

The Plant Press

Western Australian Regional Herbaria Newsletter
Volume 1, June 1997

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Plant Identification Unit at CALM's Western Australian Herbarium

Plant Identification in south western Australia is difficult because of the incredibly high number of species (an estimated 12,000 species - half of that in Australia overall), limited identification references for the south-west and the enormous amount of work that still needs to be done on the flora. This results in a heavy reliance upon the Herbarium for identifications.

The Reference Herbarium, set up over ten years ago with the help of Commonwealth funding, is a great tool for plant identification - but how do regional people or groups achieve up to date identifications? The answer was seen to be a service at the Herbarium which would meet such needs.

The Plant Identification Unit (PIU), set up this year, is an initiative of CALM's Western Australian Herbarium and Greening WA to facilitate identification of Western Australian flora and Regional Herbarium specimens in particular. The PIU is located in the Reference Herbarium at the WA Herbarium, George Street, Kensington, Perth.

The position of Duty Botanist was created to oversee the running of the PIU, including the identification of plant specimens, their processing and incorporation into the State collection. A number of volunteers assist with this process on a weekly basis.

This effort means that regional groups trying to establish a 'Field Herbarium' can be supplied with current names for their specimens while adding to

the WA Herbarium's collection. It is important that the regional herbaria collect at least one duplicate of every specimen collected. If plants are small, multiple specimens should be collected, enough to fill a West Australian newspaper page.

The reason for sending a duplicate specimen to the Herbarium is because of the fact that names change as our taxonomic views change. A good example of this is *Eucalyptus wandoo* which is now split into four species. If a duplicate specimen is lodged with the WA Herbarium as a voucher it will be updated every time there is a name change or redetermination resulting from an incorrect identification. If the duplicate specimen is in the collection it will eventually be seen by a specialist who will correct it. These changes and corrections can then be passed onto the Regional Herbaria. This means that your herbarium always has the most up-to-date and accurate names. Your herbarium can then be an effective, useful tool for your group and people in your area, contributing towards knowledge of plants and their conservation.

More than 30 Regional Herbaria are currently actively involved in the programme. This is a wonderful result and attests to the dedicated work of staff and the Herbarium Volunteers. With the start of this second year, some small changes are being made to the programme. Each volunteer has chosen one or more Regional Herbaria and will be doing his/her best to get to know the Group as well as the flora of the area.

The Regional Herbaria and Volunteer liaison contacts and the times each will be working in the Herbarium are as follows:

Albany: Kim Macey, Thurs pm

Apace Aid: Kim Macey, Thurs pm

Blackwood Environ. Soc.: Kim Macey,
Thurs pm

Boyup Brook: Kim Macey, Thurs pm

Brookton LCDC: Thelma Palmer, & Jill
Brown, Mon am

Bruce Rock: Rae Papenfus, Mon am

Bunbury Nat. Club: Thelma Palmer &
Jill Brown, Mon am

Busselton Nat. Club: Joanne Dumeresq &
Jeanette Newman, Thurs am

Cockburn Wetlands Cons. Soc.:
Jan Gathe

Corrigin LCDC: Kim Spence, Wed am

Denham CALM: Pat Wenham, Mon pm

Dumbleyung: Jean Hooper & Pat Angel,
Tues am

Esperance: Jean Hooper & Pat Angel,
Tues am

Handy Hints

High Standards

Some excellent specimens are being received by the volunteers. To maintain this high standard, remember these following points:

- 1 Make the specimens large enough to fit comfortably in a folder, (2 page single-sheets of newspaper).
- 2 Where possible, include leaves (juvenile and mature), buds, flowers, fruit, bark, etc.
- 3 Press the specimen to show as much of its structure as possible.
- 4 Make sure the specimen is tagged with the collectors name, number and date of collection.
- 5 Include the field notes with as much information as possible. This is especially important for the locality. Always include the name of the nearest town or siding, its distance and direction from the collection site. Also include property, road, river/creek and/or paddock names or nearby landscape features that will help in the future identification of the locality. Please ring the Reference Herbarium about any problems you might have in filling out the Field Notes form.
- 6 Place each specimen within a folded 2 page single sheet of newspaper (this saves postage costs) and pack well to avoid folding and/or damage to the specimens.

Feature Article

“Vouchering Our Science”

A voucher can be defined as something “serving to confirm or prove something” (Oxford English Dictionary). In biology it usually refers to a preserved specimen lodged in a museum or herbarium collection which represents a sample of an organism or taxon which has been studied.

A prime role for CALM’s Science & Information Division’s herbarium is to “voucher” our scientific observations and results. In effect, each of the 375,000 herbarium specimens is a voucher; each one represents a particular taxon at a specific locality and a particular habitat. This broad-scale vouchering role is why the herbarium actively seeks to increase its holdings of well annotated material which provides the basic data for SID’s electronic information systems.

Any research which gathers field data on plants and habitats can be vouchered efficiently in the SID herbarium through its databasing system. It is, of course, essential to have a voucher herbarium specimen which needs to be a well chosen sample of a single taxon with adequate labelling and an indication of what research project is being vouchered.

The herbarium can curate collections related to a particular science project, geographic area or particular project. Specimens may voucher photographs, bioprospecting samples, the key plants of a particular animal habitat or a detailed botanical survey of a defined geographic area. In these cases, plant specimens can be collected and processed for incorporation in the herbarium as vouchers for the particular research effort. Incidentally, it is imperative to build specimen processing costs into any grant application.

Vouchers add particular value to scientific publications where plant names are cited in relation to particular biological research. For example, vouchering of disease impacts on a species, fire responses, chromosome number determinations, conservation status or functional characters such as mode of perennation , age to first seed set, etc. It is usually mandatory for scientific reports and publications to include a note on which institution holds the vouchers. In any plant research in WA, vouchers should be lodged in the WA Herbarium which has the internationally recognised acronym PERTH. It is

Friends of Yellagonga: Jan Gathe
Geebulla Catchment Gr.: Gillian Smith,
Thurs pm
Goldfields (Kalgoorlie): Agriculture
WA/CALM/Western Mining : Bill Coad,
Mon am
Jerramungup LCDC: Vere Fairbairn,
Wed am
Karratha CALM
Katanning CALM: Jean Hooper & Pat
Angel, Tues am
Kojonup Nat. Reveg.: Pat Angel & Jean
Hooper, Tues am
Koorda Landcare: Chris Hollister, Mon,
Tues & Wed am
Kulin-Kondinin: Joanne Dumeresq &
Jeanette Newman, Thurs am
Manjimup CALM
Meekatharra Agriculture WA.: Bill
Coad, Mon am
Merredin Wildflower Soc.: Frank
Mansfield, Fri am
Miling Primary School: Joanne
Dumeresq, Thurs am
Mingenew LCDC: Gillian Smith,
Thurs pm
Mogumber SCD: Chris Hollister, Mon ,
Tues, & Wed am

Morawa Tree Soc.: Vere Fairbairn,
Wed am
Mt. Newman Mining: Jan Gathe
Mt. Marshall: Joyce Pitfield, Wed pm
Murchison Museum: Joanne Dumeresq &
Jeanette Newman, Thurs am
Nabawa Primary School: Chris
Hollister, Mon, Tues & Wed am
Narrogin CALM
Newdegate Rare Flora: Ann Rick (in
Newdegate)
Nungarin: Joyce Pitfield, Wed pm
Perenjori Wildflower Soc.: Jean
Hooper & Pat Angel, Tues am
Pingelly LCDC: Kim Spence, Wed am
Rockingham SHS: Jan Gathe
Serpentine Jarrahdale: Frank Mansfield,
Fri am
Toodyay Nats. Club: Chris Hollister,
Mon, Tues & Wed am
Waddi Forest LCDC: Gillian Smith,
Thurs pm
Watheroo Primary School : Chris
Hollister, Mon, Tues, & Wed am
West Arthur Primary School: Thelma
Palmer & Jill Brown, Mon am
Wyalkatchem: Joyce Pitfield, Wed pm
York Landcare Centre: Chris Hollister,
Mon, Tues & Wed am

New Regional Herbaria are being established at Chapman Valley, Garden Island, Ravensthorpe, Wannamal and Yanchep.

If you want to speak to your Volunteer, ring the Herbarium at (08) 9334 0587 on the day shown in the timetable. All the Volunteers have been working hard to ensure the operational changes in the system go as smoothly as possible. Another 2-3 weeks should see all the '96 collections processed.

Already, there are 14 boxes that have been received from the Regional Herbaria since the start of 1997 ! So keep up the good work !

Newsflash

Duty Botanist/Volunteer Co-ordinator

Leigh Sage was the first Duty Botanist and as such had the difficult job of launching the Plant Identification Unit programme. Leigh has moved to another contract and the role of Duty Botanist is now filled by Jan Gathe (pronounced "Garter").

Jan is a graduate of the University of Western Australia where she gained a Master of Science degree in 1965. Since then she has worked in the fields of Botany and Education in Canada and Western Australia. More recently, Jan has undertaken various contracts with CALM and developed a number of excursions with a botanical theme, for the University of Western Australia, Department of Extension.

Newsflash

Exciting Finds

Scaevola macrophylla thought to be extinct, was identified from a collection of unidentified material from the Albany Regional Herbarium. The collections, three in all, were dated from 1987 to 1990.

Two Priority species have also been identified; *Conospermum scaposum* from the Pingelly LCDC and *Ptilotus beardii* from the Murchison Regional Herbarium.

Congratulations to all those people involved in these exciting finds!

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Do you have something you would like to contribute? Turn to page four to find out how.

remarkable that many biological scientist/authors haven't vouchered their observations; there are some classic examples where we do not know what species has been referred to in papers and books.

Any publication referring to *Eucalyptus redunca* var. *elata* or *E. wandoo*, for example, could now refer to any of six taxa (see *Nuytsia* 8:1). The point is that our names are continually being revised and we have a management system to continually update these changes on voucher material.

If you are compiling a list of species for a particular purpose and each taxon name has a voucher in the herbarium where the special field "voucher for....." has been completed, then it is possible to obtain an updated list at the time of preparation of a paper or report. Not only will this list have up-to-date names but the spelling of the name and the authority will be standardised and according to current herbarium practice.

It is rarely accepted by most non-taxonomists that many plant identifications are only an "educated guess". In the case of the species rich WA flora there is great morphological variability which is still being documented and for this and other reasons, WA taxonomists do not have the knowledge base to identify many taxa with 100% certainty. In other words, there is a high error rate with plant identifications.

Our knowledge of the flora is advancing very rapidly. CALM botanists are continually revising identifications of the specimens incorporated into the collections. If an incorporated specimen is incorrectly identified it will invariably be picked up and correctly determined, the corrected specimen then passes back through the databasing operation. When any published taxonomic account of WA flora appears any misnamed specimens are re-determined determinations are

made on the specimen sheet and in the databases. If some of the re-determined material is a voucher for a particular project then it is easy to see how information can be updated and made available to the researcher.

One of the most productive benefits of the vouchering system is that any field herbarium or other reference collection of plants can be managed so that the names of each voucher are current. The databasing system has revolutionised the management of ancillary collections such as the one at CALM Manjimup. The reference collection there consists of a single collection for each species collected to date in the region. Every specimen is represented by a barcoded "parent specimen" which has been incorporated into PERTH and which can be scrutinised by herbarium users. In many cases, because of the Australia-wide activity relating to the Flora of Australia project, the specimen may be sent on loan for specialist study at another herbarium.

Alternatively a visiting specialist botanist may visit PERTH to study herbarium material and will spend some time checking determinations and renaming specimens. The Manjimup duplicate specimen has a note of the unique PERTH barcode number and any name changes, name corrections, etc., initiated in PERTH can be sent to Manjimup and entered on the specimen. With this system, botanical researchers can access material with current names. The protocols developed for Manjimup and for the Reference Herbarium in Como is being introduced by an increasing number of field herbaria, Landcare Conservation Groups and kindred groups who need access to reliable names of WA flora.

Neville Marchant

About The Plant Press

We are planning to publish three or four issues of *Plant Press* per year. We see it as a good way to keep in touch with the widely scattered members of the Regional Herbarium/ Volunteer Programme.

If you have any thoughts about what might be included in future issues, please let us know. Also, we would like contributions to this newsletter, anything of interest eg. a story about you or your group's discovery of a rare plant. Address contributions to Jan Gathe at the WA Herbarium, CALM, Locked Bag 104, Bentley Delivery Centre WA 6983.