

FROGCALL

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20th ANNIVERSARY ISSUE!

David Nelson
Tassie Trifecta

Arthur White
Green Tree Frog Story

Marion Anstis
Native tadpole or cane toad?

Harry Hines
Kroombit Tinker-frog

and more.....

Two free postcards inside to
celebrate our anniversary

Next meeting
Friday 2nd December 2011
Arrive at 6.30 pm for a 7.00 pm start

Education Centre, Bicentennial Park

www.fats.org.au

MEETING FORMAT
Friday 2nd December 2011

6.30 pm: Lost frogs needing homes. Please bring your FATS membership card and \$\$ donation. **DECCW amphibian licence must be sighted on the night.** Rescued frogs can never be released.

7.00 pm: Welcome and announcements.

7.45 pm: The main speaker, Jo O'cock (right). Grant Webster will speak on **'Frogs of Lane Cove National Park'**.

8.30 pm: Show us your frog images, tell us about your frogging trips or experiences. The evening will end with a guessing competition and party to celebrate our 20th anniversary. **Lucky door prize and Xmas cards on sale.**



Jo Ocock examines a specimen of a *Uperoleia* toadlet

Tonight Jo will present her talk:
Frogs in the 'boom': researching the frogs of the Macquarie Marshes, a floodplain wetland of the Murray Darling Basin.

Email wangmann@tig.com.au if you would like to receive a pdf copy of Frogcall in colour - every two months via email. Send articles for Frogcall to: Monica Wangmann, 38 Albert Pde Ashfield NSW 2131.

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Cover photo: Best Adult Frog Art Image, Green Tree Frog on leaf, by John Pompurs

FATS is 20 Years Old!

Arthur White

Twenty years ago a group of frog nuts met together at the Sydney Technical College at Ultimo to discuss the formation of a specialist frog group. These nuts will be known to many of you: Lothar Voigt, Harald Ehmann, Martyn Robinson, Steve Kum-jew, Karen Thumm, David Miller, Danny Wotherspoon, Shane Gow and Arthur White. We all were members of the Australian Herpetological Society and went to the meetings with all the reptile people.

Often at the end of the meeting, the froggers would sit at the back of the room and talk frogs (much to the disgust of the reptile fanciers). The time had arrived for the froggers to go it alone and so FATS was spawned.....(!)

In those early meetings, it was decided that FATS would be more than just a frog fanciers' group, or just a frog keepers club. We wanted FATS to have a scientific basis and to be constantly striving to push frog awareness in the wider community and at a political level. As most of us were doing lots of frog field work we were only too well aware of the frog declines taking place across the country. We wanted greater protection for frogs and frog habitat- but most of all we wanted conservation measures to be based on knowledge and not whim.

This was one of the reasons why FATS undertook the 'EndFrogs' program so early in its history. EndFrogs was a state-wide survey of threatened frogs. For many years this study was the backbone of subsequent government and local conservation initiatives, and spawned a number of later targeted surveys and studies on frog species at risk.

No-one expected FATS to last – but it did. FATS has survived because of the people in it. We have avoided the tensions and in societies and everyone to help out whenever discriminate between the newcomers. Nor do just frogs. All of us have environment- frogs are the grander plan.

So to all of you, I would being part of FATS. I continue to be part of us ebrate our first twenty



This frog is a mascot of FATS and his raucous 'cawk, cawk, cawk' call sounds as if he agrees with Arthur! See Arthur's article about him next page...

cliques that often form in FATS is welcome they can. We do not the frog know-alls and we limit ourselves to a wider interest in the an important cog in

like to thank you for hope that you can and will help us cel-years.

Green Tree Frog Story

Arthur White

Everybody knows about Green Tree Frogs (*Litoria caerulea*). Everybody has a story about Green Tree Frogs in the outback dunny, or calling loudly from an old rain tank when a storm approaches. It is surely the best known and widely loved frog in Australia. But apart from being green and a good pet, Green Tree Frogs have lots of other aspects that make them quite remarkable.



Life is a struggle! A Green Tree Frog - having eaten the spider is now caught in its web

What is a Green Tree Frog?

Green Tree Frogs (*Litoria caerulea*) are one of the largest Australian frogs, reaching 10 cm or more in length. The average lifespan of the frog in captivity is about sixteen years, but

some have been kept up to 30 years, which is an exceptionally long life span for a frog. Green Tree Frogs are docile and well suited to living near human dwellings. They are often found on windows or inside houses, eating insects drawn by the light.

Like many Australian frogs, Green Tree Frogs scream when in danger or if threatened. Due to its physical and behavioural traits, the Green Tree Frog has become one of the most recognisable frogs in its region, and is a popular exotic pet throughout the world.

The Australian Green Tree Frog goes Abroad

The Australian Green Tree Frog is simply called the Green Tree Frog in Australia but in America it has two other names: it is most often called White's Tree Frog, or the Dumpy Tree Frog. It is called White's Tree frog in honour of its original describer John White who described the species in 1790. The name Dumpy Tree Frog comes from the fact that as Green Tree Frogs get older, they develop large tissue folds on the side of the head giving them the "dumpy" appearance.

No-one knows when the first Green Tree Frogs were taken to America (or where they were taken from). However, they have found the southern state of Florida to their liking and are now well established in four counties in that state (Bartlett and Bartlett, 1999). These highly adaptable frogs are generalists and remarkably drought tolerant, and can survive in and around a variety of human habitations. It is unclear if Green Tree Frogs in Florida represent lineages from Australia or New Guinea,



'Dumpy Tree Frog; illustration by Matthew Klueppel

but Bartlett and Bartlett (1999) speculate that only Australian *L. caerulea* could survive South Florida's occasional winter freezes.

Populations of Green Tree Frogs have been present in New Zealand from time to time. A population was present on the North Island from the late 1930s to the 1950s (Bell, 1982) and then was not seen again. In the 1990s, Green Tree Frogs again were found on the North Island but whether they are descendants of the earlier animals or new arrivals is unclear.

Taxonomy

The Green Tree Frog shares the *Litoria* genus with dozens of other tree frog species endemic to Australasia. The Green Tree Frog was the first Australian frog scientifically classified; the specimen found its way into the collection of Sir Joseph Banks, but was destroyed with the German bombing of the Hunterian Museum at the Royal College of Surgeons in London in World War II.



A. Stone's painting of a Blue Frog, based on John White's preserved specimens sent to England

The species was originally described as the "blue frog" (*Rana caerulea*) despite it being green. The original specimens that White sent to England were preserved in alcohol and the alcohol-soluble yellow pigment in their skin was leached out of the preserved specimens. The frogs in the jar were blue by the time they reached England and as blue is a most unusual colour for frog, they were given the species name *caerulea* (or blue) to denote this unusual fact. The idea of a blue frog was so appealing to Napoleon that he sent naturalists to Australia to collect blue frogs for his court, but alas they



A Blue Green Tree frog

could only find green frogs. In recent years, frog breeders have bred a colour variant of the Green Tree Frog that lacks the yellow skin pigment and these are truly blue frogs, as shown above.

Distribution

The Green Tree Frog is native to northern and eastern regions of Australia and to southern New Guinea. Their distribution is limited mostly to areas with a warm, wet tropical or sub-tropical to temperate climate. In New Guinea, the Green Tree Frog is restricted to the drier, southern region. Its range spans from Irian Jaya to Port Moresby, and is most abundant on Daru Island. There have been isolated records in northern New Guinea, however this is thought to have been through introduction by humans. There are also records of Green Tree Frogs in Indonesia but this is also thought to be the result of deliberate or accidental introductions into the Indonesian islands.

The species has been introduced to both the United States and New Zealand. In the United States, it is restricted to Florida, where it was possibly introduced through the pet trade. Only small populations have been found in Florida, and it is unknown whether they have caused any ecological damage. In New Zealand, a small population of Green Tree Frogs occurs near Auckland.

Breeding and feeding behaviour

In the wild, Green Tree Frogs are nocturnal



Pair of frogs laying eggs

hunters and come out in early evenings to search for food. Male Green Tree Frogs call on spring and summer evenings usually after rain. If conditions are right, breeding may take place.

During the day they find cool, dark, and moist areas to sleep. During winter, Green Tree Frogs do not call and are not usually seen. Depending on their location, Green Tree Frogs occupy various habitats. Typically, they are found in the canopy of trees near a still-water source. However, they can survive in swamps or in grasslands in cooler climates. Green Tree Frogs are well known for inhabiting water sources inside houses, such as sinks or toilets. They can also be found on windows eating



Green Tree Frog eating a bat, Mt Etna Caves

insects. They will occupy tanks, downpipes and gutters, as these have a high humidity and are usually cooler than the external environment. The frogs are drawn to downpipes and tanks during the mating season, as the fixtures amplify their call which may be heard more than a kilometre away.

The call is a low, slow ‘Brawk-Brawk-Brawk’, repeated many times. For most of the year, they call from high positions, such as trees and



Green Tree Frog being attacked by Freshwater Snake

gutters. During the mating season the frogs descend, although often remaining slightly elevated, and call close to still-water sources, whether temporary or permanent. Like many frogs, Green Tree Frogs call not only to attract a mate. They have been observed calling to advertise their location outside the mating season, usually after rain, for reasons that are uncertain to researchers. They will emit a stress call whenever they are in danger, such as when predators are close or when a person steps on a log in which a frog resides.

The species’ diet consists mainly of insects and spiders but can include smaller frogs and even reptiles and small mammals. Large Green Tree Frogs have large mouths and will try to consume any prey that will fit. A Green Tree Frog will often swallow smaller prey whole, suffocating the animal while holding it in its mouth; however for larger prey, it may need to force the prey into its mouth with its hands. The frog has a few native predators, among them snakes and a few species of lizards (such

as Water Dragons) and birds (such as Herons and Egrets). Since the European settlement of Australia, non-native predators of Green Tree Frogs have been introduced, primarily foxes and rats.

As a pet

The Green Tree Frog is one of the most popular pet frogs throughout the world. Its docile nature, often cartoon-like appearance, and long life expectancy make it an attractive choice for exotic-pet owners. It is also one of the easier frogs to care for: their diet is broad and they have a strong resistance to disease. One problem commonly associated with keeping this species as a pet is overfeeding; Green Tree Frogs tend to become obese if overfed. In the wild, energy is required for a frog to capture its prey. However, in captivity they are usually given live feed in a confined space. This lessens the activity needed for feeding, resulting in rapid weight gain and one big, fat, frog.



Marion Anstis

'Mr Livermore,' a famous pet originally rescued from a crate on a truck and later rescued from obesity!

Conservation

Australian law gives protected status to the Green Tree Frog (along with all Australian fauna) under the federal Environment Protection and Biodiversity Conservation Act 1999. The IUCN lists Green Tree Frogs as a "least concern" species, given its broad range and population, balanced habitats, and because it

is likely not declining fast enough for more threatened status.

Much of the Green Tree Frog's natural habitat has been destroyed. Farming and land reclamation has removed many of the wetlands and breeding areas that were used by the frogs. Also, some of the frogs have been found infected with chytrid. These two factors associated with the general decline in frog populations in Australia threaten to reduce the population of the Green Tree Frog. However, because of the long life expectancy of this species, any effects of a reduced reproduction rate will take longer to spot than they would in a species with a shorter life expectancy.

Green Tree Frogs as Biochemical Treasures

Amphibian skin secretions have long been known as a rich source of biologically active peptides. Currently, in excess of 100 frog peptides have been structurally characterized, and these have been classified into several families based upon primary structural similarities. Many of these peptides have primary structures that are either identical to their endogenous mammalian counterparts (e.g. bradykinin from the skin of the European common frog, *Rana temporaria*) or possess discrete regions of identity with the active sites of such (e.g. bombesin from the skin of the European frog, *Bombina orientalis*).

The glandular secretion of the Green Tree Frog, *Litoria caerulea*, found in the northern territories of Australia and in New Guinea, is known to contain large quantities of peptides, only a few of which have been structurally characterized. These include a group of homologous peptides, the caerins (Stone et al. 1993), some of which have antibacterial and antiviral properties; the caeridins, whose bioactivity is unknown (Waugh et al. 1993), and caerulein, a peptide that is useful in controlling heart rate in mammals (Anastasi et al. 1968).

More recently, a new group of proteins have been extracted from the skin secretions of Green Tree Frogs that affect human nerves

(Salmon et al. 2000). One protein (Neuromedin U) has proven to be potent HIV blocker. The peptides appear to selectively destroy the HIV virus by inserting themselves into the HIV outer membrane envelope and splitting the virus asunder.

Green Tree Frogs are not the only frogs that have a range of unique chemical weapons at their disposal. Many frogs have specialized granular glands in the skin that produce and store packets of peptides (small protein-like molecules). In response to skin injury or alarm, frogs secrete large amounts of these antimicrobial peptides onto the surface of the skin to combat pathogens like bacteria, fungi and viruses. It is only in recent years that biochemists have come to realise the chemical treasures that are contained in frogs, and it all started with the humble Green Tree Frog.

Photos by Arthur White unless otherwise stated.

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The Tassie Trifecta

David Nelson

I had to dig out my copy of the last colour Frogcall to refresh my memory of my last update. Ah yes, frogging in Western Queensland back in late 2009. Well in the nearly two years that have passed since then, I haven't sat still for long! My first port was Tasmania where I spent



Tasmanian Froglet, *Crinia tasmaniensis*



Tasmanian Froglet, colourful ventral surface

most of the summer. Frog-wise, Tasmania lays claim to only a modest three endemics – the other eight species that call the island home also occur on the mainland.

The first endemic was a pretty easy one to stumble upon and probably the least interesting of the three. The Tasmanian froglet (*Crinia tasmaniensis*; imaginative name right?) is widespread and common, and much like any other *Crinia* species save for the brilliant red patches on the ventral surfaces. Another frog that turned up which was new to me, though not an endemic, was the rather pretty Smooth froglet (*Geocrinia laevis*), a forest dweller that has a reproductive strategy much like that of



Tasmanian Tree Frog, *Litoria burrowsae*

the *Pseudophryne* toadlet species and lays its eggs in moist places on land. Development continues on land until flooding triggers hatching and the tadpoles complete their growth in water.



Smooth Froglet, *Geocrinia laevis*

The other two species on the list I knew would require a bit more work. The jewel of Tassie's frog fauna is surely *Litoria burrowsae*, the – wait for it – Tasmanian Tree Frog. I decided to head for the stronghold of this species, *Melaleuca* trees. Easier said than done – the tiny mining settlement in the south-west wilderness is accessible only by small plane, boat or foot. So I found myself gearing up for an eleven-day hike taking the Port Davey track from Lake Pedder, then the South Coast track to finish up at Cockle Creek. Fellow FATS member George Madani, somehow getting wind that a foolhardy expedition was about to take place, inveigled his way onto the team.

It all paid off! We were rewarded handsomely,

with great views of the soon-to-be-extinct Orange-bellied parrot and giant blue crayfish. On top of the Ironbound Range, the most challenging part of the walk, we heard a ticking, rattling frog call from amongst the dense hummocky vegetation. We spent a little time looking for whatever it was, but had to give up – it was too dangerous to loiter on this mountain range as the weather could change suddenly and it was not a good place to get stuck. Before leaving Tasmania I visited the Hartz mountains. I'm sure that it's a lovely place in the right conditions, but my visit in April was cold, wet and the very definition of miserable. Visibility was reduced to about 30m as cloud blew constantly past. Donning my rain jacket, I headed out along one of the paths, as any frog-



Moss Froglet, *Bryobatrachus nimbus*

ger would do. I reached a likely-looking mossy, boggy patch, and gave my best imitation of that ticking, rattling call that I'd heard up on the Ironbounds. Before long I had an answer, and a bit of searching revealed Tassie's third endemic, the Moss Froglet (*Bryobatrachus nimbus*). Only described in 1994, there's some dispute over its correct name, but essentially it's just another *Crinia* (in which case the species would be *nimba*), however, unlike *Crinia*, it needs no water to breed – the eggs are laid in nests amongst vegetation where the tadpoles hatch and develop in the egg jelly, but are never in water.

With Tasmania ticked off the list and winter well on its way, I considered my next move. Central Australia had been lucky in the summer, having been granted a generous rainfall. It seemed like the place to be, so without stopping to unpack the car, I headed for Alice Springs...

All photos by David Nelson

Update on the critically endangered Tinkerfrog

Harry Hines

Queensland Parks and Wildlife Service
Department of Environment and Resource
Management June 2011

The Kroombit Tinkerfrog, *Taudactylus pleione*, is a critically endangered species known to live in only 12 small rainforest patches totalling 596 ha. It is restricted to the headwaters of five streams along the eastern edge of Kroombit Tops National Park, southwest of Gladstone.

Each year staff from the Department of Environment and Resource Management (DERM), as well as a group of volunteers, head to Kroombit to look for frogs during Frog Search. Two Frog Searches were carried out in 2010. The first was in March after the planned February trip was washed out. The second, in December, was funded by the Fitzroy Basin Association's Conserving Species and Communities program. Ironically the 2010 Frog Searches were probably too wet with numbers of tinkerfrogs low.



Kroombit Tinkerfrog, *Taudactylus pleione*

The Kroombit Tinkerfrog was discovered in 1983. Since the 1990s it has been the subject of considerable survey and research. Despite this effort the eggs and tadpoles have never

been seen and only four females have been observed. While the species is associated with small drainage lines vegetated with rainforest, males often call from areas within these gullies with very little or no surface water, suggesting that maybe the eggs are laid in subterranean water bodies and thus out of sight and reach of froggers.



Male Tinker Frog climbs out from within rocks

During the big rainfall events this past year these small gullies had turned to torrents—conditions almost certainly unsuitable for breeding by tinkerfrogs. Unfortunately surveys in 2009 were badly affected by the drought. Fingers are crossed that spring 2011 is not too wet and not too dry—just right for chasing tinkerfrogs.

Despite the climatic difficulties these past two years, it is clear from monitoring over the past 10 years that the Kroombit tinkerfrog is in trouble. The population on the plateau appears to be extinct. Many factors may be responsible including the amphibian chytrid fungus. The habitat of the extant populations, below the escarpment, has been invaded by feral pigs. The pigs have caused significant damage, especially during dry times, to the fragile areas where male tinkerfrogs call. The steep and dissected terrain and dense vegetation has made it very difficult to control pigs. Feral pig experts, local parks staff and frog researchers recently undertook a field inspection and workshop to examine the problem. Consequently, new approaches are being implemented to improve knowledge of the numbers and movements of pigs and to trial a range of new baits. Funding from the Fitzroy Basin Association and Currumbin Zoo has also enabled new

technologies to be used in the monitoring of Kroombit tinkerfrogs. Song Meter (see <www.wildlifeacoustics.com/index.php>) automated digital recorders have now been deployed to four sites—two sites where tinkerfrogs seem to have disappeared from and two sites where they are still reliably heard. These state-of-the-art devices are set to record for a minute every half hour, and have enough battery life and memory to run for several months at a time. The sound recordings will be analysed using sound recognition software trained to identify the calls of tinkerfrogs. This technology will greatly improve knowledge on the daily and seasonal calling patterns as well as providing continuous population monitoring.

The conservation of the Kroombit tinkerfrog is an example of adaptive management where new information on the frog, its threats and effectiveness of actions form an ongoing feedback loop to management. This information is gathered through a multi-disciplinary approach reliant on collaboration with local staff, volunteers and experts, and with additional financial support from bodies such as the Fitzroy Basin



Male Tinkerfrog eyes the camera lens!

Association and Currumbin Zoo. For more information on the Kroombit tinkerfrog visit the DERM website at <www.derm.qld.gov.au>.

All photos by Harry Hines

FATS offers our very best of luck to the researchers trying to save this frog!





Tasmanian Tree Frog
Litoria burrowsae
© Aaron Payne

Native Tadpole....or cane toad?

Marion Anstis

Cane toads are now in some areas of Sydney!! We all need to know how to recognise them and their eggs and tadpoles, and help others tell the difference between these toads and our native frogs. The most obvious things to point out to the public about the adults are the very large poison glands on their shoulders, the dry leathery skin and the thick ridges above and around the eyes and on the snout.



1. Large poison gland behind ear and 2. thick ridge on eyelid and bordering eye to snout. Note dry leathery skin

You can be sure you have a native tree frog if it has smooth, moist skin and rounded discs on its fingers and toes for climbing. The main confusion for many people occurs between cane toads and our many ground-dwelling frogs. Although our ground frogs don't have discs on their fingers and toes like cane toads, they do have moist skin, unlike the dry skin of the toads. Australia has no native true toads, even though some might be called 'toads' because they look a bit like them.

Cane toads can grow to 17cm or more, but are generally between 9–13 cm in length. They are not capable jumpers and tend to do several short hops as they travel, rather than a long jump. They sit upright with head held high

when on the road on wet nights.

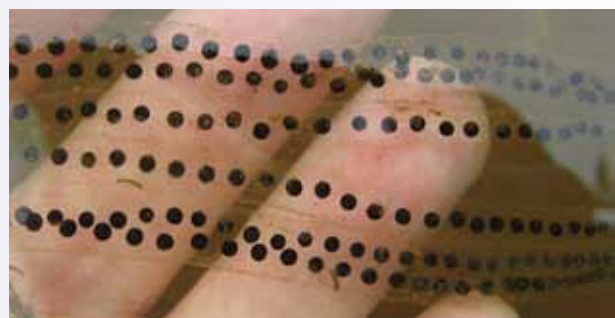
If you live in a city suburb in areas where cane toads are established, the number of native frog species that you may confuse with a cane toad is minimal, but as you move further away from the city into rural areas that number increases. Many of these native frogs are only seen at night during their breeding season, and perhaps the only time you may come across them is when you are driving along roads on a rainy night.

Some ground-dwelling native frogs may look similar in size and colour to cane toads, but they feel slightly moist and their skin is softer, thinner and not leathery. Some have warts and glands but nowhere near as large as those on the cane toad. Check the photo here and remember the following key points:

1. Cane toads are large with a big bony-looking head that has distinct ridges over and around each eye and from eye to snout.
2. They have dry, tough leathery skin with lots of warts.
3. They have a large raised gland on each shoulder which can exude white toxic fluid if they are handled roughly. This fluid is very dangerous to humans and animals, so you should wash your hands if you have handled a toad.

But what do the eggs and tadpoles look like?

Cane toad eggs are very different from native frog eggs. They are laid in very long continuous strings, each made up of pairs of eggs inside a strong rope of jelly. These jelly ropes are entangled around vegetation and one female can lay 25,000 eggs or more – far greater than any of our native frogs. Here is a small section of cane toad eggs – note the continuous jelly ropes



Cane toad eggs - part of very long ropes of jelly and eggs

containing the black eggs

This is very unlike native frog eggs which are laid in smaller floating clumps either foamy or not, or in a variety of other ways including singly or small clusters attached to stems underwater. They are never in such long jelly ropes. Here is a typical egg clump of a native frog found near Sydney:



Floating egg clump of a native species the Broad-palmed Frog, *Litoria latopalmata* - eggs never in ropes

What do cane toad tadpoles look like?

Cane toad tadpoles are small and black, with short tails. They differ from native tadpoles as follows:-

1. they are small and grow to a total length of only about 3cm
2. they have a black body about 1.2 cm long
3. eyes are well in from the side of the head



Cane toad tadpoles - note black body, clear fins and black tail muscle (above) and eyes in from sides of head and dark undersurface (below)

4. undersurface is dark bluish-black
5. tail is short, not much longer than body, with black tail muscle, clear fins and rounded tail tip
6. they often swim in very large schools



Tadpole of Ornate Burrowing Frog, *Platyplectrum ornatus*; note dorsal position of eyes and light brown colour

Some native ground frog tadpoles can have eyes that are well in from the sides of the head like the cane toad tadpoles, but these tadpoles are often shades of brown and have a copper sheen underneath. They also have longer tails in relation to body size (up to twice body length) e.g. the Ornate Burrowing frog tadpole, (*Platyplectrum ornatus*). Note dorsal eyes and paler colour:



Tadpoles of Littlejohn's Tree Frog, *Litoria littlejohni*; note long tail with fine tip, blue belly and eyes on side of head

Some black native tadpoles near Sydney include Littlejohn's Tree Frog (*Litoria littlejohni*), but this tadpole grows much larger than cane toad tadpoles. Below you can see it has a finely pointed tail tip, and the eyes are right on the side of the head, very unlike cane toad tadpoles.

Tadpoles of the Common Eastern Froglet (*Crinia signifera*) are small and variable in colour from golden to black, but they have a narrower body (especially across the gills) compared to cane toad tadpoles and slightly longer tails. They can also be distinguished from Cane

Amazon Adventure

Mark Semeniuk



Tadpoles of Common Eastern Froglet, *Crinia signifera*; note variable colours, narrower body, and eyes just in from each side of head - not as far in as cane toads

toad tadpoles by their undersurface which is transparent or has a silver-copper sheen.

Tadpoles of the Striped Marsh Frog (*Limnodynastes peronii*) can be black, or very dark brown, but again they grow much larger and have a much longer tail.

And if you ever see a big bunch of small writhing black tadpoles swimming in a big ball or clump like this, it is much more likely these are cane toad tadpoles.....



Cane toad tadpoles swarming together in shallow pool

All photos by Marion Anstis

During 2010 I was fortunate enough to have the opportunity to spend three months travelling through South America. One of the highlights without doubt, was the week spent in the Tambopata Nature Reserve, southeastern Peru. It is a small section of the Amazonian 'jungle', a part of the world I have always been fascinated in due to the spectacular diversity of frogs. To date there are over 100 known amphibians species in the Tambopata Nature Reserve – within an area less than one quarter the size of Tasmania!

My visit was during mid-November, planned with the hope I would catch the first rains of the wet season. This is often an excellent time to observe frogs in the jungle as the ponds are still accessible, and you have the chance of seeing those species which only breed following the first heavy rains. Unfortunately it hardly rained, but the humidity meant the frogs were active.

Walking the trails at night you come across bizarre looking crested toads (*Rhinella margaritifera*), beautiful tree frogs (e.g. *Osteocephalus taurinus*), if you're lucky a stunning viper (*Bothriopsis bilineata*), and other odd little frogs amongst leaf litter (e.g. *Engystomops freibergi*).



Bothriopsis bilineata, a stunning viper!

Despite the fact we had little rain, I was very fortunate to find a horned frog (*Ceratophrys cornuta*), an extremely well camouflaged sit-and-wait predator. This species is an explosive breeder, calling only after the first heavy rains

of the wet season. When they are not breeding, they sit very still amongst the leaf litter, and eat anything that wanders too close and can fit in their mouth!

Probably my favourite frog group from the trip would be the brightly coloured poison dart frogs, members of the *Dendrobatidae* family (e.g. *Ameerega trivittata*). They are diurnal (which is great because you can continue searching for frogs during the day!) and the bright colours warn potential predators they are poisonous. Some species display parenting habits, including carrying eggs and tadpoles on their back, with the males often protecting the clutch until metamorphosis.



My favourite frog on the trip: a Poison Dart Frog, *Ameerega trivittata*

Finally during the last day we got some rain, and the frogs came alive, with one of my targets, the leaf-folding frogs (*Phyllomedusa bicolor*), arriving to take advantage of the conditions. These large frogs live most of their life high in the canopy, descending only after rain to breed. Members of this genus deposit their eggs on a leaf above water, which is folded around the clutch and 'plugged' at the bottom. During hatching the plug is liquified and the tadpoles plunge into the water.

Frogging in the Amazon was almost too easy, with every turn of the head meeting another set of eyes, there was no time to spend triangulating on cryptic calling frogs amongst the litter. Having only spent one week in Amazon, I only feel like I've met the 'tip of the iceberg' and can't wait to go back!

All photos by Mark Semeniuk

We would love to join you Mark!!

Naturalia Beniana, Bolivia T.I.P.N.I.S. SOS (II)

“The most beautiful forest”
D'Orbigny, 1832

Huascar Bustillos Cayoja*



The evergreen TIPNIS (Indigenous Territory and National Park, Isiboro Secure) has forests considered as Pleistocene refuges (ending 10,000

years ago). The proposed theory by the German ornithologist Jurgen Haffer (1979) indicated that the Earth experienced freezing at the beginning of the Pleistocene period lowering the temperature world-wide and bringing about a reduction of rain in wooded zones.

This decline in tropical zone rainfall brought about a fast change in vegetation cover for savannahs. The drastic variant began a gradual reduction of the great expansion of forests, fragmenting and isolating forest patches and conserving tropical ecological characteristics. The fauna of that time, distributed and adapted to the conditions of the humid forests, was forced to take refuge in the “patches” until the meteorological conditions allowed a re-population.



Poison Dart Frog, *Ameerega picta* carrying its tadpoles on its back

In this period of isolation the flora and fauna experienced a process of evolutionary change bringing about high numbers of flora and fauna endemic species that only inhabit a

specific zone. They had a genetic-morphologic differentiation from Pleistocene ancestors.

When the freezing finished, the forest and animals began to expand but as they re-established they were differentiated from other species, increasing the biodiversity in the neotropical humid forests. The TIPNIS has worked like a megacentre of biological diversity where many species of flora and fauna coexist and interrelate in complicated and overlapping nutritional networks.



Ground-dwelling leptodactylid frog,
Pleuroderma guayapae

In Bolivia the location of the TIPNIS is truly transitional, varying in relation to metres above sea level, with a gradient of several ecological floors. All are characterized by high sensitivity to eco- environmental changes.

The zones of greater ecological fragility within the TIPNIS correspond to the “Andean mountainous areas”, the transition between Andean and the alluvial plain formed by the “montanefeet-abutments” (uneven hills and terraces) display a high ecosystem fragility. The ecological gradient of the TIPNIS consists of at least four ecological floors, from the rainy zones of Yungas in the tops of the Mountain Range of Mosetenes, to the alluvial plain of the north, with strong seasonal floods.

All the zones of the TIPNIS, comprise a centre of - megapluviosity - belonging to the Chipiriri-Chapare Rivers, the rainiest region of Bolivia, with peaks of precipitation surpassing 6,000 mm/year. This great “pluvial rate” has decisive effects on the cycles and rates of flood of the Mamore River and the Benian Plain.

The absorbent forests of Yungas-subandino and their grounds, work as a sponge that retains the overabundant water avoiding majors floods, favouring the regulation of river basins. If we considered the importance of evapotranspiration, all the forests of the area, including those at the foot of mountains and adjacent plains, supply vital environmental services, being excellent forests of regulation and protection. This intrinsic value acquires still greater importance, considering extreme pluvial episodes in the phenomena of the “child” (niño-niña), and the risks of climatic change at a world-wide level.

Within the green matrix, the study of the TIPNIS flora is insufficient. Many species of orchids and plants are yet to be discovered. Biodiversity knowledge of the TIPNIS is still very limited. Some preliminary inventories suggest a very high diversity of species, especially in the wooded formations at the foot of the mountains and the Andean mountainous geologic belt. Presently the TIPNIS has 602 registered species of plants distributed in 85 families and 251 genera. It is estimated that there are 2,500 to 3,000 species of plants representing between 12.5% to 15% of the 20,000 species of vascular flora in Bolivia.

Taking into account these premises the TIPNIS should have national protection (APs) due to its greater floral diversity. In recent years, a series of ancestral studies rescued knowledge of the ethnobotanic or ancestral medicine of the TIPNIS towns This “polished” knowledge through time, since the arrival of man in these places gives an account of a wealth of medicinal plants.....(to be continued).

**Keep your eyes out for
the next article from
Huascar...**

Frogographic competition

WINNERS!



frog
fun

Most interesting Junior Image:
Green Tree Frog, **Jake Janos**



frog
art

Best Junior Frog Art image:
Ryan Little



Best Junior image:
Magnificent Tree Frog, **Jake Janos**

See cover image for:

Best Senior Frog Art Image: Green Tree Frog on leaf, **John Pompurs**

See centrefold for:

Best Senior Image: Tasmanian Tree Frog, **Aaron Payne**



Most interesting image:
Water-holding frog eating metamorph of same species, **George Madani**



People's Choice Best image: Peron's Tree Frog in a Pitcher Plant, John Pompurs

Field Trips

Please book your place on field-trips! Due to strong demand, numbers are limited.

(ph. 9681-5308).

Be sure to leave a contact number. Regardless of prevailing weather conditions, we will continue to schedule and advertise all monthly field-trips as planned. It is YOUR responsibility to re-confirm, in the final days, whether the field-trip is proceeding or has been cancelled. Phone Robert on 9681-5308.

1. Saturday 3rd December: 8-15p.m. Darkes Forest Leaders: Brad & Matt McCaffery

Take the Princess Hwy south (not the freeway), then take the Darkes Forest Rd turn-off.

Meet 200 metres from the corner.

Often stretching like long green ribbons along rivers and creeks is the *riparian zone* ('rye-pair-ee-an'). Riparian eco-systems are vital for healthy aquatic environments. Trees and shrubs provide shade and help regulate water temperature. Roots and ground cover stabilise the banks, prevent erosion and the silting of waterways. Fallen logs regulate stream flow. Insects attracted to these zones provide food for frogs. These zones are known to often support a disproportionately large amount of biodiversity. Riparian corridors can also act as important dispersal routes for frogs, birds and other terrestrial animals. In this way, these corridors prove important in connecting isolated patches of native habitat. Tonight, we will look at the *riparian zone*, and in particular, some riparian frog species. Brad and Matt have developed an intuitive understanding of the ecological requirements of frogs, and tonight they will share some of their insights and will also explain how one can more easily find a sought-after species using an understanding of frog ecology.

2. Saturday 28th January: 8-30p.m. Castlereagh Nature Reserve Leader: Grant Webster

Meet at the corner of The Northern Rd & Whitegates Rd, Londonderry.

The Castlereagh Woodlands are a very distinct and restricted ecological community. The woodlands are forged out of the gravels of an ancient riverbed, from a time when the ancestral Hawkesbury-Nepean River system coursed its way through here. The vegetation here is quite different to that of the surrounding Cumberland Plain. Today, many of the watercourses that snake their way through this nature reserve are *ephemeral* ('e-fem-er-al' – temporary, lasting only for a short time, subject to drying out). Rain can bring out the richness of the frog life with astonishing speed. Frogs here have learnt to survive in conditions very different to those of the Sydney sandstone nearer the coast. Grant is a regular speaker at FATS meetings and most members will be familiar with his images and discussions of frogs from many far-flung parts of NSW. He has studied the Castlereagh area for many years.

Note: More than most, the commencement of this field-trip depends very much on recent rainfall!!

Please note:

In the event of uncertain frogging conditions (e.g. prolonged or severe drought, hazardous and/or torrential rain, bushfires etc.), please phone 9681-5308. Remember - rain is generally ideal for frogging! Children must be accompanied by an adult. Bring shoes or gumboots that can get wet, torch, warm clothing and raincoat. Please be judicious with the use of insect repellent - frogs are very sensitive to chemicals! Please observe all directions that the leader may give. Children are welcome, but parents please remember that young children especially can become very excited

and boisterous at their first frogging experience, so you are asked to help ensure that the leader is able to conduct the trip to everyone's satisfaction. All field trips are strictly for members only, but newcomers are welcome to take out membership before the commencement of the field-trip.

Field Trip Disclaimer:

All participants accept that there is some inherent risk associated with outdoor fieldtrips and by attending they agree to a release of all claims, a waiver of liability, and an assumption of risk.

Notice

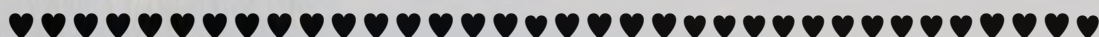
The Australian Reptile Park is anticipated to hold its Interclub Christmas party on Sunday 4th December 2011 from 10 am to 3pm. Please call them to confirm. This once a year get-together of the herpetological societies is an event not to be missed. John Weigel is likely to be Santa again and a big croc gets a Christmas treat. Us mere mortals may get a 'behind the scenes' tour. Free entry to FATS members. Please take your current FATS membership card as proof of membership.

**FATS meet AT 7pm, on the first Friday of every EVEN month
at the Education Centre, Bicentennial Park, Sydney Olympic Park**



Thank you to the many Frogcall supporters.
Your articles, photos, media clippings, webpage uploads,
membership administration, mail-out inserts and envelope preparation is greatly appreciated.

Special thanks to regular newsletter contributors, including
Lothar Voigt, Robert Wall, George Madani, Karen & Arthur White, Wendy & Phillip Grimm,
Grant Webster, Marion Anstis, Andrew & David Nelson & Bill Wangmann.



INSURANCE DISCLAIMER: FATS has public liability insurance for its various public functions. This insurance does not cover FATS members; it covers the public and indemnifies FATS. We are currently checking with insurance firms to see whether a realistic group policy can be organised to cover FATS volunteers and people who attend field trips.

FATS MEETINGS: Commence at 7 pm, end about 10pm at the Education Centre Bicentennial Park, Sydney Olympic Park, Homebush Bay and are usually held on the first Friday of every EVEN month February, April, June, August, October and December (but not Good Friday). Call, check our web site or email us for further directions. Easy walk from Concord West railway station and straight down Victoria Ave. Take a strong torch in winter. By car: Enter from Australia Ave at the Bicentennial Park entrance and drive through the park (one way road) turn off to the right if entering from the main entrance or enter from Bennelong Rd/Parkway. It's a short stretch of 2 way road and park in p10f car park (the last car park before the exit gate).

We hold six informative, informal, topical and practical meetings each year. Visitors and families are welcome. We are actively involved in monitoring frog populations, other field studies and we produce the newsletter FROGCALL and FROGFACTS information sheets. All expressions of opinion and information are published on the basis that they are not to be regarded as an official opinion of the Frog and Tadpole Study Group Committee, unless expressly so stated.

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The FATS committee especially thank Marion Anstis for producing our 20th anniversary edition.