

## LOOKING AFTER A LICHEN COLLECTION

All lichen revisions, floras, and distribution maps rely on herbarium specimens, many of them in private collections. Any good collection deserves to be maintained in perfect condition, and ultimately to be made available for future generations of lichenologists. This article suggests some ways of curation, which might be relevant to private collectors and to small public herbaria.

### Why collect lichens?

Reasons include: 1. to identify species that cannot be identified in the field, 2. to provide a voucher that can be checked in the future if there is any doubt (as there often is), or if taxonomic concepts change (as they often do), and 3. to provide material that can be used when preparing revisions, or to assist in identification of other specimens.

### When to collect

This is a difficult subject, and beyond the scope of this article, but collection should not cause scientific or aesthetic damage. Local experience of the abundance and ecology of a species is the best guide when deciding what to collect. Follow the British Lichen Society Code of Conduct.

Learning uncommon species in a public herbarium also helps to avoid over-collection. Public herbaria should welcome careful visitors, but their rules may prevent them from giving material on loan to private individuals.

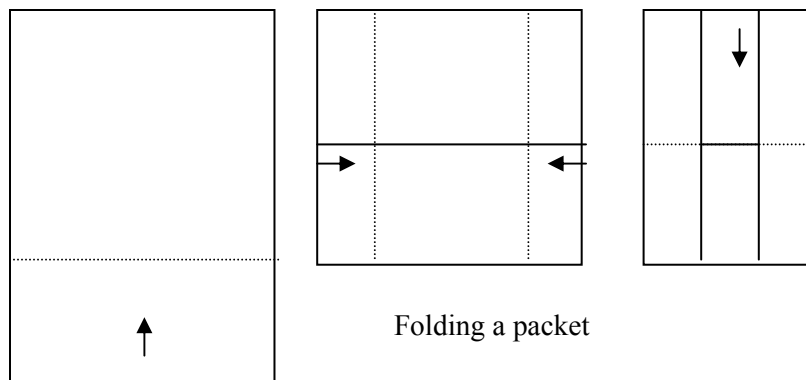
### Field collection

It is useful to collect into packets folded from a good quality paper such as Croxley Script; there is plenty of space to write data on the front with a pencil, and the specimen can stay in this packet until it is identified. Ordinary photocopying paper will disintegrate too easily on a wet day. At home, specimens must be dried as soon as possible at room temperature to prevent discolouration and mould growth.

### Housing the specimen

Most lichens need no special preparation. Very brittle specimens of large fruticose or foliose lichens (such as *Peltigera*) can be pressed very lightly before housing them in a packet: hold the specimen with long forceps (not your fingers!) in the steam immediately by the spout of a boiling kettle for a second or two until it 'wilts', then immediately press gently between blotting paper for a few seconds. For crustose specimens growing on soil, paint the dry, cut soil surface with some Unibond PVA adhesive diluted with a little water, then leave to dry.

Most specimens can be housed in packets, but boxes and even herbarium sheets may be needed for the largest. A packet can be made from an A4 sheet by making four folds in it: 1. fold down one end by about 95 mm, 2. fold in each side by about 35 mm, 3. fold down the free edge so that it very nearly reaches the bottom. This packet gives space to write or type data on the front. There is no advantage in using a smaller packet; if the specimen is very small, place it in a mini-packet inside the larger one. Large collections can either be placed in a larger packet, or divided between two A4 packets (labelled so it is clear they are parts of the same collection). Some collectors fold the packet so that the side pieces are projecting backwards, but here lichen fragments can fall out when the packet is opened.



Porina rosei Sérus.

WALES: Monmouthshire (V.C. 35), near Chepstow, St Arvans,  
Lower Martridge Wood. Alt. 65 m. On dry, shaded bark on trunk  
of Taxus baccata in woodland.

National Grid: 31/524.967

Date: 15 January 1997

Collector: A. Orange 11241

#### Basic printed data

Data can be written on the front of the packet (before the lichen is put inside) using a permanent and water-resistant ink. Rotring ink is suitable, ballpoint is not. There is no need to use messy gummed labels. Word processors avoid the problem of illegible handwriting (it can be fun to decipher difficult handwriting on one specimen collected long ago, but not on 100 specimens). Packets can be printed before they are folded. A template can be designed to fit the data into the available space, and guide marks can be incorporated to assist in folding. If specimen data are stored on a database, it should be possible to print a packet directly from the database.

Ideally, all materials used should be of conservation grade, designed to last indefinitely and not damage the specimen. Acid-free paper is essential in public herbaria, but unfortunately this may be too expensive for the individual. Ideal: 100% cotton paper. Compromise: a good quality paper such as Croxley Script (not acid-free). Not suitable: newspaper, gummed envelopes. Inside the packet, specimens can be placed in an open fold of tissue paper for protection (there is no need to wrap them up in tissue, and they are a nuisance to unwrap). Use 100% cotton tissues, which are not expensive. Small specimens can be glued to a piece of acid-free card placed inside the packet. Very fragile specimens should be placed in a small box or glued inside a shallow card tray, which is housed within the packet.

Basic collection data include (in the British Isles): vice-county (even if the modern county is recorded as well), locality, substrate and habitat, grid reference (8-figure is recommended for interesting records, and accurate GPS readings can provide these), date, collector. All basic data must be on the packet, and not merely in a notebook or a database. Additional information, such as identifications, or details of microscopic features and chemical tests, can be written on a slip of paper and placed inside the packet. If the slip carries the collection number of the specimen, there is less chance of it becoming accidentally separated from the specimen.

#### **Collection numbers**

These are invaluable for identifying individual specimens in reports, publications, databases, on microscope slides and on illustrations, and I would encourage everyone to use them. Collectors often use a series of numbers from 1 onwards throughout their lives (start from 100 if '1' seems silly), or may use the year as a prefix, such as 03-1, 03-2 etc. Numbers can be recorded in a series of notebooks or on a database. Any system should be simple, the important thing is that each specimen that will be kept has a unique number. Either assign a number soon after returning from the field, or when the specimen enters the collection.

Lepraria incana	Smith 10547
det. J. Bloggs 2003	

Examples of  
annotation slips

Thin-layer chromatography. March 2003.	J. Bloggs Plate no. 317/5
divaricatic acid nordivaricatic acid (trace)	Smith 10547

### **Coping with name changes**

The most useful arrangement for lichens is by alphabetical order of name. Lichen name-changes resulting from changes of generic position, resurrection of older names, and so on, are frequent, so that even a small herbarium will accumulate specimens of the same taxon under different names. One way to deal with this is to file specimens of one species after a card which has the accepted name written on it.

If a specimen is reidentified, one can write the new name on the front of the packet, but this is messy and there may not be enough space if more changes occur. An alternative is to make a new packet for the specimen; always keep the original printed data (cut from the front of the old packet) and place it inside the new packet as well.

### **Storage**

Packets can be stored upright in boxes or drawers. Lichens must be kept in a dry atmosphere ( $50 \pm 5\%$  humidity), to prevent mould growth and attack by insects. Booklice (psocids) are common, and will quietly damage lichen specimens in a short time. If insects are seen in a collection, seal specimens inside a polythene bag and place in a deep freeze at  $-20^{\circ}\text{C}$  for three days. Then remove and allow to stand for a day to return to room temperature before removing the polythene (otherwise they will become damp with condensation and be even more suitable for a booklouse meal).

### **Postage**

Specimens should be posted in sturdy boxes to avoid crushing of fragile specimens and crumpling of packets. Folding boxes can be purchased from post offices.

### **Where do you see your collection in 100 years time?**

Specimens supporting important records that are to be cited in papers should ideally be donated to a public herbarium, to ensure they are available to the scientific community. However, the ultimate destination of the whole of a good private collection is surely a public herbarium, either local, regional or national, so the collector should plan ahead to ensure that his or her good work is not lost to lichenology. Most public herbaria will welcome good collections, as long as they meet their acquisition policy. Few herbaria can afford enough curatorial staff, and a well-curated collection that needs minimal work will be very welcome, and specimens can be made available to the public quickly.

### **Suggested materials**

100% cotton paper for packets: 100% Cotton Archival Rag Endleaf,  $813 \times 1118$  mm, 120 gsm, pack of 100; the final cost is approximately 10.5 p per A4 sheet (including VAT), including the cost of cutting each sheet down to ten A4 sheets. Conservation by Design Limited, Timecare Works, 5 Singer Way, Woburn Road Industrial Estate, Kempston, Bedford MK42 7AW. [www.conservation-by-design.co.uk](http://www.conservation-by-design.co.uk). (I have not yet seen this paper; a brand of cotton paper with which I am familiar has recently been discontinued.)

100% cotton card: 100% Cotton Herbarium Mounting Cartridge, 220 gsm, 260 x 415 mm. Conservation by Design (address above).

100% cotton tissues: Cotton Soft 100% Organic Cotton Facial Tissue, The Cloudy Bay Cotton Company Limited, Cambridge House, 6 Oakfield Road, Harpenden, Herts. AL5 2NE. [www.cloudybaycotton.com](http://www.cloudybaycotton.com). Stocked by some supermarkets (such as Co-op). Distributor: Robinson Young Limited, Bury St. Edmunds, tel. 01284 766261.

compromise paper (not acid free): Croxley Script, 85 gsm (from stationery suppliers; 500 sheets for £16.66, equivalent to 3.3 p per sheet).

glue: a PVA glue such as Unibond is recommended for herbaria. It can be applied with a brush, and the brush washed thoroughly in water after use. For binding soil, dilute glue to a suitable consistency with water, and keep in a sealed container, shaking before use.

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