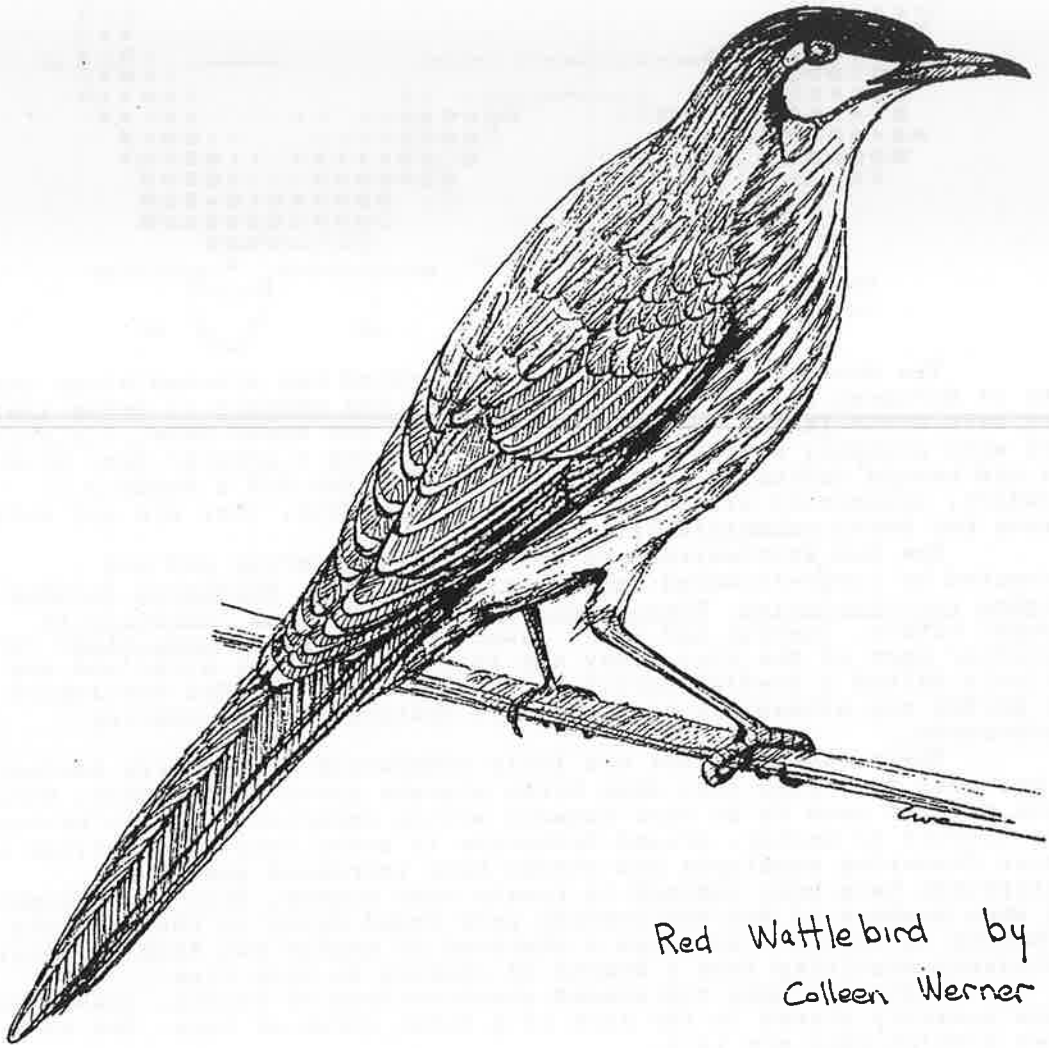
ISSN 0811-5370

S.G.A.P. BIRDS AND NATIVE PLANTS STUDY GROUP

Newsletter No. 13 January 1988



Red Wattlebird by Colleen Werner

RED WATTLEBIRD Anthochaera carunculata

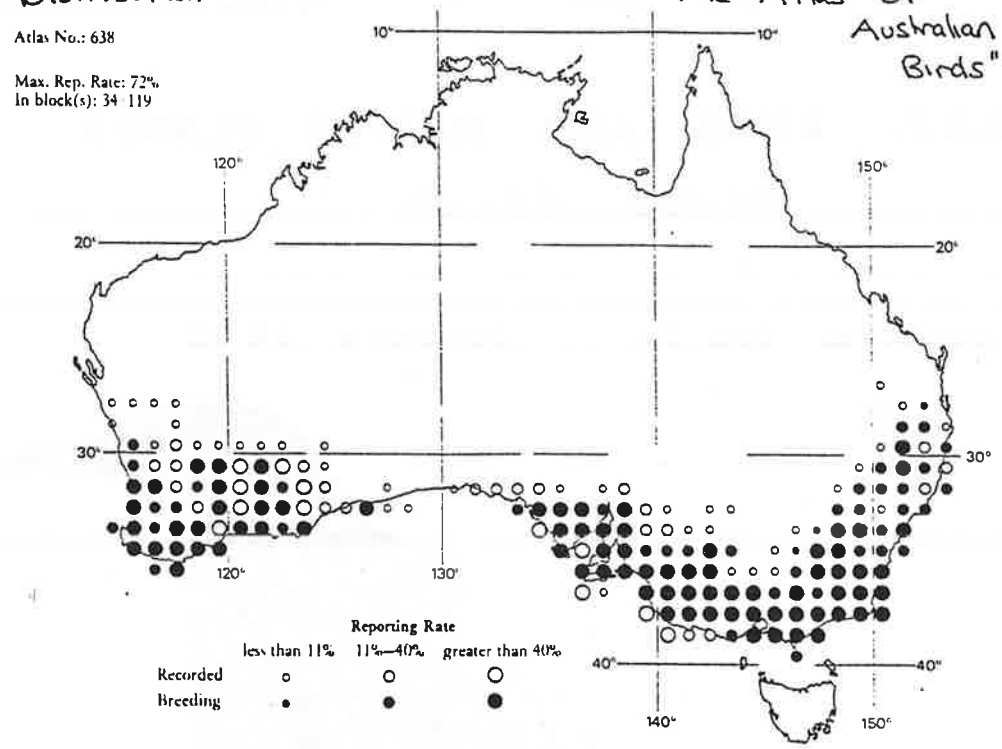
The Red Wattlebird is the largest mainland honeyeater, (the endemic Tasmanian Yellow Wattlebird is slightly larger), and, possibly the most raucous.

It's call has been likened to a harsh "tobacco box, tobacco box" and a deep "tew-tew-tew-tew".

A grey-brown bird streaked with white it is distinguished from the similiar Little Wattlebird by the dark pink pendulous wattle at the ear. Juvenile Red Wattlebirds may cause problems as they have inconspicuous wattles. However they do have a yellow wash on the belly which Little Wattlebirds lack.

In western Australia birds are more heavily streaked and belong to the subspecies woodwardi. Eastern birds are of the subspecies carunculata.

Distribution of Red Wattlebird from "The Atlas of Australian Birds"



The distribution of the Red Wattlebird has altered since the time of European settlement. At the turn of the century it seems that they were known in the Sydney region but did not breed here. (In fact they were probably well known at this time being a popular game bird. One old record indicates that the going price was 3/6 a dozen.) Nowadays, apparently attracted by suburban gardens, they are not only common but breed successfully.

The Red Wattlebirds are primarily nectivorous and are attracted by large-flowered eucalypts, angophoras, Melaleuca fulgens, Telopea speciosissima, Stenocarpus sinuatus, Banksia integrifolia amongst others. Insects and fruit (such as Pittosporum undulatum) form a smaller part of the diet. They are fairly aggressive birds and may actively defend a feeding territory. Thus, a reigning Red Wattlebird in the garden may attempt to exclude other wattlebirds and smaller honeyeaters.

Their movements are not fully understood. In eastern Australia it has been suggested that some birds migrate north each winter. Other birds however seem to be more nomadic moving opportunistically between good sources of nectar. Around Melbourne it seems that as plantings of winter flowering eucalypts and shrubs have increased some Red Wattlebirds have been induced to remain over winter. This was brought out when numbers of Red Wattlebirds were found dying in the vicinity of Melbourne in winter - not from a shortage of nectar but from a protein deficiency resulting from a dearth of insects at this time.

Nests are open cup-shaped constructions of sticks, leaves and grass normally placed in the fork of a dense shrub or tree. Two to three pinkish eggs are laid.

Can you add to the list of known food plants or nesting plants of the Red Wattlebird?

From Martin Bouman of Ermington in the midst of surburban Sydney.....

We have both Red and Little Wattlebirds coming to our garden (is this common?), the main "bushland" native birds that constantly do so as I live in suburbia far from any signifigant bushland. They are very welcome visitors. Grevillea banksii which flowers most of the year is a good "backbone" for enticing these birds into the garden. My Banksia robur flowers during the warmer months and Banksia ericifolia is much appreciated during winter for its dense cover as well as its flowers.

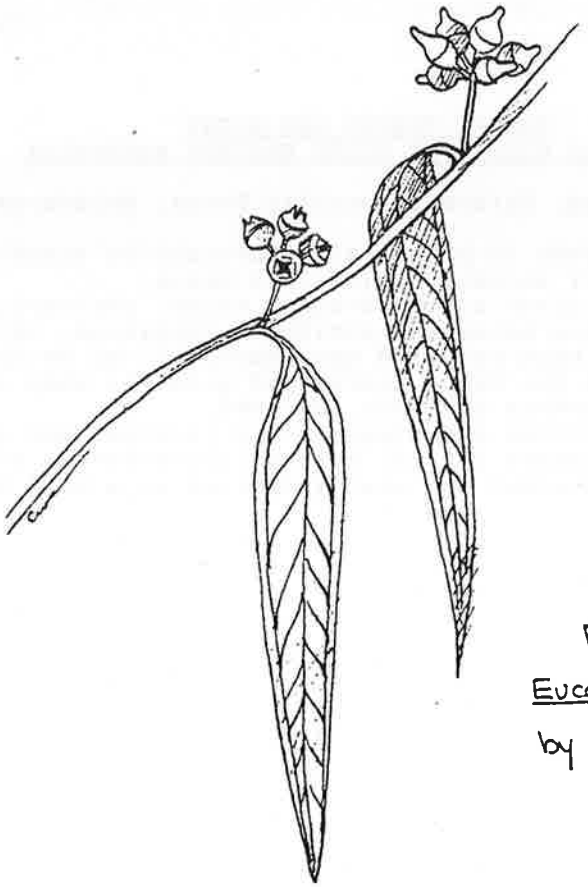
The Little Wattlebird has made an unsuccessful nest in a dense Pittosporum undulatum in my garden. I have seen Red Wattlebirds nesting high up (20m) in a White Mahogany Eucalyptus acmenoides.

These birds only started coming to my garden in the last 10 to 15 years encouraged no doubt by my plantings which started to get established at that time. Most importantly I think they spread from the confinement of bushland remnants towards gardens due to council street plantings of Melaleuca quinquinervia and Callistemon viminalis and then later by widespread use of natives in people's gardens. I think the self-seeding nature of Silky Oaks Grevillea robusta also assisted.

Behaviour: I have heard it said that wattlebirds are a problem because their aggressive nature keeps other birds away from the garden. Firstly, I would like to qualify that by saying that they only go absolutely beserk during certain times of the year (possibly coinciding with nesting) when they harass everything in sight! Secondly, I think territories change over a period of time, coinciding with replacement by a new generation?, and so the "battlezone" might move somewhat. Recently I saw a Pied Currawong chase a Red Wattlebird around my backyard. Previously it has always been the other way around.

An example of a Red Wattlebird that might have had an excessively high aggressive hormone level occurred when one not only chased others it also "zeroed" in on its mate when the latter flew across the backyard. They would fly in tandem with the "aggressor" poking its beak in the back of the other one but this did not seem to harm the latter.

We love the Wattlebirds because of their raucous calls, low flying antics ans gymnastics during feeding. In recent years since I constructed a rudimentary bird bath from an ice-cream container and log they have given us much joy by diving into the water after perching on the edge of the container. I believe that I have identified different generations by their differing diving patterns. The earlier birds used to be most proficient in doing a sommersault under water to return to the start of their dive! Later birds have been more clumsy in scrambling out of the water.



River Red Gum
Eucalyptus camaldulensis
by Colleen Werner.

RIVER RED GUMS - Eucalyptus camaldulensis

This widespread eucalypt is almost synonymous with inland Australia. It is found fringing almost all inland watercourses, lakes and lagoons. In the far inland it branches close to the ground and with its white trunk and branches grows into a magnificent tree.

Its distribution is limited by water rather than soil type. It grows on anything from heavy clays and sands to rocky soils. It is adapted to periodic inundation and seeds germinate following flooding. However, prolonged or permanent inundation kills the Red Gum. This is evident in some of the lagoons near the Murray River. Where the water table has been raised artificially stands of Red Gums are dead or dying, being replaced by water loving plants such as the Common Reed Phragmites australis. Another problem along inland waterways is excessive salt. Again along the Murray excessive salt has left some vast areas of ghostly dead trees.

The River Red Gum is not only a tree of the remote interior. It is the most widely planted eucalypt in the world and where space permits is grown successfully along streets, as a shade and windbreak planting and as a garden ornamental. Growth rates are rapid and it can attain up to 20m in ten years under a ten inch rainfall. Its species name "camaldulensis" derives from the fact that this widespread symbol of inland Australia as it is was first described in literature from a cultivated tree in the garden of the Camalduli religious order in Naples, Italy.

Flowering occurs in summer. Flowers are smallish and perhaps not especially attractive to birds. They are however a good source of insect food and perhaps their greatest feature for birds is the abundance of hollows they produce. Many, many species - corellas, cockatoos, rosellas, parrots, martins, swallows and so on nest in their hollows. Hollows form when the tree drops a branch and an enlarged cavity develops. Being excellent hollow producers they are also notorious branch droppers. In eastern Australia as one moves away from the water's edge back into the floodplain the Red Gums are replaced by Black Box E. largiflorens and occasionally Yellow Box E. melliodora. However these do not produce hollows anywhere near as prolifically as Red Gums.

Can anyone provide notes on the propagation and cultivation of the River Red Gum?

MAMMAL TRACKS AND SIGNS
A FIELD GUIDE FOR SOUTH EASTERN AUSTRALIA

Barbara Triggs, Oxford University Press, Melbourne, 1984.

This small book is packed with information teaching the reader to detect and identify animals by indirect means.

Details are given of the tracks, scats, shelters, skulls, teeth and bones of many animals - echidnas, kangaroos, wallabies, possums, bandicoots, bush rats and many more, all of which are often difficult to sight in the bush. Introduced animals, many of which frequent surburban gardens are also included.

The text is clear and diagrams and ilustrations ar plentiful and excellent - even pages of full colour illustrations of scats.

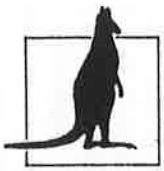
Highly recommended and easily carried on a bush walk.

Fig. 30 The front foot track shows five evenly spread toes

Fig. 31 The hind foot track has a clawless 'thumb'. The two 'joined' toes often leave only one mark

COMMON BRUSHTAIL POSSUM

The tracks show the characteristic turned-out angle of the hind feet



EASTERN GREY KANGAROO

All kangaroo tracks are similar

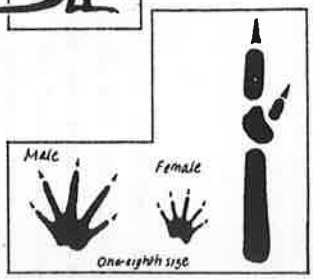


Fig. 16 Front and hind foot tracks

Fig. 32 Walking track on firm ground

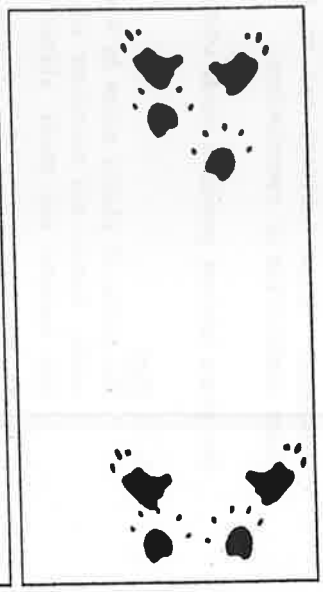


Fig. 33 Bounding track on soft sand

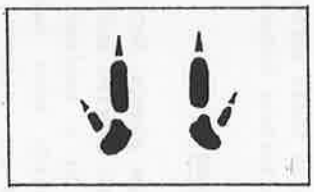


Fig. 18 Hopping track in firm sand

Fig. 19 Punting track

from Barbara Trigg's "Mammal Tracks and Signs"

NEXT NEWSLETTER

My apologies for the non-appearance of the September newsletter - we have been working away from home doing a survey of the River Murray vegetation. This took even longer than we had anticipated and we did not reach home (and all its comforts) until almost Christmas. The bulk of annual subscriptions thus become due in January.

Next newsletter will be in May. Plant of the newsletter will be the Waratahs - any species of the Telopea group. These are often temperamental so any notes on propagation and cultivation, as well as their attractiveness or otherwise to birds would be appreciated.

Instead of a bird, for this newsletter, I felt a possum - the Brushtail Possum - would be of interest. These are often about suburban gardens (and feeding tables) so any contributions regarding these lovely animals - what attracts them into the garden, food preferences, their habits and so on would be appreciated. Here Brushtails really go for fresh spinach and compost heaps.

If you would like to suggest other birds, plants or topics for discussion please do.

Would any one like to take on the task of study group leader?

My best wishes to all members for a happy and healthy 1988,

Judy Smith,
44 Hawkins Pde,
Blaxland, 2774.

ASSOCIATIONS AMONG PLANTS, BIRDS & INSECTS

A talk given to the N.W. Group in September '85.

I am a trained zoologist with a special interest in birds. I grow plants, especially Australian natives, primarily because they provide a home for our native birds. I study insects because I teach entomology and because they provide food for birds.

Birds are associated with plants and feed on insects - insects feed on plants and are preyed upon by birds. Before talking about these two way associations I want to talk about an intriguing three way association among birds, plants and insects.

I was fortunate enough to spend 3 years of my life studying bower birds in sub-tropical rainforest in northern New South Wales. The green catbird, a monogamous bowerbird, lived and reproduced in the rainforest. It turned out that this catbird was highly dependent for its food on one plant species, the strangler fig; Ficus watkinsiana. This fig forms an emergent tree that towers above the rainforest canopy. Strangler figs were randomly distributed throughout my rainforest study area and produced an abundant crop of ripe figs regularly each year for several months. Adult green catbirds are predominantly fruit eating birds and strangler fig fruits formed the principal food item of their diet. The diet of nestling catbirds also consisted largely of fruit, mainly figs. Nearly all catbird territories contained at least one fig tree. The seeds of strangler figs germinate on the trunks and branches of host rainforest trees. The fig roots and branches form an interlocking lacework that envelops the host tree and eventually kills it, hence the name strangler fig.

But how are the seeds deposited high up in the canopy? This is where the catbird plays a part. Catbirds use their strong bills to detach fig fruits. Then they carry them in flight beneath the forest canopy and eat them on sites such as branches and crevices of trees. The catbirds help to disperse the seeds of figs. This is of mutual benefit to fig plants and catbirds. However, the story doesn't end here.

Figs are unusual in that fig flowers are enclosed inside the developing fruit or receptacle so how are they pollinated? It turns out that the figs and their pollinators are interdependent. Fig flowers are pollinated by tiny agaonid wasps and these wasps can only develop inside the developing fruit or receptacle. A female wasp carrying pollen enters a young receptacle through an opening and

ASSOCIATIONS AMONG PLANTS, BIRDS & INSECTS

pollinates female flowers, each of which develops and produces a seed. The female wasps also lay eggs in other flowers and the developing larvae form "gall flowers". The emerging wasps copulate and the female collects pollen before leaving the fig receptacle to search for and pollinate other fig flowers. There are many other interesting examples of these sorts of associations but now I want to briefly discuss associations between birds and plants.

Bird-Plant Associations

Many birds depend on plants for their survival and reproduction. What do birds need to survive and reproduce and how do plants help? First, birds live in a habitat. Plants make up this habitat. Ornithologists classify bird habitats in terms of vegetation; examples of habitats are wetlands, grasslands, deserts, forests and oceans. Terrestrial habitats can be classified on the basis of structure and floristics (plant species composition).

In Australia forest habitats can be rainforest (tropical, sub-tropical, temperate) wet sclerophyll, dry sclerophyll or woodlands. These habitats can be further subdivided in terms of plant communities or associations.

The plant habitat provides birds with:-

1. Food
   The parts of plants eaten by birds are nectar, flowers, fruit, seeds, leaves and succulent stems. Plants also provide a home for insects and their allies and these are preyed upon by birds.

2. Shelter
   Birds need plant cover to escape from enemies and avoid predation.

3. Water
   Birds need water for drinking and bathing. In addition to creeks and streams water is also found in rock pools and tree crevices. Birds also use wet foliage for bathing.

4. Perches
   Birds use perches not only for foraging but also for preening and resting. High perches such as dead twigs and branches ar

used by birds as vantage sites for detecting predators, intruders and for singing. Song functions to attract mates and repel intruders.

5. Nest Sites

Birds use plants to gather nesting material such as bark, leaves, stems and roots. Birds build their nests in grasses, sedges, shrubs and trees. Old trees like eucalypts have hollows which birds use as nest sites.

Attracting Birds to Gardens

We can use our knowledge of bird behaviour to attract birds to gardens. Birds have an annual cycle consisting of a breeding season and a non-breeding season. During the breeding season birds are more resident and territorial and need space and food to rear their offspring. A home garden is usually too small for many breeding bird territories. However, during the non-breeding season (autumn-winter), birds tend to range over a larger area since their food is less abundant. So we can capitalise on this behaviour to attract birds. Birds can be attracted to gardens by providing shelter, water, perches and food plants; (e.g. autumn/winter flowering Grevilleas and Banksias for nectar feeding birds and Eucalypts for pardalotes and some honeyeaters). I now want to turn to associations between insects and plants.

7.

Insect - Plant Associations

1. Plants as Insect Food

Plants provide food for an enormous assemblage of insects. Insect species may feed on a wide range of plant species, a few species are highly specific and feed on only one species of food plant. Insects have modified mouthparts for chewing or sucking. Depending on what plant parts they eat, insects can be classified as leaf eaters, sap feeders, wood and bark feeders, gall insects and seed eaters.

a) Leaf eating insects

Some insects are great defoliators and may reach plague proportions - e.g. stick insects (Phasmids) and plague locusts. Many kinds of insects defoliate eucalypts;

i) caterpillars of moths such as autumn gum moth and gum leaf skeletoniser moth;

ii) adults and larvae of beetles such as chrysomelids and scarabs;

iii) sawfly larvae - e.g. pear and cherry slug, large green sawfly.

Insect attack on plants is not always detrimental and may be beneficial.

e.g. cactoblastis larvae eating prickly pear
weevils and their larvae feeing on Salvinia

b) Wood and bark feeding insects

Some insect larvae that bore into wood are those of longicorn beetles and cossid moths.

c) Sap feeding insects

e.g. aphids, scale, bugs, psyllids.

2. Plants provide shelter for insects

Plants provide shelter for insects and so that helps the insects escape from their enemies. There is intense predation pressure on insects by birds and insect parasites. Insects have counteracted this predation by developing extraordinary defensive and offensive behaviour to avoid and minimise predation. Some of these defence mechanisms are:

i) cryptic coloration or camouflage that enables insects to be less conspicuous against their background;
ii) posturing so that insects resemble twigs, leaves and flowers;
iii) bold patterns such as eye spots to alarm predators;
iv) nocturnal feeding;
v) release of chemicals;
vi) feigning death;
vii) production of unpalatable and distasteful chemicals;
viii) warning coloration - e.g. bright colours such as yellow and black stripes;
ix) mimicry - e.g. the coloration of distasteful lycid beetles are mimicked by other beetles and a moth.

3. Predation of Insects

Predators of insects include birds, spiders, other insects such as predatory beetles and bugs, parasitic wasps and flies. These

ASSOCIATIONS AMONG PLANTS, BIRDS & INSECTS

predators help control insect populations. Many bird species consume vast numbers of insects. For example, white-eyes (silvereyes) mainly feed on insects (e.g. aphids) so they are welcome visitors to gardens. Yellow-tailed black cockatoos excavate wood boring insects such as the larvae of longicorn beetles and cossid moths. Forest ravens feed on cockchafer grubs in the soil. There are many more examples of insectivorous birds.

4. Beneficial Insects (Predators & Parasites)

Insects too are beneficial and help control garden pests such as caterpillars and aphids. What insects are beneficial and how they can be recognised? We grow plants to attract birds but how many people grow plants to attract beneficial insects.

Beneficial insects include - ladybird beetles and their larvae - lacewings and their larvae - predatory beetles, bugs and mites - preying mantids - parasitic wasps and flies - spiders.

5. Plant Pollinators

We have seen that insects use plants for their survival (food and shelter) and reproduction (egg laying sites, larval food, and pupa attachment), so what do plants get out of their association with insects?

Insects pollinate plants and thus play an essential role in plant reproduction. Flower structure has undergone extraordinary development to ensure that cross pollination occurs. Some flowers even mimic insects. For example, one orchid species emits a chemical similar to the odour of a female wasp. The male wasp is attracted to the scent, copulates with the orchid flower and deposits pollen. Both flowers and insects benefit from their association. Insects are attracted to flowers - flowers reward insects with nectar and pollen (protein). In return insects cross pollinate flowers. What other animals pollinate plants?

Australian Myrtaceous plants provide abundant blossom for nectar feeding birds such as honeyeaters so it is not surprising that birds pollinate plants. Mammals such as possums also pollinate plants.

ASSOCIATIONS AMONG PLANTS, BIRDS & INSECTS

What insects are pollinators? The introduced honeybee is a conspicuous and useful pollinator of garden ornamentals and fruit and vegetables. The Australian flora evolved long before the honeybee arrived, so what pollinators evolved together with Australian plants? The heathlands support a vast number of plant species and many heath flowers are pollinated by native Trigona bees. These bees are solitary and the females forage and compete with honeybees for flowers. In addition to bees and wasps, other insect pollinators are beetles, flies, moths and butterflies. Scarab beetles are mainly plant feeders and many of these feed on nectar and pollen - e.g. Phyllotocus and Diphucephala. Beetles tend to feed on open flat flowers such as Leptospermum and related genera. Pollinating flies, including tachinids, hover flies and bee flies, also feed on flat open flowers - e.g. Hibbertia. The food plants that attract beneficial insects to gardens include Acacias, Leptospermums, Hibbertias and Bursaria.

This talk began with an example of a 3 way association between catbirds, fig trees and fig pollinating wasps. In conclusion, I would like to mention another intriguing 3 way association between the mistletoe bird that feed on mistletoe fruits and disperses its seeds and the insects associated with mistletoe plants. An acccunt of this association is illustrated and discussed in GEO. (June - August 1985. Vol. 7 No. 2).

R.H. DONAGHEY

The above text was kindly supplied by R.H. Donaghey (Tasmania).