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LICHENICOLOUS FUNGI
FROM THE GRAND DUCHY OF LUXEMBOURG
AND SURROUNDING AREAS

by

Paul DIEDERICH

Summary
Six species of lichenicolous fungi are described as new: *Tremella lichenicola* (on *Mycoblastus sterilis*), *Muellerella trisepata* (on *Buellia griseovirens*), *Skyttea acrocordiae* (on *Acrocordia gemmata*), *Skyttea hawksworthii* (on cf. *Verrucaria* sp.), *Lichenostigma reichlingii* (on *Ramalina fraxinea*) and *Phoma lecanorina* (on *Lecanora expallens*). *Lichenostigma rugosa* has been found lichenized or not, depending on its position on its host. *Lichenostigma lichenicola* has been found for the first time elsewhere than in its type locality. Notes on 29 other species are given.

Résumé: Champignons lichénicoles du Grand-Duché de Luxembourg et des régions limitrophes.

A. INTRODUCTION

The lichenicolous fungi have hardly been studied by the Luxembourgeois botanists. *MARCHAND* (1826 and 1829), *KOLTZ* (1897) and *FELTGEN*

(1) Route de Luxembourg, 93, L-7373 Lorentzweiler, G. D. of Luxembourg.
(1899) have mentioned some 20 species, generally without any indications of localities. SÉRUSIAUX, LAMBINON & MALAISE (1983) have reported Karschia talcophila (ACH. ex Flotow) Koërber and Sphinctrina turbinata (Pers.) de Not. Most of these species are Ascomycetes. Marchand (1826 and 1829) is the only Luxembourgish author to mention lichenicolous Deuteromycetes (two species of Hyphomycetes).

In this paper, I refer to 37 lichenicolous fungi collected in the Grand Duchy of Luxembourg and in adjacent areas. The position of each locality in the I.F.F.B. (squares of 16 km²) and U.T.M. (squares of 25 km²) mapping systems is given. Unless otherwise stated, all collections are preserved in my personal herbarium.

B. BASIDIOMYCOTINA

Athelia arachnoidea (Berk.) Júlich


Eriksson & Ryvarden (1973) pointed out that the A. epiphylla complex (including A. alnicola, A. epiphylla s.s., A. salicum and other species) lacks good characteristics for splitting into several taxa. Moreover they were not sure if A. arachnoidea could be distinguished from A. epiphylla s.l.

Arvidsson (1976) showed that the taxonomy of the lichenicolous species in the sense of Júlich is unnatural. He proposed to call the algae- and lichen-parasites producing sclerotia A. arachnoidea, and to remove all the saprophytic forms (which never form sclerotia) in the A. epiphylla group.

In Luxembourg, A. arachnoidea is commonly observed growing over epiphytic algae and lichens which are rapidly killed by the parasite. I have found specimens with sclerotia, but never with fructifications.

Tremella lichenicola Diederich sp. nov. (fig. 1)

Basidiomata lichenicola, in thallis Mycoblasti sterilis crescentia, pulviniformia vel disciformia, atrobrunnea, tremelloidea, in sicco cornea et
atra, 0,2-0,8 mm diam.; superficies rugosa. Hyphae in gelatina molli immersae, irregulares, hyalinae vel pallide viridulae, sine fibulis. Conidia ellipsoidea ad ovoidea, 4-8 x 2-4 μm. Cellulae conidiogenae 7-12 x 4-5 μm. Basidia subglobosae, 16-20 x 10-15 μm, cum 1 longitudinali septo. Sterigmata ad 50(-70) μm longa, 2-3 μm lata. Basidiosporae subglobosae, guttulatae, 10-18 x 8-14 μm.


Basidiocarps parasybiotic on Mycoblastus sterilis, pulvinate or discoid, dark brown, gelatinous, drying horny and becoming black, 0.2-0.8 mm in diameter; surface rugose. Internal hyphae immersed in a soft jelly, irregular, hyaline or light greenish, without clamp connexions. Conidia ellipsoid to ovate, 4-8 x 2-4 μm. Conidiogenous cells 7-12 x
4.5 μm. Basidia subglobose, 16-20 x 10-15 μm, becoming 2-celled by a single longitudinal septum. Sterigmata up to 50(-70) μm long and 2-3 μm broad. Basidiospores subglobose, with oil drops, 10-18 x 8-14 μm.

*Tremella lichenicola* is easily separated from the other fungicolous species. *T. simplex* JACKS. & MARTIN, the only other *Tremella* species with 2-celled basidia and hyphae lacking clamp connexions, has smaller basidia (10-15 x 10-12.5 μm), spores (7.5-10 x 7.5-8.8 μm) and conidia (3.5-5.5 x 3-3.8 μm) and has amber-coloured basidiocarps. The diagnostic features for the distinction of *T. lichenicola* from related species (JÜLICH, 1984: 424-430; MARTIN, 1952: 70-78; TORKELSEN, 1968) are given in table 1.

This new species was mentioned for the first time by COPPINS & JAMES (1979: 161) (short description and illustration of basidia and conidia) from Northern Britain, Norway and Sweden; it has also been recorded from Belgium (SÉRUSIAUX & ROSE, 1984: 95) and Germany (WIRTH, 1981: 14), but was left unnamed by these authors. It is very frequent in the area of *Mycoblastus sterilis* and occurs exclusively on this lichen species.

Other collections:


<table>
<thead>
<tr>
<th></th>
<th><em>T. lichenicola</em></th>
<th><em>T. simplex</em></th>
<th><em>T. mycophaga</em></th>
<th><em>T. indecorata</em></th>
<th><em>T. versicolor</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Basidiocarp</td>
<td>dark brown to black 0.2-0.8 mm</td>
<td>amber-coloured 0.3-1.5 mm</td>
<td>amber-coloured 0.3-1.5 mm</td>
<td>hyaline to greyish-brown 2-3 mm or larger</td>
<td>orange to brown 2-3 mm</td>
</tr>
<tr>
<td>Host</td>
<td><em>Mycoblastus sterilis</em></td>
<td><em>Aleurodiscus amorphus</em></td>
<td><em>Aleurodiscus amorphus</em></td>
<td><em>Diatype bullata</em></td>
<td><em>Aleurodiscus lividocoeruleus Peniophora nuda</em></td>
</tr>
<tr>
<td>Clamp connexions</td>
<td>absent</td>
<td>absent</td>
<td>present</td>
<td>present</td>
<td>present</td>
</tr>
<tr>
<td>Conidia</td>
<td>4-8 × 2-4 μm</td>
<td>3.5-5.5 × 3-3.8 μm</td>
<td>4-7 × 2.5-4 μm</td>
<td>2.4-3.6 × 1.2-1.8 μm</td>
<td>2.5-7 × 2-5 μm</td>
</tr>
<tr>
<td>Basidia</td>
<td>2-celled</td>
<td>2-celled</td>
<td>2-4-celled</td>
<td>2-4-celled</td>
<td>2-4-celled</td>
</tr>
<tr>
<td></td>
<td>16-20 × 10-15 μm</td>
<td>10-15 × 10-12.5 μm</td>
<td>10-18 × 9-14 μm</td>
<td>10-20 × 8-18 μm</td>
<td>9-14.5 × 9-13 μm</td>
</tr>
<tr>
<td>Basidiospores</td>
<td>10-18 × 8-14 μm</td>
<td>7.5-10 × 7.5-8.8 μm</td>
<td>6-8 × 4-6 μm</td>
<td>9-15 × 8-12.5 μm</td>
<td>6 × 4 μm</td>
</tr>
</tbody>
</table>
C. ASCOMYCOTINA

**Abrothallus microspermus** Tul.


The anamorph *Vouauxiomyces truncatus* (B. de Lest.) Dyko & D. Hawksw. seems to be more frequent than the teleomorph.

**Abrothallus parmeliarum** (Sommerf.) Arnold


This fungus, frequent on the *Parmeliaceae*, has not yet been mentioned on *Parmelia acutabulum*. On this lichen it does not form galls, contrarily to what is observed on the other hosts. I did not find the anamorph *Vouauxiomyces santessonii* D. Hawksw. The species was already mentioned from the Grand Duchy of Luxembourg by Koltz (1897: 248) and Feltgen (1899: 381) (s. loc.), but no specimen has been found at LUX.

**Actinopeltis peltigericola** D. Hawksw.

This species, known from Cyprus, Great-Britain (Hawksworth, 1982: 375) and Sweden (Santesson, 1984: 3), only occurs on Peltigera div. sp.

*Arthonia epiphyscia* Nyl.

G. D. OF LUXEMBOURG (GUTLAND): W Bissen, L8.14/KA.8515, Pyrus, on *Phaeophyscia orbicularis* (NECKER) MOBERG, 1979, DIEDERICH 5357; s. loc. (probably Echternach region), on *Ph. orbicularis*, < 1900, REINHARDT (LUX).

Wide scattered, but rare, in Europe. Also known from South America and Africa.

*Clypecoccum hypocenomyceae* D. Hawksw.


This parasite of *Hypocenomyce scalaris* has only been known from Great-Britain, Denmark and Austria.

*Lichenostigma rugosa* Thor (fig. 2)

G. D. OF LUXEMBOURG (OESLING): NE Feulen, Wark valley, K8.44/KA. 8525, on a slate-rock, on *Diploschistes scruposus* (Schreber) Norm., 1984, DIEDERICH 5472.


This species recently described is a parasymbiont of several *Diploschistes* species. It is known from most continents and seems to be rather common.

Contrarily to what is indicated by Thor (1985), the fungus often grows, in my collection from Feulen (Diederich 5472), on the apothecia (thallus margin and disc) of *Diploschistes scruposus*. It is remarkable that many ascomata of *L. rugosa* localized on the disc of the host apothecia are lichenized and possess their own small greenish thallus of 150 to
FIG. 2. - Lichenostigma rugosa (Diederich 5472): A, thallus and apothecium of Diploschistes scruposus covered by the ascomata of L. rugosa, five ascomata on the disc and one on the thalline margin are lichenized (arrows); B, section through an ascoma; C, ascospores; D, section through an apothecium of D. scruposus covered by the ascomata of L. rugosa, the ascomata growing on the hymenium are lichenized.
250 μm in diameter. This phenomenon is rarely observed on the margin of the apothecia and never on the thallus itself. The algae of the *Lichenostigma* thallus are smaller (4-5 μm) than those of the *Diploschistes* thallus (8-11 μm).

*Lichenostigma rugosa* seems to be a fungus formerly lichenized which has lost its own algae through its lichenicolous way of life, but which still remains lichenized when growing on the apothecial disc of its host. It is thus lichenized with its own algal populations when its host algae are not available nearby.

**Merismatium lopadii** (Anzi) Zopf (fig. 3)


Perithecia dark brown to black, of 70 μm in diameter, partially or completely immersed in the host thallus. Wall consisting of isodiametric cells of (2.5-)5(-9) μm in diameter. Paraphyses absent. Asci about 10 in each perithecium. Ascospores pale brown, smooth-walled, muriform, with (1-)3-5(-7) transverse septa and 0-1 longitudinal septa, 8-24 × 4.4-8 μm.

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**Fig. 3.** — *Merismatium lopadii* (DIEDERICH 5854): A, ascospores observed in water; B, ascospores observed in KOH; C, surface view of perithecial wall.
Known from some old collections from Austria, Great-Britain and Finland (?), on *Lopadium pezizoideum* (ACH.) KOERBER, *Catapyrenium lachneum* (ACH.) R. SANT. and *Protoblastenia calva* (DICKSON) ZAHLBR. or *P. rupestris* (SCOP.) STEINER, and from one more recent collection from Czechoslovakia (VEZDA, 1970 : 222). *M. lopadii* seems to be a variable species that is frequent on a large number of lichen species, but it has rarely been collected because of its extremely small size.

*Microcalicium arenarium* (HAMPE ex MASSAL.) TIBELL


This parasite of *Psilolechia lucida* (ACH.) M. CHOISY is rather common in Luxembourg. It has already been mentioned by KOLTZ (1897 : 300) (s. loc.), but no specimen has been found at LUX.

*Muellerella lichenicola* (SOMMERF.) D. HAWKSW.


Widely distributed in Europe.

*Muellerella triseptata* DIEDERICH sp. nov. (fig. 4)

Pseudoperithecia lichenicola, in thallo *Buelliae griseovirens* crescentia, primo immersa, maturitate erumpentes, dispersa, subglobosa, attra, 75-125 μm diam., prope ostiolum cellulis nigro-brunneis, subglobosis, 4-6 μm diam. tecta. Paries brunneus, cellulis pseudoparenchymatis, subglobosis ad polyedricis, 4-6,5 μm diam. Paraphyses in pseudoperitheciis veteribus indistinctae. Periphyses 2-3 μm crassae. Ascii elongato-clavati, bitunicati, crassitunicati, multispori, in iodo non caeruleoscentes, 30-50 x 9-15 μm. Ascosporae fusiformes, (0-2-)3-septatae, pallide brunneae. 7-11(-13) x 2-3 μm.
Fig. 4. — *Muellerella triseptata* (LG, holotype): A, surface view of pseudoperithecium near the ostiole; B, hair; C, mature asci; D, young asci; E, ascospores.

Holotypus: Luxemburgum, Gutland, W Hunsdorf, L8.45/KA.9005, in thallo *Buellia griseovirens* (TURNER & BORRER ex SM.) ALMB., in cortice Fraxini, 26 X 1984, DIEDERICH 5878 (LG). A microscopical preparation (with one ascocarp) conserved in herb. DIEDERICH may be considered as an isotype.

Pseudoperithecia growing in the thallus of *Buellia griseovirens*, first immersed, superficial at maturity, scattered, subglobose, black, ostiolate, 75-125 μm in diameter, covered near the ostiole with brownish-black subglobose cells of 4-6 μm in diameter, perhaps covered with hairs (see below). Wall brown, with cells pseudoparenchymatous, subglobose to polyhedral, 4-6.5 μm in diameter. Paraphyses becoming gelatinized and indistinct in mature ascocarps. Periphryses developed in the upper part of
the ascocarps, 2-3 μm thick. Ascii elongate-clavate, bitunicate, thick-walled, multi-sporated, not reacting with iodine, 30-50 × 9-15 μm. Ascosporophores irregularly arranged in the ascii, fusiform, (0-2-)3-septate, pale brown, 7-11(-13) × 2-3 μm.

*Muellerella trisepata* is distinguished from most *Muellerella* species by its 3-septate spores. The only species with 3-septate spores previously known is *M. vesicularia* (LINSAY) D. HAWSW., which differs in the much larger spores (12-15.5 × 5-7 μm).

The ascocarps of the new species are covered by brown septate hairs of about 50 μm of length. It is not clear to me if these hairs belong to the *Muellerella* ascocarps or to an hyphomycete growing on them. *M. trisepata* seems to be a parasymbiont rather than a parasite.

**Phaeospora parasitica** (LÖNNR.) ARNOLD


Perithecia black, of 90-175 μm in diameter, growing on the apothecia (especially on the margin, sometimes on the disc) or on the thallus of the host. Paraphyses absent. Ascii of about 50 × 8 μm, 8-spored, thin-walled. Spores brown, 3-septate, 12-16 × 5.5-6 μm.

Widely distributed in Europe and known as a parasite of many lichen species.

**Polycoccum peltigerae** (FUCKEL) VEZDA

GERMANY : S Manderscheid, */LA.5045, on Peltigera praetextata (FLOERKE ex SOMMERF.) ZOPF, 1984, DIEDERICH 5534, SÉRUSIAUX, ROSE & CRAM.

This species is known from Germany, France, Switzerland and Great-Britain.

**Skyttea acrocordiae** DIEDERICH sp. nov. (fig. 5)

Apothecia lichenicola, in thallo *Acrocordiae gemmatae* crescentia, primo immersa, erumpentes et clausa, deinde lati poro aperientia, urceolata, brunneo-rubra, 50-200(-300) μm diam. Excipulum flavo-brunneo-lum, pseudoparenchymaticum, cellulus 5-11 × 3,5-5,5 μm, pilis hyalinis 25-50 × 2,4-5,5 μm. Hymenium incoloratum vel luteolum, 40-60 μm.
Fig. 5. — Skytnea acrocardia (IMI, holotype): A, young apothecium; B, old apothecium; C, section through an apothecium; D, excipular hairs; E, paraphysis; F, asci; G, ascospores.
Paraphyses filiformes, simplices, septatae, 1,5-2,4 μm latae. Ascii crassitun- 
icati, apice crassati ubi semi-maturi, 8-spori, in iodo non caerulescentes, 
22-45 × 4-8 μm. Ascosporea hyalinae, ovoideae, 2-guttulatae, haud 
septatae, 5,5-7,5 × 2,4-3,2 μm.

Holotypus: Belgica, prov. Luxemburgum, distr. lorr., M7.14/FR. 
8500, in thallo Acrocrordiae gemmatae (Ach.) Massal., in cortice Quercus 
et Aceris, 19 VI 1984, Diederich 5566, Sérusiaux & Rose (IMI 

Exsiccatum: France (Orne), s. loc., on Acrocrordia gemmata (sub 
Verrucaria gemmata), s.d., Olivier, Lich. exsicc. 245 (LUX, not seen in 
LG).

Apothecia first immersed in the thallus of Acrocrordia gemmata, later 
superficial, brownish red, initially closed, then opening by a pore; disc 
finally expanded, 50-200(-300) μm in diameter, with hyaline hairs easily 
visible by a dissecting microscope (× 40), 25-50 × 2.4-5.5 μm. Exciple 
yellowish brown, pseudoparenchymatous, with cells 5-11 × 3.5-5.5 μm. 
Hymenium hyaline or light yellowish, 40-60 μm. Paraphyses filiform, not 
ramified, septate, 1.5-2.4 μm thick. Ascii with thickened walls, apex often 
thickened at semi-maturity, 8-spored, not reacting with iodine, 22-45 × 
4-8 μm. Ascospores hyaline, ovoid, generally containing 2 oil drops, 
non-septate, 5.5-7.5 × 2.4-3.2 μm.

Skyttea acrocrordiae is characterized by the brownish red apothecia 
(the other described species have dark or black apothecia), the yellowish 
brown exciple, the hyaline hymenium and the ovoid spores generally 
containing 2 drops.

The species seems to be confined to Acrocrordia gemmata. No other 
lichenicolous fungus has yet been described from this host. It has been 
collected in a Lobaria community with Lobaria pulmonaria (L.) Hoffm., 
L. scrobiculata (Scop.) DC., Peltigera collina (Ach.) Schrader, P. 
horizontalis (Huds.) Baumg., Parmeliella triphysilla (Ach.) Müller 
Arg., Leptogium lichenoides (L.) Zahlbr., Cetraria olivetorum (Nyl.) 
Culb. & Culb., Normandina pulchella (Borrer) Nyl. and several other 
interesting crustose species (Sérusiaux, Diederich & Rose, 1985).

Skyttea hawksworthii Diederich sp. nov. (fig. 6)

Apothecia lichenicola, immersa, interdum maturitate erumpentes, 
primo clausa, deinde poro aperientia, urceolata, atra, 75-175 μm diam. 
Excipulum viride, pseudoparenchymaticum, cellulis 5-8 μm diam. Pili 
hyalini, apice refracti, 30-60(-80) × 1,8-3,5 μm. Paraphyses filiformes,
Fig. 6. — *Styctea hawksworthii* (IMI, holotype) : A, section through an apothecium; B, excipular hairs; C, paraphysis; D, asci; E, ascospores.
simplices, septatae, 1,4-1,8 μm latae. Ascii crassitunicati, 8-spori, in iodo non caeruleoscentes, 18-25 × 4-5,5 μm. Ascosporeae hyalinae, anguste ellipsoidae vel fusiformes, 1-septatae, 6-8(-10) × 2-2,5 μm.


Apothecia black, immersed in the host thallus, sometimes erumpent at maturity, first closed, then opening by a pore, 75-175 μm in diameter; hairs visible with a dissecting microscope (× 40). Excipulum composed of greenish pseudoparenchymatous cells, irregular in shape and mainly 5-8 μm in diameter. Hairs hyaline, smooth, simple, non-septate, the apex thickened internally and so refractive, the thickened area up to 10 μm long, 30-60(-80) × 1.8-3.5 μm. Paraphyses filiform, simple, septate, 1.4-1.8 μm thick. Ascii elongate-clavate, thick-walled, 8-spored, not reacting with iodine, 18-25 × 4-5.5 μm. Ascospores hyaline, narrowly ellipsoid to fusiform, 1-septate, 6-8(-10) × 2-2.5 μm.

Skyttea hawksworthii is the first known Skyttea species having septate spores and long hairs (over 30 μm) on the excipulum. By its greenish excipulum the new species looks similar to S. spinosa D. HAWKSW. & COPPINS and S. viridis D. HAWKSW. & COPPINS (HAWKSWORTH, 1982: 392-396), but differs in the length of hairs and in the shape, size and septation of spores. The fungus grows on a greenish lichen crust belonging perhaps to Verrucaria.

Skyttea hawksworthii is named in honour of Professor D. HAWKSWORTH in recognition of his contributions to the knowledge of lichenicolous fungi and as an expression of thanks to his helpfulness in realizing the present paper.

Skyttea nitschkei (KOERBER) SHERW., D. HAWKSW. & COPPINS


This species has been known from the British Isles, Denmark, France, Germany and South America. It grows exclusively on Thelotrema lepadinum (ACH.) ACH.
Sphaerulina chlorococca (Leighton) R. Sant.

Belgium (Distr. Lorr.): Etalle, M7.14/FR.8500, Populus, 1984, Diederich 5563.

This fungus which generally grows on Normandina pulchella has been found independently of this species and lichenized. Its thallus is formed by small greenish yellow granules, but is more or less continuous around the perithecia. The spores are 3-7-septate sometimes with some longitudinal septa.

Sphinctrina leucopoda NyL.

G. D. of Luxembourg (Oesling): NE Feulen, Wark valley, K8.44/KA. 8525, on a slate-rock, on Diploschistes scrophus, 1984, Diederich 5845.

This lichenicolous fungus generally occurs on Pertusaria div. sp. Zedda (1963: 157), however, collected it on Diploschistes scrophus (in Czechoslovakia). It has been mentioned from Assenoids (Belgium) by Sérusiaux, Lambinon & Malaise (1983: 7).

Stigmidium schaereri (Massal.) Trevisan

G. D. of Luxembourg (Gutland): Blaschette, Béddelboesch, L8.46/KA. 9505, on a dead tree, on Lecanora gr. carpinea (L.) Vainio (apothecia), 1984, Diederich 5466.

One perithecium has been found in the same locality on the thallus of Lecidella elaeochroma (Ach.) M. Choisy. The species is very frequent in Europe on a large number of different hosts.

D. Hypomycetes

Bispora christiansenii D. Hawksw.

G. D. of Luxembourg (Oesling): Beiler, Biedem, J8.15/KA.9060, on a wooden post, in the apothecia of an undetermined lichen, 1983, Diederich 3922 & Reichling; SW Asselborn, J8.32/Gr.1050, on Micarea leprosula (Th. Fr.) Copps & A. Fletcher (apothecia), 1980, Diederich 6794.

BELGIUM (DISTR. ARD.): Buret, J8.31/GR.3510, on rocks, on Lecanora soralifera (SUZÁ) RÁSÁNEN, 1980, DIEDERICH 3971.

This species seems to be widely distributed in Europe and is known from the following countries: Great-Britain, Denmark, Finland, Germany and Italy. I recently collected it also in Spain (Oviedo, 1985, DIEDERICH 6249).

**Hobsonia christiansenii** **BRADY** (ined.)


This species has pinkish sporodochia resembling those of Illosporium sp. and hyaline helicoid conidia. It has already been mentioned by HAWKSWORTH (1979: 232) from Canada and Italy.

**Monodictys lepraria** **(BERK.) M. B. ELLIS**


Formerly known from the British Isles and from Canada.

**Sclerococcum sphaerale** **(ACH.) FR.**

G. D. OF LUXEMBOURG (GUTLAND): Berdorf, Binzeltschloeff, L9.11/LA. 0520, on a sandstone rock, on Pertusaria corallina (L.) ARNOLD, 1984, DIEDERICH 5745 & SÉRUSIAUX; Beaufort, near the castle, K8.58/LA.0020, on a sandstone rock, on P. corallina, 1984, DIEDERICH 5698b.

A common European species growing on Pertusaria sp.

**Taeniolella delicata** **M. S. CHRIST. & D. HAWKSW.**


First record of this species on Diploschistes scruposus (thallus).
Taeniolella phaeophysciae D. Hawksw.

G. D. OF LUXEMBOURG (GUTLAND) : SW Mersch, Bolaker, L8.34/KA.8510, Malus, on Phaeophyscia orbicularis, 1979, Diederich 1650, 1840 ; NE Bissen, L8.14/KA. 8520, Fraxinus, on Ph. orbicularis, 1979, Diederich 2049 ; Hobscheid, L8.41/GR.1005, Tilia, on Ph. orbicularis, 1979, Diederich 6381.

Formerly known from Great-Britain, Ireland (Hawksworth, 1979 : 257) and Belgium (Serusiaux, Lambinon & Malaise, 1983 : 8), most probably common. I recently collected it in France (dep. Hautes-Pyrénées, Pyrénées-Atlantiques and Moselle).

Taeniolella punctata M. S. Christ. & D. Hawksw.


G. D. OF LUXEMBOURG (GUTLAND) : W Larchette, Manzebaach, L8.27/KA. 9515, Fagus, on Graphis scripta, 1984, Diederich 5697 ; Berdorf, Binzeltschloeff, L9.11/LA.0520, Acer, on Thelotrema lepadinum, 1981; Diederich 3870 ; ibid., 1984, Diederich 5739 & Serusiaux ; Blaschette, Böddelboesch, L8.46/KA.9505, Carpinus, on Graphis scripta, 1983, Diederich 3630, 3945.

BELGIUM (DISTR. LORR.) : Virton, Croix-Rouge, M7.13/FQ.8095, on Graphis scripta, 1979, Sérusiaux 2066 (LG).

GERMANY : S Manderscheid, */LA.5045, Carpinus, on Graphis scripta, 1984, Diederich 5524, Sérusiaux, Rose & Cram.

This species has only been known from Denmark (type-locality and several others, e.g. Zealand, Vemmetofte, in Vezda, Lichenes Selecti Exsiccati nr 1925, LG). It seems to be widely distributed in Europe.

E. COELOMYCETES

Cornutispora lichenicola D. Hawksw. & B. Sutton

BELGIUM (DISTR. LORR.) : Etalle, M7.14/FR.8500, Quercus, on Parmelia caperata, 1984, Diederich 5549.

This species known from Great-Britain, Austria, Switzerland and Italy has not yet been mentioned on Parmelia caperata. I collected it also in Spain (Oviedo, 1985, Diederich 6232).
Lichenocolium erodens M. S. Christ. & D. Hawksw.


One of the most common lichenicolous Coelomycetes.

Lichenocolium lecanorae (Jaap) D. Hawksw.


First record of this species on Parmeliopsis aleurites (Ach.) Nyl.

Lichenocolium lichenicola (P. Karsten) Petrak & H. Sydow


Pycnidia black, 100-125 μm in diameter, on the apothecia (disc and thallus margin) and the thallus of the host. Conidia brown, verruculose, globose or ellipsoid, often with a truncated base, 4.8-6.8 × 3.2-4.2 μm. Conidiogenous cells hyaline, 7.2-10 × 2.8-3.2 μm.
This species has only been known from the type locality in Finland [on Physcia aipolia (EHRH. ex HUMB.) FÜRNOHR].

_Lichenoconium pyxidatae_ (Oudem.) Petrak & H. Sydow


A common European fungus, growing on several Cladonia and Cladina species.

_Lichenoconium reichlingii_ Diederich sp. nov. (fig. 7)

Pycnidia lichenicola, in thallo Ramalinae fraxineae crescentia, dispersa vel laxe aggregata, immersa sed ad apices erumpentes, subglobo, nigra, 60-100 μm diam., poro irregulari dehiscentia. Parietes plerumque 6-10 μm crassi, 2-3(-4) stratis cellularum pseudoparenchymaticum constat, cellulis polyedricis vel rotundatis, plerumque 5-7(-10) × 2,5-5 μm, exterioribus atrobrunneis et crassiparietalibus. Cellulae conidiogenae phialidicae vel anellidicae, subcylindricae vel ampulliformes, hyalinae, (5.5-)7-10 × 2.8-4 μm. Conidia ellipsoidea vel claviformia, basi distincte attenuata et truncata, brunnea, haud distincte guttulata, verruculosa, (6-)8-11 × (3-)5-7.2 μm.


Pycnidia scattered to loosely aggregated, immersed in the host thallus but becoming erumpent at the apices, subglobose, black, 60-100 μm in diameter, opening by an irregular pore. Pycnidial wall mainly 6-10 μm thick, composed of 2-3(-4) layers of pseudoparenchymatous cells; cells polyhedral to rounded, mainly 5-7(-10) × 2.5-5 μm, the outer dark brown and thick-walled, the inner pale brown to hyaline and thinner-walled. Mycelium ramifying through the lichen thallus; hyphae brown, septate, 2.4-5 μm thick, with 0.6-1 μm thick walls. Conidiogenous cells lining the internal wall of the pycnidial cavity, phialidic or annellide-like with 1 annellation, subcylindrical to ampulliform, hyaline, (5.5-)7-10 × 2.8-4 μm. Conidia ellipsoid or clavate, distinctly tapered and truncated at the base, brown, not distinctly guttulate; walls verruculose by light microscopy, (6-)8-11 × (3-)5-7.2 μm.
Fig. 7. — *Lichenocumium reichlingii* (LG, holotype): A, section through the pycnial wall with conidiogenous cells and young conidia; B, conidia.

*Lichenocumium reichlingii* is easily separated from the other *Lichenoconium* species by the size of the conidia. On the infected thallus of *Ramalina fraxinea* there first appears a black spot formed by the mycelium of the parasite. This spot becomes larger, while its center turns pale. Finally we have a white spot with a black margin containing one or several pycnidia.
The new species is named in honour of Professor L. Reichling (Luxembourg) in recognition of his important contribution to the study of the flora of the G. D. of Luxembourg.

Other specimen examined:


**Lichenocodium usneae** (Anzi) D. Hawksw.


Widely distributed in Europe and North America and growing on many lichen species.

**Lichenodipls lecanorae** (Vouaux) Dyko & D. Hawksw.


Widely distributed in Europe.

**Phoma lecanorina** Diederich sp. nov. (fig. 8)

Pycnidia lichenicolae, in thallo *Lecanora expallentis* crescentia, dispersa vel laxe aggregata, immersa sed erumpentes, subglobosa, atro-viridia, 15-60 μm diam. Parietes 3-5 μm crassi, 1-2 stratis cellularum constati, cellulis pseudoparenchymatis, subglobosis ad polyedricis, pleurumque 3,5-5 × 1,6-4 μm. Cellulae conidiogenae enteroblasticae, acrogenae, breve ampullaceae vel obpyriformes, phialidicae, non prolificantes, hyalinae, 4-5 × 3-4 μm. Conidia anguste ellipsoidea vel subbacillaria, hyalina, simplicia, laeavia, 3,2-5 × 1,2-1,6 μm.


Pycnidia immersed in the host thallus, partially erumpent at maturity, scattered to loosely aggregated, subglobose, dark green, 15-60 μm in diameter, ostiolate. Pycnidal wall 3-5 μm thick, composed of 1-2 layers of cells; cells pseudoparenchymatous, subglobose to polyhedral, sub-
hyaline, dark green in the upper part of the pycnidium, mainly 3.5-5 × 1.6-4 μm. Mycelium subhyaline, dark greenish, with hyphae 1 μm thick. Conidiogenous cells arising from the inner wall of the pycnidium, lining the pycnidal cavity, short ampulliform to obpyriform, hyaline, smooth-walled, phialidic, not proliferating, 4-5 × 3-4 μm. Conidia abundant, narrowly ellipsoid to almost bacilliform, rounded at the apices, hyaline, simple, guttulate, smooth-walled, 3.2-5 × 1.2-1.6 μm.

**Fig. 8.** — *Phoma lecanorina* (LG, holotype): A, section through a pycnidium; B, surface view of pycnidium; C, mycelium attacking the algae of the host lichen; D, conidiogenous cells; E, conidia.
Phoma lecanorina is closely related to Ph. dubia (LINDSAY) SACC. & A. TROTTER which has the pycnidial wall thickened (to 8 μm) near the ostiole and golden-brown cells with thicker walls. It is easily separated from the other lichenicolous Phoma species by the size and shape of the conidia.

Phoma lecanorina is a pathogenic fungus growing on Lecanora expallens. The infected area of the lichen thallus turns bluish by the mycelium of the parasite and is rapidly killed.

Vouauxiella lichenicola (LINDSAY) PETRAK & H. SYDOW


This parasite of Lecanora sp. is widespread in Europe and also occurs in North America and North Africa.

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