

# FIELD NATTER



## FIELD NATURALISTS ASSOCIATION OF CANBERRA

OBJECTS: To foster an interest in, an awareness and an understanding of nature.

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Meetings are held downstairs in the Division of Zoology and Botany, ANU, on the first Thursday of each month. Meetings commence at 8.00 pm and are followed by refreshments.

## NEWSLETTER - FEBRUARY 2004

**MEETING:** Summer in Mount Field National Park, Tasmania with the von Behrens family. Find out why Rosemary fell in love with *Richea pandanifolia*.. More information below. We will be upstairs in the Seminar Room. Please walk in from Daley Road, or up the outside garden stairway. We cannot have food or drink inside the seminar room but we managed with the corridor/tea room last time, why not again? Stay for a chat afterwards.... and see if Rosemary can whip up a power point "presentation".

### OUTING:

Outing: Sunday 8th February - Hall cemetery 3 pm. A short walk at Hall cemetery off the Barton highway. This spot is good for native plants and birds. We may then venture to another place in Hall. Contact Benj Whitworth if you need further information 6254 4 556

Advance Notice: Our next outing - Geoff Hope our March speaker on Boggy Ecosystems will lead an excursion to Snowy Flats on Gingera Road to examine one in the field - Saturday March 6.

### VISIT TASMANIA!

by Rosemary von Behrens

I went to Tasmania for the first time this summer and saw why people rave about the island, want to preserve much of it and why it is one of Australia's most valuable assets - and I only went to Mt Field National Park, the Styx, and several private grasslands. What I saw was awe-inspiring, magical, and breathtakingly beautiful. We also experienced four seasons in one day.

The Tasmanians we spoke to all said that the preservation of the old-growth forests has to be won on the mainland. However, those small people involved in the logging industry, those who depend on it for their livelihood, have families and mortgages and should not be ignored. A way needs to be found to incorporate them into the change so they still have a livelihood. This has been done in Western Australia apparently. In the meantime the major logging company is getting all it can before any legislative change prevents them from logging old growth, or clear-felling. Some loggers are themselves horrified at the "rape of the forest" but they need a livelihood and dare not speak out. Who can blame them, they need to eat! Want to feel miniscule? Stand next to a grand old tree!

## ENDANGERED BELL FROGS.

The NSW Department of Environment and Conservation (DEC) needs help locating any surviving colonies of bell frogs. There are three species; the Green and Golden Bell Frog, the Southern Bell Frog and the Yellow Spotted bell Frog. The Green and Golden Bell Frog [smooth skin, bright green colour and gold markings running from their snout to their hind legs] was thought only to have survived in locations along the coast until a small isolated colony was discovered by chance about three years ago near Queanbeyan and is now the only known inland colony of this species. The Southern Bell Frog, [warty skin, black spots on either side of a green strip running down the middle of their back] while suffering a major decline, is confined to south western NSW west of the Great Dividing Range although it is reasonably numerous in this part of the State. The Yellow-spotted Bell Frog [fully webbed toes and large yellow spots] however, has not been recorded since the 1970s.

## TIGER QUOLLS

The NSW National Parks and Wildlife Service is asking motorists using the Snowy Mountains Highway around Brown Mountain to keep an eye out for Tiger Quolls following recent reports that these endangered animals are being hit by cars.

Please inform Stuart Cohen if you observe **dead quolls** in this area or if you re/discover **bell frogs** on (02) 6298 0311, 0418 820 504 or after hours call (02) 9214 9832 [stuart.cohen@npws.nsw.gov.au](mailto:stuart.cohen@npws.nsw.gov.au)  
\*The NPWS is now part of the Department of Environment and Conservation

## TRUE BIRD TALES THE ASTOUNDING SHORT-TAILED SHEARWATER

By Phyl Goddard

This migratory bird travels vast distances annually; its flyway from Australia takes it north of New Zealand and Japan to the North Pacific, returning via the west coast of North America. As we know from walks around September on our nearby beaches after adverse weather, many birds don't quite make it back.

The vast size of its population is the second awesome aspect of the muttonbird (its more familiar name). One reference numbers the species as several tens of millions and another

thinks there might be 500 million. It breeds in burrows along Australia's south coast and only lays one egg so presumably has to be long-lived in order to maintain such a large population.

But the main reason the muttonbird warrants inclusion in this series is its breeding scenario. The egg is invariably laid, throughout all the colonies, between 20 November and 1 December with the majority between 24-26 November and, even though they have done their figure of eight around the earth, they still manage to find their regular partner and also their regular burrow, or at least one nearby!

## TOWN & COUNTRY NATURE NOTES

### SUPERB PARROTS PLUS

by Rosemary Blemings

We were treated to the annual invasion of Superb Parrots (*Polytelis swainsonii*) from about 17th December this summer. They appear to base themselves between the northern edge of Mt Rogers and Bazely Street, Fraser. On its junction with Keene Place there's a small group of eucalypts where, to borrow a phrase from Nicki Taws, the young are "creched" whilst the adults go off on foraging sorties. By now, 08.01.04., they all seem capable of foraging and they have been heard daily in Flynn flying in various directions seeking food. Often the Superbs are heard rather than seen but it's a delight to see their flights in groups of 3-15 because they just seem to love flying. On New Year's Eve about thirty were in the Wickens Close, Fraser, area many feeding on the ground where grass had been mowed the day before. They have also been seen feeding in loquat and *Grevillea robusta* trees. Since I heard them in Macquarie yesterday I hope many Belconnen folk have been sharing these moments with this endangered species. Their nest-site-trees are cleared/felled on farms and/or sold in the ACT as firewood.

A pre-Christmas return to Mulligans Flat brought some almost-swathes of purple. This time the Kangaroo Grass *Themeda triandra* had grown into magnificent 'forests' and in many places purple blooms shone out from the depths. Everywhere else purple would mean Patersons Curse but this purple came from Nodding Chocolate lilies *Dichopogon fimbriatus*. Even better, in some places, the purple meant Fringe lilies *Thysanotus tuberosus*.

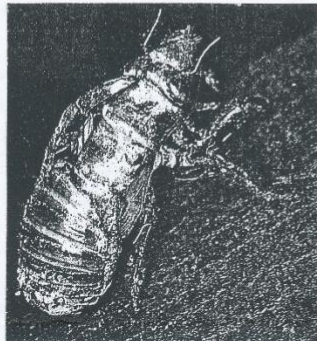
## CICADAS

Order Hemiptera,  
Suborder Auchenorrhyncha (which includes  
Cicadas, Treehoppers and Leafhoppers -  
formerly Homoptera),  
Family Cicadidae.  
by Rosemary von Behrens

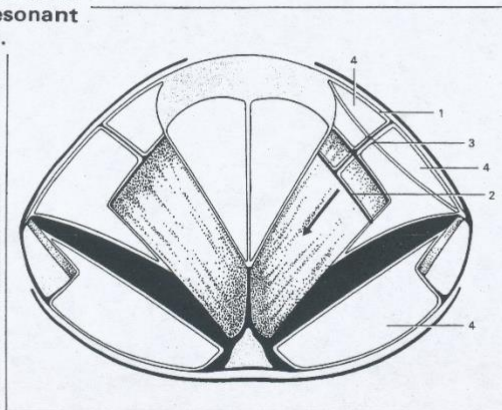
While endeavouring to remove *Vipers bugloss* plants from the sides of a creek bed on 24 January I came across clumps of empty Cicada nymph shells. They had rolled down the slope or had been blown together. Within one and a half metres of the base of a small *Eucalyptus rubida* tree I counted 75 shells although I couldn't see as many holes in the ground. It is fascinating to see newly emerged Cicadas experimenting with flying, and to hear them utter their first hesitant shrill. Many hundreds of shrilling, singing insects can be quite deafening.

The male Cicada produces the song and different species have their own song and sing at different times of the day. This encourages "aggregation of both male and females so that a clumping of a species within the habitat tends to occur." (p127 Walter M Blaney 1976 How Insects Live, Elsevier Phaidon) Blaney describes how the Cicada uses two vibrating drumlike membranes called timbals to sing in the following diagram.

A diagrammatic section through the first abdominal segment of a cicada. Sound is produced by buckling of the tymbal (1), a thin disc of cuticle. The tymbal muscle (2) is connected to the tymbal by a strut (3). Contraction of this muscle (right side of diagram) causes the tymbal to buckle inwards producing a click which is amplified by resonance in the underlying air sacs (4). On relaxation of the muscle, elasticity of the muscle causes the tymbal to buckle out again. On the underside of this abdominal segment, a folded membrane can be stretched to tune the air sacs to the resonant frequency of the tymbal.



Cicada nymph 'shell' left by an emerged adult, Cicadidae (30 mm long)



According to Paul Zborowski and Ross Storey in A Field Guide to Insects of Australia (1995 Reed Books) we have 250 species in Cicadidae. The female Cicada lays eggs on the "branches of their host trees, and the newly hatched nymphs fall to the ground and burrow with their modified front legs." The nymphs live underground feeding on the sap of roots for many years. They "emerge in early summer for the final moult. The adults then feed on the sap of branches in the canopy."

The time spent underground varies according to the species. In general the years vary from two to eight. In the USA, however, there are several groups called Periodic Cicadas belonging to the genus *Magicicada* which emerge every 13 or 17 years. "Cicadas in which almost all of the individuals in a given location mature into adults in the same year are periodical. Most cicada species are non-periodical, meaning that some adults appear in most or all years," "... (even though they have multiple-year life cycles) because in a given location adults can be found every year." \*

You could even plan to visit the USA this summer (May/June) to coincide with the 17 year emergence of Brood X. [ie 10] 2004 should be a good year in the following states, De, Ga, Il, In, Ky, Md, Mi, NC, NJ, NY, Oh, Pa, Tn, Va, WV, but check out the map at the following web address to improve your chances with previously confirmed sightings: [http://insects.ummz.lsa.umich.edu/fauna/Michigan\\_Cicadas/Periodical/BroodX.html](http://insects.ummz.lsa.umich.edu/fauna/Michigan_Cicadas/Periodical/BroodX.html)

Male Cicadas attract females by using several different songs or calls. The song changes the closer he is to the female. No noise? I guess he's busy. The female Cicada attracts the male by flicking her wings in response to his calls. This wing flick signal produces a sound and the timing is species-specific. You can actually hear some of these flicks on the web-site\* at The University of Michigan, Museum of Zoology, Insect Division, Periodic Cicada Page.

\*[http://insects.ummz.lsa.umich.edu/fauna/Michigan\\_Cicadas/Periodical/Index.html](http://insects.ummz.lsa.umich.edu/fauna/Michigan_Cicadas/Periodical/Index.html)

So next time you are feeling a little deafened by the multiple Cicada chorus, stop and think about their fascinating life cycle and remember that, despite all the time they have spent underground, they are not long for this world once they are mature adults.

## FROGS, FISH AND PHARMACEUTICALS - A TROUBLING BREW

Prozac, Other Drugs Detected In Streams And Their Inhabitants

by Marsha Walton CNN (CNN) 17 Nov 03

A number of aquatic and amphibian species are being exposed to small amounts of everything from Prozac to perfume to birth control pills that make their way into U.S. rivers and streams. And scientists now have evidence that this "cocktail" of pharmaceuticals, in high enough quantities, can lead to problems that may be serious enough to prevent wildlife from reproducing. It's not yet clear how the buildup over time could affect the species. In 2002, 80 percent of streams sampled by the U.S. Geological Survey showed evidence of drugs, hormones, steroids and personal care products such as soaps and perfumes. The U.S.G.S. tested 139 rivers in 30 states.

To give an idea how many drug remnants make their way into ponds, creeks and streams, after being passed through humans, sent into sewer systems and released from wastewater treatment plants: more than 61 million prescriptions for anti-depressants were prescribed by U.S. doctors in 2001, according to the National Center for Health Statistics at the CDC. Because prescriptions like anti-depressants are for chronic conditions, patients often take them for months and years at a time, making them more likely to build up in wastewater.

Researchers are working on several fronts to determine how big the problem is and just what short- and long-term ecological effects there might be on wildlife. Bryan Brooks, a toxicologist at Baylor University in Texas, discovered evidence of Prozac, an anti-depressant, in the brains, livers, and muscles of bluegill, caught downstream from the Pecan Creek Water Reclamation Plant in Denton, Texas, near Dallas.

Unintended consequences: Anti-depressants have the same effect on fish that they do on people: they tend to relax them. That's not necessarily a good thing for the fish, though. "We need to ask the question, 'what does accumulation in fish tissue actually mean to the organism's ability to live, grow, or reproduce?'" said Bryan Brooks, a Baylor University toxicologist. While he and his colleagues discovered those medications in fish in the wild, scientists are now studying

aquatic species in the lab, to see just how specific amounts of pills and potions affect them.

Marsha Black, an aquatic toxicologist at the University of Georgia in Athens, found that low levels of common anti-depressants, including Prozac, Zoloft, Paxil and Celexa, cause development problems in fish, and metamorphosis delays in frogs. "In mosquitofish, markers of sexual maturity were delayed in both males and females," said Black. Sexual development in males was delayed by two to four weeks. Metamorphosis in frogs was also delayed significantly.

Black says that timing is crucial to the survival of many water creatures. For example, frog eggs are often laid in ponds and wetlands that are temporary. If tadpoles have not completed metamorphosis by the time the water disappears, they will die before reaching adulthood.

In the next phase of her study, funded by the Environmental Protection Agency, Black will look at the reproductive tissue of the fish affected by the anti-depressants. Sewage treatment plants are not equipped to filter out any of the hundreds of different prescription drugs that are present in wastewater. And it's not clear just how they would approach the cost or technology of such a challenge.

Michael Smith is manager of the R. M. Clayton wastewater treatment plant in Atlanta, the largest such facility in the southeast. The facility treats about 80 million gallons of water each day. "Trying to enhance this facility to remove those items would probably require some reverse osmosis or some kind of further ultra filtration system," said Smith. "It would require a lot more construction and a lot more cost to remove those items." he added.

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Australian

Scientists are looking for the Green and Golden Bell Frog.

# The leatherwood sting

## Where have all the flowers gone?

By **SIMON BEVILACQUA**  
**BEEKEEPER** Robbie Charles can remember when he and his father used to run 800 hives within 20 kilometres of their home.

That memory goes back 20 years.

Today, Mr Charles says, he has to drive at least 2½ hours with his hives to find enough leatherwood trees for his bees.

"They've logged the guts out of it around here," he reckons.

Mr Charles lives at Mawbanna, near Smithton on the North-West Coast. He has been beekeeping since a boy when he used to go out with his dad, Rube.

"Dad was crying out for them to save leatherwoods all those years ago and no one ever listened," he said.

"He protested all his life to get some of it saved."

Mr Charles said there was no viable quantity of leatherwoods remaining north of the Arthur River.

"We've lost all that in the last 20 years," he said, "and the last 10 it's taken a fair hammering."

He believes the commercial leatherwood industry is

operating at about half of what it was 20 years ago.

He is dependent on Forestry Tasmania because 15 out of 17 of his sites are on its land.

Forestry Tasmania managing director Ewan Rolley disagrees strongly with Mr Charles' experience.

"It's a bit rich," Mr Rolley said. "All that north of the Arthur is regrowth."

He said foresters in the Smithton district were identifying leatherwood-rich areas and excluding them from harvest.

Mr Rolley, who started his career in forestry in the 1970s, said he worked extensively in the forest near Mawbanna in those days.

"It's got a history of harvesting and it's all regrowth," he said.

To that, Mr Charles says Mr Rolley must have been looking at a different forest.

"I don't think he knows what regrowth is," Mr Charles said. "What we're talking about is bush which has been selectively logged which is now clearfelled. There's a difference."

"I know where the bees used to be."

By **SIMON BEVILACQUA**

**CLEARFELLING** of native forests has cut the heart out of the commercial leatherwood honey industry in southern and north-western Tasmania, says the Tasmanian Beekeepers Association. The beekeepers say the leatherwood industry has been reduced to little more than a hobby in the south.

"It's simple, forestry has clearfelled the leatherwood trees, they're gone," Beekeepers Association president Julian Wolfhagen said. "If it keeps going at this rate the commercial industry will be gone."

Beekeepers have been fighting to secure their industry resource for years in face of massive clearfell forestry operations. Until recently the major push has been from beekeepers in the south.

Beekeepers state-wide have now fallen in. The beekeepers have huge concerns over forestry operations in the North-West where the commercial leatherwood industry has been cut in half.

Mr Wolfhagen said clearfelling in the South and North-West was acting as a pincer, forcing beekeepers to take their hives deeper into the western coast.

Forestry Tasmania and the beekeepers have been meeting for about 12 months to resolve the issue.

Forestry Tasmania says it is working to secure the resource but Mr Wolfhagen



**MILK AND HONEY:** Trees left standing, says Ewan Rolley.

believes the process is a stalling operation while clearfelling continues.

"We depend on those forests being left in the ground and not converted to a monoculture," Mr Wolfhagen said.

"I know there are foresters concerned but there's a lot of money from the big end of town involved and they're putting huge pressure on them to keep it going."

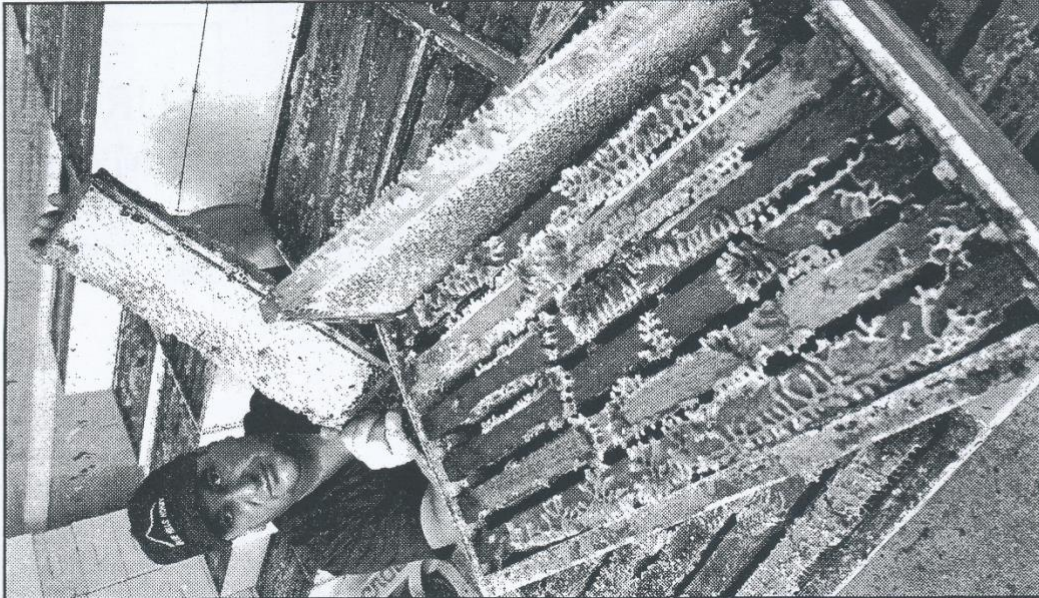
The confrontation burst into the public limelight recently with both organisations paying for advertisements to back their cause.

Forestry Tasmania's case has been to blame the lack of leatherwoods on the locking up of resources in the World Heritage Areas.

The beekeepers hit back with an advertisement stating: "It's the breakdown of the multiple-use policy that has caused the problems we face, not the reservation of additional areas."

Forestry Tasmania general manager Ewan Rolley said the Circular Head and Geeston districts were working to find a solution.

He said leatherwood stands were left in some coupes and the honey industry was allowed access.



**SWEET 'N' SOUR:** Battling apiarist Robbie Charles of Blue Hills Honey works on his hives. Picture: CHRIS KIDD

# FIELD NATURALISTS ASSOCIATION OF CANBERRA INC.

The Field Naturalists Association of Canberra was formed in 1981. The aim of the club is to stimulate interest in the natural history of the ACT through regular meetings and field outings. Meetings are usually held on the first Thursday of each month. Field outings are also planned each month and range from day outings to long weekends and camping. The emphasis is on informality and fun. New members are always welcome, especially family groups and young people. Information on activities is circulated in the monthly newsletter. If you wish to join FNAC, please complete the form below and send it with the appropriate subscription to:

The Treasurer, FNAC, GPO Box 249, Canberra ACT 2601.

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