FLORA

FLORAS PAST AND PRESENT

Judy Wheeler

WHY do we need Floras? Well we need a Flora to help us to identify the plants of any area. If we don't know what usually grows in an area, then we don't know what it is that we need to conserve. It is knowing the usual plants of an area which enables us to spot the unusual - this way we can decide which plants need closer examination and perhaps find that a plant we have seen is a new species (an exciting discovery new to science), or perhaps a known species but well outside its normal distributional range.

Australian Floras of very large areas, such as the whole of Australia can be very difficult and unwieldy to use (thousands and thousands of species). George Bentham (a British botanist) did write, single-handed just that - a Flora of Australia called "Flora Australiensis" in the mid ninteenth century, a work of seven volumes. Absolutely fabulous, an extremely talented and hard-working man. Today of course we know of many, many more species than was then known to science. A new "Flora of Australia" is being written by contributing botanists from all over Australia, but in more than fifty volumes and over a great number of years. Even a Flora of just Western Australia would be a huge work of many volumes to cover all the 12,500 or more plant species of our State.

The newly published "Flora of the South West", covers the much smaller area of Bunbury to Augusta to Denmark, and even so it has just over 2000 currently known species and took ten years to write! George Bentham worked from pressed plant specimens, which are in the Kew Herbarium, London. These were sent to London by the early explorers such as James Drummond and Ludwig Preiss and early settlers such as Georgiana Molloy. The actual specimens that he looked at can still be identified as he turned back the corner of the label and wrote the letter "B" to show that he had seen that particular specimen.

For the "Flora of the South West" we used similar pressed plant specimens housed in the Western Australian Herbarium in Perth which have been collected from throughout the south west of the State. We also have been able to tap into earlier work by various scientists who have worked in the area, such as Grant Wardell-Johnson who carefully collected plant specimens and drew up a species list for the Walpole-Nornalup National Park. Other scientists who did earlier survey work include Greg Keighery in the Busselton area and West Cape Howe, Neil Gibson in the Scott River and D'Entrecasteaux area, Brenda Hammersley in the Denmark area etc. Their work has been really important in compiling an accurate list of species for the area.

Unfortunately the people who have actually written the "Flora of the South West" have had to base their work on the collections of others. They have not been able to spend much time on field-based studies - it would just have taken even longer to write!

What format for a Flora? Many of the early Floras such as "Flora Australiensis" were devoid of all illustrations. However people have come to realise that very often a small picture can be worth a thousand words. It was on this basis that the plant identification books "Wildflowers of Western Australia" were produced and have been extremely successful. For the "Flora of the South West" we wanted to be able to give the user such pictures, but also sufficient text to be able to confirm their identification.

The keys in Floras are often quite difficult to use for people who have little specialist knowledge. One traditional start to a plant key in a Flora is based on the position of the ovary and how many ovules it contains. To the uninitiated – what or where is the "ovary" let alone how many "ovules"– it has can be quite daunting.

A format used successfully in South Australia was our starting point in which the key is based on flower colour and shape. We have followed this idea in the key of the Flora of the South West and have six broad colour groups within which we have used ten basic flower shapes. The result is a much more user-friendly illustrated Flora key.

The actual writing of a Flora is, unfortunately a very slow painstaking task. There are few or no field trips, no exciting moments like getting the vehicle bogged in previously untraversed terrain, no relaxing evening camp fires with colleagues, no encounters with wild animals.

Each plant group in turn must be thoroughly researched, literature pored over, previous descriptions of a plant species studied, often including the original

Judy Wheeler pictured with the two volumes of her new book. (See Book Review, page 19) Photo: Sylvia Leighton.

Floras continued on page 11

Floras Past and Present continued from page 10

description in Latin. Then "pen to paper", or these days "keyboard to computer" writing until we come up with the words which we feel adequately and accurately create a word portrait of each species. Further research is then needed into the distribution and flowering time of the species, what sort of soils it prefers. Finally it is the picture to illustrate the species that is needed - if we could all draw than it would be easier, but I can't and so have to convey to an artist which features I want them to bring out in their illustration of each species.

Further work on the flora of the region will be ongoing with the discovery of new species or unusual variants. This is never-ending. People who think they have found an unusual plant can seek the help of DCLM officers in their area or volunteers involved with various Community Herbaria. There are many Community Herbaria groups who are very keen to help and are great sources of knowledge about the plants of their immediate area. These people in turn, if they also think that something new has been discovered, draw on assistance from the Western Australian Herbarium in Perth to direct the specimen to a botanist who is specialising in that particular plant group. If indeed it is a new species, then there is still a long way to go before the species can be formally described and given a new scientific name. That however is another story!

Judy Wheeler is a Senior Research Scientist with DCLM at Albany and can be contacted on 9842 4520, email: judyw@calm.wa.gov.au

BUSH DETECTIVE

This puzzle asks you to guess the reason for a management action.

Barrow Island, WA's biggest land-based oilfield, is also a Nature Reserve, which means that the petroleum company (Chevron Texaco) operates under strict guidelines concerning impacts on the indigenous flora and fauna. This is one of numerous 'donkeys' (beam pumps) on the island - the arm nods up and down as it pumps up the oil. But why is there a thick mat of hard, uncomfortable, upward-pointing plastic cones (arrowed), spread on the concrete alongside the machinery? Can you guess?

Ans: This mat is to discourage mammals such as euros, boodies or banded hare-wallabies from resting in the shade of the machinery, and then getting clobbered when the flywheel operating the donkey swings down to its lowest point. Miners can be pretty inventive people, can't they? (Thanks to Graeme Rundle of the WA National Parks & Reserves Association for this puzzle.)