

Lichenicolous fungi in WIS

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Abstract. The WIS herbarium has ca. 1000 specimens of lichenicolous fungi distributed across 406 species. Fifty-nine of the specimens are types, of which fourteen are isotypes and seven holotypes.

Key words. World-wide lichenicolous fungi, WIS, Kalb collections, Matzer dissertation.

Lichenicolous fungi are parasitic fungi occurring on lichens, but not in symbiosis with the host algae and are different from the symbiotic fungi that provide the basis for lichen classification. Most are obligately lichenicolous, ca. 11% are lichenicolous lichens and ca. 2.67% are facultatively lichenicolous taxa (Diederich et al. 2018). The investigation of lichenicolous fungi has been a major interest of Dr. James Lawrey over the past two decades. This article is dedicated as a belated part of a Festschrift on his recent 70th birthday. Of particular note has been his collaboration with Dr. Paul Diederich on at least 18 scientific articles over the last dozen years, as tabulated in the Recent Literature on Lichens database (<http://nhm2.uio.no/botanisk/lav/RLL/RLL.HTM>), and culminating in the recent classification and checklist (Diederich et al. 2018).

Most major North American lichen herbaria have some lichenicolous species incorporated within their lichen collections, but relatively few collections have substantial numbers. A few years ago the University of Wisconsin was fortunate in obtaining a major part of Dr. Klaus Kalb's lichen collections, which included a substantial number (several hundred) of lichenicolous fungi as well. Dr. Kalb had a keen eye for lichens as well as lichenicolous fungi. The latter interest was initially stimulated by Prof. Dr. Josef Poelt (Universität Graz, Austria) and sustained through numerous interactions with Dr. Josef Hafellner (Universität Graz, Austria) and Dr. Anton Vězda (Czechoslovakian Academy of Science, Brno), with whom he had many joint publications. After Dr. Kalb had spent several years in the tropics, his lichenicolous collections were further investigated by Dr. Mario Matzer (Universität Graz, Austria) in his Ph.D. investigations of lichenicolous ascomycetes occurring on foliicolous lichens (Matzer 1996). In addition, a number of his tropical collections have been identified by Dr. Paul Diederich (Luxembourg, Luxembourg).

Among the more important WIS lichenicolous collections are a partial set of Prof. R. Santesson's *Fungi Lichenicoli Exsiccati* issued by UPS (currently 46 nos. between no. 166 to no. 349 – more to come). In addition, the following 59 types of 34 lichenicolous species occur in WIS: *Arthonia intermedia* Matzer (paratype), *Arthonia pseudopegraphina* Matzer (holotype and a paratype), *Arthonia tavaresii* Grube & Hafellner (isotype), *Arthrorhaphis muddii* W. Obermayer (paratype), *Ascochyta candelariellicola* D. Hawksw. (holotype), *Caloplaca sororicida* M. Steiner & Poelt (isotype), *Carbonea herteliana* Hafellner & Matzer (isotype), *Chaenothecopsis amurensis* Titov (isotype), *Chaenothecopsis asperopoda* Titov (isotype), *Chaenothecopsis nigropedata* Tibell (isotype), *Chaenothecopsis tasmanica* Tibell (isotype), *Chaenothecopsis ussuriensis* Titov (isotype), *Cornutispora ciliata* Kalb (isotype), *Diaphorographis queenslandica* Kalb & Archer (paratype), *Epibryon lichenicola* Matzer (holotype and 6 different paratypes), *Echinoplaca affinis* Kalb & Vězda (holotype), *Gyrophthorus perforans* Hafellner & Sancho (topotype), *Hawksworthiella fissurisedens* Hafellner (isotype), *Keratosphaera porinae* Matzer (holotype and 6 different paratypes), *Laeviomyces fallaciosus* Hafellner & Kalb (holotype), *Lichenocodium laevisporum* Kalb & Hafellner (holotype), *Lichenopeltella setifera* Matzer (paratype), *Lichenostigma semiimmersa* Hafellner (isotype), *Opegrapha blakii* Ertz & Diederich (topotype), *Opegrapha ectolechiacearum* Matzer & R. Sant. (two different paratypes), *Opegrapha epiporina*

Matzer (two different paratypes), *Opegrapha kalbi* Matzer (holotype and a paratype), *Opegrapha mazosiae* Matzer (paratype), *Opegrapha sipmanii* Matzer (two different paratypes [Brazil & Costa Rica]), *Rhizocarpon renneri* Poelt (isotype), *Stigmidium epiphyllum* Matzer (holotype and a paratype), *Stigmidium porinae* Matzer (two different paratypes), *Verrucaria aspiciliae* Zehetl. (isotype), *Verrucula protearia* (Zehetl.) Nav.-Ros. & Cl. Roux, in Navarro-Rosinés, Roux & Gueidan (isotype). Of these 7 are holotypes and 14 are isotypes.

The collections include 406 species of lichenicolous fungi (see below), the list of which has been updated with respect to names listed in Diederich et al. (2018) and secondarily from Index Fungorum (2020) and the 23rd checklist for North American lichens and lichenicolous fungi (Esslinger 2019). The 406 species represent 17.5% of the currently recognized lichenicolous fungi (Diederich et al. 2018) with the addition of newly described *Chaenothecopsis* species. Location information can be found at the Consortium for North American Lichen herbaria website (CNALH 2020)

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Lichenicolous fungi in WIS

Abrothallus microspermus Tul.
Abrothallus parmeliarum (Sommerf.) Arnold
Abrothallus peyritschii (Stein) Kotte
Abrothallus suecicus (Kirschst.) Nordin
Abrothallus usneae Rabenh.
Abrothallus welwitschii Mont.
Acarospora brevilobata H. Magn.
Acarospora epithallina H. Magn.
Acarospora heufleriana Körb. (Lich. alpinus 107)
Acarospora hospitans H. Magn.
Acarospora impressula Th. Fr.
Acarospora insolata H. Magn.
Acarospora microcarpa (Nyl.) Wedd.
Acarospora nodulosa (Dufour) Hue
Acarospora stapfiana (Müll. Arg.) Hue
Acarospora strigata (Nyl.) Jatta
Acarospora succedans H. Magn.
Acolium sessile (Pers.) Arnold
Agyrium rufum (Pers.) Fr.
Amandinea adjuncta Th. Fr.
Arthonia apotheciorum (A. Massal.) Almq.
Arthonia atropunctata Vain.
Arthonia cinnabarinula Müll.Arg.
Arthonia clemens Th. Fr.
Arthonia destruens Rabenh.
Arthonia diploiciae Calat. & Diederich
Arthonia follmanniana Diederich
Arthonia gelidae R. Sant.
Arthonia haematommatum Kalb & Hafellner
Arthonia haematostigma Grube & Hafellner
Arthonia intermedia Matzer

- Arthonia intexta* Almq.
Arthonia peltigerina (Almq.) H. Olivier
Arthonia phaeophysciae Grube & Matzer
Arthonia pseudopegraphina Matzer
Arthonia santessonii Matzer
Arthonia stictaria Nyl.
Arthonia subfuscicola (Lindsay) Triebel
Arthonia tavaresii Grube & Hafellner
Arthonia varians (Davies) Nyl. (= *Celidium varians*)
Arthrorhaphis alpina (Schaer.) R. Sant.
Arthrorhaphis citrinella (Ach.) Poelt
Arthrorhaphis grisea Th. Fr.
Arthrorhaphis muddii Obermayer
Arthrorhaphis vacillans Th. Fr. & Almq. ex Th. Fr.
Ascochyta candelarielicola D. Hawksw.
Aspicilia parasitica B. de Lesd.
Bachmanniomyces punctum (A. Massal.) Diederich & Pino-Bodas (= *B. uncialicola*)
Bachmanniomyces uncialicola (Zopf) D. Hawksw.
Bellemeria cupreoatra (Nyl.) Clauzade & Cl. Roux
Biatoropsis usnearum Räsänen
Buellia adjuncta Th. Fr. (= *Amadinea adjuncta* (Th. Fr.) Hafellner, as in Diederich et al.
Buellia saxatilis (Schaer.) Körb. (but species not in Diederich et al. 2018)
Buellia uberor Anzi
Buelliella minimula (Tuck.) Fink
Buelliella physciicola Poelt & Hafellner
Buelliella trypethelii (Tuck.) Fink ex Hafellner
Calicium corynellum (Ach.) Ach.
Caloplaca anchon-phoeniceon Poelt & Clauzade
Caloplaca epithallina Lynge
Caloplaca grimmiae (Nyl.) H. Olivier
Caloplaca inconnexa (Nyl.) Zahlbr.
Caloplaca invadens Lynge (but not in Diederich et al. 2018)
Caloplaca insularis Poelt
Caloplaca magni-filii Poelt
Caloplaca necator Poelt & Clauzade
Caloplaca nubigena (Kremp.) Dalla Torre & Sarnth.
Caloplaca sororicida M. Steiner & Poelt (but not in Diederich et al. 2018)
Caloplaca tenuatula (Nyl.) Zahlbr.
Caloplaca vitellinaria Szat. (but not in Diederich et al. 2018)
Candelariella dispersa (Räsänen) Hakul.
Candelariella superdistans (Nyl.) Malme
Carbonea aggregantula (Müll.Arg.) Diederich & Triebel
Carbonea assimilis (Hompe ex Körb.) Hafellner & Hertel
Carbonea herteliana Hafellner & Matzer
Carbonea vitellinaria (Nyl.) Hertel
cf. Carbonea sp. on *Tephromela* (det. P. Diederich from Australian Kalb collection)
Catillaria mediterranea Hafellner
Cecidonia umbonella (Nyl.) Triebel & Rambold (= *Lecidea umbonella* Nyl.)
Cecidonia xenophana (Körb.) Triebel & Rambold
Cercidospora caudata Kernst.
Cercidospora crozalsiana (H. Olivier) Nav.-Ros., Cl. Roux & Casares

- Cercidospora epipolytropa* (Mudd) Arnold
Cercidospora macrospora (Uloth) Hafellner & Nar.-Ros.
Cercidospora punctillata (Nyl.) R. Sant.
Chaenothecopsis amurensis Titov (isotype)
Chaenothecopsis asperopoda Titov (isotype)
Chaenothecopsis consociata (Nádv.) Alb. Schmidt
Chaenothecopsis golubkovae Tibell & Titov
Chaenothecopsis hospitans (Th. Fr.) Tibell
Chaenothecopsis kalbii Tibell & K. Ryman
Chaenothecopsis lecanactidis Tibell
Chaenothecopsis lignicola (Nádv.) A.F.W. Schmidt
Chaenothecopsis nigropedata Tibell (isotype)
Chaenothecopsis parasitaster (Bagl. & Carestia) D. Hawksw. (OK in Index Fungorum (2020) but Santesson (1993) says = *Chaenothecopsis pusilla*)
Chaenothecopsis pilosa Tibell & Kalb
Chaenothecopsis pusilla (Ach.) Alb. Schmidt
Chaenothecopsis pusiola (Ach.) Vain.
Chaenothecopsis rubescens Vain.
Chaenothecopsis savonica (Räsänen) Tibell
Chaenothecopsis subparaica (Nyl.) Tibell
Chaenothecopsis tasmanica Tibell
Chaenothecopsis ussuriensis Titov
Chaenothecopsis vainioana (Nádv.) Tibell
Chaenothecopsis viridialba (Krempelsh.) Alb. Schmidt
Chaenothecopsis viridireagens (Nádv.) Alb. Schmidt
Clypeococcum cladonema (Wedd.) D. Hawksw.
Clypeococcum epicrassum (H. Olivier) Hafellner & Nav.-Ros. (species not in Diederich et al. 2018)
Clypeococcum hypocenomycis D. Hawksw.
Cornutispora ciliata Kalb
Cornutispora ciliata Kalb
Cornutispora lichenicola D. Hawksw. & B. Sutton
Corticifraga fuckelii (Rehm) D. Hawksw. & R. Sant.
Corticifraga peltigerae (Nyl.) D. Hawksw. & R. Sant.
Corticiruptor abeloneae (P.M. Jørg.) Wedin & Hafellner
Cryptodiscus similis (Vězda) Baloch
Cyphelium sessile (Pers.) Trevis. (= *Acolium sessile* (Pers.) Arnold, as in Diederich et al. 2018)
Dacampia hookeri (Borrer) A. Massal.
Dactylospora dispersa (Trevis.) Mudd = *Sclerococcum parasiticum* (Flörke) Ertz & Diederich
Dactylospora urceolata (Th. Fr.) Arnold – OK I.f.
Diaphorographis queenslandica Kalb & Archer
Didymella persoonii (A. Massal.) H. Magn.
Didymocyrtis bryonothae (Arnold) Hafellner
Diederichomyces caloplacae (D. Hawksw.) Crous & Trakun
Diplodia lecanorae (Vouaux) Keissl.
Diplolaeviopsis ranula Giralt & D. Hawksw.
Diploschistes caesioplumbeus (Nyl.) Vain.
Diploschistes euganeus (A. Massal.) Steiner
Diploschistes muscorum (Scop.) R. Sant.
Diplotomma venustum (Körb.) Körb.

- Endococcus rugulosus* (Leight.) Nyl.
Endohyalina insularis (Arnold) Giralt, van den Boom & Elix
Epibryon lichenicola Matzer
Epilichen scabrosus (Ach.) Clem.
Flavoplaca coronata (Kremp. ex Körb.) Arup, Frödén & Søchting
Favoplaca microthallina (Wedd.) Arup, Frödén & Søchting
Geltingia associata (Th. Fr.) Alstrup & D. Hawksw.
Gyalideopsis cochlearifera Lücking & Sérus.
Gyalideopsis parvula Hafellner & Vězda
Gyalideopsis stipitata Kalb & Vězda
Gyrophthorus perforans Hafellner & Sancho
Halecania alpivaga (Th. Fr.) M. Mayrh.
Hawksworthiella fissurisedens Hafellner
Helicobolomyces lichenicola Matzer
Hemigrapha asteriscus (Müll. Arg.) R. Sant. ex D. Hawksw.
Hemigrapha pilocarpacearum Cáceres & Lücking
Hemigrapha tenellula (Müll. Arg.) R. Sant. ex Matzer
Heterocarpon ochroleucum (Tuck.) Müll.Arg.
Heterocephalacria bachmannii (Diederich & M. S. Christ.) Millanes & Wedin
Heteropladidium congestum (Breuss & McCune) Breuss (not in Diederich et al. 2018)
Heteropladidium contumescens (Nyl.) Breuss (not in Diederich et al. 2018)
Heteropladidium fusculum (Nyl.) Gueidan & Cl. Roux
Heteropladidium imbricatum (Nyl.) Breuss (not in Diederich et al. 2018)
Heteropladidium podolepis (Breuss) Breuss (not in Diederich et al. 2018)
Homostegia piggotii (Berk. & Broome) P. Karst.
Illosporium carneum Fr.
Immersaria athrocarpa (Ach.) Rambold & Piet
Immersaria cupreoatra (Nyl.) Calat. & Rambold
Karschia irregularis (probably unpublished as not in Index Fungorum (2020), but may be of interest)
Karschia talcophila (Ach.) Körb.
Keratosphaera porinae Matzer (= *Koordersiella p.*?)
Labrocarpon canariense (D. Hawksw.) Etayo & Pérez-Ortega
Laeviomyces fallaciosus Hafellner & Kalb
Lambiella furvella (Nyl. ex Mudd) M. Westb. & Resl - was *Ramboldia furvella* (Nyl. ex Mudd) Hertel & Rambold
Lambiella insularis (Nyl.) T. Sprib.
Lecania triseptata (Vain.) Zahlbr.
Lecanographa grumulosa (Dufour) Egea & Torrente (not in Diederich et al. 2018)
Lecanora gisleriana Müll. Arg. (= *Lecanora gisleri* Poelt & Ullrich, Lich. alp. 216?)
Lecanora invadens H. Magn.
Lecanora laatokkaensis (Räsänen) Poelt
Lecanora latro Poelt
Lecanora thallophila H. Magn.
Lecidea insidiosa Th. Fr. = *Ramboldia insidiosa* (Th. Fr.) Hafellner
Lecidea leprosolimbata (Arnold) Lettau ex Poelt
Lecidea rapax Hertel
Lecidea verruca Poelt
Lecidella pulveracea (Flörke) Th. Fr. (= *Lecidea distans* Krempf.) – not in Diederich et al. 2018
Leptorhaphis haematommatum Hafellner & Kalb

- Lichenochora obscuroides* (Linds.) Triebel & Rambold
Lichenochora thallina (Cooke) Hafellner (but not in Diederich et al. 2019, but is in Index Fungorum 2020)
Lichenocodium erodens M.S. Christ. & D. Hawksw.
Lichenocodium laevisproum Kalb & Hafellner
Lichenocodium lecanorae (Jaap) D. Hawksw.
Lichenocodium usneae (Anzi) D. Hawksw.
Lichenocodium xanthoriae M.S. Christ.
Lichenodiplis lecanorae (M.S. Cole & D. Hawksw.) Diederich
Lichenodiplis lichenicola Dyko & D. Hawksw.
Lichenopeltella epiphylla R. Sant.
Lichenopeltella setifera Matzer
Lichenosticta alcicornaria (Linds.) D. Hawksw
Lichenostigma alpinum (R. Sant., Alstrup & D. Hawksw.) Ertz & Diederich
Lichenostigma maurreri Hafellner
Lichenostigma semi-immersum Hafellner
Lichenothelia scopularia (Nyl.) D. Hawksw.
Lichinodium sirosiphoideum Nyl.
Llimoniella pyrenulae Diederich & Etayo
Llimoniella scabridula (Müll. Arg.) Nav.-Ros. & Hafellner
Marchandiomyces corallinus (Roberge) Diederich & D. Hawksw.
Melanographa tribulodes (Tuck.) Müll. Arg.
Melaspileella proximella (Nyl.) Ertz & Diederich
Merismatium deminutum (Arnold) Cl. Roux & Nav.-Ros. (genus is in Diederich et al. 2018 but not the species)
Micarea inquinans (Tul.) Coppins
Microcalicium arenarium (Hampe ex A. Massal.) Tibell
Microcalicium conversum Tibell
Microcalicium disseminatum (Ach.) Vain.
Milospium graphideorum (Nyl.) D. Hawksw.
Minutoexcipula mariana V. Atienza
Minutoexcipula tuckerae Atienza & D. Hawksw.
Miriquidica complanata (Körb.) Hertel & Rambold
Miriquidica intrudens (H. Magn.) Hertel & Rambold
Miriquidica nigroleprosa (Vain.) Hertel & Rambold
Muellerella hospitans Stizenb.
Muellerella lichenicola (Sommerf. ex Fr.) D. Hawksw.
Muellerella polyspora Hepp ex Müll.Arg.
Muellerella pygmaea (Körb.) D. Hawksw.
Myriospora hassei (Herre) K. Knudsen & L. Arcadia
Nectria bainii Masee
Nectriopsis cladoniicola M. S. Cole & D. Hawksw
Nectriopsis lecanodes (Ces.) Diederich & Etayo
Neolamyia peltigerae (Mont.) Theiss. & Syd.
Nigropuncta rugulosa D. Hawksw.
Norrinia peltigericola (Nyl.) Theiss. & Syd.
Opegrapha blakii Ertz & Diederich
Opegrapha brigantina Hafellner
Opegrapha diffracticola R.C. Harris & Ladd
Opegrapha ectolechracearum Matzer & R. Sant.
Opegrapha epiporina Matzer

- Opegrapha foreaui* (Moreau) Hafellner & R. Sant.
Opegrapha geographicola (Arnold) Hafellner
Opegrapha kalbii Matzer
Opegrapha lithyrge Ach. (= *Opegrapha vulgata*; delete as not lichenicolous?)
Opegrapha melanospila Müll. Arg.
Opegrapha mazosiae Matzer
Opegrapha melanophthalma Müll. Arg.
Opegrapha parasitica (A. Massal.) H. Olivier
Opegrapha phylloporinae Müll. Arg.
Opegrapha physciaria (Nyl.) D. Hawksw. & Coppins
Opegrapha physcidiae Kalb & Elix
Opegrapha pulvinata Rehm ex Arnold
Opegrapha rupestris Pers.
Opegrapha sipmanii Matzer
Opegrapha thelotrematis Coppins
Opegrapha velata (Müll. Arg.) Vain.
Ovicuculispora parmeliae (Berk. & M. A. Curtis) Etayo
Paralecanographa grumulosa (Dufour) Ertz & Tehler (= *Opegrapha granulosa* Dufour)
Perigrapha superveniens (Nyl.) Hafellner
Petractis hypoleuca (Ach.) Vězda [as *Gyalecta hypoleuca* (Ach.) Zahlbr. in Esslinger 2019]
Phacographa zwackhii (A. Massal. ex Zwackh) Hafellner (as *Opegrapha zwackhii*)
Phacopsis huuskonenii Räsänen
Phacopsis oxyspora (Tul.) Triebel & Rambold (= *Nesolechia oxyspora* (Tul.) A. Massal. in Diederich et al. 2018)
Phacopsis thallicola (A. Massal.) Triebel & Rambold (= *Nesolechia thallicola* (A. Massal.) A. Massal. In Diederich et al. 2018)
Phacopsis vulpina Tul.
Phacothecium varium (Tul.) Trevisan
Phaeopyxis punctum (A. Massal.) Rambold, Triebel & Coppins
Phaeospora hetairizans (Leight.) Arnold ex Sacc.
Phaeospora parasitica (Lonnr.) Arnold
Phylliscum demangeonii (Moug. & Mont.) Nyl.
Placopyrenium canellum (Nyl.) Gueidan & Cl. Roux
Placopyrenium fuscillum (Turner) Gueidan & Cl. Roux
Plectocarpon lichenum (Sommerf.) D. Hawksw.,
Plectocarpon macaronesiae Diederich, Etayo & Sérus.
Poeltaria coromandelica (Zahlbr.) Rambold & Hertel
Polycoccum bryonthae (Arnold) Vězda (not in Diederich et al. 2018)
Polycoccum pulvinatum (Eitner) R. Sant.
Polycoccum sauteri Körb.
Polycoccum tryptethioides (Th. Fr.) R. Sant.)
Polysporina arenacea (H. Magn.) K. Knudsen & Kocourk.
Polysporina pusilla (Anzi) M. Steiner
Polysporina subfuscescens (Nyl.) K. Knudsen & Kocourk.
Pronectria leptaleae (J. Steiner) Lowen – not in Diederich et al. 2018, but is in Index Fungorum (2020)
Pronectria santessonii (Lowen & D. Hawksw.) Lowen
Protoparmelia atriseda (Fr.) R. Sant. & V. Wirth
Protoparmelia cupreobadia (Nyl.) Poelt
Protoparmelia phaeonesos Poelt
Protothelenella croceae (Bagl. & Carestia) Hafellner & H. Mayrhofer

- Protothelenella sphinctrinoidella* (Nyl.) H. Mayrh. & Poelt
Protothelenella sphinctrinoides (Nyl.) H. Mayrh. & Poelt
Psorula rufonigra (Tuck.) Gotth. Schneider
Punctelia oxyspora (Tul.) Divakar, A. Crespo & Lumbsch (= *Nesolechia oxyspora* (Tul.) A. Massal. in Diederich et al. 2018)
Pyrenidium actinellum Nyl.
Pyrenidium hyalosporum Alstrup, D. Hawksw. & R. Sant.
Pyrenidium zamiae (Müll. Arg.) Matzer
Raesaenenia huuskonenii (Räsänen) D. Hawksw.
Ramboldia insidiosa (Th. Fr.) Hafellner (Plantae Graecenses 404)
Rhagadostoma lichenicola (De Not.) Keissl.
Rhizocarpon dinothetes Hertel & Leuckert
Rhizocarpon effiguratum (Anzi) Th. Fr.
Rhizocarpon epispilum (Nyl.) Zahlbr.,
Rhizocarpon inimicum Poelt & Vězda
Rhizocarpon intermediellum Räsänen
Rhizocarpon kakurgon Poelt
Rhizocarpon lusitanicum (Nyl.) Arn.
Rhizocarpon malenconianum (Llimona & Werner) Hafellner & Mayrhofer
Rhizocarpon norvegicum Räsänen
Rhizocarpon ochrolechia (Poelt & Nimis) Hafellner
Rhizocarpon parvum Runem.
Rhizocarpon pusillum Runem.
Rhizocarpon renneri Poelt
Rhizocarpon superficiale (Schaer.) Vain.
Rhizocarpon viridiatrum (Wulfen) Körb.
Rhymocarpus neglectus (Vain.) Diederich & Etayo
Rinodina afghanica M. Steiner & Poelt
Rinodina canariensis Matzer, H. Mayrhofer & P. Clerc
Rinodina milvina (Wahlenb.) Th. Fr.
Rinodina obnascens (Nyl.) Oliv.
Rinodina parasitica H. Mayrh. & Poelt
Rinodina santorinensis J. Steiner
Roselliniella cladoniae (Anzi) Matzer & Hafellner
Roselliniella epiphylla Matzer & Hafellner
Rosellinula frustulosae (Vouaux) R. Sant.
Rosellinula haplospora (Nyl.) R. Sant.
Rosellinula kalbii (Hafellner) Hafellner & R.W. Rogers
Rosellinula lopadii (Vouaux) D.J. Galloway
Sarcogyne pusilla Anzi
Sagediopsis campsteriana (Linds.) D. Hawksw. & R. Sant.
Sagediopsis fissurisedens Hafellner
Sagediopsis undulata (not in Diederich et al. 2018 – several Kalb specimens from Brazil)
Schaereria parasemella (Nyl.) Lumbsch
Sclerococcum athallinum (Müll. Arg.) Ertz & Diederich
Sclerococcum inquilinum (Tuck.) Ertz & Diederich
Sclerococcum lecanorae Vouaux (but not in Diederich et al. 2018)
Sclerococcum lobariellum (Nyl.) Ertz & Diederich
Sclerococcum parasitaster (Nyl.) Ertz & Diederich
Sclerococcum parasiticum (Flörke) Ertz & Diederich
Sclerococcum porphyreum (Hafellner & Kalb) Ertz & Diederich

- Sclerococcum saxatile* (Schaer.) Ertz & Diederich
Sclerococcum sphaerale (Ach.) Fr.
Scoliciosporum intrusum (Th. Fr.) Hafellner = *Micareia intrusa* (Th. Fr.) Coppins in Diederich et al. 2018
Scutula effusa (Auersw. ex Rabenh.) Kistenich, Timdal, Bendiksby & S. Ekman
Scutula epiblastematica (Wallr.) Rehm
Scutula heeri (Hepp ex A. Massal.) P. Karst.
Scutula miliaris (Wallr.) P. Karst.
Scutula solorinaria (Nyl.) P. Karst.
Scutula stereocaulorum (Anzi) Körb.
Skyttea caesii Diederich & Etayo
Skyttea fusispora Sherwood, D. Hawksw. & Coppins
Skyttea lecanorae Diederich & Etayo
Skyttea mayrhoferi Diederich & Etayo
Skyttea megalosporae Diederich & Etayo
Skyttea nitschkei (Körb.) Sherwood, D. Hawksw. & Coppins
Skyttea soralifera Kalb (But not published according to Klaus)
Sphaerellothecium cladoniicola E. S. Hansen & Alstrup
Sphaerellothecium icmadophilae (R. Sant.) Zhurb.
Sphaerellothecium minutum Hafellner
Sphinctrina anglica Nyl.
Sphinctrina leucopoda Nyl.
Sphinctrina tubaeformis A. Massal.
Sphinctrina turbinata Fr. (including *Sphinctrina gelasinata* (With.) Zahlbr.)
Stictographa lentiginosa (Lyell ex Leight.) Mudd
Stigmatidium allogenum (Nyl.) D. Hawksw
Stigmatidium aspiciliae (J. Lahm) Cl. Roux
Stigmatidium concentricum (J.L. Bezerra & Cavalc.) Lücking (genus is in Diederich et al. 2018 but not the species – Kalb specimen from Brazil)
Stigmatidium congestum (Körb.) Triebel
Stigmatidium degelii R. Sant.
Stigmatidium epiphyllum Matzer
Stigmatidium eucline (Nyl.) Vězda
Stigmatidium marinum (Deakin) Swinscow
Stigmatidium microspilum (Körb.) D. Hawksw
Stigmatidium peltideae (Vain.) R. Sant.
Stigmatidium porinae Matzer
Stigmatidium psorae (Anzi) Hafellner
Stigmatidium schaeereri (A. Massal.) Trevis.
Synaptospora tartaricola (Nyl. ex Leight.) Cain (= *Rosellinopsis ventosa* (Rostr.) Alstrup?)
Synarthonia borbonica (Ertz, Elix & Grube) Van den Broeck & Ertz
Szygospora bachmannii Diederich & M. S. Crist. [= *Heterocephalacria bachmannii* (Diederich & M. S. Christ.) Millanes & Wedin]
Taeniolella delicata M. S. Christ. & D. Hawksw.
Taeniolella verrucosa M.S. Christ. & D. Hawksw.
Telogalla olivieri (Vouaux) Nik. Hoffm. & Hafellner (but not in Diederich et al. 2018)
Tephromela cerasina (Müll. Arg.) Rambold & Triebel
Tetramelas phaeophysciae A. Nordin & Tibell
Tetramelas pulverulentus (Anzi) A. Nordin & Tibell
Thamnogalla crombiei (Mudd) D. Hawksw.
Thelocarpon epibolum Nyl. (+ four other *Thelocarpons*, but lichenized?)

- Thelocarpon epibolum* var. *epithallinum* (Leight.) G. Salisb.
Thelocarpon lichenicola (Fuckel) Poelt & Hafellner (but not in Diederich et al. 2018 but is in Index Fungorum 2020)
Toninia episema (Nyl.) Timdal
Toninia plumbina (Anzi) Hafellner & Timdal
Toninia subdispersa (Nyl. ex Hasse) K. Knudsen
Toninia verrucarioides (Nyl.) Timdal
Tremella cetrariicola Diederich & Coppins
Tremella lobariacearum Diederich & M.S. Christ.
Tremella parmeliarum Diederich
Tremella stictae Diederich
Tryblidaria nivalis (Bagl. & Carestia) Rehm (genus in Diederich et al. 2018, but species not)
Unguiculariopsis lettaui (Grummann) Coppins
Unguiculariopsis manriquei Etayo
Unguiculariopsis thallophila (P. Karst.) W.Y. Zhuang
Variospora velana (A. Massal.) Arup, Søchting & Frödén
Verrucaria aspiciiae Zehetl. (= *Verrucaria canella* Nyl. but neither in Diederich et al. 2018)
Verrucaria biatorinaria Zehetl.
Verrucaria inficiens Breuss
Verrucaria latericola Erichsen (= *Verrucaria granulosis* (Clauzade & Zehetl.), Lich. alp. 324, = *Verrucaria granulosis* (Clauzade & Zehetl.) Nav.-Ros. & Cl. Roux ????)
Verrucaria microspora Nyl.
Verrucula protearia (Zehetl.) Nav.-Ros. & Cl. Roux, in Navarro-Rosinés, Roux & Gueidan
Verruculopsis lecideoides (A. Massal.) Gueidan & Cl. Roux (genus in Diederich et al. 2018, but not species)
Vouauxiella lichenicola (Linds.) Petr. & Syd.
Vouauxiomyces ramalinae (Nordin) D. Hawksw.
Vouauxiomyces santessonii D. Hawksw.
Vouauxiomyces truncatus (B. de Lesd.) Dyko & D. Hawksw.
Wentomyces lichenicola (Hansf.) D. Hawksw.
Wentomyces lichenicola subsp. *bouteilleri* Bricaud, Cl. Roux & Sérus.
Xanthoriicola physciae (Kalchbr.) D. Hawksw.
Zwackhiomyces coepulonus (Norman) Grube & R. Sant.
Zwackhiomyces dispersus (J. Lahm ex Körb.) Triebel & Grube
Zwackhiomyces sphinctriniformis Grube & Hafellner
Zwackhiomyces sphinctrinoides (Zwackh) Grube & Hafellner

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- Index Fungorum. 2020. <http://www.indexfungorum.org>
- Matzer, M. 1996 Lichenicolous ascomycetes with fissitunicate asci on foliicolous lichens. CAB International. Mycological Papers 171: i-x, 1-202.
- Santesson, R., R. Moberg, A. Nordin, T. Tønberg and O. Vitikainen. 2004. Lichen-forming and lichenicolous fungi of Fennoscandia. Museum of Evolution, Uppsala University.