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**ACTHA NEWS**
**OCT - NOV 2009**
*Newsletter of the ACT Herpetological Association Inc.*

*The albino Carpet Python on display at the 10th Anniversary Meeting of MARK, page 12.*

## YOUR COMMITTEE

| | |
|---|---|
| President | Joe McAuliffe |
| Vice President | Ric Longmore |
| Secretary | Angus Kennedy |
| Treasurer | Margaret Ning |
| Newsletter Editor | Mandy Conway |
| Public Officer | **John Wombey** * |
| Excursion Officer | **Ric Longmore** * |
| Committee Members | Christian Robertson |
| | Philip Robertson |
| | DennisDyer |
| Student Representative | Jake McAuliffe |

* *Denotes Life Members*

## DIARY DATE

The *bi-monthly* meetings of the Association are held on the **third Tuesday of the month at 7.30pm**, West's Southern Cross Club, Catchpole Street, Macquarie, Belconnen.

## UPCOMING MEETING

**Tuesday, 20 October 2009**

### ACTHA's Annual General Meeting

ACTHA's AGM will be held at 7.30pm just before our Guest Speaker, Martin Westgate, and, as is usually the case, shouldn't take long. The current Committee's only wish is to get some new blood on board. A love of all things reptiles is the only pre-requisite so please consider joining your fellow herpetological enthusiasts in time for *Snakes Alive!* 2010: a brilliant event!

**Guest Speaker: Martin Westgate,**
The Fenner School of Environment and Society, ANU

### The frogs who inhabit Jervis Bay

In this talk Martin will present findings from research conducted in Booderee National Park, Jervis Bay. This area is most popular for its sandy beaches, but it also has some great frog habitat. Given the tendency for amphibian species to go extinct, work to understand landscape use in frogs is important for their conservation. Martin will present results which demonstrate the importance of terrestrial habitat for frogs, as well as some early findings on how frog populations have been affected by past fire in Jervis Bay.

## IN THIS ISSUE

## ACTHA presents the Australian National Botanic Gardens with a cheque

*Joe McAuliffe, President ACTHA*

Several members of the ACTHA Committee recently presented a cheque to the Australian National Botanic Gardens (ANBG) for the 2009 *Snakes Alive!* Exhibition, our major fund raising effort. As in past years, half of the net door takings are contributed to the ANBG to assist them to conduct their education program which includes a strong herpetofauna focus.

Every year the ANBG provides an ideal location for the exhibit and assists ACTHA with advertising etc. Mrs Anne Duncan (ANBG Director) and Steven Speer accepted the cheque and said that the ANBG is keen to continue the long standing relationship it has with ACTHA.

*Above, from left to right: Steven Speer ANBG, Ric Longmore ACTHA, Anne Duncan ANBG, Joe McAuliffe and Dennis Dyer ACTHA.*

*Below, second from right, Margaret Ning ACTHA.*

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## Owning a Centralian Blue-tongue Lizard (*Tiliqua Multifasciata)*

*Jack McAuliffe writes about his prized pet*

This subspecies of blue-tongue occurs in the northern arid part of Australia, living amongst sand dunes, plains and hills around vegetation and grassland areas. They like to hide in animal burrows, leaf litter and under rocks. They have quite a big body and a large arrow-shaped head, with quite a short and thin tail. Their colour is brownish grey with 11 to 13 thin bright orange bands along the body. The arms are normally black.

Their diet consists of soft plants, beetles, bugs, grasshoppers and carrion. Centralian Blue-tongues can be seen moving around on warm nights. In summer an average litter of nine live young are born.

If you want to keep one of these little dudes I would recommend that you have a outdoor pit enclosure for the summer months and an indoor glass or timber enclosure where they can spend their winter.

They make good pets but I find them more aggressive than our local Eastern Blue-tongue Lizard. They also move quicker.

## Reptile Carers Group inaugural meeting

*Held on Thurs, 6 Aug 2009 at the*
***National Zoo and Aquarium, Canberra***

*This write-up of events by Mandy Conway*

Reptile enthusiasts from all walks of life were invited to this get together which was held at the National Zoo and Aquarium's reptile house. Trent Russell, Director of the Zoo, along with other staff members Scott, Renee and Chris wanted to create a group where people could meet in a comfortable atmosphere to share their interest and passion in reptiles. The founders propose to hold this kind of event four times a year, making it an enjoyable get together for all the current groups and enthusiasts in our region.

Attendees were invited to walk around the reptile exhibits which were quite stunning *(photos above and below)*.


After Scott's welcome and introduction Trent presented a slide show which pulled together some of the reptile photos he has taken over the years and explains how this interest in reptiles has developed into his passion for them today. A BBQ followed where everyone could meet and chat with each other.

### In the beginning....

"Catching tadpoles and watching them metamorphosis into frogs is the way many budding herpetologists have started their lifelong interest in these animals." Trent said, himself included. Things progressed for him when he came across a Long-necked Turtle *(Chelodina longicollis)* crossing the road and then became friends with a resident Blue-tongue Lizard *(Tiliqua scincoides)* in his backyard.

Through the years Trent maintained an interest in reptiles but not much more than that. He really wanted to "get right into it" but in those days this was quite difficult as reptiles were not considered your usual pet and there were limited books and general information about them available. "To push on in that interest was very difficult for me." Trent said.

Fast forward a few years to when Trent lived on the Central coast of NSW, about an hour north of Sydney. With unique reptiles to be found in the Sydney sandstone area he often went searching for critters. The Bandy-bandy *(Vermicella annulata)* was an early find, having a large distribution and being quite common on the central coast. When he left school he really wanted to work with NSW National Parks and Wildlife, but on attending a careers expo and asking staff at the expo "what do you do all day? what animals do you hang out with?" and finding out that many cleaned carpark areas, swept paths, cleaned toilets and emptied bins, he faltered. But wait...

### The Australian Reptile Park, Gosford, a great place to start

The Australian Reptile Park was founded by Eric Worrell in the 1960's. Eric was a pioneer of reptiles at the time. Trent lived closed by and became a volunteer, sweeping paths and hosing ponds. He didn't mind though because he thoroughly enjoyed being in that environment "it was really fantastic". "I'll never forget the day the owner of the Reptile Park came up to me and said "come with me I want to show you something". He took me to a staff room and gave me an egg and said "crack that open". I did and out of my hands popped a baby alligator. From that moment on I thought 'this is what I want to do. This is fantastic!' Six weeks later I got a job at the Park."

Working there introduced Trent to some fascinating reptiles. The Perentie *(Varanus giganteus*), which is Australia's largest lizard, was impressive. In those days being interested in this group of animals often involved going out in the field to find them in their

natural environment. So, Trent got his drivers license and drove to South-west Queensland with a fellow volunteer to do just that. "What occurred to me out there was the question why you didn't see these things at home and why did I have to drive all the way out here to see them? I realised that it wasn't so much that they weren't there it was just that I was looking in the wrong places."

Seeing his first Shingle-back Lizard *(Tiliqua rugosa)* in the wild was pretty fantastic. Spotting a Jewelled Gecko *(Strophurus elderi*) led to the discovery of many more of this species amongst the spinifex. More trips included finding small skinks at Barrington Tops, central NSW.

After a couple of years at the Reptile Park, Trent and John, the Park owner who was originally from America, aspired to going on field trips within Australia or close by. They attended a meeting of the Australian Herpetological Society at the Australian Museum in Sydney to hear a talk by Harold Cogger, the leading authority of reptiles in Australia. Cogger had recently returned from a field trip to Papua New Guinea and found 30 odd species of reptiles and amphibians which had not been discovered before. Trent and John decided to go to PNG with the expectation of a great trip. Unfortunately, due to unrest in the country and the danger, the intrepid duo had to come up with another plan.

### The trip to the Kimberley to unearth its elusive Rough-scaled Python

John wanted to find a python that was quite rare and he specifically wanted to find the Rough-scaled Python *(Morelia carinata, right)*, an inhabitant of a monsoon forest in sheltered sandstone gorges of the northern Kimberly, WA, of which only 2 specimens had ever been caught (then). Caught, that is, by members of the WA Museum who shot the snakes as specimens for the Museum thinking they were just carpet pythons. It wasn't until their return that they discovered they had in fact found a new species.

The two specimens were found in a small oasis amid this arid region. It would be quite an exercise to get into this part of the world and the use of a plane and helicopter would be needed, followed by a walk of about 15kms to the spot they were thought to exist.

Trent showed some amazing photos of the area with its bizarre attributes. He explained that our South Coast water ways generally experience a tide level difference of between a half to one metre. Here, in the Kimberly, the tide level can vary up to 10 metres. "The tide going down along the river here causes quite a vacuum, sucking out everything and leaving just a mud flat 12 hours later."

Trent and John's helicopter landed on a mud flat with all of the gear; or so they thought. The chopper left and they then realised half of the gear had actually been left on the plane. Some of the water bottles had sprung a leak and their adventure was about to start...

Trent and John walked and walked AND walked, the extremely rough terrain and a croc inhabited mangrove area causing some, no, major concern. They walked, they got lost, they climbed (the slides said it all but as a reader you get the gist!) and they found their first reptile, an Olive Python *(Liasis olivaceus*) on top of a plateau. The journey continued through a gorge to where Trent and John thought the rainforest might be. They walked out of the bush and stumbled across the gorge with the rainforest deep below. The next challenge was getting down to it.

After climbing for a day they got close to the bottom of the gorge and set up camp. A Mertens' Water Monitor *(Varanus mertensi*) was scratching around getting comfortable for the evening and was a little put out when Trent shone his torch on it. "What struck me was how calm the reptiles in the bush were. At home they would have run for their lives."

Trent and John went for a walk in the night and found many geckos with colours and markings

which blended in perfectly with the spinifex grass environs. They found a beautifully marked Children's Python *(Antaresia childreni*), this particular specimen unique to the area, and *Litoria cavernicola* which is similar to our Green Tree Frog but lives predominantly in caves. It was difficult to find at first but once they knew where to look it was quite common. A slide of the Brown Tree Snake *(Boiga irregularis*), nicknamed the 'night tiger', impressively showed the typical Top End region banded patterning.

**The best way to catch geckos? "Put your hand in a crevice, pull it out and away you go." Trent added that the firmly attached specimen took some time, however, to remove!**

"One large and awesome Western Giant Cave Gecko *(Pseudothecadactylus cavaticus)* must have been a really tough dude because when it emerged everyone else disappeared!

The intrepid duo had traversed the area for about 8 days when Trent saw a snake crossing a rock and shouted "A Stimson's er Carpet er... I think I've found a Rough-scaled Python!" John scampered down the rock face yelling "don't touch it, don't touch it ..." Running to the rock he grabbed the snake, much to Trent's dismay, as he was obviously wanting to be the first person to handle it. The Rough-scaled Python is the only python in the world that has keeled scales, a small raised ridge on each individual scale, and the largest teeth of any Python in the world. Coming from such a small distribution and being found by accident made the encounter pretty special.

Because taking a reptile from the wild is illegal John and Trent were quite sad to leave the area and leave the snake behind. But they made a pact to return to the area at a later stage to search for another one.

## Second trip to the Kimberley

About a year or so later Trent and John met Malcolm Douglas who produced wildlife documentaries and knew the Kimberley area quite well. Malcolm wanted to go back to the area with them and film their exploits. The three returned and cruised around in a boat, much easier to get around Trent commented.

On this trip they observed many reptiles including a very fast Black-palmed Monitor *(Varanus glebopalma)*, the Burton's Snake-lizard *(Lialis burtonis)* which predominantly feeds on skinks and the Kimberly Rock Monitor *(Varanus glauerti)* described as the Ferrari of lizards "...not sure if this is because its special or fast but probably fits both categories."

Not long later John spotted their prey: a colourful adult female Rough-scaled Python. These pythons tend to change colour depending on day or night, not like a Chameleon but certainly through shades of dark and light which is quite unusual for pythons. They also have a weird threat display as pythons, showing their large teeth.

## Alice Springs and venomous snakes

Trent returned to the Reptile Park to continue, amongst other things, work on one of the things it was famous for when Eric Worrell was alive. Quite a few venomous snakes live around suburban areas, and bites when they occurred often proved fatal; antivenom was quite an issue in those days. "Most Australian snakes produce a neuro-toxic venom which shuts down the major organs", Trent added.

Hence a long trip to the Ayers Rock (Uluru) area to collect snakes with permission from the NT Government was organised to collect the reptiles they needed. They concentrated on collecting animals from the Airport's runway precinct which was soon to be extended. Some animals were relocated whilst others were taken back to the Reptile Park. Seen were earless dragons, Desert Death Adders *(Acanthophis pyrrhus)* with beautiful orange and red colours found north of Alice Springs (smaller than those found in other parts of Australia) and a Blue-tailed Skink amongst others. Although Trent admits he never really got interested in these small skinks there were so many in the desert that you couldn't help but get interested.

"They were quite difficult to catch because they literally disappear under your hand by burying themselves in the sand like a sand swimmer." Also nabbed was the Inland Taipan *(Oxyuranus microlepidotus)* the world's most venomous snake which luckily lives in the remote area around Birdsville South-western QLD/North-western South Australia.

Trent described the classic **Thorny Devil** in one slide. "The Thorny Devil eats about a third of its own body weight per day in very small ants." Staff trained the ants to come to the reptile house by putting tinned dog and cat food out. The Thorny Devil would then be left in an upside down cage over the swarm eating its fill over 5 hours.

After 18 months Trent left Alice Springs to return to family and friends in Sydney. Whilst he had enjoyed Alice Springs he found it fairly desolate and really too far away from contact.

### Taronga Zoo's Reptile Centre

Taronga Zoo was Trent's next post, specifically the Reptile Centre within, a world class facility in its time. It cost 3.5 million dollars to build and had some fantastic innovations with 70 exhibits which Trent managed for 3-4 years. He worked with the Reticulated Python, one of the world's longest snakes reaching 30 feet/10 metres. A popular exhibit with the public was Jackson's Chameleon. This reptile was different from others to keep as they live in a cool and humid area in Africa and keeping them in Australia was sometimes challenging. The Zoo's Poison Dart or Arrow Frog originates from South America where native Indians use their secretions by rubbing a dart arrow on the end of the frog. This collects enough venom to kill prey. The frog's venom can kill a human quickly even when it is just handled.

The Broad-headed Snake *(Hoplocephalus bungaroides)* was critically endangered at the time, with loss of habitat by people taking rocks for their gardens partly to blame. It is one of a group of 3 species found in the Sydney sandstone area around Nowra and into the Blue Mountains. Trent commented that it, along with other reptiles like the Fijian Crested Iguana, are only found in small areas and as such face similar issues to other endangered reptiles from small populations. Programs like those now running in most zoos are so important. For example, 95% of the Crested Iguana population is found on a small island, so something like a fire could potentially wipe out the species.

The **Green and Golden Bell Frog** *(Litoria aurea)* was also declining in numbers and not a lot was being done at the time, even though it was apparent that frogs all over the world were going extinct even before we thought about it or endeavored to save them. Trent's interest in frogs started to grow and helped develop his next ambition: conservation of reptiles and amphibians, particularly breeding in captivity. The Green and Golden Bell Frog was already established in captivity at the Zoo, it seemed like a good 'example' to get the public interested.

**Frog Focus**, a program initiated by Taronga Zoo, was an integrated system developed for the community with the expectation of releasing frogs into the wild. The first step was to breed some frogs. "What better way to get the community involved than to get the kids excited about these critters." School groups from the southern Sydney area became involved, which included excursions to areas where the frogs were being released. Tasks like reporting of habitat and surveys were also included. The program became quite popular and the blue-print was quite simple, which allowed Trent to give talks in South-East Asia. Funding was needed to get the Frog Focus Program developed further to help a broader range of species. The Education Department of Taronga Zoo became involved and, after

receiving a grant from the Australian Stock Exchange for $500,000, they put together a teachers pack on CD. Every school in Australia received one.

### The National Zoo and Aquarium, Canberra

Trent left Taronga Zoo 10 years ago after meeting and marrying his wife, re-establishing himself in her home town of Canberra at the family's National Aquarium. The vision was to transform the National Aquarium into a zoo with many outdoor exhibits of larger animals. His life now revolves around big cats and primates but his interest in reptiles is still there and nowadays has less to do with the job and more to do with his own interest: that is to get other people who are interested in reptiles and amphibians together in a social atmosphere and also to provide novice herpetologists with support and a link to others sharing the same passion. "The hobby of reptile keeping is really nurturing a curiosity about keeping and breeding these animals and is evolving at a rapid pace. There are a whole range of species in captivity these days with exciting things happening." Trent said as he ended his presentation.
Stay tuned!

## Tiny species of lizard is so light that it falls to the ground like a feather, scientists have discovered

*Matt Walker, Editor, Earth News*

Outwardly, little of the animal's body seems adapted to flying, gliding or moving through the air in any way. But a slow-motion camera has revealed that when the lizard jumps from a height, it can slow the rate of its descent and land gently on the ground.

The lizard's surprising aerial ability might help explain how some animals became true gliders. Details of the little lizard's talents are published in the Journal of Experimental Biology.

*Holaspis guentheri, spotted stripes turn from white to a brilliant blue as they stretch over the hips. A slender, flat build helps.*

**Controlled descent**

Active flight, powered by the flapping of wings, has evolved in three living lineages of animals: birds, bats and insects. But at least 30 different types of animal have evolved the ability to control their aerial descent, by parachuting or gliding to the ground. For example, gliding frogs use huge webbed feet, flying squirrels use long flaps of skin between their legs and flying fish use their fins to glide.

Other animals have less obvious morphological adaptations. Gliding snakes flatten and undulate their bodies, which helps to slow their fall while some species of ant are so tiny they can jump out of trees and freefall gently to lower trunks without hurting themselves.

**Bieke Vanhooydonck** of the University of Antwerp became extremely interested when she read some old scientific papers reporting anecdotal evidence that a relatively ordinary species of lizard might also be able to glide from tree to tree.

*Holaspis guentheri* belongs to a group of lizards known as Lacertids, which live in the Old World.

Though colourful, they do not stand out in terms of their behaviour, morphology or ecology.

"Also, compared to other gliding lizard species, it does not have any conspicuous morphological adaptations to an aerial lifestyle, ie no cutaneous flaps, webbed feet etc," says Vanhooydonck.

"It made me very curious about whether these animals were really able to 'glide' and if so, how they were accomplishing it."

***(Cont'd page 15)***

## Recovery efforts for Kosciuszko's threatened frog fauna

*Our Guest Speaker at the August 2009 ACTHA Meeting was **David Hunter**, Threatened Species Officer, Biodiversity Conservation Section, NSW Dept of Environment and Climate Change*
*This write-up by Mandy Conway*

Disease caused by the Amphibian Chytrid Fungus is responsible for many of the frog population declines occurring around the world: up to one-third of the world's species are currently threatened with extinction due to this pathogen. In Australia, the list of currently vulnerable, endangered or critically endangered frog species under the Commonwealth EPBC Act is disturbing: since the late 1970's we have already lost 8 known/described species.

David highlighted four frog species which are currently of particular conservation interest:

**Southern Corroboree Frog**, *Pseudophryne corroboree*

**Northern Corroboree Frog**, *Pseudophryne pengilleyi*

**Spotted Tree Frog**, *Litoria spenceri*

**Booroolong Frog**, *Litoria booroolongensis*

Corroboree Frogs are a bog species occurring in frost hollow wet land environments in the high montane and sub alpine areas of Kosciuszko, Brindabella and Namadji National Park. The Southern Corroboree frog, with its sister species the Northern Corroboree Frog, are high profile species' that have had a lot of work carried out on them to date. In the mid to late 1960's, Ross Pengilley did a lot of work on the baseline ecology of the species' which has provided an insight into what is occurring at the moment and what should be looked at in terms of benchmarks for recovery efforts. Follow-up work on the Corroboree Frogs by Will Osborne, who did his PhD on these species' in the mid 1980's, showed that they were in trouble and that they should be the focus of a specific conservation program.

Of particular concern is that the Southern Corroboree Frog has been in a rapid state of decline over the past 25 years (Figure 1) and is likely to become extinct in the wild in the near future if current recovery efforts are unsuccessful. The decline in abundance of this species is particularly dramatic, as more individuals were found in a one metre quadrate next to a suitable bog pool than is found in the current entire range of the frog. The majority of remaining populations have fewer than 5 male calling frogs, and cannot be considered viable.

"When species drop to these critically low numbers you're not just worried about the reason for the decline. Anything that causes mortality can be described as a major threatening process. The 2003 bushfires, for example, would have had an impact on the small Northern and Southern Corroboree populations remaining. Prior to the recent decline in this species, frog numbers would have dipped as a result of bush fires but are likely to have responded positively to the opened habitat which make it more suitable for breeding. So whilst drought and fires are major factors impacting the Corroborees they are not the primary factors contributing to the broader declines at this time." David explained.

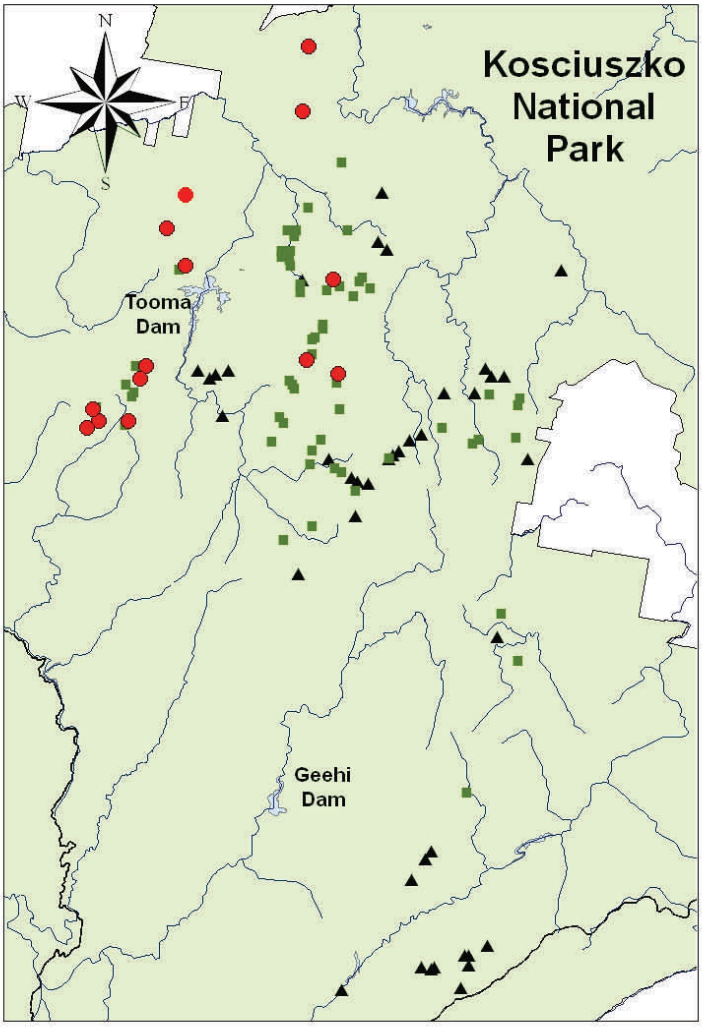



**Figure 1. Triangles are sites where the frog was extinct by the mid 1990's, squares are where the species was extinct by 2008, and dots are where small remnant populations of the Southern Corroboree Frog have persisted.**

## Amphibian Chytrid Fungus: one of the world's deadliest pathogens

What has caused the dramatic and catastrophic decline of many frog species is a pathogen, known as the Amphibian Chytrid Fungus, that was introduced into Australia, most likely from South Africa. The African Clawed Frog (*Xenopus levis*), which shows no apparent ill effects to the chytrid, is used world wide as a laboratory study animal and between the 1930's and 1960's was used as a standard female pregnancy test. If a human female wanted to confirm pregnancy she would pee in a bottle and this was sent to a laboratory. The female's urine was injected into the frog and the hormones in a positive female would stimulate the frog to ovulate.

*African Clawed Frog, photo by John Elkington*

"Within the past two and a half decades Australia has been losing frog species from our wilderness areas; areas that were protected to secure our biodiversity. To see species after species dying out was simply unbelievable. So much so that although we'd had examples of disease causing significant declines in species before, the level of decline to extinction was unprecedented. A lot of the scientific community refused to accept that a single pathogen was responsible for the scale of devastation of so many species in amphibian communities. Sentiments were simply due to the fact that this occurrence had not been seen before."

The Amphibian Chytrid Fungus isn't the only thing causing problems for the decline in general frog numbers. Habitat degradation through unsustainable land use practises and the drought are compounding the situation. Recovery efforts now need a variable plan.

The Booroolong Frog inhabits the South-West Slopes Region. It is a riverine species that predominantly occurs along permanent streams, where there is riparian vegetation, clean water, and exposed cobbled banks. This frog lays its eggs in rock crevices and is susceptible to habitat disturbance caused by cattle stomping, erosion, increased sedimentation etc. A program being undertaken by DECCW and the Murray CMA is providing farmers with assistance to limit cattle destroying river banks, and controlling weed invasion like willows, which provide an unnatural level of shading and smother the rock crevice breeding habitat.

### Current conservation aims

"With recovery programs for threatened species, one focuses on the species: the entity that's motivating you for action. But the real interest is the threatening process. The fundamental aim of a recovery program is to identify the key threatening processes and then develop suitable techniques to mitigate the impact of those processes."

"What we're relying on in the Chytrid Fungus battle is for the frogs themselves to develop resistance: it is a natural evolutionary process for species to develop resistance to pathogens. Historically there have been frogs very sensitive to this disease who have crashed to very low numbers and have since recovered. When you go and test these populations, they are maintaining stable and relatively abundant populations despite having high levels of infection. A promising sign, and at this stage we anticipate that our efforts are bridging that period when the frog is first sensitive to this pathogen to actually having its own resistance and being able to look after itself in the wild."

"There are many people of the view "what are you going to do about it... it's got to run its course..." etc. The threatened species recovery game is very difficult, requires a great deal of effort and is not full of success stories. The tangible benefits for affected species is small thus far and the factors driving the decline are extremely difficult to turn around. Loss of critical habitat and the impact of ferals don't help. If the frogs can overcome the effects of the Chytrid Fungus there will be huge areas of natural habitat that they will be able to re-establish and recolonise viable populations. It's a false perception to think that the impact of this disease is a helpless one and a more dismal state than the impact of many other processes on threatened species."

Relying on frogs to develop a resistance to the Chytrid Fungus and not on reduced virulence is a viable proposition, perhaps by introducing selective breeding of resistant individuals? Taronga Zoo has been looking at how some frogs have appeared to attain resistance whilst others have not. Is the resistance being seen in populations due to increased innate resistance at the individual level and, if it is, what is the actual mechanism by which the frog is now resistant? Answers to these questions will guide efforts to better breeding animals.

> *Did you know?* not until the Corroboree frogs have grown into young adults and the keratin in the skin has developed can the presence of the Chytrid Fungus be detected.

## The idea of a conservation triage

At the International Ecological Conference, recently held in Brisbane, Peter Garrett, Federal Minister for the Environment, put forward the idea of a conservation triage ie. species that require a lot resources and intensive work may be better off 'being let go' and resources used elsewhere.

Having an eco-systems focus has merits but not at the expense of existing species in difficulty, particularly if the decline of the species is due to humans David feels. The subject is often talked about in scientific literature and, whilst a valid point, David's view is that these decisions should be made by the broader community. An important part of his Department's programs is increasing the awareness of the plight of these species and the efforts required to save them. Financial and other contributions, like those given by ACTHA in the past to the Amphibian Research Centre in Victoria, is very important and more collaboration and involvement by interest groups is needed to keep conservation programs going. As an example, there have been recent adverts on Southern Cross Ten TV increasing awareness about the plight of the Corroboree Frog and its recovery efforts. Zoos have, as media machines, also seen increased awareness.

*Green and Golden Bell Frog, photo by Lance Jurd*

## Schools getting involved

Taronga Zoo is involved with conservation work on the Booroolong Frog in the Tumburumba region and have designated a whole section within the Zoo to education and community engagement about this species. Dave Smith from Taronga ran an education program for several of the primary and secondary schools in Tumburumba and got the kids involved in the frog's recovery efforts. "The kids were treated to a trip to Sydney, staying at Taronga Zoo for 4 or 5 nights, where they apparently had the time of their lives. To see the shift in community thinking and the support we're now getting for this frog and more broadly for frog conservation in general is encouraging and also very important for keeping pressure on Government agencies to maintain funding."

**General discussion followed the meeting, including the current situation with other affected frog species.**

The Corroboree Frog display at Tidbinbilla is excellent but the question was raised as to whether a permanent display at our local National Zoo and Aquarium would be possible, as a drawcard and to raise awareness. Trent Russell, Director of the Zoo, was present at the meeting and said that he had held discussions with Gerry Marantelli, Amphibian Research Centre in Victoria, on this idea. The Booroolong Frog was a good candidate at this stage.

Ric Longmore queried the status of the Dendyi toadlet (*Pseudophryne dendyi)*. More thorough survey work was required, however what is known is that this frog is persisting quite well in several areas with the Chytrid Fungus and is hence not a high priority. As this frog and Bibron's Toadlet (*P. bibronii*) look so similar, more genetic work needs to be done to differentiate between the species in the first instance. John Wombey added that many years ago any overturned rock in the sheep paddock would reveal a Bibron's Toadlet, a common species when Lake George was lapping at the road and before the drought.

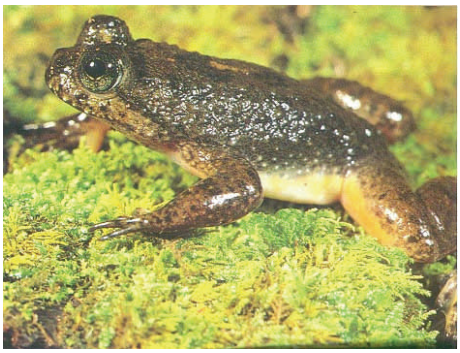
When David visits South-west WA with its bare earthed dams containing large, magnificent Green and Golden Bell Frogs (*Litoria aurea)* he has no doubts that the frog's population would be as large as in the pre 1980's if not for the Chytrid Fungus. John Wombey added that after the second world war a lot of soldiers set up settlement farms, putting dams in which would have benefited the Green and Golden Bell Frog. Would you believe that this frog is living in a brick pit at the site of the Olympic Games in Sydney? They seem to do well in these environs, it doesn't appear to be essential that

they have fancy lush habitats usually associated with frog populations.

Countries facing a similar threat include North, Central and South America in particular. Fauna is disappearing before species can even be found. When Gerry Marantelli was in Peru recently he was shown a whole shelf of frogs that had not yet been described but could no longer be found in the wild. The loss of the 40 odd species on that shelf is tragic to say the least. The majority of species lost are in QLD, which includes the two species of the Gastric Brooding Frog. These species are a phenomenon of the 20th century, and were discovered and lost in a span of 10 years, which is a terrible tragedy.

Are some species hiding in small undetected patches of Australia? The recent rediscovery of the Armoured Mist Frog (*Litoria lorica*) after 15 years absence is encouraging. It has been found to have a high level of infection but is persisting along a 400m length of stream.

The Cane Toad (*Bufo marinus*) although in high abundance, was never going to be a problem on the higher slopes in the upper rainforest areas, although the fact that *B. marinus* can pick the fungus up and move it around is worrying.



*Southern Gastric Brooding Frog*

Further recovery program techniques being trialled include exposing frogs to the Chytrid Fungus and then treating the infection which will hopefully result in acquired immunity, and the use of anti-microbial bacteria. Simply put, multiple pathogens are keen to colonise the frog's nice moist skin, so if some bacteria which are benign to the frog colonise the skin first it may stop the fungus invading. There are promising results in the laboratory but it's early days and a risky business to introduce new pathogens into the wild.

*The Amphibian Chytrid Fungus will unfortunately reach hidden frog populations long before man does.*

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## Northern Corroboree Frog, *Pseudophryne pengilleyi*

*Ric Longmore writes.*

This precious local Corroboree Frog is a sister species to the Southern Corroboree Frog *Pseudophryne corroboree* and was only officially split from this species in 1985 by Wells and Wellington (*Aust.J. Herp. Suppl. Ser. 1*). It is largely confined to the Brindabella and Fiery Ranges in the ACT and neighbouring NSW

It is named after Dr Ross Pengilley who did much pioneering research on the species in the 60's as part of his M.Sc. thesis. (*Right, a young Ross in 1968*).

I first met Ross in 1968 when as a young undergraduate in zoology at the ANU he was my tutor at the Dept. of Zoology (as was Marg Davies, another well-known froggie).

We quickly became friends (as a part-timer I was a bit older (all of 20!) than the rest of my fellow students). We shared a common interest in herpetology and Ross would frequently take me up to the Brindabella Mountains (complete with a thermos of coffee and vegemite sandwiches) in an aging ANU Land Rover to catch lizards (his prophetic PhD. study). Ross once said that I was the best skink-catcher he had ever seen! His work then concentrated on reproduction in skinks and oh boy there were a lot of species to catch and study. Every weekend in spring and summer taught me more about alpine herpetofauna (and other species including the fiercesome alpine funnel-web *Bymainiella brindabella*, but that is another story!).

Up around Picadilly Circus and Mount Ginini almost every semi-submerged log, when lifted, revealed toadlets - *P. corroboree* and *P. dendyi* and Ross would painstakingly show me how many had been parasitised by the larva of a particular species of fly, which I quickly learnt to gently squeeze out of the frogs without any apparent discomfort.

When I was bed-ridden at home after a serious car accident in 1969 Ross would visit me once a week and bring herp. papers, books and news as he patiently waited for my recovery.

Ross is a founding member of The Australian Society of Herpetologists Inc. and finished his working career in the NT. He still sends me a Christmas card occasionally. A truly amazing herpetologist that I had the honour to count as a friend.

## Monaro Amphibian and Reptile Keepers Group 10 year Anniversary

*This write-up of events by Mandy Conway*

Proceedings started with a sausage sizzle in the carpark where everyone caught-up with each other and new faces could get to know hardcore members. Yes, we were very friendly once fed and keen to once again talk reptiles, reptiles, reptiles!

Back inside, Peter Child, Reptiles Inc., welcomed the crowd of over 50 people to MARK's (Monaro Amphibian and Reptile Keepers Group) 10th anniversary celebratory meeting.

General announcements included the news that Ross Bennett, as owner of the Reptile Centre at Canberra's Federation Square, has retired. No doubt he will still be active in other areas of all things reptile. Also, sadly, Darren Green has recently passed away. Many will know him as an author of informative reptile keeping books. His expertise and advice for many keepers will be sorely missed.

### In the beginning...

At the time of MARK's inception, 10 years ago, the ACT Herpetological Association Inc. had been running for a number of years catering for enthusiasts interested in herpetology along scientific lines. Ron Dencio saw a need to cater for people who's focus was more on keeping reptiles as pets and started MARK, holding meetings every month at the Senior Citizen's Club in Turner. This was at a time when keeping reptiles and amphibians as pets in Australia really started to gain momentum.

To this day MARK continues to provide a place for people in our region to come along and discuss keeping issues and to socialise with fellow enthusiasts, as does ACTHA and another recently formed club, the Canberra Reptile Carers Group at the National Zoo and Aquarium.

"Today's meeting sees the beginning of a new chapter for MARK." Peter said. He has booked a room at the Senior Citizens Club under his business name to cover the insurance and rent aspects and has offered to organise a range of other venue options to encourage former and new members to once again congregate. A more relaxed approach to meetings is being canvassed, such as perhaps a 'sausage sizzle in the park' on a Sunday. This would be more amenable for the select group of attendees who would in the past regularly stand in the carpark talking reptiles, reptiles, reptiles until midnight, much to the ire of their partners! (Were you once a peanut gallery member?!)

Ideas on ways for MARK members to socialise and gather to talk about new acquisitions and what pets are up to, and to discuss any health or husbandry issues are being sought. Would the Group also like to provide an avenue for the sale of second-hand enclosures etc? Contact Peter Child with your thoughts and suggestions (Reptiles Inc.).

### Keeping reptiles in the ACT

Our guest speaker, Matt *(right)*, from ACT Licensing, was invited to give a presentation on licensing arrangements for keeping reptiles in the ACT.

Matt started by saying that he and his colleagues were always approachable and endeavoured to help Canberrans who wanted to keep reptiles as pets to the best of their ability. He outlined protocols for the submission of relevant paperwork and talked about what licensing officers were keen to see in written applications. Details of keeping arrangements and general husbandry practices were at the top of the list, especially heating requirements for the reptiles kept in Canberra's cooler climate and an adequate feeding and husbandry regime to help ensure healthy animals.

*An albino Carpet Python, owned by one of MARK's members*

Several questions were asked about diary entries for additions, deaths and sales of licensed animals as well as what the current procedure was for advising/submitting details to ACT Licensing officers. The Website was a good place to start but a phone call to Matt is always welcomed.

A brief discussion was held about exempt species and any possible changes to the ACT's non-exempt Category A, B and C lists. Matt advised that any changes to the keeping status of animals needed to be addressed to our local government representative in the first instance.

### Karen Guillan, NSW licensing requirements and her goanna

Karen Guillan *(below)*, a fellow founder of MARK, took the floor next to talk about licensing arrangements for NSW residents.

Licensing in the ACT is viewed as quite a procedural saga by fellow NSW hobbyists. Their residents can't fathom the stringent application requirements expected from ACT owners even though we have exempt species. Having said that, all NSW pet reptiles and amphibians need ownership licenses, no reptiles are sold through pet shops, instead all are sold through breeders. Export and import permits between the State and Territory make things more complicated. One plus: ACT Licensing actually sends you an outline of how to keep an animal. In NSW, keepers record ownership details in a book. A NSW reptile keeper has a choice from around 10 species of turtle, 40 species of gecko, 100 skinks and some mildly venomous snakes.

Karen has cared for most of our region's wild reptiles in her time as a Wildcare member and co-ordinator, and since 'retiring' as a full-time carer decided she couldn't live without one particular animal: a goanna. She wanted to keep a species of a manageable size and went forth and purchased *Varanus tristis*, a highly intelligent and very shy reptile. At 30cms long it is one of our smallest goannas. Karen said *V. tristis,* being fast and active, needed a fairly large enclosure in which they tended to use every nook and cranny.

### Show and tell: albino animals

Peter Child then once again took centre stage to present a slideshow of albino animals which included lions, crocodiles and quite a few reptiles. There appears to be a growing interest in pet albino reptiles and a striking Albino Carpet Python was present for everyone to admire.

Peter ended the meeting by asking Ron Dencio up to the stage where he gave a small speech about Ron's achievements before presenting him with a small plaque celebrating the 10th anniversary meeting.

Everyone then said their goodbyes and guess what? some members had the audacity to stand in the carpark after the meeting and talk reptiles, reptile, reptiles… Sad isn't it?!!

Visit the MARK website at www.mark.org.au for details of the next meeting.

## ACTHA provides small Grants for herpetofauna protection, education, training and research projects

In recent years, the **ACT Herpetological Association Inc.** has made a number of grants to projects that might assist to further herpetofauna protection and recovery, education, training, and research projects. In the past, the Association has made particular contributions to Gerry Marantelli to further the work on Corroboree Frog research and breeding.

The major fund raising effort by the Association is the *Snakes Alive! Exhibition* at the Australian National Botanic Gardens (ANBG) held each January. Half of the net door takings are contributed to the ANBG to assist them to conduct their education program which includes a strong herpetofauna focus. As in 2007, the Association has again decided to provide encouragement and assistance in monetary terms to students or others who are currently researching aspects of herpetofauna.

This year 5 grants were given:

### Molecular phylogeny and cryptic genetic species in the Myobatrachid frog Genus Uperoleia

**Renee Catullo, School of Botany and Zoology, ANU**

Renee's project centres around understanding the tremendous diversity in Australia's largest genus of Myobatrachid frogs - *Uperoleia*. The genus is currently divided into 26 described species, which range from Vic to QLD, and across northern Australia to Carnarvon in WA. The descriptions of species have been based on very subtle morphological and call differences, and locality, but many of the species are poorly known and have only a few specimens.

Renee hopes to generate a substantial molecular data set for all species within *Uperoleia* in order to define species limits, identify cryptic lineages that may represent new species, and better describe the true distributions for each species.

One objective of this study is to model probable distributions under both current and future climate scenarios. This will focus specifically on species whose primary distribution is in reserve systems or other protected areas. The intent is to identify areas where the undisturbed habitat of the reserve currently appears essential to the persistence of the species, but that are at risk of being displaced under future climate models. This information can be used for the development of future reserve systems to ensure the preservation of species through an ability to migrate in response to climatic events.

### Long term persistence of the Murray-darling turtles populations

**Olivier Baggiano, Environment 1, Griffith University, QLD**

This project will investigate the genetic diversity, population structure and gene flow of *Chelodina expansa, Chelodina longicollis* and *Emydura macquarii* populations in three upper catchments of the Murray-Darling Basin, QLD. Gene flow among permanent waterholes of a largely unregulated catchment will be examined in order to determine if this correlates with our expectations of dispersal ability for each species and compared against population structure in two regulated neighbouring catchments.

By determining the colonisation and re-colonisation potential of each species under semi-natural conditions, this project will provide informative data for conservation planning such as predicting the impact of future flow reduction in the MDB on the persistence of freshwater turtle populations. The significance of dams and weirs as barrier to dispersal will also be investigated, and the size and age structure of populations within one of the catchments will be estimated (mark-recapture method), providing currently lacking information on population health for each species within an upper section of the MDB.

### The effects of geography, vegetation and habitat condition on the phenotypic and phylogenetic attributes of Morethia boulengeri

**Sam Banks, Damian Michael, David Lindenmayer, The Fenner School of Environment and Society, ANU**

Boulenger's Skink (*Morethia boulengeri)* occurs in a wide range of habitats in south-eastern Australia. It is among the most common reptile in farming landscapes in the region, recorded at densities exceeding 1500 individuals ha-1.

Its abundance makes it an ideal species for studying landscape-level drivers of physiological and ecological processes. The team proposes to test associations between morphology and population parameters in *M. boulengeri*, and vegetation type and habitat condition across a set of monitored sites in southern NSW. Mitochondrial DNA will be used to characterise the phylogenetic affinities of the sampled populations.

Results from the study will be used to help guide future financial incentive schemes being delivered by Catchment Management Authorities in NSW, which aim at targeting improvements in vegetation condition and biodiversity conservation.

## Creating a frog friendly habitat

**Emma Keightley, ACT Waterwatch, Ginninderra Landcare Group**

Grant funds allocated to this project will be used to update and reprint a booklet developed by ACT Frogwatch in 2006 titled *'Creating a Frog Friendly Habitat in your backyard, school ground or rural property - a resource for communities in the ACT and region'*.

The direct outcome of the project is to educate the community about creating frog friendly habitat and thus provide new and/or enhanced habitat areas for frogs in the region. The engagement of the community would provide broader awareness and involvement in catchment health and biodiversity issues in the ACT region and hopefully lead to further participation in the ACT Frogwatch Census.

## Climate change responses in the Eastern Water Dragon

**Nadav Pezaro, School of Biological Sciences, University of Sydney**

This study aims to understand how climate change may influence nest-site selection and embryonic physiology in the Eastern Water Dragon (*Physignathus lesueurii)* and to determine how variation in these traits facilitates their adaptation to different environments. ACTHA's funding will assist with the purchase of 40 miniature thermal data loggers which record nest temperatures, and will be used at the Australian National Botanic Gardens (ANBG).

Nadav will compare the nesting behaviour and embryonic responses to temperature in water dragons from populations along their natural distribution, ranging from northern QLD to Kosciusko National Park. The variation between the climatically distinct populations will indicate both the mechanisms and extent of the water dragons capacity to adapt in a changing environment.

The intermediate population at the ANBG provides an excellent point of contact with the public and an opportunity to communicate research outcomes and the unique ecology of these reptiles. Nadav will continue and expand the ongoing research program at the ANBG (where he conducted his honours research) and establish a water dragon research website that will serve as a source of information and provide an opportunity for the public to participate in the research by reporting observations of nesting events through online data sheets.

***("lizard is so light that it falls to the ground like a feather" Cont'd from page 7)***

**Leaping platform**

So Vanhooydonck and colleagues in Belgium and France filmed individual lizards leaping from a platform two metres above ground.

They compared the performance of *H.guentheri* with a rock-dwelling lizard (*Podarcis muralis*) that never takes to the air and a highly specialised leaping gecko (*Ptychozoon kuhli, pic right)* that has a range of skin flaps that it uses to parachute to the ground. For each, they examined the duration of each species' descent, the horizontal distance it covered and at what speed.


Both the rock-dwelling lizard and *H.guentheri* landed 50 cms from the base of the platform, while the gecko landed up to 1m away. But *H.guentheri* fell for longer, and more slowly than its rock-dwelling competitor.

"Much to our surprise, *H. guentheri* is able to slow down its descent and has low impact forces upon landing," says Vanhooydonck.

*H. guentheri* weighs just 1.5g which is one third of the rock-dwelling lizard's weight and one-tenth of the gecko's. X-ray scans of the Lizard's body revealed its bones are packed full of air spaces.

Once weight was factored in the researchers found that *H.guentheri* landed 20cm further away than it should have done had it fallen like a stone.

Although the Lizard's light weight and ability to fall gently are linked, it is still unclear whether its air-filled bones are an adaptation for parachuting, or whether they evolved for another reason like escaping predators.

"It could be just how other gliding animals took the first evolutionary steps towards an aerial lifestyle", she says.

**A note from the Editor**
*The views expressed by contributors and authors and any links to Websites provided in this Newsletter are not necessarily those of ACTHA.*

## ACTHA's website up and running
**www.actha.org.au**

Thanks to our very own **Angus Kennedy** our website is not only up and running but it has been deemed one of the best herp websites in Australia. A huge bonus is the availability of our previous Newsletters on line and frequent updates on past and future ACTHA Inc. activities.

Angus spent a great deal of time and effort to create the web site and whilst he is generally happy with it he would like to receive comments and suggestions from ACTHA members on the structure and inclusions. Peruse the site and follow the links to Angus if you have any thoughts.

**2009 -2010 ACTHA Membership is now overdue!**

## ACTHA's Annual General Meeting
## 20 October 2009
**West's Southern Cross Club, Catchpole Street, Macquarie, Belconnen.**

ACTHA's AGM will be held at 7.30pm and, as is usually the case, shouldn't take long. The current Committee's only wish is to get some new blood on board.

A love of all things reptiles is the only pre-requisite so please consider joining your fellow herpetological enthusiasts in time for *Snakes Alive!* and the many other exciting events planned for 2010.

*ACTHA News*
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