

# Anne fired up by Churchill Fellowship experiences

AS part of my work as a research scientist for CALM's Science and Information Division, I manage the Department's Threatened Flora Seed Centre (TFSC), a genebank for conservation species.

With TFSC technical officer Kate Brown, I collect, test, store and monitor seed of rare and threatened plant species until required for future reintroduction programs.

Last year I was awarded a 1997 Churchill Fellowship to travel for 10 weeks to the United Kingdom, Ireland, Italy, the United States, and Spain.

After the Fellowship, I used some of my annual leave to also visit South Africa and the the Mascarene Islands of Rodrigues and Mauritius in the Indian Ocean.

The aim of my Fellowship (and the travels afterwards) was to improve my knowledge of off-site native flora conservation, particularly genebanking, as the effectiveness of my work depends to a large degree on my ability to keep abreast of the latest technologies for seed testing and storage.

Most of my time was spent at Wakehurst Place, Royal Botanic Gardens, Kew Seed Bank, in England.

The seedbank staff included me in their routine work, which involved seed collecting, cleaning, germination testing and genebanking.

## Working at Wakehurst

The work at Wakehurst Place is similar to that in Perth but on a larger scale. It was just like being back at the TFSC, (although the build-up of work awaiting my return didn't diminish!)

I participated in a seed collection trip to Devon and

by Anne Cochrane

Cornwall and experienced how English seed collectors work.

Most plants targeted for collection were less than ten centimetres high and collecting involved lying on the ground with a small plant a few centimetres from my face!

There are some minor differences in the running of the genebank (usually to do with the whim of the seed bank manager or the nature of the seed).

I was very envious of some of the seed-testing equipment at Wakehurst Place, and intensely jealous of their soon-to-be-built Millennium Seed Bank, worth millions of pounds.

## Model seed bank

At the other end of the spectrum, I visited a model seed bank in Ireland, established at a much smaller scale than the TFSC, but integrated with a comprehensive reintroduction program.

In Rome I visited the International Plant Genetic Resource Institute (IPGRI), which funds and coordinates research work world-wide and publishes on a range of topics related to genebanking.

These publications are provided free of cost, but are essentially directed towards agricultural species. I have asked institute members to include me in future research appropriate to our needs.

In the United States, I attended a Seed Biology and Technology Symposium. Although an interesting meeting, it proved to be essentially crop-oriented.

Nevertheless, it was a good venue for establishing contacts

and provided an opportunity to view the large National Seed Storage Laboratory at Fort Collins.

In Portland, Oregon I visited Berry Botanic Gardens Conservation Director Dr. Ed Guerrant, and spent four days discussing genebanking and reintroduction, and visited reintroduction specialists in Corvallis.

## US experience

Also in the US, I spoke with restoration ecologists, people working on the reintroduction of threatened species and had discussions with conservation program managers, and visited a grassland restoration site.

In Madrid I spent an interesting week at the long-established Crucifer genebank, where Professor Gomez-Campo provided me with hands-on laboratory work involving wild crop species.

I think he thought that I was a complete novice at seed cleaning, but complimented me nevertheless on my speed! I also learned how to seal seeds in glass tubes for long-term storage.

## More effective packaging

This method of seed packaging is preferred by several genebanks and is believed by some researchers to be more effective at reducing moisture intrusion over the long term.

In Cape Town, I spent a week at Kirstenbosch Botanic Gardens with Dr. Neville Brown, whose pioneering research on the use of smoke to aid germination of native plants seed has excited much interest in Australia.

## Fynbos like kwongan

Of all the places that I visited, the fynbos of South Africa



*Caption: Anne Cochrane at work in the Herbarium, shortly before taking up her Churchill Fellowship. Photo by Ken Maley courtesy The West Australian.*

presented the closest approximation to our native kwongan vegetation in Western Australia.

Because of this similarity, I found discussions on seed germination techniques with Dr. Brown highly enlightening.

I hope to collaborate with him on seed germination projects in the future, and the WA seed facility is already trialing one of the Kirstenbosch laboratory's techniques. Cape Town is also a nice place to visit!

Rodrigues and Mauritius provided an insight into some splendid work on the reintroduction of rare and threatened plant and animal species.

The major finding of my Fellowship is that the procedures and protocols for manag-

ing seed of native species in genebanks are essentially the same world-wide, and that we, in Western Australia, are 'doing it right',

Any major differences between the TFSC and other genebanks are related to the standard of facilities.

However, with a few modifications to basic procedures, techniques and equipment, the Threatened Flora Seed Centre should attain international recognition for its role in genebank conservation.

## Database sparks interest

The database developed by the TFSC has already provoked considerable interest, with Berry Botanic Gardens staff in the US hoping to trial its use very soon.

Perhaps the greatest benefit I received from the Fellowship was meeting other researchers, and the possibility of future collaborative work.

I feel that I will be able to make a substantial contribution to both the State and the National task of conserving Australia's unique flora.

To this end, I intend sharing the knowledge I have gained from the Fellowship, through training sessions, updating procedures for seed testing and by upgrading the existing genebank facilities (funding has recently been sought for the latter).

And finally, I hope to raise awareness of the role that the TFSC genebank plays in CALM's integrated flora conservation program.