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ODATRIA

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Expo Review

Odatria

Newsletter of the Victorian Herpetological Society No. 3, September 2009

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Green Tree Python *Morelia viridis* by
Andrew Owen

EDITORIAL

by Brian Barnett

When I took on the position of President last year, it was done on a 'one off term' to see if I could inject some direction into the Society that I thought it was lacking. My role was to primarily be a behind the scenes motivator and offer directional advice. As this will most likely be my last opportunity to comment in Odatria, I'll take the opportunity to comment on observations made on a couple of issues.

Societies such as ours have different requirements compared to the period through the 80's and 90's. In this infancy period, we were limited to the accessibility of expert knowledge and general direction. There was a need for a society and all of it's trimmings such as the journal 'Monitor' etc.

Times have changed, for better or for worse, communication is now totally different. We have the internet and Foxtel and some excellent publications. Herpetologists are not so reliant on what a society has to offer. Those that do not join a society should not be looked upon as unsupportive or outsiders as they possibly do not have the interest in what a society can offer. With the dwindling numbers it does make it more difficult to offer a package that will satisfy many of its members.

I could not believe how 'Monitor' was being held onto where there was no justification in producing a magazine that was costing more than the subs received each year. In my mind, this was absolute stupidity. It's replacement 'Odatria' is an on line publication which services the members in a similar way but with no major costs involved.

From day one, it has always been difficult to recruit a good committee. Appreciation has to be given to anyone that stands but the work load is required to be shared by all. Being on a committee does not mean that you have the expertise in any particular field, even though you may, but in most cases you have the position simply because no one else was prepared to take it. It is obvious that the feeling of power or importance does raise it's head but it's very necessary to keep ones feet on the ground and head out of the clouds.

In my earlier terms (80's and 90's), the meetings were held on a Wednesday evening in Parkville (just near Melbourne Zoo). No one seemed to have any problem with this but for whatever reason most things were changed more for the sake of change than for any valid reason. We now find ourselves with Friday night meetings at Monash Clayton which does not

appear to be the most suited night or venue. With the smaller crowds it is more difficult to choose a guest speaker that will attract an acceptable number. The attitude of members and the general herp community has waned to a degree where it can be embarrassing for a speaker to do a presentation to a very ordinary number. Whereas members in the past would not miss a meeting, members these days generally attend if they have nothing else on. When we brought out Greg Maxwell from the U.S. for a guest speaking spot after the 2008 Expo, I was open mouthed amazed at the number of people that did not attend. Thousands of private dollars were put into this project and the majority of herps stayed away in droves. The attitude these days is totally different.

The Society still has a purpose for a much reduced number. The committee should approach it at this level and offer only what they can provide.

The Expo is another issue. At this stage there will not be a 2010 Expo but this could change as there was a split decision on the vote and another committee may be in the position to turn this around. The main aim of the Expo is to promote the hobby in general and recruit members for the VHS. This has not been achieved and although we have had successful Expos financially, this is not the priority aim. Until we can work out how to reach those new keepers, potential herps and those that are unaware of the VHS, I have suggested that we put the Expo on hold until we come up with some ideas. None of the present committee want to be directly involved in the running of an expo so the situation of obtaining the services of a competent coordinator is paramount.

Yours in herp,

Brian Barnett
VHS President 2009



Photo circa 1959

50+ Years Service to Herping

The Expo Experience



February 28th, 2009

A day at the 2009 VHS Reptile

and Amphibian Expo

by Andrew Owen



It was finally here! The day so many herp lovers now look forward to. What started as a modest but successful day in 2006, now takes us to the Melbourne Showgrounds for the second year in a row. For this, the third VHS Reptile and Amphibian Expo, we are in a slightly bigger hall, the Nicholas Pavilion.



Outside the Nicholas Pavilion

The Expo Co-Ordinator, Simon Watharow, and the VHS Committee - Brian Barnett, Kevin Welsh, Phil Elliott, Mike Alexander and Peter Comber have worked tirelessly for over six months to bring this event together for us all. Now they get to stand back and experience what will hopefully be an enjoyable day for all those who attend, from the most experienced keepers to families and children just discovering reptiles and amphibians as pets. Ironically, almost all of the expo organisers have their own stalls at the expo, so they miss most of the day having to man their private stalls!

Doors open at 9:00am and the crowds come quick! As with previous years, the first few hours are unofficially "animal hours". If you're coming to the expo to purchase a new addition to your herp collection the race is on for the pick of the clutches! The VHS' own Phil Elliott's hatchling Frill Neck Lizards are all sold by 9:04 precisely! Any other unique looking pythons also seem to go fast. One of Kevin Welsh's Jungle Carpet Pythons has more striping than the others and is sold in the first hour. I'm sure there is many more examples like this, but they are sold before I get the chance to see them!



A busy morning for Pails For Scales!

Then it's time to get around to all the stalls and really take in and enjoy the expo, and hopefully learn a little too. There are plenty of product stalls which give everyone the chance to ask questions directly to the supplier, including Zoo Med, Reptile One, Vetafarm and many more.

The VHS stall is well represented by Anthony and Kate Bettink who do a great job signing up new members and selling *Monitor* Magazines.

Gavin Bedford's Reptile One stall was a stand out, displaying some animals many Victorians wouldn't have seen before including Pig Nose Turtles, Black Palmed Monitors and the Arafura File Snake.



Black Palmed Monitor

Black Snake Productions has a very large display and they entertain the crowd with several educational shows. Their Fresh and Salt water Crocodiles on display gain lots of attention and a large crowd gathers for the chance to see them even closer during a presentation. We are lucky enough this year to have venomous animals on display - this is a first for the Victorian Reptile Expo. Mike and Kerrie Alexander should be commended on the professional and safe way they display some of Australia's most venomous snakes. We are able to see up close Tiger Snakes (Chappel Island and Eastern forms), Copperheads, Red Bellied Black Snakes, Western Brown Snakes and Eastern Brown Snakes.

Another popular display is Snake Ranch - they don't disappoint! They seem to enjoy tempting us with animals that we either can't yet legally keep in Victoria or animals that are financially out of reach for most of us! It's great to see Rough Scaled Pythons and Pygmy Pythons in the flesh, as well as great morphs including Albino Olive Pythons and Albino Blue Tongue Lizards. We hope in the future Snake Ranch and other interstate businesses can come to our expo and be allowed by law to sell their animals on the day. We thank Snake Ranch for travelling so far to display some of their stunning animals and hope they gain lots of sales from attending the expo.



Chappel Island Tiger Snake displayed by Black Snake Productions



Rough Scaled Python displayed by Snake Ranch



Copperhead displayed by Black Snake Productions



Pygmy Python hatchling displayed by Snake Ranch



Western Brown Snake displayed by Black Snake Productions



Albino Olive Python displayed by Snake Ranch

At midday our major sponsor Zoo Med presents a talk detailing products that are soon to be more readily available in Australia. They explain the philosophy of the company is to always put the health and well being of animals first, even if it results in a more costly production process. An example is how their wood chipped bedding is spun to remove excess dust and dirt to create the cleanest bedding possible. It's great to hear how their quality products are made and that reptile health is their top priority.



Zoo Med presentation



Zoo Med presentation

With so many stalls it seems that every time I do a lap of the pavilion I find something else that grabs my attention! Reptiles Australia and Scales & Tails magazines, Mike Swan Herp Books, brilliant photography by Eye For Nature, information from the Department of Sustainability and Environment and the Herp Shop to name a few. And of course, the animals-



Angle Headed Dragon



Green Tree Python displayed by Pails For Scales



Juvenile Spencers Monitor



Smooth Knob Tail Gecko



Black Headed Pythons bred by Neil Sonnemann



Northern Blue Tongue Lizard

Slitherin are back to support our expo again. It's a great opportunity to see their fantastic rack systems and cages and ask about all their products. We thank Jason for his support of our expo and appreciate that he comes down from NSW with so many cages.



Slitherin's enclosures on display



Slitherin hatchling rack

A large crowd gathers for the VHS auction with some sought after items up for grabs. The auctions, regularly held at VHS meetings, are known for their great bargains and today's doesn't disappoint - a pair of Centralian Carpet Pythons for \$310, what a great deal! A Black-headed Python, Growling Grass Frogs and a bunch of Green Tree Frogs also gain a lot of attention. Some rare herp books and a variety of herp products mean everyone has the opportunity to go home with a bargain.



VHS auction



VHS auction

Most people keen on making a purchase at the expo came early, so after the auction the day begins to wind up. As another successful expo comes to an end we head home and get to see a wrap up of the day on National Nine News - what great advertising!

On the whole, I think anyone who is fascinated by reptiles and amphibians, would've enjoyed the 2009 expo. Thanks to everyone who attended and supported the expo. The VHS looks forward to the challenge of organising a successful expo next year and welcomes any feedback and constructive suggestions for future events.



"Jerry" the Lace Monitor



It's great to see kids having fun at the expo!
Photo supplied by VHS member

A Beginner's Guide to ... **Tree Frogs**



By Jennifer Lewin



HOUSING

Frogs are excellent escape artists and need a secure enclosure. An adventurous frog will find any small opening in its enclosure and generally take the opportunity to escape during night times. Glass aquaria work well as frog enclosures, provided they have a tight fitting lid which allows air flow into the tank - glass lids are not appropriate as they limit air flow. Fly screen tops are ideal and the materials to make them are readily available from local hardware shops.

Frogs must have access to clean water at all times, however, tree frogs spend most of their time out of the water. Frogs can drown so it is essential that they can climb out of the water when they want to. Provide areas of land and lots of branches above the water for the frogs to climb onto. Ensure that areas of land do not contain small rocks or pebbles etc. that can accidentally adhere to any food items the frogs may ingest (eat).



White-Lipped Tree Frog *Litoria infrafrenata*

HEATING

Many tree frogs, such as the Green Tree Frog, come from tropical habitats and therefore need to be kept warm. Heat sources such as an aquarium heater submerged in water will help keep the enclosure warm. Heat lamps can also be placed above the top of the enclosure and these allow the frogs to bask if they are too cold. Ideal temperature of the enclosure will depend on the species of frog you are keeping. Ensure that the frogs cannot touch heaters or hot globes as these can burn their sensitive skin.



Green Tree Frog *Litoria caerulea*

LIGHTING

To ensure good health, strong bones and good colouration a UV light should be positioned above the enclosure. These tubes fit into a regular aquarium light case, however, the actual tube or globe is not the same as you would have over an aquarium. Read the packet and ensure that the tube emits high spectrum UV (as suitable for reptiles). Remember to also provide areas of shade within the enclosure.

FEEDING

Frogs need regular access to live food such as insects. They should be feed every couple of days. Many pet shops now stock live insects including crickets, meal worms, flies and woodies. Several websites are now offering home deliveries of live insects. Depending on where you live, and the season, it may also be possible to catch food such as moths and crickets from your garden. The frogs will pounce on live food scattered into their enclosure and can also be trained to hand feed. Make sure you remove any dead or drowned insects from the enclosure as these will foul the water.



Green and Golden Bell Frog *Litoria aurea* about to feed on a cricket

HANDLING

All frogs have highly sensitive skin. Frogs breathe partly through their skin and as a result it must stay moist. It is not advisable to regularly handle frogs, however, if you need to pick up your pets ensure that your hands are wet and free of substances including sweat, chemicals and soap.



Green Tree Frog *Litoria caerulea* being handled with moist hands



Brown Tree Frog *Litoria ewingi* 'green form' photographed in Cobden, Victoria

BREEDING

Introducing new frogs, providing lots of fresh water and simulating rain may induce breeding behaviour in the frogs. Male tree frogs will croak to attract females, then climb onto the back of the female, grabbing her tightly. This position is termed amplexus and can last several hours. The female releases hundreds of eggs into the water and simultaneously the male releases his sperm over the eggs. Fertilised eggs will turn into small tadpoles within several days. The tadpoles need to be raised in a large volume of fresh, warm water and fed a vegetarian diet of endive, lettuce, algae, aquarium plants etc. The tadpoles may take from weeks to several months, and occasionally even years, to undergo metamorphosis into frogs which will emerge from the water and lose their tails. Make sure the froglets can climb out of the water as they develop their limbs, otherwise they will drown.



Green and Golden Bell Frog *Litoria aurea* in amplexus

Wildlife Possession and Trade Advisory Committee



WPTAC

By Peter Comber



The Wildlife Possession and Trade Advisory Committee most recently met on 14 May, 2009. Some good news was received for the reptile and amphibian keepers of Victoria.

Firstly, as a result of a query brought up at Meeting #50 (21 August, 2008) the legal advice provided to WAGLS was that the use of microchips to permanently mark or identify captive reptiles is not in any way a contravention of the Wildlife Regulations 2002 or any permit conditions – interesting to note though, is that applying bands or rings to captive birds is (technically) illegal! An exemption to the regulations will be introduced to clarify this issue. Microchips need to be implanted by a qualified veterinarian or by people who have completed and attained some level of qualification in the field of microchip application through one of several Recognised Training Organisations. There are three widely recognised and commonly used microchips in Australia and the Domestic (Feral and Nuisance) Animals Act 1994 dictates that microchips used must be one of either Destron, AVID

(American Veterinary Identification Devices) or Trovan manufacture. There are several record keeping agencies in Australia and anyone choosing to microchip their captive wildlife is encouraged to register with at least one of these (by law, each is required to check with the other 4 if details supplied to them are not in their own database). One obvious outcome of all this is that the Lost Reptiles Home will soon be provided with a reader capable of reading these 3 transponder types, and should an animal turn up with an electronic I.D. then chances of re-uniting stray reptile and rightful owner are greatly improved.

The second bit of good news received was regarding changes to the listed wildlife in Victoria's 'schedules'. The much anticipated other bit of legal advice provided to WAGLS was that a Regulatory Impact Statement was not required to make 'species additions or deletions' or changes to species placement within the schedules, what this means practically is that a major broad public consultation and economic analysis of the changes does not have to be done. This is a very long and drawn out process. A number of submissions were received by WAGLS encompassing birds, mammals, amphibians and reptiles and I am pleased to say that all of the reptile and amphibian submissions that 'made it to the table' from private individuals, and for review by the committee were approved (passed) at all levels. The last step being ministerial approval. The changes will take effect from 1 October and people will be able to trade in the new species following their licence renewal. Please see the next page for a table outlining the Schedule changes.

The recent returns period had a compliance level of around 80% (as at 14-05), improving all the time but still not at the 'aimed for' 100%.



Pygmy Python *Antaresia perthensis* hatchling Photo by Peter Comber

Insets Rough-scaled Python *Morelia carinata* and Centralian Knob-tailed Gecko *Nephurus amya* Photos by Jo Comber

Summary of the amendments to the Wildlife Regulations 2002

On 1 October 2009, new Regulations will come into effect that will make it easier and less expensive to keep some species of wildlife in Victoria. Under the new arrangements, a broader range of wildlife may be kept and traded by private and commercial wildlife licence holders. The regulations will also increase the number of species that may be kept without the need for a licence and reduce the cost of a licence for some keepers of wildlife.

TURTLE CARAPACE (SHELL) LENGTH

From 1 October 2009, the new regulations will allow the trade of turtles/tortoises with a shell length of less than 10cm. There are no changes to the species of turtle/tortoise which may be kept and traded.

NEW SPECIES AVAILABLE FOR COMMERCIAL TRADE

Common Name	Scientific Name	Previous Schedule	New Schedule	Type of wildlife licence required	
				Private	Commercial
Southern Angle-headed Dragon	<i>Hypsilurus spinipes</i>	Schedule 4	Schedule 3	Basic	Type 1 or 2

NEW SPECIES AVAILABLE FOR POSSESSION AND TRADE

Common Name	Scientific Name	Previous Schedule	New Schedule	Type of wildlife licence required	
				Private	Commercial
Arafura File Snake	<i>Acrochordus arafurae</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Boyd's Forest Dragon	<i>Hypsilurus boydii</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Centralian Knob-tailed Gecko	<i>Nephurus amya</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Downs Bearded Dragon	<i>Pogona henrylawsoni</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Golden-tailed Gecko	<i>Strophurus taenicauda</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Prickly Knob-tailed Gecko	<i>Nephurus asper</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Pygmy Python	<i>Antaresia perthensis</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Rough-scaled Python	<i>Morelia carinata</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Rough-throated Leaf-tail Gecko	<i>Saltuarius salebrosus</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
No Common Name	<i>Saltuarius swaini</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Magnificent Tree Frog	<i>Litoria splendida</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Black-striped Wallaby	<i>Macropus dorsalis</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Feathertail Glider	<i>Acrobates pygmaeus</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Long-nosed Potoroo	<i>Potorous tridactylus</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Plains Rat	<i>Pseudomys australis</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Quokka	<i>Setonix brachyurus</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Southern Brown Bandicoot	<i>Isodon obesulus</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Spinifex Hopping-mouse	<i>Notomys alexis</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted
Squirrel Glider	<i>Petaurus norfolcensis</i>	Not listed	Schedule 4 (Part B)	Advanced	Not permitted

SPECIES THAT NO LONGER REQUIRE A WILDLIFE LICENCE

Common Name	Scientific Name	Previous Schedule	New Schedule	Type of wildlife licence required	
				Private	Commercial
Common Bronzewing	<i>Phaps chalcoptera</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Crested Pigeon	<i>Ocyphaps lophotes</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Emerald Dove	<i>Chalcophaps indica</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Hooded Parrot	<i>Psephotus dissimilis</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Long-billed Corella	<i>Cacatua tenuirostris</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Musk Lorikeet	<i>Glossopsitta concinna</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Scaly-breasted Lorikeet	<i>Trichoglossus chlorolepidotus</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Stubble Quail	<i>Coturnix pectoralis</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2
Twenty-eight Parrot	<i>Barnardius zonarius semitorquatus</i>	Schedule 3	Schedule 5 (Part B)	No licence required	Type 1 or 2

CLARIFICATION OF PERMITTED SPECIES

Common Name	New listing	Schedule	Comment	Type of wildlife licence required	
				Private	Commercial
Red-tailed Black-Cockatoo	<i>Calyptorhynchus banksii</i> (all taxa except <i>graptogyne</i>)	Schedule 4 (Part A)	All kinds of Red-tailed Black Cockatoo except the South-eastern sub-species may be kept and traded.	Advanced	Type 2 only
Australian Eclectus Parrot	<i>Eclectus roratus macgillivrayi</i>	Schedule 3	All non-indigenous sub-species have been removed from the Schedules.	Basic	Type 1 or 2
Red-sided Eclectus Parrot	<i>Eclectus roratus polychloros</i>	Schedule 5 (Part B)	All non-indigenous sub-species have been removed from the Schedules.	No licence required	Type 1 or 2

VHS MEETING REVIEW

May 8th, 2009

John Cann

Back to Monash Uni for the first VHS meeting of 2009 and it was for a talk from one of the true legends of herpetology, John Cann.

There was a great turnout, which will fill the VHS with confidence to continue to bring guest speakers from interstate to Melbourne to talk.

As usual the auction got the night rolling with many herp products up for grabs. Herp food including bulk crickets and weaner mice, herp accessories including hides and UV tube lights and herp books, most notably being a personally signed copy of John Cann's book "Snakes Alive".

The introduction to John's talk was excellent, a slideshow to the strains of Johnny Cash's "The Rebel Johnny Yuma" showed the audience quickly what an interesting life John has led. A natural athlete, he excelled in a number of sports including swimming, boxing, athletics and three codes of football. John has played Rugby League for New South Wales and at the age of eighteen represented Australia in the decathlon at the Melbourne Olympics.

As well as tending to his snakes and showing them at the La Perouse Loop in Sydney, John has written a number of books on wildlife, led natural history expeditions to Papua New Guinea and has won recognition as one of Australia's most respected authorities on Australian turtles. He was awarded a medal of the Order of Australia in 1992.



Guest speaker - John Cann

John began his first talk "Australian Freshwater Turtles" and immediately his photography of turtles captured the audience's attention. He brilliantly captures these beautiful animals underwater in a natural environment. John's fascination with turtles seems endless which was evident in many of his stories. He almost found himself in trouble with the authorities after removing eggs from the wild which would have died after a nearby dam was drained. John hatched the eggs and returned the turtles to the site after the drainage. He said "their gunna die if I don't do it, so I'm gunna continue doing it".

John has studied turtles extensively and told of a time he found an animal that was nothing like he had seen before. He decided to go to the effort of describing this new species and began the extensive paperwork required. After a couple of months he was all but finished his description when the "bloods" came back on the turtle which showed it was a cross between two known species! At that time it wasn't well known if different species of turtles did or could breed.

John kept everyone interested with many stories and facts - including how the Fitzroy River Turtle breathes through its cloaca - until it was time for a short break. This gave everyone the opportunity to chat and browse the herp books and magazines for sale thanks to Mike Swan Herp Books and the VHS. Audience members also had the opportunity to look around a display from AFTCRA Inc (the Australian Freshwater Turtle Conservation and Research Association) promoting the cause of Australian freshwater turtles.



Audience for John Cann's talk

We headed back in for John's second talk "Enjoying, Travelling and Experiencing Herpetology First Hand" which was predominantly about travelling to Papua New Guinea, which in John's words is "pretty much part of Australia".

When John was on a trip to PNG helping to collect flesh samples of turtles, many locals heard of the Australian scientists looking for their native reptiles. The villagers seemed keen to impress and before they knew it not only were they getting turtles brought to them, but also some beautiful monitor lizards and Green Tree Pythons!



John Cann and a photo in PNG

John spoke about the large problem of Death Adder bites resulting in death in PNG. Many people, including children, die every year from bites as there is no medical treatment available. John told of his efforts to get anti-venom to some remote areas with high Death Adder bite fatalities. Usually \$2000 a vial, John managed to get anti-venom for this cause at \$200 a vial and decided to take it to PNG personally. The anti-venom must be kept cool, so he packed the vials in an eski full of ice for the charter flight to the remote area. He had pre-arranged to have the anti-venom stored in the only refrigerator in the area and got these there as quickly as possible to ensure the medicine remained cool. Upon arrival the fridge was opened and John describes it as a "sauna". It turns out the village only got power for a couple of hours a day, so in between, the fridge cooks inside. Disappointingly this meant no anti-venom for the locals.



John Cann speaking about his herp experiences

John also spoke of herping around Australia with the who's who of Australian herpetology. You name them and it seems John is mates with them. Harry Butler being someone he spoke very highly of, he also enjoyed going out with Steve and Terri Irwin searching for Irwin's Turtles.



John with a photo he took of Steve and Terri Irwin

John has also enjoyed the opportunity to go herping for Diamonback Rattlesnakes in America. On a trip out with some seasoned herpers they caught and photographed several animals. One of the people on the trip made an error of judgement and received a small bite from one of these rattlesnakes. John showed a photo he took with the individual posing with the snake that got him. After some convincing from John they headed off to hospital. John was surprised with how long the medical staff monitored his herping companion before administering anti-venom, his friend ended up spending considerable time in hospital which John believes could have been avoided if they had administered anti-venom as soon as they got to hospital.

John answered questions and stayed around having a yarn over a few slices of pizza. It sure was a night to remember and we were privileged to hear from the great John Cann.



John Cann with a Diamondback Rattlesnake

Classic Article

WOMA HUSBANDRY AND CAPTIVE BREEDING

by Peter Krauss

Originally published in *Thylacinus* in 1992. Reprinted in *Monitor* Vol 6 Issue 1 1994

INTRODUCTION

The Woma (*Aspidites ramsayi*) inhabits arid areas of the central and northern parts of Australia. At least two quite distinctive different forms of colouration and size occur in varying latitudes. Typically different examples are those from northern South Australia and those of the Tanami Desert in the Northern Territory. The northern form is cream with orange-brown bands, while the southern form is a uniform and drab brown colour. The northern Desert Woma reaches approximately 1.5m in length as an adult and the southern area form grows to double this size. Visually they bear little similarity as mature specimens.

A group of Womas in my care for over 16 years initially consisted of one male and two females with another male included later after the first successful breeding occurred in 1985. The animals are the desert form found in the Tennant Creek area of the Northern Territory, and were juveniles when obtained.



Woma Python *Aspidites ramsayi*. Colour form from South Australia.
Photo by Brian Barnett

FEEDING

As adults the male specimen measured 1.4m in length and weighed 1300g, while the females were 1.5m long and weighed 2000g and 2300g respectively. Food was always accepted readily and consisted mainly of laboratory rats, either freshly killed or defrosted. During a period some years ago, young goslings were available and the male especially preferred this change to his diet. No food was offered during winter and feeding was strictly controlled and monitored during the warmer months. Obesity is not healthy and is definitely to be avoided if the animals are to breed. Feeding is always supervised to avoid accidental cannibalism.

HOUSING

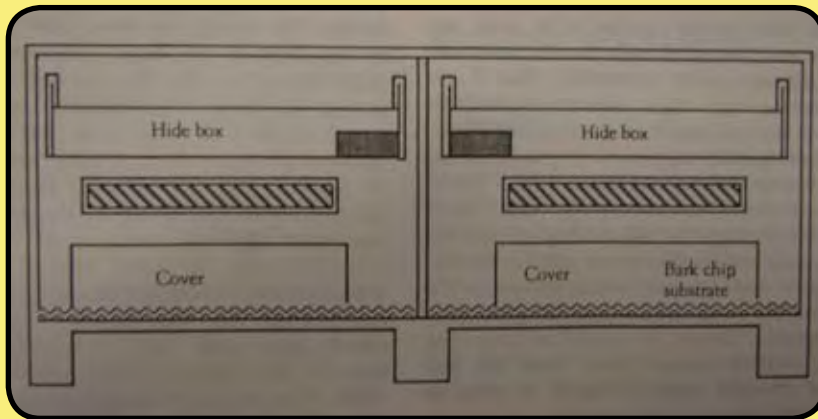
Over the years the Womas occupied several different cages. Being a terrestrial snake, the cage should be low and reasonably spacious. My Womas occupied a cage of 2m x 1m x 0.5m high with a removable dividing partition in the middle. The front was made of sliding glass panels, and the sides and back of peg board to provide ample ventilation. The top and floor were constructed of industrial plywood. As a substrate for the floor of the cage I found bark chips most suitable. These should be a medium grade and not dusty. A depth of 80-100mm as covering on the floor provided best.

Outside the mating season from August to April, I kept the male and females apart by dividing the cage into two sections. Feeding is also more easily supervised in this way. Each cage has its own hide box, a most important feature in any snake cage, and to completely fulfill its objective it must be correctly sized. When coiled up in this retreat, the python's body should touch at least two opposite sides of the box, so that it feels secure. If two snakes occupy the cage, the hide box naturally needs to accommodate both specimens. The floor of the box is covered with paper to facilitate easy cleaning.

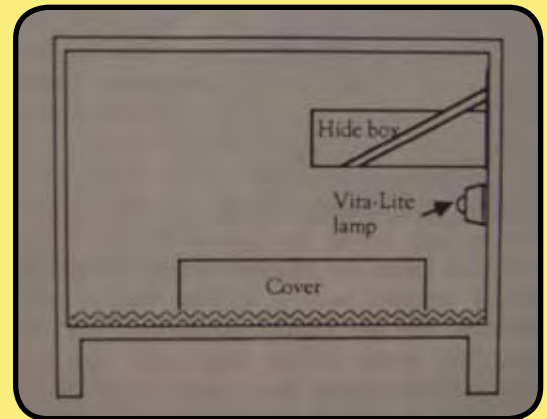
In addition the floor of each cage section has a cover which can be placed on top of the bark chips. This cover is constructed of wood and masonite and measures 800mm x 400mm x 100mm high. It is closed on three sides allowing access through one open narrow side. The snakes spend a great deal of time under these covers resting and keeping out of sight.



Woma Python *Aspidites ramsayi*. Colour form from the Alice Springs Northern Territory region.
Photo by Brian Barnett



Front view of Woma cage. This cage measures 2m x 1m x 0.5m high with a removable dividing partition in the middle.



End view of Woma cage

Each cage section has a 20 watt Vita-Lite lamp which is fitted to the back wall of the cage, approximately 200mm up from the floor. The hide box is also mounted to the rear inside wall of the cage and immediately above the light. Thus the warmth from the light heats the floor of the hide box and its close proximity to the floor provides ideal conditions for the effectiveness of the ultra-violet output of the light when the snake lays under it. As an additional heat source, each cage section is fitted with a 14 watt electrical heat pad which provides warmth for about 25% of the floor area.

Light and heating is controlled by a time clock without a thermostat installed. During the months of April to August, at least on alternate days, all Womas were exposed to a 300 watt Osram Ultra-violet Sunlamp. This light is fitted on a tripod and can be directed at the snake after sliding the glass panel aside. Exposure time is only about 5-10 minutes at a distance of about 600mm from the snake. This procedure has the added benefit of showing off the snake in the very bright light and thus allowing a thorough visual inspection and examination.

Each cage section has a water container large enough for the Womas to lay in, but over many years I have never seen a Woma soak in water. Every 2-3 days the cage is sprayed with water and often it is then that the snakes drink directly from the nozzle of the pressure spray. Regular spraying of the substrate with water reduces the dust. Naturally the bark chips should be just slightly moist but never wet. Faeces, urine and sloughs are removed regularly.

The construction of the building containing the snake cages was such that it provided ultimate climatic conditions. During the hottest time of the year all heating was turned off and lighting was provided for only about three hours in the morning. The metal roof of the building had skylight panels built into approximately 15% of its area and thus the room becomes very hot.

During the summer months I had the roof covered with shade cloth and if necessary a sprinkler system on the roof was turned on. Temperatures range from 24°C minimum at night to 43°C maximum during the day. These temperature conditions reflected the climate experienced in my home district at the northern end of the Atherton Tablelands, approximately 60km inland from Cairns in north Queensland.



Woma Python *Aspidites ramsay* - South Australian form
Photo by Brian Barnett

BREEDING

Usually during the first week of May I removed the cage divider to allow animals to be together. In most recent years when the young second male had reached well over one metre in length and weighed approximately 1200g, the older male, its father, frequently attempted to copulate with it.



Woma Pythons *Aspidites ramsayi* mating.
Photo by Peter Krauss

Cloacae were pressed together in the usual way but no inserteion of hemipenis was observed. There actions looked so realistic that I was prompted to check again that they were both males. Usually mating by the original male with one of the females ocured within hours of the divider being removed and lasted 6-8 hours. The male would then coil up by himself away from the females. At 38 months of age the young male was apparently not sexually mature, because it never showed sexual interest in the females. The adult male would always service both females, however, he seemed to favour one or the other at various times. When this was noticed I usually controlled access in order to ensure fertilisation of both females.

Womas are at times biennial breeders but there does not seem to be a regular pattern to this behaviour. Females seem to engage in mating activities with the male every year, but do not regularly develop eggs. They may breed in two consecutive years and then miss a year.

Each time a copulation with insertion of the hemipenis was clearly observed and noted I separated the male from the females again. After about 48 hours, re-introduction usually resulted in immediate mating once again. Copulation took place regularly from the first week in May until the first week in July. By this time very careful examination of the female Womas usually revealed egg development. Just by holding the snake and allowing it to move from one hand to the other with fingertips held against the belly, I was able to detect eggs forming.

One month later, if the female was gravid, egg shapes were visible. By early September the gravid Woma would rest with two thirds of her body either on its side or completely upside down. At this stage I provided an additional heat source with a 40 watt spotlight which was operated by time clock for three hours each morning. Particularly during the last weeks prior to egg laying the gravid snakes would often bask under this light for lengthy periods of time. I consider such a basking facility very important for the healthy development of the eggs. The female at this stage rests with her body partially upside down most of the day - and always at night the eggs had moved down to the lower part of the body.



Woma Python *Aspidites ramsayi* laying eggs.
Photo by Peter Krauss

As the latter half of September approached a site was selected by the female and prepared for egg laying. This usually happened under the cover on the floor of the cage. The snake started hollowing out a spot in the bark chips by moving her body in a circular motion. She moved all the bark chips aside and eventually rested on the cage floor. During the last days the female could often be heard thrashing with her body under the covers as she moved in a circular and concentric motion.

The eggs were usually laid during the last week in September. The other female was often one month later with her developments. Egg numbers ranged from 8-10 and fertility was 90-100%. The process of actually laying the eggs took the female 2.5-3 hours with a clutch of eight eggs. Eggs averaged 85gm in weight and 78mm in length. In clutches of ten eggs weight and size were marginally less. The eggs were removed as they were laid for the purposes of incubation in an electric incubator. This was done after each individual egg had dried and before it became attached to another egg or to any substrate matter.

My incubator was a modified Swan poultry incubator. It had an extra backup thermostat fitted and it featured a small electronic fan for air distribution. I am incubating most reptile eggs by the no-substrate method and find this the best way for my purposes. Eggs are placed on paper towelling on top of a mesh grid of plastic or stainless steel which is suspended over water, approximately 20-30mm deep, in a plastic container. This plastic container is fitted with an air tight lid which is transparent for easy observation of the eggs. Whilst I found it unnecessary to ever open the egg boxes, I did on occasions open the lid briefly and even changed the paper once or twice during the incubation period. This method maintains a steady 100% humidity at all times.

Experiments have shown that healthy embryos will survive and hatch even if bad and decaying eggs have not been removed. This seems especially remarkable if the container remains sealed during the entire incubation time. If all is well and the fan in the incubator functions constantly there should be very little or no condensation on the inside walls and lid of the egg boxes. If at any time an egg shows the typical signs of being dead it is advisable to remove it. This is no problem if eggs are harvested singularly and placed separately in the plastic box. If this is not possible and the eggs are in a clutch, where all are attached, it is wiser to leave a spoiled egg rather than risking damage to other eggs by trying to remove it.

At a temperature of 29-30° C, hatching started on the 75th day, however at 31° C, hatching began on the 60th day. The average weight of the neonates was 45gm and their length was 320mm. The young snakes slough for the first time after 10-12 days. They feed readily on pup mice and are best kept separately for better supervision and record keeping.



Woma Python *Aspidites ramsayi* hatchling.
Photo by Peter Krauss

CONCLUSION

The Woma is a snake which demands a lot of attention from its keeper. Working with this interesting python has been most gratifying over the years. My plans for second generation breeding, maternal incubation etc, will not be possible. Due to unfortunate circumstances these animals are no longer in my care.

ACKNOWLEDGMENTS

To Malcolm Thompson for converting my scribbled notes into readable English and Brian Barnett and Simon Kortlang for reading the manuscript and making valuable suggestions. My former associates and partners Margit and Karin Cianelli made it possible to work with these animals in the first place and provided expert help over many years. Cam Whiteing skilfully drew the original sketches and Amy Andersen kindly typed the various drafts.



Woma Python *Aspidites ramsayi*. Colour form from the Alice Springs Northern Territory region.
Photo by Brian Barnett



Another Alice Springs Northern Territory region Woma Python *Aspidites ramsayi*.
Photo by Brian Barnett

HERP HAPPENINGS

Snake Bites NT Man On Nose

A MAN has told of how a snake is stalking his Territory home after it slid into his bed and bit him on the face while he slept.

Jeff Hosie got the fright of his life when he woke to a snake latched on to his nose.

And he says the snake returned the next night - only this time it crawled into bed with his 16-year-old son Nathan and bit him on the back of his leg.

"He's a rogue snake - he's got us twice now," he said.
"He's like a stalker snake. I can't believe it is just crawling into our beds. They normally stay away."

The snake drama began early Tuesday morning when Mr Hosie, 41, woke in excruciating pain in his bed at the no-wall humpy-style tin shed he calls his home in Howard Springs about 4.50am.

"It was pretty freaky - I just woke up and felt pain so went to swipe my nose and there was a snake hanging off it," he said.

"It sunk its fangs in real good. I flicked it off and quickly grabbed my phone and shone the light on the floor and there was this snake slithering away."

"It looked like a deadly one - it was black with a small head. I then wiped my nose and realised I had blood all over me. I went into panic mode and thought I was going to die."

"I almost lost a mate to a snake bite a few years ago so I was a bit worried."

Mr Hosie's son rushed him to Royal Darwin Hospital fearing the worst. "I called Triple and told them what happened and that we were on our way to the hospital," he said.

"They were asking me questions like 'are you having trouble breathing?' and they wanted the ambulance to come out and meet us on the highway."

Mr Hosie, 41, was monitored at the hospital for more than 24 hours before being given the all-clear to return home on Wednesday where he thought the drama was all over.

But he could not believe it when the sneaky snake returned that night and tried snuggling up to his son under the sheets.

"Nathan was in bed and yelled out 'snake'," he said. "He had felt it crawling over his neck and grabbed a hold of it and just threw it. We flicked the light on and the snake shot under the bed. I grabbed the broom to try and get it but it got away."

And to add to the almost unbelievable tale he says when they got home after another dash to the hospital and they dozed off again he woke several hours later when something entered his bed and bit him on the leg.

Despite turning his bed linen upside down, he said he could not find the nibbling offender.

But two red marks side-by-side on the back of his leg - almost identical to his son's snake bite - indicated it may have been the sly reptile striking again.



Jeff Hosie was bitten on his nose by a snake while sleeping, and his son was also attacked. They have armed themselves to the teeth in anticipation of the snake's return.

But the Hosie's are prepared if the stalking snake returns.

"I don't know if it's going to come back but we'll be ready - we've got shovels and brooms out beside our beds just in case," he said.

"He's a real bugger and if we see him again we are going to pin him and drill him."

NT snake wrangler Chris Peberdy said the slithery culprit is likely to be a non-venomous slatey- grey species.

"The slatey-greys are a naturally aggressive snake and are common in Darwin's rural area," he said. "Thankfully they are not venomous but they do have a lot of fight in them and will strike as a defence mechanism."

He urged people to just call the NT snake catcher hotline - 1800 453 210 - if they find a snake on their property rather than risk being bitten while interfering with it.

REBEKAH CAVANAGH
Northern Territory news
September 2009

Myer Cleaner Bitten By Snake In CBD

A snake has bitten a cleaner at the Myer department store in Lonsdale Street.

The 29-year old man was putting cardboard in a dumpster outside the store in Melbourne's CBD when he felt something sharp on his finger, Ambulance Victoria spokesman Paul Bentley said.

"He pulled out his hand and discovered a black-coloured snake about 20 centimetres long hanging off his finger," Mr Bentley said.

"He had four puncture wounds to his finger."

Nearby workers wrapped the man's hand in a bandage before paramedics arrived about 9.45 am and administered first aid, gave the man oxygen and put him on a drip in case his condition deteriorated.

Mr Bentley said the man was taken to St Vincent's Hospital in a stable condition.

He said the hospital would run tests to determine what kind of snake had bitten the man.

A snake handler has been called to find the snake.



Area where the snake was last seen.

Advanced life support paramedic Heidi Taylor said there was no question a snake had bitten the man.

"The snake leapt up and bit him on the finger and hung on apparently for a few seconds," she said.

"There were four very obvious puncture wounds to his right hand, to his finger specifically."

She said the man had been surprisingly calm following the snake bite.

"I've been a paramedic for eight years I've never been to a snake bite wound and I'd say it's incredibly rare in the city, we were very surprised," she said.

Myer spokesman Damian Glass said he was not sure if the snake had been venomous.

He said the man had been bitten while throwing away rubbish in a laneway which runs between Lonsdale and Little Bourke streets between David Jones and Myer.

"In the process of removing the rubbish or rummaging in the bin he was allegedly bitten by something," Mr Glass said.

He said the incident had happened nowhere near the sales floor of the store and there had been no previous reports of snakes in the area.

MEX COOPER
Herald Sun
June 2009

Snake Found In Northern Territory Toilet

A TERRITORY man got the fright of his life - and learnt he should keep the toilet seat down - when he found a huge python in his dunny.

Erik Rantzau has been avoiding using his indoor loo - opting to use his outdoor toilet when nature calls - since he discovered the wild carpet python in the S-bend about four weeks ago.

"I just happened to be walking past the toilet and glanced in there and here was this snake in a massive coil just sitting up in the toilet," he said.

"He was that big that he physically blocked the pipes."

"He stayed in for four days then went out in the garden again for a week or two then appeared in there again one Saturday night.

"I got (the snake catcher) out a few times but he kept getting away.

"I didn't use the toilet - I just kept the lid down and went to another toilet I have outside."

NT snake wrangler Chris Peberdy had been out to Mr Rantzau's home on Lowther Rd, Virginia, in Darwin's rural area four times trying to catch the python.

But each time he would try and get his hands on it, the slippery reptile would evade capture by disappearing into the depths of the pipes.

In an attempt to find out the snake's movements, Mr Peberdy coated the floor of Mr Rantzau's home with talcum powder.

"It's a bit of a Territory-born invention," he said. "When I came back we could see he was coming in and out of the

back door and straight into the toilet."

He managed to wrangle the evasive reptile when it decided to peep its nose out of the toilet bowl on Wednesday.

Mr Peberdy said it was rare to find a carpet python in a toilet.

"It's quite unusual he's living in the toilet," he said.

"He's not going in there for food. He's obviously going in there because it's a good place to hide.

"But it would certainly give anyone a fright - it'd scare the pants off you, well, you've probably already got your pants off, but it'd scare you if you found it."

He had one piece of advice to Top Enders: "Look before you sit!"



LOOK BEFORE YOU SIT: The visitor in Erik Rantzau's toilet

Mr Rantzau, 49, said it was relief the snake was gone as the last thing he wanted was to have the same fate as a tourist who was bit on his manhood by a deadly brown snake during a roadside toilet stop in north Queensland earlier this year.

"No, not with the size of this guy - you wouldn't want that to happen," he said.

Even though the snake has been taken away and was released into nearby bushland last night, the Complete Office Supplies manager will no doubt have a few nervy trips to the toilet in the coming weeks.

"I think it is pretty safe from now on, but you can never be too sure," he said.

Queenslander Darly Zutt made headlines in May this year after he told of his near-death experience when a highly venomous snake bit him on the penis.

The Northern Territory News reported how the snake slithered between his legs and lunged at his penis as he crouched in bushland to go to the toilet.

"I thought I was gone," he said.

"(My mates) have been saying things like 'it was a trouser snake fight and he (the snake) saw the competition and got scared'."

REBEKAH CAVANAGH
Northern Territory News
September 2009

Snake Smugglers Feel The Squeeze

Customs and Border Protection has seized two boa constrictors in Perth and two corn snakes in Cairns as part of a major wildlife smuggling investigation.

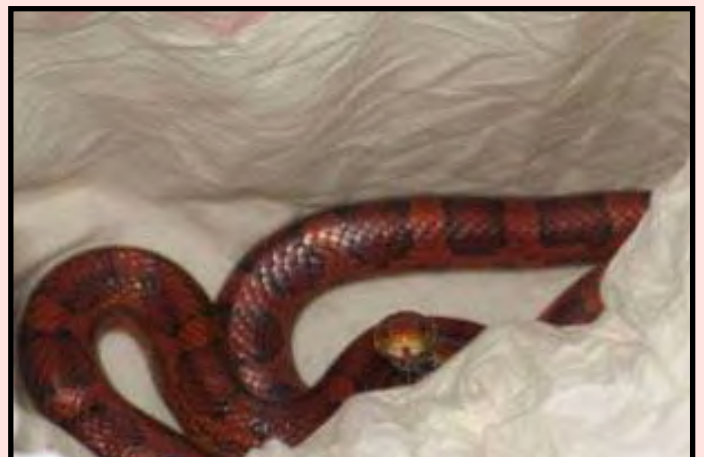
The investigation began on 18 July when the Western Australian Department of Environment and Conservation (DEC) contacted Customs and Border Protection following a tip-off from a member of the public.

On 30 July, Customs and Border Protection investigators, assisted by DEC wildlife officers and WA Police, executed a Customs search warrant on a residential address at Quinns Rocks, Perth.

During the course of the search warrant, two juvenile boa constrictors and four native reptiles were found. The boas were seized by Customs and Border Protection under the Environment Protection Biodiversity and Conservation Act 1999 and the four native reptiles were seized by DEC under Western Australia's Wildlife Conservation Act 1950.

The boa constrictors, as well as two knob-tailed geckos and two bearded dragons that were seized at the Quinns Rocks premises, are currently in the care of DEC.

Subsequent Customs investigations determined that the boas had been posted from an address in Queensland, and that they may have originated from the Solomon Islands.



Corn snake seized by Customs and Border Protection in Cairns

Customs and Border Protection investigators, assisted by Queensland Parks and Wildlife Service officers, consequently executed search warrants on two residences and a business premises in Cairns on 7 August. During the search, two corn snakes were seized at one of the residences.

Customs and Border Protection National Manager Investigations, Richard Janeczko, said wildlife smuggling is a serious crime and this successful operation should send a warning to all would-be smugglers.

"Customs and Border Protection continues to prevent, investigate and prosecute wildlife smuggling attempts into and out of Australia in a bid to end this cruel practice.

"This illegal trade not only endangers the animals involved and is a risk to our environment, but also involves the possibility of transferring diseases from these animals to our native species," Mr Janeczko said.

Boa constrictors are considered an extreme establishment risk to Australia, alongside cane toads, foxes and rabbits. For this reason, there are only three secure facilities that are licensed to keep boas in Western Australia.



Boa constrictors seized in Perth

DEC Wildlife Officer Matt Swan said the bearded dragons and knob-tailed geckos were protected fauna under the Wildlife Conservation Act 1950 and it was an offence to take them from the wild.

"The geckos cannot be kept as pets under licence and can fetch up to \$1000 on the black market, so DEC takes the unlawful possession of this species very seriously," he said.

Investigations are continuing and it is expected that one person in Western Australia and three people in Queensland will face charges for offences under the Environment Protection and Biodiversity Conservation Act 1999.

The maximum penalty for illegally importing or exporting wildlife under the Environment Protection and Biodiversity Conservation Act 1999 is \$110,000 and/or 10 years jail.

CUSTOMS MEDIA RELEASE
August 2009

Sack Of Snakes Dumped At Homebush

An animal welfare group believes a sack of eight snakes - six alive and two dead - found dumped at a car park at Olympic Park today was destined for the illegal overseas trade in exotic animals.

The snakes were found in the car park at Edwin Flat Avenue, Homebush Bay, about 11am and reported to the Wildlife Information, Rescue and Education Service, WIRES said.

WIRES' Mark Double, who is now caring for the snakes, found each was wrapped in individual plastic bags, tagged and stuffed into a larger rucksack.

They appeared to have been intended for illegal export, WIRES said.

Among the reptiles were six live snakes - a juvenile king brown, a 1.2-metre black snake, an eastern brown, a tiger snake, a bandy bandy snake and one unidentified species and two dead snakes - a bandy bandy and a golden crown snake.

"They are stressed and dehydrated ... I am taking them into care until they recover and can be released in conjunction with the NSW National Parks and Wildlife Service," Mr Double said.

Neither WIRES or the NPWS could estimate the value of the snakes.

"It's hard to imagine any commercial value, they were all fairly common snakes to us but obviously they are of some value to collectors, especially overseas," a WIRES spokeswoman said.

In February, Customs officials arrested a Sydney man at Sydney Airport after noticing live reptiles in his bags during an X-ray screening.

The officials found 24 shingleback lizards, 16 bluetongue lizards and four snakes concealed in socks and cloth bags, worth up to \$200,000 on the black market.

In January the Federal Government said the high number of animals caught being smuggled at customs points last year suggested there was a thriving black market in exotic animals.

Anyone with information about the snakes can contact WIRES on 13000 WIRES or the RSPCA on 9770 7555.

ARJUN RAMACHANDRAN
Sydney Morning Herald
April 2009

First Genetic Link Between Reptile and Human Heart Evolution

Scientists at the Gladstone Institute of Cardiovascular Disease have traced the evolution of the four-chambered human heart to a common genetic factor linked to the development of hearts in turtles and other reptiles.

The research, published in the September 3 issue of the journal *Nature*, shows how a specific protein that turns on genes is involved in heart formation in turtles, lizards and humans.

"This is the first genetic link to the evolution of two, rather than one, pumping chamber in the heart, which is a key event in the evolution of becoming warm-blooded," said Gladstone investigator Benoit Bruneau, PhD, who led the study. "The gene involved, *Tbx5*, is also implicated in human congenital heart disease, so our results also bring insight into human disease."

From an evolutionary standpoint, the reptiles occupy a critical point in heart evolution.

While bird and mammalian hearts have four chambers, frogs and other amphibians have three. "How did hearts evolve from three to four chambers?" Bruneau said. "The different reptiles offer a sort of continuum from three to four chambers. By examining them, we learned a lot about how the human heart chambers normally form."

He explained that with four chambers—two atria and two ventricles—humans and all other mammals have completely separate blood flows to the lungs and to the rest of the body, which is essential for us to be warm-blooded.



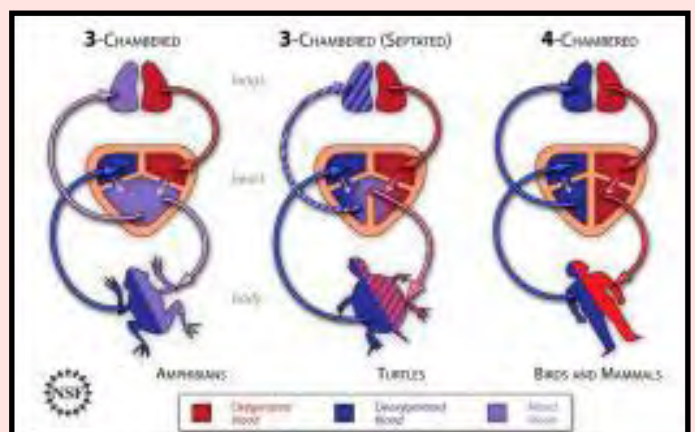
Embryo hearts show evolution of the heart from a three-chambered in frogs to a four-chambered in mammals. Credit: Zina Deretsky, National Science Foundation after Benoit Bruneau, the Gladstone Institute of Cardiovascular Disease

When it comes to reptiles, such as turtles and lizards, there is debate about whether they have one or two ventricles, which are the pumping chambers. "The main question for us to understand the evolution of the heart was to identify the true nature of these early reptile ventricles and to figure out what controls the separation of the heart into left and

right sides," said Dr. Bruneau.

To better understand reptile heart evolution, Dr. Bruneau's team used modern molecular genetics to examine *Tbx5*. Mutations in the human gene that encodes *Tbx5* result in congenital heart disease and, in particular, defects in the ventricular septum, the muscular wall that separates the ventricle into two sections. *Tbx5* is a transcription factor, a protein that turns other genes on or off. In humans and other mammals, *Tbx5* levels are high in the left ventricle and low in the right. The boundary of high and low levels is right where the septum forms to divide the ventricle into two parts. "Based on these observations," said Dr. Bruneau, "we thought *Tbx5* was a good candidate as a key player in the evolution of septation."

The team looked at *Tbx5* distribution in the turtle and the green anole lizard. During the early stages of heart formation in both reptiles, *Tbx5* activity is found throughout the embryonic ventricular chamber. In the lizard, which forms only one ventricle, this pattern stays the same as the heart develops. However, in the turtle, which has a primitive septum that partially separates the ventricles into left and right sides, distribution of *Tbx5* is later gradually restricted to the area of the left ventricle, resulting in a left-right gradient of *Tbx5* activity. This meant that the gradient of *Tbx5* forms later and less sharply in the turtle than in species with a clear septum, such as mammals, providing a tantalizing clue about how septation evolved



The three-chambered frog heart mixes oxygenated and deoxygenated blood in the ventricle. Therefore, the body never receives fully oxygen-rich blood. In turtles, where a septum begins to form and separate the ventricles, the body receives slightly richer blood in oxygen. It is only in the warm-blooded model, in birds and mammals, that the two circulatory systems become fully separate sending low-pressure pumping to the lungs, and a high-pressure flow of blood to the rest of the body. In this model, the animal's muscles receive fully oxygenated blood. Credit: Zina Deretsky, National Science Foundation

They then wanted to determine whether Tbx5 was really a main regulator of septation or merely a bystander. Mice were genetically engineered to express Tbx5 at a moderate level throughout the developing heart, just like in turtle hearts. By mimicking the turtle pattern, mouse hearts now resembled turtle hearts. The offspring from these mice died young and had only a single ventricle. This striking result conclusively showed that a sharp line delineating an area of high level of Tbx5 is critical to induce formation of a septum between the two ventricles.

"This really nailed the importance of Tbx5 in patterning the heart to allow septation to occur," said Dr. Bruneau.

During evolution, new genetic regulatory elements evolved to tell the Tbx5 gene to form a sharp boundary of Tbx5 expression. This resulted in two ventricles. Researchers will now work to identify those genetic regulatory mechanisms during the evolution of reptiles. The work also has important implications for the understanding of congenital heart defects, which are the most common human birth defect, occurring in one out of every one hundred births worldwide. Humans born with only one pumping chamber, resembling frog hearts, suffer the highest mortality and require extensive surgery as newborns.

"Our study provides exciting new insights into the evolution of the heart, which had not been examined in over 100 years," Dr. Bruneau explained. "In a larger context, it provides good support for the concept that changes in the expression levels of various regulatory molecules are important in evolution. From these studies we also hope to understand further how defects in septation occur in humans with congenital heart disease."

NT Kids Mourn Monster Croc

A huge three-legged crocodile has been killed and paraded around a rural Northern Territory town, saddening local children who had nicknamed the beast "Mr Boombastic".

The saltwater croc had been sighted near the town of Borroloola several times over the past few years, according to a staff member at the local school.

"The kids are all used to being around crocodiles," said Noela Anderson, home liaison officer for the Borroloola Community Education Centre.

"They used to always see it lying in the river and they would leave little pieces of food for it at the shore."

Mr Boombastic, who was believed to be close to 70 years old, was deemed a "problem croc" by NT Parks and Wildlife after being spotted next to a boat ramp.

The rangers attempted to catch it with a harpoon but failed due to the croc's massive size, and in the end it was shot in the head.

After the croc was killed it was strapped to the back of a trailer and driven around the small town, including past the school.



"The children were sad, but mostly they were just surprised at how big he had gotten," said Ms Anderson.

"They had never actually seen him so close. Because we've got the river you just don't put yourself in a position to be eaten.

"A crocodile smells like really off fish, and when they smell that, they know to get back inside."

Darwin Croc Farm spokesman Mick Burns said the crocodile would have posed a serious threat to humans even though it only had three legs.

"It might have been a bit slower on land but in the water it would have been almost as fast as any croc," Mr Burns said.

"If the reports are correct that it was five-and-a-half metres then it was definitely a huge croc, not many get that big."

Mr Burns said Mr Boombastic would have lost its leg in a fight with another crocodile.

"Because of the aggressive and territorial nature of crocodiles it's very common for them to have missing limbs," he said.

"A crocodile has the luxury of being able to shut off blood circulation to the affected area and go on living a normal life."

HENRI PAGET
Daily Telegraph
August 2009

Keeping and Trading Wildlife

FACTSHEET

Amendments to the Wildlife Regulations 2002

3

Background

On 1 October 2009, new Regulations will come into effect to make it easier and less expensive to keep some species of wildlife in Victoria. Also, under the new arrangements, a broader range of wildlife may be kept and traded by private and commercial wildlife licence holders. The regulations will also increase the number of species that may be kept without the need for a licence and reduce the cost of a licence for some keepers of wildlife.

What are the changes?

A total of 32 changes will be made to the Wildlife Regulations 2002. Wildlife licences will no longer be required for three species of captive bred native pigeon, six species of parrot and the Stubble Quail. Nineteen new species will also be allowed to be kept under a wildlife licence. This includes 10 new reptile species, eight new mammals and one species of frog.

The licensing requirement for the Southern Angle-headed Dragon will be relaxed. This species could previously be kept on an advanced licence but may now be held on a basic licence. The Magnificent Tree Frog may also now be kept on an advanced licence.

The changes will clarify the types of Red-tailed Black-cockatoo and Eclectus Parrot that can be kept. These changes will ensure that the endangered sub-species of the Red-tailed Black-cockatoo cannot be kept or traded under any circumstances and removes the licensing requirement for non-native sub-species of Eclectus Parrot.

The new regulations will also allow the trade of turtles/tortoises with a shell length of less than 10cm.

All other laws relating to private possession and trade of wildlife in Victoria remain unchanged.

Why are the changes being made?

These changes were made to reduce red tape around the possession and trade of native wildlife and were made following request from the Wildlife Possession and Trade Advisory Committee (WPTAC). The WPTAC provides advice to DSE on matters relating to wildlife possession and trade in Victoria.

What did DSE consider when making the changes?

The Department of Sustainability and Environment (DSE) conducted a comprehensive assessment of each change to ensure there is adequate protection in place for wild populations and that the wildlife will be appropriately cared for in captivity. The changes were made in consultation with experts from Zoos Victoria, Arthur Rylah Institute and regional DSE staff and consideration of the following:

- the conservation status of each species
- availability from legal captive sources (ie. numbers in captivity)
- the potential demand from licence holders
- the ease of husbandry
- ease of breeding
- risk to human health and safety
- the taxonomy of the species
- the potential for the species to establish as a pest in the wild if it escaped from captivity.

When will these changes happen?

The changes will come into operation on 1 October 2009. All Private Wildlife Licence holders should check which licence they need before renewing their licence this year.

Which species no longer require a licence?

There are 10 native bird species that no longer require a wildlife licence for private possession and trade including the Common Bronzewing, Crested Pigeon, Emerald Dove, Hooded Parrot, Long-billed Corella, Musk Lorikeet, Scaly-breasted Lorikeet, Stubble Quail, Red-sided Eclectus Parrot and the Twenty-eight Parrot.

If you keep any of these species, you will no longer require a Private Wildlife Licence as of 1 October 2009. If you keep other species in addition to those listed above, you still may need an appropriate Wildlife Licence from DSE. For more information on which species require a Wildlife Licence please refer to 'A Guide to laws relating to keeping wildlife for private purposes in Victoria'.

Which new species can be kept?

Private Wildlife (Advanced) Licence holders will be able to trade and possess 19 new species. These include **10 reptiles**: Arafura File Snake, Boyd's Forest Dragon, Centralian Knob-tailed Gecko, Downs Bearded Dragon, Golden-tailed Gecko, Prickly Knob-tailed Gecko, Pygmy Python, Rough-scaled Python, Rough-throated Leaf-tail Gecko, *Saltuarius swaini* (no common name); **one amphibian**: Magnificent Tree Frog; and **eight mammals**: Black-striped Wallaby, Feathertail Glider, Long-nosed Potoroo, Plains Rat, Quokka, Southern Brown Bandicoot, Spinifex Hopping-mouse and the Squirrel Glider.

What are the licensing requirements for the Southern Angle-headed Dragon?

The Southern Angle-headed Dragon could previously be kept on an advanced licence. As of 1 October, this species may be held on a basic licence. If this is the only species you keep, you will no longer require a Private (Advanced) Wildlife Licence, but you will still need a Private Wildlife (Basic) Licence.

If you keep other species in addition to the Southern Angle-headed Dragon you may still need an appropriate Wildlife Licence from DSE. For more information on which species require a Wildlife Licence please refer to 'A Guide to laws relating to keeping wildlife for private purposes in Victoria'.

What are the changes to the keeping of Red-tailed Black Cockatoos?

The Red-tailed Black Cockatoo is now listed as Red-tailed Black Cockatoo (all kinds except South-eastern). This change means that Private Wildlife Licence (Advanced) Licence holders may keep all kinds of Red-tailed Black Cockatoo except the South-eastern. This change was put in place to provide added protection to the South-eastern Red-tailed Black Cockatoo which is listed as endangered under the *Environment Protection and Biodiversity Conservation Act 1999*.

What are the changes to the keeping of Eclectus Parrots?

The changes clarify which sub-species of Eclectus Parrot require a licence. The Australian Eclectus Parrot (*Eclectus rotatus macgillivrayi*) is now the only sub-species that requires a licence (basic) for private possession and trade. The Red-sided Eclectus Parrot (*Eclectus roratus polychloros*) may be kept and traded by private keepers without a licence, however, commercial operators will still need a licence to trade this sub-species.

All non-native species of Eclectus Parrot (or any hybrids that have non-native characteristics) no longer require a wildlife licence for private or commercial possession and trade.

What are the changes to the shell length of Turtles/Tortoises?

The new regulations will mean that private wildlife keepers and commercial operators will be able to keep and trade turtles/tortoises of all sizes. The current restriction on the trade of turtles/tortoises under 10cm will be removed.

How have animal welfare concerns been addressed?

All wildlife must be kept in accordance with the relevant Code of Practice which is administered by the Bureau of Animal Welfare. The Code of Practice outlines strict keeping requirements for enclosure size, feeding requirements and many other aspects of animal welfare. Penalties apply for people who do not comply with the Code. For a copy of the relevant Code, please visit the DPI website www.dpi.vic.gov.au

Can I keep animals I find in the wild?

No. All Australian wildlife is protected. It is illegal to take wildlife from the environment unless you have appropriate authorisation from the Department of Sustainability and Environment. Significant penalties apply for people who take wildlife from the bush or trade in wildlife illegally. Anyone caught taking wildlife from the wild faces fines of nearly \$28,000 and two years imprisonment.

What do I need to do to keep wildlife in Victoria?

In Victoria, you can keep and buy over 300 species of native animals, however, there are a number of rules which ensure that the keeping and trade of native wildlife does not affect wild populations and that the animals are kept in a humane and safe way.

Importantly, you are not allowed to take animals from wild populations and for most species, you will require a licence from the Department of Sustainability and Environment. For more information on the keeping and trade of native wildlife in Victoria, please visit the DSE website at www.dse.vic.gov.au or contact the DSE Customer Service Centre on 136 186 between 8am and 6pm Monday to Friday.