

*Liaison*

**ASSOCIATION of  
SOCIETIES FOR GROWING AUSTRALIAN PLANTS Inc.**



**ISSUE 29**

**ISSN 1038 7897**

*Wildlife and Native Plants*

*Study Group Newsletter*

## **AN INTRODUCTORY LETTER**

Dear members,

*This is my first newsletter to you all, as your new study group leader.*

*I hope that together we can share in the pleasures of Australian flora and fauna, and I look forward to your involvement and contribution.*

*For those who have been members in the past, you will probably find me repeating lots of the information. I ask you to be patient as I settle into the position, and also as we share that knowledge with newer members, who are only just embarking upon their study of Australian species.*

*We hear much today about conservation and biodiversity - perhaps these are new catch words, but perhaps they are also here to stay awhile. So for this first newsletter I thought I would approach the topic of biodiversity, so that we all have some basic understanding of what the term means. You will see that conservation is in the background throughout the newsletter, however I should state upfront that I care passionately about the environment and our Australian landscapes and life forms. I am conservation oriented, but believe that in all things there must be balance. I also accept that change occurs, and whether we like it or not, affects every part of life. Nothing can ever be the same as it was.... nothing will ever be perfect.... however there is always room for improvement in the way we do things, and how we relate to our environment and the natural world. I hope to be able to share with you information relevant to the study of our Australian flora and fauna, and I hope you will share with me your concerns, your desire to know more, and to offer your experiences and to share your knowledge with the Study Group.*

*Need I say anymore?*

## **WANTED**

ARTICLES

STORIES

GENERAL INFORMATION

AUSTRALIAN WILDLIFE RESEARCH

PLANTS, PEOPLE, PLACES

## **EDITOR'S PROFILE**

My name is Christine Jones, and I live on a property in the mallee of South Australia, some 80kms. from Adelaide. Some may call the area a 'scrub property' as it has significant amounts of remnant native vegetation. This property has some land under a Heritage Agreement scheme which protects in perpetuity the natural habitat, its plants and wildlife. This means the area cannot ever be farmed. Another part of the property has Sanctuary status which also protects the native species present. On this section we also keep and manage native fauna species in a Wildlife Sanctuary, and take in rescues and injured birds and animals - some of which may/may not ever be released to the wild. The Flora and Fauna Sanctuary arrangement is not dissimilar to the Land for Wildlife Scheme which exists in some of the Eastern states. Many of you may know that we (husband Jeff and I) also grow and sell native plants and seeds Australia wide. To cater for this interest we have a nursery and arboretum where particular plants are trialled for capabilities in a semi-arid environment. We have also diversified into agroforestry, cut flowers and botanicals in the past. Today the native seed business keeps us busy, as more and more people join the revegetation movement.

Each of these areas provides its own unique experiences but there is always another opportunity presented to try something new or different, or to learn about a new species.....And I am one that does not like to miss an opportunity, and so when it presents itself, I'm in there boots and all! Guess that's why I'm here writing this to you.....

Anyway, I hope you will be a part of this wonderful experience .



*Christine*

Memberships are now sought to keep the group going!

### **SUBSCRIPTIONS are due NOW!**

**\$5.00 p.a (Aust.) \$10.00 (Overseas)**

*Send your payment and SGAP or APS membership number to :*

*ASGAP Wildlife & Native Plant Study Group*

*P.O. Box 131, Strathalbyn, S.A.5255*

### **IN ISSUE 29:**

- Biodiversity- What is it?
- Extinction and Recovery Projects
- Remnant Woodlands
- What is an Emu Wren and Why is it Endangered?
- World Environment Day
- Plants to Attract Birds and Insects
- Locusts
- Feature Plant - Banksias

# Wildlife and Native Plants Study Group Newsletter



AUTUMN 2000

ISSUE 29

ISSN: 1038 7897

## Welcome all !

This is my first newsletter as the new study group leader for the Wildlife and Native Plants Study Group.

Many thanks to Kathleen Davies for all the wonderful artwork and newsletters of the past, during her time as Study group leader. I can assure you that nothing will ever be the same again, as my style will certainly be much different. I can speak for what's in my own patch, but you as reader will need to keep me informed on the plants and wildlife of other areas of Australia. So if you have any interesting observations, experiences or questions that need answers then feel free to write in to the study group. Contributions are always welcome.

Send your query or info to:  
Wildlife & Native Plant Study Group  
P.O. Box 131, Strathalbyn, S.A. 5255

In looking through past newsletters it would seem that all sorts of flora and fauna have been discussed, and I am left wondering as to what I could possibly inform you all about.... but we all have numerous experiences, and it is through sharing them with others that we nurture our love of native plants and animals. I hope that this newsletter will be a forum to stimulate, inform and share information, whatever it is, whatever the experiences, the sightings, or the information on our very own special Australian species. So please help me to help you!



How environmentally conscious are we?

Do we really understand how all things work together in the natural world?

One of my greatest concerns is the loss of species and habitat which occurs in Australia today. I often wonder whether the plants and animals we relate to today will still be around for our great grandchildren to see and enjoy. What actions can we take to ensure that the koala, or the gum tree will still be around in 20 years? 50 years? 100 years? Does it really matter to us? Well, of course it does! Yet we can all only plant so much, or protect a fragment of a remnant after all. Perhaps the best things that we can pass on, are the positive actions we take today. We need to understand the uniqueness of our very special native species. And, we need to do all that we possibly can, to ensure that future generations can have the same pleasures and joys of Australia - with our special landscape, our wonderful and diverse plants and wildflowers, and our our special birds and animals. If something matters to us, we take care of it, protect and nurture it, and that's probably the most realistic and achievable outcome that we could expect and could hope to pass on through the generations. Studying and growing our native plants is a great foundation for that understanding. But enough philosophy for now - for I am aware that you are wanting to start that very special journey.



## BIODIVERSITY - What is it?

A new word, a catch phrase of the new millenium or what? Environment Australia suggests that Biodiversity is 'Nature's variety, our heritage, our future'. But it is much more. Biodiversity is the web of life - all life which inhabits planet Earth. It includes people, animals, plants, fungi and microbes - from dugongs to daisies, toadstools to termites.

Biodiversity loss has been defined by ecologists as 'perhaps the most serious environmental problem in Australia today'. The National Biodiversity Council recently estimated that we lose some eight species every hour, or 70,000 species a year world wide. That rate of extinction far surpasses the rate of extinction of the dinosaurs. And yet, it is by our own hand, that the loss continues at such an alarming rate.

[ack. BIODIVERSITY (1998) Environment Australia]

## AUSTRALIA: MEGA DIVERSE, MEGA DESTRUCTIVE

by Charlie Sherwin, Australian Conservation Foundation

Nearly 10 per cent of the world's animal, plant and microbe species live in Australia. Prior to European occupation this figure would have been much higher, but man has unwittingly destroyed and cleared ever since he stepped ashore over 200+ years ago. In 1999 Australia cleared over half a million hectares of Australian bush (estimated 529,200 ha.) Clearing rates according to permit approvals included 400,000ha in Qld, 60,000ha in NSW, 50,000ha in NT, 10,000ha in Tas., 6,000ha in WA, 2000ha in Victoria and 1200ha in SA.

A recent article in 'Life Lines' stated: "As well as devastating the habitat of birds and animals, land clearing in Australia is recognised as the main cause of rising groundwater and salinity, threatening future farm productivity, water quality and destroying roads, buildings and other infrastructure in towns and cities. Deep rooted native vegetation, which acts as living groundwater pumps, is being removed from large areas. This is mobilising ancient salt stores leading to salt scalds, land degradation and rising salinity levels in rivers.

Land clearing is also estimated to contribute about 13% of Australia's greenhouse pollution. In fact, since the beginning of the industrial revolution, close to one-third of the world's greenhouse gas emissions have been from the burning and rotting of vegetation due to land clearing.

But in sheer biodiversity terms, 227 entire ecosystems in Queensland alone are threatened with extinction, specifically, by land clearing."

Land clearance results in loss of vegetation and subsequent loss of native fauna which depend on that vegetation.



## EARTH NEEDS 10 MILLION YEARS TO RECOVER FROM EXTINCTION

SAN FRANCISCO, March 9 (Reuters) :It takes the Earth about 10 million years to recover from the mass extinction of plant or animal species- far longer than previously thought, two scientists have reported.

And it takes the environment just as long to recover from the extinction of even a few species, small events which nevertheless rip holes in the biosphere that are impossible ever to fully repair..... The study... comes amid predictions that as much as half of the Earth's species could vanish over the next 50 to 100 years....'

AAAAAAAAAAAA

*A memory droops among the trees  
and grasses ponder a vanished trace.  
the dream that wanders on the breeze  
wafts incense towards a hidden face.*

(Christopher Brennan)

AAAAAAAAAAAA



## REMNANT WOODLANDS : A BURNING ISSUE

From an article 'Firewood and Woodland Protection : a Burning Issue' by Jason Doyle, Victorian National Parks Association

Cutting trees and logs for firewood is a significant threat to the long term survival of several species of woodland birds, mammals and reptiles because it alters habitats and ecosystems. The changes to habitat become losses overall:

- Loss of big, old trees (which provide resources such as nectar for wildlife like the Swift parrot and Regent Honeyeater, in greater abundance than younger, smaller trees);
- Loss of tree hollows (which provide nesting sites for Tuans, Squirrel Gliders, Barking and Powerful Owls and their prey, and other wildlife);
- Loss of fallen timber and tree debris on the ground (such debris provides habitat for insects and other invertebrates, reptiles and ground feeding birds and mammals like Grey-crowned Babbler, Bush Stone curlew and Common Dunnart);
- Loss of standing dead trees (used as nesting sites by possums, bats and other wildlife, and for foraging by insect eaters like the Brush tailed Phascogale); and
- Soil compaction (which destroys habitat for burrowing animals like the pink tailed Worm Lizard and Bandy Bandy and increases runoff, erosion and sedimentation).

### Ed. NOTE

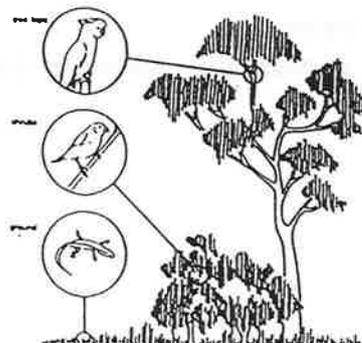
Remnant woodlands are a finite resource, and are under extreme pressure throughout Australia from a number of impacts, one of which is firewood cutting at unsustainable levels. It would seem that the most appropriate action would be a plantation based firewood industry.

..... But could it be as simple as this? .....

Our woodlands are also the home of orchids, of ground covers of shrubby or herbaceous plants, sometimes even grasses, sedges, rushes or reeds. Each woodland has its own particular habitat which supports many birds, insects and other animals. Woodland trees are perennial and often live to a great age. The plants that grow beneath the canopy are influenced by the density of the tree cover, and the special micro-climate of the area. Removing some of the woodland will obviously impact on the whole, with losses incurred in species diversity, and significant changes to the micro-climate of the area. The destruction of the taller dominant trees has a severe impact on the life of the entire woodland community.

### Which plants do they use?

When planning your garden it is important to remember that different animals use different plants and different layers of vegetation



In woodlands often at least three distinct layers of vegetation can be recognised, (1) the top layer being tall trees which provide the canopy, (2) the middle layer which consists of shrubs and bushes, (3) the ground layer which is comprised of grasses and leaf litter



## POSITIVE ACTIONS - THREATENED SPECIES RECOVERY PROJECTS

from TSN News by Amanda Nickson, National Coordinator

A number of species have been brought back from the brink of extinction through positive actions by concerned groups. In Victoria this includes the Eastern-Barred Bandicoot an inhabitant of grasslands and grassy woodlands; in Tasmania the recently rediscovered endangered plant species *Argentipallium spiceri*, will be assisted through plant propagation and reintroductions. In the Northern Territory pastoralists are monitoring remnant populations of Black footed Rock Wallabies on pastoral lands from Barrow Creek south to the SA/NT border. Programs are underway to protect the habitat of the South East Queensland and Northern New South Wales lowland coastal rainforest homes of the Richmond Birdwing Butterfly which is threatened by loss of habitat and weed invasion. The critically endangered Western Ground Parrot has been confined to a few areas within the Fitzgerald, Waychinicup-Mt.Manypeaks and Cape Arid National Parks in Western Australia, as a result of land clearing, unsatisfactory fire regimes and fox and cat predation. In South Australia the endangered Mt.Lofty Ranges Southern emu-wren found in wet and dry heath vegetation is to be monitored, with restoration work to occur in swamp habitats on the Fleurieu Peninsula.

## WORLD ENVIRONMENT DAY JUNE 5



### MONITORING BIODIVERSITY IN THE RANGELANDS

by Don Franklin, c/Key Centre for Tropical Wildlife Management

From waterholes in arid mountain canyons to saltbush plains, tropical billabongs to mallee scrub, the Australian outback supports a remarkable variety of ecosystems, plants and animals. Sheltered by vast areas of spinifex (porcupine grass), the diversity of reptiles in arid Australia is exceptional. Our bird life is rich and abundant. After rain, the desert still blooms. Temporary wetlands can still draw waterbirds in vast numbers; permanent wetlands and riparian vegetation provide more persistent oases. Out on the vast plains, many, often secretive life forms, remain surprisingly abundant.

But much has also been lost. The rat-kangaroos and bandicoots and stick-nest rats of arid Australia are gone; all too many of the seed-eating birds of the tropical savannas are in trouble; many areas of saltbush and grassland and sandhill have been degraded, some severely so; some plants are threatened, and a few are extinct. In the tropical north and sub-tropical north and north-east, land clearing is extensive well beyond the limits of the traditional agricultural zones of the east coast.

Some of these losses are now history, amongst them the extinction of so many arid-zone mammals. The horrific over-grazing of the early pastoral era is much abated, and some areas are known to be recovering.



## WHAT IS AN EMU-WREN AND WHY IS IT ENDANGERED?

From *Stipiturus* March 2000

The Mt.Lofty Ranges Southern Emu-wren (*Stipiturus malachurus intermedius*) is a small, shy bird found in dry and wet heath vegetation on the Fleurieu Peninsula south of Adelaide. The long stick-like tail carried by the emu-wren is comprised of only six tail feathers, resembling emu feathers, which can be up to two and a half times longer than the bird itself. The MLR Southern Emu wren is currently listed as Endangered nationally. The population currently is below 500 individuals and in danger of becoming extinct. Recovery actions have been developed to reduce threats to the remaining populations, increase the habitat available to the bird and ultimately increase the number of emu-wrens to a stable population size. A poor flier, the emu wren is unable to cross areas of cleared land that separate patches of remnant habitat. Consequently the eighteen remaining colonies are isolated from each other as well as from vacant suitable swamps. The number of adult emu-wrens remaining on the Peninsula is thought to be less than 250 individuals with numbers still declining. The decline of the MLR Southern emu-wren has been caused almost solely by habitat clearance and fragmentation. This includes slashing, draining, spraying, over grazing and repetitive burning of large areas of swamp. The remaining populations are now particularly vulnerable to such threats as floods, natural fires, inbreeding and predation by foxes and cats.



**WORLD ENVIRONMENT DAY** commemorated each year on June 5, was established in 1972 by the United Nations General Assembly. It is one of the principle vehicles through which the UN stimulates worldwide awareness of the environment and enhances political attention and action. Each year, the UN Environment Program (UNEP), the agency responsible for coordinating WED activities, selects a city as the main venue for the international celebrations. This year, Adelaide has won the right to host this special event which is celebrated by over 100 countries. This year's international theme is "2000 The Environment Millenium, Time to Act." Australia is promoting sub themes including caring for catchments, environmental innovation in industry and conserving biodiversity. (ack. SA Dept. for Environment & Heritage)

## NATIONAL THREATENED SPECIES DAY

September 7

## PLANTS TO ATTRACT BIRDS AND INSECTS

From Maloney, Walker & Mullins (1973) All About Australian Bush Gardens, Ure Smith: Sydney



Nectar and pollen producing plants which attract insects and birds include the following favourites:

**Acacia species:** Wattles provide a bountiful harvest of pollen.

**Angophora cordifolia :** sweet scented, creamy white, nectar filled flowers adored by bees.

**Anigozanthos flavidus:** This is the tallest of the Kangaroo paws and has pale green to yellow flowers. Birds often swing on the long stems, seeking nectar from the flowers and pollinating them as they move from one to the other.

**Backhousia myrtifolia :** a small, shapely tree with creamy white flowers in autumn in spring.



**Banksia species:** these were known to have sweet honey which could be sucked from the flower, and were a favourite of Aboriginal children. Nectar is apparently replenished daily so they are a favourite for honey eating birds and also attract a myriad of insects.

**Brachychiton populneus:** the well known kurrajong carries its greeny-yellow, purple throated bells in summer.

**Callistemon species:** despite a relatively short flowering period, these are prolific nectar plants.

**Calothamnus species:** one sided bottlebrushes are sought after by birds.

**Casuarina torulosa :** late autumn flowering is a valuable source of pollen for bees

**Clematis :** fragrant flowers appear in late spring and attract bees.

### A range of Eucalyptus species

**Eucryphia lucida :** A handsome tree with small, open petalled white flowers -the source of Tasmania's famous leatherwood honey.

**Grevillea species:** all these are favourites with birds and bees.

**Hakea species:** many of the hakeas are attractive to bluewrens and other small birds.

**Kunzea :** these plants in flower attract many small birds and insects.

**Lambertia formosa:** the honey flower loved by honeyeaters, pigmy possums and bees.

**Amyema species:** mistletoe flowers are wine cups of nectar, refilled daily, which the mistletoe bird is entirely dependent upon. Also loved by honeyeaters, lorikeets and silver-eyes.

**Melaleuca species:** All are honey trees and provide nesting or food sites for finches and babblers.

**Pittosporum -** the sticky seeds of the pittosporum are favoured by ants and other insects as well as birds.

**Regelia ciliata** has mauve flowers from mid winter to late summer and is attractive to butterflies and insects.

**Tristania laurina:** the shapely water gum provides a valuable source of honey and pollen.



Native plants can provide a range of birds, animals and insects with a sound basic diet. Not only does the nectar and pollen attract insects and bees, but many of the honeyeaters. The seeds are eaten by ground birds such as bronzewing pigeons and quail, while seeding grass heads are popular with finches. Parrots vie for casuarina seed cones and others such as the galahs are attracted to wattles and eucalyptus. Many provide nesting materials.

Plants which provide shelter and nesting sites for birds normally have a dense foliage and may be intricately branched. Prickly and thorny plants afford the smaller birds protection from predators, while taller trees suit larger birds. Nesting sites vary greatly. Many small birds prefer the low shrubs or young trees, orioles and magpie larks tend to build their nests on the outer branches of taller trees. Dense vines or creepers are tempting for finches and small honeyeaters while grasses or reeds are chosen by fairy wrens. Parrots, cockatoos and kookaburras all use the hollows in tall trees, and often other birds such as the cuckoo will commandeer the nest for their own.

Honeyeaters and other nectar feeding birds are easily attracted to a native garden, and when other Eucalypts, or lily-pilies are added to the garden will entice many other seed eating birds.

Birds provide natural pest control in the garden. Aphids and scale insects are eaten greedily by pardalotes, silver-eyes and robins.



One of the easiest ways to combat pests is to encourage the pests' natural predators such as birds, frogs, spiders and lizards into the garden.

However there will always be exceptions to the rule, such as those pests which become a serious threat to all plant life when they exist in plague proportions. Such is the case with the plague locust. Then more serious action needs to be taken by governments.

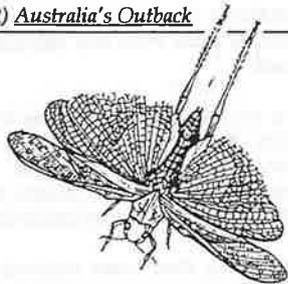


## THE TURMOIL OF A LOCUST PLAGUE

Locusts appear in swarms, and do great damage. Plagues follow a period of warm weather that allows most of the young from a succession of generations to survive. These congregate in huge groups, which move across the country eating all the plant material in their path, effectively denuding pastures, croplands, and gardens. What can you expect when driving through a locust plague?

The number of insects that fly in a locust plague are phenomenal. Visualise a car with a radiator grill so full of dead insects that the car overheats. Then try to imagine the smell of hundreds of squashed locusts being slowly boiled by a steaming radiator.

Frank Haddon, (1992) *Australia's Outback*



### What is a Locust?

A locust is often mistaken for a grasshopper as it does appear to hop amongst the grass. It is often an attractive insect with many different colours. However the plague locust can be distinguished by the black spot on its back wing. An adult ranges in size from 3-5 cms. As it flies the insect makes a clicking sound. If you are driving and run into a swarm of locusts they clatter on the windscreen like hail.

Like most insects, the locust has many predators which include birds of all shapes and sizes from the tiny Richard's pipit to the straw necked ibis. Some lizards and a few mammals such as the marsupial mice, and even foxes often include locusts in their diet.

### Fox Antics

I once watched a fox perform the most extraordinary antics - it would stand perfectly still, head slightly turned to one side, then take huge springing leaps into the air, landing with all four feet on a tussock of grass. It was catching grasshoppers! The spring onto the tussock made the grasshoppers fly into the air and then the fox attempted to take them in full flight. I was too far away to see how successful it was but I hoped it caught enough to replace the energy it used in catching them.

Frank Haddon (1992) *Australia's Outback*



Native plants are surprisingly adaptable, and many will grow in a variety of soils and conditions. It is worth remembering however that if your desire is to attract birds to the garden then the plant should mimic the needs of the birds - hence nectar loving birds look for plants with tubular shaped flowers or bottlebrush type plants, while insectivorous birds look for flowers and nectar which lure insects. If you are planning or landscaping a garden currently, then it is a good idea to have at least one or two trees and a range of shrubs.

## This edition's feature Plant is the

## BANKSIA

(ack. Salter, B. (1977)

Australian Native Gardens and Birds)



Banksias are worth growing just for the shape they assume, twisted, gnarled and full of character. Some of the banksias have flower spikes up to 30cm. long and 15cm. wide. They ooze sweetness in their nectar, and many are quite significant in colour and attractiveness. They will entice the birds and insects to your garden.

In drier areas consider planting *Banksia serrata* - the saw banksias which grow to 6m. This is a delightful tree with rough corky bark and greyish yellow flowers. For a smaller tree you could consider *B. marginata* which grows to 2.5m and has masses of small yellow turning brown flowerheads.

For well drained soils *B. speciosa* grows to 2.5m and has fat yellow spikes, and long, narrow, deeply toothed leaves which can be used in floral arrangements. *B. caleyi* is also gifted with yellow flowers but remains a compact shrub growing no more than 2m. generally.

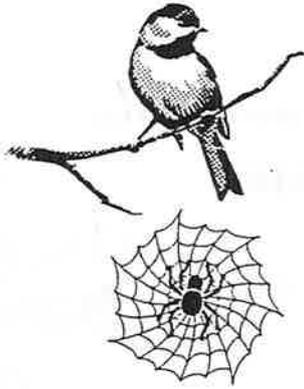
In heavy soils *B. collina* grows to 3m and has gold flowers with black hairpin stamens. This banksia produces a good amount of heavy nectar. *B. robur* grows to 2m. has emerald green flowers which change to yellow and very large leaves. A tree form *B. ericifolia* grows to 5m and produces masses of very long, rich apricot spikes. *B. coccinea* is a small but striking banksia and is one of my favourites. It grows to 2.5m and has scarlet red flowers. Another delightful banksia is *B. menziesii* which grows to 2m and has soft red and grey spikes. A well visited banksia in our garden favoured by wrens, honeyeaters and smaller birds is *B. media*.

In Newsletter No.14 of May 1988 a small article featured Banksias. This questioned the differences between *Banksia spinulosa* varieties and whether birds preferred one over another. Here is a reprint of that article:

*Banksias are often recommended as nectar producing plants for birds, but are they, or are all of them, really that good?*

*In the Blue Mountains Banksia spinulosa is abundant. B. spinulosa var. spinulosa occurs throughout the Mountains and B. spinulosa var. cunninghamii occurs less commonly and only in the Upper Mountains. Variety spinulosa regenerates from a lignotuber following fire and variety cunninghamii from seed. Variety spinulosa has slightly narrower leaves. At a glance the two varieties may be difficult to pick. However, the birds certainly know the difference. The cones of variety spinulosa are virtually ignored by nectar feeders whereas those of cunninghamii are extremely popular. Can you relate which Banksias or varieties of Banksia are popular with birds and which are not?*

Well readers, what do you think? What are your experiences and sightings of birds and banksias?



## BIRDS, SPIDERS AND COBWEBS

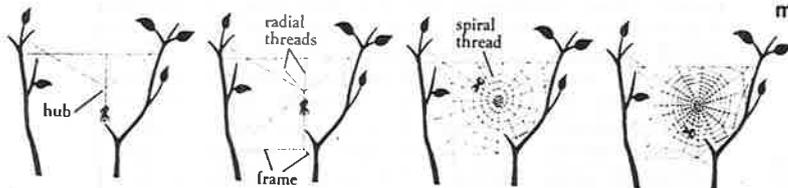
The links between spiders and birds are often overlooked. Spiders and birds seem to co-exist, quite oblivious to the other, (or so it would seem) to the human eye. However it is known that some birds eat spiders, and possibly some of the larger tarantula type of spiders may very well enjoy a meal of the avian species. However spiders and birds do have in common their taste for insects, and both can be said to be helpful controllers of these pests.

But there is another side of the spider we often overlook, and that is its gossamer fine and intricately woven webs. The material of this web is well appreciated in which the spider lures and captures its prey, but did you realize that this is also the material that many birds collect for their nest building. The need for cobweb material by some birds at this time is high and fortunately not all birds require this binding material. Birds which generally do not need the cobweb material include those which nest on the ground, in hollows, crevices or mounds. These birds use reinforced mud, large sticks or dry grass materials. But for others the cobweb material is vital. Most of the smaller honeyeaters, robins, flycatchers, cuckoo-shrikes, whistlers, fantails, thornbills and fairy wrens use cobweb material.

Look closely the next time you see a bird busying itself collecting what seems to be nothing by the beakful, and you can almost guarantee that the bird is collecting cobwebs. By watching from a distance with the aid of binoculars you can safely witness this fascinating and essential part of the bird's annual cycle.

The strength of spider silk from which cobwebs are constructed has been compared to nylon. The cobweb materials used in nest construction on both inner and outer surfaces appears to act as a form of weatherproofing. Perhaps it is also likely to aid in the nest's camouflage in the trees and shrubs.

Spiders are subject to environmental pressures just like other creatures and any changes to their environment by clearing, spraying, or removal of vegetation or ground cover is detrimental.



1. The spider pays out a silk thread which the wind carries to a second anchor point. This bridge is strengthened by additional silk threads passed back and forth across it. Then the spider makes a Y shape which becomes the first three radial threads.

2. The bottom of the stem of the Y is anchored to the ground or another firm object. A frame is constructed and radial threads are attached to surrounding objects.

3. The spider makes a "safe track", or scaffolding, of non-sticky silk, working from the centre to the edge of the web.

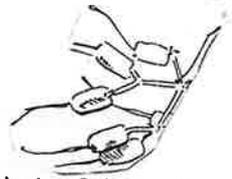
4. The spider then works back to the centre of the web, removing the dry silk and replacing it with sticky silk. The sticky silk is tied to each radial thread, then plucked to twang the gum into regular sticky beads.

### BUILDING AN ORB WEB

(ack. British Insects and Spiders)

## MISTLETOE

(adapted from an article by Rosemarie Bohm)



Mistletoes are a species of semi-parasitic plants of the families Loranthaceae and Viscaceae. Originally mistletoe referred to the Latin *viscum album* (sticky white); the sticky-coated seed clings to the tree from which it grows.

In Australia, mistletoe plants are found in all states except Tasmania. They can survive in most terrains except for alpine and treeless regions. In order to survive, mistletoe needs:

- an insect or bird to pollinate the flowers;
- a bird to eat the fruit and deposit the sticky seeds in its droppings on tree branches;
- haustoria (modified root structures) that take up water and mineral salts from the vascular tissue below the bark of host trees.

There is no advantage in killing the host tree as this would mean the death of the mistletoe. When a tree is already under stress, however, from the destruction of its natural habitat through clearing, overgrazing or drought, then the removal of nutrients and water by the mistletoe may contribute to the tree's decline.

Possums have also been recorded feeding on mistletoe flowers. possums may be the predators that keep mistletoe numbers under control and as they have declined in some regions, this may be one possible reason for the increase in mistletoe.

Some mistletoe species have threatened status and others are more common, but each seems to prefer a particular range of hosts:

- box mistletoe (*Amyema miquelii*) found on Eucalypts
- wire leaf mistletoe (*A. preissii*) usually on Acacia species
- drooping mistletoe (*Amyema pendulum* ssp. *longifolium*) usually found on redgums.

Mistletoes play a vital role in the native web of life. They provide nectar and fruit for birds, which in return are great pollinators. Other major pollinators include native bees, wasps, flies and butterflies, all of which use the mistletoe nectar for a part of their lifecycle.

Over 30 species of seed eating birds have been identified feeding on the mistletoe fruit, the most frequent being the honeyeater and mistletoe bird. Seed eating birds are responsible for the distribution of mistletoe seeds, and trees in the vicinity of their nests generally support the highest densities of mistletoe - some birds even nest in the mistletoe.

About 50% of Australian species have leaves that resemble the shape of the leaves of their host tree. One possible reason for this development could be to confuse the flower feeders. Another possibility is that the hormones from the host plant affect the mistletoe leaf structure.

