

Wildlife and Native Plants Study Group Newsletter



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WELCOME to this issue of WILDLIFE &
NATIVE PLANTS.

Firstly, I'd like to wish everyone Compliments of the Festive Season, and hope that everyone has a safe and happy Christmas New Year holiday. In many parts of Australia, the time is one for reflection and appreciation of the Great Outdoors. Not much is happening in our gardens at this time, so breathe in, relax and enjoy what nature has provided. Contemplate on what you have achieved in the past, and where you are headed in the future. After all, the New Year is a time for making resolutions. Don't be too hard on yourself, be realistic.

I'd like to share with you, the thoughts of a friend on what Christmas meant for him as a child. My friend, Max Merckenschlager pens,

'Bing Crosby dreamed of a white Christmas. My fond memories are of blistering days at Baradine in outback New South Wales; digging water holes in the sandy bed of Warrigal Creek below my grandparents' property, taking eggs to my great aunt along the corrugated road into town, watching the stars from a sleepout bunk with my uncle, and (ultimately) the big day.

BARADINE CHRISTMASSES

*Those corrugated, sandy summer forges
we'd island-hop, bare-footed, shade to shade:
the muscle-pillow arms were Uncle George's;
his evening stars were studied as we laid.
The shimmering of sky upon the stubble,
as land was sucked through straws of carted
wheat:
the Greek cafe served Peters in a double,
we'd race against the drip to lick and eat.
Each twenty-fifth, invariably a scorcher,
and relatives arrived in filial swarms;
unvoicing fears the day could raise a 'torcher'
and men would have to fight his fiery storms.
The sawdust beds of ginger beer, besodden:
that smell! As tantalising as the taste!
A downside of refrigeration modern ~
old memories Efficiency's replaced.
And Christmas dinner Grandma always roasted;
the ritual carve, the crackle on the rind;
good health to all and sundry that we toasted -
the threepences in puddings that we'd find!*

My own style is not so elaborate, but I share with you my thoughts for 2002.

THOUGHTS FOR TODAY by Christine Jones

*Christmas is a time of good cheer
Yet we are amidst internal strife
We are engulfed in mortal fear
Not knowing what will come next in life.
The New Year brings with it the unknown
Yet, a strong desire and hope for peace -
Let's cherish what we have, home grown
And give Life a whole new lease.*

*Let's appreciate the little things
Our incredulous fauna and flora,
The wondrous landscape that brings
Us together, under the Southern aurora.
Gondwana is unique in Life's scheme
There's much that we can do today -
Learn of the creation, unfold the dream
Protect from extinction, allow them to stay.*

*Value native species regardless of imperfection
Respect their shape, size, quantity and form,
Give all the chance of living through protection
Allow our living planet to control the norm.
May the New Year bring forth a caring
That fosters appreciation, not misunderstandings
Hold life tightly, offer a responsible sharing
That benefits all unique, wondrous living things.*

IN THIS EDITION

- Baradine Christmases by Max Merckenschlager
- Noteworthy Events
- Top Reads
- World Events
- Lomandra - 'The Sagg - From Neglect to Respect' by Anna Watson
- The Grass Tree by Phil Watson
- Book Reviews from Wildlife Australia Magazine: Summer 2001
- Raptors: by Greg Czechura - Wildlife Australia Magazine Summer 2001

Sustainability is about achieving quality of life for all within the means of nature.

NOTEWORTHY EVENTS

if you're in that State - then well worth a look at!

VIC. Permanent display of *Acacia leprosa*.

This newly discovered wattle has become Victoria's Federation floral emblem. The Royal Botanic Gardens in Melbourne have been a major player in its conservation.

SA. Permanent display *Origin Energy Fossil Gallery, SA Museum*. The centrepiece of this recently opened gallery features the stunning opalised Addyman plesiosaur - a 120 million year old reptile which has been restored in the past 12 months.

Also until April 2002, the SA Museum will hold an exhibition '*A Gap in Nature - Discovering the World's Extinct Animals*' consisting of 103 life size paintings of lost fauna by artist Peter Schouten which bring to life the vanished fauna.

ACT. Display '*Tangled Destinies - Land and People in Australia*' at the National Museum of Australia. This explores how people have responded to the Australian environment over tens of thousands of years, and how the environment has responded to them.

TOP READS

Geo - December- February 2002 issue.

Articles include:

- 'The Reclusive Life of the Marsupial Mole' by Kerry Uphill & Joe Benshemesh
- 'Homage to the World's Extinct Animals'
- 'The Realm of the Cloud Catcher - the Wollumbin caldera- its landscape, flora and fauna.'
- 'Victoria's untamed coast'. This details the ecology and landscape of Victoria's Croajingalong NP which has recently been designated a World Biosphere Reserve.

Environment SA Vol.8. No.4. 2001

- 'At the End of the River Murray - water wars, environmental laws, Res Judicata and the Problem of the Ecological Sustainability of the Murray-Darling Basin.' This article addresses River Murray problem in its broader context of the global environmental crisis and examines the cogency of various legal responses to the issue of ecological sustainability of the Murray Darling Basin.

WORLD NEWS

From *Environment News Service 2001* (visit: <http://www.ens.lycos.com>)

- 'HISTORIC OVERFISHING LED TO MODERN OCEAN PROBLEMS'. A study identifies overfishing as the cause of many of the problems facing coastal ecosystems today. Researchers linked ecological extinctions of marine megafauna - vast populations of whales, manatees, dugongs, monk seals, sea turtles, swordfish, sharks, giant codfish and rays - to overfishing at a global scale.
- 'MINING COMPANIES INVADE PERU'S ANDEAN CLOUD FORESTS.' A discovery of gold deposits in northwestern Peru have split the local population and mining companies. Locals fear irreparable ecological damage to human health, agriculture and endangered species. Minerals were discovered in the valley of the Tambo Grande district, Piura state, and surrounding dry tropical forests, part of the lower Piura River basin.
- 'FIFTEEN COUNTRIES HOLD KEY TO SAVING WORLD'S FORESTS.' A report suggests that efforts to save the world's critically important forests should initially focus on a handful of countries. A satellite survey of the planet's remaining unbroken forests, including virgin, old growth and naturally regenerated woodlands, has found that more than 80% are located in just 15 countries.
- 'LEAKEY WARNS OF MASS EXTINCTIONS'. According to Kenyan conservationist, Richard Leakey the world is losing between 50,000 and 100,000 plant, insect and animal species a year.
- 'GREENING EARTH MOPS UP CARBON DIOXIDE'. Over the past 21 years parts of the Northern Hemisphere have actually become much greener than they used to be. Researchers have confirmed that plant life above 40 degrees north latitude - in areas like New York, Madrid, Ankara and Beijing - have been growing more vigorously due to rising temperatures and the build up of greenhouse gases.
- 'US SAVES ONLY THE LANDS NOBODY WANTED.' America's large system of nature preserves fails to encompass the full range of the nation's biodiversity, a new report by biologists of the US Geological Survey indicates. The US has selectively protected lands that lack commercial, agricultural or other human values, leaving entire ecosystems unrepresented.
(*Ed.Note.* Sounds all too familiar, doesn't it?)

THE SAGG - FROM NEGLECT TO RESPECT *By Anna Watson*

Lomandra longifolia or better known as "Sagg" or "Spiny Headed Mat Rush" is a small tufted rush, with long strap like, green leaves. From the leaf base a tall slender, attractive yellow flower spike appears in the early growing season and persists for many weeks. As the spike matures, the structure is replaced by a tan, fruit bearing shaft, composed of attractive clusters of small nutlets.

Changing Attitudes from Farmers

Its importance to the Aborigines cannot be under estimated, as I will explain later. However, in contrast to the respect shown for the plant by the Aborigines, pastoralists and farmers from early colonial times up to now, have neglected and weeded out this native rush. Generally, they considered it as an intruder, capable of degrading their fine pastures. This had prompted a search and destroy attitude resulting in its removal by ploughing under, digging out, burning or spraying.

Today, the farmer's attitude is changing towards the sagg. This is a spin off from their awareness of the values associated with their property's remnant bushland, be it pristine or degraded. Not only is sagg being accepted as an integral part of their grassy woodlands, but it is being recognised for the important roles it performs.

Their rapid re-establishment within degraded remnants, heralds the beginning of a natural regeneration process, which will ultimately lead to the return of the original biodiversity to the area. Farmers consider this outcome essential for conservation and stock shelter reasons.

The sagg provides an important buffer to the elements and provides protection during the regeneration of the more sensitive plants within the original vegetation community. It promotes native butterfly populations by being a larval food source for their caterpillars.

Other roles, such as its ability to create refuges and habitat for native birds, fauna (eg bandicoots), as well as a myriad of insects, in conjunction with its ability to produce the first flush of new greenery in the blacken moonscape following wildfires or prescribe burns, has helped it regain the respect amongst today's environmentally aware farmers.

Landscape and Garden Values

In recent years, sagg has proven to be a popular landscape plant, respected and used by landscape architects and horticulturalists alike, for its resilience and consistency of form. When incorporated as framework plants, either in formal settings or in revegetation projects, they consistently perform their amenity and ecological roles, with minimal followup maintenance requirements.

They are tolerant of climatic extremes and soil conditions, which will often cause the demise of most other "hardy" native plants. They also establish with ease from either seedlings or transplanted mature plants. Transplants are commonly available from building or development sites, where earthworks destroy most of the other native vegetation, which will generally die if transplanting is attempted.

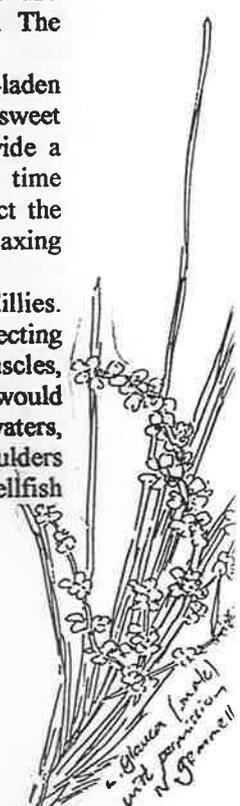
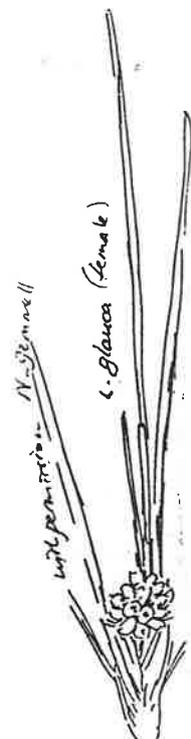
These unique attributes have finally been recognised, ensuring its regular use in difficult locations, such as broad scale plantings within road islands and along roadsides. Away from these public sites, they are equally valuable as feature plants in a domestic landscape setting. They add textural interest to rockeries and native gardens due to their foliage, flowers and fruits. They can even be picked for use as attractive shapes in floral art or dried vase arrangements.

Aboriginal Plant Use

Aboriginal families travelling through the woodland landscapes, relied on their intimate knowledge of native plants to relieve their hunger and dryness. Due to its availability, the sagg provided an easy means of gaining a tasty moist snack. One could imagine the youngsters extracting the young central leaves from the tussocks and enjoying the pea like taste and texture of the moisture white leaf bases. The equivalent of today's "Mars Bar".

When camped in one place, the nectar-laden flowers were steeped in water to provide a sweet drink. With a few squashed ants, to provide a formic acid source (citrus taste), plus time enough for fermentation, they could expect the final brew to provide a relatively relaxing experience.

The leaves were important for making dillies. These woven baskets were used for collecting plant foods or shellfish such as oysters, muscles, scallops, and even crayfish. The women would dive off the rocks into the cold estuarine waters, with their dillies strapped over their shoulders and collect a feed of the bountiful shellfish within the versatile baskets.



The baskets were made for carrying most of their needs using the following basic method. The leaves once picked were split down the centre into two and left to dry for 3 or more days. Before being worked they were dampened with water for 24 hours to render them pliable. This process of making the leaves supple, allowed their use to be extended to bandaging for sores or abscesses on the arms and legs, which needed to be kept clean and tied up.

Conclusion

Over the last few years the sagg has finally regained the respect shown by the original aboriginal land managers. Today's land managers are now realising the potential of this "too common to be useful" native rush. Its future is assured for all the above reasons.

THE GRASS TREE: ITS USES AND ABUSES *By Phil Watson*

Grass trees or blackboys are very much part of the Australian landscape and uniquely Australian. They fascinated the first European settlers, since they were unlike any other known plant. In fact, they are a living fossil developed early in the evolutionary stakes for flowering plants.

Lumbered with a difficult to pronounce and even more difficult to spell botanical name of *Xanthorrhoea*, they have recently become prized for their landscape attributes. Tasmania has four species namely *Xanthorrhoea australis*, *Xanthorrhoea arenaria*, *Xanthorrhoea nana* and *Xanthorrhoea minor*, with the first species being most widely represented in the woodland communities.

Few Populations Remain due to Degradation

For nearly two centuries, land managers have showed both apathy and lack of concern towards these very slow growing plants and their associated sandy, well-drained habitats. Today, the communities containing these grass trees are very limited in extent, with many of the remnants subjected to various degradation processes. These are taking their irretrievable toll on the grass tree population, which include land clearing, land improvements and the spread of the *phytophthora* fungal disease.

A sad story of destruction

This relates to an experience with an exploitative landowner in an outer-suburban area well known for its grass trees, who offered for sale large numbers of magnificent specimens. His aim was to cash in on the grass trees, prior to decimating their woodland community, in order to improve the land for a few sheep.

Although information on the rarity of his resource was sensitively provided, the outcome was the clearing of many acres of this grass tree community and the sale of transplanted specimens to unsuspecting nurseries. The word 'unsuspecting' is used because, unless expertly transplanted, they tend to die slowly, leaving the nursery out of pocket, along with many angry customers demanding refunds.

Sadly, even today the remaining grass tree's survival continues to be threatened, whilst the property remains out of sight from the road and in the possession of the farming family

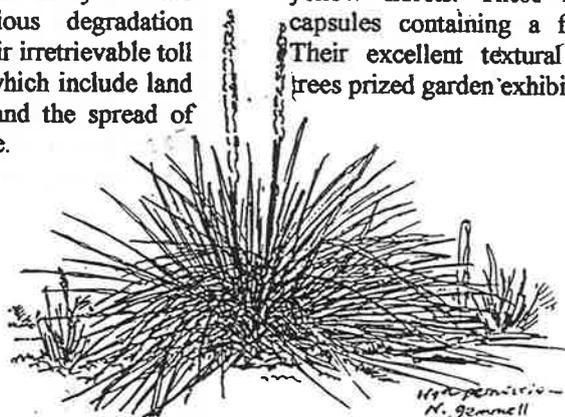
Features which inspire landscapers and backyard gardeners alike

Grass trees are related to the lilies, but are placed in a separate family. They are close relatives with the sagg (*Lomandra longifolia*) with which it share many attributes.

They are very slow growing, with some elderly specimens being amongst the oldest living plants on a worldwide scale, surviving for many hundreds of years.

Beautiful old examples are survivors of many wild fires and develop into architectural masterpieces. Wild fire can cause their blackened trunk (1 to 2 metres) to branch into two or even more heads. These consist of thick, rough corky bark, surrounded by a whorl of long, wiry leaves with unique flowers.

The flowers appear as long cylindrical spikes (1 to 3 metres) arising out of the skirt of grass like leaves, often flowering as a direct response to a very recent wild fire. This ability to be one of the first flowers to appear after a wild fire ensures a food source for many insects and birds, in an otherwise alien, blackened moonscape environment. The tops of these spikes are covered with a dense pattern of tiny white to yellow florets. These in turn produce seed capsules containing a few hard black seeds. Their excellent textural qualities make grass trees prized garden exhibits.



Xanthorrhoea semiplana "Tasoa Grass Tree"

Cultivation is not easy

Cultivation presents great challenges, with the seed taking up to a year to germinate and the young grow at a rate of only a centimetre or so a year.

Transplanting from the bush is not recommended, unless imminent development will destroy the plant. Transplanting requires diligence and heavy equipment to extract the very deep underground stems and roots, whilst keeping the residual soil attached. Flooding the root zone helps maintain an intact root system and digging the new sites hole prior to the arrival, followed by deep watering of the plant's roots zone, aids the chances of survival.

A Traditional Aboriginal Favourite

Grass trees were a 'staple' plant for the aborigines, providing food, drink, fibre and materials for making implements and weapons.

Food and Drink

As a food source, the white, tender sections of leaf bases, the growing points of stem and succulent roots were all eaten regularly. The removal of the growing point was rare as it destroyed the plant altogether. The seeds were collected and ground into a flour to provide dough for cooking a type of damper, within the ashes of a wattle wood fire.

They frequently dug out edible grubs found at the base of the trunk. The grub's presence could be detected by the observing the dead leaves in the centre of the grass tree crown.

Small sweet pockets of honey could also be extracted from the carpenter bee's cellular nests, which were often bored in the soft pith of the flower stalk.

To wash this down, the nectar from the flower could be extracted by soaking it in water filled bark troughs, to produce a thick sweet drink. A citric flavoured alcoholic brew could be made from fermenting the nectar over 3 to 5 days. An extra tang was added to the brew by crushing a few 'formic' ants into the beverage.

The Original Super Glue

Although not specifically a plant for fibre it was very useful in crafting of aboriginal tools. The light straight flower stalk served as a butt-piece for spears. A tip section of tea tree would then be attached to the end of the spear and hardened in the fire before used for hunting.

Mainland Aboriginals used pieces of very dry flower stalk for making fire with a drilling stick.

The leaves produce a hard waterproof resin, which could be collected from the base of the trunk. This resin melts when warmed, but sets hard when cold. It had a number of uses including;

- Forming glue by mixing it with charcoal, beeswax or fine sand and dust.
- Gluing the cement stone heads to wooden handles and spears to shafts and tips
- Waterproofing bark canoes and water carrying vessels

The versatility of this resin in the every day lives of the aborigines, made it a valuable trading item and was traded amongst tribes for other important collectables.

Early Colonial Use

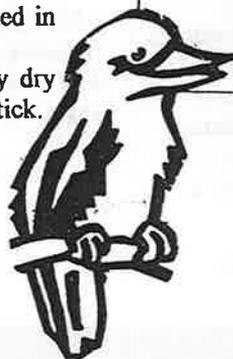
The resin was important for colonists, beginning with its regular use in the early settlers dwellings, but declining in importance as plastics and acrylics superceded it, towards the middle part of the twentieth century. These uses included;

- Burned resin produced a pleasant scent which was common in early churches
- The resin was the basis for a low cost spirit to manufacture varnishes, used on furniture and floors in settlers' houses.
- A stove polish and a metal coating for tins, used in meat canning and on brass instruments, were formulated from the resin.
- The resin was used for sizing paper, in soap making, perfumery and in manufacturing early gramophone records.

Summary

Although the grass tree has been of immense value to the aborigines and colonists, its future lies in the hands of the landowners and nature reserve managers, who are blessed with the woodland remnants which support the remaining populations. It is a true icon of the Aussie bush and as such, provides a unique identity to our Australian landscape.

*Nature will never follow people
But people will have to follow
the laws of Nature .
(Dioscorides AD 40-90)*



How are Canberra's Birds Faring ?

Philip Veerman, Coordinator - Garden Bird Survey, Canberra Ornithologists Group

Many common birds have sustainable populations, and all of the larger parrots have increased significantly. Several of the "common" species that are in decline inhabit woodland and migrate from northern Australia to the south-east of the continent. This applies to some of the cuckoos, Dollarbird, Rufous Whistler and maybe others. It is suggested that habitat loss in the area mostly north of Canberra may be a significant factor in the declines. Other species declines are due to local issues. Many species only occur at sites that are close to woodland reserves. Some species quickly disappear as the suburbs spread into the woodland areas. These include Brown Treecreeper, Speckled Warbler, Southern Whiteface, Jacky Winter, Hooded Robin, Yellow Robin, Diamond Firetail. Of concern is the drastic increase in numbers of the Common Myna.

Canberra has extensive habitat for birds and a varied bird community. The large proportion of migratory birds using Canberra means that the bird community changes every month and this creates ongoing interest for many people. Canberra suburbs were built on former eucalypt woodland, that had been cleared and used as farmland long ago. The suburbanisation of Canberra has increased habitat variety over what was there immediately before. The integration of suburbs into the woodland helps maintain a rich avifauna.

A large scale survey of the Canberra suburban bird population has been going continuously since July 1981. It contains over 1000 observer years of data which now has all been compiled and analysed. This survey is unique within Australia and has few if any parallels around the world (although other studies are underway). The information from the Garden Bird Survey (GBS) provides a significant contribution to the knowledge of long-term bird surveys and the bird fauna of urban areas. A full analysis of the first 18 years' results is nearly ready for publication. Also a full colour book giving some information from the first 17 years of the GBS, was launched in May 2000 and has been raising awareness of the birds of Canberra.

The GBS has data for over 200 species of which nearly 100 species occur in the survey every year and we regularly record from 130 to 147 species per year. The survey has breeding data for 87 species. We have documented the monthly pattern of abundance of about 120 species. Most species show a regular annual pattern. The data are sufficient to suggest that many of the common ones have sustainable populations that go through the sort of population cycles that would exist in nature. However the range of species and the times they occur here demonstrates that this is pattern is dependent upon the nearby availability of woodland and forest habitat.

Bird populations of most species have varied over the past 18 years. For example, all of the larger parrots have increased significantly, whereas the one small resident species (Red-rumped Parrot) appears to be in marked decline. Of concern is that several of the "common" species that are in decline, are species that inhabit woodland and migrate from northern Australia to the south-east of the continent. This applies to some of the cuckoos, Dollarbird, Rufous Whistler and maybe others. It is suggested that habitat loss in the area mostly north of Canberra may be a significant factor in the declines.

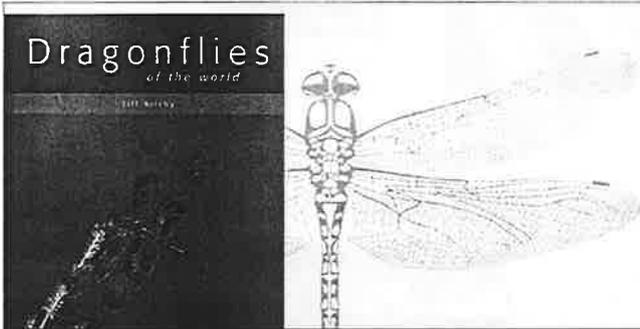
Other species declines are due to local issues (although

similar pressures no doubt occur elsewhere). The survey shows that bird population densities are influenced by distance to bush areas. Many species only occur at sites that are close to woodland reserves. Some species quickly disappear as the suburbs spread into the woodland areas. These include Brown Treecreeper, Speckled Warbler, Southern Whiteface, Jacky Winter, Hooded Robin, Yellow Robin, Diamond Firetail and no doubt many others whose occurrence in the urban areas is so marginal that we just don't have the data. Many other species, such as most raptors are easily observed in the suburbs but do not often breed there, so they require extensive woodland areas nearby.

Of concern is drastic the increase in numbers of the Common Myna. This species clearly has a negative impact on several other species (as a nest competitor). Yet most parrots have increased in spite of this. It appears from GBS results (which do not provide any cause and effect information) that so far, the only species whose decline can realistically be linked to the increase in the Common Myna are its close relative the Common Starling, and maybe the House Sparrow and Red-rumped Parrot. The situation may well change if the Common Myna increase continues much longer.

Other species have increased dramatically, they include the Crested Pigeon (which is probably repeating what the Galah did decades earlier) and a collection of species that benefit from the increased density of native vegetation made available as Canberra gardens mature. These include: Superb Fairy-wren, White-browed Scrub-wren, Brown Thornbill, Eastern Spinebill, Golden Whistler, Rose Robin and Satin Bowerbird. The increase of the Pied Currawong is of concern, mainly because of its timing. It is increasingly remaining around Canberra to breed during the summer, something that did not happen many years ago. Very likely for that reason, the breeding of a whole range of other species is shown to be declining. It also may well be a factor in the marked decline of the Laughing Kookaburra. Although it is clear that species have become locally extinct from the ACT over a period of decades, there are no species that have disappeared from the suburban environment alone, since 1981.





Dragonflies of the World

JILL SILSBY has been Secretary of the Worldwide Dragonfly Association since 1997 (its year of inception). She has travelled widely, collecting and photographing dragonflies and damselflies (Odonata) in many exotic countries as well as in the United Kingdom. Her book is an excellent introduction to odonatology.

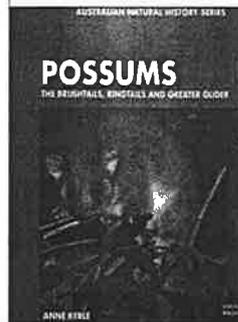
The first eight chapters serve to introduce the dragonflies with a brief account of their evolution, their morphology, life-cycle, hunting and feeding capabilities, flying expertise (a fascinating account contributed by George Ruppell), colour, territoriality and reproduction — unique and tremendously interesting is the only way to describe odonate reproduction, and Jill Silsby gives an interesting but disappointingly brief account of 'sperm displacement'. This is the term applied to the male's action of either removing sperm remaining from a previous fertilisation or ramming the sperm deep into the female's genital tract, ensuring that its sperm will fertilise that female's eggs (Anthropomorphically speaking, Odonata are promiscuous and mate multiple times with multiple partners). Plus Silsby includes habitats and refugia. All these chapters provide fascinating, 'can't put it down' type reading. Chapter nine, 'Odonata around the world', comprising 113 pages of text and excellent colour photos, opens the door to the great beauty and diversity of odonate fauna.

'Evolutionary riddles' (John Trueman), 'Artificial rearing' (Stephen Butler), and 'Conservation' (Norman W. Moore), constitute chapters 10 to 12 and provide an insight into these aspects of odonatology. All this makes fascinating reading. A useful glossary, a list of Dragonfly Societies (including the Australian Dragonfly Society), and a concise, but useful bibliography, round off what is an exciting new production in world Odonata literature.

Thirty-one Australian species are illustrated, most sufficiently well for positive identification to species level (thirty-two, if you use the illustration of *Urothemis assignata* to identify *U. aliena*. These are two very similar species!). However, it is unfortunate, and a little disappointing that two illustrations of Australian species are wrongly captioned: On page 140 — *Ictinogomphus dobsoni* is referred to as a Tasmanian species — it is West Australian. On page 153 — *Eusynthemis nigra* is a species of *Hemicordulia*.

Dragonflies of the World provides useful characteristics which help with identification to subfamily level, but foremost, must be regarded as an excellent, beautifully illustrated introduction to the study of world Odonata. At \$59.95 it is not overpriced for a book containing such a large number of high-quality colour images and many pages of interesting and absorbing text. If you are interested in Odonata, this book should be in your library. — **Deniss Reeves**, President of the Australian Dragonfly Society

Silsby, J. 2001, *Dragonflies of the World*, CSIRO, Melbourne, ISBN 0 643 06512 1, RRP \$59.95



Possums — The Brushtails, Ringtails and Greater Glider

THE MYSTERIES of the Rorschach test-like patterns that a Brushtail's urine can create on ceilings isn't examined in *Possums — The Brushtails, Ringtails and Greater Glider*, but Dr Anne Kerle covers pretty much everything else; from cloacae to colons, habitat to home range, gestation cycles to the motor somasthetic cortex of the brain, it's all there. Though, contrary to the University of New South Wales Press media release, it does not include information on how to care for injured or orphaned possums.

The book starts with the deceptively simple question: 'What is a possum?' And is soon examining the family tree of the sub-order Phalangerida, concentrating on the branches that produce the family Pseudocheiridae (including the Ringtails) and family Phalangeridae (including Brushtails and Cuscus).

Their place in the Western scientific belief system established, Anne Kerle looks at their place in Aboriginal spirituality and diet. Drawing on accounts taken from the journals of early European settlers and explorers and stories told by the Anmatyerre artist, Clifford Possum Tjapaltjarri, the importance of the possum as a source of food, clothing, sleeping rugs and ceremonial items becomes evident. The Possum Spirit it appears, like the Brushtails who visit our gardens, was a curious, mischievous character and quite the philanderer. One of the most puzzling conclusions she draws from these early accounts is that possums, especially the Brushtail, have dramatically declined in distribution since European settlement.

Other topics covered include evolution, breeding cycles, habitat and dietary preferences, distribution, communication, life cycle, social organisation, threats to survival and conservation management.

The amount of information on each species reflects available research and so more space is given to the Common Brushtail, Mountain Brushtail, Greater Glider and Common Ringtail than to the Cuscus and the Daintree River, Rock and Green Ringtail Possums. However, there are detailed references for each chapter so the persistent can track down source documents for further information.

Photographs are in black and white with a section of coloured plates grouped in the centre. The illustrations and tables used to clarify information are excellent and combine with the overall layout to make a very user-friendly guide.

The quality and range of information contained in the 110 pages of text will appeal to biologists, conservationists, wildlife enthusiasts and anyone with an interest in elevating their understanding of these wonderful arboreal marsupials. My only criticism is that for such a slim volume, the \$39.95 price tag seems a little steep. —

Nick Wray, The Gap Wildlife Group

Kerle, Anne 2001, *Possums — The Brushtails, Ringtails and Greater Glider*, University of NSW Press, Sydney, ISBN 0 86840 419 5, RRP \$39.95

Scratchings and rustlings

Greg Czechura, Queensland Museum



Greg Czechura works in the Queensland Museum Enquiry Centre. E-mail: gregc@qm.qld.gov.au

CONTRARY TO THE PERCEPTION that raptors are exclusively found in unspoilt wild places, it is not unusual to find these birds in urban environments. Indeed, the presence of Black Kites (*Milvus migrans*) often signposts habitation in India, Africa, Asia and Australia. It is easy to accept the presence of opportunistic scavengers, such as the Black Kite, around urban centres. However cognitive dissonance sets in when it comes to birds, such as the Peregrine Falcon (*Falco peregrinus*), that are popularly depicted as icons of our ideals of Wilderness. Most Peregrines do occur in rural and natural environments, but some have unashamedly forsaken natural cliffs for the steel, glass and concrete canyons of major cities.

The presence of raptors in an urban context can add an unexpected flourish to life in the 'burbs. I have had the pleasure of watching both Australian Hobbies (*Falco longipennis*, here in Australia) and Eurasian Hobbies (*Falco subbuteo*, on the outskirts of London) dashing through gardens in pursuit of House Sparrows (*Passer domesticus*). These, and similar encounters with Collared Sparrowhawks (*Accipiter cirrhocephalus*) and Eurasian Sparrowhawks (*Accipiter nisus*), have occurred in very similar contexts and landscapes despite being continents apart.

Obviously, urbanisation does not benefit all or even most raptor species. Tropical forest raptors for instance are notoriously intolerant of habitat alteration. The present parlous state of the world's population of the Great Philippine Eagle (*Pithecophaga jeffreyi*) sadly attests to this fact. Fewer than 200 of these huge eagles remain in the wild, and with evidence that the country's forest cover is all but gone, the future for these birds looks grim to say the least. Similarly, euphoria at the rediscovery in 1988 of the Madagascar Serpent Eagle (*Eutriorchis astur*) was tempered by the desperate need to adequately preserve the rainforests where it makes its home.

As more and more natural habitats are cleared and committed to farmland or urbanisation, declines have been detected in many raptor species. In addition, the new human landscapes contain unique risks: high levels of disturbance, biocides, powerlines and an array of man-made obstacles to name a few. The fate of a pair of Powerful Owls (*Ninox strenua*) from Toohey Forest in Brisbane's southern suburbs dramatically highlights the hazards of urban living. In a space of a few weeks earlier this year, both members of a resident pair of these owls were found dead below powerlines clutching their final catch (respectively a glider and a possum). Both birds, weighed down by their prey, had either crashed into the wires — or their dangling victim had bridged the wires as the bird flew past. There are numerous similar cases of falcons, hawks and owls being killed via collisions with windows, chain-link fences, powerlines and motor vehicles.



Despite having the odds seemingly stacked against them, raptors can make a go of life in suburbia and other human landscapes. A combination of well connected reserves, open spaces, parklands and a carefully designed built environment may reap unexpected rewards. Sometimes, even birds regarded as uncommon or rare (e.g. Square-tailed Kite *Lophoictinia isura*) may make an appearance along the suburban/semi-rural fringe of major towns and cities if suitable habitat and landscape conditions exist.

Despite having the odds seemingly stacked against them, raptors can make a go of life in suburbia and other human landscapes

The dedicated raptorophile will not be surprised by urban or near urban raptor encounters — eagles, hawks, falcons and owls really do like living in a varied landscape. Conversely, the trend to densely packed residential or industrial estates, while good for profits, provide little in the way of comfort for raptors. Indeed, on some estates there is even little scope for residents to plant much in the way of gardens, while parkland is often little more than a few (often exotic) trees, no undergrowth and closely mown lawns. As such, these landscapes hold little attraction for raptors (or their prey for that matter). The best that can be hoped for in these situations is a glimpse of a distinctive shape as it passes high overhead on its way to better pastures.

Complete loss of native plants and animals in urban landscapes is not inevitable and certainly not desirable. Even relatively high order predators such as raptors can be retained in urban areas, provided that more than lip service is paid to retention of green space and sensible town planning. Not only does a varied urban landscape benefit raptors and other animals, dare I also suggest that it makes the urban environment a whole lot more pleasant to live in? — **Greg Czechura**

EDUCATION/FUN AND GAMES

Bird ID for Beginners – Birds of Prey

Birds of prey can be notoriously difficult to tell apart, but by getting to know a few of the more common ones, you will be off to a good start.

Birds of prey, also known as raptors, are most often seen soaring high in the air. This means that taking note of the pattern under the wing, which can be quite distinctive, and the way the wings are held when seen in silhouette, are very important factors in trying to identify a bird.

Wedge-tailed Eagle

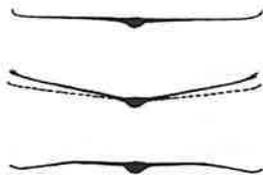
This very large and iconic bird is unmistakable when seen at close quarters. Up to a metre long, it is dark brown or black with a long wedge-shaped tail. Although often seen at road-kills, it is usually seen soaring to great heights, which makes it difficult to gauge size. It can be distinguished by its underwing pattern, the upswept wings, the shape and length of the tail, and the silhouette of the wings in flight.



Wedge-tailed eagle – above shows underwing pattern. At right, silhouette in flight – top soaring, below gliding

Little Eagle

At 45-55cm long, this eagle is about half the size of the Wedge-tailed Eagle. It is a powerful, stocky small eagle with a short square tail, feathered legs and a short crest. It has a distinctive underwing pattern in the shape of an 'M'. However, the Whistling Kite also has an underwing 'M', although slightly less distinct. It has a longer, rounder tail and longer wings than the stocky Little Eagle.



Little Eagle – above left shows distinctive white underwing 'M'. Note also the short, square tail, less than half the length of the bird's body. Above right shows silhouette in flight – top soaring and gliding, middle soaring, bottom gliding.

Black-shouldered Kite

This very handsome little bird looks a very neat and distinguished black and white in the field. It is quite small at around 33-37cm long. They are often seen along roadsides, either perched in trees or hovering over paddocks.



They have a close cousin, the Letter-winged Kite, very similar in appearance except for a black 'M' pattern under the wings. The Black-shouldered Kite has only dark patches at the wingtips, and is far more common. The Letter-winged Kite is rarely seen.



Black-shouldered Kite – above underwing pattern of dark patches on wingtips. At right, silhouette in flight – top soaring and gliding, below gliding

Nankeen Kestrel (Australian Kestrel)

At 30-35cm long, this is the smallest of the Australian raptors. It is slightly smaller than the Black-shouldered Kite and has narrower wings and a long, rounded tail. It has distinctive rufous upper parts and pale underparts, black wing-tips and a band near the tip of the tail. A distinguishing feature through binoculars is the single black "teardrop" under its eye. A Brown Falcon has two teardrops.



The Kestrel is a common sight along roadways, perched on fences or power poles, or hovering in one spot over paddocks. It is perhaps the most commonly seen raptor. The name Nankeen is a reference to its colour. As a child growing up on a poultry farm, my father called these Chicken Hawks and was apt to take a pot shot at them, although its diet is mostly insects such as grasshoppers and crickets. But they will also take mice, skinks and small birds up to starling or sparrow size. They hunt by hovering over their prey then diving down to snatch it.

Nankeen Kestrel - top shows the underwing pattern. Note dark wingtips and band on tail. Below silhouette in flight soaring and gliding. When hovering in one spot over prey, flaps wings rapidly



References – images taken from *The Birds of Prey of Australia: a field guide to Australian raptors*, by Stephen Debus, published in Melbourne in 1998 by Oxford University Press in association with Birds Australia. ISBN 0 19 550624 3 This is an excellent reference for under \$20. Another good and affordable field guide is *Raptor Identification* by Gordon Beruldsen, 1995. ISBN 0 646 26387 0. A good quick reference in the field.

Image of Wedge-tailed Eagle from *The Birds of Victoria*, by W. Roy Wheeler and Jeremy Boot, published by Nelson 1979. Image of Little Eagle from *Australian Birds* by Donald and Molly Trounson, published by National Book Distributors, 1989