

Lichenicolous Biota (Nos 381–400)

Josef HAFELLNER*

HAFELLNER Josef 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana (Graz) 101: 19–35. - ISSN 1024-0306.

Abstract: The 17th fascicle (20 numbers) of the exsiccata 'Lichenicolous Biota' is published. The issue contains material of 19 taxa, 18 non-lichenized fungal taxa (15 teleomorphs of ascomycetes, 1 anamorphic state of ascomycetes, 2 basidiomycetes) and 1 unnamed cecidiogenous bacterium, including isotype material of *Arthonia epipolytropa* Hafellner & Grube (no 391), *Arthonia subclemens* Hafellner et al. (no 392) and paratype material of *Tremella purpurascens* Diederich et al. (nos 387, 388). Furthermore, collections of the type species of the following genera are distributed: *Arthophacopsis* (*A. parmeliarum*), *Everniicola* (*E. flexispora*), *Phacopsis* (*P. vulpina*), *Scutula* (*S. miliaris*), *Sphaerellothecium* (*S. araneosum*), and *Thamnogalla* (*T. crombiei*). The fascicle contains notable contributions to the fungus floras of Austria, Italy, and the U.S.A.

* University of Graz, Institute of Biology, Division of Plant Sciences, NAWI Graz, Holteigasse 6, 8010 Graz, AUSTRIA
e-mail: josef.hafellner@uni-graz.at

Introduction

The exsiccata 'Lichenicolous Biota' is continued with fascicle 17 containing 20 numbers.

The exsiccata covers all lichenicolous biota, i.e., it is open not only to non-lichenized and lichenized fungi, but also to myxomycetes, bacteria, and even animals, whenever they cause a characteristic symptom on their host (e.g., discoloration or galls). Consequently, the exsiccata contains both highly host-specific and plurivorous and even only facultatively lichen-inhabiting species, as long as the individuals clearly grow or fructifications develop upon a lichen and the collection is homogeneous, so that identical duplicates can be prepared.

The five complete sets are sent to herbaria of the following regions: Central Europe (Graz [GZU]), Northern Europe (Uppsala [UPS]), Western Europe (Bruxelles [BR]), North America (New York [NY]), Australasia (Canberra [CANB]). Incomplete sets will preferably be distributed to Barcelona [BCN], Edinburgh [E], Saint Petersburg [LE], Munich [M], and Prague [PRM] (herbarium acronyms sec. HOLMGREN et al. 1990, continued by the New York Botanical Garden as electronic database "Index Herbariorum"). Also in the future, it is planned to publish at least one fascicle per year, consisting of a variable number of decades.

The grid reference preceded by the abbreviation 'GF' refers to the grid used by the project 'Floristische Kartierung Mitteleuropas' (floristic mapping of Middle Europe, e.g., EHRENDORFER & HAMANN 1965).

For the 17th fascicle, I gratefully acknowledge the contribution of 2 collections by Ralph COMMON, and 1 collection each by Lucia MUGGIA (together with Claudio G. AMETRANO) and Paul DIEDERICH. In fieldwork I received support by Angela HAFELLNER, Lucia MUGGIA, Pier-Luigi NIMIS, Toby SPRIBILLE, and Mauro TRETACH. Paul DIEDERICH contributed to the scientific content of the fascicle by the identification of both lichenicolous fungi and hosts. Christian SCHEUER and Walter OBERMAYER are thanked for critically reading the manuscript.

I would be much obliged to colleagues who send material of lichenicolous biota for distribution in future fascicles. The collections should be divided up into at least 5 (up to 10) duplicates, preferably already prepared. Unprepared collections should be rich enough to obtain at least 5 duplicates.

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

381. *Phacopsis vulpina* Tul.

in Annales des Sciences Naturelles, Botanique, sér. 3, 17: 126 (1852). – Syn.: *Agyrium vulpinum* (Tul.) H.Olivier in Bulletin de l'Académie Internationale de Géographie Botanique, sér. 3, 16: 196 (1906).

Host: *Letharia vulpina* (thallus)

Europe, Italy: Valle d'Aosta, Prov. Aosta, Western Alps, Alpi Pennine, by the road from Aosta to the Colle de Gran San Bernardo, NW above Saint-Rhémy-en-Bos-ses, 45°50'25"N / 007°10'40"E, c. 1800 m elev., subalpine forest on slope exposed to the E, on bark of *Larix decidua*.

Note 1: *Letharia vulpina* is the type host of *Phacopsis vulpina*.

Note 2: *Phacopsis vulpina* is the type species of the genus *Phacopsis* Tul.

1. VIII. 2001

leg. J. Hafellner (87187), det. J. Hafellner

distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

382. *Pronectria erythrinella* (Nyl.) Lowen

in Mycotaxon 39: 461 (1990). – Bas.: *Sphaeria erythrinella* Nyl. in Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar, ser. 2, 1: 125 (1859). – Syn.: *Nectria erythrinella* (Nyl.) Tul. & C.Tul. in Selecta Fungorum Carpologia, Vol. 3. Nectriei – Phacidiei – Pezizei: 95 (1865). – *Dialonectria erythrinella* (Nyl.) Cooke in Grevillea 12(64): 110 (1884). – *Nectriella erythrinella* (Nyl.) Fuckel ex Höhn. & Weese in Annales Mycologici 8(4): 466 (1910).

Host: *Peltigera leucophlebia* (thallus)

Northern America, U.S.A.: Alaska, Yukon-Koyukuk Census Area, Brooks Range, Endicott Mountains, valley of Middle Fork of Koyukuk River, N of Wiseman, W of the James Dalton Highway (Alaska Hwy 11), 67°30'30"N / 159°51'20"W, c. 400 m elev., boreal forest with dominant *Picea mariana* and understory of *Betula glandulosa* over alluvial soils, on soil.

Note 1: The type host of *Pronectria erythrinella* is a *Peltigera* not identified to species level.

Note 2: The anamorphic state is present on all distributed duplicates.

19. VIII. 2010

leg. J. Hafellner (87353) (with T. Spribille), det. J. Hafellner

distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

383. *Scutula miliaris* (Wallr.) Trevis.

in Spighe e Paglie: 10 (1853). – Bas.: *Peziza miliaris* Wallr. in Flora Cryptogamia Germaniae 2: 499 (1833). – Syn.: *Biatorina miliaris* (Wallr.) Th.Fr. in Lichenes Arctoi Europae Groenlandiaeque hactenus cogniti: 188 (1860). – *Calloria miliaris* (Wallr.) Quel. in Enchiridion Fungorum: 325 (1886). – *Pseudohelotium miliare* (Wallr.) Sacc. in Sylloge Fungorum 8: 296 (1889). – *Scutula wallrothii* Tul. in Annales des Sciences Naturelles, Botanique, sér. 3, 17: 119 (1852) [nom. illeg., ICN 52.1.].

Host: *Peltigera aphthosa* (thallus)

Northern America, U.S.A.: Alaska, Matanuska-Susitna Borough, Byers Lake c. 45 km N of Talkeetna, above northern lakeshore, 62°44'50"N / 150°06'35"W, c. 260 m elev., boreal forest over diluvial moraine, on the mossy ground.

Note 1: The type host of *Scutula miliaris* is *Peltigera canina*.

Note 2: *Scutula wallrothii*, a superfluous name for *Scutula miliaris*, is the type species of the genus *Scutula* Tul.

Note 3: The species with its teleomorphic and anamorphic states (including *Karsteniomyces peltigerae*) has been monographed by Triebel et al. (Symb. Bot. Upsal. 32(1): 333–336, 1997).

25. VIII. 2010 leg. J. Hafellner (87356) (with L. Muggia), det. J. Hafellner
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

384. *Sphaerellothecium araneosum* (Rehm) Zopf

in Nova Acta Academiae Caesareae Leopoldino-Carolinae Germanicae Naturae Curiosorum 70: 178 (1897). – Bas.: *Sphaerella araneosa* Rehm [in Arnold], Verhandlungen der K.-K. Zoologisch-Botanischen Gesellschaft Wien 23: 115 (1873). – Syn.: *Epicymatia araneosa* (Rehm) Sacc. in Sylloge Fungorum 1: 572 (1882). – *Mycosphaerella araneosa* (Rehm) Lindau in Hilfsbuch für das Sammeln der Ascomyceten: 125 (1903). – *Phaeosphaerella araneosa* (Rehm) Sacc. & D.Sacc. in Sylloge Fungorum 17: 676 (1905). – *Endococcus araneosus* (Rehm) H.Olivier in Bulletin de l'Académie Internationale de Géographie Botanique 17: 127 (1907). – *Discothecium araneosum* (Rehm) Vouaux in Bulletin de la Société Mycologique de France 29: 55 (1913).

Host: *Ochrolechia inaequatula* sensu auct. medioeurop. (thallus)

Europe, Austria: Salzburg, Lungau, Eastern Alps, Niedere Tauern, Radstädter Tauern, Speiereck massif W of the village Mauterndorf, on the mountain Kleiner Lanschütz, uppermost slopes exposed to NE, 47°08'08"N / 013°37'32"E, c. 2300 m elev., GF 8847/4, low outcrops of calcareous schist surrounded by alpine meadows rich in dwarf shrubs, on plant remnants.

Note 1: The type host of *Sphaerellothecium araneosum* is *Ochrolechia upsaliensis* (Rehm, Ascomyceten Fasc. 3, no. 133, sub *Sphaerella araneosa* Rehm, 1872).

Note 2: *Sphaerellothecium araneosum* is the type species of the originally monotypic genus *Sphaerellothecium* Zopf.

31. VIII. 2019 leg. J. Hafellner (86082), det. J. Hafellner
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

385. *Thamnogalla crombiei* (Mudd) D.Hawksw.

in Notes from the Royal Botanic Garden Edinburgh 38: 178 (1980). – Bas.: *Endocarpon crombiei* Mudd in Monograph of the British Cladoniae: 36 (1865). – Syn.: *Pharcidia crombiei* (Mudd) Sacc. & D.Sacc. in Sylloge Fungorum 17: 648 (1905).

Host: *Thamnolia vermicularis* (thallus)

Europe, Austria: Steiermark (=Styria), Eastern Alps, Niedere Tauern, Wölzer Tauern, mountains NW of the town Oberwölz, Rettlkirchspitze SW above the refuge Neunkirchner Hütte, saddle between summit and its eastern pre-summit, 47°15'40"N / 014°07'50"E, c. 2430 m elev., GF 8750/2, outcrops of calciferous amphibolite in alpine vegetation, on soil.

Note 1: *Thamnolia vermicularis* is the type host of *Thamnogalla crombiei*.

Note 2: *Thamnogalla crombiei* is the type species of the originally monotypic genus *Thamnogalla* D.Hawksw.

27. IX. 2009 leg. J. Hafellner (74266) & A. Hafellner, det. J. Hafellner
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

386. *Thelocarpon epibolum* Nyl.

in Flora (Regensburg) 49: 420 (1866).

Host: *Peltigera leucophlebia* agg. (thallus)

Northern America, U.S.A.: Alaska, Matanuska-Susitna Borough, Alaska Range, Broad Pass, between George Parks Highway (Alaska Hwy 3) and the NW shore of Summit Lake, 63°18'45"N / 149°09'30"W, c. 720 m elev., open *Picea mariana* forest with shrub understorey at treeline ecotone, on soil.

Note 1: The type host of *Thelocarpon epibolum* is *Solorina crocea*.

Note 2: *Pronectria erythrinella* may also be present on some of the duplicates. Material of this species from this locality has been distributed as Lichenicolous Biota no. 349.

16. VIII. 2010 leg. J. Hafellner (84430) (with L. Muggia), det. J. Hafellner
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

**387. *Tremella purpurascens* Diederich, Common & Millanes
Paratype**

in Diederich et al., Class Tremellomycetes, order Tremellales. – In: Diederich et al. (eds.), Flora of Lichenicolous Fungi, Vol. 1, Basidiomycota: 243 (2022).

Host: *Dirinaria purpurascens* (thallus)

Northern America, U.S.A.: Florida, Pasco County, Zephyrhills, Woodfern Avenue, 28°14'46"N / 082°11'31"W, c. 35 m elev., on twigs of an ornamental tree.

Note 1: *Dirinaria purpurascens* is the type host of *Tremella purpurascens*.

25. VII. 2019 leg. R. Common (10338), det. P. Diederich
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

**388. *Tremella purpurascens* Diederich, Common & Millanes
Paratype**

in Diederich et al., Class Tremellomycetes, order Tremellales. In: Diederich et al. (eds.), Flora of Lichenicolous Fungi, Vol. 1, Basidiomycota: 243 (2022).

Host: *Dirinaria purpurascens* (thallus)

Northern America, U.S.A.: Florida, Pasco County, Zephyrhills, at intersection of Fort King Road and Gall Boulevard, 28°14'56"N / 082°11'24"W, c. 35 m elev., on oak twigs fallen to the ground after strong wind.

Note 1: *Dirinaria purpurascens* is the type host of *Tremella purpurascens*.

Note 2: The basidiomata are partly damaged by grazing of either arthropods or gastropods.

26. XI. 2015 leg. R. Common (9944B), det. P. Diederich
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

389. *Tremella tornabeae* Diederich, Etayo, Pérez-Ortega & Millanes

in Diederich et al., Class Tremellomycetes, order Tremellales. In: Diederich et al. (eds.), Flora of Lichenicolous Fungi, Vol. 1, Basidiomycota: 261 (2022).

Host: *Tornabea scutellifera* (thallus)

Africa, Canary Islands: Lanzarote, a short distance NE of Mirador del Rio, N of the village Ye, 29°12'52"N / 013°28'50"W, c. 470 m elev., gentle slope inclined to SE fully exposed to trade winds, on branchlets and exposed roots of sub-shrubs.

Note 1: *Tornabea scutellifera* is the type host of *Tremella tornabeae*.

Note 2: The locality of Lichenicolous Biota no. 389 is situated only c. 13 km SSW of the type locality and shows a very similar ecology, according to our own field experience.

4. IV. 1999 leg. J. Hafellner (84253) & A. Hafellner, det. J. Hafellner
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

390. Unidentified species

(gall-inducing, probably a bacterium)

Compare Diederich et al., Tremella-like bacterial galls. In: Diederich et al. (eds.), Flora of Lichenicolous Fungi, Vol. 1, Basidiomycota: 340 (2022).

Host: *Parmelia saxatilis* (thallus)

Europe, Luxembourg: Steinsel, Gipsweiher, 49°39'45"N / 006°06'40"E, c. 260 m elev., mixed forest, on bark of *Quercus robur*.

Note 1: Bacterial cells present in the galls have been depicted by Diederich et al. (l.c.)

Note 2: The taxonomy of bacteria causing galls on lichens is so far unresolved. On vascular plants gall induction by bacteria is well documented (see e.g., Riker et al., Botanical Review 12: 57–82, 1946).

31. I. 2009 leg. P. Diederich (16796)
distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

391. *Arthonia epipolytropa* Hafellner & Grube Isotype

in The Lichenologist 55(5): 242 (2023).

Host: *Lecanora polytropa* (thallus, apothecia)

Europe, Austria: Kärnten (Carinthia), Eastern Alps, Central Alps, Saualpe W of the town Wolfsberg, between the mountains Ladinger Spitz and Speikkogel, NE below Wolfsberger Hütte, 46°50'10"N / 014°39'50"E, c. 1750 m elev., GF 9153/4, dwarf shrub heath in treeline ecotone on gentle slopes exposed to the SE, on scattered small boulders of micaschist.

Note 1: *Lecanora polytropa* is the type host of *Arthonia epipolytropa*.

Note 2: *Cercidospora epipolytropa* (Mudd) Arnold is present on the duplicates deposited in CANB, GZU, NY.

Note 3: *Carbonea aggregantula* (Müll.Arg.) Diederich & Triebel is present on the duplicate deposited in UPS.

24. IX. 2010

leg. J. Hafellner (76280), det. J. Hafellner

distributed to: BR, CANB, GZU, LE, NY, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

392. *Arthonia subclemens* Hafellner, Grube & Muggia

Isotype

in Hafellner & Grube, The Lichenologist 55(5): 245 (2023).

Host: *Lecanora polytropa* (apothecia)

Europe, Italy: Trentino-Alto Adige, South Tyrol (Südtirol), Eastern Alps, Ötztal Alps, Val Venosta (Vinschgau), mountains NE above the village Silandro (Schlanders), ridge NNE above Schönputz, 46°39'13"N / 010°48'23"E, c. 2370 m elev., siliceous outcrops and boulders in treeline ecotone, on slightly inclined rock faces.

Note 1: *Lecanora polytropa* is the type host of *Arthonia subclemens*.

Note 2: *Carbonea aggregantula* (Müll.Arg.) Diederich & Triebel is present on the duplicate deposited in GZU.

Note 3: An unnamed *Stigmidium* is present on the duplicates deposited in GZU and UPS.

28. VI. 2016

leg. L. Muggia (s.n.) & C. G. Ametrano, det. J. Hafellner

distributed to: BR, CANB, GZU, NY, TSB, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

393. *Arthophacopsis parmeliarum* Hafellner

in Cryptogamie, Bryologie et Lichénologie 19: 159 (1998).

Host: *Parmelia sulcata* (thallus)

Northern America, U.S.A.: Alaska, Kenai Peninsula Borough, S of Seward, along Caines Head Trail, surroundings of campground at Tonsina Point and along Tonsina Creek, 60°02'45"N / 149°26'50"W, c. 5 m elev., coastal cool-temperate rainforest, on bark of *Alnus tenuifolia*.

Note 1: *Parmelia sulcata* is the type host of *Arthophacopsis parmeliarum*.

Note 2: *Arthophacopsis parmeliarum* is the type species of the originally monotypic genus *Arthophacopsis* Hafellner.

Note 3: For the determination of the host the key in McCune & Geiser, Macrolichens of the Pacific Northwest, 2. ed.: 220 (2009) has been used.

27. VIII. 2010 leg. J. Hafellner (87352) (with T. Spribille), det. J. Hafellner
distributed to: BR, CANB, GZU, LE, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

394. *Everniicola flexispora* D.Hawksw.

in Notes from the Royal Botanical Garden Edinburgh 38: 384 (1982).

Host: *Nephroma arcticum* (thallus)

Northern America, U.S.A.: Alaska, Kenai Peninsula Borough, W of Seward Highway (Alaska Highway 1), along Devil's Creek Trail, between bridge over Quartz Creek and valley entrance of Devil's Creek, 60°32'50"N / 149°37'20"W, c. 310 m elev., patch of cool-temperate rainforest with dominant *Tsuga mertensiana*, on talus over bryophytes.

Note 1: The type host of *Everniicola flexispora* is *Evernia prunastri*.

Note 2: *Everniicola flexispora* is the type species of the originally monotypic genus *Everniicola* D.Hawksw.

Note 3: Infections by this species on the thallus of *Nephroma arcticum* were first reported by Alstrup & Hawksworth (Meddelelser om Grønland, Bioscience 31: 31 f., 1990). The conspecificity with the fungus on *Evernia prunastri* needs confirmation.

29. VIII. 2010 leg. J. Hafellner (87348) (with L. Muggia), det. J. Hafellner
distributed to: BR, CANB, GZU, LE, NY, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

395. ***Lecanora lecanoricola*** (Alstrup, D.Hawksw. & R.Sant.)
Rambold & Triebel

in Bibliotheca Lichenologica 48: 168 (1992). – Bas.: *Lecidella lecanoricola* Alstrup, D.Hawksw. & R.Sant. in Alstrup & Hawksworth, Meddelelser om Grønland, Bioscience 31: 45 (1990).

Host: *Lecanora cenisia* (thallus)

Europe, Italy: Piemonte, Prov. Cuneo, Western Alps, Alpi Cozie, Colle di Sampeyre, on the ridge just W of the pass, 44°33'10"N / 007°06'55"E, c. 2290–2300 m elev., large boulders of ophiolitic rock, on inclined rock faces.

Note 1: *Lecanora cenisia* is the type host of *Lecanora lecanoricola*.

Note 2: The taxonomic position within the collective genus *Lecanora* is so far unresolved.

26. VII. 2000 leg. J. Hafellner (87299) (with P. L. Nimis & M. Tretiach),
det. J. Hafellner

distributed to: BR, CANB, GZU, LE, NY, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

396. ***Microcalicium arenarium*** (Hampe ex A.Massal.) Tibell

in Botaniska Notiser 131: 237 (1978). – Bas.: *Cyphelium arenarium* Hampe ex A.Massal. in Miscellanea Lichenologica: 50 [20] (1856). – Syn.: *Phacotium arenarium* (Hampe ex A.Massal.) Trevis. in Flora (Regensburg) 45: 5 (1862). – *Coniocybopsis arenaria* (Hampe ex A.Massal.) Vain. in Acta Societatis pro Fauna et Flora Fennica 57(1): 75 (1927). – *Caliciella arenaria* (Hampe ex A.Massal.) Fink in Lichen Flora of the United States: 72 (1935).

Host: *Psilolechia lucida* (thallus)

Europe, Italy: Piemonte, prov. Torino, Western Alps, Alpi Cozie, mountains W of Pinerolo, northern slopes and ridges of Grand Truc S above the village Perrero, 44°55'18"N / 007°08'13"E, c. 1300 m elev., micaschist boulders in the shade of a *Larix* forest, in overhangs of boulders.

Note 1: The species originally was not recognized as being lichenicolous or algicolous.

Note 2: For lectotypification and heterotypic synonyms see Tibell (Bot. Notiser 131: 237, 1978).

26. VII. 2001 leg. J. Hafellner (87354) (with P. L. Nimis & M. Tretiach),
det. J. Hafellner

distributed to: BR, CANB, GZU, NY, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

397. *Muellerella lichenicola* (Sommerf.) D.Hawksw.

in Botaniska Notiser 132: 289 (1979). – Bas.: *Sphaeria lichenicola* Sommerf. in Supplementum Florae Lapponicae: 218 (1826). – Syn.: *Tichothecium lichenicola* (Sommerf.) R.Sant. in Svensk Botanisk Tidskrift 54 (4): 507 (1960).

Host: *Rinodina bischoffii* (apothecia)

Europe, Austria: Styria (Steiermark), Eastern Alps, Steirisches Randgebirge, Grazer Bergland, Frießenkogel SE above of the village St. Jakob-Breitenau, N above Teichalm, 47°21'35"N / 015°28'30"E, c. 1300 m elev., GF 8658/2, montane pasture on slope exposed to SW, on small boulders of Devonian limestone.

Note 1: The type host of *Muellerella lichenicola* is *Caloplaca* (*Gyalolechia*, *Laundonia*) *flavovirescens* (holotype in O restudied by Triebel, Bibliotheca Lichenologica 35: 155, 1989).

Note 2: Strains of the *Muellerella lichenicola* group occasionally co-occur with *Lichenodiplis*-type anamorphs. There is some evidence that they constitute teleomorph-anamorph connections (see Muggia et al., Fungal Biology 119: 115–1128, 2018). The *Lichenodiplis* strain on *Rinodina* is known as *Lichenodiplis lichenicola* Dyko & D.Hawksw. (Hawksworth & Dyko, Lichenologist 11: 56, 1979).

25. IX. 2011

leg. J. Hafellner (79203) & A. Hafellner, det. J. Hafellner
distributed to: BR, CANB, GZU, NY, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

398. *Polycoccum clauzadei* Nav.-Ros. & Cl.Roux

in Mycotaxon 69: 329 (1998).

Host: *Xanthoria* (*Rusavskia*) *elegans* (thallus)

Northern America, U.S.A.: Alaska, Anchorage Borough, SSE of Anchorage, Beluga Point on N shore of Turnagain Arm, 61°00'20"N / 149°41'40"W, c. 10 m elev., rocky head of boulder conglomerate including greenstone and serpentinite, on rock faces exposed to SW.

Note 1: *Xanthoria elegans* is the type host of *Polycoccum clauzadei*.

Note 2: *Arthonia molendoi* (Heufl. ex Frauenf.) R.Sant. was also present in the investigated population of *Xanthoria elegans* (Hafellner 78360 in GZU).

30. VIII. 2010

leg. J. Hafellner (87355) (with T. Spribille), det. J. Hafellner
distributed to: BR, CANB, GZU, NY, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

399. *Stigmidium tabacinae* (Arnold) Triebel

in Bibliotheca Lichenologica 35: 236 (1989). – Bas.: *Pharcidia tabacinae* Arnold in Flora (Regensburg) 64: 176 (1881). – Syn.: *Sphaerulina tabacinae* (Arnold) Vouaux in Bulletin de la Société Mycologique de France 29: 34 (1913).

Host: *Toninia tristis* agg. (thallus)

Europe, Italy: Valle d'Aosta, Prov. Aosta, Western Alps, Alpi Pennine, slopes W of Aosta, by the road from Sarre to Ville-sur-Sarre, 45°43'45"N / 007°15'10"E, c. 1150 m elev., rocky slope exposed to the S with patches of *Pinus nigra* forest, on soil layer over outcrops of calcareous schists.

Note 1: The type host of *Stigmidium tabacinae* is *Psora tabacina* auct., a species now usually treated under the name *Toninia tristis*.

Note 2: Triebel (l.c.) designated a lectotype with *Toninia tristis* as host.

31. VII. 2001 leg. J. Hafellner (87359) (with P. L. Nimis & M. Tretiach),
det. J. Hafellner

distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Hafellner J. 2023: Lichenicolous Biota (Nos 381–400). - Fritschiana 101: 19–35.

400. *Stigmidium xanthoparmeliarum* Hafellner

in Bulletin de la Société Linnéenne de Provence 45: 231 (1994).

Host: *Xanthoparmelia stenophylla* (thallus)

Europe, Italy: Piemonte, Prov. Cuneo, Western Alps, Alpi Cozie, Valle Varaita ca. 4 km W of the village Sampeyre, slopes exposed to the S just W of Villar, 44°34'55"N / 007°08'05"E, c. 1120 m elev., boulders of ophiolite in a pasture, on inclined rock faces.

Note 1: *Xanthoparmelia stenophylla* (sub *X. somloensis*) is the type host of *Stigmidium xanthoparmeliarum*.

Note 2: *Lichenostigma cosmopolites* Hafellner & Calatayud is also present on all duplicates. A corresponding specimen of this species has been separated and deposited in GZU (Hafellner 87358).

25. VII. 2000 leg. J. Hafellner (87357) (with P. L. Nimis & M. Tretiach),
det. J. Hafellner

distributed to: BCN, BR, CANB, E, GZU, LE, M, NY, PRM, UPS

Taxon Synopsis:

Taxon	Exs. no.
Ascomycota	
Arthoniomycetes	
<i>Arthonia epipolytropa</i>	391
<i>Arthonia subclemens</i>	392
<i>Arthophacopsis parmeliarum</i>	393
Lecanoromycetes (incl. Ostropomycetidae)	
<i>Lecanora lecanoricola</i>	395
<i>Microcalicium arenarium</i>	396
<i>Phacopsis vulpina</i>	381
<i>Scutula miliaris</i>	383
<i>Thelocarpon epibolum</i>	386
Leotiomycetes (incl. Helotiales)	
<i>Thamnogalla crombiei</i>	385
Sordariomycetes (incl. Hypocreales)	
<i>Pronectria erythrinella</i>	382
Eurotiomycetes (incl. Verrucariales, Chaetothyriales and Mycocaliciales)	
<i>Muellerella lichenicola</i>	397
Dothideomycetes	
<i>Polycoccum clauzadei</i>	398
<i>Sphaerellothecium araneosum</i>	384
<i>Stigmidium tabacinae</i>	399
<i>Stigmidium xanthoparmeliarum</i>	400
Anamorphic Fungi (unclassified)	
Hyphomycetes	
Coelomycetes	
<i>Everniicola flexispora</i>	394
Basidiomycota	
Tremellomycetes	
<i>Tremella purpurascens</i>	387, 388
<i>Tremella tornabeae</i>	389
Bacteria	
Unnamed species causing the formation of galls	390

Host Index:

Host taxon	Lichenicolous taxon	Exs. no.
<i>Dirinaria purpurascens</i>	<i>Tremella purpurascensis</i>	387, 388
<i>Lecanora cenisia</i>	<i>Lecanora lecanoricola</i>	395
<i>Lecanora polytropa</i>	<i>Arthonia epipolytropa</i>	391
	<i>Arthonia subclemens</i>	392
<i>Letharia vulpina</i>	<i>Phacopsis vulpina</i>	381
<i>Nephroma arcticum</i>	<i>Everniicola flexispora</i>	394
<i>Ochrolechia inaequatula</i> auct.....	<i>Sphaerellothecium araneosum</i>	384
<i>Parmelia saxatilis</i>	Unidentified species (probably a member of Bacteria).....	390
<i>Parmelia sulcata</i>	<i>Arthophacopsis parmeliarum</i>	393
<i>Peltigera aphthosa</i>	<i>Scutula miliaris</i>	383
<i>Peltigera leucophlebia</i>	<i>Pronectria erythrinella</i>	382
	<i>Thelocarpon epibolum</i>	386
<i>Psilolechia lucida</i>	<i>Microcalicium arenarium</i>	396
<i>Rinodina bischoffii</i>	<i>Muellerella lichenicola</i>	397
<i>Thamnolia vermicularis</i>	<i>Thamnogalla crombiei</i>	385
<i>Toninia tristis</i>	<i>Stigmidium tabacinae</i>	399
<i>Tornabea scutellifera</i>	<i>Tremella tornabeae</i>	389
<i>Xanthoparmelia stenophylla</i>	<i>Stigmidium xanthoparmeliarum</i>	400
<i>Xanthoria elegans</i>	<i>Polycoccum clauzadei</i>	398

Geographic Index:

BIOGEOGRAPHIC UNITS (see BRUMMITT 2001)

Country (or Archipelago)	Lichenicolous taxon	Exs. no.
1. EUROPE		
Austria	<i>Arthonia epipolytropa</i>	391
	<i>Muellerella lichenicola</i>	397
	<i>Sphaerellothecium araneosum</i>	384
	<i>Thamnogalla crombiei</i>	385
Italy	<i>Arthonia subclemens</i>	392
	<i>Lecanora lecanoricola</i>	395
	<i>Microcalicium arenarium</i>	396
	<i>Phacopsis vulpina</i>	381
	<i>Stigmidium tabacinae</i>	399
	<i>Stigmidium xanthoparmeliarum</i>	400
Luxembourg.....	Unidentified species (probably a member of Bacteria).....	390
2. AFRICA		
Canary Islands (belonging to Spain)		
	<i>Tremella tornabeae</i>	389
3. ASIA TEMPERATE		
4. ASIA TROPICAL		
5. AUSTRALASIA		
6. PACIFIC		
7. NORTHERN AMERICA		
U.S.A.	<i>Arthophacopsis parmeliarum</i>	393
	<i>Everniicola flexispora</i>	394
	<i>Polycoccum clauzadei</i>	398
	<i>Pronectria erythrinella</i>	382
	<i>Scutula miliaris</i>	383
	<i>Thelocarpon epibolum</i>	386
	<i>Tremella purpurascens</i>	387, 388
8. SOUTHERN AMERICA (including CENTRAL AMERICA)		
9. ANTARCTIC		

References

- BRUMMITT R.K. 2001: World geographical scheme for recording plant distributions. Edition 2. Plant Taxonomic Database Standards No. 2, Edition 2, August 2001. - Pittsburgh: Carnegie Mellon University. Published for the International Working Group on Taxonomic Databases for Plant Sciences (TDWG) by the Hunt Institute for Botanical Documentation. XV + 137 pp.
- EHRENDORFER F. & HAMANN U. 1965: Vorschläge zu einer floristischen Kartierung von Mitteleuropa. - *Berichte der deutschen botanischen Gesellschaft* 78(1): 35–50.
- HOLMGREN P.K., HOLMGREN N.H. & BARNETT L.C. (editors) 1990: *Index Herbariorum. Part I. The herbaria of the world.* 8th edition. - Bronx, New York: New York Botanical Garden for the International Association for Plant Taxonomy. - *Regnum Vegetabile* 120: 693 pp.

Electronic resources

- Index Herbariorum: A worldwide index of 3,100 herbaria and 12,000 associated staff where a total of 390 million botanical specimens are permanently housed. - URL: <http://sweetgum.nybg.org/science/ih/> [14. XII. 2023].

Bibliographic data of fascicles so far issued

- HAFELLNER J. 2007: Lichenicolous Biota (Nos 1–20). - *Fritschiana* (Graz) 60: 35–49. URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-60/lichenicolous-biota-nos-1-20.pdf>
- HAFELLNER J. 2008: Lichenicolous Biota (Nos 21–60). - *Fritschiana* (Graz) 61: 1–28. URL: <http://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-61/hafellner-2008-lichenicolous-biota-21-to-60.pdf>
- HAFELLNER J. 2009: Lichenicolous Biota (Nos 61–80). - *Fritschiana* (Graz) 65: 33–46. URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-65/lichenicolous-biota-nos-61-80.pdf>
- HAFELLNER J. 2010: Lichenicolous Biota (Nos 81–100). – *Fritschiana* (Graz) 67: 11–26. URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-67/hafellner-2010-lichenicolous-biota-nos-81-100.pdf>
- HAFELLNER J. 2012: Lichenicolous Biota (Nos 101–120). – *Fritschiana* (Graz) 74: 1–17. URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-74/hafellner-2012-lichenicolous-biota-nos-101-120.pdf>
- HAFELLNER J. 2012: Lichenicolous Biota (Nos 121–150). – *Fritschiana* (Graz) 74: 19–41. URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-74/hafellner-2012-lichenicolous-biota-nos-121-150.pdf>
- HAFELLNER J. 2013: Lichenicolous Biota (Nos 151–180). – *Fritschiana* (Graz) 76: 47–68. URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-76/hafellner-2013-lichenicolous-biota-nos-151-180.pdf>
- HAFELLNER J. 2014: Lichenicolous Biota (Nos 181–200). – *Fritschiana* (Graz) 78: 9–24. URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-78/hafellner-2014-lichenicolous-biota-nos-181-200.pdf>

- HAFELLNER J. 2015: Lichenicolous Biota (Nos 201–230). – *Fritschiana* (Graz) 80: 21–41.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-80/hafellner-2015-lichenicolous-biota-nos-201-230.pdf>
- HAFELLNER J. 2016: Lichenicolous Biota (Nos 231–250). – *Fritschiana* (Graz) 83: 31–46.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-83/hafellner-2016-lichenicolous-biota-nos-231-250.pdf>
- HAFELLNER J. 2017: Lichenicolous Biota (Nos 251–270). – *Fritschiana* (Graz) 86: 25–40.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-86/hafellner-2016-lichenicolous-biota-nos-251-270.pdf>
- HAFELLNER J. 2018: Lichenicolous Biota (Nos 271–300). – *Fritschiana* (Graz) 90: 1–22.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-90/hafellner-2018-lichenicolous-biota-nos-271-300.pdf>
- HAFELLNER J. 2019: Lichenicolous Biota (Nos 301–320). – *Fritschiana* (Graz) 94: 25–42.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-94/hafellner-2019-lichenicolous-biota-nos-301-320.pdf>
- HAFELLNER J. 2020: Lichenicolous Biota (Nos 321–340). – *Fritschiana* (Graz) 96: 29–54.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-96/hafellner-2020-lichenicolous-biota-nos-321-340.pdf>
- HAFELLNER J. 2021: Lichenicolous Biota (Nos 341–360). – *Fritschiana* (Graz) 97: 1–17.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-97/Hafellner-Lichenicolous-Biota-341-360-Fritschiana-97.pdf>
- HAFELLNER J. 2022: Lichenicolous Biota (Nos 361–380). – *Fritschiana* (Graz) 100: 13–29.
URL: <https://static.uni-graz.at/fileadmin/nawi-institute/Botanik/Fritschiana/fritschiana-100/2022-Hafellner-Lichenicolous-Biota-361-380.pdf>