

# **39th International Herpetological Symposium**



**June 22-25, 2016  
St. Louis, Missouri**





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Without the generous financial support of these sponsors, the International Herpetological Symposium (IHS) would be less than it is. Sponsors allow IHS to attract speakers, fund the IHS Grant Program, the IHS Junior Herpetologist Award program, fund extra activities, rent meeting spaces and AV equipment, produce the program and other printed materials, and make the Ice Breaker one of the most exciting social gatherings of the year.

Please support these wonderful sponsors and share their work with your friends.



The IHS vendor tables will be open to the public and to IHS registrants at no charge during the conference with an incredibly diverse selection of herpetocultural supplies, artwork, books, and other items.

The Vendor Room will be open from 9:00 am - 4:00 pm Thursday and Friday and from 9:00 am to 12:00 pm on Saturday to everyone, including the general public!

June 1, 2016



Dear Friends and Colleagues,

Another year has gone by, and once again the time for the International Herpetological Symposium (IHS) is upon us. IHS, over the past 38 years has been at the forefront for disseminating the latest herpetological information.

This year we have an amazing array of talks including presentations on frogs, monitors, Uromastyx, Timber Rattlesnakes, genetics, medicine, husbandry and breeding, and so much more! Across the planet, reptiles and amphibians are faced with pollution, collection for food and traditional medicine, habitat fragmentation, and an ever-increasing attack on their lives in nature. With knowledge gained through IHS lectures, we are better able to understand their needs and what we can do to help in their plight.

Long before many reptile and amphibian books were written, and long before there was such a thing as the Internet or reptile shows, the International Herpetological Symposium was there. And although you can now retrieve information about just about any reptile or amphibian in the world with the touch of a few buttons, IHS remains relevant and has an important place in herpetology. The human need to come face-to-face with each other to pass along information is still needed in this complicated, seemingly impersonalized world, and IHS provides this. This year, some of the biggest, most important names in herpetology, ecology, field biology, and herpetoculture are coming to the beautiful city of St. Louis to share their work, exciting information, and new discoveries with us. In the great tradition of the IHS, information will be passed verbally, hands will be shaken and friendships will be made.

The purpose of the IHS is:

(1) to provide a yearly symposium for the dissemination of information and research pertaining to the natural history, conservation biology, captive management, and propagation of amphibians and reptiles, and (2) the publication of such information. Unlike most herpetological societies or associations, IHS does not have a voting membership, but an Electoral Body. That body consists of the members of the Board of Directors, the Advisory Council, Publication Editors, and Chairs of various committees. These individuals are selected from all areas of herpetology and herpetoculture. Zoologists, herpetologists, and private herpetoculturists are all involved in planning and organizing the annual symposia, and (3) to provide grants for financial assistance to individuals or organizations conducting herpetological research, conservation, and education.

The IHS meetings have evolved and a flow of excited attendees show up each year to learn more about their beloved reptiles and amphibians. We learn about new advances in their study and are given incredible information about their lives in nature and in captivity.

No matter what walk of life brings you to IHS, I hope you enjoy every talk and I thank all of the speakers, sponsors, and attendees for keeping this incredible tradition alive and strong!

Cheers,

**Ken Foose, IHS President**



# Saint Louis Zoo

## Animals Always®

**A huge thank you to our host for this year's International Herpetological Symposium - The St. Louis Zoo!**

**Enjoying an adventure every time you visit. Knowing a discovery will be made around each corner. You're at the Saint Louis Zoo, a get-away destination that brings together more than 18,700\* wild animals and 3,000,000 visitors each year.**

**Located on 90 acres in beautiful Forest Park, the Zoo is home to more than 500 species of animals, many of them rare and endangered. It is one of the few free zoos in the nation.**

Since its inception in 1910, the Zoo has been renowned for its beautiful naturalistic exhibits and for its diverse collection of animals from the major continents and biomes of the world. It is widely recognized for its innovative approaches to animal management, wildlife conservation, research and education.

Through the Zoo's WildCare Institute, the Zoo focuses on wildlife management and recovery, conservation science, and support of the human populations that coexist with wildlife in 12 conservation hotspots around the globe, including three in Missouri.

### **Zoo Facts**

- \* The City of St. Louis purchased the 1904 World's Fair Flight Cage for \$3,500.
- \* In 1917, 299,100 people visited the Zoo. In 2009, the Zoo broke an all-time record with 3,101,830 visitors.
- \* Phil the gorilla's fame was such that he was once featured in Life magazine as "an up and coming gorilla".
- \* School children donated their pennies to purchase Miss Jim the elephant in 1916.
- \* Marlin Perkins, host of Mutual of Omaha's Wild Kingdom television show, was director of the Saint Louis Zoo from 1962-1970.
- \* Siegfried the walrus was one of the Zoo's most popular animals in the 1960s, particularly because he would let visitors tickle his chin.
- \* Raja was the first elephant born at the Zoo in 1992.

**Wednesday, June 22, 2016**

**Ice Breaker**

**Holiday Inn Airport West Earth City  
3400 Rider Trail S, St. Louis, MO 63045**

**7:00 pm - ???**

**VENDORS**

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Herpetological Conservation International (Myke Clarkson)

Dante Fenolio *Life in the Dark* book signing



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## INTERNATIONAL HERPETOLOGICAL SYMPOSIUM JUNIOR HERPETOLOGIST AWARD

This new program created by Russ Gurley and the IHS Board and funded by Todd Goodman and a dozen other excited sponsors, is a brand new program for IHS.

Announcements were made and applications were mailed out. The Junior Herper committee thoroughly examined every packet and read all the essays. One winner in each age category was chosen. This winner received an all expenses paid trip to the 2016 International Herpetological Symposium in St. Louis, Missouri from June 22-25, 2016. This includes admission to all talks, free banquet, and a free trip to the St. Louis Zoo. In the two younger age groups, an all expenses paid trip was given to a parent or chaperone as well. Five runners-up in each age category received free registration to the 2015 IHS meeting, free banquet and free trip to the St. Louis Zoo and \$200 towards travel expenses.

Applicants submitted:

1. A cover letter explaining why the applicant should be chosen as the Junior Herpetologist winner
2. There are three age divisions for this year's Junior Herpetologist program: (12-15) (16-18) and (19-22)
3. A short essay (500 to 1,000 words, typed, 1.5 spacing, Times New Roman, black ink) was submitted with their application. This essay featured a favorite reptile or amphibian species with the topic of Natural History or Conservation or Captive Care or Herpetoculture.

**\* Note from Russ: We have a very energetic, interesting, sophisticated, and intelligent group of young herpers out there, studying, flipping boards and flat rocks, taking care of their reptile pets, and growing into the amazing herpers who will replace us all someday. I was so encouraged and so excited to read these essays and applications and I hope the Junior Herper program continues for IHS long into the future. Thank you to my committee for your hard work and to all who supported this program in 2016. If you would like to donate to the Junior Herper Program, e-mail me at russgurley@cableone.net or ask one of the IHS Board Members for more information.**

**CONGRATULATIONS to the 2016 JUNIOR HERPETOLOGIST AWARD winners and runners up! We are proud of your hard work and your passion for reptiles and amphibians! Although winners are ineligible to win more than once, runners up and all others are encouraged to submit again in 2017. Dealine for 2017 applciations will be March 1, 2017.**

Ages 12-15

**Winner: Sarah Brabec (Dunlap, IL)**

Runner Up: Rebecca Levergood (Alpharetta, GA)  
Runner Up: Scout Aulenbach (Lilburn GA)  
Runner Up: Lauren Taracka (Port Townsend, WA)  
Runner Up: Avi Ackermann (Plano, TX)

Ages 16-18

**Winner: Bjorn Peterson (Trenton, TX)**

Runner Up: Calvin Vick (Cambridge, MN)  
Runner Up: Kaeden Miller (Maumee, OH)

Ages 19-22

**Winner: Logan Mansfield (Carroll Community College, Westminster, MD)**

# IHS OFFICERS

## President

Ken Foose Exotic Pets 2105 N. Decatur Las Vegas, NV 89108 ExoticPetsLV@gmail.com

## Vice President

Bob Ashley P. O. Box 376 Rodeo, NM 88056 bobashleycdm@hotmail.com

## Treasurer and Grant Program Chair

Vicky Poole Fort Worth Zoo 1989 Colonial Way, Fort Worth, TX 76110 vpoole@fortworthzoo.org

## Secretary

Jennifer Stabile jenstabil@asu.edu

## IHS ADVISORS

Rob Nixon (2014-2016)	sapo1047@msn.com
Kat Kyle (2016-2018)	katjaquez@gmail.com
Robyn Markland (2016-2018)	robyn@thereptilereport.com
Dante Fenolio (2014-2016)	dante@anotheca.com
John Potash (2015-2017)	johnpotash1973@gmail.com
Kristen Wiley (2015-2017)	kentuckyreptilez@bellsouth.net
Tell Hicks (2015- 2017)	tellhicks@btinternet.com
Keith Morris (2015-17)	keith@zoomed.com
Wayne Hill (2015-2017)	whill1@gate.net

Vince Scheidt (Honorary)	vince.scheidt@gmail.com
Jim Murphy (Honorary)	jbmurphy222@gmail.com
Bill Love (Honorary)	bill@bluechameleon.org
John Behler (Honorary- posthumously)	

Russ Gurley.	russgurley@cableone.net
Todd Goodman	tgoodman@timberlinefisheries.com
James Badman	james.badman@asu.edu

## IHS 2016 Speaker Coordinators

Steve Hammack & Jen Stabile

## IHS Vendor Coordinator

Russ Gurley

## Junior Herpetologist Award Coordinator

Russ Gurley russgurley@cableone.net

## Publication Design and Layout

Russ Gurley P. O. Box 321 Ada, OK 74820 russgurley@cableone.net

**For Information: intlherpsymp@gmail.com**



# Thursday, June 23, 2016

8:30 am Opening Remarks Ken Foose

8:40 am Keynote

**Dr. Richard Ross “The Golden Age of Reptiles or What It Was Like Before Most of You Were Born”**

9:30 am Quetzal Dwyer “Snakes of the genus *Bothriechis* - Captive Husbandry, Systematics, and Distribution:

10:15 am Dr. Mark Finke “Methods for Enhancing the Nutritional Content of Feeder Insects”

10:45 am BREAK

11:00 am Jeff Briggler “The Hellbender – A Journey in Saving a Declining Ozark Highland Salamander”

11:30 am Roger Sweeney “Nutritional Analysis of Natural Fruit Items Consumed by Gray’s Monitor Lizard, *Varanus olivaceus*”

12:00 pm LUNCH

2:00 pm Dr. Jeff Etting “Armenia in Retrospect: A Decade of Conservation Efforts for the Armenian Viper”

2:45 pm Chris Hanley, DVM “Reptile Medicine: What’s New and What’s Challenging”

3:15 pm Gary Ferguson (presenter) and William H. Gehrmann “Thermoregulation and UV/Vitamin D Photoregulation in Reptiles: Current Knowledge and Future Directions”

4:00 pm BREAK

4:15 pm Dan Krull “Lone Star Rattlesnake Days”

4:45 pm Jeff Dawson (Saint Louis Zoo) “Efficient Husbandry Systems for Chelonians”

5:30 pm **JOHN TASHJIAN’S FAMOUS “NAME THAT HERP QUIZ” - 2016 version!**

\* A fun and difficult brain teaser. The winner will receive a free registration to IHS 2017!

# Friday, June 24, 2016

8:30 am Opening Remarks Ken Foose

8:45 am Ty Park "One Man's Passion"

9:15 am Roger Sweeney "Conservation Assessment for the St. Vincent Frog"

9:45 am Ian Kanda RVT "Population Census for the Red-sided Garter Snake at the Eden Garter Snake Den Northwest of Stony Plain, Alberta"

10:15 am BREAK

10:30 am Jerry Fife "Breeding and Maintaining Galapagos Tortoises"

11:00 am Phil Goss "Boa Constrictors: More Than Morphs"

11:45 am Scott Ballard "Snake Road in Southern Illinois: The Most Herpetologically Diverse Area in the Midwest"

12:15 pm LUNCH

2:00 pm Ray Morgan "The Venom Interviews Project — Hot Herpetology Without The Hype"

2:45 pm Sarah Brabec (Junior Herper Award Winner / 12-15) "With a Front Yard Frog is Where We Start"

3:00 pm Bjorn Peterson (Junior Herper Award Winner / 16-18) "Growing up with a Galap"

3:30 pm Rebecca Levergood (Junior Herper Award Runner Up / 12-15) "Axolotls: Amazing Survivors"

4:00 pm Logan Mansfield (Junior Herper Award winner / 19-22) "Restoring Tiger Chameleon Habitat: The Big Picture"

4:30 pm Phil Goss "USARK Update"

5:00 - 5:30 pm Buses leave for ST. LOUIS ZOO



# Saturday, June 25, 2016

8:30 am Opening Remarks - Ken Foose

8:45 am Patrick Nabors "TSD in Tree Frogs"

9:30 am Robert Mendyk "Of Rattlesnakes and Revolution: The Timber Rattlesnake and Its Symbolic Role in American Independence"

10:00 am BREAK

10:30 am Chip Cochran, Devon Massyn and Myke Clarkson (Presented by Myke Clarkson)  
"PROJECT PONDO: A Chameleon Conservation Project by HCI"

11:00 am Marcus Andrade "New Herpetological Exhibit at The Patricia and Phillip Frost Museum of Science"

11:30 am Dan Krull "Hog-nosed Snakes"

12:00 pm LUNCH

2:00 pm Adrien M. Zap DVM "Evaluating Thyroid Function and Establishing Reference Intervals in Endemic Galapagos Giant Tortoises (*Chelonoidis* species)"

2:45 pm Ian Kanda RVT "Spiny-Tailed Agama's of the genus *Uromastyx*"

3:30 pm Gerry Salmon "Natural History of the Gray-banded Kingsnake. A Look at the Sequence of Discovery"

4:00 pm Bob Ashley "The Chiricahua Desert Museum"

4:15 pm Presentation of the Joe Laszlo Award and the Louie Porras Award

4:30 pm Closing Remarks Ken Foose

4:30 to 5:00 pm Final Opportunity to visit the VENDOR ROOM

6:00 pm Banquet

6:30 pm Banquet Speaker

**Dan Keyler MD "Development of a New Polyvalent Antivenom from Snake Envenoming in Sri Lanka"**

**7:30 pm LIVE AUCTION!!**

## ABSTRACTS

### New Herpetological Exhibit at The Patricia and Phillip Frost Museum of Science

Marcus Franco De Andrade

mandrade@frostsscience.org

The Patricia and Phillip Frost Museum of Science is currently constructing a new facility in the heart of Miami. In this new facility there will be a numerous animal exhibits in an area called the Living Core. In the Living Core there will be a high level of focus on native species from Florida in regards to the reptile and amphibian exhibits. In my presentation I will be discussing the Everglades/ Pine Hammock section of the Living Core. I will be providing blue prints and progress pictures of the construction. Following the description of the area there will be a discussion on what native species will be housed in this area along with natural plants in the exhibit. Many of these species are classified as threatened and federally protected. To conclude my presentation I will discuss some of the different husbandry techniques that we will be using and have a guest question section to close out the presentation.

### SNAKE ROAD IN SOUTHERN ILLINOIS—THE MOST HERPETOLOGICALLY DIVERSE AREA IN THE MIDWEST

Scott Ballard

Illinois Dept. Natural Resources  
Natural Heritage Biologist/Herpetologist  
Marion, Illinois 62959

In 1972, the U.S. Forest Service began closing a 2.6 mile stretch of Forest Road in the LaRue-Pine Hills Ecological Area to protect migrating reptiles and amphibians, the only known proactively closed road in the country to protect herpetiles. It is familiarly known as Snake Road.

Based on research done in the early 1990's, the road closure was lengthened to a full two months in the spring and fall. This 2000 acres provides habitat for 56 of the state's roughly 100 species of amphibians and reptiles.



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Most visitors to the area abide by the regulations and laws while hiking Snake Road and are able to add many species to their life lists. But because of the publicity this area has received, violations are noted each year due to illegally collecting and treatment of the herptiles of the area.

### **Efficient Husbandry Systems for Chelonians**

**Jeff Dawson**

Saint Louis Zoo  
jdawson@stlzoo.org

Keeping and rearing chelonians can require large amounts of space, time, materials, and labor. This is especially true for species that must be housed individually or in low numbers or those that require special conditions. This presentation will discuss a variety of enclosure designs and life support systems which have been successfully used at the Saint Louis Zoo and within a private collection to increase efficiency and promote healthy animals.

### **Armenia in Retrospect: A Decade of Conservation Efforts for the Armenian Viper**

**Jeff Ettling, Ph.D.**

Director, Center for Conservation in Western Asia  
Curator of Herpetology, Saint Louis Zoo

The Saint Louis Zoo has been actively involved in wildlife conservation for decades, but following a strategic planning process in 2003, which included Zoo curators, veterinarians and researchers, we made the decision to focus our conservation efforts where we could have the greatest impact and keep the programs closely connected to the Zoo and its mission. The outcome of this process was the establishment of the Saint Louis Zoo's WildCare Institute in 2004 with 12 conservation centers. The Center for Conservation in Western Asia (formerly the Center for the Conservation of Near East Mountain Vipers) is working to conserve mountain vipers, other reptiles, amphibians, birds and mammals native to the Caucasus and Trans-Caucasus regions.

For the past twelve years the Center for Conservation in Western Asia has focused its efforts on the conservation of the Armenian Viper, *Montivipera raddei* which has a fragmented distribution in the mountainous regions of Armenia, Azerbaijan, eastern Turkey and northwestern Iran. Armenian Viper populations have decreased by 88% over the past 40 years as a result of habitat alteration/destruction, human persecution and over-collection for the pet trade. While aspects of the reproductive behavior of the Armenian Viper have been documented nothing has been published on the spatial ecology, genetic diversity or population structure of the species. Together with my Armenian colleagues Aram Aghasyan, Ph.D. and his son, Levon Aghasyan, Ph.D. of the Scientific Center of Zoology and Hydroecology of the National Academy of Sciences, Yerevan, Armenia we studied Armenian Viper populations inhabiting two different landscapes: one inhabiting a human-modified landscape with a combination of overgrazing and interspersed agricultural fields and the other inhabiting a recovered natural landscape formerly grazed by livestock, but allowed to revert to its wild state over the past ten years. The two study sites were separated by 397 kilometers. We compared home range size, movements, genetic diversity and population structure between the viper populations inhabiting these landscapes. In particular, we were in-

terested in what impact human modifications to the landscape may be having on the vipers and their prey. Our goal was to use the data from our studies to develop conservation management recommendations for the Armenian Viper.

Our data revealed that vipers inhabiting the human-modified landscape made larger movements and had larger home ranges (five times larger) compared to vipers inhabiting the recovered natural landscape. Small mammal abundance was also lower in the human-modified landscape where there was overgrazing of remaining steppe habitat. Surprisingly, the body condition of vipers inhabiting the two landscapes were equivalent, suggesting that vipers have larger home ranges, in the human-modified landscape, in order to find enough food. Despite the mosaic of overgrazed steppe and agricultural fields our genetic analyses indicate that gene flow is occurring between two den sites in the human-modified landscape that are separated by 3.2 kilometers. Additionally, the two geographically separated populations are genetically distinct from one another. While conservation of intact parcels of undisturbed habitat should be the first priority, management plans for areas with agriculture should include the maintenance of corridors with high quality habitat that provide foraging and shelter for the vipers and the small mammals they prey upon. These corridors also allow for seasonal movements and gene flow. Due to the genetic distinctiveness of the two geographically separated populations we recommended that they be managed as independent conservation units.



Developing conservation management recommendations for a species is one thing, having them put into action is often a more difficult task. In our case, the impact of our spatial ecology and genetic analyses for the Armenian viper were larger than any of us could have predicted. On 7 September 2006 the Ministry of Nature Protection, Republic of Armenia enlarged the boundaries of both Khosrov State Reserve and Shikahogh State Reserve based on the results of our research. In addition, our data was used, in part, to help establish Arevik National Park and Zangezur Sanctuary. Both of these new protected areas were declared on 15 October 2009 by the Government of the Republic of Armenia. I was in Armenia at the time of the declaration and it was at that very moment that I realized that it doesn't matter how small a project may seem. In the end, when combined with other wildlife research projects from the region a significant impact can be made for the conservation of wildlife and wild places. Our work in this biologically unique region is ongoing and we are continuing our long-term mark-recapture study of Armenian viper populations as well as initiating projects with other Armenian reptiles and amphibians. Our studies of the Armenian viper are living proof that we can all make a difference for the conservation of species and their habitat.

### **Thermo-regulation and UV/vitamin D photo-regulation in reptiles: current knowledge and future directions**

**Gary W. Ferguson**

[g.ferguson@tcu.edu](mailto:g.ferguson@tcu.edu)

The light environments of reptiles in nature has long been known to vary among species with their activity being either primarily during the day (diurnal), primarily at dawn or dusk (crepuscular), primarily at night (nocturnal) or some combination of these categories depending on factors such as season and temperature. However, our understanding of the consequences of exposure to different intensities and qualities of sunlight remains sketchy and our lack of knowledge of these consequences has made successful captive husbandry difficult for keeping and breeding many species. During the mid- to late- 20th century the association between sun-basking

and thermoregulation became well documented for many taxa and provided important insight for their successful husbandry. However, providing sufficient nutrition and the critical role of natural or simulated sunlight for healthy skeletal growth, development and reproduction of many species is just beginning to be understood. Thoughts regarding our knowledge and ignorance of this topic are reviewed.



### **Breeding and Maintaining Galapagos Tortoises**

**Jerry Fife**

fifereptiles@mindspring.com

Jerry has maintained Galapagos tortoises for over twenty years in Phoenix, Arizona. He has raised them from hatchlings to adults and produced over 100 hatchlings. In this presentation he will discuss the care, maintenance and breeding of Galapagos tortoises. The care and maintenance of Galapagos tortoises has been somewhat problematic and captive raised tortoises often experience irregular growth, goiters and foot problems. Jerry will explain his set-up for hatchlings and adults. He will discuss diet, winter housing, breeding and incubation of eggs.

### **Reptile Medicine: What's New and What's Challenging**

**Chris Hanley, DVM, Dipl ACZM**

Staff Veterinarian  
Saint Louis Zoo

With every medical case seen, there is always something new to learn. We will start by reviewing current diagnostic testing options, some of the newer sedative and anesthetic options for herps, and cover a number of medicines now being used more regularly to help our patients. In addition, through case examples, we will cover some of the challenges these animals present in terms of diagnostics and treatment and what can be done by combining known medicine and a bit of creativity.

### **Spiny-tail Agamids of the Genus *Uromastix***

**Ian Kanda RVT**

Oklahoma State University School of Veterinary Medicine  
Stillwater, Oklahoma  
ian.kanda@okstate.edu

The genus *Uromastix* is nestled in the family Agamidae and contains 15 different species. They range across northern Africa from the Pacific coast of Morocco to western India and inhabit some of the hottest and driest places on the planet. Anatomical traits such as nasal salt glands, a large caecum and unique dentition allow them to make the most of the little resources available and survive in this type of habitat. Behavioral adaptations regarding times of activity and finding refuge from the sun also allow these animals to flourish where others cannot. A successful herpetoculturist extrapolates from this natural history and finds a balance between the forces that these animals are adapted to, and the extremes that can cause their demise.

**Population Census for the Red-sided Garter Snake at the  
Eden Garter Snake Den Northwest of Stony Plain, Alberta**

**Ian Kanda RVT**

Oklahoma State University School of Veterinary Medicine  
Stillwater, Oklahoma  
ian.kanda@okstate.edu

In the spring of 2014 a population of red sided garter snakes, *Thamnophis sirtalis parietalis* at the Eden Garter Snake Den was counted to assess declines. Counting methods were modeled after a previous count of the same population 15 years earlier. The hibernaculum was encircled with a drift fence and snakes were counted as they attempted to disperse after mating. With 2453 counted animals, results were compared and a decline of approximately 75% was assessed. The declines add merit to the need for conservation measures for this population of snakes. Current threats to this population include human foot and vehicular traffic, industrial processes and urbanization.

**Of Rattlesnakes and Revolution: The Symbolic Role of *Crotalus horridus* in American Independence  
and its Unsuccessful Bid to Become the Emblem of a New Nation**

**Robert W. Mendyk<sup>1,2,\*</sup>**

<sup>1</sup>Department of Herpetology  
Jacksonville Zoo and Gardens  
Jacksonville, FL 32218

<sup>2</sup>Smithsonian Research Associate  
Department of Herpetology  
National Zoological Park  
Washington, D.C. 20008

\*E-mail: mendykr@jacksonvillezoo.org  
Office: (904) 757-4463 ext. 163

**Abstract:** Tied closely to elements of their behavior and natural history, snakes, particularly the Timber rattlesnake (*Crotalus horridus*), became an important colonial icon in the decades leading up to the American Revolution. As a symbol of the American colonies, rattlesnakes appeared in satirical cartoons and political propaganda against the British, and adorned the mastheads of colonial newspapers, colonial currency, militia flags and naval vessels. Benjamin Franklin, a founding father of the United States, was exceptionally fond of the rattlesnake, writing frequently about its habits, and even proposed the species as the national emblem of the new nation. This presentation will highlight the biological, historical and cultural significance of rattlesnakes in colonial America, including Franklin's own intimate connection with these animals, the species' unsuccessful bid to become the national emblem, and the various illustrations, political cartoons and flags which helped spread its symbolism during the American Revolution.



## The Venom Interviews

**Ray Morgan**

rayinla@gmail.com

<http://TheVenomInterviews.com/>

The Venom Interviews is a 4½-hour crash course in the professions and professionals whose daily work revolves around some of the world's most interesting and misunderstood reptiles.

Some of the most respected names in the field discuss how their childhood fascination with reptiles developed into their unique careers in herpetology, toxinology, venom research, emergency medicine and more, and they offer wise advice to anyone wanting to work in the field.

The Venom Interviews project was launched in response to the media's fictionalized depictions of venomous reptiles and the people who work with them. The goal of the film is to present the work and science of venomous herpetology as it actually is, without exaggeration or sensationalism.

## The Golden Age of Reptiles or What It Was Like Before Most of You Were Born

**Richard Ross**

stingrays1@cox.net

Dr. Ross began keeping reptiles as a child, during the era when pet shops rarely offered reptiles, and mail order dealers were the only source when growing up in the suburbs. While in medical school, he began studying diseases of reptiles, and published his first book, *The Bacterial Diseases of Reptiles*, in 1984. In 1976, Dr. Ross received the AZA Edward Bean Award for the first captive breeding of the white-lipped python, and the AZA Certificate of Merit for the first captive breeding of the Macklot's python in 1978. The 1990 publication of his book, *The Reproductive Husbandry of Pythons and Boas*, was a watershed event in the history of reptile breeding, and paved the way for today's captive breeding industry. Dr. Ross will talk about the fascinating history of the mail order era, the exotic animal trade, his experiences in traveling with reptiles, and entertaining aspects of the herpetological culture of the 20th century.

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SEVENTH ANNUAL

### **TURTLE and TORTOISE PRESERVATION GROUP CONFERENCE on CAPTIVE CARE and BREEDING**

**November 9th, 10th and 11th, 2016**

**Mesa Centennial Hall  
263 N. Center Street  
Mesa, Arizona 85201**

**[www.ttpg.org](http://www.ttpg.org)**

## Natural History of the Gray-banded Kingsnake. A Look at the Sequence of Discovery

Gerry Salmon

gerardtsalmon@gmail.com

Gerry Salmon has been an avid naturalist with a strong interest in Herpetology and geographic distribution of North American reptiles. He has been researching the Mexicana Complex Kingsnakes for more than 25 years in museum collections, in captive collections, and in the field. He is a retired New York State Police Sergeant, a former state park naturalist for New York and South Carolina, and has worked as an endangered species monitor on pipeline and wind farm construction projects. He currently volunteers as a curatorial assistant in the Texas Natural History Collections at UT Austin, and resides in Boerne, Texas.

His talk will highlight the natural history of the Gray-banded Kingsnake and biologists' long attempts to understand it since its discovery more than a century ago. Known by less than 5 specimens by the early 1940s, several important discoveries occurred starting in the late 1940s (led by students under the direction of W. Frank Blair of the University of Texas at Austin). More individual specimen collections occurred in the late 1950s and early 1960s by Bryce C. Brown and Frederick R. Gehlbach of Baylor University which expanded into increased collections by scientists, zoo keepers and interested amateur naturalists by the mid to late 1960s and 1970s. During this time several more important papers were written by Gehlbach and his collaborators, Ernest C. Tanzer, Richard D. Worthington, and others. This awareness brought in many collectors from all over the US and from outside the country as well. West Texas became a destination for herpers interested in collection their own specimen. This was not always an easy thing to do and conditions need to be just right. Visitors often spent many nights of futile search with little or no success. Local collectors faired better and some were able to collect many specimens as they became more skilled and picked better conditions to hunt. Some of these snakes were sold and commanded relatively high prices for the day. Although known to be a relatively common snake, the Gray-banded Kingsnake was protected, along with other then commercially valuable species of snakes, by the State of Texas in 1977. Dennis J. Miller's 1979 masters degree thesis entitled "A Life History Study of the Gray-banded Kingsnake, *Lampropeltis mexicana alterna*, in Texas" was later printed and distributed by the Chihuahuan Desert Research Institute (then based out of Sul Ross State University in Alpine). It was the best natural history information on this species available at the time. By 1987, with legal protection lifted (due to a lack of any scientific backing to continue it), the modern era of collecting began with many interested herpers returning to West Texas to seek specimens for their collections or for captive breeding. Knowledge developed mostly in the 1970s increased success in captive husbandry and led to breeding and propagation, by the late 1990s, greatly relieved collecting pressures. It became easier and more cost effective to simply purchase captive-produced offspring (this included other species from the area as well). Gerry's presentation will mostly deal with the combination of Herpetology and Herpetoculture that make this species a favorite of visitors to the Trans-Pecos area of Texas.

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## **Nutritional Analysis of Natural Fruit Items Consumed by Gray's Monitor Lizard *Varanus olivaceus***

**Roger Sweeney**

Assistant Director  
Virginia Zoo  
3500 Granby Street  
Norfolk, VA 23503

Roger.Sweeney@norfolk.gov

The Gray's Monitor Lizard *Varanus olivaceus* is endemic to the Philippines islands and is listed as Vulnerable under IUCN Red list criteria. They are threatened by habitat loss and fragmentation, and by hunting for food or pet trade.

Currently very few Gray's monitor lizards are kept in zoos, but their opportunity to act as a flagship species for high priority ecosystems demonstrate their conservation education value. Husbandry challenges include the diet, as several captive individuals have died from causes linked to nutrition. The natural diet of juveniles contains significant animal protein in the form of snails and crabs, but as they mature they change to a frugivorous diet.

We collected fruit samples from the main trees known to comprise the natural diet. Proximate nutritional analysis was conducted in order to provide baseline data that can contribute to our ability to formulate captive diet for this species in North American zoos.

## **Conservation Assessment for the St. Vincent Frog**

**Roger Sweeney**

Assistant Director  
Virginia Zoo  
3500 Granby Street  
Norfolk, VA 23503

Roger.Sweeney@norfolk.gov

The St. Vincent Frog *Pristimantis shrevei* is endemic to the island of St. Vincent and is listed as Endangered under IUCN Red list criteria. No recent field work had been done for this species since in 2006. The need for more current assessment had increased following several severe weather events in recent years that have affected the main island. In addition to previous threats, the impact of the invasive Johnstone's whistling frog *Eleutherodactylus johnstonei* on the island needed more assessment for impacts, either from direct competition or as a vector for infectious disease. Chytrid fungus is known to be present on other nearby islands, including the neighboring island of Grenada to the South of St. Vincent.

We assisted the forestry department in conducting a conservation assessment for the St. Vincent Frog in June 2015 to update known information for this species, which included Chytrid surveillance as well as population surveys.

**Evaluating thyroid function and establishing reference intervals in endemic Galapagos giant tortoises (*Chelonoidis species*)**

**Adrien M. Zap, Isabelle L. Desprez, F. David Bravo Rada, Andrés G. Ortega Ojeda, Ellen N. Behrend, Sylvain Larrat, E. Marie Rush**

Samples were collected from 131 endemic Galápagos tortoises, representing wild and captive populations of three species (*Chelonoidis chathemensis*, *C. guntheri*, *C. vicina*) during the 2015 dry season. Additional samples will be collected in the rainy season for seasonal comparison. Each tortoise was examined, measured, and photographed prior to sample collection. Blood was analyzed for baseline parameters using Abaxis, Inc. tests; blood smears were prepared for hematology, feces was collected to assess for parasites, and frozen plasma was stored for secondary laboratory analysis.

Data analysis (Software R) provided descriptive statistics, distribution, and reference/confidence intervals. Subsequent analysis will include hormone assays, hematology assessment, and parasite findings, as well as sample data from 2016 to establish reference intervals for endemic tortoises. This is the first database of reference intervals for endemic Galápagos tortoises, and will enable veterinarians and scientists to monitor tortoise populations for illnesses and treat appropriately.

Permits: Galapagos National Park PC-75-15, St. George's University IACUC 13008-R



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## International Herpetological Symposium Grant Program

The International Herpetological Symposium (IHS) has established a grant program to provide financial assistance to individuals or organizations conducting herpetological research, conservation, and education. Proposals are due by May 31 of each year, and recipients are announced by September. Grants are available annually in amounts up to \$1000 and will be awarded to applicants whose projects represent a significant contribution to herpetology in one of the areas listed below:

### Herpetological Natural History

Proposals in this category should address new field research in areas such as population ecology, behavior, and life history strategies of amphibians or reptiles.

### Herpetological Conservation Biology

Proposals in this category should address new research on threatened, imperiled, or a surrogate for such amphibian or reptile species, or the phenomena that affect the maintenance, decline, and restoration of their natural habitat.

### Captive Propagation

Proposals in this category should address research in captive behavioral studies or new techniques in captive maintenance and breeding of amphibians or reptiles.

### Herpetological Education

Proposals in this category should address starting and/or maintaining an educational program pertaining to amphibians or reptiles at a facility available to the public, such as a zoological park, school, or community center.

The total number of grants awarded will depend solely upon the balance of the dedicated grant fund in any given year. The IHS Grant Fund is made available through the fundraising efforts of our annual Silent Auction, and dedicated donations. Special thanks to the following persons for their support of this grant: Wayne Hill, James Badman & Drew Rheinhardt of The Phoenix Reptile Show, Bethany Gerstner, Robyn Markland, David Doherty, Gwen Becker (in memory of Bill Becker), the IHS Board of Advisors, and all Silent Auction item donors.

Applicants may be anyone from the herpetological community; see IHS website for downloadable application. Recipients are encouraged to present their findings at a future symposium.

### Congratulations to the following 2015 IHS Grant winners:

#### **Drew Foster (Phoenix Zoo) – Captive Propagation**

Yuman Fringe-toed Lizards at the Phoenix Zoo: Captive Propagation and an Investigation into Temperature Sex Determination in the Species

#### **Rachel Rhymer (California State University, Northridge) – Natural History**

Determining the Role of Maternal Care in an Argentinean Lizard

#### **Courtney Miller (University of New Orleans) – Conservation Biology**

Distribution of the chytrid fungus *Batrachochytrium dendrobatidis* (Bd) in amphibians in a major biodiversity hotspot in Cameroon

#### **Shailendra & Arunima Singh (TSA/India) – Education**

Turtles in the Schools

## **The Porras Award**

In recognition of lifelong achievements in and contributions to field biology, specifically in Central America, the International Herpetological Symposium is pleased to bestow an award in his name. The Louie Porras Award is presented to a speaker at the IHS annual meeting who has demonstrated that his or her work represents exceptional accomplishments in the field that benefit herpetology, herpetoculture or herpetological conservation.

### **About Louis “Louie” Porras**

Louie Porras hails from the beautiful Costa Rican community of San Ramon, a site near cloud forest that fairly brims with fantastic reptiles and amphibians. And from the moment he could walk, Porras was chasing all of them. His family relocated to the US when Louie was eight years old, and he again found himself in a herp paradise: the Florida of the 1950s. Back then, from the ‘Glades south, Florida was so alive with snakes that Porras literally supported his family by catching them. At the same time he honed his herpetocultural skills working for Charles P. “Bill” Chase, whose legendary animal compound was comparable to the world’s largest zoo.

During that time Porras made acquaintances throughout the herpetological community, from inspired scientists to avid hobbyists and collectors. His candor and integrity, not to mention his generous provision of what were undoubtedly the finest and most interesting herps on the planet, endeared him to everyone. But his activities went beyond that. Every spare moment Louie was in the field, first in the south Florida environs, but later in Mexico, Honduras, Costa Rica, and the Caribbean Islands, repeatedly. He became a student of the literature, acquiring and reading everything he could find on the subject of herpetology. This soon led to collaborations as well as solo publications that range from conservation to systematics and natural history. After his service with Bill Chase, Porras left to establish his own business, a renowned enterprise called “The Shed.” Serving the research, zoo, and hobbyist communities, Louie expanded his activities. When his love for the Intermountain West led him to settle his family in Utah, he opened “ZooHerp,” and the legend continued to grow. And let’s not forget stints at the Houston and Hogle Park zoos along the way.

Porras was one of the first herpetologists to take quality color photographs of reptiles and amphibians, and he has produced a body of work that has served in countless book and magazine articles. He also took a deep interest in the IHS, serving for years in various capacities and as president. During his tenure he established a journal, “Herpetological Natural History,” and the IHS had a celebrated international meeting in Costa Rica, featuring the late Roger Conant as keynote speaker. After closing ZooHerp Inc., he launched a magazine called “Fauna,” dedicated to promoting herps, invertebrates, and their habitats. He went on to found Eagle Mountain Publications, which has produced a superb series of herpetological books and earned him a reputation as a fearless fact checker and meticulous editor. He has also launched the professional journal, *Mesoamerican Herpetology*, celebrating the species-rich region that lies between the US and South America and providing a much needed outlet for scholars and students of this fantastic faunal assemblage.

### **Recipients**

**2015 – Robin Moore**

# The Joseph Laszlo Memorial Award

JOSEPH LASZLO  
1935 - 1987

Many individuals were fortunate to have known the late Joseph Laszlo, long-term Superintendent of the Department of Reptiles at the San Antonio Zoo, San Antonio, Texas, who died on 14 November, 1987. In recognition of his lifelong achievements in and contributions to herpetology, especially in herpetoculture, the International Herpetological Symposium, Inc. has bestowed an annual award in his name. The Joseph Laszlo Memorial award is presented to the speaker at the IHS meeting who has demonstrated that his or her work represents new and exciting views and advances in herpetology. For information on the interesting life of Joseph Laszlo, an obituary was published in Herpetological Review, 19, 5-6 (1988).



Joe Laszlo and Poison Ivy. Photographed in 1982 by Bert Langerwerf.

## The following individuals have received the Joseph Laszlo Memorial Award:

- 1991 Seattle, WA - Richard Shine, Ph.D., University of Sydney, Australia
- 1992 St. Louis, MO - Brian A. Kend
- 1993 Miami, FL - Dr. Hans-George Horn, Germany
- 1994 New Orleans, LA - Dante Fenolio/Michael Ready
- 1995 Denver, CO - Ross M. Prazant, D.V.M./Phillipe DeVosjoli
- 1996 San Antonio, TX - David Grow, Oklahoma City Zoo
- 1997 Liberia, Costa Rica - Allen E. Anderson, Norwalk, Iowa
- 1998 Cincinnati, OH - Harry Greene, University of California, Berkeley
- 1999 San Diego, CA - Carlos H. Arevalo Gtez, Guadalajara Zoo
- 2000 New Orleans, LA - Gregory C. Lepera, Jacksonville Zoological Gardens
- 2001 Detroit, MI - Scott J. Stahl, DVM
- 2002 St. Louis, MO - John Brueggen, St. Augustine Alligator Farm, FL
- 2003 Houston, TX - Bill Love, Blue Chameleon Ventures, Alva, FL
- 2004 Daytona Beach, FL - Dr. Stephen P. Mackessy, University of Northern Colorado, CO
- 2005 Phoenix, AZ - Dante Fenolio, University of Miami, Coral Gables, FL
- 2006 San Antonio, TX - Dr. David Lazcano Jr., Universidad Autonoma de Nuevo León, México
- 2007 Toronto, Canada - Ray E. Ashton, Jr., Newberry, FL
- 2008 Nashville, TN - Wayne Hill, Winter Haven, FL
- 2010 Tucson, AZ - Carl Franklin University of Texas at Arlington, Arlington, TX
- 2011 Fort Worth, TX - Alan Kardon San Antonio Zoo, San Antonio, TX
- 2012 Baltimore, MD - Marie Rush DVM
- 2013 New Orleans, LA - Chawna Schuett, Saint Louis Zoo, St Louis, MO
- 2014 Riverside, CA - Philippe de Vosjoli
- 2015 San Antonio, TX - Collette Adams, Gladys Porter Zoo, Brownsville, TX

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