The SHHS RATTLE!

News and Info for SHHS Members

In This Issue: Calloselasma, Ophiophagus

www.VenomousReptiles.org

Report: Columbia 2002

Status of the Society

By Karl Betz, SHHS VP

This past October was the Columbia, South Carolina show. Our involvement as sponsors for the show was greatly reduced this year. That may not always be the case. To that end, I would like everyone to ask themselves (and think about) a few things:

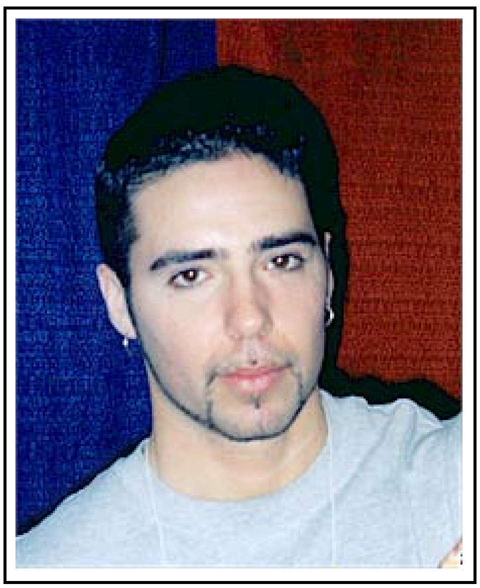
If no-one volunteers to help with security, set-up, etc, how can we complain if this show is cancelled? Is it worth it (to me/us) to volunteer a few hours to help run/support the show so that we can continue to have the show?

Remember that we are striving against public opinion to keep our "hobby" legal. That will only be accomplished through the positive involvement of people who are passionate and knowledgeable about our "hobby."

Saturday night we chowed-down at the diner at the top of the hill and enjoyed (some more than others) the inexpensive buffet. Before the introduction of Dr. Sam Seashole, our key speaker, Chris Harper addressed the group. From the very first meeting of the Southeastern Hot Herp Society (a local Georgia group of 7 people), we have grown to a loose organization of hundreds of individuals in all parts of the country and, indeed, several foreign countries. As Chris (and later I) looked out into the crowd

of herpers, there were several that were new and some folks none of us could identify. Most of what we do is accomplished online and our only actual meeting is held on the Saturday evening at the Columbia Show each year. Chris emphasized the goals of the Society (found on our website) and thanked the officers of the society for their contributions over the past year. Due to other commitments, Chad Minter stepped down as Vice President while still remaining an avid member. Chris announced that I (Karl H. Betz) would now be the Vice President and that the office of Assistant Vice President would be filled at a later date.

I am happy to report that the office has been filled by Thomas Eimermacher of New Orleans, who recently completed his Masters Degree in Business Administration at the University of New Orleans. Prior to his appointment, Thomas had written many articles for the SHHS, represented us in radio interviews, helped set up the booth last year in the Superdome, helped maintain the website and helped moderate our email list. Thomas has been and can be expected to be a great asset to the SHHS in the future.



Thomas Eimermacher, MBA

At the end of his speech, with virtually no notice, Chris called me up in front of this crowd of ravening herpers and asked me to say a few words. As could be expected, I made my usual plea for articles for the newsletter. The amount of venomous keeping experience in that crowd of people was overwhelming and I hope to be able to tap into that vein of knowledge to keep our newsletter the quality product we have all come to expect. So let me ask you...

What do you keep that I can't keep (I live in Georgia and can only keep GA-indigenous venomous reptiles)? What have you bred successfully? What tricks have you learned by keeping what you keep that we may not all know? What do you have to share? I can help anyone with grammar and spelling and format. I make no promises that any article, including my own, will be error-free BUT I won't let anyone make themselves look like a fool for any reason in front of their peers. Drop me a line, send me an article, become involved in our society.

I am **at Buzztail1@hotmail.com**.

A Safety Reminder For the Winter Quarter of 2003

from Chris Harper President, SHHS

By now I 'm sure most people have seen the photos of the bloody *C.atrox* bitten hand on our website and read the tale that goes with it. Recently, I followed up with the individual who wrote the article, Bret Welch, to see how much healing had taken place. Here is his sobering reply:

"I have very limited use, the thumb is fused at the first digit, the index is fused at the first digit, not to mention all of the fingers have very limited mobility. Necrosis set in in most of the bones and the hand looks very distorted and skinny. I have adapted to what use I can get, but its really a pain in the ass. Not to mention there is no feeling in the superficial tissue. I just had some x-rays done, and it will get worse. The bones are being drawn in in a cup like shape, and the tendons used to separate them are knotted up. All in all, I might as well have a hook there. " Bret

There are many venomous keepers with 20 or more years of experience that have never been bitten. As a matter of fact, Bret had been a professional herpetologist for 20 years when this bite occurred. None of us are immune to a momentary lapse in judgement, but the repercussions can be ominous. Please keep that in the back of your mind.

Calloselasma rhodostoma; the Malayan Pitviper

By Michael Brodt

with additions by Thomas Eimermacher

The *Agkistrodon* complex is by far my favorite group of snakes to work with. There are 5 genera of snakes currently recognized within this group: *Agkistrodon*, *Calloselasma*, *Deinagkistrodon*, *Gloydius*, and *Hypnale*.

Calloselasma rhodostoma is found in Southeast Asia, and is a distant cousin of the North American Copperheads. *Calloselasma* is a monotypic genus with only one species, C. *rhodostoma*. These snakes have some rather unusual characteristics that visually distinguish them from their North American relatives. First, they have smooth scales. This is a feature unique to the genera *Calloselasma* and *Azemiops*; every other viper and pitviper in the world has keeled scales. Second, they are one of the few pitvipers that lay eggs rather than give live birth. *Deinagkistrodon acutus*, another *Agkistrodon* relative, is also an egg-layer.

Calloselasma is found throughout Thailand to southern Vietnam, and north to the very edge of West Malaysia. Thus, the common name “Malayan pitviper” is a bit of a misnomer, as the snake actually inhabits only a small part of Malaysia. Other suggested English names have been the “Moonlight pitviper”, and the “Marbled pitviper”. These snakes are usually found in drier types of habitat throughout the region. Females are stocky and attain a length of 1.00m, with males being smaller and skinnier. They have a variable background coloration from brown to grey with the typical Copperhead style triangular bands on the sides of the body. They also have a stripe extending from their eye to their chin, which is scalloped on the bottom.

I house all of my animals in locked cages on cypress mulch with a water dish available at all times. The snakes sit coiled and/or buried in the mulch during the day, and become active at night. At the present time, my specimens have decided to eat only live prey, although at one time they did accept frozen/thawed mice dipped in warm water. Most of the specimens in my collection exhibit a bite and hold behavior with both live and frozen/thawed prey items.

All of the adult animals I have dealt with have been relatively easy to handle with hooks, however, I do not routinely remove them from their cage. Nevertheless, I have experienced instances, in which adult specimens became agitated outside of their enclosure, and these animals can be surprisingly fast. They are also known to leap forward when striking both defensively or during a feeding response, which I can confirm from my experience with them as well.

Photo by Mardi Snipes

Based on this, I use very long tools to work with them inside or outside of their cage.

In my experience, breeding this species is not complicated (albeit, I have only done it once). The animals shut down for the winter, feeding sparingly from November through April. I maintained them at a temperature in the mid to upper 70s F during this time. In April, I increased the temperature to the mid to upper 80s F, started feeding them again, and began misting their cages daily with warm water. In March, I placed the female into the male's cage where she remained for a week. I then removed her for feeding and returned her to the male's enclosure after a few days. I continued this cycle for one month. While I never witnessed copulation during this period, I did observe courting behavior.

The female continued her normal eating regimen until one month before laying 16 eggs. The eggs were laid in mid-July and were removed a day later for artificial incubation. They were placed on damp vermiculite inside a deli container that was equipped with air holes. The eggs were incubated in my snake room, and I maintained the temperature of the eggs around 85F with a slight night time drop. *Calloselasma* eggs have a short incubation period, and the eggs started hatching after 32 days. All hatchlings had emerged within 36 hours.

I housed the babies individually in deli containers with damp cypress mulch as a substrate. (For security purposes, all deli containers were housed in a large lockable cage.) Water was available at all times. After 10 days, the babies had all shed, and I tried feeding them. I was able to get the babies to feed on live cricket frogs (*Acris creitans blanchardii*), baby fence lizards (*Sceloporus undulatus hyacinthimus*), ground skinks (*Scincella lateralis*), and 5-lined skinks (*Eumeces fasciatus*). After several feedings, the babies were slowly switched over to scented mouse pinks, and from there to un-scented mouse-pinks. None of my babies started out eating pinkies right away, regardless whether they were fresh-killed or scented. One baby was a complete non-feeder, and was subsequently assist-fed about 1.5 inches of mouse tail every seven days until live pinks were killed and consumed.

The venom of *Calloselasma rhodostoma* is of great medical significance, in that it is responsible for a great amount of bites throughout its distribution range, and in it being the subject of much research for use in pharmaceutical products. The venom has been studied extensively, and is mainly of hemorrhagic nature. Among other components, it contains phosphodiesterase, alkalinephosphoesterase, alkaline phosphatase, L-amino acid oxidase, arginine ester hydrolase, 5'-nucleotidase, and thrombin-like enzymes. Studies in captive specimens have determined that the intraspecific variation in the venom is inherited rather than produced by external environmental factors. Purified fractions in the venom of this species are also used to derive ancrod, which is being researched for its use in the treatment of acute ischemic stroke, and has been used in the treatment of deep vein thrombosis since 1968.

In humans, the venom of *Calloselasma rhodostoma* has been shown to have primarily procoagulant effects at low concentrations, in that it converts fibrinogen to fibrin, and then precipitates the fibrin out of the blood, leaving the rest of the blood incoagulable. However, at higher concentrations, the venom has shown to have anticoagulant effects with a progressively shortened coagulation process.

It is also notable that according to a study by Wuster et al (1996), venom composition seems to be determined by natural selection for different prey in different areas. This is due to inherited variation, which in turn is due to natural selection, as opposed to direct induction due to different animals being eaten by an individual.

In summary, *Calloselasma* make rather good captive animals that do not attain an excessive size, and have husbandry requirements that are not unlike those of their North American relatives. However, based on human bite accounts and their ability to leap while striking, I would not recommend this species for beginners. Captive propagation of this animal is uncomplicated, although getting the babies to eat can be somewhat time consuming. Even still, based on the number of captive animals I have recently seen available, I believe more and more people are working with and having success with this interesting species.

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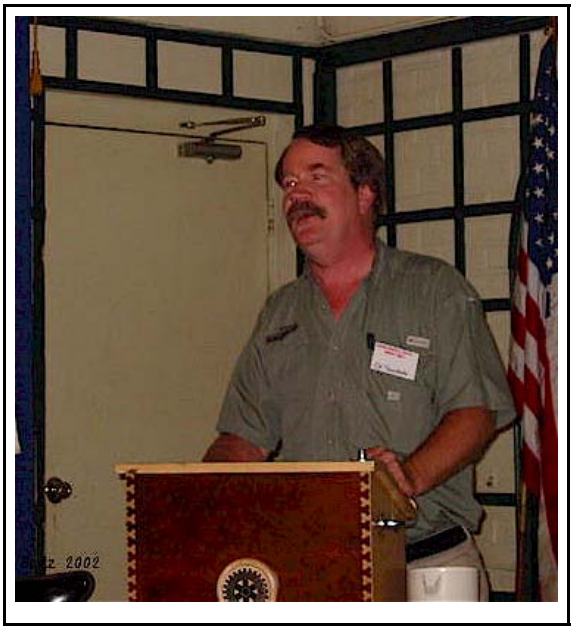
More from Columbia 2002

Dr. Sam Seashole addresses venomous veterinary concerns

By Karl Betz, SHHS VP

This past October I had the pleasure of attending the SHHS get-together at the "annual banquet" during the Columbia, South Carolina show.

Saturday night we gathered at the diner at the top of the hill and enjoyed (some more than others) the relatively inexpensive buffet. What followed was an incredible discussion of the concepts of venomous veterinary treatment by Dr. Sam Seashole. I consider myself to be an above average knowledge level keeper and given that reference, I think that some of



the medical references that Dr. Seashole made were above the level of his audience. However, I can honestly say that he was more than willing to stop and answer any questions or explain in more readily understood laymen's terms what he had been discussing.

Dr. Seashole shared an incredible amount of data with us and many discussions and debates were started and continued that night (just as last year). Some of the broader ideas that he brought to us are: Medicine (as approached in the western world) is "allopathic" which means opposite. In short, we treat the symptoms as opposed to curing the cause. It created quite a stir in the audience when he stated flatly that all reptilian disease seen within the herp community stems from a husbandry issue. He further stated that Reptilian Stress Syndrome was not a disease but a precursor to reptilian disease and that it could prevent proper healing.

Dr. Seashole also mentioned that in solenoglyphic snakes, mouthrot and fang sheath infections could be caused by low ascorbate levels (vitamin C) and that they could be treated with amicacin.

He initially jump-started us again with his statement that parasites don't normally hurt healthy snakes. This seemingly contradicted the views held by many in the audience that snakes should be treated for parasites as soon as they are acquired. He warned that Panacure can easily be overdosed (which can kill your reptile) but that it will kill tapeworms when administered in proper multiple doses. When dealing with external parasites such as mites, he recommended pyrethroid-based sprays like mycodex or a bottle of Nix (over-the-counter human head lice treatment) mixed in a gallon and a half of water. We also heard from various members about CVS (a chain drugstore) Tick Spray and cigarette tobacco mixed in with litter substrate.

When dealing with neurological disorders in reptiles, Dr. Seashole stated that protozoa are the # 1 cause – amoeba or giardia. From there he gave drastic specific examples of how Order to Order contamination can wipe out entire collections. Green Iguana and crocodilian fecals harbor fatal strains of disease for snakes. When sterilizing surfaces (water bowls, cages, etc) diluted bleach is still the most recommended cleaning agent. Caution must be used to avoid the new "Ultra" bleaches which contain lye (harmful to reptiles). At this point John Hollister pointed out that deli cups are extremely cheap. So cheap, in fact, that he uses them as disposable water dishes thereby eliminating any possibility of cross-contamination through having to clean multiple water dishes. Further information can be found at his website Herpo.com.

Respiratory disorders were briefly covered. These are highly contagious and are mostly viral or mycoplasmal. For parasitic lung diseases, he recommended lavamosole in doses of 10mg/kg. Lavamosole boosts the immune system and kills lung worms. It is available cheaply from most feed stores as a worming agent for sheep.

The bottom line and summary position from Dr. Seashole's presentation is that "Unhappy snakes get sick" and "Happy snakes generally don't." When pressed on safe restraint techniques, Dr. Seashole stated that what you or I might find usable and safe might not work as well for him or the next "guy (or gal)". Safe handling techniques depend upon the individual and their particular situation but there is no substitute for good equipment.

Ophiophagus hannah, The King Cobra
An experience in captive care and husbandry
By Sierra

First of all, let me say that this article is based only on my own personal experiences. I initially started into herps as a little girl, collecting any frog, lizard or snake I could find (yep, I was and still am a tom-boy, much to the dislike of my parents). I have been into venomous reptiles now for about 14 years and we have been licensed by the state of Florida for the past 8 years. Herps are a real passion with us. My King Cobra experience entails both hatchlings and adults; both wild caught “from the bush” and captive born animals. We started our experience with King Cobras in the early 90's and have had at least a dozen since then as well as one successful-breeding in 2001. It should be noted that Kings can each be unique in their behavior, especially with regards to feeding and I suspect that initiating breeding can vary among them as well. I am not the most scientific person and not exactly a herpetologist, so do forgive me if my article isn't totally professional. I actually consider myself a hobbyist and like most I started out on my own. Eventually I did acquire a mentor (who later became my husband) and for the most part we are self-taught. The article is based on our hands on experience and put into our own words. Most keepers are very secretive about the husbandry of their Kings, so I am sorta breaking the unspoken rules here but I feel to best serve the animals and the hobby/profession that info should be shared among us although I, too, was reluctant when first asked to write this article based on the fact that, for most people, I wouldn't suggest owning a King Cobra.

Ophiophagus hannah is one of the most feared and famous creatures on the planet. Nearly every man, woman and child can recognize this majestic animal. The King Cobra's geographic range is from northern India, east to China, including Hong Kong and Hainan, south throughout the Malay Peninsula and east to western Indonesia and the Philippines. Due to this large range, Kings display a variety of colors and patterns depending on their locale and individual specimens may even show a unique pattern, anywhere from solid olive coloring to dark (almost black), with or with out banding. Some imports even have varied highlights of orange or yellow. King Cobras are monotypic with no subspecies. In the wild, normal habitat would consist of forest and bamboo thickets to open fields. Due to extensive habitat destruction, tea plantations have become a very popular home to the King Cobra. They are Diurnal, seeking prey both at night and during the

Our juvenile cage setup. Photo by Sierra

day. They have become endangered and protected in much of their range, however they have also become more common in American “hobbyist” collections and are much easier to obtain than they were 5 or 10 years ago. They have a longevity of over twenty years but with more specimens in captivity, I suspect we will find them to live even longer than expected.

Venomous enthusiasts consider it to be one of the most revered additions to their collections. Of course, it is the world's longest venomous snake and can reach lengths of 18 feet with the disputed record to be 19'2” (although 14'-16' seems average for females while males average out around 11'-12'). It can be an intimidating and dramatic acquisition for even the most experienced keeper and should only be kept by those extensively trained to deal with it by another experienced King Cobra keeper. I will never forget my first experience with a large imported Indo King - the loud huffing was unreal and quite shocking. It sent a chill up my spine as I heard that sound when opening the crate. It's meant to intimidate and believe me it does. I was trembling both with excitement and intimidation. Several factors need to be considered when preparing to venture into the keeping of King Cobras. First is your personal experience - I would strongly recommend at least 5 years with various other species before getting your first King. Second is living space - the sheer size of the enclosure needed to house them properly. And lastly the feeding aspect. Hatchlings do well in relatively small cages while adults need large cages and even small room-sized enclosures should be considered for breeding purposes. I have successfully used 12” (for hatchlings/small neonates) through 48” Neodesha cages along with some larger homemade breeding cages. Various substrates may be used such as sphagnum moss or cypress mulch but I have always had success with plain newspaper during the regular caging season. I recently have experienced a death of a *Crotalus durissus cumanensis* due to impaction from cypress mulch. I have been informed by Dean Ripa that he has had several *Lachesis* and *Bothrops* die from this as well - so I would suggest caution when choosing a substrate. I just learned that sphagnum moss may be the ideal choice especially during pre-breeding and nesting.

Feeding King Cobras, especially hatchlings, can prove difficult and in fact many hatchlings in captivity will die before an inexperienced keeper can persuade them to eat. Different theories on how to best start a baby King are often debated. Some keepers suggest force-feeding with a pinky press and pinkies, but this is not the technique I would suggest as baby Kings are fragile and they can easily be overcome by stress. I have gotten the best success with feeding babies on neonate *Elaphe guttata* (Red Rat or Corn Snakes) or southern Black Racers (*Coluber constrictor priapus*). These are easily acquired from several dealers and should be frozen first to kill parasites. Some babies will prefer live while others will take their first meal on a pre-killed and brained *Elaphe*. Sometimes an injured/bloody prey item is enough stimulate feeding. Larger imports may feed on small Reticulated Pythons (*Python reticulatus*) or on various monitors (*Varanus*) but this isn't very practical and you should begin scenting attempts as soon as feeding is established. Also, stuffing prey items with extra mice can help increase the size and nutritional content of the meal. I've also heard of using fish to scent but I have had no personal experience with it. Hatchlings/neonates should be fed once every 7-10 days and adults every 14-28 days depending on individual metabolism. Hatchlings and neonates are very susceptible to respiratory problems so constant temp and airflow/quality must be maintained. I have kept the daytime temps in the range of 74-78 with a max of 80 degrees F. A very minute nighttime drop not below 70 was all I would allow for fear of respiratory distress. Baby Kings, when handled, flail about crazily so care must be taken during any handling or transfer. As a safety precaution, you should always have at least one other “King experienced” person present when handling large King Cobras. Tailing large Kings can be tricky and hand placement at the proper length is critical. Handling can usually be avoided entirely. We have found that shift boxes are the best way to handle King Cobras. They are less stressful to the animal, as well as, safer for the handler. Interlocking shift cages can also be of great benefit. If the snake should happen to defecate in one, merely shift them to the other for very easy cleaning. They also can double as nesting boxes that can make it easy to separate the female from the eggs. We have never even had a close call handling our Kings (knock on wood) due mostly to the shift boxes. The size of our medium shift boxes are 18”x 16”x 6” which will house them for most of their life and if needed, larger ones can be used. A once-a-week misting seemed to be fine for all of my kings with an increase in frequency around shed time. My female nearly always retained an eyecap, which meant either tubing or outright handling/restraining her. When restraining her, a clean damp rag was given to her to chew on while we removed eye-caps, medicated, or while sexing and this trick kept her occupied while we performed any necessary tasks. Kings “jaw-walk ” along and chew, as well as maintaining a tight hold as they inject their venom. Also, it needs to be mentioned

that these animals deficate a lot!!! Adequate airflow is critical as well as cleaning the cages often for that reason. They are good climbers as well, so I provide branches for exercise when possible but it's not necessary. Kings are heavy drinkers so provide lots of fresh water. For adults we used a 5-gallon bucket cut down to a four inch depth - it's simple, tip proof and easy to clean. Thermostat controlled heat tape may be used as well but doesn't seem to be necessary.

Here is my biggest King secret that I have to share with you - my own little invention (although I'm sure others have done similar things). I converted all of my Kings to rat feeders with a blended paste of southern Black Racers and canned 9-Lives Supersupper cat food). I simply take a whole adult Black Racer and 2-3 cans of the 9-Lives Supersupper and place it all in a food processor and blend until it's a nice soupy paste - you may need to add a little water to get the right consistency (gross, but hey it works). Although strange and messy, this has never failed for me and has worked for several friends as well. I have shared this technique with individuals over the Internet who have had success with it also. This paste can be frozen in small containers or even an ice-cube tray and thawed as needed. It lasts for quite awhile and certainly saves on feeder snakes. You can merely dip the snout (or depending on the King, the whole prey animal) of a pre-killed rat in the paste. This may work with pinkies and neonate Kings as well but I would suggest establishing a good eating pattern first. Be patient if the switchover takes awhile, you are trying to change the natural instinct of the King and he may be reluctant. You may also have to wash down the prey animal before scenting it to destroy any of the original scent. If you do offer wild caught snakes, you must freeze them for at least two weeks to kill parasites. Imported King Cobras are usually infested with parasites and will need to be treated ASAP. Some very difficult Kings may only feed, at first, on snakes native to their homeland locale, so be prepared to do your homework and spend money to get the feeders. Each King is a little different in that aspect but almost all can eventually be switched over to easily accessible feeder snakes or even rats. The decision to feed rats is a personal one and I have had discussions with several individuals over whether or not Kings should be switched over to rats. I personally have had no problems with feeding them rats which resulted in my keeping King Cobras for many problem-free years. And I don't lose any sleep over whether it is ethical or not to feed rats to a snake-feeder. Ultimately the decision is yours to make should you decide to keep this species.

VENOM FACT:

King Cobra, *O.hannah*
Subcutaneous LD-50 1.7mg
Venom yield - 400 - 700 mg
Source: www.VenomDoc.com

Temperament varies among King Cobras. Our largest female was quite aggressive and wouldn't hesitate to engage us while one adult male was shy and would flee at any opportunity.. Hatchlings are quite wiry and delicate. They will flail about when tailed and great care needs to be taken with them - again use shift boxes.

The pair that we successfully bred were Thai locale. The female was 12'+ at the time and the male was around 9'. I had raised both from hatchlings/neonates. The female was captive born and the male was an import “fresh from the bush”. Pre-breeding conditions were as follows: They were placed on Cypress mulch (but I would now suggest Sphagnum Moss instead) to help with the humidity. Both were maintained on food because of the ophiophagus factor involved (you don't want your Kings hungry during an introduction!!). A very mild almost non-existent cooling period was used in conjunction with heavy misting. The temp was normally kept at 75-80 degrees and during the misting period was dropped to 70-75 degrees for a period of six weeks. We misted on a bi-daily basis and fairly heavily. Again, this worked for us but may not be critical in inducing breeding. We merely tried to mimic monsoon conditions.

Breeding King Cobras can be an involved process and introducing pairs can be quite an ordeal to undertake. Very carefully introduce the pair!!!! Stay alert and ready to intervene should it become necessary. I have personally been very lucky and never had it happen, but I've heard nightmare stories of severe fights and one story of attempted ingestion of a mate. For this reason, I would suggest that they must be close in size to be introduced. We witnessed interesting foreplay - where the male head bobbed and pushed the female all over the cage with his head for hours apparently trying to convince her that he was the right mate. We only witnessed the pair copulating for about an hour (we are not sure if that was the only breeding as they were kept together for two periods of three days each time and the second introduction is when we know for sure they mated. They were not under constant supervision after the first few hours, so we are not sure of the exact length of copulation.). The female was gravid for 72 days, during which time we provided fortified rats every 7-10 days. For the most part she fed well the entire gestation period

except for the last few weeks. Shredded newspaper was provided for nesting material which she would corral into her hide box(again I would now recommend sphagnum moss perhaps because newspaper is too dry and tends to stick to the eggs and dry them out, a mistake we learned from),. It was amazing to watch her undulate and loop the paper into the box. I don't think I have ever seen anything close to it in reptile behavior - very cool to watch. She laid 23 eggs, 19 of which were viable. There are reports of double clutches with Kings but I could not verify the accuracy of those reports - time will tell with so many people keeping them now. I don't equate snakes with much emotion but she did show some motherly gestures toward her eggs and gently nuzzle them with her nose. Normal incubation is 60-80 days and ours hatched out right on schedule in 69 days. Some breeders allow the female to incubate the eggs but to be on the safe side, I prefer to do it artificially. The litter size may reach up to 60 but probably averages around 20-30. Incubator temp was a constant 80-84 degrees for the 69 days and humidity, of course, was near 100%. Due to the fact that in our rural area we have power outages quite often, our incubators are always put on an APC backup battery just in case (these are found at most electronics stores). Babies were assist-hatched out at nearly 18" in length and they hooded immediately. They were dark black with light banding like little zebras and can make your eyes go dizzy when they crawl quickly around the cage, which is probably beneficial in eluding predators. Feeding baby Kings will grow remarkably fast. They are sorta amusing in behavior at first, without the necessary body strength they will hood up and fall over awkwardly or struggle while shaking under the difficult task. They are, however, extremely alert little guys and will watch you intently and follow your every move. They are nervous as well as skittish and flee quickly when disturbed. Sexes of the babies were fairly even in this clutch with 9 females and 10 males. The first shed occurred between 7 and 14 days and several fed while others refused. I have found this to be the norm. When purchasing baby Kings, the first question to ask is whether they have fed and on what. And how many times? You must look closely at the animal for signs of distress and not feeding as well as watching for signs of infections (bubble blowing, open mouth breathing, etc.). We have used the injectible antibiotic Baytril for respiratory infections with mixed success and I believe it is now given mostly orally. Despite the initial difficulties, I can't begin to tell you how exciting it is to hatch out baby Kings - simply phenomenal! It was definitely a milestone in our herping endeavors.

King Cobra Antivenoms

Central Research Institute Polyvalent Anti Snake Venom Serum
Country of origin: India

Thai Red Cross Society King Cobra Antivenin
Country of origin: Thailand

Venom Research Unit *Ophiophagus hannah* Antivenom
Country of origin: Vietnam

Serum Institute of India Ltd.SII Polyvalent Antisnake Venom Serum
Country of origin: India

Editorial Corrections from the Fall 2002 Issue of "The SHHS Rattle"

By
Karl H. Betz

In the last issue of the SHHS Rattle (Fall 2002) contained a couple of Editorial errors.
Firstly, the photos accompanying the article by Richard Mastenbroek, **Keeping the Irian Jaya Kingbrown in Captivity**, were not of Irian Jaya Kingbrowns but were "what's known as a "St George" or Queensland Mulga/King Brown." This misidentification is not the fault of Richard Mastenbroek and should not reflect on the veracity of his article. The pictures were picked from our archives to accompany the article and the error was completely on the part of the editorial staff. We apologize for any inconvenience.
Secondly, the article by Scott Eipper, **Husbandry of two species of Australian Hydrophiids (Sea Snakes)**, was not annotated to reflect that it had been previously published in the journal of the Victorian Herpetological Society, Monitor. It has not normally been our practice to annotate prior publication of articles submitted to the SHHS Rattle. We will continue to provide our membership with quality articles and will annotate submissions that have been previously published ONLY if the previous submission data is included in the byline of the article.

Australian Death Adders in Captivity

By Scott C. Eipper
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Introduction:

The Death Adders *Acanthophis* are (in my opinion) a large group of snakes numbering 14 species in total (7 in Australia, 4 in Papua New Guinea and 3 on neighbouring islands.) (Hoser, 2002).

All are highly venomous; their venom is mainly made up of neurotoxins. I have personally been the unfortunate recipient of a bite from a small *A. praelongus* which resulted in minor effects (swelling, pain, nausea etc) in which I did not seek out medical attention. I do know however of some bad bites that fellow keepers have had. One large female *A. cummingi* bit a colleague, which required a large amount of Antivenom to reverse the effects of the venom.

The type of Antivenom is Death Adder monovalent and the initial dose is 6, 000 units. The Antivenom is made in Australia at the Commonwealth Serum Labs however I am unsure if it is available for sale overseas.

That being said these are great elapids. I have only kept **AUSTRALIAN** species these are *A. antarcticus, A. cummingi, A. hawkei, A. lancasteri,* and *A. praelongus* and have looked after for short periods *A. pyrrhus* and *A. woolfi.*

I kept all of the *Acanthophis* I kept the same way with relative ease in which I will break up into more detail further on.

Housing:

I have 2 methods of caging that I use for *Acanthophis* they are as follows:

I use sliding glass fronted cages (2 feet long (60 cm) X 1 foot high (30 cm) X 1 and 1/2 feet deep (45 cm). Those are heated to 27 to 31 degrees Celsius by way of thermostatically controlled light bulbs (40 watt).

I also use opaque "sweater" type boxes. These I have found are better and have now changed to these. I also use heat mats rather than light bulbs with these sorts of containers.

I have experimented with a few types of substrates for these snakes and I have come to the conclusion that either newspaper or paper towel, are the best for the job.

Others have had considerable success with gravel and clay. However I prefer a faster and more hygienic substrate.

The enclosure is simple with a half-hollow log or small ice cream container up turned with a hole cut in it to allow for access. This is placed under the heat source (in the sliding glass cages) or above the heat mat. The cages do have a somewhat small gradient but this is still utilised by the snakes. At the cool end the water bowl is situated. This is a low bowl so the snakes can drink out of it. Remember these are not like Cobras *Naja* or Mambas *Dendroaspis*

These are very lazy elapids. Some Wild Caught specimens tend to only drink initially with misting.

Death Adders are nocturnal so a standard 12h light 12h dark regime is fine.

The "Basking" spots are around 29 degrees Celsius while the rest of the cage is kept around room temperatue.

Feeding:

Death Adders are usually fairly tricky snakes to get to feed, as they are mainly lizards (Skinks) or Frog feeders.

Acanthophis sp. Photo by Mardi Snipes

However, once they are eating mice or weaner rats they are good.

My adult Female *A. cummingi* was one such snake. A friend, who in turn got her from a Dealer in Darwin, gave her to me. She was not eating and was starting to lose condition. I left her a week to settle in and started leaving small mice near the Entrance to her hide. After a week of this I had no luck. I then decided to scent a small fuzzy rat with skink urine unfortunately same story. I was get frustrated by this point and needed to get some food into her. I assist fed (head of a fuzzy rat into mouth and let the snake do the rest) her, and had success. Now she is a great feeder eat both rats and mice.

Juveniles are I have found somewhat harder. I now offer a pink mouse to them when I get them, I leave it in the cage for an hour if its not gone I try to slap her with it (get a defensive bite) until its held. If all this fails I force feed drumsticks (pinky rat legs) until such time that the snake starts to eat on its own.

Female Death Adders tend to eat year around (except while gravid) where as the Males do go off their food and occasionally for extended periods. This is something that should be kept in mind but not worried about because if the snake was previously a good feeder it will generally still be so, It just needs sometime.

As for feeding rates with a Death Adder of 45 cm (18 inches) I roughly feed them 2 mice every 3 weeks in one sitting. Photos of A. antarcticus feeding can be seen in (Hoser, 1989)

Breeding:

As a group once the husbandry problems are solved, Death Adders are a fairly easy group of elapids to breed.

I cool mine at the start of October and have them warm again by December. The female is placed into the males cage and they are left together for about a week (care should be noted as some species especially *A. pyrrhus* are ophidiophargus (cannibalistic) (Hoser, pers comm).

Care of gravid females is much the same as any other gravid snake (keep the cage clean and warm and keep handling to a minimum) (Eipper, 2000).

Litter size varies from species to species so below average Litter sizes are given:

Acanthophis antarcticus (Common Death Adder): Average 18 (Greer, 1997)

Acanthophis cummingi (Floodplain Death Adder): Unknown

Acanthophis hawkei (Barkly Tableland Death Adder): 20 (Barnett and Gow, 1992.)

Acanthophis lancasteri (Hill Death Adder): Unknown.

Acanthophis praelongus (Northern Death Adder): 6 to 8 (Hoser, 2002.)

Acanthophis pyrrhus (Desert Death Adder): 11 to 13 (Greer, 1997.)

Acanthophis wellsei (Pilbara Death Adder): 12 (Hoser, 2002.)

Acanthophis woolfi (Dajarra Death Adder): not to the author's knowledge to have been bred.

Average gestation period across the board seems to be between 140 to 170 days. With juveniles having their first slough around 15 days after birth. Most young are around 12 to 13 centimetres at birth and around 10 grams.

Further Notes:

Sloughing can be a major problem with these snakes, I have found misting the cage just after the snake has gone through the "Blue" stage (eyes have cleared after turning milky blue) is very effective. Usually sloughing problems can be related to a previous history of mites after one or two sloughs however this can usually be overturned.

Mites themselves are probably one of the hardest parasites to get rid of in snakes and this in turn can cause further problems. Pest strips left in the cage for a couple of hours once a week for three weeks will get rid of these effectively.

Conclusion:

I have been keeping Acanthophis for around 8 years they are a great group of snakes to keep but they are not in my mind a great beginner venomous species due to their unpredictable nature and toxic venom. For further information on the Acanthophis genus I strongly suggest looking at Raymond Hoser's Website: **www.smuggled.com**, regardless of what your opinion of Ray is he is probably one of the foremost in anything to do with the genus Acanthophis. Further Notes on rearing of Acanthophis can be found in Valentic, 1998.

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Greer, A. E., 1997. *The Biology and Evolution of Australian Snakes*; Surrey Beatty and Sons, Chipping Norton; 358 pp.

Hoser, R.T. 1989. *Australian Reptiles and Frogs*, Pierson, 238 pp.

Hoser, R.T. 2002 Death Adders (Genus *Acanthophis*): an Updated review, including descriptions of 3 new island species and 2 new Australian subspecies. *Crocodilian, Journal of the Victorian Association of Amateur Herpetologists*, 4 (1) 18 pp.

Valentic, R., 1998 Notes on rearing Australian Death Adders genus *Acanthophis*, *Monitor* 9 (2), 42-47.

VENOM FACTS:

Common death adder, *Acanthophis antarcticus*
Subcutaneous LD-50 - 0.5mg
Antivenom: CSL Australian Polyvalent

Source: www.VenomDoc.com

Letter to the Editor:
Comments on false and misleading statements by Richard Mastenbroek

By Raymond Hoser
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The confusing and misleading text in the article "Keeping the Irian Jaya Kingsnake in Captivity" on pages 12-15 of the Fall 2002 *Newsletter of the Southeastern Hot Herp Society* needs correcting for the benefit of readers of your magazine.

A read of Mastenbroek's "paper" (which is essentially the same diatribe as published on his website at: http://www.kingsnake.com/elapids/) indicates an enthusiasm for his pet snakes.

In fairness to Mastenbroek, the latter part of the paper does in fact contain some useful information on this little known species.

But unfortunately all this is overtaken by his childish campaigns and failure to grasp the facts in terms of these very snakes.

His statements are potentially dangerous as he has not only deliberately engaged in providing misleading information (in violation of the ICZN's code on zoological nomenclature), but his conduct is so out of line, it could be reasonably interpreted as to be fraudulent.

Ignoring his scurrilous and baseless attacks on myself (Raymond Hoser) and my character in the opening of his article, Mastenbroek falsely asserted that the description of the *species Pailsus rossignolii* was based on a single brief e-mail from a museum contact at the Bogor Natural History Museum.

Even a cursory read of the original description (which Mastenbroek says he has read) would reveal that he knew his statement to be a lie.

That the statement is an attack on myself is not relevant here.

However what is relevant is the implication that the description of *Pailsus rossignolii* is somehow invalid and/or that the snake described as that species is in fact merely a variant of "*Pseudechis australis*" as then contended by Mastenbroek.

To further his spurious claims, Mastenbroek asserts an alleged lack of scientific proof in terms of the original description by myself.

Nothing could be further from the truth.

Mastenbrook re-asserts this alleged lack of proof by stating that he will call the New Guinea species "*Pseudechis australis*" until proven differently.

The proof is patently clear in the 2000 paper by myself.

It's just that Mastenbroek chooses to ignore it!

That Mastenbroek is aware of this "proof" is shown by his further reference to an online paper by his close friend Wolfgang Wuster which clearly stated that the species "rossignolii" as described by myself is valid and not only that, but radically different to Australian "*Pseudechis australis*".

My own inquiries into the King Brown Snakes goes back some years and the first major publication in this regard was a paper in 1998 describing the species *Pailsus pailsei*, which is sympatric to, but distinct from, the radically different species "*Pseudechis australis*" where they occur together, around Mount Isa in Queensland.

Sympatry alone is perhaps the best test of whether or not two variants are different species or not.

At this point in time, it's also worth noting Mastenbroek's own lack of experience with elapids, bearing in mind that Atillo (Joe) Mara has advised that he sold Mastenbroek his first pet elapid as recently as 1999.

Continuing investigations into "*Pseudechis australis*" led to the then startling discovery by myself that there were no King Brown Snakes in New Guinea, with all specimens from that island being yet another undescribed species, that was similar in form to the much smaller *Pailsus pailsei.*

The paper describing them as *Pailsus rossignolii* was published in 2000. A follow-up paper describing all known and three new forms of the species "*Pseudechis australis*" was published in 2001.

As part of the processes of ascertaining the general distribution of all the *Pailsus* species, I looked at specimens of "*Pseudechis australis*" and "*Pseudonaja* spp." in Australian Museums from all areas where the species are known to occur as well as countless captive specimens of known species.

Besides the fact that my papers more than adequately "prove" that these species are distinct, and well and truly within the minimal requirements as laid out by the ICZN in "The Rules" other independent researchers have also ascertained that the taxonomy and nomenclature as used in my taxonomic papers is valid and correct.

A listing of recent papers that uses these names would fill several pages and is not necessary here. Suffice to say that the most recent book on snakes by the West Australian Museum uses names assigned to species by myself.

A forthcoming book by a curator at the Queensland Museum will undoubtedly do so as well.

More importantly, and in terms of Mastenbroek's false and misleading statements in relation to the "Irian Jaya Kingbrown", he cites an online paper by his close friend Wuster, which I will mention again in a little more detail.

That paper shows a Mitochondrial (Cytochrome *b*) DNA separation between *Pailsus rossignolii* and "*Pseudechis australis*" of some 7% (noting that 3% has been given by other authors such as Harvey et.

al. 2000 as being enough to separate species) confirming:

A/ That it is a different species and

B/ That the generic placement of the species *pailsei*, *rossignolii* and West Australian *weigeli* into the genus *Pailsus* is also correct.

Notwithstanding Wuster's own results confirming the diagnosis of the species r*ossignolli* and his similar results on *Pailsus pailsei*, which for reasons best known to himself, he has kept quiet about, one must not as a matter of course count on any expertise by Wuster in Australasian snakes.

By way of example (as of 7 November 2002), on his website at: http://biology.bangor.ac.uk/~bss166/Projects.htm he has a photo of an Australian Collett's Snake ("*Pseudechis colletti*"), listed as a "New Guinea Pseudechis"!

Or for example Wuster's claims at: that neither *Pailsus pailsei* or *Acanthophis wellsei* are valid species because they weren't included in Cogger 2000.

As far back as October 1999, Cogger himself conceded that both were new and validly named taxa and that their non-inclusion in his book reflected his ignorance of the 1998 papers at the time his book went to print and not that the taxa weren't valid.

To list all Wuster's mistakes would be tedious and is simply not relevant here.

However, the above shows quite emphatically that Mastenbroek (and/or his close associates) is fraudulent in alleging that the "New Guinea Kingbrown" as he calls it, is the same snake as the Australian species known by the same name.

Notwithstanding all the above, his paper effectively rediagnoses the species *rossignolii*, including some of the differences identified by myself in the original description. Had Mastenbroek possessed any meaningful experience with Australian *Pseudechis australis* (and by this I mean not just peering through a few glass cages at Peter Mirtschin's Venom Supplies in Tanunda, SA), Mastenbroek may have even been able to perhaps redescribe the species *rossignolii* in a more meaningful way.

He may have then noted the radically different morphology (in *Pailsus* as more slender build, thinner head, etc), scalation (in *Pailsus* a higher ventral count, differences in subcaudals, rostal, etc) and breeding biology (e.g. no male combat (as a norm) in *Pailsus*) between the Australian King Brown Snake ("*Pseudechis australis*") and the snake he calls "Irian Jaya King Brown", more correctly known as *Pailsus rossignolli.*

It is a pity that his paper is therefore made to have little value as a result of his conflicting and misleading comments.

This fraud by Mastenbroek is further exacerbated by the misleading use of a photo of an Australian King Brown Snake (from Queensland), which by Mastenbroek's own admission is a radically different snake to the New Guinea species. The placement of this photo in the paper, was (I understand) an unintentional error by the editor of the newsletter, Chris Harper, whom I assume was not aware of the radical differences between the two species.

However this action could reasonably lead an uninformed person to believe that both taxa were effectively one and the same.

There is no doubt that ten years from now, Mastenbroek will look like an idiot for failing to comprehend that snake from New Guinea does already have a proper name (*rossignolii*) and has done so for some time already.

Furthermore, as much as he may not like to use the name, he and every other herpetologist is stuck with it and Mastenbroek would look far more like a professional (which he clearly seeks to do) if he were to use the correct nomenclature.

Finally, it is worth making mention of the real reason why Mastenbroek has engaged in the fraudulent practice just described.

In 1993 and 1996, in my books, *Smuggled* and *Smuggled-2*, I detailed major smuggling rackets involving his close friend and convicted wildlife smuggler David John Williams. Since then, it seems that Williams and friends Mastenbroek and Wuster have used every available forum (although mainly the internet) to attack myself and anything else to do with me.

Because of the fact that Williams et. al were effectively bankrupt and/or without significant asset, our lawyers said that to sue and get judgement against them for defamation would be pointless as we would never get any court ordered pay-out and merely get a large legal bill instead.

However when the defamation moves into the scientific arena and persons such as Mastenbroek peddle false and misleading information (in this case that the New Guinea species of "Kingbrown" is one and the same as the Australian), it is reasonable for readers of your journal (whom I assume have no concern for the personality battles Mastenbroek may wish to wage) to be appraised of the truth and scientific reality.

Long after myself and Mastenbroek have departed the herp scene, others will look at the "New Guinea Kingbrown". We owe them the decency to provide them with accurate information.

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(and as published at: http://www.kingsnake.com/elapids/)

Uetz, P. 2002. The EMBL Reptile Database at: http://www.embl-heidelberg.de/~uetz/LivingReptiles.html and links from there.

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ALL Hoser papers cited above can be downloaded in full from the website:
Http://www.herp.net as htm, pdf or MS-word files.

New Series,“Snake Wranglers”, on the National Geographic Channel

Series Breakdown and Air Times

Snake Savior
Premieres Wednesday, January 22, at 8 p.m. ET/PT
Help rescue India's most notorious snakes—cobras, vipers, and giant pythons—from frightened villagers, crooked snake charmers and devious poachers.

Diamondback Survivors
Premieres Wednesday, January 29, at 8 p.m. ET/PT
Work with a rattlesnake expert to learn how America's largest venomous snake—the diamondback—has been able to thrive in the wake of human encroachment.

The Boas of Belize
Premieres Wednesday, February 5, at 8 p.m. ET/PT
Travel to Belize to visit an island crawling with boa constrictors. Then visit the heart of the country to catch much larger mainland boas.

Bad-Rap Rattlesnakes
Premieres Wednesday, February 12, at 8 p.m. ET/PT
Distinguished herpetologist Dr. Jesús Rivas travels through the United States to get hands-on experience with some of our most venomous snakes, including copperheads, cottonmouths, and rattlesnakes.

Fangs of the Forest
Premieres Wednesday, February 19, at 8 p.m. ET/PT
Yale researcher Dr. Zoltan Takacs travels to Africa to locate blood samples from some of the world's deadliest snakes.

Venom Harvest
Premieres Wednesday, February 26, at 8 p.m. ET/PT

Three decades ago, Rom Whitaker helped an Indian tribe, the Irulas, go from hunting the region's cobras, kraits, and vipers for their skins to conserving them for their venom. Now we re-visit them with Rom for an update.

Swimming with Sea Snakes
Premieres Wednesday, March 5, at 8 p.m. ET/PT
Dr. Zoltan Takacs swims with deadly sea snakes in the waters off Fiji and Vanuatu in order to determine why sea snakes don't die from their own venom.

Rattlesnake Road Trip
Premieres Wednesday, March 19, at 8 p.m. ET/PT
Jim Harrison is heading out to the American southwest in search of a fresh supply of Mojave Rattlers for the creation of new lifesaving antivenoms. Can he round up a new collection of rattlesnakes on this road trip and make it back alive?

South Pacific Snakehunt
Premieres Wednesday, March 26, at 8 p.m. ET/PT
Join an expedition to Malaysia, and hunt for new species of snakes in one of the last tracts of virgin rain forest left on Earth.

A “HOW TO”:
Force-Feeding Neonatal Venomous Snakes
By Thomas Eimermacher

Most long-term keepers and breeders of venomous snakes will have to force-feed a newborn snake at some point in time. Many species of snakes feed on reptiles and amphibians at the neonatal stage of life, and gradually switch to larger prey (including rodents) as they grow in size. Despite a thorough knowledge of the natural history of a given species, it is not always possible or feasible to provide the type of prey that would trigger a feeding response from the animal. When all other alternatives fail, the keeper is sometimes compelled to resort to force- or assist-feeding the animals. The purpose behind this is to cater the snake with the needed nutrients, while jump-starting the metabolism and thereby encouraging the animal to begin feeding on its own.

While force-feeding can be a very effective technique, it is not entirely without risk. There are

several issues that must be considered with this. First, there has often elapsed a significant amount of time since the animal has not fed, which may mean that the snake is very weak and physically vulnerable. Since the force-feeding procedure itself creates some degree of stress even in the most experienced hands, it can be dangerous for the animal if it has already been allowed to deteriorate to a critical condition. It is therefore important that the snake is force-fed before its condition declines to the point at which the procedure itself becomes a critical risk to the animal. Secondly, force-feeding a venomous snake is a rather delicate procedure, and any keeper engaging in it faces a significantly increased risk of being envenomated. In addition, it is very easy to injure the snake while doing so, and the utmost care should be taken to avoid a potentially serious injury to the animal.

Once it is decided that this approach is to be taken one must choose an adequate prey size. Small to large pinkie mice are a suitable choice for most small to medium-sized species of venomous snakes. Even newborn members of larger species usually do well on pinkie mice, peach fuzzy mice, or rat pinks. Prior to beginning the actual procedure, the prey is to be taken in prekilled condition and lubricated in water. The young snake must now be fixated, which can be accomplished in a number of ways, including pinning, tubing, or by use of cushion-type foam pads. Pinning has the disadvantage of subjecting the snake to an increased risk of injury, as some specimens will struggle profusely when fixated in this manner. As an alternative, the use of two cushion-type foam pads that are assembled in a book design can be practical. The snake can be fixated between the two pads and then be manipulated accordingly. Care must be taken regarding the type of foam pads used when implementing this method. Both pads must be soft enough to keep the animal from being injured, yet evert enough pressure to effectively immobilize it. For most people however, tubing is the safest and most effective method for both the keeper and the kept. This method also involves relatively little risk of injury to both parties involved. Once tubed, the snake can then be carefully backed out of the tube, and fixated with the appropriate hold. It is recommended to fixate the animal on a surface that provides a fair amount of traction in order to keep the snake from manipulating the handler's grip by twisting or thrashing.

At this point, a pair of thin tweezers is used to introduce the prey item to the snake. Many snakes will open their mouth and bite whatever is placed in front of them automatically, while other specimens will spite the handler and persistently refuse to do even as much as opening their mouths. In that case, one may gently slide a sterile metal probe into the mouth, which usually triggers an angry biting response. With the probe keeping the mouth from closing, the prey item can now be inserted. A pair of long, thin tweezers should be used to carefully introduce the prey item head-first into the mouth of the snake. This again often triggers a biting response from many specimens. With the prey item in the mouth of the snake, the probe can now be removed. The prey item is then carefully pushed into the throat by the use of thin tweezers. Great care must be taken while doing so, as the fragile interior structure of the mouth is easily injured otherwise. Once the prey item has been pushed past the jaw of the snake, many specimens will further swallow on their own. With others, the prey must be pushed further towards the stomach, as they tend to regurgitate otherwise. Once can either use a probe to push it down further, or simply massage the prey down by rubbing the snake's ventral scales, as the prey item travels towards the stomach. For the ladder method, it is recommended to tube the animal prior.

Following the procedure, most specimens will be stressed and should be left alone, with an ample supply of fresh water readily available. The number of force-feeding sessions required to successfully motivate the animal to feed on its own varies greatly, and can take anywhere from one session to several months of weekly sessions.

NEWS ITEM:

Eggs 'hold key to snakebite survival'

By Santosh Sinha , BBC Hindi Online

A research institute in India says it has developed a way of using eggs as an antidote to potentially fatal snake-bites. The Vitthal Mallya Research Institute in the southern Indian city of Bangalore says its scientists have developed the technique after three years of intensive research. The animal then develops antibodies against the poison in its blood. But Dr Rao said the process is very painful. "We will extract the antidote from the yolk of an egg," said Dr Rao. "The antidote will then be injected to a snake-bite victim," he added. According to some estimates, around 15,000 people die in India every year due to snake bites. The process of producing antidotes starts with immunising chickens when they are just four weeks old. They are injected with a small amount of snake venom when they reach the age of 12 weeks. They develop immunity to the venom by the time they are 20 weeks old. Dr. Rao says the process would be much cheaper than the existing one, as an average hen lays around 250 eggs every year. He said one egg would produce at least 5 milligrams of antidote, which would be enough to save one life. Dr Rao said tests were presently under way to determine whether the antidote has any side effects. Earlier, the same institute developed a unique technique which helped in identifying the species of a snake from a victim of snake-bite.

Pailsus, *Pseudechis* and the Irian Jaya Kingbrown

by Wolfgang Wüster
School of Biological Sciences, University of Wales, Bangor, UK

"Australians and others with an interest in *Pailsus/Cannia* are advised in the first instance to inspect at least some known specimens...."
(Raymond Hoser, 2001)

In his response to Richard Mastenbroek's (2002) article on Irian Jaya Kingbrown, Raymond Hoser (2002) makes a number of accusations and claims that require a reply. At the same time, this provides an opportunity to address the status of the taxa involved, which is likely to be of more interest to readers than the rather repetitive personality clashes over this issue.

A background to the *Pseudechis*/ *Pailsus*/ *Cannia* controversy is given in Wüster et al. (2001) and Wüster (2002a,b). It is worth reiterating that the controversy that has surrounded Hoser's species descriptions concern primarily his methods, not his conclusions. Some of the taxa he has described may well be valid. The point of the criticisms is that the lack of detail in his papers makes it impossible to form an independent opinion of the matter, and that his publications most certainly would never see the light of day in a reviewed scientific journal.

The following sets of comments address the claims and accusations of Hoser (2002) regarding Mastenbroek's (2002) article.

1. Description of *Pailsus rossignolii*

Hoser accuses Mastenbroek of "providing misleading information (in violation of the ICZN's code on zoological nomenclature)". This is of course nonsense, as the Code does not in any way, shape or form restrict scientific debate about the validity or otherwise of any taxon. Mastenbroek is as entitled as anyone else to question the status of this form: this is a matter of opinion, not of legislation. It is scientific evidence that will provide a definitive solution to this problem.

Hoser then cites Mastenbroek's statement that Hoser described the holotype of his *Pailsus rossignolii* on the basis of a single e-mail, and states that "Even a cursory read of the original description [...] would reveal that he knew his statement to be a lie."

Would it really? What evidence is there that Hoser had any more evidence about the holotype than that provided by his correspondent at the Bogor Museum? The e-mail was, at the time of writing, downloadable in one of several self-extracting zip files relating to *Pailsus* and *Pseudechis* on Hoser's website at www.smuggled.com. Its full text is:

"Dear Hoser,
Our museum has one number (No. 364) of *Pseudechis australis*. It has a total length of 1.05 meters. Subcaudal indicates 54 single scales. The locality is only at New Guinea.

Yours sincerely,

Mumpuni
Lab. Herpetology, Museum Zoologicum Bogoriense, Balai Penelitian dan Pengembangan Zoologi, Puslitbang Biologi - LIPI, Jl. Raya Bogor Jakarta Km 46, Cibinong 16911, Indonesia"

Hoser's description of the holotype of *P. rossignolii* reads as follows:

"*Pailsus rossignolii* sp. nov.
Holotype: An adult specimen (no. 364) of 105 cm total length lodged at Museum Zoologicum Bogoriense, Balai Penelitian dan Pengembangan Zoologi Puslitbang Biologi – LIPI, Jl. Raya Bogor Jakarta Km 46, Cibinong 16911, Indonesia.
The animal has 54 single subcaudal scales. The locality of collection is given as "New Guinea", but to date the species is only known from the south of the Island in the general region of Merauke Lat 8º 30' Long 140º 20' and areas a short distance west of here along the coast."

Hoser's holotype description provides no information on the specimen beyond that contained in Mumpuni's e-mail. Presumably, this is why such "trivial" details as the sex of the holotype, or the dorsal and ventral scale counts, are omitted from the description. Had he bothered to look at the two specimens of *P. rossignolii* in the Australian Museum, Sydney (AM R 147654 and 147660), then he might have been able to produce a more convincing description, based on holotypes he had actually examined himself.

Elsewhere in his description of *P. rossignolii*, Hoser (2000) mentions communications from European herpetoculturists, but no personal experience with this species. Nowhere in his paper is there any indication whatsoever that he ever set eyes on an Irian Jaya king brown. He does not list any specimens examined by himself, and the photos are by others, which is atypical for a good photographer like Hoser. In a later paper, Hoser (2001) listed the specimens of *Pseudechis australis* and associated forms that he had examined, but did not mention a single specimen of his *Pailsus rossignolii*. In the absence of any evidence to the contrary, the most parsimonious explanation thus remains that Hoser had never set eyes on "his" species prior to its description, and that the description of the holotype was based solely on the e-mail from the Bogor Museum employee.

2. Status and validity of the genus *Pailsus* and the species *pailsi* and *rossignolii*

In several places, Hoser misinterprets statements made on my website: (http://biology.bangor.ac.uk/~bss166/FWit/Pseudechis.htm) as validating his species and the genus *Pailsus*. While it is true that the DNA data presented on that site are consistent with the contention that *rossignolii* is a distinct species from *Pseudechis australis*, they do NOT support the classification of this form outside *Pseudechis*, unless one opts for an "atomising" taxonomy where nearly every species is classified in a separate genus. Moreover, Hoser is wrong in his assertions that the results confirm the status of *pailsi* or *weigeli*. On my web page, the affinities of *pailsi* are assumed, as no DNA data for *pailsi* were available at the time the page was set up, and *weigeli* is not even mentioned. Data for *pailsi* have since been obtained, and show that, contrary to Hoser's assertions, *pailsi* shows no special affinities with *rossignolii.* It is in fact as distinct from that species as it is from *P. australis* and *P. butleri*. In summary, while *rossignolii* and *pailsi* are probably valid species of *Pseudechis*, there is no evidence in favour of the recognition of the genus *Pailsus*. Not only is *Pailsus*, as conceived by Hoser, rooted deep within *Pseudechis*, and closest to *P. australis*, but, moreover, there is no evidence for its monophyly! The most parsimonious approach is therefore to consider *Pailsus* as a synonym of *Pseudechis*. Details of DNA data and analyses will be published in the scientific literature in due course.

3. The value of Mastenbroek's paper

Richard Mastenbroek's paper has considerable value in redefining and redescribing the Irian Jaya *Pseudechis*. Unlike Hoser, he provides basic morphometric data for multiple specimens of *P. rossignolii*, such as ventral and dorsal scale counts, as well as extensive husbandry information.

These new data in fact destroy Hoser's own sole distinctive feature of *rossignolii* against *pailsi*: there is extensive overlap of subcaudal counts - the 58-68 subcaudals seen in Mastenbroek's series of *P. rossignolii* show extensive overlap with the subcaudal counts given for *P. pailsi* by Hoser (2001), which are 54, 65, 65, and 69). Hoser gave counts of 49-58 subcaudals for 3 specimens of *P. rossignolii* (which he almost certainly had not seen himself), i.e., substantially lower than those seen by Mastenbroek. Among the Australian Museum specimens, AM R 147660, a male, has 62 subcaudals, and AM R 147654 (female) has 51 subcaudals, but the tail tip appears to be damaged, so that several further subcaudals may be missing. The same may be true of the specimens mentioned by Hoser.

On the other hand, Mastenbroek provides a new and clearly diagnostic character, the ventral scale count. Mastenbroek's 6 specimens had ventral scale counts of 178-187 ventrals (and AM R 147660 and 147654 have 187 and 186, respectively). On the other hand, Hoser gives counts of counts of 218 and 219 for the two specimens of *P. pailsi* in which ventral counts were not omitted "in an oversight" (Hoser, 2001).

It seems more than a little ironic that it is one of Hoser's fiercest critics who provides the first real morphological evidence for the status of *P. Rossignolii* when Hoser himself failed to do so.

4. Why do we bother?

Yet again, Hoser tries to attack the credibility of his opponents by referring to his "exposure" of criminal activities in his "Smuggled" books, and states this to be the reason behind criticisms of his taxonomy. The reality is that I could not care less about what Hoser said in his books, which I have never read and do not intend to read.

On the other hand, I do care passionately about the taxonomy of venomous snakes, and as a scientist I do care about the evidence behind that taxonomy. Science often has a poor image among non-academics. The "it's so obvious, why do the scientists always try to make it difficult" attitude is extremely prevalent, and something the likes of Hoser exploit very effectively - they become the anti-establishment heroes. Most of my academic colleagues prefer to stay in their ivory towers instead of talking to the general public. On the other hand, I see my mission as ALSO including communicating what I do to persons outside of academia, and that includes countering non-scientific claims and posturing. There are no two separate worlds of taxonomy with different standards of evidence, one for "amateurs" and one for academics - everyone who plays should play by the same rules.

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The Good Ol' Days.

They were and they weren't.

By Bill Panos

I remember in my younger days, some four plus decades ago, all types of animals fascinated me. Birds of prey and reptiles were at the top of my list. Snakes and lizards were a little easier to come by, so I started there. My father built me a plywood and hardware cloth box to keep the garter snakes I would bring home. We had a rock wall in the back yard so snagging snakes was pretty easy.

I started to notice that pet stores, in addition to cats, dogs, and canaries were selling snakes. Big, beautiful "boa constrictors". I used to go in and look at those animals every day. Nobody had a clue what species they were or where they were from. A Latin name? No such thing! "It's a boa constrictor."

I was about ten or twelve then. The only problems were saving up the money to buy it, about twenty-five bucks as I recall, what to keep it in and how long before mom found out I had it was the question. I mowed some lawns and soon had the money for the snake and an aquarium.

Two down, one to go, so I did it. I bought the snake and the aquarium, got `em home, headed for the basement and hoped for the best. Life was good! My snake was eating mice. Now, looking back, I know it was under the worst conditions - not enough heat or light, and then it happened…I had the snake out and was holding it and it coiled up around my arm. Now I had it behind the head and it had me from the elbow down but Hey, I was a kid. I didn't want to let go of the head so, I go upstairs and say "Hey mom, help me unwrap this." To this day she will tell ya "That's the first time I realized snakes aren't slimy." I think she got over it. Kinda hard to tell.

That was thirty some years ago. No computers, no pictures, no email. I don't remember how I got my first price list but it was by U.S. Mail and most snakes were sold by the foot. You never really knew what you were going to get. There were some shady or just plain ignorant dealers and very few breeders. Almost everything came out of the wild and was sent straight to your front door.

I didn't buy my first hot herp. I found it being kept by the manager of a Hilton hotel in Sioux City, Iowa. It was a lovely two-foot long, slate gray C. viridis he had in a ten-gallon aquarium with some gravel and about an inch of water in the bottom.

He was keeping it in his office at about 72 F. and couldn't figure out why it didn't rattle any more and wouldn't eat. He knew I liked snakes and said if I wanted it I could have it. I didn't think twice. I drained the water from the tank, put it and the snake in the back seat of my car and headed back to Omaha NE.

I set it up in a 50 gal. L-shaped tank that I still have, and within two weeks of getting proper heat and light it was as nasty as it was supposed to be and taking mice. I was hooked on hots. Now that I was living in an apartment I decided to get out the price lists and see what else I could get.

DO NOT KEEP HOT HERPS IN AN APARTMENT. Risking your life is up to you. Risking your neighbor's life is not up to you. I was young and stupid. Some people say I am now old and stupid. My point is, back then there were no controls at all on venomous snakes. Any one could get them sent to their front door. Boomslangs were sold in pet stores as corn snakes are sold now. You could find them for twenty dollars.

I have receipts from some places the older keepers may remember…The Shed in Florida, hand signed by Joe Baraducci, and Tom Crutchfield's, also in Florida, even some people that have fled the country to avoid prosecution for their herp collecting and selling practices. These go back twenty years and more. Back then no one thought much about how the animals were obtained - they were available and we bought them.

Times have changed, and I think, for the better. I didn't know any other people were keeping venomous reptiles. I didn't know of any "herp-societies." There was no Internet and no exchange of information. The only information available was from books usually outdated and not meant to advise people on keeping snakes. Now there are some controls on importers. There are breeders. There is no reason for taking animals from the wild and having an eighty-percent mortality rate of imports. You will always get better animals from captive born stock than from wild caught imports.

These are the best days of herp keeping, especially for hot keepers with an unprecedented

variety of high quality and healthy animals from dedicated breeders.

Some controls on keeping venomous reptiles may be necessary. I have met people that shouldn't be allowed to own gold fish. This isn't a change I fear.

It took me two years to get a Federal falconry permit and that was in the early 1970`s but it was something I wanted and I wanted to do it legally. Now not only do you have to take a written test but also your facilities must pass inspection and you must serve a year apprentice ship with a licensed falconer.

Keeping potentially deadly animals is not a right; it is a privilege that should be granted to those with the knowledge and skill to handle it.

I don't know who should be making that decision but I remember when nobody did and as I look back, those weren't the good old days. These are.

Happy herping and great keeping to you all. I won't wish you luck, I wish you knowledge. ~BP

NEWS ITEM:

Police hunt for drugs, find reptiles

Snakes, caiman found on guard at house of man arrested on drug charges

By Carl Chancellor
Beacon Journal staff writer

Jan. 07, 2003

(Ohio) A trio of reptiles failed miserably in their guard duties last week.

On Monday, Arlander Ables, 42, the owner of two snakes and a caiman, was arraigned on a variety of drug charges stemming from his arrest last Friday by Akron police officers.

According to Lt. John Livers, Ables was arrested at his Ackely Street residence after allegedly selling drugs to undercover narcotics officers.

Livers said the officers, executing a search warrant, entered the home and were immediately confronted by a pair of boa constrictors. He said a stash of drugs was recovered from the enclosure holding the snakes with little problem, but he added that the encounter with the snakes was ``unusual."

``It's usually dogs," said Livers. He said its not uncommon for drug dealers to use Rottweilers to protect their drugs and money.

However, it was what officers found next in Ables' basement that caused the real stir.

``It was a caiman, which looks like an alligator. It was about 4 feet long," said Livers. He said the caiman -- any of various tropical American crocodilians-- was kept in a pen that contained a small plastic wading pool and a safe, which officers assumed contained cash.

Livers said one officer distracted the reptile as a second officer entered the pen to recover the safe.

``There wasn't any money in the safe, just some photographs," said Livers. He said the suspect asked officers not to tell his wife about the photographs, which were pornographic in nature.

Ables, who spent the weekend in the Summit County Jail, was charged with several felonies including trafficking crack cocaine, possession of crack and marijuana, and manufacturing of drugs. He was released on Monday on a $20,000 bond.

Livers said the reptiles were left in the care of the other residents at the Ackley Street home. He said that his office was trying to determine if housing the reptiles violated any municipal ordinances.

Ables is scheduled to appear in court on Jan. 15.

http://www.ohio.com/mld/beaconjournal/news/local/4889956.htm

Cage Cleaning and Venomous Reptile Husbandry

By
Clarence G. Nasworthy, Jr.

"If you are not part of the solution, you are part of the precipitate."

Introduction:

The cage cleaning and herp room sanitation of 99.9% of today's herpers is absolutely atrocious. I have visited the so-called "snake rooms" of many professional and amateur herpers only to find the most detestable conditions (probably only seen elsewhere by landfill technicians). Upon return to my domicile/herp facility, the decontamination process required for me to re-enter, has taken upwards of 3 hours. Herein, I shall describe the meticulous detail one must pay to the cleansing and disinfecting process of the properly maintained herp room.

My Facility:

Upon being the fortunate recipient of a tidy inheritance 8 years ago, I purchased a 150 x 150 foot (22,500 sq.ft.) one story solid concrete building located geographically in an area that is upwind of all industry and refuse facilities by at least 5 nautical miles. Outfitting the building for my purposes was quite a task. The 12 inch thick concrete floor of the facility is overlain with a one inch thick layer of clear acrylic. The underlay is pure snow white, as are all walls and ceiling. The ceiling is also interspersed with lighting one might typically find in an operating room. These full spectrum UV ray lighting fixtures are spaced every 5 feet, equidistant apart throughout the herp room, starting from the center. Because of the sparkling clean look, I initially started out with all working surfaces outfitted in polished stainless steel. However, when the lights were all on, the effect was blinding and I found this to be too unsafe for venomous reptile work, and switched to brushed stainless steel.

The entire building is slightly pressurized within, and all windows and doors have the same degree of sealing that the CDC in Atlanta uses in its level 4 hot zones. The slight pressurization has the effect of blowing air outward if any windows or doors are opened. However, the air locks outside the doors are themselves flooded with a nebulized antibacterial/antiviral chemical called, Staphene in the event that a door is opened. This also serves to cleanse the lungs of the herper prior to entering the herp facility, lest he introduce an unwelcome pathogen through normal respirations. The air conditioning ventilation system also utilizes a filter system developed by the military for post nuclear holocaust bunkers.

My Residence:

On the south end of the building is a small adjoining room in which I reside. However, only the items absolutely necessary for my survival and cleanliness are in this room as I find I have time for nothing else. A computer with a T3 internet connection is my one luxury. My linens, walls and furniture are all pure white, as I find it shows even the slightest speck of dirt, dust or grime and eliminates the possibility of contamination to the rest of my herp facility.

The Disinfecting Booth:

On the north end of the building, I have installed a "paint spray style booth" one might typically find in an auto body painting shop. However no paint has ever been used in the sprayer. This is the area that I use to daily spray my cages with a solution of 25% chlorine bleach. Initially I tried a 100% chlorine bleach/lye solution, but I found that the plastic style cages either became too brittle and fell apart in my chemical gloved hands, or they just immediately dissolved in the spray leaving a soupy mess on the floor.

Following the cleansing chlorine bleach bath, the cages are rinsed for exactly 30 minutes

(timed) with sterile, triple distilled mountain spring water. Afterward, the cages are dried with snow white towels that have themselves been washed in chlorine bleach, then tumble dried, and subjected to 1 hour of a UV light treatment on both sides. The cages are then suitable for re-entry by one of my reptile charges.

Reptile Food:

When I initially considered the aspect of importing rodents from outside sources and the difficulty that would be met by trying to sterilize each and every rat, I was delighted to discover a laboratory that breeds rats that are for all intents and purposes, sterile. However, upon receiving a shipment of these rats, (which are left in the airlock by my postal carrier), the package is misted with Staphene for up to 2 hours prior to my bringing them into the facility. They are then taken to my "sink booth" complete with exhaust hood, and their alimentary canals are flushed of excrement with a sterile water and (8%) chlorine bleach solution, followed by sterile water alone for 10 minutes. I have outfitted the sink with a hospital style incubator enclosure complete with rubber glove inserts, which enables me to handle the rats while I rinse them out. They are then immersed in containers of 90 parts water, 10 parts chlorine and frozen to -100º F for 90 days. I have found that no known pathogens can survive this treatment. Afterward, they are thawed and warmed to +100ºF and offered to the reptiles for consumption.

Reptile Excrement:

Probably the most difficult of problems to solve in the beginning stages of my herp facility, was dealing with the "snake poop" elimination and contamination situation. Ultimately, I discovered an ingenious system that utilizes a laser beam "particle sniffer" that can be calibrated to detect reptile fecal fumes, which activates a mechanism that drops the floor out the snake cage, leaving the snake suspended on a very thin screen mesh. Both the cage and the snake are then rinsed from all angles with sterile water. The water flows downward through a pipe system that automatically mixes a caustic antibacterial/antiviral chemical with the poop water slurry and ejects it into the sewer system. The drain pipe itself utilizes no less than 10 one-way valves to eliminate the possibility of a microbe migrating upward from the sewer system. [Periodically I also pour a 5 gallon bucket of a 50% Nolvasan solution down the drain pipe, and scream obscenities down to the microbes in the sewer system for good measure. (*I know they can hear me, those bastards*.] Cage cleaning, facility cleaning, and reptile feeding usually begins at around 5:30am and ends at 11pm sharp.

The Herps:

I have 10 snakes within my collection - 5.5 CB amelanistic *Crotalus atrox*. The first year of their lives were spent in quarantine with AZA approved and monitored courses of antibiotics, antiparasitics and the like. Cultures of both fecal material and saliva were taken periodically, and beneficial microbes were then reintroduced into their systems after treatments rendered nearly all microbial virtually extinct.

My initial goal was a breeding program whereupon I would ship out the parasite-pathogen free offspring to collectors around the globe. However, this did not last very long, as every single specimen from the first shipment turned belly up and died within a day of arrival. To make good on this to my customers, I replaced the dead offspring with the hopes that the first shipment died as the result of a thermoregulation problem during shipping. However, the second batch arrived and promptly expired as well.

Conclusion:

After requested necropsies were performed by 4 University veterinary clinics, (each receiving exactly 2 dead specimens, and one live specimen for comparison) it was discovered that my *crotalid* offspring basically had no appreciable number of antibodies, and thus a non-effective immune system.

After speaking with idiot after idiot, the so-called "specialist" that I was ultimately directed to said that I should probably begin gradually subjecting my snakes to various pathogens to build up their immune systems. Well, of course I just told him to stick that idea straight into his bacteria laden rectum, as it was out of the question.

Finding myself between a rock and a hard place, I have had to separate my collection to prevent breeding. I simply cannot add any more cages to my daily routine, unless the earth itself slows its rotation and adds hours to a day. Good luck with your cleaning.

The preceding was completely fictional and originated from the mind of yours truly. It begs an answer to the question: "How much is too much?"

If you found yourself thinking, "Wow! What a great set-up!", you really need to get out more often.

~Till next time, try to enjoy the hobby.

Chris Harper

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The Southeastern Hot Herp Society, Inc.

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APPLICATION for MEMBERSHIP

Mail To: Chris Harper, 71 Ridgeway Drive, Danielsville, GA 30633 -- USA

Please enclose $25. Make all checks payable to the Southeastern Hot Herp Society.

Our Mission Statement

The main goals of the Southeastern Hot Herp Society are:

1. To provide a forum for information exchange on the ecology natural history and behavior of venomous snakes.
2. To promote conservation and protection of indigenous venomous snakes.
3. To encourage responsible animal husbandry by venomous snake keepers.
4. To educate the general public to the benefits of venomous snakes in nature.
5. To serve as a clearinghouse of information on venomous snakes.

New Membership_____ Renewal _____ Today's Date: _____

Please print:

(First name_____(M.I.) __ (Last Name) _____ (Age)_____

Mailing Address: (Street)

(City) (State) (Zip Code)

Home Phone Number: ( )_____ **Email Address**:

Primary area of interest in SHHS: ie. husbandry, conservation, education, etc.

**Level of Education:

_____Occupation:_____

**Do you own any Venomous Snakes? _____If so list what you keep (basically):

Membership Agreement:

By signing your name, you indicate that you understand the purpose of the society and, to the best of your ability, agree to favorably support The Southeastern Hot Herp Society Inc.'s efforts (further known as SHHS in this document) The SHHS in no way encourages members to keep venomous reptiles. Venomous reptiles are inherently dangerous and a bite can result in permanent injury or death. Activities of the SHHS at times include close contact with venomous reptiles. By signing your name, you agree not to hold SHHS responsible for any injury or bite by venomous reptile that you may receive while participating in any activities associated with the Southeastern Hot Herp Society. Any person perceived by SHHS officers to have reckless behavior associated with venomous reptile handling will be banned from participation in the society. All members are expected to abide by the laws of their state, county and city.

I have read all of the above and agree.

Applicant: Print Name _____

(Signature)_____ **(Date)_____**

(Guardian if applicable):_____(Date)_____

** *This information is optional, but we are interested in the demographics of the society.*

The Southeastern Hot Herp Society

Our History

The Southeastern Hot Herp Society is a non profit organization dedicated to venomous reptile conservation through education. The society was formed in September 1998 as a response to the lack of an official body specifically for venomous reptile keepers, and due to an ever present apathy toward venomous reptile conservation. The society is primarily composed of venomous reptile keepers and is based out of the Northeast Georgia area.

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2. To promote conservation and protection of venomous reptiles.

3. To encourage responsible animal husbandry by venomous reptile keepers.

4. To educate the general public to the benefits of venomous reptiles in nature.

5. To serve as a clearinghouse of information on venomous reptiles.

Our Position On The Pet Trade

Although the SHHS condones the selling and trading of live animals, we do not support the exploitative, or illegal trade of reptiles and amphibians. Summarily, the conservation of wild populations AND a sustainable, responsible pet trade is what the SHHS represents. Commercial interests who wish to join the SHHS must agree to abide by this philosophy**.**

Disclaimer

The Southeastern Hot Herp Society in no way encourages anyone to keep venomous reptiles. Venomous reptiles are inherently dangerous and a bite / envenomation can lead to permanent injury or death. If a person keeps venomous reptiles or is planning to keep venomous reptiles, and is over the age of 18, the Southeastern Hot Herp Society feels that it is that person's right to do so, as long as they accept the responsibility that comes with it. This includes responsibility for their own safety as well as the safety of others around them. All members are expected to abide by the laws of their state, county, and city. Preferrably, anyone wishing to work with venomous reptiles should apprentice with a knowledgeable, experienced keeper.