Lichens found on trees on Ham Lands

What are lichens?

Lichens are composite organisms consisting of fungal filaments (hyphae) mixed with cells of algae which exist in a symbiosis. The association is mutually benifical with the fungi providing the growth form giving protection, harnessing moisture and nutrients from the air and from the substrate (e.g. wood, stone) on which the lichen grows. Algae capture energy from the sun through photosythesis which provide sugars to enable the fungus and algae to grow. Lichens are classified as fungi and each type of lichen tends to have a different fungus species present, Relatively few types of algae (or in a few cases cyanobacteria (photsynthetic bacteria)) are associated with fungi to form lichens.

- It is estimated that 6–8% of Earth's land surface is covered by lichens.
- Current estimates suggest about 28,000 lichen species worldwide and about 1800 in the UK.
- Lichens are long-lived and have adapted to survive in some of the most extreme environments including arctic tundra, hot dry deserts, rocky coasts, and toxic slag heaps.
- Lichens are useful bioindicators of air quality.
- Lichens often have a regular but slow growth rate of less than a mm per year.
- Lichens are among the oldest living organisms. A lichen on East Baffin Island was estimated to be 9,500 years. The earliest fossil evidence dates from 600 million years.
- Lichens are used in making dyes, perfumes and in traditional medicine and a few species are eaten by insects and larger animals such as reindeer.

Types of lichen

Lichens come in many colours, sizes, and forms with four main groups found on trees on Ham Lands as shown below. A hand lens is useful for looking at the features of lichens in the field. Chemical tests can be helpful for identifying some lichens, but many others do require the use of a microscope.

Fruticose or shrubby – thin leafless branches attached to bark at the base.

Oakmoss

(*Evernia prunastri*)

Dotted-ribbon Lichen

(*Ramalina fastigiata*)

Farinose Cartilage Lichen

(*Ramalina farinacea*)

Foliose – flat leaf-like attached to the bark from the lower surface.

Golden Shield Lichen

(*Xanthoria parietina*)

Shield Lichen

(*Parmelia sulcata*)

Hooded Rosette Lichen

(*Physician adscendens*)

Crustose – crust-like adhering tightly to a surface

Leprose - powdery appearance.

Lecidella Lichen

(*Lecidella elaeochroma*)

Rim Lichen

(*Lecanora* sp.)

Dust Lichens

(*Lepraria* sp.)

Lichens and air quality

Many lichens are sensitive to air pollutants such as sulphur dioxide and nitrogen oxides. When air is heavily polluted with sulphur dioxide, there may be no lichens present with only certain green algae tolerating these conditions. A few lichen species can tolerate elevated levels of pollution, and are commonly found in urban areas, on pavements, walls, and tree bark. In general, the lichens most sensitive to pollution are the shrubby and leafy types, while the most tolerant lichens tend to be crustose. If the air is clean, then shrubby, hairy, and leafy types of lichen become abundant.

Lichens on Ham lands

Lichens are abundant on trees and larger bushes on Ham Lands, particularly those of oak, hawthorn and plum. You can see photographs of lichens from Ham Lands at www.inaturalist.org. Improving air quality in the London area with falling levels of sulphur dioxide and nitrogen oxides in recent decades is resulting in a noticeable increase in the abundance of fruticose and foliose lichens on trees and bushes.

Sources and further reading

What are lichens (britishlichens.co.uk)

Lichen - Wikipedia

What is a Lichen? | The British Lichen Society

Dorset - Lichens (dorsetnature.co.uk)

Lichens | NatureSpot

AIR-4pp-chart.pdf (imperial.ac.uk)