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~ APRIL 2005 NEWSLETTER ~  
MEETINGS AND FIELD TRIPS

We meet on the third Thursday of the month at 7:30 pm. General meetings conclude by 8 pm and are followed by a guest speaker beginning at 8:15 pm. There is time for a cuppa between the meeting and the guest speaker. The venue for the meeting is Marrara Christian School, on the corner of Amy Johnson and McMillan Drives.

All welcome. Bring plants to swap, sell or have identified.

~ NEXT MEETING THURSDAY 21<sup>ST</sup> APRIL ~  
~GUEST SPEAKER~

“The Millennium Seed Bank Project” & “Why 3 Plus?”  
Dr Sean Bellairs

The Millennium Seed Bank Project with Kew Royal Botanical Gardens, England, has recently been in the press. Sean will talk about what is proposed for the NT in this international project, and other seed biology initiatives. Sean will also provide an overview of experimental design aimed at the interested amateur. So if you have ever wondered why scientists often wander around measuring 3 or more plots in a population, here is your chance to find out.

~ APRIL FIELD TRIPS ~

Native Garden and revegetation works at Darwin Airport  
At 9am Saturday 23<sup>rd</sup> April

Dave Cash from Greening Australia will talk to us about the beautiful native garden and pond he established at Darwin Airport. Then Dan Richards, Airport Environment Manager, will show us the revegetation work along Rapid Creek implemented by a Green Corp. group last year. Meet at 9am at the Airport Management carpark (free parking), 1 Fenton Crt, (behind Environment Australia Building, Darwin Airport).

*Nervilia* Sampling at Charles Darwin National Park  
At 8am on Saturday 16th and Sunday 17th April

On the above dates we will undertake sampling of the ground orchid *Nervilia peltata* for the last time this wet season. The sampling is expected to provide a snapshot of the decline in leaf numbers as the wet season comes to an end. If the leaves dry-up rapidly we may not need both mornings to undertake the assessment, so please contact Dave on 8945 6809 to confirm attendance. If participants are known, then they can be advised of last minute changes to the sampling schedule. We meet at 8am and spend the morning assessing plants, as well as keeping an eye open for what else is happening at the field sites.

Have a look at the April 2004 Newsletter for a story on the survey work done earlier last year:

<http://tenpsnt/newletters/nervilia.pdf>

Meeting the third Thursday of the month at 7:30 pm at Marrara Christian School Library

## ~ OTHER UPCOMING EVENTS ~

**Wetland Wildflowers at Holtze** – Sunday 22<sup>nd</sup> May. See article and photos in this newsletter. Further details will be in the May Newsletter.

**Fire in the Top End** – June 16<sup>th</sup> meeting. Specific topic and speaker TBA.

**Plant Identification techniques** – Thursday 21<sup>st</sup> July meeting. Dale Dixon, NT Herbarium, Darwin.

**Plant Identification Workshop** - We are arranging a plant identification workshop for this dry season. Dale Dixon from the Darwin Herbarium has kindly offered to assist with instruction at this workshop, which will be aimed at the needs of participants with no expectation of pre-existing plant identification skills; however a keenness to learn is a prerequisite. We will hold the workshop over the Picnic-Day long weekend from Saturday 30 July to Monday 1 August 2005. The venue is the Environmental Education Campground in Litchfield National Park.

## ~ Missing Library Book ~

### **Wildflowers of Kakadu by Kim Brennan**

If you have borrowed this book, please let Nina or Joyce know. This book is now out of print and it may be difficult to obtain a replacement.

## ~ *Dipodium stenochilum*, a ground orchid found in Charles Darwin National Park ~

This *Dipodium stenochilum* was photographed in Charles Darwin National Park in mid November 2004. It is a leafless ground orchid that lives in symbiosis with a root fungus usually associated with the family myrtaceae (Jessup and Johnson, 1997).

It is thought that this orchid attracts pollinators through floral mimicry and Jones (1988) has observed wasps collecting pollen from *D. stenochilum* flowers.



In the photo (left), there is a very small praying mantis around 7 mm in length and coloured orange and black, similar to the strobe ant *Opisthosis*. It was observed moving from flower to flower covering the whole flower spike. The following month a high fertilisation rate was noticed with abundant seedpods in the general area. Plants in areas where strobe ants and spiders were observed on the flowers didn't produce nearly as many seedpods (Van den Hoek, *pers. observ.*).

Four species of ants in the genera *Hymenoptera* have been recorded on the threatened *Dipodium hamiltonianum* found in Victoria. It is not known if the ant's role in pollination is accidental but it appears they 'milk' a substance from the base of each flower. "A symbiotic relationship may exist, where the ants obtain an exudate in return for protecting the flowers from invertebrate grazing" (Yen, *pers. comm.*).

### **References:**

- Jessup, S and Johnson, G. (1997) Action statement No. 82 Yellow Hyacinth Orchid *Dipodium hamiltonianum*
- Jones, D.L. (1988) Native Orchids of Australia. Reed: French's Forest.
- Van den Hoek, D. (2004) - Park Ranger Howard Springs District Parks.
- Yen, A. - Senior Curator, Invertebrate Survey Department, Museum of Victoria

*Contribution from: David Van den Hoek*

## The ecology of Leichhardt's Grasshopper: when life is dependent upon a select group of plants”

### Overview of Piers Barrow's very interesting talk about his study into Leichardt's Grasshopper *Petasida ephippigera*.

This study was initiated because Ranger's were reporting an apparent decrease of the hopper. Part of the concern about their disappearance was because the tourists loved them. It was queried, was fire reducing their habitat and their subsequent disappearance?

Leichardt's Grasshopper inhabits the sandstone heaths of the escarpment and plateau, feeding almost exclusively on *Pityrodia spp* (part of the mint family, having a strong aromatic scent). The grasshoppers tend to eat and strip the ends of the branches, and once were seen eating the flower. The young nymphs are found on little plants or low branches of large plants. There are rarely enough grasshoppers to damage the plant. Piers did see hoppers strip bare three plants, but the plants still would have survived. There appears to be no benefit to the plant to be the host of *Petasida ephippigera*.

The grasshopper has an annual life cycle with the eggs hatching at the end of the wet and the adults emerging at the end of the dry season, with all adults having died by April the following year. In the wet season they lay their eggs in the soil making a hole with their abdomen about 2cms deep. The nymphs are 1cm long, not brightly coloured and hard to see. They can leap approximately 2 feet and can move 10 meters. Late stage nymphs in November have nearly got adult colours and at the next moult will get their wings, becoming adults. Most adults don't move more than 30 meters, they are sluggish and don't move fast. Adult males move more and further, becoming skittish in January.

The males are smaller and more slender than the females. Some have more orange and less black resulting in less pattern but they are all well camouflaged and hard to spot. They display brighter colours during the wet season (Dec – Mar) when there are less people around, which may be one of the reasons why

they are thought to be sparse. Their bright colour was thought to be toxic, but when they were analysed by a Qld. team no known toxins were found. Piers and his team have seen and received reports of them being eaten by praying mantises and spiders.

Their distribution is limited by *Pityrodia* distribution, but there are many *Pityrodia* without a grasshopper population. This patchy distribution is suspected to be a result of fires. The sandstone country is very diverse with high levels of endemism. Fire regimes have changed in the last 20 years; they now have big fronts resulting in trouble for the sandstone heaths.

Very little is known about fire and *Pityrodia*, they re-sprout after fire. They are not fire dependant, but when there is no fire for 10 years there is a decline in diversity, as Acacias etc. crowd out the *Pityrodia*. Therefore, some fire is good for *Pityrodia*. There is a question regarding the fact that they grow in sandstone heaths where most plants are fire sensitive. Between April and December the grasshoppers can hop but cannot fly to get away from the fires, and it is unlikely the nymphs can survive on the plants that are burnt. Frequency, timing of the fires (season) and, most importantly, patchiness of the fire regime seem to have the most impact on the grasshoppers population. The grasshoppers do move from unburnt to burnt re-sprouting areas to eat the young leaves.

Piers is still analysing the results of his study, but his early feel is that there are no obvious differences shown between burnt and unburnt areas and that the fluctuating populations may be completely chance. The *Pityrodia* flowers in the wet and seeds in August and there doesn't seem to be a need to manage the plant. His recommendation to date is patchy fires are important for the survival of the grasshopper, but he's waiting for the research results. His final message is 'Protect health lands and that should protect the grasshoppers'.

Contribution from Linda Rennie

~ Photos by Piers Barrow ~



*Pityroides jamseii*



Details of the *P. jamseii* flowers



Adult Leichhardt grasshoppers on *P. jamseii*



Nymph grasshoppers



Freshly moulted nymph



Adult grasshopper



Praying mantis at lunch showing that it may be unwise to be quite so obvious!

~ What's in flower?~



The pure white flowers in contrast to the glossy dark green leaves, and the beautiful scent of the *Phalerias* makes them ideal garden plants. *Phaleria clerodendron* (left), and *Phaleria octandra* (right)



The annual, *Gomphrena sp.* with a backdrop of *Acacia wickhamii*



The delicate vine, *Abrus precatorius* provides some understorey colour for the rain forest.

*Contribution from Sally Jacka*

~Wildflower rambles~

On Saturday 19th March, while many members of the club were busy selling plants, I was taking a lazy walk looking to see what plants were flowering. I visited the Knuckeys Lagoons Recreation Reserve near the headwaters of Meckits Creek. On the road skirting the fence there were two species of *Mitrasacme* and two species of *Cartonema*. Plenty of rosettes of *Drosera* leaves, probably, *D. petiolaris* but none were in flower. The track was fairly wet so I turned back and went on to the track under the power lines opposite Holmes Jungle. Here there were several *Mitrasacme*, which I believe to be *M. exerta*, and another species with a much smaller flower. There were species of *Goodenia*, *Gomphrena*, *Heliotopium*, *Pachynema* as well as the *Zorna acuta*. There were no *Stylidium unglinosum*, which in previous years had covered the ground in March.

*Contribution from Joyce Stobo*

The following day, Joyce and I did a reconnaissance walk at the Crown Land off Wallaby Holtze Road (see below), where we will be holding our May field trip. Here we recorded over 30 native herbs already in flower, including 4 *Utricularia* species. We will compile a plant list for the proposed Holtze Landcare Group, and I am sure we will have plenty to add to it in May. It is a beautiful site, well worth looking after for the wetland plants and birds. The few times we looked away from the ground, looking for small plants, we saw Jabiru, Brolgas and other smaller wading birds.

*Contribution from Sally Jacka*



Although none were in flower, many clumps of *Drosera sp.* still provided plenty of colour.



*Thysanotus sp.* (Mauve fringed lily), yellow *Goodenia symonii* and blue *Spermacoce auriculata*.



*Calandrina sp.*

~ What's the TENPS Committee Up to?~

**Highlights of Committee meeting held on Tuesday, 29 March 2005.**

**Native Garden** - Ankalie House, a respite care house in Wulagi managed by Carers NT have very kindly supported TENPS with printing and loans of tables and display boards for our plant sales. In return, we have offered to help design and establish a native garden at the house. Some of the committee members will be visiting Ankalie to check out what needs to be done and discuss ideas. It would be great if other members could be involved. If you would like to come along to contribute your ideas, please call Raylene on 8941 8826.

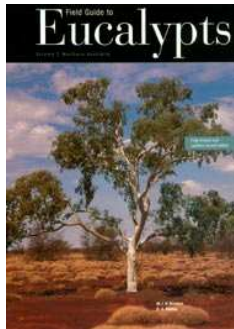
**Plant Sale** – another popular TENPS plant sale was held at Coolalinga on Saturday 26<sup>th</sup> March, with Phaleria being the most sort after plant (see 'What's in flower' this Newsletter).

**Plant Labeling** – In order to keep a high standard and maintain a good reputation with our plant sales, it was decided that the following protocols for labeling of plants sold under the banner of TENPS should be adhered to:

- Tube stock to be labeled with a full explanation of care needed in order for the plant to have a good chance of survival, and
- annuals and deciduous plants to be labeled as such.

~ Eucalyptus Book ~

Sally Jacka has organised a bulk discount purchase, exclusively for TENPS members, of the 2<sup>nd</sup> edition of Eucalypts Volume 3, by Ian Brooker & David Kleinig.



**Field Guide to Eucalypts - Volume 3 Northern Australia** by M.I.H. Brooker & D.A. Kleinig  
R.R.P. \$129.90  
ISBN 1-876473-48-7

As reviewed in **The Australian Woodworker**

*Field Guide to Eucalypts - Volume 3 Northern Australia*, covers all known eucalypt species from Queensland, Northern Territory and Western Australia north of 26° latitude. The genus Eucalyptus includes over 900 species of which 280 are treated here.

All eucalypt species and subspecies have been photographed in their natural habitat, and each is described with an emphasis on the more important diagnostic features.

Drawings are provided to illustrate the meaning of botanical terms for leaf and bud shape, male and female flower parts as well as fruit, along with photographs of types of bark, various glands, seedling types, and other features of eucalypt plants. The book contains a key to eucalypts, listing the main distinguishing features, which would be useful for someone to make an identification based on a verbal description.

The key links to the species colour plate pages, which contain the identifying photographs and further details of distribution and other information such as size of fruit, bud and leaves in various stages of growth. The species colour plates show the full tree in situ, plus a close up of the bark, the bud and fruit. Some have close up photos of leaves and bud in flower.

<http://www.skillspublish.com.au/Skills%20AWW%20Current.htm>

~ Discount price for TENPS members \$65.00 plus \$5.00 postage ~

**Also available** at a discounted price of \$13.00 plus \$3.00 postage:

Eucalyptus. An illustrated guide to identification by Ian Brooker and David Kleinig. This is a selection of species from every state and territory, which includes those most commonly used for landscaping purposes.

Please let Sally know on 8988 5654 if you want to purchase either of these books at the discounted price. Money must be paid to Sally at the next meeting, or before, to secure your copy.

**NEXT MEETING THURSDAY 21<sup>ST</sup> APRIL  
GUEST SPEAKER:  
“The Millennium Seed Bank Project”  
&  
“Why 3 Plus?”  
Dr Sean Bellairs**

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