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The Rio Grande Valley Chapter of the Texas Master Naturalist program is organized exclusively for charitable, scientific, and educational purposes, more specifically to develop a group of knowledgeable volunteers to provide education, outreach, and service dedicated to the study of conservation of natural resources and natural areas within the Rio Grande Valley of Texas.

Beach evening primrose, a sand dune staple

Article & photos by Anita Westervelt, South Texas Border Chapter

The big bold vibrant yellow bloom of beach evening primrose, *Oenothera drummondii* is quite an eye-catcher. A true beach plant, it handles the harsh coastline conditions of nutrient poor sandy soils, salt spray and accumulation, and wind, heat and drought.

Beach evening primrose (*Oenothera drummondii)*

Beach evening primrose is native to northern Mexico and south-eastern United States, from the Texas coast to North Carolina. It grows on the edge of sand dunes and commands attention with its nearly three-inch in diameter brilliant yellow flowers.

The bloom consists of four large petals. It is nectar and pollen rich, pollinated by bees during the day and moths, hawk moths and other night-flying insects at night. The flowers have been known to attract Ruby-throated Hummingbirds. The petals fold in and turn orange-red when the blossom begins to close. Depending on the conditions, plants can bloom during all seasons.

Smooth edged leaves have a grey green cast and grow in rosette-like clusters. The leaves and stems conserve moisture and withstand the force of wave action. The fruit produces numerous tiny seeds which are spread by wind and tidal flows.

The plant has a shrub-like, self-supporting growth which varies from upright to sprawling and can take over large patches of dune. It grows relatively low to the ground which helps it resist wind damage from the relentless coastal winds coming from the Gulf of Mexico.

Its beauty is more than blossom deep. The plant plays an important role in helping maintain the biodiversity and ecological balance of our natural coastal habitat and provides resources for dune wildlife.

Sand dunes are vital to our coastal ecosystem. You might say they are the first line of defense against the sea. They provide a natural infrastructure to protect real estate from hazards such as extreme tidal changes, erosion and storm surge. Root systems of native plants that populate a sand dune, anchor the sand. Vegetation above ground traps blowing sand and stabilizes the dunes during severe storms. The surface area of the vegetation can help absorb wind and wave action during harsh weather events.

Beach evening primrose foliage and roots help stabilize the sand dunes

Here on our Texas Coast, sand dunes are critical to ecology. They create important habitats for native plants and wildlife – perhaps not all as visible as the shorebirds to the throngs of beachgoers, but snakes, jackrabbits, squirrels, ground squirrels, rats, opossums, raccoons and coyotes are among the critters that call the dunes home.

Much of the flora along our local beaches and in the dunes is easily viewed and photographed from the beach, and via beach access paths. Close-up study and photography may be more difficult as there are very strict codes that protect these vital resources from human access and unintended destruction. In Texas, the dunes themselves, and all dune vegetation are protected under the Texas Natural Resource Code 63.091 and 31 Texas Administrative Code (TAC) Chapter 15.

Dorky Glamour Puss of the Laguna Madre, the Roseate Spoonbill

Article & photos by Mary Grizzard, Rio Grande Valley Chapter

The first time I laid eyes on Roseate Spoonbills I assumed, like many other novice bird-watchers, that I was looking at American Flamingos. That was until I lifted my binoculars. *What in the world?*?? Those were definitely *not* flamingos! They were tall, elegant birds, rosy pink with white backs and necks, but what was up with those bizarrely shaped bills? I almost laughed as I focused on the birds' long, gray beak that looked like a sawed-off boat oar. I'd never heard of Roseate Spoonbills, but in the evening when I googled "pink wetland bird," that was the unanimous hit. I skimmed through an assortment of online photographs and felt blessed to have seen such gorgeous creatures in person. I just felt a little sorry that they had to have such dorky bills…

Adult Roseate Spoonbill with bald head and scarlet wing band at Gladys Porter Zoo

Spoonbill swishing bill to forage

Those dorky, spoon-shaped bills, for which the species *Platalea ajaja* receives its common name, may look ridiculous on such otherwise glamorous creatures, but, as is always the case in nature, weirdness has a reason. A spoonbills' large, rounded bill is extremely effective in detecting food as the bird swings its head back and forth through shallow waters. Hunting entirely by touch, the roseate's bill is lined with sensitive vibration detectors, and the spoon shape makes it easy to sift through mud, probing the bottom as it feels for crustaceans, aquatic insects, mollusks, frogs, newts, and very small fish. Once a food item is detected, the bill snaps shut, straining out the water and silt, and the creature is swallowed whole.

Interestingly, a spoonbill hatchling does not have a spoon-shaped bill. Its bill starts to flatten out when it is ten days old; it begins to resemble a spoon at around 16 days, and it finally attains full size and shape when the spoonbill fledges, at around six weeks. And get ready for a dose of cuteness — spoonbill hatchlings are sometimes called *teaspoons* because of their smallish bills.

Not only do hatchling spoonbills lack their spoon-shaped bill, but they also lack their species' characteristic pink color. Like the flamingo, and the spoonbill's distant cousin, the scarlet ibis, their gorgeous pink plumage is derived from crustaceans in their diet, which in turn have been feeding on red algae. Nestlings begin life with only a hint of pink and gradually acquire more color as they are fed by their parents. This color continues to deepen over time. At age three they even develop a scarlet shoulder band, indicating they are mature and ready to breed.

Another almost comical event happens when roseate spoonbills reach maturity — they go bald! The fluffy white feathers on their crown are lost and reveal yellow-green skin and a black nape.

Immature roseate spoonbills have feathered heads

Roseate spoonbills are only found in the Western Hemisphere. The other five species of spoonbills are variously found in the remaining continents (except Antarctica), but these all have white, rather than pink plumage. Unfortunately, the roseate's gorgeous pink color was the cause of its near extirpation from North America in the early 1900s. Roseate's wings and feathers were in high demand for ladies' fashion hats and fans at that time. To make matters worse, the pink color rapidly faded after the death of the bird, so fresh supplies were regularly needed. And because roseate spoonbills are highly social and breed in densely populated colonies, it was easy for plume hunters to take large numbers of them at a time. By the 1930s, only a few dozen nesting pairs remained on the continent; none were known to breed in Texas.

Protected status for the roseate was finally given through the landmark US Migratory Species Act of 1918, and Texas and numerous other states extended protection as well. Happily, as a result of these conservation efforts, spoonbills have been gradually increasing in number and returning to their former territory. The Audubon Society even reports an expansion of their breeding range, with successful breeding pairs documented in Georgia, Arkansas, and South Carolina. Delighted birders have been thrilled to find occasional vagrant roseate spoonbills as far north as Minnesota, Maine, and Quebec in recent years.

That's the good news. There are still concerns for the well being of this species, however, and biologists are now studying how habitat loss, through the drainage and development of wetlands, and climate change, where rising sea levels are flooding their shallow feeding grounds, might be affecting their population.

My first view of spoonbills several years ago was on a vacation to Mexico, and it wasn't until we began spending the colder months of the year on South Padre Island that I saw them once again. This dorky glamour puss is one of the mascots of the South Padre Island Birding, Nature Center and Alligator Sanctuary, and it's a rare day in the non-breeding season that you won't find them there, somewhere out on the mudflats or in the mangroves. Sighting that breathtaking pink is often the highlight of many visitors' trip.

Our great-great grandparents' generation almost drove roseate spoonbills to extinction in North America, and our parent's and grandparent's generation had the foresight and determination to help bring them back. Now it's up to us to continue protecting this fabulous, dorky, gorgeous wading bird of the Laguna Madre.

Nature-watching with Children

Article & photos by M. Kathy Raines, Rio Grande Valley Chapter

"It's a webworm, Grandma!" enthused my then four-year-old granddaughter one summer afternoon. Chuckling at the absurdity of anyone's embracing that pesky little creature, I nevertheless helped her and her then five-year-old brother gather up a few webworms for a collection in a jar with holes poked through the lids. Learning the word "entomologist", they cried, "We're *entomologists!*" Alas, just like with captive butterflies and grasshoppers of my youth in Lubbock, the webworms continually expired, as I'd warned. But they were excited each time they saw one, or another caterpillar.

Roly poly's, of course, continually intrigue young children, though the sturdy little isopods (orders of crustaceans) obviously don't appreciate being handled and compelled to curl up in defense. With its inherent armor, though, the creature doesn't seem to be harmed. At four—with the inevitable anthropomorphism of early childhood—my granddaughter tried to sneak roly-poly's into the car so ours could visit those at her house. Whenever told, though, that all creatures must be returned to their abodes, she understood, welcoming them back into their roly-poly families. (Honestly, she, now in early elementary school, is the only person I know who can readily give the correct number of roly-poly legs, 14; I just had to look it up myself!).

When children are two or so, they gleefully stamp on ants or even roly-poly's. When my own kids or grandkids did this, I told them: we don't harm an animal unless we're going to eat it or unless it's bothering us. They seemed to understand and soon complied, with only a few reminders.

Spiders make great subjects of observation for all ages

Throughout the years, I have repeated that mantra from time to time. I tell them, should they want to stomp on an "ugly" outdoors cockroach, that though they may find roaches repulsive—though I myself find their caramel coloring pleasant and their features interesting— these insects work as decomposers in our soil, and they understand. (But, children being children, they, like even the best trained of pets, may disobey when alone and squash them in my absence!).

Springtime evenings are particularly exciting for children, though an erratic June bug—an insect that caroms like a pool ball—may startle a little one. One may find fireflies, glowing click beetles, and perhaps an occasional walking stick or praying mantis. Plus, children can investigate the elaborate webs tropical orb weavers create every night, and the wolf spiders that seem to sparkle in the grass.

Our conversations may begin thusly: “See any interesting spiders lately?” Finding (or even rescuing, from a pool or trash can) lizards and catching butterflies—briefly, letting them go—thrills my granddaughter. This spring, during a visit to feed ducks at a park, she’d fly off in a blur, pursuing butterflies fluttering around nearby bushes. We periodically check my trashcan for brown anoles, for one was entrapped in one recently, and, stunned, it allowed itself to be briefly held. When she finds an unknown creature, she says, “Grandma, take a picture and send it to iNaturalist!”

Last spring, we lifted our favorite small log, after a rainfall, to spot a Brahminy blind snake, which we studied for a while, learning that it pursues ants. We habitually look under the wood as well as bricks and stones. We sometimes scare up Mediterranean geckos, too.

I print out scavenger hunts for the grandchildren of creatures we might find when we visit Ramsey Park, and now that they read and write, they can jot down what they see. I am not a list-keeping birder, but, knowledgeable about local species, I inform the children, so they readily distinguish Great-tailed Grackles from Golden-fronted Woodpeckers and Great Kiskadees. We also enjoy watching soaring Turkey Vultures.

Of course, respect for our fellow creatures is passed from generation to generation. My own father—a teacher and former rancher—gleefully pointed out those that dwelled in our alley and backyard in Lubbock in the ‘60s: “horny toads”, or Texas horned lizards, toads, and the occasional mudpuppy (a salamander) which we kept and watched in our canvas swimming pool for a while, then released.

As I taught my children and grandchildren not to harm fellow creatures, Dad taught us that and another lesson, which he, having been a rancher, executed much better than I ever could. There’s nothing wrong with death, he told us. It’s inevitable. It’s suffering that is to be avoided. I can speak this lesson, but I lack the courage to enact it. When he saw a grackle with broken wings, one doomed to be eaten by a cat or snake, he would—as they did on the ranch with chickens—twist its neck to put it out of its misery. If I can’t take it to a rehabilitation center, I, alas, will leave a wounded creature to suffer.

I am quite grateful that my dad taught us kids to respect and to be curious about our fellow creatures and to harbor only a well-reasoned fear of some, including certain spiders and snakes, who could do us harm. Resultingly, neither my sibs nor I have any of the all-too-prevalent animal phobias. As a child with an aversion to sliminess, I nursed one against earthworms for a while—that was until my willingness to thread one onto a hook became prerequisite to joining him on fishing trips.

Anyway, appreciating fellow inhabitants of the earth as I do, I have sought to foster this love in children who come into my realm.

Are you up for a Challenge?

Article & photos by Anita Westervelt, South Texas Border Chapter

Pollinator Week 2024 – Pollinator Bioblitz

Pollinator Week is an annual event celebrated internationally in support of pollinator health. This community science project is hosted by the North American Pollinator Protection Campaign's (NAPPC) Pollinator Communications Taskforce.

Join this project (in your iNaturalist account) to help collect data on the distribution of pollinators across the US, Canada, and Mexico during pollinator week.
https://www.inaturalist.org/projects/pollinator-week-2024-pollinator-bioblitz


Metallic epauletted-sweat bee

"We're especially interested in learning about and documenting floral resources that support our pollinators. Please share photos of pollinators visiting floral resources in your neighborhood."

The project is set up to autopopulate during the week of pollinator week. If you're signed up, they should get your observations automatically. They have included most of the key pollinator taxa, including bees, wasps, butterflies, moths, hover flies, hummingbirds, and bats. They have chosen to exclude beetles.

Use the above link to join in your iNaturalist account. Visit the following link for more information about Pollinator Week: https://www.pollinator.org/pollinator-week/activities

National Moth Week July 20-28, 2024

Information about Moth Week is at this link:
https://nationalmothweek.org/


Apotolype blanchardi moth

National Moth Week is a citizen science project held annually worldwide during the last full week of July and celebrates the beauty, life cycles and habitats of moths around the world.

Moth-ers of all ages and abilities are encouraged to learn about, observe and document moths in their backyards, parks and neighborhoods.

Moth photographs can be uploaded via your iNaturalist account; In June, search "projects" and "join" the National Moth Week 2024 project when I becomes designated.

To learn about moth attracting set ups, visit this link: https://nationalmothweek.org/mothing-101/

Rio Grande Valley Home and Garden Show 2024

Article by Robert Hernandez, South Texas Border Chapter
Photos by Anita Westervelt, South Texas Border Chapter

The South Texas Border Chapter (STBC) of Texas Master Naturalist (TMN) has participated in the annual Rio Grande Valley Home and Garden Show since 2019 with a two year lapse during the Covid pandemia. This year marked the 33rd annual event that took place at the McAllen Convention Center March 22 through 24, 2024. That made this year's event the second post-covid occasion and had over 25,000 visitors to the show that focuses on home and garden improvement ideas.

South Texas Border Chapter members provided native plants and excellent information to the public at the Home and Garden Show

The STBC's participation came as a result of our agreement to provide speakers for the event with the show's organizer in exchange for the use of a booth free of charge during the three day event. The booth is utilized as an outreach booth for our chapter where our volunteers educate the public about the ecological value of replacing with or adding native plants to their existing gardens or landscapes while at the same time conducting a native plant sale. Our STBC members donated around 300 plants that were potted from their own gardens while other plants came from a local native plant nursery, Hui-Xochitl Nursery in Edinburg.

Throughout the event chapter volunteers did a spectacular job in assisting attendees with questions about certain native plants and the ecological impact they have in their gardens. They also shared information about the TMN program to individuals that visited our booth. Several demonstrated high interest in joining the organization and were provided with the necessary information.

There were over thirty chapter members that signed up to volunteer during the three day event that contributed to this year's success not only in funds earned from the plant sale but also the impact they had in informing the public about the importance of creating native habitats in their gardens.

TMN members made a big impact at the Home and Garden Show through one-on-one contact and seminar presentations

Three of our chapter members made presentations throughout the speaker seminars on the main stage. Anita Westervelt presented "Bring on the Hummingbirds" and "Native Plants for Small Plots." Jennifer Rektorik presented "Better Lights, Safer Nights" and Jaime Rodriguez's topic was "Buzz and Flutter."

This year's event has been the most successful in not only funds earned through the plant sale but also in fulfilling the goals of our mission statement of providing education, outreach and service dedicated to the beneficial management of natural resources within our community thanks to our STBC volunteers and Seminar Speakers/ Presenters.

We will commence preparations for the 2025 RGV Home and Garden Show soon.

Rare Bird Visitors to the Rio Grande Valley

Article & photos by Carolyn Cardile, Rio Grande Valley Chapter

One of the thrills of birding in the Rio Grande Valley (RGV) is seeing rare birds. This spring I had the good fortune to see two of the rare birds in our area. It was so exciting to see them so close to home.

Imagine my surprise when the Mangrove Cuckoo decided to spend the morning at the South Padre Island Birding and Nature Center where I was volunteering and greeting visitors. I was able to join a few of those visitors who were birders on the back porch where we were able to take some photos of the cuckoo as it sat in a tree near the deck posing. My husband, Paul, and I had seen it from a distance a few days earlier. However, watching it from only a few yards away was an unexpected treat.

Mangrove Cuckoo (*Coccyzus minor*) seen in the RGV

Mangrove Cuckoos do not usually come to the RGV. They live in black and red mangrove, beach scrub, and tropical hardwood hammocks in Florida. They also live in various West Indian habitats. In those areas they often live in disturbed or second-growth habitats. Their prey includes insects, larvae, spiders, frogs, eggs, nestlings, and fruit according to Cornell Lab's All About Birds website. The site gives a more detailed list of prey and describes how they swallow smaller prey and beat larger prey against a branch before eating it. The article also mentions that Mangrove Cuckoos eat hairy caterpillars, unlike most other birds.

Southern Lapwing: On April 16, Paul and I drove to the golf course in Mercedes in search of the Southern Lapwing. It was our lucky day. Local people directed us to the golf course and told us where to look. We parked near the clubhouse and saw it immediately. WOW! As we watched from the road, the lapwing walked around, laid on the ground, and then walked toward us, giving us a good view of its face. I was pleased to get pictures of the side and front of the bird.

According to the Animalia website, the Southern Lapwing is Uruguay's national bird and a symbol of the Brazilian State of Rio Grande do Sul. These birds are common in most parts of South America. It has recently been spreading north into Central America and can be identified as the only crested wading bird in South America. The Southern Lapwing (*Vanellus chilensis*) is 13-15 inches long and weighs about 8-15 ounces.

The bird's head is gray with a black forehead, throat patch and breast. A white border separates the gray head and crest from the black face. The underparts are white, and the eye-ring, legs, and most of the bill are pink. The bird also has red, bony extensions under the wings called spurs the purpose of which is to intimidate enemies and fight birds of prey.

Southern Lapwings hunt for insects, arthropods, crustaceans, and mollusks on the ground or in shallow water. They are adaptable and can live 10-13 years. They're also known as the "Peewit" because of their call.

The Southern Lapwing has striking contrasting plumage

Southern Lapwing (*Vanellus chilensis*)

The eBird website states that the "Southern Lapwing lives in the grasslands and pastures of Panama and South America. They have gray-brown underparts with a bronze sheen, a black breast band, that extends up to the bird's forehead, wing spurs, and a white belly and undertail coverts."

I'm so glad we took the time to find this bird. I've never seen anything like it. Seeing and photographing the Southern Lapwing made the trip all the way to Weslaco from South Padre Island worth the effort.

Startle Response

Article & photos by Anita Westervelt, South Texas Border Chapter

The Texas eyed click beetle, *Alaus lusciosus*, is one of the largest of the click beetles, measuring up to two inches long. If the sheer size of the bug doesn't give you pause, the markings might startle you into a quick-step-back response. Which is the intent.

The dominant markings of this click beetle are eye spots surrounded by a thick white ring. The spots are thought to distract and mesmerize predators, who assume the rest of the beetle is proportional in size, according to a report at insectidentification.org.

Texas eyed click beetle (*Alaus lusciosus)* distracts predators with eye spots

The anatomy of a beetle is such: head, thorax, abdomen. The false eye spots are on the pronotum, which is the exoskeletal shield covering the thorax. Elytra, the wing casings, cover the wings. Elytral markings also give the beetle distinguishing looks.

The "false eyes" on the pronotum are a defensive adaptation that has evolved because of its advantage in confusing or frightening potential predators. The click beetle's real eyes are much smaller and positioned behind the antennae on the insect's true head.

With respect to beetles that are preyed on by birds and reptiles, predators tend to hesitate before snatching up eye-spotted insects. Rodents, like shrews, other insects, spiders and mantises also prey on click beetles.

The Texas eyed click beetle is found in central, southern, and sections of eastern Texas. Their range also encompasses Colorado, Kansas, New Mexico and Mexico.

Similar is the Eastern-eyed click beetle, *A. oculatus*, also called the eyed elater, a Greek word for "that which hurls." It is mostly found in the eastern United States. The Texas eyed click beetle is

the larger of the two and its white elytral markings are more clumped and patchier; *Alaus oculatus* has smaller, more evenly dispersed white spots.

Size and patterns aside, it's double jeopardy for predators that attempt to make a meal of click beetles. They have another unusual defense; they use their click to startle predators.

Click beetles have a remarkable spine on the under surface of the first segment of the thorax. This spine fits into a notch on the second thoracic body segment between the legs. The beetle flexes its body in such a way that the spine quickly releases with an audible click. The beetle can snap its spine into the grove with such force as to eject it from the predator's grasp, or startle the attacker into dropping it, according to a blogspot written by entomologist Eric R. Eaton.

The larval stage of eyed click beetles is spent in the soil, in rotting or decayed wood. Adults emerge from early spring through early fall and feed on nectar and plant juices. They are beneficial members of the ecosystem.

A second line of defense is the ability to click and eject itself from or startle the predator

Exciting Backyard Visitor

Article & photo by Michelle Cano, Rio Grande Valley Chapter

This past January 16, 2024, during an arctic front, a Rufous Hummingbird showed up on a tree as I looked out the window. I quickly sprang into action and made him some warm sugar water. I ran outside to put the feeder up. As soon as I walked away, he was on the feeder instantaneously. It was brutally cold, and the wind chills were in the 20s, so I kept putting warm water throughout the day. He continued to come to the feeder the rest of the week and I made my usual eBird report with pictures of him in my yard.

After three weeks, Ruffie (my nickname for him) was still at my feeder every day. Coastal Bend Bays & Estuaries Program Biologist, Justin LeClaire emailed me telling me he was looking at my reports and the bird looked like an Allen's Hummingbird. Wow! Could I actually have this rare one in my yard? In order to confirm, he would need photos of the tail feathers spread open.

I spent the next two weeks after work each day photographing him and video taping him but he would never open up his tail feathers! I told Justin I was having a very hard time but he told me to be patient and keep trying. Luckily, the bird kept coming every day to my yard. Then on February 20, it happened. He was sitting on a branch and opened up all his tail feathers and began to preen them! Wow! Lucky me!! What a beautiful hummingbird he had become in the last five weeks. I took lots of pictures and emailed them to Justin. That evening, Justin emailed me that he had sent the photos to another biologist who was a hummingbird expert for confirmation.

Allen's Hummingbird (*Selasphorus sasin*) seen in the Rio Grande Valley

My anxiety was building, hoping for the best that it would really be a rare Allen's Hummingbird in my yard. The next day, the email arrived from Kelly B. Bryan. He wrote a very detailed explanation of the tail feathers, and the end result was: "This is a male Allen's Hummingbird, 100%. Congrats again. KBB."

I was so elated to know that one was actually in my yard this whole time. Sadly, he didn't show up the next day or thereafter, but the mystery was solved, and I got to relish the fact that I did indeed have a beautiful Allen's Hummingbird for five weeks in my yard.

Barnacles – behind the scenes of science

Article & photos by Anita Westervelt, South Texas Border Chapter

There are more than 1,400 known species of barnacles found in the world's waterways. They live at all latitudes and at all depths, from the intertidal zone to the deep sea.

Barnacles were once thought to be related to snails.

Although they may look like mollusks, those invertebrates, like snails, slugs, mussels and octopuses, with their shell-like covering barnacles are actually crustaceans and are related to lobsters, crabs and shrimp. They look like tiny shrimp in their larval stage, where they swim as members of zooplankton in the ocean. Barnacles are exclusively marine.

Acorn barnacles on utility pole-like drift

The history of the taxonomy of barnacles might surprise you and an introduction to a small, but fascinating, cast of characters is in order to help set the scene.

Carolus Linnaeus, 1707-1778, was a first-class Swedish botanist scientist; he wrote 180 books with precise descriptions of nature -- but little analysis or interpretation. His most important contribution to science was his logical classification system for all living things, proposed in his book, *"Systema Naturae*," first published in 1735.

In this and subsequent works, Linnaeus described plants and animals based on two descriptors: **physical appearance** and **method of reproduction**. He used binomial nomenclature in naming them. Hence, organisms were given two Latin names: genus and species. As you may recall from Texas Master Naturalist training, the Linnaean system of classification is today the basis for naming and describing organisms in all fields of biology.

Next, we have **George Cuvier**, 1769-1832. He was a French scientist, who, with another, was largely responsible for making biology a distinct branch of science. He advocated the theory of **catastrophism** -- the theory whereby violent and sudden natural catastrophes, like great floods and the rapid formation of major mountain chains, which caused plants and animals living in those parts of the world to be killed off; new life forms moved in from other areas causing the fossil record for a region to show abrupt changes in species -- his explanation relied solely on scientific evidence rather than biblical interpretation.

John Vaughan Thompson, 1779-1847, was a British military surgeon, marine biologist, zoologist, botanist and published naturalist.

Hermann Burmeister, 1807-1892, was a German and Argentine zoologist, entomologist, herpetologist and botanist, professor, museum head and published author of "*Handbuch der Entomologie*."

Incidentally, the theory of **catastrophism** was eventually rejected in favor of **uniformitarianism**, (a theory that allowed that changes in the earth's crust during geological history have resulted from the action of continuous and uniform processes -- like a tsunami reshaping a coastline, an asteroid impact causing mass extinction) -- this was a revolutionary idea that was instrumental in leading **Charles Darwin**, 1809-1882, a British naturalist and geologist, in his understanding of biological evolution in the 1830s. More on that in a bit.

Our last cast member in this scenario is **Sir Joseph Dalton Hooker**, 1817-1911. He was a British botanist and explorer, director of the Royal Botanical Gardens, Kew, England, and recipient of the highest honors of British science.

Remember, this article is about barnacles and here's where that coincides with this cast of characters.

Barnacles were originally classified by **Linnaeus** and **Cuvier** as Mollusca, but in 1830, **John Vaughan Thompson** published observations showing the metamorphosis -- of barnacles -- of the **nauplius** (the first larval stage of many crustaceans, having an unsegmented body and a single eye) and **cypris** larva -- the non-feeding final stage -- the settling stage -- where the larva attaches to the substrate by means of cement secreted by glands in the first antennae. The body is enveloped in a bivalve carapace (a hard upper shell) and the pair of compound eyes is sessile (fixed in one place; immobile); there are six pairs of thoracic appendages in adult barnacles. **Thompson noted how these larvae were similar to those of crustaceans.**

Goose barnacles (*Lepas anatifera*) on plastic bottle

It gets clearer.

In 1834, **Hermann Burmeister** published further information, reinterpreting these findings. The effect of these findings was to move barnacles from the phylum of **Mollusca** to **Articulata** -- **but the overarching impact** was to show naturalists that **detailed study** was needed to reevaluate their taxonomy.

We're coming to the crux of this chronicle.

Recall **Sir Joseph**, the previously introduced cast member of Kew Gardens (England) fame. In addition to all his honors and accolades, he was **Charles Darwin's** closest friend, which is interesting in itself, as we don't often think of these historical figures as having friends, like you and me. But I digress.

More interestingly, in 1846, **Charles Darwin** took up **Hermann Burmeister's** challenge of **detailed study** at the suggestion of Darwin's close friend, **Sir Joseph Hooker**, which developed Darwin's initial interest into a major study; by studying a group of organisms in its entirety, to thoroughly understand at least one species, before making the generalizations needed for his theory of **evolution by natural selection**.

It was Darwin's detailed research into a single class – **which happened to be Cirripedia (Barnacles)** – and more specifically, by comparing barnacles to crustaceans, it was a key component that provided substantive evidence of the broad and sweeping **theory of evolution by natural selection** that Darwin proposed in his book: "On the Origin of Species." This body of evidence helped Darwin convince his readers of the validity of his ideas.

Bay barnacles (*Amphibalanus improvisus*) on drift tree trunk

No pun intended, but barnacles played a major part in the evolution of science.

Darwin's collection of barnacles along with a handwritten list of the different specimens is on display at the Zoological Museum of Copenhagen.

Roemer's Acacia - *Senegalia romeriana*

Article & photos by Camille M. Rich, Rio Grande Valley Chapter

"This is a prickly, 3-7 foot, round-topped shrub or, more rarely, a small tree to 20 foot with spreading branches. Branchlets with scattered straight or recurved prickles. Leaves divided into numerous leaflets 1/2 inch long or less. Fragrant, cream to greenish flowers 3/8 inch wide arising mostly from the axils of the leaves are followed by a narrow, leathery fruit. Fruit a brown to reddish, flat, curved pod up to 4 inches long and 1 1/8 inches broad. Young trunks are covered with smooth bark, becoming scaly with age. Twigs are armed with short, curved prickles; hence the common name, Catclaw." *Source: Lady Bird Johnson Wildflower Center*

Seedpod of Roemer's Acacia

Roemer's acacia is a shrub that can grow from 15 to 20 feet in height and has a spread of 10 to 15 feet. It is a perennial, deciduous shrub that prefers sand, clay, gravelly, rocky, or limestone soil types. It requires full sun, and, once established, requires very little water to survive. It blooms in the spring. Flower color varies from white to green. This legume provides both nectar and seeds for wildlife. *Source: Native Plant Society of Texas*

Roemer's Acacia blooms and foliage

"Roemer Acacia grows in dry limestone or gravelly soils. In good, deep soil it grows to 15′-20′, although on thin limestone hillsides in Edwards County it is a scraggly shrub of 3′ to 6′. It is drought resistant and fairly cold hardy, as are Gregg and Wright Acacia. Its globe-shaped flowers are a good source of honey."

Source: Texas Native Plant Database

In closing, thank you for taking a moment to learn a bit about this lovely shrub in the Leguminosae family. For more information and images of Roemer's Acacia, please visit elmestenoranch.com.

Milestones & awards for March, April, and May 2024

Congratulations!

2024 New Class Graduates

Terrilyn Alaniz
Jennifer Brouwen
Roberto Cepeda
Lindsey Czopek
Theresa De Salvo
Tere del Castillo
Tess DeSerisy
Danny Dollar
Rob Gardner
Rolando Garza
Max Garza
David Gordon
Noemi Gutierrez
Maki House
Devin Johnston
Dawn Johnston
Cristina Ledezma
Blanca Martinez
Stephanie Mendoza
Danny Salinas
Victoria Salinas Guerra
Sylvia Soliz
Mark Sorenson
Michell Sosa
Marby Sweeney
Corinne Waite
Karen Weaver

Well done all!

Newly Certified Texas Master Naturalists

Terrilyn Alaniz ’24
Jennifer Brouwen ‘24
Theresa De Salvo ‘24
Rob Gardner’24
David Gordon ‘24
Noemi Guttierrez ‘24
Maki House ‘24
Devin Johnston ‘24
Dawn Johnston ‘24
Blanca Martinez ‘24
Danny Salinas ‘24

Milestones & awards for March, April, and May 2024

100 Hours Milestones

Terrilyn Alaniz ‘24
Theresa De Salvo ‘24
Robert Gardner ‘24
Devin Johnston ‘24

250 Hours Milestones

Bobbie Brown ‘22

1,000 Hours Milestones

Paul Sorenson ‘16

2,500 Hours Milestones

Marilyn Lorenz ’15
Susan Upton ‘21

Well done all!

South Texas Border Chapter

Congratulations!

Milestones & awards for
March, April and May 2024

Recertification 2024

Kathy Mauer-Tonn
Zeke Schmidt
Mary Levandoski
Lorie Archambault
Donna Otto
Amanda Hernandez
Dayna Austin
Roberta Allen
Ann Whitney
Tom Nix
Nancy Newton
Jaime Rodriguez
Robert Hernandez
Cindy McKee
John McKee
Michael McClure
Mary Baker
Carla Canales

500 Hours

Lisa Adam
Dave Hayner

WELL DONE!!

250 Hours

Tom Nix

Bill Rich

Zeke Schmidt

100 Hours

Nancy Newton
Jaime Rodriguez
Roberta Allen
Liz Eddy
Carla Canales

Contributors to this issue of The Chachalaca

Michelle Cano

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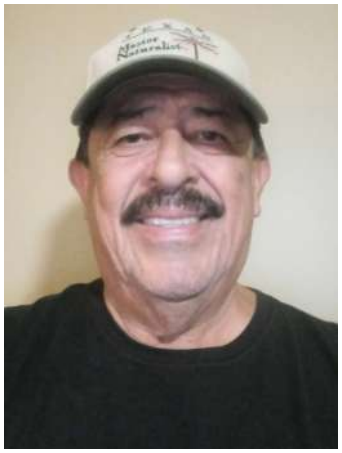

Robert Hernandez

M. Kathy Raines

Camille M. Rich

Anita Westervelt

Rio Grande Valley Chapter Leadership Team 2024

Officers

President	Robin Gelston
1st Vice President	Emma Gonzalez
2nd Vice President	Dan Martin
Secretary	Evelyn Alpert
Treasurer	Betsy Hosick

Directors and Committees

Past President	Roberto Gaitan
Membership	Joni Gillis
Hours review: Adrian Ramos, Norma Trevino	
New Class	Barbara Peet
Education Committee: Robert Gaitan, Amy Daley, Barb Peterson	
New Class Rep	Robert Cepeda
Communication	Mara Lee Moats
Outreach: Marilyn Lorenz	
Historian/Archivist: (open)	
Newsletter Editor: Diane Hall	
Facebook Editor: Robert Gaitan	
Website: Eryn Wingert, Chet Mink, Richard Blanton	
Advanced Training	Teresa Du Bois
Volunteer Service Project	David Batot
At-Large: Winter Texan	Joyce Baer Halpern
At-Large: Pam Bradley, Thomas Butcher, Jose Palmos, Rebecca Guera	

Advisors

Texas AgriLife	Tony Reisinger
Texas Parks & Wildlife	Javier de Leon

RGV Chapter Texas Master Naturalist: This chapter is an affiliate of the Texas Master Naturalist Program jointly sponsored by Texas AgriLife and the Texas Parks & Wildlife Department.

South Texas Border Chapter Leadership Team 2024

Officers

President	Anne Mayville
First Vice President	Roberta Allen
Second Vice President	Jennifer Rektorik
Secretary	Velma Schmidt
Treasurer	Gayle Rice

Directors

Immediate Past President	Donna Otto
Membership Director	Jaime Rodriguez
Awards: River Rivera	
Hours review/approval: Kathy Tonn, River Rivera	
New Class Director	James Gerry
Communication Director	Anita Westervelt
Publicity: Anita Westervelt	
Newsletter: participate with RGV Chapter	
Webmaster/IT: Joseph Connors	
Outreach Director: Roberta Allen	
Historian/Archivist: Kathy Tonn	
Advanced Training Director	Judy Perkin
Volunteer Service Project Director	Jennifer Rektorik
Volunteer Opportunity Director	River Rivera
At-Large Director	Robert Hernandez
Winter Texan Director	Mary Baker
New Class Representative	Roxanne Balousek
Chapter State Representative	Anne Mayville

Advisors

Texas Parks & Wildlife Advisor	Javier DeLeon
Texas AgriLife Advisors	Tony Reisinger