



Highland Lakes Steward

March 2013

Volume 4, Issue 3

MISSION

The Texas Master Naturalist program is a natural resource-based volunteer training and development program sponsored statewide by Texas A&M AgriLife Extension and the Texas Parks and Wildlife Department.

The mission of the program is to develop a corps of well-informed volunteers who provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities for the state of Texas

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AHHH, SPRING

By Linda O'Nan

After a mild and mostly dry winter, spring is at our doorstep. I am always ready, no matter how little winter we have had. For the first time in the 13 years I have lived in the area, the microclimate area on the south side of my house received no frost! Turks cap, salvia greggi, Mexican honeysuckle, purpleheart, shrimp plant, aloes, chile pequin and trailing lantana bloomed consistently all winter. Many of my cold sensitive prized succulent bowls remained outside all winter, too, with no damage. As thankful as I am for little biting cold, I am looking to the skies for moisture to abate the drought conditions that we just seem to always be in or on the edge of that we can't shake. We all have to be even more vigilant to practice good water conservation techniques, holding tight to the deep green principles that we have been taught, especially through our master naturalist programs. Speaking of programs, be sure and welcome our new 2013 class. They will join our team of ever-faithful volunteers—do you remember what brought you to master naturalists? For most of us, more life is over than we have lying ahead, and whether it is a renewed interest or a newly found personal passion, what a great way to give back to the natural world. Many, many thanks to the outstanding contributions of our chapter members. Spring-



Turk's Cap (*Malvaviscus arboreus* var. *Drummondii*) by Jerry Stone

time renews our faith that whatever we do will make a difference. So get out there and get dirty.....Spring will slip away before you know it. Clean out the hummingbird feeders—wash your windows so you can see the birds. Love is in the air—breathe deep. Enjoy. See you soon. Can't wait.

INSIDE THIS ISSUE:

AHH, Spring Linda O'nan	1
April Meeting Pat Campbell	2
Wood Duck Box News Jerry Stacy	2
March Meeting	3
Friends of UHNLC Billy Hutson	4
Pest of the Month - Malta Star Thistle Fred Franki	5
The Kildeer Sherry Bixler	6
The Smallest Hummingbird Becky Breazeale	7
The Vastly Underrated American Opossum Phil Wyde	8
Gallery	11

Please submit pictures, articles, reports, stories, announcements, etc. to

chili865@gmail.com.

Photos should have captions and appropriate credits. The deadline for submissions to each month's newsletter is the 10th of the month and publication will be by the 15th.

Jerry Stacy Made a Wood Duck nest box run on March 11 and found two nests with eggs - one with three and one with six.

Photo by Linda O'nan

APRIL MEETING

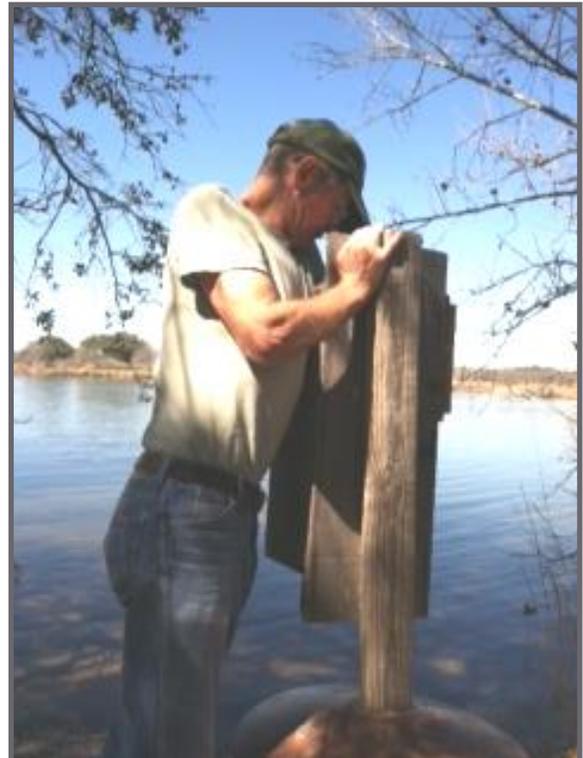
by Pat Campbell

Our speaker for April is going to be Bonnie Baskin from the Hill Country Science Mill located in Johnson City. The Hill Country Science Mill, a regional science center, won't actually open until 2014. Bonnie is going to talk about the focus, what resources will be available, other information about the Mill in general, as well as some possible volunteer activities for the future.

Bonnie, educated at the University of Miami, is a PhD and has been a scientist and biotech entrepreneur. She founded and ran two biotech companies, and sits on a number of non-profit and for-profit boards. She certainly has a great science background and it should be very interesting to hear about what is coming to the Hill Country.

Lunch will be at Darci's Deli this month. It is located at 909 Third St, in Marble Falls in case you are not familiar with it. I have been assured that at 11:15-11:30, we will have no problem getting out in an hour or so. As usual, I welcome any ideas for future lunches.

See you there!

WOOD DUCK BOX NEWS! By Jerry Stacy

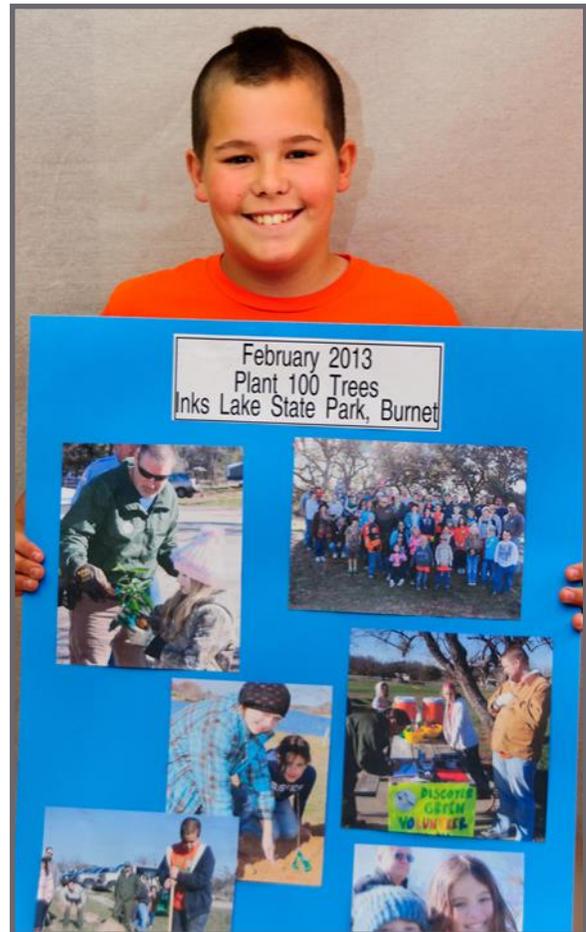
MARCH MEETING

Photos by Jerry Stone



Mark Klym of Texas Parks and Wildlife, provided a comprehensive look at the wild cats of Texas, their history and biology.. Mark is Coordinator of the Texas Hummingbird Roundup and Texas Wildscapes programs.

Debora Maroney introduced Gabe Jones who inspired us all telling about his Discover Green Marble Falls Project. Discover Green is a non-profit environmental service group for students. . His latest project is to plant trees at Inks Lake State Park. He organized several students to plant 100 trees in February and he is planning to do it again in April.



FRIENDS OF THE UPPER HIGHLAND LAKES NATURE CENTER (UHLNC)

by Billy Hutson

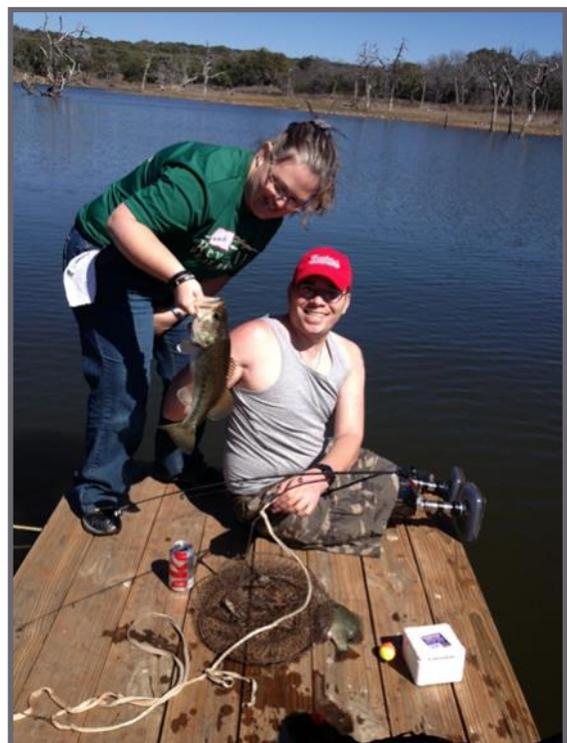
Progress is happening at the nature center. The month of Feb. alone we have put in an approx. total of 200 hours in building trails, cutting cedar (Ashe Juniper) posts for the fence, and a general cleanup of the nature center, had a geological oriented hike for the Sun City Geology club where Dr. Frank Caramanaca and I hosted and guided 15 members of their geology club on a 3 hour tour of the nature center ending with the subject of their interest- the natural geology amphitheater at the washout.

Next, we (a dozen volunteers- several from the new HLMN class) assisted RPR owner Vol Montgomery, with the 60 plus members of a wounded and recuperating military force from San Antonio to a free day of recuperation with their families at RPR. Some of us participated in a one on one to take soldiers out on a fishing excursion with good success, some volunteered to cook and serve all 80 (includes volunteers) to the grilled food, some of us cleaned up before and after the event, some gave interpretive hikes, and some of us just floated between the soldiers to show our individual empathy of their encounters in adversity to serve our country. One recuperating soldier (who

had been shot 12 times) made the comment of the day to me that he thought the day was rehabilitating and the tour to the top of Inspiration Point was inspirational. He didn't know that it had been named Inspiration point by Vol after a book by Pres Bush. This was all possible because of the ranch owners sincere concern for our wounded military. Needless to say we all felt good after a long day knowing we had made a difference. This may be a quarterly event.

To follow up, we hosted a group of hikers from Sun City for three hikes. When I was asked to host this, I contacted them and asked if they wanted a 15 min, a 30 minute or a one hour hike. Their response was that they have three categories IE: bottom level that wanted a 2 hour hike, intermediate level that wanted a 3 to 4 hour hike, and the advance level that wanted a 7 to 8 mile hike (beyond estimation). Obviously, I enlisted help (Andrea, Betty and Sharon), and they all wanted interpretive hikes so it was right up our alley (trail).

It's been a great month and it is getting better with several new members from the general public and it's growing every day as they hear more about us.



PEST OF THE MONTH

INVASIVE MALTA STAR THISTLE – LEARN HOW TO IDENTIFY AND ERADICATE!

By Fredi Franki

Malta Star is in the Sunflower family, Asteraceae. It is a non-native annual that is insect pollinated and reseeds itself. Each plant has numerous small, prickly, yellow flowers and the seed head can contain up to 60 seeds. Seed heads form between April and September and the seeds can be dormant for up to 10 years. Plants have a long taproot and are very competitive, crowding out grasses, wildflowers, and other desirable plants, ultimately having a negative impact on wildlife. Each thistle grows 1 – 3 feet tall. If at all possible kill or pull the plants when they are small.



Rosette

There is no one method of control, and certainly no easy method. Identify the rosettes and attack them in the fall/winter. Select methods according to size of the area, other vegetation, and available resources. Herbicides can be used from fall until early spring or when the plants bolt. Once flowering begins herbicide use is much less effective. If possible spray only the offending plant(s). I have used a cardboard box with no top or bottom. Set it down over the selected area and spray. The box keeps the spray from drifting. Roundup and vinegar are two good choices. Mix Roundup according to instructions. Vinegar can be either 9% or 20%, use it straight but add about 3 generous squirts of liquid dish soap. Use a garden sprayer with wand for best control.

I also pull plants, fairly easy this time of year, especially after a rain. This is a good approach if you have a small area, don't want to, or cannot spray. Get as much of the root as possible. Later in the summer, I find it almost impossible to pull the mature plants. If you have mature plants to dispose of either burn them immediately or leave them in the sun in something like a black plastic bag to "cook" the seeds. Then put the bags out for trash pickup.

Mowing after seed heads form is problematic. I used a push mower and bag but seeds can still spread



Flower

on the wheels of the mower and

stick inside the bag. Also my push mower could barely handle the thick plants. If you mow them now, as small plants, mow every week and set the blade down as far as possible. Otherwise, they grow back even bigger. And they will still form a seed head(s), just not as much as a full grown plant. Be aware that Malta Star can be toxic to horses.

None of these methods is a one-time shot. You must use multiple methods and repeat often. As with any invasive control, research is important and each site is different. You will likely destroy some good plants along with the bad. Part of the whole management process includes replanting of desirable plants after gaining control of the offending invasive.

Share your experience with the rest of the chapter. Sheryl Rodgers-Smith just put some links to her website in an email. She included her experience and great pictures too! Terry Whaley said the 20% vinegar really works but is a lot more expense than 9%. Penny Nichols is successfully using the 9%. Let us know what you find out.

References:

http://texasinvasives.org/plant_database/detail.php?symbol=CEME2

http://www.fs.fed.us/outernet/r3/publications/documents/managing_starthistle.pdf

THE KILLDEER (*Charadrius vociferous*) AND THE EVOLUTION OF EGGS

By Sherry Bixler



The Killdeer is an easily recognized bird with vivid markings and a distinctive call. A shorebird that occurs year-round in the southern half of the United States, the Killdeer is usually seen in very small groups except in late summer when loose flocks are formed.

Prominent double black breast bands and a black eye-stripe help with identification of this medium-sized shorebird. He is 10 ½ inches long, has an orange rump and a loud 'kill-dee' call.

He is one of the birds that is actually named for his call and his latin name, *vociferus*, is entirely apt. He is a member of the plover family which has about a dozen species in North America.

Killdeer are primarily insect eaters although they consume small invertebrates and a very small percentage of weed seeds. They nest on bare, gravelly ground and feign injury to draw predators away from the nest. They raise 3 to 5 young and although they are generally found near water, they may nest a good distance from it.

Ages ago the reptiles 'invented' the eggshell which served to keep the egg from drying out. As descendants of reptiles, birds have evolved eggs of an improved design. Bird eggs are virtually self-contained

systems, needing only warmth and oxygen to hatch. Oxygen is absorbed through the somewhat porous eggshell while carbon dioxide and water are given off the same way.

Altricial birds (those who hatch undeveloped and require more parental care) need a lower percentage of egg yolk to provide sustenance since they need it for less time. Precocial birds like ducks need a higher percentage of yolk since they remain in the shell longer.

Small birds lay proportionately larger eggs. A wren egg can weigh as much as 13 per cent of the bird's weight while an ostrich egg may weigh only 2 per cent of the bird's weight.

Most eggs are oval but some, like those of owls, are almost round. Seeing abandoned nests always makes us wonder what bird built the nest but remember that collecting nests, feathers or eggs is against the law unless a scientific collector's permit is in use.

(Note that this will be the last bird/birding article in this 3-year series.)

THE SMALLEST HUMMINGBIRD

by Becky Breazeale

Last spring, my husband and I were out in the yard trimming our sage bushes when we saw what we thought was the smallest hummingbird in the world (that was before my master naturalist training). Our neighbor was there and he could not help us identify the bird. I went straight to *A Field Guide to the Birds East of the Rockies*, by Roger Tory Peterson for information. I turned to the Hummingbird page and there it was – Sphinx moth.



Courtesy of *A Field Guide to the Birds East of the Rockies*

The hummingbird look-a-like that we spotted appeared to be a White-Lined Sphinx Hummingbird moth *Hyles lineata* (Fabricius, 1775) White-lined **Sphinx Hummingbird Moth**. The White-Lined Sphinx hovers over flowers, uncoils, and inserts their long sucking mouthparts into the plants. They drink the nectar – much like hummingbirds. Their wings also beat very rapidly and are seen as a blur while these creatures are hovering over their food plants. You can see them at anytime during the day or night and can be found in many places including deserts, suburbs, and gardens.



Courtesy of flickr.com

These particular moths have a wingspan of 2 7/16 - 3 9/16 inches (6.3 - 9 cm). The Upperside of the forewing is dark olive brown with paler brown along the

upper edge of the wing called the costa and outer edge of the wing called the margin. There is a narrow tan band running from the wing tip to the base, and white streaks along the veins. The upperside of the hindwing is black with a reddish pink middle band.

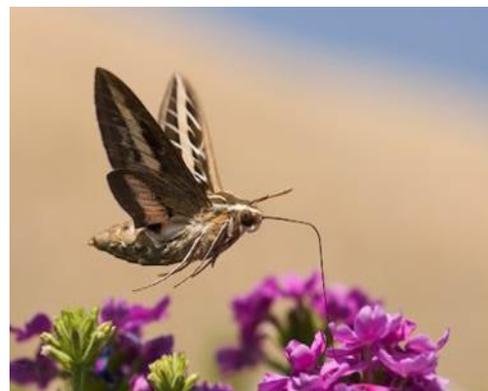


Courtesy of flickr.com

Caterpillars pupate in shallow burrows in the ground. They enjoy such plants as evening primrose (*Oenothera*), tomato (*Lycopersicon*), purslane (*Portulaca*), willow weed (*Epilobium*), four o'clock (*Mirabilis*), apple (*Malus*), elm (*Ulmus*), and grape (*Vitis*).



Courtesy of Terry Thormin



Courtesy of alaska-in-pictures.com

(Continued on page 10)

THE VASTLY UNDERRATED AMERICAN OPOSSUM, *DIDELPHUS VIRGINIANA*

By Phil Wyde

I suspect that many of you do not think of opossums as cute and cuddly – and maybe even consider them with some scorn. However, please read on! I think that you will find that opossums deserve a LOT more respect than they usually get. In fact, I think that they actually deserve some admiration.

The first thing that you should know is that the word “opossum” refers to *Didelphus virginiana*, the native North American species of opossum. There are more than 130 other species world-wide. They are referred to as “possums.” Only the *D. virginiana* is called an opossum (ref. 5).”

The next thing that you should know is that in this article I am only going to talk about *Didelphus virginiana*. Don’t be too disappointed. You should find the information about this one species more than enough to satisfy your deepest naturalist desires.

With Master Naturalists I have to be careful about using the term “native.” *D. virginiana* is not truly native. He appears to have originated in South America (about 50 million years ago) and then migrated to Central America where the species remained until sometime after the geologic formation of the Isthmus of Panama (ref. 1). Sometime after the formation of that isthmus, *D. virginiana* came to North America and Texas. I think that technically that would make the species an invasive. However, since he came here (i.e., to Texas) before ANY other mammal, that makes *D. virginiana* THE OLDEST living mammal in Texas (ref. 2) and alright to call him to call him “native.”

If we look at the taxonomy of this species it can be seen that the opossum has been placed in the Animal Kingdom, phylum Chordata, class Mammalia, infraclass Marsupialia, order Didelphimorphia, family Didelphidae, genus *Didelphis* and species *Didelphus virginiana* (ref. 1). The most important thing that you get out of this set of information is that the opossum is a MAMMAL (i.e., young opossums get milk from their mothers) AND a MARSUPIAL (i.e., the premature pups are maintained in the pouch of their mother until they reach maturity). That makes them the only marsupial mammal in North America and something special! Note that although they look like rodents, they are NOT!



Figure 1. Image of an irate opossum (taken from ref. 1)

Now let’s get down to some interesting facts about the opossum. They are semi-arboreal omnivores. That means that they like to live in trees and eat both plant and animal matter. However, even for omnivores, their diets are very broad. Indeed a main part of their diet is carrion and they also eat insects, frogs, birds, snakes, small mammals, slugs, earth worms, apples, oranges, persimmons, avocados, other fruits and more. Speaking of snakes, in some parts of Texas, copperhead snakes can constitute up to six percent of the opossum’s diet (ref. 2).

As you might guess from this diverse diet, they will often take advantage of food around human habitation, e.g., pet food, food waste in garbage and food left around other human habitats (e.g., camp and picnic sites).

Opossums have prehensile tails. However, except for young babies, the opossum's tail is not strong enough to allow these animals to hang by their tails. Instead, the opossum mostly uses its tail as a brace and a fifth limb when climbing. The young do not have much need of their tails. To get her young around, a mother opossum will sometimes carry her young upon her back, where they will cling tightly whether she is climbing or running. Here is another interesting fact; opossums can swim (ref. 4).

Opossums only have bristle-like hair (i.e., not soft, flat-laying) which is why most people probably do not find them cute and cuddly. (Their rat-like eyes may also turn people off.) Of course, being marsupials, female possums have a pouch called a marsupium. Also of interest albinism (a lack of pigmentation leading to an all white appearance and pink eyes) is relatively common in the possums. (They are normally a mixture of white, black and/or gray.) They can hear and smell extremely well, but they have relatively poor eyesight. Intelligence appears to have had little to do with the possum's ability to survive all these millions of years, since they have relatively small brains. I would lean instead to the possum's adaptability to changing environments, high reproductive capabilities and their ability to use a broad range of food sources. While talking about food let me throw in another interesting fact about opossums. They have 52 teeth, more than any other mammal in North America.

I am sure that none of you, INCLUDING BILLY, know the next fact that I am about to tell you. (I certainly did not.) I will bet almost anything! This next fact is that male opossums have a forked penis bearing twin glandes! Now that I have told you that you will not be surprised to learn that female opossums have bifurcated vaginas. (It is this fact that gives rise to the term "didelphimoph" and the names of the order (Didelphimorphia), family (Didelphidae) and genus (Didelphis) used in opossum taxonomy.)

There is more that I suspect that Billy does not know about opossums. (Again I did not.) Opossums have a very vigorous immune system (probably related to their life style) and have partial or total immunity to rattlesnake, cottonmouth and other pit viper venoms (ref. 1). Interestingly they are not immune to the venom of Old World snakes (e.g., cobras and puff adders; ref. 2). Of equal interest, opossums are eight

times less likely than wild dogs to carry rabies. This may be due to their lower body temperature.

I am tempted to tell you a lot about the sexual and reproductive habits of opossums, and given what I have told you about their sexual organs, I am sure that you are very interested. However, because I do not want to get Cindy (Sterling) or Helen (Smith) too excited, I will just give you a few highlights. First, opossums mate only once a year, but have two litters, once in the spring and once in late summer (ref. 4). (If you come up and ask me, I will explain to you how this can happen.) Gestation is very fast, ONLY 13 DAYS! As many as 25 babies are born and make their way into the pouch. Once there, they must find a teat and hold onto it. THAT IS BECAUSE THERE ARE ONLY 13 TEATS! (For the mathematically impaired among you, 25 young and only 13 teats!) Despite these initial losses, relatively large litter sizes of 12 or 13 are not uncommon (refs 1 and 4). The young are weaned between 70 and 125 days when they let go of the teat and leave the pouch (ref. 1).

Opossums are usually solitary, roam freely and stay in an area as long as food and water last. They live mostly in abandoned burrows, in tree hollows and under houses and buildings. However, they will also live in haystacks, junk heaps, chicken houses, abandoned autos, storage sheds, etc. (ref. 1 and 3). If a possum does become a nuisance on your property, you can use peanut butter and sardines to lure the animal into a live trap for relocation. The Texas Parks and Wildlife Department will issue free permits to trap, transport and release nuisance fur-bearing animals (ref. 3).

The average life span of an opossum is short, one to two years with four years being a long life span (refs 1 and 3). Many are killed by automobiles particularly since they often are about at night and feed on road side carrion. Dogs and man also rank high on the list of the opossum enemies. Natural predators of opossums include foxes, coyotes and owls.

In general opossums would rather run than fight. However, when cornered they commonly "plays possum." When they do this they try to mimic the appearance and smell of a sick or dead animal. Indeed, during this charade they often emit a smelly substance from their anal gland that smells like rotten meat (ref. 4). Interestingly this whole response is involuntary and not a conscious act (ref. 1). When an opossum is

"playing possum", the animal's lips drawback, the teeth become bared, saliva is secreted from around the mouth, the eyes close or half-close, and the foul-smelling fluid is secreted from the anal glands. "The stiff, curled form can be prodded, turned over, and even carried away without reaction (ref. 1)." The affected animal typically recovers between 40 minutes to 4 hours later (ref. 1)."

Threatened opossums will growl deeply, raising their pitch as the threat becomes more urgent. They also make a clicking noise as they wander in search of a mate; female possums will sometimes repeat this sound. Baby opossums will make a sneezing noise to signal their mother if distressed. If threatened, they will open their mouths and hiss until the threat is gone (refs 3 and 4).

Interestingly the opossum was once widely hunted and eaten in the United States. Just as interesting, opossum pelts were once a staple of the fur trade. I can only imagine that back then there were a number of "Oatmeal Cowboy" types.

To end this article I would like to point out a number of positives for opossums (taken from ref. 5) and make one last comment on their name.

Opossums:

Do not gnaw or chew on things;

Do not dig up gardens or attack people or pets;

Have a peaceful nature and avoid confrontations;

Help gardens by eating snails, slugs, insects, snakes, rats and overripe fruit;

Are not a public health risk; and

They are a Texas native.

The name "opossum" is thought to have originated in Virginia when Captain John Smith, leader of the Jamestown colony translated the Algonquian Indian name "white beast" into the English word "opossum."

References

<http://en.wikipedia.org/wiki/Possum>

<http://suite101.com/article/the-opossumoldest-mammal-in-texas-a41996#sthash.wj45md7k.dpuf>

<http://www.opossum.org/facts.htm>

<http://www.planetpossum.com/facts.htm>

<http://biology.clc.uc.edu/students/114-sum98-opossums/misc.htm>

(Continued from page 7) **THE SMALLEST HUMMINGBIRD**

Adults sip nectar from a number of different flowers including sage (*Salvia*), Columbine (*Aquilegia*), larkspur (*Delphinium*), honeysuckle (*Lonicera*), moonvine (*Calanthe*), lilac (*Syringa*), clovers (*Trifolium*), and Jimson weed (*Datura stramonium*).

If you are out in your garden this spring and you try to get a closer look at the smallest hummingbird in the world, don't be fooled by the White-Lined Sphinx moth. This imposter moth is brown, striped and has

antennae unlike any hummingbird you'll ever see.

Resources:

<http://www.birds-n-garden.com>

<http://www.butterfliesandmoths.org/species/Hyles-lineata>

<http://www.flickr.com>

<http://www.puyallup.wsu.edu>

GALLERY

By Jerry Stone



Baby Alligators taken in 1993 at Brazos Bend State Park



Low Verbena (*Verbena pumila*) taken in Horseshoe Bay on 3/9/13

Crow-Poison (*Nothoscordum bivalve*) taken on 3/4/13 in Horseshoe Bay.



GALLERY

By Jerry Stone



Pin Clover (*Erodium cicutarium*) taken on 3/9/13 in Horseshoe Bay.



Spreading Bladderpod (*Lesquerella gracilis*) taken on 3/9 in Horseshoe Bay by Jerry Stone



Drummond Phlox (*Phlox Drummondii*) with flower fly (?) taken on 3/8/12 on the Willow City Loop.



Bluebonnet (*Lupines texensis*) taken on 3/9/13 in Fredericksburg