

# The Plant Press

Western Australian Regional Herbaria Newsletter



Volume 9 March 2001

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## FUNDING ISSUES

Last year I made a plea to all regional herbaria to include costs for specimen identification and processing (essentially to database each specimen). We have had some positive response that Jan will describe below. However our long term survival and expansion of the Project to provide a world class information system depends on how much funding we can obtain. Please contact us if you need advice on how to seek funds to run your particular regional Herbarium.

In the meantime be assured that despite rumours to the contrary

### THE REGIONAL HERBARIA PROJECT WILL CONTINUE

It is not closing down and there was never intention to do so. We were planning to scale down the project but we no longer need to do this, thanks to funding from The Executive Director of CALM. The present round of funding will continue to the end of June. We hope to receive ongoing NHT funding from an application we lodged earlier this year.

Neville Marchant

Newsletter of the Community Regional Herbarium  
Volunteer Program

Editor: Margaret Lewington

ph 9334 0587

email: <margl@calm.wa.gov.au>

## Congratulations Beverley

The Beverley Regional Herbarium has been a successful applicant for a Community Conservation Grant. They have received \$5,000 which will enable them to purchase equipment and curation materials to continue their project of surveying the Beverley Airfield Reserve.

To date they have collected more than 400 vouchers from the Reserve and a part of the cost for them to be incorporated into the State Collection will be met by this grant.

## Coastcare Grant

I am very happy to report that a Regional Herbarium project called:

'Surveying WA's Littoral Ecology (SWALE)' has been awarded a Coastcare Grant. This is a joint Commonwealth, state and local government initiative with Commonwealth funding provided by the Natural Heritage Trust.

Four regional herbaria - Geraldton, Rockingham, Bunbury and Esperance, will be participating in the project. It will involve the establishment of a permanent transect from the high tide line back into the stable community in as near to pristine condition as possible. This will be surveyed, vouchers taken, a report written and display signs at a nearby beach erected.

The transect, vouchers and report will serve as a reference for any future revegetation of beaches in these 4 coastal districts.

We hope that a successful SWALE Stage 1 could lead to SWALE Stage 2, 3 etc. that would give a sound scientific basis for the restoration and maintenance of a healthy coastline around WA.

Jan Gathe

# Regional Herbaria Workshops 2000

The second half of last year was a very busy one with regard to workshops.

In June a day trip was made to **Tammin** and to **Merredin** to discuss the ways in which these regional herbaria can gain plant information and use it to enable their communities to develop tourist interest in their local floras.

A half-day trip to **Mundaring** was held in September to encourage and inform members of the Hills Forest group of the importance of vouchering and how to collect, press and document specimens.

In October Irene Shepherd organised an excellent workshop at **Northampton** with people attending from as far away as Kalbarri, Dongara and Mullewa. The workshop was primarily on the ways in which regional herbaria can value-add to their collections, so making them a wonderful resource for their communities. Discussion was very lively and worthwhile. Neville also spoke to high school students at Northampton District High School and students and teachers at Geraldton Secondary College.

Late in October **Tammin** Regional Herbarium invited us to discuss with interested community members possible ecotours of the district. There was a considerable discussion of local issues, both environmental and political! The following day Don Sachs drove our party around the district checking out possible sites of interest for an ecotour.

In mid-November Mike Hislop and I visited **Beverley** to catch up with Everard Seymour

and the group of 12 or so who have joined him at that Regional Herbarium. Mark Ochtman, a Greening Australia WA Bushcare Officer, is working with the Beverley Regional Herbarium to survey reserves in that district.

Early in December Margaret and Neville (and CALM staff from Manjimup) were invited to **Northcliffe** to talk with a very enthusiastic group of residents wanting to document the local flora - including the weeds.

This year the Identification Workshop we like to hold in **Perth** was later than usual, in late November, partly because of our ambitious program of workshops in the country. It's a bit hard being everywhere at once! Still the 2-day workshop on the Family Papilionaceae was well attended and people worked really hard, some identifying as many as 30 taxa, including some from the Gascoyne region.

Val Crowley and Lyn White of West Arthur Regional Herbarium brought a specimen of *Jacksonia velveta* ms from Lyn's property. This is a DRF taxon and will soon be described by Dr Jenny Chappill, who opened the Workshop with a discussion of the different genera of the Papilionaceae. Jenny was able to confirm Val and Lyn's identification and told them this species was known from only two other populations - at Collie and Woodanilling. West Arthur was only the third population known of this beautiful and different-looking *Jacksonia*.

Congratulations West Arthur!

Jan Gathe

## 500,000th Voucher

The WA Herbarium's Research Collection has just achieved half a million specimens. The 500,000th voucher is a specimen of *Clematis delicata* ms from the Kulin-Kondinin Regional Herbarium, collected by A. D. Quicke in August 1999. *C. delicata* is a climbing plant and has many creamy-white flowers with purple stamens; it is salt tolerant and typically occurs around salt lakes in the Wheatbelt. It is not endangered, but could be affected by rising water tables or increasing salinity.

# Tidy Towns Talk

by Jan Gathe

The following talk was given by me on December 7<sup>th</sup> 2000 at the occasion of the Tidy Towns Awards Presentation. This was held at Belvoir Homestead in the Swan Valley. There were four other speakers:

Sean Poole          WA Landcare Trust  
Bernard Ryan      WA Municipal Authority  
Nathan McQuoid    Greening Australia (WA)  
Anthony Wynen      Keep Australia Beautiful  
   Committee (WA)

The audience was mainly country people and there was quite a lot of good-natured rivalry as the different award winners went on stage to accept the achievement on behalf of their town.

Bridgetown and Perenjori, both 2<sup>nd</sup> finalists within their own category, included their Regional Herbaria in their Mission Statements. Other finalists in the competition which have Regional Herbaria were Bruce Rock, Narrembeen, Denmark, Esperance and Mandurah. For future Tidy Towns competitions they might consider adding their Regional Herbaria to their other accomplishments.

Kim Spence and I found the day very interesting and enjoyable. Lunch was delicious! A number of people asked us questions about the Regional Herbarium Program and different plants they knew from their own district.

## The Regional Herbarium Network in Western Australia

### Q. 1 What is a herbarium?

Many people may not be familiar with the word 'herbarium'. The word is derived from the Latin word 'herba' which means grass or green crop. The word 'herb' was used in English writings as early as 1210 when it already had two meanings:

1. A plant of which the stem does not become woody or persistent and which dies to the ground or dies entirely after flowering.

2. A plant of which the stems and/or leaves are used for food or medicine or in some way for their scent or flavour.

Today most people would use the latter definition of the word 'herb' but a herbarium is not a collection of just herbs; rather it is a collection of dried plants of all kinds and they are systematically arranged. Thus the Western Australian Herbarium is a collection of close to half a million dried plants - native and alien - that grow in Western Australia. The regional (or local) herbaria are smaller collections of dried plants that grow in certain regions of WA.

### Q. 2 What is the role of the WA Herbarium?

The role of the WA Herbarium is to study and document this state's flora. Also it aims to make knowledge of our flora available to relevant institutions and the general public. These activities of collection and distribution of plant information underpin the prime role of the WA Herbarium, which is conservation of our flora.

We estimate there are about 12,000 native species. Regularly we discover new species - not yet named or described. In fact the south west of Western Australia has been designated one of 25 "biodiversity hotspots" in the world, the only one in Australia. We have an incredibly rich, complex and diverse plant life that also supports a very diverse assemblage of animals. The flora is of international importance and recognised as being extremely diverse, though this is not really appreciated by many West Australians.

For a state the size of WA with such a rich flora, 2.5 million plant specimens (vouchers) would give a good representation - a basis on which to study and know our flora. The WA Herbarium has almost half a million vouchers, insufficient to enable botanists to better understand our plants.

At the very least, it is essential to know the names of plants. We must be able to communicate information about plant species and be confident we are talking about the same entity - if we are going to rehabilitate degraded lands and soils, if we are going to commit limited monies

# GAPS in our knowledge of the distribution of our Flora

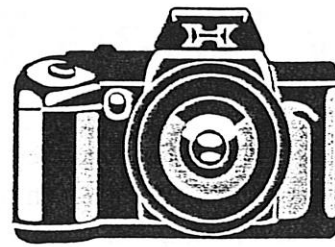
At the Herbarium we are constantly improving the quality of our data. One of our ongoing goals is to fill in the missing data in our FloraBase distributions and descriptions.

Filling the gaps is of primary importance to further our understanding of the taxa involved. At the moment, when we have a disjoint population, it is unclear whether we have one species just not collected in the intermediate area, two species or varieties separated by geography, or one population with a geocode error giving us an outlier away from the rest of the population. **True outliers have great scientific value and it's important to increase our confidence that database records for a given species represent its true range.**

Many of these gaps occur in the regional areas and we would like to seek your help in locating new specimens of the taxa under consideration. As we become aware of any species which require further investigation (collection) we would send as much information as possible e.g. existing locations, description, photograph (if available), to the regional herbarium indicated by its distribution. **It is always exciting to uncover range extensions for species. You could be the one to find that elusive record!**

We welcome your comments on this new initiative.

Amanda Spooner  
Paul Gioia



## Flora Image Database

Many thanks to photographers who have sent us slides or prints for FloraBase - your contribution is greatly appreciated.

We are now planning to offer regional lists to those photographers interested, indicating which species from a given area are not represented in our collection. As before, we'll be using the following initials:

- f - flower;
- h - habit;
- e - environment.

We are also always seeking additional botanical details such as buds, fruit, bark..

We'll be delighted if you can assist us. As you know we keep all slides and prints locked up when in use.

Kath Napier

## New Herbaria

Since "The Plant Press" Vol. 8 came out, we have received first boxes from Northam, Wagin and Dongara, as well as many boxes from established herbaria, especially at the Perth workshop.

A great effort, congratulations!

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to resolving salinity problems or extracting chemicals from plants for AIDS therapy, etc.

Common names are not sufficient. For example, on the banks of the Swan River is a beautiful eucalypt we call the Flooded Gum (*Eucalyptus rudis*). Around Katanning people call this same tree the Blue Gum. Sydneysiders also have a Blue Gum - *Eucalyptus saligna* and we have all heard of the Blue Gum that grows in Tasmania, which is *Eucalyptus globulus*. **Common names cannot be relied upon to manage our state's flora for issues as critical as land revegetation, agriculture and forestry.** Also, many of our plants are not common and will never have common names applied to them. Knowledge of the scientific name of a plant is the key that opens the door to information on how best to manage our environment.

### Q.3 Where does the Community Regional Herbarium Volunteer Program fit into all this?

The Community Regional Herbarium network was initiated in 1996 to:

1. Make scientific names and other plant information readily available to people who need it.
2. Build up the state's Research Collection to learn more about plants and their relationships to each other.

Greening WA and the WA Herbarium funded the Program over the first 2 years. Since then a Natural Heritage Trust grant together with the WA Herbarium have made this project possible, but the Natural Heritage Trust grant runs out in January 2001. We hope that this funding will continue as more than 13,000 vouchers have been added to the State Collection over these 5 years.

Today the program is a real network of 87 Regional Herbaria spread across the state. Most are in the southwest - most people - most clearing - most concern. They include the wheatbelt, coastal, forested and urban areas. There are a number of regional herbaria outside the southwest corner; in fact they extend from Kununurra, down the coast to the south and east to Eucla and inland to Wanganoo Station near

Leonora.

We are not sure how many people are involved, about 6-700, but we do know they are all passionate about their local flora and concerned enough to commit themselves to this enterprise, i.e. building up and maintaining a local herbarium, which is a valuable resource to their community in landcare, education and tourism, while at the same time contributing to the State Research Collection and the knowledge that will result.

The WA Herbarium is to the forefront in development of its database, which enables the storage of a huge amount of information that can be easily and quickly accessed using the barcode system. Many herbaria around the world are now developing similar systems to that started 15 years ago here in Perth!

### Q.4 What constitutes a good regional herbarium?

Having a public venue, microscope and computer are all very desirable but not always possible because of the cost. Some groups have these items because they were funded early in the program. Now regional herbaria must fund themselves through their Shire, grants, members and Friends.

I would look for a number of things in a good regional herbarium:

1. Several hundred vouchers representative of the local flora.
2. The majority of these vouchers would be mounted, correctly labelled with barcode numbers, in plastic envelopes and stored systematically in folders.
3. Vouchers are of high quality, with flowers, leaves and fruits and are well-pressed.
4. The scientific names are current and valid.
5. Electronic link to FloraBase or regular contact with WA Herbarium.
6. Books and 'Plant Press' on display and used.
7. Members attend workshops conducted by WA Herbarium to extend their knowledge.
8. Local herbarium is used by the community - library, field days, rehabilitation workers, school projects.

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The results of 5 years of work by this network of regional herbaria speak for their members' hard work, dedication and love of our flora. A recent count gave us 13,337 vouchers

i.e. 13,337 Research Collection  
13,337 Regional Collections  
(this does not include Albany [14,000] and Manjimup [9,000] which started before 1996 and are now members)

An Australian standard for the cost of producing a voucher is \$52, giving a value of \$693,524 for the Research Collection vouchers and perhaps a little less for the smaller regional collections. In total the volunteers of the Regional Herbarium Volunteer Program in the country and in Perth have done scientific work to the value of \$1,000,000.

In fact what they have contributed is beyond price and will only become apparent in the future. Of the 13,337 vouchers, 70 were Declared Rare Flora and 574 were Priority species - these finds may alter the status of some of these very vulnerable species and will certainly help in their management. Also about 12 species appear to be as yet unnamed and undescribed and so new to science.

Knowing the names of local plants is enabling many regional herbaria to develop projects that are enriching their community. Margaret River and Wellstead are writing books on their local flora and Esperance has produced a pamphlet on its wildflowers while Bunbury has 3 pamphlets on growing native plants in 3 different habitats. Blackwood and Guilderton are revegetating their rivers with native riparian species, Ravensthorpe is developing a walk trail along the old railway line to Hopetoun, Tammin is mapping out a Floral Drive through its Shire and the many country towns that hold Wildflower Shows are much more confident of their scientific names.

Thus the regional herbarium network run by many talented, knowledgeable and keen volunteers is providing a community resource while playing a very significant role in the understanding and conservation of our unique flora that is of international importance.



## Congratulations Eileen!

As many of us already know, Eileen Croxford's name is synonymous with the Albany Wildflower Society. Eileen was the founding member of this branch and over the years has contributed more than 7,000 specimens to a collection that today numbers just over 14,000 specimens. This is a really remarkable achievement.

And now all her hard work and dedication to the conservation of the flora of the Albany district has been recognised by CALM. At a recent Awards function held at Yanchep, Eileen was awarded 1997-1998 Volunteer of the Year for her services to the Albany Regional Herbarium.

Congratulations Eileen on an award so justly deserved.

The work of the volunteers of the WA Herbarium was recognised as well with the following awards being made to:-

**Barbara and Bob Backhouse**

1997-98 Outstanding Service Award for work in the Reference Herbarium

**Stan Webster**

1998-99 Outstanding Service Award for work on *Acacia*.

**Barbara Evans and Margaret Evans**

1999-2000 Outstanding Service Award

**Kath Napier**

1998-99 Volunteer of the Year for coordinating the Data Imaging Team

**Fred and Jean Hort**

1999-2000 Volunteer of the Year for their work with DRF and Priority species.



## Perennial Grass Key for the Wheatbelt

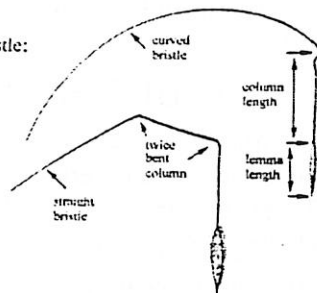
An illustrated key to the perennial grasses of the Avon Wheatbelt botanical district of WA should be available by the time you receive this newsletter. It has been prepared with the layperson in mind - all the important features are illustrated in the body of the key and only those features that are the easiest to see are used.

Grasses are notoriously difficult to identify, even for experienced botanists, yet they are so important. That is why former Government Botanist Charles Gardner began his *Flora of Western Australia with the Grasses* as Volume 1, Part 1. Gardner's work is still useful (it was the source for many of the illustrations in the new book) but it was prepared more than 50 years ago and is now out of date. The new book includes an index and cross references to the names that have changed since Gardner's time.

The author, Alex Williams, is a botanist who works as a volunteer at the Herbarium of Western Australia in Perth. The book comes in a spiral binding with 57 pages and covers 84 species. At each step of the key the important points are illustrated, as in the example below:

5. Awn sickle-shaped, with a curved bristle; lemma narrow & needle-like, evenly covered with white hairs ...6

5. Awn bent twice, bristle straight, or if curved then lemma not evenly covered with white hairs ...13



The book has indexes to scientific and common names, a glossary of technical terms and an introductory section on the structure of the grass plant and how to study grasses. Great value for only \$15. The book can be purchased from the Herbarium (corner of George St and Hayman Rd, Kensington) and mail orders can be sent, with a cheque or money order for \$17.50 to cover cost and postage, to WA Herbarium, Locked Bag 104, Bentley Delivery Centre, WA 6983.

## Treasures of the Turquoise Coast - Jurien Community Conference

This conference, subtitled 'from the Breakaways to the Breakers', took place on 16 and 17 September and over 100 people attended, from the Hill River area and local and metropolitan councils, government departments, tourism, development and mining interests. Four from the Perth Herbarium, Carolyn Garavanta, Anne Matthews, Fran Kinninmonth and Margaret Lewington found the weekend interesting and stimulating. One purpose of the conference was to discuss how to develop and manage tourism without destroying the natural land and marine features which bring people to the region.

Speakers on Saturday morning gave an overview of the Central Coast (Gary Snook, Coorow Shire President) and of the plant communities (Nathan McQuoid) and marine fauna (Edwina Davies-Ward). The afternoon was devoted to field trips; the choice was a boat trip to the local islands, squatter shacks, bus trip to Mount Lesueur and Waddi Farms or Rivercare in the Hill River.

On Sunday the Hill River Catchment and its hydrology were covered before the launch of the Hill River Integrated Catchment Management Strategy. Then concurrent sessions covered Marine/coastal issues, Biodiversity hotspots and Catchment conundrums. Margo Wier's talk on Ecosystem Services - Biodiversity and its importance and Keith Bradby's on the significance of the southwest of WA being listed as one of only 25 'world biodiversity hotspots' (the only one in Australia) and what this could mean in terms of funding for conservation were eye-opening.

Displays were set up on Coastcare issues and it was very pleasing to see the Jurien Regional Herbarium on display and being used by the public. We had taken some Perth vouchers and put them beside their matching Jurien ones with printouts of the species maps. The afternoon closed with an excellent presentation by Juliana Priskin of her tourism research in the Central Coast area.

Margaret Lewington

## Collecting Restiads

The collection of restiads is in some ways a special case. The first consideration is to be able to recognise the family in the field.

The most obvious characteristic that separates Restionaceae from Cyperaceae, Poaceae or other monocot families is that by far the majority of them have numerous prominent nodes along the length of the culms (stems). Typically brown scale-like 'leaves' called culm sheaths are attached at these nodes (often tightly appressed), though in some genera these are shed before the culms mature (e.g. *Lepidobolus* or *Lepyrodia*).

The other important feature is that the flowers are almost always unisexual with the female and male inflorescences (which may appear quite dissimilar) produced on separate plants, i.e. the plants are dioecious. This latter characteristic is important because sometimes it is necessary to see both the female and male inflorescences before a reliable name can be applied. You should therefore aim to collect both female and male specimens of a restiad taxon (give them separate numbers) at the collection site.

To help you decide which belongs with what you can use a hand lens to check for anthers and styles, etc. but also to closely examine the nodes and culm sheaths, which are fixed in character for each species whether male or female although the inflorescence may look quite different.

Another particular consideration is the importance of collecting a bit of the rootstock. While this should be standard practice for all monocots, it is often vital in the case of restiads. It may not be possible to take a specimen to species level in the absence of a good sample of the rootstock.

A handtrowel will also help in making a good restiad collection. Don't be too worried about longterm damage to the plant - all restiads reproduce below ground by a proliferating network of rhizomes as well as by seed.

An excellent reference to Restionaceae is now available:

"Australian rushes: biology, identification and conservation of Restionaceae and allied families" edited by Kathy Meney and John Pate, illustrated by Ellen Hickman, UWA Press, 1999.

Mike Hislop

## Liaison People

There have been some changes in volunteer liaison, so here is a revised list:

Bannister Creek	Peter Davies	Tue
Bennett Brook	Bill Coad	Mon-Wed
Beverley	Dorothy Perrett	Thu
Dongara	Gillian Smith	Thu
Mandurah	Thelma Palmer	Tue, Thu
Merredin	Bill Coad	Mon-Wed
Porongurup	Dorothy Perrett	Thu
Wagin	Dorothy Perrett	Thu

## Weed Information Network Workshops 2001

### A tentative listing of places and times

22/4 (Sun)	Kalamunda (Loretta Bean)
1/5 (Tue)	Bunbury (Andrew Horan)
15/5 (Tue)	Jerramungup (Nadine Brown/ Stewart Wheeler)
1/6 (Fri)	Geraldton (Jenna Brooker)
14/6 (Thu)	Narrogin (Gwennyth Warren)
27/6 (Wed)	Tammin (Glenice Batchelor)

These workshops are one-day meetings to introduce the WIN Project and explain the extra information needed for weed specimens to increase their value to science. A more detailed plant collection note form will be introduced and tried out, with its accompanying manual.

## Guilderton Launch

On March 3rd the Lower Moore River Plan was launched at Guilderton by Senator Sue Knowles. There was an excellent display in the Gazebo, including information on the Regional Herbarium and after the official speeches and lunch, many of the guests went up the river and were impressed by the revegetation work and the birdlife, including the osprey which caught a fish just in front of the boat!

Margaret Lewington

## Correct mailing address

When sending items, please add to the address:

- one of our names or
- 'Regional Herbaria Program' or
- 'Plant Identification Unit'

so it will come straight to us.

WA Herbarium, Locked Bag 104,  
Bentley Delivery Centre WA 6983