HORNED LIZARD CONSERVATION SOCIETY
Post Office Box 122, Austin, Texas 78767
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Phrynosomatics

The Newsletter of the Horned Lizard Conservation Society

Our purpose is to document and publicize the values and conservation needs of horned lizards, to promote horned lizard conservation projects and to assist with horned lizard management initiatives throughout their ranges.

Ditmars' Horned Lizard (*Phrynosoma ditmarsi*) or The Case of the Lost Lizard*

By Vincent D. Roth

*This story originally appeared in the Sonoran Herpetologist, 10 (1) 1997. Reprint Permission granted by the Tucson Herpetological Society.

This title sounds like an Earle Stanley Gardner mystery story, but happens to be an account of sleuthing in a nonfiction science mystery. All of the elements of a mystery are present- a missing link, unidentified people, unknown localities, incomplete bits of information, and an exotic setting. "A detective story!" is the comment made by friends who have heard it. Will the hypothesis prove correct? Will the lizard be found? This uncertainty makes mysteries exciting and is what makes science exciting. Maybe this is the reason so many biological scientists find that their vocation is also their avocation.

The missing clue in this mystery was Ditmars' horned lizard, last seen alive in 1898.

Most of the lizards along our borders are well known. Of 136 species from the United States listed in Hobart Smith's *Handbook of Lizards*, all but three are well documented. One of the three is the smooth-necked alligator lizard, *Gerrhonotas levicollis levicollis* (Stejneger), from western and southern Chihuahua and recorded originally from the "Mexican Boundary," but has not been found along the Arizona and New Mexico-Mexico borders since.

Another is *Bipes* sp., a soft-bodied two-legged worm lizard. The nearest distribution of this genus is represented by *Bipes biporus* at the tip of Baja California where the habitat is damp sandy soil. In spite of rumors reported by Smith, it is doubtful that it ever was found in the mountains of southern

Photo By: R.R. Montanucci, *In* Hodges, W.L. 1995. *Phrynosoma ditmarsi* Stejneger. Rock Horned Lizard. Catalogue of American Amphibians and Reptiles. pp.614.1-614.3

Arizona because there is almost no damp sandy soil in this area. There have been many reports of two-legged lizards in the Chiricahua Mountains in southeastern Arizona, but they consistently turn out to be the local alligator lizard, *G. kingi* (Gray), a slender lizard with tiny legs and a snake-like movement.

The mystery involving the third, Ditmars' horned lizard, could not be solved so easily. Two collections of "*ditmarsi*" were made in 1890 and 1897, for a total of three specimens and none had been found since, in spite of the efforts of many professional and amateur herpetologists, including myself. Trips through back country in Sonora in my well-traveled pickup camper "El Ghosto Blanco" produced nothing more than a few specimens of the regal horned lizard, *Phrynosoma solare*, along the valley roads. But the quiet old towns, each with its central plaza, church and adobe houses, looking as they did when missions were first established in the late 1600s, made the trips worthwhile.

The country is relatively unexplored by biologists and *ditmarsi* could occur anywhere. The roads, all narrow, winding, gravel or merely two ruts, skirted vast canyons, cottonwood lined rivers, outcrops of rhyolite and volcanic plugs standing

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UPCOMING EVENTS

Old Rip Festival:
September 20, 1997: 9am-5pm
Parade 10:00am, All-day Festivities
Eastland, Texas
See page 22 for more information or
Call Bette Armstrong for more info: 254-629-3976

Wildlife Expo:
October 4 and 5, 1997
4200 Smith School Road
Texas Parks and Wildlfe Dept. HQ
Call Bill Davis for more info: 512-442-4995

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Third Horned Lizard Conference: A Wonderful Feast

By Clare Freeman

The HLCS held its national conference in San Angelo, Texas, May 16-18, and it was truly a feast. The banquet began with appetizers Friday evening when we had an open house for the public as well as those registered to attend the conference and happily enough some of those drop-ins liked the menu so well that they paid to come to the big meal. There was plenty of food for thought at the sessions on Saturday. The guests were welcomed by Carolyn Todd from the Texas Chapter and by Lester Milroy, the national president of the Society.

Following a brief business meeting, the courses were served. Dr. Richard Montanucci from Clemson University provided the first course with an introduction to each of the living species of horned lizards including their distributions, what is known of their habitat requirements and of their reproductive biology, and how they are currently thought to relate to one another. He discussed the impact of human activities on horned lizards, especially those in some peril such as the flat-tailed horned lizard of far southwestern Arizona, southeastern California and adjacent parts of Mexico.

He was followed by Trina Guerra from Texas A&M University in College Station who presented the results of a genetic analysis of the Texas horned lizard, once widely distributed across Texas but now almost absent in the eastern part of the state. The purpose of the research was to determine whether lizards found in different regions of Texas are genetically distinct. DNA sequence data indicated that individuals from around the state have differentiated little from one another but are significantly different genetically from populations of the Texas horned lizard in western New Mexico. This research was supported in part by a grant from the HLCS.

A Few Conference attendees: Jim Armstrong, Rich deRobles, Bette Armstrong, Mary Lynn Wisdom, Larry Wisdom, Chip Ruthven, Gaspar Holland, Roger Repp, Carolyn Todd, Bill Brooks, Clare Freeman, Stanley Parker, Trina Guerra, Noah Holland, Abraham Holland, Bill Davis, Richard Montanucci. Photo By Sandra Holland.

Lee Ann Johnson Linam from the Texas Parks and Wildlife Department presented Texas Horned Lizard Watch, a new program designed to gather long-term data on trends in Texas horned lizard abundance and distribution within the state. This program offers all of us a hands-on chance to contribute to the conservation of *Phrynosoma cornutum*. The watch will gather data on abundance of harvester ants, imported red fire ants, and trends in land use as well as standardized measures of horned lizard abundance (see p. 10).

Chip Ruthven, also from the Texas Parks and Wildlife Department, discussed the demographics of the Texas horned lizard population on the Chaparral Wildlife Management Area in South Texas from 1991 through 1996. In this period over 1000 individuals were captured and marked. May was found to be the most active month but horned lizards have been caught in every month but January. The most active period is April through July. Adult sex ratios are skewed toward females (65% of captures). Juveniles averaged 32% of the population but fluctuated from 13% in 1992 to 45% in 1994. Yearly population density estimates range from 1 horned lizard per 9.4 acres in 1991 to 1 horned lizard per 4.3 acres in 1994. The longest interval between captures was 4 years 3 days for an adult female estimated to be at least three years old at first capture.

Wendy Hodges of the University of Texas at Austin described determining the distribution and eastern limits of the range of the flat-tailed horned lizard in the Yuma desert of southwestern Arizona. This species, *Phrynosoma mcallii*, has been proposed for listing as threatened by the US Fish and Wildlife Service. Delineating the range is necessary for listing and for designation of critical habitat for this lizard. Current assessments of remaining quality habitat for the flat-tail show that over 30% of the Arizona range is completely gone and at least 51% of the California range has disappeared. Surface disturbances threaten large sections of remaining habitat.

Roger Repp of the Tucson Herpetological Society continued the discussion of the plight of the flat-tailed horned lizard and the litigation involving the listing of the species as threatened. Participants in the suit against the USFWS include Mr. Dale Turner, the Defenders of Wildlife, the Tucson Herpetological Society and the Horned Lizard Conservation Society. Mr. Repp made an eloquent appeal for help on behalf of the flat-tail and received a generous response from

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HLCS OWES SPECIAL THANKS TO THE FOLLOWING PEOPLE FOR THEIR ASSISTANCE:

MARION SZUREK
DON ICKLES
REGION XV EDU. SERVICE CENTER
JOHN CULBERTSON
MARY ELLEN ASTUDILLO
SHANON BIGGERSTAFF
RICH DEROBLES
SAN ANGELO STANDARD-TIMES
HOLIDAY INN
A CATERED AFFAIR

AND HLCS COORDINATORS:

CLARE FREEMAN
BILL BROOKS
WENDY HODGES
CAROLYN TODD

A Wonderful Feast ... continued from page 3

those in attendance at the conference.

A pleasant diversion from this feast for the mind was enjoyed at a barbecue at San Angelo State Park Saturday evening. Dr. Herbert Hinckley was the featured speaker and he described the transformation of the ten caliche covered acres of an abandoned drive-in movie theatre he bought in Littlefield, Texas, into a thriving horned toad sanctuary that exists today. Dr. Hinckley emphasized he uses no pesticides or herbicides. This year he saw his first horned lizard out of hibernation on March 15.

Following Dr. Hinckley's talk, a horned toad hunt was organized and at least one horned toad was found. The exciting find was a rattlesnake which was captured and handled safely by Chip Ruthven. It was released after all who were interested had a chance to take a close look.

The feast resumed Sunday morning with a presentation by Lester Milroy, HLCS national president, on ebb and flow in populations of the San Diego coast horned lizard in southern California. Horned lizard populations vary in a pattern of cycles of fluctuation throughout their ranges. These cycles are related to variations in flowering plants and insect activity which in turn are influenced by variations in rainfall and temperature. Habitat loss and fragmentation due to agriculture and development can lead to isolation of populations and cause the fluctuations to become more pronounced with dramatic effect in areas of low or moderate horned lizard population density.

Larry Wisdom from Blooming Grove, Texas, described a method for making realistic horned lizard models from preserved specimens in university or museum collections. The models have a high tolerance for abuse and sufficient detail for educational purposes and identification displays. Displays of the models were available for examination. Especially interesting were the models of the species found only in Mexico and unfamiliar to most of us.

And finally a most marvelous dessert was provided by HLCS members who on their own are involved in promoting the cause of horned toads by educating and informing the public in Texas. This may have been everybody's favorite part of the feast.

Sandra Holland from Pleasanton, Texas described the activities of her sons Noah and Abraham (AKA The Traveling Toads and Toads II) over the past few years. In addition to developing a program complete with horned toad costumes to take to schools, they were responsible for getting the Texas Horned Lizard named the state reptile and are currently working on getting a horned lizard postage stamp.

Bette and Jim Armstrong from Eastland, Texas, have developed L'il Rippy, a horned toad sewing pattern in honor of Old Rip, Eastland's most famous native son. The story is that Old Rip, a Texas horned lizard, was placed in the cornerstone of the county courthouse and was removed alive in February, 1927, 31 years later when the courthouse was torn down. Bette is determined to keep the memory of Old Rip alive by promoting school and community activities about horned toads; and to celebrate the anniversary of the opening of the courthouse cornerstone this year, she got Gov. George Bush to proclaim Eastland the Horned Toad Capital of Texas. She later presented him with a stuffed L'il Rippy.

Joann and Don Merritt from Midland, Texas have enlisted the aid of their grandchildren in producing an educational program about horned toads which they present in schools and other organizations and clubs. For children, they created a game to illustrate the impact on horned toads of factors like predators and automobiles. One of their grandsons composed a horny toad rap suitable for all ages, and we enjoyed performing it. Mention must be made of their slides; we were treated to many wonderful slides over the weekend and the Merritts had some of the best.

The Horny Toad Rap

Now the Horny Toad is a Real Cool Dude,
He never seems to ever change his mood.

The only time the dude ever loses his cool
Is when he fears for his life an that's his rule.

The the Horny Toad will do a special trick,
He'll aim and shoot blood from his eye, real quick.

If you stop to watch a Horny Toad eat red ants,
Better stomp your feet, they might crawl up your pants.

A Horny Toad's proper name just happens to be
Texas Horned Lizard! He's A Texas Dude!
Same as you and Same as me!

Election Results

The following candidates are our new National Board of Directors:

President	Scott Henke
Vice President of Research and Recovery	Richard Montanucci
Vice President of Member Services	Gasper Holland
Treasurer	Clare Freeman

72 Members voted, 55 for Scott Henke and 17 for Lester Milroy for President. I encourage our members to write each new board member if you share an interest in helping serve on any committees. We particularly need help for Research and Recovery and local issues affecting individual Chapters. Texas Chapter members should contact Sandra Holland, and Southern California members should contact Lester Milroy for information on what you can do. We look forward to the new Board's two year tenure.

Phrynosomatics Editor Stepping Aside

Photo by Roger Repp

Phrynosomatics Readers:

I apologize for the delay in this issue. I fully intended to complete it for the National Conference in May, however the last minute demands of the conference and also having to run the elections prevented me from meeting my own deadline. I apologize to writers for asking for articles ASAP only to have them languish on my desk while other issues took precedence. This only exemplifies the need for more active individuals in the organization so not just a few are doing the many important things to keep the organization flowing.

I have served as editor for this newsletter since 1994. Due to increased demands on my time to finish my doctorate, this will be my last newsletter. No one has yet to stand up and replace me, but I hope someone will take over this vital task. I regret not having the time to continue this endeavor. I thoroughly enjoy doing it, but if you are among the many folks tired of not receiving a regular newsletter, you will welcome the change, and should step up to help fill this void. I appreciate the patience many of you have shown over the last six months and hope HLCS will be better served by a new editor.

I hope the length of this newsletter, the largest one HLCS has published, will help make up for the delay. With the advent of a new National Board of Directors, it is time for fresh ideas of a new editor. Thanks for all your letters and comments, I will miss them!

Horned Lizard Surveys: Now I believe....

HLCS members have traveled the great state of Texas to survey various properties for horned lizards. Many of us go to fulfill that personal satisfaction of seeing the wonderful lizards in their natural habitat.

On June 10, 1997, HLCS representatives Clare Freeman, Rachel Freeman, Doug Sofer and myself went on a survey for a different reason. We were going to remove horned lizards from a property in Kenedy, southeast of San Antonio. We do not remove horned lizards as a rule, but this was an unusual case in which the owner was remodeling extensively and was tearing up the land for new plumbing, spraying pesticides and preparing the yard for a "nice" green lawn.

Over the winter, Carolyn Todd had communicated with the owner who kept digging them up from their hibernacula as he was fixing the house plumbing. Concerned about harming an "endangered" species, HLCS was asked to lend a hand.

I expected, if lucky, we would find maybe a dozen (I had been told 9 were dug up during the winter). We were busy all day and collected 75 horned lizards!!! I have never seen so many in one place at a time. They were pouring out of our containers. We could not open them without the chance of 5 or 10 making a run for it!

In my travels around the state, reading letters from our members and talking to many Texans, I have heard time and again how people would see horny toads "all over the place" while they were growing up. Well, I never believed them.... until June 10, 1997. I have been converted! I now believe it is possible that so many horned lizards could be in one place.

I am terribly jealous of the landowner who asked us to remove those lizards from his property. How lucky he was to have horny toads crawling all over the place! And, why didn't he want to try to keep them around?!? Well, we moved the lizards a very short distance (circa 5 miles) to his sister and brother-in-law's ranch. It was a strange experience, indeed, not one I want to repeat. Well, I would love to see 75 horned lizards in a day, but I don't ever want to move them from their home again. We must try hard to keep habitat in tact and be gracious caretakers of the land we are fortunate to share with such wonderful animals.

You never know when an opportunity like this may come along, it's a rare event, becoming more rare every year as horned lizard habitat continues being converted to houses, cotton fields, parking lots, etc. I have yet to go on one of these surveys and not see a horny toad, but I must drive far away. If you would like to become part of our survey team and experience the wonderful event of seeing horned lizards in their native habitat, send us a postcard with your name, telephone number and address. Let us know if you can travel anywhere in the state, or can only go within a short distance (example within 100 miles of your home). We would love to have you join us for the day.

SOUTHERN CALIFORNIA CHAPTER NEWS

News from Lester Milroy, SCC President

The research project with the San Diego Coast Horned Lizard, *Phrynosoma coronatum* of Southern California is yielding some astonishing information. Our project in California is going well and radio-tracking is showing us where the horned lizards go in the winter as well as what they do. The micro transmitters stay with the horned lizards for about 5 months and then are replaced with new ones. The first group of horned lizards have been followed for one year. They have been released from their hi-tech gear to go about their normal life without being pestered by a group of scientists wanting to know their every move. A second group has now been "drafted" to increase the sample size for comparative data. The horned lizards are monitored weekly to "see" where they go, what they do and the places they "like" the best. Do they like grassland habitat, or chaparral, or coastal sage scrub? When do they move into shady areas? When they get hot, right? Well, how hot is too hot for horned lizards? We are finding out. And what is a San Diego Coast Horned Lizard's favorite meal? Ants, right? But what kind of ant? When do baby San Diego Coast Horned Lizards begin to hatch? What do the baby horned lizards eat? When does the mating cycle begin for the San Diego Coast Horned Lizard and what is the peak time of this cycle? We are finding this out in our studies. Stay tuned and we will let you in on these secrets as we learn them.

Our Horned Lizard Display is nearing its completion thanks to the diligent and outstanding work done by Larry Wisdom. His technique of casting preserved horned lizards, donated to this project by museums and other sources, will be a one-of-a-kind display that will be an invaluable tool for us to teach about the uniqueness of the "critter" known as the horned toad. We are short one species from the United States and two species of the Mexican horned lizards. This display will be unveiled at the HLCS Conference in San Angelo, Texas on the 17th and 18th of May. I want to say, thank you very much Larry Wisdom for the excellent work you are doing for the society. We really appreciate it a lot.

There is news on the Flat-tailed Horned Lizard action that sounds very promising. The action that has involved the HLCS concerns the Flat-tailed horned lizard and its proposed protection under the Endangered Species Act. It was proposed for protection in 1988 and was rejected, even though scientific research indicated that the horned lizard was in decline. Further studies accented the population decline and the need for protection. In 1992, the Flat-tailed horned lizard was again proposed for protection. One year after the process was started, there was still no ruling, for or against protection. The Endangered Species Act states that there is a one year time frame to allow review of the research and granting or denying listing. That time frame has long past without any ruling. The Flat-tailed horned lizard population is declining and the research indicates this information very well. A lawsuit was filed by Defenders of Wildlife with HLCS and the Tucson Herpetological Society to address the issue of the law and the time frame the law prescribes.

The latest on the Flat-tailed horned lizard issue is that the case went before a Magistrate Judge in Flagstaff, Arizona on May 1st and it seems the Magistrate is not too happy with the U.S. Fish and Wildlife Service for its failure to comply with the guideline of the ESA. Roger Repp, of the Tucson Herpetological Society, was at the hearing with Diane Connolly, the lawyer for Defenders of Wildlife. Roger reported that Judge Verkamp told the USFWS that "It is clear that you guys (USFWS) need a judicial boot in the backside!" Roger also reported that the attorney for the USFWS, Kelly Mofield, told the Magistrate that "We are extending our comment period from May 9th to June 9th." This, as reported, did not sit well with the Magistrate Verkamp, who then stated to the attorney "That ticks me off! You guys (USFWS) can't continue to arbitrarily change deadlines." So it sounds like the Magistrate is aware of the law and wants it followed like it should be followed. We are hopeful that we will get the Flat-tailed horned lizard protected with at least a Threatened status and hopefully a habitat protection issue will be part of the status (see next page).

For your information concerning the Flat-tailed horned lizard: The Flat-tailed horned lizard, *Phrynosoma mcallii*, has the smallest range of all of the horned lizard species in the United States. Their range is in the southeastern part of Southern California and southwestern part of Arizona. We will try and have more information in future articles in *Phrynosomatics*. Though we are focused on a specific animal, our goals are far reaching in protecting the valuable natural resources for which we have been granted guardianship. We can make a difference.

Phrynosoma taurus photo by Harry Greene.

Flat-tailed Horned Lizard Update

By Dale S. Turner and Wendy L. Hodges

Legal maneuverings continue in the suit to force legal protection for the Flat-tailed horned lizard (FTHL), *Phrynosoma mcallii*. The initial group of plaintiffs - HLCS, Tucson Herpetological Society, Defenders of Wildlife, and myself (D.T.) - has been joined by the Angeles Chapter of the Sierra Club and the Desert Protective Council. Members of those groups share our concern that the FTHL is in serious trouble and has been poorly treated by the federal land managers who control its destiny.

Our outstanding pro-bono (i.e., unpaid) lawyer, Diane Connolly, filed a series of legal briefs over the last year showing that the U.S. Fish & Wildlife Service has been dragging their feet on final listing of the species under the Endangered Species Act, despite a clear deadline that came and went nearly two and a half years ago.

The government's excuse has been they had higher listing priorities, went through a year-long moratorium on listing actions and have been chronically underfunded. Our response is that the deadline passed four months before the start of the moratorium, and the moratorium ended in April 1996, over one year ago.

On 1 May 1997, the initial lawsuit went to court and the judge agreed with the plaintiffs that the Fish and Wildlife Service had been dragging its feet about listing the species. The judge granted the Service 60 days to make a decision.

In addition, the Fish & Wildlife Service has had and used resources to work on a complex plan which they hope will prevent the need for giving legal protection to the species. Furthermore, they have clearly delayed final action on the proposed listing specifically to allow completion of that alternative plan.

That plan, called a Conservation Agreement, is a voluntary arrangement between ten federal and state agencies to give limited protection to the lizard in a subset of its remaining U.S. distribution. While an improvement over the status quo, the plan does nothing to recover habitat the lizard has already lost and falls far short of

the legal protections that would be provided by listing the species. Several analyses of the plan pointed out that it allows further degradation and fragmentation of the remaining FTHL habitat, while legitimizing the ongoing destruction caused by recreational off-road vehicle use of federal lands (public lands). The plan also provides no arena for public input or supervision. In June, 1997, the Plan was reportedly signed by the respective government agencies.

Our case has been bolstered by recent court rulings in several other cases, the most similar one involving the Barton Springs Salamander in Austin, TX. In that case, a judge ruled that a proposed Conservation Agreement is not sufficient to avoid listing a species, explaining: "The effect of the measures articulated in the Conservation Agreement on the species is speculative. There are no assurances that the measures will be carried out, when they will be carried out, nor whether they will be effective in eliminating the threats to the species."

On 15 July 1997, the Service published its finding on the proposed listing package. The Service chose to withdraw the listing, claiming the threats to the species had been overstated in the original proposed rule and other threats no longer exist. The Service stated in the federal register that, "a conservation agreement will ensure further reduction in threats, and data indicating a population decline are inconclusive," yet they used the same inconclusive data to state that off highway vehicles do not pose a significant threat to the species.

The plaintiffs are currently deciding whether to continue with a second lawsuit regarding the withdrawal to list the species. The published ruling is riddled with inconsistencies about what the data say and the conservation agreement, while its intentions are good, is simply a poorly implemented document based on political climate and motives. While a group of scientists worked hard to direct the Plan in appropriate measures, the signatories chose to ignore some very important issues they raised and only chose the facts that served their interests.

The HLCS and other plaintiffs must now decide whether to continue the path they started, to protect the Flat-tailed horned lizard and its habitat for the future through the course of law, not politics.

If you would like to read the U.S. Fish and Wildlife's ruling, it was published in the Federal Register, July 15, 1997, Volume 62, Number 135, pp. 37852-37860. You can also read it on the internet: http://www.epa.gov/fedrgstr/EPA-SPECIES/1997/July/Day-15/e18688.htm

Public Information Report: Sandra Holland, VP-Public Affairs

<u>**BOOKS AND ARTICLES.**</u> Wilderness Walkers: Naturalists in Early Texas (1987) by Betsy Warren, mentions in the section about Thomas Drummond that he collected various fauna, including one horned lizard to send to scientists in Britain.

Drummond lived in the early 1800's. There is also a drawing of a horned lizard (*P. cornutum*) on page 93 in the section on Lincecum. Of Gideon Lincecum, the author writes, "He spent his days in the woods and fields observing ants, tarantulas, spiders, bees, butterflies, scorpions, horned lizards--everything that crossed his path." A picture of a Harvester ant (*Pogonomyrmex barbatus*), which Lincecum named, is on p. 89.

Of Ferdinand Roemer, the book says, "A good speller, he easily wrote the long scientific names in Latin, such as *Pelecanus americanus* (long-billed pelican); *Phrynosoma orbula reseavigm* (horned lizard); and *Celtis crassifolai* Lam (hackberry tree)" and "Landing on the island of Galveston, he spent seven weeks collecting plants from the land and sea. Large numbers of crabs, mussels, jellyfish, sea urchins, and a horned lizard were shipped back to the Academy of Science in Berlin."

In A Picture Book of Animals series for grades 1-4, the Desert Animals book has a picture of a horned lizard on its cover, shared with an owl. Having seen the book only in a catalog, I don't know what treatment the horny toad may have inside the covers.

The World Book Encyclopedia article, "Horned Lizard", mentions the nicknames "horned toad" and "horny toad", but has nary a word about "horned frog."

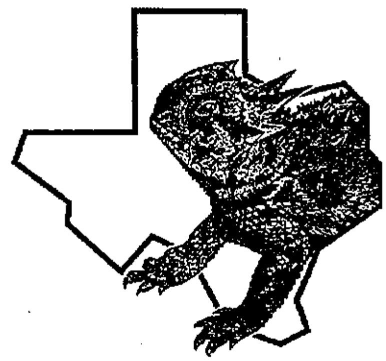
Find the Mistakes Science Adventures: Remarkable Reptiles by Julie Koerner, has a horned lizard on the cover (among other animals) wearing either earmuffs or earphones! It is a coloring book.

<u>**PUBLISHING.**</u> Dr. Wade C. Sherbrooke, Director of the American Museum of Natural History Southwestern Research Station in Portal, Arizona, and author of the book, Horned Lizards: Unique Reptiles of Western North America, has asked the HLCS to financially support a new edition which will include the Mexican species.

<u>**FESTIVALS.**</u> Members Noah, Abraham and Sandra Holland were at the Texas Children's Festival of the Institute of Texan Cultures in April, representing the Texas Chapter. A local origami artist, Bill Knod, developed a pattern for horned lizards and showed everyone how to do it at the booth. The San Antonio Express-News article about the festival said, "The Horned Lizard Conservation Society made striking origami (paper creations) Texas horned toads."

<u>**EXHIBIT.**</u> The Institute of Texan Cultures in San Antonio currently has on display four watercolors by Navajo artist Shonto Begay from his book, Ma'ii and Cousin Horned Toad.

<u>**AREA CODES.**</u> If your area code is changing, please notify the HLCS. Mine is changing to 830 in July. Phone is 569-4821 and fax is 569-2580. I would like to receive information about what the media is saying about our little reptile.



<u>MEDIA COVERAGE.</u> Mary Moewe of Fort Worth called for information about the threatened status of the Texas species for the "Ask Ed Brice" column in the Life Section, Fort Worth Star-Telegram. It may have been published about the time of our annual conference.

<u>**OTHER INFO.**</u> We now have the resolution declaring the Texas horned lizard the official State Reptile framed and hung in our living room. Our visitors to our homebased business like to study it.

The gifted and talented students at Enge-Washington Intermediate School in Groesbeck, Texas, sent a questionnaire about the horny toad. Their questions were, "How many horned toads are left in Texas?", "Do you know how many horned toads are left in the world?", "Did the fire ants kill most of the horned toad?" and "When did the horned toads become endangered?"

A man from a kite company called about having our logo put on one of the endangered species series.

Texas Chapter Elections!!!

Just when you thought elections were over!!!! The Texas Chapter of the HLCS is holding its elections for Chapter Officers. Nominees are requested by Texas Chapter Members. Please send your nominee to: HLCS: Texas Chapter Elections: PO BOX 122: Austin, TX 78767. Voting will take place at the annual Horny Toad Appreciation Day in Eastland Texas, or you can mail in your nominee / vote. The following offices are available in the Texas Chapter: President, Treasurer, Vice President for Education, Vice President for Public Affairs, Marketing / Catalog Sales, Fundraising, Secretary / Historian. The following persons will be considered for the posts, but others are welcome to join! Carolyn Todd, President; Clare Freeman, Treasurer; Sandra Holland, VP for Public Affairs; Bill Davis, Catalog Sales: all other positions are vacant and in need of leadership. Please join the active ranks now!

TEXAS CHAPTER NEWS

From the scratch pad of Bill Davis.... VP-TX Chapter Sales

Greetings to our membership! For starters, I have decided to give up my polyester leisure suit look (not that it wasn't a babe magnet) and have decided to become a Horned Toad Wrangler. Yes, with months of practice, I can now lasso a Horny Toad at a full gallop. They put up a fierce-um fight but once measured they are returned to where they were wrangled.

For those of you who missed the San Angelo convention it was a great one. San Angelo was supportive as always giving us publicity to help further our cause. Met lots of new folks and generally had an informative yet good time. I give a hearty thanks to **ALL** the speakers and guests as these folks are the backbone of our organization. We cannot understate our commitment to saving and protecting the current populations and thus insuring *Horny Toads* for future generations.

Wrangler Bill

CLEAR YOUR CALENDARS!!! There are several big time events coming up. In addition to our continued work in San Angelo there will be an Old Rip festival in Eastland Texas on Sept. 20th. Also, we will have our booth at the Austin Expo on Oct. 4th and 5th. The Expo is put on by the Texas Parks and Willife Department and is a **really** big event. There is all kinds of family fun and the turnout is in the tens of thousands. Everything concerning outdoor hobbies, sports and education is represented. The best advice I can give is to get there early. It will be held off East HWY 290 from IH 35. It's a big place, you can't miss it.

Once again, thanks to our members for their continued support and hope to see you at some of the upcoming events.

Rollover Fish Pass: Cut Through the Gulf Causes Habitat Loss for Humans and Horned Lizards - By Alan McNeill

-Editor's Note: The following information comes from Attorney, Alan McNeill who has corresponded with HLCS over the last several months. Please contact him at: 479 Pine Street, Beaumont, TX, 77701, 409-833-6474 if you have any information or would like to help.

I am involved in major litigation over Bolivar Peninsula, which at one time had many horned lizards in its environs. Maybe, they are still here, although we have not seen them in many years.

The purpose of the litigation, filed in both State and Federal Courts, is to close the Rollover fish pass, which is eroding the beach, vegetation, and other wild life habitat at the rate as much as 30 feet a day. Hundreds of acres have been washed into the Bolivar Peninsula and deposited in the bay and intracoastal waterway. The giant sucking sound you hear around here is the Rollover fish pass.

I have a huge volume of material on the Rollover Pass, a man-made cut -in the Bolivar Peninsula, and I will enclose a small part (pages 15-16). I recently attended the Texas Coastal Issues Conference put on by the General Land Office (GLO), during two days in Corpus Christi. One of the main speakers was Dr. Robert Morton, a geologist and a member of the Geology Department at UT, and involved with the Department of Economic Geology. He has done studies on the Rollover Pass since 1974, and points out repeatedly how devastating it has been. As far as I know, going back to 1958, there is not a single report of any expert, engineer, academic, or otherwise that says that the Cut is a good thing. Even the Corps of Engineers is offended by it (mainly because it washes sand into the Gulf Intracoastal waterway).

The Cut was strictly a State project urged by a local private fishing club, and managed through politics to get the Parks and Wildlife people involved as well as Galveston County.

The Rollover Fish Pass Story (pages 15-16) is what I distributed at the Texas Coastal Issues Conference. Next year, the Texas Coastal Issues Conference will be in Galveston. I hope that you and HLCS members would attend. It is a wonderful exchange of ideas, and there were approximately 500 people in Corpus including all kinds of folks.

If you have any questions about what has happened there, please feel free to call. From the front property owners standpoint, no one else has sought to protect the beach. In our law suit, we are asking that it be renourished and restored, and that this Cut be closed. We estimate that there are several million cubic yards of beach sand that have been washed into Rollover Bay through this Cut. We know that the GLO took coring, and at one point the sand was several feet deep, where before there was only bottom mud.

Playing With Horny Toads: Texas Horned Lizard Watch

By Clare Freeman

When Larry Wisdom was a little boy growing up in Texas in the 1940's and 1950's, he built corrals in the dirt and had horny toad round-ups. He grew up to be a chemist and now he is a grandfather and he still plays with horny toads, but he uses his chemistry background to make marvelously realistic models of horned toads to use for educational purposes.

When Bette Armstrong was a little girl growing up in Texas in the 1950's she also played with horny toads and she liked to sew. Today she and her husband, Jim, have retired to Eastland, Texas, and Bette plays with stuffed horny toads now. She has created a sewing pattern based on Eastland's famous Texas horned lizard, Old Rip, and donates a percentage of the proceeds from the sale of L'il Rippy patterns to HLCS.

The Holland brothers, Noah and Abraham, from Pleasanton, Texas, have only recently left off being little boys; but they played as horny toads instead of with horny toads as Larry and Bette were privileged to do.

Things have changed a lot in the years between Larry and Bette and Abraham and Noah; and where horny toads were once abundant enough for kids to play with, today they are either scarce or have disappeared entirely. And state laws to protect the lizards prohibit the kind of free play that once was possible.

Now the Texas Parks and Wildlife Department is offering us all a new way to play with horny toads and at the same time to help them by getting involved in some hands-on conservation research. The game is called Texas Horned Lizard Watch and all it takes to play is to call Parks and Wildlife at 1-800-792-1112, ext.7011, and request the Texas Horned Lizard Watch instructions and data sheets. They can also be obtained by written request to:

Endangered Resources Branch
Texas Parks and Wildlife
4200 Smith School Rd.
Austin, Texas 78744

Start playing with horny toads again!

Texas Horned Lizard Watch: Offering Texans who care a way to "get involved" in conservation research.

By Lee Ann Johnson Linam

Everyone loves horny toads, but for many Texans the fierce-looking yet amiable reptile is only a fond childhood memory. Once common throughout most of the state and parts of Arizona, New Mexico, Oklahoma, Kansas, Arkansas, Louisiana, and Mexico, the horny toad (or Texas horned lizard) has disappeared from many parts of its former range. Now, through participation in the Texas Horned Lizard Watch, you can take part in an effort to better understand why it is doing well in some locations and what factors may have contributed to its decline in other areas.

A survey conducted by the Horned Lizard Conservation Society in 1992 confirmed what many people's personal experience tell them: that in the last 30 years the horny toad has essentially disappeared from the eastern third of Texas. In addition, many respondents reported that the horned lizard was increasingly rare in Central Texas. Only in West Texas and South Texas do populations seem to be somewhat stable.

Many factors have been proposed as culprits in the disappearance of the horny toad, including collection for the pet trade, spread of the red imported fire ant, changes in land use, and environmental contaminants. Since 1967 horned lizards in Texas have been protected from the pet trade, but for the most part the decline of the Texas horned lizard has remained a mystery with little understanding of the management actions that could be taken to restore it.

That lack of solutions is what prompted Texas Parks and Wildlife to seek the public's help in watching out for the horny toad. As a participant in Texas Horned Lizard Watch, you will be "on-the-ground" collecting data and observations about the population of horned lizards on your property. The data you provide to Texas Parks and Wildlife may then shed light about patterns of decline or stability and thus finally offer some management alternatives for people wishing to maintain or restore a horned lizard population. In the process it gives Texans who care about horny toads a way to help.

Data sheets and maps for Texas Horned Lizard Watch are available from:

Endangered Resources Branch
Texas Parks and Wildlife
4200 Smith School Road
Austin, TX 78744
1-800-792-1112 ext. 7011

Photo by W. L. Hodges

stark above the landscape. They wound through narrow canyons with jungle-like foliage and bright-plumed trogons, up dry washes and over rocky mesas. Some places required a second run to get up the hilly roads, even in compound low.

In broad, sycamore-shaded Guadalupe Canyon, at the junction of the three states of Arizona, New Mexico and Sonora, I visited with John Magoffin, a local cattle rancher. He assured me he had never seen a horned lizard in Guadalupe Canyon, nor in the adjacent Sierra San Luis.

From the Trail Dust Zoo near Bisbee, Arizona, came rumors that *ditmarsi* had been found by someone from California. Mr. Howard Hamm, a talented western artist and curator of the zoo who has a "green thumb" when it comes to animals (all of his animals seem friendly!) assured me he had seen *ditmarsi* among lizards brought to him. But later, when my hopes were raised, he decided that actually he hadn't seen any. While looking over the wide range in color of the *douglasii* in his cages, an on-looker commented, "You seem to know something about lizards." I admitted a moderate knowledge. "Well, I've seen one like that," he said, pointing at a *douglasii*, "reddish and flat, but with no horns. My boy picked it up at the Sunnyside Church in Douglas a few years ago"

This was exciting news, but when reconsidered and a second look taken at Douglas, it was discarded. Douglas lacked the necessary habitat.

Tim Walker, an amateur herpetologist from Paradise, Arizona, had made many hiking trips in the mountains below the border in search of snakes and lizards. When it comes to locating snakes, Tim is one of the best and most persistent of the herpetologists, but he had no success in locating the elusive *ditmarsi*. He and I spent many hours speculating on the habitat of *ditmarsi*, and came to the conclusion that it must be on one of the isolated mountain ranges—but which one?

Dr. Charles H. Lowe, a well-known herpetologist of the University of Arizona at Tucson, has been on the lookout for *ditmarsi* since the 1950's. He obtained a large collection of horned lizards from a mining engineer, Arthur Ruff from Cananea, Sonora, but they were all the mountain short-horned species, *P. douglasii* (Bell).

During the 1890-91 Lumholtz Archaeological Expedition, sponsored by the American Museum of Natural History (AMNH), F. Robinette collected the first specimen of *ditmarsi*, which languished for many years unidentified and with no locality in the ASH herpetological collections. In 1968, a graduate student of Lowe's, Mike Robinson, began an analysis of the first part of the Lumholtz expedition, and in 1969 received a grant from the Arizona-Sonora Desert Museum to aid his search for the missing lizard. During his visits to the Southwestern Research Station (SWRS), we shared information accumulated separately and speculated whether *ditmarsi* was a valid species or might even be extinct. Mike tried following the guessed-at route of the Lumholtz expedition without success in finding the lizard.

The problem has been that the exact route of the expedition from Bisbee to Fronteras was not indicated by Lumholtz in any of his articles. His field notes were not on file at the AMNH and local newspapers of the 1890s didn't record the arrival and departure of the expedition. After searching through published reports it was possible to piece together some localities and dates given by J. A. Allen in his list of mammals and birds collected on the expedition. Although there were some errors in those records, a tentative route was established.

The expedition left Bisbee on September 6 and headed southwest to Greenbush Ranch (the present-day Stevenson Ranch) near Palominas, Arizona, crossed the Mexican border September 15 at the San Pedro River to the Mexican Aduana (Customs Station at San Pedro just south of Palomitas), and then turned east along the border where they stopped at Trincheras (September 20), Santa Barbara (September 21) and Leoncita (September 23). These small villages are uninhabited today and not on recent maps.

They probably stopped at Ojo de Agua at the north end of the Sierra de los Ajos and passed through the mountains. After reaching the "Fronteras Highway," they traveled south, arriving in Fronteras on September 23, and in Oputo (also spelled Opoto) on October 22. Although the lizard collected by Robinette had no locality nor a date available, we speculated that "Northern Sonora" would indicate an area north of Oputo, especially since the expedition didn't leave there until November 25 or so, late for horned lizards to be active.

The second and third specimens collected in 1897 had been turned over by a "Mr. Eustace" to Raymond L. Ditmars, then Curator of Reptiles in the New York Zoological Park. Ditmars kept one specimen alive for about a year and commented on its peculiar habits in a letter to Dr. Leonhard Stejneger, Curator in the Museum of Reptiles and Batrachians at the United States National Museum (USNM). This letter of October 12, 1905 was located in the USNM archives by Dr. George Zug, Assistant Curator of the Museum of Reptiles and Amphibians. Ditmars wrote, "This little creature used to jump clear off the ground in most clown-like fashion when annoyed, emitting a series of hisses like miniature sneezes."

The lizards were preserved and later forwarded to Dr. Stejneger for identification, and he subsequently described them in 1906 as *Phrynosoma ditmarsi* Stejneger, naming them after his colleague Raymond Ditmars. In his letter to Stejneger, Ditmars wrote, "the most definite locality I can give you for this specimen is 'Northern Sonora, Mexico'." Stejneger gave the type locality as "State of Sonora, Mexico, not far from the boundary of Arizona," elaborating slightly on the data available.

My attempts to locate Mr.

Eustace, or information about him or his descendants failed. A letter to the Douglas Dispatch directed towards old timers, and searches through the Bisbee, Naco and Tombstone newspapers of the 1890s, and through the Arizona Historical Society files, and even telephone directories, produced no mention of his name.

At this point it became obvious that additional information was necessary before the species could be recovered. So far efforts had produced only frustration, stronger leg muscles and worn out vehicles. For such a scarce lizard, it was impractical to search over so wide a country. Even in the Chiricahua Mountains, its relative the short-horned lizard, *P. douglasii*, was not easily found. Because of the similarity of the two species, Mike Robinson and I conjectured that it might be a mountain species rather than a lowland species like the Texas horned lizard, *P. cornutum*, or the regal horned lizard, *P. solare*.

After Mike and I had almost given up hope of finding the lizard, another possibility arose. While identifying the stomach contents of some local lizards for a student, Carol Simon, the solution to finding *ditmarsi* became apparent to me. The stomach contents of the three presented specimens of *ditmarsi* could be studied to identify the insects upon which the lizards fed, determine their habitats and known distribution, and then a summary of the data would identify the type of habitat and locality of *ditmarsi*.

The search was becoming more exciting.

In May 1970 an airmail request was sent to Dr. Richard G. Zweifel, head of the Department of Herpetology at the ASH, for the stomach and large and small intestines of their specimen of *ditmarsi* (AMNH 557). They arrived by return mail.

The stomach contents were removed, washed repeatedly in alcohol and screened into various sizes. I then sorted them microscopically using progressively higher magnification. Many of the specimens were partially digested and in pieces, but a total of eighteen different items were separated: pebbles of andesite, seeds of three species of grasses, and fourteen insects.

This approach was so successful that I sent an immediate request to Dr. Zug at the USNM for the stomachs of the other two lizards. One of the two had been kept in captivity for a year, so only one stomach would be of value. Imagine the concern and consternation when Dr. Zug replied that one lizard had been eviscerated The other lizard was being sent by return mail. The question immediately arose—would Mr. Eustace have removed the stomach of the lizard that had died? Or would Ditmars have eviscerated a lizard that died in the laboratory? The question was pondered apprehensively since one specimen would be useless, the other of great value.

When the specimen arrived by registered mail, excitement charged

the laboratory as I opened the package and one of the three known specimens in the world was unveiled. And as the cheesecloth shroud was unfolded, unveiled it was such an insignificant animal, alcohol soaked, gray, dead over seventy years, the tips of many tubercles rubbed off, the short horns just as Stejneger had described. With some trepidation, the lizard was opened by Ralph Luetke, a volunteer assistant at the Station, and the stomach and intestines removed.

We held our collective breaths as the first slit was made, and out popped gramma grass seeds, *Bouteloua* sp., and Apache harvester ant heads, *Pogonomyrmex apache* Wheeler, the same seed and species of ant as found in the AMNH specimens. The stomach contents were from the Southwest and not laboratory food. We were on the right track.

Then began the process of sorting and identifying. I made the initial identifications and then made the specimens available to specialists, writing almost fifty letters and making an equal number of personal contacts. For instance, the weevils were taken to Karl Stephani an amateur coleopterist (specialist in beetles) in Tucson, then sent to a specialist on weevils for a generic identification, and then on to a person who specialized on the specific genus. Everyone cooperated enthusiastically and, caught up in the spirit of the search, remarked, "Let me know if you are successful."

When sorting was finished, there were thirty different items the lizards had ingested, and of special importance, eight species of ants in one stomach. There were pebbles picked up accidentally by the horned lizard, indicating it had fed upon the ants as they carried pebbles from their nest. There were gramma grass seeds, almost one seed for each harvester ant! The lizard obviously was also feeding upon ants returning to the nest.

No specific identifications were available for the seeds, but several grass specialists hazarded guesses. I spent a day in the University of Arizona Herbarium comparing seeds and narrowed the possibilities to several gramma grasses of one type and to bullgrass, *Muhlenbergia* sp. Roy Snelling of the Los Angeles County Museum studied the ants and returned a summary of the habitats of the eight species. Later, other species were sent to additional ant specialists. Among them was one unique reticulated thorax and part of an abdomen of a ponerine ant, *Gnamptogenys regularis* Mayr, previously known only from Tepic, Nayarit, Mexico. Were we wrong in assuming that *ditmarsi* came from near the border of Arizona?

One next bit of information also directed our attention southward. Dr. Ann Howden of Ontario, Canada recognized the three weevils as identical to an undescribed species of *Pandeletius* collected a few years before by her husband in the southern part of Sonora at Yecora, on a juniper at 7,000 feet.

Each time an identification was

obtained, it meant searches through the literature and of the University of Arizona insect collection for distribution records. Gradually information came in, and a pattern slowly developed. The distribution of most of the specimens showed an affinity for the mountains of southern Arizona or northern Sonora.

Other weevils, tiphid wasps, a male scale, jumping spiders, true bugs and grasshoppers were identified. One of the grasshoppers was *Barytettix h. humphreysii* (Thomas) upon which Dr. Ted Cohn of San Diego State College was working at the time. Its distribution is west of Agua Prieta and Sierra San Jose near Naco, whereas the distribution of a related species, *B. h. cochisei* Gurney occurs east of Agua Prieta. One extremely unusual insect, a true bug with short wings, lateral thoracic horns and a dorsal scutellar horn, was represented by only a few parts. After almost giving up attempts to identify it, I assembled the parts like a jigsaw puzzle, made a composite drawing and sent it to Dr. R. C. Froeschner of the USNM in Washington D.C.

Dr. Froeschner replied immediately that it was very close to a South American genus of largid bug, *Thaumastaneis*, known only from Bolivia and Brazil. It is similar to a local ant-mimicking, brachypterous (short-winged) true bug, *Arhaphe cicindeloides* Walker (which lacks the dorsal spines), a very common largid bug among the dead leaves in oak stands in the Chiricahua Mountains.

In another field, several geologists and petrologists suggested that the tiny pebbles were not adequate for a specific determination. However, the pebbles were described by W. H. Pierce of the Arizona Bureau of Mines as "a finely crystalline igneous rock characterized by plates or tables of plagioclase feldspar and a dark to red brown ferromagnesian mineral of undetermined species. A small amount of magnetic and other unidentified material was present. Quartz was not observed. Based upon spotty evidence, I would suggest that the material is diorite in composition."

Mr. Sidney Williams of the Phelps Dodge Corporation at Douglas, Arizona, felt that these mineral specimens were andesite, a close relative of diorite. He knew the areas below the border, and suggested that two mountain ranges be investigated, Sierra Manzanal, south of Cananea, and Sierra San Luis, near the Chihuahuan border, both of which had extensive deposits of andesite. We were able to eliminate Sierra San Luis because it was east of Agua Prieta and out of the range of the *Barytettix* grasshopper.

It was time to summarize the data. After many hours of discussion over meals, in my office and laboratory, over campfires, retelling the story of the missing lizard to anyone who would listen, and then sifting through their ideas, suggestions, and speculations, plans for the future evolved. Looking over the data, it was possible to come to the following conclusions:

The lizards had been collected in the fall of the year as evidenced by the expedition collections from northern Sonora and probably in the month of September. The seeds, grasshoppers and jumping spiders found in the stomachs had been mature, reconfirming the time of year. The presence of gramma grass seeds, Apache harvester ants, and andesitic pebbles in both stomachs indicated that the lizards were collected in the same area. The soil would probably be sandy red as Ditmars described the color of the live lizard; horned lizards normally blend well with the substrate. The specific habitat had been described by Snelling as "a canyon habitat with a small stream, rocky slopes, grass, oak-juniper, possibly with sycamores on the canyon floor. It looked to me like the lizard was foraging above the streams, between the stream and the sides of the canyon."

Then I realized there had been extensive change in the habitats over the past seventy years—lower rainfall and over-grazing in many areas. Was I studying lizards taken from the extreme edge of their habitats? There were still so many variables that at times I was ready to give up.

The *Changing Mile* by Hastings and Turner describing climatic changes of southeastern Arizona during the late 1800s and early 1900s showed some significant transformations in the vegetation. If similar changes took place south of the border, insect (and lizard) life may have been altered significantly and marginal species such as the horned largid bug, *Gnamptogenys* ant, and the *Pandeleteius* weevil, as well as *ditmarsi*, may have been pushed farther south.

While the identifications of the plants, insects and spiders were being obtained, extensive collections of ants were made in the Chiricahua Mountain area at elevations of 4,160 to almost 10,000 feet to determine the altitudinal distribution and habitat preference for the species found in the lizards' stomachs. Most of these species occurred sympatrically within 4,800 to 5,400 feet on dry hillsides often adjacent to riparian situations.

The key items to locate were the andesite (its magnetic properties made it especially valuable), grasses (conspicuous in the fall), *Barytettix* grasshoppers, Apache harvester ants, *Gnamptogenys* ant, largid bugs, and *Pandeleteius* weevils. With the time of year determined, knowledge of the general area in Mexico and its habitats, and an idea of the mineral make-up of the area, we started serious searches in the field in mid-summer of 1970. The best possibility appeared to be the Sierra Manzanal, one of the two ranges below the border with known deposits of andesite. The mountains at Cananea, nearby, had produced only *douglasii*, and to the east Sierra de los Ajos had been searched briefly with no success. We made several insect collecting trips into northern Sonora for samples of the organisms and pebbles found in the lizards' stomachs. The habitat in which most of the species occurred would likely be the place where *ditmarsi* would be found.

These trips with friends and volunteers from the SWRS required crossing the border with all the hassles involved with Mexican officials over papers for the pickup truck, birth certificates or lack of them, temporary visas, below-age students without written permission from parents, a neat beard ("He's a hippie! "), a German passport, and the often expected *mordida* (the extra pay for "extra service").

The first stop in Mexico would be the *panadería* for a bag of *birotes*, the tasty, hard Mexican rolls, some small but flavorful Mexican bananas, *tamarindos*, dried seed pods with a citrus-acid like flavor, limes for hot limeade or for squeezing over fresh mangos, and bars of *panocha*, a raw sugar for energy food. Then through Agua Prieta, typically lacking direction signs, past the cemetery to the checking station, and then abruptly out into the backcountry—wide open vistas, no power or telephone lines, no billboards, and little fencing.

Maps from the American Geographical Society, U. S. Coast and Geodetic Survey (Aeronautical Charts) and the Secretaria de Agricultura y Ganaderia, Direccion y Meterologia from Mexico City gave little help. They were consistent only in their inconsistencies. Localities on one map were missing or spelled differently on another, altitudes varied considerably in the mountain ranges, which never seemed to be in the same place. Roads which didn't exist were depicted with heavy lines, and good roads not even indicated! Still, the maps were of some value.

Our first destination was the west side of the mountain range we thought was Sierra Manzanal. On a back trail, while we were lunching on *birotes* and mangos, a truck bounced out of the mountains with a load of copper ore. We flagged it down and found we were not in the Sierra Manzanal, but in the Sierra de los Ajos. So back up the road to Cananea, a relatively American-looking mining town, and then south on a different road to our goal.

We checked out each road into the Sierra Manzanal, most of them never having seen a grader or bulldozer, so it meant a slow, rough trip. Five or ten miles per hour is considered good progress. After an hour or so on one narrow road gouged out of the steep mountain side we came to a small cluster of brown corrugated-paper-clad shacks with the usual half-dozen or more small children and their pregnant mothers. We asked about the road and about horned lizards. The road went on for a couple of miles, but as for the lizards, they knew of none in the area. One relaxed fellow said they could be found at Sierra San Antonio to the west, but were very rare. Later, a look at the map showed no mountain by that name.

A couple of miles up the road we parked at a deserted mine and looked over the area. The habitat didn't appear promising except for many of the ants we were looking for. Soon dark clouds, lightning and rain in the distance cut short our stay. Being caught in a cloudburst in this country can mean an unexpected stay of a few days if the roads turn into rivers or quagmires. We returned to Cañon de Evans in the Sierra de los Ajos and drove five miles up a sycamore and oak-lined wash to make camp.

The area was still promising, with the type of habitat described by Snelling and with many of the insects we were seeking, but no andesite. On our way home we stopped in Douglas to see Sidney Williams, a geologist who knows northern Sonora well, and he gave us the directions we needed to get into the Sierra Manzanal.

Our next trip into Mexico took us deep into this mountain range because we picked up a Mexican who was heading for his ranch and showed us new roads. He seemed to know nothing about horned lizards and again we wondered if we could be in the right mountain range. After we dropped him off we located a small stream, cooled off in the water, and took a siesta (when in Mexico, do as the Mexicans do). Some collecting in the area again showed a few of the insects in which we were interested, also some red rock similar to what we were looking for, but no lizards. That evening we camped beneath an old oak and had our usual dinner of potatoes wrapped in aluminum foil and balled in hot coals, *birotes* and fresh cantaloupes. Debris nearby indicated that many years ago this had been the site of a large mining camp. We wondered if Mr. Eustace had been a mining engineer and collected the lizards right here. On a nearby hill we saw and heard a drilling rig, indicating current drilling activity.

That night horizontal streaks of lightning broke into fingers of light and then ended in balls of fire . . . one of the greatest displays of lightning I have ever seen. With the thunder, then came rain, and later a herd of curious burros. It was hard to sleep under my plastic ground cover. After a breakfast of corn pancakes, bananas and hot chocolate, we explored some nearby mine shafts, searched for horned lizards and then climbed the hill to investigate the drilling operation. We found an engineer, Hector Lopez, in charge, and with the help of my daughter, Susie, who had spent some time in Mexico, we communicated fairly well. After the usual, "What are you doing up here?" from both sides, we got down to business.

"Any horned lizards? we asked

"Si!" His children had been playing with them last week in the bush around the driving rig. He drew a reasonable facsimile of a horned lizard and then cinched it by saying it squirted blood out of its eye, characteristic only of horned lizards.

I offered a reward of 100 pesos (about $10) to anyone who would get a specimen for me that turned out to be *ditmarsi*. With this agreement, we left with a promise to return soon.

Over two weeks passed before we could return and then we found that Señor Lopez had left for Mexico City where his wife was having a baby. In the meantime, we had studied the material taken on the previous trip and believed that we were in the right area, but intensive searches around the drilling rig produced no horned lizards. A new engineer, this time an American, Paul Geiger, was at the rig and communication was easy. He promised to obtain a lizard for us if possible. Other searches in the area produced no more likely place for *ditmarsi*. We returned to Cañon de Evans to camp and once again decided that the Sierra de los Ajos couldn't be the right locality.

Almost two weeks later a call came from Cananea. It was Paul Geiger asking if I could meet him in Douglas the following morning. He had a lizard! At the Station, the excitement was at high pitch and everyone wanted to go to town immediately. We arrived early at the appointed spot and waited. As he drove in, we dashed up and were handed a small box. We cracked open the lid slightly and out peered a very spiny horned lizard. Our hopes died. "A *douglasii*!" was all I could say at first, but then added, "It's a good record anyway." We sent a few dollars along for the collector as a consolation prize, and went home wondering where we would look next. At the Station the specimen was turned over to Chuck Lowe, who peeked through a hole in the box and agreed it was a *douglasii*.

The next day a call came from Chuck. "Mike and I are coming down tomorrow." Just a flat statement, no reason, no nothing. Something was in the wind. They arrived the next morning with the electrifying news, the lizard had been identified by its abdominal keeled scales as *ditmarsi*! There still was a slight question in Chuck's mind, but in the meantime the type of the species had been requested for comparison. More specimens were needed for confirmation, so it was back to Mexico.

This time, accompanied by Chuck and Mike, we decided to check out the road along the border to Rio San Pedro and possibly locate some of the Lumholtz Expedition tracks. The road was unproductive for lizards, but a picnic site along the river had a record sized wild grape vine a foot in diameter near the base. The back road eventually led along the river, across farm lands, through grasslands and *ejidos* to Cananea. We located none of Lumholtz's route.

We drove into the Sierra Manzanal and up a narrow mining road where we had to back up to make one turn on the precipitous mountain side to the drilling rig. I introduced Paul to Chuck and Mike and we made arrangements to obtain additional specimens of *ditmarsi*.

We looked carefully for lizards, found none, but took notes on this habitat. It was similar but not identical to the habitat we expected because it was on top of a rocky oak-covered hill with sandy red soil rather than in a canyon. Without a doubt we were near, but not necessarily at the type locality.

The rest of the tale was anticlimactic . . . we obtained more specimens, the identity of the lizard was confirmed, and the rediscovery was written up (Lowe, Robinson and Roth 1971). Stomach contents of the new specimens provided additional information on the food habits of these lizards (Roth 1971). The search was over . . . and successful. All that remained was reporting the news at the annual herpetological meeting and to tell the story again and again to interested biologists and herpetologists who almost invariably replied, "Sounds like a detective story"—which it was!

Acknowledgments.—Many thanks go to David Hardy, Sr. and Karen Hayes who typed and repeatedly improved this paper.

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Additional Note: Vince Roth is an entomologist and arachnologist, particularly well know for his work on spider taxonomy. He retired from the Portal Research Station in 1986 and he and Barbara, his wife, have been traveling the world on spider treks ever since until earlier this year. Unfortunately, Vince Roth is terminally ill with cancer. A bright side is that Barbara gave birth to two sons for them last month! Vince was asked about receiving mail and he said that would be fine. If you would like to write this inspiring detective, his address is: P.O. Box 136, Portal AZ 85632.

The Rollover Fish Pass Story - By Alan McNeill

The Rollover Fish Pass commonly known as The Cut, is situated about mid-way down the Boliver Peninsula, which is approximately 28 miles long and serves as a barrier to Galveston Bay. Rollover, so named because during Prohibition whisky barrels were off-loaded in the Gulf and rolled over the beach, had the lowest elevation along the Peninsula. At high tides, often times, the vegetation would become marshy, although the beach continued all the way across.

In 1954, a local private fishing club known as the Gulf Coast Rod, Reel and Gun Club, conceived a notion of a fish pass. Several years before, it bought 22 1/2 acres of land in the Rollover area. For many years it had lobbied and attempted to persuade lawmakers to put a canal through the Boliver Peninsula linking the Gulf and the east part of Galveston Bay. Finally, in 1954, an agreement was reached whereby the Gun Club put up the land, Texas Parks and Wildlife obtained the permit from the U.S. Corps of Engineers to dredge a canal 80 feet wide and 8 feet deep. The Gun Club granted a conditional easement through the center of the 22 1/2 acres to the State of Texas for the passage of water. The Gun Club leased to Galveston County, on an annual basis, a lease to maintain the premises, providing Galveston County would pay the Gun Club's taxes on the property. This lease has been renewed each and every year since 1954 to the present time.

During the construction phase, Brown & Root Construction Company started to dredge a private canal so granted by the Corps to avoid the navigable stream and federal funding status. The original specifications called for a canal 80 feet wide and 8 feet deep. Before the dredging could be completed, the avulsion at the mouth of the canal had widened to 500 feet at the Gulf and the current had undermined the pilings of a Texas Highway Department bridge to a depth of 30 feet. The dredging was stopped. The Cut was closed for 2 years until the matter could be settled. Then Parks and Wildlife amended its construction contract and installed sheet piling along the sides of the Cut.

Beaches situated along the Boliver Peninsula were several hundred feet wide, and the vegetation was also two to three hundred yards wide. At one point, in the early 20's and 30's, a railroad track ran along the vegetation line, and occasionally caused grass fires. The railroad track, its cross ties and support beams have long disappeared into the Gulf by the advancement of the tide line caused by the avulsion from The Cut.

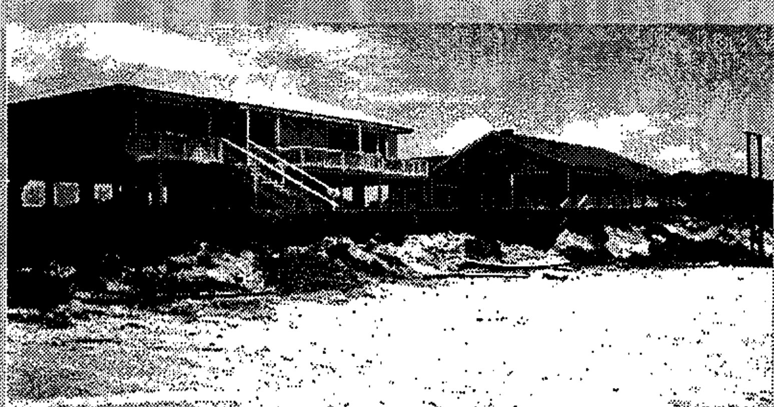
By 1996, in the area affected, approximately 50 feet of beach was left at low tide. A small cliff about 3-4 feet high formed along this area for several miles and the beach lost its profile, becoming flat and very often exposed down to clay as the sand washed away. In 1994, the sheet pilings had severely rusted and deteriorated, and Park and Wildlife granted a 2 million dollar contract to improve the sheet piling and put concrete caps on this wall. This accelerated avulsion and the remaining few feet of beach rapidly disappeared.

In the fall of 1996, Tropical Storm Josephine, a minimal storm, passed from west to east in the Gulf. One month later, normal high winter tides again took more vegetation and houses collapsed into the Gulf of Mexico. Now the vegetation line is right underneath many cabins and houses and other structures. Because of the wash of The Cut, often 25 feet per second, the beach was unstable, vulnerable, and lost 30 - 40 feet of vegetation.

The cause of all of this has been documented by the U.S. Corps of Engineers Reports, the Department of Economic Geology at the University of Texas, the Marine Science Department at Texas A&M, as well as others. The cause is The Cut. When the sudden severe damage occurred after 1994, several beach front property owners banded together and filed lawsuits seeking closure of The Cut, now pending in federal court in Galveston. Unable to attract help from any source, they funded their own television commercial to tell the public about the damage caused to the beach from Cut avulsion.

After suits were filed, the General Land Office started a hay bale project. The Governor's letter describing the bale project and its costs is attached to this report. At the present time, some of the hay bales are working. Some of them are not and are rapidly deteriorating. More important than a single structure is Highway 87, the only roadway from the ferry at the end of Boliver Peninsula to the Mainland. For several miles it is in danger of being breached, and very often at high tides with high southerly winds, water is over the highway. This is the only route to the University of Texas Medical Branch, the Burn Center, and to advanced medical facilities in Galveston from Southeastern Texas. So far only the General Land Office and Commissioner Mauro have acted to try to close The Cut. Mr. Mauro's letter to Governor Bush is attached.

Closure of The Cut would allow natural littoral flow without interference. Sand could again build up the beach without great expenditures. Additional sand could provide needed nourishment and restoration through the Coastal Management Plan. Dredging beach sand could be returned to the beach from Rollover Bay.



This picture was taken March/April, 1996, prior to severe damage done by Tropical Storm Josephine, and high water tides in December. In March, there wasn't a lot of margin left, although the dune grasses were trying to migrate seaward, they are now gone. The yellow and pink houses have been relocated approximately 100 feet to the rear. Houses further to the east have fallen into the Gulf. There is no longer any habitat, no dunes, and this has all happened within the last few months as a result of avulsion from the Cut.

Texas Horned Lizard - By John Clapham (age 12)

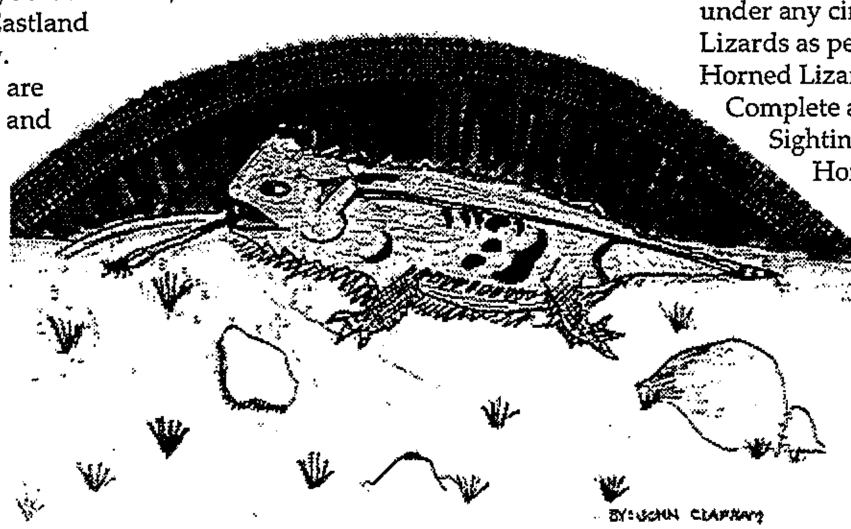
Horned (horny) toad? Horned frog (Mascot of Texas Christian University)? Horned lizard? The Texas Horned Lizard is called all of these names. There are no lizards like it anywhere else in the world. The Texas Horned Lizard has earned a permanent place in Texas folklore because of its monster-like appearance and its habit of squirting blood from its eyes! "Old Rip," a Horned Lizard from Eastland, Texas, joins other Texas tall tales by supposedly living in a time capsule under a cornerstone for 31 years. "Old Rip," or maybe a facsimile, now lies in state at the Eastland Courthouse North entry.

Horned Lizards are very interesting looking and are even a little bit scary. These Horned Lizards are commonly called toads for their wide, flat appearance which, interestingly, casts no shadow. They are usually from three to five inches long. Its main form of protection is its camouflage and, at times, it is almost invisible. It can bury itself in the sand by tossing sand onto its back, with its side spikes. It also has a pair of sharp horns on the back of its head which can save it from being swallowed by an enemy. It thrashes around and pokes the predator's throat, hopefully causing it to spit it out. The main predators of the Horned Lizard are snakes, road runners, and ravens.

The Horned Lizard is very easy going and not afraid of man. It generally runs from predators, but, if confronted, it puffs up and it can squirt blood from the area of its eye. This can project up to five feet and it certainly surprises its enemy. Other interesting facts are that the Texas Horned Lizard and the Round-tailed Horned Lizard lay eggs, but the Mountain Short Horned Lizard gives birth to live young! Horned Lizards hibernate from Fall to around late April or May.

The Horned Lizard is very picky about its habitat. It is usually comfortable at 100 degrees, but begins to suffer at 104 degrees. A temperature of 113 degrees is quickly fatal. To counteract the heat, the Horned Lizard buries itself in the sand. Below 80 degrees, they seek shelter from the cold. At 60 degrees and below, they become inactive.

Horned Lizards prefer a hot, dry habitat with little plant growth. The range of the Texas Horned Lizard extends from as far North as Kansas and Colorado to as far South as Mexico and as far West as Arizona to



as far East as New Orleans. The Texas Parks and Wildlife Department classifies the reptile as threatened and it is now illegal to pick up or collect Horned Lizards without a permit. Generally, the Horned Lizard has all but disappeared east of Interstate 35.

There are many reasons that the Horned Lizards are endangered. One is that farmers plow fields and plant tall grass which destroys their habitat. Our widespread use of pesticides in the 1950s and 1960s all but eliminated their major food source (ants). Another reason is the imported fire ant which drives out the larger, less aggressive ants that the Horned Lizard eats. Also, visitors from the North took the Horned Lizard back to their own homes where they soon died. Local people took the Horned Lizard and tried to raise it inside where it died because of isolation from its habitat. People on the coast even used Horned Lizards for fish bait!

In order to protect the Texas Horned Lizard, the Horned Lizard Conservation Society was formed in Texas. In the December, 1993, newsletter, it lists several ways we can help the Horned Lizard. The people whose help we need most is the private landowner. One thing you can do to help is not to convert native pasture land into improved pasture land. Do not replace native vegetation with thick grass on your lawn because the grass makes it difficult for the Horned Lizard to walk. Do not spray pesticides because these affect both the Horned Lizard and its food. Never, under any circumstances, take Horned Lizards as pets or to sell. If you see a Horned Lizard, do not pick it up.

Complete a Texas Horned Lizard Sighting Survey and mail to the Horned Lizard Conservation Society.

I think overall the Horned Lizard plays a small but very important part in Texas history and folklore and should be protected. A Horned Lizard is as close to a dinosaur as most of us will ever get. After all, such a unique creature, oven one as small and prickly as the Horned Lizard, deserves a safe spot on a toasty rock in the bright and shiny Texas sun. If areas of land are set aside as wildlife preserves, and we all do our part to limit dangerous pesticides, I feel the brave little armored lizard will win the battle against extinction.

This article is a great example of writing kids do about horned lizards. The HLCS would like to sponsor a kids' project newsletter. We would like to dedicate a newsletter entirely to the writings of students and children under 18.

Ideally, the entire newsletter would be written, illustrated, edited, printed and distributed by kids so they may learn about pubishing on all levels. This would be a great project for the upcoming school year. Interested teachers are encouraged to contact HLCS for information on how to contribute. Please let us know ASAP if you are interested, especially the editing or production jobs.

The Horned Lizard Conservation Society: A Short History of Where We Came From, Who We Are, and What We Do

By Bill Brooks

In 1965 the state of Texas passed special legislation protecting the Texas Horned Lizard from collecting due to its rapid decline in population. In 1977, after status listings were categorized under the Endangered Species Act, the U.S. Fish and Wildlife determined that the Texas Horned Lizard was in a threatened status (specifically a Category 2- candidate for threatened or endangered). Currently, it is still not actually listed by the United States Fish and Wildlife Service. The State's Parks and Wildlife Department has listed the species as threatened and levies a $500 fine for collecting or transportation of these unique lizards in or out of the state.

In 1990 Bart Cox decided to do something to help the "Horny Toads". He contacted newspapers, TV and radio stations to spread the word. On Nov. 6, 1990 over 200 people answered Bart's "call to arms." A new organization was born in Texas that evening at the Austin Nature Center: a group dedicated to the study and preservation of all species of Horned Lizards, wherever they may be found. Bart was elected our first president.

The next month (Dec. 1990) the first newsletter came out. We called it *"Phrynosomatics."* The word is a noun meaning people who are enthusiastically dedicated to reversing the decline and supporting the conservation of Horned Lizards.

Lee Stone became our second national president June 1, 1992. During her tenure we funded several Horned Lizard research projects. Our first grant went to Steve Sheffield in April 1992. His $700 grant went to an Oklahoma statewide population survey and a study of the effects of pesticides on Texas Horned Lizards. In 1992, we also helped Wendy Hodges fund a Texas statewide survey for the presence or absence of Horned Lizards at 100 historic localities. The society also awarded Melissa Montemayor a $500 grant for pit tags and a bar code reader to use in a range and longevity study of the Texas Horned Lizard on the Chaparral Wildlife Management Area in South Texas. Kelly Zamudio received the same amount to study the genetic diversity of *Phrynosoma douglasi* and validation of *Douglasi* subspecies based on geography in June of 1993. Scott Davis was awarded a $1000 grant in June 1994 for a study of genetic variability in the Texas Horned Lizard. Our latest $1000 grant was awarded to Jim V. Richerson, from Sul Ross State University at Alpine, Texas to do a 1996 study on the impact of parasites on Horned Lizards.

On September 10, 1992 the HLCS became an official non-profit, tax exempt 501(c)(3) organization wholly staffed by volunteers. We set up the HLCS as a national organization with a national board of directors and local chapters. There are currently two chapters: the Texas Chapter and the Southern California Chapter. Lester G. Milroy III is the current president of the SCC and the previous National President.

Scott Henke is the current HLCS President, Research & Recovery is chaired by Richard Montanucci, Gasper Holland is the Member Services chair, and Clare Freeman serves as the national and Texas Chapter Treasurer. Wendy Hodges is the National Newsletter Editor.

Melissa Montemayor is the current Texas Chapter president. She was a past grant recipient and currently works for TDOT and resides in Laredo, Texas. The Texas Chapter is undergoing elections of new officers.

<u>Other Texas Chapter officers include:</u> Carolyn Todd, VP for Education, Bill Davis, VP for Marketing. He sells Club T-shirts, posters, jewelry, cards. He also stocks the book by Wade C. Sherbrooke, *Horned Lizards, Unique Reptiles of Western North America.* Sandra Holland, VP for Public Information. Sandra's sons, Abraham and Noah, are the famous Traveling Toads. They performed through out Texas doing an informative Horned Lizard skit. In 1993, Abraham convinced the 73rd Texas Legislature to pass House Resolution #141, making the Texas Horned Lizard the state reptile!

The society has held three large conferences. On May 27, 1992 our first Horned Lizard Conference was held on the University of Texas at Austin campus. The second conference was held on June 1, 1994 at the San Diego Zoo. A third conference was held May 17 & 18, 1997 in San Angelo, Texas.

The HLCS, under the direction of Steve Austin, has also thrown four memorable benefit concerts in Austin. Our first benefit was at La Zona Rosa August 25, 1991. Bill Oliver, Michael Elwood & Beth Galiger, and New Brazil with Karen Natania were the headliners.

On Feb. 2, 1992 the first "Broken Spoke Silent Auction and Benefit Concert" highlighted Steve Fromholtz, the Alvan Crow Band, Karen Natania, Kimmie Rhodes, Bill Oliver and the Otter Space Band, Glen Alyn and the Ernest Tub Band, and the Bingham Creek Sisters.

The Bingham Creek Sisters, Bill Oliver and the Otter Space Band, Glen Alyn and The Ernest Tub Band and Karen Natania were back in November 1992 at the Waterloo Ice House. Champ Hood, Butch Hancock and Sara Elizabeth Campbell also played for this fun event.

The second Broken Spoke Benefit was held on April 18, 1993. The all-star line up included Don Walser and the Pure Texas Band, Alvan Crow, Don McCalister, Cornell Hurd, Sarah Elizabeth Campbell, The Lords of Love, Champ Hood, Marvin Denton and the Threadgill Troubadours, Glen Alyn and the Ernest Tub Band, Karen Natania and Bill Oliver and the Otter Space Band. Stay tuned for more of these wonderful concerts.

Through our organization's outreach and educational efforts to the public, we offer several free publications and informational pamphlets and literature. We offer the public support of our organization through our Adopt-A- Lizard program. The Society has also produced and sells a K-3 Horned Lizard Curriculum Guide for teachers. A multi-grade educational CD is in the planning stages.

In 1996, a couple of club related web sites were created on the internet. Please visit either Bill Moore's Horned Lizard pages; http://webpages.marshall.edu/~moorej/toads/HLCS_home.html or Bill Brooks' Horned Lizard pages; http://www.psy.utexas.edu/psy/brooks/hlcs/index.htm

The society has sponsored several field trips. A couple of times society members visited Melisa Montemayor's study site at the Chaparral Wildlife Management Area in South Texas. Another notable trip was to the Bomer Wildlife Management Area April 27 and 28, 1996. Dr. Scott Henke at Texas A&M-Kingsville and Scott Fair gave us a telemetry tracking demonstration and Professor Henke cooked some fine BBQ. It was on this trip that we were told about another exciting project we are currently working on. We, along with Don Ickles and the people of San Angelo, have been invited by the Texas Parks and Wildlife Department to set up the first Horned Lizard Preserve in the world in the San Angelo State Park. The state has offered to fence in 500 acres of the park to serve as a research area. Funding is currently being sought for a meeting hall and interpretive center. Much work remains to be done on this enormous project.

It is impossible to thank everyone who has helped out our organization but I would especially like to mention Jack Morse and Tom and Susan Curry. Jack was one of the original treasurers and gave his time, talents and money to keep us going in the lean years. Thank you artist, Tom Curry and wife, Susan. Tom donated prints of his Texas Horned Lizard poster for sale for the benefit of the organization and gave monetary support when it was sorely needed. The picture was also printed on one of our best selling T-shirts. Carolyn's energy, Wendy's knowledge, and Clare's dependability have been of immeasurable help. This is not everyone who has helped out, but to those I left out, I send heart felt thanks.

This is a the short story of the Horned Lizard Conservation Society. I want to invite everyone who's interested in the study and conservation of the Horned Lizard to join our group. You can contact the Horned Lizard Conservation Society directly by writing HLCS, Texas Chapter, P.O. Box 122, Austin, Texas 78767 or me, Bill Brooks, 805 N. Capital of Texas Hwy, Austin TX, (512) 306-0892, Brooks@psyvax.psy.utexas.edu for further information.

The Horned Lizard Conservation Society Historical Abbreviated Time Line Index

Nov. 6, 1990- Bart Cox called a meeting to discuss the plight of the Horned Lizard and the Horned Lizard Conservation Society was born.

Dec. 1990- "Phrynosomatics," the HLCS newsletter was first published.

Aug. 5, 1991- The first Horned Lizard Benefit Concert at La Zona Rosa.

Feb. 2, 1992- A benefit and silent auction held at the Broken Spoke.

April, 1992- a $700 grant funded Steve Sheffield's Oklahoma Statewide Population Survey and a study of The Effects of Pesticides on Texas Horned Lizards.

Summer 1992- Wendy Hodges' Texas Statewide Survey for the Presence or Absence of Horned Lizards at 100 Historical Localities was funded. Melissa Montemayor got $500 for Pit Tags and a Bar Code Reader to use in a Range and Longevity Study of the Texas Horned Lizard on the Chaparral Wildlife Management Area in South Texas. Kelly Zamudio received the same amount to study the Genetic Diversity of *Phrynosoma douglasi* and Validation of *Douglasi* Subspecies Based on Geographic Variation.

June 1, 1992- Lee Stone became the second national president.

Sept. 10, 1992- HLCS became a tax exempt 501(3)(c) organization.

Nov. 1992- A benefit at Waterloo Ice House was held.

April 18, 1993- The second Broken Spoke benefit concert was held.

May 27, 1993- The first Horned Lizard Conference on the University of Texas at Austin campus.

1993- Abraham Holland convinced the Texas Legislature to make the Horned Lizard the state reptile.

June, 1993- Scott Davis was awarded a $1000 grant in June 1994 for a Study of Genetic Variability in the Texas Horned Lizard.

June 1, 1994- The second Horned Lizard Conference at the San Diego Zoo in California. Inception of officers Lester Milroy (president), Kelly Zamudio (research and recovery), Clare Freeman (treasurer), Tracey Brown (member services).

1996- The HLCS' web sites came on line. http://webpages.marshall.edu/~moorej/toads/HLCS_home.html AND http://www.psy.utexas.edu/psy/brooks/hlcs/index.htm

April 27 & 28, 1996- Society's field trip to the Bomer Wildlife Management Area.

June 1996- Jim V. Richerson, Ph.D. from Sul Ross State University at Alpine, TX got a $1,000 grant to do a study on The Impact of Parasites on Horned Lizards.

May 17 &18, 1997- The third Horned Lizard Conference was held in San Angelo, Texas.

June 1997- New officers elected to the National Board of Directors.

Letters.....from the Post Office

Dear HLCS:

"I can't recall the day of the week, but it was warm, between 2-4 pm, in 1993, when I looked outside my art classroom window to see a Horned Lizard. I had not seen one since I was a child, and now I am a Grandmother. Either the Horned Lizard was old, or very abused, because one horn was off and one/half of a foot was gone, but his tongue worked just fine. The horned lizard was eating sugar ants and red ants, that were marching back and forth on the sidewalk and steps.

As I watched some students began entering the building, and more than once the horned lizard almost got stepped on, but he didn't move. I went outdoors to take a picture of him/her? and could see that he was very full looking, and almost as long as my palm (3 to 3-1/2" long and 2 to 2-1/2" at his middle.) As I watched the lizard never moved or took notice of me, so I picked him up. One eye never opened and he didn't try to run away. I put the horned lizard back down beside the grass and sidewalk, and went back into the building. One hour later, I could not find him again.

As I remember the texture of the skin, it was dry but not very hard. (When I lived in Brady, TX, I played with them all the time and remember the skin was leather-like in 1950's.) I wonder why we have so few horned lizards, but I think it is due to our chemicals and population management of fire ants. Texas A&I protects red ants, so maybe this is why Horn-liz is here."

I found these notes today as I cleaned out my art closet!! Sorry to be so late reporting the sighting, but I Just found your address and my photo notes. I didn't know anyone wished to pinpoint locations.

Always caring for Texas,
Annette Williamson Wise
Sugar Land, TX 77479

Dear HLCS:

We would like to receive information form the Horned Lizard Conservation Society. We heard about your organization from a book called Alice Nizzy Nazzy: The Witch of Santa Fe which has great illustrations by Tomie de Paolo.

Also, when I (Kari) and my husband (Paul) were growing up in Southern California, we used to regularly see and catch horny toads. Now, in the '90s, our daughters have never seen a single horned lizard in the wild. We'd like them to learn more about those lizards, and we'd like to know if there's anything we can do to help save them.

Kari, Paul, Sara and Hanna Aist
Calabasas, CA

HLCS:

I had read about your organization but could not find the address in Austin. While touring the Stock Show, I saw "Horny Toad" jewelry being sold by Mr. Tom McCain. He gave me a printed sheet concerning the society (thanks, Tom!).

Aside from being a graduate of Ranch Management at TCU, I am interested in horned lizards because I own property in Crockett County. The Pecos River is my west boundary. We see the lizards, but not as often as before.

Please send me information about the lizard. I thing they are a "protected" species. What are the rules, laws, and regulations concerning them and their habitat?

Barbara Baldridge
Fort Worth, TX

P.S. I have not seen a "horny toad" in Fort Worth in many years!

Dear HLCS:

I am writing to request advice and/or assistance with a project regarding horned lizards. We own property near Del Rio, Texas, on the Devil's River and we have sighted numerous horned lizards. They do not seem to be plentiful, but they are still here. We would like to do what we can to preserve the environment for them in order for them to stay as well as to repopulate.

Can you recommend resource material for us to read to discover what is the recommended approach to preserve this natural environment? We would also be interested in any suggestions your group has.

Sharon Vance
Garland, TX

Dear HLCS:

Where have all the Horned Toads gone? I have lived in the DFW area for over 51 years and remember them well. I realize that there is little habitat for them in the urban areas composing the DFW area, but I own land in Navarro County where it is rural. It is much more rural than the fringe areas around the city where I was raised.

My land consists of 20 acres in the very western tip of Navarro county and I have set aside only one acre in the norhtheast corner for my personal use, leaving the remaining 19 acres undisturbed. Even so, no lizards of any kind can be found there.

I have also noticed that there are no longer any of the large Red Ants that the lizards feed on but there are plenty of the smaller variety including the dreaded fire ant. Is there a correlation here? Have the fire ants run off the Horned Toads? Have the fire ants just run off the Red Ants leaving the Horned Toads without a source of food? Is there any lizard that will feed on fire ants?

Is it possible and practical to recreate the correct environment to have a balance between predator (lizards) and prey (ants). Can I do anything to attract lizards to my 20 acres? There are also 20 acres on either side of my place where the land lies natural plus many more behind that are not farmed.

Thanks for any information and help you can provide for me and the lizards.

Lloyd Gargus
Grand Prairie, TX

Letters...from the Internet

Dear HLCS

I visited your web site and was interested in the different species listed. I have not done much research in finding references for "horned toads" so was not prepared for more than 3 species to be listed. Do you have a reference that gives the individual identification characteristics for each species? I am convinced that I have found two different species living in the same area (within 100 feet of each other), and would like to prove it. I have started doing some rehab work in the area (because no one else would and the game ranger has been urging) and have had one or two "HT" 's to relocate due to mower accidents. (So far so good-full recovery except for one spike on the head.) Your site is good, thanks for all the work you have put into it.

Dr. Harvhard

Hello,

I found the HLCS while just looking around. I am very interested in wildlife and habitat protection. I remember a place in Devine, Texas that had a huge population of horned lizards about 8 years ago. Devine is south of San Antonio on IH 35. There was a lumber yard called Driscols. There was a large back lot of an acre or two behind the stored posts, wire and other bulky items there. The soil was red sandy stuff. You had to be careful where you stepped because there were lots of horned lizards everywhere. A year or so later the lumber yard closed and the land was bulldozed for a new parking lot and restaurant!! I wonder if there is a strong population of horned lizards in the area still. I have had that on my mind for many years, now I found someone to tell! Thanks!

Maury Heiman

Dear HLCS:

I was out in my garden, which is primarily roses, with dirt pathways and mulched beds (mulched by shredded redwood bark or shredded cedar bark), and looked down to see what I thought might be a child's toy. It was for all the world - 5 or 6 inches long, with what appeared to be large scales or protuberances along the sides of its head and body. It was dark gray / medium brown with yellow / orange scales. We have lizards around here but ours are thin, like a snake, with long tails - normally 4-6 inches long. This creature did not have a tail, but reminded me more of toad. As it turns out, I poked him gently with a stick, he was alive and made a bee-line to hide under a rose, and nestled in the redwood mulch. I tried to locate him later, but couldn't find him again. Could this have been a Horned Lizard?? I don't have a book with a lot of reptile pictures, and the picture on the Home Page here, is not that distinct. I saw him from the top side down, as he lay in the pathway. I am in Sacramento, California - it is hot here, about 100 degrees during the daytime - but not a desert. We are in the central valley of the state.

Just curious.... Adena Kalal

Dear Editor:

I had a lovely conversation with the daughter of the Southern California Chapter at the Del Mar Fair a couple of weeks ago. I am an internationally exhibited wildlife artist and we talked about my donating art work to the Horned Lizard newsletter. She and her father brought paperwork to me at my booth at the Fair (which I then lost) about the Society.

I donate pen and ink work to the California Turtle and Tortoise Society and I do free-lance work for the "Vivarium" magazine. I will follow up this email with some copies of my art work for you to look at. If you like my work, lets talk. I do have access to a scanner, but I'm a computer dummy and I need someone to help me with it.

I am a lab technician at the University of California, Irvine (we do electrophysiology studies in Xenopus and cell cultures, sodium and calcium channel and gap junction studies) I am also a licensed veterinary technician and a juried member of the Society of Animal Artists. I'm looking for ways to give something back to the conservation groups that work so hard to protect the animals I love.

Mary Hawley

Dear HLCS:

After having read portions of several Horned Lizard web sites, I have come to believe that the horny toad that appeared in our yard last week was looking for a good place to lay her eggs. I had no idea how the process was to appear but after I watched her dig a shallow tunnel in a shady dirt area near our home, and then turn her rear around to the dug out section, it dawned on me what was probably happening. I got on the internet and all that I have read thus far, seems to confirm the fact, that one of our State's threatened species is trying to keep the population from dying completely away. Now, after this long intro, I'd like to know if you have any suggestions in what to do to protect the eggs from being stepped on, messed with by animals, (we live in the country right outside of Abilene) and just exactly what type of housing or protection would be helpful. My husband says, "Leave them alone!" but I feel like I want/need to protect them. Suggestions for a newbie? Thanks very much.

Deborah Jeter

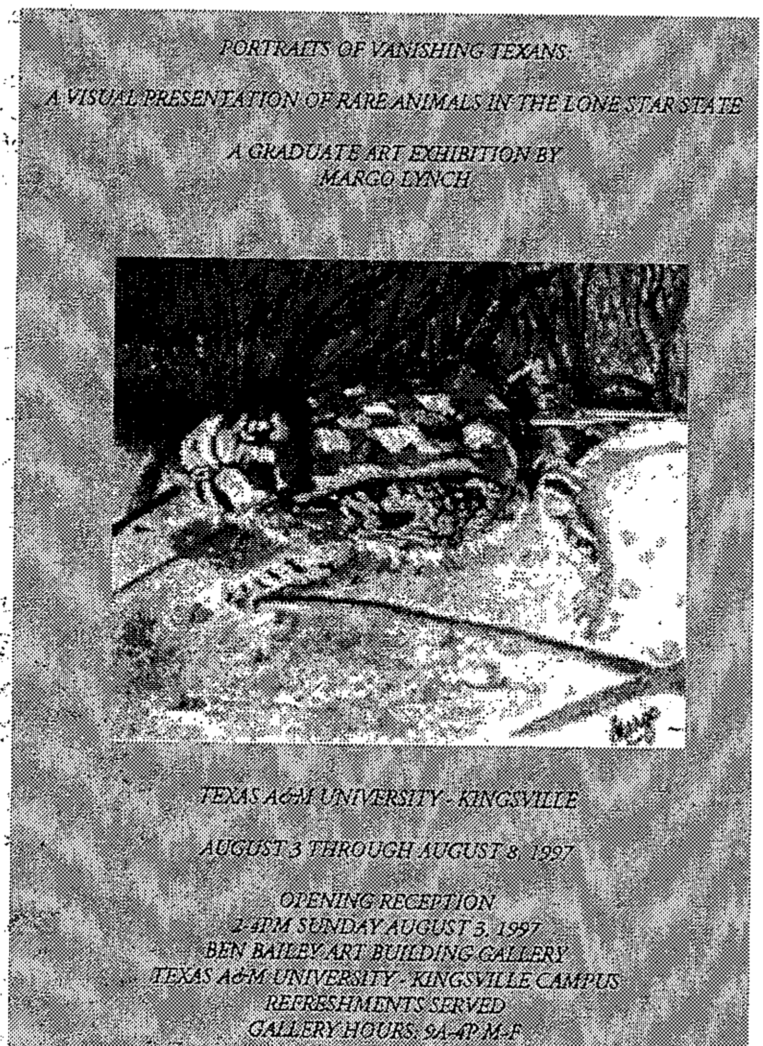
Response:

Your husband's comments aren't bad but if you want to help protect the nest a bit, you could put a square screen-wire box over the area to protect it. Keep an eye on it. This way you would know when the babies hatch (of course they would also be sitting ducks for the fire ants so keep a close look out!) Keep written records of when the eggs were laid and when they hatch and keep me posted. Good luck.

Bill Brooks

HORNY TOAD APPRECIATION DAY!!!

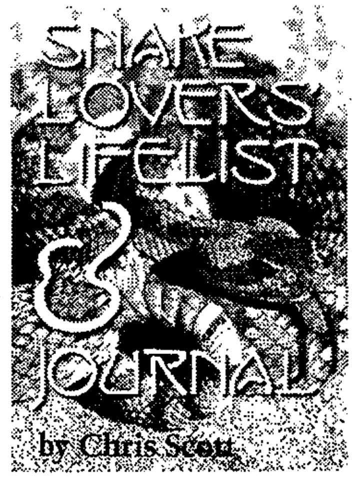
The Texas Chapter of the HLCS is holding its annual Horny Toad Appreciation Day in Eastland, Texas, this year to coincide with the city's annual Old Rip Festival. This Year is a special year for Eastland and HLCS, it is the 100th anniversary of the Old Rip Festival!!!! Festivities will be held 9am - 5pm with a parade at 10:00am. Don't miss out! HLCS- TX will have ongoing slide shows throughout the day for the general public and various booths will be set up around the town square as well as the Texas Chapter's quarterly meeting (time and place to be announced, check with our booth). For more information contact Bette Armstrong: (254) 629-3976. Bette is also getting a list of local hotels and motels to stay at for participants traveling from more disant places. Be there or be square!



Still Available from HLCS!!!

Snake Lovers' Lifelist & Journal

By Chris Scott



UT Press has offered HLCS members a special group rate on a new book, Snake Lovers' Lifelist and Journal, by Chris Scott. We are able to offer our members the book for $15.00 (+$2 for postage). The book will sell for $19.95 in bookstores. Interested? Send your checks, payable to HLCS to PO Box 122, Austin, TX 78767.

From UT Press:

"Herping," the practice of finding and identifying species of snakes and other reptiles, is becoming as popular as bird watching among many people interested in natural history. Unlike birders, however, "herpers" have never had a formal journal in which to record their lifelist of observations.

Now they do! Snake Lovers' Lifelist and Journal lists and describes every known species of snake found in the United States and Canada, plus many subspecies, color phases, interbreeds, and hybrids, for a total of 490 different native and introduced forms. Blank pages allow herpers to record the details of their sightings of each form, while professional quality color photographs and line drawings are included to aid identification.

Chris Scott also makes an eloquent plea for the conservation of snakes and their habitats, noting which snakes are protected by law, in what areas, and what their protected status is. He hopes that this information will help to counter the growing commercialization of herpetology, a practice that often leads to the destruction of both habitats and the animals they support.

Suitable for both amateur and professional herpetologists, Snake Lovers' Lifelist and Journal will be an indispensable resource for everyone fascinated by snakes. It will dispel the myths and fears surrounding these creatures and replace them with knowledge, understanding, and respect.

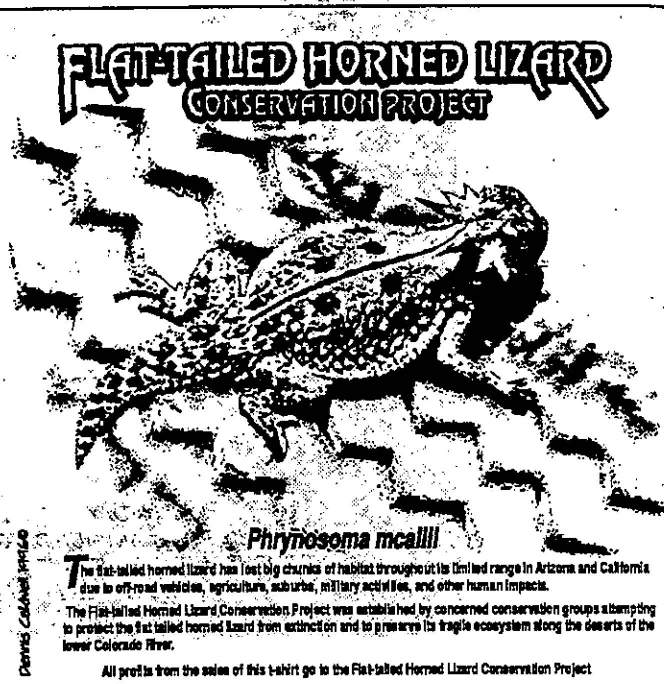
Bound in hardcover with an elegant, sturdy, washable material for a lifetime of herping. 7 x 9 7/8 in., 288 pp., 92 color photos.

Buy a T-Shirt, Save a Lizard

The Tucson Herpetological Society has produced a t-shirt to raise funds for a lawsuit on behalf of the Flat-tailed horned lizard. HLCS is a co-plaintiff on the suit. Artwork on the t-shirt is shown at right. Priced at $15, shirts are available from:

Roger Repp
6000 N Camino de la Tierra
Tucson AZ 85741

Sizes: M, L, and XL. Natural color only. Add $3 postage and make checks payable to "THS".



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