

Tennessee Herpetological Society



A MESSAGE FROM THE PRESIDENT

Our society has reached a milestone 15 years in the making. The first Chad Lewis Memorial Grant recipients have been selected. Our recipients are Nathan Haislip of the University of Tennessee at Knoxville and Chris O'Bryan of Austin Peay State University. Both are studying aspects of the ecologically important Ranavirus. I know that we are all very interested in the results of these important studies.

I wish to express my gratitude to all that have made the Chad Lewis Memorial Grant a reality. The creation and awarding of this grant demonstrates what a relatively small group of dedicated individuals with a goal and a plan can accomplish. The membership has done well!

I hope you are spending time outside in Tennessee's wilds and I look forward to seeing everyone at Royal Blue WMA.

Thank you for your dedication to our society,

Brian Butterfield
President

CHADWICK LEWIS MEMORIAL SCHOLARSHIP AWARDED

The Tennessee Herpetological Society (THS) is pleased to announce that recipients of the first-ever Chadwick Lewis Memorial Grant in herpetology are Nathan Haislip (University of Tennessee – Knoxville) and Chris O’Bryan (Austin Peay State University). Haislip, under the direction of Dr. Matthew J. Gray of the UT Department of Forestry, Wildlife and Fisheries, recently completed a laboratory study of environmental stressors and their effects on the susceptibility of amphibian larvae to the widespread pathogen, Ranavirus. O’Bryan, currently under the direction of Dr. Floyd Scott of the APSU Department of Biology, is investigating the in situ presence of Ranavirus in amphibian populations in West Tennessee. Both studies are key to our understanding the potential impact this group of pathogens may have to amphibian populations in Tennessee. In recognition of their outstanding research on amphibian diseases, each student’s sponsoring program has been awarded \$500 to assist their work. The THS is pleased to support the UT Center for Wildlife Health and the APSU Department of Biology in these efforts.

“It is an honor for Nathan to be recognized as the first co-recipient of the Chad Lewis Memorial Award. Chad’s dedication to and enthusiasm for Tennessee’s herpetofauna are an inspiration to all of us. Nathan has strived for excellence during his M.S., and his passion for herpetofauna runs as deep as Chad’s did. Funds associated with the Chad Lewis Memorial Award were instrumental in completing molecular analyses associated with Nathan’s research on amphibian ranaviruses. From Nathan’s research we now know that susceptibility to ranaviruses differs among species of Tennessee anurans and that susceptibility is not uniform among developmental stages.”

Matthew J Gray, PhD • Center for Wildlife Health • University of Tennessee

“I am greatly appreciative and truly honored to receive the Chad Lewis Scholarship award. The Tennessee Herp Society and its members have played a huge part in helping me to become the herpetologist that I am. I cherish the friends and mentors I have gained through the society and hope to instill Chad Lewis’ personality, spirit, and enthusiasm with my actions and deeds. Thank you all for the lessons learned, the memories shared, and the experiences gained.”

Nathan Haislip • Fort Worth Zoo

“Through support for research by undergraduate and graduate students in herpetology in Tennessee, the Chad Lewis family and the Tennessee Herpetology Society are helping train the scientists that will be needed in the coming years to meet the challenges stemming from multiple threats to our native herpetofauna. The generous grant awarded Austin Peay undergraduate Chris O’Bryan will help support his attempt to document Ranavirus in populations of amphibians in West Tennessee, an area where tests have yet to be done.”

Floyd Scott, PhD • Department of Biology and Center of Excellence for Field Biology • Austin Peay State University

“Many thanks to both the Tennessee Herpetological Society and the Lewis family for their generous support of herpetological research in Tennessee. The grant awarded me will help reveal the status of Ranavirus and its impact on amphibian populations in West Tennessee. It will also aid in developing techniques for future management and conservation of species at-risk to this unrelenting pathogen.”

Chris J. O’Bryan • Undergraduate Research Assistant Department of Biology and Center of Excellence for Field Biology Austin Peay State University

The Chadwick Lewis Memorial Grant was established in honor of its namesake following his untimely passing in 1995. Chad earned his undergraduate degree in biology from East Tennessee State University and was pursuing his master’s degree in biology under the direction of Professor O. Ray Jordan at Tennessee Technological University at the time of his death. His primary love was for Appalachian salamanders and he spent countless hours documenting their populations across his favorite landscape- Unaka Mountain in Unicoi County.

The grant was created to honor his memory and to promote herpetological studies across Tennessee. Contributions to the fund have been made annually during the regular THS member meeting, primarily from the spirited auction held each year. Chad’s father, Charlie Lewis of Erwin, Tennessee, has contributed significant monies to the fund. This year’s award represents the culmination of 15 years of fund development, and the first opportunity the THS has had to appropriate grant monies for herpetological research. We know Chad would be quite pleased to see that they will be used for such worthy study.

ATLAS OF REPTILES IN TENNESSEE: REPORT ON STATE OF COMPLETION

By: A. Floyd Scott and William H. Redmond

TAXONOMIC REVISION OF DESMOGNATHUS WRIGHTI (CAUDATA: PLETHODONTIDAE)

As of 1 September 2010, The Atlas of Reptiles in Tennessee website (<http://apsu.edu/reptatlas/>) included accounts for 45 of the 58 species of native reptiles (in the classic sense) that occur in the state. Represented are 9 of 16 species of turtles, 7 of 9 species of lizards, and 29 of 33 species of snakes. To be posted soon are accounts for 2 more turtles, 1 additional lizard and 1 other snake. The remaining species are those that are most common with hundreds of museum and literature records that must be georeferenced, if possible, and cross checked for duplication. Anyone wishing to donate photographs to be linked to the accounts is encouraged to contact Floyd Scott or William Redmond.

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NORTHEAST TENNESSEE HAS A NEW SALAMANDER:

Desmognathus organi

The new salamander is named for Dr. James Organ (2007 THS keynote speaker).

The following release is from: The Center for North American Herpetology
Lawrence, Kansas <http://www.cnah.org> 26 August 2010

TAXONOMIC REVISION OF DESMOGNATHUS WRIGHTI (CAUDATA: PLETHODONTIDAE)

2010. *Herpetologica* 66(3): 283-295

Erica J. Crespi, Robert A. Browne & Leslie J. Rissler

Abstract: We revise the taxonomic status of *Desmognathus wrighti*, which occurs in the southern Appalachians of western North Carolina, eastern Tennessee, and southwest Virginia, USA, based on a combination of genetic, ecological, and morphometric analyses. Previously, we reported fixed differences in allozymic loci and mitochondrial DNA sequences between lineages geographically divided by the French Broad River basin at the level of species divergence. Here, we show that these two lineages also differ in ventral pigmentation and several measures of body size, including snout-vent length, body condition, and head width. In addition, spatially explicit ecological-niche analyses of climate at more than 400 collection localities spanning the range of *D. wrighti* indicate that the lineages separated by the French Broad River are in unique environmental niche space. Ecological niche models resolved that population localities north of the river were generally colder and drier than localities to the south, which suggests that divergent selection pressures may exist, in addition to isolation by distance, to drive the diversification of these two lineages. The name *Desmognathus wrighti* (King, 1936), for which the type locality is Mt. LeConte within the Great Smoky Mountains, Tennessee, was retained for all populations south and west of the French Broad River, while the name *D. organi*, with type locality at Whitetop Mountain, Virginia, was given to those populations north and east of the river.

VENOMOUS SNAKES OF TENNESSEE

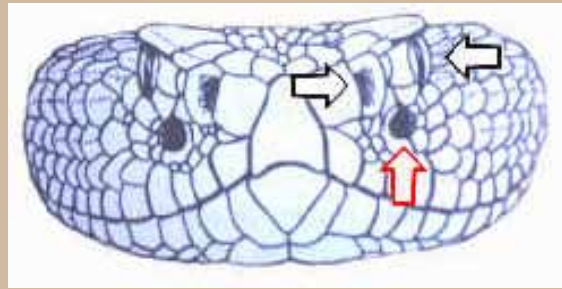
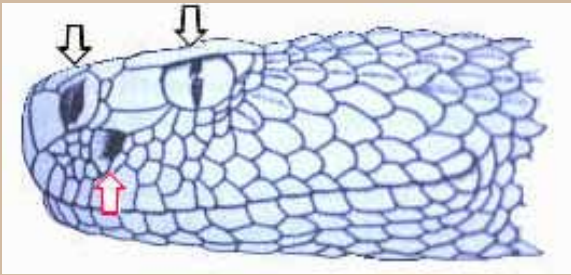
There are 33 species of snakes native to Tennessee; only 4 of these are venomous:

1. Copperhead
2. Western Cottonmouth
3. Timber Rattlesnake
4. Pigmy Rattlesnake

- All of the venomous snakes native to Tennessee belong to the family of snakes called pit vipers. Pit vipers are the group of venomous snakes having a specialized, heat-sensing pit on the front of the head.
- All of the venomous snakes native to Tennessee have hypodermic fangs in the upper mouth. Nonvenomous snakes have small teeth but no fangs. Venomous snake shown on top, nonvenomous on bottom. Photo by John White.
- All of the venomous snakes native to Tennessee have a vertical, elliptical shaped eye pupil. Nonvenomous snakes in Tennessee have a round pupil.
- All of the venomous snakes native to Tennessee are ovoviviparous, which means they retain the eggs within the body until the young are expelled in a membranous sac, ready to face the world.
- All of the venomous snakes native to Tennessee have a single row of scales on the underside from the vent to the tip of the tail. All of our nonvenomous snakes have an overlapping row of two scales on the underside from the vent to the tail tip. Note: This detail is best observed on the shed skin of a snake.



These neonate (newborn) copperheads are showing their bright yellow tail tips they will use to lure prey closer. They will stay in the area where they were born for just a few days until they have shed their skin for the very first time. Photo by David Scott.



*Illustrations of side and front views of rattlesnake head showing the eye and nostril (black arrows) and facial pit (red arrow).
Credit: Florida Museum of Natural History.*



Venomous snake shown on left, nonvenomous on right. Photo by John White. Florida Museum of Natural History.



Venomous snakes native to Tennessee have a vertical, elliptical shaped eye pupil (at left), while nonvenomous snakes have a round pupil. Photos by Lisa Powers, Froghaven Farm.



Venomous Western Cottonmouth pictured at left showing tail scalation. Nonvenomous common kingsnake pictured in right photo showing overlapping post vent scalation. Photos by Lisa Powers, Froghaven Farm.



Juvenile Western Cottonmouth



*Juvenile Northern Watersnake
Photos by Lisa Powers, Froghaven Farm.*



FIRST AID FOR SNAKEBITE IN TENNESSEE

A venomous snakebite in Tennessee can be recognized by one or more definite puncture wounds, and if venom is injected, there will be intense burning pain and swelling around the holes.

In Tennessee there are four native species of venomous snakes:

The Copperhead (*Agkistrodon contortrix*) is the most common venomous snake in Tennessee and is the snake responsible for most bites. The good news is that the venom of the copperhead is very mild in comparison and few, if any, verified deaths have occurred from these snakes. Photo (above) by Lisa Powers, Froghaven Farm.

The secretive and somewhat rare, timber rattlesnake (*Crotalus horridus*) is our largest venomous snake, but prefers to avoid any contact with humans. Taking eight years to reach maturity, then giving birth only once every three years or more, makes this magnificent early symbol of our country very vulnerable to extinction. Photo (at right) by Danny Bryan.



First aid for snakebites has varied tremendously over the years. Unfortunately

The Western Cottonmouth (*Agkistrodon piscivorus*) is a Coastal Plains species that primarily inhabits the lowlands of west Tennessee but is absent from remaining eastern two-thirds of our state. These snakes help improve fisheries by “weeding out” old, weak or diseased fish. Photo (below on left) by Lisa Powers, Froghaven Farm.

The Pygmy Rattlesnake (*Sistrurus miliarius*) is one of the rarest species of snake in Tennessee. It is a small (under 18 inches), reclusive snake that lives along the Tennessee River Floodplain in the counties along the border of middle and west Tennessee. Photo (below on right) by David Scott.



many of these treatments were more harmful and caused more damage to the patient than if the bite had been left untreated.

What to do:

- Do remain calm.
- Do remove jewelry.
- Do mark the time.
- Do keep the stricken limb below the heart.
- Do get to a hospital as quickly as possible. Call ahead (911) and let them know you are on the way with a snakebite victim.
- Do get a tetanus shot.

Perhaps even more importantly than what to do, may be the things that you should NOT do when treating snakebite.

What Not to do:

- Do not panic.
- Do not cut the wound.
- Do not try to suck the venom out by mouth.
- Do not apply a tourniquet.
- Do not give the patient painkillers.
- Do not give the patient any alcohol to drink.
- Do not apply ice to the wound.
- Do not apply any type of electrical stimulus.
- Do not try to capture or kill the snake.



Indo-Pacific Gecko (H. garnotii) found in Murfreesboro, Rutherford Co., Tennessee.

THE INDO-PACIFIC GECKO (*Hemidactylus garnotii*) IN RUTHERFORD COUNTY, TENNESSEE

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The Indo-Pacific Gecko (*Hemidactylus garnotii*) is native to Southeast Asia but has been introduced in many tropical areas globally including the southeast United States where it is well established in Florida (Conant and Collins 1998; Bartlett and Bartlett 1999). Its success as an invasive species is facilitated by the species' adaptability and parthenogenesis, i.e., unisexual mode of reproduction (Kluge and Eckardt 1969). Nocturnal in nature, the Indo-Pacific Gecko occurs primarily on buildings, fences, and bridge abutments in urban areas where it has been introduced.

In June 2004, we discovered a female Indo-Pacific Gecko in a townhouse located near the campus of Middle Tennessee State University in Murfreesboro, Rutherford Co., Tennessee (Fig. 1). Later in August 2004, we observed a young juvenile in the same townhouse indicating reproduction (by parthenogenesis) was occurring.

Range expansion of the Indo-Pacific Gecko is facilitated by hitchhiking as a stowaway in transported nursery stock and building materials. The presence of this species in Murfreesboro might also have been facilitated by similar means or represent escaped pets. Regardless, this species likely cannot survive the harsh winters in Tennessee and the establishment of a permanent population seems unlikely.

Literature Cited

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