Introduction to Plant Identification Using Family Traits

Ricky Linex
Wildlife Biologist

Natural Resources Conservation Service
Weatherford, Texas

“I’m a _____, why do I need to know how to identify the plants on my property,

their just plants.”

Cattle rancher
Wheat farmer
Deer hunter
Quail hunter
Wildlife consultant
Landowner conservationist
Land developer
Realtor
Bank/Trust officer
Landscaper
Honey producer
Butterfly enthusiast
Citizen scientist
Master Naturalist
USDA NRCS employee

Engelmann’s daisy
Engelmannia peristenia

Being able to identify the plants that grow on your land or lease is paramount to judging the overall quality of food and cover found there. You need to know what they are and what value they provide for various types of livestock and species of wildlife.

Steve Nelle Photo

At first, plant identification can be a confusing and daunting task but with practice you can learn the common plants of your area. Learning the broader family traits can help you to narrow down your search for the plants identification.

Having good resources, both as plant identification books and websites along with going to the field with good plant people will help you learn to ID the plants you need to know.

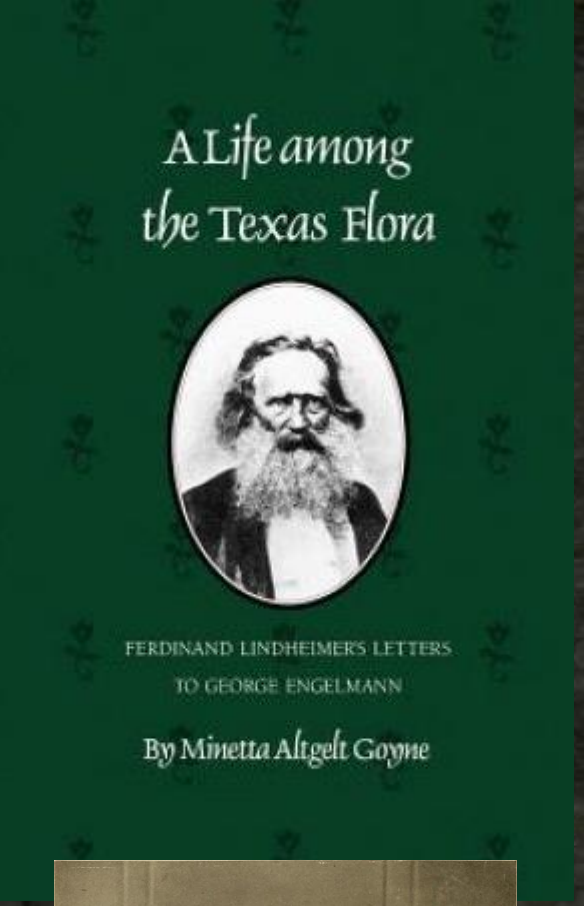
We have it so much easier now than those who came before us.

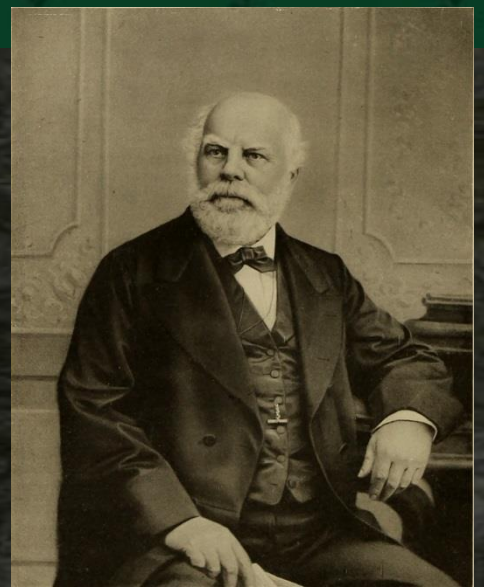
Ferdinand Jacob Lindheimer

(1802-1879)

- Known as the
- “Father of Texas Botany”
- Collected 1836-1879

Lindheimera texana A. Gray & Engelm.
Texas yellowstar





FL. SEV. AMERICA A

MANUAL OF BOTANY

FOR THE

NORTHERN AND MIDDLE STATES.

PART I.

CONTAINING

GENERIC DESCRIPTIONS OF THE PLANTS TO THE NORTH OF VIRGINIA, WITH REFERENCES TO THE NATURAL ORDERS OF LINNÆUS AND JUSSIEU.

PART II.

CONTAINING

SPECIFIC DESCRIPTIONS OF THE INDIGENOUS PLANTS, WHICH ARE WELL DEFINED AND ESTABLISHED; AND OF THE CULTIVATED EXOTICS.

BY AMOS EATON, A. M.

Lecturer on Botany, Mineralogy and Chemistry. Corresponding Member of the Lyceum of Natural History of New-York.

Second Edition, corrected and enlarged.

ALBANY:

PRINTED AND PUBLISHED BY WEBSTERS AND SKINNERS.

1818.

Manual of Botany
Published in eight volumes over the years 1818-1840
Below – Giant ragweed

AMARYLLUS, 49.

atamasco (atamasco lily. P. w. J. 4.) spathe 2-cleft, acute: flower pedicelled: corol bellform subequal, erect: stamens declined.
formosissima (jacobea. E. 4.) spathe 1-flowered: corol ringent-like: petals declined.

AMBROSIA, 93.

trifida (P. N. C. A. S. ☹.) bristly, rough: leaves 3-lobed serrate, lobes oval lanceolate acuminate: fruit 6-spined beneath the apex. From 5 to 8 feet high.
integrifolia (P. Ju. ☺.) leaves ovate sessile acuminate serrate, bristly on both sides, ciliate at the base: racemes terminal, sometimes ternate. Flowers very inconspicuous.
elatior (hogweed. O. S. ☺.) leaves doubly-pinnatified smoothish: petioles long ciliated: ra-

A Flora of North America by Asa Gray and John Torrey

8. *L. Texensis* (Hook.): stem silky-pubescent; leaflets 5, lanceolate, rather acute, glabrous above, silky beneath and on the margins; stipules subulate; raceme pyramidal; pedicels alternate, as long as the flowers; calyx silky, bracteolate; the upper lip shorter, 2-cleft, the lower acuminate and entire; vexillum orbicular, deep blue, with a white spot in the middle divided by a longitudinal fold. *Hook. bot. mag. t.* 3492. L. bimaculatus, *Don, in Brit. fl. gard.* (*ser.* 2.) *t.* 314? not of *Lam.*

San Felipe, Texas, *Drummond.*—Much resembles L. subcarnosus, but appears distinct: its habit stouter, the leaves neither fleshy nor retuse, the flowers deeper colored, and the wings more projecting. *Hook.*

NATTSKATTA. SOLANUM NIGRUM L.

120. ⊙.

Flora

der

Gegend um Dresden.

Von

Dr. Heinrich Ficinus,

Professor der Physik und Chemie an der chirurgisch-medicinischen Akademie und der Naturkunde an der damit verbundenen Thierarzneischule zu Dresden, der mineralogischen Gesellschaft daselbst Secretär, der Kais. Leopoldinischen Akademie der Naturforscher zu Bonn, der Gesellschaft naturforsch. Freunde zu Berlin, der naturforschenden zu Halle und zu Leipzig, der mineralogischen zu Jena, der für Natur und Heilkunde zu Dresden, des landwirthschaftlichen

372 S nigrum L black Waxy or smooth Stengel angular herbaceous Leaves eirund pointed toothed polychrome flowers white with yellow dust bags hanging the afterdolden stalked their stalk between the leaves stapled berry black b judaicum Acke angular with crooked herbaceous spines Schk 46 Sturm 1 Off Solanum Herba Suspicious smelling of musk along the walls and deserts b Brockwitz M on the Jewish pond July Aug G

nersdorf hinter Keitz, bei Brockwitz, Poste. Mai, Juni. ♃.

††† Frucht ist eine Beere.

Solánum L. Nachtschatten.

(Solaneae)

Kelch meist 5spaltig, bleibend. Krone radförmig 5spaltig mit spitzen Abtheilungen. Staubbeutel in einem hervorstehenden, anders gefärbten Kegel zusammengeneigt, an der Spitze mit 2 Oeffnungen. Narbe stumpf. Beere fächrig, vielsamig.

371. S. tuberosum L., Kartoffel-N. Stengel krautartig. Blätter gefiedert. Blumen in Afterdolden, Wurzeln mit Knollen. a. weiße Blumen. b. violette Blumen.

Gemeine Sommerfrucht. Juli, August. ♃.

372. S. nigrum L., schwarzer N. Behaart oder glatt, Stengel eckig, krautartig. Blätter eirund, zugespitzt, gezahnt, vieleckig, gestielt. Blumen weiß mit gelben Staubbeuteln, hängend, die Afterdolden gestielt, ihr Stiel zwischen den Blättern angeheftet. Beere schwarz. b. judaicum. Aeste eckig, mit krummen krautartigen Stacheln. Schk. 46. Sturm 1. Off. Solanum. Herba. Verdächtig. Riecht schwach nach Moschus.

Gemein an Mauern und wüsten Stellen b. bei Brockwitz M., am Judenteiche. Juli, Aug. ⊙.

USDA United States Department of Agriculture
Natural Resources Conservation Service

NRCS

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Results for Scientific Name = solanum nigrum
10 records returned

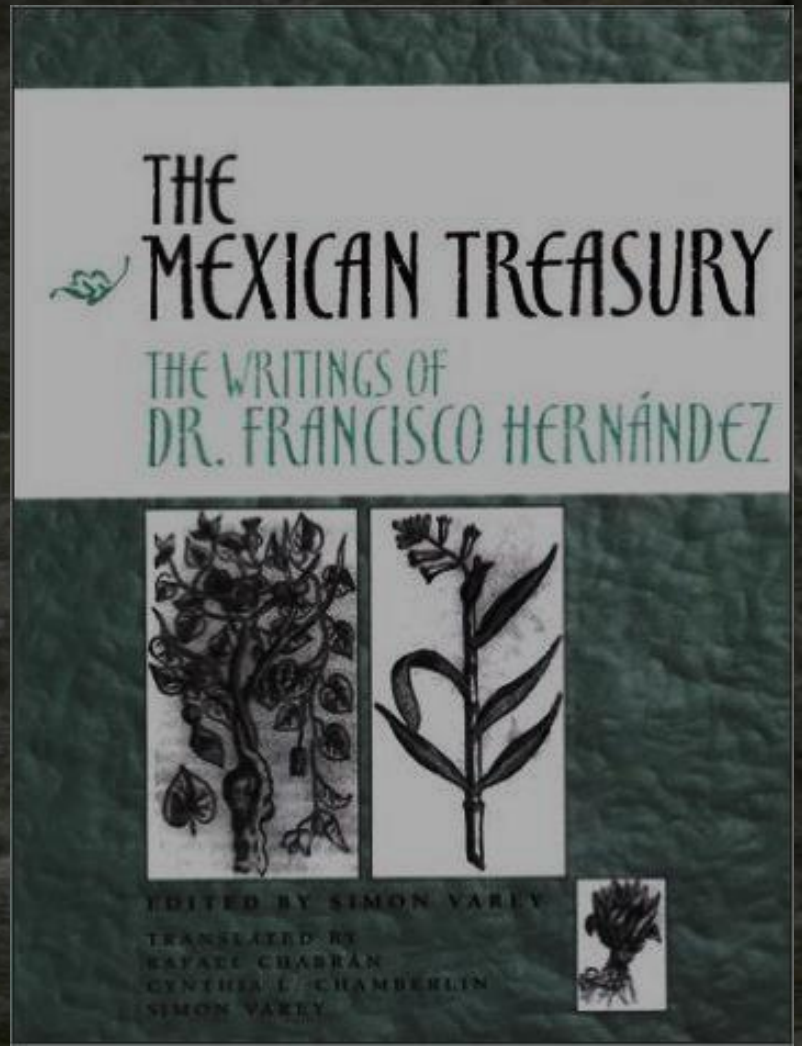
Click on an accepted name below to view its PLANTS Profile with all synonyms, distribution map, more information, and Web links if available. P
generate fully synonymized plant lists. Synonyms are indented beneath accepted counterparts.

Symbol	Scientific Name	Common Name
SOAM	*Solanum americanum* Mill.	American black nightshade
SONIA	*Solanum nigrum* L. var. *americanum* (Mill.) O.E. Schulz	
SONIV3	*Solanum nigrum* L. var. *virginicum* L.	
SODO	*Solanum douglasii* Dunal	greenspot nightshade
SONID2	*Solanum nigrum* L. var. *douglasii* (Dunal) A. Gray	
SONI	*Solanum nigrum* L.	black nightshade
SOPT7	*Solanum ptycanthum* Dunal	West Indian nightshade
SONI4	*Solanum nigrum* auct. non L.	
SOVI8	*Solanum villosum* (L.) Mill.	hairy nightshade
SONIV4	*Solanum nigrum* L. var. *villosum* L.	

Francisco Hernández Expedition (1570–77)

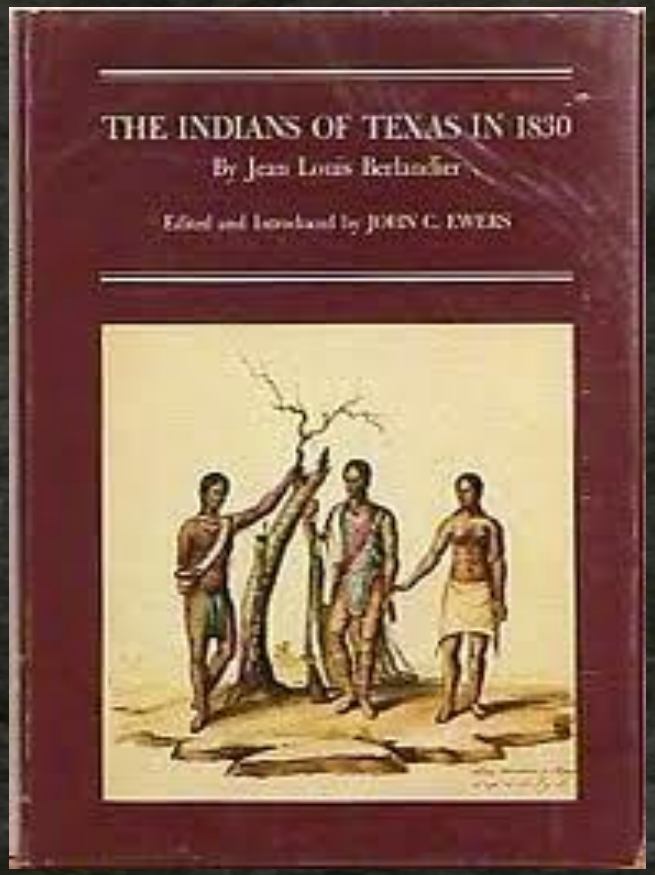
The **Francisco Hernández Expedition** is considered to be the first scientific expedition to the New World, led by Francisco Hernandez de Toledo, a naturalist and physician of the Court of King Phillip II, who was highly regarded in Spain because of his works on herbal medicine. Among some of the most important achievements of the expedition were the discovery and subsequent introduction in Europe of an incredible amount of new plants that had never seen before in the Old World, but that quickly gained acceptance and become very popular among European consumers, such as the pineapple, cocoa, corn, and peppers. Compilation of his work published in 1615.

From Wikipedia, the free encyclopedia

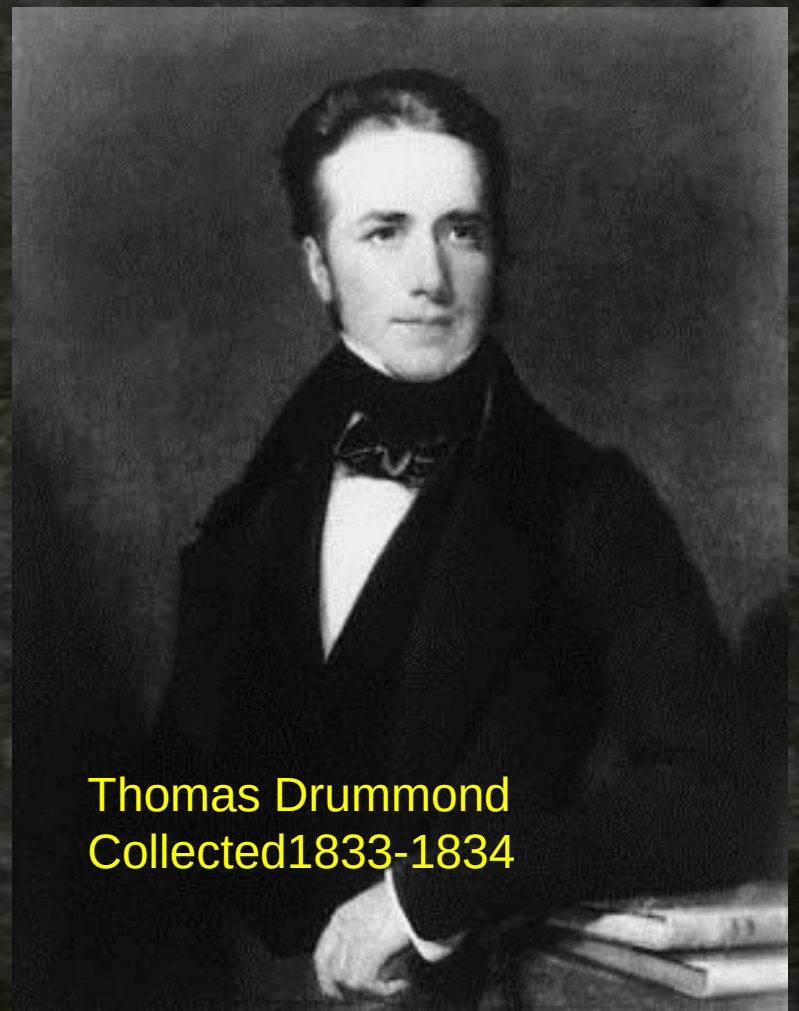


Early Botanical Collectors in Texas

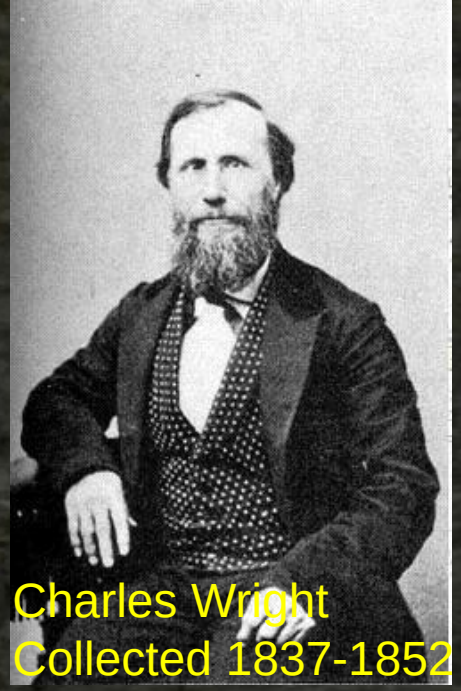
Dr. Edwin James
Collected in 1820 in the Texas Panhandle while accompanying US Army expedition to the Rocky Mountains



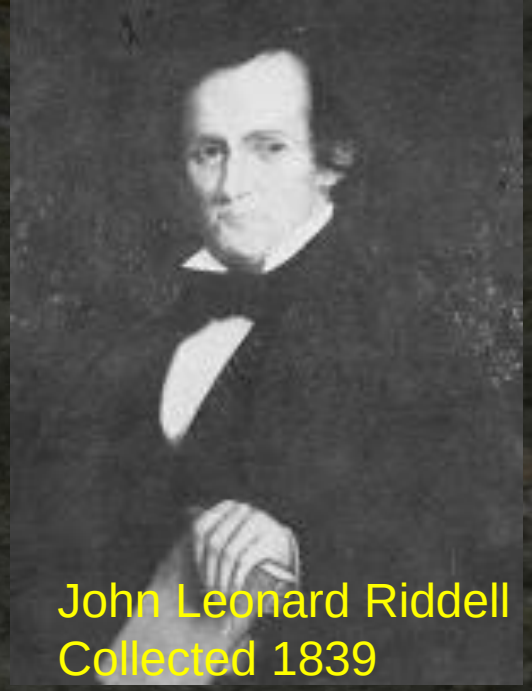
Jean Louis Berlandier
Collected 1828-1834



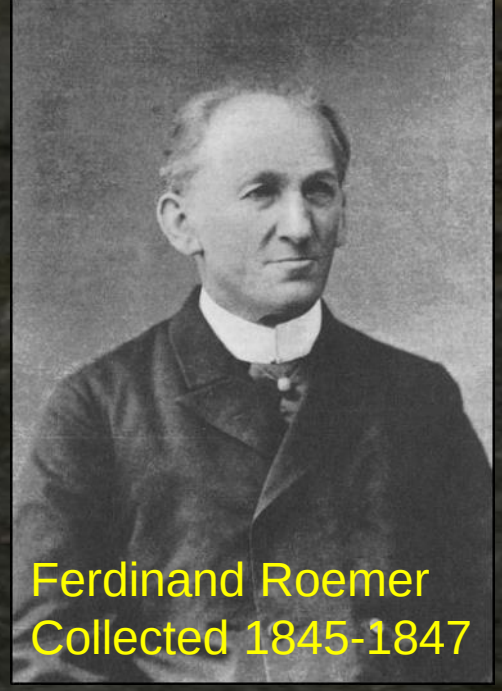
Thomas Drummond
Collected1833-1834



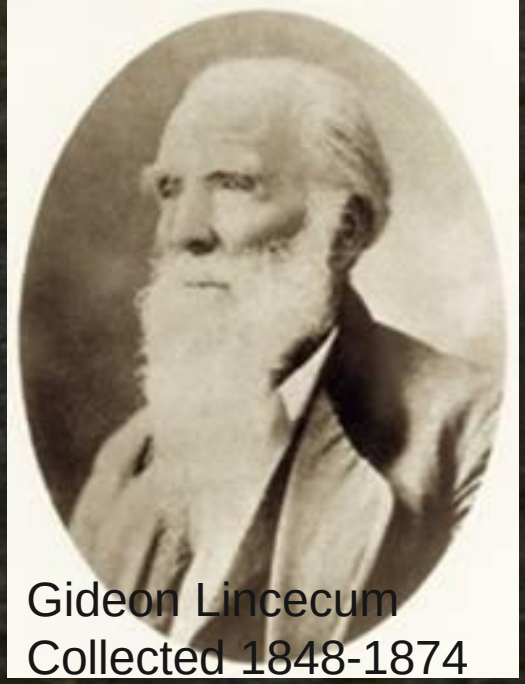
Charles Wright
Collected 1837-1852



John Leonard Riddell
Collected 1839



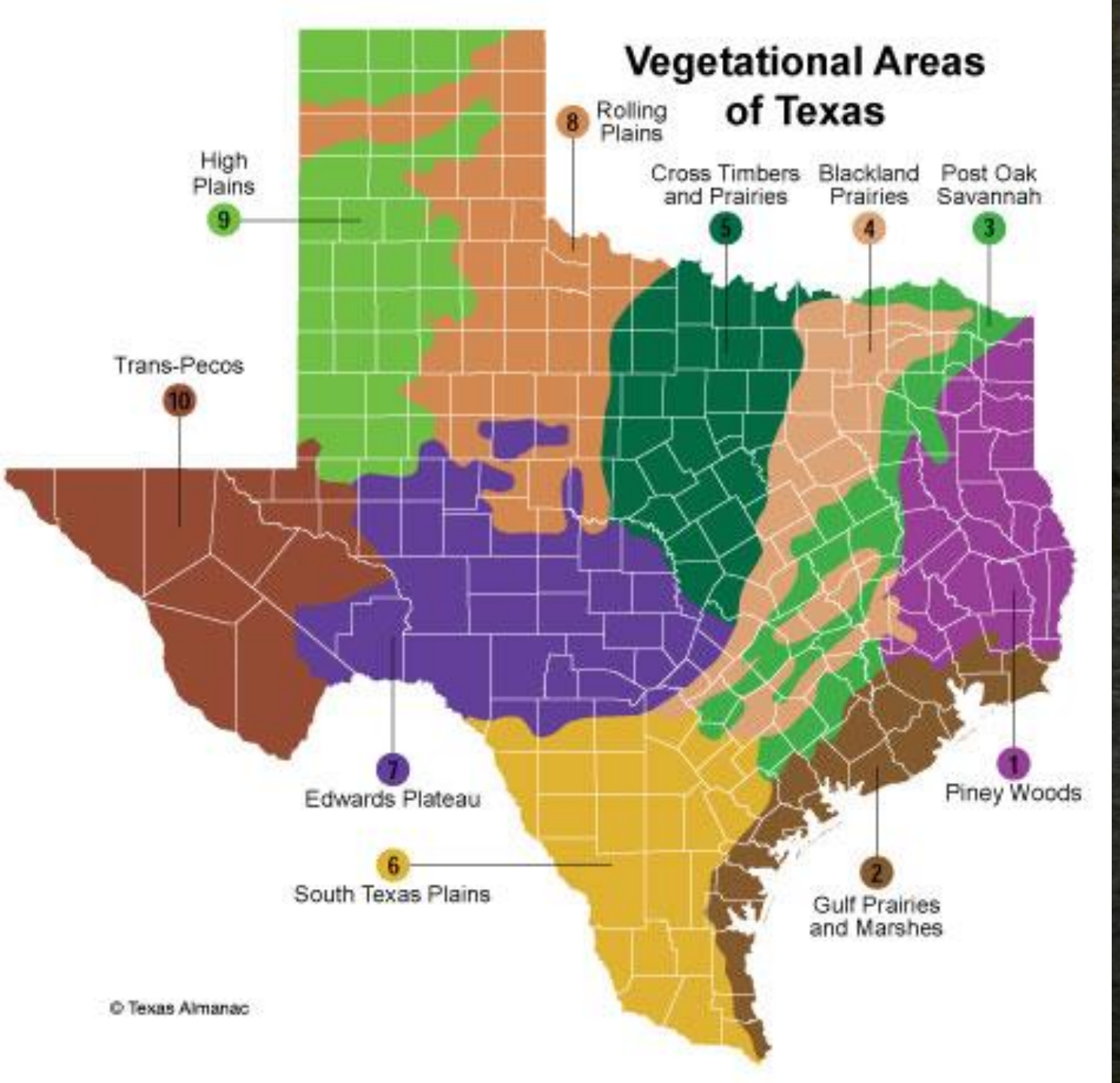
Ferdinand Roemer
Collected 1845-1847



Gideon Lincecum
Collected 1848-1874

Julien Reverchon
Arrived in Texas 1856,
Collected 1876-1905

Mary Sophie Young
Second Female
Botanist in Texas
collected
1900-1919 with
Nebuchadnezzar,
August, 1914


Vegetational Areas of Texas
8 Rolling Plains
High Plains 9
Cross Timbers and Prairies 5
Blackland Prairies 4
Post Oak Savannah 3
Trans-Pecos 10
7 Edwards Plateau
1 Piney Woods
6 South Texas Plains
2 Gulf Prairies and Marshes
© Texas Almanac

Summary of the Flora of Texas

❖ Species	4,839
❖ Subspecies	44
❖ Varieties	532
❖ Forms	39
❖ Hybrids	25
Total number of taxa in Texas	5,479

Source: **Manual of the Vascular Plants of Texas**
by Donovan S. Correll and Marshall C. Johnston, 1970

UPDATE: Dr. George Diggs, BRIT, stated October 16, 2015 there are now 5,839 recognized taxa in Texas.

> 360 plants in 45 years.

Overwhelmed? Don't Be!

9.6% of these species are grasses (558 species)

If you were to learn 10% of the grasses, 56 species, you could likely identify more plants than 95% of the people in your county.

True experts may only be able to identify a percentage of the plants in their area, but they know how to follow a botanical key and identify the rest.

Challenge:

Set a Goal to learn 1 new plant per week.

Plant Names:
Carl Linnaeus developed the
Binomial nomenclature, the combination of a genus name and a second term, which together uniquely identify each species of organism.

Texas wintergrass = common name
Nassella leucotricha = scientific or botanical name
(Stipa leucotricha) = previous scientific genus
Winter grass, spear grass, Texas needlegrass, Texas tussockgrass

Sideoats grama
Bouteloua curtipendula

Greek:
leukos, white
tricha…thrix, hair.

leucotricha = white-haired

Carl Linnaeus developed the
Binomial nomenclature, the combination of a genus name and a second term, which together uniquely identify each species of organism.

Texas wintergrass
Nassella leucotricha (Stipa leucotricha)
Winter grass, spear grass, Texas needlegrass, Texas tussockgrass

Sideoats grama
Bouteloua curtipendula

Sideoats grama
Bouteloua curtipendula

Curti – to shorten, curtailed
Pendula – hanging, pendulous
‘short and pendulous’

Latin is used for scientific names,

1. Tradition, International Language of Science
2. “Dead” language
3. Precise meaning “terse tongue”
   (concise with few words having many meanings)
4. Greek was used some early on.

Cassell’s Latin Dictionary
Latin=English; English=Latin

A variety is a group of plants in a natural population that has distinctive features often selected by environmental pressures through sexual reproduction. A variety is propagated sexually and comes true from seeds. The varietal name is also an epithet, added after the name of the species and is preceded by the abbreviation "var.”

Bouteloua curtipendula var. *caespitosa*

A cultivar is a plant selected by man for one or more unique traits and usually is propagated vegetatively in order to maintain those traits. If a new type of tomato was developed by cross pollination in a breeding program, it would be a cultivar. A cultivar name follows the species name and is enclosed within single quotation marks, not underlined or italicized, and each word begins with a capital letters.

Cornus florida 'White Cloud'
White Cloud flowering dogwood

http://www.ces.ncsu.edu/depts/hort/consumer/quickref/general/scientific_names.html

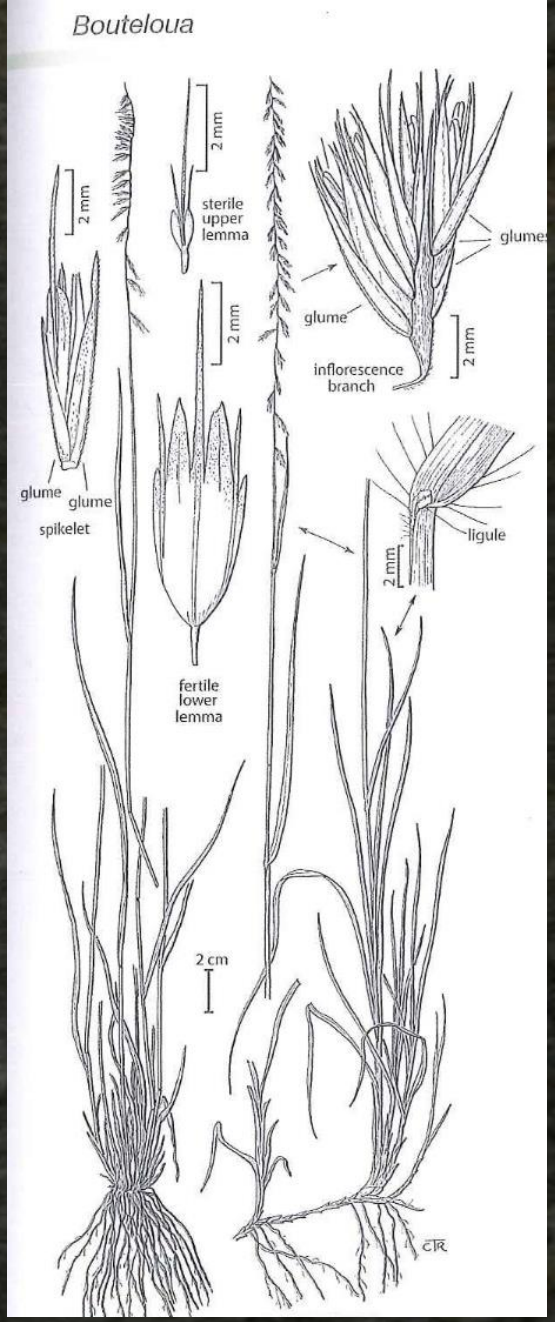
USDA NRCS PLANTS Database

GENERAL | IMAGES | SYNONYMS | CLASSIFICATION | LEGAL STATUS | RELATED LINKS

Bouteloua curtipendula **(Michx.) Torr. var. *curtipendula***
sideoats grama

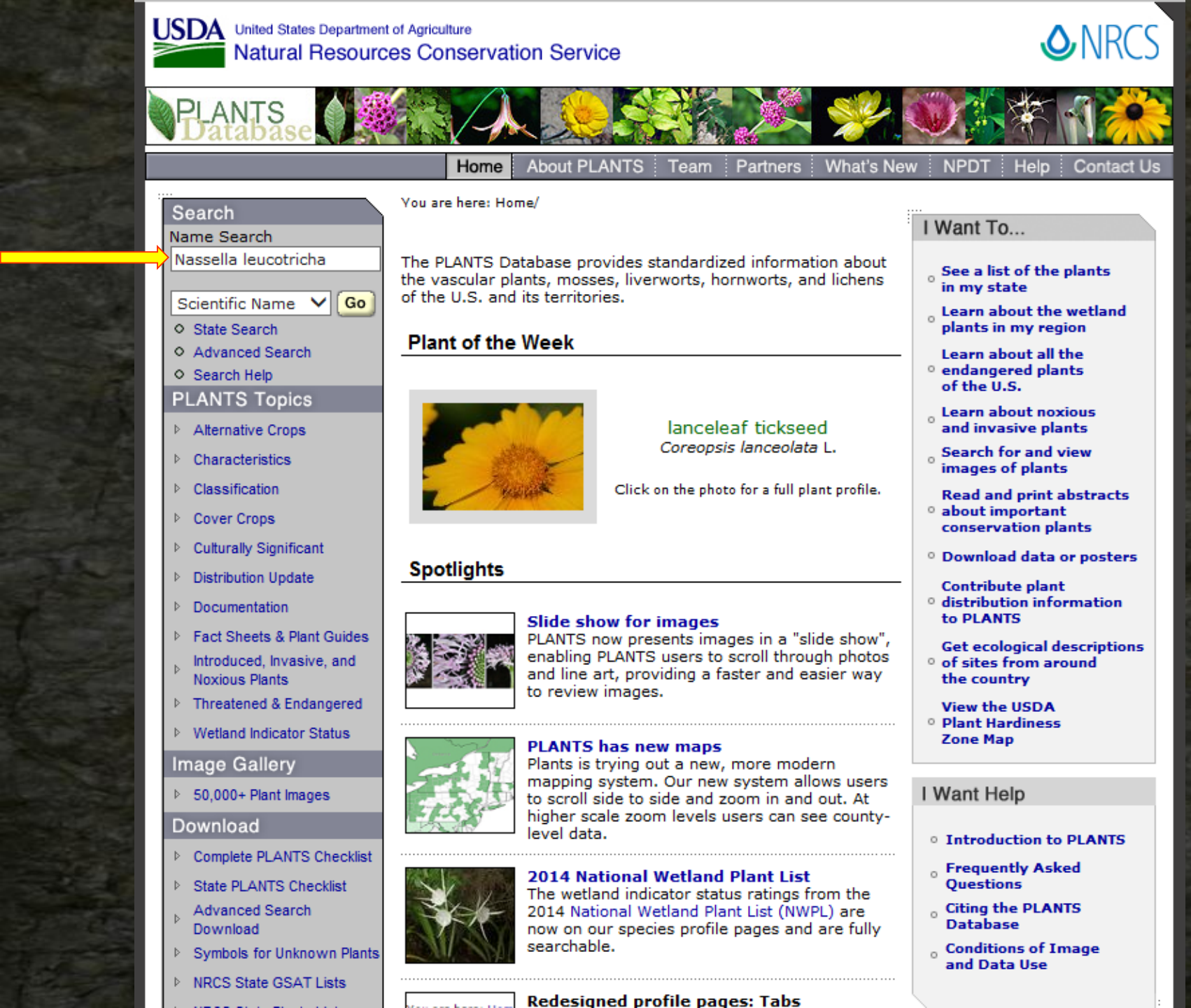
Click on a scientific name below to expand it in the PLANTS Classification Report.

Rank	Scientific Name and Common Name
Kingdom	Plantae – Plants
Subkingdom	Tracheobionta – Vascular plants
Superdivision	Spermatophyta – Seed plants
Division	Magnoliophyta – Flowering plants
Class	Liliopsida – Monocotyledons
Subclass	Commelinidae
Order	Cyperales
Family	Poaceae / Gramineae – Grass family
Genus	*Bouteloua* Lag. – grama
Species	*Bouteloua curtipendula* (Michx.) Torr. – sideoats grama
Variety	*Bouteloua curtipendula* (Michx.) Torr. var. *curtipendula* – sideoats grama
Variety	*Bouteloua curtipendula* (Michx.) Torr. var. *caespitosa* Gould & Kapadia – sideoats grama



Guide to Texas Grasses
by Robert B. Shaw

caespitosa (kess-pi-TOH-suh)



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National Plants Data Team supports PLANTS Database

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Nassella leucotricha (Trin. & Rupr.) Pohl
Texas wintergrass

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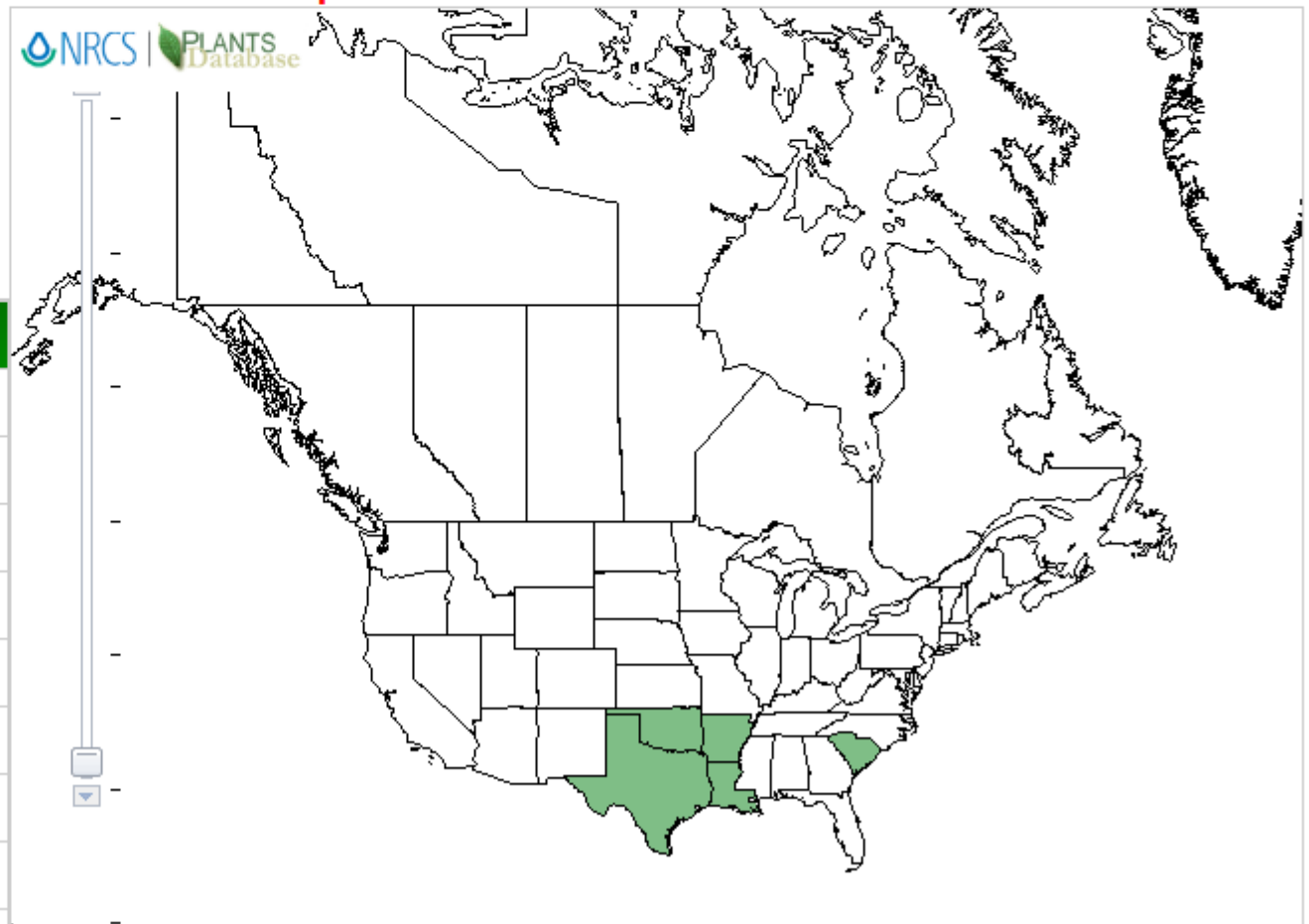


General Information	
Symbol:	NALE3
Group:	Monocot
Family:	Poaceae
Duration:	Perennial
Growth Habit:	Graminoid
Native Status:	L48 N
Other Common Names:	Texas needlegrass
Fact Sheet (pdf) (doc)	

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Plant Fact Sheet

TEXAS TUSSOCKGRASS

Nassella leucotricha (Trin. & Rupr.) Pohl.

Plant Symbol = NALE3

Contributed By: USDA NRCS National Plant Data Center

© Larry Allain
USGS NWRC
@ plants.usda.gov

Alternate Names
Texas wintergrass, *Stipa leucotricha*

Uses
All livestock graze Texas tussockgrass. It is a good forage, primarily because it is green and succulent during the winter when most other grasses are dormant. Its foliage will disintegrate rapidly at the end of the growing season, which will make it a poor grass for soil protection.

Status
Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

Description
Grass Family (Poaceae). Texas tussockgrass is a native, cool-season, short-lived, perennial bunch grass. The height ranges from 2 to 3 feet. The leaf blade is long and narrow. The leaf sheath is longer than the internodes. The basal sheaths enclose a nearly awnless self-pollinated seed called a cleistogene. The seedhead is an open panicle. The spikelets are 1-seeded and the lemma has an awn 6 to 10 inches long, rather stout, light colored, and twisted like a rope in lower part.

Distribution: For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Management
This grass is best managed for winter grazing. To prevent seed from injuring sheep and contaminating wool, remove the sheep for 2 to 3 weeks until seed ripen and fall to the ground. For maximum production, no more than 50 percent of current year's growth by weight should be removed by grazing. Periodic grazing deferments during growing season allow plants to remain vigorous and produce a seed crop.

Establishment
Texas tussockgrass has the most rapid growth in early fall before the cold weather. It will continue to stay green as it grows throughout the winter and spring until June. It often becomes dormant during the hot summer. It reproduces from seed. New plants are also established from cleistogenes (seed produced in the axil of the lower sheath and stem). Awns on the seed twist and untwist as moisture changes. This characteristic and the needlelike end that holds the seed assist in planting the seed. The seed also becomes attached to the hair and wool of grazing animals, which help distribute them. It grows best on deep loam soils.

Cultivars, Improved and Selected Materials (and area of origin)
Please contact your local NRCS Field Office.

Reference
Leithead, H.L., L.L. Yarlett, & T.N. Shiflett. 1976. 100 native forage grasses in 11 southern states. USDA SCS *Agriculture Handbook No. 389*, Washington, DC.

Prepared By & Species Coordinator:
Percy Magee, USDA NRCS National Plant Data Center, Baton Rouge, Louisiana

Edited: 13may02 alw; jul03 alw; 20sep05 jsp; 070116 jsp

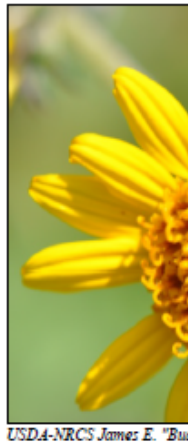
USDA
United States Departm
Natural Resources Conse

AW BUSHS

Simsia calva

Plant

Contributed by: USD
Plant Materials Center



USDA-NRCS James E. "Bu

Uses
Awnless bushsunflow
utilized by several cla
(USDA-SCS, 1970). S
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for deer and seed for s
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"Bud" Smith Plant Ma
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foliage is also eaten by
The flowers attract ma
(Ladybird Johnson Wi
bushsunflower can als
for highly erodible are
value of 3.33 (TPWD,

Status
Please consult the PL
Department of Natural

Seedbed preparation should begin the year prior to spring planting to reduce weed problems during the first year of estab
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Pests
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USDA

Control
Please contact your local agricultural extension specialist

USDA NRCS. 2012. Release Brochure for 'Plateau' Awnless Bushsunflower (Simsia calva). Available at http://www.plant-materials.nrcs.usda.gov/pubs/txpmcrb10958.pdf. 2012.
USDA SCS. 1979. Planting Guide for Awnless Bushsunflower (*Simsia calva*). USDA-Soil Conservation Service. February 1979.
USDA SCS. 1970. Technical Notes: Awnless Bushsunflower (*Simsia calva*). USDA-Soil Conservation Service. May 1970. Fort Worth, Texas.

Prepared By
Brandon Carr, USDA NRCS James E. "Bud" Smith Plant Materials Center, Knox City, Texas.

Citation
Carr, B., 2013. Plant Guide for Awnless Bushsunflower (*Simsia calva*). USDA-Natural Resources Conservation Service, James E. "Bud" Smith Plant Materials Center. Knox City, TX 79529.

Published: April 2013

Edited: 19July2013 sdm

For more information about this and other pla
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District at http://www.nrcs.usda.gov/ and visit
PLANTS Web site at http://plants.usda.gov/ o
Materials Program Web site http://plant-materials.nrcs.usda.gov.

PLANTS is not responsible for the content or
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USDA-NRCS James E. "Bud" Smith PMC

Nassella leucotricha (Trin. & Rupr.) Pohl
Texas wintergrass

General Information	
Symbol:	NALE3
Group:	Monocot
Family:	Poaceae
Duration:	Perennial
Growth Habit:	Graminoid
Native Status:	L48 N
Other Common Names:	Texas needlegrass
Fact Sheet (pdf) (doc)	
Data Source and Documentation	

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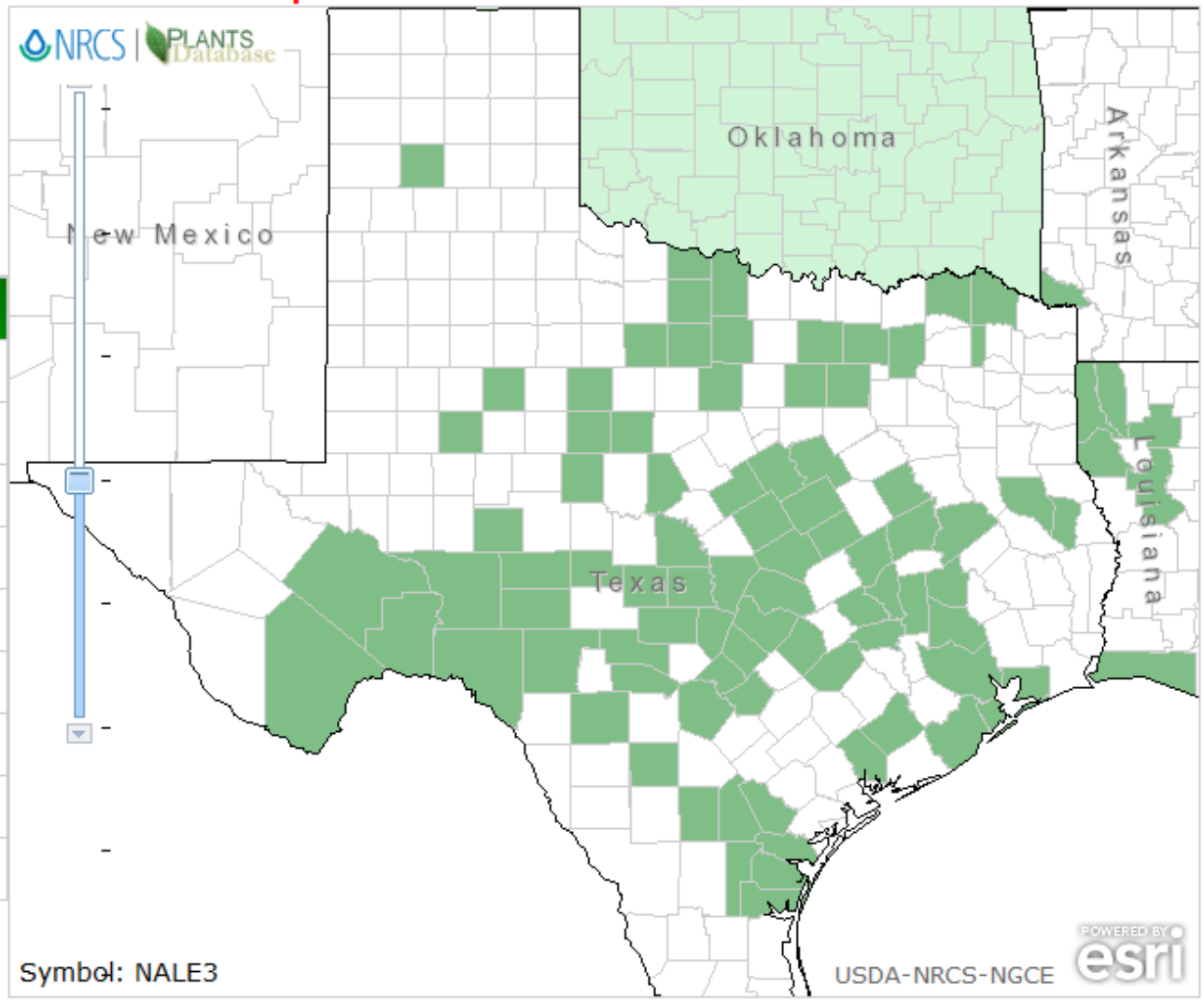

Native
Native, No County Data
Introduced
Introduced, No County Data
Both
Both, No County Data
Absent/Unreported

Native Status:

L48 AK HI PR VI NAV CAN GL SPM NA

Nassella leucotricha (Trin. & Rupr.) Pohl
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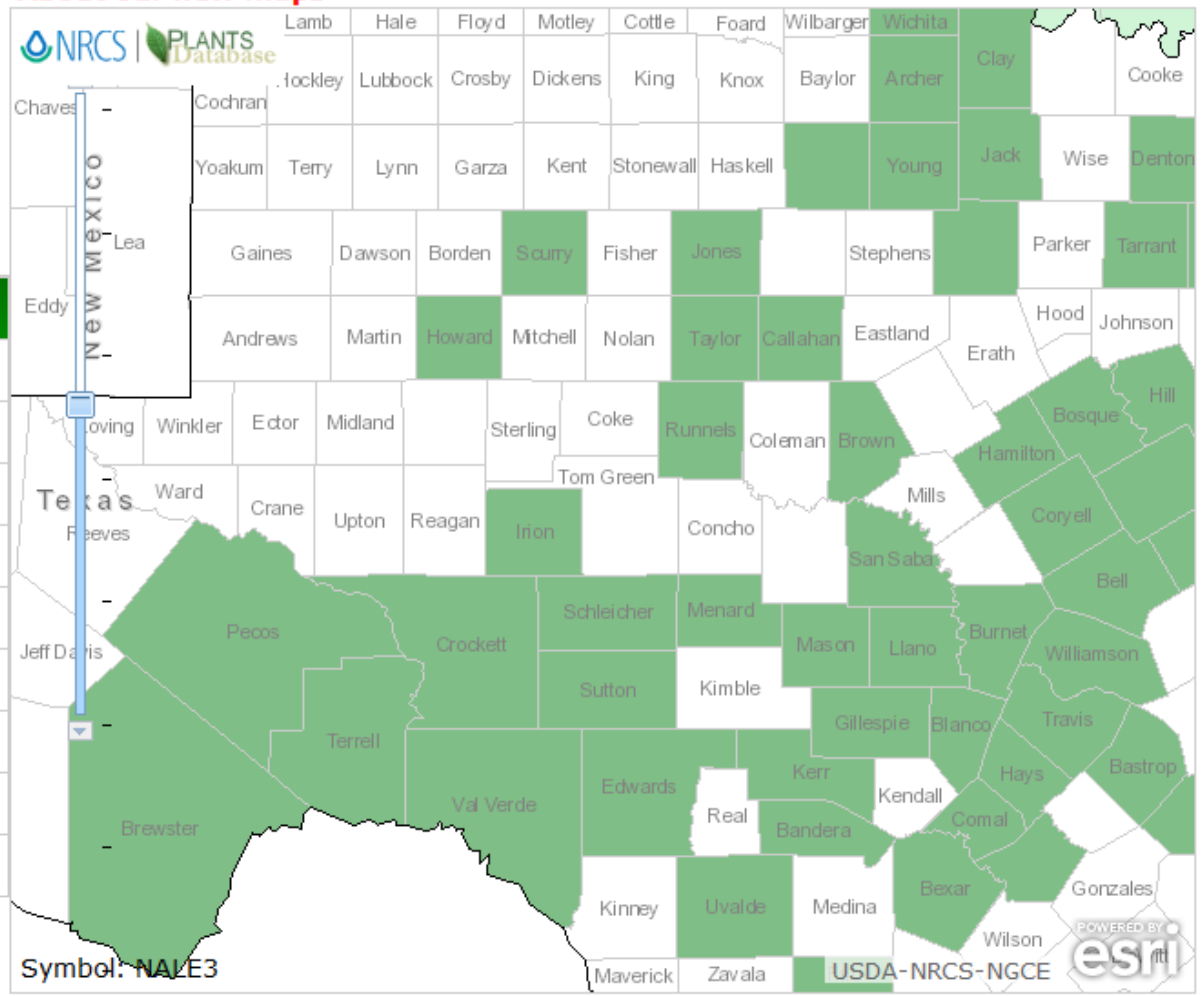

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Introduced
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Both
Both, No County Data
Absent/Unreported

Native Status:

L48 AK HI PR VI NAV CAN GL SPM NA

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Nassella leucotricha (Trin. & Rupr.) Pohl
Texas wintergrass

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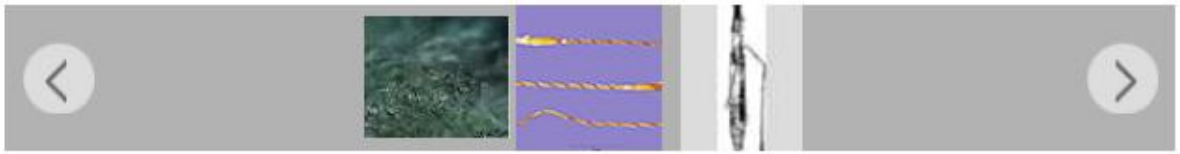
click on a thumbnail to view an image, or see all the *Nassella* thumbnails at the Plants Gallery



Stipa leucotricha Trin. & Rupr. -
STLE5

Tracey Slotta. Provided by ARS Systematic Botany and Mycology Laboratory. United States, TX, Victoria. Usage Requirements.

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Nassella leucotricha (Trin. & Rupr.) Pohl
Texas wintergrass

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Symbol	Scientific Name
STLE5	*Stipa leucotricha* Trin. & Rupr.

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Texas wintergrass

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- Native Plants Network (NALE3)
- The Grass Manual on the Web - Treatment (NALE3)
- The Grass Manual on the Web - Illustration (NALE3)
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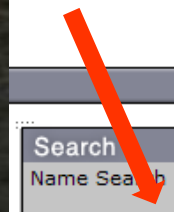

USDA United States Department of Agriculture
Natural Resources Conservation Service

NRCS

PLANTS Database

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Texas needle grass
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Name Search

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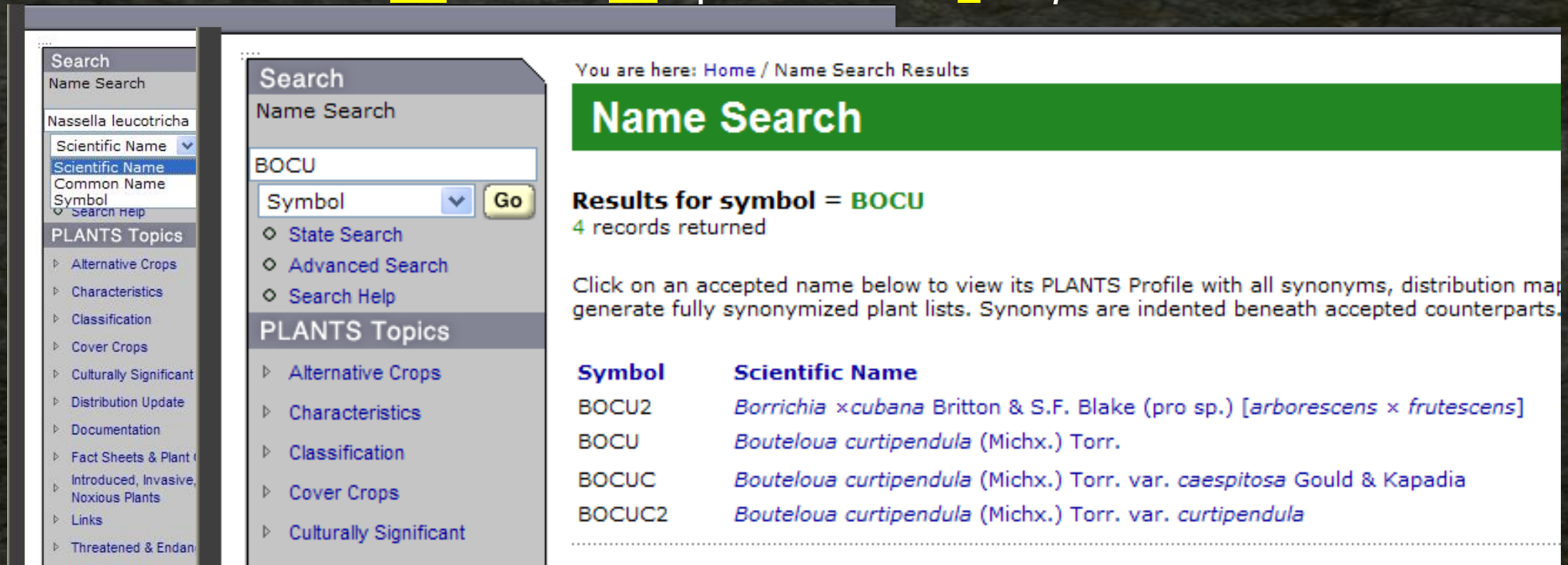
Please try a different query

(Errors in spelling,
spaces in names,
different name than DATABASE is programed for)

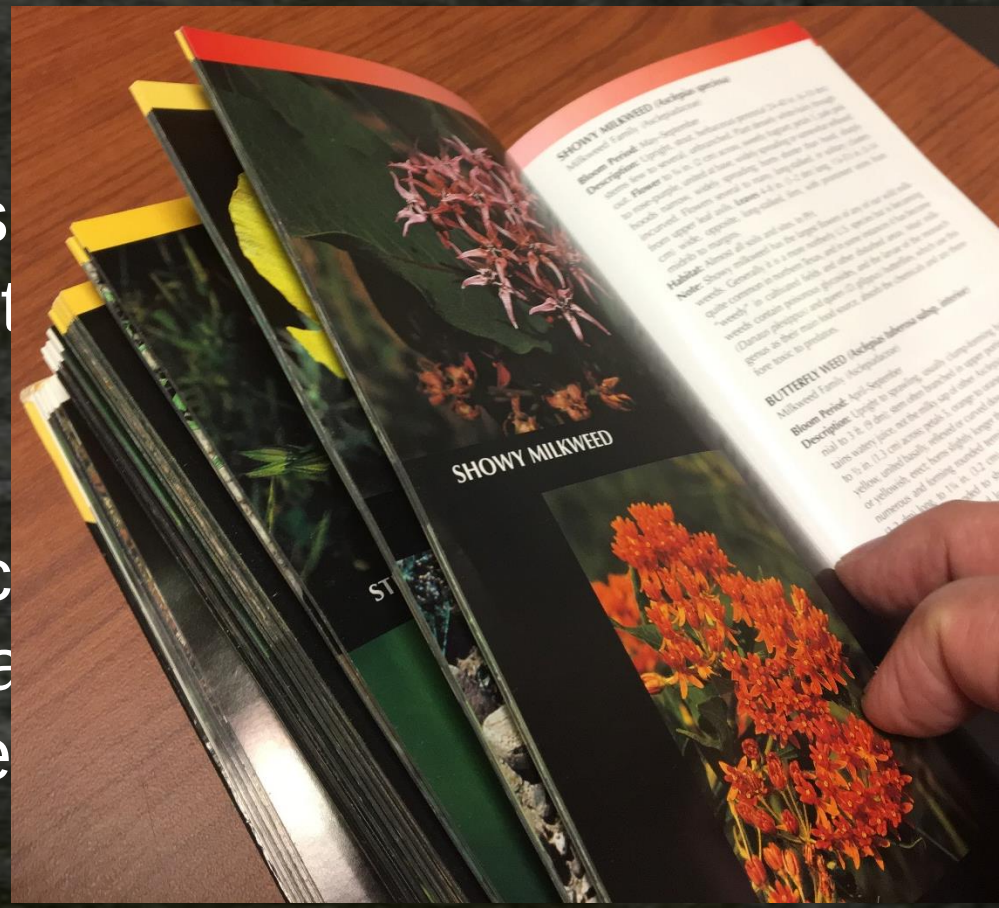
Searches on the PLANTS Database can be by:

Scientific name – sure bet
Common name – gambler method
Symbol - First two letters of genus and specie name = BOCU,
Bouteloua curtipendula
duplicates have numbers added or letters to identify subspecies or varieties
= BOCUC Bouteloua curtipendula var. *caespitosa*



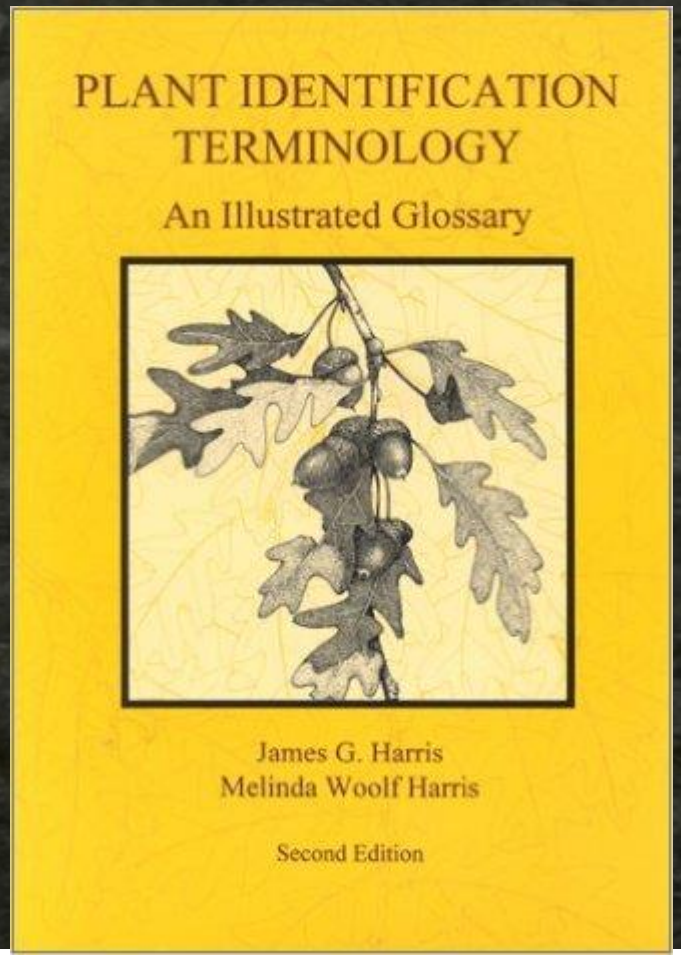
Methods to learn how to identify plants:

1. FLPA
   - “Flipping pages”
   - color-coded pages makes it easy, no experience;
   - plant not in book
2. Family association
   - use similar plant characteristics
   - search / confusion over similar t
   - families(Verbena-Mint)
3. Use of botanical keys
   - Hard to master but gives correc
   - must learn plant terms in glossa
   - fruit, use of other aids, magnifie



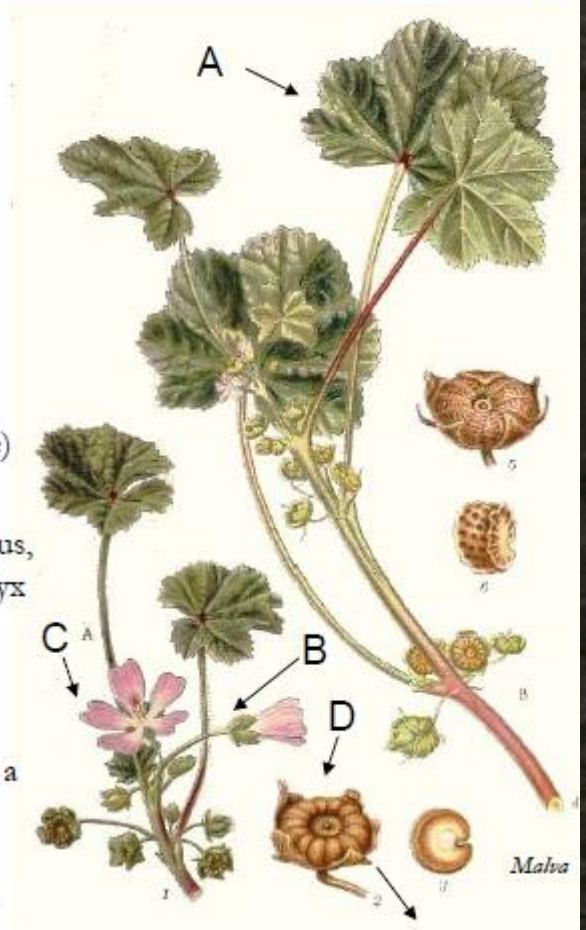
Google –

Plant Family Characteristics



Struwe, L. 2009. Field identification of the 50 most common plant families in temperate regions (including agricultural, horticultural, and wild species). Rutgers University, New Brunswick, NJ, USA. Published by the author, available at http://www.rci.rutgers.edu/~struwe/

Malvaceae s. lat. COTTON FAMILY



- Herbs (shrubs or trees)
- With stellate or peltate hairs (star-shaped or stalked scales)
- Leaves alternate, simple or palmately compound (**A**), with palmate venation (rarely pinnate)
- With stipules that fall off early
- Flowers actinomorphic, 5-merous, often with an epicalyx (extra calyx outside normal calyx; **B**)
- Petals free, 5 (**C**), often convolute in bud
- Stamens 5-many, often fused in a tube around the style or as separate bundles
- Ovary usually superior, 2-many carpels
- Fruit usually a capsule or a wheel-shaped schizocarp (**D**)

Note: This family now includes the mainly tropical families Bombacaceae and Sterculiaceae, as well as the tree family Tiliaceae. The characters listed here works best for temperate herbaceous Malvaceae.

Examples: Cotton (*Gossypium*), hibiscus (*Hibiscus*), mallow (*Malva*), marshmallow (*Althaea*), linden, basswood (*Tilia*), cacao (*Theobroma*), kapok (*Ceiba*), jute (*Corchorus*), cola (*Cola*), okra (*Abelmoschus*), durian (*Durian*), balsa wood (*Ochroma*), baobab (*Adansonia*).


Plant Identification by Family and then
Keying out the plant using a botanical key

Photo by Bruce Leander

Some Common Family Characteristics of Plants

FOXGLOVE FAMILY (Scrophulariaceae) Mainly annual or perennial herbs, occasionally shrubs or rarely trees. Stem not angular. Leaves alternate or opposite. Flowers perfect in racemes or panicles, never terminal (in ours); sepals 4 or 5, free or united; corollas bilabiate or more or less irregular; the 4 or 5 buds imbricated in bud; stamens sometimes only 2, rarely 5, inserted on the corolla tube; style single, stigma entire or bilobed. Ovary superior. Fruit a 2-celled capsule, many seeded.
Examples: agalinis, water hyssop, Indian paintbrush, ceniza, toadflax, penstemon, speedwell

MALLOW FAMILY (Malvaceae) Annual and perennial plants herbaceous or shrubby, often with mucilaginous sap and tough fibrous bark, usually with simple, forked or stellate hairs. Leaves alternate, usually palmately nerved, simple or rarely palmately compound; entire, toothed or lobed; petioled, stipules present, sometimes falling early. Flowers radially symmetric with 5 sepals, 5 petals, and numerous stamens united to form a column around the style (extra calyx outside normal calyx). Ovary usually superior, carpels 3 or more, 1-celled, style usually several branched. Fruit usually a capsule or a wheel shaped schizocarp resembling a flattened orange without the skin, containing several hairy seeds.
Examples: Indian mallow, sida, cotton, hibiscus, cheese-weed, globe mallow, pavonia, poppymallow

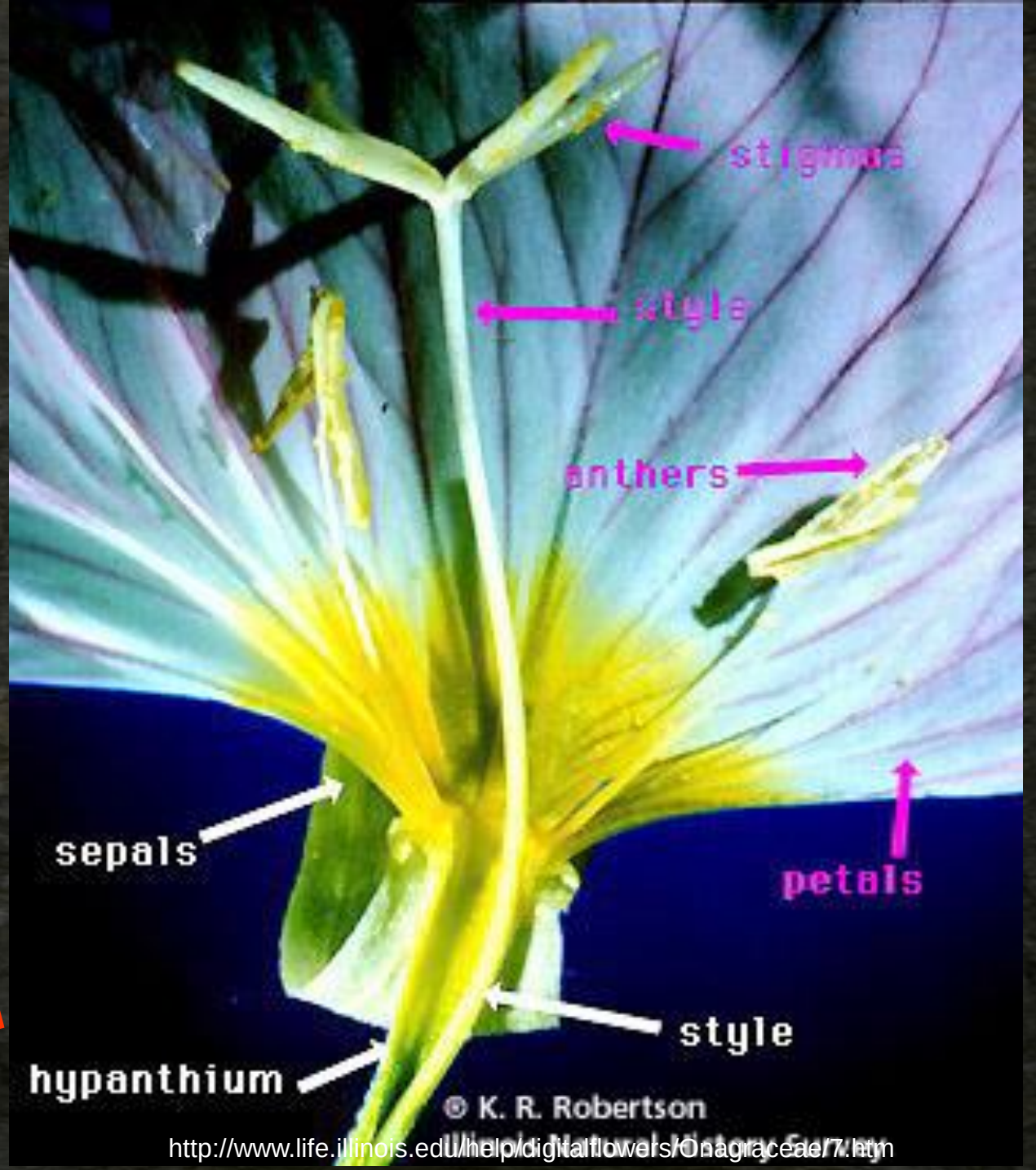
EVENING-PRIMROSE FAMILY (Onagraceae) Annual or perennial herbs or half-shrubs. Leaves basal, alternate or opposite; simple, entire, toothed or pinnately lobed; stipules minute or lacking. Flowers perfect and radially symmetric; sepals 4, generally reflexed when flower opens, may adhere to each other. Petals 4 attached to top of extended floral tube (hypanthium); inferior ovary, stamens 4 or 8 (flower parts in fours or multiples of fours), stigma usually divided into 4-way cross. Fruit cylindrical, 1 to many seeded capsules, elongated vase-shaped and often ribbed. Fruits of gaura resemble Phillips head screwdriver bits.
Examples: evening primrose, gaura, water primrose, halfshrub sundrop, desert evening primrose

Photo by Bruce Leander

Sepals – 4, reflexed
Petals – 4, yellow fading reddish
Stamens – 8
Stigma – four lobed or crossed

EVENING PRIMROSE FAMILY (Onagraceae) Herbaceous plants.

Flowers perfect and radially symmetric. Sepals 4, generally re-flexed when flower opens, may adhere to each other. Petals 4. Stamens 4 or 8. Stigma usually 4-lobed.



http://www.life.illinois.edu/help/digitalflowers/Onagraceae/7.htm

ONAGRACEAE EVENING-PRIMROSE FAM

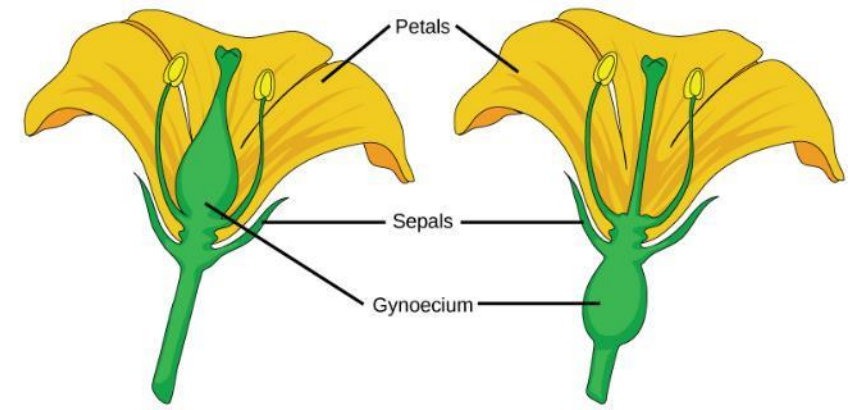
Annual or perennial herbs or half-shrubs; leaves basal, alternate, or opposi
toothed or pinnately lobed; flowers basal, axillary, terminal, solitary, in spikes
panthium of a short or elongate, cylindrical tube; calyx lobes or sepals (3–)4
(–5), attached at summit of hypanthium (= floral tube); stamens (4–)8(–10); pis
pellate; ovary inferior; fruit a dehiscent capsule or an indehiscent, 1-seeded, nu

A medium-sized (650 species in 18 genera) family, cosmopolitan in distri
cially of temperate and warm areas of the Americas. The family consists of he
more rarely trees and includes a number of ornamentals such as *Cla*
(FIREWEED), *Fuchsia*, and *Oenothera*. Family name conserved from *Onag*
treated as *Oenothera* (the name *Oenothera* was published earlier and thus has
of nomenclature) (Greek: *onagra*, evening-primrose) (subclass Rosidae)

FAMILY RECOGNITION IN THE FIELD: herbs (sometimes woody-based) often wit
with parts usually in *4s* and a *conspicuously inferior* ovary; *tube-shaped* hy
present; stamens typically 8.

REFERENCES: Munz 1961, 1965; Raven 1964; Conti et al. 1993; Hoch et al. 1993.

1. Petals equal, not clawed, yellow to white or pink, or petals absent; flowers radially symmetr
   basal, axillary, or in terminal inflorescences.
   2. Hypanthium (= floral tube) not prolonged beyond the ovary, the flower parts (petals, stamens)
      at the summit of the ovary; sepals persistent in fruit ____ **Ludwigia**
   2. Hypanthium much prolonged beyond the ovary, pedicel-like, the flower parts well-separated
      from the ovary; sepals deciduous in fruit.
      3. Stigmas deeply lobed or branched, not peltate ____ **Oenothera**
      3. Stigmas entire to only slightly lobed, peltate ____ **Calylophus**
1. Petals slightly unequal, clawed, white to pink or reddish; flowers usually bilaterally symmetrical
   (*Gaura*) OR radially symmetrical (*Stenosiphon*), in slender, solitary or panicled racemes.
   4. Petals white to pink or reddish, usually all projecting upward, 1.5–15 mm long; anthers red,
      purple, or brown, ca. 1–6 mm long; hypanthium nearly cylindrical; leaves abruptly reduced in
      the inflorescence; filaments often with a scale at base (except in *G. parviflora*) ____ **Gaura**
   4. Petals pure white, evenly spaced, 4–6 mm long; anthers creamy white (withering brownish),
      less than 2 mm long; hypanthium thread-like; leaves gradually reduced in the inflorescence;
      filaments without a scale at base ____ **Stenosiphon**

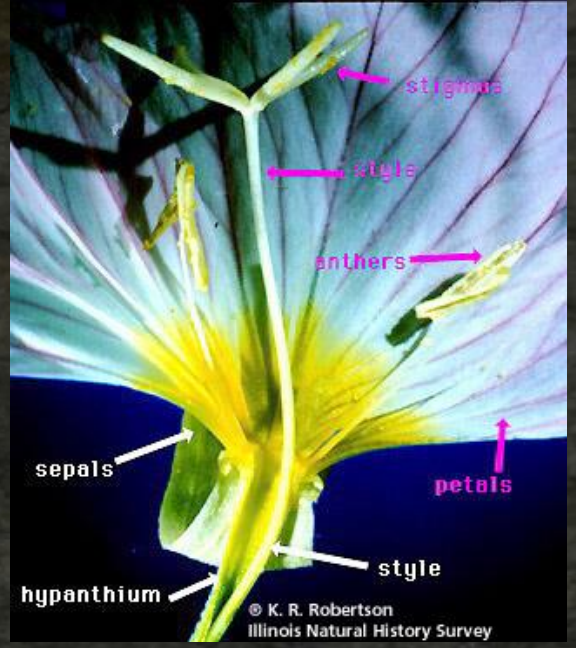


Superior ovary

Inferior ovary

Shinners & Mahler's Illustrated Flora of North Central Texas
By
George M. Diggs, Jr
Barney L. Lipscomb
Robert J. O'Kennon

http://artemis.austincollege.edu/acad/bio/gdiggs/NCTXpdf.htm



Shinners & Mahler's Illustrated Flora of North Central Texas
By
George M. Diggs, Jr
Barney L. Lipscomb
Robert J. O'Kennon

OENOTHERA EVENING-PRIMROSE, SUNDROPS

Annual or perennial herbs; flowers in leaf axils or in ± distinct inflorescences, radially symmetrical, 4-merous, opening near sunset or near sunrise; hypanthium well-developed, extending beyond the ovary; calyx lobes reflexed, not persistent in fruit; petals yellow (these sometimes drying or fading to pinkish or reddish), white to pink or rose-purple; stamens 8; stigma deeply 4-lobed; fruit a dehiscent or nut-like and indehiscent capsule.

A genus of 124 species of the Americas, especially in temperate areas. The genus is well known for its complicated genetics including reciprocal translocation and structural heterozygotes; many species have unusual meiotic chromosome configurations (Dietrich & Wagner 1988). Oil of *Oenothera* is an important ingredient used in many cosmetics including lipstick. Many are cultivated as ornamentals; the flowers often open and are scented in the evening for moth pollination. (Greek: *oinotheras*, name used by Theophrastus for some species of *Epilobium*, possibly from wine-scenting (*oeno*, wine), in allusion to an ancient use of the roots)

REFERENCES: Gates 1958; Straley 1977; Ellstrand & Levin 1980; Raven et al. 1979; Wagner 1983, 1986; Dietrich & Wagner 1987, 1988; Harte 1994; Dietrich et al. 1997.

1. Hypanthium 0.2–5 cm long; ovaries and fruits neither deeply sharp-angled nor winged.
   2. Petals light to deep yellow (withering white or reddish).
      3. Flowers many, in dense, terminal, head-like or finally elongate spikes.
         4. Leaf blades 10–60 mm wide; petals obovate to obtriangular, usually broadest near apex; capsules 3–6 mm thick at base; ovules and seeds horizontal in locule, sharply angled ——— **O. biennis**
         4. Leaf blades 3–15 mm wide; petals broadly elliptic to nearly rhombic, usually broadest near middle; capsules 2–4 mm thick at base; ovules and seeds ascending in locule, not sharply angled.
            5. Free sepal tips 2–6 mm long; flower buds with wide-spreading hairs to nearly glabrous, the hairs pustulate-based (= swollen at base)—use dissecting scope; mature lower buds usually extending past youngest buds at end of spike ——— **O. heterophylla**
            5. Free sepal tips usually 0.5–1.5 mm long; flower buds with appressed hairs, the hairs not pustulate; mature lower buds usually not extending past youngest buds at end of spike ——— **O. rhombipetala**
      3. Flowers solitary, or few in loose terminal spikes.
         6. Hypanthium as long as the ovary or longer; fruits cylindrical, usually > 10 mm long.
            7. Stem leaves nearly entire, with only a few small teeth; plants biennial, 0.5–2 m tall; ovules and seeds horizontal in locule, sharply angled; mature capsules 3–6 mm in diam. at base ——— **O. biennis**

7. Stem leaves sinuate-dentate to sinuate-pinnatifid, rarely nearly entire; plants annual, 0.1–0.6(–1) m tall; ovules and seeds ascending in locule, not sharply angled; mature capsules 2–4 mm in diam. at base.
   8. Petals 5–22 mm long; sepals 5–12(–15) mm long; stigma surrounded by anthers at flowering time; anthers 2–6 mm long ____ **O. laciniata**
   8. Petals 25–40 mm long; sepals 15–30 mm long; stigma elevated above anthers at flowering time; anthers 4–11 mm long ____ **O. grandis**
6. Hypanthium shorter than the ovary; fruits club-shaped, the lower part narrower, the upper part swollen, 10 mm or less long.
   9. Flowers terminal, borne above the leaves; leaf blades (except lowest) linear, 0.2–1.2(–3) mm wide; hypanthium 1–2 mm long; sepals 1.5–2 mm long, without free tips; petals 3–5(–7) mm long; capsules usually 4–6 mm long ____ **O. linifolia**
   9. Flowers lateral and finally terminal, in the axils of leaves or leafy bracts; leaf blades oblong-lanceolate to oblong-linear, mostly 2–10 mm wide; hypanthium 4–10 mm long; sepals 4–10 mm long, with free tips 1–1.5 mm long; petals 5–15 mm long; capsules 5–15 mm long ____ **O. spachiana**

2. Petals white to rosy lavender with yellowish base ____ **O. speciosa**

1. Hypanthium 2–12.5 cm long (5 cm or more long except in *O. triloba*); ovaries and fruits deeply sharp-angled and winged (except neither deeply sharp-angled nor winged in *O. jamesii*).
   10. Plants essentially stemless or with suberect or trailing stems to 0.5 m or less long; ovaries and capsules deeply sharp-angled and winged, often conspicuously so.
      11. Plants winter annuals; petals 1–2 cm long; capsules winged mostly above middle, borne at base of plant ____ **O. triloba**
      11. Plants perennials; petals 2–5 cm long; capsules winged their entire length, borne at base of plant or along the stems.
         12. Wings of capsules 4–6 mm wide; capsules 2–3 cm long; plant essentially stemless or caespitose (clumped) with a short stem; leaf blades nearly entire to pinnatifid; limited to extreme w part of nc TX (Callahan Co.) ____ **O. coryi**
         12. Wings of capsules 7–20 mm wide; capsules 2–6.5 cm long; plant usually with distinct stems to 50 cm long; leaf blades nearly entire to with scattered small teeth; widespread in nc TX ____ **O. macrocarpa**
   10. Plants with erect stems usually 1–3 m tall; ovaries and capsules neither deeply sharp-angled nor winged ____ **O. jamesii**

Oenothera jamesii Torr. & A. Gray, (presumably for Edwin James, 1797–1861, surgeon-naturalist, first botanical collector in CO and first known botanical collector in TX, with Major Long's expedition to the Rocky Mts. in 1819–1820), TRUMPET EVENING-PRIMROSE. Robust biennial, appressed pubescent; stems erect, to 3 m tall; inflorescence unbranched or few-branched; flowers opening near sunset, very large; hypanthium 6–11 cm long; sepals 4–6 cm long, in bud with free tips 3–6 mm long; petals yellow, fading reddish, 3.5–5 cm long; capsules 2–5 cm long, cylindric. Stream banks or other moist situations; Bell, Coryell (Fort Hood—Sanchez 1997), Somervell, Tarrant (R. O'Kennon, pers. obs.), and Williamson (Balcones Canyonlands Nat. Wildlife Refuge, C. Sexton, pers. comm.) cos.; mainly Edwards Plateau w to Trans-Pecos. Jul–Oct.

Oenothera laciniata Hill, (laciniate, torn), CUT-LEAF EVENING-PRIMROSE, DOWNY EVENING-PRIMROSE, SINUATE-LEAF EVENING-PRIMROSE. Annual or short-lived perennial to ca. 0.5 m tall; flowers opening late afternoon to late morning; hypanthium 1.5–3.5 cm long; petals light yellow; capsules 2–5 cm long. Disturbed soils; nearly throughout TX. Apr–Jun.

Oenothera linifolia Nutt., (with leaves like *Linum*—flax), THREAD-LEAF SUNDROPS. Slender, low (to 0.3 m tall), glabrous, small-flowered annual; leaf blades entire, filiform, to 3 mm wide (usually less); flowers opening near sunrise; hypanthium 1.5–2 mm long; sepals 1.5–2 mm long; petals 3–5 mm long, yellow. Sandy open woods; Kaufman and Lamar cos., also Dallas Co. (Mahler 1988); se and e TX w to nc TX. Apr–May.

Oenothera macrocarpa Nutt., (large-fruited), MISSOURI-PRIMROSE. Perennial with minutely gray-pubescent to glabrous, suberect to trailing stems to 0.5 m long or nearly acaulescent; leaves green to silvery or gray with dense, appressed pubescence; flowers opening near sunset; hypanthium 5–12 cm long; sepals 2–4 cm long, in bud with free tips 1.5–8 mm long; petals 2–5 cm long, yellow, sometimes fading reddish; capsules 2–6.5 cm long, conspicuously 4-winged. Limestone outcrops or prairies. Apr–Jun.

1. Plants completely glabrous _____ subsp. **oklahomensis**
1. Plants with appressed pubescence on either stems and buds or on whole plant.
   2. Leaf blades linear-lanceolate to broadly lanceolate, greenish, only the youngest tissue gray hairy; widespread in nc TX _____ subsp. **macrocarpa**
   2. Leaf blades ovate to broadly lanceolate, conspicuously gray-hairy, the entire plant with thick pubescence; possibly e to w margin of nc TX _____ subsp. **incana**

subsp. **incana** (A. Gray) W.L. Wagner, (hoary, quite gray), MISSOURI-PRIMROSE. While subsp. *incana* is generally found to the w of nc TX, a BRIT/SMU sheet from Callahan Co. on our w margin was annotated by W.L. Wagner as subsp. *macrocarpa* intermediate to subsp. *incana*. Edwards Plateau to nw TX.

Window on a Texas Wildscape

A Texas Hill Country yard turned wildlife habitat...

Home | Our Texas Natives | Bird List | Online Resources | Recycling

FRIDAY, SEPTEMBER 2, 2016

Snowberry clearwing moth

ABOUT ME

Sheryl Smith-Rodgers

TUESDAY, AUGUST 30, 2016

River primroses and more

Cross the U.S. 281 bridge over the Blanco River here right now, and you may notice some TALL yellow flowers in bloom on the west side along the river. *Wonder what those are*, I mused when I first saw them. So I later e-mailed park manager Ethan Belicek and asked if he knew. In all my years of living in Blanco (and in the state park, too), I'd never seen them before. Could they have arrived via last year's floods?

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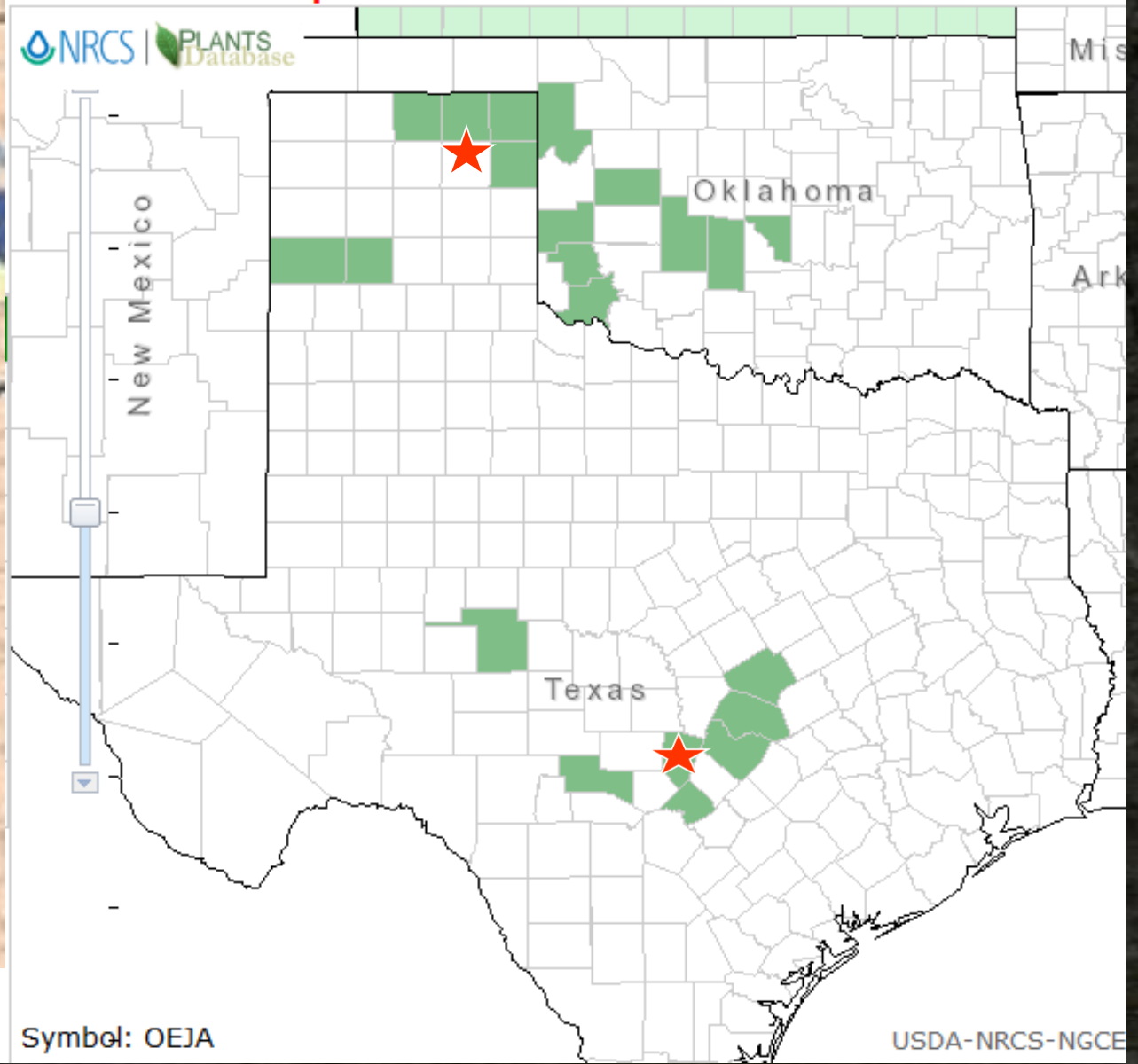
Torr. & A. Gray

S

About our new maps



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The PLANTS Database provides standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories.

Plant of the Week

Western hemlock
Tsuga heterophylla (Raf.) Sarg.

Click on the photo for a full plant profile.

Spotlights

Common Weeds in Puerto Rico and U.S. Virgin Islands
A bilingual guide to the common weeds of Puerto Rico and the U.S. Virgin Islands is now available from the USDA NRCS. It is useful not only in the Caribbean region but also in tropical to warm temperate areas throughout the Americas and beyond.

2012 National Wetland Plant List
The new National Wetland Plant List is now in PLANTS as a table linked to species profile pages. This list is to be used for Federal wetland delineations completed on or after June 1, 2012. Our Advanced Search and species profile pages temporarily show the old 1988 U.S. Fish and Wildlife Service data, but soon will have the 2012 wetland data.

Cover Crops
Cover crops are a diverse group of plants that can be used on farmland for soil protection and health. We now offer a sortable list, linking to profile pages, of over 70 species used for cover crops in North America.

Gymnosperms updated
Scientific names of all the gymnosperms in PLANTS are now updated to match the latest research. Oregon State University and the National Plant Data Team reviewed almost 700 names in this important group of plants.

PLANTS recommended as a GIS standard.

I Want To...

- See a list of the plants in my state
- Learn about the wetland plants in my region
- Learn about all the endangered plants of the U.S.
- Learn about noxious and invasive plants
- Search for and view images of plants
- Read and print abstracts about important conservation plants
- Download data or posters
- Contribute plant distribution information to PLANTS
- Get ecological descriptions of sites from around the country
- View the USDA Plant Hardiness Zone Map

I Want Help

- Introduction to PLANTS
- Frequently Asked Questions
- Citing the PLANTS Database
- Conditions of Image and Data Use
- Contribute Your Photos to PLANTS

PLANTS Interactive ID Keys: Introduction

Automated Key Data Available For Use and Testing

Draft interactive keys and plant character data sets for selected groups of U.S. plants are available for use and testing on-line or by downloading the specific PLANTS Identification application.

> Click here to view the PLANTS Interactive ID Keys
> Click here to view User Notes

Unlike a traditional plant identification key that provides you with only two choices at each step (a dichotomous key), these keys let you select multiple characters simultaneously (polyclave key). This makes more character data available in the key and minimizes the number of steps it takes to identify a plant.

These data sets were developed cooperatively by the collaborators cited in the keys and the USDA NRCS National Plant Data Team. The automated plant keys run in SLIKS freeware written in JavaScript and let you identify specific groups of plants known to occur in the U.S. **This freeware has limited functionality and is best view using Internet Explorer**. The species list in the wetland monocot key is derived from the U.S. Fish and Wildlife Service National Wetland Inventory National List of Vascular Plant Species That Occur in Wetlands: 1998 National List. Other keys are based on the species lists in PLANTS. These draft plant character data sets are for testing purposes only.

Data development for the grass and legume keys were partially funded by the USDA NRCS Agricultural Wildlife Conservation Center and the USDA NRCS Louisiana State Office contributed to grass key development. For more information, click on Instructions, Information, Disclaimers and Policies after the application is loaded.

We welcome your comments to improve this draft data set or the interactive key. Please email the USDA NRCS National Plant Data Center and include the name of the data set (e.g., PLANTS Identification-Wetland Monocots-Cyperaceae) in your subject line.

Technical Resources

- Conservation Plants
- Technical Publications
- Tools & Data
  - Plant Tools & Data
  - Learning Tools

Related Links

- Glossary of terms for use in plant materials

PLANTS Interactive ID Keys

> Grasses (*Poaceae*)
> Legumes (*Fabaceae*)
> Gymnosperms
> Wetland Monocots
> Ericaceae

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DOWNLOAD VERSION: The application runs off-line in your browser and does not load any executable files onto your computer. Please note that you will need to unzip/extract the zip file and copy all its files into a new folder to uncompress them. Then just click on the .html file with the name of the data set in your new folder to start the program. With newer versions of Internet Explorer, you can go to Tools, Internet Options, Advanced, Security, and check the box for "Allow active content to run in files on My Computer" then Apply, in order to avoid repeated browser warnings on active content. Wetland Monocots starts with a key to families called WETLAND_MONOCOTS.html, which leads to the individual family keys.

Grasses (*Poaceae*)

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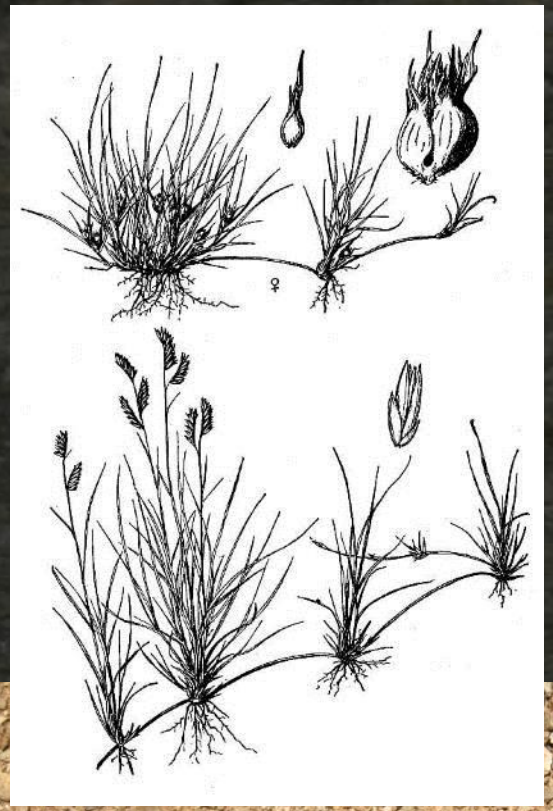

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National Plant Data Team

Grasses of Texas

Compiled from several sources by Dr. David Bogler, Missouri Botanical Garden in collaboration with the USDA NRCS NPDT

Instructions, Information, Disclaimers and Policies

DRAFT *beta*

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- ☐ *10. Rhizome short and compact, stems close*
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- ☐ *13. Basal sheaths fibrous, old leaves persistent at base of plant*
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All Taxa:

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Chosen characters:

R 2. Perennials

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- D *Andropogon gerardii*
- D *Andropogon glomeratus*
- D *Andropogon gyrans*
- D *Andropogon hallii*
- D *Andropogon ternarius*

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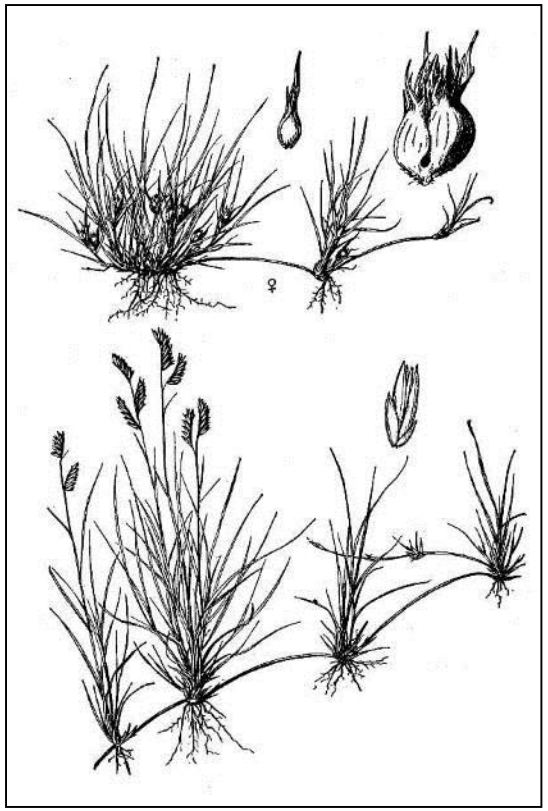

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- D *Andropogon tamarius*

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- ☐ *28. Stem nodes bearded or hairy*
- ☐ *29. Plants conspicuously hairy, grayish, or wooly*
- ☐ *33. Stem internodes solid or spongy*
- ☐ *34. Stem internodes hollow*
- ☐ *35. Stems with inflorescence less than 1 m tall*
- ☐ *36. Stems with inflorescence 1-2 m tall*
- ☐ *37. Stems with inflorescence 2-6 m tall*
- ☐ *38. Stems with inflorescence 6 m or taller*
- ☐ *39. Basal leaves equal to or exceeding stems, culms, or scapes*

Reduced To 69 grass choices

D *Urochloa mutica*
D *Vaseyochloa multinervosa*
D *Willkommia texana*
D *Zizania texana*
D *Zizaniopsis miliacea*

End of Matching Set

Chosen characters:

R 2. Perennials
R 12. Stolons or runners present

Taxa Matching Your Description:

D *Agrostis stolonifera*
D *Allolepis texana*
D *Axonopus compressus*
D *Axonopus furcatus*
D *Bothriochloa pertusa*
D *Bouteloua dactyloides*
D *Bouteloua eriopoda*
D *Bouteloua hirsuta*
D *Bouteloua parryi*
D *Bouteloua uniflora*
D *Cathestecum erectum*
D *Chloris andropogonoides*
D *Chloris brevispica*
D *Chloris divaricata*
D *Chloris gayana*
D *Chloris subdolichostachya*
D *Chloris submutica*
D *Cynodon aethiopicus*
D *Cynodon dactylon*
D *Cynodon magenisii*
D *Cynodon nlemfuensis*

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- ☐ *25. Stems terete, round in cross section, or polygonal*
- ☐ *26. Stems compressed, flattened, or sulcate*
- ☐ *27. Stems branching above base or distally at nodes*
- ☐ *28. Stem nodes bearded or hairy*
- ☐ *29. Plants conspicuously hairy, grayish, or wooly*
- ☐ *33. Stem internodes solid or spongy*
- ☐ *34. Stem internodes hollow*
- ☐ *35. Stems with inflorescence less than 1 m tall*
- ☐ *36. Stems with inflorescence 1-2 m tall*
- ☐ *37. Stems with inflorescence 2-6 m tall*
- ☐ *38. Stems with inflorescence 6 m or taller*
- ☐ *39. Basal leaves equal to or exceeding stems, culms, or scapes*

D *Urochloa mutica*
D *Vaseyochloa multinervosa*
D *Willkommia texana*
D *Zizania texana*
D *Zizaniopsis miliacea*

End of Matching Set

Chosen characters:

R 2. Perennials
R 12. Stolons or runners present

Taxa Matching Your Description:

D *Agrostis stolonifera*
D *Allolepis texana*
D *Axonopus compressus*
D *Axonopus furcatus*
D *Bothriochloa pertusa*
D *Bouteloua dactyloides*
D *Bouteloua eriopoda*
D *Bouteloua hirsuta*
D *Bouteloua parryi*
D *Bouteloua uniflora*
D *Cathestecum erectum*
D *Chloris andropogonoides*
D *Chloris brevispica*
D *Chloris divaricata*
D *Chloris gayana*
D *Chloris subdolichostachya*
D *Chloris submutica*
D *Cynodon aethiopicus*
D *Cynodon dactylon*
D *Cynodon magenisii*
D *Cynodon nlemfuensis*

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- [ ] 21. Stems solitary
- [ ] 22. Stems caespitose, tufted, or clustered
- [ ] 26. Stems compressed, flattened, or sulcate
- [ ] 27. Stems branching above base or distally at nodes
- [ ] 28. Stem nodes bearded or hairy
- [ ] 33. Stem internodes solid or spongy
- [ ] 34. Stem internodes hollow
- [ ] 36. Stems with inflorescence 1-2 m tall
- [ ] 37. Stems with inflorescence 2-6 m tall
- [ ] 41. Leaves mostly basal, below middle of stem
- [ ] 42. Leaves mostly cauline
- [ ] 43. Leaves conspicuously 2-ranked, distichous
- [ ] 44. Leaves pseudo-petiolate, petiole attached to sheath
- [ ] 48. Leaf sheath smooth, glabrous
- [ ] 49. Leaf sheath hairy, hispid or prickly
- [ ] 50. Leaf sheath hairy at summit, throat, or collar
- [ ] 51. Leaf sheath or blade keeled
- [ ] 52. Leaf sheath and blade differentiated
- [ ] 56. Leaf blades disarticulating from sheath, deciduous at ligule
- [ ] 60. Leaf blades lanceolate
- [ ] 61. Leaf blades ovate
- [x] 66. Leaf blades very narrow or filiform, less than 2 mm wide
- [ ] 67. Leaf blades 2-10 mm wide
- [ ] 68. Leaf blades 1-2 cm wide
- [ ] 71. Leaf blade margins folded, involute, or conduplicate
- [ ] 73. Leaf blades mostly glabrous
- [ ] 74. Leaf blades more or less hairy
- [ ] 75. Leaf blades scabrous, roughened, or wrinkled
- [ ] 76. Leaf blades glaucous, blue-green, or grey, or with white glands
- [ ] 78. Ligule an unfringed eciliate membrane
- [ ] 79. Ligule a fringed, ciliate, or lobed membrane
- [ ] 80. Ligule a fringe of hairs
- [ ] 82. Inflorescence lateral or axillary
- [ ] 84. Inflorescence simple spikes
- [ ] 87. Inflorescence a dense slender spike-like panicle or raceme, branches contracted
- [ ] 88. Inflorescence solitary, with 1 spike, fascicle, glomerule, head, or cluster per stem or culm
- [ ] 89. Inflorescence with 2 or more spikes, fascicles, glomerules, heads, or clusters per culm

D Spartina patens
D Spartina pectinata
D Spartina spartinae
D Stenotaphrum secundatum
D Trichloris crinita
D Urochloa ciliatissima
D Urochloa mosambicensis
D Urochloa mutica
D Willkommia texana
D Zizania texana

End of Matching Set

Chosen characters:

R 2. Perennials
R 12. Stolons or runners present
R 20. Stems mat or turf forming

Taxa Matching Your Description:

D Axonopus compressus
D Bothriochloa pertusa
D Bouteloua dactyloides
D Bouteloua hirsuta
D Cynodon aethiopicus
D Cynodon dactylon
D Cynodon magenisii
D Cynodon nlemfuensis
D Cynodon transvaalensis
D Eremochloa ophiuroides
D Paspalum distichum
D Stenotaphrum secundatum
D Urochloa mutica

End of Matching Set

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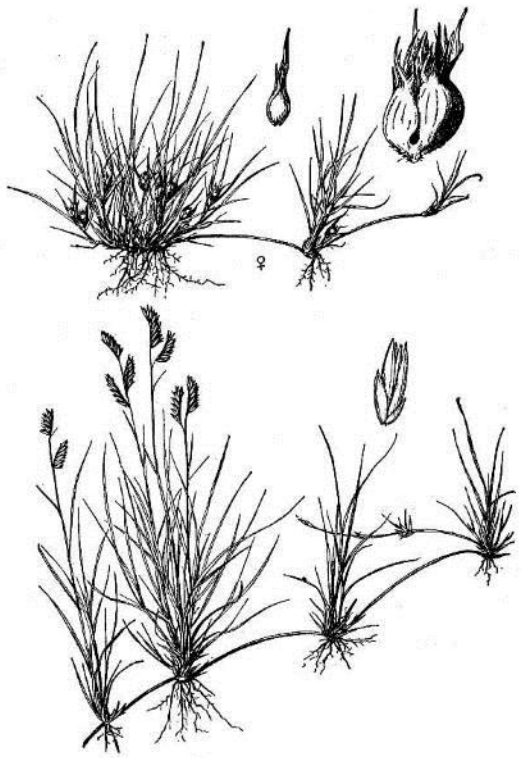
- 88. Inflorescence solitary, with 1 spike, fascicle, glomerule, head, or cluster per stem or culm
- 89. Inflorescence with 2 or more spikes, fascicles, glomerules, heads, or clusters per culm
- 93. Inflorescence spike linear or cylindric, several times longer than wide
- 95. Inflorescence a panicle with narrowly racemose or spicate branches
- 96. Inflorescence a panicle with digitately arranged spicate branches
- 97. Inflorescence single raceme, fascicle or spike
- 98. Inflorescence with 2-10 branches
- 100. Inflorescence spikelets arranged in a terminal bilateral spike
- 103. Lower panicle branches whorled
- 104. Inflorescence branches paired or digitate at a single node
- 106. Inflorescence branches terminating in bristle or point
- 108. Rachis dilated, flat, central axis to which spikelets are attached
- 110. Rachis angular
- 115. Flowers bisexual
- 116. Flowers unisexual
- [x] 118. Plants dioecious
- 120. Spikelets pedicellate
- 122. Spikelets laterally compressed
- 123. Spikelets dorsally compressed or terete
- 124. Inflorescence or spikelets partially hidden in leaf sheaths, subtended by spati
- 128. Spikelets with 1 fertile floret
- 129. Spikelets with 2 florets
- 134. Spikelets solitary at rachis nodes
- 135. Spikelets paired at rachis nodes
- 141. Spikelets all alike and fertille
- 143. Spikelets in paired units, 1 sessile, 1 pedicellate
- 144. Pedicellate spikelet rudimentary or absent, usually sterile
- 146. Spikelets bisexual
- 147. Spikelets unisexual
- 148. Inflorescence disarticulating between nodes or joints of rachis, rachis fragm
- 149. Spikelets disarticulating above the glumes, glumes persistent
- 151. Spikelets disarticulating beneath or between the florets
- 164. Spikelets in dense head-like clusters
- 168. Spikelets closely appressed or embedded in concave portions of axis
- 173. Monoecious - staminate and pistillate spikelets on separate inflorescences
- 180. Glumes equal or subequal
- 181. Glumes distinctly unequal



R 20. Stems mat or turf forming

Taxa Matching Your Description:

- D *Axonopus compressus*
- D *Bothriochloa pertusa*
- D *Bouteloua dactyloides*
- D *Bouteloua hirsuta*
- D *Cynodon aethiopicus*
- D *Cynodon dactylon*
- D *Cynodon magenisii*
- D *Cynodon nlemfuensis*
- D *Cynodon transvaalensis*
- D *Eremochloa ophiuroides*
- D *Paspalum distichum*
- D *Stenotaphrum secundatum*
- D *Urochloa mutica*

End of Matching Set

Chosen characters:

- R 2. Perennials
- R 12. Stolons or runners present
- R 20. Stems mat or turf forming
- R 66. Leaf blades very narrow or fi

Taxa Matching Your Description:

- D *Bouteloua dactyloides*
- D *Bouteloua hirsuta*
- D *Cynodon magenisii*
- D *Cynodon transvaalensis*
- D *Eremochloa ophiuroides*

End of Matching Set

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Grasses of Texas

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There is only one taxon left: ***Bouteloua dactyloides***

The taxon ***Bouteloua dactyloides*** in this dataset can have the following character states:

Note that an enumeration of character states is not always the same as a specific description, for example, the character state might be 'Leaves 1-10 cm' while the specific description for leaf length in the same taxon might be 'Leaves 5-7 cm'.

Perennials, Rhizomes present, Stolons or runners present, Stems trailing, spreading or prostrate, Stems nodes swollen or brittle, Stems erect or ascending, Stems mat or turf forming, Stems caespitose, tufted, or clustered, Stems terete, round in cross section, or polygonal, Stem internodes solid or spongy, Stems with inflorescence less than 1 m tall, Stems, culms, or scapes exceeding basal leaves, Leaves mostly basal, below middle of stem, Leaf sheath mostly open, or loose, Leaf sheath smooth, glabrous, Leaf sheath hairy at summit, throat, or collar, Leaf sheath and blade differentiated, Leaf blades linear, Leaf blades very narrow or filiform, less than 2 mm wide, Leaf blades mostly flat, Leaf blade margins folded, involute, or conduplicate, Leaf blades mostly glabrous, Leaf blades more or less hairy, Ligule present, Ligule an unfringed eciliate membrane, Ligule a fringed, ciliate, or lobed membrane, Ligule a fringe of hairs, Inflorescence with 2 or more spikes, fascicles, glomerules, heads, or clusters per culm, Inflorescence a panicle with narrowly racemose or spicate branches, Inflorescence with 2-10 branches, Inflorescence branches 1-sided, Flowers unisexual, Plants dioecious, Spikelets sessile or subsessile, Spikelets laterally compressed, Inflorescence or spikelets partially hidden in leaf sheaths, subtended by spatheole, Spikelet less than 3 mm wide, Spikelets with 1 fertile floret, Spikelets solitary at rachis nodes, Spikelets unisexual, Spikelets disarticulating above the glumes, glumes persistent, Spikelets in dense head-like clusters, Spikelets secund, in rows on one side of rachis, Rachilla or pedicel glabrous, Monoecious - staminate and pistillate spikelets on separate inflorescences, Glumes present, empty bracts, Glumes 2 clearly present, Glumes equal or subequal, Glumes equal to or longer than adjacent lemma, Glume equal to or longer than spikelet, Glumes 1 nerved, Lemma coriaceous, firmer or thicker in texture than the glumes, Lemma becoming indurate, enclosing palea and caryopsis, Lemma 3 nerved, Lemma glabrous, Lemma apex dentate, 2-fid, Lemma apex dentate, 3-5 fid, Lemma teeth unequal. central tooth longer, Lemma awnless, Lemma margins thin, lying flat, Lemma straight, Palea present, well developed, Palea membranous, hyaline, Palea shorter than lemma, Palea 2 nerved or 2 keeled, Stamens 3, Styles 2-fid, deeply 2-branched, Stigmas 2, Fruit - caryopsis, Caryopsis ellipsoid, longitudinally grooved, hilum long-linear,

D ***Cynodon nlemfuensis***
D ***Cynodon transvaalensis***
D ***Eremochloa ophiuroides***
D ***Paspalum distichum***
D ***Stenotaphrum secundatum***
D ***Urochloa mutica***

End of Matching Set

Chosen characters:

R 2. Perennials
R 12. Stolons or runners present
R 20. Stems mat or turf forming
R 66. Leaf blades very narrow or fi

Taxa Matching Your Description:

D ***Bouteloua dactyloides***
D ***Bouteloua hirsuta***
D ***Cynodon magenisii***
D ***Cynodon transvaalensis***
D ***Eremochloa ophiuroides***

End of Matching Set

Chosen characters:

R 2. Perennials
R 12. Stolons or runners present
R 20. Stems mat or turf forming
R 66. Leaf blades very narrow or fi
R 118. Plants dioecious

Taxa Matching Your Description:

D ***Bouteloua dactyloides***

End of Matching Set

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DRAFT *beta*

There is only one taxon left: ***Bouteloua dactyloides***

Buffalograss *Buchloe dactyloides*

The taxon ***Bouteloua dactyloides*** in this dataset can have the following character states:

Note that an enumeration of character states is not always the same as a specific description, for example, the character state might be 'Leaves 1-10 cm' while the specific description for leaf length in the same taxon might be 'Leaves 5-7 cm'.

Perennials, Rhizomes present, Stolons or runners present, Stems trailing, spreading or prostrate, Stems nodes swollen or brittle, Stems erect or ascending, Stems mat or turf forming, Stems caespitose, tufted, or clustered, Stems terete, round in cross section, or polygonal, Stem internodes solid or spongy, Stems with inflorescence less than 1 m tall, Stems, culms, or scapes exceeding basal leaves, Leaves mostly basal, below middle of stem, Leaf sheath mostly open, or loose, Leaf sheath smooth, glabrous, Leaf sheath hairy at summit, throat, or collar, Leaf sheath and blade differentiated, Leaf blades linear, Leaf blades very narrow or filiform, less than 2 mm wide, Leaf blades mostly flat, Leaf blade margins folded, involute, or conduplicate, Leaf blades mostly glabrous, Leaf blades more or less hairy, Ligule present, Ligule an unfringed eciliate membrane, Ligule a fringed, ciliate, or lobed membrane, Ligule a fringe of hairs, Inflorescence with 2 or more spikes, fascicles, glomerules, heads, or clusters per culm, Inflorescence a panicle with narrowly racemose or spicate branches, Inflorescence with 2-10 branches, Inflorescence branches 1-sided, Flowers unisexual, Plants dioecious, Spikelets sessile or subsessile, Spikelets laterally compressed, Inflorescence or spikelets partially hidden in leaf sheaths, subtended by spatheole, Spikelet less than 3 mm wide, Spikelets with 1 fertile floret, Spikelets solitary at rachis nodes, Spikelets unisexual, Spikelets disarticulating above the glumes, glumes persistent, Spikelets in dense head-like clusters, Spikelets secund, in rows on one side of rachis, Rachilla or pedicel glabrous, Monoecious - staminate and pistillate spikelets on separate inflorescences, Glumes present, empty bracts, Glumes 2 clearly present, Glumes equal or subequal, Glumes equal to or longer than adjacent lemma, Glume equal to or longer than spikelet, Glumes 1 nerved, Lemma coriaceous, firmer or thicker in texture than the glumes, Lemma becoming indurate, enclosing palea and caryopsis, Lemma 3 nerved, Lemma glabrous, Lemma apex dentate, 2-fid, Lemma apex dentate, 3-5 fid, Lemma teeth unequal. central tooth longer, Lemma awnless, Lemma margins thin, lying flat, Lemma straight, Palea present, well developed, Palea membranous, hyaline, Palea shorter than lemma, Palea 2 nerved or 2 keeled, Stamens 3, Styles 2-fid, deeply 2-branched, Stigmas 2, Fruit - caryopsis, Caryopsis ellipsoid, longitudinally grooved, hilum long-linear,

D *Cynodon nlemfuensis*
D *Cynodon transvaalensis*
D *Eremochloa ophiuroides*
D *Paspalum distichum*
D *Stenotaphrum secundatum*
D *Urochloa mutica*
End of Matching Set

Chosen characters:
R 2. Perennials
R 12. Stolons or runners present
R 20. Stems mat or turf forming
R 66. Leaf blades very narrow or fi

Taxa Matching Your Description:
D *Bouteloua dactyloides*
D *Bouteloua hirsuta*
D *Cynodon magenisii*
D *Cynodon transvaalensis*
D *Eremochloa ophiuroides*
End of Matching Set

Chosen characters:
R 2. Perennials
R 12. Stolons or runners present
R 20. Stems mat or turf forming
R 66. Leaf blades very narrow or fi
R 118. Plants dioecious

Taxa Matching Your Description:
D *Bouteloua dactyloides*
End of Matching Set

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Axonopus compressus
Perennials, Rhizomes present, Rhizome elongate, creeping, stems distant, Stolons or runners present, Stems nodes swollen or brittle, Stems geniculate, decumbent, or lax, sometimes rooting at nodes, Stems mat or turf forming, Stems terete, round in cross section, or polygonal, Stems compressed, flattened, or sulcate, Stem nodes bearded or hairy, Stem internodes solid or spongy, Stem internodes hollow, Stems with inflorescence less than 1 m tall, Stems, culms, or scapes exceeding basal leaves, Leaves mostly basal, below middle of stem, Leaves conspicuously 2-ranked, distichous, Leaf sheath mostly open, or loose, Leaf sheath smooth, glabrous, Leaf sheath hairy, hispid or prickly, Leaf sheath and blade differentiated, Leaf blades linear, Leaf blades lanceolate, Leaf blades ovate, Leaf blades 2-10 mm wide, Leaf blades 1-2 cm wide, Leaf blades mostly flat, Leaf blade margins folded, involute, or conduplicate, Leaf blades mostly glabrous, Ligule present, Ligule a fringed, ciliate, or lobed membrane, Inflorescence lateral or axillary, Inflorescence solitary, with 1 spike, fascicle, glomerule, head, or cluster per stem or culm, Inflorescence a panicle with narrowly racemose or spicate branches, Inflorescence with 2-10 branches, Inflorescence branches 1-sided, Inflorescence branches paired or digitate at a single node, Inflorescence branches paired racemes, V-shaped, Rachis angular, Flowers bisexual, Spikelets sessile or subsessile, Spikelets dorsally compressed or terete, Spikelet less than 3 mm wide, Spikelets with 1 fertile floret, Spikelets solitary at rachis nodes, Spikelets all alike and fertille, Spikelets bisexual, Spikelets disarticulating below the glumes, Spikelets conspicuously hairy , Spikelets secund, in rows on one side of rachis, Rachilla or pedicel glabrous, Glumes present, empty bracts, Glumes 1 clearly present, the other greatly reduced or absent, Glumes distinctly unequal, Glume equal to or longer than spikelet, Glume surface hairy, villous or pilose, Glumes 4-7 nerved, Lemma coriaceous, firmer or thicker in texture than the glumes, Lemma becoming indurate, enclosing palea and caryopsis, Lemma glabrous, Lemma apex truncate, rounded, or obtuse, Lemma apex acute or acuminate, Lemma awnless, Lemma straight, Palea present, well developed, Palea membranous, hyaline, Palea longer than lemma, Palea 2 nerved or 2 keeled, Stamens 3, Styles 2-fid, deeply 2-branched, Stigmas 2, Fruit - caryopsis,

Bothriochloa pertusa
Perennials, Stolons or runners present, Stems nodes swollen or brittle, Stems erect or ascending, Stems geniculate, decumbent, or lax, sometimes rooting at nodes, Stems mat or turf forming, Stems caespitose, tufted, or clustered, Stems terete, round in cross section, or polygonal, Stem nodes bearded or hairy, Stem internodes hollow, Stems with inflorescence less than 1 m tall, Stems, culms, or scapes exceeding basal leaves, Leaves mostly basal, below middle of stem, Leaves conspicuously 2-ranked, distichous, Leaf sheath mostly open, or loose, Leaf sheath smooth, glabrous, Leaf sheath and blade differentiated, Leaf blades linear, Leaf blades 2-10 mm wide, Leaf blades mostly flat, Leaf blades mostly glabrous, Leaf blades more or less hairy, Leaf blades glaucous, blue-green, or grey, or with white glands, Ligule present, Ligule an unfringed eciliate membrane, Inflorescence with 2 or more spikes, fascicles, glomerules, heads, or clusters per culm, Inflorescence a panicle with narrowly racemose or spicate branches, Inflorescence a panicle with digitately arranged spicate branches, Inflorescence branches more than 10 to numerous, Inflorescence branches paired or digitate at a single node, Peduncle or rachis scabrous or pubescent, often with long hairs, Rachis dilated, flat, central axis to which spikelets are attached, Rachis grooved, Flowers bisexual, Spikelets pedicellate, Spikelets dorsally compressed or terete, Spikelet less than 3 mm wide, Spikelets with 1 fertile floret, Spikelets with 2 florets, Spikelets paired at rachis nodes, Spikelets in paired units, 1 sessile, 1 pedicellate, Pedicellate spikelet rudimentary or absent, usually sterile, Spikelets bisexual, Spikelets disarticulating below the glumes, Spikelets disarticulating beneath or between the florets, Spikelets falling with parts of disarticulating rachis or pedicel, Rachilla or pedicel glabrous, Glumes present, empty bracts, Glumes 2 clearly present, Glumes equal or subequal, Glumes equal to or longer than adjacent lemma, Glume surface hairy, villous or pilose, Glume with circular pits, Glumes 3 nerved, Lemmas thin, chartaceous, hyaline, cartilaginous, or membranous, Lemma 1 nerved, Lemma glabrous, Lemma apex acute or acuminate, Lemma distinctly awned, more than 2-3 mm, Lemma with 1 awn, Lemma awn 1-2 cm long, Lemma awned from tip, Lemma awn once geniculate, bent once, Lemma margins thin, lying flat, Lemma straight, Stamens 3, Styles 2-fid, deeply 2-branched, Stigmas 2, Fruit - caryopsis,

Bouteloua dactyloides
Perennials, Rhizomes present, Stolons or runners present, Stems trailing, spreading or prostrate, Stems nodes swollen or brittle, Stems erect or ascending, Stems mat or turf forming, Stems caespitose, tufted, or clustered, Stems terete, round in cross section, or polygonal, Stem internodes solid or spongy, Stems with inflorescence less than 1 m tall, Stems, culms, or scapes exceeding basal leaves, Leaves mostly basal, below middle of stem, Leaf sheath mostly open, or loose, Leaf sheath smooth, glabrous, Leaf sheath hairy at summit, throat, or collar, Leaf sheath and blade differentiated, Leaf blades linear, Leaf blades very narrow or filiform, less than 2 mm wide, Leaf blades mostly flat, Leaf blade margins folded, involute, or conduplicate, Leaf blades mostly glabrous, Leaf blades more or less hairy, Ligule present, Ligule an unfringed eciliate membrane, Ligule a fringed, ciliate, or lobed membrane, Ligule a fringe of hairs, Inflorescence with 2 or more spikes, fascicles, glomerules, heads, or clusters per culm, Inflorescence a panicle with narrowly racemose or spicate branches, Inflorescence with 2-10 branches, Inflorescence branches 1-sided, Flowers unisexual, Plants dioecious, Spikelets sessile or subsessile, Spikelets laterally compressed, Inflorescence or spikelets partially hidden in leaf sheaths, subtended by spatheole, Spikelet less than 3 mm wide, Spikelets with 1 fertile floret, Spikelets solitary at rachis nodes, Spikelets unisexual, Spikelets disarticulating above the glumes, glumes persistent, Spikelets in dense head-like clusters, Spikelets secund, in rows on one side of rachis, Rachilla or pedicel glabrous, Monoecious - staminate and pistillate spikelets on separate inflorescences, Glumes present, empty bracts, Glumes 2 clearly present, Glumes equal or subequal, Glumes equal to or longer than adjacent lemma, Glume equal to or longer than spikelet, Glumes 1 nerved, Lemma coriaceous, firmer or thicker in texture than the glumes, Lemma becoming indurate, enclosing palea and caryopsis, Lemma 3 nerved, Lemma glabrous, Lemma apex dentate, 2-fid, Lemma apex dentate, 3-5 fid, Lemma teeth unequal. central tooth longer, Lemma awnless, Lemma margins thin, lying flat, Lemma straight, Palea present, well developed, Palea membranous, hyaline, Palea shorter than lemma, Palea 2 nerved or 2 keeled, Stamens 3, Styles 2-fid, deeply 2-branched, Stigmas 2, Fruit - caryopsis, Caryopsis ellipsoid, longitudinally grooved, hilum long-linear,

Bouteloua hirsuta
Perennials, Rhizomes present, Rhizome short and compact, stems close, Stolons or runners present, Stems nodes swollen or brittle, Stems erect or ascending, Stems geniculate, decumbent, or lax, sometimes rooting at nodes, Stems mat or turf forming, Stems caespitose, tufted, or clustered, Stems terete, round in cross section, or polygonal, Stem internodes hollow, Stems with inflorescence less than 1 m tall, Stems, culms, or scapes exceeding basal leaves, Leaves mostly basal, below middle of stem, Leaves conspicuously 2-ranked, distichous, Leaf sheath mostly open, or loose, Leaf sheath smooth, glabrous, Leaf sheath hairy at summit, throat, or collar, Leaf sheath and blade differentiated, Leaf blades linear, Leaf blades very narrow or filiform, less than 2 mm wide, Leaf blades mostly flat, Leaf blade margins folded, involute, or conduplicate, Leaf blades more or less hairy, Ligule present, Ligule a fringe of hairs, Inflorescence

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Bouteloua dactyloides (Nutt.) J.T. Columbus
buffalograss

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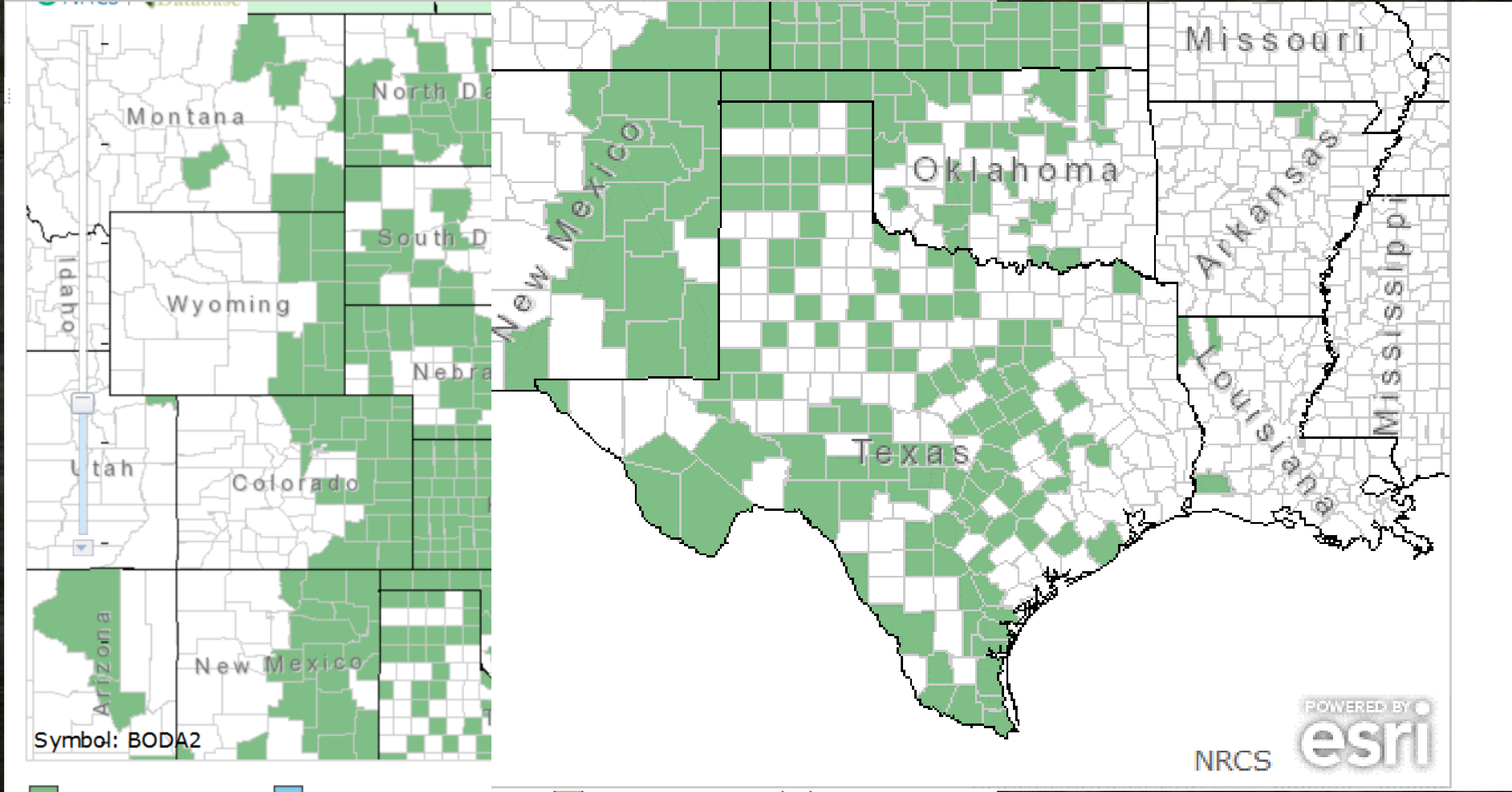
General Information	
Symbol:	BODA2
Group:	Monocot
Family:	Poaceae
Duration:	Perennial
Growth Habit:	Graminoid
Native Status:	CAN N L48 N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North American Plant Atlas (NAPA)

U.S. County-Level Distributions: Species/Generic Maps

- List Plants by Genera
- List Plants by Traditional Families
- List Plants by Modern Families
- List Plants Phylogenetically

U.S. State-Level Distributions: Species/Generic Maps

- List Plants by Genera
- List Plants by Traditional Families
- List Plants by Modern Families
- List Plants Phylogenetically

U.S. State-Level Distributions: Family Maps

- Traditional Family Maps
- Modern Family Maps

NOTICES (Please Read First. Updated 10/12/2015.)

Taxonomic Data Center Query (TDC-Q) Page

North American Plant Atlas (NAPA)

Taxonomic Data Center (TDC)

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- Announcement: BONAP and the National Wetlands Plant List
- BONAP's Facebook Page
- BONAP's References (Polish Translation)
- BONAP's News and Notes (Ukrainian Translation from Science Project STD)
- Introducing BONAP (Danish Translation)
- BONAP's References and Documentation (Spanish Translation)

Selected Institutions and Organizations Using BONAP Data

The Biota of
North
America
Program

BONAP's North American Plant Atlas (NAPA)

(US County-Level Species Maps: List by Genus)

BONAP maintains relatively complete phytogeographic and related botanical databases for all free-living vascular plants found in North America (north of Mexico). For over four decades, we have worked collaboratively with many federal and state government agencies, private groups and individuals across the continent to produce and edit our databases. Therefore, we feel that our county-level database has matured sufficiently to allow us to post all of our integrated county-level maps for the North American ferns and allies, conifers and flowering plants. BONAP plans to provide periodic updates of these maps at regular intervals. Please see our TDC page for additional data.

North American plant genera, e.g., Bolbitis, that occur within our study area, but restricted to insular islands of the Gulf of Mexico and the Caribbean, such as Navassa, Puerto Rico, U.S. Virgin Islands, are not mapped.

Citation Information
Map Color Key

Return to NAPA Homepage

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

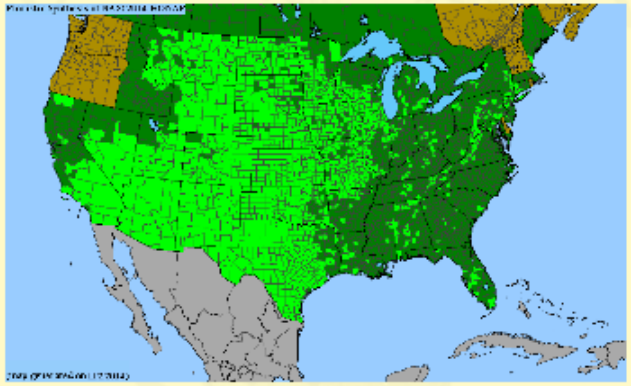
A

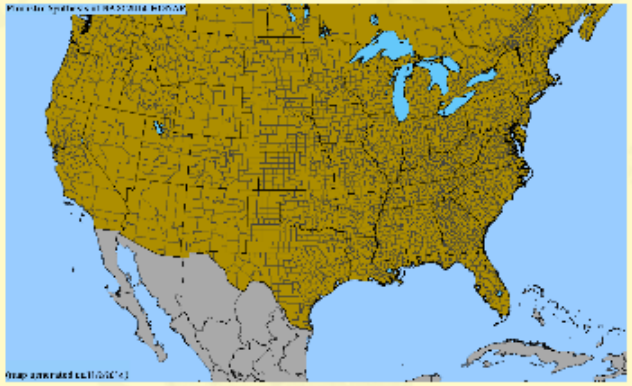
B

Baccharis	Bacopa	Bahia	Bahiopsis	Baileya	Baldellia	Balduina
Ballota	Balsamorhiza	Baltimora	Bambusa	Banara	Banksia	Baptisia
Barbarea	Barbieria	Barkleyanthus	Barleria	Barleriola	Barringtonia	Bartlettia
Bartonia	Bartsia	Basella	Basiphyllaea	Bassia	Bastardia	Bastardiopsis
Batesimalva	Batis	Bauhinia	Beaumontia	Bebbia	Beckmannia	Beckwithia
Begonia	Beilschmiedia	Bejaria	Belamcanda	Bellardia	Bellis	Beloglottis
Benincasa	Benitoa	Bensoniella	Berberis	Berchemia	Bergerocactus	Bergia
Berkheya	Berlandiera	Bernardia	Berteroa	Berula	Berylsimpsonia	Besseya
Beta	Betula	Bidens	Bifora	Bigelowia	Bignonia	Billardiera
Billbergia	Billieturnera	Bischofia	Bismarckia	Bistorta	Bituminaria	Bixa
Blechnum	Blennosperma	Blepharidachne	Blepharipappus	Blepharizonia	Blepharoneuron	Blephilia
Bletia	Bletilla	Blighia	Blitum	Bloomeria	Blumea	Blutaparon
Blysmopsis	Blyxa	Bobea	Bocconia	Boechera	Boehmeria	Boerhavia
Bolandra	Bolbitis	Boltonia	Bommeria	Bonam[illegible]	Bonellia	Bontia
Borago	Borodinia	Borrichia	Boschniakia	Bothriochloa	Bothriospermum	Botrychium
Botrypus	Bouchea	Bouchetia	Bougainvillea	Bourreria	Bouteloua	Bouvardia
Bowlesia	Boykinia	Brachionidium	Brachychiton	Brachyelytrum	Brachypodium	Brachystigma
Bradburia	Brandegea	Brasenia	Brasiliopuntia	Brassavola	Brassia	Brassica
Braya	Brazoria	Brexia	Breynia	Brickellia	Brickelliastrum	Brighamia
Brintonia	Briza	Brodiaea	Bromelia	Bromidium	Bromus	Brongniartia
Brosimum	Broughtonia	Broussaisia	Broussonetia	Browallia	Brugmansia	Bruguiera
Brunellia	Brunfelsia	Brunnera	Brunnichia	Brya	Bryonia	Buchenavia
Buchnera	Bucida	Buckleya	Buddleja	Buglossoides	Bulbine	Bulbophyllum

BONAP's North American Plant Atlas

Citation Information
Map Color Key


Bouteloua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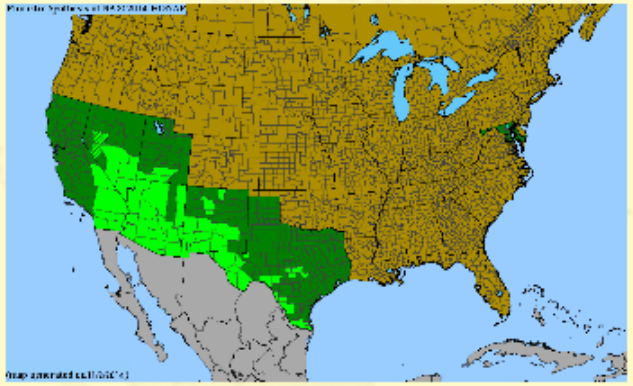
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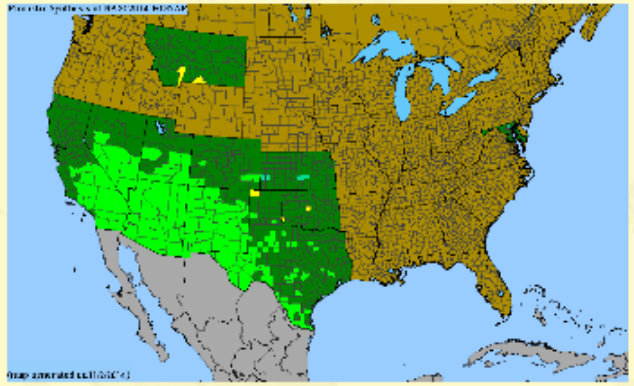
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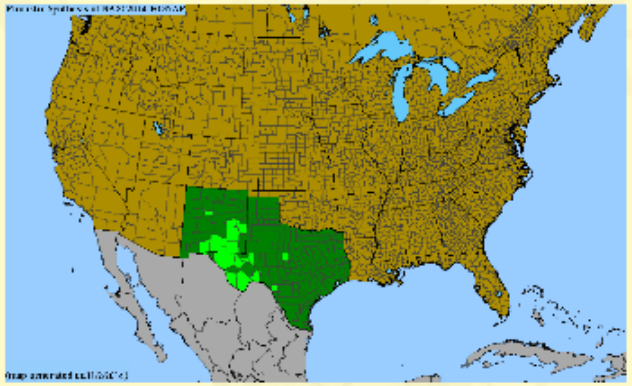
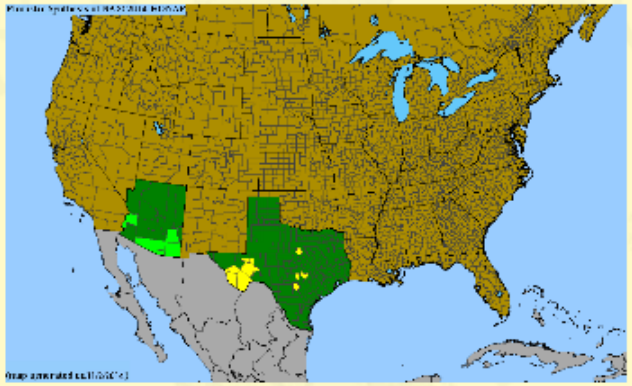
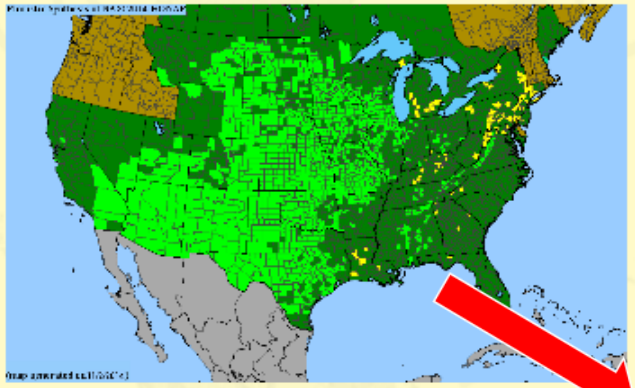
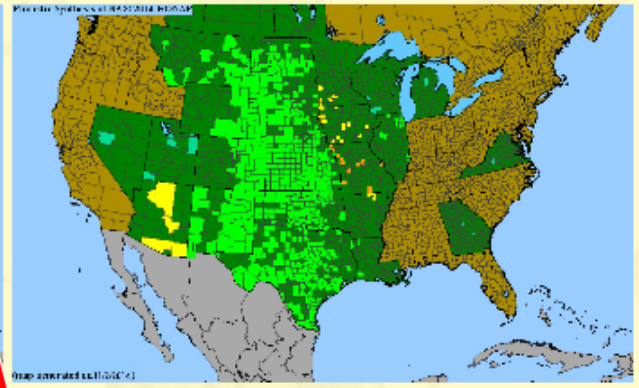
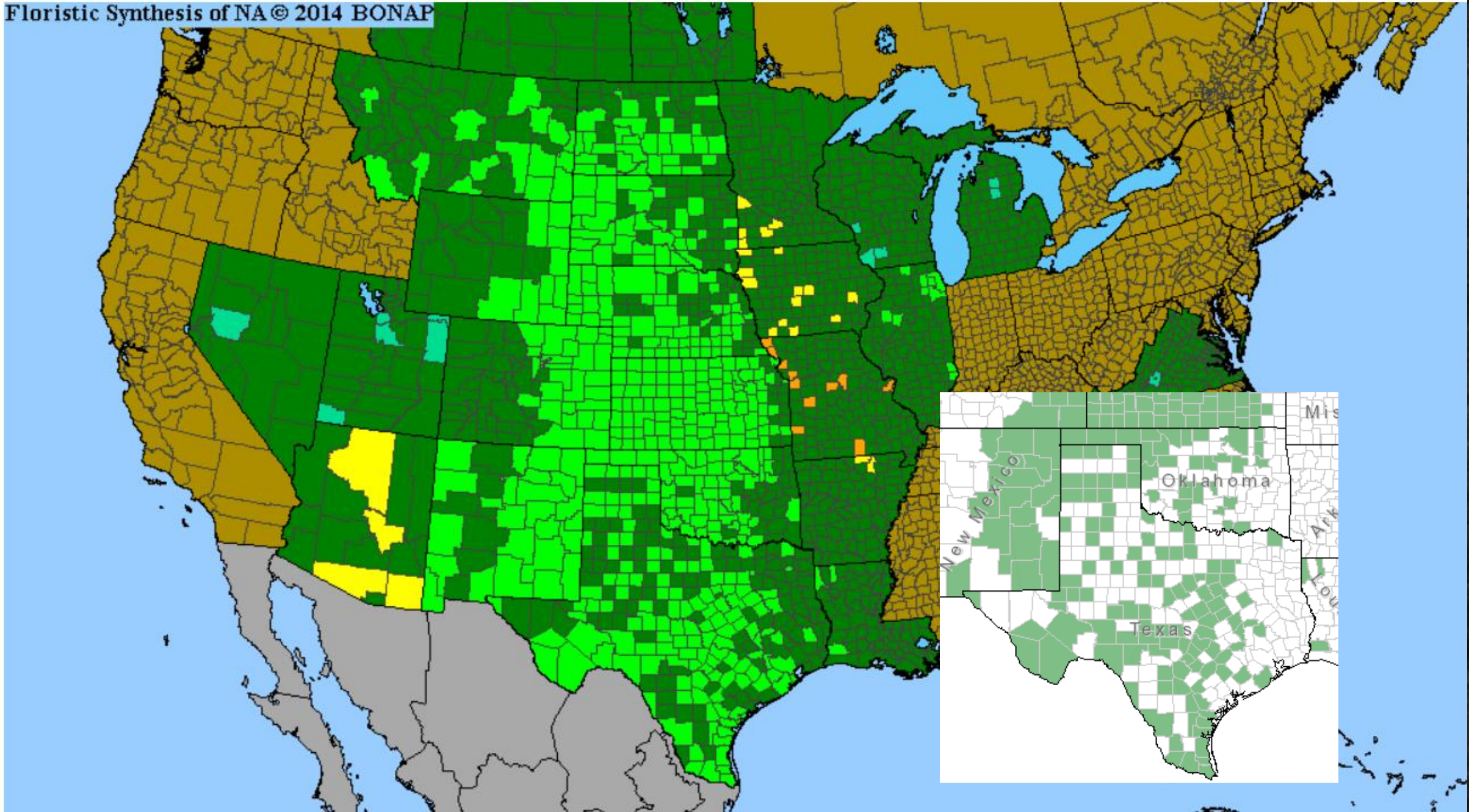

Bouteloua breviseta


Bouteloua chondrosioides

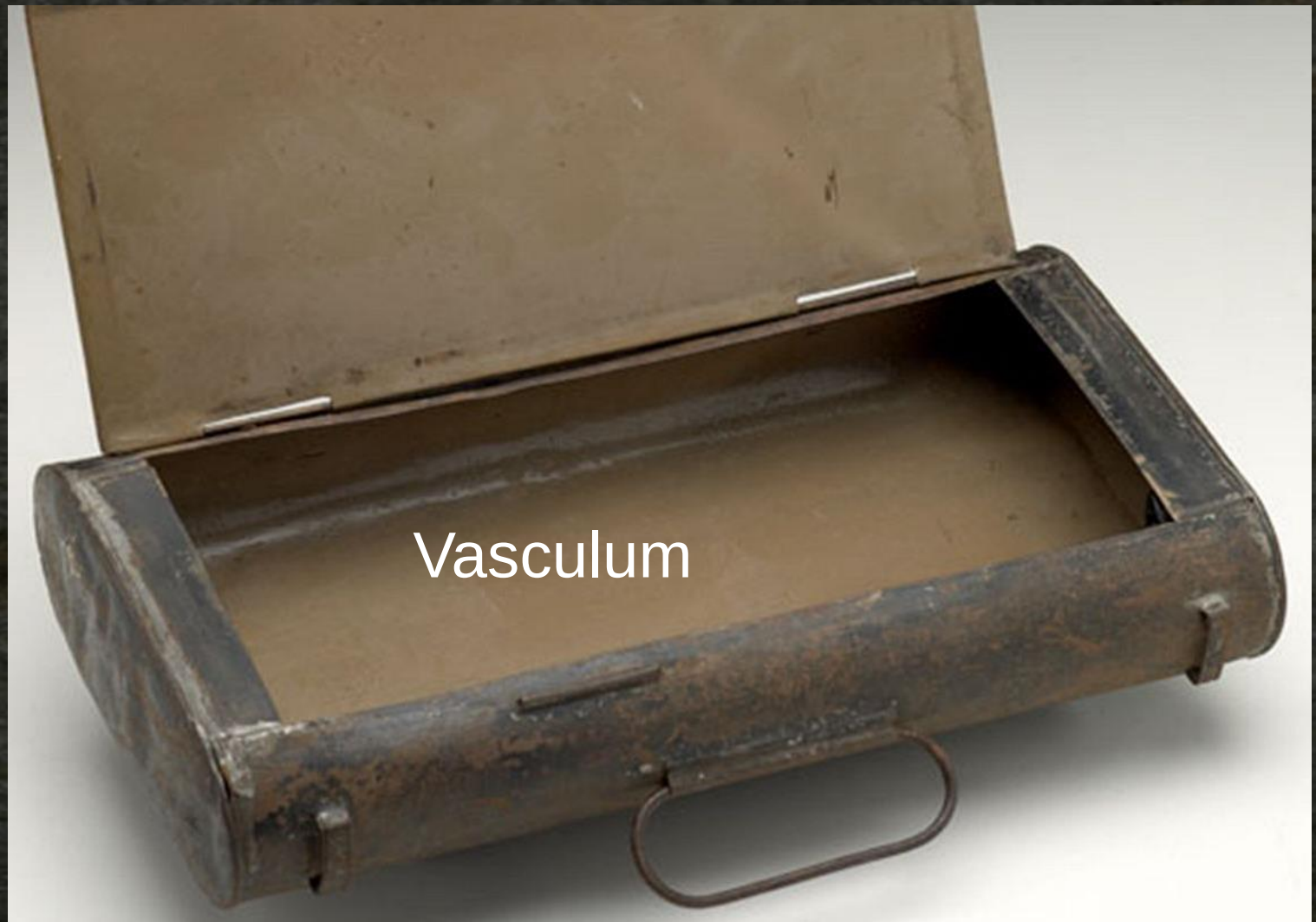

Bouteloua curtipendula


Bouteloua dactyloides

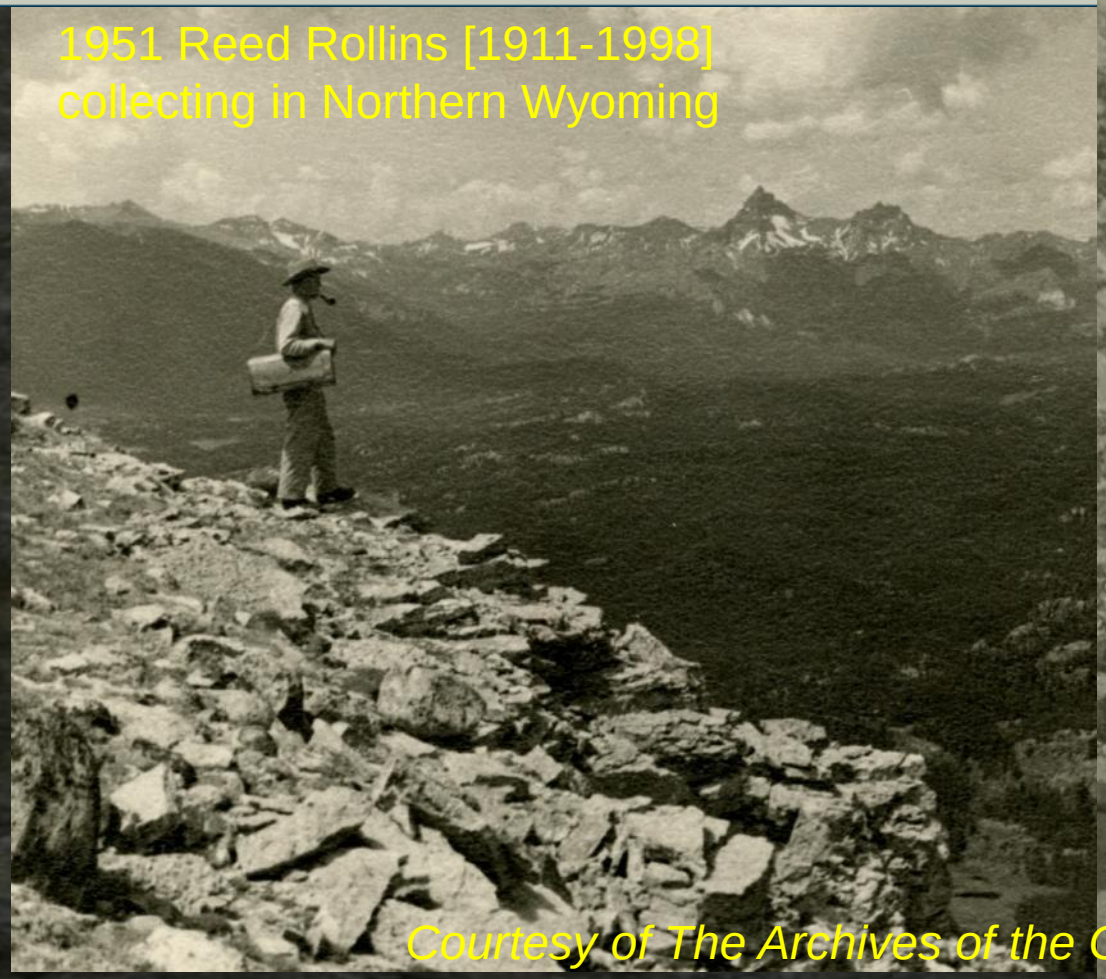


Old school tools for collecting specimens and keeping them fresh until you can identify them at a later time

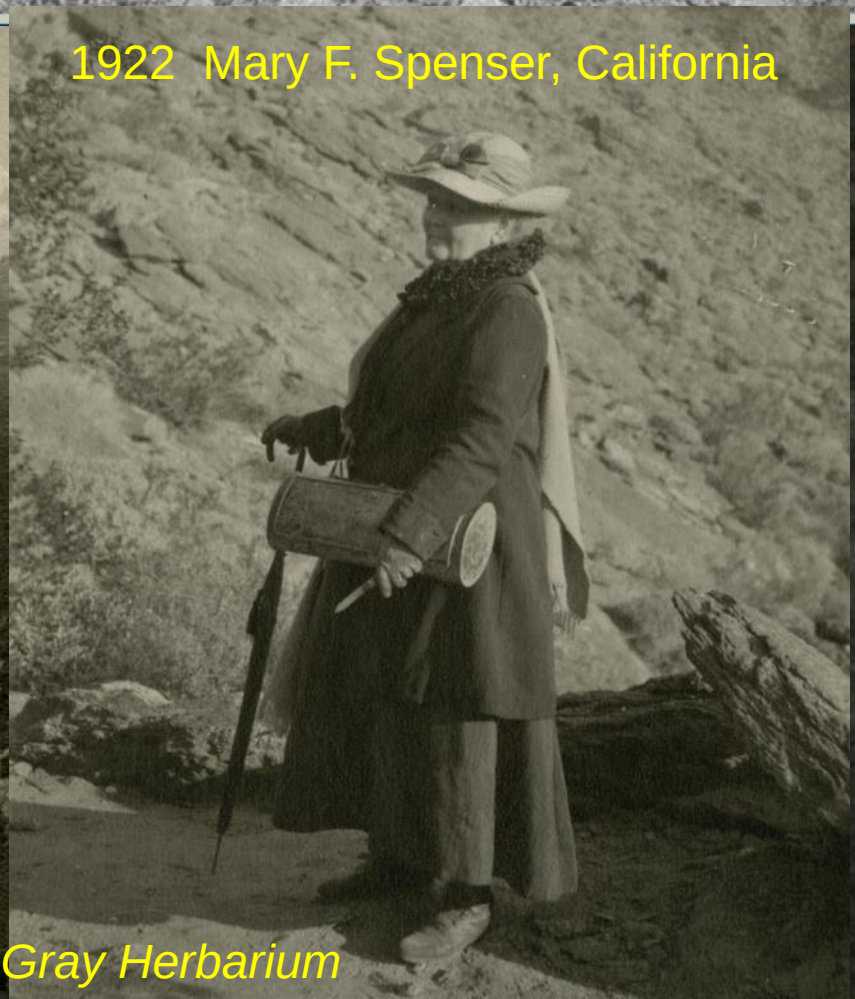
Damp moss, leaves or newspaper lined the vasculums used from the 1800's till the 1950's



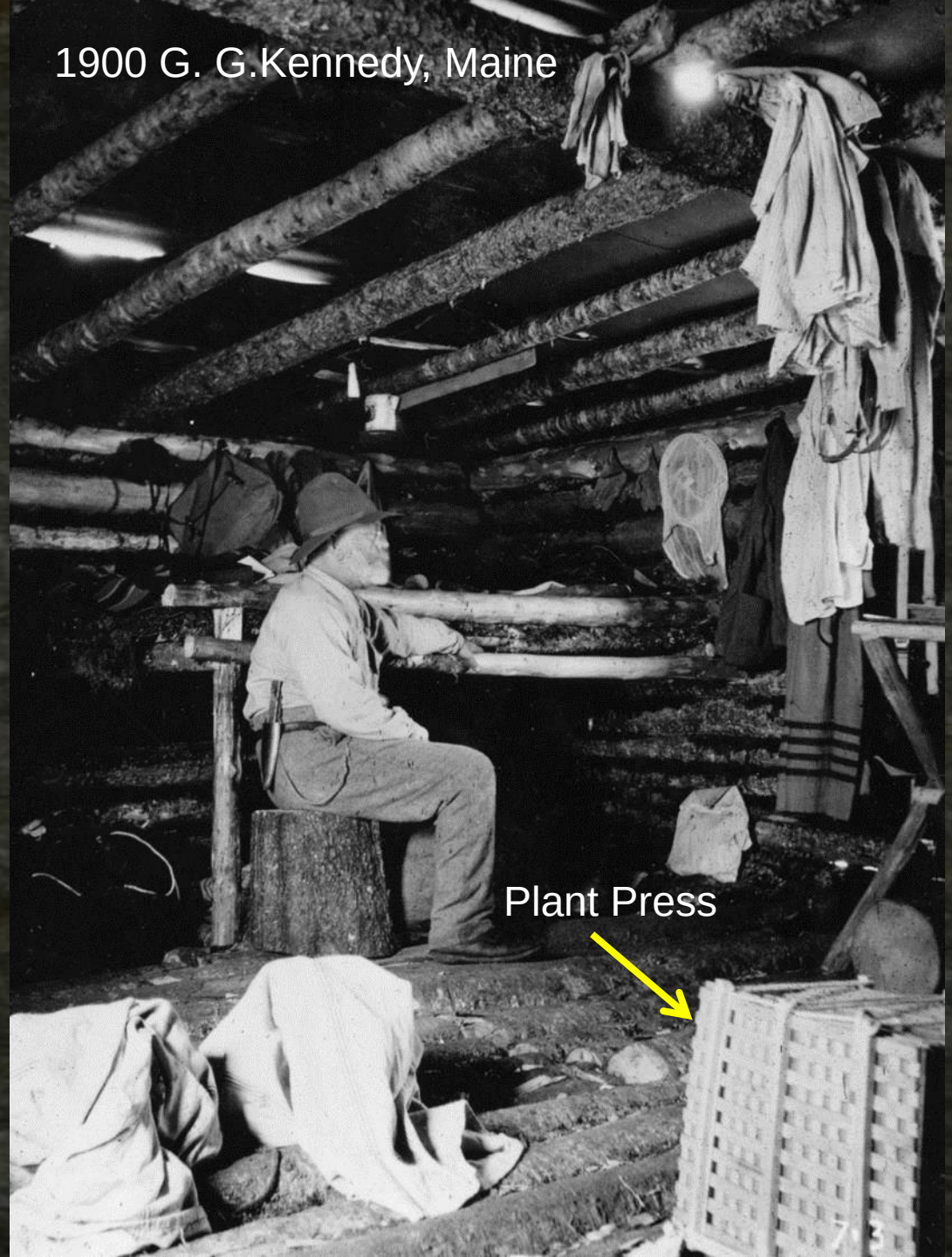
1951 Reed Rollins [1911-1998]
collecting in Northern Wyoming



1922 Mary F. Spenser, California



Courtesy of The Archives of the Gray Herbarium


1900 G. G.Kennedy, Maine
Plant Press

Modern tools for collecting specimens and keeping them fresh until you can identify them at a later time

1. Sharpshooter for digging tap-rooted plants. WHY???
2. Pruners for taking samples of woody plants
3. Zip-lock bags in gallon size, dampened paper towel
4. Plastic garbage bags to hold plants, clear better than black
5. Igloo type ice chest (48-54 qt), newspapers and a bag of ice
6. Plant press
7. Flatbed scanner


Love Those Congressmen!
Can't Complain
Going, Going . . .
Religion and Nuclear War
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FAST CASH LOAN
Fast Cash Title Loans
Get up to $20,000 Today!
Get $100 to $1000
50% OFF!

PLO people, is that they would save their own skins. If the Israeli troopers have to fight their way house-to-house through West Beirut to finish off the PLO, not many of the latter are likely to survive the battle. Before ... the U.S. government, ... PLO leaders, for all their public bravado, were imploring the United States to act as a go-between.

The Israelis also have good reason to want the PLO ... control their troops accordingly, that the rescue be carried out quickly and that the U.S. units be allowed by Washington to defend themselves against any attack from any quarter.

Even with such ... the United States ... trying to quench the flames in Lebanon, is asking for trouble. But letting the fire rage on is asking for even worse trouble.

County Appraisals:

Can't Complain

No one is manning the barricades at the Dallas County Appraisal District. No one has to. And that is good news. After the City of Dallas' experience two years ago, a minor riot over the recent countywide revaluations would not have been surprising.

But the appraisal district learned some valuable lessons from the city's ... bles. A speakers bureau helped explain the revaluation program in advance, and the district has been careful to keep communications open to and through the media.

Only 5 percent or so of the county property owners have complained about the new appraisals. And although appraisal district officials admit their busy phone lines may have thwarted some taxpayers, the number of complaints is pleasingly small, considering the size of the increase in some of the values.

Taxpayers, no doubt, are getting more sophisticated. They understand that the property value is only part of the tax formula. The big factor is the tax rate that governing bodies set, for that determines how hard the pocketbook is hit.

The appraisal district has done a good job with its revaluation program and with its public relations.

U.S. Lands:

Going, Going . . .

Can the federal government, which owns nearly a third of America, spare 60,000 acres for auction to the private sector?

Gracious, no, says the Wilderness Society, whose president accuses the Reagan administration of "pirating the public treasure for private benefit." ... descriptio... trea...

... 17 acres ... Waikiki Beach ... an empty, 5-story building near New York City's Wall Street.

The administration's objective is not only to reduce the federal government's role as landlord but to raise badly needed cash — $1 billion in fiscal 1983 and $17 billion in the next five years.

To offer, of course, isn't to strike a deal. In a recessionary (or, if you like, post-recessionary) period, the private sector's purse is not overflowing. Nor may there be ready takers for some of this year's just-announced offerings, such as ... Texas, Grapevine Lake and various other ... of Engineers ... a portion ... center ... not in any case ... der the property and see what happens? The government's long-term plans are to sell 35 million acres of federal property, leaving Washington with a meager 715 million acres to administer. That should leave room for at least three or four bureaucrats to turn around in, wouldn't you say?

Love Those Congressmen!

... honorable members of Congress. They are now attempting to present a new budget that will raise the taxes of the general public by some $21 billion.

This action on the part of our learned statesmen gives each taxpayer less than $5 per week from the 10 percent tax cut ... and passed by our Congress ...

In the same vein ... their constituents ... our ... elected senators and representatives made the generous gesture of revoking a tax exemption of $75 a day that they had previously voted to allow themselves. The proposed revocation was very carefully tacked on to a bill the congressmen were sure the President would veto. The bill was vetoed, and their tax exemptions are safe. As a result, we constituents have more taxes and no relief while congressmen enjoy some $20,000 worth of tax exemptions each year.

—ELOISE S. DAVIS, Dallas

Chappaquiddick

To the editors: Now that we have so recently finished with a week on the "Anniversary of Watergate," I feel it only fair to suggest equal time be given to the "Anniversary of Chappaquiddick."

As many of us well know, the "star" of that episode gives every indication he would like to be our next president. It might be good to bring in the judge and other experts to give some explanation of the unanswered questions of the Chappaquiddick cover-up.

—PATRICIA ... FLEEGER ...

ERA ...

To the editors: I am continually amazed at the misinformation of many, as to the Equal Rights Amendment. The amendment as proposed on March 22 is:

Section 1: Equality of rights under the law shall not be denied or abridged by the United States or by any state on account of sex.

Section 2: The Congress shall have the power to enforce, by appropriate legislation, the provisions of this article.

Section 3: This amendment ...

... reads this ... served. The ... proposed again ... great ... necessary expense because too many people we currently have in office failed to fulfill their elected duty.

—JENELLE G. FLOWERS, Cedar Hill, Texas

A Fire-Builder?

To the editors: Your editorial about the AT&T bill, HR 5158, ... order the ... politicians ... concern in the business community and in the mind of every person who reads it. Bless you for it!

—WINONA PORTWOOD, Dallas

Russians Coming?

To the editors: The underlying assumption of Jim Wright's column, "Red, Dead or Both?" is that if the United States falls behind in the nuclear arms race, the Soviet Union will rule the United States, that we will turn "red" and lose our freedoms. I have heard this argument many times yet never is it accompanied by an explanation of how this takeover will be accomplished.

To me it seems that the only ... politically and practically impossible for any country to stretch itself so thin for very long. If Wright disagrees then he owes his readers another article that doesn't merely make assumptions, but that presents his concept of a step-by-step process by which the Soviets could rule the United States.

—PAUL ASHLEY, Dallas

Schizophrenia

To the editors: Re: Article ... schizophrenia.

I agree with the writer that until you have lived with a schizophrenic ... you cannot realize the problems you are faced with on a day-to-day basis.

I have a 29-year-old son who first had problems before his 20th birthday. He has no means of support except from his family. Due to expense of medical treatment we had to resort to state hospitals after about the third year. He is not insurable according to the various insurance companies ... made application ... the past 10 years. ... Social Security ... been ... since ... He ... for several ...

... psychiatrist with the state hospital has given me statements that he feels he is unable to hold a job but this information is ignored by the Social Security office.

This letter is not intended to sound like a plea for financial help from the government but rather to let other families know that someone understands the problems they are faced with too.

—T. R. SMITH, Waxahachie, Texas

Well Done

To the editors: The article explaining the format of the ... legal notices that appeared in The Dallas Morning News on June 25 was well done ... discus... ... service clerks ... regions reported ... referring to the article ... asking ... specific questions ... than ... been asked previously.

We sincerely appreciate your apparent interest in providing information to your readers. Your initiative of pursuit of an issue on the basis of investigation as opposed to imagination is commendable.

—JOHN R. MARSHALL, Director/Chief Appraiser, Dallas

Religion and Nuclear War

To the editors: ... through Dallas ... I noticed Jim Wright's excellent column, "Red, Dead or Both?" It is an important contribution to the religious-political debate about nuclear weapons.

The assumption that ... if we renounce our possession of them is very dubious. There is also a widespread religious refusal to face the most likely consequences when the civil order is effectively defenseless. Preaching about the "immorality" of war ought, then, to include descriptions of how to survive in Gulag conditions, for that is the most likely alternative.

Ironically, the most sensible statement about the cause of peace was made by a woman, Margaret Thatcher, at the United Nations June 23. Weapons do not cause war, she bluntly told the delegates, while weakness most likely is a major cause. Like the Holy Father, Mrs. Thatcher reminded us that weapons ... needs rigid verification before it is moral. We need not be blind to what an enemy does in the name of religion, just the opposite in fact. This is perhaps why religion ought to talk about something other than politics.

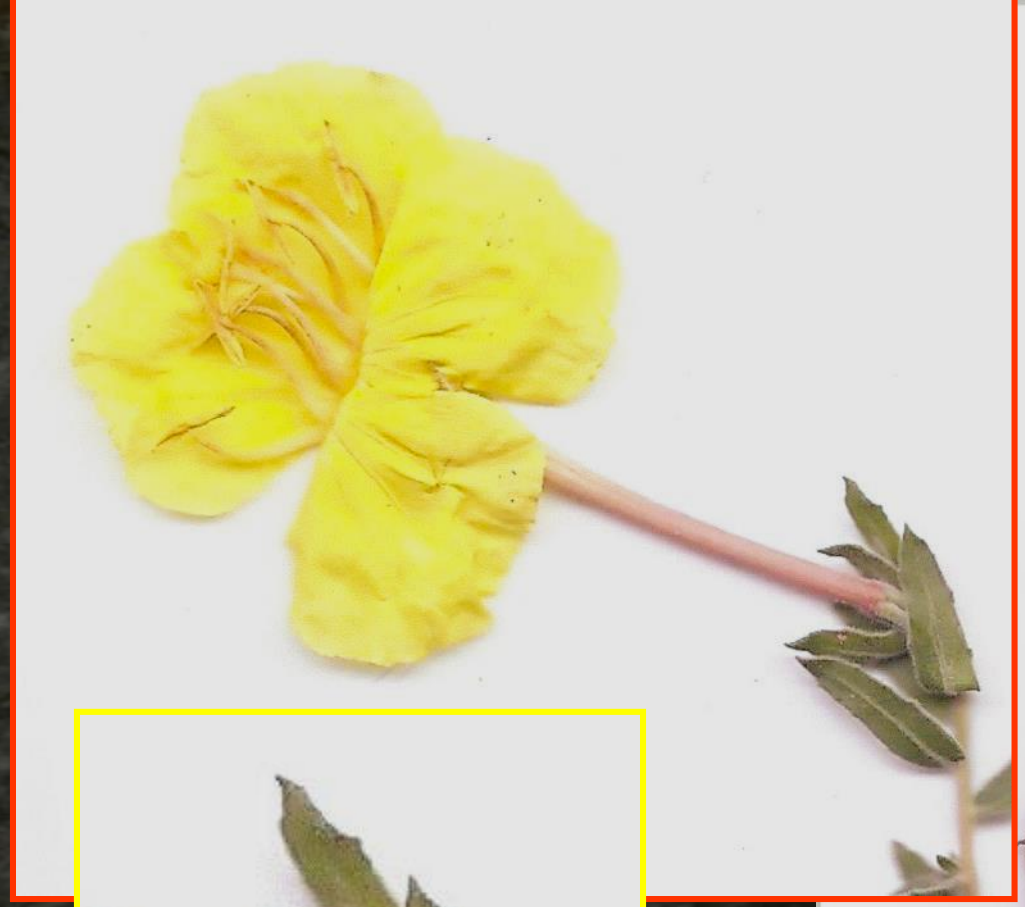
"We believe that wars are caused not by armaments but by the ambitions of aggressors and that what tempts them is the prospect of easy advantage and quick victory," Mrs. Thatcher noted. "The only choice that is morally and humanly valid is represented by the reduction of nuclear armaments, while waiting for their future complete elimination, carried out simultaneously by all the parties, by means of explicit agreements and with the commitment of accepting effective control," John Paul II carefully said on Dec. 13. Obviously, when these strict conditions are not met, the pope does not assume that a nation should proceed as if they were.

The "desire" for peace can be the "cause" of war or tyranny if it is not rooted in a full appreciation of how ideological military powers do act. Religion in particular ought not to identify itself with a kind of hopeless irreality about the actual problems of politicians responsible for the freedom and value of our civilization. Wright is one of the few who clearly appreciates the "immorality" of the "morality" that leads to surrender. He sees that religion is in danger of becoming very bad politics and, therefore, very bad religion.

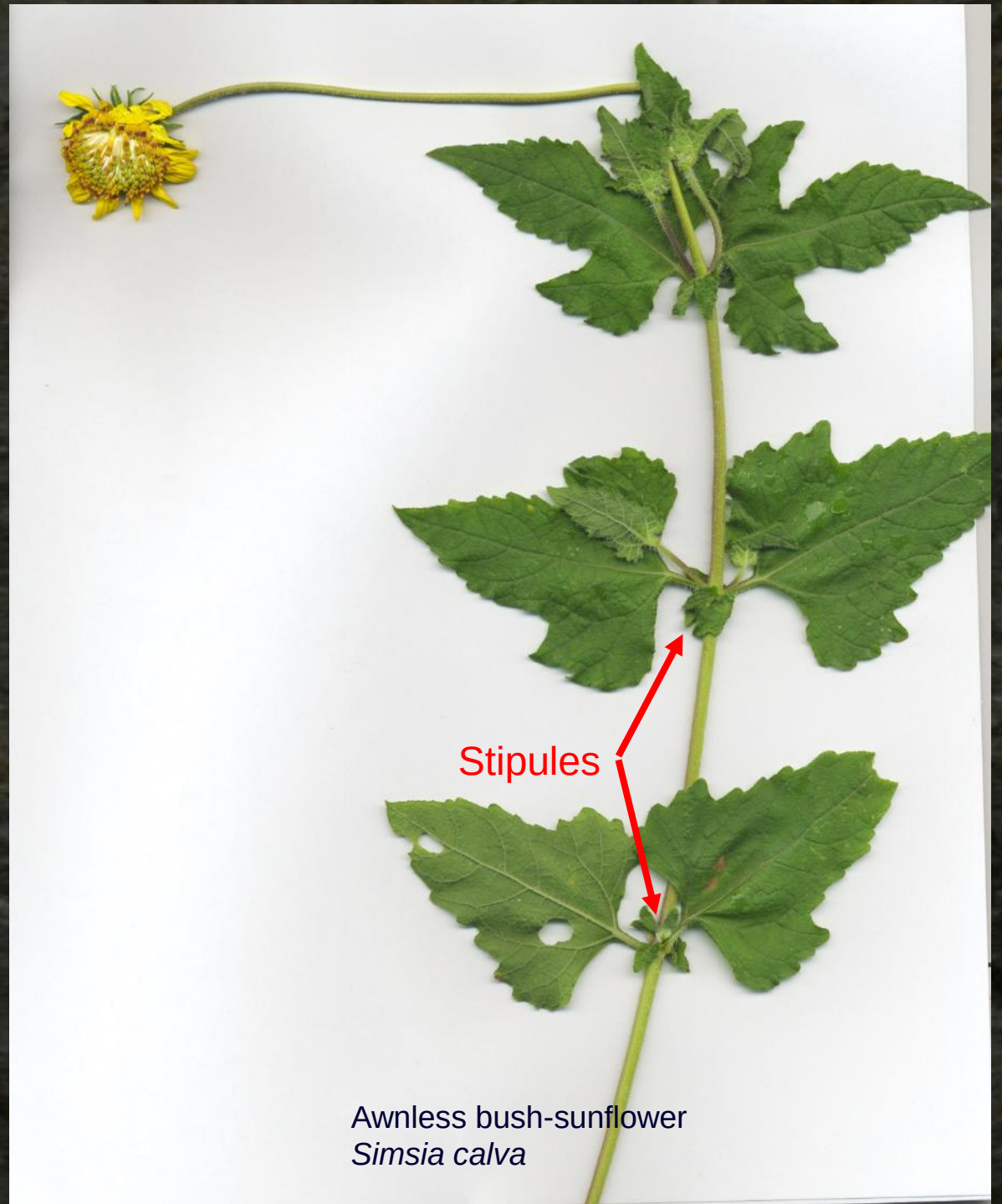
—JAMES V. SCHALL, Department of Government, Georgetown University, Washington, D.C.


A really fowl th
BY CAJUN
Gracia Casey Thibodeaux
I have mentioned before my daughter's love of chickens.
What I did not mention was the fact that when she got settled in college she gave most of the chickens away, leaving only the scrubbiest least attractive ones at home.
I continued to feed them and pretty much ignored them otherwise.
There came a time when, somehow, the number of roosters outnumbered the hens considerably.
n holds revival
Jones graduate
Is Pleas
CEFCO

Plant Scans



Western primrose
Calylophus hartwegii ssp *pubescens*



Awnless bush-sunflower
Simsia calva

“Is it Real or is it Memorex?”

Skunkbush sumac
Rhus trilobata

Spreading sida
Sida abutifolia

BUCKSKIN BRIGADE

Ulmus americana

Key Plants for Deer

Common Name: American elm
Plant Class: Woody
Value to Deer: Food and Cover
Date Collected: 07/19/2010
Herd Name: The Rut
Collected by: Collin Nethery

Pricklypoppy

Dayflower with husk

Buffalobur

For best results scan seeds at 600 dpi.

BRIT Virtual Herbarium

Welcome to the BRIT Virtual Herbarium, powered by the Atrium Biodiversity Information System, and developed by the Botanical Research Institute of Texas (BRIT) to manage plant data, images, and other associated data from the BRIT-SMU-VDB Herbarium and the BRIT Press. As of the official release date (October 17, 2009) the BRIT Virtual Herbarium hosts the complete BRIT Type Collection, and one specimen of each species vouchered in the BRIT Herbarium from the Texas counties of Denton and Gillespie. Efforts are underway to greatly increase the number of specimens digitized for online access.

Atrium is a technology platform developed at BRIT to revolutionize biodiversity information management by enabling researchers and organizations to share, synthesize, manage and publish biodiversity data in a collaborative, online environment. Atrium provides a broad range of tools for research organizations as well as an unparalleled, open-source framework based on industry standards which facilitates the development of powerful applications and tools for the biodiversity community. For further information, including information about the newest features, please visit the Atrium-Biodiversity.org web site. The Virtual Herbarium portion of Atrium provides many tools for entry, organization and analysis of collection data. Collaborators can view complete collection data and high resolution images, print labels, and annotate collections remotely.

Atrium has been developed with funding from the Native Plant Society of Texas, the Gordon and Betty Moore Foundation, the Beneficia Foundation, Conservation International, the World Wildlife Fund, the Amazon Conservation Association, and support from individuals like you. Your donations help us to support more digitization activity and share our herbarium with the world.

Featured Projects

BRIT Type Specimens

Flora of Denton County

Flora of Tarrant County

http://www.atrium-biodiversity.org

Read more about the features of Atrium...

RealPlayer Enterprise | Rediscover AOL

J. Reverchon 3342

Collection Date: 8 May 1902
Determined By: unknown
Determination Date: unknown
Institution: unknown

View Annotation History

Collection Data | Specimens | Collection Images

Download Mid Size Image
Download Full Size Image
View Zoomable Image

Image Properties
Image Name: jreverchon_003342_01

Show All Properties

Other
Original Height: 10212 px
Original Width: 7212 px

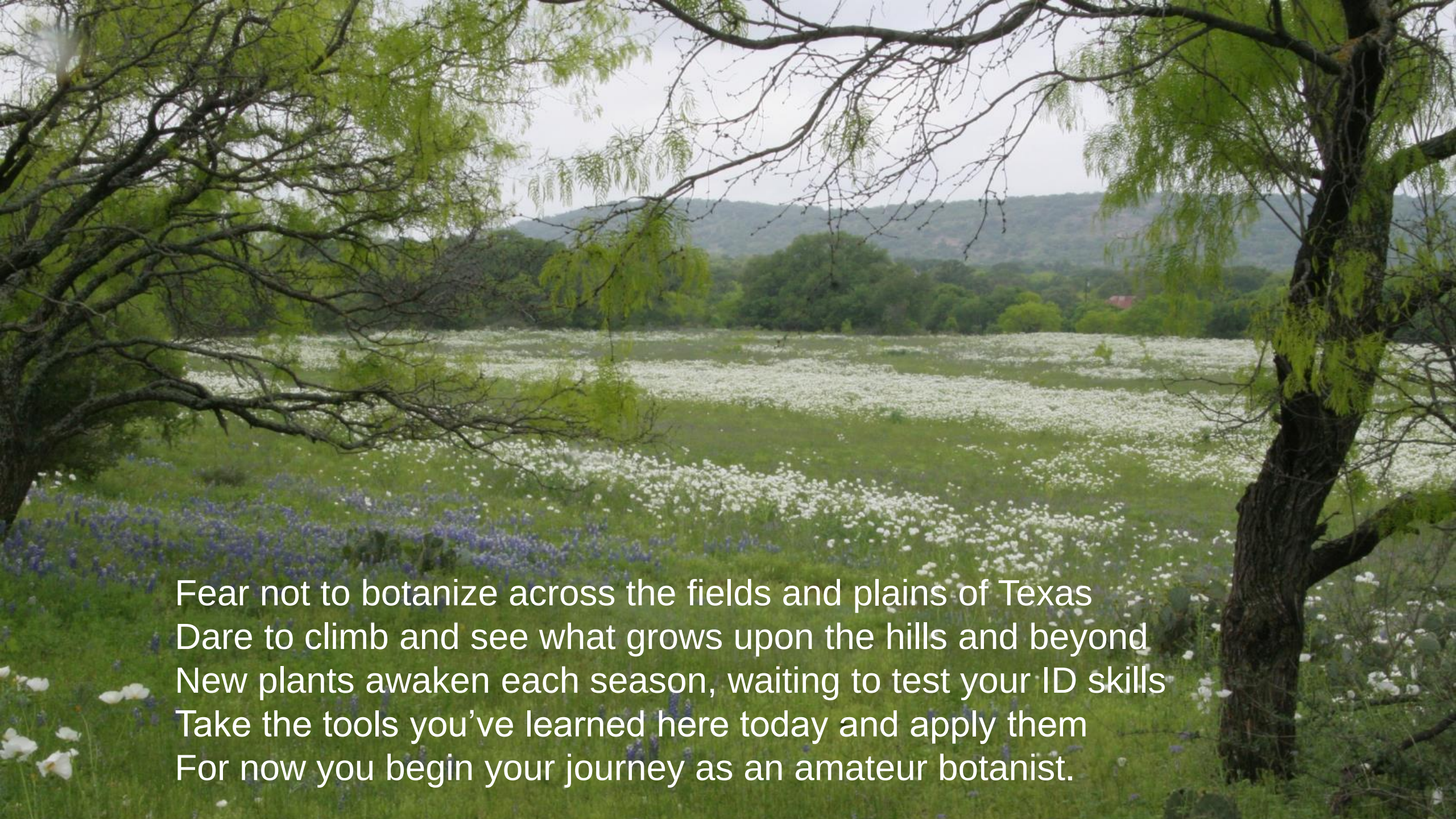
Silphium gracile, Simpson rosinweed
S. reverchonii

With a pressed plant you have one copy of the plant.
✓ Plants can fade over time
✓ Fragile
✓ Tedious to review pressed plants

With a scanned plant image or a photograph you can e-mail that plant to hundreds of people for help in ID'ing.
✓ The plant never fades, you can adjust for contrast, brightness, color
✓ Plants can be viewed anywhere on laptops, tablets, smartphones
✓ Plants can be easily viewed as a slideshow

Social media sites can be of help in confirming your identification.

Don't forget your digital camera, it is a great plant ID tool.
Learn how to adjust your camera, it is a tool, know how to use the tool.


Fear not to botanize across the fields and plains of Texas
Dare to climb and see what grows upon the hills and beyond
New plants awaken each season, waiting to test your ID skills
Take the tools you've learned here today and apply them
For now you begin your journey as an amateur botanist.

Questions??

Contact Info:

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817-458-3864 (O)
817-304-5266 (C)
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