

THE FORKED TONGUE

THE MONTHLY NEWSLETTER OF THE GREATER CINCINNATI HERPETOLOGICAL SOCIETY

Vol. XXVII, No. IV

www.angelfire.com/oh4/CINCYHERPS

April 2002

The Editor's Den

By Grady Calhoun

The April *Forked Tongue* features an article on the care of gravid female colubrids and incubating eggs. This is perfect timing since many of us are in the process of putting our animals together for breeding.

The April meeting will be held at Northern Kentucky University at 7:30 Wednesday, April 3rd. We meet in room 421 of the Natural Science Building.

March Highlights

Johnny Arnett from the Cincinnati Zoo was the speaker for March and presented a slide show on Komodo Dragons. As many of you know Johnny is one of the world authorities on Dragons. His presentation covered a trip to the Komodo Islands to study wild dragons. It was a wonderful show with great slides.

Announcements

This year, 2002, marks the 25th anniversary of the GCHS. We should all be proud of the work that the society does and the fact that it has remained in existence for this long. Some celebrations will be planned later in the year. Please let any of the officers know if you have any ideas.

Calendar of Events

- April 3rd Monthly Meeting. Program: Bill West on Basic Wildlife Photography
April 19th - 21st Herp weekend at Natural Bridge.
April 27th & 28th Educational program at Krohn Conservatory
May 1st Monthly Meeting. Program: Joe Shubauer-Berigan on Herps of the Savannah River Area.
May 11th & 12th Big show at museum

- May 18th Loveland Church festival
June 5th Monthly Meeting. Program
Robin Saunders Topic TBD
July 3rd Monthly Meeting. Program: Scott Kass, Topic TBD (tentative)

Caring for Gravid Females and Snake Egg Incubation 101, the American Colubrids

by Dean Alessandrini

The American snakes that are members of family *colubridae* are among the most popular snakes kept and bred in captivity. A few of the more popular genera included within this family are the king and milk snakes, (genus *Lampropeltis*), the rat snakes and corn snakes (genus *Elaphae*), and the bull, pine and gopher snakes (genus *Pituophis*).

With a few exceptions, the fertile eggs of these snakes can be successfully incubated in similar fashion. For the purposes of this article, I am going to make the assumption that you have successfully bred your captive colubrid snake, and that you are preparing for her to lay.

The methods I will discuss in this article are not intended to be considered the only ones that may be successful, and surely there are those who prefer different methods and have had good results. I will simply discuss the methods that have proven successful for me, and with which I have successfully incubated countless clutches over the years.

Stage 1, the Early Days:

After copulation and in the early stages of being gravid (carrying eggs) female colubrid snakes typically show a very strong feeding response, and should be fed well. During this period, it may be a better choice to feed smaller meals often, rather than the typical weekly large meal. You may even notice that although the female seems ravenous, she refuses large food items, even those that she may have certainly devoured during a "typical" time if the year.

The April Meeting is Wednesday, April 3rd at 7:30 at NKU

Some breeders suggest calcium supplements during this period as well, (calcium is essential to the production of the eggshells). I have not found this to be necessary, however, as long as adult prey items are offered. If you are feeding juvenile prey items, such as fuzzy mice or rat pups, it is advisable to dust them

Depending on the species you are working with, approximately 6-8 weeks after a successful copulation, the female will show the telltale signs of being gravid. You will notice that she always appears swollen in the rear half of her body, and the ventral side (underside) of the snake looks somewhat rounded, in contrast to a normal flat ventral side. The rear half of the body may seem more rigid than usual, and will feel very firm to the touch. Continue to offer small food items to her during this period, but be aware that at some point during this stage, she is very likely to slow down in feeding, or even to cut off altogether. This is normal and to be expected. Many times they will rush up to an offered food item as they normally would, only to change their mind at the last second, as if some instinct deep inside is overruling their feeding response and telling them that it is not a good idea to eat. If your gravid female does continue to feed during this period, be especially careful to offer only small food items.

Stage 3, The Pre-Lay Shed:

At some point during stage 2, when your snake is noticeably gravid, she is going to go through a shed cycle. This shed is typically referred to as the “pre-lay” shed, as it is a sign that oviposition (egg-laying) time is near. When your snake goes “opaque” (most notable by a cloudy appearance and blue or white clouded eyes), it is time to prepare a nest box.

The nestbox can consist of a sturdy plastic container, large enough for the female to enter and move around easily in. For a three and a half-foot California king snake, for example, a nest box about the size of a large shoebox or small sweaterbox will suffice. Fill the nestbox about half full with damp (but not wet) substrate. I like to use sphagnum moss mixed with cypress mulch, but vermiculite, peat moss, potting soil, or even dampened clean cloths can be used. Because your nesting female will want peace and security, opaque containers work better if your snake’s cage is in the open. Cut a hole in the side or top of the container and place it in your snake’s cage, on the cooler section (not under a heat lamp or over a heating pad).

with a good calcium supplement like the commercially available “Repti-Cal”, since the bones of baby rodents are not fully developed and are a poor calcium source.

Stage 2, She’s Showing:

When the pre-lay shed cycle is complete, expect your snake to settle down into the nest box within a few days. She will likely come out only on occasion to drink or briefly thermoregulate on the warm side of the cage. Again, depending on the species, she will likely begin to deposit the eggs in about 5-14 days after the pre-lay shed. A few species, such as *Drymarchon* (the indigo snakes and cribos) have been known to go as long as 28 days before they begin to lay. On average, however, I would expect the event to happen in about a week after the pre-lay shed. Once egg laying begins, it should be complete within about 8-10 hours. Occasionally, females may become “egg-bound” and either refuse to lay altogether, or stop with a few eggs still noticeably in their body. Should this happen, you should contact your reptile vet right away. Waiting until the female is large enough should help eliminate this problem. A good rule is if you are uncertain if she is large enough, stay on the safe side and wait another year. Most female colubrids are not fully ready to breed until they are at least 2-3 years old.

Stage 4, Incubation:

When the eggs are first deposited, they will feel like little water balloons, and are very fragile. It is now time to carefully pick the eggs up one at a time and place them into the incubator. Be careful to note the top of the eggs, and do not turn the eggs while moving them. Snake embryos may drown if the eggs are turned. Care must be taken to keep the eggs in the position they were laid throughout incubation. If the eggs were laid in a mass and are stuck together, it is ok to simply move the entire mass into the incubator as they are. This is much less risky than trying to separate eggs that are stuck... which can be, at worst, fatal to the developing embryos by causing the shells to split. After a few hours, the eggs will solidify and become much firmer than they were just after deposition. If it helps you to remember which side is up, at this time you can carefully mark an “x” on the top of each egg with a pencil mark, or with a small piece of tape. After the eggs graduate past the “water balloon” stage, eggs that are fertile will appear white,

The April Meeting is Wednesday, April 3rd at 7:30 at NKU

smooth, dry and leathery to the touch. Infertile eggs tend to feel slimy, and look yellowish. You should know for sure within a week if any of your eggs are bad, as they will tend to take on the “rotten egg” smell. It is normal for colubrids to have some good eggs and some infertile eggs in the same clutch.

The incubator

Generally speaking, (again with only a few exceptions) your goal is to keep the eggs in a damp, but not wet environment and at a more or less constant 76-82 degrees F temperature. There are certainly many ways to accomplish this, but for our purposes, I will discuss the method that has worked for me. Think of it as if you are going to set up a ventilate container ‘B’ only slightly, by drilling a few small holes in the *sides*. Now is the part that’s a little tricky if you have never done this. Gather a couple of clean cloths, (old t-shirts work well), and wet them well with luke-warm water. Wring them out. Wring them out again. Wring them out until they are still damp, but you cannot possibly squeeze another drop of water out by wringing them. Now you have the perfect “egg-mattress”. Line the base of container ‘B’ with one of the cloths. Now gently place the eggs on top of the cloth, cover the eggs with the second cloth, and snap the lid onto container ‘B’. Place container B onto the brick surface of container ‘A’.

Now you must cover the top of container ‘A’ with something that is going to keep the humidity in. If you have chosen an aquarium, wrap the aquarium lid with plastic wrap, leaving only a few holes for ventilation.

You now have a very good way of keeping the eggs at optimum humidity. The only issue left is temperature. If you have a room where the eggs will stay within the 76-82F range, then you are set. If not, you can place a small submersible aquarium heater into the water in container ‘A’. You will need to experiment with the setting, but plan to set the thermostat a few degrees higher than the desired air temperature in the incubator. Temperatures that are cooler than ideal will result in slower development time, however as long as the temperature is at least in the 70’s, the embryos should continue to grow and develop. Temperatures that are too high are more dangerous, and can result in deformities or death of the developing embryos.

Check the eggs daily to make sure that the temperature is within the desired range and the cloths

“container within a container”. Container ‘A’ is going to be something like an aquarium or a large, non-perforated plastic container. Place several bricks (enough to cover the bottom) into container ‘A’. The bricks are going to be the platform for container ‘B’. Now fill container ‘A’ with enough water to cover about 75% of the brick’s surface, leaving the top of the bricks dry. Container ‘B’ is going to consist of a small “plastic shoebox” type container. I like to use the Rubbermaid keepers that measure about 12”Lx6W”x3”D, with snap-on lids. These are available at most retail department and grocery stores.

in container ‘B’ are still damp. I have found that by using this method, I do not need to mist the eggs. The incubator seems to keep the humidity high enough that the cloths never dry out.

Problem Detection

Occasionally eggs will “dent” during the incubation process. This can mean that the eggs are not fertile, or it can simply indicate that they are not being kept moist enough. If your eggs dent, and it is not very close to hatch time (they will sometimes dent *just* before hatching) try getting them a little moister. Conversely, eggs that are kept too moist will tend to develop “windows” or clear areas in the shell. If your eggs window, try drying the medium a tad.

Stage 5, Pipping and Hatching

If all goes well, you can expect the eggs to begin hatching in 65-80 days. (longer in a few species). There is truly nothing like the moment when you check your eggs and see one or two little heads staring out at the world for the first time. This is the period we call “pipping” and this is what makes it all worth while. Babies are born with a small “egg-tooth” on the tip of the snout, and will slash their way to create an opening in the leathery shell. Resist the temptation to help the babies emerge. The young snakes will sit patiently for up to a day with only their noses out, while absorbing the last of the yolk from the egg. They will come out on their own when they are ready. All of the eggs may not pip at once, and it may be several days before the entire clutch has emerged. Once completely out, the neonates should each be housed in their own separate container. They will go through a shed in a week or so and will then be ready for their first meal.

The April Meeting is Wednesday, April 3rd at 7:30 at NKU

Ohio's Reptile and Amphibian Licensing and Regulations

Since it is the time of the year that we go out looking for local reptiles and amphibians, it is necessary to get familiar with the State regulations. This information was taken from the Ohio Department of Natural Resources Website <http://www.dnr.state.oh.us/wildlife/resources/pub3/pub03.html>. The Ohio Division of Wildlife adopted a regulation, Ohio Administrative Code (O.A.C.) Section 1501:31-25-04, concerning the possession, purchase, sale, or trade of reptiles and amphibians native to Ohio. The purpose of this regulation is to protect and conserve native reptiles and amphibians while maintaining the educational and economic benefits derived from them. The following information should aid you in understanding how you can legally possess reptiles and amphibians native to Ohio. The bottom line is that if you are an adult resident of Ohio and want to keep a "native" species, including a garter snake, a box turtle or even an American Toad you've got to have a license.

A propagating license application must be requested persons who permanently possess native reptiles or amphibians but do not intend to sell, offer for sale, trade or barter animals. The license holder may possess an unlimited number of reptiles and/or amphibians of which only four total individuals of each reptile or amphibian have been taken from the wild.

Except for bullfrogs, green frogs, snapping or softshell turtles that can be harvested with a fishing license, a nonresident cannot take from the wild native reptiles or amphibians, live or dead.

You do not need a reptile and amphibian propagating license to:

- Harvest bullfrogs, green frogs, softshell turtles or snapping turtles in accordance with O.A.C. 1501:31-13-05 (a fishing license is required).
- Possess without a license not more than four individuals or 25 eggs, tadpoles, or larvae of each native reptile or amphibian, live or dead which have been taken from the wild, legally obtained from out of state or captive produced, as an Ohio resident, 17 years of age or younger.

from the Division of Wildlife within 10 days after taking possession of any native reptile, amphibian or wood turtle (*Clemmys insculpta*).

With a propagating license, except for state endangered species, an Ohio resident may possess: four total individuals of each wild-captured native reptile or amphibian from the list entitled "Wild-captured Native Reptiles and Amphibians"; and/or an unlimited number of animals captive produced or legally obtained from out of state, with proper documentation.

A \$25 commercial propagating license is required for persons wishing to sell, offer for sale, trade, or barter native reptiles or amphibians which have been captive produced, legally obtained from out of state, or are the offspring of wild-captured animals. With this license, an Ohio resident may possess for sale, trade or barter an unlimited number of reptiles and amphibians that are captive produced or legally obtained, with proper documentation.

A \$10 noncommercial propagating license is required for

- Collect or possess non-endangered reptiles and/or amphibians for research or education ONLY by permanent establishments that are accredited by the American Zoological Association (AZA) or other Division of Wildlife approved museum, scientific, or educational institution in accordance with all applicable regulations. A detailed report must be provided to the Division regarding all collection activities by March 15th, annually (see "Research or Education" discussion below).

RECORD KEEPING AND ANNUAL REPORTS **Commercial and Noncommercial Propagating License Holders**

All propagating license holders must retain a certificate of origin, a bill of sale, receipted invoice, or other Division of Wildlife approved evidence of lawful acquisition for each individual of any taxa of reptile or amphibian captive produced or legally obtained from out of state. Accurate records for all animals, including wild-captured, must be maintained for five years by the license holder and be available for inspection by a representative of the Division of

The April Meeting is Wednesday, April 3rd at 7:30 at NKU

Wildlife at all reasonable hours. Records must include:

- Common and scientific name, and number of native reptiles or amphibians received or sold, the birth dates of captive born animals, and the date, location and length of all wild-captured taxa,
- Date of the transaction, and complete name and address of the person from whom an animal was purchased (including the seller's propagating license number) or to whom the animal was sold, traded, bartered or given as a gift, and
- Unique passive transponder code of implanted snakes and/or turtles.

RESEARCH or EDUCATION

Permanent establishments that are accredited by the American Zoological Association or other Division of Wildlife approved museums, scientific, or educational institutions in accordance with all applicable regulations must submit an annual report. The detailed report must be provided to the Division regarding all collection activities by March 15th, annually which includes a listing of all native reptiles and amphibians in possession, by species, sex, length, quantity, purpose for possession, and date and where or from whom acquired.

PERMANENTLY MARKING CAPTIVE SNAKES AND TURTLES

A unique passive integrated transponder (PIT) tag must be

implanted under the skin of all live native snakes and
Gray Treefrog (*Hyla versicolor*)
Bullfrog (*Rana catesbeiana*)
Green Frog (*Rana clamitans melanota*)
Northern Leopard Frog (*Rana pipiens*)
Wood Frog (*Rana sylvatica*)

REPTILES

Common Snapping Turtle (*Chelydra serpentina serpentina*)
Eastern Box Turtle (*Terrapene carolina carolina*)
Midland Painted Turtle (*Chrysemys picta marginata*)
Red-eared Slider (*Trachemys scripta elegans*) Eastern
Spin y Softshell Turtle (*Apalone spinifera spinifera*)
Northern Fence Lizard (*Sceloporus undulatus hyacinthinus*)
Five-lined Skink (*Eumeces fasciatus*)
Broadhead Skink (*Eumeces laticeps*)
European Wall Lizard (*Podarcis muralis*)
Queen Snake (*Regina septemvittata*)
Northern Water Snake (*Nerodia sipedon sipedon*)

turtles held in captivity when the animal reaches the following size:

- snakes with a snout-vent length of 18 inches or greater
- turtles with a straight carapace length of four or more inches
- PIT tags may be implanted by any person authorized by the owner. Only PIT tags which can be read by an "AVID Mini Tracker" reader may be implanted.

The following is a **BRIEF SAMPLE** of some of the reptiles and amphibians considered to be native to Ohio by this regulation. For a complete listing refer to the website cited earlier in this article.

AMPHIBIANS

*Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*)
Mudpuppy (*Necturus maculosus maculosus*)
Red-spotted Newt (*Notophthalmus viridescens viridescens*)
Jefferson Salamander (*Ambystoma jeffersonianum*)
Spotted Salamander (*Ambystoma maculatum*)
Smallmouth Salamander (*Ambystoma texanum*)
Marbled Salamander (*Ambystoma opacum*)
Eastern Tiger Salamander (*Ambystoma tigrinum tigrinum*)
Redback Salamander (*Plethodon cinereus*)
Northern Slimy Salamander (*Plethodon glutinosus*)
Northern Two-lined Salamander (*Eurycea bislineata*)
American Toad (*Bufo americanus*)
*Eastern Spadefoot (*Scaphiopus holbrookii*)
Northern Spring Peeper (*Pseudacris crucifer crucifer*)
Eastern Garter Snake (*Thamnophis sirtalis sirtalis*)
Eastern Hognose Snake (*Heterodon platirhinos*)
Northern Ringneck Snake (*Diadophis punctatus edwardsii*)
Black Racer (*Coluber constrictor constrictor*)
Blue Racer (*Coluber constrictor foxii*)
Rough Green Snake (*Opheodrys aestivus*)
Black Rat Snake (*Elaphe obsoleta obsoleta*)
Black Kingsnake (*Lampropeltis getula nigra*)
Eastern Milk Snake (*Lampropeltis triangulum triangulum*)
Northern Copperhead (*Agkistrodon contortrix mokasen*)
*Eastern Massasauga (*Sistrurus catenatus catenatus*)
*Timber Rattlesnake (*Crotalus horridus horridus*)

* indicates state endangered species

The April Meeting is Wednesday, April 3rd at 7:30 at NKU

Requirements for Submitting Articles to the Forked Tongue

1. Articles can be submitted via 3.5" floppy disk or hard copy to Editor, GCHS 11470 Gatch Hill Road, Aurora, IN 4700.
2. Articles may be e-mailed to Grady Calhoun at gcalhoun@seidata.com.
3. Black and white photographs can be included with articles. Photo submissions should include your name, phone number, and description of photo on the back. Photos can be returned.
4. All time dependent submissions must be in the editors possession no later than the meeting previous to the desired publication date

Classified Advertizing Policy

GCHS Members may run a free classified ad of 7 lines or less at no charge for an unlimited time; however, the ad will be canceled after one month unless the editor is informed to continue it. Please include scientific names for the animals with your ad as well as your phone number and area code. Ads of up to 7 lines for non-member are \$2 per issue; ad charges for items more than 7 lines long are as follows:

Business card size	\$3 per issue
1/4 page	\$6 per issue
1/2 page	\$10 per issue
Full page	\$20 per issue

The GCHS is not liable for the quality of the merchandise advertized. The Society also reserves the right to refuse any ad considered inappropriate.

Classifieds

Available: Venomous snake video available: This video has extractions from king cobras, gaboan vipers, and several others, plus graphic snakebite slides. Kentucky Reptile Zoo is a non-profit educational exhibit and venom extraction laboratory. \$10.00 donation plus \$5.00 postage and handling will bring this video to you! Please note everything is filmed as it happens and is not professionally edited. Send a check or money order to Kentucky Reptile Zoo, 200 L&E Railroad, Slade, Kentucky 40376. Visit our website at www.geocities.com/kentuckyreptilezoo for more information, or call 606-663-9160.

Discount: A 10% discount is offered to all card carrying members of the GCHS at my veterinary clinic that treats a lot of reptiles. All Creatures Animal Hospital, 1894 Ohio Pike, Amelia, Ohio 45102, Dr. Dan Meakin 513-797-7387

Discount: A 10% discount is offered to all card carrying members of the GCHS at Dr. Dahlhausen's Veterinary Clinic, 5989 Meijer Dr., Suite 2, Milford, Ohio 513-576-0131

(Number to left of decimal indicates males; number to right of decimal indicates females; number to right of second decimal indicates number of unknown sex. For example, 3.2.1=3 males, 2 females, and 1 unsexed specimen)

Currently Held Positions

President	Grady Calhoun (812) 926-1206 (513) 564-6041	Vice President	Dean Alessandrini (513) 347-0099
Treasurer	Peggy Fille (513) 528-4452	Secretary	Diane Bauer (513) 451-1203
Seargent-at-Arms	Bruce Fille (513) 528-4452	Editor	Grady Calhoun (812) 926-1206 (513) 564-6041
Advisor	Ray Whitson (859) 342-8842	Education Conservation Committee Chairman	Fred Fannin (513) 734-6906

About the GCHS

The Greater Cincinnati Herpetological Society holds monthly meetings which typically consist of a short business section, a refreshment intermission, and a program related to herpetology. Both members and nonmembers are invited to attend. Membership is open to anyone with an interest in reptiles and amphibians. New members may sign up by mail or at the monthly meetings. Members receive monthly issues of *The Forked Tongue* and free classified advertising. Annual dues should be directed to the secretary at the society's mailing address, according to the rates below:

Student	\$10.00	Corresponding	\$10.00
Individual	\$12.00	Sustaining	\$25.00
Family	\$18.00	Institutional	\$30.00
		Contributing	\$50.00

Why Be a Member?

Receive monthly issues of *The Forked Tongue*
Meet individuals knowledgeable about herpetoculture
Have access to captive-bred herps and feeder animals
Participate in society-sponsored field trips, and outings.
Receive a 10 percent discount on herp-related items and services when you show a valid membership card at the following establishments:

Delhi Pet Center 451-4015	Kentucky Reptile Zoo (606)663-9160
Harrison Pet Center 367-1115	Norwood Pet Center 351-7230
All Creatures Animal Hospital	797-7387

**P.O. Box 14783
Cincinnati, OH 45250**