Cactus as a Resource

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The only crop I have ever planted is prickly pear. Pear (nopal) is a mainstay of our ranching and wildlife management operation (1).

Let me goad your thoughts. In your daily life what "things" are most important to you. Would it be your country-club membership, the arts, your car, how about your computer? Are you content after weighing your quality leisure time against the sacrifices necessary to have job security? Do you enjoy your travels?

If all the motors in the world stopped running, what would you do? Those of us living near the nopaleras of rural south Texas and northern Mexico might survive.

Prickly pear, once again, could become one of the most important "things" in our lives.

Quality of life afforded by a nopal-based society surely would be less than that to which we have grown accustomed. However, such a life style might be less costly to sustain and more apt to endure.

San Antonio's future may soon be decided by a pending Federal Court ruling on water distribution from the Edwards Aquifer. Today's drought-induced shortage of water is causing contention throughout the area. The question to be answered is: "Is a minnow or a salamander more important than a lifestyle or an individual's business?"

In the face of unusually dry conditions, the values of pear and water are being learned anew by the peoples of Texas. Drought, shortage of feed stuffs, high input cost, and low cattle prices are driving many out of the ranching industry.

Those of us with prickly pear have a better chance of staying until conditions improve. An acre of burned prickly pear can be prepared for livestock and wildlife consumption for hundreds of dollars less than a comparable feeding of hay or grain. Hay and grain have to be hauled in. Cactus grows on our ranches.

As a young man, constantly faced with the problems of drought, I was told by my father (Jack Maltsberger), "If you have pear and water, you can stay."

He told me about a group of untamed mustang horses and wild cattle that survived over 14 months with prickly pear as their only source of food and water.

Described as the number-one wildlife plant of the South Texas Plains, prickly pear is probably utilized by more life forms than any other plant grown in our region. For thousands of years it's moisture and nutrient-rich fruit and pads have contributed to their diets and sustained them through periods of drought and famine (2,3,4,5,6,7,8,9). By providing shelter from predators, its

thorns improve nesting and reproductive success of birds, insects, livestock, reptiles, rodents, and wildlife (3,9).

I want to go back into the past and share with you some "things" that were important to others that have inhabited our part of the world. Some direct quotations will be used from those that lived the life and others that have done the research, lest I dilute the impact of their experiences.

In the 1840s much of Texas was an uninhabited grassland. When asked, as an old man in his 90s, why his people settled on the Blanco River (about 60 miles north of San Antonio), Scott Nance replied instantly and without hesitation, "wood and water, they had to have wood and water." Scott Nance was my wife's (Sarah Lee Maltsberger) great, great uncle. Today, it is easy to loose perspective of how important wood, water, and pear can be to survival.

G. W. Maltsberger (my great grandfather) ranched and traded in the San Antonio area in the 1850s. John Maltsberger (my grandfather) relocated on the Nueces River watershed in La Salle County, near Cotulla, Texas in the 1880s. We ranch about 100 miles south of San Antonio and 60 miles north of Laredo. Our ranch is an arid shrubland situated on the northeastern edge of the encroaching Chihuahuan Desert (13).

In the July 28, 1911, the *San Antonio Light*, (San Antonio, Texas), our area was described as: "in Texas, down by the Rio Grande, the land that tradition says was forgotten the day after creation and given to the devil for the marshaling and maneuvering of his legions." (10).

More kindly it is referred to as the South Texas Plains or as a Tamaulipan Brushland (a portion of the larger Tamaulipan biotic region) (11,12,13).

Making prickly pear cactus all the more important to us are high temperatures, low rainfall, and yearly surface evaporation rates that often exceed 80 inches. Our combined spring and fall annual potential growing season is estimated to total only about 100 days (13). The growing season at Brownsville, Texas has been estimated as 341 days (11). Our rainfall is erratic and unpredictable.

The Spaniard, Alonso de Leon, while searching for the Frenchman La Salle's settlement, Fort St. Louis, crossed the Rio Grande in April 1689 above the present city of Laredo. He then discovered and named the Nueces River when he reached it near Cotulla. To cross the river, his men had to detour a mile and a half and then cut a passage with cutlass and axes for almost three miles through a dense thicket of prickly pear and mesquite (14).

Shipwrecked and lost, Alvar Nunez Cabeza de Vaca was the first European to see and write about our southwestern United States. His small party of explorers wandered for roughly 6,000 miles while living among the Indians for eight years (1528-1536). In their wanderings, Cabeza de Vaca and his party may have passed through the country near Cotulla, that was later described by Alonso de Leon.

Cabeza de Vaca best describes the importance of prickly pear cactus to the native people who annually trekked into the nopaleras of south Texas:

> "They are a merry people, considering the hunger they suffer.

> They never skip their fiestas and areitos. To them the happiest time of year is the season of eating prickly pears.
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> They go in no want then and pass the whole time dancing and eating, day and night. They squeeze out the juice of the prickly pears, then open and set them to dry. The dried fruit, something like figs, is put in hampers to be eaten on the way back. The peel is beaten to powder.
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> Many times while we were among this people and there was nothing to eat for three or four days, they would try to revive our spirits by telling us not to be sad; soon there would be prickly pears in plenty; we would drink the juice, our bellies would get big, and we would be content.
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> From the first talk like this we heard to the first ripening of the prickly pears was an interval of five or six months. This period having lapsed and the season come, we went to eat the fruit." (15,11).

Studies of human coprolites found in rock shelters of the Lower Pecos region of west Texas reveal flowers, seed, and fiber of prickly pear cactus. The presence of cactus fibers in almost every coprolite ever examined from the Lower Pecos region and from the finding of numerous singed spine bases support the conclusion that cactus was one of the main food items of the area's inhabitants from 6,000–0 B.C. (16). Nobel states in his *Remarkable Agaves and Cacti*, "The recorded story of our association with agaves and cacti begins with the remnants of these plants in 9000-year-old human feces." (1)

In the early 1900s many of the poorer peoples of Mexico and some on the Island of Sicily were reported to subsist largely on prickly pear fruit for three or four months of each year (10, 18).

Even today, in Mexico, there are poor people who dry nopalitos and string them for future consumption.

Is it unreasonable to believe that cattle fed upon prickly pear cactus shortly after their arrival in the new world? I think not, after reviewing the works of Bryant and Nobel that detail human use of prickly pear up to 9000 years ago (1,16).

Janzen's (2) placing in the Chihuahuan Desert nopaleras of "herbivorous megafauna and it's carnivores that were present from 3,000,000 (and more) to 10,000 years ago and the remnant medium-sized faunas that have been very recently eliminated", support his conjecture that Chihuahuan Desert nopaleras were big-mammal vegetation.

Janzen also stated, "The return of equids and several sizes of bovids to New World vegetation was the Spanish gift to paleoecology. Cattle, horses, sheep, and goats readily eat the fruits of cacti, yuccas, mesquite, and acacia." (2).

Historian Dan Kilgore's *Texas Cattle Origins* should be read by all interested in the Conquest of New Spain and the origins of ranching in the Southwest (14).

Kilgore (14) relates:

> "The first cattle shipped from the islands to Mexico around 1521 were utilized exclusively as draft animals. Large exportations to Mexico did not start until 1527, when Nuno de Guzman, governor of the Province of Panuco, issued licenses to his settlers to capture Indians to exchange as slaves for livestock from the islands.
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> Although island officials then banned the export of cattle and horses, the desire for slaves on the islands equaled the demand for cattle on the mainland and a brisk trade developed in the two commodities. Indians rounded up and branded as slaves by Guzman were shipped from Tampico at the mouth of the Panuco River and traded for cattle rounded up and branded on Hispaniola and Cuba. An early rate of exchange was eighty Indians for one cow." (14)

To avoid the Union Army's blockading of southern coastal waters, untold hundreds of thousands of bales of Confederate cotton were shipped out of the neutral port of Matamoros, Mexico, during the Civil War. Coming from as far away as Missouri, much of this cotton was moved across south Texas and the Rio Grande River by oxen. (19)

Until displaced by the railroads, a major portion of the freighting done in Mexico and the southwestern United States was done with oxen.

As the teamsters cut pear to feed their cattle, broken pads fell to the ground, took root and grew. Tuna seeds passing through the digestive tracts of their cattle would also sprout and repopulate. Could not freighting with cattle fed pear in this manner be considered as a self-sustaining industry?

The following passages written by David Griffiths, Assistant Agrostologist in Charge of Range Investigations in 1905 well state the importance of prickly pear cactus for cattle used as draft animals (17). Griffith's is the only written description I've seen of freighting with cattle in South Texas:

> "There are hundreds of ox teams in the southwestern part of Texas that work all the year on a ration consisting very largely of pear all of the time, and practically nothing else for months. They belong mainly to the Mexican population, who freight and haul wood to the towns, ranches, and pumping establishments which are springing up somewhat numerously in that section.
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> Their ration consists of such feed as the country produces. Grass and browse are the main feed when the seasons are good. It is during the dry seasons that the greatest quantity of pear is fed, but the freighter never omits it from his ration for working oxen. Even during the month of May, 1904, when grass was in the best possible condition and there was an abundance of it, pear scorched with brush was regularly fed. It is impossible to tell how much these animals eat.
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> A day spent upon the market plaza at Laredo, Texas, confirmed the statement which had been often heard regarding the large use made of pear by the Mexican wood choppers. When the men are asked what they feed, the answer invariably is "nopal" (prickly pear). One, of whom special inquiry was made, stated that he was hauling wood 30 miles (round trip) making two trips per week. His loads averaged three-fourths of a cord of

mesquite wood. His oxen grazed very largely on grass at that time, but the greater part of the year they got little besides nopal, the thorns being singed off over a brush fire. His team was in good working condition.

The largest amount of freighting in the State of Texas at the present time is doubtless done below the line of the Texas and Mexican Railway. In this region there is an abundance of pear of good quality. Here, and in fact farther north, especially along the Rio Grande, teaming is still a business; but it is almost entirely in the hands of the Mexican population, who own their oxen and carts, their sole holdings in many cases.

It is estimated by Mr. Jacobo C. Guerra that there are no less than 200 of these Mexican carts operating between Rio Grande City and the north. About 60 of these work at the business continuously, while the remainder haul when there is an exceptionally large quantity of freight to be moved. There are a few mule teams on the road, but by far the larger quantity of freight is handled with bulls or oxen; even cows are sometimes hitched to the wagons. A team consists of 4 to 10 oxen hitched to a Mexican cart. Such a team will make a trip of 76 miles and back in ten to fourteen days. The longer time is the one most frequently used. Two trips per month is what the average team makes.

They go practically empty one way, and haul 3,000 pounds on the other trip. This figures up, for those who work at the business all of the time, 10 miles per day, continuously, from one year's end to the other, and this over a very hard road, two-thirds of which is sandy.

This work is done by these animals upon a ration of prickly pear and grass, when the latter is to be had; when there is no grass, pear alone suffices. There are long seasons of frequent occurrence when grass is next to nothing, and during these seasons nopal in large quantities is fed, the cattle getting little else. The season is both infrequent and severe when the hobbled ox can not get some feed out of a brush pasture. Frequently, however, the feed, aside from pear, is very small in quantity.

Probably the largest amount of teaming is done between Hebronville and Rio Grande City. There is no pear convenient upon the northern one-third of this road. It is therefore necessary for the teamsters to provide themselves with pear by hauling it over about one-fourth of the journey.

This necessitates the hauling of pear 15 or 20 miles, which largely increases the total work done by the animals. The driver camps at night in a pear thicket, lights a brush fire, and in about thirty minutes scorches the thorns from enough pear for his team to eat during the night. Another feed in the morning is usually all they get.

In some cases the animals are given a ration of pear at midday. These people are often provided with a pear fork, a description of which has already been given (see fig. 1, p.15) while some of them use a sharp stick for handling the pear. In chopping the pear down an ax or a machete is used. Before leaving the pear thickets enough pear is scorched and loaded on the wagons to feed the teams until they return to the thickets again.

During a good season, like the past one, there is plenty of grass along the road, but in spite of this pear is fed. The animals do not eat so much of it as they do when the grass

is short, but there is never a season when they will not eat a surprisingly large amount of scorched pear.

During long, dry seasons the water supply along the road becomes very scarce, and teams often are forced to make the entire distance of 76 miles without water, on a full ration of pear. Indeed, teamsters have informed the writer that during the winter their oxen drink only about once each week, but that they need water two or three times a week in the summer.

It is next to impossible to get a very definite notion of how much these people feed their stock. As accurate an estimated as it has been possible to secure allows one-half load of singed pear to 12 head of oxen for one feed, when two feeds a day are given the animals. A load will probably weigh from 1,500 to 2,000 pounds." (17)

If as recently as 1521 A.D., a draft animal that could be sustained on prickly pear cactus was valued at more than the lives and freedom of 80 people, what might the future hold in store for us? How might our perception of "things" change?

Prickly pear has seen many species of animals and races of people fade away after feeding on its tunas and nopalitos. I wonder if this is the first time it has witnessed over a million human beings being held accountable to a minnow and a salamander?

Hopefully, the medical and nutritional research being done on prickly pear today will help sustain us in the future.

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