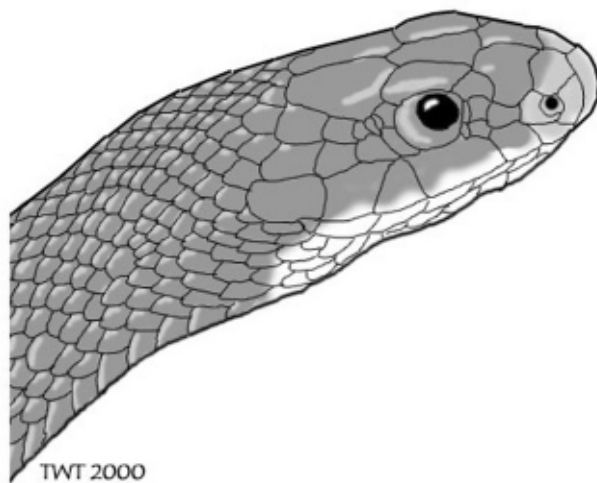


Kansas Herpetological Society



Newsletter

DECEMBER 2001



NUMBER 126

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Front Cover: An illustration of the head of an adult Eastern Racer (*Coluber constrictor*) by Travis W. Taggart, Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas 67601.

KANSAS HERPETOLOGICAL SOCIETY



NEWSLETTER No. 126

DECEMBER 2001



ANNOUNCEMENTS

REPORT ON THE KANSAS HERPETOLOGICAL SOCIETY 28th ANNUAL MEETING

The *Kansas Herpetological Society* held its 28th Annual Meeting at Topeka Collegiate School in Topeka, Kansas, on 2–4 November 2001. Over 100 participants (Fig. 1) attended scientific paper sessions to listen to 26 talks on amphibians, turtles, and reptiles by scientists and students from across the nation.

During its business meeting, the KHS voted Gregory Sievert (Emporia State University) as president-elect, Eric Kessler (Blue Valley North High School) as treasurer, and Mary Kate Baldwin (Topeka Collegiate School) as secretary. Suzanne L. Collins (The Center for North American Herpetology, Lawrence) currently is president-elect and takes office as president on 1 January 2002. Mark Ellis (Wakarusa, Kansas) served as president during 2001, and hosted the meeting this year (Fig. 2).

During the Society business meeting, Mark Ellis an-

nounced that Megan Kearney, a graduate student at Emporia State University, was this year's recipient of the *Howard K. Gloyd-Edward H. Taylor Scholarship* (Fig. 3). The scholarship of \$100.00 honors the memory of two great herpetologists (and former KHS Distinguished Life Members) with strong ties to Kansas. Gloyd was born in Ottawa and attended both Kansas State University and the University of Kansas, and Taylor graduated from Garnett High School and was a biology faculty member for many decades at the University of Kansas, Lawrence. In addition, KHS president Ellis awarded the first *Alan H. Kamb Grant for Research on Kansas Snakes* to Curtis Schmidt, graduate student at Fort Hays State University (Fig. 3). The grant honors the memory of longtime KHS member Al Kamb of Lawrence. Mr. Kamb passed away in 1998.



Figure 1. Group photograph of participants at the *Kansas Herpetological Society* 28th Annual Meeting held 2–4 November 2001 at Topeka Collegiate School in Topeka, Kansas. Photograph courtesy of Kansas Heritage Photography, Wakarusa.



Figure 2. The Executive Council of the *Kansas Herpetological Society* taking office in 2002. From left: Gregory Sievert (KHS President-elect), Mary Kate Baldwin (KHS Secretary), Eric Kessler (KHS Treasurer), and Suzanne L. Collins (KHS President). Not pictured: Mark Ellis (KHS Past President), Travis W. Taggart (KHS Editor) and John E. Simmons (KHS Historian). Photograph by Joseph T. Collins.



Figure 3. Megan Kearney, graduate student at Emporia State University accepts the *Howard K. Gloyd-Edward H. Taylor Scholarship* from KHS President Mark Ellis (left). Curtis Schmidt, graduate student at the Sternberg Museum of Natural History, Fort Hays State University, receives the first *Alan H. Kamb Grant for Research on Kansas Snakes* from President Ellis. Photograph by Suzanne L. Collins.

Prior to the start of the Saturday night KHS auction, Daniel D. Fogell, instructor at the University of Nebraska, Omaha (Fig. 4), was chosen as the fourth recipient of *The Suzanne L. and Joseph T. Collins Award for Excellence in Kansas Herpetology*. Fogell was selected for this honor by the KHS Awards Committee. The committee judged his portrait of a Copperhead (*Agkistrodon contortrix*) to be the best among 45 images entered in the photographic competition held this year. For his image, Dan Fogell was given a commemorative certificate and a check for \$1,000.00 by Kelly J. Irwin, member of the Board of Directors of *The Center for North American Herpetology*. *The Collins Award* is the largest biological award given annually in the state of Kansas, and the largest annual presentation made nationally for research on (even-numbered years) or photography of (odd-numbered years) amphibians, turtles, and reptiles. Judges for *The Collins Award* in 2001 were David Edds (Emporia State University), Travis W. Taggart (Fort Hays State University), and Gregory Sievert (Emporia State University).



Figure 4. Daniel D. Fogell, instructor at The University of Nebraska, Omaha, proudly displays his winning photograph of a Copperhead, for which he received *The Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology* for 2001. Photograph by Suzanne L. Collins.

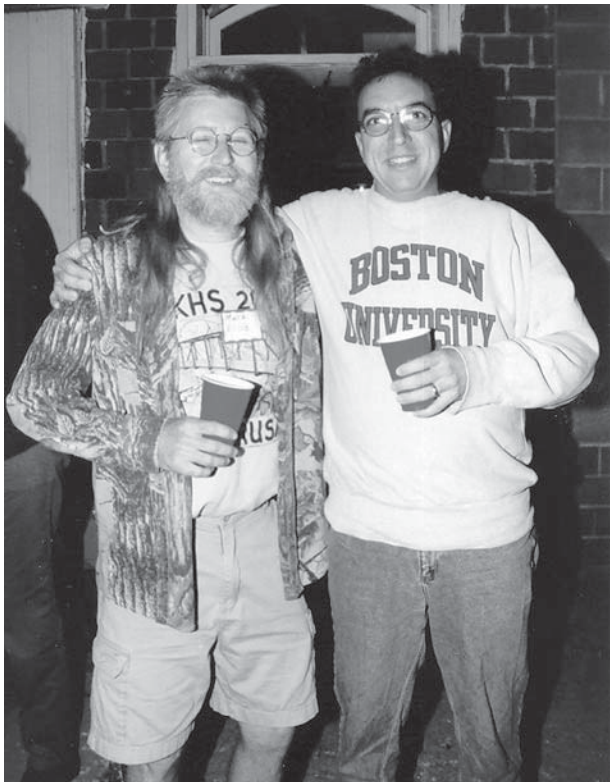


Figure 5. KHS President Mark Ellis (left) and KHS Meeting Keynote Speaker Walter Meshaka are discovered sharing one in the dim recesses behind the Auction House in Wakarusa. Much science was conducted in this area during the evening. Sample sizes were enormous. Conclusions drawn were ambiguous. Photograph by Larry L. Miller.

The Saturday evening KHS auction (Figs. 6–8) netted a little over \$1,700.00 for the Society treasury, spurred in part by the excellent offerings of original artwork by Eva Horne and Marty Capron, and also by the hard work of auction assistants Laura Acuff, Sarah Bellows-Blakely, Emily Heronemus, and Stephanie Wendt.

Following the first Sunday morning scientific paper session, two other KHS meeting attendees were recognized as the third annual recipients of *The Big Croaker Awards*, sponsored by the Kansas Department of Wildlife and Parks and the *Kansas Amphibian Monitoring Program*. Established in 1999, the awards this year were given to those individuals that monitored choruses of frogs and toads with diligence and excellence during the spring of 2001. Kathy and Mark Sexson, Garden City, Kansas, (Fig. 9) and Stanley D. Roth, Jr., Kansas Biological Survey, Lawrence, (Fig. 10) were each given a commemorative certificate and a check for \$100.00 by Joseph T. Collins, coordinator of the *Kansas Amphibian Monitoring Program*, and also representing the *Kansas Department of Wildlife and Parks*. Each spring, about ninety KAMP volunteers census choruses of amphibians on over eighty 15-mile routes across Kansas, establishing baseline information that will eventually be used to determine whether amphibian populations are declining, increasing, or remaining stable.

Featured speaker at the two-day event was Walter E. Meshaka (State Museum of Pennsylvania, Harrisburg; Fig. 5). Walter spoke, with his ever effervescent enthusiasm, on the Cuban Treefrog (*Osteopilus septentrionalis*), an amphibian that has colonized Florida and successfully spread across the state.

Speakers for the scientific paper sessions on Saturday included (in order of presentation): Nicole Palenske (Emporia State University, on hematological comparisons), James Pilch (University of Kansas, on Timber Rattlesnakes), Mike Coker (Topeka Zoo, on a future herpetarium), Eva A. Horne (Kansas State University, on tallgrass prairie



Figure 6. Fascination with Timber Rattlesnakes was much in evidence at the KHS auction. This exquisite artwork donated by Eva Horne fetched a handsome sum. Photograph © by artist.



Figure 7. The traditional KHS auction, conducted on Saturday night by Joseph T. Collins at the Auction House in Wakarusa, netted a handsome sum for the KHS coffers. Joe was skillfully assisted by Emily Heronemus (left) and Stephanie Wendt (right). Photograph by Suzanne L. Collins.



Figure 8. Another auction item of great interest was this original artwork by Marty Capron, well-known artist and a former recipient of the KHS *Bronze Salamander Award* for his distinguished service to the Society over the decades. Here at the auction, Sarah Bellows-Blakely and Emily Heronemus display the original rendering of the Wakarusa Bridge that was used to grace the T-shirts commemorating this annual meeting. The shirts were a huge success and promptly sold out. The original artwork by Marty fetched a stunning price—ample testament to the discriminating taste of the participating bidders, as well as the financially deleterious effects of beer consumption. Photograph by Larry L. Miller.

reptiles), Emily C. Moriarty (University of Texas, on North American Chorus Frogs), Eric M. Rundquist (University of Kansas, on an emerging threat to Kansas herpetofauna), Sean Daly (Emporia State University, on red blood cells), Curtis Schmidt (Fort Hays State University, on the herpetofauna of the Smoky Valley Ranch), Henry S. Fitch (University of Kansas, on reproduction in rattlesnakes), Kelly J. Irwin (Arkansas Game and Fish Commission, on Ozark Hellbenders), Megan Kearney (Emporia State University, on Eastern Collard Lizard digestion), Calvin Cink (Baker University, on homing in Common Snapping Turtles), Dwight R. Platt (Bethel College, on Harvey County reptiles), Eli Greenbaum (University of Kansas, on Copperheads), Eric Kessler (Blue Valley North High School, on the herpetofauna of Miami County, Kansas), and John Tollefson (Emporia State University, on Kansas River turtles).

Speakers for the scientific paper sessions on Sunday morning included: Chad Whitney (Olathe North High School, on Timber Rattlesnakes), Doug Eifler (Haskell Indian Nations University, on New Zealand geckos), Travis W. Taggart (Sternberg Museum of Natural History, on a new salamander from Arkansas), Patricia Burrowes (University of Puerto Rico, on declining amphibians in Puerto Rico), Rafael Joglar (University of Puerto Rico, on the coquis of Puerto Rico), Dan Fogell (University of Nebraska at Omaha, on Prairie Rattlesnakes in Iowa), Angela



Figure 9. Kathy and Mark Sexson of Garden City, Kansas, were the first of two recipients of *The Big Croaker Award* for 2001, sponsored by the *Kansas Department of Wildlife and Parks* as part of the *Kansas Amphibian Monitoring Program*. A commemorative certificate and check for \$100.00 were presented to them on the occasion of the 28th annual meeting of the *Kansas Herpetological Society* on Sunday morning, November 4th, 2001. Photograph by Suzanne L. Collins.



Figure 10. Stanley D. Roth, Jr. of Lawrence, Kansas, was the second recipient of *The Big Croaker Award* for 2001, sponsored by the *Kansas Department of Wildlife and Parks*. During the spring of 2001, he drove from Lawrence to western Kansas to cover two different KAMP routes, and didn't miss a month. Here, Stan receives a certificate and check for \$100.00 from Joseph T. Collins, coordinator of the *Kansas Amphibian Monitoring Program*. Photograph by Suzanne L. Collins

Babbit (Emporia State University, on *Hyla chrysoscelis*), Larry L. Miller (Northern Hills Junior High School, Topeka, on Italian Wall Lizards), and Jay Kirk (Friends University, Wichita, on the Eastern Indigo Snake on St. Vincent National Wildlife Refuge, Florida).

Abstracts for these talks appear elsewhere in this, the final issue of the *KHS Newsletter*.

Meeting Chairperson and KHS President Mark Ellis and his lovely companion, Kathy Shidler, deserve the strong thanks and appreciation of the entire KHS membership for putting together one of the society's most memorable meetings. And, special thanks go to headmaster Michael Roberts, Topeka Collegiate School, for allowing Mary Kate Baldwin (Fig. 11) the intellectual freedom of movement so necessary for this type of endeavor to succeed. The KHS further thanks Cami Liggett and Larry L. Miller for supplying animals for the live exhibit. Finally, once again our thanks to Emporia State University—David Edds, Lynnette Sievert, and Gregory Sievert substantially bolstered attendance at the meeting when five of their students from ESU presented papers at this meeting. Hopefully, other colleges and universities in Kansas and neighboring states will try to make such a showing at future meetings.

In 2002, the Society will meet in Lawrence (talks and coffee, free beer and auction) under the auspices of Suzanne L. Collins, who will serve as KHS President during that year. For more precise information on the 29th Annual Meeting of the KHS on 1–3 November 2001, bookmark and regularly check the KHS meeting web site (updated

constantly as new information becomes available from the KHS President) at

<http://eagle.cc.ukans.edu/~cnaar/khsAnnualMeetingInfo.html>



Figure 11. For without Mary Kate Baldwin (KHS Secretary), beer, and Eric Kessler (KHS Treasurer), things do not seem to go as well . . . but things did go well. These two KHS officers were instrumental in making them go so very well at the Society annual meeting and auction, both of which were huge successes. Our thanks to them both. Photograph by Suzanne L. Collins

ABSTRACTS OF PAPERS

Presented at the 28th Annual Meeting of the
Kansas Herpetological Society
Topeka Collegiate School
2–4 November 2001

Abstracts are listed in the order in which they appeared in the program

Keynote Speaker: *Walter Meshaka*
State Museum of Pennsylvania, Harrisburg
The Cuban Treefrog in Florida: Life History of a Successful Colonizing Species

The phenomenal range expansion of the Cuban Treefrog (*Osteopilus septentrionalis*) in Florida during the past 75 years defines this species as an unequivocally superb colonizing species. The reasons why this species dispersed so far and so fast from its center of distribution, and why it so firmly could establish itself in colonies, on the other hand, were unknown. To answer these “why” questions, I examined life history traits of this species assumed to reflect colonizing abilities and tested them against ecological correlates of successful colonization success. Here, I discuss some of my findings and the implications for future of the Cuban Treefrog in introduced areas and the futures of some of the species with which it will come into contact.

Nicole M. Palenske and David K. Saunders
*Department of Biological Sciences, Emporia State University, Emporia, Kansas***
Hematological Comparisons Between Two Hibernating Species, Bullfrogs (*Rana catesbeiana*) and Common Musk Turtles (*Sternotherus odoratus*)

Previous studies on hibernating Common Musk Turtles (*Sternotherus odoratus*) found increases in hematocrit, hemoglobin, and red blood cell counts (RBCC). These increases are due to decreased oxygen availability to body tissues in the hibernating animals. The purpose of this study was to evaluate and compare hematological properties between hibernating Bullfrogs (*Rana catesbeiana*) and Common Musk Turtles. We collected blood from Bullfrogs submerged in aerated water for 20 and 50 days at 5°C, as well as 0 day frogs exposed to 5°C, but not submerged. The control group consisted of three frogs maintained at room temperature. We measured hematocrit, hemoglobin, RBCC, and plasma osmolality in all frogs. Additionally, we calculated mean cell hemoglobin concentration (MCHC), mean cell volume (MCV), and mean cell hemoglobin (MCH) for each frog. No significant differences were found in hematocrit, hemoglobin, or RBCC among the four groups of frogs. However, plasma osmolality significantly decreased ($p=0.041$) in the 20- and 50-day groups relative to the control group. This study indicates

that Bullfrogs, unlike Common Musk Turtles, can extract sufficient amounts of oxygen from the surrounding water, thereby decreasing their need for increases in hematocrit, hemoglobin, and RBCC.

James Pilch
*Tertiary Oil Recovery Project, University of Kansas, Lawrence, Kansas***
A Timber Rattlesnake Sanctuary

A Timber Rattlesnake sanctuary has been established in the Douglas-Franklin County area of eastern Kansas. Land was purchased by the author and was subsequently found to hold a large population of Timber Rattlesnakes (*Crotalus horridus*). Since that time, others and myself have relocated multiple individuals to this protected area. In the future there will be an attempt to mark and track individual snakes in order to determine natural history details of this species as it occurs in eastern Kansas.

Eva Horne
*Division of Biology, Kansas State University, Manhattan, Kansas***
Effects of weather and burn treatment on activity and abundance of tallgrass prairie reptiles: Some preliminary data

Konza Prairie Biological Station, near Manhattan, Kansas, is a tallgrass prairie site with large-scale, long-term fire and grazing treatments. Despite >10 years of data on a variety of plant and animal communities from Konza, little is known about the herpetofauna. I began a long-term study of the reptiles in 1999 with two trap arrays (drift-fence/funnel-trap) along the forest edge of a permanent stream. Traps were checked daily from 1 May–17 August in 2000 and 2001. Seventy-four individual reptiles from nine species were captured. The number of animals captured (activity) in both years was positively correlated to temperature but was not correlated with precipitation or relative humidity. In 2001, five Y-shaped trap arrays were placed in open grassland areas of an annually burned watershed (K1B) and five arrays in a watershed (K4B) in the second year of a four-year burn cycle. The first capture in K1B was 26 days later than the first capture in K4B. More individual reptiles were captured in K4B but more species were captured in K1B. While these data are very preliminary, they hint at

interesting interactions between reptiles and their variable, unpredictable prairie environment.

Emily C. Moriarty

*Section of Integrative Biology and Texas Memorial Museum, University of Texas, Austin, Texas***

The Phylogenetic Relationships of North American Chorus Frogs

Earlier studies of North American Chorus Frogs, genus *Pseudacris*, have included morphological, immunological, allozyme electrophoresis, chromosome morphology, and advertisement call characters to estimate the phylogenetic relationships of eleven species of the genus *Pseudacris*. Cocroft (1994, *Herpetologica* 50: 420–437) combined published data into a single total evidence analysis. However, data were not available for some species and several nodes of this phylogeny were poorly supported. We include additional characters and taxa in a phylogenetic analysis by incorporating frequency information from a previous allozyme study (Hedges 1986, *Systematic Zoology* 35: 1–21) and adding molecular sequence data from 12S and 16S mitochondrial genes for all species and subspecies. The implications for taxonomy and the evolution of mating calls in this group will be discussed.

Eric M. Rundquist

*Animal Care Unit, University of Kansas, Lawrence, Kansas***

An Emerging Threat to a Fragile Kansas Herpetofauna

A deliberate release of domestic pigs occurred in 1995 in southeastern Kiowa County, Kansas. Since then, these feral swine have spread to at least three adjacent counties in the Gypsum Hills subprovince of the Red Hills Province and represent a significant threat to populations of several state-protected amphibians and reptiles in this area. An overview of the current status of the threat will be given with a discussion of possible solutions to the problem.

Sean Daly and David Saunders

*Department of Biological Sciences, Emporia State University, Emporia, Kansas***

Morphometric Analysis of Vertebrate Red Blood Cells

Previous studies had investigated variability in red blood cell morphology between groups of vertebrates, but few studies had investigated red blood cell morphology in large numbers of reptilian and amphibian species. This study was undertaken to evaluate the similarities and differences in the red blood cell morphology of a variety of amphibian and reptilian species. Using the computer imaging software, NIH Image, we made measurements of red blood cell length, width, and perimeter as well as nucleus perimeter

for those red blood cell possessing a nucleus. In general, our data show that red blood cell size increases from mammals to birds, birds to reptiles, and reptiles to amphibians. The ratio of nucleus diameter to red blood cell diameter remained relatively constant despite changes in red blood cell diameter. The reason for such large variation in red blood cell size among the vertebrates is yet to be elucidated.

Curtis Schmidt and William Stark

*Department of Biological Sciences, Fort Hays State University, Hays, Kansas***

Herpetofauna of the Smoky Valley Ranch, Kansas

The Smoky Valley Ranch is a 16,000-acre shortgrass prairie preserve owned by The Nature Conservancy and located in Logan county, Kansas. An inventory of the herpetofauna of the ranch was conducted in 2000 and 2001. The inventory utilized three primary survey techniques: searching by foot, road cruising, and the use of drift fences and funnel traps. A total of 23 species of amphibians and reptiles were collected during the two-year inventory. The species richness values obtained from each of the sampling techniques were compared for each different habitat type.

Henry S. Fitch

*Fitch Natural History Reservation, University of Kansas, Lawrence, Kansas ***

Reproduction in Central Plains Rattlesnakes

The Prairie Rattlesnake (*Crotalus viridis*), Western Diamondback Rattlesnake (*Crotalus atrox*), and Timber Rattlesnake (*Crotalus horridus*) are all wide-ranging species whose life-history traits change over their ranges in response to climate and other environmental factors. For instance, females of *Crotalus viridis* may reproduce annually, biennially, or triennially, and litter size may average as many as 11.9 or as few as 2.6 in different regions. Litter size is correlated with size of favorite prey locally. Populations that prey mainly on Wood Rats, Ground Squirrels or young Rabbits have the most young per litter and those that prey on lizards have the fewest.

Kelly J. Irwin

Arkansas Game and Fish Commission, Benton, Arkansas
Status of the Ozark Hellbender (*Cryptobranchus bishopi*) in Arkansas

The Ozark Hellbender (*Cryptobranchus bishopi*) is endemic to the Ozark Plateau of Arkansas and Missouri. This fully aquatic, long-lived salamander has experienced dramatic population declines throughout its range within the past two decades. The causal agent(s) for this decline has not been empirically determined. Recent efforts to conduct

a thorough distribution and population status survey in Arkansas delineated the known extent of its distribution and added only a few new metapopulation localities. The Arkansas Game and Fish Commission is currently working with a consortium of state, federal, and university personnel in formulating a conservation strategy in hopes of saving this unique species.

Megan Kearney

*Department of Biological Sciences, Emporia State University, Emporia, Kansas***

Digestive efficiency and food passage time of the Eastern Collared Lizard, *Crotaphytus collaris*

Thirteen *Crotaphytus collaris* were collected in Chase County, Kansas, in May 2001 and brought to the laboratory. Lizards were fed three different diets to determine if different foods resulted in significant differences between digestive efficiencies and food passage times. I chose neonatal mice (*Mus musculus*) to represent a high quality, but novel meal, and domestic crickets (*Acheta domestica*) and mealworms (*Tenebrio molitor*) to represent low quality meals, similar to what the lizards normally eat. Initially, the lizards were fed one neonatal mouse per day for four consecutive days. I recorded the mass of food ingested and fecal samples deposited by each lizard for four days. This was then repeated with a cricket meal and a mealworm meal approximately 3.5% of the lizard's body mass. I collected 52 fecal samples and 22 food samples (five mice, seven crickets, and ten mealworms), recorded the wet masses, dried the samples at 70°C, and recorded dry masses. I used bomb calorimetry to determine the caloric content of the food and fecal samples and calculated digestive efficiency (DE). I found a significant difference ($P < 0.005$) among the digestive efficiencies of *C. collaris* fed a neonatal mouse meal (DE = 89.92%), a cricket meal (DE = 81.78%), and a mealworm meal (DE = 92.53%). To measure food passage time, I fed two color-coded beads with each meal and recorded times of ingestion and defecation. The neonatal mouse meal (70.04 hr) took significantly longer ($P < 0.001$) to pass than either the cricket (54.93 hr) or the mealworm (55.11 hr) meal.

Calvin Cink

*Biology Department, Baker University, Baldwin City, Kansas***

Homing Abilities in the Common Snapping Turtle, *Chelydra serpentina*

Although Common Snapping Turtles (*Chelydra serpentina*) may not be territorial during the summer, they do occupy relatively stable home ranges which overlap, and whose spacing may in part be determined by aggressive interactions. The importance of these home ranges may be mea-

sured in part by the turtles persistent returns to these areas after displacement. I examined the returns of 97 turtles from the Wakarusa River to points of capture in ponds in the Baker Wetlands Natural Area in Douglas County, Kansas. Sixty percent returned within a week of displacement and 20 percent within three days. Return time was a function of displacement distance (1–2.5 km) and upstream or downstream displacement sites. Slightly more males than females returned, more of the older turtles returned, and several turtles displaced several times over a four-year period were persistent in returning to their home ranges. Trailing devices applied to several turtles suggest that homing is not by direct routes but along interconnected water courses that return them to their home ranges.

Dwight R. Platt

*Bethel College, North Newton, Kansas***
Snakes and Lizards of Harvey County, Kansas

Seventeen species of snakes and seven species of lizards have been reported from Harvey County in south-central Kansas. This paper will discuss the current status and abundance of these species, their habitat distribution within the county, and changes in abundance over the last forty years.

Eli Greenbaum

*Natural History Museum, University of Kansas, Lawrence, Kansas ***

Venom Variation and Chemoreception of the Viperid Snake, *Agkistrodon contortrix*

Previous studies of chemoreceptive behavior in vipers suggest that snakes focus on the scent of envenomated tissue to track down and consume prey following envenomation. Other studies have indicated a correlation between qualitative differences in venom biochemistry and geographic variation in diet. The North American Copperhead (*Agkistrodon contortrix*) has geographic variation in diet and venom biochemistry; we collected snakes from three populations (Louisiana, Texas, and Kansas) that are known to have different prey preferences. We studied the variation of venom biochemistry in this species and two other taxa (*Agkistrodon piscivorus* and *Sistrurus catenatus*) using sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE), which confirmed intraspecific and interspecific variation of venom proteins. Behavioral experiments addressed whether Copperheads preferred envenomated prey over nonenvenomated prey, as do other species of vipers studied thus far. Additional experiments tested whether Copperheads could distinguish between envenomated prey from different samples, or between Copperheads and the other two species of vipers. Results

indicated that Copperheads prefer envenomated prey over nonenvenomated prey. In envenomated prey discrimination experiments, Copperheads could distinguish between envenomated prey from different samples, and all but the sample from Kansas could distinguish between *A. contortrix*, and *A. piscivorus* and *S. catenatus*. Relative power of the venom from different samples as indicated by time to immobilization experiments was in the order: Louisiana>Texas>Kansas. These results suggest that chemoreception is sensitive to subtle differences in venom biochemistry, and may reflect adaptation to improve efficiency of finding envenomated prey.

Eric Kessler

*Blue Valley North High School, Overland Park, Kansas***
The Herpetofauna of the Miami County State Lake area, Kansas: Revisiting the Pigeon Lake Region after 70 years

From 1926 to 1929, Howard M. Gloyd (1932), research associates, students, and local residents conducted ten field trips in which between 17 to 21 days were spent surveying the herpetofauna of the "Pigeon Lake" region which included lake, lakeshore, marsh, wooded swamp, upland slope, hillside, and prairie grassland habitats. Thirty-seven species were observed including nine amphibians, five turtles, four lizards, and nineteen snakes. Seventy years later, from 1996 to 2001, forty-two one-day field trips were conducted to survey the herpetofauna of the Miami County State Lake region (north of what was Pigeon Lake). From March to July of 1997, the woodland and woodland glade communities were systematically surveyed during 18 six-hour long field trips in order to determine patterns existing in the retreat-site selection of woodland snakes. Less formal surveying occurred in the year prior to this research and in the years followed. A combined total of 34 species were observed including six amphibians, nine turtles, five lizards, and fourteen snakes. All twelve species considered 'abundant' and 'common' by the current study were found in both surveys, while four of the six species (66%) considered 'infrequent' and nine of sixteen species (56%) considered 'rare' occurred in both surveys. Gloyd observed twelve species that are undocumented by the current study. Differences in the species encountered between the two surveys can be explained by the fact that Gloyd's survey included a greater variety of habitats, especially wetland and open grassland areas. In fact, eight of the twelve species undocumented in the current study were found in such habitats. Only one woodland species observed by Gloyd may have been considered 'common', the Timber Rattlesnake, which is currently a 'Species in Need of Conservation'. The remaining woodland species may be considered 'rare' since one or two specimens were observed of each. In contrast, the current study has documented nine species that were not observed by Gloyd.

Seven of the nine species observed in the current study are considered 'rare' and were thus less likely to be observed by Gloyd and colleagues. It is interesting that two species considered 'infrequent' by the current study, the Great Plains Narrowmouth Toad and Smooth Earth Snake, both being observed on 39% of the trips, were not found by Gloyd. In the future, surveying in the wetland habitats of Miami County State Lake and in the wetlands and grasslands of the surrounding area will be conducted in order to document species observed in Gloyd's study. Of particular interest would be the rediscovery of the Eastern Newt, Spring Peeper, Eastern Hognose Snake, Timber Rattlesnake, and Redbelly Snake all of which are threatened or SINC species in the state of Kansas. Collection of the Softshell species observed at Miami County State Lake would constitute a county record.

John F. Tollefson

*Department of Biological Sciences, Emporia State University, Emporia Kansas***

Aquatic Turtle Assemblages in the Kansas River Drainage.

Sampling for aquatic turtles at eight sites in the Kansas River drainage in Douglas and Leavenworth counties, Kansas, was completed during the summer of 2000. Four distinct habitat types were sampled within the drainage: main channel, backwater, tributary, and floodplain scour. Aquatic turtle assemblages were compared between the four habitat types. Few significant differences were found in aquatic turtle abundance, richness, or evenness. Tributary sites showed the greatest species evenness and may be important diversity pockets when considering turtle conservation issues. Differences in assemblage composition were found. Main channel, backwater, and scour habitats support significantly distinct aquatic turtle assemblages.

Chad Whitney

*Olathe North High School, Olathe, Kansas***

The Timber Rattlesnake in Johnson County, Kansas

The Timber Rattlesnake (*Crotalus horridus*) occurs in 24 counties in Kansas (Collins 1993). Suitable habitat for this species ranges from open limestone cedar glades and limestone bluffs to wood sandstone outcropping (Ernst 1992, Collins 1993). This serpent has been designated a *Species in Need of Conservation* by the Kansas Department of Wildlife and Parks, and is protected from collecting. Such protection does not shield it against what could eventually be its demise—development by humans. In terms of human population, Johnson County, Kansas, is one of the fastest-growing counties in the United States, and with that increase in people comes much housing development. As of now, there are only a few large den sites of Timber Rattlesnakes left in Johnson County. Of imme-

diate concern, two den sites will be impacted in the near future by a proposed golf course and a new subdivision. Timber Rattlesnakes are still present in Johnson County, but have declined in numbers. If action to protect them is not taken soon, the den sites of this species will be in very close proximity to human activity, and the snake will be eliminated. I propose that more nature sanctuaries be established in Johnson County, similar to the Shawnee Mission Park and the Ernie Miller Nature Center. Such sanctuaries create refuges for this species.

Douglas Eifler

Haskell Indian Nations University, Lawrence, Kansas
Nectar Feeding in New Zealand Geckos

New Zealand geckos in the genus *Hoplodactylus* visit flowers to feed on nectar. I examined the nectar feeding behavior of two gecko species (*H. maculatus* and *H. duvaceii*) having access to two plant species: pohutukawa (*Metrosideros excelsa*) and flax (*Phormium tenax*). Geckos visiting pohutukawa were larger than lizards visiting flax. On flax, geckos were concentrated on plants with a greater number of male flowers, which are larger and provide a greater nectar payoff. Experimental manipulation of pohutukawa nectar volumes indicated that the distribution of geckos is influenced by the pattern of nectar availability.

Travis W. Taggart

Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas
A New Plethodontid Salamander from South-Central Arkansas

The *Plethodon glutinosus* complex (sensu Highton, 1989) currently consists of sixteen arbitrarily diagnosed forms resulting from the operations of a typological process concept of species and data analysis. Those data were reanalyzed using a lineage based concept of species resulting in the discovery of several new taxa, including one from south central Arkansas.

Patricia A. Burrowes

Department of Biology, University of Puerto Rico, San Juan, Puerto Rico

Amphibian Population Declines: What we have seen in Puerto Rico?

We have been monitoring eleven populations of eight species of *Eleutherodactylus* in Puerto Rico since 1989. Our methods consist of determining densities of active frogs in transects established at the Caribbean National Forest (El Yunque), Carite Forest, San Lorenzo, as well as lowland species around the metropolitan area of San Juan.

Results published in 1996, provided evidence to presume the extinction of three species, *E. karlschmidti*, *E. jasperi* and *E. eneidae*, and the decline of eight populations in six different species at elevations above 400 m. At present none of the presumed extinct species have been observed in spite of our efforts to find them, and although one of the declining populations has recuperated, others have disappeared. Common denominators in the decline of Puerto Rican anurans are high elevation, and keen ecological specialization such as restriction to stream or bromeliad habitats. There are many known and suspected causes of amphibian population declines around the world. We will report on new evidence that links anuran declines in Puerto Rico to global climatic change and the incidence of chytrid fungi. Finally we will describe our efforts as a DAPTF group force to contribute to the conservation of amphibians and public awareness in Puerto Rico.

Rafael L. Joglar

Department of Biology, University of Puerto Rico at Río Piedras, San Juan, Puerto Rico

Puerto Rico: An island enchanted by frogs.

Puerto Rico (8,990 square km), the smallest of the Greater Antilles, is known as The Enchanted Island. Its enchantments include beaches, rainforests, music, a blend of histories and cultures, Spaniard forts, 500 old cities and many others. One more enchantment should be added to the island's list: frogs. Because Puerto Ricans are fascinated by frogs and frog diversity, density and diversity of reproductive modes are higher in this island than in any other island in the world we could say that it is an island enchanted by frogs. The frogs of the genus *Eleutherodactylus*, locally known as coquis, compose 89% of the native amphibians and are the most important nocturnal predators in Puerto Rico. Despite their ecological, cultural and touristic importance, Puerto Rican amphibians are facing a biodiversity crisis. Our research, from 1986 to 2001, documents that the conservation of these species has been an exercise in futility since it has been limited to preparation of threatened and endangered species lists that are not updated regularly and that have very little to do with the population status of these species. Government agencies responsible for biodiversity (state and federal) have ignored the exotic species issue and, based on wrong principles, have favored birds and mammals over amphibians in terms of research and protection. To improve the conservation of Puerto Rican amphibians, it is important to sponsor (1) scientific research with emphasis on field work, (2) habitat protection with emphasis on land acquisition, and (3) education. It is also necessary to (1) increase the budget of government agencies in charge of conservation and (2) reestablish conservation priorities.

Daniel D. Fogell

Department of Biology, University of Nebraska at Omaha,
Omaha, Nebraska

The Prairie Rattlesnake (*Crotalus viridis viridis*) in Iowa's
Loess Hills

The Nature Conservancy's Broken Kettle Grassland in Iowa's northern Loess Hills harbors the last known Prairie Rattlesnake population in Iowa. Using radiotelemetry and general field observations, the geographic distribution, habitat preferences, and seasonal activity of this population of Prairie Rattlesnakes were investigated. Population size and structure were also investigated.

Angela Babbitt and Lynnette Sievert

Department of Biological Sciences, Emporia State
University, Emporia, Kansas **

Food Passage Time in *Hyla chrysoscelis* at 16°C and 24°C

Ectotherms often become thermophilic after feeding and move to warmer temperatures. Digestive efficiency and foraging success are also temperature-related. We measured the food passage time of *Hyla chrysoscelis* at 16°C and 24°C to determine the effect of temperature on food passage time. Eight male *Hyla chrysoscelis* from Lyon County, Kansas, were given a meal of a single cricket on the first night of the study. For the next four nights, the frogs were fed single crickets that were marked with colored glass beads, a different color for each night. The amount of time between feeding and defecation of each bead was measured. The experiment was conducted first at 24°C and again at 16°C. All eight frogs ate marked crickets at 24°C, but only six frogs ate marked crickets at 16°C. The differences in passage times of the two groups were highly significant ($p = 0.0001$). The mean passage times were 81.4 hrs and 38.2 hrs at 16°C and 24°C, respectively.

Larry L. Miller

Science Department, Northern Hills Junior High School,
Topeka, Kansas

The Italian Wall Lizard (*Podarcis sicula*) in Topeka, Kansas: An Alien Natural History

The Italian Wall Lizard was established in Topeka, Kansas, during the late 1950s or early 1960s after specimens either escaped or were set free from a biological supply house located near 21st Street and Gage Boulevard in Topeka, Kansas. This illustrated talk will present both facts and theories relating to the very successful introduction of these small lizards.

Jay Kirk

Biology Department, Friends University, Wichita, Kansas
The Eastern Indigo Snake Project on St. Vincent National
Wildlife Refuge

Beginning in December 1998, a collaborative relationship was forged between USFWS personnel of St. Vincent National Wildlife Refuge and *The Center for North American Herpetology* to initiate winter herpetofaunal surveys on the refuge. After two preliminary visits to the island in December 1998, serious discussions and plans for future work ensued regarding the presence or absence of the Eastern Indigo Snake (*Drymarchon couperi*) on the island refuge. General field collecting and observations were conducted for thirteen days over the period of 24 December 1999 through 15 January 2000; no Eastern Indigo Snakes were observed during this period. On 15 January 2000, several *Gopherus* burrows were surveyed using a burrow video camera; four adult Gopher Tortoises were found but no Eastern Indigo Snakes were observed. Between 19 December 2000 and 15 January 2001, general field collecting and observations were conducted for a total of twelve days. On 31 December 2001, fifteen Gopher Tortoise burrows were surveyed using a burrow video camera; three adult Gopher Tortoises and two adult Eastern Diamondback Rattlesnakes were observed in burrows, but no Eastern Indigo Snakes were found. During April 2001, I conducted targeted field work in search of Eastern Indigo Snakes on St. Vincent National Wildlife Refuge; drift fence arrays were activated and operated from 2–29 April 2001. Traps were checked a minimum of once every 24 hours, and in many instances twice a day, and proved successful at sampling herpetofauna. Again, no Eastern Indigo Snakes were found. Various reasons for this are postulated.

** indicates the paper is a candidate for *The Collins Award* in 2002



FIELD TRIPS

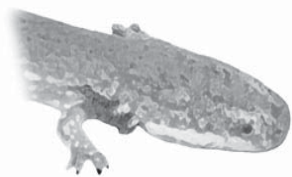
SPRING 2002 KHS FIELD TRIP SCHEDULED FOR THE SOUTHWEST

The spring 2002 KHS field trip will be to the Cimarron National Grasslands located in Morton County, Kansas. The dates of the field trip will be 31 May to 2 June 2002. The first organized field trip will begin at 9:00 am on Saturday, 1 June 2002. The second organized field trip will begin at 2:00 pm on Saturday, 1 June 2002. The meeting place for the field trips will be the Cimarron Recreation Area which is located four miles east of Route 27 along gravel road FS 700 on the south side of the river. Camping at the recreation area is \$7.00 per night. Restrooms are available. Open campfires are not allowed. There are also at least two motels in Elkhart. The El Rancho is located at 604 Hwy 56 and its phone number is 620-697-2117. The other motel is the Elkhart Motel which is located at 329 Morton Street. The phone number is 620-697-2168.

Interested persons may travel on to northeast New Mexico Sunday afternoon the 2nd of June to spend a few days herping and exploring the Clayton, New Mexico, area. They can camp at beautiful Clayton Lake State Park (phone 505-374-9253 for information) or stay in one of Clayton's several motels. Two of the motels are the Clayton Motel and the Best Western Inn. The phone number for the Clayton Motel is 505-374-2544. The phone number for the Best Western Inn is 505-374-2589. There are several good places to eat in Clayton, and many historical sites to visit in the area. Lots of herps (especially rattlesnakes) can be found in northeastern New Mexico. Tentative plans are to stay in the Clayton area until Wednesday, 5 June 2002. However, individuals may choose to stay longer or for a shorter period of time.

As with all KHS field trips, FRS channel 4 will be monitored. The Morton County Kansas/Northeast New Mexico field trip will be the only spring KHS field trip for 2002. Start making plans now for this exciting adventure!

For more information, contact Larry L. Miller, KHS Field Trip Chairperson 840 SW 97th Street Wakarusa, Kansas 66546. Telephone: 785-836-2119 (email: kansasphoto@metacrawler.com).



RESULTS OF THE KHS FALL FIELD TRIP

In early October 2001, KHS members traveled to Elk County, Kansas, to search for amphibians, turtles, and reptiles found in the Chautauqua Hills area of the state. Many gathered at Howard City Lake on Friday night, and at 9:00 am on Saturday morning a stunning 71 participants (Figure 12) were present for the herpetofaunal count.

With the help of gracious land-owners in the area, we spent two great days collecting numerous species.

The count for 5-7 October 2001 was as follows:

Kansas: Elk Co: Howard City Lake area 5 October 2001 4:00 pm-7:00 pm

Northern Cricket Frog	3
Western Ribbon Snake	1
Common Garter Snake	1

Kansas: Elk Co: Wood Ranch, SW of Howard City Lake 6 October 2001 9:45 am-noon

Smallmouth Salamander	1
Northern Cricket Frog	±20
Bullfrog	±20
Great Plains Narrowmouth Toad	2
Eastern Collared Lizard	1
Ground Skink	1
Six-lined Racerunner	2
Ringneck Snake	6
Flathead Snake	14
Milk Snake	1
Coachwhip	2
Bullsnake	1
Ground Snake	8
Lined Snake	3
Copperhead	2

Kansas: Elk Co: Howard City Lake area 6 October 2001 1:00 pm-6:00 pm

Northern Cricket Frog	19
Plans Leopard Frog	2
Bullfrog	1
Common Musk Turtle	1
Eastern Box Turtle	2
Slider	1
Ground Skink	2
Western Slender Glass Lizard	2
Ringneck Snake	4
Flathead Snake	8
Eastern Racer	3

Common Kingsnake	1
Coachwhip	2
Rough Green Snake	2
Ground Snake	1
Plainbelly Water Snake	1
Northern Water Snake	1
Lined Snake	1
Timber Rattlesnake	1

Northern Cricket Frog	21
Eastern Box Turtle	1
Ornate Box Turtle	1
Western Slender Glass Lizard	1
Ringneck Snake	17
Eastern Racer	1
Common Kingsnake	1
Rough Green Snake	2

Kansas: Elk Co: Howard City Lake area
7 October 2001 9:00 am–10:30 am

Common Musk Turtle	1
Ornate Box Turtle	1
Ringneck Snake	3
Rough Green Snake	1

Kansas: Elk Co: 1 mi NW Elk Falls
7 October 2001 11:00 am–noon

Ornate Box Turtle	4
Five-lined Skink	2
Six-lined Racerunner	2
Ringneck Snake	8
Flathead Snake	4
Great Plains Rat Snake	1
Plainbelly Water Snake	2
Lined Snake	2

Kansas: Elk Co: SW side Elk City Reservoir
7 October 2001 1:00 pm–2:00 pm

Participants: Cathy Acuff, Laura Acuff, Robert Acuff, Lucia Baldwin, Mary Kate Baldwin, Derek Benson, Jenny Brillhart, Michael Brown, Marty Capron, Dan Carpenter, Nathan Carpenter, Shelbi Carpenter, Michael Cass, Phillip Cass, Shawn Chronister, Joseph T. Collins, Suzanne L. Collins, Keith Colman, Nate Davis, Garrett Dear, Kenneth Dear, Brandon DeCavele, Doug Eifler, Erin Eifler, Maria Eifler, Mark Ellis, James Gubyani, Jeff Hansen, Anthony Hernandez, Daniel Hogan, David Humenczuk, Charlie Jansen, Jennifer Johnson, Eric Kessler, Nicholas Ketter, Jamie Kirk, Jay Kirk, Cami Liggett, John F. Lokke, Vince Lopez, Tiny Malloy, Lisa McNearney, Ross McNearney, Edwin Miller, Kristen Miller, Larry L. Miller, Suzanne L. Miller, Daniel Murrow, David Oldham, Jackson Oldham, Robin Oldham, Tag Oldham, Weston Palmer, Chuck Palmer, Paul Powers, Samuel Powers, Jill Reimer, Brennan Schloo, Kathy Shidler, Andy Sinderf, Travis W. Taggart, Michael Teeter, Michelle Teeter, Brian Underwood, Jeremy Washburne, Michael Washburne, Andy Weep, Dave Weep, Jan Whalen, Chad Whitney, and Amy Zavala.



Figure 12. Some of the seventy-one participants in the KHS fall field trip to Elk County, Kansas, on 5–7 October 2001. Photography by Suzanne L. Collins.

KHS BUSINESS

KHS EXECUTIVE COUNCIL ACTIONS

The Kansas Herpetological Society *Executive Council* met on 4 November 2001. Attending were Mary Kate Baldwin, Suzanne Collins, David Edds, Eric Kessler, Greg Seivert, and Travis Taggart. Mark Ellis presided. The noon meeting was held at Topeka Collegiate School.

Mary Kate Baldwin and Eric Kessler distributed copies of several financial reports. Records indicate that in 2001, membership dues collected were \$3,005. Eric estimated that newsletter expenses might be \$2,500 for the year. That assumes the newsletter will remain at sixteen pages plus four cover pages and will be mailed at a bulk rate. The Board expressed concern that postage rates are going to increase and until we know the new rates, no changes in how we mail the newsletter will be discussed.

Memorial donations in the amount of \$200, excluding the Kamb donation, were received this year. It was moved and seconded (Collins/Taggart) to add the memorial donations to the *Gloyd-Taylor Scholarship* fund. Motion was approved.

There is currently \$339.96 in the Gloyd-Taylor fund and adding \$200 would allow the purchase of a CD. It was moved and seconded (Collins/Kessler) to continue to reinvest all interest in the fund, allowing it to grow until it can earn sufficient interest to make an award. Motion was approved.

The Board agreed to continue to take \$100 annually from the general fund for the *Gloyd-Taylor Scholarship*. This will allow the fund to continue to grow until interest earned is at the \$100 level, at which point 75% of the interest can be awarded and 25% reinvested with the principle; this is the same criterion that was approved for the *Kamb Grant*.

The Board directed Mary Kate to reinvest the *Kamb Grant* CD adding 25% of the interest from the previous year and contributions made within the last year. The KHS contributed \$13.64 from the general fund to augment last year's interest so the award could be made for \$100. She estimated that the total of the new CD would be \$3,108.85.

The Board supported the concept presented at the general business meeting that the KHS Awards Committee be appointed for a two-year term that runs concurrently with the two-year cycle of *The Collins Award*. This will allow the same committee to judge all submissions. Papers published and presentations made from January of one year through December of the following year (e.g., Jan. 2000–Dec. 2001) are eligible for the award.

Respectfully submitted,
Suzanne L. Collins
President-elect



BOOKMARK THESE KHS WEB SITES NOW

*For everything about the KHS,
go to*

[http://eagle.cc.ukans.edu/~cnaar/
khs/khsmain.html](http://eagle.cc.ukans.edu/~cnaar/khs/khsmain.html)

*For information about the KHS Annual Meeting,
go to*

[http://eagle.cc.ukans.edu/~cnaar/khs/
AnnualMeetingInfo.html](http://eagle.cc.ukans.edu/~cnaar/khs/AnnualMeetingInfo.html)

*For information about the KHS Spring Field Trip,
go to*

[http://eagle.cc.ukans.edu/~cnaar/khs/
FieldTripSpringInfo.html](http://eagle.cc.ukans.edu/~cnaar/khs/FieldTripSpringInfo.html)

*For information about the KHS Fall Field Trip,
go to*

[http://eagle.cc.ukans.edu/~cnaar/khs/
FieldTripInfoFall.html](http://eagle.cc.ukans.edu/~cnaar/khs/FieldTripInfoFall.html)

Remember: Not all of these web sites are fully prepared at any given time; they are always works-in-progress to keep you informed of upcoming KHS activities. Bookmark them, and check them regularly. You will find out faster at these websites about where and when the KHS is planning an activity than you will waiting for a KHS Newsletter to arrive in the mail.

SHORT COMMUNICATIONS

NOTES ON REPRODUCTION OF THE WESTERN GREEN LACERTA (*LACERTA BILINEATA*) AND THE ITALIAN WALL LIZARD (*PODARCIS SICULA*) IN KANSAS.

James E. Gubanyi

2501 Burnett Road, Topeka, Kansas 66614

Collins (1993) presented no data concerning reproduction in the introduced populations of *Podarcis sicula* in Topeka and noted that nothing was known about its courtship and mating behavior in Kansas. Based on data available at that time, he did not consider the Western Green Lacerta (*Lacerta bilineata*) as an established species in the state. Below I present a few observations that I have made, or that have been reported to me, concerning reproductive behavior in the introduced Kansas populations of the Western Green Lacerta and the Italian Wall Lizard.

A pair of Western Green Lacertas, that I maintain in captivity, mated or attempted to mate numerous times throughout the years 1998, 1999, and 2000. Courtship occurred during the day and did not appear to be seasonal. I kept these lizards apart most of the time, but would periodically put them together in the same cage. Soon after introducing them to each other, the male would begin pursuit of the female. The male's behavior was so aggressive that I did not keep the pair together for long, for fear that the male would injure the female. On at least one occasion, I observed the two copulating, with the male's jaws around the female's neck and his tail underneath hers. Both lizards had the habit of digging and nearly completely burying themselves in the soil of potted plants in their cages. On 15 February 2000, I discovered one white shriveled egg, about 15 mm long, buried about an inch deep in the soil of a potted pothos plant. No additional eggs were noticed.

A gravid Italian Wall Lizard that I captured in southwest Topeka on 22 July 2001 laid five eggs on top of and underneath a layer of newspaper flooring in the aquarium in which I was keeping her. The eggs, which were all firm and dry, were discovered the night of 28 July 2001. I had observed her scratching behind a rock and underneath newspapers the previous night. The eggs were all white and ellipsoid (prolatespheroid, to be exact) in shape. They were measured and found to have a mean length of 9.5 mm and a mean width of 4.0 mm (see Table 1).

I subsequently incubated the eggs in moist sand. The eggs swelled as they incubated, and on 12 September 2001 the largest egg was measured at 15 mm long and 8 mm wide. The eggs began to hatch about 29 September 2001. Only two of the eggs hatched, but, unfortunately, a local (feline?) predator got into and upset the container of eggs so that I obtained only one (dead) juvenile wall lizard. The lizard was measured and found to have an S-V length of 2 cm and a total length of 5.5 cm.

In addition to the above notes, Keith Coleman (pers. comm. 2001) reported to me his observations concerning reproduction in Italian Wall Lizards. His observations, made in the early to mid 1990's, were very similar to mine except for the time of year. On one occasion, he discovered four eggs buried under dry sand and gravel in an aquarium, and on another occasion he found four eggs in a shallow circular depression, about the diameter of a fifty-cent piece, underneath a flat rock in a yard. He reported that, in both cases, the eggs (1) had been laid sometime in May, (2) were all about 1/4 inch long and football-shaped, and (3) hatched about the middle of July.

Burton and Burton (1975) indicated that, in the wild, female Wall Lizards lay a clutch of 3-9 eggs in a hole dug in the soil and may produce two or three clutches in a season. Burton and Burton also indicated that Wall Lizard eggs hatch after about two months. Wynne (1981) reported that the young of *Podarcis sicula* are 2-3 inches long at hatching. The observations concerning the Topeka population of *P. sicula* reported above are thus consistent with previously published data, and the information about reproduction in the Western Green Lacerta is the first such data for the introduced population in Kansas.

Literature Cited

- Burton, Maurice and Robert Burton. 1975. *Encyclopedia of Reptiles, Amphibians, and Other Cold-Blooded Animals*. BPC Publishing, London. 252 pp.
Collins, Joseph T. 1993. *Amphibians and Reptiles in Kansas. Third Edition*. Univ. Press of Kansas, Lawrence. 397 pp.
Wynne, Richard H. 1981. *Lizards in Captivity*. TFH Publications, Neptune, New Jersey. 189 pp.

Table 1. Individual lengths and widths of a clutch of eggs laid on 28 July 2001 by a Kansas specimen of *Podarcis sicula*. Measurements are in mm.

Egg	Length	Width
1	10.0	4.0
2	11.0	4.5
3	10.0	4.0
4	8.5	3.5
5	8.0	4.0

**KANSAS HERPETOLOGICAL SOCIETY
APRIL-MAY AMPHIBIAN, TURTLE & REPTILE
COUNT**

Locality: _____

Date: _____

Time: From _____ To _____

Please carefully record the total number of each species observed or heard.

Salamanders

- Smallmouth Salamander, *Ambystoma texanum*
- Barred Tiger Salamander, *Ambystoma mavortium*
- Eastern Tiger Salamander, *Ambystoma tigrinum*
- Eastern Newt, *Notophthalmus viridescens*
- Longtail Salamander, *Eurycea longicauda*
- Cave Salamander, *Eurycea lucifuga*
- Many-ribbed Salamander, *Eurycea multiplicata*
- Grotto Salamander, *Typhlotriton spelaeus*
- Red River Mudpuppy, *Necturus louisianensis*
- Common Mudpuppy, *Necturus maculosus*

Frogs and Toads

- Plains Spadefoot, *Spea bombifrons*
- American Toad, *Bufo americanus*
- Great Plains Toad, *Bufo cognatus*
- Green Toad, *Bufo debilis*
- Red-spotted Toad, *Bufo punctatus*
- Woodhouse's Toad, *Bufo woodhousii*
- Northern Cricket Frog, *Acris crepitans*
- Spotted Chorus Frog, *Pseudacris clarkii*
- Spring Peeper, *Pseudacris crucifer*
- Strecker's Chorus Frog, *Pseudacris streckeri*
- Boreal Chorus Frog, *Pseudacris maculata*
- Western Chorus Frog, *Pseudacris triseriata*
- Eastern Gray Treefrog, *Hyla versicolor*
- Cope's Gray Treefrog, *Hyla chrysoscelis*
- Crawfish Frog, *Rana areolata*
- Plains Leopard Frog, *Rana blairi*
- Bullfrog, *Rana catesbeiana*
- Green Frog, *Rana clamitans*
- Pickrel Frog, *Rana palustris*
- Southern Leopard Frog, *Rana sphenoccephala*
- Eastern Narrowmouth Toad, *Gastrophyne carolinensis*
- Great Plains Narrowmouth Toad, *Gastrophyne olivacea*

Turtles

- Common Snapping Turtle, *Chelydra serpentina*
- Alligator Snapping Turtle, *Macrochelys temminckii*
- Common Musk Turtle, *Sternotherus odoratus*
- Yellow Mud Turtle, *Kinosternon flavescens*
- Eastern Box Turtle, *Terrapene carolina*
- Ornate Box Turtle, *Terrapene ornata*
- Common Map Turtle, *Graptemys geographica*
- Ouachita Map Turtle, *Graptemys ouachitensis*
- False Map Turtle, *Graptemys pseudogeographica*
- River Cooter, *Pseudemys concinna*
- Painted Turtle, *Chrysemys picta*
- Slider, *Trachemys scripta*
- Smooth Softshell, *Apalone mutica*
- Spiny Softshell, *Apalone spinifera*

Lizards

- Eastern Collared Lizard, *Crotaphytus collaris*
- Lesser Earless lizard, *Holbrookia maculata*
- Prairie Lizard, *Sceloporus undulatus*
- Texas Horned Lizard, *Phrynosoma cornutum*
- Ground Skink, *Scincella lateralis*
- Coal Skink, *Eumeces anthracinus*
- Five-lined Skink, *Eumeces fasciatus*
- Broadhead Skink, *Eumeces laticeps*
- Great Plains Skink, *Eumeces obsoletus*
- Southern Prairie Skink, *Eumeces obtusirostris*
- Northern Prairie Skink, *Eumeces septentrionalis*
- Six-lined Racerunner, *Cnemidophorus sexlineatus*
- Western Slender Glass Lizard, *Ophisaurus attenuatus*

Snakes

- Texas Blind Snake, *Leptotyphlops dulcis*
- Western Hognose Snake, *Heterodon nasicus*
- Eastern Hognose Snake, *Heterodon platirhinos*
- Western Worm Snake, *Carphophis vermis*
- Ringneck Snake, *Diadophis punctatus*
- Flathead Snake, *Tantilla gracilis*
- Plains Blackhead Snake, *Tantilla nigriceps*
- Night Snake, *Hypsiglena torquata*
- Rough Green Snake, *Ophiodrys aestivus*
- Eastern Racer, *Coluber constrictor*
- Coachwhip, *Masticophis flagellum*
- Great Plains Rat Snake, *Elaphe emoryi*

- Eastern Rat Snake, *Elaphe obsoleta*
- Glossy Snake, *Arizona elegans*
- Gopher Snake (Bullsnake), *Pituophis catenifer*
- Prairie Kingsnake, *Lampropeltis calligaster*
- Common Kingsnake, *Lampropeltis getula*
- Milk Snake, *Lampropeltis triangulum*
- Longnose Snake, *Rhinocheilus lecontei*
- Ground Snake, *Sonora semiannulata*
- Checkered Garter Snake, *Thamnophis marcianus*
- Western Ribbon Snake, *Thamnophis proximus*
- Plains Garter Snake, *Thamnophis radix*
- Common Garter Snake, *Thamnophis sirtalis*
- Lined Snake, *Tropidoclonion lineatum*
- Rough Earth Snake, *Virginia striatula*
- Smooth Earth Snake, *Virginia valeriae*
- Brown Snake, *Storeria dekayi*
- Redbelly Snake, *Storeria occipitomaculata*
- Graham's Crayfish Snake, *Regina grahamii*
- Plainbelly Water Snake, *Nerodia erythrogaster*
- Diamondback Water Snake, *Nerodia rhombifer*
- Northern Water Snake, *Nerodia sipedon*
- Copperhead, *Agkistrodon contortrix*
- Cottonmouth, *Agkistrodon piscivorus*
- Massasauga, *Sistrurus catenatus*
- Timber Rattlesnake, *Crotalus horridus*
- Western Rattlesnake, *Crotalus viridis*

This list is based on the common and scientific names that appear in the fourth edition of *Amphibians and Reptiles in Kansas* (Collins 1997), with modifications from information published since that date. Compiled for the Kansas Herpetological Society by Joseph T. Collins, November 2000.

RETURN TO

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The Kansas Herpetological Society

The *Kansas Herpetological Society* 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 amphibians, turtles and reptiles in Kansas in particular; and to achieve closer cooperation and understanding between herpetologists, so that they may work together in common cause.

Membership

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 Treasurer (see inside front cover). All members are entitled to participate in Society functions, have voting privileges, and are eligible for Society grants and scholarships. They receive copies of the *KHS Newsletter*, as well as other publications co-sponsored by the Society, either gratis or at a discount.

Editorial Policy

The *Kansas Herpetological Society Newsletter*, issued quarterly, publishes peer-reviewed manuscripts and notes dealing with the biology of amphibians, turtles and reptiles. Manuscripts should be submitted to the Editor no later than the 10th 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. Pen and ink illustrations and photographs are also welcomed. Illustrations and photographs will be returned to the author only upon request. The *KHS Newsletter* has adopted the common names standardized nationwide by Collins (1997); all manuscripts submitted will be automatically converted to conform with Collins (1997).

The Howard K. Gloyd-Edward H. Taylor Scholarship

The Gloyd-Taylor Scholarship is presented annually by the Kansas Herpetological Society to an outstanding herpetology student. Nominations for this award are open to any KHS member enrolled in an accredited educational institution in Kansas or any KHS member enrolled in any accredited educational institution outside of Kansas. The scholarship is \$100.00 and is awarded on the basis of potential for contributing to the science of herpetology. Students from grade school through university are eligible.

Nominations should include typewritten details of the nominee's qualifications, plus name and address of the nominee and nominator. Self-nomination is encouraged. If self-nominated, a letter of reference from an academician is required.

Nominations should include, but are not limited to, academic record, herpetological activities, and future plans in herpetology. Academic record should address schools attended and an indication of academic performance in each (e.g., grade point average, teacher evaluations, courses completed). Herpetological activities should include a brief narrative that details experiences and activities that demonstrate a long-term interest in herpetology, and documents accomplishments in herpetological study. Future plans in herpetology should include a statement, not to exceed one-page, written by the student about his/her future interests and plans.

Applicants may include an optional appendix with photographs, awards, newspaper articles, reports written by the student, or other documents relevant to herpetological activities.

Nominations should be sent to the KHS Awards Committee Chair, and must be postmarked by 15 September. The scholarship winner will be announced at the annual meeting in November. New applications will be accepted after 1 January of the following year.

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. The recipient of the grant (minimally \$100.00) will be selected by the KHS Awards Committee. If no qualified proposals are submitted, no award will be made for that year.

The KHS Awards Committee will entertain proposals for research on Kansas snakes. The proposal must be limited to ten typed pages, and should include, but not be limited to the following: title, name of researcher, contact information, abstract, introduction and justification, objectives or hypotheses, materials and methods, significance of research and possible results, literature cited, timetable, and proposed budget. The research must be conducted on one or more native Kansas snake species. Additionally, a majority of the field work or observations must be proposed to occur in Kansas, or the data must be proposed to be collected, at least in part, on Kansas specimens.

Proposals should be sent to the KHS Awards Committee Chair, and must be postmarked by 15 September. The grant recipient will be announced at the annual meeting in November. New applications will be accepted after 1 January of the following year.

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

Conditions and Stipulations: The Award shall be known, presented, and portrayed as the *Suzanne L. & Joseph T. Collins Award for Excellence in Kansas Herpetology* and may not be changed for any reason, nor added to or merged with any other award, prize, or gift. The Award is established in recognition of the scientific and photographic achievements of Suzanne L. Collins and Joseph T. Collins, whose life-long study and conservation of the native amphibians, turtles, and reptiles of Kansas is amply demonstrated in their extensive and excellent writings and photography, both academic and popular, about these animals.

The Award shall be presented no more than once each year. The Award may not be divided, but must be presented in full to a single individual. The Award consists of a trust-in-perpetuity, owned and invested by the *The Center for North American Herpetology*, and part of the interest from the trust is annually forwarded to the *Kansas Herpetological Society*, should they choose to make an award in that year.

Recipients of The Collins Award are chosen by the *Kansas Herpetological Society Awards Committee*.

In even-numbered years, the Award is bestowed upon an individual who, in the *preceding* two calendar years, had published a paper of academic excellence on the systematics, ecology, or conservation of a native species of Kansas amphibian, turtle, and/or reptile in the *Kansas Herpetological Society Newsletter*, *Transactions of the Kansas Academy of Science*, *Herpetological Review*, or the *Journal of Herpetology*, and/or presented a lecture of excellence on the systematics, ecology, or conservation of a native species of Kansas amphibian, turtle, and/or reptile at the KHS Annual Meeting. To qualify for the Award, a portion of the field work or observations must have occurred in Kansas, or the systematic data must have been based in part on Kansas specimens. *In odd-numbered years*, the Award is bestowed upon an individual who was chosen the best in a juried competition featuring the art of photography in portraying amphibians, turtles, and/or reptiles, said competition to take place under the auspices and on the occasion of the annual meeting of the *Kansas Herpetological Society*. To qualify for the Award, the art work must portray a species native to Kansas.

The Collins Award is minimally \$1000.00, and is neither a grant nor a scholarship. No nominations or applications can be made for it.

KHS Advertisement Policy: As decreed by the KHS Executive Council, the KHS Newsletter will accept advertisements at the rate of \$25.00 per quarter page per issue, up to a one-page maximum per issue. No advertisements for live animals or parts thereof will be accepted.

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