

2 DOES THE LICHEN HAVE TINY LEAFY LOBES? (continued)

*Degelia atlantica* Felt lichen



wet

*Pannaria conoplea* Mealy-rimmed shingle lichen



wet

**Form** Scallop-like plates closely attached to the substrate with longitudinal ridges, concentric "growth" rings and blackish felted margins (the hypothallus). Forms patches up to 10cm  
**Colour** Pale grey, sometimes tinged brown; darker when wet.  
**Soredia/Isidia** Numerous knobly isidia on the surface and margins, especially on the raised ridges where the lobe margins meet.  
**Fruit** Very rare; reddish.  
**Underside** Thick blackish or greyish velvety mat (hypothallus) visible at the edges of upturned lobe margins.  
**Notes** Similar to *D. plumbea*, but this is usually abundantly fertile and lacks isidia, and *Pannaria conoplea*, but this is finer and more leafy, lacking the solid look of *D. atlantica*.

**Form** Small lobes with finely scalloped margins forming patches to 3-5cm, occasionally more.  
**Colour** Pale grey to blue-grey with paler margins, sometimes tinged brown and darker when wet.  
**Soredia/Isidia** Coarse grey soredia on the lobe margins.  
**Fruit** Very rare.  
**Underside** Blackish or greyish velvety mat (hypothallus) not usually visible.  
**Notes** Similar to *Degelia atlantica* but not as closely pressed to the substrate with less knobly isidia and a less developed hypothallus. Generally, a more delicate looking species. Also similar to *P. rubiginosa* which has chestnut-coloured fruiting discs and is rare in SW England

3 IS THE LICHEN CRUSTY AND GRANULAR? (continued)

*Thelotrema lepadinum* Barnacle lichen



**Form** A thin crust with numerous small, distinctive barnacle-like fruits. Patches to about 10cm, but often forms extensive mosaics.  
**Colour** Whitish to pale grey.  
**Soredia/Isidia** None.  
**Fruit** Abundant; like small barnacles (to 2mm).  
**Notes** Typically found on smooth bark of hazel and rowan, and mature ash and oak. Can be confused with some *Pertusaria* species but look for the barnacle-like fruits.

*Mycobilimbia pilularis*



**Form** Finely granular with distinctive fruits, forming patches up to 10-20cm or more.  
**Colour** Green to grey-green, greener when wet.  
**Soredia/Isidia** None.  
**Fruit** Abundant; buff to pinkish-orange and flat initially but becoming globular.  
**Notes** Frequently found on or near the base of mature trees, often in more shaded conditions.

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All photos © Acton/Griffith 2013 except: *Nephroma parile* © Ray Woods 2013, soredia on *Sticta limbata* © Dave Lamcraft 2013, *Peltigera horizontalis* © Jason Hollinger, licensed under Creative Commons and *Dimerella lutea* © Tim Wilkins 2012.

Some key features to look for when identifying lichens

Use a hand lens (preferably x10 magnification) to examine them.

**Colour** Of upper (and if visible, the lower) surface. The colour of a species can vary – for example, depending on whether it is wet or dry.

**Cyphellae and pseudocyphellae** Pores or cracks that expose the interior of the lichen, appearing as paler spots or lines on the surface.

**Fruits** Reproductive structures that produce spores. They can be round discs, pimple-like or globular, and their colour often contrasts with the lichen surface.

**Hypothallus** A dark mat on the lower surface, often only visible between lobes or at the margins. It may be thin and visible only as a dark stain, but when well developed may be thicker and velvet-like.

**Isidia** Tiny projections on the surface that may be nodular, granular, finger-like, or branched like tiny fragments of coral. They are a means of vegetative reproduction.

**Lobe** The rounded "leaf" of a leafy lichen.

**Lobules** Small "secondary" lobes that develop on the margins or on the surface of lobes.

**Rhizines** Root-like structures, as found on the underside of *Peltigera* species. These may be straight, forked or branched.

**Soredia** Fluffy powder or coarse granules that often occur along ridges or cracks on the surface, or on the lobe margins. They may be diffuse or arise in discrete structures (termed soralia). Like isidia, they are a means of vegetative reproduction.

**Tomentum** An even or patchy carpet of short hairs (usually brownish or pale) on the underside as found in *Sticta* species.

Fruits and isidia on *Lobaria pulmonaria*



Lobules on *Leptogium cyanescens*



Soredia on *Sticta limbata*



Hypothallus on *Degelia* sp.



Rhizines on *Peltigera* sp.



Tomentum with cyphellae on *Sticta* sp.



Lichens of temperate rainforest in South West England

Guide 1 The *Lobarion* lichens of ash, hazel, willow and old oak



*Parmeliella triptophylla* Black-bordered shingle lichen



**Form** Tiny lobules on a wide black margin (hypothallus), often with a dense crust of isidia in the centre. Forms patches to 3-5cm, often aggregating to form much larger patches which appear as a black 'stain' on trunks of trees such as ash.  
**Colour** Blackish when wet to brown or grey-brown when dry.  
**Soredia/Isidia** Minute, thin and finger-like isidia, often branched (best visible when dry).  
**Fruit** Rare; small (to 1mm), red-brown.  
**Underside** Black hypothallus extending beyond the margins of the lobes.  
**Notes** Appears as a dark stain on the bark of trees (especially old ash).

3 IS THE LICHEN CRUSTY OR GRANULAR?

*Dimerella lutea* Orange dimple lichen



**Form** A thin crust, sometimes barely visible, or finely granular, forming patches up to 10cm.  
**Colour** Pale grey-green to grey.  
**Soredia/Isidia** None.  
**Fruit** Small (to 2mm), orange with a pale margin, looking like minute apricot halves (especially when wet). Produced seasonally.  
**Notes** Mainly grows on mosses or bark in damp shaded situations. The other common *Dimerella* species usually has smaller white to pinkish fruits and is more common on bark.

4 DOES THE LICHEN LOOK JELLY-LIKE WHEN WET?

*Leptogium lichenoides* Tattered jelly-skin lichen



**Form** Dense mass of very thin lobes that appear minutely frilly at the margins due to abundant isidia. Forms patches to 10cm.  
**Colour** Pale blue-grey when dry, dark grey to blackish when wet.  
**Soredia/Isidia** Abundant elongated cylindrical isidia on lobe margins.  
**Fruit** Very rare.  
**Underside** Smooth or slightly wrinkled.  
**Notes** When wet, is similar to some other *Leptogium* species. If in doubt dry a specimen to see the distinctive colour of dry *L. cyanescens*.

*Leptogium cyanescens* Blue jelly-skin lichen



**Form** Intricate rosettes of thin overlapping lobes with isidia or lobules, or both. To 10cm.  
**Colour** Pale blue-grey when dry, dark grey to blackish when wet.  
**Soredia/Isidia** Cylindrical or flattened isidia or lobules abundant on lobe margins and/or surface.  
**Fruit** Very rare.  
**Underside** Smooth or slightly wrinkled.  
**Notes** When wet, is similar to some other *Leptogium* species. If in doubt dry a specimen to see the distinctive colour of dry *L. cyanescens*.



This guide is for anyone interested in identifying some of the more conspicuous lichens of temperate rainforest in South West England. Different species of lichen often grow together, forming distinct communities. The *Lobarion* community grows on trees with mildly acidic or alkaline bark – for example ash, sycamore, willow, hazel and old oak – and is characterised by large leafy lichens, especially the four *Lobaria* species.

A companion guide (Guide 2) looks at the *Parmelion* community of lichens. These grow on trees with acidic bark.

## What is a lichen?

A lichen is a special association between one or two fungi species (the 'mycobiont') and a green alga or blue-green alga (the 'phycobiont'). The mycobiont forms the main body of the lichen, providing an outer surface that protects the phycobiont underneath which manufactures food. Each lichen has its own distinct species of fungus, but all lichens share a small number of phycobiont species; in most cases this is a green alga but the majority of species in this guide partner with a blue-green alga.

## What is temperate rainforest?

Temperate rainforest is a type of usually ancient natural or semi-natural, broad-leaved woodland found in western Britain and Ireland where the climate is mild and wet due to the influence of the Gulf Stream. Although often dominated by, and thought of as, oak woods, they include a mix of other tree species - for example, birch, alder, ash and hazel. In fact, upland ash woods and Atlantic hazel woods are some of the most important temperate rainforest habitats.

## Why are South West England's temperate rainforests important for lichens?

Temperate rainforests have a long link to the past, with many sites having supported woodland for thousands of years. They are less susceptible to large-scale management changes - for example, woodland clearance or intensive coppice management, because of the difficult terrain on which they grow - and they have escaped the worst impacts of air pollution that have had a severe impact on lichens in particular since the industrial revolution. These factors, combined with the damp, mild Atlantic climate, have created these special habitats in which these important species survive. Because of this, some of these are now used as indicators of high-quality wildlife habitats.

Many of these lichens are not found in other parts of Britain and Europe, and some are globally rare. A number of species are considered of "principal importance for the conservation of biodiversity in England" under Section 41 of the Natural Environment and Rural Communities Act (2006); these are indicated in the guide by "S41". Further details of species conservation status can be found in the GB Red List (see books section).

## Finding and identifying lichens

The best areas will often be slopes and river valleys with mixed deciduous woods containing hazel and old trees of ash, rowan, willow and oak. *Lobarion* species occur on bark, or on mats of mosses and liverworts growing over bark. Many species also grow on mossy boulders and rocks, especially in humid situations. The large, leafy lobes of *Peltigera horizontalis* and the black smears of *Parmeliella triptophylla* are good indicators of interesting habitat.

To identify a lichen first look at its growth form:

- Does it consist of leafy lobes? If so, see Section 1 of this guide
- Does it consist of small or tiny leafy lobes that look like roof-shingles? If so, see Section 2 of this guide
- Is it crusty or powdery? If so, see Section 3 of this guide
- Is it jelly-like when wet? If so, see Section 4 of this guide

The key features to look for when identifying lichens are described on the back page. To see these features well, and to fully appreciate the beauty of lichens, you will need to use a magnifier or a hand lens of x10-15 magnification.

Please note that scientific names should always be used when recording.

## Further information

### Books

Lichens: An Illustrated Guide to the British and Irish Species, Frank Dobson, 7th Edition (2018), Richmond Publishing Co Ltd.  
Lichens, Oliver Gilbert (2000), Collins New Naturalist series, Harper Collins.

A Conservation Evaluation of British Lichens and Lichenicolous Fungi, Woods & Coppins (2012), JNCC <http://jncc.defra.gov.uk/page-6197>  
This is the current Red List for lichens in Great Britain.

### Websites

[www.britishtichensociety.org.uk](http://www.britishtichensociety.org.uk) The British Lichen Society (BLS) website provides a wide range of information about all aspects of lichens and lichenology.

[www.nbnatlas.org](http://www.nbnatlas.org) The NBN Atlas hosts an up-to-date database of British lichen distribution.

[www.fungi.myspecies.info](http://www.fungi.myspecies.info), [www.dorsetnature.co.uk/Dorset-lichen.html](http://www.dorsetnature.co.uk/Dorset-lichen.html) and [www.uklichens.co.uk](http://www.uklichens.co.uk) are good websites for photographs and information on lichen species.

## 1 DOES THE LICHEN HAVE WELL DEVELOPED LEAFY LOBES?

### *Lobaria pulmonaria* Tree lungwort



**Form** Loosely attached lobes with a distinctive network of ridges giving a lung-like appearance. Grows to 30cm or more.  
**Colour** Green when wet, brownish-green when dry.  
**Soredia/Isidia** Often has small peg-like isidia and soredia on the margins and ridges.

**Fruit** Rare; a red-brown disc.

**Underside** A patchy tomentum with convex naked areas corresponding to depressions between the ridges on the upper surface.

**Notes** Protected from collection for selling under Schedule 8 of the Wildlife and Countryside Act (1981).

### *Lobaria amplissima* Parchment lichen



**Form** Closely pressed to the substrate, smooth or wrinkled lobes with wavy margins; usually with dark brown rounded, shrubby growths (known as cephalodia) on the surface. Margins of young lobes have a fine frosting when dry. Grows to 30cm or more.

**Colour** Pale grey (when dry) to pale green-grey (when wet), often with brown tips.

**Soredia/Isidia** None.

**Fruit** Scarce, a red-brown disc with a pale margin.

**Underside** An even tomentum.

**Notes** Similar to *L. virens* when wet/green but that species never has cephalodia. *Flavoparmelia caperata* is brighter yellow-green, but has soralia and never has cephalodia.

### *Nephroma laevigatum* A kidney lichen



**Form** Thin, papery lobes with distinctive fruits on the underside of upturned lobe tips. Often has tiny flattened lobules on lobe margins. Grows to around 8cm, sometimes more.

**Colour** Brown-grey to brown when wet, often red-brown when dry.

**Soredia/Isidia** None.

**Fruit** Frequent; an orange-brown disc on the underside of the upturned lobe tip.

**Underside** Smooth or wrinkled and tan-coloured, like tan leather, and lacking other features e.g. rhizines or cyphellae.

**Notes** The fruiting bodies are not always present or obvious, especially as they are on the underside of the lobes.

### *Nephroma parile* Powdery kidney lichen



**Form** Leafy lobes. Grows to around 8cm.

**Colour** Chocolate brown to reddish-brown.

**Soredia/Isidia** Grey to brownish granular soredia along the margins and occasionally on the lobes.

**Fruit** Very rare.

**Underside** Smooth or wrinkled and tan-coloured, like tan leather, and lacking other features e.g. rhizines or cyphellae.

**Notes** Similar to *Peltigera collina* but that species has rhizines, and to *Sticta limbata* but that species has cyphellae.

### *Sticta fuliginosa* s.lat A stinky Sticta



**Form** Rounded lobes with downturned margins; lobes largely undivided but may be notched or irregular. Usually to 5cm in size but occasionally to 10cm or more.

**Colour** Blackish-brown when wet, dark grey-brown when dry.

**Soredia/Isidia** Tiny coral-like isidia visible as dark granular patches on the surface of the lobes.

**Fruit** Scarce; red-brown, often with pale hairs on margins.

**Underside** Pale or brown tomentum with paler spots (cyphellae).

**Notes** Smells fishy when wet (rub with a finger and smell). Similar to *S. sylvatica*. *Sticta fuliginosa* has recently been split into three separate species, all of which have subtle differences and need microscopic confirmation.

### *Sticta sylvatica* A stinky Sticta



**Form** Irregularly branched lobes usually forming patches up to 5cm, occasionally to 10cm or more.

**Colour** Grey or brown to blackish-brown when wet, dark grey to grey-brown when dry.

**Soredia/Isidia** Tiny coral-like isidia visible as dark granular patches on the surface of the lobes.

**Fruit** Not recorded in the UK.

**Underside** Pale or brown tomentum with paler spots (cyphellae).

**Notes** Smells fishy when wet (rub with a finger and smell). When poorly developed it is difficult to distinguish from some irregularly notched forms of *S. fuliginosa*.

### *Lobaria scrobiculata* Lob scrob



**Form** Loosely attached irregular lobes with ridges. Grows to 10cm.  
**Colour** Yellowish-grey (dry) or blue-grey (wet).

**Soredia/Isidia** Grey to blue-grey soredia; spreading along the ridges and lobe margins.

**Fruit** Rare; a red-brown disc with a thick pale margin.

**Underside** A patchy tomentum with convex naked areas corresponding to depressions between the ridges on the upper surface.

### *Lobaria virens* Green satin lichen



**Form** Smooth or wrinkled wavy lobes closely pressed to the substrate. Grows to 30cm or more.

**Colour** Green when wet, brownish-green when dry.

**Soredia/Isidia** None.

**Fruit** Frequent; an orange disc with a thick green margin.

**Underside** An even tomentum.

**Notes** Similar to *L. amplissima* (see above) and *Flavoparmelia caperata*, which is much commoner, a paler apple green colour and only rarely fertile.

### *Peltigera horizontalis* A dog lichen



**Form** Large smooth lobes forming large patches which can be up to 40cm or more.

**Colour** Brown to grey-brown when wet, grey when dry.

**Soredia/Isidia** None.

**Fruit** Frequent; chestnut brown, rounded, held up parallel to the lobe surface, ie horizontally.

**Underside** White with a network of dark veins and brown rhizines that look like twisted and frayed rope ends.

**Notes** Similar to other *Peltigera* species but the rounded fruits and underside are distinctive.

### *Peltigera collina* Flourey dog-lichen



**Form** Lobes with raised wavy/frilly margins and soredia. Grows to around 15cm.

**Colour** Grey, blue-grey to grey-brown when dry, grey when wet.

**Soredia/Isidia** Coarse, pale-grey to blue-grey soredia on the wavy lobe margins.

**Fruit** Rare; dark brown to blackish.

**Underside** Pale with darker veins and tufts of rhizines.

**Notes** This is the only *Peltigera* species with marginal soralia. It is similar to *Nephroma parile* (which has a smooth or wrinkled underside with no rhizines).

### *Sticta limbata* Flourey Sticta



**Form** Rounded, sometimes notched or irregular lobes with downturned flourey margins forming patches to 3cm, sometimes more.

**Colour** Pale grey to pale grey-brown, darker when wet.

**Soredia/Isidia** Diffuse, flourey, pale-grey soredia along margins and spreading on to surface.

**Fruit** Very rare.

**Underside** Pale or brown tomentum with paler spots (cyphellae).

**Notes** When poorly developed could be confused with *Nephroma parile* which has a smooth underside with no pale spots.

## 2 DOES THE LICHEN HAVE TINY LEAFY LOBES?

### *Normandina pulchella* Elf ears



**Form** Tiny – to 0.5cm – rounded ear-like lobes with a distinctive pale rim.

**Colour** Pale blue-grey to pale green-grey; greener when wet.

**Soredia/Isidia** Greyish to greenish soredia, mainly on the margins and sometimes spreading to cover lobes.

**Fruit** Only very rarely recorded in the UK.

**Notes** May be scattered or clustered; usually grows on mosses, liverworts or other lichens.