



British Lichen Society

BLS Lichen Recording Guidelines

Janet Simkin

Version 6d, revised 9th September 2013

1. Introduction

The BLS is now collating lichen records in a single database, using the software package Recorder 6. All validated records are made available on the NBN Gateway (www.searchNBN.net), and it is assumed that in supplying records to the BLS you are giving us permission to do this and to supply them to other individuals and organisations as we see fit, and that you have the necessary permissions from landowners and commissioning bodies to do so. Once on the NBN Gateway records may also be picked up by GBIF and websites such as SNHi which use NBN Web Services.

A database is only useful if it holds data in a way that is well organised and accessible, contains data that is accurate, and contains the data needed by its users. The BLS database has been developed to meet all these requirements.

- a) Recorder 6 was developed for the British biological recording community by JNCC and is now widely used by local record centres and national recording schemes. It uses a powerful SQL Server database to organise the data held, and we have developed our own suite of reports to help us extract information quickly and easily.
- b) Good practice in field work and identification techniques partly addresses the second requirement, that the data be accurate. The BLS held a workshop on this in 2005, which was written up in the report *Surveying and Report Writing for Lichenologists, Guidelines for Surveyors, Consultants and Commissioning Agencies* (Hill, D.J. 2006). We are also developing automated validation and verification checks, using the NBN Record Cleaner. These check that grid references are on land and within the correct vice county, and that each record is within the expected distribution of that species. Records that need expert verification and perhaps a voucher specimen are highlighted and should be sent on to an expert for review.
- c) The third requirement, for data that is fit for the purposes for which it was intended, was considered at the BLS Recording Workshop in October 2008. This document is the outcome of those discussions.

1.1 Records needed

Records are needed for all locations, whether they are lichen hotspots or most definitely not, and for all species. At present the database is strongly biased towards the best lichen sites and the most interesting species, and this gives a distorted picture of lichen distribution. To enable us to monitor change and assess the status of lichens on a regional or local basis we need many more records of common species from ordinary sites. Dated repeat surveys of the same sites are particularly valuable.

1.2 Information required

All biological records contain information on the location, the visit, and the details of the species records themselves. In computer databases these three are held as separate records but linked, to avoid unnecessary duplication of information. There may be many visits to one location, and many species records for one visit.

All records submitted to the BLS database should be associated with a site name, grid reference, vice county, recorders and a date. Additional information may also be included, and should be for any species that is nationally or regionally scarce, of particular conservation interest, or that has been collected. For professional and other detailed surveys it is normal practice to record substrate and small scale habitat for every species. For NVC and other ecological surveys it is usual to record abundance.

Information	Example	Notes (* required)
Location		
Site name	Brada Hill – whin crags	*
Grid reference	NU161339	* use letters for the 100km square, not numbers
Vice county	68	*
Additional information on habitats, management, ownership or access		
Visit		
Date	5/10/2008	* Date or date range
Recorders	Janet Simkin	*
Additional information may include:		
- a more precise location name	BLS field meeting	
- parts of site visited		
- altitude range		
- purpose of visit		
- length of time spent on site		
- weather conditions		
Species records		
Taxon name	<i>Stereocaulon dactylophyllum</i>	*
Substrate	Saxicolous	corticolous, saxicolous etc.
Small scale habitats	Whin outcrop	trees and rock types
Abundance	Rare	DAFOR
Collection details	Hb Simkin	herbarium, accession number
Determination details	Brian Coppins	Determined by and when
Comments	P+o	e.g. identification details, 8-figure grid ref, fertile

Ideally, we should aim for 1km precision in recording within the site. This allows us to relate records to protected areas and to pull out site lists as well as producing maps at local, regional and national level.

- For a small site this is easy, the grid reference is the centre of the area visited and should be given to 6 digit precision (100m) or 4 digit (1km) depending on the area covered. Churchyards, small gardens, bridges and buildings are usually given 6 digits, villages, hills, valleys and larger woodlands get 4 digits. It is the area visited that matters, not the size of the site.
- If the site is large and the visit covered more than one 1km square it is best to make a list for each square.
- Sometimes that is not practical, and then a single site list is perfectly acceptable. It should be given the 4 digit (1km) grid ref central to the visit or where most of the time was spent, with a

note to explain that a wider area was covered. For old records where we don't know which part of the site was visited the site centroid grid reference should be used.

- If several sites within a 1km square were visited, a separate list should be made for each, especially if the habitats were different or the sites can be named.
- Hectad (10km) and tetrad (2km) recording is of limited use for lichens, a sprinkling of records for precise locations is far preferable. The database can then produce lists at whatever precision is needed at the push of a button, as can the NBN Gateway.

Dated records are needed if we are to monitor changes in lichen communities, and trace the advance and retreat of populations. Dated records for repeat visits to the same site are particularly useful. Lichen recording takes time so we tend to accumulate records onto the same card rather than starting a new list for each visit, and this is fine so long as the card only covers a single year.

1.3 Records of absence

Repeat surveys of a site often involve some time spent searching for species of interest that had been recorded there before. It is useful to have a note in the database to say if these were not found. These will be held in the database as “zero abundance” records, with a comment added to the latest confirmed record to indicate that absence information is available.

2. Record cards

All lichen recorders are encouraged to use the standard BLS record cards for recording in Britain. Two are available, the General card and a Churchyard card. Both can be downloaded from the BLS website (www.britishlichensociety.org.uk), and they are updated from time to time to incorporate changes to species names. They are structured in a way that makes it easy to find information later on, and quick to input the species list to the computer.

It helps if we all use the same codes for substrates and small scale habitats on record cards, so we are trying to standardise them:

Substrates		Rock types		Trees	
Br	Bryicolous (on bryophytes)	asb	Asbestos	Ac	<i>Acer campestre</i> (field maple)
C	Corticolous (on bark)	ba	Basalt	Ae	<i>Aesculus</i> (horse chestnut)
Fo	Folicolous (on leaves)	br	Brick	Al	<i>Alnus</i> (alder)
Lc	Lichenicolous (on another lichen)	ce	Cement	Ap	<i>Acer pseudoplatanus</i> (sycamore)
Lg	Lignicolous (on wood)	co	Concrete	Bt	<i>Betula</i> (birch)
S	Saxicolous (on rock)	lr	Ironstone	Co	<i>Corylus</i> (hazel)
T	Terricolous (on soil)	fl	Flint	Ct	<i>Crataegus</i> (hawthorn)
		gr	Granite	Fg	<i>Fagus</i> (beech)
		lm	Limestone	Fx	<i>Fraxinus</i> (ash)
		ma	Marble	Ix	<i>Ilex</i> (holly)
		mo	mortar	Lx	<i>Larix</i> (larch)
		sd	Sandstone	Ma	<i>Malus</i> (apple)
		sh	Shale	P	<i>Pinus</i> (pine)
		sl	Slate	Pc	<i>Picea</i> (spruce)
				Pp	<i>Populus</i> (poplar)
				Pr	<i>Prunus</i> (plum etc.)
				Pt	<i>Populus tremula</i> (aspen)
				Q	<i>Quercus</i> (oak)
				Sx	<i>Salix</i> (willow)
				Sa	<i>Sorbus aria</i> (whitebeam)
				Sm	<i>Sambucus</i> (elder)
				Sb	<i>Sorbus aucuparia</i> (rowan)
Positions					
bw	Boundary wall				
fp	Fence post				
gt	Gate				
pa	Path				
rf	Roof				
rtw	Retaining wall				
Churchyard positions					
X	On church building				
Y	In churchyard				

cht	Chest tomb	Ti	<i>Tilia</i> (lime)
cr	Cross	Tx	<i>Taxus</i> (yew)
hd	Headstone	U	<i>Ulmus</i> (elm)

The general card is crowded, however, and can be awkward to use in the field, with little room to add information on substrates, so some people prefer to take field notes in a notebook and then either transfer the records to a card at the end of the day or input them directly to a spreadsheet on computer.

3. Data quality

Records included in the database must be accurate, both in identification and in the details of location, date and recorders supplied with them.

3.1 Species determination

Species determination can be checked by sending the specimen to an expert. There is a list of beginners and specialist referees on the Identification page of the BLS website. The referee is then recorded in the database as the determiner.

Other resources that may be useful are the species dictionary in the BLS spreadsheet (described below), and the online taxon dictionary which lists most of the synonyms of British lichens used in the last 100 years together with information on misallocation, splits and lumpings. If records are to be input to the BLS spreadsheet there is no need to update to the most recent names as it caters for the more common synonyms.

Aggregates can be used for some species complexes. These are shown in the species list and on the record cards. Similarly, some species for which there are varieties or subspecies may also be recorded at species level if that is shown as an option on the record card. In most cases autonyms, for which the subspecies name is the same as the species name (e.g. *Alectoria sarmentosa* subsp. *sarmentosa*) may be recorded at species or subspecies level. The exceptions to this are described in the Syn List.

Unconfirmed records should be noted on the card as additional species, with chemical tests and other identification notes. The same information will be input to the database, but with the record identified to genus only. This allows the specimen to be traced back to the original record once it has been determined. Determination may not happen for many years so it is best not to rely on memory.

3.2 Location details

Location details should also be checked, and this is best done by the original recorder or someone else with local knowledge. Check that:

- Site names are as shown on the OS map
- Grid references are correct
- The vice county is correct.

There are several useful websites for this, including

- Streetmap (www.streetmap.co.uk)
- Ordnance Survey (www.ordnancesurvey.co.uk/oswebsite/getamap)

- Where's the Path (wtp2recorder.appspot.com/wheresthepath)
- Herbaria United (herbariaunited.org/gridrefVC).

4. Spreadsheets

If possible, records should be sent in to the BLS as Excel spreadsheets. They must be set up to have one row for each record that contains all the information on site, visit, species, substrate and collection, and the site and visit details should be repeated on each of these lines. For records of particular interest a more precise location and grid ref may be given.

It helps the BLS if you use our standard spreadsheets, which can be downloaded from the BLS website. There are slightly different versions for general, churchyard and historic cards, but they all display back the modern name and conservation status of each species and so can be used to produce species lists and other analyses for inclusion in survey reports. They are updated with the latest species names and synonyms from time to time so it is worth downloading the latest versions every few months.

These notes relate to the general spreadsheet BLS_General_v6b.xls. For churchyard cards the procedure and spreadsheet are slightly different.

To use this spreadsheet you need to have either Microsoft Excel (part of Microsoft Office) or OpenOffice on your computer. It works best in Excel2003 or similar, and these notes describe the menu options in that version. Later versions of Excel have the same functions but different menus.

4.1 Getting started

- Avoid overwriting the empty spreadsheet as you will want to use it again and again, so open it and immediately use "File - Save As" to save it each time with a unique name before entering any records. A numeric sequence, such as Bloggs0001_VC67, Bloggs0002_VC68 etc., makes it easier to keep track of which records have been input and sent in.
- Use a separate spreadsheet for each vice county, and leave a blank (or coloured) line between cards.
- Data can only be added to the first worksheet "Records" (click on the tab at the bottom to move to this worksheet if you are not already in it).
- The other two worksheets are protected and should not be changed. They include lists of the codes and species names used by the program which may be useful for reference.
- When the records are imported to the Recorder 6 database, the columns headed in blue are used to set up Locations, those in pink set up Events and Samples (equivalent to a site visit), and those in green set up the Taxon Occurrences.
- Further information on what is to be entered to each column is given in the comments along the header row. Position the cursor over the column headings to see them.

4.2 Excel settings

- The default settings in Excel usually work well, but if the spreadsheet is not doing what you expect check that you have:
 - The fill-down button on one of the toolbars (use View – Toolbars – Customise. The button is in the Edit list, select it and drag it to the Formatting toolbar).

- Move down switched on (Tools – Options – Edit – Move Selection after Enter and select Direction “Down”).
 - Correct two initial capitals switched off (Tools – Options – Spelling – Autocorrect options – Correct TWo INitial CAPitals).
 - Autocomplete on if you are entering a lot of species names, or off if you are entering a lot of codes and it is inserting values you don’t want (Tools – Options – Edit and select “Enable AutoComplete for Cell Values”).
- There are several ways of copying information in Excel, including Copy and Paste, Ctl-C and Ctl-V, and Fill Down. Pulling down with the mouse is not recommended if the range to be copied includes a number as it tends to increment the number in each row to create a series. This can be avoided by using one of the other methods.

4.3 Inserting rows

- Only 4,000 record lines are set up in this spreadsheet to keep it to a reasonable size, and the end of the range is marked by a red line. You can increase this by inserting more rows above the red line but please do not exceed 20,000 rows in one spreadsheet. Insert the additional rows before you have reached the red line as you will need one blank row which has all the formulae and validation set up in it to copy down to the new rows.
 - Select a block of rows below your existing records, but including the red line, and insert some more lines (Insert – Rows).
 - Copy a blank row that was already there to all the new rows (fill down or copy depending on your version of Excel).

4.4 Site and visit details

- The location, recorder and date details should be input to the first line for that visit and then copied down to the other lines (use copy, pull down or fill-down). Apart from this one action per card there is no need to use the mouse during input.
- Location names should be formatted with the general area first and then the precise location, separated by a hyphen (e.g. Ponteland – St. Mary churchyard, or Ponteland – old railway path). Churches should always be given their dedication if possible and end with the word churchyard.
- Put a Y in the “checked” column to show that the location name, grid ref and vice county have been checked and are correct. Leave it blank if they haven’t been checked, but expect the spreadsheet to be returned to you if a spot check shows any errors!
- You may wish to format the date column, but this is up to you as there are so many different formats. If you do format it, you will find that Excel starts reformatting dates in ways that you don’t want. Change it back to a text field to cure this, or input dates with a ‘ before the date to force it to take it as text. Select the cells to be formatted with the mouse, then Format – Cells – Date and select the format required.

4.5 Species records

- Species may be entered using BLS numbers or the full Latin name. Either way, the number, full name and conservation status will be displayed back in the green columns for checking. This function includes several features designed to make the spreadsheet quick and easy to use:

- There is no need to include #, ##, or the words var., f. or subsp. when typing in the full name. The system knows and will display the full name back with these included.
 - The full name including f., var. or subsp. may be entered if preferred. This feature is intended to support cutting and pasting species lists from databases such as Mapmate.
 - Autonyms may be entered in full or shorter form.
 - About 300 of the older names most often found on record cards are included as synonyms and converted automatically to the modern name. Thus a *Melanelixia* can also be entered as *Melanelia* or *Parmelia*. The synonyms go back to the early 1970s. Any name that is not recognised by the program should be checked in the Syn List as there may be additional factors to take into account in determining the correct modern name.
 - If you need to enter a taxon that is not recognised by the system, do so using the full name and it will be sorted out before the record is imported to Recorder. This applies to recent additions to the British list, and also to unconfirmed records that can only be assigned to a genus.
- Substrate must be entered using the standard codes. Until you get to know them they can be selected from the drop-down lists, but they will soon become familiar. The main codes are shown below. They may be used in combination, the full list is in Appendix A1.

Bry	Fol	Other
Cort	Lic	Sax
Cort+Lig	Lig	Terr
Cort+Sax	Met	Terr+Lig

- Abundance is usually recorded using the DAFOR scale. Until you get to know the standard codes they can be selected from the drop-down lists, but they will soon become familiar.

A/D	Dominant
A/A	Abundant
A/F	Frequent
A/O	Occasional
A/R	Rare

The DOMIN scale may be used if preferred, and in this case the numeric codes are D/1 – D/10.

- Small scale habitat information is added using standard codes separated by commas. Each code should be entered in full, thus an oak twig is “CQ,CTw” and not “CQ-tw” as may seem more obvious.

The full list of codes is included in the Codes worksheet of the input spreadsheet for reference. The spreadsheet cannot validate this information so it is up to you to get it right. The most commonly used codes are shown below, and the full list is in Appendix A2 (substrates) and A3 (positions).

Trees		Stone types		Position	
CAc	<i>Acer campestre</i> (field maple)	SB	Basic rock	Aq	Aquatic
CAe	<i>Aesculus</i> (horse chestnut)	SBa	Basalt	Ma	Maritime
CAp	<i>Acer pseudoplatanus</i> (sycamore)	SGr	Granite		
CAI	<i>Alnus</i> (alder)	SLm	Limestone	PBo	Boulder
CBt	<i>Betula</i> (birch)	SMa	Marble	PBr	Bridge
CCo	<i>Corylus</i> (hazel)	SBr	Brick	PBw	Boundary wall
CCt	<i>Crataegus</i> (hawthorn)	SMo	Mortar	PRtw	Retaining wall
CFg	<i>Fagus</i> (beech)	SCo	Concrete	PPa	Path
CFx	<i>Fraxinus</i> (ash)	SSd	Sandstone	PPe	Pebble
CLx	<i>Larix</i> (larch)	SSh	Shale	PWs	Window sill
CP	<i>Pinus</i> (pine)	SSI	Slate	PW	Wall
CPp	<i>Populus</i> (poplar)				
CPr	<i>Prunus</i> (plum etc.)				
CQ	<i>Quercus</i> (oak)				

CSx	<i>Salix</i> (willow)	Lignum		Churchyards	
CSa	<i>Sorbus aria</i> (whitebeam)	LTs	Tree stump	XBw	Boundary wall
CSm	<i>Sambucus</i> (elder)	LWT	Worked timber	XPa	Church path
CSb	<i>Sorbus aucuparia</i> (rowan)	PFp	Fence post	XTw	Church tower
CTi	<i>Tilia</i> (lime)	PFr	Fence rail	XM	Monument / memorial
CU	<i>Ulmus</i> (elm)	PGp	Gate post	XX	Church building
CTw	Twig	PGt	Gate	XY	In churchyard

- Unconfirmed records should be included but put to genus only, or if even this is not known to Lichen Unidentified. Identification notes and the species it may be should be included in the record comments.
- You may find it quicker to enter all the species first and then go back to add any additional information such as substrate, scale habitats and notes. This also provides an opportunity to check for input errors as it will be obvious if the species name or number has been entered incorrectly.

4.6 Records of absence

Notes of species searched for but not found can be included in the spreadsheet, but they must be clearly highlighted in colour to ensure that they are imported as “zero abundance” records. Please include further details in the comments field.

4.7 On completion

- Once a spreadsheet is complete it can be stored in a smaller form to save space, and this can then be easily emailed as an attachment or manipulated for inclusion in a survey report.
 - Select the rows to be saved, including the title row at the top.
 - Copy (Edit – Copy, or Ctl+C).
 - Position the cursor in the top left corner (cell A1).
 - Paste the values only (Edit – Paste Special – Values).
 - Delete the unused rows, down to (and including) the red bar at row 4000.
 - The 2nd and 3rd worksheets, Codes and BLS List, are no longer needed so delete them by selecting each in turn at the bottom of the screen (Edit – Delete Sheet)
 - Save this smaller spreadsheet under a different file name, using a logical sequence so that you can find it again (File – Save As).

The new spreadsheet contains just the data, without the formulae, lists or any validation. You will not be able to add further records.

- Before emailing it, you may also want to zip the spreadsheet to make it even smaller. There are several ways to do this, including using WinZip or Sending to Compressed File.
- To use the spreadsheet as a way to store your own records you might want to delete unused columns, remove the colours from the header and green columns, and sort it into location or species order. All these are easily done in Excel, and the Help function includes tutorials to show you how. You can also copy the species list and conservation status to a Word document, such as a survey report, where the selected cells will be held as a table.
 - Before doing any of these, be sure to have compressed the spreadsheet and saved it under a different name first.

4.7 Printing the spreadsheet

- To print the spreadsheet
 - Hide any columns you don't need (click anywhere in the column and then Format – Column – Hide)
 - Use the mouse to select the block of cells you want to print and set the print area (File – Print Area – Set Print Area). Do not include the top row of column headings as these are already set up to print as titles.
 - Use Print Preview (File – Print Preview) to see how it will look when printed, and then use Setup adjust the margins and reduction accordingly (Setup – Margins, Setup – Page). Set it to fit 2 pages wide if you have a lot of detail to display, or 1 page wide if you have hidden a lot of the columns. Check that it is not being reduced to less than 60% normal size (shown on the Page tab) as that makes it unreadable.
 - Click on Print from Print Preview or the main spreadsheet to send it to the printer.

5. Recorder 6

Recorder 6 (known as R6) is a sophisticated system and needs a modern PC and some computing skills, or at least a willingness to learn, to run it successfully. It can be very useful to lichen recorders who want to manage their own database and produce their own site lists and maps, but may not be suitable for everyone and simpler systems are available. If you choose to use an older system, such as BioBase, AditSite, Recorder 2002 or MapMate, you should take advice from the BLS first as there may be issues of compatibility that you need to be aware of.

The current version is 6.18 and any earlier versions should be upgraded to this level and kept up to date with future upgrades as they are released. Further information on Recorder 6 is available from the Recorder website (<http://jncc.defra.gov.uk/default.aspx?page=4592>).

Data can be entered directly through R6 Recording Cards, or imported from the BLS spreadsheet. A zip file containing the necessary rucksacks, recording cards and import templates can be supplied when you install the system. They will work best if you have the same set up as the central system, as follows:

- Taxon Dictionary – all lichen records should be entered using the British Isles List of Lichens and Lichenicolous Fungi. Please do not use the default FUNGI and LICHEN list as this is not under BLS control and is very out of date.
- Sites – held under the appropriate vice county in the hierarchy
- Surveys – a separate survey for each vice county
- Substrates, Scale Habitats and Abundance – these should be set up by importing the dummy data supplied by BLS to ensure the correct coding.

Soon we also hope to be able to supply Recorder users with a set of people.

Much of the reporting and mapping you will need can be done using the standard XML reports, Report Wizard and mapping functions in Recorder 6. Additional reports and some other useful utilities are available from BLS, so please ask if there is anything you need. The mapping can be enhanced by importing VC polygons and ordnance survey maps, or by exporting to DMAP (see www.dmap.co.uk).

6. Mapping Scheme

The 10km Mapping Scheme database is maintained by Prof. Mark Seaward at Bradford University and is the main source of lichen distribution maps for the British Isles. Although a copy of the data is now kept in the R6 database, any queries and requests for maps should continue to be directed to Mark Seaward and records supplied to the Recorder 6 database should also be sent to him for inclusion in the Mapping Scheme.

Appendix A Substrate and Small Scale Habitat codes

A1 Substrate codes

On record cards	In database	Description
Br	Bry	Bryicolous (on bryophytes)
	Bry+Lig	
C	Cort	Corticolous (on bark)
CB	Cort+Bry	
CL	Cort+Bry+Lig	
	Cort+Lig	
	Cort+Met	
CS	Cort+Other	
	Cort+Sax	
	Cort+Sax+Bry	
	Cort+Sax+Bry+Lig	
	Cort+Sax+Lig	
	Cort+Sax+Lig+Met	
	Cort+Sax+Met	
	Cort+Sax+Met+Other	
	Cort+Sax+Other	
	Cort+Sax+Terr+Lig	
	Cort+Terr	
	Cort+Terr+Bry	
	Cort+Terr+Bry+Lig	
	Cort+Terr+Lig	
	Cort+Terr+Sax	
	Fo	
Lc or Lic	Lic	Lichenicolous (on another lichen)
Lg	Lig	Lignicolous (on wood)
	Lig+Met	
	Lig+Other	
M	Met	Metalliferous (on metal)
	Other	
S	Sax	Saxicolous (on stone)
SB	Sax+Bry	
SL	Sax+Bry+Lig	
	Sax+Lig	
	Sax+Lig+Met	
SM	Sax+Lig+Met+Other	
	Sax+Lig+Other	
	Sax+Met	
	Sax+Met+Other	
T	Ter	Terricolous
TB	Terr+Bry	
TL	Terr+Bry+Lig	
	Terr+Lig	
TS	Terr+Other	
	Terr+Sax	
	Terr+Sax+Bry	
	Terr+Sax+Bry+Lig	
	Terr+Sax+Lig	

Note: substrate is here used in the sense of substratum, the surface on which the lichen is growing.

A2 Small scale habitat codes

On record cards	In database	Description
Corticolous		
Ab	CAb	<i>Abies</i> (fir)
Ac	CAC	<i>Acer campestre</i> (field maple)
Ae	CAe	<i>Aesculus</i> (horse chestnut)
Al	CAI	<i>Alnus</i> (alder)
Ap	CAp	<i>Acer pseudoplatanus</i> (sycamore)
Apl	CApl	<i>Acer platanoides</i> (norway maple)
Bt	CBt	<i>Betula</i> (birch)
Bx	CBx	<i>Buxus</i> (box)
Ce	CCe	<i>Cedrus</i> (cedar)
	CCf	Conifer
Cl	CCI	<i>Calluna</i> (heather)
Co	CCo	<i>Corylus</i> (hazel)
Cp	CCp	<i>Carpinus</i> (hornbeam)
Cs	CCs	<i>Castanea</i> (chestnut)
Ct	CCt	<i>Crataegus</i> (hawthorn)
Cy	CCy	<i>Cytisus</i> (broom)
Eu	CEu	<i>Euonymus</i> (spindle)
Fg	CFg	<i>Fagus</i> (beech)
Fx	CFx	<i>Fraxinus</i> (ash)
Ix	CIx	<i>Ilex</i> (holly)
Jp	CJp	<i>Juniperus</i> (juniper)
Ju	CJu	<i>Juglans</i> (walnut)
Li	CLi	<i>Liriodendron</i> (tulip tree)
Lx	CLx	<i>Larix</i> (larch)
Ma	CMa	<i>Malus</i> (apple)
My	CMy	<i>Myrica</i> (bog myrtle)
No	CNo	<i>Nothofagus</i> (southern beech)
P	CP	<i>Pinus</i> (pine)
Pi	CPc	<i>Picea</i> (spruce)
Pl	CPI	<i>Platanus</i> (plane)
Pp	CPp	<i>Populus</i> (poplar)
Pr	CPr	<i>Prunus</i> (plum etc.)
Pra	CPra	<i>Prunus avium</i> (wild cherry or geam)
Prp	CPrp	<i>Prunus padus</i> (bird cherry)
Prs	CPrs	<i>Prunus spinosa</i> (blackthorn)
Pt	CPt	<i>Populus tremula</i> (aspen)
Py	CPy	<i>Pyrus</i> (pear)
Q	CQ	<i>Quercus</i> (oak)
Qi	CQi	<i>Quercus ilex</i> (holm oak)
Rh	CRh	<i>Rhododendron</i>
Rs	CRs	<i>Rosa</i> (rose)
Ru	CRu	<i>Rubus</i> (bramble)
Sa	CSa	<i>Sorbus aria</i> (whitebeam)
Sb	CSb	<i>Sorbus aucuparia</i> (rowan)
Sm	CSm	<i>Sambucus</i> (elder)
Sx	CSx	<i>Salix</i> (willow)
Ti	CTi	<i>Tilia</i> (lime)
Tx	CTx	<i>Taxus</i> (yew)
U	CU	<i>Ulmus</i> (elm)
Ux	CUx	<i>Ulex</i> (gorse)
Vm	CVm	<i>Vaccinium myrtillus</i> (bilberry)
Lignicolous		
	LAc	Lignum - <i>Acer campestre</i> (field maple)
	LAe	Lignum - <i>Aesculus</i> (horse chestnut)

On record cards	In database	Description
	LAl	Lignum - <i>Alnus</i> (alder)
	LAp	Lignum - <i>Acer</i> (sycamore)
	LBt	Lignum - <i>Betula</i> (birch)
	LCf	Lignum - conifer
	LCo	Lignum - <i>Corylus</i> (hazel)
	LCs	Lignum - <i>Castanea</i> (chestnut)
	LCt	Lignum - <i>Crataegus</i> (hawthorn)
	LFg	Lignum - <i>Fagus</i> (beech)
	LFx	Lignum - <i>Fraxinus</i> (ash)
	Llx	Lignum - <i>Ilex</i> (holly)
	LJp	Lignum - <i>Juniperus</i> (juniper)
	LJu	Lignum - <i>Juglans</i> (walnut)
	LP	Lignum - <i>Pinus</i> (pine)
	LPc	Lignum - <i>Picea</i> (spruce)
	LPp	Lignum - <i>Populus</i> (poplar)
	LPr	Lignum - <i>Prunus</i> (plum, cherry etc.)
	LPt	Lignum - <i>Populus tremula</i> (aspen)
	LQ	Lignum - <i>Quercus</i> (oak)
	LR	Rotting wood
	LSb	Lignum - <i>Sorbus</i> (rowan)
	LSm	Lignum - <i>Sambucus</i> (elder)
	LSx	Lignum - <i>Salix</i> (willow)
	LU	Lignum - <i>Ulmus</i> (elm)
	LUx	Lignum - <i>Ulex</i> (gorse)
	LWT	Worked timber
Metal		
	MCu	Copper
	MCuR	Copper run-off
	MFe	Iron
	MFeC	Cast iron
	MFeR	Ferrous run-off
	MPb	Lead
	MPbR	Lead run-off
	MZn	Zinc
	MZnR	Zinc run-off
Saxicolous		
	SA	Siliceous (acid) rock
Asb	SAsb	Asbestos cement
	SB	Basic rock
Ba	SBa	Basalt (inc. dolerite, andesite, whin)
Br	SBr	Brick
Ce	SCe	Cement
Ch	SC	Chert
Co	SCo	Concrete
Ep	Sep	Epidiorite
Fl	SFl	Flint
Gb	SGb	Gabbro
Gn	SGn	Gneiss
Gr	SGr	Granite
Ir	SIr	Ironstone
Ld	SLd	Dolomitic or magnesian limestone
Lm	SLm	Limestone
Ma	SMa	Marble
Mo	SMo	Mortar
MS	SMS	Mica Schist
PI	SPI	Plaster

On record cards	In database	Description
Q	SQ	Quartz
Sc	SSc	Calcareous sandstone
Sd	SSd	Sandstone
Se	SSe	Serpentine
Sch	SSch	Schist / schistose
Sh	SSh	Shale
Sl	SSI	Slate
Ta	STa	Tarmac / Asphalt
Ti	STi	Tile
Tf	STf	Tufa
Other		
	OBo	Bone
	OCl	Cloth
	OFP	Faecal pellet
	OG	Glass
	OLt	Leather
	ONR	Nutrient enriched
	OPa	Paint
	OPI	Plastic
	ORF	Roofing felt
	ORu	Rubber
	OSh	Shell
	OTh	Thatch
Terricolous		
	THm	Heavy-metal contaminated soil
	TP	Peat
	TR	Soil on rock or wall
	TS	Sand
	TSs	Shell sand

For lichenicolous species the lichen hosts are coded as Z followed by the BLS number of the host species, e.g. Z0674 for *Lecanora rupicola*.

A3 Position codes

On record cards	In database	Description
Corticolous		
	CRT	Root
	CTb	Branch / bough
	CTr	Trunk
Tw	CTw	Twig
Lignicolous		
	LDs	Lignum - standing dead tree
	LDf	Lignum - fallen dead tree
	LRt	Lignum - tree root
	LTs	Lignum - tree stump
	LTr	Lignum - trunk of living tree
Saxicolous		
Bo	SBo	Boulder
Ch	SCh	Chipping
Pe	SPe	Pebble (or shingle)
	SSc	Scree
	SCI	Inland cliff
Aquatic		
	Aq	Aquatic
	AqB	Brackish
Maritime		
	Ma	Maritime
	MaCl	Maritime cliff
	MaD	Maritime dunes
	MaLi	Maritime littoral zone (below HWM)
	MaSh	Maritime shingle beach
Buildings and man-made structures		
	PB	Building
Br	PBr	Bridge
Bw	PBw	Boundary wall
	PCo	Cobbled path or road
	PDp	Drainpipe
Fp	PFp	Fence post
	PFr	Fence rail
Gp	PGp	Gate post
Gt	PGt	Gate
	PNB	Notice-board
Pa	PPa	Path
Pav	PPav	Paving stones
	PRb	Rubble
	PRf	Roof
	PRn	Ruined building
	PRT	Roof tile
	PRTw	Retaining wall
	PSe	Seat / bench
	PSt	Steps
	PTu	Turf
	PW	Wall
Ws	PWs	Window sill
Churchyards		
Be	XBe	Bench or seat
Bu	XBu	Buttress
Bw	XBw	Boundary wall
Ch	XCh	Chancel
Cht	XCht	Chest tomb

On record cards	In database	Description
Cl	XCl	Cloister
Cof	XCof	Coffin tomb
Cop	XCop	Coped tomb
CP	XCP	Chamfered plinth
Cr	XCr	Cross
CrL	XCrL	Wooden cross
Ft	XFt	Footstone
Gp	XGp	Gatepost
Gt	XGt	Gate
Gu	XGu	Gutter at base of church
Hd	XHd	Headstone
Hg	XHg	Hogback
K	XKb	Kerb
LB	XLB	Leaping board
Lc	XLc	Lightning conductor
Lgr	XLgr	Ledger
M	XM	Monument / memorial
Nv	XNv	Nave
Pa	XPa	Church path
Ped	XPed	Pedestal tomb
Po	XPo	Church porch
Pq	XPq	Plaque
Rf	XRf	Church roof
Rtw	XRtw	Retaining wall
SC	XSC	String course
St	XSt	Steps
T	XTt	Table tomb
Tw	XTw	Church tower
Wm	XWm	War memorial
Ws	XWs	Church window sill
•	XX	Church building
	XXE	East end of church
	XXN	North side of church
	XXS	South side of church
	XTN	North transept
	XTS	South transept
	XXW	West end of church
✓	XY	Churchyard
Aspect		
\	\	Sloping surface
^	^	Horizontal surface (top)
>	>	Vertical surface
>E	>E	East facing
>N	>N	North facing
>S	>S	South facing
>W	>W	West facing