



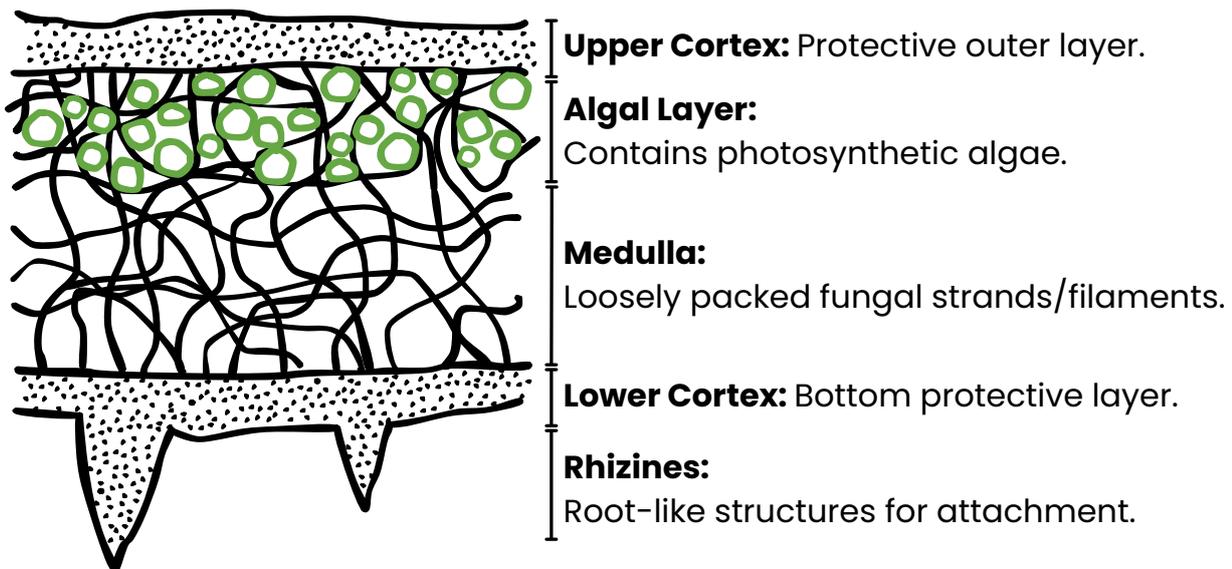
Lichen Introduction

Lichens are made up of a fungus (mycobiont) and a photosynthetic partner (photobiont), usually green algae or cyanobacteria. The photobiont produces sugars via photosynthesis to feed both partners, while the fungus provides protection and structure. This relationship is typically mutualistic.

Lichens appear in many shapes, sizes, and colours, and grow on a wide variety of surfaces, from tree bark and rocks to soil and rooftops. Over 1,800 species have been recorded in the UK, with around 17,000 known worldwide.

In this guide, we'll explore their main growth forms and reproductive structures to help you identify some common lichens found in Guernsey. A hand lens or magnifying glass is useful for examining their tiny features, though zooming in with a good-quality camera or phone can also reveal the fine details needed for identification.

Cross-Section of Thallus (visible surface of the lichen)



Growth Form:

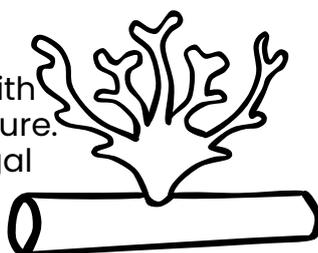
Crustose

- Tightly attached crust with deeply embedded rhizines.
- Includes leprose lichens which are composed granules called soralia.



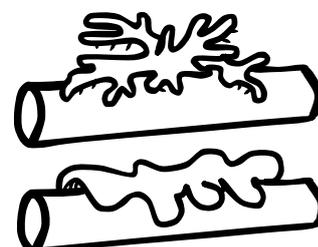
Fruticose

- Coral-like bushy or shrubby structures with single root-like structure.
- Evenly distributed algal cells.



Foliose

- Leaf-shaped lobes on outer part of Thallus.
- Can be detached from the substrate (e.g. using a fingernail).
- Upper and lower cortex have different colours.





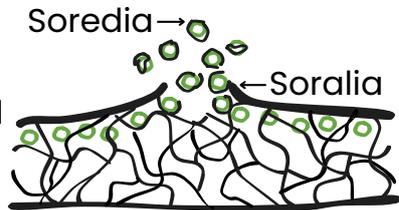
Lichen Introduction

Reproductive Structures:

Asexual Reproduction:

Soredia:

Granular masses consisting of algal cells surrounded by fungal strands are formed by soralia. Soralia may be diffuse across the thallus or clearly delimited to certain areas. They are called laminal when on the surface, marginal at the edges, and terminal at the lobe tips.



Idisia:

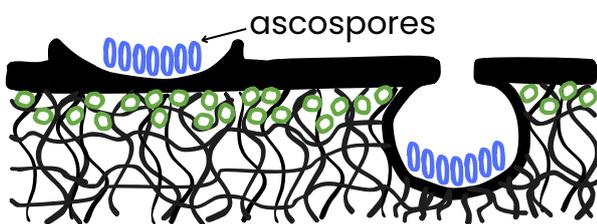
Elongated structures on the surface of the thallus, containing both algal and the fungal partners cells. Isidia can grow into new lichen thalli.

Sexual Reproduction:

Lichen can have reproductive structures that produce fungal spores (ascospores) which are generally in two main forms: Apothecia and Perithecia. When those spores are dispersed and start to grow, they must find an algal partner on their own in order to grow up as lichens.

Apothecium

Perithecium

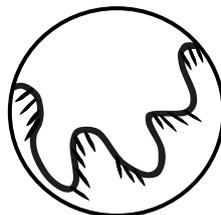


Apothecia – Open, disc/cups full of ascospores that are easy to see on the thallus surface. (Apothecium Singular)

Perithecia – Flask-shaped with a pore containing ascospores, usually embedded in the lichen surface. (Perithecium Singular)

Extra morphological features:

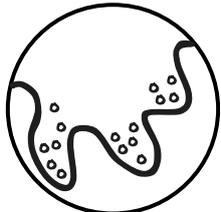
Cilia are rhizines that are not attached to substrate and appear as hair-like structures at the lobe tips and undersides.



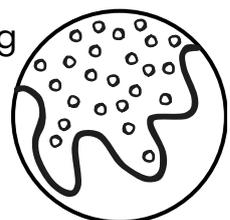
Pycnidia flask-shaped forms which look like black dots on the thallus and produces fungal spores.



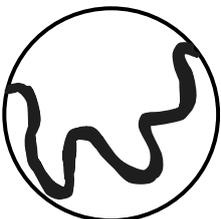
Pruina are little white dots on the lobes which are calcium oxalate crystals produced by the lichen.



Pseudocyphellae are interruptions or thinning of the upper cortex which often present as white pore-like structures that can be dotted or linear.



The **pro-thallus** is a layer of fungal tissues around the edge of the thallus. Generally appears as a black line.





Ochrolechia parella (Crab-eye lichen)



- Growth Form:** Crustose
- Thallus:** Light grey/cream, paler towards edge. Larger specimens can be around 20cm wide with a thick and warted thallus.
- Reproductive Structures:** Large pinkish-brown to whitish apothecia densely covering thallus centre.
- Substrate:** Hard rock and walls including granite.

Lecanora campestris (Rim lichen)



- Growth Form:** Crustose
- Thallus:** Pale grey/white thallus. Cracked and warted with black pro-thallus.
- Reproductive Structures:** Brown/black apothecia densely covering thallus centre.
- Substrate:** Hard rock and walls including granite.

Graphis scripta (Script lichen)



- Growth Form:** Crustose
- Thallus:** White/Grey green.
- Reproductive Structures:** Apothecia very variable, elongate, curved or branched with raised, unfurrowed, lip-like black margins.
- Substrate:** Smooth barked trees.

Lecidella elaeochroma (Disc lichen)



- Growth Form:** Crustose
- Thallus:** Grey or pale grey-green thallus with cracked crust and black spots.
- Reproductive Structures:** Apothecia around 1mm.
- Substrate:** Smooth barked trees, common on Ash.



Caloplaca dalmatica (Firedot lichen)



Growth Form: Crustose

Thallus: Pale yellowish to yellow-orange with network of grey-black cracks.

Reproductive Structures: Apothecia 0.5–1 mm. Orange to yellow around edges.

Substrate: Well lit rocks and mortar.

Caloplaca marina (Orange sea lichen)



Growth Form: Crustose

Thallus: Yellow-orange to bright orange. Marginal lobes not clearly defined. Thallus granular but never powdery.

Reproductive Structures: Reddish orange apothecia.

Substrate: Hard maritime rock at or above high water.

Parmotrema perlatum (Powdered ruffle lichen)



Growth Form: Foliose

Thallus: Upper Cortex is pale grey turning yellowish-green if wet. Lower cortex is dark brown/black with cilia, but tan towards edges. Rounded, wrinkled lobes around 5-20mm wide.

Reproductive Structures: Rarely fertile however may see apothecia with sorediate margins.

Substrate: Rock and rough bark, esp. of deciduous trees.

Flavoparmelia caperata (Common greenshield lichen)



Growth Form: Foliose

Thallus: Upper Cortex yellow-grey when dry, turning apple-green when wet. Lower cortex is dark brown/black with felt-like texture from cilia. Wrinkled lobes 10mm wide expanding at tips.

Reproductive Structures: Soredia in shallow areas giving a coarse in texture. Occasional apothecia with a sorediate margin.

Substrate: Deciduous trees and well lit rocks and roofs.



Parmelia sulcata (Hammered shield lichen)



Growth Form: Foliose

Thallus:

Upper Cortex pale grey. Lower cortex black, with simple rhizines. Lobes up to 5 mm wide with brownish tips. White pseudocyphellae from which soralia arise.

Reproductive Structures:

Soredia that develop along a coarse network of pseudocyphellae. Apothecia rare with sorediate margins.

Substrate:

Tree bark and occasionally mossy rocks.

Xanthoria parietina (Common orange lichen)



Growth Form: Foliose

Thallus:

Upper Cortex is yellow-orange and can appear greener when wet. Lower cortex is white and has pale cilia. Flattened lobes 1–4mm in diameter.

Reproductive Structures:

Apothecia spread across thallus.

Substrate:

Rocks, bark, and wood.

Ramalina farinacea (Powdery ramalina)



Growth Form: Fruiticose

Thallus:

Pale grey-green flattened branches up to 3mm wide and 70mm long arising from a single point.

Reproductive Structures:

Soredia present along branch margins giving powdery appearance.

Substrate:

Common on Twigs and trunks, sometimes on rocks.

Usnea subfloridana (Common beard lichen)



Growth Form: Fruiticose

Thallus:

Yellow-green to grey-green. Blackened base with transverse cracks. Bushy appearance with larger specimens up to 10cm.

Reproductive Structures:

Soralia and short, straight isidia. Apothecia rare, but flat and disc-like.

Substrate:

Tree bark, shrubs and sometimes old wooden fences or dead wood.