

Wildlife and Native Plants Study Group Newsletter



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Dear Members,

Well the year is quickly passing, and with the droughts and flooding rains experienced throughout this land of ours, many of you must be concerned about your gardens.

Concerns over climate change and global warming are increasing as our seasons seem out of whack. But for awhile at least, our gardens blossomed and flourished with spring, and the lovely warm, sunny days brought the birds, butterflies and other fauna into full view. A tinge of yellow, the wattle's sweet and redolent perfume filled the air of the countryside, and the warbling and singing of many birds told us winter was gone and spring was definitely here. Our garden came alive with honeyeaters gathering as much nectar as they could from flowering callistemons, melaleucas and many other native plants. Unfortunately our beautiful sugar gum standing tall above the house, was filled with so many galahs who proceeded to strip it bare. For many days at dusk the tree looked like it had pink and grey foliage. I fear the tree may be too far gone to recover from such an onslaught. How did your garden fare?

Many thanks to those members who promptly paid their subs, and to those members who returned questionnaires and sent in articles. Your responses were very much welcomed as were the articles that came in. If you sent me an article, and I haven't replied then please accept my sincere thanks for your efforts, and contribution towards the newsletter. I have been back in hospital for hand surgery and was unable to use the hand for some time. To the one person who did complain (and they'll know who they are!) I remind you that this is your newsletter and if you don't like reading articles from the same people all the time, then do something positive about it and send us an article!

As the days warm up take a moment to ensure adequate protection against some of the 'nasties' of summer - particularly mosquitoes. Simple protection is possible. Wear loose fitting clothing covering as much of the body as possible, use insect repellent containing DEET (Diethyl toluamide), fit insect screens to doors and windows, screen rainwater tanks and septic tanks, empty containers which pool water such as pot plant saucers, stock ponds with fish, and reschedule outdoor activity to earlier in the day when mosquitoes are less active.

The days seem to be flying now, and I guess it won't be long before Christmas is here. There will not be another edition this year so I will take the opportunity now to wish you all a

Merry Christmas & a Happy New Year

May you gain lots of pleasure from family and friends at this time, and enjoy your Summer holidays.

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-and more!

NATIVE BEES by Christine Jones
a follow on article from that of last edition - The Sweetness of the Bush - a story of honey

Scientists have described about a million different kinds of insects and there are many more still to be discovered or described. Compared with about 7,000 birds species and about 4,000 mammal species, the insect kingdom poses a large world of discovery, and interactions. This magnitude of numbers in the insect world is evident when we sight numbers of insects, such as ants in the cupboard or termites in a piece of wood.

Geologists have indicated that insects have been present on Earth probably millions of years before Man, and that most forms have changed little in that time. Bourke (1961: 6-7) summed up the situation well, stating "We seem to have brought most of our troubles on ourselves. Planting solid acres of crops, orchards and gardens provided various insects with a large, readily obtainable supply of food and naturally their numbers increased. Harvesting our crops and storing the produce means we are storing food for insects as well as for ourselves. Our gregarious habits, resulting in the development of concentrations of buildings, have helped other insects by creating unnatural but very favourable habitats. It is considered that, under normal conditions, at least 10 per cent of our agricultural produce goes to the insect tribe. During plagues the figure in affected areas has often reached 100 per cent."

This is the case with locusts and grasshoppers in particular across Australia - when conditions are right their numbers explode, and then they devour everything in their path. But not all insects are our enemies. Some 'good' insects destroy others that may be classed our enemies, while some are used to produce dyes and drugs etc., others are scavengers assisting the decomposition of rotting materials, and then there are those that assist in the pollination of plants - the bees and butterflies in particular.

Most of us think of swarms and honey when bees are mentioned. But many bees are solitary bees, do not store honey, do not care for young, have no stings, and some even have become lazy and parasitic. I have however experienced native bees that fly in swarms within 3 or 4 feet of the ground which inhabit the mallee areas. They are prevalent on hot days, but pose no risk as they are stingless. They have produced a form of honey, some of which is edible - black in colour, and are most likely to be 'sugar bag' bees.

The 'sugar-bag' Bee (*Trigona carbonaria*) are tiny, sturdy, stingless bees about a centimetre in size. They are social and nest in tree hollows in warm areas, having a wide distribution range. A colony is made up of a queen, the infertile female workers and the males (drones.) The inner surface of the nesting hollow is plastered over and cells are attached by stalks. The honey is dark and does not compare favourably with that produced by domestic bees, but is edible, and was prized by the indigenous people. A colony of these bees was sent to England in 1825 and survived for some years there.

The Banded Bee (*Anthophora pulchra*) is a large hairy, blue-banded bee probably introduced from Asia. Nests are usually burrows in the soil, but occasionally they are found in the mortar of brick walls. Adult bees are black, with the head and thorax covered by yellow hairs and the abdomen bears bands of bright blue, hence the bees' name.

The Carpenter Bee (*Lestis bombylans*) is also a solitary bee and it too, burrows into trees to make nests. The species is often called the Grass-tree bee for good reason, as the female likes to burrow into the side of a dead flower stalk of the grass tree, where it removes the pithy centre, and divides the hollowed out stem into cells, sealing them with pith. The Carpenter bee varies in colour from blue-green to bronze-green, with white on the face, a thick coat of golden hair on the thorax and abdomen, and has brown wings. The mother bee often occupies the empty cell at the entrance, perhaps to protect her brood, but takes no care of the larva or pupa.

The Leaf-cutter Bee (*Megachile mystacea*) is found worldwide. It is a solitary bee and does not store honey. Its life history is similar to the other bees mentioned however the nest is different. Typically the bees cut oval and circular sections from the soft leaves of various plants, particularly banksia and waratahs, but also exotics and orchard trees. The leaf sections are used to build cells, the oval pieces forming the sides and the smaller circular pieces the ends. Each cell assumes a short thimble shape. Cells are placed end to end in a cavity in a tree trunk, wall, fence, rock or in the ground. The whole nest is encased in a cover of leaf fragments. This species is dominant in Asia and Australia. It is black with white hairs on the head and red ones on the abdomen.

For the bee/plant interactions see Maree's article this issue.

Bourke, P.A. (1961) Reference Book to Australian Nature Plates. Macmillan. London

Lilies of the woodlands

STORY AND PHOTOGRAPHY BY TIM LOW

Study Australian history and discover a lovely and nutritious group of plants often overlooked by an orchid-adoring public.

In late winter and spring, wildflower devotees are out and about in Australia's grassy woodlands, in Victoria especially, in search of those most revered of all plants – the ground orchids.

With their odd palettes of colours and unique flower shapes (the lower-most petal always forms a lip) orchids are charming, to be sure, but my loyalties go to the underdogs so I barrack for another group of plants, which share space with the orchids, offering far more colour but rating far less attention – the ground lilies.

In times past these plants were popular, as their names reveal: milkmaids, early nancy, chocolate lily, vanilla lily, blue stars. These are lively names bestowed by affectionate country folk, who appreciated the beauty of these plants, and their aromas. Chocolate lilies (*Dichopogon* species) and vanilla lilies (*Arthropodium* species) have richly scented blooms, although whether chocolate lilies smell more like chocolate than vanilla is a moot point.

Twining fringed lily (*Thysanotus batersonii*)



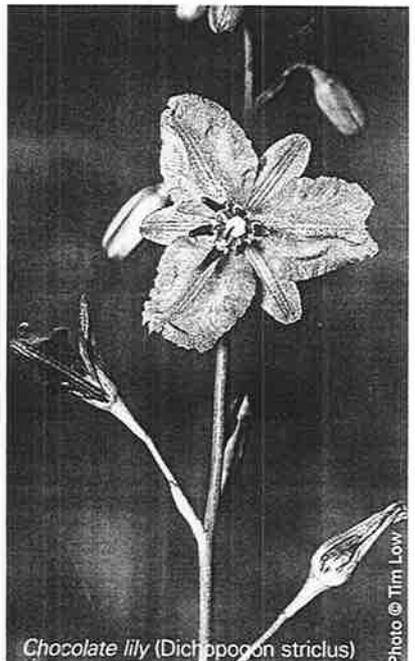
Bulbine lily (Bulbine bulbosa)

Photo © Tim Low



Bulbine lily tubers (Bulbine bulbosa)

Photo © Tim Low



Chocolate lily (Dichopogon strictus)

Photo © Tim Low

Summer underground

Lilies, ground orchids and the yam daisy or murnong (*Microseris scapigera*) once thrived in the woodlands of south-eastern Australia, adding diversity to the grassy understorey. The orchids and murnong and the lilies mentioned here tend to share a similar way of life. They are soft-leaved perennials that wither during the heat of summer, surviving the hotter months as underground tubers or corms. During late winter or spring, or sometimes early in autumn, they push up buds and leaves and burst into bloom.

Orchids begin flowering in winter but lilies reach their peak in spring, although early nancy (*Anguilla dioica*) unfurls its first blooms in late winter. Victorian colonial botanist Baron Ferdinand von Mueller declared it the first harbinger of the spring, as it bursts forth into flower, much like the snowdrop indicates the first effects of

the warming rays of the spring-sun in the European north'. It often carpets the thin sheets of soil overlying granite domes – a setting that is sunny and moist after rain but very hot and dry during the period when the corms are dormant. Some rural people knew it as 'pepper and salt' (the white petals are sprinkled with dark dots) or as 'harbinger of spring'.

Roasting tubers

Another country name was 'blackman's potatoes'. Aboriginal people in the past looked upon ground lilies as good tucker. The tiny tubers or corms could be exposed with a digging stick during the seasons of dormancy and roasted or baked for food. All the orchids and tuberous lilies were probably used, and there are records of women harvesting tubers of fringed lilies (*Thysanotus* species), which are sweet and watery, milkmaids (*Burchardia umbellata* – bland and starchy), bulbine lily (*Bulbine bulbosa* – very nourishing,

like potatoes), and various orchids

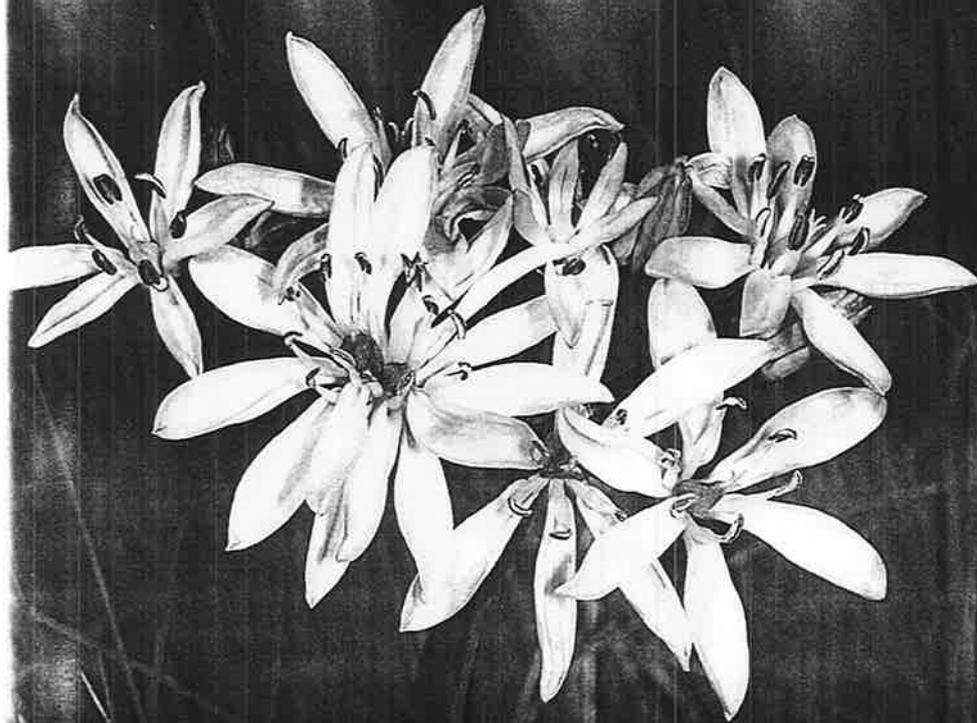
The underground organs come in various shapes and flavours and, although they are usually very small, they often grow in a surprisingly dense layer a few centimetres underground, within easy reach of a sharp stick. On strolls through temperate woodlands few people ever guess that so much sustaining food lies concealed underground. Murnong, a plant resembling the common dandelion, produces especially large sweet tubers and was the most important of these plants, serving as the main vegetable staple for Aborigines in Victoria's woodlands and grasslands.

Blossoms from a wetter past

Ground orchids tend to steal the show for four reasons I can think of: they are allied to the spectacular tropical rainforest orchids (the sexiest of all flowers, some say); their flowers are unique in form, with a hood and lip; they are usually rarer (lilies are

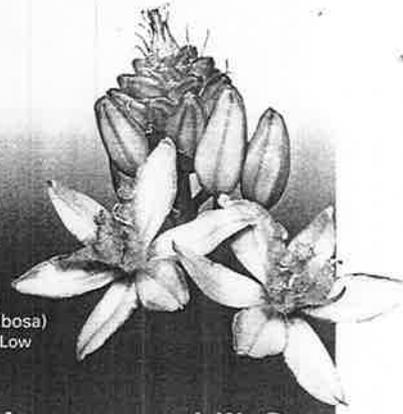


Early Nancy (Wurmbea dioica)



Milkmaid lilies (*Burchardia umbellata*)

Bulbine Lily
(*Bulbine bulbosa*)
Photo © Tim Low



What is a ground lily?

Ground lilies are an eclectic group of plants. Once grouped together in the lily family (Liliaceae), they are now divided among several smaller families. The tuber-bearing species are all small plants with grass-like leaves and six 'petals'. Strictly speaking, the flowers consist of three true petals and a calyx of three petal-like sepals, all collectively called 'tepals'. Flowers are usually purplish, pink, blue, yellow or white.

The widest range of species occurs in south-eastern and south-western Australia, but one of the fringed lilies (*Thysanotus chinensis*) grows in northern Australia and has dispersed northwards, probably as seeds attached to migrating birds, travelling up through Asia to southern China, where it was first discovered in the 19th century.

Photo © Tim Low

devalued because they are often easy to find); and they come in a much greater variety. Many orchids are pollinated by specialised wasps and their pollination syndromes have promoted intense speciation, leading to diversification into scores and scores of very similar species. Ground lilies, meanwhile, are a relatively stable group – not, it seems, undergoing active speciation.

Some species have been stable for a very long time, judging by their disjunct distributions. Small colonies of the common chocolate lily (*Dichopogon strictus*) grow in remote mountain ranges in central Australia, far from the woodlands in the south-east where these plants otherwise occur. The outback colonies, along with the palms in Palm Valley, west of Alice Springs, provide some of the best living evidence that the climate in the outback was once wetter.

Other lilies, such as twining fringed lily (*Thysanotus patersonii*) and blue stars (*Chaemescilla corymbosa*), grow in



Milkmaid lily tubers (*Burchardia umbellata*)

heathlands on both sides of Nullabor Plain, a distribution pattern not matched by any eucalypt. Either these lily species are very old, predating the drying of Nullabor Plain, or their seeds are better at long-range travel than those of eucalypts and most other plants. That they sometimes travel well is suggested by the presence of one species of fringed lily (*Thysanotus chinensis*) in South East Asia and China as well as northern Australia, and by the sharing of two genera (*Bulbine* and

Wurmbea) by Africa and Australia.

Ground orchids have suffered from habitat loss and grazing by cattle, sheep, rabbits, and overabundant kangaroos; and ground lilies and murnong have endured a similar fate. They fare best today in national parks. But even within reserves, their distributions are often limited. In Chiltern National Park in northern Victoria, chocolate lilies are dominant spring wildflowers, but other kinds of lilies – and orchids – are very patchy, reflecting the grazing, logging and mining that predated the park's formation. Some of the best sites around Chiltern for orchids and lilies are country road verges that escaped heavy grazing and other pressures. These lilies of the woodlands are plants we should learn to value more, or we risk losing them one day.

Biologist, traveller, writer and photographer **TIM LOW** is the author of the best-selling books *Feral Future* and *The New Nature*.

Wildlife and Native Plants.... so What's in it for me? By Maree McCarthy (*Nature's Magic Garden Designs*)

In an island continent such as Australia, with soils and organisms evolved distinctly separate from Europe, we need to watch the local ecosystems to learn how we can 'fit in' and call this place 'home'. The wonderful part is, Native plants, insects and all the other things that have evolved together over an amazingly long time around here are really quite beautiful and fascinating!

I mean have you ever noticed how the native **Hover Flies** (short-tongued pollinators) are always attracted to Xmas Bush in clouds, and also to many other native plants. Its handy to know that their larvae love to **eat aphids** too, so look after them – but also be aware that they're extremely sensitive to Pyrethrum.

Another beautiful nice thing about having native plants around the place is that they attract the **Australian Native Bees**. Australia has **over 1,500 species** ranging in size from 2mm to 24mm. At present there are about 200 species just in the Sydney region alone. One native bee species (*Trigona carbonaria*) and all the males of the species in the Sydney region are **stingless** (Dollin et al., 2000:15). Of the rest, none are aggressive, and most are too small to deliver an effective sting.

Unfortunately, urban development has destroyed countless colonies of native bees. However, some have managed to survive in the city - such as the beautiful **Blue Banded Bee**; the **Teddy Bear Bee** - often nesting under houses; and the rounded cuts from the **Leaf Cutter Bee** are sometimes seen – especially on rose leaves. Dollin et al. noted that, "In a park in Concord seven species have been seen in half an hour, and over a two year period a pair of flowering angophoras at Carlingford were visited by at least 35 different species." (2000:6).

As well as a reliable food source, native bees need nesting places, such as:

- natural bushland
- burrows in the ground
- mudbricks,
- holes in dead timber
- dead pithy stems

Many nests are used year after year. Protecting habitat for native bees will help them to survive. Bees visit flowers for both

nectar and pollen, and not necessarily at the same time.

Some native bees have short tongues (like the Hover Flies) and prefer shallow, open flowers like those of the myrtle family such as:

- Eucalypts (also attracts small birds) Try Dwarf forms such as *E. curtisii* – 3-5m)
- Backhousia myrtifolia 6m. Beautiful cream flowers perfumed like honey and nutmeg. Powdered leaves can be a substitute for nutmeg. Oil from leaves is also an excellent mozzie repellent (French, 1990:28).
- Austromyrtus dulcis (Midyim Berry) 30cm x 1m. Shade or Sun. Attractive pink new growth and small fruit that tastes like custard and nutmeg.
- Baeckea virgata Dwarf 70cm Sun. Very compact shrub and very hardy.
- Baeckea virgata 'La Petite' 90cm. Sun or half shade. Weepy. Long flowering.

Lilly Pillies such as:

- Syzygium leuhmannii 'Royal Flame' 1m. Sun or half Shade. Weeping pink new growth. Red edible berries.
- Syzygium 'Pink Cascade' 2-3m Sun or Shade. Weeping, pink new growth with large pink Pom-Pom flowers followed by bunches of pink fruit.
- Syzygium australe 'Compact Form' 3-4m Sun or Shade. Dense Lush foliage to ground. Good Screen. Hardy. Edible Fruit. White fluffy flowers.

...and many others such as:

- Citrus
- Boronia
- Eriostemon
- Phebalium
- Zieria

Long-tongued bees will favour tubular blooms (Dollin & Batley, 2000:6) such as:

- Correa 1-2m (Native Fushia)
- Westringia (ground covers to 2m) (**Blue Banded and Teddy Bear Bees love W. fruticosa**)
- Prostanthera (Mint Bushes – usually around 1-2m)

Long-flowering native plants that are favourites of native bees:

- *Brachycome multifida* (Cut-leaf Daisy)
- *Bracteantha bracteata* (Paper Daisies)

Reed Bees Love Australian plants in the Fabaceae family such as:

- *Wattles*
- *Peas*

So... You still ask "Whats in it for me?" Well, some of our crops require a special kind of pollination. For example, Borage, *Solanaceae* family – Tomatoes, eggplants, chillis, tamarillos. These flowers have special anthers that require shaking to pollinate. The 'Buzz Bees' such as the **Teddy Bear, Carpenter and Blue-Banded Bees** are able to do this and European Honey Bees cannot. Plants that need this method of pollination include:

- *Dianella*
- *Hibbertia scandens* (hardy native salt-tolerant climber, Sun or Shade, yellow flowers)
- *Leptospermum* (T-Tree)
- *Macadamia*
- *Polyscias spp.* (Native Elderberry 2m, Celery Wood 10m, Pencil Cedar narrow 10m)
- *Pomaderris* – masses of creamy flower heads are very attractive to native bees and other insects.

And the other thing is.... Stingless Native Bee honey is delicious! So, not surprisingly, **Stingless Beekeeping** is becoming quite popular!

Even dead shrubs and trees are home to many creatures. The metallic-green **Peacock Carpenter Bee** nests in dead dry flowering stalks of grass trees (*Xanthorrhoea*) or in soft wood such as *Banksia* and *Leptospermum*.

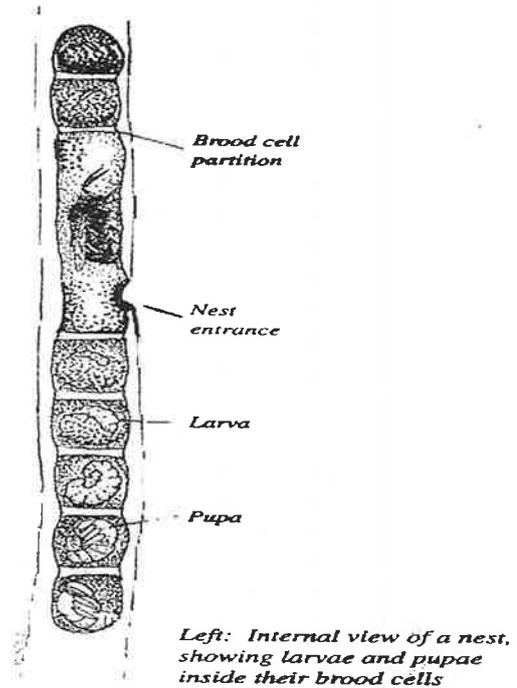
Peacock Carpenter Bee (*Xylocopa (Lestis) bombylans*)

[X. bombylans female]



(Source – Dollin et al, 2000:59)

Carpenter Bees may nest in dead dry flowering stalks of grass trees, or in soft wood such as *Banksia* and *Leptospermum*. They defend the entrance hole by blocking it with their bottoms!



(Source: Dollin et al, 2000:59)

References and Resources:

Dollin, A., Batley, M., Robinson, M., & Faulkner, B., (2000), *Native Bees of the Sydney Region: A Field Guide*, Australian Native Bee Research Centre, Nth. Richmond, Australia.

French, J., (1990), *A-Z of Useful Plants*, Arid Books, Australia.

Note: Free updates are available on the *Aussie Bee* Website:
www.zeta.org.au/~anbr/fieldguideupdates.html

ED.NOTE: Thanks Maree for your excellent article.

Plants to Attract Fauna to the Garden

Keith Townsend

This is a list of plants to attract fauna to the garden. Bruce Carvolth and I did some work in the hope of providing better information for the Flora for Fauna website. Following this I re-hashed the info to a suitable form for an information sheet. Although it is for Townsville, with a few local adaptations it should be useful for most of Queensland. I found it a useful tool when talking to a Wildlife Carer Group recently.

To Attract Honeyeaters

Banksia aquilonia
Banksia dentata
Banksia plagiocarpa
Banksia robur
Callistemon species
Darlingia darlingiana
Grevillea species - particularly those with large flowers
Lagunaria petersonii
Lophostemon grandiflorus
Melaleuca species
Melicope rubra (syn. *Evodiella muelleri*)
Xanthostemon chrysanthus

To Attract Fruit Eating Birds

Acmena hemilampra
Chionanthus ramiflorus
Cupaniopsis anacardioides
Diospyros geminata
Drypetes deplanchei

Euroschinus falcata
Ficus species (Figs)
Flacourtia sp. (Cooktown)
Livistona decipiens
Livistona drudei
Micromelum minutum
Pittosporum ferrugineum
Pleiogynium timorense
Scolopia braunii
Syzygium australe
Syzygium luehmannii
Syzygium oleosum
Terminalia catappa
Terminalia muelleri

To Attract Insect Eating Birds

Bursaria tenuifolia
Callistemon species
Darlingia darlingiana
Grevillea species
Melaleuca species
Xanthostemon chrysanthus



Xanthostemon chrysanthus

To Attract Parrots & Cockatoos

Banksia aquilonia
Banksia dentata
Banksia plagiocarpa
Banksia robur
Casuarina cunninghamiana
Corymbia clarksoniana
Corymbia erythrophloia
Corymbia ptychocarpa

To Attract Gliders/Possums

Acmena hemilampra
Banksia species
Callistemon species
Corymbia clarksoniana
Corymbia erythrophloia
Corymbia ptychocarpa
Eucalyptus camaldulensis
Eucalyptus crebra
Eucalyptus tereticornis
Lophostemon grandiflorus



Aristolochia tagala

Brachychiton australis
Cissus opaca
Cissus reniformis
Citrus species

Drypetes deplanchei
Ficus species
Flacourtia sp. 'Cooktown'
Gahnia aspera
Geijera salicifolia var. *latifolia*
Graptophyllum species
Hoya australis
Melicope elleryana
Melicope rubra
Micromelum minutum
Scolopia braunii
Terminalia catappa

Melaleuca species
Syzygium australe
Syzygium luehmannii
Syzygium oleosum

To Attract Koalas

Eucalyptus camaldulensis
Eucalyptus crebra
Eucalyptus tereticornis

To Attract Skinks/Dragons

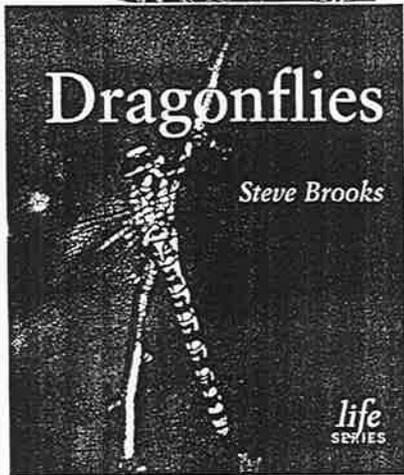
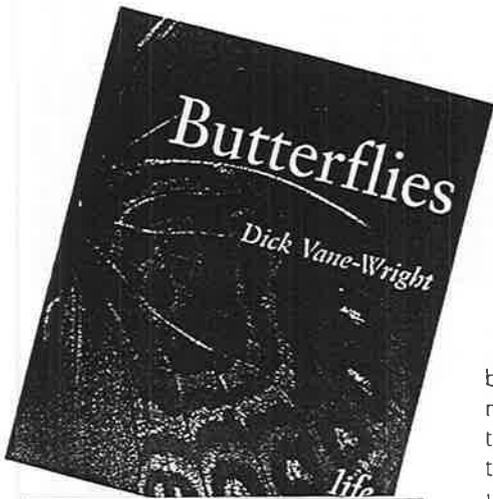
Any tufted grass or rush
Asplenium nidus
Dianella atraxis
Dianella caerulea
Dianella congesta
Gahnia species
Lomandra hystrix
Lomandra longifolia
Microsorium spp.
Xanthorrhoea johnsonii
 Heavily mulched gardens



To Attract Butterflies

- Cairns Birdwing, Big Greasy, Red-bodied Swallowtail
- Common Aeroplane
- Hawk Moths
- Hawk Moths
- Ulysses, Orchard Swallowtail, Chequered Swallowtail
- Albatross spp.
- Common Crow, Two Brand Crow
- Australian Rustic
- Skipper spp.
- Orchard Swallowtail
- Orchard Swallowtail
- Eichorn's Crow
- Ulysses Swallowtail
- Ulysses Swallowtail
- Cruiser, Glasswing Cruiser
- Australian Rustic
- Common Oak Blue

BOOK REVIEWS



Butterflies

By Dick Vane-Wright, *The Natural History Museum, London, 2003. 112pp, colour illus.*
RRP \$34.95

Dragonflies

By Steve Brooks, *The Natural History Museum, London, 2003. 96pp, colour illus.*
RRP \$34.95

(Available from CSIRO Publishing,
www.publish.csiro.au)

Butterflies and Dragonflies are part of The Natural History Museum's *Life Series*, which aims to present 'an accessible introduction to the wonders of the natural world suitable for all nature enthusiasts', with each book covering a single ecosystem or plant or animal group.

Reading these books is like attending an enthusiastic natural history lecture. The language is sometimes daunting

but, particularly in *Dragonflies*, which makes more use of technical terms, the terms are defined the first time they are used and both books include useful glossaries. These are not books that children are likely to read, although the large, clear and colourful photographs would delight any age. They are, however, books that a determined teenager or interested adult would find fascinating and rewarding.

Both books aim give a global overview with examples from around the world, but there is very little Australian material, while Europe and the UK are well-represented. This could be a drawback for Australian readers, but because each book is an introduction to an entire group of insects and is about behaviour rather than identification, it's not really a problem. Information about the variety of behaviours possible with these animals will inspire readers to observe their own local butterflies and dragonflies with far more care and attention.

For instance, how do dragonflies know where to lay their eggs? The larvae remain ferocious aquatic predators for as much as five years, and each species has different requirements. The adults must first identify a suitable body of water (sometimes mistaking a wet road for a relatively wide and slow-moving river), then find a section and lay their eggs to hatch where the larvae will have the right water and habitat conditions but not too much competition. It adds a whole new layer of interest to watching a dragonfly hover over a backyard pond. *Butterflies* also offers intriguing details. Did you know that butterflies can taste with their feet, or that their erratic flight makes them difficult to catch on the wing because lunging predators cannot accurately predict where the butterfly will be in that next instant?

The author, whose enthusiasm suffuses every page, even makes a case for their mathematical ability. Females appear to vary the number of eggs they lay at each location by apparently calculating the ability of a plant to support the future of their voraciously chewing caterpillars. Anyone who has been responsible for children can sympathise with the challenge of placing offspring in a location where they can survive independently. Imagine when there is such a difference between the adult and larval forms. Do flying, liquid-sipping butterflies retain a memory of the need to chew from their pre-pupal days?

Did you know that butterflies can taste with their feet, or that their erratic flight makes them difficult to catch on the wing ...

In both books, the insects often appear in natural settings; *Butterflies* is particularly good at using photographs to illustrate behaviours described in the text. And the photographs are beautiful. These are animals with tremendous visual appeal, presented to advantage. The photographers deserve more acknowledgment, rather than being tucked away in a small paragraph on the credits page.

The sections on human impacts, conservation and the future of both animal groups are well written and thought-provoking. May pandas and Koalas continue to attract attention and conservation efforts, but we are more likely to have butterflies and dragonflies in our own neighbourhoods as well as in many valuable wilderness locations, and as a group, they are better environmental indicators.

Reviewed by **SAREN STARBRIDGE**

Plan to Plant the Plain Plantain

By Phil Watson

Many would link the name Plantain to a large cooking banana, but more significantly it also refers a series of fascinating herbaceous species found in the genus *Plantago*. Within most open grassy and grassy woodland communities, both indigenous and introduced *Plantago* species can be discovered happily thriving amongst the inter-tussock spaces formed by both native and exotic grass species or sedge species.

From the little known *Plantaginaceae* Family the Plantain, commonly known as a troublesome lawn weed, is one of the commonest or plainest plants. In fact Ribwort *Plantago lanceolata* is known worldwide by kids as Soldiers Herb, since the flowering head shoots out as the lopped stem is pulled rapidly over the head. It is also known as White Man's Footprints by the American Indians as the wagon trains of the American pioneers inadvertently carried the seed of the plant across western USA. Buckshorn Plantain *Plantago coronopus* is common in all poorly drained and compacted sites world wide. However, the genus has so many values that it deserves recognition beyond its plain status.

In our grassy woodlands and begging to be planted in your backyard bush tucker patch are a few rare endemic species namely *Plantago paradoxa*, *Plantago tasmanica* and *Plantago glabrata* along with the more common variable Plantain *Plantago varia*. Specially adapted Plantains enjoy the colder alpine areas, worthy of trying in your patch purely for their superb foliage displays. These include Montane Plantain *Plantago antarctica* and Tasmanian Alpine Plantain *Plantago daltonii*.

DEATH AND GLORY

reprinted from *Wildlife Australia* Winter 2004

An invasive toxic plant which could be linked to Swamp Wallaby deaths in New South Wales has now been reported in Portland, Victoria. The Glory Lily (*Gloriosa superba*) native to Africa and Asia, contains colchicine, a highly toxic plant chemical that interrupts cell division and can cause animal miscarriage and death. RMIT University researchers and NSW wildlife officers will collaborate to determine the level of threat the plant poses to humans and wildlife.

RMIT University was initially approached by the NSW National Parks and Wildlife Service (NPWS) after rangers in Bongil Bongil National Park near Coffs Harbour suspected that a steep decline in the number of Swamp

Wallabies was linked to Glory Lily. Professor Jorma Ahokas, Director of RMIT University Key Centre for Applied and Nutritional Toxicology, said researchers, through groundwork methodology established at RMIT, would clarify whether the plant was responsible for those deaths.

The weed has also been found along parts of the New South Wales northern coast and southeast Queensland.

Professor Ahokas said the plant's active ingredient, colchicine, "had the potential to impact on fertility with possible fatal consequences for animals likely to eat Glory Lily leaves or seeds, including native animals such as Swamp Wallabies and birds, and stock including goats and sheep."

"In Europe, cases of sheep suffering from permanent fleece loss after eating Glory Lily or other colchicine-containing plants have been recorded, and other psychological functions may also be affected," he said. "Ongoing study will also determine whether colchicine is transferred to humans through meat consumption."

NSW NPWS ranger Martin Smith said wildlife officers were concerned that the plant could become the 'Cane Toad of weeds'.

"Pest plant control is dependent on an integrated approach by landholders whose properties are affected", he said. "By scientifically quantifying the potential impact of Glory Lily invasion on the wider community, we are in a stronger position to contain it."

WILDER THAN WE THOUGHT

reprinted from *Wildlife Australia* Winter 2004

The NSW National Parks and Wildlife Service plans to search for bats, possums, gliders, nocturnal reptiles, bandicoots, quolls, marsupial mice, reptiles, frogs and birds in a new 300 hectare addition to Lane Cove National Park in Sydney.

NPWS senior ranger Michele Cooper was pleased to reveal that the Pennant Hills land, previously thought to be devoid of wildlife, is actually teeming with interesting species.

"We have already completed some initial survey work which has revealed a brand new site for the Red-crowned Toadlet, a vulnerable species of frog," she said. "This is an exciting discovery, with this stunning species thought to be in severe decline in urban areas."



**SA THREATENED SPECIES - THE LARGE
- CLUB SPIDER ORCHID** from SA Veg. on the
Edge

There are more than 1600 species currently listed on the Australian Government's Environment Protection and Biodiversity Conservation Act 1999. Approximately 320 of these species are animals, but plants dominate the list. One of these is the Large-club Spider Orchid, *Caladenia macroclavia* (*syn. Arachnorchis macroclavia*).

Currently listed as Endangered under the EPBC Act, the Large-club spider orchid is a native terrestrial orchid with a single short and narrow hairy leaf that is dull green with irregular purple blotching at the base. Flowering time is August to October. The flower stalk measures 15-28cm and the flowers are about 5cm across. Flowers are green to yellowish green, with brown tipped club-shaped petal and sepal tips. The labellum (or lip) has green to yellow-green fringes and a dark maroon centre.

The large -club Spider Orchid is endemic to the Yorke Peninsula of SA where it occurs at five sites: Agery Reserve, Mona Railway Reserve, Muloowurtie Conservation Reserve, Pt. Julia site and a Pt. Vincent site. The orchid's distribution may once have covered the Eyre Peninsula to the Murray Region, but now appears to be confined to the Yorke peninsula.

The orchid grows on sandy clay loam soil over limestone in mallee and broombrush. White mallee woodland and grassland were once widespread over Yorke Peninsula. The large club spider orchid now survives mostly in small remnant blocks and along roadsides. Vegetation at all known sites is dominated by mallee species such as *Eucalyptus gracilis*, *E. socialis* and *E. incrassata*.

The current population size is estimated to be just 250 plants. The sub-population at Agery Reserve is considered critical for the survival of the species as it contains the largest number of flowering plants. Most of the species' sub-populations are very small and under serious risk of extinction.

Habitat loss and fragmentation caused by vegetation clearance has impacted significantly on the orchid and also increased the effects of other threats. These other threats include grazing by vertebrate animals, competition from weeds, habitat damage by vehicles, dumping of soil or rubbish, herbicide drift and roadworks. Weed species such as bridal creeper, soursobs, wild oats and African boxthorn threaten to

displace Large-club Spider Orchid at many sites. Kangaroos, rabbits and sheep eat the plants, and sheep and rabbits also cause soil erosion and spread weeds. Habitat fragmentation also limits the abundance and movement of pollinators. Without successful pollination, the species will not increase in number.

CONFERENCES

FAQI Flower Association of Queensland - 7th Australian Native Flower Conference

The conference website is online and is being updated as the conference date approaches. Web address is www.flowersaustralia.asn.au Here you will find the conference agenda, venue details, sponsorship info, details of farm tours, registration information and conference organiser contacts.

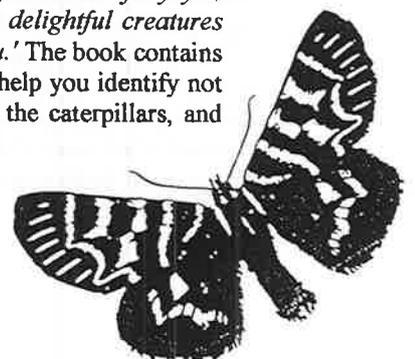
Also online are the following: events calendar, FAQI member contact details, industry planning documents, cut flower industry links, current research, the 2005 Native Flower Conference and more.

THE SHOULDERED BROWN BUTTERFLY from the *Butterfly Conservation SA Inc. Newsletter March 2004*

The Shouldered Brown Butterfly emerged in Autumn at Penambol C.P. This species is not common in the South East, being found only in the lower south-east where the high rainfall natural forest occurs. Its larvae feed on a variety of native grasses including wallaby, tussock and kangaroo grass and also on a range of introduced species found around the edges of scrub and in plantations and forests.

††

Members interested to know or see more butterflies in their own garden and backyards should check out Densley Clyne's book [How to attract Butterflies to your garden](#) (1990, Reed Books). This book describes the life cycles of 32 common Australian butterflies together with the plants on which they like to feed. Clyne suggests that 'by planting out your garden carefully you can persuade some of these delightful creatures to take up residence with you.' The book contains some magnificent photos to help you identify not only the butterflies but also the caterpillars, and even some eggs and larvae.



DINGO CAME FROM ASIA

Reported in the Adelaide Advertiser (4/8/04) :

"Dingoes probably evolved from a very small group of pets brought by South East Asian settlers, researchers reported yesterday.

Genetic tests on dingoes and a range of dogs from around the world shows the animals can date their ancestors back 5000 years, to either a single female or a very small group of animals, the international team of researchers say.

This coincides with the arrival in Australia of settlers from South East Asia, they say in this week's issue of the Proceedings of the National Academy of Sciences.

Researchers from Australia, New Zealand, Sweden and the US collected DNA samples from 211 dingoes and compared them with the DNA of 676 dogs from around the world and 38 wolves from Europe and Asia."

PROTECTING ENDANGERED NATIVE GRASSLANDS

The Canberra Times (7/10/04) highlighted that the ACT Government had moved to protect endangered areas with the issue of a draft strategy for grassland conservation, titled *ACT Lowland Native Conservation Strategy*. Only 5% of the ACT's native grasslands remain undeveloped.

The strategy had been three years in the making and would replace a number of action plans for conservation of threatened species. The draft strategy identifies areas of grasslands remaining, makes recommendations for future management and possible inclusion in the reserves system, and rates the ecological value of each area identified.

"According to the strategy, less than 1 per cent of the grasslands that existed in Australia before European settlement remains intact, and those in the ACT support several rare species, including the grassland earless dragon and striped legless lizard.

Environment ACT manager of wildlife and monitoring Dr David Shorthouse said grasslands typically occurred in valleys, and because Canberra's development had been planned for the area's valleys, only 1000ha of the original 20,000ha of grasslands remained untouched.

"The ACT also has 90 per cent of all the remaining earless dragons in the world and they live in these grasslands, so the ACT has a big responsibility to protect what's left", Dr.Shorthouse said."

The Conservation Council has welcomed the report.

NSW HAS A NEW BIRD OBSERVATORY

The Pastoral Times, NSW (8/10/04) reports the opening of the Gulpa Creek Reed Beds Bird Observatory, 4kms from Mathoura at Picnic Point. The observatory is the first completed stage of the Tri Avian Corridor project that incorporates Wakool and Balranald areas.

A 350m boardwalk leads to a split level bird observatory created using renewable redgum timber. It is expected to provide visitors views of almost 50 different bird species. The collaborative project included timber cutters, bee keepers, volunteers and bird watchers, and was funded through the Government's Regional Assistance Program, Murray Shire Council, the Murray Wetlands Working Group, NSW State Forests and the Barmah-Millewa Forum.

The original reed beds observatory, built in 1985 is still visible from the new structure. The original observatory was often flooded and unable to be used in all seasons. The project integrates environment, economic, social and scientific factors, which is destined to become part of the Living Murray icons showcase. This aims to educate the community in the importance of re-instating near natural flooding regimes into the wetlands in the region.

RESEARCH BARKING UP THE RIGHT TREE TO SAVE THREATENED OWLS

The Northern Daily Leader (1/10/04) reports on research techniques that Forests NSW is using in the study of birds of prey. The latest focus is on the threatened barking owl of the Pilliga Forest. The Pilliga State Forest supports the largest known population of the birds in NSW, and may be the largest in southern Australia.(although the owl is much more common in Northern Australia). Forests NSW principal research scientist Dr Rod Kavanagh said the current research had involved the trapping and radio-tracking of nine birds across the Pilliga. A seldom seen night stalker of the western bushland, the barking owl was listed in 1998 as a vulnerable species. The current study is part of the recovery plan for these birds.

Barking owls, *ninox connivens*, are so named because of the "wook wook" noise they make when calling to each other. Some liken it to the bark of a small dog. Dr.Kavanagh expects other populations occur on private lands in riparian forests and woodlands on the western slopes and on the North Coast of NSW, but these areas have not been surveyed.

The birds are lured with owl calls broadcast from computer speakers, and caught in nets strung between trees. Once caught the birds are weighed and statistics recorded, and then fitted with a radio transmitter. After release the birds were tracked during the day to determine where they were nesting and roosting, and at night to see where they foraged and how far they travelled.

PLAN DOUBT CAUSES WANDERER CONCERN

Confusion reigns over the future of the Draft Plains Wanderer Recovery Plan, according to the NSW Pastoral Times (1/10/04). The Draft plan has been in progress for the past three years and is believed by some parties of the NSW Local Government and Shires Association to have been "shelved" in some government department. The agency concerned however says the plan is still under consideration before being forwarded to the Minister.

The Plains Wanderer is a small quail-like bird standing about 10cm tall and weighing 40-95kg. It is known to exist in the plains around Conargo. It is listed as an Endangered Species on Schedule 1 of the NSW Threatened Species Conservation Act 1995 and is also listed as a Vulnerable Species on Schedule 1 of the Commonwealth Endangered Species Protection Act 1992.

BIRDS AND COTTON CAN CO-EXIST

An article in the Border News (NSW), gave the cotton industry's perspective presented by Cotton CRC CEO Guy Roth, to the Birds Australia Congress held in Highfields Qld. recently.

Mr. Roth said the industry had a great opportunity to build on these changing practices to enhance sustainable ecological outcomes for birds. He said that 20-30% of the land is not used for cotton or grain on cotton farms and so there is considerable opportunity to enhance and conserve habitat.

In a bird study of cotton farms in the Gwydir Valley (Jarman and Montgomery 2001), 23 surveys indicated 42,495 birds were counted from 45 species. Birds eat lots of insects, and are good indicators of biodiversity. It was suggested that more is needed to be learnt about birds on farms, and their value to farming systems. He suggested that many cotton farmers and their families have an interest in birds, and that they should be shown how to monitor, or further their interest by joining a bird watching group.

He stated that *"an opportunity exists to combine the skills of Birds Australia members, the interest of cotton farmers and the professional and financial resources of the Cotton CRC, to generate research projects to provide the scientific knowledge base for a sustainable, friendly environment for birds on cotton farms. From this growers will learn and understand, and in turn change management practices that will have better outcomes for birds and for family life on the farm."*

We need to raise awareness, benchmark, develop action guidelines, and implement dialogue with farm families in a non-threatening environment. Research and education offers great potential to produce a mutual outcome for birds and cotton growers," Guy Roth said."

SAVE FAUNA BY MAINTAINING HABITATS, SAY WILDLIFE LOVERS

Two Toowoomba bird lovers, Lindy Eising and Lorraine McPhee, are calling on council, developers and householders to preserve and plant more native trees to reverse the decline of local native birds and wildlife. The Qld Chronicle (1/10/04) reports. Their argument is a common one, that people insisted on European environments by planting deciduous trees and lawns which attracted European and Asian birds that killed or out-competed native wildlife species. Already the Turquoise parrot, the regent honeyeater, the powerful owl and the grey-headed flying fox were on Toowoomba's endangered fauna list. The sugar glider and possum populations were also dwindling. The ladies called for the planting of native trees in new developments and in city parks, and the retention of tree hollows from Australian trees, which could provide habitat for our native fauna, before the native species were gone for good.

VOLUNTEERS SAVE PLANT

The NSW Western Magazine 11/10/74 reports on a project to protect the nationally endangered plant, *Zieria obcordata*, on 'Bulbudgerree' a property owned by Kerrie and George Taylor. The endangered plant was being choked by the exotic 'tree of heaven', so volunteers have worked across the site, cutting and painting the weed with herbicide in an attempt to save the *Zieria* species. Apart from this site, the only other known location of *Zieria obcordata* is at Bathurst. Only about 200 plants survive in the world.

EXPERTS CAUGHT ON THE HOP AS FROGS DISAPPEAR

In an article by Roger Highfield in the Sydney Morning Herald (16-17/10/04) he concludes from a global study that almost one third of the world's frogs, toads, salamanders and other amphibians are threatened with extinction within 100 years. The prospect is a grim one and a timely warning of an environmental disaster.

'Amphibians are widely regarded as useful indicators of harmful changes in the environment, because their permeable skin is so sensitive.

The President of US Conservation International suggests that "Amphibians are one of nature's best indicators of overall environmental health. Their catastrophic decline serves as a warning that we are in a period of significant environmental degradation."

The underlying cause of their deaths is unclear, says the Global Amphibian Assessment compiled by more than 500 scientists from more than 60 nations. The team leader, Dr. Simon Stuart, said: "The bottom line is that there's almost no evidence of recovery and no known techniques for saving mysteriously declining species in the wild."

Over the past three years scientists analysed the distribution and conservation status of all 5743 known amphibian species. Of these, 1856 -32%- are considered under threat of extinction. Up to 122 species have disappeared since 1980. Sufficient data are lacking to assess the status of nearly 1300 other species, also thought to be under threat. By comparison only 12% of all bird species and 23% of all mammal species are threatened.

In the Americas, the Caribbean and Australia, where there are cooler habitats experiencing drought, a fungal disease called chytridiomycosis has hit amphibians especially hard. Surveys showed that the amphibian population of Costa Rica's Monteverde Cloud Forest, for example, remained stable until 1987. The following year it began to crash and by 1989, 40% of its amphibian species had become extinct. The victims included the striking golden toad. Dr. Stuart said it was now widely believed that chytridiomycosis played a pivotal role in the devastation, which took place in a dry period.

The disease is less of a problem in most parts of the world, including Europe, Asia and Africa, where habitat destruction, air and water pollution and consumer demand are causing the decline.

Bruce Young, a zoologist with the international conservation group NatureServe said: "We need greater protection of natural areas and accelerated research on amphibian diseases to stem the extinction tide."

Scientists began noticing the disappearance of amphibians in the late 1980s and early 1990s, but before this study they had never conducted a worldwide assessment of the frogs, toads, salamanders and legless caecilians, also called rubber eels. "We've never documented anything like this for any other species. When species become rare and begin disappearing we nearly always know why," Dr. Stuart said. "This has taken the scientific world completely by surprise."

GUIDELINES FOR THE TRANSLOCATION OF THREATENED PLANTS IN AUSTRALIA

The Australian Network for Plant Conservation (ANPC) has recently released a revised edition of their publication, Guidelines for the Translocation of Threatened Plants in Australia. The second edition was produced as new information on techniques and approaches was gained through an increasing number of translocations. The revised version brings together more information on assessing whether a translocation is advised, monitoring and evaluation, and how to involve local communities. Case studies from across Australia are used to highlight the main points. The new 80 page colour publication includes information on:

- definitions and objectives;
- deciding whether translocation is a viable option;
- the translocation process from project proposal, development, through to monitoring;
- community participation; and
- case studies.

Copies are available from the ANPC for \$22 + postage and handling. An order form is available for download from the web at <http://www.anbg.gov.au/anpc/books.html>.

Also available is Plant Conservation: approaches and techniques from an Australian perspective edited by Claire Brown, Fiona Hall and Jeanette Mill. Produced by the ANPC in 2003, it is available for \$55 + p/h.



TOADS DRIVE VULNERABLE ANIMALS TO ARK

reprinted from *Wildlife Australia* Winter 2004

The scourge of the Cane Toad has hit the Northern Territory.

Warning people to be vigilant about carrying cane toads into toad free areas, NT Parks and Wildlife Minister Dr. Chris Burns said the likely arrival of the toads into Palmerston and Darwin next year meant residents would have to deal regularly with 'this poisonous and unpleasant creature.'

Speaking at the opening of the Museum and Art Gallery's Frogs Alive! Display Dr Burns also introduced the "Island Ark" program which, in partnership with traditional owners, aims to establish and maintain populations of rare and vulnerable mammals on islands off the Top End.

"The islands will be arks - like Noah's Ark - where animals susceptible to poisoning by Cane Toads or being eaten by feral cats can seek refuge." Dr. Burns said. *"Last year a team of traditional owners and Parks and Wildlife scientists translocated quolls to establish 'ark' populations on two islands off the coast of Arnhem Land, and subsequent surveys have shown they are doing very well. Scientists are now identifying further species to move onto the island."*

WEEDY BEACHES

reprinted from *Wildlife Australia* Winter 2004

A multi-faceted strategy is set to tackle weeds on Tasmanian beaches. Marram grass, sea spurge and sea wheatgrass occur widely in the state, and it is hoped that through the establishment of eradication zones further spread and establishment of these weeds along with pyp grass and beach daisy can be halted.

The aims of a co-ordinated strategy targeting five significant weed species - are to contain distribution, minimise adverse impacts on natural heritage, educate and co-ordinate actions to maintain commitment and to develop improved control techniques. It is seen as an important measure in the Tasmanian Government's bid to protect the significant natural heritage area of Tasmania.

FLINDERS STING

reprinted from *Wildlife Australia* Spring 2004

An historical meeting between Matthew Flinders and Nicolas Baudin on South Australia's coast in 1802 has been commemorated in the naming of a new wasp. *Aulacus flindersbaudini* is one of three new wasp species discovered and named by University of Adelaide entomologists. All the wasps belong to the family Aulacidae, which is

found on all continents, but until the new species were discovered, it was known in South Australia from only a single specimen of *A. moerens*. *"That was described in 1868 and collected on the Adelaide plains"* says entomologist Dr. John Jennings. *"It hasn't been collected since and is probably locally extinct."*

The newly named *A. flindersbaudini* specimen, a male, is reddish brown and about 8mm long. Nothing is yet known about its biology or host species. The other newly named species are *A. grossi* after its collector Dr Gordon Gross, and *A. belairensis*, after Belair national Park its place of discovery.

NEW FINDINGS OF RARE MAMMALS

reprinted from *Wildlife Australia* Spring 2004

A biodiversity survey has found the rare long-nosed potoroo, heath mouse, and agile antechinus alive and well in the state's south-east.

The agile antechinus has never been recorded in SA; there were no modern records of the long-nosed potoroo; and the heath mouse had never been recorded in mainland SA. The survey also revealed that the nationally endangered southern brown bandicoot is holding out 'in relatively good numbers' in lower south-east woodlands.

Unfortunately, the survey showed most native bird species in decline and less than 10 per cent of the region's native vegetation remaining. On a positive note, a sparse but widespread population of malleefowl, including juvenile birds, was found in SA's upper south-east in salt-water teatree shrubland, a locally common vegetation type.

SPRUCING UP PINE ISLAND

reprinted from *Wildlife Australia* Spring 2004

Approximately 1000 trees have been planted on Pine Island to replace trees burnt in the 2003 bushfire or removed from suburbs in pre-emptive action against future bushfires.

"The trees being planted at Pine Island are native trees to replace an area where pine trees were destroyed during the January 2003 bushfire," says ACT Environment Minister Jon Stanhope, noting that drought and bushfire had badly affected ACT trees. *"In addition to the number of trees destroyed by the fires, many others in our urban areas have had to be removed to help protect our suburbs from future fire events. My Government is committed to replacing every tree removed with two plants more appropriate to our environment and in more appropriate locations."*

