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**P. VAN DEN BOOM, E. SÉRUSIAUX, P. DIEDERICH,
M. BRAND, A. APTROOT & L. SPIER**

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[*voir la suite de la liste à la troisième page de la couverture*]

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REVUE DE BOTANIQUE

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A LICHENOLOGICAL EXCURSION IN MAY 1997 NEAR HAN-SUR-LESSE AND SAINT-HUBERT, WITH NOTES ON RARE OR CRITICAL TAXA OF THE FLORA OF BELGIUM AND LUXEMBOURG

by

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Summary

The 'Bryologische Lichenologische Werkgroep' of the 'Koninklijke Nederlandse Natuurhistorische Vereniging' organized a field meeting in May 1997 near Han-sur-Lesse and St-Hubert in southern Belgium. This paper presents the results of the ecological and taxonomical observations on lichens and their lichenicolous fungi, in the prospect of an 'Annotated checklist' currently in preparation for Belgium and Luxembourg. The visited localities include several very important sites, especially the *Xerobromion* communities near Han-sur-Lesse and the old-growth forest of St-Michel.

Pseudorobillarda peltigerae Diederich sp. nov. is a new lichenicolous fungus growing on *Peltigera rufescens*. The following species are reported as new for the studied area (Belgium and G. D. Luxembourg) : *Agonimia opuntiella, Bacidia carneoglauca, B. circumspecta, B. herbarum, B. trachona, Baglietoa baldensis, Biatora meiocarpa, Caloplaca alociza, C. flavocitrina, Cercidospora epipolytropa, Clypeococcum epicrassum, Dactylospora parasitica, Endocarpon pallidum* (the

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earlier record refers to *E. pusillum*), *Lepraria borealis, L. nivalis, Leptorhaphis maggiana, Libertiella didymospora, Merismatium discrepans, Phaeophyscia cernohorskyi, Pharcidia parvipuncta, Physalospora lecanorae, Polycoccum marmoratum, P. opulentum, Porocyphus rehmicus, Rinodina pityrea, Staurothele guestphalica, Stigmidium cerinae, Strigula affinis* (the earlier record refers to *S. jamesii*), *Syzygospora physciacearum, Toninia athallina, T. philippea, Verrucaria funckii* and *Weddellomyces epicallopisma*. The following ones, either very rare or not recorded recently, have been collected : *Buellia venusta, Caloplaca lucifuga, Chromatochlamys muscorum* var. *muscorum, Collema occultatum, Gyalecta truncigena, Micarea pycnidiophora, Naetrocymbe fraxini* and *Phaeographis inusta. Caloplaca flavocitrina* is shown to be distinct from *C. citrina* and to be an ubiquitous species in the studied area. The following combinations are introduced : *Woessia arnoldiana* (Körb.) Sérus. & Diederich (= *Bacidia arnoldiana* Körb.), *W. caligans* (Nyl.) Sérus. & Diederich [= *Bacidia caligans* (Nyl.) A. L. Sm.], *W. delicata* (Larbal. ex Leight.) Sérus. & Diederich [= *Bacidia delicata* (Larbal. ex Leight.) Coppins] and *W. inundata* (Fr.) Sérus. & Diederich [= *Bacidia inundata* (Fr.) Körb.]. An albino form is reported for the first time in *Opegrapha varia*.

Résumé : *Une excursion lichénique en mai 1997 aux environs de Han-sur-Lesse et de Saint-Hubert, avec notes sur des taxons rares ou critiques de la flore de Belgique et du Luxembourg.*

Le 'Bryologische Lichenologische Werkgroep' de la 'Koninklijke Nederlandse Natuurhistorische Vereniging' a organisé, en mai 1997, une prospection dans la région de Han-sur-Lesse et St-Hubert, dans le sud de la Belgique. Cet article présente les résultats obtenus quant à l'écologie et la taxonomie des lichens observés et de leurs champignons lichénicoles, dans la perspective d'une 'Check-list' actuellement en cours de préparation. Les sites explorés comprennent notamment des milieux de très grande valeur biologique, en particulier les communautés du *Xerobromion* près de Han-sur-Lesse et la vieille forêt de St-Michel.

Pseudorobillarda peltigerae Diederich sp. nov. est une espèce nouvelle de champignon lichénicole, trouvée sur *Peltigera rufescens*. Les espèces suivantes sont mentionnées pour la première fois dans le territoire formé par la Belgique et le Luxembourg : *Agonimia opuntiella, Bacidia carneoglauca, B. circumspecta, B. herbarum, B. trachona, Bagliettoa baldensis, Biatora meiocarpa, Caloplaca alociza, C. flavocitrina, Cercidospora epipolytropa, Clypeococcum epicrassum, Dactylospora parasitica, Endocarpon pallidum* (la mention antérieure correspond en fait à *E. pusillum*), *Lepraria borealis, L. nivalis, Leptorhaphis maggiana, Libertiella didymospora, Merismatium discrepans, Phaeophyscia cernohorskyi, Pharcidia parvipuncta, Physalospora lecanorae, Polycoccum marmoratum, P. opulentum, Porocyphus rehmicus, Rinodina pityrea, Staurothele guestphalica, Stigmidium cerinae, Strigula affinis* (la mention antérieure correspond à *S. jamesii*), *Syzygospora physciacearum, Toninia athallina, T. philippea, Verrucaria funckii* et *Weddellomyces epicallopisma*. Les espèces suivantes sont très rares ou n'avaient plus été observées récemment dans ce même territoire : *Buellia venusta, Caloplaca lucifuga, Chromatochlamys muscorum* var. *muscorum, Collema occultatum, Gyalecta truncigena, Micarea pycnidiophora, Naetrocymbe fraxini* et *Phaeographis inusta. Caloplaca flavocitrina* est une espèce bien distincte de *C. citrina* et est ubiquiste dans ce même

territoire. Les combinaisons suivantes sont introduites : *Woessia arnoldiana* (Körb.) Sérus. & Diederich (= *Bacidia arnoldiana* Körb.), *W. caligans* (Nyl.) Sérus. & Diederich [= *Bacidia caligans* (Nyl.) A. L. Sm.], *W. delicata* (Larbal. ex Leight.) Sérus. & Diederich [= *Bacidia delicata* (Larbal. ex Leight.) Coppins] et *W. inundata* (Fr.) Sérus. & Diederich [= *Bacidia inundata* (Fr.) Körb.]. Une forme albinos est signalée pour la première fois chez *Opegrapha varia*.

Samenvatting : *De lichenologische excursie in mei 1997 naar Han-sur-Lesse en Saint-Hubert, met notities over zeldzame of kritische taxa van de flora van België en Luxemburg.*

De 'Bryologische Lichenologische Werkgroep' van de 'Koninklijke Nederlandse Natuurhistorische Vereniging' organiseerde in mei 1997 een excursie naar Han-sur-Lesse en St-Hubert, in het zuiden van Belgie. Dit artikel geeft de resultaten van ecologische en taxonomische waarnemingen van lichenen en lichenicole fungi, met in het vooruitzicht een 'Standaardlijst' van Belgie en Luxemburg, die op dit moment in voorbereidung is. Tot de onderzochte lokaties behoren zeer belangrijke terreinen zoals het *Xerobromion* bij Han-sur-Lesse en de oude bossen van St-Michel.

Pseudorobillarda peltigerae Diederich sp. nov. is een nieuwe lichenicole fungus die op *Peltigera rufescens* groeit. De volgende soorten worden voor het eerst vermeld van Belgie en Luxemburg : *Agonimia opuntiella, Bacidia carneoglauca, B. circumspecta, B. herbarum, B. trachona, Bagliettoa baldensis, Biatora meiocarpa, Caloplaca alociza, C. flavocitrina, Cercidospora epipolytropa, Clypeococcum epicrassum, Dactylospora parasitica, Endocarpon pallidum* (de eerdere opgave correspondeert met *E. pusillum*), *Lepraria borealis, L. nivalis, Leptorhaphis maggiana, Libertiella didymospora, Merismatium discrepans, Phaeophyscia cernohorskyi, Pharcidia parvipuncta, Physalospora lecanorae, Polycoccum marmoratum, P. opulentum, Porocyphus rehmicus, Rinodina pityrea, Staurothele guestphalica, Stigmidium cerinae, Strigula affinis* (de eerdere opgave correspondeert met *S. jamesii*), *Syzygospora physciacearum, Toninia athallina, T. philippea, Verrucaria funckii* en *Weddellomyces epicallopisma*. De volgende lichenen die werden verzameld zijn of zeer zeldaam, of recent niet opgegeven : *Buellia venusta, Caloplaca lucifuga, Chromatochlamys muscorum* var. *muscorum, Collema occultatum, Gyalecta truncigena, Micarea pycnidiophora, Naetrocymbe fraxini* en *Phaeographis inusta. Caloplaca flavocitrina* is een soort die duidelijk is te onderscheiden van *C. citrina* en blijkt door het gehele gebied voor te komen. De volgende combinaties worden geintroduceerd : *Woessia arnoldiana* (Körb.) Sérus. & Diederich (= *Bacidia arnoldiana* Körb.), *W. caligans* (Nyl.) Sérus. & Diederich [= *Bacidia caligans* (Nyl.) A. L. Sm.], *W. delicata* (Larbal. ex Leight.) Sérus. & Diederich [= *Bacidia delicata* (Larbal. ex Leight.) Coppins] en *W. inundata* (Fr.) Sérus. & Diederich [= *Bacidia inundata* (Fr.) Körb.]. Een albino-form is voor de eerste keer waargenomen in *Opegrapha varia*.

INTRODUCTION

In May 1997, the 'Bryologische Lichenologische Werkgroep' of the 'Koninklijke Nederlandse Natuurhistorische Vereniging' (KNNV) organized its annual field meeting near Han-sur-Lesse and St-Hubert in southern Belgium. For three days, the participants thoroughly explored several sites known for their biological interest, or suspected to have a rich lichen flora. Many specimens were collected and are deposited in the herbarium of the Department of Botany at the University of Liège (LG) or in the collectors' private herbaria (indicated as 'h'). This paper presents the results of the ecological and taxonomical observations on the lichens encountered and their lichenicolous fungi, in the prospect of an 'Annotated checklist' currently in preparation for Belgium and Luxembourg. The so-called 'studied area' thus includes Belgium, Luxembourg and the surrounding areas (mainly the 'Ardennes' department in northern France). The phytogeographical division of the studied area used in this paper follows LAMBINON et al. (1993 : XXI-XXIV) and further information on the ecological and floristic characteristics of the recognized districts can be be found in the excellent survey of TANGHE (1975).

The following lichenologists attended the meeting : André Aptroot, Pieter van den Boom, Maarten Brand, Paul Diederich, Han van Dobben, Kok van Herk, Peter Jan Keizer, Emmanuël Sérusiaux, Laurens Sparrius and Leo Spier. This paper is based on the data, either taxonomical or ecological, provided by the authors ; it has been coordinated by E. Sérusiaux and P. Diederich, including a careful checking of all critical taxa.

LIST OF LOCALITIES AND IDENTIFIED TAXA

Localities

1-Belgium, Namur prov., distr. Mosan, Han-sur-Lesse, Les Grignaux, W of the Ry d'Ave, alt. 200-220 m (IFBL J6.34), dry and SE exposed limestone outcrop and *Xerobromion* communities on top, May 3rd 1997. Known by Belgian botanists as 'Hérimont' (THILL 1964) but that name does not appear on current maps and thus is not adopted in this report. Most of the site is an official nature reserve, managed by the Wallonian administration (Decree of 18.7.1991).

2-Belgium, Namur prov., distr. Mosan, Eprave, SW of Bois de Noulaiti, left side of the river Lomme, alt. 160 m (IFBL J6. 24), heavily disturbed woodland along the river, with *Ulmus laevis* and including *Populus* plantations, May 3rd 1997. The reports include collections made by P. Diederich at the very same place on June 1st 1997.

3-Belgium, Namur prov., distr. Mosan, Han-sur-Lesse, Belvédère (NE of the village), alt. c. 250 m (IFBL J6. 24), dry and S-exposed limestone outcrop with *Xerobromion* communities, May 3rd 1997. Known by Belgian botanists as 'Rocher Serin' or 'Roche à Serin' (THILL 1964) but these names do not appear on current maps and thus are not adopted in this report. Most of the site is an official nature reserve, managed by the Wallonian administration (Decree of 18.7.1991).

4-Belgium, Namur prov., distr. Mosan, Han-sur-Lesse, Belvédère (NE of the village), alt. c. 250 m (IFBL J6. 24), sheltered and N-exposed limestone outcrop in woodland (mainly *Carpinus* coppices), May 3rd 1997. See under 3.

5-Belgium, Luxembourg prov., distr. Ardennais, St-Hubert, valley of the Masblette, near the Pont Mauricy, alt. c. 320 m (IFBL J6. 47), ancient mixed woodland by the river, with e. g. old boles of *Alnus, Fraxinus, Quercus, Acer pseudoplatanus* and *A. platanoides*, etc., including young *Carpinus*, May 4th 1997. The site is known as a part of the 'Forêt de St-Michel'; only a small fragment was explored, near the Pont Mauricy at the bottom of Masblette valley. The reports include collections made by P. Diederich at the very same place on June 5th 1997.

6-Belgium, Luxembourg prov., distr. Ardennais, St-Hubert, valley of the Masblette, 700 m E of Pont Mauricy, alt. c. 320 m (IFBL J6. 47), open ancient *Fagus* woodland with few *Fraxinus* trees, May 4th 1997.

6b-Belgium, Luxembourg prov., distr. Ardennais, St-Hubert, valley of the Masblette, alt. c. 320 m (IFBL J6. 47), parking of 'Fourneau St-Michel', on iron and concrete, June 5th 1997 (collections made only by P. Diederich).

7-Belgium, Luxembourg prov., distr. Ardennais, Arville, Sart-aux-Pîres, right side of the river Lomme, alt. c. 310-320 m (IFBL J6.

56), disturbed banks of the river and a small canal along it (with e. g. pieces of metal wreckage, etc.), May 4th 1997.

8-Belgium, Luxembourg prov., distr. Ardennais, Arville, Sart-aux-Pîres, right side of the river Lomme, alt. c. 310-320 m (IFBL J6. 56), schistose rocks containing heavy metals on SW exposed cuttings for railway, May 4th 1997.

9-Belgium, Luxembourg prov., distr. Ardennais, Arville, Sart-aux-Pîres, right side of the river Lomme, alt. c. 310-320 m (IFBL J6. 56), disturbed *Quercus* woodland with schistose rocks on W-exposed slope, May 4th 1997.

10-Belgium, Luxembourg prov., distr. Mosan, 2.5 km N of Tellin, road from Tellin to Wavreille, near crossing to Bure, alt. 260 m (IFBL J6. 33), roadside trees (*Acer*), May 4th 1997.

11-Belgium, Namur prov., distr. Mosan, Ave-et-Auffe, Auffe centre, alt. 210 m (IFBL J6. 33), old *Tilia* tree (c. 350 years old), May 4th 1997.

12-Belgium, Namur prov., distr. Mosan, campsite of Bois du Roptai, W of Ave-et-Auffe, Bronfoss, alt. 265 m (IFBL J6. 33), young *Quercus* wood and remnants of *Xerobromion* communities, May 4th 1997. The reports include collections made in this locality by A. Aptroot between May 2-7 1997.

13-Belgium, Luxembourg prov., distr. Mosan, Tellin, right side of the Ri des Boyes near Chenet, alt. c. 210-220 m (IFBL J6. 35), scattered trees (*Salix, Populus, Malus*, etc.) along the river in a sheltered valley, May 5th 1997.

14-Belgium, Namur prov., distr. Mosan, Wavreille, right side of the Ri des Boyes near Chenet, N of 'Trous des Lutons', alt. c. 210-220 m (IFBL J6. 35), sheltered limestone outcrop in woodland (mainly *Carpinus* coppices), May 5th 1997.

15-Belgium, Namur prov., distr. Mosan, Wavreille, outcrop N of the road Belvau-Wavreille on the right side of the Lesse, alt. 280-200 m (IFBL J6. 34), *Xerobromion* communities on steep S exposed slope, May 5th 1997. Known by Belgian botanists as 'Maupas' (Thill 1964) but that name does not appear on current maps and thus is not adopted in this report. Most of the site is an official

nature reserve, managed by the Wallonian administration (Decree of 18.7.1991).

16-Belgium, Namur prov., distr. Mosan, Wavreille, outcrop N of the road Belvau-Wavreille on the right side of the Lesse, alt. 280-200 m (IFBL J6. 34), sheltered limestone outcrop in woodland (mainly *Carpinus* coppices), May 5th 1997. See under 15.

17-Belgium, Luxembourg prov., distr. Mosan, road Tellin-Wavreille, 1 km N of Tellin, alt. 250 m (IFBL J6. 35), roadside trees, old *Fraxinus*, May 5th 1997.

18-Belgium, Namur prov., distr. Mosan, Lessive, 'Station de télécommunications', alt. 250 m (IFBL J6. 32), on *Quercus* trees, May 7th 1997 (collections made only by A. Aptroot).

Identified taxa

All identified taxa found in those localities are reported on Tab. 1.

NOTES ON THE LICHEN VEGETATION AND FLORA OF THE VISITED LOCALITIES

Calcareous outcrops communities near Han-sur-Lesse (loc. 1, 3, 4, 15 & 16)

Three of the sites visited during this excursion (loc. 1, 3 & 15) are reckoned amongst the very best calcareous outcrops of the Benelux, and are especially rich in flowering plants and insects (especially butterflies) of submediterranean origin. They are thoroughly described by THILL (1964 : 14-29) and their flora and vegetation will only be briefly summarized here. They all are part of the 'Calestienne', a dry and warm ridge formed of hard Givetian limestone outcrops making a sharp transition between the flat plain of the 'Famenne' and the much cooler 'Ardennes' range. Their original forest cover mainly belongs to the *Quercetum pubescentis* (classification following NOIRFALISE 1984) and fragments can still be observed at several places near Han-sur-Lesse. Edges of these forests, now mostly managed as coppices, comprise many interesting shrubs like *Cotoneaster integerrimus* and *Pyrus pyraster*, and herbaceous plants like *Pulsatilla vulgaris, Geranium sanguineum* and

Vincetoxicum hirundinaria. But the real treasure of these sites is the *Xerobrometum*, a low and scarce grassland with a very impressive list of submediterranean flowering plants such as *Aster linosyris, Carex humilis, Dianthus carthusianorum, Globularia bisnagarica, Veronica prostrata* subsp. *scheereri*, and many others. Very interesting non-lichenized fungi are also reported from those *Xerobrometum*, e. g. *Floccularia luteovirens* (Alb. & Schw. :Fr.) Gillet, a thermophilous mushroom of steppic origin known from a single locality in the studied area, the Belvédère (loc. 3 ; last collection made in 10. 1981, specimens preserved in LG). The numerous calcareous blocks and outcrops of these sites host an extraordinary lichen flora which was extensively sampled during the excursion. Special attention has also been paid to the shaded (usually N-orientated) and sheltered side of those outcrops.

Hard and exposed calcareous rocks are well-known for their impressive lichen flora, with epi- and endolithic species, *Aspicilia calcarea, Bagliettoa baldensis, B. parmigera, B. steineri, Buellia venusta, Caloplaca aurantia, C. chalybaea, C. dolomiticola, C. ochracea, Lecanora crenulata, L. pruinosa, Protoblastenia calva, P. cyclospora, P. incrustans, P. rupestris, Rinodina lecanorina, Solenopsora candicans* and *Verrucaria calciseda* being the most frequently collected. *Caloplaca alozica, Staurothele guestphalica, Toninia athallina* and *T. philippea* were found in this habitat during the excursion and are all new reports for the studied area. Upper parts, used as resting points by many birds and thus strongly nitrophilous, are characterized by *Lobothallia radiosa* (= *Lecanora subcircinata*), *Caloplaca coronata, C. decipiens, C. flavescens* and others.

The most interesting communities are found along the fissures or on acrocarpous saxicolous mosses such as *Grimmia pulvinata* and *Schistidium apocarpum. Agonimia tristicula, Diploschistes muscorum, Psora lurida, P. testacea, Squamarina cartilaginea, Toninia sedifolia* and *T. tumidula* are frequent in this habitat. *Agonimia opuntiella, Bacidia herbarum, Chromatochlamys muscorum* var. *muscorum* and *Phaeophyscia cernohorskyi* are the most interesting species found in this niche during the excursion. The conspicuous, but now rare and threatened, *Fulgensia fulgens* was detected in two localities (12 and 15). Many taxa lichenized with cyanobacteria and found in humid microniches, especially fissures or holes, and those on vertical rocks but frequently moistened with a water film or slow to dry out, remain a great challenge as several cannot be satisfactorily

identified for the time being, the species of *Collema, Placynthium nigrum* and *Synalissa symphorea* being the only easily recognized ones. It is clear that more taxa are involved, including in *Placynthium.*

Shaded and sheltered calcareous outcrops also yielded an impressive list. The most typical species are *Acrocordia conoidea, Caloplaca chrysodeta, C. cirrochroa, C. xantholyta, Clauzadea immersa, Dirina stenhammarii, Gyalecta jenensis, Lecania cuprea, Mycobilimbia sabuletorum* (overgrowing mosses), *Porina linearis* and *Rinodina bischoffii.* Several species of *Lepraria* enjoy that habitat (*L. incana, L. crassissima* and *L. lesdainii*, the last in the most protected microniches and now transferred to the genus *Botryolepraria*) and we were quite surprised to find *Lepraria nivalis*, new for the studied area on sheltered outcrops in loc. 4 and 14. In the former locality, it was very abundant, incl. on *Hedera* 'stems' growing on the rocks, together with *L. crassissima, Diploicia canescens* and *Opegrapha vermicellifera.*

An interesting terricolous community occurs on the most exposed calcareous outcrops, on thin soil, amongst the phanerogams typical of the *Alysso-Sedion albi* (mainly small annuals and thick-leaved *Sedum*) : they are known as the '*Cladonia* swards'. They include *Cladonia convoluta, C. furcata* (incl. the subsp. *subrangiformis*), *C. pyxidata* subsp. *pocillum, C. rangiformis, Leptogium gelatinosum* (= *L. lichenoides* var. *pulvinatum*), *Peltigera rufescens* and *Placidium pilosellum* (= *Dermatocarpon rufescens* auct. belg. p. p. = *D. trapeziforme* auct. belg. p. p.). Several species occuring along the fissures or overgrowing mosses are also common in this community. On slightly acidophilous rocks, especially those of the late Frasnian and Famennian, it further includes typical species like *Cetraria aculeata* (= *Cornicularia aculeata*), *C. islandica* and *Cladonia foliacea* s. str. All such sites are now gone — several were formerly known near Han-sur-Lesse — due to their disuse as extensive pastures for sheep and eventual colonization by dense shrub thickets species such as *Crataegus* species and *Prunus spinosa.*

Many lichenicolous fungi have been found on calcareous outcrops, incl. *Pseudorobillarda peltigerae* newly described in this paper, *Libertiella didymospora* described from Poland by other authors a few months after the excursion and *Stigmidium cerinae* described as recently as 1994. Several encountered species like both *Polycoccum* (*P. marmoratum* and *P. opulentum*) and *Weddellomyces epicallo-*

pisma are most probably widespread, although they are reported as new for the studied area in this paper.

Riverine forest along the Lomme at Eprave (loc. 2)

The site shelters a quite small and very much disturbed fragment of riverine forest (*Ulmo-Fraxinetum*, fide NOIRFALISE 1984) with *Ulmus laevis*. This tree is mainly a continental species and it is now rare and local in Belgium, most probably because of ancient and almost complete deforestation in the large valleys (DUVIGNEAUD 1961). The forest fragment we visited is disturbed because of the vicinity of a main road and extensive *Populus* plantations. A rather rich epiphytic lichen flora is nevertheless present with such interesting species as *Agonimia allobata* (richly fruiting at the base of an old *Fraxinus*), *Biatoridium monasteriense, Normandina pulchella, Opegrapha ochrocheila*, very abundant *O. rufescens* and *O. vermicellifera*, and *Psoroglaena stigonemoides* (abundant, and sometimes fruiting, on *Sambucus nigra*, which is its 'favourite' bark in Belgium, together with *Anisomeridium polypori*). However, the most interesting species found belong to *Bacidia* s. l. with nice thalli of *B. viridifarinosa* on *Acer, Euonymus, Populus*, etc. and on roots and calcareous rocks in a sheltered underhang at water level ; in this rarely prospected niche, it was growing together with *Bacidia trachona* and fruiting *B. carneoglauca*, two species which are here reported as new to the studied area.

Forest of the Masblette valley at Saint-Hubert (loc. 5 & 6)

The 'Forêt de Saint-Michel' is one of the best preserved forests in the district Ardennais, and, by all means, the best one on the northern edge of the 'Ardennes' range. Indeed, it covers several hundred ha of extensively managed forests quite close to a natural stage, and many old boles of almost all tree species (*Acer pseudoplatanus, Alnus, Fagus, Fraxinus* and *Quercus*) are still present. Quite unfortunately the site still has no protection status under the Belgian law for nature conservation and the results of our lichenological study provides further ground for such an official protection.

The following phytosociological associations can be observed (classification following NOIRFALISE 1984) : typical stands of the 'Ardennes beech-grove' belonging to the *Luzulo-Fagetum* cover both

sides of the valley, with the variants *dryopteridosum* and *milietosum* on colluvial soil near the bottom of the valley and in cool lateral ravines (the former characterized by species like *Lamium galeobdolon* subsp. *montanum* and *Euphorbia amygdaloides* and the latter by the abundance of *Festuca altissima*). At the bottom, nice patches of mixed oak forests belong to the *Stellario-Carpinetum luzuletosum* with *Polygonum bistorta* and two fern species (*Athryium filix-femina* and *Dryopteris carthusiana*) ; close to the river are large stands of the *Stellario-Alnetum* and of the *Carici remotae-Alnetum*.

The epiphytic flora is exuberant and mosses such as *Antitricha curtipendula, Leucodon sciuroides, Neckera complanata* and *N. crispa* can cover large parts of old boles. The lichen flora includes many common species of smooth bark, amongst which we were surprised to find a healthy population of *Phaeographis inusta*, an 'old woodland' species not seen in Belgium since the turn of the century, quite a nice list of *Opegrapha* and *Pertusaria* species — *P. multipuncta* (Turner) Nyl. has been seen here in 1983 (Diederich et al. 1991 : 34) but was unfortunately not detected in 1997 — and several species one can expect from old bark of *Fraxinus* and *Quercus*, e. g. *Bacidia biatorina, Chaenotheca trichialis* and *Normandina pulchella*.

The most remarkable species include *Biatora meiocarpa*, a species new to the studied area, *Gyalecta flotowii*, growing extensively on old *Fraxinus* and *Acer pseudoplatanus*, and which has here its almost only population in the studied area, *Caloplaca lucifuga*, otherwise known from a single locality in Luxembourg, *Menegazzia terebrata* (see Margot et al. 1975 for further details on the distribution of this species in Belgium), *Micarea pycnidiophora, Pyrenula nitida* and *Sphaerophorus globosus*. For the *Menegazzia, Pyrenula* and *Sphaerophorus*, the site hosts their only remaining population on the northern side of the Ardennes ; the three species still have healthy but very local populations on the southern side. It has however suffered several losses during the last decades as the conspicuous *Lobaria pulmonaria* (L.) Hoffm. and *Parmelia crinita* Ach. have both disappeared between 1969 (last specimens seen for both ; Sérusiaux & Rose 1984 : 91, Diederich et al. 1992 : 144) and 1983, when the site was carefully examined with F. Rose. They were not seen during this excursion.

Forest along the Lomme at Saint-Hubert (loc. 9)

This very disturbed woodland on the W-exposed slope of the Lomme yielded several interesting species, mainly because of the presence of several old boles of *Fagus* and *Quercus* in suitable conditions (atmospheric water level remaining high because of springs at mid-height of the slope and adequate light on the boles). *Bacidia circumspecta* was found here. Dry bark of old *Quercus* yielded an interesting assemblage of *Chrysothrix chlorina*, *Calicium viride* and *Chaenotheca chrysocephala, C. ferruginea* and *Lecanactis abietina*, while *Dimerella pineti* and *Trapelia corticola* were abundant on the shaded and humid side of an old *Fagus*.

Metal-rich siliceous rocks (loc. 8)

Saxicolous lichens restricted to siliceous rocks rich in heavy metals (mainly Fe and Cu) are known from two main regions in the studied area : the so-called 'massif of Stavelot (E Belgium)' and 'massif of Rocroi (mainly N France)'. Both have rocks dating back to the Cambrian and the Ordovician. Although the total lichen flora specializing on these rocks is rather poorer than that of similar biotopes elsewhere in Western and Central Europe (Purvis & Halls 1996), it nevertheless comprizes such very typical species as *Acarospora sinopica, Lecanora epanora, L. gisleriana, L. handelii, L. subaurea* and *Rhizocarpon oederi* (Sérusiaux 1990 : 142-143, Diederich et al. 1991 : 4-5). The occurrence of such species near St-Hubert, in a completely artificial site (railway cuttings) whose rocks belong to the Early Devonian (Gedinnian), was quite unexpected, although the presence of Cu minerals like azurite and malachite has been detected there several decades ago (Calembert 1942). Healthy populations of several species restricted to siliceous rocks enriched with heavy metals like copper were observed : *Lecanora epanora, L. gisleriana* (which starts its development as a lichenicolous fungus on *L. epanora* and eventually organizing its own pinkish thallus at the expense of its host), *L. handelii* and *Rhizocarpon oederi*. Accompanying species include more ubiquitous species, e. g. *Lecanora polytropa, Lecidella scabra, Porpidia soredizodes, P. tuberculosa, Scoliciosporum umbrinum, Trapelia placodioides* and others. Also quite abundant were the much rarer *Stereocaulon nanodes* and *S. pileatum*, also found on the ballast

(see LAMBINON & SÉRUSIAUX 1985 for more details on the local distribution of these two species). *Cercidospora epipolytropa* is a tiny species of the Dothideales growing on *Lecanora gisleriana* and *L. polytropa* and newly reported here for the studied area. Two species of *Lepraria* were collected here : one is the recently described *L. borealis*, and the other one remains unidentified. It forms tiny bluish cushions on acrocarpous mosses with rather coarse granules and produces atranorin, zeorin, stictic and constictic acids ; it is most probably undescribed.

Rocks submerged in water (loc. 2, 5, 7 & 9)

Aquatic lichens in Belgium have been poorly studied. The recent study of the aquatic pyrenolichens and their lichenicolous fungi in Luxembourg (MOLITOR & DIEDERICH 1997) has clarified most taxonomical problems of the species involved, and all species collected during the excursion could be identified.

In the river Lomme near Eprave (loc. 2), we collected *Verrucaria hydrela* and *V. praetermissa*, two relatively common species on siliceous rocks, but here found on calcareous stones. Along the Masblette (loc. 5), we found again *Verrucaria hydrela* and *V. praetermissa*, and in addition *Thelidium minutulum*, a lichen which is rarely found in rivers in other countries, but which is quite common over sandstone in streams in Luxembourg, together with the lichenicolous pyrenomycete *Pharcidia parvipuncta* (previously known only from the type locality in Siberia). On the banks of the river Lomme at loc. 7, most stones were so much covered with algae or soil that no lichens could develop ; however, on iron wreckage close to the river, *Verrucaria praetermissa* was growing together with *Porina chlorotica*, and on siliceous rocks, with fertile and abundant *Woessia inundata*. In a small stream in a forest close to the river Lomme (loc. 9), *Verrucaria hydrela* and the similar *V. funckii*, here reported for the first time in the studied area, were abundant.

Isolated trees (loc. 10, 11, 13 & 17)

Roadside trees and more or less isolated ones once again proved to be most important habitats for lichens. Air pollution and most probably the recent dramatic increase in car traffic and use of chemicals and fertilizers in agriculture have a profound effect on

the lichen flora of roadside trees in open country-side : the once exuberant communities of *Anaptychia ciliaris* and *Ramalina* species (*R. farinacea, R. fastigiata* and *R. fraxinea*) are now gone or very reduced. The first species has now only two localities left near Rochefort and Han-sur-Lesse (not visited during the excursion) with very reduced thalli and the *Ramalina*'s are quite depauperate and unhealthy (loc. 10 and 17) when compared to specimens collected in the same area about twenty-five years ago. The recently described *Rinodina pityrea* is an interesting discovery of such localities.

A very old *Tilia* (c. 350 years old) in the centre of a village had a fascinating nitrophilous community with several *Physcia*'s and *Physconia*'s (*P. distorta* and *P. grisea*), together with *Buellia alboatra* and *Diploicia canescens*. The rare *Normandina acroglypta* [= *Lauderlindsaya chlorococca* (Leight.) Diederich & Sérus.] and *Gyalecta truncigena* (the only remaining locality for this species in the Belgium) were also found on this tree, on its more shaded and protected side. A small but typical population of *Strigula affinis* was also sampled on the same tree.

Finally, *Collema occultatum* was discovered on the trunk of an isolated *Malus* in a sheltered valley (loc. 13), a locality where *Bacidia rubella, Caloplaca obscurella, Catillaria nigroclavata, Chaenotheca stemonea, Fellhaneropsis vezdae,* and *Halecania viridescens* were also present, mainly on old *Populus* and *Salix* by the river. The very recently described *Fellhanera viridisorediata* was found on a young *Salix*, and a sheltered *Sambucus* not far from the river at the same place yielded the minute and most probably overlooked *Macentina abscondita*.

NEW SPECIES AND COMBINATIONS, AND SPECIES NEW OR INTERESTING FOR BELGIUM AND LUXEMBOURG

Agonimia opuntiella (Buschardt & Poelt) Vězda

Syn. : *Physcia opuntiella* Buschardt & Poelt, *Phaeophyscia opuntiella* (Buschardt & Poelt) Hafellner

Type : Italy, Bergamo Prov., Val Cavallina, von Trockenrasen durchsetzter thermophiler, ESE exponierter Hangwald kurz nördlich Trescore Balneario, +/- 250 m, an offenen, von Kieselschichten durchsetzen Kalkfelsen, 30.5.1975, *J. Poelt* (GZU-holotype !).

Belgium : distr. Mosan : Loc. 1, *P. Diederich* 12710 (h). Loc. 3, *P. Diederich* 12693 (h). Loc. 15, *A. Aptroot* 40491 (h), *E. Sérusiaux* s. n. (LG). C. 23 km SE of Dinant, 0.5 km W of road crossing Halma-Genimont and Wellin-Ave (J6.33), over calcareous rocks, with *Agonimia tristicula*, 10. 1982, *A. M. Brand* 27847 (h, sub *Mycobilimbia hypnorum*). 2.2 km SE of Han, 1.1 km ENE of Belvau (J6.35), over mosses and soil on limestone rock, 8. 1985, *A. M. Brand* 33494 (h).
Luxembourg : distr. Lorrain : SW of Grevenmacher, Kelsbaach (L9.35), on mosses over calcareous rocks, 11. 1981, *P. Diederich* 3748 (h).

This species is detected as minute greenish-grey to brownish squamules, scattered amongst mosses growing on the most exposed *Xerobromion* communities ; in the studied area, it is not known with perithecia and can be easily identified by its 'hairy' surface and the formation of elliptic to subglobose blastidia. The species was first described in *Physcia* (Poelt 1980) and very recently reassigned into *Agonimia* (Vězda in Lichenes Rariores Exsiccati n° 330, 1997). We agree with such a position because of the general habit of the thallus which is very much like *Agonimia tristicula*, the presence of complex papillae on its upper surface (see fig. 1d & 2 in Poelt 1980) together with typical hyaline hairs, and the fact that the whole thallus is made of a paraplectenchymatous tissue. The type material was examined, and the collections from Belgium and Luxembourg match it perfectly. *Agonimia opuntiella* is known from the Alps (Austria, Italy and Switzerland), Czech Republic (Vězda in Lichenes Rariores Exsiccati n° 247, 1996), SE France (Provence), Central Spain and the Canary Islands (fide Bricaud et al. 1993 : 105).

New to the studied area.

Bacidia carneoglauca (Nyl.) A. L. Sm.

Belgium : distr. Mosan : Loc. 2, *A. Aptroot* 40340 (h), *P. v. d. Boom* 18686 (h), *P. Diederich* 12629, 12635, 12639 (h), *E. Sérusiaux* s. n. (LG).
Distr. Ardennais : 1.8 km WSW of Chiny, E shore of Semois, 0.5 km NW of Rocher du Haî (L8.37), schistose rocks on shore of stream, 8. 1995, *A. M. Brand* 33377 (h).

Bacidia carneoglauca is a very conspicuous species, easily identified by its large white prothallus, UV+ orange-pinkish thallus, and white-pubescent pycnidia which are always present. At loc. 2, it was found with abundant apothecia, growing at water level by the river, on calcareous rocks and roots (*Acer, Alnus* and *Populus*) in a sheltered underhang ; there is no doubt that the thalli are completely immersed during winter floods. *Bacidia trachona* and the closely

related *B. viridifarinosa* Coppins & P. James were found in the very same niche ; the latter has less restricted ecological requirements as it was also found in abundance on trunks of *Acer, Euonymus* and *Populus* at 1-4 m height. A further locality for *B. carneoglauca* is provided by an earlier collection, made along the Semois, also at water level and showing that the species does also grow on siliceous rocks.

New to the studied area.

Bacidia circumspecta (Nyl. ex Vain.) Malme

Belgium : distr. Ardennais : Loc. 9, on *Fagus, P. Diederich* 12571 (h), *E. Sérusiaux* s. n. (LG).
Distr. Lorrain : 9 km NE of Virton, valley of Rouge Eau, at confluence with Gros Ruisseau (M7.14), base of old *Quercus* in wood, 4. 1991, *A. M. Brand* 25741 (h).

Bacidia circumspecta is easily confused with *B. subincompta* (Nyl.) Arnold which is also present in the studied area (SÉRUSIAUX et al. 1985 : 26 ; VAN DEN BOOM 1996 : 12). It is distinguished by its colourless to pale brown, K- hypothecium, its more narrow ascospores (2-3 µm wide) with 3-7 septa, the persistent apothecial margin and a slightly different thallus (EKMAN 1996a ; see e. g. key on p. 58). Part of the material previously named *B. subincompta* may also belong here. *B. circumspecta* is a species of old bark of deciduous trees (*Quercus* and *Fagus*) and survives only in the most preserved forests.

New to the studied area.

Bacidia herbarum (Stizenb.) Arnold

Belgium : distr. Mosan : Loc. 4, *A. M. Brand* 35695 (h).
France : distr. Lorrain : Schengen, Stromberg, carrières (N9.11), sur de la terre, des mousses et des débris végétaux recouvrant des rochers de calcaire coquillier, 11. 1981, *P. Diederich* 12799 (h).

Bacidia herbarum is a rare species, overgrowing mosses in open, calcareous grasslands ; it is obviously much less common that *B. bagliettoana* and *Mycobilimbia sabuletorum* which occupy the same niche.

New to the studied area.

Bacidia trachona (Ach.) Lettau

Belgium : distr. Mosan : Loc. 2, *A. Aptroot* 40341, 40347 & 40348 (h), *P. v. d. Boom* 18698 (h), *P. Diederich* 12633 (h), *E. Sérusiaux* s. n. (LG). Yvoir, vallée du Bocq, entre Pipeti et Bauche (H5.28), surplomb de rochers schisteux, 19.5.1997, *E. Sérusiaux* s. n. (LG).
Distr. Ardennais : Lierneux, S du village de Verleûmont, Sur Colanhan (H7.37), carrières abandonnées de schistes salmiens, 11. 1988, *E. Sérusiaux* 10343 (LG). 1.5 km W of Chiny, S shore of Semois (L6.37), vertical rock face above stream, sheltered, flooded at high water, 8. 1995, *A. M. Brand* 33376 (h). Ste-Cécile, rive gauche de la Semois, rocher de Libaipîre face au Tombeau du Chevalier (L6.35), crevasses de la base d'un tronc en bord de rivière, 6.7.1997, *E. Sérusiaux* s. n. (LG).

Bacidia trachona is unknown with apothecia in Belgium but is easily identified by its large (0.1-0.3 mm in diam.), sessile and thus conspicuous pycnidia. It seems to be typical of shaded and sheltered underhangs of either calcareous or schistose rocks, including those at water level by rivers where it is immerged into water during winter floods. It also grows in deep crevices at the base of trunks (*Acer, Alnus* and *Populus*) by rivers and also at water level. In such ecological niches, it can be found with *Bacidia carneoglauca* and *B. viridifarinosa* (see above).

New to the studied area.

Bagliettoa baldensis (A. Massal.) Vězda

Belgium : distr. Mosan : Loc. 3, *A. Aptroot* 40405 (h). Loc. 15, *A. Aptroot* 40505 (h). Hotton (H7.31), limestone rock outcrop, 3. 1988, *A. M. Brand* 17387 (h). 6 km NE of Couvin, 1.7 km NE of Nismes, Roche à Lomme (J5.41), on limestone rocks, 9. 1986, *A. M. Brand* 15136 (h, sub *Bagliettoa cazzae*). C. 23 km SE of Dinant, 0.5 km W of road crossing Halma-Genimont and Wellin-Ave (J6.33), over calcareous rocks, 10. 1982, *A. M. Brand* 27868 (h, sub *Bagliettoa parmigera*).

The genus *Bagliettoa* A. Massal. comprises the representatives of *Verrucaria* with a shield-like involucrellum having radiating grooves. Although this criterion is easily seen, even in the field, it is not sure if it deserves generic level. In Belgium and Luxembourg, this genus includes four species, two reported here, one [*B. steineri* (Kušan) Vězda] which has already been mentioned (Aptroot 1988 : 20), and a fourth one [*B. cazzae* (Zahlbr.) Vězda & Poelt] which will be dealt with elsewhere. Except for *B. cazzae*, these species are most probably rather widespread on hard and exposed limestones, but these groups are very poorly known in both countries.

New to the studied area.

Bagliettoa parmigera (J. Steiner) Vězda & Poelt

Belgium : distr. Mosan : Loc. 1, *P. Diederich* 12730 (h). C. 23 km SE of Dinant, 0.5 km W of road crossing Halma-Genimont and Wellin-Ave (J6.33), over calcareous rocks, 10. 1982, *A. M. Brand* 27686 (h).

See comments under *B. baldensis*. This species had once been mentioned as occurring in Belgium but without any additional information (ZSCHACKE 1933-34 : 105). Our collections confirm that the species occurs in the studied territory.

Biatora meiocarpa (Nyl.) Arnold

Belgium : distr. Ardennais : Loc. 5, on *Acer, A. M. Brand* 35702 (h).
Distr. Lorrain : Ethe, rive gauche du ruisseau de la Neuve Forge, en amont de la Chapelle de l'Ange Gardien (M7.24), sur *Quercus* dans une futaie, 6. 1989, *E. Sérusiaux* 10422 (LG). 9 km NE of Virton, valley of Rouge Eau, just downstream of bridge along road to St-Léger (M7.14), old *Acer* at bottom of valley, 4. 1991, *A. M. Brand* 25460 (h).

The European species of the genus *Biatora* Fr. have been recently monographed by PRINTZEN (1995) who e. g. transfers two species, well-known in the studied area [*B. epixanthoides* (Nyl.) Diederich and *B. sphaeroides* (Dicks.) Körb. = *Catillaria sphaeroides* (A. Massal.) Schuler], to *Mycobilimbia* Rehm (without making the formal combinations) and excludes the closely related *Lecidea albohyalina* (Nyl.) Th. Fr. and *L. meiocarpa* Nyl. on the basis of differences in ascocarp ontogeny and size and shape of conidia (long and filiform in these two species vs short and bacilliform in *Biatora* s. str.). The latter has been found in the studied area and is kept in *Biatora* pending further studies on its exact generic position. It can be easily confused with the widespread *Lecania cyrtella* (Ach.) Th. Fr. which is distinguished by its lecanorine margin (sometimes quite difficult to see) and its curved conidia (pycnidia usually produced in the studied area ; not seen in Belgian material of *B. meiocarpa*). *Biatora helvola* Körb. ex Hellbom is also quite similar but so far has not been seen in the studied area ; amongst the diagnostic characters between these two species and mentioned by EKMAN (1994), we found the apothecia size, width of paraphysis tops and type of excipulum to be the most useful ones.

Biatora meiocarpa is a very tiny species, with inconspicuous thalli and small, pale orange to pale brown apothecia. It is most probably overlooked. Following EKMAN (1994), it is known only from Northern Sweden, Finland and N-W Russia, and all other records, including those from Central Europe, are considered as wrong identifications ; our collections thus represent a considerable range extension for this species. We suggest it is a typical species of old and well-preserved forests.

New to the studied area.

Buellia venusta (Körb.) Lettau

Syn. : *Diplotomma epipolium* auct., non (Ach.) Arnold

Belgium : distr. Mosan : Loc. 1, *L. Spier* 7889 (h). Loc. 3, *A. Aptroot* 40401 (h), *P. Diederich* 12682 (h), *E. Sérusiaux* s. n. (LG), *L. Spier* 7894 (h). 2.7 km SSE of Yvoir, Poilvache (H5.27), on limestone, 9. 1989, *A. M. Brand* 21998 (h). Luxembourg : distr. Lorrain : Ahn, Palmberg (M9.12), sur un rocher en calcaire coquillier, 11. 1981, *P. Diederich* 12780 (h). Hamm, rocher au-dessus du carrefour de la rue Godchaux (piste cyclable) avec la rue des Draperies (M8.26), on a sandstone rock, 10. 1997, *P. Diederich* 13417 (h).

This species was known in Belgium as *B. epipolia* (DUVIGNEAUD & GILTAY 1938 : 39). *B. epipolia* (Ach.) Mong. has been shown to be a synonym of *Buellia alboatra* (Hoffm.) Th. Fr. (NORDIN 1996), and the epithet *venusta* is therefore to be used for this species. However, following NIMIS & JOHN (1998 : 45), the epithet *venusta* refers to a different taxon which is a constant parasite of *Lecanora muralis*, whilst the non-lichenicolous taxon found in the studied area should be named *B. epipolia* auct. The matter definitely requires further investigation.

B. venusta is a rather rare species in the studied territory, where we collected it a few times on limestone and on sandstone rocks.

Caloplaca alociza (A. Massal.) Mig.

Belgium : distr. Mosan : Loc. 4, *A. M. Brand* 35696 (h).

Caloplaca alociza is a dark-fruited *Caloplaca* with an immersed thallus and which grows on hard and sunny limestone ; its presence in Belgium was expected but not demonstrated before.

New to the studied area.

Caloplaca flavocitrina (Nyl.) H. Olivier
Syn. : *Caloplaca citrina* (Hoffm.) Th. Fr. var. *flavocitrina* (Nyl.) W. Watson

Belgium : distr. Mosan : Loc. 11, *A. M. Brand* 35742 & 35743 (h).

This taxon is usually included in *Caloplaca citrina* (Hoffm.) Th. Fr. Detailed examinations of large populations in the studied area as well as in The Netherlands convinced us that two different species can be distinguished : *C. citrina* has a pulverulent thallus, usually without any distinct lobes nor squamules, greenish to pale yellow, apothecia usually present, with a crenulate-sorediose margin, ascospores 11.5-13.5 (-14.7) × 6-7 µm ; *C. flavocitrina* has a thallus with distinct, greenish to yellowish green squamules or small lobes, becoming sorediate at the margin, the soredia eventually invading the whole surface of the squamules, soredia usually bright yellow to pale orange, apothecia not rare but sometimes completely absent, with a smooth margin, ascospores 9.5-12.5 × 5.5-7.5 µm.

Caloplaca flavocitrina was accepted at variety level by WADE (1965 : 8) and is not recognized in recent floras (PURVIS et al. 1992, WIRTH 1995). Both species frequently occur together but can be easily recognized in the field with the characters mentioned above. Both *C. citrina* and *C. flavocitrina* are pioneer species on rocks and artificial substrata, like concrete and cement, and, especially in nitrophilous conditions, are often the dominant lichens. However, it seems that *C. citrina* is more nitrophilous than *C. flavocitrina* and therefore often grows exclusively at the base of walls. Both species are regularly found on trees, especially in polluted areas, *C. flavocitrina* being the most frequent in this habitat. The collections of both species we have examined from the studied area are too numerous to be listed here.

New to the studied area.

Caloplaca lucifuga Thor

Belgium : distr. Ardennais : Loc. 5, on *Quercus, E. Sérusiaux* s.n. (LG).

This corticolous and sorediate *Caloplaca* was formerly known from a single small collection from Luxembourg, distr. Lorrain (DIEDERICH et al. 1991 : 16), and has been found in small quantities in deep crevices of an old *Quercus* at loc. 5. It is expected to be

rare in the studied area and restricted to well-preserved stands of old forests.

Cercidospora epipolytropa (Mudd) Arnold

Belgium : distr. Ardennais : Loc. 8, on *Lecanora gisleriana, P. Diederich* 12585 (h), *E. Sérusiaux* s. n. (LG) ; ibid., on *L. polytropa, A. M. Brand* 35732 (h). 8 km WSW of Vielsalm, 0.8 km NE of Bihain (H7.47), on shale ('coticule') stones in disused quarry, on *L. intricata*, 4. 1990, *A. M. Brand* 23275 (h).

The minuscule perithecia of this lichenicolous fungus belonging to the Dothideales develop in the apothecia of species of the *Lecanora polytropa*-group ; *L. gisleriana* is a new host for this species.

New to the studied area.

Chromatochlamys muscorum (Fr.) H. Mayrhofer & Poelt var. ***muscorum***

Belgium : distr. Mosan : Loc. 15, on terricolous mosses in *Xerobromion* communities, *E. Sérusiaux* s. n. (LG).

Chromatochlamys muscorum is easily overlooked as its thallus is hardly visible and its perithecia grow +/- immersed amongst mosses leaves and stems. It was formerly known from the studied area by only one collection, made in 1925 by Tonglet at Bouvignes, near Dinant (specimen mentioned by MAYRHOFER 1987 : 70). It is probably rare but widespread in suitable localities in the Mosan distr.

Collema occultatum Bagl.

Belgium : distr. Mosan : Loc. 13, on *Malus, P. v. d. Boom* 18824 (h, LG).

Collema occultatum is a very extraordinary species of *Collema* as it has a poorly developed, crustose thallus, very tiny apothecia which look like perithecia and cuboid, submuriform ascospores. Its discovery on the trunk of a *Malus* in the sheltered valley of 'Ri des Boyes' is one of the most interesting results of the excursion. It has been mentioned by KOLTZ (1897 : 322, sub *C. quadratum*) as collected by Reinhard in the Mullerthal in Luxembourg ; there is no specimen under that name in LUX and hence the report cannot be checked.

Clypeococcum epicrassum (Oliv.) Nav.-Ros. & Cl. Roux

Belgium : distr. Mosan : Loc. 15, on *Squamarina cartilaginea, E. Sérusiaux* s.n. (LG).

Clypeococcum epicrassum is a lichenicolous ascomycete specialized on species of *Squamarina*. It is common in the Mediterranean region and is also known from Great Britain (NAVARRO-ROSINÉS et al. 1994).

New to the studied area.

Dactylospora parasitica (Flörke) Zopf

Belgium : distr. Ardennais : Loc. 6, on *Pertusaria albescens* on *Fraxinus, P. v. d. Boom* 18758 (h).

Luxembourg : distr. Lorrain : Larochette, près de la ferme Weydert (L8.17), alt. 370 m, on *Pertusaria albescens* on *Sorbus domestica*, 2.1998, *P. Diederich* 13483 (h).

Dactylospora parasitica is a rather common lichenicolous ascomycete in Western Europe, growing on corticolous species of *Pertusaria*. As its preferred hosts are common in Belgium and Luxembourg, it is astonishing that the species had never been found before. The discovery of the species in a small quantity in the Forêt de St-Michel (loc. 6) and on very old *Sorbus domestica* trees indicates that it requires special ecological conditions, like the existence of ancient woodlands or old trees with a long historical continuity.

New to the studied area.

Endocarpon pallidum Ach.

Belgium : distr. Mosan : Loc. 1, *L. Spier* 7980 (h). Loc. 3, *P. Diederich* 12685 (h) ; ibid., 9. 1997, *P. Diederich* 12981 (h) ; ibid., 1.2 km SW of Han-sur-Lesse, Les Grignaux (J6.34), over mosses on limestone rock, 7.1995, *A. M. Brand* 33309 (h). Loc. 15, *A. Aptroot* 40494 (h). Loc. 16, *E. Sérusiaux* s. n. (LG).

This species has been mentioned erroneously from the studied area (VAN DEN BOOM et al. 1994) : the corresponding material is a typical *E. pusillum* Hedw. (MOLITOR & DIEDERICH 1997). The genuine *E. pallidum* is distinguished from *E. pusillum* by the pale lower surface of its thallus and is without rhizines. It is thus new for the studied area.

Fellhanera viridisorediata Aptroot, Brand & Spier

Belgium : distr. Mosan : Loc. 13, *A. Aptroot* 40451 (h).

This very typical species has just been described by APTROOT et al. (1998) and the material found during the excursion is mentioned in their paper. *Fellhanera viridisorediata* is most probably an overlooked species in the studied area.

Gyalecta truncigena (Ach.) Hepp

Belgium : distr. Mosan : Loc. 11, on *Tilia*, *A. M. Brand* 35740 p.p. (h, LG), *P. v. d. Boom* 18791 (h).

Gyalecta truncigena was formerly known from roadside *Fraxinus* trees in the Lorrain distr. (SÉRUSIAUX & ROSE 1984 : 93). It was quite abundant on an isolated *Tilia* in the centre of the village of Ave-et-Auffe. As the trees of its locality in the Lorrain distr. have all been removed (in 1986, destroying one of the best stands of *Lobarion* in Belgium), this population is currently the only one known in the studied area.

Lepraria borealis Lohtander & Tønsberg

Belgium : distr. Ardennais : Loc. 8, on schistose rocks rich in heavy metals (also overgrowing mosses), *A. M. Brand* (h), *P. v. d. Boom* (h), *P. Diederich* (h), *E. Sérusiaux* s. n. (LG). 3.5 km SSE of Herbeumont, 300 m from crossing of N884, small road to Ste-Cécile (L6.35), quarry with exposed schists, 5. 1996, *A. M. Brand* 17739 (h).

The list of *Lepraria* species present in Belgium and Luxembourg is still growing, thanks to the now numerous collections available and to careful examination of their chemical compounds. *Lepraria borealis* has recently been described from Scandinavia, NW Russia, and the west coast of North America (USA/Washington and Canada/British Columbia) (LOHTANDER 1994), and has been reported from Scotland (COPPINS & O'DARE 1995 : 52). The material from Belgium matches properly the original description, including the production of atranorin, rangiformic and norrangiformic acids (determined by TLC). It is known from two localities, on schistose rocks or overgrowing mosses ; the locality found during the excursion has schistose rocks enriched with heavy metals, especially copper.

New to the studied area.

Lepraria nivalis J. R. Laundon

Belgium : distr. Mosan : Loc. 4, *A. M. Brand* 35690 (h), *P. v. d. Boom* 18725 (h), *P. Diederich* 12672 & 12673 (h). Loc. 14, *A. M. Brand* 35760 (h).

Our material of *Lepraria nivalis* produces atranorin and protocetraric acid (determined by TLC) and thus corresponds to chemotype I of LEUCKERT et al. (1995 : 249). It is known from NW Europe down to the Mediterranean area, and from 'the Himalayas and North America' (LAUNDON 1992 : 327-329). It was found very abundant on sheltered calcareous outcrops and on *Hedera* 'stems' growing on them. *L. crassissima* (Hue) Lettau is the other species of *Lepraria* species to be found abundantly in this niche.

New to the studied area.

Leptorhaphis maggiana (A. Massal.) Körb.

Belgium : distr. Mosan : Loc. 3, on *Corylus* at the edge of a *Pinus* plantation, *A. M. Brand* 35683 (h).

Luxembourg : distr. Lorrain : NNE of Niederanven, Kiem (L8.58), on *Carpinus*, 8. 1987, *P. Diederich* 8383 (h).

Leptorhaphis maggiana is most probably an unlichenized fungus, but its ecology (smooth bark in rather dry habitats) makes it more likely to be studied by lichenologists than by mycologists.

New to the studied area.

Libertiella didymospora D. Hawksw. & Miadlikowska

Belgium : distr. Mosan : Loc. 3, on *Peltigera rufescens, P. Diederich* 12699 (h).

This lichenicolous species has just been described from two localities in Poland (HAWKSWORTH & MIADLIKOWSKA 1997). In the Polish collections and the one mentioned above, it grows on the lower surface of *Peltigera rufescens*, without damaging it.

New for the studied area.

Merismatium discrepans (J. Lahm) Triebel

Belgium : distr. Mosan : Loc. 1, on *Protoblastenia rupestris, P. Diederich* 12715 (h). Loc. 3, on *P. rupestris, P. Diederich* 12984 (h). 2.6 km NE of Durbuy, Rocher de Glawan (H7.11), on a limestone rock, on a sterile crust, 3. 1985, *A. M. Brand* 14159 (h).

This is the first time that the genus *Merismatium* is recorded in Belgium. *M. discrepans* generally grows on species of *Protoblastenia*, but TRIEBEL (1989 : 187) studied one additional specimen on *Verrucaria*.

New to the studied area.

Micarea pycnidiophora Coppins & P. James

Belgium : distr. Ardennais : Loc. 6, on *Fagus, L. Spier* 8140 (h, LG). SSE of Herbeumont, E of road N884 to Ste-Cécile, small path along Grotte de Lourdes (L6.36), on old *Fagus*, 5. 1996, *P. v. d. Boom* 17643 (h, LG).

This very typical species was previously known only from the 'Berdorf area' in the Lorrain distr. in Luxembourg (VAN DEN BOOM et al. 1994 : 160). Its discovery in the 'Forêt de St-Michel' and near Herbeumont is of major interest as it is an atlantic species, restricted to well-preserved forests.

Naetrocymbe fraxini (A. Massal.) R. C. Harris
Syn. : *Arthopyrenia fraxini* A. Massal.

Belgium : distr. Mosan : Loc. 3, on *Quercus, A. Aptroot* 40376 (h), *E. Sérusiaux* s. n. (LG).

This unlichenized species, which looks like a lichen and has thus been mostly studied by lichenologists, has not been reported from the studied area during this century (DIEDERICH et al. 1991 : 10-11) and is mentioned from the Mosan distr. for the first time. It is most probably widespread but overlooked.

Opegrapha herbarum Mont.

Belgium, distr. Ardennais : Loc. 5, on *Acer, A. M. Brand* 35699 (h).

Opegrapha herbarum is most probably overlooked in the studied area as it is otherwise only known from a single collection, made early in this century, in the distr. Lorrain in Luxembourg (DIEDERICH et al. 1991 : 32-33).

Opegrapha varia Pers. (albino form)

Belgium, distr. Ardennais : Loc. 5, *P. Diederich* 12613 and 12656 (h).

On an old trunk of *Acer pseudoplatanus* with abundant normal

Opegrapha varia, ca. 1 % of the individuals on one side of the trunk were albino, with smaller ascomata and a pale yellowish to brownish (not blackish) excipulum. Albino forms in lichens are rare and have seldom been reported (for a review of this question, see GILBERT 1996). This is the first time that such a form has been observed in a member of the Opegraphaceae.

Phaeographis inusta (Ach.) Müll. Arg.

Belgium : distr. Ardennais : Loc. 5, *A. Aptroot* 40329 (h), *A. M. Brand* 35706 (h), *P. v. d. Boom* 18735 (h), *P. Diederich* 12602 (h), *E. Sérusiaux* s. n. (LG).

The discovery of this species is a major result of the excursion as the genus was considered extinct in the studied area since the turn of the century. Indeed, the only two *Phaeographis* collections from Belgium which have been studied recently are *P. dendritica* (Ach.) Müll. Arg. [Belgium : distr. Brab. : near Mons, on *Castanea*, coll. before 1900, BM] and *P. smithii* (Leight.) B. de Lesd. [Belgium : distr. Flandr. : near Gent, coll. before 1900, in herb. Leighton, BM] : both have been examined by Dr. B. J. Coppins. KICKX (1865) mentioned two species in Belgium : *P. dendritica*, found on *Castanea* and *Quercus* near Mons, Dinant and Bonne-Espérance, and *P. inusta* (which he synonymized with *P. smithii*), found on *Quercus* near Gent and Ypres, on *Castanea* near Mons, and on *Fagus* in the Ardennes. As several last century-herbaria made in Belgium have not yet been re-examined, it is quite possible that some additional herbarium specimens still exist. The species has recently been reported from the Brab. distr. (HOFFMANN & VAN ROMPU 1995 : 22, 27) but the corresponding specimen (GENT !) turned out to be a typical *Graphis scripta* (examined by the first author).

A rather healthy population of *Phaeographis inusta* was found on young trees (with a typically smooth bark) and young coppices of *Carpinus, Corylus*, and *Fagus* in loc. 5. Accompanying species include only 'weedy' species like *Arthonia radiata, Arthothelium ruanum, Fuscidea lightfootii, Graphis scripta* and *Mycoblastus fucatus. P. inusta* is however a typical 'old woodland' species and its occurrence in the 'Masblette' valley is a further indication of its high patrimonial value.

Phaeophyscia cernohorskyi (Nádv.) Essl.
Syn. : *P. strigosa* (Poelt & Buschardt) Golubkova

Belgium : distr. Mosan : Loc. 15, on rocks and overgrowing mosses in *Xerobromion* communities, *A. Aptroot* 40491A (h), *A. M. Brand* 35770 (h).

In Europe, *Phaeophyscia cernohorskyi* is a submediterranean to mediterranean species, with isolated outliers in Central Europe and the Canary Islands (Nimis 1993 : 524). Its occurrence in Belgium near Han-sur-Lesse (on rocks and on mosses in typical *Xerobromion* communities) is very remarkable as it seems to be its most northern locality on the continent, the closest ones being in the Neckar region in Germany (Wirth 1995 : 720, sub *P. strigosa*). We have adopted Esslinger's position on the taxonomy of the group, and especially on the synonymy of *P. strigosa* with *P. cernohorskyi* (Esslinger 1978 : 294-297), as he has examined original collections of Nádvornik and selected a lectotype for the epithet *cernohorskyi.*

Müller (1965 : 62) reports '*Physcia hirsuta* Mereschk. (Syn. *P. cernohorskyi* Nádv.)' from Eifel/Germany, not far from the Belgian border, as an epiphyte on *Acer* and *Aesculus.* The relevant collections have not been examined and we consider their identification as doubtful.

New to the studied area.

Pharcidia parvipuncta (Stein) G. Winter

Belgium : distr. Ardennais : Loc. 5, on *Thelidium minutulum, P. Diederich* 12619 (h).

This species was previously known only from the type locality in Siberia where it grows on *Thelidium aeneovinosum.* The type specimen is considered to be lost (Molitor & Diederich 1997 : 74). Our specimen fits well the original description (see Vouaux 1913 : 35). As it is too much reduced for studying a sufficient number of ascomata, we do not discuss its taxonomic position, and we leave it in *Pharcidia* until more material is available. A transfer to *Stigmidium* is unlikely as the ascomata are much smaller than those of most *Stigmidium* species, and as the ascospores are normally 3-septate, an exceptional feature in *Stigmidium.*

New to the studied area.

Physalospora lecanorae (Stein) G. Winter

Belgium : distr. Mosan : Loc. 1, on *Lecanora albescens, L. Spier* 7880 (h). Loc. 3, on *L. albescens, P. Diederich* 12983 (h). 0.4 km NE of Waulsort (H5.56), on

Lecanora albescens over limestone, 10. 1991, *A. M. Brand* 26956 (h, sub *Verrucaria controversa*).
Luxembourg : distr. Lorrain : Est de Luxembourg, Gantebaensmillen (M8.26), sur des blocs de pierre calcaire destinés à stabiliser la berge de l'Alzette, sur *Lecanora dispersa*, 10.1997, *P. Diederich* 13433 (h).

Lichenicolous fungus new for the studied area.

Polycoccum marmoratum (Krempelh.) D. Hawksw.

Belgium : distr. Mosan : Loc. 15, on *Verrucaria, A. Aptroot* 40468 (h). 4 km E of Couvin, Nismes, St-Joseph (J5.41), on shaded limestone rocks, on *Verrucaria*, 9. 1986, *A. M. Brand* 15099 (h).

See comments under *P. opulentum*.
New to the studied area.

Polycoccum opulentum (Th. Fr. & Almq. ex Th. Fr.) Arnold

Belgium : distr. Mosan. Loc. 1, on *Verrucaria calciseda, P. Diederich* 12755 (h). 1.1 km E of Bomal, near Belvédère (G7.52), on limestone rock, on *Thelidium decipiens*, 4. 1985, *A. M. Brand* 14231 (h). 6 km SE of Dinant, 1.0 km WSW of Furfooz, near 'Roche à la Chandelle' (H5.58), on limestone, on a crustose lichen, 8. 1988, *A. M. Brand* 19355 (h).

Navarro-Rosinés & Roux (1990) have provided a detailed description of *P. opulentum*, which had often been confused with *P. marmoratum* in the past. *P. opulentum* is characterized by large ascospores, surrounded by a thick gelatinous perispore (halo), hyaline or pale brownish for a long time and getting dark brown only when postmature ; the often flattened ascomata develop on calcicolous endolithic thalli of Verrucariaceae (*Polyblastia, Thelidium* and *Verrucaria*). *P. marmoratum* has slightly larger, brown ascospores with a verrucose ornamentation and no distinct halo ; its ecology is poorly known, as most earlier reports belong to *P. opulentum* ; both Belgian collections of *P. marmoratum* are on calcicolous *Verrucaria*.

New to the studied area.

Porocyphus rehmicus (A. Massal.) Zahlbr.

Belgium : distr. Mosan : Hotton (H7.31), vertical, S-exposed but shaded limestone, 3. 1988, *A. M. Brand* 17377 (h). 1.4 km SSE of Yvoir, Rocher de Champale (H5.27), limestone outcrops on steep SW slope with grassland, 9. 1989, *A. M. Brand*

22018 (h). 11 km E of Namur, Grottes de Goyet (G6.31), steep S-exposed limestone rock, 8. 1988, *A. M. Brand* 19287 (h).
Distr. Ardennais : Loc. 7, *P. v. d. Boom* 18762 (h, LG), *P. Diederich* 12798 (h, LG), *E. Sérusiaux* s. n. (LG).

The genus *Porocyphus* Körb. has never been mentioned from Belgium and Luxembourg. Indeed, it forms crustose to subsquamulose black thalli, lichenized with *Calothrix* (cyanobacteria) as photobiont, which are considered very difficult to identify. Two species at least are present in the studied area : *P. coccodes* (Flot.) Körb., which will be dealt with in another paper, and the one mentioned here. Both may turn out to be widespread and common, even on artificial substrates in ruderal conditions. *P. rhemicus* is known from natural limestone outcrops, and from artificial substrata (like the concrete wall by the river found at loc. 7 during this excursion).

It is possible that the material included in *P. rehmicus* by Henssen (1963) is heterogenous and comprises two distinct taxa : one with large spores (15-25 × 6-12 µm ; see Migula 1929 : 471-472) which is *P. rehmicus* s. str., and another one with smaller spores (10-16 × 6-9 µm) for which the name *P. byssoides* Hepp is available. This matter requires further study. All specimens mentioned above have small spores.

New to the studied area.

Pseudorobillarda peltigerae Diederich sp. nov.

Conidiomata lichenicola, pycnidia, semi-immersa, depresso-globosa ad ovoidea, atrobrunnea ad nigra, unilocularia, glabra, ostiolata, non papillata, 100-280 µm in diam. Paries 7.5-10 µm crassa, cellulis externis crassitunicatis, atrobrunneis, cellulis internis tenuitunicatis et pallescentibus. Conidiophora absentia. Paraphyses filiformes, hyalinae, 0-2-septatae, 26-31 µm longae. Cellulae conidiogenae hyalinae, enteroblasticae. Conidia hyalina, subcylindrica, 1-septata, laevia, 16-20 × 2.5-3 µm, cum 2-3 appendicibus apicalibus flexuosis, 16-20 µm longibus.

Type : Belgium : distr. Mosan : Han-sur-Lesse, Belvédère, on exposed limestone outcrop, on *Peltigera rufescens*, 3 May 1997, *A. Aptroot* 40380 (LG-holotype).

Conidiomata pycnidial, semi-immersed in whitish necrotic patches of the upper surface of the host thallus, 100-280 µm in diam.,

depressed globose to ovoid, dark brown to black, unilocular, glabrous, ostiolate, ostiole not papillate. Wall 7.5-10 µm thick, 1-3 cells thick, the outer cells thick-walled, dark brown, 6-11 × 3-6 µm in section, the inner cells paler and thin-walled, 7-10 × 2-3 µm in section. Conidiophores reduced to conidiogenous cells lining the cavity, hyaline, enteroblastic, c. 3-4 µm long and 2.5-3 µm thick. Paraphyses developing between the conidiogenous cells, hyaline, filiform, 0-2-septate, 26-31 µm long and 1-1.5 µm thick. Conidia (fig. 1) formed inside a sheath, hyaline, subcylindrical, straight or slightly curved, 1-septate, not constricted at the septum, smooth, base narrowly truncate, apex rounded, 16-20 × 2.5-3 µm, with a minuscule apiculus which bears 2-3 flexuous, divergent, extracellular appendages, 16-20 µm long (best visible in phase contrast at 1000 × magnification).

Nag Raj (1993) described and illustrated 8 species of *Pseudorobillarda* Morelet, and Bianchinotti (1997) added one more species. All known species, except for *P. sojae* Uecker & Kulik, have elongate paraphyses developing between the condiogenous cells. Amongst the paraphysate species, *P. bambusae* Nag Raj et al. mostly resembles *P. peltigerae* ; it differs by the larger and paler conidiomata, 190-460 µm in diam., the pale brown wall, the longer paraphyses (45.5-52 µm long), and the conidia which are often constricted at

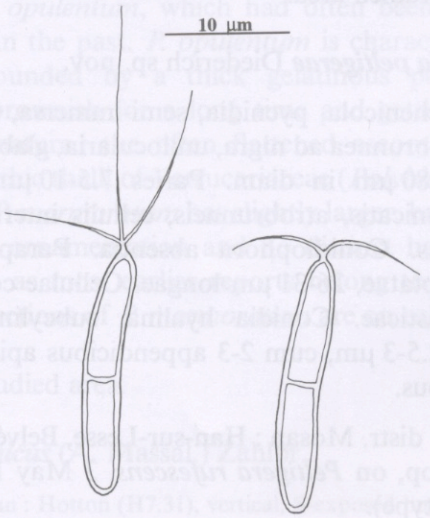

Fig. 1. — *Pseudorobillarda peltigerae* Diederich (holotype). Conidia.

the septum. All other species differ from *P. peltigerae* by several characters, and also by their different hosts. All hitherto known species grow on phanerogams : *P. peltigerae* is thus the first lichenicolous species.

The genus *Peltigera* is well known for its numerous lichenicolous fungi (HAWKSWORTH & MIADLIKOWSKA 1997). In the type locality of *Pseudorobillarda peltigerae*, we collected a total of 4 species on *Peltigera rufescens*, three of which were still undescribed during the excursion : *Capronia peltigerae, Libertiella didymospora* (described only a few months after the excursion ; see under that species), *Pseudorobillarda peltigerae*, and an unidentified coelomycete with black, thick-walled conidiomata and hyaline, 1-septate conidia, 8.5-10.5 × 2-3 µm (*P. Diederich* 12700).

Psorotichia schaereri (A. Massal.) Arnold

Belgium : distr. Mosan : Loc. 1, *P. v. d. Boom* 18676 (h). Loc. 4, *A. M. Brand* 35696 (h). C. 23 km SE of Dinant, 0.5 km W of road crossing Halma-Genimont and Wellin-Ave (J6.33), over calcareous rocks, 10. 1982, *A. M. Brand* 27846 (h). 0.4 km NE of Waulsort (H5.56), limestone rock outcrops, 10. 1991, *A. M. Brand* 26949 (h). 4 km S of Namur, Rochers de Néviau (G5.57), on dolomite, near top of W-facing rock face, 9. 1989, *A. M. Brand* 21972 (h). Aywaille, Heid des Gattes (G7.25), on slightly schistose rocks, 4. 1987, *A. M. Brand* 16312 (h). 0.6 km N of Durbuy (H7.11), on limestone rocks, 3. 1985, *A. M. Brand* 14140 (h).
Luxembourg : distr. Lorrain : Lasauvage, rocher en tuf calcaire dans le village (M7.48), 10. 1996, *P. Diederich* 12443 (h).

Like *Porocyphus*, the genus *Psorotichia* A. Massal. forms crustose to subsquamulose black thalli which are rarely collected and considered very difficult to identify ; they are lichenized with representatives of the cyanobacteria *Chroococcidiopsis*. Three species belonging to that genus are mentioned by DUVIGNEAUD & GILTAY (1938 : 19) : *P. schaereri*, which is the most commonly reported species in Europe (e. g. from Eifel/Germany by MÜLLER 1965 : 25), and which is reported here, *P. caesia* (Nyl.) Forssell which is usually considered to be a synonym of the latter (e. g. CLAUZADE & ROUX 1985 : 648), and *P. tongletii* B. de Lesd., a name of uncertain application. A further species has been reported in VAN DEN BOOM (1996 : 17) as *P.* cfr. *diffracta* (Nyl.) Forssell, but this record is erroneous, the corresponding specimen (*H. Sipman* 17378, B !) belonging to a non-identified species.

The material mentioned above might be heterogeneous. One specimen (*A. M. Brand* 35696) is partly densely pruinose and partly epruinose ; it could belong to *P. diffracta*, a species with a pruinose thallus, but morphologically it is much closer to *P. schaereri*, a species known to be occasionally pruinose. The specimen *A. M. Brand* 22033 is slightly effigurate and is rather similar to *P. obtenebrans* (Nyl.) Forssell as illustrated by Moreno & Egea (1994, fig. 1) ; it is however better accomodated within a broad concept of *P. schaereri* because of its large ascospores (12.5-18 × 7-8.5 µm vs 10-12 × 6-8 µm in *P. obtenebrans*).

Rinodina pityrea Ropin & H. Mayrhofer

Belgium : distr. Mosan : Loc. 10, on *Acer, A. M. Brand* 35738b (h), *P. v. d. Boom* 18788 (h, LG).

The genus *Rinodina* (Ach.) Gray has just been revised for The Netherlands, Belgium and Luxembourg (Giralt et al. 1997) but the widespread, although recently described, *R. pityrea* was reported only from the first country. Its occurrence in Belgium was expected and is here demonstrated. The locality found during the excursion is dusty roadside trees with e. g. *Caloplaca obscurella, Lecanora carpinea* and *Lecidella elaeochroma*.

New to the studied area.

Staurothele guestphalica (J. Lahm ex Körb.) Arnold

Belgium : distr. Mosan : Loc. 1, on rocks, *L. Spier* 7959 (h). Loc. 15, on rocks, *A. M. Brand* 35765 (h). 6 km NE of Couvin, 1.7 km NE of Nismes, Roche à Lomme (J5.41), limestone rock outcrops with *Buxus*, SE slope shaded by shrubs, 9. 1986, *A. M. Brand* 15146 (h). 7.3 km SSW of Dinant, Rochers de Freyr (H5.57), 100 m N of stone 34, calcareous rocks protruding from wooded W-slope, 4. 1984, *A. M. Brand* 11350 (h).

The genus *Staurothele* Norman belongs to the Verrucariaceae and is easily set apart by the occurrence of algal cells in the hymenium. Three other species are known in the studied area : *S. caesia* (Arnold) Arnold, rather common on hard and exposed calcareous outcrops in the Mosan district, *S. fissa* (Taylor) Zwachk, found +/– submerged on siliceous rocks in unpolluted rivers in the district Ardennais, and *S. frustulenta* Vain., so far known from a single locality, on a wall of siliceous rocks (van den Boom et al.

1994 : 164). *Staurothele guestphalica* grows on exposed and sunny calcareous outcrops and is mentioned from Eifel/Germany by MÜLLER (1965 : 21).

New to the studied area.

Stigmidium cerinae Cl. Roux & Triebel
Syn. : *Stigmidium caloplacae* Alstrup & Olech

Belgium : distr. Mosan : Loc. 4, on *Caloplaca flavocitrina, E. Sérusiaux* s.n. (LG, herb. Diederich).

Stigmidium cerinae is a frequent lichenicolous ascomycete, with ascomata usually immersed in the hymenium of *Caloplaca cerina* var. *chloroleuca*, or, more rarely of *C. cerina* var. *muscorum* (ROUX & TRIEBEL 1994 : 480, HAFELLNER 1994 : 23-24). Our specimen looks macroscopically quite different, as the ascomata are more or less superficial, but this might be due to the different host, and the different part of the host to be attacked (the thallus).

The ascomata in our specimen are superficial, black, 50-65 µm in diam. ; the excipulum is brown, including the base and is c. 10-12 µm thick ; pseudoparaphyses are of type a (sensu ROUX & TRIEBEL 1994) ; asci are 8-spored and c. 29-33 × 8.5-9 µm ; the endoascus reacts BCr+ violet (BCr = Cresyl Blue) ; ascospores are hyaline, 1-septate, not distinctly constricted at the septum, pseudotetrablastic, 10-12.5 × 3-4 µm, without a thick perispore (halo), epispore reacting BCr+ violet ; the vegetative hyphae are pale brown. Such a description immediately points to *S. cerinae*, except that the vegetative hyphae are said to be hyaline and the ascomata immersed by ROUX & TRIEBEL (1994). It is difficult to decide whether one or two distinct species are involved. The frequency of *S. cerinae* on *Caloplaca cerina* suggests a highly specialized fungus growing only on the *C. cerina*-group. As almost no differences could be found, and as both host species involved are congeneric, it is wise, for the moment, to consider only one lichenicolous fungus, awaiting the discovery of additional material on other *Caloplaca* species.

New for the studied area.

Strigula affinis (A. Massal.) R. C. Harris

Belgium : distr. Mosan : Loc. 11, *A. M. Brand* 35740 (h).

Strigula affinis was reported earlier from S Belgium (SÉRUSIAUX et al. 1985 : 33) but the only specimen was eventually referred to the closely related *S. jamesii* (Swinscow) R. C. Harris (VAN DEN BOOM et al. 1994 : 164). A small but typical population of *S. affinis* was discovered on a very old *Tilia* in the centre of Ave-et-Auffe during the excursion and thus represents the first ascertained record for the studied area. Both species have 3-septate ascospores and macroconidia ; *S. affinis* can be mainly distinguished by its larger perithecia (0.3-0.45 mm in diam. vs 0.1-0.2 mm in *S. jamesii*), brownish to blackish (jet black in *S. jamesii*) and its large ascopores [(12.5-)14.5-19.5(-24.5) × (4-)4.5-6 µm vs 13.5-16(-17.5) × 4-5(-5.5) µm in *S. jamesii*].

Strigula affinis is mainly a southern species in Europe and the locality found during the excursion is its most northern report ; *S. jamesii* grows much further north as it is known from Denmark and Scotland. Further data on both species can be found in a forthcoming survey of the genus in Europe and Macaronesia by C. Roux & E. Sérusiaux.

New for the studied area.

Syzygospora physciacearum Diederich

Belgium : distr. Maritime : Knokke, dans un bois à 1 km à l'ouest du Zwin (B2.33), on *Physcia tenella* on *Sambucus*, 4.1997, *P. Diederich* 12493 (h).
Distr. Mosan : Loc. 13, on *Physcia tenella* on *Salix, P. J. Keizer* (h, herb. Diederich), *E. Sérusiaux* s. n. (LG).

Syzygospora physciacearum is a cosmopolitan lichenicolous heterobasidiomycete which grows on several genera of the Physciaceae (DIEDERICH 1996 : 38-44).

New to the studied area.

Toninia athallina (Hepp) Timdal
Syn. : *Catillaria athallina* (Hepp) Hellbom, *Kiliasia athallina* (Hepp) Hafellner

Belgium : distr. Mosan : Loc. 1, *P. Diederich* 12739 (h). 2.2 km SE of Han, 1.1 km ENE of Belvau (J6.35), on limestone rock, 8. 1995, *A. M. Brand* 33477 (h).

Before the outstanding monograph of the genus *Toninia* A. Massal. by TIMDAL (1991), this species would never have been placed into it as it has an endolithic thallus and 1-septate ascospores. With

the new circumscription of the genus, it does fit well into it. Its presence in the studied area was not unexpected as it was reported from Eifel/Germany by MÜLLER (1965 : 32, sub *Catillaria athallina*).

New for the studied area.

Toninia philippea (Mont.) Timdal

Syn. : *Catillaria philippea* (Mont.) A. Massal., *Kiliasia philippea* (Mont.) Hafellner

Belgium : distr. Mosan : Loc. 15, *P. v. d. Boom* 18856 (h, LG).

Toninia philippea is closely related to *T. athallina*, and is most easily distinguished by its well-developed, epilithic thallus. Its occurrence in the studied area is not a surprise either, when one examines its distribution in Europe (TIMDAL 1991 : 81) and as it was already mentioned from Eifel/Germany by MÜLLER (1965 : 32, sub *Catillaria philippea*).

New to the studied area.

Verrucaria funckii (Sprengel) Zahlbr.

Belgium : distr. Ardennais : Loc. 9, on schistose stones in a small stream on a W-exposed slope in forest, *P. Diederich* 12590 (h, herb. Brand, LG).

Verrucaria funckii is very similar to *V. hydrela* Ach., which was found at the very same place. It is distinguished by smaller perithecia, involucrellum not spreading laterally, and paler and more greenish thallus. It is much rarer than any other aquatic Verrucariaceae known in Belgium and Luxembourg.

New for the studied area.

Weddellomyces epicallopisma (Wedd.) D. Hawksw.

Belgium : distr. Mosan (all specimens on *Caloplaca aurantia*) : Loc. 1, *P. Diederich* 12749 (h). Meuse valley, 0.4 km NE of Waulsort (H5.56), on limestone, 10. 1991, *A. M. Brand* 26945 (h). 1.7 km NNW of Han-sur-Lesse, near Grotte d'Eprave (J6.24), on limestone rock, 8. 1995, *A. M. Brand* 33433 (h). 4 km E of Couvin, Nismes, St-Joseph (J5.41), on limestone rock, 9. 1986, *A. M. Brand* 15091 (h).

Weddellomyces epicallopisma is a lichenicolous ascomycete which destroys its host and is easily detected by its almost immersed black perithecia, usually present at the border between the healthy and bleached and dying parts of its host thalli. In the studied area, it

is only known on *Caloplaca aurantia*, but, unlike its host, has not (yet ?) been found on artificial susbtrata.

Lichenicolous fungus new to the studied area.

Woessia arnoldiana (Körb.) Sérus. & Diederich comb. nov.
Bas. : *Bacidia arnoldiana* Körb., Parerga Lich., fasc. 2 : 134, 1860.
Syn. : *Bacidina arnoldiana* (Körb.) V. Wirth & Vězda, Stuttgarter Beitr. Naturkunde, Ser. A, 517 : 62, 1994.
Type : Germany, 'ad saxa umbrosa calcarea in sylvaticis vallis Rosenthal prope Eichstaedt Bavariae', coll. *Arnold*, in Arnold, Lich. sel. Germ. 131 (L, lectotype selected by Ekman 1996a : 115, not seen).
= *Woessia fusarioides* D. Hawksw., Poelt & Tsch.-Woess, Pl. Syst. Evol. 154 : 207, 1986.
Type : Austria, Burgenland, Oberwart, *Quercus*-Stumpf im Mischwald SW über Bad Tatzmannsdorf, nahe der Strasse nach Oberwart, alt. +/- 350 m, 26.3.1980, *J. Poelt* (GZU-holotype, IMI 253748-isotype !).

Belgium : distr. Mosan : Loc. 13, *A. Aptroot* 40449 (h), *A. M. Brand* 35744 (h), *P. v. d. Boom* 18805 (h).
Distr. Ardennais : Loc. 5, *A. Aptroot* 40327 (h).

Woessia D. Hawksw. & Poelt (1986) was described from Austria as a lichen genus producing only pycnidia. Even a rapid examination of the original description indicates that it concerns a species of a well-known group of *Bacidia* De Not. s. l., the so-called *Bacidia phacodes*-group. This group is characterized by a thallus made of goniocysts, mostly pale apothecia, barrel-shaped when young, usually a paraplectenchymatous excipulum or excipulum with at least one row of cells with large and isodiametric lumina at its outer edge, simple and apically swollen paraphyses, an ascus-type significantly different from that of the core of *Bacidia* (Lumbsch 1991), acicular ascospores whose upper parts all converge to a single point at the upper part of the ascoplasm, and conspicuous pycnidia producing long, filiform and flexuose conidia. Although the affinities of many species of *Bacidia* s. l. are still to be studied, especially for tropical ones, such a group clearly deserves generic status. *Woessia* is the earliest available name for it as its type species is a well-developed *Bacidia arnoldiana* Körb. : thallus with goniocysts, pycnidia and even a few apothecia are present in the isotype collection (examined by

B. J. Coppins : see identification label inside the envelope, and eventually by two of us, P. Diederich and E. Sérusiaux). *Woessia* has already been used several times, including for the description of new species (Sérusiaux 1995 & 1996, van den Boom & Vězda 1996).

In his study of foliicolous lichens in the Western Caucasus, Vězda (1983 : 61-62) had recognized the monophyly of that group of species but did not take any decision as to the taxonomical rank it deserves. Without any reference to Hawksworth & Poelt paper (1986), he described the new genus *Bacidina* for it in 1990 in a very short paper, lacking any discussion at all (Vězda 1990). The name was however taken up by Wirth (1994) in his check-list of lichens in Germany. In his outstanding work on species of *Bacidia* s. l. in North America, Ekman (1996a) chose to use *Bacidina* Vězda, claiming that it 'has gained wide acceptance' (Ekman 1996b) and that 'a reestablishment of *Woessia* is a clear violation of the spirit of the present Code' (Ekman 1996a : 4). He eventually introduced a proposal to conserve *Bacidina* against *Woessia* (Ekman 1996b). Although this is purely a matter of nomenclature, and therefore of minor importance, we wish to maintain *Woessia* for the following reasons : (a) the possibility of conservation as organized by the Code of Nomenclature (ICBN) has never been designed to conserve very recently described names : one can expect nowadays that, before describing a new taxon, especially at genus level, authors check the recent and relevant literature for any competing names ; (b) *Bacidina* differs from *Bacidia* by one letter only and maintaining *Bacidina* would be a source of confusion for non-experts outside the small group of scientists working on the taxonomy of those tiny lichens ; (c) claiming that *Bacidina* is now widely accepted is exaggerated, as several of the papers he mentioned (Ekman 1996b) are mere compilations and check-lists.

Van den Boom & Vězda (1996) have described a new species in the genus *Woessia* and therefore one could argue that the author of *Bacidina* has agreed to use *Woessia*. We must however establish the actual situation : when submitted for publication, the original ms was about a new species of *Bacidina* and the editors of Herzogia accepted it pending the use of *Woessia*. The second author has not been informed of the change before publication and thus never formally accepted to use *Woessia* instead of *Bacidina*.

Two authors of this paper (P. Diederich and E. Sérusiaux) have decided to introduce the relevant combinations for the species found during the excursion.

Woessia arnoldiana was already known from the studied area (DIEDERICH et al. 1991 : 13), where it grows on trees or on calcareous rocks, always in rather shaded and humid conditions, mainly in the distr. Mosan, Ardennais and Lorrain.

Woessia caligans (Nyl.) Sérus. & Diederich comb. nov.
Bas. : *Lecidea caligans* Nyl., Flora 57 : 10, 1874.
Syn. : *Bacidia caligans* (Nyl.) A. L. Sm., Monogr. Brit. Lich. 2 : 157, 1911.
Type : England, Jersey Is., 'In insula Alderney prope Jersey, supra saxa maritima', coll. *Larbalestier* (? H-Nyl., not seen ; BM-isotype ex herb. Crombie).

Belgium : distr. Mosan : Loc. 13, *P. v. d. Boom* 18813 (h).

Woessia caligans was already known from the studied area (DIEDERICH et al. 1992 : 139), where it grows on calcareous walls or on concrete, or as an epiphyte on *Malus, Salix* and *Sambucus*, usually in ruderal conditions.

Woessia delicata (Larbal. ex Leight.) Sérus. & Diederich comb. nov.
Bas. : *Lecidea effusa* var. *delicata* Larbal. ex Leight., Lich. Fl. Gr. Br. (3rd ed.) : 371, 1879.
Syn. : *Bacidia delicata* (Larbal. ex Leight.) Coppins, Lichenologist 12 : 106, 1980 ; *Bacidina delicata* (Larbal. ex Leight.) V. Wirth & Vězda, Stuttgarter Beitr. Naturkunde, Ser. A, 517 : 62, 1994.
Type : Ireland, 'Ravine above Lough Feagh, Connemara', coll. *Larbalestier*, 1877 (? BM, not seen ; CRK-isotype).

Belgium : distr. Mosan : Loc. 12, *P. v. d. Boom* 18801 (h).
Distr. Ardennais : Mont, Sommerain, Ruisseau de Sommerain, au S de 'Au Grand Etang' (J7.17), sur *Sambucus* isolé, en bord d'anciens prés de fauche, 6. 1997, *E. Sérusiaux* (LG).

Woessia delicata was already known from the studied area (DIEDERICH et al. 1991 : 14), where it grows on trees (*Populus, Pyrus, Quercus, Salix* and *Sambucus*), usually in sheltered and humid conditions. The collection mentioned above from the distr. Ardennais

is quite exuberant and covered with apothecia : it is a part of the very healthy and fertile populations locally present in the studied area. In The Netherlands, it occurs on a wide range of habitats, from sheltered rocks in maritime habitats to tree bark in damp woods.

Woessia inundata (Fr.) Sérus. & Diederich comb. nov.
Bas. : *Biatora inundata* Fr., Kgl. Vetensk.-Akad. Nya Handl., Stockholm : 270, 1822.
Syn. : *Bacidia inundata* (Fr.) Körb., Syst. Lich. Germ. : 187, 1855 ; *Bacidina inundata* (Fr.) Vězda, Folia Geobot. Phytotax. 25 : 432, 1990.
Type : data on the type collection not found (? UPS).
= *Lichingoldia gyalectiformis* D. Hawksw. & Poelt, Pl. Syst. Evol. 154 : 204, 1986.
Type : Norway, Oppland, ostexponierter, von Wasserrinnen durchzogener Waldhang zwischen Hovde und Oddwang, SW Tretten, 3.9.1976, *A. Buschardt & J. Poelt* (IMI 214757-holotype !).

Belgium : distr. Ardennais : Loc. 7, *P. Diederich* 12592 (h), *E. Sérusiaux* s. n. (LG). Luxembourg : distr. Ardennais : Stolzembourg, près de la mine de Cu (K8.26), déblai de roches siliceuses légèrement calcareuses, en conditions humides et ombragées, 5. 1998, *P. Diederich* 13612 (h).
Distr. Lorrain : 1 km W of Echternach, Gorge du Loup (L9.12), sandstone blocks of scree on N slope, open place in wood, 3. 1989, *A. M. Brand* s. n. (h). 1 km W of Grevenmacher, Rouderbaach (L9.52), on calcareous stones in a stream, 4. 1996, *P. Diederich* 12381, 12382 (h).

Woessia inundata is found on rocks in water or at water level, by unpolluted streams and rivers, usually in shaded conditions ; it is probably widespread in Belgium and Luxembourg. It has already been reported from Malmedy (Belgium, Ard. distr.) by MÜLLER (1958 : 144).

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TAB. 1. — List of all identified taxa, found at each locality visited during the excursion (see text for list of localities). Nomenclature follows the most recent accounts for each genus, but *Parmelia* s. l. is maintained.

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
Abrothallus microspermus Tul.* (1)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×
Acrocordia conoidea (Fr.) Körb.	–	–	–	×	–	–	–	–	–	–	–	–	–	–	×	–	×	–	–
Agonimia allobata (Stizenb.) P. James	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
A. opuntiella (Buschardt & Poelt) Vězda	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
A. tristicula (Nyl.) Zahlbr.	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Anisomeridium macrocarpum (Körb.) V. Wirth +	–	–	–	–	×	–	–	–	–	–	–	–	×	–	–	–	–	–	–
A. polypori (Ellis & Everh.) M. E. Barr	–	×	–	–	×	–	–	–	–	–	–	×	–	×	–	–	–	–	–
Arthonia didyma Körb.	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
A. muscigena Th. Fr.	–	×	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
A. punctiformis Ach.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
A. radiata (Pers.) Ach.	–	×	–	–	×	–	–	–	–	–	–	–	–	×	–	–	–	–	–
A. spadicea Leight.	–	–	–	×	×	–	–	–	–	×	–	–	–	×	–	–	–	–	–
A. vinosa Leight.	–	–	–	–	×	×	–	–	–	–	–	–	–	–	–	–	–	–	–
Arthopyrenia analepta (Ach.) A. Massal. +	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Arthothelium ruanum (A. Massal.) Körb.	–	×	–	–	×	–	–	–	–	–	–	–	–	×	×	–	–	–	–
Aspicilia caesiocinerea (Nyl. ex Malbr.) Arnold	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
A. calcarea (L.) Mudd	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
A. contorta (Hoffm.) Krempelh. subsp. *contorta*	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
A. contorta subsp. *hoffmaniana* S. Ekman & Fröberg	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Athelia arachnoidea (Berk.) Jülich * (2)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bacidia arceutina (Ach.) Arnold	–	×	–	–	–	–	–	×	–	–	–	–	–	×	–	–	–	–	–
B. bagliettoana (A. Massal. & De Not.) Jatta	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
B. biatorina (Körb.) Vain.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. carneoglauca (Nyl.) A. L. Sm.	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. circumspecta (Nyl. ex Vain.) Malme	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
B. fuscoviridis (Anzi) Lettau	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
B. hemipolia (Nyl.) Malme	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–

B. herbarum (Stizenb.) Arnold	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. rubella (Hoffm.) A. Massal.	–	–	–	–	×	×	–	–	–	–	–	–	–	×	–	–	–	–	–	–
B. subincompta (Nyl.) Arnold	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. trachona (Ach.) Lettau	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. viridifarinosa Coppins & P. James	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Baeomyces rufus (Huds.) Rebent.	–	–	–	–	–	–	–	×	–	×	–	–	–	–	–	–	–	–	–	–
Bagliettoa baldensis (A. Massal.) Vězda	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
B. parmigera (J. Steiner) Vězda & Poelt	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. steineri (Kusan) Vězda	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
Biatora chrysantha (Zahlbr.) Printzen	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. epixanthoides (Nyl.) Diederich	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B. meiocarpa (Nyl.) Arnold	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Biatoridium monasteriense J. Lahm	–	×	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–	–	–	–
Botryolepraria lesdainii (Hue) Canals et al.	×	–	–	×	–	–	–	–	×	–	–	–	×	×	×	–	–	–	–	–
Buellia aethalea (Ach.) Th. Fr.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–
B. alboatra (Hoffm.) Th. Fr.	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
B. griseovirens (Turner & Borrer ex Sm.) Almb.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	×	–	–	–
B. punctata (Hoffm.) A. Massal.	–	–	–	–	–	×	–	–	–	×	×	–	–	–	–	–	×	–	–	–
B. venusta (Körb.) Lettau	×	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Calicium glaucellum Ach.	–	–	–	–	×	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C. lichenoides (L.) Schumach.	–	–	–	–	×	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
C. viride Pers.	–	–	–	–	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	–
Caloplaca alociza (A. Massal.) Mig.	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C. aurantia (Pers.) J. Steiner	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
C. chalybaea (Fr.) Müll. Arg.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
C. chlorina (Flot.) H. Olivier	×	–	–	–	–	–	–	–	–	–	–	×	–	–	–	×	–	–	–	–

+ = non lichenized fungi, included here as these species are usually studied by lichenologists
* = lichenicolous fungi, with hosts indicated below
(1) on *Parmelia caperata*
(2) mentioned only at loc. 5, where it has been collected on *Pertusaria pertusa*, but most probably present in the other localities

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
C. chrysodeta (Vain. ex Räsänen) Dombr.	×	–	–	×	–	–	–	–	–	–	–	–	–	–	×	–	×	–	–
C. cirrochroa (Ach.) Th. Fr.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. citrina (Hoffm.) Th. Fr.	–	–	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–
C. coronata (Krempelh. ex Körb.) J. Steiner (*) (3)	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. decipiens (Arnold) Blomb. & Forssell	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–
C. dolomiticola (Hue) Zahlbr.	×	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–
C. flavescens (Huds.) J. R. Laundon	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. flavocitrina (Nyl.) H. Olivier	–	–	–	×	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–
C. flavovirescens (Wulfen) Dalla Torre & Sarnth.	×	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
C. inconnexa (Nyl.) Zahlbr. (*) (4)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. lucifuga Thor	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C. obscurella (J. Lahm) Th. Fr.	–	–	–	–	–	–	–	×	–	–	×	–	–	×	–	–	–	×	×
C. ochracea (Schaer.) Flagey	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. polycarpa (A. Massal.) Zahlbr. * (5)	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C. saxicola (Hoffm.) Nordin	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	×	–
C. variabilis (Pers.) Müll. Arg.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. xantholyta (Nyl.) Jatta	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–
Candelariella aurella (Hoffm.) Zahlbr.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	×	–
C. reflexa (Nyl.) Lettau	–	×	×	–	–	–	–	–	–	–	–	–	×	–	–	×	–	–	–
C. vitellina (Hoffm.) Müll. Arg.	–	–	–	–	–	–	–	×	×	×	–	–	–	–	–	–	–	–	–
C. xanthostigma (Ach.) Lettau	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	×	–
Capronia peltigerae (Fuckel) D. Hawksw. * (6)	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Catillaria chalybeia (Borrer) A. Massal.	×	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
C. lenticularis (Ach.) Th. Fr.	×	–	×	–	–	–	–	×	–	–	–	–	–	–	–	×	–	–	–
C. minuta (A. Massal.) Lettau	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
C. nigroclavata (Nyl.) Schuler	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Cercidospora epipolytropa (Mudd) Arnold * (7)	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
Chaenotheca chrysocephala (Turner ex Ach.) Th. Fr.	–	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	–	–	–
C. ferruginea (Turner & Borrer) Mig.	–	–	×	–	×	×	–	–	–	×	–	–	–	×	–	–	–	–	–
C. stemonea (Ach.) Müll. Arg.	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–

C. trichialis (Ach.) Th. Fr.	–	–	–	–	×	–	–	–	–	–	–	–	–	×	–	–	–	–	–	
Chromatochlamys muscorum (Fr.) H. Mayrhofer & Poelt	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
Chrysothrix candelaris (L.) J. R. Laundon	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. chlorina (Ach.) J. R. Laundon	–	–	–	–	–	–	–	–	×	×	–	–	–	–	–	–	–	–	–	
Cladonia coniocraea (Flörke) Sprengel	–	–	–	×	×	×	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. convoluta (Lam.) Anders	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. digitata (L.) Hoffm.	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. floerkeana (Fr.) Flörke	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. foliacea (Huds.) Willd.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. furcata (Huds.) Schrad. subsp. *furcata*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. furcata subsp. *subrangiformis* (Sandst.) Abbayes	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. polydactyla (Flörke) Sprengel	–	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	–	–	–	
C. portentosa (Dufour) Coem.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. pyxidata (L.) Hoffm. subsp. *pyxidata*	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. pyxidata subsp. *pocillum* (Ach.) Å. E. Dahl	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. ramulosa (With.) J. R. Laundon	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. rangiformis Hoffm.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. scabriuscula (Delise) Leight.	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	
C. squamosa (Scop.) Hoffm.	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. subulata (L.) Weber ex F. H. Wigg.	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
C. symphycarpa (Flörke) Fr.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
Clauzadea immersa (Hoffm.) Hafellner & Bellem.	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. metzleri (Körb.) Clauzade & Cl. Roux ex D. Hawksw.	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	
C. monticola (Schaer.) Hafellner & Bellem.	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	

(3) on species of *Verrucaria*, later forming its own independent thallus
(4) on *Caloplaca chalybaea*, later forming its own independent thallus
(5) on *Verrucaria calciseda*
(6) on *Peltigera rufescens*
(7) on *Lecanora gisleriana* and *L. polytropa*

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
Clypeococcum epicrassum (Oliv.) Nav.–Ros. & Cl. Roux * (8)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. hypocenomycis D. Hawksw. * (9)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Collema auriforme (With.) Coppins & J. R. Laundon	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
C. crispum (Huds.) Weber ex F. H. Wigg. var. *crispum*	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C. cristatum (L.) Weber ex F. H. Wigg. var. *cristatum*	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
C. fuscovirens (With.) J. R. Laundon	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C. occultatum Bagl.	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
C. tenax (Sw.) Ach. var. *tenax*	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dactylospora parasitica (Flörke) Zopf * (10)	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
Dermatocarpon miniatum (L.) W. Mann	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–
Dimerella pineti (Ach.) Vězda	–	–	×	×	×	–	–	–	–	×	–	–	–	×	–	–	–	–	–
Diploicia canescens (Dicks.) A. Massal.	×	×	–	×	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
Diploschistes muscorum (Scop.) R. Sant. (*) (11)	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
D. scruposus (Schreb.) Norman	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
Dirina stenhammarii (Stenham.) Poelt & Follmann	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Endocarpon pallidum Ach.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	×	–	–
Endococcus propinquus (Körb.) D. Hawksw. * (12)	–	–	–	–	–	–	–	–		×	–	–	–	–	–	–	–	–	–
Enterographa zonata (Körb.) Källsten	–	–	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–	–	–
Evernia prunastri (L.) Ach.	–	×	–	×	×	×	–	–	–	×	×	–	×	×	–	–	–	–	×
Fellhanera viridisorediata Aptroot, Brand & Spier	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Fellhaneropsis vezdae (Coppins & P. James) Sérus. & Coppins	–	–	–	–	×	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Fulgensia fulgens (Sw.) Elenkin	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	×	–	–	–
Fuscidea cyathoides (Ach.) V. Wirth & Vězda	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F. lightfootii (Sm.) Coppins & P. James	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Graphis scripta (L.) Ach.	–	×	–	–	×	×	–	–	–	–	–	–	–	×	–	–	–	–	–
Gyalecta flotowii Körb.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
G. jenensis (Batsch) Zahlbr.	–	–	–	×	–	–	–	×	–	–	–	–	–	–	×	–	–	–	–
G. truncigena (Ach.) Hepp	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
Gyalideopsis anastomosans P. James & Vězda	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Halecania viridescens Coppins & P. James	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Homostegia piggotii (Berk. & Broome) P. Karsten * (13)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hymenelia prevostii (Duby) Krempelh.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
Hypocenomyce scalaris (Ach.) Choisy	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	×	–	–	–
Hypogymnia physodes (L.) Ach.	–	–	×	–	×	×	–	–	–	×	–	–	×	×	–	–	–	×	–
H. tubulosa (Schaer.) Hav.	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	×	–	–	–
Ionaspis lacustris (With.) Lutzoni	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
Lecanactis abietina (Ach.) Körb.	–	–	–	–	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–
L. latebrarum (Ach.) Arnold	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
Lecania cuprea (A. Massal.) v. d. Boom & Coppins	×	–	–	×	–	–	–	–	–	–	–	–	–	×	–	–	×	–	–
L. cyrtella (Ach.) Th. Fr.	–	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–	–	–	–
L. naegelii (Hepp) Diederich & v. d. Boom	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–
L. rabenhorstii (Hepp) Arnold	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L. turicensis (Hepp) Müll. Arg.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
Lecanora albella (Pers.) Ach.	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
L. albescens (Hoffm.) Branth & Rostr.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–
L. argentata (Ach.) Malme	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L. carpinea (L.) Vain.	–	–	–	–	–	–	–	–	–	×	–	–	×	–	–	–	×	–	–
L. chlarotera Nyl.	–	–	–	–	×	–	–	–	–	×	–	–	×	–	×	–	×	–	–
L. conizaeoides Nyl. ex Cromb.	–	–	×	–	×	×	–	–	×	–	–	–	–	–	–	–	–	–	–
L. crenulata Hook.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	×	–	–
L. dispersa (Pers.) Sommerf.	×	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	×	–	–
L. epanora (Ach.) Ach.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
L. expallens Ach.	–	–	×	–	×	×	–	–	–	×	–	–	–	–	–	–	×	×	–
L. flotowiana Sprengel	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–

(8) on *Squamarina cartilaginea*
(9) on *Hypocenomyce scalaris*
(10) on *Pertusaria albescens*
(11) first as a parasite on *Cladonia* squamules (*C. pyxidata* subsp. *pocillum* and *C. symphycarpa*), later forming an independent thallus
(12) on *Porpidia tuberculosa*
(13) on *Parmelia saxatilis*

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
L. gisleriana Müll. Arg. (*) (14)	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
L. hagenii (Ach.) Ach.	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–	–	–	–	–
L. handelii J. Steiner	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
L. intumescens (Rebent.) Rabenh.	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
L. muralis (Schreb.) Rabenh.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
L. orosthea (Ach.) Ach.	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
L. polytropa (Hoffm.) Rabenh.	–	–	–	–	–	–	–	×	×	×	–	–	–	–	–	–	–	–	–
L. pruinosa Chaub.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
L. pulicaris (Pers.) Ach.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L. saligna (Schrad.) Zahlbr.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L. subcarnea (Lijl.) Ach.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L. subcarpinea Szatala	–	–	–	–	–	×	–	–	–	–	–	–	–	×	–	–	–	–	–
L. symmicta (Ach.) Ach.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Lecidea fuscoatra (L.) Ach.	–	–	–	–	–	–	–	–	×	×	–	–	–	–	–	–	–	–	–
Lecidella carpathica Körb.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
L. elaeochroma (Ach.) Choisy f. *elaeochroma*	–	×	×	–	–	×	–	–	–	–	×	×	–	×	–	×	–	×	–
L. scabra (Taylor) Hertel & Leuckert	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
L. stigmatea (Ach.) Hertel & Leuckert	×	–	–	×	–	–	–	×	–	–	–	–	–	–	–	×	–	×	–
Lepraria borealis Lohtander & Tønsberg	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
L. crassissima (Hue) Lettau	×	–	×	×	–	–	–	–	–	×	–	–	–	–	–	×	–	–	–
L. incana (L.) Ach.	–	×	×	–	×	×	–	×	–	×	–	×	×	×	–	×	–	–	–
L. lobificans Nyl.	–	×	–	×	×	–	–	–	–	–	–	×	–	×	–	–	–	–	–
L. nivalis J. R. Laundon	–	–	–	×	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
L. rigidula (B. de Lesd.) Tønsberg	–	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	–	–	–
Leproloma vouauxii (Hue) J. R. Laundon	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Leptogium gelatinosum (With.) J. R. Laundon	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
L. schraderi (Bernh.) Nyl.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Leptorhaphis maggiana (A. Massal.) Körb. +	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Libertiella didymospora D. Hawksw. & Miadlikowska * (15)	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Lichenoconium erodens M. S. Christ. & D. Hawksw. * (16)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L. lecanorae (Jaap) D. Hawksw. * (17)	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
L. usneae (Anzi) D. Hawksw. * (18)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Lichenodiplis lecanorae (Vouaux) Dyko & D. Hawksw. * (19)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Lichenostigma elongata Nav.–Ros. & Hafellner* (20)	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Lobothallia radiosa (Hoffm.) Hafellner	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Macentina abscondita Coppins & Vězda	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Menegazzia terebrata (Hoffm.) A. Massal.	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
Merismatium discrepans (J. Lahm) Triebel * (21)	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Micarea botryoides (Nyl.) Coppins	–	–	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–	–	–
M. denigrata (Fr.) Hedl.	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
M. lignaria (Ach.) Hedl. var. *lignaria*	–	–	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–	–	–
M. lithinella (Nyl.) Hedl.	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
M. lutulata (Nyl.) Coppins	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	–	–	–	–
M. peliocarpa (Anzi) Coppins & R. Sant.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M. prasina Fr.	–	×	–	×	×	–	–	–	–	×	–	–	×	×	–	–	–	–	–
M. pycnidiophora Coppins & P. James	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
M. sylvicola (Flot.) Vězda & V. Wirth	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–
Muellerella lichenicola (Sommerf.) D. Hawksw. * (22)	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M. pygmaea (Körb.) D. Hawksw. var. *pygmaea* * (23)	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(14) on *Lecanora epanora*
(15) on *Peltigera rufescens*
(16) on *Pertusaria pertusa*
(17) on *Lecanora conizaeoides*
(18) on *Pertusaria pertusa*
(19) on *Lecanora* sp.
(20) on *Lobothallia radiosa*
(21) on *Protoblastenia rupestris*
(22) on *Protoblastenia rupestris*
(23) on *Lobothallia radiosa*

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
Mycobilimbia sabuletorum (Schreb.) Hafellner	×	–	×	×	–	–	×	–	–	–	–	–	–	–	–	×	–	–	–
Mycoblastus fucatus (Stirt.) Zahlbr.	–	–	–	×	×	×	–	–	–	×	–	–	–	–	–	–	–	–	–
Naetrocymbe fraxini (A. Massal.) R. C. Harris +	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Normandina acroglypta (Norman) Aptroot	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
N. pulchella (Borrer) Nyl.	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ochrolechia androgyna (Hoffm.) Arnold	–	–	–	–	×	×	–	–	–	×	–	–	–	–	–	–	–	–	–
O. subviridis (Hoeg) Erichs.	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–
O. turneri (Sm.) Hasselrot	–	–	–	–	×	–	–	–	–	–	–	×	–	–	–	–	–	×	–
Omphalina umbellifera (L. :Fr.) Quél.	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
Opegrapha atra Pers.	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O. herbarum Mont.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O. ochrocheila Nyl.	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O. rufescens Pers.	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O. saxatilis DC. s.l.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
O. varia Pers.	–	–	–	×	×	–	–	–	–	–	–	×	–	×	–	–	–	–	–
O. vermicellifera (Kunze) J. R. Laundon	–	×	–	×	×	–	–	–	–	–	–	×	–	–	–	–	–	–	–
O. viridis Pers.	–	–	–	–	×	×	–	–	–	–	–	–	–	–	–	–	–	–	–
O. vulgata (Ach.) Ach. var. *subsiderella* Nyl.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Parmelia acetabulum (Neck.) Duby	–	–	–	–	–	–	–	–	–	–	×	×	–	×	–	–	–	×	–
P. borreri (Sm.) Turner	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
P. caperata (L.) Ach.	–	–	–	×	×	×	–	–	–	–	–	–	–	–	–	×	–	–	×
P. exasperatula (Nyl.) Essl.	–	–	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–	×	–
P. glabratula (Lamy) Nyl.	–	×	–	×	–	–	–	–	–	–	×	–	×	×	–	–	–	–	–
P. perlata (Huds.) Ach.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×
P. revoluta Flörke	–	–	–	–	×	–	–	–	–	×	–	–	–	×	–	×	–	–	–
P. saxatilis (L.) Ach.	–	×	–	–	×	×	–	×	–	×	–	–	×	–	–	×	–	×	–
P. subaurifera Nyl.	–	–	×	–	–	–	–	–	–	–	×	–	–	×	–	×	–	–	–
P. subrudecta Nyl.	–	–	–	×	–	–	–	–	–	–	×	–	–	×	–	×	–	×	–
P. sulcata Taylor	–	×	×	×	–	×	–	–	–	–	×	×	×	×	–	×	–	×	–
P. tiliacea (Hoffm.) Ach.	–	–	–	–	–	–	–	–	–	–	×	–	–	×	–	–	–	×	–

Parmeliopsis ambigua (Wulfen) Nyl.	–	–	–	–	×	×	–	–	–	×	–	–	–	–	–	–	–	–	–
Peltigera didactyla (With.) J. R. Laundon	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
P. horizontalis (Huds.) Baumg.	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
P. praetextata (Flörke ex Sommerf.) Zopf	–	×	×	×	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
P. rufescens (Weiss) Humb.	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Pertusaria albescens (Huds.) Choisy & Werner	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–
P. amara (Ach.) Nyl.	–	×	–	–	×	–	–	–	–	–	–	–	–	×	–	–	–	–	–
P. coccodes (Ach.) Nyl.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
P. flavida (DC.) J. R. Laundon	–	–	–	–	×	–	–	–	–	–	–	–	×	–	–	–	–	–	–
P. hemisphaerica (Flörke) Erichsen	–	–	–	–	×	–	–	–	–	–	–	–	×	–	–	–	–	–	–
P. hymenea (Ach.) Schaer.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
P. leioplaca DC.	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
P. pertusa (Weigel) Tuck.	–	×	–	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–
P. pupillaris (Nyl.) Th. Fr.	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
Petractis clausa (Hoffm.) Krempelh.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–
Phaeographis inusta (Ach.) Müll. Arg.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Phaeophyscia cernohorskyi (Nádv.) Essl.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
P. nigricans (Flörke) Moberg	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–
P. orbicularis (Neck.) Moberg	–	–	–	×	–	–	–	–	–	–	×	×	–	×	–	–	–	×	–
Pharcidia parvipuncta (Stein) G. Winter * (24)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Phlyctis argena (Sprengel) Flot.	–	×	–	×	–	×	–	–	–	–	–	–	–	×	×	×	–	–	–
Physalospora lecanorae (Stein) G. Winter * (25)	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Physcia adscendens (Fr.) H. Olivier	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–	–	–	×	–
P. aipolia (Ehrh. ex Humb.) Fürnr.	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	×	–
P. stellaris (L.) Nyl.	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
P. tenella (Scop.) DC.	–	×	–	–	–	–	–	–	–	–	×	–	×	×	–	–	–	–	–
P. tribacia (Ach.) Nyl.	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
Physconia distorta (With.) J. R. Laundon	–	–	–	–	–	–	–	–	–	–	×	×	–	×	–	–	–	–	–
P. enteroxantha (Nyl.) Poelt	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–

(24) on *Thelidium minutulum*
(25) on *Lecanora albescens*

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
P. grisea (Lam.) Poelt	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	×	–
P. perisidiosa (Erichsen) Moberg	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–
Placidium pilosellum (Breuss) Breuss	×	–	×	×	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–
Placynthiella icmalea (Ach.) Coppins & P. James	–	–	–	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
Placynthium nigrum (Huds.) Gray	×	–	×	×	–	–	–	×	–	–	–	–	–	–	–	×	–	–	–
Platismatia glauca (L.) W. Culb. & C. Culb.	–	–	–	–	×	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Polyblastia dermatodes A. Massal.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Polycoccum marmoratum (Krempelh.) D. Hawksw. * (26)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
P. opulentum (Th. Fr. & Almq. ex Th. Fr.) Arnold * (27)	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Porina aenea (Wallr.) Zahlbr.	–	×	–	×	–	–	–	×	–	×	–	–	–	×	–	–	–	–	–
P. chlorotica (Ach.) Müll. Arg.	–	×	×	–	×	–	–	×	–	×	–	–	×	–	×	–	–	–	–
P. leptalea (Durieu & Mont.) A. L. Sm.	–	–	–	–	×	–	–	–	–	×	–	–	–	×	×	–	–	–	–
P. linearis (Leight.) Zahlbr.	–	–	×	×	–	–	–	–	–	–	–	–	–	–	×	–	×	–	–
Porocyphus rehmicus (A. Massal.) Zahlbr.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
Porpidia macrocarpa (DC.) Hertel & Knopf	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
P. soredizodes (Lamy ex Nyl.) Laundon	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
P. tuberculosa (Sm.) Hertel & Knopf	–	–	–	–	×	–	–	–	×	×	–	–	–	–	–	–	–	–	–
Protoblastenia calva (Dicks.) Zahlbr.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
P. cyclospora (Hepp ex Körb.) Poelt	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
P. incrustans (DC.) J. Steiner	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
P. rupestris (Scop.) J. Steiner	×	–	×	×	–	–	×	×	–	–	–	–	–	–	×	×	–	–	–
Pseudevernia furfuracea (L.) Zopf	–	–	×	–	×	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Pseudorobillarda peltigerae Diederich * (28)	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Psilolechia lucida (Ach.) M. Choisy	–	–	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–	–	–
Psora lurida (Ach.) DC.	×	–	×	–	–	–	–	–	–	–	–	–	×	–	–	×	–	–	–
P. testacea Hoffm.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Psoroglaena stigonemoides (Orange) Henssen	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Psorotichia schaereri (A. Massal.) Arnold	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pyrenula nitida (Weigel) Ach.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ramalina farinacea (L.) Ach.	–	×	×	–	–	–	–	–	–	–	×	–	–	×	–	–	–	×	–

R. fastigiata (Pers.) Ach.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–
R. fraxinea (L.) Ach.	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–
R. pollinaria (Westr.) Ach.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rhizocarpon distinctum Th. Fr.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
R. geographicum (L.) DC.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
R. hochstetteri (Körb.) Vain.	–	–	–	–	–	–	–	×	×	–	–	–	–	–	–	–	–	–	–
R. lecanorinum Anders	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
R. oederi (Weber) Körb.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
R. reductum Th. Fr.	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
Rinodina bischoffii (Hepp) A. Massal.	–	–	×	×	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
R. calcarea (Hepp ex Arnold) Arnold	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
R. gennarii Bagl.	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
R. immersa (Körb.) Arnold	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
R. lecanorina (A. Massal.) A. Massal.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
R. pityrea Ropin & H. Mayrhofer	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
R. pyrina (Ach.) Arnold	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
Ropalospora viridis (Tønsberg) Tønsberg	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	–	–	–	–
Sarcogyne regularis Körb.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
Scoliciosporum chlorococcum (Graewe ex Stenh.) Vězda	–	–	–	–	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–
S. umbrinum (Ach.) Arnold	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
Solenopsora candicans (Dicks.) J. Steiner	×	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
Solorina saccata (L.) Ach.	–	–	–	×	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Sphaerophorus globosus (Huds.) Vain.	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–
Squamarina cartilaginea (With.) P. James	×	–	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
Staurothele caesia (Arnold) Arnold	×	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–
S. fissa (Taylor) Zwackh	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–

(26) on *Verrucaria*
(27) on *Verrucaria calciseda*
(28) on *Peltigera rufescens*

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
S. guestphalica (J. Lahm ex Körb.) Arnold	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Stereocaulon nanodes Tuck.	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
S. pileatum Ach.	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
Stigmidium cerinae Cl. Roux & Triebel * (29)	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S. microspilum (Körb.) D. Hawksw. * (30)	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Strigula affinis (A. Massal.) R. C. Harris	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
Synalissa symphorea (Ach.) Nyl.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
Syzygospora physciacearum Diederich * (31)	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Taeniolella delicata M. S. Christ. & D. Hawksw. * (32)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T. punctata M. S. Christ. & D. Hawksw. * (33)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Thelidium decipiens (Nyl.) Krempelh.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T. minutulum Körb.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Thelocarpon epibolum Nyl.	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Thelotrema lepadinum (Ach.) Ach.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Thrombium epigaeum (Pers.) Wallr.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Toninia aromatica (Sm.) A. Massal.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–
T. athallina (Hepp) Timdal	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T. candida (Weber) Th. Fr.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T. philippea (Mont.) Timdal	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
T. sedifolia (Scop.) Timdal	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
T. tumidula (Sm.) Zahlbr.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
T. verrucarioides (Nyl.) Timdal (*) (34)	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Trapelia coarctata (Sm.) Choisy	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
T. corticola Coppins & P. James	–	–	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–	–	–
T. involuta (Taylor) Hertel	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
T. placodioides Coppins & P. James	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–

Trapeliopsis flexuosa (Fr.) Coppins & P. James	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	×	–	–	–
T. gelatinosa (Flörke) Coppins & P. James	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–
T. granulosa (Hoffm.) Lumbsch	–	–	–	–	–	×	–	–	–	×	–	–	–	–	–	–	–	–	–
T. pseudogranulosa Coppins & P. James	–	–	–	–	×	×	–	–	–	×	–	–	–	–	–	–	–	–	–
Tremella lichenicola Diederich * (35)	–	–	–	×	×	×	–	–	–	×	–	–	–	–	–	–	–	–	–
T. pertusariae Diederich * (36)	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Usnea ceratina Ach.	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Verrucaria caerulea DC.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
V. calciseda DC.	×	–	×	×	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
V. compacta (A. Massal.) Jatta	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V. foveolata (Flörke) A. Massal.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–
V. funckii (Sprengel) Zahlbr.	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–
V. hochstetteri Fr.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–
V. hydrela Ach.	–	×	–	–	×	–	–	×	–	×	–	–	–	–	–	–	–	–	–
V. lecideoides Trevis.	–	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V. macrostoma Dufour ex DC.	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V. muralis Ach.	–	–	×	–	–	–	×	–	–	–	–	–	–	×	×	–	–	–	–
V. nigrescens Pers.	×	–	–	×	–	–	×	–	–	–	–	–	–	–	×	–	–	–	–
V. pinguicula A. Massal.	–	–	–	×	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–

(29) on *Caloplaca flavocitrina*
(30) on *Graphis scripta*
(31) on *Physcia tenella*
(32) on *Ropalospora viridis*
(33) on *Graphis scripta*
(34) on *Placynthium nigrum*
(35) on *Mycoblastus fucatus*
(36) on *Pertusaria hymenea*

	1	2	3	4	5	6	6b	7	8	9	10	11	12	13	14	15	16	17	18
V. praetermissa (Trevis.) Anzi	–	×	–	–	×	–	–	×	–	–	–	–	–	–	–	–	–	–	–
V. subfuscella Nyl.	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V. viridula (Schrad.) Ach.	–	–	×	×	–	–	×	×	–	–	–	–	–	–	×	–	–	×	–
Vouauxiella lichenicola (Linds.) Petr. & Syd.* (37)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–
Weddellomyces epicallopisma (Wedd.) D. Hawksw. * (38)	×	–	×	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Woessia arnoldiana (Körb.) Sérus. & Diederich	–	–	–	–	×	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Woessia caligans (Nyl.) Sérus. & Diederich	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–
Woessia delicata (Larbal. ex Leight.) Sérus. & Diederich	–	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–
Woessia inundata (Fr.) Sérus. & Diederich	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–	–	–	–	–
Xanthoria candelaria (L.) Th. Fr.	–	–	–	–	–	–	–	–	–	–	–	×	–	–	–	–	–	–	–
X. elegans (Link) Th. Fr.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×	–
X. parietina (L.) Th. Fr.	–	×	×	–	–	–	–	–	–	–	×	×	×	×	–	–	–	×	–
X. polycarpa (Hoffm.) Rieber	–	–	–	–	–	×	–	–	–	–	×	–	–	–	–	–	–	–	–

(37) on *Lecanora chlarotera*
(38) on *Caloplaca aurantia*.

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