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

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.

Special Publication No. 3

The Horned Lizard Conservation Society
Who We Are and What We Do

The Horned Lizard Conservation Society, HLCS, was formed in November 1990. Two Chapters now exist, the Texas Chapter and Southern California Chapter. In 1992, the HLCS was recognized by the Internal Revenue Service as an official nonprofit organization under the provisions of 501 (c)(3) of the Internal Revenue Code. All contributions to HLCS are tax deductible.

The Society exists for the purposes of documenting and publicizing the values and conservation needs of horned lizards, promoting horned lizard conservation projects and assisting with horned lizard management initiatives throughout North America.

We strive to achieve these purposes through six avenues:

1. Educating members and the public about the plight of horned lizards and the need to conserve them.
2. Gathering and organizing information about horned lizards from existing sources.
3. Developing and supporting scientific research regarding horned lizard natural history, ecological requirements and population demographics.
4. Supporting strategies to preserve existing horned lizard populations.
5. Developing and supporting strategies for the management of horned lizard habitat.
6. Pursuing stategies for the propagation of horned lizards in order to maintain or reestablish local populations.

More specifically, the HLCS actively pursues educational activities by making appearances at public events such as Wildlife Expo. in Austin, Texas, and the Texas Children's Festival sponsored by the Institute of Texan Cultures in San Antonio, Texas. Our volunteers are often requested to give presentations to other organizations and schools in Texas and California.

In addition to presentations, the Texas Chapter developed an educational curriculum guide for children in kindergarten through third grade. We hope to update the guide soon and make it available to students and teachers on CD-ROM.

The HLCS holds a public conference biennially. The conference brings in leading scientists working on horned lizards. The membership is exposed to current research on horned lizards and conservation efforts.

The Texas Chapter actively supports research on horned lizards by funding research topics through an annual competitive grant program. The Southern California Chapter actively participates in horned lizard research by performing surveys on *Phrynosoma coronatum*, the coast horned lizard.

The Southern California Chapter also has been working closely with the San Diego Zoo in California to provide public exhibits with horned lizards and examples of their habitats. They are hoping to do some captive breeding possibly in the future and provide homes to horned lizards pushed out by land developers.

The Texas Chapter recently began a joint effort with San Angelo State Park in Texas, the San Angelo Chamber of Commerce and Tourist Bureau, Angelo State Universtiy and Texas Parks and Wildlife Department. This effort involves choosing a minimal 500 acre tract of land in the state park for a *Phrynosoma cornutum*, Texas horned lizard, preserve, educational and research area.

See related stories on the following pages for more information on the great things HLCS is doing for the protection and conservation of Horned Lizards!

We are always needing more volunteers. Sign up and begin helping horny toads now!▼

National Board of Directors

Visit our Website: http://www.psy.utexas.edu/psy/brooks/hlcs/index.htm

Please Send all Membership Applications and Information Requests to:

HLCS
P.O. Box 122
Austin, TX 78767

Lewis and Clark Called Them Lizzards

BY Dale Turner

Dale wrote that the curious spelling, punctuation, and capitalization within the various quotes are exact transcriptions from the original notes and letters, and should be retained as such. They are not due to the editor still learning how to use the spell check in software.

" Our last news of Captn Lewis was that he had reached the upper part of the Missouri... With his map he sent us specimens or information of the following animals not before known to the northern continent of America.... [Number] 9. A prickly lizard."

~Thomas Jefferson, February 11, 1806.

The Lewis and Clark expedition has long been recognized as one of the most important explorations of the American wilderness, but their contributions to our knowledge of natural history are perhaps underappreciated. For example, how often have you heard them acclaimed for discovering horned lizards?

Among other things, Jefferson directed Meriwether Lewis and William Clark to take detailed notes on new plants and animals, and to collect specimens whenever possible. Among the first results of the trip was a shipment of "Miscellanious Articles" sent from St. Louis on May 18,1804. In that was a specimen of what would be named *Phrynosoma cornutum*, described by Lewis as:

" A horned Lizzard, a native of the Osage plains, on the Waters of the Arkansas River, from five to six hundred miles West of Saint Louis, in a small Trunk."

Two years later (May 29, 1806) and much farther west (Camp Chopunnish, Idaho, along the Clearwater River), Lewis met and described *Phrynosoma douglasii*. In his journal, he notes:

"a speceis of Lizzard called by the French engages (fur traders) prarie buffaloe are native of these plains as well as of those of the Missouri. I have called them the horned Lizzard... I cannot conceive how the engages ever assimilated this animal with the buffaloe for there is not greater analogy than between the horse and the frog. this animal is found in greatest numbers in the sandy open parts of the plains, and appear in great abundance after a shower of rain; they are sometimes found basking in the sunshine but conceal themselves in little holes in the earth much the greater proportion of their time. they are numerous about the falls of the Missouri and in the plains through which we past lately above the Wallahwallahs."

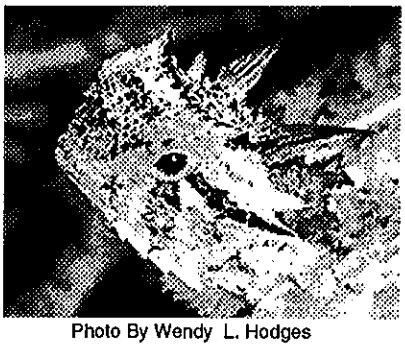


Photo By Wendy L. Hodges

He also gave a very detailed description of their appearance.

Lewis, though his scientific training had been informal, was an outstanding naturalist and would have left a greater mark had he not died just three years after the expedition's return. As it turned out, others were left to formalize the wealth of information gathered by his expedition.

Phrynosoma cornutum was not formally described until 1825, but the author, Dr. Richard Harlan, worked from specimens in the Philadelphia Museum of Natural History, the repository for Lewis and Clark material.

The first published description of *Phrynosoma douglasii* came in 1829, from specimens in the British Museum.

For more information on the biological discoveries of the expedition, I can strongly recommend Lewis & Clark: Pioneering Naturalists by Paul R. Cutright.▼

Photo By Wendy L. Hodges

Horned Lizard Research in California and Translocation

By Lester G. Milroy

Our research in California on the San Diego Coast Horned Lizard, *Phrynosoma coronatum blainvillei*, is progressing well and revealing some interesting behaviors about this species of horned lizard. We are radio tracking horned lizards this year and using differential global positioning satellite data to get a "visual" idea as to how the horned lizards move around in and use their habitat. We are tracking the horned lizards in three different habitat types: grassland, sage scrub and mixed. We have noticed that some of the horned lizards are "travelers" and have moved significant distances from their initial point of capture and tagging. Others are "home-bodies" and do not move very far from their initial point of capture. There is still the question of being territorial and further defining their "home range."

We are also taking blood samples from the horned lizards being tracked to plot hormone cycles in the males and females. This will give us a better idea for management of horned lizard populations in protected areas to minimize "outside" disturbances of the populations during peak cycles. The blood samples are also being used in mapping the DNA of the San Diego Coast Horned Lizard in our study areas to help identify genetic differences in the species and subspecies. We also hope to identify any negative factors that may show decline in specific population areas.

This is a progress report to let you know the work that is being conducted for the conservation of horned lizards. I continue to be amazed and captivated by these animals and their activity and behaviors. I have also found that no matter how much you think you know and understand them, they still have their "secrets" just waiting to be discovered.

Translocation or Relocation of Horned Lizards

When I first learned that the San Diego Coast Horned Lizard in California was being considered for protection under the Endangered Species Act because of declining numbers and disappearing populations, I was disturbed by what I heard. I researched the information further and found that habitat destruction and loss was the number one reason for the decline. Other reasons were over collecting and illegal collecting, the pet and curio trades, the use of insecticides that kill ants (the primary food item of many horned lizard species), uncontrolled domestic cats, and a basic lack of knowledge and information about the requirements of horned lizards.

One of the first things that came to mind was why not capture the horned lizard populations that are in jeopardy and move them to a "safe" locality? These safe localities could be federal or state parks or wildlife reserves where there were other horned lizards. Right? But what if the population you want to move has some disease or other problem that is not visible, and the population that is in the protected areas has no defense against that disease or defect? Not only would you loose the population you want to move, but you would probably also destroy the "safe" population.

Or, by moving one population in with another, the factors of 1) is there enough food to feed both populations, 2) is there enough cover to support both populations, 3) will the "safe" area support future generations and allow for expansion?

What are the natural predators of horned lizards? If you add one population of horned lizards with another, does that not increase the food supplies for horned lizard predators and will that population not grow? Will the horned lizard populations be able to "balance" with the increased predators? What is the survival rate of hatchling horned lizards under "normal" conditions? In drought conditions? What are the population demographics(male vs. female, young vs. old)? What is the age of reproductive maturity? What is the natural life span of each species of horned lizard? What is the best habitat type for each horned lizard species?

These questions go on and on. Many of these questions do not have answers at the present time.
Much to my dismay, these questions have to be answered before we can consider relocating horned lizard populations on a large scale.

The conservation and preservation of horned lizards is important because they are part of a much bigger puzzle in the world around us. What part do horned lizards play in the bigger picture, you might ask? I cannot answer that question. If I could, I would hold the key to life itself. I do know that as a kid I enjoyed watching horned lizards. They helped increase my curiosity about nature and the world around me. Even today as I research the horned lizard, I continuously learn something new.

Translocation or relocation of different animals has to be continuously monitored and observed. These types of projects require long term study and data collecting. There are gains, as well as losses. Sometimes it can be very emotional. Like any other job, people who are trained, educated and dedicated are needed to do this work. Funding is also needed to help purchase equipment to collect the information needed and put our technology to work to help analyze the information collected.

It can be done. Just remember that conservation and preservation are not dirty words. Ignorance and stupidity are.▼

TEXAS CHAPTER NEWS

Horned Lizard Education and Research in Texas

By Carolyn Todd

Our members have helped us work toward many milestones along the way. Young Abraham Holland from Pleasanton, Texas wrote his legislator in 1993 during the 73rd Legislature. The result was the passing of House Resolution #141 which designated the Texas horned lizard as the state reptile.

Through our organization's outreach and educational efforts, we offer several free publications and information pamphlets and literature. We have produced a K-3 Curriculum Guide for teachers. A multimedia project for secondary students is underway. However, foundation or private financial support is needed to complete and distribute this program.

In 1965, prior to having an endangered species act, the Texas Legislature protected the Texas horned lizard by making it illegal to sell or trade them. At this time, and several decades before, the Texas horned lizard was shipped out of the state in the thousands every summer.

In 1977, after the passing of the Endangered Species Act and threatended and endangered species legislation in Texas was adopted, *Phrynosoma cornutum*, the Texas horned lizard, was listed by Texas as threatened. It remains listed to this day due to continued declining populations throughout the state. The Federal Government has not listed the species, but considers it a category 2 candidate species for listing. The Mountain short-horned lizard, *Phrynosoma douglasii*, is also listed by Texas as Threatened and a C2 species by the USFWS.

Texas Chapter Officers

Melisa Montemayor	President		
Carolyn Todd	Vice President for Education	Bill Davis	Catalog Sales
Sandra Holland	Vice President for Public Affairs	Inactive - Help!!	Fundraiser / Graphic Artist
Clare Freeman	Vice President for Communication, Treasurer	Inactive - Help!!	Secretary / Historian

The Texas Chapter continues to fund academic research on Texas species of horned lizards to understand more about their biology and ecological needs so we may best protect them. We offer small grants, up to $1,000, annually to scientists which meet our qualifications. Funded Projects to date include:

1. Wendy L. Hodges. 1992. University of Texas at Austin. Status and Distribution of the Texas Horned Lizard (*Phrynosoma cornutum*) in Texas.
2. Steve Sheffield. 1992. Oklahoma State University. Effects of Pesticides on Horned Lizards.
3. Melisa Montemayor. 1993. Chaparral Wildlife Management Area, TPWD. Range and Longevity of the Texas horned lizard utilizing PIT tags.
4. Kelly Zamudio. 1993. University of Washington. Genetic diversity of *Phrynosoma douglasii* and validation of subspecies currently recognized.
5. Scott Davis. 1994. Texas A&M University. Interspecific genetic diversity of *Phrynosoma cornutum* throughout its range.
6. Jim Richerson. 1996. Sul Ross University. Identification and impact of parasites on 3 species of horned lizards in Texas.

We offer the public support of our organization through memberships, our Adopt-A-Lizard program, and the sale of a diversity of gifts from jewelry to t-shirts. We also sell and distribute a book written by Wade Sherbrooke, *Horned Lizards, Unique Reptiles of Western North America*. Support of the HLCS can be made in writing to HLCS, PO Box 122, Austin, Texas, 78767.

In addition to monetary support, the HLCS is always in need of volunteers to help with all the projects mentioned here and more! Sign up today and play a more active role in protecting horned lizards for the future and for your children.▼

Horned Toad Society Hops Into Action to Protect Vanishing Breed in State: By John MacCormack

San Antonio Express-News
Sunday, May 12, 1996
Reprinted by Permission

Benavides — Spaced a few yards apart, eyes scanning the ground, the searchers shuffle-step across a bumpy South Texas field, probing with all the intensity of rookie federal agents assigned to the Unabomber case.

But it was not forensic evidence they sought. Rather, it was that endearing reptilian gargoyle known to scientists as the "Texas Horned Lizard", and to the rest of the world as the horny toad.

"This is one of their scats," said Scott Fair, a Texas A&M-Kingsville graduate, plucking a coffee-colored lizard dropping from the dry ground.

"You can see all the bumps in it. Those are ant heads and ant bodies. But you can usually find scat faster than you can find the lizards," cautioned Fair, whose thesis involved tracking horn toads by radio in the South Texas brush.

On this recent field trip of the Texas Chapter of the Horned Lizard Conservation Society, the old toad hunter's axiom largely held true. During two morning sweeps at the Bomer Wildlife Management Area, only five horny toads were flushed from hiding among the gopher mounds, prickly pear and buffelgrass.

The 130-acre wildlife site is 12 miles south of Benavides and has been used by Texas A&M-Kingsville graduate students such as Fair for quail and toad studies.

In these times, the horny toad is a creature of fantasy or fable for many. And although the catch seems meager, to the young Texans and the foreign-born, it was an abundance.

One boy was lucky enough to even catch one.

"I was just walking. I saw this thing moving a little bit and I tried to grab it. It went off, and I grabbed it again, and it sprayed blood out," said awed Curtis Hill, 8, whose parents traveled from La Vernia on the chance their children would see the legendary beast.

Carolyn Todd with Horned Toad.
Photo By Mike Irvin, Standard Times.

The horned lizard was designated the Texas State Reptile in 1992, by unhappy coincidence, the same year a study was published documenting its precipitous decline in many areas.

As quintessentially Texan as the armadillo, as Lone Star as the Longhorn, and once as common as the grasshoppers, the Texas horned toad is now only a memory in many places.

Pesticides, loss of habitat, the displacement of red ants by fire ants and other causes are suspected, but so far no one has conclusively determined what is behind their decline.

"It's a cold reality. The Texas Horned Lizard doesn't exist in East Texas anymore, except for a few informal reintroductions, and the species will continue to decline in Central and Northern Texas as cities continue to grow," said Wendy Hodges, a University of Texas at Austin graduate student who co-authored the 1992 study.

"In South Texas and West Texas, the populations appear stable unless there are landscape-scale changes," she said.

Once made into curios, traded at Boy Scout Jamborees and collected for the pet trade, the lizard now is listed as a threatened species by state authorities. It is illegal to collect, posses or remove Texas Horned Lizards from their habitat.

It was in response to the alarming trends that the Texas Horned Lizard Conservation Society was founded in Austin six years ago. Its mission is to publicize the horny toad's plight, to preserve existing habitats and to research the feasibility of reintroduction into its former range.

The society has 300 dues-paying members from across the state and puts out a periodic newsletter addressed to "Phrynosomatics," a word derived from the horned toad's Latin name, *Phrynosoma*.

The society went national three years ago with a second chapter opened in Southern California where the Coastal Horned Lizard, a related species, is likewise imperiled.

Most who join are inspired less by science than by nostalgia.

"When I think of them as play things, I call them horny toads. When I think of them as zoological phenomenon, I call them horned lizards," said Clare Freeman, 59, the society's treasurer.

"We get letters all the time from people who say I played with these as a kid and they're gone now. You might say our members are kids, but kids in their 50s, 60s, 70s, and 80s," she said.

"Women will write and say, 'When we were girls, we made dresses for horny toads.' Other people will write and talk about making little wagons out of matchboxes and hauling them around," she said.

And like the letter writers, Freeman, who grew up in Snyder, south of Lubbock, recalls with fondness a Texas childhood enriched by the fierce-looking but harmless creatures.

"And when I was a kid, they were everywhere. Everyone knows about hypnotizing them. You put them on their backs and stroke their bellies. We thought you had to rub them in a counter-clockwise circle," she said.

"They'd get really still and sometimes they'd stay that way for a few minutes. We'd put little sticks in their paws. Some people did dreadful things to them, boys mostly, but you don't want to put that in your paper," she said.

After the toad hunt, the society held its quarterly meeting under the mesquites, while several small boys kept close watch over the five toads being held in a 10-gallon tank before release.

Beyond the usual business of account balances and correspondence, a surprising proposal was put forth by a visitor, Don Ickles, a field representative of the Texas Education Agency from San Angelo.

"We have a new state park in San Angelo, and its whole focus is to be an education and research center. The park is prepared to dedicate 500 acres for a horned lizard center, and we would welcome your consideration of the area," he told them.

Ickles' offer came with a caveat, however: "The state will not get involved with fund-raising."

Society Vice President Carolyn Todd said the proposal was both unexpected and intriguing.

"I believe it's very serious. We'll be doing a site survey in San Angelo on June 22. I think it's a tremendous opportunity for us to educate the public and have a protected habitat for horned lizards," she said.

Contacted later by phone, San Angelo State Park Superintendent John Culbertson said he is eager to explore the possibilities of a collaboration.

"We've got quite a few horned toads out here. I saw one yesterday in fact. We've got plenty of red ant beds and undisturbed areas. We could create a study area," he said.

"If we could get a plan in writing as exactly what they need, we could run it through master planning and I feel we could get it approved." he said.

After the meeting was over, some members paused to reflect before starting on the long drive home.

Among them was Larry Wisdom, 59, who came 400 miles from Blooming Grove to attend his first meeting as a member of the Horned Lizard Conservation Society.

"My grandfather was a Methodist minister in the Central Texas Conference, and as a boy I'd spend the summers with him in little towns like Venus, Grayford and Moody," he said.

"The first thing I would do would be to build a little stone corral about three feet in diameter and eight inches high, and start collecting them. You literally could find hundreds of them," he said.

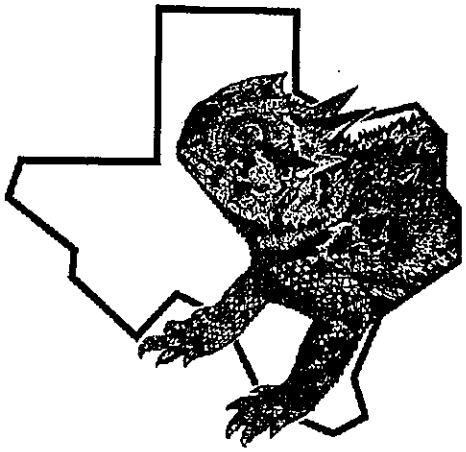
"They'd be all gone the next morning, and I'd start out all over again. That was the fun of it. After you had caught one two or three times, you'd recognize it. Sometimes their horns would be different, just like longhorn cattle," he said.

Asked what essential quality mode horned toads so attractive to him as a child, Wisdom first mentioned the odd shape, but then seized upon another characteristic.

"Texas has an abundance of lizards, but the only one I could catch almost every time was the horned toad. He's just not that fast," he said.

Wisdom, a retired Frito-Lay Co. researcher who helped bring the world Doritos, Munchos and Funyuns, is now building life-size horned toad replicas for his grandchildren, some of whom he fears may never see the real thing.

"I had literally thousands of encounters with horned toads. My children had dozens," he said. "And last year I took my four eldest grandchildren to a dude ranch in Bandera, and they saw the first one they'd ever seen in their lives."▼



Helping Horned Lizards: Simple Things to Consider

By Clare Freeman

The flat pancake-like shape of horned lizards limits them to living on open ground with sparse vegetation where they are not impeded in their search for food or cover. Common lawn grasses such as Bermuda and St. Augustine form thick mats and runners which interfere with these awkward and slow moving lizards.

Bunch grasses, on the other hand, tend to form clumps that allow free movement of horned toads and at the same time, provide cover and protection from potential predators. Buffalo grass is a native bunch grass that is gaining popularity as a lawn grass in horned toad country.

Property that is being converted to pasture or other cultivation may be planted with native grasses or left with undisturbed buffers of native vegetation to the benefit of all wildlife including horned lizards.

Insects, especially ants, comprise the diets of all horned lizards and in some species ants may account for more than 90% of the food intake. Some horned lizards are highly specific with regard to their choice of ants, but no horned lizards are known to dine on the imported fire ant. This is important in the use of pesticides to control this ant because carelessness in the choice and application of insecticides can destroy harmless and beneficial ants and other insects, and thereby harm horned toads.

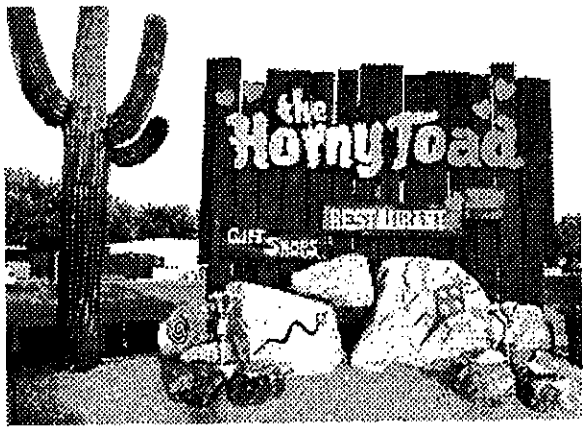


Photo By Wendy L. Hodges: The Horny Toad Restaurant in Carefree, AZ. Though named after them, this restaurant sits on top of former Horny Toad Habitat.

Fire ants are a big problem and unless controlled, they will eventually eliminate native ant populations in their neighborhood as well as attack and destroy young defenseless animals including horned toads.

Bait formulations are preferred over contact insecticides especially where only a few fire ant colonies are present or the area to be treated is small, but there are promising new approaches being explored such as the use of a natural parasite (phorid flies) to control fire ants.

Learn to recognize the ants good for horned toads and consider whether you really want to eliminate that colony of harvester ants rather than coexist with them.

Horned lizards do NOT fare well in captivity! Attempts to keep them over extended periods are doomed to fail and the hapless animals are doomed to die. As appealing as they may be and as easy as they are to catch, the best approach to enjoying them is to observe them where they live and try to protect and preserve their habitats. In most states where they are found, horned lizards enjoy some legal protection against capture and exploitation, and animals in all state and national parks are protected.

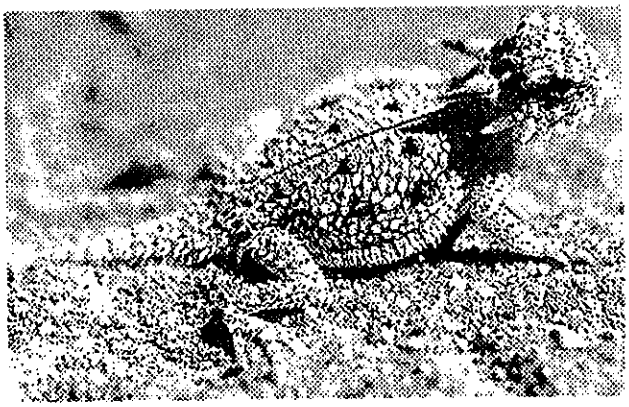


Photo By Wendy L. Hodges. *P. mcallii* in Arizona, California and Mexico is threatened by habitat loss and destruction.

Under no circumstances should horned lizards become commodities in the pet trade and one of the goals of the HLCS is to eliminate this practice through education and legislation. You can help by not catching, selling, buying or trading horned lizards.

These simple but important points to remember are:

1) Think native in landscaping; plant bunch grasses in lawns.
2) Avoid unneccessary disturbance or destruction of habitat (including food sources).
3) On cultivated lands leave or create wildlife buffers; avoid exotic grasses in pasture-land.
4) Exercise caution in the use and application of insecticides.
5) Never take horned toads to keep or to sell as captive pets and don't buy them in pet stores.▼

Harvester Ant Ecology

By Wendy L. Hodges

Members of HLCS know harvester ants primarily as the preferred food choice of horned lizards. Many people have often asked why horned lizards would eat such an insect that is small and has a painful sting (they can also bite!). However, harvester ants are one of the most abundant insects in the arid and semi-arid regions where horned lizards live. It is impossible to study or learn about horned lizards without knowing anything about harvester ants.

Harvester ants belong to the order of insects called Hymenoptera, which includes bees and wasps. Like many bees, wasps, and other ants, harvester ants have a sting on the end of their abdomen which they use for defense. They are not aggressive ants, like the imported fire ant *(Solenopsis invicta)*, so they only sting when directly threatened (being eaten, squashed, etc.). 22 species of harvester ants live in North America, and 37 species occur in Central and South America.

Among North American species, the largest group (genus) is *Pogonomyrmex*, or pogos for short. Pogos have been called the "preeminent group of harvesting ants in North America" because they exist in large numbers throughout the arid regions of Mexico and the western United States-the same areas that horned lizards inhabit.

Harvester ants get their name from their mode of feeding; they harvest seeds from various plants. They snip off seeds with their large muscular mandibles and carry them back to the nest where they are husked and stored in mound chambers. The seed stores are used throughout the year whenever active foraging must cease, for example, during drought or heavy predation.

The seeds are chewed up by the worker caste and fed to larvae which digest the seeds and produce a substance they regurgitate to feed other members of the colony. Some seeds they collect have a special structure called the elaiosome which is on the outer part of the seed and is rich in oils. The harvesters may remove the outer husk for food while discarding the rest of these seeds.

Harvester ants are also scavengers and will pick up dead insects and other arthropods in their path.

Harvester ant mounds are one of the most distinguished types built by an ant. They use their mandibles to cut and clear the ground surrounding the opening to the nest, three to six feet in diameter. Some harvester ants build a small mound around the entrance to the nest while others leave the ground completely flat with only piles of seed husks and soil debris surrounding the entrance. One main hole is found in the center of the area and other smaller entrances may dot the periphery. Trails are often evident leading away from the mound like a spoked wheel. These trails lead to the plants that the ants are harvesting and are used daily. These trails may be exploited by horned lizards who sit and wait for the ants to walk by. The trails are also thought to serve as partitions between neighboring ant colonies to reduce aggressive confrontations.

Pogos construct their nests in the earth using an elaborate system of tunnels and chambers. Tunnels are primarily cut by the ants' mandibles and the soil particles are pulled out and deposited in another place. They may use their front legs to collect loose soil to be carried out. One interesting phenomenon is the ants' ability to stridulate to loosen soil. Stridulation is an action in which a "scraper" on the ants' leg is rubbed over a filelike surface causing a vibration. The vibrations created by stridulation help loosen soil during nest excavation. The ants may press their mandibles into cracks in the nest wall to direct the vibration.

As you can see, harvester ants are amazing insects. I have only started to describe their habits and characteristics. However, these insects are not always appreciated by humans. The large surface they clear is an ugly spot in modern man's quest for the perfect manicured lawn. Humans also tend to believe all ants are "bad" ants. However, by maintaining healthy populations of native ants, introduced insects, like the fire ant, find it tougher to invade your lawn successfully.

On my searches for the Texas horned lizard *(Phrynosoma cornutum)*, I spoke with many people who admit to poisoning harvester ant mounds. Overcoming the bad reputation given to ants is a problem HLCS will have to confront for years to come.▼

References:

Cole, Arthur C., Jr., 1968. *Pogonomyrmex Harvester Ants: A study of the genus in North America.* The University of Tennessee Press, Knoxville, TN.

Spangler, Howard G., 1973, Vibration aids soil manipulation in hymenoptera. *Journal of the Kansas Entomological Society. 46 (2); p 157.*

Sudd, John H. and Nigel R. Franks. 1987. *The Behavioral Ecology of Ants.*Chapman and Hall Publications. New York, NY.

A Horned Toad Star?

By Bill Davis

Question: In the movie "Old Yeller" what did the little boy trade the cowboy for Old Yeller? That's right! A horny toad! Not a bad trade either. Of course, the cowboy (Chuck Conners) immediately turned it loose (what a guy). Also you might notice that the little kid had been carrying it in his pocket. As a child, I never did that. Seems like it would be a bad idea for both of us.

A second movie where the horny toad played a prominent role was "The Outlaw Josey Wales." In one scene, Clint Eastwood wakes up eye to eye with one of our little friends, it seems Chief Dan George placed it in front of him because horny toads "know which way to go". Clint didn't take the horny toad's advice, but at least he didn't spit tobacco juice on him!

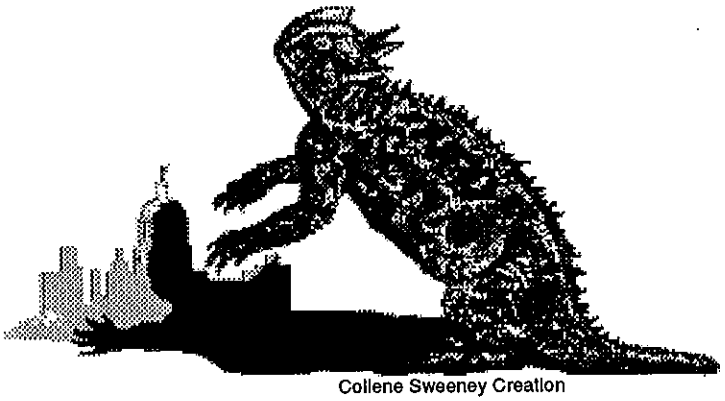
Are there any other movies out there with our hero in them? Well, there are tons of Cheapie Creepies that involve spiders, bats and even ants that terrorize the human race. But none, so far as I know have exclusively starred our friend the horny toad.

So...here's my idea! A horny toad (minding his own business) stumbles onto and eats a radioactive cheeseburger. After growing to an enormous size, he waits just outside the city limits gobbling up unsuspecting bicyclists that stray too far from the "mound".

The city, citing budget problems, is unable to deal with this new menace (the last menace the city handled was building developers and they did that badly). Naturally the city turned to the Horned Lizard Conservation Society for help.

After much debate and 17 votes, a spokesperson is elected to attempt communication or a mind meld with the giant creature. This brave soul (whose initials are "BD") uses a complex form of head movements (a.k.a. "horny toad talk") to communicate with the rampaging reptile. He eventually convinces "Chuck" (found out his name) that eating entire fire ant mounds like popcorn would make him a national hero, beloved by all.

Chuck admits that while bicyclists' legs were something of a delicacy, the equipment that they wore was definitely hard to digest. Hence, Chuck's reign of terror came to an end. ▼



Collene Sweeney Creation

Horned Toad Tales

By Clare Freeman

Horned toads have been part of the human environment in the North American west since the earliest immigrants set foot on its plains and prairies and deserts thousands of years ago. Through the ages, they have entered into the myths, stories and folklore of most people settling these lands.

The tradition continues today, and one of the most recent additions to this body of tales is *Alice Nizzy Nazzy, The Witch of Santa Fe*, a charming retelling for children of the old Russian tale of Baba Yaga, by Tony Johnston.

The earliest tales are those of Native Americans, and in these stories, horned lizards are generally revered as steadfast, wise, and industrious, but among the Chemehuevis of southern California in the story "How Horned Toad Visited the Giants," the horned lizard is a little less than wise.

Horned Toad lived out in the desert alone. One day his cousin, Small Bird, stopped by on his way to visit the Giants. Horned Toad begged to go along but Small Bird was afraid. He told Horned Toad that the Giants were cannibals who would trick their visitors into laughing and use that as reason to eat them. Horned Toad was always grinning and would laugh at anything, but he still begged and promised not to laugh. Finally Small Bird gave in and said that if they could fix up Horned Toad with some kind of protection then he could go.

They gathered up some flint arrow-heads and made a wreath of them. Small Bird tied the wreath to his cousin's head and the two set off to visit the Giants. It was evening when they reached the Giants' camp, and Small Bird warned Horned Toad again. But Horned Toad just grinned and promised not even to smile.

The Giants were huge and stark naked; and after sharing supper with the two visitors, they began to dance and cut up around the fire. At first Horned Toad was sure he could keep a straight face but soon was grinning from ear to ear and finally as the dancing got wilder and wilder and the antics more outrageous, he burst out laughing. Immediately a Giant snatched him up and popped him in his mouth. But when he tried to swallow Horned Toad, the flint wreath scratched his throat so hard that the Giant coughed him right out. And that's why to this day horned toads wear flint wreaths and grin big grins.

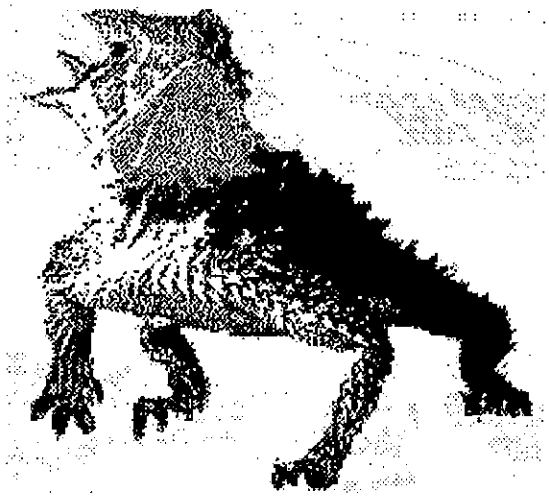
In the Navajo story "Coyote and Horned Toad" the prickly spines of the horned lizard are again important but the horned toad's attributed virtues receive emphasis, too.

The Horned Toad clan were hard workers and well liked by their neighbors for their industry and politeness. Every day Horned Toad and her husband and children worked hard to make a good farm and keep a clean hogan. They cleared fields and planted seeds for squash and corn. They hoed weeds and carried water and picked off bugs eating the plants.

Coyote heard about this fine farm and decided to go have a look just when the corn was ripening. Horned Toad was alone working in her field when Coyote arrived and when he asked, she gave him an ear of corn to eat. He kept asking for more and more corn and Horned Toad said to him " Corn is very hard to raise. My children and I must hoe and water it and pick off the bugs. I can't afford to give it all away to those too lazy to raise their own."

Coyote ran out into the field and picked a big ear of corn and began to eat it, but Horned Toad was hanging onto the other end of it. When Coyote gulped it down, he gulped down Horned Toad at the same time. Coyote looked around but he didn't see Horned Toad so he quickly ate all the corn he could.

He was too full to move and soon began to feel sleepy so he stretched out in the shade to rest. Down inside Coyote, Horned Toad was very angry so she began to swell up bigger and bigger and Coyote felt fuller and fuller. Then she called out, " Hey, Cousin! Give me some corn!".



Coyote raised his head and looked around and saw some little birds. "Go away! It's a lot of work to raise corn and this is my farm now so I won't give you any," he said. This really made Horned Toad angry so she began to walk around inside Coyote and called out again, "Hey, Cousin!". Again Coyote thought it was the little birds and told them to go away. Horned Toad kept walking and twice more she called out to Coyote. The fourth time Coyote realized that something was calling from inside him and his stomach began to feel like something rough was in it.

He knew that it must be Horned Toad walking around in there so he begged her to come out but Horned Toad said "No. Out there I don't have my farm anymore but in here at least I have some of my corn". Then she began to pull and scratch against some of Coyote's organs; she pulled at his liver and she scratched against his lungs and she pulled and scratched against his heart. Coyote howled and ran as fast as he could away from Horned Toad's farm but he couldn't run away from Horned Toad. Soon Coyote felt something sharp hacking at his throat; it was Horned Toad using her horns to cut her way out. As Coyote fell down dead, Horned Toad crawled out and went back to work in her cornfield, saying, "See what happens to those who take what's not theirs."▼

Reading List

Books with horned lizard stories

Begay, Shonto. 1992. Ma'ii and Cousin Horned Toad: A Traditional Navajo Story. Scholastic, Inc. New York.

Bowers, Janice Emily. 1993. A Full Life in a Small Place and Other Essays from a Desert Garden. University of Arizona Press. Tucson, AZ.

Johnston, Tony. 1995. Alice Nizzy Nazzy: The Witch of Santa Fe. J.P. Putnam.

Manastet, Jane. 1997. Horned Lizards. University of Texas Press. Austin, Texas.

Penney, Grace. Spiky the Mini-Monster. World Books. Waco, TX.

Sherbrooke, Wade. 1981. Horned Lizards: Unique Reptiles of Western North America. Southwest Parks and Monument Association. Globe, AZ.

Welch, June Rayfield. 1993. O Ye Legendary Horned Frog! Yellow Rose Press. Irving, TX.

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

Forwarding and Return
Postage Guaranteed
Address Correction Requested

Don't Forget to Renew-Consider giving a gift membership to the Phrynophiles in your family!
PLEASE JOIN US NOW! Students/Seniors 65+: $10, Subscribing: $10 (newsletter only), Regular: $25, Contributing: $50, Patron: $100.00, Lifetime: $250.00. (Families=$25 for the first person and $10 for each additional member).

Printed on Recycled Paper

Table of Contents