

**KANSAS
HERPETOLOGICAL
SOCIETY
NEWSLETTER**



Number 17

February 1977

KHS MARCH MEETING IN SALINA

The second 1977 meeting of the Kansas Herpetological Society will be held on the 12th of March (Saturday) in Room 202 at Central High School in Salina. The high school is located on Crawford Street. To reach it from I-70, take the Ohio Street exit and turn right off Ohio Street onto Crawford Street. Park in the north parking lot just off Crawford Street and enter the school through the glassed-in area. Signs will direct members to Room 202 at the northeast end of the building. The program planned is:

George Toland, Biology Teacher

Topic: Collectservation of the Vicious Little Bells

Jaime Pefaur, Herpetology Graduate Student

Topic: Herpetofauna of Arequipa, Peru

The meeting will be called to order at 1:30PM with a short business meeting followed by the speakers.

The Executive Council Members should meet in the north parking lot at the high school for their meeting at noon.

FIRST 1977 MEETING OF KHS HELD IN EMPORIA

Twenty-five members gathered for the first meeting of the Kansas Herpetological Society in 1977 on January 22nd at Emporia State College in Emporia. For the program, Dr. Robert Clarke presented a talk, illustrated with slides, on his herp collecting trip to the islands of the Sea of Cortez. It was extremely interesting to hear about, and see pictures of this unusual area and its herpetofauna. We also enjoyed hearing Kelly Irwin tell of his experiences while collecting herps in the Ozarkian waterways.

HOWARD GLOYD CELEBRATES 75TH

Howard K. Gloyd, Professor Emeritus of the University of Arizona and Honorary Member of the Kansas Herpetological Society celebrated his 75th birthday on February 12. The Kansas Herpetological Society wishes him the very best on this day.

Kansas Herpetological Society Newsletter

Kansas Herpetological Society
Treasurer's Report - 1976

RECEIPTS:

Balance carried forward from 1975	\$ 15.19
Contributing memberships for 1976 (2)	30.00
Regular memberships for 1976 (118)	354.00
Regular memberships for 1977 (37)	111.00
Income from checklists	17.20
Donations for reprint	<u>18.79</u>
TOTAL RECEIPTS:	\$ 546.18

EXPENDITURES:

Postage	\$ 90.00
Printing KHS envelopes	52.00
Checklist printing	32.67
Donation to SSAR facsimile reprint	50.00
Annual meeting expenses	4.97
KHS Newsletter Printing	26.22
KHS Newsletter Printing	18.94
KHS Newsletter Printing	23.76
KHS Newsletter Printing	<u>22.26</u>
TOTAL EXPENDITURES:	\$ 320.82

Balance forwarded to 1977 KHS Secretary-Treasurer \$ 225.36

Respectfully submitted,

Delfi Messinger, Treasurer 1976
Kansas Herpetological Society

BREEDING SNAKES IN CAPTIVITY

The following snakes have been bred in the Tucson-Phoenix area, mostly in Tucson, by amateur reptile enthusiasts:

BOAS and PYTHONS (Boidae):

- Boa Constrictor (Boa constrictor)
- Rainbow Boa (Epicrates cenchris)
- Mexican Rosy Boa (Lichanura trivirgata trivirgata)
- Burmese Python (Python molurus bivittatus)

COLUBRIDS (Colubridae):

- Great Plains Rat Snake X Red Rat Snake (Elaphe guttata)
- Trans-Pecos Rat Snake (Elaphe subocularis)
- Green Rat Snake (Elaphe triaspis)
- California Kingsnake (Lampropeltis getulus californiae)
- Sonoran Kingsnake (Lampropeltis getulus splendida)
- Gray-banded Kingsnake--both Blair's and Alternating
(Lampropeltis mexicana)
- Arizona Mountain Kingsnake (Lampropeltis pyromelana)
- Mexican Milksnake (Lampropeltis triangulum annulata)
- Sinaloan Milksnake (Lampropeltis triangulum nelsoni)
- Red Milksnake (Lampropeltis triangulum sypila)

RATTLESNAKES (Crotalidae):

- Banded Rock Rattlesnake (Crotalus lepidus klauberi)
- Chihuahuan Ridge-nosed Rattlesnake (Crotalus willardi silus)
- Arizona Ridge-nosed Rattlesnake (Crotalus willardi willardi)

People have used many methods to try to stimulate breeding in captive snakes. In Tucson, one method has been used extensively, apparently with great success: hibernation of temperate and semi-tropical snakes during winter to induce spring mating. By "hibernation" I mean gradually cooling the snakes (in their usual cages) during the fall, keeping them at 45-65°F during the winter, and gradually warming them some-time during the spring. One can avoid the need for fancy equipment, thermostats, etc., by taking advantage of drafty rooms, windows, and home heating and cooling systems to control the cage temperatures. All one needs are a few cheap thermometers to locate the proper temperatures in your home, basement, or porch. Temperatures can be further modified by sealing heating vents, cracking a window, using light bulbs, and so on. Provide plenty of water during hibernation or the snakes may dehydrate.

The method described above seems to work very well and is my method of choice. It is the only method I have tried, however, and other methods, including no "method" at all, have been successfully used by other people. Ernie Wagner, Senior Keeper at the Woodland Park Zoo in Seattle and Dr. Glenn Slemmer at the University of British Columbia have bred many snakes on the above list, plus some others, by controlling photoperiod and supplementing their reptile's diets with

cod liver oil and calcium. Photoperiods are varied from 8-9 hours (winter) to 16 hours in summer. A small drop of cod liver oil is added to food items, and plaster of paris blocks in water bowls provide calcium. Dr. Richard Zweifel, Chairman and Curator of the herpetology department at the American Museum of Natural History in New York, has bred both Arizona Mountain Kingsnakes (Lampropeltis pyromelana) and several subspecies of the Common Kingsnake (Lampropeltis getulus). In his own words, "There are no tricks or gimmicks to the breeding---we merely place the two prospective parents in the same cage and hope they take to one another in a loving rather than cannibalistic fashion."

I have heard of other methods in addition to the above, such as: refrigeration of snakes at 40-45^oF for two weeks to throw snakes into a breeding cycle two or more times per year, injection of hormones, separation of sexes until mating season, and so on. I know little about such methods, although the "separation" method seems easy enough for the experimental breeder to try out, as well as the refrigeration method.

From the variety of methods described above it is obvious that knowledge concerning snake-breeding methods is in a state of disarray. Two facts are certain: snakes do not always breed spontaneously in captivity; some people and/or some methods seem to have more success than others. The situation is confusing to me, but the following seem to be possible explanations of the existing facts:

1) Everyone I know who has bred reptiles in captivity, and this includes the entire Tucson crowd, takes good care of his snakes and houses them very well. Perhaps the health and "happiness" of the snakes are significantly improved because of this, inducing breeding--or letting it occur naturally without poor health/unhappiness interfering. Therefore, any method these people might try would be likely to work, regardless of whether it was actually necessary. I consider this to be an important factor, but not all-explaining.

2) Certain species of snakes may breed very readily in captivity, whereas others may require various special conditions. Thus, a large variety of techniques may induce breeding, depending on the species used in the breeding experiments. For example, the Yuma Kingsnake (Lampropeltis getulus yumensis) and related subspecies will often breed without special conditions (although hibernation does increase the percentage of females which successfully reproduce in this species). The same goes for tropical pythons and boas. Other snakes, such as the Arizona Mountain Kingsnake (Lampropeltis pyromelana), will sometimes breed readily, but success is much greater with hibernation. It seems logical that hibernation may be important only in high-elevation or other cold-climate snakes. Having no experience

with the vitamin D₃, calcium, and photoperiod method of Wagner and Slemmer,³ I can only refer you to their paper: "Some parameters for breeding reptiles in captivity," which can be found in the Proceedings of the 1976 Reptile Symposium, Frederick, Maryland. I would guess that some of their animals would have bred without the vitamin-mineral portion of their treatment, just as some will breed without hibernation. I am not sure of the importance of the photoperiod manipulation although I would be surprised if it were not important at all.

3) Some adult snakes, as Wagner and Slemmer mentioned, may take years to become "adjusted" enough to captivity to begin breeding. Some of the snakes that suddenly begin breeding after years of inactivity without the use of special techniques to induce breeding might also begin breeding within a year of capture if hibernated or subjected to some other treatment. Because of such situations, one person might claim that hibernation or vitamins stimulate(s) breeding while another feels that no special techniques are required--even if both are breeding the same species of snake. Both people would be correct, and the situation would require closer examination to determine why.

4) Many reptile enthusiasts, eager to breed reptiles rapidly, subject their snakes to a variety of treatments simultaneously, either accidentally or deliberately. I can imagine situations in which the snakes are responding to, for example, photoperiod via an unshaded window while their captors believe that their manipulation of temperature induced reproduction. A number of Tucson breeders consciously regulate photoperiod as well as temperature. Situations such as these do not lend themselves to interpretation.

No one I know has performed controlled experiments comparing different methods of inducing breeding in captive snakes. Many of the observations reported above lend themselves most readily to misinterpretation, so the breeding situation still requires experimentation and clarification. However, I do feel sure of some facts concerning hibernation: hibernation, at the very least, in no way interferes with breeding of many temperate and semi-tropical snakes, and may actually stimulate it. Hibernation also happens to be a very practical way to limit the number of mouths that need to be fed for several months of the year, which is a relief to those unfortunates who have no steady supply of mice or lizards. For these reasons, I recommend this method.

ADDENDUM: In the above article I may have understated the possible importance of photoperiod in reptile reproduction. Although I did not always consciously regulate daylength for my breeding snakes, they were exposed to natural photoperiods during the fall, winter, and spring. During non-hibernation ("summer") periods I generally exposed the snakes to 18-24 hours

light daily, and deliberately exposed them to daylengths intermediate between natural existing photoperiods and my "summer" daylength for a few days prior to and following exposure to the natural photoperiods of the fall-winter-spring hibernation period.

---RANDALL N. JOHNSON, 8342 E. Keim Dr., Scottsdale, AZ 85283

CRAWFISH FROGS SNORE AGAIN IN SOUTHEAST KANSAS

In the Kansas Herpetological Society Newsletter of June 1975, Joseph T. Collins and Mary E. Dawson reported observing a chorus of the Northern Crawfish frog, Rana areolata circulosa, on 5 May 1975 in western Cherokee County. Since this frog is considered a threatened species in Kansas, and had not been taken for at least ten years prior to Collins and Dawson's discovery, it is noteworthy that another population was located in the spring of 1976 in central Woodson County, approximately fifty miles northwest of the Cherokee County locality.

On the morning of 30 April, Karen Hamrick, Tim Broschat and I left Lawrence for Woodson County. By noon a steady downpour began which lasted all day. The high temperature during the day was about 55° F, dropping to 50° F in the evening. After dark, we began going to ponds in the area to listen for calling leopard frogs. At one of our first stops, we heard the familiar sounds of leopard frogs and chorus frogs, and, on listening closer, we heard a low sound not immediately recognizable. This call soon turned out to be that of the crawfish frog.

The small pond from which the crawfish frogs were calling was in a cattle pasture, and had a narrow grassy margin on one side. The first frog located was a calling male, floating about two feet from the edge of the pond. Nearby was an amplexing pair, also floating in the water. We estimated that there were four to five crawfish frogs in this pond, in addition to numerous leopard frogs and chorus frogs. Several other choruses could be heard in the distance, indicating that the size of the population in the area could be relatively large.

After leaving this pond, we drove toward the distant sounds of one of the other choruses. We found several more crawfish frogs calling from a large drainage ditch beside a railroad track. As we approached this chorus, we began hearing a different call, which turned out to be release calls from two males. For fifteen minutes, we observed these two frogs alternately attempt to amplex each other. As one would succeed in mounting the other, the one below would issue several short, high-pitched release calls and begin kicking vigorously.

The following day was clear with a high temperature of 65° F. That night we went back to the farm pond and obtained a recording of the call of a single male. No other individuals were calling from the pond, and only one or two frogs could be heard in the distance. Thus, the number of frogs calling and the frequency of their calls had diminished compared to the previous night.

In summary, Collins and Dawson's observations in 1975 and mine in 1976 indicate that crawfish frogs may be somewhat more common than previously thought. That the two choruses were found within a week of each other in successive years may indicate a relatively restricted breeding season compared to other frogs. It is hoped that diligent searching in April and May by KHS members may reveal other extant populations of this species in eastern Kansas.

---JAN CALDWELL, 2045 Avenue -A-, University of Kansas, Lawrence

CURRENT LITERATURE

This current literature section has been compiled by Joseph T. Collins, and contains titles of books and articles on amphibians and reptiles of possible interest to KHS members. Generally, books and articles listed in this section are written by KHS members, or contain direct reference to the herpetofauna of Kansas.

Blackwelder, R. E. and P. Mayes.

1976. Books on zoology. Pub. Biol. Res. Inst. America. 136pp. Available free from: Books on Zoology, P.O. Box 108, Makanda, Illinois 62958.

Blassingame, W.

1976. Wonders of the turtle world. Dodd, Mead & Company, New York. 79pp. Available from the publisher for \$4.95 (hardcover). Written for young persons.

Crump, M. L.

1977. The many ways to beget a frog. Natural History (January issue): Pagination unknown.

Dodd, C. K., Jr.

1976. Herpetologists, amphibians and reptiles, and the endangered species act of 1973. SSAR Herpetological Review, 7(4):174-176.

Duellman, W. E. and A. H. Savitzky.

1976. Aggressive behavior in a centrolenid frog, with comments on territoriality in anurans. Herpetologica, 32(4):401-404.

Jackson, J. A.

1976. Relative climbing tendencies of gray (Elaphe obsoleta spiloides) and black rat snakes (E. o. obsoleta). Herpetologica, 32(4):359-361.

Lazell, J. D., Jr.

1976. This broken archipelago. Cape Cod and the islands, amphibians and reptiles. Demeter Press Book,

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Quadrangle/New York Times Book Company, New York.
260pp. Available for \$12.50 (hardcover) from the
publisher. An excellent book.

Minton, S. A., Jr.

1976. Serological relationships among some congeneric North
American and Eurasian colubrid snakes. *Copeia*,
1974(4):672-678. A good paper on snake classification.

Oulahan, R.

1976. Wild, Wild world of animals. Reptiles and amphibians.
Time-Life Television Book. 128pp. Available for \$7.95
(hardcover) from Time-Life Books, New York.
KHS member Richard Lattis was a consultant in the
production of this book.

Slavens, F. L.

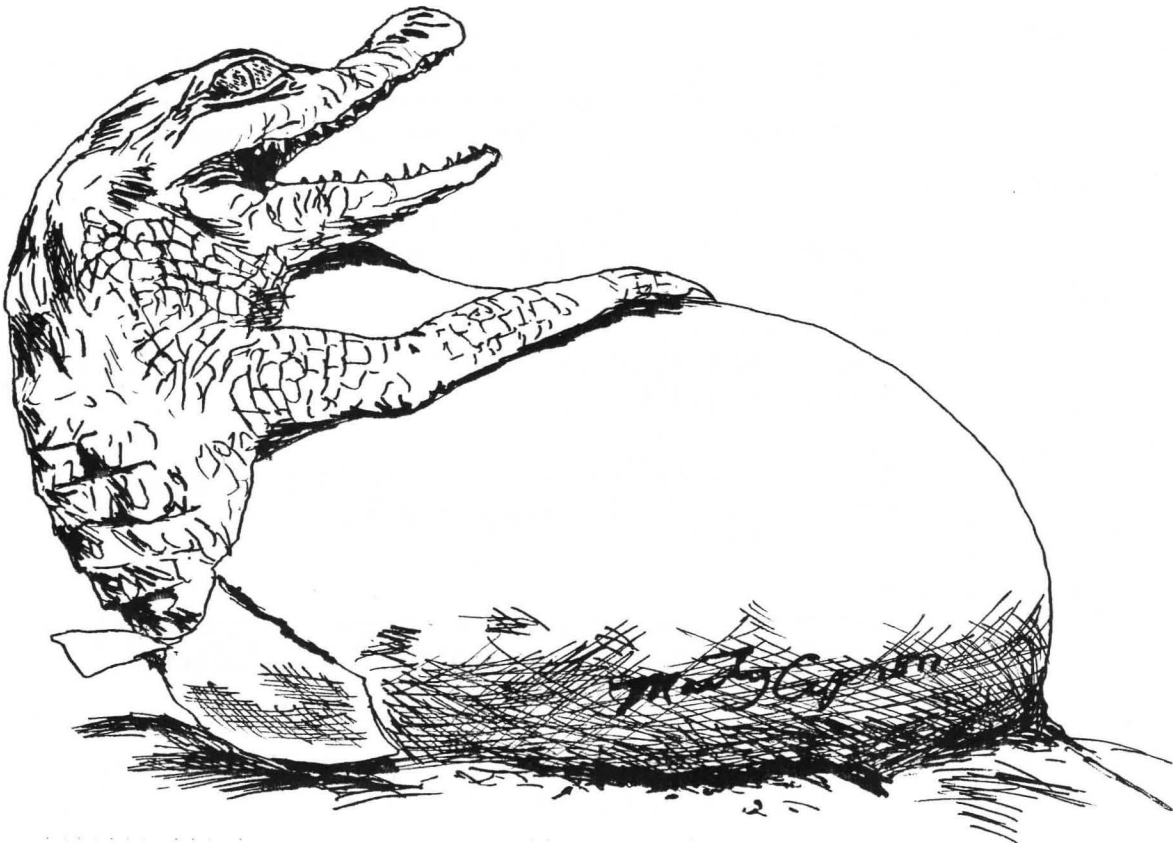
1976. The working guide to breeding potential for reptiles and
amphibians in United States zoos. 80pp.

Smith, H. M. and R. B. Smith.

1976. Synopsis of the herpetofauna of Mexico. Volume IV. Source
analysis and index for Mexican amphibians. John
Johnson, North Bennington, Vermont. Not paginated.
Available for \$12.50 (hardcover) from the publisher.

Trueb, L.

1976. Catalogue of Publications in herpetology published by the
University of Kansas Museum of Natural History. Univ.
Kansas Mus. Nat. Hist. Spec. Pub., 1:1-15.



REPRODUCTION OF DENDROBATES AURATUS AT THE SCZ

In 1974, the Sedgwick County Zoo acquired a group of green-and-black arrow poison frogs (Dendrobates auratus) from Panama. These frogs exhibit a strikingly beautiful coloration; jet black with highly variable shades of brilliant green, varying from green-gold to deep blue-green. Many zoo visitors believe these little animals (three to four centimeters in length) to be ceramic casts owing to the brightly colored, glossy appearance of their skin. The green-and-black arrow poison frogs also exhibit amazing reproductive behavior. In this article I will discuss what the SCZ herpetarium staff has observed since March of 1976 only, because the frogs are still reproducing and our ideas and techniques are still changing.

The environment varies somewhat between our three terraria of Dendrobates auratus, with reproduction occurring in each cage. The first, a large public exhibit unit (125cm X 75cm X 100cm) contains eight Dendrobates auratus (one male and seven females) and five female orange-striped arrow poison frogs (Phyllobates lugubris). The unit is an elaborate setup, complete with flowing stream and waterfall. It is thickly planted with nine species of plants, including gesneriads, philodendrons, and bromeliads. A branch approximately eight centimeters in diameter is set the length of the exhibit at 80cm above the floor of the enclosure. The space between the branch and wall has been made into a planter and supports a dense growth of epiphytic plants. The second unit is fiberglass, roughly 50cm X 50cm X 50cm. It receives natural light from a northeast window. One female is permanently housed in it. The third terrarium is a standard 15 gallon fish tank. The aquarium is simpler yet, but represents our most advanced technique. It contains no living plants at all--they are all plastic except for a few real "fallen leaves". The main substrate is pea gravel which is covered by decorative sheet moss. No dirt, charcoal, or other soil types are used. This third unit also receives natural northeast light from a nearby window. It houses one female. A third individual, a male, is periodically rotated between the second and third units. The second and third units are covered each night with a tightly fitted piece of plastic which provides a night time humidity of 100%. When the cover is removed and the unit is sprinkled, daytime humidity is around 70-80%. The temperature varies from 68^o-71^oF at night to 78^o-82^oF in the day. No chemical disinfectants, soaps, or detergents are used in the maintenance of the units, but chlorinated tapwater is freely used, and each morning and evening the enclosures are sprinkled with same. The frogs are fed a diet of young crickets (approximately 0.5cm in length) and for variety, vestigial winged fruit flies are also fed. All food items are dusted with dicalcium phosphate containing vitamin D. It was under these conditions that in March the little frogs began to reveal their fantastic reproductive behavior.

The males spend much of their time sitting in the foliage. They seem to have a favorite spot above the floor in each unit.

Unfortunately, we don't have enough males to observe competition for calling sites and the males are separated at all times. Both males have been heard calling, although their trilling is so low it is barely noticeable. The call consists of high soft trills interspaced with two to three second pauses, and does not last long because the females quickly respond by approaching the male.

The females in the public exhibit cage battle fiercely for the sole male. A female will amplex a competing female and hold on until the other breaks free or is driven off. The battle is quite vigorous and lasts over two hours. The female's enthusiasm diminishes very little, although short rest periods occurred every few minutes. One female was observed several times successfully flipping her opponent. During this period of premating combat, the male will sit at his calling site or forage nearby. Outside of competing for a male, territoriality or aggressive behavior has not been observed between females; however, some females will assume a submissive posture when approached by another female. The submissive posture basically consists of lowering the body, especially the head, as close to the ground as possible. The dominant female may hop onto the back of a submissive female, then hop away. In the public exhibit, there is one male and seven females, yet only four clutches of eggs have been found during one year. Apparently in an exhibit with so many females, very little reproduction will occur because they compete so intently for the male that they spend much of their time and energy fighting.

Once a female has driven off her competitors she approaches the male waiting nearby. As soon as she is close enough she begins to stroke the male with her forearms. The male's reaction is highly variable. Most frequently he sits quietly for a short time and allows the female to stroke him. He soon hops away, appearing to resume his foraging. The female follows very closely, striking the male's lower back and hind legs whenever the male stops long enough for her to catch up. The male never gets too far away from the female, following a slow erratic path on the floor of the unit, stopping from time to time to allow the female to catch up and continue her stroking. Many times the pair face each other with the female nudging the male's forearms, nose, lips, and throat with her nose, while continuing to stroke the same area with her hands and forelegs. This activity lasted for about three minutes, ending with the male resuming his hopping about the unit. The male seemed to visit every fallen leaf and get under everything he could, only rarely leaving the floor of the unit to climb into the foliage. The duration of this activity is highly variable, from less than thirty minutes to nearly eight hours, with an average of about six hours. In this period of time the male appears to select an egg laying site. Almost all of the clutches of eggs have been laid between smooth horizontal leaves. We now provide only plastic leaves for egg laying

and this appears to be preferred by the frogs. Plastic eliminates the possibility of the eggs absorbing a toxic substance.

Once the male has selected a site, both parents prepare it for egg laying. Unfortunately, this activity occurs most often under a leaf or flat piece of wood which makes observation difficult. At one time we covered choice leaves with clear plastic and removed all other leaves. The egg laying stopped. As soon as the frogs were given a choice between clear plastic or an opaque cover over a leaf the pair quickly chose the opaque cover. In preparing the site both animals will clean and moisten it. This process appears very ritualized since both animals can be seen turning, bobbing, and touching their chins to the site. Occasionally one frog will climb onto the back of the other. The female continues stroking and nudging the male, and this courtship, under the leaf, lasts for about one hour, ending in the laying of the eggs. Amplexus has not been observed between males and females of this species and it appears that fertilization does not occur at the time of laying. Nine out of eleven clutches of eggs removed the same day of laying showed no development. However, recently we have been leaving the clutches in the unit until the next morning and all clutches have developed. Immediately after laying the male will sit in the water dish and take water into his cloaca. When the male hops out of the dish he is noticeably larger. The water he has taken up is deposited on the egg mass while he presses his body close to it and rotates. This activity is repeated several times over 48 hours--the female ignores the whole process. The male will continue to care for the eggs, making sure they do not dry out. However, he does not closely guard or defend them.

The eggs are huge for the size of the frog that produces them. They are about 2mm in diameter and a clutch may measure 2.5cm across. We have recorded from 1-14 eggs in a single clutch; average clutch size is 7 eggs. The frequency of clutches appears to depend somewhat on the availability of the male. The females that share a male with each other will produce eggs every 5-10 days. On the other hand a female in the constant company of a male will produce only once every two weeks.

At ten to fourteen days the, as yet, unhatched tadpoles begin their unusual journey to water. The male will hop into the egg mass, exhibiting the same turning behavior as he did before, and not be the least bit gentle with the eggs. This activity is repeated several times over the next few days since the eggs do not hatch at the same time. The turning does not appear to be concerned with the eggs themselves, although hatching does occur at this time. The male continues to visit the tadpoles several times a day, and during these visits they become very active within their gelatinous puddle. Four days after the eggs began to hatch

a tadpole was observed swimming up onto the back of the male who was sitting in the mass of tadpoles. There was already one tadpole on the back of the male between his shoulders with its tail pressed flat on his back. The male, over a period of days, will visit the tadpoles several times each day, and will lie with his hind legs outstretched while periodically shifting his position. At this time the tadpoles swim vigorously against the outstretched legs of the male. The tadpoles were observed to swim up onto the legs of the male and then onto his back. When he has tadpoles on his back, the male moves to the water dish, at which time the tadpoles swim off his back and begin their lives in the water.

The tadpoles are fiercely predatory and cannibalistic. An individual that develops a bit faster than its peers will promptly catch and kill any tadpole that cannot adequately defend itself. The tadpoles have been observed pursuing and attacking chironomid fly larvae. They will accept spinach, strips of fish, and fruit-flies, offered them with forceps. All food is dusted with dicalcium phosphate with vitamin D₃ supplement.

Plastic butter tubs are used as containers for hatchlings and young tadpoles. As they grow and become more aggressive, they are transferred to a clear plastic shoe box. Several rocks are placed about the shoe box to create extra horizons and hiding places.

In late June, the first little froglets began spending most of their time out of the water after having started their odyssey in mid-April. At first they spent most of their time underneath leaves and debris but now they are quite active spending most of the day foraging. They are fed hatchling crickets and vestigial-winged fruit flies. Lately they have begun to look more and more like their parents, and are nearly 2.5cm long. Perhaps next spring or fall we'll have second generation breeding.

---DAVID GROW, Sedgwick County Zoo, 5555 Zoo Boulevard, Wichita



OKLAHOMA HERPETOLOGICAL SOCIETY
STATEMENT OF POLICY
CONCERNING RATTLESNAKE ROUNDUPS

WHEREAS, cruel and inhumane treatment of rattlesnakes is exhibited at rattlesnake roundups, and

WHEREAS, rattlesnake roundups are dangerous to spectators and participants, and

WHEREAS, spectators are taught inhumane treatment of rattlesnakes, and, indirectly, other forms of living creatures, dangerous methods of handling rattlesnakes, and incorrect information concerning the natural history of rattlesnakes, and

WHEREAS, repeated large-scale removal of reptile predators, such as rattlesnakes, from an area can result in endangering the very existence of those reptile populations and therefore is not in the best interest of conservation or wildlife management, now be it

RESOLVED, that the Oklahoma Herpetological Society is opposed to rattlesnake roundups as they exist.

Cruel and Inhumane Treatment: The following practices are considered cruel and inhumane treatment of rattlesnakes:

1. Collecting and handling the rattlesnake in a manner that will cause physical injury to them. Examples of this are:
 - a. Throwing them to the ground.
 - b. Pulling rattles off of their tails while the snakes are still alive.
 - c. Sewing their mouths shut.
 - d. Securing them behind their heads, then lifting the snakes from the ground without supporting their bodies.
 - e. Pouring gasoline or other noxious chemicals into dens of rattlesnakes to force them from their hiding places.
2. Causing unnecessary stress to the rattlesnakes through:
 - a. Extracting venom from them for reasons other than scientific purposes.
 - b. Handling them at times other than when collecting or butchering them.

- c. Kicking them.
 - d. Intentionally causing them to strike or rattle.
 - e. Poking them with objects.
 - f. Throwing objects at them.
3. Providing inadequate husbandry. Examples of this are:
- a. Allowing them to starve.
 - b. Allowing them to dehydrate.
 - c. Allowing them to suffocate or to be crushed due to other rattlesnakes laying on them.
4. Killing rattlesnakes in a manner which will cause pain to them. Examples of this are:
- a. Amputating their tails before amputating their heads.
 - b. Burning them alive.



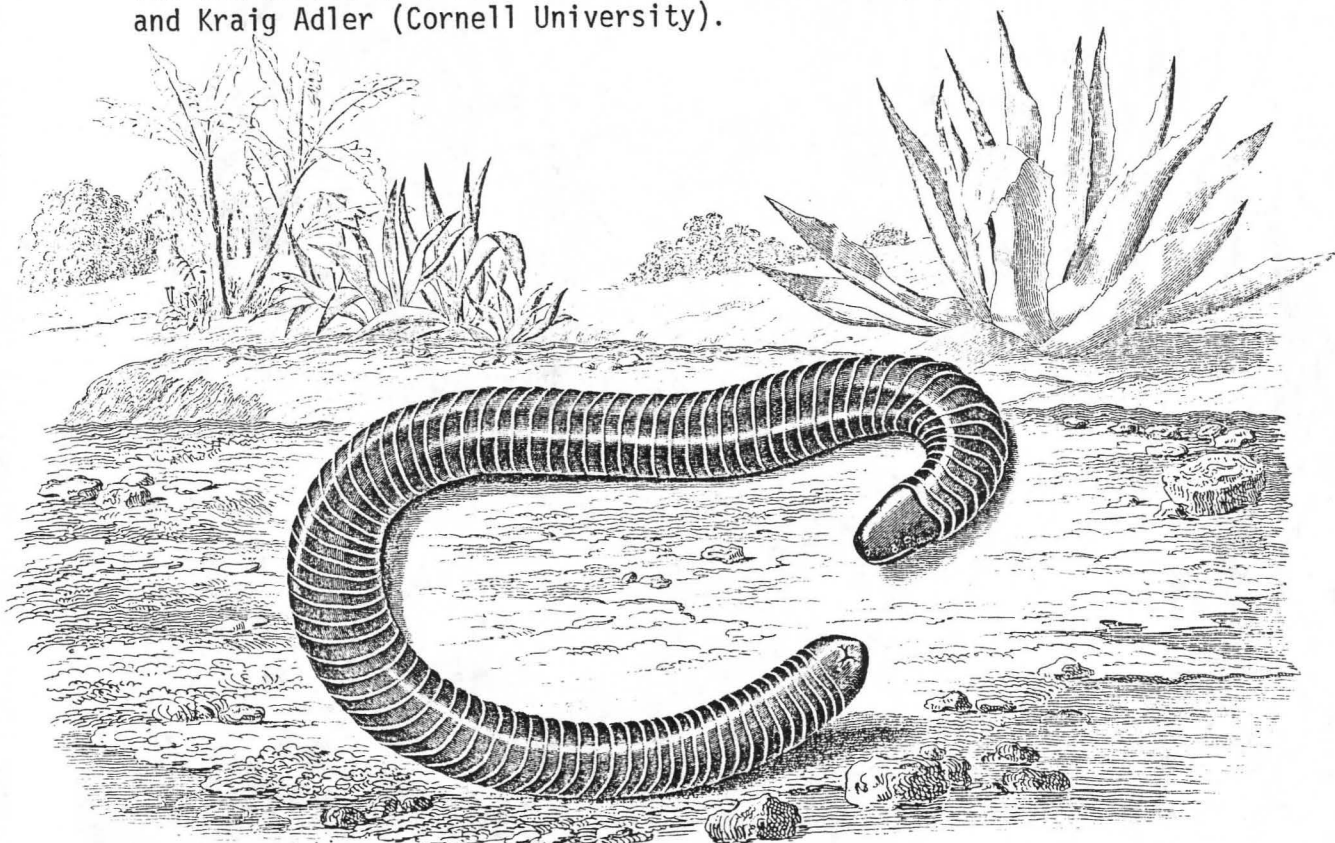
Dangerous to Human Spectators and Participants: The following practices are considered dangerous to human spectators and participants:

1. Releasing rattlesnakes in rattlesnake hunt areas during or prior to rattlesnake roundups.
2. Holding rattlesnakes by hand without securing them behind the heads.
3. Not pinning rattlesnakes with a snake hook before grabbing them behind their heads.
4. Walking into a rattlesnake enclosure without protective boots.
5. Allowing spectators to hold live rattlesnakes.
6. Exhibitionalism using live rattlesnakes in crowds of people, including small children.

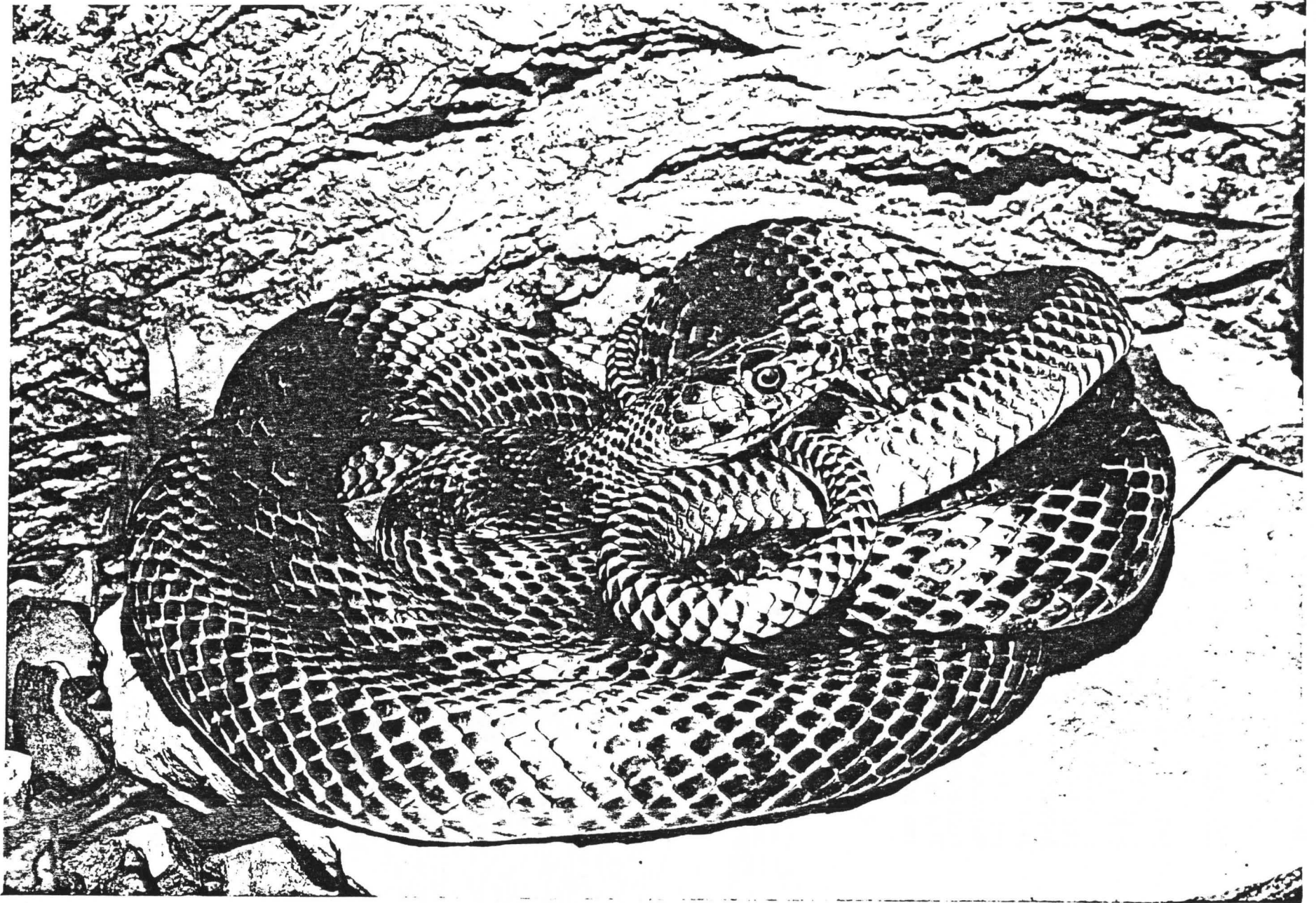
Reprinted from: Oklahoma Herpetological Society Bulletin,
Number 4 (December, 1976).

FOUR KHS MEMBERS TO BE SSAR REPS

The KHS Executive Council has appointed Jan Caldwell, Kelly Irwin, Delfi Messinger, and Marjorie Perry to officially represent the Kansas Herpetological Society at the first annual SSAR Regional Society Herpetological Conference on 8 August 1977 in Lawrence, Kansas. The Conference, being held concurrently with the joint annual meetings of the Society for the Study of Amphibians and Reptiles and the Herpetologist's League, will be devoted to discussion sessions on topics of relevance to state and regional herpetological societies, and will be held in the Museum of Natural History at KU. Regional herpetological society representatives from across the United States will be attending. The Conference will be moderated by James B. Murphy (Dallas Zoo) and Kraig Adler (Cornell University).



---The Kansas Herpetological Society Newsletter is issued every other month by the Kansas Herpetological Society. All interested individuals are invited to become members. Membership dues per calendar year are \$3.00 (Regular) or \$15.00 (Contributing) payable to: Marjorie Perry, Secretary-Treasurer, 812 Murrow Court, Lawrence, Kansas. All manuscripts and notes should be sent to the Editor. EDITOR: Janice Perry, Museum of Natural History, University of Kansas, Lawrence, Kansas 66045. ASSOCIATE EDITOR: David Grow, Sedgwick County Zoo, 5555 Zoo Boulevard, Wichita, Kansas 67212.



The largest coachwhip snake (Masticophis flagellum) thus far recorded from Kansas. This animal was over six feet long, and was captured in southern Kansas by Martin Capron and Steve Starlin on 28 September 1975. Photograph by J. T. Collins.