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# BULLETIN

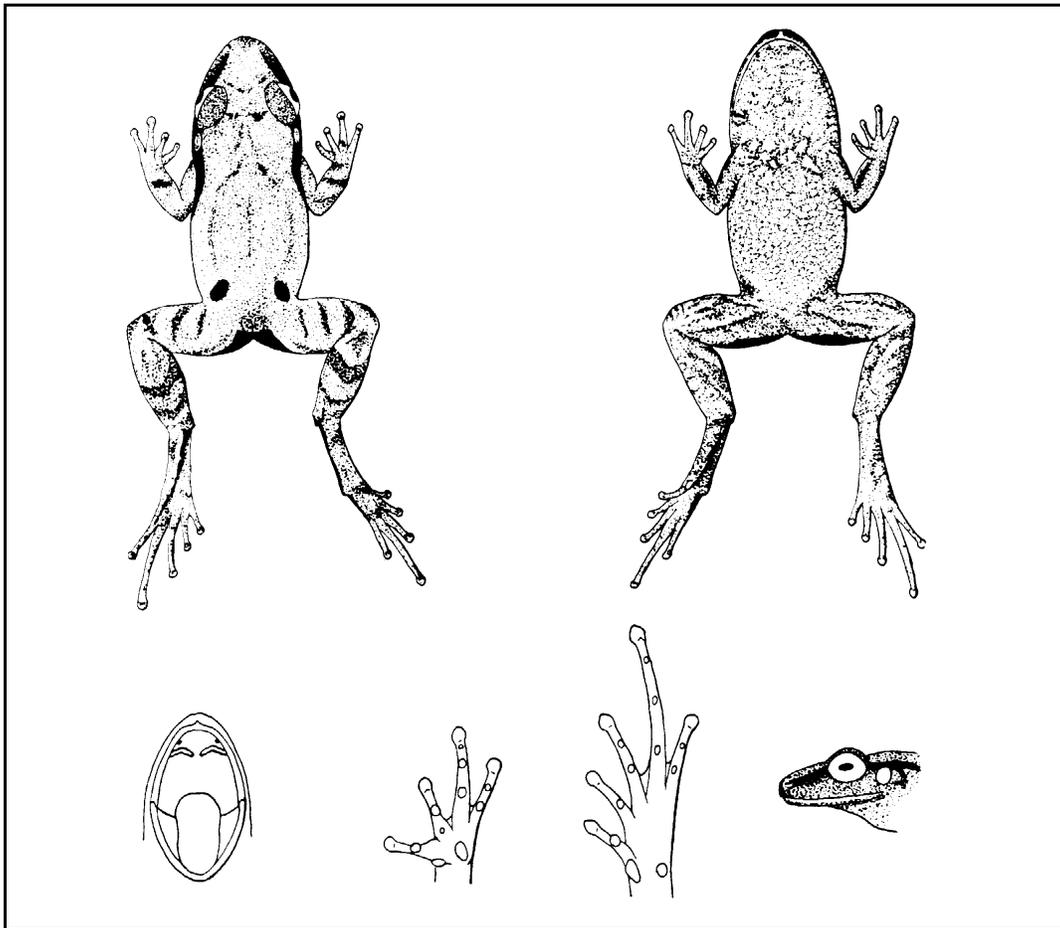
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**BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY**  
**Volume 48, Number 6**  
**June 2013**

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**Cover:** Jamaican rumpspot frog, *Eleutherodactylus andrewsi*. Drawing from *The Herpetology of Jamaica. I. Amphibians* by W. Gardner Lynn, Bulletin of the Institute of Jamaica Science Series, Number 1, 1940.

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**Book Review: *The Eponym Dictionary of Amphibians*  
by Bo Beolens, Michael Watkins and Michael Grayson**

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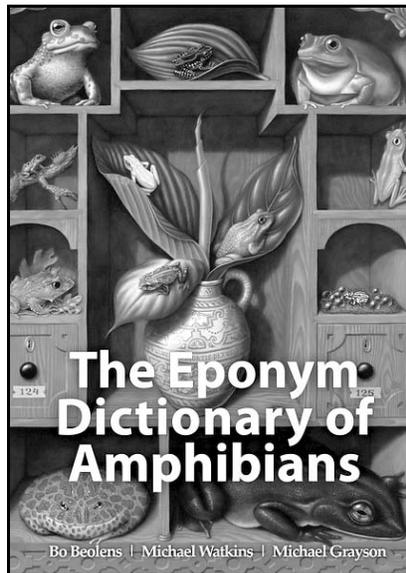
"I expect a review copy of *The Eponym Dictionary of Amphibians* in a few days. Any interest in reviewing it?" This email message from Mike Dloogatch left me wondering, "What's an eponym?" My dictionary defines eponym as "a person whose name is taken for a people, place, or institution, etc." (Ehrlich et al., 1980). The "etcetera" in this case, refers to scientific or vernacular names of biota derived from the names of people. An interesting topic, I thought; I accepted Mike's offer.

*The Eponym Dictionary of Amphibians* is fourth in a series of books by Beolens and coauthors that explore the eponyms of reptiles, birds, and mammals (Beolens and Watkins, 2003; Beolens et al., 2009, 2011). Bo Beolens, per the book jacket, spends "all his free time... birding" and his online monikers include "Grumpy Old Birder" and "Fatbirder."

Birds are obviously his passion and birds are where the eponym dictionary series originated. Apparently, once one delves into the topic of eponyms, it's hard to stop. Beolens' coauthors are Michael Watkins, who was a shipbroker for many years, and Michael Grayson, who worked in the British Library and who has enjoyed a lifelong fascination with amphibians and reptiles.

The cover image is a reproduction of an enchanting oil and egg tempera painting by Madeline von Foerster entitled *Frog Cabinet*. The painting depicts colorful and odd-looking frogs from around the world, each housed separately, or in one small group, on shelves of a wooden cabinet. Two closed doors represent frogs not yet discovered and those that may disappear before becoming known to science. It's hard to find fault with the usage of this striking painting as the cover image, except for the fact that there are no salamanders depicted (it is the amphibian eponym dictionary, after all). Readers interested in learning about the artist or viewing her other paintings are encouraged to visit her website ([www.madelinevonfoerster.com](http://www.madelinevonfoerster.com)).

The dictionary is written for "the amateur herpetologist, the student of zoology or anyone else interested in taxonomy, nomenclature or amphibians." It includes the names of 2668 amphibians honoring 1609 individual people. An additional 128 amphibian appellations originate with names that "sound like people's names but are in fact not," and 83 are categorized by the authors as miscellaneous, "relating to indigenous peoples, fictional characters, conservation groups, guerrilla armies, chartered accountants, and biblical and mythological references." The book is an alphabetical listing of eponyms, each followed by one or more names of species named after that



person, as well as a brief biographical account of the honored individual. The authors note that tracking down "the provenance of amphibian names" was "fraught with difficulties." They do not, however, provide a description of their methodology (which I would like to have seen), and they warn that "the reader may find that people associated with more recently named species and subspecies are not included in this book." This, indeed, was the case for this reader (see below).

Naturally, when the book arrived, I began perusing the pages for names of people I've met. I found Drs. George Folkerts, Karen Lips, and George Rabb. George Folkerts has a salamander named for him, the dwarf black-bellied salamander (*Desmognathus folkertsii*). It is fitting, I think, that a south-eastern United States salamander be named

for Dr. Folkerts as he taught at Auburn University, Alabama, for 38 years. George was a remarkably knowledgeable naturalist, trained not only in zoology, but in botany. In fact, it was his descriptions of southeastern US pitcher plant prairies that first caught my attention (Folkerts, 1982, 1991). I fell in love with pitcher plant prairies when I lived in north Florida, and made many weekend field excursions, camera and tripod in hand, to capture images of the species that comprise this spectacular plant community. I had the good fortune to meet George at a conference in Tallahassee and was in awe of the depth of his knowledge of southeastern plants, animals, and natural communities. We corresponded many years later, after I relocated to southern Illinois, when I was trying to pinpoint his southern Illinois crawfish frog collection localities (he started his academic training at Southern Illinois University at Carbondale [SIUC]). He was anticipating a trip to southern Illinois at the time and we planned to go afield together. To my dismay, he passed away before he could make that trip.

Karen Lips has an anuran named for her, *Incilius karenlipsae* (a toad without a common name). I met Karen, an accomplished herpetologist who investigates amphibian declines in the Neotropics, when she was on the faculty of the Zoology Department at SIUC. I would occasionally stop by her office and chat. Two of these visits stand out in my mind because they resulted in opportunities for me that otherwise would not have materialized. In one case, Karen had been contacted by the Illinois chapter of The Nature Conservancy inquiring about her possible interest in conducting a herpetofaunal survey of one of their recently acquired properties in southern Illinois. The funds they allocated

were not enough to support a graduate student, so she turned them down; but they were sufficient to finance me for several survey seasons. On the second occasion Karen introduced me to her colleague, Dr. Matt Whiles, who was examining gut contents of preserved larval flatwoods salamanders (*Ambystoma cingulatum*) from South Carolina. I had dozens of larval specimens in my basement, which I collected while doing presence/absence surveys for the species in Florida (I collected one specimen per newly discovered breeding site). I received a small stipend to remove stomach contents from my specimens, increasing the sample size of the study nearly four-fold. In their description of *Incilius karenlipsae* (which, sadly, may be extinct) Mendelson and Mulcahy (2010) state that Karen's contributions to the understanding of the cause of amphibian declines in the Neotropics are "extraordinary." I would add "generous" to the list of Karen's attributes; I was sorry to see her leave southern Illinois.

Two amphibians are named for George Rabb, a salamander (*Dendrotriton rabbi*) and a frog (*Ecnomiohyala rabborum*). The frog is actually named for both George and his late wife, Mary. I met George and Mary when I worked as an animal keeper at Brookfield Zoo in the late 1970s and early 1980s. George was the zoo director and Mary managed the zoo bookstore and library. The bookstore, under Mary's direction, carried a number of appealing books, several of which now sit on my bookshelf. Aware of my keen interest in ambystomatid salamanders, George kindly included me in a one-season drift fence survey of blue-spotted salamanders (*Ambystoma laterale*) and the hybrid "species," Tremblay's salamander (*Ambystoma tremblayi*), at a pond in Palos Forest Preserve, Cook County, Illinois. Finding dozens of salamanders in our coffee-can traps was a dream come true for me. George, now retired, continues his work towards the international conservation of wildlife. Sadly, Rabbs' fringe-limbed treefrog is now thought to be extinct in the wild, a casualty of chytridiomycosis, and the last two captive individuals are aging males (Mendelson, 2011).

One name noticeably missing is Steve Karsen. Steve, a Chicago Herpetological Society member and resident of southern Illinois, discovered the first (and only) plethodontid salamander known to occur in Asia. An astute observer, Steve

recognized that he had stumbled onto something unique and made sure to get specimens into the right hands. Not only was the salamander a new species, it warranted placement in its own genus, *Karsenia* (Min et al., 2005). It is unclear to me how Beolens and his coauthors missed this eponym. Was the description too recent to be included? No, that doesn't explain the omission as citations go through 2012. Perhaps the answer is that the salamander was described in the journal *Nature*. *Nature* is not listed in the Bibliography, suggesting the authors did not include it in their search for eponyms. However, *Karsenia* does appear at AmphibiaWeb, the online database used by the authors for the most recent scientific nomenclature. No matter the reason, the omission of *Karsenia* detracts from the book and begs the question: "What other eponyms did the authors miss?"

How can a person increase his or her chance of achieving scientific immortality by having a species named for them? One of the best strategies, based on the preponderance of entries in the eponym dictionary, is to contribute significantly to natural science or to be an esteemed colleague of, or collect for, a taxonomist. Another strategy, based on the number of species that have been named for family members or friends of the describer(s) is to be the grandparent or parent of, be born to, be a sibling of, marry, befriend, or work with a taxonomist. It can also help, in some cases, to be a philanthropist (especially one who supports taxonomic research/field work), US president or vice-president, missionary, explorer, photographer, composer, musician, high school teacher, writer, businessperson, or landowner.

*The Eponym Dictionary of Amphibians* is full of interesting stories and intriguing characters, far too many to adequately encapsulate in this review. So, if you'd like to know who died in the field in the pursuit of knowledge, learn why a species was named after a guerrilla army or after the fictional hero "Zorro," or if you simply enjoy learning about the people behind the name(s), I encourage you go to your local library or bookstore and enjoy this book yourself. You won't be disappointed.

#### Acknowledgments

I thank Mike Dloogatch for the opportunity to review this book and Erin Palmer for editorial comments.

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## Notes on Reproduction in Long-nosed Leopard Lizards, *Gambelia wislizenii* (Squamata: Crotaphytidae), from Southern California

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### Abstract

A histological examination of gonadal material from long-nosed leopard lizards, *Gambelia wislizenii*, from southern California was conducted. As in *G. wislizenii* from different areas, reproduction is initiated in spring and terminates in early summer. Mean clutch size for 20 females was  $5.5 \pm 1.4$  SD, range = 2–8. One female from May with corpora lutea indicates egg laying begins in that month. Histological information is presented that multiple clutches are produced by *G. wislizenii* in southern California. The smallest reproductively active male (spermiogenesis) measured 83 mm SVL; the smallest reproductively active female (5 follicles > 5 mm) measured 88 mm SVL. Timing in the events of the *G. wislizenii* reproductive cycle is similar to those of many other North American lizards and allows neonates time to feed and accumulate fat reserves before entering hibernation. The possibility of an earlier start of *G. wislizenii* reproduction in Mexico merits investigation.

The long-nosed leopard lizard, *Gambelia wislizenii* (Baird and Girard, 1852) ranges from southern Idaho and eastern Oregon south to Sonora, Coahuila and Zacatecas, Mexico (McGuire, 1996) where it is confined to arid and semiarid lands (Hollingsworth, 2009). Information on reproduction of *G. wislizenii* is in many sources. The most detailed information sources on *G. wislizenii* reproduction are by Tollestrup (1982) and Parker and Pianka (1976). Anecdotal accounts on *G. wislizenii* reproduction are in: Smith (1946); Johnson et al. (1948); Stebbins (1954, 2003); Gates (1957); Tinkle (1959); Robison and Tanner (1962); McCoy (1967); Montanucci (1967); Turner et al. (1969); Fitch (1970, 1985); Parker (1973); Tanner and Krogh (1974); Essghaier and Johnson (1975); Vitt (1977); Behler and King (1979); Nussbaum et al. (1983); Mitchell (1984); Williamson et al. (1994); Brown et al. (1995); Degenhardt et al. (1996); McGuire (1996); Grismer (2002); St. John (2002); Brennan and Holycross (2005, 2006); Lemm (2006); Hollingsworth (2009); Stebbins and McGinnis (2012).

Due to the difficulty in justifying collections of large monthly samples of lizards, utilization of museum specimens for obtaining reproductive data has become increasingly important. The purpose of this paper is to add information on the reproductive biology of *G. wislizenii* from a histological examination of museum specimens from southern California. Histological information that egg deposition begins in May and females produce multiple clutches in southern California is presented. Comparisons of *G. wislizenii* reproduction from different areas are made.

### Methods

A sample of 112 *G. wislizenii* consisting of 51 adult males (mean SVL = 97.9 mm  $\pm$  7.1 SD, range = 83–114 mm), 46 females (mean SVL = 110.0 mm  $\pm$  10.0 SD, range = 88–136 mm), 6 subadult males (mean SVL = 73.8 mm  $\pm$  3.9 SD, range = 68–78 mm) and 9 subadult females (mean SVL = 76.8 mm  $\pm$  7.5 SD range = 68–83 mm) was examined from the herpetology

collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California. Lizards were collected 1941–1977.

The left testis and left ovary were removed from males and females, respectively. Gonads were embedded in paraffin, sections were cut at 5  $\mu$ m and stained by Harris hematoxylin followed by eosin counterstain (Presnell and Schreiber, 1997). Oviductal eggs or enlarged follicles (> 5 mm length) were counted. No histology was performed on them. Histology slides were deposited in LACM. An unpaired *t*-test was used to compare male and female mean body sizes and the relation between clutch size and female body size (SVL) was examined by linear regression analysis (InStat vers. 3.0b, Graphpad Software, San Diego, CA).

### Results

The mean body size of adult females was significantly larger than that of *G. wislizenii* males (unpaired *t*-test,  $t = 6.9$ ,  $df = 95$ ,  $P < 0.0001$ ). Monthly stages in the testicular cycle of *G. wislizenii* are in Table 1. Three stages were observed: (1) Regression, germinal epithelium is reduced to 1–2 cell layers.

**Table 1.** Monthly stages in the testicular cycle of 51 *Gambelia wislizenii* males from southern California.

Month	N	Regressed	Recrudescence	Spermiogenesis
March	4	0	3	1
April	11	1	2	8
May	22	0	0	22
June	8	1	1	6
July	3	2	1	0
August	3	2	1	0

**Table 2.** Monthly stages in the ovarian cycle of 46 *Gambelia wislizenii* females from southern California.

Month	N	Quiescent	Early yolk deposition	Follicles > 5 mm	Oviductal eggs	Corpora lutea only
March	1	1	0	0	0	0
April	6	1	2	3	0	0
May	19	2	5	7	4*	1
June	10	5	3	2	0	0
July	6	6	0	0	0	0
August	3	3	0	0	0	0
September	1	1	0	0	0	0

\* 1 May female with oviductal eggs was undergoing concurrent yolk deposition for a subsequent clutch.

Spermatogonia and Sertoli cells predominate; (2) Recrudescence, germinal epithelium proliferates in preparation for the next period of sperm formation. Primary and secondary spermatocytes predominate. Spermatids are present in late recrudescence; (3) Spermiogenesis, lumina of the seminiferous tubules are lined by sperm or clusters of metamorphosing spermatids. The period of spermiogenesis encompasses April through June (Table 1). Testicular recrudescence commenced in June. The smallest reproductively active male measured 83 mm SVL (LACM 94791) and was collected in San Bernardino County in May. Males smaller than 83 mm SVL were reproductively inactive.

The monthly stages in the *G. wislizenii* ovarian cycle are summarized in Table 2. The period of female reproductive activity encompassed April through June. Mean clutch size (oviductal eggs or follicles > 4 mm) for 20 females was  $5.5 \pm 1.4$  SD, range = 2–8. Two of this sample included two clutches of five eggs, one clutch from each of two females captured in May, that laid clutches in captivity in June. Body sizes (SVL) were not available for these females. One female from May (LACM 94735) from Riverside County with oviductal eggs was undergoing concurrent yolk deposition indicating *G. wislizenii* may produce multiple clutches in the same reproductive season. One May female (LACM 94758) from San Bernardino County contained corpora lutea indicating egg deposition begins in that month. Linear regression analysis revealed a significant positive relation between female body size (SVL) and clutch size ( $n = 18$ ). This relation is illustrated by the regression equation: ( $Y = -2.59 + 0.074X$ ,  $r = 0.56$ ,  $P = 0.016$ ). The smallest reproductively active female (5 enlarged follicles > 5 mm) measured 88 mm SVL (LACM 94792) and was collected in May in San Bernardino County. Females smaller than 88 mm SVL were reproductively inactive.

*Gambelia wislizenii* exhibits a reproductive cycle typical of numerous other North American lizards including representatives of many different families (Anguidae, Crotaphytidae, Eublepharidae, Iguanidae, Phrynosomatidae, Phyllodactylidae, Teiidae, Xantusiidae) in which sperm formation and mating occurs in spring and eggs are deposited or neonates emerge in summer. This strategy results in hatchlings appearing in summer when food resources are plentiful. It also allows hatchlings to accumulate adequate fat reserves to utilize during hibernation.

The congeners *Gambelia copeii* (Goldberg et al., 2010) and *G. silus* (Tollestrup, 1982) exhibit a reproductive cycle with timing much like that of *G. wislizenii*.

The number of clutches produced per reproductive season by *G. wislizenii* merits discussion. Nussbaum et al. (1983) reported females from northern populations deposit one clutch of eggs, whereas females from southern populations deposit multiple clutches. Tollestrup (1982) reported *G. wislizenii* produced one clutch of 5–7 eggs per year, but postulated that multiple clutches could be produced under favorable conditions and, perhaps, were typical in southern deserts. Turner et al. (1969) reported females of *G. wislizenii* from southern Nevada produced two clutches in 1965 and 1966 whereas Stebbins and McGinnis (2012) reported *G. wislizenii* females from California produce more than three clutches per year. Turner et al. (1969) reported that production of multiple clutches by *G. wislizenii* likely depends on spring rainfall and resultant food abundance. The congener *G. silus* (as *G. sila*) from San Luis Obispo County, California may produce as many as four clutches in the same year (Germano and Williams, 1992). My finding of one female from May from Riverside County (LACM 94735) with oviductal eggs while exhibiting concurrent yolk deposition for a subsequent clutch indicates *G. wislizenii* may produce multiple clutches in southern California.

Fitch (1985) reported clutches from northern (north of 37°N) *G. wislizenii* females ( $n = 16$ ) were smaller (4.94) than 47 clutches from more southern females which averaged 6.05. However, this trend was not apparent in the geographic comparisons of *G. wislizenii* clutch sizes (Table 2) in Parker and Pianka (1976).

The appearance of two gravid *G. wislizenii* females in March from Baja California, Mexico, reported by Fitch (1970) suggests the reproductive cycle begins earlier than occurs at higher latitudes. Subsequent examination of additional *G. wislizenii* from Mexico are warranted to investigate this possibility.

#### Acknowledgment

I thank G. Pauly (LACM) for permission to examine *G. wislizenii*.

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#### Appendix

*Gambelia wislizenii* from southern California examined from the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California.

**Los Angeles County:** LACM15631, 15635, 15637-15639, 15641, 15644-15647, 37788, 109498, 132213-132215, 181868; **Riverside County:** LACM15649, 26808, 52880, 52882, 73676, 94717, 94719-94730, 94732-94738, 94740-94742, 94744-94747, 94749-94753, 94756; **San Bernardino County:** LACM 15655, 15657, 15659, 15661, 52877, 64000, 64002, 70175-70177, 70180-70184, 70187, 70189, 70815, 94707, 94731, 94757, 94758, 94760-94764, 94766-94773, 94776-94779, 94782-94789, 94791, 94792-94794, 115560, 122044, 122427, 125976, 126233, 126234, 137896.

In fond remembrance of Ilene Sievert, who died December 16, 2012, this year we will reprint several of the essays that Ilene wrote for these pages between 1988 and 1993 under the rubric "Frog City." This one is from October 1990.

## Frog City by Ilene Sievert

### VII. A Green Thought: Part 2

In my old-house cold and dusty basement is a small room near the furnace set up for growing plants under artificial light. Banks of cheap fluorescent shop lights hang on various weights and lengths of chain from hooks screwed into the joists. Along the two long walls three deep and two wide they hang over the discarded desk, surfboard-shaped formica kitchen table, and ruined icebox turned on its side and topped with a superfluous basement door. The plants sit in refrigerator trays, broiler pans, plastic greenhouse trays; whatever was cheap, discarded by others or served in a previous avatar with Shirley MacL\_\_\_\_. Some plants, prone to rot, are up on racks of plastic egg crate diffusor. Others prefer to wallow in their own drainage.

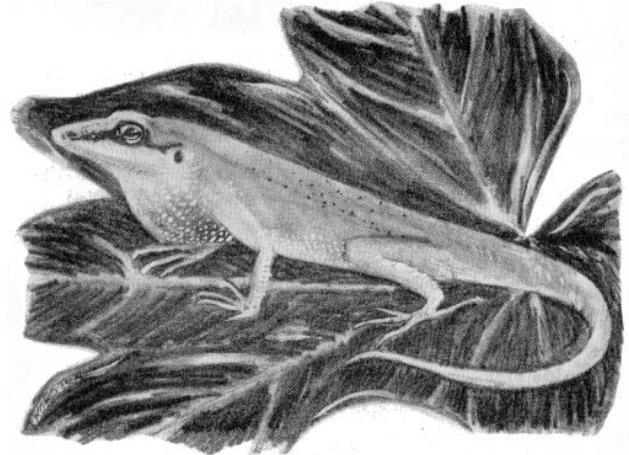
I grow small orchids, bromeliads, epiphytic cactus, succulents, begonias — an assortment of nonhardy houseplants. Also summer blooming pot plants winter here, fuchsia, agapanthus, browallia, impatiens. Seeds and cuttings are started and bulbs brought to bud. On the floor, cool in summer and cold in winter, are pots of dormant plants, mostly bulbs, amaryllis, calla; also covered pans of cool starting seeds. There are boxes of pots, milk jugs of aging water, watering cans of various shapes and sizes, several misters, spilled dirt, bags of medium, buckets of gravel and sand; a mixed texture of horticultural disorder.

Water evaporates from pans and plants and all gets generously misted once or more per day with very dilute fertilizer solution. The single window is glass block with a screened vent kept open at least a crack except in bitterest weather. A small fan in the farthest corner pushes the upper air in a gentle column downward. The high humidity caused rampant fungus problems until ventilation was provided.

The light fixtures throw off a lot of heat, but when they snap off at night it gets appreciably cooler. They are controlled by timers set to day-length plus two hours, reset monthly. Many plants require seasonal variation of photoperiod to bloom. Hey what the hell is this? These articles are supposed to be about herps and this is boring plant stuff. Tell it to your Aunt Maude's garden club. Jeez!

I beg your pardon, gentle reader. Forgive me for trying your patience. It's really the Editor's fault, you know. He is totally irresponsible. After you have vented your just irritation take some kindly advice from your Author, who is also a reader just like you. When prose seems vagrant and off the point it sometimes pays to emulate the admirable *Pyxicephalus*. Nestle back quietly into your comfy substrate and be cryptic. It may be that something of interest will pass in front of your eager and capable jaws.

One autumn, the season when tender cells must be protected from coming winter lest root and branch shrivel and die, I faced an annoying and familiar problem. Although the pots were



soaked in water, although a citrus oil "organic" drench had been poured through the soil, yet certainly there remained (a) small ant colonies that adore the bark mix of epiphytic plants, (b) sowbugs and earwigs, lovers of moisture, (c) small moths hidden in pot and foliage, and (d) eggs of tiny black flies, fungus gnats, which will hatch indoors, fly upstairs and immolate themselves in moist food and in beverages, particularly milk where they show to advantage.

As I gazed into my threatening green thicket so pregnant with unwanted life, it seemed a wild jungle, a jungle that was lacking in predators.

The resident basement spiders, ghostly pale or tiny and black, were far from doing an adequate job. Perhaps their numbers suffered from too frequent harvest. Peepers cannot resist the twinkly legs. I suspect the spiders have good harvest of each other. When a few are flipped into a jar and taken upstairs, by the time they reach the consumer there usually remains one spider and one or more silk packages. Male half has holy war against house bugs and smashes or gasses all he sees, so mum on the spider farm, please.

A suitable predator for the plant room would have to go lightly, undestructively, amongst sometimes slender, sometimes thorny plants. It should be small enough to consider gnats a useful food. Its droppings must be tiny and innocuous. The room is not tight and a small and agile animal could reach other parts of the house. The effects of such on animals and people must be considered.

Our toughest tree frog is the Cuban, a big lazy galoot who wouldn't pop an eyeball at a gnat; he's better at june bugs. Furthermore he's been a spare eater since maturity, saving up a big gutful for a rare large and smelly poop. Blackie, our all-American toad, would do his patriotic duty and eat anything that

moved, but as sometimes happens with American armed forces, he is too clumsy and rough for a delicate job of assassination. There is, to my knowledge, no CIA toad. Anyway the bulk of Blackie or the Cuban would cause a horrible smell should he die in an inaccessible place. Spring peepers would eat gnats and have no mobility problems but would probably flee the heat of the ballasts, disperse into the house and dry up.

I was thinking of house geckos running up the walls when I remembered the brown anoles. Following our Disneyworld hajj, while still in Florida, we visited a strip of sandy beach between the ocean and an inland waterway. There was so much salt in the air that glasses fogged up and lips licked salty. The dominant vegetation was a hard leaved shrub of open habit growing under the very full sun in what appeared to be pure sand. The base of the bush was alive with large nasty-looking ants, but the branches were alive with jumping little brown lizards.

If these lizards could live and even jump under these conditions they had a fair chance in captivity, so Carolyn of the Swift Hand captured a couple and they traveled tourist class to Chicago in a yogurt cup in my tote. They lived a couple of years in a plastic cage on sand amidst low sansevieria and haworthia. One escaped into the house and was found and recaptured more than six months later in a pile of neglected papers near the cage. It looked fatter and healthier than the one in the cage. Very impressive.

So, when I was in a local pet store and saw a small brown anole alone in a bare cage, ignoring some gross mealworms half her length, she was taken home. Off she scampered into the plants and the next time I saw her, a moth in her jaws, she was quite green. Doggone, she was a green anole so let's get her some company. Every pet store had "chameleons" of unknown species and secret origin so I chose two which appeared to be male and female green anoles and released them in the room. The male soon became large and bold. He bobs and flashes a pink throat fan at me, then runs over to take small newly shed mealworms or waxworms, dusted with calcium and vitamins, directly from the forceps. The girls are shy and will only take the offering if it's put down nearby, and I must move away and keep still.

Their agility is astonishing; they climb and clamber over leaf, stem, chain, walls, between the bulbs and the fixtures, and what isn't climbed is jumped. One night I found a lizard sleeping on a loosely slung light cord, his toes wrapped firmly about it, tight as a tree frog. I never saw them run upside down on the ceiling but would not rule out the possibility. They're more than capable of leaving the room through the many openings between the beams or under the door. There were two sightings last winter on the furnace pipes. Yet, they always return to the room.

How to check on them? Small green and sinuous creatures are not easily spotted amongst foliage and have many hiding

places. It's unusual to detect all three in one visit. They like the warm top of the fixtures and I can step on a low stool, peep over the lights, and see one or more. A pass with the mister will cause anyone in the foliage to move, sometimes to run out to lick the fresh drops. Tiny dry droppings mark favorite perches to check. It is startling to move a plant and have a part of it jump away so I carefully shake and inspect each one taken out of the room. This avoids bringing an anole outdoors or into the living room.

I became impatient for the patter of even smaller feet and figured that another male might stimulate breeding activity. An obvious male was chosen out of a ten-gallon pet store tank where he was living peacefully with many others of both sexes, I swear to God, and after a short quarantine he was released into the room.

The resident male did not ponder, did not soliloquize, did not lose a single second wishing for his too too solid flesh to melt. He instantly spotted the new male though more than six feet away. First he bobbed and flashed as briefly as one can do such things, then jumped recklessly across the room, the new male flying before him. Directly as the new male disappeared, straight-away to a female and they bobbed and danced awhile together, till, turning her back but gazing seductively over her shoulder, she slowly climbed up the light cord. He followed and they vanished over the light fixtures, fade and cut. I didn't see the introduced male for a long time and believed him driven from the room or dead in some hiding place.

When spring next came it was time to inspect dormant bulbs asleep in their pots of dry earth and closed up against the light in cardboard boxes. When I got down on the chilly floor and started grubbing and poking about, moving and opening boxes, out crawled the sorriest sick, cold, and starving anole. He was thin as a rack, his pelvis a washboard. His color was brown and he moved so slowly I caught him in my middle-aged hand. He was put in a warm moist tank and hand fed. It was too late. He never regained the will to live.

The ruling Don Anolis grows larger and more green. How relentlessly he must have persecuted the deceased and kept him from warmth and food. I have seen him courting a lady-love. He ignores my presence, the insensitive brute, but she is fearful and moves off though he chases and nips her neck. Small dried up eggs appear on top of the light fixtures; pieces of cork bark and moister locations are ignored. If eggs have been laid in the earth of the pots they'd be hard to detect in the perlite and beads of Osmocote. Alas, no tiny youngsters have appeared to eat the gnats and whitefly so abundant. Has the sharp-eyed male or mommy dearest devoured them? Is an 8 x 12 room full of hiding places too small for young as it was for a second male? All is not yet green and good in paradise. If this problem is resolved there should be a Part 3.

## Herpetology 2013

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 editor assumes full responsibility for any errors or misleading statements.

### NATURAL-HISTORY STUDIES

L. J. Vitt [2013, *Herpetologica* 69(2):105-117] notes that natural-history studies represent the observational stage of the scientific method, and the single greatest discovery in biological sciences—evolution by natural selection—was based largely on a vast amount of natural-history information collected by Charles Darwin. He briefly reviews natural-history observations that he has made during his career that led to discoveries in life-history theory, placentation in New World *Mabuya* that rivals that of eutherian mammals, social behavior in the North American clade of five-lined skinks, and the relationship of ecological traits of lizards globally to their evolutionary history (phylogeny). Much credit is given to gifted collaborators who provided the intellectual interplay that led to these discoveries. The author briefly comments on what he considers to be frontiers in herpetology that involve combining phylogenetic hypotheses with natural-history data. And a final comment encourages those among us who are able to spend extended time periods in the field to collect as much natural-history data as possible, because these data describe reality, and, as theories and phylogenies evolve, the kinds of basic data that led to Darwin's theory of evolution by natural selection can be applied again and again.

### PATTERNS OF WATER LOSS

W. E. Peterman et al. [2013, *Canadian J. Zoology* 91(3):135-140] note that water balance is critical to survival, growth, and performance of many terrestrial organisms because it can influence foraging time, limit dispersal, and curtail courtship activities. Water loss can vary in time and space across the landscape, and can also be modulated by behavior. Amphibians are particularly sensitive to water loss because their skin provides little to no resistance to evaporative water loss. This study sought to quantify rates of water loss across a heterogeneous landscape using plaster of Paris models as analogs for the western slimy salamander (*Plethodon albagula*). Models were validated within a controlled laboratory setting prior to field deployment, and were shown to approximate rates and magnitudes of water loss observed in living salamanders. Both adult- and juvenile-sized models were tested in the field, and it was found that juvenile-sized models lost water at a greater rate under all contexts. The rates of water loss measured at night (1.5%/h–4.5%/h) were nearly half of those measured during the day (2%/h–10%/h). Rates of water loss were greatest on ridges with southwestern aspects during the day (5%/h–10%/h) and lowest in ravines with northeast aspects at night (1.50%/h–3.75%/h). The results corroborate field observations of salamander activity patterns and distribution across the landscape, providing a physiological mechanism driving fine-scale habitat use and distribution. Although this study tested plaster models as analogs for salamanders, the approach should be generalizable to other amphibian taxa, providing an efficient means of measuring rates of water loss in the field under biologically meaningful contexts.

### HATCHLING POND TURTLE BEHAVIOR

D. K. Rosenberg and R. Swift [2013, *American Midland Naturalist* 169(1):111-121] note that understanding space-use patterns of freshwater turtle hatchlings is critical to guide conservation efforts, yet little is known because of the difficulties in studying this early life-history stage. The authors investigated post-emergence movements and habitat associations of western pond turtles (*Actinemys marmorata*) at two study sites in western Oregon using micro-transmitters and harmonic radar methods. Hatchlings delayed emergence until spring, with few exceptions. Hatchlings typically remained within 2 m of nests for as long as 59 d after initial emergence. During migration from their nests to aquatic habitat, hatchlings embedded themselves in soil for up to 22 d at stop-over sites. Movements between successive stop-over sites averaged 27 m. Although the number of days turtles remained within 2 m of their nest following emergence varied widely among and within nests, hatchlings entered aquatic habitat relatively synchronously. Hatchlings entered aquatic habitat on average 49 d after initial emergence, and traveled an average of 89 m from their nest site. Hatchlings detected in water were always within 1 m of shore and in areas with dense submerged vegetation and woody debris. Because of delayed emergence and extended post-emergent use of the area adjacent to nests, managers must consider the trade-offs of managing vegetation for nest habitat and the potential harm to hatchlings by vegetation management near nests.

### COACHWHIPS VERSUS RACERS

D. A. Steen et al. [2013, *Journal of Zoology* 289(2):86-93] note that when sympatric species compete, character divergence may help maintain coexistence. Snakes are often found in species-rich assemblages while exploiting similar resources; because snake body size is a relatively plastic trait that determines the range of prey sizes an individual may consume, divergence in body size between sympatric species may arise as a result of interspecific interactions. The North American racer, *Coluber constrictor*, and the larger coachwhip, *Coluber flagellum*, have a close taxonomic relationship and similar foraging strategies. Therefore, the authors hypothesized that *C. constrictor* would be smaller where they co-occur with *C. flagellum*, as compared to where *C. flagellum* is absent, throughout the southeastern extent of their range. To evaluate this hypothesis, the authors obtained data on body size for 2321 adult *C. constrictor* and 526 adult *C. flagellum*, along with habitat data and other potentially important factors influencing body size. *Coluber constrictor* was smaller than elsewhere when in peninsular Florida, in pine forests, on hydric soils and in the presence of the larger and potentially competing *C. flagellum*. Body size of *C. flagellum* did not vary by any measured habitat variables. The trends that were documented are consistent with the hypothesis that *C. constrictor* body size is influenced by several variables, including co-occurrence with *C. flagellum*.

## DAY GECKO COLOR CHANGES

R. I. I. Ikeuchi and A. Mori [2013, *Current Herpetology* 32(1): 26-33] note that rapid body color change of animals in response to environmental stimuli has at least three biological functions: predation avoidance, thermoregulation, and intraspecific communication. The authors tested the hypothesis that *Phelsuma kochi*, a Madagascan giant day gecko that normally has a bright green body color, darkens its color to maximize its level of background matching so as to evade predation. Because recent studies revealed that some lizard species are able to eavesdrop on avian alarm calls and respond with antipredator behavior, they conducted a playback experiment of avian alarm calls to examine whether *P. kochi* recognizes alarm calls and changes color in response to them. They played back alarm calls and songs of a syntopically occurring passerine bird, *Terpsiphone mutata*, and white noise to free-ranging geckos. The geckos changed their body color quicker and darker in response to alarm calls than songs, and tended to keep their dark coloration longer after the playback of alarm calls than that of songs or white noise. This result suggests that *P. kochi* is able to eavesdrop on alarm calls of syntopic birds and respond by darkening its body color to reduce its conspicuousness to predators.

## EFFECTS OF DROUGHT ON BLANDING'S TURTLES

W. J. B. Anthonysamy et al. [2013, *American Midland Naturalist* 169(2):322-335] note that drought is an ecological challenge for turtle species worldwide and can be exacerbated by habitat fragmentation and loss, especially for small populations. The authors studied the activity of 16 Blanding's turtles, *Emydoidea blandingii*, using radio-telemetry from 2005–2006 during consecutive drought and normal hydrological years at a fragmented preserve in northeastern Illinois. The preserve experienced drought conditions during 2005 with precipitation levels 20% below the 60 y average. Fine scale measures of activity (i.e., mean water depth at locations, proportion of unique locations, and proportion of locations in dry habitat) differed between years, whereas broad scale measures of activity (i.e., home range, movement distance) did not. On average only 41.3% of 2005 home ranges overlapped with 2006 home ranges suggesting space use shifted between years. Although most proportional habitat use remained unchanged between years, several individuals increased their use of riverine habitats when other wetland habitat dried. This study underscores the need to examine the risks of severe environmental events on vulnerable populations.

## RECONCILIATION ECOLOGY

A. M. Linares and P. C. Eterovick [2013, *Herpetologica* 69(2): 237-256] conducted a herpetofaunal inventory and distribution study at the Inhotim Institute in Brumadinho Municipality (State of Minas Gerais, Southeastern Brazil). The Inhotim Institute is located in a transition area between the Atlantic Forest and Cerrado biomes, and the study site encompasses natural forest fragments (secondary forest) and landscaped areas with buildings and gardens representing human occupancy. Comparison between these habitats provides a test as to whether human habitats designed to be interwoven with small tracts of wild habitat are sufficient to maintain a broad array of native species,

as proposed in the concept known as "reconciliation ecology." Field work was conducted 7 d per month from January 2008 to January 2009, except for December 2008. The authors used pitfall traps with drift fences, visual and auditory surveys, and random records and capture by persons not directly involved in the study in both forest and anthropogenic habitats. Sixty-five species were recorded which included 32 amphibians and 33 reptiles. Three anurans and one lizard were introduced species (probably from the transport of plants from other states for landscaping) and were excluded from the analyses. Herpetofaunal species richness was greater in anthropogenic areas, possibly due to the generalist habits of most species and because such areas have a greater availability of suitable breeding habitats for amphibians. The number of species recorded was high compared to other Brazilian sites, suggesting that the reconciliation ecology approach might be an effective conservation strategy for herpetofauna at the Inhotim Institute.

## SNAPPING TURTLE HABITAT DIFFERENCES

T. C. Lescher et al. [2013, *American Midland Naturalist* 169(1): 86-96] address habitat differences of two sympatric turtle species, alligator snapping turtles (*Macrochelys temminckii*) and eastern snapping turtles (*Chelydra serpentina*) in six watersheds in southeastern Missouri. The study found that alligator snapping turtle presence corresponded with higher abundance of submerged physical structures in the stream, deeper water, relatively higher levels of detritus, and warmer water temperatures. Greater amount of aquatic vegetation was important in characterizing eastern snapping turtle presence in traps. Eastern snapping turtles and alligator snapping turtles did not use the same areas spatially at either a microhabitat or macrohabitat scale, and were only trapped at the same location once in 282 trap locations. Future conservation plans for the alligator snapping turtle and eastern snapping turtle should consider the microhabitat characteristics of sites used by these turtles.

## FIRE AND AMPHIBIAN COMMUNITIES

S. M. Allingham and M. Harvey [2013, *Current Herpetology* 32(1):1-8] note that fire is a frequent feature of African grasslands because agriculture is often used as a management tool in conservation areas. Richness, diversity, and abundance of amphibians were compared in four areas of montane grassland subjected to different fire regimes in Nyika National Park (Malawi, southeastern Africa). The surveys were performed using drift fences and pitfall traps randomly set in four areas (12 sites) subjected to the following fire regimes: (A) no fire for at least 15 years; (B) no fire for at least 10 years; (C) no fire for at least 6 years; and (D) annually burned. Vegetation cover and vegetation height were measured. During a 50-day sampling period 370 amphibians from 17 species and six families were collected. The lowest value of abundance was found in areas C and D. The amphibian species *Hyperolius marmoratus* and *H. nasutus* were most abundant in the control area A. *Arthroleptis xenodactyloides*, *Amietophrynus gutturalis* and *Am. maculatus* were found in all areas. There was a strong correlation between vegetation height and species richness. Vegetation structure, which is affected by fire, appears to be a key factor impacting amphibian assemblages in montane grasslands.

## Unofficial Minutes of the CHS Board Meeting, May 17, 2013

The meeting was called to order at 7:48 P.M. at the Schaumburg Public Library. Board members Stephanie Cappiello and Cindy Rampacek were absent.

### Officers' Reports

Recording Secretary: The board did not meet in April. Minutes of the March 15 board meeting were read and accepted.

Treasurer: The March and April financial reports were presented, discussed, and accepted.

Membership Secretary: Mike Dloogatch read a list of expiring memberships.

Sergeant-at-arms: There were 42 attendees at the April meeting.

### Committee Reports

Shows:

- Notebaert Nature Museum, first full weekend of each month.
- Midwest Museum of Natural History, Sycamore, Illinois, June 22, Rockin' for the Reptiles.

Dick Buchholz and Mike Scott will show animals at the Cosley Zoo.

ReptileFest: Andy Malawy shared the preliminary results of this year's 'Fest. This was one of the top 2 years in both attendance and profit. There was discussion about ways to improve drink sales for next year. Jenny moved, and Aaron seconded, to increase the donations to each of the four groups benefiting from the drink sales to \$1000 each. After discussion, the motion passed unanimously. Everyone agreed that Rick Hoppenrath did an incredible job at the photo booth this year, stepping in at the last minute, and making it the best ever at over \$2900. Josh Baity moved to give the Hoppenrath family a free membership in appreciation for all of Rick's hard work, and Mary's sacrifice! Jenny seconded, and the motion passed unanimously.

### Old Business

Junior Herpers: The Junior Herper table at 'Fest was a success. They had several new families interested in coming to meetings, and are looking for speakers.

Banners: The new banners at 'Fest were great. Ideas for more were discussed.

Zoo trip: The trip to the Indianapolis Zoo went well. We are looking for someone interested in organizing another, possibly in the fall.

### New Business

Herps of Illinois: A letter was received from Dr. Steve Barten with concerns regarding the collection and release of specimens for the Herps of Illinois exhibit at ReptileFest. Research has shown problems with the spread of disease when captive specimens are released back into the wild. All agreed that this is an important concern, and that in the future CHS members or local nature centers should be enlisted to maintain the exhibit animals in captivity rather than release them.

Nominating committee: As there will be a number of vacancies to fill for next year, the committee will need to begin early looking for candidates.

### Round Table

Mike Dloogatch traveled to Texas this spring. It was a great trip, but few snakes were found.

Josh Baity and his wife are expecting their first baby this year, a girl!

Barbara Nieri has concerns about animal handling at shows, and the videos shot at these events. There was some discussion about ways to address this, but more thought and discussion will be needed.

Nancy Kloskowski thought 'Fest went well. She enjoyed the pizza.

Linda Malawy encouraged everyone to attend the Midwest Herpetological Symposium this year, August 31 – September 3, in Peoria.

The meeting was adjourned at 9:35 P.M.

*Respectfully submitted by Jenny Vollman*



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For sale: High quality, all locally captive-hatched tortoises, all bred and hatched here in the upper midwest. Baby leopards, Sri Lankan stars, and pancakes usually available, and are all well-started and feeding great! Leopards are \$125 ea., Sri Lankans (2012 hatched) \$475 ea. And Pancakes are \$195 ea. Leopards for out of state sale/shipping require a veterinary health certificate (inquire for cost). E-mail at [KKranz1@wi.rr.com](mailto:KKranz1@wi.rr.com) or call Jim or Kirsten at 262 654 6303.

Herp tours: **Costa Rica herping adventures.** Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds, and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site <http://hiss-n-things.com> and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at [jim.kavney@gmail.com](mailto:jim.kavney@gmail.com) or call Jim Kavney, 305-664-2881.

Summer Herpetological Field Classes: Research 4 Reptiles, LLC, has openings for ages 12 years to adult for herpetological field classes. Assist in real research studies and learn species identification, capture techniques, and data collection. All classes are limited to 8 individuals and are taught entirely outdoors at pond/prairie sites within Midewin National Tallgrass Prairie in Wilmington, Illinois. Registration details and class information can be found on our website at <http://www.research4reptiles.biz>. For questions, email Holly Zak at [research4reptiles@comcast.net](mailto:research4reptiles@comcast.net) or call 630-337-0757.

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## UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, June 26, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. This will be our popular and always well-attended annual **Show & Tell** meeting. Bring an animal that you find interesting for one reason or another and be prepared to give a short (under five minutes) presentation to the group. Don't be shy. Neither age (yours) nor commonness (the animal's) should be a limitation.

**Erica Mede**, a certified veterinary technician from Chicago Exotics Animal Hospital, will speak at the July 31 meeting. Erica's topic will be "The Good, the Bad, and the Ugly of Poop." This talk will leave you breathless (not from the odor) and unable to look away from your reptile's feces again. You will learn about the good (beneficial intestinal flora and fauna), the bad (nasties that lurk in your reptile's colon — parasites and pathogens), and the ugly (differences between normal and abnormal feces).

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

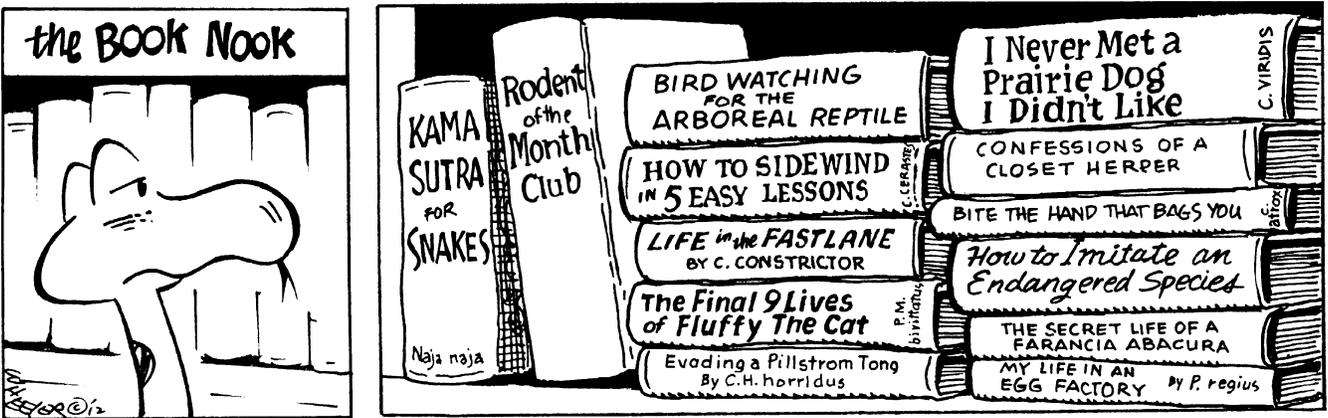
### Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., July 19, in the adult meeting room on the second floor of the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg..

### The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group's Facebook page.

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