

What are lichens?

Lichens may not be the most particularly attractive organisms to a majority of people, but they can be a lot more useful than you would think. Lichens are a compound organism made up of two partners;

- a mycobiont (fungus) and
- a photobiont (green algae and/or cyanobacterium)

Each of these components could not survive without the other; this creates a symbiotic (mutual) relationship where the fungus provides structural support and protection from the elements while the photobiont uses photosynthesis to produce energy for growth and reproduction.

Lichens can be found growing on the bark of trees almost anywhere, in soil deposits, and even on rocks and stone. The most commonly seen lichens in urban areas tend to be crustose species; these can grow on stone walls, the bricks on your house as well as on pavements.

Some lichen colonies are over 8000 years old!

Lichens can often live for many hundreds of years given the correct environment, although many are able to withstand some extreme temperatures ranging from polar regions to tropical areas. Worldwide, the estimated total species of lichens is between 14,000 and 18,000. There is no precise number as new species are constantly being discovered. 1,700 of these species are native to Britain.

There are 3 main types of lichens.

Crustose - As the name suggests, this type of lichen forms as a crust, either on tree bark or rocks. It is attached so closely to the substrate that it cannot be removed without having to remove a piece of the substrate that it is attached to.

Foliose - These are very different from crustose species. They often grow on the same type of substrate, however in appearance they look very different. Foliose lichens are formed in leaf-like structures that lay against the substrate and attached to it at many points, however, these can be removed without difficulty or the need to remove part of the substrate that it is attached to.

Fruticose - These lichens are 'beard-like' in appearance and sit up and away from the substrate (usually tree branches). They are attached to the substrate at one single point which means that they are easy to remove.

Uses.

Some lichens can be used to make dyes, perfumes and even traditional medicines. These, however, are not the most important uses that lichens possess. Lichens are a common, natural indicator of air quality. They are highly sensitive to subtle changes in environmental conditions, especially air pollution from sulphur dioxide and nitrous compounds. This means that they can be used as bio-indicators to determine the quality of the air that we breathe.

Lichen Guide



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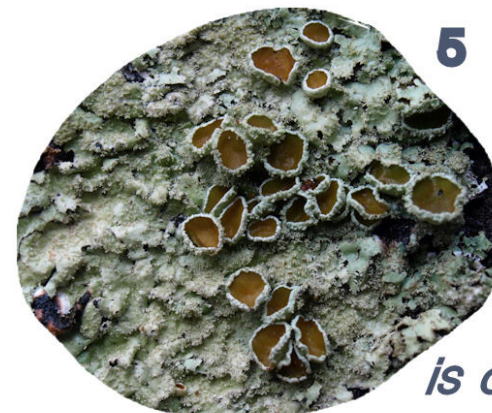
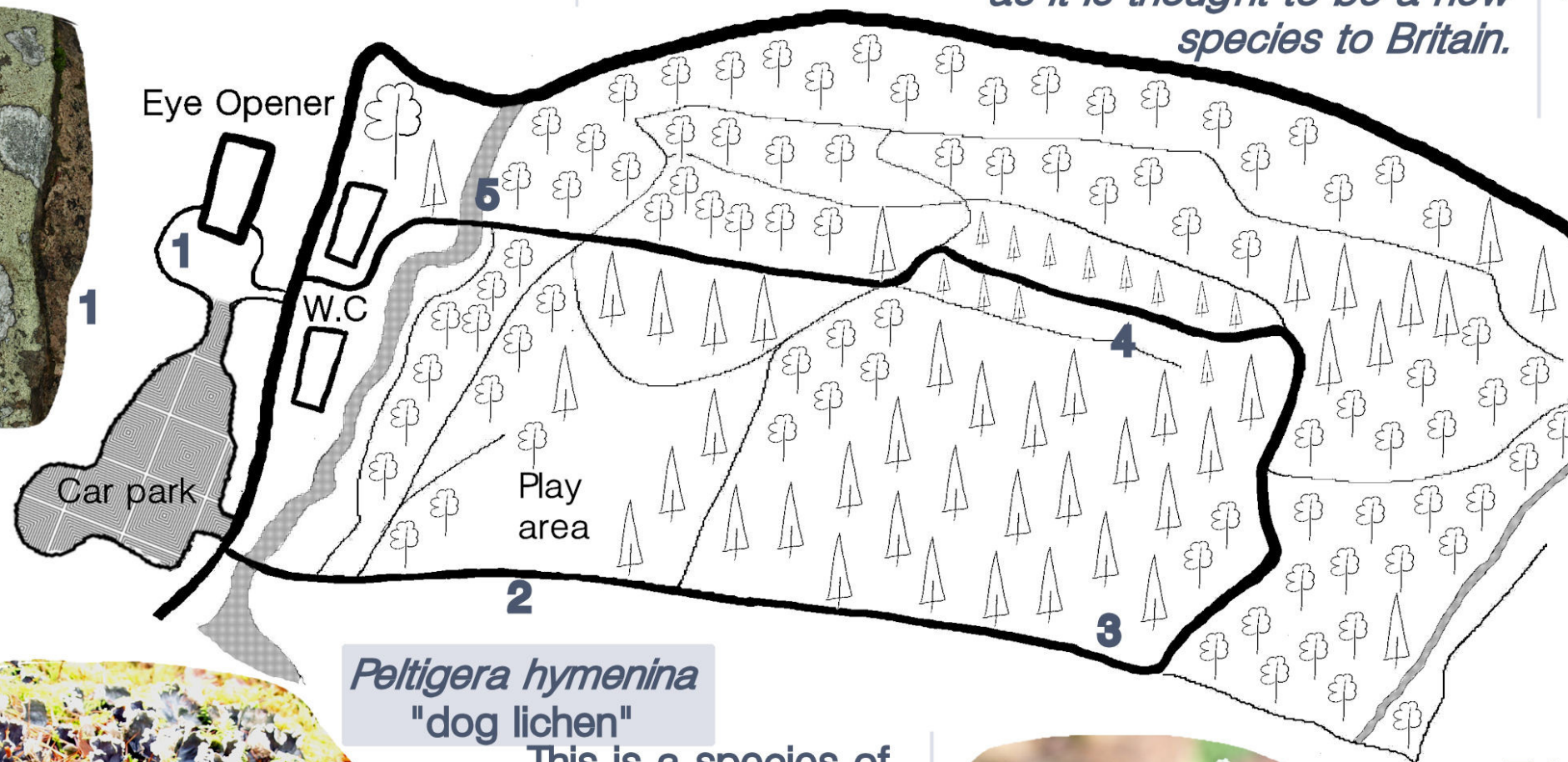
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Lecanora soralifera
&
Porpidia tuberculosa

This lichen mosaic is made up of two different species. The *Lecanora* species is the green/yellow lichen and the white and grey lichens are *Porpidia*. Both are crustose species and can often be found growing together in this pattern.



1



5

Parmelia species

This is a foliose lichen. It is pale green or grey in colour and the orange discs on the surface are the fruiting bodies. This is currently under investigation as it is thought to be a new species to Britain.

Usnea is a fruticose lichen species. From its appearance you can see where it gets its nickname from. This species is very sensitive to air pollution, especially sulphur dioxide, which also makes it a species useful to bio-monitoring.

Usnea subfloridana
"beard lichen"



4

2



Peltigera hymenina
"dog lichen"

This is a species of foliose lichen which thrives in damp areas. The red/orange projections are the fruiting bodies. On the underside you can see fine hair-like structures. This is where the lichen gets its nickname as the hairs look like the teeth of a canine.



3

Hypogymnia physodes

This is another foliose species. In colour it has a pale green or grey top side where the underneath is a dark brown or black. It is a very common species, often found on acidic tree bark, this means it can be used as a pollution indicator.