

HAMPSHIRE FLORA GROUP HERBARIUM WORKSHOP 9TH FEBRUARY 2019 FURTHER READING AND USEFUL REFERENCES

LINKS

The electronic version of this paper is at [HTTPS://HANTSPLANTS.ORG.UK/DOCS/HERBARIUM WORKSHOP NOTES 2019.PDF](https://hantsplants.org.uk/docs/herbarium_workshop_notes_2019.pdf).

[RBGE: INTRODUCTION TO HERBARIA, HOW THEY WORK AND WHAT THEY ARE FOR](#) (video)

[100 USES FOR A HERBARIUM \(WELL, ACTUALLY, 72\)](#)

[BSBI CODE OF CONDUCT](#)

[ADVICE ON COLLECTING AND PRESSING BY ARTHUR CHATER](#)

[SARAH WHILD'S INTRODUCTION TO PRESSING, AND MOUNTING FOR PERSONAL USE](#) (video)

[MORE RESOURCES...](#)

LEICESTER HERBARIUM MOUNTING NOTES

11 Points to Remember when Mounting Herbarium Specimens

Points that may vary between institutions are marked **in red**, with footnotes.

1. Leave a border of **at least a quarter of an inch**¹ between the edge of the specimen and the edge of the sheet.
2. Mount the label in the **bottom right-hand corner**² of the sheet, leaving a border of no more than a quarter of an inch between the edge of the label and the edge of the sheet.
3. Glue the whole of the back of the label and press down thoroughly, unless the specimen placement means you need to leave the label as a loose flap, attached only in the right-hand corner.
4. Mount loose seeds & plant material in a capsule and glue the back of the capsule to the sheet, and press down thoroughly, before you put the material in and fold the flaps over.

¹ Most people would consider as little as a quarter of an inch as pushing it!

² This is the commonest, but will vary according to institution. HCMS favours bottom left.

5. Fold the capsule flaps in the order W/E/S/N.
6. Check the specimen is correctly attached **by holding the sheet upside down**³.
7. Remember, where possible, to mount the specimen so that some leaves show the top surface, and some the underside.
8. Remember how the specimen will be used, and try to make sure any distinguishing characters present can easily be seen (or rather, don't obscure them in your mounting!)
9. If you have to cut a stem and mount the cut piece adjacent, mark both the cut ends with the same lower case letter ('a' for the first etc...)
10. When **strapping, it's fine to moisten the whole strap, but don't get it dripping wet**⁴ and only press down on each end of the strap – don't apply pressure to any plant material below the strap. The strap should be attached to the sheet, not to the specimen.
11. If possible, do not mount all specimens bang in the middle of the sheet – think of how a pile of specimens will sit well in the folder, and try to distribute the specimens onto the sheets with this in mind, without overdoing it!

TOOLS AND MATERIALS

Collecting

A handbook. If you are collecting for a herbarium, you need to know which features are diagnostic and must be either represented in your collection, or documented in the field. For this, a good “technical” flora is best, but it doesn't have to be the most up to date; earlier editions of Stace or even Clapham, Tutin and Warburg will do the job at the family and genus level. You may be able to glean what you want from a good popular handbook like Rose or Streeter, but they won't necessarily tell you everything. If you are collecting in a particular group like a genus, you will probably learn what's necessary for that group (for instance, many *Crocus* need corms for identification and tepal colour notes; *Hieracium* need a plant down to the top of the taproot and various notes on colour of leaves and styles). There are notes on many groups in Arthur Chater's advice notes (see Links above), and more information is published annually in the BSBI's Yearbook.

Secateurs. Essential if you are collecting woody material. All good gardening shops!

Scissors can sometimes be useful for detaching more delicate plant parts. See below on Preparation and Pressing.

Containers. The traditional collector's tool was a vasculum, or in less exalted terms, a tin box. If you read some modern advice on keeping every collection separate, you might wonder how people ever coped in the past! However most collecting is now done into bags of some sort, and for most plants self-sealing or zip-sealing plastic bags are fine and available from most supermarkets, and allow collections to be physically separated without breaking the bank. Some things really are best put straight into a press in the field (e.g. *Taraxacum*): see below.

³ Only do this once to your own specimen, on preparing it!

⁴ The linen tape straps we use in Hampshire are adhesive on contact and do not require wetting. The rest of the advice is good, but sometimes you will need to press a strap down in the gap between two branches of a stem where it spans them.

Big prickly specimens like *Rubus* or *Rosa* are best separated in plastic carrier bags, if you can still get them.

You may need to collect certain parts (detachable flowers, seeds etc.) into separate little packets so that they don't end up as a powder or sludge in the bottom of the bag. Carry some sheets of paper that you can fold to make packets (ordinary copy or printer paper will do at this stage as long as you'll be decanting them quickly). Make sure the packets are given an identifying code like the main parts of the specimen and cross-referenced in your notes.

Tags. You need a stock of label tags with string ties to attach to your specimens. You can get these from stationery shops or the Internet (about £9 for 500). The labels can be small; they only need to be big enough to hold an identifying number or code.

Notebook and writing implement. This is absolutely essential. You need to record all the usual details for a plant record to do with "What?, Who? When? Where?". You also need to add any useful details you can't carry away with you (trunk sculpturing, habitat, community description) or may disappear in the process of preservation (colour, size of flora parts, gland details). Small notebooks are available cheaply from stationery stores or online. Given the British weather, you may consider getting a waterproof notebook. They are rather more expensive, but Go Outdoors does the very pocketable 3" x 5" "Rite in the Rain" 50-sheet notebook for c. £4.50, and Amazon advertises Snugpak notebooks in a range of small sizes from £3.30 to £4.50. Waterproof pens are often sold for these books but they are expensive, and I've never found any advantage over using a pencil in the rain.

Preparation and pressing

Dissecting tools. Once you get your material home you may need to prepare it in various ways involving trimming, cutting, detaching and squashing. It's worth having a simple dissecting kit for this that includes some small scissors and scalpels. A full basic dissecting kit will cost you about £16 from suppliers such as [Brunel Microscopes](#) or [Camlab](#) and will include spare blades etc., but you could go cheaper by buying the canvas roll (c. £2.50) and stocking it with just a few items: say, a straight-bladed scalpel, a convex-bladed scalpel, one pair of fine-pointed scissors and a few single-edged razor blades. (For squashing, a hammer does fine.)

Plant press. You can buy a purpose-made wire-mesh press with straps for about £50 from [Watkins and Doncaster](#), or about £70 from [NHBS](#). They are 3cm shorter than the standard size for herbarium sheets. There is a limit to how much you can put into them without straining them. The advantage of these models is that they are lightweight and portable for pressing in the field. The disadvantage will surely be obvious. You could try putting together your own, and people have suggested using kitchenware racks, but I'd say you're better off making a wooden frame press.

Commercial wooden frames of an appropriate size are almost unsourceable in the UK, and the best I've found are from the US-based [Forestry Suppliers Inc.](#) They do 12" x 18" open-back and closed-back presses which, by the time you've paid import duty and shipping, come out at about £60. For your money, you get some very long buckled straps which are a bit of an encumbrance (I've never tried filling a plant press to a height of 5 feet myself!) and a starter set of drying paper and ventilators. But at this point, why not consider making your own? Two pieces of ¼" or thicker plywood, four hardwood edge strips, some PVA glue, a couple of luggage straps with buckles and you're there. If you want an open-back model it's a bit more work but not impossible.

The third option (and the cheapest, as long as you already own the books) is a couple of big books with some weights on top (other big books, gold ingots, dead goats or whatever you have to hand). I've done this in the past but I'm not a big fan. I think a plant press with ventilators is better at

getting the plants to a suitable state in a shorter time in a more controllable fashion. But then, some plant press methods have their risks, too: it's easier to "overcook" plants if you're doing a rapid dry.

Now we come to consumables. If you are preparing specimens to go directly into one of the two Hampshire herbaria (Winchester or Portsmouth), talk to the curatorial staff: they may be able to help out from stocks.

Flimsies. Yes, it's possible to buy botanical "flimsies" whose size exactly matches up to standard presses, and they no doubt have other virtues that I've never quite grasped. Why not do what nearly everyone does and use – newspaper sheets! If your newspaper of choice is still a broadsheet you might need to trim it a bit. If you're tabloid, the sheets are a wee bit undersized, but that's not usually a great problem.

Drying paper. Botanical drying paper costs between £10 and £13 for 25 sheets from the main suppliers. 285x445mm blotting paper from Amazon, which is just a smidgin longer and narrower than the usual UK herbarium sheets, costs £18 for 50 sheets. The difference in drying ability is negligible, especially if you're using a press with ventilators. If you're really going into high production, the 610x860mm blotting paper from Preservation Equipment Ltd works out at about £90 for 100 sheets, each of which can be cut into four: the equivalent of £22.50 for 50 sheets, and a neutral pH medium. If you're leaving specimens in the press long enough that the pH of the drying paper matters, you're not doing it right!

Ventilators. Otherwise known as "corrugated cardboard". Ones made specially for plant pressing exist, but are just about impossible to obtain from UK suppliers and not worth importing from the US. You can buy A2 2mm corrugated cardboard sheets from somewhere like Amazon, cut them in two and trim their length a little bit with a Stanley knife and a steel rule, and you can have 20 for about £15. Better still, go to a specialist like [Kite Packaging](#) for the Half Europa size, buy a pack of 20 (minimum order), cut those in half and get a much better product (5mm double-walled) for close to £10 for 40. If you're prepared to order a bigger board size and do more slicing, that comes down to nearer £5 for 40.

Packing. When you have woody or bulky specimens, you may need to pack around the stems to prevent thinner material like leaves going crinkly in the early drying stages.

Mounting

The motto here is: "Acidity is the foe of long term plant preservation". (So are bugs and moulds, but those are for someone else to worry about.) Therefore it matters a lot whether your specimen is just going off to a referee for ID or being kept short-term in a personal collection, or whether it's going to be offered up to a herbarium.

Some of the big institutions would prefer to do the specimen mounting themselves, and if you send them mounted material they will probably re-mount it. Unfortunately resources in Hampshire don't stretch to this, so we do our own.

If you're preparing material to send around for second opinions, it's positively disadvantageous to mount on standard herbarium sheets: they are awkward and expensive to ship and to protect in shipping. And if you're simply collecting for private reference and have limited storage, you may decide you don't want big sheets either. If your collection really is short-term (a few years), you won't even have to worry about acid-free mounting media. (You might have to worry about bugs.) However once you start to collect for donation to a herbarium, you need to mount to archival

standards. Again, if you are planning to hand over specimens fairly quickly, talk to the institution first and they may be able to help with materials.

Mounting paper. Once a specimen is going into long-term archive, you really need to use professional mounting paper, which is acid-free and buffered. This eliminates one cause of deterioration. Mounting paper isn't cheap. Buying it a quire (24 or 25 sheets) at a time will cost you 28p-40p a sheet. For 100 sheets the cost is 25p-30p a sheet. This is from suppliers such as [Watkins and Doncaster](#), [NHBS](#) and [Preservation Equipment](#). There is no real alternative. Different parts of the world and even different suppliers in the same country have different standards for sheet size, and it's best to check that your supplier's matches the standard in use in your receiving institution.

Labels. Yes, these need to be acid-free, too. You can just annotate the mounting sheet, but some herbaria frown on this. If you want to print them from computer, then they work out rather expensive because of the minimum order quantities. For example, you can buy 100 sheets (1000 labels of a suitable size) from [Preservation Equipment](#) – for about £38! If you're going to write them out yourself, you can get a couple of suitable sizes from the same company on backing sheets that don't go through most printers. The smaller size come out at about £12.50 for 250 labels. You may prefer the designed-for-purpose herbarium ones rather than blanks, as they save you filling in all the headings and remind you of what you should be filling in. A pad of 100 should cost you £4-5. Try [Watkins and Doncaster](#) in the UK, or the [Herbarium Supply Company](#) in the US.

Linen tape. Some herbaria require specimens to be pasted onto the mounting sheet, rather than taped. Hampshire museums prefer taping. If you are passing material to a pasting institution, most of the companies mentioned so far will provide suitable paste.

You will find lots of varieties of tape sold by the botanical supplies companies, in different sizes of varying usefulness. Some require wetting, some don't. But you might as well buy bookbinders' linen tape. No wetting required – just cut the size of strip you need, peel and stick. Make sure to go for a brand, such as Lineco, which is guaranteed acid-free. Depending on the size of reel, it will cost you between £8 and £13 through Amazon and will last you a long time. If for some reason you really want a wettable tape, then go for [Preservation Equipment](#).

Despite what you may have read or seen elsewhere, NEVER, EVER, EVER USE SELLOTAPE!!!

Packets. You use these for seeds or any other detachable bits. You will probably have guessed by now that these have to be acid-free, too. You can buy made-up packets, some of them with adhesive backs, but it's easy to fold your own. Get acid-free archival paper (around 100gsm weight) from somewhere like Amazon. Don't buy cartridge paper: it's not suitable. A pack of 100 sheets will cost about £10 and will make 200-400 packets, depending on how big they need to be.

Genus covers. If you are keeping your own collection you may end up needing quite a few of these. But even if you are passing your specimens on fairly quickly, it's worth having a few in order to transport sheets around with a degree of protection. Species folders do not have a spine, and will comfortably accommodate a few sheets. Genus covers usually have a spine (varying depths are available), and will hold more. Depending on what you buy, how many you buy, and who you're dealing with, cost can vary from about 35p a folder to nearer £1. Check out the suppliers already mentioned for the best deal.