

Kansas Herpetological Society



Newsletter

MARCH 1998



NUMBER 111

KANSAS HERPETOLOGICAL SOCIETY OFFICERS FOR 1998

President

JOHN LOKKE

P. O. Box 76, University of Nebraska at Omaha
Omaha, Nebraska 68182-0242

(402-551-8114)

email: jlokke@s-cwis.unomaha.edu

President-Elect

CHRIS MAMMOLITI

Department of Wildlife and Parks

512 SE 25th Avenue

Pratt, Kansas 67124-8174

(316-672-5911)

Past-President

KAREN GRAHAM

Sedgwick County Zoo, 5555 Zoo Boulevard

Wichita, Kansas 67212

(316-942-2213 ext. 229)

email: e674@scatcat.fhsu.edu

Treasurer

KAREN TOEPFER

303 West 39th Street

Hays, Kansas 67601

(785-623-4258)

email: fmkt@fhsuvm.fhsu.edu

Secretary

DAREN RIEDLE

Department of Zoology

Oklahoma State University

Stillwater, Oklahoma 74078

(316-331-7168)

email: driedle@ionet.net

Editor

ERIC M RUNDQUIST

Animal Care Unit, B054 Malott Hall

University of Kansas

Lawrence, Kansas 66045

(785-864-5587)

email: trattler@kuhub.cc.ukans.edu

KANSAS HERPETOLOGICAL SOCIETY COMMITTEE CHAIRPERSONS

Field Trips

LARRY L. MILLER

840 SW 97th Street

Wakarusa, Kansas 66546

(785-836-2119)

email: wakarusa@cjnetworks.com

DISTINGUISHED LIFE MEMBERS

ROBERT F. CLARKE

Emporia State University, Emporia

HENRY S. FITCH

The University of Kansas, Lawrence

DWIGHT R. PLATT

Bethel College, North Newton

HOBART M. SMITH

The University of Colorado, Boulder

LIAISON REPRESENTATIVES

KEN BRUNSON

Kansas Wildlife and Parks

(316-672-5911)

JOHN LOKKE

Society for the Study of Nebraska

Amphibians & Reptiles

(402-551-8114)

DAVID GROW

Oklahoma Herpetological Society

(405-424-3344)

The front cover illustration is a scan of an original drawing by Olin Karch of a
Cane Toad (*Bufo marinus*) from San Jose, Costa Rica in 1986.

KANSAS HERPETOLOGICAL SOCIETY



NEWSLETTER No. 111

MARCH 1998



ANNOUNCEMENTS

KANSAS HERPETOLOGICAL SOCIETY SILVER ANNIVERSARY MEETING

The 25th Annual Meeting of the Kansas Herpetological Society will be held in Lawrence on 5-8 November 1998. The theme of the meeting will be **Great Plains Herpetology**. A tentative schedule of events is as follows: Thursday, 5 November, KHS Executive Council Meeting, Registration, Evening Social; Friday, 6 November, Registration, Scientific Paper Session, **Keynote Speaker**: Andrew Holycross (Arizona State University), KHS General Business Meeting, Introduction of all former Presidents of the KHS, Presentation of the Gloyd-Taylor Scholarship by John Lokke (KHS President), Presentation of two Bronze Salamander Awards by Joseph T. Collins (Kansas Biological Survey), Banquet, Presentation of The Collins Award by James L. Knight (South Carolina State Museum), **Banquet Keynote Speaker**: David Grow (Oklahoma City Zoo), KHS Auction; Saturday, 7 November, Registration, Scientific Paper Session, **Keynote Speakers**: Harry W. Greene (Cornell University) and Richard Seigel (Southeastern Louisiana State University), Evening Program TBA; Sunday, 8 November, Scientific Paper Session, Post-meeting Reception at residence of Suzanne and Joe Collins. The **Honorary Chairpersons** of the meeting will be Robert F. Clarke, Emporia State University; Henry S. Fitch, The University of Kansas; Dwight R. Platt, Bethel College; and Hobart M. Smith, The University of Colorado.

The official site of the meeting will be the Lawrence Holiday Home, 200 McDonald Drive, Lawrence, Kansas 66044, where a block of rooms have been reserved by KHS. The room rate is \$67 for 1-4 persons per night. Although we attempted to avoid it, this will be a KU football weekend, so it is advisable to make your room reservations as soon as possible. Call the Holiday Home Reservations Manager at 785-841-7077, extension 8902 to make reservations and be sure to specify that you are with the Kansas Herpetological Society to receive the special room rate.

No final decisions have been made at this time regarding registration fees or banquet costs, although it appears that both will be \$20 or less. A registration form will be printed in the June issue of the KHS Newsletter, along with final details for the meeting. Prior to that, check the KHS home page on the World Wide Web at <http://eagle.cc.ukans.edu/~cnaar/khs/khsmain.html> for meeting updates as they occur. Those with questions should contact the Chairperson of the Silver Anniversary Committee, Joseph T. Collins, at the address and phone number listed on the inside back cover of this Newsletter.

—*Silver Anniversary Meeting Committee*: Suzanne L. Collins, Ann Rundquist, Eric M Rundquist & Joseph T. Collins.

KANSAS HERPETOLOGICAL SOCIETY

SILVER ANNIVERSARY SPRING FIELD TRIP

The Silver Anniversary Spring KHS Field Trip will be on Saturday (9 May) and Sunday (10 May) in northeastern Kansas. The base camp will be located at Atchinson State Fishing Lake East. Atchinson State fishing Lake East is located north and a little west of Atchinson. Go north of Atchinson for about 4.0 miles on highway 7 and then turn west for 2 miles. The lake will be north of that point.

Motels, food, and fuel are all available in Atchinson.

More information about the lake can be obtained by calling 913-367-7811. Signs will be up near the lake sometime Friday evening (8 May) to help those attending find the camp. The group should plan to meet at the camp site before 9:00 AM on Saturday morning (9 May) for instructions. As always, CB channel 4 will be monitored during the event for everyone with CB radios.

There are a number of interesting amphibian and reptile species that may be found in the area. KHS President John Lokke, Joe Collins, and others plan to spend some time traveling up toward the Nebraska border along the Mis-

souri River in Doniphan County, in hopes of adding both the Northern Leopard Frog (*Rana pipiens*) and the Western Fox Snake (*Elaphe vulpina*) to the Kansas faunal list.

Plan to attend and bring friends and others interested in Kansas herpetology.

Any questions about this KHS field trip should be directed to Larry Miller before 6 May 1998. Inquiries may be in the form of email, a telephone call, or U.S. mail. Just make sure they arrive before 6 May to insure a response before the meeting.

– Larry L. Miller
KHS field Trip Chairperson
840 SW 97th Street
Wakarusa, Kansas 66546
Telephone 785-836-2119
email: wakarusa@cjnetworks.com

INTERNATIONAL HERPETOLOGICAL SYMPOSIUM

The 22nd annual meeting of the International Herpetological Symposium will be held 25–27 June 1998 in Cincinnati, Ohio. The theme of the meeting is “Captive and Wild Snakes—Are They Similar?” and speakers include KHS members Kraig Adler, Joseph and Suzanne Collins, and David Chiszar, along with other notables such as Elliot Jacobson, Richard Bartlett, Aaron Bauer, Sherman Minton, and Harry Greene. Rumor has it that an exposé of certain former members of the “Ohio Mafia” will be conducted. Full registration is \$125 before May 15, \$150 thereafter. For more information contact Stan Draper, P. O. Box 16444, Salt Lake City, Utah 84116-0444; email: sdraper@npsp.com.

ALL FLORIDA HERPETOLOGY CONFERENCE

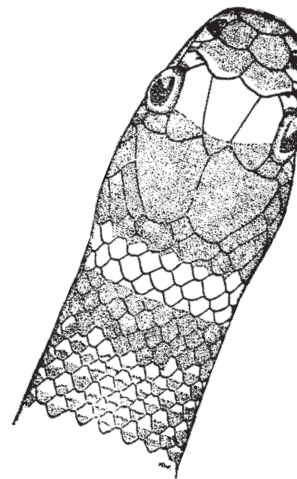
The 21st annual All Florida Herpetology Conference will be held 18 April 1998 at the University of Florida, Gainesville. Speakers and special guests include Roger Conant, William Duellman, Neil Ford, and Peter Pritchard. Registration cost is \$17. For more information contact David Auth, Herpetology, Florida Museum of Natural History, Dickinson Hall, P. O. Box 117800, University of Florida, Gainesville, Florida 32611, phone (352) 392-3264.

EARTHWATCH LOOKING FOR VOLUNTEERS

The EarthWatch Institute is seeking volunteers for four herpetologically-related research projects in 1998. The projects are tracking endangered Desert Tortoises (*Gopherus agassizii*) in Joshua Tree National Monument in California, Leatherback (*Dermochelys coriacea*) monitoring in the Virgin Islands, Baja Peninsula lizard population dynamics in the Gulf of California, and Black Sea Turtle migration and feeding pattern studies in Baja California. Volunteer costs for these studies range from \$1300–\$1800. For more information contact Earthwatch Institute, 680 Mt. Auburn, Watertown, Massachusetts 02272, 1 (800) 776-0188, website: www.earthwatch.org

ASSOCIATION OF REPTILE AND AMPHIBIAN VETERINARIANS

The Association of Reptile and Amphibian Veterinarians recently held their fourth annual meeting in Houston, Texas. The meeting was attended by over 200 veterinarians, vet students, and herpetologists from 13 countries. The five-day conference covered a wide variety of topics and techniques, such as microsporidiosis in bearded dragons and intraosseous catheter use. Membership in this group is open to anyone with an interest in herps and the 1998 meeting is set for Kansas City in October. Anyone wanting any information about the group and/or meeting should contact Wilbur Amand, 1 Smithbridge Road, P. O. Box 605, Chester Heights, Pennsylvania 19017.



KHS BUSINESS

CALL FOR PAPERS FOR THE SILVER ANNIVERSARY MEETING

Although it is a bit early, this is the official **Call for Papers** for this year's 25th Annual Meeting of the Society. Anyone wishing to make a presentation at the meeting should send a topic title and short abstract to Eric Rundquist by no later than 1 June 1998. After your presentation is confirmed, please send a complete copy [both hard copy and disk (PC or Mac format)] of same to Eric by 15 September 1998 for possible inclusion in a symposium volume. Although the theme of the meeting is **Great Plains Herpetology**, KHS members are free to submit a topic of their own choosing. This is the only Call for Papers that will be issued this year.

SPRING HERP COUNTS COMING UP

It is time for the annual KHS spring Herp Counts. As usual, a checklist of Kansas herps has been enclosed for each member in this Newsletter. Please feel free to make as many copies as you wish and do as many herp counts as you can. As this is the 10th anniversary of this Society project, I encourage everyone to make a special effort this year and get out into the boonies and tally our herpetofaunal diversity. As always, the count period is 1 April-31 May. Please send your finished counts to Eric Rundquist at the address listed on the inside front cover of this Newsletter. Remember that counts received after 15 June will not be included in the final tally and will not be published.

On the subject of counts, I need to mention two other projects with which KHS has become involved. The first is the Kansas Amphibian Monitoring Project which will coordinate with the international North American Amphibian Monitoring Program. The coordinator of this project is Joseph T. Collins, who will be working under the auspices of the Kansas Department of Wildlife and Parks and Ken Brunson. Volunteers are needed to run pre-selected routes in the state, which will be conducted at least once per month from March through June each year. There are many routes still available, so contact Joe if you are interested. This program is particularly suitable for a continuing high school class project, especially now that Keith Coleman and Joe Collins have issued the new *Calls of Kansas Frogs and Toads* tape. Also, in light of this new program, the Kansas Amphibian Populations Program, coordinated by Eric Rundquist, will be herewith discontinued. I want to thank all those who have given me data sheets over the years and urge all of you to get in touch with Joe.

The second project is the Kansas Deformed Amphibian Project. This effort is being made in conjunction with the

Kansas Department of Wildlife and Parks and the North American Reporting System on Amphibian Malformations. Eric Rundquist is the state coordinator for this project. Reports on deformed amphibians (extra or missing limbs, pattern abnormalities, organ abnormalities) should be made to Eric. A space has been allocated at the Division of Herpetology, Natural History Museum, University of Kansas to receive specimens of deformed amphibians and these are especially needed along with verbal and/or written reports. Contact Eric for further details on this project.

KHS MEMBERS RECEIVE STATE WILDLIFE HONORS

KHS members Stanley Roth and Joseph T. Collins were honored recently at the annual meeting of the Kansas Wildlife Federation. Former KHS president Roth received the Conservation Educator of the Year Award. This is the second time Stan has been so honored. KHS co-founder Collins was presented with the KWF's President's Award (he has also received Conservationist of the Year from KWF in 1986). The KHS Executive Council extends their congratulations to these two individuals and is proud that they exemplify the KHS mission to "encourage conservation of wildlife in general and of amphibians and reptiles in particular."

OKLAHOMA TURTLES STILL IN TROUBLE

Long-time KHS member Richard Lardie indicates that Society members can still help out with a continuing turtle commercialization problem in Oklahoma. As many of you will recall, Dick asked for our help last year in defeating a bill that essentially would have allowed unlimited commercial harvest of turtles in Oklahoma. It appears that our efforts did help some, as the bill was defeated. However, Dick indicates that commercial turtle harvest is still "virtually unlimited and unsupervised" in the state. He asks that KHS members contact the following two people and ask that regulations be devised and implemented to limit these depredations: Mark Howery and Ron Suttles, Oklahoma Department of Wildlife Conservation, 1801

KHS BRINGS YOU GREAT NEWS OF THE WORLD

STUDENTS RATTLED BY SNAKE ROUNDUPS

Students in Larry Miller's Environmental Action class want to end rattlesnake roundups in Kansas, but their chance of success is about as slim as dying from the bite of one of the scaly critters.

In fact, no one in Kansas has died from a prairie rattler's bite in more than 40 years, Miller said.

So what, says Rep. Joann Flower, R-Oskaloosa, who has no intention of allowing two bills concerning rattlesnakes to be heard.

"I don't think rattlesnake roundups in any way upset the balance of nature out there," said Flower, chairman of the House Agriculture Committee. "I tell them I have a bias about rattlesnakes whenever they bring it up. I have no intention of bringing those bills up for a hearing."

House Bill 2370 would halt the commercial use of rattlesnakes in Kansas, such as selling their meat at snake roundups. House Bill 2797 would tighten requirements for bringing non-native poisonous snakes into Kansas.

"They don't realize what it's like to live on a farm where every step can be a dangerous one," Flower said. "I also am tired of these groups using children to try to get hearings on bills they want passed. It's not a tactic I appreciate."

Miller's class is an elective one involving 17 sixth-, seventh- and eighth-graders at the private Topeka Collegiate School. The students' parents had to sign a form allowing their children to participate in a politically active class.

"We don't force students to have any particular view about the roundups," Miller said. "Some of these kids like to fish and hunt. Others are very, very opposed to the roundups for a variety of reasons."

The students researched the rattlesnake issue and then began an e-mail, telephone and letter-writing campaign with the objective of ending rattlesnake roundups in Kansas.

"I am opposed to the way the roundups are held," Miller said. "I oppose how the torturing and killing of snakes is celebrated. It's certainly not comparable to sport hunting. It's a thrill show and very barbaric. Only six states still allow rattlesnake roundups, and Kansas, unfortunately, is one of them."

Sarah Walker, a past organizer of the Wallace County event, said no snakes are tortured and the event hasn't put a dent in the area's rattler population.

The first roundup in 1992 brought in 46 snakes, all of which had to meet the 18-inch minimum length. Last year, about 200 prairie rattlers were captured.

Some of those snakes are killed at a butchering area open to the public. The snakes' heads are chopped off and

the writhing body is stripped of its skin, prompting Miller's allegations of cruelty.

Walker, however, said no snakes are ever skinned alive, and chopping off their heads is the quickest and most humane way to kill them.

The snake meat is fried and sold during the roundup.

"I think the attitudes about the roundup are changing," said Walker, who recently moved from Sharon Springs to Hutchinson. "It's just like pheasants, which are a real tourist attraction in Kansas. We say, 'Why not harvest prairie rattlesnakes?' Put it in that context, and people start to change their minds."

The annual event—the next one is *(date withheld to protect rattlesnakes and the balance of nature from this barbaric atrocity)*—has a big economic impact on Wallace County, Walker said. Last year's event drew about 3,000 people to Sharon Springs, population 1,000.

Miller also said his class was concerned about the appearance in Kansas of Western Diamondback Rattlesnakes - which are not native to Kansas, are much larger than prairie rattlers and also are more aggressive.

He wonders how they got here.

Ken Brunson, a spokesman for the Kansas Department of Wildlife and Parks, confirmed that two or three Western diamondbacks have been captured near Kanopolis State Park.

"It's unusual enough that we think they were brought in from somewhere else," Brunson said.

Prairie rattlers grow to a maximum of four feet in length. Western diamondbacks, however, can reach up to seven feet.

Walker said it was far more likely the Western Diamondbacks arrived in Kansas aboard oil-drilling equipment or grain trucks from Texas and Oklahoma.

Henry Fitch, a retired professor of biology at the University of Kansas, attended four roundups to collect data. While he found no evidence the roundups were decimating the rattler populations in Wallace County, he strongly suggested that female snakes be released.

"If these females are killed off, those snake populations will be going downward," he said. "If they are released, the population will increase."

—February 1998, The Hutchinson News
Submitted by Suzanne L. Collins, Lawrence

EDUCATORS RESPOND TO STATE ANIMAL GUIDELINES

Among the knee-high desks and bottles of glue, a Bullsnake with no name rested in a quiet heap.

Melodie Miller, 7, curiosity in her eyes, lifted the staid and essentially harmless snake from its cage like an assistant on Mutual of Omaha's "Wild Kingdom," displaying it proudly for a startled reporter.

"See," Miller's teacher, Karen Warner, said to the person with the note pad. "You were trained to be afraid of them."

Warner, who teaches second grade at Centennial School, has a veritable reptile and amphibian zoo in her classroom. In addition to the bull snake, Warner provides lodging for a glass lizard, two skinks, three frogs, two toads, a bull snake, an iguana and a bearded dragon.

In Warner's room, students learn about the habits and habitats of the animals. They also learn which ones not to handle.

The class is so popular that first-graders are constantly clamoring to invade it.

"I was begging to come in your class," recalled Miller, now a second-grader.

In eight years of having reptiles and amphibians in her classroom, Warner has not experienced any problems with the creatures.

"I think it would be a real shame if we were limited" in use of live reptiles or amphibians, Warner said. "Unless there was a concern."

Whether there should be concern is now being debated within the Lawrence school district, across the state and throughout the nation.

Advice, not law

Last fall, the Kansas Department of Health and Environment released a group of official recommendations regarding the care and use of animals in public schools.

The recommendations, although not regulations per se, deemed inappropriate the use of reptiles and amphibians within classrooms because of the risk of salmonella infection. Contamination by salmonella can produce flu-like symptoms and cause severe illness.

Small pet rodents, rabbits and aquarium fish were deemed acceptable.

"This is advice," said Greg Crawford, spokesman with the Kansas Department of Health and Environment. "Just as your doctor gives you advice, you can choose to ignore that, but you assume all of the responsibility for that decision."

Crawford said the state was motivated to draw up the guidelines in response to questions from school administrators and health officials regarding the handling of animals and potential illness.

"This isn't something somebody just dreamed up,"

Crawford said. "We've had schools who have called saying, 'How do we do this so we don't get people sick.'"

According to the national Centers for Disease Control and Prevention, salmonella infections caused by reptiles are on the rise in the United States. Current estimates are between 20,000 and 50,000 each year.

Donna Osness, principal at Riverside School and coordinator of health services for the Lawrence school district, said the recommendations came to her office last month. She said the KDHE guidelines, in some form or other, would likely be incorporated into an "all-encompassing" policy proposal for the school district to consider.

Currently, there are no specific guidelines in the realm of animal care and housing in classrooms.

"We have begun looking at that policy," Osness said. "Then the holidays hit and we didn't really have the time to finish that out."

Whatever the proposal, the school board would have the final say.

"It isn't going to be a simple policy to write," Osness said. "We aren't going to say no animals in the classroom or all animals in the classroom. It's going to be somewhere in between."

Kids love it

Certain reptile and amphibian study units use preserved specimens and models. Others use live animals, either through outside demonstrations or within classrooms.

"That has been a choice of teachers to have ... classroom pets," said Lynda Allen, science coordinator for the school district. "The kids love it, absolutely love it."

"It can be done in other ways," Allen added, "but it certainly is much more satisfying and enjoyable to students to study live animals."

However, she said, an examination of the methods used to protect children from infection may be necessary.

"But as far as I know we've never had a problem," Allen said.

Stan Roth, biology teacher at Lawrence Free State High School, said he has kept a wide variety of amphibians and reptiles in his classrooms for almost 40 years and has never come across such a problem.

"I don't understand why it has become necessary to tell public school teachers how to deal with animals in the classroom," Roth said. "I think the KDHE is trying to provide 100 percent care and protection for school kids, and that's silly if not impossible."

"If they were trying to do that," he added, "they wouldn't allow them to use scissors."

At the annual meeting of the Kansas Herpetological Society in November, a resolution was passed objecting to the guidelines.

"I really think this is something that needs to be withdrawn, and some professional specialists need to be brought in to look at this," said Joseph Collins, Kansas

University herpetologist emeritus and initiator of the resolution. “You need to consult with people before they make these kinds of public announcements, and I’m sure it wasn’t done.”

Collins said the importance of live reptiles and amphibians as a teaching tool far outweighs any purported risk of infection.

“My initial reaction was that there is far greater chance of that occurring in the lunchroom than that occurring in any reptile or amphibian class,” Collins said. “We’re not talking Ebola virus here. These aren’t monkeys.”

Dr. Gail Hansen, state public health veterinarian, took issue with that assertion.

“Studies have found that about 90 percent of reptiles carry salmonella,” Hansen said. “It’s the same salmonella (bacteria) that makes us sick.”

The state’s recommendations, she added, are in line with guidelines adopted by the CDC and the Pet Industry Joint Advisory Council concerning proper handling of animals.

“I don’t want children to be afraid of reptiles, but I want people to be aware of the fact that yes, reptiles do carry disease and there are easy ways to prevent it,” Hansen said.

Eric Rundquist, animal science technician with the KU animal care unit, called the guidelines extreme, adding that “‘herps’ are an easy target.”

“There is a very slight risk,” said Rundquist, who has taught public education courses and made presentations in local schools on reptiles and amphibians. “Virtually every vertebrate in the world at some time or another carries salmonella. Usually it’s not infectious.”

Using live animals in the classroom, Rundquist added, is a “marvelous teaching tool. It would really disturb me that this tool could be taken out of people’s hands.”

Crawford, however, advised against alarmist positions.

“I’ve heard how we’re anti-reptile, anti-animal, anti-classroom—I’ve heard all kinds of words thrown around,” Crawford said. “All we’re saying is, just do it safe. Don’t get people sick.”

— 2 January 1998, Lawrence Journal World
(submitted by Ralph Black, Lawrence)

REPTILE-ASSOCIATED *SALMONELLA*: TWO RECENT CASES IN CONTEXT

(Due to the recent controversy in Kansas over guidelines issued by the Kansas Department of Health and Environment regarding amphibians and reptiles in school

classrooms, the following article is reprinted by kind permission of the publisher from the September/October 1996 issue of *Reptile & Amphibian Magazine*.)

Reptile-associated salmonellosis cases have received considerable media attention recently. Two incidents in particular have been especially well publicized—the October 1995 death of Gaige Becker, an Indiana infant infected with the same type of *Salmonella* bacteria found in the family’s pet iguana, and a winter 1996 outbreak affecting 35 Denver Zoo visitors who contracted the illness through indirect contact with the zoo’s Komodo Dragons. While initial reports stated that 50 people became ill, only 35 visitors are known to have tested positive for the same type of *Salmonella* as was found in one of the dragons.

Incidents such as these have an important bearing on how we evaluate and respond to the dangers posed by captive reptiles and bacterial illnesses such as salmonellosis. Unfortunately, the lack of necessary background in newspaper and television reports of reptile-associated salmonellosis cases leaves readers with the impression that reptiles are dangerous *Salmonella* vectors.

While health officials are not entirely sure why Becker became ill, they assume that someone who handled the family iguana transmitted the bacteria to the boy after failing to wash their hands. Indirect contact between reptiles and humans was also involved in the Denver case. Although initial reports suggested that at least some of the affected zoo visitors became ill after touching Komodo dragons, according to Rick Haeffner, the Denver Zoo’s Curator of Reptiles, “No members of the public were allowed to touch any of the Komodo Dragons at any time.”

In Denver, the bacteria were forced to take a more circuitous route in moving from reptiles to humans. A chain barrier around the outside perimeter of the two-foot wall enclosing the Komodos originally kept zoo visitors from coming into direct contact with either the animals or their enclosure. Unfortunately, the three smallest Komodos, each about one-and-a-half feet long, were easily hidden from view when they settled against the inside of the fence. Since only one dragon at a time was on display, zoo visitors had a problem. Only tall people—or children sitting on the shoulders of the adults—could see from beyond the chain barrier over the fence at a dragon in semi-concealment below. The largest of the zoo’s Komodo Dragons—which is about six feet long—touched that surface after its feet and claws came into contact with the *Salmonella*-tainted feces of one of the smaller reptiles. When visitors touched the contaminated fence and then touched either their mouths or food, they introduced the bacteria into their own bodies.

The fact that people became ill due to indirect contact with infected animals remains the most newsworthy, and least appreciated, fact of both the Indiana and Colorado incidents. To understand why, we need to know more about the illness and the bacteria that causes it.

SALMONELLA & SALMONELLOSIS

Bacteria of the genus *Salmonella* live in the gastrointestinal tracts of insects, mammals, birds, and reptiles. Although many animals can carry the bacteria, people do not face a significant risk of contracting salmonellosis from every animal they encounter. Even if a given animal carries the bacteria, only a minority of the 2,000 varieties (serotypes) of *Salmonella* pose a risk to humans. Of these, only *Salmonella typhi* (which causes typhoid fever) colonizes humans and can only be transmitted from person to person (Miller et al. 1995).

Even when considering potentially dangerous strains of non-typhoidal *Salmonella*, the news is generally good for humans. A healthy adult's immune system can handle these bacteria without much difficulty. People exposed to pathogenic *Salmonella* may not become ill; if they do, they can have such mild symptoms that they never realize they were sick. For those who do become ill, though, salmonellosis can be not only unpleasant but fatal. In humans, *Salmonella* usually causes gastroenteritis (food poisoning) which involves fever, stomach cramps, nausea, vomiting, and/or diarrhea. Once *Salmonella* bacteria become established in the intestinal wall where they cause these symptoms, they may go on to colonize other areas of the body, causing such conditions as meningitis (inflammation of the membranes surrounding the brain and spinal cord), septicemia (blood poisoning), and osteomyelitis (infection of bone marrow).

Although healthy adults face only a slight risk of contracting salmonellosis even when exposed to the bacteria, the same is not true for the very young, the very old, or for those with compromised immune systems. For people in these groups, *Salmonella* can pose a real hazard. A small (but significant) percentage of people who contract salmonellosis die. Of the 12,748 cases reported in 1991, 49 were fatal (Miller et al. 1995).

The media has heavily publicized the fact that some fatalities are reptile-associated. Infants are not the only children at risk, as they can contract salmonellosis even before birth. According to Martin Toly, a Regional Epidemiologist with the New York State Department of Health, one New York woman transmitted *Salmonella* (also from an iguana) to her unborn child. As a result, the child died as a newborn.

Understandably, *Salmonella* is a matter of legitimate medical concern. Investigators involved with the Denver outbreak commented that the responsible serotype was surprisingly virulent: symptoms resulted from exposure to fewer bacteria than are normally necessary to cause infection, and symptoms were severe. Toly suggested that the virulence of the Denver cases was not unusual. He noted that while typical salmonellosis cases do result from contact with reptiles, in his experience increased virulence is common.

In the United States, the association between *Salmonella* and reptiles can be traced back to the early 1970s when 250,000-300,000 salmonellosis cases were linked to contact with pet turtles (Frye 1995; Preliminary Report 1994; Volk et al. 1986). As early as the 1940s, snakes and lizards were identified as potential *Salmonella* vectors (Hinshaw and McNeil 1947), but it was not until the bacteria's much publicized link with turtles that pet reptiles became a focus of concern.

It would be irresponsible to suggest that this concern is entirely misplaced. Although reptile-associated salmonellosis deaths are rare, a small but significant percentage of human salmonellosis cases are traced to pet reptiles, particularly the common pet store Green Iguana. Other species may carry *Salmonella* as well, including monitors and pythons, according to Toly.

In 1994-1995, rare *Salmonella* serotypes infecting humans were isolated in pet reptiles in 13 states, including California, Florida, Illinois, New Jersey, New York, Oregon, and Utah ("Reptile-associated" 1995). Less remarkable cases of reptile-associated salmonellosis are documented nationwide yearly: 26 were identified in 17 Ohio counties between September of 1993 and May of 1994, for instance ("Reptile-associated" 1994).

Nonetheless, reptile-associated cases represent only a small percentage of the total number reported (roughly 10% according to Toly), although it is difficult to offer a precise figure. Moreover, despite the recent focus on reptiles, other pets also pose a hazard. Infected cats or dogs—which might appear healthy—can transmit the illness to humans (Volk et al. 1986). Other potential non-animal vectors are a cause for greater concern still. A variety of *Salmonella* serotypes can be transmitted to humans via poultry and dairy products. In a 1984 Chicago outbreak, the largest ever in the United States, 200,000 people became ill after drinking milk contaminated with *Salmonella typhimurium* (Miller et al. 1995). Other milk-based products also pose a risk; outbreaks affecting hundreds of people have been traced to commercially-produced ice cream at least twice in the last five years. While people commonly contract salmonellosis from poultry and eggs, anything which comes into contact with *Salmonella* or *Salmonella*-tainted water (including meat and produce) poses a risk.

Not surprisingly, outbreaks are commonly traced to restaurants. In fact, when health officials began investigat-



ing the Denver cases, they originally suspected that the vector linking the various cases would prove to involve either contaminated eggs or a restaurant.

DRUG RESISTANCE

The drug resistance of various *Salmonella* serotypes has been well documented (MacDonald et al. 1987, O'Brien et al. 1982). Because several bacterial generations can be born, produce offspring, and die within 24 hours, reproductive rates virtually guarantee that these organisms will develop drug resistance. Even if an antibiotic kills over 99% of a bacterial population, when as few as two or three members possess genes conferring resistance to that antibiotic, these survivors can produce a new generation possessing the same drug resistance (Weiner 1994). Until recently, the dynamics of natural selection among bacteria were neither widely understood nor fully appreciated.

When poultry farmers treated animals with antibiotics in an effort to eradicate *Salmonella* in birds and their eggs, they accelerated the rate at which serotypes developed antibiotic resistance. When conditions become stressful, bacteria mutate much more frequently than normal, exhibiting what evolutionary biologists call an "S.O.S. response" (Weiner 1994). Antibiotics place exactly the sort of stress on bacteria that elicits such a response. Once mutations become more frequent, the chances improve that a mutation conferring antibiotic resistance will arise. If such a mutation enters a population's gene pool, it will be passed on to future generations.

The same flawed anti-*Salmonella* strategy used by poultry farmers was (and still may be) used in turtle farming operations seeking to produce *Salmonella*-free animals for the pet trade (Preliminary Report 1994; Selbert 1995). When turtle farmers began treating baby turtles and turtle eggs with the antibiotic gentamicin, they (like their poultry farming counterparts) developed drug-resistant *Salmonella* populations (DoAoust et al. 1990), an alarming situation given that gentamicin is commonly prescribed for children with salmonellosis.

Because many bacteria, including *Salmonella*, can mutate in ways that confer resistance not only to one but to a variety of antibiotics, the accidental production of antibiotic-resistant strains has caused considerable difficulties for health care providers (Cohen et al. 1993).

Whether or not turtle breeders' poor judgment in this area made a significant contribution to the recent evolution of drug-resistant *Salmonella* serotypes is difficult to say. Whatever the case, infectious disease specialists are now of the general opinion that serotypes are becoming increasingly antibiotic-resistant both inside and outside the United States due to the widespread use of antibiotics on livestock (Miller et al. 1995). By 1993, no existing antibiotic could even significantly reduce the three to four day duration of

typical salmonellosis symptoms (Sanchez et al. 1993).

Under scrutiny, recently publicized cases of reptile-associated salmonellosis suggest not that reptiles pose a significant risk to humans in general but that among the multitude of microorganisms that surround and live on and within us are occasional varieties that can be dangerous. Along with generally inoffensive bacterial species are occasional pathogenic strains, including some *Salmonella* serotypes, which have become more dangerous because of ill-considered human attempts to combat them. Despite taking vitamins, eating nutritious foods, and washing our hands frequently, we remain vulnerable to a host of bacterial illnesses because humans are constantly and unavoidably the subjects of attempted colonization by microorganisms. Most of the time, we do not notice these attempts at microcolonization. Nonetheless, the very act of swallowing virtually guarantees that people will introduce bacteria into their bodies.

For most people, reptile pets pose no danger. The very young, the very old, and the immunosuppressed face a greater risk of illness than others, but because we all face at least some risk, people should use common sense and take precautionary steps. Eggs and meat should be cooked thoroughly before they are eaten, and everyone should wash their hands before eating. Always wash your hands after handling animals and after touching any surface with which animals have had contact.

Although bacterial illnesses most commonly result when people ingest *Salmonella*, bacteria can also be introduced into the blood through scratches or bites (Frye 1995). Should any pet penetrate a person's skin with its teeth, beak, or claws, the cut should be washed immediately with antibacterial soap and treated with a topical antiseptic. Pets should be kept away from surfaces where food is prepared or eaten.

Pregnant women can pass *Salmonella* to their unborn children, and so should be especially cautious about exposing themselves to the bacteria. In general, parents with infants or young children should consider waiting to keep reptiles as pets until their children are older. If they do opt to keep reptiles, they should take special care to insure that their children do not become exposed — directly or indirectly — to these animals or any bacteria.

It is human nature to want to know why misfortunes befall us, but if we go too far in identifying reptiles as the cause of illness we make a fundamental mistake in assigning blame. By and large, reptiles come into contact with humans on terms that humans dictate. We have access to medical literature and the basic understanding of disease vectors and germ theory that can be found in any introductory biology text. When people contract salmonellosis, the fault (if that word can even fairly be used in this context) lies not with reptiles but with humans.

Many people simply do not realize that their pets may

harbor potentially dangerous microorganisms. Improper maintenance and hygiene puts the pet owner at risk for contracting salmonellosis. When iguanas are improperly maintained (fed an inadequate diet or housed in crowded conditions or at improper temperatures or humidity), the resulting stress increases the likelihood that any *Salmonella* bacteria they might harbor will make them ill (Frye 1995).

Such a finding with one common pet species suggests that poor maintenance could present a similar danger both for other reptile species and their owners. When a reptile has salmonellosis, bacteria in that animal become more numerous and, as a result, more easily spread to either other animals or humans.

Reptiles can also appear healthy and their habitats clean while still carrying potentially dangerous bacterial populations. A high proportion of reptiles are asymptomatic carriers of *Salmonella* (Reptile-associated 1995), so even an apparently healthy reptile may harbor a potentially dangerous serotype.

Often, a bacteria's ability to cause illness is highly species-specific, so an animal might harbor a variety that causes it no harm, even though the same bacteria might be potentially dangerous for humans. While a great deal is known about the genus *Salmonella*, it would be unwise to assume that any pet is free of dangerous serotypes based on either an animal's or a cage's appearance. Common sense hygiene is always necessary.

The recent events in Indiana and Colorado underscore the fact that people should always wash their hands after handling reptiles or touching any surface with which reptiles have had contact. Bacteria can survive for a considerable period of time outside their normal environments. Health officials cultured *Salmonella* from the contaminated fence of the Denver Zoo's Komodo pen two weeks after the original outbreak.

Still, although people are at a constant — albeit low — risk of contracting salmonellosis, and reptiles factor into that equation, they do not factor into it prominently. As Haeffner observed, during the time some Denver Zoo visitors were suffering from salmonellosis, there were dozens of food-related *Salmonella* cases in Colorado, which, like the more than 600 cases per year in that state, went generally unreported by local news media. Restaurants, eggs, and milk products pose a more serious risk than Komodo Dragons or pet reptiles, but the risk restaurants and food products pose has become familiar enough to have lost its newsworthiness.

Reptiles remain newsworthy, as is made clear by the fact that the media pay close attention to virtually every case of reptile-associated salmonellosis that comes to the surface. Interest in these cases reflects the public's generally negative perception of reptiles. Despite the increasing popularity of reptile pets, in the public's eye they remain novel and

often frightening creatures. During visits to pet stores, only people with allergies shy away from dogs and cats that are brought out of their cages, but when snakes are removed from their tanks, shoppers often put considerable distance between themselves and the reptiles. Reptiles are not cuddly animals. Children seem to find reptile pets fascinating, as do many adults. In general, however, people have more of a fascination than an affection for reptiles. The inclination Americans have to vilify reptiles for harboring the microorganisms says more about our society's inability to appreciate the realities of the natural world and to properly care for ourselves and the animals we interact with than it does about the reptiles the media so readily cast as villains.

Author Jeffrey Yule is a Columbus, Ohio gecko-keeper and a graduate of Ohio State University.

LITERATURE CITED

- Cohen, S. P., W. Yan. and S. B. Levy. 1993. A Multidrug Resistance Regulation Chromosomal Locus is Widespread among Enteric Bacteria. *Journal of Infectious Diseases* 169: 119-126.
- DoAoust, J. Y., E. Daley, M. Crozier, and A. M. Sewell. 1990. Pet Turtles: A Continuing Threat to Public Health. *American Journal of Epidemiology* 132.2: 233-238.
- Frye, Fredric L. 1995. Salmonellosis in Pet Reptiles and their Owners. *Reptiles* May: 26-42.
- Garret, Laurie. 1994. The Coming Plague: Newly Emerging Diseases in a World Out of Balance. New York: Penguin.
- Gorbach, Sherwood L., John G. Bartlett, and Neil R. Blacklow. 1992. *Infectious Diseases*. Philadelphia: W. B. Saunders.
- Hinshaw, W. R. and E. McNeil. 1944. Gopher Snakes as Carriers of Salmonellosis and Paracolon Infections. *Cornell Veterinarian* 24: 248-254.
- Hinshaw, W. R. and E. McNeil. 1947. Lizards as Carriers of *Salmonella* and Paracolon Bacteria. *Journal of Bacteriology* 53: 715-718.
- MacDonald, K. L., M. L. Cohen, B. N. T. Margrett, et al. 1987. Changes in Antimicrobial Resistance of *Salmonella* Isolated from Patients in the United States. *J. of the American Medical Assoc.* 258: 1496-1499.
- Mandell, Gerald L., John E. Bennett, and Raphael Dolin. *Principles and Practice of Infectious Diseases*, Fourth ed. New York: Churchill Livingstone. 2013-2032.
- Miller, Samuel I., Elizabeth L. Hohmann, and David A. Pegues. 1995. *Salmonella* (including *Salmonella typhi*).
- O'Brien, T. F., J. D. Hopkins, E. S. Sillece, et al. 1982. Molecular Epidemiology of Antibiotic Resistance in *Salmonella* from Animals and Human Beings in the United States. *New Eng. Journal of Medicine* 307: 1-6.
- Preliminary Report: Live Freshwater Turtle and Tortoise Trade in the United States. Nov. 1994. Washington:

Humane Society of the United States.
 Reptile-associated Salmonellosis. August 1994. Division of Environmental Health Update. Ohio Department of Health.
 Reptile-associated Salmonellosis—Selected States, 1994-1995. 1995. Journal of the American Medical Association. 273 (28 June): 1898-1899.
 Reptile Warning Follows Baby's Death Traced to Pet Iguana. 1996. The Columbus Dispatch Feb. 2: 3A.
 Sanchez, C., E. Garcia-Restoy, J. Gareau, et al. 1993. Ciprofloxacin and Trimethoprim-sulfamethoxazole versus Placebo in Acute Uncomplicated *Salmonella* Enteritis: a Double-blind Trial. Journal of Infectious Diseases 168: 1304-1307.
 Selbert, P. 1995. Harvey Kliebert's Turtle and Alligator Farm. Reptile & Amphibian Magazine Jan./Feb.:12-21.
 Volk, Wesley A., David C. Benjamin, Robert J. Kadner, and J. Thomas Parsons. 1986. Essentials of Medical Microbiology, Third Edition. Philadelphia: J. B. Lippincott.
 Weiner, Jonathan. 1994. The Beak of the Finch. New York: Random House.

For more information on *Salmonella* see Herpmed's Reptile-Associated *Salmonella* Web Page at <http://www.xmission.com/~gastown/herpmed/salm.htm>

RESEARCH FINDS ALLIGATOR PROBLEMS ALSO EVIDENT IN LESS POLLUTED LAKES

Reproductive and hormonal problems documented in alligators living in a polluted Florida lake have turned up in alligators living in other Florida lakes thought to be more insulated from pollutants, say researchers at the University of Florida.

"These long-term studies are the answer to finding out how environments change over time, naturally and under man's hand. This should be a wake-up call. We have to make sure that similar problems are not occurring in ourselves," said UF Professor of Zoology [and former KHS President] Lou Guillette.

A research team led by Guillette made headlines in 1993 when they said pesticides could be responsible for sexual deformities and a previous population decline of alligators in Lake Apopka near Orlando.

That lake suffered from a severe pesticide spill in 1980 and commercial development on its shores.

"Everyone accepted the fact that Lake Apopka had a problem," Guillette said. "We now have the same problems on another lake."

Preliminary tests on Lake Okeechobee, Florida's biggest lake, showed the research team many of the same problems it had seen before: lower testosterone levels and small penis size in male alligators. In addition, tests also showed a new problem: altered thyroid hormone levels.

The results are scheduled to appear in the Feb. 17 issue of the scientific journal Environmental Toxicology and Chemistry.

Also during the studies, researchers for the first time found possible effects of environmental toxicants on the thyroid, a critical regulator of growth in animals.

Biology Professor Drew Crain, a former student of Guillette now teaching at the University of Mississippi, said the study shows that problems found in Lake Apopka alligators are confined neither to that lake nor to one system in the animals.

"Previous studies have focused on the hormones associated with reproduction — the steroid hormones testosterone and estradiol — but now we have evidence of disruption in other endocrine-controlled systems," Crain said.

With funding from the Environmental Protection Agency and the National Institute of Environmental Health Services, the team wanted to see if the past findings from the Lake Apopka alligators were unique to that highly polluted lake.

"We were asking, 'Are we getting the same effects with lower exposure, exposure that we would assume to be normal background?'" Guillette said.

Guillette said alligators are the perfect animals to study because they are predators at the top of the food chain, have a long life span and take several years to mature.

Researchers caught, measured, tagged and withdrew blood from 50 alligators each on Lake Okeechobee, Lake Apopka and Lake Woodruff, a relatively pristine lake located in a wildlife refuge. When the blood was tested and compared the results from the Lake Okeechobee alligators were very similar to the results they obtained from Lake Apopka.

"There was a 75- to 80-percent reduction in testosterone levels in males" when measured against the alligators in their control lake, he said. Hormonal irregularities found in Lake Okeechobee alligators were not as severe across-the-board as the Lake Apopka alligators, but a number of measures were troublesome, he said.

"The thing that now concerns us about Lake Okeechobee is we're no longer talking about a lake that has a Superfund site. We're no longer talking about a lake with a major pesticide spill. This is a huge body of water."

Guillette had help from Crain; Daniel Pickford, another former student of Guillette's; Franklin Percival of UF's Florida Cooperative Fish and Wildlife Research Unit; and Allan Woodward of the Florida Game and Freshwater Fish Commission.

— 9 February 1998, AP Wire Service
 Submitted by David Edds, Emporia

POISONOUS FROG MAY GIVE SCIENCE A KEY TO NEW DRUG

A deadly poison from the skin of a South American frog provided the decisive clue for the discovery of a powerful new painkiller that researchers say may have all of the benefits of morphine, but none of the damaging side effects.

Researchers at Abbott Laboratories in North Chicago, Ill., developed a new painkiller, called ABT-594, after scientists at the National Institutes of Health isolated a poison from the skin of an Ecuadorian [dendrobatid] frog called *Epibpedobates tricolor*.

John Daly of the National Institute of Diabetes and Digestive and Kidney Diseases, a National Institutes of Health agency, found in 1976 that an extract from the frog's skin could block pain 200 times more efficiently than morphine.

Although epibatidine appeared to be a painkiller in rats, it was too toxic for human use.

Ten years later, National Institutes of Health researchers have used new analytic tools to determine the chemical structure of epibatidine and found that it resembled nicotine. This was consistent with its painkiller effect.

A brief report about the compound, along with a diagram of its chemical structure, was published in the journal *Science*. Researchers at Abbott realized that the chemical structure was similar to a group of experimental drugs that the company was testing for treatment of Alzheimer's disease. These drugs also worked on the nicotine receptors for nerve cells.

"Chance favors the prepared mind," said Michael Williams, a scientist and vice president at Abbott. "We had a slew of compounds that we knew interacted (with the nicotine receptors). We then looked through them for some that had analgesic potential."

After screening about 500 compounds, the Abbott researchers selected the drug ABT-594 for further testing. Its chemical structure closely resembled epibatidine, but it lacked the elements that made the compound toxic.

"The frog didn't make epibatidine for the benefit of humans, but rather to kill predators," said Williams. "We needed to get rid of the (poisons) that affected the cardiovascular system and the respiratory system."

In a research to be published in *Science*, Williams and his colleagues will report that in laboratory animals studies, ABT-594 appears to be many times more powerful than morphine, but lacks the serious side effects of that drug. Morphine is the main drug used for treatment for intense and unrelenting pain like that caused by cancer or injury.

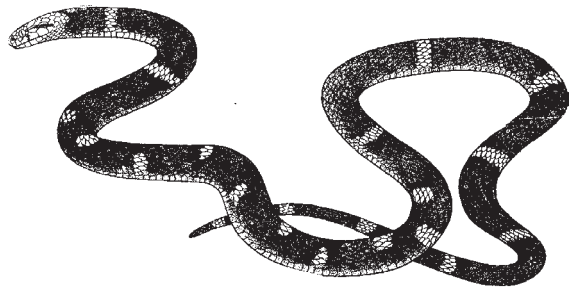
According to *Science*, 30 million to 40 million Americans suffer from pain that is not affected by common

analgesics like aspirin or ibuprofen.

Williams said morphine could suppress breathing. This means the drug cannot be used to control pain in patients who already have respiratory problems. Morphine can also stop the digestive movement inside the intestines and bowel, which can lead to dangerous constipation.

The effectiveness of morphine also declines with chronic use and the drug can become addictive.

— 2 January 1998, The Kansas City Star
Submitted by Suzanne L. Collins, Lawrence



THINNING THE HERD

A 38-year-old man passed away in Jenkins Township, Pennsylvania, in November, a couple of hours after going to the home of a friend to see his snakes. According to the friend, the man had playfully reached into a cobra's tank and was bitten. Refusing a ride to the hospital, the man said, "I'm a man, I can handle it," and instead went to a bar, where he had three drinks and bragged to patrons that he had just been bitten by a cobra. An hour later, he was dead.

— 8-14 January 1998, PitchWeekly
Submitted by Suzanne L. Collins, Lawrence

WORST REPTILE SNACK

Ron and Bonnie Probst of Klamath Falls, Ore., took their 8-foot Boa Constrictor, Teardrop, to the animal clinic after it swallowed its prey – a heating pad.

"The pad apparently satisfied all the criteria for food as far as the snake was concerned," said the vet. "It was warm and fuzzy and had some hard objects inside that must have felt something like bones." The vet removed the pad.

That's one teardrop we wouldn't want on our pillow.

— 28 December 1997, Parade Magazine
Submitted by Suzanne L. Collins, Lawrence

FEATURE ARTICLES

NEW RECORDS OF AMPHIBIANS AND REPTILES IN KANSAS FOR 1997

JOSEPH T. COLLINS

Director

The Center for North American Amphibians and Reptiles

1502 Medinah Circle

Lawrence, Kansas 66047

&

Adjunct Herpetologist

Kansas Biological Survey

2041 Constant Avenue

Lawrence, Kansas 66047

The five new county records and single maximum size record listed below are those accumulated or brought to my attention since the publication of records for 1996 (Collins, 1997). Publication of these new records permits me to give credit and express my appreciation to the many individuals who collected or obtained specimens and donated them to me for deposition in an institutional collection. Further, recipients of this list are permitted an opportunity to update the range maps and size maxima sections in *Amphibians and Reptiles in Kansas Third Edition* (Collins, 1993). Finally, these new records represent information that greatly increases our knowledge of the distribution and physical proportions of these creatures in Kansas, and thus gives us a better understanding of their biology. This report is my 23rd in a series that has appeared annually since 1976, and the data contained herein eventually will be incorporated into the fourth (revised) edition of my book.

The Kansas specimens listed below represent the first records for the given county based on a preserved, cataloged voucher specimen in an institutional collection, or represent size maxima larger than those listed in Collins (1993). Any information of this nature not backed by a voucher specimen is an unverifiable observation. All new records listed here are presented in the following standardized format: standard common and current scientific name, county, specific locality, date of collection, collector(s), and place of deposition and catalog number. New size maxima are presented with the size limits expressed in both metric and English units. Common names are those now standardized for North America, as compiled by Collins (1997), and are given at the species level only.

The records listed below are deposited in the herpetological collections of the Natural History Museum, The University of Kansas, Lawrence (KU). I am most grateful to the members of the Kansas Herpetological Society, and to the staff of the Kansas Department of Wildlife and Parks and the Kansas Biological Survey, who spent many hours in search of some of the specimens reported herein. Some of the records contained herein resulted from field studies sponsored by funds from the Kansas Department of Wildlife and Parks' Chickadee Checkoff Program. John E. Simmons, Collection Manager for the Division of Herpetology, Natural History Museum, The University of Kansas, diligently assigned catalog numbers to the specimens listed below, and to him I am indebted.

NEW COUNTY RECORDS

SMOOTH SOFTSHELL (*Apalone mutica*)

DICKINSON Co: Sec. 24, T13S, R1E. 22 June 1997. Jeffrey S. Hubbard (KU 224653).

FALSE MAP TURTLE (*Gratemys pseudogeographica*)

RUSSELL Co: Wilson Reservoir, Sec. 32, T12S, R12W. 25 October 1996. Tommie Berger (KU 224654).

WESTERN SLENDER GLASS LIZARD (*Ophisaurus attenuatus*)

COMANCHE Co: Sec. 35, T34S, R17W. 24 May 1997. Jami Wyatt, Liz Stein, Suzanne L. Collins & Joseph T. Collins (KU 224641); Sec. 36, T34S, R18W. 24 May 1997. Larry L. Miller, Suzanne Miller, Nichole Grim, Mary Kate Baldwin, Keith Coleman & James Gubanyi (KU 224640).

REDBELLY SNAKE (*Storeria occipitomaculata*)

CRAWFORD Co: Center of SW 1/4 of Sec. 32, T27S, R24E. 7 October 1997. Dan Mosier (KU Color Slide 11255).

SMOOTH EARTH SNAKE (*Virginia valeriae*)

JACKSON Co: Sec. 29, T8S, R16E. 23 August 1997. Suzanne L. Collins & Joseph T. Collins (KU 224648).

NEW MAXIMUM SIZE RECORDS

COACHWHIP (*Masticophis flagellum*)

COMANCHE Co: Sec. 4, T33S, R20W. 24 May 1997. James Gubanyi & Keith Coleman (KU 224649). Length = 1829 mm (71 3/4 inches). Male.

LITERATURE CITED

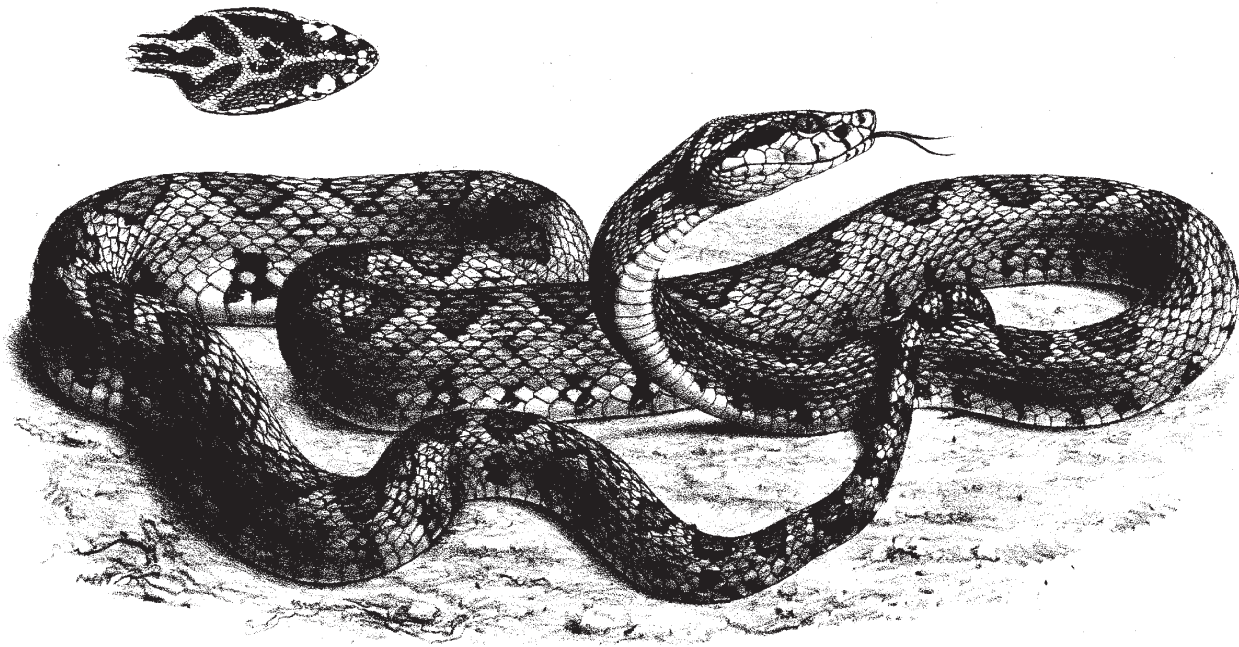
- Collins, Joseph T. 1997. New Records of Amphibians and Reptiles in Kansas for 1996. Kansas Herpetol. Soc. Newsl. 107: 14–16.
- Collins, Joseph T. 1993. Amphibians and Reptiles in Kansas. Third Edition. Univ. Press of Kansas, Lawrence. xx + 397 pp.
- Collins, Joseph T. 1997. Standard Common and Current Scientific Names for North American Amphibians and Reptiles. Fourth Edition. SSAR Herpetol. Circ. 25: iv + 40 pp.

BIBLIOGRAPHY

The publications listed below are those with direct references to amphibians and reptiles in Kansas that have been published or brought to my attention since the up-date of county records by Collins (1997).

- Busby, William. 1997. Mid-winter Herp Activity in Kansas. Kansas Herpetol. Soc. Newsl. 108: 19.
- Busby, William H. and William R. Brecheisen. 1997. Chorusing Phenology and Habitat Associations of the Crawfish Frog, *Rana areolata* (Anura: Ranidae), in Kansas. Southwest. Nat. 42(2): 210-217.
- Clark, Donald R., Jr., Christine M. Bunck and Russell J. Hall. 1997. Female Reproductive Dynamics in a Maryland Population of Ringneck Snakes (*Diadophis punctatus*). Journ. Herpetol. 31(4): 476–483.
- Degenhardt, William G., Charles W. Painter & Andrew H. Price. 1996. *Amphibians and Reptiles of New Mexico*. Univ. New Mexico Press, Albuquerque. xix + 431 pp.
- Ferrier, Wayne. 1997. Natural History and Captive Care of the American Bullfrog. Reptile and Amphibian Magazine 51: 38-43.
- Gerlanc, Nicole M. and Glennis A. Kaufman. 1997. Bison Wallows as Ephemeral Breeding Pools for Western Chorus Frogs. SSAR-HL-ASIH Ann. Meet. Abstracts, p. 139.
- Graham, Terry E. and Andrew A. Graham. 1997. Ecology of the Eastern Spiny Softshell, *Apalone spinifera spinifera*, in the Lamoille River, Vermont. Chelonian Conserv. Biol. 2(3): 363–000.
- Irschick, Duncan and H. Bradley Shaffer. 1997. The Polytypic Species Revisited: Morphological Differentiation Among Tiger Salamanders (*Ambystoma tigrinum*) (Amphibia: Caudata). Herpetologica 53(1): 30–49.
- Lindeman, Peter V. 1997. A Comparative Spotting-scope Study of the Distribution and Relative Abundance of River Cooters (*Pseudemys concinna*) in western Kentucky and southern Mississippi. Chelonian Conserv. Biol. 2(3): 378–383.
- Miller, Christie. 1997. Grace Olive Wiley: Cobra Queen. Reptile & Amphibian Magazine, March-April issue. Pp. 26–30.
- Miller, Larry L. 1997. Topeka Collegiate School Summer research Class Yields Specimen of Green Lacerta. Kansas Herpetol. Soc. Newsl. 109: 13.

- Moriarty, Emily C. 1997. A Molecular Comparison of *Pseudacris triseriata* and *Pseudacris maculata* from Sympatric Populations in Douglas County, Kansas. SSAR-HL-ASIH Ann. Meet. Abstracts, p. 217.
- Moriarty, John J. 1997. Amphibian and Reptile Diversity and Distribution in the United States. Minnesota Herpetol. Soc. Newsl. 17(8): 4-5.
- Mosher, Tom. 1997. Another Western Diamondback Rattlesnake in Kansas. Kansas Herpetol. Soc. Newsl. 108: 19.
- Pough, F. Harvey, Robin M. Andrews, John E. Cadle, Martha L. Crump, Alan H. Savitzky, and Kentwood D. Wells. 1998. *Herpetology*. Prentice Hall, Upper Saddle River, New Jersey. xi + 577 pp.
- Rundquist, Eric M. 1997. Results of the Ninth Annual KHS Herp Counts Held 1 April-31 May 1997. Kansas Herpetol. Soc. Newsl. 108: 12-17.
- Rundquist, Eric M. 1997. Addendum to 1997 KHS Herp Counts. Kansas Herpetol. Soc. Newsl. 109: 14-15.
- Simmons, John E. 1997. Report on a Clutch of Rat Snake Eggs (*Elaphe obsoleta*) from Kansas. Kansas Herpetol. Soc. Newsl. 108: 10-11.
- Taggart, Travis W. 1997. Status of *Bufo debilis* (Anura: Bufonidae) in Kansas. Kansas Herpetol. Soc. Newsl. 109: 7-12.
- Taylor, W. Edgar. 1891. The Ophidia of Nebraska. Ann. Report State Board of Agriculture, Nebraska. Pp. 310-357.



AMPHIBIAN AND REPTILE COUNTS IN LOUISIANA AND MISSISSIPPI

Joseph T. Collins & Suzanne L. Collins
The Center for North American Amphibians and Reptiles
 1502 Medinah Circle
 Lawrence, Kansas 66047

Travis W. Taggart
Department of Biological Sciences
 Southeast Louisiana University
 Hammond, Louisiana 70402

In late February 1998, we had an opportunity to visit and conduct counts of amphibians and reptiles observed in the southern portions of Louisiana and Mississippi. The first count was in Louisiana; the second was in Mississippi, in which we were accompanied by Richard A. Seigel and his students at Southeast Louisiana University (Hammond), and Glen N. Johnson (U. S. Forest Service). Results of our observations are listed below. For both days, we observed 105 specimens of amphibians and reptiles consisting of 24 species. Common names are those standardized by Collins (1997).

LOUISIANA: Jefferson Parish: Jean Lafitte National Historical Park, 29.794°N, 090.123°W. 26 February 1998. 10:00 am to 3:00 pm. Joseph T. Collins & Travis W. Taggart. Cloudy, intermittent light rain, ±65°F.

Gulf Coast Toad (<i>Bufo valliceps</i>)	1
Green Treefrog (<i>Hyla cinerea</i>)	1
Green Frog (<i>Rana clamitans</i>)	4
Slider (<i>Trachemys scripta</i>)	1
American Alligator (<i>Alligator mississippiensis</i>)	1
Green Anole (<i>Anolis carolinensis</i>)	18
Ground Skink (<i>Scincella lateralis</i>)	10
Cottonmouth (<i>Agkistrodon piscivorus</i>)	8
Plainbelly Water Snake (<i>Nerodia erythrogaster</i>)	1
Eastern Ribbon Snake (<i>Thamnophis sauritus</i>)	1
10 species	46 specimens

MISSISSIPPI: Harrison County: DeSoto National Forest. 27 February 1998. 9:00 am to 4:00 pm. Travis W. Taggart, Suzanne L. Collins, Joseph T. Collins, Richard A. Seigel, Glen N. Johnson, Meagan Columbe-Moore, Charles Criscione, Brian Horne, Maria Kelly-Smith, Thomas Ostertag, and Stephen Richter. Sunny, ±70°F.

Mississippi Slimy Salamander (<i>Plethodon mississippi</i>)	2
Southern Cricket Frog (<i>Acris gryllus</i>)	±15
Southern Toad (<i>Bufo terrestris</i>)	1
Woodhouse's Toad (<i>Bufo woodhousii</i>)	1
Barking Treefrog (<i>Hyla gratiosa</i>)	1
Southern Chorus Frog (<i>Pseudacris nigrita</i>)	±5
Gopher Frog (<i>Rana capito</i>)	2
Florida Leopard Frog (<i>Rana sphenocephala</i>)	4
Chicken Turtle (<i>Deirochelys reticularia</i>)	2
Eastern Box Turtle (<i>Terrapene carolina</i>)	4
Green Anole (<i>Anolis carolinensis</i>)	3
Fence Lizard (<i>Sceloporus undulatus</i>)	7
Ground Skink (<i>Scincella lateralis</i>)	8
Racer (<i>Coluber constrictor</i>)	1
Corn Snake (<i>Elaphe guttata</i>)	2
Southern Water Snake (<i>Nerodia fasciata</i>)	1
16 species	59 specimens

Literature Cited

Collins, Joseph T. 1997. *Standard Common and Current Scientific Names for North American Amphibians and Reptiles. Fourth Edition.* SSAR Herpetol. Circ. 25: 1–40.

SHORT COMMUNICATIONS

WINTER SNAKE ACTIVITY

The following is an historical record of winter snake activity by a Kansas snake species. The record is by the late Claude Hibbard and is excerpted from a letter to Edward H. Taylor on 21 January 1951. The letter is located in the Edward H. Taylor archives located at Spencer Research Library, University of Kansas, Lawrence, Kansas. The excerpt reads as follows: "Here is a snake story — December 31, the real warm day ahead of the storm, I was at the farm. It was between 12:30 and 1:30 P.M., temperature 70 to 71 degrees. I was on a slope facing southeast and found a blue racer out. It was a little stiff but could crawl. By 4:30 P.M. the big drop in temperature started and it was 20 degrees above by 7 P.M. that evening so I am sure it probably never made back into a hole."

The "blue racer" described is obviously *Coluber constrictor*. The "farm" described was most likely the Hibbard family farm in Meade County, Kansas, where Hibbard was born.

Eric M Rundquist
Animal Care Unit
B054 Malott Hall
University of Kansas
Lawrence, Kansas 66045

WINTER SNAKE ACTIVITY

While hiking along a man-made levee at Elk City Reservoir, Elk County, Kansas with Brian Foreman on 18 December 1997, a juvenile male Gopher Snake (*Pituophis catenifer*) was observed. The snake, approximately 471 SVL, 538 TL, was observed basking on the west side of the levee at 1345 hrs. Ambient temperature was 65° F. The west side of the levee is limestone talus structure, from which the snake may have emerged.

Daren Riedle
Independence Community College
Independence, Kansas 67301

WATER SNAKE FEEDING RECORDS

While conducting herpetological surveys at Montgomery County State Lake, Montgomery County, Kansas on 10 September and 14 September 1997, nine Northern Water Snakes (*Nerodia sipedon*) were captured and palpated for

stomach contents. Only three individuals contained food items. One adult snake, estimated to be 700 mm TL, was observed swallowing a 120 mm Channel Catfish (*Ictalurus punctatus*). A juvenile snake, approximately 207 mm TL, contained an adult Northern Cricket Frog (*Acris crepitans*), and another juvenile, approximately 210 mm TL, contained a small sunfish (*Lepomis* sp.), which was 35 mm in length.

Daren Riedle
Independence Community College
Independence, Kansas 67301

BLIND SNAKE REPRODUCTIVE ACTIVITY

A pair of Texas Blind Snakes (*Leptotyphlops dulcis*) were discovered at a site near Sun City, Barber County, Kansas on 24 May 1997. The snakes were found together under a small, imbedded limestone rock near a canyon rim on a south-facing slope. Skies were clear with a moderate north wind and ambient temperature of 80°F. Habitat was sand sage prairie typical of the Gypsum Hills physiographic province in Kansas. Other reptile species located in the immediate area were Common Kingsnake (*Lampropeltis getula*) and Western Rattlesnake (*Crotalus viridis*).

Measurements for the two specimens were as follows: TL - 263 mm, tail - 7 mm, mass - 4 g; TL - 236 mm, tail - 10 mm, mass 3 g. Judging from tail/TL ratio, it is highly probable that the specimens were female and male, respectively. Palpation of the female revealed no ova. Both specimens were released at the capture site after being measured.

Although the specimens were not found *in copulo*, they were in contact with each other at discovery. It is likely that they were engaged in pre-copulatory or post-copulatory activity. Collins (1993) confirms that nothing is known about reproductive behavior in this species in Kansas. Hibbard (1964) recorded brooding females in Meade County in July and Rundquist et al. (1978) reported on a large aggregation of this snake on 14 May in Clark County. It is likely that such aggregations are for reproductive purposes in this rare, secretive, and subterranean species.

Thanks are due to Mr. Ted Alexander for permission to conduct field studies on his property. Specimens were collected under Scientific Collecting Permit #SC-164-97

issued to the author by the Kansas Department of Wildlife and Parks.

Literature Cited

- Collins, Joseph T. 1993. Amphibians and Reptiles in Kansas. Third edition. Univ. Press of Kansas, Lawrence. xx + 397 pp.
- Hibbard, Claude W. 1964. A brooding colony of the blind snake, *Leptotyphlops dulcis dissecta* Cope. *Copeia* 1964(1): 222.
- Rundquist, Eric M., Eddie Stegall, David Grow, and Peter Gray. 1978. New herpetological records from Kansas. *Trans. Kansas Acad. Sci.* 81(1): 73-77.

Eric M Rundquist
Animal Care Unit
B054 Malott Hall
University of Kansas
Lawrence, Kansas 66045



NEWS RELEASE ❁ NEWS RELEASE

• Kansas Heritage Photography •
840 SW 97th Street
Wakarusa, Kansas 66546
(785) 836-2119

NEW AUDIO CASSETTE

KANSAS HERITAGE PHOTOGRAPHY is pleased to announce a new audio cassette on the natural history of Kansas entitled

THE CALLS OF KANSAS FROGS AND TOADS

By Keith Coleman and Joseph T. Collins

Frogs and toads signal the arrival of another Kansas spring. Through a new audio cassette, bring them into your homes and cars as they sing about sex in the shallow swamps and streams of the Sunflower State. Recorded by Keith Coleman and narrated by Joseph T. Collins, this cassette features (Side 1) the calls of all 22 kinds of frogs and toads found in Kansas, along with an informative narration about each in an informal and relaxed presentation. Side 2 is a continuous, unnarrated succession of choruses, beginning in late winter through spring and into summer.

A must for those with cabin fever. March 1998.

Keith Coleman is a *herpetologist* and *graduate student in philosophy* at the University of Kansas. Joseph T. Collins is *The Wildlife Author Laureate of Kansas* and *adjunct herpetologist* with the Kansas Biological Survey.

Available from KANSAS HERITAGE PHOTOGRAPHY, 840 SW 97th Street, Wakarusa, Kansas 66546. \$14.95 + 3.00 for shipping, handling and state tax. Call 1 (785) 836-2119

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 and reptiles in Kansas in particular; and to achieve closer cooperation and understanding between herpetologists, so that they may work together in common cause. For up-to-date information about the Society and its activities check the KHS home page on the World Wide Web at <http://eagle.cc.ukans.edu/~cnaar/khs/khsmain.html>

Membership

All interested persons are invited to become members in the Society. Membership dues per calendar year are \$10.00 (U.S., Regular), \$15.00 (*outside* North America, Regular), and \$15.00 (Contributing) payable to the KHS. Send all dues to: KHS Secretary-Treasurer, 303 West 39th Street, Hays, Kansas 67601.

All members are entitled to participate in Society functions and have voting privileges. They receive copies of Society publications, which include KHS NEWSLETTERS, as well as other publications of interest or those co-sponsored by the Society.

Editorial Policy

The KANSAS HERPETOLOGICAL SOCIETY NEWSLETTER, issued quarterly, publishes manuscripts and notes of interest dealing with the biology of amphibians and reptiles. Manuscripts should be submitted to the Editor no later than the 15th of the month prior to the month of issuance. All manuscripts become the sole possession of the Society, and will not be returned unless special arrangements are made with the Editor.

Pen and ink illustrations and photographs are also welcomed. These should be sized accordingly as no reductions can be made. Illustrations and photographs will be returned to the author only upon request.

Editorial Staff

EDITOR

ERIC M RUNDQUIST
Animal Care Unit
B054 Malott Hall
The University of Kansas
Lawrence, Kansas 66045
(785-864-5587)

ASSOCIATE EDITORS

JOSEPH T. COLLINS
*The Center for North American
Amphibians and Reptiles*
1502 Medinah Circle
Lawrence, Kansas 66047
(785- 749-3467)

ANN F. RUNDQUIST
725 Connecticut Street
Lawrence, Kansas 66044
(785-832-9093)

E-mail: jcollins@kuhub.cc.ukans.edu

KANSAS HERPETOLOGICAL SOCIETY
303 WEST 39TH STREET
HAYS, KANSAS 67601

ADDRESS CORRECTION REQUESTED

NON PROFIT ORG.
U. S. POSTAGE
PAID
LAWRENCE, KANSAS 66044
PERMIT NO. 222