



Luis Berlandier

Frontier Naturalists in Austin's Colony

Frank Michel



Down at the crossroads



1828-1835 — Science's first/last look at an old land

“... Everything — the botany, the conchology, the geology — was new to me. The widely scattered specimens of natural history had never been disturbed or moved from the spot where the finger of nature had dropped them. I had visited many unfrequented places, but never before had I found one at which I felt so clearly that I was the first that ever left a shoe-print on the white, clean sands of that clear dashing river. . . .” Gideon Lincecum, 1835



Timeline of pre-Republic Texas

- * Texas was the bottom of the sea about 250 million years ago.
- * 10,000 to 13,000 years ago, Paleo-Indians first documented humans in Texas
- *1519 - 1689, Age of Contact, Cabeza de Vaca, etc.
- *1689 - 1821 , Spanish colonial period.
- *1821 - Mexico prevails.
- *1821, Stephen Austin visits Brazos country, first settlers arrive.
- *1823, Austin founds San Felipe as colonial capital.
- *1824, Austin opens Land Office, begins issuing contracts for "Old 300". Each to receive a Labor for farming (~177 acres) and a League for livestock (~4,446 acres). Mexican Constitution adopted.
- *1828 -35, tensions come to slow boil with law limiting immigration, differences between centralists/federalists, desire to separate Texas from Coahuila, slavery questions, boundary disputes, religious differences, international intrigues, etc. First of "frontier naturalists" begin to arrive. in an almost pristine landscape.*
- * 1836, Texas independence.



Three naturalists, two revolutions

April 27 - May 9, 1828 — **Jean Louis Berlandier (23)**

March 1833 - Dec. 1834 — **Thomas Drummond (43)**

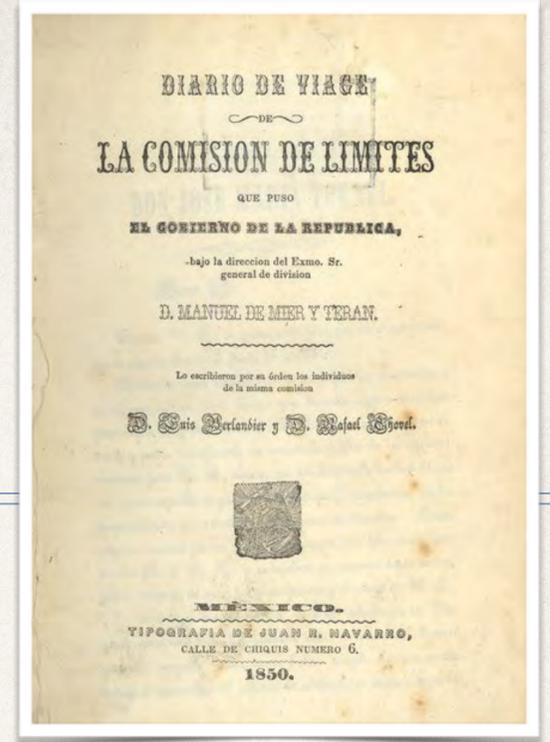
1835 — **Gideon Lincecum (42)**



One revolution forever changed the scio-economic/political landscape. The other simultaneously changed forever the literal landscape.

Jean Louis Berlandier (1803-1851)

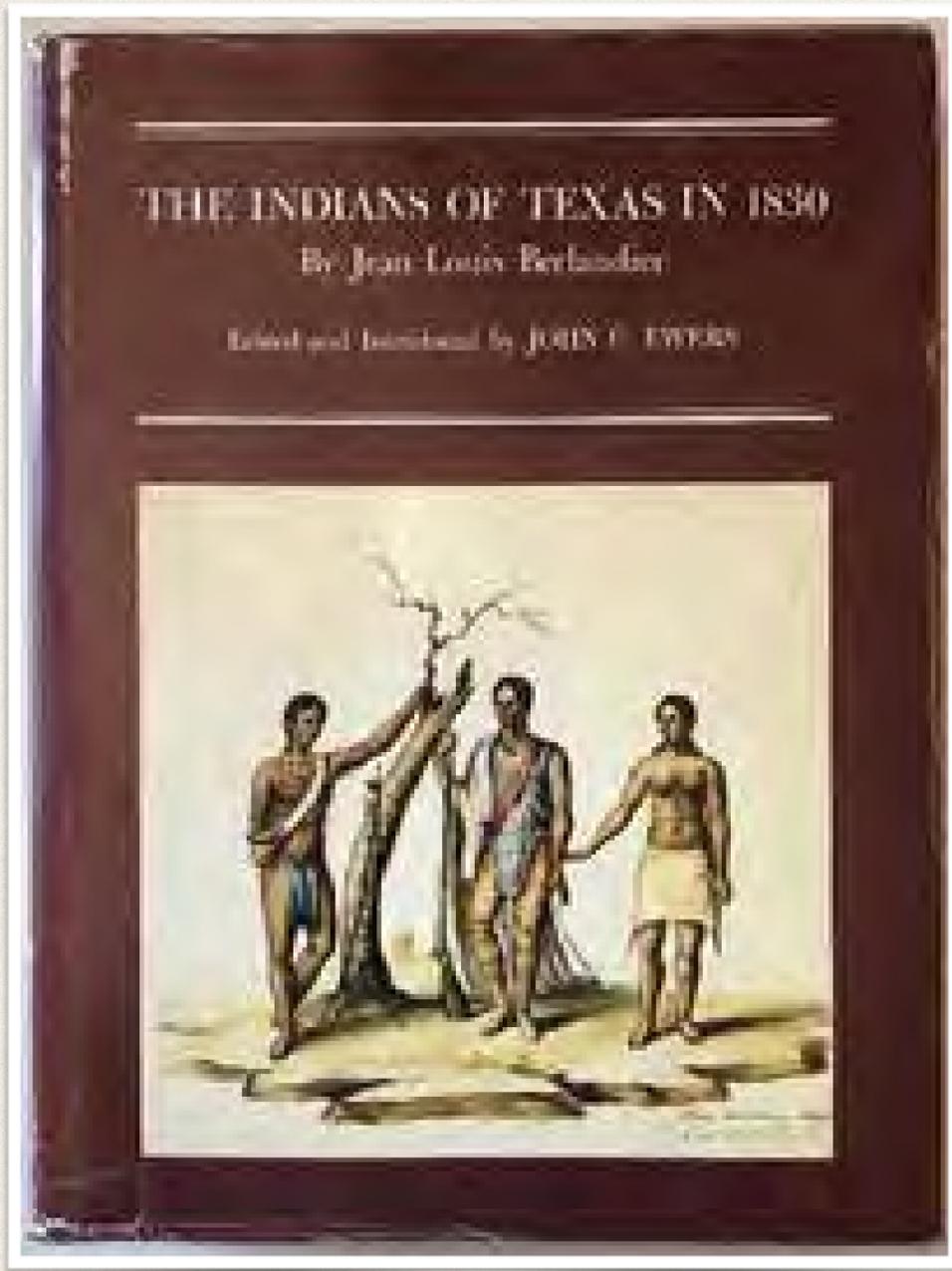
First to collect Texas specimens and send with the outside world. April-May, 1828



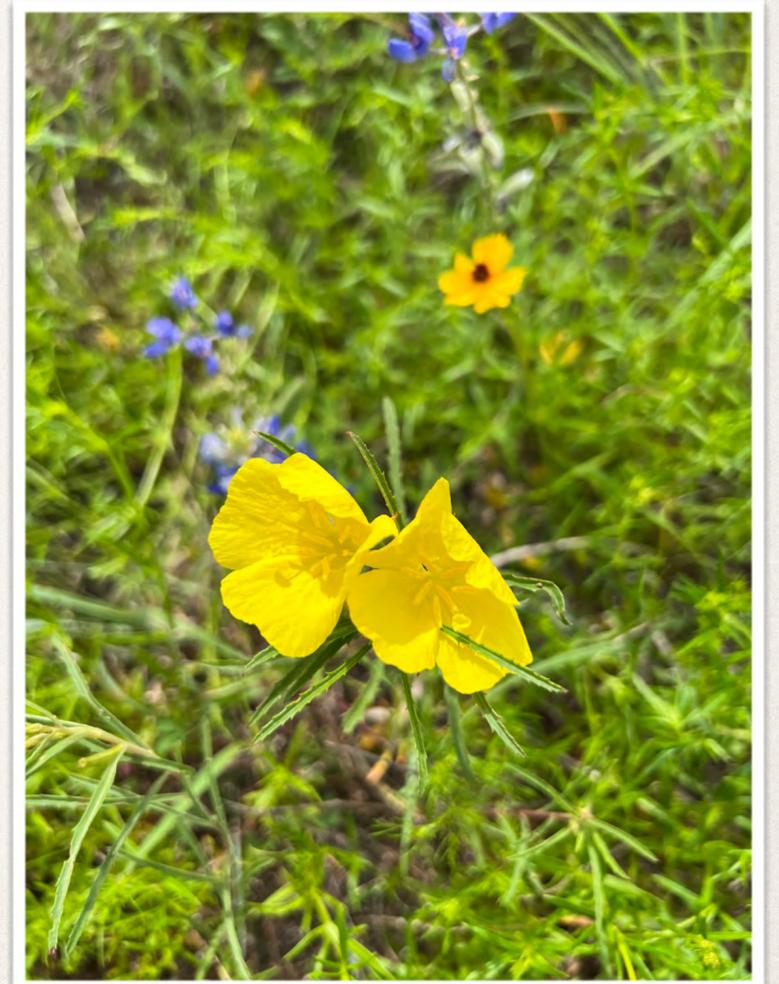
- ❖ French, (Aguste Candolle mentor and critic) pharmacy apprentice & botany trained, later physician.
- ❖ Assigned by Geneva academy as botanist, zoologist, to Mexican Boundary Commission (Jose Manuel de Mier Y Teran), also an ethnographer, earliest multi-decade meteorological records in S. Texas, N. Mexico). Significance of Commission!
- ❖ Collected more than 55,000 specimens, including newly discovered . Now in 27 world herbaria, nature specimens and Indian artifacts in Smithsonian, U.S. National Museum, Gilchrest Museum, Library of Congress (original diary hand-written in French, 1,500 pages), Harvard, Yale, UT , Texas A&M. First known written reference to Texas Bluebonnet. P (lupine), published "The Indians of Texas (1830)."
- ❖ Impressions of Stephen F. Austin and Texas life on eve of Revolution.
- ❖ Mexican-American War.

A photograph of a handwritten signature in cursive script, which reads "Luis Berlandier". The signature is written in dark ink on a light-colored, aged piece of paper.





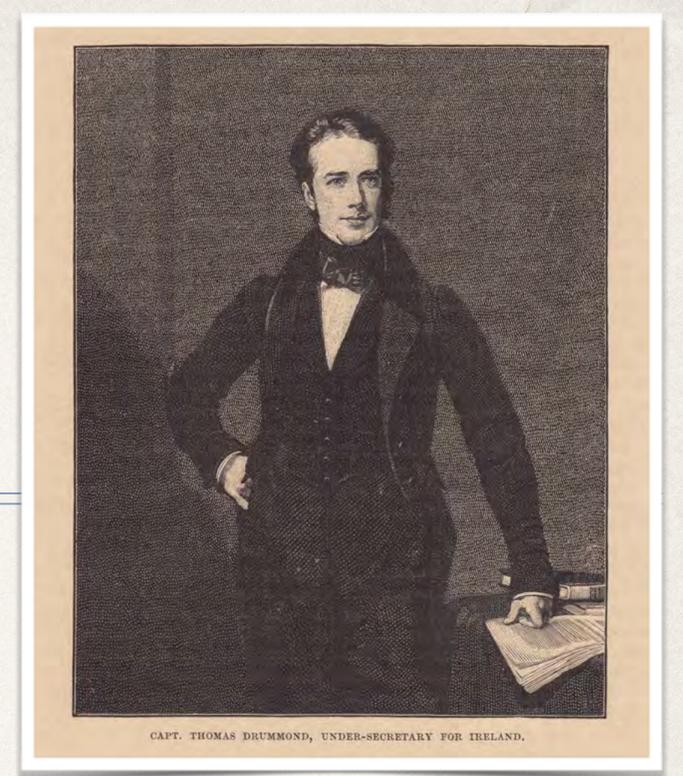
Berlandier's tortoise (*Gopherus berlandieri*)



Berlandier's sundrops (*Calylophus berlandieri*)

Thomas Drummond (1793 - 1835)

First Texas scientific collection shared among museums around globe, 1833-34



- ❖ Collected 750 different Texas plant species, 150 bird species. First to gather good specimens in direct vicinity of Austin's Colony, first to collect insects in Colony (for Wm Kirby "father of entomology"). Studied Galveston to Edwards Plateau — Brazos, Colorado, Guadalupe valleys.
- ❖ At least 31 Texas species bear his name (i.e. Drummond Oak - *quercus drummondii*).
- ❖ A 19th-century Odysseus. In Texas, Cholera epidemic and "The Great Overflow" of 1833. Inspired naturalists to follow with discovery and classifications in Texas (Ferdinand Linheimer and Chas. Wright.)

August, 1833

“About one-third of the plants collected on my route, were destroyed by the overflowing of the river. Vegetation is now recommencing, but I never witnessed such devastation; it has extended even two hundred miles up the river from this place. . . .

“You may form an idea of the difficulties I have had to encounter in this miserable country (more miserable, however, as to its inhabitants than in any other respect) when I tell you that all the bird-skins I sent you were removed with a common old penknife, not worth two cents, and that even this shabby article I could not have kept had the natives seen anything to covet in it; and that I am obliged to leave behind my blanket and the few clothes I have brought, because of the difficulty carrying them, though I feel pretty sure I shall never see them again.”

— **Thomas Drummond**, San Felipe de Austin.

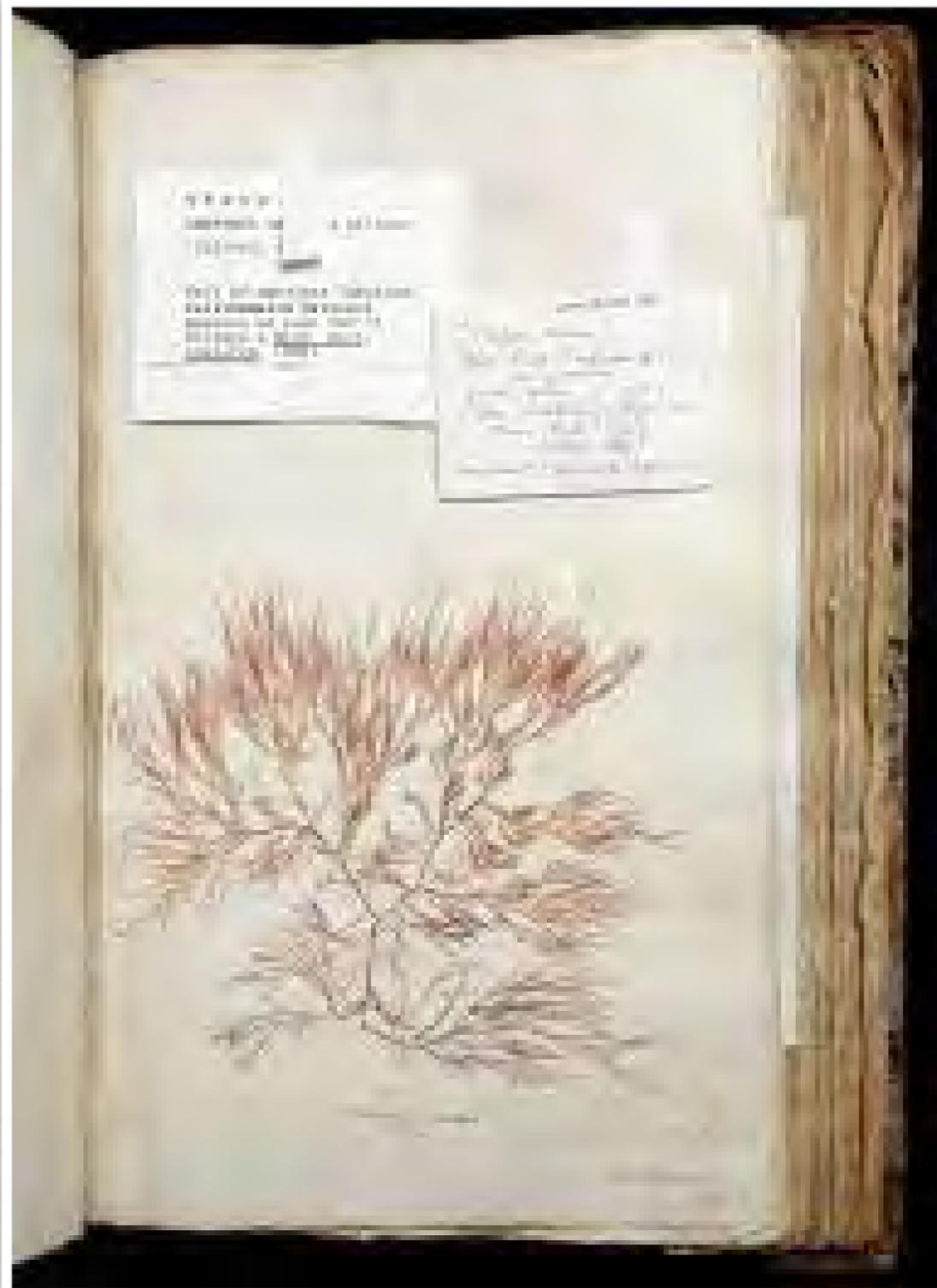
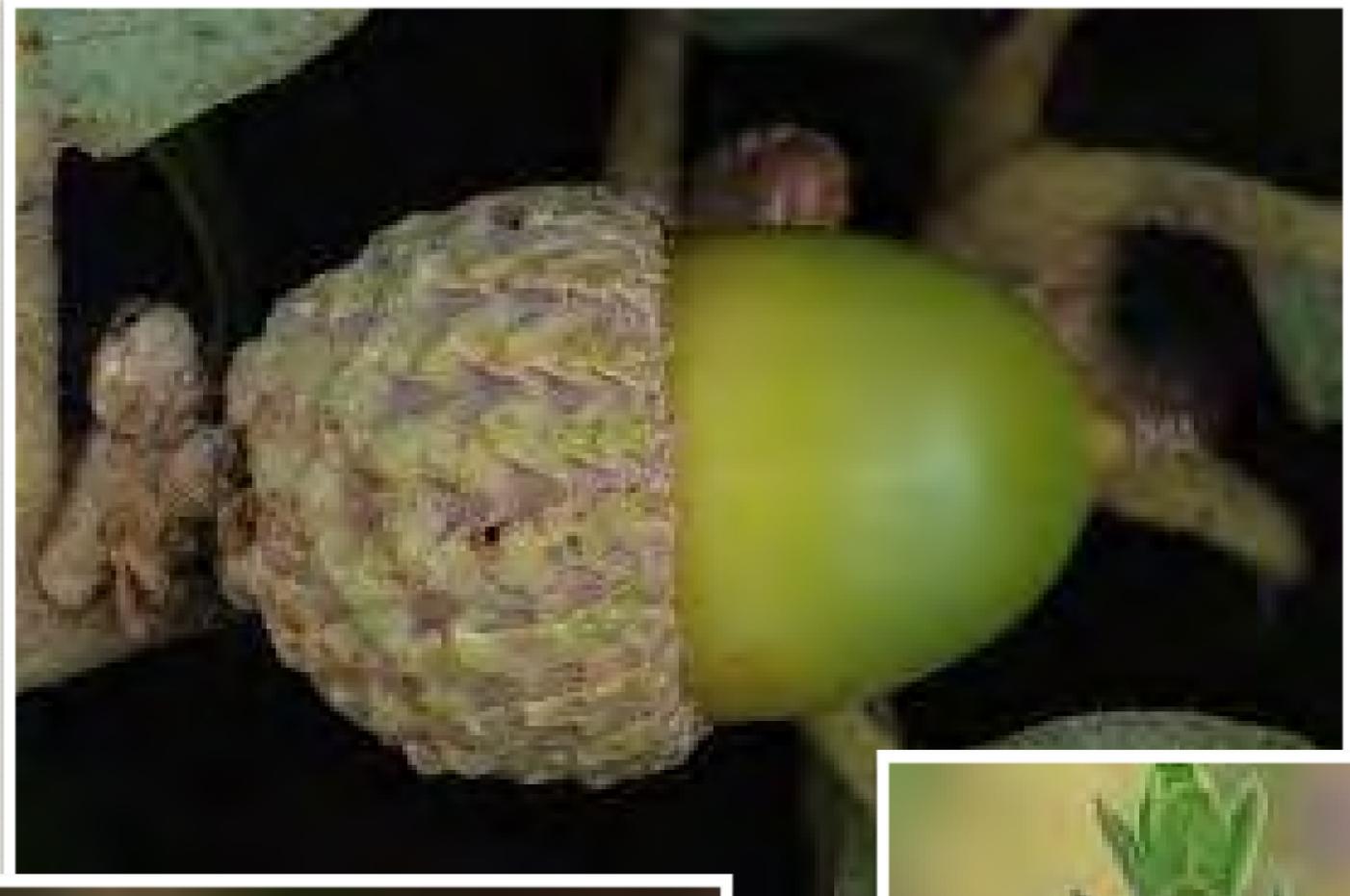
(Clockwise from right)

Drummond Oak (*quercus drummondii*)

Drummond's skullcap (*Scutellaria drummondii*)

Drummond's Onion, wild garlic (*Allium drummondii* Regel).

Turk's cap (*malvaviscus drummondii*)



**LINUM BERENDIERI. BERENDIER'S YELLOW-
FLOWERED FLAX.**

Class and Order.

PENTANDRIA PENTAGYNIA.

(Nat. Ord.—LINEÆ.)

Generic Character.

Flores proportione partium quinaria. *Sepala* integra. *Styli* rarissime 3, cum petalis staminibus sepalisque 5.

Specific Character and Synonym.

LINUM Berendieri; annum monogynum multicaule ramosum, caule angulato, foliis alternis linearibus rigidiusculis glabris mucronato-acuminatis marginibus lævibus, floribus subcorymbosis, fructibus racemosis, sepalis bracteisque lanceolato-acuminatis marginibus serrulato-scabris, capsulis globosis acutis.

LINUM Plotzii. Hook. MSS. in Herb. Tex.

An exceedingly beautiful and new species of *LINUM*, first known to me by means of specimens in a small collection of plants gathered by M. BERENDIER, (at first erroneously supposed to be by M. PLOTZ,) in Texas. These specimens were from "Bejar," where they were found blossoming in March, 1828. By Mr. DRUMMOND it was afterwards detected at Rio Brazos and San Felipe, in the same country, and introduced to our gardens in 1835. With us it has been kept in a cool frame, where it flowered in August; but there is reason to think it will prove a hardy annual, and a most valuable acquisition to our gardens.

DESCR. *Root* annual, sending up from its summit many stems, which are more or less branched, especially upwards;

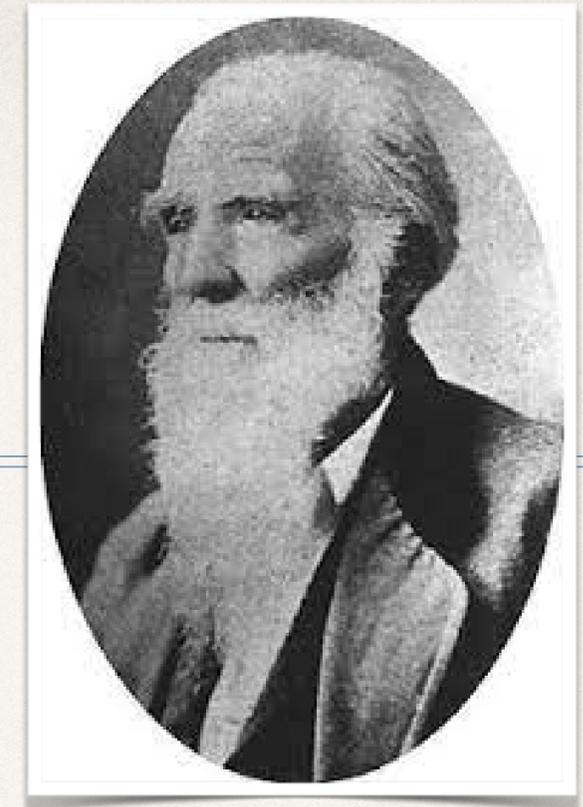
wards; the branches angular. *Leaves* scattered, linear, three-fourths of an inch to an inch in length, mucronate, glabrous and quite entire at the margin, slightly glaucous. The *flowers* are, at first, before expansion, corymbose, afterwards the rachis is lengthened out, and in the state of fruit there is an elongated raceme, the *pedicels* half an inch long, pointing one way. *Bracteas* lanceolato-acuminate, aristate, as well as the sepals, which have three to five prominent ribs, and are serrulate at the margin. *Corolla* large, yellow, deeper and almost orange at the base. *Petals* obovate, entire; the claw at the very base hairy. *Stamens* five. *Anthers* sagittate. *Germen* globose. *Style* longer than the *stamens*, dividing at the extremity into five patent branches, each tipped with a globose stigma. *Capsule* globose, acute, five-celled, five-valved.

Fig. 1. Calyx, including the Stamens and Pistil. 2. Petal.

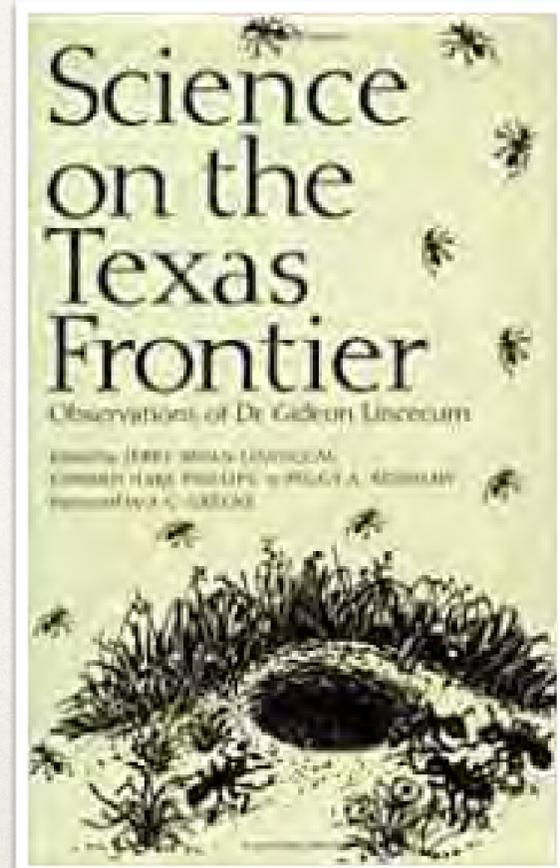


Gideon Lincecum (1793 - 1874)

Charles Darwin and Texas horticultural ants, 1835-1874



- ❖ Texas Revolution - Mosely Baker's volunteer company.
- ❖ Agricultural ants and Charles Darwin, Linnean Society. Philadelphia Academy of Natural Sciences.
- ❖ Lincecum Herbarium (UT Austin) 300-plus specimens documenting medicinal plant taxa. Collections in Smithsonian. Years as botanical physician. Smithsonian, British Museum Jardin des Planets (Paris). Choctaw research. At least 15 accessions to Smithsonian. Long-term weather records for Smithsonian. At least 14 published papers.
- ❖ Botanical (vs. allopathic) and Indian herb medicine. 1848 to Long Point, Washington County. State Cemetery, Austin block.



Austin's colonial land ethic



- ❖ Beat back the wilderness and turn land into wealth, driver of an economy: harvest lumber for building; clearing for crop production; maximize yields often with soil depletion (ie, cotton); unlimited grazing; free ranging (ie, hogs); water use.
- ❖ Writings of Austin and others (ie. garden spots vs. conquer Texas “from its wilderness state.

“What people saw ... were objects having material and functional significance, rather than biological and ecological value. ...”

“Austin as an impresario looked first at what was materially useful to and capable of sustaining settlement ...”

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Page: 423**

*Settlement and Environmental Change in Texas,
1820-1900*

ROBIN W. DOUGHTY*

ANY DISCUSSION OF THE EARLY ECOLOGICAL HISTORY OF A REGION will examine the natural environment and its relationships with human values and human activities. The focus will be on how and why the landscape has been reorganized and changed by successive waves of sojourners and settlers: on the early attempts of travelers and explorers to harvest the natural richness which they discovered, and on the pioneer farmers who soon began to alter the variety, abundance, and distribution of plants and animals on the land. Such a study will try to distinguish between humanly induced transformations and the natural changes that result from tempest, wild fire, pandemics, and other aspects of seasonal, annual, or periodic cycles, including drought. On the other hand, it should avoid drawing a false dichotomy between the destructive influence of man and the healing influence of nature.

The present study looks at the process of landscape change in the province, the country, and the state of Texas. Obviously, a time frame

Environmental revolution — nails and bolts

- ❖ Texas blessed with “good soils”, lush vegetation and abundant wildlife. (Plant 10-penny nails, yield a crop of iron bolts.)
- ❖ Colonists attacked plants and animals that interfered with their purposes. a mission to bring order to natural spaces echoed by Austin.
- ❖ Introduced alien species that changed the ecosystems. Habitat destruction & fragmentation. Loss of fire and “disturbance” led to brush encroachment.
- ❖ Clear-cutting, mono-cropping, soil erosion vs. seeming limitless fertility. (Noticed woodland clearance made climate drier.)



The Explorers' Texas: The Lands and Waters by Del Winegar, (Austin, 1984)

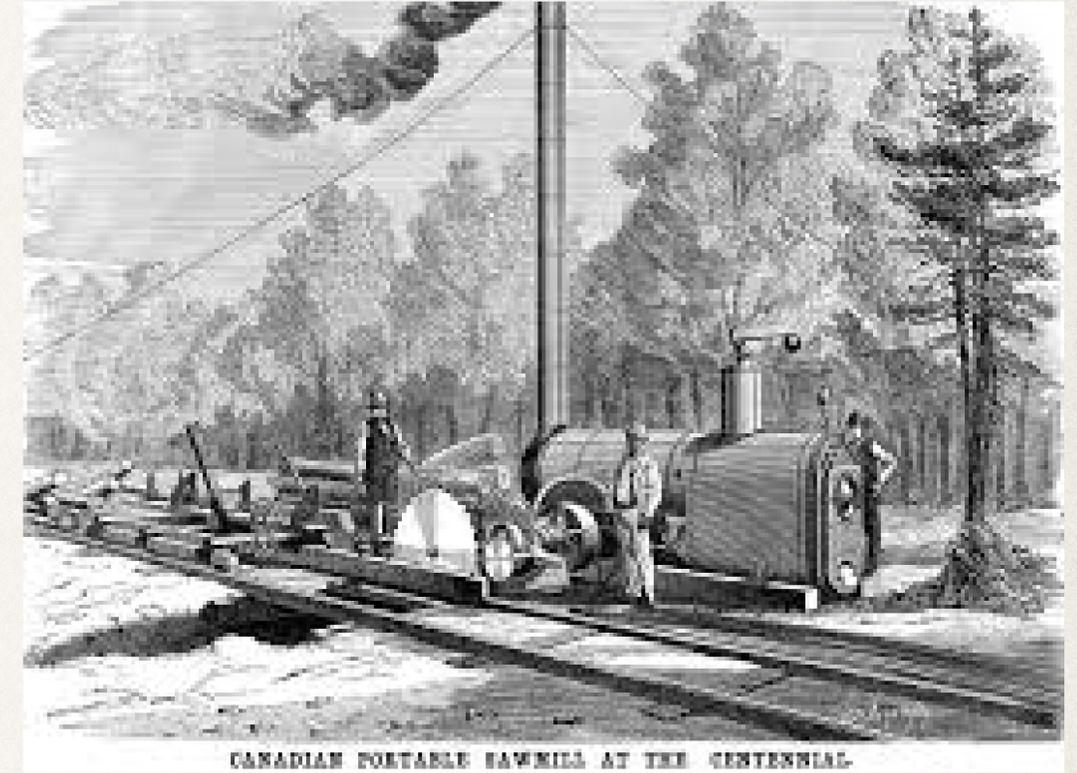
“My horse could scarcely make its way through the wilderness of flowers, and I for a time remained lost in admiration of this scene of extraordinary beauty. The prairie in the distance looked as if clothed in rainbows that waved to and fro over its surface.”

— Karl Anton Postl, 1832

Houses covered the slopes around Washington on the Brazos, from which “rang out the dull thud of the immigrant’s axe. Proud oaks and lofty pecan and hickory trees were ruthlessly cut down ... Piles of twisted branches and knotty trunks were set on fire, and the bright blaze of these burning heaps cleared off the dampness of the woods.”

— Herman V. Ehrenberg, 1835

Drummond noted in 1834 how the 90-mile strip between the Colorado and Guadalupe Rivers was “as destitute of verdure as the streets of Glasgow.” (except for riparian growth)



The ax, plow and fire also opened the landscape for cultivation and supplying building materials but also opened the door to invasive species. Steamboats and steam powered sawmills sped the process (Industrial Revolution).

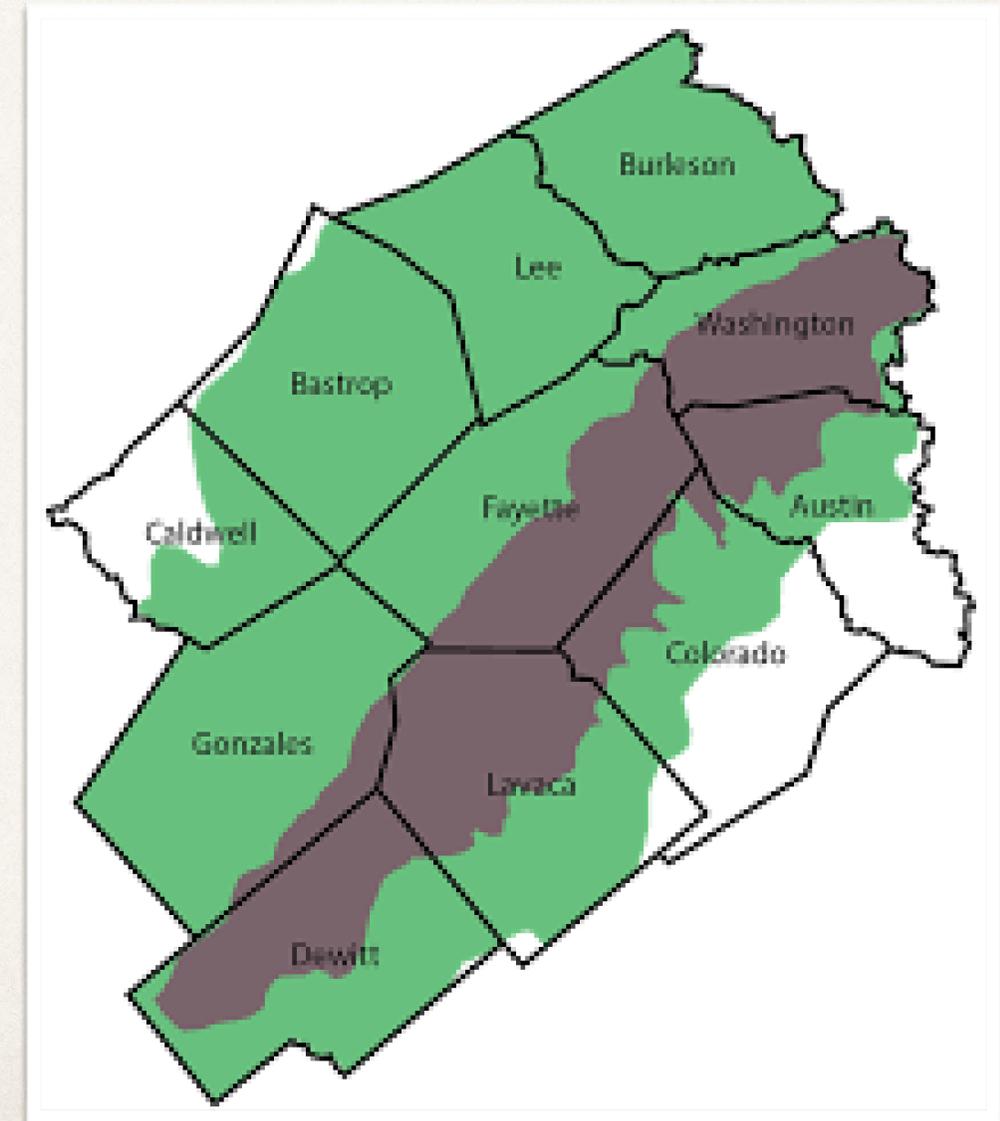
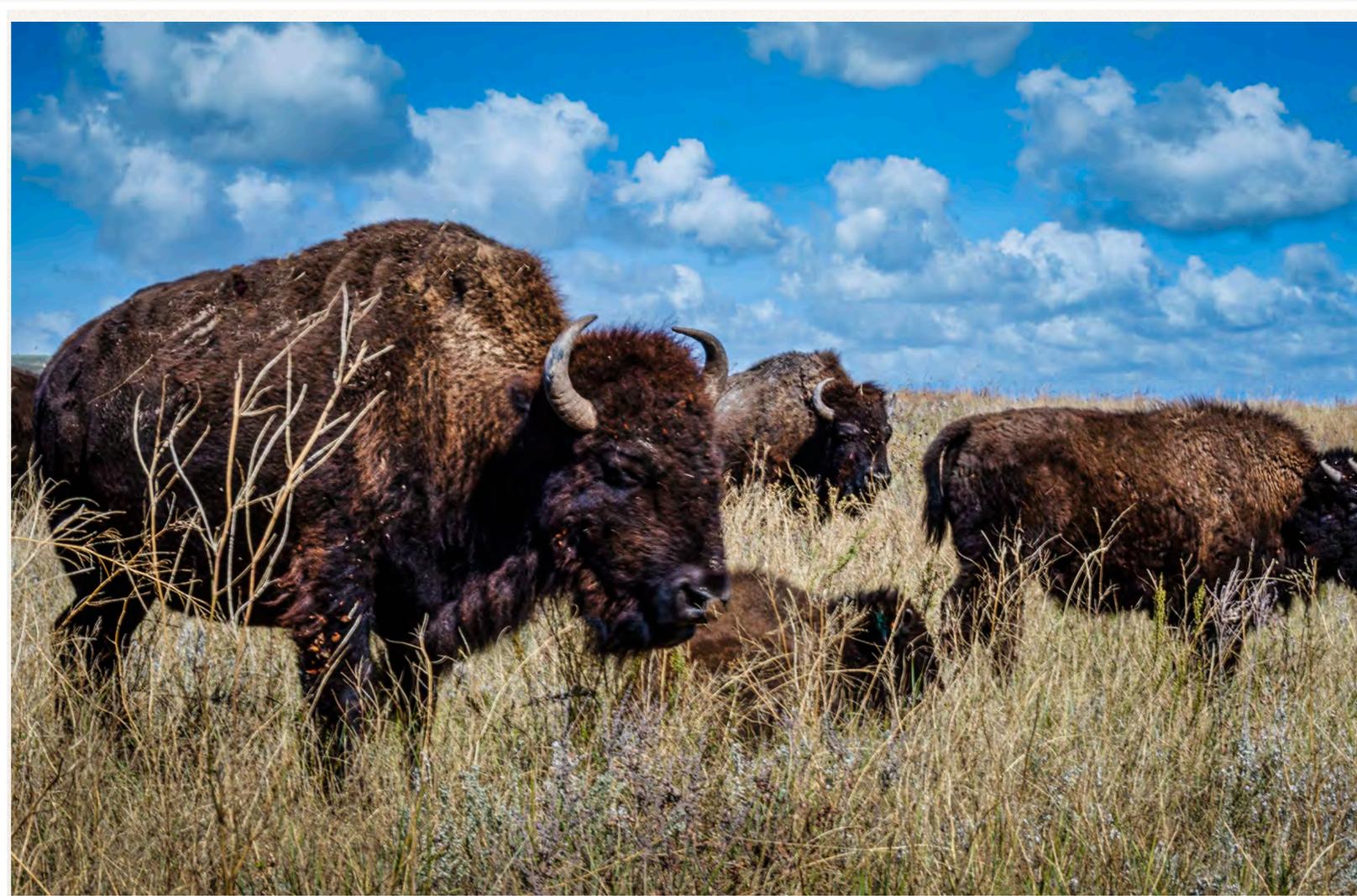
Loss of habitat and introduction of domestic animals competing for forage (i.e., goats vs. white tail deer.)



Texas is part of the tall-grass, blackland prairie system of North America.



The Fayette Prairie — remnant of Texas past



Extinct or extirpated



Last sighting 1898 Audubon, 30 sq. miles (Linsecum)



Left as legacy

“The primary product that will elevate us from poverty is cotton.” — **Stephen F. Austin**

Small trade in animal hides was a distant 2nd in Colony’s economy.

“Although the fields are largely cleared, around the land one sees hundreds of tree trunks that — having been cinched — no longer grow. . . . Gross’s (sic) fields have a melancholy appearance because of the enormous skeletons of trees that stillstand.” — Gen. Manuel de Mier y Teran, 1829 on Jarod Groce’s plantation Bernardo.



Boom time

* 1830-'35 — Production explodes from @ 450k pounds to > 3.5 million.

* 1830-'34 — Anglo population grew from about 10,000 to 21,000.

* Within 3 years, Colony had four horse-drawn, three-story, industrial scale cotton gins and Austin’s brother and cousin set up partnership to bring more.



Courtesy San Antonio Express-News





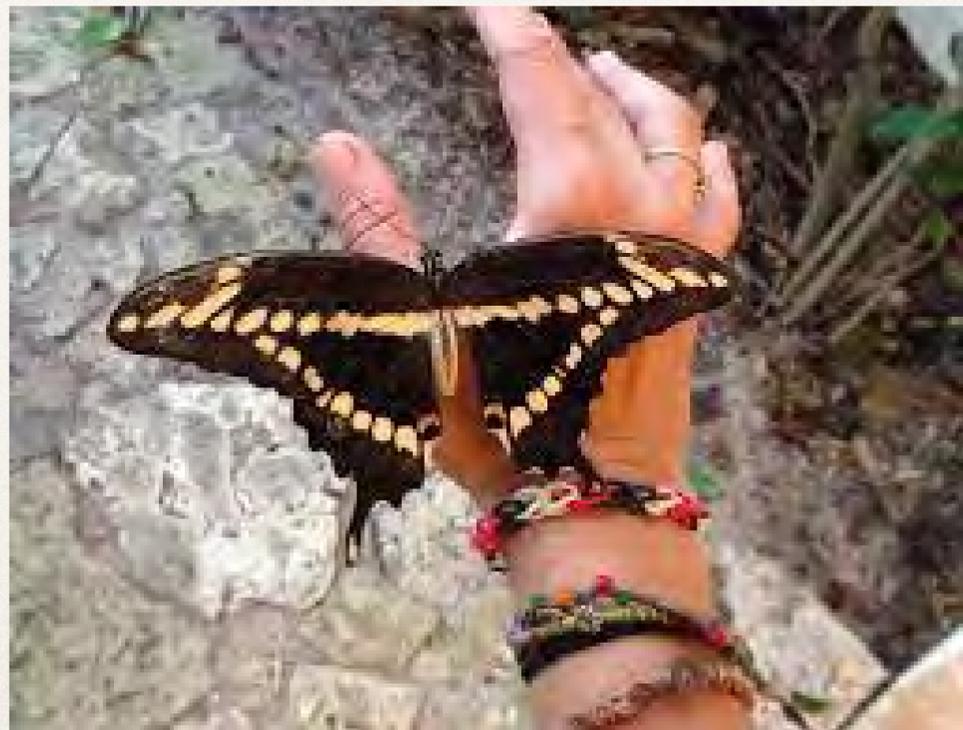
Texas' 'toothache tree

(*Zanthoxylum clava-herculis*)

This native Southern prickly ash, one of four varieties in Texas, is also known as Hercules' club, Devil's walking stick, tickle-tongue, and pepperwood.

Comanches and other indigenous people, as well as Stephen F. Austin's colonists, would have known that chewing the bark or leaves of this tree can numb the mouth with a natural anesthetic, which was sometimes part of "frontier dentistry."

The tree is also one of a preferred habitat of the ugly caterpillars who in spring become the beautiful Giant Swallowtail (*Papilio cresphontes* Cramer), North America's largest butterfly.





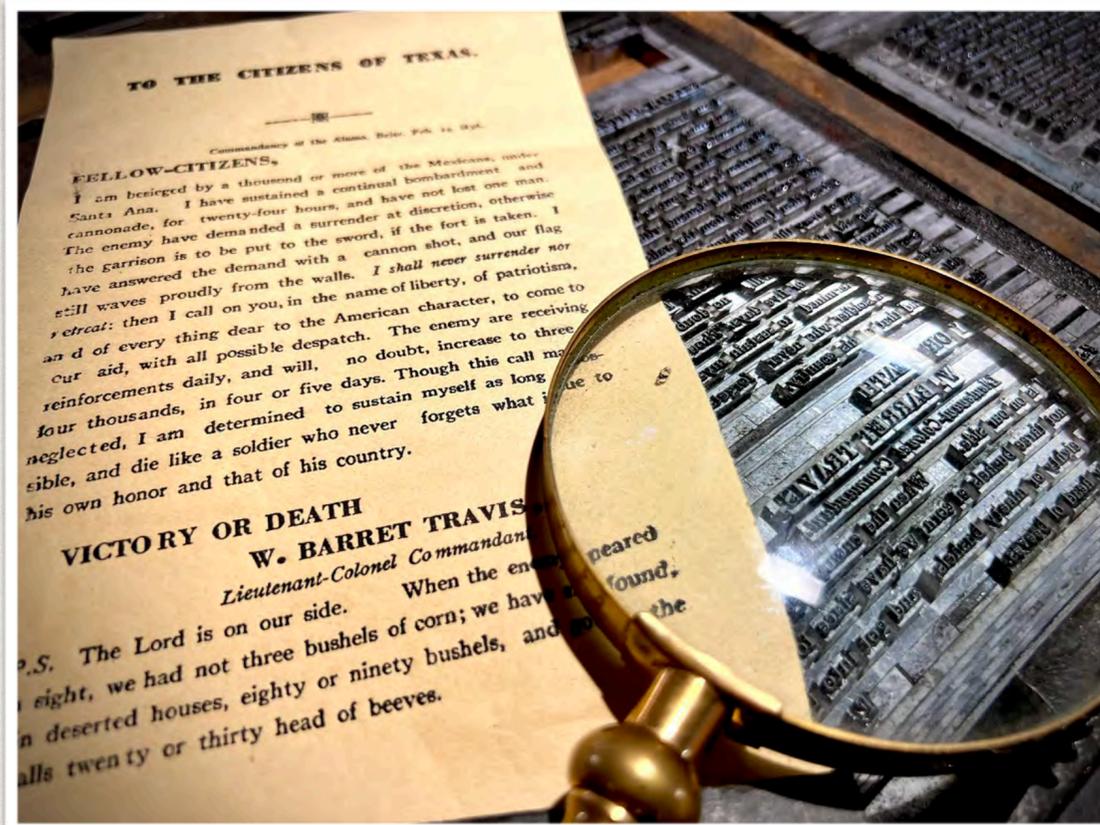
Iron gall ink,
the write stuff





“How little people see of
the things they are
daily trampling over.”

— Gideon Lincecum



Reading list

1. Adventures of a Frontier Naturalist, J.B. Linsecum, E. Hake Phillips, Peggy Redshaw
2. Science on the Texas Frontier, Edward O. Wilson
3. Gideon Linsecum, a biography, Lois Wood Burkhalter
4. Settlement and Environmental Change in Texas, 1820-1900, Southwestern Historical Quarterly Volume, 89, Buy 19785 - April, 1986, Robin W. Doughty
5. Los Brazos de Dios: A Plantation Society in the Texas Borderlands, 1821-1865, Sean M. Kelley
6. Seeds of Empire, Cotton, Slavery and the Transformation of the Texas Borderlands, 1800-1850, Andrew J. Torget
7. Naturalists of the Frontier, Samuel Wood Geiser