

KANSAS HERPETOLOGICAL SOCIETY

NEWSLETTER NO. 87

FEBRUARY 1992

ANNOUNCEMENTS

ORNATE BOX TURTLE CLASS TO GRADUATE FROM CALDWELL HIGH SCHOOL IN MAY

The famous Caldwell, Kansas sixth-grade students who attracted national attention in 1986 with their campaign to have the Ornate Box Turtle named as the official Kansas state reptile as a 125th birthday gift for the state will graduate from high school this May. Their success marked a milestone in the 120-year history of Caldwell and gave the town more regional, national, and international recognition than it had ever received. Many things have happened at the school and in the town of Caldwell since that year of celebration and success. The students' successful campaign for the Ornate Box Turtle as a state symbol, which was intended to bring pride to their school and community, instead exposed controversy, hate, and unrest among some Caldwell residents. This designation reportedly led to the killing of turtles by some people, and some also made fun of the students for a project that made many people in Kansas proud. Caldwell made national news in 1989 and 1990 for its "Turtle War" and these students were not allowed to use the "T word" at school.

There are many people who would like to see a final honor given the dedicated students who wrote a new chapter of Kansas history. Thus, you are asked to acknowledge the great accomplishments of those young people from Caldwell by sending them cards and letters thanking them for their part in getting the Ornate Box Turtle named as the state reptile. Address them to the students in care of the Caldwell High School, 31 North Osage Street, Caldwell, Kansas, 67022. You may even want to send copies of your letters to the Editor, *Wichita Eagle*, 825 East Douglas, Wichita, Kansas, 67202. That environmentally enlightened newspaper has covered many of the past happenings in Caldwell, and some of its reporters might be interested in interviewing some of the students for another story.

Mail your cards and letters to any or all of the following students: Kirt Boco, Kristy Goodman, Amy Green, Mark Kolarik, Aaron Lowe, Mary Morris, Shane Schmidt, Julie Shellhammer, Julia Shoffner, Andrea Stetz, Mandy Struble, Misty Thompson, Stacy Volavka, Tim Ward, Scott Wickery, Tammy Whittum, and Jeff Wolff. All are seniors at Caldwell High School this year. As they face the bright but uncertain future, let them know that when they leave Caldwell, the rest of the world will welcome them with open arms for what they have done. Let them know that they can be proud of what they accomplished as sixth grade

students. Someday the citizens of Caldwell may wake up and recognize the achievement of these fine students and citizens.

— Irving Street, 9046 Indian Ridge Road
Lawrence, Kansas

WILDLIFE PHOTOGRAPHERS TO MEET AT TOPEKA COLLEGIATE

The seventh and eighth grade students at Topeka Collegiate School will sponsor a special wildlife photography day on Saturday, 11 April 1992 at their school, which is located south of Topeka in Pauline. The day will be devoted to learning how professional wildlife photographers photograph such animals as frogs, toads, lizards, turtles and even rattlesnakes, for textbooks and other publications.

At least three professional wildlife photographers will be available to assist those attending. They include Joe and Suzanne Collins of the University of Kansas and Larry Miller, science teacher at Topeka Collegiate. Work by these photographers has appeared in such magazines as *National Wildlife*, *National Geographic*, *Kansas!*, *Science Probe*, and *American Scientist*. They have also published in a number of Kansas natural history books, textbooks, and on postcards, calendars, and wildlife posters.

The hours for this event will be from 0900-1600 hrs. The event is open to all amateur and professional photographers.

All proceeds from the day will go toward an educational field trip for seventh and eighth grade students at Topeka Collegiate. Topeka Collegiate School is a non-profit independent school.

For more information and registrations forms write to: Seventh and Eighth Grade Class, Topeka Collegiate School, 201 Southeast 59th Street, Topeka, Kansas, 66619. Please include \$1 to cover printing and postage costs.

NEW VOLUMES AVAILABLE

The long-awaited definitive volume on Caribbean herps, *Amphibians and Reptiles of the West Indies: Descriptions, Distributions, and Natural History* by Albert Schwartz and Robert W. Henderson is now available for \$75.00 from the University Presses of Florida, 15 North-

west 15th Street, Gainesville, Florida, 32611; phone (904)392-1351. This 736 page, 7 X 10 in. clothbound tome contains a frontispiece, 600 maps, notes, bibliography, and index and completely updates the two previous volumes on West Indian herps by these authors. Shipping and handling costs are either \$3.00 for UPS or \$2.00 bookpost for the first book. Add 50¢ for each additional volume. Florida residents add 6% sales tax.

Cornell University Press announces publication of two new works: *Reptiles and Amphibians of Australia (Fifth Edition)* by Harold G. Cogger and *Australian Snakes: A Natural History* by Richard Shine. The Cogger volume is completely updated and has a radically different format from the four previous editions. All photos are in color and placed adjacent to relevant text. In addition, the book contains distribution maps, identification keys accompanied by explanatory line drawings, a section on collecting methods, a glossary, and an extensive list of references. The 8 X 11 in. clothbound book is 704 pages with 230 color plates and 650 black-and-white illustrations. This tome lists for \$97.00 and will be available 1 March 1992.

Dick Shine's work is 8 1/4 X 11 in. clothbound, 224 pages with 278 color plates and 27 black-and-white illustrations. Dick Shine is arguably the world's leading snake ecologist and his volume covers the day-to-day lives of Aussie snakes and discusses their anatomy, evolution, habitat, behavior, sex habits, life history, and diet. He includes a chapter on interaction with humans, their role in Aboriginal culture, snake myths, venom toxicity, and habitat destruction. This book lists for \$34.95 and is available now. Those interested in purchasing either of these books should contact Cornell University Press, 124 Roberts Place, P.O. Box 250, Ithaca, New York, 14851 or call (607)277-2211.

15TH ANNUAL ALL-FLORIDA HERPETOLOGY CONFERENCE

The All-Florida Herpetology Conference will be held 18 April 1992 at the Reitz Union Auditorium of the University of Florida in Gainesville. The conference will begin at 0800 hrs and is cosponsored by the Florida Museum of Natural History and the Gainesville Herpetological Society. Scheduled speakers are: David Chiszar, James Gillingham, William Haast, Dale Marcellini, Sherman Minton, Edward Moll, Ron Tremper, Trooper Walsh, and Peer Zwart. Other events include a panel discussion, exhibition and sale of herpetological books and art, a workshop for young herpetologists, and an evening banquet and auction at the Florida Museum of Natural History. Those wishing to obtain conference registration forms and information should contact David Auth, Florida Museum of Natural History, University of Florida, Gainesville, Florida, 32611 or call (904)392-1721.

NEW HERP COMPUTER NETWORK

All you modem mavens out there should be aware that an herpetological computer bulletin board now exists. Called the *Herpetology On-line Computer Network* (or *Herp-net*), this is an open access computer bulletin board serving the national herpetological community and can be accessed via any personal computer and any modem. The number to access *Herp-net* is (215)464-3562 via 300/1200/2400 bps modem 24 hours a day. Anyone wishing additional information about *Herp-net* should send a self-addressed, stamped envelope to: Herpetology On-line Computer Network, P.O. Box 52261, Philadelphia, Pennsylvania, 19115. I have used this network's services in the past and it *does* work.



KHS BUSINESS

KHS TO SHERIDAN COUNTY IN JUNE

Plan now to meet on 5-7 June 1992 for some High Plains herping at the KHS Annual Field Trip. This year's excursion will be held at beautiful Sheridan County State Lake, off Route 24 and nestled near the extreme northwestern corner of Kansas, the Ornate Box Turtle State.

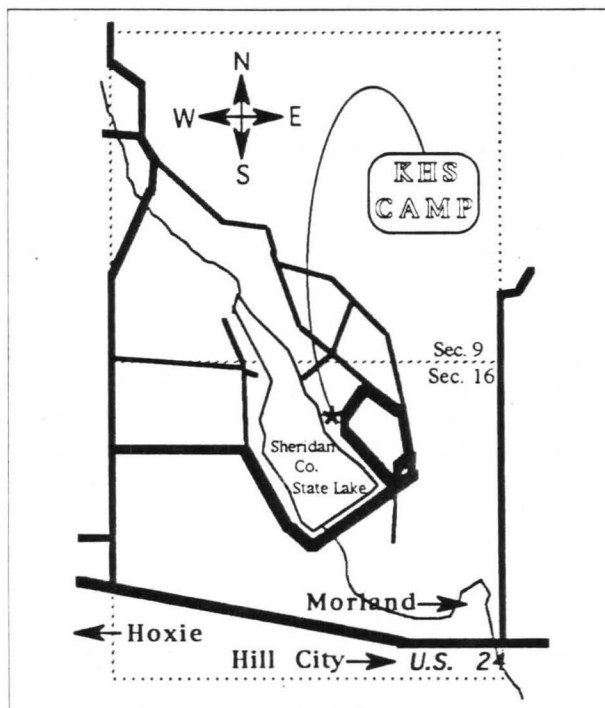
The area is surrounded by rocky hillsides concealing no less than 17 new county records, including the sole remaining deadly peril on the western Kansas prairies, the sizzling *C. viridis*. The campsite headquarters will be on the eastern shore, and the park is small so there should be no problems finding the campsite this year. Primitive camping is available at the lake but for the less adventurous, accommodations can be found within 10 to 20 miles from the campsite in Hoxie, Hill City, or Morland.

For those seeking a higher level of comfort, shelter can be had at the Cress' Vue Motel in Hoxie (675-3279), Hoxie Motel (675-3055), Pomroy Inn in Hill City (674-2098), Prairie Harvest Inn in Morland (627-4411), and Western Hills Motel in Hill City (674-2141). Fuel is readily available, for yourself and auto, in Hoxie and Hill City.

If you have any questions please contact Kelly J. Irwin, 2861 West 32nd Avenue, Manhattan, Kansas 66502, (913) 776-8940 or Travis W. Taggart, 2302 Donald Drive, Hays, Kansas 67601, (913) 625-5707.

Bring your picks, film, and your friends to experience

and enjoy the type of natural weekend that only Kansas can provide. See you in June !



LETTER FROM KDWP DIRECTOR OF LAW ENFORCEMENT

Dear Kansas Herpetological Society Members:

As Director of the Law Enforcement Division of the Department of Wildlife and parks, I am writing to assure you that our division shares your interest and concern for Kansas' amphibian and reptile resources. Commercialization, habitat destruction, and pollution have negatively [affected] these animals and we see continually dwindling populations. Conservation of amphibians and reptiles has never been as important as it is today.

Our division is committed to providing necessary protection for these species and to enforcing conservation laws affecting them. Besides routine patrol and investigation activities, we also utilize our special operations section to discover violations. Special operations uses covert investigations, special concentrated enforcement projects, and high tech equipment to monitor illegal activities. Since passage of K.S.A 32-1005, making commercialization of wildlife unlawful, Special Operations is especially inter-

ested in individuals or businesses selling or bartering reptiles and amphibians. Additionally, we are planning to expand the use of our toll free violation hotline to encourage more extensive reporting of pollution crimes and commercialization encroachments upon our threatened and endangered animals and species in need of conservation.

Since our Conservation Officers have large districts to cover and diverse responsibilities which somewhat limit their enforcement capabilities, you can greatly assist us by being additional "eyes and ears" for us while you are afield. Although we discourage the confronting of violators by untrained persons, we request that all violations be quickly reported to our field staff. This can easily be accomplished by telephoning the local Conservation Officer, local Sheriff's office, or by using our *Operation Game Thief* hotline [1-800-228-4263 (GAME)], which is monitored 24 hours per day. Callers should provide the following information: location of offense, type of offense, how the animals were taken, date and time the offense occurred, a description of the offender, vehicle description, tag numbers, or any other pertinent data.

We also encourage you to become personally ac-

quainted with your local Conservation Officer, who will not only be pleased to work with you, but can answer any questions you may have about laws and regulations.

By working together, we can provide the additional enforcement effort needed to curtail illegal use of our valuable, but diminishing, reptile and amphibian resources. The Law Enforcement Division is looking forward to working more closely with the Kansas Herpetological Society in this important matter.

Sincerely
(signed) Omar T. Stavlo
Director, Law Enforcement Division
Kansas Department of Wildlife and Parks

AMENDMENT PASSED

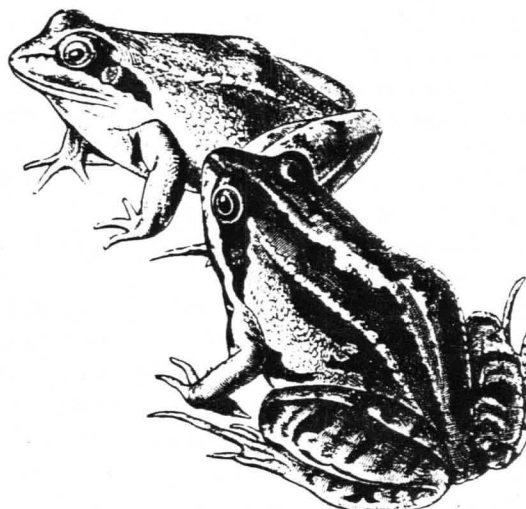
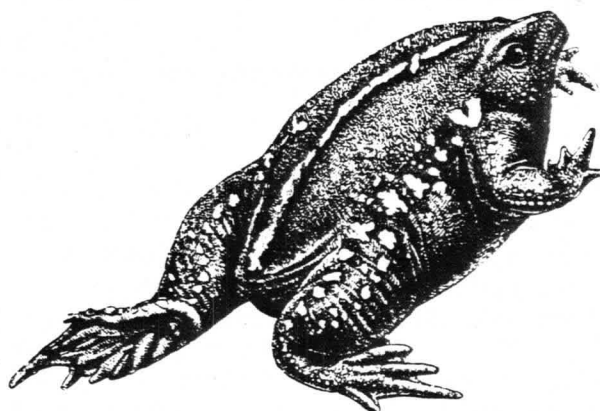
At the 1991 KHS Annual Meeting, an amendment to the KHS Constitution was passed. Article VII, Section 3, line 1 now reads: "A member in arrears for payment of dues for a period of three months after conclusion of the current membership year shall be dropped from the role after due notice from the Secretary-Treasurer." Please note this change and adjust your copy of the Constitution accordingly.

THIS AND THAT

Remember that amphibian season is just about upon us. We had an excellent effort from a number of people in conducting the initial Amphibian Census for Kansas last year and I hope that we will exceed that effort this year. Data gathered this year will be turned over to the international Disappearing Amphibians Task Force for addition to their database. As it stands now, we are the only regional herpetological society gathering this vital information and contributing to this extremely important project. Anybody needing extra Census forms should drop me a line and I'll send what you need. There is a copy of the form in this Newsletter. Feel free to make as many copies as you wish.

Finally, after two years and many frustrating attempts, I have figured out how to use the translator on this bloody machine. That means, for those of you with IBM-type computers with MS-DOS operating systems (which I find to be an oxymoron), you can submit your articles to me on floppies now. I can translate most conventional word processing programs except for DisplayWrite. If any of you have the latter program (God help you), please convert your document to ASCII files and I should be able to translate it (maybe). Should you decide to go this route (I heartily recommend it, as it saves me a great deal of time and fewer sore fingers), submit your articles on 3.5 inch floppies and include a hard (printed) copy of the article. I will try to return your floppies if you request such but make no guarantees.

—EMR



KHS BRINGS YOU GREAT NEWS OF THE WORLD

COTTONMOUTH FOUND IN KANSAS

Shane Eckhardt knew what it was the minute he saw it. He couldn't believe his eyes at first because it wasn't supposed to be there. But there it was with its head [raised] in the air, its tongue flicking, and its ...eyes on him. Then its tail started snapping back and forth.

Shane, who was standing beside his truck, reached through the window, pulled out a rifle, and got off a few nervous shots. A couple hit vital spots, one right behind the triangular shaped head . . . Shane was to discover later that it was only the second Cottonmouth ever recorded as being killed in Kansas. The first was [taken] in 1937 on the Neosho River near Chetopa.

The chance encounter that was to rewrite [herpetological] history took place September 14 just south of the K96 bridge across the Spring River east of the Crestline corner. Shane said he had driven off the road and parked to scout out possible sites for a deer stand.

"I stepped out of the truck and there he was – about three feet away. When I shut the truck door, he reared up. I knew it wasn't a common water snake – it had to be a Cottonmouth, although it was hard to believe that I was actually seeing one. I had hunted and fished up and down that river all my life," said the 32-year-old Eckhardt.

After shooting the snake, he took it home, where it created considerable excitement.

Shane notified Harley McDaniel, Conservation Officer with the Kansas Department of Wildlife and Parks and was told to freeze the snake to preserve it. It was then taken to Jim Triplett, biology professor at Pittsburg State university. Triplett verified [that] it was a Cottonmouth, and sent it to [KHS member] Joe Collins, zoologist with the Museum of Natural History at the University of Kansas.

Collins, who recently coauthored a *Peterson Field Guide* on reptiles and amphibians, was excited about the find. So excited, in fact, that he and two fellow herpetologists, [KHS member] Kelly Irwin of Kansas State University and [KHS member] Travis Taggart of Fort Hays State [University], drove to Cherokee County last weekend. They tramped up and down the river trying to find another [Cottonmouth]. They found Copperhead and several other kinds [of amphibians and reptiles], but no Cottonmouth.

Collins said the Cottonmouth is the fifth species of venomous snake recorded as being found in Kansas. It joins the Prairie, Timber, and Massasauga Rattlesnakes, as well as the Copperhead, which is common [in] southeast Kansas.

Collins said he felt extreme southeast Kansas would be about the only spot in the state where a Cottonmouth

would be found because of [the] proximity to the Ozarks and water tributaries that flow into southern streams, the snake's natural domain. The find will be recorded in a new book scheduled to come out [next] fall on amphibians and reptiles in Kansas. Before Collins will confirm a species in this edition, there must be two different specimens taken at two different times by two different people. Counting the one found in 1937, Shane's will be the second.

Collins believes Cottonmouths in low numbers have always existed in southeast Kansas but a scientist was just never lucky enough to be in the right spot at the right time to collect a specimen.

That's why he's planning future hunting trips in the area. And Shane can't wait to join him. "I'm definitely hooked," he says. "I'm keeping a scrapbook so I can show my grandkids 'grandpa's snake' "

— Columbus (Ks) Daily Advocate, 3 October 1991
(submitted by Suzanne L. Collins, Lawrence)

THIS TIME ZOO VISITS CHILDREN

A mini-menagerie thrilled pupils at Sumner Elementary School on Wednesday.

[KHS member] Dr. Hugh Quinn, director of the Topeka Zoo, and zoo staff members brought a parrot, a pig, and a Python to the school as part of American Education Week.

As each animal was brought out, Quinn described it and took questions from the excited children, who sat on the auditorium floor.

The children's favorite animal was Jessie the Burmese Python [*Python molurus bivittatus*]. A delighted "Yesssss!!!" reverberated off the walls of the auditorium when Quinn announced the last visitor would be a snake.

Tension rippled through the audience as zoo staffers [KHS member] Mike Coker, Merle Miller, and Shane Anderson slowly wheeled out a large, yellow, plastic container, carefully lifted the lid and held up Jessie's head.

"Oooooooohhh!" the children gasped and climbed to their feet. It took all three men to hold up the snake, which curled his tail completely around Miller's body.

"Cool!" said Kristi Brundin, 9. Later, she said she liked the macaw because it was pretty but said she liked the snake because "they're big and I like pythons."

Angela Garcia, 9, said she liked the macaw's pretty feathers. "I like the pig, too, because he was cute, but I don't like the snake," she said firmly. "Because they slither and they bite."

But both Danielle Baker, 7, and Mikey Hagan, 8, said

they thought the snake was fun. Hagan said his favorite animals at the zoo were snakes and hippos.

Evie Green, a first-grade teacher at the school, arranged the visit. The second-graders' teacher, Susan Holthaus, said having a visit from a community resource such as the zoo was a real treat for the pupils.

"They've been to the zoo before, but to have someone come out and explain it to them is really great," Holthaus said.

Clardy Vinson, the principal, said the school has been emphasizing math and science, including the environment and endangered species.

"They're very concerned about the welfare of animals," Vinson said.

That's exactly what Quinn hoped for.

"What we hope it does is instill an empathy for animals," he said. "If they really can empathize with them, and grow to like the animals a lot, then they'll want to conserve wildlife. I think if people have an empathy with wildlife, then they'll want to make sure it's around for their kids."

Quinn cautioned the children not to pick up any snakes they see in the wild, because "they may bite you and make you very, very sick. Just leave him alone and admire him from a distance."

— Topeka Capital Journal, 21 November 1991
(submitted by Mary Kate Baldwin, Topeka)

SNAKE EXHIBIT SHOWS SIGNS OF ATTEMPTED BREAK-IN

One man's poison can be another man's passion.

This was the case recently at the Kansas Snake exhibit at the [University of Kansas] Natural History Museum in Dyche Hall.

Although many consider crawling reptiles repugnant, others like snakes enough to try to steal them.

Barbara McClain, associate director of the Natural History Museum, said the snakes' caretaker, Jeff Whipple, noticed on the morning of November 7 that the lock to the snake exhibit was damaged.

The lock was fine the day before, but it had been tampered with, so she reported it to KU police, she said.

The lock was damaged, and screws to the door had been removed, according to KU police records.

Whipple said he was worried that someone might be after a particular snake in the exhibit — the albino [Black] Rat Snake (*Elaphe o. obsoleta*).

The snake may be sought by people in the pet industry, especially people who trade animals, he said.

"If someone did break in, they would be after the albino," he said.

In September, an albino snake was stolen from Manhattan's sunset Zoo. People around the country breed

snakes to sell them as pets, Whipple said.

He said the exhibit's wild albino Rat Snake, which was caught near Easton, [Kansas] was rare and would be a novelty for a collector.

"I see the snake as a survivor against all odds," he said. "She sticks out like a sore thumb to her predators."

Whipple said that of the 45 snakes in the exhibit, the [Red] Milk Snake [*Lampropeltis triangulum sypila*] also would be a target for thieves. The Milk Snakes are black with red and white bands.

Snakes are becoming more popular as pets, especially among college students and city dwellers, Whipple said. They do not require much care and can be kept in the closet, he said.

Whipple also said that 12 snakes in the exhibit were [venomous] and that it was not safe to go into the exhibit unescorted.

A person could be disfigured or have a severe or fatal reaction if bitten by any of the venomous snakes, he said.

Sherry Emerson, owner of Pet World [in Lawrence], which sells snakes from around the world, said the majority of snake owners were college-aged men.

Emerson said that an albino Rat Snake was unusual and that the average rat snake was worth about \$30.

Although she sells snakes indigenous [to] Kansas, it is illegal to sell snakes caught in the state.

— University Daily Kansas, 15 November 1991
(submitted by Suzanne L. Collins, Lawrence)

AT LEAST IT WAS CLEAN

We wouldn't blame Nancy Anderson if she never washed another dish. And we'd support her if she assigned son Ben and husband Les to that job for a long time to come.

Ben because he forgot that he had put a Bullsnahe he'd found earlier in the day into his water jug for safekeeping. So, imagine Mom's surprise when she unscrewed the lid of the jug and submerged it in the dishwasher after dinner.

Les because, in his newspaper, The Ark Valley News, he told the world about the resultant "scream that rattled all creatures in the neighborhood" when Nancy encountered the snake frantically trying to keep its head above the suds.

Les reports all Andersons survived the encounter, and Ben gave the snake to a classmate. "No word yet," Les concludes, "on what his mother's reaction was."

— Wichita Eagle, 12 September 1991
(submitted by Elizabeth James, Andover)

NEW CLUES IN THE CASE OF THE DISAPPEARING AMPHIBIANS

Frogs, toads, and salamanders are vanishing in widely scattered places. The most puzzling cases are in parks and

reserves, where amphibians had seemed relatively safe. These cases suggest that a single agent is involved, at least as an accomplice, in the declines. Suspected killers include acid rain and other forms of long-distance pollution, unusually dry weather, pathogens, and ultraviolet radiation. For the past two years, with the support of Chicago's Brookfield Zoo and Stanford University's Center for Conservation Biology, I have been studying amphibian declines in the mountains of Costa Rica and have discovered what may be clues to the killer's identity.

In 1987, more than 1,000 Golden Toads [*Bufo periglenes*] gathered in their annual breeding ritual to mate and lay eggs in Costa Rica's 26,000-acre Monteverde Cloud Forest Reserve. But in 1988 and again in 1989, very few toads were seen, and by 1990, the world's only population of this extraordinary species had vanished.

When I first began my study, dry weather headed my list of suspects. Few things are more important to an amphibian than rain. After checking weather records, however, I discarded that idea. Precipitation in 1987 was below average, but there had been drier years.

Measurements by ecologist Ken Clark of pH levels revealed no evidence of abnormal acidity, so I discounted acid rain. And because Golden Toads spend most of their time under cover, I rejected ultraviolet radiation. Once again, I turned to the weather.

In Costa Rica, hydrologists work with a time chart that runs from May, the beginning of the wet season, through April, the end of the dry season. Because an amphibian's ability to survive an extremely dry dry-season might depend upon the timing of wet-season rains, I used a modified hydrological year – July through June.

When I looked at local rainfall data over 20 years, I found that the 1986-87 hydrological period, when Golden Toads last appeared *en masse*, was the driest in reserve history. In 1986, July-October rains were the lowest on record, and when the November trade winds arrived without their usual payload of moisture, Monteverde lurched into a harsh dry season. An April cold front brought several days of mist, and on this cue, the Golden Toads gathered to breed. But soon it was dry again. The 1987 wet-season arrived late; May rainfall was the lowest ever recorded.

During dry periods, local streams depend on groundwater discharge from aquifers. Extremely low stream flow indicated that groundwater was scarce. Could this disruption in hydrology have upset the water balance of Golden Toads?

Ecologist Robert Lawton has discovered that in the toad's habitat, the water table often lies within a foot or two of the surface. Seepages are common. Although the toads are rarely seen except during their brief mating jubilees, limited observations at other times suggest they might take advantage of this moisture. In 1980, naturalist found two males in damp tunnels eight inches below ground.

In 1987, herpetologist Martha Crump noted that the Golden Toad's breeding pools had dried up and few, if any, tadpoles survived. Adult toads generally live more than one year, so this reproductive failure probably doesn't explain the population's decline.

Circumstantial evidence that dry conditions played a key role in the toad die-off comes from observations of Harlequin Frog [genus *Atelopus*] populations, which disappeared from Monteverde at the same time. Harlequin Frogs live near streams but rarely swim, and like other frogs and toads do not drink water; rather, they absorb moisture from wet surfaces. At one site where Crump and I had studied Harlequin Frogs, they survived a normal dry-season by sitting on wet rocks beside an aquifer-fed stream or by hiding in damp crevices. In March 1987, Crump counted 403 frogs along a 650-foot section of the stream – almost five times the normal number. The frogs, it appeared, were looking for moisture. Because the females are especially fond of hiding, one usually sees many more males. For the first time, this was not the case; females had emerged in record numbers.

This unusual gathering strongly suggests that Harlequin Frogs were having trouble with water balance. But if the stream never stopped flowing completely, why did the population disappear? We can speculate that some other agent took advantage of the situation. If the frogs were not at their best because of dehydration or crowding, then viruses, bacteria, fungi, or protozoans might have gotten the upper hand. But regardless of the immediate cause, population crashes are rare. The odds that two such events would occur in the same place at the same time for totally different reasons are low. Likewise, conditions as dry as those of 1986-87 are rare.

The cause of the dry conditions was El Niño, a periodic warming of waters in the South Pacific named for a seasonal current off the Peruvian coast. Fluctuations in El Niño can affect different parts of the world. In 1982-83, the strongest El Niño recorded this century caused drought and wildfires in Borneo and major decline of marine life on the coast of Peru. Because of its timing, El Niño affected the annual hydrological cycle at Monteverde.

Many amphibian declines have taken place on mountains, where weather is especially vulnerable to atmospheric disturbances such as those caused by El Niño. Is this natural climate oscillator an important player in the global amphibian crisis?

It's too soon to tell, but the answer may be yes, particularly when viewed in context with other parameters, such as the fact that about 50 million acres of tropical forest are disappearing each year. Forest soak up rainwater and release it slowly. This sponge effect maintains local climates by recycling moisture to the atmosphere and ensures a dry-season water supply (groundwater). At Monteverde, where much of the forest flanking the reserve has been cut,

dry-season flow in some streams has markedly declined. Deforestation around the world may be affecting the capacity of ecosystems to buffer natural climate fluctuations. If this is correct, El Niño may be an unwitting accomplice in the amphibian crisis. The real culprit, however – the agent of global deforestation – is man.

— J. Alan Pounds, Wildlife Conservation
November/December 1991
(submitted by Spencer Fully Bared, Protection)

GOOD NEWS FOR AMPHIBIANS

Considering the worldwide amphibian crisis, it's nice to be able to report that a new species of frog has been identified in Ramsey Creek, in extreme southeastern Arizona.

In 1988, Dr. James Platz, of Nebraska's Creighton University, noticed that some of the frogs in the region that were thought to be Chiricahua Leopard Frogs, *Rana chiricauhuensis*, seemed different. In follow-up studies, he discovered they are indeed a new species, thought to be closely related to *R. chiricauhuensis*.

Tadpoles of the new species (it has yet to be officially named) take more than a year to develop into adults, an unusual strategy in region with few permanent streams. Even more interesting, the adult frogs do all of their vocalizing underwater. No other Leopard Frog is known to call underwater exclusively.

Platz and his colleagues have also found this new frog in Brown Cañon, just north of Ramsey. They intend further studies of the species in both localities.

— Wildlife Conservation, November/December 1991
(submitted by E. Hallowed Well, Wichita)

TOAD ROAD

For the country that considers the legs of amphibians something to be eaten, France certainly shows a touching concern for toads.

After the French government proposed building a \$207 million, 22-mile highway to connect the Alpine town of Montmélon to Albertville, the hub of the 1992 Winter Olympics, ecologists pointed out that the road would cut off a colony of rare toads from its breeding pond. So an underpass, called a *crapauduc* (a toad duct), was constructed through which the toads could commute. The underpass was designed to be two toad-widths wide to avoid toad jams caused by toads who refused to hop over their fellow commuters — apparently they never heard of leapfrogging.

Such tunnels are built for the benefit not only of amphibians but of humans, too. If there were no tunnel,

toads would waddle across the road and be squished under the tires of speeding vehicles. The resulting mess might actually be dangerous for drivers. Some cars could skid off the highway and end up in a ditch. Toad or be towed.

Toad tunnels are not unique to France. There are at least 150 in Germany and a dozen in Great Britain. In fact, two years ago, an International Toad Tunnel Conference was held in West Germany at which the ins and outs of toad-tunnel construction were discussed. Considering all of this fuss, toad tunnels might not seem worth all the trouble. But the benefit is obvious: fewer toads will croak.

— Sports Illustrated, 11 November 1991
(submitted by Chris Mammoliti, Pratt)

LICKING THE DRUG PROBLEM

What with the recent unsettling developments on the world political scene, particularly in the Middle East, I imagine that most of you are eager for a report on our yard.

We've moved to a new yard, which contains an alarming amount of nature. And I'm not talking about the friendly kind of yard nature that you get in, for example, Ohio ("The Buckeye State"), such as shrubbery and cute little furry baby buckeyes scampering around. I'm talking about the kind of mutant terroristic nature we get here in Florida ("The Assault Roach State"). For example, we have a kind of toad down here that, if you lick it, can kill you.

Now you're saying to yourself, "Yes, but who, aside from Geraldo Rivera seeking improved ratings, would lick a toad?" The answer is: More and more people. According to news articles that alert readers keep sending me, there's a brand of toad ... that secretes an hallucinogenic substance when it gets excited, and licking this toad has become a fad in certain circles. Which raises a couple of questions in my mind, such as: Does this occur in sophisticated social settings? Do you have a group of sophisticated people sitting around a dinner table, finishing their coffee, and one of them suavely reaches into his jacket pocket, pulls out this thing that looks like a giant wart with eyeballs, and then, lowering his voice suggestively, says, "Anybody want to do some *toad*?" Also, how do they get the toad excited? Show it movies? Give it a tiny marital aid? Also, will Free Enterprise try to cash in on this? Will Anheuser-Busch come out with a TV commercial wherein some rugged-looking workmen, exhausted from a hard day of not showing up at people's houses, relax by taking some man-sized slurps off a Toad Lite?

Unfortunately I can't answer these questions, because I'm busy worrying about being killed by our mango tree. Our new yard has a mango tree, which I bet sounds like exotic fun to those of you who live in normal climates, right? Just think of it! All the mangoes you need, right in

your own yard!

The problem is that, mangowise, you don't need a whole lot. You take one bite, and that takes care of your mango needs until at least the next presidential administration. But the mangoes keep coming. They're a lot like zucchini, which erupts out of the ground far faster than you could eat it even if you liked it, which nobody does, so you start lugging hundreds of pounds of zucchini to your office in steel-reinforced shopping bags, hoping your co-workers will be stupid enough to take some home, except of course they're lugging in their zucchini, all summer long, tons of it coming in, until the entire office building collapses in a twisted tangle of girders and telephone message slips and zucchini pulp, out of which new vines start to spring immediately.

Mangoes are even worse, because (a) they grow on trees, and (b) they're about the size of a ladies bowling ball, only denser. They're the kind of fruit that would be designed by the Defense Department. They hang way up in our tree, monitoring the yard and communicating with each other via photosynthesis. and whenever they see me approaching they fire off a Warning Mango, sending one of their number thundering to Earth, cratering our lawn and alarming seismologists as far away as Texas ("The Silly Hat State"). Even on the ground, the mango remains deadly, because it immediately rots and becomes infested with evil little flies, and if you try to kick it off the lawn, it explodes, a mango grenade, covering your body with a repulsive substance known to botanists as "mango poop" that stays on your sneakers forever, so that when you go out in public, your feet are obscured by a cloud of flies, and the Florida natives snicker and say to each other, "Look! That idiot kicked a mango!"

So I keep a wary eye on the mango tree at all times, which means that I am in constant danger of falling into the Scum Vat. This was originally intended to be a small decorative pool with maybe a couple of cute little goldfish in it, but at some point a gang of aggressive meat-eating algae took over. If you tried to put some goldfish in there, you'd never get close. A tentacle of algae would come swooping up and grab them out of your hand, and then you'd hear an algae burp. The only thing that can survive in there is the Giant Arguing Frogs. We've never actually seen them, but we hear them at night, when we're trying to sleep. They have a microphone hooked up to a 50,000-watt amplifier, and all night long they broadcast the following conversation:

FROG ONE: BWAAARRRRPPPP.

FROG TWO (disagreeing); BWAAARRRRPPPP.

You can tell they're never going to work it out. Some nights, lying in bed and listening to them, I've thought about going out there to mediate, but of course the algae would get me. You'd have to be some kind of dumb mango kicker to pull a stunt like that. Better safe than sorry, that's

my motto, which is why I'd like to remind all my readers, especially you impressionable young people, that if you *must* lick a toad, make sure it's wearing a condom. Thank you.

— Dave Berry, *Dave Berry Talks Back*
[submitted by (I am not making this up)
Dave Bury, Wichita]

Editor's note: I know, I know, I said no more toad licking articles, but this one was too good to pass up.

DUEL IN THE SUN

When I told people that I was an aquatic ecologist and had come to the Negev Desert to study mosquitoes, they thought I was crazy or at least a bit confused. From the rim of the Zin Cañon, I gazed across at sculpted walls of limestone that were almost barren of vegetation. The cañon floor and riverbed appeared to be utterly dry — not a typical mosquito breeding ground.

I first descended to the bottom of the cañon in June 1988, and the riverbed was indeed bone dry. I was told, however, that if I followed the riverbed for five miles, I would come across an oasis — a freshwater spring called Ein Akev. After several hours of enduring the 100° temperature of the midday sun, the oasis was a particularly welcome sight. The water flows from crevices in the cañon wall year round and drops fifty feet into a deep, clear pool. I found no mosquitoes in this pool and very few in several smaller pools nearby.

Rainfall, which averages less than four inches a year in this cañon, occurs almost exclusively in the winter, so when January arrived, I set out again for Ein Akev. Shortly after the rains begin, the water, unimpeded by soil and vegetation, rushes down the cañon, flooding the riverbed. The torrent quickly subsides, leaving temporary pools in the irregularly shaped rock. These pools last for a few days or a few months.

Most aquatic animals in these ephemeral pools race against time to develop from egg to adult. Mosquitoes must pass through four larval stages, change into pupae, and then emerge as adults before they can leave the pools. A hard rain may wash the insects from the pool. If they fail to complete the cycle before the pools dry, the insects perish, providing nutrients for the next group of animals when the pools refill. Despite this disadvantage, many species of mosquitoes seem to prefer temporary pools because they are rich in nutrients and harbor fewer predators than the permanent pools.

In the hundreds of pools left by the floods, I saw amazingly dense populations of larvae and pupae of the mosquito *Culiseta longiareolata*. In a standard-sized dipper used to count aquatic insects, I collected several hun-

dred larvae. (Many entomologists consider one larva per dipperful a serious mosquito problem in habitats such as rice fields.) The species accounted for more than 95% of the organisms in the pools. Each larva comes from an egg raft containing perhaps 200-400 eggs. After incubating on the surface for several days, tiny larvae break out from the bottom tip of the eggs and enter the water. The larval period, which includes three molts into successively larger individuals, takes one to three weeks. The larvae then change into pupae and emerge as adults in two or three days. *C. longiareolata* breed year round in the Negev Desert, although the activity slows almost to a halt during the hot summers.

I was particularly interested in learning whether factors such as predation or competition with other species might have important effects on mosquito populations in these isolated pools. During the first half of the winter, the mosquitoes seemed largely unaffected by other species. But in early February, the situation changed when Green Toads, *Bufo viridis*, entered the pools to mate. Each female deposited about a thousand eggs encased in a gelatinous string. After about five days, the developing embryos popped out of the eggs and remained immobile on the outside of the strings for a few more days, until they could swim away as tadpoles. Like the mosquito larvae, the tadpoles must metamorphose into adults (sic) before the pools dry.

I observed both mosquito larvae and tadpoles gnawing away at the bottom, presumably feeding on algae and other microscopic food particles. Could these two taxonomically disparate species — one an invertebrate, the other a vertebrate — be competing for the same food?

To test for competition, I conducted a series of experiments in artificial pools made from plastic tubs, complete with soil bottoms and food. In my first experiment, I followed the effects of newly hatched mosquito larvae and small tadpoles on each other. On average, the mosquito larvae raised with the tadpoles took four days longer to reach the pupal stage and were smaller than those raised in the absence of tadpoles. Similarly, the tadpoles were smaller and took longer to metamorphose when raised in the presence of mosquitoes. In a second experiment, when I added extra food to the pools with mosquitoes and tadpoles, their development was unaffected by each other's presence, indicating that competition for food did indeed reduce the growth rates of both species.

The effects of competition can have dire consequences in nature. By extending the time that mosquitoes and toads must spend in the water, competition exposes them to the hazards of the desert pools. During the winter, few predators are found in the pools, but by spring, their numbers climb. In addition to several species of dragonfly nymphs that prey on mosquito larvae and tadpoles, I observed backswimmers, large predatory water bugs, feeding on

them. (I have even seen these aggressive insects kill adult toads.) And if predators don't get them, there is always the possibility that they will be caught in a dwindling pool. The size of the larvae and tadpoles at the time they metamorphose is also important. Small mosquito pupae become smaller adults, which lay fewer eggs. Smaller male toads are less likely to secure a mate, and smaller females lay fewer eggs.

In another experiment, I started with intermediate-sized tadpoles and newly hatched mosquito larvae. The tadpoles clearly had the upper hand. Not only did they outcompete the mosquito larvae for food but they also preyed upon mosquito larvae in their early stages. Once the larvae reached a certain size, they became immune to predation by the tadpoles.

On my stomach, peering down into the crystal-clear water of a pool, I saw something peculiar: dozens of mosquito larvae were clustered around a string of toad eggs. Could the larvae be preying on the immature toads (sic)? At first I thought this unlikely because the hatchlings of other toad species are known to be unpalatable to many predators. Furthermore, mosquito larvae are generally not predators.

I found that the toad eggs were immune to predation, but once the developing embryos popped out of the egg string, the mosquito larvae attacked and completely devoured the hatchlings. In laboratory and field tests, I found that the survival of toad embryos was greatly reduced in the presence of mosquito larvae. Only the hatchlings that escaped the onslaught of mosquito larvae long enough to develop into tadpoles had a chance. Once mobile, they could easily evade the predators.

As midspring approaches, the importance of the mosquito and toad on each other diminishes and voracious predators such as dragonflies and backswimmers become a greater concern. But for several months prior to that, the mosquito and toad are locked in fierce struggle for survival, in which the one with the size advantage eats the other.

— Leon Blaustein, *Natural History*, July 1991
(submitted by Al S. Mostly, May Day)

STUDENTS RESCUE RARE TURTLE

The tiny black-and-white turtle peered sleepily out at the world last week while cameras flashed and video cameras whirred. She seemed oblivious to the commotion being made about her by scientists and journalists.

Finally, David Penick, one her keepers at Drexel University [in Philadelphia], decided she'd had enough. He placed her back inside her billiard ball-size [egg]shell, and then put it and four other eggs in a white incubator.

"This is a very rare event," said Michael O'Connor, a

Drexel biologist. "As far as we know, her birth marks the first time that a Leatherback Sea Turtle [*Dermochelys coriacea*] has been hatched in captivity in the United States.

Penick and Allison Leslie, both Drexel graduate students, found a nest of turtle eggs on a sandy beach in Tortuguero, Costa Rica, last month. Because the turtles would have drowned, the students packed up a few of the eggs and took them to Philadelphia.

O'Connor said the turtles are endangered throughout the world because of poaching, predators, and the pressures of industrial development. If they survive to adulthood, they become the world's largest turtles, weighing as much as one ton.

But fewer and fewer of them are surviving, and Drexel scientists are studying them in an attempt to develop strategies for saving some of the world's largest reptiles.

— Wichita Eagle, 8 September 1991
(submitted by Jack Shumard, Wichita)

TURTLES RULE THE WATERS

The traveling habits of six Kemp's Ridley Sea Turtles [*Lepidochelys kempi*] may determine whether or not an eight-company consortium, led by the Mobil Oil Corp., will be permitted to drill for natural gas 14,000 feet below the surface of the ocean off Cape Hatteras, North Carolina.

Researchers at the Virginia Institute of Marine Science plan to glue electronic transmitters to the shells of six turtles this fall to track their travels for a year. If the turtles are found to frequent the area above the possible gas deposit, federal energy officials will probably forbid drilling when the Ridelys are there, say marine scientists and oil industry officials.

The Ridelys are the world's most endangered sea turtles, numbering around 1,000 [individuals].

— Wichita Eagle, 23 June 1991
(submitted by Dan Schupp, Wichita)

REPTILES GUARDING DRUGS

Using reptiles to guard drug stashes hit Philadelphia police with a hiss.

A narcotics officer found a 10-foot Python wrapped around crack vials and glassine bags under a mattress during a house raid Thursday night.

"The way he was screaming, I thought he'd found a mother lode of coke," said police Lt. John Gallo of Officer Jimmy Coolen.

"But then, I see this huge snake slithering out from under the mattress, flicking its tongue, heading toward us," Gallo said.

The snake was seized along with crack, and taken to an animal shelter.

The use of large or venomous snakes is the latest tactic of drug dealers, said David Chiszar, a University of Colorado herpetologist.

A few drug dealers favor small crocodiles, he said.

"The presence of large or highly venomous serpents or aggressive crocodylians could certainly be a deterrent to anyone entering a drug establishment," Chiszar said.

The reptiles are usually used to dissuade thieves or rival dealers, rather than to scare away police, Chiszar and Gallo said.

Chiszar has heard from herpetologists around the world [of] tales of rattlesnakes, cobras, and vipers turned over (sic) by police after raids.

The stories include one about a viper taken from a crack house in Dallas and a crocodile from a California crack house.

Chiszar's favorite was the haul of six Indian Cobras [*Naja naja*], two Eastern Diamondback Rattlesnakes [*Crotalus adamanteus*], three Blacktail Rattlesnakes [*Crotalus molossus*], four Red Diamond Rattlesnakes [*Crotalus ruber*], and one Prairie Rattlesnake [*Crotalus v. viridis*] from a crack house in Oxnard, California.

Gallo said the 30-pound Philadelphia Python would remain at the animal shelter until its owner claims it — an unlike occurrence — or it is adopted.

The owner of the raided house fled. Two men were arrested and charged with possession of heroin, Gallo said.

— The Kansas City Star, 10 November 1991
(submitted by Suzanne L. Collins, Lawrence)

HAITIAN SLIDERS HATCH AT LOWRY PARK ZOO

The Lowry Park Zoological Garden, Tampa, Florida, has hatched six Haitian Sliders (*Trachemys decorata*), making this possibly the first captive hatching of this species in North America. The zoo is a participant, along with four other institutions, in the Haitian Slider Conservation Project, an international effort targeted for species conservation by the Chelonian Advisory Group. Eight hatchlings emerged from a clutch of 10 eggs after a 74-day incubation period, and six have survived to date. An additional clutch of 13 eggs remains in incubation. Each clutch was divided and incubated at 82° and 86° F in an effort to produce equal sex ratios. Early in 1991, 9.9 adults were imported from the Dominican Republic, where the species is under increasing pressure from illegal trapping and habitat encroachment; 7.7 were distributed to four other institutions. Radiography done soon after importation indicated that at least five of the nine females were gravid.

— AAZPA Communiqué
(submitted by Prinz Max da Weed, Vinland)

FEATURE ARTICLES

New Records of Amphibians and Reptiles in Kansas for 1991

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The 95 new county records and seven maximum size records listed below are those accumulated or brought to my attention since the publication of records for 1990 (Collins, 1991). 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* (Collins, 1982). 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 seventeenth in a series that has appeared annually since 1976, and the data contained herein will be incorporated into the upcoming third (revised) edition of my book, currently in preparation.

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 (1982). 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: common and 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 (1990), but are a change from my past reports because they are given at the species level only. The last two decades have seen fundamental changes in how a species is defined. Subspecies are no longer considered a significant taxonomic unit, and their use is on the decline worldwide. Thus I have adopted the species scientific and common names for this report, and will use them to begin each species account in the next edition of *Amphibians and Reptiles in Kansas*.

The records listed below are deposited in the herpetological collections of the Museum of Natural History, The University of Kansas, Lawrence (KU) and the Museum of the High Plains, Fort Hays State University, Hays (MHP). I am most grateful to the members of the Kansas Herpeto-

logical Society, to David Edds and his graduate students at Emporia State University, and to the staff of the Kansas Department of Wildlife and Parks, 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, Museum of Natural History, The University of Kansas, diligently assigned catalog numbers to the specimens listed below, and to him I am indebted. Thanks are due also to Philip S. Humphrey, Director, and William E. Duellman, Curator of Herpetology, of the Museum of Natural History, The University of Kansas, and to Jerry Choate, E. D. Fleharty, and Karen Toepfer of the Museum of the High Plains at Fort Hays State University. And finally, I once again owe a special debt of gratitude to Travis W. Taggart, Fort Hays State University, whose collecting efforts are abundantly apparent in the records listed below. His efforts and enthusiasm made 1991 a most memorable season.

NEW COUNTY RECORDS

TIGER SALAMANDER (*Ambystoma tigrinum*)

GREELEY CO: Sec. 2, T16S, R39W. 6 July 1991. Travis W. Taggart (KU 218822). **PAWNEE CO:** 7 mi E Zook. 10 June 1991. Tim Smith (KU 218723). **SEWARD CO:** 0.5 mi NE Kismet. 4 August 1991. Randy Reiserer (KU 218724). **THOMAS CO:** within city limits Colby, NE part of town. 10 July 1991. Brandon Geschwentner (KU 218725); farm pond, Sec. 32, T6S, R31W. 14 August 1991. Curtis Schmidt & Mark Van Doren (KU 218726).

PLAINS SPADEFoot (*Spea bombifrons*)

DONIPHAN CO: 8.5 mi N Sparks on Ks. Rt. 7. 8 July 1991. Randy Reiserer & Kevin R. Toal (KU 218603). **HASKELL CO:** 5.7 mi E Sublette on Edell Avenue. 4 August 1991. Randy Reiserer (KU 218748). **LEAVENWORTH CO:** Sec. 32, T12S, R21E. 24 May 1991. Keith Coleman & Jim Gubanyi (KU 218749).

AMERICAN TOAD (*Bufo americanus*)

NEMAHA CO: Sec. 20, T4S, R11E. July 1991. Chris Mammoliti (KU 218731). **WABAUNSEE CO:** extr. NE corner of county, SE 1/4 Sec. 15, T15S, R13E, along S side I-70. 25 April 1991. James Gubanyi & Keith Coleman (KU 218732).

GREAT PLAINS TOAD (*Bufo cognatus*)

BROWN CO: Sec. 1, T1S, R18E. 8 July 1991. Randy Reiserer & Kevin R. Toal (KU 218595). **DONIPHAN CO:** 6.3 mi N Sparks on Ks. Rt. 7. 8 July 1991. Randy Reiserer & Kevin R. Toal (KU 218596). **HASKELL CO:** 5.7 mi E Sublette on Edell Avenue. 4 August 1991. Randy Reiserer (KU 218736). **STEVENS CO:** 3 mi W Seward County line, T34-35S, R35W. 4 August 1991. Randy Reiserer (KU 218737).

GREEN TOAD (*Bufo debilis*)

GREELEY CO: Sec. 11, T16S, R39W. 6 July 1991. Travis W. Taggart & J. Taggart (KU 218828). **HAMILTON CO:** SE 1/4 Sec. 12, T26S, R42W. 7 July 1991. Travis W. Taggart & J. Taggart (KU 218838). **WICHITA CO:** Sec. 19, T16S, R38W. 7 July 1991. Travis W. Taggart & J. Taggart (KU 218845).

WOODHOUSE'S TOAD (*Bufo woodhousii*)

THOMAS CO: Agricultural Experiment Station, Sec. 1, T8S, R34W. 31 August 1991. Travis W. Taggart (KU 218846).

NORTHERN CRICKET FROG (*Acris crepitans*)

GREELEY CO: Sec. 2, T16S, R39W. 4 August 1991. Travis W. Taggart (KU 218847). **WICHITA CO:** Sec. 17, T16S, R38W. 4 August 1991. Travis W. Taggart (KU 218848).

WESTERN CHORUS FROG
(*Pseudacris triseriata*-*P. maculata* complex)

MEADE CO: 0.8 mi NE Plains city limit on Rt. 54. 4 August 1991. Randy Reiserer (KU 218741).

PLAINS LEOPARD FROG (*Rana blairi*)

DECATUR CO: Decatur County Lake, Sec. 27, T4S, R27W. 19 May 1991. Travis W. Taggart (KU 218852). **GRANT CO:** Sec. 23, T30S, R37W. 7 July 1991. Travis W. Taggart (KU 218854). **GREELEY CO:** Sec. 2, T16S, R39W. 6 July 1991. Travis W. Taggart (KU 218851).

BULLFROG (*Rana catesbeiana*)

MITCHELL CO: Glen Elder State Park, Sec. 20, T6S, R9W. 8 June 1991. Travis W. Taggart, Bill Vowinckel & Connie Long (KU 218849). **WICHITA CO:** Sec. 20, T16S, R38W. 6 July 1991. Travis W. Taggart (KU 218850).

GREAT PLAINS NARROWMOUTH TOAD
(*Gastrophryne olivacea*)

SEDGWICK CO: S of Sedgwick on Hoover Road, ca. 0.5 mi N Little Arkansas River. June 1991. Kirk Mullen (KU 218747).

SNAPPING TURTLE (*Chelydra serpentina*)

EDWARDS CO: Sec. 35, T24S, R19W, Arkansas River, 1.5 mi E Kinsley. 27 July 1991. Lenn Shipman (KU 218567). **MARION CO:** S 1/2 Sec. 17, T17S, R4E, on Cress Creek at Lost Spring. 5 June 1991. Alexis Powell, Cody Walton, & Stanley Roth (KU Color Slide 9063). **PAWNEE CO:** Sec. 2, T22S, R17W, Pawnee River, low-water bridge S Larned State Hospital. 9 August 1991. Lenn Shipman & Paul Shipman (KU 218569). **SCOTT CO:** Scott County State Lake. 4 August 1991. Travis W. Taggart (KU 218894). **STAFFORD CO:** Sec. 10, T23S, R13W, Rattlesnake Creek, 3 mi N St. John. 8 September 1991. Lenn Shipman & Paul Shipman (KU 218568).

EASTERN BOX TURTLE (*Terrapene carolina*)

POTTAWATOMIE CO: ca. 6.5 mi W St. Clere, Sec. 3, T8S, R11E. 19 September 1989. Richard Kazmaier (KU 218795).

ORNATE BOX TURTLE (*Terrapene ornata*)

REPUBLIC CO: Sec. 30, T2S, R5W. 27 July 1991. Travis W. Taggart (KU 218899).

MISSISSIPPI MAP TURTLE (*Gratemys kohnii*)

BUTLER CO: Sec. 35, T24S, R6E, Durechen Creek at Rt. 177 bridge. 12 July 1991. Lenn Shipman & Paul Shipman (KU 218573). **MARION CO:** Sec. 1, T21S, R4E, Cottonwood River, 0.5 mi N Florence. 10 May 1991. Lenn Shipman & Paul Shipman (KU 218572).

FALSE MAP TURTLE
(*Gratemys pseudogeographica*)

BUTLER CO: Sec. 35, T24S, R6E, Durechen Creek at Rt. 177 bridge. 12 July 1991. Lenn Shipman & Paul Shipman (KU 218576). **HARVEY CO:** Sec. 21, T23S, R2W, Little

Arkansas River, 2 mi N & 2 mi W Halstead on Rt. 50. 30 June 1991. David Edds & Tracy Hirata-Edds (KU 218575). **MARION CO:** Sec. 1, T21S, R4E, Cottonwood River, 0.5 mi N Florence. 10 May 1991. Lenn Shipman & Paul Shipman (KU 218574). **MITCHELL CO:** Sec. 17, T6S, R10W. 18 May 1991. Travis W. Taggart (KU 218898). **PAWNEE CO:** Sec. 4-5, T22S, R16W, Pawnee River, S edge Larned on Rt. 19. 9 August 1991. Lenn Shipman & Paul Shipman (KU 218577). **POTTAWATOMIE CO:** near Rt. 24 bridge, just E Manhattan, Sec. 9, T10S, R8E. 24 September 1991. Robert Bergquist & Charles Bever (KU 218788). **RILEY CO:** Big Blue River, Red Bud Area, Sec. 11, T6S, R7E. 20 September 1991. Robert Bergquist & Charles Bever (KU 218789). **SEDGWICK CO:** Sec. 20, T28S, R4W, Little Arkansas River, W edge Valley Center. 6 August 1991. David Edds, Lenn Shipman & Paul Shipman (KU 218578). **WYANDOTTE CO:** Nearman Creek Power Plant, T10S, R24E. 17 September 1991. Daniel Murrow (KU 218790).

PAINTED TURTLE (*Chrysemys picta*)

GREELEY CO: Sec. 2, T16S, R39W. 7 July 1991. Travis W. Taggart (KU 218895). **HAMILTON CO:** Sec. 21, T23S, R41W. 7 July 1991. Travis W. Taggart (KU 218896). **LABETTE CO:** Sec. 9, T33S, R21E, Neosho River Dam, NE edge Oswego. 20 August 1991. Lenn Shipman & Paul Shipman (KU 218571). **PAWNEE CO:** Sec. 2, T22S, R17W, Pawnee River, low-water bridge S Larned State Hospital. 9 August 1991. Lenn Shipman & Paul Shipman (KU 218570). **POTTAWATOMIE CO:** Pottawatomie State Lake #1, Sec. 4, T7S, R9E. 10 September 1991. Robert Bergquist & Charles Bever (KU 218786). **WYANDOTTE CO:** Nearman Creek Power Plant, T10S, R24E. 17 September 1991. Daniel Murrow (KU 218787).

SLIDER (*Trachemys scripta*)

ELLIS CO: Sec. 25, T15S, R19W. 28 April 1991. Travis W. Taggart (KU 218901); Sec. 13, T11S, R17W. 26 May 1991. Mark VanDoren (KU 218791). **MITCHELL CO:** Sec. 18, T7S, R10W. 8 June 1991. Travis W. Taggart (KU 218903). **OSBORNE CO:** Sec. 25, T7S, R11W. 8 June 1991. Travis W. Taggart (KU 218902). **WYANDOTTE CO:** Nearman Creek Power Plant, T10S, R24E. 17 September 1991. Daniel Murrow (KU 218792).

SMOOTH SOFTSHELL (*Apalone mutica*)

HARVEY CO: Sec. 33, T24S, R1W, Little Arkansas River, 0.5 mi W Sedgwick. 6 August 1991. David Edds, Lenn Shipman & Paul Shipman (KU 218579). **LYON CO:** Sec. 27, T19S, R12E, Cottonwood River, 3 mi E & 2.5 mi

S Emporia. 21 July 1991. David Edds & Linda Fuselier (KU 218580). **OSAGE CO:** Pomona Lake, 0.5 mi NW of N end of dam. 9 June 1991. John Powell & Beverly Downing (KU 218796).

SPINY SOFTSHELL (*Apalone spinifera*)

BARTON CO: Sec. 33, T19S, R13W, Arkansas River, S edge Great Bend on Rt. 281. 8 August 1991. Lenn Shipman & Paul Shipman (KU 218581). **MITCHELL CO:** Sec. 17, T6S, R10W. 8 June 1991. Travis W. Taggart (KU 218900). **PAWNEE CO:** Sec. 4-5, T22S, R16W, Pawnee River, S edge Larned on Rt. 19. 9 August 1991. Lenn Shipman & Paul Shipman (KU 218582).

COLLARED LIZARD (*Crotaphytus collaris*)

CLAY CO: Milford Lake area Sec. 29, T10S, R4E. 3 May 1991. Curtis Schmidt (KU 218753). **MCPHERSON CO:** Sec. 23, T17S, R1W. 5 May 1991. Travis W. Taggart (KU 218857).

TEXAS HORNED LIZARD (*Phrynosoma cornutum*)

KEARNY CO: Sec. 18, T25S, R37W. 7 July 1991. Travis W. Taggart (KU 218859).

PRAIRIE SKINK (*Eumeces septentrionalis*)

TREGO CO: Sec. 1, T11S, R21W. 18 May 1991. Travis W. Taggart (KU 218860).

SLENDER GLASS LIZARD
(*Ophisaurus attenuatus*)

ELLSWORTH CO: Sec. 27, T16S, R7W. 2 June 1991. Travis W. Taggart (KU 218856). **MITCHELL CO:** Sec. 14, T7S, R10W. 8 June 1991. Travis W. Taggart (KU 218855).

PLAINS BLACKHEAD SNAKE (*Tantilla nigriceps*)

WICHITA CO: Sec. 10, T17S, R36W. 6 July 1991. Travis W. Taggart (KU 218882).

RACER (*Coluber constrictor*)

KEARNY CO: Sec. 11, T25S, R38W. 7 July 1991. Travis W. Taggart (KU 218862). **SHERIDAN CO:** Sheridan County State Lake, Sec. 9, T8S, R26W. 26 May 1991. S. L. Collins & J. T. Collins (KU 218762).

COACHWHIP (*Masticophis flagellum*)

GREELEY CO: Sec. 4, T16S, R39W. 4 August 1991. Travis W. Taggart (KU 218872). **NORTON CO:** Sec. 20, T3S, R23W. 18 May 1991. Travis W. Taggart (KU 218871). **RAWLINS CO:** T3S, R35W, Mile Marker 46 on US Rt. 36. 3 September 1991. Kirk Mullen (KU 218767).

CORN SNAKE (*Elaphe guttata*)

CLAY CO: Milford Lake area, Sec. 20, T9S, R4E. 4 May 1991. Mark Van Doren (KU 218763).

RAT SNAKE (*Elaphe obsoleta*)

CLAY CO: Milford Lake area, Sec. 29, T10S, R4E. 3 May 1991. Kelly J. Irwin (KU 218764).

GLOSSY SNAKE (*Arizona elegans*)

GOVE CO: 2.5 mi S & 0.5 mi W Monument Rocks, Secs. 9 & 16, T15S, R31W. 11 June 1991. Stanley Roth (KU 218760). **GRANT CO:** Sec. 26, T30S, R37W. 14 September 1991. Travis W. Taggart (KU 218861).

GOPHER SNAKE (*Pituophis catenifer*)

SHERIDAN CO: Sheridan County State Lake, Sec. 16, T8S, R26W. 26 May 1991. S. L. Collins & J. T. Collins (KU 218770).

COMMON KINGSNAKE (*Lampropeltis getula*)

HAMILTON CO: below Hamilton County State Lake, Sec. 28, T23S, R41W. 7 July 1991. Travis W. Taggart (KU 218867). **MORTON CO:** Cimarron National Grasslands, SE 1/4 Sec. 20, T34S, R43W. 12 May 1991. Robert L. Ball (KU 218810). **NORTON CO:** Sec. 20, T3S, R23W. 18 May 1991. Travis W. Taggart (KU 218868).

MILK SNAKE (*Lampropeltis triangulum*)

HAMILTON CO: Sec. 28, T23S, R41W. 7 July 1991. Travis W. Taggart (KU 218870). **NESS CO:** Sec. 12, T19S, R22W. 28 April 1991. Lance Good & Gregory Mills (KU 218766).

WESTERN RIBBON SNAKE (*Thamnophis proximus*)

MCPHERSON CO: Sec. 23, T17S, R1W. 4 August 1991. Travis W. Taggart (KU 218885). **MITCHELL CO:** Sec. 29, T6S, R10W. 19 May 1991. Travis W. Taggart (KU 218883). **OSBORNE CO:** Sec. 24, T7S, R11W. 8 June

1991. Travis W. Taggart (KU 218884).

COMMON GARTER SNAKE (*Thamnophis sirtalis*)

NORTON CO: Sec. 20, T3S, R23W. 18 May 1991. Travis W. Taggart (KU 218886).

LINED SNAKE (*Tropidoclonion lineatum*)

HAMILTON CO: Sec. 22, T23S, R41W. 7 July 1991. Travis W. Taggart (KU 218887).

BROWN SNAKE (*Storeria dekayi*)

EDWARDS CO: 3 mi S Kinsley. 3 May 1964. E. L. Whitmer (MHP 1563). **MITCHELL CO:** Sec. 29, T6S, R10W. 8 June 1991. Travis W. Taggart (KU 218881).

NORTHERN WATER SNAKE (*Nerodia sipedon*)

MITCHELL CO: Sec. 29, T6S, R10W. 19 May 1991. Travis W. Taggart (KU 218873). **NORTON CO:** Norton County State Lake, Sec. 7, T3S, R23W. 18 May 1991. Travis W. Taggart (KU 218874.).

COTTONMOUTH (*Agkistrodon piscivorus*)

CHEROKEE CO: ca. 1 mi W Missouri border on Ks. Rt. 96 at Spring River, NW 1/4 Sec. 14, T33S, R25E. 14 September 1991. Shane Eckhardt (KU 218677); 1 mi S & 1.5 mi E jct. US Rt 69 & Ks. Rt. 96, Sec. 16 & 21, T33S, R25E. 29 August 1991. Ken Outt (KU 218780).

MASSASAUGA (*Sistrurus catenatus*)

MITCHELL CO: Sec. 17, T7S, R10W. 8 June 1991. Travis W. Taggart (KU 218891). **OSBORNE CO:** Sec. 26, T7S, R11W. 7 June 1991. Travis W. Taggart (KU 218892).

WESTERN RATTLESNAKE (*Crotalus viridis*)

JEWELL CO: Sec. 19, T2S, R8W. 27 July 1991. Travis W. Taggart (KU 218889).

NEW MAXIMUM SIZE RECORDS

SMALLMOUTH SALAMANDER
(*Ambystoma texanum*)

DOUGLAS CO: Lawrence, 0.3 mi S jct. 31st Street & Haskell Avenue. 26 March 1991. Kevin R. Toal (KU 218583). SVL = 92 mm; Total length = 171 mm (6 3/4 inches). Female

EASTERN NARROWMOUTH TOAD
(*Gastrophryne carolinensis*)

CHEROKEE CO: Sec. 11, T33S, R25E. 28 September 1991. T. W. Taggart, K. J. Irwin, S. Eckhardt & J. T. Collins (KU 218746). SVL = 37 mm (1 7/16 inches). Male.

SNAPPING TURTLE (*Chelydra serpentina*)

PAWNEE CO: Sec. 2, T22S, R17W, Pawnee River, low-water bridge S Larned State Hospital. 9 August 1991. Lenn Shipman & Paul Shipman (KU 218569). Carapace length = 375 mm (14 3/4 inches). Male.

FALSE MAP TURTLE
(*Graptemys pseudogeographica*)

MITCHELL CO: Sec. 17, T6S, R10W. 18 May 1991. Travis W. Taggart (KU 218898). Carapace length = 237 mm (9 3/8 inches). Female.

SMOOTH SOFTSHELL (*Apalone mutica*)

OSAGE CO: Pomona Lake, 0.5 mi NW of N end of dam. 9 June 1991. John Powell & Beverly Downing (KU 218796). Carapace length = 285 mm (11 1/4 inches). Female.

WESTERN HOGNOSE SNAKE (*Heterodon nasicus*)

MORTON CO: Cimarron National Grasslands, SW 1/4 Sec. 26, T33S, R41W. 20 May 1991. Robert L. Ball (KU 218806). Total length = 918 mm (36 inches). Female.

COTTONMOUTH (*Agkistrodon piscivorus*)

CHEROKEE CO: ca. 1 mi W Missouri border on Ks. Rt. 96 at Spring River, NW 1/4 Sec. 14, T33S, R25E. 14 September 1991. Shane Eckhardt (KU 218677). Total length = 915 mm (36 inches). Male.

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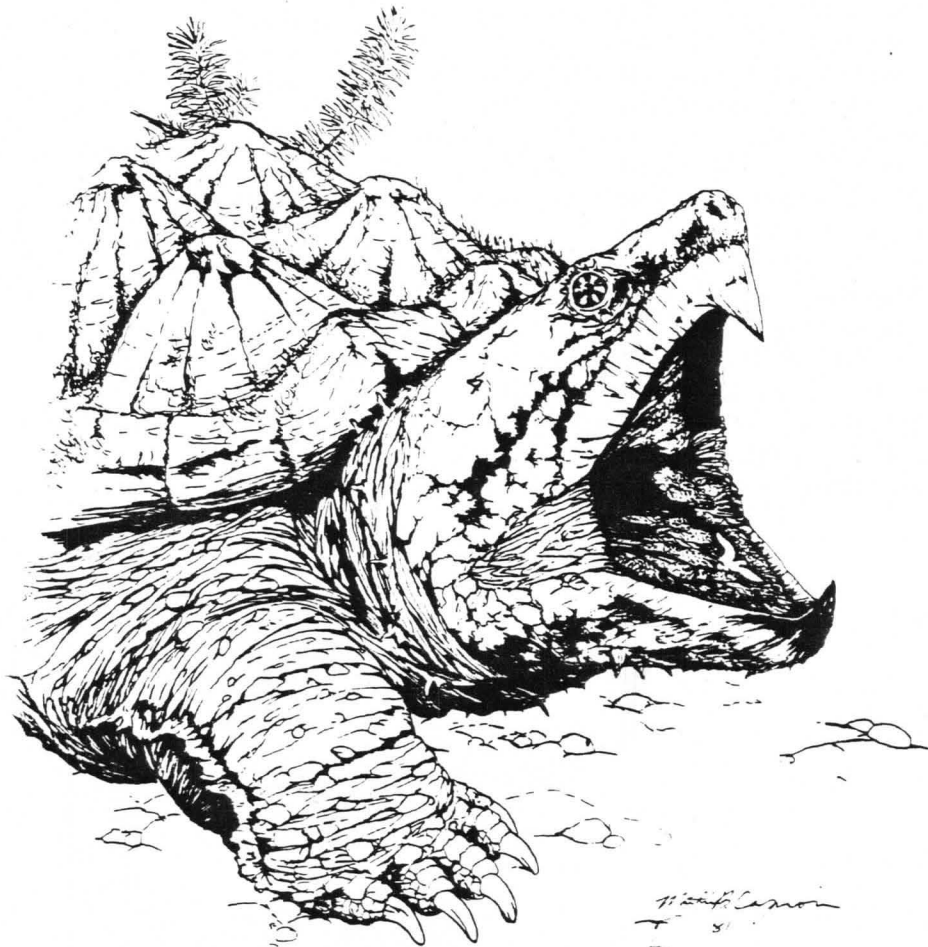
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BOOK REVIEW

Kansas Wildlife by Joseph T. Collins, Suzanne L. Collins, Bob Gress, and Gerald J. Wiens. Clothbound, 128 pp., 8 1/2 X 11 inches, 121 full-color photographs. \$19.95. University Press of Kansas, 2501 West 15th Street, Lawrence, Kansas, 66049.

The day before my birthday, a large package arrived in my box from the University Press of Kansas. I was pleasantly surprised to find a copy of the new *Kansas Wildlife* by Joe and Suzanne Collins, Bob Gress, and Gerald Wiens inside. Not having time for more than a brief glance, I put off a more thorough perusal of the tome until the next day. What a marvelous birthday present this beautiful book is!

The format of the book leads off with a Foreword by John E. Hayes, Jr., Chief Executive Officer of Kansas Power and Light Gas Service, the major benefactor for this book's publication. An Introduction by Joe Collins follows. Herein Collins reveals perhaps the best-kept secret of the state and one every native Kansan with a love for his or her surroundings knows: diversity. Contrary to the widespread notion of a flat sameness, both of habitat and inhabitants, anyone who has spent any amount of time traveling through Kansas will have a keen and heartfelt appreciation for the distinct and subtle differences central to the character of our surroundings and fellow creatures and Collins does a fine job in explicating that fact.

We then come to the meat of book: dozens and dozens of full-color photographs of examples of the state's vertebrate wildlife minus fishes. Each photograph is accompanied by an informative caption by Joe Collins. All four authors are well-known and established wildlife photographers and the photos chosen show the prime of their various skills. I was struck in particular by the following photos: common night hawk, male breeding Northern Prairie Skink, young eastern screech owls, prairie voles, Cooper's hawk (which might be the finest raptor photograph ever), Common Map Turtle, greater prairie chicken, and juvenile Eastern Hognose Snake (which will surprise the herpetologically knowledgeable). However, all the photographs in this tome are the very best efforts of the authors and various

photos will surely strike other readers differently. I have yet to see a finer collection of renderings of native Kansas wildlife.

Although this piece will no doubt be perceived by most as largely a coffee-table type picture book, the captions by Joe Collins are a delight. Although Collins is exclusively an herpetologist, his keen eye for detail and subtlety provides unique insights for the birds and mammals portrayed. His best quotes, however, are reserved for herps. The caption for the Alligator Snapping Turtle contains the following line: "dangling your toes from a drifting boat might best be described as trolling." A quote by the late Archie Carr (a great herpetologist and perhaps an even better writer) on Plains Spadefoots is perfectly apropos: "I like the looks of frogs, and their outlook, and especially the way they get together in wet places on warm nights and sing about sex." I could not agree more. Check out the first two lines on the Western Slender Glass Lizard caption. If you are sucker for puns (unfortunately, I am), you will enjoy it thoroughly.

I have two very minor gripes (call it niggling if you want, but I had to find *something*): the word for the Cooper's hawk's "stalky" wings is "stocky" and the placing of photo credits at the end of the captions gives the impression that the captions were authored by the photographers. All in all, this book belongs in everyone's library, Kansan or not. All four authors are commended for their contributions to a better understanding for our native wildlife, its diversity, and its desperate need for conservation. KPL Gas Service is commended for their good taste in choosing these authors and artists, for underwriting the book to such an extent that such a beautiful book is well within virtually anyone's budget, and for showing a remarkable corporate attitude in promoting the interests of conservation, knowledge, and understanding.

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