

Putting specimens in the press

Normally specimens of flowering plants, ferns and gymnosperms are pressed and dried between sheets of newspaper (Advertiser size). Each specimen is laid out within a folded sheet, with either a field label or a collection number included within each sheet.

Branches should not exceed newspaper size (c. A3 size or 450 x 300 mm) and should be spread out where possible with a minimum of overlap. Tall thin specimens (e.g. grasses or sedges) can be folded in a V or N or M shape to fit this size.

Bulky parts may need splitting or sectioning. This is a good time to open out flowers to show their internal structures.

State Herbarium of South Australia Identification Service

Plants collected in South Australia from the 'wild' are identified for individuals, community groups, researchers from government departments and tertiary institutions, and consultants. Charges may apply at commercial rates.

Dried specimens may be submitted at the reception desk or forwarded to: The Manager,
State Herbarium of South Australia
Plant Biodiversity Centre
PO Box 2732, Kent Town, 5071.

Public Reference Herbarium Identifying a plant yourself

The Reference Herbarium is the main public-access area of the State Herbarium in the Plant Biodiversity Centre. It is a facility for those with at least some skills in plant identification. It consists of named specimens of most plants found in the wild in South Australia, arranged in plant families. Services available to enquirers include:

- Books about South Australian plants, produced by the staff and others that will help you identify your plant.
- Microscopes for closer study of specimens. A microscope is frequently necessary to observe features important for identification.
- Interactive computer keys are being developed and will eventually be available to users.

**The Reference Herbarium is open to the public
(9 am - 5 pm, Monday – Friday).**

Placing a piece of corrugated cardboard between each sheet of newspaper is desirable since this helps the specimens to dry.

After placing specimens in the press pressure is applied, usually by means of straps, to flatten the material. As the newspaper and air absorb moisture the plant gradually dries. Replace damp papers and provide good ventilation to avoid the specimens going mouldy. The faster the drying process the better the specimen quality.

Note: Fungi, mosses, liverworts and lichens are best collected in paper bags and dried without being pressed. Marine or freshwater algae require special methods. If you are interested in collecting any of these plant groups, contact the State Herbarium.

The State Herbarium of South Australia collection

The State Herbarium of South Australia collection is a rich sample in time and space of the State's plant, algal and fungal biodiversity. It is utilised by botanists as the main source of data and information for documentation of not only the flora of South Australia, but also, in conjunction with a global network of herbaria, that of Australia and the world. Its holdings of 925,000 preserved plant specimens come from all over the world and are valued at over \$43 million.

Botanists at the State Herbarium carry out research, predominantly on the Australian native flora, but also on those plants which have become naturalised through introduction from overseas or across our State borders.

Interstate and overseas botanists and others, including ecologists, agriculturists, horticulturists and forensic scientists, also consult and add to the collections.

Many specimens are added to the collection from collecting trips, both of a general nature and directed at research to improve the classification of plant groups. Others are donated by members of the public with a keen interest in developing their knowledge of the flora. Other important sources include exchange programmes with interstate and overseas herbaria and "voucher specimens" (see overleaf, under *Why collect a specimen*).

Collection and preservation of herbarium specimens



**State Herbarium of South Australia
Plant Biodiversity Centre**
Science & Conservation Directorate
Department for Environment & Heritage
Hackney Road, Adelaide SA 5000
Ph. 08 82229311

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**Department
for Environment
and Heritage**

Collecting a specimen

Do you have permission?

Before you even think about making a collection, make sure that you have permission to do so.

In the case of Reserves, Parks and Pastoral Land, you must obtain appropriate permits. Failure to do so may result in prosecution. On private land you should have permission from the owner.

Permits and information concerning legal requirements for plant collecting in South Australia can be obtained from:

Biodiversity Survey & Monitoring Section,
GPO Box 1047, Adelaide, SA 5001
Email: dehscientificpermits@saugov.sa.gov.au

Why collect a specimen?

Plant specimens are collected for a variety of reasons - to have a plant identified, to have a plant name verified, to serve as a voucher for survey or research work, for distribution records, and for general interest. Material to be preserved as permanent scientific records in a herbarium should be adequately pressed and labelled. Inadequate material is of little scientific value.

Voucher specimens are vital to ensuring casual or scientific observations on plants keep pace with any changes to their names resulting from improved knowledge of the flora. Without them the quality of scientific and other research is prone to decay. And so, for example, the Biological Survey of South Australia has lodged thousands of voucher specimens with the State Herbarium.

Making the collection

First assess the population and never remove more than a small proportion from a locality. Take care not to damage the plant or the population more than is necessary.

Bear in mind that identification of plants is usually based on flowers, fruits or other reproductive structures and that it is important to make as complete a collection as possible. Fragmentary or incomplete specimens are difficult to identify. A herbarium sheet is similar in size to a page of *Advertiser* newspaper and this can be used as a guide for the maximum size of any one specimen.

A specimen from large herbs, shrubs and trees

This should include representative types of foliage, flowers and

Field Identification Hakea rostrata

Location Mt Lofty Ranges; 2 km by road SE of Stirling on main road to Longwood. Region SA/SL

Latitude 34°45'26"S Longitude 135°23'20"E GDA94? y/n

[or Grid] Zone _____ E

N GPS

Frequency Common, localised population of many plants

Habitat Eucalyptus obliqua stringybark forest over a sparse shrub understory including Pultenaea daphnoides, Hakea spp., Acacia myrtoides, Sollya over diverse herbs and grasses, including Tetratheca pilosa, Prasophyllum, Drosera peltata, D. whittakeri on litter covered stony loam.

Habit Shrubs to 3.5 m high, many stemmed, with soft green shoots arising from the base. Flowers faintly sickly scented, white with pale yellow pollen.

Other notes Bees and flies frequenting and dipping into flowers. Growing with Hakea rugosa (Bloggs 234) and H. carinata (Bloggs 235). Occasional fruits gnawed, probably by black cockatoos seen in population the day before. "Turkey gobblers" (term long used by Stirling resident N. Able).

Collector(s) J. Bloggs 233 & M. Bloggs, A. Beecee

An example of an herbarium collector's field label

The position given in degrees should be deg/min/sec or deg/decimal min, or as a grid refence in full numeric form of zone, easting, northing (e.g. 54/2654000E/-345600N/)

fruits from one plant. If you wish to document local variation you would collect from more than one plant. Clearly indicate on your label if pieces of the collection come from more than one plant. Bark and wood samples from woody plants may be useful, but you should not injure the plant unduly.

A specimen made up of small plants

Several whole plants should be collected. Roots, bulbs, or other underground parts should be dug up carefully, and the soil removed with care.

Labelling the specimen

The documentation of your collection is as important as the quality of your specimen(s). A collection without a label is of no use to anyone. If you wish to make regular collections a field book, is desirable. You may be able to obtain one from the State Herbarium.

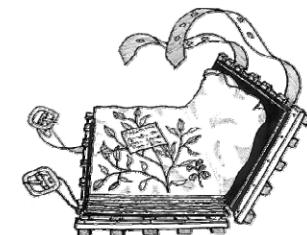
Collections should be numbered, preferably sequentially, with each collection having a unique number. In this way, you can keep a piece of collection with your number attached and deposit one in the State Herbarium. Communications about the collection will be via your name and collection number.

Things to note at the time of collection:

- Date and collector(s) name(s)
- Precise locality – define as clearly as possible (e.g. 6 km SE from Swan Reach on the road to Sedan). Your information should be such that the collected plant can be re-located.
- Latitude / Longitude or Grid reference. Highly desirable, as is an indication of the source of the information (map or Global Positioning System) and the "geodetic datum" (GDA94 (=WGS84) or AGD66/84). Contact the State Herbarium for clarification.
- Other observations. How common (its frequency), its habitat (e.g. soil type, landform, associated species), things about the plant (e.g. size, colours, scent, pollinators) and any other relevant information – local common names, ethnobotanical information, etc. A rule of thumb is to note anything that will **not** be obvious on the dried specimen!

The press

Various types of press exist, but they all serve the same essential purpose – flattening and drying the plant material without it becoming mouldy.



Basic requirements are two equal-sized firm boards or mesh within which stacks of newspaper and card-boards can be placed, and straps or ropes to hold the whole lot together once the specimens have been collected. For a small number of collections even a telephone book can be quite adequate, but ventilation may be a problem.

An **Electronic Collector's Book** which allows direct entry of the data on to a computer and then downloading into the State Herbarium database is also available for those who have access to a computer and collect for the State Herbarium. Note: Written entry into a field book at time of collection is still an important prerequisite. The memory of even the most knowledgeable person has a propensity to play tricks.

A useful Web site illustrating aspects of this brochure:
www.une.edu.au/botany/plant_collecting.htm