

RHS Herbarium guide to making Herbarium Specimens

RHS Garden, Wisley, Woking, Surrey GU23 6QB

April 2013

Collection:

Materials & tools:

Polythene bags

“Post-it” notes

Secateurs

Digital camera

RHS Colour chart

Tape measure



Select material typical of the plant rather than the largest leaf or flower; if the plant can spare it include all parts that will aid identification. Place the sample into a polythene bag along with an identifier. One could use a “Post-it” note, with details including a brief plant description with habit, dimensions, date and accession number plus anything else that seems relevant; but this could instead be a unique collection number with the corresponding notes made in a notebook. Photograph the plant label or identifier (this could be your “Post-it” note or ticket with collection number, etc. anything that will tie the image to the specimen) prior to photographing the plant; this will eliminate mistakes with identity later on. **Do not rely on memory!** Take several images including a wide shot of the habit, an intermediate shot showing foliage and flowers or other features and close-ups of the things that make the plant special, this may be the flowers but can also be variegated foliage, fruits or bark.

The more detail that you can add (ideally coupled with a photo), the more useful you will make the specimen, not only to yourself but to future botanists too. There is nothing more worthless than a specimen with no details! Restrict your collections to one specimen a bag as some plants tend to shed petals when picked and sorting out the correct petals to half a dozen similar cultivars at the end of a collecting session isn't an easy task!

Colour charting:

Comparing the colours of fresh material with the RHS colour chart will give a permanent reference. There will inevitably be colour loss or change; some cultivars can revert to the common colour of the original species during the drying process or as the specimen ages. Always use the chart out of direct sunlight or artificial light sources; beside a north-facing window is ideal. Select the nearest colour on the fan to the colour you



are trying to match and place the object under the hole in the colour patch so it can be matched to the surrounding colour. Once you are happy that the match is as close as you can get give it a descriptive name e.g. Bright Yellow and note the number of the fan segment e.g. 9 and the colour patch A to give a reference 9A. Record all colours that you think will be crucial in the plant description, many cultivars only differ in colour features.

Pressing:

Materials:

Pressing boards

Blotting paper

Corrugated card

Foam sheet

Straps

Tensioning bars



Pressing boards; these consist of a pair of 6mm thick plywood or hardboard sections cut to 310mm wide x 465 long

If you can get it, acid free 300gsm blotting paper is the best material for drying out specimens quickly which will give best preservation of colour and other characters, but newspaper can produce good results. **On no account be tempted to use embossed kitchen towel as the pattern will be impressed on the specimen!**

Corrugated card is available in various widths (300mm required) from packaging suppliers, unfortunately in large 75metre long rolls. However, as with other materials, this could be bulk-bought and shared. Lengths of 460mm required.

You will also need two 25mm wide x 1.5m long canvas luggage straps with sliding plastic buckles. Handy, but not crucial, are several sponge/foam sheets cut to format size.

Method:

Place two pieces of corrugated card (these put together, corrugation to corrugation) onto a pressing board and put on to this a double layer of blotting paper. You are now ready to lay out your specimen. Try to retain the natural shape of the plant, but make sure that at least one leaf and one flower are showing their under surfaces, these can either be turned-over on the plant or removed and pressed separately. Long-leaved or stemmed plants such as grasses and sedges can be folded over to fit the format and held in place with the ever-useful "Post-it".

When you are happy with the layout, and making sure that the identifying "Post-it" is with it, carefully place another couple of sheets of blotting paper on top. On to this place another two pieces of corrugated card (corrugation to corrugation as before), following on with the next specimen and so on, until complete. If a specimen is bulky a sheet of foam placed between the upper layer of blotting paper and the corrugated card above it is beneficial. Place the second pressing board on top and, positioning the straps c. 1/3 in from either end, tighten and apply as much pressure as you can. Further

pressure can be applied by using two tensioning bars (strips of wood 30mm x 12mm x 460mm long, bevelled at one end to facilitate pushing under the straps), inserted broad side down and then turned side on and pulled toward the edges of the press boards until the straps are very tight.

The ideal is to dry the sample as quickly as possible to retain form and colour so some type of low heat source is desirable but not essential, provided moisture is removed promptly. Heat can be provided by positioning the parcel of specimens above a radiator or placing in an airing cupboard. After 24 hours inspect the pressings, they probably will be in a rather floppy state, so be careful not to pull the specimen out of shape too much when lifting the blotting paper. If you notice any dog-eared leaves or petals these can be teased out at this stage using some rigid paper such as the edge of a "Post-it" note. Some say that that the damp paper and cards should be replaced with dry ones but, unless sodden or showing signs of mould, one can keep the originals on until dry. Retighten the straps and continue the drying for at least a week. Determining whether a specimen is dry can be difficult, but if you are unsure give it a bit longer in the press. Generally if the specimen lifts easily from the paper and feels rigid and light it is ok.

Mounting:

Materials:

Mounting card (we use Kent mounting card 190gsm) 267 x 419mm (acid-free preferred*) white /natural 175gsm to 200gsm

PVA glue (acid free)

Gummed linen hinging tape

*** Acid free is used because of its superior archiving qualities, colour retention especially**

Fragment pouches. These can be made by cutting an A4 sheet into 4 or 8 equal pieces (to A6/A7 size) and folding as shown in diagram:

Tools:

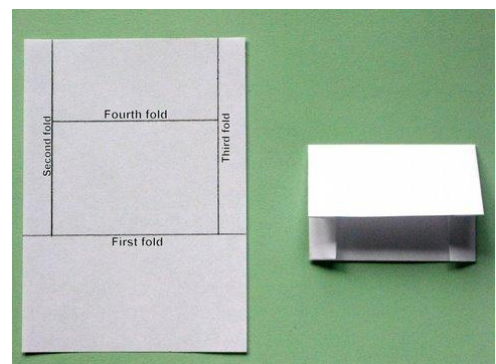
Scissors

Tweezers

Dissecting needles or cocktail sticks

Weights; sealable (zipper) polythene bags filled with dry sand or grit

Cardboard label template



Method:

Firstly place your cardboard label template (thin card cut to the size of the label format) at the bottom, right-hand corner of the mounting sheet and lay out your specimen making sure not to bend things away from their natural position. Spacing out any other pieces evenly make them easier to examine and pleasing to the eye. It is helpful to dissect a flower or fruit and arrange the parts in a row above the label template. Other fragments, e.g. seeds, petals, leaves or other bits that may be of interest can be placed in a fragment pouch and glued to the sheet, usually in the bottom left-hand corner.

When you are happy with the arrangement lift the main piece and lightly apply dabs of PVA adhesive to the underside, this can be done with deft touches from the bottle, or a bit more finely with a cocktail stick or dissecting needle dipped in a pool of glue. Take care not to apply too much in one place but try and secure most leaves, stems and flowers. Replace the glued part to its position; this must be done in one movement and without any adjustment once in place as this will smear the adhesive.

Place sandbag weights on top until the adhesive has grabbed the specimen, usually about 5 minutes, then, apply straps, made from the gummed lined tape, moisten these by licking, or if you prefer dab onto a wetted sponge (Sellotape, masking or electrical tapes should **never** be used), to the ends of stalks, flower stems, etc. These will keep the specimen in place if the adhesive does not hold (many plants have a waxy coating which tends to repel the glue).

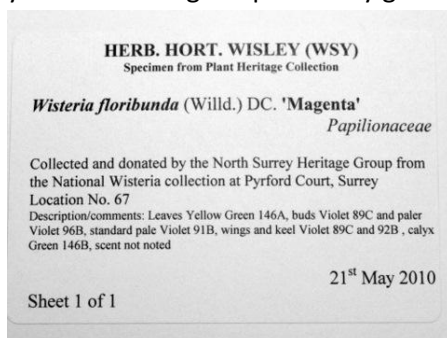
Legend:

Materials:

For computer users Avery format A4 series L7165 (8 per sheet) are ideal as labels. Again investing in archival quality, acid free labels will prevent problems later, such as yellowing and adhesive breakdown.

There are three essential pieces of information: first and foremost origin (including accession number and details such as wild collection, breeding, etc.), second the date of collection and third the collector's name. If only past collectors included these small details! We have had to refuse to take on collections that people have asked to donate to the Herbarium at Wisley due to the original collector having failed to include any information at all as to where or when the plants were collected.

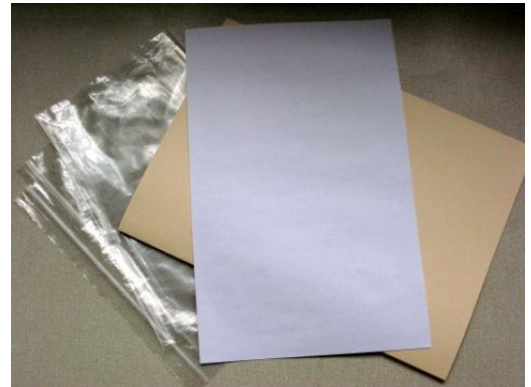
If preferred, details can be hand written on the mounting sheet rather than using a label, however you do it the legend preferably goes in the bottom right-hand corner of the sheet.



Above is a basic label, Common names can also be included, but never used instead of the Latin name.

The Latin name should be in bold italic with the author of the name used (to the right of the name) in plain font followed by the cultivar name contained in single quotes in bold plain font. Below that on the right is the family name also in italic, the main body text should be plain font, Times New Roman is the institutional preferred font. Always mark if the sheet is part of a large sample that has had to be mounted on more than one sheet i.e. Sheet 1 of 2, 2 of 3 and so on. Conversely, marked "sheet 1 of 1" implies that it is not part of anything larger.

Remember that your specimen is a valuable historical record and will be greatly enhanced by the detail on the label. Try and include anything you think relevant.



Archiving & Curating:

Materials:

Flimsies

Genus covers

Large format sealable (zipper) polythene bags

Deciding on how to file your collection is a matter of personal choice, adopt a system that makes the specimen easy to find. This can be achieved by filing alphabetically arranging the families in alpha order, followed by genera, then by species and so on.

Place the specimen in a flimsy, these are a protective cover made from acid-free 60gsm paper cut to twice the width of the mounting sheet and folded lengthways. Pencil the family e.g. *Papilionaceae* in the bottom-left corner of the flimsy along with the initial of the genus with the species and cultivar names e.g. *L. odoratus* 'Slap and Tickle' in the bottom-right corner, this will greatly help with filing and locating later. This is then placed with other specimens of the same genus into a genus cover; mark the cover with the family name in the bottom-left corner and genus bottom-right, and file.



Insect infestation can ultimately become a problem, as the picture on the right shows. Many ways of trying to combat this such as drenching the specimens in mercuric chloride or naphthalene, and more recently aerosol sprays such as Raid and Vapona have been deemed more dangerous to the user than the pest! A system of freezing has now been adopted by most major herbaria and is a technique that can be used easily at home. A routine of placing newly accessioned mounted specimens into the freezer for 36 hours prior to filing should be used. Always place the specimens into a sealed polythene bag for freezing. It is very important to keep the bag sealed during the thawing stage to prevent the specimen absorbing moisture from the atmosphere. By keeping the genus covers permanently in a sealed bag, with periodic freezing, say every year or sooner if any pests have been noticed, your collection should remain in tip-top condition.

Sources:

Preservation Equipment Ltd www.preservationequipment.com for linen tape (product no.533-1025), PVA adhesive (901-1008), zipper bags, genus covers, labels, etc.

Atlantis European www.atlantisart.co.uk blotting paper

Tim Farr Art Supplies www.timsartsupplies.co.uk mounting card

B & M Latex www.bandmlatexupholstery.co.uk for foam sheet (high density firm foam is best), this can be cut to size to order.

Watkins and Doncaster www.watdon.co.uk for dissecting needles, tweezers and general naturalist equipment

Fletchers Packaging Ltd www.fletcherspack.co.uk for corrugated card roll

The internet and your local DIY store are ideal for finding just about everything else

Further reading;

Bridson, D. and Forman L. (eds) *The Herbarium Handbook*. RBG Kew. ISBN 0 947643 45 1

On line:- http://www.herbarium.rdg.ac.uk/making_specimens/specimen_selection.html