



## The Reverchon Naturalist

*Recognizing the work of French botanist Julien Reverchon, who began collecting throughout the North Central Texas area in 1876, and all the botanists/naturalists who have followed ...*

### Ye-Haa! The Red-Bearded Ladies of Texas

*Story by Ann Mayo, Member  
Cross Timbers - Texas Master Naturalists  
Arlington, Texas*

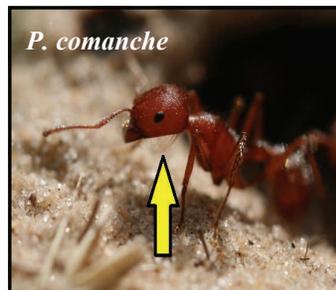
Many of you don't need to be told that Texas is a great place to study ants. Complete strangers have said this to me in passing. Although we can't quite boast of having the most species of ants in the union, for that claim goes to Arizona. Of the 14,000 described species out of an estimated 40,000 in the entire world, Texas hosts approximately 280 kinds of ants with some unique to Texas. Ants are found in nearly all terrestrial habitats where they play diverse and important roles, including as prey and predators, pollinators, seed dispersers, and in soil ecology. In fact, many biologists claim that ants are more important than earthworms for soil vitality. The ants in any habitat are important for ecosystem health and functioning, which is one of the main reasons I study the ants of the Texas prairies.

Although there are many interesting ants in the tall grass prairie, I am currently focused on harvester ants in the genus *Pogonomyrmex*. This name means bearded (*pogono*) ant (*myrmex*), or pogo for short. The beard refers to special hairs located just below the mandibles that are used for cleaning the ant's body. Calling this a beard may seem a bit odd, for only the workers have this structure and workers are always female - hence, our red bearded ladies. But this is how the structure appeared to the men who first described these ants.

Historically, pogos probably arose in Guatemala, and spread both throughout South and North America as

habitats became hotter and drier. Today, pogos typically live in deserts and arid grasslands where they primarily feed on seeds and, therefore, have the potential to effect plant populations. They nest in sunny, open areas with good soil drainage and are particularly abundant in our Southwest. Their preference for open areas also means they will nest in human disturbed areas like dirt paths and electrical power line right of ways. These ants are also the preferred food of the Texas Horned Lizard (*Phrynosoma cornutum*).

There are 40 some species of *Pogonomyrmex* ants and in Texas we have 11 of them. Most of you are familiar with one species, *Pogonomyrmex barbatus*, which are often called harvester ants or big red ants and common throughout Texas. *P. barbatus* builds nests with an exterior, large flat disc covered with pebbles. Another species, famous for its heat tolerance, is *Pogonomyrmex desertorum*, and besides Texas live in Death Valley where the species forages in the heat of the day. Besides tolerating heat, pogos are some of the worst for venomous stings with *Pogonomyrmex maricopa* topping the list for any arthropod. My study species, *Pogonomyrmex comanche* has become quite rare as its open, sandy habitat has been fragmented and disappeared. While some pogos are well studied, we know little about *P. comanche*. I hope to add to what we know about these ants and their role in the tall grass prairie in Texas so stay tuned, there's more to come.



*P. comanche*  
This *Pogonomyrmex comanche*, left, has become quite rare in the tall grass prairies of Texas. Note the red beard just above the yellow arrow in this photo. (Photo: Ann Mayo, Cross Timbers Chapter of the Master Naturalists)

**PARTNERING**

This issue brings new blood into the Reverchon Naturalist. Several of the stories in this issue come by way of interconnected roots from another group that appreciates our native plants, insects and animals. This group are members of the Texas Master Naturalists that belong to one of 42 chapters spread across Texas and are lead by Michelle Haggerty, state coordinator for the program. Michelle forwarded information about the Reverchon Naturalist to all 42 chapters with an invitation for those who would like to write an article to do so. These members are energetic and enthusiastic ambassadors of all things related to the great outdoors, so we welcome them to our newsletter family.

This winter continues to be colder and dryer than normal making the passage into spring that much more to look forward too. We always have the green up and flush of wildflowers to look forward to, right? However, predictions for abundant spring wildflowers are less than hopeful. There will be wildflowers, but not in the grand large scale displays of past years that had adequate fall rainfall. Just like the plants and animals we too must take the sweet with the sour.

---

***The Funny Little Grasses***  
**By MacKenzie Moore**  
**NRCS Rangeland Mgmt. Specialist**  
**McKinney, Texas**

With the Bluestem and the Big Bend  
And the Grama playin' drama,  
The flowers are inflating  
And the seeds disarticulating.

Tumblegrass tumbles by  
And Fescue is growing high,  
Coastal Bermuda covers the ground  
And, of course, the sedges never round.

Broomsedge sweeps the land  
And the Lovegrass in the sand,  
Look for the Panicum that is so small  
And watch the Johnsongrass get real tall.

In the water grows the rice  
And the Threeawn is never twice,  
The Rye will always grow  
In rain, sleet or snow.

So, take with you now this poem  
Make sure, the grasses, you know 'em,  
The contest grows near  
But do not fear.

Remember what you like best about the  
grasses  
And the funny things they do,  
Just learn the grasses the best way for you.

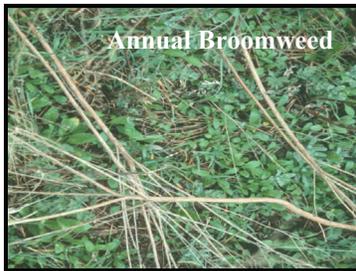
**(Written-Sept. 24, 1996)**



## Weed Control

Story by **Ron Sosebee, Ph.D., Professor Emeritus**  
Texas Tech University

**W**ith weed problems occurring when we have wet falls and winters, it's no surprise that most of our weeds germinate in the fall, early-winter and over-winter in the vegetative stage (rosette). Many of our annual weed seedlings don't resemble the mature plant, e.g., annual broom weed. Hence, the weeds are alive and ready to send up a flowering stalk as soon as the environmental conditions are right in the spring, which is usually about the time that the grasses begin to green up. On the other hand, the weeds already have a head start and get ahead of the grasses. The weeds then become dominant and overshadow the grasses. Ultimately, the weeds significantly reduce grass production, and are most easily controlled when they're in the vegetative stage rather than after they have sent up a flowering stalk.



*Weed control is most effective and cost efficient when applied at this stage of growth as seen in these pictures. (Photo: Ron Sosebee, Ph.D.)*



### 2011 Texas Brigades Camps

The Texas Brigades is a wildlife-focused leadership development program for high school youth (ages 13-17). There are four different camps: **Bobwhite Brigade**, Buckskin Brigade, Feathered Forces, and Bass Brigade. You will be introduced to habitat management, hone your communication skills, and develop a land ethic. Top wildlife professionals and resource managers serve as instructors and mentors, and each camp is 4 ½ days long.

*Announcing the upcoming 2011 camp dates for Texas Brigades Camps. These dates and more information about the camps can be found at their Web site: <http://www.texasbrigades.org/Camps/camps.html>*

The **Bobwhite Brigade** celebrates its 19<sup>th</sup> anniversary this June. Applications for cadets (ages 13-17) and Covey Leaders (adults) are available at [www.texasbrigades.org](http://www.texasbrigades.org). Tuition for cadets is \$400, but scholarships are available; Covey Leaders attend free of charge. Dates for the Rolling Plains Bobwhite Brigade (held at Centennial Lodge near Coleman) are June 18-22; the South Texas Bobwhite Brigade convenes June 26-30 at the 74 Ranch near Campbellton. For more information, check the Texas Brigade's Web site.

# Who's Singing In My Backyard

*Story and Photo by Don Johnson, Member  
Coastal Prairie Chapter of the Texas Master Naturalists and  
Fort Bend County Master Gardener's Entomology Group*

While at the Houston Museum of Natural Science recently I bought a book titled, *The Songs of Insects*. A CD came with the book that includes the sounds of a variety of cricket, katydid and cicada species. After playing the CD I decided that this was essentially a hearing test on which I did poorly. How do I distinguish the hissing of an insect from the hissing in my ears? In fact, the authors also admit to having problems with high pitched insect sounds, but after several years of collecting the sounds they have created an interesting book. You can find their website at: <http://www.musicofnature.org/songsofinsects/index.html>. I encourage you to listen to some of the insect sounds and you don't have to tell anyone that you didn't hear all of them.

Shortly after getting the book, I received an e-mail from a fellow docent at the Cockrell Butterfly Center that showed how a caterpillar made a hissing sound to ward off a predator. The experiment was done with a moth caterpillar and some birds. For the most part, the birds were startled with the hissing sound and left the caterpillar alone. Insects breathe through tiny holes in their abdomen called spiracles. The hissing came from the caterpillar forcing air out of its spiracles, something like air coming out of a balloon. Check out the Web site <http://i.livescience.com/animals/caterpillars-whistle-through-tiny-holes-101210.html>



*Madagascar Hissing Cockroach*

This is the same tactic that the hissing cockroach uses to protect his territory. When I have taken some of the museum's hissing cockroaches to school groups, the students always want the roaches to hiss. As I discussed the caterpillar action with the director of the museum greenhouse she informed me that she has heard sounds coming from the chrysalis of the Julia butterfly. I tried to listen but did not pass that test either. Professors at Clarkson University are studying sounds coming from the inside of insects hoping to find "solutions to the problems caused by insect pests." <http://www.newswise.com/articles/scientists-listen-to-faint-sounds-inside-insects>

Scientists have stated that the majority of the sounds made by insects are "calling songs" produced generally by the male to find a female. Some crickets have a calling song and a courtship song while others have aggressive songs to caution their competition. Insects have favorite times of the day and night to sing and some stop when the temperature gets too cold. Some cicadas even form singing choruses to attract females. Some of the sounds are produced when the insect rubs one body part against another. Others, like the cicadas, have sound producing organs in their abdomens.

One scientist who must have lots of time has determined that the snowy tree cricket can help tell the temperature. The scientist calculates how many chirps the cricket makes in 13 seconds, adds forty to that number and that is the temperature in degrees Fahrenheit. Walk one of the paths during daylight in Brazos Bend State Park in the spring, and you will hear how the alligators communicate. You won't have any trouble hearing their sounds. A summer evening there can be filled with the sounds of a variety of species of frogs. Then listen to the serenade of the insects in your own yard or herb garden.

## **Texas Cupgrass (*Eriochloa sericea*)**

*Story by Znobla Wootan, Native American Seed*

*Photos Courtesy of Native American Seed*

**T**exas Cupgrass (*Eriochloa sericea*) is a warm-season grass that grows in a wide range of soil conditions, preferring sunny locations and is incredibly hardy once established. It is a bunch grass that does not spread through rhizomes, but has intertwined roots each attached to an individual pencil like stalk and reaching an average height of 1-2 feet. Texas Cupgrass, also known as Silky Cupgrass, has unique flowering sequences that makes it very tricky to harvest and does not lend itself well to conventional harvest techniques.

Unlike most other grasses, Texas Cupgrass produces seeds all through its growing season making it an invaluable food source for wildlife that depend on seed for the majority of their diet. It also provides cover and nesting material for many small species of wildlife. Particularly in the evenings and early mornings, one can hear the increasingly rare call of the Bobwhite quail coming from our field of Texas Cupgrass. Plus, the dove and quail particularly enjoy our field after a harvest with the extra seed on the ground from the passing of the harvesting equipment.

It is an awesome sight to see a flock of doves taking to the air after being disturbed while feeding, or observing a Painted Bunting swaying on a stem as it gently plucks the seed from the stem. The stalks, with empty individual cup like bases, have a unique zigzag pattern that makes a great identifying characteristic, for all seed eating birds love these nutritional seeds.

Texas Cupgrass is a good prairie indicator because if grazed too heavily its population will decrease, but if grazed lightly the population will easily increase in abundance. All forms of livestock prefer Texas Cupgrass, and it was almost grazed to extinction surviving only under brush and in small prairie preserves for numerous years. Now, the presence of Texas Cupgrass is an indication of an area that is being well managed. The addition of Texas Cupgrass to rangeland, prairies or backyards will better serve both wildlife and livestock, and it's an essential component for any restoration project.



*The addition of native grasses included in a planting creates a healthy habitat for native birds, such as this Painted Bunting, foreground, and a female cardinal, background, that's looking on.*



*A perennial crop of Texas Cupgrass, above, cultivated for its valuable seed and destined for habitat restoration.*

*Inset: A close up photo of a Texas Cupgrass seed head.*

## Cowpen Daisy (*Verbesina encelioides*)

Story by Martha Mullens

Photos by Troy Mullens

Members of the Cross Timbers Chapter of Master Naturalists,  
Native Plant Society, and National Audubon Society

*Verbesina encelioides* is an upright to sprawling annual reaching a height of 1-4 feet. The foliage appears gray-green due to the minute hairs that cover the coarsely toothed, deltoid to ovate, 2-4 inch leaves, which are arranged opposite near the base and alternately at the top. Also, there are large-toothed appendages or lobes (wings) on each side of the basal leaves. The yellow composite, 2- inch wide, solitary flowers borne on tall, slender stalks are composed of numerous disk flowers with 12 ray flowers that are three-toothed at the tip.

*Verbesina encelioides* is known by such aliases as golden crownbeard, goldweed, flat-seed sunflower, wingstem, and cowpen daisy. Superficially resembling a sunflower, it would not be considered especially attractive and exudes the unpleasant odor of a wet cow when touched.

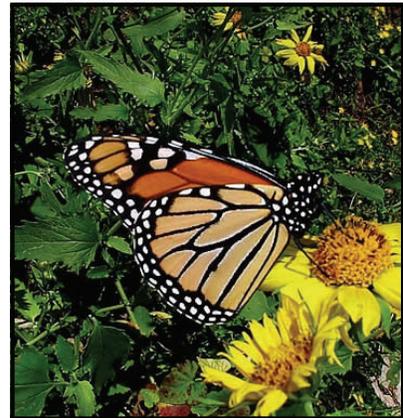
Cowpen daisy is an extremely important food source for birds and insects in late fall and early winter. For instance, it provides nectar for migrating monarchs when most other flowering plants have ceased to bloom. Plus, because of its lengthy boom period from April to October, it provides ample supplies of nectar to native pollinators, such as syrphid flies. These flies have short tongues that can make use of the disk flowers of this composite. It also serves as a larval host plant for the bordered patch butterfly (*Chlosyne lacinia*).

Moreover, medicinal properties include its use by Native Americans and early settlers as an anti-inflammatory for insect and spider bites, and to soothe boils and mouth sores. Boiled leaves or tea may relieve gas and bloating, skin ulcers, and hemorrhoids. The plant's alkaloids have microbial and anticancer properties.

Growing in sandy and limestone soils, cowpen daisy occurs throughout much of Texas in disturbed areas, such as roadsides, oil fields, pastures, and cow pens, which is the origin for its common name. It can be used to landscape alleys or planted in xeriscape gardens due to its drought and deer resistance and robust growing nature. On the negative side, it produces chemicals that kill other plants that grow too close.



*Cowpen Daisy (Verbesina encelioides) is an extremely important food source for insects, left photo, as well as pollinators like the monarch butterfly, right photo, that gets nectar from the plant throughout much of Texas.*



# Operation Idiopathic Decline

*Story and Photos by Dr. Dale Rollins, Ph.D. and Director  
of the Rolling Plains Quail Research Ranch  
San Angelo, Texas*

**B**ird dogs howl mournfully in their kennels, Quail hunters are frustrated, and researchers are stumped. The abundance of the Bobwhite Quail, an iconic game bird of the southern United States, is at a record low, and nobody is sure just why.

“Bobwhite abundance has declined for a while, more drastically in some areas than others” said Dr. Dale Rollins, San Angelo-based research scientist with Texas Agrilife Research, and the director for the Rolling Plains Quail Research Ranch (RPQRR). “But in recent years, we question whether rainfall is the driving factor, at least in the Rolling Plains. Recent observations seem to defy the prevailing habitat-precipitation paradigm.”

Dr. Rollins notes Quail populations in Texas are known to wax and wane like the price of crude oil—and are often characterized by boom and bust cycles, especially in the western half of Texas. Such annual fluctuations are thought to be the result of variable rainfall caused by weather patterns (e.g., El Nino – La Nina oscillations).

For years, coffee-shop talk has blamed quail busts on disease, and now a group of quail researchers are turning their attention to the possible roles of diseases and parasites in the decline of Bobwhite Quail.

“Disease, as a hypothesis for quail decline, has been ignored by the research community,” said Rick Snipes of Aspermont, Texas, and the president of the RPQRR. He is an avid and outspoken quail hunter. Snipes said sportsmen and landowners across Texas and Oklahoma are united in their concern for the popular game birds.

“Herb Stoddard did the last serious discussion of diseases as a factor in quail happenings, and that was 80 years ago,” said Snipes.

In 1931, Stoddard wrote *The Bobwhite Quail*, and the book is still widely referenced today for its detail on the life history of the six-ounce game bird.



Snipes said the board of directors of the RPQRR has committed \$2 million as proof of the research ranch’s commitment to the new initiative. “And that’s 100 percent of private dollars made possible by donations from concerned quail hunters,” he said.

Snipes and Rollins praised the efforts of the Dallas-based group Park Cities Quail Coalition that alone collected over \$1.3 million for the research ranch since 2008.

“It’s an understatement to say that quail hunters are very concerned—they’re not willing to just give up the ship,” said Rollins. “I’ve always been intrigued about the possible role of disease in quail dynamics. For example, I cannot explain the sudden, widespread demise of the scaled [‘blue’] quail across its range in 1988 without the involvement of disease.”

Scaled quail populations have also declined since 2006, and as with Bobwhites, Rollins says the drop cannot be adequately explained by weather or habitat alone.

“What we’ve observed with quail declines across west Texas since 2006 hints of something going on—it doesn’t appear to be habitat-related, and our weather during 2010 was favorable for a rebound but it didn’t happen,” said Rollins.

*(Continued on page 8)*

(Continued from page 7)

Rollins commented the decline of quail east of Interstate 35 can be explained largely as a result of habitat change, but he argues that habitat changes are not as apparent across the Rolling Plains.

“We’re talking about larger ranches out here, and the country looks pretty much like it did twenty years ago when quail were abundant,” he said.

Various hypotheses from fire ants to the lack of fire (prescribed burning); from overgrazing to invasive grasses, and from a proliferation of wild turkeys to feral hogs have been touted as factors involved in quail decline.

Labeled **Operation Idiopathic Decline** - *idiopathic* is an admission that the doctor doesn’t know, so the study is expected to continue for the next three years. Rollins noted the initial focus will be to sample quail during the late-summer period.

“The pattern most people are observing is good quail numbers until after Labor Day, then something seems to happen between then and opening day. This has happened the last two years,” he said. “We don’t know if disease is the proverbial smoking gun or not. We’re simply offering it up as a competing hypothesis to more habitat-based arguments. I’m glad to see the RPQRR provide funding to enable a systematic, serious study like this.”

Rollins convened a group of scientists (*photo on page 7*) from across Texas to form the nucleus of the disease consortium. Those scientists included Drs. Markus Peterson, Blanca Lupiani, and Guan Zhu from Texas A&M University; Drs. Brad Dabbert, Steve Presley, and Ron Kendall from Texas Tech University; and Dr. Alan Fedynich from the Caesar Kleberg Wildlife Research Institute at Texas A&M in Kingsville. Others included Dr. Kelly Reyna of Audubon Texas and Dr. Russell Ueckert, a practicing DVM and quail hunter from Abilene, along with staff members from Texas Parks and Wildlife Department and Oklahoma’s Department of Wildlife Conservation.

“This all-star team brings an expertise in virology, parasitology, toxicology, and other disciplines essential to cracking the quail decline code,” said Snipes. “And I’m excited that several of them are concerned quail hunters—that means they also have a vested interest in the outcome.”

“Eventually we hope to recruit internationally-known scientists onto our team,” he said. “Science solved the decline of red grouse in Scotland, and we’re hopeful for a similar success story on Bobwhites. Our initial goal is to stop the bleeding here in the Rolling Plains. Hopefully we’ll learn things that can be applied to struggling quail populations further east.”

“Anytime you discover a dead quail, or bag birds that appear light in weight or have spotted livers, put it on ice and give me a call immediately,” said Rollins. “Dead birds found in the field were obviously witnesses to the crime. Their carcasses may hold important clues.”



Photo courtesy B. Haigh

Rollins says the concern about struggling quail populations goes beyond just hunters.

“We’re talking rural economic development here. So, when quail numbers are down, fewer hunters show up to support hotels, convenience stores, and restaurants. A 2000 study found that 65 percent of quail hunters’ expenditures were spent in the local communities,” said Rollins. “And most of these small, rural towns in west Texas are struggling—these hunting dollars are crucial.”

The Rolling Plains Quail Research Ranch was created in 2007. Its mission is to preserve the heritage of wild quail hunting in Texas for this, and future, generations. For more information about the ranch, see [www.quailresearch.org](http://www.quailresearch.org). For more information about **Operation Idiopathic Decline**, contact Dr. Dale Rollins at [d-rollins@tamu.edu](mailto:d-rollins@tamu.edu) or (325) 653-4576.

## WHERE'S THE CATERPILLAR?

*By Don Johnson, Member*

*Coastal Prairie Chapter of the Texas Master Naturalists and  
Fort Bend County Master Gardener's Entomology Group*

**I**f you plant it, they will come is really true. If you include sufficient nectar and host plants for your yard, you will enjoy a butterfly display. You will want various host plants in order to get a variety of butterflies. Some popular host plants are milkweed, passionvine, cassia, citrus, and Aristolochia, but there are many others. Each gardener can do a small part to overcome the continuous loss of wildlife habitat.

Butterflies will only lay their eggs on specific plants. To enjoy of variety of butterfly species in your yard, it is important to have different kinds of host plants. If the butterfly cannot find her host plant in the few weeks that she lives, she will die with all of her eggs. Depending on the species, the caterpillar will emerge from the egg about a week or so after it is laid. The little caterpillar will eat the remainder of its egg shell and then begin to munch on the leaves of the host plant. If you keep a daily watch on the growth of the caterpillars you may find that the one you saw yesterday is replaced by a different colored one today. Some caterpillars change colors as they molt and grow.

As the caterpillar eats and grows, it molts several times until it reaches a point when it can no longer grow and must pupate. When you cannot find the chrysalis where you last saw the caterpillar, you may wonder what has become of it. Most caterpillars will travel away from the host plant to make a chrysalis; they are searching for a place where they can hang freely.

Like all other insects, caterpillars are subject to predation. Birds will avoid the monarch caterpillar and butterfly because of the toxins they contain from eating the milkweed plant. Wasps, however, are not bothered by the toxins and will eat the monarch caterpillar or take the caterpillar to its nest for its young. The assassin bug will also eat and kill caterpillars. Birds will eat other non-toxic caterpillars.

The butterfly eggs are subjected to weather, disease, and predators even before they become caterpillars. The caterpillars also face other challenges, but luckily for us a few of the caterpillars will live to become beautiful butterflies.

*In the left photo, a Monarch caterpillar went from the milkweed plant to a rosemary bush to make its chrysalis. A wasp now attacks the new butterfly, far right, as the predator.*



The U.S. Department of Agriculture (USDA) prohibits discrimination in all of its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 632-9992 (voice) or (800) 877-8339 (TDD). USDA is an equal opportunity provider, employer and lender.