

# Lichens of the Latvian coast of the Baltic Sea

Alfons Piterāns

Faculty of Biology of University of Latvia

Along the Latvian coast of the Baltic Sea, from Rucava to Kolka, 267 species of lichens have been recorded. Of these, some are rare in Latvia, such as the soil – growing species *Cladonia foliacea*, *C.subfurcata*, *Stereocaulon condensatum*, *Pycnothelia papillaria*, the epilithic species *Xanthoparmelia mougeotii*, *Umbilicaria polyphylla*, and the epiphytic species *Thelotrema lepadinum*, *Pertusaria pertusa*, *Mycoblastus sanguinarius*, and *Pleurosticta acetabulum* a.o. A total of 22 lichen species are protected in Latvia. These species in list are marked with asterisk.

Key words: flora of lichens, protected species, rare species, Latvia.

## Introduction

The lichen flora of the coastal zone of the Baltic Sea in western Latvia has been previously insufficiently studied. Much of this territory has been protected for the past 50 years do to its designation as a closed border zone during the Soviet occupation. Therefore, the coastal zone has been subject to minimal anthropogenic impact. At present, it is important to study the unique flora of this unique area to elaborate protection plans, and to serve as baseline data in the study of future changes.

## The study area and lichen collections

The the coastal zone of the Baltic Sea from Nida to Kolka was formed by receding water of the Baltic Ice Lake and the Baltic Sea in the Postglacial period. High dunes are common, especially to the south of Liepāja, on both sides of Ventspils, and from Jūrkalne to Pāvilosta. The coastal zone of Kurzeme is very diverse in natural habitats, including many bogs and fens, but predominating vegetation is typical first-dune vegetation, and dry pine forests on older dunes.

The lichens flora was studied from Nida to Liepāja and from Ventspils to Kolka (including the Slītere State Nature Reserve), and to a lesser degree from Liepāja to Ventspils. The collected lichen material is located in Herbarium of the University of Latvia (RIG). A list of our recorded lichen species, and those of previous collections, is presented.

## Description of lichen flora

Previously much attention has been paid to the flora of lichens in the area of the Slītere Nature Reserve, beginning with A. Bruttan, who made excursions to the Zilie Kalni of Kurzeme (Bruttan, 1863, 1869, 1870). Data on lichens in the Slītere Nature Reserve are published by H. Skuja (1936) in the survey of lichens in Latvia. During the last twenty years, detailed investigations of the lichen flora of the Slītere Nature Reserve has been carried out by A. Piterāns (Piterāns, 1981, 1985, Питеранс, 1982, Piterāns, Henriņa 1991).

Most of the dunes are covered with the pine forests, in which groundcover is dominated by lichens and mosses, the lichens being mainly distributed in canopy gaps. There, species of the genera *Cladina*, *Cladonia* and *Cetraria* were the most common. Rare lichens on soil included *Cladonia foliacea* on dunes near Pape, Mazirbe and Saunags on sandy soil, the first find in Latvia of *Cladonia subfurcata* on dunes near Kolka, *Stereocaulon condensatum* in Slītere Nature Reserve, and *Pycnothelia papillaria* near Akmeņrags and in the the Slītere Nature Reserve. *Pycnothelia papillaria* was first mentioned in Latvia by A.Bruttan, found in the Sigulda area and Mazsalaca in central to northern Latvia (Bruttan, 1870). On the right coast of the Irbe river in the Dižpurvs bog, *Cladonia cyanipes* was found growing on soil among the heather (Piterāns, Henriņa, 1991).

Epilithic lichens were most common in the Slītere Nature Reserve. The rare species include *Xanthoparmelia mougeotii*, a Central European species, and *Melanelia fuliginosa* and *Umbilicaria polyphylla* on natural stones. Due to the relative richness of epilithic species, the Slītere Nature Reserve is a unique area in Latvia.

Epiphytic lichens of the western Latvia Coast included *Thelotrema lepadinum*, *Opegrapha vermicellifera*, *Pertusaria pertusa*, *Mycoblastus sanguinarius*. Occasionally, *Pleurosticta acetabulum* was found on the deciduous trees.

On pine trees stems growing on the dunes, *Hypogymnia physodes* and *Pseudevernia furfuracea* were abundant, along with *Bryoria fuscescens*, *Usnea hirta*, *U.subfloridana* and *U.filipendula*. On *Salix daphnoides* stems, *Melanelia glabratula*, *Phycia stellaris*, *Lecanora carpinea*, *Lecidella euphoria* and *L.elaeochroma* were observed. *Ramalina fraxinea*, *R.fastigiata*, *R.farinacea*, *Parmelia sulcata*, *Melanelia olivacea*, *M.exasperatula* and *M.exasperata*, were abundant on *Alnus incana* stems.

In the area of the Slītere Nature Reserve, *Lobaria amplissima* and *Sphaerophorus globosus* were found 100 years ago, but have not and may be extinct in Latvia

In the coastal zone of western Latvia, 267 lichen species have been found, including 42 *Cladonia* spp., 19 *Lecanora* spp., and 15 *Peltigera* spp. Of these species, 22 are protected (Piterāns, Vimba, 1986). A complete list of the species collected by us and found previously is given below. Protected species are marked with an asterisk. (\*).

### List of the lichens species

- Acarospora*** A. Massal.  
*A. fuscata* (Schrad.) Th. Fr.  
*A. insolata* H. Magn.  
*A. veronensis* A. Massal
- Acrocordia*** A. Massal.  
*A. gemmata* (Ach.) A. Massal.
- Anaptychia*** Körber  
*A. ciliaris* (L.) Körb.
- Arthonia*** Ach.  
*A. cinnabarina* (DC.) Wallr.  
*A. radiata* (Pers.) Ach.  
*A. spadicea* Leight.
- Arthopyrenia*** A. Massal.  
*A. rhyponata* (Ach.) Massal.
- Arthothelium*** A. Massal.  
*A. ruanum* (A. Massal.) Körber
- Aspicilia*** A. Massal.  
*A. cinerea* (L.) Körber.
- Bacidia*** De Not.  
*B. bagliettoana* (A. Massal. & De Not. in A. Massal.) Jatta  
*B. beckhausii* Körber  
*B. friesiana* (Hepp) Körber  
*B. rosella* (Pers.) De Not.  
*B. rubella* (Hoffm.) A. Massal
- Baeomyces*** Pers.: Fr.  
*B. rufus* (Huds.) Rebert.
- Bryoria*** Brodo & D. Hawksw.  
*B. capillaris* (Ach.) Brodo & D. Hawksw.  
*B. furcellata* (Fr.) Brodo & D. Hawksw.  
*B. fuscescens* (Gyeln.) Brodo & D. Hawksw.  
*B. subcana* (Nyl. ex Stizenb.) Brodo & Hawksw.
- Buellia*** De Not.  
*B. disciformis* (Fr.) Mudd
- B. griseovirens* (Turner & Borrer ex Sm.) Almb.
- Calicium*** Pers.  
*C. abietinum* Pers.  
*C. adpersum* Pers.  
*C. viride* Pers.
- Caloplaca*** Th. Fr.  
*C. cerina* (Ehrh. ex Hedw.) Th. Fr.  
*C. flavorubescens* (Huds.) J. R. Laundon  
*C. holocarpa* (Hoffm. ex Ach.) A. E. Wade  
*C. lobulata* (Flörke) Hellb.  
*C. saxicola* (Hoffm.) Nordin  
*C. scopularis* (Nyl.) Lettau
- Candelaria*** A. Massal.  
*C. concolor* (Dicks.) Stein.
- Candelariella*** Müll. Arg.  
*C. vitellina* (Hoffm.) Müll. Arg.  
*C. xanthostigma* (Ach.) Lettau
- Catillaria*** A. Massal.  
*C. lenticularis* (Ach.) Th. Fr.
- Cetraria*** Ach.  
*C. aculeata* (Schreb.) Fr.  
*C. chlorophylla* (Willd. in Humb.) Vain.  
*C. ericetorum* Opiz  
*C. islandica* (L.) Ach.  
*C. muricata* (Ach.) Eckfeldt  
*C. sepincola* (Ehrh.) Ach.
- Chaenotheca*** (Th. Fr.) Th. Fr.  
*C. chlorella* (Ach.) Müll. Arg.  
*C. chrysocephala* (Turner ex Ach.) Th. Fr.  
*C. ferruginea* (Turner & Borrer) Mig.  
*C. furfuracea* (L.) Tibell & Middelborg  
*C. phaeocephala* (Turner) Th. Fr.
- Chrysotrix*** Mont.  
*C. candelaris* (L.) J. R. Laundon  
*C. chlorina* (Ach.) J. R. Laundon
- Cladina*** Nyl.

- C. arbuscula* (Wallr.) Hale & W. L. Culb.  
*C. ciliata* (Stirt.) Trass  
     *var. ciliata*  
     *var. tenuis* (Flörke) Ahti & M. J. Lai  
*C. mitis* (Sandst.) Hustich  
*C. portentosa* (Dufour) Follmann  
*C. rangiferina* (L.) Nyl.  
*C. stellaris* (Opiz) Brodo  
*C. stygia* (Fr.) Ahti  
**Cladonia** Hill ex P. Browne  
     *C. bacillaris* Nyl.  
     *C. bacilliformis* (Nyl.) Glück  
     *C. botrytes* (K.G. Hagen) Willd.  
     *C. cariosa* (Ach.) Spreng.  
     *C. carneola* (Fr.) Fr.  
     *C. cenotea* (Ach.) Schaer.  
     *C. cervicornis* (Ach.) Flot.  
     *C. chlorophaea* (Flörke ex Sommerf.)  
 Spreng.  
     *C. coccifera* (L.) Willd.  
     *C. coniocraea* (Flörke) Spreng.  
     *C. cornuta* (L.) Hoffm.  
     *C. crispata* (Ach.) Flot.  
     *C. cyanipes* (Sommerf.) Nyl.  
     *C. deformis* (L.) Hoffm.  
     *C. digitata* (L.) Hoffm.  
     *C. fimbriata* (L.) Fr.  
     *C. floerkeana* (Fr.) Flörke  
 \**C. foliacea* (Huds.) Willd.  
     *C. furcata* (Huds.) Schrad.  
     *C. glauca* Flörke  
     *C. gracilis* (L.) Willd.  
         *ssp. gracilis*  
         *ssp. turbinata* (Ach.) Ahti  
     *C. grayi* G. Merr. ex Sandst.  
     *C. humilis* (With.) J. R. Laundon  
     *C. incrassata* Flörke  
     *C. macilenta* Hoffm.  
     *C. phyllophora* Hoffm.  
     *C. pleurota* (Flörke) Schaer.  
     *C. pocillum* (Ach.) Grognot  
     *C. polycarpoides* Nyl  
     *C. pyxidata* (L.) Hoffm...  
     *C. ramulosa* (With.) J. R. Laundon  
     *C. rangiformis* Hoffm.  
     *C. rei* Schaer.  
     *C. scabriuscula* (Delise in Duby) Nyl.  
     *C. squamosa* Hoffm.  
     *C. subfurcata* (Nyl.) Arnold  
     *C. subrangiformis* Sandst.  
     *C. subulata* (L.) Weber ex F. H. Wigg.  
     *C. sulphurina* (Michx.) Fr.  
     *C. symphyocarpa* (Flörke) Fr.  
     *C. uncialis* (L.) Weber ex F. H. Wigg.  
         *ssp. uncialis*  
         *ssp. biuncialis* (Hoffm.) M. Choisy  
     *C. verticillata* (Hoffm.) Schaer.  
**Collema** Weber ex F. H. Wigg.  
     *C. flaccidum* (Ach.) Ach.  
     *C. nigrescens* (Huds.) DC.  
**Degelia** Arv. & D. J. Galloway  
     *D. plumbea* (Lightf) P. M. Jorg. & P. James  
**Dermatocarpon** Eschw.  
     \**D. luridum* (With.) J. R. Laundon  
**Diploschistes** Norman  
     *D. muscorum* (Scop.) R. Sant. in Hawksw.  
     *D. scruposus* (Schreb.) Norman  
**Evernia** Ach.  
     *E. prunastri* (L.) Ach.  
**Graphis** Adans  
     *G. scripta* (L.) Ach.  
**Gyalecta** Ach..  
     *G. ulmi* (Sw.) Zahlbr  
**Hypocenomyce** M. Choisy  
     *H. scalaris* (Agh.) M. Choisy  
**Hypogymnia** (Nyl.) Nyl.  
     *H. farinacea* Zopf  
     *H. physoees* (L.) Nyl.  
     *H. tubulosa* (Schaer.) Hav.  
**Icmadopmila** Trewis  
     *I. ericetorum* (L.) Zahlbr.  
**Imshaugia** S. L. F. Meyer  
     *I. aleurites* (Ach.) S. L. F. Meyer  
**Lecanactis** Körber  
     *L. abietina* (Ach.) Körber.  
**Lecania** A. Massal.  
     *L. dubitans* (Nyl.) A. L. Sm.  
     *L. koerberiana* Lahm  
**Lecanora** Ach.  
     *L. allophana* Nyl.  
     *L. argentata* (Ach.) Malme  
     *L. carpinea* (L.) Vain.

*L. chlarotera* Nyl.  
*L. conizaoides* Nyl. ex Crombie  
*L. dispessa* (Pers.) Sommerf.  
\**L. glabrata* (Ach.) Malme  
*L. leptyrodes* (Nyl.) Degel.  
*L. marginata* (Schaer.) Hertel & Rambold  
*L. muralis* (Schreb.) Rabenh.  
*L. populicola* (DC. in Lam & DC.) Duby  
*L. pulicaris* (Pers.) Ach.  
*L. rugosella* Zahlbr.  
*L. rupicola* (L.) Zahlbr.  
*L. sambuci* (Pers.) Nyl.  
*L. scrupulosa* Ach  
*L. subrugosa* Nyl  
*L. umbrina* (Ach.) A. Massal.  
*L. varia* (Hoffm.) Ach.

**Lecidea** Ach.

*L. confluens* (Weber) Ach.  
*L. fuscoatra* (L.) Ach.

**Lecidella** Körb. emend. Hertel & Leuckert

*L. elaeocmroma* (Ach.) M. Choisy  
*L. euphorea* (Flörke) Hertel in Hawskw.

**Lepraria** Ach.

*L. incana* (L.) Ach.

**Leptogium** (Ach.) Gray

*L. lichenoides* (L.) Zahlbr.

**Leptorhapis** Körber

*L. atomaria* (Ach.) Szatala

**Lobaria** (Schreb.) Hoffm.

\**L. amplissima* (Scop.) Forssell  
\**L. pulmonaria* (L.) Hoffm.  
\**L. scrobiculata* (Scop.) DC.

**Megalaria** Hafellner

*M. grossa* (Pers. ex Nyl.) Hafellner

**Melanelia** Essl.

\**M. elegantula* (Zahlbr.) Essl.  
*M. exasperata* (De Not.) Essl.  
*M. exasperatula* (Nyl.) Essl.  
\**M. fuliginosa* (Fr. ex Duby) Essl. in Egan  
*M. glabratula* (Lamy) Essl.  
*M. olivacea* (L.) Essl.  
*M. sorediata* (Ach.) Goward & Ahti  
*M. subargentifera* (Nyl.) Essl.  
*M. subaurifera* (Nyl.) Essl.  
*M. tominii* (Oxner) Essl.

**Melaspilea** Nyl.

*M. gibberulosa* (Ach.) Zwackh.

**Menegazzia** A. Massal.

\**M. terebrata* (Hoffm.) A. Massal.

**Mycobilimbia** Rehm

*M. tetramera* (De Not.) Clauzade

**Mycoblastus** Norman

\**M. sanguinarius* (L.) Norman

**Mycoporum** Flotow ex Nyl.

*M. elabens* Flotow ex Nyl.

**Neofuscelia** Essl.

*N. loxodes* (Nyl.) Essl.

**Nephroma** Ach.

\**N. laevigatum* (Ach.) Ach.

*N. parile* Ach.

**Ochrolechia** A. Massal.

*O. androgyna* (Hoffm.) Arnold

*O. arborea* (Kreyer) Almb

*O. turneri* (Sm. in Sm. & Sowerb.)

Hasselrort

**Omphalina** Quelet

*O. umbellifera* (L.: Fr.) Quelet

**Opegrapha** Ach.

*O. atra* Pers.

*O. rufescens* Pers

*O. rupestris* Pers.

*O. varia* Pers.

*O. vermicellifera* (Kunze) J. R. Laundon

*O. viridis* (Pers. ex Ach.) Behlen &

Desberger

*O. vulgata* Ach.

var. *vulgata*

var. *subsiderella* Nyl.

**Pannaria** Del.

*P. pezizoides* (Weber) Trevis.

**Parmelia** Taylor

\**P. omphalodes* (L.) Ach.

*P. saxatilis* (L.) Ach.

*P. sulcata* Taylor

**Parmeliella** Müll. Arg.

*P. triptophylla* (Ach.) Müll. Arg.

**Parmeliopsis** Nyl.

*P. ambigua* (Wulfen) Nyl.

*P. hyperopta* (Ach.) Arnold

**Peltigera** Willd.

*P. apthosa* (L.) Willd.

*P. canina* (L.) Willd.

- P. degenii* Gyeln.  
*P. didactyla* (With.) J. R. Laundon  
*P. horizontalis* (Huds.) Baumg.  
*P. hymenina* (Ach.) Delise in Duby  
*P. lepidophora* (Nyl. ex Vain.) Bitter  
*P. leucophlebia* (Nyl.) Gyelnik  
*P. malacea* (Ach.) Funck  
*P. membranacea* (Ach.) Nyl.  
*P. neckeri* Hepp ex Müll. Arg.  
*P. polydactyla* (Neck.) Hoffm.  
*P. praetextata* (Flörke ex Sommerf.) Zopf  
*P. rufescens* (Weiss) Humb.  
*P. scabrosa* Th. Fr.
- Pertusaria** DC.
- P. albescens* (Huds.) M. Choisy & Werner  
 in Werner  
*P. alpina* Hepp ex H. E. Ahles  
*P. amara* (Ach.) Nyl.  
*P. coccodes* (Ach.) Nyl.  
*P. coronata* (Flörke) Erichs  
 \**P. hemisphaerica* (Ach.) Schaer.  
*P. leioplaca* DC. in Lam. & DC.  
*P. leucostoma* A. Massal.  
 \**P. pertusa* (Weigel) Tuck.  
 var. *pertusa*
- Pycnothelia** (Ach.) Duf.
- \**P. papillaria* Duf.
- Phaeophyscia** Moberg.
- P. orbicularis* (Necker) Moberg
- Phlyctis** Wallr.
- P. agelaea* (Ach.) Flot.  
*P. argena* (Spreng.) Flot.
- Physcia** (Schreber) Michaux
- P. adscendens* (Fr.) H. Olivier  
*P. aipolia* (Ehrh. ex Humb.) Turnr.  
 var. *aipolia*  
*P. caesia* (Hoffm.) Turnr.  
*P. dubia* (Hoffm.) Lettau  
*P. semipinnata* (J. F. Gmelin) Moberg.  
*P. stellaris* (L.) Nyl.  
*P. tenella* (Scop.) DC. in Lam. & DC.  
 var. *tenella*
- Physconia** Poelt
- P. detera* (Nyl.) Poelt  
*P. distorta* (With.) J. R. Laundon  
*P. enteroxantha* (Nyl.) Poelt
- P. grisea* (Lam.) Poelt  
**Placynthiella** Elenkin  
*P. uliginosa* (Schrad.) Coppins & P. James  
**Platismatia** W. Culb. & C. Culb.  
*P. glauca* (L.) W. L. Culb. & C. F. Culb.  
**Pleurosticta** Petr.  
 \**P. acetabulum* (Neck.) Elix & Lumbsch in  
 Lumbsch, Kothe & Elix  
**Porina** Müll. Arg.  
*P. aenea* (Wallr.) Zahlbr.  
**Protoparmelia** M. Choisy  
*P. badia* (Hoffm.) Hafellner  
**Pseudevernia** Zopf  
*P. furfuracea* (L.) Zopf  
**Pyrenula** A. Massal.  
*P. nitida* (Weigel) Ach.  
*P. nitidella* (Flörke ex Schaer.) Müll. Arg.
- Ramalina** Ach.
- R. baltica* Lettau  
*R. calicaris* (L.) Fr.  
*R. farinacea* (L.) Ach.  
*R. fastigiata* (Pers.) Ach.  
*R. fraxinea* (L.) Ach.  
*R. obtusata* (Arnold) Bitt.  
*R. pollinaria* (Westr.) Ach.  
*R. roesleri* (Hochst. ex Schaer.) Hue  
 \**R. thrausta* (Ach.) Nyl.
- Rhizocarpon** Ramond ex DC. in Lam. & DC.
- R. geographicum* (L.) DC.  
*R. lecanorinum* Anders
- Schaereria** Körber
- S. fuscocinerea* (Nyl.) Clauzade & Roux
- Sphaerophorus** Pers.
- \**S. globosus* (Huds.) Vain.
- Stereocaulon** Hoffm.
- \**S. condensatum* Hoffm.  
*S. paschale* (L.) Hoffm.  
*S. saxatile* H. Magn.  
*S. subcoralloides* (Nyl.) Nyl.  
*S. tomentosum* Fr.
- Strangospora** Körber
- S. moriformis* (Ach.) Stein.
- Tephromela** M. Choisy
- T. atra* (Huds.) Hafellner in Kalb
- Thelotrema** Ach.
- \**T. lepadinum* (Ach.) Ach.

**Trapeliopsis** Hertel & Gotth. Schneid.in Gotth.

*T. granulosa* (Hoffm.) Lumbsch

**Umbilicaria** Hoffm.

\**U. polyphylla* (L.) Baumg.

**Usnea** Dill. ex Adans

*U. filipendula* Stirt.

*U. fulvovireagens* (Räsänen) Räsänen

*U. hirta* (L.) Weber ex F. H. Wigg

*U. scabrata* Nyl.

*U. subfloridana* Stirt.

**Verrucaria** Schrad.

*V. submersella* Servit.

**Vulpicida** J.-E. Mattson & M. J. Lai

*V. pinastri* (Scop.) J.-E. Mattsson & M. J.

Lai

**Xanthoparmelia** (Vain.) Hale

*X. conspersa* (Ach.) Hale

\**X. mougeotii* (Schaer. ex D.Dietr.) Hale

*X. somloensis* (Gyeln.) Hale

var. *somloensis*

*X. tinctina* (Maheu & A.Gillet) Hale

**Xanthoria** (Fr.) Th. Fr.

*X. candelaria* (L.) Th. Fr.

*X. fallax* (Hepp) Arnold

*X. parietina* (L.) Th. Fr.

*X. polycarpa* (Hoffm.) Th. Fr. ex Rieber

### References

Bruttan A. (1863) Über die lichenologische Excursion in Kur- und Livland. Balt. Wschr., H. 43.

Bruttan A. (1869) Bericht über eine lichenologische Excursion in Kur- und Livland. Sitzungsber. Naturf.-Ges. Dorpat, Bd. 2, S. 58 - 62.

Bruttan A. (1870) Lichenen Est-, Liv- und Kurlands. Dorpat, 166 S.

Pīterāns A. (1981) Ķērpji un to aizsardzība [Lichens and their protection]. Latvijas PSR floras aizsardzības aktuālās problēmas. Rīga, 49. - 52. lpp.

Pīterāns A. (1985) Aizsargājamās ķērpju sugas Latvijas PSR [Protected species of Lichens in the Latvian SSR]. Latvijas PSR floras aizsardzības aktuālās problēmas. 23. - 27. lpp.

Pīterāns A., Heniņa E. (1991) Slīteres rezervāta ķērpju flora [Lichens of the Slītere Nature Reserve]. Jaunākais mežsaimniecībā, 33. laid., 27. - 32. lpp.

Skuja H. (1936) Ķērpji [The lichens]. Gr.: Latvijas zeme, daba un tauta. 2.sēj., 126. - 134. lpp.

Питеранс А. (1982) Лишайники Латвии [Lichens of Latvia]. Рига. Зинатне 352 с.