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*Front Cover: An adult Common Map Turtle (Graptemys geographica). Photograph by J. Daren Riedle, recipient of The Collins Award in 2007 for best image.*

# Journal of Kansas Herpetology

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## KHS BUSINESS

### THE KANSAS HERPETOLOGICAL SOCIETY 37th ANNUAL MEETING

The Kansas Herpetological Society held its 37th Annual Meeting in the Gary K. Clarke Education Center at the Topeka Zoo, Topeka, Kansas, on 6–7 November 2010. One hundred and twelve registrants attended six scientific paper sessions to listen to 29 talks on amphibians, reptiles, and turtles by scientists and students from across the nation.

During its business meeting, the KHS elected a new slate of officers. Travis W. Taggart (Sternberg Museum of Natural History) was voted president-elect for 2011, David Oldham (Pittsburg State University) was voted treasurer, and Eva A. Horne (Kansas State University) was voted secretary. Derek Schmidt (Overbrook, Kansas) currently is president-elect and takes office as president on 1 January 2011. Kathy Ellis (Wakarusa, Kansas) served as president during 2010, hosted the meeting this year, and will serve on the KHS Executive Council in 2011 as past-president.

Following the elections, KHS President Kathy Ellis opened the KHS Awards Ceremony by introducing Joe Collins (KHS Master of Ceremony). Joe announced that Stan Roth of the Kansas Biological Survey, Lawrence, was the inaugural recipient of the *Henry S. Fitch-Dwight R. Platt Award for Field Herpetology*. The award of \$100.00 honors the memory of two great herpetologists (and KHS Distinguished Life Members) with strong ties to Kansas. The late Henry Fitch conducted research on the *Fitch Natural History Reservation* at the University of Kansas for over half a century, and Dwight Platt is currently emeritus faculty at Bethel College in North Newton, Kansas, where he continues to do field work on the sand prairie herpetofauna. Joe then announced that Jodie Hearlson of Emporia State University was this year's recipient of the *Howard K. Gloyd-Edward H. Taylor Scholarship*. The scholarship of \$300.00 honors the memory of two great herpetologists (and KHS Distinguished Life Members) with strong ties to Kansas. Gloyd was born in Ottawa, Kansas, and attended both Kansas State University and the University of Kansas, and Taylor was a faculty member for decades at the University of Kansas. Next, Joe presented the *Alan H. Kamb Grant for Research on Kansas Snakes* to Prashant Deshmukh of Emporia State University. The \$300.00 grant honors the memory of longtime KHS member Al Kamb of Lawrence.

The KHS Saturday night award ceremony continued with George R. Pisani, Kansas Biological Survey, Lawrence, becoming the thirteenth recipient of *The Suzanne L. and Joseph T. Collins Award for Excellence in Kansas Herpetology*. George was selected for this honor by the KHS Awards Committee, which judged his paper, *Virginia valeriae and Storeria dekayi in a northeast Kansas grassland community: ecology and conservation implications* (2009. *Journal of Kansas Herpetology* 32: 20-36) to be the best on a Kansas amphibian, reptile, or turtle for 2008 and 2009. For his excellent published research, George was given a commemorative plaque and a check for \$1,000.00 by KHS President Kathy Ellis. *The Collins Award* is the largest biological award given annually in the state of Kansas, and the largest annual presentation made nationally for research (even-numbered years) or photography (odd-

numbered years) on amphibians, reptiles, and turtles. The KHS Awards Committee for 2010 consisted of Daniel D. Fogell (Southeast Community College, Lincoln), Travis W. Taggart (Sternberg Museum of Natural History, Fort Hays State University, Hays), and Walter E. Meshaka, Jr. (State Museum of Pennsylvania, Harrisburg).

In concluding the Saturday afternoon KHS Awards Ceremony, KHS President Kathy Ellis, by authority of the KHS Executive Council, presented Travis W. Taggart with the *Bronze Salamander Award for Distinguished Service to the Kansas Herpetological Society*. Travis was given this award for converting the old *KHS Newsletter* to a new, more professional and academic *Journal of Kansas Herpetology* in 2002, and for his decade of service (2000–2009) as editor of both.

After welcomes by Kathy Ellis (KHS President), and Chris Wagner (Topeka Zoo), Moderator George Pisani introduced the Society's keynote speaker at the two-day event, Daniel D. Fogell (Southeast Community College, Lincoln, Nebraska). Dan spoke about latitude, attitude, and the herpetofauna tucked away in the peripheries of Nebraska.

Other speakers for the scientific paper sessions on Saturday morning included (in order of presentation): Steven Higgins on *Preliminary findings on cryoprotection by urea and glycerol in the Boreal Chorus Frog* (*Pseudacris maculata*), Jodie Hearlson on *Selected aspects of semi-aquatic turtle assemblages in east-central Kansas ponds*, Walter E. Meshaka, Jr. on *Pennsylvania Snake Reproduction*, Eva A. Horne on *Crickets talk with their feet*, Shelly Evans on *Captive housing preferences of the Corn Snake*, Elaphe guttata, and Katie Talbott, on *Initial results on a study investigating female choice in Crotophytus collaris*.

Speakers for the scientific paper sessions on Saturday afternoon included Bruce Rothschild on *Why dragons stopped climbing trees: the story of arthritis in the lizard Family Varanidae*, Olivia Cowin on *Observations on the Eastern Newt, Notophthalmus viridescens, in Miami County, Kansas: habitat features and associated herpetofauna*, J. Daren Riedle on *Community structure of two aquatic turtle communities within the Middle Trinity River basin, Texas*, Jennifer Brown on *Interactive effects of chytrid, contaminant, and predatory stressors on Woodhouse's Toad* (*Anaxyrus woodhousii*) tadpoles, Alexander J. Muensch on *The ontogeny of spatial ecology and habitat use in a population of Cottonmouths* (*Agkistrodon piscivorus*) in southwest Missouri, Erik Zeidler on *Herpetofauna in the Big Apple? a comprehensive study of Common Snapping Turtle populations amidst the hustle and bustle of Bronx, New York*, Jennifer Singleton on *Escape rates of aquatic turtles from funnel traps and basking traps*, Walter E. Meshaka, Jr. on *Seasonal activity, reproductive cycles, and growth of the Pickerel Frog*, *Lithobates palustris* (LeConte, 1825), from Pennsylvania, Michael Rochford on *Cold Constrictors Unconquered*, and Doug Eifler on *Catch me if you can: escape behavior in a Namibian sand lizard*.



Some of the ca. 100 registrants at the KHS Annual Meeting at the Topeka Zoo, Topeka, Kansas, on 6–7 November 2010. The zoo facilities provided an excellent venue for the meeting. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.

The final presentation of the afternoon session was by Joseph Gubanyi, entitled *A Memorial to James Edward Gubanyi*. Joe's stirring memorial tribute to his brother was followed by a moment of silence. Everyone missed Jim at this meeting (we knew he was a bit later than normal), and we will always miss him at KHS events. He was often late in showing up, so whenever any of you are on a future KHS field trip, searching along a Kansas stream or hiking over a sand prairie, toward the end of the event on Sunday be sure to look over your shoulder. Jim could show up at any time; and even if he doesn't, a memory of him will always be there for many of us.

Speakers for the scientific paper sessions on Sunday included Walter E. Meshaka, Jr. on *Reproductive cycles of the Northern Redbelly Snake, Storeria occipitomaculata occipitomaculata* (Storer, 1839), *in Pennsylvania*, Ryan Miloshewski on *Timber Rattlesnakes: educating and calming the anxious public*, Dandan Liu on *Prevalence of antibiotic resistant bacteria associated with the Red-eared Slider (Trachemys scripta elegans)*, Brynn Blair on *Observations on the Eastern Newt, Notophthalmus viridescens in Miami County, Kansas: preliminary data on its natural history*, Aubrey Aronson on *One full year of spatial and thermal ecology of Terrapene ornata in northeast Kansas*, Joseph T. Collins on *Kansas Herpetology*, Bill Welch on *Turtle trapping on the Little Arkansas River in Kansas*, Steven Grant on *Ecology and demography of a rolling plains population of Ornate Box Turtles, Terrapene ornata*, Jeff Witters on *Field and lab study of Terrapene ornata for educational purposes: lessons learned and future directions*, Shannon Muro on *Diet of Texas Horned Lizards, Phrynosoma cornutum, in a fragmented High Plains landscape*, and Mark S. Mills on *Using coverboards to examine biodiversity in the Loess Hills at Squaw Creek National Wildlife Refuge, Missouri*.

At the conclusion of the Sunday presentations, the third annual *George Toland Award* for the best paper presented at the meeting by a student on the ecology of North American amphibians, reptiles, turtles, and/or crocodilians was given by KHS President Kathy Ellis and Awards Committee Chairperson Dan Fogell to Katie Talbott, Fort Hays State University. Katie

received a commemorative certificate and check for \$200.00.

The KHS auction garnered \$1,032.00 for the Society treasury, led once again in part by the extraordinary offering of original artwork by Eva Horne, donations of herpetological books by Suzanne L. Collins (CNAH) and Eric Thiss (Zoo Book Sales), contributions in memory of Jim Gubanyi, and T-Shirts from Touchstone Energy, and also by the hard work of auction assistants Grace Anne Johnson, Shelbi Carpenter, and Evan Thiss, who so diligently assisted KHS auctioneers Walter E. Meshaka, Jr., Dan Fogell, and Eric Thiss.

Meeting Chairperson and KHS President Kathy Ellis deserves the generous thanks and appreciation of the KHS membership for putting together a most memorable meeting. Kathy was aided in her task by a local committee consisting of herself, Mark Ellis, Dan Johnson, Derek Schmidt, and Suzanne L. Collins. To them all we owe our enthusiastic kudos. And, of course, we must recognize the incredible service over the last decade of outgoing KHS officers Mary Kate Baldwin (KHS Secretary) and Eric Kessler (KHS Treasurer); both kept us financially afloat and affordable over the last decade through their diligent handling of the funds. Special thanks to Erica Peterson, who sat in for Mary Kate at this meeting.

And finally, thanks to our sponsors, The McPherson Family Trust, Zoo Book Sales, Topeka Zoo, JTC Enterprises, and CNAH. Without their support, financial and otherwise, the meeting would have been less.

The Society will meet (talks, donuts, and coffee, free beer and auction) under the auspices of Derek Schmidt, who will serve as KHS President during 2011. For more precise information on the 38th Annual Meeting of the KHS in November 2011, bookmark and regularly check the KHS meeting web site (updated constantly as new information becomes available) at

<http://www.cnah.org/khs/AnnualMeetingInfo.html>

JOSEPH T. COLLINS, KHS Associate Editor, Kansas Biological Survey, The University of Kansas, Lawrence, Kansas 66047.

## Images from the Kansas Herpetological Society 37th Annual Meeting



KHS President Kathy Ellis opened the 37th Annual Meeting with a welcoming address to the assembled participants. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.



George R. Pisani, Kansas Biological Survey, Lawrence, was the thirteenth recipient of *The Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology*. George received a commemorative memento and a check for \$1000.00 for his excellent paper entitled "*Virginia valeriae* and *Storeria dekayi* in a Northeast Kansas Grassland Community: Ecology and Conservation Implications," published during 2009 in the *Journal of Kansas Herpetology*. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.



Daniel D. Fogell, Southeast Community College in Lincoln, Nebraska, was the KHS Keynote Speaker at this year's meeting. Dan eloquently revealed the bald facts about Nebraska herpetofauna. His talk was well attended and enthusiastically received. Photograph courtesy of Ryan Shofner, Hays, Kansas.



KHS President Kathy Ellis presented future KHS President-elect Travis W. Taggart with the Society's *Bronze Salamander Award for Distinguished Service to the Society*. Travis created the *Journal of Kansas Herpetology* and was its editor for the first eight years. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.



KHS President Kathy Ellis presented the *Alan H. Kamb Grant* for \$300.00 to Prashant Deshmukh, Emporia State University. Prashant will use the grant to further his studies on Kansas snakes. Photograph courtesy of Ryan Shofner, Hays, Kansas.



Jodie Hearlson (Emporia State University) was the 2010 recipient of the *Gloyd-Taylor Scholarship* for \$300.00. She is so pleased. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.



KHS President-elect Derek Schmidt will assume office on 1 January 2011. Photograph courtesy of Larry L. Miller.



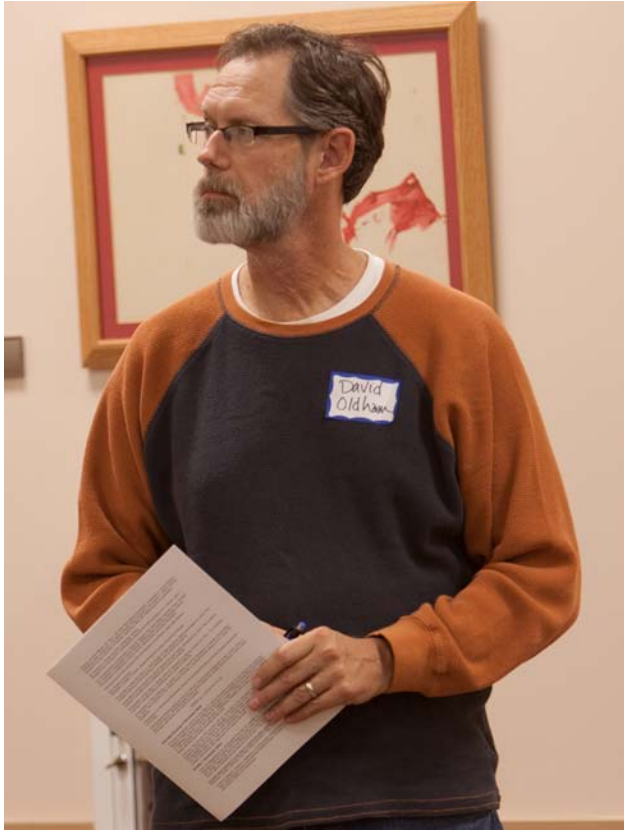
Dan Fogell (left) and KHS President Kathy Ellis presented the inaugural *Fitch-Platt Award* for \$100.00 to Stanley Roth, Kansas Biological Survey. Photograph courtesy of Ryan Shofner, Hays, Kansas.



Dan Fogell (KHS Awards Committee Chairperson) and KHS President Kathy Ellis (middle) presented the third annual *George Toland Award for Ecological Research on North American Herpetofauna* to Katie Talbott, Fort Hays State University. Katie received a certificate and a check for \$200.00. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.



Eva Home (Kansas State University) gave an outstanding talk on Blanchard Cricket Frog behavior and will become the new KHS Secretary on 1 January 2011. Photograph courtesy of Ryan Shofner, Hays, Kansas.



David Oldham (Pittsburg State University) will become the new KHS Treasurer on 1 January 2011. Here he has second thoughts as he observes the antics of the membership at the Saturday night auction. Photograph courtesy of Larry L. Miller.



Joe Collins became an honorary member of the Emporia State University crowd. L-R: Jodie Hearlson, Joe, Prashant Deshmukh, Stanley Roth, Eric Kessler, and Brent Thomas. Greg Sievert went for orange juice. Photograph courtesy of Ryan Shofner.



L-R: Shelby Klima and Robin Oldham were ready to party, but KHS President Kathy Ellis was sobered by the realization that the Saturday night auction had gotten seriously out of control and the participants needed sedation. Photograph by Larry L. Miller.



Eric Kessler's students from Blue Valley School District in Overland Park made an excellent presentation on Kansas newts. Photograph courtesy of Ryan Shofner, Hays, Kansas.



KHS Co-Auctioneer Walter Meshaka ran a *tight* auction. Here he prepares himself with large doses of orange juice at the KHS Friday night social. Photograph by Larry L. Miller.



Most of the approximately 100 registrants for the KHS annual meeting gathered for two days at the Topeka Zoo's Gary K. Clarke Education Center to hear scientific talks on herpetology . . . and to be near the donuts and coffee. Photograph by Ryan Shofner, Hays, Kansas.





Prior to the evening KHS auction at the Topeka Zoo, (L-R) Travis W. Taggart, Errol D. Hooper, Jr., Suzanne L. Collins and Joseph T. Collins autographed over 75 copies of their new book, *Amphibians, Reptiles, and Turtles in Kansas*. Photograph courtesy of Larry L. Miller.



The men of Ft. Hays State University kept a watchful eye on the dwindling supply of orange juice at the KHS Saturday night auction. Photograph courtesy of Ryan Shofner, Hays, Kansas.



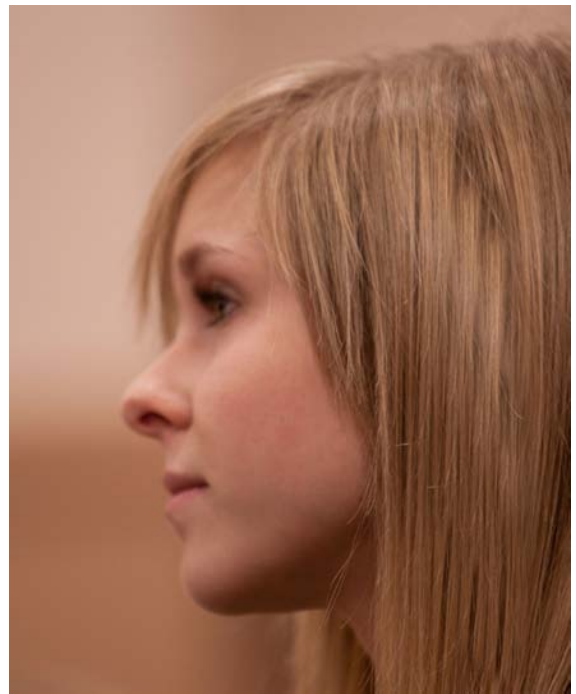
KHS *Distinguished Life Members* drank little orange juice, but provided sage counsel to the participants at the Society's annual meeting in Topeka. L-R: Joseph T. Collins, Dwight R. Platt, Larry L. Miller, and Geroge R. Pisani. Photograph by Suzanne L. Collins.



Aubrey Aronson (Olathe South High School) gave an outstanding student presentation on Ornate Box Turtle ecology. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.



KHS Co-Auctioneer Eric Thiss and son, Evan, sold Dan Fogell's personal autographed copy of *Amphibians, Reptiles, and Turtles in Kansas* for the third time . . . to Dan Fogell for the third time. Photograph courtesy of Ryan Shofner, Hays, Kansas.



And then there was former KHS first daughter, Grace Anne Johnson. With diligence, skill, and civility she guided the auction along, keeping a watchful eye on our auctioneers, *los tres amigos locos*. The Society owes her much for her forbearance and patience. Photograph courtesy of Larry L. Miller, Kansas Heritage Photography.

## REPORT ON THE KHS FALL FIELD TRIP TO NORTON COUNTY, KANSAS

The Kansas Herpetological Society Fall Field Trip for 2010, held on 1-3 October in Norton County, was a stupendous success. Over fifty participants conducted herpetofaunal counts, recording eighteen species of amphibians, reptiles, and turtles and over 650 specimens during the weekend event.

The field trip began on Friday evening, with campers arriving at Prairie Dog State Park (along the shores of Sebe-lius Reservoir) to set up their tents, cook the evening meal, and check the surrounding habitat for creatures of the dusk. On Saturday morning, the group assembled at 9:00 am to receive instructions from KHS Field Trip Co-Chairpersons Daniel Murrow, Travis W. Taggart, and Dan Carpenter about the herpetofaunal survey to be done by them on the hillsides of Pakkebier Farms in Norton County. The sixteen car caravan arrived at the rugged, spacious habitat and it occupied the participants for much of the morning. Afternoon searching and surveying was done ad libitum. Turtle traps were set.

Saturday night consisted of the usual revelry around the campfires, snakes stories, and dancing and singing offkey, followed by a night's slumber. The KHS extends its thanks to Chris Mulder (KDWP) and James Ninemire for help in gaining permission to search on private land.

The Sunday portion of the Society field trip began at 9:00 am and ran until noon. It was equally successful. Overall, at least four new county records were discovered for Kansas; they are noted with an asterisk on the accompanying count.

Participants were: Braden Aylesworth, Lucia Baldwin, Mary Kate Baldwin, Hank Bishop, Miles Bishop, Mike Caron, Dan Carpenter, Nathan Carpenter, Shelbi Carpenter, Joseph T. Collins, Suzanne L. Collins, Olivia Cowin, Kathy Ellis, Mark Ellis, Veronica Greene, Austin Hansen, Stephanie Heald, Nick Hettrick, Doug Hitt, Shirley Hitt, Crystal Klainang, Eric Kessler, Owen Kessler, Amanda Klammer, Katie Kopper, Cody Larrick, Brandon Low, Judy Low, Dexter Mardis, Dan Murrow, Nick Parker, Sam Parker, Erica Peterson, Ady Pipkin, Austin Rice, Brett Schmidt, Derek Schmidt, Ryan Shofner, Charlie Steiben, George Stevenson, Jordan Signer, Caitlin Seals Swanke, Bruce Taggart,

Jessie Taggart, Megan Taggart, Travis W. Taggart, Sara Unruh, Tyler Weber, and Victor Wilkinson. The following species were observed:

### Amphibians

Barred Tiger Salamander .....	1
Woodhouse's Toad .....	1
Blanchard's Cricket Frog .....	1
Boreal Chorus Frog* .....	2
Plains Leopard Frog .....	±300
Bullfrog* .....	±250

### Reptiles

Eastern Collared Lizard* .....	1
Prairie Lizard .....	47
Eastern Racer .....	5
Milk Snake* .....	2
Coachwhip .....	4
Great Plains Rat Snake .....	2
Gopher Snake (aka Bullsnake) .....	3
Ringneck Snake .....	19
Plains Garter Snake .....	4
Common Garter Snake .....	2

### Turtles

Northern Painted Turtle .....	5
Ornate Box Turtle .....	4

### Field Trip Totals

18 Species .....	±653 Specimens
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KHS Field Trip Co-Chairpersons TRAVIS W. TAGGART, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601 & DANIEL G. MURROW, 8129 Perry Street #37, Overland Park, Kansas 66204.



Some of the 50 participants at the KHS Fall Field Trip to Norton County, Kansas, on 1-3 October 2010. The herpetofaunal survey of Norton County yielded over 650 observations. Photograph by Suzanne L. Collins.

## IMAGES FROM THE KHS FALL FIELD TRIP TO NORTON COUNTY, KANSAS



At Prairie Dog State Park in Norton County, Kansas, the KHS “tent city” sprung up quickly as the sun drifted low on Friday evening. The nearby community of Norton benefited economically from the presence of the society. Nearly fifty hungry herpetologists converged on a single restaurant and consumed most of the available food on the menu. Photograph by Suzanne L. Collins.



Travis Taggart (KHS president-elect) led a group of students into the swamp, where he instructed them on the fine art of setting turtle traps. Photograph by Ryan Shofner.



Amanda Klammer (L) and Charlie Stieben admire the Plains Garter Snake held by Veronica Greene. Photograph by Suzanne L. Collins.



Showing off their successful serpent search, Brandon Low (L) holds a juvenile Coachwhip (*Masticophis flagellum*) while Mike Caron displays a Plains Garter Snake (*Thamnophis radix*). Both reptiles were caught during the KHS Fall Field Trip to Norton County, Kansas. Photograph by Suzanne L. Collins.



The discovery of the weekend was this juvenile Eastern Collared Lizard (*Crotaphytus collaris*) from southern Norton County, found by KHS member Victor Wilkinson. This was the most northern record for the species ever found in Kansas. Photograph by Suzanne L. Collins.



A Plains Leopard Frog (*Lithobates blairi*) sits along water edge, patiently waiting for an insect to fly within reach. This was the most commonly observed species during the KHS Fall Field Trip to Norton County, Kansas. Photograph by George Stevenson.



Eric Kessler (R) and his trusty field assistant vigorously seined the waters of this small pond, but only a single Plains Leopard Frog showed up in the netting. Photograph by Suzanne L. Collins.



Juvenile Coachwhips were a favorite of the KHS crowd. Photograph by Amanda Klammer.



Friends University students took down an entire tree for the KHS campfire on Saturday. L-R: Katie Kopper, Veronica Greene, Dexter Mardis, Braden Aylesworth, Stephanie Heald, and Tyler Weber. Photograph by Amanda Klammer (she had the camera and the axe).



At the KHS Fall Field Trip to Norton County, Kansas, a hardy few of the participants survived the Saturday night festivities of revelry and excessive orange juice to pose for the Sunday morning after. KHS president-elect Derek Schmidt (second from right) grimly assesses the situation as he realizes that it will all be his responsibility on 1 January 2011. Photograph by Ryan Shofner.

#### KHS DONORS

Few tributes are so lasting or honor individuals so well as donations. The Kansas Herpetological Society is privileged to carry on the aims and goals of the Society through its grants, scholarships, awards and other programs. This list recognizes donations received through 1 November 2010.

*Donation to the  
Fitch-Platt Award  
In Memory of*

*Henry S. Fitch  
(1909–2009)  
James E. Gubanyi  
(1944–2010)*

by Mary Kate Baldwin & Erica Peterson

\*

*Donation to the  
Kamb Grant*

by Calvin L. Cink

\*

*Donation to the  
Fitch-Platt Award  
In Memory of*

*Eva Williams  
(1953–2010)  
James E. Gubanyi  
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\*

*Donation to the  
Kamb Grant*

by Franklyn F. Finks

\*

*Donation to the  
Kamb Grant &  
Gloyd–Taylor Scholarship*

by R. Gayan Stanley

\*

*Donation to the  
Fitch-Platt Award  
In Memory of*

*James E. Gubanyi  
(1944–2010)*

by Security Transport Services, Inc. &  
Topeka Monday 60+ Softball League

#### KHS COMMITTEES APPOINTED

KHS President Kathy Ellis has appointed the following individuals to KHS committees for a three-year term, effective 1 January 2011:

##### *Media & Publicity*

Robin Oldham, Committee Chairperson  
(serves until 31 December 2013)

##### *Awards*

Daniel D. Fogell, Committee Chairperson  
Eva A. Horne  
Walter E. Meshaka, Jr.  
(serve until 31 December 2013)

##### *Field Trips*

Daniel G. Murrow  
Travis W. Taggart  
Committee Co-Chairpersons  
(serve until 31 December 2013)

##### *Nominating*

Dan Carpenter, Committee Chairperson  
Joseph T. Collins  
David Oldham  
(serve until 31 December 2013)

#### PAY YOUR 2011 DUES

If you have not already done so, send your calendar 2011 dues (\$15.00 regular, \$20.00 contributing) to:

Dr. Eva A. Horne  
KHS Secretary  
Division of Biology  
Kansas State University  
Manhattan, Kansas 66506

Your attention to this matter will ensure that delivery of the *Journal of Kansas Herpetology* will be uninterrupted.

#### KHS 2011 SPRING FIELD TRIP

The KHS 2011 spring field trip will be to Montgomery County. For information as it is posted, be sure to check the KHS web site regularly at:

[www.cnah.org/khs/FieldTripSpringInfo.html](http://www.cnah.org/khs/FieldTripSpringInfo.html)

For immediate information, contact:

Daniel G. Murrow  
& Travis W. Taggart  
KHS Field Trip Co-Chairpersons

(see inside front cover of this issue)

## IN MEMORIAM

JAMES EDWARD GUBANYI  
(1944–2010)

### *In Remembrance*

On 15 August 2010, the Kansas Herpetological Society lost one of its most affable, dedicated, long-term members, Jim Gubanyi. His enthusiasm, camaraderie, and avid commitment to the hunt for snakes, lizards, and turtles during KHS field trips was legendary and will be sorely missed. Hunting and collecting various kinds of cold-blooded creatures was something Jim did throughout much of his life. He more than once lamented to me that he wished KHS had been around in the 1960s and early 1970s when, as a teenager and young adult, he collected numerous specimens he would later discover would have been county records at the time. Jim had an intimate knowledge of the herpetofauna of the environs in and around the Topeka area as a result of the countless hours he had spent in the field. Jim knew more than anyone else about the localities and relative abundance of the Italian Wall Lizard and the Western Green Lacerta. Jim was very proud of his collection of these lizards and was always endeavoring to learn something new about them.

Jim was born in Leavenworth, Kansas, on 24 December 1944, but his family soon thereafter moved to California, where he lived until he and his brother and mother moved back to Kansas when Jim was fifteen. Jim and his younger brother, Joe, started catching reptiles at an early age, Jim catching his first snake at the age of four. Appropriately enough, after catching his first snake, Jim attempted to build something to house the animal. In those early days, both in California and in Kansas, the two brothers acquired menageries that became the talk of the neighborhood. I still have vivid memories of seeing their collection in central Topeka when I was very young. Jim's mother tolerated her boys' activities as long as their animals were not loose in the house.

Jim graduated from Topeka High School and took a few courses at Washburn University. He also studied automotive repair at Kaw Valley Vocational Technical School and became a certified automobile technician. In his later years, Jim also took courses at Topeka Technical College. Joe's interest in biology, no doubt spurred on by his older brother, led Joe into the academic study of biology, which culminated in a PhD and a faculty position at Concordia University in Seward, Nebraska. Jim had a number of jobs over the years. One of his first jobs, around 1960, involved cleaning bottles and cages for Charles Burt at his biological supply house, Quivira Specialties, in Topeka. Jim also once worked at the Topeka Zoo and at Essex Wire. He also once worked for the railroad, and, during the time I knew Jim, he worked as a driver or chauffeur and service technician for various people, a handyman and grounds keeper, a school bus driver, and a church custodian.

Besides herpetology, Jim had interests in fishing, marksmanship, gardening, rocks and minerals, geology, entomology, and astronomy. He was also active in sports; he regularly played ping-pong and played softball in the summer. He also

liked to tinker with and repair mechanical devices of all kinds. Jim very often seemed to view the fixing of a device most people would rather throw away as a personal challenge that he could not pass up. Although Jim sometimes had little patience with things that bothered him, he seemed always to display admirable patience and determination when it came to fixing something. I once asked Jim how he acquired this ability, an ability I wish I possessed. He told me that as a child he used to take things apart and then see if he could put them back together; his mechanical ability thus stemmed primarily from his curiosity about how things worked and his experience at disassembly and assembly.

Jim was a very outgoing person who had many friends and seemed to make new friends very easily. I can remember on several occasions he and I encountered landowners or persons of authority while we were in the field hunting or recording, and, even though the situations were a bit daunting to me, Jim took it in stride and conversed with the new arrivals in sort of an earthy, honest fashion that put them at ease. Oftentimes, Jim would soon end up talking with a stranger as if he had known him for years. It seemed hard for Jim to concentrate for an extended period of time on one thing. He often finished several tasks virtually at once by continually working back and forth at each for short periods. Having a conversation with Jim sometimes was a unique experience, particularly when he would not inform you of the subject of the conversation or would make it difficult for you to anticipate what he was going to say because you could not figure out where the conversation was going.

Jim loved to go places and do things, and over the years he was always getting me involved in any number of his adventures. I quickly learned that, when I got into the car with Jim, I must realize that I actually have no idea of where precisely we will go or when roughly we will get back. Jim and I attended many KHS field trips together, and, although these trips were at times very trying for me, they overall were worthwhile and were sometimes very profitable. At times, much of the field trip for us would occur before we ever got to the KHS campsite or after we had left the area, as Jim would like to stop along the way and hunt in places he couldn't just pass by. We had the habit of always showing up late to the field trips because of the extra activities and because we could never leave Topeka on time.

In addition to his brother Joe, his mother, Naomi Nibelink, his daughter, Marla Gubanyi, and two grandchildren, Julian Gubanyi and Jackson Sprecker, also survive Jim. I believe Kansas herpetology in general and the KHS in particular has suffered a loss. I know I will miss getting out of the house with Jim, coping with his quirky habits, and sharing a fondness for our common interests.

KEITH COLEMAN, 1916 SW Atwood Avenue, Topeka, Kansas 66604.

## Some Memories of Jim



At the 2002 KHS annual meeting in Lawrence, Kansas, the late Jim Gubanyi was honored for his diligent efforts on behalf of the *Kansas Anuran Monitoring Program*, sponsored by the Kansas Department of Wildlife & Parks and administered by Joe Collins. Here, Ken Brunson (right) from KDWP presents Jim with *The Big Croaker Award*, in recognition of his survey efforts on behalf of Kansas frogs and toads. The Award included a commemorative certificate and a check for \$100.00. Photograph by Suzanne L. Collins.



Near the end of a KHS field trip, late on Sunday morning, Jim Gubanyi located the survey in progress and proudly displayed his most recent find, a Woodhouse's Toad (*Anaxyrus woodhousii*) to Travis Taggart (left) and Curtis Schmidt (right). Jim might not have always got there on time, but he more often than not eventually made it to the Society field trips. And we were always glad to see him, with his infectious grin and enthusiasm. Photograph by Suzanne L. Collins.



Near 21st Street and Gage Boulevard in Topeka, Jim Gubanyi showed up at the 2009 Running of the Lizards, an event created in the late 1990s by Joe Collins for his Washburn University herpetology class. Jim brought with him a Western Green Lacerta (*Lacerta bilineata*), one of the two species of European lizards that were released or escaped in the 1950s or 1960s and are now firmly established in the city of Topeka. Shortly after this image was taken, Jim did his first television interview. Photograph by Larry L. Miller, Wakarusa, Kansas

VIEWPOINT

AN ACCURATE ACCOUNTING OF AN INACCURATE STATEMENT ABOUT SNAKE TAXONOMY

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The statement by Pyron and Burbrink (2009, page 528 column right; Figures. 1, 2) that the “taxonomic conclusions of Burbrink and Lawson (2007) and Collins and Taggart (2008) are shown to be inaccurate” is in itself inaccurate and worse, in a biased way, it confuses the taxonomic application of the snake genera *Pituophis*, *Pantherophis*, *Scotophis*, and *Mintonius*. The phylogenetic hypothesis put forth by Burbrink and Lawson (2007) was ultimately shown to be inaccurate by Pyron and Burbrink (2009); however, the taxonomic arrangement proposed by Collins and Taggart (2008) was not falsified by Pyron and Burbrink (2009), and was supported both by the phylogenetic hypothesis in Burbrink and Lawson (2007) and that in Pyron and Burbrink (2009). The continued recognition of the genera *Mintonius*, *Scotophis*, *Pantherophis*, and *Pituophis* is, therefore, fully supported by all available published evidence.

The reason that the taxonomic arrangement of Collins and Taggart (2008) remains valid is demonstrated in Pyron and Burbrink (2009). Their well-supported phylogeny shows that the two species in the genus *Mintonius* (*gloydi* and *vulpinus*) remain as sister taxa to the three species in the genus *Pantherophis* (*emoryi*, *guttatus*, and *slowinskii*), and both *Mintonius* and *Pantherophis* remain as sister taxa to the four species in the genus *Scotophis*, and that all three genera remain as sister taxa to *Pituophis* (Figure 1).

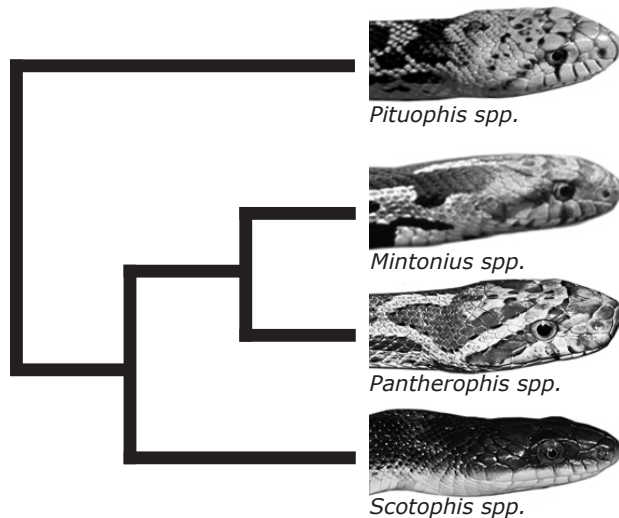


Figure 1. Burbrink and Lawson (2007) had incorrectly determined that *Pituophis* and *Mintonius* were sister taxa and suggested that the entire group be lumped into *Pituophis*. Collins and Taggart (2008) proposed their taxonomic hypothesis in preference to that of Burbrink and Lawson (2007), a taxonomic hypothesis that is supported by the evidence in both Collins and Taggart (2008) and Pyron and Burbrink (2009), as demonstrated above.

Based on the phylogenetic hypotheses presented in Collins & Taggart (2008) and Pyron and Burbrink (2009), the following taxonomies can be derived, both fully supported by the same evidence:

A taxonomy based on Collins and Taggart (2008)

- Mintonius*
- M. gloydi*
- M. vulpinus*
  
- Pantherophis*
- P. emoryi*
- P. guttatus*
- P. slowinskii*
  
- Pituophis*
- P. catenifer*
- P. deppei*
- P. lineaticollis*
- P. melanoleucus*
- P. ruthveni*
  
- Scotophis*
- S. alleganiensis*
- S. bairdi*
- S. obsoletus*
- S. spiloides*

A taxonomy based on Pyron and Burbrink (2009)

- Pantherophis*
- P. alleganiensis*
- P. bairdi*
- P. emoryi*
- P. gloydi*
- P. guttatus*
- P. obsoletus*
- P. slowinskii*
- P. spiloides*
- P. vulpinus*
  
- Pituophis*
- P. catenifer*
- P. deppei*
- P. lineaticollis*
- P. melanoleucus*
- P. ruthveni*

And so I ask this simple question: Which of these two taxonomic arrangements, each fully supported by the same phylogenetic evidence, contains more taxonomic information?



Each contains unique information; each loses some information. I contend that the taxonomy of Collins and Taggart (2008) is more informative because it demonstrates four relationships, whereas that of Pyron and Burbrink (2009) demonstrates only two relationships. Or, conversely, the taxonomy of Collins and Taggart (2008) hides only one phylogenetic relationship (that all four genera are each others closest relatives) whereas the taxonomy based on Pyron and Burbrink (2009) hides three distinctive sister genera.

I encourage readers to remember that a phylogeny, while it can explain in detail an evolutionary history, is not a taxonomy, which functions as a useful shorthand of phylogeny with which to write and speak about diversity without bogging down in uncategorized or over-categorized phylogenetic minutiae, when all one might be seeking is a general idea of the relationship between a Ringneck Snake and a Northern Water Snake. The best taxonomy is, of course, one that is most informative. An informative taxonomy is the only way herpetologists can hope to accurately explain the general evolutionary relationships of herpetofauna to a public (and to many other academic biologists) that will never take a course in phylogenetics.

In summary, both the arrangement by Pyron and Bur-

brink (2009) and that of Collins and Taggart (2008) are correct and consistent with all available evidence (as demonstrated in Figure 1, this paper), but I feel that four distinct and easily recognized genera will always be a more informative taxonomy than two genera, one of which contains a wide variety of morphologically dissimilar species.

I thank three outside reviewers whose helpful comments greatly improved the style of this manuscript. Travis W. Taggart skillfully executed Figure 1.

#### Literature Cited

- Burbrink, Frank T. and Robin Lawson. 2007. How and when did Old World Rat Snakes disperse into the New World?. *Molecular Phylogenetics and Evolution* 43: 173-189.
- Collins, Joseph T. and Travis W. Taggart. 2008. An alternative classification of the New World Rat Snakes (genus *Pantherophis* [Reptilia: Squamata: Colubridae]). *Journal of Kansas Herpetology* 26: 16-18.
- Pyron, R. Alexander and Frank T. Burbrink. 2009. Neogene diversification and taxonomic stability in the snake tribe Lampropeltini (Serpentes: Colubridae). *Molecular Phylogenetics and Evolution* 52: 524-529.



An adult Western Rat Snake (*Scotophis obsoletus*) from Sumner County, Kansas, displaying a color and pattern considered more typical for specimens from Texas. Serpent compliments of Larry L. Miller. Photograph by Suzanne L. Collins.

## NOTES

### CLUTCH CHARACTERISTICS OF TWO RAT SNAKE SPECIES FROM PENNSYLVANIA

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Pennsylvania is home to 22 presently recognized species of snakes (Meshaka and Collins, 2009). Among them, clutch size data do not exist for Pennsylvania populations of either the Eastern Rat Snake, *Scotophis alleghaniensis* (Holbrook, 1836) or the Midland Rat Snake, *S. spiloides* (Duméril, Bibron & Duméril, 1854) (Hulse et al., 2001), previously known collectively as either the Eastern Rat Snake, *Elaphe obsoleta* (Say, 1823) or the Black Rat Snake, *Elaphe obsoleta obsoleta* (Say, 1823).

Here, we provide estimates of clutch size from three Rat Snakes of both species collected from three adjoining counties in southern Pennsylvania. Examination of three post-partum females corroborated findings by Hulse et al. (2001) of a generally short egg-laying season in Pennsylvania by this group of snakes. Specimens are housed in the section of Zoology and Botany at the State Museum of Pennsylvania. Means are followed by standard deviation.

A 97 cm snout-vent length (SVL) female Eastern Rat Snake (SMP-H 1991) was captured on 1 June 1992 in Mechanicsburg, Cumberland County. Body fat was extensive and she contained eleven ovarian follicles, four in her left ovary and seven in her right ovary. Mean length and width of six follicles were  $15.8 \pm 3.7$  mm and  $5.8 \pm 1.2$  mm, respectively. A smaller second set of follicles were approximately 8 mm in length.

A 115 cm SVL female Midland Rat Snake (SMP-H 271) was captured on 9 June 1972 in South Mountain, Franklin County. Body fat was extensive and she contained 19 ovarian follicles, eight in her left ovary and eleven in her right ovary. Mean length and width of six follicles were  $31.0 \pm 1.6$  mm and  $10.7 \pm 1.3$  mm, respectively. A smaller second set of follicles were approximately 12 mm in length.

A 110 cm SVL female Midland Rat Snake (SMP-H 270) was captured on 7 June 1972, 6 mi. southwest of Cowen's Gap, Fulton County. Body fat was extensive and she contained twelve ovarian follicles, five in her left ovary and seven in her right ovary. Mean length and width of six follicles were  $25.9 \pm 2.5$  mm and  $14.6 \pm 11.4$  mm, respectively. A smaller second set of follicles were approximately 8 mm in length.

In addition, three other female Midland Rat Snakes from Pennsylvania were examined whose largest ovarian follicles ranged 7.8–10.5 mm: A 115 cm SVL female (SMP-H 3434) collected on 30 July 2008 in Pine Run, Beaver County. A 113 cm SVL female (SMP-H 1936) collected on 16 June 1976, 6.2 mi. south of Landisburg, Perry County. A 108 cm SVL female (SMP-H 4681) collected on 16 June 2010 in Rector, Westmoreland County. These data are suggestive of rapid follicular development as noted for Arkansas Rat Snakes (Trauth et al., 2004) and corroborate a generally narrow range of oviposition dates in Pennsylvania, as noted by Hulse et al. (2001). To that end, during a seven-year study in western Pennsylvania, no female Midland Rat Snakes were captured under cover boards in June, and females captured in July were not gravid (Meshaka, 2009). Notwithstanding cold summer temperatures that could delay egg-laying until mid-August, an egg-laying season of late June and early July was considered typical for Pennsylvania Rat Snakes (Hulse et al., 2001). Perhaps, the rapid follicular growth, an abbreviated nesting season, and secretive nature of the nesting female has contributed to the dearth of females with follicles suitable in size for clutch size estimation for this group of snakes in Pennsylvania.

#### Literature Cited

- Hulse, A. C., C. J. McCoy, and E. J. Censky. 2001. Amphibians and Reptiles of Pennsylvania and the Northeast. Cornell University Press, Ithaca, New York.
- Meshaka, W. E., Jr. 2009. Seasonal activity and breeding seasons of snakes from Powdermill Nature Reserve in western Pennsylvania: the importance of site-specific data in land management programs. *Herpetological Conservation and Biology* 5: 155–165.
- Meshaka, W. E., Jr., and J. T. Collins. 2009. A Pocket Guide to Pennsylvania Snakes. Publication of the Commonwealth of Pennsylvania, Harrisburg. 54 pp.
- Trauth, S. E., M. J. Plummer, and H. K. Robison. 2004. Amphibians and Reptiles of Arkansas. Arkansas Fish and Game Commission. Little Rock, Arkansas.



## ARTICLES

### FIELD OBSERVATIONS OF ELEVEN SPECIES OF SNAKES DURING TWENTY-SIX YEARS AT HAWK MOUNTAIN SANCTUARY, PENNSYLVANIA

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**Abstract:** Two hundred and thirty-eight opportunistic field observations were reported for 11 snakes species during 1986-2009 at the Hawk Mountain Sanctuary, a 1,100 ha private refuge for birds of prey in eastern Pennsylvania. The Eastern Rat Snake (*Scotophis alleghaniensis*) and the Timber Rattlesnake (*Crotalus horridus*) each comprised nearly 25% of the total number of observations. Snakes were seen during April-November, with most species observed in July. Monthly distribution of total numbers of snakes observed was bimodal as determined by a July depression in observations. Individual species varied with respect to modality of seasonal activity patterns, and these findings as well as those concerning other activities and behaviors noted herein provide comparative data for what can be otherwise locally common even if not often-studied snake species in Pennsylvania.

#### Introduction

The life histories of many of Pennsylvania's amphibian and reptile species remain poorly understood (Hulse et al., 2001). The need for basic herpetofaunal life history information in Pennsylvania extends to snakes, of which 22 species are found in the state (Meshaka and Collins, 2009). The goal of this study was to provide site-specific data on opportunistic field observations of snakes conducted over a 26 year period (1986–2009) at a large and protected site in the Ridge-and-Valley Province of Pennsylvania and to compare these findings with those from elsewhere in Pennsylvania, to more accurately quantify the sorts of ecological information necessary to make sound management decisions that involve this segment of Pennsylvania's biota.

#### Materials and Methods

The Hawk Mountain Sanctuary (HMS) is a 1,100-ha privately owned refuge for birds of prey founded in 1934. The sanctuary is located in the Ridge-and-Valley Province in Berks County in eastern Pennsylvania (Figure 1) and serves as a center for worldwide conservation of birds of prey. Consistent with its mission to serve as an observation, research, and education facility, HMS has maintained field observation cards pertaining specifically to snakes since 1986. I examined these cards to determine activity patterns of field-observed snakes on the property.

#### Results and Discussion

**Snake assemblage:** Two hundred and thirty-eight individuals of eleven species were seen as early as 16 April and as late as 3 November. The monthly number of species sighted over the season was unimodal, with numbers of species observed increasing until July, after which the numbers of species observed each month decreased until October (Figure 2). Total number of individuals seen each month was distributed in a bimodal pattern with a July depression in otherwise high monthly numbers of observa-



Figure 1. Hawk Mountain Sanctuary overlooks the Kittatinny Ridge, Berks County, Pennsylvania. Photograph by Benjamin Hayes.

tions during May-September (Table 1). Two snake species not previously noted from Berks County (Meshaka and Collins, 2009), the eastern Racer and Eastern Ribbon Snake, are reported here. The Queen Snake (*Regina septemvittata*), Brown Snake (*Storeria dekayi*), and Smooth Earth Snake (*Virginia valeriae*), all reported from Berks County (Meshaka and Collins, 2009), were not represented in the natural history cards.

#### *Agkistrodon contortrix*

The Copperhead, with eleven observations, comprised 4.6% of the snake field observations. Individuals were seen as early as 28 May 1997 and as late as 24 August 2007. Highest number of individuals was seen in July, with too few observations to ascertain modality in seasonal activity (Table 1). In Pennsylvania generally, individuals are active during late April through October and into November in the southeastern portion of the state (Hulse et al., 2001). One instance of aggregation was observed atop the Pinnacle on 21 July 1996 at which time four individuals were found together.

Table 1. Monthly distribution of field observations of snakes during 1986–2009 at Hawk Mountain Sanctuary, Berks County, Pennsylvania.

Species	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total
<i>Agkistrodon contortrix</i>	0	1	2	6	2	0	0	0	11
<i>Coluber constrictor</i>	0	0	0	1	0	0	1	0	2
<i>Crotalus horridus</i>	0	5	12	13	15	11	2	0	58
<i>Diadophis punctatus</i>	1	5	6	1	19	12	0	1	45
<i>Heterodon platirhinos</i>	1	0	0	0	0	1	0	0	2
<i>Lampropeltis triangulum</i>	0	5	5	1	2	4	2	0	19
<i>Nerodia sipedon</i>	3	13	2	3	4	2	1	0	28
<i>Scotophis alleghaniensis</i>	2	16	16	4	5	15	1	0	59
<i>Storeria occipitomaculata</i>	0	0	2	0	0	0	0	0	2
<i>Thamnophis sauritus</i>	0	0	0	1	0	0	0	0	1
<i>Thamnophis sirtalis</i>	1	2	1	1	0	5	1	0	11
Total	8	47	46	31	47	50	8	1	238

*Coluber constrictor*

The Eastern Racer, with two observations, comprised 0.8% of the snake field observations. Individuals were seen on 5 July 1997 and 5 October 2005 (Table 1). Although this species could superficially be confused with the Eastern Rat Snake, it is also a species of open fields and shrublands in the northeast (Hulse et al., 2001), a habitat that is limited primarily to the area around the Aco-pian Center.

*Crotalus horridus*

The Timber Rattlesnake (Figure 3), with 58 observations, comprised 24.4 % of the snake field observations. Individuals were seen as early as 11 May 2002 and as late as 27 October 1996. Highest number of individuals was seen in August, with the distribution of observations indicating an unimodal seasonal activity pattern (Table 1). In Pennsylvania generally, this species does not emerge until late April and is active until mid October (Hulse et al., 2001). An individual seen crossing the trail between Pinnacle Summit and the heli-port on 21 July 1996 appeared to have just fed. One instance of aggregation was

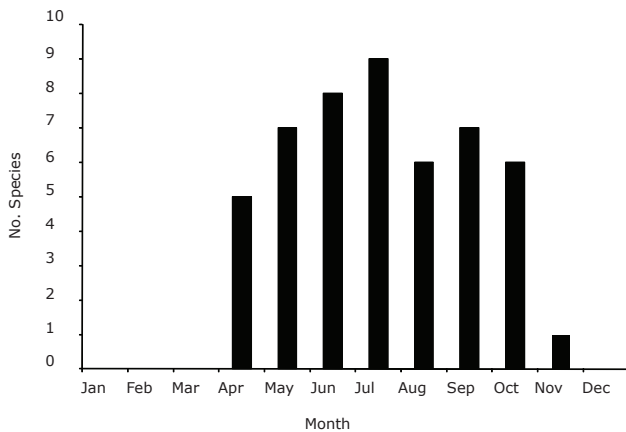


Figure 2. Distribution of the number of snake species observed each month during 1986–2009 at Hawk Mountain Sanctuary, Berks County, Pennsylvania.

observed at East Rocks on 26 September 2009 during which two adults were found curled together with two or three young on top of them.

*Diadophis punctatus*

The Ringneck Snake, with 45 observations, comprised 18.9% of the snake field observations. Individuals were seen as early as 20 April 1996 and as late as 3 November 2008. The highest number of individuals was seen in August (Table 1). The combination of observations from both under cover and in the open precludes determination of modality in seasonal activity from this sample. In Pennsylvania generally, individuals are active from early April until the end of October (Hulse et al., 2001) and exhibit a bimodal seasonal activity pattern, with peaks in late May-June and again in September (Hulse et al., 2001). In western Pennsylvania, individuals were active in all months of the May-September study period with an unimodal seasonal activity peak in June (Meshaka, 2009).



Figure 3. The Timber Rattlesnake (*Crotalus horridus*), such as this individual basking, was one of the two most commonly observed snake species during 1986–2009 at Hawk Mountain Sanctuary, Berks County, Pennsylvania. Photograph by Bill Moses.

Two instances of aggregation by the Ringneck Snake were observed at HMS. The first event involved three individuals found together under a brick pile on 6 June 1996. On 27 August 2002, twelve individuals were found under rocks near the pit at North Lookout. Ringneck Snakes have been reported to aggregate in Pennsylvania generally (Hulse et al., 2001) and in western Pennsylvania (Meshaka, 2009). A roadkill was found on Hawk Mountain Road on 19 May 1997.

*Heterodon platirhinos*

The Eastern Hognose Snake, with two observations, comprised 0.8% of the snake field observations. Individuals were seen on 24 April 1997 and 29 September 1998 (Table 1), the latter of which was a roadkill on Dreherstown Road, near the Pennsylvania Game Commission ponds.

*Lampropeltis triangulum*

The Milk Snake, with nineteen observations, comprised 8.0% of the snake field observations. Individuals were seen as early as 17 May 1999 and as late as 3 October 2008. Highest numbers of individuals were seen in both May and June, followed by a second peak in September (Table 1). In Pennsylvania generally, individuals are active from mid-April to early October (Hulse et al., 2001). In Pennsylvania, seasonal activity is unimodal and peaks in June (Hulse et al., 2001). In western Pennsylvania, individuals were active in all months of the May-September study period with an unimodal seasonal activity peak in June (Meshaka, 2009).

An individual captured on the Sawmill Road on 1 June 1997 regurgitated a recently eaten Ringneck Snake. Another individual captured in the old intern office on 24 August 2005 regurgitated a live Ringneck Snake and soon thereafter captured it again. To that end, Hulse et al. (2001) determined that in Pennsylvania, Milk Snakes shift their diet ontogenetically from snakes to mammals.

*Nerodia sipedon*

The Northern Water Snake, with 28 observations, comprised 11.8% of the snake field observations. Individuals were seen as early as 16 April 2002 and as late as 8 October 2003. The highest number of individuals was seen in May, with the distribution of observations having indicated an unimodal seasonal activity pattern (Table 1). In Pennsylvania generally, individuals are active from early March to mid-October, with an unimodal peak in May-June (Hulse et al., 2001). On 29 May 2004, a small individual was observed eating an anuran metamorphosing, which conforms to findings of its diet in Pennsylvania (Hulse et al., 2001).

*Scotophis alleghaniensis*

The Eastern Rat Snake (Figure 4), with 59 observations, comprised 24.8% of the snake field observations. Individuals were seen as early as 21 April 2006 and as late as 2 October 2002. Highest number of individuals was seen in May and June, followed by a second peak in September (Table



Figure 4. The Eastern Rat Snake (*Scotophis alleghaniensis*), such as this individual eating an Eastern Chipmunk, was one of the two most commonly observed snake species during 1986–2009 at Hawk Mountain Sanctuary, Berks County, Pennsylvania. Photograph by Mary Linkevich.

1). In Pennsylvania generally, individuals are active from late April to mid-October, especially during May–September (Hulse et al., 2001). In western Pennsylvania, individuals of *S. spiloides* were active in all months of the May-September study period, and unimodal seasonal activity peaked in June; however, for males in that study, seasonal activity was bimodal with a peak in June followed by a smaller peak in August (Meshaka, 2009). Activity of the Eastern Rat Snake occurred both on the ground and above the ground on man-made structures as well as in trees and bushes (Figure 5), a pattern likewise shared by *Scotophis* in Pennsylvania generally (Hulse et al., 2001). Monthly distribution of arboreality roughly approximated that of general activity (Table 1) at HMS. On 18 June 2007, an individual was observed on the road to the shed eating an Eastern Chipmunk (*Tamias striatus*) (Figure 4). This mammalian prey item fits within the dietary range of *Scotophis* in Pennsylvania generally (Hulse et al., 2001). On 31 August 2001, an individual was observed climbing a tree along the escarpment trail with a food bulge.

Three instances of copulation or courting were recorded for the Eastern Rat Snake at HMS. On 11 May 2003, two individuals were seen coiled together in a tree. On 31 May 2002, a pair of snakes was seen in copula for one hour at Schaumbach's Tavern. On 15 June 2007, three individual snakes were seen together near the information pavilion, two of which were in copula. These dates conform to findings by Hulse et al. (2001) that in Pennsylvania mating generally occurs during May-June. The single observation of a roadkilled Eastern Rat Snake took place on 12 May 1996 on Hawk Mountain Road between the Hill House and the Visitor Center.

*Storeria occipitomaculata*

The Redbelly Snake, with two observations, comprised 0.8% of the snake field observations (Table 1). Both individuals were seen together on 1 June 1995.

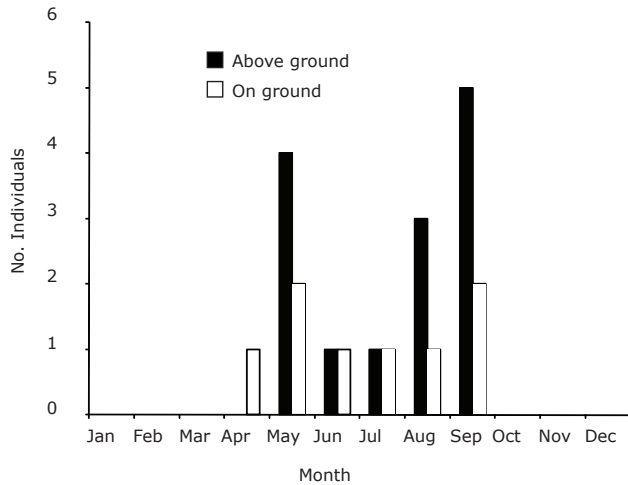


Figure 5. Monthly distribution of the number of Eastern Rat Snakes (*Scotophis alleghaniensis*) found on structures above the ground and found on the ground during 1986–2009 at Hawk Mountain Sanctuary, Berks, County, Pennsylvania.

#### *Thamnophis sauritus*

The Eastern Ribbon Snake, with one observation, comprised 0.4% of the snake field observations (Table 1). The single individual was seen on 5 July 2001.

#### *Thamnophis sirtalis*

The Common Garter Snake, with eleven observations, comprised 4.6% of the snake field observations. Individuals were seen as early as 19 April 1994 and as late as 19 October 2005. The greatest number of individuals was seen in September, with too few observations to ascertain modality in its seasonal activity (Table 1). In Pennsylvania generally, individuals are active throughout the year but most activity generally begins in mid to late March and ends in late October or early November (Hulse et al., 2001). At a residential site in south-central Pennsylvania, individuals were active during April–October of the May–December study period, and seasonal activity was unimodal with a peak in July (Meshaka, 2008). At a park in south-central Pennsylvania, individuals were active in all months of the May–September study period with bimodal peaks in seasonal activity in

May–June and in September (Meshaka, 2008). In western Pennsylvania, individuals were active in all months of the May–September study period, and unimodal seasonal activity peaked in June (Meshaka, 2009).

#### Summary

The anecdotal data amassed in this report provide site-specific refinements to life history phenomena of several locally common or at least easily observable species for which even basic life history data in Pennsylvania are lacking. The less frequently encountered snakes reported here, as well as those regionally present but undetected during this study, raise the question of their status with respect to their rarity or absence being actual or an artifact of sampling technique. In this regard, protected places with a research culture, such as HMS, provide the necessary conditions to answer questions built upon field research.

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#### Literature Cited

- Hulse, A. C., C. J. McCoy, and E. J. Censky. 2001. *Amphibians and Reptiles of Pennsylvania and the Northeast*. Cornell University Press, Ithaca, New York.
- Meshaka, W. E., Jr. 2009a. Seasonal activity and parturition season of the common garter snake (*Thamnophis sirtalis*) from two sites in south-central Pennsylvania. *Journal of the Pennsylvania Academy of Science* 83: 51–54.
- Meshaka, W. E., Jr. 2009b. Seasonal activity and breeding seasons of snakes from Powdermill Nature Reserve in western Pennsylvania: the importance of site-specific data in land management programs. *Herpetological Conservation and Biology* 5: 155–165.
- Meshaka, W. E., Jr., and J. T. Collins. 2009. *A Pocket Guide to Pennsylvania Snakes*. Publication of the Commonwealth of Pennsylvania, Harrisburg. 54 pp.



## About the Kansas Herpetological Society

The KHS is a non-profit organization established in 1974 and designed to encourage education and dissemination of scientific information through the facilities of the Society; to encourage conservation of wildlife in general and of the herpetofauna of Kansas in particular; and to achieve closer cooperation and understanding between herpetologists, so that they may work together in common cause. All interested persons are invited to become members in the Society. Membership dues per calendar year are \$15.00 (U.S., Regular), \$20.00 (outside North America, Regular), and \$20.00 (Contributing) payable to the KHS. Send all dues to: KHS Secretary, 5438 SW 12th Terrace Apt. 4, Topeka, Kansas 66604.

### *KHS Meetings*

The KHS holds an annual meeting in the fall of each year. The meeting is, minimally, a two day event with lectures and presentations by herpetologists. All interested individuals are invited to make presentations. The annual meeting is also the time of the Saturday night social and fund-raising auction.

### *Field Trips*

The KHS hosts two or more field trips each year, one in the spring and one in the fall. Field trips are an enjoyable educational experience for everyone, and also serve to broaden our collective understanding of the distribution and abundance the amphibians, reptiles, and turtles in Kansas. All interested persons are invited to attend.

## Editorial Policy

The Journal of Kansas Herpetology, currently issued quarterly (March, June, September, and December), publishes all society business.

### *Submission of Manuscripts*

As space allows, *JKH* publishes all manner of news, notes, and articles. Priority of publishing is given to submissions of Kansas herpetological subjects and by KHS members; however all submissions are welcome. The ultimate decision concerning the publication of a manuscript is at the discretion of the Editor. Manuscripts should be submitted to the Editor in an electronic format whenever possible. Those manuscripts submitted in hard copy may be delayed in date of publication. Manuscripts should be submitted to the Editor no later than the 1st of the month prior to the month of issuance. All manuscripts become the sole possession of the Society, and will not be returned unless arrangements are made with the Editor. In the interest of consistency and comprehension, the standardized common names used in *JKH* will follow those used in *Amphibians, Reptiles, and Turtles in Kansas* (Collins, Collins, and Taggart, 2010).

### *Reprints & Artwork*

*JKH* publishes original peer-reviewed submissions under the Articles and Notes sections. Upon review, acceptance, and publication, Portable Document File (PDF) copies are provided gratis to the author on request. Figures and photographs submitted with manuscripts are welcome, but must be sized appropriately by authors for this journal's column sizes (i.e., 19.5 or 39 picas wide). Particular attention should be paid to reduction of text on the figures.

## Societal Awards, Grants, and Recognitions

### *Distinguished Life Members*

Individuals selected as *Distinguished Life Members* are chosen by the KHS Executive Council based on their distinguished published research papers on Kansas herpetology.

### *Bronze Salamander Award*

Established in 1987, this Award is presented to those individuals whose efforts and dedication to the Kansas Herpetological Society go far beyond the normal bounds. The recipients of this Award have given exemplary service to the KHS, and are presented with an elegant bronze sculpture of a Barred Tiger Salamander.

### *The Howard K. Gloyd - Edward H. Taylor Scholarship*

Established in 1993, *The Gloyd-Taylor Scholarship* is present annually by the Kansas Herpetological Society to an outstanding herpetology student. The scholarship is a minimum of \$300.00 and is awarded on the basis of potential for contributing to the science of herpetology. Students from grade school through university are eligible.

### *The Alan H. Kamb Grant for Research on Kansas Snakes*

KHS members only are eligible to apply for *The Alan H. Kamb Grant for Research on Kansas Snakes*, which was established in 2001. The recipient of the grant will be selected by the KHS Awards Committee. A minimum award of \$300 is given annually.

### *The Henry S. Fitch - Dwight R. Platt Award for Excellence in Field Herpetology*

KHS members only are eligible to apply for *The Henry S. Fitch - Dwight R. Platt Award for Excellence in Field Herpetology*, which was established in 2010. The recipient of the grant will be selected by the KHS Awards Committee. The award will be given annually when sufficient funds have been raised to establish a trust.

### *The George Toland Award for Ecological Research on North American Herpetofauna*

This CNAH Award was established in 2008 in recognition of the scientific career of George Fredrick Toland, whose life-long interest in herpetology was passed on to so many of his students. The recipient of this award will be selected by the KHS Awards Committee. A minimum award of \$200 is given annually at the end of the KHS meeting.

### *The Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology*

This CNAH Award was established by Westar Energy in 1998 in recognition of the achievements of Suzanne L. Collins and Joseph T. Collins. In even years, the Award is bestowed upon an individual who, in the preceding two calendar years, had published a paper of academic excellence on native species of Kansas amphibians, reptiles, and/or turtles, and in odd years, the Award is given to an individual who, in a juried competition, took the best photograph of a Kansas amphibian, reptile, or turtle. *The Collins Award* is minimally \$1,000.00, and is neither a grant nor a scholarship. No nominations or applications can be made for it.

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