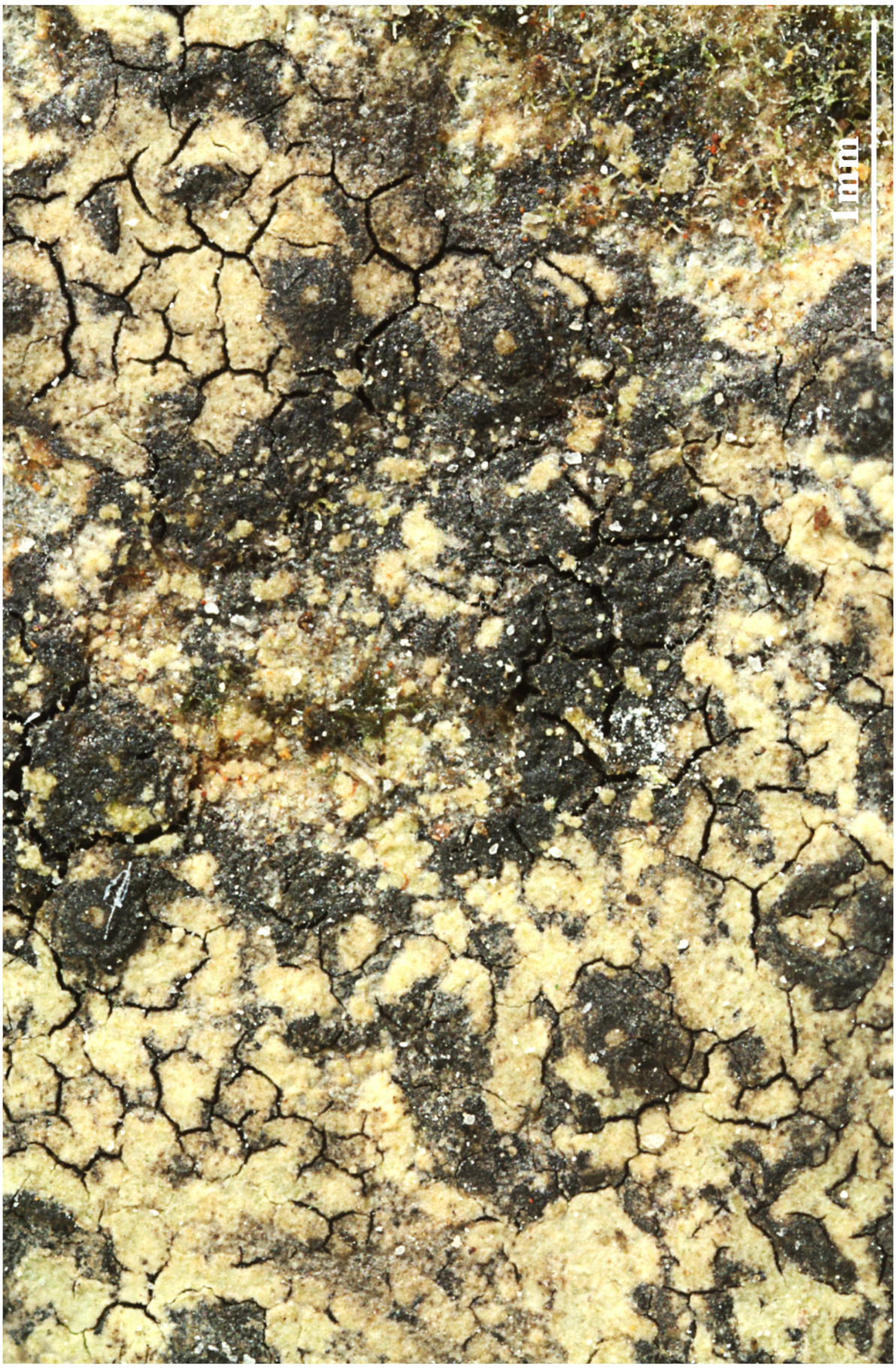
[ABL77539], Brazil, Mato Grosso do Sul, Bonito, Parque National da Serra da Bodoquena, Rio Perdido, in Atlantic rain forest on limestone. 21°07'' S, 56°43' W, 510 m. Leg. A. Aptroot (no 77539), 3.11.2018, det. A. Aptroot, 2019.



Verrucaria nigrescens

[ABL77059], Brazil, Mato Grosso do Sul, Bonito, Fazenda Marambaia, in Atlantic rain forest on tree bark. 20°58' S, 56°42' W, 650 m. Leg. A. Aptroot (no 77059), 30.10.2018, det. A. Aptroot, 2019. - Excipulum brown to black, 10–25 mm thick. Periphyses present in the ostiolar canal, pale brown, unbranched, septate, 30–40 x 2–3 µm. Pseudoparaphyses lining the upper part of the perithecial cavity, unbranched, septate, 25–100 x 2–3 µm. Interascal filaments absent at maturity, reduced to a IKI+ blue hymenial gel. Hymenial algal cells elongated to cylindrical, sometimes in pairs or short filaments, (3–)4–9(–12) x 1.5–3.0 µm. Asci clavate, fissitunicate, 8-spored, 60–90 x 20–30 µm. Ascospores colourless to pale, narrowly to broadly ellipsoid, muriform, (20–)22–30(–32) x (9–)10–14(–15) µm.





Willeya protrudens

Xanthoparmelia catarinae Hale, Mycotaxon 34(2): 543 (1989)

[ABL77779], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, in Atlantic rain forest on siliceous rock. 21°07’44" S, 56°30’41" W, 800 m. Leg. A. Aptroot (no 77779), 6.11.2018, det. A. Aptroot, 2019.





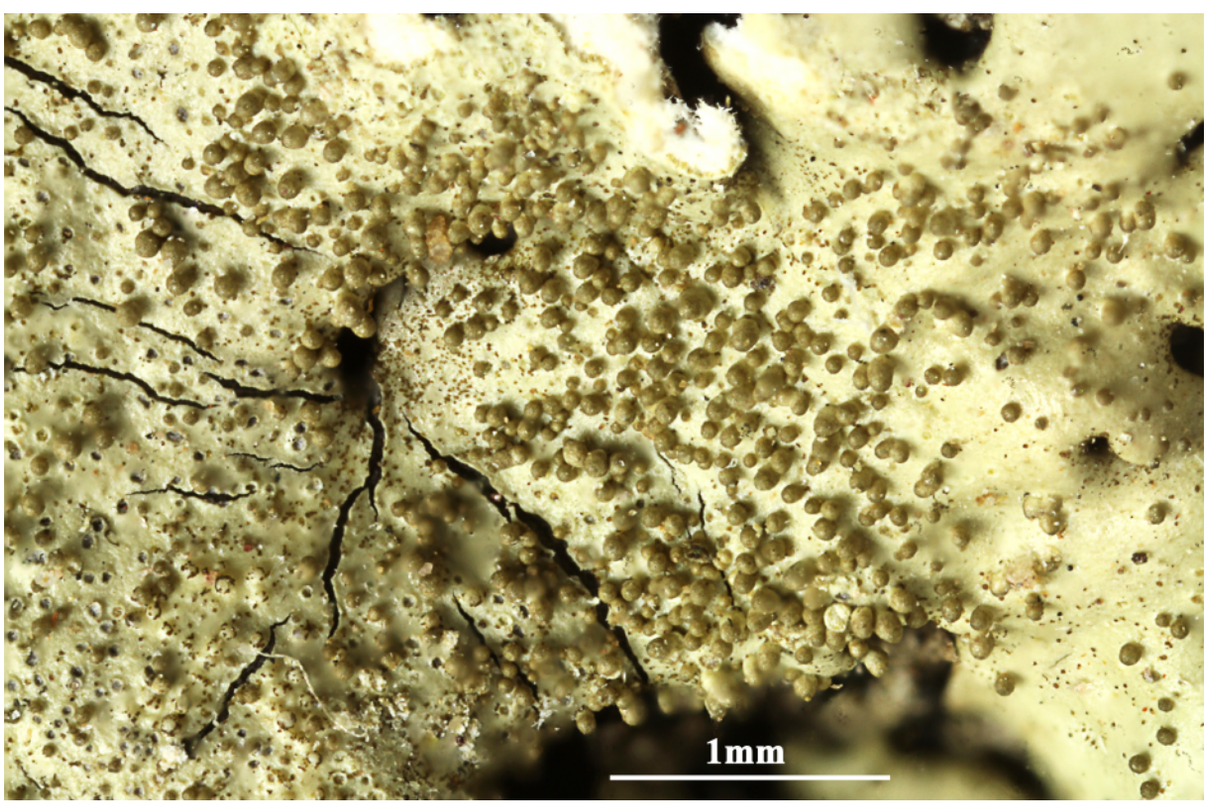
Xanthoparmelia catarinae

Xanthoparmelia mexicana (Gyeln.) Hale, Phytologia 28(5): 488 (1974)
= *Parmelia mexicana* Gyeln., Feddes Repert. Spec. Nov. Regni veg. 29: 281 (1931)

[ABL77778], Brazil, Mato Grosso do Sul, along road W of Morraria do Sul, in Atlantic rain forest on siliceous rock. 21°07’44" S, 56°30’41" W, 800 m. Leg. A. Aptroot (no 77778), 6.11.2018, det. A. Aptroot, 2019.







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This book illustrates lichens that were recently collected in Mato Grosso do Sul state in Brazil. The second author lived during four years in this state while he was visiting professor at the main university. He made numerous excursions, often with colleagues, to whom he is very thankful, to collect lichens all over the state. This book depicts a selection of those. For many species, this is the first time that colour pictures are published. Full references to the descriptive literature and to synonyms are given.

New species:
Constrictolumina fusca Aptroot & Schumm
Pyrenula lilaceoreagens Aptroot, Carollo & Schumm
Thelopis flavosorediata Aptroot & Schumm