

December, 1987

ANNOUNCEMENTS

"While the Deer and the Ant Elope, Play"

A new exhibit, "Kansas Wildlife: Who's At Home on the Range?" opened at the KU Museum of Natural History in Lawrence on 30 November, and will continue until 19 June 1988. The exhibit describes the changes in the variety and quality of wildlife in Kansas from the nineteenth century to the present.

Wildlife populations naturally increase when food and habitat are abundant and decrease when resources are limited or disease occurs. Increasing human populations affect the abundance of wildlife by competing for habitat and by uncontrolled harvest.

Bison, deer, beaver, turkeys, other well-known animals, and a twenty-minute video tape are used in the exhibit to illustrate changes in wildlife due to the attitudes of Native Americans, immigrant settlers, and twentieth century inhabitants of Kansas. Some animals, once common, are no longer found in the state. Other wildlife populations have increased from a time when their continued existence was in doubt.

Human attitudes, now reflected in state and federal laws controlling harvest of wildlife, in land use practices, and in other public and private environmental activities continue to affect Kansas wildlife. The current emphasis is on management of wildlife resources for multiple use by humans.

The exhibit was produced by the KU Museum of Natural History staff, with the cooperation of the Kansas Department of Wildlife and Parks, and the Kansas State Historical Society, and other agencies.

(From Christine A. Winner, Public Relations Assistant, Museum of Natural History, University of Kansas)

KHS Member Receives Wildlife Award

KHS member Marvin Schwilling, the threatened and endangered species project leader for the Kansas Department of Wildlife and Parks, was recently honored by the Central Mountain and Plains Section of The Wildlife Society. The award recognizes his contributions to the wildlife profession.

In addition to his work with the nongame program, Schwilling has been the resident biologist at Cheyenne Bottoms Wildlife Management Area and Marais des Cygnes Wildlife Management Area, as well as the waterfowl project leader.

(Taken from Kansas Nongame Notes vol.5, number 5)

On the Beach

Volunteers are again being requested for the green sea turtle tagging project at Tortuguero, Costa Rica. Shifts run for eight or 15 days, with departures between 2 July and 3 September. This project has been going for 30 years, and is currently under the auspices of the Caribbean Conservation Corporation. All inclusive price from Miami is \$1148 for eight days, \$1488 for 15 days. For further information, contact:

Ray E. Ashton
Massachusetts Audubon Society
Lincoln, Massachusetts 01773
(617) 259-9500
(904) 332-5345

HEINZ--Herpetological Information Center

The Herpetological Information Center from West Germany has recently contacted KHS, sending a copy of their journal, Sauria, plus three of their "Amphibian and Reptile Filing Systems" leaflets. Both have beautiful color photos of reptiles and amphibians, but of course, all the text is in German. No subscription price was indicated, but if you are interested in subscribing, contact:

Hans-Dieter Philippen
Kelsterbacherstr. 24
D-5138 Heinsberg - Grebben
West Germany

Tune That Name

The United States Fish and Wildlife Service has recently released the first copies of their new "Checklist of Vertebrates of the United States, the U.S. Territories, and Canada" (Resource Publication No. 166). It's 79 pages give both scientific and common names of 226 species of amphibians, 396 reptiles, 1100 birds, and 467 mammals. Obviously, any list of this type will have names in it which are controversial, so F&W is already planning to keep the list up-to-date in a computerized form.

Anyone who has ever tried to figure out what the scientific name is for an animal they know only by common name (or vice versa) will immediately understand why such a list as this one is needed. This will be an especially useful reference for public and school libraries to have on hand. Ask your friendly local librarian to order it!

No price was indicated on the copy I received, but it may be purchased from the Publications Unit, US Fish and Wildlife Service, Matomic Building, Room 148, Washington, D.C. 20240; or from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

The Forest as the Trees Wood Have It

The 1988 Kansas Forest Resources Conference will be held in wooded Topeka, Kansas on 24 March 1988, at the Ramada Inn Downtown. This year, the conference will be co-sponsored by the Kansas Wildlife Heritage Month organization. Kansas Wildlife Heritage Day is being celebrated on 23 March at the State Capital.

This year, the theme of the conference will be **Forests: More Than Just Trees**, "and it should be of interest to anyone who loves trees, wildlife or recreation." Speakers will include Bob Meinen (Secretary of Kansas Wildlife and Parks) addressing the recent merger of Fish & Game and the Park Authority; Ed Koehler (Pittsburg State University) on a program training students in the use of wood in manufacturing; Jerry Bratton (Great Plains Forestry Specialist) on managing timber for wildlife habitat; Mark Lapping (Kansas State University) on economic development as it relates to environmental issues; and George Osborne (Lawrence City Forester) who will discuss community forestry projects and town environments.

For further details, contact:

Pat Petty
2610 Chaflin Road
Manhattan, Kansas 66502

KHS BUSINESS

1987 Annual Meeting of the KHS Held in Emporia

The 1987 annual meeting of the Kansas Herpetological Society took place in Emporia, Kansas on 14-15 November 1987. Olin Karch, KHS President, welcomed the group and called the meeting to order at 9:15 a.m. in room 72 of the Science Building on the campus of Emporia State University.

The first speaker was Robert F. Clarke (Emporia), on Sand Lizards. Dr. Clarke illustrated his talk with many excellent color slides of the lizards and their habitats. He also spent some time talking about how habitat for some of the reptiles has been altered in different parts of the country.

A short break was held next, during which a group photograph was taken of the 60 people in attendance at that time.

Bob Rose (Emporia) gave a very interesting program dealing with zoos around the world. He talked about the types of animals and plants that were popular at different zoos and how people in different countries used their zoos. He also used a series of beautiful color slides to illustrate his talk.

The lunch break was held between 11:45 a.m. and 1:00 p.m. Members and their friends scattered over Emporia to find the best eating places.

The first speaker after lunch was Joseph T. Collins (Lawrence). He discussed the upcoming third edition of the Peterson Field Guide to Amphibians and Reptiles of the Eastern and Central United States that he is co-authoring with Roger Conant. Collins

explained how the field guide would be a collection of information about all of the species known to occur in the area covered by the guide. He also gave much credit to both professional and amateur herpetologists from around the country for their help with the collection of records and other valued input.

The KHS Business Meeting followed, with the election of James Marlett of Wichita as the new KHS President-Elect. Marlett will serve as President during 1989. Jeffrey Whipple of Lawrence will serve as the 1988 President, with Olin Karch of Emporia serving as the 1988 Past-President. Larry Miller of Caldwell was re-elected as the KHS Secretary/Treasurer.

Jack Shumard of Wichita suggested making the ornate box turtle the official logo of the Kansas Herpetological Society. There was a short discussion and then it was moved by Jeffrey Whipple and seconded by Joseph Collins to make the ornate box turtle the official logo. The motion passed.

A treasurer's report was given by Larry Miller. KHS had a total of \$1243.53 on deposit at the Caldwell State Bank in Caldwell, Kansas, as of 12 November 1987. All bills had been paid to that date.

Members discussed the possibility of having two or more field trips per year. Many views were given, but no formal decision was made. The KHS officers will plan future meetings and publish information in the KHS Newsletter. An attempt will be made to get the dates in the newsletter as far in advance of the meetings as possible.

Jack Shumard reported that the KHS would have a display at the annual "Sports, Boat and Travel Show" to be held in Wichita 17-21 February 1988. Among those that will work at the booth will be J.T. Collins, Larry Miller, Eric Rundquist, Marty Capron, Kirt Mullen, Dan Schupp, and Jack Shumard.

Other topics discussed included the herpetological display set up at the Sumner County Fair in Caldwell last August where over 1000 people attended and had the chance to observe a number of live amphibians and reptiles close-up.

Cleda Baker of Caldwell was commended for her continued efforts to honor the state reptile, most recently by making special ornate box turtle belt buckles and hats. Larry Miller reported that Cleda Baker planned to sell belt buckle number one by sealed bid to the highest bidder. Also, Mrs. Baker wanted to inform the KHS that there would only be 250 of the buckles made. Interested persons should contact her as soon as possible at Cleda's Etc. Shop, 3 South Main, Caldwell, Kansas 67022.

Miller also stated that Mrs. Baker had told him that all money made over her cost on the belt buckle number one would be used to put up a sign or signs along the highway entering Caldwell, announcing that the city is "The Ornate Box Turtle Capital of the World."

Following the business meeting, Marvin Schwilling (Emporia) gave an informative update on the Kansas Nongame Wildlife Program along with a revised list of the endangered and threatened amphibians and reptiles of Kansas.

Martin Capron (Oxford) then gave a talk on turtle studies he has conducted in southeast Kansas. Capron told of trapping methods that had been used to attempt to capture a specimen of

the alligator snapping turtle. He also showed color slides and talked about other species of turtles collected and observed during his studies.

The final event of the afternoon was a tour of the Emporia State University amphibian and reptile facilities conducted by Olin Karch.

The evening KHS Social started at 6:30 p.m. at the Ramada Inn with free refreshments for all attending. The annual Auction got underway about 7:30 p.m., with Joseph T. Collins presiding. Doanted items such as tapes of Kansas frog calls, photographs, bumper stickers, books, hats and art relating to herpetology were auctioned to bring in a total of \$465.00 for the KHS. The popular event was well attended and, as always, everyone there seemed to have lots of fun supporting their society.

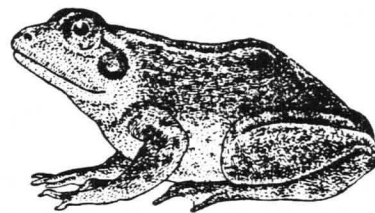
As the social and auction ended, KHS members scattered to look for the Emporia nightlife, visit and tell stories until the early hours of the morning, and in some extreme cases, catch up on sleep.

The first speaker on Sunday morning was Larry Miller (Caldwell). Miller (with the aid of J.T. Collins) talked about research in the spring of 1986 in the Cimmaron National Grasslands, located in the southwestern corner of Kansas. He showed exquisite color slides of the habitat and several of the native animals found in this unique area. He and Collins also told of some of their more unusual experiences, such as visiting with Kansas Governor Mike Hayden while collecting frogs at Middle Spring (near Elkhart).

The final speaker was Don Coldsmith (Emporia), speaking on the medical treatment of venomous bites. The subject of being bitten by a venomous animal such as a poisonous snake is always one that comes up at herpetological meetings and on field trips. New information continues to become available daily, and KHS members are always looking for the truth about venomous animals.

The 1987 meeting was a success. KHS members and their friends attended from many parts of Kansas. The KHS gained several new members at the meeting, and everyone is looking forward to seeing these new faces at future field trips and meetings. Everyone is encouraged to remember that the Kansas Herpetological Society is their society. Every member's suggestions and comments are always welcome, and every member is welcome to attend meetings, field trips, and write articles for the KHS Newsletter. Send your materials and comments to any of the KHS officers.

--Larry Miller
KHS Secretary/Treasurer
524 North Osage
Caldwell, Kansas 67022



KHS BRINGS YOU NEWS OF THE WORLD

The Bite of the Turtle

Snaking down from a Himalayan ice cave to the Bay of Bengal, the 1,560-mile-long river is called Ganga Ma (Mother Ganges), the holiest of all Hindu streams. Every pious Hindu wishes to be cremated on the Ganges' banks and to bequeath his ashes to her waters.

But piety has led to pollution. Not every family can afford enough firewood for a complete cremation, so thousands of half-charred corpses are dumped into the river each year. "When these bodies decompose," says D. Chakaraborti of the Central Ganges Authority, "they pollute the water to a dangerous level."

The solution: carnivorous softshell turtles. To cleanse the holy river, the state government of Uttar Pradesh is raising hundreds of the reptiles. In mid-1988 they will be released into a twelve-mile stretch of the Ganges. There they are expected to feed on the dead.

Numerous in the area until man destroyed their nesting sites, the turtles will help re-establish the ecological cycle. Officials say the creatures pose no danger to live users of the Ganges, though the project is not without risks. "Poaching will be our biggest problem," says Rajendra Prakash Sharma, chief wildlife warden of Uttar Pradesh. "Turtle meat is considered a delicacy."

--Time Magazine, 12 October 1988
(submitted by Larry Miller, Caldwell)

Long-living Prairie Rattler Gets an Appropriate Name

HILLSBORO--An honored longtime resident of the Tabor College campus in central Kansas now has a name. It's not original, but it is appropriate for what is billed as the oldest prairie rattlesnake in captivity.

The winning name, announced Friday in the contest run by the college, is "Methuselah."

But the 30-year-old prairie rattler is not likely to live as long as the 900-plus years of his Biblical namesake. Tabor spokesman Paul Sager said biologists found that the previous record lifespan for a prairie rattler was 19 years.

The winning name was submitted by Michelle Becker, a sophomore from Salem, Ore.

--The Wichita Eagle-Beacon, 31 October 1987
(submitted by Jack L. Shumard, Wichita)

Tiny Tunnels to Help City's Salamanders

AMHERST, MASS. Work began Tuesday to install tiny tunnels on a street to protect migrating salamanders from cars.

Next comes trying to teach the salamanders new tricks.

Watching the installation on Henry Street was local environmentalist Richard Winston, who last year persuaded selectmen to close the street from dawn to dusk to protect salamanders, during their annual migration to ponds west of the road, which begins after the first warm spring rain.

The tunnels, one and a half feet high and eight inches wide, are grated on top.

"The purpose is to provide ambient light," Winston said.

"Otherwise, the salamanders won't go in there."

Even with the light, Winston said the salamanders might be reluctant to use the tunnels.

Winston said the second phase of the project will be to install "drift fencing" that will block the salamanders from crossing the road and guide them into tunnels.

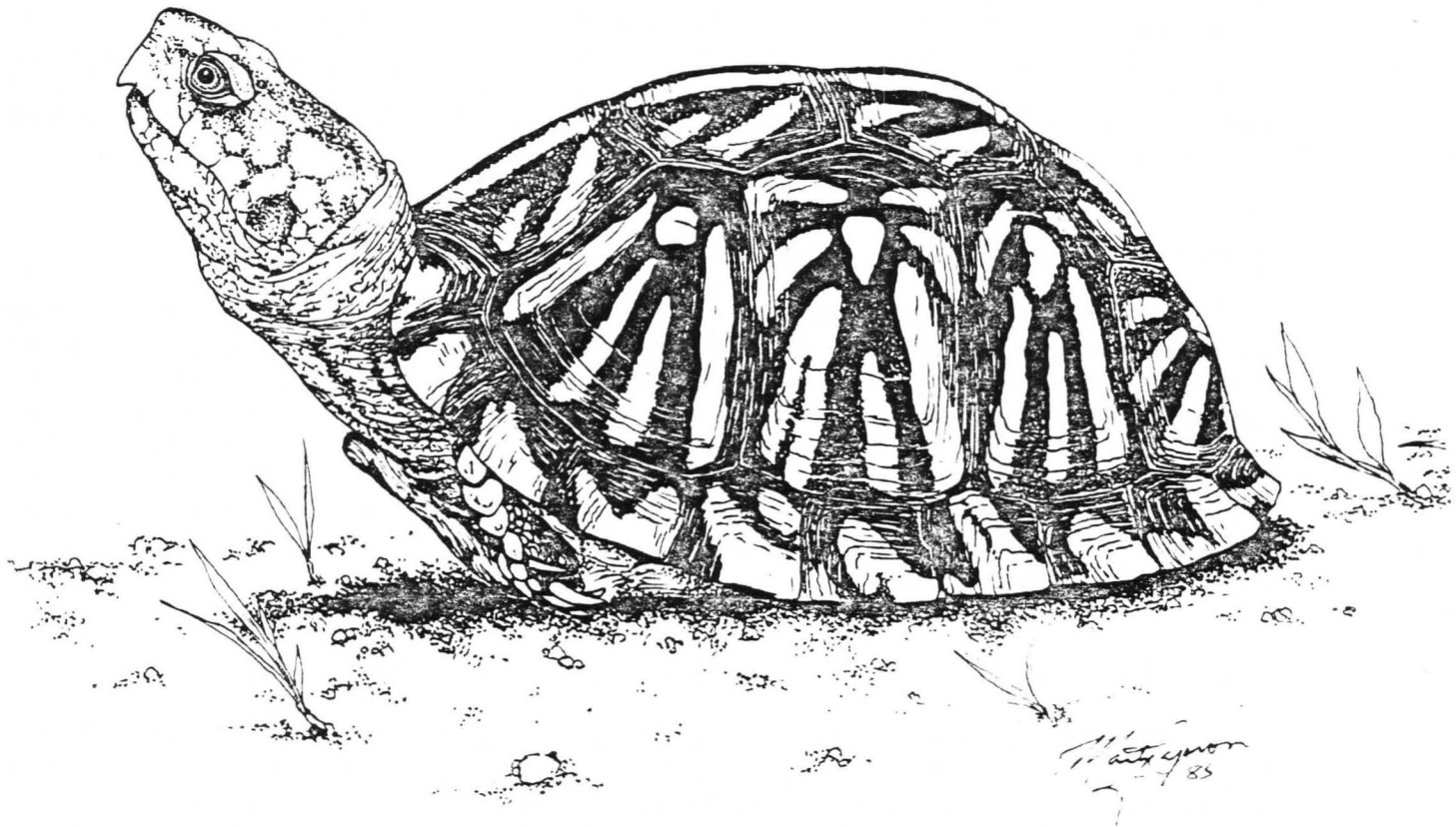
"We still don't know what the salamanders will do once they come up against the fencing. We'll be playing with the right angle until we get it right."

"But the final test will be in the first warm rain next spring."

The tunnels, donated by an Ohio company, should be installed by Wednesday, public works officials said.

--Lawrence Journal-World

(submitted by Irving Street, Lawrence)



All the Zoos That's Fit to Print

The following news items are all from the American Association of Zoological Parks and Aquariums Newsletter, and were supplied by Ruth Gennrich (Lawrence).

From AAZPZ Newsletter 28(11), November 1987:

Fort Worth Zoo Records Notable Reptile Breedings

Nine African bush vipers (Atheris squamiger) were hatched at the Fort Worth Zoological Park on 7 May. The adults were wild-caught in Zaire and acquired in June 1986. The pair was introduced on 4 November 1986, and copulation was observed within one hour. Gestation time was about six months. At birth, the offspring exhibited two basic color morphs: five were green resembling the female and four were orange/yellow like the male. All had accepted pink mice within two weeks. Although the West African bush viper (A. chlorechis) has reproduced several times successfully in at least one U.S. zoo, this is believed to be the first captive breeding for this species.

From 3-5 September, nine leaf-nosed vipers (Eristicophis macmahoni) hatched from ten eggs laid on 16 July. The parents had been maintained at the zoo since January 1984, but no mating activity was ever observed. In an effort to induce breeding, the animals were temperature cycled from 27 November 1986 to 12 March 1987. They were separated in mid-March and resumed normal feeding and activity patterns. They were placed together from 23 May to 4 June and, though unobserved, copulation is believed to have occurred during this time. This is also thought to be a first captive breeding. Although not rare in the wild, neither species has traditionally done well in captivity.

Broad-Snouted Caimans Hatch at The Bronx Zoo

Eighteen broad-snouted caimans recently hatched from two clutches of eggs at the New York Zoological Park. The parents of these caimans were hatched at the Atagawa Tropical Gardens in Japan in August 1981, making this the first time a second generation of crocodylian has been bred in a zoo. This also represents the sixth species of endangered crocodylians bred at the zoo in the past seven years. The other five species are the Chinese alligator, Malayan false gharial, Siamese crocodile, Cuban crocodile and Yacare caiman.

Ecuadorian Spiny Lizards Hatch at the Santa Fe Teaching Zoo

On 24 October 1986, the Santa Fe Teaching Zoo received on loan 1/4 Echinosaura horrida horrida which had been recently collected in Pichincha Province, Ecuador. This group has produced over 30 eggs, deposited in two-egg clutches, with a fertility rate of 61%. Fifty-eight percent of the embryos developed to

full term but died in the egg, failing to pip. This condition has limited successful hatching to 10%. The problem appears to be related to the toughness of the egg shell and may require environmental degradation of the shell to allow the embryos to pip and subsequently hatch. It is believed that the hatchlings are the first of this monotypic genus to be reproduced in captivity.

From AAZPZ Newsletter 28(12), December 1987:

Scholarship Available

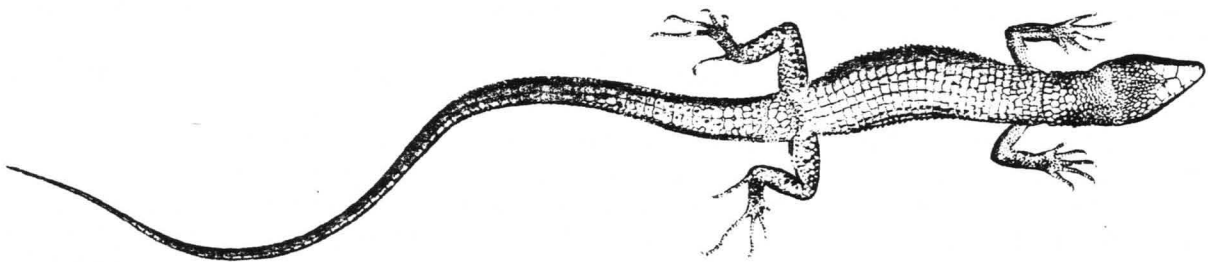
The Central Florida Herpetological Society is offering a full scholarship in the Biological Parks Training Program at the Santa Fe Community College. The deadline for the receipt of applications is 15 April 1988. A detailed brochure and application may be obtained from the Central Florida Herpetological Society, P.O. Box 3277, Winter Haven, FL 33881.

Reptile Encounter Opens at the Audubon Zoo

The Audubon Park and Zoological Garden, New Orleans, Louisiana, opened its new Reptile Encounter on 5 September. This new major herpetological facility comprises 73 reptile and amphibian exhibits containing 300 specimens of 110 species. In order to simulate natural environments, the climates in the exhibits are computer controlled.

Galapagos Tortoises Hatch at the Phoenix Zoo

Four Galapagos tortoises were hatched at the Phoenix Zoo between 11 September and 2 October. The hatchlings were a product of two separate clutches, numbering 13 and 12 eggs, laid on 10 April and 11 May respectively. One tortoise hatched from the first clutch after incubating 156 days, and three hatched from the second clutch after incubating between 137 and 144 days. The eggs were incubated at 20-30 °C in the same sandy substrate in which they were laid. Weights ranged from 66 to 77.6 grams. This is the first successful reproduction at the zoo since acquiring the pair in 1962. The Phoenix Zoo is one of five institutions currently breeding Galapagos tortoises.



FEATURE ARTICLES

The Egg and Eye

by

John C. Fraser
Fredonia, Kansas

On 4 May 1986, Mike Puckett (local herper and longtime friend) and I spent part of a warm spring day observing and collecting snakes around Perry Lake in Jefferson County, Kansas. We did well, finding quite an assortment of reptiles, though we concentrated on areas that few herpers pillage. Perry Lake has sustained heavy habitat destruction from people searching for milksnakes and timber rattlesnakes.

Noon had just passed. As we were driving along a road on the east side of the lake, we both noticed a sheet of thick cardboard laying against the slope of a ditch, with a good protective layer of grass all around its perimeter. Mike jumped out and ran over and lifted it. To our delight, we found a three-foot prairie kingsnake (Lampropeltis calligaster calligaster), obviously a gravid female.

I brought the snake home and put her in a cage in my snake house. On 1 June, she deposited eight apparently fertile eggs on the cage floor. I immediately transferred these eggs to a home-made reptile egg incubator which I already had in use for eggs from different kingsnakes and milksnakes.

The incubator was maintained with an air temperature in and around it of 78-82° F. On 24 July (54 days later), I noticed the first heads protruding from some of the prairie kingsnake eggs. I knew from past experience that this clutch would be out of the eggs by the next day. That same evening, while I was working in the snake house, I noted that some of the young were already starting to emerge from their eggs. While I was feeding snakes, my friend Hayes Puckett dropped by and looked in the incubator. He noticed something that I had either overlooked, or had just happened.

"John," he said, "what's the deal with one of these eggs? There are two heads sticking out of it."

"What?" I responded, and immediately ran over to confirm his observation. I lifted the lid off the incubator, and we both stared in profound amusement as the heads of two prairie kingsnakes were protruding approximately a half-inch apart from each other--from the same egg! Hayes kept asking me, "Do you think its a two-headed snake?" but all I could say was "I don't know, I don't know...".

We finally calmed down and decided that we really wouldn't know--until the next day.

The next day brought an answer to the question. By the evening of 25 July, all eight eggs had hatched, with a total of nine prairie kingsnakes. Seven of the hatchlings were normal in length and weight, while two of them were proportionally just half the size of their siblings. The weights of the hatchlings I

recorded that evening were:

9.8 grams, male
10.0 grams, male
10.5 grams, male
11.5 grams, male
11.6 grams, male
4.8 grams, female (one of two in the egg)
6.3 grams, female (one of two in the egg)
10.5 grams, female
11.3 grams, female

The normal sized hatchlings ranged in length from 7 to 9 inches, while the two from the same egg were 4.25 and 5.75 inches long.

This was a very interesting event to be able to observe and record. How often this happens in the reptile world would be quite interesting to know.

Taking the Heat The Mojave Tests the Limits of Lizards and Women

by
Marny Ashburne
Earthwatch

I woke Monday, June 1, in the last seat of a Greyhound bus headed away from Los Angeles into the Mojave Desert. My instructions were to meet Dick Tracy in Barstow, California, and follow him to the Amboy Crater for a week of intense investigations. Was I ready for this?

At the rendezvous Dick Tracy, our leader, introduced himself. In his forties, with graying hair, a beard, dark glasses, and a straw hat pulled low over his eyes, he didn't look anything like the pictures of him. Good thing, I suppose; a P.I. shouldn't be too recognizable. His partner was Linda "Lynn" Zimmerman, just shy of 30; she was the quiet type, but I got the impression she could handle herself.

We stepped out of the air-conditioned bus terminal into a blast furnace. "This is nothing," said Dick. "Wait until we get to the desert." Across the street in Mr. G's Sandwich Shop we sat near the windows drinking sodas and watched people get off the buses. I figured the other team members would be easy to spot; there must be a type who'd camp in the desert for two weeks. I was wrong.

Val Brown was a herpetology fanatic and free spirit from Chicago. This was the first leg of a journey that would take her to San Francisco, Mexico City, and finally Texas for a second EARTHWATCH investigation--tortoises. Provided she survived this one. Peggy Chambers, a veteran camper from Philly, arrived next. She didn't look the type, but there she was, ready for anything. Maybe more so than the rest of us.

Katarzyna "Kashka" Kubzdela, our Polish contact, didn't show up on the Arizona bus. Trouble so soon? After a few phone calls, Dick discovered she'd left a message at the special number: "Arriving on 10 p.m. bus." Dick would come back for her later.

We came to investigate the chuckwalla (Sauromalus obesus, "bad fat lizard," if you want to get technical). Also known as the smiling lizard, chuckwallas can be as long as 16 inches, including tail. Those in the Mojave are smaller, maybe a foot long. A plant-eating lizard, or herbivorous ectotherm to be exact, it is one of the few such lizards found in North America. Chucks digest the plants they eat in part by fermentation, stills bubbling away in their potbellies. Cellulose is hard to digest, and fermentation aided by the desert heat helps do the work for them. The hotter chucks get, the faster they bubble. The area near Amboy, where we were headed, is seasonally the hottest and most extreme of their entire range--yet here they thrive. Why?

That's what Dick and Lynn wanted to know. They wanted to find out how animals adapt to harsh environments. Chuckwallas are an extreme example. Dick and Lynn were particularly interested in what chuckwallas eat. The local fare consists of creosote bushes, ambrosia shrubs, and grass--all of it dried to a crisp by summer--and nothing to drink. The chucks had already lost 20 percent of their weight since early spring, Dick reported. What would happen to them by fall? Lynn promised us more details when everybody had arrived.

I came to the desert with few qualifications. I hadn't camped since Girls Scouts; the only desert I'd seen was filled with rabbits bounding away in slow motion from the jaws of hungry coyotes, accompanied by a symphony orchestra and narrator Orson Welles. The hottest temperature I'd endured was 95 muggy degrees in Boston. But I'd seen enough pictures, watched enough movies. It was time for the real thing: I wanted to experience the desert.

After a quick dinner Dick went back to wait for Kashka's bus, and the rest of us headed towards camp 80 miles away on the edge of the Twenty-nine Palms Marine Corps Base. For an hour and a half we drove through desert. Creosote bushes dotted the flat sand and hills loomed in the distance; it looked fake somehow, like a matte painting from a movie. The sun was setting behind us and a hot wind blew in through the windows, evaporating the sweat from the front of my body but not from my back. I could feel myself drip. "It's much cooler now," shouted Lynn over the roar of the engine and wind. I wasn't convinced.

By the time we neared Amboy on Old Route 66 it was too dark to see more than the huge dark fingers of lava rock spread across the sand. At just the right moment Lynn turned the Subaru off the road between two lava ridges. An old oil filter marked the spot. Around the bend were tents. Home sweet home.

We heard rumbling in the distance, but it wasn't thunder. A flare drifting to the horizon told us how close the Marines were. I was not comforted. We unloaded supplies by lantern light and Lynn gave us a quick tour of "the crack"--our loo--hidden in a crevice of rock. It was too dark for any other sightseeing--just

the important stuff. Dick and Kashka arrived around midnight. We made brief introductions and went to bed.

At five the next morning, I woke to the sound of a train clacking by. Six engines pulled a mile of Santa Fe flatcars. Judy Garland songs ran through my head. I could see lots of sand and rock. And sky. The air was cool. This was going to be a piece of cake, I thought. Over flat Taster's Choice and doughnuts we got the promised details from Dick and Lynn--our mission.

We had three jobs. First, surveillance: capturing lizards, attaching temperature-sensitive radio transmitters, releasing them, and monitoring their temperatures throughout the day. Second was monitoring the environment in a little weather station. The third was survival. Ours. At the time I didn't realize it would be such a big job. Chuckwallas had evolved the capacity to live at Amboy over thousands of years. We came here by planes and buses over the span of a few hours. How would we adapt?

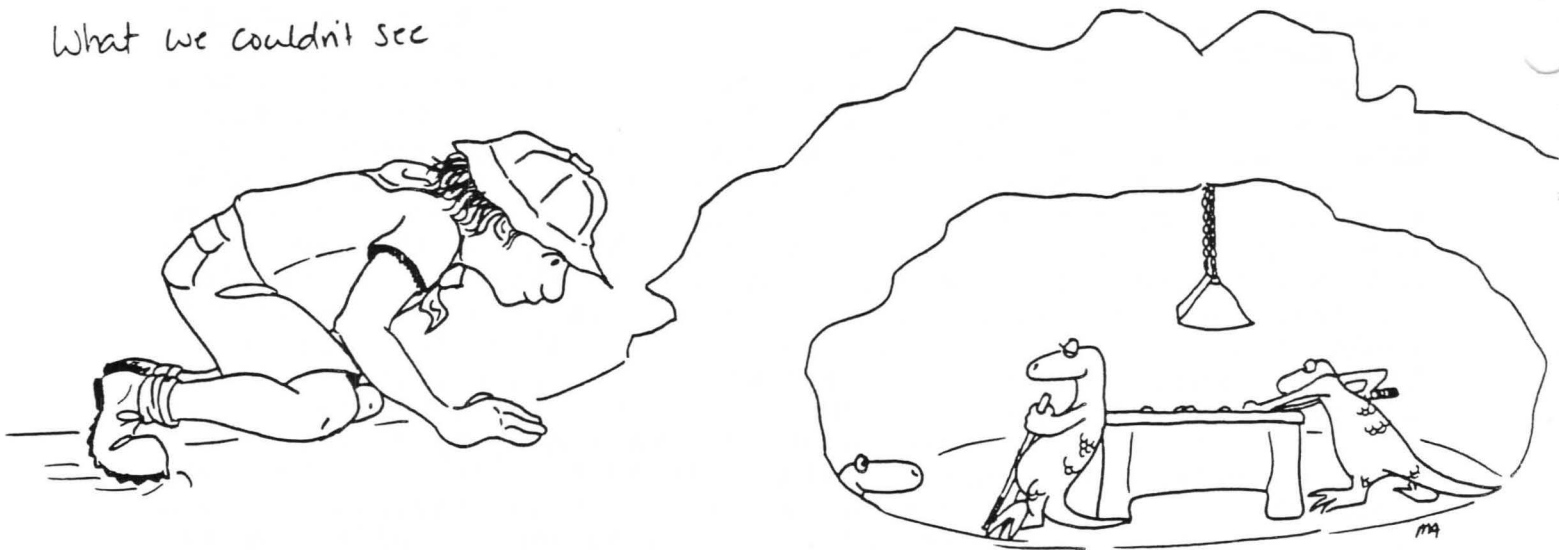
We got a tour of the weather station: pyranometer and microvoltmeter (to measure radiant energy from the sun and sky), anemometer, bolometer (to measure black body radiation), and thermometer--the only "ometer" I recognized--and finally, "operator estimates" of cloud cover. (It seemed ridiculous with all the technical paraphernalia to look at the sky and announce, "I guess there's about 33 percent cloud cover, or maybe 37.") We took turns taking these measurements and reveled in declaring each new record high "hot spot." The air varied from 84°F at night to around 112°F at midday. The hot spots (sand with no shade) could reach 121°F--we didn't do much barefoot walking.

Daily we set out to find two lizards, Mongo and Nonstudly, who already sported transmitters. Studly preceded Nonstudly, hence the name. "That's not Studly" must have been his moniker for some time before capture. Only male lizards were fitted with transmitters. It wasn't a macho or sexist thing--the females just weren't big enough to carry them. A dab of glue and a custom-tailored vest of duck tape held the transmitter secure to the lizards belly--and out of the sun.

Before heading into the desert we suited up in hats, T-shirts, shorts, and sturdy shoes, then lathered on the sunblock--24. Drinking water was essential. Even if we didn't feel like it, Dick warned us, we were always to be downing something--Gatorade, water, or Diet Slice.

Equipped with walkie-talkies, radios, and clipboards, we strode into the burning sands in search of chuckwallas. Being cold-blooded, they had to find a place in the sun to rev up, so Mongo and Nonstudly were almost always up and moving before we were. Finding lizards was not hard. Finding the right ones was a bit more difficult and often required the help of the radio. Once in range and tuned to the right frequency, we would hear a steady, repeating beep. When we located a lizard we took turns watching him from a chair and recording the beep frequency, which didn't really tell the exact temperature of the animal but gave us a rough idea: if the beeps speeded up, he was getting hotter. We'd listen, count 50 beeps against a stopwatch, then double that time. Only after Lynn had plugged those numbers into a formula and plotted them on a graph could we tell how hot these guys were in relation to other things, like the air or rock temperature.

What we couldn't see



At 110° F sitting in a chair staring at rocks sounded pretty good. We sat in pairs the first day. Peggy and I, Val and Kashka--jugs of ice water between us. (Water without ice was too hot to drink.) "You should drink all that water in a couple of hours," Dick advised us. We should also have to pee regularly--proof the kidneys were working. By noon Mongo and Nonstudy settled down in a crevice for the afternoon to wait out the sun. So did we, only we sat under a tarp, noted each other's symptoms of dehydration, and made small talk. The crevices offered the chucks shade but no relief from the heat. In fact, the rocks absorbed and radiated so much heat that the chucks must have baked daily. I wondered that their insides didn't cook.

In fact, they didn't. Dick and Lynn were finding out that during the summer chucks were perfect "homotherms." Like humans, they were able stabilize their temperature at 37°C (Tracy always used the Celsius scale)--our temperature--except they did it by crawling in and out of boulder crevices. At mid-day in June, when the rock's surface temperature reached a scorching 157°F, or 70°C, the deepest crevices stayed at about 96-100°F. (During early spring nights, however, rock crevices and chucks dropped to a cool 50°F.) At night we still felt the heat pouring out of those rocks.

The first day in the full desert heat was the toughest. The air temperature topped out at 114°F. Not hot enough, however, to fry an egg. I know. We tried. It just shriveled and dried up. Evaporated. Back East I'd have been soaking wet and having trouble breathing; here in the desert I felt fine--as long as I didn't move. Sitting in a chair under the full sun with the radio kerchunking out Mongo's temperature like a metronome, I thought, "This isn't so bad after all." But why was my head pounding? Sweat evaporated so fast you didn't realize how much you'd lost until your shirt grew stiff with salt.

Back at camp we ate salty chips, drank sodas, and talked

about the heat. "I was having trouble counting to 50 for the transmitter readings," admitted Kashka. My head still pounded, so I soaked my hair and my hat with water until it began to feel better. Busy nagging the rest of us to drink, Dick didn't keep up with his own body's needs and got charley horses in his legs. We had gotten a crash course in desert survival. It made me realize that taking care of each other was as important as caring for ourselves.

By five o'clock it had cooled off enough to start thinking about showering off the sweat, sand, and sunblock without scalding ourselves. The showers were bags filled with the precious water we imported from nearby Cadiz (pronounced "katie"). After my shower, when the breeze hit and the water evaporated instantly, I was positively chilled. But by the time I walked back to camp, I was hot again. We fought to take the last shower.

The local insect population was either booming or concentrating around our moisture. When we spilled water on the ground, flies came to drink it, and lizards came to eat the flies. The largest camp followers, a couple of sand lizards, had barely half their tails, thanks to carelessly placed boots. It was hard to see these guys--they were well named. Some were so "tame" they allowed us to stroke them. We saw only the tracks of other visitors: sidewinders, beetles, kangaroo rats. Once we watched a jackrabbit meander across the sand near camp. If you've never seen a jackrabbit meander, it's really something. In our own small way we probably upset a delicate balance by bringing in water and garbage, which fed the flies, which fed the lizards. What would happen when we left?

Each lizard carried his transmitter for several days and then it was time to remove the vest. Which meant catching him. Catching a lizard could be easy if he resided in "good rock," and difficult to impossible if he favored "bad rock." Bad rock consisted of deep crevices in the lava. When cornered, chuckwallas wedge themselves into a crevice and gulp air, blowing up like a balloon; they don't give up easily. That's where the three-foot crowbar came in. Lava rock was no match for drop-forged iron. But we weren't interested in knocking apart the whole desert, so Dick spent as much time putting rock back together as he did breaking it apart.

We caught two easily. After beeping several days of data for us, Nonstudly was cooperative about being undressed. Lynn spied "Bob," a camp follower, in good rock and was able to grab him before he wedged himself in too deeply. Though they look like they escaped from a Japanese monster movie, chuckwallas were very tame to handle. They didn't snap, hiss, or do any of the things I expected. Their skin felt like sandpaper, and their pudgy bellies made them quite a handful. The biggest surprise was how hot they felt. Whether swinging from a sling scale or wrapped in tape, they always maintained their dignity by displaying a Cheshire-cat grin. If anything we did actually bothered them, they didn't show it. When released with his new vest, Bob ran all around camp bobbing his head, as if to declare it his territory and us his people.

Absorbed in lizard-catching and picture-taking, I didn't

guzzle enough water on my last day. On the way back to Barstow to help Lynn get ice and groceries before I caught the bus to L.A., I sensed a change. In the store I didn't feel the usual chill from the frozen food section, had trouble remembering the three things I was supposed to buy, and generally was disoriented. I downed two sodas right away, then a third, and even filled my water bottle for the bus ride. It went fast. I still felt odd, and my mouth was dry. It took me two days to recover completely. The others were staying 10 more days. Could I have lasted?

So how do animals adapt? I was left with more questions than answers. The flies at camp made me think about how quickly and dramatically we can alter everybody's environment. I hope we'll never need to know about adapting to something as catastrophic as a nuclear winter. I don't think we'd do too well. Chuckwallas have managed to adapt slowly over thousands of years to a harsh environment. We are experts at creating harsh environments quickly. It's the tortoise and the hare story again: The race may not go to the swiftest. Maybe that's why that jackrabbit was moving so slowly.

Thanks to **Earthwatch Magazine** for providing this story for the KHS Newsletter. Earthwatch Expeditions give people a unique opportunity to both support and participate in scientific research. The following herpetology related programs are active this year:

CHUCKWALLA, Amboy Crater, south central California. Team I, 12-21 March; Team II, 14-23 May; Team III, 23 May - 1 June.
Share of Costs: \$690.

BAJA LIZARDS, San Pedro Martir Island, Gulf of California, Sonora, Mexico. Study of sexual selection in side-blotched lizards with Diana Hews of the University of Texas. Team II, 15-20 April; Team III, 1-15 May; Team IV, 17-31 May.
Share of Costs: \$590.

SAVING THE LEATHERBACK TURTLE, Sandy Point, St. Croix, U.S. Virgin Islands. Eight teams departing between 6 April and 24 June for 10 days each. Share of Costs: \$1,095-1,250.

Earthwatch is a nonprofit corporation. Share costs are tax-deductible and cover all expenses except transportation to and from the field.

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EDITORIAL

KHS member Larry Miller has recently brought to my attention a most disturbing use of the snake as a negative symbol. Routinely, reptiles and amphibians, especially snakes, get more than their share of bad press. Like other KHS members, I spend a lot of time and energy trying to convince otherwise intelligent people that not every snake they see should be murdered on sight. Yet the stereotype of the snake as an evil creature persists. What we don't need is more association of snakes with a negative image.

We are fighting against a deep cultural bias--"Now the serpent," says chapter 3 of Genesis, "was more subtle than any beast of the field," and sure enough, the serpent immediately lies to Eve--and you know the story from there. Books and movies routinely cast snakes in sinister roles. They are portrayed as attacking people without provocation. They are all deadly venomous. Even worse, it is usually harmless snakes that are used in films when the script calls for venomous ones--reinforcing the attitude "who cares since they all look alike." Guilt by association, right? Kill 'em first and ask if they are venomous later.

However, in an age in which human beings are at last realizing that the earth (and life upon it) is their responsibility to care for, and not theirs to exploit any old way they want, we have made a little bit of progress in separating real snakes from the connotations of the snake as a symbol of evil. Imagine the surprise of KHS member Larry Miller, a school teacher and conservationist of many years experience, to receive a pamphlet from the National Child Safety Council titled **MARIJUANA "Snake in the Grass."**

Larry immediately wrote to his school's Principal and the National Child Safety Council:

"I have used the National Child Safety Council publications dealing with drug abuse for a number of years. As you know, I feel very strongly about proper drug education in our schools. However, I also feel just as strongly about providing our children with materials that do not interfere with other educational goals.

"I have spent seventeen years in Caldwell attempting to educate people as to the importance of all wildlife. One of my major goals has been trying to help people get over their fear of snakes...

"The publication...from the National Child Safety Council has some excellent facts about marijuana. However because of the use of a snake as the 'user' I am returning the booklets..."

So just what is Larry so upset about? Here is what: on the cover is a cartoon drawing of a snake wearing pith helmet (with leopard hatband, no less!) examining a Cannibis plant with a magnifying glass held in its tail. The cartoons continue with many other animals shocked as the snake becomes involved with

marijuana. A wise old owl lectures on the evils of drug use. The cute little bunny, chipmunk, and fawn, of course, pay much closer attention than the snake. In the classroom, even the coyote seated in front of the snake is apparently listening to the teacher while the snake is totally occupied with drugs. A cute dog, sheep and bunny are appalled at the snake's behavior in a movie theater. Eventually, the snake ignores the warning of a buzzard that there is "trouble just ahead," and is about to be run over by rampaging water buffalo as it tries to drive in traffic while stoned.

It is not my purpose here to comment on the text or informational content of this pamphlet, but rather, on the selection of a snake as the out-of-control drug abuser. I am puzzled as to why animals are used at all in this pamphlet. Drug use is a human problem, not an animal problem. Wouldn't the age group this pamphlet is targeted for (elementary school) surely be just as receptive to cartoon people as cartoon animals?

What these drawings are communicating is that warm-blooded is good, cold-blooded is bad. Cute, fuzzy, warm animals have made the right decisions, while the snake is bad, a danger to others, evil. This reinforces the very misconceptions about reptiles most KHS members are fighting hard to overcome. It's okay to run over a snake on the highway because it might bite someone, right? Yet, does anyone ever try to run over a skunk because it might be rabid? How about someone swerving to hit a deer because it might be a vector of the often fatal Lyme's disease?

I urge you to contact the National Child Safety Council (Jackson, MI 49204) to voice your complaints about the selection of a snake as the negative symbol for this pamphlet.

If a symbol for evil is needed, we don't have to look any farther than ourselves. Wild animals don't make moral judgements that impact on the lives of human beings, but human beings certainly make decisions that affect the lives of wild animals. We must educate people to understand that no wild animal is bad or evil unless a human being makes it so. The natural world is ours to study, to appreciate, to utilize, to understand. It is not ours to plunder or anthropomorphize for our own ends.

Until our society stops assigning human values and motivation to wild animals, it will remain very difficult to convince most people they should not murder snakes.

--John Simmons
KHS Newsletter Editor

