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**ACTHA Inc. News**
**June - July '16**
*Newsletter of the ACT Herpetological Association Inc.*

**ACTHA 2016 - 2017 Membership Renewal Now Due**

**now $20 for individuals or a family**

***Please see back page.***

*It was discussed at a recent Committee Meting that due to rising costs ACTHA's Annual Membership Fee will increase to $20 per year for an individual or family membership. This is the first increase for over 15 years.*

## Your Committee for 2015 - 2016

| | |
|---|---|
| President | Dennis Dyer |
| Vice President | **Ric Longmore*** |
| Secretary | Vacant |
| Treasurer | Margaret Ning |
| Newsletter Editor | Mandy Conway |
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| Committee Members | Jason Spurr |
| | Iris Carter |
| | Greg Flowers |
| | Peter Child |
| | Nicole Hansen |
| Student Representatives | Vacant |

* *Denotes Life Members*

Image: Mandy Conway

## In this issue

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**Correction:** The photo of a Woma Python which appeared on page 9 of the Feb -Mar 2015 issue of the Newsletter was taken by Mr Raymond Hoser and included in error. It has now been removed from the online edition of that newsletter. Ed.

## Diary date

The *bi-monthly* meetings of the Association are usually held on the **third Tuesday of the month at 7.30pm**. Our usual venue is:

***Belconnen Soccer Club*, Hawker**
**(cnr Belconnen Way & Springvale Drive)**

## Upcoming meeting

### Tuesday, 21 June 2016

**Dr Emma Sherratt,** Postdoctoral Researcher, Keogh Lab, ANU, is our guest speaker this month. Tantalisingly, the subject of her talk:
**Is it a snake? Is it a worm? NO it's a Caecilian!**
**A tale of the overlooked amphibians**

Caecilian amphibians are the third main group of amphibians, after frogs & toads, and salamanders & newts. Despite their widespread distribution across the world, they are all too often misunderstood, misidentified or simply ignored by people. This talk aims to provide (almost) everything we know about caecilians, from their unique sensory system to their strange reproductive habits (i.e. babies eating their mother's skin).

# ACTHA fieldtrip to Gosford

*A small but passionate group of members drove to Gosford to visit the Australian Reptile Park on Saturday 21 May and a Reptile Expo on Sunday 22 May '16. Mandy Conway & Margaret Ning begin this write-up.*

## The Australian Reptile Park (ARP)

Saturday the 21st saw everyone assemble early at the Australian Reptile Park entrance to wait for our 'VIP Behind the Scenes' Tour guides. The general consensus was that the $100 for adults and $75 for kids fee (which included the ARP's general admission of $32) was well worth it! Each area we visited was explained in great detail and the venomous snake area was probably our group's choice pick.

The Tour runs for 90 minutes and is fully escorted by experienced Animal Keepers. Our guides for the Tour were Kirsten, a spider specialist, and Zac, who handles, milks and cares for the venomous snakes.

### First stop: the snake venom rooms

There are over 250 snakes used in the ARP's anti-venom program, with around 40 snakes needed to produce one vial of antivenom. We were shown a vast array of stacked enclosures which contained many of the world's most poisonous snakes. Zac brought out a king brown, which at 2.5m he described as small! He also highlighted some of their nicknames "cyclone, stock whip, leroy, danger mouse, nervous ned, gigantic" all acquired by virtue of their demeanour.

To help put us in the picture a vial of fangs was shown to us; very interesting, particularly that the largest was from an exotic snake. "The gaboon viper, from Africa, is the world's heaviest viperid and has the longest fangs, up to 5cm." Zac said. The diamond-backed rattle snakes were impressive. We all noticed the very strong odour of eucalyptus oil in the room, which masked the odour of snake 'poo' very well.

Snakes are milked fortnightly to avoid them becoming too accustomed to the procedure whereby they stop yielding venom, Kirsten informed us. This venom is used by the Commonwealth Serum Laboratories. The ARP is the sole supplier of the venom required by

*Above: Lainey Ford is there to greet the rest of us!* *Image: Alison Gee*

the Laboratory in the production of antivenom for terrestrial snakes and funnel web spiders. Many of the processes were explained to us in great detail; of interest was that a woman receiving a bite would fare a worse long-term outcome, particularly in relation to her reproductive organs.

Zac said it was important for snake bite victims not to wash the bite so the venom could be analysed and identified. A poly venom compound would still work, but not as well. Interestingly, tiger snake sourced antivenom can be used for other species bites, apparently even with cobras. Even more importantly, the bite area should be well bandaged (people should review current first aide procedures) and the patient kept very still.

*Above: Zac introduces a king brown to the group.*
*Images: Mandy Conway*

*(ACTHA fieldtrip to Gosford, cont'd,...)*

### Second stop: the spider milking room

We moved through to the funnel-web spider milking room where Kirsten explained the process she goes through to extract venom from her charges. "They cannot be handled when milking and they cannot jump." she said. The Sydney funnel-web is the most venomous spider in Australia, with a quick acting venom that would potentially kill an elderly person in 76 mins, and a child in 13 mins. The males are 6 times more deadly than the female.

*Above: Sydney Funnel-Web Spider*
*Image: Aust. Reptile Park*

There is a huge education program for funnel-webs, with ARP presence at schools and shows. Staff also go out and collect the spiders because they have been unable to breed them in captivity.

In the case of funnel-web spider antivenom, rabbits are used in the process instead of horses. The funnel-web spider program at the ARP depends largely upon the provision of male specimens from the area within 150km of Sydney.

Needless to say there were several of us that were very keen to exit this room.

### Third stop: animals held for education purposes

A very large and heavy Burmese Python was a popular snake with visitors; it could potentially grow to 5-6 m.

*Image: Mandy Conway*

The **Solomon Island Skink**, *left*, otherwise known as the Monkey Tailed Skink, is the world's largest skink, growing to a length of 72cms. Nearly half of this length is their prehensile tail which helps them to move amongst the canopy. 80 per cent of their diet consists of fruit and vegies, but they also seem to like insects. They are one of the few species of reptile that functions within a family unit.

*Image: Mandy Conway*

There are a pair of **Argentinian Giant Tegu's**, Buddy, *above*, and Lopez: Jake's favourite encounter! They are purported to have an unusually high intelligence, with some clearly seeking human affection or forming a strong bond to their keeper.

The green Anaconda is the heaviest snake in the world, weighing up to 220kgs and reaching a length of 8m. Their size makes them sluggish on land so they spend a lot of time in the water. They will eat anything they can catch.

The Leopard Tortoise, from South Africa, is a vegetarian and the fourth largest species of tortoise in the world. The one we saw was only a 3yo, and very cute.

On the cuteness scale the alligator babies were tops though! There were two young, a 1yo and 2yo, which we were able to feed crickets to (with taped tongs to protect their teeth). Their scary 'barking' reminded us of Jurassic Park!

### Fourth stop: outside

#### Devil Ark Breeding Program

There are 30 individual Tasmanian Devil's at ARP, and a further 150-200 at Barrington Tops, NSW. Carrion feeders, not hunters, they are solitary except when feeding or breeding. 22 have now been released in Tasmania. With limited human exposure, the devil's retain their wild behavioural traits, maintaining their independence and relying on their own natural instincts, which prepares them for eventual release back in the wild in Tasmania.

*Image: Mandy Conway*

Currently classified as endangered, the Tasmanian Devil is under threat from Devil Face Tumour Disease. The ARP is part of a national breeding program to save the species from extinction through work undertaken at Devil Ark in the Barrington Tops. Set on 500 hectares, 25 hectares has been fenced off into 13 Managed Environmental Enclosures where

*(ACTHA fieldtrip to Gosford, cont'd,...)*

the Tasmanian-like vegetation and cool, wet and snowy conditions provides excellent breeding conditions.

Kirsten was still in full flight at 12.15 when we went to meet Hugo, a giant Galapagos tortoise. Fully grown at 65yo, he was quite happy to eat his Lucerne and lettuce while we admired him. He also likes sweet potato, carrot and apple. There are 2 males at the Park, like Dubbo Zoo, so no breeding is possible at this stage.

Our official tour finished at 12.45pm but our visit was far from over.

*Above: Kirsten takes us to meet Hugo*
*Image: Alison Gee*

We watched a tiger snake being milked during which the production of antivenom was explained. A simplified explanation of how the snake antivenoms are produced is that extremely small amounts of venom are injected into horses on a regular basis over a long period of time. The horses are not affected by the very small amounts except that this produces antibodies to counteract the foreign substance in their system. After some 9-10 months of this immunological 'conditioning' a small proportion of each horse's blood is removed and the plasma is extracted. This plasma contains the antibodies which will neutralise the snake venom when injected into a snake bite victim.

*Image: Alison Gee*

Moving on to the crocodile display we met **Elvis**, billed as the crankiest croc in Australia. With a full stadium of other people watching, we observed 3 handlers manoeuvring said croc who kept his mouth open in a threat response. He proceeded to wolf down a kangaroo leg and part of a chicken whilst the presenter explained much of a croc's vitals.

*Image: Mandy Conway*

Continuing to walk around we saw many other animal species before closing in on a group of very young koalas. Kirsten took us inside their pen for a very special close encounter which was also part of our VIP Tour.

Finally our group was asked to sit with some animals for a photo session. We had the choice of sitting with an alligator, a Burmese Python and a wombat, all three of which we cuddled.

*Above, from L to R: Dennis Dyer, Alison Gee, Lainey Ford, Margaret Ning, Mandy Conway, Jake McAuliffe, Sarah Hanrahan, Peter & Joe Roach, holding a Burmese Python.* *Image: Aust. Reptile Park*

**Central Coast Herpetological Society Reptile Expo, Gosford**

Margaret's first reptile expo: "Mandy and I were standing in the queue at 8.45am waiting to enter the Hall, along with approximately 100 others. Once the doors opened we found ourselves in a crush of people quickly moving along several long rows of enclosures which contained a plethora of snakes and geckos. The banks of mainly perspex enclosures were simple but very effective, exhibiting their contents well."

Albino and hypermelanistic carpet pythons were probably the most numerous snakes for sale, highlighting the current trend for reptiles

*(ACTHA fieldtrip to Gosford, cont'd,...)*

'with a difference'. Even some of the staple species like the Woma, jungle, bredli, Stimsons, black-headed and olive pythons had these traits at the expo.

Other herps available to purchase were pygmy blue-tongues, bearded dragons, shingle-backs, short and long-necked turtles and a gorgeous, colouful, array of geckos.

Animals were displayed on one side of the hall and enclosures and paraphernalia on the other. A couple of stallholders had an incredible range of books, covering many aspects of herpetology. VenomGear, a business located in the Hawkesbury Valley, had lots of care sheets on reptiles as well as information on animal care courses at the Richmond College, NSW. The Captive Animals Cert 3 is a standard course for working in the zoo industry. We came away with a very nice python poster for use at the next *Snakes Alive!*

Mandy comments: "One exhibitor had baby frilled-neck lizards, which was a little disconcerting for a Canberran. The thought of potential impulse buying of this species, or any other specialist species didn't sit well with me (even though these reptiles required evidence of a NSW Class 2 Licence). Many people appeared to be experienced herpers looking to expand their menageries. However many people were also new enthusiasts, seen buying a 'complete reptile package' for their new acquisition. There was an element of impulse buying in some cases, which was over-heard in several conversations on 'how to look after their new pet'. A father was heard saying "...we've bought you a gecko [son] and now we're going to buy your sister a turtle..." Books on caring for the new pet reptile were available but the situation was perhaps, I felt, not ideal."

**And now a word from Lainey, who had an awesome time up north!**

"When we went on our excursion to Gosford to the reptile park we went out the back to the venom room. We saw a rattle snake and heard him too. And I got to see an anaconda. I also LOVED at the reptile park the star tortoise and the king cobra and the GIANT TORTOISE Hugo and Elvis the cranky crocodile. Elvis was large and when he was eating a kangaroo leg there was a really big crunch and it sounded very painful if that was your leg or head it would hurt a lot and you would probably die.

*Above: Lainey with a Star Tortoise and below, with Brad Walker at the reptile expo.* *Images: Alison Gee*

AND the koala and when I was feeding the kangaroo he decided to hold my hand still because maybe I was wriggling it too much and he couldn't eat the food from my hand. Or maybe he loved me. And who could forget the gift store! I found so many things I liked at the gift store, I got a little Hugo and an anaconda and a bearded dragon and a new reptile book.

When we arrived at the expo I saw this man with a poster and I went to go buy the poster and I said to him "I like stimson pythons" and then he pulled one out of his mysterious bag and let me hold Eddie and after that he pulled out an even smaller one and said it was a hatchling. I couldn't believe how small it was! I got a book called Keeping and breeding Australian pythons and he wrote a chapter in it about coastal carpet pythons. After I bought it I went back for him to sign it for me and I got to take a picture with him. I saw lots of stimson pythons and I really want one so I've got so many reptile books and they are all about how to keep snakes and other reptiles. I had a very good time at the expo. In some parts I did not like, I didn't like getting squashed like a sardine but we had a bbq sausage and I went on the jumping castle. But the thing I really liked was asking questions about how to keep snakes and talking to Brad Walker about keeping snakes and all his 53 billion stimson pythons.

When we went home on Tuesday we went to the walkabout park and I got to feed this really naughty goat but when I turned to look at the llama the goat stole my packet of food out of my hand and ate it all! One of the rangers saw that I was in to snakes a lot because I had a tshirt with a snake on it so I got to hold a snake. It was a spotted python and its scientific name is antaresia something.

By LAINEY"

## The Australian & International Scene

***Many thanks to member Tony Lawson for continuing to send through interesting links!***

### How to build your dragon: Queensland scientist helps recreate beast from past

*By Drew Creighton, Brisbane Times, 15 May '16*

The beauty of the age we live in is the world's scientific elite can collaborate from the antipodes without leaving their own labs.

It also means research investigating how a 600-kilogram, six-metre long goanna would have fared when the earliest people arrived in Australia 60,000 years ago, is possible.

*Above: Dr Christofer Clemente worked with Canadian scientist Dr Taylor Dick to recreate an ancient goanna.*
*Image: University of the Sunshine coast*

Though not the main focus of the study, the imagery evoked by an epic battle of man versus beast was too much to ignore.

The study focused on how animals, as they became larger, coped with the stress from the extra weight and how they moved.

It was completed when University of the Sunshine Coast Animal Ecophysiology lecturer Christofer Clemente partnered with Canadian scientist Simon Fraser, and focused on lizards.

Dr Clemente said the study was essentially about what happens when animals get really big.

"Being big makes a lot of sense. You want to be big because when you're big you don't get eaten by things and you can eat a lot more things," Dr Clemente said.

"Being big is a great idea. Unfortunately when you are big you have to support all the extra mass, so now you've got problems getting around."

Dr Clemente said as lizards get bigger their posture and shape doesn't really change and in Australia and Asia the monitor family could range from eight grams to 50 kilograms.

"So you have all this change in size in the same group and they don't really change their shape, so the question that we tried to ask is what happens, how do they support the mass as they get bigger."

A muscle has two roles, it can propel you forward and it supports the mass the body holds.

The trouble with getting bigger is that the role of the muscle in moving forward is compromised by its dual role of supporting weight. "Lizards as they keep getting bigger, they won't get faster they will actually slow down at some point." That point is around two to six kilograms where they are the fastest - above that they start to get sluggish.

About 100,000 years ago in the pleistocene there was a giant lizard lumbering around with an average weight of 250 kilograms and a maximum of 600 kilograms.

It would have been in Australia about the same time as Indigenous Australians arrived on the continent, and there is some evidence suggesting there was an overlap.

"The question then was who would have won, who was the top predator? Was it the giant meat-eating lizard or was it the human?

"Humans would have almost certainly been able to outrun this large lizard and they probably would have seen it as this slow lumbering lizard that would have made a delicious meal."

With the hunting by early Australians and climate change, the giant lizard's demise came soon after the arrival of humans.

### Hybrid turtle possible first in Australia

*By Shannon Verhagen, Australian Geographic, 12 April '16*

The scientific community is abuzz after a suspected hybrid turtle was rescued off Queensland's coast.

The unusual turtle was rescued by concerned onlookers and taken to Reef HQ Aquarium's turtle hospital on the Great Barrier Reef after it

was seen lingering in the Townsville Port following entanglement in a crab pot.

Two fishing hooks lodged in its mouth were extracted before it was sent to James Cook University's veterinary school for X-rays to assess possible internal injuries.

With the all-clear, the turtle was returned to Reef HQ for some rest and rehabilitation – and its unusual appearance soon sparked interest in the scientific community.

*Above: The turtle appears to have traits of both the hawksbill and green turtle.*
*Image: Reef HQ Great Barrier Reef Aquarium.*

"This turtle is quite unique looking and it certainly isn't like any of the others we've had come into the turtle hospital over the 27-odd years that we've been open," said Hamish Tristram, a senior aquarist at Reef HQ.

Using an identification key to determine its species, the team at Reef HQ found several features that were not consistent with either a hawksbill or green turtle, instead Summer – as the turtle was affectionately named, after Hamish's daughter – appeared to have traits of both.

"The post-ocular scales that go behind the eyes – generally the green turtle has four and the hawksbill has three," explained Hamish. "This particular animal has three on one side and four on the other so it has an intermediate (trait) or has features of both."

Hamish says the animals' scutes (the large scales on the back of its shell) appear to overlap and the lower scutes have serrated edges, which are traits of the hawksbill, but its single-clawed flippers and paired rostral scales are features of the green turtle.

*Above, the large scale (called scutes) on Summer's shell appear to overlap, and the lower scutes have serrated edges; traits of the hawksbill turtle, such as Shelly, pictured below.*
*Images: Reef HQ Great Barrier Reef Aquarium.*

**First for Australian waters**

Summer's hybrid status has not yet been confirmed, but genetic testing and a laparoscopy will be undertaken to verify the turtle's heritage and determine whether or not it is a viable animal (able to breed).

"We're very excited about what that might reveal," said Hamish. "It is a very rare opportunity to have an animal like this to have those tests done."

If it is indeed a hybrid hawksbill-green turtle, Mark Harmann, an associate professor of marine biology at James Cook University, says it will be the first recorded in Australian waters. However, he added, "that's not to say it wouldn't have happened before."

Sofia, a green turtle, brought to Reef HQ in February 2016, shares some traits - such as single-clawed flippers - with Summer. Image: Reef HQ Great Barrier Reef Aquarium.

Mark said cases have been recorded in East Africa and Southern and Central America, and it comes down to people recognising the difference and reporting it.

Until the necessary testing has been conducted, Summer will be kept at the hospital and used for educational purposes, and with her recovery on track Hamish said she will then be released back to her natural environment.

"I'm glad to say that we're very confident of her going back to the wild," he said, adding, "She will certainly be a success story and if we can get a bit more knowledge from her whilst we've got her then it's a win-win for everyone."

## Earless dragon's bossy breeding behaviour proves a challenge for Canberra researchers

*By Craig Allen, ABC News, 17 April '16.*

*Above: The lizards were thought to be extinct in the Canberra region until a chance discovery.*
*Image: supplied by ACT Government.*

In the world of Grassland Earless Dragons, females are the boss, and often bully the males of the species into hiding.

Scientists had long thought the dragons had become extinct in the Canberra region, until their chance rediscovery in the Jerrabomberra Valley in the early 1990s.

With 99 per cent of their temperate grassland habitat destroyed by development and farming, researchers were worried about the future survival of the species, and began collecting wild animals for an experimental breeding program.

University of Canberra ecologist Lisa Doucette says numbers of the endangered reptiles in captivity are now steadily growing, offering a dramatically increased chance of long-term survival.

"We started with only 16 individuals collected from the wild, with the first collected in 2012, and we now have over 60 individuals in captivity and have released 30 back to the wild," Dr Doucette said.

But so little was known about the dragons, that conventional reptile breeding conditions were counterproductive.

With other species, breeders would house multiple females with a single male - but with earless dragons that proved disastrous.

"The females are very dominant, they're very aggressive, and they give the males a very hard time," Dr Doucette said.

"That has been part of the problem - some of the dominant females we can't even house them with other males or females for long periods, as they will bully them around.

"It makes the males quite tentative for mating... some of the males will just hide, and they won't even try."

**Grassland management crucial to dragons' survival**

And while researchers probe the breeding habitats of the enigmatic little lizards, ACT Government rangers are working to safeguard their grassland home.

They have learnt that simply locking up grassland paddocks was actually detrimental to the lizards' survival as their habitats gradually became choked by excessive growth.

Instead, they have had to introduce patchwork burning and selective grazing, to keep grass length at optimal levels.

Project ranger with ACT Parks and Conservation Maree Gilbert said the grasslands - and their lizard inhabitants - had evolved to certain conditions.

*Above: Ecologist Lisa Doucette says female dragons can bully the males into hiding.*
*Image supplied: ABC News*

*(The Australian & International Scene, cont'd,...)*

"These areas have very much evolved under grazing and burning regimes - and we have learnt many lessons [and] some areas need a lot of active management," Ms Gilbert said.

"It's not an area that you would just put a fence around and keep everybody out."

*Above: 30 dragons have been released into the wild since the breeding program began.*
*Image supplied: ABC News*

**Kangaroo grazing threatens species**

While the ACT Government has ruled out developing endangered grasslands, Ms Gilbert said now one of the biggest threats was kangaroos.

And according to her, it is one of the reasons rangers advocate an annual kangaroo cull in the ACT.

"Dragons, as with many other grassland species, are at risk of being impacted quite dramatically and basically losing their habitat as a result of kangaroo over-grazing," she said.

"So we need to be involved and make decisions and not just let it go.

"In the same way we can't let the grass grow perpetually, we also just can't let the kangaroos reproduce and graze perpetually - it needs to be a closely monitored and managed process."

Dr Doucette said the University of Canberra's captive breeding program would continue, as an insurance policy in case of environmental collapse.

"While they're doing well right now, we do want to keep a captive population going, just in case things go poor in the wild," she said.

**Lizards, too, may sleep in stages**

*By Erica Goode, The New York Times, 28 April '16*

Horses snooze in their stalls. Fish take their 40 winks floating in place. Dogs can doze anywhere, anytime. And even the lowly worm nods off now and then.

All animals, most scientists agree, engage in some form of sleep.

But the stages of sleep that characterize human slumber had until now been documented only in mammals and birds.

A team of researchers in Germany announced in a report published on Thursday, however, that they had found evidence of similar sleep stages in a lizard: specifically, the bearded dragon, or *Pogona vitticeps*, a reptile native to Australia and popular with pet owners.

Recordings from electrodes implanted in the lizards' brains showed patterns of electrical activity that resembled what is known as slow-wave sleep and another pattern resembling rapid eye movement, or REM, sleep, a stage of deep slumber associated with brain activity similar to that of waking.

Some researchers had argued that these stages were of relatively recent origin in evolutionary terms because they had not been found in more primitive animals like amphibians, fish, reptiles other than birds, and other creatures with backbones.

But the new finding, said Gilles Laurent, director of the department of neural systems at the Max Planck Institute for Brain Research and the principal author of the study, "increases the probability that sleep evolved in all these animals from a common ancestor."

He added that it also raised the possibility that staged sleep evolved even earlier and that some version of it might exist in animals like amphibians or fish. The report appeared in Thursday's issue of the journal Science.

Other researchers said the study could help scientists understand more about the purpose and mechanisms of sleep. But the finding, they added, is bound to generate more controversy about whether the resting state of primitive animals is really the same as sleep, and whether the brain activity seen in a lizard can be compared to that in mammals.

"Like any good science, it raises more questions than it answers," said Matthew Wilson, a professor of neuroscience at M.I.T. who has studied sleep and learning.

Daniel Margoliash, a professor of organismal biology and anatomy at the University of Chicago, said the study provided "extremely strong evidence that the patterns of structure of sleep that we've seen in a broad range of species is reflective of something that evolved very early in vertebrate evolution and is shared across many - perhaps all - vertebrates."

He added: "It forces us to think about the earliest evolution of these phenomenon. When did these aspects of sleep start, and what were they for?"

Dr Margoliash said he found especially intriguing the idea that in the lizard, sleep might play a role in the consolidation of learning and memory, as studies have suggested it does in mammals.

The research team studying the bearded dragon described its sleep patterns as a simpler, 'stripped down' version of mammalian sleep.

The entire sleep cycle was completed in about 80 seconds, and the proportion of REM stayed the same throughout. In contrast, human sleep cycles take an hour or more to complete, and the percentage of REM increases over the course of a night.

The scientists also found bursts of brain activity during the lizard's slow-wave sleep that they proposed were the equivalent of what are known as sharp-wave ripples in mammalian sleep patterns.

The ripples - which, in mammalian sleep, have been observed in a brain area called the hippocampus - have been associated in rats with the replaying of recent tasks while the animals were awake. And scientists have theorized that they represent the transfer of information from the hippocampus to other areas of the brain, like the cortex.

In the lizards, the sharp-wave ripples came from a different brain area called the dorsal ventricular ridge, not the reptilian equivalent of the hippocampus.

Dr Wilson said it was possible in an evolutionary sense that there might be "a deep, common mode of off-line processing that got elaborated and refined in these other vertebrate systems like mammals," expanding into the hippocampus.

But Gyorgy Buzsaki, a professor of neural sciences at New York University, said the study presented convincing evidence of an earlier evolutionary timeline for staged sleep: "It's a wonderful study," he said. But he questioned whether the bursts of activity seen by the researchers were sharp-wave ripples or simply part of the lizards' slow-wave sleep.

"This rhythmic pattern reminds me very much of the up-and-down shifts that are the hallmarks of slow-wave sleep," he said.

Dr Laurent said that his team had stumbled on the sleep stages by accident; their research was intended to look at cortical function in the lizards more generally.

"It was totally unanticipated," he said.

Asked if the presence of staged sleep in lizards meant that reptiles dreamed, Dr Laurent noted that dreaming was a subjective experience and that if consciousness were assumed to be required for it, the answer was probably no.

But if dreams are defined as "bits of 'neuronal playback' in certain brain areas during sleep," he said, "I'll bet that lizards dream."

### New Gecko species discovered

*By Australian Geograhic Staff Writer, 6 April '16*

*Above: Scientists in outback Queensland have discovered a new species of fat-tailed gecko.*
*Image: Angus Emmott*

The new gecko species, *Diplodactylus ameyi*, is found in outback Queensland and northern New South Wales. It is tan to medium-dark brown with pale spots; well camouflaged for the arid environments it inhabits. A specialised

termite predator, it is up to 85mm in length and has a distinctive, broadly rounded snout and shelters during the day in disused spider burrows.

The species was described in the journal *Zootaxa* on 25 March '16 by Queensland Museum herpetologist Patrick Couper and his colleague Paul Oliver from the Australian National University.

Patrick has described over 50 reptile species, including 24 geckos. "We have been working, on and off, on this particular species-group for the last five years," Patrick said. "We recognised seven species of fat-tailed geckos back in 2014 but, at the time, knew there was further work to do."

The gecko was named in honour of Dr Andrew Amey, who manages the Queensland Museum's reptile and amphibian collections, in recognition of his contributions to Australian herpetology.

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## Seen!

**... by an ACTHA member:**

"**So why did the Peron's Tree Frog's all choose here?**

Not too hot: it's an LED globe, barely gets warm. Not too dry: gets a daily 100% humidity dose when the shower is used; plus water is always available in the 'little white bowl' below for an overnight soak! Plus most important of all, Peron's, as humans, like 'a room with a view' ... for exactly the same reasons: we can see predators approaching!"

**... by Margaret Ning:**

"This frog was photographed today at Stonequarry Cemetery (just outside Taralga). It was 5-6 cm long and in a bunch of *Vinca* in a cool (?), dampish spot. It was a very long way from the nearest water."

**ACTHA expert says:**

"It is an Eastern Banjo frog *Limnodynastes dumerilii*. Note the enlarged glandular tissue on the outer side of thigh (tibial gland) distinctive of these frogs in our region. Usually, when dry, it shelters in a short burrow - maybe the spot of rain brought it out."

**... Penny and Phillip Williams write about their encounter, at a private property in the Brobenah Hills out of Leeton:**

"... Phil was walking along the bank of the dam and looked to one side to see a large snake... moving beside him. He was alerted by a 'hiss' sound. He gave it plenty of space and it headed away from the dam and into the trees."

**ACTHA expert:** "It's a King Brown Snake. The dark bands in the image are scrub shadows and deceptive."

In a hollow of a dead tree close to the dam was a large Lace Monitor. Could we detect a satisfied smile on its face? What had it found in that hollow?"

## Burrowing into ACTHA's past

*By Mandy Conway*

**Some of the more interesting inclusions in ACTHA's newsletters during 1991 follow.**

**March 1991**

- 'The herpetofauna of Gungahlin', Kruno Kukolic, Senior Wildlife Ecologist ACTP&CS, advertised speaker for Mtg
- 'One year after our Frog Workshop', by Michael Tyler

**April 1991**

- 'Notes on the geology of the Googong Hill area, ACTHA's Burra Project', by Gavin Young
- 'ACTHA Burra field trip, 'Reptiles in the Home Paddock project'

**May 1991**

- 'Living in sea water - why do turtles cry?', Dr Paul Cooper, advertised speaker for Mtg
- 'A snake, a thing of beauty and a joy of nature', newspaper article and write-up on *'Snakes Alive!*: an essential part of Australia's heritage', a public workshop held in April at UC as part of Heritage Week. Presented by Ric Shine.

**June 1991**

- 'Counting the calories: energetics and metabolism of tropical carnivorous lizards', Dr Bryan Green, CSIRO Div of Wildlife and Ecology, advertised speaker for Mtg

**July 1991**

- 'Everything you wanted to know about frogs but were too repulsed to ask!', Mike Tyler, advertised speaker for Mtg
- 'Proposed freeways linking Gungahlin with Civic: consequences of our current ignorance', call for ACTHA to get involved with the Vertebrate Atlas

**Aug 1991**

- 'The Rainforest or Southern Angle-headed Dragon', Alan Manning, advertised speaker for Mtg
- 'Did you know that in NSW frogs are not classified as fauna?', by Sally Stephens *(of interest: need a permit to keep Corroboree frogs)*

**Sept 1991**

- 'Reptile Research at Canberra Universities: turtles, water dragons and legless lizards', Fiona Beynon, Simon Conroy, Sandie Jones, advertised speakers for Mtg

**Nov 1991**

- 'Kinghorn Centennial Lecture', Dr Hal Cogger, advertised speaker for Mtg, notes by Gerry Hill, Ross Bennett and Will Osborne

**Dec 1991**

- 'Rediscovery of the Lined Earless Dragon, *Tympanocryptis lineata,* in the ACT', by Kruno Kukolic and Will Orborne

### ACTHA 2016 - 2017 Membership Renewal Now Due

### Membership now costs $20 for individuals/family

Membership year runs from 1 July 2016 to 30 June 2017. 'Herpetofauna' is an additional **$15** per annum.

Payment at our June meeting would be appreciated.

OR a direct Deposit to:

**ACTHA, BSB 112-908, A/c 486822880**

(*PLEASE! Don't forget to note your name so we can identify whose payment it is on our Bank Statement.)*

OR a cheque made out to ACTHA at PO Box 160, Jamison Centre, ACT 2614

Queries? please email margaretning1@gmail.com

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