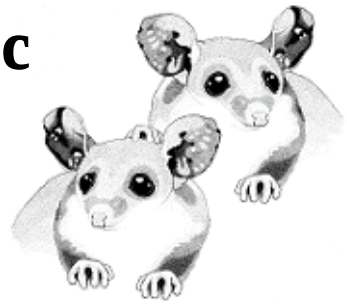
Tweed Valley Wildlife Carers Inc

NEWSLETTER

July 2003



Food, Glorious Food ...

Inside this issue:

This issue of the TVWC Newsletter focuses on food for the native wildlife that comes into our care.

It includes a useful summary, for newer carers in particular, of the different food needs of the various types of birds, eg insectivorous compared to grain-eating birds.

Other articles cover carers' experiences with and research on commercially-available milk formulas, eg for marsupial joeys and bats.

Why not feed the wildlife? provides an overview of the 'no-no' food often fed to wild birds and other animals that come onto our properties.

Reasons for discouraging this practice are given for different species, with more natural and less harmful ways to attract native wildlife discussed.

Flying-fox food issues are covered, as we follow the progress of an in-care baby flying-fox.

Plus, instructions for breeding meal worms and a great home-made nectar recipe.

And more ...

In addition, we begin a regular section called *Chair Chat!* from TVWC President, Ilona Roberts. This is a round-up of recent events, committee news, and issues that members should note.

An easy emergency food for birds ...

Just to whet your appetite (excuse the pun!) for all the interesting information within, we begin with a wonderfully simple recipe for an emergency food that can be used for all baby birds, except seabirds.

Both components are readily available from supermarkets.

For those occasions when a baby bird cannot be identified or comes in when you are not prepared, try a 50/50 mix of:

- High protein baby cereal, eg Farex (plain, not flavoured)
- Crushed and soaked dog kibble

This mixture can be used for the first 24 hours the baby bird is in care, once it is out of shock and stabilised.

Remember, this is an emergency diet only – until you can get the correct food.

Online News: www.tvwc.org

Have you been to our website lately? If not, do so as there have been many additions.

For a start, many of our fact sheets are now available in Adobe Acrobat format which makes it much easier for you to download, read and print.

New pages include:

- *A is for Antechinus*, a featured-animal story by Sue Johnson and Helen Joakim on their experiences raising 5 baby antechinus.
- Two new fact sheets on building nest boxes for Microbats and Feathertail Gliders.
- Three new animals added to the *Our Wildlife* section: Lesser Long-eared Bat, Chocolate Wattled Bat, and Feathertail Glider.

Overseas visitors!

TVWC is helping people as far away as New York, the UK and south of France!

We are receiving requests for information on wildlife and advice is being asked by people in remote areas. Others are asking for contact details of wildlife groups in their area, such as Loretta Schwartz of New York wondering if we knew of any rescue groups in the New York City area. She said:

> "Thank you so much for being there. Just so good to know."

Mandy from the south of France successfully hand-raised two baby magpies on the email advice she received from us, as she could not find anyone to help her or take the birds in her region.

And Nick in Suffolk, UK, searched the web for advice after he came across a baby bird that had fallen from its nest. He found us and followed our instructions on making an artificial nest for the bird that he then watched being reunited with its parent!

A Diary *Must*!

Sue Johnson, TVWC Records Officer, came back with a wealth of information and enthusiasm from the first

National Conference on Wildlife Rehabilitation

held 30 June to 2 July, in Melbourne.

She will tell us all about it at the next

General Meeting

2 August, 1pm

CWA Hall
Murwillumbah

Chair Chat!

President, Ilona Roberts' round-up of recent news, events and committee matters

Welcome to new members:

Belinda Baker, Jason Baker, Catherine Beard, Pamela Beech, Janice Bishop, Jeffrey Bray, Kathleen Burley, Paul Crawford, Rosemary Eva, Mary Grant, Jodie Haines, Katherine Howell, Tamara Lackey, Yvonne Murray, David Norrish, Daniel Reid, Edwin Roelink, Karen Scott, Peter Thomson

I don't know if time is passing faster or more incidents and events are cramming themselves into the days, but this year seems to be almost as hectic as last year.

We have quite a number of new members to welcome to the group since the last newsletter, and we'll be getting as many of them trained as we can. This month in particular has been crammed with workshops; I daresay a few heads will be spinning on overload.

In the Public Eye ...

We've managed to get ourselves into the public eye, mainly thanks to Helen's efforts.

- In May, Volunteering Tweed had a two-day stall in Tweed Mall and we were invited to bring our promotional material. Pat Betts, Narelle Shallcross and I attended one day, and Helen Joakim the next. I have to say we weren't exactly swamped by people desperate to join us, but at least we were visible and able to talk to members of the public.
- On June 8 there was a celebration for World Environment Day in Knox Park, and we had a stall. Thank you Sonia, Belinda and Nadine for giving your time.
- There have been articles about the group's work in the Tweed Sun, the Daily News and the Gold Coast Bulletin.
- Fran Doyle and I have been to the Centaur Primary School and given a talk to the Year 4 children about our work – they were full of questions and genuinely interested in what we do. We have been asked to come back to speak to the Year 3s later in the term.

Meetings & Workshops

As for meetings, we had the good fortune to be invited to hold the April General meeting at the property of members Rosemary Eva and Liz Coles. They own a beautiful Alpaca stud, and have given us permission to put the new macropod release pen there. We walked around the area where the release pen will go – it will be a wallaby joey's idyll. I have to say I felt more than a little annoyed that more members didn't make the effort to attend.

The June 14 General Meeting was necessarily short as it preceded the Bird Workshop presented by Clem Craythorn. Having both meeting and workshop on the same day meant the workshop was cut short as well, but Clem is a true professional and with consummate skill he treated us to a day that was interesting, informative and *humorous* . His obvious enthusiasm for his subject was inspiring.

Northern Rivers Wildlife Carers have been hosting workshops in Lismore. On June 21 some of our newer carers attended a macropod workshop and June 28 was a possum care workshop. Hopefully this means that most of us now should be able to cope with some basic caring.

We have Flying-fox and reptile workshops coming up in August and September, and advanced marsupial workshops are taking place in late July. (see page 11 for dates)

And all this is in *addition to the* normal (if any wildlife carer's day can be called that) rescues, transport and caring we have to deal with..

Committee News

While on Committee matters, we have been busy working on many fronts in addition to those mentioned already, including putting together a sorely needed policy on Vet Services; having new brochures, Vet pads and membership cards printed; lobbying Council about wildlife signs; and putting together a comprehensive Phone Volunteer Handbook, on top of making sure the organisation is running as well as possible with its limited resources.

Thanks, Noel Edwards

A special thanks to Noel Edwards – he is presently the only carer who is rescuing pelicans on a regular basis and it often happens that great chunks of his day are taken up either looking for or trying to catch one of these birds which has been reported as injured, entangled or in some kind of trouble.

Welcome back, Dave

Our Bat and Flying-fox Coordinator is now Dave Pinson, who recently returned from South Australia, and whom I welcome back with delight and a profound sense of relief. Another pair of hands for those barbed wire rescues, to say nothing of having someone else with significant experience in caring for several species of animal!

Now we await Sue McArthur's return from SA. Hurry back, Sue!

(Continued on page 10)

L-R: Ilona Roberts, President; member Maureen Tormey, and Helen Joakim, Treasurer.

In the absence of a Secretary, Ilona and Helen have been covering the role.

Marsupial Milk Formulae

It can be confusing, as Ilona Roberts found

My recent experiences demonstrate why many Marsupial carers are understandably confused about which milk formula is best for the joeys in their care.

A Bandicoot Tragedy

In April, four Bandicoot joeys came into care. They were approximately 42 days old and had been abandoned by their mother after her release from a researcher's trap in the area of the proposed Tugun By-pass.

They had been commenced on Wombaroo Mammal First Aid, a low lactose emergency milk formula.

Once in my care I began to change them over to Wombaroo >0.7 Kangaroo milk formula, as per Rhonda Mc Clymont's manual, *The Care and Hand-raising of Orphaned and Injured Bandicoots.*

However, they failed to thrive; one showed signs of colic and another became seriously ill and was admitted to Currumbin Sanctuary's Hospital A severe gut infection and possible urethral blockage were diagnosed.

I took the others in shortly thereafter as it was assumed they were all similarly affected. They remained for several days; sadly, the little female and one of the males died.

Once in Currumbin they were all changed to Di-Vetelact . Currumbin staff seemed to be of the opinion that the Bandicoots' dire condition was at least in part the result of my having had them on the Wombaroo formula.

I do not agree with this as a couple of days previously I had noticed that the Bandicoots' anuses were red and swollen. Doogie Raphael, a fellow member who was helping me with feeds, thought they might have been sucking on each others' bottoms – probably felt like mum's nipple. In my opinion, this action would probably have stimulated defaecation and urination, with resultant ingestion of faecal material and local tissue damage, leading to the gut infections.

When the two survivors were returned to me, I kept them on the Di-Vetelact regimen as instructed by Currumbin staff.

Weight gain for both animals was slow until insects and other supplementary foods were introduced to their diet, after which it was dramatic.

John Prior took the larger one and subsequently successfully released him. The smaller male stayed with me until I could get his weight up for his release.

Signs of hair loss ...

I was prolonging his weaning for this reason, until I noticed that the hair around the base of his tail and lower back was becoming sparse. I learned to my horror that such hair loss is a sign of *Digestelact Syndrome (also known as Di-Vetelact Syndrome)*, a condition identified by several researchers working with marsupial orphans. I withdrew the Di-Vetelact and the condition improved.

Marsupial Milk differs

In her paper *Husbandry and Veterinary Care of Orphaned Marsupial Pouched Young*, Dr Helen McCracken, Head of Melbourne Zoo's Veterinary Department, identifies the differences of milk composition between marsupial and eutherian mammals, eg horses, dogs, pigs and humans.

Unlike placental mammals, there is a significant increase in protein content of marsupial milk during the joey's pouch life. The concentration and types of sugars present in marsupial milk also differ substantially to that of placental mammals.

Wombaroo and Di-Vetelact (or Digestelact) are the two most popular formulae used to raise orphans.

Dr McCracken states that:

> "Wombaroo … has made unique formulae for macropods, possums and wombats and for each of these, produced several different milk types ***formulated to simulate the natural changes which occur in marsupial milk***."

Di-Vetelact is a low lactose formula designed for young domestic animals but it is also used to raise marsupials. The same formula is used regardless of the species or the joey's stage of development.

For very young joeys it seems to suffice but has been shown

(Continued on page 8)

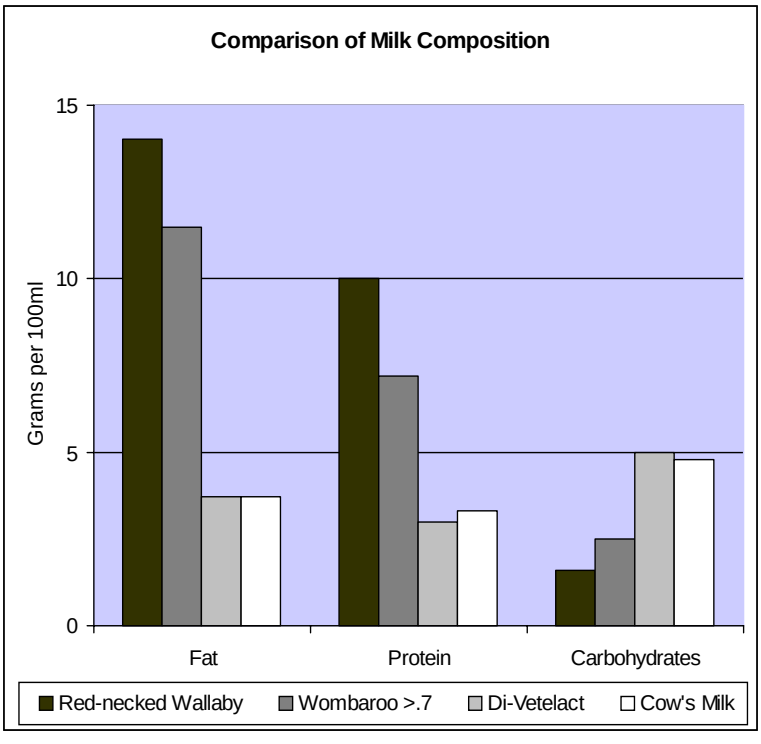
Wallaby joeys reared on Di-Vetelact, in Lynda Staker's studies:

- **Were permanently much smaller—a third less than mother or Wombaroo-reared animals;**
- **Experience hair loss and thinness;**
- **Never acquire the water-proof coat they require;**
- **Don't wean themselves.**

The chart below shows the composition of the milk of a late lactation Red-necked Wallaby, in comparison to that of the appropriate Wombaroo formula, Di-Vetelact and cow's milk.

The amount of fat and protein in Di-Vetelact is very low, whereas there is an excess of carbohydrates. Wombaroo more closely resembles the mother's milk.

(Based on charts compiled by Kerry Cranney)



The Food (and other) Needs of Flying-fox Babies

By TVWC Bat Coordinator, Dave Pinson

Flying-fox babies come into care for three main reasons: power lines, barbed-wire, and quite literally being dropped. Baby season starts in September, with bubs still coming in at Christmas and beyond.

A baby in care

Babies coming into care are first weighed, and then measured. The forearm length tells us the exact age of baby and, from there we can establish a *weight for age* ratio. Babies are almost always dehydrated, and well under weight.

The next stage is to stabilize the patient. Stabilizing involves re-hydrating, once warm, either orally if not too bad, subcutaneously if more advanced, and then establishing a normal feeding routine. Often water and glucose is given for the first few feeds before moving slowly to artificial milk.

Types of Milk

The Wombaroo company makes a flying-fox milk replacer that has been rapidly losing favour due to adverse reactions.

For many years now, human milk replacers such as *Nan 1* or *Heinz* have been the preferred choice – with a lot fewer problems.

Lately however an increasing number of carers on the east coast are trialing and advocating full cream cow's milk, with a little glucose added.

This food most closely replicates mum's milk, resulting in quite spectacular results.

Babies showing problems, raised on Wombaroo or Nan, recover very quickly on cow's milk, gaining weight.

This coming season we will be using and encouraging cow's milk as the preferred replacer for flying-fox babies.

NB: Cow's milk should never be used for marsupials!

From 4 to 6 weeks

For the first 4 – 5 weeks of their normal life, flying-fox bubs are carried with mum on her nightly foraging. When in care, the babies spend most of this time securely wrapped, head down in a basket, fast asleep. Five feeds a day gradually reduces to four.

From about 5 weeks on, baby spends increasing amounts of the day, mostly sleeping, on a modified clothes airer. Out in the wild, it would normally be left in camp as mum feeds at this age.

At about 6 weeks, solids are introduced to babies in care, in the form of steamed, softened apple sprinkled with supplement, the amount of apple being increased daily.

Apple is used in orphan rearing for many reasons:

- It is relatively cheap.
- It is a very well rounded fruit, nutritionally.
- Once released, the animals are unlikely to find apple orchards on the north coast.

Apple, mango, grapes etc are all good foods in captivity. Banana, paw paw, and citrus are not.

Shortest Digestive Tract

Flying-foxes don't actually eat fruit as such; they pulp it between tongue and upper palate, extracting the juice before spitting out the pulp. This has led to the popular misconception that flying-foxes vomit on you. So efficient is this process that the resulting pulp can be as dry as wood.

Flying-foxes, with their mainly liquid diet, have the shortest digestive tract of any mammal – less than 30 minutes from one end to the other.

Palate damage is the nightmare of barbed-wire rescues. In trying to free themselves by chewing the barbs, the palate is punctured through to the sinus. There is no cure. An animal with this damage, if freed, is unable to eat and will slowly starve. Euthanasia is the only answer.

Weaning

Weaning starts at around 10 to 12 weeks. As this time is approaching, the baby is much more active, flapping to exercise and strengthen those rapidly-growing wings.

At about weaning time, the not-so-small-anymore baby learns to fly. It happens all of a sudden; the flapping sessions become more frequent and prolonged. One minute they are looking at you, the next they summon up the courage, and let go… airborne … well, briefly! Back on the airer to try again!

Flying-foxes are so affectionate that they want to be on you all the time. Not a problem – until they learn to fly. Now, you have created a monster, albeit very cute, and it's time to join the older *kids* outside in pre-crèche.

(Continued on page 11)

Become a Flying-fox Carer!

Raising flying-foxes is both rewarding and highly addictive.

You will need a series of vaccinations (and a sense of humour) but TVWC will subsidize the cost (of the vaccinations, not the sense of humour!)

A training course is being run on 23 August, before birthing season in September. (see page 11 for details)

Call Dave Pinson on 02 6672 5858 for more information.

Why Not Feed the Wildlife?

By Dave Pinson, with special thanks to WIRES and WILVOS

As wildlife carers we often come across many well-intentioned people who, because of their appreciation of and the pleasure they get from our native wildlife, feed the wildlife that ventures onto their properties.

The table below shows why we shouldn't feed wildlife, the overriding reason being that we simply cannot provide them with their correct nutritional requirements.

Nature's food chain has developed over millions of years, and by feeding native wildlife we could be causing untold damage to our already fragile environment.

The dietary requirements of native fauna is extremely complex – even experienced carers can have difficulty establishing the correct diets when caring for sick, injured or orphaned wildlife. By feeding wildlife, we are upsetting nature's fine balance.

By continually feeding wildlife, animals can become aggressive, dependant and ultimately sick. It also causes nomadic animals to become sedentary, reducing the amount of exercise and disabling their ability to forage for natural foods, which is not instinctive, but is learned.

So, next time someone tells you they feed the magpies that come into their backyard, tell them how they can enjoy the wildlife without feeding it.

For most of us, birds are the wild animals we are most likely to see in, and want to attract to, our back yards.

Always keeping your cat inside is the easiest and single most effective way of enjoying the birdlife!

Animal	Unnatural Foods	What feeding wildlife unnatural foods can do	Natural Foods	Enjoy your wildlife without feeding it
Kookaburras, Magpies, Currawongs	Meat, Mince, Bread	Bled meat contains too much phosphorous and too little calcium, producing nutritional imbalances and severe deficiencies – beak and bone deformity. Providing a regular food source encourages over- population. As they are predatory, this will deter smaller native birds visiting your garden and, worse, these smaller species are preyed upon all year round, when migratory species like Currawongs do not move on. Can become dependent on regular food source and lose the ability to find food themselves, especially juveniles raised on a false diet.	Insects, Invertebrates, Small reptiles, Small mammals, like rodents	Leave leaf litter in your garden as it will attract insects, vertebrates and lizards. Leave 'safe' dead trees and hollowed limbs of live trees – the hollows provide nesting sites. Plant native trees – consult your local nursery for plants indigenous to your area.
Rosellas, Cockatoos, Galahs	Bread, Fruit, Food scraps, Seed mixes	Bread has poor nutritional balance, not complex cereal base required. Introduced fruit can ferment in the crop, causing infections. Seed mixes are rarely nutritionally balanced and difficult to eat, encouraging them to rely on the oilier seeds (sunflower) which can lead to long-term fatty growths and obesity. Encourages a normally nomadic population to become sedentary, thus not balancing their diet.	Native grasses & seeds; Large variety of insects and their larva; Hardened fruits like gum nuts.	Leave 'safe' dead trees and hollowed limbs of live trees to provide nesting sites. Have a balance of vegetation in your garden, avoiding hybrid native plants – consult your local nursery for indigenous plants. Provide water in varying depths, with protection from neighbourhood cats, planting plants of varying heights around the water source.
Lorikeets, Honeyeaters	Sugar & water, Honey & water, Bread, Non-native fruit, Seed mixes	Digestive system designed for liquid intake. Bread, seed mixes and fruit quickly fill the bird, slowing digestion, leading to vitamin and mineral deficiencies, predisposing them to disease through bacterial and yeast infections of the crop. Diseases such as psitticine (beak & feather disease) easily spread through communal feeding trays. With a regular food supply, nomadic birds will breed out of season, thus becoming sedentary and creating localised over-population, leading to further disease. Causes decline in smaller birds through overcrowding of nesting sites and competition for insects.	Nectar & pollen from Eucalypt & other native plants; Native berries & blossom; Insects & their larvae.	Provide a balance of vegetation in your garden by avoiding hybrid native plants – consult your local nursery for plants indigenous to your area. Provide water in varying depths with protection from neighbourhood cats, planting plants of varying heights around the water source. Leave 'safe' dead trees and hollowed limbs of live trees – the hollows provide nesting sites.

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Why Not Feed the Wildlife? *(continued from page 5)*

Animal	Unnatural Foods	What feeding wildlife unnatural foods can do	Natural Foods	Enjoy your wildlife without feeding it
Ducks	Bread, Chips, Vegetable scraps, Leftovers	These foods do not provide the correct nutritional balance, causing deficiencies and predisposing them to disease etc. For example, a reduction in calcium levels can cause weaker egg shells. Bread can ferment in the gut causing bacterial infections. Food settles on the bottom of ponds and rots causing levels of bacteria to rise - causes things such as botulism which can kill the ducks.	Plants growing along water edge and in the water; Shrimps, mussels and small aquatic animals; Insects.	Contact your environment centre or council to clean up and regenerate the local pond, lake or lagoon. Write down your observations on the condition of your local ducks, their environment and any changes – this may be useful to your environment centre.
Possums and Gliders	Bread, Fruit, Food scraps, Milk	Fruits are not digested easily by Ringtail Possums. It ferments in the gut and produces vast quantities of gas – death is usually the end result. If fed milk, it aggravates their digestive system causing diarrhoea and dehydration which can result in death. Feeding non-native foods encourages possums to 'experiment', including eating the poisonous snail pellets in your garden. Introducing a new food source ultimately reduces the possum's territories, creating overpopulation of areas, predisposing them to disease.	Variety of leaves. Eucalypt leaves and flowers; Native fruits and buds; Bark; Grass; Occasionally, small insects.	Provide a balance of vegetation in your garden by avoiding hybrid native plants – consult your local nursery for plants indigenous to your area. Leave 'safe' dead trees and hollowed limbs of live trees, to provide nesting sites, or install a possum box (see our web site for a fact sheet on building a possum box). If possible, keep your compost heap enclosed to prevent possums from scavenging and using this as their only source of food. It also discourages rodents.
Kangaroos, Wallabies, Pademelons	Bread, Leftovers, Milk.	Kangaroos are designed to eat large amounts of low protein roughage such as native grasses and browse (leaves, twigs and shoots). Human food is a poor substitute, with little nutritional value and will disrupt their natural intake. If fed milk, the gut becomes aggravated causing diarrhoea and dehydration that can result in death. Bread is a soft food and, if eaten regularly, can result in gum problems. Once this occurs, it only takes a hardened grain or twig to puncture the gum allowing the disease 'lumpy jaw' to infect the gum area.	Kangaroos graze – predominantly grasses; Wallabies – browse and shrubs; Smaller macropods – browse, fungi, and insects.	Keep your dogs enclosed and do not allow them to stray.

Swamp Wallaby joey browsing on a bottle brush.

Bird Books

TVWC stocks the following books:

- *Caring for Australian Native Birds* by Heather Parsons
- *Australian Bird Rehabilitation Manual* by Norma Henderson
- *Baby Bird ID* by Norma Henderson
- *Wildbird Rescue* by Norma Henderson

Available at cost price from
Ilona Roberts in Tumbulgum
Call 02 6676-6259

Breeding Mealworms

Mealworms are a useful food source for many different animals that come into care, including insectivorous and carnivorous birds, frogs, bandicoots, antechinus and other carnivorous mammals.

Mealworms are the larvae of the *Temebrio molitor* beetle. These can be purchased commercially or can be bred by carers, as an economical alternative, and so that there are some always on hand.

Container

A range of containers can be used, eg plastic food storage container, glass aquarium, wooden box. It should be about 15cm high and have a tight-fitting lid. There should be several large holes in the lid, with these covered with flywire. Adequate ventilation is important.

'Ingredients'

- Unprocessed bran;
- Hessian sacking or white paper towel;
- Small container of mealworms or beetles to start off with;
- Few slices of carrot, apple, potato peel or banana skin.

Instructions

- Add a 5–7 cm layer of bran to the container.
- To this, add some of the mealworms or beetles.
- Place a layer of hessian or paper towel on top of the bran.
- Continue to place alternate layers of bran and hessian, plus some mealworms within each layer, up to the top of the container.
- Add the fruit/vegetable matter to the top layer. This needs to be regularly replaced.
- Store in a dark, well-ventilated and warm place – a constant 25° with 50% humidity is best.

The Cycle

The female beetle lays over 200 eggs which hatch into young mealworms after 20 days.

Feeding on the bran, the mealworms grow, continually shedding their outer skin and reaching maturity at 46 days.

The mealworms progress through their pupae stage, to emerge as beetles by day 63, ready to start the cycle again.

So, within a year, five lots of mealworms can be bred.

Do you 'have it'?

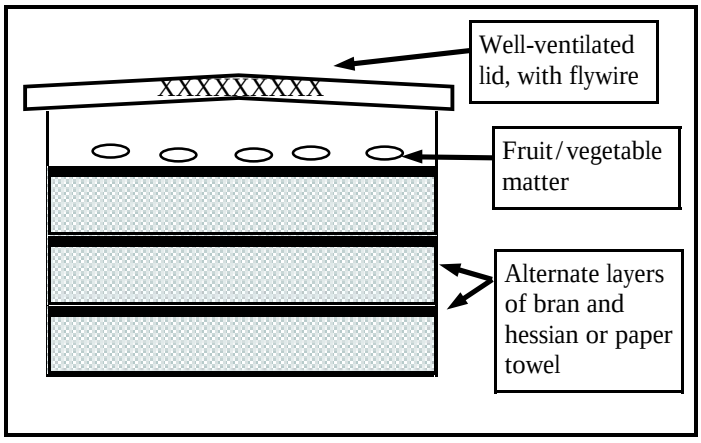
It seems that when it comes to breeding mealworms, you either have it, or you don't! Some of us fit into the second group, unfortunately. But 'having it' usually means that you have all the requirements just right, particularly the constant warmth. Try storing the mealworm colony on your hot water service, for example.

If you do 'have it', there will be many a TVWC carer more than willing to take some mealworms off your hands!

(Source: *Bird* Care, by Heather Parsons, 1993)

Tips:

- To make harvesting easy, place a damp sheet of paper on the top layer overnight and the mealworms will be attracted to it.
- At times when you have a glut of mealworms and no animals to feed, store them, with a little bran, in the fridge, to slow down their development.



Home-made 'Nectar'

The following recipe, originating from Taronga Zoo, was designed for Leadbeaters Possums but can be used by carers for Sugar or other Gliders, Ringtail Possums, and for nectar-feeding birds, eg Lorikeets and Honeyeaters.

It is not intended as a full meal, but as a supplement or 'condiment', with a teaspoon or two being spooned over the top of the animal's fruit or other food.

You can store the mixture in the freezer, and spoon out the little you need for each feed, as it has the consistency of ice-cream when frozen.

Ingredients

- 450ml of warm water
- 450ml of honey
- 3 shelled boiled eggs
- 75gms high protein baby cereal, eg Farex (plain)
- 3 teaspoons Sustagen vitamin supplement.

Instructions

- In a blender/food processor, mix eggs until mushy.
- Put the warm water in a container and add the honey to it, mixing well.
- Add the honey/water mix to the eggs, half at a time, blending well.
- Add Sustagen and the cereal, half at a time, blending for one or two minutes, so that it is lump-free.
- Pour into a container and, when cool, put in the freezer.

This Sugar Glider loved and thrived on this nectar recipe.

TVWC Office-bearers

President	Ilona Roberts	02 6676-6259
Treasurer	Helen Joakim	02 6677-1224
Secretary	Vacant - being carried out by Helen Joakim and Ilona Roberts	
Reptile Coordinator	Peter Burnheim	02 6679-1427
Bird Coordinator	Vacant	
Seabird Coordinator	Vacant	
Bat Coordinator	Dave Pinson	02 6672-5858
Marsupial Co-ordinator	Jennifer Thomas	02 6672-5011
Membership & Records Officer	Sue Johnson	02 6677-1224
Committee Members	Elizabeth Coles, Erin Murphy, Nadine Maddecks	
Phone Coordinator	Ilona Roberts	
Newsletter Editorial Team	Helen Joakim, Ilona Roberts, Dave Pinson	
Fundraising Team	Marie Ellis, Pat Betts, Belinda Wright, Meredith Dennis, Sonia Sheppard, Phil Washington	

Marsupial Milk Formulae *(continued from page 3)*

to be inadequate for the needs of joeys once they start to emerge from the pouch.

Although most of the studies relate to wombats and macropods, there have also been reports of other marsupials exhibiting deficiency problems associated with prolonged Di-Vetelact use – from Quolls to Antichinus.

Di-Vetelact Syndrome

Digestelact or Di-Vetelact Syndrome was discovered by Dr Richard Speares in northern Queensland, who observed hair loss in macropods, mainly wallabies, and had lost several Grey Kangaroos before he identified pathological changes in their livers. His research attributed the symptoms to the milk formula, after eliminating other causes.

Lynda Staker's manual, *Don't Step Backwards (2001),* also discusses this syndrome and her two-year trials comparing Di-Vetelact and Wombaroo.

Staker notes that:

> "Joeys reared on Divetelact **never** acquire the thick coarse insulating weatherproof fur of their healthier counterparts The fur remains 'fluffy' and non-weather resistant **forever**".

These animals also remain permanently undersize – one-third the size of mother or Wombaroo-raised joeys – this despite being fed the best native and supplementary foods

In addition, Staker notes that Divetelact joeys will not wean themselves.

Wombaroo Recommended

In the light of these findings, I would recommend that carers use the appropriate Wombaroo products when raising orphan marsupials. No artificial formula can totally replace mother's milk, but one which takes into account different species' needs and the different growth stages of marsupials is less likely to cause problems.

Back to the Bandicoots

I had previously raised two orphan Bandicoots using Wombaroo >0.7 Kangaroo milk with no problems. I believe that the four which came into care and became so ill, were younger than the other two I'd raised, and possibly needing the comfort of sucking on something that felt like a teat. I hadn't realised what they were up to until Doogie made her observation; since then, of course, people have regaled me with tales of how this or that animal they once had used to do the same thing.

> **"Unfortunately, many carers who do not understand the nutritional requirements of joeys, and who believe that any formula will do, have not bothered to undertake their own research as to which formulas actually provides the essential nutrients to rear marsupials."**
>
> **Lynda Staker, *Don't Look Backwards*, 2001**

A Quick Guide to Bird Foods

Based on Heather Parson's bird manuals

It is sometimes confusing for new members to know what the different types of birds eat in the wild, and what are appropriate foods for them when they come into care. Below we have summarised the types of birds, their wild food and what they can be fed when in care. Books such as Heather Parson's *Caring for Australian Native Birds*, upon which the table below is based, and Norma Henderson's *Australian Bird Rehabilitation Manual*, are invaluable resources for members interested in caring for injured or orphaned native birds.

Bird Type	Examples	Wild Food	Food in Care
Insectivores (insect-eating)	Wrens Swallows Tawny Frogmouth Magpie Larks Willie Wagtails Cuckoos Flycatchers Some Kingfishers	A wide variety of insects and invertebrates – moths, caterpillars, flies, mosquitoes, beetles, termites, spiders, insect larvae and worms.	Adults: Mealworms; maggots; all other insects, depending on size of bird; Wombaroo Insectivore mix. Provide mineralized grit/fine sand. Young: As above, using smaller pieces – insects and mealworms can be chopped. Wombaroo Insectivore mix, as per directions.
Carnivores (meat-eating)	Kookaburras Australian Magpies Butcherbirds Currawongs	Small mammals; baby birds; reptiles; frogs; insects and invertebrates – cicadas, beetles, crickets, cockroaches, spiders, curl grubs.	Adults: Wombaroo Insectivore mix; small meatballs made up of 50% lean mince, 25% Insectivore mix, 25% soaked dog kibble and powdered calcium; insects, eg crickets, cockroaches, mealworms; small fuzzy or pinkie mice/rats. Young: Small meatballs, as above; pinkie/fuzzy mice/rats; worms; insects (dead).
Raptors (specialized meat-eaters)	Owls Kites Wedge-tailed Eagle Osprey	Insects; small mammals; other birds; reptiles; carrion (Wedge tail); fish (Osprey).	We are not licensed to care for raptors – they are highly specialised – these birds should be transferred to Northern Rivers Wildlife Carers.
Nectivores (nectar feeders)	Lorikeets Honeyeaters Friarbirds Wattlebirds	Native nectar & pollen; insects; lerps; soft fruit and berries; Eucalypt sap.	Adults: Wombaroo Lorikeet and Honeyeater mix; chopped fruit, eg bananas, grapes, pear, apple; soaked sultanas; egg & biscuit mix sprinkled on fruit. Young: 50/50 Wombaroo Lorikeet and Honeyeater mix and Wombaroo Insectivore mix. Add pureed fruit and insects to nectar mix.
Granivores (grain eaters)	Cockatoos Rosellas Finches Some Pigeons/ Doves	Grain; grass seeds; fruits, berries/nuts from trees and shrubs eg Eucalypt, Banksia, Casuarinas. Offer nuts still on branch. Some insects.	Adults: Good quality birdseed appropriate to species; chopped fruit and veg, eg apple, pear, corn, peas, and grated carrot;. sprouted seeds, well washed. Provide shellgrit/sand. Young: Wombaroo Granivore mix
Frugivores (fruit eating)	Figbirds Catbirds Fruit Doves some Pigeons Bowerbirds	Native berries and fruits; insects.	Adults: Chopped fruit, eg cherries, grapes, guava, paw-paw, mulberries, pear etc; Wombaroo Insectivore mix; Dried fruit, eg figs, soaked sultanas. Young: Wombaroo Insectivore mix with pureed fruit. 60% soft mixed fruit, 20% Hi protein cereal, 20% egg & biscuit mix and 1 teaspoon powdered calcium, water to form slurry.
Waterfowl	Ducks Swans Geese Moorhens Coots Swamphens	Insects and their larvae; grasses; herbs; seeds; aquatic plants; some berries.	Adults: Freshly chopped greens, eg spinach, clover, duckweed, grass, lettuce; seed/grain soaked in water; freshly sprouted seeds; poultry pellets. Provide shellgrit/sand. Young: Finely chopped greens; chicken crumble (small amounts); Wombaroo Granivore mix. Float food in shallow dish of water to allow them to skim from surface.

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Training News

Birds: our part in their lives

For those unable to attend, or who did attend but were too busy taking it all *in* to take any of it *down*, Ilona Roberts has put together her compiled bits and pieces to share. Contact her on *ilona@better.net.au* if you would like her to email you a copy.

Clem Craythorn's bird workshop – *Birds: our part in their lives* – held on 14 June was an outstanding success, attended by 29 people, including 10 new members who joined on the day.

Clem started out with a short history of birds, descendants from reptilian ancestors of the Mesozoic age. He took us through catching birds, and dealing with those important first hours when a bird comes into care, recognising and treating the symptoms of shock, cold and dehydration *before* we begin feeding.

For the segment on the examination of birds, Clem demonstrated with his pet chooks, and we learnt some simple techniques to check for wing, head, neck and leg damage.

Some of the types of injuries Clem covered on the day included head, feather, fractures of the different bones, beaks, and various types of wounds.

Clem Craythorn, talking to TVWC Records Officer, Sue Johnson, at the bird workshop he presented on behalf of TVWC.

To give you an idea of the range and breadth of the day, below are a few snippets from Clem:

On feet and legs

- All birds perch on one leg when asleep.
- Raptors, Kookaburras and Tawny Frogmouths can't manage with one foot, but need to be able to use both.

Coping with one eye

- Birds with binocular vision, eg Raptors, can't survive with permanent loss of vision in one eye.
- Birds with stereoscopic vision, ie eyes on either side of the head, can survive, but would be much easier prey.
- Ducks survive well because their eyes are situated high on the head and are a flock bird, which may afford protection from predators.
- Wading birds have 360° vision, ie can see in front of and behind themselves.

Owls vs Tawnies

- Owls hunt by sound. They have asymmetrical ears and need their facial feathers intact in order to hunt.
- Tawny Frogmouths hunt by sight.

On Baby Birds

- Any baby bird in care can be treated as an insectivore with the exception of Figbirds, Catbirds, Pigeons and Doves and Pescivores, ie fisheaters.
- We have to teach hand-raised birds to be afraid of us and our pets. You know you're doing a good job once you've raised your babies and they are in the flight aviary, as far as they can get away from you when you come to leave them their food.

The colour of droppings

If healthy, bird droppings should have a brown centre surrounded by white. But ...

- Green bubbly droppings: maybe poisoning or an empty gut.
- Brown and runny: could be coccidiosis, poisoning or ruptured intestine.
- Very smelly: possible poisoning or coccidiosis.
- Watery: needs food or has too much fluid

On Beaks

Beaks are classed as *living* or *dead*.

- Doves and parrots have living beaks, which means the beak will heal over, not grow back, if damaged.
- Magpies have dead beaks which can be trimmed to allow the bird to feed.

Thanks, Clem

The consensus was that the day was not only enjoyable, but informative, leaving one wanting more.

Hopefully we can persuade Clem to return in the not-too-distant future.

Chair Chat! (Continued from page 2)

Thanks, Christine Goff

Christine Goff has been on the TVWC Committee and been the Bird Coordinator for many years. Unfortunately, Christine has had to resign from her position, although she will remain a valued bird carer. The Committee will miss her input and good work. Thanks, Christine!

More Training News

Reptile Awareness & Snake Handling

The snake season will be upon us again soon and the number of calls from distressed residents about snakes visiting them will begin increasing.

Snakes are arguably the most misunderstood and unloved animals. Yes, some species can kill a human, but most snakes bites occur when people try to move or kill the animal, and are not unprevoked attacks by the snake.

Also, most of the snake calls received by our group involve non-venomous snakes such as carpet pythons and tree snakes which, if left alone, will move off on their own.

Reptiles: Live & Let Live

On Sunday, 14 September, we will be running a snake education session. Education of our members – many themselves very fearful of or knowing little about snakes – and the general public, about snakes in our environment and how to live peacefully with them, will be the theme.

This will be held in the morning, presented by Northern Rivers Wildlife Carers' Paul Whiting, an experienced snake handler, who will be bringing along some of his snakes.

Snake Handling Training

The morning education session will be followed that afternoon by Snake Handling training.

The afternoon session will be restricted to TVWC members who want to be able to handle snakes and are available to be called out for snake rescues or removals.

Paul and other experienced snake handlers will train participants in the correct handling procedures, advise on the required equipment, and supervise hands-on handling.

Those who attend this session ***must*** also attend the morning session, which will cover the background information required of snake handlers.

Lunch will be provided for those attending the full day.

14 September 2003

CWA Hall, Queen St Murwillumbah

Reptiles: Live & Let Live

9.30am—12noon

Snake Handling

1.30pm—4.30pm

AM session only:

Members: $5.50

Non-members: $7.70

Both sessions:

Members: $11.00

You must register by 31 August by calling or emailing Helen:

02 6677-1224

hjoakim@bigpond.com

Other Scheduled Training Courses

The following courses are being run by Northern Rivers Wildlife Carers. TVWC members are welcome to attend but, if interested, must contact Helen Joakim on 02 6677-1224 in the case of the Helen George workshops or Dave Pinson on 02 6672-5858 for the Flying-fox training.

Flying-fox Care and Handling	23 August; 10am start	Macleans Ridges Hall	$5.00, incl morning and afternoon tea, BYO lunch.
Helen George Advanced Training: ♦ **Possums, Gliders, Bandicoots, other small marsupials, Echidnas** ♦ **Macropods**	26 July, 9am to 5pm 27 July, 9am to 5pm	Lismore RSL Market Street Lismore	$15 for one day; $25 for both days. Carers must have done basic training and have experience

The Food Needs of Flying-fox Babies (continued from page 4)

Crèche for flying-foxes

Crèching for our group is done near Lismore at a facility run by Northern Rivers Wildlife Carers, their huge release cage located near an existing colony.

Here bubs from all over the Northern Rivers come to be together, socialise, and *learn to be bats*. They are housed and fed for a few weeks before the door is opened. Once open, the youngsters can come and go at will, continuing to be support fed from buckets hanging low in the trees for many weeks, before finally fully assimilating into the colony.

Because there is so much support, orphans have a 96% success rate of making it, to become gentle night-time workers in our forests.

Bat Custard!

Put 1 egg and 1 glass of milk into double boiler and stir gently until it thickens. Optionally, sprinkle with Small Carnivore Mix.

The bats love it and it is very nutritious (and there is a hell of a lot left over after the bat has had its one or two ml and been released!)

Dates to Remember

Saturday, August 2	**General Meeting** 1pm at CWA Hall, Murwillumbah
Sunday, September 14	**Reptiles: Live and Let Live** 9.30am to 12noon, CWA Hall, Murwillumbah
	Snake Handling Training 1.30pm to 4.30pm, CWA Hall, Murwillumbah
Saturday, October 4	**General Meeting** 1pm at CWA Hall, Murwillumbah
Saturday, December 6	**General Meeting** 1pm at CWA Hall, Murwillumbah

Tweed Valley Wildlife Carers

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NSW National Parks and Wildlife Service General Licence No 10051

A Quick Guide to Bird Foods *(continued from page 9)*

Bird Type	Examples	Wild Food	Food in Captivity
Waders	Egrets Herons Ibis Plovers Curlews	Insects; small fish; crustaceans; aquatic plants; worms. Reptiles, frogs (heron, egret, ibis & spoonbills).	Adults: Meat mix – 70% raw lean mince meat/fish, 30% crushed dog kibble, moisten with water to form long pellets; whitebait; insects – crickets, grasshoppers, earthworms & maggots. Young: As above using smaller pellets with mashed insects.
Seabirds	Pelicans Shearwaters Gulls Petrels Terns Gannets Penguins	Fish, squid & prawns.	Adults: Fish, eg whitebait, pilchards. Feed fish head first. Raw peeled prawns, squid etc with Wombaroo Insectivore mix added inside the fish. Young: Blend the fish and feed via syringe. **NB:** Many seabirds need to be fed in or will only take fish from water. All deep sea feeding birds such as Shearwaters, Gannets, Petrels & Albatross must be provided with fresh sea water. Salt added to water is no good…