



# 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 ...*

## Balsam Gourd *Ibervillea lindheimeri*

Jake Landers

Usually in late summer, someone wants to know the name of a vine with bright orange fruit slightly smaller than a ping-pong ball. The vine is often climbing on a fence (Figure 1) or bushes, and is completely unseen until the fruits turn from striped watermelon-green to the visible orange. It is called Balsam gourd, Globeberry, Deer apples, or *Ibervillea lindheimeri*.

The vine emerges in the spring from a fist-sized tuber a foot underground, and climbs with hook-on tendrils that attach it firmly to whatever it is climbing on. The leaves are lobed like a three-fingered hand. The small flowers have five petals and are yellow (Figure 2), the female much larger than the male.



Figure 2 (above). Five-petaled, yellow bloom of the balsam gourd.

Photo credit: Ricky Linex, USDA-NRCS.



Figure 1 (above). Balsam gourd adorns a fence surrounding an old cemetery site.

Photo credit: Jake Landers.

Balsam gourd is found only in Texas and southern Oklahoma. Another species found in West Texas has smaller, brilliant red fruit, and the leaves are finely dissected as an adaptation to the drier conditions under which it grows. Also called Deer apples, its scientific name is *Ibervillea tenuisecta*.

When we first moved into our home in San Angelo, the lot only recently cut out of a Mesquite pasture, we found a plant growing in the area I was preparing for a garden. I found the tuber a foot down with the soil packed so tightly around it, I split it trying to get it up.

A bulldozer operator in the Sonora area once brought a tuber in to the range experiment station and asked what kind of potato was it. He said one would occasionally pop up while bulldozing big Cedar trees.

(Continued on next page 3)

# See You Down the Road

By Ricky Linex  
NRCS Wildlife Biologist  
Weatherford, Texas

## One Journey Ends While Another Begins – the North Central Texas Plant Book Saga

On September 9<sup>th</sup> of this year, I will have completed a long journey. This journey has been spread over the past 8 years and has consumed much of my time over these years. The journey's end will be the delivery of *Range Plants of North Central Texas, A Land User's Guide to Their Identification, Value and Management*. The idea for this book originated with a book by Clint Rollins called, *Common Rangeland Plants of the Texas Panhandle*. I thought it would be a good idea to do a similar book for the north central Texas area and so the project started back in 2007 with assembling the list of desired plants.

This book provides several photos, 1,450 in total, for each of the 324 plants (160 forbs, 59 grasses and 105 woodies) with emphasis on leaves, flowers, fruits and other details to aid in identification. The text is predominately written for the layman plant enthusiast with a minimum of technical, botanical terms. Each plant is discussed with identification tips, value and management. The sections on the value of the plants will be of most interest to many readers because this information is harder to find from other sources. Many wildflower books show how to identify plants, but do not offer any suggestions of its value to different species of livestock and wildlife. Knowledge of the value of the plants is crucial for a successful land user. Management tips are presented to offer suggestions for maintaining or increasing the presence of the plant upon your land and where you are likely to find the plant growing. The information presented is intended to show plants found in the Rolling Plains, Cross Timbers and Prairies, Blackland Prairie and Post Oak Savannah vegetational areas of Texas. However, with the large amount of regional overlap shown by many of these plants, this book will be useful to land owners and users, students, and wildflower enthusiasts throughout the middle half of Texas and southern Oklahoma.

*Range Plants of North Central Texas* is arranged alphabetically by plant family and then by genus and finally by species within the same genus. This method groups similar plants within a family together to allow easier comparison and identification. The online USDA PLANTS Database was used as the reference for current scientific names. Previous scientific names are shown in parenthesis to bring up to date those of us who first learned the scientific names more than a few years ago. Common names are those locally accepted and widely used in Texas. The soft cover book features 8½ X 11 inch heavy paper with double wire binding so it will lay open for ease in use.

Whether you are contemplating leasing or buying land for livestock production or joining a deer lease for its recreational value, knowing the plants found on that ranch can make the difference in making a profit and receiving satisfaction from the endeavor. Just because grass is growing on the lease doesn't mean that livestock will readily consume it. All plants are not created equal. This book will help you learn which plants are preferred by livestock, game animals, song birds and pollinators. In this edition of the *Reverchon*, I have included several pages from the book for you to preview. Check out pages 4—7 to see a few of the plants that are included in the book.

The next journey will be spreading these books out among participating Soil & Water Conservation Districts who will serve as the primary point of contact for sales. These SWCD offices are located in local Natural Resources Conservation Service offices. The book will sale for \$20.00. In addition, anywhere you see me at a field day or program, I will be sure to have a box of books for sale. Check the calendar of events to help you find where I will be with books in tow. Proceeds from sales of the books will be deposited and used to print future copies. I will not receive a nickel from the sales. I hope you will pick up a copy, and I especially hope you find it useful.

*Ricky Linex*

(Continued from Page 1— Balsam Gourd)

I showed him a picture of the fruit which he had never seen before, and I don't know if he believed me, but I staggered him with the scientific name.



Figure 1 (above). Colorful gourds use a fence post in a pasture for its trellis.

Photo credit: Ricky Linex, USDA-NRCS.

Last fall, I planted some seeds of Balsam gourd to see if I could grow them for my high-fence enclosure on the ranch for rare native plants. I had forgotten about them until last week when I checked the pots and found several spindly plants with roundish leaves that I thought were weeds. They had roots like a thin white radish, and I transplanted them to bigger pots. I don't know how long it will take them to grow big enough to support big orange marbles, but they have a good start.

In July, I found a vine with more than 30 orange fruits growing on the fence next to the softball park. I gathered three to show to my range workshop students, and I intended to gather some more if they lasted. They were still there after the softball season was over with hundreds of people passing by. I'm convinced we have a generation of young people who do not look through the car windows to see what's growing in the world outside.

I went by again to see if any were still there, and I found only the dried shells of the fruits. I gathered them to collect the seeds, and I discovered that the seeds had been skillfully removed. Some little creature needed seeds more than I did. Maybe it planted a few instead of eating them all. The vine will be back next spring.

Jake Landers is a retired Range Specialist with Texas A&M AgriLife and lives in Menard, Texas.

NRCS Wildlife Biologist, Garry Stephens, ran across an area in northern Frio County where a fence line was overgrown with old man's beard, *Clematis drummondii*. Garry commented, "Some areas of these plants were literally covered with hundreds of Ash-gray blister beetles (Figure 1) which were happily munching away." Garry noted that the ground was also alive with them. After a quick internet search, Garry discovered that populations of the Ash-gray blister beetle, *Epicauta fabricii*, at this level can present problems from colic to death with cattle and horses when the beetles are ingested by livestock that are grazing pastures or those eating hay. He surmised that this might explain some of the undiagnosed livestock deaths that happen each year.

Photo credit: Garry Stephens, USDA-NRCS.

photo  
Spot





# Range Plants of North Central Texas



A Land User's Guide  
to Their Identification,  
Value and Management

by Ricky J. Linex

bush honeysuckle, western white honeysuckle

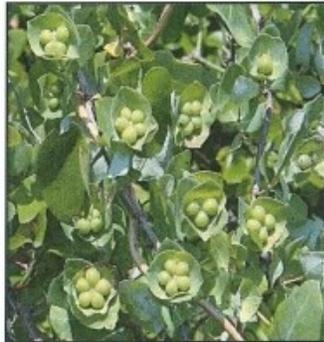
## White honeysuckle

**Identification:** Considered a low climbing shrub, white honeysuckle is usually seen climbing or twining in other shrubs and juniper and reaching 5 to 10 feet in height. The older stems are grayish while new stems are greenish on underside with purple markings on upper side. Leaves are opposite on stems, sessile or short stalked, leaf shape variable from oval to rounded, tips pointed to rounded, olive-green and smooth above, paler and smooth below, with outermost leaves completely encircling the stem becoming fused into one leaf. Flowers form in clusters on the ends of new growth in the spring, petals white to yellowish,  $\frac{1}{2}$  to  $\frac{5}{8}$  inch in length. Fruits mature in fall with several bright red or reddish-orange round fleshy berries growing in clusters on ends of stems, each  $\frac{1}{4}$  to  $\frac{3}{8}$  inch in diameter.

**Value:** All classes of livestock browse upon white honeysuckle, and it provides excellent browse value for deer. In pastures where livestock have grazed for many years, honeysuckle grows in protective shrubs with stems growing out above browsing height. The berries are eaten by many game and songbirds.

**Management:** White honeysuckle browsing should be evaluated yearly and adjustments made to stocking rates and grazing seasons in order to protect this desirable shrubby vine. The plant is easily over-browsed by both livestock and deer due to its palatability. Ripe seeds can be gathered after frost and scattered in low shrubs to allow the seedlings a chance to survive. White honeysuckle is normally seen on rocky slopes and limestone outcrops and can grow in sandy to clayey soils.

Species: *Lonicera albiflora*  
Family: CAPRIFOLIACEAE  
Honeysuckle Family  
Orig/Long/SoG: Native  
Flowering Period: April to May  
Fruit Mature: October to November  
Distribution: 4, 5, 7, 8, 9, 10



powderpuff thistle, American star-thistle

## American basketflower

**Identification:** This forb grows upright, 1 ½ to 4 feet in height, on a stout stem usually branching in the upper part of the plant. Leaves are simple, alternate, sessile, entire, glabrous and gland-dotted. Upper leaves are lanceolate averaging 1 to 3 inches in length while leaves at the base of the plant are obovate. Leaves do not have spines as found on true thistles. Flowers are solitary, composite with outer corollas pinkish to lavender in color with inner corollas cream-colored. The 2 to 4 inch wide flower heads are quite showy. With adequate winter moisture American basketflower will often form large colonies covering several acres. By June the flowers have faded revealing a fuzzy tan-colored basket-shaped head hiding numerous black, satiny seeds—these can be worked loose by rolling the flower head between the fingers. The tan bracts at the base of the flower may appear prickly but are soft to the touch. These bracts reveal a basket-like shape, hence the name.

**Value:** This forb provides excellent seed for all game birds and songbirds; however, it is of no value to livestock and receives very low to no use by deer. American basketflower is visited by pollinator species.

**Management:** Since American basketflower is not grazed by livestock or wildlife, the plant will be prolific if moisture is adequate during late winter and spring. Growth begins in late winter with plant maturing in early summer. Mature flower heads can be hand gathered in June/July with seeds stripped out and used to seed desired areas. This plant prefers tighter soils and low areas in rangeland where additional water collects. This annual forb will be suppressed the year of a prescribed or wild fire or following the use of chemicals for certain brush species.

Species: *Centaurea americana*  
Family: ASTERACEAE  
Sunflower Family  
Orig/Long/SoG: NAC  
Bloom Period: May to July  
Distribution: 1, 2, 3, 4, 5, 6, 7, 8, 10



# Reverchon bristlegrass

Reverchon's bristlegrass

Species: *Setaria reverchonii*  
Family: POACEAE  
Grass Family  
Orig/Long/SoG: NPW  
Bloom Period: April to June  
Distribution: 2, 3, 5, 6, 7, 8, 9, 10



**Identification:** Reverchon bristlegrass is a tufted perennial bunchgrass standing 12 to 30 inches tall with several stiffly erect culms growing from a swollen base with short rhizomes. The nodes and lower internodes are covered with flattened hairs. Leaf blades are stiffly erect,  $\frac{1}{8}$  to  $\frac{1}{4}$  inch wide and 3 to 8 inches long; flat or usually inrolled near leaf tip, and narrowed toward the base. Sheaths are usually longer than internodes with hairs on the margins. Ligule is a very short membrane with short hairs less than  $\frac{1}{16}$  inch long. Seedhead is a narrow spike-like panicle, 2 to 8 inches long, with many short flattened branches up to  $\frac{3}{4}$  inch long. A short hair or bristle is attached to branchlet below seed and may be shorter than seed or up to  $\frac{1}{4}$  inch in length. One to four seeds may be attached to each branchlet.

**Value:** Reverchon bristlegrass provides fair forage value for livestock and poor forage value for deer. The majority of the leaves lie close to the base so animals consume quite a bit of stem with the chosen leaves. Game and songbirds readily eat the seeds.

**Management:** Reverchon bristlegrass can be commonly found in the Rolling Plains and western Cross Timbers of north-central Texas. It is normally seen in scattered bunches and does not usually make up a significant portion of the plant composition in rangeland pastures. Proper grazing use, rotational grazing, and proper stocking rate will help ensure Reverchon bristlegrass remains a component of the grasses found in these pastures. It can be found on rocky or sandy prairies and limestone hills.



# Purchasing Seed on a PLS Pound vs. a Bulk Pound

*Bamert Seed Company*

Have you ever called or visited a website of a seed dealer and kept seeing these three little letters, PLS? Have you ever wondered what's so important about PLS? Well, let me explain.

Pure live seed (PLS) % is important when defining an amount of an individual species to plant in order to achieve a desired or adequate stand. PLS % is a way of expressing the quality of the seed. PLS % is the amount of "live or viable" seed that you are considering. The PLS % of a seed species is determined by multiplying the purity by the germination percentage of a specific seed lot.

When purchasing on a PLS pound basis, it helps you to better compare lots of a specific species to another because you are guaranteed the same amount of viable seed even though different lots may be used. This is in comparison to a bulk pound. A bulk pound of seed is one that contains viable seed, inert matter, other crop seed, and weed seed. When purchasing on a bulk pound basis, you are no longer guaranteed the same amount of viable seed. Purchasing on a PLS pound basis allows you to compare apples to apples and ensures the viability of your seed purchased.

It is important that when you are getting ready to purchase seed you understand not only the bulk contents but also the PLS % of the seed. This is to help the consumer know which portion of the seed is viable and will germinate, and how much is inert material and/or "dead" seed. In layman's terms, when you purchase seed on a PLS pound basis, you are buying the viable seed; but when you purchase on a bulk pound basis, you are buying viable seed, inert material, and/or potentially dead seed. Let's take a look at an example of a PLS versus Bulk purchase.

### Example:

You want to purchase 30 pounds of Blue Grama, but you are unsure if you should purchase on a bulk pound or a PLS pound. You know that the price of Blue Grama on a bulk pound costs \$23 per pound; and, Blue Grama on a PLS pound costs \$27 per pound. You know that the specific lot has a PLS of 59%.

Bulk Cost:	PLS Cost:
To find the cost of the seed on a bulk pound, you multiple the cost by pounds, in this instance: \$23 x 30 bulk pounds = \$690 total cost You know that you will pay \$690 for 30 bulk pounds of viable, inert material, and dead seed. Next, you want to know how many PLS pounds you would be receiving. Therefore, you multiply the total bulk pounds by the PLS percent. 30 bulk pounds x 0.59 lot PLS = 17.7 PLS pounds	To find the cost of the seed on a PLS pound basis, you multiple the cost by PLS pounds, in this instance: \$27 x 30 PLS pounds = \$810 total cost You know that you will pay \$810 for 30 pounds of viable seed. Next, you want to know how many bulk pounds you would be receiving. Therefore, you divide the total PLS pounds by the PLS percent. 30 PLS pounds / 0.59 PLS% = 51 Bulk pounds

So even though the cost of buying on a PLS may seem higher, you are receiving 30 PLS pounds of seed that are guaranteed to be viable and germinate. While if you purchase on a bulk pound, you are only receiving 17.7 PLS pounds of seed that would be viable and germinate. Purchasing seed on a PLS pound basis is especially important when comparing lots with differing PLS%. So, when it comes to purchasing on a PLS versus a Bulk pound, don't be scared or hesitant of the cost because when you buy on a PLS basis, you are guaranteed viable seed.

*Article written and submitted by the Staff of Bamert Seed Company located in Muleshoe, Texas.*



**Figure 1 (above).** A seed tag displays the information about the amount of "pure live seed" (PLS) actually purchased.

*Photo source: Bamert Seed Company.*

## Praise for Conservation Groups that Made Possible *Range Plants of North Central Texas*

Ricky Linex

Now that the long-awaited plant book is finally in hand, I want to send out a special thank you to several groups who took an interest in this publication, and through their generosity made a dream of mine a reality. Without these sponsors, the printing of the book would not have been possible. Going back to 2009, Chip Martin, then with Quail Unlimited of Texas, was the first to offer suggestions for possible funding. About the same time, Quail Coalition was formed in Texas and the initial funding for printing of the future book was received. Donations from the Greater Houston Chapter of Quail Coalition, Cross Timbers Chapter of Quail Coalition and the Texas Council of Quail Coalition were received in 2009.

The Texas Wildlife Association Foundation, using monies received from a banquet recognizing outstanding quail stewards of Texas, contributed toward the book in 2010. The Natural Resources Conservation Service in Texas contributed later in 2010, but additional funding was still needed. The Directors of the Rolling Plains Quail Research Ranch near Roby, Texas made a substantial contribution to the cause in 2011.

At that time, I felt comfortable with the amount of funding received to be able to print 1,500-2,000 copies. As the book was clearing all of the NRCS reviews and undergoing edits and corrections in 2014, I began shopping around for a printer to get estimates of what it would cost to print. What I was not mindful of was that the larger paper size, increased number of pages and double wire binding as compared to the traditional paperback binding

Figure 1 (right). Cover art for *Range Plants of North Central Texas*.

Photo credit: Ricky Linex, USDA-NRCS.



of the Panhandle plant book would result in a higher printing cost. It became quickly apparent it was time to go back to fundraising as the book was ready to print, but the current funds would not pay for the printing of enough copies to get the price down to a reasonable cost per book.

As is often said, timing is everything. I approached Jay Stine, Director of Shared Services with the Park Cities Chapter of Quail Coalition just before their 2014 banquet. Jay suggested that I submit a grant request which was followed by an interview with the Park Cities committee. The committee approved the funding which more than doubled the amount previously contributed and the combined contributions of all sponsors allowed for the printing to begin of 4,000 copies of the book.

Quail and quail habitat managers hold a cherished spot in my heart and it is with great personal satisfaction that quail conservation groups contributed 96% of the cost of printing the books. Thanks to the generosity of these groups, this book is a reality. To each of you, I owe my deepest respect and admiration for the good you do.

*Ricky Linex is a Wildlife Biologist with the USDA-NRCS in Weatherford, Texas, and author of *Range Plants of North Central Texas. A Land User's Guide to Their Identification, Value and Management.**



### Check out this App!

**NEW MANAGEMENT  
CALENDAR FOR LANDOWNERS  
TO HELP IMPROVE HABITAT  
FOR BOBWHITE QUAIL!**

This app is designed to assist landowners, hunters, and wildlife managers in the management of habitat for the Northern Bobwhite quail (*Colinus virginianus*). This app provides a schedule for the landowner to use throughout the year describing when and how to implement management practices to improve habitat.

*Humankind has not woven the web of life.  
We are but one thread within it.  
Whatever we do to the web, we do to ourselves.  
All things are bound together.  
All things connect.*

- Chief Seattle (*Duwamish*)

See anything happening on your Texas rangeland? Articles and photos related to the flora and fauna of our native landscape are welcome. We'd really like to hear from you; please share what's happening in your part of the state.

Send your 300 to 500-word essay to Ricky Linex at [ricky.linex@tx.usda.gov](mailto:ricky.linex@tx.usda.gov) and Melissa Sturdivant at [melissa.sturdivant@tx.usda.gov](mailto:melissa.sturdivant@tx.usda.gov).

*Melissa Sturdivant*

*Melissa Sturdivant is a Soil Conservationist for the USDA-NRCS in Goldthwaite, Texas, and serves as the Co-Editor for the Reverchon Naturalist.*

## **MARK YOUR CALENDAR**

### **QUAIL APPRECIATION DAYS**

**September 16, Archer City, Texas**

Contact Justin Gilliam, Texas A&M AgriLife Extension, at 940-574-4914 or email [J-Gilliam@tamu.edu](mailto:J-Gilliam@tamu.edu)

**September 18, Palo Pinto, Texas**

Contact Scott Mauney, Texas A&M AgriLife Extension, at <http://palopinto.agrilife.org/files/2014/08/Quail-Appreciation-Day-2014.jpg>

### **RIPARIAN WORKSHOPS**

**September 24, Classroom at Waco Wetlands and field sites near Crawford**

Contact Jenna Jones Walker, Watershed Administrator, City of Waco Water Utility Services, at 254-750-6644 or [jennaw@ci.waco.tx.us](mailto:jennaw@ci.waco.tx.us)

**September 25, near Iredale, Texas**

Contact Jenna Jones Walker, Watershed Administrator, City of Waco Water Utility Services, at 254-750-6644 or [jennaw@ci.waco.tx.us](mailto:jennaw@ci.waco.tx.us)

**October 30, Lampasas area**

Contact Lisa J. Prcin, Texas A&M AgriLife Research, Blackland Research & Extension Center, at 254-774-6008 or [lprcin@brc.tamus.edu](mailto:lprcin@brc.tamus.edu)

### **CROSS TIMBERS LANDOWNERS WORKSHOP**

**October 3, Decatur, Texas**

Contact Renee Burks, Texas A&M Forest Service, at 254-386-3361 or [rburks@tfs.tamu.edu](mailto:rburks@tfs.tamu.edu)

### **NATIVE PLANT SOCIETY OF TEXAS**

#### **ANNUAL SYMPOSIUM**

**October 16-19, Texarkana**

See website for details and for information on how to register <http://npsot.org/wp/story/2014/5192/>

### **MASTER NATURALISTS**

#### **STATE CONVENTION**

**October 24-26, Mo Ranch, Hunt, Texas**

See website for details and for information on how to register <http://txmn.org/2014-state-meeting/>

## **From the Prairie—to the Plate and the Medicine Cabinet**



**Figure 1 (above).** Liatris growing along the roadside in Mills County.



**Figure 2 (right).** Close-up image of the stalk-like bloom of Liatris.

*Photos credit: Melissa Sturdivant, USDA-NRCS.*

Liatris, or you may know it as blazing star, button snakeroot or dotted gayfeather (*Liatris* spp.), is truly ablaze on the Texas prairie and native rangeland, but there's more to this plant than you might know.

Liatris has a long history of use by American Indian tribes both as a food source and in the treatment of ailments and diseases. Being such a drought hardy plant probably led to its use over time because when everything else withered away from drought, this plant was still blooming.

The roots of Liatris are edible. However, depending on when and which of the Liatris plants you have, the palatability of the corm-like roots harvested will probably be affected. I dug some up recently and needless to say, they were very bitter, and had a medicinal taste. Yuk! Well, that just made me more curious and I researched my medical botany books to see what was going on with this native plant. *L. spp.* seems to have some chemical properties which probably led to its use by many tribes. In fact, it was crushed, boiled, reduced, and dabbed on almost everything and by many tribes. It was used in the treatment of a lot of different ailments such as sore throats and laryngitis, various kinds of gastrointestinal problems, coughs and other pulmonary inflammations, skin infections and boils, kidney and urinary tract infections, STDs, and also to improve the appetite! All plant parts were reportedly used, not just the roots, and they were used to make teas and poultices.

Not just a pretty plant, right? It cures the sick, but also feeds the hungry. Historical records reveal that if the roots were stored, either below ground (not dug yet) or cached for winter, the sugar content increased over time and they were an excellent and nutritious food for many. I've dug a few and will let you know how that turns out in a few months.

*Melissa Sturdivant*