

Lichen Literacy - Video Transcript

Lucy Sabin . Archives of Curiosity . Hockney Gallery . 2019

L: Lichenologist

A: Air Quality Analyst

L: The herbarium exists as a source for people who are doing taxonomic revisions of plants. Taking a group of plants, working out how they relate to each other, how many species there are, that sort of thing. So that's its primary use but also plotting the historic distribution. They are used by designers and, you know, artists, that sort of thing..

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A: So my background. I did a degree in environmental sciences which was a very broad degree. I did focus on biomonitoring of air pollutants. I used mosses to monitor metals and metal uptake. I continued with that for my PhD, and that was also on biomonitoring with lichens.

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L: [name], I once went on a walk with him on Tooting Common looking at lichens. Starting on the main road and walking inwards and pointing out how the lichens changed as you moved away from the road. When he explained you could see how the lichens got bigger and [there was] more variety as you moved away from the main road.

Xanthoria parietina is traditionally a lichen which thrives on nitrogen. The great thing, which was everywhere when sulphur dioxide was at its peak so to speak, is... well it's disappeared

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A: I think what is noticeable is when you have a lot of sulphur dioxide, because first of all you don't have the coal burning anymore that the UK had in the 50s and also you had the sulphur taken out of diesel. Therefore the sulphur levels have dropped quite significantly.

I think also lichens they were quite longstanding for biomonitoring in cities and it was the absence or the presence of various species... but in a way they are not sensitive enough anymore so they are not as good an indicator..

The danger at the moment it's still nitrogen oxides and particles because they are still breaching the regulation and in epidemiological studies you can still show that they are having an impact on health.

The problem with particles for example is that people don't know what it is that makes particles bad. Is it the composition? Is it the size? Is it the surface area? Is it the number? Because they are a very complex pollutant they are not a gas like NO₂ where you have one specific gas. If you have a particle... that can mean a whole range of things you know it can be high in metals... it can be a whole host of components and they can be bigger or smaller so depending on their size they can go deep into your lungs or they can be filtered out further up in your respiratory system.

So in the city is is transport emissions. You can also have a lot of secondary pollutants gases which are then absorbed by particles that are already in the air or they form together into a particle that has actually come in from a long way that are not necessarily from local pollution

They can travel from continental Europe. The smallest particle they can travel hundreds of kilometres depending on weather conditions. We've had weather conditions where you can get Saharan dust brought over if you have the right conditions. Also there is evidence we have black smoke particles which are kind of combustion particles in the Arctic defining more what is out there.