

The Maine Herpetological Society

Newsletter



Volume 17 Number 8 & 9

Sept/October 2008

Upcoming MHS Meetings and Regional Events Mark Your Calendar!

Saturday Nov 15	Regular Meeting Island Apts. Speaker Clover Street
Saturday Nov 30	NY Reptile Expo White Plains, NY www.reptileexpo.com
Saturday Dec 20	Regular Meeting Island Apts. Annual Christmas Party
Saturday Jan 17	Regular Meeting Island Apt.

New and Renewed Memberships

We are pleased to welcome the following new members to our society

Amanda Ashley Rand	Mexico	Individual
Rema Lee Weston	Biddeford	Individual

And we thank the following for renewing their MHS membership:

Jon Ericson	Boston, Ma.	Family
Peter Alexander	Cape Elizabeth	Student
Steve Black	Gardiner	Individual
Andrew McDonald	Livermore Falls	Family
Stephan Page	Cape Elizabeth	Student
Robert & Michelle Stano	Wells	Individual

Next Meeting

Clover Street will give a powerpoint presentation on his experience as an intern zookeeper/animal show presenter for the Reptile and Amphibian Discovery Zoo in Minnesota this past summer. Clover worked for Jaime Pastika. Jaime gave a reptile presentation at Unity College last year for their Performing Arts series. Clover will have a few images of the animals her cared for.

Society News

At the last meeting, which was way back in September, Doug Kranich gave a slide presentation on his trip to Costa Rica. This was a great talk and Doug had many great slides to show us. Doug and his fellow adventurers saw a lot of herps and amazingly they were able to get pictures of most of them. It was a really jaw dropping array of photos that made you want to sign up for the next trip.

The December meeting and Annual Christmas Party is on Saturday Dec. 20. More on this later but do plan on attending. We really don't get together that often and this is our annual social event. We exchange inexpensive gifts in an auction and have a potluck holiday feast. Mark it on your calendars.

Lastly I just wanted to remind everyone that we have a web site that we can utilize to correspond with each other. Although it doesn't have a chat room it does have forums and messaging. Why don't you give it a try and post. And don't forget articles for the newsletter. I hate to harp on everyone about this but how can we have a newsletter without articles? Did you get a new herp, or gone herping or do you feel brave enough to submit a husbandry article?

WILD SNAKES WITH PROBLEMS OF CAPTIVE SNAKES

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ABSTRACT

A study of wild caught snakes within a 60 km radius of the CBD in Melbourne, Australia from 2001-2003 showed that more than 50% of adult Tiger Snakes (*Notechis scutatus*), Copperheads (*Austrelaps superbus*) and Brown Snakes (*Pseudonaja textilis*) carried parasitic mites (of unknown species).

In most snakes these mites were only detected after the reptiles were placed in a white plastic container with a segment of Shelltox Pest-strip with Dichlorvos as the active ingredient, whereupon the mites fell off the snakes and died.

Noticed in three snakes were constrictions of the tail that were consistent with failure to properly slough as seen in emaciated captive snakes that are infested with mites.

GENERAL

For some years, I have held a permit from the Victorian Wildlife Authority to trap and release reptiles that are deemed nuisances or a threat to safety of persons or their domestic pets.

Essentially, the operation of the permit is as follows. A person, who is usually in a state of fear, phones myself directly or by referral from another party such as a government authority, wildlife refuge or similar seeking the removal of a snake or other reptile. I then go to the address and attempt to capture the reptile, assuming it can still be found by the time I arrive at the address.

In most cases the 'offending reptile' is found and caught.

By law the reptile is then released in suitable habitat nearby. A typical example is a large wildlife reserve such as Westerfolds Park in Melbourne's north-east.

Due to long-standing misgivings in terms of re-releasing species in new areas (see Hoser 1995) and the fear of transmitting parasites and diseases to other populations of snakes, or for that matter to my own captive collection of snakes (many of which are Victorian native species), all caught snakes were

placed in a container with a Dichlorvos-based section of pest strip for at least 30 minutes after capture. This is sufficient to kill all the mites on the snake and also small ticks.

There is no detectable affect on the snakes. For the record a typical dosage is a 2 cm X 3cm section of (fresh) pest strip in a 30 cm long X 19.5 cm wide X 10.5 cm high enclosed plastic container (known as a click-clack), with ventilation holes in the lid. Used pest strip segments are stored in foil and plastic to retain potency, which will over time fade. Large ticks which are sometimes seen on snakes are either manually removed, or in some circumstances left on the snake overnight. In those cases the snakes are also left with a section of pest-strip, which usually results in the large ticks dying by morning.

Sometimes snakes would be injected with ivermectin as an effective means to kill the ticks. Rarely, a spray would be used to kill the mites, but due to the slower death time of the mites from the spray, the pest strips were generally used on "wild caught" snakes.

While mites are rarely seen on snakes (or large lizards) when removed from properties, except in unusual and heavy infestations, the fact is that following treatment as described, more than half are found to have mites on them.

In the period from 17 October 2001 to 22 November 2003, the following reptiles were removed by myself from properties in the Melbourne area. All were treated with pest strips.

5 Brown Snakes (*Pseudonaja textilis*)
 28 Tiger Snakes (*Notechis scutatus*)
 9 Copperheads (*Austrelaps superbus*)
 3 Eastern Bluetongued Skinks (*Tiliqua scincoides*)
 1 Blotched Bluetongued Skink (*Tiliqua nigrolutea*)

Two of the Brown Snakes had mites, most of the Tiger Snakes had mites and all of the other reptiles had mites.

(Continued on page 3)

(Continued from page 2)

In most cases between 10 and 30 were observed dead in the containers with the reptiles after treatment.

For the copperheads, none showed signs of mite infestation until treated with the pest strip sections.

In conversations with herpetologists, the general perception has been that problems with mites are a feature of captivity. It's been asserted that population explosions of mites that lead to severe blood loss and emaciation in confined and constrained reptiles is a unique feature of captive reptiles.

It's been asserted that wild reptiles are able to wander away from mites that fall off them, whereas in the captive situation, mites that are scraped off or fall off the reptile can then re-climb onto them.

Hence it's also been generally asserted that wild reptiles do not suffer as a result of the usually lower level mite infestations seen.

Some snakes retrieved by myself did appear emaciated, in particular a large Tiger Snake found at 200 Nepean Highway Seaford on 7 November 2002, which had a severe tick and mite infestation.

These parasites are common to Mornington Peninsula reptiles (see Hoser and Valentic 1996 for another example).

Whether the emaciation occurred as a result of the parasites or the parasites took advantage of weakness in the reptile to gain a foothold on it, or a combination of both is not known.

However this paper seeks to demonstrate emphatically and for the first time ever that parasitic mites can adversely affect reptiles in the wild state.

TAIL DEFECTS IN SNAKES

Observed in a number of snakes were missing ends of tails and signs of injury, including the Seaford Tiger Snake mentioned above. Bearing in mind that as a rule the snakes caught were set to be released more-or-less immediately, there was no real motive to pay much attention to so-called 'battle scars' and other physical defects unless they really stood out.

Hence the inspection of most snakes, including the Seaford one was cursory and nothing more of relevance can be recalled.

On 11 March 2003, I retrieved a (small) 40 cm male Tiger Snake from 3 Edward Court, Ivanhoe in inner suburban Melbourne. This area is adjacent to the Yarra River and in spite of it's proximity to the

Melbourne CBD has lots of Tiger Snakes.

This snake was found to be somewhat emaciated and to have mites, with about 60 falling off when the snake was treated.

This is very a high number of mites based on the small size of the snake.

The snake was noticed to have sections of unsloughed skin on the anterior neck region and also a constriction of unsloughed skin towards the end of the tail.

The constriction was so severe as to have left the end part of the tail dried and shrivelled and it appeared that without intervention it would simply fall off over time as all that appeared to be left was bone.

This was the last 2.5 cm of tail. Mites are known to cause severe emaciation in snakes and in the captive state shedding problems and mites seem to go hand in hand.

The pattern of shedding problems in this wild snake fitted the profile of what I have observed in countless captive snakes affected by mites.

Based on the lack of other alternatives, it appears that in this wild snake, it's shedding problems were directly attributable to the mites.

Subsequent to this a large Tiger Snake was caught on a property at 89 Banyule Road, Rosanna, which had a constriction about 3 cm from the end of it's tail.

At a glance it appeared to be a wound from an attack by an animal, but further inspection revealed that the section of tail had a constriction around the affected section with normal scales beyond that.

This feature did not appear to be a battle wound or birth defect and hence I could only attribute it to a sloughing problem at some stage past.

This snake did carry mites, but only about 10 fell off it when treated.

As the snake was over a metre long, it'd be likely that the few mites on it at the time of capture were not causing it discernable harm then.

On 21 November 2003 I retrieved a large 1.2 metre Copperhead from the Bayside Christian College at Robinsons Road, Baxter.

This snake, while in immediate pre-slough (eyes cleared after clouding), it appeared to be in optimal condition. When treated with pest strip about 20 mites fell off it, which for a wild snake of that size is a negligible infection. The snake also carried at least two large ticks.

As mentioned already, both parasites are common on wild-caught snakes in the Mornington Peninsula region (which includes Baxter).

This snake also had a moderate constriction evident about 2 cm from the end of the tail tip, although the scales beyond the constriction were perfectly normal and healthy.

The constriction again indicated a sloughing problem as opposed to other cause.

CONCLUSION

Diseases, ailments and husbandry issues thought to be manifestations of captivity, may also occur in wild snakes. It is likely that some of these issues, including mite infestations and mite-related problems are more prevalent than previously thought and have been merely overlooked by field workers in the past.

ACKNOWLEDGEMENTS

Numerous private keepers and field collectors who have shared their experiences with myself and given me unfettered access to collections and data.

The Victorian Wildlife Department (called Department of Sustainability and Environment (DSE) this week) provided the relevant permit (number CC2027519) and this is gratefully acknowledged.

REFERENCES

- Hoser, R. T. 1995. Release into Hell. *Monitor* 7 (2):77-88.
- Hoser, R. T. and Valentic, R. 1996. Notes on a herpetological field trip in the Australian State of Victoria. *Monitor* 7(2):24-34.

Free to Good Home

I recently received a Columbian boa as a rescue. It is a female, tame and appears to be in good health. It is approximately 5 1/2 ft long. It does have some scarring but the scars are old and well healed.

If anyone is interested in this boa email me at editor@maineherp.org. Be prepared to be questioned as to your ability to care and house a large boa. I am not interested in giving this boa to someone that is looking to make a quick buck so please only contact me if you are interested in it as a pet for yourself. Kevin

Snake bite is a 'neglected tropical disease' (Ewen Callaway)

Snakes kill more people than either dengue fever or skin cancer, according to a new worldwide estimate.

Cobras, vipers, black mambas and other venomous snakes take between 20,000 and 94,000 lives each year, and bite another 421,000 to 1,841,000 people.

However, the economic toll of snakebites could be far greater than many infectious diseases, says Janaka de Silva, an epidemiologist at the University of Kelaniya in Ragama, Sri Lanka, who spearheaded the new report.

De Silva is hoping the study will raise the profile of snakebites. "We want to get the snake bite classified as a neglected tropical disease," he says.

His team trolled published papers, national and regional health data, and hospital records to establish a snake bite death rate for 169 countries where attacks are a problem.

Because snake bite data for many of these countries, particularly in Africa, did not exist, the team extrapolated figures based on data from neighbouring countries, and produced an upper and lower estimate for snake bite victims.

Snakebites were most common in tropical areas, which are generally home to more venomous snakes than temperate regions.

However, increased rural development in many of these countries also fosters more contact between people and snakes. Factor in dispersed healthcare centres with little money to stock anti-venom or other treatments, and you have the makings of an epidemic, de Silva says.

Reliance on traditional treatments can also result in higher death rates in some countries, he says.

And while worldwide snake bite deaths pale in comparison to pandemics such as malaria and HIV, or chronic disease such as cancer, many victims of snakebites suffer physical maiming for the rest of their lives.

"Disability is much higher than in infectious disease," de Silva says. "In infectious diseases you either die or recover."

Journal reference: PLoS Medicine (DOI: 10.1371/journal.pmed.0050218)

http://www.newscientist.com/article/dn15118-snake-bite-is-a-neglected-tropical-disease.html?DCMP=ILC-hmts&nsref=news6_head_dn15118

How the turtle got its shell - A paleontological mystery solved

YALE DAILY NEWS (New Haven, Connecticut) 22 October 08

Rudyard Kipling seems to have covered the bases with his “Just So” stories: how the camel got its hump, how the rhino got its skin, how the leopard got its spots.

But it seems that he forgot one. How did the turtle get its shell?

It is one of the oldest debates in paleontology, But two paleontologists, Walter Joyce, collections manager at the Peabody Museum of Natural History, and Spencer Lucas, of the New Mexico Museum of Natural History and Science, have put it to rest.

Two decades ago, Lucas and his team unearthed a 210-million-year-old turtle shell in New Mexico. As far back as the 1800s, paleontologists put forth theories explaining how this bizarre reptile developed armor. One such scientist, George Cuvier, posited that the shell had developed from the ribs, flattening and fusing over time. Eventually, this became the dominant theory. But many modern paleontologists came to believe that the shell, which is now tightly fused with the ribs, was actually separate from the ribs and developed from hardened skin.

“It was an ongoing debate — as old as science is,” Joyce said.

Enter Lucas and Joyce.

Twenty years ago, Spencer Lucas and his team found a fragment of bone at their New Mexico dig site. At first, Lucas said, they thought it was a head spike from a type of dinosaur. But because the fragment seemed to be made up of multiple bones, he was unsure. After comparing it to other Triassic-era turtle fossils in a collection in Germany, though, they concluded that it was probably the neck spike of a turtle, and published a paper saying so.

Then, about three years ago, after returning many times to the site, Andrew Heckert, a member of the Lucas team, found many more fragments. This discovery contained not only more neck spikes, but shards of shell.

Lucas emailed Joyce photographs of the specimen. It didn’t take Joyce long to figure out that they belonged to a turtle fossil, making it the first Triassic-era turtle to be found in North America.

Extrapolating from fragments no more than two inches across, Joyce said that the turtle would have been about 15 inches long in real life, with a shell about one millimeter thick.

More important, the underside of the shell revealed important facts about the turtle’s evolutionary history. Contrary to the beliefs of the paleontologists

of yore, the ribs and vertebrae of a turtle are clearly visible and separate from the shell.

Though the modern turtle’s ribs and shell — which is made of dermal bone, just like the human skull — are tightly fused, Joyce said the new evidence makes it clear that the structure is a composite, rather than simply an expansion of the ribs as some have argued.

“Through evolution, through time, the two just came together, and the end product is that they’re fused,” Joyce said. “The further you go back in time, the less associated they are with each other.” The evidence refutes assertions not only by paleontologists, but by embryologists, who operate under the assumption that embryology recapitulates evolution. Human embryos, for example, have gills and tails, mirroring the early stages of human evolution.

In turtles, the ribs and shell grow together from the beginning, which embryologists believe, by analogy, reflects early turtle evolution.

But Joyce said that the sequence of events in embryology often does not reflect what happened in evolution, an opinion supported by the turtle fossil. An alternative hypothesis would explain turtle embryological development over time: the ribs began to grow towards the skin, and instead of the shell growing off of the skin and then fusing with the ribs, evolution allowed it to save a step and the shell began to grow directly off of the ribs.

Joyce said the finding’s significance is twofold. Not only does it provide solid evidence about the origin of the turtle shell, but it allows paleontologists to search less blindly for more turtle fossils.

Joyce said that prior to this find, Triassic turtle fossils were extremely rare, with only about eight throughout the world and none in North America, while fossils from the Tertiary and Jurassic periods abounded. This perplexed paleontologists-, since it is at odds with the idea that turtles have thick shells and large bodies, making them more likely to fossilize. Additionally, as aquatic animals, they are likely to be preserved in sediment, which then turns into sedimentary rock, the only type of rock that contains fossils.

But this fossil has an unusually thin shell and seems to be from a terrestrial mammal, Joyce said. It was more likely to be destroyed in fast-moving river environments, and the fragile bones were more likely to fall apart.

Now, Joyce said, paleontologists know to look for smaller specimens in order to reconstruct the evo-

lutionary history of the turtle.
The next step?

Finding them, Joyce said.

"Where do turtles come from? We just have no idea," he said.

Turtles are the only vertebrates about whose lineages paleontologists are clueless, due to a lack of transitional fossils, he said. Some hypothesize they are related to arcosaurs, which include dinosaurs, others guess they are related to lizards, and still others think they are the most basal of reptiles on the evolutionary totem pole.

He likened the search for turtles' history to the debate about the origins of birds. That debate, he said, was settled 10 years ago, when scientists started finding so-called "feathered dinosaurs" in China. The connection between those specimens and

tology from the University of Tübingen in Germany. But he will still maintain some of his Yale ties: He will continue to work with Tyler Lyson GRD '12.

Together, they are performing a comprehensive review of turtle species from the late Cretaceous era, which occurred before the extinction of the dinosaurs, and those from the early Paleocene era, which occurred after their extinction, in order to see how turtles responded to whatever killed off the dinosaurs. Lyson said they are trying to determine the proportion of turtles that survived, and whether there are patterns of response among different species.

As far as they can tell, though, turtles seem to have outlasted the dinosaurs.

"Turtles don't care!" Joyce said jokingly. "The lame dinosaurs go extinct, but the cool turtles survive."

[How the turtle got its shell](#)



modern birds was tight enough that it is now almost universally accepted.

"Nowadays there are more and more people doing paleontology, looking in the Triassic, maybe the Permian, in hopes of finding their ancestors," Joyce said.

But he said he could not set a timeline for this discovery.

"It took us 200 years to get here!" he said with a laugh. "So it might be next year or it might be 50 years from now. It'll be cool when it happens, that's all I can say."

Joyce only has two weeks left as Vertebrate Collections Manager at the Peabody, he said.

He has accepted a junior professorship in paleon-

Scientists to bring back extinct tortoise - Turtles to shack up, and one day give birth to long extinct species (Kevin Wei)

A giant turtle is going to be brought back from the dead. Scientists in the Galapagos have found a species from the island of Isabela that shares DNA with the extinct turtle, *G. elephantopus*. Dr. Gisella Caccone, a lead researcher on the project, says that planned breeding of Isabela turtles will allow the extinct turtles to make a comeback.

“By mating Isabela tortoises that are most genetically similar to *G. elephantopus*, selecting the offspring that are most similar, and mating those, through successive generations the species’ genetic makeup may be largely restored,” she said in an interview with [The New York Times](#).

When Darwin went through the Galapagos Islands he was almost as interested in turtles as in finches, and wrote about them in his *Origins of Species*. Noting that each of the islands housed many distinct species of tortoise, Darwin speculated that all the tortoises originated from one mainland species, but later evolved characteristics advantageous to their own particular islands.

Darwin also noted that, thanks to the fashionability of turtle soup and oil lamps, the tortoises were being killed in great numbers by passing sailors. Ironically, while the turtle meat and oil industries are responsible for the extinction of four Galapagos tortoise species, it is also partly responsible for the *G. elephantopus*’s resurrection. Researchers suspect that a few *G. elephantopi* were picked up from their island Floreana, then dropped off on the island Isabela where hunting was less intense. The lucky turtles then passed on their genes by interbreeding with natives of the island.

The genes of the first Floreanian-Isabelan hybrids were split evenly between the two species. Through the next few generations, the Floreanian genes became more diluted. Thanks to the tortoises’ long lifespans, only a few generations have passed since the first tortoises mated with Isabelan natives, so the genes aren’t too diluted. Consequently, it should be easy for scientists to retrace the mating steps and recollect all the Floreanian genes in one turtle. By comparing modern-day turtles’ genetic codes to that of a museum specimen of *G. elephantopus*, scientists will know which turtles should be mated in order to retrieve the species’ genes. Professor Ehab Abouheif, an Evolutionary Biologist in the Biology department at McGill, said that this approach could be applied to other species as well. “The same approach can be potentially applied to other organisms if the museum specimens are well maintained and properly curated. By identifying extinct species and their close relatives, we can understand how particular species were lost and formed...and this is particularly important in designing future conservation strategies for endangered species,” he said.

However, Abouheif expressed concerns about museum curation today. “The problem is that the curation of museum specimens is no longer given the respect that it deserves and as a result important collections have suffered,” he said. Although it will take only a few carefully-selected matings to resurrect *G. elephantopus*, none of us will see this resurrection in our lifetime. Due to the tortoises’ long life span, mating of even four generations will take more than a century. But when this is done, the *G. elephantopus* will be reintroduced to Floreana and crossed off the extinction list.

Classified Advertisements

Classified advertisements are free to dues paying members. The format for the ads should be as follows: 1.1.1 The first number represents the number of males, the second represents the number of females, and the third, the number of unknown sex. Please use the species name whenever possible. The Maine Herpetological Society is not responsible for content, prices, or errors in classified ads, nor do we receive any compensation from the sales resulting from these ads. **

MHS Items for sale Members prices: New MHS T- shirts and hats \$10 ea. 4 sizes available, Adult S,M,L,XL Maine Reptile and Amphibian Book including the frog CD, \$15 each; ME Herp Posters, 4 varieties, snakes, turtles, amphibians and vernal pools. \$3 ea.; They are also available by contacting Doug Kranich (723 4108) or kranich@verizon.net. They can be mailed but shipping will be added to the cost.

Patterson Reptiles Availability Male "Calico/Ghost" Albino House Snake \$10,000; Male Albino Jungle House Snake \$300, (*L.fulgiosa* X *L.l.lineata*), 2 Male Albino Patternless House Snakes \$300 each, 2 Male Whitewater Rosy Boas (Het Albino) \$50 each; Male Striped Cornsnake (het albino) \$25; Male VR Strain Orange Thayeri \$125 Male Sinaloan Milksnake \$150; (possible Double Het Hypoerythristic & Spotted); 3.2 Nelson's Milksnakes \$35 each; Male Aberrant Nelson's Milk Snake \$50; FedEx certified, USA shipping ONLY, Live Arrival Guarantee, Terms on website: Contact Jason Patterson, <http://www.pattersonreptiles.com/>

For Sale: Nicaraguan boas 125.00 ea.; ball pythons \$25.00 ea. Contact Kevin Murphy - 207-576-0157 kmurphy70192@roadrunner.com