

KANSAS
HERPETOLOGICAL
SOCIETY
NEWSLETTER



NUMBER 41

FEBRUARY 1981

NEXT KHS MEETING TO BE HELD AT SEDGWICK COUNTY ZOO IN WICHITA

On Saturday, March 7, members and friends of the Kansas Herpetological Society will meet at the beautiful Sedgwick County Zoo for the first meeting of the new year. It will be an indoor meeting at which a number of interesting slide presentations will be given. This will be followed by a behind-the-scenes tour of the Herpetarium by members of the zoo staff. In addition, the KHS will hold its annual auction. Any item of interest may be auctioned, except for live reptiles or amphibians or items made from their body parts. So plan to attend and bring items to donate for the auction as well as enough money to bid on the things you want. These items include: photographs, drawings, reprints of herp articles, snake hooks and cages, back issues of both the KHS newsletter and the Transactions of the Kansas Academy of Science, and other miscellaneous items of herpetological interest. For those members who maintain live herp collections, there will be packages of frozen mice of various sizes and rats, as well as live mice of different strains. One of these mouse strains is totally hairless.

Program for the March 7 KHS Meeting

- 9:30 - 10:00 Coffee and doughnuts
- 10:00 - 11:00 "Sand Lizard (Uma spp.) Collecting in Mexico, 1979,"
by Dr. Robert F. Clarke
- 11:00 - 11:30 "A Slide Presentation of Some Poison Arrow Frogs
(Atelopus spp.)" by Peter Gray
- 11:30 - 12:00 "Herp Facts and Fiction: a Dialogue," by president
Jeffery T. Burkhart
- 12:00 - 1:00 Lunch
- 1:00 - ? KHS Annual Auction

The guided tour will follow the auction. So, please remember March 7, and spend a wonderful day at the Sedgwick County Zoo. The proceeds from the auction help to cover the cost of the newsletter. This year the KHS is preparing a color pamphlet on the endangered amphibians and reptiles of Kansas, to alert and educate the public about these rare animals. Although part of the cost will be shared by the Kansas Fish and Game and a grant from the SSAR (Society for the Study of Amphibians and Reptiles), we need additional funds to cover the entire expense. Hopefully, we can raise this money at the annual auction, so be sure to attend and bring items to donate.

FUTURE MEETINGS OF ASSOCIATED ORGANIZATIONS

The KANSAS ACADEMY OF SCIENCE will meet on March 20, 1981 at Southwestern College in Winfield, Kansas.

The KANSAS FOR SAFE PEST CONTROL will meet on March 28, 1981 at Emporia State University. A general meeting will be held and one speaker will discuss Integrated Pest Management in Kansas. Contact Terry Shafer, Rt#3, Lawrence, KS 66044 (913-842-1348) for more information.

The CHIKASKIA RIVER WILDLIFE STUDY will be held from April 17-18, 1981 this spring. This year's study will emphasize the collecting of fish from the Chikaskia River and searching for several specific amphibians and reptiles. It will be held in Sumner County, Kansas just north of the small town of Drury. Contact Larry Miller, 524 North Osage St., Caldwell, Kansas 67022 (316-845-2680) for more information.

The KANSAS ASSOCIATION OF TEACHERS OF SCIENCE will hold their annual spring meeting at Rock Springs Ranch from April 24-26, 1981. Contact Mr. Dudley Fryman, R.R.#2, Garden City, Kansas 67846 for more information.

The KANSAS ASSOCIATION OF BIOLOGY TEACHERS will meet at Clark County State Lake on May 2, 1981. This will be their annual spring field trip. Contact Joseph T. Collins, Museum of Natural History, University of Kansas, Lawrence, Kansas 66045 (913-864-4920) for more information.

The OKLAHOMA ACADEMY OF SCIENCE announces the Oklahoma Collegiate Academy of Science and Immunology Symposium to be held at the University of Oklahoma on February 20, 1981. The Oklahoma Collegiate Academy Section is specifically designed for the delivery of undergraduate research presentations by science majors throughout the state of Oklahoma. The research projects and the subsequent presentations will be evaluated by a panel of senior research scientists and awards will be given. In conjunction with the Collegiate Academy of Science, the Microbiology section will sponsor a symposium of immunology. The featured speaker will be Dr. Ronald Herberman, from the National Cancer Institute, speaking on "Natural Killer Lymphocytes." Noted immunologists from Oklahoma will be participating in this timely and interesting area.

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HELP KANSAS' NONGAME WILDLIFE

Have you ever thought of a future world without a robin's morning song? Or walked in the field under a hawkless sky? Our lives would surely be poorer. Now, we can all help to ensure a future richer for wildlife, and ourselves as well. An act by the 1980 Kansas Legislature has provided a small space on your state income tax form so that you can help. You may designate one, five, or ten dollars, or any amount you choose for the new Nongame Wildlife Fund. Your designated share will either come out of your tax refund, or be added to the taxes you owe. Either way, it is an opportunity for you to help support nongame wildlife conservation in Kansas.

Until now, it has been the license dollars of hunters and fishermen and the excise tax on their equipment that has been the sole source of funds to pay for wildlife management in Kansas. The sportsman's money has gone toward game species. Nongame wildlife has not had any sponsors. But because all Kansans benefit from nongame wildlife, we all now have the opportunity to help these animals, and by doing so, assure a quality life for our future, too.

What is nongame wildlife? Any species of wild animal life that is not considered as a sport, or game species typically sought by hunters or fishermen, is nongame wildlife. Rare and endangered species are nongame wildlife, but so are the more common animals among the almost 700 species found in Kansas, from chickadees to herons, from minnows to tree frogs. Along with our game species, such as pheasant and deer, each has a vital role in the interacting web of life.

The Nongame Wildlife Fund will be under the jurisdiction of the Kansas Fish and Game Commission. Additionally, a Citizen's Advisory Committee - independent of Fish and Game - has been established to assist as a public "sounding board" and to help set priorities for nongame conservation projects. Members of the citizen's committee are representative of nearly all nongame interests in Kansas. Some preliminary long-range plans call for: the development of urban wildlife improvement programs for city parks and your own back yard, identification and acquisition of unique or critical habitat areas for nongame species and public enjoyment, stepped up participation in national studies for endangered species which occur in Kansas such as the bald eagle, whooping crane, and peregrine falcon, determining population status and life history profiles of Kansas' species considered rare or endangered, dissemination of educational materials to schools and the interested public on Kansas' nongame wildlife resources, and, the development of observation areas and nature walks for more public use of our nongame resources.

For more information on the NONGAME WILDLIFE FUND contact the Fish and Game Commission, R.R.#2, Box 54A, Pratt, Kansas 67124.

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EDITORIAL: IS THE "KANSAS NONGAME WILDLIFE ADVISORY COUNCIL" ADEQUATELY REPRESENTATIVE OF NEARLY ALL NONGAME INTERESTS IN KANSAS?

The information in the preceding article was taken from a brochure which briefly explains the Nongame Wildlife Fund Plan, and urges Kansans to donate money to help all nongame wildlife in the state. What kinds of wildlife will benefit? "...chickadees to herons, from minnows to tree frogs." While this is a very worthwhile goal, and, in my opinion, the tax checkoff system is a wonderful approach to obtaining the needed funds, I would like to raise several questions regarding how this is going to be accomplished. The brochure states: "... a Citizen's Advisory Committee - independent of Fish and Game - has been established to assist as a public 'sounding board' and to help set priorities for nongame conservation projects. Members of the citizen's committee are representative of nearly all nongame interests in Kansas." Unfortunately, the brochure fails to mention exactly which organizations were chosen to be on this committee. Therefore, I will list the nine organizations that are currently represented on the Kansas Nongame Advisory Council: Kansas Academy of Science, Kansas Advisory Council for Environmental Education, Kansas Audubon Council, Kansas Ornithological Society, Kansas Biological Survey, Kansas Wildflower Society, Kansas Farm Bureau, Kansas Wildlife Federation, and, the Kansas Chapter of the Wildlife Society.

By considering the main interests of these nine organizations we can determine if the citizen's committee is truly "representative of nearly all nongame interests in Kansas." A brief glance at the list shows that the state's avian fauna is well represented. Furthermore, the representation of the Kansas Wildflower Society on the council indicates that the flora of the state may benefit from the program. The Kansas Biological Survey has been investigating the natural history and distribution of wildlife in Kansas for many years. Therefore, its presence on the advisory council is a great asset. The Kansas Advisory Council for Environmental Education would presumably be involved in the dissemination of educational materials to schools and interested citizens. The Kansas Academy of Science is an organization with a relatively broad scope, which includes the physical, chemical, biological, and social sciences. Although this organization has made many valuable contributions to our understanding of nongame wildlife in Kansas, this is not its only purpose. Of course, a representative of the Kansas Academy of Science with a major interest in the natural sciences would also be a major asset to the council.

Turning to the last three organizations on the list, however, even fantastic stretches of the imagination fail to reveal why they are represented on the council. The Kansas Farm Bureau is well-known for providing economic benefits to Kansas farmers, especially in the form of insurance. Although this organization has also supported other activities related to rural life, its major function does not seem to be related to the Nongame Wildlife Program. Although the titles of the last two groups, the Kansas Wildlife Federation and the Kansas Chapter of the Wildlife Society, may lead someone to believe that these organizations deserve a place on the council, they are hunting-oriented groups. Therefore, it seems totally inappropriate to have their representatives on the Kansas Nongame Advisory Council.

With the above information in mind, can we really say that the citizen's committee is "representative of nearly all nongame interests in Kansas?" Two of the nine organizations represent hunter's interests, ie. the interests of game species. Furthermore, some major nongame interests have no representation; namely, mammals, fish, reptiles, and amphibians. It is also very odd to consider that the advisory council does not have a representative from the state Museum of Natural History. Although the museum is located on the campus of the University of Kansas, it is the state Museum of Natural History, and, contains much information about nongame vertebrates in Kansas.

One obvious remedy to the imbalanced representation of the Kansas Nongame Advisory Council could be an expansion of the council to include representatives from the currently neglected groups. One obvious choice to represent the interests of reptiles and amphibians on the council is the Kansas Herpetological Society. What are some criteria that may be used in selecting organizations to be represented on the council? Some criteria that may prove useful are: 1) that the group should have statewide membership, 2) that it would promote the nongame program and could do so to a relatively large and diverse membership, and, 3) that the group's representative would bring a somewhat unique view to the nongame program. The Kansas Herpetological Society, which was started in 1974, has been very active in discovering new information about the Kansas herpetofauna, and, in promoting conservation and education. Our organization fulfills each of the criteria presented above.

It is possible, of course, that many organizations fulfill these criteria. To include all of them in the council could reduce its effectiveness. Apparently, the number chosen for maximum efficiency is the number, "nine." Assuming that it has been decided to limit the council to nine members, we may still ask the question, "How were the nine representative groups chosen from the many who fulfill the criteria presented above?" A brief look at the council's composition shows such enormous imbalances that I am beginning to wonder if the choice was entirely arbitrary. Of the five major vertebrate groups (fish, amphibians, reptiles, birds, and mammals), only one (birds) is represented on the council. Two groups on the council represent hunters' interests. Therefore, it is hard to agree with the section of the Nongame Wildlife Fund brochure which tells us what kind of animals will benefit from the program, "...from chickadees to herons, from minnows to tree frogs."

In conclusion, I would like to emphasize my support of the Nongame Wildlife Fund Program. It is potentially of great benefit to the nongame wildlife of the state. It is, however, a new program which needs suggestions and guidance, as well as support, from the people of Kansas to adequately fulfill its intended goals. One area in which suggestions may be helpful concerns the composition of the Kansas Nongame Wildlife Advisory Council.

-----Hank Guarisco, Museum of Natural History, University of Kansas, Lawrence, KS 66045.

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PROGRAM ABOUT SNAKES GIVEN BY KHS MEMBER FOR EDUCATION FAIR

Leland Unruh, teacher at Campus High School and KHS member from Haysville, gave an informative and interesting program about snakes in the classroom at the fifth annual Uniserv District #12 Education Fair. The fair, which is sponsored by the South Central Kansas National Education Association, is an annual event that often attracts several hundred teachers and other interested persons from the southern Kansas area.

Mr. Unruh's program dealt with keeping live snakes in the classroom, reptile habitats, and the development of a laboratory food supply. The presentation also included a chance for those attending to handle a live snake and to watch a snake eat a mouse. There was also a question and answer period.

Many of those attending had never touched a snake before, and almost none has ever watched a snake eat. Mr. Unruh used several native and foreign animals for his presentation, informing those attending about the importance of snakes to the environment. He stressed that snakes should not be killed.

Mr. Unruh has been using snakes in his teaching program for several years. Those attending his program, that was given on Friday, 16 January 1981, were given the unique chance to see just how these interesting animals could be used by teachers. Most left with a better understanding of the often misunderstood snakes.

-----Larry Miller, 524 North Osage Street, Caldwell, Kansas 67022

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ENDANGERED SPECIES OFFICE TOLD TO LIMIT ADDITIONS TO LIST

The Interior Department, in a significant change of policy, is now de-emphasizing its efforts to place flora and fauna faced with extinction on its controversial list of endangered species. Under recent directives to the department's office of Endangered Species, the office has been instructed to cut in half the number of species it will examine for listing as endangered or threatened. The office has been instructed to concentrate instead on the "recovery" of species already on the list. Recovery means taking steps to remove the dangers that are threatening a species with extinction.

Some environmentalists who have heard about the policy change are upset by it, believing it signals the beginning of a general relaxation of protection for endangered plants and animals. The Endangered Species Act, which requires the listing of endangered or threatened plants and animals and efforts to protect them, has been a frequent basis of contention. Business, local government and other development-oriented interests have complained that the act needlessly blocks projects needed for economic expansion. A celebrated case was the snail

darther, a small fish that held up completion of the Tellico Dam in Tennessee because it was on the endangered list.

Environmentalists and others have complained that the act is not being adequately enforced and that potentially valuable species are disappearing at an alarming rate. Lewis Regenstein, executive vice president of the Fund for Animals, said, "We think it is an outrage that they are not taking an aggressive position in listing endangered species that are in danger of extermination." Regenstein suggested that the policy change may reflect the interests of the new administration. However, officials at the Interior Department said that the new emphasis had been long considered and had nothing to do with President Reagan's election.

Ronald E. Lambertson, associate director of the department's Fish and Wildlife Service, in whose name the memoranda were issued, said that the de-emphasis of the listing process was necessary to make the best use of the limited money and personnel of the Office of Endangered Species. Lambertson said that amendments to the law last year require extensive economic analysis and other study before a species can be listed, putting additional strain on the capacities of the office.

-----Kansas City Times, January 28, 1981.

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AMERICAN ALLIGATOR EXPORTS APPROVED

Because of increasing alligator populations in Louisiana and Florida, and because these states have programs to monitor populations and control harvests, the Service has approved alligator exports from these areas. The finding for Louisiana applies to alligators taken in the state during the 1980 commercial harvest season, and in Florida, export is approved under the "nuisance" alligator control program during 1980 and 1981.

Provided that any export of American alligators is in accordance with the service's regulations (50 CFR 17.42), which require the licensing of foreign buyers and tanners, and provided that hides are properly tagged, there is assurance that their export would not diminish the effectiveness of the CITES in controlling trade in other crocodilians.

-----Endangered Species Technical Bulletin 5(2):11, November/December 1980

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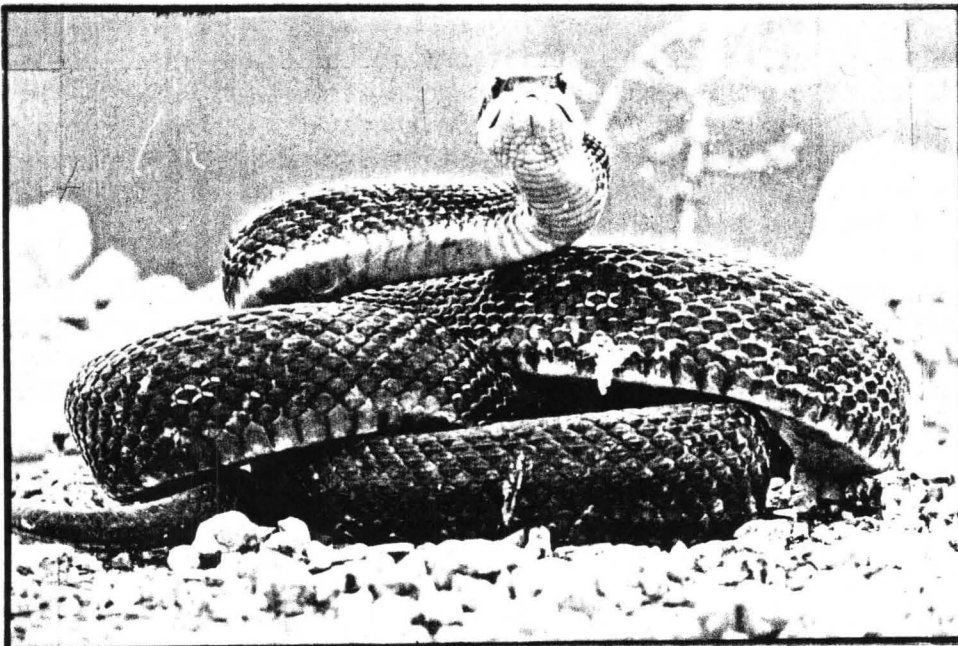
AMPHIBIANS AND REPTILES IN KANSAS, 1

"Amphibians and Reptiles in Kansas" is a new section of the KHS newsletter devoted to informing members about the natural history and habitats of reptiles and amphibians occurring in our state. Each installment will feature one species. In addition to introducing the reader to an animal with which he/she may not be aware of, an emphasis is placed upon revealing interesting facets of the biology which are often not found in the common field guides. Therefore, this section can be considered a complement to the field guides. Of course, this section is not a comprehensive treatment, but may reveal interesting facts about reptiles and amphibians in Kansas.

The title is taken from Joseph T. Collins' informative publication entitled, Amphibians and Reptiles in Kansas, which is currently being revised. In addition to being an extremely useful field guide, Collins' book gives a good summary of many aspects of the natural history of our herpetofauna. The second edition will also contain current range maps for each species. Therefore, anyone with an interest in the Kansas herpetofauna should obtain a copy of the second edition, which will soon be available from the Gift Shop of the Museum of Natural History of the University of Kansas.

THE BLACK RAT SNAKE (ELAPHE OBSOLETA OBSOLETA)

The black rat snake is one of the largest snakes in Kansas, sometimes reaching lengths of over six feet. It is a common species which is restricted to the eastern third of the state, and is usually found in wooded areas. While the adults may be totally black, or black with a faint red or white pattern on the skin between the scales, the young are cream or tan with many large brown blotches covering the entire body. This pattern is eventually lost as the snake matures.



(adult Black Rat Snake, photographed by Larry Miller)

Most individuals emerge from hibernation during April. Typical denning sites include deep crevices on rocky, wooded hillsides and abandoned wells. Many other species of snakes use the same hibernacula, including: the Osage Copperhead (Agkistrodon contortrix phaeogaster), the eastern yellowbelly racer (Coluber constrictor flaviventris), and the red-sided garter snake (Thamnophis sirtalis parietalis).

Mating usually occurs in the spring, although pairs have been observed later in the year. The female black rat snake lays a clutch of eggs in a moderately damp location, such as a rotting tree stump. Clutch size varies from six to thirty or more eggs. Small females produce fewer eggs, while an exceptionally large individual may lay about thirty eggs. Evidence has been found that indicates communal egg laying sometimes occurs. A group of seventy-six eggs was discovered under boards around an old lumber mill in Indiana. This could have been the result of three or four large females laying eggs in the same location.

Both telemetry and mark and recapture studies have given us some indication of the black rat snake's home range. The average distance the snake moves in one day varies from 31 to 150 meters. About forty percent of the time, however, the snake is found in the same location as on the previous day. The telemetry study indicates that the black rat snake is fairly arboreal in nature; since about half of the time the snakes were found in trees. One-fourth of the time is spent in burrows, while the remaining time is divided between thick brush, buildings, and tall grass. A laboratory study also indicated that this snake has a strong tendency to climb. It was most often found in a nest box in a tree limb, as opposed to a box on the floor of the cage.

Inquiries concerning the diet of the black rat snake have revealed some interesting facts. About two-thirds of the food items consist of mammals, especially rodents such as voles (Microtus spp.) and white-footed mice (Peromyscus spp.). Birds constitute the next most important food group, comprising about 20% of the diet. When the arboreal nature of the black rat snake is considered, this is not surprising. Generally, predation is confined to eggs, nestlings, and fledglings of a variety of species including, the blue jay (Cyanocitta cristata), the bluebird (Sialia sialis), and the phoebe (Sayornis phoebe). One observer in Douglas County noticed several large black rat snakes hunting among the nests of a colony of bank swallows (Riparia riparia). These individuals were recaptured several times throughout the year in the vicinity of the colony. The easy access to a steady supply of food may account for the large size of these snakes (the largest individual captured was a male that was 1850 mm (72 3/4 inches) in length. Other interesting accounts describe the black rat snake preying upon bats, both in nature and in captivity. In addition to warm-blooded prey, an occasional reptile or amphibian may also be eaten.

The red-tailed hawk (Buteo jamaicensis) is a major predator of the black rat snake in Kansas. A study of the hawk's pellets showed that about half of them contained remains of this snake. Other predators may include skunks, opossums, and racoons. In the early summer, some snakes are heavily infested with chiggers belonging to a number of different species. This condition may be noticed as a series of red patches between the scales.

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-----Hank Guarisco, Museum of Natural History, University of Kansas, Lawrence,KS 66045.

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PUERTO RICAN BEACHES PROPOSED AS CRITICAL HABITAT FOR HAWKSBILL TURTLE

The Service has proposed to designate critical habitat for the hawksbill sea turtle (Eretmochelys imbricata) in the Commonwealth of Puerto Rico (F.R. 10/22/80). Protected as an endangered species since 1970, much hope for the survival and recovery of this species depends upon the maintenance and protection of suitable, undisturbed nesting beaches. One area included in the proposal, the beaches of Mona Island, was cited as being of major importance as a nesting area for the hawksbill at the World Conference on Sea Turtle Conservation held in November 1979, in Washington, D.C. Designation of Mona Island as critical habitat for the species was one recommendation made at the 1979 conference.

Hawksbill sea turtle populations are apparently declining worldwide because of commercial trade in tortoise-shell items and stuffed specimens, human consumption

of eggs or destruction of eggs by predators, and destruction or alteration of nesting beaches. Other threats to the hawksbill include killing for meat (this only happens occasionally because hawksbill meat is considered poisonous in many parts of the world), accidental entanglement in fishing nets, incidental catches in trawls, pollution and destruction of nesting and feeding reefs, and harassment while nesting and swimming.

Critical habitat for the hawksbill sea turtle in the Commonwealth of Puerto Rico was originally proposed on May 24, 1978. That proposal was withdrawn on March 6, 1979, because of substantive changes made in the requirements for determining critical habitat by the endangered species act amendments of 1978. The areas in the present proposal are essentially the same as those in the original proposal.

Mona Island is owned by the Commonwealth of Puerto Rico and is managed as a Natural Reserve. The island is uninhabited except for Puerto Rico Conservation rangers who enforce wildlife laws. The entire 7.2 kilometers of beaches on Mona Island, to a point 150 meters from shore, are proposed as critical habitat for the hawksbill sea turtle. Mona Island is already critical habitat for the federally-listed yellow-shouldered blackbird (Agelaius xanthomus), Mona ground iguana (Cyclura stejnegeri), and Mona boa (Epicrates monensis monensis).

The areas proposed (on Culebra Island) as critical habitat include nearly all the major sand beaches on the north shore of the island. These areas (Playa Resaca, Playa Brava, and Playa Larga) are currently owned by the U.S. Navy, but are scheduled to be transferred to the Commonwealth of Puerto Rico sometime in 1981. Under draft agreements, the beaches will not be further developed and will be managed by the commonwealth as marine turtle nesting beaches with numerous conditions on human use and activities.

ISLA CULEBRITA A part of the National Wildlife Refuge system, this island is uninhabited with virtually no public access. This island may be transferred to the Commonwealth of Puerto Rico, pending congressional approval, although this has not yet been decided. If transfer is completed, restrictions on human activities would be the as on Culebra. Critical habitat would include all beach-front areas on the southwest facing shore, east facing shore, and northwest facing shore from mean high tide inland to a point 150 meters from shore.

CAYO NORTE Cayo Norte is privately owned in two separate parcels. No one presently lives on the island, although there are reportedly some unoccupied dwellings. The beach may be visited occasionally by boaters, but the remoteness of the island makes such visits rare. Critical habitat would include south beach from mean high tide inland to a point 150 meters from shore.

If published as a final rule, this proposal would require federal agencies not only to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the hawksbill sea turtle, but also requires them to insure their actions are not likely to result in the destruction or adverse modification of their critical habitat.

-----Endangered Species Technical Bulletin, 5(2):11. November/December 1980.

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SUCCESSFUL PROPAGATION OF THE "WATER DRAGON," *PHYSIGNATHUS COCINCINUS*.

One of the most personable and intelligent of the lizards is the water dragon. The six species of *Physignathus* range roughly from southeast Asia to Australia. Since 1973, I have cared for and owned several oriental or Chinese water dragons, *P. cocincinus*. The males are large, robust animals with pink cheeks and yellow-orange colored chins. The body is generally green in color. The females are less colorful and have a slim build. The adult size is usually around ten inches from the snout to the vent, and approximately thirty inches in total body length. The females are slightly smaller than the males. They are extremely carnivorous, but despite their meat-eating tendencies, they tolerate handling, and even enjoy being scratched on the crest of the neck. If given spacious quarters, a proper diet, and a natural light cycle, these lizards will thrive in captivity and can be bred successfully.

The male *Physignathus* must be housed separately from the female and any other lizard that may bear a superficial resemblance to a water dragon, for example, *Iguana iguana*. This is because the male water dragon is preoccupied with procreation. Unfortunately, it's idea of romance is nothing short of rape. The female is justifiably terrified of the male. If placed with the male at any time of the year other than the breeding season, the female will react to the amorous male's head bobbing behavior with fear-induced flight that usually ends with a headlong crash into the side of the enclosure. If housed together, the male will harass, bite, maul, and perhaps even cripple the unfortunate female. During the breeding season, which is about mid-November, the female's response to the male water dragon's approach is slightly different. The female's head will lower in reaction to the head bobbing of the male, and her body will quiver as if to say, "go ahead, kill me." Then, the female will run, but will allow the male to catch her. Copulation then occurs, lasting less than two minutes. When the male releases the female, usually totally unharmed, I remove her immediately.

During the following months, the female takes on a heavy **appearance**. Before the eggs are laid, approximately three months after mating, the female becomes nervous, and will be seen scratching at the corners of her cage. A special, enclosed nest box, partially filled with sterilized soil, should be provided for the female to lay her eggs. The clutch, usually between ten and fourteen eggs, takes about three months to hatch. Hatchling water dragons average six inches in length, but can more than double that size in four months. Young dragons feed readily on small insects, but one young lady trained her hatchlings to accept vitamin-enriched pieces of meat offered to them on sticks.

There are several factors which make *Physignathus* an excellent zoo animal. Being large and colorful, they make attractive display animals. They are exceptionally hardy beasts. Therefore, their care is relatively simple. Lastly and most importantly, since the water dragons are more than willing to breed in captivity, a proper breeding program would make it unnecessary to take these animals from the wild for either the zoo or the pet trade.

-----Dana Knepper, 1556 Lacy, Sioux City, Iowa 51103.



(Photo of a water dragon hatching from egg. Submitted by Dana Knepper)

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MONITO GECKO PROPOSED AS ENDANGERED

Known only from Isla Monito in the Commonwealth of Puerto Rico, the Monito gecko (Sphaerodactylus micropithecus) has been proposed by the service as an endangered species with its critical habitat delineated (F.R. 10/22/80).

An extremely rare lizard, only one adult Monito gecko has ever been collected in spite of intensive surveys. An egg was collected at the same time (May 1974) and both specimens were placed in the Florida State Museum. According to Dr. Howard W. Campbell who, with Dr. Fred G. Thompson, collected the gecko and egg, predation from introduced rats (Rattus rattus) may be the major factor contributing to the species' rarity. Dr. Campbell's trip report stated, "No quantitative estimate is available for their numbers, but it should be noted that, at night, one is never out of sight of at least one foraging rat and frequently several will be in sight at any given moment."

Previous surveys of Monito failed to turn up any lizards of the genus Sphaerodactylus, which are normally abundant when present. The gecko was described as a distinct species in 1977 and the Monito Sphaerodactylus has been difficult

to ally taxonomically with any species nearby, including S. monensis of Mona Island only 5 kilometers away.

The service believes that because the Monito gecko is known to occur only on the tiny (300 x 500 meters) Isla Monito, the entire island should be designated as critical habitat. If the area were destroyed, the gecko would become extinct. Also, the rat problem is such that the island must be carefully managed to insure the continued existence of the lizard as well as its extensive sea bird colony.

Activities which might be detrimental to the environment of this species and lead to further reduction of its range include using Monito as a target for naval bombing practice, as was considered in the past, and other types of physical alteration of the island.

----- (taken from Endangered Species Technical Bulletin, V(11):10, Nov/Dec 1980).

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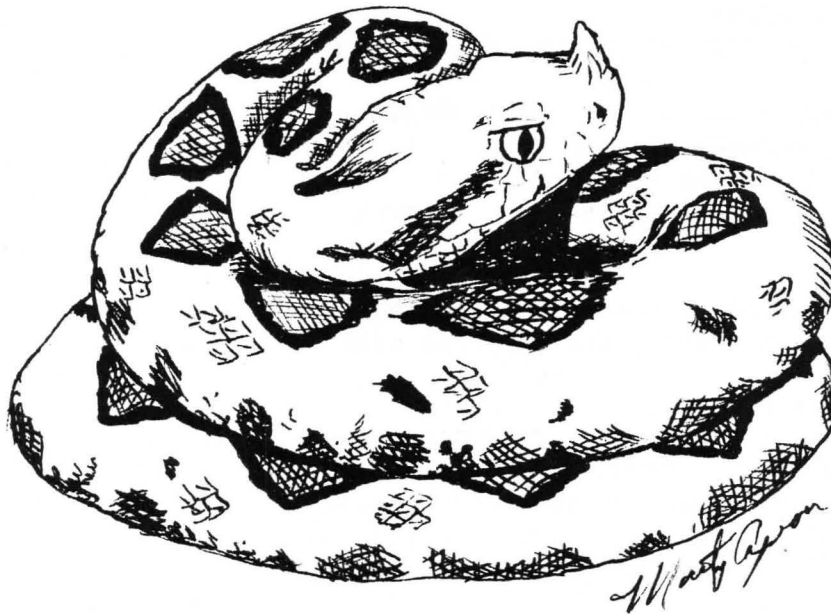
S N A K E

A snake came to my water-trough
on a hot, hot day, and I in pyjamas for the heat,
To drink there.

In the deep, strange-scented shade of the great dark carobtree
I came down the steps with my pitcher
And must wait, must stand and wait, for there he was at the
trough before me.

He reached down from a fissure in the earth-wall in the gloom
And trailed his yellow-brown slackness soft-bellied down,
over the edge of the stone trough
And rested his throat upon the stone bottom,
And where the water had dripped from the tap, in a small
clearness,
He sipped with his straight mouth,
Softly drank through his straight gums, into his slack long
body,
Silently.

Someone was before me at my water-trough,
And I, like a second comer, waiting.



He lifted his head from his drinking, as cattle do,
 And looked at me vaguely, as drinking cattle do,
 And flickered his two-forked tongue from his lips, and
 mused a moment,
 And stooped and drank a little more,
 Being earth-brown, earth-golden from the burning bowels
 of the earth
 On the day of Sicilian July, with Etna smoking.

The voice of my education said to me
 He must be killed,
 For in Sicily the black, black snakes are innocent, the gold
 are venomous.

And voices in me said, If you were a man
 You would take a stick and break him now, and finish
 him off.

But must I confess how I liked him,
 How glad I was he had come like a guest in quiet, to drink
 at my water-trough
 And depart peaceful, pacified, and thankless,
 into the burning bowels of this earth?

Was it cowardice, that I dared not kill him?
 Was it perversity, that I longed to talk to him?
 Was it humility, to feel so honoured?
 I felt so honoured.

And yet those voices:
"If you were not afraid, you would kill him!"

And truly I was afraid, I was most afraid,
But even so, honoured still more
That he should seek my hospitality
From out the dark door of the secret earth.

He drank enough
And lifted his head, dreamily, as one who has drunken,
And flickered his tongue like a forked night on the air, so
black,
Seeming to lick his lips,
And looked around like a god, unseeing, into the air,
And slowly turned his head,
And slowly, very slowly, as if thrice adream,
Proceeded to draw his slow length curving round
And climb again the broken bank of my wall-face.

And as he put his head into that dreadful hole,
And as he slowly drew up, snake-easing his shoulders, and
entered farther,
A sort of horror, a sort of protest against his withdrawing
into that horrid black hole,
Deliberately going into the blackness, and slowly drawing
himself after,
Overcame me now his back was turned.

I looked round, I put down my pitcher,
I picked up a clumsy log
And threw it at the water-trough with a clatter.

I think it did not hit him,
But suddenly that part of him that was left behind
convulsed in undignified haste,
Writhed like lightning, and was gone
Into the black hole, the earth-lipped fissure in the wallfront,
At which, in the intense still noon, I stared with fascination.

And immediately I regretted it.
I thought how paltry, how vulgar, what a mean act!
I despised myself and the voices of my accursed human
education.

And I thought of the albatross,
And I wished he would come back, my snake.

For he seemed to me again like a king,
Like a king in exile, uncrowned in the underworld,
Now due to be crowned again.

And so, I missed my chance with one of the lords
of life.
And I have something to expiate;
A pettiness.

-----D. H. Lawrence (taken from: The Complete Poems of D.H. Lawrence, Vivian
de Sola Pinto and Warren Roberts, editors, Penguin Books, New York, N.Y.)

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