The Lichens of Lodge Hill Farm Railway Bridge Revisited

BOB KEMP, SHIRLEY HANCOCK

Introduction

In the 2001 edition of the WFSG Annual REVIEW, Joy Ricketts published results of her lichen survey that was made along the course of the dismantled Wyre Forest railway, running from Park House to the River Severn, in 1999/2000. Her report discussed the problems that lichens face from pollution and in particular, how this may have shaped the lichen "flora" of Wyre Forest. She pointed out that Lodge Hill Farm Railway Bridge "is a lichenological treasure house" for Wyre, as it supports a good number of saxicolous and crustose lichens. In view of this comment we revisited the bridge, now 24 years on since the survey, to determine if there had been any material change to the diversity and or condition of the "lichen flora" growing there.

Lodge Hill railway bridge (Figures 1, 2 and 3) is constructed from sandstone blocks and coping stones, with mortar joints between. Probably built in the 1860s at the time the railway was laid, the origin of the sandstone remains unknown and may not be of local extraction.

The diversity of lichens growing on sandstones can be significantly influenced by differences in nutrient levels within the rock itself, the nature of the surface, its aspect and its drainage. Bird perching sites too can attract some lichens that favour high levels of enrichment. These do occur on the top of some of the coping stones at Lodge Hill, as well as on over-hanging tree branches. Similarly, different lichens may occur on or near mortar, benefiting from the higher levels of Calcium that it contains.

Saxicolous lichens often grow slowly. The continuity of ecological conditions and the stability of the substrate surface over time is important if species diversity is to increase by natural colonisation. Negative influences from atmospheric pollutants, excessive shading and surface cleaning can all be detrimental; as will over-grazing by molluscs and other invertebrates. Physical removal of foliose lichens, such as *Parmelia sp.* and *Ramalina sp.*, by birds and mammals, often for the purpose of nesting, may also be detrimental.

With all these factors in mind, the Lodge Hill bridge appears to be, currently, in good condition from the point of view of lichens. The stones are in an open, well lit position and are most speciose upon the coping stones and undulating surfaces of the top two layers of blocks, reflecting the surface run-off/drainage. The stones become dryer below.

Additional lichens were recorded in the immediate vicinity of the bridge on trunks, twigs and branches.



Figure 1. Lodge Hill Railway Bridge, east parapet looking north. Bob Kemp



Figure 2. Lodge Hill Railway Bridge east parapet looking south. Bob Kemp



Figure 3. Lodge Hill Railway Bridge west parapet looking north. Bob Kemp

Table 1. List of lichen species recorded by Ricketts (2021) and Kemp and Hancock (2024)

Rickets (2001)	Kemp & Hancock (2024)	Rickets (2001)	Kemp & Hancock (2024)
Acarospora fuscata	Present	*Leproloma membranaceum*	?
Acarospora impressula		*Leproloma vouauxii*	Present
Acarospora smaragdula	Present	*Leptogium gelatinosum*	
Caloplaca crenulatella		*Melanelixia (Parmelia) fuliginosa*	Present
Caloplaca holocarpa		*Melanelixia (Parmelia) glabratula*	Present
Caloplaca teicholyta		*Parmelia saxatilis*	Present
Candelariella vitallina	Present	*Parmelia sulcata*	Present
Candilariella aurella	Present	*Pertusaria albescens var corallina*	
Cladonia chlorophaea		*Phlyctis argena*	Present
Cladonia fimbriata		*Physcia tenella*	Present
Cladonia macilenta	Present	*Physconia grisea*	
Dirina massiliensis form sorediata	Present		*Porpidia macrocarpa*
Flavoparmelia (Parmelia) caperata	Present	*Porpidia tuberculosa*	Present
Hypogymnia physodes	Present	*Protoblastinia rupestris*	Present
Lecania erysibe		*Psilolechia lucida*	Present
Lecanora albescens	Present	*Rinodina teichophila*	?
Lecanora campestris	Present		*Rhizocarpon petraeum*
Lecanora chlarotera	Present		*Rhizocarpon geographicum*
Lecanora confusa		*Sarcogyne regularis*	
Lecanora conizaeoides		*Scoliciosporum umbrinum*	
Lecanora crenulata	Present	*Tephromela atra*	Present
Lecanora dispersa	Present	*Toninia aromatica*	Present
Lecanora expallens		*Trapelia coarctata*	
Lecanora polytropa	Present	*Trapelia involuta*	Present
Lecanora soralifera	Present	*Trapelia placodioides*	Present
Lecidea fuscoatra		*Trapeliopsis flexuosa*	
Lecidella scabra	Present		*Verrucaria nigrescens nigrescens*
Lecidella stigmatea	Present	*Verrucaria viridula*	Present
Lepraria incana	Present	*Xanthoria parietina*	Present
Lepraria lesdainii	Present	*Xanthoria polycarpa*	
Leprocaulon microscopicum	Present		

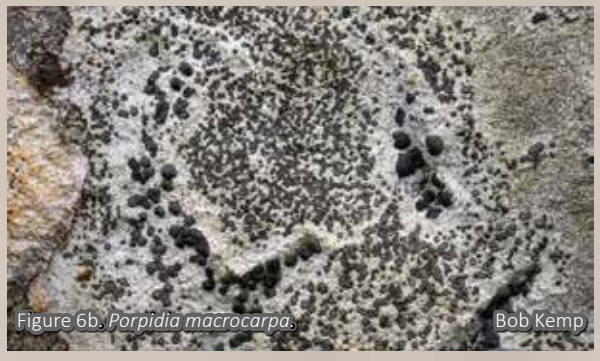
Lichens recorded in 2024 but not in 2001

Arthonia radiata
Cladonia chlorophaea
Cladonia macilenta
Evernia prunastri
Flavoparmelia caperata
Fuscidea lightfootii
Hypogymnia physodes
Hypotrachyna revoluta
Lecanora chlarotera/hybocarpa
Lecidella elaeochroma
Melanelixia subaurifera
Parmotrema perlatum
Physcia tenella
Punctelia subrudecta
Xanthoria parietina


Figure 4. *Leprocaulon microscopicum*. Bob Kemp


Figure 5. *Leprocaulon microscopicum*. Bob Kemp


Figure 6a. *Porpidia macrocarpa*. Bob Kemp


Figure 6b. *Porpidia macrocarpa*. Bob Kemp

Discussion

It was good to confirm that the 'lichen flora', growing on the bridge and immediate surroundings, is in good condition and still reflects the species mix that Ricketts listed 24/25 years ago. Although no rarities were encountered, the species diversity is good for this part of the Midlands.

Of particular interest to us, was the continued presence of *Leprocaulon microscopicum* (Figures 4 and 5). This species is growing on the top of several coping stones and has a distinct granular appearance. Western in distribution, it prefers acid soils (often on cliffs), rarely on bark. Mainly coastal (Dobson, 2018).

It is a local lichen in Shropshire and Worcestershire and is on the very eastern edge of its range here.

The following are comments on some species that we added to the list.

On the east side of the bridge, walking away from Lodge Hill Farm Cottage and close to the wooden gate, is a very fine, large, thallus of *Porpidia macrocarpa* (Figures 6a and 6b). It was not mentioned in Ricketts' report and may be a more recent colonist.

Lichens often make attractive mosaics as each thallus "battles" for space on their chosen substrate. *Rhizocarpon petraeum* (Figure 7) is another lichen, not listed in 2001; it has a white thallus with black apothecia, often with white margins and loosely arranged in circles. Growing on mortar here, it is accompanied by the surrounding, brown thalli of *Verrucaria nigrescens nigrescens*. This is a very common lichen on calcareous rocks and mortar bearing many, tiny, submerged perithecia (flask-shaped spore producing structures).

The orange disks either side of the *Rhizocarpon petraeum* are the apothecia (flat disk, bearing spores) of *Protoblastenia rupestris*. A common species on lime-rich substrates, *e.g.* mortar.

The white-edged disks on the bottom left are probably *Lecanora dispersa*.

The remaining 'new' species to the list was a single, small and diminutive, example of the "Map Lichen" *Rhizocarpon geographicum (*Figure 8*)*. This lichen can be found commonly on acid rocks and stone walls on the Shropshire Hills nearby.

It is interesting to note that Ricketts recorded *Lecanora conizaeoides* (Figures 9 and 10) during her survey. This is a lichen that was formerly very common and thriving in Sulphur Dioxide (SO^2) polluted environments. As a steady reduction of SO^2 emissions has taken place since the Clean Air Acts and coal burning is no longer popular, this lichen has declined significantly. Relict growths of *L. conizaeoides* are still occasionally seen *e.g.* on memorials in churchyards situated within old industrial towns.



Figure 7. *Rhizocarpon petraeum*. Bob Kemp



Figure 8. *Rhizocarpon geographicum*. Bob Kemp



Figure 9. *Lecanora conizaeoides* on Victorian Memorial, Shrewsbury. Bob Kemp



Figure 10. *Lecanora conizaeoides* with apothecia, Shrewsbury Municipal Cemetery. Bob Kemp

In contrast, many lichens that were decimated by SO^2 pollution, following the Industrial Revolution, are now beginning to recover. *Usnea subfloridana*, Beard Lichen (Figures 11a and 11b) is a good example. It is mildly SO^2 tolerant and is now spreading into many areas of the industrial West Midlands, including Birmingham Parkland. It is frequent in Wyre too, occasionally growing on well-lit trunks, twigs and branches of deciduous trees.



Figure 11a. *Usnea subfloridana*. Bob Kemp



Figure 11b. *Usnea subfloridana*. Bob Kemp

So, Lodge Hill Farm Bridge still remains a "treasure house" for lichens in Wyre Forest and may possibly have become even more diverse since the end of the steam railway in the 1960s.

Whilst industrial and domestic SO^2 pollution has declined, agricultural pollution sadly has not. It has steadily increased as more nitrates are used to fertilise the land and ammonia is given off from intense animal and fowl husbandry; both pollute the air. The effect that this has had on lichens, with many unable to tolerate these chemicals, is equally devastating. However, a small number of species, "nitrophiles", thrive! But it has to be mentioned that traditionally clean air areas such as in rural Wales, are now becoming seriously affected by relatively recent increases in agricultural pollution. This important lichen refugium is now sadly threatened.

Ricketts (2001) discussed the implications of SO^2 pollution with respect to the Wyre Forest. However, today, the gradual eutrophication of surfaces, due to the deposition of nitrogen compounds, can encourage exuberant algal growth and is most obvious on tree bark surfaces. It is depressing to see the direct, physical smothering and shading that this algal growth can inflict.

Today, the Wyre Forest lichen diversity is influenced, like much of the surrounding countryside, by moderate levels of agricultural pollution. The forest has had its fair share of historical SO^2 pollution too. The latter may still be having a lasting influence on old tree bark, adversely affecting lichen colonisation long term. The chemical influences, coupled with various forest practices that physically remove and destroy lichens, (*e.g.* regular coppice cycles and felling), prevent long-term ecological continuity. Some lichens, notably those specialists inhabiting ancient tree bark, are regrettably few in Wyre, as are the number of ancient/veteran Oaks/Ash trees.



Figure 12a. *Graphis scripta* (Dowles Brook). Bob Kemp

Despite the above, where conditions are suitable, some ancient woodland lichens continue to survive, *e.g., Graphis scripta*, (Figures 12a and 12b) *Phaeographis dendritica, Thelotrema lepadinum, Cladonia parasitica* and *Cladonia caespiticia*. The first three are smooth bark species in Wyre, inhabiting the deeper, humid, "ravines" *e.g.* Seckley Wood. They tend to be found on Hazel and Ash bark, close to small streams. It may be that in these sheltered, deeply situated sites, lichens escaped historical pollution and so allowed relict populations to persist.



Figure 12b. *Graphis scripta* (Dowles Brook). Bob Kemp

Phaeographis dendritica (Figure 13)

The late Trevor Duke recorded this species in Wyre (Pers. Comm.). It is superficially like *G. scripta* and most likely to turn up in similar environments, on smooth barked trees. Nationally, it is mainly found in South-west England and West Wales but has turned up recently at a number of old woodlands in Shropshire. Both species are known as "Script Lichens" due to the appearance of the modified spore-bearing, squiggle-like, apothecia; appropriately called lirellae.



Figure 13. *Phaeographis dendritica*. Bob Kemp

Thelotrema lepadinum (Figures 14a and 14b)

The common name for this lichen is "Bark Barnacles" on account of its "fruits" looking like the sea creature. Interestingly, the apothecia are residing within the raised portion of the lichen thallus. A small number have been found in Seckley Wood on Ash.



Figure 14a. *Thelotrema lepadinum*. Bob Kemp



Figure 14b. *Thelotrema lepadinum*. Bob Kemp

Cladonia parasitica (Figures 15a and 15b)

Cladonia are a fascinating group of lichens and include many attractive species. They can be an identification nightmare too, on account of their intra-specific variation.

Two ancient woodland species, found on old, rotting, tree stumps, are occasionally encountered in Wyre and relatively easy to distinguish when in "fruit". The "fruit" is an elevated hollow growth (podetia) standing above the squamulous thallus and tipped with spore-bearing apothecia. These can vary considerably between species.

Note the filigree-like squamules and squamulous podetia arising from within them.



Figure 15a. *Cladonia parasitica.* Bob Kemp



Figure 15b. *Cladonia parasitica.* Bob Kemp

Cladonia caespiticia (Figure 16)

Unlike *C. parasitica* the squamules of *C. caespitica* are generally larger and a little less filligree-like. The podetia emanate from squamules and resemble small mushrooms. They grow on rotting stumps and over mosses.



Figure 16. *Cladonia caespiticia.* Bob Kemp

Some corticolous lichens that grow over or immediately adjacent to the Lodge Hill Bridge.

A small, random, selection of species are mentioned here just for interest. The railway bridge has a number of trees and shrubs that border and overhang the coping stones. Entering the span of the bridge, close to Lodge Hill farm cottage, is a mature Ash (suffering Ash Dieback sadly).

On the coping stone below and growing on the trunk of the Ash can be seen some fine examples of *Parmelia saxatilis* (Figures 17a). A common species in Wyre similar to *P. saxatilis*, is *Parmelia sulcata (Figure 17b)*. Unlike *P. saxatilis* the lobes are cracked and lined with powdery granules (soridia); a characteristic of this species. It is most often encountered on tree bark (Figure 17c).

Note that the lobes are cracked and lined with powdery granules (soridia), a characteristic of this species.


Figure 17c. *Parmelia sulcata*. Bob Kemp

Another foliose lichen found on the Ash is *Ramalina farinacea* (Figure 18) often found on twigs and branch bark.

Two lichens that are nitrophylic par-excellence and are now extremely common over much of the country, due to agricultural pollution, are *Xanthoria parietina* and *Physcia tenella*. They can be dominant, and will easily be found at Lodge Hill!

Xanthoria parietina (upper part of Figure 19), is very common on trees, rocks, bird perching sites. It is a common sight near the coast, often covering large areas on roofs frequented by seabirds. *Xanthoria parietina* and *Physcia tenella* (lower part of Figure 19) are very often found growing together, leading to questions regarding whether there is a more intimate relationship between them, rather than coincidence.


Figure 17a. *Parmelia saxatilis*. Bob Kemp


Figure 17b. *Parmelia sulcata*. Bob Kemp


Figure 18. *Ramalina farinacea*. Bob Kemp


Figure 19. *Xanthoria parietina* (top) and *Physcia tenella* (bottom). Bob Kemp

Physcia tenella is interesting since it displays "eyelash-like" structures called cilia. These arise from the lobes and can act as a form of scaffolding. Beneath the lobe tips, powder-like, soralia develop. Soralia are a vegetative means by which many lichens can reproduce. Each is composed of an algal cell enveloped in fungal hyphae and are easily dispersed.



Figure 20. *Physcia tenella* showing cilia and soralia. Bob Kemp

Concluding remarks

With a paucity of lichen-rich rock outcrops in Wyre Forest, Lodge Hill railway bridge is a significant place for saxicolous lichens in the area. The "lichen flora" appears stable, perhaps becoming more speciose. It is important, moving forward, that any excessive shading by trees and shrubs is prevented and that the surfaces of the sandstone are not cleaned or interfered with in an unsympathetic way. We hope that these general notes will encourage more people to look at lichens whilst out and about in Wyre.

The nomenclature used in this article follows that of Dobson, 2018. Lichen names are, like many other Groups, often changing. As this is the 'go to' book at the current time, we feel it is best to keep to this book's names to avoid confusion.

Since the writing of this article, the excellent, two volume , "Lichens of Ireland and Great Britain" by Paul Whelan has been Published (Holm Oak).

It features recent name changes and is likely to become the new "go to guide" for the general naturalist.

References

Ricketts, J. (2001) *WFSG Review.*

Dobson, F. S. (2018) *Lichens. An illustrated Guide to the British and Irish species.*



Lichens on the west parapet of Lodge Hill Railway Bridge looking over the disused railway line, *Leprocaulon microscopicum* (centre). Bob Kemp