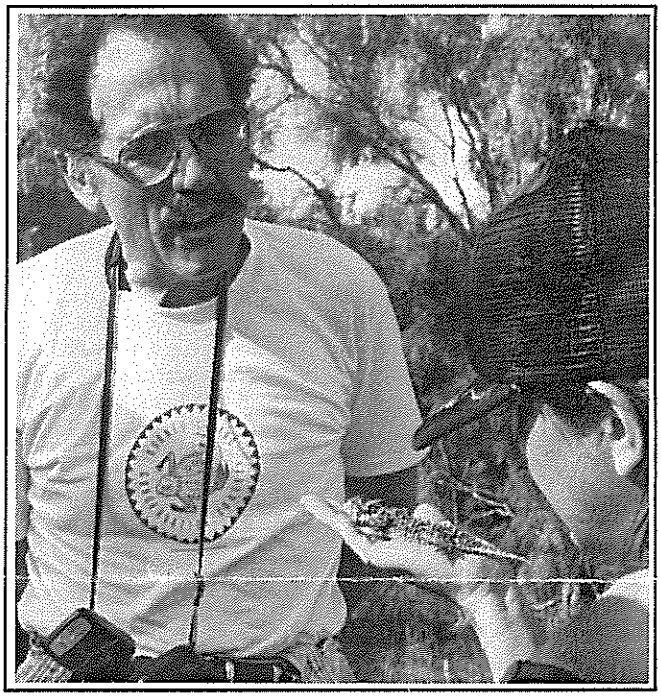
Phry´•no´•so´•ma•tics

noun, 1. people enthusiastically dedicated to reversing the decline and supporting the conservation of horned lizards. From the genus Phrynosoma – the horned lizards.

June 1991 A Monthly Newsletter of the Horned Lizard Conservation Society



Bart expounds upon the wonders of the horny toad that Susan Curry holds in her hand.

Bart's Notes –

Horny Toads at Last!

Sixteen of us (eleven adults and five youngsters) made it down to the Chaparral Wildlife Management Area over the Memorial Day Weekend and, *yes*, we did see some horny toads. Janet Gilles, Susan Curry, and Bill Davis were brave enough to join me in my Piper airplane for the one and a half hour flight to the Cotulla airport, where we were met by Clare Freeman and her daughter Rachel. At the Wildlife Management Area we were met by Marcia Jenkins and her husband Jim, John Henry Smith from Llano, and Bill Doolittle with his two boys. Wendy Donaldson, along with Melanie Typaldos and her daughter and son, would catch up with us later.

After meeting with ranger Jimmy Rutledge, the resident wildlife biologist, and getting maps of the area, we headed out in search of the little critters so dear to our hearts. No luck. *They* were intelligent enough to stay out of the sun in the heat of the day. Around four thirty, David Synatzske, area manager, came out with Jimmy Rutledge for a chat. They're both Aggies and former students of our own Hal Irby and,

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Upcoming Meetings

GENERAL MEETING—
Tuesday, June 11th, 7 p.m.
Austin Nature Center

If you thought you missed the slide show last month, you're in luck! Due to some communication foul-up, Melanie's program was scheduled for *June*, not May. So, at the June meeting, Melanie Typaldos will present a half hour presentation which will include a slide show with several horned lizard species shown in their native habitat. She will also discuss other lizards that inhabit the same areas.

RESEARCH AND RECOVERY COMMITTEE — meets next on Wednesday, June 26th, 6 to 8 p.m. at the home of Lee Stone, 2905 Lafayette (just east of I-35).

A Research & Recovery Committee Communication . . .

Phrynosoma Phacts *by Melanie Typaldos*

I welcome questions and comments! If you want to discuss the information in this article, or if you'd like to suggest a topic for a future column, see me at the monthly meeting or drop me a line: Melanie Typaldos, P.O. Box 18494, Austin, Texas 78760

Predator Avoidance

From listening to people talk at the meetings, I know that a good percentage of our membership has personal experience with horned lizards in the wild. Anyone who has ever caught one has experienced some of their unique behavior patterns for avoiding predation. I'm going to discuss these behaviors in this months article.

Horned lizards escape predation by using a combination of factors:

1. Cryptic coloration
2. Running and freezing
3. Inflating the body
4. Aggressive behavior
5. Playing dead
6. Ejection of blood from the eyes

Each lizard will use a combination of these tactics, some of which are more effective against certain predators than they are against others.

Cryptic Coloration

To anyone who has ever searched for horned lizards in their natural environment, the ability of these animals to blend into their surroundings is a source of constant amazement.

Our own Texas Horned Lizard, *Phrynosoma cornutum*, is a master of cryptic coloration. Although not well documented, these lizards are known to have distinctive coloration which varies geographically. This coloration allows

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One of the horned lizard scouting teams: (from left) Bill Davis, Marcia Jenkins, Clare Freeman and her daughter Rachel, Bart Cox, Susan Curry, Janet Gilles, and John Henry Smith.

HORNY TOADS AT LAST! *from page 1*

boy, did we learn a lot about Hal. It seems he's famous not only for identifying and protecting Texas wildlife, but also for *eating* it. Its hard to know, from my teasip perspective, where to draw the line separating the BS from the real, but, between pinches of snuff placed beneath lips, we were given a long list of Texas fauna relished by Dr. Irby, including *scorpions*. At his retirement banquet he was feted with a cake with colorful icing covering cow patties. Knowing the A&M faculty as I do, *that* I can believe.

Our special thanks to Marcia's husband Jim, for driving us around the area in their pickup. Around five, the rangers, David and Jimmy, drove up and handed us our first horny toad. What a sight it was to see nine adults, armed with cameras sprouting long-focus lenses, blazing away at that one poor creature. A topless starlet at Cannes is less photographed. As we were able to find and photograph horny toads on our own we calmed down some, and some of us ran out of film. They were all Texas horned lizards, with characteristic markings, but I was impressed by the variation in overall color, ranging from dark brown, to yellow, to UT orange. Clare Freeman gave us all (including the rangers) a lesson in sex identification.

That evening we roasted hot dogs over a mesquite campfire and John Henry Smith gave us a lesson in Dutch oven cooking, producing a peach cobbler to die for. Susan Curry offered their Lakeway home for our next social gathering. It's filled with Tom's famous work and will serve as a fine site for a summer party. We'll set a date (some Saturday evening in July or August) and arrange tasks (including a cleanup crew) at our June meeting.

Reflections on Monthly Meetings

Speaking of our June meeting, we will *not* be holding our chapter elections. They have been postponed until August. I'm getting less done than I'd hoped, but I'm having fun, and that's *really important* to me. I think the board of directors has come up with a solution to the problem that's been bugging us since this organization began, at least I hope we have.

At our monthly meetings a classic problem has arisen: some members want a well prepared program, informative committee reports, and an opportunity for input on planning field trips and social events, with an absolute minimum of bickering about organizational details, while others resent the three directors (Deborah, George and me) making all the important organizational decisions without being democratic and consulting with the membership. Both viewpoints cannot be satisfied at once, so we've decided to hold different types of meetings on alternating months. On even-numbered months we'll have meetings with a strong program, lengthy committee reports, social planning, and no politics whatsoever. On odd-numbered months we'll hold business meetings and do our best to entertain all points of view on issues like whether we want to be a national organization, what sort of financial arrangements chapters will have with the national organization, what rules will govern at the national level and the chapter level, how chapters will communicate with each other, etc. We will also be sending out this newsletter on a bimonthly (instead of monthly) basis.

PLEASE NOTE: THERE WILL BE NO NEWSLETTER IN JULY.

A Profile of the Chaparral

The Chaparral Wildlife Management Area (WMA) is located about 80 miles southwest of San Antonio The State of Texas purchased the Area in 1969 to serve as a wildlife research and management facility. Encompassing 15,200 acres of brush land, it is home to white-tailed deer, javelina, a variety of birds including quail and dove, feral hogs, bobcats, coyotes, cottontailed and jack rabbits, rodents, badgers, skunks, raccoons, rattle snakes, and many reptiles and amphibians. The three protected reptile species found in the area are the Texas Tortoise, Texas Indigo Snake, and the Texas Horned Lizard.

The WMA was enclosed in a deer-proof fence in 1983 to create a controlled environment for wildlife research. No surface water is available, so windmills and stock tanks have been built to supply water for wildlife and livestock.

The land is brushy, with a variety of vegetation including mesquite, blackbrush, whitebrush, guayacan, and prickly pear. Average annual rainfall is 21".

Summer Meeting Plans

At our June meeting Melanie Typaldos will present a program with slides, we'll pass around photos of the Chaparral trip, we'll hear from the committees, we'll make arrangements for our summer party, and we'll pass out the latest version of the bylaws *without discussion*. At our July meeting we'll discuss the bylaws in detail, we'll decide which offices we want to fill, we'll decide how we want to get people to run for those offices (do we want a nominating committee, arm-twisting, blackmail?), and we'll decide how we want to conduct the election at the August meeting. At the August meeting Andy Price, Ph.D. herpetologist and zoologist with the Texas National Heritage Program of the Resource Protection Division at Parks and Wildlife, has tentatively agreed to present us with a brief talk and then make himself available for questions. Afterwards we'll hold our election. In case you missed our last meeting, we've moved the meeting place to the next building to the south of the Nature Center. Just walk along the scenic lily pond due south about two hundred feet, you can't miss it. I'll see you there!

— Bart Cox

Bill Davis Reports —

The Quest for Toads

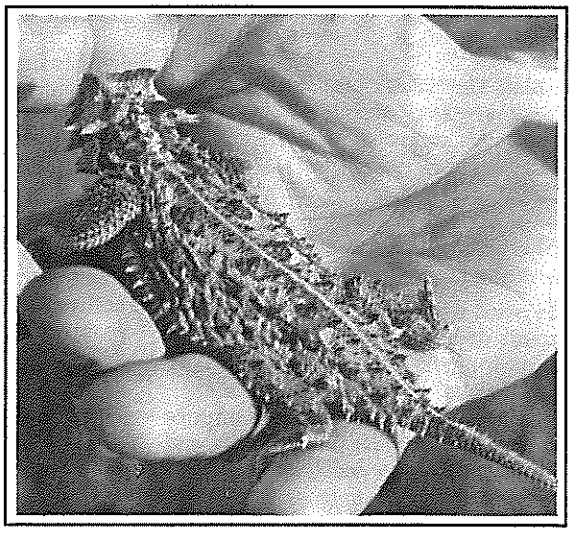
Bart, Janet, Susan and I met on a clear hot morning at the airport. Bart had already checked his plane over (*so he said*) and we were winging our way south. Bart did not mind me flying the plane a bit but hated me sitting on his lap. Landing in Cotulla we were gratefully ferried out to Chaparral.

About ten of us, gung ho and ready, traveled out to a likely spot to look for Horny Toads. We split up and wandered off on four different directions. Jim Jenkins guarded the vehicles with a can of beer from a shady spot. A minute to explain the environment we were searching. Almost the *entire* area had foot tall weeds (stickers included) and other scruff bushes topped off with mesquite trees and cactus. Many areas were too dense to penetrate. The dirt roads were the only clear places. So we tramped off into this mess. Those of us with boots and jeans faired better than shorts and tennis shoes. We picked up fewer stickers and didn't worry as much about snakes. During this time, no one saw a single harvester ant mound. My group *finally* found evidence out on the road, Horny Toad Feces!! and promptly took 16 pictures of it. That being the only excitement, we dragged our dehydrated bodies back to the vehicles. From that experience we learned that A. It was very hot. B. The Horny Toads are on the road at least some of the time, and C. the Horny Toads are aware of A and must be hiding in the shade. At this point Jim Jenkins appears to be smartest among us so we joined him in the shade. After awhile the Rangers came around and told us to wait until evening and then drive around until you scare one into running.

Evening came. Jim graciously agrees to drive us around in his open bed truck. (Not realizing at the time this will take 4 hours at 2 mph). We're off, 21 eyes scanning in all directions looking for the elusive Horny Toad. Two hours and several false alarms later, Ten people are sitting in the shade wondering who's stupid idea this had been.

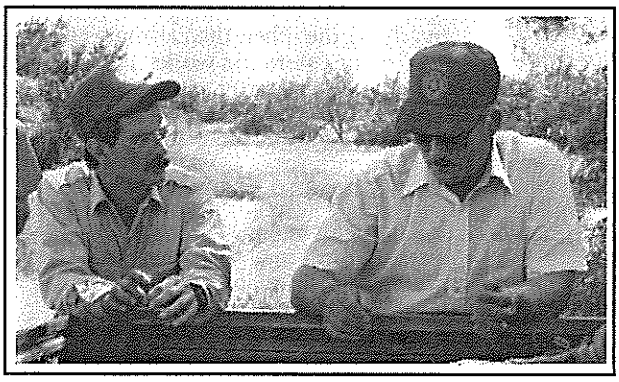
The Rangers came to our rescue with the first live specimen. We promptly scared the male Texas horned lizard by surrounding him with cameras clicking and isn't he cute noises. After immortalizing him with 50 or so pictures, the Rangers returned him to his territory.

Renewed with passion for success, we climbed back in the pickup and were off. A large turtle was the first victim to our clicking cameras. He obliged us by staying out of his shell but his aim to "run" away was clear. Then . . . the first sighting! This male Texas horned lizard darted into the brush and cactus successfully. We surrounded the area and closed our circle. The Horny Toad was smart enough to stay perfectly still and his camouflage was great, but get close enough and he'd run making noise in the weeds. That's how we caught him. He was a juvenile male but in great shape. There was a harvester ant mound there on the road and I think I heard another move but couldn't spot him. We left him there of course, but the road was probably a dangerous place to be. Farther down we did find a road kill. It's a shame the vegetation is so thick everywhere but the roads. We spotted two more, one we caught, one we didn't. The female we caught this time had an orange tint to her. She blended in with the orange road dirt very well. A few more pictures and back to our temporary camp.



As night fell, we set up at the actual camp grounds. A fire was made and weenie's were roasted. We chatted under a clear sky about Horned Lizard business and what star was what. Some members camped there that night but real men like me drove into Cotulla to sleep at a motel.

Tired but satisfied with our field trip success, we returned home Sunday. ▲



Chaparral Wildlife Management Area resident ranger Jimmy Rutledge (left) and Area Manager David Synatzske (right) giving the horny toad search team hints on where to find them..

Jimmy Rutledge and David Synatzske were quite helpful and hospitable to the group that visited the Chaparral Wildlife Area. They gave advice on how best to see the horny toads (drive the roads and watch for them in the roadway), *found* the first one for us, and gave us some information about the area and its use.

Peak activity in the Chaparral is during hunting season, as some hunting is allowed during that time (this provides productive data about the game species hunted, as well as an opportunity to study the effects of harvest on wildlife populations). The rest of the year is quiet, with visitors mainly being biologists doing research, or small groups like ours conducting field trips.

Synatzske said because of an increase in staff (now 6), in the last year they have been able to start collecting data on reptiles in the area. They hope to expand these efforts in the future.

Until the last seven years, the land in the Chaparral has been continually grazed by livestock. Texas Parks and Wildlife plans to reintroduce some livestock to the area, and monitor their effect on the land and it's inhabitants. Synatzske said that the cattle should have no ill effect on the horned lizards, and may in fact be helpful in opening up areas that have been overgrown. ▲

Raising Horny Toads Indoors and Other Interesting Stuff

by Lee Stone

Dr. Wade Sherbrooke, Resident Director of the Southwestern Research Station of the American Museum of Natural History, reported in the Herp Review 118(1), 1987 on the difficulties of raising Horny Toads indoors. This is a summary of his report.

Sherbrooke notes in his report some interesting facts about horned lizards.

1. Horned lizards use their tongues like toads do to catch food. They flick their tongues out and the sticky coating "grabs" the ants. The size and agility of food insects is very important. *Crickets are too fast generally, and mealworms are too heavy to be lifted by horny toads' sticky tongues.* Captive "toads" get hungry and frustrated.
2. Horny toads do not like ants to get behind them. Because many ants bite or sting, *horny toads "tend to panic" if surrounded by lots of insects* thrown into an aquarium with them. They will walk backwards while keeping the insects in front of them!
3. Horned lizards' poor feeding and survival in captivity as been attributed to lack of or insufficent ants in the diet and the need to hibernate in winter. *Failures to raise horned lizards in captivity* may be due to:
   a. the wrong size and type of food,
   b. difficulty getting them to drink enough water, since in the wild they drink water that is shed off their backs during rains,
   c. heat/cool requirements,
   d. missing Vitamin D3,
   e. missing minerals,
   f. and ultraviolet radiation needs.
4. They eat tiny pebbles just like birds eat little gravel. We don't know why, maybe to help grind up insects in their stomachs or for the minerals.

Poor Horny Toads! Sherbrooke tried to raise a clutch of horny toad eggs *indoors*, with no ants and no hibernation. None of the animals survived past the age of two years. Some of the hatchlings died probably of a bone disease due to artificial lighting. Most became infected with an eye/mouth infection and died. The longest survivor died within two years of hatching. An autopsy revealed she had large "fat bodies" and bloody eggs in her body.

All in all, no horny toad would wish upon its brethren the fate of being reared indoors. In other words, horny toads need to be outdoors doing their own thing – with help from horny toad friends as needed. ▲

Phrynosoma Phacts

continued from page 1

lizards from different areas to blend in more perfectly with the soil on which they are found. Because horned lizards typically live on exposed soil rather than in dense vegetation, the lizards are provided with much greater protection if their coloration matches the color of the soil in their area. For this reason, lizards from areas with light colored soil will tend to be light in color, those from areas with predominantly reddish soils will have a redder coloration, etc. The Roundtail horned lizard, *P. modestum*, and the Flat-tail horned lizard, *P. m'calli*, are known to have similar color variations.

The bright stripe down the back of *P. cornutum* might seem to "blow its cover". This is not the case. In fact, the stripe serves to disrupt the outline of the lizard, making the two halves seem separate rather than parts of a whole. When the animal is placed against an artificial background, it is difficult to believe. Place the same lizard in an area of broken rocks, gravel and small shrubs and you'll see how the light stripe is very easily interpreted as a stream of light among shadows. In fact, it gives the illusion of a change of depth across the two sides of the lizard. The lizard looks more like two rocks, one overlying the other, than a single entity.

Cryptic coloration works only when an animal is perfectly still. This explains why horned lizards tend to freeze when approached.

Running and Freezing

If a predator approaches too closely, a horned lizard may decide to run. Because of the flattened body shape, they are poorly equipped to run. So they have modified this behavior to suit their abilities.

A horned lizard which is forced to run will frequently do so for only a short distance, then stop abruptly and freeze. Suppose a predator is some distance away from the lizard and is intently following it with its eyes, perhaps from overhead. When the lizard stops abruptly, the predator's eyes continue following the expected path of the lizard. Now it has lost the lizard's exact location and the lizard can revert to cryptic coloration for its defense.

Inflating the Body

One of the most startling behaviors of horned lizards is inflating of the body. This is quite dramatic. The lizard, when fully inflated, may not be able to touch the ground with its feet! This increases the apparent size of the lizard. This behavior is probably aimed at snakes. Since snakes swallow their prey whole, the size of the prey item is of critical importance. If the prey is too large to be swallowed, the snake will pass it by in favor of something more suitable.

Aggressive Behavior

Horned lizards are also known to exhibit aggressive behavior when confronted. This includes biting, use of the horns as weapons, lunging at an attacker and hissing.

Horned lizards will frequently fain or actually attempt to bite when caught. These bites seem to be more of a bluff than a real threat and cause little or not pain to a person.

A Regal horned lizard, *P. solare*, once surprised me by jabbing the horns behind its head into my hand as I held it. This behavior might be effective against an animal which is holding the lizard's head in its mouth, with the lizard thrusting the horns into the soft tissue on the inside of the mouth.

Playing Dead

If all else fails, a horned lizard may simply "give up" and remain limp and motionless. Although this might not be interpreted as a defense tactic, there are several examples of faining death in the animal kingdom. The best known of these is the opossum. Another example is the hognose snake, which even fains convulsions before "dying". This behavior can be effective against predators which are averse to eating carrion, for example snakes. In addition, this may cause a predator, such as a cat, to allow its attention to wander, giving the lizard an escape opportunity.

Squirting Blood

Horned lizards of several species, Texas, Coast, and Regal, are known to occasionally eject blood from the eyes when molested. This is a rare occurrence and probably requires great stress to invoke.

The blood is ejected from the sinus orbitals and may spurt for a distance of up to three feet. This blood may be mixed with other fluids when ejecting. Members of the canine family, dogs, wolves, and coyotes, apparently have an aversion to the taste of the blood. ▲

References

Burleson, Gretchen L., "The Source of the Blood Ejected from the Eye by Horned Toads", *Copeia*, 1942, No. 4.

Sherbrooke, Wade C., *Horned Lizards, Unique Reptiles of Western North America*, Southwest Parks and Monuments Association, 1981.

Letters from the Members . . .

I went to the May meeting thinking about whether the club ought to remain a local group or go national but not really having an opinion. I tended to agree with the view expressed that as long as someone was willing to expend their own time, it really didn't matter to the rest of us. After finding out that we didn't need to worry about the activities of our affiliates because they would be bound by our purposes and bylaws, I asked what our purpose was. Nobody knew. Also, although the topic of whether to go national was raised by the chair, discussion was closed off after 3 or 4 people spoke, even though others indicated they wished to speak.

Anyhow, I now agree that we need to have a viable functioning group that works before we attempt to replicate ourselves. No one now knows even what our stated purpose is, and I do not want to attend a "long boring meeting about bylaws". The rest of the meeting was superb, with highly interesting and informative talks about horny toads.

My big fear is encouraging poorly thought out and disastrous captive breeding programs. This group is intelligent, industrious and caring, and I have no doubt that should we begin an active breeding program, the little guys will thrive. But what about branch organizations?

ing people can make mis-
ample cited at the meeting
ngered sea turtle program
ll males, finding out 20
. Closer to home, A&M
raise hyacinth macaws,
rrots that are endangered,
st scientific information
ey lost the birds. Mean-
are breeders all over the
and south Texas who could
sfully raised those birds because they are raising macaws and amazons quite successfully. A&M just didn't have all the information, or maybe they just did not have the experience. Little things can be quite important for wild animals.

Pointless deaths we do not need. Particularly pointless horny toad deaths done in our name. Let's get our group going right, the bylaws the way we want them, and then expand.

Janet Gilles

Editor's note: Any member who wants a say about the content of the bylaws and other organizational matters should attend the "long boring meeting" in July. If you care, be there!

Progress Continues in the R & R Committee

by Wendy Donaldson, Chair

Whew, what a month! The Research and Recovery Committee has been pretty busy. Several members attended Greater San Antonio Herpetological Society's barbecue/meeting featuring Alan Tennant (author of The Snakes of Texas). Alan's talk and slide show, "The Decline of Wild Africa" was quite depressing, but the barbecue was a great idea. HLCS should definitely have a feast/meeting this summer.

At our committee meeting, May 22, several projects were in the works. Joyce Snodgrass brought a video camera and did a little taping. She had carried the camera around during the day and asked people questions about Horned Lizards, good publicity work.

We are all wondering where the fundraising committee is (if there is one). Does membership and T-shirts raise much money, how much money does the HLCS have in its Treasury? Fundraising involves more than obtaining funds, it involves exposure and a great educational opportunity.

The R & R committee is planning a trip for two of its members to visit 1 or 2 researchers whose papers we have been reading. One candidate is Dr. James Munger in Boise, ID. Another candidate is Dr. Allan Muth in Palm Desert, CA. I have not been able to reach Munger all week, and Muth is sending additional information about the Research Center and would not mind two visitors for a week. I also spoke with Dr. Richard Montanucci who may be visiting Austin in August (he has deep interest in *Phrynosoma douglassii hernandesi* which is also threatened in Texas). I am compiling a budget for the R & R Committee which will include costs for this educational mission. We hope to find a willing airline to donate tickets.

Several members of the committee went to Chaparral WMA on Saturday, May 25. Melanie Typaldos and I took a round-about way going southeast to the Choke Canyon area and then southwest to Chaparral. We spent Sunday morning with John Smith combing the roads in one section of Chaparral. It was a pretty successful trip for seeing Texas Horned Lizards. The difference in overall color (of dry lizards) between the two areas was remarkable as was the color of the soil. You will see for yourself in Melanie's slideshow at the June general meeting.

The Sighting Survey continues to be circulated. Again, I must ask all HLCS members with access to photo copiers to make copies of the survey, I wouldn't mind having 500 or more at my disposal. Unfortunately, the newspaper mail-out did not work too well. It seems the major problems are that we sent too much information and the reduced survey was still too big for most publications. We are also constructing a small poster to be placed in information centers (Lee Stone has put one in the Nature Center) along with our Sighting Survey and the brochure Marcia Jenkins has created.

Members of the committee continue to look for Horned Lizard populations in the Austin area. We are monitoring two potential areas, but have no confirmed sightings this year. Work is also continuing on the property owner Stewardship program.

The library material is ready! Jack Morse handed the collection of Horned Lizard articles we have been compiling to the Life Science Library in the Main building on UT campus on May 29. We are awaiting final approval and placement by the head librarian. The collection of articles will be available to *anyone*. We will continue to add articles as they are collected. I would like to place collections in other libraries in Austin or anywhere, but that takes time and money spent on copying the material.

The R & R Committee is doing a lot of work. The committee is a handful of individuals that need more hands. Our next meeting will be held at Lee Stone's home, 2905 La Fayette (central Austin) on June 26th at 6:00 pm. Lee promises wine to mix with a frenzy of poster cutting and pasting that needs to be done. (I think I'll stick with water!) ▲

Okay, let's face it . . .

How many OLD folks (i.e. over 18 or so) actually have TIME to sit around and look for lizards. Precious few . . . WE do, but most just can't be bothered. With such a few specimens we need to get as many people looking for them as possible out there. Where do we go to get *interest* in this? . . . *to the Children.*

There are plenty of organized Children's groups for us to submit the *idea* of these wonderful beasts to, and they will be *competitive* in trying to find out if they are out there – Scouts, Day camp, Schools — It's tricky (the legal problems, not picking them up) but we've got to do it.

Our hope is the future, and so are the children (and the children of the current Horny Toads). *Joyce Snodgrass*

Native Americans & the Horned Lizard

by Mark Lind

Ask anybody who's from Texas, and they're sure to have a favorite story about horny toads. Seems like everybody's got a special affection for these lizards. Native American Indians, too, were enchanted by the horny toads; in fact, they literally worshipped them. The Anasazi, Hohokam, Zuni, and Pimas, to name a few, believed that horned lizards were the embodiments of ancient, powerful spirits that could control the destinies and welfare of Indians.

The Pimas believed that horned toads could change the fortunes, health, and happiness of their people, and recognized two particular afflictions: "Wandering Sickness" and "Staying Sickness". Of the two, they believed, only Pima Indians were affected by "Staying Sickness", which was caused by offending the powerful spirits of desert objects and animals such as the horned toad, often by doing no more than stepping on or crossing their tracks.

When a Pima Indian had been diagnosed as having "Staying Sickness", a tribal shaman would determine which "strength" was causing the disease and tried to help his patient recall when and how his transgression had occurred. The ritual cure then consisted of singing specific horned lizard songs all night, or even for several days. These songs described horned lizards and how they behaved, thereby reaffirming the importance and uniqueness of the lizard. Often, a horned lizard effigy of clay or carved wood was applied to the body of the patient as well. The patient was cured when the malignant strength that had entered the body was changed into a benevolent one, which instead of harming the host, became a protective force thereafter.

The imaginative religious animism of these early inhabitants of the southwestern United States reveals their close association and reverence for the species of animals that coexisted with them in the desert. By linking their physical health and well-being with that of animals such as the horned toad, they also show that their spiritual morality was inextricably tied to their interactions with the natural world. I think the fact that they elevated the mythological status of the horned lizard in their cultures to a religious level shows the extent of their reverence for these enigmatic creatures, and (tragically) reveals the inherent egocentrism of our own western religious views.

Horned toads played an important role in the symbolic spirituality of southwestern Indian cultures, and still today, the horned lizard has a special place in our hearts that is testimony to the effect that these threatened creatures have had, and continue to have, upon the human psyche. ▲

Newsletter Input

Please help build this newsletter! We need articles, graphics, maps etc. Send to: Marcia Jenkins, c/o The Reference Press, 6448 Hwy. 290 East, Suite E-104, Austin, Texas 78723. Articles of more than 100 words must be: (1) typed originals, or (2) provided on a Mac or PC disk. Deadline for articles is first day of the month. Questions? Call Marcia Jenkins at 454-7778 weekdays or 512-321-7579 eves.

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- **Students - $10** • **Subscribing - $10 (newsletter only)**
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Mail fees along with Name, Address, Phone Number and comments to: **Horned Lizard Conservation Society**, P.O. Box 122, Austin, Texas 78767

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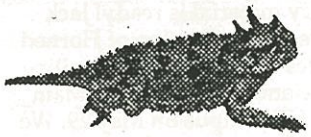

Dedicated to Conserving Horned Lizards Throughout North An

~~Mike Beard~~
Gary Nelson
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