



www.actha.org.au

ACTHA contact details  
PO Box 440  
Jamison ACT 2614  
E-mail: info@actha.org.au

ACTHA Inc. News

Dec '18 - Jan '19

Newsletter of the  
ACT Herpetological  
Association Inc.

## Christmas party for ACTHA members

from 6pm, Friday 14th December 2018

to be held at **Canberra Reptile Zoo**, O'Hanlon Place, Gold Creek, Nicholls.

A selection of food & drink will be available for all financial members.  
(Margaret will have her receipt book for *last minute membership subscriptions*, \$20pa)

RSVP to [margaretning1@gmail.com](mailto:margaretning1@gmail.com) by **Monday, 10 December** pls

*Of course we shall take the opportunity to discuss Snakes Alive! 2019; who can volunteer, who can provide animals and most importantly who can show off our beautiful animals to people attending the week-long event!*

### In this issue

**ACTHA AGM and Congratulations**

**Margaret Ning** who receives an OAM! page 2.

**A wildlife adventure in Sri Lanka,**

Damien Esquerré was our guest at the 16 October meeting, who provided a travelogue through his beautiful photography, starts on page 3.

**The Australian & International Scene**

Landmark work on frog extinction crisis wins at PM's science prizes, page 6.

Cane toads detected in Canberra, page 7.

Lizard research discovers native reptiles evolved to detect introduced predators, page 8.

Robot researchers look to lizard tails to pave way for search and rescue, off-road abilities, page 10.

### 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 is the Christmas Party!**

### Your Committee for 2018 - 2019

President	Jason Spurr
Vice President	<b>Ric Longmore*</b>
Secretary	Dennis Dyer
Treasurer	Margaret Ning
Newsletter Editor	Mandy Conway
Webmaster	Angus Kennedy
Public Officer	<b>John Wombey*</b>
Excursion Officer	
Conservation Officer	Joe McAuliffe
Committee Members	Scott Keogh
	Iris Carter
	Greg Flowers
	Roy Chamberlain
	Peter Child
Youth Representative	Liam Thornton
	* Denotes Life Members

# SNAKES ALIVE!

## MEET & GREET YOUR REPTILIAN NEIGHBOURS

Live displays, feeding and handling of snakes, lizards, frogs, turtles and crocodiles.

**14 - 20 January 2019** See page 11 for all the info!

# ACTHA 2018 Annual General Meeting

Scott Keogh gave an overview of the year that was, including the role that members play in maintaining ACTHA as an association held in high regard by many in local government and the community.

Of note, Margaret Ning who, along with a Treasurer's general day to day business, has spent many hours keeping the Association's books in order as well as ensuring the bi-monthly meetings always have a great guest speaker.

This year Margaret received an Order of Australia Medal to boot. Congratulations and well done Margaret!

Our Editor Mandy Conway was also thanked for tirelessly putting together the Association's bi-monthly Newsletters, which were always an interesting and informative read.

Incumbent Committee members were thanked for their work during the year before Scott declared all positions open.

And your new Committee for 2018-2019 is:

President	Jason Spurr
Vice President	<b>Ric Longmore*</b>
Secretary	Dennis Dyer
Treasurer	Margaret Ning
Newsletter Editor	Mandy Conway
Webmaster	Angus Kennedy
Public Officer	<b>John Wombey *</b>
Excursion Officer	Joe McAuliffe
Conservation Officer	Scott Keogh
Committee Members	Iris Carter
	Greg Flowers
	Roy Chamberlain
	Peter Child
Youth Representative	Liam Thornton
	<i>* Denotes Life Members</i>

## Below: Fitting recognition of our very own Margaret Ning!

Reproduced with thanks from 'News of Friends of Grasslands', July-August 2018

### Congratulations Margaret!

Congratulations to Margaret Ning on receiving an OAM in the Honours List on Monday 11 June:

**Margaret Ellen NING, ACT,**  
For service to conservation and the environment.

The Governor General's website (<https://www.gg.gov.au/australian-honours-and-awards/australian-honours-lists>)

says:

'Ms Margaret Ellen NING, ACT  
For service to conservation and the environment.  
Service includes:  
Friends of Grasslands:  
Member since 1996.  
Committee Member since 1997.  
ACT Herpetological Association (ACTHA):  
Treasurer, current.  
Member, since 1998.  
Membership Secretary, since 2000.  
Organiser, 'Snakes Alive!' exhibitions, current.  
Member, Australian Native Plants Society.  
Former Member, Canberra Ornithologist Group.'

This is lovely recognition of one of our most generous and dedicated FOG members and committee members, who has done so much in support of FOG and ACTHA and with people who are interested in and care about native grasslands in this region.

*Photos (2017 & 2018) clockwise from top left: Margaret about to photo-monitor grassland condition at part of Old Cooma Common for the Monaro Golden Daisy project; demonstrating new tools for weed management, at Mt Oak; adding to the species list at Nerriga (purple hat); on the FOG tree-hollow hunt (blue hat), with John Brannan*



## ACTHA meeting held Tuesday, 16 Oct 2018 Damien Esquerré: A wildlife adventure in Sri Lanka

*This summary by Margaret Ning and Ed. All images supplied by Damien Esquerré.*

Damien and Connie Esquerré's 15 day trip to Sri Lanka in April '18 was an amazing adventure which they are unlikely to forget any time soon. They travelled through five parks beginning with Runakanda Rainforest Reserve, followed by Knuckles Mountain Range, Nuwara Eliya, Yala National Park and Bundala National Park.

Their first task was to find like-minded guides; done. Their guides were two Sri Lankans who were naturalists themselves and knew exactly what Damien was looking for and, most importantly, where to find them. They visited five national parks, with habitat ranging from jungle to Savannah and then into wetland areas.

"He introduced us to animals I never knew existed," Margaret writes, "including 'semi slugs' with their weird mating procedure."

His non-herpetofauna images ranged from large mammals like elephants, buffalo, a giant squirrel, etc, to smaller insects such as butterflies, moths, grasshoppers and spiders. There were various bird species too.

Damien went on to take his audience through an incredibly comprehensive mix of herpetofauna, which included snakes, lizards of all sizes and turtles, which were photographed throughout their four national park pilgrimage.

Sri Lanka is a biodiversity hot spot, which we knew from Duminda's travelogue a few months ago, as it has some Indian fauna as well as its own endemic species.

One of Damien's top-five highlights was a 'tailed' Caecilian. Another highlight was an Indian Rock Python which was found after a long search, effectively energising the rest of the day.

Damien's camera prowess captured some amazing moments; a dragon fly sitting on a pit viper for example. Some shots may have been part of a sequence taken over an hour, or even longer. With leeches ever present some moments were more enjoyable than others.



Green vine snake, *Ahaetulla nasuta*



Russel's viper, *Daboia russelli*



(A wildlife adventure in Sri Lanka, cont'd...)

The logistics for a perfectionist photographer include taking pics in a raw format which then needs to be 'developed'. "I took 7000 images, 'developed' 500, and have included just 150 here in this travelogue." Damien said.

Some of Damien's ANU peer group attended the meeting as well, coming along to see, at long last, pictures from Damien's trip six months earlier. The ACTHA audience benefitted from their knowledge when some queries arose; indeed we benefitted from knowledgeable ACTHA members too, with Liam explaining that a slow Loris (a primate) has a venomous bite that is harmful to humans.

"Damien's presentation was spectacular in its imagery and accounts were delivered with insight and humour. A very descriptive narrative, enhanced by comments from his student friends." Margaret writes. "An occasional glitch in plans was to be expected; like a stolen mobile, using 'find my iPhone' to chase the thief for an hour, negotiating its return, but ultimately how that incident led to the sighting a beautiful leopard, an encounter which would not have otherwise occurred."



Leaf-nosed lizard, *Ceratophora tennentii*



Rhino-horn lizard, *Ceratophora stoddartii*



Star tortoise (*Geochelone elegans*)



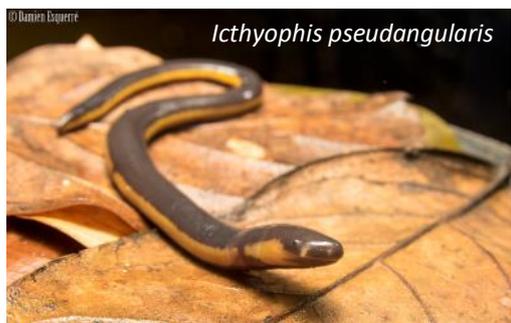
Bengal monitor, *Varanus bengalensis*



Kangaroo lizard, *Otocryptis wiegmanni*



© Damien Esquerre



*Icthyophis pseudangularis*



Rock python, *Python molurus*



Asian elephant, *Elephas maximus*



© Damien Esquerre



Sri Lankan leopard, *Panthera pardus*



*Lorix tardigradus*



Special thanks to my friends Udaya Chanaka and Assanga "Pussa"Mayadunna!

## The Australian & International Scene

### Landmark work on frog extinction crisis wins at PM's science prizes

By Adam Morton, *The Guardian*, 17 October 2018



*Above: The Southern Corroboree Frog: one of the critically endangered species that award-winning Lee Berger and colleagues are attempting to save.*

*Image: John Lane/Zoos Victoria.*

The sudden crash of several frog species in Australia and central America between the late 1970s and 1990s was a global mystery. Six species were lost in Queensland alone. The prevailing wisdom was environmental factors must be to blame for their extinction. Could it be rising pollution? Or ultraviolet radiation from the growing hole in the ozone layer?

It turned out it was neither. A group of Australian scientists showed environmental change was not responsible, and in the process upended conventional thinking about what can trigger species loss. It started as a theory from Rick Speare, a Townsville-based doctor and vet: that an infectious disease was spreading north through Queensland, wiping out frog species as it went. He invited Lee Berger, a veterinary science graduate from the University of Melbourne, to join the investigation as a PhD candidate.

The resulting doctoral thesis, based on sample collection in the field and analysis at the CSIRO's biosecurity centre in Geelong, told the story of a remarkable discovery – that frogs were being killed by a chytrid fungus that caused them to lose electrolytes through their skin until the sodium and potassium in their blood had dived to half the healthy level, triggering fatal heart attacks. In the process, her work established that animals would not

always adapt quickly in the face of infectious disease and that it could lead to extinction.

Scepticism in the scientific community was slow to shift – “People thought it was a crazy project. Most people thought it was not a PhD project,” Berger says – but over time the work she and her colleagues were doing helped trigger changes in quarantine protocols and wildlife management that place a greater emphasis on preventing the spread of disease.

Twenty years on, Berger's original research paper has been cited by other scientists more than 1,800 times. Her paradigm shifting work was honoured at Parliament House on Wednesday night, when she received the \$50,000 Frank Fenner Prize for life scientist of the year at the prime minister's prizes for science.

Berger says the award is important acknowledgement of ongoing work to save frog species. While significant strides have been made, at least six species – including the critically endangered southern corroboree frog and the Baw Baw frog – remain at risk.

“It's great to get recognition for the decades of work and to get attention on these issues,” Berger, who holds adjunct research fellowships at James Cook University and the University of Melbourne, says. “But it's still a massive problem. I'm hoping the more we know about it and talk about it the more resources we can get for it. Resources can be hard to come by.”

Berger is part of the One Health Research Group, currently at James Cook University but in the process of moving to the University of Melbourne. It is led by her husband, Lee Skerratt. The group has mapped the fungus across the country, identified species that are at high risk of being affected, studied disinfection and treatment, and worked on reintroduction programs.

It is aiming to use technology borrowed from aquaculture to build a better understanding of how resistance to the fungus could develop.

“Our hope is we can start looking at selective breeding because once it's there it can't be eradicated,” Berger says. “It's always going to kill them.”

**The top gong, the \$250,000 prime minister's prize for science, was awarded to Australian National University emeritus professor Kurt Lambeck** for work revealing how the Earth changes shape, second-by-second and over millennia, in ways that affect sea levels, continental movements and the orbit of satellites. His work has shaped space mission planning and informed the development of pinpoint GPS systems, including navigation tools used in smartphones.

## Two cane toads detected in Canberra

By Han Nguyen, *The Canberra Times*, 16 Oct 2018



The ACT government is asking Canberrans to be on the lookout after two cane toads were found in the capital.

The adult toads were found in Rosenthal Street, Campbell.

It's understood the animals were found in September by a local resident who caught and then froze them.

This is the second sighting of cane toads in the ACT in the last 12 months. The first incident was at a caravan park in O'Connor. A woman who had travelled down from the Northern Territory spotted the toad coming out of her caravan.

Investigations are ongoing on how the newest sighting of toads came to Canberra.

Director of ACT Parks and Conservation Daniel Iglesias said the incident was believed to be contained and that the toads were inadvertently transported to Canberra via vehicle.

"A local resident found the cane toads and reported them to us," Mr Iglesias said.

"They have since been positively identified by the ACT government biosecurity vet."

Mr Iglesias said it was highly unlikely a cane toad population would establish this far south due to Canberra's cold winter climate, but they could survive the warmer months.

"They pose a threat to native and domestic animals so we are treating it seriously and working with the community to find any other cane toads if there are any," he said.

Rangers have visited residences near where the cane toads were found and the surrounding area will be searched. A letterbox drop is also being undertaken in the vicinity of where the cane toads were found.

Pest officer Ollie Orgill said the toads were found in the backyard of a Campbell residents property several days apart.

"She noticed something unusual, something she hadn't seen before and she was familiar with the cane toad so she was able to work out pretty quickly that this was an issue, this was something that shouldn't be here," Mr Orgill said.

Cane toads are toxic at all stages of their life cycle from eggs to tadpoles to adults. Their toxin is strong enough to kill most native animals that prey on frogs or toads and their eggs, such as birds, other frogs, reptiles and mammals, including some of our threatened species.

Mr Iglesias urged pet owners in Campbell to be particularly vigilant in the coming weeks.

Cane toads are large with dry warty skin. They have a bony head and over their eyes are bony ridges that meet above the nose. They can be grey, yellowish, olive-brown or reddish-brown and their bellies are pale with dark mottling. Average sized adults are 10-15 centimetres long.

Mr Iglesias said people travelling from Queensland, Northern Territory and northern NSW should be vigilant they are not giving a cane toad a lift in their car, trailer or plant material.

"We all have a shared responsibility when it comes to biosecurity and keeping our bush capital safe from threats," he said.

"A big thank you goes out to the resident who was vigilant enough to report the cane toads."

### What if you think you see one?

**Do not kill it** as it is most likely a native frog  
**Exercise caution** and take a close-up photograph

**Wearing rubber gloves and eye protection** put into a well-ventilated container with 1cm of water

Email [EPSDInvasiveAnimals@act.gov.au](mailto:EPSDInvasiveAnimals@act.gov.au) or phone Access Canberra on 13 22 81.

## Lizard research discovers native reptiles evolved to detect introduced predators

By Shannon Corvo and Gary-Jon Lysaght,  
ABC North and West, 3 November 2018



Above: Prof Dale Nimmo says native skinks and geckos can detect danger, but not individual predators. Image: ABC Rural Daniel Fitzgerald

### Scientists at Charles Sturt University have discovered that native reptiles are smarter than previously thought.

The research published in the Royal Society Open Science journal revealed native lizards can identify foxes and wild cats as predators, even though they have not evolved alongside them.

Ecologist Dale Nimmo said the findings proved that native reptiles could survive the onslaught of destructive predators.

"We exposed a native skink and a gecko to the scents of the cats and the foxes and a bunch of native species including the spot-tailed quoll and the brown snake," Professor Nimmo said.

"What we found was that these native reptiles were able to associate the scent of the cat and the fox with a risk.

"They avoided spaces where their scents had been applied in the same way that they would if it was a scent of a dingo or a quoll or a brown snake."

### How are they so smart?

Professor Nimmo said there are three reasons why native reptiles are intelligent enough to know foxes and cats are predators.

"The first is that there's this idea that when a native animal evolves with a suite of native predators, they need to adapt a flexible approach to detecting predators," he said.

"The second possibility is that it's been 150 years since foxes and cats were introduced to the region and that's enough time for quite a number of generations."

Although some species take hundreds of years to evolve, Professor Nimmo said the skink could have evolved in far less time than that.

"The third possibility is that these animals are actually learning within the time frame of their life that the scent of a fox is an indicator of a fox being around," he said.

Although Professor Nimmo said skinks and geckos are able to detect when predators are nearby, they sometimes evade danger at the risk of not getting a meal.

"What these animals are doing is going up to a potential food source, having a look at it, checking out the environment, sensing a predator and then not eating the food," he said.

"Food is, obviously, one of the major resources animals need to survive and produce offspring."

### What next?

Professor Nimmo said future research will aim to determine how native reptiles have been able to adapt.

"There are the three possibilities but it's very hard to differentiate between them, but that's what we might be trying to do in future studies," he said.

"We don't know if they learn how to avoid predators or if it is a behaviour inherited through their genes.

"[But] we do know that they recognise the scents of foxes and feral cats as a threat and respond.

"This gives some hope for some native species as we seek to predict or prevent the impacts of invasive predators on Australian wildlife."

## Robot researchers look to lizard tails to pave way for search-and-rescue, off-road abilities

By Kylie Bartholomew and Cathy Border,  
ABC Sunshine Coast, 6 November 2018



Above: During the research, the pair would at times mimic a predator to motivate the lizards to run.  
Image: supplied, Dr Christofer Clemente.

**Understanding the way in which lizards use their tails could hold the key to building off-road robots for search and rescue, agricultural use, or even space missions.**

So say Dr Christofer Clemente from the University of the Sunshine Coast and Nicholas Wu from the University of Queensland.

The pair's latest research, published in the *Journal of the Royal Society Interface*, examined how lizards use their tails to transition from four legs to two legs while running.

Below: Dr Christopher Clemente wants to develop robots with more obstacle negotiating ability.  
Image: ABC Sunshine Coast: Kylie Bartholomew.



Dr Clemente said that understanding would enable them to design a 'tailed robot' which could operate on four wheels, but could also raise onto its rear wheels with the help of a tail, much like a lizard raises onto its back legs to run.

"A lot of wheeled robots aren't very manoeuvrable. It's one of the few advantages that legged robots have," he said.

"[They] can get over obstacles easily but aren't very efficient [so] if we could get a wheeled robot and allow it to negotiate obstacles then what we've made is a compromise between the two."

Dr Clemente said the greater a robot's ability to negotiate obstacles, either on four or two wheels, the more places it could reach.

"If you go into an area where there's a lot of rubble around and you want to look for survivors, you want to send in little robots that are capable of getting around quickly and getting over obstacles, because time is of the essence," he said.

If successful, the technology could be used to create robots to travel across uneven, dangerous, or uninhabitable terrain after natural disasters and could even have use within the agricultural industry.

"If they can take a remote robot that can go out and take environmental samples like soil, air, or water samples, it would need dedicated paths if it was a completely wheeled robot," Dr Clemente said.

"But if we give it a little more obstacle negotiating ability then they can reach more places."

### Recording lizard biomechanics and kinetics

According to Dr Clemente, lizards are "extraordinary" creatures because of their ability to interchange between walking from four legs to two — the same movement they want robots to do.

Dr Clemente and Mr Wu studied eight species of lizards — both in their natural environment and in the laboratory — and recorded their biomechanics (the way they moved), as well as their kinetics (the force at which they push onto the ground).

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

For three years, they used video and photography to observe and record hundreds of lizards from across Australia to compare how the reptiles moved quadrupedally (with four legs) and bipedally (with two legs).

"What we found is that lizards have a few tricks up their sleeves," Dr Clemente said.

"They sometimes do things like flick up their tail or move their arms back and that causes them to rise up on their back legs and start running on their back two legs."

He said that discovery was "neat" because it was previously thought that lizards running on two legs was an accident just because they were going so fast.

"Like the way that if you're riding a motorcycle or a push bike and you accelerate really quickly, you go up on the back wheel or pop a wheelie," Dr Clemente explained.

"But what we showed was that some lizards are actually trying to run on their back legs."

#### **Robots learning to cross uneven terrain**

He said that gave researchers an understanding they had not had before which showed the lizards were probably moving from four to two legs to get over obstacles which also put the centre of mass up higher.

Mr Wu, a PhD candidate at UQ, said they also discovered a distinct difference in how lizards used their tails, depending on their running style.

"When they're running on four legs they don't use their tails that much in terms of navigation; they tend to use it to turn quickly around corners," he said.

"But during bipedal running, it seems that they're using their tails more towards stabilisation."



*Above: The study involved hundreds of lizards across eight species all over Australia, in their natural habitat and in the laboratory.*

*Image: supplied, David Paul.*

Mr Wu said that understanding would aid robotic design because robots needed to compute how to cross uneven terrain.

"On flat terrain, it's quite an easy process to calculate where to put your foot down but on uneven terrain, there's a lot of variables and it's very complex for robots to try to compute," he said.

"Most of the time these robots will fail in the field."

Getting a lizard to transition between quadrupedal and bipedal running on cue is tricky, so with a \$380,000 Australian Research Council Discovery fellowship, the researchers built a four-wheeled robot, complete with a tail.

"We built it with the idea that it would drive along on four wheels, which is the same as running along on four legs, but we could use the tail in the same way that the lizards were using their tails to flick [themselves] up," Dr Clemente said.



#### **From an member...**

How clear can a bearded dragon make it that he wants to be fed? Comes up to you, bites at the empty feeding tongs that happen to be in your hand.

Then goes and sits in his feeding bowl facing you with his mouth open. They don't need to bark! Happened this afternoon.

Janet

# SNAKES ALIVE!

## MEET & GREET YOUR REPTILIAN NEIGHBOURS

Live displays, feeding and handling of snakes, lizards, frogs, turtles and crocodiles.



0427 788 304  
[www.actha.org.au](http://www.actha.org.au)



10am - 4pm



14 - 20 January 2019



Feeding Times  
11am, 1pm & 2pm



Crosbie Morrison Building  
Australian National  
Botanic Gardens



Adults \$6  
Children \$4  
Concession \$5



[www.actha.org.au/tickets](http://www.actha.org.au/tickets)



AIR CONDITIONED  
COMFORT!!



Partners

