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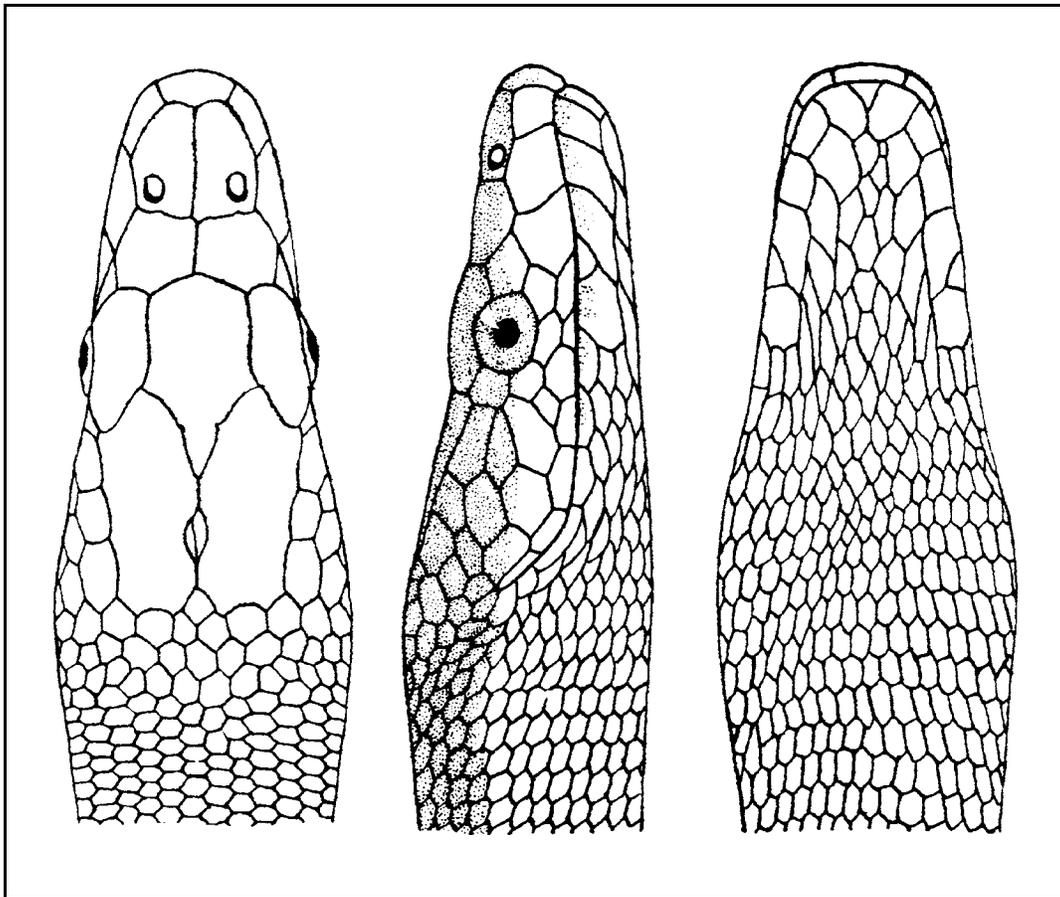
**Chicago Herpetological Society**

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July 2004



**BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY**  
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## Observations of Winter Activity by *Sistrurus catenatus* and *Coluber constrictor* in Eastern New Mexico

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Wintertime surface activity by snakes is unusual in most of North America where low temperatures restrict the ability of these ectothermic animals to function. However, some parts of the southwestern U.S. are sufficiently warm in the winter to allow surface activity by reptiles (e.g., Repp, 1998). In New Mexico, most snake activity is restricted to the months of May through September, although many species are detected occasionally as early as March or as late as November if weather conditions are mild (Degenhardt et al., 1996). A few New Mexico snake species have been found active during winter (approximately 21 December to 20 March), including night-snake (*Hypsiglena torquata*), terrestrial gartersnake (*Thamnophis elegans*) and prairie rattlesnake (*Crotalus viridis*) (Degenhardt et al., 1996). In this article, we report observations of two snake species active on the surface during winter in eastern New Mexico.

On 8 January 2003 (1400 h), the senior author (JDJ) encountered an adult male desert massasauga (*Sistrurus catenatus edwardsii*) basking on a dirt road 0.8 km east of State Road 294 and 24 km S of Taiban in De Baca County (1348 m elev.). The snake, ca. 46 cm total length, was the first of six total encountered in the general area during 2003, but was the only one found during the winter. Habitat in this area is rolling sand hills, with sparse grasses, yuccas and low shrubs. This specimen of *S. catenatus*, which has been catalogued in the Eastern New Mexico University Natural History Museum (Portales, New Mexico) as ENMU 5128, is the first reported for De Baca County and represents a new county record (Degenhardt et al., 1996).

On 16 February 2003 (1530 h), JDJ found a roadkilled eastern yellow-bellied racer (*Coluber constrictor flaviventris*) on a dirt road 4.8 km NNE of Broadview, Curry County. The snake (an adult female, 96 cm total length) still exhibited some body movement when found and apparently had been only recently killed. The collecting locality is in an area of open shortgrass prairie and was adjacent to an active black-tailed

prairie dog (*Cynomys ludovicianus*) town that has since been eradicated. The specimen is deposited in the Eastern New Mexico University Natural History Museum (ENMU 5187).

These observations were made during an unusually warm and dry winter in New Mexico. Air temperatures recorded at Cannon Air Force Base near Clovis, Curry County, ranged from 0 to 18°C on 8 January 2003, and - 3 to 12°C on 16 February 2003. Mild daytime temperatures, little to no wind, and clear weather were observed at both localities on the two collecting dates. No recent precipitation was observed in the area for either date.

*Sistrurus catenatus* and *C. constrictor* have been previously reported to be active in New Mexico from March to November and from April to October, respectively, based on available museum specimen records (Degenhardt et al., 1996). Although the months of March to November typically have moderate to warm temperatures in New Mexico, this period is also when most fieldwork and specimen collecting is conducted by reptile researchers in the state. Therefore, the paucity of museum specimens that have been collected during even mild periods of the winter may be partly due to a scarcity of herpetologists in the field during this season. Future efforts to survey for snakes during mild winters may indicate that many New Mexico species are more active during this season than previously suspected.

### Acknowledgments

We thank Charles Painter, Andrew Price and Mark Watson for reviewing an earlier version of the manuscript. We also thank Michael D. Braun (who observed both snakes in the field) and David M. Steele (who observed the *Coluber*) for their helpful comments; Marv Lutnesky of Eastern New Mexico University for curating the specimens; and Charles Painter for verifying the identities of the specimens from photographs.

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## Resurrecting García's *Botrops* [*Lachesis*] *acrochordus*

When are *discovering* a species and *naming* it different?

Reflections on the taxonomic "Big Bang"; or how I learned to stop worrying and love the Linnaean bomb.

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### Abstract

Using an example the naming of a species of viper, I explore the vagaries of Linnaean classification since its inception in an unruly "Big Bang," and show that, within the resultant scattering of debris, science has spent more time picking up the pieces than advancing knowledge. These effects are then followed into the age of artificial intelligence, with implications for the future of taxonomy.

Describing a "new" species can be a fairly commonplace business if there is no other species like it (e.g., its forms are new to science) or a real intellectual battle if that species has endured long residence in old museum jars where other similar species, familiar in name but overlooked in context, sit like mute advocates of scientific inertia. These bottled sleepers promulgate a multitude of unwitting disciples suffering a rigor mortis-like state of mind until without warning their preserving fluids are shaken up, and some upstart cries out from behind the stacks that "something new!" slumbers among the pickles. Whereas a whole new genus can be proclaimed with a single specimen, to name even one new species within an existing genus might require a huge sampling pool numbering dozens of specimens, accompanied by an entire evolutionary theory as a pedigree. And so a major taxon, the bushmaster (genus *Lachesis* Daudin, 1803) has waited almost until the very last to see its tombs cleaned.

Some new papers published within the last ten years (Ripa, 1994, 1999, 2000; Zamudio and Greene, 1997) offer the exciting prospect that these great vipers comprise three distinct species rather than the longstanding polytype of four subspecies.

With all the problems attending such a pronouncement, there remained a bug in the machine. A controversial "middle" population of uncertain affinity needed to be explained in order to justify speciation in at least two of the populations surrounding it. Its identity might make or break a vicariance hypothesis in an Evolutionary Species Concept (sensu Wiley, 1978).

The population in question is endemic to the Pacific and Caribbean slopes of eastern Panama and northwestern South America—often called the *Choco* after its indigenous inhabitants. This is an area of great biological interest for its unique and often shared fauna with Central America. Authorities were divided as to which species the Choco snake represented. Some South American scientists (e.g., Hoge and Romano-Hoge, 1981; Martínez and Bolaños, 1982) catalogued it with Daudin's (1803b) *Lachesis mutus* [*muta*] (acknowledging Taylor's trinomial, *Lachesis muta muta*), presumably on the basis of its locality in South America. The North American museums buried it in a different hole, with the American Cope's (1875) *Lachesis stenophrys* (and the American Taylor's sub-

species *Lachesis muta stenophrys*), and this is the grave cautiously allotted it by the American teams, Campbell and Lamar (1979), Zamudio and Greene (1997), and others.

Geographically, the Andes Mountains seemed to divide this snake's range on the east from the widespread Amazonian population, *Lachesis muta muta* (e.g., Campbell and Lamar, 1979; Ripa 1994; Zamudio and Greene, 1997); while its northern and western limits seemed continuous with the Central American, *Lachesis stenophrys* (e.g., Campbell and Lamar, 1979; Zamudio and Greene, 1997).

So which species?

In a monotypic genus, such as *Lachesis* was for so many years, it seemed little to matter. The question was rather of "race" than species, and there was little incentive to wonder. But as evidence grew and bushmasters were elevated to full species status, and biogeographic knowledge about the Choco region grew (e.g., Dixon, 1979; Potts and Behrensmeyer, 1992; Coates and Obando, 1996; et al.), it made more sense to group the odd snake with the Central American *Lachesis stenophrys* (e.g., Zamudio and Greene, 1987). There was no *apparent* disjuncture between the two populations to contradict this arrangement.

That there was indeed a disjuncture, although an overlooked one, would have been apparent only to one who had spent time hunting for bushmasters in that part of the world. Reading Zamudio and Greene's (1997) extraordinary paper, I felt they were "wrong" in their basic conclusion (that the rise of the Andean barrier had shaped the evolution of the Central American bushmaster in particular), but essentially right in another way, one that the authors themselves were unaware of.

In light of my own new findings, I revised their idea (as well as Campbell and Lamar's [1979] range map for bushmasters), and offered new data showing that the Andean Barrier had indeed shaped at least one bushmaster, but not the species they thought. On the basis of morphology, I concluded that the Chocoan snake was neither one nor the other of the two species in question (*Lachesis muta muta* or *Lachesis stenophrys*), but an entirely novel form, one with its own status and meaning (Ripa, 1999, 2000). The Chocoan bushmaster was,

in my vocabulary, a distinct species.

But I stopped short of giving my new child a Latin name. I meant to leave this final stroke for a subsequent paper (cited as “Ripa, in prep.” in Ripa [1999, 2000]). In the meantime I freely evoked an English name instead, calling the reptile “Darien Bushmaster” in those two publications until I could christen it properly in a scientific journal. And then I waited for my readers to share their own ideas, ad hoc, whether as critics or supporters.

In fact few ideas came in. One idea, however, showed that in spite of all my efforts to be a good scholar I had fallen woefully short on an important account. The estimable Jonathan Campbell, whose knowledge of the names (and history of names) of reptiles is astronomical, provided me the unexpected news that, if indeed my species was “new” to modern science, it already had a name—one over a hundred years old!

In 1896 a book called *Los Ofidios Venenosos del Cauca* (“The Venomous Snakes of Cauca”) appeared in Cali, Colombia. Its author was a certain *El doctor Evaristo García* (thus reads his name on the overleaf), evidently a practicing medical doctor with an interest in snakebite. His book is a kind of guide for recognizing the venomous snakes of the region, offering, as the subtitle states, “practical methods for the prevention of accidents caused by reptile bite.”

The text is as an obscure one and survives in few libraries outside of Colombia. It is easy enough to overlook a work one can hardly find, but one has even less qualms about it when no other authority for the entirety of the last century seems to have given it the least credence.

Now Cauca, the setting of *El doctor’s* book, is one of the provinces of Colombia where my “new” bushmaster resides. Indeed, many of the specimens on which I based my studies originated from this province. In a guide portending to tell of Chocoan snakes and their bites, it is only natural that the bushmaster should figure there. Doctor García calls his serpent *La Verrugosa del Choco* (the Wart Snake of the Choco), and bestows on it the Latin name of:

*Bothrops acrochordus*.

With the snake assigned to *Bothrops* (*Bothrops*) rather than *Lachesis*, I soon saw why I had paid no mind to it—I wasn’t looking in the right files. In the graveyard of old names, the tomb hardest to find is the one that has been mismarked. Moreover, with half again every pitviper in the world having once done a stint as “*Bothrops*,” and over a dozen names for bushmasters already in prior use before García, my oversight was understandable. I was leaning on the earlier Cope (1875), who had already named a bushmaster (*Lachesis stenophrys*) from that part of the world some 20 years before García. I had assumed, wrongly, that any more recent assignments (e.g., as *Bothrops*) should have been sunk into Cope’s (as Campbell and Lamar [1979] had themselves done with García). I was also laboring under the delusion that once a name gets “sunk,” it stays “sunk.” Not the case at all. My claim for newness in the Chocoan snake had inadvertently raised the dead.

But what did García’s *description* consist of? Had he and I,

by some taxonomic metempsychosis reaching across the past century, been thinking on parallel lines?

Hardly.

In García’s short chapter we learn of the large and dangerous viper of the region, feared by many, and that reaches great size. It has large mouth and large fangs, and of course the familiar “warty hide” that makes bushmasters easily recognizable. The snake’s color is described as pale with a series of irregular black blotches, with the dark line of an eye-stripe.

Although the local name *Verrugosa*, and the mention of a “warty” scale complex, is suggestive, it would not be confirming in itself, for a large highly keeled *Bothrops* or *Crotalus* could also answer such a description. Yet the animal is emphatically a bushmaster, for there is a good if not photographic (by modern standards) likeness of the snake’s head, which has been severed from its body.

The drawing is of a severed head only. This is revealing. García does not have a complete specimen, just the head portion. The snake’s body has not been preserved. This, he implies, is due to the great size of the animal (“*el volumen considerable de la verrugosa*”), and the shortage of alcohol to preserve it (“*nos ha dificultado el conservar en la alcohol el animal entero*”). We are in Colombia, and moreover, the Colombia of the 1890s. Alcohol, save for the drinkable kind, is hard to come by.

We do not wonder then of the paucity of García’s description, which provides no morphometric material whatsoever; perhaps the doctor has had only the head to work with. In vain we search his descriptions for scale counts or any other physical trait that would allow us to separate this “species” of bushmaster from any other. Indeed, it seems a rather generic bushmaster head the artist has drawn, and from this it would be impossible to guess which of the recognized species it was meant to represent.

The author is obviously unaware that his predecessors Linnaeus (1766), Daudin (1803a,b), Wagler (1824), Cope (1875) et al., have already named these large vipers of the Americas (hence he does not borrow their nomenclature), and believes, erroneously, that his description is new to science. In truth, his description is not new to science. The bushmaster, by 1896, has been described no less than 13 times by different authorities, each allotting it a different name.

García’s bushmaster is not uniquely Chocoan. Its “newness” seems to consist only in being the first bushmaster reported from western Colombia. Not that it was unexpected that bushmasters should be found there. They are endemic, after all, to most of the pluvial lowlands of Equatorial South America, and the earlier Cope (1875) has already shown us that they range well into Central America, as far north as Nicaragua.

On the other hand, the snake García is talking about might be new if he tells us why he considers it so. He points only to the granular character of its scales, the large head with the convex occipitals and small scales on the frontal—traits answered by all other bushmasters, and indeed, even the sym-

patric *Bothrops*. But García is naive to any previous descriptions of bushmasters, and believes, because of the snake's "warty hide, eye stripe and pale ground color with irregular blotches," that these traits constitute a creature new to science. In fact, these traits of bushmasters are well known in the literature by this time, and García has merely made another case for their existence.

And this brings an interesting point, for in order to answer our question, *When are discovering a species and naming it different?* we must try to define more precisely the terms we employ. We can easily say what a name is—it is a mere sign or symbol standing for something else—but what is *discovery* and what are the qualifications of *description*?

**There are no "new" names for species. . . . There are only new descriptions of species**

The problem haunting all scientific nomenclature, and one that modern systematists are working literally round the clock to correct, is that there is a greater abundance of names for species than there are descriptions to support them. And yet one does not name an organism; one names a *description* of an organism. A name does not carry a description within it; a name is simply a means of identification, a handle—one that should take us back to a description first, and an organism second. It cannot logically be otherwise in describing anything, whether a beast or a stone.

If we confuse the two, name and description—if the precedence is the sole criterion for judging the worth of a name—then we are led to the defensible but unsatisfying conclusion that an indigenous or folk name is as good as any other for scientific purposes. If this is so—and because folk names are arrived at collectively—no single human being's name can rightly be attached to anything as the discoverer of anything. If naming is the sole requisite of discovery, we should resort to the names given by indigenous people instead; and in the absence of indigenes in those regions, the names given by the first settlers landing there. Here is an example for the genus of bushmasters converted to this alternate system:

*Surucucu* (Guarani tribe, circa 500 A.D.)

I have no clue as to whether or not the Guarani tribe or some other came up with the name *surucucu*, or in what era it could be presumed to have arisen, etc., and offer this only facetiously. Nevertheless, it could be a quite workable system, and if my "Guarani" is not appropriate, then a new breed of *ethnologic taxonomists* could find a name that was. As a paper trail for future historians to verify the official christening, the ethnologist's own name and the date of his study could be appended to the species name, as is done presently in the Linnaean system (e.g., *Lachesis* Daudin, 1803).

Is a worldwide change toward such a nomenclature far-fetched? Perhaps not. Forced, say, by new attitudes of political correctness to abandon ethnocentric snobbery and bring biology "to the people," such a thing could happen—stranger things have. Supporters could argue that the scientific fundamentals really haven't changed. The Linnaean structure is preserved—only the geopolitical *right* to name has been altered,

away from what might be called the exclusionary practices of European science. The guidelines for precedence have shifted away from the scientists, who merely visit the region where the organism lives, to the people who actually live there, and are thus more appropriate to name the plants and animals they live among. Moreover, the method is more factual, more scientific since it attempts (even if it must fail at) restoring true historicity to names and puts naming totally in the hands of name-specialists rather than in the hands of biologists.

The obvious protests among scientists would be that changing our system this late in the game is madness, that we have enough problems of this sort already, and that a name should be traced to a source *on paper*, not a fluctuating indigenous tongue. But this view has its own inconstancies.

For if setting a name *on paper* is the only requisite to discovery, even a newspaper account can accomplish that (so much the better if it has a photograph). Various native names for bushmasters (as for other organisms) exist in old published accounts (especially when these animals have taken human life) and it only remains to find these articles, citing them for the needed localities. There are plenty of examples; and since *accuracy* of description is not requisite to qualifying an early scientific name (science has appreciated such qualifications only in retrospect), we should neither impose this rule upon our friends in the press. The Internet is already turning up its own problems in this regard (see Wüster [2003] for an example). It is now possible for anyone to name anything, and self-publish it at the touch of a button, throughout the world. It is ironic that some of these names, through their instant availability, are already supplanting some reviewed work and being quoted in many publications. A sort of pop-culture science has appeared, and the Internet has created a new breed of folktale.

Scientists may argue that the simple publication of a name (e.g., in the newspaper or on the Internet) is not an essentially *scientific* statement. The name and its description should be published in a scientific journal, preferably one that has been peer-reviewed, for it to be honored. This flaccid argument has been bantered about for years even among academicians, to no end. The majority of scientific names on the books—at least those from the eighteenth and nineteenth centuries—have no "descriptions" in any modern sense of the word; nor did they first appear in peer-reviewed journals, rather, they simply showed up in museum inventories, with others published ad hoc. Scientists themselves admit that peer-reviewed journals do not necessarily publish "better science" than their more expedient juniors (e.g., the *CHS Bulletin*). Science is only "scientific" when it is proved right; and the fact that new scientific communications are continually arising, correcting the errors of previous communications and "disproving" them, all within a peer-reviewed context, makes us realize how little agreement there really is in science; how, in fact, there is no actual science per se, only greater degrees of "scientificness" among scientific work as greater agreement is reached. In this regard, a peer-reviewed journal provides no greater guarantee of "accuracy" than any other, for all are subject to the same test of time.

Nor are large-scale publishing engines essential to publicize

a scientist's findings. Herpetology is a limited readership, and certain specialized articles may be of interest only to a few people. Self-publishing or nonreviewed publishing can bring those few minds together as effectively as any other, and because waiting on peer review before publishing can take a great deal of time, one cannot blame the scientist having certain time-sensitive material for wanting to get his message out in advance of competition, avoiding a year or more delay while waiting on his "peers" to give him the green light (if his work is extremely specialized, he may not have any actual "peers"; but all science is similar enough that most scientists can at least recognize whether or not the proper formulas have been followed, even if they cannot repeat and test the experiments themselves).

In some ways this is what García himself did; he published his work without European/American academic consent. Had he submitted his work to one of the prominent zoological journals of his age, it is likely that somebody (perhaps his predecessor Cope), would have caught his error. Then, García would have resorted to one of the 13 existing names for bushmasters, and *acrochordus* would never have been born. His contribution would consist of having added a "range extension" for the bushmaster, instead of inventing yet another name for it—what proved to be a synonym, and for that reason ignored by nearly all scientists since his work's publication.

But one can never second-guess the future life of a "fact."

#### **Advice to future explorers: When landing in a New World, name everything in sight—you cannot go wrong**

How far removed from the modern search for species is the antique one! In the early days of naming, names themselves answered for descriptions, and in every country species were likely to carry as many monikers as there were scientists working there.

In those good old days, naming a new species was not essentially different from a land grab. The boat has just landed, and it is a naturalist's Gold Rush. . . . Everything is "yours" if you can write names fast enough.

As in a land grab, you need to stake out your territory. You go to the Land Office, and fill out your claim, describing in a general way the dimensions of your new property. How general may depend on whether or not you have neighbors who have also visited the Land Office and made prior claims. If you have no neighbors, then expressions like "ten feet from the Old Beech Tree and one hundred yards from Large Craggy Boulder facing the sun at dawn" may serve for your metes and bounds, since in the absence of other property holders more precise coordinates do not yet exist. If, however, neighbor Smith has already made a claim bordering your property then your claim becomes more complex. Precise delineations become required, taking Smith's own mapped borderline into account rather than "Craggy Boulder." As time passes and more claims come in, more compasses will be brought out, and the outlines of your property must be more precisely drawn else others might try to lay claim to it.

It is thus with species, which become more precisely ren-

dered as we begin to question their integrity. A species can never be fully described—it is continually being redescribed through generations, as more and more data are acquired, as newer and greater perspectives on data are achieved. Such a new perspective was DNA analysis. Just as other measuring data (e.g., counting scales in reptiles) enlarged upon the shape and color descriptions of those earlier times, so DNA has proved quite revolutionary. We should not expect it to be the last such innovation. Analysis is ever expanding.

But in the vague world of antique taxonomy we regress to a universe governed only by the most generalized borders. There may be few or no "metes and bounds" as we know them today, and often we are given only a *name* to answer for *description*. "Big Shady Acres" = "Large Black Forest Viper" (written in Latin, for its supposed universality, but more importantly because it is a dead lingo and not subject to change).

In those easier times in which nearly every species was something "new" to the small circle of European namers who took a leisurely interest in promoting them—a charmed era before scientific hurdles became so elevated that rigorous coordinates were required before "proving" ones claims to the scientific community—simply drawing out a name from a grab bag and attaching it at random to an organism stood about as good a chance of finding a home as any other. This is practically what happened. And it happened with such vehemence that the world is still reeling from the event, a sort of taxonomic Big Bang.

Imagine a supercomputer launched to a life-bearing Mars and naming every species it encounters at random, and you will have an idea of the effect of the Linnaean system of classification on nineteenth century biology. The result was a veritable deluge of names; more names than there were species to support them.

Next, imagine a second expeditionary computer is sent to Mars. This one is more sophisticated, and knows how to do more than just name. Programmed by a biogeographer, a morphologist, and a genetic analyst, its mission is to identify the species named on the first expedition, describe them, file new data with respect to them, and name new species that were not encountered on the first expedition. But there is a constraint: *none of the names given on the first expedition can be eliminated*. The dilemma of the twentieth century classifiers is just this: how to cope with the exorbitant findings of the first expedition, right or wrong, and retain all of it without dismissing any of it.

The second mission soon finds itself bogged down with redundancies. It must get rid of the synonyms. This sounds easy at first. Simply preserve the earliest names, eliminate the later ones that duplicate them. But consider this: every name has a special locality and if some new data in years to come reveals an important variation in examples from that particular locality, then that name becomes "valid" and will have to be kept as representative of that locality. The result is, *you can never get rid of any names*.

Names are for keeps.

Thus the second expedition finds its time spent justifying the findings of the first; and so on the second and the fourth and the tenth, ad infinitum, no matter how spurious those findings. It is an expanding geometric puzzle, proliferating with the number of players.

The data have not been arrived at by a logical progression. The mission of the second expedition has been merely to validate the random designations generated by the first expedition, and so on. It has been a question of name first, describe second—quite the reverse of how thought is, or should be, formed when analyzing relationships. Korzybski (1933) calls this sort of thinking a “pathologically reversed order” and holds it responsible for the majority of mankind’s psychological ills.

A system should not beg evidence from a name; it should devise a more logical order for thought-processes and then assign accordingly. However, human beings are not strictly logical beings; *practical* beings, however, we do strive to be. The limitations of human memory have been considered by the system: We require an inventory, even the most dubious, in order to begin—otherwise the filing material cannot be relocated. Names are established first so that we can make a file.

A wiser secretary might simply eliminate *all* the excess files from the first expedition and start over, but the rules of the system (i.e., zoological nomenclature) prevent that. We labor within a system, and often, against the system, believing that it can be made workable.

Workable or not, it is a system harboring a virus—a hereditary virus. Our first Martian marathon has generated a great deal of taxonomic debris, and the second, third and fourth expeditions will find most of their time taken up with casting it off. How much time? So far, the entire twentieth century has not been enough. We are still dealing with it. Moreover, the debris is cumulative, growing as naming expands, each new name offering the possibility of a new redundancy. It will never end.

García was a participant in the “first expedition,” a phenomenon unique to the nineteenth century: the rampant naming of every living thing. The Linnaean bomb exploded upon an innocent age when organisms were previously identified only by folk names. The new taxonomy spread rapidly among scientists, but it did so unequally, localized by the European roots of education. Publications were scarce and uncatalogued; distances were large and carriers moved very slowly between continents. Traveling to the major education centers where this information was stored was not always feasible (how much larger the Atlantic Ocean in 1896!) Communication was limited to letter writing, a response taking many months. There was no central database for the names of species (no International Commission on Zoological Nomenclature to be consulted electronically). The study, for study’s sake, of “loathsome snakes and other vermin” was considered beneath the dignity of most universities, who saw these animals only as objects of medical curiosity. Consequently, it is in a *medically* oriented book that we learn about García’s *acrochordus*. But what we learn primarily is of its dangerous-

ness, not its morphology, and nothing whatever of its aspect as “species.”

Given the distances of travel, and the isolated concentrations of literature in a few major learning centers in Northern countries, the scientist living in a remote outpost had little choice but to do as García did. Easier to walk out in your backyard, pick a random flower and give it a name than to travel to Paris or London to hunt up an obscure pamphlet by an obscure practitioner of the Linnaean discipline. Name first, question later. And this is exactly what the nineteenth century naturalists did—thousands of them, all over the globe. The result was millions of “species” named in a very short time, the majority of them synonymous.

Hardly any of these names included “descriptions” in the modern sense. They were just names. Some were names attached to preserved specimens, or even a fragment of a specimen (e.g., Cope’s bushmaster tail); others were names attached to a picture, not always very good or descriptive (e.g., García’s), accompanied by terse, vague explanations like “green and black lizard found on Teak tree at dusk.” This was often quite enough to demonstrate the presence of genus-type in particular region, but were useless for comparing examples from other regions. The names were seldom defended against each other; it wasn’t necessary. Classification was in its infancy. In that epoch, it was genera that were being argued, not species.

The nineteenth century was free-range country for namers. Taxonomy had not yet been “internationalized”—there was no uniform standard of expectation. Least uniform was the tropics. Decades behind the North, its practitioners were regional, and lacking contact from abroad, their work did not rely on European or American consensus to be worthwhile on the local level. A name for a species such as García’s could be meaningful in country, and have practical value. It could be used by his students or successors at school, or have local medical importance, etc. Descriptions did not demand universal acceptance or approval to be locally useful taxa. The *naturalistas de Europa* (as García calls them reverently in reference to another genus, *Thanatophis*, which was then emerging from “*Botrops*”) are forever ahead of the game anyway, an event-horizon the worker in a remote tropical outpost can hardly hope to keep up with. However, he is in the not unenviable position of being in direct contact with the profuse outpourings of an almost brand new world, and this gives him some real advantages. If he writes enough new names, at least *some* of them will get through the scholarly nets of Europe, and survive on their own. If he does not write any names—he cannot be aware of all the names that already exist in other inventories—then he can only lose out when the final role is called.

And so, using such skills as he possesses, *El Doctor* plunges ahead and reports the existence of a certain viper in his province and gives it a Latin moniker. He does not appeal to European sensibility to confirm his claim. Oddly, this will prove to his favor at the end of the next century when his “dead species” will be resuscitated by another worker, Ripa, who provides the first real evidence that life yet exists within the corpse.

The rampant designations of the Golden Age of Naming were only interrupted by the increased availability of books during the early twentieth century, when the industrial age brought unprecedented travel between continents. Suddenly the works of Boulenger, Wagler and the like, are turning up in exotic libraries and special claims like García's are no longer possible, even in country. The advancements of modern taxonomy are the direct result of these increased means of communication. Descriptions are suddenly "better" because the new internationalism demands it. Classification becomes a competition for the *validity* of names, not merely a race to invent them. This is the age of the second Martian expedition—its purpose to confirm the findings of the first.

*El Doctor García* is one of the last of the line of that breed of regionalists who cannot be expected to be aware of the European climates of thought.

### **Resurrection through addition. . . . When in doubt about the identity of a corpse, give it a middle name**

Although named as 13 distinct species (14 with García's) during the eighteenth and nineteenth centuries, by the dawning of the twentieth century these names for bushmasters have all drowned into one nominate, *Lachesis muta*. Herpetology has moved on without García, his "new" name out-selected almost as soon as it has appeared. It is *Lachesis muta* that the American Ditmars (1910) refers to when describing his visits to Panama and Costa Rica, not the *Lachesis stenophrys* of a previous American visitor, Cope (1875), whose name has also been dropped from the contemporary record, probably because he provided no real reason for it in the first place. Likewise Beebe, Amaral and other writers of the era make no reference to García's snake, nor to any other of those wanton assignments of the past. The bushmaster has withdrawn into a single taxonomic unit.

By the middle of the next century, however, a new spree, trinomialism, occupies the modern imagination and keeps taxonomists busy hairsplitting species into *subspecies*. Suddenly a means of differentiation is acknowledged between at least four of the 14 former synonyms. Not a very convincing distinction to all authorities, for indeed, the bushmaster's "amazing homogeneity of form" is being remarked as late as 1967 by Vial and Jimenez-Porras. Nevertheless, the calm waters have been shattered, and herpetology has created new work for itself by invoking a new means of analysis. Now, morphological variations of every kind are being taken as evidence of genetic differences. It is free-range country once again, and zoological journals are a fairground of trinomial exhibitions.

*El Doctor's* snake will not be included in this extravaganza. Hoge and Romano-Hoge (1981) sink *Botrops acrochordus* into Taylor's (1951) *Lachesis muta muta*, expanding its occurrence to the pacific slopes of Ecuador and Colombia. Later, Campbell and Lamar (1989) will contradict this view and point up, however with caution, its "geographic affinities" with *Lachesis muta stenophrys*. This is not surprising, since Taylor (1951) has appeared the name is already turning up in the catalogues of various American museums, inventoried accordingly as

though through some tacit consensus with Cope (1875). Since its first appearance, García's *Botrops acrochordus* seems to know no other life outside of his own paper, an old discarded name given token mention on lists as part of the historical development of the genus.

Tri-naming offered bushmasters the first chance to prove themselves independently. The comparatively recent departures of the 1950–60s reflect the 14 earlier binominals of Linnaeus (1766), Wied (1824), Wagler (1824), Cope (1875), et al., (excepting *Lachesis [muta] melanocephala* [1989], alone among the bushmasters for beginning its life as a subspecies) and these multiple synonymies the bushmaster sheds like an old skin to emerge within four relatively stable units.

For the namer it has been only a matter of adding *locality* to *precedence*, and birthing a third name from that union. Nothing is lost in taxonomy; where a prior name exists, it simply slides into appropriate first place. Justifications are not required. And so the tri-names emerge as representations of their original designations, whatever their meaning, or lack of it. Later, when Zamudio and Greene (1997) prove Ripa's (1994) view of bushmaster speciation with mtDNA, the original designations are restored. But García's is left out once again.

Webster's dictionary defines the word *cenotaph* as "an empty tomb erected in honor of some deceased person who has been buried elsewhere." The history of the bushmaster is like the history of a cenotaph, however, one representing many different individuals, some actual and distinct personalities, others only aliases. It is like a circle of 14 actors for whom there are only four parts in the play; so we remand these actors to the wings in the hope they may at some point be useful to the story. Daudin, in burying bushmasters under *Lachesis* in 1803, is only trying to manage Linnaeus's *Crotalus mutus* (1766) sensibly. The rattle-less *Lachesis* simply doesn't fit in the box with *Crotalus*, but he has got to put it somewhere. So Daudin (1803a), whose name now graces the monument (of the genus) today, invents *Lachesis*, but he no more discovered (or described) bushmasters than any other of Linnaeus's juniors. He simply dumped it out of *Crotalus*, into a new place where it has since had the luck to stay. But names "attract" names as new manila files attract data. The recognition of *Lachesis* as a worthy dump site for oddball pitvipers attracted so many other obviously unrelated species (even *Bothriechis schlegelii* was assigned to *Lachesis* in 1859) that eventually this genus too had to tidied up by others later on. Probably the bushmaster remained where it was only through being the queerest duck. But when "*Bothrops*" came along the fad shifted for a while and there the bushmaster did a stint for nearly half a century.

The taxonomic history of the bushmaster can be likened to the formation of gelatin from a liquid substance; a gradual process in which specific islands of inertia stand out due to the exertions of surrounding material.

What has caused the taxon to "gel" into the three (or four) species it now occupies? Simply because of 14 names at least three proved to be disjunctly distributed, and had enough

physical distinctions to warrant it. Considering the immensity of bushmaster distribution, it would have been a miracle if some did not. Hence their present assignment has little to do with their original erection as “species,” nor to the original namers themselves. This is mere happenstance—a result of a subsequent biogeography working in an almost accidental concord. The actual *case* for bushmasters “as species” was made later, by other authorities. It was these later authorities that really *discovered* them as “species.” They found them hidden under the old, uncertain monuments of antiquity, in mismarked graves.

Locality does not a species make; every organism has one; and given a large enough range of sampling, it is a near certainty that at least some examples will prove allopatrically distributed. If this segregation is ancient enough, morphological variance is sure to follow. A good species description should reflect this pattern of morphology, distribution, and, if possible, genetic evolution. But a description that does not achieve even one of these things is no better than a folk name. Thus García’s *acrochordus* proved no more useful to science than the indigenous *verrugosa*, and was tossed out.

The era of tri-naming brought more clarity to the picture than existed before, since taxonomic changes must be justified, even if the original christenings aren’t. It was Taylor who first “split” *Lachesis muta* from *Lachesis stenophrys*, welding them to a common species, *muta*, thus granting a subspecific relationship to Cope’s “synonym.” Hoge (1966), who made the same oversight with Wied (1824) that I did with García, saw his *Lachesis muta noctivaga* sink into Wied’s (1824) *Lachesis [muta] rhombeata*, simply because of a precedent in locality. But it was Hoge (1966) who really described *rhombeata*, not Wied (1824), although Wied did invent the name in current usage.

If naming everything in sight was the standard practice of the nineteenth century, the twentieth century scientist devised new tricks for attaching his name to things. As in a courtroom where one can plea bargain (plead guilty to a lesser charge), it is easier to beg acceptance of a tri-name than a bi-name for your species “discovery.” The demands are not as high, but the rewards are nearly as good. One gets to see one’s name on the files.

Thus, the twentieth century concocted as many if not more names than the previous, as it became possible to “split” species into regional variations. Better still, all these variations could bleed over into each other without challenging the terms, for intergradation remains an expected part of the trinomial rank.

Plea bargaining for García, we could ask the taxonomic court to view *acrochorda* as the junior of one or the other of the two close-lying species. One has only to decide which of the two species it most favors, and justify the connection. But this is mere hairsplitting, and untrustworthy science. Among dissimilar species, tri-names cannot be defended where intergradation cannot be shown, and direct genetic contact with the greater populations, save for possible spillovers, has not occurred for millions of years. A description of living (as op-

posed to extinct) species should reflect as much as possible, present time (for this alone is testable) and if we yield to historical effects, real or presumed, then where do we stop, what is the cut off point in the past? We should then begin revising *Crotalus*, *Bothrops*, *Trimeresurus*, and half again every other as well, giving these over to tri-names. How few “species” we will have left to burden us when we are done; and yet how much less useful and descriptive our filing arrangement.

The tri-names for bushmasters persisted for many years until Ripa (1994) begged that they were not defensible. Morphologically distinctive snakes from disjunct localities are “good” Evolutionary Species (e.g., Wiley, 1978). Of the four bushmasters, only one of these, *Lachesis muta rhombeata*, could be defended as a subspecies, due to an evolutionarily recent disjuncture and a not compelling differentiation from the nominate. The rest were “good” species with recognizable forms and particularized localities, none of which were contiguous. Zamudio and Greene (1987) refined Ripa’s theory, and this is the nomenclature in use today.

Science is governed by trends and in the world of “publish or perish” it is not enough that taxonomists keep busy, their works must find a readership. What an audience will or will not accept is governed by the sympathies of the age; and these are guided by current expectations. At present, one of these expectations is that taxonomy should abolish all unnecessary designations (of which there are many), and seek cleaner, better descriptions to support them. An honest task; but what is the *description* of a “description?”

In this new and more precisely organized universe we have entered, when does a description fail its task?

Korzybski, in his general semantics, emphasizes strongly that a name is not a description, and is, indeed, “a non-meaning” until it expresses a relationship. A chair is not a “chair” unless compared to something else, say, a table, bench, floor, etc. Non-relative terms are meaningless propositions (e.g., Wittgenstein’s “A proposition cannot contain itself as one of the terms.”). In the world of descriptions nothing can stand *of its own*. Names signify relationships, not objects.

In our more “primitive” recent past when the number of designations far exceeded those of the descriptions presumed to support them, taxonomy did battle with names floating in space. Names represented physically undescribed organisms, morphological singularities unjustified against other like-species. We had species seeking genera and (when the former were toppled) genera, lying in wait, as it were, for new species to assume their place. The latter is a curiosity of Ripleyan proportions. The concept of “genus” is meaningless without a “species” to ground it to nature. Nevertheless, it happens occasionally by a sort of taxonomic quirk that a previously erected genus, divorced from purpose when its species have walked out on it, haunts the books in a sort of taxonomic limbo, only to be resurrected later when by chance a new species, disgorged from some other genus that has found it unpalatable, moves in to occupy its place. It is a universe of ghost-names, grounded not to the earth, not even to bodies,

floating with uncertain intentions above empty cenotaphs. Biding their spectral time to be reincarnated, they wait on future caretakers to dig them up and bury them again appropriately.

Cope's (1875) *Lachesis stenophrys* is a nearly faceless corpse waiting on future examiners to give it a meaningful identity. A lonely name on paper, undefended against its predecessors, one of the most impoverished specimens in the history of herpetology represents it: the merely distal portion of a snake's tail. You cannot tell from this miserable scrap of flesh which type of bushmaster it is, and Cope reveals little more than its locality. Were scientific expectations so meager in the nineteenth century that it could be satisfied by a mere label? One wonders the necessity of a specimen at all. One could simply *propose* a species and label an empty jar, on the off chance of it finding a more meaningful destiny later on. Cope gives us what amounts to the equivalent, renames what is *presumed* to be inside, without defending it against Wagler, Daudin, or any others, and expects us to follow. Quite rightly, we did not follow — at least not straightaway. Cope's *stenophrys* occupied a sort of blank space on the books until Taylor (1951) rescued it with a triname, 75 years after the fact. All this is pure happenstance as far as Cope is concerned. He could not have been aware of any differences between his snake and Linnaeus's *mutus* (*muta*). None had ever been put forth.

So what was Cope doing at the time? He seems only to be affirming the precedence of Daudin's "*Lachesis*" over Wagler's "*Bothrops*," as a statement. But if we should ask why he ignored Daudin's *mutus* and added this new name (*stenophrys*) to the pile, we can only answer vaguely, "because he did."

As of 1896, the names for bushmaster "species" are a haphazard assortment of possibilities awaiting the dice throw of future historians to decide their fate. By contrast to Cope (1875) or García (1896), Solorzano's and Cerdas's (1989) description of a bushmaster is something new to science. They are giving us a new perspective not only on the species (sub-species) they describe (*L. [muta] melanocephala*), but on the allopatric *L. [muta] stenophrys* from which they separate it. They are working *relationally*, not simply naming things. In so doing they are adding to the growing picture of bushmaster morphology and the evolutionary effects of barrier geography.

But García is merely saying, "look, a large venomous rough-scaled viper exists in this region. It is probably some kind of *Bothrops*, although I can't say why. Here is a picture of its head." He doesn't realize this work has already been done before him, or that his locality is not significant in itself of speciation (but it will one day become significant). If García's work can be called a "description" in Korzybski's sense of the word, it is low on the scale of meaning. But it will rate higher on the scale of meaning in years to come when certain special distinctions are advanced by others.

Taxonomy is a strange roulette wheel where precedence takes all, and the sole measure of "ownership" is to have raised the first flag. Like Columbus, one need not know exactly what continent one is standing on to have "discovered" it. One need not measure its topography, or count its rivers;

one need not, in fact, even set foot on its shores to prove its existence. After all, stars and planets are "discovered" long range by telescope, some merely by *inference*, from gravitational shadows. The general dimensions of a piece of land, its rivers and lakes, flora and fauna, even indigenous inhabitants, can all be satisfied by a prediction, leaving the measuring for others later. It is the ability to *coordinate* one's discovery — to put it on a map — that counts in a world that relies on communication to make determinates.

Whereas a piece of property is described by its "locality" alone, with a species the topographical *shape* of the terrain (the morphology of the plant or animal) is the ultimate coordinate.

García's snake (like Cope's), is a nearly shapeless landmass floating in an open sea called "Cauca." It has the traits of other similar landmasses denoting a certain type of geology (i.e., all of which are traceable to "bushmaster"), but its shape is not rendered distinctively enough for us to say, in and of itself, where it belongs on the map. It exists in a zone with few coordinates, allowing no certain predictions about where it should lie, where its "newness" should begin or end.

While I must grudgingly "sink" my unpublished synonym, *Lachesis darienensis* into García's *acrochordus* I find it interesting that after over a hundred years García should find his previously dismissed species resurrected and exonerated because of, not in spite of, his own scholarly error. If García had known better (if, say, the libraries in Colombia had had the pertinent books and journals on hand) he would have seen his error and afforded his specimen any number of the other synonyms: Linnaeus's (1766) *Crotalus mutus* or Gmelin's (1788) *Coluber crotalinus* or Shaw's (1802) *Coluber alecto* or *Scytale catenatus* (used by Latreille in Sonnini and Latreille [1801-1802]) or *Scytale ammodytes* (again Latreille in Sonnini and Latreille [1801-1802]) or Daudin's (1803b) *Lachesis mutus* [*muta*], the latter of which, for reasons of precedence (but not evolutionary systematics), we today call the nominate species. Or he might have picked from abundant others, such as Daudin's (1803b) *Lachesis ater* or Wagler's (1824) *Bothrops surucucu* or Wied's (1824) *Lachesis rhombeata* or Liasis's (1872) *Trigonocephalus brasiliensis*. If he had known of Cope's (1875) description of a specimen from Nicaragua, he surely would have followed suit and taken *Lachesis stenophrys* for its name, this being the locality nearest to his.

But García is unaware of Cope (1875), the nearest of his 13 predecessors, so *Lachesis* is not revived in his vocabulary. He consigns his snake to *Bot[h]rops*, in those days the handy catchall for all large ground vipers that are not rattlesnakes since Wagler launched this trend in 1824. The name soon became appended to over 61 species, in both the New and Old World.

Glancing over this mammoth *grimoire*, one realizes that before 1900, the overwhelming number of names for species arose simply from the namers lacking a common checklist. From our modern standpoint, when forests have become scarcer than libraries, it seems strange to think that rare animals like bushmasters were once more common than the taxonomic publications in which they now "live." With such an abun-

dance of new material to draw from, the name-fecund nineteenth century naturalists learned to name first, ask questions later. García, having the good excuse of living amid abundant natural resources, but a dearth of literary ones, gives us a name already obsolete during his own era, and that will collect dust for the next 100 years until another researcher Ripa (1999, 2000) vindicates it by proxy. If science accepts Ripa's view and expands upon it, García's name will become welded to a species he neither discovered nor described, for in fact his contribution was outdated by nearly a century during his own lifetime.\*

The nascent bursts of Linnaean enthusiasm created a species overkill that has kept taxonomy jumping for over two centuries. And yet as names get older they get lost, are constantly being revived and/or dismissed as systematics matures and ponders their worth. For the most part taxonomy spends its time not with qualifying and refining descriptions, but with juggling these old claims to names. Indeed, just as in the Land Claims Office where skilled surveyors enter the picture only in response to border disputes, so too is the Systematics Office called in only when disputes arise over the validity of names. Indeed, one could go so far as to say that systematics itself (whatever its aims may now be) evolved just for this reason: A technology for justifying (or refuting) the claims to names.

The name always comes first.

It seems backwards or illogical this bestowing of "identity" upon something before knowing what it "is," but perhaps naming is only the first step in a search for an identity, and not the proof of having found one. A child is born, it is named—we may only later question who the father is. One thing is certain: it is relative child's play to bestow a name; quite something else to justify its value. Due to the ease with which earlier science accepted unjustified nomenclature, and because of a zoological code that gives precedence to names over description, synonymies for almost all species of organism abound ad nauseam. The winnowing of old names is a task the taxonomic writer better have a taste for, lest his occupation be a painful one as he sifts the dust of dead men's fancies.

The business of science is discovery, but as science ages, the nature of discovery changes. As in surveying, an emphasis on clearer and more highly organized descriptions of borderlines will produce more accurate demarcations not only of a particular property, but that of adjoining landowners. In taxonomy, increasingly defined terms will yield increased understanding not only of our own subjects, but of peripheral species as well. Hence a tri-name is useful to systematics for it brings new relations into play. Whether or not the tri-name represents an intrinsically "valid" genetic entity (e.g., the morphological variations of *Crotalus horridus horridus* vis-à-vis *C. h. atricaudatus*) is not really so important. We are not dealing with genetic units (our concept), we are not even dealing with "nature" (another concept). We are dealing with a filing arrangement enabling us to *identify* nature. Many of

the arguments about species and the longed for proofs of evolution are rooted in this human foible to identify objects with the names given to them. A "chair" is not a "chair," it is anything but a "chair" until it has relation. We are naming relationships, not physical "things." We are naming descriptions, not natural objects.

The Linnaean system is still with us because it has proved itself the most durable means of identifying living relationships. But this does not mean it will always be with us. Computers do not need this system as we do, and, in fact, the extra weight of human vocabulary makes machines run slower, burdening their analysis.

### Does classification not need human beings anymore?

The power of machines to out-think us can be expressed thus: If a tri-name better defines the terms of a bi-name, then why stop with a tri-name? With the aid of machines we can have names to the Nth power, as new variations are made known to us. Human beings cannot keep up with such an enormous log, but a computer can. Indeed, a computer can do something more: it can keep up with *individuals*.

Classification is a human need; and the Linnaean system is a response to that. It treats not individuals but Orders, into which we slot individuals, often clumsily, and falsely, so that we can make sense of them. For us, "sense" is Order, and if Order is King, it is from our hereditary expectation that without Order, our ever-fallible memory would let individuals be lost. Order is a product of forgetting; thus we need Order. But machines needn't worry about forgetting.

Emerging from the murky designations of the past we now have mathematical programs (e.g., mtDNA analysis) to add to the primarily visual systems of morphology; systematics becomes more emphatically *systematic*, more "foolproof," as the human element is removed. The art goes out of description, replaced by the mathematical certainties of the machine. Numbers supplant human expression. Machines are the pre-eminent classifiers.

This begs the question: If a machine can do our work better than we can, then it can also better understand what its own work means. Do machines even need human classifiers? Do we, as human beings, need classification? Why not leave our questions for the machines to muddle over? A humorous picture of things to come: A world of machines all buzzing and humming among themselves; machines that do not need our illusion of order; that create their own fast moving, perfect order, of perfect memory.

The human mind strives to understand nature *by imposing its own need for order upon it*. But a machine that can remember every object singly is a greater mirror of nature than any human-made order can be. Machines do not need our slow-witted Order. They have their own faster, more reliable Order (or Orders) to choose from, able to juggle as many Orders as

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\* Editor's note: Mr. Ripa's article was submitted to the *Bulletin of the Chicago Herpetological Society* in November 2003. Spring 2004 saw the publication of *The Venomous Reptiles of the Western Hemisphere*, a two-volume magnum opus by Jonathan A. Campbell and William W. Lamar, in which they recognize *Lachesis acrochorda*.

we, or they, can manufacture. And they can do it all simultaneously. We have entered an age where machines, not people, have become the programmers of machines (Warwick, 1997). Is the human audience necessary?

Our system of classification exists because the majority of us believe in it; but machines do not need our belief and they may soon be in the majority. They do not need our concept (or concepts) of species in order to identify those special patterns of recurrence by which we recognize “species,” or anything else.

Amidst these cycles of change, our human expectations remain the same: we wish to express ourselves in an *orderly* way, and be assured afterwards that we have learned from what we, as human beings, have done. But a machine that can call up every star in the sky numerically should care little for an argument like the one in these pages. With machines, units can, once again as in real nature, become *singularities*. A human-named “species” does not require a “genus” to contain it—this is a human coordinate, and a flawed, uncertain one, forever changing from year to year as new names are expressed against the old. So too a machine, able to process nature in single units, does not require a genus-species in order to identify it, or to locate it within its files. A machine can think outside of the human (and thus flawed) parameters within which we humans endlessly argue. And why do we argue? Because ours is an Order of *generalization*, not specifics. It is only through generalization that we can make Order—of data, of specifics. Order helps us “understand.” But in this gaining future, there may be no place for what is not specific. Every sample becomes unique of its own, and unproved hypotheses like “species” remain merely human ponderings, akin rather to philosophy than science.

This seems hard to grasp, but with an intelligence that can remember everything individually, filing systems must change. Already the machine is working to remove the faulty human element of outmoded species-concepts and nature is being reinterpreted in terms of genetic absolutes, written in digital formulas no human memory is capable of remembering. Words like “discovery” have no currency here. Discovery might remain with us, a human concern in some equally vague contest of men, but to a machine “discovery” is only programming.

Discovery is a product of expectation, and whether to men or machines has divergent meanings. The question *what is new?* begs the age old retort, *new to whom?* Our expectations as humans are bound to a human expectation of what “newness” consists of to our adopted system. For most of us, newness means not to the world (or to a machine) but what is new to ourselves, what enlightens us in particular. The phrase *new to science* is axiomatic and conditional, for, as we know, *there is nothing new under the sun.*

We grant tacitly that the discoveries of science are “new,” relative to scientific expectations, but that, in many cases, if science has “discovered” it, then it was probably already known to some nonscientist out there who simply didn’t have the knowhow to record it, or the right technical words to

express his idea in a way that would persuade “scientists.” García’s bushmaster had bitten, maimed and killed generations of indigenes before he stumbled on it, and the Spanish settlers had already given it a passable Latin (if not *scientifically* Latin) name, *Verrugosa* (“Wart Skin”), which is just as descriptive of a bushmaster as the name given by García, *acrochordus* meaning exactly that. Which among these people, García included, can claim to have discovered the elusive Wart Skin?

If the scientific audience does not worry over such questions as these it is because it *expects* the scientific view to be different from the common person’s. The man-on-the-street (or -in-the-jungle) may have developed his own mythos about why a snake looks different from the other side of the mountain; but his myth, right or wrong, will cater to his own regional expectations of truth and likely not succeed when a very different international consensus demands a different protocol. The scientific myth wins through being communicable to the largest number of people who share a similar expectation. García’s description, with its limited expectations of “species,” is closer to folk-science than the science of today. But in his era, all science was “closer to the street” than now. It was comprehensible to the average person.

Consider the next evolutionary stage into which machines will move us, one in which the Aristotelian systems of the past will become completely lost, and the Linnaean method itself become a sort of folk method. If folk names lost the race in the past because they were the least communicative to the majority of people, so too should a method reliant on concepts as opposed to individuals fail in a future where the largest audience is mechanical. Consider an audience of machines acting as interpreters for “stupider” human beings. The former, whose brain is infinite, can remember everything; the latter, requiring an unwieldy Order to remember anything, is a brain working so slowly that it is soon surpassed. Will the machines walk out on us? Wouldn’t you walk out of a classroom full of retarded people?

We cannot discover something totally “new” because what is totally “new” is without relations. The “chair” is an expected discovery in our living room because we *have* a living room and (perhaps) an expectation to sit down. But if there were only “chair” and no “room” and sitting down was not an expectation then “chair” might be “hat” or “world” or anything else besides a piece of furniture. We must include the observer in the equation, else our view will be an extrinsic and pointless one. The expectation begins with the observer, and our expectations as observers begin with relations. But a machine that can count and reproduce the atoms in a “chair” need not care for such relations as “room” or “house” and the requirements of sitting down, although it may spit out duplicates of chairs whose original purpose was (in some relational past) to provide seating. Let relations shift and the old arguments break down. The Linnaean system, as good as it is, is still an argument of very specialized utility: it capitalizes on the weakness of the human thought process. Our relations, subordinate to our Order, is an Order conjured up of human forgetting. But forgetting is a soon to be outmoded, human cognitive relation.

The expectations of science increase from year to year, and consequently we are discovering more and more; knowledge is snowballing, and more pieces of “furniture” (relations) are appearing. But all this is very tentatively held together through our agreement and expectation of a room, a house, a world—*an order*. Let these expectations change and so too will change our interpretations.

The expectations put on Cope (1875) in his day will not hold water in the schools of today. It is not enough to put a name in a catalogue and expect a unanimous acceptance of its novelty. There is already too much excess furniture in the room. The expectations put on Wagler, for instance, were minuscule compared to the expectations put on say, Salomão and colleagues (1997) when they attempted to refine the synonyms and discover, within the lineages of the all-purpose *Bothrops* group (to which nearly every New World species of viper once belonged) which “species” were really worth keeping on the books. Filing can be random and arbitrary when there are no relations in the way; not so when it comes time to refile, costing more in time and effort as more files appear.

With irony, I am able to trace Garman’s (1884) contribution to viperid taxonomy because his name is attached by the thread of fate to *Bothrops asper*; but if I want to find out why *Bothrops asper* is not *Bothrops atrox* or some other species, what its distribution is, what its distinguishing characteristics are—indeed, anything that we deem important—I will not find it in Garman (1884). Instead I will have to go on a paper chase encompassing better than a century. I must sort through a myriad of obscure papers authored by less famous scientists whose emphatically *new* descriptions, whose new and more compelling *discoveries* remain buried under a less well known monument.

As with Columbus (as with García, Cope, etc.), what Garman gives me is a locality for a specific action taking place: namely, the moment when he sees the advancing coastline, and believes, for whatever reason, that he is seeing that continent for the first time ever, and makes a record of that moment by giving his vision a name, planting a flag. But Columbus, while he can show me the way to the Indies, cannot tell me where the Indies ends and Siberia begins. He names his discovery through error. Others will have to come along later and prove that America is not “India” or some other Asian country, before we can determine the importance of Columbus to European culture.

Stabs in the dark such as Cope’s might ultimately be proven valid by “accident,” through other people’s work to justify them—but the vast majority will not be. García’s was not for an entire century. At least ten of his 13 predecessors have not.

But they might be within the foreseeable future. Variations within “species” are as limitless as their locality. As new data is constructed about the South American orogeny, we can expect to see some of these names resurfacing, probably trinominally. Based on morphology, Ripa (1999, 2000) shows evidence for that within the nominate form. As such, old names, now discarded, may arise anew, their inventors having no idea of their destiny.

But morphology is at best only a genetic indicator, and is visually dependent. The scientist began by measuring shapes and color in the hopes of conjuring the “god” behind them—the god called Order. Machines, needing neither Order or God, possess the ability to classify differences that we can’t even see with our eyes. In a computer world where every specimen is singular, every individual example can be assigned a name (or a number), and thus every name (or number) can become a valid relation. As more relations are expressed, more relations can *yet* be expressed, and we find ourselves on the verge of a labyrinthine world like Borges’ *Library of Babel* where books (and the names in them) begat books by spontaneous divisions. Science, which attempts to imitate nature as its “god,” ends by reflecting nature so completely that “god” is itself replaced by science—a perfect mirror. The search for Order becomes a religious search, less a scientific one.

### **In the beginning was the word and the word was “snake!”**

Ages before Columbus, before ships, maps and even men (in the era of pre-men), in the one great Day before calendars brought plurality to Days, when our greatest ancestors slept uneasily in the dreaming-forest, their emotions, unspeakable, struggling for utterance amidst the frantic beating of hearts afraid of the unseen jaws that might eat them, there was only one Book and its author was Terror. A protohuman dictionary of grunts and growls, crees and cries—all very real “names” for things uttered from the depths of the soul—mimicked through the ages so that others might hear, and survive to pass it on. A hereditary dictionary passed down through the hollers of wiser more experienced scholars, be they apes, whose names for things one had better remember before treading in the dangerous forest.

Given the horror that primates have of snakes, their signaling and vocalizing at the sight of one, and given the evident danger of snakes to primitive vocalizing hominids—it is conceivable that the very first name ever uttered for anything was a shout signifying “snake!” To be able to cry “snake!” and, especially, to understand the cry of “snake!” would have survival advantage in a forest teeming *with* snakes—and naturally there should be no cry of differentiation between “good” and “bad” snakes when one was about to put a foot or hand on one. (The complexities of snake identification would not have been worth considering by early humans, nor is it today in most human societies, whether primitive or advanced, where snakes are unanimously feared whatever their kind.)

Columbus cries “land ho!” but he does not know *which* land. . . . The jungle man cries “leeeghagh!” signifying “snake!” but he does not know *which* snake, only that “leeeghaghs!” are bad and he had better warn his family and friends to keep away from them whenever he spots one on the trail. Several million years later a doctor named García cannot tell us much about the snake he has “discovered”—the language, the systems of thought, are not yet evolved to the task—but he can warn us of its danger in a book he has written. The name he gives the animal is more sophisticated than a cry; however Latinized, however better documented by means of external replication, it is not essentially superior to the cry of

the “savage,” for it is a warning with few relations.

The name García has given his cry for “snake!” will be abandoned for at least a century after he has uttered it, lost among other earlier cries, and eventually dismissed. He cannot justify his cry of *Botrops acrochordus* against the cries for other species already proclaimed by his predecessors—names he has never heard. His name rests in an unmarked grave; his holler in the woods, mute, heard by nobody.

Over a hundred years later, Ripa (1999, 2000), unaware of the forgotten García, will take up the cry independently, and hollering “morphology” and “disjuncture” argue that a “new species” exists, hidden within the tomb of the old. One wonders if he would have gone to the trouble if had he realized that over a century before, his spiritual double and as bereft a scholar, had already given his discovery a name?

We have come a long way from the primordial shriek in the jungle, that special noise that signified the danger of a snake in our midst. We have taken that shriek and subdivided myriad times, till it signifies not one conceptual serpent any longer, but all the different forms of serpents, all the variety of their

danger and/or harmlessness, and whatever else we can find to say about them. The human expectation, the vain reward for our efforts, for the taxonomist’s discoveries, is simply to transect that cry yet further, and create new utterances that can be formed on the lips or at the end of a pen—new words that can be logged in the growing dictionary of cries.

Korzybski (1933) reports that words represent only “half-truths,” underdefined evaluations framing neurological impulses (called “unspeakables”) in which *every identification* is bound to be in some degree a misevaluation. But, in the mechanized future, when tests have become so perfected that the human need to identify becomes secondary, and even a burden upon the functioning of the machine; when machines have done away with species-names as we have done away with folk names—as folk names did away with special grunts—when machines alone can command “true understanding” and we, primitive idiots of a later age await their explanation (though it is doubtful that we will be able to grasp it)—there will be no such arguments, for there will be no uncertainties. Our hollers will be of a different sort, though no less “unspeakable” of our enduring need to be heard.

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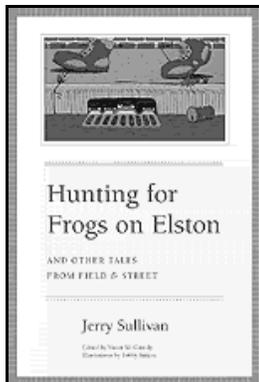
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**Book Review: *Hunting for Frogs on Elston and Other Tales from Field and Street*  
by Jerry Sullivan; illustrations by Bobby Sutton. 2004. xvi + 303 pp. ISBN 0-226-77993-9.  
The University of Chicago Press in association with Chicago Wilderness. Hardbound. \$25.00**

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Although frogs are mentioned in the title of this book, this is only marginally a herpetology related book. Rather, it is a collection of columns that originally appeared in the *Chicago Reader* under the title "Field and Street." The columns were written by the late Jerry Sullivan, who is described in the book as a career naturalist and journalist. Each column is titled, and since they were originally newspaper columns each is short—only three to four pages. Just the right length for when you need something interesting to read for a few minutes.



There is an introduction by Glenda Daniel, who paints an interesting portrait of the author which helps the reader to understand Mr. Sullivan. The book itself is divided into six sections. A brief mention of each follows.

State of the Prairie: eight columns. Columns cover the damage done by deer, how to manage nature in a human dominated environment, why biodiversity is important, and selected other topics.

The Seasons: twelve columns starting in early spring and going through to deep winter. Here the reader can learn how skunk cabbage produce heat which allows them to get a head-start on other plants in their woodland home. There is an article on ephemerals, high speed wildflowers that condense their growing season into the brief period when the temperature is warm enough for growth and the trees have not yet leafed out. This column lists a few good spots to see spring wildflowers, although it first appeared 19 years ago, and it is possible the deer have eaten away the beauty since then.

Creatures Great and Small: This book takes its title from the first of the 15 articles in this section. This article describes the survey technique for a ten-mile road trip with stops at selected points to listen for frog calls. A few frogs were heard, but the high point of the trip was finding some screech owls close enough to view their silhouettes. There is also a story on hunting for rattlesnakes along the Des Plaines River. Although the hunt was unsuccessful, the article gives a description of habitat for massasaugas and why their habitat requirements resulted in the decline of the species. A chorus frog article completes the herp selection. Sludge worms, badgers and coyotes are a few of the other creatures mentioned. It is a tribute to Mr. Sullivan's writing skill that even the sludge worm article is not only informative, but quite interesting.

Birds and More Birds: Of the 15 articles in this section, three are about raptors, and several are about bird-watching and counting. My favorites were the sparrow chapter, which describes some of the native species, and the passenger pigeon article. We all know that passenger pigeons are extinct, but this article allows the reader to envision the vast flocks that once darkened the sky and also realize that extinction was inevitable once North America was largely deforested and cultivated.

Plants: ten articles. Oak trees are mentioned in various places throughout this book, and in this section they have their own article. Oaks may be one of the author's favorite plants, but he also has an article on purple loosestrife. If you do not know the difference between a sedge and a grass there is an article worth reading also. The article on wild onions makes a strong case for moving Chicago a bit west of the present location if our city is truly named after an onion.

People and Places: This is the last section in the book. The ten articles cover the evolution of field guides, surveying Illinois, and marshes. One article covers women naturalists, another is about the fossils that link dinosaurs and birds. There is one article on bird watchers and another on Roger Tory Peterson.

After reading this book I feel that the author could have been described as a birdwatcher. Or a student of local botany. Or of biodiversity. He was also a proponent of restoration of natural areas. The more a walker in the woods or field knows about the life around them the more enjoyable the walk is, and Mr. Sullivan probably enjoyed each walk he took immensely.

This book is a collection of newspaper articles and not a scientific study. Even so, there were very few mistakes. One worth mentioning is in "Prairie September," which notes the first osprey nesting in the "country" since 1855. I am sure the correct word is "county" here, but before I corrected it in my mind I allowed myself a moment to imagine the ospreys I have seen flying all the way from their foreign nests for my viewing pleasure.

This is not a book to buy because you are a herper. But it is well worth picking up if you wish to be more aware of all the other things around when you are out looking for herps and enjoying nature in the metropolitan area.

## IN MEMORIAM: MICHAEL J. MILLER, DVM

Dr. Michael J. Miller, age 54, died of a heart attack on Monday, June 21, 2004. Mike received his D.V.M. from the University of Illinois College of Veterinary Medicine. He was widely known as a pioneer and innovator in husbandry and breeding techniques for lizards of the family Gekkonidae. A longtime member of the Chicago Herpetological Society, Mike was still in high school when he first joined in 1967, and relied on his father to drive him to the monthly meetings. Mike became a mainstay of the CHS from the 1970s through the 1990s, serving on the Board of Directors in many positions, including a term as President in 1982. He attended almost every CHS meeting during that period, providing his fellow members not only with veterinary care and advice, but also live and frozen rodents for sale out of the trunk of his car. Also during this period he wrote numerous articles for the CHS *Bulletin*, gave programs at several CHS meetings and delivered papers at various herpetological conferences, including presentations on husbandry and breeding of geckos at the International Herpetological Symposiums in 1980, 1981 and 1982.

Mike was a big man, standing over 6 foot 3 in height, and was of ample weight and girth. With big bug eyes, a snappy wit, and receding hairline, Mike looked, in retrospect, the unintentional prototype for Homer J. Simpson. Mike was always good for a funny story, or quick with a witty remark or comeback. Everyone who knew him probably has a "Mike Miller story." When one avid new gecko enthusiast met Mike for the first time, he asked if Mike knew anything about geckos. Mike's reply was, with no hint of modesty, "I'm the world's greatest expert!" He was the source for endless advice on reptile husbandry and breeding techniques, and at one time kept and maintained a collection of about 1,000 geckos, reproducing at least 300 species in total during his long career as a reptile hobbyist. He will be sorely missed.

—James P. Zaworski

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When I entered veterinary school as a first-year student, Mike Miller was a fourth-year student. There was a house on campus belonging to a fraternity of veterinary students in which those students could find inexpensive rooms. I reserved a room there, and as soon as the house manager found out I had pet snakes, he assigned me as Mike's roommate because he also kept snakes.

One day I came home from class, went to our room, and was shocked to find it had been ransacked. Mike's one shelf was tipped over, with his vinyl LP records strewn on the floor. His cornsnake's aquarium was lying on its side with the lid off and a single crack in the glass, but the snake was still cowering in fear (if a snake can feel fear) in its hide box on the floor. A mouse cage and its shavings were scattered about, but fortunately the mice had already been used and the cage was empty. We each had bookshelves. Mine was OK, but all the books had been swept off of Mike's shelf and were in a heap on the floor. Some decorative plaster figurines Mike had expertly painted were broken on the floor. There also was a strange, oblong, brown object, like a baguette, under Mike's desk.

Who had broken in? Why was the door still locked? Was anything stolen? All these questions ran through my head.

Were my snakes all right? Uh oh. I suddenly noticed the sliding glass door to my Burmese python's cage was open about five inches. The snake was about 12 feet long and weighed 75 pounds, and she was not in her cage. I found her coiled peacefully on the pile of Mike's books. Suddenly I noticed the brown baguette under his desk was giving off a foul, biological odor. We hadn't suffered a break-in so much as a break-out, and my snake was the culprit. It was like she knew to leave my stuff alone and had only trashed Mike's stuff, and his stuff was pretty thoroughly trashed.

I cleaned up the mess as best I could, although the plaster figurines were beyond repair. When Mike got back I apologized profusely and offered to replace the figurines. Mike was clearly unhappy but did forgive me. Later that year, Mike got a dog and the dog paid me back in full with a disgusting bout of gastroenteritis while locked in the room.

Mike graduated and left in the spring, while I had three more years of vet school. We remained friends, colleagues, and fellow CHS members for many years. The two of us served as presidents of the CHS in consecutive years back in the old days.

—Stephen L. Barten, DVM

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Dr. Mike was a friend of mine since the middle 1980s, a collaborator on a book, *Care in Captivity*, a client (I painted his house) and a life-saver many times over. He also gave zillions of people a wonderful experience with geckos.

In addition to the normal things of friendship, Dr. Mike saved my life. I was sick for about two months in 1990–91 and had lost weight down to 85 lbs which is about half of the most I've ever weighed so you can see that I was just bones and attitude. We were having pizza dinner after a CHS meeting up on the north side and I kept nodding off or running to the john because I was so sick. I had been to four MD doctors and no one had a clue. I was just dying. At the table, Dr. Mike says to me, "Do you have this symptom? Do you have that?" and goes straight through all the symptoms that the MDs were so puzzled about. I said yes and yes as he described my

misery to a T. He then looked up at me with a gleam in his eyes and said, "You'll be fine." I was waiting for him to scratch me behind the ears as he looked over my head and told Ken, "She has *Giardia*. She'll be fine." A week later, after obtaining a prescription for Flagyl, I was gaining weight. I really owe my life to Mike. So many of us (plant, animal and human) do. It is a shame that we have lost such a wonderful man so early.

— *Ellin Beltz*

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I attended my first International Herpetological Symposium in 1983. Mike Miller was already a veteran of these events, having been a speaker at the previous three. I walked into the hospitality room the first evening and found Mike and the legendary Joe Laszlo (then Curator of Reptiles at the San Antonio Zoo) sitting side by side on a couch at the center of a "spirited" discussion. Herp husbandry theories were flowing almost as fast as the beer. I probably hung around until 2 or 3 A.M., but Mike and Joe were still going strong when I left.

Another fond memory of Mike involves a CHS board meeting that was held at the Humberts' property in Michigan. At the time most of us had never seen the property, so Ron took the entire group on a tour of the grounds. When we came to a stream that Ron assured us was inhabited by mudpuppies, Mike never hesitated. He stripped off his pants, waded out into the waist-deep water, and proceeded to turn rocks in search of the salamanders. All the rest of us "avid herpers" wimped out and stayed dry.

— *Mike Dloogatch*

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Mike Miller was a friend of ours for nearly 30 years. The CHS, of course, brought us together, he as a soon-to-graduate vet student at U. of I. and Dotty and I as new and very inexperienced amateur herpetologists. Over the years we served together on many CHS boards, enjoyed camping and field trips with our young families and were there for each other during good times and bad.

Mike was complex in many ways but had a mind (and a memory) often belying his blue collar, "average Joe" appearance and demeanor. I recall fondly one instance which occurred in 1979 at an event sponsored by the CHS at Elmhurst College. It was a short 3-day course for local vets on reptile

husbandry, medicine and surgery. Dr. Fredric L. Frye, the noted California veterinarian was our speaker.

It was late one afternoon. It had been a long day of lectures and discussion. Mike Miller was seated in the last row of the auditorium, dozing peacefully. Frye noticed the seemingly slumbering Mike and directed a technical question right to him. "Dr. Miller what would you do if . . . ?" Without stirring or opening his eyes Mike responded with a perfect answer. Frye was astounded and Mike's fellow vets applauded. It was so typical of our Dr. Mike.

I could compose a book of short stories and anecdotes about Mike and I know many of his friends and family could as well. Part of his eulogy, however, will be to share those cherished memories, verbally, over time. In that way this sometimes unusual but never uninteresting comrade will continue to live in our hearts and minds. He will be missed.

— *Ron & Dotty Humbert*

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About 15 years ago, my daughter Stacie was working for Dr. Mike Miller at his Palos Hills veterinary clinic. I was teaching a Friday morning class at Moraine Valley College. A lunch with Stacie sounded like a good idea. When I got to the clinic, Mike was just heading out to a large field where construction was to begin in a few months. His goal was to catch as many snakes as possible and relocate them. If he could give up his lunch for snakes so could I. I think he planned (and preferred) a solo outing, but couldn't find a way to say no to me.

The activity went as planned for about 20 minutes (a dozen or so garter snakes and I seem to recall one brown snake) until we came upon several puddles that were only a few hours from being dry. In them were countless American toad tadpoles. We scrounged up a couple of tattered paper cups and spent the next two or three hours dipping tadpoles out of small puddles and moving them to large puddles and a small pond.

Stacie later commented that the staff had to work late that night, with overtime pay, to catch up with the patients. By my estimation it cost Dr. Miller about \$100 in salaries to save those very common American toads. I suspect he thought the price was cheap.

— *Jack Schoenfelder*

## HerPET-POURRI

by Ellin Beltz

### Silly Season in Arkansas

"Airlines have strict guidelines on shipping snakes. . . . Knowing that deadly reptiles may be slithering in boxes below airplane passenger compartments made some skin crawl. . . . [They] must be packed. . . ." in special ways and there are tons of other requirements all of which you need to know and I'm not going to go into. What brought this topic to the fore in the May 30, 2004, *Arkansas Democrat-Gazette* was the death of a Scotsman, apparently by deadly snake bite. He seems to have picked up a wooden crate of deadly snakes at the airport, driven along some ways in a rented SUV, been possibly bitten, may have tossed out the crate, driven along a ways and died. The snakes were found and taken to the zoo before anyone connected the visitor's death with them. And his body was shipped back to the U.K. and so was not autopsied. In any case, the dailies are giving this one the full 15-minute treatment with background stories into all sorts of silly-season tie ins including the astonishing fact that not every single hospital in the U.S. stocks antivenin and so can't be counted on to save your life in a New York minute should your captive venomous snake put a fang in you. This was apparently news. Contributor Bill Burnett wrote: "I was out of town working and missed info on the fellow getting bit by the snakes he has ordered. Of course, that started all the panic. Typical!"

### Contributor news

Ray Boldt, faithful clipper of the Chicago Tribune and photographer has moved from the inner city to Barrington and celebrated his 75th Birthday on June 12. He does so this year missing a cancerous kidney which was removed but from which the cancer had not spread. He wrote "Boy am I lucky?" Yes, Ray you are. And we're lucky to have you too!

### News of the Me

This has got to be the weirdest article I've had to summarize for you yet. The May 20, 2004, *Los Angeles Times* Gardening Section had an article about L.A. basin lizards. And in a sidebar about the three kinds of lizards to be found there, were three columns of text, one for each lizard. Each one had it's scientific name explained, and my page <http://ebeltz.net/herps/etyhome.html> was cited. I'm absolutely honored and rather flattered; the other books and research they cited are all top notch. Thanks to Lori King-Nava of Chicago of Chicago who found this all the way from the west coast.

### One of those days on the job

"Fire crews and vets managed to save a snake that had got stuck in its owner's wedding ring after he wriggled into it and got wedged. Tango's owners tried to free him by rubbing oil on his body but contacted the fire brigade when that didn't work. They rushed the corn snake to the vet's, who gave him an injection to knock him out so firefighters could chop the ring off without hurting him. The reptile was slipped free in 30 seconds, then given oxygen to help wake up. [BBC News, June 4, 2004]

### And we wonder how things get introduced. . .

- A man in Leetonia, Ohio, grows and ships albino bullfrogs around the world, especially to Japan, where albinism is considered a sign of purity and highly coveted. Retail prices for albino bullfrogs range from \$20 to \$200. Frogs are sold in lots of 100 to wholesale distributors. [Lorain, Ohio, *Morning Journal*, June 17, 2004, from Wes von Papineäu]

- "As many as 200 tortoises kept in seven bags and 14 kilograms of 'ganja' (hemp) were recovered from seven inter-state smugglers at a railway station in [Jaunpur, India]. . . . A police team conducted a raid at the . . . railway station . . . where the smugglers . . . were arrested with the tortoises and the contraband . . . they were taking . . . to West Bengal for selling. . . . The tortoise were released in Gomti river." [New Delhi, India *The Hindu*, June 14, 2004, from Wes von Papineäu]

### And lament what happens when they do

"Cane toads are continuing their march across Australia, with native animals unable to come to terms with the poisonous invader. . . . Cane toad tadpoles were also wiping out native frog populations, as their tadpoles ate the native frog tadpoles. . . . The chief executive of [Australia's] Co-operative Research Centre for Pest Animal Control . . . said foxes were the number one pest, causing hundreds of millions of dollars worth of economic and environmental damage. Mouse plagues caused untold social turmoil. 'If you've got to shake mice out of your children's beds at night, it's just another thing to make farming unattractive, . . .' The CSIRO [Commonwealth Scientific and Industrial Research Organisation] has warned that some insect pests operate as one huge organism, causing widespread damage. Crazy ants, which have threatened Christmas Island's famous red crabs, have now established themselves in the Northern Territory's Arnhem Land over an area of 350 hectares." [Melbourne, Australia *Courier Mail*, June 19, 2004, from Wes von Papineäu]

- A University of Tampa assistant professor of ecology wants to get Nile monitor lizards out of Cape Coral, which is "over-run with the nasty, tail-whipping creatures from sub-Saharan Africa. [The professor] has \$50,000 in grants from the National Fish and Wildlife Foundation and the Charlotte Harbor National Estuary Program to capture, study and destroy the lizards." Nile monitors can grow to seven feet long. They were first seen in Cape Coral in 1990 and current estimates run as high as 1,000 animals, making the trap fees about \$50 per leguaan. So far he's gotten 60 monitors, the biggest was about 26 pounds. The researcher pointed out that "Introducing species like the Nile monitor lizard—which is not indigenous to Florida—into the state's ecosystem is a huge problem. Left unchecked, [he said] Nile monitors could threaten native species, including other lizards and birds such as burrowing owls." He said "They're a disaster waiting to happen." [Tampa, Florida, *Tribune*, June 28, 2004, from Wes von Papineäu]

### Remove one data point

"I noticed that someone sent you the AP newspaper article from Michigan about the massasauga "killing" an 85-lb. black lab. I recently found out the "rest of the story," although it never hit the papers. It seems that the dog did not die of the snakebite. The owners refused treatment and had the vet euthanize the dog, apparently (they said) because they didn't want a potentially compromised dog (it was an "outside" dog, they said). The dog did take a severe bite in the shoulder area, but it very likely would have survived with treatment. The circumstances of the bite were unclear. The original implication was that the bite occurred in the owner's yard, but this was not confirmed in the article, and it is possible that the dog was "in the field" when bitten. I fault the newspapers for not checking the details, and for clearly suggesting that the Michigan DNR was being negligent in not helping people control these "poisonous" snakes. [Name withheld by request, June 4, 2004]

### Ribbeting Reading

The *Cape Argus* of Cape Town, South Africa, reports on *The Atlas and Red Data Book of the Frogs of South Africa, Lesotho and Swaziland* "... copublished by University of Cape Town's ... Avian Demography Unit ... and America's famous Smithsonian Institution." Marius Burger, one of the Frog Atlas project's coordinators, was at the first World Congress of Herpetology—at the famous "disappearing frogs" meeting. He and the nearly 400 other people who worked on the atlas had the usual tales to tell about trying to count frogs. One said, "One of the problems of frog atlasing is that you've got to do it at night and so you automatically look suspicious." Herpetologists and volunteers collected 42,500 distribution records for all 114 recorded species. [June 15, 2004, from Wes von Papineäu]

### 101 Uses for a Captured Crocodile

"Gucci" the crocodile who swam free in Hong Kong was finally captured. A local media outlet ran a "What should happen to the crocodile?" Here are some of the responses with the names removed:

- He should be kept in a safe enclosed area, with other crocodiles like him. Tokyo, Japan
- A huge crocodile sandwich and make it snappy! Phuket, Thailand
- Set it free again, it was good for tourism! Sofia, Bulgaria
- Handbags at dawn. Hong Kong
- Let it retire in the swimming pool in Government House. London, UK
- I think the croc should be set free in the Big Brother house and the housemates given the task of capturing the animal. Would make interesting viewing. Cardiff, Wales
- Nothing. Until it has cast its postal vote. Huntingdon, Cambridgeshire
- Such an intelligent croc shouldn't be killed. The authorities should send it to an Australian croc farm. Edinburgh, Scotland

- It will probably end up being used for Chinese herbal remedies!!! Wales
- Keep and culture it. Find a mate for it so that they multiply. Kitwe, Zambia
- Make a nice handbag and matching shoes—perfect for materialistic Hong Kong socialites. Hong Kong
- The crocodile should be released in its natural habitat. Lahore, Pakistan
- I believe the usual procedure in Hong Kong is to award it a passport and amnesty, and then revoke them 3 weeks from now, once the deportation papers are ready. Auckland, New Zealand  
[BBC World Service, June 10, 2004, from Wes von Papineäu]

### Hiss of Death

Conservation laws have chased India's once famed snake charmers into a subeconomic life of drug and alcohol abuse, their influence and respect in the community lost because they can no longer legally hunt snakes. Even so, the few remaining in the profession do collect animals. Now conservationists are proposing enlisting the snake charmers to both educate people and function as animal control officers for snakes. One such conservationist who has worked with the Jogi-Nath Sapera—the snake charmers' community of north India—for three years said: "I have planned something like a dial-a-snakecharmer-service. People are constantly calling Saperas to remove snakes from their homes, gardens and fields. They can be paid a small fee for this." CHS member and herpetologist Romulus Whitaker said: "Statistics indicate that you are twice as likely to die of rabies in India than by snakebite. To me that's very scary. . . ." [South Africa Daily News, June 17, 2004, from Wes von Papineäu]

### Ban guns, feed crocs

"Man-eating crocodiles are benefiting from the clampdown on guns in the Solomon Islands. According to police officers serving in the troubled archipelago, at least four people have been killed by the marauding reptiles on the Guadalcanal coastline near their base in the past six months. . . . One villager said it was hard to get rid of the crocodiles without guns. `They are also getting cunning, coming up close to villages and barking to attract dogs down to eat them up.'" [Auckland, New Zealand, *Herald*, June 9, 2004, from Wes von Papineäu]

### The saga continues

"Lonesome George is probably the last giant tortoise of his type. But are scientists doing all they can to find him a partner, boost his sex drive and save his subspecies? . . . Poor Lonesome George. He may be famous, but he hasn't got a mate. All alone in the world and, sadly, singularly uninterested in sex, George the Galapagos giant tortoise looks set to be the last in his line [*Geochelone nigra abingdoni*]. Ever since George was discovered in 1971, there have been many attempts to get him to reproduce" but up until now he has been paired with the wrong females. "The first examination of genetic similarities between the different tortoise populations in the Galapagos, done in the late 1990s, threw up something of a

surprise . . . [because DNA analyses] showed that Lonesome George is more closely related to the subspecies on the island of Española [*Geochelone nigra hoodensis*]. This indicated that giant tortoises, which are ill-suited to life at sea, somehow survived an incredible 300-kilometer journey from Española in the south to Pinta in the north, probably by hitching a ride on strong currents.” People continue to search Pinta in hopes of finding a real mate for George. “Late last year, Peter Pritchard, founder of a privately funded conservation group in Florida called the Chelonian Research Institute, gathered together more than 20 park staff and conducted the most thorough search of the island to date. They had mixed success—they found a total of 15 Pinta tortoises, although all of them were dead and only one of them was female.” Lately thoughts have turned to sperm collection or perhaps even cloning. But time is on George’s side. There are still hundreds of tortoises in private collections and zoos in South America. One or more of them may still be found to be Pinta tortoises. And George is still a youngster, after all he’s less than 100 and might live another 100 years. [*Nature* 429:498-500, June 3, 2004, and on <http://www.galapagospark.org/en/home.htm>, from Wes von Papineäu]

**Thanks to everyone who contributed this month** especially since most of it sits waiting to be typed in for next month! I had really bad carpal tunnel from working as a writer now and

it has been a rough month in general so your patience is greatly appreciated. Please don’t stop sending whole pages of newspapers and magazines with herp stories. Please be sure the publication name and date and your name is on each piece. Mail to me, please note we have a **new PO number** because we got “too much mail.” Ellin Beltz, POB 1125, Ferndale, CA 95536-1125. My E-mail is “[ebeltz@ebeltz.net](mailto:ebeltz@ebeltz.net)” — back issues of this column are archived on “<http://ebeltz.net>.”



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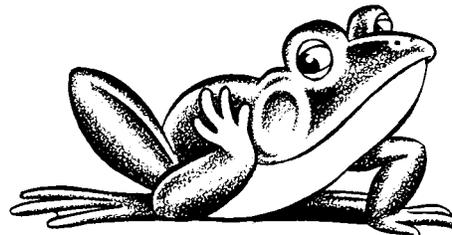
**RATS AND MICE**

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*Bull. Chicago Herp. Soc.* 39(7):140, 2003

## The Tympanum

In Indiana, Minton (2001; p. 121) attests to the defense value of concealment in the Western Chorus Frog by stating “Nearly every Hoosier has heard its voice, although few know it by sight. I have heard its call ascribed to birds, insects, salamanders, and larger species of frogs. In parts of southern Indiana and Kentucky, both this frog and *Pseudacris crucifer* are called ‘peepers,’ and it is believed that they can be seen only by persons with brown eyes.” I want to bear witness to the fact that the last part of the above sentence is not true, as I have blue eyes and have seen both of the above species! Moreover, I have been in the field with people with brown eyes who look



directly at both peepers and chorus frogs and say, “I hear them but can’t see them.” This obviously proves that only people with blue eyes can see these frogs! **J. Alan Holman, Michigan State University Museum, East Lansing MI 48824-1045.**

### Literature Cited

Minton, S. A., Jr. 2001. Amphibians and reptiles of Indiana (revised second edition). Indianapolis: Indiana Academy of Science.

## Herpetology 2004

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.

### CUES FOR DETECTION OF PREDATORS

C. R. Hickman et al. [2004, *Herpetologica* 60(2):203-210] note that many aquatic amphibians live in habitats with low visibility. In such habitats, chemical cues may be more reliable than visual cues for predator recognition. Adult perenni-branchiate gray-bellied salamanders, *Eurycea multiplicata griseogaster*, occupy clear-water streams with low levels of sedimentation and relatively few visual obstructions. In a previous laboratory experiment, gray-bellied salamanders distinguished between chemical stimuli from predatory fish (banded sculpins, *Cottus carolinae*) and nonpredatory tadpoles (*Rana sphenoccephala*). In this study, when only visual cues were available, salamanders did not distinguish between sculpins and tadpoles. Instead, they reduced activity in response to both predatory and nonpredatory heterospecifics in comparison to a blank control, indicating an alarm response to general disturbance rather than recognition of the specific predator, per se. To confirm that chemical stimuli are important under natural conditions, the authors tested whether gray-bellied salamanders in a natural stream habitat distinguished between chemical stimuli from sculpins, nonpredatory fish (stone-rollers, *Campostoma pullum*), and a blank control. In contrast to their response to the nonpredator treatments, salamanders quickly moved away from the sculpin stimulus and then burrowed into the gravel substrate. Therefore, even for salamanders from clear-water habitats, chemical stimuli are more effective than visual stimuli for recognition of visually cryptic predators.

### DIET AND THE TORTOISE CARAPACE

J. Gerlach [2004, *African J. Herpetology* 53(1):77-85] notes that the main character used in identifying species of Chelonia is the carapace. The taxonomy of several tortoise genera remains highly disputed, due in part to a limited knowledge of the limits of variation in many populations. For taxa where substantial captive populations are maintained and play an important role in conservation, there is a need to ensure correct identification. The use of the carapace in identification has sometimes been criticized due to potential problems of distortion caused by captive diets. The author studied the effects of diet on two species: *Testudo ibera* and *Dipsochelys dussumieri*. This confirmed previous findings that low calcium-to-phosphorus ratios cause scute pyramiding and that extreme calcium deprivation results in metabolic bone disease. However, even though poor diets result in bone resorption, deposition at points of stress and abnormal fusion patterns, they do not compromise the taxonomically useful characters of scute proportions, coloration and depressions and they have no impact on the plastron. Such carapace characters and those of the plastron in particular, remain of value in systematics. This study highlights the need for careful examination of the value of taxonomic characters.

### NEWT EGG-LAYING SITE CHOICES

G. Orizaola and F. Braña [2003, *Herpetological Journal* 13(4): 189-193] note that predation on larval stages has been reported to play an important role in structuring amphibian communities, and for this reason the choice of suitable oviposition places is likely to influence newt fitness. This study attempted to assess whether females of four newt species — marbled newt (*Triturus marmoratus*), alpine newt (*T. alpestris*), palmate newt (*T. helveticus*) and Bosca's newt (*T. boscai*) — avoid chemical cues of predatory brown trout (*Salmo trutta*) in selecting their oviposition site. In laboratory tests, individual females were allowed to choose their oviposition site between places with water conditioned by fish chemicals and others with unconditioned water. *T. marmoratus* females selected preferentially tubs without predator cues as oviposition sites, whereas the other three species did not show significant preference under these conditions. Absence of chemical recognition capabilities, strong philopatry towards oviposition site or predator avoidance based in habitat characteristics are suggested as possible causes of the lack of chemical predator avoidance detected in this experiment.

### AN OVERLOOKED REPTILE "HOT SPOT"

D. G. Broadley and F. P. D. Cotterill [2004, *African J. Herpetology* 53(1):35-61] review the reptiles recorded from south-east Katanga Province in the Democratic Republic of Congo employing the evolutionary species concept. This review indicates that there are at least 119 species in the area (7 chelonians, 37 lizards, 4 amphisbaenians, 69 snakes and 2 crocodylians), 15 of which are endemic (12.6%). Analysis of zoogeographical affinities shows that this reptile fauna is derived from all directions, with forest forms entering from the north accounting for 14.4% and savanna forms entering from the east contributing 22%.

### MISIDENTIFIED SNAKES AND THE PERPETUATION OF ERROR

B. Hughes [2004, *African J. Herpetology* 53(1):63-76] being struck by the number of instances of misidentification of *Dromophis lineatus* as *Psammodphis* spp. by recognized authorities (including Albert Günther, George Albert Boulenger, Gaston F. de Witte and Raymond Laurent), has summarized those that have come to his notice and tried to draw some useful conclusions from such errors. These are: whatever overall authority a worker may have, his experience of a particular species may be quite limited and his efficacy in identifying specimens of species with which he is unfamiliar may be no better than anyone else. The identifying of specimens is commonly by use of a key which, by its nature, can generate an unacceptable level of error; identifications should not be taken at face value, but evaluated against the data accompanying them.

## Unofficial Minutes of the CHS Board Meeting, June 18, 2004

Lori King called the meeting to order at 7:35 P.M. Board members Matt Campbell, Linda Malawy, Ed Rzewnicki and Jenny Vollman were absent.

### Officers' Reports

Recording Secretary: Melanie Aspan read the minutes of the May 14 board meeting. Corrections were made and the minutes were accepted.

Treasurer: Jim Hoffman presented the May balance sheet. John Bailey inquired if the expense associated with the signs produced by Bob Bavirsha's company for ReptileFest has been submitted. Jim replied that it has not.

Membership Secretary: Mike Dloogatch announced that the number of members has dropped below 700 this month. Mike also related that he has sent several back issues of the CHS *Bulletin* to the University of Tennessee Library, completing their collection.

Vice-President: Lori King reminded the Board that there would be no speaker for the June meeting since it will feature the annual Show & Tell presentations, and also that Karl Switak has rescheduled his engagement to the September general meeting. Lori related to the Board on behalf of Matt Campbell a suggestion that members be encouraged to put together short presentations on any useful husbandry or breeding techniques that they feel would be of interest, and to devote a future general meeting to showcasing these presentations.

Corresponding Secretary: Steve Spitzer reported a "thank-you" voicemail message from Cal-tronic Systems located in Wooddale. Ron Humbert had assisted them by removing a 25-pound snapping turtle from their parking lot in May. Steve also received an E-mail from Sherry Thompson, who is with Noah's Wish, requesting assistance with training volunteers on the proper sheltering and safe handling of reptiles. This request has been forwarded to Steve Barten. John Bailey brought up the idea of having a general CHS E-mail address on the website in addition to having individual Board members' addresses available.

Publications Secretary: Betsy Davis has received an announcement of the 2004 North American Reptile Breeders' Conference and Trade Show. An announcement will be run in the CHS *Bulletin* as a courtesy. Betsy thanked John Bailey for the list of turtle/tortoise-related websites that he sent to the Board. Betsy expressed that she would like to compile similar lists for other herps and provide links on the CHS website.

Sergeant at Arms: Brian Jones reported 44 attendees at the May General Meeting.

### Committee Reports

Shows: Lori King presented July 10- 11 as the next Notebaert Museum weekend show. July 10 was also presented as the date for this year's Argonne National Laboratory company picnic at which the CHS appears annually. Ron Humbert

mentioned that he had received a letter from the Plum Creek Nature Center thanking Mike Scott and John Bailey for their time and effort.

Monthly Raffle: ZooMed has sent raffle items as well as literature to be handed out at general meetings.

General Meetings: Jack Shoenfelder will give the June Illinois Herp short presentation, which will be on mudpuppies.

Chicago Wilderness: At Jim Hoffman's request, Ron Humbert will report next month on where to submit the donation to Chicago Wilderness voted on at the May Board Meeting.

ReptileFest: Jim Hoffman inquired if the exit meeting had occurred. Lori King responded that it had, and that many good ideas were presented for future shows. Lori also reported that a new Coordinator would be found for next year's show because John Archer has declined to take up the position for a second year.

### Old Business

State Reptile/Amphibian: Ron Humbert reported that Lieutenant Governor Pat Quinn has signed on as a co-sponsor for this initiative. He also related to the Board that the five finalists for both categories have been decided. The finalists in no particular order are: Reptilian Finalists: Common Garter-snake, Massasauga, Eastern Box Turtle, Painted Turtle and Milksnake. Amphibian Finalists: Gray Treefrog, Eastern Newt, American Toad, Tiger Salamander and Spring Peeper. It was decided that CHS members would participate in a vote at the August meeting in conjunction with the voting taking place at the Illinois State Fair in Springfield.

New Exhibit – 2005: Lori King updated the Board on the proposed Navy Pier exhibit, letting them know that there are plans to design interactive exhibits and that a funding committee is being set up.

### Round Table

Mike Dloogatch noted that [www.midwestfrogs.com](http://www.midwestfrogs.com) has been updated with frog call video clips and is an excellent resource.

The meeting was adjourned at 10:08 P.M.

*Respectfully submitted by Melanie Aspan, Recording Secretary*

## Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: [GrmtRodent@aol.com](mailto:GrmtRodent@aol.com).

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutritionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, \$.17 each; fuzzies, \$.24 each; hoppers, \$.30 each; weanling, \$.42; adult, \$.48. Rats: starting with pinks at \$.45 each, to XL at \$1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. PO Box 85, Alpine TX 79831. Call **toll-free** at (800) 720-0076 or visit our website: < <http://www.themousefactory.com>> .

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice available: small newborn pinks up to jumbo adults. Prices start at \$25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: Two 3' Neodesha cages with glass, brand new and unused, come with matching hide box and bowl, \$90 each set. Chicago area only. Jim, (847) 534-4980, or [jim@hoffmanz.com](mailto:jim@hoffmanz.com).

For sale: herp books. *The British Amphibians and Reptiles* by Malcolm Smith, 1973 (5th ed.), 322 pp., 91 figs., 16 b&w plates, comprehensive treatment, mylar covering the DJ, hardbound, \$30; *Reptiles* by Angus d'A. Bellairs, 1957, 195 pp., 12 figs., DJ split along spine—the evolution, structure, function and life history of reptiles, both living and extinct, hardbound, \$10; *Additions to the Herpetofauna of Nayarit, Mexico* by Richard Zweifel, 1959, 13 pp., American Museum Novitates series, softbound, \$7; *Riesenschlangen aus Aller Welt* by Zdenek Vogel, 1973, 102 pp., 60 b&w, 2 color photos, natural history and care in captivity, in German, softbound, \$26. All books in excellent condition except as noted. Send E-mail address for complete list. Orders for \$25 or more sent postpaid; \$2.50 postage and handling for orders under \$25. William R. Turner, 7395 S. Downing Circle West, Littleton, CO 80122, (303) 795-5128. E-mail: [toursbyturner@aol.com](mailto:toursbyturner@aol.com).

For sale: c.b. '03 yellow anacondas, aggressive feeders, perfect health, about 2' long, \$100 each; also c.b. '04 reticulated pythons; beautiful hatchlings already feeding on adult mice. These guys are tiger siblings and are available for \$100/each as well. Personal checks, money orders and Paypal accepted. Out of state shipping available. If you have questions or would like to purchase an animal call Mark Petros, (847) 836-9426 or E-mail [ballpython777@yahoo.com](mailto:ballpython777@yahoo.com).

Herp Tours: Why pay more? Travel with the International Fauna Society, a 501 (c)3 not-for-profit organization, and experience the Costa Rican rainforest! Stay at the beautiful Esquinas Rainforest Lodge in the untouched herpetological paradise that is Piedras Blancas National Park. Meet new friends, relax in the naturally-filtered swimming pool or in the lush, fauna-filled tropical garden. Discounts for IFS and Chicago Herp Society members. For details, visit The International Fauna Society website at [www.faunasociety.org](http://www.faunasociety.org) or E-mail: [info@faunasociety.org](mailto:info@faunasociety.org).

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Herp tours: Experience the Amazon! Road-ride in Costa Rica! See and photograph herps where they live, have fun doing it, make good friends and contacts, and best of all . . . **relax!** From wildlife tours to adventure travel, **GreenTracks, Inc.** offers the best trips led by internationally acclaimed herpers and naturalists. See our website < <http://www.greentracks.com>> or call (800) 9-MONKEY. E-mail: [greentracks@frontier.net](mailto:greentracks@frontier.net).

Pet Sitting: In-home care for all your pets' needs. Specializing in reptiles, amphibians, birds, fish, dogs, cats. . . . Very passionate in herpetology, experienced vet technician at an exotic animal hospital, aquarium technician for over 10 years. Great references available. Call Lisa Collins to book your special care requests, (847) 644-3681. [Northshore based]

Reptile show: South East Wisconsin Exotic Reptile Festival—Racine, Wisconsin. August 1, 2004, 10–3. Adults, \$4; children under 12, \$1. Captive-bred only. South Hills Country Club, only an hour north of Chicago on I-94. Tables still available. [www.sewerfest.com](http://www.sewerfest.com). (262) 632-9129.

Wanted: **Shed skins**. I am studying the sheds of eastern North American snakes for the purpose of developing an identification key. If you keep any of the following species, would you consider providing me with sheds? I need sheds from: *Agkistrodon contortrix mokasen*, *Carpophis amoenus* ssp., *Cemophora coccinea*, *Clonophis kirtlandii*, *Coluber constrictor* ssp., *Elaphe gloydi*, *E. guttata*, *Farancia abacura* ssp., *F. erythrogramma* ssp., *Heterodon platirhinos*, *Lampropeltis calligaster*, *L. g. getula*, *L. g. niger*, *Nerodia erythrogaster* ssp., *N. taxispilota*, *Opheodrys aestivus*, *Pituophis melanoleucus* ssp., *Regina ridida* ssp., *Sistrurus catenatus* ssp., *Tantilla coronata*, *Thamnophis butleri*, *T. radix*, *T. sauritus* ssp., *Virginia striatula* and *V. valeriae* ssp. For more information on how you can help with this project, please contact me at the following address: Brian S. Gray, Serpent's Cast Identification Services, 1217 Clifton Drive, Erie PA 16505-5215, or call (814) 833-1074.

Wanted: Female ball pythons, adults preferred but smaller animals also considered. I am a professional breeder specializing in ball pythons and I can assure you that your animal will be provided with excellent care and optimal living conditions. Mark Petros, (847) 836-9426; [ballpython777@yahoo.com](mailto:ballpython777@yahoo.com).

Wanted: I'm looking for my soulmate. I want to settle down to a family before it is too late. But I have this problem. . . . When we get into hobbies and interests: old popular records, jazz and show tunes, and antique electronics are fine, but when I mention turtles, "What, are you crazy?" So maybe this is a better place to look. Please don't try to separate me from my turtles—at least not most of them. If interested, please drop a line to Ellis Jones, 1000 Dell, Northbrook IL 60062, telling a bit about yourself and giving a phone number.

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

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, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: [MADadder0@aol.com](mailto:MADadder0@aol.com).

**Announcing**  
the  
**FALL 2004 CHS ZOO TRIP**  
to the  
**National Mississippi River Museum & Aquarium**

**Saturday, October 2**

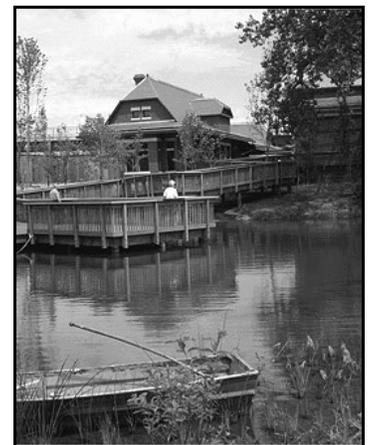
Prepare to take an entertaining and informative journey on the Mighty Mississippi at the National Mississippi River Museum & Aquarium. Enjoy dynamic aquariums, historical exhibits and a stroll through the wetlands and boatyard. Visitors can get “up close and personal” with live critters, become barge pilots, and control locks and dams. Tour the steamboat William M. Black and watch as a boat is launched into the Mississippi River.

Woodward Wetlands (outdoor exhibit) is the place to explore the natural habitat of the Mississippi, with a boardwalk trail that takes you to natural and living history outposts. See turtles sunning on logs while herons perch nearby. Examine the natural flora of a Mississippi wetlands Meet and hear the stories of Native Americans, fur traders, fishers, clanimers, refuge managers and early pioneers.

The floating dock features houseboats, scientific vessels, and the traveling Audubon Ark. Among the friends you'll meet at the Aquarium are turtles (including spotted, Blanding's, Ouachita map, false map, albino map), cave salamanders, amphiumas and plethodons. Check out this unusual Museum/Aquarium at <http://www.mississippirivermuseum.com/main.htm>. [To view a short video of the Aquarium under construction, log onto [www.mississippirivermuseum.com/MovieMed.RAM](http://www.mississippirivermuseum.com/MovieMed.RAM).] Over the past 25 years, the museum has successfully raised \$54 million to establish and expand its Mississippi River Museum into the National Mississippi River Museum & Aquarium. The Museum & Aquarium is accredited by the American Association of Museums — a distinction held by only nine percent of American Museums — and was named an affiliate of the Smithsonian Institution in August 2002.

Trip Schedule:

- 7:00 A.M. **SHARP!** Bus leaves the Peggy Notebaert Museum. Watch a film *en route*. Enjoy Fall colors along the Mississippi River.
- 11:00 A.M. Herp hunting on Green Island
- 12:30 P.M. Box lunch (or bring your own) **on the bus** *en route* to the Mississippi River Aquarium in Dubuque
- 1:15 P.M. Guided tour of the Aquarium with Lee Jackson, Aquarium Director
- 5:00 P.M. Dinner in Dubuque (not included in trip fee)
- 6:00 P.M. Bus Leaves Dubuque
- 10:00 P.M. Return to Peggy Notebaert



Cost: **\$40**, includes box lunch, Aquarium admission and round-trip luxury transportation [or bring your own lunch and pay only \$32]. Seats are limited. To register, contact Bob Herman at **773-667-4095** or email [BobHerman@ameritech.net](mailto:BobHerman@ameritech.net) for a registration form. Your reservation is secure *only* when paid up!



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