

LEJEUNIA

REVUE DE BOTANIQUE

Nouvelle série N° 162

Décembre 1999

NEW OR INTERESTING LICHENS AND LICHENICOLOUS FUNGI FROM BELGIUM AND LUXEMBOURG. VIII

by

E. SÉRUSIAUX⁽¹⁾, P. DIEDERICH⁽²⁾, A. M. BRAND⁽³⁾
& P. VAN DEN BOOM⁽⁴⁾

Abstract

Five species of lichens or lichenicolous fungi are described as new : *Agonimia globulifera* Brand & Diederich sp. nov., *Endococcus protoblasteniae* Diederich sp. nov., *Milospium deslooveri* Diederich & Sérusiaux sp. nov., *Nectriopsis micareae* Diederich, van den Boom & Ernst sp. nov. and *Rhizocarpon trapeliicola* Brand sp. nov. The following new combinations are proposed : *Agonimia gelatinosa* (Ach.) Brand & Diederich comb. nov., *Agonimia vouauxii* (B. de Lesd.) Brand & Diederich comb. nov., *Endococcus brachysporus* (Zopf) Brand & Diederich comb. nov., *Epi-bryon parvipunctum* (Stein) Diederich comb. nov., *Lecania globulosa* (Flörke) van den Boom & Sérusiaux comb. nov., *Nectriopsis indigena* (Arnold) Diederich & Schroers comb. nov., *Nectriopsis lecanodes* (Ces.) Diederich & Schroers comb. nov., *Neocoleo-rea inundata* (Vain.) Diederich comb. nov., and *Trichonectria rubefaciens* (Ellis & Everh.) Diederich & Schroers comb. nov. Lectotypes are chosen for *Mycobilimbia hypnorum* (Lib.) Kalb & Hafellner, *Opegrapha culmigena* Lib. and *Verrucaria gelatinosa* Ach. *Caloplaca phlogina* is shown to be distinct from *C. citrina* and *C. flavo-citrina*. 111 species are new for Belgium, Luxembourg and northern France, and taxonomical or ecogeographical notes are given for rare or interesting species. The most interesting reports are those of *Lecidea cyrtidia* Tuck., which is mentioned correctly for the first time in Europe, and *Mycoporellum sacromontanum* (Strasser) Re-

(1) Chercheur Qualifié F. N. R. S., Département de Botanique, Sart Tilman, B-4000 Liège, Belgium; E.Serusiaux@ulg.ac.be.

(2) Musée national d'histoire naturelle, 25 rue Munster, L-2160 Luxembourg, Luxembourg; paul.diederich@ci.educ.lu.

(3) Klipperwerf 5, NL-2317 DX Leiden, Netherlands.

(4) Arafura 16, NL-5691 Son, Netherlands; pvdboom@zonnet.nl.

dingering, collected for the first time since its description. The Belgian and Luxembourg material of *Endococcus*, *Leptogium*, *Porpidia* and *Usnea* is revised. Nine species previously recorded from Belgium and Luxembourg, viz. *Acrocordia macrospora*, *Anema nummularium*, *Arthonia epiphyscia*, *Bryoria capillaris*, *Buellia leptocline*, *Eopyrenula leucoplaca*, *Phaeospora parasitica*, *Sphaerellothecium araneosum*, *Stigmidium peltideae* and *Usnea subcornuta*, do not occur in that area.

Résumé : Lichens et champignons lichénicoles nouveaux ou intéressants pour la flore de la Belgique et du G.-D. de Luxembourg. VIII.

Cinq espèces nouvelles de lichens ou de champignons lichénicoles sont décrites : *Agonimia globulifera* Brand & Diederich sp. nov., *Endococcus protoblasteniae* Diederich sp. nov., *Milospium deslooveri* Diederich & Sérus. sp. nov., *Nectriopsis micareae* Diederich, van den Boom & Ernst sp. nov. et *Rhizocarpon trapelicola* Brand sp. nov. Les combinaisons nouvelles suivantes sont proposées : *Agonimia gelatinosa* (Ach.) Brand & Diederich comb. nov., *Agonimia vouauxii* (B. de Lesd.) Brand & Diederich comb. nov., *Endococcus brachysporus* (Zopf) Brand & Diederich comb. nov., *Epibryon parvipunctum* (Stein) Diederich comb. nov., *Lecania globulosa* (Flörke) van den Boom & Sérus. comb. nov., *Nectriopsis indigenus* (Arnold) Diederich & Schroers comb. nov., *Nectriopsis lecanodes* (Ces.) Diederich & Schroers comb. nov., *Neocoleroa inundata* (Vain.) Diederich comb. nov. et *Trichonectria rubefaciens* (Ellis & Everh.) Diederich & Schroers comb. nov. Un lectotype est choisi pour *Mycobolimbium hypnorum* (Lib.) Kalb & Hafellner, *Opegrapha culmigena* Lib. et *Verrucaria gelatinosa* Ach. *Caloplaca phlogina* est considéré comme étant distinct de *C. citrina* et de *C. flavocitrina*. 111 espèces sont nouvelles pour la Belgique, le Luxembourg et le nord de la France, et des commentaires taxonomiques ou chorologiques sur les espèces rares ou intéressantes sont présentés. Les mentions les plus intéressantes sont celles de *Lecidea cyrtidia* Tuck., signalé pour la première fois correctement en Europe, et *Mycoporellum sacromontanum* (Strasser) Redinger, récolté pour la première fois depuis sa description. Le matériel belge et luxembourgeois de *Endococcus*, *Leptogium*, *Porpidia* et *Usnea* a été revu. Neuf espèces, qui avaient été signalées de Belgique et du Luxembourg, doivent être rayées de cette flore : *Acrocordia macrospora*, *Anema nummularium*, *Arthonia epiphyscia*, *Bryoria capillaris*, *Buellia leptocline*, *Eopyrenula leucoplaca*, *Phaeospora parasitica*, *Sphaerellothecium araneosum*, *Stigmidium peltideae* et *Usnea subcornuta*.

INTRODUCTION

This paper is the last contribution to the preparation of the Checklist of the lichens and lichenicolous fungi from Belgium, Luxembourg and surroundings areas before the publication of the Checklist itself. Indeed we now have gathered enough data to produce a fairly complete list of the taxa present in the study area, together with detailed information on their nomenclature, local ecology and distribution, as well as their current conservation status. The lichen and lichenicolous flora of Belgium, Luxembourg and surrounding areas is surprisingly rich, with more than 1100 species and includes rare and vulnerable species that deserve special efforts for their conservation.

We are convinced that the publication of the Checklist will encourage further work on those fascinating organisms and provide scientific grounds for the protection of the sites and habitats that shelter the most interesting species.

As for all other papers included in this series, this one includes the description of several species new for science, new combinations that proved to be necessary, relevant taxonomic information on several poorly understood species, ecological and chorological information on species or infraspecific taxa that are new or rare for the study area, and corrections of previously published data that proved to be wrong. All localities are followed by their coordinates in the IFBL cartographic system (square of 16 km²). 'Luxembourg' always means the Grand-Duchy of Luxembourg, and not the Belgian Province of Luxembourg. The phytogeographical districts are abbreviated as in LAMBINON et al. (1993). In the enumeration of specimens, 'h' means the private herbarium of the collector. Species names preceded by * are lichenicolous fungi, by + non-lichenized fungi and by (+) doubtfully lichenized fungi.

RECENT LITERATURE PERTINENT TO THE STUDY AREA

Since the previous paper published in this series (VAN DEN BOOM et al 1996), the following contributions to the lichen and lichenicolous flora of the study area have been published :

- BREUSS (1999) describes a new species of corticolous *Verrucaria* from Luxembourg and Mallorca (Spain), *Verrucaria sorbinea* Breuss.
- GIRALT et al. (1997) revise the genus *Rinodina* for the Benelux countries, while GIRALT & VAN DEN BOOM (1996) describe the new *Rinodina brandii* Giralt & van den Boom from three localities in southern Belgium.
- HAWKSWORTH (1994) reports the lichenicolous ascomycete *Polycoccum kernerii* Steiner from France, dept. Ardennes, very close to the Belgian border.
- MOLITOR & DIEDERICH (1997) present a study of the aquatic pyrenolichens of Luxembourg together with their lichenicolous fungi. One new species of lichenicolous ascomycetes, *Lichenopeltella thelidii* Diederich, has been collected twice on *Thelidium minutulum*.
- ROUX et al. (1997) describe the new lichenicolous hyphomycete *Refractohilum pluriseptatum* Etayo & Cl. Roux, known from several Belgian localities on *Pachyphiale carneola*.

• SCHLECHTER (1994) presents a detailed distribution atlas of the macrolichens of the Eifel (Germany). The author includes many Belgian or Luxembourg literature records without checking any relevant material. A fairly large number of doubtful or even erroneous data concerning our study area have thus been published. Indeed, the maps of *Cladonia bellidiflora*, *C. botrytes*, *C. carneola*, *C. turgida*, *Degelia plumbea*, *Evernia divaricata*, *Heterodermia speciosa*, *Nephroma laevigatum*, *Pannaria conoplea*, *P. rubiginosa*, *Parmotrema arnoldii*, *Pseudophebe pubescens*, *Ramalina capitata*, *Sphaerophorus fragilis*, *Stereocaulon paschale*, *Sticta limbata* and *Umbilicaria vellea* are partly or completely based on doubtful literature records. *Sphaerophorus globosus* is mentioned from Echternach, but this results from a confusion with *Bunodophoron melanocarpum* (several specimens in the herbarium of P. Diederich). *Xanthoparmelia protomatrae* is erroneously mentioned from Luxembourg (Ard. distr., Hoscheid, Molberlay, K8.24), as the corresponding specimen (P. Diederich 9804, B. Mies & E. Schlechter, hb. Diederich, examined by TLC !) belongs to *X. somloënsis* (Gyeln.) Hale var. *somloënsis*. *Collema fasciculare*, *C. nigrescens*, *Flavopunctelia flaventior* and *Usnea articulata* are reported from several localities in the Moselle valley very close to the Luxembourg border, but none of these records seems to be sustained by any herbarium specimen. *Usnea* cf. *plicata* (det. Clerc 1991) is mentioned from several German localities, including two very close to the Belgian or Luxembourg borders, but this taxon is not accepted in any of the recent European floras or checklists, and the identity of the corresponding material is thus not clear.

• SÉRUSIAUX (1998) describes the new foliicolous *Byssoloma diderichii* Sérus., collected on leaves of *Buxus* in France (dept. Moselle), at a few kilometers only from the Luxembourg border.

• In a revision of the species of *Scutula* growing over *Peltigera*, TRIEBEL et al. (1997 : 327) show that the Belgian specimen published as *S. heerii* by DIEDERICH et al. (1991 : 41) belongs to the new species *S. dedicata* Triebel, Wedin & Rambold.

• VAN DEN BOOM & SÉRUSIAUX (1996) publish detailed ecological information on the foliicolous species found on *Buxus* leaves and twigs in a single site in southern Belgium.

• VAN DEN BOOM et al. (1998) publish a detailed report of the taxa found during the 'Koninklijke Nederlandse Natuurhistorische Vereniging' field meeting in May 1997 near Han-sur-Lesse and St-Hubert. One new species of lichenicolous coelomycete has been collected, *Pseudorohillarda peltigerae* Diederich, together with no less than 33 species new for Belgium and Luxembourg.

RESULTS

Acarospora nitrophila H. Magn.

France, Ard. : Dept. Ardennes, Bois de Fumay (entre Fumay et Revin) (K5.23), rochers cambriens éclairés au bord de la route, 4.1968, *J. Lambinon* 68/210 (LG).

The genus *Acarospora* is very much undercollected and poorly known in the study area. There is no doubt that several species occur beside the well-known and easily identified species like *A. fuscata* (Nyl.) Arnold, *A. macrospora* (Hepp) Bagl., *A. sinopica* (Wahlenb.) Körb. and *A. smaragdula* (Wahlenb.) A. Massal. We here report on two species which were previously reported near Malmédy (Belgium, Ard.; see MÜLLER 1958 : 150) but never confirmed by re-examination of the relevant collections.

Acarospora nitrophila has been reported by MÜLLER under *A. praeruptorum* H. Magn. [= *A. nitrophila* var. *praeruptorum* (H. Magn.) Clauzade & Cl. Roux], which we consider as a synonym of *A. nitrophila* following PURVIS et al. (1992 : 61). It is most probably widespread in the study area.

Acarospora veronensis A. Massal.

Belgium, Ard. : 5 km W of Houffalize, near Pont de Rensiwez (J7.26), W exposed schistose rocks, 4.1985, *A.M. Brand* 14346 (h); Nadrin, Rocher du Hérou (J7.14), on schistose rocks at top of narrow ridge, 4. 1985, *A. M. Brand* 14346 (h).

This species is quite close to *A. complanata* H. Magn.; both collections mentioned here match quite well the description of CLAUZADE et al. (1981 : 87-89) and are thus assigned to *A. veronensis*. Formerly reported from Malmédy by MÜLLER (1958 : 150) and here confirmed from two other localities.

Acrocordia salweyi (Nyl.) A. L. Sm.

Belgium, Fl. : Brugge, Groot Seminarie (C2.31), on a brick wall, 2.1996, *L. Durwael* 485 (?GENT [not seen], hb. Aptroot).

Luxembourg, Lorr. : W of Larochette, vallon du Manzebaach (L8.26), on sandstone rock in forest, 5.1983, *P. Diederich* 5815 (h).

For a long time we refrained from publishing this species, as the only specimen available (*P. Diederich* 5815) is quite small (c. 8 perithecia). There is, however, no doubt about our identification, as the ascospores measure 19-29 x 9.5-12 µm, the perithecia 0.5-0.6 mm, and the involucrellum is not spreading, but incurred under the exciple.

Dr André Aptroot kindly informed us about a specimen of *Acrocordia macrospora* A. Massal. collected by L. Durwael in Brugge and mentioned in

her thesis (DURWAEL 1996). An examination of a small duplicate of this collection in hb. Aptroot revealed that the involucrellum is incurved and continuous under the exciple, and not spreading, and that the ascospores are $24\text{--}29 \times 9.5\text{--}11.5 \mu\text{m}$. We conclude that this specimen also belongs to *A. salweyi*, and that *A. macrospora* does not occur in Belgium.

New for the study area.

****Adelococcus alpestris* (Zopf) Theissen & Sydow**

Belgium, Mosan : Anseremme (H5.47), rochers, sur *Acarospora fuscata*, 6.1889, G. Lochenies s. n. (LUX).

Lichenicolous ascomycete new for the study area.

***Agonimia gelatinosa* (Ach.) Brand & Diederich comb. nov. (Figs 1, 4E)**

Basionym : *Verrucaria gelatinosa* Ach., Lichenogr. Univ. : 283 (1810); *Polyblastia gelatinosa* (Ach.) Th. Fr., Nova Acta R. Soc. Scient. Upsal., ser. 3, 3 : 362 (1862). - Type : Switzerland, over mosses, *Schleicher* (UPS-Ach - lectotype!, selected here). [Santesson's annotation says that the isotype in H is in a very bad condition (missing) and that in BM is sterile].

Syn. : *Verrucaria nigrata* Nyl., Act. Soc. Linn. Bordeaux 21 : 430 (1857); *Polyblastia nigrata* (Nyl.) Lönnr., Flora 41 : 631 (1858). - Type : France, Hautes-Pyrénées, Barèges, on "*Weissia crispulum*" in subalpine zone, W. Nylander (H-Nyl 3622 - holotype!).

Prothallus conspicuous, formed of dark brown hyphae, which give the substratum a blackish colour. Thallus dark brown and composed of goniocysts (c. $18\text{--}35 \mu\text{m}$ in diam., when simple, or $70\text{--}120 \mu\text{m}$ when lobate), including one to many algal cells, surrounded by a single row of polygonous cells, which are c. $5\text{--}9 \mu\text{m}$ large and $2\text{--}5 \mu\text{m}$ thick in section; the cell wall is more or less thickened ($0.5\text{--}1.5 \mu\text{m}$) and dark brown at the surface of the goniocysts; papillae absent. Photobiont green, cells roundish or elongate, $7\text{--}11 \mu\text{m}$. Sterile globules absent. Perithecia developing on the substratum between goniocysts, subspherical to ovoid, $0.3\text{--}0.5 \text{mm}$ in diam., surface black and mat. Exciple $40\text{--}70 \mu\text{m}$, of three layers : outer layer parenchymatic, dark brown, $20\text{--}33 \mu\text{m}$; middle layer parenchymatic, hyaline, $0\text{--}25 \mu\text{m}$; inner layer prosenchymatic, hyaline, $20\text{--}25 \mu\text{m}$; sometimes an additional parenchymatic hyaline layer passing into periphyses; the outer layer is sometimes discontinuous below at the point of attachment of the perithecium.Periphyses present, well-developed; paraphyses absent. Asci c. $160 \times 42 \mu\text{m}$, 8-spored, apically slightly thickened, I+ orange; subhymenium I+ blue. Ascospores hyaline, ellipsoid, muriform, $31\text{--}41 \times 15\text{--}20 \mu\text{m}$, with 16-30 cells visible in optical section. Pycnidia rare, small, ovoid ($40 \times 70 \mu\text{m}$), black, between goniocysts; conidia hyaline, bacilliform, $2.3\text{--}3 \times 0.7\text{--}0.8 \mu\text{m}$.

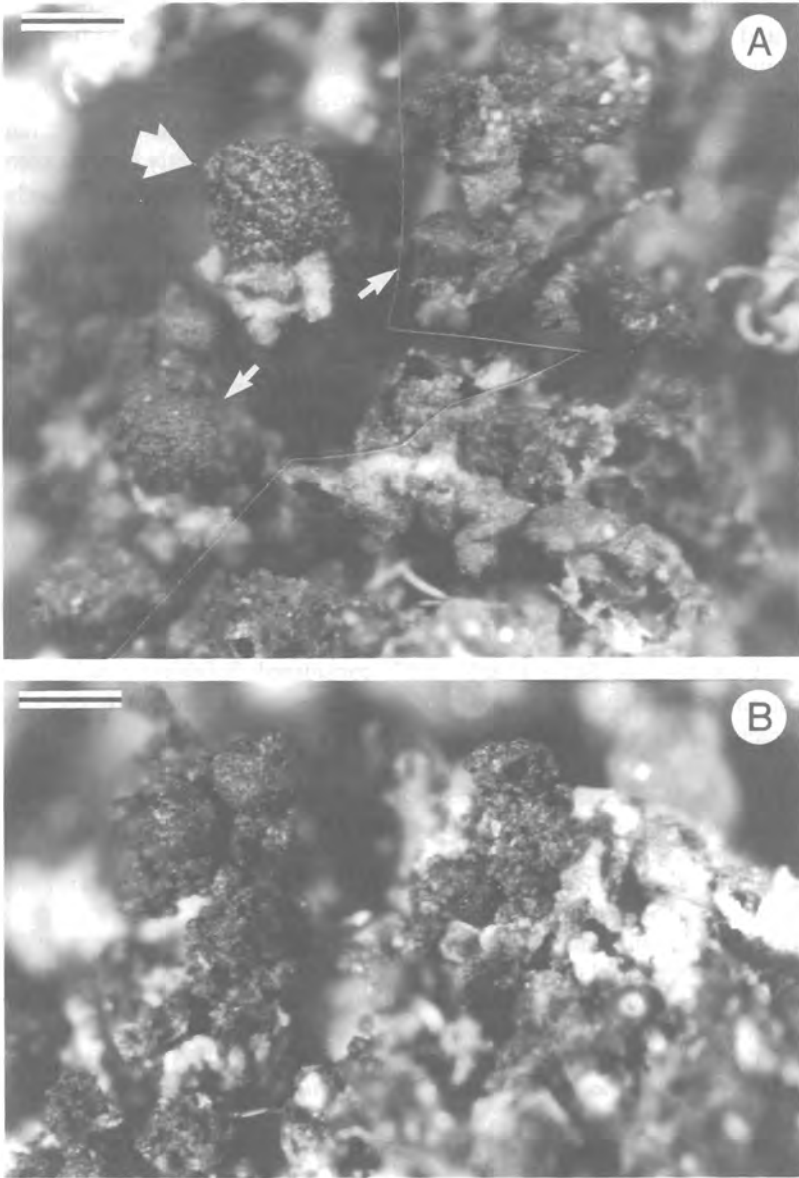


FIG. 1. — *Agonimia gelatinosa*. Dark brown, granulose thallus, intermixed with larger and paler squamules of *A. tristicula* (A, bottom centre and right; B, right). Ascomata of *A. gelatinosa* (A, two small arrows; B, top left) and one ascoma of *A. tristicula* (A, large arrow) (*A. M. Brand* 18369). Scale bars = 250 μ m.

Agonimia gelatinosa is very similar to *A. globulifera*, described below, and has surely been confused occasionally with that species in the past. Although the species is not known from the study area, we nevertheless treat it here, as we have to compare the new species *A. globulifera* with it.

A. gelatinosa is distinguished from *A. globulifera* by the very different blackish thallus, the absence of sterile globules, and the slightly smaller ascospores with fewer cells. It seems to be more frequent in the Alps and in arctic regions, whilst *A. globulifera* prefers the lowland. It grows on the ground, mostly over mosses (*Distichum capillaceum*, *Scorpidium scorpidioides*, *Tortella flavovirens*, *Tortula ruralis*), or on plant debris.

Like *Agonimia globulifera*, *A. gelatinosa* is best included in the genus *Agonimia* (for a characterization of the genus, see below under *A. globulifera*), although thalline papillae have not been observed. This might be explained by the particularly reduced thallus in *A. gelatinosa*.

Polyblastia nigrata (Nyl.) Lönnr. was treated by SWINSCOW (1971 : 103) as a synonym of *A. gelatinosa*, although the ascospores studied and illustrated by SWINSCOW are slightly larger and much stronger muriform (c. 50 cells visible in optical section). We re-examined the type specimen. As the thin and blackish thallus covering bryophytes strongly resembles that of *A. gelatinosa*, and as sterile globules are absent, we accept SWINSCOW's synonymy.

CLAUZADE & ROUX (1985 : 617) considered *Polyblastia caliginosa* Norm. to be an additional synonym of *P. gelatinosa*. Unfortunately the type specimen could not be located by us (H-, M-, TROM-).

Additional specimens examined : France : Dept. Morbihan, 1.7 km S of Etel, calcareous dune sand in flat dunes, on *Tortella flavovirens*, 7.1988, *A. M. Brand* 18369 (h, with *A. globulifera*).

Great Britain : Scotland, Ben Lawers, Jones (H-Nyl. 2509, 3623, sub *V. nigrata*).

Svalbard : *A. M. Brand* 8936 (h).

Sweden : Oeland, on *Tortula ruralis*, *A. M. Brand* 21280, 21329 (h).

Switzerland : Valais, Val d'Hérens, W of Lac de Dix, 0.4 km W of la Barna, steep N-slope over calcareous schist, on *Distichum capillaceum*, alt. 2550 m, 7.1990, *A. M. Brand* 24399 (h); Valais, Cool Torrent, on plant debris, *A. M. Brand* 24746 (h).

The Netherlands : Utrecht, Huizen, Tafelbergheide (UTM; 31UFT515944), on disturbed soil in *Calluna* heathland, 1.1999, *L. B. Sparrius* 1769 (h).

Agonimia globulifera Brand & Diederich sp. nov. (Figs 2, 3, 4D)

Agonimia insignis thallo minusculo, viridulo, lobis irregularibus et digitatis, 20-50 μm latis, globulis atris sterilibus 70-200 μm diam., peritheciis atris subglobosis ad pyriformibus, 0.25-0.6 mm diam., ascis 100-135 \times 30-37 μm , 8-sporibus, et ascosporibus hyalinis, muriformibus, 37-50 \times 16-26 μm .

Type : The Netherlands, Noordwijk, Luchterduin, bij Langevelderslag, steile N-helling van duin, 3.1992, *A. M. Brand* 27016 (LG - holotype; hb. Brand - isotype).

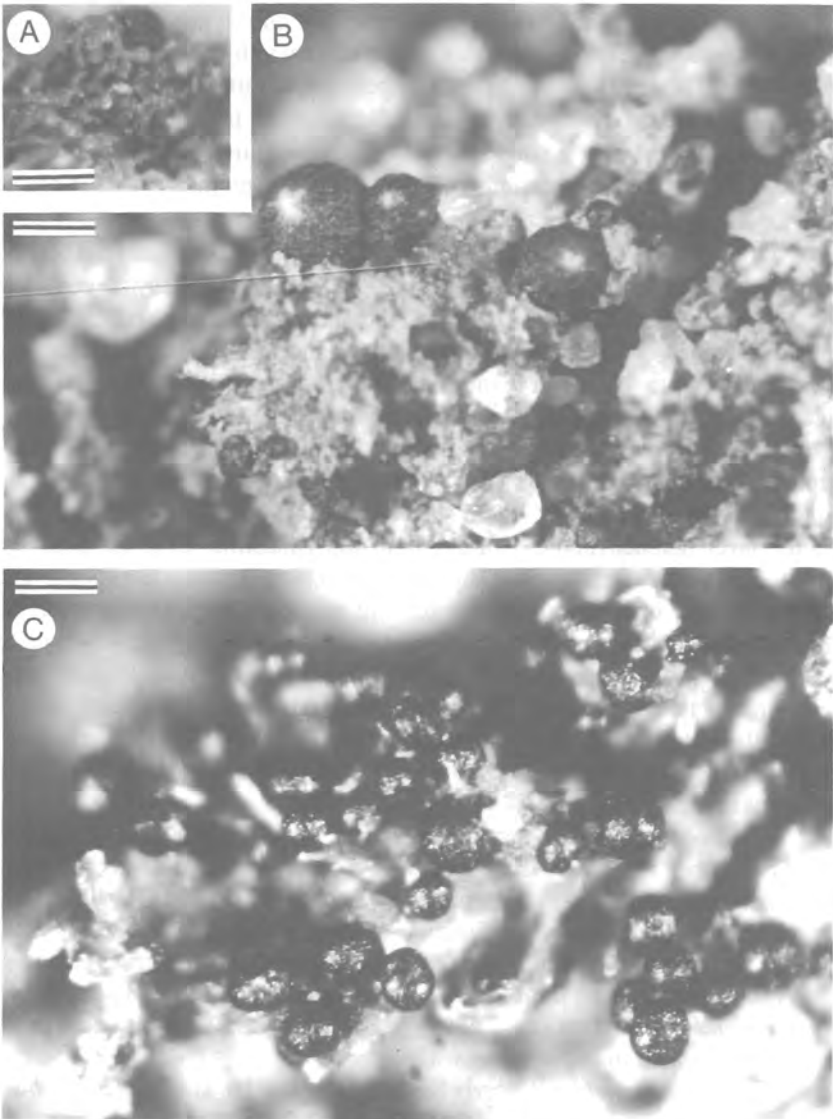


FIG. 2. — *Agonimia globulifera*. A, sterile globule, surrounded by a well-developed thallus of finger-like lobes. B, thallus with three perithecia and a few sterile globules. C, thallus with sterile globules (A, *A. M. Brand* 11234b; B, *A. M. Brand* 27016; C, *A. M. Brand* 18508). Scale bars : A, C = 125 μ m, B = 250 μ m.

Prothallus indistinct. Thallus up to several cm in diam., but usually smaller, medium to dark greenish. Lobes irregular and finger-like, 20-50 μm wide, distance between lobes similar to the lobes width, often aggregated to form larger, flattened squamules with finger-like marginal lobes. Photobiont cells subspherical to ovoid, c. 6-10 μm in diam., green, irregularly distributed in the thallus. Cortex of a single row of cells, which are 5-8(-10) μm broad and 2-4(-6) μm thick in section; cell wall thin, not pigmented; cells often with small papillae, mainly near the lobes apex, 1-2.5 μm tall and 1-1.5 μm wide, either narrowly cylindrical (c. 2 x 1 μm) or broad conical (c. 1 x 1.5 μm). Sterile globules always frequent, subspherical, black, shiny, superficial to 1/3 immersed, 70-200 μm in diam., composed of parenchymatic cells; cells thin-walled, with a large oil-drop, in the centre of the globules generally dark brown, up to 11 μm in diam., near the border c. 5 μm , brown or hyaline. Perithecia rare, superficial or partly immersed, subspherical to pyriform, 0.25-0.6 mm in diam., ostiole whitish or pale brown, in a minuscule apical depression of the perithecium; surface black, mat. Involucrellum absent. Exciple thick, of three layers: outer layer parenchymatic, black, 25-30 μm ; middle layer parenchymatic, hyaline, 0-40 μm (indistinct in small perithecia); inner layer prosenchymatic, hyaline, 16-40 μm ; in young perithecia, an additional layer of thin-walled cells passing into periphyses. Subhymenium parenchymatic, of thin-walled cells, 5-8(-11) μm .Periphyses well-developed, c. 35 x 3 μm , septate; paraphyses absent. Asci c. 100-135 x 30-37 μm , apically slightly thicker, without any special apical structure, (4-)8-spored. Ascospores ellipsoid, hyaline, strongly muriform, (32-)37-50 x (15-)16-26 μm (ratio length/width 1.7-2.8), with (22-)35-60 cells visible in optical section. Pycnidia unknown.

This new species is characterized by a diminutive thallus, which is lobed or digitate when well-developed, overgrowing mosses, lichens, sand or rarely calcareous rocks, on which minuscule sterile, black, shiny globules are abundant. We do not know the function of these globules, but it seems that they do not represent young, developing perithecia. Such sterile globules have been mentioned in the literature from *Agonimia gelatinosa* and *Polyblastia wheldonii* (PURVIS et al. 1992), but some of the relevant specimens are likely to belong to our new species.

Polyblastia wheldonii Travis has a thallus similar to that of *A. globulifera*. It is distinguished by the absence of sterile globules (at least in the specimen examined by us; PURVIS et al. 1992: 486 mention the presence of sterile globules in this species), the absence of cortical papillae and the very large ascospores, 78-97 x 50-65 μm (PURVIS et al.: 80-125 x 40-60 μm), becoming brownish at maturity. *P. wheldonii* was known only from the British Isles, but here we report an additional specimen from the Spanish Pyrenees.

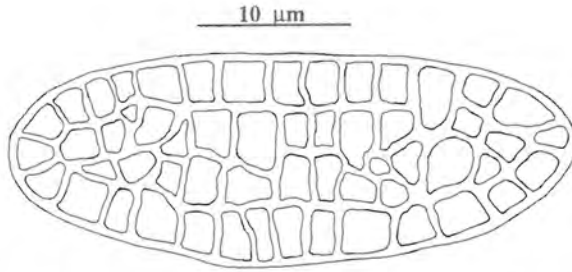


FIG. 3. — *Agonimia globulifera*. Ascospore (*P. Diederich* 13000).

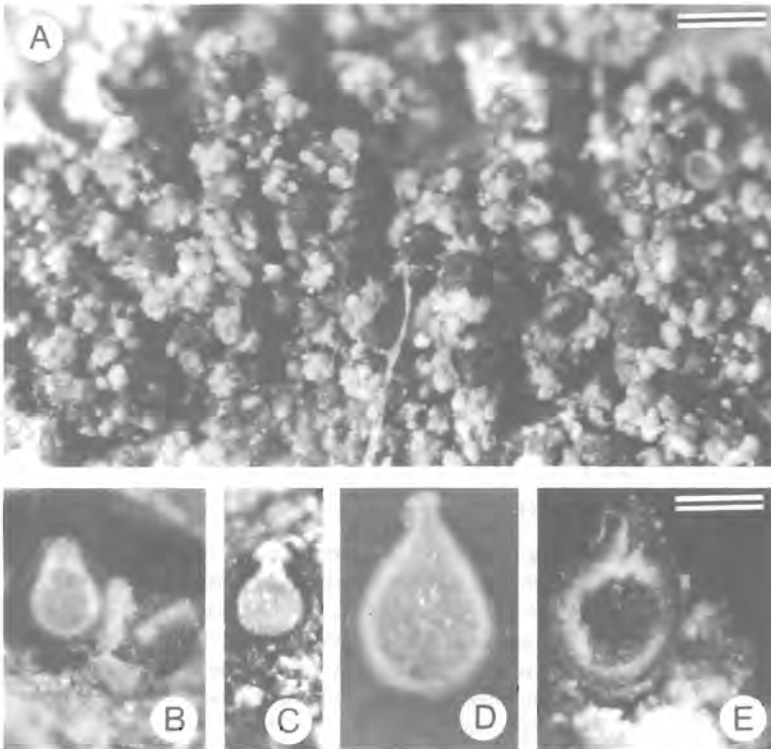


FIG. 4. — A, *Agonimia vouauxii*, thallus with numerous ascomata. B-E, section through ascomata of *Agonimia* species with a poorly developed, granulose or crustose thallus (all from dry herbarium material, photographed through a binocular microscope). B, *A. vouauxii*; C, *A. allobata*; D, *A. globulifera*; E, *A. gelatinosa* (A, *A. Aptroot* s. n. [9.1975]; B, *A. M. Brand* 21001; C, *E. Sérusiaux* s. n. [5.1997]; D, *P. Diederich* 13000; E, *A. M. Brand* 18369). Scale bars : A = 250 μm , B-E = 125 μm .

Specimen examined : Spain, Pyrenees, valle Otal, alt. 2300 m, soil on limestone, A. M. Brand 12993b (h).

Polyblastia philaea Zschacké is a terricolous species, with a thick, more or less continuous, pale thallus, and half or almost completely immersed, subspherical, apically flattened perithecia, which are mainly 0.35-0.6 mm in diam.

Specimens examined : Germany, Baden-Württemberg, Schwarzwald, Freiburg im Breisgau, on soil, *Thiry* (B [hb. H. Zschacké 3986] - isotype). - Belgium, Mosan : 1 km SE of Nismes, Fondry des Chiens (J5.41), 4.1991, *P. van den Boom* 11007 (h, hb. Brand). - Luxembourg, Lorr. : Imbringen, Kneppchen (L8.46), on soil in a *Mesobrometum* community, 4.1991, *P. Diederich* 9501, 9502 (h). - Portugal : Estremadura, S of Leira, Serra dos Candeeiros, SE of Porto de Mós, road to Grutas de Alvados (39°32.7' N, 8°45.4' W), on soil, 7.1995, *P. van den Boom* 17238 (h).

Polyblastia fugax Rehm, described from Germany (Franken) on sandstone, is distinguished from *A. globulifera* by smaller, immersed perithecia (up to 0.2 mm in diam.) and a dimidiate involucrellum (ZSCHACKE 1933 : 466-467). *P. bryophilopsis* Vain. has also more or less immersed perithecia and a whitish thallus (POELT 1969 : 535).

The generic assignment of this new species, either to *Agonimia* or to *Polyblastia*, is still a matter of debate. Despite its very small thallus, we believe that it fits the genus *Agonimia* quite well by the combination of the following characters : thallus not or exceptionally saxicolous, of small papillate lobes, perithecia more or less superficial, black, subspherical or slightly higher than wide, exciple of three layers (a dark outer, and hyaline middle and inner layers), and large, hyaline, muriform ascospores. We assume that several other terricolous or muscicolous species so far referred to *Polyblastia* are additional candidates for the genus *Agonimia*, but we prefer not to propose such combinations here.

Additional specimens of *A. globulifera* : Belgium, Mosan : Han-sur-Lesse, Les Gri-gnaux, W of the Ry d'Ave (J6.34), dry and SE-exposed limestone outcrop and *Xerobromion* communities, 5.1997, *P. Diederich* 12753 (h); Han-sur-Lesse, Belvédère (NE of the village) (J6.24), sur un rocher calcaire, 9.1997, *P. Diederich* 12986 (h); Wavreille, outcrop N of the road Bellevaux-Wavreille on the right side of the Lesse (J6.34), *Xerobromion* communities on steep S-exposed slope, 5.1997, *E. Sérusiaux* s. n. (LG); 2 km NE of Dinant, Fonds de Lefte (H5.38), dry calcareous rocks on S-slope, 7.1984, *A. M. Brand* 11234b (h); *ibid.*, *Xerobrometum* au lieu-dit Chéreau des Capucins, sur mousses dans les anfractuosités, 7.1982, *E. Sérusiaux* 2922b & *P. Malaise* (LG); Devant-Bouvignes (H5.37), *A. M. Brand* 19376 (h, sub *Protoblastenia testacea*), 19378 (h, sub *Placidium pilosellum*); Roches de Freyr (H5.57), *A. M. Brand* 11364 (h, sub *Bacidia bagliettoana*); Furfooz (H5.58), *A. M. Brand* 19320 (h, sub *Psora lurida*); Juzaine (G7.52), *A. M. Brand* 6797 (h, sub *Placolecis opaca*); Wellin (J6.43), *A. M. Brand* 11210 (h, sub *Placidium squamulosum*); Couvin (J4.48), *A. M. Brand* 15161 (h, sub *Mycobilimbia sabuletorum*). - Ard. : Remouchamps, Nin-

- glinspo (G7.36), *A. M. Brand* 16416 (h, sub *Mycobilimbia sabuletorum*). - Lorr. : Virton, SW of Lahage, Le Gros Cron (M7.12), calcareous outcrops, 4.1998, *P. van den Boom* 20130 (h); *ibid.*, *A. M. Brand* 22180 (h, sub *Fulgensia fulgens*).
- Luxembourg, Lorr. : W Ernster, Warschent (L8.57), dans une pelouse calcaire, 7.1986, *P. Diederich* 7156b (h); *ibid.*, 10.1997, *P. Diederich* 13000 (h); Lasauvage, rocher de tuf calcaire dans le village (M7.48), 9.1999, *P. Diederich* 13881 (h).
- France : Dept. Dordogne : Le Moustier, *A. M. Brand* 10814 (h, sub *Fulgensia* sp.). - Dept. Lot : Sauliac, *A. M. Brand* 18590 (h, sub *Placidium pilosellum*); Cahors, *A. M. Brand* 18686 (h, sub *Psora lurida*). - Dept. Meuse, Lorr. : 3 km W of Marville (N7.11), in a *Mesobrometum*, 9.1980, *P. Diederich* 2917 (h, sub *Leptogium schraderi*). - Dept. Morbihan : 1.7 km S of Etel, calcareous dune sand in flat dunes, 7.1988, *A. M. Brand* 18369 (h) (specimen with *Agonomia gelatinosa*); N of Quiberon, 2.5 km SW of Plouharnel, calcareous dunes, 7.1988, *A. M. Brand* 18508 (h). - Dept. Moselle, Lorr. : W of Metz, Mont Saint-Quentin, dans une pelouse xérophile, 8.1985, *P. Diederich* 6220c (h); à 600 m au NNW de Montenach, versant SE du Koppenachberg (N9.22), 6.1999, sur le sol, sur des mousses ou des débris végétaux dans une pelouse calcaire, *P. Diederich* 13770 (h).
- The Netherlands : Zandvoort, duinen bij pasl 63, c. 350 m van zee, 11.1989, *A. M. Brand* 21105 (h); Baarn, Groeneveld, 5.1977, *A. M. Brand* 6911b (h); Limburg, Bemelen, Bemelerberg, kalkgrasland met tufkrijtrotten, 5.1998, *P. Diederich* 13703 (h).
- Spain : Pyrenees, valle Otal, alt. 2300 m, *A. M. Brand* 12989 (h, sub *Catapyrenium cinereum*); *ibid.*, alt. 1780 m, *A. M. Brand* 12970 (h, sub *Collema auriforme*).
- Italy : Rome, S of Polo de Cavaliera, *A. M. Brand* 8341 (h, sub *Placidium pilosellum*).
- Sweden : Oeland, Moeckelmossen, *A. M. Brand* 21283 (h, sub *Psora decipiens*).

***Agonimia vouauxii* (B. de Lesd.) Brand & Diederich comb. nov. (Fig. 4A-B)**

Basionym : *Polyblastia vouauxii* B. de Lesd. [as 'vouauxi'], Recherches sur les lichens des environs de Dunkerque : 259 (1910). - Type : France, dept. Nord, 'St-Pol, dunes, sur un morceau de cuir', *M. B. de Lesdain* (type lost).

Syn. : *P. vouauxii* var. *charticola* B. de Lesd., Recherches sur les lichens des environs de Dunkerque : 259 (1910). - Type : France, dept. Nord, 'St-Pol, dunes, sur un morceau de papier', *M. B. de Lesdain* (type lost).

Belgium, Mar. : De Panne, Westhoek (D0.16), terricolous, in dunes, over detritus in a vegetation of mosses and lichens, 5.1999, *P. Diederich* 13747 (h). - Mosan : 4 km WSW of Han, Ave, cemetery (J6.33), open dry vegetation on lime rich schist soil, over *Peltigera rufescens*, 8.1995, *A. M. Brand* 33527b (h).

The Netherlands : Maasvlakte, Z van Hartelkanaal, c. 1 km W van Brielse Gatdam, kalkrijk zand, 9.1995, *A. M. Brand* 33566 (h); Maasvlakte, N van electriciteitscentrale, open zandgrond, 9.1995, *A. M. Brand* 33573, 33574 (h); Noordwijk, duin t. h. van paal 79, rand van schelpenpad, 6.1987, *A. M. Brand* 19801 (h); Wassenaar, omgeving Meijendel, terrestrisch in duin, 450-470 m van strand, 11.1979, *A. M. Brand* 23563 (h); *ibid.*, 5.1981, *A. M. Brand* 23587 (h); Wassenaar, Meyendel, N-berm van fietspad, 0.4 km NE van Pannenduin, betreden berm, 9.1995, *A. M. Brand* 33548 (h); Zeeuws Vlaanderen, 3.5 km W van Breskens, Nieuwe Sluis, duingrasland, 8.1991, *A.*

M. Brand (h); Noord Beveland, Wissekerke, binnendijks duinachtig grasland, baksteen op de grond, 8.1992, *A. M. Brand* 28872 (h); Ameland, De Hon, tussen baken en gaslocatie, lage jonge duintjes aan rand van kwelder, 10. 1989, *A. M. Brand* 21001 (h, hb. Diederich); Terschelling, Bosplaat, voet van stuifduin (zuidzijde) ter hoogte van paal 27, lage duintjes, 10.1990, *A. M. Brand* 23843 (h); Heemskerk, op baksteen, 9.1975, *A. Aptroot* s. n. (h, hb. Brand); Schiermonnikoog, crossing of Prins Bernhardweg and Cornelus Visserspad, dune area with open mossy places, terricolous, 9.1996, *P. van den Boom* 18163 (h).

For a long time, this lichen was known only from the area of Dunkerque (France, dept. Nord), where Bouly de Lesdain collected it several times on brick, bones, mosses, *Peltigera* and detritus (BOULY DE LESDAIN 1910a, 1914). Recently, WITTMANN & TÜRK (1989) reported the same species from Austria.

Agonimia vouauxii is characterized by a granulose to squamulose, greenish to brownish, papillate thallus, with squamules of 60-200 μm in diam., superficial, subspherical to slightly obpyriform, blackish perithecia, 125-230 μm in diam., 2-spored asci, and large, hyaline, muriform ascospores, (40-)60-72(-87) \times 15-24(-31) μm .

Polyblastia agraria Th. Fr., a similar species, which differs by a very thin, film-like thallus and ascospores becoming brownish when old (PURVIS et al. 1992 : 482), known from Great Britain and Sweden, has not been found in the study area.

Although the delimitation of the genera *Polyblastia* and *Agonimia* is not yet clear to us - there are too many poorly known or rarely collected muscicolous and terricolous species which we did not have the opportunity to study -, we are convinced that *A. vouauxii* is a typical member of the genus *Agonimia*. Like most other hitherto known species of that genus, *A. vouauxii* has a squamulose, papillate, non-saxicolous thallus, subspherical, more or less superficial, blackish perithecia, and a multi-layered perithecial wall.

Agonimia vouauxii was already known from the study area (type locality in N France !), and here we report it as new for Belgium.

Anema decipiens (A. Massal.) Forssell

Belgium, Mosan : 1.1 km E of Bomal, near Belvédère (G7.52), on S-facing limestone rock, 4.1985, *A. M. Brand* 14263 (h).

France, Mosan : Dept. Ardennes, Givet, slope at E-side of Fort de Charlemont (J5.25), on limestone outcrops, 9.1986, *A. M. Brand* 15210 p. p. (h, sub *A. tumidulum*).

New for the study area.

Anema tumidulum Henssen ined.

Syn. : *A. moedlingense* auct., non Zahlbr.; *A. nummularium* auct. p. p., non (Durieu & Mont.) Nyl.

Belgium, Mosan : 0.6 km N of Durbuy (H7.11), limestone rocks on steep S-slope, 3.1985, *A. M. Brand* 14140 (h, sub *Psorotichia schaeferi*); E of Dinant, Fonds de Leffe (H5.38), S facing slope of narrow valley, with shallow limestone outcrops and *Xerobrometum* vegetation, on limestone, 4.1984, *H. Sipman* 17376 (LG).

France, Mosan : Dept. Ardennes, Givet, slope at E-side of Fort de Charlemont (J5.25), on limestone outcrops, 9.1986, *A. M. Brand* 15210 p. p. (h, with *A. decipiens*).

Anema nummularium had twice been published from Belgium : BOULY DE LESDAIN (1910b, sub *Omphalaria nummularia*) mentions a specimen collected by Tonglet in Fonds de Leffe in 1906 (specimen not seen by us); VAN DEN BOOM (1996) mentions a recent specimen from the same locality (specimen *H. Sipman* 17376, cited above). HENSSEN & JØRGENSEN (1990 : 139) show that the true *A. nummularium* is a Mediterranean species which does not exist in Central Europe, and that the Central European material should be called *A. notarisii* (*A. Massal.*) Forss. (syn. *A. moedlingense*). However, MORENO & EGEA (1992 : 20-21) consider that *A. notarisii* and *A. moedlingense* represent two distinct taxa. WIRTH (1995 : 130) uses the unpublished name *A. tumidulum* for the species dealt with here, and we follow his opinion.

Anema tumidulum is new for the study area, whilst *A. nummularium* does not exist here.

Arthonia endlicheri (Garov.) Oxner

Belgium, Mosan : 1.7 km NNW of Villers-sur-Lesse (J6.13), soft schistose rock above shore of the river, half shaded by trees, 7.1995, *A. M. Brand* 33339 (h). - Ard. (selected specimens examined) : Ste-Cécile, rive gauche de la Semois, entre Relogne et les rochers face aux Rochers du Chat (L6.36), 7.1997, *E. Sérusiaux* s.n. (LG); ibid., rocher de Libaipire face au Tombeau du Chevalier (L6.35), crevasses de la base d'un tronc en bord de rivière, 7.1997, *E. Sérusiaux* s.n. (LG).

Luxembourg, Lorr. : SW Berdorf, Weerschrumtschloeff, flattened top of sandstone rocks (L9.11), 5.1992, *A. M. Brand* 27246 (h); SE Beaufort, Haupeschaach (K8.58), sur paroi verticale en grès, 5.1992, *A. Aptroot* 28810 (h), *P. van den Boom* 12350 (h) & *P. Diederich* 4795 (h); E Rollingen (Mersch), Drëiburen et Haenslach (L8.35), paroi ombragée de grès, 7.1983, 9.1986 et 3.1987, *P. Diederich* 5819, 7677, 7845 (h); W Larochette, vallon du Manzebaach (L8.26), 5.1983, *P. Diederich* 5805 (h).

Arthonia endlicheri can be quite common on shaded schistose rocks, mainly in underhangs in the Semois valley, and on sandstone outcrops in Luxembourg. It is sometimes a dominant species and can also colonize the base of trees in very sheltered conditions. The species is easily recognized by its thick, usually almost lobate, pale pinkish (when fresh) to whitish sterile

thallus with soredioid outgrowths or thick folds, and the production of lecanoric acid. The specimens from the Luxembourg sandstone rocks have been erroneously reported as *Dirina massiliensis* Durieu & Mont. f. *sorediata* (Müll. Arg.) Tehler by VAN DEN BOOM et al. (1994 : 153).

New for the study area.

****Arthonia molendoi* (Frauenf.) R. Sant.**

Luxembourg, Ard. : Esch-sur-Sûre, ruins of castle (K8.32), on schistose rocks and walls of ruin of castle, on *Caloplaca saxicola*, 9.1986, A. M. Brand 15470 (h). - Lorr. : Ahn, Palmberg (M9.12), on a calcareous rock, on *C. aurantia*, 11.1981, P. Diederich 12779 (h).

France, Lorr. : Dept. Moselle, Schengen, Stromberg, carrières (N9.11), on calcareous rock, on *Caloplaca* cf. *decipiens*, 11.1981, P. Diederich 12784 (h).

Lichenicolous ascomycete new for the study area.

****Arthonia phaeophysciae* Grube & Matzer**

Arthonia epiphyscia Nyl. has been published from several Luxembourg collections, always lichenicolous on *Phaeophyscia orbicularis* (DIEDERICH 1986b : 7, DIEDERICH 1989a : 38-39). GRUBE & MATZER (1997) recently showed that the specimens on *P. orbicularis* belong to a distinct species, which they described as *A. phaeophysciae*. The genuine *A. epiphyscia* is therefore absent from the study area, whilst *A. phaeophysciae* is new for it.

****Arthonia vagans* Almq. var. *lecanorina* Almq.**

Luxembourg, Lorr. : N Reckange (Mersch), Elenter Kapelle (L8.24), on a concrete post in a meadow, on *Lecanora albescens* and *L. dispersa*, 5.1998, P. Diederich 13630 (h).

Following GRUBE & MATZER (1997), the nomenclature of the *Arthonia* growing on the *Lecanora dispersa*-group is not yet settled, and *A. galactinaria* Leight. might prove to be an earlier name for the species mentioned here.

Lichenicolous ascomycete new for the study area.

***Arthopyrenia salicis* A. Massal.**

Luxembourg, Ard. : 3 km N of Bourscheid, W of Unterschlinder (K8.24), 275 m, on *Carpinus* along stream (E-side), 1988, P. van den Boom 17414 (hb. Brand).

This tiny lichenized species was formerly known from a single collection made last century in Belgium near Waulsort (DIEDERICH et al. 1991 : 13). It is probably overlooked in the study area.

****Arthrorhaphis olivaceae* R. Sant. & Tønsberg**

Belgium, Ard. : 13 km S of La Roche, 1.8 km N of Lavacherie, Rocher du Coucou (J7.42), schistose rock on W-slope, near top, on *Melanelia disjuncta*, 3.1988, A. M. Brand 17233b (h).

This is a rare fungus, which was known only from Sweden, where it is grown on *Melanelia olivacea* (SANTESSON & TØNSBERG 1994). Our specimen is reduced, with only a few ascomata developing in necrotic parts of the thallus, but is nevertheless very characteristic.

Lichenicolous ascomycete new for the study area.

***Bacidia rosella* (Pers.) De Not**

Belgium, Ard. : Bertogne/Engreux, rive droite de l'Ourthe Occidentale, un peu en amont du barrage au lieu-dit 'La Nasse' (J7.25), 320 m, érablière à *Tilia*, riche en *Festuca altissima*, sur un vieil *Acer platanoides*, 7.1999, E. Sérusiaux s.n. (LG).

This species was formerly known from a single recent collection from the 'Berdorf area' in Luxembourg (SÉRUSIAUX et al. 1985 : 26), where it was growing on an old *Quercus* in a well-preserved forest. It is thus interesting to report upon this second locality, made on an old *Acer platanoides* in a small patch of rather nice ravine-forest in a deep valley. The population is made of a few thalli only and restricted to a single tree. There is no doubt that it is an endangered species in the study area, as its pink and large apothecia with a thin whitish pruina are easily detected.

***Bacidia saxenii* Erichsen**

Belgium, Fl. : 2 km S of Brugge, 1 km N of Steenbrugge, churchyard of Brugge (C2.31), gravestone, over mosses, 4.1993, A. Aptroot 33471 (h) (det. B. J. Coppins).
Luxembourg, Ard. : 2.3 km NNE of Weiswampach, 0.8 km S of Beiler, S side of wood Empich (J8.15), schist quarry with *Sambucus*, horizontal surface of boulder, 6.1992, P. van den Boom 12599 (h, hb. Diederich). - Lorr. : Lorentzweiler, Roude Bam (L8.46), sur de la vieille peinture recouvrant un mur vertical, à 10-20 cm au-dessus du sol, 6.1997, P. Diederich 12813 (h).

New for the study area.

***Buellia leptoclina* (Flot.) Körb.**

SCHEIDEGGER (1993 : 352) recently reported *Buellia leptoclina* (Flot.) Körb. from Belgium. He (1997, pers. comm.) informed us that this information refers to the type specimen of *Lecidea leptoclina* Flot. f. *tongletii* Hue, located in PC, and collected near Dinant (Fonds de Leffe, Belgium, Mosan

distr.); however, a re-examination of the same specimen by Dr Scheidegger and a study by TLC showed that it contains gyrophoric and lecanoric acids, which is typical for *B. saxorum* A. Massal. As both *B. leptoclina* and *B. saxorum* are confined to siliceous rocks, and as there are only hard calcareous rocks in the type locality, the true identity of *B. leptoclina* f. *tongletii* necessitates the re-discovery of this taxon in the type locality and the collection of richer material.

Buellia leptoclina has thus to be deleted from the Belgian flora.

***Buellia ocellata* (Flot.) Körb.**

France, Mosan : Dept. Ardennes, 0.4 km E of Chooz (J5.35). schistose rock outcrops on steep W-slope. 9.1986, A. M. Brand 15240 (h).

New for the study area.

***Buellia violaceofusca* Thor & Muhr**

Belgium, Ard. : Bertogne/Engreux, rive droite de l'Ourthe Occidentale, un peu en aval du barrage au lieu-dit 'La Nasse' (J7 25), 320 m, sur un vieux *Quercus* dans une chênaie assez sèche sur pente, 7.1999, E. Sérusiaux s.n. (LG).

This species has been described recently (THOR & MUHR 1991) and, to our knowledge, has been reported only from Central Sweden, Estonia (THOR & NORDIN 1998 : 123) and Scotland (PURVIS et al. 1992 : 130). It is unknown at the fertile stage and is recognized by its dark brown soralia with a typical violet tinge developed on a whitish inconspicuous thallus. In Bertogne/Engreux, it was found in deep crevices of an old *Quercus* in a rather dry wood in a deep valley; it was growing together with abundant Caliciales like *Chaenotheca chrysocephala* and *C. stemonea*. It has been compared with a paratype (Sweden, Värmland, L.-E. Muhr 3708) preserved in LG, and matches it perfectly. The species does not produce any chemical compound.

New for the study area.

***Caloplaca cerina* (Hedw.) Th. Fr. var. *chloroleuca* (Sm.) Th. Fr.**

Syn. of *C. stillicidiorum* (Vahl) Lynge

Luxembourg, Lorr. : A l'est de Ernster, Warschent (L8.57), sur des débris végétaux, dans une pelouse calcaire, 10.1997, P. Diederich 12999 (h).

Germany, Rheinland-Pfalz : NW Daun, c. 1 km ENE of Baasem (G9.53), alt. 500 m, over mosses on calcareous rock, 10.1979, A. M. Brand 9293 (h).

This taxon has been mentioned once from Belgium by TONGLET (1898 : 24) who collected it on mosses near Moniat (distr. Mosan); although we did not see any corresponding specimen, this record is likely to be correct; the

author said that it differs from typical *C. cerina* by its greyish thallus. The recent Luxembourg collection is extremely reduced, with only two apothecia, but it shows that the species still exists in the study area. In Germany, we collected it close to the Belgian border, and MÜLLER (1965 : 58) reported it from the Lorr. district (Irrel, K9.53), close to the Luxembourg border.

Caloplaca phlogina (Ach.) Flagey

Syn. : *Caloplaca citrina* (Hoffm.) Th. Fr. f. *phlogina* (Ach.) D. Hawksw.

France, Lorr. : Dept. Meurthe-et-Moselle, au sud de Colmey, rive gauche de la Chiers (N7.13), sur du bois, 9.1980, P. Diederich 3867 (h).

Caloplaca citrina is considered to be heterogeneous by many authors, but no attempt of a modern treatment has ever been proposed. In a recent paper (VAN DEN BOOM et al. 1998 : 20), we showed that *C. flavocitrina* (Nyl.) H. Olivier is a distinct taxon, which even appears to be much more common than *C. citrina* s. str. Another distinct entity within the *C. citrina* group, for which the epithet *phlogina* is available, has often been said to differ from *C. citrina* by the corticolous habitat and smaller soredia (e. g. WADE 1965 : 8). Examination of a large number of mainly Dutch specimens proved that these corticolous specimens, with a more or less completely sorediose thallus are very distinct from *C. citrina* and *C. flavocitrina* by both macroscopical and microscopical characters. The main characters distinguishing these three species are summarized in Table 1.

C. phlogina is easily separated from *C. citrina* by its yellow apothecia with a non or poorly sorediate margin (the disc is orange, and the margin pale yellowish and strongly crenulate-sorediate in *C. citrina*), by the slightly shorter and distinctly narrower ascospores, by the smaller soredia, and by the predominately (exclusively ?) corticolous habitat (*C. citrina* is rarely corticolous).

C. phlogina is distinguished from *C. flavocitrina* by the absence or rarity of squamules, the paler soredia, the narrower ascospores, and the generally larger apothecia. Like *C. citrina*, *C. flavocitrina* is a mainly saxicolous species, whilst *C. phlogina* is only known from bark or lignum. Care should be taken, however, with sterile saxicolous thalli of *C. cf. flavocitrina* with a strongly sorediate thallus, as some of such collections might prove later to belong to *C. phlogina*.

New for the study area.

**Cercidospora xanthoriae* (Wedd.) R. Sant.

Syn. : *Cercidospora caudata* Kernst.

Luxembourg, Lorr. : Mamer, Tosseberg, près des thermes romains (M8 14), sur un mur, sur *Caloplaca crenulatella*, 11.1997, P. Diederich 13454 (h).

Lichenicolous ascomycete new for the study area.

TABLE 1. — Features distinguishing *Caloplaca citrina*, *C. phlogina* and *C. flavocitrina*.

	<i>C. citrina</i>	<i>C. phlogina</i>	<i>C. flavocitrina</i>
Thallus	pulverulent, squamules often indistinct or absent, thallus mostly composed of soredia. sometimes ± pruinose	squamules absent or sometimes present when young, thallus mainly composed of soredia	squamules distinct, becoming sorediate at the margin, soredia eventually invading the whole surface of the squamules
Colour of thallus	greenish to pale yellow	pale to greenish or distinctly yellow	squamules greenish to yellowish green, soredia bright yellow to pale orange
Diameter of soredia	40-90 µm	25-50 µm	25-50 µm
Apothecial diameter	0.5-1 mm	0.5-1.1 mm	0.25-0.8 mm
Colour of disc	orange	yellow	yellow to orange
Colour of margin	greenish yellow	yellow	yellow
Apothecial margin	crenulate-sorediate	esorediate (or indistinctly sorediate, mainly when young)	esorediate, smooth
Ascospores	11.5-13.5 x 6-7 µm	9-12.5 x 4.5-6 µm	9.5-12.5 x 5.5-7.5 µm
Ecology	saxicolous, rarely corticolous	corticolous or lignicolous	saxicolous, rarely corticolous

***Chaenothecopsis savonica* (Räsänen) Tibell**

The Netherlands. Camp. : Prov. Noord-Brabant, WSW of Heeze, fish-nursery, damp *Betula-Salix* wood amongst reed-land (grid-ref. 51-55-53), on wrotting stump of *Betula*, 2.1988, P. van den Boom 19848 (h) (det. L. Tibell).

Chaenothecopsis savonica is not known from the study area. It is mentioned here from a Dutch locality close to the Belgian border, and thus may exist in Belgium in similar habitats.

New for The Netherlands.

***Cladonia callosa* Harm.**

Syn. : *C. fragilissima* Østh. & P. James

France, Ard. Dept. Ardennes, Revin (K5.34), on shale debris by road, 9.1983, A. Aptroot 12253 (h, LG).

The collection matches the description and chemistry (grayanic acid) perfectly (DESCHÂTRES & BOISSIÈRE 1994). *C. callosa* is most probably overlooked in the study area because of confusion with related species like *C. ramulosa* (With.) J. R. Laundon. It is reported from Germany (Eifel) by APTROOT & LUMBSCH (1985).

New for the study area.

***Cladonia curiosa* (Ach.) Spreng**

Belgium, Brab. : 'Yzerberg, prope Lovanium' (L5.13), 1863, E. Coemans, in Coemans *Cladoniae Belgicae Exsiccatae*, centuria prima, n° 21, Gent, 1863 (LG, sub *C. curiosa*). - Fl., Brab. & Mosan : 'Gandae et Lovanii, legit Coemans, circa Rochefort, Crèpin et Coemans, 1862', in Coemans *Cladoniae Belgicae Exsiccatae*, centuria prima, n° 20, Gent, 1863 (LG, sub *C. curiosa*). - Mosan : Géronsart (most probably near Jambes, at G5.36), 5.1891, in hb. Bellynck (NAM); Seilles, Sclaigneaux (G6.21), terrains vagues dominant les usines Dumont, 8.1970, F. Siebertz (LG); Monteuville (H6.38), pelouse sur schistes, 7.1968, P. Auquier (LG).
Luxembourg, Lorr. : S. loc., <1850, F.-A. Tinant 773, 922 (LUX); 'Ad rupes circa Befort en M. Duc. Luxemburg, 1826' (K8.58), R. Courtois 1689 (LG); W Steinfort, carrières (L8.51), sur sable, 4.1980, V. John 1872 (hb. Diederich); ibid., 7.1980 & 3.1984, P. Diederich 2306 & 5187 (h).

LAMBINON (1969 : 142) states that the distribution of this species is poorly known in the study area. We have thus examined all relevant collections available and found the above mentioned specimens. The material found in the Coemans' Exsiccatae of Belgian *Cladonia*, as well as that of the Bellynck herbarium, is very well-developed and perfectly matches the description of that species. Unfortunately the n° 20 does not make the difference between the material collected in Gent (distr. Fl.), Leuven (distr. Brab.) and Rochefort (distr. Mosan).

Four collections have been examined by TLC : F. Siebertz produces atranorin and norstictic acid, and P. Auquier and F.-A. Tinant 773, 922 produce atranorin only.

The ecology of *Cladonia curiosa* in the study area can thus be described as follows : on sandy or calcareous soil, probably always in rather open vegetation, and on disturbed soil of old, industrial wasteland. Obviously it is a rare species that should be looked for in suitable habitats. It was formerly mentioned from the study area by DE WILDEMAN (1898 : 521) and

SANDSTEDE (1906 : 433-434), but, except for the Coemans' Exsiccatae mentioned above, none of these collections have been checked.

Cladonia cenotea (Ach.) Schaer.

Belgium, Ard. : 10 km SE of La Roche, rock near Ourthe Occidentale. 0.4 km N of Le Chéslin (J7.35), on mosses and plant debris over schistose rocks on W-slope in *Quercus* wood, 4.1985, A. M. Brand 14398 (h).

The above collection is so far the only one found in the study area for this species, but we expect that further research in the field will yield other localities. It can indeed be confused with the common and widespread *C. chlorophaea* (Sommerf.) Spreng., *C. fimbriata* (L.) Fr. and *C. grayi* Sandst., from which it can be distinguished by its perforated cups and the production of squamatic acid (checked by TLC in the above mentioned collection). The species has previously been reported from the study area by DE WILDEMAN (1898 : 521-522) and AIGRET (1901 : 138), but none of these collections have been checked.

Cladonia peziziformis (With.) J. R. Laundon

Syn. : *C. capitata* (Michx.) Sprengel; *C. leptophylla* (Ach.) Flörke

Belgium, Mosan : 'Rochefort, ad terram argillosam' (J6.15), 1862, Crépin, in Coemans *Cladoniae Belgicae Exsiccatae*, centuria prima, n° 22, Gent, 1863 (LG, sub *C. cariosa* var. *leptophylla*).

The Netherlands, Brab. : Bemelen, Bemelerberg (km blok 62-21-23), kalkgrasland met tufkrijtrotzen, 5.1998, P. Diederich 13704 (h, LG).

This very typical species has been detected in the Belgian material of *Cladonia cariosa* distributed in the Coemans' Exsiccatae. The material is not plentiful but there is no doubt about its identification (detailed description available in PURVIS et al. 1992 : 202). The species has also been recently collected in The Netherlands, prov. Zuid-Limburg, very close to the Belgian border, during the 1998 field trip of the 'Bryologische Lichenologische Werkgroep' of the 'Koninklijke Nederlandse Natuurhistorische Vereniging' (KNNV), in a nature reserve where it was abundant on earth in a chalk-grassland. The species could thus occur in similar habitats in Belgium and Luxembourg.

Cladonia peziziformis seems to be very rare throughout Europe : see TØNSBERG & ØVSTEDAL (1995) for a survey. It has been reported from Belgium by DE WILDEMAN (1898 : 527), but the corresponding material has not been seen, and by AIGRET (1901 : 143), who correctly reports upon the Coemans' Exsiccatae n° 22.

***Collema limosum* (Ach.) Ach.**

Belgium, Mar. : Prov. West Vlaanderen, 2 km NNW of Nieuwpoort, Ijzermunding C1.41, hoge zandige kwelder, 5.1988, *A. M. Brand* 17943 (h). - Mosan : Chemin de Tilff à Colonster (F7.53), sur la terre calcaire, 8.1895, leg. ? (LG [in hb. J. Goffart]); Spy (G5.23), sur la terre en bord de rivière, 12.1968, *Italy* s. n. (LG).

This very typical species of *Collema* grows on soil by rivers, small ponds or humid tracks : as all those habitats are seldom explored by lichenologists, it can be expected to be rather widespread. It was formerly mentioned by BOULY DE LESDAIN (1910 : 263) near Dunkerque (France, Mar.) and by DEGELIUS (1954 : 206) near Kanne (Belgium, Brab. : E7.35).

****Cyphelium sessile* (Pers.) Trevis.**

France, Lorr. : Dept. Meurthe-et-Moselle, 1 km N of Charency-Vezin, military graveyard with very old *Tilia* trees (M7.52), on *Tilia*, on *Pertusaria coccodes*, 4.1998, *P. van den Boom* 20034 (h, hb. Diederich).

This species was previously known from one single locality in the study area (Luxembourg, Ard. district.), where it grows on *P. coccodes* on a roadside *Fraxinus* (DIEDERICH et al. 1988 : 23).

+*Cyrtidula hippocastani* (DC.) R. C. Harris

Syn. : *Mycoporum hippocastani* (DC.) Coppins

Belgium, Ard. : 2 km S of Trois-Ponts, St-Jacques (G7.58), on twigs of *Sorbus* at edge of *Picea* wood, 4.1987, *A. M. Brand* 16341 (h).

This is a non-lichenized species, looking very much like a genuine lichen and therefore included in our studies. This species, as well as *C. quercus* (Massal.) Minks have usually been included in *Mycoporum* Nyl., but HARRIS (1995 : 64-65) showed that they belong to the completely different genus *Cyrtidula*.

Non-lichenized fungus new for the study area

***Diploschistes euganeus* (A. Massal.) J. Steiner**

France, Mosan : Dept. Ardennes, Rancennes, Rochers d'Aviette (J5.35), sur schistes couviniens, 7.1978, *J. Lambinon* 78/612 (LG).

New for the study area.

Diploschistes gypsaceus (Ach.) Zahlbr.

Belgium, Mosan : Durbuy, rock at base of SE side of castle (H7.11), SE exposed vertical limestone rock with some seepage, 3.1988, *A. M. Brand* 17388 (h).

New for the study area.

**Endococcus brachysporus* (Zopf) Brand & Diederich comb. nov.

Basionym : *Tichothecium gemmiferum* var. *brachysporum* Zopf, Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 70 : 283 (1898); *Discothecium gemmiferum* var. *brachysporum* (Zopf) Vouaux, Bull. Soc. Mycol. France 29 : 47 (1913); *Discothecium brachysporum* (Zopf) Lettau, Hedwigia 61 : 174 (1920 ['1918']). - Type : Italy, Südtirol, St. Ulrich in Gröden ..., 'auf *Rhizocarpon excentricum*' [probably on *Porpidia speirea*, see below], *F. Zopf* (type lost : B-, M-) (fide TRIEBEL 1989 : 99).

Belgium, Ard. : Lierneux, au sud du village de Verleumont, Sur Colanhan (H7.37), carrières abandonnées de schistes salmiens, sur *Porpidia tuberculosa*, 11.1988, *E. Sérusiaux* 10342 (LG); ibid., on *P. tuberculosa*, *A. M. Brand* 16268 (h); Vielsalm (H8.31), on *P. tuberculosa*, *A. M. Brand* 5549 (h), vallée de la Warche (G8.34), on *P. tuberculosa*, *A. M. Brand* 3363 (h); 6 km ESE of La Roche, Le Hérou (J7.15), on shale, on *Porpidia* sp., *A. M. Brand* 17132 (h); Wiompont (J7.33), on *P. tuberculosa*, *A. M. Brand* 17222 (h).

Luxembourg, Ard. : W de Eschdorf, Millebaach (K8.41), sur une paroi ombragée en schistes, sur *P. glaucophaea*, 10.1987, *P. Diederich* 8755 (h), Lipperscheid (K8.34), on *P. tuberculosa*, *A. M. Brand* 6582 (h).

Great Britain, Scotland, V. C. 104, North Ebuies : Isle of Skye, W of Torrin, An Stac (NG.53.20), on *Porpidia* sp., 5.1987, *P. Diederich* 8197 (h).

In her outstanding revision of the lecideicolous ascomycetes, TRIEBEL (1989) presented a detailed study of over 100 specimens of *Endococcus*, resulting in the recognition of three distinct taxa, *E. perpusillus* Nyl., *E. propinquus* (Koerber) D. Hawksw. and *E. rugulosus* Nyl. These species, as recognized by TRIEBEL, are quite variable, and each of them is known from a large number of often unrelated hosts.

A careful study of the material of *Endococcus* in the private collections of the authors and in LG convinced us that a much narrower species concept can be adopted for the genus *Endococcus*, resulting in a larger number of mostly host-specific taxa. At least three distinct entities can be recognized on the host genus *Porpidia*, but only for two of them are names available.

Endococcus brachysporus is characterized by small, smooth-walled, medium to dark brown ascospores, 7-10 x (4.5-)5-6(-6.5) μm , a spore wall 0.5-0.8 μm thick, a relatively thick septum, 1-1.7 μm thick, with a dark medium lamella, without a dark torus. The perithecia are 100-270 μm in diam., half immersed to superficial, and the asci 30-53 x 9-13 μm . Following TRIEBEL (1989), the type, which is supposed to be lost, was probably not growing on *Rhizocarpon petraeum* (Wulfen) A. Massal. [syn. *R. excentricum* (Ach.) Arnold], as indicated in the original description, but on the superfi-

cially similar *Porpidia speirea* (Ach.) Krempelh., on which she observed an *Endococcus* with particularly small ascospores, similar to those originally described for *E. brachysporus*.

Endococcus propinquus (see below) is growing on the same host genus, but is distinguished by larger, dark brown ascospores, 10-12 x 6.5-7 μm . The perithecia are more or less immersed, 160-260 μm in diam., the ascospore wall 0.6-1 μm , the septum relatively thick, with a dark medium lamella and without a visible torus.

An undescribed species, which we observed on *Porpidia macrocarpa*, *P. platycarpoides* and once on *P. flavocaerulescens* (from several European countries), is distinguished from the other taxa on *Porpidia* by the relatively long, but narrow ascospores, 10.5-12.5 x 5-6.3 μm , which are slightly verruculose when immature (young, hyaline or pale brown ascospores have to be examined at a high magnification). When mature, they are smooth, dark brown and thin-walled (wall 0.5-0.7 μm). The perithecia are 170-240 μm , half or completely immersed. In Belgium (Ard.), we collected this species in Herbeumont (*A. M. Brand* 15622, on *P. platycarpoides*), Robertville (*A. M. Brand* 5307, on *P. macrocarpa*), Warche, Bayehon (*A. M. Brand* 23022, on *P. macrocarpa*) and Arville, Sart-aux-Pires (*A. Aptroot* 40441 p. p., on *P. tuberculosa*).

Lichenicolous ascomycete new for the study area.

**Endococcus exerrans* Nyl.

Belgium, Ard. : Vielsalm (H8.31), on shale in an old quarry, on *Rhizocarpon lecanorinum*, 7.1975, *A. M. Brand* 5549b (h); 6 km ESE of La Roche, Le Hérout (J7.15), on shale, on *R. viridiatrum*, 4.1990, *A. M. Brand* 23244, 23246 (h); *ibid.*, on *R. lecanorinum*, 4.1988, *A. M. Brand* 17136 (h, sub *Miriquidico deusta*); *ibid.*, on *Rhizocarpon* sp., 4.1990, *A. M. Brand* 23252 (h); *ibid.*, on *R. distinctum*, *A. M. Brand* 14435 (h); Houffalize (J7.27), on *R. viridiatrum*, *A. M. Brand* 23228b (h); Bouillon (L6.22), on *R. viridiatrum*, *A. M. Brand* 25228 (h); Halma (J6.43), on *R. lecanorinum*, *A. M. Brand* 25160 (h); *ibid.*, on *R. geographicum* subsp. *lindsayanum*, *A. M. Brand* 25160 (h); Salmchâteau (H8.31), on *R. lecanorinum*, *A. M. Brand* 22840 (h). Luxembourg, Ard. : Esch-sur-Sûre (K8.32), on *R. viridiatrum*, *A. M. Brand* 15517, 20238b (h).

Amongst the three species of *Endococcus* studied by TRIEBEL (1989), two were said to occur on *Rhizocarpon*, viz. *E. perpusillus* Nyl. and *E. rugulosus*. However, if we apply our narrower species concept, the name *E. perpusillus* has to be used for a taxon confined to *Schaereria tenebrosa*, and *E. rugulosus* to a species growing on *Verrucaria*. In the material of *Endococcus* on *Rhizocarpon* in the private collection of A. M. Brand, at least 6 different species can be recognized, including three occurring in the study area. Although no type material has been examined by us, the original descriptions

of the types allow us to admit the names *E. exerrans*, *E. fusiger* and *E. macrosporus* for these three species.

The main diagnostic characters of these three species are given in Table 2.

Endococcus exerrans is a lichenicolous ascomycete new for the study area.

TABLE 2. — Characters distinguishing the three species of *Endococcus* occurring on *Rhizocarpon* in Belgium and Luxembourg.

	<i>E. exerrans</i>	<i>E. fusiger</i>	<i>E. macrosporus</i>
Perithecia	more or less immersed, 90-160 μm	superficial, 140-230 μm	immersed, 130-220 μm
Ascospores	13-16 x 4-5 μm	12.5-16 x 6-7 μm	16.5-19.5 x 5.5-7 μm

****Endococcus fusiger* Th. Fr. & Almq.**

Belgium, Ard. (all on *Rhizocarpon lavatum*) : Bévercé, Trô-Maret (G8.23), *A. M. Brand* 23073 (h); Remouchamps (G7.25), *A. M. Brand* 16404 (h); Eau Rouge (G8.32), *A. M. Brand* 16357 (h); St-Hubert (J6.58), *A. M. Brand* 17249 (h); Robertville (G8.35), *A. M. Brand* 5307, 5313 (h); Solwaster, Rocher de Bilisse (G8.12), *A. M. Brand* 19992b (h).

The main characters distinguishing this species from the other species of *Endococcus* occurring in the study area on *Rhizocarpon* are summarized in Table 2.

Lichenicolous ascomycete new for the study area.

****Endococcus macrosporus* (Arnold) Nyl.**

Luxembourg, Ard. : 11 km WSW of Esch-sur-Sûre, Moulin de Bigonville, NE side of Sûre (K7.47), on schistose rock, on *Rhizocarpon geographicum* subsp. *lindsayanum*, 5.1992, *A. M. Brand* 27207b (h), 27208 (i, sub *Tephromela grumosa*).

The main characters distinguishing this species from the other species of *Endococcus* occurring in the study area on *Rhizocarpon* are summarized in Table 2.

Lichenicolous ascomycete new for the study area.

****Endococcus propinquus* (Körb.) D. Hawksw.**

Belgium, Ard. : Vielsalm, flanc droit de la vallée de la Salm, à l'angle formé par la vallée et le Thier des Carrières, 'Fosse Roulette' (H8.31), sur *Porpidia* sp. (fertile, non sorédié), 2.1998, *P. Diederich* 13560 (h); La Roche (J7.13), on *Porpidia tuberculosa*, *A. M. Brand* 23111 (h); Solwaster, Rocher de Bilisse (G8.12), on *P. tuberculosa*, *A. M. Brand* 19993 (h); Chiny (L6.37), on *P. tuberculosa*, *A. M. Brand* 22207, 22214 (h).

Endococcus propinquus has twice been mentioned in the Belgian literature : once by SÉRUSIAUX (1990 : 137), but the corresponding specimen (*E. Sérusiaux* 10342, LG) is here considered to belong to *E. brachysporus*, and once in VAN DEN BOOM et al. (1998 : 48), but the specimen (*A. Aptroot* 40441 p. p.) belongs to an undescribed species (see above, under *E. brachysporus*)

For the differences with other species growing on *Porpidia*, see under *E. brachysporus*.

The presence of *E. propinquus* s. str. is thus confirmed for the study area.

****Endococcus protoblasteniae* Diederich sp. nov. (Fig. 5)**

Endococcus species insignis ascomatibus semi-immersis, atris, subsphericis, (90-)100-150(-170) μm , pariete atrobrunneo, K+ viridulo, 20-27 μm crasso, paraphysibus nullis, periphysibus 2-3-septatis, 12.5-15 x 1.5-3.5 μm , hymenio KI+ coeruleo, ascis clavatis, 8-sporis, KI-, 40-55 x 9-12 μm , pariete apicaliter incrassato, ascosporis primum paene hyalinis, deinde olivaceo-brunneis, 1-septatis, in septo haud vel leviter constrictis, laevibus, sine perisporo, pariete brunneo, 0.5 μm crasso, septo pallide brunneo, 0.9-1.1 μm crasso, lamella media atro-brunnea, multiguttulatis, 9.5-14 x 4.5-5 μm .

Type : Luxembourg, Lorr. distr., à l'est de Mersch, colline à gauche de la route vers Angelsberg, Bënzert, à la lisière de la forêt (L8.35), sur des pierres en grès, dans une pelouse, sur *Protoblastenia rupestris*, 7.1999, P. Diederich 13839 (LG - holotype; E, hb. Diederich - isotypes). Isotype material is also planned to be distributed in Santeson *Fungi Lichenicoli Exsiccati*.

Ascomata lichenicolous, dispersed on the thallus of *Protoblastenia rupestris* (never on the apothecia), perithecioid, half-immersed, black, non-setose, subspherical, (90-)100-150(-170) μm in diam. Perithecial wall dark reddish brown, incl. at the base, K+ greenish, 20-27 μm thick, of isodiametric cells, which are 8-13 x 2.5-4.5 μm in section. Paraphyses absent at maturity; periphyses present around the ostiole, 2-3-septate, sometimes with one ramification, c. 12.5-15 x 1.5-3.5 μm . Hymenial gel KI+ blue (hemiamyloid). Asci claviform, 8-spored, KI-, 40-55 x 9-12 μm , wall distinctly thickened apically and laterally close to the apex. Ascospores for a long time almost hyaline, becoming greenish brown, 1-septate, not or slightly constricted at the septum, smooth-walled, without a distinct perisporium, wall pale brown, 0.5 μm thick, septum pale brown, 0.9-1.1 μm thick, with a darker medium lamella, darker torus sometimes visible, each cell with numerous lipid drops, 9.5-14 x 4.5-5 μm . Anamorph unknown.

This species is close to *E. exerrans* which is mainly distinguished by longer and slightly narrower ascospores (13-16 x 4-5 μm) and a different

host (species of *Rhizocarpon*). *E. exerrans* differs furthermore by a thinner perithecial wall (laterally and basally 11-15 μm , apically up to 27 μm), which is paler below and darker above.

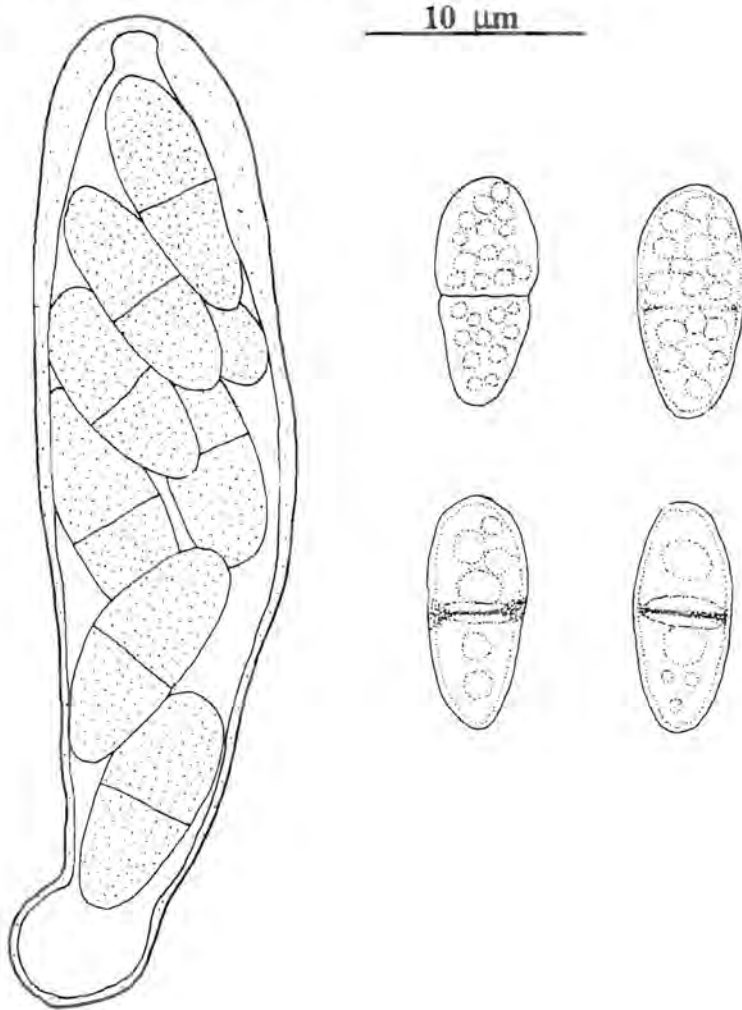


FIG. 5. — *Endococcus protoblasteniae*. Ascus and ascospores (the two above alive) (holotype).

**Endococcus rugulosus* Nyl.

Belgium, Mosan : 2 km NE of Dinant, Fonds de Lefte (H5.38), on *Verrucaria*, 8.1998, D. Ertz 17 (LG); Dinant (H5.47), on *Verrucaria* sp., A. M. Brand 19392 (h); Couvin (J4.48), on *V. macrostoma*, A. M. Brand 15125 (h); Han-sur-Lesse, Belvédère

(J6.24), on *Verrucaria*, 5.1997, *A. Aptroot* 40395 (h); *ibid.*, on *V. nigrescens*, *A. M. Brand* 33469 (h). - Ard. : Malmédy (G8.43), on *Verrucaria* sp., *A. M. Brand* 22865 (h); 3 km WSW of La Roche, 0.8 km ESE of Petit Halleux (J7.12), on *Verrucaria*, 3.1988, *A. M. Brand* 17349b (h). - Lorr. : Virton (M7.33), on *V. viridula*, *A. M. Brand* 25439 (h).

The name *E. rugulosus* has been used by TRIEBEL (1989) for all specimens with (dark) brown, thick- and smooth-walled ascospores of 13-16 x 6-7.5 µm, growing on a wide range of host lichens including species of *Amygdalaria*, *Aspicilia*, *Ionaspis*, *Lecanora*, *Placopsis*, *Rhizocarpon* and *Verrucaria*. However, we are convinced that the material on *Verrucaria* (c. 10 specimens examined from Belgium, France and Switzerland) is a quite distinct species, with verruculose and smaller ascospores. As the type specimen of *E. rugulosus* is found on *Verrucaria macrostoma* s. l., and as no other *Endococcus* name on this host genus is available, we use the name *E. rugulosus* for our material on *Verrucaria*, although we did not study the type specimen.

The species is characterized by half- to completely immersed perithecia, 90-220 µm, asci 40-50 x 12-18 µm, and medium brown, distinctly verruculose and thin-walled (wall c. 0.5 µm) ascospores 10-12(-12.5) x 5.5-7.5 µm.

Lichenicolous ascomycete new for the study area.

**Endococcus verrucisporus* ("verrucuspora") Alstrup

Belgium, Ard. : 5.6 km NE of Malmédy, valley of Bayehon, 0.8 km S of Moulin de Bayehon (G8.34), shale at shore of stream in narrow valley, 0-20 cm above water level, on *Ionaspis lacustris*, 4.1990, *A. M. Brand* 22992 (h).

This lichenicolous fungus has only recently been described from the Faroe Islands (ALSTRUP et al. 1994), and is also known from one additional specimen from Norway (ALSTRUP 1997 : 27), always on the same host, *I. lacustris*.

Lichenicolous ascomycete new for the study area.

Enterographa crassa (DC.) Fée

Belgium (additional material to that mentioned from Belgium by SÉRUSIAUX et al. 1985 : 30, which is here confirmed) : Fl. : 5 km S of Diksmuide, Blankkaart (D1.33), on *Populus* in wood, 5.1988, *A. M. Brand* 17947 (h). - Mosan : Yvoir, vallée du Bocq, Pipeti (H5.28), vieux *Quercus* ombragé au pied des rochers, 5.1997, *E. Sérusiaux* s.n. (LG, avec *E. hutchinsiae*). - Ard. : Poupehan, rive gauche de la Semois, entre la Roche aux Eperviers et Germowé (L6.11), sur tronc, 6.1991, *E. Sérusiaux* 11043 (LG).

Luxembourg, Lorr. : Berdorf, Binzeltschloeff (L9.11), on *Acer*, 6.1984, P. Diederich 5736 (h, with *E. hutchinsiae*) & *E. Sérusiaux* 6490 (LG); Berdorf, Zickzackschloeff (K9.51), on *Quercus*, 6.1984, *E. Sérusiaux* 6519 (LG); NEE Haller, Halerbaach (L8.18), on *Quercus*, 9.1986, P. Diederich 7589 (h, with *E. hutchinsiae*).

Enterographa crassa has been reported from the study area by SÉRUSIAUX et al. (1985 : 30-31) and by DIEDERICH (1989a : 100-101). However VAN DEN BOOM et al. (1994 : 153-154) claimed that only *E. hutchinsiae* occurs in Belgium and Luxembourg, growing mainly on rocks but also on bark. Detailed re-examination of the material involved clearly shows that both species are indeed present : *E. crassa* is exclusively an epiphytic species, whilst *E. hutchinsiae* is mainly found in underhangs of siliceous rocks in shaded places, but occasionally also grows on bark in sheltered and humid forests.

Eopyrenula grandicula Coppins

Belgium, Ard. : Bouillon, rive gauche de la Semois, en amont de Dohan, entre la Roche de la Dampirée et un vallon immédiatement en amont (L6.24), érablière de ravin à *Lunaria rediviva*, sur *Corylus*, 6.1991, *E. Sérusiaux* 11098 (LG); Sainte-Cécile, rive gauche de la Semois, rocher de Libaipire face au Tombeau du Chevalier (L6.35), sur écorce de *Corylus* en bord de rivière et débouché d'un petit ravin, 7.1997, *E. Sérusiaux* s. n. (LG).

The collection made in 1991 was first published as *E. leucoplaca* (Wallr.) R. C. Harris (DIEDERICH et al. 1992 : 141) but actually is a typical *E. grandicula* following the revision of the genus for western Europe (COPPINS et al. 1992). The latter is thus new for the study area and the former should be deleted from its flora.

**Epibryon parvipunctum* (Stein) Diederich comb. nov. (Fig. 6)

Basionym : *Sagedia parvipuncta* Stein, Flechten, in F. Cohn (eds.), Kryptogamen-Flora von Schlesien, Band 2, 2. Hälfte : 339 (1879); *Pharcidia parvipuncta* (Stein) G. Winter, Hedwigia 25 : 14 (1886); *Sphaerulina parvipuncta* (Stein) Sacc., Syll. Fung. 17 : 695 (1905). - Type : Poland, Silesia, Schneegraben am Brunnenberge, on *Thelidium aeneovinosum* [*T. diaboli*?], Stein (type lost : WRS^L).

Specimen examined : Belgium, Ard. : St-Hubert, valley of the Masblette, near the Pont Mauricy (J6.47), on partly immersed siliceous stones in a river, on *Thelidium minutulum*, 5.1997, P. Diederich 12619 (h).

We recently published this species as new for Belgium (VAN DEN BOOM et al. 1998 : 27). As the type specimen is considered to be lost, and as our single Belgian specimen is extremely reduced (c. 10 minuscule perithecia), we did not study its systematic position.

The discovery of several lichenicolous species of *Epibryon* Döbbeler (MATZER 1996 : 101-104; HOFFMANN 1999 : 153-159, 165-168; HOFFMANN & HAFELLNER, in prep.) led us to re-consider its generic position. Re-examination of the material clearly confirms that it belongs to *Epibryon*. A short description of our specimen follows :

Ascomata lichenicolous on the thallus of *Thelidium minutulum*, perithecioid, more or less superficial, dispersed, black, non-setose, 40-60 μm in diam., up to 50 μm high. Perithecial wall dark brown, K-, of isodiametric cells, 3-5 μm in diam. in surface view. Paraphyses absent at maturity; paraphyses present around the ostiole, c. 7 x 1.5 μm . Hymenial gel KI+ blue (hemi-amyloid). Asci claviform, 8-spored, KI-, 28-36 x 11.5-15 μm , wall distinctly thickened apically and laterally close to the apex. Ascospores hyaline, 3-septate, not or slightly constricted at the septa, 12.5-16 x 4.5-5 μm , each cell with one lipid droplet.

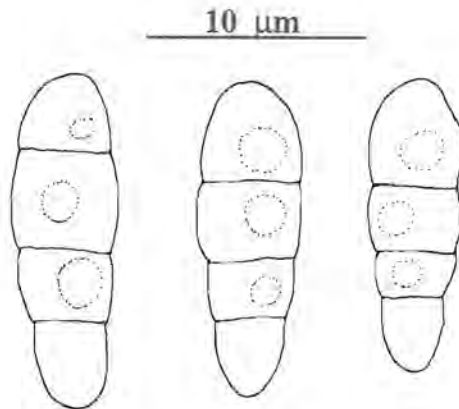


FIG. 6. — *Epibryon parvipunctum*. Ascospores (P. Diederich 12619).

**Epibryon solorinae* (Vain.) Nik. Hoffm. & Hafellner

Syn. : *Laestadia solorinae* Vain

Belgium, Lorr. : NNW of Virton, SW of Lahage, Le Gros Cron (M7.12), S exposed calcareous outcrops, on *Solorina saccata*, 4.1998, P. van den Boom 20135 (h, hb. Diederich).

Laestadia solorinae has recently been studied by HOFFMANN (1999 : 165-168) in his outstanding, not yet published thesis on hyaloamerosporous lichenicolous pyrenomycetes, and found to belong to the genus *Epibryon* (to

be published by HOFFMANN & HAFELLNER, in prep.). The Belgian specimen perfectly agrees with the detailed description provided by HOFFMANN (1999). The species was known from Austria and Georgia.

Lichenicolous ascomycete new for the study area.

**Epicladonia stenospora* (Harm.) D. Hawksw.

Belgium, Lorr. : C. 1.7 km N of St-Léger (M7.25), on *Fagus*, on *Cladonia contocraea* (thallus and galls induced by *Tremella cladoniae*), 9.1989, *A. M. Brand* 22139 (h).

This species was known from a single collection made before 1835 in the Mosan district (DIEDERICH et al. 1991 : 19). Our recent collection shows that it still occurs in the study area.

+Epigloea bactrospora Zukal

Belgium, Lorr. : 2 km NW of St-Léger, E side of road to Etalle, 2.1 km S of road Buzenol-Chantemelle (M7.25), rotting wood of lying trunk in *Quercus-Fagus* wood, 9.1989, *A. M. Brand* 22119 (h).

The genus *Epigloea* Zukal comprises several species which are interpreted as highly adapted algal parasites with tiny, pyrenomycete-like gelatinous ascocarps. It belongs to the Epigloeaceae Zahlbr., a family of uncertain taxonomic position. Those fungi are not lichenized in the classic sense (HAWKSWORTH 1988), but, as they are not likely to be collected and studied by mycologists, are included in the present account. They are very inconspicuous and thus are most probably overlooked in the study area. Three species are reported here following the revision of DÖBBELER (1984).

Non-lichenized fungus new for the study area.

+Epigloea filifera Döbb.

Belgium, Ard. : 0.9 km NE of Wibrin (J7.16), sandstone in health near disused quarry, 4.1990, *A. M. Brand* 23263 (h).

Non-lichenized fungus new for the study area.

+Epigloea soleiformis Döbb.

Belgium, Lorr. : 2 km NW of St-Léger, E side of road to Etalle, 2.1 km S of road Buzenol-Chantemelle (M7.25), rotting wood of lying trunk in *Quercus-Fagus* wood, 9.1989, *A. M. Brand* 22118 (h).

Non-lichenized fungus new for the study area.

***Flavoparmelia soredians* (Nyl.) Hale**

Syn. : *Parmelia soredians* Nyl.

Belgium, Mosan : Viroinval, half way between Nismes and Olloy-sur-Viroin (J5.41), on *Tilia* in group of four trees along road, 5.1999, A. Aptroot 44701 (h, LG, hb. Diederich).

The species is also known from northern France (Pas-de-Calais, St-Josse, près de Montreuil, sur *Populus*, s. d., J. R. Wattez, LG), not far from the Belgian border, and is apparently spreading in The Netherlands (APTROOT & VAN HERK 1999; Aptroot, pers. comm.). It could be more widespread in the study area.

Lecanora compallens van Herk & Aptroot has been found as an accompanying species on the same trees.

New for the study area.

***Fuscopannaria leucophaea* (Vahl) P. M. Jørg.**

Syn. : *Pannaria leucophaea* (Vahl) P. M. Jørg.

Belgium, Ard. : 4 km NW of La Roche, Ourthe valley, near bridge of Jupille (H7.53), rocks at the shore of the river, 3.1988, A. M. Brand 17291 (h).

This species was supposed to be extinct in the study area (SÉRUSIAUX 1984), all other collections having been made during the last century. Its discovery in the Ourthe valley thus deserves a mention in this paper.

***Fuscopannaria saubinetii* (Mont.) P. M. Jørg.**

Luxembourg, Lorr. : S. loc., terricolous, over sand, < 1850, F.-A. Tinant 1024 (LUX).

Although there are no indications on the collecting locality, and contrarily to what has been stated before (SÉRUSIAUX 1984 : 81), the specimen originates without any doubt from the Luxembourg sandstone area, probably near Berdorf (DIEDERICH 1989b : 12-13). The identity is not absolutely certain as the specimen is relatively small.

New for the study area.

***Graphis elegans* (Sm.) Ach.**

Belgium, Ard. : 3.8 km SSE of Herbeumont, Roche du Chat in the Semois valley (L6.36), 280 m, on *Acer* in *Fagus* wood on steep N-slope, 8.1986, A. M. Brand 15626 (h).

This atlantic species was known from a single recent locality in the study area, also in the Semois valley near Bouillon (DIEDERICH et al. 1991 :

19-20). It is thus interesting to report this further locality made in one of the richest spot for corticolous and saxicolous lichens in the whole study area.

Immersaria athroocarpa (Ach.) Rambold & Pietschm.

Syn. : *Lecidea athroocarpa* (Ach.) Ach.; *Porpidia athroocarpa* (Ach.) Hertel & Rambold

Belgium, Ard. : 10 km SE of Verviers, Solwaster, Rocher de Bilisse (G8.12), on quartzite rocks, 3.1989, *A. M. Brand* 19984 (h); Vielsalm, 0.5 km NE of Salmchâteau (H8.31), rock outcrops on W-slope, exposed siliceous rock surface, 4.1990, *A. M. Brand* 22841 (h, sub *Buellia* 'saxorum').

New for the study area.

Lecania globulosa (Flörke) van den Boom & Sérus. comb. nov.

Basionym : *Lecidea globulosa* Flörke, Deutsche Lich. 10 : 1 (1821); *Catillaria globulosa* (Flörke) Th.Fr., Lichenogr. Scand. 2 : 575 (1874); *Bacidia globulosa* (Flörke) Hafellner & V. Wirth in V. Wirth, Flecht. Bad.-Württ. : 511(1987). - Type : Germany : An *Pinus abies* auf dem Harze, im Thüringer Walde, auch bei Rostock, Deutsche Lich. 181 (M - syntype, not seen).

Representative specimen examined : Belgium, Ard. : SW of Houffalize, Au Moulin de Rayimont (J7.34), old *Quercus*, 5.1997, *P. van den Boom* 18915 (h).

According to PURVIS et al. (1992 : 166-170), '*Catillaria*' *globulosa* does not belong to *Catillaria*. It does not refer either to *Bacidia* s.str. because of its 0-1-septate ascospores. Accommodation in *Lecania* is most appropriate, because it agrees in all important characters : rather small, 0-1-septate ascospores, and the more or less strongly convex and biatorine apothecia. It is related to *Lecania cyrtellina* (Nyl.) Sandst., but also to species like *Lecania hutchinsiae* (Nyl.) A. L. Sm. and *L. sylvestris* (Arnold) Arnold. The dark olive-green pigment in the epithecium of *L. globulosa* is also known from *L. atrynoides* Knowles, *L. polycycla* (Anzi) Lettau and *L. turicensis* (Hepp) Müll. Arg. The presence of conglutinated paraphyses in *L. globulosa* is an important feature which is also observed in the other species of the genus.

Lecania globulosa has been reported for the first time from Belgium by SÉRUSIAUX et al. (1985 : 27-28) and is locally frequent in southern Belgium and Luxemburg.

Lecanora agardhiana Ach.

Belgium, Mosan : 2.7 km SSE of Yvoir, Poilvache (H5.27), on limestone, 9.1989, *A. M. Brand* 22000 (h).

New for the study area.

***Lecanora allophana* Nyl.**

Belgium, Lorr. : 11 km NNE of Virton, Bellefontaine, road N491 to railway, c. 0.6 km from road N479 to Croix-Rouge (L7.52), old *Fraxinus* along road, 9.1989, A. M. Brand 22196 (h).

Lecanora allophana was previously known from several last century collections made in Luxembourg (DIEDERICH et al. 1992 : 24) and from a single recent record, made near Dinant (Belgium, Mosan; VAN DEN BOOM 1996 : 14). It is thus interesting to report upon this further, plentiful collection made in the Lorrain district in Belgium.

***Lecanora barkmansiana* Aptroot & van Herk**

Belgium, Fl. : Leke (C1.54), sur tronc de *Populus × canadensis*, 11.1986, M. Hoffmann MH3149 (GENT, LG); Torhout (D1.16), sur tronc de *Populus × canadensis*, 11.1986, M. Hoffmann MH3145 (GENT, LG).

France : Dept. Isère, St-Antoine l'Abbaye, près de St-Marcellin, alt c. 300 m, sur *Robinia* en bord de route, 7.1998, E. Sérusiaux s. n. (LG).

This species has just been described as new for science by APTROOT & VAN HERK (1999) from many localities throughout The Netherlands. The collections have been compared with an isotype (LG !) and match it perfectly, and the specimen from France has been checked by A. Aptroot & C. van Herk. This new species can thus be expected to be widespread in western Europe.

New for the study area, and for France.

***Lecanora compallens* van Herk & Aptroot**

Belgium, Mosan : Viroinval, half way between Nismes and Olloy-sur-Viroin (J5.41), on *Tilia* in group of four trees along road, 5.1999, A. Aptroot 44702 (h, LG, hb. Diederich).

Luxembourg, Lorr. : Schouweiler, vers Bascharage, à 1,2 km après la sortie du village, le long de la route principale (M8.22), on *Tilia*, 9.1999, P. Diederich 13854 (h) & K. van Herk.

Lecanora compallens was known from one recent Luxembourg collection on *Sorbus domestica* (VAN HERK & APTROOT, in press), and is herewith reported as new for Belgium.

***Lecanora hybocarpa* (Tuck.) Brodo**

Belgium, Mosan : 4.5 km SSW of Dinant, 1.8 km N of Faimignoul, Chaussée des Alpinistes (H5.57), on *Fraxinus*, parasitized by *Vouauxiella verrucosa*, 8.1988, A. M. Brand 19360 (h) (conf. T. Lumbsch); 7.4 km SSW of Dinant, road Anseremme-

Falmignoul, near km stone 34.1 (H5.57), on old *Fraxinus* along road on plateau, with *V. verrucosa*, 4.1984, *A. M. Brand* 11378 (h).

Lecanora hybocarpa has been described from North America by BRODO (1984 : 134-136), and, as far as we know, has been reported in Europe only from Spain (Catalunya and Ebre delta; see GIRALT 1996 : 208-212). In Catalunya, it is a characteristic species of pioneer communities on branches and trunks, with smooth and neutral bark, of trees in the coastal plain but not close to the sea. This association has been named *Lecanora hybocarphae-Caloplacetum pollinii* (GIRALT 1996 : 402-405).

New for the study area.

Lecanora strobilina (Spreng.) Kieff.

Belgium, Ard. : 3 km W of Trois-Ponts, road N23 (G7.58), on old free-standing *Fagus* along road, 4.1987, *A. M. Brand* 16236 (h); Rochehaut, route descendant vers la Semois par le Moulin de Bochet (J7.28), sur un vieux *Fagus*, 10.1984, *E. Sérusiaux* 6902 (LG).

This very characteristic species was formerly known from several collections made last century (DIEDERICH et al. 1991 : 28) and was supposed to be extinct. The above specimens demonstrate that it does still occur in the study area.

Lecidea cyrtidia Tuck.

Belgium, Ard. : Lienne valley, 3 km NW of Chevron, Iîe de Chession (G7.46), open and low *Quercus* wood on a dry hill, on schistose stone, 4.1987, *A. M. Brand* 16267 (h).

This is by all means the most interesting report for the study area as *Lecidea cyrtidia* is so far known only from North America (U.S.A. : Arkansas, Georgia, Kentucky, Maryland, Massachusetts, Missouri, North Carolina, South Carolina, Tennessee, Virginia and West Virginia; Canada : Quebec and New Brunswick; see HARRIS 1997). The collection mentioned above perfectly matches the description provided by COPPINS & MUHR (1997) and by HARRIS (1997) and has been examined by Dr. B. J. Coppins.

In the European literature, *Lecidea cyrtidia* has been considered a synonym of *Micarea lapillicola* (Vain.) Coppins & Muhr (= *Lecidea lapillicola* Vain.) for quite a long time (e. g. SANTESSON 1993 : 112), but COPPINS & MUHR (1997) have clearly demonstrated that both taxa are very distinct.

Lecidea cyrtidia does not belong to *Lecidea* s. str. as it has *Porpidia*-type asci, paraphyses with a swollen brown apical cap, and an excipulum made of radiating hyphae with swollen dark brown apices at the apothecium edge, and containing small dark brown granules of pigments. We agree with COPPINS & MUHR (1997) in suggesting that *Lecidea cyrtidia* is closely re-

lated to *L. plebeja* Nyl., a lignicolous species of boreal forests which has the same asci, paraphyses and excipulum (several specimens in LG examined).

New for Europe.

Lecidea nylanderii (Anzi) Th. Fr.

Belgium, Ard. : 1.8 km SSW of La Roche, along road to St-Hubert (J7.13), on *Tilia* along road on a wooded NE slope, 3.1988, *A. M. Brand* 17338 (h).

Lecidea nylanderii is very likely to be confused with *Lepraria incana*, as it usually looks like a leprose crust, made of pale bluish soredia, and as it contains divaricatic acid. When sterile (e. g. the specimen mentioned above), it can be distinguished by a bluish prothallus, densely packed soredia and the absence of zeorin (see TØNSBERG 1992 : 174-176). Many collections likely to belong to this species were tested, but only one correctly matches the description.

New for the study area.

Lecidea plana (J. Lahm) Nyl.

Belgium, Ard. : 5.5 km ENE of Malmédy, valley of Warche, 0.4 km E of confluence with Bayehon (G8.34), quartzite blocks of scree in narrow valley, 4.1990, *A. M. Brand* 23021 (h); Bihain, ancienne carrière de coticule à l'est de la route Bihain-Hebronval (H7.47), carrières abandonnées de schistes salmiens, 11.1988, *E. Sérusiaux* 10346 (LG).

Lecidea plana has been reported twice from the study area : once near La Roche (Belgium, Ard.; see DE WILDEMAN 1898 : 469, as *Lecidea latypea* Ach. which is a synonym), and at Theux (BOULY DE LESDAIN 1905 : 30, as var. *aequata* Flörke). Those collections could not be examined but are likely to be misidentifications : the former could be *L. lithophila* (Ach.) Ach. which is closely related and more common, and the latter *Lecidella carpathica* Körb., *Lecidea latypea* auct., non Ach. being a synonym. The species is thus confirmed for the study area and is obviously much rarer than its relative *Lecidea lithophila* which is rather abundant on slate debris in the disused quarries near Vielsalm.

Lecidella anomaloides (A. Massal.) Hertel & H. Kilius

Belgium, Ard. : S-shore of Semois, 1.8 km W of Chiny (L6.37), on schists, 4.1991, *A. M. Brand* 25394 (h)

New for the study area.

Lecidella viridans (Flot.) Körb.

Belgium, Ard. : 4 km NW of La Roche, near bridge of Jupille (H7.53), on steep SSW exposed siliceous rocks, 3.1988, A. M. Brand 17284 (h).

New for the study area.

Lepraria flavescens Clauzade & Cl. Roux

Belgium, Lorr. : SW of Lahage, Le Gros Cron (M7.12), S exposed calcareous outcrops, overhang and vertical rock, 4.1998, P. van den Boom 20134 (h, hb. Diederich).

Lepraria flavescens is a very easily identified *Lepraria* as it has a rather lobate thallus and reacts C+ orange (atranorin, sordidon and flavescin detected by TLC). It should not be confused with the usually sterile *Lecanora pruinosa* Chaub., a species which is not rare in the Mosan district and which also reacts C+ orange (arthothelin and 2,7-dichloronorlichexanthone detected by TLC); *L. pruinosa* has a distinctly placodioid thallus with slightly convex lobes and a granular-pruinose surface. *Lepraria flavescens* has been described from S France (CLAUZADE & ROUX 1977 : 33) and, to our knowledge, has otherwise been reported only from SW Germany (WIRTH 1995 : 539-540). The only collection from the study area has been compared with a topotype collection (hb. Diederich) and with a collection from the Schwäbische Alb (Germany) (LG).

New for the study area.

Lepraria umbricola Tonsberg

Belgium, Ard. : 2.5 km NW of St-Hubert, NE of road to Grupont (J6.47), on *Quercus* in wood, 8.1995, A. M. Brand 33454 (h). - Lorr. : Croix-Rouge (6.5 km N of Virton), Château Renaud (M7.13), on exposed N sandstone outcrop, 4.1991, A. M. Brand 25324 (h).

The number of *Lepraria* species in the study area continues to grow as extensive collections are being made and detailed TLC analysis performed. Both collections mentioned above contain thamnolic acid and match very well the original description of TØNSBERG (1992 : 206-208).

New for the study area.

Leptogium biatorinum (Nyl.) Leight.

The complete *Leptogium* material from GENT (only recent collections), LG and LUX, and from the private collections of the authors and of Dr A. Aptroot has been examined critically, and the most interesting results presented here. The important contribution by JØRGENSEN (1994), mainly

dealing with the smaller species of the genus, allowed us to clarify many problems, and to correct some previous identifications.

All the specimens of *L. biatorinum* published by DIEDERICH et al. (1992 : 142) proved to be correctly identified. Some of them are fertile, with the typical apothecia with a thick proper margin, as illustrated by JØRGENSEN (1994 : 4). The thallus in these specimens is composed of minuscule squamules or lobes.

Leptogium byssinum (Hoffm.) Nyl.

Belgium, Mar. : Knokke, De Zwinbosjes (B2.33), op kalkrijk zand in duin, 4.1987, *M. Hoffmann* 3227 (GENT).

The only specimen examined is fertile, with one large typical apothecium (similar to those illustrated by JØRGENSEN 1994 : 4), and the thallus is entirely crustose and areolate. The species has not been correctly reported from the study area before (DIEDERICH et al. 1992 : 142, sub *L. biatorinum*), and can thus be considered new for this area.

Leptogium cyanescens (Rabenh.) Körb.

Belgium, Ard. : Rochehaut, Rochers des Falloises, rochers schisteux frais au bord de la Semois (env. 50 cm au-dessus de l'eau) (K6.51), 8.1964, *J. Lambinon* 64/1295 (LG); Rochehaut, rive droite de la Semois dans la partie aval du méandre de Frahan (K6.51), rochers schisteux frais au bord de la Semois, un peu au-dessus du niveau moyen, 6.1966, *J. Lambinon* 66/360bis (LG); Nadrin, sous Vernovlin, bord de l'Ourthe (J7.15), dalle schisteuse plate probablement sous eau aux hautes eaux, 11.1962, *A. Lawalrée* 11974 (LG); Bertogne, rive droite de l'Ourthe occidentale, un peu en aval du pont de la route Ortho-Bertogne (J7.35), rochers quartzitiques ombragés au bord de l'eau, 8.1967, *J. Lambinon* 67/613 (LG); *ibid.*, un peu en aval du Moulin du Vieux Château (J7.35), rochers schisteux humides très ombragés près de la rivière, 8.1967, *J. Lambinon* 67/620 (LG); Maissin, Grand Rôli, rochers moussus au bord de l'Our, rive droite (K6.13), 4.1963, *J. Lambinon* 63/636 (LG); 1.7 km NNE of Bohan, shore of Semois (K5.47), schistose rocks at shore, c. 3 dm above water, 9.1986, *A. M. Brand* 15337 (h).

Luxembourg, Ard. : Heischtergronn (K8.32), sur une paroi verticale suintante siliceuse, 6.1966, *L. Reichling* (LUX); Heinerscheid, Kasselslay (J8.45), pierre sub-horizontale ombragée au bord de la rivière, 9.1966, *J. Lambinon* 66/1291 (LG, LUX); *ibid.*, 7.1985, *P. Diederich* 6180 (h); *ibid.*, 5.1991, *P. Diederich* 9837 (h); Esch-sur-Sûre, shore or river Sûre E of town (K8.32), on schistose rocks at shore of stream, 9.1986, *A. M. Brand* 15490b (h).

France, Ard. : Dept. Ardennes, Thilay, au sud de Navaux, rive gauche de la Semois (K5.55), rocher plongeant dans les eaux de la rivière, 5.1967, *J. Duvigneaud* (LG).

Leptogium specimens with laminal isidia and a smooth, thin thallus collected in the study area have always been considered as belonging to *L.*

cyanescens. The discovery of the morphologically very distinct *L. magnussonii* in this area led us re-examine the complete material involved. We give here the list of all specimens belonging to the genuine *L. cyanescens*. The species was already mentioned by LAMBINON (1969 : 97) as one of the characteristic species of the subaquatic lichen communities on siliceous rocks in the study area.

***Leptogium gelatinosum* (With.) J. R. Laundon and *Leptogium lichenoides* (L.) Zahlbr. (Figs 7-8)**

In the past, the name *L. gelatinosum* has often been used exclusively for specimens with an entire thallus margin. However, *L. gelatinosum* may also have a thallus with a deeply incised or even lacinate margin, the single lacinae being always somewhat flattened, rarely or never cylindrical, and generally distinctly curved downwards. The thallus margin of the genuine *L. lichenoides* is isidiate, the isidia being cylindrical and often frequently branched to strongly coralloid, and orientated in all directions. Furthermore, the thallus lobes of *L. lichenoides* are often strongly elongate and narrower in the middle region, where they tend to be distinctly thickened following a pale gill on the lower surface.

The thallus of *L. gelatinosum* is generally brown, whilst that of *L. lichenoides* is often bluish grey. This is, however, just a response to the different ecology of both, *L. gelatinosum* being most frequent in exposed conditions, as in calcareous grasslands, whilst *L. lichenoides* prefers humid, shaded niches, as the base of old trees in well-preserved forests. In extreme conditions, *L. lichenoides* may also have a dark brown thallus.

The similar *L. intermedium* (Arnold) Arnold is not known from the study area, but it might have been overlooked for small, cushion-like thalli of *L. gelatinosum*.

As both *L. gelatinosum* and *L. lichenoides* are rather common in the south-eastern part of the study area, we do not enumerate the long list of specimens examined, but, instead, give a distribution map of both species (Figs 7 and 8).

***Leptogium magnussonii* Degel. & P. M. Jørg.**

Belgium, Ard. : Bouillon, 0.3 km S of castle (L6.22), vertical schistose rockface, with dripping water, 3.1991, A. M. Brand 25214 (h); S-shore of Semois, 1.6 km W of Chiny (L6.37), schistose rocks at shore of river, incidently inundated, 4.1991, A. M. Brand 25376 (h); 2.5 km SW of Chiny, E shore of Semois (L6.47), schistose rocks c. 1 m above water of stream, 8.1995, A. M. Brand 33352 (h).

Luxembourg, Ard. : 1 km E of Esch-sur-Sûre (K8.32), schist on steep rock face, probably temporarily wet and dry, 5.1992, A. M. Brand 27174 (h).

France, Ard. : Dept. Ardennes, Fépin, au bord de la route de la rive gauche de la Meuse, à hauteur du Bois de Fépin (J5.54), rochers subverticaux éodévoniens, humides par périodes, 4.1968, J. Lambinon 68/179 (LG).

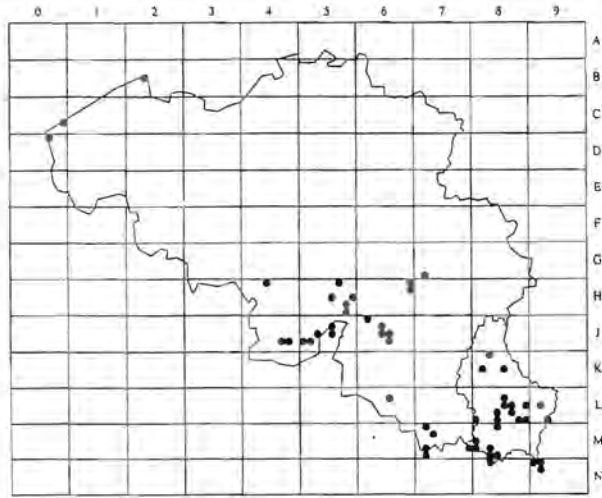


FIG. 7. — Known distribution of *Leptogium gelatinosum* in Belgium and Luxembourg, based on the study of herbarium material, using the IFBL-grid (squares of $4 \times 4 \text{ km}^2$).

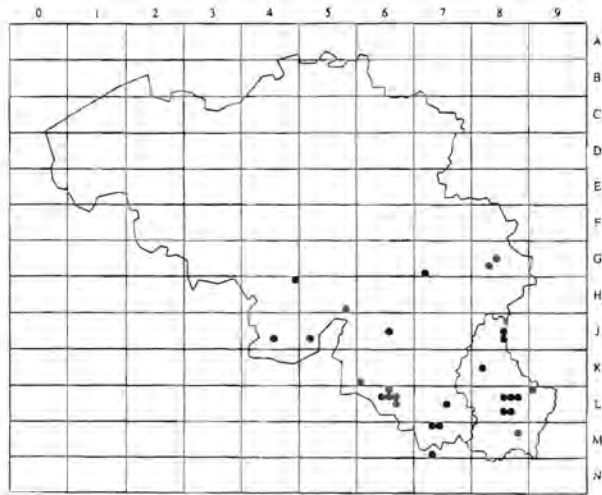


FIG. 8. — Known distribution of *Leptogium lichenoides* in Belgium and Luxembourg, based on the study of herbarium material, using the IFBL-grid (squares of $4 \times 4 \text{ km}^2$).

Germany, Rheinland-Pfalz : Donnersberg, Ruine Falkenstein (MTP : 6313), alt. 400 m, feuchte Felswand unterhalb der Ruine, 11.1990, *E. Schlechter* (hb. P. Diederich).

Leptogium magnussonii has only recently been described from Scandinavia (JØRGENSEN 1994 : 14-18), where it is quite common on coastal rocks, and the authors wondered if the species might be restricted to Scandinavia. BERGER (1996 : 65), however, discovered a healthy population in Austria on periodically wet, siliceous rocks, proving that the species is also present on non-coastal rocks in Central Europe. Our additional material shows that it is much more common and widespread, and should be looked for in similar habitats elsewhere in Europe and North America.

New for the study area, for France and for Germany.

Leptogium massiliense Nyl.

Belgium, Mosan : Dinant, Fonds de Lefte, Chéreau des Capucins, N of river Lefte (H5.38), S exposed sloping calcareous rocks, 5.1999, *E. Sérusiaux, D. Ertz & P. van den Boom* 22668 (h, hb. Diederich); 1 km WNW of Treignes, Roche aux Chevaux (J5.33), shaded limestone rockface in *Quercus* wood, 4.1991, *P. van den Boom* 11067 (h)

New for the study area.

Leptogium plicatile (Ach.) Leighon

Belgium, Mosan : 1.2 km ESE of Bomal, Grotte du Coléoptère (G7.52), shaded calcareous rocks, near entrance of cave, in wood, 4.1985, *A. M. Brand* 14210 (h); Hansur-Lesse, Les Grignaux, W of the Ry d'Ave (J6.34), dry and SE-exposed limestone outcrop and *Xerobromion* communities, 5.1997, *P. van den Boom* 18675 (h); 0.5 km E of Hotton (H7.31), steep, shaded limestone rocks, at foot of cliff, in wood, exp. S, 3.1985, *A. M. Brand* 14182 (h); Mettet, lieu-dit Le Hameau (H5.23), ancienne carrière de calcaire, paroi rocheuse subverticale fraîche et ombragée, 4.1968, *J. Lambinon* 68/113 (LG). - Ard. : Bouillon, rocks at SE side of Castle (L6.22), sloping E-exposed schistose rock, 9.1986, *A. M. Brand* 15407 (h).
Luxembourg, Ard. : Oberschlindermanderscheid (K8.24), sur un mur, 10.1982, *P. Diederich* 3619 (h); Vianden (K8.27), sur un mur, entre des mousses, 10.1985, *T. Welter* (hb. Diederich 6792); Esch-sur-Sûre, ruins of castle (K8.32), on schist of rocks and walls of ruin of castle on hill in meander of Sûre, 9.1986, *A. M. Brand* 15474 (h). - Lorr. : Mersch (L8.35), sur un mur humide, 4.1888, *J. Feltgen* (LUX); Lasauvage, rocher de tuf calcaire dans le village (M7.48), 9.1999, *P. Diederich* 13903 (h).

Leptogium plicatile has often been confused with the similar *L. turgidum*. It is distinguished from the latter taxon by a reduced or missing upper cortex, and by usually larger and dull lobes which are not or less strongly wrinkled.

Leptogium schraderi (Ach.) Nyl.

Belgium, Mar. : 2 km NNW van Nieuwpoort, Ijzermonding (C1.41), kalkrijk zand van opgespoten terrein, 5.1988, *A. M. Brand* 17941 (h). - Brab. : Lanaye, Montagne St-Pierre (E7.45), on shaded calcareous rock-slope, 5.1987, *P. van den Boom* 5344 (h). - Mosan : 1.4 km SSE of Yvoir, Rocher de Champale (H5.27), limestone outcrops on steep SW slope with lime grassland, 9.1989, *A. M. Brand* 22034 (h); Han-sur-Lesse, Les Grignaux, W of the Ry d'Ave (J6.34), mosses on limestone rock, 7.1995, *A. M. Brand* 33310 (h); 6 km NE of Couvin, 1.7 km NE of Nismes, Roche à Lomme (J5.41), limestone rock outcrops with *Buxus*, 9.1986, *A. M. Brand* 15158 (h); Bure (J6.45), kalkgroeve, 7.1978, *A. Aptroot* 6437 (h).

Luxembourg, Lorr. : Sur le mur du pont de Mersch (L8.35), 4.1888, *J. Feltgen* 132 (LUX); Walferdange, Sonneberg (L8.56), sur des mousses, dans une pelouse calcaire, 7.1980, *P. Diederich* 3178 (h); Erpeldange-les-Bous, W Haed, bord du chemin quittant la route Bous - Windhof vers l'étang du Reckingerhaff (M9.31), sur de la terre, 8.1981, *P. Diederich* 3716 (h); Oberanven, Keidel (L8.57), dans une pelouse calcaire, 8.1985, *P. Diederich* 6848 (h).

France, Lorr. : Dept. Meuse, 3 km W Marville (N7.11), dans un *Mesobrometum*, 9.1980, *P. Diederich* 2917 (h); Damvillers, Côte de Morimont (N7.51), sur un rocher calcaire, dans une pelouse thermophile, 9.1980, *P. Diederich* 3176 (h); dept. Moselle, W Metz, Mont Saint-Quentin (P8.55), dans une pelouse xérophile, 8.1985, *P. Diederich* 6220a (h).

This species is sometimes difficult to separate from the closely related *L. turgidum* (see discussion under that species).

We collected several specimens of what appears to be a distinct, but closely related taxon, for which no name seems to be available. It has a small, rosette-like thallus which is distinctly flattened in the centre, with sub-cylindrical or slightly flattened, prostrate, diverging lobes. These lobes are similar to those of *L. schraderi* s. str., but they are slightly thinner, not erect, always dull, greyish or dark brown, and the wrinkles are more linear (in *L. schraderi*, they are often sinuose). The thallus has the same anatomy as *L. schraderi*. All specimens, except one, have been collected on calcareous soil in *Mesobromion* communities in the Luxembourg Lorr. district. Because of the flat thalli, these specimens could be mistaken for *L. massiliense* Nyl. The genuine *L. massiliense*, as described and illustrated by JØRGENSEN (1994 : 18-19), differs by a shiny thallus which is not flattened in the centre and has more regular, cylindrical and less wrinkled lobes, and furthermore it always develops over rocks.

Specimens of *L. aff. schraderi* : Belgium, Mosan : NE Han-sur-Lesse, Belvédère (J6.24), dry and S exposed limestone outcrop with *Xerobromion* communities, 5.1997, *A. Aptroot* 40392 (h).

Luxembourg, Lorr. : N Niederanven, Aarnesch (L8.58), dans une pelouse calcaire, 8.1985, *P. Diederich* 6801 (h); Graulinster, bord de la route (L8.38), dans une pelouse calcaire, 7.1986, *P. Diederich* 7132 (h); W Ernster (L8.57), dans une pelouse

calcaire, 7.1986, *P. Diederich* 7158 (h); Imbringen, Kneppchen (L8.46), sur de la terre, dans une pelouse calcaire, 4.1991, *P. Diederich* 9492 (h), à l'est de Ernster, Warschent (L8.57), sur des débris végétaux, dans une pelouse calcaire, 10.1997, *P. Diederich* 13394 (h).

Leptogium subtile (Schrad.) Torss.

Luxembourg, Lorr. : Itzig, Igelsmoor (M8.26), auf faulendem *Salix*-Holz, 11.1898, *J. Feltgen* 131 (LUX); Mensdorf, Widdebiërg, carrière (L9.51), sur un rocher en grès, 8.1982, *P. Diederich* 3605 (n).

The specimen *P. Diederich* 3605 has been published by DIEDERICH et al. (1992 : 143) as *L. tenuissimum*. However, the excellent treatment of this group of species by JØRGENSEN (1994) allowed to identify it correctly as *L. subtile*. So far, the species is not known from Belgium.

Leptogium tenuissimum (Dicks.) Körb.

Belgium, Ard. : SW of Herbeumont, ruins of castle (L6.25), SW-side of old wall with schist, sandstone and mortar, 5.1996, *P. van den Boom* 17633 (h).

Luxembourg, Lorr. : Rollingen (L8.35), auf sandigem Wegesrande im Walde, 3.1892, *J. Feltgen* 134 (LUX); Graulinster, bord de la route (L8.38), dans une pelouse calcaire, 7.1986, *P. Diederich* 7133a (h); Lasauvage, rocher dans le village (M7.48), sur un rocher en tuf calcaire, 9.1996, *P. Diederich* 12443 (h); Hamm, rocher au-dessus du carrefour de la rue Godchaux (piste cyclable) avec la rue des Draperies (M8.26), sur une surface horizontale ensoleillée en grès, 10.1997, *P. Diederich* 13413 (h).

Of the two specimens of this species reported from the study area (DIEDERICH et al. 1992 : 143), one proved to belong to *L. subtile* (see under that species). The species has surely been much overlooked in this territory, due to its small size.

The similar *L. imbricatum* P. M. Jørg. is not known with certainty from the study area, although a very small specimen might belong to it [Belgium, Mosan, Neu Moresnet (F9.12), waste of former zinc mines, 4.1987, *A. M. Brand* 16906 (h)].

Leptogium teretiusculum (Wallr.) Arnold

Belgium, Mosan : 6 km SE of Dinant, 1 km S of Furfooz (H5.58), vertical to slightly overhanging limestone face, exp. NE, ± open place in wood, 8.1988, *A. M. Brand* 19333 (h); 0.4 km E of Herneton-sur-Meuse, E shore of Meuse (H5.56), shaded schistose rocks, steep W-face, slightly shaded, backside of garden, 10.1991, *A. M. Brand* 26977 (h). - Ard. : 2.5 km SW of Chiny, E shore of Semois (L6.47), schistose rocks c. 1 m above water of stream, 8.1995, *A. M. Brand* 33351 (h); 1.6 km WSW of Chiny, E shore of Semois, base of Rocher du Hai (L6.37), schist of vertical rockface, exp. W over stream, flooded with high water, 8.1995, *A. M. Brand* 33391 (h).

Luxembourg, Ard. : Esch-sur-Sûre, ruins of castle (K8.32), on schist of rocks and walls of ruin of castle on hill in meander of Sûre, 9.1986, *A. M. Brand* 15468 (h). - Lorr. : 1 km E of Manternach, N of road C.R. 134 (L9.43), sur une paroi verticale ombragée en calcaire coquillier, dans une forêt de gorge, 5.1992, *P. Diederich* 4788 (h), *P. van den Boom* 12331 (h) & *A. M. Brand* 27143 (h).

Germany, Eifel : Rheinland-Pfalz, Gerolstein, Wollersberg, on lava, on slightly overhanging face, exp. SW, 10.1979, *A. M. Brand* 9298 (h).

Leptogium teretiusculum has only once been mentioned in the recent literature from Belgium and Luxembourg (VAN DEN BOOM et al. 1994 : 159). Our additional specimens show that the species is much more common, but probably overlooked due to its small size. The specimen *A. M. Brand* 19333 is unusual, as the thallus is entirely formed by cylindrical, almost *Polychidium*-like lobes, developing over a calcareous rock.

Leptogium turgidum (Ach.) Cromb.

Belgium, Mosan : Bomal, Juzaine (G7.52), op kalkrots in bos, bij beek Aisne 5.1977, *A. M. Brand* 6888 (h); 2.2 km SE of Han, 1.1 km ENE of Belvau (J6.35), soil on ledges of limestone rock, 8.1995, *A. M. Brand* 33498 (h); 7.3 km SSW of Dinant, Roches de Freyr, 100 m N of km stone 34 (H5.57), on calcareous rocks, protruding from wooded W-slope, 4.1984, *A. M. Brand* 11366 (h); 6 km SE of Dinant, 1 km S of Furfooz (H5.58), vertical to slightly overhanging limestone face, exp. NE, ± open place in wood, 8.1988, *A. M. Brand* 19334 (h); 2 km NNE of Bomal, ruines de Logne (G7.52), limestone rocks at shore of river Ourthe, 4.1985, *A. M. Brand* 14223 (h). - Ard. : SW of Herbeumont, ruins of castle (L6.25), old vertical wall of schist, sandstone and mortar, 5.1996, *P. van den Boom* 17663, 17664, 17634, 17637 (h); *ibid.*, 4.1985, *P. van den Boom* 2350 (h); *ibid.*, 4.1991, *A. M. Brand* 25495 (h).

Luxembourg, Ard. : Brandebourg, ruins of castle (K8.35), schistose rock, base of castle, 5.1992, *A. M. Brand* 27259 (h). - Lorr. : 0.6 km NW of Berdorf, wall along churchyard (K9.51), 5.1992, *P. van den Boom* 12368 (h); Pétange, Prénzebiérg (M8.31), sur des pierres en grès, dans une plantation de pins, 7.1980, *P. Diederich* 2286 (h); Lorentzweiler, cimetiére (L8.46), sur un mur, 8.1981, *P. Diederich* 3390 (h); SW Rumelange, carrière Weïsskaul (N8.13), sur des mousses, 8.1981, *P. Diederich* 3330 (h); Lorentzweiler, Roude Bam (L8.46), sur un toit en éternit, 6.1997, *P. Diederich* 12770 (h); Mamer, Tossebiérg, près des thermes romains (M8.14), sur un mur en grès, 9.1997, *P. Diederich* 12885 (h); Strassen, partie sud du village, rue des Prés (M8.14), sur un taur, 11.1997, *P. Diederich* 13436 (h).

Leptogium turgidum has often been confused with *L. plicatile*, although both species are clearly distinct (see discussion under that species).

The distinction from the related *L. schraderi* is more difficult. Typical specimens of *L. turgidum* have large, broad and flattened lobes, which are normally strongly wrinkled and shiny near the apex or when young (a typical specimen is illustrated in APTROOT et al. 1996 : Fig. 1.1), whilst those of *L. schraderi* have cylindrical, erect, shiny, longitudinally strongly wrinkled and

frequently branched lobes. However, we had difficulties with some specimens in which cylindrical, erect branches develop from flattened lobes, or in which the subcylindrical, erect lobes are shorter, darker and thicker than in typical *L. schraderi*. Despite these intermediate specimens, we have a feeling that both taxa should be kept as distinct, but an infraspecific rank for *L. turgidum* might be more appropriate.

New for the study area.

****Lichenochora inconspicua* Hafellner**

Luxembourg, Lorr. : SW de Rumelange, Carrière Weïsskaul (N8.13), sur rochers calcaires, sur *Mycobilimbia sabuletorum*, 8.1981, P. Diederich 3343 (h).

Lichenicolous ascomycete new for the study area.

****Lichenocodium pyxidatae* (Oudem.) Petr. & H. Syd.**

Belgium, Lorr. : 3.5 km NNE of Virton, Vallée de Rabais (M7.23), on *Quercus* in valley near brook, on *Cladonia pyxidata*, 4.1991, A. M. Brand 25310 (h).

The lichenicolous coelomycete *L. pyxidatae* was known from a German locality very close to the Luxembourg border (DIEDERICH 1986b : 21), but had never been recorded from Belgium or Luxembourg before.

Lichenicolous coelomycete new for the study area.

****Lichenostigma cosmopolites* Hafellner & Calatayud**

On most *Xanthoparmelia* specimens from the studied area, a superficial net of dark brown, torulose, branched and anastomosed hyphae can be observed, on which black perithecioid ascomata can develop. This lichenicolous fungus was already reported by DIEDERICH et al. (1992 : 147) as *Sphaerellothecium araneosum* (Arnold) Zopf. However, the latter is confined to the genera *Ochrolechia*, *Pertusaria* and *Varicellaria* (ROUX & TRIEBEL 1994 : 519-523). The species found on *Xanthoparmelia* has just been described by HAFELLNER & CALATAYUD (1999) as *Lichenostigma cosmopolites*. The description and illustrations provided by these authors confirm that the material from our area of study definitely belongs to this species.

+*Lichenothelia convexa* Henssen

Belgium, Ard. : Willerzie, ruisseau des Marotelles (K5.16), barre rocheuse cambrienne ensoleillée, 5.1978, E. Sérusiaux s.n. (LG); Stavelot, Rochers de Challe (G8.52), 300-310 m, rochers siliceux (schistes et quartzites du Revinien) fortement enrichis en pyrite, 3.1998, M. Minet, E. Sérusiaux & P. van den Boom s.n. (LG).

France, Ard. : Dept. Ardennes, Château-Regnault-Bogny (S de Monthermé), Rochers des Quatre Fils Aymon (K5.54), sur le rocher, 10.1982, *E. Sérusiaux* 4554 (LG, sub *Umbilicaria grisea*).

Lichenothelia D. Hawksw. is a non-lichenized fungus that has very little chance to be ever collected and studied by mycologists; indeed, it forms very tiny black dots on dry and exposed siliceous rock surfaces, either in natural or artificial (mainly roofs) habitats. It forms small apothecia-like ascomata as well as marginal macroconidia (not developed into pycnidia). The three collections mentioned produce ascospores and macroconidia that are typical for *L. convexa* (HENSSSEN 1987 : 259). Other species are expected as the genus is obviously widespread in the study area, including roofs, but so far the material cannot be determined.

Non-lichenized fungus new for the study area.

****Marchandiomyces corallinus* (Roberge) Diederich & D. Hawksw.**

Belgium, Ard. : S of Vielsalm, rocks NE of Salmchâteau, NW, lower part of rocks (H8.31), on shale, on *Lepraria caesiocalva*, 5.1992, *A. M. Brand* 27284 (h). - Lorr. : Lischert (L7.36), dans un verger, sur *Parmelia saxatilis*, 7.1996, *D. Thoen* (h, hb, Diederich).

Luxembourg, Lorr. : Hollenfels, dans le parc près du château (L8.44), sur *Lecanora conizaeoides*, 10.1996, *P. Diederich* 12448 (h); Mersch, N Reckange, Elenter Kapelle (L8.24), on *Pinus*, on *L. conizaeoides*, 5.1998, *P. Diederich* 13629 (h).

This species had several times been mentioned from the study area (e.g. DIEDERICH 1990), but all the corresponding specimens belong to *M. aurantiacus* (ETAYO & DIEDERICH 1996). The four collections cited above show that *M. corallinus* s. s. also exists in the study area.

***Melanelia sorediata* (Ach.) Goward & Ahti**

Syn. : *Parmelia sorediata* (Ach.) Th. Fr.; *P. sorediosa* Almb.; *P. disjuncta* auct. p. p., non (Erichsen) Essl.; *P. substygia* sensu LAMBINON (1966) p. p., non Räsänen

Belgium, Ard. : Ovifat, versant droit de la Warche, sous la carrière Dethier (G8.34), blocs de rochers dans le pierrier, 3.1960, *J. Lambinon* 60/93b, 60/143 (LG); Vielsalm, Thier des Carrières (H8.31), éboulis de phyllades anciens (déblais plus ou moins tassés et éclairés), 5.1965, *J. Lambinon* 65/377 (LG); SE of Vielsalm (H8.31), abandoned shale quarry, on loose stones, 4.1987, *A. M. Brand* 16201 (h); Vielsalm, flanc gauche de la Salm, Bonâfa (H8.31), ancien site d'exploitation de l'ardoise, sur dalle de schiste, 8. 1989, *E. Sérusiaux* 10697 (LG).

Luxembourg, Ard. : 1.4 km SSW of Hobscheid, 0.3 km NW of Unterschlinder, Wolfsbiereg (K8.24), schistose rock outcrop on S slope, 3.1989, *A. M. Brand* 20185 (h).

The populations now referred to this species were previously included in the closely related *M. disjuncta* (Erichsen) Essl. (LAMBINON 1966 : 431, sub *Parmelia substygia* Räsänen; LAMBINON 1969 : 151; SÉRUSIAUX 1990 : 138). They are distinguished from the latter by their narrow, linear and rarely overlapping lobes with a dull upper surface which is devoid of pseudocyphellae, and their capitate and raised soralia, born on small and erect lateral lobes. *Melanelia sorediata* is much rarer than *M. disjuncta* and has been found in a few, scattered localities. It is however rather common in old quarries near Vielsalm, where *M. disjuncta* is very rare.

New for the study area.

***Melanelia stygia* (L.) Essl.**

Syn. : *Parmelia stygia* (L.) Ach.

Belgium, Ard. : Solwaster, rocher de Bilisse (G8.12), sur rocher, 7.1975, A. M. Brand 5405 (h).

Melanelia stygia is easily identified by its more or less convex, shiny lobes with minute, punctiform pseudocyphellae. It is a montane species, and its discovery in the study area again demonstrates the phytogeographical affinities of several siliceous outcrops in the higher parts of the Ardennes.

New for the study area.

***Melaspilea granitophila* (Th. Fr.) Coppins**

Belgium, Ard. : 1.5 km WSW of Chiny, Rocher du Hât (L6.37), on a schistose rock, 8.1995, A. M. Brand (h).

New for the study area.

****Merismatium scammoecum* Lettau**

Belgium, Mosan : 2.6 km NE of Durbuy, Rocher de Glawan (H7.11), on a limestone rock, 3.1985, A. M. Brand 14165 (h).

The biology of *M. scammoecum* is poorly known. TRIEBEL (1989 : 191-194) examined several specimens growing close to endolithic thalli of *Protoblastenia incrustans*. The type specimen is reported on *Thelidium dionantense*. In our specimen, the perithecia are growing directly on the rock, and it is not clear whether they are connected to one of the endolithic lichens present on this rock.

New for the study area.

Micarea bauschiana (Körb.) V. Wirth & Vězda

Belgium, Ard. : Salmchâteau, affleurements situés c. 100 m au N du cimetière, alt. 430 m (H8.31), rochers du Salmien non ou peu minéralisés, en sous-bois, 2.1998, E. Sérusiaux s. n., P. Diederich & M. Minet (LG); 2.3 km NW of Bouillon, Pic du Diable (L6.22), schistose rocks, 3.1991, A. M. Brand 25264 (h).

Micarea bauschiana was formerly known from two localities in Belgium (Mosan and Ard. districts) (VAN DEN BOOM 1996 : 15) and is here recorded from two further localities. It might prove to be widespread in the Ardennes.

Micarea erratica (Körb.) Hertel, Rambold & Pietschm.

Syn. : *Lecidea erratica* Körb.

Belgium, Brab. : Voeren, De Planck, near Dutch border at Dikkenbos (E7.58), on flint in meadow, 5.1978, A. Aptroot (h). - Ard. : Stavelot, Rocher de Challie (G8.52), 300-310 m, rochers siliceux (schistes et quartzites du Revinien) fortement enrichis en pyrite, 3.1998, P. van den Boom 19921 (h), E. Sérusiaux s. n. & M. Minet (LG).
Luxembourg, Ard. : 0.9 km SSW of Hoscheid, road to Goebelsmühle (K8.24), on schistose stones in *Calluna-Sarothamnus* heath on S-slope, 3.1989, A. M. Brand 20390 (h).

New for the study area.

Micarea nigella Coppins

Belgium, Ard. : Lienne valley, 4.5 km from confluence with Amblève (G7.46), at base of *Corylus* (over a rock above stream), 4.1987, A. M. Brand 16400 (h).
France : Dept. Vosges, Lac de Blanchemer (SE de Gérardmer), au S du Grand Artimont, sur *Acer* au bord du lac, 6.1985, E. Sérusiaux 7293 & F. Rose (LG).

Micarea nigella seems to be a rare species as only few collections have been reported (Denmark, Scotland and England in COPPINS 1983 : 165; S Sweden in SANTESSON 1993 : 139). Both collections mentioned above match the original description very well.

New for the study area, and for France.

Micarea subnigrata (Nyl.) Coppins & H. Kilius

Belgium, Ard. : Robertville, 1 km W of barrage, valley of Warche (G8.34), on quartzite blocks of scree on S slope, 4.1989, A. M. Brand 20367 (h); Bovigny, flanc droit de la vallée de la Ronce (H8.41), alt. 460 m, ancienne exploitation de carrière, sur dalles schisteuses, 3.1998, E. Sérusiaux s. n., P. van den Boom & M. Minet (LG).
France, Ard. : Dept. Ardennes, Château-Regnault-Bogny (S de Monthermé), Rochers des Quatre Fils Aymon (K5.54), sur le rocher, 10.1982, E. Sérusiaux 4550 (LG).

Micarea subnigrata is a rather rare lichen throughout its range, easily characterized by its spectacular, helicoid macroconidia (present in the above mentioned collections).

New for the study area.

**Milospium deslooveri* Diederich & Sérus. sp. nov. (Fig. 9)

Milospium lichenicola insignis sporodochiis 100-200 μm diam. et conidiis valde curvatis ad helicoideis, imperfecte septatis, 8-12 x 8-10 μm .

Type : Belgium, prov. Luxembourg, Ard. distr., Sainte-Cécile, rive gauche de la Semois, rocher de Libaipire face au Tombeau du Chevalier (L6.35), parties ombragées de parois rocheuses siliceuses, partiellement en sous-bois, sur une croûte sorédieuse à *Trentepohlia* non identifiée, 7.1997, E. Sérusiaux s. n. (LG - holotype; hb. Diederich - isotype).

Colonies lichenicolous, forming dark brown, convex, rounded sporodochia, 100-200(-250) μm in diam.; mycelium immersed in the host thallus. Conidiophores semi-macronematous, mostly 2.5-3 μm thick, agglomerated in very dense sporodochia. Conidiogenous cells monoblastic or polyblastic, integrated, terminal, determinate. Conidia strongly curved when young, becoming almost helicoid, very uniform, not lobed, brown, with a K+ olivaceous pigment, 8-12 x 8-10 μm , with 2-6, mostly incomplete, septa, growing from the outer wall towards the inner wall, the 1-2 most apical septa often becoming complete when mature; wall smooth, unevenly thick, much thicker and more strongly pigmented in the outer, exposed part.

This species is easily distinguished from the two hitherto known *Milospium* species, *M. graphideorum* (Nyl.) D. Hawksw. (on species of *Lecanographa*, *Opegrapha*, and other genera with *Trentepohlia*) (HAWKSWORTH 1975) and *M. lacoizquetae* Etayo & Diederich (on *Cladonia parasitica*) (ETAYO & DIEDERICH 1996), by the regularly helicoid, incompletely septate and non-lobate conidia. The conidiomata and the conidiogenesis are the same as in both other species.

Unfortunately, we are unable to definitely identify the host, which resembles *Opegrapha gyrocarpa* Flotow or *O. fumosa* Coppins & P. James, two species so far not recorded from the study area.

The new species is named after Prof. J. R. De Sloover, a Belgian botanist of the University of Louvain-la-Neuve, who encouraged both authors of this new species to achieve a checklist of the lichen flora of Belgium and Luxembourg.

Additional specimen : Belgium, Ard. : Sainte-Cécile, vallée de la Semois, rive gauche, entre le lieu-dit Relogne et les rochers face à la Roche du Chat (L6.36), parties ombragées de parois rocheuses siliceuses, partiellement en sous-bois, sur une croûte à *Trentepohlia* non identifiée, 7.1997, E. Sérusiaux s. n. (LG).

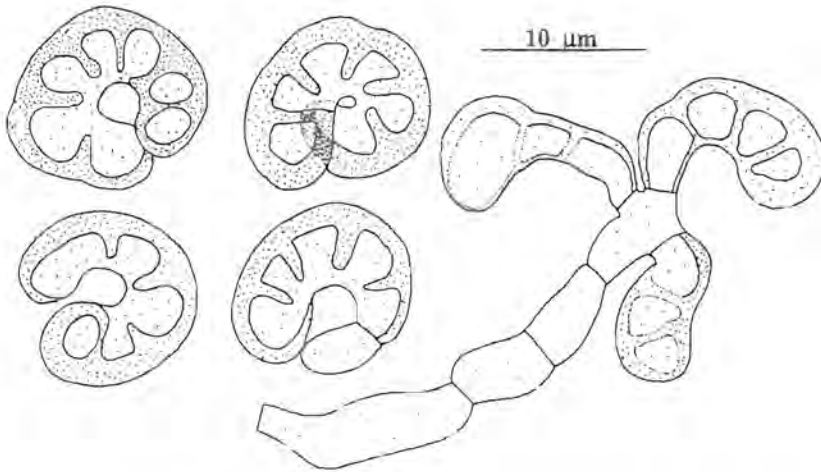


Fig. 9. - *Milospium deslooveri*. Conidiophore, conidiogenous cell and conidia (holotype).

Miriquidica deusta (Stenham.) Hertel & Rambold

Syn. : *Lecanora deusta* (Stenham.) Nyl.; *Lecidea deusta* (Stenham.) Nyl.; *Lecidea deustata* Zahlbr.

Belgium, Ard. : Nadrin, Rocher du Hérou (J7.14), SW face of rock at culminating point of ridge just rising above *Quercus* wood, 4.1988, A. M. Brand 17316 (h).

This species was formerly known from a single record by VAN DOBBEN & SIPMAN (1980 : 21, under *Lecidea deustata*) near Izier (Belg., Ard.); the relevant collection could not be checked but the above mentioned specimen was examined in detail (lobaric acid demonstrated by TLC) and confirms the occurrence of the species in the study area.

Miriquidica is otherwise represented in the study area by *M. intrudens* (H. Magn.) Hertel & Rambold, known from two localities (SÉRUSIAUX 1990 : 142) in the Ardennes district; both collections were carefully re-examined by TLC and contain miriquidic acid. A further species, most probably undescribed, has been collected in the Ard. district in N France, dept. Ardennes, Revin, Mont Malgré-Tout, La Faligeotte (K5.34), schistose rocks of road cutting, 9.1986, A. M. Brand 15276 (h) : it looks like *Rimularia furvella* (Mudd) Hertel & Rambold and contains miriquidic acid. It cannot be identified with any of sorediose *Miriquidica* species known so far [*M. atrofulva*

(Sommerf.) Schwab & Rambold and *M. nigroleprosa* (Vain.) Hertel & Rambold].

****Muellerella pygmaea* (Körb.) D. Hawksw. var. *pygmaea***

Belgium, Mosan : Han-sur-Lesse, Les Grignaux, W of the Ry d'Ave (J6.34), dry and SE-exposed limestone outcrop and *Xerobromion* communities, on *Lobothallia radiosa*, 5.1997, P. Diederich 12747 (h). - Ard. : Vielsalm, Thier des Carrières (H8.31), déblais de phyllades, sur *Lecidea fuscoatra*, 4.1974, E. Sérusiaux s. n. (LG). Luxembourg, Ard. : Hoscheid, Molberlay (K8.24), on schists, on *L. fuscoatra*, 5.1991, P. Diederich 9803 (h), 1 km E of Esch-sur-Sûre, near tunnel and road N15, wall along stairs and top of the hill above tunnel (K8.32), sur un rocher en schistes, sur *L. fuscoatra*, 5.1992, P. Diederich 4839 (h). - Lorr. : Hamm, rocher au-dessus du carrefour de la rue Godchaux (piste cyclable) avec la rue des Draperies (M8.26), sur une surface horizontale ensoleillée en grès, sur une croûte stérile non identifiée, 10.1997, P. Diederich 13408 (h).

TRIEBEL (1989) recognized three varieties within *Muellerella pygmaea*. MATZER (1993) showed that at least one variety, viz. var. *athallina*, is heterogeneous : on several host genera, the ascospores, studied by TEM, are smooth-walled, whilst on other host genera, they are verrucose. We believe that the host specificity in *Muellerella* is much greater, and that more taxa could be recognized within this group. However, as long as no modern revision of *Muellerella* is available, we prefer to use TRIEBEL's treatment.

The type of *Muellerella pygmaea* var. *pygmaea* has been collected on *Lecidea lapicida* in Poland, that of *Tichothecium pygmaeum* var. *grandiusculum* Arnold (a synonym of var. *pygmaea*) on *Lecidea* s. str. in Austria, and that of *T. fuscoatrae* Steiner (which TRIEBEL 1989 considered a synonym of var. *pygmaea*, but with a question mark), on *Lecidea fuscoatra* in Greece. The specimens from the Ardennes district are therefore likely to belong to *M. pygmaea* var. *pygmaea* s. str., whilst those from the Mosan and Lorrain districts might belong to distinct taxa.

Muellerella pygmaea has been reported several times from the study area (e. g. SÉRUSIAUX 1990 : 138), but in most cases, without any indication on the variety.

****Muellerella pygmaea* var. *athallina* (Müll. Arg.) Triebel**

Belgium, Mar. : Knokke, Albertstrand (B2.33), sur un poteau en bois en bord de mer, périodiquement submergé, sur *Lecanora albescens*, 4.1997, P. Diederich 12518 (h). - Mosan : Dinant, nature reserve Devant-Bouvignes (H5.37), on *Aspicilia calcarea*, 5.1999, P. van den Boom 22687 (h). - Ard. : Stavelot, Rocher de Challes sur la rive droite de l'Amblève (G8.52), rocher siliceux, sur *Porpidia macrocarpa*, 3.1998, E. Sérusiaux s. n., M. Minet & P. van den Boom (LG). Luxembourg, Lorr. : NE of Kehlen, cimetière de Schéimerech (L8.54), sur un vieux mur et sur de vieilles tombes, sur *Lecanora campestris*, 9.1997, P. Diederich 12947

(h); Hamm, rocher au-dessus du carrefour de la rue Godchaux avec la rue des Draperies (M8.26), sur une surface horizontale ensoleillée en grès, sur *Lecidella stigmatea*, 10.1997, P. Diederich 13411 (h); Strassen, partie sud du village, rue des Prés (M8.14), sur un mur, sur *Caloplaca variabilis*, 11.1997, P. Diederich 13441 (h, sub *C. variabilis*), ibid., on *Aspicilia calcarea*, P. Diederich 13469 (h).

As the type of var. *athallina* has been collected on *Protoblastenia*, none of the specimens mentioned above are likely to belong to var. *athallina* s. str. The name *Tichothecium erraticum* A. Massal. is available for the material on *Aspicilia*, and the names *Microthelia ecatonspora* Anzi and *M. cookeri* Lindsay for that on *Lecanora*.

Lichenicolous ascomycete new for the study area.

****Muellerella pygmaea* var. *ventosicola* (Mudd) Triebel**

Belgium, Ard. : Vielsalm, Salmchâteau, flanc droit de la vallée de la Salm, cimetière de Salmchâteau (H8.31), murs surmontés de dalles d'ardoise, sur *Rhizocarpon reductum*, 2.1998, P. Diederich 13498 (h), E. Sérusiaux & M. Minet.

As the type of var. *ventosicola* is from *Ophioparma ventosa*, it is possible that the material on *Rhizocarpon* belongs to a different, yet undescribed taxon.

Lichenicolous ascomycete new for the study area.

***Mycobilimbia hypnorum* (Lib.) Kalb & Hafellner**

Belgium, Mosan : Ougrée, Domaine du Sart Tilman, rive gauche du ruisseau de Colonster (F7.57), talus schisteux sec à *Diphyscium*, 5.1964, J. Lambinon 64/501 (LG); c. 23 km SE of Dinant, 0,5 km W of road crossing Halma-Génimont and Wellin-Ave (J6.33), middle devonian calcareous rock outcrop on slope in narrow, wooded valley, shaded by trees, with *Agonimia opuntiella* and *A. tristicula*, 10.1982, A. M. Brand 27847 (h). - Ard. : Most probably near Malmédy (G8.43), before 1830, M. A. Libert (LG, in *Plantae Cryptogamicae quas in Arduenna collegit*, fasc. 1, n° 12, 1830); without locality, 'Libert, Crypt. Arduen., n° 12' (LG, in hb. R. Courtois n° 165 p.p.).

Luxembourg, Lorr. : Grevenmacher, Kelsbach (L9.53), 11.1981, on calcareous rocks, over mosses, P. Diederich 3747 (h).

Mycobilimbia hypnorum has been described by Marie-Anne Libert, the most famous Belgian cryptogamist, in her exsiccate distributed under the name 'Plantae Cryptogamicae quas in Arduenna collegit'. A complete set of the exsiccate is preserved in LG and n°12 in fasc. 1 read as follows: '*Lecidea hypnorum* N. Crusta tenui, effusa, membranacea, viridi-cinerea; apotheciis sessilibus, atris, nitidis, marginatis, concavis, demum planis, proliferis, conglomeratisque; margine integerrimo. Ad rupes Supra Muscos. Per Annum.'. The specimen corresponds to the current use of the epithet

(HAFELLNER 1989, PURVIS et al. 1992 : 329). The material distributed in the exsiccate can be regarded as the type collection and we select the specimen in LG herewith as the lectotype. The specimen in R. Courtois's herbarium is most probably a duplicate of the original collection of M. A. Libert; it is also a typical *Mycobilimbia hypnorum*.

***Mycobilimbia lobulata* (Sommerf.) Hafellner**

Syn. : *Toninia lobulata* (Sommerf.) Lyngé

Belgium, Mosan : 2.2 km SE of Han, 1.1 km ENE of Belvau (J6.35), limestone rock, over mosses on steep N-side, sheltered, 8.1995, *A. M. Brand* 33511 (h); Aywaille, vallée de l'Amblève, château d'Amblève en amont de Martinrive (G7.24), anfractuosités terreuses d'une paroi calcaire plus ou moins dolomitisée et ombragée, 2.1981, *E. Sérusiaux* 2307b (LG).

This species has been assigned to the genus *Toninia* for a long time because of its thallus made of small squamules; these are very characteristic as they are crenate-lobate, overlapping and pale with a darker centre (greyish). It is however very close to *Mycobilimbia sabuletorum* and thus is better accommodated in the same genus.

Following DUVIGNEAUD & GILTAY (1938 : 25), *Toninia syncomista* (Flörke) Th. Fr., which is a synonym of *T. lobulata*, had been mentioned from Malmédy by LOCHENIES (1897); we did not find, however, such an indication in Lochenies' paper. VAN DEN BOOM (1996 : 15) recently reported this species from Dinant (Belgium, Mosan distr.). The two specimens cited above show that the species might be more common in the Mosan district.

(+?) *Mycoporellum sacromontanum* (Strasser) Redinger

Syn. : *Arthonia sacromontana* Strasser, *Allarthonia sacromontana* (Strasser) Zahlbr.; *Keisslerellum sacromontanum* (Strasser) R.-G. Werner comb. inval.

Belgium, Ard. : Stavelot, rocher de Challe sur la rive droite de l'Amblève (G8.52), rochers siliceux (schistes et quartzites du Revinien), sur rochers, 3.1998, *E. Sérusiaux* s. n., *M. Minet* & *P. van den Boom* (LG); La Roche, Château du Diable (J7.13), on siliceous stone in a furrow, 5.1990, *L. Spier* (hb. Brand 33024, sub '*Micarea olivacea*'); W shore of Lac de Nisramont, 0.6 km from the barrage (J7.25), on shaded schistose rocks in wood on E-slope, 4.1988, *A. M. Brand* 17142 (h).

The three collections perfectly match the original description of STRASSER (1897 : 69) and that of KEISSLER (1937-1938 : 485-486) : thallus very thin, dark brown, soon evanescent; ascocarps black and shiny, first rather aplanate but soon globose or even conical, 0.2-0.5 mm in diam., compound with usually 3 locules; hamathecium indistinct; asci subcylindrical, up to c. 150 µm long and c. 15-20 µm wide, 8-spored; spores hyaline, 2-celled, with the distal cell rounded and the proximal one attenuated, c. 19-26 x 6-7

µm. Its biological status is unclear : STRASSER and KEISSLER state it is associated with a *Palmella*-like alga but we failed to detect any in our collections.

Mycoporellum sacromontanum is very poorly known as it has never been reported since its description. However, WERNER (1944 : 145) has introduced the invalid generic name *Keisslerellum* for it, although he obviously never collected or saw a single collection of the species. In his fascinating analysis of the taxonomy of pyrenolichens, HARRIS (1995 : 64-70) does not discuss its generic position; he reduced *Mycoporellum* Müll. Arg. into synonymy with *Mycoporum* Nyl. We nevertheless maintain *M. sacromontanum* in *Mycoporellum* as the combination into *Mycoporum* has never been made, but we consider it does belong to the latter genus as circumscribed by HARRIS.

Lichenized (?) fungus new for the study area.

(+)*Mycoporum antecellans* (Nyl.) R. C. Harris

Belgium, Ard. : 4.5 km E of Suxy, 0.3 km N of roadcross N897/801 (L7.21), 430 m, on *Fagus* in forest, 8.1995, A. M. Brand 33410 (h).

This species was formerly known from a single collection made last century near St-Hubert (DIEDERICH et al. 1991 : 10), also on *Fagus*. The collection from Suxy demonstrates it still occurs in the study area. It is most probably not lichenized but seems to be a good indicator of old and well-preserved forests.

**Nectria* (Fr.) Fr.

Three lichenicolous (or fungicolous) species of *Nectria*, viz. *N. indigena* (Arnold) Rehm (on *Naetrocymbe saxicola*), *N. lecanodes* Ces. (on *Peltigera*) and *N. rubefaciens* Ellis & Everh. (on *Parmelia saxatilis* and *P. sulcata*), have been reported from Luxembourg (MOLITOR & DIEDERICH 1997 : 76-77, VAN DEN BOOM et al. 1996 : 88, DIEDERICH et al. 1991 : 31). In their recent treatment of Hypocreales, ROSSMAN et al. (1999) propose a new generic arrangement of the taxa, and all species with a KOH- ascumatal wall are excluded from the genus *Nectria*, and even from the Nectriaceae. Instead, most lichenicolous species belong to the newly described family Bionectriaceae. However, only a few lichenicolous genera like *Pronectria* Clem. or *Paranectria* Sacc. have been discussed by these authors, that do not cover the lichenicolous species treated here.

The genus *Nectriopsis*, although described for *N. violacea* (Fr.) Maire from myxomycetes, also covers fungicolous fungi characterized by small superficial perithecia, simple perithecial walls, the presence or absence of perithecial hyphae, and mostly 1-septate ascospores (SAMUELS 1988).

Whether *Nectriopsis* in its current sense is a monophyletic unit is not known. Nevertheless, because of simple perithecial wall structures, superficial habitat of the perithecia, their obviously biotrophic life style, *N. indigena* and *N. lecanodes* are transferred to *Nectriopsis*.

Nectria indigena has small orange to brownish perithecia of 150-250 μm , arising from a sometimes almost unrecognizable subiculum; ascomatal hairs are absent, and the ascomatal wall is composed of one single layer of cells, c. 20 μm thick and K-. Because of its simple perithecial wall anatomy, astromatous and superficial habit of the perithecia, and its biotrophic biology, the combination of *Nectria indigena* in *Nectriopsis* Maire is proposed.

Nectriopsis indigena (Arnold) Diederich & Schroers comb. nov. Basionym: *Secoliga indigena* Arnold, Flora 53 : 121, 1870.

Nectria lecanodes has pale whitish to pinkish or orange, superficial perithecia, 200-300 μm in diam., becoming cupulate when dry, developing over an often reduced and indistinct subiculum. The ascomatal wall is covered by concolourous hyphae. It is K-, 35-45 μm thick, and composed of two distinct layers: an outer layer of \pm interwoven hyphae (textura intricata), and an inner layer of elongate cells (textura angularis or prismatica). The ascospores are 1-septate, not disarticulating, and distinctly verruculose to verrucose when mature. We believe that the classification of this species in *Nectriopsis* is the best solution, and we propose therefore the following new combination:

Nectriopsis lecanodes (Ces.) Diederich & Schroers comb. nov. Basionym: *Nectria lecanodes* Ces., in Rabenhorst, Herb. mycol. ed. 2 : 525, 1863.

Nectria rubefaciens has small, superficial, subglobose, reddish orange ascomata, collapsing by latering pinching when dry, 80-160 μm in diam., hyaline, thick-walled, 0-1-septate setae around the ostiole with a rounded apex, a simple ascomatal wall, K-, 10-12 μm thick, 1-septate, hyaline to brownish, smooth ascospores, and an *Acremonium* anamorph, *A. rhabdosporum* W. Gams (LOWEN 1995 : 91-92). It resembles some species of *Lasionectria* (Sacc.) Cooke, but species of that genus are distinguished by larger ascomata (more than 200 μm in diam.), which are slightly cupulate when dry, and a thicker ascomatal wall (more than 20 μm thick) of two distinct layers. The genera *Trichonectria* and *Nectriopsis* are quite similar (ROSSMAN et al. 1999 : 76), and the main difference seems to be the very thick-walled ascomatal hairs in *Trichonectria*, aspects of ascospore and ascus morphology, and the thin-walled or missing hairs in *Nectriopsis*. Thus, *N. rubefaciens* appears to belong to *Trichonectria*, and the following new combination becomes necessary:

Trichonectria rubefaciens (Ellis & Everh.) Diederich & Schroers comb. nov.
Basionym : *Nectria rubefaciens* Ellis & Everh., Journ. Mycol. 3 : 116, 1887.

**Nectriopsis micareae* Diederich, van den Boom & Ernst sp. nov. (Fig. 10)

Nectriopsis lichenicola insignis peritheciis superficialibus, subsphericis, pallide brunneis, 100-125 μm , pilis hyalinis, 0(-3)-septatis, 17-30 \times 2.5-3.5 μm , ascomatis pariete externo textura intricata, hyphis 1.8-3.5 μm crassis, ascis subcylindricis ad clavatis, 35-45 \times 7.5-10 μm , ascosporis hyalinis, 1-septatis, laevibus, 12-14 \times 3.5-4.5 μm .

Type : The Netherlands, Noord-Brabant, WSW of Heeze, SW of Greveschutven (grid-ref. 51-55-54), fish-nursery, small damp *Salix* wood at S rim of water, rotting trunk of fallen *Betula*, on *Micarea* sp., 22.10.1997, P. van den Boom 19752 (LG - holotype, hb. van den Boom - isotype).

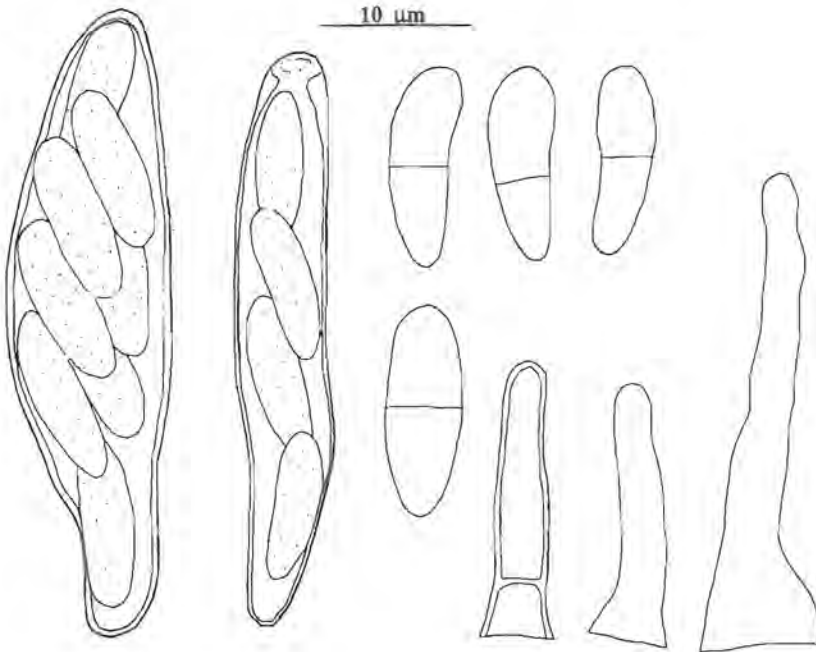


FIG. 10. — *Nectriopsis micareae*. Ascis, ascospores and ascosporangia (holotype).

Ascomata lichenicolous on *Micarea*, perithecioid, solitary, superficial, non-stromatic, not immersed in a mycelium, subspherical, pale brown, with an orange or pinkish tinge, collapsing irregularly when dry, 100-125 μm in diam., with tiny hairs visible at a strong magnification; hairs hyaline, straight, smooth, 0(-3)-septate, thin-walled, with a slightly enlarged base and

a rounded apex, 17-30 x 2.5-3.5 μm ; cells at the surface of the perithecial wall forming a *textura intricata*, with hyphae 1.8-3.5 μm thick; perithecial wall K-, in section 10-13 μm thick, of narrow elongate cells, except the outer layer, which is composed of interwoven hyphae. Ostiolar canal periphysate; paraphyses gelatinized at maturity. Asci subcylindrical to clavate, 35-45 x 7.5-10 μm , apically with a minute refractive ring. Ascospores 4-8/ascus, irregularly biseriate, narrowly ellipsoid, hyaline, \pm equally 2-celled, not constricted at the septum, smooth, 12-14 x 3.5-4.5 μm . Anamorph unknown.

Amongst the hitherto recognized lichenicolous species of *Nectriopsis*, this species is most close to *N. leptogii* Diederich, which has similar perithecial hairs (for a description and illustrations, see APTROOT et al. 1997a : 114-115). However, the new species has a very distinct perithecial surface (*textura intricata*), and larger ascomata, asci and ascospores. Amongst the numerous species of *Nectriopsis* studied by SAMUELS (1988), none has the characteristics of our new species.

Nectriopsis micareae appears to be confined to a yet undescribed, often sterile species of *Micarea* with a finely granulate, greenish thallus, which is related to *M. prasina*, and which is currently being studied by P. van den Boom. The fungus is clearly parasitic, as the infected parts of the host thallus become whitish and are probably being killed. The presence of these pale thallus parts often allow the discovery of the minuscule perithecia, which, even under the binocular, would otherwise easily be overlooked.

Additional specimens : Belgium, Camp. : N of Lommel, Blekerheide (C6.26), former heathland, on *Prunus padus*, 6.1999, P. van den Boom 22701 (h, hb. Diederich), *ibid.*, on *Betula*, P. van den Boom 22705 (h).

Germany : Niedersachsen, Landkreis Harburg, S Tostedt, im Quellgebiet der Oste zw. den Ortschaften Knick und Tiefenbruch (MTB : 2724.143), auf abgestorbenem Moos und Detritus in einem Moor, 10.1995, G. Ernst 4561 (h, hb. Diederich).

The Netherlands : Noord-Brabant, SE of Eindhoven, Heeze (grid-ref. 51-56-45), in forest, 10.1996, P. van den Boom 18203 (h); Noord-Brabant, NNE of Heeze, Rul, Strabrechtse Heide (51-56-15), on *Betula*, 9.1998, P. van den Boom 21684 (h).

**Neocoleroa inundata* (Vain.) Diederich comb. nov. (Fig. 11)

Basionym : *Arthonia exilis* auct., non (Flörke) Anzi f. *inundata* Vain., Medd. Soc. F. Fl. Fenn. 10 (2) : 162, 1883; *Conida inundata* (Vain.) Sacc. & D. Sacc., Syll. Fung. 18, suppl. pars 8 : 1906. - Type : Finland, Ostrobothnia kajanensis, Kianta, Ahola, Kivellä purossa, on *Woessia inundata*, s. d., Vainio 28960 (TUR-Vainio - holotype !).

When describing the new taxon *Wentomyces lichenicola* (Hansf.) D. Hawksw. subsp. *bouteillei* Bricaud, Cl. Roux & Sérus., possibly confined to *Fellhanera bouteillei*, ROUX et al. (1994) mentioned two specimens of apparently the same fungus, growing on species of *Woessia* (= *Bacidina*). One Luxembourg specimen on *Woessia* was subsequently published by VAN DEN BOOM et al. (1996 : 90) as *W. lichenicola* subsp. *bouteillei*. BARR (1997)

considered that the *Wentomyces* species with setose ascomata are best included in *Neocoleroa* Petr., and she proposed the new combination *Neocoleroa lichenicola* (Hansf.) M. E. Barr subsp. *bouteillei* (Bricaud, Cl. Roux & Sérus.) M. E. Barr.

In the mean time, we studied more specimens on *Woessia*, and we realized that they represent a distinct taxon, for which the name *Arthonia exilis* f. *inundata* Vain. is available.

The type specimen of *A. exilis* f. *inundata* comprises a large number of minuscule perithecia (50-75 μm in diam.), which are devoid of setae and thus do not look like typical *Neocoleroa*. However, a careful examination of the specimen with the binocular microscope, at high magnification ($\times 80$), revealed the presence of at least three perithecia with a few apically furcate setae. A microscopical examination of one of them confirmed our hypothesis that they represent young perithecia of *Neocoleroa*, in which the ascomatal setae are absent or poorly developed (c. 20 μm long), but then typically furcate near the apex. A microscopical study of some other perithecia proved that the ascospores are c. 14.5-16 \times 4.5 μm , which is larger than in the original account (9-11 \times 3-4 μm). Asci could not be observed by us, as the centrum is in a poor condition, probably due to the age of the specimen.

A description of *N. inundata*, mainly based on the examination of recent specimens on *Woessia*, follows: perithecia half immersed to superficial, blackish, subspherical, mostly 60-150 μm in diam., typically covered by setae which are brown (but apically often paler), apically slightly bi- or trifurcate, c. 24-44 \times 3.5-5 μm ; the lower part of the perithecium is often fixed to the host with brownish hyphae, 50-65 \times 1.7-4 μm ; perithecial wall in surface view of brown isodiametric cells of 3.5-8 μm in diam. Periphyses simple or rarely branched, 15-30 \times 2-3 μm ; interascal filaments absent at maturity. Asci elongate-clavate to subcylindrical, thick-walled, 36-56 \times 7.5-9.5 μm , 8-spored. Ascospores \pm biseriolate, hyaline, smooth, 1-septate, constricted at the septum, each cell with one large or 2-3 smaller lipid bodies, 12-16 \times 5-6.5 μm (measurements based on living ascospores; dead ones are generally narrower, 4-5 μm wide).

Neocoleroa lichenicola differs from *N. inundata* by slightly smaller ascospores (10.5-14.5 \times 4-5 μm), longer ascomatal setae (40-65 μm) and larger ascomata (mainly 100-200 μm) (see ROUX et al. 1994).

We have examined material of *N. inundata* from Austria, Finland, Luxembourg, Madeira and The Netherlands, on *Woessia arnoldiana* and *W. inundata*, and on unidentified, mostly sterile, sorediate, corticolous, foliicolous and saxicolous *Woessia* specimens. In addition, the specimen published as *Pharcidia frigida* (Sacc.) Vouaux by BOULY DE LESDAIN (1914: 158) from France, dépt. Nord, on *Woessia inundata* certainly belongs to *N. inundata*.

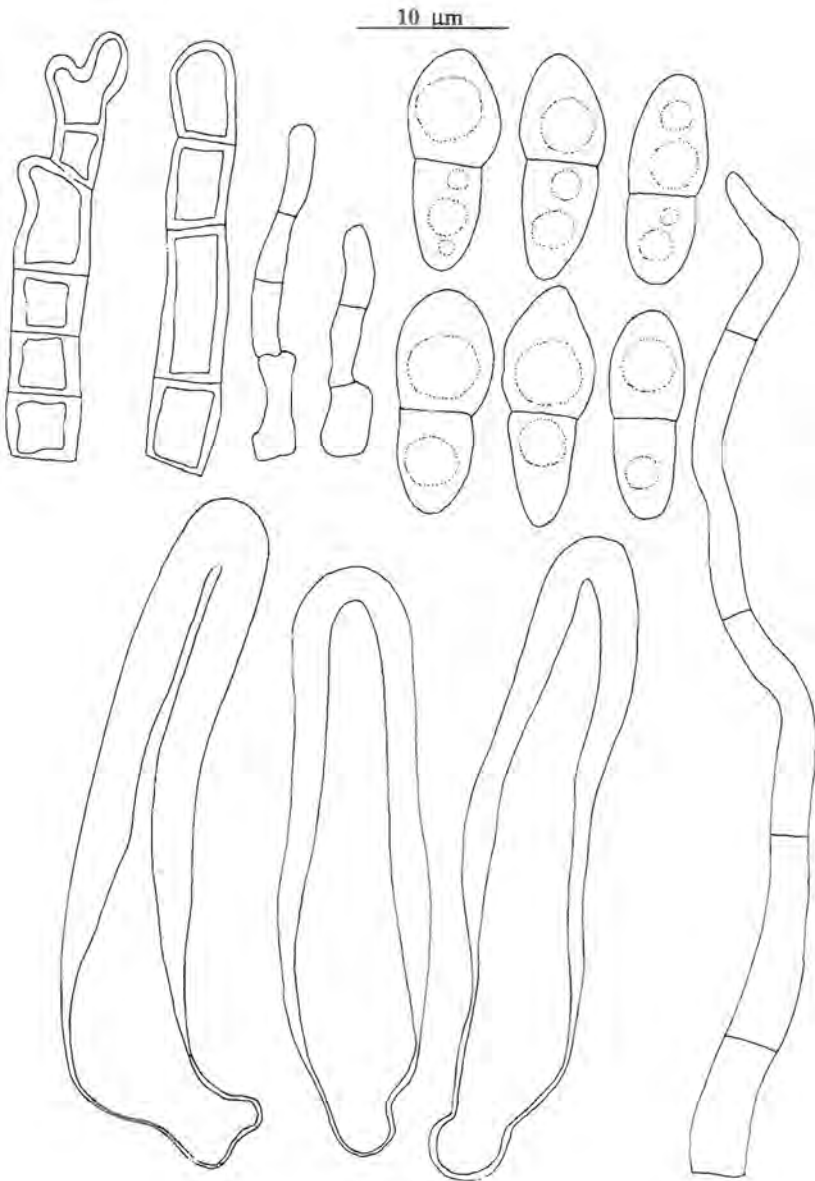


FIG. 11. — *Neocoleroa inundata*. Asci, ascospores, vegetative hyphae (right), ascomatal setae (top left) and periphyses (top centre) (P. Diederich 12297).

Additional specimens : Luxembourg, Lorr. : Graulinster, en bord de route dans le village (L8.38), alt. 375 m, sur un tronc de *Sorbus domestica* en bord de route, sur *Woessia*, 7.1995, P. Diederich 12297 (h); E Rollingen, Dréiburen (L8.35), sur une paroi verticale suintante en béton, près d'une source, sur *W. arnoldiana*, 7.1983, P. Diederich 5820 (h).

Austria, Oberösterreich : Mühlviertel, Waldaistal, Guttenbrunner Leiten (MTB 7653), alt. 380 m, auf Granit im Bachbett, auf *W. inundata*, 10.1994, F. Berger 8016 (h, hb. Diederich); Rannatal, Bachbett zw. 8-9 Furt (MTB 7548), alt. 325 m, auf *W. inundata*, 9.1996, F. Berger 10187 (h).

Madeira : Route Funchal-Faial, à Ribeiro Frio, le long de la Levada de Portela, alt. 850 m, laurisylve ± dégradée le long de la rivière, sur *Woessia* sp. foliicole, 2.1988, E. Sérusiaux s. n. (LG).

The Netherlands : Flevoland, Lelystad, along Meerkoetenweg (coord. 159,9/494,9; 26-24-15), on *Sambucus*, on sterile *Woessia*, 11.1998, A. Aptroot 44022 (h); Noord-Brabant, 's-Hertogenbosch, Fortress, Bastion Baselaar (coord. 149,9/410,7), on brick, on sterile *Woessia*, 12.1997, A. Aptroot 41816 (h).

Neofuscelia delisei (Duby) Essl.

Syn. : *Parmelia pulla* var. *delisei* (Duby) H. Magn.; *Parmelia delisei* (Duby) Nyl.

The difficult question of the status of *Neofuscelia delisei* has been summarized by SKULT (1993) and studied in detail for populations of S Finland by the same author. Typical populations can be morphologically distinguished from the closely related *N. pulla* (Ach.) Essl. by the so-called 'yellowish tendency' and the 'upper maculate surface' of their lobes (vs rather dark brown and non-maculate lobes in typical *pulla*); they produce perlatic, glomelliferic and glomellic acids instead of stenosporic or divaricatic acids in typical *pulla*.

Populations with yellowish and maculate lobes are present in the study area and they produce the acids typical of *delisei*. However, detailed analysis of 10 randomly selected populations of the *delisei-pulla* complex in the LG herbarium concurs with SKULT's conclusions : morphology is not correlated with the chemical compounds produced. Indeed, beside typical *delisei* and *pulla* populations, there are several intermediates that cannot be satisfactorily assigned to any of those entities. We thus prefer to maintain a conservative treatment of the complex and put all populations under *Neofuscelia pulla*. We are of course aware of the unsolved biological question that such a treatment implies, as the isidiate counterparts [*N. loxodes* (Nyl.) Essl. and *N. verruculifera* (Nyl.) Essl.] can be rather easily identified.

Ochrolechia arborea (Kreyer) Almborn

Belgium, Ard. : Mormont, au bord de la route de Manhay, à hauteur du village (H7.23), tronc de *Fraxinus*, 2.1968, J. Lambinon 68/11 (LG). - Lorr. : Ste-Marie-sur-

Semois, bord de la route Etalle/Croix-Rouge, un peu au S du débouché du chemin de Fratin (L7.53), tronc de *Fraxinus*, 9.1963, J. Lambinon 63/1445 (LG).

This species is easily recognized by its rounded, flat or slightly excavate, creamish soralia that react C+ red (gyrophoric acid) and UV+ orange (lichexanthone).

New for the study area

Opegrapha culmigena Lib.

Syn. : *O. herbarum* Mont.

Belgium, Ard. : Most probably near Malmédy (G8.43), before 1830, M. A. Libert (LG, in *Plantae Cryptogamicae quas in Arduenna collegit*, fasc. 1, n° 15, 1830).

This is the second type collection we have carefully examined in the exsiccate distributed by the Belgian cryptogamist Marie-Anne Libert, the first being *Mycobilimbia hypnorum* (see under that name). The lichen named '*Opegrapha culmigena*' N. crusta tenui, laevigata, alba; apotheciis sessilibus, sparsis, simplicibus, elongatis, rectiusculis; disco canaliculato; marginibus inflexis. Ad culmos *Poae nemoralis* siccis.' grows over desiccated culms of *Poa nemoralis*.

It is identical with the species currently named *Opegrapha herbarum* Mont., Arch. Bot. 2 : 302, 1833, which thus must be reduced into synonymy. The above-mentioned collection, preserved in LG, is here selected as the lectotype.

The ascospores are ca. 8/ascus, hyaline (with a granulose brownish pigment in the perispore when postmature), 3-septate (one of the medium cells distinctly enlarged), with a distinct perispore, 19-23 x 6-6.5 µm; the ascomata are lirelliform, the disc being not or only slightly exposed and epruinose; the excipular wall is dark brown, K+ olivaceous. This agrees with the description of *O. herbarum* in recent floras (e.g. PURVIS et al. 1992 : 408-409, WIRTH 1995 : 443), except that these authors state that the exciple is not reacting with KOH. The taxonomic value of this reaction requires further studies.

The species was already reported from Belgium and Luxembourg (DIEDERICH et al. 1991 : 32-33, VAN DEN BOOM et al. 1998 : 25).

Opegrapha variiformis ("variaeformis") Anzi

Luxembourg, Lorr. : Ahn, Palmberg (M9.12), sur un rocher en calcaire coquillier, 11.1981, P. Diederich 12777 (hb. Diederich).

This species is widespread in the Mediterranean region (TORRENTE & EGEE 1989 : 132-135), but has very rarely been recorded in Central Europe (Germany), where it was believed to be extinct (WIRTH 1995 : 446). The discovery of a healthy and well-developed population in the Moselle valley in

Luxembourg is most interesting, and gives further support for the arguments to protect the locality 'Palmborg', which also has the only Luxembourg *Buxus* population.

New for the study area.

Ophioparma ventosa (L.) Norman

Syn. : *Haematomma ventosum* (L.) A. Massal.

Belgium, Ard. : S of Vielsalm, rocks NE of Salmchâteau, NW, lower part of rocks (H8.31), c. 500 m, on shale, W-face of rock outcrops, sheltered by *Betula*, 5.1992, A. M. Brand 27283 (h).

This species is well-known from exposed siliceous outcrops in montane areas in Europe and when fertile, is easily recognized by its vivid red apothecia. Its discovery in Belgium at rather low elevation (c. 500 m) on the natural outcrops of Vielsalm/Salmchâteau once again demonstrates their very high patrimonial value. The population is scarce and sterile but detailed examination of the thallus anatomy and pycnidia, determination of the chemical compounds produced by the thallus, and comparison with the large collections of LG leave no doubt on its identity.

Ophioparma ventosa was once mentioned from the Belgian Ardennes (near Mortehan) (LOCHENIES 1896 : 107). Although we did not see the corresponding specimen, the report is most probably correct as LOCHENIES provides a very accurate and detailed description of the species. Our recent collection proves that the species really exists in the study area.

**Paranectria oropensis* (Ces.) D. Hawksw. & Piroz.

Luxembourg, Lorr. : NE Kehlen, cimetièrre de Schéimerech (L8.54), on *Tilia*, on *Buellia punctata*, *Parmelina tiliacea* and *Xanthoria candelaria*, 9.1997, P. Diederich 12929 (h, LG).

Although the material is immature (the asci contain no ascospores), there is no doubt about our identification.

Lichenicolous fungus new for the study area.

Parmelia submontana Hale

Belgium, Ard. : NNW of Bouillon, 1 km S of Ucimont, Botassart, near a chapel (L6.12), on *Aesculus*, 4.1999, P. van den Boom 21916 (h, LG, hb. Diederich). - Lorr. : Road Habay-la-Neuve to Etalle, 2.4 km SSW of Habay (L7.44), on *Fraxinus* at road side, among meadows, 9.1986, A. M. Brand 15431 (h, LG).

Luxembourg, Lorr. : NE Kehlen, cimetièrre de Schéimerech (L8.54), on *Populus*, 9.1997, P. Diederich 12918 (h); *ibid.*, on *Tilia*, P. Diederich 12925 (h, LG); SW of

Differdange, Vesquenhaff (M8.41), on branches of *Fagus* in forest, 5.1999, *P. Diederich* 13746 (h); NNW of Schouweiler (M8.22), on *Quercus* in a pasture, 9.1999, *P. Diederich* 13860 (h); SE Lasauvage, Grand-Bois (M7.48), on *Acer* along a road, 9.1999, *P. Diederich* 13868 (h).

According to CHRISTENSEN (1997), this species is a Central European montane to Mediterranean montane species with subatlantic outliers in the NW European lowland. It has been argued that it is currently spreading rather rapidly over NW Europe as there are many recent reports and almost no misidentified collections in old herbaria, but the possibility that it is relict in humid niches cannot be ruled out with the data available.

New for the study area.

***Petractis hypoleuca* (Ach.) Vezda**

Belgium, Mosan : 0.4 km NE of Waulsort (H5.56), 180 m, carboniferous limestone rock outcrops on W-slope, nearly vertical N-face, open, 10.1991, *A. M. Brand* 26959 (h).

This species was formerly known from a single collection, made at Anseremme (H5.47) near Dinant (Belgium, Mosan distr.) early in this century (1909) (VĚZDA 1965 : 138). It is most probably overlooked in the Mosan district.

****Phacopsis oxyspora* (Tul.) Triebel & Rambold**

Belgium, Ard. : Houffalize, rochers gréseux au bord de la route de La Roche, à 2 km de Houffalize (J7.27), sur *Xanthoparmelia conspersa*, 11.1961, *J. Lambinon* 61/2408 (LG)

Lichenicolous ascomycete new for the study area.

***Phaeophyscia endophoenicea* (Harm.) Moberg**

Belgium, Mosan : 10 km SE of Dinant, 2 km NE of Liouyet (H6.51), on *Tilia* in row along small road among meadows, 8.1995, *A. M. Brand* 33523 (h). - Lorr. : 11 km NNE of Virton, Bellefontaine, road N491 to railway, c. 0.6 km from road N479 to Croix-Rouge (L7.52), on old *Fraxinus* along road, 9.1989, *A. M. Brand* 22194 (h). Luxembourg, Lorr. : NW of Hoesdorf, Laengten (K8.47), on *Malus*, 7.1980, *P. Diederich* 2498 (h).

New for the study area.

****Phaeopyxis varia* Coppins, Rambold & Triebel**

Belgium, Ard. : 2.3 km NW of Bouillon, Pic du Diable (L6.22), schistose rocks in open *Quercus* wood, on *Trapeliopsis gelatinosa*, 3.1991, *A. M. Brand* 25261 (h); NW

of Engreux, near Les Deux Ourthes, on the right bank of the river (Ourthe Occidentale) (J7.25), *Quercus* wood with shaded schist outcrop, terricolous, on *T. gelatinosa*, 5.1997, *P. van den Boom* 18879 (LG, h).

Luxembourg, Ard. : Au S de Perlé, près du moulin de Perlé (L7.17), sur *T. pseudo-granulosa*, 4.1985, *P. Diederich* 5975 (h).

Lichenicolous ascomycete new for the study area.

****Phaeospora lecanorae* Eitner**

Luxembourg, Lorr. : Ahn, Palmberg (M9.12), sur un rocher en calcaire coquillier, sur *Lecanora* sp., 11.1981, *P. Diederich* 3756 (h); Strassen, Xaviershaff, mur le long d'une route (M8.14), sur un mur d'une ferme couvert de poussières le long d'une route, sur *Lecanora albescens*, 1.1998, *P. Diederich* 13505 (h).

The first specimen mentioned above had already been published as *P. parasitica* (Lönnr.) Arnold (DIEDERICH 1986b : 12). However, as *P. parasitica* is known to parasitize species of *Rhizocarpon* (e. g. SANTESSON 1993 : 165, TRIEBEL 1989 : 230), and as most other known species of *Phaeospora* are host-specific, it is unlikely that *P. parasitica* grows on a wide variety of lichens, including *Lecanora* and *Rhizocarpon*. We therefore prefer to name the Luxembourg collections *P. lecanorae* : this name is based on material growing on *Lecanora*, and the short original description matches our specimens very well (EITNER 1901 : 26) (ascospores in EITNER : 14 x 6 μm ; in the Luxembourg specimens : 12-16 x 5.5-6 μm). The ascomata in our material are 120-220 μm in diam. The differences between *P. lecanorae*, *P. parasitica* and *P. rimosicola* are summarized in Table 3. We did not attempt to locate the type specimen of *P. lecanorae*. A specimen collected by BOULY DE LESDAIN (1914 : 160, as *P. rimosicola*), on *Lecanora umbrina* in France, dépt. Nord, with ascospores of 11-16 x 4-6 μm , clearly belongs to *P. lecanorae*.

Phaeospora lecanorae is a lichenicolous ascomycete new for the study area, whilst *P. parasitica* is deleted from its flora.

****Phaeospora rimosicola* (Mudd) Hepp**

Belgium, Ard. : Arville, Sart-aux-Pires (J6.56), on exposed siliceous rock, on *Rhizocarpon hochstetteri*, 5.1997, *A. Aptroot* 40441 p. p. (h, specimen with *Endococcus* sp. on *Porpidia tuberculosa*).

Two species of *Phaeospora* have been described on *Rhizocarpon*, *P. rimosicola* on *R. concentricum* (description of the type in TRIEBEL 1989 : 230) and *P. parasitica* (Lönnr.) Arnold on *R. umbilicatum* (description of the type in HAWKSWORTH 1985 : 164). Following these authors, *P. rimosicola* has much smaller ascomata (60-125 μm) and narrower ascospores (18-19 x

6.5-7 µm) than *P. parasitica* (ascomata over 200 µm, ascospores 18-23 x 9-11.5 µm). The ascomata in the Belgian specimen are 60-100 µm and the ascospores 16-18.5 x 5-6.5 µm, which agrees well with the type of *P. rimosicola*. We examined one specimen of *P. parasitica* on *R. umbilicatum* (Germany, Bayern, Schwaben, Oberallgäu, zw. Nebelhorn und Zeiger, 2000 m, 11.1982, T. Feuerer 8528/3, hb. Diederich) and found larger ascomata, 150-225 µm, and ascospores of 18-20 x 8-10 µm. The differences between the studied species of *Phaeospora* are summarized in Table 3.

Lichenicolous ascomycete new for the study area.

TABLE 3. — Characters distinguishing *Phaeospora lecanorae*, *P. parasitica* and *P. rimosicola*.

	<i>P. lecanorae</i>	<i>P. parasitica</i>	<i>P. rimosicola</i>
Ascomata	120-220 µm	150-225 µm	60-125 µm
Ascospores	12.5-16 x 5.5-6 µm	18-23 x 8-11.5 µm	16-19 x 5-7 µm
Hosts	<i>Lecanora albescens</i> and <i>L. sp.</i>	<i>Rhizocarpon umbilicatum</i>	<i>Rhizocarpon concentricum</i> and <i>R. hochstetteri</i>

Placidiopsis cartilaginea (Nyl.) Vain.

Syn. : *Placidiopsis cystmani* (A. Massal.) Körb.

Belgium, Mosan : 6 km SE of Dinant, 1.0 km WSW of Furfooz near Roche à la Chandelle (H5.58), on mosses on soil in a small hole in limestone rock at top of rock, 8.1988, A. M. Brand 19346 (h).

This squamulose species was mentioned from the studied territory by LAMBINON (1969 : 99) but no corresponding specimen could be located. An old collection from Waulsort (Belgium, Mosan) has been confirmed by BREUSS (1996 : 77). This is thus the second confirmed record for the study area. The material has been identified following the recent revision of the genus by BREUSS (1996).

Placolecis opaca (Fr.) Hafellner

Syn. : *Astrolaca opaca* (Fr.) Bagl.; *Lecidea entochrysoides* Hue

Belgium, Mosan : 1.4 km SSE of Yvoir, Rocher de Champale (H5.27), limestone outcrops on steep SW slope with lime grassland, 9.1989, A. M. Brand 22035 (h); 1.1 km E of Bomal, near Belvédère (G7.52), extensive S-facing limestone rock, 4.1985, A. M. Brand 14240 (h).

This brownish squamulose species was already known from the study area as SCHNEIDER (1979 : 64-67) reports three collections, all gathered near Dinant (Belgium, Mosan distr.), most probably by Tonglet, incl. the type of *Lecidea entochrysoides* Hue which is a synonym. The species may be overlooked because of confusion with similar species like *Psora lurida* (Ach.) DC.

Placopyrenium trachyticum (Hazsl.) Breuss

Belgium, Fl. : 2 km S of Brugge, 1 km N of Steenbrugge, churchyard of Brugge (C2.31), gravestone, 8.1999, *P. Diederich* 13922 (h) & *M. Hoffmann*.
Luxembourg, Lorr. : Lasauvage (M7.48), rocher de tuf calcaire dans le village, 9.1999, *P. Diederich* 13893 (h), *A. Aptroot*, *L. Sparrius* & *C. van Herk*.

This species has recently been found several times in the Netherlands (SPIER et al. 1998), several specimens being identified by Dr O. Breuss and one specimen being seen by us [Prov. Zuid-Holland, Nieuwpoort, town hall, on brick, 7.1999, *A. Aptroot* 45995 (h, LG, hb. *Diederich*)]. In Belgium, it was reported from Malmédy (MÜLLER 1965 : 20, sub *Dermatocarpon trachyticum* (Hazsl.) Vain.), but no specimen could be examined. The two recent specimens mentioned above confirm it does occur in the area of study.

Placynthiella dasaea (Stirt.) Tønsberg

Luxembourg, Ard. : W Brandenbourg, Enteschbaach (K8.35), sur *Quercus*, 8.1986, *P. Diederich* 7223 (h); *ibid.*, sur *Picea*, *P. Diederich* 7206 (h); *ibid.*, sur des débris végétaux, *P. Diederich* 7229 (h); N Biwisch, Kircher Hecken (J8.23), sur *Fagus*, 8.1986, *P. Diederich* 7315 (h); NW Weiswampach, Conzefenn (J8.24), sur *Salix*, 8.1986, *P. Diederich* 7331 (h); SSE Brachtenbach (J8.52), sur un poteau en bois, 9.1987, *P. Diederich* 8695 (h). - Lorr. : Blaschette, Béddeboesch (L8.46), sur *Acer*, 12.1983, *P. Diederich* 5052 (h); W Steinfort, berge de l'Eisch (L8.51), sur *Betula*, 3.1984, *P. Diederich* 5104, 5108 (h); Godbrange, Schweißboesch (L8.37), sur *Fagus*, 4.1986, *P. Diederich* 6840 (h); *ibid.*, sur du bois mort, *P. Diederich* 6843 (h); Ernzen, Manzebaach (L8.27), sur *Picea*, 6.1986, *P. Diederich* 7035 (h); entre Aspelt et Altwies, Fëlschtreffergrond (M8.47), sur *Salix*, 6.1986, *P. Diederich* 7074 (h); N Sandweiler, Schwaarzbur (M8.17), sur *Populus*, 7.1986, *P. Diederich* 7104 (h).
Germany, Rheinland-Pfalz, Lorr. : S Manderscheid, vallée de la Kleine Kyll (coord. UTM : LA.54), sur *Fraxinus*, 6.1984, *P. Diederich* 5521 & 5851 (h), *L. Cram*, *F. Rose* & *E. Sérusiaux*.

Placynthiella dasaea has only recently been separated from *P. icmalea* (TØNSBERG 1992 : 271-273), and is therefore poorly known. It is missing, for example, in the lichen flora of SW Germany (WIRTH 1995). In Luxembourg it was mentioned already by DIEDERICH (1989a : 206) as specimens of *P. icmalea* with a thallus degenerated into soredia, but it was not treated as a

distinct taxon. The species is nevertheless very distinct from *P. icmalea*, with which it often grows together (for a characterization of both, see TØNSBERG 1992). Even in mixed vegetations (e. g. specimens *P. Diederich* 7035, 7223, 7331), no intermediate thalli have been observed. One specimen from Luxembourg (*P. Diederich* 5108) is fertile. The species most probably occurs in Belgium as well, but the relevant material still has to be checked,

New for the study area and for Germany.

Placynthium hungaricum Gyeln.

Belgium, Mosan : Dinant, réserve RNOB de Devant-Bouvignes, au N du vallon de Devant-Bouvignes (H5.37), paroi calcaire ensoleillée, occasionnellement suintante, 8.1998, *D. Ertz & E. Sérusiaux* s. n. (LG); Han-sur-Lesse, Les Grignaux, W of Ry d'Ave (J6.34), dry and SE exposed limestone outcrop, 5.1997, *P. Diederich* 12738 (h).

Careful examination of recent collections of calcareous lichens with cyanobacteria as photobionts led to the identification of four species of *Placynthium*, the rather common *P. nigrum* (Huds.) Gray and the other three reported here.

The collection *P. Diederich* 12738 is invaded by *Toninia verrucarioides* (Nyl.) Timdal, a species typically overgrowing the thalli of several species of *Placynthium*.

New for the study area.

Placynthium subradiatum (Nyl.) Arnold

Belgium, Mosan : Dinant, réserve RNOB de Devant-Bouvignes, au N du vallon de Devant-Bouvignes (H5.37), paroi calcaire ensoleillée, occasionnellement suintante, 8.1998, obs. *D. Ertz & E. Sérusiaux*; *ibid.*, réserve domaniale des Fonds de Leffe, rive droite au 'Chéreau des Capucins' (H5.38), paroi calcaire ensoleillée et occasionnellement suintante, 7.1982, *E. Sérusiaux* 2911 (LG) et 8.1998, *D. Ertz & E. Sérusiaux* s. n. (LG); Wavreille, outcrop N of road Bellevaux-Wavreille on the right side of the Lesse (J6.34), *Xerobromion* communities on steep S-exposed slope, 5.1997, *E. Sérusiaux* s. n. (LG).

France, Mosan : Dept. Ardennes, Givet, slope at east-side of Fort de Charlemont (J5.25), on limestone outcrops, 9.1986, *A. M. Brand* 15210 (h, sub *Anema tumidulum*).

Formerly reported once near Dinant (Belgium, Mosan distr.) by VAN DEN BOOM (1996 : 16) and probably widespread on natural calcareous outcrops.

***Placynthium tremniaceum* (A. Massal.) Jatta**

Belgium, Mosan : Dinant, réserve RNOB de Devant-Bouvignes, au N du vallon de Devant-Bouvignes (H5.37), paroi calcaire ensoleillée, occasionnellement suintante, 8.1998, *D. Ertz & E. Sérusiaux* s. n. (LG); 2.2 km SE of Han-sur-Lesse, 1.1 km ENE of Belvau (J6.35), extensive limestone rock, exp. NW, steep side, sheltered, 8.1995, *A. M. Brand* 33506 (h).

The collection *A. M. Brand* 33506 is invaded by *Toninia verrucarioides* (Nyl.) Timdal.

New for the study area.

***Polyblastia albida* Arnold**

Luxembourg, Lorr. : 1 km W of Echternach, Gorge du Loup (L9.12), on a shaded, vertical sandstone, 3.1989, *A. M. Brand* 20278 (h); Lasauvage, rocher de tuf calcaire dans le village (M7.48), 9.1999, *P. Diederich* 13884 (h).

New for the study area.

****Polycoccum microsticticum* (Leight. ex Mudd) Arnold**

Luxembourg, Ard. : W Eschdorf, Millebaach (K8.41), sur une paroi ombragée en schistes, sur *Acarospora fuscata*, 10.1987, *P. Diederich* 8756 (h).

Lichenicolous ascomycete new for the study area.

***Porina interjungens* (Nyl.) Zahlbr.**

Belgium, Ard. : 3 km S of Remouchamps, Fonds de Quareux (G7.36), on large quartzitic boulders in broad stream, 4.1987, *A. M. Brand* 16406 (h).

New for the study area.

***Porocyphus coccodes* (Flot.) Körb.**

Belgium, Ard. : 2 km W of Bouillon, shore of Semois near Rocher du Pendu (L6.22), schistose rocks close to the bank of a river, 9.1986, *A. M. Brand* 15385 (h).

Luxembourg, Lorr. : Lorentzweiler, Roude Bam (L8.46), on concrete in a garden, 4.1997, *P. Diederich* 12536 (h); Lorentzweiler, rue Belle-Vue (L8.46), on concrete around a house, 2.1998, *P. Diederich* 13477 (h); NW of Steinfort, barrage (L8.51), on a wall, 9.1997, *P. Diederich* 12903 (h).

The three Luxembourg collections of *P. coccodes* are typical, with blackish, almost cylindrical isidia-like outgrowths, whilst the Belgian specimen is less dark, and the outgrowths are more granular. New for the study area.

One additional specimen of *Porocyphus* could not be identified with certainty : it has been collected in Belgium, Ard. : 2.5 km SW of Chiny (L6.37), on a block of schist in a broad, shallow stream (the Semois), on top of a block inundated with high water, 8.1995, *A. M. Brand* 33401 (h). The thallus is areolate, with no granules developed, the ascomata are mostly immersed in the thallus, and the ascospores are 10.5-15 × 5.5-9 µm. More collections of this taxon are needed to understand whether this is an extreme form of *P. rehmicus*, or if a different species is involved.

***Porpidia albocaerulescens* (Wulfen) Hertel & Knoph**

Belgium, Ard. : Porcheresse, rive gauche de l'Our, bois de Laloue (K6.12), sur quartzophyllade le long de l'Our, 5.1963, *J. DuVigneaud* 63 B 212 (LG).

There is only one recent collection that matches the description of *Porpidia albocaerulescens* perfectly : thick, pale greyish thallus, producing stictic acid (checked by TLC), sunken apothecia with a densely pruinose disc and large ascospores (18-23 × 7.5-9 µm). In their detailed study of that species, HERTEL & KNOPH (1984 : 480) report another Belgian collection : 'Belgien, ad saxa in sylvis Ardennarum, ? *J. P. Montagne* (UPS)'; we have not examined that collection. On their distribution map of the species in Europe, KNOPH & SCHRÜFER (1993 : 2-4) add another locality in S Belgium and a further one in N France; the latter refers to a collection they mentioned as 'Sur les rochers, dans les Ardennes, aux environs de Sedan, leg. *J.P.F.C. Montagne*, Desmazières, Plantes cryptogames de France, Edit. I, Ser. I : 845 und Edit. II, Ser. I : 45 (BM)'. We have not examined those collections either.

***Porpidia contraponenda* (Arnold) Knoph & Hertel**

Belgium, Ard. : 2 km NE of La Roche, Château du Diable (H7.53), siliceous blocks on scree on N-slope in open wood, 4.1990, *A. M. Brand* 23109 (h); Eupen, flanc droit de la vallée de la Helle, face au Grand Bongard (F8.55), sur rochers, 7.1986, *E. Sérusiaux* 8009 (LG); Mont-Rigi, vers Xhoffrais (G8.34), sur rognons de silex dans une lande à bruyères, 10.1954, *J. Lambinon* s. n. (LG); Vielsalm, flanc gauche de la vallée de la Salm, lieu-dit Bonâfa (H8.31), sur déblais d'ardoise, 8.1989, *E. Sérusiaux* 10692 (LG).

All collections have been examined by TLC and produce methyl 2'-O-methylmicrophyllinate and 2'-O-methylmicrophyllinic acid; they match the description of PURVIS et al. (1992 : 496) and GOWAN & AHTI (1993 : 57-58).

New for the study area.

***Porpidia glaucophaea* (Körb.) Hertel & Knoph**

Belgium, Ard. : 2.1 km SSW of Herbeumont, shore of Semois (L6.35), on schistose rocks of shaded E-exposed shore, 7.1986, *A. M. Brand* 15617 (h); 3.8 km SSE of Herbeumont, Roche du Chat (L6.36), schistose rock outcrops near shore of stream, 8.1986, *A. M. Brand* 15640 (h); Presgaux, rive gauche de l'Eau Noire en amont de la route de Cul-des-Sarts (J4.56), rochers schisto-gréseux très ombragés, 8.1967, *J. Lambinon* 67/655 (LG).

Luxembourg, Ard. : W Eschdorf, Millebaach (K8.41), on schists in shaded condition, with *Endococcus brachysporus*, 10.1987, *P. Diederich* 8755 (h); Bockholz-les-Hosingen, vallon du Lellgerbaach (K8.14), 10.1986, sur schistes, *P. Diederich* 7716 (h).

This species had already been mentioned from the study area in the Ard. distr. in France [as the host of *Gongylia nadvornikii* Servit, syn. *Sagediopsis barbara* (Th. Fr.) R. Sant. & Triebel; DIEDERICH et al. 1992 : 142] as *P. cf. glaucophaea*; a re-examination of the collection (LG) confirmed that it does belong to this species.

New for the study area.

***Porpidia musiva* (Körb.) Hertel & Knoph**

Belgium, Ard. : Robertville, 1 km W of barrage, valley of Warche (G8.34), on quartzite blocks of scree on S slope, 4.1989, *A. M. Brand* 20366 (h); 3.8 km SSE of Herbeumont, Roche du Chat (L6.36), schistose rock outcrops, 8.1986, *A. M. Brand* 15631 (h); Chevrain, rochers le long de la route Cetturu-Brisy (J7.28), 5.1985, *E. Sérusiaux* 7044 (LG).

The three collections have been examined by TLC and produce confluent and 2'-O-methylperlatolic acids. *Porpidia musiva* is closely related to the more widespread *P. cinereoatra* (Ach.) Hertel & Knoph which contains the same acids. We distinguish the former by its thicker and paler thallus, usually with a bluish-black prothallus, convex and swollen areoles, and slightly larger apothecia and ascospores (see WIRTH 1995 : 768). However, we share the opinion of PURVIS et al. (1992 : 496) who state that *P. musiva* might be an extreme variant of *P. cinereoatra*.

New for the study area.

***Porpidia platycarpoides* (Bagl.) Hertel**

Belgium, Ard. : 2.1 km SSW of Herbeumont, shore of Semois (L6.35), schistose rocks of shaded, E-exposed shore, 7.1986, *A. M. Brand* 15621 (h); Vielsalm, flanc gauche de la vallée de la Salm, lieu-dit Bonâfa (H8.31), sur déblais d'ardoise, 8.1989, *E. Sérusiaux* 10693 (LG); Patignies, rive gauche de la vallée de la Houille, face au bois du Chênai (J5.58), barre rocheuse de grès en sous-bois, 11.1977, *E. Sérusiaux* 1894 (LG); Oignies, petit vallon perpendiculaire au ruisseau d'Alisse, E de la route de Fumay (K5.13), paroi rocheuse ± verticale, 9.1963, *J. Lambinon* 63/1470

et 63/ 1474 (LG); Sainte-Cécile, rive gauche de la Semois, rocher de Libaipire, face au Tombeau du Chevalier (L6.35), parois schisteuses ombragées, 7.1997, *E. Sérusiaux* s.n. (LG).

Luxembourg, Ard. : Entre Bettel et Vianden (K8.37), rochers schisteux humides, 7.1980, *P. Diederich* 2590 (h).

The *Porpidia macrocarpa* aggr. is a difficult complex and merits further study. We agree with GOWAN (1989 : 32) and other authors (e. g. PURVIS et al. 1992 : 498, SANTESSON 1993 : 178, WIRTH 1995 : 771) that the K+ reddish purple pigment that is sometimes present in the exciple and hypothecium does not warrant taxonomic recognition, and that *P. nigrocruenta* (Anzi) Diederich & Sérus. should therefore be reduced into synonymy with *P. macrocarpa*. However we agree with PURVIS et al. (1992 : 498) that a homogeneous entity, named *P. platycarpoides*, can be recognized by the following characters : robust and rather large apothecia (up to 2.5 mm in diam.), never crowded, strongly constricted at their base, with a raised and swollen, rarely flexuose, margin, and usually a distinct whitish (slightly bluish) pruina on the disc. Moreover, such populations always contain norstictic and connorstictic acids in addition of stictic, constictic and cryptostictic acids; *P. macrocarpa* s. str. produces only the latter group of acids or none. *Porpidia platycarpoides* seems to prefer shaded and rather humid natural outcrops of siliceous rocks, while *P. macrocarpa* can also be abundant in artificial habitats, such as slate debris in disused quarries. When growing on iron-rich rocks, the thalli of *P. macrocarpa* can be 'oxidized' with orange to rust red colour, a feature never seen in *P. platycarpoides*.

New for the study area.

****Pronectria leptaleae*** (J. Steiner) Lowen

Luxembourg, Lorr. : SE of Lasauvage, Grand-Bois (M7.48), on *Acer* along a road, on *Phaeophyscia orbicularis*, 9.1996, *P. Diederich* 12439 (h).

Lichenicolous ascomycete new for the study area.

Protoparmelia hypotremella van Herk, Spier & V. Wirth

Belgium, Mosan : 1 km SE of Chevetogne, Abbaye de Chevetogne (H6.53), scattered trees, on *Quercus*, 2.1995, *P. van den Boom* :6589 (h).

Protoparmelia hypotremella is a sterile, corticolous species which has just been described from The Netherlands, SW Germany and Austria (APROOT et al. 1997b). It is most probably overlooked and widespread in the study area.

New for the study area.

***Prothelenella corrosa* (Körb.) H. Mayrhofer & Poelt**

Syn. : *Microglaena corrosa* (Körb.) Arnold

Belgium, Ard. : 13 km S of La Roche, 1.8 km N of Lavacherie, Rocher du Coucou (J7.42), on siliceous rocks, 3.1988, *A. M. Brand* 17240 (h).

New for the study area.

***Pyrenula nitidella* (Schaer.) Müll. Arg.**

Belgium, Ard. : Marcourt, Chapelle de St-Thibaut (H7.52), on very old *Tilia* in ± open place, 3.1988, *A. M. Brand* 17370 (h).

Pyrenula nitidella is very rare in the study area. It has been once mentioned from the Brab. distr. last century, and once in 1985 from northern France (Lorraine distr.) not far from the border of the study area (DIEDERICH et al. 1991 : 39).

***Pyrrhospora rubiginans* (Nyl.) P. James & Poelt**

Belgium, Ard. : Sart, Ruisseau de Statte, Rocher de Bilisse (G8.12), paroi de quartzite, 9.1998, *E. Sérusiaux* s. n. (LG); 1.8 km W of Chiny, right shore of the Semois, N-exposed rock face in wooded valley (L6.37), 9.1989, *A. M. Brand* 22210 (h); Sainte-Cécile, rive gauche de la vallée de la Semois, entre le lieu-dit Relogne et les rochers face à la Roche du Chat (L6.36), parties ombragées de parois rocheuses siliceuses, partiellement en sous-bois, 7.1997, *E. Sérusiaux* s. n. (LG).

Pyrrhospora rubiginans is a crustose lichen, growing on dry and exposed underhangs of siliceous outcrops; it is easily recognized by its yellow-green thallus, with orange granular soredia reacting K+ purple. It was formerly known from Norway, Sweden and Scotland and is new for the study area.

***Ramalina thrausta* (Ach.) Nyl.**

Luxembourg, Lorr. (?) : S. loc., < 1850, *F.-A. Tinant* 181 (LUX).

This collection has been previously reported as *Bryoria* cf. *capillaris* (Ach.) Brodo & D. Hawksw. (DIEDERICH 1986a : 118). A detailed analysis and identification of chemical compounds by TLC demonstrate that it does not belong at all to that genus. We are now quite confident that it is an atypical specimen of *Ramalina thrausta* (Ach.) Nyl. : the thallus morphology is quite typical for that species, and it produces stenosporic acid. When well-developed, *R. thrausta* is easily identified by its thin lateral, sometimes hook-shaped branchlets with punctiform soralia at their ends (KROG & JAMES 1977 : 41-42). The *Tinant* collection is very old and brittle and all lateral branchlets

are broken and their remains are gone, except one which has tiny soralia at its tip. Comparison with old herbarium specimens and examination of all other possibilities of genera and species to which it might belong led to this as the only possibility.

In western Europe, *Ramalina thrausta* is mainly a species of twigs and small branches in montane conifer forest; it is known, for example, in the Vosges in France and in SW Germany (WIRTH 1995 : 802). Its presence in the study area is thus of a high phytogeographical interest, but unfortunately the species must be considered as extinct.

Ramalina thrausta is new for the study area, and *Bryoria capillaris* should be deleted from its flora.

***Rhaphidocyrtis trichosporella* (Nyl.) Vain.**

Belgium, Ard. : 2 km SE of Vonêche, le Chênet, valley of Wimbe (J6.51), on old *Quercus* in wood, 10.1982, A. M. Brand 27878 (h); Bertrix, vallée du ruisseau d'Aise, vallon de la Goutelle de Duni (L6.35), sur tronc de *Quercus* en forêt, 7.1997, E. Sérusiaux s. n. (LG).

A rather conspicuous corticolous species but very likely to be confused with other, more common pyrenolichens.

New for the study area.

***Rhizocarpon geographicum* (L.) DC. subsp. *diabasicum* (Räsänen) Poelt & Vězda**

Luxembourg, Ard. : Heinerscheid, Kasselslay (J8.45), sur un rocher en schistes, 11.1983, P. Diederich 5028 (h).

This taxon is probably quite common in the Ardennes district, but it had never been recorded from that area.

New for the study area.

***Rhizocarpon plicatile* (Leight.) A. L. Sm.**

Syn. : *R. rubescens* Th. Fr.

Belgium, Ard. : Chiny, vallée de la Vierre, barrage (L6.38), affleurement schisteux au bord du lac, 5.1986, E. Sérusiaux 7873 (LG).

This species has been mentioned near Beaumont (Belgium, Mosan distr.) by LOCHENIES (1894 : 168-169, sub *R. rubescens*) but the corresponding material has not been found. We can thus confirm it does occur in the study area.

***Rhizocarpon subgeminatum* Eitner**

Belgium, Ard. : Malmédy, rocher de Falize (G8.42), on rocks, 5.1977, A. M. Brand 6790 (h); Solwaster, ruisseau de la Statte, Rocher de Bilisse (G8.12), paroi de quartzite, 9.1998, E. Sérusiaux s.n. (LG).

This species was reported by MÜLLER (1958 : 144, 1964 : 35) from Malmédy, rocher de Falize, but the relevant material has not been checked. The above collections confirm its occurrence in the study area, including at the Malmédy locality.

(*)*Rhizocarpon trapeliicola* Brand sp. nov. (Fig. 12)

Rhizocarpon lichenicola insignis hospite (*Trapelia involuta*), apotheciis subsphericis, ascis 8-sporibus et ascosporis submuriformibus, hyalinis, 12.5-16 x 5.5-7.5 µm, demum thallus proprium formans, areolis pallide brunneis formatum.

Type : Luxembourg, Ard., 11 km WSW of Esch-sur-Sûre, Moulin de Bigonville, SW side of Sûre (K7.47), S-exposed rocky slope, on *Trapelia involuta*, 5.1992, A. M. Brand 27200 (LG - holotype).

Prothallus absent. Thallus starting as subspherical areoles on decolorized squamules of *Trapelia involuta*, older areoles loosely attached to the rock. Areoles dispersed, c. 0.3 mm large, up to 0.15 mm high, roundish, subspherical to ± flattened, pale brown, I-, K-, C-, P+ slightly, but distinctly orange. Epinecral layer not compact, c. 10-15 µm thick; upper cortex of subspherical cells with a greyish brown pigment, c. 70 µm, passing into the algal layer; algal layer with crystals (indissoluble in C, soluble in K, stictic acid ?). Apothecia c. 0.3-0.4 mm, superficial, since the beginning convex to subspherical, initially with a thin margin (c. 10 µm thick), which disappears soon, dark brown, surface slightly rough. Hypothecium dark brown. Exciple marginally dark brown, internally pale, with crystals. Hymenium 65-70 µm. Epihymenium irregularly dark brown (without any trace of a blue green pigment, even in KOH), K-, HCl-, with crystals. Paraphyses apically branched, with apical cells up to 3.5 µm thick, some with a brown cap. Ascospores 8/ascus, hyaline, 12.5-16 x 5.5-7.5 µm (average 13.6 x 6.0 µm), submuriform, with 4-7 (average 6) cells visible in optical section (with 2-4 transverse septa).

The new species is known only from the type locality in the Ardennes distr. in Luxembourg. It has been collected on a schistose rock outcrop, together with common species like *Trapelia involuta*, *T. obtegens*, *Trapeliopsis granulosa*, *Placynthiella icmalea*, *Cladonia coccifera* and *Lepraria lobifera*. It has only been found on pale, whitish squamules of *T. involuta*, with dead algae, never on healthy thalli. Although it cannot be demonstrated that *R. trapeliicola* is responsible for the death of its host, we assume it starts its

growth as a parasite on it and eventually forms its own independant thallus. Indeed, well-developed individuals directly grow on the substrate.

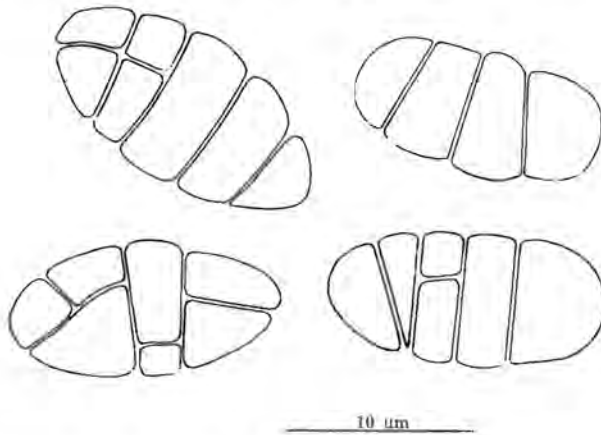


FIG. 12. — *Rhizocarpon trapeliicola*. Ascospores (holotype).

This is the first lichenicolous species of *Rhizocarpon* growing on *Trapelia* (see POELT 1970 and POELT & OBERMAYER 1995 for further details on lichenicolous species of *Rhizocarpon*). It is further easily distinguished by its hyaline, submuriform, rather small ascospores, being 8/ascus. It is distinguished from *R. reductum* Th. Fr. [syn. *R. obscuratum* auct., non (Ach.) A. Massal.] and *R. submodestum* (Vain.) Vain. by the absence of a blue green epihymenial pigment, subspherical apothecia and more dispersed thalline squamules; the ascospores in *R. reductum* are also larger (19-28 x 10-12 µm), and those in *R. submodestum* have less septa (mainly 3) (FRYDAY 1996).

****Roselliniella microthelia* (Wallr.) Nik. Hoffm. & Hafellner**

Syn. : *Guignardia microthelia* (Wallr.) Keissl.

Belgium, Fl. : W of Antwerpen, St-Niklaas, centre (C4.32), graveyard along church with very old neglected gravestones, on brick, on *Trapelia placodioides*, 4.1998, P. van den Boom 19960 (h, hb. Diederich). - Ard. : Stavelot, vallée de l'Amblève, Rocher de Challe (G8.52), paroï siliceuse, sur *T. placodioides*, 8.1997, E. Sérusiaux s. n. (LG); *ibid.*, 3.1998, E. Sérusiaux s. n. (LG).

The Netherlands : Prov. Utrecht, Soest, De Stompert, in open forest on inland dunes, on pebble on *T. coarctata*, 11.1998, A. Aptroot 44007 (h).

This species is treated in detail in the thesis of HOFFMANN (1999 : 106-112) and in HOFFMANN & HAFELLNER (in prep.).

Lichenicolous ascomycete new for the study area.

****Roselliniopsis groedensis* (Zopf) Matzer & Hafellner**

Luxembourg, Ard. : Esch-sur-Sûre, rocks N of castle (K8.32), on schistose rocks, on *Pertusaria lactea*, 3.1989, A. M. Brand 20250 (h). - Lorr. : Beaufort, lake near castle (K8.58), on a sandstone rock, on *P. corallina*, 5.1992, A. M. Brand 27149 (h).

Lichenicolous ascomycete new for the study area.

****Sarcopyrenia gibba* (Nyl.) Nyl. var. *geisleri* (Beckh.) Nav.-Ros. & Hladun**

Belgium, Fl. : Zaffelaere (C3.44), on brick, 4.1988, K. Van der Gucht 272 (GENT); Ertvelde (C3.33), on 'brug (pseudo-graniet)', 5.1988, K. Van der Gucht 361 (GENT); Oostakker (D3.13), epilithic on a telephone post, 4.1988, K. Van der Gucht 208 (GENT).

Sarcopyrenia gibba has only once been mentioned in the Belgian literature (VAN DER GUCHT & HOFFMANN 1990 : 114). NAVARRO-ROSINÉS & HLADUN (1990) showed that this species includes two varieties : var. *gibba*, which is confined to the Mediterranean region, and var. *geisleri*, which is widespread in western and central Europe. We re-examined the whole material in GENT and found that the Belgian populations belong to var. *geisleri*. Following NAVARRO-ROSINÉS & HLADUN (1990) this taxon is lichenicolous on lichens of the *Verrucarietea nigrescentis* Wirth 1980. In the studied material, it was not possible, however, to determine on which lichens they were growing.

***Schismatomma umbrinum* (Coppins & P. James) P. M. Jørg. & Tønsberg**

Belgium, Ard. : Willerzie, plateau de la Croix-Scaille, Ruisseau des Rousseries (K5.16), 360 m, affleurement de roches cambriennes, partiellement en sous-bois, 5.1999, E. Sérusiaux s.n. (LG, hb. Diederich).

This species was formerly known from a single locality in Luxembourg, made near Berdorf (VAN DEN BOOM et al. 1994 : 163). The quite healthy populations found at this second locality were growing in an underhang of siliceous rocks by a small river. They have been examined by TLC and found to produce schizopeltic acid and two unknown UV+ bluish substances. JØRGENSEN & TØNSBERG (1988) provide further information on this nice and probably overlooked species.

****Sphaerellothecium cladoniicola* E. S. Hansen & Alstrup**

Belgium, Brab. : Angre (H3.11), sur la terre, sur *Cladina arbuscula* subsp. *squarrosa*, 4.1888, G. Lochenies s. n. (LUX).

Lichenicolous ascomycete new for the study area.

Sphaerophorus fragilis (L.) Pers.

Belgium, Ard. : Robertville, vallée de la Warche (G8.34), sur rocher, 4.1989, G. Matzke (LG).

Luxembourg, Lorr. : S. loc., c. 1850, J.-B. Reinhard 50653 & 50655 (LUX).

According to LAMBINON (1966 : 207-208), earlier records of this species from the study area are misidentifications for *Sphaerophorus globosus* (Huds.) Vain. An old collection by Reinhard, probably made near Echternach (Luxembourg, Lorr. distr.) contains *S. globosus*, *S. melanocarpus* [now placed in the genus *Bunodophoron*, as *B. melanocarpum* (Sw.) Wedin] and two very typical thalli of *S. fragilis*. Moreover, a recent collection made in the Warche valley, a site of very high conservation value, also belongs to that species. Its occurrence in the study area is thus confirmed.

Staurothele hymenogonia (Nyl.) Th. Fr.

Belgium, Mosan : Han-sur-Lesse, 1 km E of Belvaux (J6.34), soft calcareous rock on W-slope, 4.1987, A. M. Brand 16145 (h).

France, Lorr. : Dept. Moselle, Schengen, Stromberg (N9.11), on limestone in a quarry, 11.1981, P. Diederich 12795 (h).

Both specimens have a whitish, very thin, almost indistinguishable thallus, and prominent perithecia, covered with whitish crystals, giving a pruinose aspect. A third specimen might belong here : Belgium, Mosan : Han-sur-Lesse, Hérimont, Les Grignaux (J6.34), on exposed limestone, 5.1997, A. Aptroot 40366 (h); the spores are brownish, 8/ascus, muriform with 6-8 x 3 cells, 20-24 x 10-11.5 μm , the hymenial algae cylindrical, the perithecia more or less immersed in the thallus, later erumpent; the thallus is well-developed, very thin, pale greenish, continuous, with numerous isidia-like outgrowths. Because of the very characteristic thallus and the more or less immersed perithecia, we hesitate to include this specimen in *S. hymenogonia*, and we believe that a distinct, possibly undescribed species might be involved.

This species has already been mentioned from Belgium by DUVIGNEAUD & GILTAY (1938 : 13), but we did not see any relevant material.

Staurothele rugulosa (A. Massal.) Arnold

Luxembourg, Lorr. : Consdorf, churchyard (L9.21), vertical wall, 5.1991, P. van den Boom 11240 (h, hb. Diederich).

This species is very close to *S. hymenogonia* and differs by a well-developed, cracked, granulose or areolate thallus up to 0.6 mm thick.

New for the study area.

**Stigmidium bellemerei* Cl. Roux & Nav.-Ros.

Luxembourg, Ard. : Clervaux, centre, wall along stairs to Museum and wall of Museum (J8.44), calcareous stone, on *Lecania coeruleorubella*, 4.1990, P. van den Boom 9444 (h, hb. Diederich).

Our collection agrees in all aspects with the detailed description of the species provided by ROUX et al. (1998). The species was known only from the holotype, collected in France (Aveyron) on *Lecania nylanderiana* A. Massal. This lichenicolous ascomycete is therefore new for the study area.

ROUX et al. (1998) apparently omitted to compare *S. bellemerei* with *S. punctillum* (Arnold) D. Hawksw., described from *Lecania cyrtella* (Ach.) Th. Fr., the same host genus. Following the published descriptions of this taxon (original description, KESSLER 1930 : 379, VOUAUX 1912 : 241, etc.), *S. punctillum* has perithecia of a similar size, and the same hyaline, 1-septate ascospores of 15-18 x 4-5 μm . However, an examination of the original material (several specimens collected by Arnold in the type locality, M!) proved that *Stigmidium punctillum* (syn. *Arthopyrenia punctillum* Arnold) is a non-lichenicolous species of *Arthopyrenia* s. l., growing on branches of *Salix*. We did not succeed to find any asci or ascospores in the perithecia examined, as they were too old. In one pycnidium, hyaline, non-septate, ellipsoid microconidia (spermatia ?) of 1.5 x 1 μm have been observed.

**Stigmidium clauzadei* Cl. Roux & Nav.-Ros.

Luxembourg, Lorr. : Mamer, Tosseberg, près des thermes romains (M8.14), on a wall, on *Verrucaria viridula*, 11.1997, P. Diederich 13459 (h).

This lichenicolous fungus was previously known from S France and from Spain, where it grows on *Verrucaria nigrescens* and *V. viridula* (ROUX & NAVARRO-ROSINÉS 1994).

Lichenicolous ascomycete new for the study area.

**Stigmidium pseudopeltideae* Cl. Roux & Triebel ined.

Luxembourg, Ard. : Kautenbach, versant gauche de la Wiltz, en peu en aval du village (K8.23), talus en sous-bois clair, sur *Peltigera canina*, 9.1966, J. Lambinon 66/1304b (LG).

This specimen has been published by DIEDERICH et al. (1991 : 42) as *Stigmidium peltideae* (Vain.) R. Sant. A re-examination of our material, using the outstanding publication on the genus by ROUX & TRIEBEL (1994), showed that the ascospores are not pseudotetrablastic, 10-11.5 x 3.5-4 μm , the episore is BCr-, the perispore BCr+ blue and the cytoplasm BCr+ violet, and the ascus wall BCr-.

The specimen belongs therefore to *S. pseudopeltideae*, which is new for the study area, where *S. peltideae* does not occur.

****Telogalla olivieri* (Vouaux) Nik. Hoffm. & Hafellner**

Syn. : *Guignardia olivieri* (Vouaux) Sacc.

Luxembourg, distr. unknown : S. loc., on *Xanthoria parietina*, < 1850, F.-A. Tinant 362 (LUX).

The Netherlands : Noord-Holland, Hoorn, harbour, on brick of wall, on *Xanthoria calcicola*, 1.1997, A. Aptroot 40190 (h, hb. Diederich)

Although the Tinant specimen has no indications on locality and date of collection, it is rather sure that all the lichen collections made by F.-A. Tinant are from Luxembourg, and most of them from the Lorr. district. The species is being transferred to the new genus *Telogalla* Nik. Hoffm. & Hafellner (in the thesis of HOFFMANN 1999 : 121-130, and in HOFFMANN & HAFELLNER, in prep.).

Lichenicolous ascomycete new for the study area and for the Netherlands.

***Thelidium incavatum* Mudd**

Belgium, Lorr. : NNW of Virton, SW of Lahage, Le Gros Cron (M7.12), S exposed calcareous outcrops (tufa), 4.1998, P. van den Boom 20142 (h, hb. Diederich).

New for the study area.

***Thelocarpon cocosporum* Lettau**

Luxembourg, Lorr. : Hamm, rocher au-dessus du carrefour de la rue Godchaux (piste cyclable) avec la rue des Draperies (M8.26), sur une surface horizontale ensoleillée en Grès de Luxembourg, 10.1997, P. Diederich 13415 (h).

This species was previously known from the type locality in the Black Forest, Germany (WIRTH 1995 : 585), from The Netherlands (VAN DEN BOOM et al. 1996) and from La Gomera, Canary Islands (HAFELLNER 1995 : 498).

New for the study area.

***Thelocarpon depressellum* Vain.**

Luxembourg, Lorr. : Berdorf, Binzeltschlëff (L9.11), sur un rocher de Grès de Luxembourg, 3.1997, P. Diederich 12491 (h).

This species was known from Finland, Sweden and the Tatra mountains (POELT & VĚZDA 1977 : 253, SANTESSON 1993 : 219).

New for the study area.

Thelocarpon laureri (Flot.) Nyl.

Belgium, Camp. : Kalmthout, Kalmthoutse Heide (B4.27), burnt heathland, on burnt *Pinus* wood and *Molinia* stump, 4.1998, L. B. Sparrius 652 (h, LG).

The Netherlands : Prov. Noord-Brabant, Mariahout, churchyard, on wooden tomb, 6.1988, P. van den Boom 6905 (h, LG).

New for the study area.

Thelocarpon strasseri Zahlbr.

Belgium, Ard. : 4.4 km NNW of St-Hubert, 3 km SSE of Fourneau St-Michel (J6.47), rotting trunk lying in wood, 3.1988, A. M. Brand 17248 (h).

New for the study area.

Tremolecia atrata (Ach.) Hertel

Syn. : *Lecidea atrata* (Ach.) Wahlenb.; *L. dicksonii* auct., non (J. F. Gmelin) Ach.

Belgium, Ard. : S of Vielsalm, rocks NE of Salmchâteau, central part of rocks (H8.31), open schistose rocks, W-slope, 5.1992, A. M. Brand 27298 (h).

The collection from Salmchâteau is very scanty but nevertheless quite typical for this species which is known to prefer siliceous outcrops rich in heavy metals. It was formerly known from a single Belgian locality (Ard. district, near Bevercé, G8.34) (MÜLLER 1965 : 28), but the specimen has not been checked.

**Trimmatostroma lichenicola* M. S. Christ. & D. Hawksw.

Luxembourg, Lorr. : N Reckange (Mersch), Elenter Kapelle (L8.24), on a concrete post in a meadow, on *Candelariella vitellina*, 5.1998, P. Diederich 13633 (h).

This lichenicolous hyphomycete was already known from a recent Luxembourg collection on the thallus of *Pleurosticta acetabulum* (VAN DEN BOOM et al. 1996 : 90). The new specimen is especially interesting, as it grows on the same host species as the holotype, i. e. *Candelariella vitellina*.

Umbilicaria polyrrhiza (L.) Fr.

Germany, Ard. : 1 km S of Monschau, N of Perlenau (F8.57), schistose rocky ridge in meander of Perlenbach, S facing slope rock, sheltered by trees, 5.1992, A. M. Brand 27334 (h).

This locality was already known by MÜLLER (1949 : 18; 1965 : 41) and it is reassuring to know that the species still occurs there. The locality is

very close to the Belgian border, and the species could thus be found in the study area.

Usnea cornuta Körb.

Syn. : *Usnea intexta* Stirt.; *U. inflata* (Duby) Motyka

Belgium, Mosan : Hermeton-sur-Meuse, escarpement de la rive droite de la vallée de l'Hermeton (H5.55), rochers famenniens ombragés, 4.1962, *J. Lambinon* 62/304 (LG). - Ard. : Paliseul (K6.43), 9.1884, *A. Douret* (LG); Steinbach-Limerlée (J8.21), s. d., *Van Bastelaer* (LG); Louette-St-Pierre (K5.27), 10.1870, *F. Gravet* (LG); Herbeumont, bois de Conques, rive gauche de la Semois, dans la boucle située immédiatement au N du Rocher du Chat (L6.26), sur *Quercus*, 6.1985, *P. Diederich* 6112 (h), *F. Rose & E. Sérusiaux*.

Luxembourg, Lorr. : S. loc., on a sandstone rock, < 1250, *F.-A. Tinant* 139, 141, 167, 168b, 187, 189, 601b (LUX); Berdorf, Weerschrumshléff, sur falaise humide et abritée de grès au sommet des gorges (L9.11), 6.1964, *R. Schumacker* 64/3 (LG, 2 specimens).

Great care has been paid to achieve correct identifications of all *Usnea* reports in the study area by LAMBINON (1966, 1969) : all available material of critical taxa mentioned has been examined, incl. by TLC. We base our identifications on the most recent studies by the world-wide specialist of the genus (CLERC 1987, 1991 & 1992) and on several collections from Luxembourg which he has identified or checked.

Several collections mentioned above (Belgium, Mosan distr. and Luxembourg, Lorr. distr.) were formerly reported as *Usnea flammea* Stirt. (LAMBINON 1966 : 457-458, 1969 : 163-164); they have all been carefully checked and can definitely be assigned to *U. cornuta*.

Usnea cornuta is now at best very rare in the study area, the most recently sampled population being quite depauperate (valley of Semois near Herbeumont).

Usnea flammea Stirt.

Luxembourg, Lorr. : S. loc., < 1850, ecology unknown, *F.-A. Tinant* 168a (LUX).

The species was reported by LAMBINON (1966 : 457-458, 1969 : 163-164) but the relevant collections are all *U. cornuta* (see under that species). There is, however, an old collection from Luxembourg that definitely belongs to that species. Unfortunately it must be considered as extinct from the study area.

Usnea fragilescens Lynge var. *fragilescens*

Belgium, Ard. : Louette-St-Pierre (K5.27), 'ad rupes', 11.1870, *G. Lochenies* (BR); Muno, Roche à l'Appel (L6.34), saxicole, 3.1963, *L. Delvosalle* (LG).

The second mentioned collection was reported by LAMBINON (1966 : 458, 1969 : 164) and is here confirmed; the first one is an interesting addition. Both contain stictic, cryptostictic, constictic and menegazziaic acids; norstictic acid was not detected. They both belong to the nominal variety as defined by CLERC (1987). The species has not been recently seen and must be considered as extinct from the study area.

Usnea fulvorangeans (Räsänen) Räsänen

Most of the collections reported under this name by LAMBINON (1966 : 460, 1969 : 164-165) represent this species, the most remarkable exception being a typical specimen of *U. wasmuthii* (see under that species). *Usnea fulvorangeans* is the only sorediate species of *Usnea* which still has viable populations in the study area.

Usnea glabrata (Ach.) Vain.

Belgium, Ard. : Entre Oneux et Fays (G7.18), sur *Quercus*, 6.1893, *M. Halin* (BR); Houffalize, bord de la route vers La Roche (J7.27), 7.1956, *E. Jacques* 2336 (LG); Herbeumont, partie inférieure de la vallée de l'Antrogne (L7.26), branches de *Quercus* en bordure de la route de la rive droite, 11.1965, *J. Lambinon* 65/915 (LG); Chiny, sentier de Suxy (L6.37), épiphyte en forêt, 8.1964, *Ph. De Zuttere* L24 (LG).

These four collections were reported by LAMBINON (1966 : 457, 1969 : 162) and are confirmed (TLC : fumarprotocetraric and protocetraric acids). The species has not been seen recently and must be considered as probably extinct in the study area.

Usnea hirta (L.) F. H. Wigg

Belgium, Camp. : Bouwel (C5.34), sur *Quercus*, 7.1920, *L. Giltay* (BR).

This species is known from several localities in the Ardennes district. Belgium, Grand-Halleux (LAMBINON 1966 : 454, specimens in LG, checked) and Luxembourg (see VAN DEN BOOM et al. 1994 : 165 for further details). A further collection has been found in BR and is quite interesting as it has been collected early in this century in the Campine district, where air pollution has now almost eliminated corticolous foliose and fruticose lichens.

Usnea madeirensis Motyka

Belgium, Ard. : Rocherath, 'Drei Herren Wald' (G8.38), sur *Fagus*, 4.1959, R. Schumacker 59/11 (LG); Louette-St-Pierre (K5.27), 10.1870, troncs d'arbres, F. Gravet (LG).

Luxembourg, distr. unknown : S. loc., between 1823 and 1853, F.-A. Tinant (LUX).

This species has recently been recognized as a widespread species in western Europe and the collection from Luxembourg has already been published by CLERC (1991 : 436). Two further collections have been detected in the LG herbarium and checked by TLC (salazinic acid); they were formerly reported as *U. wasmuthii* Räsänen (LAMBINON 1966 : 459) and eventually as *U. extensa* Vain. (LAMBINON 1969 : 164). *Usnea madeirensis* has not been seen recently and must be considered as extinct in the study area.

Usnea subcornuta Stirr.

The species is reported by LAMBINON (1966 : 455) from the Belgian coast (near Koksijde, C0.57) but no relevant material could be found. NIMIS (1993 : 730) shows that the species does not occur in Europe. It must therefore be removed from the flora of the study area.

Usnea rubicunda Stirr.

Syn. : *Usnea rubiginea* auct., non (Michx.) A. Massal.

Luxembourg, distr. unknown : S. loc., on a sandstone rock, < 1850, F.-A. Tinant 169 (LUX).

Usnea rubicunda is the most easily identified species in the genus and the reports for Belgium (Brab. and Ard. distr.) by LAMBINON (1966 : 456) are all accurate. It is interesting to report upon a very old collection from Luxembourg. The species has not been collected in the study area during this century.

Usnea wasmuthii Räsänen

Belgium, Ard. : Louette-St-Pierre (K5.27), 10.1870, F. Gravet (LG).

Luxembourg, distr. unknown : S. loc., < 1850, F.-A. Tinant 191 (LUX). - Ard. : Bockholz-lès-Hosingen, vallon du Lellgerbaach (K8.14), sur *Prunus spinosa*, 10.1986, P. Diederich 7685a (h). - Lorr. : Meysembourg, vallon du Manzebaach (L8.27), sur *Fagus*, 12.1978, P. Diederich 1165c (h).

The taxonomical concept adopted here for that species follows CLERC (1992). The specimens produce salazinic and barbatic acids (TLC). The specimens reported under that name (material in LG) by LAMBINON (1966 : 459-460) were eventually published as *U. extensa* Vain. (LAMBINON 1969 :

164); they correspond either to *U. madeirensis* (see under that species) or to *U. subfloridana* Stirt. The latter specimens are quite unusual for that species as their tuberculate soralia have none or very few isidioid outgrowths but can be assigned only to *U. subfloridana* as they produce thamnolic acid. *Usnea extensa* has been described from Siberia and belongs to the *U. glabrescens* aggr., according to CLERC (1987 : 494); it has been reduced into synonymy with *U. glabrescens* (Vainio) Vainio by SANTESSON (1993 : 229); this species is unknown in the study area.

Another collection made by Gravet at Louette-St-Pierre - where *U. madeirensis* occurred - and preserved in LG as *U. fulvorangeans* proved to be the genuine *U. wasmuthii*. *Usnea wasmuthii* is obviously a very rare species in the study area and recent, quite depauperate, populations have been seen only in Luxembourg. In Bockholz-lès-Hosingen, we collected it on *Prunus spinosa*, together with *U. filipendula*, *U. florida*, *U. fulvorangeans*, *U. hirta* and *U. subfloridana*.

Verrucaria fuscula Nyl.

Syn. : *V. insularis* (A. Massal.) Jatta; *Dermatocarpon insulare* (A. Massal.) Mig.

Belgium, Mosan : Yvoir, rochers de Champale (H5.27), rochers calcaires ensoleillés, sur la crête, 6.1967, J. Lambinon 67/376 (LG); 2.7 km SSE of Yvoir, Poilvache (H5.27), over limestone, 9.1989, A. M. Brand 22005 (h).

This obligate parasite of *Aspicilia calcarea* has been described in detail by ZEHETLEITNER (1978).

New for the study area.

Verrucaria glaucovirens Grunmann

Syn. : *V. virens* Nyl.; ?*V. obfuscans* (Arnold) Nyl.; *V. virens* var. *obfuscans* Arnold

Belgium, Mar : Nieuwpoort, Ijzersluis (C1.41), alt. 0 m, bakstenen talud, exp. Z, incl. 45°, boven zoet water, 5.1988, A. M. Brand 17935 (h). - Camp : SW of Lommel, près de Wezel (C6.34), on a wall (mortar), 5.1989, P. van den Boom 8336 (h, hb. Diederich) (conf. C. Roux).

Verrucaria glaucovirens is a poorly known species, which has been mentioned in the literature from Algeria, Finland, France and Sweden (ZSCHACKE 1933 : 317, SANTESSON 1993 : 232), where it grows on mortar, walls and calcareous rocks. The similar *V. obfuscans* is said to differ only by the dark brown colour of the thallus (which is greyish green in *V. glaucovirens*). Our material does not allow to distinguish between *V. glaucovirens* and *V. obfuscans*, and both names might in fact be synonyms. *V. obfuscans* is

known from Germany and France (Paris) on walls (ZSCHACKE 1933 : 317-318).

New for the study area.

Verrucaria umbrinula Nyl.

Belgium, Ard. : 2 km W of Bouillon, bank of Semois near Rocher du Pendu (L6.22), schistose rocks close to the bank, 9.1986, A. M. Brand 15390 (h).

New for the study area.

Vezdaea rheocarpa Poelt & Döbbeler

Belgium, Ard. : 3 km NW of Bouillon, 1.2 km N of Moulin de L'Epine, along Semois (L6.12), on old *Fraxinus*, A. M. Brand s. n. (h).

Vezdaea rheocarpa was known from two sterile Luxembourg collections made in one single locality (DIEDERICH et al. 1991 : 44). The Belgian specimen cited above is the first fertile specimen collected in the study area.

**Vouauxiella verrucosa* (Vouaux) Petr. & Syd.

Belgium, Mosan : 4.5 km SSW of Dinant, 1.8 km N of Falmignoul, Chaussée des Alpinistes (H5.57), on *Fraxinus*, on *Lecanora hybocarpa*, 8.1988, A. M. Brand 19360 (h, sub *L. hybocarpa*); 7.4 km SSW of Dinant, road Anserenume-Falmignoul, near km stone 34.1 (H5.57), on old *Fraxinus* along road on plateau, on *L. hybocarpa*, 4.1984, A. M. Brand 11378 (h, sub *L. hybocarpa*).

Lichenicolous fungus new for the study area.

**Zwackhiomyces martinianus* (Arnold) Triebel & Grube

Luxembourg, Ard. : 3 km SE of Hosingen, 0.6 km NE of Wahlhausener Dickt, Bolletsbaach (K8.15), stones on disused path, near brook, on *Porpidia* cf. *crustulata*, 3.1989, A. M. Brand 20005 (h).

Lichenicolous ascomycete new for the study area.

**Zwackhiomyces physclicola* Alstrup

Luxembourg, Lorr. : SE of Lasauvage, Grand-Bois (M7.48), on *Physcia caesia*, 9.1986, P. Diederich 12434 (h).

Our specimen agrees in most aspects with the original description of this species (ALSTRUP 1993 : 102), and also the host, *P. caesia*, is the same. However, a careful examination of the ascospores at a high magnification (x 2000) reveals the presence of three couples of setulae fixed on the larger

ascospore cell at c. 2 μm from the septum. The same kind of ascospore setulae is known in most species of *Lichenopeltella* (e. g. APTROOT et al. 1997a), but has never been reported for species of *Zwackhiomyces*. Also the hamathecial filaments, which are c. 2 μm thick, not or rarely branched and apically free, exclude our specimen from the genus *Zwackhiomyces* Grube & Hafellner, as circumscribed by GRUBE & HAFELLNER (1990). These filaments were said to be c. 2 μm thick in the type specimen (ALSTRUP 1993), but they were not described further. In our opinion, *Z. physciicola* does not belong to *Zwackhiomyces*, but to a different, possibly undescribed genus.

The species has also been reported on *Physcia tribacia* (Ach.) Nyl. in Spain by CALATAYUD & BARRENO (1995 : 400) and in Corsica by HAFELLNER (1994 : 233).

Lichenicolous ascomycete new for the study area.

Acknowledgments

We are most grateful to the curators of the institutional herbaria B, BR, GENT, H, LG, LUX, M, NAM, STU, TROM, TUR, UPS and WRSL, and to Prof./Dr A. Aptroot, F. Berger, G. Ernst, M. Hoffmann, L. B. Sparrius and D. Thoen for the loan of specimens or for information about the location of type specimens, Prof. J. Lambinon for allowing us to use his rich lichen collection from Belgium and Luxembourg, Dr P. Clerc for identifying the complete set of Luxembourg *Usnea*, Dr B. J. Coppins for checking the identity of *Arthonia endlicheri*, *Bacidia saxenii* and *Lecidea cyrtidia*, Dr T. Lumbsch for checking the identity of *Lecanora hybocarpa*, Prof. A. Rossmann for interesting discussions on *Nectria* s. l., Dr C. Roux for confirming the identification of *Verrucaria glaucovirens*, Dr C. Scheidegger for information on *Buellia leptoclina*, Dr H.-J. Schroers for collaboration in transferring several lichenicolous *Nectria* s. l. species to other genera, Dr L. Tibell for identifying our specimen of *Chaenothecopsis savonica*, Prof. J. Lambinon and Dr A. Aptroot for useful comments on our manuscript, Mr N. Hoffmann for allowing us to use the results of his yet unpublished thesis, Dr R. Fabri for easy and quick access to pertinent literature in BR, Dr E. S. Hansen for sending us a photocopy of ALSTRUP et al. (1994), Dr M. Wedin for providing us with a copy of EITNER (1901) and Prof. G. Follmann for sending us a copy of SCHLECHTER (1994). We also want to thank very warmly Dr Peter Lambley who checked the English of an early version of this manuscript; of course any mistake or shortcoming is our own responsibility.

REFERENCES

- AIGRET, C., 1901. – Monographie des *Cladonia* de Beigique. *Bull. Soc. Roy. Bot. Belg.* 40 : 43-213.
- ALSTRUP, V. 1993. – News on lichens and lichenicolous fungi from the Nordic countries. *Graphis Scripta* 5 : 96-104.

- ALSTRUP, V., 1997. – New lichenicolous fungi found on the NLF meeting in Norway 1993. *Graphis Scripta* 8 : 25-29.
- ALSTRUP, V., CHRISTENSEN, S. N., HANSEN, E. S. & SVANE, S., 1994. – The lichens of the Faroes. *Ann. Soc. Sci. Faeroensis* 40 : 61-121.
- APTRoot, A., DIEDERICH, P., SÉRUSIAUX, E. & SIPMAN, H. J. M., 1997a. – Lichens and lichenicolous fungi from New Guinea. *Bibl. Lichenol.* 64 : 220 pp.
- APTRoot, A., DIEDERICH, P., VAN HERCK, C. M., SPIER, L. & WIRTH, V., 1997b. – *Protoparmelia hypotremella*, a new sterile corticolous species from Europe and its lichenicolous fungi. *Lichenologist* 29 : 415-424.
- APTRoot, A. & LUMBSCH, H. T., 1985. – Ergänzungen zur Verbreitung von *Cladonia fragillissima*. *Herzogia* 7 : 243-245.
- APTRoot, A. & VAN HERCK, C. M., 1999. – *Lecanora barkmaneana*, a new nitrophilous sorediate corticolous lichen from the Netherlands. *Lichenologist* 31 : 3-8.
- APTRoot, A., VAN HERCK, C. M. & SPIER, L., 1999. – Naarden-Vesting vanaf het ijs gezeien. *Buxbaumia* 39 : 55-57.
- BARR, M. E., 1997. – Notes on some 'dimeriaceous' fungi. *Mycotaxon* 64 : 149-171.
- BERGER, F., 1996. – Neue und seltene Flechten und lichenicole Pilze aus Oberösterreich, Österreich II. *Herzogia* 12 : 45-84.
- BOULY DE LESDAIN, M., 1905. – Liste des lichens recueillis à Spa. *Bull. Soc. Bot. Fr.* 52 : 16-38.
- BOULY DE LESDAIN, M., 1910a. – Recherches sur les lichens des environs de Dunkerque. Imprim. P. Michel, Dunkerque, 301 pp.
- BOULY DE LESDAIN, M., 1910b. – Lichens belges rares ou nouveaux. *Bull. Soc. Roy. Bot. Belg.* 47 : 39-45.
- BOULY DE LESDAIN, M., 1914. – Recherches sur les lichens des environs de Dunkerque, 1^{er} supplément. Société dunkerquoise pour l'encouragement des sciences, des lettres et des arts, Dunkerque, 190 pp.
- BREUSS, O., 1996. – Revision der Flechtengattung *Placidopsis* (Verrucariaceae). *Österr. Z. Pilzk.* 5 : 65-94.
- BREUSS, O., 1998. – Drei neue holz- und borkenbewohnende *Verrucaria*-Arten mit einem Schlüssel der bisher bekannten Taxa. *Linzer Biol. Beitr.* 30 : 831-836.
- BRODO, I. M., 1984. – The North American species of the *Lecanora subfusca* group. *Nova Hedwigia, Beih.* 79 : 63-185.
- CALATAYUD, V. & BARRENO, E., 1995. – Lichenicolous fungi from the Iberian Peninsula and the Canary Islands. Flechten Follmann (ed. Daniëls, Schulz & Peine), University Cologne : 397-402.
- CHRISTENSEN, S. N., 1997. – *Parmelia submontana* new to Denmark. *Graphis Scripta* 8 : 61-63.
- CLAUZADE, G. & ROUX, C., 1977. – Taxons nouveaux et intéressants pour le midi de la France. *Bull. Soc. Linn. Provence* 30 : 9-36.
- CLAUZADE, G. & ROUX, C., 1985. – Likenoj de Okcidenta Europo. Ilustrita determinlibro. *Bull. Soc. Bot. Centre-Ouest, N.S., Numéro Spécial*, 893 pp.
- CLAUZADE, G., ROUX, C. & RIEUX, R., 1981. – Les *Acarospora* de l'Europe Occidentale et de la région méditerranéenne. *Bull. Mus. Hist. Nat. Marseille* 41 : 41-93.

- CLERC, P., 1987. – Systematics of the *Usnea fragilesceus* aggregate and its distribution in Scandinavia. *Nord. J. Bot.* 7 : 479-495.
- CLERC, P., 1991. – *Usnea madeirensis* Mot. (ascomycète lichénisé) : une espèce méconnue de l'Europe et de l'Amérique du Nord. *Candollea* 46 : 427-438.
- CLERC, P., 1992. – Some new or interesting species of the genus *Usnea* (lichenised Ascomycetes) in the British Isles. *Candollea* 47 : 513-526.
- COPPINS, B. J., 1983. – A taxonomic study of the lichen genus *Micarea* in Europe. *Bull. Br. Mus. Nat. Hist. (Bot.)* 11 (2) : 17-214.
- COPPINS, B. J., JAMES, P. W. & HAWKSWORTH, D. L., 1992. – New species and combinations in The Lichen Flora of Great Britain and Ireland. *Lichenologist* 24 : 351-369.
- COPPINS, B. J. & MÜHR, L.-E., 1997. – *Micarea lapillicola* (Vain.) Coppins & Muhr, a previously misunderstood species from NW Europe. *Graphis Scripta* 8 : 45-49.
- DESCHÂTRES, R. & BOISSIÈRE, J.-C., 1994. – *Cladonia callosa* Del. ex Harm., nom correct de *Cladonia fragilissima* Østhaugen et P. James. *Bull. Soc. Linn. Provence* 45 : 283-289.
- DE WILDEMAN, E., 1898. – Thallophytes. In : De Wildeman, F. & Durand, T., *Prodrome de la Flore Belge* 1, 543 pp., Castagne, Bruxelles.
- DIEDERICH, P., 1986a. – Macrolichens nouveaux ou intéressants pour la flore luxembourgeoise (2). *Bull. Soc. Nat. Luxemb.* 86 : 117-123.
- DIEDERICH, P., 1986b. – Lichenicolous fungi from the Grand Duchy of Luxembourg and surrounding areas. *Lejeunia*, N. S. 119 : 26 pp.
- DIEDERICH, P., 1989a. – Les lichens épiphytiques et leurs champignons lichénicoles (macrolichens exceptés) du Luxembourg. *Trav. Sc. Musée Nat. Hist. Natur. Luxemb.* 14 : 268 pp.
- DIEDERICH, P., 1989b. – Etude taxonomique et écogéographique des lichens épiphytiques et de leurs champignons lichénicoles (macrolichens exceptés) du Grand-Duché de Luxembourg. Thèse de doctorat, Université Catholique de Louvain, 400 pp.
- DIEDERICH, P., 1990. – New or interesting lichenicolous fungi. 1. Species from Luxembourg. *Mycotaxon* 37 : 297-330.
- DIEDERICH, P., LAMBINON, J., SÉRUSIAUX, E. & VANDEN BOOM, P., 1992. – Lichens et champignons lichénicoles nouveaux ou intéressants pour la flore de la Belgique et des régions voisines. VI. *Belg. Journ. Bot.* 125 : 137-150.
- DIEDERICH, P., SÉRUSIAUX, E., APTROOT, A. & ROSE, F., 1988. – Lichens et champignons lichénicoles nouveaux ou intéressants pour la flore de la Belgique et des régions voisines. IV. *Dumortiera* 42 : 17-35.
- DIEDERICH, P., SÉRUSIAUX, E. & VANDEN BOOM, P., 1991. – Lichens et champignons lichénicoles nouveaux ou intéressants pour la flore de la Belgique et des régions voisines. V. *Lejeunia*, N. S. 136 : 47 pp.
- DÖBBELER, P., 1984. – Symbiosen zwischen Gallertalgen und Gallertpilzen der Gattung *Epigloea* (Ascomycetes). *Nova Hedwigia, Beih.* 79 : 203-239.

- DURWAELE, L., 1996. – Fytosociologische en ecologische studie van epilithische mossen en lichenen in de Brugse binnenstad (West-Vlaanderen). Unpubl. thesis, Universiteit Gent, Faculteit van de Wetenschappen, 134 pp.
- DUVIGNEAUD, P. & GILTY, L., 1938. – Catalogue des Lichens de Belgique. *Bull. Soc. Roy. Bot. Belg.* 70 (suppl.) : 52 pp.
- EITNER, E., 1901. – II. Nachtrag zur Schlesischen Flechtenflora. *Jahresber. Schles. Ges. Vaterl. Cult.* 78 ('1900'), 2. Abt., b : 5-27.
- ETAYO, J. & DIEDERICH, P., 1996. – Lichenicolous fungi from the western Pyrenees, France and Spain. II. More Deuteromycetes. *Mycotaxon* 60 : 415-428.
- FRYDAY, A., 1996. – A provisional re-assessment of the non-yellow species of *Rhizocarpon* occurring in the British Isles. *British Lichen Soc. Bull.* 78 : 29-40.
- GIRALT, M., 1996. – Lliquens epifits i contaminació atmosfèrica a la plana i les seralades litorals tarragonines. Institut d'Estudis Catalans, Barcelona, 525 pp.
- GIRALT, M. & VAN DEN BOOM, P., 1996. – *Rinodina brandii*, a new saxicolous lichen species from Belgium containing pannarin. *Belg. Journ. Bot.* 129 : 77-82.
- GIRALT, M., VAN DEN BOOM, P. P. G. & MATZER, M., 1997. – The lichen genus *Rinodina* in Belgium, Luxembourg and The Netherlands. *Mycotaxon* 61 : 103-151.
- GOWAN, S. P., 1989. – The Lichen Genus *Porpidia* in North America. *Bryologist* 92 : 25-59.
- GOWAN, S. P. & AHTI, T., 1993. – Status of the lichen genus *Porpidia* in eastern Fennoscandia. *Ann. Bot. Fennici* 30 : 53-75.
- GRUBE, M. & HAFELLNER, J., 1990. – Studien an flechtenbewohnenden Pilzen der Sammelgattung *Didymella* (Ascomycetes, Dothideales). *Nova Hedwigia* 51 : 283-360.
- GRUBE, M. & MATZER, M., 1997. – Taxonomic concepts of lichenicolous *Arthonia* species. *Bibl. Lichenol.* 68 : 1-17.
- HAFELLNER, J., 1984. – Studien in Richtung einer natürlichen Gliederung der Sammelfamilien Lecanoraceae und Lecideaceae. *Nova Hedwigia, Beih.* 79 : 241-371.
- HAFELLNER, J., 1989. – Die europäischen *Mycobilimbia*-Arten - eine erste Übersicht (lichenisierte Ascomycetes, Lecanorales). *Herzogia* 8 : 53-59.
- HAFELLNER, J., 1994. – Über Funde lichenicoler Pilze und Flechten auf Korsika (Frankreich). *Bull. Soc. Linn. Provence* 44 : 219-234.
- HAFELLNER, J., 1995. – Bemerkenswerte Funde von Flechten und lichenicolen Pilzen auf makaronesischen Inseln III. Einige bisher auf den Kanarischen Inseln übersehene lecanorale Arten. *Linzer Biol. Beitr.* 27 : 489-505.
- HAFELLNER, J. & CALATAYUD, V., 1999. – *Lichenostigma cosmopolites*, a common lichenicolous fungus on *Xanthoparmelia* species. *Mycotaxon* 72 : 107-114.
- HARRIS, R. C., 1995. – More Florida Lichens, including the 10th tour of the pyrenolichens. Published by the author, Bronx, U.S.A., 192 pp.
- HARRIS, R. C., 1997. – Reinstatement of *Lecidea cyrtidia* Tuck. in the North American lichen checklist. *Evansia* 14 : 69-73.
- HAWKSWORTH, D. L., 1975. – A revision of lichenicolous fungi accepted by Keissler in *Coniothecium*. *Trans. Br. Mycol. Soc.* 65 : 219-238.

- HAWKSWORTH, D. L., 1985. – A redistribution of the species referred to the ascomycete genus *Microthelia*. *Bull. Br. Mus. Nat. Hist. (Bot.)* 14 : 43-181.
- HAWKSWORTH, D. L., 1988. – The variety of fungal-algal symbioses, their evolutionary significance, and the nature of lichens. *Bot. J. Linn. Soc.* 96 : 3-20.
- HAWKSWORTH, D. L., 1994. – Notes on British lichenicolous fungi : VII. *Lichenologist* 26 : 337-347.
- HENSSEN, A., 1987. – *Lichenothelia*, a genus of microfungi on rocks. *Bibl. Lichenol.* 25 : 257-293.
- HENSSEN, A. & JØRGENSEN, P. M., 1990. – New combinations and synonyms in the Lichinaceae. *Lichenologist* 22 : 137-147.
- HERTEL, H. & KNOPH, J.-G., 1984. – *Porpidia albocaerulescens*. Eine weit verbreitete, doch in Europa seltene und vielfach verkannte Krustenflechte. *Mitt. Bot. Staatssamml. München* 20 : 467-488.
- HOFFMANN, N., 1999. – Hyaloamerespore Pyrenomyceten auf Flechten. Diplomarbeit, Karl-Franzens-Universität, Graz, 208 pp.
- HOFFMANN, N. & HAFELLNER, J., in prep. – Revision der lichenicolen Arten der Sammelgattungen *Guignardia* und *Physalospora* (Ascomycotina). *Bibl. Lichenol.*
- JØRGENSEN, P. M., 1994. – Further notes on European taxa of the lichen genus *Leptogium*, with emphasis on the small species. *Lichenologist* 26 : 1-29.
- JØRGENSEN, P. M. & TØNSBERG, T., 1988. – On some crustose lichens with *Trentepohlia* from shaded overhangs in coastal Norway. *Nord. J. Bot.* 8 : 293-304.
- KEISSLER, K. von, 1930. – Die Flechtenparasiten. In : Dr. L. Rabenhorst's Kryptogamen-Flora, Band 8 : XI + 712 pp.
- KEISSLER, K. von, 1937-1938. – Pyrenulaceae bis Mycoporaceae. In : Dr. L. Rabenhorst's Kryptogamen-Flora, Band 9, Abt. 1, Teil 2 : 695 pp.
- KILIAS, H., 1981. – Revision gesteinsbewohnender Sippen der Flechtengattung *Caillaria* Massal. in Europa. *Herzogia* 5 : 209-448.
- KNOPH, J.-G. & SCHRÜFFER, K., 1993. – Die Flechte *Porpidia albocaerulescens* (Wulfen) Hertel & Knoph in Europa. *Bryonora* 11 : 2-4.
- KROG, H. & JAMES, P. W., 1977. – The genus *Ramalina* in Fennoscandia and the British Isles. *Norw. J. Bot.* 24 : 15-43.
- LAMBINON, J., 1966. – Révision des macrolichens de Belgique et des régions voisines. Etude taxonomique et phytogéographique. Thèse de doctorat, Liège, 594 pp. + 2 annexes.
- LAMBINON, J., 1969. – Les lichens. Les Naturalistes Belges, Bruxelles, 196 pp.
- LAMBINON, J., DE LANGHE, J.-E., DELVOSALLE, L. & DUVIGNEAUD, J. (et coll.), 1993. – Nouvelle Flore de la Belgique, du Grand-Duché de Luxembourg, du Nord de la France et des Régions voisines (Ptéridophytes et Spermatophytes). Quatrième édition. Ed. Patrim. Jardin bot. nat. Belg., Meise, CXX + 1092 pp.
- LOCHENIES G., 1894. Matériaux pour la flore cryptogamique de Belgique. *Bull. Soc. Roy. Bot. Belg.* 33 : 153-172.
- LOCHENIES, G., 1896. – Lichens récoltés par M. Delogne, principalement dans les Ardennes belges. *Bull. Soc. Roy. Bot. Belg.* 35 : 95-117.

- LOCHENIES, G., 1897. – Lichens récoltés à l'herborisation de Malmédy les 28, 29 et 30 juin 1986. *Bull. Soc. Roy. Bot. Belg.* 36 : 122-134.
- LOWEN, R., 1995. – *Acremonium* section *Lichenoidea* section nov. and *Pronectria oligospora* species nov. *Mycotaxon* 53 : 81-95.
- MATZER, M., 1993. – Zur Kenntnis der Gattungen *Muellerella* und *Plurisperma* (Ascomycetes). *Nova Hedwigia* 56 : 203-210.
- MATZER, M., 1996. – Follicolous ascomycetes with fissitunicate asci on foliicolous lichens. *Mycological Papers* 171 : 202 pp.
- MOLITOR, F. & DIEDERICH, P., 1997. – Les pyrénolichens aquatiques du Luxembourg et leurs champignons lichénicoles. *Bull. Soc. Nat. Luxemb.* 98 : 69-92.
- MORENO, P. P. & EGEA, J. M., 1992. – Estudios sobre complejo *Anema-Thyrea-Peccania* en el sureste de la Península Ibérica y norte de Africa. *Acta Bot. Barcinonensia* 41 : 1-66.
- MÜLLER, T., 1949. – Die Flechten der Eifel. *Naturh. Ver. Rheinlande und Westfalens, Mitt.-Blatt* 2 : 1-28.
- MÜLLER, T., 1958. – Über die Flechtenflora des Kantons Malmédy. *Bull. Jard. Bot. Etat Bruxelles* 28 : 129-159.
- MÜLLER, T., 1965. – Die Flechten der Eifel mit Berücksichtigung der angrenzenden Ardennen und der Kölner Bucht. *Decheniana, Beih.* 12 : 72 pp.
- NAVARRO-ROSINÉS, P. & HLADUN, N. L., 1990. – El género *Sarcopyrenia* Nyl. (ascomycetes liquenícolas) en Europa y norte de Africa. *Candollea* 45 : 469-489.
- NIMIS, P. L., 1993. – The lichens of Italy. An annotated catalogue. *Museo Regionale di Scienze Naturali Torino, Monografia* 12 : 897 pp.
- POELT, J., 1969. – Bestimmungsschlüssel europäischer Flechten. Cramer, Lehre, 757 pp.
- POELT, J., 1990. – Parasitische Arten der Flechtengattung *Rhizocarpon* : eine weitere Übersicht. *Mitt. Bot. Staatssamml. München* 29 : 515-538.
- POELT, J. & OBERMAYER, W., 1995. – *Rhizocarpon mosigiae* spec. nov., ein neuer parasitischer Vertreter der Gattung aus Tirol (Österreich). *Herzogia* 11 : 111-113.
- POELT, J. & VĚZDA, A., 1977. – Bestimmungsschlüssel europäischer Flechten. Ergänzungsheft I. *Bibl. Lichenol.* 9 : 258 pp.
- PURVIS, O. W., COPPINS, B. J., HAWKSWORTH, D. L., JAMES, P. W. & MOORE, D. M., 1992. – The lichen flora of Great Britain and Ireland. Natural History Museum Publications, London, 710 pp.
- ROSSMAN, A. Y., SAMUELS, G. J., ROGERSON, C. T. & LOWEN, R., 1999. – Genera of Bionectriaceae, Hypocreaceae and Nectriaceae (Hypocreales, Ascomycetes). *Studies in Mycology* 42 : 248 pp.
- ROUX, C., BRICAUD, O., SÉRUSIAUX, E. & COSTE, C., 1994. – *Wentomyces lichenicola* subsp. nov. *bouteillei* champignon lichénicole non lichénisé (Dothideales, Dimeriaceae). *Mycotaxon* 50 : 459-474.
- ROUX, C., ETAYO, J., BRICAUD, O. & LE COEUR, D., 1997. – Les *Refractohilum* (Hyphomycètes, Moniliacés) à conidies pluriseptées en Europe et au Canada. *Can. J. Bot.* 75 : 1592-1600.

- ROUX, C. & NAVARRO-ROSINÉS, P., 1994. – *Stigmidium clauzadei* sp. nov., nelikeni ginta fungo likenoĝa (Ascomycetes). *Bull. Soc. Linn. Provence* 44 : 443-450.
- ROUX, C., NAVARRO-ROSINÉS, P. & TRANCHIDA, F., 1998. – *Stigmidium bellemerei* sp. nov., champignon lichénicole non lichénisé (Verrucariales). *Cryptogamie, Bryol. Lichénol.* 19 : 221-228.
- ROUX, C. & TRIBBEL, D., 1994. – Révision des espèces de *Stigmidium* et de *Sphaerellothecium* (champignons lichénicoles non lichénisés, Ascomycètes) correspondant à *Pharcidia epicymatia* sensu Keissler ou à *Stigmidium schaeereri* auct. *Bull. Soc. Linn. Provence* 45 : 451-542.
- SAMUELS, G. J., 1988. – Fungicolous, Lichenicolous, and Myxomyceticolous species of *Hypocreopsis*, *Nectriopsis*, *Nectria*, *Peristomialis*, and *Trichonectria*. *Mem. New York Bot. Gard.* 46 : 78 pp.
- SANDSTEDE, H., 1906. – Die Cladonien des nordwestdeutschen Tieflandes und der deutschen Nordseeinseln. *Abh. Naturw. Ver. Bremen* 18 : 384-456.
- SANTESSON, R., 1993. – The lichens and lichenicolous fungi of Sweden and Norway. SBT-förlaget, Lund, Sweden, 240 pp.
- SANTESSON, R. & TÖNSBERG, T., 1994. – *Arthrorhaphis aeruginosa* and *A. olivaceae*, two new lichenicolous fungi. *Lichenologist* 26 : 295-299.
- SCHIEDEGGER, C., 1993. – A revision of European saxicolous species of the genus *Buellia* De Not. and formerly included genera. *Lichenologist* 25 : 315-364.
- SCHLECHTER, E., 1994. – Verbreitungsatlas der Makrolichenen der Eifel und ihrer Randgebiete. Doctoral thesis, University of Köln, 305 pp.
- SCHNEIDER, G., 1979. – Die Flechtengattung *Psora* sensu Zahlbruckner - Versuch einer Gliederung. *Bibl. Lichenol.* 13 : 291 pp.
- SÉRUSIAUX, E., 1984. – Les Pannariaceae s. l. (Lichens) en Belgique, au Grand-Duché de Luxembourg et dans les régions voisines. *Bull. Soc. Roy. Bot. Belg.* 117 : 80-88.
- SÉRUSIAUX, E., 1990. – Liste préliminaire des lichens et champignons lichénicoles des rochers et éboulis des affleurements du Salmien (Belgique, région de Vielsalm). *Mém. Soc. Roy. Bot. Belg.* 12 : 135-147.
- SÉRUSIAUX, E., 1993. – Deux nouvelles espèces de *Byssoloma* Trev. (Lichens, Pilocarpaceae) d'Europe Occidentale et de Macaronésie. *Cryptogamie, Bryol. Lichénol.* 19 : 197-209.
- SÉRUSIAUX, E., DIEDERICH, P. & ROSE, F., 1985. – Lichens et champignons lichénicoles nouveaux ou intéressants pour la flore de la Belgique et des régions voisines. III. *Dumortiera* 33 : 25-35.
- SKULT, H., 1993. – Notes on the status of *Parmelia delisei* versus *P. pulla* and their distribution in Finland. *Graphis Scripta* 5 : 87-91.
- SPIER, L., VAN HERK, K. & APTROOT, A., 1998. – Inventarisatie van mossen en korstmossen op de stadswallen van 's-Hertogenbosch. *Buxbaumia* 47 : 35-39.
- STRASSER, P. P., 1897. – *Arthonia* (*Coniangium* Kbr.) *scromontana* n. sp. *Verhandl. Zool.-Bot. Ges. Wien* 47 : 69.
- SWINSCOW, T. D. V., 1971. – Pyrenocarpous lichens : 15. Key to *Polyblastia* Massal. in the British Isles. *Lichenologist* 5 : 92-113.

- THOR, G. & MUHR, L.-E., 1991. – *Buellia violaceofusca*, a new lichen from Sweden. *Lichenologist* 23 : 11-13.
- THOR, G. & NORDIN, A., 1998. – 16 lichens new to Estonia. *Folia Cryptogamica Estonica* 32 : 123-125.
- TONGLET, A., 1898. – Lichens des environs de Dinant. *Bull. Soc. Roy. Bot. Belg.* 37 : 16-43.
- TØNSBERG, T., 1992. – The sorediate and isidiate, corticolous crustose lichens in Norway. *Sommerfeltia* 14 : 1-331.
- TØNSBERG, T. & ØVSTEDAL, D. O., 1995. – *Cladonia peziziformis* new to Norway from a burnt *Calluna* heath. *Graphis Scripta* 7 : 11-12.
- TORRENTE, P. & EGEA, J. M., 1989. – La Familia Opegraphaceae en el Area Mediterránea de la Península Ibérica y Norte de Africa. *Bibl. Lichenol.* 32 : 282 pp.
- TRIEBEL, D., 1989. – Lecideicole Ascomyceten. Eine Revision der obligat lichenicolen Ascomyceten auf lecideoiden Flechten. *Bibl. Lichenol.* 35 : 278 pp.
- TRIEBEL, D., RAMBOLD, G. & NASH III, T. H., 1991. – On lichenicolous fungi from continental North America. *Mycotaxon* 42 : 263-296.
- TRIEBEL, D., WEDIN, M. & RAMBOLD, G., 1997. – The genus *Scutula* (lichenicolous ascomycetes, Lecanorales) : species on the *Peltigera canina* and *P. horizontalis* groups. *Acta Univ. Ups. Symb. Bot. Ups.* 32 (1) : 323-337.
- VAN DEN BOOM, P. P. G., 1996. – Lichenen van de provincie Namen in België, met gegevens van de lichenologische excursie naar Anseremme in 1984. *Buxbaumiella* 40 : 4-18.
- VAN DEN BOOM, P. P. G., APTROOT, A. & VAN HERK, C. M., 1996. – The lichen flora of megalithic monuments in the Netherlands. *Nova Hedwigia* 62 : 91-104.
- VAN DEN BOOM, P., BRAND, M., DIEDERICH, P., APTROOT, A. & SÉRUSIAUX, E., 1994. – Report of a lichenological field meeting in Luxembourg. *Bull. Soc. Nat. Luxemb.* 95 : 145-176.
- VAN DEN BOOM, P., DIEDERICH, P. & SÉRUSIAUX, E., 1996. – Lichens et champignons lichénicoles nouveaux ou intéressants pour la flore de la Belgique et des régions voisines. VII. *Bull. Soc. Nat. Luxemb.* 97 : 81-92.
- VAN DEN BOOM, P. P. G., ETAYO, J. & BREUSS, O., 1995. – Interesting records of lichens and allied fungi from the western Pyrenees (France and Spain). *Cryptogamie, Bryol. Lichénol.* 16 : 262-283.
- VAN DEN BOOM, P. & SÉRUSIAUX, E., 1996. – A site with foliicolous lichens in Belgium. *Belg. Journ. Bot.* 129 : 19-23.
- VAN DEN BOOM, P., SÉRUSIAUX, E., DIEDERICH, P., BRAND, M., APTROOT, A. & SPIER, L., 1998. – 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. *Lejeunia*, N. S. 158 : 58 pp.
- VAN DER GUCHT, K. & HOFFMANN, M., 1990. – The impact of air pollution on the occurrence of corticolous and saxicolous lichens in the industrial area north of Ghent (Belgium). *Mém. Soc. Roy. Bot. Belg.* 12 : 111-126.
- VAN DOBBEN, H. & SIPMAN, H., 1980. – De lichenen van de excursie naar Aywaille, 1977. *Buxbaumiella* 9 : 16-23.

- VĚZDA, A., 1965. – Flechtensystematische Studien I. Die Gattung *Petractis* Fr. *Preslia (Praha)* 37 : 127-143.
- VOUALD, L., 1912-14. – Synopsis des champignons parasites des lichens. *Bull. Trimestr. Soc. Mycol. Fr.* 28 : 177-256; 29 : 33-128, 399-494; 30 : 135-198, 281-329.
- WADE, A. E., 1965. – The genus *Caloplaca* Th. Fr. in the British Isles. *Lichenologist* 3 : 1-28.
- WERNER, R.-G., 1944. – Prodrome pour une phytogéographie des lichens IV. (Fam. Phylloporinacées à Mycoporacées). *Bull. Soc. Sc. Nat. Maroc* 24 : 123-149.
- WIRTH, V., 1995. – Flechtenflora. Ulmer, Stuttgart, 661 pp.
- WITTMANN, H. & TÜRK, R., 1989. – Zur Kenntnis der Flechten und flechtenbewohnenden Pilze von Oberösterreich und Salzburg II. *Herzogia* 8 : 187-205.
- ZEHETLEITNER, G., 1978. – Über einige parasitische Arten der Flechtengattung *Verrucaria*. *Nova Hedwigia* 29 : 683-734.
- ZSCHACKE, H., 1933-34. – Epigloeaceae, Verrucariaceae und Dermatocarpaceae. In : Dr. L. Rabenhorst's Kryptogamenflora, Band 9, Abt. 1, Teil I : 44-695.



Manuscrit "camera ready" réalisé par le cadre PRIME de la Société Botanique de Liège (Ministère de l'Emploi de la Région Wallonne, projet n° 30513). Publication bénéficiant d'une subvention de la Division Nature et Forêts de la Région Wallonne.