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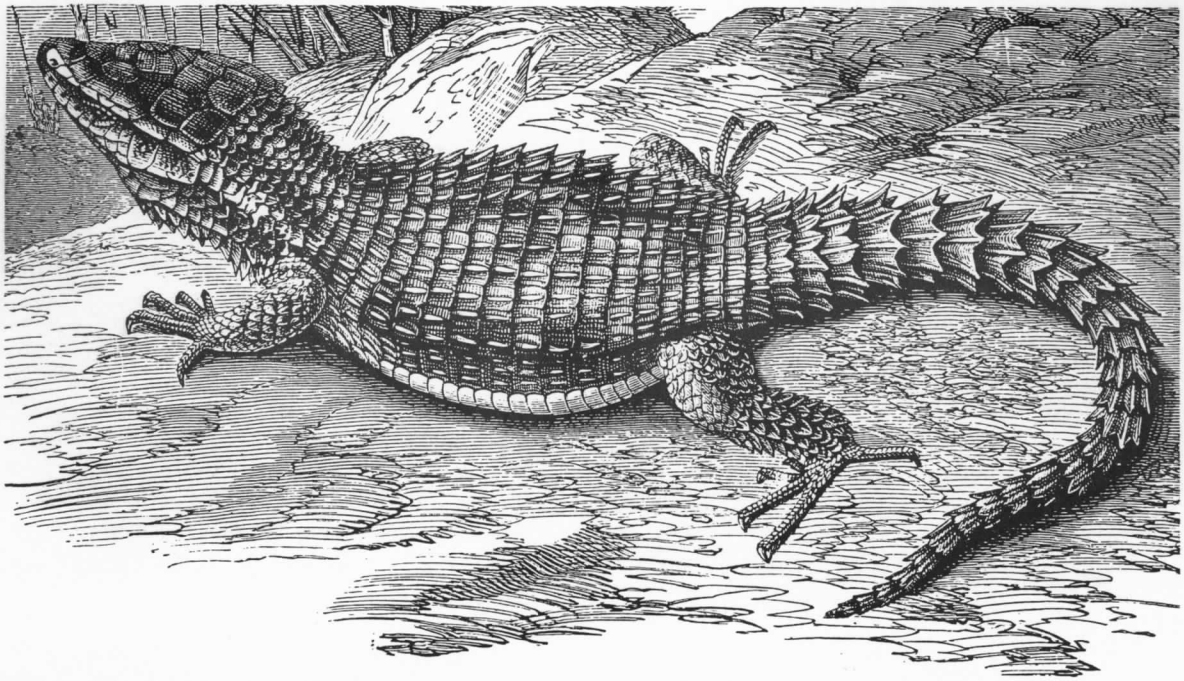

Lizards of the genus *Cordylus* are found only in southern and eastern Africa. This issue includes a photo essay by Gary Fogel, depicting the live birth of an armadillo lizard, *Cordylus cataphractus*. The drawing of a Cape girdle-tailed lizard is taken from the *Library of Natural History, Volume V* edited by Richard Lydekker, 1904.

BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY
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Raising Newly-Hatched Green Anoles, *Anolis carolinensis*, in Captivity

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Last summer I was presented with an opportunity that invoked dim memories of my early youth. During preschool days, I was totally fascinated with my eldest brother's American chameleons (green anoles). However, he forbade me to play with or even touch these curious, compelling creatures who so magically changed from gray to brown to green before my eyes. Now, several decades later, two of them needed care. At last it was my turn.

For the past several years, Miss Frances Velay has maintained a thriving colony of American chameleons in a lush, 20″ x 25″ x 50″ terrarium (Figure 1). Occasionally, eggs were laid that hatched into minuscule neonate anoles. Despite loving care, none of the young had ever survived more than a few weeks.

Professional and amateur herpetoculturists report difficulty rearing captive-hatched green anoles. Greenberg (1991) states that, "only occasionally are young fledged. Although neonates feed and behave normally at first, most do not survive a month. The cause of death has not been determined but muscular spasms observed in their last hours indicate a profound metabolic problem." Although the National Zoo has raised them, one staffer concluded that adult green anoles can be obtained so readily that it's not worth the trouble to hatch the eggs. He confirmed that young green anoles often perish even under optimal conditions (Demeter, pers. com.).

Nonetheless, I volunteered to tend any hatchlings of 1992, encouraged in this venture by an article (Draud, 1992) which stated: "newly hatched juveniles will require many small insects and plenty of water. Feed and mist them twice daily. If fed properly, juveniles will grow rapidly and within several weeks will be large enough to take small crickets."

Food and Feeding

Two neonate anoles emerged several weeks apart, and I picked up each about one week after hatching. Fortunately, Miss Velay provided me with several starter vials of winged fruit flies, which seemed the most urgent need.

I quickly learned how to prevent the escape of my precious few flies during feeding: squeeze the cotton stopper to one side until a few flies crawl up near the top of the bottle. Then quickly release the cotton to press them between it and the glass, alive but immobile. While slowly sliding out the cotton, catch and crush the flies when they emerge.

My next problem was the tactical challenge of presenting the flies to a creature barely larger than my fingernail. Through trial and error I developed a procedure that worked well: entice the anole onto a leaf or small plastic plant. Carefully transfer plant plus anole from the cage into a shallow plastic dish, gently shaking the anole off the plant. Place a lid on the dish while preparing the meal. With a slender broomstick straw several inches long, impale a freshly killed fruit fly. Hold the fly in front of the anole, or wave it slowly off to one side for better visibility (Figure 2). If the anole doesn't immediately strike and swallow the fly, touch the fly to the anole's nose. If necessary, place it right on the snout. Eventually, the anole will lick or rub the fly off its snout and eat it.

As the green anoles grew more active, I dispensed with the feeding dish and inserted the straw directly into the cage in

Figure 1. Frances Velay with terrarium of anoles. Photograph by author.

Figure 2. Author feeding a week-old green anole. Photograph by Jessamine Goddard.

front of them. Depending on its mood and degree of hunger, the young anole either dashed to the incoming straw to snatch the morsel eagerly, ate the fly only after some tempting, licked up the fly after it had been placed on its nose, retrieved the fly later after I placed it on a nearby leaf, or refused to eat altogether.

Initially, I had planned to catch wild flies to feed the anoles, and I optimistically dotted my yard with bait stations of rotting fruit and vegetables. Although a muskmelon lure drew clouds of small beetles, fruit flies, and tiny black flies, these wild insects proved wary and difficult to catch. Neither nets nor quickly clamping a lid over the bait yielded enough prey. Carolina Biological Supply came to the rescue with a starter batch of vestigial-winged fruit flies (much easier to handle than those with wings) and food medium with easy-to-follow instructions on maintaining fresh cultures.

Before reaching this solution, I supplemented fruit flies with other insects from sweeps of lawns, woods and fields. I offered beetles, flies, mosquitos, ants, small moths, gnats, and other invertebrates, even removing wings. Other than fruit flies, however, the anoles accepted only a few small black flies cut in half, and rarely, a quartered, de-winged house fly.

On average the anoles ate three meals of five to seven fruit flies each day. After approximately two to five weeks, the anoles began to catch vestigial-winged fruit flies, which I had released in their cage. After three to seven weeks, the anoles graduated to small crickets, which at first I killed and halved, presenting on a broomstick straw or depositing them on a branch. Eventually the anoles caught live crickets and both became adept hunters. Note in Table 1 the wide disparity between the progress of these two sibling green anoles.

Lucky Snap: A Lesson in Lighting

The first neonate, later sexed as female, earned the name Lucky Snap for her habit of eagerly snapping up fruit flies and for generally seeming happy-go-lucky. However, Snap faced a crisis from her 21st to 26th day of life. She lost her appetite and ultimately totally refused food, not even seeming to see the flies. At her lowest point, she was utterly listless, licking water droplets only when they were placed directly on the tip of her snout.

On Snap's 23rd day, I installed a Vita-Lite bulb (Duro-test Corporation) in an aquarium-style fixture to provide ultraviolet light. Although Snap's cage stayed in the sunlight when possible (with careful monitoring of the inside temperature), after a long period of rainy weather I suspected she needed better light. According to *Care in Captivity* (Beltz, 1989): "ultra-

Table 1. Feeding schedules.

Day number (1 = hatch day)	Snap (hatched 9 July 1992)		Cassidy (hatched 30 July 1992)	
	Number of feedings	Fruit flies eaten	Number of feedings	Fruit flies eaten
1 — 4	N/A	N/A	N/A	N/A
5	N/A	N/A	2	9
6	N/A	N/A	2	13
7	N/A	N/A	2	9
8	N/A	N/A	2	10
9	6	15	6	21
10	4	13	4	19
11	3	10	3	12
12	2	14	N/A	N/A
13	3	20	3	5
14	3	10	3	14
15	4	4	4	14
16	2	10	Fruit flies released free in cage from this point on	
17	1	11		
18	4	0		
19	3	17		
20	2	11		
21	3	5		
22	4	0		

violet rays are especially important for vitamin D synthesis and calcium metabolism . . . . [UV light] increases appetite, activity, and general health. It activates vitamin D in the skin, which is important for normal calcium metabolism, strong bones, and eggshell production." Likewise, Greenberg (1991) explains that ultraviolet light is "believed important for full expression of photo-modulated physiological and behavioral traits and may be important to the health of hatchlings." Full spectrum light may be more important for hatchlings than adults, since Snap's parents had thrived and bred under a normal fluorescent bulb.

References suggested placing the light source six inches away from the cage for six to twelve hours a day. Since Snap was doing so poorly, I gave her the option to be closer and left it on fulltime during the first few days so she could choose to bask or hide. For the first many hours she stretched full-length, nearly touching the light.

Other Environmental Factors

In addition to improving the lighting, I raised the humidity by adding a paper cup full of wet sphagnum moss and misting the cage more frequently. (Green anoles lap droplets from leaves or the sides of the cage, not recognizing standing water as a source of drinking water.) Following the advice of John McNett of Casa de Tortuga, I held Snap for a minute or two in half an inch of water, keeping her nostrils clear. Shedding reptiles often benefit from soaking. It helps to help loosen their skin. Since Snap's head shield remained gray even when the rest of her body switched from green to dark brown during basking, I surmised she was close to her first shed. In fact, her seeming blindness to the fruit flies was probably caused by the opaque stage while her new eye caps were growing.

At the suggestion of Béla Demeter of the National Zoo, I also offered vitamins. Greenberg (1991) also noted: "Some workers improve the odds by calcium supplementation (dusting prey)." First, I tried Vitalife, an available reptile supplement, but Snap assiduously rubbed the fruit flies back and forth to remove the dusting. Next I dipped the flies in a mixture of honey and Poly-Vi-Sol liquid vitamins (for human infants). Even in the most dilute forms, Snap shook her head violently when approached with these flies and adamantly refused them. When I placed a dab on her snout, she rubbed it off vigorously.

Finally, based on a recommendation in *Care in Captivity* (Beltz, 1989) for thrice daily feedings of a nectar of liquid protein, vitamin/mineral supplements, and baby food, I experimented with peach baby food. Snap soon began to enjoy fruit flies coated with this nutritious sweetener. Since then I learned that Chirp powder, a product of Lambert Kay, "supposedly has about four times as many nutrients as some other preparations and, importantly, some herps prefer its taste over others" (Engler, 1993).

Snap's breakthrough came at 2100 h, 3 August, her 26th day, when first one and then the other eye scale peeled back and she rubbed off her head shield. From then on, she ate voraciously and remains in excellent health.

Both anoles have been maintained at a temperature in the high 70s and 80s, Fahrenheit.

Cage Type

Impressed with the appearance of a healthy terrarium, I first created one with a glass top, potting soil and luxurious plants. Within days it built up excess humidity, with constant condensation on the inside, resulting in fungal growth on the soil surface. When I switched from a glass top to a screen lid, the cage dried out too easily, killing the plants. However, these moisture imbalances proved insignificant compared with the difficulty of locating a bright green anole among the foliage or a tiny dark brown anole sitting quietly on the soil.

Soon, I switched to a clear, gallon-size glass jar stuffed loosely with paper towels and topped by fine mesh aquarium netting (Figure 3). A few plastic plants positioned at different levels gave the anoles a selection of hiding and resting spots. This set-up provides these additional positive features:

- easy to clean
- easy to locate the anoles for feeding
- easy to maintain proper humidity and temperature
- easy to transport between home and office to enable round-the-clock observation and feeding.

Once the anoles started eating crickets, I transferred them to an aquarium lined with paper towels, with several live potted leafy plants which are misted twice daily, and a sphagnum-filled water dish for uneaten crickets.

Hippity-hop-along Cassidy: A Study of Contrasts

On 30 July the other neonate emerged, later sexed as a male. Noticeably larger even at hatching, this green anole proved more robust, earning the name Hippity-hop-along Cassidy for his speed and agility. He relished eating flies dipped in peach baby food and basking under the Vita-Lite, both of which were provided from his first week on. Either because of the tech-

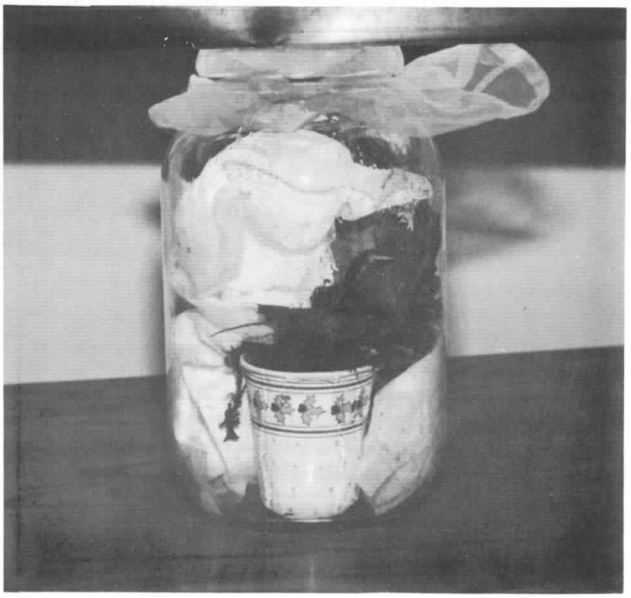

Figure 3. Snap in gallon-jar cage. Photograph by author.

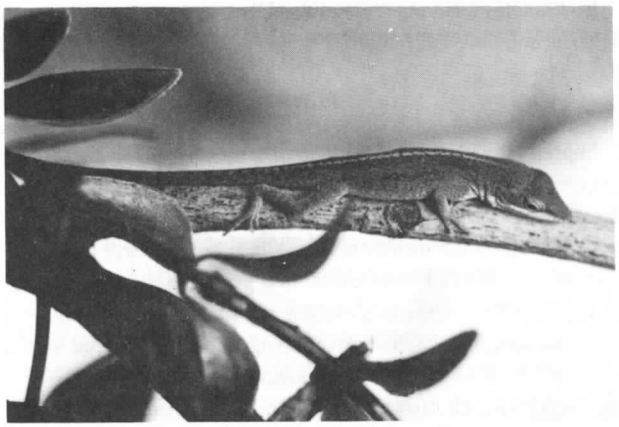

Figure 4. Cassidy basking at six weeks old. Photograph by author.

niques I learned from my experiences with Snap, the sex difference or for other reasons, Cassidy (Figure 4) grew rapidly, equaling Snap's size by his 13th day (her 34th). By his 37th day he regularly did "push-ups" and displayed a pink dewlap. Table 1 shows how Cassidy advanced in less than half of Snap's time to catching fruit flies (two weeks rather than five) and crickets (three weeks rather than seven). Cassidy is still considerably larger than is Snap.

Handling

Heeding my brother's concerns from years ago, I have restrained myself from handling the anoles. In nature, baby green anoles are described as fairly inactive, sitting quietly most of the time to avoid attracting attention from their parents or other potential predators. Draud (1992) writes, "In general, the less these small lizards are handled, the better they like it." Meier et al. (1973) recommend minimizing this potentially stress-causing factor. As an adult, I have finally found the patience to enjoy these creatures with my eyes only.

The Human Element

As well as the above environmental requirements for raising neonate green anoles, a major factor in success is time: time to observe them to learn how they communicate hunger and other needs; time to be patient when feeding them; and time to locate and consult other herpetoculturists. Also important are flexibility to try different approaches and dedication to do whatever possible to care for them properly.

Acknowledgements

Foremost, I dedicate this paper and the raising of Snap and Cassidy to Frances A. Velay, who kept their parents, cared for the neonates just after hatching, and gave me the opportunity to raise them. From Philadelphia, Miss Velay is noted for her red-eared sliders. One of these turtles achieved a longevity record of more than 41 years and is still in excellent health and laying eggs. I thank Miss Velay deeply for encouraging and broadening my herpetological interests.

Thanks also to Mary Mawson, who ably cared for Hippity-hop-along Cassidy during his critical 5th through 11th days; to Miss Jessamine Goddard, who conceived the idea of using broomstraws to feed the anoles and provided the first such implements; and to Jack Sobel, Ann Bolger, Tessie Doheny and others from the Center for Marine Conservation who occasionally helped anole-sit. John McNett, of the Casa de Tortuga in Fountain Valley, California, and Béla Demeter, of the National Zoo in Washington, D.C., responded to my frantic phone calls with sage advice. Lastly, thanks to my father, and to my brother Walter Susor, who introduced me to the wonders of reptiles.

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Field Observations of Salivary Digestion of Rodent Tissue by the Wandering Garter Snake, *Thamnophis elegans vagrans*

Robert B. Finley, Jr.[1], David Chiszar[2] and Hobart M. Smith[3]

When collecting small mammals in the vicinity of Raton Pass north of the Colorado/New Mexico border in 1983, one of us (RBF) saw a wandering garter snake (*Thamnophis elegans vagrans*) attempting to swallow a Mexican vole (*Microtus mexicanus*) that was dead in a museum special mouse trap. The snake, alive but sluggish, had engulfed the entire anterior half of the vole until prevented from swallowing more by the attached trap. When removed from the trap, and the abundant saliva rinsed off in a creek, the vole was discovered to have extensive depilation over much of the head and neck (Figure 1), presumably through salivary proteolytic action. The vole was prepared as a study skin that afternoon and the snake was also preserved. The locality was on the west side of Interstate Highway 25, nearby to mile marker 5.5, 5.5 mi N Raton Pass, 6800 ft, Las Animas County, Colorado; the date was 18 June 1983. Both specimens are in the collection of the National Ecology Research Center in Ft. Collins, Colorado: the vole no. BS/FC 10527, an adult, pregnant female, and the garter snake no. BS/FC 4004, female, total length 683 mm.

The next day another garter snake was surprised on the same trap line as it was beginning to swallow another vole. This snake quickly disgorged the mouse and escaped.

In view of the many hundreds of voles (*Microtus*) that have been trapped within the range of *T. elegans*, two such occurrences on successive nights, when rarely observed otherwise, seem unlikely to be mere coincidence. However, the known ecology of the snake in Colorado, as summarized by Hammerson (1982), suggests an explanation. Both the wandering garter snake (at least in this part of its range) and the Mexican vole are more terrestrial than many of their congeners, and are often found in moderately dry areas distant from water as well as in riparian habitats. Also, this garter snake is known to hibernate in small mammal burrows and to feed on voles. All members of its species appear to be readily capable of digesting mammals (Fox, 1952), whereas their close relatives (*T. atratus*, *T. couchi*, *T. hammondi*) are not. In June, when these observations were made, Mexican voles were abundant and their runways were associated with the burrows of pocket gophers (*Thomomys bottae*) (Finley et al., 1986) at a season when amphibians, the usual summer food of *T. e. vagrans*, were not abundant at that elevation. The two observations of attempted feeding on voles under the conditions here reported suggest that the occurrence of the wandering garter snake in more terrestrial habits and at higher elevations than many of its congeners may be a consequence of its ability to use small rodents for food, and their burrows for overwintering sites.

Digestion of the skin of the vole here reported was obviously a result of secretions of oral glands of the snake, inasmuch as ingestion was blocked considerably short of the stomach. Furthermore, the serous secretions of Duvernoy's glands are implicated, since the mucous secretions of the other oral glands are strictly lubricative in function, or at least have no proteolytic action (Taub, 1967; Kochva, 1978; DeLisle, 1981).

Garter snakes (*Thamnophis*) are commonly regarded as essentially harmless, and have long been widely popular as pets, occurring throughout temperate North America, often abundantly, and being gentle, as a rule, at least after a short time in captivity. It was therefore a great surprise to most herpetologists when a moderately severe reaction, similar to envenomation, occurred in 1975 to a bite in California from a garter snake (*T. couchi*) on an 11-year-old boy (Minton, 1978, 1979; DeLisle, 1981). Apparently all members of the genus (McKinstry, 1983) as well as of some related genera (e.g., *Natrix* of Europe; Gygax, 1971) possess Duvernoy's glands (Taub, 1967; DeLisle, 1981).

Much research on the structure and function of these glands has been done on *T. elegans vagrans*, first by Vest (1981a, b). In addition, Jansen (1983) described an antibacterial function, apparently of primarily buccal importance in this species (although perhaps of gastric function also in species capable of subcutaneous injection), and later (Jansen, 1987) a strong myonecrotic function, supporting Gans' (1978) suggestion that the initial and still most ubiquitous role of Duvernoy's gland secretion is digestive. Minton and Weinstein (1987) reported the immunological properties of those secretions in *T. e. vagrans*.

The proteolytic, digestive role of Duvernoy's gland secretions was confirmed and emphasized by Hayes et al. (1993) in another species, the brown tree snake, *Boiga irregularis*. The "primarily proteinaceous" nature of those secretions in the same species, "with few lipid or carbohydrate components,"

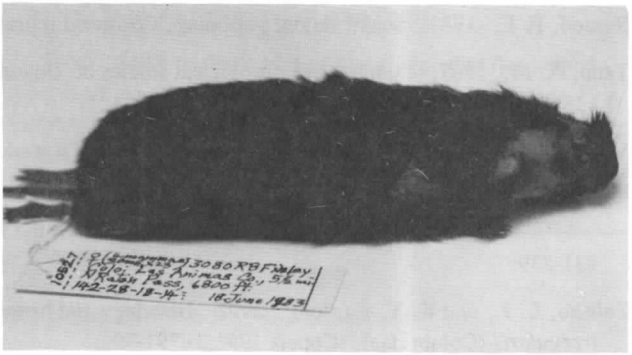

Figure 1. Study skin of a vole, *Microtus mexicanus*, showing hair slippage from the head resulting from exposure to oral gland secretions of a garter snake, *Thamnophis elegans vagrans*. See text.

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was recorded by Zalisko and Kardong (1992).

The venoms of solenoglyph snakes are also importantly digestive in function, although secondary to prey immobilization (Russell, 1983). Nevertheless, there is no clear evidence that the venom glands of endoglyphous snakes evolved from Duvernoy's glands (Taub, 1967; Kochva, 1978); their origin remains a mystery, compounded by the abundant polyphyly of the latter, and by the apparent diphyly, at least, of the former.

The present report of the rapid initiation of digestion upon exposure to saliva, presumably from Duvernoy's glands, is the first to confirm, on the basis of field observations, some of the results of laboratory studies.

Acknowledgements

We are much indebted to Dr. Gordon H. Rodda for help with the literature.

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Helpful Herp Hints
by Dennis Engler

I recently acquired a small Chaco tortoise (*Geochelone chilensis*) which seemed to be about a year old. It had good weight but its eyes were swollen and sealed shut. Ordinarily I only accept animals that are in good health and I recommend that others do the same. This is especially important for beginners. But these tortoises are not often available, and this one seemed so pathetic that I found my heart going out to it and suddenly I was its new owner.

The following is an account of the treatment I administered and the result. This is by no means intended to be the definitive treatment for every turtle or tortoise with swollen eyes. It is simply an account of the treatment administered to one specific tortoise. I would stress that: 1) good husbandry is the best guarantee that you won't be needing to treat a sick animal; 2) it's best not to purchase sick animals; and 3) if you have an animal that's sick, the sooner it gets help the better. A cure is much more likely if the problem is caught early.

Day 1: I always soak a newly acquired tortoise in case it has become dehydrated. This gives it a chance to drink. In this case I figured that stress and vitamin deficiency were the most likely causes of the eye problems. While soaking the tortoise, I put a few drops of Tetra Reptisol (multipurpose soluble liquid vitamins) in the water. I placed the drops right by its head, so that if it drank it would be taking in some vitamins with the water. And it did drink. I also used some Tetra Turtle Eye Clear at this time—a couple of drops in each eye. Between the soaking and the drops it was able to open its eyes. Even though this was its first day in my care, I offered it a variety of greens: kale, endive, escarole, dandelion, mustard greens and romaine. It did not eat. It went into the hidebox provided and stayed for the rest of the day.

Day 2: When I removed the tortoise from its hidebox, its eyes were still stuck shut and swollen. I used the Turtle Eye Clear again, a few drops in each eye until it could open its eyes. I also turned the tortoise upside down and placed a couple of drops of the Reptisol vitamins on its mouth, hoping gravity would cause some to seep into its mouth and down its throat. I again offered the greens and this time it did eat. It ate a very small amount of endive and then returned to its hidebox.

Day 3: Again when I removed it from the hidebox I found the tortoise's eyes stuck shut and swollen. I repeated the above routine of eye rinses, vitamins and food. It seemed to eat a little more than the previous day. It ate endive again and some dandelion leaf. Then it went back into its hidebox. Later I bought some generic vitamin E gel caps. I punctured a gel cap, removed the tortoise from its hidebox and squeezed a little gel onto each eye. Then I returned it to its hidebox.

Day 4: When I went to check on the tortoise, for the first time it was out walking around on its own. One eye was open! The other eye, though closed, did not seem so swollen. I again went through the routine of eye rinses, vitamins and offering greens. This time it really seemed to be getting its appetite back. After it had finished eating, I again placed vitamin E gel in both eyes and returned it to its hidebox.

Day 5: The tortoise was again out of the hidebox walking around its cage. This time both eyes were open! I soaked it again, placing a few drops of Reptisol in the water. After the soaking I let it eat, and it ate well again. I used the vitamin E gel in the eyes again.

Since day five the tortoise's eyes have been fine. Once a week I sprinkle a powdered variety of vitamins on its greens. And once a week I place a few drops of Reptisol in its drinking water. Most books on turtles and tortoises mention vitamins as a factor in eye problems, which is why I used the Reptisol. I read about using the vitamin E gel caps in Frye's book, *Reptile Care*. I'm sure that not all the answers to your questions are in books, but there is a lot of information out there if we just take the time to look for it.

I am finding more and more useful information in herp magazines. *Reptiles and Amphibians*, *Captive Breeding*, *Reptiles*, *Reptilian* and *Vivarium* are some that come to mind. There have been some excellent articles in these magazines lately on a variety of subjects. If you can't afford to subscribe to every magazine that interests you, perhaps a couple of your friends could order different magazines and you could swap them back and forth. The more you read and learn, the better you will be able to take care of your herps.

If you'd like to share a bit of knowledge that has helped you in taking care of herps, you can send it to: Chicago Herpetological Society, Helpful Herp Hints, 2001 N. Clark Street, Chicago IL 60614. Happy Herping!

Literature Cited

Frye, F. L. 1991. Reptile care: an atlas of diseases and treatments. Neptune City, NJ: T.F.H. Publications.

The Live Birth of an Armadillo Lizard, *Cordylus cataphractus*

Gary Fogel
4108 N. Damen Avenue
Chicago, IL 60618

I have owned armadillo lizards for several years and they have had numerous live births throughout that time. Until recently, however, I had never witnessed the actual birth process. On Sunday, 22 August 1993, this was about to change. During a routine feeding I noticed one gravid female having trouble moving her back legs. Since this was not normal behavior, I took it to mean she was going into labor. The fact that she was doing so in plain sight was amazing. Fortunately, I had film in my camera at the time, so I ran to get it, positioned myself and waited. Less than two minutes later, the birth was over. The following photos (Figures 1–9) document this possibly never before seen event. As soon as the neophyte lizard was born, the mother ran for cover under the nearest rock. Within seconds the baby did the same. Since armadillo lizards give birth once a year, usually to only one offspring, the chance of documenting this event again seems a remote possibility at best.

Figure 1.

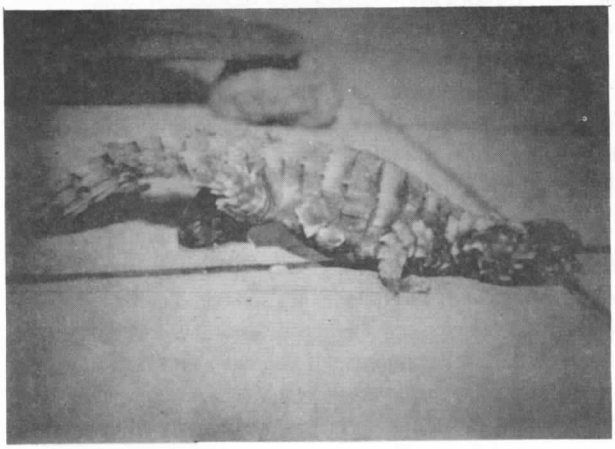


Figure 2.

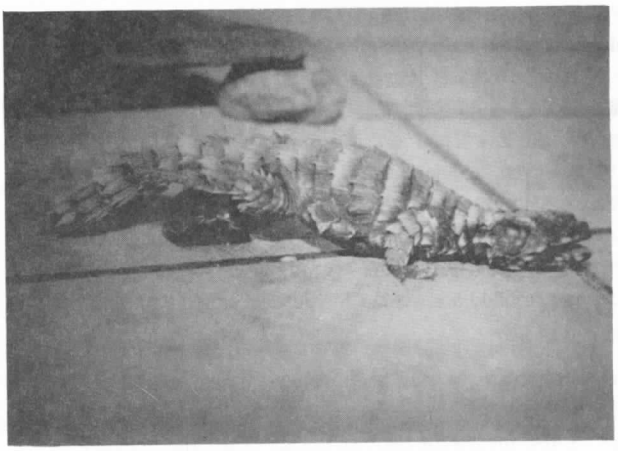


Figure 3.

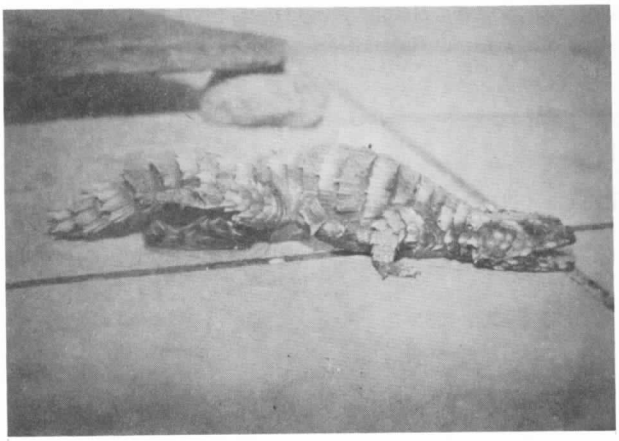


Figure 4.

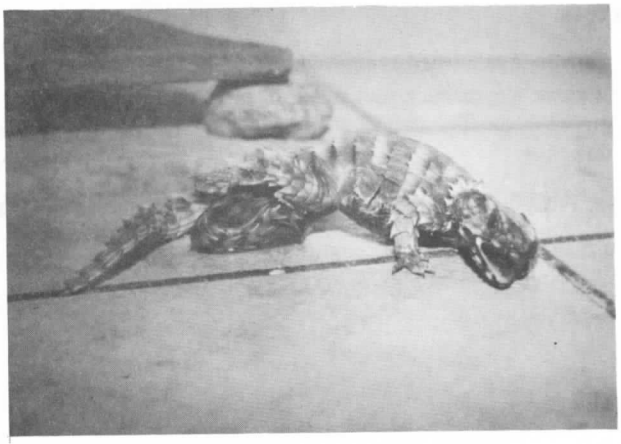


Figure 5.

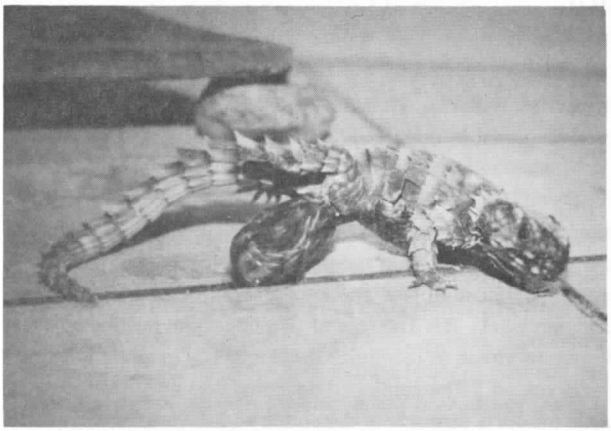
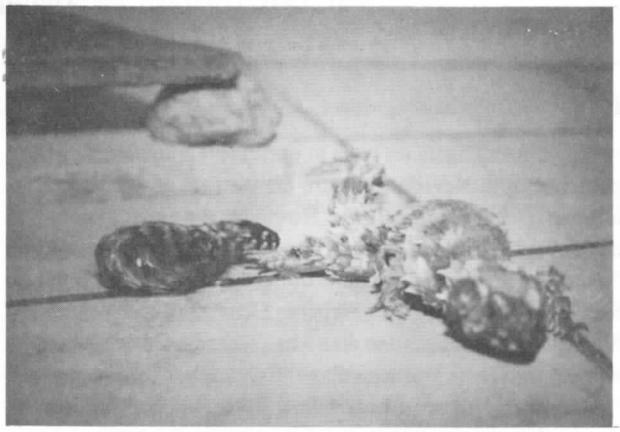


Figure 6.



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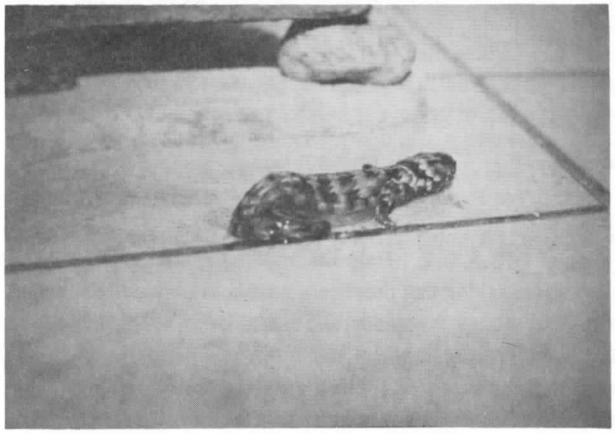


Figure 8.

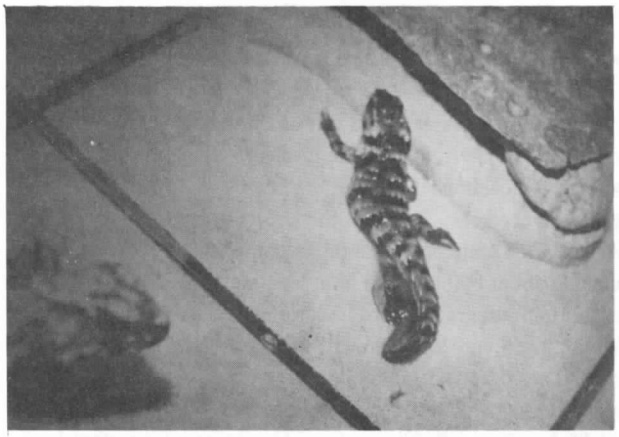
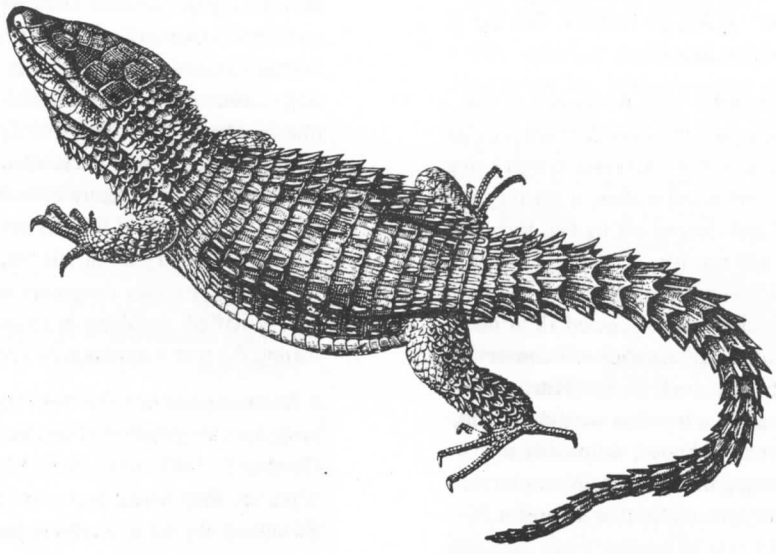


Figure 9.



HerPET-POURRI
by Ellin Beltz

It's turtles, all the way down . . .

• Government agencies want to preserve 1.3 million acres of public lands in Nevada to ensure the survival of the desert tortoise (*Gopherus agassizii*). However, ranchers, miners, developers and desert recreationists fear their uses of the "empty" lands will be prohibited. The U.S. Fish and Wildlife Service (USFWS) held a hearing in October in Las Vegas, hoping an accommodation could be reached. Other species will be protected, too, including the California bear poppy, the Gila monster, the southwest willow flycatcher, and the blue diamond cholla. Presently local developers pay $500 an acre to fund research, collection, and adoption of desert tortoises. [*Las Vegas Sun*, October 10, 1993, from Bob Pierson] The October 13 issue of the same paper said that more than 30 critics showed up to speak against the proposal to protect land for the use of species other than *Homo sapiens*.

• Environmentalists and real estate developers in Melbourne Beach, Florida, are at loggerheads over recent building on the beach within a few hundred feet of the ocean. Government officials and environmental activists are trying to protect a stretch of beach used as a nesting site by up to 15,000 sea turtles every year. In 1990, the U.S. Congress approved the Archie Carr National Wildlife Refuge which is supposed to include about 860 acres in four separate areas on the barrier island in Southern Brevard and northern Indian River counties. So far, however, less than half that much land has been purchased with the $63 million raised by county, state, and federal sources as well as private foundations. Congress contributed $5.5 million. Builders are pushing to get at the other land slated for protection. More than 30 projects are up for review by Brevard County, and the Disney Company intends to build a time-share resort next to the proposed southern boundary of the Refuge. More development means more roads, more lights, more people driving and playing on the beaches. One researcher said, "If the Carr Refuge lands are not acquired nearly in their entirety, there probably won't be any green turtles here by the year 2000." [*Chicago Tribune*, October 9, 1993, from P. L. Beltz and Claus Sutor]

• Two young eastern painted turtles were found east of the town of Como, North Carolina (six miles south of the Virginia state line), covered in asphalt-covered fiberglass strings being used by highway workers to stop erosion along a small cypress swamp. They were rescued and cleaned off by two Richmond-area women and apparently will survive. Their experience prompted an article in the *Richmond Times Dispatch* [September 13, 1993, from Kathy Bricker] that discussed all forms of habitat loss and encroachment. CHS member and conservation biologist at the University of Richmond, Joseph Mitchell, was quoted, "Every time we cut down a tree that we didn't plant, every time we put in a new road or house, we modify the landscape so that what was living there originally can no longer live there, or we modify the life of that organism."

• The *EarthFirst! Journal* features a story titled "Mexican Sea Turtles in Trouble" by Mark Heitchue [September 22, 1993, from Alan Willard]. Heitchue states that four "problems have been identified by Mexican biologists and conservationists . . . 1.) Mexico keeps promising to put turtle excluder devices (TEDs) on all Mexican shrimp trawlers . . . 2.) The unpunished rape and torture of two women sea turtle biologists by known turtle poachers is not only unforgivable, but has also created a climate of fear and intimidation for biologists doing frontline work. 3.) The sale of two important nesting beaches despite promises to recognize these areas as protected turtle preserves. 4.) The continued poaching and open sale of sea turtle products throughout the country . . . . It took a grassroots activist movement to close the notorious sea turtle slaughterhouse in Mexico where 75,000 turtles were being killed every year . . . . A coalition of grassroots activists . . . helped force Japan to stop importation of endangered Hawksbill sea turtles for jewelry." EarthFirst suggests several actions which are rather radical and will not be repeated here, but I will include their call for volunteers. You can contact them at P.O. Box 1415, Eugene, OR 97440 (503) 741-9191, fax (503) 741-9192.

• From other materials I have received, it appears that the four charges above are being circulated widely and did indeed come from the research community involved. Also, Carole Allen of H.E.A.R.T. (Help Endangered Animals—Ridley Turtles) wrote saying that they were unable to obtain hatchlings this year. Call it a bureaucratic snafu, or an attempt to end the H.E.A.R.T. program, depending on your point of view. TED requirements aren't even being enforced well in the U.S. yet, as a letter sent by the Center for Marine Conservation to the Director of the Office of Protected Resources, National Marine Fisheries Service (NMFS) brings forward. Dated October 20, 1993 it reads in part: "[we are] pleased to support NMFS interim final rules published on September 20, 1993 requiring the use of turtle excluder devices (TEDs) in the summer flounder fishery from the southern border of North Carolina to Cape Charles, Virginia to protect sea turtles . . . . The National Academy of Sciences 1990 report documented that the incidental capture of sea turtles in non-shrimp fisheries, including the summer flounder bottom trawl fishery, is the second largest source of human induced moralities [sic] of sea turtles (the first being the shrimp trawls) . . . . We also urge the NMFS to require and place adequate numbers of observers to obtain an accurate picture of both the interactions between the . . . trawlers and . . . [the] sea turtles, the functioning of newly certified TEDs in this fishery. We are concerned that many such observer programs in the past have been only poorly staffed, resulting in scattered data inadequate for estimating the true magnitude of such interactions."

• Another point of view from Baton Rouge on the turtle/trawler problem [*The Courier*, Terrebonne Parish, LA October 5, 1993, from Ernie Liner]: "If the politicians would wake up, they would recognized [sic] they are to blame for dwindling shrimp and crab populations, a commercial fisherman said." It seems that the Louisiana Legislature outlawed the commercial catch of redfish to please sport fishermen and

now the redfish are reproducing so fast that they are eating all the shrimp. The article said: "State biologists have said that Louisiana has 68 million pounds of reds and they eat 1.5 percent of their bodyweight each day . . . and they just love shrimp and crabs . . . . [Bert Jones, Chairman of the Wildlife and Fisheries Commission said] 'We just want to make shrimping better for shrimpers.'" Shrimpers claim the commission is insensitive to their needs.

• Two new turtle escape hatches for fishing nets, the Jones TED and the Flounder TED, have been approved by the NMFS. Both resulted from cooperation between members of the fish and flounder industries and the fisheries service. The vice president of the 551-member South Alabama Seafood Association said he was not aware of the new designs and added that TEDs have caused many shrimpers to go out of business. "We've lost millions and millions of dollars putting up with this stuff. I've lost thousands myself. I hope the good Lord sees fit to give us something this time that will actually work and not put more of us out of business." [Houma, LA *Times-Picayune*, November 6, 1993 from Ernie Liner]

• Observers on Florida fishing boats were used to see if net restrictions could help endangered sea turtles without completely abolishing night fishing off that state's east coast, according to Governor Lawton Chiles. He said, "If there are additional strandings, we will go farther than that." [Orlando, FL *Sentinel* and Leesburg, FL *Daily Commercial*, October 13, 1993, from Bill Burnett]

• An ancient tortoise fossil was displayed at the third annual Fossil Fair in Orlando, Florida—for the first time since it was found 15 years ago. The fossilized shell which appears to be the size of a coffee table was found on an underwater ledge in Little Salt Spring in 1975. Its discovery was reported in *National Geographic* and *Science* magazines, but as Russell McCarty, a paleontologist reported, "The pieces had been sitting in boxes in a trailer in Little Salt Spring for a decade and a half." McCarty assembled the 200-plus pieces in slightly over two years. A sharpened wood stake found between the turtle's carapace and plastron is considered evidence that a human hunter killed the animal when the ledge was at the ground level. Carbon dating of the stake gives an age of 12,030 years ago. Charring on the tortoise's shell shows that it was turned upside down and cooked on the spot. The species of turtle is given as *Geochelone crassiscutata* and the dimensions are three feet long and three feet wide, although the animal was killed before it was full grown. [Orlando, FL *Sentinel*, November 19, 1993, from Bill Burnett]

• The Marine Mammal Stranding Center published their stranding list for the three month period of June to September. In previous issues, I have occasionally summarized their findings, but the list this time was so appalling, I am including each animal listed and excerpting from the stranding record. The abbreviation "UC" is for "unknown causes."

- Loggerhead female, UC, 66 lbs
- Loggerhead female, propeller cut behind head, 125 lbs
- Loggerhead female, UC, decomposed
- Loggerhead female, UC, digestive tract loaded with spider crabs, 101 lbs
- Kemp's ridley male, liver severed by propeller, 12.9″
- Loggerhead female, captured alive and released
- Loggerhead, UC, 24″
- Loggerhead, prop cut along 25-inch length of top shell
- Kemp's ridley, released after found in water intake system of Salem Nuclear Plant, 8.9″, 4.5 lbs
- Loggerhead female, prop cut on head, 26″
- Leatherback, UC, 700 lbs
- Leatherback male, UC, 700 lbs
- Loggerhead male, UC, 40″
- Kemp's Ridley, prop cut on head and neck, plastic in gut, 9.2″, 4.6 lbs
- Loggerhead female, UC, 35″
- Loggerhead male, UC, 37″
- Loggerhead male, UC, but rope around one front flipper, 41″
- Leatherback, UC, head and flippers missing, 53″
- Leatherback female, 3 prop cuts on carapace, 400 lbs
- Kemp's Ridley, UC, 12″
- Leatherback male, prop cuts on carapace, 5′, ~700 lbs;
- Loggerhead, UC
- Leatherback, UC, 54″
- Leatherback female, UC, cuts on both front flippers, 52″
- Leatherback female, UC, 75″, 800 lbs
- Leatherback entangled in netting, released, 5′, ~600 lbs
- Leatherback male, UC, large crack in top shell, braided dacron line wrapped around neck and right front flipper, 80.5″
- Leatherback, UC, 5′
- Leatherback female, UC, 60.5″, ~700 lbs
- Leatherback female, prop cuts on carapace caused death, 60″, 500 lbs
- Leatherback, entangled in gill net buoy line 2 miles off shore, cut loose and released by U.S. Coast Guard, 5′, 600 lbs.

Folks, this list is from the area of New Jersey right around Atlantic City. If this is the case for approximately 50 miles of coastline, how many turtles are dying on the rest of the Eastern Seaboard? Is anybody collecting data on this? You can help the inappropriately named, but highly active Marine Mammal Stranding Center. Send checks to MMSC, P.O. Box 773, Brigantine, NJ 08203. Be sure to ask for their mail order list; the shirts, toys, magnets, mugs, etc. are very reasonably priced and proceeds benefit the center.

• The Arkansas Department of Fish and Game has issued an Emergency Proclamation prohibiting capture and possession of alligator snapping turtles (*Macroclemys temmincki*) in that state. The action was prompted by evidence of the turtles' decline as well as a large-scale commercial trade in the export of turtle meat. For information contact: Steve Wilson, Director, Arkansas Fish and Game (800) 364-4263. [*Herpetological Review* 24(4):125, 1993, from Kurt A. Buhlmann's "Legislation and Conservation Alert" column]

• Holmes County, Ohio, game officers had to reduce a population of snapping turtles in a local pond. The snappers had eaten a bunch of spring ducklings in a private wildlife refuge; an ornamental fish farm was also threatened. Twelve snappers were captured, the largest weighing 18 pounds. The animals were relocated to more appropriate habitats where someday they may reach weights of up to 80 pounds. [Wooster, OH *Daily Record*, September 25, 1993, from Steve Frantz]

• Michael Klemens, Director of the Turtle Recovery Program [TRP] at the American Museum of Natural History sent the Program's annual report: "The Turtle Recovery Program marked its fourth year of operation by organizing a 'turtle summit,' gathering scientists and policy makers from around the world to critically assess past efforts and chart a new course for turtle conservation. New field investigations began in Burma, Madagascar and Tanzania. In the United States, we increased our efforts to integrate turtle conservation into land management and public policy issues. In September, an agreement was concluded that protected 45,000 acres of desert grassland in Mexico. This single action has ensured the survival of the endangered Bolson tortoise by protecting one of North America's last remaining tracts of pristine Chihuahuan grassland. Despite these successes, we are facing new challenges in our efforts to steward the world's turtles safely into the twenty-first century. Habitat loss, degradation, and fragmentation still remain the major threats facing tortoises and freshwater turtles. However, recent evidence indicates that large-scale commercial exploitation for food, medicine and the live animal trade is beginning to surpass habitat loss as the primary threat to an increasing number of turtle species! The TRP, in partnership with six other conservation groups, has established a task force to examine the scope and magnitude of this problem. The task force will develop educational and policy materials concerning trade issues that are to be targeted at all levels-from elementary schools to government decision makers. All our activities are made possible by the generosity of our donors. We gratefully acknowledge your past support and ask you to renew, and if possible increase, your contribution to sustain our mission in the forthcoming year."

Regular readers know that I often suggest that we contribute to the TRP, and so I was a little shocked to read their annual report of individual donors and find so few names I recognize. In fact, I could find only 11 CHS members on the list: Walter Allen, Ellin Beltz, Fred Caporaso, Philip and Diane Drajeske, Karen Furnweger, Richard Glasser, Cynthia and Paul Johnson, David Lee, Edward Moll, Barry Paterno and Frank Slavens. These represent only 17 percent of the individual donors. This means that either CHS is not reaching a lot of turtle people or that a lot of well-known CHS turtle people are not contributing. In either case, we've work to do. The TRP is an international project, supported by the International Union for the Conservation of Nature. The project spans political boundaries and has the respect of researchers and governments worldwide. I know Michael. He gives his heart and soul to this project—constantly off in some other country—trying to find solutions that can come from within the community of the native peoples, rather than impose restrictions from without. Project locations range from Madagascar to Mexico, from New England to Namibia, from Viet Nam to Venezuela. Everywhere on earth, including the U.S., turtles are vulnerable to habitat destruction and their inability to respond quickly to environmental disruptions. The TRP works with zoos on Species Survival Plans for turtle and tortoise species and has received donations from prestigious institutions and individuals worldwide (including Robert F. Kennedy, Jr.). This project is IMPORTANT for turtle conservation and I would hope that even if you can only spare $5.00 or $10.00 that you would address the check to "AMNH-IUCN-TURTLE" and mail it to Dr. Michael W. Klemens, Director, Turtle Recovery Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Contributions are tax deductible to the extent permitted by the current IRS rules and U.S. law.

Thanks to everyone who contributed to the turtle spectacular this month and to Paul Gritis, Mike Zelemski, and Allen Salzberg who sent in clippings on turtles that I didn't use. A personal note, P. L. Beltz who has been a regular and voluminous contributor to this column will undergo surgery for cancer at about the time that the January *Bulletin* will be in your hands. Let's hope he's around for many more issues! You can contribute, too. Send clippings with date/publication slug and your name and address firmly attached with tape (not staples) to: Ellin Beltz, 1647 N. Clybourn Avenue, Chicago, IL 60614. Special thanks to contributors who photocopy articles with date and publication as well as their names all on one page!

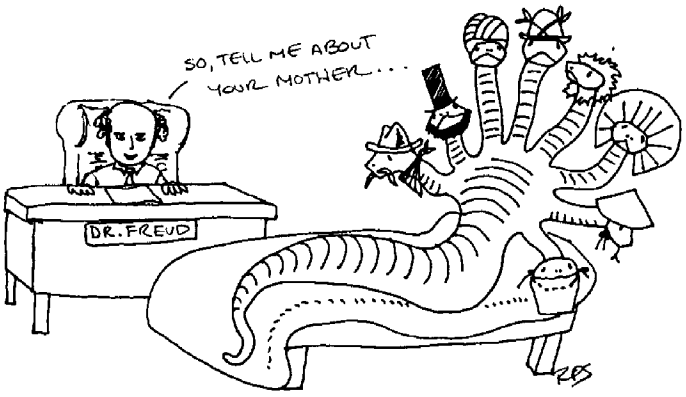
NEWTLINE

Dr. Roger Conant was welcomed with much enthusiasm to the meeting of the Chicago Herpetological Society on October 27, 1993, at the James Simpson Theatre in the Field Museum. In addition to numerous technical publications, Dr. Conant is the author of the *Reptile Study* merit badge pamphlet for the Boy Scouts of America which he hopes will stimulate herpetocultural interests. Dr. Conant is perhaps best recognized for his work, along with co-author **Joseph T. Collins**, on the Peterson *Field Guide to Reptiles and Amphibians of Eastern and Central North America*. However, Dr. Conant's latest accomplishment, *Snakes of the* Agkistrodon *Complex*, co-authored with Dr. Howard K. Gloyd, was the focus of this visit.

Sixty years ago, Dr. Conant began the seemingly insurmountable research for the monograph. Dr. Conant explained, "the research began as a labor of love, with no intention of receiving remuneration." The history of the project was just as interesting as the process. The relationship between Dr. Conant and Dr. Gloyd was one of many distances. The two first met while Dr. Conant worked at the Toledo Zoo and Dr. Gloyd was a graduate student at the University of Michigan in Ann Arbor. They soon discovered a mutual interest in cottonmouths, copperheads and their relatives around the globe. The two decided to collaborate on a study of these snakes. Though the work was exciting, the project required extensive amounts of correspondence and traveling. Continuing to pursue their chosen careers, Dr. Conant became the Curator of Reptiles at the Philadelphia Zoo in 1935, and shortly thereafter Dr. Gloyd became the director of the Chicago Academy of Sciences. During this time, they worked as much as possible on the project but in 1958 when Dr. Gloyd transferred to the faculty at the University of Arizona in Tucson, Dr. Conant's busy schedule forced him to abandon the project. It was not until the death of Dr. Gloyd in 1976 that Dr. Conant was able to re-enter the picture and complete the work. Dr. Conant is currently an adjunct professor at the University of New Mexico, Albuquerque.

Dr. Conant presented slides of many species and subspecies of the genera *Agkistrodon*, *Calloselasma*, *Deinagkistrodon* and *Hypnale*, along with distribution maps. Various subspecies were found in many different areas of the world including the southeastern United States, the west coast of Mexico, Honduras, Costa Rica, southeastern Europe, Japan, Korea, China, eastern Tibet, Nepal, Mongolia, Afghanistan, Siberia, Iran, Taiwan, Vietnam, Thailand, Cambodia, Laos, Java, Malaysia, and India to name just a few. Dr. Conant believes that encroaching civilization, along with superstitious medicinal rituals performed in the Orient, have endangered many subspecies.

After the presentation, on behalf of the Society, President **Ron Humbert** bestowed upon Dr. Conant a special gift created by artist **Don Wheeler**. This was a rock upon which was a trompe l'oeil painting of a Florida cottonmouth, *Agkistrodon piscivorus conanti*. Members then lined up to meet the remarkable and charming Dr. Conant and possibly get a highly coveted autograph.



THE AGKISTRODON COMPLEX

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On the eve of Thanksgiving and amidst nasty weather, turnout was low for the November 24, 1993, "election" meeting. **Jim Gaspar** handed out ballots while the business portion of the meeting was held inside the A. Montgomery Ward Lecture Hall. Membership Secretary, **Steve Spitzer** reported 1,934 members and was available for membership applications or voting questions. Adoption Chairperson, **Ben Entwisle**, reminded members that several of the animals available for adoption required permits. Among the orphans were a red-tail boa, a large snapping turtle, a box turtle, a caiman, a ball python, a Nile monitor, a 5-foot alligator, an iguana, and a blue-spotted salamander. A "passport of fun reading" was available to members with the help of Librarian **Lisa Koester**. On behalf of the Turtle Club, Lisa announced that the next meeting scheduled for December 19 would be "Pot-Luck." Show Chairperson, **Jack Schoenfelder** announced that **Jenny Vollman** and **Sally Hajek** would undertake the position of co-show chairpersons for the upcoming year. He thanked everyone for their past support. **Marcia Rybak** announced that the First Annual Chicago Herpetological Expo has been scheduled for June 4—5, 1994 at the University of Illinois at Chicago. Nominating Chairperson **Dr. Stephen Barten** thanked the committee consisting of Steve Spitzer, Lisa Koester, **Mike Dloogatch** and Marcia Rybak for all their help.

Following the break, **John Driscoll** conducted the raffle and the election began with the office of President. No nominations were received from the floor leaving Marcia Rybak duly elected by acclamation. As outlined in her eloquent

speech, Marcia would like to see the CHS create workshops for members, sponsor more school activities, and work on herpetological conservation in Illinois. **Anthony Rattin**, elected by acclamation for the office of Vice President, acknowledged that he had "enormous shoes to fill following John Murphy." **Gary Fogel**, likewise, was re-elected by acclamation for the office of Treasurer. Gary humorously confided that the stigmatic position was not as complicated as it appeared and that, "With the help of computers and a xerox machine . . . was just like having my own checking account, except it's not my money." Steve Spitzer was re-elected by acclamation to the office of Membership Secretary. After no nominations from the floor, Steve despondently responded, "I didn't expect any competition." **Jill Horwich**, elected by acclamation to the office of Recording Secretary, spoke to members about working on the awareness of the laws and regulations regarding herps in Illinois and hopes to persuade more members to attend board meetings. Mike Dloogatch, re-elected by acclamation to the office of Publications Secretary, approached the podium to say, "Occasionally I hear from people who like the *Bulletin* and seldom hear from those who don't, so I assume I'm doing a good job." **Brian Jones** was re-elected by acclamation to the office of Corresponding Secretary. Brian's speech consisted of, "Basically what I do is correspond . . . and I hope I do as good this year as last year."

The office of Sergeant-at-arms was the first to be put to a vote. Stacy Miller emerged victorious.

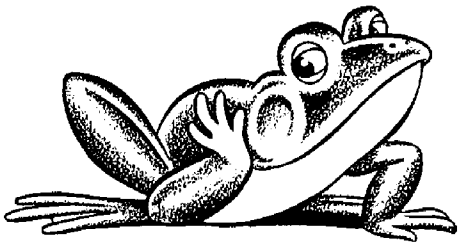
While tallying the ballots, a videotape of two male western cottonmouths in combat display was shown. **Ralph Shepstone** and Mike Dloogatch shot the footage on October 1, 1993, on Pine Hills Road in southern Illinois. The expedition yielded yellow-bellied water snakes, copperheads, timber rattlesnakes and a kingsnake. Ralph reminded members that no collecting is allowed in the area. Ralph, a dentist, was able to get close-up footage inside the mouth of a cottonmouth by mounting the Sony 8 mm video recorder on a pole.

During the battle for Member-at-large positions, a panel of veterinarians consisting of Dr. Stephen Barten, **Dr. Gery Herrmann**, **Dr. Scott Michaels**, and **Dr. Mike Miller** were available for questions and answers. Thanks to the amendment to Section 5 Article 9 of the CHS By-Laws regarding the Electoral Process, **Jack Schoenfelder**, Jim Gaspar and **Claus Sutor** were elected to the three Member-at-large positions quickly. Another excellent feature of the election should be attributed to Marcia Rybak. Printed on each ballot was a description of the duties of each office as outlined in the CHS By-Laws.

We stay in touch, so you stay in touch.
Respectfully yours,
NEWT

The Tympanum

Help, These Animals Are Driving Me Crazy



Lizards and I are rather recent acquaintances. My experience with four-legged critters has always been limited to the warm fuzzy kind. Dogs and cats and horses and I have always co-existed most pleasantly. I have their captive care reduced to the lowest common denominator. If the animal has a good strong appetite, the food is ingested easily, and the end result is of acceptable size, shape and consistency, well, those are pretty good barometers of well-being. A college degree isn't a prerequisite to success. It would appear that the difficulty of caring for a few lizards would be negligible. That might be so for the casual well-adjusted. But, for the nurturing Earth Mother who measures success by the mouthful, trouble is just one uneaten cricket away.

The equation seems so basic. Caregiver feeds animal food of choice for the selected species and selected species will consume said fare. NOT! After periods of time that can lull the provider into the comfortable aura that surrounds successful lizard-keeping, the buzzards turn up their noses, squeeze their eyes shut and lock their jaws against what they obviously feel is the malevolent poison I have provided. I become reduced to presenting anything I think the brats will consume. They scorn my groveling and pleading as I offer wax worms, mealworms, and hand-cut greens. I loathe my lack of character as I dangle these maggots enticingly in front of their disdainful mocking little faces. The paranoid part of me is certain that their recent dismissal of my efforts to supply them with nourishment is a way to provide amusement in an otherwise boring day. One week they are gorging themselves on my offerings and overnight they have wired their mouths shut. It is demoralizing to that part of my psyche that requires success.

I have re-evaluated their environment. Perhaps I think that if I just move this there and add another piece of furniture, and feed larger/smaller insects, and alter the temperature just a bit, and buy them new outfits, and give them their own TV, I will stimulate their lagging appetites. Again, NOT!

In the throes of an attack of reptile inadequacy I dial the lizard help line. To the uneducated that is a knowledgeable friend who is not yet sick of your hysteria. It appears that she too is experiencing an appetite loss in her collection, and stoically admonishes to wait it out. Apparently what is, is. So I am on lizard watch reluctantly playing their little species game and hoping that after a good night's sleep they will awaken, stretch their little legs, blink their beady little eyes, look up at me and ask "Where's the beef?"

In the meantime, I'm beginning to wonder how a bunny or a hedgehog would look in the Lizard Lounge.

If there are any closet owners of lizard anorexics out there or perhaps a guru who has solved the mystery of self-imposed reptile food austerity, write or phone—I'm willing to go the extra mile and do anything as long as it doesn't break the local decency laws. **Marlene Golin, 3 Timberleaf Lane, Riverwoods IL 60015, (708) 945-4346.**

Herpetology 1994

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editors assume full responsibility for any errors or misleading statements. JCM

MACROHABITAT EFFECTS ON THE STREAMSIDE SALAMANDER

J. R. Holomuzki [1991, Copeia (3):687-694] studies the way in which macrohabitat influences oviposition site choice by females and growth, survival and instream dispersal of larvae of the salamander *Ambystoma barbouri*, in the fishless headwaters of an ephemeral stream in central Kentucky. Egg densities were higher in pools than in runs, and females rarely oviposited in riffles. Differential use of slow-flowing pools by ovipositing females may be related to phylogeny because most *Ambystoma* are pond breeders. It is not clear whether ovipositing in pools incurred an advantage for larvae. Growth rates of larvae raised in field enclosures did not differ between pools and runs. Macrohabitat suitability, based on temperature, oxygen concentration, food density, and substrate stability, was also similar between pools and runs. However, runs tended to dry before pools. This difference in macrohabitat persistence caused significantly higher mortality in runs. Survivorship was similar between pools and runs before the stream became intermittent. The author estimates turnover times of larvae in pools to be 30–33 days, suggesting that instream dispersal among macrohabitats was limited. Limited instream dispersal may prevent larvae from moving into fish-inhabited areas downstream of the headwaters. Timing of stream drying, macrohabitat persistence and predation apparently interact to determine the role of macrohabitat survival and instream dispersal of *A. barbouri* larvae.

ALUMINUM, ACID AND FROG REPRODUCTION

R. C. Beattie and R. Tyler-Jones [1992, J. Herpetology 26(4): 353-360] study the effects of low pH on fertilization and embryonic development in *Rana temporaria* in the laboratory and field. In the field fertilization was reduced by high concentrations of monomeric aluminum, while embryonic mortality was caused mainly by low water temperatures. Most dead eggs were at the mid to late cleavage or early gastrula stage. In the laboratory embryonic survival decreased with increasing aluminum concentrations at pH 4.5. High concentrations of aluminum also increased the number of embryos which died in the early stages of development, and increased the proportion of embryos which remained constricted within the perivitelline membrane and failed to hatch. The body length of surviving larvae was decreased by both increasing aluminum concentrations and low pH. In both the laboratory and field, most embryonic abnormalities were associated with the incomplete absorption of the yolk-plug during gastrulation. High aluminum concentration was the principal factor associated with this type of abnormality, although in the lab this abnormality also occurred at a pH of 4.5 in the absence of aluminum. Liming of acidic ponds can increase fertilization success and survival of *Rana temporaria*.

TWO TEXAS SIRENS

O. Flores Villela and R. A. Brandon [1992, Annals of the Carnegie Museum 61(4):289-291] examine the morphology of the paratypes of *Siren intermedia texana*, as well as other Texas specimens and conclude that two distinct species occur in Texas, *S. intermedia* and *S. lacertina*. *Siren intermedia texana* is placed in the synonym of *S. i. nettingi*. They also confirm that *Siren lacertina* is present in southern Texas and Matamoros, Tamaulipas, Mexico. However, this species has not been previously reported from other localities west of Alabama, but was noted in Texas in 1883.

TWO NEW FLYING LIZARDS

J. Lazell [1992, Bull. Mus. Comp. Zool. 152(9):475-505] describes two new species of *Draco*. *Draco jareckii* was collected at Basco, on Batan Island, one of the Typhoon Islands in Batanes Province, Philippines. The new species is based upon 28 specimens, that are 67–90 mm SVL. The patagia, or "wing" flaps are reduced, and at their greatest lateral width are only 25–30% of the SVL. The patagium contains five ribs, and a tympanum is absent. *Draco caerulhians* is described from Manguanitu, Sangihe, an island in the Sangihe of the Far Moluccas, Indonesia. *D. caerulhians* is a small species with males reaching 74 mm and females attaining 82 mm SVL. It has five ribs in the patagium and a well developed tympanum. The author reports that the two banks of islands are strikingly similar in physiography to the Lesser Antilles of the Caribbean and compares *Draco* to *Anolis*, predicting similar patterns of distribution and evolution for the two unrelated species groups.

A POORLY KNOWN AUSTRALIAN SKINK

P. J. Cooper [1992, Mem. Queensland Mus. 32:54] notes that the fossorial, limbless skink, *Anomalopus pluto*, is known from only 15 preserved specimens. At the type locality the species inhabits rainforest where there are small isolated patches of grey loamy sand surrounded by tall, open forest dominated by *Eucalyptus tetrodonta*. Little is known about the diet, but remains of termites have been found in their stomachs. This species has an elongated right lung and no right oviduct. Other lizards that have no right oviduct produce only one egg. This species is expected to follow that pattern.

THREE NEW GRASS ANOLES FROM CUBA

O. H. Garrido and S. B. Hedges [1992, Caribbean Journal of Science 28:21-29] describe three new species of grass anoles of the *alutaceus* group of *Anolis* from upland areas of eastern Cuba. They occur in remnant forest of three mountain systems in Guantanamo Province: *A. macilentus* in the Meseta del Gauso, *A. vescus* in the Sierra del Purial, and *A. alfaroi* in the Cuchillas de Moa.

Advertisements

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Attention: the Varanid Information eXchange is a society of herpetoculturists sharing an interest in MONITOR LIZARDS. Members receive the bimonthly newsletter, *VaraNews*. Annual membership is: U.S., $10; foreign, $12 surface/$15 air. For a free copy, send a legal-size SASE to: Varanix, 8726D S. Sepulveda Boulevard, #243, Los Angeles CA 90045.

BOA SURVEY: Please write for my questionnaire on *Boa constrictor* reproduction. Even if your animals have not reproduced, please respond if they are at least four years old and have had the opportunity. In return for a completed survey you will receive a chart showing the subspecies, their scale counts and range. William Joy, P.O. Box 821433, Dallas TX 75382-1433. INTERNET: 72223.220@COMPUSERVE.COM

Fauna classifieds: monthly classified publication for reptiles, amphibians, food items & supplies, literature and more. Excellent information source, worldwide circulation. Subscription $14/year. Free sample & info. Write: FAUNA, 2379 Maggio Circle Unit C, Lodi CA 95240.

For sale: *WILLARD'S RODENT RANCH*—tell 'em Ben sent ya! Live or fresh-frozen mice and rats—mice; pinks to hoppers $.35 each or 3/$1.00; weanlings to adults $.50 each; jumbos $.75 each—rats; pinkies to chubbies $.50 each; fuzzies $1.00 each; small $1.50 each; medium $2.25 each; large $3.00 each; jumbo $4.00 each. Discounts available on large one-time orders. Prices subject to change without notice, availability may vary. Pick-up or delivery at the CHS meeting, shipping available for large frozen orders. Contact Mike Miller (days) at (708) 974-2600.

For sale: **HIGH QUALITY FEEDER ANIMALS** PRODUCED FROM THE BEST LAB DIETS AVAILABLE. Tenth year of production and supply of frozen feeder animals. All feeders can be removed one at a time from the bag; they are not frozen together. All orders **will arrive frozen.** Now offering *seven* sizes of mice: small newborn pinks, medium size pinks, large fuzzy pinks, extra large fuzzies/small hoppers, juvenile mice, young adults, and large adults. Also available are pinkie rats, baby chicks, and quail chicks. Orders sent special delivery, postage extra. **Free pricelist.** Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358, after 6 P.M. Central Time on weekdays, all day Saturday and Sunday.

For sale: *THE GOURMET RODENT*: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, 6115 SW 137th Avenue, Archer FL 32618, (904) 495-9024.

For sale: top quality mice, rats and Chinese dwarf hamsters. All sizes at competitive prices. Gary W. Allison, 919 Wyandotte Street, Bethlehem PA 18015, (215) 974-8975.

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, $.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: high quality feeder mice. Shipped UPS Next Day Air. All mice are properly processed to insure a quality product. Fourth year of production and supply of frozen feeder mice. Prices: pinks, $20/100; fuzzies, $25/100; weanlings, $30/100. Also available are 4 oz.+ rats, $100/100. The Mouse Factory, P.O. Box 85, Alpine TX 79831, (915) 837-7100, Ray Queen.

For sale: live mice, Dallas–Ft. Worth Metroplex. Adults, hoppers, fuzzies & pinkies. J.R.'s Cowtown Critters, (817) 465-4188 or (817) 465-2026, Arlington TX.

For sale: live or frozen feeder mice and rats, all sizes available, from pinkies to adults. Quantity discounts. Lowe Labs, (708) 749-RATS.

For sale: **Disposable reptile-cage liners!** See our display ad this issue. **FLEX-WATT® HEAT TAPE**, 3″ wide: 1–20′, $2.50/foot; 21–49′, $2.25/foot; 50′+, $2/foot—11″ wide: 1–10′, $3.50/foot; 11–49′, $3.25/foot; 50′+, $3/foot—clip sets: 1–20, $2 each; 21+, $1.50 each. Assembled units available. **No-Pest® strip**, $6 each postpaid or 2 for $11 postpaid. **Betadine® scrub**, $10/pint or $40/gallon. **Disposable heat-packs**, last 10 hours, $1.50 each, 10/$12.50. **Frozen rodents** always available. Mice: pinks–weanlings, 3/$1; subadult, 40¢; adults, 50¢. Rats: small, 60–80¢; medium, $1–1.50; large, $2; jumbo, $3. Call on quantity discounts [note: discount on orders picked up at CHS meetings]. Live rodents available at a higher price. Send SASE for expanded 1994 stock and supply list. Scott J. Michaels, D.V.M, Serpent City, P.O. Box 657, Island Lake IL 60042, (815) 363-0290.

For sale: mice and rats of all sizes. Also frozen toads. Call or write for price sheet. Keith Simpson, Rt. 3, Box 903, Knox IN 46534, (219) 772-5606.

For sale: I'm back, Steve's Rodent Farm. Rats only, small and medium, live or frozen, quantity discounts. Shipping available. Call or write for price list. Steve Waldrop, c/o Steve's Rodent Farm, Rt. 7, Box 1154, Haleyville AL 35565, (205) 486-8876.

For sale: mice, $1; rats, $2. Steve, (312) 271-0912, 5 P.M. - 9 P.M.

For sale: commercial turtle pellets (extruded dry floating type). This stuff is fed to *thousands* of turtles in the South on commercial farms for the turtle meat production industry. *A complete, balanced diet for maximum growth. Incapable of causing shell deformities.* $20 for 10 pounds, postpaid. Discounts (sent in partial refund) on larger amounts. Send postal money orders *only* to: Terry Dillon, 30012 Hubert Jenkins Road, Bogalusa LA 70427.

For sale: large selection of captive born reptiles and amphibians, books and supplies. Send S.A.S. business-size envelope for complimentary price list or $5 for a 1 year subscription (bi-monthly), to Twin Cities Reptiles, 540 Winnetka Avenue North, Golden Valley MN 55427, (612) 593-0298.

For sale: stained glass suncatchers, panels, windows and lamps with herp themes. Work from your photo or choose one of my designs. Immortalize your favorite animals in a family heirloom. Paul Braun, Splendor in the Glass, 51 Jefferson, Valparaiso IN 46383, (219) 464-8778.

For sale: Tired of getting bitten while collecting, feeding or maneuvering animals? Try my Whitney tongs—10% discount to herp society members—2′, $65 each; 2½′, $66 each; 3′, $67 each; 3½′, $68 each; 4′, $69 each, 5′, $85 each; 6′, $90 each. Will ship U.P.S. extra. Send money order or cashier's check to Don Lunsford, 5661 Walkerton Drive, Cincinnati OH 45238.

For sale: 1993 HERPETOLOGICAL DIRECTORY. A valuable information source containing private and commercial breeders, foreign exporters, U.S. and foreign herp societies, wholesalers, and sources for rodents & other food items, supplies & equipment and publications. Send $15 to FAUNA, 2379 Maggio Circle Unit C, Lodi CA 95240.

For sale: **Overstock sale!! Wilson shoe boxes and tall sweater boxes (aka First Phillips/Wilhold).** These are the same ones Osco Drug *used* to carry and are now difficult to get. Clear, easy-to-clean, space-efficient boxes. Normal shoe box price, $3 each; **sale price**, $1.75 each. No limit on quantity. Tall sweater boxes—normal price, $7 each—**sale price**, $5.50 each. Due to some misunderstandings about manufacturer's name, sale extended thru 1/31/94. Serpent City, Inc., (815) 363-0290.

For sale: reptile cage disinfectant and deodorant. Kills many types of infectious disease detrimental to herps. $3.91 for 2 oz (makes 1 gallon). Wholesale and quantity prices available. Make checks payable to J. Howard, 1088 Chapman Road, Jesup GA 31545, (912) 530-6384.

For sale: rat and mouse breeding boxes, all stainless steel, complete with water bottles and mice. Will not ship. Best offer. (516) 957-3624. [NY]

Advertisements (cont'd)

For sale: one 4′ Neodesha cage, glass front, never used, $100. John Raymond, (312) 465-3442.

For sale: **Pearlco Infrared Ceramic Heating Elements**, excellent heat source that screws into ordinary sockets, 60W, 100W or 150W, $25 plus shipping; **Vita-Lite Incandescent Daylight Bulbs**, excellent light quality to create hot spots, 60W, 75W, 100W or 150W, $15 plus shipping; **Vita-Lite Plus Full-Spectrum Natural Fluorescent Light**, SCREWS INTO ORDINARY INCANDESCENT FIXTURES, does not emit any heat, great way to regulate photoperiods with heat tapes, pads, or can be used in conjunction with Pearlco elements or incandescent bulbs, $40 for bulb "kit" (replacement bulb costs $15.99); **Layena**, by Purina, excellent feed for gut-loading insects, $2.50/lb includes shipping. Rob Carmichael, P.O. Box 38, Vernon Hills IL 60061, (708) 949-7082, before 8:00 P.M.

For sale: collection of 120 different outdated antivenom/snakebite kits from all over the world, $600. Also, collector's item—snake catching box made and used by Carl Kauffeld. This is the box Carl used on his collecting trips to South Carolina, 30″l x 20″h x 12″w, three compartments, top opens and two side compartments. Box was never cleaned out and still has (unsoiled) *Staten Island Sunday Advance* newspapers dated April 17, 1977. See book *Snakes and Snake Hunting* for picture of box, $500. Steve, (516) 957-3624. [NY]

For sale: herpetological and natural history titles from China. Chen, Bihui, ed. (1991) *The Amphibian and Reptilian Fauna of Anhui*, 408 pp., 18 color photos, text in Chinese with Latin names and English abstract, $50; Huang, M. H. (1990) *Fauna of Zhejiang. Amphibia and Reptilia*, 330 pp., 288 figs., 30 color photos, text in Chinese with Latin names (translation is in progress), O/P and scarce, (H) $75; Yaomin, J., editor (1992) *A Collection of Papers on Herpetology*, 157 pp., many figs., 25 papers with English abstracts and table of contents, $20; Yang, D. (1991) *The Amphibian Fauna of Yunnan*, 280 pp., 209 figs., spot distribution maps, in Chinese with Latin names, (H) $50; Zhou, J., and T. Zhou (1992) *Chinese Chelonians Illustrated*, 89 pp., many color photos, text in English and Chinese, (H) $60. Write for complete list of many more titles to G. S. (Scotty) Allen, 77 Baronwood Court, Brampton, Ontario L6V 3H7, Canada. Xie Xie (thank you)!

For sale: set of five posters first published by Army Air Forces Tactical Center for easy identification and habits of venomous snakes of the world, $9 postpaid; *Field Guide to the Snakes of South Vietnam* by Simon Campden Main, $10 postpaid; *Batrachia of North America* by E. D. Cope, $16 postpaid; *Laboratory Anatomy of the Iguana* by J. C. Oldham and H. M. Smith, $17 postpaid; *Time of the Turtle* by J. Rudloe, $5 postpaid; *Atlas of Amphibians and Reptiles of New Zealand* by C. P. Pickard and D. R. Towns, $18 postpaid. Catalog of over 4000 herpetological titles sent free upon request. Herpetological Search Service & Exchange, 117 E. Santa Barbara Road, Lindenhurst NY 11757, (516) 957-3624.

For sale: *Rattlesnake Hunting*, a 60-minute video by a 30-year veteran collector. Don't miss this one! It's as close to being in the field as you can get. (Not a slick commercial production.) Send check or money order for $19.95 plus $3 postage & handling to: D. Wheeler, 2705 Sunset Trail, Riverwoods IL 60015. Allow 4–6 weeks for delivery.

For sale: captive raised monitor lizards. 2½′ Dumeril's monitor, $125; 2′ Javan water monitor, looks like lace monitor, $100; 2½′ Tanzanian rock leguaan, *Varanus albigularis*, $200. Ray Guese, (303) 722-6058, 8:00 — 11:00 MST. [Denver]

For sale: rhinoceros iguanas; Cuban iguanas; green iguanas; *Geochelone sulcata*; *G. elephantopus* (Florida sales only). D. J. or Sam, (305) 680-8492. [FL]

For sale: two male *Pituophis melanoleucus melanoleucus* x *mugitus*, captive-bred and captive-raised, currently 34–36″ total length, very pretty pattern and coloration morph (breeder selected). Contact for details of appearance. Make *reasonable* offer for one or both sibs. Tom Keefer, 5511 40th Avenue, Hyattsville MD 20781, (301) 864-5569.

For sale: one male and two female gray-banded kingsnakes, "Blair's phase," c.b. '92, $225 each; female gray-banded kingsnake, "Blair's phase," c.b. '93, $175. All four for $775. Snakes are healthy and eating rodents. Mike Wood, (219) 269-7664. [IN]

For sale: one male and one female gray-banded kings, c.b. '93, *alterna* phase, beautiful blue-gray, excellent mouse feeders, $275/pair; five Texas Baird's ratsnakes, c.b. '93, from orange/silver parents, $25 each; two male and one female Mexican Baird's ratsnakes, c.b. '93, from yellow parents, nice, $40 each; two male and two female Mexican milksnakes, c.b. '93, excellent color/pattern, $130/pair; one male and one female 2′ albino prairie kings, c.b. '92, nice color, $175/pair; one male and two female rough-scaled sand boas (*E. conicus*), c.b. '91, very nice color and pattern, fat, ready to breed(?), $450/trio; one male and one female albino San Diego gophers, c.b. '92, Applegate strain, brilliant yellow, fluorescent orange, almost 4′ long, gorgeous, $450/pair; female hypomelanistic San Diego gopher , c.b. '92, nice orange, $125; one male and one female striped house snakes, breeders, chocolate brown, $125/pair; thirty African house snakes, c.b. '93, brown/red/olive green, some with patterns and very pretty, $20–35 each; Mexican rosy boa, c.b. '93, nice color, eating hopper mice, $55. Many other snakes available (*thayeri*, *mexicana mexicana*, corns etc.) Quantity discounts available. (619) 287-3937. [San Diego]

For sale: tricolor milks. Three female *Lampropeltis triangulum nelsoni*, $100 each; one male *L. t. sinaloae*, $75. All c.b. '93 with perfect banding. Also, one male *Liasis albertisi*, captive records from 9/89, bred past spring, $300 or best offer to potential breeder. Mike Zelenski, 832 Riverbrook Drive, Racine WI 53405, (414) 632-3437.

For sale: 19″ wild-caught male albino Great Basin gopher snake (*Pituophis melanoleucus deserticola*), inquire; two 1½′ subadult frilled lizards (*Chlamydosaurus kingii*), $2000; one male and two female young adult Turks and Caicos Island boas (*Epicrates chrysogaster*), one female striped, the other pair spotted, $1500. Dave or Katie, (203) 238-9596.

For sale: Amazon tree boas, *Corallus e. enydris*, c.b. '93, red phase, $125 each; male Madagascar frilled leaf-tailed gecko, *Uroplatus henkeli*, two-year captive, proven breeder, $100; one male and two female Timor monitors, *Varanus timorensis*, long-term captives, $1000/trio; super leopard gecko babies, adults grow to 13″, 150 g, with yellow that glows in the dark, free photos, $100 each; African spurred tortoise, *Geochelone sulcata*, c.b. '94, $165 each. Call to get our free quarterly price list. Steven Bostwick, Helser 4825 Firkins, Ames IA 50012, (515) 296-5793 or (515) 967-5716.

For sale: *for Chicago area pick-up only*! "Adorable" 1993 c.b. Kenya sand boas, feeding on live chubby/fuzzy mice, $70 each; c.b. black & white banded California kingsnakes (from mixed parents), only $20–25. Janice, (708) 484-7307. Please leave a message if I can't get to the phone and I *will call you back!*

For sale: 3′ female red Sumatran blood python, nice, $325; one male and one female Borneo blood pythons, exceptional captive-raised adults, special $550/pair; all three blood pythons, $800; one male and two female northwestern Mexican boas, c.b. '93, 2½′, $125 each, $350/trio; one male and one female Colombian rainbow boas, c.b. '93, on weaned mice, $200/pair; one male and one female banana California kingsnakes, 85% yellow, male is albino, c.b. '93, $175/pair; 2′ female albino California kingsnake, c.b. '92, unusual spotted pattern, $85; one hetero male and one albino female striped Pacific gopher snakes, consistent breeders, special $250/pair; one male and one female striped Pacific gopher snakes, female albino, c.b. '92, male hetero, c.b. '93, $175/pair; one male and one female striped Pacific gopher snakes, nonalbino, consistent breeders, $100/pair. Quantity discounts considered. Ray Guese, (303) 722-6058, 8:00 — 11:00 MST. [Denver]

For sale: captive-bred babies. Blood pythons, ball pythons, Burmese pythons, Kenyan sand boas, corn snakes, Illinois bull snakes. Will deliver in Chicago metro area or ship from O'Hare Airport. Joan Moore, (312) 528-4631.

For sale: one male and one female c.b., 4′ green tree pythons, great eaters, great temperament, wonderful snakes, $2500/pair. (806) 246-3621. [TX]

Advertisements (cont'd)

For sale: green tree python colony, four males and four females, all but one male captive hatched and raised, three males and two females breeding size and age, one male and one female very unusual coloration. Custom cages with misting systems and drains included. Relocating to Europe in March, must sell everything. $15000 or make an offer. (312) 927-1229 home or (312) 927-8653 FAX.

For sale: Peruvian red-tailed boas, Sierra mountain kings, leopard ratsnakes, Bay of L.A. rosy boas, Cape gophers, trinket snakes, cave-dwelling ratsnakes and more. Larry Keller, P.O. Box 267, Sidney IL 61877.

For sale: c.b. baby *Boa constrictor imperator*, $75 each. Henry Cohen, 24 St. Johns Place, Buffalo NY 14201, (716) 881-6724.

For sale: Argentine boas, *Boa constrictor occidentalis*, born 6/23/92, from unrelated parents, $1500/pair. Bill Brant, (904) 495-9024. [FL]

For sale: female Surinam redtail boa (*Boa constrictor* ssp.), c.b. 9/25/93, screamer, $450; 3′+ female Argentine boa (*B. c. occidentalis*), c.b. 7/23/92, $700; 2½′ male Peruvian redtail boa (*B. c.* ssp.), '93, Pacullpa, Peru, locality, $275; 2′ female D'Albert's python, c.h. '92, $185; Pueblan milks, $60–80; female Mexican milksnake (*annulata*), orange strain, $75; melanistic male *thayeri*, $75; male Guatemalan milk (*abnorma*), $125; one male and one female black & white striped desert California kingsnakes, $85/pair; male Arizona mountain kingsnake, $125. All specimens feeding great. Scott J. Michaels, D.V.M, Serpent City, (815) 363-0290.

For sale: [This ad ran with the wrong area code for the past two months] one male and two female breeder-size red blood pythons, $2000/group; 2½′ female green tree python, c.b. '92, eats mice or rats, still yellow, $1000; one male and one female Queensland carpet pythons, proven breeders, unrelated, c.b. '86, $900/pair; one male and one female Macklot's pythons, c.b. '90, breeder size, $600/pair; one male and one female Argentine boas, c.b. '93, unrelated, $900/pair; female Hogg Island boa, c.b.'93, $400; one male and one female Colombian boa constrictors, c.b. '92, unrelated, $400/pair; female Argentine boa, c.b. '92, $850; male Guyanan redtail boa, breeder size, $450; 5′ female Surinam redtail boa, $450; one male and one female Mexican rosy boas, c.b. '92, unrelated, $225/pair; one male and one female albino prairie kingsnakes, c.b. '92, $200/pair; one male and one female albino banded California kingsnakes, c.b. '92, unrelated, $160/pair. Also baby Kenyan sand boas, $65; Cuban boas, $200. Mr. Lynn Robertson, Route 3, Box 446, Bedford VA 24523, (703) 297-3449 or (703) 947-5856.

Reptile Emporium: we specialize in captive bred snakes. Weekdays, 10 A.M.–8 P.M. Weekends, 10 A.M.–5 P.M. 6405 W. 34th Street, Berwyn IL, (708) 749-7287.

Wanted: a copy of S. C. Bishop's *The Salamanders of New York* (1941) 365 pp. Joseph Jannsen, 2906 Connecticut Avenue, Medford NY 11763, (516) 654-1486.

Wanted: proceedings from the 12th International Herpetological Symposium; *Reptile and Amphibian* Magazine, Mar/Apr 1990 and Sep/Oct 1991; *Captive Breeding* Magazine 1(2). G. S. (Scotty) Allen, 77 Baronwood Court, Brampton, Ontario L6V 3H7, Canada.

Wanted: smooth-fronted and dwarf caimans; pure brown Cayman (*fuscus*); any caimans from Trinidad and Tobago; any size female Madagascar tree boa (*Sanzinia*); large common snapping turtles, at least 45 lbs and up; albino toads; albino turtles (except red-ear sliders). Walt Loose, (215) 926-6028, best times to call—anytime weekends, 11:30 P.M. E.S.T. weekdays.

Wanted: interested in acquisition of one male *Tropidolaemus wagleri* either for purchase or breeding loan. Also interested in corresponding with persons working with *Bitis*, *Bothriechis* and *Trimeresurus*. Drew Newman, 1136 Ross Avenue, St. Paul MN 55106.

Wanted: pairs of *Elaphe taeniurus ridleyi*, *E. porphyracea*, *E. radiata*, *E. moellendorfi*, *Spilotes pullatus*, *Drymobius margararitiferus* and *Bogertophis subocularis* for captive breeding program. Also looking for rare colubrids, especially Neotropical species (pairs only) from Mexico, Central and South America. Shane, (312) 248-3976.

Wanted: male **BRAZILIAN RAINBOW BOA**. Must be an outstanding light orange Brazilian over two years old. Top dollar paid. Scott Schuett, 1820 Bigelow, Toledo OH 43613, (419) 473-0518 phone/fax.

Wanted: to buy male *Tiliqua gigas*, or will swap one of my three females for a male. Mike Zelenski, 832 Riverbrook Drive, Racine WI 53405, (414) 632-3437.

Wanted: your surplus c.b./c.h. snakes. Scott J. Michaels, D.V.M, Serpent City, (815) 363-0290.

Wanted: legal and healthy *Acanthochelys* spp.; *Geochelone chilensis*; *Rhinoclemmys areolata*; *R. annulata*. SURPLUS—three male and one female c.h. *Testudo hermanni*. DONATION—to responsible individual or institution three male, three female and 11 unknown sex *Pelusios subniger*. Dr. Harold Wahlquist, 1346 Arlene Court, Lilburn GA 30247, (404) 921-5686 after 7 P.M. EST evenings or reasonable hours during weekends.

Widowed green male *Phelsuma sundbergi ladiguensis*. Mate died soon after emigration from Seychelles to the U.S.A. in 1979. Looking for new partner for relationship and possible necking activities. Secure and old but not cold. Ray Tripp, P.O. Box 4732, Lincoln NE 68504-0473, (402) 477-1975.

Line ads in this publication are run free for CHS members — $2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (312) 588-0728 evening telephone or (312) 782-2868 fax.

News and Announcements

1994 CHS HERPETOLOGICAL GRANTS PROGRAM

The Chicago Herpetological Society announces the CHS Herpetological Grants program to award financial support for herpetological research, education and conservation. Four awards of up to $500 each will be available. Interested parties may apply for a grant in any one of the following categories:

1. Illinois Herpetology
2. Graduate Student Research in Herpetology
3. Undergraduate Research in Herpetology
4. Field Studies in Herpetology
5. Conservation
6. Captive Management, Husbandry, and Propagation

An attempt will be made to award grants in each category, but depending on the applications received, not all categories may receive awards. Some categories may receive more than one award. The Grants Committee reserves the right to reassign the category under which a given proposal is submitted. If applications are lacking, fewer than four awards may be distributed.

Applicants must be members of the Chicago Herpetological Society. In accepting a grant, the recipient agrees to abide by all state and federal laws, to submit a written summary of the project for publication in the CHS *Bulletin*, and to acknowledge the Chicago Herpetological Society in any publications that result from the subsidized research. Recipients are encouraged to submit their work as an article for the CHS *Bulletin*, or to present a program at a CHS meeting.

Applications should include the following:

1. Statement of the objectives of the proposal.
2. Description of materials and methods.
3. Complete budget, not to exceed $500.
4. Brief resumé of the applicant, if an individual. If the applicant is an organization, background information on that organization should be included.
5. A completion date for the project.

Applications must be typed, double spaced, and submitted in duplicate. Applications should be kept brief and simple, and proposals longer than three to five pages are discouraged. All applications must be received by 1 March 1994, and awards will be announced by 1 May 1994.

It is the goal of the Grants Committee to award grants to a variety of applicants; enthusiastic amateurs will receive equal consideration with professional herpetologists and graduate students. Topics including Illinois herpetology, captive husbandry and propagation, and those which might translate into quality CHS *Bulletin* articles or monthly meeting programs are favored, though not requisite.

Submit applications or questions to: CHS Herpetological Grants, Chicago Herpetological Society, 2001 N. Clark Street, Chicago, IL 60614. Or contact Dr. Michael J. Miller, Grants Committee Chair, at (708) 974-2600.

RAFFLE DONATIONS AT THE NOVEMBER 24 MEETING

The following is a listing of those individuals and businesses who generously donated items for our monthly raffle at the November 24 meeting. The donated items are shown in parentheses.

Aquascape, Inc.—Bannockburn IL (reptile cage carpet); Top Hat Cricket Farms (cricket dispensers); Tetra Terrafauna (turtle calcium block); Grubco (mealworm gift certificate); Captive Breeding Magazine (magazine); Reptile News Press (book on reptile nutrition); CHS (cobra poster); Brian Weber (aquarium light bulbs); Jack Schoenfelder (turtle bowl); Mardel Laboratories (Pro Molt); Jill Horwich (Cousteau videotape); Zeigler (cricket food); Pretty Bird International (tortoise food); SSAR–Kraig Adler (1st World Congress poster); Stephan Swanson ("Save the Grove" T-shirt); Wardley (Reptile Ten food); Gary Fogel (dinosaur toys); Marcia Rybak (snake book); anonymous (rattlesnake buckle).

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, January 26, at the Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, in Chicago. The featured speaker will be William Holmstrom, Superintendent of Herpetology at the Bronx Zoo. The topic will be "The Behavior and Ecology of Anacondas in the Venezuelan Llanos." William is currently participating in a four-year field study of anacondas in Venezuela. This is the only extensive field study of any giant snake species ever undertaken. Many aspects of the behavior and ecology of these snakes are being investigated through mark–recapture and radiotelemetry.

Nicholas Roster of Central Michigan University will speak at the February 23 meeting. Nicholas, a graduate student, is currently investigating the feeding response of frog and toads. His method consists of offering a computer-animated prey item, a cricket, to frogs and toads using a Sony Watchman small-screen television. Nicholas will share the fascinating results of his high-tech study, as well as actual film footage of these anurans attacking the animated prey presented on the screen.

We are required to use the entrance on the west side of the museum. The main entrances at the north and south ends of the building will not be open. We have permission to use the staff parking lot to the west of the museum. Entrance to this lot is from McFetridge Drive, the wide street just to the south which lies between the museum and Soldier Field. There is also ample free parking available in the lot to the north of the museum.

The #146 CTA bus goes directly to the museum. Unfortunately, it does not operate after 9:00 P.M. However, after the program anyone needing a ride to a CTA stop will have no trouble finding one—just ask any board member.

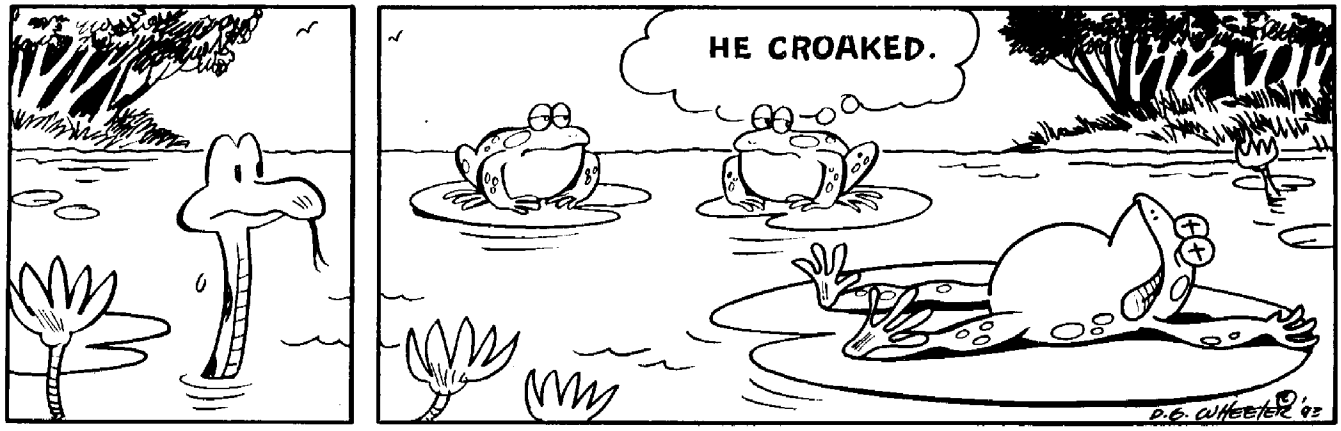
Turtle Club

The Chicago Turtle Club will meet Sunday, January 23, 1:00–3:30 P.M., at the Emmerson Park Fieldhouse, 1820 W. Granville Avenue, Chicago.

AWARDS PRESENTATION

Each year the Chicago Herpetological Society bestows awards upon a few select members in recognition of their service to the organization. At the December 29 meeting four people were so honored. **Ron Humbert** received a commemorative gavel to mark his year in office as President. **Lisa Koester**, who did double duty as Librarian and Picnic Coordinator this past year, received the CHS Merit Award. This honor is given each year to one or more individuals selected by the Awards Committee for outstanding service. **Dotty Humbert** received the Presidential Service Award; this honor is presented each year to a person selected by the President as having been particularly helpful specifically to the President or to the CHS Board. As a token of appreciation for **Joan Moore's** efforts as CHS Director of Sales, President Ron Humbert, on behalf of the entire CHS, presented her with a gift certificate good at Jewel Food Stores.

THE ADVENTURES OF SPOT



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