The community selected for review this month is not one recognized by the USFSW (1983) whose communities have been the subject of this series. This series restricts the use of the term "community" to those designated by the USFSW (1983); the term "zone" is herein defined as a floral area in the four-county Rio Grande Delta area outside the designated communities of the USFSW (1983). A zone may contain more than one community. Thus, the "community" featured this month will be called the Bordas Scarp zone.

The Hidalgo Plain, underlain by the Reynosa Formation (Pliocene), lies west of the Lissie Gravel and sand belt of Hidalgo County. It includes western Hidalgo County and the eastern half of Starr County; it extends northward through Jim Hogg County. Erosion has defined the western edge of the Hidalgo Plain as a sixty- to seventy-feet high escarpment called the Bordas Scarp. Oakville Sandstone (Miocene) and Frio Clay (Oligocene) compose the escarpment. The soil on the Hidalgo Plain contains layers of rock-like caliche, a hard, calcareous soil type which over time may develop into limestone, which may reduce erosion (Clover 1937).

The Hidalgo Plain features a Mesquite-Zacatal (Mesquite-grassland) over a base of gravel, pebble-embedded limestone, sand, and sandstone. Mesquite-Zacatal dominants on the Hidalgo Plain include Honey Mesquite (Prosopis glandulosa), Purple Three-awn grass (Aristida purpurea), Gummy Lovegrass (Eragrostis curtipedicellata), and Red Lovegrass (E. octenias, as E. secundiflora) (Clover 1937). The native vegetation has largely been converted to rangeland with the introduction of foreign forage grasses and invasions of weedy forbs on overgrazed sites. Shrub societies include Granjeno (Celtis pallida), Lotebush (Zizyphus obtusifolia), Genizo (Leucophyllum frutescens), Black Brush (Acacia rigidula), Tasajillo (Opuntia leptocaulis), and Nopal Prickly Pear (Opuntia linheimeri) (Clover 1937).

Below and to the west of the Bordas Scarp lies the Aguilares Plain. Overlying the Frio Clay and other formations westward. The Mesquite-Zacatal dominants on the Aguilares Plain include Honey Mesquite, Sixweeks Grama grass (Bouteloua barbata), and Purple Three-awn. Mixed shrub-societies occur which include Lotebush, Genizo, Guajillo (Acacia berlandieri), La Coma (Bumelia celastrina), Granjeno, Desert Yaupon (Schaerferia cuneifolia), Albobush (Forestiera angustifolia), Black Brush, and Texas Paloverde (Parkinsonia texana). The Aguilares Plain lies in western Starr and Jim Hogg Counties and much of Zapata County (Clover 1937).

The shrub societies in this area together are called chaparrals. Chaparral, in south Texas, refers to an area dominated by thorn-clad, small-leaved, xeric-adapted shrubs (Clover 1937).

In Starr County, the west-facing escarpment between the Hidalgo Plain and Aguilares Plain, known as the Bordas Scarp, features a unique cactus community with some species found nowhere else in the United States.
Chaparral societies are the dominant vegetation. The society on the slope includes the following shrubs: Joint-fir (Ephedra antisyphilitica), Trecul Yucca (Yucca treculeana), Granjeno (Celtis pallida), Black Brush (Acacia rigidula), Honey Mesquite (Prosopis glandulosa), Leatherstem (Jatropha dioica), Guayacan (Guaiacum angustifolium), Desert Yaupon (Schaeferia cuneifolia), Coyotillo (Karwinskia humboldtiana), Lotetush (Zizyphus obtusifolia), Allthorn (Koeberlinia spinosa), Vara dulce (Aloysia macrostachya), and Saladillo (Varilla texana); the following grasses: Three-awn (Aristida purpurea), Hooded Windmill Grass (Chloris cucullata), and Gummy Lovegrass (Eragrostis curtindicellata); and the following forbs: Runyon's Huaco (Poliannthes runyonii), as Runonia longiflora), Talinopsis frutescens, Low Menodora (Menodora heterophylla), Melon-vine (Ibervillea lindheimeri), Cowpen Daisy (Verbesina encelioides), and Spinyleaf Zinnia (Zinnia acerosa, as Z. pumila). Spinyleaf Zinnia is listed for the Transpecos area by Correll and Johnston (1970) and Gould (1969) and Correll and Johnston (1970) list Talinopsis only for the Transpecos in Texas; both need identity confirmation. The most distinctive feature of the Bordas Scarp vegetation is the wide variety of cacti found here. Some of the fourteen occur nowhere else in the United States (such as Star Cactus) and others' nearest records are in the Big Bend. These cacti include Tasajillo (Opuntia leptocaulis), Nopal Prickly Pear (Opuntia lindheimeri), Sacasal (Cereus Wilcoxii poselgeri), Strawberry Pitaya (Echinocereus enneacanthus), Rio Grande Hedgehog Cactus (Echinocereus reichenbachii var. pitchii), Alicoche (Echinocereus pentalophus), Peyote (Lophophora williamsii), Fishhook Hedgehog Cactus (Perocactus seztispinus), Star Cactus (Echinocactus (Astrophytum) asterias), Glory-of-Texas Hedgehog Cactus (Thelocactus bicolor), Runyon's Pincushion Cactus (Coryphantha macromeris var. runyonii), Pale Pincushion Cactus (Mammillaria longimamma var. sphaerica), and Pichilinga Nipple Cactus (Mammillaria heyderi var. hemisphaerica and var. heyderi) (Clover 1937). Many of these cacti currently face severe threats from brush clearing and some from overcollecting. Peyote is extensively collected for Native American religious ceremonies (Benson 1982). At the base of the Bordas escarpment, Clover (1937) found the following: Slim Tridens grass (Tridens (Tridioa) muticus), Sacaton grass (Sporobolus wrightii), Pigeonberry (Rivina humilis), Jicamilla (Jatropha catharica), Indian-mallow (Abutilon wrightii), Yellowshow (Amoreuxia wrightii), Lazy Daisy (Aphanostephus skirrobasis), the endemic Ashy Dogweed (Dyssodia tephroleuca), Bush Sunflower (Simsia calva), and Orange Zexmenia (Wedelia hispida).

The natural vegetation of Starr County and the increase in brush has been reviewed (see Ideker (1984) for references). The Bordas Scarp zone lies between two Mesquital-Zacatiles which continue to be converted to "improved rangeland." The unique cactus community of the escarpment continues to be threatened by further land clearing including species occurring nowhere else in the United States.

Benson (1982), Correll and Johnston (1970), Gould (1969), and Lonard, Overitt, et al. (In press) were consulted in determining current nomenclature. Two related papers on original cactus records in the area are Clover (1932) and Clover (1935).

BIBLIOGRAPHY


Cereus (Acanthocereus) pentagonus, commonly called Barbedwire Cactus or "night-blooming cereus," together with the Honey Mesquite (Prosopis glandulosa) forms an association within the Mesquital-Chaparral in the vicinity of Rio Hondo. This association is several miles in extent. About four miles east of Rio Hondo the cactus is dominant, climbing in mesquites and forming such a dense tangle that it is almost impossible to get through without a machete. Farther north, in an open mesquite wood, it is frequent with Sarcuista (Spartina spartinae) and Nopal Prickly Pear (Opuntia linchmeini). In places where the cactus and mesquite share dominance the following are prominent in the upper layer: Granjeno (Celtis pallida), Lotebush (Zizyphus obtusifolia), Colima (Zanthoxylum faginea), and Nopal Prickly Pear. The lower layer is composed largely of the following: Pigeonberry (Rivina humilis), Mallow (Malvaviscus coronandianum), mallow side paniculate, Heliotrope (Heliotropium indicum), Gilia (Gilia incisa), Fishhook Hedgehog Cactus (Ferocactus setispinus), and Tropical Sage (Salvia coccinea).

Barbedwire Cactus requires much more water than most cactus species. It often stands in water for weeks after a gulf storm without serious injury.


Barbedwire Cactus
Cereus (Acanthocereus) pentagonus

The species name refers to the five-angled stems of young plants; mature have three-angled stems.

Flowers. One at each areole, blooming at night, 5¼-8 in. long, tubular, flaring into a funneliform throat with perianth segments numerous; outer segments shorter than the inner, green, narrowly lanceolate to linear; inner segments white, acuminate; tube withering and persistent on ripe fruit; areoles on tube and ovary with brown felt and slender spines; stamens numerous.

FRUIT. Berry oblong, red, rind thick, flesh red and edible, seeds numerous and black; cotyledons broadly ovate, ¼-½ in. long, united at base.

STEMS. From 2-4½ in. in diameter, strongly 3-5 angled or rounded on old trunks; young growth sometimes 6-8-ribbed; exterior of stems pulpy and thick, interior hard and woody with, a small pith; areoles 1¼-2 in. distant; spines numeroous, gray, acicular to subulate, the radial spines 6-7 (sometimes to 12), ¾-1½ in. long or longer; central spines 1 or more, longer than the radials.

RANGE. Coastal Texas (from Corpus Christi southward), southern Florida, east coast of Mexico, Guatemala, Panama, Venezuela, Colombia, Cuba, and St. Thomas and St. Croix Islands. Collected by the author on clay mounds between Brownsville and Boca Chica Beach, Cameron County, Texas.
This third in a series of field manuals taken from his 1960 tome is published posthumously from the author's outlines. Full description may be too technical for some, but illustrations, history, and legend make the book readable useful to all levels.

It is a field manual to be consulted and not a coffeetable decoration. Its value will depend on whether the taxonomy is updated from the out-of-date 1960 volume. The original work remains an invaluable reference as long as the user checks its taxonomy against a current reference.

Texas encourages non-thirsty plants

AUSTIN, Texas — A model program has been enacted by the Austin city council that stresses water conservation through landscaping with low-water-use and native plants. The program is part of a statewide effort to encourage state and local governments to "Go Native — Plant Texas" when they landscape such public facilities such as courthouses, city halls, schools, and state offices.

Texas Agriculture Commissioner John Hightower and a host of other public officials, along with Mrs. Lyndon Johnson, announced the "Plant Texas" program in recent ceremonies here.

"Why use our taxpayers' money to buy plants from California, Florida, or even Japan when we can find harder, cheaper, and prettier plants right here at home?" Hightower stated. From buffalo grass to sumac, from bluebonnets to Indian paintbrush, Texas has a long list of native vegetation that is more water-conserving than imported varieties, the agriculture commissioner pointed out.

"These are the original 'native Texans,' and they have been enduring our state's hard winters, scorching summers, and long dry spells since way before Gabeza de Vaca shipwrecked near Galveston in 1528," Hightower said. "It's time that we plant Texas with these native Texans as a matter of state policy."

In addition to the state initiative, the Texas Department of Agriculture recently conducted a survey and published the Texas Native Tree Directory. The list contains information on more than 200 Texas businesses which are growing and selling the 173 native trees that have low requirements for water and tenance.
NATIVE PLANT PROJECT

Meeting Notice

Date: Friday, 16 November 1984
Time: 1930 (7:30 P.M.)
Place: Visitors' Center Auditorium, Santa Ana National Wildlife Refuge, 7½ miles south of Alamo, Texas, ¼ mile east and south of the junction of FM 907 and US 281.

Agenda:

(1) The Native Plant Project meeting will be a joint meeting with the Central Texas Region of the Native Plant Society.

(2) The evening's program will feature Dr. James H. Everitt who speak on the native cacti of the lower Rio Grande Valley. Dr. Everitt will show slides of native cacti, review their distribution and habitats, and discuss the threats to their survival.

Sacasíl
*Cereus (Wilcoxia)* poselgeri

FIELD IDENTIFICATION. A rare and inconspicuous cactus attaining a height of 2–3 ft, with slender erect or reclining stems about ¼ in. in diameter, each with 8–10 inconspicuous spiny ribs. Often growing entangled with other thorny shrubs in thickets and easily overlooked.

FLOWERS. Blooming March–May. Mostly terminal and solitary from an areole, some fragrant, but older ones scentless. Opening in the afternoon, but closing at night, for 5–9 days. The 1 in. long flower tube and the ovary clothed externally with long hairs and slender clustered spines which are reddish brown or black and ¼–¼ in. long; perianth segments numerous, overlapping, 1–1½ in. long, ¼–¼ in. wide, linear, acute to acuminate at apex, wide-spreading or recurved, pink with usually a darker strip down the center; stamens numerous; filaments slender, filiform, green below to white above, about ¼ in. long, erect around the style base; anthers ovoid to short-oblong, flattened, yellow to red, about ¼ in. long; style greenish, stigmas 8–12, erect, linear, slender, green, apex obtuse or rounded and somewhat incurved, length about ¼ in., exerted beyond the stamen ring.

FRUIT. Seeds about ⅛ in. long, rugose, pitted, black, aril large and basal.

STEMS. Green to gray, 1–3 ft high, slender, solitary or branched, ¼–¼ in. thick, ribs 8–10 and inconspicuous; spine clusters dense, low, radial spines 9–12, appressed, delicate, gray to green, puberulent; central spines ascending or appressed, white to gray, often tipped black, about ¼ in. long, stouter and longer than the radials; old stems sometimes spineless.

ROOTS. Near the surface of the ground, tuberous, fusiform, black, 1–4 in. long, usually several together.

RANGE. On dry gravelly or sandy hillsides. In southwest Texas and adjacent Coahuila, Mexico. In Texas north of Hidalgo County to Laredo along the Rio Grande River.

REMARKS. The genus, *Wilcoxia*, was named after General Timothy E. Wilcox of the United States Army. The species name, *poselgeri*, honors H. Poselger, a German botanist who, in an article written in 1853, described the plant under the name of *Cereus tuberosus* Poselger. It is also known under the vernacular names of Sacasíl and Lead Pencil Cactus. Rather rare, but also easily overlooked owing to its occurrence among thick chaparral. A 1-ft specimen was grown by the author in a pot and bloomed on March 16. The pink flowers were not fragrant and opened only a few hours in the afternoon for a period of 8 days.
Why the 1983 Christmas Freeze Was the Worst.

There were three main reasons why last Christmas's freeze was the worst on record, worse than the 1951 and 1962 freezes, states Dr. John Fucik, President of the Native Plant Project. Half of the 70,000 acres were killed. He said the freeze was unusual because it was not the usual "radiational" freeze which local citrus growers know how to combat.

Local growers use wind machines, heaters, and irrigation to combat freeze threats. These prevent damage during 90% of the freezes. But during the 1983 Christmas Freeze the wind picked up to 18 miles per hour with higher gusts. If wind speeds exceed 5 miles and hour, heat released by heaters in orchards blows away and wind machines fail work. There was nothing anyone could do. The tissues of trees, the ground, and building walls were stripped of any stored heat by the wind which had blown for 36 hours ahead of the cold weather.

This editor has pointed out that temperatures had remained too high for vegetation to acclimate to freezing temperatures. All but four highs during the first 16 days of December were above 75°F, including 91°F on the tenth.

President Fucik confirms this lack of acclimation. Trees must be subjected to a certain number of cold nights with cool days below 70°F to take on any degree of cold hardiness. The freeze suddenly followed a warm November and December without any cold acclimation. The freeze was the worst in recorded history because everything came at once and worked against the growers' preparation. Thus, the citrus, palms, exotic ornamentals, and even some native trees and shrubs were killed or severely damaged — for the first time in the memory of long-time local residents.

Dr. Fucik sent out questionnaires and reports on the responses through July 1984. He said 40% of grapefruit trees had been pruned, 8% cleared, and 52% remained untouched. Early and mid-season oranges showed 39% pruned, 5% cleared, and 56% untouched. Late oranges showed 35% pruned, 5% cleared, and 60% untouched. In November, some pruning continues, but the bulldozers and bonfires remain more common sights in the previously untouched groves.

COMING EVENTS

The Native Plant Society's Southern Section will be visiting here on 16-18 November. A joint meeting is scheduled for Friday, 16 November and a field trip to the Lomas And Audubon Palm Grove for Saturday, 17 November. Drs. John Fucik and Robert Lonard will lead the field trip. Participants will meet at a Girl Scout Camp near Laguna Atascosa National Wildlife Refuge at 0800 on Saturday, 17 November. Dr. Frank Judd will speak on the Texas Tortoise and lead a trip into tortoise habitat on Sunday, 18 November, probably with the same starting time and place. Ask for more details Friday evening.

Los Amigos del Mesquite will hold their 3d Annual Convention at Richards Sun Valley Motel on 30 November and 1 December 1984. Topics include uses of, landscaping with, and propagation of mesquite. Congressperson Eligio de la Garza will speak at the banquet.

If you prefer a field trip to the Lower Rio Grande Valley Nature Center to the above one at the same time, see the bottom of page seven.
Cyndy Chapman arranged a forum on the plight of the Falcon Woodlands held 18 October which was sponsored by Frontera Audubon Society and the Pan American University Biology Department. Frontera Audubon elected this year to emphasize need for preservation of the Falcon Woodlands.

Earl Frankenbergler moderated. James Everitt showed and discussed slides of representative flora and Robert Schumacher the fauna. Threatened species were identified.

Panel members represented the International Boundary & Water Commission (Falcon Reservoir), the Southwest Regional Office of the National Audubon Society, Frontera Audubon Society, Pan American University, Starr County Commissioners Court, Texas Natural Heritage Program and Texas Nature Conservancy, Texas Parks & Wildlife Department wildlife management, Falcon State Park, U. S. Department of Agriculture, and the U. S. Fish and Wildlife Service. Each panel member individually discussed each's role in the Falcon Woodlands. The problems involved in and need for the protection of the Falcon Woodlands from conversion from the natural, native Neotropical thorn woodlands were covered in the presentations and discussion following.

All seemed to agree on the need for protecting the Falcon Woodlands. And everyone present learned much about the problems facing the Falcon Woodlands and the problems facing the Falcon Woodlands and the problems encountered in protecting them as a natural area.

Falcon Woodlands remain the largest piece of subtropical woodlands surviving in the United States today. Falcon Woodlands contain a mixture of Chihuahuan, subtropical, and northern temperate plants and animals found nowhere else. Have you written your letters yet to indicate your support for the acquisition and protection of this unique part of your Texas natural heritage?

PAST FIELD TRIP: FALCON WOODLANDS

Twenty people met at Falcon Dam on 20 October for a field trip through the Falcon Woodlands. Bob Schumacher led the participants through the IBWC property below Falcon Dam and the Santa Margarita Ranch owned by the Gonzalez family. The Santa Margarita Ranch is renowned as habitat for Neotropical avian species such as the brown jay unknown elsewhere in the United States. Positive spinoffs of this field trip may be a video documentary and magazine and/or newspaper articles on the plight of the Falcon Woodlands.

FUTURE FIELD TRIPS - NOVEMBER 1984

The Lost Maples State Natural Area weekend field trip for Thanksgiving weekend is cancelled due to lack of interest.

A short field trip through the Lower Rio Grande Valley Nature Center will substitute. A nature walk will commence at 1000 on Saturday, 17 November. A workday will follow, bring your work gloves. Lots of clean up work remains to be done in the nature park as well as work inside the nature center building.
November Puzzle

1D—Subject of November’s NPP program
2D—Cactus resembling a dead stick protruding from a shrub — until it flowers
3A—Soil preference of many cacti
4D—Cactus named for a sewing item
5D—Cactus named for a spiny critter
6D—Common name for an Echinocactus
7A—Cactus forming a thicket in Cameron County
8A—One of the cholla group of Opuntia
9D—Common name for a cactus with curved spines
10D—Prickly Pear
11A—Another Echinocereus
12A—Almost ubiquitous feature of cacti
12D+1D—Cactus found in USA only in Starr County
13A—Cactus used in religious ceremonies
14A+1D—Desert water storer

October Puzzle Answers:

BRUSH
L
W
L CENIZO
FUCIK
O
TAMAULIPAN
WILLOW
N
GUAJILLO
A
E
P
N RIOGRANDEASH
G
P
R
R
A
L

P.O. Box 1433
Edinburg, TX 78540-1433

The Sabal
Volume 1, Number 5
November 1984