

## COPING WITH LICHENS

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The study of lichens ought to be rewarding and enjoyable but we all sometimes have feelings of frustration, confusion and inadequacy. This document is written for those occasions; something philosophical to soothe and inspire when the keys don't work, when you feel unsure about everything and want to chuck the microscope through the window. Most of this wisdom has been sent to me in a remarkable collection of letters and e-mails from wiser members of the Society. This third edition, following the 2012 second edition and the 2010 first edition, is written by a lichenologist who has dedicated considerable time to the study of lichens for a decade and can still sometimes feel like a complete beginner.



Lichenologists have a variety of motives, but the strangeness and beauty of lichens are usually the attraction. That there is plenty left to discover (new county records are almost the norm rather than the exception during excursions) should stimulate anyone with an enquiring mind. Identifying lichens is not easy but nor is it the preserve of some remote cognoscenti. Patience, enthusiasm and careful observation are the most important attributes.

One thing to hold on to is that you will never be able to name every specimen; even the very best of lichenologists have boxes full of packets waiting for “the fog to clear”. A noticeable feature of Oliver Gilbert’s herbarium is the number of packets with vague determinations, and he always sent his

collections to the “worlds-best”, whoever they were for that genus or species. Even from our most able lichenologists there are comments such as “no spores found”, “may be x”, “try this or that expert” and so on. If “the gods” cannot always arrive at a determination, what chance us mere mortals? In our modern molecular world, it may (or may not) be possible to provide evidence to support an identification even from a little specimen. Even if that were possible, practicalities need addressing. Limited resources require an intelligent approach in deciding which specimens are priorities for DNA barcoding. Field recording relies on a pragmatic approach, and an understanding of the taxonomic difficulties.

In the field, not every scrap of lichen is nameable; some specimens are just too young, damaged or atypical. When recording a church (starting from the south-east buttress in proper Churchyard Working Group tradition, if that is your chosen method) one sometimes spends ages deliberating over a poor specimen of such and such. Oftentimes, a few yards further along the wall, there is a beautiful example of the thing you were agonising over, and the card can be ticked without hesitation.

Occasionally the difficulties of this subject result in more than mere frustration, one enters the doldrums, a recognised state after initial enthusiasm, excitement and pleasure at finding something that fascinates, challenges and delights. Then the challenges become more challenging and refuse to work out, leaving you confused and frustrated. It is a recognised syndrome and all lichenologists have been through it. Let’s be real, there are no short-cuts. There is no substitute for experience. There may be days when you want to chuck it all in. There will be days when you crave easy answers, some guidance, a fool-proof aide-memoire that will give you the answers. But lichens don’t read books, they don’t always abide by the descriptions in Floras, they deviate, they grow bigger, or they are smaller, they aren’t the prescribed colour, they have been deformed by parasites or herbivores. It is only by looking long and hard, again, and again, that you slowly build up an understanding, develop a “nose”, an instinct and recognise a “jizz”. It is also true that the current literature is not perfect. If I had one word of advice for an aspiring beginner wanting to contribute to our subject, it would be to note down every time that the literature did not provide you with a convincing identity for your specimen. It is also very useful to note when different lichenologists give different names to the same specimen. I would be delighted to receive any such observations. One of my motives for taking on the updates to Corrections to the 2009 Flora (see Downloads on the BLS website) was to archive the numerous priceless observations made by ‘beginners’ and ‘improvers’ who are often the only people who work hard with common species and hence get confused when our literature is inadequate because poorly observed historic descriptions have not been re-examined.

One of our geological members states a useful truism from that discipline; “the best geologist is the one that has seen the most rocks”. Instinct becomes useful. Some people advocate writing down your first instinct of a name when looking at a problematic specimen, claiming that it will often turn out to be the answer. But doubt creeps in, you begin to question, and then it is “hmm, it could be this, or, it could be that, but then again...” and you are left in that mire of not believing anything, and you lose faith and confidence in your abilities. Don’t name a specimen on instinct unless you are competent to do so. Resist the temptation to record an exciting species unless you can prove it or have had it checked. Working on a specimen means more than just looking at it. Write down descriptions and observations. Make drawings and measurements. If you end up truly stumped keep all your notes and drawings and send these with the specimen to a referee, there is a list of these on the BLS website. Referees are willing to help but please ensure you have paid the correct postage and make it as easy as possible for them to return the specimens.

I have sometimes dwelt too heavily on what I don’t yet know and have been reticent about recording a good site, knowing that there will be interesting things that I will miss. But the only way to improve is to get on and do it. Record what you know you are competent to name and make notes or take

specimens of the things you don't recognise. A useful list will result, and you will be another little step forward in expanding your repertoire.

Some of our most talented lichenologists have had to wait years for a penny to drop. Specimens are squirreled away until one day, while reading an article or accompanying another worker in the field, there is that "ah ha" moment, "so that's what you were!" These days we have the luxury of websites and electronic communication. The significance of these is immense. It is now possible to upload details of suspected undescribed species to widely accessible websites. See for instance: <http://fungi.myspecies.info/all-fungi/anisomeridium-sp-mp4445>. I would urge anyone who wants to contribute to lichenology to collaborate with such websites.

Even in my short time studying lichens, I have been treated to a few of those special moments when months of waiting are rewarded with a realisation. They are well worth waiting for. Some small pruinose squamules from asbestos frustrated me for months; this lichen doesn't appear in the keys (not quite true, I was looking in the wrong key) so some serendipity is required. In my case I was browsing the "Flora" for something else in *Aspicilia* when I chanced upon a description that rang a bell – *moenium*. Reference to the original description in the Lichenologist and the inevitable "shove it under Brian's nose" confirmed it as such. Sometimes one must wait until one finds fruiting material. For over a year I had a sneaking suspicion that the K- yellow granules that I occasionally found on trunks were not really corticolous *Candelariella vitellina* but I didn't know what else to call them. At last, some stalked fruits growing from the underside of some granules revealed their true identity, *Chaenotheca chrysocephala*. Even the dreaded sorediate crusts reveal themselves eventually by producing fruits; such has been the case with me and *Fellhaneropsis viridisorediata*.

Not even Brian can name every specimen put in front of him. He has been known to say something like "No, can't make anything of that. Could be new to science, but the material is not good enough. Bin it." I am not sure that the 'bin it' statement is now the best advice if the collector is really determined to find the answer, especially now that molecular methods are a reality, but Brian's pragmatic statement will always be important for deciding priorities.

My struggles with species of *Cladonia* and sterile crusts on thatch elicited the following helpful strategy from Sandy. "This is a fruitful area for accumulating collections, which, at a later date and when viewed in total, might (ahem, "might" being the operative word), suddenly produce a recognisable pattern, and lead you to recognise species A, B and C amongst your motley collection. Such is the way that Brian worked on the "Atlantic Graphidion", by collecting hundreds of little chippings and slivers, then setting them all out, and starting to group like with like, and then sticking them under the microscope, doing drawings, making measurements..." My conclusion, long after the event, is that my thatch studies were of value but that the difficult species involved (*Cladonia* and sorediate crusts) are not so amenable to comparative study as Brian's pyrenocarps of the Atlantic Graphidion. They have less definite characters and require new and innovative approaches.

Identification has often traditionally been a case of 'shove it under Brian's nose and record as such'. There are at least two problems. Brian, unfortunately, will not live for ever, and even while alive should not have to be Solomon for so many specimens. We need better literature and better protocols for deciding whether we can justifiably record a taxon. If we don't devise a substitute for 'shove it under Brian's nose', what will happen when Brian's nose is not available? Shoving under Brian's nose is also lazy and inefficient if it does not result in a wide dissemination of the information. I would encourage people to contribute to forums, and so either allow Brian to directly inform many others during a determination, or else transcribe the words of wisdom to an accessible body of many readers.

Finally, from a correspondent who strives to get on and enjoy every minute of existence, a final gem. What really matters is not the ability you finally attain, but the satisfaction in attaining it and the enjoyment in its practice – and of course the people you meet along the way.

That is not quite my main motivation but is a lovely sentiment from someone who has encouraged so many in their studies.

Some notes extracted for me from a manual about surgical suturing techniques:

‘Combine repetition with reaching just beyond your comfort zone for rapid skill acquisition. . .’

The greatest make it look easy. . .

Students rarely appreciate how valuable making or avoiding mistakes can be.

‘. . .the difference between expert performers and the rest, reflects a lifelong passion and deliberate effort to improve performance in a specific domain.’

‘. . . everyone who has achieved skill has encountered terrible difficulties along the way; there are no exceptions. . .’

‘Lack of improvement in any field is more related to ineffective practice rather than lack of innate talent.’, ‘skill acquisition requires breaking down fundamental movement into specific steps, mastering each of the components and then reassembling the steps.’

‘repeat with precision’. ‘go slow and perfect moves. . .’ ‘find errors and fix them. . .’ ‘tedious attention to repetitive detail. . .’