

NEWSLETTER

**SPRING 2004
NUMBER 8**

Ed: Bryan Both



Tree poppers slay the olives

The members of the Friends have had great success in using recently purchased devices to pull medium-sized olive trees out of the ground in the Reserve.

The "tree poppers" can lift trees up to the trunk thickness of a carrot, and up to 2 metres high. They use a lever principle to prise out the trees.

Indeed, while "tree popper" might be a catchy name for marketing purposes, it is a bit of a misnomer. The tree does not leap from the ground.

Rather, the trick to the operation is to apply steady, consistent pressure, and the device levers the tree from the ground. One person of average stature and strength can operate this device – no great exertion is needed.

There is some disturbance of the ground around the site, but the consensus from users at a recent working bee is that, certainly in areas of little valuable remnant vegetation, the number of pest trees which can be quickly removed outweighs the disadvantage of site disturbance, and the risk of weed resurgence.

The University has purchased five "poppers" of different sizes for testing and evaluation. The technique will be demonstrated at the Friends Members Open Day on Sunday 17 October 2004.

More volunteers needed for working bees

There is a loyal [but rather small] group of members who are regular participants in the working bees on the Reserve.

The Committee would like to involve more members in this activity, and so we extend an invitation to you to join in. We meet at 9 am and conclude at about 12.45 pm, alternating between Saturday and Sunday mornings. A schedule of forthcoming working bees appears elsewhere in this newsletter.

We carry out a range of tasks, principally removing exotic weeds, of which the olive is one of the most widespread and invasive, but by no means the only one. The work is not physically strenuous. There is a pleasant social time at the end of each session when members share a sausage sizzle, which is provided without charge as a "thank you" to workers.

We are planning to conduct regular surveys of plant species at key monitoring points, and there may be opportunities for members to be trained to participate in this new activity.

If you would like to ask questions about joining in, or would like to be met and introduced to the activities instead of arriving alone, please contact our Secretary, Joe Haslam on **8271 2660**. We warmly invite your involvement.

BOTANICA

An Orgy of Orchids

Spring is in the air and the orchids in the Waite Conservation Reserve (WCR) are doing their thing. Conspicuous at the moment are the Donkey Orchids (*Diuris*), King Spider Orchids (*Caladenia tentaculata*) and the earliest flowering of the sun-orchids; *Thelymitra luteocilium*, a species with dusky pink flowers that only open fully on warm sunny days.

Temperate Australia is remarkably rich in native ground-dwelling orchid species. Despite the perception of rarity and fragility that orchids bring to mind, they can be a significant component of the ground layer vegetation, in terms of numbers of species and sometimes in sheer abundance as well. Although flowers may only be seen for a few weeks each year, these orchids are actually perennial plants that die back to an underground tuber and generally regrow again the next season in the same spot.

Australian ground orchids are highly specialised plants that have intimate root connections with specific soil fungi (mycorrhizae) necessary for the successful germination of their tiny seeds and ongoing nutrition.

Many also have bizarre sex lives, often involving specific insect pollinators. Their pollen grains are packaged together as two large sticky masses known as pollinia and these detach readily and adhere to any part of a visiting insect that comes into contact with them.

The Spider-orchids seduce various wasp and native bee species by releasing the same sex pheromones that these insects use to attract a mate. (The common King Spider-orchid found widely in the WCR, *Caladenia tentaculata*, is in a group where each orchid species lures its own particular species of Thynnid wasp for 'pseudocopulation').

Many Greenhood orchids (*Pterostylis*) have highly sensitive appendages that respond like a trigger to the touch of tiny gnats, trapping and propelling the alighting insect inwards towards their sex organs to effect pollination.

The Donkey Orchids (*Diuris*) mimic other conventional species of flowering plants that offer rewards to visiting insect pollinators, by being superficially similar in appearance. In this way they attract pollinators that are locked in on a particular target flower for its reward; but the *Diuris* are only pollinated because of their deception and they give nothing in return.

The complex ecological associations with fungi and insects mean that orchids are particularly good indicators of bushland health. It is pleasing to see that the more intact areas of the WCR have a good representation of orchid species with several being found in abundance.

This season has seen the confirmation of several earlier orchid records for the WCR, that either involved uncertainty about their original or continued occurrence in the reserve, or else were lacking location information. The total number of native orchid species in the reserve (confirmed by sightings in the last 5 years) now stands at 15 species (see table at the end of this article). While some are represented by single plants or very small transient occurrences many others are well established and have viable populations.

Diuris Delights

A most exciting discovery was made very recently (on September 19th) when a substantial population of *Diuris behrii* (Behr's Cowslip Orchid, or Golden Moths) was found on Quartz Hill. A total of 94 flowering Cowslip Orchid plants were counted, with the largest patch comprising 66 plants within an area of



Diuris behrii (Behr's Cowslip Orchid, Golden Moths)

8 m diameter.

Behr's Cowslip Orchid has clear yellow flowers and a fragrance similar to that of daffodils. It appears to be a very good mimic of the yellow Bulbine Lily (*Bulbine bulbosa*), a conspicuous plant at the moment in many parts of the WCR. Its flowers are of the same bright yellow colour as *Bulbine* and somewhat orange-golden at the centre; they are held at the top of tall, erect stems similar in height to *Bulbine* spikes; there are 2 –3 flowers on each stem, similar to the number of *Bulbine* flowers open at any one time; and the flowering times coincide. Until I approached closely, I found it difficult to tell whether that yellow splash in the understorey was a *Bulbine* or a *Diuris behrii*.

The Wallflower Donkey-orchid (*Diuris orientis*, formerly known as *D. aff. corymbosa*) is also well established in the WCR, and it has been suggested that the shape and brownish colouration of its flowers mimics those of *Pultenaea* and other bush peas. Hybrids between Behr's Cowslip Orchid, *Diuris behrii*, and other *Diuris* species are commonly encountered. Several plants with weirdly shaped flowers found near the edge of the main *D. behrii* patch on Quartz Hill appear to be hybrids between these two very different species, *D. behrii* and *D. orientis*.

Behr's Cowslip Orchid was once a common sight in the grasslands and grassy woodlands (particularly Box and Sheoak communities) of southern Australia but declined dramatically with the onslaught of European settlement, as these habitats were prime areas to be developed for grazing and cropping. The species now only persists in small remnants and seems to suffer continuing decline due to the susceptibility of these communities to weed invasion.

Currently *Diuris behrii* is listed as a Rare species for South Australia under the National Parks & Wildlife Act and is regarded as Vulnerable in the Southern Mt Lofty Ranges region, although listing as a nationally Vulnerable species is being considered.

The WCR provides an important stronghold for the conservation of this threatened species in the Adelaide area; the population here seems to be in much better health than one I visited recently in Belair National Park. The area on Quartz Hill where it occurs is wonderfully intact although a nearby infestation of Perennial Veldt Grass (*Ehrharta calycina*) is a potential threat and has been earmarked for control.

Photo and text by Peter Lang.

Native Orchid Species of the Waite Conservation Reserve

<u>Botanical name</u>	<u>Common name</u>	<u>Abundance in WCR</u>
<i>Acianthus pusillus</i>	Mosquito Orchid	localised colonies
<i>Caladenia carnea</i> var. <i>carnea</i>	Pink Fingers	rare
<i>Caladenia tentaculata</i>	King Spider-orchid	widespread
<i>Diuris behrii</i>	Behr's Cowslip Orchid	large localised population
<i>Diuris orientis</i>	Wallflower Donkey-orchid	large localised colonies
<i>Diuris pardina</i>	Spotted Donkey-orchid	rare
<i>Glossodia major</i>	Purple Cockatoo	single plant
<i>Microtis arenaria</i>	Onion Orchid	widespread
<i>Pheladenia deformis</i>	Bluebeard Orchid	single clump
<i>Pterostylis longifolia</i>	Tall Greenhood	unconfirmed report
<i>Pterostylis nana</i>	Dwarf Greenhood	small colonies, scattered
<i>Pterostylis robusta</i>	Large Shell-orchid	localised colony, scattered
<i>Thelymitra luteocilium</i>	Yellow-tuft Sun Orchid	widespread
<i>Thelymitra nuda</i>	Scented Sun-orchid	widespread
<i>Thelymitra pauciflora</i>	Slender Sun-orchid	widespread
<i>Thelymitra rubra</i>	Salmon Sun-orchid	localised colonies

Annette and Andy Baker's nieces were visiting from England last April and joined us at the working bee. These children live in London where you cannot see very far because of buildings and pollution. They would not stop talking about their lovely morning in the bush for the rest of their stay. Thank God we live in Australia!

Ajmeena Khan White (Mima) Age 12.

I went for a walk. I saw lots of trees. I saw what the people at the working bee were doing. I hope it helps. There was a really nice view. I could see for miles and miles and miles. We looked down into a deep gully. I thought it was not suitable for Trolls: more for Dragons or Bunyips. I liked the information on the signs beside the track and it was good to see that people were taking an interest in Australia's native plants and animals.

Shandana Khan White Age 10.

It was nice to look out into the distance. We saw echidna holes. We pulled up olive trees, some big some small. We saw Monarch butterflies and unusual looking yellow flowers. There was a sign explaining the yellow flowers. (Clustered Everlasting) I saw quite a few signs that Uncle Andrew had made. I liked eating outside. It was really hot weather, (26C) I was sweating.

Czarievna Khan White (Misha) Age 8.

We pulled out lots of African weeds. We saw many pretty birds. I heard a Kookaburra laugh. I pulled out lots and lots of little olive trees under a big gum tree. (River red gum) The BBQ was very nice and I liked the sausages that Aunty Annette cooked.